Critical Release Notice

Publication number: 297-8021-814
Publication release: Standard 20.02

The content of this customer NTP supports the SN09 (DMS) software release.

Bookmarks used in this NTP highlight the changes between the NA015 baseline and the current release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the NA015 baseline remains unchanged and is valid for the current release.

Bookmark Color Legend

Black: Applies to content for the NA015 baseline that is valid through the current release.

Red: Applies to new or modified content for SN04 (DMS) that is valid through the current release.

Blue: Applies to new or modified content for SN05 (DMS) that is valid through the current release.

Green: Applies to new or modified content for SN06 (DMS) that is valid through the current release.

Purple: Applies to new or modified content for SN07 (DMS) that is valid through the current release.

Pink: Applies to new or modified content for the SN08 (DMS) that is valid through the current release.

Orange: Applies to new or modified content for SN09 (DMS) that is valid through the current release.

Attention!
Adobe ® Acrobat ® Reader ™ 5.0 or higher is required to view bookmarks in color.

Publication History

Note: *Refer to the NA015 baseline document for Publication History prior to the NA017 software release.*

November 2005

Standard release 20.02 for software release SN09 (DMS).

For the Standard SN09 (DMS) release the following changes were made:

<u>Volume 2</u>
OM group CNDB (modified by CR Q01148982)

<u>Volume 5</u>
OM group TRMTER (modified by CR Q01053671)

The Critical Release Notice has been updated to correctly show the details of the documentation releases associated with software release SN07.

September 2005

Preliminary release 20.01 for software release SN09 (DMS).

For the Preliminary SN09 (DMS) release the following changes were made:

<u>Volume 1</u>
No changes

<u>Volume 2</u>
No changes

<u>Volume 3</u>
OM group ISUPUSAG (modified by CR Q01104397)

<u>Volume 4</u>
OM group STORE (modified by CR Q01079425)

<u>Volume 5</u>
No changes

<u>Volume 6</u>
No changes

June 2005

Standard release 19.02 for software release SN08 (DMS).

No changes – null release

March 2005

Preliminary release 19.01 for software release SN08 (DMS).

No changes – null release

December 2004

Standard release 18.02 for software release SN07 (DMS).

For the Standard SN07 (DMS) release the following changes were made:

<u>Volume 1</u>
No changes

<u>Volume 2</u>
No changes

<u>Volume 3</u>
OAPNMTC by Feature A00005160
OFZ2 by CR Q00792099

<u>Volume 4</u>
No changes

<u>Volume 5</u>
TDGTHRU (new) by Feature A00005160

<u>Volume 6</u>
No changes

September 2004

Preliminary release 18.01 for software release SN07 (DMS).

For the Preliminary SN07 (DMS) release the following changes were made:

<u>Volume 1</u>
AIN, AINICOFF, AINICSUB, AINOGOGG, AINOGSB2, ATTAMA

<u>Volume 2</u>
CP, IS4ITOPS (obsolete, removed)

<u>Volume 3</u>
No changes

Volume 4
SMSTOPS (new)

Volume 5
TC7WRLSS (new), VOW (new), WINTOPS (new)

Volume 6
No changes

March 2004

Standard release 17.03 for software release SN06 (DMS).
For the Standard SN06 (DMS) release the following changes were made:

Volume 1
No changes

Volume 2
DCA references removed/marked obsolete

Volume 3
No changes

Volume 4
No changes

Volume 5
TFCANA

Volume 6
DCA references removed/marked obsolete

September 2003

Standard release 17.02 for software release SN06 (DMS).
For the Standard SN06 (DMS) release the following changes were made:

Volume 1
OM group BTTANDM (NEW)
OM group BCTPOOL (new)

Volume 2
OM group IS4ITOPS (new)

Volume 3
No changes

Volume 4

No changes

<u>Volume 5</u>
OM group TOPSDACC
OM group TOPSISUP
OM group TRK
OM group TRKQOSOM

<u>Volume 6</u>
No changes

June 2003

Preliminary release 17.01 for software release SN06 (DMS).
For the Standard SN06 (DMS) release the following changes were made:

<u>Volume 1</u>
No changes

<u>Volume 2</u>
OM group DCTS

<u>Volume 3</u>
No changes

<u>Volume 4</u>
No changes

<u>Volume 5</u>
OM group TRK2
OM group TRKDCTS
OM group TRKQOSOM (new)

<u>Volume 6</u>
No changes

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297-8021-814

DMS-100 Family

North American DMS-100

Operational Measurements Reference Manual Volume 6 of 6

Product Performance and Reference

LET0015 and up Standard 14.02 May 2001

NORTEL NETWORKS™

DMS-100 Family

North American DMS-100

Operational Measurements Reference Manual Volume 6 of 6

Product Performance and Reference

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1 Product performance OMs

In this section, specific operational measurements (OM) associated with particular products are used to monitor the performance of the individual products on the switch. They may be useful to the switch administrator when determining switch capacities and overall switch performance.

Advanced intelligent network (AIN)

Tracking the product's use of system resources and detecting early symptoms of system faults are key to administering the advanced intelligent network (AIN).

Link capacity

Link capacity issues have a direct effect on AIN service because of the messaging between the SSP and the SCP that makes up the query and service logic response for an AIN call. AIN-related messaging Operational Measurements signal the need to evaluate CCS7 links. Comparison of capacity and occupancy of the links can lead to provisioning of additional resources. CCS7 messaging between SSP offices should also be considered in evaluating CCS7.

As a software-only feature, AIN is supported by a variety of CCS7 implementations throughout the network. Message switch and buffer 7 (MSB7) and link peripheral processor (LPP) based systems require administration separate from switch-based diagnostic and administration tools. (The LPP is equipped with LIU7 units and does not use network nailed-up connections.)

MSB7 and CCS7 links are engineered and administered based on throughput capacity. Capacity issues for messaging between the MSB7 and the CPU can arise due to the CCS7 links, operating at a constant speed of 56 kbp/s, and hardware constraints in the network.

OMs reporting performance data for CCS7 messaging track capacity issues. The following table lists performance indicators for link capacity.

Performance indicators for link capacity (Sheet 1 of 2)

OM group	Register	Log reports
C7LINK2	C7BYTTX	
	C&BYTTX2	
	C7BYTRX	
	C7BYTRX2	
	C7BYTRT	
	C7BYTRT2	
SUPUSAG	ISMGOUT	

Advanced intelligent network (AIN) (continued)

Performance indicators for link capacity (Sheet 2 of 2)

OM group	Register	Log reports
	SMGOT2	
	ISMSGIN	
	ISMSGIN2	
TCAPUSAG	ISMGOUT	
	SMGOT2	
	ISMSGIN	
	ISMSGIN2	

How to evaluate link capacity performance

Individual CCS7 links operate at a constant speed of 56 kbp/s in each direction and are engineered to carry a maximum of 0.8 erlang of traffic. In accordance with CCS7 network standards, CCS7 data links are always equipped in mated pairs, with each individual link engineered at a normal condition maximum of 0.4 erlang of traffic. Non-catastrophic single failure leaves the surviving link with no more traffic than its engineered maximum.

CCS7 messages are measured in 8-bit bytes called octets. The maximum capacity of CCS7 links are therefore rated in terms of bytes per second, or octets per second (octet/s).

With link capacity calculated for both normal and failure conditions, polling and summing the appropriate OM registers for busy hour transmitted and received byte counts provides the data to calculate the percentage of link occupancy.

Calculations used to evaluate factor performance

The basic calculation for CCS7 link performance is as follows:

```
Transmitted and received byte counts | 3600 seconds/hr
-------------------------------------------------------- =  percentage of
       Maximum calculated link capacity                     link occupancy
```

Each connection consists of redundant links in each direction. If one of the paired links fails, the remaining link carries all the traffic in that direction.

Advanced intelligent network (AIN) (continued)

Specific CCS7 occupancies for normal condition and failed condition are as follows:

Normal condition (0.4 erlang): 1 link: 1 direction: normal

```
Link occupancy incoming
(C7BYTRX + C7BYTRX2 | 3600 seconds/hr)
--------------------------------------- =  Link occupancy (IN)
       2800 octets/second

(C7BYTTX + C7BYTTX2 + C7BYTRT + C7BYTRT2 | 3600 seconds/hr)
---------------------------------------------------------- =Link occupancy
               2800 octets/second                           (OUT)

C7BYTRX + C7BYTRX2 | 3600 seconds/hr)
--------------------------------------- = Link occupancy (IN)
        5600 octets/second

 (C7BYTTX + C7BYTTX2 + C7BYTRT + C7BYTRT2 | 3600 seconds/hr)
---------------------------------------------------------- =Link occupancy
                 5600 octets/second                         (OUT)
```

When link occupancy exceeds the 0.4 E or 0.8 E criteria in either direction, an overload condition exists and an additional link may be required.

MSB7 calculations are as follows:

```
(TCMSGOUT + TCMGOU2 + TCMSGIN + TCMSGIN2)
------------------------------------------- = Total TCAP messages/second
            3600 seconds/hr

(ISMGOUT + ISMGOT2 + ISMSGIN + ISMSGIN2)
------------------------------------------ = Total ISUP messages/second
            3600 seconds/hr
```

Data evaluation procedure

The following procedure is used to evaluate link capacity.

1. Gather OM data from busy hour readings.
2. Calculate occupancy based on busy hour readings and engineering capacity of the equipment.

3. If occupancy exceeds capacity, refer data to provisioning engineering for further evaluation and action.
4. You have completed the procedure.

Real-time capacity

The impact of AIN 0.0 release on the computing module (CM) is a function of the additional AIN call types, such as AIN POTS line to trunk call, and the penetration of these call types on the switch.

Standard central processing unit (CPU) OMs are used to measure CM occupancy, in OM group CPUSTAT. Refer to the following table for real-time performance indicators.

Real-time performance indicators

OM group	Register	Log reports
CPUSTAT	CCPAVAIL	
	CCCPSAUXCP	
	CPSBKG	
	CPSCPOCC	
	CPSFORE	
	CPSGTERM	
	CPSIDLE	
	CPSMAINT	
	CPSOM	
	CPSSCHED	

The impact of XPM real time by AIN software should be minimal or non-existent as the software is resident in the CM only. There are currently no XPM OMs to directly track real time usage on the XPM.

How to evaluate real-time capacity performance

Real-time engineering of the peripherals is directly related to the call processing area of the peripheral processors.

Advanced intelligent network (AIN) (continued)

Calculations used to evaluate performance

Tools such as Northern Telecom's PRTCALC program are available to perform calculations of peripheral real-time automatically. The following calculation can be used to evaluate the total percentage of call processing available in a peripheral.

```
[100% - (Overhead % + buffer %)] = call processing area
available
```

Data evaluation procedure

Calculated high day busy hour (HDBH) engineering results are expressed in terms of percentage of the available call processing area usage. The PERFORM tool can measure the percentage of processor occupancy. The MAP utility called PERFORM can monitor real time usage. This utility is optional for the operating company to purchase. Associated logs of the PERFORM tool are PRFM 200, 201, 204 and 210.

The MAP terminal provides displays indicating the amount of CM real-time usage using the ACTIVITY command.

Traffic

Terminating and non-terminating announcements associated with AIN operations affect maintenance trunk module (MTM) capacities associated with DRAM usage.

An MTM has a DS30 link. A DS30 link has 32 channels with channel 0 used for messaging and channel 16 not used. 30 ANNMEMs (channels 1 through 15 and 17 through 31) can be set up to play any ANN on any DRAM and on any of the speech channels to that DRAM. DS30 link channels 1 through 15 and 17 through 32 make up DRAM channels 0 through 29. DRAM uses channel 0 for maintenance, leaving only 29 channels for announcements. Table DRMUSERS selects the ANN to play, and table ANNMEMS determines the location of the DS30 channel to be used.

If the traffic for any given ANN requires the concurrent use of more than 29 speech channels, the same set of phrases can be duplicated on more than one DRAM. Since each ANNGRP can specify 256 members (in table ANNMEMS) one ANNGRP can span up to a maximum of 9 DRAMS (256/29), leaving 5 (261 - 256) unusable channels.

Product impact on system traffic

AIN impacts only those OMs that deal with TCAP or CCS7 traffic. Existing call processing OMs that track call originations and terminations will not change. This would include OM groups OFZ, and CP.

Advanced intelligent network (AIN) (continued)

The existing OMs to be used for AIN are NSC, NSCACG, and TCAPUSAG. The following table contains performance indicators for evaluating system traffic.

Performance indicators for evaluating system traffic

OM group	Register	Log reports
NSC	NSCORIG	
	NSCATIN	
	NSCTIOVF	
	NSCSFLTO	
	NSCFLICM	
	NSCFLICS	
	NSCABNAS	
	NSCABNBS	
	NSCSFLEA	
	NSCQUERY	
	NSCFPRIQ	
	NSCUNSOR	
	NSCT2TO	
NSCACG	NSCATMPT	
	NSCBKSIC	
	NSCBKSOC	
	NSCCOSCP	
	NSCCOSI	
TCAPUSAG	TCMSGOUT	
	TCMSGOU2	
	TCMSGIN	
	TCMSGIN2	

Advanced intelligent network (AIN) (continued)

How to evaluate traffic capacity performance

the outputs associated with designated OMs are reviewed in accordance with locally established schedules. The review process typically consists of the following steps:

1. Look for service indications, for example, timeouts, that exceed the established engineering criteria
2. Look for service indications that can indicate a signaling problem.
3. Record the appropriate OM readings to establish projections of when more facilities will be necessary to meet engineering criteria.
4. You have completed the procedure.

Calculations used to evaluate traffic capacity performance

The traffic handling capacity on an individual ANNGRP basis is constrained by the limit of 256 speech channels for each ANNGRP. As an example, if the duration of an ANN is taken to be 15 s per call, and the maximum channel utilization is set to 80% (allowing a 20% buffer for peaks), the maximum traffic density (A) would be as follows:

$$A = 256 \cdot 0.8 = 205 \text{ channels in use}$$

If a blocking probability (B) of 0.01 is assumed, the target maximum allowable traffic volume in CCS can be computed from a Poisson traffic table. A segment of a Poisson traffic table is shown below. For the purpose of this example, only channels 200 to 205 are shown. Any standard Poisson traffic table reaching up to 205 inputs can be used to verify this example.

Poisson traffic table

Channel	0.001	0.005	0.010	0.050
200	5729	5956	6068	6383
201	5762	5989	6101	6416
202	5795	6022	6134	6449
203	5828	6055	6167	6482
204	5861	6088	6200	6515
205	5894	6121	6233	6519

Advanced intelligent network (AIN) (end)

With 205 channels and a blocking probability (B) of 0.01, a traffic volume of 6233 CCS (173.14 Erlangs) can be accommodated.

Allowing 1 second for overhead (connecting and releasing the channel and miscellaneous) on every call, the total duration for ANN is 16 seconds per call. To compute the maximum number of calls per second on an ANNGRP basis, with 80% use and a 1% (0.01) blocking probability (B), multiply the maximum traffic volume by the per-call timing:

```
173.14 erlangs · 1/16 call = 10.8 call
```

Data evaluation procedure

The actual call capacity varies depending on the announcement duration and the utilization rate of the channels.

Automatic call distribution (ACD)

CC real time occupancy

The primary impact on CC real-time occupancy is imposed by base ACD messaging. The real-time requirements for base ACD can be handled through the use of additives to plain old telephone service (POTS) call timings.

The additives are as follows:

- base call timings
- base ACD and termination additives
- querying additives
- automatic call distribution management information system (ACDMIS) additives
- network automatic call distribution (NACD) overflow additives
- NACD additives

The following table lists the performance indicators for CC real-time occupancy.

Performance indicators for CC real-time occupancy

OM group	Register	Log reports
EXT	EXTHI	OMPR2xx

How to evaluate real-time occupancy performance

Tools such as Northern Telecom's REAL::TIME program are available to perform calculations of CC real-time occupancy automatically.

Calculations used to evaluate real-time occupancy performance

The following calculation can be used to evaluate CC real-time occupancy:

```
total MIS link call attempts/hr rate
--------------------------------------      Number of MIS links required
 maximum link call attempts/hr rate   =     to support an individual
                                            application (at the required
                                            bit rate)
```

Data evaluation procedure

The percentage of central processing unit (CPU) time required by ACDMIS to transmit event messages depends on the number of ACD calls and integrated services digital network (ISDN) calls on agent positions per hour expected in the office and the CPU cost per message.

ACDMIS multiprotocol controller link occupancy

The X.25 multiprotocol controller (MPC) data link or enhanced multiprotocol controller (EMPC) data link between the switch and the downstream processor carries all the ACD event messages that are required by the management information system (MIS). Performance factors that should be considered include the data link capacity and the number of links required to support the ACDMIS application.

The following table lists the performance indicators used to evaluate the performance of the MPC link.

Performance indicators for the MPC link (Sheet 1 of 3)

OM group	Register	Log reports
ACDMISPL	MISLOST	
	MISQUSAG	
	MISTRANS	
MPCBASE	BDAPPERR	MPC103
	CONVERR	MPC102
	CONVESTB	
	CONVIREF	MPC101
	FCTRLDEL	
	L2UDSIN	
	L2UDSOUT	
	L3UDSIN	
	L3UDSOUT	
	LOSTMSGS	MPC102
	MPCNSMBU	MPC903
	MPCNSOK	MPC905
	MPCNSSBU	MPC904

Automatic call distribution (ACD) (continued)

Performance indicators for the MPC link (Sheet 2 of 3)

OM group	Register	Log reports
	RESETL2	MPC102
	RESETL3	MPC102
MPCLINK2	L2LACKTO	
	L2LDISC	
	L2LDOWN	
	L2LLVIO	
	L2LRCV	
	L2LRVIO	
	L2LRXMIT	
	L2LSETUP	
	L2LXMIT	
	L2MSGLST	
	L2NURCV	
	L2NUXMIT	
	L2PABORT	
	L2PDOWN	
	L2PHWERR	
	L2PSYNC	
MPCLINK3	L3LACKTO	
	L3LDISC	
	L3LDOWN	
	L3LLVIO	
	L3LRCV	
	L3LRVIO	

Automatic call distribution (ACD) (continued)

Performance indicators for the MPC link (Sheet 3 of 3)

OM group	Register	Log reports
	L3LRXMIT	
	L3LSETUP	
	L3LXMIT	
	L3MSGLST	
	L3NURCV	
	L3NUXMIT	
	L3PABORT	
	L3PDOWN	
	L3PHWERR	
	L3PSYNC	
ROAPPL	ROAPCON	
	ROAPCONF	RO101
	ROAPFLOG	RO101
	ROAPIC	RO103
	ROAPLOGA	RO101
	ROAPOG	RO103
	ROAPUSE	RO103
ROMISC	ROCON	
	ROCONF	RO101
	ROMFLOG	RO101
	ROMLOGA	RO101
	ROMTERM	RO104

How to evaluate MPC link performance

The data link between the switch and the downstream processor operates at a rate of 9600 bp/s. At this rate, with an approximate message size of 40 bytes, an MPC link supports up to 13 messages per second. As call traffic increases,

Automatic call distribution (ACD) (end)

the number of data links increase as necessary to support the increased number of ACD event messages. An EMPC link carrying the same messaging supports approximately 26 messages per second.

Two MPC links are provided for each MPC card; however, ACDMIS and NACD applications use only one link for each card. Multiple links mean translations datafill and ACD configuration changes are required, because ACD link partitioning is tied to datafill configuration.

Note: The NT830 packet assembler/disassembler (PAD) limits the link to 4800 bits/s from switch to PAD and 9600 bits/s from PAD to downstram processor. The NT800 packet assembler/disassembler allows 9600 bits/s from switch to downstream processor.

Calculations used to evaluate performance

The maximum capacity of the data link in terms of call attempts per hour is calculated as follows:

```
(bytes/message)(messages/second)(3600 seconds/hr)
---------------------------------------------------  = call attempts/hr
                    bytes/call
```

The calculation to determine the number of links required is as follows:

```
MIS link call attempts/hr requirements
---------------------------------------- = number of links (round up)
maximum link call attempts/hr rate
```

Data evaluation procedure

Compare the number of links required to the number of links currently provisioned. If necessary, increase the number of links.

Basic rate interface (BRI) performance factors

Bd channel traffic

A Bd channel is a D-channel that carries service access point identifier (SAPI) 16 (packet-switched) data to the packet handler. Monitoring Bd channel traffic is necessary because the loading impact of SAPI 16 traffic is significantly greater than the loading impact of SAPI 0 (circuit-switched) data. The information assessed helps determine whether SAPI 16 services should be redistributed to achieve an acceptable DCH load balance.

OM group ISGBD monitors traffic handling on Bd channels on a per-channel basis. Five registers count frames that are

- transmits to the packet handler (PH)
- transmits to the PH, but discards because of hardware problems
- transmits to the PH
- receives from the PH with cyclic redundancy check (CRC) errors
- receives from the PH, but discards because of: - logical terminals identifiers (LTIDS) that are not correct - messages that the system cannot decode - flow control problems - aborts

The performance indicators for Bd channel traffic appear in the following table.

Performance indicators for Bd channel traffic

OM group	Register	Log reports
ISGBD	DBDTXDSC	ISDN103, ISDN104, PM270
	DBDTXDSC	ISDN103, ISDN104, PM270
	DBDRXPH	
	DBDCRC	
	DBDTXPH	

Evaluating Bd channel performance

Registers DBDRXPH and DBDTXPH monitor the level of SAPI 16 traffic on Bd channels. Each count represents 100 frames. An increase in these registers indicates an increase in the level of SAPI 16 traffic. If the traffic causes an overload, the system discards the SAPI 16 frames to preserve SAPI 0 service. An increase in the peg counts of DBDRXDSC and DBDTXDSC indicates this overload condition. This overload condition is temporary. The OM group

Basic rate interface (BRI) performance factors (continued)

ISGCPU tracks DCH processor occupancy, which also increases. The OM group ISGOVLD begins to count congestion and overload conditions.

Calculations used to evaluate Bd channel traffic

Use the following formula to determine the percentage of Bd channel capacity. Divide the total frames the system transmits and receives on the Bd channel by the recommended Bd channel capacity.

```
(DBDTXPH ·  100) + (DBDRXPH ·  100)
----------------------------------  ·  100 = percentage of
  Bd channel capacity (see note)             Bd channel
```

Note: Capacity for each Bd channel varies. Contact traffic engineers for the Bd channel capacity.

Use the following formula to calculate the total frames that the DCH discards.

```
DBDTXDSC + DBDCRC + DBDRXDSC =  total frames discarded by
                                the DCH
```

Use the following formulas as necessary.

```
(DBDTXPH ·  100) + (DBDRXPH ·  100) = total frames transmitted
                                      and received on the Bd
                                      channel

Total frames discarded by DCH
------------------------------- · 100 =     percentage of
Total frames transmitted and                frames discarded
received                                    by the DCH
```

Basic rate interface (BRI) performance factors (continued)

Data evaluation procedure

Use the following procedure to evaluate Bd channel traffic.

1. Compare the percentage of Bd channel capacity with the recommended threshold. If the channel capacity is less than the recommended threshold, go to step .
2. If the percentage of Bd channel capacity is more than the recommended threshold, check the percentage of frames that the DCH discards.
3. If the DCH discards a high amount of frames, assess the distribution of SAPI 16 service across the DCHs supplied. Give this information to the correct provisioning group for additional evaluation.
4. Check the ISDN103, ISDN104, and PM270 logs for additional information.
5. The procedure is complete.

D-channel traffic

The BRI D-channels carry 4:1 multiplexed D-channel information to the LGC. The D-channel information is circuit-switched call control and low speed D-channel packet-switched data. At the LGC, the DCH provides the main interface for all BRI D-channels. The system monitors D-channel traffic to determine the correct DCH load balancing for the LGC.

The registers in OM group ISGBRA track the parameters associated with D-channel traffic. The 15 registers count the following:

- frames with CRC errors
- service access point identifier (SAPI) frames that the system transmits and receives
- links reset by a DCH and far end
- reject frames that the DCH and far end transmit and receive
- receiver not ready (RNR) frames that the DCH transmits and receives

An ISDN service group (ISG) defines the service and channel information for a DCH. Each ISG has 32 channels with BRI D-channels. The BRI D-channels have up to four time division multiplexed (TDM) D-channels. The system collects information for all BRI D-channels that the system assigns to an ISG. The system collects the information because the system can allocate large numbers of BRI D-channels (108) to single ISGs.

Basic rate interface (BRI) performance factors (continued)

Performance indicators for D-channel traffic appear in the following table.

Performance indicators for D-channel traffic

OM group	Register	Log reports
SGBRA	DBRCRC	
	DBRLKRED	PM190, PM194, PM198, PM270
	DBRLKREP	PM270
	DBRREJRX	
	DBRREJTX	
	DBRRNRD	
	DBRRNRP	
	DBRRXDSC	PM190, PM194, PM198, PM270
	DBRS16RX	
	DBRS16TX	
	DBRSARX	
	DBRSATX	
	DBRSORX	
	DBRTXDSC	PM190, PM194, PM198, PM270
	DBRSOTX	

Evaluating D-channel errors

The OM registers DBRRXDSC, DBRTXDSC, and DBRCRC count the number of frames that the DCH discards. Hardware problems or CRC errors cause the DCH to discard frames. An increase in these register counts can indicate a DCH overload condition. The OM group ISGOVLD provides more information on DCH overload conditions. If the DCH card has faults, the system generates a PM190, PM194, or PM198 log. You must replace the card.

Register DBRRNRD tracks the number of RNR frames that the DCH transmits. Register DBRRNRP tracks the number of RNR frames that the end device transmits. Transmission of an RNR frame indicates that the DCH is not able to accept additional frames for a period of time. High register counts can indicate line card problems, problems with the DS30A links, or a DCH problem.

Basic rate interface (BRI) performance factors (continued)

The other registers in ISGBRA monitor the traffic levels of D-channels.

Calculations used to evaluate D-channel traffic

Use the following formula to determine the total number of frames that the DCH discards.

```
DBRTXDSC + DBDCRC + DBRRXDSC  = total frames discarded by
                                the DCH
```

Use the following formula to calculate the number of requests for SAPI 16 service during the measurement period.

```
(DBRS16TX ·  100) + (DBRS16RX ·  100)   =     total SAPI 16
                                              transmitted and
                                              received by DCH
```

Use the following formula to determine the number of requests for SAPI 0 service during the measurement period.

```
(DBRSOTX ·  100) + (DBRSORX ·  100) = total SAPI 0 frames
                                      transmitted and
                                      received by DCH
```

Use the following formula to calculate the total number of SAPI frames that the DCH transmits and receives.

Basic rate interface (BRI) performance factors (continued)

```
DBRS0TX + DBRS0RX + DBRS16TX + DBRS16RX +
DBRSATX +  DBRSARX + DBRCRC + DBRRXDSC +
DBRREJRX + DBRREJTX + DBRRNRD + DBRRNRP =   total SAPI
                                            transmitted and
                                            received by DCH
```

Data evaluation procedure

Use the following procedure to evaluate D-channel traffic.

1. Gather OM data from busy hour readings.
2. Calculate the number of frames that the DCH discards for the current study period.
3. If the number of discarded frames is less than the recommended threshold, go to step .
4. A large number of discarded frames can be present. Check the total number of SAPI 16 frames that the DCH transmits and receives.
5. The level of SAPI 16 traffic can be higher than the engineered limit. A large number of frames the DCH discards can be present. If these two conditions are present, assess the distribution of SAPI 16 service across the DCHs supplied. Give the information to the correct provisioning group for additional evaluation.
6. If the level of SAPI 16 traffic is in the engineered limit, go to step .
7. Check PM107, PM190, PM191, PM192, PM193, PM194, PM195, and PM235 logs for additional information.
8. The procedure is complete.

DCH or EDCH overload

The DCH overload conditions occur when a DCH or EDCH is not able to process the received data in a limited time period. The SAPI 16 (packet-switched) service causes high-volume traffic in a DCH or EDCH. Overload control protects SAPI 0 (circuit-switched) and SAPI 63 (TEI management) service against disruptions. The DCH or EDCH cause these disruptions. Overload control occurs at the cost of SAPI 16 service. A system of gradual levels of traffic control can minimize disruption to SAPI 16 service. The levels of traffic control are based on the overload level.

The system implements overload control. The system balances the traffic load when the DCH or EDCH enters the congestion state. When calls in progress cause the DCH or EDCH to overload, the system prevents the introduction of

Basic rate interface (BRI) performance factors (continued)

new data. The system blocks SAPI 16 traffic for a limited period of time if the DCH or EDCH has a severe overload. The SAPI 16 block takes place as follows:

- The registers in OM group ISGOVLD provide information on congestion, overload, and frame discard levels of overload control.
- Registers CONCENTR, CONGEXIT, and CONGTIME measure the number of times that a DCH or EDCH enters and leaves a congestion state. Registers CONCENTR, CONGEXIT and CONGTIME measure the number of seconds that a DCH or EDCH is in a congestion state.
- Registers OVLDENTR, OVLDEXIT, and OVLDTIME measure the number of times that a DCH or EDCH enters and exits an overload state. Registers OVLDENTR, OVLDEXIT and OVLDTIME measure the number of seconds that a DCH or EDCH stays in an overload state.
- Registers OV16DSC measure the number of SAPI 16 frames that the DCH discards because of overload controls. Register OV16DSC2 is the extension register.

The system collects the OM information for the ISG instead of the DCH or EDCH. The ISG can move from one DCH or EDCH to another as required for sparing. The ISG does not always associate with a DCH or EDCH. The performance indicators for DCH or EDCH overload appear in the following table.

Performance indicators for DCH or EDCH overload

OM group	Register	Log reports
ISGOVLD	CONGENTR	PM270
	CONGEXIT	PM270
	CONGTIME	PM270
	OVLDENTR	PM270
	OVLDEXIT	PM270
	OVLDTIME	PM270
	OV16DSC	PM270
	OV16DSC2	PM270

Evaluating DCH or EDCH overload

The first level of overload is congestion. To determine the amount of time the DCH or EDCH experiences congestion, monitor register CONGTIME. To

Basic rate interface (BRI) performance factors (continued)

determine the amount of time the DCH or EDCH is in overload, monitor register OVLDTIME. Observe indications that the DCH or EDCH approaches the most critical overload level. At this level, the DCH discards SAPI 16 frames. Registers OV16DSC and OV16DSC2 measure the SAPI 16 frames.

The following are engineered thresholds for the registers in the ISGOVLD OM group:

- Register CONGENTR increases when DCH or EDCH processor occupancy increases to 95%.
- Register OVLDENTR increases when DCH or EDCH processor occupancy increases to 99%.
- Register OV16DSC (or OV16DSC2, the extension register) increases when DCH or EDCH processor occupancy increases to 100%.
- Register OVLDEXIT increases when DCH or EDCH processor occupancy decreases to 98%.
- Register CONGEXIT increases when DCH or EDCH processor occupancy decreases to 94%.

Overloads at equal intervals indicate that a new evaluation of the level of SAPI 16 traffic must take place. Too much overloading can indicate the need for additional DCHs or EDCHs or a distribution of packet-switched traffic.

Calculations used to evaluate DCH or EDCH overload

Use the following formula to calculate the percentage of time that the DCH or EDCH is in a congestion state. The percentage of congestion cannot exceed 25%. The number of seconds in a 30 min measurement period is 1800.

```
  CONGTIME
------------- · 100 =   percentage of time the DCH or EDCH
1800 seconds            is in a congestion state
```

Use the following formula to calculate the percentage of time that the DCH or EDCH is in an overload state. The percentage of overload cannot exceed 0%.

Basic rate interface (BRI) performance factors (continued)

```
  OVLDTIME
------------- · 100 =   percentage of time the DCH or EDCH
1800 seconds            is in an overload state
```

Use the following formula to calculate the total SAPI 16 frames that the DCH discards.

```
OV16DSC + (OV16DSC2 · 65536) =  total SAPI 16 frames
                                discarded due to overload
                                controls
```

Data evaluation procedure

Use the following procedure to evaluate DCH or EDCH overload.

1. Calculate congestion, overload, and SAPI 16 discard for the current study period.
2. If congestion is less than 25%, DCH or EDCH congestion is in the acceptable limit. If there is no overload or SAPI 16 discard, DCH or EDCH overload is within the acceptable limit. Go to step .
3. If a high percentage of congestion and overloading are present, give this information to the correct group. A group must receive the information so that the system can redistribute ISDN services to improve DCH or EDCH load balance.
4. The procedure is complete.

DCH or EDCH processor occupancy

The DCH or EDCH processor occupancy indicates the percentage of time that the DCH or EDCH processes calls. A DCH or EDCH that overloads can cause a DCH or EDCH to go out of service. The system must monitor DCHs or EDCHs often to make sure steady performance occurs. The system monitors processor occupancy to help determine resource requirements and facilitates the distribution of ISDN D-channels across all DCHs or EDCHs.

Basic rate interface (BRI) performance factors (continued)

The OM group ISGCPU measures the CPU occupancy of a DCH or EDCH. The first ten registers form a histogram of the average processor occupancy that associate with an ISG. This information allows the administrator to determine ISG use of the DCH or EDCH processor over a given period of time. Register DCPUTOT provides the amount of time that the first ten registers are measured. Register DCPURTR gives the real-time that remains for the DCH or EDCH to process additional calls. Register DCPUTOT provides the time that remains.

The system collects the OM information for the ISG instead of the DCH or EDCH. The ISG can move from one DCH or EDCH to another as DCH or EDCH sparing requires. The ISG does not always associate with a particular DCH or EDCH.

Performance indicators for DCH or EDCH processor occupancy

OM group	Register	Log reports
ISGCPU	DCPU10	
	DCPU20	
	DCPU30	
	DCPU40	
	DCPU50	
	DCPU60	
	DCPU70	
	DCPU80	
	DCPU90	
	DCPU100	
	DCPUTOT	
	DCPURTR	

Evaluating DCH or EDCH processor occupancy

The OM registers measure the amount of time that the DCH or EDCH is idle. The registers measure this time to the nearest tenth of one second in a 1 s interval. The OM registers subtract this idle time (a number from 0 to 100) from 100. The OM registers use this calculation to provide a percentage of processor occupancy. The percentage of processor occupancy increases the correct register. For example, if the DCH or EDCH processor is idle for 0.27

Basic rate interface (BRI) performance factors (continued)

in a 1 s interval, the average processor occupancy for this interval is 73% (100 - 27 = 73). Register DCPU80, which counts the number of seconds with an average occupancy between 70% and 80%, increases.

Calculations used to evaluate DCH or EDCH processor occupancy

Use the following formula to calculate a percentage measurement for a given occupancy. Divide the count in any of the first ten registers by the amount of time in the measurement period. For example, DCPU90/DCPUTOT provides the percentage of time that a DCH or EDCH has an average CPU occupancy greater than 90% and up to 100%.

```
DCPU90
--------   ·   100  =    percentage of time the DCH or EDCH
DCPUTAT                  has average CPU occupancy greater
                         than 90% and up to 100%
```

Use the following formula to calculate the percentage of real-time that remains for the DCH or EDCH to process additional calls.

```
DCPURTR
--------   ·   100  = percentage of real-time remaining for
DCPUTOT                 additional DCH or EDCH call processing
```

A 10% buffer must be available to process additional calls, which allows peaks in traffic. If this percentage is less than 10%, the DCH or EDCH capacity can reach overload.

Use the following formula to calculate the average processor occupancy over the measurement period. Subtract from 100 the percentage of time the DCH or EDCH is available to process additional calls.

Basic rate interface (BRI) performance factors (continued)

$$100 - \left[\frac{\text{DCPURTR}}{\text{DCPUTOT}} \cdot 100 \right] = \text{average DCH or EDCH processor occupancy}$$

Data evaluation procedure

Use the following procedure to evaluate DCH or EDCH processor occupancy.

1. Calculate average processor occupancy, average CPU occupancy, and percentage of real-time that remains for the current study period. Average CPU occupancies are for ranges 0 - 10, 10 - 20 and so on.
2. If processor occupancy is less than 90%, DCH or EDCH processor occupancy is in the acceptable limit. Go to step .
3. If processor occupancy is over 90%, forward this information to the appropriate group. This action allows the group to distribute the ISDN services to improve DCH or EDCH load balance.
4. Monitor processor occupancy to determine if there is a need to provide additional DCH or EDCH cards. Compare the processor occupancy of all DCHs or EDCHs to make sure an acceptable load balance occurs. If one DCH or EDCH has an average occupancy of 80% and others have average occupancies that range from 20% to 40%, the DCH or EDCH load is not balanced. Distribution of ISDN services can achieve equal balance. The ISDN services must distribute evenly across all DCHs or EDCHs. Forward the OM reports to the appropriate group.
5. The procedure is complete.

DS-1 link availability

The pathway between the LGC and the PH consists of a number of DS-1 links. These links carry B- and D- packet data to the PH. DS-1 link availability is necessary for the performance of the ISDN node. Not enough available DS-1 links can cause degradation in system performance because the load on other links increases.

Basic rate interface (BRI) performance factors (continued)

The OM group DS1CARR monitors DS-1 link availability, as shown in the following table.

Performance indicators for DS-1 link availability

OM group	Register	Log reports
DS1CARR	DS1MBU	
	DS1SBU	

Evaluating DS-1 link availability

Register DS1MBU measures the amount of time that a DS-1 link is manual busy. Register DS1SBU captures the time that the DS-1 link is system busy. During analysis of DS-1 link availability, make sure the values in these registers do not exceed the maximum engineered capacities. The supply of more DS-1 links can provide the best service to the customer.

Data evaluation procedure

You can use the following procedure to evaluate DS-1 link availability.

1. Make sure that all the DS-1 links that you want to study do not have maintenance problems. (DS1MBU should read zero.) Collect busy-hour data.
2. Compare total use measurements for the DS-1 link with the maximum use values used to engineer these facilities. If the values do not exceed the engineered values, discard the data. You can retain the data for the development DS-1 use directions. Go to step . If the values exceed the engineered values, go to step .
3. Notify the provisioning engineers of any values that exceed the engineered maximum. The engineers use the values to determine if the system needs more links or options to serve ISDN traffic.
4. The procedure is complete.

DS30 link availability

The DS30 links transport B-circuit-switched data from the LGC to the network. The DS30 link availability contributes to the performance of the ISDN node. Not enough available DS30 links can cause degradation in system performance. Degradation occurs because the load on other links increases.

Basic rate interface (BRI) performance factors (continued)

The OM group XPMLNK monitors C-side link use and blockage statistics for an LGC. The registers count:

- attempts to connect to a channel (CSLAA)
- blockage encountered (CSLBLK)
- usage measurements for traffic (CSLCBU)
- channels busied-out for maintenance reasons (CSLMU)

The OM group XPMLNK measures information for circuit-switched channels. Performance indicators for DS30 link availability appear in the following table.

Performance indicators for DS30 link availability

OM group	Register	Log reports
XPMLNK	CSLCBU	
	CSLAA	
	CSLBLK	
	CSLMU	

Evaluating DS30 link availability

Register CSLCBU measures the amount of time (in ccs) that the C-side links are busy because of call processing. Register CSLMU records the time (in ccs) that C-side links are not available for call processing. Assess DS30 link availability and check that the values in the registers do not exceed maximum engineered capacities for the LGC. To provide the customer with the best service, acquire more DS30 links. Values that are lower than normal can indicate that the links require better service.

Calculations used to evaluate DS30 link availability and blockage

Use the following formulas to evaluate DS30 link availability and blockage.

$$\frac{\mathrm{CSLMU}}{\mathrm{CSLCBU}} \cdot 100 = \text{percentage of link availability}$$

$$\frac{\mathrm{CSLBLK}}{\mathrm{CSLAA}} \cdot 100 = \text{percentage of blockage}$$

Basic rate interface (BRI) performance factors (continued)

Data evaluation procedure

You can use the following procedure to evaluate DS30A link availability.

1. Make sure that the DS30A links that you want to study do not have any maintenance problems. (PSLMU should read zero.) Collect busy-hour data.
2. Compare total use measurements (PSLMU) for the DS30A channels with the maximum use values used to engineer these facilities. The values can exceed the engineered values. If the values do not exceed the engineered values, you can discard or retain the data. Data can be used to develop DS30A use trends. Go to step . If the values exceed the engineered values, go to step .
3. Calculate the percentage of DS30A link availability and blockage. Compare these percentages with the recommended thresholds. If there is no DS30A blockage, and link availability is acceptable, go to step . In any other occurrence, go to step .
4. Notify the provisioning engineers of any values that exceed the engineered maximum. The engineers can add more links or other options for serving ISDN traffic.
5. This procedure is complete.

LCME real-time occupancy

The LCME real-time or processor occupancy indicates the amount of time the processor operates for call processing and overhead activities. The LCME processor application indicates the amount of time the processor operates for call processing. The performance of the LCME depends on the amount of processor use. Overuse of a processor can lead to disruption or degradation of customer service.

Note: The name LCME also refers to the LCMI.

The OM group LMD provides traffic information for the LCME. The OM group LMD also captures B-channel circuit-switched call attempt information. The register NTERMATT counts call terminations and register NORIGATT counts call attempts. Performance indicators for LCME real-time appear in the following table.

Performance indicators for LCME real-time occupancy

OM group	Register	Log reports
LMD	NORIGATT	
	NTERMATT	

Basic rate interface (BRI) performance factors (continued)

Evaluating LCME real-time

Only circuit-switched calls contribute to the real-time use of the LCME processor. The B- and D-channel packet switched calls do not need LCME processor resources. Calculation of timing for each call is identical for ISDN lines and lines that are not ISDN lines.

Use the Nortel's software tool PRTCALC to perform peripheral real-time calculations.

Calculation used to evaluate LCME processor use

The total processor occupancy available for the LCME is 3,600,000 ms/h. The system allocates 75% of the processor occupancy (2,700,000 ms) to the call processing operation. To determine the amount of call processing use, multiply the number of call attempts by the average call timing. Divide this amount by 2,700,000. (This calculation provides only a rough estimate because average call timing is used.)

To obtain the average call timing, contact the provisioning engineers.

```
Sum of NTERMATT + NORIGATT · average call timing
--------------------------------------------------  · 100 = % of LCME
            2700000  (75% of 3600000)                       usage
```

Data evaluation factor procedure

Use the following procedure to evaluate LCME processor use.

1. Use the work sheet “LCME real-time" to record calculated information.
2. Calculate the percentage of LCME use.
3. If LCME processor use is less than 75%, it is in the acceptable limit. Go to step .
4. If the LCME processor use is over 75%, there can be an LCME overload. Notify the provisioning engineers.
5. The procedure is complete.

LCME traffic

Monitor LCME traffic capacity to determine the LCME load balance. An overloaded LCME can indicate that there are not enough switching paths or equipment available. An overloaded LCME can result in bad telephone

Basic rate interface (BRI) performance factors (continued)

service. An LCME that is not used enough can indicate an excess of switching paths and equipment. This LCME state can result in idle facilities and costs that are not necessary.

The OM group LMD provides traffic information for the LCME and captures B-channel circuit-switched use. The register LMTRU measures traffic busy use on each line peripheral. The register records the number of lines in the call processing busy (CPB) and the call processing deload (CPD) states. Register NTERMATT counts call terminations. Register NORIGATT counts call originations. Performance indicators for LCME traffic appear in the following table.

Performance indicators for LCME traffic

OM group	Register	Log reports
LMD	LMTRU	
	NORIGATT	
	NTERMATT	

Evaluating LCME traffic

Line capacity is normally measured in terms of the number of lines that are served that to meet an objective grade of service. The separate operating company establishes the objective grade of service. The line peripheral capacity term “ccs capacity" indicates this measurement in ccs during a continuous 60 min period. The engineering tables contain the ccs capacity values. These values are measured in a working switch by OMs that function for this purpose.

To monitor LCME traffic capacity, evaluate the ccs per line, ccs per B-channel, and ccs per LCME.

Usage for each line (or ccs for each line), is the use or projected average use for each line that the switch serves. Perform the following calculation to obtain the ccs per line. Divide the amount of line unit use by the number of lines and equivalent lines that the switch serves.

Perform the following operation to evaluate ccs per line. Compare the current ccs per line to the value used in the provisioning process. This comparison indicates if the ccs for each line is tracking with the forecast value.

If the current ccs per line exceeds forecast values of line growth, notify the provisioning engineers. Perform the following operation to determine the cause of ccs for each line that increases or are higher than forecast. Take office

Basic rate interface (BRI) performance factors (continued)

counts of each type of service and the number of features per line. Compare the counts with total features and services forecasts. An increase in lines that generate high use raises the ccs per line values. POTS lines are lines with lower use. Business lines is an example of a line that generates high use.

Perform the following operation to determine the number of lines that the system can be assign. The lines are assigned based on the traffic load offered and service level objectives. Find the ccs capacity from the table column that matches the conditions in the switch. The conditions are the number of channels and the high day/average busy season ratio. Divide this value by the expected ccs per line. The result indicates the line capacity for that module.

Calculations used to evaluate LCME traffic

Use the following formula to determine the ccs per line. To obtain the current line count, contact the provisioning engineers.

```
   Total LMD_LMTRU
------------------------- = average usage (CCS) per line
Current total line count
(B-channel or POTS)
```

Use the following formula to determine the ccs per B-channel. The LMTRU register scans all busy lines every 100 s (given in ccs). Register LMTRU gathers this information at 30 min intervals so that two readings form an hourly measurement. The ccs/B-channel that you obtain from the following calculation cannot exceed the forecast value for the high day busy hour (HDBH). To obtain the HDBH information, contact the provisioning engineers. If the ccs/B-channel values exceed engineered values for HDBH, notify the provisioning engineers.

```
Sum of LMTRU over 1 h
-----------------------   =   CCS/B-channel
# of lines (B-channels)
```

Basic rate interface (BRI) performance factors (continued)

Use the following formula to determine the ccs per LCME. If the ccs per LCME is too high, obtain more DS30A links.

> ***Note:*** Standard figures for HDBH ccs are 6 ccs for ISDN B-channels and 3 ccs for POTS.

```
Average CCS per line  ·  maximum lines per LCME  =  total
                                                   CCS per
                                                   LCME
```

Use the following formula to determine the traffic flow.

```
Sum of LMTRU over 1 h
-----------------------  =  average holding time
NORIGATT + NTERMATT

NORIGATT + NTERMATT
-----------------------  =  calls per hour per line
  # of  B-channels

Average holding time ·  number of calls per hour  =  traffic
                                                     flow
```

If your calculations result in values that are higher than forecast values the level of traffic is too high for the LCME. Notify provisioning engineers to correct the problem.

LGC overload

When call processing in the LGC exceeds capacity, real-time overload conditions can occur. The processors in the LGC, the SP and MP or the UP, provide some call processing time. The master processor or the unified processor is the limiting component in most occurrences.

> ***Note:*** The term LGC can also refer to the LTC.

Basic rate interface (BRI) performance factors (continued)

The OM group PMOVLD contains performance indicators that monitor overload conditions. Performance indicators for LGC real-time occupancy appear in the following table.

Performance indicators for LGC real-time occupancy

OM group	Register	Log reports
PMOVLD	PORGDENY	PM106, PM128
	PTRMDENY	PM106, PM128

Evaluating LGC overload

An overload condition occurs when an LGC resource that processing uses is exhausted. PM overload occurs as a result of:

- a hardware failure on the P-side of the overloaded PM
- a network hardware failure
- datafill changes that result in too much messaging to the PM
- a PM that receives too much traffic

The OM group PMOVLD monitors the performance of the LGC to determine if the LGC is overloaded. The registers in group PMOVLD associate with log PM106 and log PM128. If the system generates these logs, use the following information to determine the cause of the overload conditions:

- hardware failures on the switch
- manual action performed on the overloaded PM
- Groups PMOVLD and CP generate OMs during the overload period
- data that associates with the overloaded PM and its P-side nodes

Data evaluation procedure

Use the following procedure to evaluate peripheral real-time occupancy when an overload occurs.

1. Make sure that the peripheral module does not have maintenance problems. The PM can have maintenance problems that can cause overloads. If an overload occurs, correct the problems. Continue to monitor the peripheral to see if another overload occurs. If there is no indication of maintenance problems, go to step .
2. Review the number of call attempts. If the value exceeds the engineered limit, determine if the number of calls is the result of a single event. If the number of calls is the result a single event, stop here. File the data for

Basic rate interface (BRI) performance factors (continued)

future reference. If the number of calls is not the result of a single event, go to step .

3. Review the number of lines that have high call processing time requirements, like MADN, CLASS features, and Display phones. Determine if the number of lines with these services meet the engineering guidelines and office loading plan. Go to step .
4. Review the items from steps and that exceed the engineered limits. If any values exceed engineered limits, notify the provisioning engineers.
5. The procedure is complete.

LGC real-time occupancy

The LGC real-time or processor occupancy is a factor in the performance of an LGC. A processor that the system uses too much can lead to disruption or degradation of customer service. When the call processing operation of the LGC exceeds capacity, real-time overload conditions can occur.

Evaluating LGC real-time occupancy

To evaluate the peripheral real-time occupancy, you must solve maintenance problems in the LGC or connecting links. Analyze the types of traffic to determine if the call mix corresponds to the engineering model that supply the LGC.

The processors in the LGC, the SP MP, or UP, provide some call processing time. The MP or UP are the components that normally limit call processing time. To obtain the current SP and MP or UP occupancies, contact the provisioning engineers.

Use the Nortel's software tool PRTCALC to obtain peripheral real-time calculations.

> ***Note:*** Recommended occupancies appear in the following table. Add two percentage points to the overhead figure when universal tone receivers (UTR) are present. Peripheral Real Time Calculation (PRTCALC) assumes that UTRs are used where correct.

Recommended LGC real-time occupancies

Occupancy allocation	Overhead Buffer	Available for call processing
15%	20%	63%
54%	10%	36%

Basic rate interface (BRI) performance factors (continued)

Data evaluation procedure

Use the following procedure to evaluate LGC real-time.

1. Obtain processor occupancies from the provisioning group.
2. Compare the occupancies with those that appear in the previous table. If the occupancies are acceptable, go to step . If the occupancies are not acceptable, go to step .
3. Notify the provisioning engineers of any values that exceed the thresholds.
4. The procedure is complete.

LGC traffic

Monitor LGC traffic capacity to determine the LGC load balance. An overloaded LGC can indicate that not enough DS30A and DS30 links, or LGCs, or both, are present. An overload can result in bad telephone service. An excess of equipment, or links, or both, can result in idle facilities and costs that are not necessary.

As the LGC capacity approaches 100%, the grade of service objectives for lines that the LGC serves are not met. The percentage of blockage that the LGC encounters can indicate this condition especially if the blockage rate is a lot higher in one LGC than in others. Blockage rates that exceed the engineered limits in all LGCs indicate an overload. Additional equipment is required.

The OM group LMD provides traffic information for the LGC. The register LMTRU measures traffic busy use for each line peripheral. It records the number of lines that are in the CPB and call processing deload CPD states. The OM group XPMLNK monitors link use and blockage statistics for the LGC. The following table lists performance indicators for LGC occupancy.

Performance indicators for LGC occupancy

OM group	Register	Log reports
LMD	LMTRU	
XPMLNK	CSLAA	
	PSLAA	
	CSLBLK	
	PSLBLK	

Basic rate interface (BRI) performance factors (continued)

Evaluating LGC traffic

To determine the amount of LGC capacity used at a given time, gather data from each of the line units that the LGC serves. Compare the amount of each CCS load that the system offers the LGC, to the engineered LGC capacity. This figure indicates the percentage of use at any given time.

A blockage problem can occur in an LGC. If maintenance problems are not present, and the installation of the maximum number of links occurs, reduce the offered load to the LGC. Move the lines to line units that other LGCs serve. Continue this process until the blockage rate is in the objective range.

Calculations used to evaluate LGC traffic

Use the following calculations to determine the percentage of LGC capacity in use and the percentage of blockage. LGC engineered capacity equals the number of line unit capacities the LGC serves.

```
Sum of LMD_LMTRU (all line
units served by the LGC)
--------------------------  · 100  =  % LGC capacity used
LGC engineered capacity

CSLBLK + PSLBLK
-----------------  · 100  =  percentage of blockage
 CSLAA + PSLAA
```

Data evaluation procedure

Use the following procedure to evaluate LGC traffic.

1. Calculate the percentage of LGC capacity in use and the percentage of blockage. If the values are in the recommended thresholds, go to step .
2. If any of the values exceed the recommended thresholds, notify the provisioning engineers.
3. The procedure is complete.

Line traffic

The ISDN lines provide the communication channel between the customer and the ISDN switch. Monitor line traffic to make sure that the customer receives high quality service.

The OM group LINAC monitors the grade of service for line access. The OM group LINAC records problems that customers experience when they try to access telephone networks through the LCME. The LCME associates a subscriber line with a DS30A channel to enable outgoing and incoming calls.

Basic rate interface (BRI) performance factors (end)

Register LINCAT measures call attempts. Register LINCATF measures call failures. The following table lists performance indicators for line traffic.

Performance indicators for line traffic

OM group	Register	Log reports
LINAC	LINCAT	
	LINCATF	

Evaluating line traffic

Compare the percentage of call failures with the recommended threshold. A high percentage of call failures indicates an overloaded LCME. Deload LCMEs that overload immediately. Notify the provisioning engineers of the condition.

Calculation used to evaluate line traffic

Use the following calculation to determine the percentage of line call attempt failures.

```
LINCAT
--------  ·  100  =  percentage of call failures
LINCATF
```

Data evaluation procedure

Use the following procedure to evaluate line traffic.

1. Calculate the percentage of call failures for the current study period.
2. If the percentage of call failures is in the engineered limit, go to step .
3. If the percentage of call failures exceeds the threshold, the LCME is overloaded. Notify the provisioning engineers of the condition.
4. The procedure is complete.

CompuCALL

Monitoring CompuCALL performance factors

The following factors affect CompuCALL performance:

- computing module (CM) real-time (RT) use for processing CompuCALL messages
- EMPC/MPC throughput capacity
- CompuCALL link integrity

Tracking performance and service requirements

Two sets of service requirements are involved with the smooth operation of CompuCALL. The first involves the switch's central processing unit (CPU) and is concerned with performance issues.

Performance issues include

- how much of CM RT is required for processing CompuCALL messages
- how much auxiliary call processing (AUXCP) RT is used to reserve CM RT for CompuCALL messages during periods of high call processing occupancy
- grade-of-service criteria, which describes how the switch must perform

The second set of service requirements concern the throughput of the EMPC/MPC and the capacity of the CompuCALL link to carry CompuCALL messages to and from the call center's business computer.

CompuCALL service requirements for the CPU, EMPC/MPC, and the CompuCALL link are described in this chapter within the context of understanding the factors that cause problems with CompuCALL service.

Operating company administrators and engineers are encouraged to use the following worksheet to do the following:

- gather information regarding the characteristics of CompuCALL message scenarios
- analyze CompuCALL CM RT use after comparing it with information about the individual switch's overall RT use profile
- make administrative, provisioning, and engineering decisions regarding CompuCALL scenario's link capacity

CompuCALL (continued)

CompuCALL real-time and link performance analysis worksheet (Sheet 1 of 2)

Section I. Inputs. Provide high day busy hour call attempts (HDBCA) for each CompuCALL session (including all automatic call distribution groups associated with that session)

A. Coordinated voice and data (CVD) = ____________

B. CVD with call redirection, but no redirects = ____________

C. CVD with one call redirect = ____________

D. CVD, call redirection on, no redirects, consultation = ____________

E. CVD, call redirection, no redirects, consultation, conference = ____________

F. Make call = ____________

Section II. CM real-time analysis. Provide information on the switch's non-CompuCALL call attempts as well as conducting a summary analysis for all the switch's CompuCALL sessions.

G. Approximate total non-CompuCALL HDBHCAs =__________

H. Average non-CompuCALL CM RT ms per call attempt (ms/CA) =__________

I. Sessions' (1-n) CM RT (ms/hr) required: (*A(1-n)* CA/h x 57 ms/CA + *B(1-n)* x 62 + *C(1-n)* x 117 + *D (1-n) x* 187 + *E (1-n) x* 232 + *F (1-n) x* 60).

I (Total). CM RT (ms/hr) required: [*I1* + *I2* + *I3* + ... + *In* + (*G* x *H*)] =__________

J. Grade-of-service check: *I(Total)* CM RT (ms/hr) required (3,600,000 ms/hr x (0.86))=_________

If *J* < 0.91 go to *K*. If not, restart at *A*.

K. (1-n). Sessions' (1-n) AUXCP_CPU_SHARE (*A(1-n)* CA/hr x 8 ms/CA + *B (1-n)* x 10 + *C (1-n)* x 41 + *D (1-n)* x 41 + *E (1-n)* x 52 + *F (1-n) x* 14).

K(Total). AUXCP_CPU_SHARE ((*K1* + *K2* + *K3* +...+ *Kn*) 3,600,000) x 100=__________%

If *K* + AUXCP_CPU_SHARE for other applications < 25%, continue. If not, restart at *A*.

L. (*A* CA/hr x 4 msg/CA) 3600 seconds/hr =__________messages per second

M. (*B* x 5 msg/CA) 3600 seconds/hr =__________messages per second

N. (*C* x 10 msg/CA) 3600 seconds/hr =__________messages per second

O. (*D* x 12 msg/CA) 3600 seconds/hr =__________messages per second

P. (*E* x 14 msg/CA) 3600 seconds/hr =__________messages per second

Q. (*F* x 3 msg/CA) 3600 seconds/hr =__________messages per second

CompuCALL (continued)

CompuCALL real-time and link performance analysis worksheet (Sheet 2 of 2)

Section I. Inputs. Provide high day busy hour call attempts (HDBCA) for each CompuCALL session (including all automatic call distribution groups associated with that session)
R. (*L* + *M* + *N* + *O* + *P* + *Q*) =__________Total messages/s (session messaging requirement) *S.* (*L* msgs/s x 82 bytes/msg + *M* x 66 + *N* x 53 + *0* x 56 + *P* x 51 + *Q* x 46) *R* msg/second=__________ Average bytes per message (session average message size) *T.* Messaging capacity =__________messages/second card type__________ link speed__________ If *R* ÷ *T* > 1.0, restart at *Step A*.

CompuCALL capabilities have a significant impact on call processing resources. OM group SCAISERV monitors CompuCALL messaging by tracking various CompuCALL services.

OM group CPUSTAT provides useful reference information to indicate the level of use of CPU processing resources. The CompuCALL performance engineering guidelines directly impact call processing and auxiliary call processing classes and should be continually monitored to ensure the proper use of resources within performance guidelines.

OM register CCPAVAIL indicates total CPU call processing occupancy available and is the integer value difference between the maximum CPU time available for call processing and percentage of time being used.

OM register CPSAUXCP counts the percentage of CPU time used by AUXCP class. The average CPU auxiliary call processing occupancy for one minute may be obtained by dividing the holding register value by the transfer period time in minutes (15 or 30).

OM register CPSCPOCC counts percentage of CPU time used for call processing occupancy. The average CPU CP occupancy for one minute may be obtained by dividing the holding register value by the transfer period time

CompuCALL (continued)

in minutes (15 or 30). The following table lists the performance indicators for CPU real-time call processing.

Performance indicators for CPU real-time call processing

OM group	Register	Log reports
CPUSTAT	CCPAVAIL	
	CPSAUXCP	
	CPSCPOCC	

> ***Note:*** OMs peg only when a CompuCALL session is logged on and associated.

How to evaluate real-time call processing performance

When using CompuCALL, the operating company must administer, provision, and engineer each switch based on the company's established grade-of-service (GOS) criteria.

The CompuCALL GOS criterion, chosen to ensure a high quality of service, is based upon a mean 200 ms CM delay for the DV_Call_Offered_U message. This can be achieved by ensuring that CM RT use does not exceed 91% of 86% of the total milliseconds available per hour for call processing in the CPU.

The DV_Call_Offered_U message is a critical component of the CVD messaging scenario. The message provides information regarding incoming calls to the business computer when an agent is selected to handle the call, allowing the business computer to send data to the agent.

If an agent's workstation display does not promptly show information about the incoming caller, one or more of the following factors might be involved:

- delay in the packet network or the private line
- queueing and processing delays at the call center's business computer
- transmission delay for display update

Proper administration and engineering of the switch can significantly reduce the likelihood of switch-based delays such as CM delay for the DV_Call_Offered_U message and delay in the EMPC/MPC.

Calculations used to evaluate performance of CompuCALL messages

The following table shows the byte size of selected CompuCALL call-event messages. These messages, provide the functionality that most customers associate with the product. Not included are messages involved in setting up, administering, and concluding the SVC connection. The messages in this table form basic CompuCALL calling scenarios.

The table provides each maximum message size. The maximum size assumes that each message uses the largest number of parameters and the largest parameter sizes.

Maximum message size

Message	Maximum size	Recommended engineered average size	RETURN_ RESULT average size	RETURN_ERROR average size
DV_Add_Party	42	34	22	13
DV_Call_Answered_U	120	84		
DV_Call_Offered_U	122	101		
DV_Call_Queued_U	108	83		
DV_Call_Released_U	66	59		
DV_Call_Received_C	108	82	5	8
DV_Call_Redirect	53	50	5	13
DV_Conference_Party	25	19	22	13
DV_Transfer_Party	25	19	22	13
DV_Make_Call	74	57	22	8

Note: X.25 overhead (an additional 12 bytes per message) is not included in this list.

Calculations used to evaluate performance for calling scenarios and auxiliary call processing share

Certain CompuCALL messaging processes are scheduled under AUXCP, adjustable from one to 25% using parameter AUXCP_CPU_SHARE in table OFCENG (office engineering). However, other services or products can also use this scheduling class. So, depending upon switch product mix and service use, the maximum available to CompuCALL may be less than 25%.

CompuCALL (continued)

CompuCALL processes SCAITRAN and SCAIBASE are scheduled within the AUXCP class. The AUXCP class ensures CM time availability when overall call processing occupancy of the CM is very high. An AUXCP real time “guarantee" is established through the AUXCP_CPU_SHARE office parameter.

The following table shows the six typical calling scenarios for CompuCALL. Information about how these scenarios are used (on an individual switch, for each session, and for the sum of all the switch's sessions) is required when analyzing the data.

CompuCALL calling scenarios (Sheet 1 of 2)

Scenarios	Messages for each scenario	Average bytes per message for each CA	Total CP/AUXCP CM RT/CA	Portion of total ms in AUX CP per CA
1. CVD	DV_Call_Queued_U, DV_Call_Offered_U, DV_Call_Answered_U, DV_Call_Released_U	82 bytes	57 ms/CA	8 ms/CA
2. CVD with call redirection, but no redirects	DV_Call_Received_C, RETURN_RESULT, DV_Call_Offered_U, DV_Call_Answered_U, DV_Call_Released_U	66 bytes	62 ms/CA	10 ms/CA
3. CVD with one call redirect	DV_Call_Received_C, DV_Call_Redirect, RETURN_RESULT, RETURN-RESULT, DV_Call_Released_U, DV_Call_Received_C, RETURN-RESULT, DV_Call_Offered_U, DV_Call_Answered_U, DV_Call_Released_U.	53 bytes	117 ms/CA	41 ms/CA
Note: Call redirection is enabled when the SCAIREDIR option is datafilled in table ACDGRP.				

CompuCALL (continued)

CompuCALL calling scenarios (Sheet 2 of 2)

Scenarios	Messages for each scenario	Average bytes per message for each CA	Total CP/AUXCP CM RT/CA	Portion of total ms in AUX CP per CA
4. CVD, call redirection on, no redirects, consultation	DV_Call_Received_C, RETURN_RESULT, DV_Call_Offered_U, DV_Call_Answered_U, DV_Add_Party, RETURN_RESULT, DV_Call_Offered_U, DV_Call_Answered_U, DV_Transfer_Party, RETURN_RESULT, DV_Call_Answered_U, DV_Call_Released_U	56 bytes	187 ms/CA	41 ms/CA
5. CVD; call redirection on, but no redirects, consultation, conference	DV_Call_Received_C, RETURN_RESULT, DV_Call_Offered_U, DV_Call_Answered_U, DV_Add_Party, RETURN_RESULT, DV_Call_Offered_U, DV_Call_Answered_U, DV_Conference_Party, RETURN_RESULT, DV_Transfer_Party, RETURN_RESULT, DV_Call_Answered_U, DV_Call_Released_U	51 bytes	232 ms/CA	52 ms/CA
6. Make call	DV_Make_Call, RETURN_RESULT, DV_Call_Released_U	46 bytes	60 ms/CA	14 ms/CA

Note: Call redirection is enabled when the SCAIREDIR option is datafilled in table ACDGRP.

CompuCALL (continued)

The following table gives percentage of AUXCP time used by each CompuCALL scenario and percentage of total CPU time needed by AUXCP.

Percentage of AUXCP time used by CompuCALL

Non-CompuCALL calls	CVD	CVD with call redi-rection, no redirects	CVD with call redi-rection, one redirect	CVD, call redirection on, no redirects, consultation	CVD, call redirection on, no redirects, consultation, conference	Make call
0%	11%	13%	25%	18%	18%	19%
20%	9%	10%	22%	14%	14%	15%
40%	7%	8%h	16%	10%	10%	11%
60%	4%	5%	10%	6%	7%	7%
80%	2%	2%	4%	3%	3%	3%

The following table displays CM GOS-based CA per second engineered maximum capability for six CompuCALL scenarios across five levels of non-CompuCALL CM real time use. The information here can serve as a framework for understanding the administration and engineering of maximum

CompuCALL scenarios, depending upon RT percentage used by non-CompuCALL calls.

CM GOS-based CA per second engineered maximum capability for CompuCALL

Non-CompuCALL calls	CVD	CVD with call redirection, no redirects	CVD with call redirection, one redirect	CVD, call redirection on, no redirects, consultation	CVD, call redirection on, no redirects, consultation, conference	Make call
Messages per call attempt:						
	4	5	10	12	14	3
Maximum number of call attempts per second that can be engineered:						
0%	13.7	12.6	6.0	4.2	3.4	13.0
20%	10.7	9.9	5.2	3.3	2.6	10.2
40%	7.7	7.1	3.8	2.4	1.9	7.3
60%	4.7	4.3	2.3	1.4	1.2	4.4
80%	1.7	1.5	0.8	0.5	0.4	1.6
Note: Available CM/AUXCP real time is 86% of 3,600,000 ms/hr.						
Note: CompuCALL's GOS is based upon a mean 200 ms CM delay for the DV_Call_Offered_U message.						
Note: The number of call attempts per second that can be engineered for each scenario depends on the percentage of CM real time taken up by non-CompuCALL calls.						

Calculations used to evaluate performance for linking register counts with messages and scenarios

CompuCALL performance administration involves ensuring that the switch CM is carrying the appropriate level of CompuCALL call attempts in compliance with established CompuCALL GOS levels. Also, the EMPC/MPC links supporting the CompuCALL link must also carry the appropriate level of traffic in compliance with established link capacities.

Establishing administrative guidelines based upon call attempts per second for both switch CM capacity and EMPC/MPC capacity allows telephone

CompuCALL (continued)

operating company administrative personnel to administer CompuCALL effectively.

Operating company administrators and engineers can use the “Worksheet for CompuCALL real time and link performance analysis" to establish each customer's call attempts per second traffic characters for the six CompuCALL scenarios.

To correctly administer switch performance aspects of an operational CompuCALL configuration, information about customer scenario use (as well as the type and port speed of the EMPC/MPC card used) must be furnished from the switch's operational data.

Raw performance data can be extracted from either OM register data or from table datafill. The raw data can be manipulated to provide empirical inputs to the appropriate performance engineering questions.

Use the following flowchart to determine customer use of messaging scenarios. The registers for OM group SCAISERV give call peg counts for data collected for each SCAI group. Performance engineering for CompuCALL traffic should be completed with high day busy hour (HDBH) peg count totals to ensure sufficient engineering of CM and EMPC/MPC resources.

As shown in the following flowchart, evaluate these registers CALLRECC and CALREDRR, to determine if the value for each SCAI group is zero or greater than zero. The CALLRECC register pegs when a DV_Call_Received_C message is sent to the call center business computer. The CALREDRR register pegs when a RETURN_RESULT reply is sent to the business computer regarding a DV_Call_Redirect message, establishing that a call is redirected.

If the CALLRECC register is zero, redirection is not involved in the scenario and all completed call attempts only involved scenario A. If register CALLRECC is greater than zero, either scenario 2 or 3 call types are applicable.

Next look at register CALREDRR in the flowchart. If it is zero, then all completed call attempts involved only scenario 2, because no redirection has taken place.

If CALREDRR is greater than zero, the scenario still needs further clarification. Register CALREDRR (across a high-traffic, one-hour period) indicates the total HDBH redirected scenario 3 calls. Scenario 2 calls can be determined by subtracting two-times CALREDRR from CALLRECC (total

DV_Call_Received messages). This eliminates DV_Call_Received redirected call attempt messages from the overall counts of DV_Call_Received messages pegged by CALLRECC.

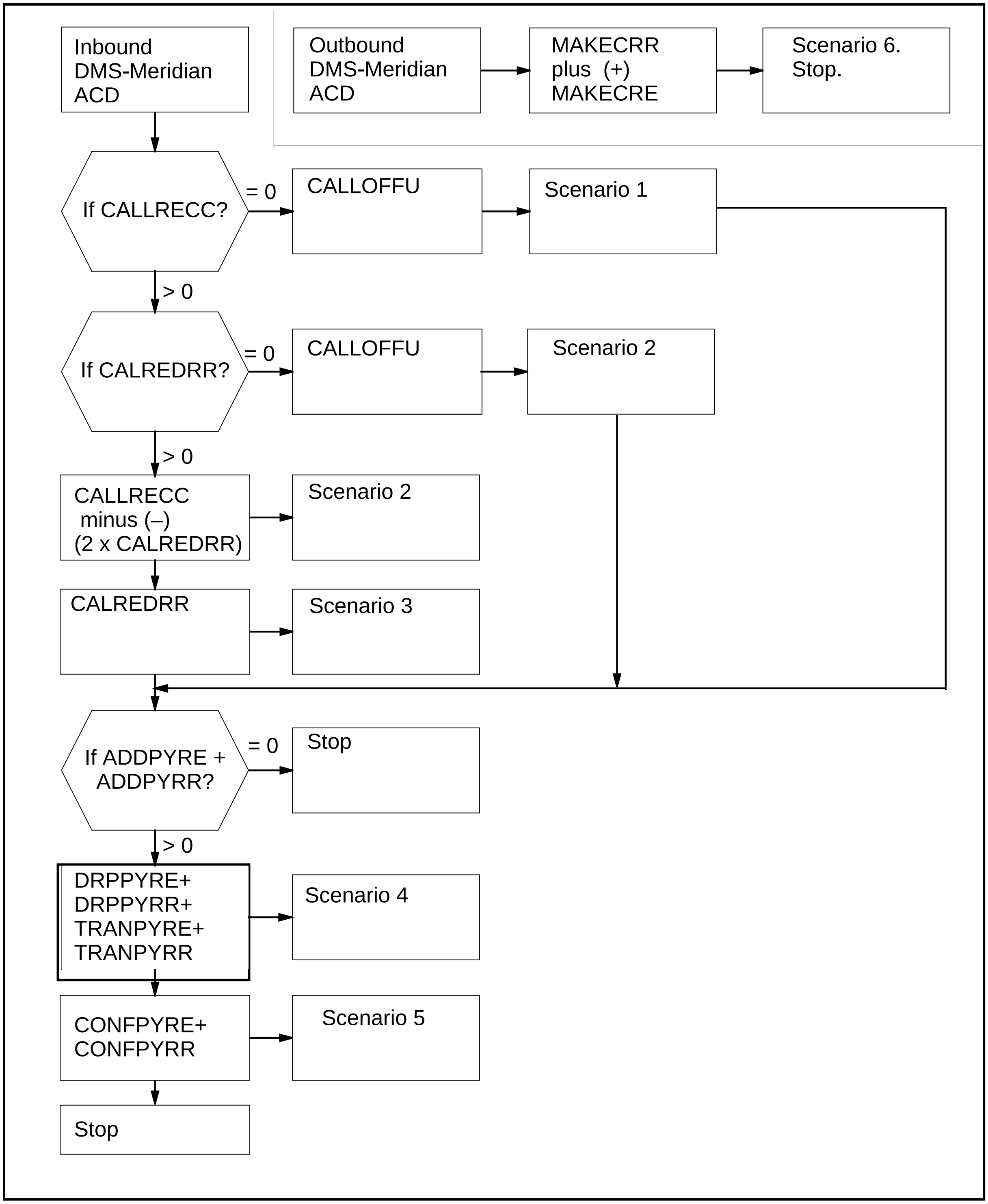
Register ADDPYRE pegs when the switch sends a RETURN_ERROR reply to a business computer in response to a DV_Add_Party message. Register ADDPYRR pegs when a switch sends a RETURN_RESULT reply to a DV_Add_Party message. If these registers equal zero when combined, this indicates that no consultation nor conference calls have taken place. When the combined value of the registers is more then zero, two other sets of registers should be considered.

The first set consists of DRPPYRE, DRPPYRR, TRANPYRE, and TRANPYRR. Registers DRPPYRE and DRPPYRR peg when a switch sends a RETURN_ERROR or a RETURN_RESULT reply to a DV_Drop_Party message. TRANPYRE and TRANPYRR peg when a switch sends a RETURN_ERROR or a RETURN_RESULT message in response to a DV_Transfer_Party message. The sum of these four registers provide an approximation of scenario 4 call types.

An additional set of registers indicates scenario 5 call types. The two registers are CONFPYRE and CONFPYRR. These registers peg when a switch sends a RETURN_ERROR or a RETURN_RESULT reply in response to a DV_Conference_Party message.

As shown, the flowchart demonstrates an administrative methodology where OMs, mapped to messaging scenarios, provide an approximate measure of CompuCALL use.

CompuCALL (continued)



Data evaluation procedure

None

EMPC/MPC throughput capacity

For each card type (EMPC/MPC) and link speed, CompuCALL link performance engineering is based on the average size of the messages. Average message size determinations depend on the number of messages transmitted per call attempt and associated message sizes in bytes. The following table below lists the performance indicators for throughput capacity.

OM group	Register	Log reports
MPCBASE	MPCNSOK	MPC905
	CONVESTB	
	L2UDSIN	
	L3UDSIN	
	L2UDSOUT	
	L3UDSOUT	
	FCTRLDEL	
MPCLINK2	L2LXMIT	
	L2LRCV	
	L2NUXMIT	
	L2NURCV	
MPCLINK3	L3LXMIT	
	L3LRCV	
	L3NUXMIT	
	L3NURCV	
MPCFASTA	FAMSGOUT	
	LLNKAVBL	MPC201
	LLNKXFRD	MPC201

CompuCALL (continued)

How to evaluate EMPC/MPC throughput capacity performance

Operating companies and call centers determine the operating characteristics for CompuCALL at each switch and for each ACD/MDC group. Currently, packet networks commonly use 9600 bp/s public facilities, but point-to-point private data networks could be deployed at higher operating speeds such as 19.2 or 56 kbp/s. Each application's specific data throughput needs must be considered when engineering EMPC/MPC capacity.

To properly calculate each customer's CompuCALL messaging requirements, the application-specific messaging characteristics must be identified then applied against EMPC/MPC capacities. The operating company must engineer the number of CompuCALL links based on the CompuCALL messaging requirements for each individual switch.

Northern Telecom generally recommends use of a packet size of 128 bytes on the CompuCALL link because of the small size (under 128 bytes) of CompuCALL messages. Because of this small message size, throughput (not theoretical data transfer rate) is constrained by the MPC/EMPC processing. If CompuCALL messages in excess of 128 bytes are required, use the 256 byte packet, the maximum CompuCALL message size packet.

Calculations used to evaluate performance

The following table displays EMPC/MPC port messaging capabilities in terms of messages per second transmitted, based upon 1980 CCITT's protocol recommendations for X.25 signaling, which is the signaling used by CompuCALL.

EMPC/MPC port messaging capabilities (Sheet 1 of 2)

Average message size (bytes)								
Card type	**Link speed**	**45**	**50**	**55**	**60**	**65**	**80**	**95**
Messaging capacity (messages per second)								
MPC	9600	10	9	9	8	8	6	5
MPC	19200	8	7	7	6	6	5	4
EMPC	9600	20	19	18	17	16	13	11
Note: To make optimal use of link capacity and survivability, provision one SVC per link and one link per card.								

EMPC/MPC port messaging capabilities (Sheet 2 of 2)

Average message size (bytes)								
Card type	**Link speed**	**45**	**50**	**55**	**60**	**65**	**80**	**95**
Messaging capacity (messages per second)								
EMPC	19200	25	25	23	22	22	20	20
EMPC	56000	23	23	22	21	20	19	20
Note: To make optimal use of link capacity and survivability, provision one SVC per link and one link per card.								

How to evaluate link integrity performance

Continuity testing performance factors peg requests from the business computer for continuity testing, manual continuity test requests, and reception results from the switch.

Calculations used to evaluate factor performance

Use the following formula to determine the percentage of unsuccessful test attempts:

```
         SCAISERV_CONTSTRE
--------------------------------------- · 100  =    percentage of
SCAISERV_CONTSTRR + SCAISERV_CONTSTRE               unsuccessful tests
```

Data evaluation procedure

If the count is high for CONSTRE, possible causes could be that the business computer is not logged on, a problem exists on the link, or a problem exists with the business computer.

Overload controls, link capacity

The CompuCALL link has overload protection. This protection consists of discarding CompuCALL link messages when messaging capacity is exceeded. The discarding of messages takes place arbitrarily and the messages cannot be recovered.

The following table displays the capacity of a single link as measured by call attempts per second. Use the information in this table to evaluate

CompuCALL (end)

CompuCALL and to understand the provisioning and engineering decisions needed to accommodate capacity constraints.

Capacity of a single link as measured by call attempts per second

Card type and speed	CVD	CVD with call redi-rection, no redirects	CVD with call redi-rection, one redirect	CVD, call redirection on, no redirects, consultation	CVD, call redirection on, no redirects, consultation, conference	Make call
(msgs/s msg s/CA)	**Average messages per scenario call attempt:**			**Average messages per scenario call attempt:**		
	4	5	10	12	14	3
MPC:	Capacity of a single CompuCALL link (CA per second):					
9.6 Kbps	1.50	1.60	0.90	0.75	0.64	3.33
19.2	1.25	1.20	0.70	0.58	0.50	2.67
EMPC:						
9.6 Kbps	3.25	3.20	1.80	1.50	1.36	6.67
19.2	5.00	4.40	2.30	1.92	1.79	8.33
56.0	4.75	4.00	2.20	1.83	1.64	7.67

Multiprotocol controller (MPC) card, data link use

The multiprotocol controller (MPC) is a data communications card that allows data communications between a switch and an external computer. The system downloads the multiprotocol controller software from the central processing unit (CPU). The MPC supports software functions for data packet network communication.

Table E911RCER associates link sets with remote call event records for a public safety answering point. After you obtain the link set from table E911RCER, refer to table MPCLSET to associate specific cards and links. The following table contains performance indicators for the multiprotocol controller card. The table also contains performance indicators for data link use in the automatic location identification (ALI) controller and Automatic Call Distribution Management Information System configurations.

Performance indicators for multiprotocol controller card and data link usage

OM group	Register	Log reports
MPCLINK2	L2NUXMIT	
or	or	
MPCLINK3	L3NUXMIT	
MPCBASE	FCTRLDEL	

Evaluating MPC card, data link use performance

The E911 Direct Access to Data Management System ALI Database supports direct access to line and automatic call distribution to public safety answering points. The E911 Direct Interface to Open ALI Database also supports access and automatic call distribution to public safety answering points. If the ALI controller serves more than one answering point, card capacity will run out. Dial-up into ALI Database for SRDB Update requires one Hayes-compatible modem that operates at baud rates between 1200 and 9600. The system performs a dial-up for selective routing data base updates.

Calculations used to evaluate multiprotocol controller card, data link use performance

Use the following calculations to evaluate MPC card, data link use:

E911 emergency service (continued)

```
      L2NUXMIT or L3NUXMIT
------------------------------------- · 100% =  percentage of
transmission capacity of unused                 multiprotocol controller
link during measured time interval              link usage
(in kilobytes), based on selected
baud rate
```

Data evaluation procedure

If the percentage of data link use for the MPC card exceeds grade-of-service requirements set by the operating company, the number of links to the ALI database.

E911 feature data block allocation

An E911 feature data block is a type of extension block. It contains E911 information that supplements the data for calls recorded in the call condense block and call data block. OM group EXT lists types of extension block allocation.

The associated extension blocks for E911 appear in the EXT OMs as CRITICAL_FEATURE_DATA. The system allocates one critical feature data block per agent (caller or PSAP) in the E911 call. For example, the system allocates two critical feature data blocks for a two-port call and three for a three-port call. The following table contains the performance indicators used to monitor the allocation of critical feature data blocks.

Performance indicators for critical feature data block allocation

OM group	Register	Log reports
C7LINK1	C7ERRSEC	
EXT	EXTHI	OMPR2xx
EXT	EXTOVFL	OM2200
		OMPR2xx
		E911233 and 224
EXT	EXTSEIZ	OMPR2xx

Note: Operational measurement register (OMPR) reports are a series containing the outputs of OM groups that have been scheduled or requested. The reports consist of raw register readings, and a maximum of 32 OMPR output reports can be scheduled (OMPR200 to OMPR231). Here the reports are represented by OMPR2xx.

Evaluating E911 feature, data block allocation performance

The office parameter E911_NUMBER_OF_FDBS defines the number of blocks the system allocates in memory. The value you enter must be based on engineering estimates of the maximum number of simultaneous E911 calls in the tandem switch. Multiply the number of E911 calls by two. Failure to allocate an E911 feature data block can cause failure of the E911 functions. The call remains connected.

Calculations used to evaluate E911 feature, data block allocation performance

The standard method for tracking the growth in extension block and/or feature data block use calculation includes three factors. The first factor is the memory allocation for each critical feature data block. The second factor is the number of blocks allocated. The third factor is the maximum number of simultaneous E911 calls during the busy hour. To calculate the number of E911 calls, divide the EXT OM (CRITICAL_FEATURE_DATA) by two.

Data evaluation procedure

If the percentage of overflow exceeds grade-of-service requirements set by the operating company, increase provision of extension blocks in table OFCENC.

Three-port conference circuit allocation

Three-port conference circuit for call transfers are tracked in registers of OM group TWCIBN. The following table contains performance indicators for three-port conference circuit allocation.

Performance indicators for three-port conference circuit allocation

OM group	Register	Log reports
TWCIBN	TWCATT	OMPR2xx
TWCIBN	TWCOVFL	OM2200, OMPR2xx

Note: OM register OMPR reports are a series that contain the outputs of OM groups that are scheduled or requested. The reports consist of raw register readings for a maximum of 32 scheduled OMPR output reports scheduled (OMPR200 to OMPR231). The reports are exemplified by OMPR2xx.

Evaluating three-port conference circuit allocation performance

Calculate the percentage of overflow during the current study period. Compare the percentage with the engineered service-level objective for three-way call attempts.

E911 emergency service (continued)

Calculations used to evaluate three-port conference circuit allocation performance

Use the following calculations to evaluate the percentage of unsuccessful three-way call attempts:

```
  TWCIBN_TWCOVFL
-----------------  · 100% =    percentage of overflow
  TWCIBN_TWCATT                (unsuccessful three-way call
                               attempts)
```

Data evaluation procedure

The overflow percentage can exceed the service-level objective. If an overflow occurs and a maintenance problem is not present, the engineering organization increases the number of available three-port conference circuits.

Tandem switch real-time capacity

Real time use computations for the tandem switch central control must include E911 call activity. The following table contains performance indicators for tandem switch capacity in real-time.

Performance indicators for tandem switch real-time capacity

OM group	Register	Log reports
EXT	EXTHI	OMPR2xx
Note: The OM register OMPR reports are a series that contain the outputs of OM groups that are scheduled or requested. The reports consist of raw register readings for a maximum of 32 scheduled OMPR output reports scheduled (OMPR200 to OMPR231). The reports are exemplified by OMPR2xx.		

Evaluating tandem switch capacity performance in real-time

The CPU per-call timings for a call attempt through an E911 trunk is 21.6 ms in the NT40 central control and 10.9 ms in the SuperNode core. Include E911 call activity in real-time use computations.

Calculations used to evaluate tandem switch capacity performance in real-time

Tools like the Nortel's REAL::TIME program perform calculations of the tandem switch in real-time automatically. (Use the additional section of the tool.)

Data evaluation procedure

To calculate the impact of E911 calls on real-time processing, multiply the per-call timings by the busy hour values. The busy hours are the hours of simultaneous use of critical feature data blocks (divided by 2). The OM group EXT records the number of busy hours. Use the results with any real-time calculation of overall central control performance.

Subscriber carrier module-100 urban capacity in real-time

Line Appearance on Digital Trunk nodes and Remote Carrier Urban can connect to a subscriber carrier module-100 urban (SMU). This connection can impact signal processing CPU use in the SMU. The following table lists the performance indicators for SMU capacity in real-time.

Performance indicators for SMU real-time capacity

OM group	Register	Log reports
EXT	EXTHI	OMPR2xx
Note: OM register OMPR reports are a series that contain the outputs of OM group that are scheduled or requested. The reports consist of raw register readings and for a maximum of 32 scheduled OMPR output reports scheduled (OMPR200 to OMPR231). The reports are exemplified by OMPR2xx.		

Evaluating SMU capacity performance in real-time

Signal processing SMU terminating per-call timing for an E911 call attempt is 153 ms.

Calculations used to evaluate SMU capacity performance in real-time

The system allocates one E911 feature data block for each E911 call that the switch processes. Tools like the Nortel PRTCALC program perform calculations of SMU capacity performance.

Data evaluation procedure

To calculate the impact of E911 calls on real-time processing, multiply the timing for each call by the busy hour values. Busy hour values are the hours, divided by two, that the system uses critical feature data blocks at the same time. The operational measurement group EXT register EXTHI records the number of hours.

E911 emergency service (continued)

Receiver service circuit allocation

The system allocates multifrequency receiver service circuits to collect digits from the public safety answering point. The multifrequency receiver service circuits collect incoming automatic number identification or called digits. The following table contains the performance indicators for the allocation of receiver service circuits.

Performance indicators for receiver service circuit allocation

OM group	Register	Log reports
RCVR	RCVOVFL	OM2200, OMPR2xx
RCVR	RCVOVFL	OMPR2xx
Note: OM register OMPR reports are a series that contain the outputs of OM groups that are scheduled or requested. The reports contain register readings that are not formatted for a maximum of 32 scheduled OMPR output reports (OMPR200 to OMPR231). Report OMPR2xx is an example of the reports.		

Evaluating receiver service circuit allocation performance

Calculate the percentage of overflow that occurs in the current study period. Compare this percentage with the engineered service-level objective for receiver circuits.

Calculations used to evaluate receiver service circuit allocation performance

Use the following formula to calculate the percentage of attempts to seize receiver service circuits that are not successful:

```
     RCVR_RCVOVFL
-----------------------  · 100% =  percentage of overflow
RCVR_RCVOVFL + RCVSZRS             (unsuccessful attempts
                                   seize receiver service
                                   circuits)
```

Data evaluation procedure

The overflow percentage can exceed the service-level objective. If a maintenance problem does not cause this percentage, the engineering personnel must consider an increase of the number of available receiver circuits. You must notify the engineering personnel.

E911 trunk group traffic loading

The system can isolate and measure dedicated E911 trunk activity and not measure other traffic. The following table contains performance indicators for E911 trunk group traffic loading.

OM group	Register	Log reports
TRK	INCATOT	OMPR2xx
TRK	INFAIL	Various TRK subsystem log reports, OMPR2xx
TRK	NOVFLATB	ATB100, OMPR2xx
Note: OM register OMPR reports are a series that contain the outputs of groups that are scheduled or requested. The reports contain register readings. These readings are not formatted for a maximum of 32 scheduled OMPR output reports scheduled (OMPR200 to OMPR231). In this table, OMPR2xx is an example of the reports.		

Evaluating E911 trunk group traffic loading performance

Calculate the percentage of incoming call attempts to trunk groups that fail. Compare this percentage with the engineered service-level objectives for incoming call attempts to the trunk group.

Calculations used to evaluate E911 trunk group traffic loading performance

Use the following formula to calculate the percentage of incoming attempt failures on a trunk group:

```
TRK_INFAIL
------------  · 100% =  percentage of incoming attempt
TRK_INCATOT             failures on a trunk group
```

Data evaluation procedure

The overflow percentage can exceed the service-level objective. If an overflow occurs and a maintenance problem is not present, the engineering personnel can distribute the load on the trunk group. The engineering personnel can also add trunk groups.

E911 emergency service (continued)

E911 trunk peripheral real-time capacity

Call activity affects the real-time handling capacity of series 2 peripheral modules. These series 2 peripheral modules connect to E911 trunks. The performance indicators for E911 trunk peripheral real-time capacity appear in the following table.

Performance indicators for E911 trunk peripheral real-time capacity

OM group	Register	Log reports
PMOVLD	PTRMDENY	PM128, OMPR2xx
ISDD	DPATMPT	OMPR2xx
ISDD	DPATMPT	OMPR2xx
ISDD	IMFATMPT	OMPRxx2

Note: OM register OMPR reports are a series that contain the outputs of OM groups that are scheduled or requested. The reports contain register readings that are not formatted for a maximum of 32 scheduled OMPR output reports (OMPR200 to OMPR231). In this table, OMPR2xx is an example of the reports.

Evaluating E911 trunk peripheral real-time capacity performance

Real time engineering of the trunk peripherals associates with the call processing area of the peripheral processors.

Calculations used to evaluate E911 trunk peripheral real-time capacity performance

Tools like the Nortel PRTCALC program automatically perform calculations of peripheral real-time. Use the following formula to calculate the percentage of call processing available in a peripheral:

```
(100% – (Overhead % + buffer %)) =  call processing area
                                    available
```

Data evaluation procedure

Calculated high day busy hour (HDBH) engineering results are expressed in terms of percent of utilization of the available call processing area. The PERFORM tool can measure the percent of processor occupancy.

Selective routing database impact on data store

The memory allocation of the selective routing database increases when the system adds new tuples to table E911SRDB.

Evaluating performance

When the database reaches the memory allocation, the system software increases the data store by 203 words. This action eliminates the need to increase the allocation if the addition of a new tuple exceeds the memory limit.

Calculations used to evaluate performance

The maximum configuration of the database requires a maximum of:

- 2.4 Mwords (300,000 entries) for NT40
- 12.3 Mwords (800,000 entries) for SuperNode

Use table editor command COUNT to track the memory use of table E911SRDB.

Data evaluation procedure

Additional tuples require more memory. There is no direct correlation between the number of tuples in table E911SRDB and the amount of memory needed. The SRDB Memory Administration helps to determine:

- the amount of memory that table E911SRDB uses
- the number of tuples in table E911SRDB
- the amount of available memory on the switch

This information is available on demand and when store updates occur. This capability generates logs and activates an alarm when critical levels of use occur. The critical levels of use correspond to the memory availability of some sizes of table E911SRDB.

Outside plant access cabinet

Dial tone speed recording

Dial tone speed recording (DTSR) measures the ability of a switch to return dial tone in 3 s. The Operational Measurements group SITE provides information about traffic-related counts and DTSR for remote sites. The following table contains the performance indicators for monitoring DTSR.

OM Group	Register	Log reports
SITE	DLMKS_D	
	DLMKS_T	
	DPDELAY	
	DPTESTC	
	DTDELAY	
	DTTESTC	
	LCMDP_D	
	LCMDP_D2	
	LCMDP_T	
	LCMDP_T2	
	LCMDT_D	
	LCMDT_D2	
	LCMDT_T	
	LCMDT_T2	
	LCMKS_D	

Evaluating DTSR performance

Use the registers in the SITE OM group to evaluate dial tone delay. The following three factors cause dial tone delay:

- time that call processing takes to recognize the origination
- time the switch takes to allocate resources, like channel and tone receivers, for the call
- time the switch takes to set up dial tone

Outside plant access cabinet (continued)

These factors vary for each switch. The factors depend on the type of line from which the call originates, and the location of the associated line card. The factors also depend on the type of peripheral interface to the central control (CC).

A dial tone delay of greater than three seconds does not exceed:

- 1.5% overflow during the average busy season busy hour (ABSBH)
- 20% overflow for the high day busy hour (HDBH)

Calculations used to evaluate DTSR performance

Registers hold DTSR counts in pairs. The first part of each pair is a count of all calls. The other part is a count of calls with a dial tone delay that exceeds 3 s. Each site has three of these pairs. One pair is for dial pulse (DP)-originated calls. Another pair is for Digitone-originated calls. The other pair is for keyset-originated calls. Calculations for each pair are in the following display.

```
LCMDP_D
--------    ·   100  =  percentage of delayed calls (dial tone exceeding
LCMDP_T                 3-second criteria for dial pulse lines)


LCMDP_D
--------    ·   100  =  percentage of delayed calls (dial tone exceeding
LCMDP_T                 3-second criteria for Digitone line)


LCMDP_D
--------    ·   100  =  percentage of delayed calls (dial tone exceeding
LCMDP_T                 3-second criteria for keyset lines)
```

Data evaluation procedure

Use the following procedure to evaluate DTSR performance.

1. Calculate the percentage of calls that receive dial tone delay that exceeds 3 s. Compare the percentage level to the established engineered standards. If the standards are not met, go to Step 2.
2. Determine if maintenance problems cause the dial tone delay overflow. If software or hardware problems are not the cause, go to Step 3. If software or hardware problems are the cause, wait for results of the next study period. See if the engineered standards are met. If the standards are not met, refer the problem to the provisioning engineer.

Outside plant access cabinet (continued)

3. Determine if any isolated activity causes the dial tone delay overflow. If conditions that are not normal are the cause, wait for the next study period to see if the engineered standards are met. If the standards are not met, refer the problem to the provisioning engineer.
4. The procedure is complete.

Call attempts

Traffic information for lines shows the call attempts and call attempt failures for line concentrating devices (LCD) such as the OPAC.

The OM group LMD shows the call attempts and call attempt failures for each LCD. The OM group SITE contains registers that count incoming calls the system routes to:

- a line at a remote site
- another line or trunk

The following table contains the performance indicators for monitoring call attempts.

Performance indicators for call attempts

OM group	Register	Log reports
LMD	LMTRU	
	NORIGATT	
	NTERMATT	
	ORIGBL	NET130
	REVERT	LINE112
	TERMBLK	NET130
SITE	INRTERM	
	INTERSIT	
	INTRASIT	
	RORIGOUT	

Evaluating call attempt performance

Traffic is the total load that results from all call attempts. The call attempt rate, call attempts per hour, and the use due to these attempts characterize traffic. Measure the call attempt use in hundred call seconds (ccs).

For a given number of channels, the possibility of call blocking increases as the load increases. This possibility increases the value of the CCS load.

The OM group SITE provides additional information on traffic analysis. How the system routes calls that originate from the OPAC is an example of additional information.

Calculations used to evaluate call attempt performance

Use the following formula to determine the percentage of call attempts that fail. These call attempts fail because there is no idle speech path for the OPAC from the originating line module to the network module.

```
ORIGBLK
---------  ·  100  =  percentage of failed call attempts
NORIGATT
```

The following formula determines the total number of attempts blocked.

```
ORIGBLK  +  TERMBLK  =  total attempts blocked
```

The following formula determines the total number of call attempts.

```
NORIGATT  +  NTERMATT  =  total call attempts
```

Outside plant access cabinet (continued)

Data evaluation procedure

Monitor the call attempt rate to make sure the rate falls within engineered limits.

If the call attempt rate exceeds engineered limits, problems may occur with subscriber lines. Problems may occur with the peripheral module (PM) capacity to direct traffic. A high call attempt rate can indicate a need to provision more links or reduce the load.

Subscriber line usage

Subscriber line use (SLU) is an option. You may add SLU to a line or a group of lines through a service order.

The corresponding OM groups (TRA125M1, TRA125M2, TRA250M1, and ENG640M1) record and manipulate the measurements. These measurements include the number of originations, calls in progress, terminations, and termination attempts failed because of call processing busy.

The following table contains the performance indicators for monitoring SLU.

Performance indicators for SLU

OM group	Register	Log reports
TRA125M1	TBU2 ORIG2 TERM2 BUSY2	
TRA125M2	TBU3 ORIG3 TERM3 BUSY3	
TRA250M1	TBU1 ORIG1 TERM1 BUSY1	
ENG640M1	TBU0 ORIG0 TERM0 BUSY0	

Evaluating subscriber line usage performance

Use the registers in these OM groups to track SLU over an extended period. Information derived from these long-range studies help planning engineers determine the total annual line demand for each customer-serving area.

The information can indicate a need to supply additional lines or PMs to keep the OPAC within engineered limits.

Calculations used to evaluate subscriber line usage performance

There are no calculations to evaluate factor performance.

Data evaluation procedure

There is no data evaluation procedure.

Intraswitched call traffic

The OM group RLCDIS provides information on traffic for intraswitched calls in an OPAC. These calls have the RLCM intracalling feature package (NTX156AA).

The intraswitching feature allows the OPAC to switch calls internally for the calling and called parties that the same OPAC services.

If no idle intraswitching channels are available, the host controller, an XMS-based PM (XPM), reports blocking to the CC. The call is then switched through the host office network. The following table lists performance indicators for intraswitched call traffic.

Performance indicators for intraswitched call traffic

OM group	Register	Log reports
RLCDIS	ISTOTATT	
	ISTOTBLK	
	ISTOTTRU	
	ISUN0ATT	
	ISUN0BLK	
	ISUN0TRU	
	ISUN01ATT	
	ISUN01BLK	
	ISUN1TRU	

Evaluating intraswitched call traffic performance

The RLCDIS registers measure intraswitching calls attempted, blocked, and in use.

If one LCM unit performs a takeover of the other unit, RLCDIS continues to associate intraswitched calls. The OM group RLCDIS associates the calls with the unit that supports the calling and called parties. This unit can be in or out of service.

The data from RLCDIS indicate the intraswitched call traffic in an OPAC and makes sure that the configuration meets traffic requirements.

Outside plant access cabinet (continued)

Calculations used to evaluate intraswitched call traffic performance

Use the following formula to determine the percentage of intraswitching call attempts that fail because of an intraswitching channels busy condition.

```
ISTOTBLK
----------  ·  100 =    percentage of intraswitching
ISTOTATT                call attempts that fail
```

The RLCDIS OM group collects statistics for calls that use intraswitching channels. Calls between LCM unit 0 and LCM unit 1 of the OPAC are referred to as interswitched calls.

Registers do not count these calls separately. To determine the number of calls, subtract the total intraswitching call attempts for units 0 and 1 from the total intraswitching call attempts.

Use the following formula to determine the number of interswitching calls.

```
ISTOTATT – (ISUN0ATT + ISUN1ATT) =  number of
                                    interswitching calls
```

Data evaluation procedure

Review the total number of intraswitching call attempts to see if the value exceeds the engineered limit.

A study covers enough busy hours to give an accurate average view of the traffic load on intraswitching channels. The study period can be from 5 to 10 days in length. Calculate the percentage of blocked calls for intraswitching and interswitching channels. Review the data with the provisioning engineer to determine if the current OPAC configuration is adequate.

ESA call processing capacity

When the OPAC is in emergency stand-alone (ESA) mode, the OPAC cannot communicate with the host while it processes calls.

The OPAC pegs a limited number of call processing OMs while in ESA mode. A PM171 log report collects and stores these peg counts. When the OPAC exits ESA, this log goes to the CC.

Evaluating call processing capacity performance

The PM171 log contains the counts for all calls attempted, blocked, and routed through given ESA tables internal to the OPAC.

If any of these fields reaches overflow, forward the associated data to engineering for evaluation.

Calculations used to evaluate call processing capacity performance

There are no calculations to evaluate factor performance.

Data evaluation procedure

During ESA, the OPAC pegs the following call processing OMs:

- traffic peg counts
  - total origination attempts
  - total termination attempts
  - total calls completed
  - total originations blocked due to lack of resources
  - total terminations blocked due to lack of resources
  - total lines taken out of service because of too many errors
  - usage counts for up to 16 entries in the plain old telephone service (POTS) prefix table
- error peg counts
  - coin failures
  - ringing failures
    - pretrip
    - ring block
    - continuity
    - test register
  - translation errors

The peripheral stores OMs from the OPAC during ESA. The OMs then go to the CC and print as a PM171 log.

Outside plant access cabinet (continued)

There is no procedure to evaluate this log. The registers track the types of calls processed during ESA.

Processor occupancy

The OM group PMSTAT provides real-time processor occupancy measurements for OPACs. These OPACS have extended-memory line concentrating module (XLCM) equipment and software loads.

The XLCM is equipped with a 256 k/Byte memory load. Processor occupancy refers to the percentage of time, also referred to as available time, that the XLCM microprocessor is not idle.

This OM group helps engineer the XLCM to correspond with the switching office traffic load. The OM group ensures correct provisioning of OPAC. The following table lists performance indicators for processor occupancy.

Performance indicators for processor occupancy

OM Group	Register	Log reports
PMSTAT	PMAVAIL	
	PMAVCP	
	PMAVOC	
	PMLOWOC	
	PMOVHEAD	
	PMPEAKOC	

Evaluating processor occupancy performance

The CC is responsible for calculating the percentages of processor use dedicated to overhead and call processing for each XLCM.

The overhead value becomes a constant for calculation of the call processing processor use. The call processing value is lowest when available time is highest. Assume call processing is zero to calculate the overhead constant.

Use the first available time value reported to calculate the overhead value for the initial period of operation. The system obtains the highest available time value every 15 min over a 24-h period.

This reading will help obtain the overhead constant for the next 24 h period. The PMOVHEAD register provides the overhead constant.

Calculations used to evaluate processor occupancy performance

The PMSTAT registers perform all the necessary calculations.

Data evaluation procedure

Use the registers in the OM group PMSTAT to help with engineering the XLCM against the OPAC traffic load. An office with too much XLCM equipment results in idle facilities and higher costs. Not enough XLCM equipment results in telephone service overloads and degradations.

Evaluate the OM readings for several days after any of the following occur:

- a BCS application is performed
- an XLCM is busied and returned to service
- new XLCMs are commissioned

The OM readings are evaluated for several days to allow the overhead value to reach a steady state.

Link usage and blockage

Between two and six DS-1 links connect the OPAC to the host controller. The OM group XPMLNK gives link usage and blockage statistics. This information shows the performance and availability of the DS-1 links.

The data also aid reliability studies and troubleshooting. The OM group does not include measurements of nailed-up connections or nonswitched special services.

A nailed-up connection is a permanent network connection that forms part of the speech path between equipped PMs.

The following table lists the registers that show the link usage and blockage statistics.

Registers used for calculating link usage and blockage statistics (Sheet 1 of 2)

OM Group	Register	Log reports
XPMLNK	CSLAA	
	CSLBLK	
	CSLCBU	
	CSLMU	
	PSLAA	

Outside plant access cabinet (end)

Registers used for calculating link usage and blockage statistics (Sheet 2 of 2)

OM Group	Register	Log reports
	PSLBLK	
	PSLCBU	
	PSLMU	

Evaluating link usage and blockage performance

The XPMLNK registers provide peg and usage counts every 15 min. The XPM OM system transfers active-to-holding registers 1 min before it sends the information to the CC.

The register reports usage measurements in CCS. The system uses a 10 s sampling rate to maintain accuracy. The peg measurements are the number of allocation attempts or blocked allocation attempts.

All measurements are direct measurements, if possible. The information is measured link by link. The registers represent a total of all links from the CO.

Calculations used to evaluate link use and blockage performance

The following formula helps evaluate DS-1 channel availability.

$$\frac{\text{PSLBLK}}{\text{PSLAA}} \cdot 100 = \text{percentage of blockage}$$

Data evaluation procedure

To determine the best link use to supply the OPAC with DS-1 links, look for values that exceed the maximum engineered value.

Refer these values to the provisioning engineer to determine any requirement for more links or options to service the OPAC traffic.

Primary rate interface (PRI) performance factors

DS-1 link availability

A DS-1 provides the link between two switches. The DS-1 link handles 24 B-channels of voice and data. The DS-1 can also handle a group of 23 B-channels of voice and data, with one D-channel for signaling.

The DS-1 link availability is necessary for the ISDN node to perform. Not enough available DS-1 links causes degradation in system performance. Degradation occurs because the load on other links increases and affects the level of service to the customer.

The OM group DS1CARR monitors DS-1 link availability and use. The following table lists performance indicators for DS-1 link availability.

Performance indicators for DS-1 link availability

OM group	Register	Log reports
DS1CARR	DS1MBU	PM105, PM182
	DS1SBU	PM109, PM111
	DS1PBU	PM183
	DS1CBU	PM107

Evaluating DS-1 link availability

The usage registers listed below measure the amount of time that DS-1 links are busy:

- Register DS1MBU is a usage count of the time that DS-1 is in a manual busy state.
- Register DS1SBU is a usage count of the time that DS-1 is in a system busy state.
- Register DS1PBU is a usage count of the time the DS-1 is in a peripheral busy state. The DS-1 is in a peripheral busy state because the P-side (remote) peripheral is not in service.
- Register DS1CBU is a usage count of the time the DS-1 is in a C-side busy state. The DS-1 is in a C-side busy state because the C-side peripheral (the DTCI) is not in service.

Primary rate interface (PRI) performance factors (continued)

Data evaluation procedure

Use the following procedure to evaluate DS-1 link availability.

1. Make sure that maintenance problems are not present on the DS-1 links you want to study (DS1MBU reads zero). Collect busy-hour data.
2. Compare total use measurements for the DS-1 link with the maximum use values used to engineer these facilities. If the values do not exceed the engineered values, discard the data. You can also retain the data for the development DS-1 use directions. If the values exceed the engineered values, go to step .
3. Notify the provisioning engineers of any values that exceed the engineered maximum. The engineers can add more links or other options to serve ISDN traffic.
4. The procedure is complete.

DTCI overload

A DTCI overload occurs when the DTCI exhausts the resources that call processing requires. The OM group PRADCHL2 contains performance indicators for monitoring overload conditions. The following table lists performance indicators for DTCI overload.

> ***Note:*** The DTCI also refers to the LTC.

Performance indicators for DTCI overload

OM group	Register	Log reports
PRADCHL2	PRFLSHED	PM128, PM106

Evaluating DTCI overload

The system provides flow and overload control for the DTCI and the LTC equipped for PRI. The system delays incoming Q.931 messages on PRI trunks. The system presents the messages to call processing in regulated quantities when real-time availability allows.

When a DTCI becomes overloaded, the overload control system regulates the impact on service from Q.931 messages. The overload control system makes sure that the impact is calculated. The main causes of overload in the DTCI are:

- Call processing messages flood the DTCI from the core.
- The call rate exceeds capacity.

Primary rate interface (PRI) performance factors (continued)

- The far end office floods the DTCI with call originations or messages.
- Failure recovery, like the loss one of the network planes.

When an overload condition persists, the DTCI can run out of one of the following resources:

- processor real-time
- call processing data structures
- messaging buffers
- communication links on the P-side or C-side

When an overload occurs, the DTCI sheds Q.931 SAPI 0 messages. The DTCI sheds the messages to protect the stability of the DTCI and maintain traffic throughput. The OM register PRFLSHED increases discarded messages caused by an overload condition. The discarded messages increase on a per D-channel (interface) basis.

Calculations used to evaluate DTCI overload

There are no calculations used to evaluate DTCI overload.

Data evaluation procedure

Use the following procedure to evaluate DTCI overload.

1. Check register PRFLSHED. If there are no discarded messages present, go to step . If there are discarded messages go to step .
2. Check for PM128 and PM106 logs. The system generates PM128 when the DTCI enters overload. The system generates PM106 when the DTCI exits the overload condition. Forward this information to the correct provisioning group. The provisioning group assesses and distributes the PRI services again. This procedure improves DTCI performance.
3. The procedure is complete.

DTCI real-time occupancy

The DTCI real-time or processor occupancy is a determining factor in the performance of a DTCI. An overloaded processor can lead to interruption or degradation of customer service. When the call processing of the DTCI exceeds capacity, real-time overload conditions can occur.

Evaluating DTCI real-time occupancy

The processors in the DTCI, SP and MP provide some call processing time. In most occurrences, the MP is the limiting component. Obtain the current SP and MP occupancies from the provisioning engineers.

Primary rate interface (PRI) performance factors (continued)

The following table lists recommended indicators for DTCI processor occupancy.

Recommended indicators for DTCI processor occupancy

Idle overhead	Available for call processing		
MP	**SP**	**MP**	**SP**
15%	70%	65% (2340000 ms/hour)	20% (720000 ms/hour)

Use the Nortel software tool PRTCALC (Peripheral Real Time Calculation) to obtain peripheral real-time calculations.

> ***Note:*** Use the PERFORM tool (accessed from the MAP terminal) to determine the real-time use of the DTCI. The PERFORM tool monitors processor activity in the posted DTCI. The logs PRFM200, PRFM201, PRFM204, PRFM207, and PRFRM210 record the PERFORM data.

Data evaluation procedure

Use the following procedure to evaluate DTCI real-time.

1. Obtain processor occupancies from the provisioning group.
2. Compare the occupancies with the occupancies recommended in the table on the previous page. If the occupancies are acceptable, go to step . If the occupancies are not acceptable, go to step .
3. Notify the provisioning engineers of values that exceed the thresholds.
4. The procedure is complete.

Network traffic on PRI D-channels

Register PRAFAC measures message traffic the network ring again feature (NRAG) generates on PRI D-channels. The PRAFAC data helps to track routing problems in the ISDN network. To track routing problems, the PRAFAC measures facility and facility reject messages from switch to switch. A routing problem can occur because of the following:

- network congestion
- network failure
- D-channel failure
- lack of available translations for the specified address

Primary rate interface (PRI) performance factors (continued)

The following table lists performance indicators for network traffic on PRI D-channels.

Performance indicators for network traffic on PRI D-channelse

OM group	Register	Log reports
PRAFAC	DISCNGST	
	DISRTUNA	

Evaluating network traffic on PRI D-channels

Register DISCNGST counts facility messages the system discards because of switch congestion. Register DISRTUNA counts facility messages the system discards because the D-channel route is not available (not in service). Register REJCNGST counts facility reject messages that originate at the switch because of congestion.

Calculations used to evaluate network traffic on PRI D-channels

There are no calculations used to evaluate network traffic on PRI D-channels.

Data evaluation procedure

Use the following procedure to evaluate network traffic on PRI D-channels.

1. Check the increases of registers DISCNGST, DISRTUNA, and REJCNGST. If the counts are acceptable, go to step .
2. If there is a high peg count, especially for DISRTUNA, assess the distribution of D-channels across the trunks groups again. Registers DISCNGST and REJCNGST indicate network congestion or problems with internode traffic.
3. Notify the provisioning engineers of values that exceed the thresholds. When you notify the engineers of these values, the engineers can add more D-channels.
4. The procedure is complete.

PRI D-channel traffic

The PRI D-channels carry SAPI 0 call control messages through the DTCI to the ISP. The ISP provides the main interface for all PRI D-channels. From the ISP, the system routes the SAPI 0 frames to the MP for Q.931 processing.

Primary rate interface (PRI) performance factors (continued)

The registers in OM group PRADCHL2 track many parameters that associate with PRI D-channel traffic. Twelve registers count:

- frames with CRC errors
- SAPI 0 frames that the system transmits and receives
- links reset by an ISP and far end
- reject frames that an ISP and far end transmit and receive
- RNR frames that an ISP and far end transmit and receive
- PRI Q.931 messages that the PRI overload control system discards

The following table lists performance indicators for PRI D-channel traffic.

Performance indicators for PRI D-channel traffic

OM Group	Register	Log reports
PRADCHL2	PRDCRC	
	PRDDISCR	
	PRPDISCT	
	PRDSORX	
	PRDREJTX	
	PRDRNRRX	
	PRDRNRTX	
	PRDSOTX	
	PRDSBMRX	
	PRDSBMTX	
	PRFLSHED	

Evaluating PRI D-channel traffic

The following OM registers count the frames the system discards because of hardware problems or cyclic redundancy check (CRC) errors:

- PRDDISCR
- PRDDISCT
- PRDCRC

Primary rate interface (PRI) performance factors (continued)

An increase in register counts can indicate an overload condition.

Registers PRDRNRTX and PRDRNRRX track the number of RNR frames that the ISP and end device transmit. Transmission of an RNR frame indicates that the system is not able to accept additional incoming frames for a limited time. High register counts can indicate problems with the links or the ISP.

The registers that remain in PRADCHL2 monitor the traffic levels of D-channels.

Calculations used to evaluate PRI D-channel traffic

Use the following formula to determine the total number of frames the ISP discards.

```
PRDDISCR + PRDCRC + PRDDISCT =  total frames discarded
                                by the ISP
```

Use the following calculation to determine the number of requests for SAPI 0 service during the measurement period.

```
(PRDSOTX ·  100) + (PRDSORX ·  100) = total SAPI 0 frames
                                      transmitted and
                                      received by ISP
```

Data evaluation procedure

Use the following procedure to evaluate PRI D-channel traffic.

1. Calculate the total number of frames the ISP discards for the current study period.
2. If the number of discarded frames is less than the recommended threshold, go to step . In any other occurrence, go to step .

Primary rate interface (PRI) performance factors (continued)

3. If a large number of discarded frames are present, check OM register PRFLSHED. Forward this information to the correct provisioning group for additional evaluation.
4. The procedure is complete.

Trunk group performance

The following table lists performance indicators for individual trunk groups.

Performance indicators for individual trunk groups

OM group	Register	Log reports
TRK	INCATOT	
		TRK113, TRK116
	INFAI	TRK111, TRK114, TRK115, TRK116, TRK117, TRK138, TRK182, TRK183, TRK213
	NATTMPT	
	NOVFLATB	
	OUTFAIL	TRK113, TRK121, TRK162, TRK213
	TOTU	
	TRU	
	SBU	TRK106, TRK109

Evaluating trunk group performance

Registers INCATOT, PRERTAB, INFAIL, NATTMPT, NOVFLATB, and OUTFAIL measure trunk traffic, overflow, incoming, and outgoing failures. Registers TRU, SBU, and MBU measure traffic busy use, system busy use, and manual busy use in the order given.

Calculations used to evaluate trunk group performance

Use the following formula to determine the percentage of incoming attempts the system abandons.

Primary rate interface (PRI) performance factors (continued)

```
PRERTEAB
---------   ·  100  =   percentage of incoming attempts
INCATOT                 abandoned
```

Use the following calculation to determine the percentage of incoming attempts that failed.

```
 INFAIL
---------   ·  100  =   percentage of incoming attempts
 INCATOT                that failed
```

Use the following calculation to determine the percentage of outgoing attempts that failed.

```
OUTFAIL
--------   ·  100  =    percentage of outgoing attempts that
NATTMPT                 failed
```

Primary rate interface (PRI) performance factors (end)

Data evaluation procedure

Use the following procedure to evaluate trunk group performance.

1. Calculate the percentage of incoming attempts abandoned, incoming attempts that failed, and outgoing attempts that failed.
2. The recommended thresholds are:
   - less than 5% for incoming attempts abandoned
   - less than 1% for incoming attempts that failed
   - less than 0.1 % for outgoing attempts that failed
1. If the thresholds are acceptable, go to step . If thresholds are not acceptable, go to step .
2. Notify the provisioning engineers of any values that exceed the thresholds.
3. The procedure is complete.

Use the following procedure to evaluate trunk group availability.

1. Make sure that no maintenance problems are present on the trunk groups that you want to study (MBU reads zero). Collect busy-hour data.
2. Compare total usage measurements for the trunk group (TOTU) with the maximum use value used to engineer these facilities. If the values do not exceed the engineered values, discard the data. You can retain the data for the development of trunk group use trends. Go to step . If the values exceed the engineered values, go to step .
3. Notify the provisioning engineers of values that exceed the engineered maximum. This action allows the engineer to add trunk groups or other options to serve ISDN traffic.
4. Gather OM data from busy hour readings.
5. The procedure is complete.

Remote line concentrating module/outside plant module

Dial tone speed

Dial tone speed recording (DTSR) measures the ability of a switch to return dial tone in three seconds. The OM group SITE provides information about traffic-related counts and DTSR for remote sites.

Performance indicators for DTSR

OM group	Register	Log reports
SITE	LCMDP_T	
	LCMDP_T2	
	LCMDP_D	
	LCMDP_D2	
	LCMDT_T	
	LCMDT_T2	
	LCMDT_TD	
	LCMDT_D2	
	LCMKS_T	
	LCMKS_T2	
	LCMKS_D	
	LCMKS_D2	

Evaluating DTSR performance

The following three factors cause dial tone delay:

- time that call processing takes to recognize the origination
- time that the switch takes to allocate resources, like channel and tone receivers, for the call
- time that the switch takes to set up dial tone

These factors vary for each switch and depend on the following:

- the type of line from which the call originated
- the location of the associated line card
- the type of interface to the central control

Remote line concentrating module/outside plant module (continued)

Nortel recommends that dial tone delay of more than three seconds not exceed 1.5% overflow during the average busy season busy hour (ABSBH). Nortel recommends that this tone delay not exceed 20% overflow for the high day busy hour (HDBH).

Calculations used to evaluate DTSR performance

The DTSR counts are held in pairs. The first part of each pair is a count of all calls. The other part is a count of calls with a dial tone delay of more than 3 s.

Each site has three pairs. One pair is for dial pulse (DP) originated calls. One pair is for Digitone-originated calls. One pair is for keyset-originated calls. Calculations for each pair are in the following display:

```
LCMDP_D
--------   ·  100 =  percentage of delayed call (dial tone
LCMDP_T              exceeding 3-second criteria)

LCMDT_D
--------   ·  100 =  percentage of delayed calls
LCMDT_T              (dial tone exceeding 3-second criteria
                     for Digitone lines)

LCMKS_D
--------   ·  100 =  percentage of delayed calls (dial tone
LCMKS_T              exceeding 3-second criteria for keyset
                     lines)
```

Data evaluation procedure

Use the following procedure to evaluate DTSR.

1. Calculate the percentage of calls that receive dial tone delay of more than three seconds. Compare the percentage level to the established engineered standards. If the standards are not met, go to step .
2. Determine if maintenance problems caused the dial tone delay overflow. If software or hardware problems were not the cause, go to step . If software or hardware problems are the cause, wait for the results of the next study period. See if the engineered standards are met. If the standards are not met refer the problem to the provisioning engineer.
3. Determine if any one-time activities that are not normal caused the dial tone delay overflow. If conditions that are not normal are the cause, wait

Remote line concentrating module/outside plant module (continued)

for the next study period. See if the engineered standards are met. If the standards are not met refer the problem to the provisioning engineer.

4. The procedure is complete.

Call attempts

Traffic information for lines indicates call attempts and call attempt failures for line concentrating devices like the RLCM. The OM group LMD indicates call attempts and call attempt failures for each LCD. The OM group SITE contains registers that count incoming calls that the system routes to:

- a line at a remote site
- another line or trunk

The following table contains the performance indicators for monitoring call attempts.

Performance indicators for call attempts

OM group	Register	Log reports
LMD	NORIGATT	
	NTERMATT	
	ORIGBLK	NET130
	TERMBLK	NET130
SITE	INTRASIT	
	INTRASIT	
	RORIGOUT	
	INRTERM	

Evaluating call attempts performance

Traffic is the total load from all call attempts. The call attempt rate (call attempts per hour) and the use (measured in CCS) due to these attempts characterize the traffic. The CCS load is important. For a given number of channels; the risk of call blocking increases as the load increases.

The OM group SITE provides additional information on traffic analysis. Routing of calls originating from the RLCM is an example of additional information on traffic analysis.

Remote line concentrating module/outside plant module (continued)

Calculations used to evaluate call attempts performance

Call attempts can fail because there is no idle speech path between the originating line module to the network module. In this case the originating line module is the RLCM. Use the following formula to determine the percentage of call attempts that fail for this reason.

```
ORIGBLK
--------- · 100 = percentage of failed call attempts
NORIGATT
```

For the total number of attempts blocked, use the following formula.

```
ORIGBLK + TERMBLK = total attempts blocked
```

The following formula determines the total number of call attempts.

```
NORIGATT + NTERMATT = total call attempts
```

Data evaluation procedure

Monitor the call attempt rate to make sure the rate falls within engineered limits. If the call attempt rate exceeds engineered limits, problems may occur with subscriber lines or the peripheral module's capacity to direct traffic. A high call attempt rate can also indicate a need to provision more links or reduce the load.

Subscriber line usage

Subscriber line usage (SLU) is an option. The operating company can add SLU to a line or a group of lines through a service order. The corresponding OM groups record and manipulate the collected measurements. These

Remote line concentrating module/outside plant module (continued)

measurements include the number of originations, calls in progress, terminations, and termination attempts failed because of call processing busy.

The following table contains the performance indicators for monitoring subscriber line use.

Performance indicators for SLU

OM group	Register	Log reports
TRA125M1	TBU2 ORIG2 TERM2 BUSY2	
TRA125M2	TBU3 ORIG3 TERM3 BUSY3	
TRA250M1	TBU1 ORIG1 TERM1 BUSY1	
ENG640M1	TBU0 ORIG0 TERM0 BUSY0	

Evaluating subscriber line use performance

Use the registers in these OM groups to track subscriber line use over an extended period. Long-range studies show the total annual line demand for each customer-serving area. The information may indicate a need to provide additional lines or PMs to keep the RLCM within the engineered limits.

Calculations to evaluate subscriber line use performance

There are no calculations to evaluate subscriber line use performance.

Data evaluation procedure

There are no data evaluation procedures.

Intraswitched call traffic

The OM group RLCDIS provides information on traffic for intraswitched calls in an RLCM with feature package NTX156AA. The intraswitching feature allows the RLCM to switch calls internally for calling and called parties that the same RLCM services. If no idle intraswitching channels are available, the host controller (an XMS-based PM [XPM]) reports blocking to the CC. The call is then connected through a switch through the host office network. The following table lists performance indicators for intraswitched call traffic.

Performance indicators for intraswitched call traffic (Sheet 1 of 2)

OM group	Register	Log reports
	ISTOTATT	
	ISTOTBLK	

Remote line concentrating module/outside plant module (continued)

Performance indicators for intraswitched call traffic (Sheet 2 of 2)

OM group	Register	Log reports
	ISTOTTRU	
	ISUN0ATT	
	ISUN0BLK	
	ISUN0TRU	
	ISUN1ATT	
	ISUNABLK	
	ISUN01ATT	

Evaluating intraswitched call traffic performance

The RLCDIS registers measure intraswitching calls attempted, blocked, and in use. One RLCM unit may perform a takeover of the other unit. The RLCDIS then continues to associate intraswitched calls with the unit that supports the calling and called parties. The unit may be in or out of service. The data from RLCDIS show the intraswitched call traffic in an RLCM and make sure that the configuration meets traffic requirements.

Calculations used to evaluate intraswitched call traffic performance

Use the following formula to determine the percentage of intraswitching call attempts that fail because of an all intraswitching channels busy condition.

```
ISTOTBLK
-------- · 100 =    percentage of intraswitching call
ISTOTATT            attempts that fail
```

The RLCDIS OM group collects statistics for all calls that use intraswitching channels. Calls between unit 0 and unit 1 of the RLCM are interswitched calls. The system does not count these calls separately. To determine the count, take the total intraswitching call attempts for units 0 and 1. Subtract this number from the total of all intraswitching call attempts.

Remote line concentrating module/outside plant module (continued)

```
ISTOTATT – (ISUN0ATT + ISUN1ATT) =  number of
                                    interswitching calls
```

Data evaluation procedure

Review the total number of intraswitching call attempts to see if the value exceeds the engineered limit. A study should cover enough busy hours to give an accurate average view of the traffic load on intraswitching channels. The study period should be 5 to 10 days in length. Calculate the percentage of blocked calls for intraswitching and interswitching channels. Review the data with the provisioning engineer to determine if the current RLCM configuration is adequate.

ESA call processing capacity

When the RLCM is in emergency stand alone (ESA) mode, the RLCM cannot communicate with the host while it processes calls. The RLCM counts a limited number of call processing OMs while in ESA mode. A PM171 log report collects and stores these peg counts. When the RLCM exits ESA, this log goes to the CC.

Evaluating ESA call processing capacity performance

The PM171 log contains the counts for all calls attempted, blocked, and routed through ESA tables internal to the RLCM. If any of these fields reaches overflow, send the associated data to engineering for evaluation.

Remote line concentrating module/outside plant module (continued)

Data evaluation procedure

During ESA, the RLCM pegs the following call processing OMs:

- traffic peg counts
  - — total origination attempts
  - — total termination attempts
  - — total calls completed
  - — total originations blocked due to lack of resources
  - — total terminations blocked due to lack of resources
  - — total lines taken out of service because of too many errors
  - — use counts for up to 16 entries in the POTS prefix table
- error peg counts
  - — coin failures
  - — ringing failures
    - – pretrip
    - – ring block
    - – continuity
    - – test register
  - — translation errors

The system stores the OMs that the RLCM provides during ESA in the peripheral. The OMs go to the CC and print as a PM171 log after ESA exit. The registers track the types of calls processed during ESA.

Processor occupancy

The OM group PMSTAT provides real-time processor occupancy measurements for RLCMs with XLCM (NT6X51AB) equipment and software loads. The XLCM has a 256 kByte memory load. Processor occupancy refers to the percentage of time that the XLCM microprocessor is available. This OM group assists the office personnel to engineer the XLCM to correspond with the switching office traffic load. This OM group also makes sure correct

Remote line concentrating module/outside plant module (continued)

provisioning of the RLCM occurs. The following table lists performance indicators for processor occupancy.

Performance indicators for processor occupancy

OM group	Register	Log reports
PMSTAT	PMOVHEAD	
	PMAVOC	
	PMAVCP	
	PMPEAKOC	
	PMLOWOC	
	PMAVAIL	

Evaluating processor occupancy performance

The CC is responsible for the calculation of the percentages of processor use dedicated to overhead and call processing for each XLCM peripheral. The overhead value is a constant in the calculation of call processing processor use. The call processing value is lowest when available time is highest. Set call processing to zero to calculate the overhead constant.

The first available time value reported is part of the calculation of the overhead value for the initial period of operation. The highest time from each 15 min over a 24 h period gives the overhead constant for the next 24 h. The overhead constant comes from the PMOVHEAD register.

Calculations used to evaluate processor occupancy performance

The PMSTAT registers perform all the necessary calculations.

Data evaluation procedure

Use the registers in the OM group PMSTAT to assist with engineering the XLCM against the RLCM traffic load. An office with too much XLCM equipment results in idle facilities and costs that are not necessary. Not enough XLCM equipment results in telephone service overload and degradation.

Evaluate OM readings after you upgrade software, commission new XLCMs, or busy and return an XLCM to service. Evaluate the OM readings for several days to allow time for the overhead value to come to a steady state.

Remote line concentrating module/outside plant module (continued)

Link usage and blockage

Between two and six DS-1 links connect the RLCM to the host controller. The OM group XPMLNK gives statistics on link usage and blockage. This information shows the performance and availability of the DS-1 links. The data may also form part of reliability studies and in troubleshooting. The OM group does not include measurements of nailed-up connections or nonswitched special services.

The following table lists the registers used for calculating the link usage and blockage statistics.

Registers used for calculating link usage and blockage statistics

OM group	Register	Log reports	Other information
XPMLNK	PSLCBU	None	monitors usage levels
	PSLAA	None	counts blockages
	PSLBLK	None	monitors attempts to connect to a channel
	PSLMU	None	monitors busied-out channels for maintenance

Evaluating link usage and blockage performance

The XPMLNK registers provide peg and usage counts every 15 min. The XPM OM system transfers active-to-holding registers 1 min before the information goes to the CC. The usage measurements appear in CCS. Samples taken every 10 s maintains accuracy. Peg measurements are the number of allocation attempts or blocked allocation attempts.

All measurements are direct measurements when possible. The information is measured link by link. The registers represent a total of all links from the central office.

Calculations used to evaluate link usage and blockage performance

The following formula evaluates DS-1 channel availability.

$$\frac{PSLBLK}{PSLAA} \cdot 100 = \text{percentage of blockage}$$

Remote line concentrating module/outside plant module (end)

Data evaluation procedure

Determine the best link use for provisioning the RLCM with DS-1 links. Look for values that exceed the maximum engineered values for these facilities. Refer these values to the provisioning engineer to determine any need for more links or options to service the RLCM traffic.

Remote switching center

RSC accessability—line side

Delay and blockage measure access to the line side of a remote switching center (RSC). Dial tone delay (DTD) OM shows delay. Delay is the percentage of call attempts that do not receive dial tone in 3 s. Dial tone delay objectives are the base for engineering the number of line modules needed. Normally, engineering grade of service objectives do not exceed 1.5% delay (average busy season busy hour), eight% (ten high days), and 20% (high day). Blockage is the inability of a call to connect to its intended destination because a required resource is not available.

The following table lists performance indicators for RSC accessibility.

Performance indicators for RSC accessibility

OM group	Register	Log reports
SITE	DLMKS_D	
	DPDELAY	
	DTDELAY	
LMD	NTERMATT	
	MADNATT	
	NORIGATT LMTRU	
	ORIGBLK TERMBLK	
	ORIGABN	NET130
	REVERT	NET130

Evaluating RSC accessibility performance

The following conditions affect RSC accessibility:

- number of call attempts (NORIGATT) compared to the engineering forecast
- line module use (LMTRU) compared to the engineered limit
- dial tone delay
- blockage rate (ORIGBLK)
- line module load balance

Calculations used to evaluate RSC accessibility performance

The following calculations evaluate RSC accessibility.

```
Sum of SITE_DLMKS_D + SITE_DPDELAY + DTDELAY
--------------------------------------------- · 100 = Percentage of DTD
             Total LMD_NORIGATT

ORIGBLK | NORIGATT · 100  =  percentage of call attempts that fail
```

Data evaluation procedure

Use the following procedure to analyze RSC accessibility. This procedure assumes correct maintenance in the line modules and associated links.

1. Review the dial tone delay to determine if it exceeds the objective percentage of DTD. If it does, proceed to step 2. If it does not, discard the data or save it to determine if a trend develops.
2. Review the number of call attempts and line module use values during the period of the DTD. This review allows you to see if the call attempts and use values exceed the forecast for this time period. If both are within engineered limits, go to step 3.
3. Review the blockage rate from OM ORIGBLK to determine if blockage in some line modules causes the delay. Compare the blockage with the amount of use in each line module. See if the blockage and dial tone delay relate to each other. If blockage is confined to some line modules, reduce use in the affected modules. Use line transfers or restrict assignments to those modules until the blockage disappears. Otherwise, refer the problem to the provisioning engineer and maintenance.
4. The procedure is complete.

DS-1 channel availability

The connecting path between a host office and an RSC contains three to 16 DS-1 links to each RCC. There are 24 channels for each DS-1 link. These links serve both incoming and outgoing traffic. The number of DS-1 links depends on the expected high day load, expressed in ccs. The following table lists performance indicators for DS-1 links.

Performance indicators for DS-1 links (Sheet 1 of 2)

OM group	Register	Log reports
XPMLNK	PSLCBU	
	PSLAA	

Remote switching center (continued)

Performance indicators for DS-1 links (Sheet 2 of 2)

OM group	Register	Log reports
	PSLBLK	
	PSLMU	

Evaluating DS-1 channel availability performance

The XPMLNK OM group registers measure the availability of DS-1 channels. These registers monitor:

- attempts to connect to a channel (PSLAA)
- blockage encountered (PSLBLK)
- usage measurements for traffic (PSLBU)
- busied-out channels for maintenance reasons (PSLMU)

In an analysis of DS-1 channel availability, look for values that exceed the maximum engineered capacities of these facilities.

Calculations used to evaluate DS-1 channel availability performance

Use the following formula to determine the procedure to use to evaluate DS-1 channel availability.

```
PSLBLK
------- · 100 = percentage of blockage
PSLAA
```

Data evaluation procedure

Use the following procedure to evaluate DS-1 channel availability.

1. Make sure there are no maintenance problems on the RSC DS-1 links for study (PSLMU reads zero). Collect busy hour data.
2. Compare total use measurements for the DS-1 channels with the maximum use value used to engineer these facilities. If the values do not exceed the engineered values, discard the data or retain it to develop DS-1 use trends. If the values exceed the engineered values, go to step .

Remote switching center (end)

3. Refer values that exceed the engineered maximum to the provisioning engineer. The system may need more links or other options for serving the RSC traffic.
4. The procedure is complete.

Remote switching center—SONET (RSC-S)

Call attempts

Use traffic information for lines to assess call attempts and call attempt failures for line concentrating devices (LCD). The line concentrating module (LCM) is an example of an LCD.

Traffic information for lines shows call attempts and call attempt failures for LCDs like the LCM.

The difference between the performance indicators for the RSC-S and the RSC-S with ISDN is how the system processes packet data. With ISDN terminals, voice traffic transmits over a B-channel. The ISDN traffic and the B-channel circuit-switched voice traffic use the same indicator. The following table contains the OM performance indicators to monitor call attempts.

Performance indicators for call attempts

OM group	Register	Log reports
LMD	NTERMATT	
	MADNATT	
	ORIGATT	
	LMTRU	
	ORIGBLK	NET130
	TERMBLK	NET130
	ORIGABN	LINE106, LINE108
	REVERT	LINE138

Evaluating call attempts performance

Traffic is the total load that results from all call attempts. The system measures the call attempts per hour. This number is important because call blocking increases as the load increases.

The OMs that monitor circuit-switched voice call attempts are the same for ISDN and non-ISDN terminals. The procedure to monitor call attempts for the RSC-S with and without ISDN is also the same. With the RSC-S with ISDN, the registers of OM group LMD include circuit-switched calls from ISDN terminals.

Remote switching center—SONET (RSC-S) (continued)

Calculations used to evaluate call attempts performance

Some call attempts fail because there is no idle speech path from the originating line module (LCM/LCME) to the network module. Use the following formula to determine the percentage of these call attempts that fail.

```
ORIGBLK
--------  ·  100  = percentage of call attempts
NORIGATT              that fail
```

Data evaluation procedure

Monitor the call attempt rate to make sure the rate falls within engineered limits. A rate beyond limits may indicate problems with the subscriber lines or the capacity of the peripheral module (PM) to handle traffic. The rate may also indicate a need to provision more links or reduce the load.

Call originations

Registers in the SITE OM group provide information about traffic-related counts for remote sites.

With ISDN terminals, voice traffic transmits over a B-channel. The ISDN traffic and B-channel circuit-switched voice traffic use the same indicators. The following table contains the performance factors to monitor call originations.

Performance indicators for call originations (Sheet 1 of 2)

OM group	Register	Log reports
SITE	INTERSIT	
	INTRASIT	
	RORIGOUT	
	NRTERMI	
	DLMKS_D	
	DLMKS_T	
	DPDELAY	
	DPTESTC	

Remote switching center—SONET (RSC-S) (continued)

Performance indicators for call originations (Sheet 2 of 2)

OM group	Register	Log reports
	DTDELAY	
	DTTESTC	
	LCMDP_D	
	LCMDP_T	
	LCMDT_D	
	LCMDT_T	
	LCMKS_D	
	LCMKS_T	
	LMDP_D	
	LMDP_T	
	LMDT_D	
	LMDT_T	

Evaluating call originations performance

Registers INTERSIT, INTRASIT, and RORIGOUT determine the percentage of originating traffic at the intraswitched remote site. Registers INTERSIT and INTRASIT increase before an attempt is made to set up network connections between two lines. Before INTERSIT and INTRASIT increase, the originating office determines if the called line is busy or not available.

The OMs that monitor circuit-switched voice call attempts are the same for ISDN and non-ISDN terminals. This allows the procedure to monitor these call originations for the RSC-S with ISDN to remain constant.

Calculations used to evaluate call originations performance

Use OMs from OM group SITE in this formula to calculate the percentage of intraswitched traffic.

Remote switching center—SONET (RSC-S) (continued)

```
             SITE INTRASIT
------------------------------------------------- · 100 =   percentage of
(SITE_INTRASIT + SITE_INTERSIT + SITE_RORIGOUT)              intraswitched
                                                             traffic
```

Data evaluation procedure

The OM registers use peg counts to monitor traffic at remote sites. Register INTERSIT counts calls that originate at an RSC and go to a line at another site. Register INTRASIT counts calls that originate at RSC remote and go to another line at the same remote site. Register RORIGOUT counts calls that originate at RSC and go to a trunk.

Dial tone speed recording on PMs

Dial tone speed recording (DTSR) provides information for each PM on the ability of the switch to return a dial tone in three seconds. The following table contains performance indicators for DTSR.

Performance indicators for DTSR

OM group	Register	Log reports
DTSRPM	DGTDLY	
	DGTTOT	
	DPLDLY	
	DPLTOT	
	KSDLY	
	KSTOT	

Evaluating DTSR performance

The DTSR on new peripherals measures the length of calls. The system times all originations from when the origination appears in the line module to when a dial tone appears.

Calculations used to evaluate DTSR performance

There are no calculations.

Remote switching center—SONET (RSC-S) (continued)

Data evaluation procedure

The extended peripheral modules collect DTSR statistics for each LCD packaged separately in a message and sent to the central control.

Emergency standalone

When the RSC-S enters emergency standalone (ESA), the RSC-S cannot communicate with the host while it processes calls. When the RCC2 exits ESA, the RCC2 sends the central control statistics about calls processed during ESA. The central control statistics are OM-type data output. The central control statistics appear as a PM171 log.

When the RSC-S with ISDN enters ESA, the ability to process B-channel voice calls from ISDN and non-ISDN terminals are equal. When the RSC-S with ISDN exits ESA, the system produces a PM171 log. The log contains traffic measurements for the period when the RSC-S with ISDN is in ESA.

Evaluating emergency stand-alone performance

The fields of log PM171 show:

- the number of different types of call attempts
- the number of different types of calls that go to types of ESA tables internal to the RCC2
- the number of different types of blocked calls

If any of these fields reach the overflow state, forward the logs to planning engineers.

Calculations used to evaluate emergency stand-alone performance

There are no calculations.

Data evaluation procedure

The above registers use peg counts to monitor traffic at remote sites. Register INTERSIT counts calls that originate at a remote switching center and go to a line at another site. Register INTRASIT counts calls that originate at a remote switching center and go to another line at the same remote site. Register RORIGOUT counts calls that originate at a remote switching center and go to a trunk.

Essential service protection

Essential service protection (ESP) guarantees that originations from lines with essential line (ELN) service receive preferential treatment. The ELN receives preferential treatment over non-ELN call originations. The following table lists performance indicators to monitor ESP.

Performance indicators for ESP

OM group	Register	Log reports
ESP	ESPDELAY	
	ESORIG	
	ESPOVRD	
	ESPPMBLK	
	ESPPMCCO	
	ESPPMORG	
	ESPPMSTL	

Evaluating essential service protection performance

Under ESP, both the RCC2 and CC give ELN lines preferential treatment. Under normal traffic load, subscribers with ELN or non-ELN lines do not notice a difference in the grade of service. As call processing increases to the point of overload, ELN lines experience a shorter dial tone delay than non-ELN lines. Nortel recommends No more than 10% of all lines have the ELN option. This 10% rule applies to both the number of lines for the RCC2 and number of lines in the office. Since delay in dial tone indicates that overload can occur, dial tone delay is important to monitor.

Calculations used to evaluate essential service protection performance

There are no calculations.

Data evaluation procedure

With ESP, the RCC2 and CC process calls in a queue. These priorities become especially important during an overload of the CC or RCC2. During an overload, the CC and RCC2 work together. When the RCC2 becomes overloaded, the RCC2 reduces new work. When the CC becomes overloaded, the RCC2 reduces work for the CC.

Interswitching resource

The OM group RSCIR is part of the OM reporting system. This OM group helps to determine the number of interlinks. The group compares the number of attempted interswitched calls with the number of blocked interswitched calls.

Remote switching center—SONET (RSC-S) (continued)

The fields of this group measure the following:

- interswitched call attempts
- calls blocked if interswitching channels are not available
- the number of interswitching channels in use

Interlinks connect two RCC2s. The procedure is the same as intraswitching. If a call originates from one RCC2 and terminates to the other RCC2, the call, when established, goes over the interlinks. There are four types of interswitched calls in the dual RCC2. These interswitched calls are line-to-line, line-to-trunk, trunk-to-line, and trunk-to-trunk.

For the RSC-S with ISDN, the system interswitches circuit-switched voice calls that involve terminals off interconnected RCC2s. The system interswitches these calls in the same way as for non-ISDN terminals. With the RSC-S with ISDN configuration, the registers of OM group RSCIR include circuit-switched calls from ISDN terminals.

The following table contains the performance indicators for interswitched calls.

Performance indicators for interswitched calls

OM group	Register	Log reports
RSCIR	RSCIRALL	
	RSCIRALT	
	RSCIRATL	
	RSCIRATT	
	RSCIRCBU	

Evaluating interswitched calls performance

Interswitching channels handle all four types of interswitched calls (line-to-line, line-to-trunk, trunk-to-line, and trunk-to-trunk). The system records the number of interswitched call of each type and the total number of interswitching channels available. These numbers tell the operating company how the interswitching channels handle normal operation. The system also records the numbers of blocked interswitched calls of each type and the total number of interswitching channels available. These numbers tell the operating company the types of calls denied interswitching channels.

The OM RSCIR, which evaluates interswitching resources, does not change. The procedure for evaluating interswitching traffic also does not change.

Calculations used to evaluate interswitched calls performance

Use the following formulas to determine the percentage of the types of calls that use interswitching channels. The formulas also determine the percentages of each type of call that are the system blocks and routes through the network.

Remote switching center—SONET (RSC-S) (continued)

```
RSCIR_RSCIRALL
--------------- · 100 = percentage of interswitching
RSCIR_RSCIRCBU          channels that are being used
                        for line-to-line calls

RSCIR_RSCIRBLL
--------------- · 100 = percentage of line-to-line calls
RSCIR_RSCIRCBU          that are being blocked and
                        routed through the network

RSCIR_RSCIRALT
--------------- · 100 = percentage of interswitching
RSCIR_RSCIRCBU          channels that are being used for
                        line-to-trunk calls

RSCIR_RSCIRBLT
--------------- · 100 = percentage of line-to-trunk calls
RSCIR_RSCIRCBU          that are being blocked and
                        routed through the network

RSCIR_RSCIRATL
--------------- · 100 = percentage of interswitching
RSCIR_RSCIRCBU          channels that are being used for
                        trunk-to-line calls

RSCIR_RSCIRBTL
--------------- · 100 = percentage of trunk-to-line calls
RSCIR_RSCIRCBU          that are being blocked and
                        routed through the network

RSCIR_RSCIRATT
--------------- · 100 = percentage of interswitching
RSCIR_RSCIRCBU          channels that are being used
                        for trunk-to-trunk calls

RSCIR_RSCIRBTT
--------------- · 100 = percentage of trunk-to-trunk
RSCIR_RSCIRCBU          calls that are being blocked and
                        routed through the network
```

Data evaluation procedure

Monitor the percentages of calls interswitched and blocked. If the number of calls blocked exceeds the engineered level, forward the registers to the provisioning engineer.

Intraswitching resource

Intraswitching allows calls that originate and terminate in a remote to switch internally to that remote by intraswitching channels. The origination uses the DS-1 channel to the host office. On establishment of the connection, the DS-1 channel becomes available for other uses. If an idle intraswitching channel is not available, the host office switches the call.

The system takes measurements of the following intraswitched calls:

- line-to-line
- line-to-trunk
- trunk-to-line
- trunk-to-trunk

Intraswitching channels are in use if the call meets the following conditions:

- originated at a given large remote
- passed dialing failures
- passed destination busy check
- obtained channel for terminator
- terminated at the same large remote

There are several types of intraswitched calls possible in the RSC-S:

- A line-to-line call originates and terminates at a line
  - — calls that originate and terminate on the same LCM
  - — calls that originate and terminate on different LCMs
- Line-to-trunk calls originate at a line on the RSC-S and terminate at a trunk on the same RSC-S
- Trunk-to-line calls originate at a trunk on the RSC-S and terminate at a line on the same RSC-S
- Trunk-to-trunk calls originate and terminate at different trunks on the same RSC-S

The following types of calls do not have interswitching:

- service analysis calls
- three-way in effect calls
- custom calls
- feature in effect calls

Remote switching center—SONET (RSC-S) (continued)

- calls that contain an echo suppressor
- calls that contain a sender
- calls that have attenuation padding that exceeds the maximum value allowed for the remote

For the RSC-S with ISDN, circuit-switched voice calls that involve terminals from the same RCC2 intraswitch the same way as non-ISDN calls. With the RSC-S with ISDN configuration, circuit-switched calls from ISDN terminals appear in the registers of OM group RSCIS.

The following table contains the performance factors for intraswitching resources.

Performance indicators for intraswitching resources

OM group	Register	Log reports
RSCIS	RSCISALL	
	RSCISALT	
	RSCISATL	
	RSCISATT	
	RSCISCBU	

Evaluating intraswitched calls performance

Intraswitching channels handle all four types of intraswitched calls (line-to-line, line-to-trunk, trunk-to-line, and trunk-to-trunk). Keep track of the number of intraswitched calls of each type and the number of intraswitching channels available. These numbers show how the intraswitching channels handle normal operation. Keep track of the numbers of blocked intraswitched calls of each type. These numbers show the types of calls denied intraswitching channels.

The OM group that evaluates intraswitching resources (RSCIS) does not change. The procedure for evaluating intraswitching traffic also does not change.

Calculations used to evaluate intraswitched calls performance

Use the following formulas to determine the percentage of each type of call that uses intraswitching channels. The formulas also determine the percentage of each type of call that the system blocks and routes through the network.

Remote switching center—SONET (RSC-S) (continued)

```
RSCIS_RSCISALL
--------------- · 100 = percentage of intraswitching
RSCIS_RSCISCBU          channels that are being used
                        for line-to-line calls

RSCIS_RSCISBLL
--------------- · 100 = percentage of line-to-line calls
RSCIS_RSCISCBU          that are being blocked and
                        routed through the network

RSCIS_RSCISALT
--------------- · 100 = percentage of intraswitching
RSCIS_RSCISCBU          channels that are being used for
                        line-to-trunk calls

RSCIS_RSCISBLT
--------------- · 100 = percentage of line-to-trunk calls
RSCIS_RSCISCBU          that are being blocked and
                        routed through the network

RSCIS_RSCISATL
--------------- · 100 = percentage of intraswitching
RSCIS_RSCISCBU          channels that are being used for
                        trunk-to-line calls

RSCIS_RSCISBTL
--------------- · 100 = percentage of trunk-to-line calls
RSCIS_RSCISCBU          that are being blocked and
                        routed through the network

RSCIS_RSCISATT
--------------- · 100 = percentage of intraswitching
RSCIS_RSCISCBU          channels that are being used
                        for trunk-to-trunk calls

RSCIS_RSCISBTT
--------------- · 100 = percentage of trunk-to-trunk
RSCIS_RSCISCBU          calls that are being blocked and
                        routed through the network
```

Data evaluation procedure

There are no data evaluation procedures.

Remote switching center—SONET (RSC-S) (continued)

PM real-time performance

When demand exceeds the call-processing capacity of the RCC2, real-time overload conditions may occur.

For RSC-S with ISDN, the result of call traffic on real-time performance depends on:

- the amount of traffic
- the types of calls

The RSC-S with ISDN can handle the following types of calls (in addition to non-ISDN call types):

- B-channel circuit-switched voice and data
- B-channel dedicated high-speed packet data (Bb)
- D-channel call control signaling
- D-channel low-speed packet data (Bd)

The following table contains the performance indicators for overload conditions.

Performance indicators for overload conditions

OM group	Register	Log reports
PMOVLD	PORGDENY	PM106, PM128
	PTRMDENY	PM106, PM128

Evaluating PM real-time performance

The processing time available in each RCC2 processor limits the RCC2 call-processing capacity. The unified processor (UP) card replaces the master processor (MP) and signal processor (SP) cards. The UP card also holds the memory cards associated with the MP and SP.

Note how the following types of calls affect real-time processing:

- Neither Bb nor Bd calls affect real-time processing.
- D-channel call control signaling is part of the normal real-time performance that is sent setting up a voice circuit-switched call.

OMs that evaluate real-time (PMOVLD) operate in the same way for the RSC-S with ISDN and for the RSC-S.

Remote switching center—SONET (RSC-S) (continued)

Calculations used to evaluate PM real-time performance

There are no calculations.

Data evaluation procedure

An overload condition occurs when a PM resource needed for processing is exhausted. The causes of PM overload include:

- a hardware failure on the peripheral side (P-side) of the PM
- a network hardware fault
- datafill changes that result in extensive messaging to the PM
- a PM that is overconfigured

The information from PMOVLD shows RCC2 performance and overconfigurations.

The registers in OM group PMOVLD associate with PM106 and PM128 logs. If these logs appear, record the following information to determine the cause of the overload condition:

- hardware failures on the host switch
- manual action performed on the overloaded PM
- OMs that groups PMOVLD and CP generate during the overload period
- any data that relate to the overloaded PM and its P-side nodes

Bd channels

With ISDN terminals, Bd channels carry low-speed data traffic. When the system datafills an ISDN terminal, groups of D-channels form on an ISDN service group (ISG) basis. The following information contains the performance indicators for Bd channels for each ISG (up to 255). Registers in this group monitor the traffic on Bd-type D-channels. The D-channel handler (DCH) increases the five registers in ISGBD and forwards the counts to the CC. The following table lists performance indicators for Bd-channels.

Performance indicators for Bd-channels (Sheet 1 of 2)

OM group	Register	Log reports
ISGBD	DBDTXDSC	
	DBDRXPH	
	DBDDRXDSC	

Remote switching center—SONET (RSC-S) (continued)

Performance indicators for Bd-channels (Sheet 2 of 2)

OM group	Register	Log reports
	DBDCRC	
	DBDTXPH	

Evaluating Bd-channel performance

These registers show protocol errors in the PH. Forward all reports to the correct personnel.

The registers count:

- frames received and transmitted to and from the packet handler (PH)
- frames for the PH but discarded due to hardware problems
- frames received from the PH with cyclic redundancy check (CRC) errors
- frames received from the PH but discarded due to various problems

Calculations used to evaluate Bd-channel performance

There are no calculations.

Data evaluation procedure

There are no data evaluation procedures.

D-channels

Each ISDN line communicates with the RCC2 over 16 kbp/s D-channels. The enhanced line concentrating module (LCME) time division multiplexes (TDM) these D-channels. The LCME presents these D-channels to the RCC2 as a single 64 kbp/s channel.

At the DCH, D-channel messages with a service access point identifier (SAPI) indicate packet data. The system multiplexes according to statistics and routes these messages on DS-1 links to the PH. (Messages with SAPI 0 frames go to the ISDN SP.) The following information contains the performance indicators for the DCH, according to ISG. The following table lists performance indicators for D-channels.

Performance indicators for D-channels

OM group	Register	Log reports
ISGBRA	DBRCRC	
	DBRLKRED	PM190, PM194, PM198, PM270
	DBRLKREP	PM270

Evaluating D-channel performance

Registers in this group monitor traffic on the basic rate interface (BRI) D-channels. The DCH increases the registers and transmits the counts to the CC. Events counted include:

- frames with CRC errors
- SAPI frames transmitted and received
- line resets by the DCH or far-end, reject frames
- receiver-not-ready (RNR) frames

Counts occur on a DCH basis. Forward these registers to personnel at the PH. If the registers measure a large number of errors, the DCH may be at fault. Monitor PM270 logs. If the DCH card has faults, the system produces PM190, PM194 or PM198.

Calculations used to evaluate D-channel performance

There are no calculations.

Data evaluation procedure

There are no data evaluation procedures.

Small remote unit (SRU)

Subscriber line usage

Subscriber line usage (SLU) is an option the user can add to a line or a group of lines through the service orders utility. The operational measurement (OM) groups record and manipulate the collected measurements. These measurements include the number of originations, calls in progress, terminations, and termination attempts failed because of call processing busy.

The following table contains the performance indicators that monitor subscriber line usage.

Performance indicators for subscriber line usage

OM group	Register	Log reports
TRA125M1	TBU2 ORIG2 TERM2 BUSY2	
TRA125M2	TBU3 ORIG3 TERM3 BUSY3	
TRA250M1	TBU1 ORIG1 TERM1 BUSY1	
ENG640M1	TBU0 ORIG0 TERM0 BUSY0	

Evaluating subscriber line usage

Use the registers in the OM groups mentioned above to track subscriber line usage over an extended period of time. The information derived from these long-range studies assist the planning engineer to determine the total line demand. The engineer calculates line demand for each customer serving area on an annual basis.

Calculations used to evaluate subscriber line usage

Calculation is not required.

Data evaluation for subscriber line usage

The information can show a need to add additional lines or small remote units to keep the system within engineered limits.

Line traffic

The system can use traffic information for lines to assess the call attempts and call attempt failures for the SRU. The following table contains performance indicators to monitor line traffic.

Performance indicators for line traffic

OM group	Register	Log reports
LMD	LMTRU	
	MADNATT	
	NORIGATT	
	NTERMATT	
	ORIGABN	LINE106, LINE108
	ORIGBLK	NET130
	ORIGFAIL	AMAB151, LINE104, LINE105, LINE106, LINE108, LINE109, LINE120, LINE138
	PERCLFL	LINE107, LINE110, LINE113
	REVERT	LINE138
	STKCOINS	LINE112
	TERMBLK	NET130

Evaluating line traffic

Traffic is the total load that is a result of all call attempts. Traffic comprises the call attempt rate (call attempts per hour). Traffic also comprises the use of the network (measured in hundred call seconds or ccs) because of these attempts. The ccs load is important as the chance of call blocking increases as the load increases.

Calculations used to evaluate line traffic

Use the following formula to determine the percentage of call attempts that fail. Failure occurs because there is not an idle speech path from the originating SRU to the network module.

Small remote unit (SRU) (continued)

```
ORIGBLK
---------  ·  100 = percentage of call attempt failures
NORIGATT
```

Data evaluation for line traffic

Monitor the call attempt rate to make sure the rate is in engineered limits. If the engineered limits are exceeded, there can be problems with subscriber lines or SRU capacity to handle traffic. It can also indicate a need to add more links or reduce the load.

Peripheral real-time occupancy

When the system exceeds RCC call processing capacity, real-time overload conditions occur. The following table lists performance indicators that monitor real-time overload conditions.

Performance indicators for real-time overload conditions

OM group	Register	Log reports
PMOVLD	ORGDENY	PM106, PM128
	PTRMDENY	PM106, PM128
PMSTAT	PMAVAIL	
	PMAVOC	
	PMAVCP	
	PMLOWOC	
	PMOVHEAD	
	PMPEAKOC	
SITE	INRTERM	
	INTERSIT	
	INTRASIT	
	RORIGOUT	

Each RCC has a master processor (MP) and a signaling processor (SP). Both processors provide some call processing time, but the signaling processor is normally the limiting component.

Evaluating peripheral module real-time occupancy

To evaluate peripheral real-time occupancy, first correct any maintenance problems in the component or connecting links. The user must analyze the types of traffic to determine if the call mix corresponds to the engineering model for RCCs.

An overload condition occurs when the system exhausts a PM processing resource. Causes of PM overload include the following:

- hardware failure on the P-side of the overloaded PM
- network hardware fault
- datafill changes resulting in large messaging to the PM
- PM that is over-configured

OM group PMOVLD monitors RCC performance to determine if the RCC is overloaded. OM group PMOVLD associates with the PM106 and PM128 logs. If the system generates these logs, the following conditions could cause overload:

- hardware failures on the host switch
- manual action performed on the overloaded PM
- OMs generated during overload by groups PMOVLD and CP
- any data relating to the overloaded PM and its P-side nodes

Data evaluation procedure

Use the following procedure to evaluate peripheral real-time occupancy when an overload occurs.

1. Check the PM to see if it has maintenance problems. If it does, correct the problems. If it does not, go to step two.
2. Review the processor occupancy reading for each LCM unit for load arrangement in the line subgroups (LSGs). A reading of 65% in the PMAVOC register indicates that a particular LCM unit has reached its maximum engineered capacity. As a result, load balance is required.
3. Review the total number of call attempts. If the value exceeds engineered limits, determine if a one time event causes the number of calls. If the event exceeds engineered limits, file the data for future reference. If it does not exceed engineered limits, go to step four.

Small remote unit (SRU) (continued)

4. Review site data and compare the recorded values for in site, between sites, originating out, and incoming terminating calls. Review site data to determine if the traffic mix changes from the mix used to set traffic limits for the peripheral. Go to step five.
5. Review the number of lines with high call processing time requirements (like MADN, CLASS features, and display phones). Determine if the number of lines with these services follows engineering guidelines and the office load plan. Go to step six.
6. Review the items from step two and step three that exceed engineered limits. Refer this information to the provisioning engineer, to develop a plan to distribute the load to other peripherals.

Intraswitching resource availability

Intraswitching channels lets the system internally switch the calls that originate and terminate in an RSC. When the system makes a connection, the DS-1 channel (to the host office) the system used for call origination releases. The DS-1 channel is now available for other use. If no idle intraswitching channel is available, the host office switches the call.

The following are RSC intraswitched call types:

- line-to-line: originate and terminate on the same LCM or different LCMs
- line-to-trunk: originate at a line on an RSC and terminate at a trunk on the same RSC
- trunk-to-line: originate at a trunk on an RSC and terminate at a line on the same RSC
- trunk-to-trunk: originate and terminate at different trunks on the same RSC

The host office automatically directs the RSC to intraswitch calls. The possibility of intraswitching channel overflow does not make a difference. If overflow occurs, the remote reports blocking and the host office switches the calls again through the host network.

The following call types are not switched between sites:

- service analysis calls
- three-way in effect calls
- custom calls
- feature in effect calls
- calls with an echo suppressor

- calls with a sender
- calls with attenuation padding that exceeds the maximum value allowed for the remote

The following table lists performance indicators that monitor intraswitched calls.

Performance indicators for intraswitched calls

OM group	Register	Log reports
RSCIS	RSCISALL	
	RSCISALT	
	RSCISATT	
	RSCISCBU	
	RSCISBLL	

Evaluating intraswitching resource availability

To determine how intraswitching channels behave during normal operation, monitor the number of intraswitched calls and the number of available intraswitching channels.

To determine the call types denied intraswitching channels (and being routed through the network), monitor the number of blocked intraswitched calls. Also, you should monitor the number of available intraswitching channels.

Interswitching resource availability

OM group RSCIR measures the following and determines the number of interlinks:

- interswitched call attempts
- calls blocked if interswitched channels are not available
- interswitched channels in use

Feature package NTX380 contains two RCCs connected by interlinks. Interswitching is like intraswitching (explained earlier in this chapter). If a call originates from one RCC and terminates at other RCC, the call is routed over interlinks. The call is routed when the system establishes the call.

Small remote unit (SRU) (continued)

Types of interswitched calls in the RSC are:

- line-to-line: originate and terminate on the same LCM on an interconnected RSC
- line-to-trunk: originate at a line on an RSC and terminate at a trunk on the interconnected (mate) RSC
- trunk-to-line: originate at a trunk on an RSC and terminate at a line on the interconnected (mate) RSC
- trunk-to-trunk: originate and terminate at different trunks on both RSCs

The following table lists performance indicators for monitoring interswitched calls.

Performance indicators for interswitched calls

OM group	Register	Log reports
RSCIR	RSCIRALL	
	RSCIRALT	
	RSCIRATL	
	RSCIRATT	
	RSCIRCBU	

Evaluating interswitching resource availability

To determine how interswitching channels are used in normal operation, monitor the number of interswitched calls. Also, you must monitor the number of available interswitching channels.

To determine call types denied interswitching channels (and being routed through the network), monitor the number of blocked interswitched calls. You also must monitor the number of available interswitching channels.

Calculations used to evaluate performance

Use the following formulas to determine the percentage of call types that use interswitching channels.

```
RSCIS_RSCIRALL
-----------------  · 100 =   percentage of interswitching channels
RSCIS_RSCIRCBU               used for line-to-line calls

RSCIS_RSCIRBLL
-----------------  · 100 =   percentage of blocked line-to-line calls
RSCIS_RSCIRCBU               routed through the network

RSCIS_RSCIRALT
-----------------  · 100 =   percentage of interswitching channels
RSCIS_RSCIRCBU               used for line-to-trunk calls

RSCIS_RSCIRATL
-----------------  · 100 =   percentage of interswitching channels
RSCIS_RSCIRCBU               used for trunk-to-line calls

RSCIS_RSCIRBTL
-----------------  · 100 =   percentage of blocked trunk-to-line calls
RSCIS_RSCIRCBU               routed through the network

RSCIS_RSCIRATT
-----------------  · 100 =   percentage of interswitching channels
RSCIS_RSCIRCBU               used for trunk-to-trunk calls

RSCIS_RSCIRBTT
-----------------  · 100 =   percentage of blocked trunk-to-trunk calls
RSCIS_RSCIRCBU               routed through the network

RSCIS_RSCIRBLT
-----------------  · 100 =   percentage of blocked line-to-trunk calls
RSCIS_RSCIRCBU               routed through the network
```

Data evaluation procedure

You must monitor the percentage of interswitched calls and the percentage of blocked calls should during specified time periods. If the number of blocked calls exceeds the engineered level, forward the registers to the provisioning engineer.

Use the following procedure to evaluate intraswitching resource availability.

1. Intraswitch channels must not have maintenance problems before starting the RSCIS OM group study. The study must cover enough busy hours to

Small remote unit (SRU) (continued)

give an accurate average model of the traffic load on intraswitch channels (five to ten days).

2. Review the total number of call attempts. If the value exceeds the engineered limit, determine if the number of calls was caused by a one time event. If the calls were a result of a one time event, stop here and file the data for future reference. If the calls were not, got to step three.
3. Review RCIS data and compare the recorded values for intrasite total call attempts with the engineered limit. Also, review the number of blocked calls for each type of intraswitched call. If this number exceeds the engineered limit, go to step five. If the number does not exceed the engineered limit, stop here and notify the supply engineer. Notify the engineer of the number of attempts and the potential for blockage problems, and forward the data to the engineer.
4. Calculate the percentage of blocked calls for each call category and forward to the supply engineer.
5. Review the items from steps two and three that exceed engineered limits. Discuss these items with the supply engineer and develop a plan to distribute the load to other peripherals.

ESA call processing capacity

When an RSC enters ESA, the RSC cannot communicate with the host while the RSC processes calls. When an RCC exits ESA, the RCC sends statistics about the calls processed during ESA to the central controller (CC). Although the statistics are OMs, the statistics are recorded in a PM171 log.

Evaluating ESA call processing capacity

A PM171 log contains the number of different types of call attempts. These call types can be routed through specified of ESA tables internal to the RCC. A PM171 log also contains the number of different call types the system blocked. If any of these fields reach overflow, forward this data to engineering for evaluation.

Data evaluation procedure

When an RSC enters ESA and cannot communicate with the host, the RSC cannot perform billing. During ESA, the RCC increases the registers and places the registers in a PM171 log. When an RCC exits ESA, the system sends this log to the host. There are no specified procedures for evaluating this log. You can use registers for tracking call types processed during ESA.

Essential service protection

Essential service protection (ESP) guarantees that originations from lines with the essential line service (ELN) option receive primary treatment over

Small remote unit (SRU) (end)

non-ELN call originations. The following table lists performance indicators for monitoring essential service protection.

Performance indicators for essential service protection

OM group	Register	Log reports
ESP	ESPORIG, ESPORVD	
	ESPDELAY, ESPPMORIG	
	ESPPMSTL, ESPPMBLK	
	ESPPMCCO	

Evaluating ESP performance

When ESP is active, both the RCC and CC give ELN lines primary treatment. Under normal traffic load, subscribers with ELN or non-ELN lines will not notice a difference in their grade of service. As call processing increases, ELN lines experience a better grade of service (shorter dial tone delay) than non-ELN lines. Therefore, 10% of all lines is the maximum Nortel recommends for the ELN option. The 10% rule applies to both the number of lines for the RCC and the number of lines in the office. It is important to monitor dial tone delay because dial tone delay can indicate that overload could go into effect.

The system gives ESP in the CC per-directory number (DN); in the RCC, the system gives ESP per-loop. For 500/2500 sets, this does not have an impact. For Meridian Business Sets (MBSs), if any DN on the set has ELN option, all keys on MBS receive primary service.

Subscriber carrier module—100 Access

Dial tone speed recording

Dial tone speed recording (DTSR) measures the ability of the switch to return dial tone within 3 s. The system measures the dial tone delay for the lines connected to the remote digital terminal (RDT) (integrated digital terminal [IDT]). The measurement is from the time the SMA receives the setup message to the time the system applies the dial tone. The computing module accumulates and stores the results on a line concentrating device (LCD) by LCD basis. The following table contains the performance indicators to monitor DTSR.

Performance indicators for DTSR

OM group	Register	Log reports
SITE2	RDTDP_T	
	RDTDP_T	
	RDTDP_T2	
	RDTP_D	
	RDTP_D2	
	RDTDT_T	
	RDTDT_D	
	RDTDT_D2	
	RDTKS_T	
	RDTKS_T2	
	RDTKS_D	
	RDTKS_D2	
DTSRPM	DPLTOT	
	DPLDLY	
	DGTTOT	
	DGTDLY	
	KSTOT	
	KSDLY	

Evaluating DTSR performance

The switch administrator can focus the test of DTSR to the remote site or to the peripheral module (PM). OM group SITE2 collects DTSR statistics for each remote site (that is, the RDT). The OM group DTSRPM collects information for each PM. The system can use this information to identify PMs (including the SMA) that can be overloaded. The system can compare the statistics from the two OM groups to obtain information. The system also checks receiver use; if there are not enough receivers in the office, there can be dial tone delays.

Dial tone delay of greater than three seconds must not exceed 1.5% overflow during the average busy season busy hour (ABSBH). During the high day busy hour (HDBH), overflow must not exceed 20%.

Calculations used to evaluate DTSR performance

DTSR counts are held in pairs. The first part of each pair is a count of all calls. The second part is a count of calls with a dial tone delay that exceeds three seconds.

Each site has three pairs:

- one pair is for dial pulse (DP) originated calls
- is for Digitone (DT) originated calls
- one is for keyset (KS) originated calls

Calculations for SITE2 are shown in the following example. These calculations provide percent dial tone delay on a remote site basis.

```
RDTDP_D
--------  ·  100 =   percentage of delayed calls (dial tone exceeding
RDTDP_T              3-s criteria) for dial pulse lines

RDTDT_D
--------  ·  100 =   percentage of delayed calls (dial tone exceeding
RDTDT_T              3-s criteria) for Digitone lines

RDTKS_D
--------  ·  100 =   percentage of delayed calls (dial tone exceeding
RDTKS_T              3-s criteria) for keyset lines
```

Subscriber carrier module—100 Access (continued)

> ***Note:*** Each of the registers in the above calculations has an extension register, which you must include to provide an accurate result. Each increase of an extension register represents 65 535 counts.

Calculations for DTSRPM counts appear in the following example. These calculations provide the percent dial tone delay on each PM.

```
DPLDLY
-------  ·   100 =   percentage of delayed calls (dial tone exceeding
DPLTOT               3-s criteria) for dial pulse lines

DGTDLY
-------  ·   100 =   percentage of delayed calls (dial tone exceeding
DGTTOT               3-s criteria for dial pulse lines)

KSDLY
-------  ·   100 =   percentage of delayed calls (dial tone exceeding
KSTOT                3-s criteria for dial pulse lines)
```

Data evaluation procedure

Use the following procedure to evaluate DTSR.

1. Calculate the percentage of calls that receive dial tone delay that exceeds three seconds. Compare the percentage level to the established engineered standards. If the percentage level does not meet the standards, go to step two.
2. Determine if maintenance problems could have caused the dial tone delay overflow. If software or hardware problems were not the cause, go to step three. If software or hardware problems could have caused the overflow, wait to see the results of the next study period. Determine if the engineered standards are met. If the standards were not met refer the problem to the supply engineer.
3. Determine if any not normal, one time activities exist that could have caused the dial tone delay overflow. If one time activities do not exist, refer the problem to the supply engineer. If not normal conditions could have caused the overflow wait for the next study period. Determine if the engineered standards are met. If the standards are not met refer the problem to the supply engineer.

Link use and blocking

Link use and blocking statistics are collected by the OM group XPMLNK to help operating company personnel determine the best link use. You can use the information to supply the switch and to solve problems. You can also use the data in reliability studies and reports. This feature does not include any measurements of nailed-up connections or nonswitched special services.

The OM group XPMLNK monitors use and peg counts. These measurements are reported every 15 minutes. The XPM OM system transfers active to holding registers 1 minute before it sends the information to the CC. The use measurements are reported in hundred call seconds (ccs). The system achieves this accuracy by sampling every 10 seconds. The peg measurements are the number of allocation attempts or blocked allocation attempts.

Use of the XPMLNK OM group does not impact on the peripheral processor real time to a serious extent. The impact to real time occurs when channels are allocated and deallocated. Impact to real time also occurs when ports are busied and returned to service. The accurate real time used for each allocation or deallocation is 725 microseconds. The impact to peripheral processor real time is less than 2%.

The following table lists the performance indicators that calculates the link use and blockage statistics.

Performance indicators for calculating link usage and blockage statistics

OM group	Register	Log reports
XPMLINK	CSLCBU	
	PSLCBU	
	CSLAA	
	PSLAA	
	CSLBLK	
	PSLBLK	
	CSLMU	
	PSLMU	

Subscriber carrier module—100 Access (continued)

Evaluating link use and blocking performance

OM group XPMLNK gives the user information on the following:

- C-side and P-side link call busy usage counts.

  These registers provide the amount of time, expressed in ccs, that the P-side or C-side links are busy or in use for call processing or P-side maintenance tasks (like line diagnostics), or any task that uses a channel.

- C-side and P-side link allocation attempt pegs.

  These registers provide the number of times the system makes an attempt to use a P-side or C-side channel. When the system allocates a channel, the register will be increased.

- C-side and P-side link blockage pegs.

  These registers provide the number of failed attempts for a speech path. Failures occur when neither a speech link or an idle channel exist on C-side or P-side of the SMU.

- C-side and P-side link maintenance use.

  These registers provide the total time, in ccs, the P-side or C-side links are not available or maintenance busy.

All measurements are made directly. Reports are made for each SMU. The system measures information on a link-by-link basis. The registers contain information that represents a total of all links from the SMU. The operating company can use this information to engineer the SMU more efficiently with less work on the part of operating company personnel.

Call attempts

You can use traffic information for lines to assess the call attempts and call attempt failures for line concentrating devices like the RCU. The following table lists the performance indicators for monitoring call attempts.

Performance indicators for call attempts

OM group	Register	Log reports
LMD	NTERMATT, MADNATT	
	NORIGATT, LMTRU	
	ORIGBLK, TERMBLK	NET130
	ORIGABN	LINE106, LINE108
	REVERT	LINE138

Evaluating call attempts performance

Traffic is the total load that results from all call attempts. Traffic is the call attempt rate (call attempts per hour) and the use of the network (measured in ccs) because of the attempts. The ccs load is important because the chance of call blocking increases as the load increases. The SMU-RCU subsystem is set for a blocking probability of 4%.

Calculations used to evaluate call attempts performance

Use the following formula to determine the percentage of call attempts that fail. Failure occurs because there is no idle speech path from the originating line module (the RCU, in this example) to the network module.

```
ORIGBLK
---------  · 100 =   percentage of call attempts that fail
NORIGATT
```

The following formula determines the total number of attempts blocks.

```
ORIGBLK + TERMBLK  =  total attempts blocked
```

The following formula determines the total number of call attempts.

```
NORIGATT + NTERMATT = total call attempts
```

The following formula can calculate average holding time for each call attempt.

Subscriber carrier module—100 Access (continued)

```
     LMTRU
-------------------- = average holding time for each attempt
NORIGATT + NTERMATT
```

Data evaluation procedure

Monitor the call attempt rate to make sure that it falls within engineered limits. If limits are exceeded, there can problems with the subscriber lines or the capacity of the PM to handle traffic. There might also be a need to add more links or reduce the load.

Essential service protection

Essential service protection (ESP) guarantees that originations from lines with the essential line service (ELN) option receive primary treatment over not-ELN call originations. The following table lists performance indicators for monitoring essential service protection.

Performance indicators for essential service protection

OM group	Register	Log reports
ESP	ESPORIG, ESPORVD,	
	ESPDELAY, ESPPMORIG	
	ESPPMSTL, ESPPMBLK	
	ESPPMCCO	

Evaluating essential service protection performance

When the system activates the ESP, both the SMU and the CC give ELNs first treatment. Under normal traffic load, subscribers with ELN or not-ELNs will not notice a difference in their grade of service. As call processing increases, ELNs will experience a better grade of service (shorter dial tone delay) than not-ELNs. You are recommended to have no more than 10% of all lines with the ELN option. The 10% rule applies to both the number of lines for the SMU and the number of lines in the office. Also, since delay in dial tone is an indicator that overload can go into effect, monitoring dial tone delay is important.

Data evaluation procedure

Monitor the peg count for register ESPDELAY to determine if more call condense blocks (CCBs) need to be added. This register increases when no CCBs are available (that is, all CCBs are in use by other essential line originations). An excessively high count can indicate under supply of the CCBs in table OFCENG.

Peripheral module real-time occupancy

When the system exceeds the call-processing capacity of the SMU, real-time overload conditions can occur. The following table lists the performance indicators that monitor overload conditions.

Performance indicators for overload conditions

OM group	Register	Log reports
PMOVLD	PORGDENY	PM106, PM128
	PTRMDENY	PM106, PM128

Evaluating peripheral module real-time occupancy performance

Available processing time limits the SMU call-processing capacity in each SMU unified processor. Each unified processor provides some per-call processing, but the signaling processor sets the limits most of the time. For plain old telephone service (POTS), the signaling processor can handle approximately 14 000 call attempts per hour (this value assumes originations *and* terminations). A safe assumption is that calls average 100 s in duration. You can use the approximation that 100 call seconds of use equals 1 call attempt (CA) (1 ccs traffic equals 1 CA/hr).

> ***Note 1:*** Planning engineers must use attempt rates based on traffic studies
>
> ***Note 2:*** Hairpinned special services do not require call processing by the SMU.

Data evaluation procedure

An overload condition occurs with the exhaustion of a PM resource needed for processing. The causes of PM overload include the following:

- a hardware failure on the P-side of the overloaded PM
- a network hardware fault
- data entry changes resulting in large messaging to the PM
- a PM that is overconfigured

Subscriber carrier module—100 Access (continued)

You can use the information derived from the PMOVLD group to monitor the performance of the SMU. You can determine if the SMU is overconfigured.

The registers in group PMOVLD associate with PM106 and PM128 logs. If these logs appear, record the following information to help determine the cause of the overload condition:

- hardware failures on the switch
- manual action performed on the overloaded PM
- OMs the system generates during the overload period by groups PMOVLD and CP
- any related data that relates to the overloaded PM and its P-side nodes

CLASS modem resource use

You must monitor the custom local area signaling service (CLASS) modem resource (CMR) card use. You must make sure that enough resources are allocated for CLASS subscribers. The following table lists the performance indicators to monitor CMR card use.

Performance indicators for CMR card utilization

OM group	Register	Log reports
CNDXPM	CNDNOMDM	
	CNDNOMON	
CND	CNDUNAVL	
MWTCAR	CMWIUNAV	

Evaluating CLASS modem resource use performance

The CNDXPM group OMs registers CNDNOMON and CNDNOMDM determine the number of times attempts to activate activate a CLASS feature fail. Failure occurs because ringing detector circuits or modem resources are not available in a specified peripheral. The CND group OM register CNDUNAVL tracks the number of times CLASS features fail. Failure occurs because CMR cards are not available in a specified peripheral. The OM group MWTCAR register CMWIUNAV increases each time CLASS message waiting indicator (CMWI) information is not delivered. The information is not delivered because the CMR card is not entered or is not in service.

D-channel traffic handling

The D-channels that associate with an ISDN service group (ISG) provide the following services:

- SAPI 0 service
- SAPI 16 service
- SAPI 17 service
- SAPI 63 service

The service access point identifier (SAPI) identifies the bearer service requested in link access procedure on the D-channel (LAPD) frame. A SAPI of 0 is a request for call control of ISDN B-channels or for Meridian business set (MBS) control messages. SAPI 0 identifies circuit-switched traffic. A SAPI of 16 is a request for low-speed packet switching. The request requires a D-channel connection between a D-channel handler (DCH) card and a packet handler. SAPI 17 allows terminals on the same basic rate interface (BRI) to communicate with other terminals. SAPI 17 also supports terminal tests. A SAPI of 63 represents a request for layer two management services, like:

- terminal endpoint identifier (TEI) management
- error reporting
- physical link control

Operating company personnel monitor D-channel traffic assists operating company personnel to determine the correct DCH load balance for the SMU. The following table lists the performance indicators for monitoring D-channel traffic.

Performance indicators for D-channel traffic (Sheet 1 of 2)

OM group	Register	Log reports
ISGBRA	DBRCRC	
	DBRLKRED	
	BRLKREP	
	DBRREJRX	
	DBRREJTX	
	DBRRNRD	
	DBRRNRP	

Subscriber carrier module—100 Access (end)

Performance indicators for D-channel traffic (Sheet 2 of 2)

OM group	Register	Log reports
	DBRS16RX	
	DBRS16TX	
	DBRSARX	
	DBRSATX	
	DBRS0RX	
	DBRS0TX	
	DBRRXDSC	
	DBRTXDSC	

Evaluating D-channel traffic handling performance

The registers in OM group ISGBRA track many parameters that associate with D-channel traffic. The OM registers DBRRXDSC, DBRTXDSC, and DBRCRC count the number of frames the system discards. The system discards frames when hardware problems or cyclic redundancy check (CRC) errors occur. An increase in OM group ISGBRA counts can indicate a DCH overload condition. The OM group ISGOVLD provides more information on DCH overloading. The OM group ISGOVLD appears in greater detail later in this document.

The system uses registers DBRRNRD and DBRRNRP to track the number of receiver-not-ready frames the system transmits. The DCH and the end device transmit these frames in the sequence given. Transmission of an RNR frame indicates the system cannot accept additional incoming frames for a short time. The system tracks the number of link resets performed by the DCH and the end device with registers DBRLKRED and DBRLKREP.

Registers DBRREJTX and DBRREJRX count the number of reject frames transmitted and received by the DCH. A receiving data link layer entity, like a DCH, uses a reject frame to initiate retransmission that follow detection of a sequence error.

The system uses the other registers in the ISGBRA group to monitor the traffic levels of D-channels that provide many services. The following section uses these registers to provide calculations. The calculations are useful for the switch administrator to evaluate the performance of D-channel traffic. Note that each count in the traffic registers represent 100 frames.

Subscriber carrier module—100S remote

Dial tone speed recording

Dial tone speed recording (DTSR) measures the ability of a switch to return dial tone within 3 seconds. The following table contains the performance indicators for monitoring DTSR.

OM group	Register	Log reports
SITE2	RCSDP_D	
	RCSDP_T	
	RCSDT_D	
	RCSDT_T	

How to evaluate DTSR performance

The following factors cause dial tone delay:

- time taken by call processing to recognize the origination
- time taken by the switch to allocate resources, such as channels and receivers, for the call
- time taken by the switch to set up dial tone

These factors vary for each switch, depending on the the type of line from which the call originated, the location of the associated line card, and the type of peripheral interface to the central control (CC).

Normally, dial tone delay of greater than 3 seconds should not exceed 1.5% overflow during the average busy season busy hour (ABSBH) and 20% overflow for the high day busy hour (HDBH).

Calculations used to evaluate DTSR performance

DTSR counts are held in pairs. The first part of each pair is a count of all calls; the second part is a count of calls with a dial tone delay exceeding 3 seconds.

Each site has two such pairs: one for dial pulse (DP) originated calls and one for Digitone (DT) originated calls. Calculations for each are shown in the following examples.

Subscriber carrier module—100S remote (continued)

```
RCSDP_D
--------   · 100  = percentage of delayed calls (dial tone exceeding
RCSDP_T             3-second criteria for dial pulse lines)
```

```
RCSDT_D
--------   · 100  = percentage of delayed calls (dial tone exceeding
RCSDT_T             3-second criteria for Digitone lines)
```

Data evaluation procedure

Use the following procedure to evaluate DTSR.

1. Calculate the percentage of calls receiving dial tone delay exceeding 3 seconds. Compare the percentage level to the established engineered criteria. If the criteria is not met, go to Step 2.
2. Determine if maintenance problems caused the dial tone delay overflow. If software or hardware problems are not the cause, go to Step 3. If software or hardware problems are the cause, wait for the results of the next study period to see if the engineered criteria is met. If not, refer the problem to the provisioning engineer.
3. Determine if any unusual nonrecurring activities caused the dial tone delay overflow. If not, refer the problem to the provisioning engineer. If unusual conditions caused the dial tone delay overflow, wait for the next study period to see if the engineered criteria are met. If not, refer the problem to the provisioning engineer.

Call attempts

Traffic information for lines is used to assess overall call attempts and call attempt failures for line concentrating devices (LCDs) such as the RCS. The following table contains performance indicators for monitoring call attempts.

OM group	Register	Log reports
LMD	NTERMATT	
	MADNTATT	
	NORIGATT	
	LMTRU	
	ORIGBLK	NET130
	TERMBLK	NET130
	ORIGABN	LINE106, LINE108
	REVERT	LINE138

The OM group LMD is used to assess the overall call attempts and call attempt failures for each line concentrating device.

How to evaluate call attempts performance

Traffic is the total load resulting from all call attempts. It is the call attempt rate (call attempts per hour) and the overall use (measured in hundred call seconds or ccs) because of those attempts. The ccs load is important because, for a given number of channels, the probability of call blocking increases as the load increases. The SMS-R/RCS subsystem is usually engineered for a blocking probability of four percent.

Calculations used to evaluate call attempts performance

The following formula determines the percentage of call attempts that fail because there is no idle speech path from the originating line module (the RCS, in this case) to the network module.

```
ORIGBLK | NORIGATT · 100 = percentage of call attempts that fail
```

Data evaluation procedure

Monitor the call attempt rate to ensure that it falls within engineered limits. If it does not, this may indicate problems with the subscriber lines or the

Subscriber carrier module—100S remote (continued)

peripheral module capacity to handle traffic. It may also indicate a need to provision more links or reduce the load.

CLASS modem resource (CMR) card use

An NT6X78AA CLASS modem resource (CMR) card in each unit of an RCC module acts as a controller for CLASS display lines. The card supports the following features:

- calling number display
- dialable number display
- calling name display features
- CLASS message waiting indicator (CMWI) feature for 500/2500 sets equipped to receive modem transmissions. CMWI pegs OM groups MWTCAR and CNDXPM.
- bulk calling line identification (BCLID) pegs OM group BCLID.
- spontaneous call waiting identification (SCWID) pegs OM groups CND and CNDXPM.

In addition, the CMR card sends calling-party display information to subscribers with data links.

A downloadable software module included in the base PM load controls CMR card operation. Its functions include allocating resources to appropriate PCM speech bus time slots, detecting ringing on the line, and transmitting DN information to the line for display during the 4 seconds of silence after the ringing cycle begins. The CMR card does not have modem receive capability.

The following table contains performance indicators for monitoring CMR card usage.

OM group	Register	Log reports
CNDXPM	CNDNOMDM	
CND	CNDUNAVL	
MWTCAR	CMWIUNAV	

Performance characteristics of the CMR card that affect its capacity include the following:

- 32 modem transmit-only channels to the outgoing pulse code modulating (PCM) speech bus
- 32 ringing detector circuits connected to the incoming PCM speech bus
- simplex-mode 1200 baud 202A data transmission protocol
- maximum calling-party display capacity of 2.5 displays per second

> ***Note 1:*** The SMS-R cannot use the CMR card's ringing monitors for RCS lines.
>
> ***Note 2:*** The RCS line cards accept data while on-hook, which is a requirement for the CLASS calling number delivery (CND) feature. However, some early line cards for the SLC-96 series-5 RT do not accept data while on-hook. Therefore, when assigning CND options to a line on an SLC series-5, ensure that the line card in use has this capability.

OM groups CNDXPM, CND, and MWTCAR are used to assess the overall performance of the CMR card.

How to evaluate factor performance

OM group CNDXPM register CNDNOMDM determines the number of times a CLASS feature fails because no modem resources are available on the CMR card in the RCC supporting the line in use.

OM group CND register CNDUNAVL tracks the number of times CLASS features fail because CMR cards are not available in the RCC. Calculate the CMR card utilization rate by comparing the total number of call attempts versus the number of failures due to the unavailability of the CMR card.

OM group MWTCAR register CMWIUNAV increments each time CMWI information is not delivered because the CMR card is either not datafilled or not in service.

Calculations used to evaluate CLASS modem resource performance

None

Data evaluation procedure

None

Subscriber carrier module—100S remote (continued)

Essential service protection (ESP)

Essential service protection (ESP) guarantees that originations from lines with the essential line service (ELN) option receive preferential treatment over non-ELN call originations, particularly during overload of the remote cluster controller (RCC). The SMS-R uses RCC overload control software to ensure that SMS-R essential lines receive preferential dial tone at all times. The following table contains the performance indicators for monitoring essential service protection.

OM group	Register	Log reports
ESP	ESPORIG	
	ESPOVRD	
	ESPDELAY	
	ESPPMORIG	
	ESPPMSTL	
	ESPPMBL	
	ESPPMCCO	

How to evaluate ESP performance

When ESP is activated, the SMS-R uses the RCC overload control software to ensure that SMS-R ELN lines receive preferential treatment. Under normal traffic load, subscribers with either ELN or non-ELN lines notice no difference in their grade of service. However, as call processing increases to the point of overload, ELN lines experience a better grade of service (shorter dial tone delay) than non-ELN lines. Therefore, no more than 10% of all lines should have the ELN option. This 10% rule applies to both the number of lines for the SMS-R and number of lines in the office. Also, since delay in dial tone is an indicator that overload may go into effect, monitoring dial tone delay is important.

ESP in the CC is given on a per-DN basis; while in the SMS-R, it is given on a per-loop basis. For 500/2500 sets, this has no impact. For a Meridian business set (MBS), this means that if any DN on the set has the ELN option, all keys on the MBS receive preferential service. However, since the SMS-R does not currently support MBSs, this does not apply.

Calculations used to evaluate ESP performance

None

Data evaluation procedure

Monitor peg count for register ESPDELAY to determine if more call condense blocks (CCBs) need to be provisioned. This register is incremented when an essential line receives delayed origination because no CCBs are available (that is, all CCBs are being used by other essential line originations). A high count indicates underprovisioning of CCBs in Table OFCENG.

Peripheral module real-time occupancy

When the call processing capacity of the SMS-R is exceeded, real-time overload conditions occur. The following table contains performance indicators for monitoring overload conditions.

OM group	Register	Log reports
PMOVLD	PORGDENY	PM106, PM128
	PTRMDENY	PM106, PM128

How to evaluate peripheral module real-time occupancy performance

SMS-R call processing capacity is limited by the available processing time in each SMS-R processor. There are two processors: the master processor and the signaling processor. Each processor provides some processing for each call, but the signaling processor is limiting in most cases. For plain old telephone service (POTS), the signaling processor handles approximately 14,000 call attempts each hour. (This value assumes originations *and* terminations.) Using a conservative assumption that calls average 100 seconds in duration, it is reasonable to use the approximation that 100 call seconds of utilization equals one call attempt (one ccs traffic equals one CA/hr).

Note 1: Planning engineers should use attempt rates based on actual traffic studies wherever possible.

Note 2: Hairpinned special services do not require call processing by the SMS-R.

Calculations used to evaluate peripheral module real-time occupancy performance

None

Subscriber carrier module—100S remote (continued)

Data evaluation procedure

An overload condition occurs when a PM resource needed for processing is exhausted. The causes of PM overload include the following:

- hardware failure on the P-side of the overloaded PM
- network hardware fault
- datafill changes resulting in extensive messaging to the PM
- overconfigured PM

The information derived from the OM group PMOVLD is used to monitor the performance of the SMS-R and to determine if it is overconfigured.

The registers in OM group PMOVLD are associated with PM106 and PM128 logs. If these logs appear, record the following information to determine the cause of the overload condition:

- hardware failures on the switch
- manual action that was performed on the overloaded PM
- OMs generated during the overload period by OM groups PMOVLD and CP
- any pertinent data relating to the overloaded PM and its P-side nodes

Subscriber line usage

Subscriber line usage (SLU) is an option added to a line or group of lines through a service order. The corresponding OM groups record and manipulate the collected measurements, which include the number of originations, calls in progress, and terminations. The table that follows contains the performance indicators for monitoring subscriber line usage.

Group	Register	Log reports
TRA125M1	TTBU, ORIG, TERM	
TRA125M2	TERMTBU, ORIG, TERM	
TRA250M1	TBU, ORIG, TERM	
TRA250M2	TBU, ORIG, TERM	

How to evaluate subscriber line usage performance

Use the registers in these OM groups to track subscriber line usage over an extended period of time. This information helps the planning engineer

Subscriber carrier module—100S remote (end)

determine the cumulative line demand for each customer serving area on an annual basis. The information may indicate a need to provision additional lines or peripheral modules to keep the SMS-R/RCS subsystem within the engineered limits.

Calculations used to evaluate subscriber line usage performance

None

Data evaluation procedure

None

Subscriber carrier module (SCM)

Dial tone speed recording

Dial tone speed recording (DTSR) measures the ability of a switch to return dial tone within 3 s. The following table contains the performance indicators for monitoring DTSR.

Performance indicators for DTSR

OM group	Register	Log reports
SITE2	RCSDP_D	
	RCSDP_T	
	RCSDT_D	
	RCSDT_T	

Evaluating DTSR performance

Three factors cause dial tone delay:

- time taken by call processing to recognize the origination
- time taken by the switch to allocate resources to the call, like channels and receivers.
- time taken by the switch to set up a dial tone

These three factors for delay vary for each switch. The factors depend on:

- the type of line that originated the call
- the location of the associated line card
- the type of peripheral interface to the CC

Dial tone delay of greater than three seconds must not exceed 1.5% overflow during the average busy season busy hour (ABSBH). During the high day busy hour (HDBH), the delay must not exceed 20%.

Calculations used to evaluate DTSR performance

DTSR counts are held in pairs. The first part of each pair is a count of all calls; the other is a count of calls with a dial tone delay that exceeds three seconds.

Each site has two pairs of DTSR counts: one pair is for dial pulse (DP) originated calls. The other pair is for Digitone (DT) originated calls.

```
RCSDP_D
---------  · 100 =   percentage of  delayed calls (dial tone exceeding
RCSDP_T              3–s criteria for dial pulse lines)


RCSDT_D
---------  · 100 =   percentage of  delayed calls (dial tone exceeding
RCSDT_T              3–s criteria for Digitone lines)
```

Data evaluation procedure

Use the following procedure to evaluate DTSR.

1. Calculate the percentage of calls that receive dial tone delay that exceeds three seconds. Compare the percentage level to the established engineered standards. Does it meet the standards? If the percentage level does not meet the standards, go to step two.
2. Determine if maintenance problems could have caused the dial tone delay overflow. If software or hardware problems were not the cause, go to step three. If software or hardware problems could have caused the problem, wait to see the results of the next study period. You should determine if the engineered standards are met. If the standards are not met, refer the problem to the provisioning engineer.
3. Determine if any not normal one time activities exist that could have caused the dial tone delay overflow. If not normal activities do not exist, refer the problem to the supply engineer. If not normal conditions could have caused the problem, wait for the next study period. You should determine if the engineered standards are met. If standards are not met, refer the problem to the provisioning engineer.

Link usage and blockage

Link use and blockage statistics are collected by the OM group XPMLNK for operating company personnel. Operating company personnel will determine the best link application. You can use this information in supply of the switch and to solve problems. The data also can be used in reliability studies and reports. This feature does not include any measurements of nailed-up connections or not-switched special services.

The OM group XPMLNK monitors the peg and usage counts. These measurements are reported every 15 minutes. The XPM OM system does a transfer of active to holding registers 1 minute. Transfer takes place before the XPM OM system sends the information to the CC. The use measurements are reported in hundred call seconds (ccs). The system achieves this accuracy by

Subscriber carrier module (SCM) (continued)

sampling every 10 seconds. The peg measurements are the number of allocation attempts or blocked allocation attempts.

Operating company personnel used to have to sum and adjust different OMs. Adjustments made to the OMs were based on experience and estimation. The OM group XPMLNK provides a more accurate link operation information than previously available. The system automatically provides the information at normally scheduled intervals. The following table lists performance indicators for link use and blockage.

Performance indicators for link usage and blockage

OM group	Register	Log reports
XPMLNK	CSLCBU	
	PSLCBU	
	CSLAA	
	PSLAA	
	CSLBLK	
	PSLBLK	
	CSLMU	
	PSLMU	

Data evaluation procedure

OM group XPMLNK gives the user information on the following:

- C-side and P-side link call busy use counts. Use counts give the amount of time, in ccs, the P-side or C-side links are busy or in-use. The links are busy or in-use for call processing or P-side maintenance tasks (like line diagnostics), or any task that uses a channel.
- C-side and P-side link allocation attempt pegs. This count provides the number of times the system attempts to use a P-side or C-side channel. When the system allocates a channel, the register increases.
- C-side and P-side link blockage pegs. This count provides the number of failed attempts for a speech path. Failure occurs because a speech link or idle channel is not available on the C-side or P-side of SMS.
- C-side and P-side link maintenance use. This count provides total time, measured in ccs, the P-side or C-side links are not available or maintenance busy.

Subscriber carrier module (SCM) (continued)

When possible, all measurements are made directly. Reports are made on a per-SMS basis. The system measures the information on a per-link basis. The registers contain information that represents a total of all links from the SMS. The operating company can use this information to engineer SMS efficiently and without work on the part of operating company personnel.

Call attempts

You can use traffic information for lines to assess call attempts and call attempt failures for line concentrating devices like RCS. The following table contains the performance indicators to monitor call attempts.

Performance indicators for call attempts

OM group	Register	Log reports
LMD	NTERMATT, MADNTATT	
	NORIGATT, LMTRU	
	ORIGBLK, TERMBLK	NET130
	ORIGABN	LINE106, LINE108
	REVERT	LINE138

You can use the OM group LMD to assess call attempts and call attempt failures per line concentrating device (LCD).

Evaluating call attempts performance

Traffic is the total load that results from all call attempts. Traffic is call attempt rate (call attempts per hour) and use (measured in hundred call seconds or ccs) caused by the attempts. The ccs load is important because the chance of call blocking increases as the load increases. The SMS-RCS subsystem is set up most of the time for a blocking probability of 4%.

Calculations used to evaluate call attempts performance

Use the following formula to determine the percentage of call attempts that fail. Failures occur because there is no idle speech path from the originating line module (the RCS, in this example) to the network module.

Subscriber carrier module (SCM) (continued)

```
ORIGBLK | NORIGATT · 100 =  percentage of call attempts that
                            fail
```

Data evaluation procedure

Monitor the call attempt rate to make sure the attempt rate falls within engineered limits. If attempt rate exceeds the limits, there can be problems with subscriber lines or the peripheral module capacity to handle traffic. Call attempt rates beyond the engineered limits can also indicate a need to provision more links or reduce the load.

CLASS modem resource (CMR) use

An NT6X78AA CLASS modem resource (CMR) card in each unit of an SMS module acts as a controller for CLASS display lines. The card supports the following features:

- calling number display
- dialable number display
- calling name display features
- CLASS message waiting indicator (CMWI) feature for 500/2500 sets equipped to receive modem transmissions

In addition, the CMR card sends calling-party display information to subscribers with data links.

The system can download a software module, included in the base PM load, that controls CMR card operation. These functions include the ability of the system to allocate resources to the correct PCM speech bus time slots. The system can also detect ringing on the line and transmit DN information to the line for display. The system transmits the information during the four seconds of silence after ringing cycle begins. The CMR card does not have modem receive capability.

Subscriber carrier module (SCM) (continued)

The following table contains the performance indicators for monitoring CMR card use.

Performance indicators for CMR card utilization

OM group	Register	Log reports
CNDXPM	CNDNOMDM	
CND	CNDUNAVL	
MWTCAR	CMWIUNAV	

Performance characteristics of the CMR card that affect its capacity include:

- 32 modem transmit-only channels to the outgoing PCM speech bus
- 32 ringing detector circuits connected to the incoming PCM speech bus
- simplex-mode 1200 baud 202A data transmission protocol
- maximum calling-party display capacity is 2.5 displays per second.

Note 1: The SMS cannot use the ringing monitors of the CMR card for RCS lines.

Note 2: The RCS line cards will accept data while on-hook, a requirement for the CLASS calling number delivery (CND) feature. Some of the early line cards for the SLC-96 series-5 RT do not accept data while on-hook. When you assign CND options to a line on SLC Series-5, make sure the line card in use has this capability.

OM group	Register	Log reports
PMOVLD	PORGDENY, PTRMDENY	PM106, PM128, PM106, PM128

You can use OM groups CNDXPM, CND, and MWTCAR to assess the performance of the CMR card.

Evaluating CLASS modem resource (CMR) use performance

The system can use OM group CNDXPM register CNDNOMDM to determine the number of failed attempts to activate a CLASS feature. Failure occurs because modem resources are not available on the CMR card in an SMS that supports the line in use.

Subscriber carrier module (SCM) (continued)

The OM group CND register CNDUNAVL tracks the number of times CLASS features fail. Failure occurs because CMR cards are not available in an SMS. Calculate the CMR card use rate. Compare the number of call attempts with the number of failures caused by there not being enough CMR cards.

The OM group MWTCAR register CMWIUNAV increases each time CMWI information is not delivered. The information is not delivered because the CMR card is not datafilled or is not in service.

Essential service protection (ESP)

Essential service protection (ESP) guarantees that originations from lines with the essential line service (ELN) option receive primary treatment. Non-ELN call originations do not receive primary service. The following table contains the performance indicators to monitor essential service protection.

Performance indicators for essential service protection

OM group	Register	Log reports
ESP	ESPORIG	None
	ESPORVD	None
	ESPDELAY, ESPPMORIG	
	ESPPMSTL, ESPPMBLK	
	ESPPMCCO	

Evaluating ESP performance

When the system activates ESP, both the SMS and CC will give ELN lines treatment first. Under normal traffic load, subscribers with ELN or non-ELN lines should not notice a difference in their grade of service. As call processing increases to the point of overload, ELN lines will experience a better grade of service (shorter dial tone delay) than non-ELN lines. No more than 10% of all lines need to have the ELN option. This 10% rule applies to both the number of lines for the SMS and number of lines in the office. You must monitor dial tone delay since delay in dial tone is an indicator that overload can go into effect.

The operating company should note the system gives ESP in the CC on a per-DN basis. In the SMS, the system gives ESP on a per-loop basis. For 500/2500 sets, this is of no concern. For an electronic business set (EBS), if any DN has the ELN option, all keys on the EBS receive primary service.

Because the SMS does not support EBSs now, primary service would not apply.

Data evaluation procedure

Monitor the peg count for register ESPDELAY to determine if more call condense blocks (CCBs) need to be provisioned. This register increases when no CCBs are available (other essential line originations use all the CCBs). An excessively high count can indicate not enough CCBs in Table OFCENG.

Peripheral module real-time occupancy

When the system exceeds the call processing capacity of the SMS, real time overload conditions can occur. The following table lists performance indicators for peripheral module real-time occupancy.

Performance indicators for peripheral module real-time occupancy

OM group	Register	Log reports
PMOVLD	PORGDENY, PTRMDENY	PM106, PM128, PM106, PM128

Evaluating peripheral module real-time occupancy performance

The system limits SMS call processing capacity by the available processing time in each SMS processor. There are two processors: one master processor and one signaling processor. Each processor provides some per-call processing, but the signaling processor sets the limit most of the time. For plain old telephone service (POTS), the signaling processor handles approximately 14,000 call attempts per hour (this value assumes originations and terminations).

A safe assumption is that calls average 100 s in duration. You can assume 100 call seconds of operation equals one call attempt (One ccs traffic equals one CA/hr). Planning engineers must use attempt rates based on existing traffic studies.

> ***Note:*** Hairpinned special services do not require call processing by the SMS.

Data evaluation procedure

An overload condition occurs with the exhaustion of a PM resource needed to process information. The causes of PM overload include:

- a hardware failure on the P-side of the overloaded PM
- a network hardware fault

Subscriber carrier module (SCM) (continued)

- datafill changes resulting in large messaging to the PM
- a PM that is overconfigured

The system uses the information derived from the PMOVLD group to monitor the performance of the SMS. The system can determine if the PMOVLD is overconfigured.

The registers in group PMOVLD associate with PM106 and PM128 logs. If these logs appear, record the following information to help determine the cause of the overload condition:

- hardware failures on the switch
- manual action performed on the overload PM
- OMs generated during the overload period by groups PMOVLD and CP
- any important data that relates to the overloaded PM and its P-side nodes

Subscriber line usage

Subscriber line usage (SLU) is an option the system can add to a line or a group of lines through a service order. The corresponding OM groups are used to record and manipulate the measurements collected. Measurements include the number of originations, calls in progress, terminations, and termination attempts failed because of call processing busy. The following table contains performance indicators that monitor subscriber line use.

Performance indicators for subscriber line usage

OM group	Register	Log reports
TRA125M1	TBU2 ORIG2 TERM2 BUSY2	
TRA125M2	TBU3 ORIG3 TERM3 BUSY3	
TRA250M1	TBU1 ORIG1 TERM1 BUSY1	
ENG640M1	TBU0 ORIG0 TERM0 BUSY0	

Evaluating subscriber line usage performance

Use the registers in these OM groups to track subscriber line usage over an extended period of time. The information derived from these long-range studies could assist the planning engineer to determine the total line demand. The system calculates line demand for each customer serving area on an

Subscriber carrier module (SCM) (end)

annual basis. The information can show a need to add more lines or peripheral modules. Additions will help keep the SMS-RCS subsystem within the engineered limits.

Subscriber Services

CLASS resource card

The CLASS modem resource (CMR) card in each unit of a peripheral module (PM) acts as a controller for custom local area signaling services (CLASS) calling party display lines. The CMR card (NT6X78AB) can be installed in any of the following PMs to support CLASS features:

- line group controller (LGC)
- line trunk controller (LTC)
- remote cluster controller (RCC)
- subscriber carrier module-100 urban (SMU)
- subscriber carrier module-100S (SMS)

The CMR card supports the calling number delivery (CND), dialable number delivery (DDN), and calling name delivery (CNAMD) features. It also supports the CLASS message waiting indicator (CMWI) feature for 500/2500 sets equipped to receive modem transmissions and sending of calling party display information to subscribers with bulk calling line identification (BCLID) data links.

The table that follows lists the OMs associated with CMR cards.

(Sheet 1 of 2)

OM group	Register	Log reports
CNDXPM	CNDNOMDM	
	CNDNOMON	
CND	CNDUNAVL	
	SCWIDDEL	
	CNDDNDEL	
	CNDPDEL	
	CNDODEL	
	DDNDEL	
CNAMD	CNAMDEL	
	NANUMDEL	
	CNAMODEL	

(Sheet 2 of 2)

OM group	Register	Log reports
	CNAMDPDEL	
	CMWIUNAV	

How to evaluate CLASS resource card performance

The CNDXPM OM group contains registers that track cases when calling information is not delivered to the PM. The CND group indicates officewide use of CND, DDN, CNAMD, and long distance indicator (LDI), including resource shortages and denials. The MWTCAR group provides information on feature use, including failures, for the message waiting (MWT) feature.

Calculations used to evaluate CLASS resource card performance

Use the following formula to determine the percentage of unsuccessful attempts to use CMR card resources for calling name and number delivery.

$$\frac{\text{CND\_CNDUNAVAL}}{\text{CND\_CNDDNDEL + CND\_CND\_CNDPDEL + CND\_CNDODEL + CND\_DDNDEL} - \text{CNAMD\_CNAMDEL} - \text{CNAMD\_NANUMDEL}} \cdot 100 = \text{percentage of unsuccessful attempts to use CMR card}$$

Data evaluation procedure

After calculating the percentage of unsuccessful attempts to use CMR card resources on an officewide basis, compare this percentage with the engineered service level set for this capability. If the percentage exceeds this level and the cause is not attributable to a maintenance problem, the engineering organization should be advised to investigate which peripherals are overloaded and how to redistribute the loading of CLASS lines among the various line peripherals.

Bulk calling line identificaion

The bulk calling line identification (BCLID) feature package (NTXF55AA) provides information about calls to members of a BCLID group. The data associated with the incoming calls are transmitted from the switch to customer equipment through one or more dedicated Bell 202A data links. The customer equipment collects the American standard code for information interchange (ASCII) records for immediate use or for archiving.

Subscriber Services (continued)

The following table lists the OMs associated with BCLID.

OM group	Register	Log reports
BCLID	BCLDCLDN	
	BCLDOOA	
	BCLDPRIV	
BCLIDO	BCLDOVLD	

How to evaluate bulk calling line identificaion performance

Two OM groups, BCLID and BCLIDO, collect information about BCLID message traffic. BCLID contains registers that maintain an officewide count of BCLID link events. BCLIDO contain registers that track link overload conditions associated with individual BCLID customer groups.

Calculations used to evaluate bulk calling line identificaion performance

None

Data evaluation procedure

During BCLID message transmission, each message requires 0.4 s to complete, assuming a data link is available. When no data link is available, all messages are lost. If BCLID subscribers discover that message loss is excessive, additional data links must be provisioned for the group.

Digital recorded announcement machine

The digital recorded announcement machine (DRAM) is a maintenance trunk module (MTM) that has a special equipment shelf (NT2X58) containing digital recorded announcement (DRA) cards. These cards store audio messages for use during call processing.

The Subscriber Services features that use DRAM messages are:

- call forwarding remote access (CFRA)
- customer originated trace (COT)
- automatic call back (ACB)
- automatic recall (AR)
- dialable number delivery (DDN)
- DDN AR voiceback (ARDDN)

- screening list editing (SLE)
- subscriber activated call blocking (SACB)
- feature not allowed (FNAL) announcement
- calling name delivery (CNAMD)
- calling number delivery (CND)
- wake-up call reminder (WUCR)
- remote call forwarding without unique PIN

These features have dedicated DRA cards, which the switch uses to send recorded voice messages to subscribers. A DRA controller card (NT1X75BA) is required on the DRAM shelf to support residential enhanced services (RES) and custom local area signaling services (CLASS) announcements.

The following table lists the OMs associated with DRAMs.

OM group	Register	Log reports
ANN	ANNATT	LINE128, TRK138
	ANNOVFL	
	ANNTRU	
TRMTFR2	TFRACRJ	
	TFRWUCR	

How to evaluate DRAM performance

The ANN OM group contains registers that provide information on the use of recorded announcements in an office. The TRMTFR2 OM group contains registers that count calls made to specific treatments.

Calculations used to evaluate DRAM performance

Use the following formula to determine the percentage of unsuccessful attempts to use DRAM resources for calling name and number delivery.

$$\frac{\text{ANN\_ANNOVFL}}{\text{ANN\_ANNATT}} \cdot 100 = \text{percentage of failed attempts to use CLASS DRAM facilities}$$

Subscriber Services (continued)

Data evaluation procedure

After calculating the percentage of unsuccessful attempts to use DRAM resources on an officewide basis, compare this percentage with the engineered service level set for this capability. If the percentage exceeds this level and the cause is not attributable to a maintenance problem, the engineering organization should be advised to investigate which peripherals are overloaded and how to redistribute the loading of CLASS lines among the various line peripherals.

Receivers

In offices where Digitone (DGT) receivers are used, additional DGT receivers may be needed to ensure that the call forwarding remote access (CFRA) feature does not adversely affect standard call processing. The number of DGT receivers should equal the number of CFRA subscribers that are allowed to use the CFRA feature concurrently. In offices where all lines and trunks are serviced by universal tone receivers (UTR), no additional tone receivers are required to handle CFRA calls.

The following table lists the OMs associated with receivers.

OM group	Register	Log reports
RCVR	RCVOVFL	
	RCVSZRS	
	RCVQOVFL	
UTR	UTROVFL	
	UTRSZRS	
	UTRQOVFL	
AR	ARPRCD	
COT	COTPRCD	
CND	SCWIDDEL	
CNDXPM	SCWDNUTR	

How to evaluate receiver performance

Pooled dual-tone multifrequency (DTMF) and multifrequency (MF) receivers are engineered to handle the worst case of high day busy hour (HDBH) or average busy season busy hour (ABSBH) traffic, measured in hundred call seconds (ccs). The traffic tables used for receiver provisioning depend on receiver holding times and probability of receiver delay. Failed attempt data are obtained from OMs RCVR_RCVQOVFL and RCVR_RCVSZRS.

UTRs are combined service circuits that perform the functions of DTMF receivers for lines and MF receivers for trunks. There are 30 or 60 UTRs for each extended peripheral (LGC or LTC). Failed attempt data are obtained from OMs UTR_UTRQOVFL and UTR_UTRSZRS.

Calculations used to evaluate receiver performance

None

Data evaluation procedure

Based on custom local area signaling services (CLASS) feature penetration and usage, additional UTRs may be required. The impact on UTR usage results from the existence of interruptible announcements for certain CLASS features, such as two-level activation of automatic recall (AR) or customer originated trace (COT).

Conference circuits

Because interruptible announcements run in parallel with digit collection from the subscriber, the UTR is busy until the subscriber finishes entering all digits associated with the call. As many as 40 s could be required. Two-level activation of AR and COT on the average causes a 5-7 seconds increase in UTR usage. One-level activation of calling number delivery (CND) causes a 2-3 seconds increase.

The CLASS feature spontaneous call waiting identification (SCWID) requires UTRs if the office is datafilled to process acknowledgment tones from SCWID lines.

Conference circuits are used for Subscriber Services features call transfer (CXR) and extension bridging (EXB). The number of circuits available to an office is limited.

The following table lists the OMs associated with conference circuits.

OM group	Register	Log reports
TWCPOTS	TWCPATT	
TRMTRS	TRSNOSC	LINE138, TRK138

Subscriber Services (continued)

How to evaluate conference circuit performance

The TWCPOTS OM group contains registers that track the use of three-port conference circuits for call transfers associated with enhanced Subscriber Services features CXR and EXB. The TRMTRS OM group contains registers that track the number of calls that are routed to a treatment due to a shortage of hardware or software resources.

```
TWCPOTS_TWCPOVFL
-----------------  · 100  = percentage of overflow (unsuccessful three-way
TWCPOTS_TWCPATT              call attempts)
```

Calculations used to evaluate conference circuit performance

Use the following formula to determine the percentage of unsuccessful attempts to make add-on party call connections.

Data evaluation procedure

After calculating the percentage of unsuccessful attempts to use conference circuits for three-party calls, compare this percentage with the engineered service level set for this capability. If the percentage exceeds this level and the cause is not attributable to a maintenance problem, the engineering organization should be advised to investigate adding conference circuit resources.

Central control real time

Central control (CC) real-time is the percentage of CC processing time occupied by Subscriber Services features. The following table lists performance indicators for subscriber services features.

(Sheet 1 of 4)

OM group	Register	Log reports
ACB	ACBDLAY	AMAB117
	ACBIMED	AMAB117
	ACBNIMED	
	ACBACBN	
	ACBOSCN	
	ACBUNIV	
	ACBATT	

Subscriber Services (continued)

(Sheet 2 of 4)

OM group	Register	Log reports
ACRJ	ACRJACT	
	ACRJDACT	
	ACRJAUNV	
AR	ARIMED	AMAB117
	ARDLAY	AMAB117
	ARNIMED	AMAB117
	ARARN	
	AROSCN	
	ARUNIV	
	ACBATT	
ACRJ	ACRJACT	
	ACRJDACT	
	ACRJAUNV	
AR	ARIMED	
	ARDLAY	
	ARNIMED	
	ARARN	
	AROSCN	
	ARUNIV	
BCLID	BCLDCLDN	
	BCLIDOOA	
	BCLDPRIV	
CALLOG	CALLACT	
CALLFWD	CFDATT	

Subscriber Services (continued)

(Sheet 3 of 4)

OM group	Register	Log reports
	CFUATT	
	CFBATT	
CALLWAIT	CWTTATT	
	CWDATT	
	CWOATT	
CFRA	CFRAATT	
CND	CNDACT	
CNAB	CNABSACT	
	CNABATT	
	CNABUNIV	
CNAMD	CNAMDEL	
CNDB	CNDBATT	
	CNDBSUP	
	CNDBUNIV	
COT	COTATT	
	COTUNIV	
DRCW	DRCWACT	
	DRCWUNIV	
	DRCWAUNV	
IBNGRP	GICORIG	
MDCWAKUP	WUCSACT	
MWTCAR	CMWIACT	
RCHDOPT	RCHDATT	
SACB	SACBACT	LINE180

Subscriber Services (end)

(Sheet 4 of 4)

OM group	Register	Log reports
	SACBDACT	
SCA	SCAACT	
	SCADCT	
	SCAUNIV	
	SCAAUNV	
SCRJ	SCRJACT	
	SCRDACT	
	SCRJUNIV	
	SCRJAUNV	
SLVPOPT	SLVPINT	
	SLVPTRAN	
	SLVPHOLD	
TWCIBN	CXFRATT	
	TWCATT	
TWCPOTS	TWCPATT	

How to evaluate central control real time performance

CC real-time values for Subscriber Services features are calculated based on the number of call attempts that activate the features and per-call timing for each type of activation. The effect of Subscriber Services calls on real-time processing can be calculated by multiplying the per-call timings, described below, by the number of busy-hour call attempts for the Subscriber Services features installed in the central office (CO).

TOPS

DTC and CPU service criteria

The digital trunk controller (DTC) and central processing unit (CPU) service criteria is based on the percentage of calls received or other requests for service that encounter a delay that exceeds a set number of seconds.

Delay criteria

The duration of a delay is more important than just the probability of a delay. At the present time, delays of less than 3 seconds are considered acceptable to the subscriber, or at least they do not annoy the subscriber if it does not happen too frequently. The delay criteria that are used for engineering purposes are as follows:

- Dial tone delay (DTD) is the probability that a customer will experience a dial tone delay of more than 3 seconds.
- Incoming start-to-dial delay (ISDD) is the probability that an incoming trunk to a multifrequency receiver will experience a delay of more than 3 seconds before the receiver becomes available.

The current recommended delay criteria for a DMS-200 or DMS-100 switch are shown in the following table.

	DMS-200 DMS-100			
Delay measurement	*ABSBH*	*HDBH*	*10HDBH*	*HDBH*
Dial tone delay	1.5%	20.0%	N/A	N/A
Incoming start-to-dial	1.5%	20.0%	8.0%	20.0%

Busy hour definitions

Switches are engineered based on empirical data or forecast data for the busiest hour for the component or for the office (switch). These hours are referred to as “busy hours.” The following are the definitions for the average busy season busy hour, high day busy hour, and 10 high day busy hour.

Average busy season busy hour (ABSBH)

The 3 months, not necessarily consecutive, that have the highest traffic in the busy hour are termed the “busy season". The busy hour traffic level averaged across the busy season is the ABSBH load.

High day busy hour (HDBH)

The one day among the same ten days that has the highest traffic during the busy hour is designated the (annually recurring) “high day". The traffic level in the busy hour of the high day is termed the HDBH load. (There may be some other hour of the high day or another day of the year with a higher traffic level, but it would not be used in the engineering database.)

Ten high day busy hour (10HDBH)

Traffic data for the time consistent busy hour is processed all year to identify the ten highest traffic days of the year. The 10-day average traffic level for the time-consistent (TC) busy hour is the 10HDBH load.

Performance factors for operator services

Switch performance and operator services, from an administration and engineering point of view, should focus on the following system components:

- Central processor
- DTC modules
- TOPS message switch (TMS) messaging (not applicable for TOPS 04)
- Multiprotocol controller (MPC)/enhanced multiprotocol controller (EMPC) messaging (not applicable for TOPS 04)

Note: IBM performance administration is not discussed in this guide.

The operating company monitors the performance factors of the above components to determine if the operator services grade of service is being met. The operating company also uses these results to determine if the levels of usage of the components compare favorably to the forecast values used to provision the system. The performance is monitored through the use of operational measurements (OMs), the ACTIVITY tool, and the XPM PERFORM tool, but primarily through OMs.

Central processor

There are four central processors currently being used in operator services systems. In addition to the NT40, there are three SuperNode (SN) versions. The four central processors are designated as follows:

- NT40
- SN20 (68020)
- SN30 (68030, 33 MHz)
- SN40 (68030, 40 MHz)

TOPS (continued)

Average CPU processing time

The CPU average processing time (APT) that is used to calculate the call capacity of the CPU is an estimate in the provisioning process. It is derived from estimates of the call mix that can be expected by the switch during the engineered period. Because it is an average, the APT in a working office will rise and fall depending on the call mix that is offered during the study period. Therefore, a representative APT can only be derived from a number of study periods; that is, studies are accumulated until the average of the results does not significantly change when adding the results of another study period. A representative APT is an important consideration when looking at the APT of a single study period. The following table lists the OMs needed to calculate APT.

OM group	Register	Log reports
OFZ	NIN	
OFZ	NORIG	

The following calculation is a method of determining CPU average processing time.

$$\text{APT} = \frac{3{,}600{,}000\text{ ms} \cdot \text{recorded \% occupancy}}{\text{NORIG} + \text{NIN}}$$

In this calculation, 3,600,000 ms represents the total number of milliseconds in an hour. This value is then multiplied by the percentage of call processing time recorded from OM group CPUSTAT, register CPSCPOCC. The result is divided by the sum of the number of originations (NORIG) and the number of incoming attempts (NIN) recognized by the CPU. The value derived is the average processing time for calls processed by the CPU during the study period.

Call processing occupancy

Call processing occupancy is a measurement of the average percentage of CPU real time allotted to call processing that is used during the study period. A study period is usually the office call busy hour, although it can be during any other period of the day.

Monitoring by OM groups

The overall system performance can be monitored by using OM registers. Operational measurements for monitoring the operator services central processor are listed in the following table.

OM group	Register	Log reports
CP	ORIGDENY	
	CPLOOVFL	OM2200
CP2	INEFDENY	
CPUSTAT	CPSCPOCC	
ISDD	DPTDLY	
	DTTDLY	
	MFTDLY	

Note 1: CPUSTAT register CPSCPOCC provides the CM call processing occupancy.

Note 2: CP and CP2 OM groups monitor overflows and denials

Note 3: ISDD registers monitor incoming start-to-dial delay. This delay may be caused by either heavy CM call processing activity or by DTC real-time overload.

Monitoring with the ACTIVITY tool

Daily system monitoring and performance analysis can be accomplished by using the CPU measurement tool ACTIVITY.

This measurement tool provides valuable information regarding the following:

- Traffic—The ACTIVITY tool uses data extracted from operational measurement tables, reflects the amount of traffic being handled by the office.
- Occupancy—The ACTIVITY tool uses firmware timing to determine the CPU processor occupancy for different classes of CPU system activities.
- Grade of service (GOS)—The ACTIVITY tool reflects customer grade of service being offered by the system. The grade of service is measured in terms of delay criteria.

The ACTIVITY user interface can be activated by the subcommand ACTIVITY in the maintenance (MTC) subsystem level of the MAP terminal. As soon as the ACTIVITY MAP level is entered, the monitoring starts. The

TOPS (continued)

STRTLOG command generates the appropriate log. Every user to subsequently enter the same MAP level from other terminals restarts the monitoring for all users. The screen is updated and logs are generated. LOGUTIL must be turned on in order for the log outputs to be available.

For a current real-time display, monitor the overall system performance by the ACTIVITY tool. The following figure illustrates an ACTIVITY display and shows the major items to monitor.

ACTIVITY MAP display

```
 CM     MS     IOD     Net      PM   CCS     Lns     Trks       Ext    E10
  .      .      .       .        .    .       .       .          .      .
  .      .      .       .        .    .       .       .          .      .

                                     Major item
Activity
  0  Quit     Calls/hour     LOrig     TOrig   ConctRatio  ToAnn 04:13:35
  2  Strt          1320         13         9         64%     18%
  3  Strtlog
  4  Stoplog   CpOcc       Bkg          For   Maint      Sched        Pref
  5              10%       58%           1%     15%        11%         5%
  6
  7            OAvgDel   95%OLim PAvgDel  95%PLim  BAvgDel 95%BLim  RTrip
  8               19ms      50ms    20ms     49ms     25ms    64ms  848ms
  9
 10            OrigDeny InefDeny CPLoovfl CPSuic   CPTrap LCMdtsr  LMdtsr
 11               --       --       --        --      --      --      --
 12
 13
 14
 15
 16
 17
 18

   ADMIN
 Time  07:55
                                    Major items
```

The major items to monitor are as follows:

- CpOcc — call processing occupancy. This register counts the percentage of CPU time being used for call processing (CP occupancy) and expresses it as an integer. CPU call processing occupancy consists of processes in the following scheduler classes: high-priority call processing, call processing, and deferrable call processing.

- CPLoovfl — call processing letters overflow. This register counts attempts to send a progress message to an existing call that fails because no call processing letters are available.
- InefDeny — ineffective deny. This register counts origination/abandon pairs that are ignored by the central control (CC) because they were not serviced within 0.5 seconds from the time the origination arrived in the CC.
- OrigDeny — originations denied. This register counts originations that are ignored by the central control because they were not serviced within 3 seconds of arrival.

Note: If the ACTIVITY tool is used, it will reduce the available real time by 2% for the NT40 and 3% for the SuperNode.

Call processing occupancy

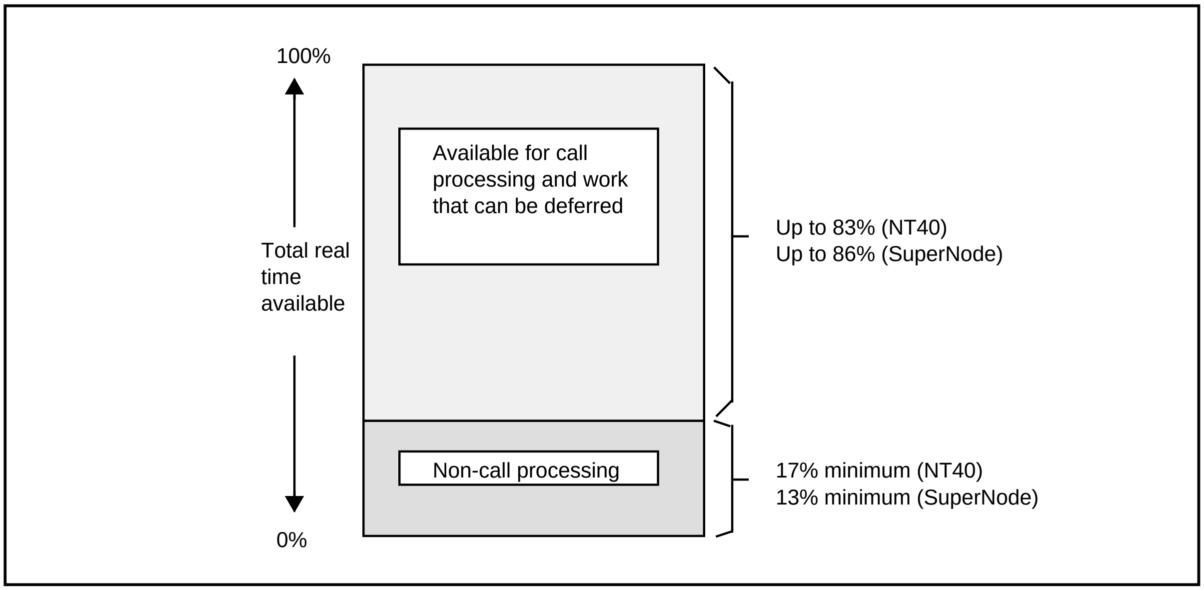
The switch architecture provides distributed processing over three switching stages controlled by the CPU. The capacity of the CPU is defined in terms of overhead and call processing occupancies. The overhead occupancy accounts for nondeferrable priority processes, such as task assignment, scheduling, and system integrity; and deferrable functions such as operations, administration, and maintenance (OA&M), and auditing routines. The call processing occupancy includes the originating call processes and the incoming system call processes and related tasks such as call request interrupt.

The maximum amount of real time available for call processing in a SuperNode central call processing unit (CPU) that has a minimum of 14% overhead is 86% (100% - 14%).

With the NT40 processor, the maximum amount of real time for call processing, while maintaining the minimum overhead (17%), is 83% (100% - 17%). Refer to the following figure for an illustration of real-time availability.

TOPS (continued)

CPU real-time availability for call processing

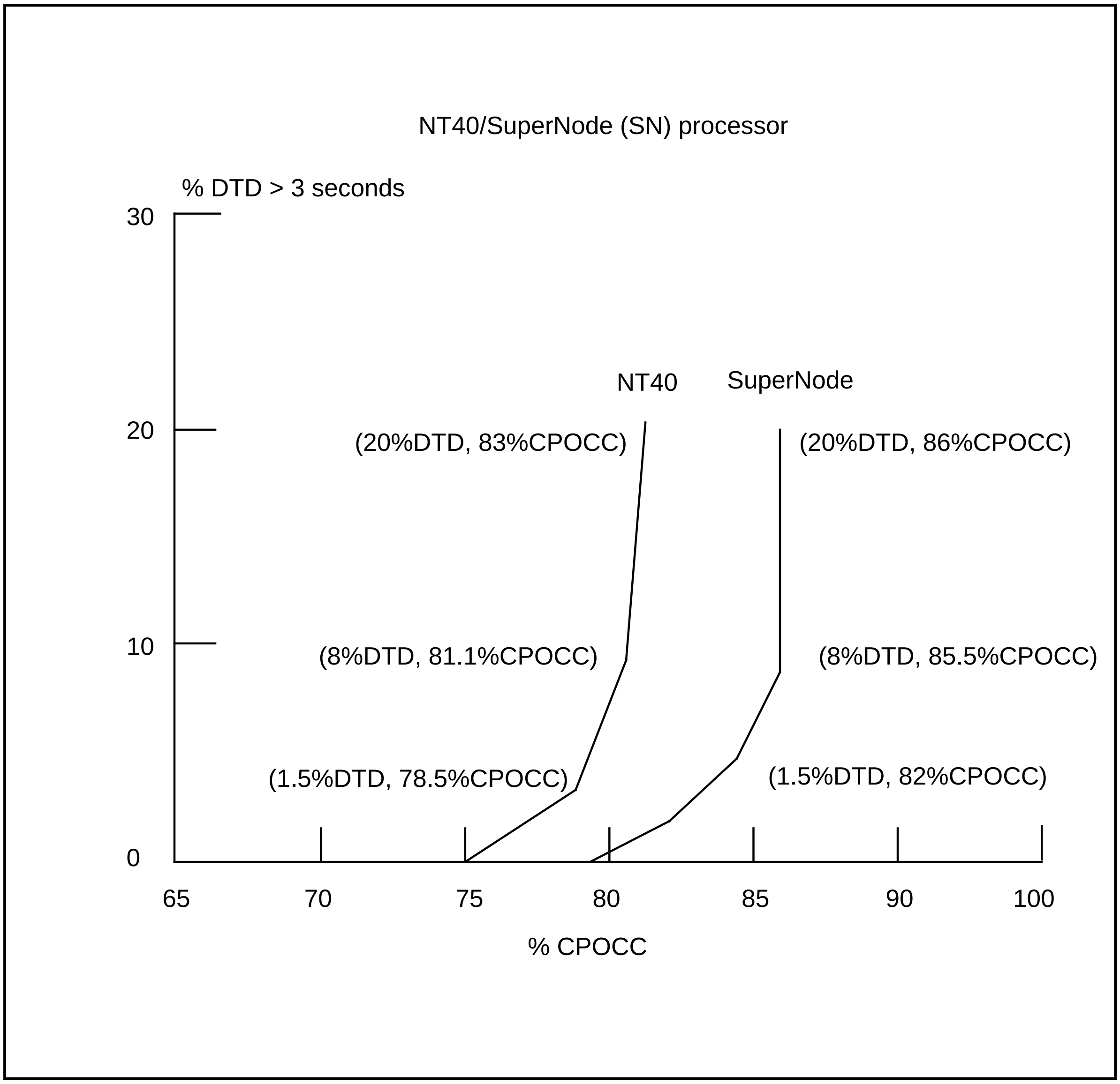


These available real-time values are adjusted as other factors are considered. For example, the maximum amount of call processing real time available for SuperNode and NT40 equals 86% and 83% respectively; however, these values are adjusted due to grade of service objectives and other factors as follows:

- Grade of service adjustments
  - 1.5% delay—4.0% adjustment (SuperNode)
  - 1.5% delay—4.5% adjustment (NT40)
  - 8.0% delay—0.5% adjustment (SuperNode)
  - 8.0% delay—1.9% adjustment (NT40)
- Average work time adjustment
- Additional adjustments (if activated)
  - ACTIVITY tool—3.0% adjustment (SuperNode)
  - ACTIVITY tool—2.0% adjustment (NT40)
  - EADAS feature—1.0% adjustment
  - CPUSTAT—0.5% adjustment

With the addition of optional features and maintenance considerations, total real time dedicated to overhead will increase above the minimum allocation, further reducing CPU real time available for call processing.

Central processor load service curve



Monitoring CPU real-time capacity factors

Real-time capacity factors are monitored to determine the amount of capacity that is being used, how it is being used, and how much remains available. This section describes those factors and how they can be used to learn more about the status of real-time capacity for a particular time period.

Each of the following descriptions of real-time factors includes a table that lists the related OMs and associated log reports (if any exist).

TOPS (continued)

How to evaluate call processing occupancy

Call processing occupancy can be evaluated for different purposes. These purposes may include: determining why occupancy is high (when compared to the engineered estimate) for a particular period of time, verifying estimated average processing time, verifying predicted real-time usage derived from the REAL::TIME tool, and monitoring the effect of new services or features.

The following table lists the OM groups and registers that are associated with call processing occupancy.

OM group	Register	Log reports
CPUSTAT	CCPAVAIL	
CPUSTAT	CPSCPOCC	

Data evaluation procedure

The following procedure provides the steps required to evaluate call processing occupancy.

1. Set data to collect during the call busy hour or other designated study hour. This data includes OM group CPUSTAT, register CPSCPOCC.
2. Use the average processing time (APT) formula to calculate the APT for the study period data to derive the overall CPU APT.
3. Compare the study period APT with the APT used to engineer the current design period (obtained from the current provisioning documents). If the APT is significantly higher or lower, continue to take studies to see if the APT is consistently higher or lower than expected. If the APT is consistently higher than the value used to engineer the switch, report the values to the engineering group for consideration of the effect on the end-of-design date. This is especially important for an office that will soon upgrade to a SuperNode.
4. The cause of higher or lower than forecast average processing times is usually due to a different call mix than was expected. Using empirical data, compare the actual call mix with the data that was used to engineer the office. Determine APT for each TOPS traffic. If the TOPS traffic APT is higher than forecasted, significant differences should be reported to the provisioning engineer, and new call capacity calculations derived from the the REAL::TIME tool should be considered.

Note: The ACTIVITY tool will use up to 2% (NT40) and 3% (SuperNode) of call processing capacity when running. A more accurate evaluation of real-time usage can be made with ACTIVITY turned off.

QMS real-time impact on the CM

If the queue management system (QMS) is available, then the QMS real-time impact on the CM must be monitored. The following table lists the OM groups and registers that are associated with QMS real-time impact on the CM.

OM group	Register	Log reports
QMSACT	CALLARIV	
QMSDATA	CQSCONS	
QMSDATA	CQSRCATT	
TOPSQMS	POSRQSTD	

Evaluating QMS real-time results

QMS is designed with switch capacity and real-time efficiency as paramount concerns. The software supporting QMS behaves linearly under load, which provides a stable model for managing real-time efficiency.

Calculations used to evaluate QMS real-time impact

The following values are used by provisioning engineers to compute the basic MIS real-time statistics:

```
HDBH call attempts   =   CALLARIV (stand–alone and host offices
HDBH call attempts   =   POSRQSTD (remote office – sum valuse for all
                         queues
Average number of call queues searched by an available agent = CQSCONS
                                                               --------
                                                               CQSRCATT
```

Data evaluation procedure

Use the following procedure to evaluate QMS real-time impact on the CM.

1. Set data to collect during the call busy hour or other designated study hour. This data includes OM group QMSACT, register CALLARIV, OM group QMSDATA, registers CQSCONS and CQSRCATT, and OM group TOPSQMS, register POSRQSTD.
2. Using the formula for the average number of call queues searched by an available agent, derive the average number of call queues searched.
3. Supply the calculated average number of call queues searched and HDBH data to the provisioning engineers. The engineers will apply this value in a calculation to determine QMS real-time additives.

TOPS (continued)

Monitoring DTC performance factors

The signal processor (SP) is the limiting digital trunk controller (DTC) factor in operator services. If the signal processor occupancy exceeds 90%, as measured by PMACT, incoming start-to-dial delays may occur, indicating a need to shift traffic to another DTC or a need for additional DTCs. This condition is caused by very short holding times and is not a common condition for operator services traffic.

Monitoring delays by OM groups

The overall DTC system performance (delays) is monitored by using OM registers shown in the following table.

OM group	Register	Log reports
ISDD	DPTDLY	
ISDD	DTATMPT	
ISDD	MFATMPT	
ISDD	MFTDLY	
ISDD	OTHATMPT	
ISDD	OTHTDLY	
Note: SDD registers monitor incoming start-to-dial delay. This delay may be caused by either heavy CM call processing activity or by DTC real-time overload.		

Evaluating ISDD results

The DTC is a nonconcentrating peripheral module (up to 480 inputs and 480 outputs). Therefore, delays are not caused by the unavailability of channels, but they can be caused by overloads in the CPU. The following procedure provides steps for evaluating ISDD results.

Calculations used to evaluate ISDD

The following formula can be used to calculate the percentage of incoming start-to-dial delays:

```
Total %        Total delays(MFTDLY + DPTDLY + OTHTDLY)
          -------------------------------------------------  ·  100
ISDD =      Total attempts (MFATMPT + DPATMPT + OTHATMPT)
```

Data evaluation procedure

Use the following procedure to evaluate ISDD results.

1. Set data to collect during the call busy hour or other designated study hour. This data includes OMs for all types of trunks (MF, DP, and other) that are assigned in the DTCs.
2. Using the formula for percentage of incoming start-to-dial delay, derive the overall percentage of delay for all DTCs.
3. Compare the percentage of delay during the study to the objective service level value used in the provisioning of the DTCs. If the percentage is higher than the objective, continue to take studies to determine if the percentage of delay is consistently above the objective. If the percentage of delay remains above the objective, notify the provisioning engineer, as this can be an indication of overload in the CPU.

Monitoring performance with the XPM PERFORM tool

The XPM PERFORM tool is accessed through the MAP terminal and displays information about the processors of a posted peripheral module (PM) of node type LTC, LTCI, LGC, DTC, or RCC. This tool is used to monitor signal processor occupancy on a current minute basis or on an average of an accumulated period up to an hour.

The PERFORM level can be accessed from the PM level of the MAP terminal by posting a PM and entering the command PERFORM. At the PERFORM level, commands are available to access two sublevels: DELAYS and PMACT.

The DELAYS level displays information about the following call processing delays:

- dial tone
- dial tone removal
- post dialing
- speech path
- pulse code modulation (PCM) cut-through (CT)

The PMACT analyzes the real time of the signal processor and the master processor (MP) in the following categories:

- call processing occupancy
- high-priority background occupancy
- low-priority occupancy

TOPS (continued)

The combination of the call processing and the high-priority background occupancies provide the service of the PM. Low-priority background processes are used for audits and for testing. The displayed data is updated once each minute with an average number for the last 15 minutes.

All data measurements are accumulated for up to 1 hour on the active unit in increments of 1 minute and averaged every 15 minutes in the form of a summary. To get an hourly measurement, the 15-minute summaries must be added and divided by 4. This will, for example, provide an average DTC signal processor occupancy for the hour under study.

The accumulated data is not maintained for a warm or cold SWACT. Only one user at a time can monitor the performance data for a PM, but up to five PMs can be included in the data accumulation.

Monitoring DTC signal processor (SP) real-time occupancy

For a current real-time display, monitor the overall DTC system performance by the XPM PERFORM tool sublevel PMACT (PM - DTC). The following figure illustrates the display of the PMACT sublevel for the DTC for a period of one minute.

XPM PERFORM display showing signal processor (SP) occupancy

```
 CM      MS     IOD      Net       PM    CCS      Lns      Trks     Ext      E10
  .       .      .        .         .     .        .        .        .        .

 PMACT                          SysB    ManB    OffL     CBsy   ISTb    InSv
  0 Quit       PM                  0       0       0        0     0      236
  2 Strt       DTC                 0       0       0        0     0       47
  3 Strtlog
  4 Stoplog  DTC  0 InSvLinks OOS:  CSide   0   Pside  0
  5 Stop     Unit0 Act  InSv
  6          Unit1 InactInSv
  7          LOAD NAME  :  NDT31BM
  8          STATUS:  RUNNING  REASON:  COMMAND   LOGS: OFF TIME 00:14:00
  9                            MP    MPAVG    SP  SPAVG
 10
 11          CALL PROCESSING   14      14     73    73
 12          LOW PRIO BGND      8       8      6     6
 13                          ORIG   ORIGAVG    TERM    TERMAVG
 14                             0         0       0          0
 15                         AVAIL     INUSE    HIGH
 16          PS CHNL            0         0       0
 17          UTR               30         0       0
 18

   ADMIN
 Time  07:59                    Value used to monitor the
                                signal processor occupancy
```

Data evaluation procedure

After monitoring the DTC signal processor occupancy percentage during the current study period (the call busy hour), compare the study's percentage to the engineering maximum level objective of 90%. The 90% engineering level objective allows for a 10% buffer. If the percentage is consistently above the engineering level objective or if ISDD OM registers are being pegged and the cause is not attributable to maintenance reasons or unusual nonrecurring events, then notify the provisioning engineer. These conditions usually

TOPS (continued)

indicate that the calls have very short holding times or there is a delay caused by overload in the CPU.

TMS call capacity

Calculating overall TMS capacity requires consideration of the SP processor call capacity, DCH call capacity, and the fact that 10 shelf slots are reserved for DS-1 and DCH cards combined. Comparing these factors identifies the number of TMSs necessary for the expected call mix and volume.

Assuming message sizes of 256 bytes or less, DCH capacity calculations do not change with the size of the messages, making the calculations appropriate to any operator services application. The only information required for the calculation is the number of messages per call.

DS-1 card requirements for voice and data links to the operator positions and interfaces to supporting databases are fixed. Any of the 10 slots not used by DS-1 cards are reserved for DCH cards.

Real-time calculations for the SP processor require the call timings for the particular operator services application installed in the office.

DCH engineering

Each DCH in a TMS is engineered to a maximum of 15 messages per second. Use the following procedure to determine the message load on a particular DCH.

1. Determine the average number of messages per call.

   Tabulate the number of calls by call type. For an existing office, datafill OM group TOPSOCPS for toll and assist (TA), directory assistance (DA) and any other operator services call categories. This OM group is datafilled in advance for the call types being tracked. The TOPSDA OM group counts DA calls without having to be datafilled.

Multiply each of these peg counts by the number of messages per call. The number of messages per call type includes position-to-CM traffic as well as any position-to-database traffic.

- For TOPS MPX-IWS OPP calls, assume the following number of messages per call.
  - 0- Non-coin - 10 messages per call
  - 0- Coin - 11 messages per call
  - 0+ Non-coin - 10 messages per call
  - 1+ Hotel - 10 messages per call
  - 1+ DD Coin with Coin Collect - 16 messages per call
  - IBM DA - 5 messages per call
  - Intercept - 11 messages per call
- For TOPS MPX ASCII protocol calls, assume the following number of messages per call. An operator assistance (OA) ORDB adjustment of .9 messages per each 10% of ORDB access is required where applicable.
  - 0+ - 11 messages per call
  - 1+ Hotel - 7 messages per call
  - CAMA - 4 messages per call
  - IBM DA - 3 messages per call
  - NT DA - 4 messages per call
- For TOPS MP calls, assume the following number of messages per call. An operator assistance (OA) ORDB adjustment of .9 messages per each 10% of ORDB access is required where applicable. A search ratio adjustment must be made to the DA calls. Multiply the ratio, based on statistics generated by the DA system, times 10 for IBM DA

TOPS (continued)

and 7 for NT DA and add the amount to the base number of messages per call.

- 0+ - 8 messages per call
- 1+ Hotel - 5 messages per call
- CAMA - 3 messages per call
- IBM DA - 17 messages per call
- NT DA - 14 messages per call

Use the worksheet shown in the following figure to calculate total TMS message traffic.

TMS message worksheet

Principal call types	High day busy hour calls	Messages per call type	Total messages per call type
Total		*(N/A)*	

- Determine the number of messages per DCH per second using the following formula. (To obtain the average number of messages per call, divide the total message traffic by the total operator services call volume):

```
Messages per DCH per second  =  Operators per Dch
                              x Average messages per call
                              x Average operator occupancy (decimal)
                              ______________________________________
                                Average operator work time (seconds)
```

If any DCH in a TMS exceeds the limit of 15 messages per second, the message load should be redistributed among all DCHs in the TMS. If all DCHs in the TMS exceed the limit, another DCH should be added if shelf space is available or operator positions should be offloaded to another TMS. These calculations are based on office averages. An unbalanced load on the DCHs could cause an individual DCH to exceed the limit. Use the Perform tool and operational measurements to ensure that DCH message traffic is in balance.

TMS signal processor engineering

A separate calculation of SP real-time resources is necessary to determine whether the TMS call capacity is less than the DCH call capacity.

Seventy percent of the processing resources of the SP are consumed by overhead operations, leaving 720,000 ms in the busy hour for call processing. To determine the SP call capacity of the TMS in the busy hour, it is necessary to know the weighted average call timing for the expected or actual call mix. Dividing this number into 720,000 yields the call capacity. Individual SP call timings currently available are MPX DA (23 ms), MP IBM DA (34.51 ms), and MP TA (41.83 ms).

The weighted average call timing is the sum of individual products of all call timings multiplied by the percentage of the whole (decimal) each call type represents. For example, if call type A takes 15 ms of SP processing time and type B takes 30 ms and each call type makes of 50% of the call mix, the average weighted call timing is $(.5 \times 15) + (.5 \times 30) = 22.5$ ms.

> ***Note:*** When TMSs share DS-1 facilities of one TMS to communicate with an external database, SP resources are not affected by the extra message load.

Monitoring performance with the XPM PERFORM tool

The XPM PERFORM tool is accessed through the MAP terminal and displays information about the processors of a posted peripheral module (PM) of node type TMS, LTC, LTCI, LGC, DTC, or RCC. This tool can be used to monitor

TOPS (continued)

signal processor occupancy on a current minute basis or on an average of an accumulated period up to an hour.

The PERFORM level can be accessed from the PM level of the MAP terminal by posting a PM and entering the command PERFORM. At the PERFORM level, commands are available to access two sublevels: DELAYS and PMACT.

The DELAYS level displays information about the following call processing delays.

- dial tone
- dial tone removal
- post dialing
- speech path
- pulse code modulation (PCM) cut-through (CT)

The PMACT analyzes the real time of the signal processor and the master processor (MP) in the following categories:

- call processing occupancy
- high-priority background occupancy
- low-priority occupancy

The combination of the call processing and the high-priority background occupancies are displayed as one total on the report. This total provides the service for the PM. Low-priority background processes are used for audits and for testing. The displayed data is updated once each minute with an average number for the last 15 minutes.

All data measurements are accumulated on the active unit in increments of 1 minute and averaged every 15 minutes in the form of a summary. To get an hourly measurement, the 15-minute summaries must be added and divided by 4. This will, for example, provide an average DTC signal processor occupancy for the hour under study.

The accumulated data is not maintained for a warm or cold SWACT. Only one user at a time can monitor the performance data for a PM, but up to five PMs can be included in the data accumulation.

Monitoring TMS signal processor (SP) real-time occupancy

For a current real-time display, monitor the overall TOPS message switch (TMS) performance by the XPM PERFORM tool sublevel PMACT (PM -

TMS). The following figure illustrates the display of the PMACT sublevel for the TMS for a period of one minute.

XPM PERFORM display showing TMS signal processor (SP) occupancy

```
 CM     MS     IOD     Net      PM    CCS      Lns     Trks     Ext    E10
  .      .      .       .        .     .        .        .        .      .

 PMACT
                            SysB    ManB    OffL    CBsy   ISTb   InSv
  0 Quit       PM             0       0       0       0      0     275
  2 Strt       TMS            0       0       0       0      0       2
  3 Strtlog
  4 Stoplog  TMS   0 InSvLinks OOS:  CSide   0 . PSide  0
  5 Stop     Unit0Act   InSv
  6          Unit1InactInSv
  7          LOAD NAME  :  NDT31BM
  8          STATUS:  RUNNING  REASON:  COMMAND   LOGS:  OFFTIME: 00:14:00
  9                            MP    MPAVG    SP  SPAVG
 10
 11          CALL PROCESSING   15      15     70    70
 12          LOW PRIO BGND     12      12      6     6
 13                          ORIG   ORIGAVG   TERM    TERMAVG
 14                             0         0      0          0
 15                         AVAIL     INUSE   HIGH
 16          PS CHNL            0         0      0
 17          UTR                0         0      0
 18

   ADMIN
 Time  07:59                     Value used to monitor the
                                 signal processor occupancy
```

Data evaluation procedure

After monitoring the TMS signal processor occupancy percentage during the current study period (the call busy hour), compare the study's percentage to the engineering maximum level objective of 90%. The 90% engineering level objective allows for a 10% buffer. If the percentage is consistently above the

TOPS (continued)

engineering level objective and the cause is not attributable to maintenance reasons or unusual nonrecurring events, then notify the provisioning engineer.

MPC/EMPC messaging

The multiprotocol controller is a general purpose data communications card between the switch and an external computer (between a switch and a central office billing computer, for example).

Total MPC/EMPC messages per second

Monitor multiprotocol controller (MPC)/enhanced multiprotocol controller (EMPC) messaging degradation by the OM Group MPCBASE, register LOSTMSGS.

OM group	Register	Log reports
MPCBASE	LOSTMSGS	MPC102
MPCLINK2	L2LRCV	
MPCLINK2	L2LXMIT	
MPCLINK3	L3LRCV	
MPCLINK3	L3LXMIT	

Total MPC/EMPC messages per second affects the overall performance of the operator services system. If the messages per second is too high, the MPC will discard messages. Therefore, operator services grade of service is degraded.

Calculations used to evaluate performance

Use the following formula to determine the total MPC/EMPC messages per second:

```
  Busy hour L2LXMIT + L2LRCV + L3LXMIT + L3LRCV
---------------------------------------------------- =   Total MPC/EMPC
              3600 seconds per hour                      messages per
                                                         second
```

Data evaluation procedure

MPC/EMPC call messaging capacity to the Directory Assistance System (DAS) equals:

- MPC—20 messages per second
- EMPC—50 messages per second

Directory assistance control messaging traffic will be load shared between supplied MPC/EMPC cards.

Calculate the total MPC/EMPC messages per second during the current study period. Compare this calculation with call message capacity. Consider additional MPC/EMPC cards (maximum of 16) or of an MPC card to an EMPC card if the following occurs:

- If the amount is always above the service level objectives (MPC = 20, EMPC = 50) , the cause is not attributable to maintenance reasons or unusual nonrecurring events.

Otherwise, you must reduce traffic. Report these indications to the engineering organization.

QMS MIS impact on EMPC

If QMS management information system (MIS) is in use, the system must monitor the rate of message throughput on the X.25 link to the MIS device needs. The following table lists the OM groups and registers that associate with QMS MIS impact on the EMPC.

> ***Note:*** The following table contains one assumption: the system only transmits full buffers.

OM associated with QMS MIS impact on EMPC

OM group	Register	Log reports
QMSMIS	BUFFSX	

The number of call buffers the system transmits per minute affects the performance of the operator services system. If the number of EMPC links is not enough, the EMPC discards information. The service of the operator grade is degraded.

Calculations used to evaluate performance

Use the following formula to determine the number of call buffers the system transmits per minute:

TOPS (end)

```
High day busy hour BUFFSX
-------------------------  =       Number of call buffers
           60                      transmitted per minute
```

Data evaluation procedure

Link capacity limits an EMPC card that transmits at 56 kbp/s to 52 buffers per minute. A 20% reduction to account for X.25 link overhead and peakedness changes the capacity of the EMPC link to 42 buffers per minute.

For configuration of links, the system supplies one additional link to protect against link failure. All links share the traffic load under normal operating conditions.

Calculate the number of call buffers the system transmits per minute during the current study period. Compare this amount with the total EMPC link capacity. Give consideration to additional EMPC cards under the following conditions:

- the amount is consistently above the service level objectives (42 buffers per minute per EMPC link).
- the cause is not because of maintenance reasons or one time events that are not normal

You must reduce traffic. Report these indications to the engineering group.

TOPS 04

There are three TOPS 04 office configurations. This section examines each configuration separately:

- TOPS 04 single
- TOPS 04 host OC
- TOPS 04 remote OC

The system arranges these configurations to handle TOPS traffic. The system also arranges for a group of TOPS and other types of traffic (for example, tandem calls).

Isolating TOPS 04 traffic

Use operational measurements to isolate the TOPS 04 traffic from the rest of the traffic (if any) on the switch. Calculate the percent of CPU call processing occupancy for TOPS 04 traffic. The system uses this information to determine what causes higher than usual CPU occupancy. It could be the result of not normal TOPS 04 average processing times, or call rates, or the two together. Notify the provisioning engineer of higher than forecast values for either call rates or average processing times.

> ***Note:*** OMs do not segregate traffic by position type. If the position types that follow are in the same office, the system cannot isolate position types from each other. The system cannot isolate position types from each other through standard OM calculations. The position types include TOPS 04, TOPS MP, TOPS MPX, and TOPS MPX-IWS traffic or any group of these positions. Engineering personnel must conduct traffic studies to determine traffic separation between the different TOPS position types. The engineering personnel apply the traffic separations to the OM statistical data to facilitate calculations of TOPS 04 computing module usage.

The following table lists OM registers. The calculation needs OM registers to separate the TOPS 04 traffic from the rest of the traffic on the switch.

(Sheet 1 of 2)

OM group	Register	Log reports
AABS	AABSCCSC	
AABS	AABSCOSC	
AABS	AABSTHSC	
CDACTS	ACTSABN	

TOPS 04 (continued)

(Sheet 2 of 2)

OM group	Register	Log reports
CDACTS	ACTSSUCC	
CDMCCS	MCCSATT	
CDMCCS	MCCSFAIL	TRK106
CDMCCS	MCCSOPR	
TOPSOC	OCMCCS	
TOPSOCPS	IPS	
TOPSRON	RONATT	

TOPS 04 call timing

The following tables use OM registers: “TOPS 04 standalone call processing real-time (ms) calculation" through “TOPS 04 remote OC call processing real-time (ms) calculation. " The OM registers calculate the total call timing of TOPS 04 traffic.

Note: Real-time tool REAL::TIME automates these calculations.

The call timing in the following tables are projected call timings:

- “TOPS 04 standalone call processing real-time (ms) calculation"
- “TOPS 04 host OC call processing real-time (ms) calculation"
- “TOPS 04 remote OC call processing real-time (ms) calculation"

The call timing in the following tables uses the SN20 processor as the base for:

- “TOPS 04 standalone call processing real-time (ms) calculation"
- “TOPS 04 host OC call processing real-time (ms) calculation"
- “TOPS 04 remote OC call processing real-time (ms) calculation"

For other processors, complete the calculations. Use the numbers given in the table and apply the conversion factor for the appropriate processor shown in the following list.

- SN30 conversion—SN20 1.5
- SN40 conversion—SN20 1.7
- NT40 conversion—SN20 2.0

> ***Note:*** The NTI regional capacity engineer obtains call timings for other loads.

TOPS 04 standalone configuration

Use the following table when the TOPS 04 office is a single configuration. The table determines the specific CPU real-time result of TOPS 04 traffic.

Determining CPU real-time impact of TOPS 04 traffic (standalone configuration)

Call type	OM group	Busy hour call attempts(OM registers)		Call timing		Total MS
Hotel 0-, 0+, 1+	TOPSOCPS	IPS HTL_0MINUS + IPS HTL_0PLUS + IPS HTL_1PLUS	X	42.9 ms	=	
Non-coin 0-, 0+	TOPSOCPS	IPS NCN_0MINUS IPS	X	39.1 ms	=	
		NCN_0PLUS	X	41.0 ms	=	
Coin 0-, 0+, 1+	TOPSOCPS	IPS CN_0MINUS IPS	X	52.4 ms	=	
		CN_0PLUS IPS	X	50.7 ms	=	
		CN_1PLUS	X	53.0 ms	=	
ACTS	CDACTS	ACTSABN + ACTSSUCC	X	37.6 ms	=	
MCCS	CDMCCS	MCCSATT + MCCSFAIL + MCCSOPR	X	43.8 ms	=	
AABS bill third party	AABS	AABSTHSC	X	66.7 ms	=	
AABS collect	AABS	AABSCOSC	X	54.6 ms	=	
AABS credit card	AABS	AABSCCSC	X	45.1 ms	=	
Recall	TOPSOCPS	IPS RECALL	X	25.1 ms	=	
CAMA	TOPSOCPS	IPS CAMA	X	26.5 ms	=	
RONI	TOPSRON	RONATT	X	21.0 ms	=	
Inwards	TOPSOCPS	IPS INWARDS	X	36.0 ms	=	
Delay	TOPSOCPS	IPS DELAY	X	30.8 ms	=	

TOPS 04 (continued)

QMS additives

Use the QMS additives in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Calculations used to evaluate performance

Use the following formula to determine the percentage of call processing real time the processor of a single TOPS 04 uses.

```
Percentage of CPU call                 Total ms
processing occupancy for  =  --------------------  ·  100
TOPS 04 standalone calls     3,600,000 ms per hr
```

Evaluating TOPS 04 standalone CPU occupancy

The TOPS 04 standalone configuration serves TOPS traffic. The TOPS 04 standalone configuration also can serve other types of traffic. The evaluation procedure consists of a comparison of the study totals for each of the TOPS 04 call types. The TOPS 04 are used to engineer the TOPS facility. Adjustments to the end-of-design date can be necessary when the call rates are higher than forecast. Adjustments also can occur if other traffic (non-TOPS) moves to another switch (multiswitch locations).

TOPS 04 host OC

Use the following table when TOPS 04 is a host operator. The table determines the exact real-time result of TOPS 04 traffic on the CPU.

Determining CPU real-time impact of TOPS 04 traffic (host operator centralization office)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
Hotel 0-, 0+, 1+	TOPSOCPS	IPS HTL_0MINUS + IPS HTL_0PLUS + IPS HTL_1PLUS	X	21.3 ms	=	
Non-coin 0-, 0+	TOPSOCPS	IPS NCN_0MINUS	X	22.6 ms	=	
		IPS NCN_0PLUS	X	24.1 ms	=	
Coin 0-, 0+, 1+	TOPSOCPS	IPS CN_0MINUS	X	24.4 ms	=	
		IPS CN_0PLUS	X	23.7 ms	=	
		IPS CN_1PLUS	X	23.9 ms	=	
MCCS	TOPSOC	OCMCCS	X	03.6 ms	=	
Recall	TOPSOCPS	IPS RECALL	X	16.4 ms	=	
CAMA	TOPSOCPS	IPS CAMA	X	13.7 ms	=	
RONI	TOPSRON	RONATT	X	13.7 ms	=	
Inwards	TOPSOCPS	IPS INWARDS	X	22.9 ms	=	
Delay	TOPSOCPS	IPS DELAY	X	15.6 ms	=	
			TOTAL MS		=	

QMS additives

Use the QMS additives in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

TOPS 04 (continued)

Calculations used to evaluate performance

Use the following formula to determine the percentage of call processing real time the processor of a single TOPS 04 uses.

```
Percentage of CPU call                Total ms
processing occupancy for  =  --------------------  ·  100
TOPS 04 host OC calls         3,600,000 ms per hr
```

Evaluating TOPS 04 host OC CPU occupancy

The TOPS 04 host OC configuration serves TOPS 04. The TOPS 04 host OC configuration also can serve other types of traffic. The evaluation procedure consists of a comparison of the study totals for each of the TOPS 04 call types. The TOPS 04 are used to engineer the TOPS facility. Adjustments to the end-of-design date can be necessary if the call and growth rates are higher than forecast. Adjustments also occur if other traffic (non-TOPS) moves to another switch (multiswitch locations).

TOPS 04 remote OC

Use the following table when the TOPS 04 is a remote operator centralization office. The table determines the exact real-time result of TOPS 04 traffic the CPU processes.

Determining CPU real-time impact of TOPS 04 traffic (remote operator centralization office) (Sheet 1 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
Hotel 0-, 0+, 1+	TOPSOCPS	IPS HTL_0MINUS + IPS HTL_0PLUS + IPS HTL_1PLUS	X	44.3 ms	=	
Non-coin 0-, 0+	TOPSOCPS	IPS NCN_0MINUS	X	41.0 ms	=	
		IPS NCN_0PLUS	X	43.4 ms	=	
Coin 0-, 0+, 1+	TOPSOCPS	IPS CN_0MINUS	X	53.8 ms	=	
		IPS CN_0PLUS	X	53.6 ms	=	
		IPS CN_1PLUS	X	55.2 ms	=	
ACTS	CDACTS	ACTSABN + ACTSSUCC	X	36.6 ms	=	
MCCS	TOPSOC	OCMCCS	X	42.3 ms	=	

TOPS 04 (continued)

Determining CPU real-time impact of TOPS 04 traffic (remote operator centralization office) (Sheet 2 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
AABS bill third party	AABS	AABSTHSC	X	65.7 ms	=	
AABS collect	AABS	AABSCOSC	X	53.6 ms	=	
AABS credit card	AABS	AABSCCSC	X	44.1 ms	=	
Recall	TOPSOCPS	IPS RECALL	X	25.4 ms	=	
CAMA	TOPSOCPS	IPS CAMA	X	28.6 ms	=	
RONI	TOPSRON	RONATT	X	21.3 ms	=	
Inwards	TOPSOCPS	IPS INWARDS	X	37.6 ms	=	
Delay	TOPSOCPS	IPS DELAY	X	30.7 ms	=	
			TOTAL MS		=	

QMS additives

Use the QMS additives in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Calculations used to evaluate performance

Use the following formula to determine the percentage of call processing real time in the processor of a TOPS 04 remote OC.

```
Percentage of CPU call               Total ms
processing occupancy for  =  --------------------  ·  100
TOPS 04 remote OC calls      3,600,000 ms per hr
```

TOPS 04 (end)

Evaluating TOPS 04 remote OC CPU occupancy

The TOPS 04 remote OC configuration serves TOPS 04 traffic. The TOPS 04 remote OC configuration also can serve other types of traffic. The evaluation procedure consists of a comparison of the study totals for each of the TOPS 04 call types. The TOPS 04 call types engineer the TOPS facility. Adjustments to the end-of-design date may be necessary if the call rates and growth directions are higher than forecast.

TOPS MP

There are three TOPS MP office configurations. This section examines each configuration:

- TOPS MP standalone
- TOPS MP host OC
- TOPS MP remote OC

Each configuration can be set to handle only TOPS traffic or a combination of TOPS and other types of traffic (for example, tandem calls).

Isolating TOPS MP traffic

Isolate the TOPS MP traffic from the rest of the traffic (if any) on the switch. Isolation occurs through the use of operational measurements. You calculate the percent CPU call processing occupancy for TOPS MP traffic. This information determines whether higher than expected CPU occupancy is the result of higher than expected TOPS MP average work times. Higher than expected CPU occupancy also can be the result of higher than expected TOPS MP call rates. Notify the provisioning engineer of higher than forecast values for either call rates or average processing times.

> ***Note:*** OMs do not segregate traffic by position type. If TOPS 04, TOPS MP, TOPS MPX, and TOPS MPX-IWS or any group are in the same office, the system cannot isolate the position type from each other. Engineers must conduct traffic studies to determine traffic separation between the different TOPS position types. Engineers apply the traffic separations to the OM statistical data to facilitate calculations of TOPS MP computing module use.

The following table lists the OM registers the calculation needs. The system uses the calculation to separate the TOPS MP traffic from the rest of the traffic on the switch.

OMs for isolating TOPS MP traffic (Sheet 1 of 2)

OM group	Register	Register	Log reports
AABS	AABSCCSC	AABSCCSC	None
AABS	AABSCOSC	AABSCOSC	None
AABS	AABSTHSC	AABSTHSC	None
CDACTS	ACTSABN	ACTSABN	None

TOPS MP (continued)

OMs for isolating TOPS MP traffic (Sheet 2 of 2)

OM group	Register	Register	Log reports
CDACTS	ACTSSUCC	ACTSSUCC	None
CDMCCS	MCCSATT	MCCSATT	None
CDMCCS	MCCSFAIL	MCCSFAIL	None
CDMCCS	MCCSOPR	MCCSOPR	None
TOPSAICC	CMPLTANN	CMPLTANN	None
TOPSAICC	CMPLTNIL	CMPLTNIL	None
TOPSDA	DACALL	DACALL	None
TOPSDA	INTCCALL	INTCCALL	None
TOPSDACC	AACCPT	AACCPT	None
TOPSOC	OCMCCS	OCMCCS	None
TOPSOCPS	IPS	IPS	None
TOPSRON	RONATT	RONATT	None

Timing TOPS MP call

Tables “TOPS MP standalone call processing real-time (ms) calculation" through “TOPS MP remote OC call processing real-time (ms) calculation" use OM registers. The OM registers calculate the total call timing that associate with TOPS MP traffic.

Note: The real-time tool REAL::TIME automates these calculations.

Tables “TOPS MP standalone call processing real-time (ms) calculation," and “TOPS MP remote OC call processing real-time (ms) calculation"are projected call timings. The current call timings are available through your engineering department. A limited number of call timings are available.

The following call timings are based on the SN20 processor:

- “TOPS MP standalone call processing real-time (ms) calculation"
- “TOPS MP host OC call processing real-time (ms) calculation"
- “TOPS MP remote OC call processing real-time (ms) calculation"

For the other processors, complete the calculations given in the following table. Apply the conversion factor for the appropriate processor as shown in the following list.

- SN30 conversion—SN20 1.5
- SN40 conversion—SN20 1.7
- NT40 conversion—SN20 2.0

Note: The NTI regional capacity engineer obtains call timings for other loads.

TOPS MP standalone configuration

Use the following table when the TOPS MP office is a standalone configuration. The table determines the exact CPU real-time result of TOPS MP traffic.

Determining CPU real-time impact of TOPS MP traffic (standalone configuration) (Sheet 1 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
Hotel 0-, 0+, 1+	TOPSOCPS	IPS HTL_0MINUS + IPS HTL_0PLUS + IPS HTL_1PLUS	X	42.9 ms	=	
Non-coin 0-, 0+	TOPSOCPS	IPS NCN_0MINUS	X	39.1 ms	=	
		IPS NCN0PLUS	X	41.0 ms	=	
Coin 0-, 0+, 1+	TOPSOCPS	IPS CN_0MINUS	X	52.4 ms	=	
		IPS CN_0PLUS	X	50.7 ms	=	
		IPS CN_1PLUS	X	53.0 ms	=	
ACTS	CDACTS	ACTSABN + ACTSSUCC	X	37.6 ms	=	
MCCS	CDMCCS	MCCSATT + MCCSFAIL + MCCSOPR	X	43.8 ms	=	
AABS bill third party	AABS	AABSTHSC	X	66.7 ms	=	
AABS collect	AABS	AABSCOSC	X	54.6 ms	=	
AABS credit card	AABS	AABSCCSC	X	45.1 ms	=	
Recall	TOPSOCPS	IPS RECALL	X	25.1 ms	=	
CAMA	TOPSOCPS	IPS CAMA	X	26.5 ms	=	

TOPS MP (continued)

Determining CPU real-time impact of TOPS MP traffic (standalone configuration) (Sheet 2 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
RONI	TOPSRON	RONATT	X	21.0 ms	=	
Inwards	TOPSOCPS	IPS INWARDS	X	36.0 ms	=	
Delay	TOPSOCPS	IPS DELAY	X	30.8 ms	=	
DA	TOPSDA	DACALL	X	38.2 ms	=	
DA call completion	TOPSDACC	AACCPT	X	53.4 ms	=	
INT	TOPSDA	INTCCALL	X	26.6 ms	=	
INT call completion with announcement	TOPSAICC	CMPLTANN	X	24.6 ms	=	
INT call completion without announcement	TOPSAICC	CMPLTNIL	X	19.6 ms	=	
			TOTAL MS		=	

QMS and ADAS additives

Use the QMS additives in the following table.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Add 64% over standard DA call types when your office installs ADAS.

Calculations used to evaluate performance

Use the following formula to determine the percentage of call processing real time the processor of a standalone TOPS MP uses.

```
Percentage of CPU call                 Total ms
processing occupancy for  =  -------------------- · 100
TOPS MP standalone calls     3,600,000 ms per hr
```

Evaluating TOPS MP remote OC CPU occupancy

The TOPS MP remote OC configuration serves TOPS MP traffic or other types of traffic. The TOPS MP standalone configuration also can serve other types of traffic. The evaluation procedure consists of a comparison of the study totals for each of the TOPS MP call types. The TOPS MP call types engineer the TOPS facility. Adjustments to the end-of-design date can be necessary if the call rates are higher than forecast. The TOPS 04 remote OC configuration. You can move other traffic (non-TOPS) to another switch (multiswitch locations).

TOPS MP host OC

Use the following table when the TOPS MP is a host operator centralization office. The table determines the exact real-time affect of TOPS MP traffic on the CPU.

Determining CPU real-time impact of TOPS MP traffic (standalone configuration) (Sheet 1 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
Hotel 0-, 0+, 1+	TOPSOCPS	IPS HTL_0MINUS + IPS HTL_0PLUS + IPS HTL_1PLUS	X	21.3 ms	=	
Non-coin 0-, 0+	TOPSOCPS	IPS NCN_0MINUS	X	22.6 ms	=	
		IPS NCN_0PLUS	X	24.1ms		
Coin 0-, 0+, 1+	TOPSOCPS	IPS CN_0MINUS	X	24.4ms	=	
		IPS CN_0PLUS	X	23.7ms		
		IPS CN_1PLUS	X	23.9ms		
MCCS	TOPSOC	OCMCCS	X	03.6 ms	=	
Recall	TOPSOCPS	IPS RECALL	X	16.4 ms	=	
CAMA	TOPSOCPS	IPS CAMA	X	13.7 ms	=	
RONI	TOPSRON	RONATT	X	13.7 ms	=	

TOPS MP (continued)

Determining CPU real-time impact of TOPS MP traffic (standalone configuration) (Sheet 2 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
Inwards	TOPSOCPS	IPS INWARDS	X	22.9 ms	=	
Delay	TOPSOCPS	IPS DELAY	X	15.6 ms	=	
DA	TOPSDA	DACALL	X	16.9 ms	=	
INT	TOPSDA	INTCCALL	X	13.9 ms	=	
			TOTAL MS		=	

QMS and ADAS additives

Use the QMS additives in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Add 64% over standard DA call types when your office installs ADAS.

Calculations used to evaluate performance

Use the following formula to determine the percentage of call processing real time in use for the processor of a TOPS MP host OC.

$$\text{Percentage of CPU call processing occupancy for TOPS MP host OC calls} = \frac{\text{Total ms}}{3{,}600{,}000 \text{ ms per hr}} \cdot 100$$

Evaluating TOPS MP host OC CPU occupancy

The TOPS MP host OC configuration serves TOPS MP traffic. The TOPS MP host OC configuration also serves other types of traffic. The evaluation procedure consists of a comparison of the test totals for each of the TOPS MP call types. The TOPS MP call types are the call types in use to engineer the

TOPS facility. Adjustments to the end-of-design date may be necessary if the call and growth rates are higher than forecast. You can move the excess traffic (non-TOPS) to another switch (multiswitch locations).

TOPS MP remote OC

Use the following table when the TOPS MP is a remote operator centralization office. The table determines the exact real-time affect of TOPS MP traffic processed by the CPU processes.

Determining CPU real-time impact of TOPS MP traffic (host operator centralization office) (Sheet 1 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
Hotel 0-, 0+, 1+	TOPSOCPS	IPS HTL_0MINUS + IPS HTL_0PLUS + IPS HTL_1PLUS	X	44.3 ms	=	
Non-coin 0-, 0+	TOPSOCPS	IPS NCN_0MINUS	X	41.0 ms	=	
		IPS NCN_0PLUS	X	43.4 ms	=	
Coin 0-, 0+, 1+	TOPSOCPS	IPS CN_0MINUS	X	53.8 ms	=	
		IPS CN_0PLUS	X	53.6 ms	=	
		IPS CN_1PLUS	X	55.2 ms	=	
ACTS	CDACTS	ACTSABN + ACTSSUCC	X	36.6 ms	=	
MCCS	TOPSOC	OCMCCS	X	42.3 ms	=	
AABS bill third party	AABS	AABSTHSC	X	65.7 ms	=	
AABS collect	AABS	AABSCOSC	X	53.6 ms	=	
AABS credit card	AABS	AABSCCSC	X	44.1 ms	=	
Recall	TOPSOCPS	IPS RECALL	X	25.4 ms	=	
CAMA	TOPSOCPS	IPS CAMA	X	28.6 ms	=	
RONI	TOPSRON	RONATT	X	21.3 ms	=	
Inwards	TOPSOCPS	IPS INWARDS	X	37.6 ms	=	
Delay	TOPSOCPS	IPS DELAY	X	30.7 ms	=	
DA	TOPSDA	DACALL	X	37.4 ms	=	

TOPS MP (continued)

Determining CPU real-time impact of TOPS MP traffic (host operator centralization office) (Sheet 2 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
DA call completion	TOPSDACC	AACCPT	X	52.6 ms	=	
INT	TOPSDA	INTCCALL	X	29.1 ms	=	
INT call completion with announcement	TOPSAICC	CMPLTANN	X	26.7 ms	=	
INT call completion without announcement	TOPSAICC	CMPLTNIL	X	21.4 ms	=	
			TOTAL MS		=	

QMS and ADAS additives

Use the QMS additives in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Add 64% over standard DA call types when your office installs ADAS.

Calculations used to evaluate performance

Use the following formula to determine the percentage of call processing real time in use for the processor of a TOPS MP remote OC.

```
Percentage of CPU call              Total ms
processing occupancy for  =  --------------------  ·  100
TOPS MP remote OC calls      3,600,000 ms per hr
```

Evaluating TOPS MP remote OC CPU occupancy

The TOPS MP remote OC configuration servesTOPS MP traffic. The TOPS MP remote OC configuration can also serve other types of traffic. The evaluation procedure consists of a comparison of the study totals for each of the TOPS MP call types. The study totals for each of the TOPS MP call types compare with those in use to engineer the TOPS facility. Adjustments to the end-of-design date may be necessary if the call rates and growth directions are higher than forecast.

TOPS MPX

There are three TOPS MPX office configurations. The following section examines each configuration.

- TOPS MPX standalone
- TOPS MPX host OC
- TOPS MPX remote OC

The system arranges each of these configurations to handle TOPS traffic. This system also arranges for a group of TOPS and other types of traffic (for example, tandem calls).

Isolating TOPS MPX traffic

Isolate the TOPS MPX traffic from the rest of the traffic (if any) on the switch. Isolation occurs through the use of operational measurements. The user calculates the percent CPU call processing occupancy for TOPS MPX traffic. This information determines the causes of higher than expected CPU occupancy. Higher than expected TOPS MPX average work times, or higher than expected TOPS MPX call rates, or both are potential causes. Notify the provisioning engineer of higher than forecast values for either call rates or average processing times.

> ***Note:*** OMs do not segregate traffic by position type. Position types TOPS 04, TOPS MP, TOPS MPX, and TOPS MPX-IWS traffic or any combination can exist in the same office. Standard OM calculations will not isolate these types. Engineers must conduct traffic studies to determine traffic separation between the different TOPS position types. Engineers apply the traffic separations to the OM data statistics to facilitate calculations of TOPS MPX computing module use.

The table lists the OM registers needed to calculate and separate the TOPS MPX traffic from other traffic on the switch.

OMs for isolating TOPS MPX traffic

OM group	Register	Log reports
TOPSAICC	CMPLTANN	
TOPSAICC	CMPLTNIL	
TOPSDA	DACALL	
TOPSDA	INTCCALL	
TOPSDACC	AACCPT	

TOPS MPX call timing

Tables “TOPS MPX standalone configuration" through “TOPS MPX remote OC call processing real-time (ms) calculation" use the OM registers. These tables use the OM registers to calculate the total call timing that associates with TOPS MPX traffic.

> ***Note:*** The real-time tool REAL::TIME automates the calculations.

The call timing in the following tables are projected call timings: “TOPS MPX standalone call processing real-time calculation," “TOPS MPC host OC call processing real-time (ms) call processing," and “TOPS MPX remote OC call processing real-time (ms) call processing."

The SN20 processor is the base for the call timing in the following tables: “TOPS MPX standalone call processing real-time calulation," “TOPS MPX host OC call processing real-time (ms) call processing," and “TOPS MPX remote OC call processing real-time (ms) call processing." For other processors, complete the calculation using the numbers given in the table. Apply the conversion factor for the appropriate processor as shown in the following list.

- SN30 conversion—SN20 1.5
- SN40 conversion—SN20 1.7
- NT40 conversion—SN20 2.0

> ***Note:*** The NTI regional capacity engineer obtains call timing for other loads.

TOPS MPX standalone configuration

Use the following table when the TOPS MPX office is a standalone configuration. The table determines the exact CPU real-time affect of TOPS MPX traffic.

Determining CPU real-time impact of TOPS MPX traffic (standalone configuration) (Sheet 1 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
DA	TOPSDA	DACALL	X	39.2 ms	=	
DA call completion	TOPSDACC	AACCPT	X	54.4 ms	=	
INT	TOPSDA	INTCCALL	X	27.6 ms	=	

TOPS MPX (continued)

Determining CPU real-time impact of TOPS MPX traffic (standalone configuration) (Sheet 2 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
INT call completion with announcement	TOPSAICC	CMPLTANN	X	25.6 ms	=	
INT call completion without announcement	TOPSAICC	CMPLTNIL	X	20.6 ms	=	
			TOTAL MS		=	

QMS and ADAS additives

Use the QMS additives listed in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Add 64% over standard DA call types if your office installs ADAS.

Calculations used to evaluate performance

The following formula determines the percentage of call processing real time in use in the processor of a standalone TOPS MPX.

```
Percentage of CPU call                  Total ms
processing occupancy for  =  --------------------  ·  100
TOPS MPX standalone calls    3,600,000 ms per hr
```

Evaluating TOPS MPX standalone CPU occupancy

The TOPS MPX standalone configuration serves TOPS MPX traffic. This configuration also serves other types of traffic. The evaluation procedure consists of a comparison of the test totals for each of the TOPS MPX call types.

The evaluation compares test totals for each of the TOPS MP call types with those used to engineer the TOPS facility. Adjustments to the end-of-design date may be necessary if the call rates are higher than forecast. If necessary, move other traffic (non-TOPS) to another switch (multiswitch locations).

TOPS MPX host OC

Use the following table when the OPS MPX is a host operator centralization office. The table determines the exact real-time affect of TOPS MPX traffic on the CPU.

Determining CPU real-time impact of TOPS MPX traffic (host operator centralization office)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
DA	TOPSDA	DACALL	X	17.9 ms	=	
INT	TOPSDA	INTCCALL	X	14.9 ms	=	
			TOTAL MS		=	

QMS and ADAS additives

Use the QMS additives in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Add 64% over standard DA call types when your office installs ADAS.

Calculations used to evaluate performance

The following formula determines the percentage of call processing real time used in the processor of a TOPS MPX host OC.

TOPS MPX (continued)

```
Percentage of CPU call                 Total ms
processing occupancy for  =  --------------------  ·  100
TOPS MPX host OC calls       3,600,000 ms per hr
```

Evaluating TOPS MPX host OC CPU occupancy

The TOPS MPX host OC configuration serves TOPS MPX traffic. The TOPS MPX host OC configuration can also serve other types of traffic. The evaluation compares test totals for each of the TOPS MPX call types with test totals used to engineer the TOPS facility. Adjustments to the end-of-design date may be necessary if the call rates are higher than forecast. If necessary, move other traffic (non-TOPS) to another switch (multiswitch locations).

TOPS MPX remote OC

Use the following table when the TOPS MPX is a remote operator centralization office. The table determines the exact real-time result of TOPS MPX traffic the CPU processes.

Determining CPU real-time impact of TOPS MPX traffic (remote operator centralization office)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
DA	TOPSDA	DACALL	X	37.4 ms	=	
DA call completion	TOPSDACC	AACCPT	X	52.6 ms	=	
INT	TOPSDA	INTCCALL	X	29.1 ms	=	
INT call completion with announcement	TOPSAICC	CMPLTANN	X	26.7 ms	=	
INT call completion without announcement	TOPSAICC	CMPLTNIL	X	21.4 ms	=	
			TOTAL MS		=	

QMS and ADAS additives

Use the QMS additives in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Calculations used to evaluate performance

The following formula determines the percentage of call processing real time used in the processor of a TOPS MPX remote OC.

```
Percentage of CPU call                    Total ms
processing occupancy for  =  --------------------  ·  100
TOPS MPX remote OC calls     3,600,000 ms per hr
```

Evaluating TOPS MPX remote OC CPU occupancy

The TOPS MPX remote OC configuration serves TOPS MPX traffic. This configuration also serves other types of traffic. The procedure is the same as for the other configurations. The evaluation compares the test totals for each of the TOPS MPX call types with the test totals used to engineer the TOPS facility. Adjustments to the end-of-design date may be necessary if the call rates and growth directions are higher than forecast.

TOPS MPX-IWS

There are three TOPS MPX-IWS office configurations. The following section examines each configuration.

- TOPS MPX-IWS standalone
- TOPS MPX-IWS host OC
- TOPS MPX-IWS remote OC

The system arranges each of these configurations to handle only TOPS traffic or a combination of TOPS and other types of traffic (for example, tandem calls).

Isolating TOPS MPX-IWS traffic

Use operational measurements to isolate the TOPS MPX-IWS traffic from the rest of the traffic (if any) on the switch. Calculate the percent CPU call processing occupancy for TOPS MPX-IWS traffic. The system uses the information to determine causes of higher than expected CPU occupancy. Higher than expected TOPS MPX-IWS average work times, higher than expected TOPS MPX-IWS call rates, or both, are potential causes. Notify the provisioning engineer of higher than forecast values for either call rates or average process times.

> ***Note:*** OMs do not segregate traffic by position type. Position types TOPS 04, TOPS MP, TOPS MPX, and TOPS MPX-IWS traffic or any combination exist in the same office. The system cannot isolate these position types from each other through standard OM calculations. Engineers must conduct traffic studies to determine traffic separation between the different TOPS position types. Engineers apply the traffic separations to the OM statistical data to facilitate calculations of TOPS MPX-IWS computing module use.

The table lists the OM registers you need to calculate and separate the TOPS MPX-IWS traffic from the rest of the traffic. This traffic is on the switch.

OMs for isolating TOPS MPX-IWS traffic

OM group	Register	Log reports
TOPSDA	DACALL	
TOPSDA	INTCCALL	
TOPSDACC	AACCPT	
TOPSOCPS	IPS	

TOPS MPX-IWS call timing

The OM registers calculate the total call timing associated with TOPS MPX-IWS traffic. Tables “Performance indicators that monitor TOPS MPX-IWS traffic" through “TOPS MPX-IWS remote OC call processing real-time (ms) calculation" use the OM registers.

Note: The real-time tool REAL::TIME automates the calculations.

The SN20 processor is the basis for the call timing in the following tables: “Performance indicators that monitor TOPS MPX-IWS traffic," “TOPS MPX-IWS host OC call processing real-time (ms) calculation," and “TOPS MPX-IWS remote OC call processing real-time (ms) calculation." Use the numbers in the table to complete the calculations. Apply the conversion factor for the appropriate processor in the following list.

- SN30 conversion—SN20 1.5
- SN40 conversion—SN20 1.7
- NT40 conversion—SN20 2.0

Note: The NTI regional capacity engineer obtains all timing for other loads.

TOPS MPX-IWS standalone configuration

The system uses the following table when the TOPS MPX-IWS office is a standalone configuration. The table determines the exact CPU real-time result of TOPS MPX-IWS traffic.

Determining CPU real-time impact of TOPS MPX-IWS traffic (standalone configuration) (Sheet 1 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
Hotel 1+	TOPSOCPS	IPS HTL_1PLUS	X	50.7 ms	=	
Non-coin 0-, 0+	TOPSOCPS	IPS NCN_0MINUS	X	45.7 ms	=	
		IPS NCN_0PLUS	X	49.5 ms	=	
Coin 0-, 1+	TOPSOCPS	IPS CN_0MINUS	X	60.7 ms	=	
		IPS CN_1PLUS	X	63.4 ms	=	
DA	TOPSDA	DACALL	X	42.8 ms	=	
DA call completion	TOPSDACC	AACCPT	X	56.6 ms	=	

TOPS MPX-IWS (continued)

Determining CPU real-time impact of TOPS MPX-IWS traffic (standalone configuration) (Sheet 2 of 2)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
INT	TOPSDA	INTCCALL	X	21.4 ms	=	
			TOTAL MS		=	

QMS and ADAS additives

Use the QMS additives in the following table if your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Add 64% over standard DA call types if your office installs ADAS.

Calculations used to evaluate performance

The following formula determines the percentage of call processing real time used in the processor of a standalone TOPS MPX-IWS.

```
Percentage of CPU call                    Total ms
processing occupancy for  =  --------------------  ·  100
TOPS MPX-IWS standalone      3,600,000 ms per hr
calls
```

Evaluating TOPS MPX-IWS standalone CPU occupancy

The TOPS MPX-IWS standalone configuration serves TOPS traffic. The TOPS MPX-IWS standalone configuration can also serve other types of traffic. The evaluation compares test totals for each of the TOPS MPX-IWS call types with test totals used to engineer the TOPS facility. Adjustments to the end-of-design date can be necessary if the call rates are higher than forecast. If necessary, move other traffic (non-TOPS) to another switch (multiswitch locations).

TOPS MPX-IWS host OC

Use the following table when the TOPS MPX-IWS is a host operator centralization office. The table determines the exact real-time result of TOPS MPX-IWS traffic on the CPU.

Determining CPU real-time impact of TOPS MPX-IWS traffic (host operator centralization office)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
Hotel 1+	TOPSOCPS	IPS HTL_1PLUS	X	27.1 ms	=	
Non-coin 0-, 0+	TOPSOCPS	IPS NCN_0MINUS	X	25.9 ms	=	
		IPS NCN_0PLUS	X	26.5 ms	=	
Coin 0-, 1+	TOPSOCPS	IPS CN_0MINUS	X	27.6 ms	=	
		IPS CN_1PLUS	X	30 ms	=	
DA	TOPSDA	DACALL	X	18.3 ms	=	
DA call completion	TOPSDACC	AACCPT	X	17.2 ms	=	
			TOTAL MS		=	

QMS and ADAS additives

Use the QMS additives listed in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Add 64% over standard DA call types if your office installs ADAS.

Calculations used to evaluate performance

The following formula determines the percentage of call processing real time used in the processor of a TOPS MPX-IWS host OC.

TOPS MPX-IWS (continued)

```
Percentage of CPU call               Total ms
processing occupancy for  =  --------------------  ·  100
TOPS MPX-IWS host OC calls   3,600,000 ms per hr
```

Evaluating TOPS MPX-IWS host OC CPU occupancy

The TOPS MPX-IWS standalone configuration serves TOPS traffic. The TOPS MPX-IWS standalone configuration can also serve other types of traffic. The evaluation compares test totals for each of the TOPS MPX-IWS call types with test totals used to engineer the TOPS facility. Adjustments to the end-of-design date can be necessary if the call rates are higher than forecast. If necessary, move other traffic (non-TOPS) to another switch (multiswitch locations).

TOPS MPX-IWS remote OC

Use the following table when the TOPS MPX-IWS is a remote operator centralization office. The table determines the exact real-time result of TOPS MPX-IWS traffic on the CPU.

Determining CPU real-time impact of TOPS MPX-IWS traffic (remote operator centralization office)

Call type	OM group	Busy hour call attempts (OM registers)		Call timing		Total MS
Hotel 1+	TOPSOCPS	IPS HTL_1PLUS	X	55.6 ms	=	
Non-coin 0-, 0+	TOPSOCPS	IPS NCN_0MINUS	X	49.2 ms	=	
		IPS NCN_0PLUS	X	53.8 ms	=	
Coin 0-, 1+	TOPSOCPS	IPS CN_0MINUS	X	63.5 ms	=	
		IPS CN_1PLUS	X	67.3 ms	=	
DA	TOPSDA	DACALL	X	43 ms	=	
DA call completion	TOPSDACC	AACCPT	X	56.8 ms	=	
INT	TOPSDA	INTCCALL	X	21.4 ms	=	
			TOTAL MS		=	

QMS and ADAS additives

Use the QMS additives listed in the following table when your office installs QMS.

QMS additives

Queues	Standalone	Host	Remote
2	3.4 ms	.9 ms	2.8 ms
4	3.7 ms	1.2 ms	2.8 ms
6	4.0 ms	1.5 ms	2.8 ms
8	4.3 ms	1.8 ms	2.8 ms

Add 64% over standard DA call types if your office installs ADAS.

Calculations used to evaluate performance

The following formula determines the percentage of call processing real time used in the processor of a TOPS MPX-IWS remote OC.

```
Percentage of CPU call                   Total ms
processing occupancy for  =  --------------------  ·  100
TOPS MPX-IWS remote OC       3,600,000 ms per hr
calls
```

Evaluating TOPS MPX-IWS remote OC CPU occupancy

The TOPS MPX-IWS remote OC configuration serves TOPS MPX-IWS traffic. The TOPS MPX-IWS remote OC configuration can also serve other types of traffic. The evaluation compares test totals for each of the TOPS MPX-IWS call types with those used to engineer the TOPS facility. Adjustments to the end-of-design date may be necessary if the call rates and growth directions are higher than forecast.

2 OM groups by release

Under each release heading is a list of the OM groups that changed or originated as part of that release.

NA013

The following list provides the new and changed OM groups for NA013.

- CALLRDT
- RTESVCS
- OAPCALP9
- QMSMIS
- WC
- XIPCOMID
- XIPDCOM
- XIPMISC
- XIPSRVCS

NA012

The following list provides the new and changed OM groups for NA012.

- ADASAPU
- ARN
- OAPCP
- SCAISRV4

NA011

The following list provides the new and changed OM groups for NA011.

- MWICTCAP
- PRIMWIC
- RND

- SCAISSRV
- SCAISRV2
- SCAISRV3

NA010

The following list provides the new and changed OM groups for NA010:

- C7GTLNK
- C7HSLAL1
- C7HSLAL2
- C7HSLATM
- C7HSLCAR
- C7LINK3
- C7LINK4
- AMA
- CMG
- RMSGOMGP
- SCAISRV3
- SDS
- SIMRING
- TRMTFR3

NA009

The following list provides the new and changed OM groups for NA009:

- ACDGRP
- AUTSPID
- CNAMD
- EXT
- SITE
- SITE2

NA008

The following list provides the new and changed OM groups for NA008:

- CALLFWD
- CND

- CNAB
- CNDB
- FC
- FLEXCALL (deleted)
- FTAM (deleted)
- HPCBASIC
- HPCTRKGP
- ISDNPDOM
- SCAISRV2
- SCAISRV3
- SEIUTRAN
- TRK
- TRMTFR3

STP4.1

The following list provides the new and changed OM groups for STP4.1:

- C7GTLINK
- C7SMH
- MRVT

STP4.0

The following list provides the new and changed OM groups for STP4.0:

- ASUFBUS
- ASUMEMUT
- C7AUTOIM
- C7GTWSCR
- C7LINK2
- C7LINK3
- C7LINK4
- C7LPP
- C7LPP2
- C7MDR (deleted)
- C7SCCP
- FBTRAFF

- HSLAL1
- HSLAL2
- HSLATM
- HSLCAR
- LIUFBUS
- MDR7GW (deleted)
- NCMCPUST
- PM
- PMTYP

NA007

The following list provides the new and changed OM groups for NA007:

- SCAISRV2
- UCDGRP

NA005.1

The following list provides the new and changed OM groups for NA005.1:

- CALLFWD
- CMISEOM
- CWTPOTS
- GIPDOMS
- DNCT
- EKTSOMS
- FLEXCALL
- HTGP
- LCD
- LINEACT
- LINEREF
- LINEXPT
- ROSEOMS
- TRMTCM
- TRMTCU
- TROUBLEQ
- TWCPE

NA005

The following list provides the new and changed OM groups for NA005:

- C7MTPRES
- CALLFWD
- CALLHOLD
- CALLOG
- CALLWAIT
- CF3P
- CM
- CND
- CNDB
- CPICKUP
- CPU
- EXNDINV
- EXT
- FBTRAFF
- HFPOM
- HUNT
- IBNGRP
- ISUPERRS
- LDS
- LNREDIAL
- MWTCAR
- MWTCAR2
- PRKOM
- SCAISRV2
- SPRING
- TRMTFR3
- WBTRK

TOPS05

The following list provides the new and changed OM groups for TOPS05:

- CTRYDIR
- MDSSTATS
- TOPPACT3
- TOPPDID5
- TOPSISUP
- TOPSMISC

NA004

The following list provides the new and changed OM groups for NA004:

- C7LINK1
- C7LINK3
- C7ROUTE2
- C7ROUTER
- DCADTALG **OM OBSOLETE
- DCAIA **OM OBSOLETE
- DCAMCEIA **OM OBSOLETE
- DSCWID
- ENG640M1
- LIMFBTP
- LIMFBUS
- LMSCPUST
- NIUFBUS
- NIUMEMUT
- SDS
- SRAOM
- TRMTCM2
- TRMTCU3
- TRMTER
- TRMTFR2
- TRMTFR3
- U3WC

TOPS04

The following list provides the new and changed OM groups for TOPS04:

- RTRSCCP
- RTRTCAP
- TOPSRTRS

NA003

The following list provides the new and changed OM groups for NA003:

- ASUFBUS
- ASUMEMUT
- CMSGCARR
- CMSGGEN
- SLQ

TOPS03

The following list provides the new and changed OM groups for TOPS03:

- PPCO

CSP02

The following list provides the new and changed OM groups for CSP02:

- AR
- NCMCPUST
- OHBTBASE
- OHBTDTU
- OHBTRES
- OHBTTYPE
- PCMCARR
- PM
- PM2
- PMOVLD
- PMTYP
- XPMOCC
- XPMOVLD

BCS36

The following list provides the new and changed OM groups for BCS36:

- AABS
- AASV
- ACDGRP
- ADASAPU
- ADASSRV
- AIN
- BRSTAT
- C7ROUTER
- CACHEMGR
- CF6P
- CNAMD
- CND
- CPUSTAT
- DCND
- DCRDEST
- DCRLINK
- DCRMISC
- DCTS
- EXT
- FRSAGENT
- ISNCALL1
- ISNCALL2
- ISNLNKS
- LENMUSIC
- LMD
- MDSACT
- NARUSAGE
- NSC
- OFZ
- PCMCARR

- PM
- PM1
- PM2
- PMOVLD
- PMTYP
- RADR
- RLCDIS
- RSCIR
- RSCIS
- SAVFOQP
- SAVFTQP
- SCAISERV
- SCAISRV2
- SITE
- SITE2
- SLLNKINC
- SLM
- TCAPERRS
- TCAPUSAG
- TOPS950
- TOPSALT
- TOPSMISC
- TOPSOC
- TOPSVC
- TRK
- TRMTCM
- TRMTCU
- TRMTER
- TRMTFR
- TRMTFR2
- VPN
- VPSC

- VSNCOM
- VSNLINK

BCS35

The following list provides the new and changed OM groups for BCS35:

- ADASDSGN
- C7SCCPCO
- COVMDISK
- COVMDSPP
- COVMFLTY
- COVMISCD
- COVMISCH
- COVMISND
- COVMISPT
- COVMT1CH
- DMCT
- FCS
- PMSTAT
- SA8AQP
- SAFDQP
- SAIDQP
- SAUDQP
- SAVDQP
- SCAITRAN
- TOPPACT1
- TOPPACT2
- TOPPACT3
- TOPPDID1
- TOPPDID2
- TOPPDID3
- TOPPDID4
- TOPPDID5
- TOPPMSG

BCS34

The following list provides the new and changed OM groups for BCS34:

- ACCSBNS
- ACCSBNSE
- ACCSCCV
- ACCSCCVE
- APOCCS
- ATTAMA
- BCAPCG
- BCAPOF
- CALLOG
- CF3P
- CNDXPM
- COT
- CP2
- CPICG
- DCMEBSS
- DSCWID
- DTSRPM
- EIUETHER
- ENETMAT
- ENETPLNK
- ENETSYS
- FRT1
- FTR1
- FTRQ
- ICBK
- IHTRP
- IPRP
- ISGBD
- ISGBRA
- ISGCPU

- ISGOVLD
- ISUPCGRP
- ISUPCKTA
- ISUPCONN
- ISUPERRS
- NACDGRP1
- NACDGRP2
- NCMCPUST
- NWMTGCNT
- OGTQMS
- OTS
- P8NPA
- P8NXX
- P8QUERY
- P8QUERY2
- P8SSP
- P8SSP2
- P8TEL
- PRKOM
- QMSACT
- QMSDATA
- QMSMIS
- RTLTSUM
- SCPUBHMT
- SCPUPTF
- SOTS
- TCN7ERRS
- TCN7USAG
- TOPSQMS
- TOPSTRAF
- TRKDCTS
- TRMTCU2

- TROUBLEQ
- UCDGRP
- XPMLNK
- TOPSTRAF
- TRKDCTS
- TRMTCU2
- TROUBLEQ
- UCDGRP
- WIDEBAND
- XPMLNK

BCS33

The following list provides the new and changed OM groups for BCS33:

- AABSFILT
- APSYS
- BCLIDNL
- CCTOOM
- CNAB
- DCOMLINK
- FPDABM
- FPDEVICE
- FPSCSI
- LINEHAZ
- MDCWAKUP
- MSFBUS
- MSFBUSTP
- MWTCAR2
- NDS0CARR
- NMTCLINK
- NMTCNODE
- NMTCTYPE
- NMTCUNIT
- NSSTCAP

- SACB
- SCPDBMTC
- SCPQPQTC
- SCPQPQTM
- SCPQPQTT
- SCPQPUTM
- SCPQUMTC
- SCPSVAVL
- SCPUPUT
- SCPUPUTM
- TRMTCM2
- TRMTPR

BCS32

The following list provides the new and changed OM groups for BCS32:

- ACB
- ACRJ
- AR
- C7LINK1
- C7LINK2
- C7LINK3
- C7MTP
- C7SCCPA1
- C7SCCPA2
- CDCOM
- DAISGEN
- DS1CARR
- DTSR
- ENETOCC
- ENG640M1
- FRSPM
- ISDD
- ISDNBD

- ISDNLL
- MPCBASE
- MPCLINK2
- MPCLINK3
- MS
- NSCACG
- PRADCHL2
- SITE3
- SPP
- SPPIN
- SRCDISP
- TDCLAPD
- TOPSAICC
- TOPSUSE
- TRA125M1
- TRA125M2
- TRA250M1
- TWCIBN
- UTR
- VFGUSAGE

BCS31

The following list provides the new and changed OM groups for BCS31:

- ACCTCODE
- BCLID
- BCLIDO
- C7GWSCCP
- C7MDR
- C7SCCP
- CALLWAIT
- CDACCS
- CDMCCS
- CDR

- CFWPOTS
- LIUFBUS
- MDR7GW
- MSCHAIN
- MSCHNLK
- MWTCAR
- NMC
- NSSTCN
- OHQCBQR2
- OHQCBQR3
- OHQCBQR4
- PRAFAC
- RCHDOPT
- SLLCOM
- SLVPOPT
- STN
- TOPSPSZ
- TRMTRS
- TS
- TTCCARR

BCS30

The following list provides the new and changed OM groups for BCS30:

- AABSHAND
- C7LKSET
- C7ROUTE
- C7RTESET
- CM
- DCM
- DDU
- DRCW
- GIACGRP
- HUNT

- IBNGRP
- IBNSG
- ILNRR
- MPHCON
- MPHGRP
- MTRPERF
- MTRUSG
- N6LINK
- NETMSG
- RCVR
- ROAPPL
- ROMISC
- SCA
- SCF
- SVCT
- TDCPROT
- TDCROUT
- TM
- TOPSPARS
- TRMSCRND
- TRMSCRNO
- VFGIWUSE

BCS29

The following list provides the new and changed OM groups for BCS29:

- ACMS
- ATRK
- CNDB
- ESP
- M20CARR1
- M20CARR2
- NRS
- PMMSGCNT

- REVALLO
- RTEASUM
- RTFEAT
- SCRJ
- SME
- TME
- TOPSBRND
- TOPSCCAB
- TOPSEA
- TOPSINCC

BCS28

The following list provides the new and changed OM groups for BCS28:

- DAMISC
- ISUPUSAG
- LINAC
- LM
- TOPSDACC

BCS27

The following list provides the new and changed OM groups for BCS27:

- C7DCIS6
- C7GTWSCR
- CFRA
- CNDXPM
- DUTLGEN
- IBNAC
- IBNSGLDN
- STORE
- TFCANA

BCS26

The following list provides the new and changed OM groups for BCS26:

- CP
- EIOC
- ICT
- IREC
- MPCFASTA
- TOPSKFAM

BCS25

The following list provides the new and changed OM groups for BCS25:

- ACDMISPL
- CALLFWD
- DALINK
- IRAG
- TOPSARU
- TOPSDA

BCS24

The following list provides the new and changed OM groups for BCS24:

- ACSYSTR
- AOSSVR
- AVRARU
- EACARR
- IADL
- ICDIVF
- ICDIVP
- ICONF
- ICWT
- IDND
- IFDL
- ILR
- INDC
- IWUC

- MPB
- SPC

BCS23

The following list provides the new and changed OM groups for BCS23:

- CBK
- MACHCONG
- NWMFRRCT
- NWMFRRTG
- NWMSILC
- OGTMP
- OGTSP
- SETRAF
- TOPSPSZ
- TOPSQS

BCS22

The following list provides the new and changed OM groups for BCS22:

- ACRTS
- ACTAKEDN
- ACTRBL
- CDACTS
- CRMDBM
- EBSMSGCT
- LOGS
- MOC4TONE
- SYSPERF
- TOPSOCPS

BCS21

The following list provides the new and changed OM groups for BCS21:

- CMC
- CPU
- CSL

- CWTPOTS
- IOC
- MTA
- MTU
- OOCBILL
- OOCBOOK
- RCF
- SLLNK
- TOPSDEV
- TOPSRON

BCS20

The following list provides the new and changed OM groups for BCS20:

- AIOD
- AMA
- ANN
- AOSS
- ATTLAMA
- BLUEBOX
- C6LINK
- C6VFL
- CALLHOLD
- CPICKUP
- DCRICTRK
- DSINWTS
- DSMCCS
- DSMTP
- DUAQ
- DUAQMOD
- EASHTRK
- EATSMS
- ESUP
- IOSYS

- KSHUNT
- LNREDIAL
- N6LK
- N6OFFICE
- N6XR
- OFZ2
- OHQCBQCG
- OHQCBQRT
- ONI
- PCNF
- PRP
- RRTE
- SCPOTS
- SPEEDCAL
- TONES
- TOPSMTCE
- TRKVERDS
- TWCPOTS

3 Logs to registers

Listed under each log number are OM groups that monitor the same or related activities on the switch.

ACD120

The following register associates with ACD120:

- ACDDFLCT

ACMS100

The following register associates with ACMS100:

- ACMSIDX

ACMS101

The following register associates with ACMS101:

- ATRKOUT

ACMS102

The following register associates with ACMS102:

- ATRKEXP

ACMS103

The following register associates with ACMS103:

- ATRKOVR

ACMS104

The following register associates with ACMS104:

- ATRKDIG

AMA117

The following register associates with AMA117:

- AMAEMTR

AMAB100

The following register associates with AMAB100:

- AMAENT

AMAB105

The following register associates with AMAB105:

- LNRCATT

AMAB117

The following registers associate with AMAB117:

- ACBDLAY
- ACBIMED
- AMANS
- ARDLAY
- ARIMED
- ARNIMED
- ARTIME
- CNDDNDEL
- CNDODEL
- CNDPDEL

AMAB150

The following registers associate with AMAB150:

- CDRATT
- CPUATT
- SCLATT
- SCSATT

AMAB151

The following register associates with AMAB151:

- ORIGFAIL

AOSS100

The following registers associate with AOSS100:

- AOSSD
- AOSSDF

AOSS105

The following register associates with AOSS105:

- AOSSTRCE

AOSS106

The following register associates with AOSS106:

- AOSSTRBL

ATB100

The following registers associate with ATB100:

- CF6OVFL
- CNFOVFL
- CNFOVFLT
- DESOVFL
- NOVFLATB
- OFZNCBN
- OFZNCID
- OFZNCIM
- OFZNCIT
- OFZNCLT
- OFZNCOF
- OFZNCON
- OFZNCOT
- OFZNCRT
- OFZNCTC
- OFZNOSC
- OHQBLOCK
- OHQOFFER
- R2OHQBLK
- R2OHQOFR
- R3OHQBLK
- R3OHQOFR
- R4OHQBLK
- R4OHQOFR

- RTOHQBLK
- RTOHQOFR
- SOTSNCBN
- SOTSNCID
- SOTSNCIM
- SOTSNCIT
- SOTSNCLT
- SOTSNCOF
- SOTSNCON
- SOTSNCOT
- SOTSNCRT
- SOTSNCTC
- SOTSNOCS
- STGOVFL

AUD395

The following register associates with AUD395:

- LNRCFAIL

C7UP130

The following register aassociates with C7UP130:

- ISERRHOP

C7UP111

The following register associates with C7UP111:

- OUTOSF

CC100

The following register associates with CC100:

- CPUFLT

CC102

The following registers associate with CC102:

- MTCHINT
- SSYLOSSU
- SYNCLOSS

CC103

The following register associates with CC103:

- TRAPINT

CC107

The following registers associates with CC107:

- CINITC
- INITDENY
- SYSCINIT
- SYSWINIT
- WINITC

CC110

The following register associates with CC110:

- MSYLOSSU

CC113

The following register associates with CC113:

- CMCLKMBU

CC114

The following register associates with CC114:

- CMCLKSBU

CC173

The following register associates with CC173:

- C7TFC3

CCCS182

There are no registers associated with CC182

CCIS101

The following registers associate with CCIS101:

- FECOV
- FLROOSTI
- NECOV

CCIS104

The following register associates with CC1S104:

- FEPRO

CCIS108

The following register associates with CCIS108:

- MANOOSTI

CCIS120

The following registers associate with CCIS120:

- MANNECOV
- MANOOSTI

CCIS124

The following registers associate with CCIS124:

- BFROVLD
- PSCRCD

CCIS130

The following registers associate with CCIS130:

- EMR
- EMRTIME

CCIS22

The following register associates with CCIS22:

- MANFECOV

CCIS300

The following register associates with CCIS300:

- BFROVFL

CCIS6

The following register associates with CCIS6:

- MANOOSTI

CCS101

The following registers associate with CCS101:

- C7ABNRFB
- C7EXCONG
- C7EXDLAY
- C7EXERR
- C7LKFAIL
- C7LKSYNU

CCS104

The following register associates with CCS104:

- C7RPO

CCS107

The following register associates with CCS107:

- C7SLTFL

CCS108

The following register associates with CCS108:

- C7NUCFL

CCS152

The following register associates with CCS152:

- C7RSMANB

CCS154

The following register associates with CCS154:

- C7RSFAIL

CCS155

The following register associates with CCS155:

- C7RSUNAU

CCS157

The following register associates with CCS157:

- C7MANB

CCS159

The following register associates with CCS159:

- C7LINH

CCS160

The following register associates with CCS160:

- C7RINH

CCS161

The following register associates with CCS161:

- C7LUNINH

CCS162

The following register associates with CCS162:

- C7RUNINH

CCS164

The following registers associate with CCS164:

- C7CBK
- C7COV
- C7LKUNAU

CCS166

The following register associates with CCS166:

- C7TFA

CCS167

The following register associates with CCS:167

- C7TFR

CCS168

The following register associates with CCS168:

- C7TFP

CCS172

The following registers associate with CCS172:

- C7RSCNGU
- C7TFC0
- C7TFC1
- C7TFC2

CCS173

The following registers associate with CCS173:

- C7ABATE1
- C7ABATE2
- C7ABATE3
- C7ABATEV
- C7ONSET1
- C7ONSET2

- C7ONSET3
- C7ONSETV

CCS180

The following register associates with CCS180:

- C7XTFA

CCS181

The following register associates with CCS181:

- C7XTFR

CCS182

The following register associates with CCS182:

- C7XTFP

CCS201

The following register associates with CCS201:

- C7RTFALL

CCS202

The following register associates with CCS202:

- C7RTFNTN

CCS204

The following register associates with CCS204:

- C7RTFUEQ

CCS218

The following registers associate with CCS218:

- PMMMBU
- PMTMMBU
- PMTUMBU
- PMUMBU

CCS219

The following registers associate with CCS219:

- PMMSBU
- PMUSBU

CCS231

The following registers associate with CCS231:

- PMERR
- PMTERR

CCS233

The following registers associate with CCS233:

- PMMMBU
- PMUMBU

CCS234

The following register associates with CCS234:

- PMMSBU
- PMTMSBU
- PMTUSBU
- PMUSBU

CCS236

The following register associates with CCS236:

- PMERR

CCS400

The following register associates with CCS400:

- C7MSGLOS

CCS500

The following register associates with CCS500:

- MSUDSCRD

CCS502

The following registers associate with CCS502:

- MSUDSCRD
- MSURJACP
- MSURJCPA
- MSURJDPC
- MSURJDSN
- MSURJDST

- MSURJHO1
- MSURJNIC
- MSURJOPC
- MSURJPCS
- MSURJPRI
- MSURJSI
- MSURJTT

CCS503

The following register associates with CCS503:

- MSUSCRER

CDRC100

The following register associates with CDRC100:

- CDRATT

CDRE100

The following registers associate with CDRE100:

- CDROVFL

CFW100

The following registers associate with CFW100:

- CFWPSUC1
- CFWPSUC2

CFW102

The following register associates with CFW102:

- CFWPAATT

CM100

The following registers associate with CM100:

- CMTRAP

CM101

The following registers associate with CM101:

- CMMSWACT
- CMRSWACT
- CMSSWACT

CM102

The following registers associate with CM102:

- CMMSMPXU
- CMRSMPXU
- CMSSMPXU

CM104

The following register associates with CM104:

- CMMCSBSY

CM112

The following register associates with CM112:

- CMMEMFLT

CM113

The following register associates with CM113:

- CMMEMFLT

CM120

The following registers associate with CM120:

- CMMCINIT
- CMMWINIT

- CMSCINIT
- CMSWINIT

CM122

The following registers associate with CM122:

- CMRCPUFL
- CMREXFLT
- CMRLNKFL
- CMRMCFL
- CMRMEMFL
- CMRPMCFL
- CMRSSCFL

CM125

The following register associates with CM125:

- CMCPUFLT

CM133

The following register associates with CM133:

- PMCNDBSY

CM137

The following register associates with CM137:

- PMCLKBSY

CMC101

The following register associates with CMC101:

- CMCMBU

CMC102

The following register associates with CMC102:

- CMCSBU

CMC107

The following register associates with CMC107:

- CMCDIAG

DAIS200

The following registers associate with DAIS200:

- DAISSYER
- DAISSYEV

DAIS201

The following register associates with DAIS201:

- DAISCOEV

DAIS202

The following register associates with DAIS202:

- DAISREEV

DAIS203

The following register associates with DAIS203:

- DAISRLEV

DAIS204

The following register associates with DAIS204:

- DAISNFEV

DAIS297

The following register associates with DAIS297:

- DAISABEV

DAIS298

The following register associates with DAIS298:

- DAISPRER

DCME105

The following registers associate with DCME105:

- BSSN3K1
- BSSN64K
- BSSNSPCH

DDM101

The following register associates with DDM101:

- PMERR

DDM102

The following register associates with DDM102:

- PMERR

DDM104

The following register associates with DDM104:

- PMERR

DDU100

The following register associates with DDU100:

- DDUERROR

DDU203

The following register associates with DDU203:

- DDUMBUSY

DDU204

The following registers associate with DDU204:

- DDUFAULT
- DDUSBUSY

DFIL151

The following register associates with DFIL151:

- FCSDNTR

DIRP101

The following registers associate with DIRP101:

- AMAFREE
- CDREMTR
- CDRENT

DLC101

The following register associates with DLC101:

- PMERR

DLC102

The following registers associate with DLC102

- PMFLT
- PMTFLT
- PMTSBP

DPAC103

The following register associates with DPAC103:

- PMERR

DPAC104

The following register associates with DPAC104:

- PMFLT

DUTL100

The following register associates with DUTL100:

- DUTLSYEV

DUTL101

The following register associates with DUTL101:

- DUTLCOEV

DUTL102

The following register associates with DUTL102:

- DUTLREEV

DUTL103

The following register associates with DUTL103:

- DUTLDIEV

DUTL198

The following register associates with DUTL198:

- DUTLPRER

DUTL199

The following register associates with DUTL199:

- DUTLSYER

EIO101

The following register associates with E1O101:

- EIOCMBU

EIO115

The following register associates with E1O115:

- EIOCERR

EIO124

The following register associates with E1O124:

- EIOCFLT

ENCP100

The following register associates with ENCP100:

- ENSPCHER

ENCP101

The following register associates with ENCP101:

- ENSPCHER

ENCP102

The following register associates with ENCP102:

- ENSPCHER

ENCP136

The following register associates with ENCP136:

- ENCALDND

ENET101

The following registers associate with ENET101:

- ENMISOP
- ENMPARP

ENET103

The following registers associate with ENET103:

- ENCOLD
- ENFLT
- ENRELOAD
- ENSISOP
- ENSPARP

ENET108

The following register associates with ENET108:

- ENERR

ENET201

The following registers associate with ENET201:

- ENMCDISO
- ENMCDPAR
- ENMPBISO
- ENMPBPAR

ENET203

The following registers associate with ENET203:

- ENCDFLT
- ENPBFLT
- ENSCDISO
- ENSCDPAR
- ENSPBISO
- ENSPBPAR

ENET208

The following registers associate with ENET208:

- ENCDERR
- ENPBERR

ENET301

The following registers associate with ENET301:

- ENMLKISO
- ENMLKPAR

ENET303

The following registers associate with ENET303:

- ENLKFLT
- ENSLKISO
- ENSLKPAR

ENET308

The following register associates with ENET308:

- ENLKERR

ERV100

The following register associates with ERV100:

- TCUEROR

ERV101

The following register associates with ERV101:

- TCUERTR

ERV102

The following register associates with ERV102:

- TCUERTO

ESNF100

The following register associates with ESNF100:

- TCUESNF

EXT106

The following register associates with EXT106:

- SCPAOVFL

FP503

The following registers associate with FP503:

- FPDEVMB
- FPDEVNA
- FPDEVRB
- FPDEVSB

FP504

The following registers associate with FP504:

- FPSCSIEU
- FPSCSIIT
- FPSCSIMB
- FPSCSIRB

- FPSCSIRS
- FPSCSIRX
- FPSCSISB
- FPSCSISW
- FPSIPPDO
- FPSIPPIO
- FPSIPPMO

FP552

The following registers associate with FP552:

- FPDABMIT
- FPDABMRX
- FPDABMSB

FRAD200

The following register associates with FRAD200:

- TCUACFD

FRS121

The following register associates with FRS121:

- LMILOST

FTR138

The following registers associate with FTR138:

- ADDNCERR
- ADDNDENY
- ADDNOVFL
- ADLCERR
- AL10CERR
- AL10INTG
- AL10PROG
- AL30CERR
- AL30INTG
- AL30PROG
- AL60CERR

- AL60INTG
- AL60PROG
- ALHNCERR
- ALHNINTG
- ALHNPROG
- CCWACT
- CCWCERR
- CDAACT
- CDACERR
- CDADACT
- CDADENY
- CDADERR
- CDAINTG
- CDAOVFL
- CDAPROG
- CDBACT
- CDBCERR
- CDBDACT
- CDBDENY
- CDBDERR
- CDBINTG
- CDBOVFL
- CDBPROG
- CDFCERR
- CDFDACT
- CDFDENY
- CDFDERR
- CDFINTG
- CDFOVFL
- CDOACT
- CDOCERR
- CDODACT

- CDODENY
- CDODERR
- CDOINTG
- CDOOVFL
- CDSACT
- CDSCERR
- CDSDACT
- CDSDENY
- CDSDERR
- CDSINTG
- CDSOVFL
- CDSPROG
- CWTCERR
- CWTDENY
- CWTOVFL
- DABEACT
- DABEDACT
- DAIACT
- DAIDACT
- DIDDDACT
- DNDACT
- DNDCERR
- DNDDACT
- DNDINTG
- DNIACT
- DNIDACT
- DNIDDACT
- DNIDEACT
- ICTCERR
- ICTDENY
- ICTOVFL
- ILRCERR

- ILRINTG
- NDCACT
- NDCCERR
- NDCDACT
- NDCINTG
- NDCUSGE
- RAGACT
- RAGCERR
- RAGDACT
- RAGINTG
- RAGOVFL
- SWCCERR
- SWCDENY
- SWCOVFL
- TFRINRF
- TFRIWUC
- TFRRTTE
- TWCCERR
- TWCDENY
- TWCFAIL
- TWCOVFL
- TWCOVRFL
- WLNACT
- WLNCERR
- WLNDACT
- WLNINTG
- WLNPROG
- WUCACT
- WUCCERR
- WUCDACT
- WUCDENY

- WUCINTG
- WUCOVFL

IBN101

The following registers associate with IBN101:

- ACERR
- ACTRCARF
- ACTRCC
- ACTRCLFR
- ACTRCNR
- ACTRCTRL
- ACTRDMFL
- ACTRINKY
- ACTRINLO
- ACTRPFO
- ACTRRES
- ACTRSERR
- ACTRSFLT
- ACTRSYS

IBN102

The following registers associate with IBN102:

- ACFLT
- ACTDAUD
- ACTDCARF
- ACTDCC
- ACTDCNR
- ACTDCTRL
- ACTDDMFL
- ACTDINKY
- ACTDINLO
- ACTDMAN
- ACTDPFO
- ACTDRES

- ACTDSERR
- ACTDSYS

IBN104

The following register associates with IBN104:

- ACCF3PFL
- ACCF3POV
- ACDATAER
- ACDMFL
- ACDMOVFL
- ACEXOVFL
- ACRTSCAR
- ACRTSCC
- ACRTSCHC
- ACRTSCR
- ACRTSIL
- ACRTSNWB
- ACRTSSE

IBN125

The following register associates with IBN125:

- UCDDFLCT

IBN136

The following register associates with IBN136:

- SPPLIMEX

IEM900

The following registers associate with IEM900:

- APREXFLT
- APRMEMFL
- APRPRTFL

IFS102

The following register associates with IFS102:

- WUCNRSC

IOD103

The following register associates with IOD103:

- IOCMBU

IOD104

The following registers associate with IOD104:

- IOCERR
- IOCFLT
- IOCSBU

IOD108

The following register associates with IOD108:

- IOCLKMBU

IOD109

The following register associates with IOD109:

- IOCLKSBU

IOD117

The following register associates with IOD117:

- IOCLKERR

IOD119

The following register associates with IOD119:

- CSLFLT

IOD120

The following register associates with IOD120:

- CSLERR

IOD203

The following register associates with IOD203:

- MTUMBU

IOD204

The following register associates with IOD204:

- MTUSBU

IOD208

The following registers associate with IOD208:

- MTUERR
- MTUFLT

IOD303

The following register associates with IOD303:

- CSLMBU

IOD304

The following register associates with IOD304:

- CSLSBU

ISDN104

The following registers associate with ISDN104:

- PM1MBU
- PM1SBU

ISF103

The following register associates with ISF103:

- WUCABDN

ISUP100

The following registers associate with ISUP100:

- ISERRBLO
- ISERRGRS
- ISERRRLC
- ISERRRSC

ISUP101

The following register associates with ISUP101:

- ISERRBAD

ISUP102

The following registers associate with ISUP102:

- ISCKTRAE
- ISERRREL

ISUP103

The following registers associate with ISUP103:

- ISCKTBLO
- ISCKTLBT
- ISCKTRBT

ISUP104

The following registers associate with ISUP104:

- ISCKTCGU
- ISCKTGBF
- ISCKTGBT

ISUP105

The following registers associate with ISUP105:

- ISCONUCA
- ISCONUCN

ISUP106

The following registers associate with ISUP106:

- ISCONUCC
- ISCONUCE
- ISCONUCF

ISUP107

The following register associates with ISUP107:

- ISCONCOT

ISUP108

The following registers associate with ISUP108:

- ISCONFAR
- ISCONINR

ISUP130

The following register associates with ISUP130:

- ISCKTUBL

LINE100

The following registers associate with LINE100:

- TRBQATT
- TRBQOCC

LINE104

The following registers associate with LINE104:

- CF6QABAN
- CINTEGFL
- CNFQABAN
- CNFQABANT
- ORGLKT
- ORIGFAIL
- ORIGLKT

LINE105

The following registers associate with LINE105:

- CNFQABAN
- CNFQABANT
- LINBADDG
- ORIGFAIL
- ORIGLKT

LINE106

The following registers associate with LINE106:

- OHQABN
- ORGABDN
- ORIGABDN
- ORIGABN
- ORIGFAIL
- RTOHQABN

LINE107

The following register associates with LINE107:

- PERCLFL

LINE108

The following registers associate with LINE108:

- ORIGABDN
- ORIGABN
- ORIGFAIL
- SVCQABAN

LINE109

The following registers associate with LINE109:

- CF6QABAN
- CNFQABAN
- CNFQABNT
- ORIGFAIL
- ORIGLKT

LINE110

The following register associates with LINE110:

- PERCLFL

LINE112

The following register associates with LINE112:

- STKCOINS

LINE113

The following registers associate with LINE113:

- PERCLFL
- STRMGSGL

LINE120

The following registers associate with LINE120:

- CNFQOVFL
- CNFQOVFT

- ORIGFAIL
- TWCPOVFL

LINE133

The following registers associate with LINE133:

- HAZCLR
- HAZDET

LINE138

The following registers associate with LINE138:

- ACBABT
- ACBFDEN
- ACBOVFL
- ACBSTDT
- AIODDEF
- ANNATT
- AOSSQDEF
- AOSSQOV
- ARABT
- ARFDEN
- AROVFL
- ARSTDT
- BLKRECMD
- CARDOVFL
- CARFAIL
- CAROVFL
- CARRFAIL
- CARROVFL
- CBQOVFL
- CF6QOVFL
- CFBEXMPT
- CFBFAIL
- CFBOVFL
- CFBPDENY

- CFBPOVFL
- CFBPSOV
- CFBSOV
- CFDFAIL
- CFDPDENY
- CFDPOVFL
- CFDSOV
- CFPADENY
- CFPAOVFL
- CFPFDENY
- CFPFOVFL
- CFRAFAIL
- CFRAHWOV
- CFRALIMT
- CFRASWOV
- CFUFAIL
- CFUIFSOV
- CFUOVFL
- CFWSOV
- CHDFAIL
- CHDOVFL
- CMCFEOV
- CMCFIOV
- CNDBFDEN
- CNDBOVFL
- CNDFDNA
- CNDFDND
- CNDOVFL
- CNFQOVFL
- CNFQOVFLT
- COTBDIN
- COTFDEN

- COTOVFL
- COTPFLR
- CPUFAIL
- CPUINVLD
- CWDEXMPT
- CWDFAIL
- CWOEXMPT
- CWOFAIL
- CWTFAIL
- CWTPDENY
- CWTPOVFL
- DCRBLK
- DRCWEDEN
- DRCWEOVF
- ECCBOVFL
- FTRQOVFL
- KSHBLKD
- KSHBUSY
- KSHDFLCT
- KSHOVFL
- MTASZFL
- MWTOVFL
- OHQOVFL
- ORGTRMT
- ORIGANN
- ORIGFAIL
- ORIGTONE
- PERCLFL
- R2CBQOVF
- R2OHQOVF
- R3CBQOVF
- R3OHQOVF

- R4CBQOVF
- R4OHQOVF
- RCFDFLD
- REVERT
- RTCBQOVF
- RTOHQOVF
- SCFEDEN
- SCFEOVF
- SCFOVFL
- SCLFAIL
- SCNDLOVF
- SCNLOVF
- SCPADENY
- SCPFDENY
- SCRJEDEN
- SCRJEOVF
- SCRJSRJT
- SCSFAIL
- STNOVFL
- SVCQOVFL
- TCMANCT
- TCMANTO
- TCMBLDN
- TCMCFWV
- TCMDISC
- TCMOPRT
- TCMPDIL
- TCMPSIG
- TCMSGIN
- TCMTDBR
- TCMTRBL
- TCMUNDN

- TCMVACS
- TCMVACT
- TCMVCCT
- TERAIFL
- TERCONP
- TERERDS
- TERFDER
- TERNONT
- TERRODR
- TERSSTO
- TERSTOB
- TERSTOC
- TERSYFL
- TFRBUSY
- TFRCCTO
- TFRCONF
- TFRMANL
- TFRNINT
- TFRNVIP
- TFRORAC
- TFRORAF
- TFRORMC
- TFRORMF
- TFRPGTO
- TFRPRSC
- TFRSRRR
- TFRTRRF
- TONEOVFL
- TRMBLK
- TRMMFL
- TRSCGRO
- TRSEMR1

- TRSEMR2
- TRSFECG
- TRSGNCT
- TRSNBLH
- TRSNBLN
- TRSNCRT
- TRSNECG
- TRSNOSC
- TRSNOSR
- TRSTOVD
- TTFRSCRJ

LINE139

The following register associates with LINE139:

- CFDOVFL

LINE150

The following register associates with LINE150:

- COTCMPL

LINE151

The following register associates with LINE151:

- COTINCM

LINE204

The following registers associate with LINE204:

- CF6QABAN
- CNFQABAN
- CNFQABANT
- ORIGLKT
- TRBQOVFL

LOST101

The following registers associate with LOST101:

- CMCERR
- LOSTREC

LOST103

The following register associates with LOST103:

- CMCLERR

LOST108

The following register associates with LOST108:

- PMERR

LOST109

The following register associates with LOST109:

- PMERR

LOST111

The following register associates with LOST111:

- PMERR

MM101

The following registers associate with MM101:

- CMDPSYNC
- CMTRMISM

MPC101

The following register associates with MPC101:

- CONVIREF

MPC102

The following registers associate with MPC102:

- CONVERR
- LOSTMSG
- RESETL2
- RESETL3

MPC103

The following registers associate with MPC103:

- BDAPPERR

MPC201

The following registers associate with MPC201:

- LLNKAVBL
- LLNKXFRD

MPC903

The following registers associates with MPC903:

- MPCNSMBU

MPC904

The following register associates with MPC904:

- MPCNSSBU
- PMFLT

MPC905

The following register associates with MPC905:

- MPCNSOK

MPC906

The following register associates with MPC906:

- PMERR

MS101

The following register associates with MS101:

- MSMBP

MS103

The following registers associate with MS103:

- MSERR
- MSFLT

MS150

The following registers associate with MS150:

- MSCHDIA
- MSCHERR

MS151

The following register associates with MS151:

- MSCHMBP

MS152

The following register associates with MS152:

- MSCHMBP

MS153

The following registers associate with MS153:

- MSCHDIAF
- MSCHERR
- MSCHFLT

MS154

The following register associates with MS154:

- MSCHERR

MS157

The following registe associates with MS157:

- MSCHERR

MS261

The following register associates with MS261:

- MSCDMBP

MS263

The following registers associate with MS263:

- MSCDERR
- MSCDFLT

MS277

The following register associates with MS277:

- MSCHERR

MS280

The following registers associate with MS280:

- MSCLDIA
- MSCLERR

MS281

The following register associates with MS281:

- MSCLMBP

MS282

The following registers associate with MS282:

- MSCLMBP

MS283

The following registers associate with MS283:

- MSCLDIAF
- MSCLERR
- MSCLFLT

MS284

The following register associates with MS284:

- MSCLERR

MS301

The following register associates with MS301:

- MSLKMBP

MS303

The following registers associate with MS303:

- MSLKERR
- MSLKFLT

MS310

The following registers associate with MS310:

- MSCLDIA
- MSCLERR

MS311

The following register associates with MS311:

- MSCLMBP

MS312

The following register associates with MS312:

- MSCLMBP

MS313

The following registers associate with MS313:

- MSCLDIAF
- MSCLERR
- MSCLFLT

MS314

The following register associates with MS314:

- MSCLERR

MS317

The following register associates with MS317:

- MSCLERR

MS400

The following register associates with MS400:

- MSFBDIA

MS401

The following register associates with MS401:

- MSFBMBP

MS403

The following registers associate with MS403:

- MSFBDIAF
- MSFBERR
- MSFBFLT

MS404

The following registers associate with MS404:

- MSFBERR
- MSFBFLT
- MSFBMBP

MS407

The following register associates with MS407:

- MSFBERR

MS410

The following register associates with MS410:

- MSTPDIA

MS411

The following register associates with MS411:

- MSTPMBP

MS412

The following register associates with MS412:

- MSTPMBP

MS413

The following registers associate with MS413:

- MSTPDIAF
- MSTPERR
- MSTPFLT

MS414

The following register associates with MS414:

- MSTPERR

MS417

The following register associates with MS417:

- MSTPERR

MTR103

The following register associates with MTR103:

- MTRAUDER

MTR104

The following register associates with MTR104:

- MTRAUDER

MTR105

The following register associates with MTR105:

- MTRAUDER

MTR113

The following register associates with MTR113:

- DTCALLP

MTR114

The following register associates with MTR114:

- TODXPMFL

MTR116

The following register associates with MTR116:

- MTRAUDER

MTR118

The following register associates with MTR118:

- MTRAUDER

MTR119

The following register associates with MTR119:

- RECYCCLR

MTR120

The following register associates with MTR120:

- DTFEAT

MTR123

The following register associates with MTR123:

- MTRAUDER

MTR127

The following register associate with MTR127:

- THQERR

MTR129

The following register associates with MTR129:

- THQOVFL

MTR135

The following register associates with MTR135:

- CCMATXPM

MTR136

The following registers associate with MTR136:

- CCMATERR
- DTXPM

MTR137

The following registers associate with MTR137:

- CCMATERR
- DTXPM

MTR138

The following registers associate with MTR138:

- CCMATERR
- DTXPM

MTR139

The following registers associate with MTR139:

- CCMATERR
- DTXPM

MTR140

The following registers associate with MTR140:

- CCMATERR
- DTXPM

MTR141

The following registers associate with MTR141:

- CCMATERR
- DTXPM

MTR142

The following registers associate with MTR142:

- CCMATERR
- DTXPM

NCS100

The following register associates with NCS100:

- NSCINVY

NET101

The following registers associate with NET101:

- PMINTEG
- PMTINTEG

NET102

The following registers associate with NET102:

- NMMSGER
- NMSPCHER
- NMSPCHFL
- PMERR
- PMINTEG

NET130

The following registers associate with NET130:

- ORIGBLK
- ORIGLKT
- OUTMFL
- OUTMTCHF
- OUTRMFL
- SOUTMFL
- SOUTRMFL
- STNMTCHF
- STRMBLK
- STRMMFL
- STRMRBLK
- TERMBLK
- TRMBLK
- TRMMFL

NETM103

The following register associates with NETM103:

- NMSBU

NETM105

The following register associates with NETM105:

- NMMBU

NETM112

The following register associates with NETM112:

- NMCFLT

NETM116

The following register associates with NETM116:

- NMPTSBU

NETM117

The following register associates with NETM117:

- NMPRMBU

NETM120

The following register associates with NETM120:

- NMMSGFL

NETM122

The following register associates with NETM122:

- NMJRSBU

NETM123

The following register associates with NETM123:

- NMJRMBU

NETM128

The following registers associate with NETM128:

- DCMSBP
- NMCERR

NMS100

The following register associates with NMS100:

- NMSINVAD

NMS101

The following register associates with NMS101:

- NMSVACT

NMW142

The following register associates with NMW142:

- HTRATT

NPAC210

The following register associates with NPAC210:

- PMERR

NPAC211

There are no registers associated with NPAC211.

NSC100

The following registers associate with NSC100:

- NSCINVY
- NSCIVCAR

NSS103

The following register associates with NSS103:

- NSSTCNIV

NSS107

The following registers associate with NSS107:

- INVDIGIT
- TCNFREEC

NT101

The following register associates with NT101:

- CPSUIC

NWM100

The following registers associate with NWM100:

- DEFLDCA
- DREU

NWM101

The following registers associate with NWM101:

- DEFLDCA
- PREU

NWM102

The following register associates with NWM102:

- DEFLDCA

NWM103

The following register associates with NWM103:

- DEFLDCA

NWM104

The following register associates with NWM104:

- DEFLDCA

NWM106

The following register associates with NWM106:

- DEFLDCA

NWM107

The following registers associate with NWM107:

- FRRTGATT
- FRRTGLF

NWM108

The following register associates with NWM108:

- DEFLDCA

NWM110

The following registers associate with NWM110:

- CBKCNT
- CBKPASS

NWM113

The following register associates with NWM113:

- NWMBLK

NWM120

The following register associates with NWM120:

- RRTCNT

NWM141

The following register associates with NWM141:

- PRPCNT

OM2200

The following registers associate with OM2200:

- CCBOVFL
- CPLOOVFL
- CPLPOVFL
- INLBOVFL
- MULTOVFL
- ORIGLKT
- OUTBOVFL
- RCVQOVFL
- WAKEOVFL

PM100

The following register associates with PM100:

- PMFLT

PM101

The following registers associate with PM101:

- PMERR
- PMFLT

PM102

The following registers associate with PM102:

- C7LPO
- INSSYSB
- PM2MSBU
- PM2USBU
- PMDRERR
- PMDRFLT
- PMDRMBU
- PMDRSBU
- PMFLT
- PMMSBU
- PMTDRERR
- PMTDRFLT
- PMTDRMBU
- PMTDRSBU
- PMUSBU

PM105

The following registers associate with PM105:

- DESSBU
- DS1MBU
- INSMANB
- PM2MMBU
- PM2UMBU

- PMMMBU
- PMUMBU

PM106

The following registers associate with PM106:

- PORGDENY
- PTRMDENY

PM107

The following registers associate with PM107:

- DS1CBU
- PMSBP

PM108

The following registers associate with PM108:

- PMERR
- PMINTEG

PM109

The following registers associate with PM109:

- DS1LCGA
- DS1RCGA
- DS1SBU
- FRT1SBU
- PMCCTFL
- PMPSFLT
- PMTCCTFL
- PMTPSFLT

PM110

The following registers associate with PM110:

- AISFLT
- BERFLT
- CARRCBSY
- CARRMANB
- CARRPBSY

- CARRSYSB
- DS1LOF
- FRT1AIS
- FRT1BER
- FRT1ES
- FRT1LOF
- FRT1SES
- LLFAFLT
- LLMAFLT
- PMCCTDG
- PMPSERR
- PMTCCTDG
- PMTPSERR
- RFAIFLT
- RMAIFLT
- SIGLFLT
- SLIPFLT

PM111

The following registers associate with PM111:

- AISFLT
- BERFLT
- CARRCBSY
- CARRMANB
- CARRPBSY
- CARRSYSB
- LLFAFLT
- LLMAFLT
- RFAIFLT
- RMAIFLT
- SIGLFLT
- SLIPFLT

PM112

The following register associates with PM112:

- DS1SLP

PM113

The following registers associate with PM113:

- PMERR
- PMINTEG

PM114

The following register associates with PM114:

- PMFLT

PM115

The following register associates with PM115:

- PMERR

PM116

The following register associates with PM116:

- PMERR

PM117

The following registers associate with PM117:

- PMERR
- PMFLT

PM118

The following registers associate with PM118:

- PMERR
- PMINTEG

PM119

The following registers associate with PM119:

- PMERR
- PMINTEG

PM121

The following register associates with PM121:

- PMERR

PM122

The following registers associate with PM122:

- PMERR
- PMINTEG
- PMSWERCT

PM124

The following registers associate with PM124:

- PMERR
- PMINTEG

PM125

The following registers associate with PM125:

- PMERR
- PMTRAPCT

PM126

The following register associates with PM126:

- PMERR

PM127

The following register associates with PM127:

- PMFLT

PM128

The following registers associate with PM128:

- LK1FAIL
- PM2MSBU
- PM2UMBU
- PM2USBU
- PMDRMBU
- PMDRSBU
- PMERR

- PMMCXFR
- PMMMBU
- PMMSBU
- PMMWXFR
- PMSCXFR
- PMSWXFR
- PMTMCXFR
- PMTMWXFR
- PMTSCXFR
- PMTSWXFR
- PMUMBU
- PMUSBU

PM150

The following register associates with PM150:

- PMERR

PM151

The following register associates with PM151:

- PMFLT

PM152

The following register associates with PM152:

- PMUSBU

PM160

The following registers associate with PM160:

- PMERR
- PMRGERR
- PMTRGERR

PM161

The following registers associate with PM161:

- PMFLT
- PMRGFLT
- PMTRGFLT

PM162

The following registers associate with PM162:

- PMFLT
- PMRGFLT

PM163

The following register associates with PM163:

- PMRGFLT

PM164

The following register associates with PM164:

- PMFLT

PM170

The following registers associate with PM170:

- PMMMBU
- PMMSBU

PM179

The following registers associate with PM179:

- PMSCXFR
- PMSWXFR

PM180

The following registers associate with PM180:

- AISFLT
- BERFLT
- CARRCBSY
- CARRMANB
- CARRPBSY
- CARRSYSB
- LLFAFLT
- LLMAFLT
- PM2ERR
- PMERR
- PMFLT

- PMINTEG
- PMMCXFR
- PMMWXFR
- PMSCXFR
- PMSWXFR
- RFAIFLT
- RMAIFLT
- SIGLFLT
- SLIPFLT

PM181

The following registers associate with PM181:

- PM2FLT
- PMDRERR
- PMDRFLT
- PMERR
- PMFLT
- PMINTEG
- PMPSERR
- PMPSFLT
- PMSCXFR
- PMSWXFR
- RTSFAIL
- TSTFAIL

PM182

The following registers associate with PM182:

- PMMBP
- PMMMBU
- PMTMBP
- PMUMBU

PM183

The following registers associate with PM183:

- DS1PBU
- PMCCTFL
- PMMSBU
- PMPSERR
- PMPSFLT
- PMSBP
- PMUSBU

PM185

The following registers associate with PM185:

- PMFLT
- PMINTEG

PM186

The following registers associate with PM186:

- AISFLT
- BERFLT
- CARRCBSY
- CARRMANB
- CARRPBSY
- CARRSYSB
- ERRAIS
- ERRBVRX
- ERRBVTX
- ERRCLRX
- ERRCLTX
- ERRLOS
- ERRSLRX
- ERRSLTX
- FLTAIS
- FLTBVRX
- FLTBVTX

- FLTCLRX
- FLTCLTX
- FLTLOS
- FLTSLRX
- FLTSLTX
- LLFAFLT
- LLMAFLT
- RFAIFLT
- RMAIFLT
- SIGLFLT
- SLIPFLT

PM187

The following registers associate with PM187:

- AIS16FLT
- BERFLT
- CARRCBSY
- CARRMANB
- CARRPBSY
- CARRSYSB
- CRC4FLT
- CREFLT
- FLTAIS
- FLTBVRX
- FLTBVTX
- FLTCLRX
- FLTCLTX
- FLTLOS
- FLTSLRX
- FLTSLTX
- LLCMAFLT
- LLFAFLT
- LLMAFLT

- RFAIFLT
- RMAIFLT
- SIGLFLT
- SLIPFLT

PM190

The following registers associate with PM190:

- PM1ERR
- PM1FLT
- PM1SBU
- PMMSBU
- PMSBP
- PMUSBU

PM191

The following registers associate with PM191:

- PM1MBU
- PMMBP
- PMMMBU
- PMUMBU

PM192

The following registers associate with PM192:

- PM1FLT
- PMMSBU
- PMSBP
- PMUSBU

PM194

The following registers associate with PM194:

- PM1FLT
- PMERR

PM198

The following registers associate with PM198:

- PM1ERR
- PM1FLT
- PMERR

PM199

The following registers associate with PM199:

- PM1ERR
- PM1FLT
- PMFLT

PM310

The following registers associate with PM310:

- APCPUERR
- APCPUFLT

PM311

The following registers associate with PM311:

- APMEMERR
- APMEMFLT

PM312

The following registers associate with PM312:

- APPRTERR
- APPRTFLT

PM317

The following registers associate with PM317:

- APSDROP
- APTRMISM

PM318

The following registers associate with PM318:

- APSDROP
- APTRMISM

PM319

The following registers associate with PM319:

- APCPUERR
- APMEMERR
- APPRTERR

PM320

The following register associates with PM320:

- APTRAP

PM501

The following registers associate with PM501:

- APMSWACT
- APRSWACT

PM503

The following registers associate with PM503:

- APSDROP
- APSSYNC
- APTRMISM

PM900

The following registers associate with PM900:

- APRCPUFL

RO101

The following registers associate with RO101:

- ROAPCONF
- ROAPFLOG
- ROAPLOGA
- ROCONF
- ROMFLOG
- ROMLOGA

RO103

The following registers associate with RO103:

- ROAPIC
- ROAPOG
- ROAPUSE

RO104

The following registers associate with RO104:

- ROMTERM

SCAI200

The following register associates with SCAI200:

- RECCIGNR

SCAI301

The following registers associate with SCAI301:

- SICQFAIL
- SIMSGLST
- SOGQFAIL

SCAI302

The following register associates with SCAI302:

- SOMSGLST

SCR100

The following register associates with SCR100100:

- RECUSGE

SLM401

The following registers associate with SLM401:

- SLMMBSU
- SLMSBSU

SLM402

The following registers associate with SLM402:

- SLMMBSU
- SLMSBSU

SLM403

The following registers associate with SLM403:

- SLMFLT
- SLMMBSU
- SLMSBSU

SLM404

The following register associates with SLM404:

- SLMFLT

SLNK106

The following registers associate with SLNK106:

- SLLNKIOV
- SLLNKOVF

SME106

The following register associates with SME106:

- SMEOVFL

SME107

The following register associates with SME107:

- SMEOVFL

SNAC100

The following registers associate with SNAC100:

- RONITBL
- TBLREPRT

SNAC101

The following registers associate with SNAC101:

- RONITBL
- TBLREPRT

SNAC102

The following registers associate with SNAC102:

- RONITBL
- TBLREPRT

SNAC103

The following registers associate with SNAC103:

- RONITBL
- TBLREPRT

SPC100

The following registers associate with SPC100:

- SPCNAUSU
- SPCNTCSU

SPC101

The following registers associate with SPC101:

- SPDISCTC

SPC102

The following register associates with SPC102:

- SPDISCAU

SWER

The following registers associate with SWER:

- CPTRAP
- CWOOVFL
- CWTTOVFL
- ENSWERRS
- LNRPOVFL
- SWERRCT

SWERR

The following register associates with SWERR:

- P8QPROER

SYNC103

The following register associates with SYNC103:

- CMCFLT

TCAP101

The following register associates with TCAP101:

- ACMSOVFL

TFAN100

The following registers associate with TFAN100:

- TFANCU
- TFANPEG
- TFANSU

TOPS100

The following registers associate with TOPS100:

- POSDF
- POSDMDF

TOPS102

The following register associates with TOPS102:

- POSD

TOPS106

The following register associates with TOPS106:

- POSTRKDF
- VCFL

TOPS107

The following registers associate with TOPS107:

- VCDEF

TOPS114

The following register associates with TOPS114:

- BRNDFAIL

TOPS116

The following registers associate with TOPS116:

- TCSCOMPD
- TCSCOMPO

TOPS118

The following register associates with TOPS118:

- PSTIMOUT

TRAP

The following register associates with TRAP:

- ENTRAPS

TRK106

The following registers associate with TRK106:

- ANNSBU
- CF6SBU
- CNFSBU
- CNFSBUT
- MCCSFAIL
- PMCCTDG
- PMCCTFL
- SBU
- SEQFAIL
- STNSBU
- SVCSBU

TRK109

The following registers associate with TRK109:

- DS1ECF
- SBU

TRK111

The following registers associate with TRK111:

- INCLKT
- INFAIL
- INLKT
- SYSLKT

TRK113

The following registers associate with TRK113:

- GLARE
- INLKT
- OUTFAIL
- OUTOSF
- OUTROSF
- PRERTEAB
- SOUTOSF
- SOUTROSF

TRK114

The following registers associate with TRK114:

- INABNC
- INABNM
- INCABNC
- INCABNM
- INFAIL
- PDLM
- SOTSPDLM
- SYSABDN
- TKBADDG

TRK115

The following registers associate with TRK115:

- INFAIL
- PSGM
- SOTSPSGM

TRK116

The following registers associate with TRK116:

- INABNC
- INABNM
- INFAIL
- PRERTEAB

TRK117

The following register associates with TRK117:

- INFAIL

TRK118

The following register associates with TRK118:

- AOF

TRK119

The following register associates with TRK119:

- AOF

TRK120

The following register associates with TRK120:

- ANF

TRK121

The following registers associate with TRK121:

- GLARE
- OUTFAIL
- OUTOSF
- OUTROSF
- TERSSTO

- TERSTOB
- TERSTOC

TRK122

The following registers associate with TRK122:

- INLKT
- OUTFAIL
- PMINTEG

TRK123

The following registers associate with TRK123:

- INLKT
- PMERR
- TDUNLOST

TRK138

The following registers associate with TRK138:

- BLKCTRK
- BLKRECMD
- CF6QOVFL
- CFRAFAIL
- CFRAHWOV
- CFRALIMT
- CFRASWOV
- CMCFEOV
- CMCFIOV
- CNFQOVFL
- CNFQOVFT
- DCRBLK
- INANN
- INCTRMT
- INFAIL
- INTONE
- R2CBQOVF

- R2OHQOVF
- R3CBQOVF
- R3OHQOVF
- R4CBQOVF
- R4OHQOVF
- SCFOVFL
- SCNDLOVF
- SCNLOVF
- SYSTRMT
- TCMANCT
- TCMANTO
- TCMATDT
- TCMBLDN
- TCMCFWV
- TCMDISC
- TCMOPRT
- TCMPDIL
- TCMPSIG
- TCMTDBR
- TCMUNDN
- TCMVACS
- TCMVACT
- TCMVCCT
- TCUCGFL
- TCUPTFL
- TCUVPFL
- TERCONP
- TERERDS
- TERINOC
- TERNCUN
- TERNONT
- TERRODR

- TERSCFL
- TERSSTO
- TERSTOB
- TERSTOC
- TERSYFL
- TFRBUSY
- TFRNCII
- TFRNCIX
- TFRNCTF
- TFRNINT
- TFRNVIP
- TFRPGTO
- TPRCER1
- TPRNOBC
- TPRNORA
- TPRPER1
- TPRPER2
- TPRPER3
- TPRPER4
- TPRPER5
- TRMBLK
- TRMMFL
- TRSCQOV
- TRSEMR3
- TRSEMR4
- TRSEMR5
- TRSEMR6

TRK149

The following registers associate with TRK149:

- Q33FLT
- TERQ33A
- TERQ33B

TRK153

The following register associates with TRK153:

- BBDETECT

TRK162

The following registers associate with TRK162:

- INABNC
- INABNM
- OUTFAIL
- OUTOSF
- OUTROSF

TRK182

The following register associates with TRK182:

- INFAIL

TRK183

The following register associates with TRK183:

- INFAIL

TRK207

The following registers associate with TRK207:

- AIODMB
- AIODSB
- AIODSBU

TRK213

The following registers associate with TRK213:

- INFAIL
- OUTFAIL

TRK342

The following registers associate with TRK342:

- TPRCER1
- TPRNOBC
- TPRNORA
- TPRPER1

- TPRPER2
- TPRPER3
- TPRPER4
- TPRPER5

TRKT202

The following register associates with TRKT202:

- TCUAARD

UCVP400

The following registers associate with UCVP400:

- CGRPDEL
- MGRPDEL
- SGRPDEL

UTR100

The following register associates with UTR100:

- PMERR

WUCR101

The following register associates with WUCR101:

- WUCBLCK

WUCR102

The following registers associate with WUCR102:

- WUCDSCRD
- WUCOVRDU

4 OM references

Functionality code to OM group

Listed under each functionality code heading are the associated OM groups.

NTG310AA

The following OM groups associate with NTG310AA :

- PM1
- XPMOCC
- XPMOVLD

NTG320AA

The following OM groups associate with NTG320AA:

- ADASAPU

NTX001AA

The following OM groups associate with NTX001AA:

- BRSTAT
- CF3P
- CMC
- CP
- CP2
- CPU
- CSL
- DCM
- DDU
- DS1CARR
- EXT
- FTRQ
- IOC
- IOSYS
- ISUPCGRP
- LMD
- LOGS

- MTU
- NMC
- OFZ
- OFZ2
- OTS
- PM
- PMOVLD
- PMTYP
- RADR
- RCVR
- RTEASUM
- RTFEAT
- RTLTSUM
- SOTS
- STN
- STORE
- SVCT
- TFCANA
- TM
- TONES
- TRK
- TRMTCM
- TRMTCM2
- TRMTCU
- TRMTCU2
- TRMTER
- TRMTFR
- TRMTPR
- TRMTRS
- TROUBLEQ
- TS

- XPMOCC
- XPMOVLD

NTX007AB

The following OM groups associate with NTX007AB:

- HUNT

NTX020AC

The following OM groups associate with NTX020AC:

- CFWPOTS
- CWTPOTS
- SCPOTS
- TWCPOTS

NTX020AD

The following OM groups associate with NTX020AD:

- CFWPOTS
- CWTPOTS
- SCPOTS
- TWCPOTS

NTX021AA

The following OM group associates with NTX021AA:

- RCF

NTX022AA

The following OM groups associate with NTX022AA:

- DCRDEST
- DCRICTRK
- DCRLINK
- DCRMISC

NTX022AB

The following OM groups associate with NTX022AB:

- DCRDEST
- DCRLINK
- DCRMISC

NTX023AB

The following OM groups associate with NTX023AB:

- C7LINK1
- C7LINK2
- C7LKSET
- C7ROUTE
- SITE

NTX030CC

The following OM groups associate with NTX030CC:

- AMA
- OFZ
- OGTMP
- OGTSP
- TOPSDEV
- TOPSMISC
- TOPSMTCE
- TOPSOC
- TOPSOCPS
- TOPSPSZ
- TOPSQS
- TOPSRON
- TOPSTRAF
- TOPSUSE
- TOPSVC

NTX039AA

The following OM groups associate with NTX039AA:

- TOPSDEV
- TOPSMISC
- TOPSUSE

NTX040AA

The following OM groups associate with NTX040AA:

- PM1
- XPMOCC
- XPMOVLD

NTX041AA

The following OM groups associate with NTX041AA:

- C7LINK2
- C7LKSET
- C7ROUTE
- C7RTESET
- C7SCCP
- PM1
- XPMOCC
- XPMOVLD

NTX041AB

The following OM groups associate with NTX041AB:

- C7LINK2
- C7SCCP

NTX042AA

The following OM groups associate with NTX042AA:

- AMA
- ONI

NTX044AA

The following OM groups associate with NTX044AA:

- AMA
- BLUEBOX

NTX045AA

The following OM groups associate with NTX045AA:

- CFWPOTS
- OTS

NTX060AB

The following OM groups associate with NTX060AB:

- CBK
- MACHCONG
- NWMTGCNT
- PRP
- RRTE

NTX060BA

The following OM groups associate with NTX060BA:

- NWMSILC

NTX060BB

The following OM groups associate with NTX060BB:

- NWMFRRCT
- NWMFRRTG

NTX063AA

The following OM groups associate with NTX063AA:

- ESUP

NTX070AB

The following OM groups associate with NTX070AB:

- TOPSDEV
- TOPSMISC
- TOPSQS
- TOPSTRAF
- TOPSUSE

NTX082AA

The following OM groups associate with NTX082AA:

- ENG640M1
- TRA125M1
- TRA125M2
- TRA250M1

NTX085AA

The following OM groups associate with NTX085AA:

- EATSMS
- TFCANA

NTX087AA

The following OM groups associate with NTX087AA:

- EATSMS
- TFCANA

NTX089AA

The following OM groups associate with NTX089AA:

- REVALLO

NTX098AA

The following OM groups associate with NTX098AA:

- ATTAMA

NTX100AA

The following OM groups associate with NTX100AA:

- ACRTS
- ACSYSTR
- ACTAKEDN
- ACTRBL
- CALLFWD
- CF6P
- CPICKUP
- CRMDBM
- FTRQ
- IBNGRP
- IBNSG
- LNREDIAL
- OHQCBQCG
- OHQCBQR2
- OHQCBQR3
- OHQCBQR4

- OHQCBQRT
- PRKOM
- SPEEDCAL
- TWCIBN

NTX101AA

The following OM group associates with NTX101AA:

- UCDGRP

NTX102AA

The following OM group associates with NTX102AA:

- AMA

NTX105AA

The following OM groups associate with NTX105AA:

- OHQCBQCG
- OHQCBQRT

NTX106AA

The following OM groups associate with NTX106AA:

- ENG640M1
- IBNGRP
- KSHUNT
- TRA125M1
- TRA125M2
- TRA250M1

NTX112AB

The following OM groups associate with NTX112AB:

- VFGUSAGE

NTX119AA

The following OM group associates with NTX119AA:

- MWTCAR

NTX131AA

The following OM groups associate with NTX131AA:

- AOSS
- AVRARU

NTX140AA

The following OM groups associate with NTX140AA:

- DUAQ
- DUAQMOD

NTX145AA

The following OM groups associate with NTX145AA:

- RSCIR
- RSCIS

NTX150AA

The following OM groups associate with NTX150AA:

- RLCDIS
- RSCIR
- RSCIS

NTX154AA

The following OM groups associate with NTX154AA:

- PM
- XPMOCC
- XPMOVLD

NTX156AA

The following OM groups associate with NTX156AA:

- RLCDIS

NTX157AA

The following OM groups associate with NTX157AA:

- DSINWTS

NTX159AA

The following OM groups associate with NTX159AA:

- ATTAMA
- ATTLAMA

NTX167AB

The following OM groups associate with NTX167AB:

- ISUPCGRP
- ISUPCKTA
- ISUPCONN
- ISUPERRS
- ISUPUSAG

NTX171CA

The following OM group associates with NTX171CA:

- CDMCCS

NTX174AA

The following OM group associates with NTX174AA:

- AIOD

NTX181AA

The following OM groups associates with NTX181AA:

- CP

NTX185AA

The following OM group associates with NTX185AA:

- BLUEBOX

NTX186AA

The following OM group associates with NTX186AA:

- EACARR

NTX197AA

The following OM groups associate with NTX197AA:

- DSINWTS
- DSMCCS
- DSMTP

NTX204AA

The following OM groups associate with NTX204AA:

- C6LINK
- C6VFL

NTX208AA

The following OM group associates with NTX208AA:

- CDACTS

NTX213AA

The following OM group associates with NTX213AA:

- SITE

NTX215AA

The following OM group associates with NTX215AA:

- SETRAF

NTX218AA

The following OM group associates with NTX218AA:

- USAGSAMP

NTX221AA

The following OM group associates with NTX221AA:

- AMA

NTX222AM

The following OM group associate with NTX222AM:

- PM2
- XPMOCC
- XPMOVLD

NTX222BA

The following OM group associates with NTX222BA:

- EXT
- TRK

NTX222CA

The following OM group associates with NTX222CA:

- EXT

NTX238AA

The following OM group associates with NTX238AA:

- CF6P

NTX251AA

The following OM group associates with NTX251AA:

- NRS

NTX260AA

The following OM group associates with NTX260AA:

- PCNF

NTX269AA

The following OM group associates with NTX269AA:

- UTR

NTX270AA

The following OM groups associate with NTX270AA:

- DTSR
- ISDD
- PM
- PM2
- PMOVLD
- PMSTAT
- SITE
- SITE2
- XPMLNK
- XPMOCC
- XPMOVLD

NTX273AA

The following OM groups associate with NTX273AA:

- MPCBASE
- MPCLINK2
- MPCLINK3

NTX274AA

The following OM group associates with NTX274AA:

- PCMCARR

NTX291AA

The following OM groups associate with NTX291AA:

- CP
- CPUSTAT

NTX297AA

The following OM group associates with NTX297AA:

- MPB

NTX300AA

The following OM groups associate with NTX300AA:

- ICBK
- IHTRP
- IPRP
- OFZ
- PCMCARR
- PM2
- SRCDISP
- TRK
- XPMOCC
- XPMOVLD

NTX303AA

The following OM group associates with NTX303AA:

- CDR

NTX306AA

The following OM groups associate with NTX306AA:

- N6LK
- N6XR

NTX307AA

The following OM groups associate with NTX307AA:

- N6LINK
- N6OFFICE

NTX309AA

The following OM group associates with NTX309AA:

- TOPSVC

NTX353CA

The following OM group associates with NTX353CA:

- TRMTFR2

NTX366AA

The following OM groups associate with NTX366AA:

- TCAPERRS
- TCAPUSAG

NTX367AA

The following OM groups associate with NTX367AA:

- TCAPERRS
- TCAPUSAG

NTX372AA

The following OM groups associate with NTX372AA:

- SLLNK
- SLLNKINC

NTX386AA

The following OM group associates with NTX386AA:

- EACARR

NTX387AA

The following OM groups associate with NTX387AA:

- PM
- XPMOCC
- XPMOVLD

NTX387AB

The following OM group associates with NTX387AB:

- CND

NTX398AA

The following OM groups associate with NTX398AA:

- SITE2

NTX407AA

The following OM groups associate with NTX407AA:

- ACDGRP

NTX407AB

The following OM group associates with NTX407AB:

- ACDGRP

NTX412CB

The following OM group associates with NTX412CB:

- CDCOM

NTX413AA

The following OM group associates with NTX413AA:

- CALLFWD

NTX414AA

The following OM group associates with NTX414AA:

- PRKOM

NTX416AE

The following OM group associates with NTX416AE:

- ACDGRP

NTX417AA

The following OM groups associate with NTX417AA:

- SLLNK
- SLLNKINC

NTX435AA

The following OM groups associate with NTX435AA:

- CALLHOLD
- CALLWAIT
- STN

NTX455AA

The following OM group associates with NTX455AA:

- EASHTRK

NTX470AA

The following OM group associates with NTX470AA:

- CP

NTX472AB

The following OM groups associate with NTX472AB:

- CP
- HUNT
- IADL
- ICDIVF
- ICDIVP
- ICONF
- ICWT
- IDND
- IFDL
- ILR
- INDC
- PMOVLD
- XPMOCC
- XPMOVLD

NTX474AA

The following OM groups associate with NTX474AA:

- MTRPERF
- MTRUSG

NTX478AA

The following OM group associates with NTX478AA:

- PCMCARR

NTX479AA

The following OM group associates with NTX479AA:

- UTR

NTX483AA

The following OM group associates with NTX483AA:

- CP

NTX485AA

The following OM group associates with NTX485AA:

- UTR

NTX499AA

The following OM groups associate with NTX499AA:

- ICT
- IRAG
- IREC
- IWUC
- OTS

NTX550AA

The following OM groups associate with NTX550AA:

- C7SCCP
- TCAPERRS
- TCAPUSAG

NTX552AB

The following OM groups associate with NTX552AB:

- ACCSBNS
- ACCSCCV
- TRMSCRND
- TRMSCRNO

NTX554AA

The following OM groups associate with NTX554AA:

- NSC
- NSCACG

NTX555AA

The following OM group associates with NTX555AA:

- NSC

NTX555AB

The following OM group associates with NTX555AB:

- NSC

NTX560AA

The following OM groups associate with NTX560AA:

- ROAPPL
- ROMISC

NTX560AB

The following OM groups associate with NTX560AB:

- ROAPPL
- ROMISC

NTX571AA

The following OM group associates with NTX571AA:

- PRKOM

NTX573AA

The following OM group associates with NTX573AA:

- IBNGRP

NTX574AA

The following OM group associates with NTX574AA:

- IBNGRP

NTX601BA

The following OM group associates with NTX601BA:

- PCNF

NTX633AA

The following OM groups associate with NTX633AA:

- OOCBILL
- OOCBOOK
- TOPSDEV

NTX640AA

The following OM groups associate with NTX640AA:

- LMD
- PM
- PMTYP
- XPMOCC
- XPMOCC
- XPMOVLD

NTX652AA

The following OM group associates with NTX652AA:

- RLCDIS

NTX664AA

The following OM groups associate with NTX664AA:

- CMC
- CP
- CSL
- IOC
- LMD
- PM
- PMTYP
- RLCDIS
- TRK
- TS
- XPMOCC
- XPMOVLD

NTX665AA
The following OM group associates with NTX665AA:

- SPC

NTX666AA
The following OM group associates with NTX666AA:

- SPC

NTX669AA
The following OM group associates with NTX669AA:

- TRK

NTX701AA
The following OM group associates with NTX701AA:

- CF6P

NTX701BA
The following OM group associates with NTX701BA:

- PCNF

NTX701CA
The following OM group associates with NTX701CA:

- PCNF

NTX714AA
The following OM group associates with NTX714AA:

- TOPSEA

NTX716AA
There are no OM groups associated with NTX716AA.

NTX717AB
The following OM groups associate with NTX717AB:

- TRKVERDS

NTX720AA
The following OM groups associate with NTX720AA:

- AOSSVR
- AVRARU

NTX728AA

The following OM group associates with NTX728AA:

- SLLNK

NTX738AA

The following OM groups associate with NTX738AA:

- ACSYSTR
- LOGS
- SYSPERF

NTX750AA

The following OM group associates with NTX750AA:

- CPUSTAT

NTX750AB

The following OM groups associate with NTX750AB:

- BCAPCG
- BCAPOF
- CPICG
- ISDNBD
- ISDNLL
- ISGBD
- ISGBRA
- ISGCPU
- ISGOVLD
- LMD
- OFZ
- PM
- PM1
- PM2
- PMTYP
- PRADCHL2
- RLCDIS
- SME
- TROUBLEQ

- XPMOCC
- XPMOVLD

NTX767AA

The following OM group associates with NTX767AA:

- EXT

NTX768AA

The following OM group associates with NTX768AA:

- EXT

NTX791AA

The following OM group associatse with NTX791AA:

- PRAFAC

NTX806AA

The following OM group associates with NTX806AA:

- CFWPOTS

NTX807AA

The following OM group associates with NTX807AA:

- CWTPOTS

NTX807AB

The following OM group associate with NTX807AB:

- CWTPOTS
- OTS

NTX820AA

The following OM group associates with NTX820AA:

- TWCIBN

NTX822AA

The following OM group associates with NTX822AA:

- EBSMSGCT

NTX825AA

The following OM groups associate with NTX825AA:

- ACCSBNS
- ACCSCCV

NTX825AB

The following OM groups associate with NTX825AB:

- ACCSBNSE
- ACCSCCVE

NTX833AA

The following OM groups associate with NTX833AA:

- C7MTP
- PM
- XPMOCC
- XPMOVLD

NTX834AA

The following OM group associates with NTX834AA:

- C7DCIS6

NTX835AA

The following OM groups associate with NTX835AA:

- C7LINK3
- C7MTP

NTX840AA

The following OM group associates with NTX840AA:

- C7GTWSCR

NTX856AA

The following OM groups associate with NTX856AA:

- IBNAC
- IBNSGLDN

NTX877AB

The following OM groups associate with NTX877AB:

- MPHCON
- MPHGRP

NTX878AC

The following OM group associates with NTX878AC:

- GIACGRP

NTX892AA

The following OM group associates with NTX892AA:

- MPCFASTA

NTX901AA

The following OM groups associate with NTX901AA:

- BLUEBOX
- DTSR
- DTSRPM
- LINAC
- LM
- MTA
- NSC
- TROUBLEQ

NTX902AA

The following OM groups associate with NTX902AA:

- CBK
- ESP
- PRP
- RRTE

NTX905AA

The following OM group associates with NTX905AA:

- TRK

NTX913AA

The following OM groups associate with NTX913AA:

- PM
- XPMOCC
- XPMOVLD

NTX941AA

The following OM groups associate with NTX941AA:

- MSCHAIN
- MSCHNLK

NTX942AA

The following OM groups associate with NTX942AA:

- CM
- SLM

NTX944AA

The following OM groups associate with NTX944AA:

- NMTCLINK
- NMTCNODE
- NMTCTYPE
- NMTCUNIT

NTX951AA

The following OM groups associate with NTX951AA:

- MSCHAIN
- MSCHNLK

NTX983AA

The following OM group associates with NTX983AA:

- NSC

NTX991AB

The following OM group associates with NTX991AB:

- ACDMISPL

NTX991AD

The following OM group associates with NTX991AD:

- VFGIWUSE

NTXA00AA

The following OM groups associate with NTXA00AA:

- ACB
- AR
- EXT

NTXA00AB

The following OM groups associate with NTXA00AB:

- EXT

NTXA01AA

The following OM groups associate with NTXA01AA:

- CND
- CNDXPM

NTXA02AA

The following OM groups associate with NTXA02AA:

- COT
- OTS

NTXA10AA

The following OM groups associate with NTXA10AA:

- LMD
- PM2
- PMTYP

- XPMOCC
- XPMOVLD

NTXA17AA

The following OM groups associate with NTXA17AA:

- AABS
- VSNCOM
- VSNLINK

NTXA18AA

The following OM group associates with NTXA18AA:

- SACB

NTXA28AA

The following OM group associates with NTXA28AA:

- TOPSKFAM

NTXA35AA

The following OM group associates with NTXA35AA:

- ISUPUSAG

NTXA41AA

The following OM group associates with NTXA41AA:

- CNDB

NTXA42AA

The following OM group associates with NTXA42AA:

- DRCW

NTXA43AA

The following OM group associates with NTXA43AA:

- CFRA

NTXA45AA

The following OM groups associate with NTXA45AA:

- SCA
- TRMTFR2

NTXA62AA

The following OM groups associate with NTXA62AA:

- DALINK
- DAMISC
- TOPSARU
- TOPSDA

NTXA64AA

The following OM groups associate with NTXA64AA:

- OFZ
- OTS

NTXA68AA

The following OM group associates with NTXA68AA:

- NETMSG

NTXA83AA

The following OM groups associate with NTXA83AA:

- TDCLAPD
- TDCPROT
- TDCROUT

NTXA87AA

The following OM group associates with NTXA87AA:

- CND

NTXA95AA

The following OM group associates with NTXA95AA:

- SCF

NTXA96AA

The following OM group associates with NTXA96AA:

- SCRJ

NTXB22AA

The following OM groups associate with NTXB22AA:

- DCTS
- TRKDCTS

NTXB58AA

The following OM groups associate with NTXB58AA:

- PM2
- PMTYP
- XPMOCC
- XPMOVLD

NTXB68AA

The following OM group associates with NTXB68AA:

- OFZ

NTXE01AA

The following OM groups associate with NTXE01AA:

- ENETMAT
- ENETOCC
- ENETPLNK
- ENETSYS

NTXE14AA

The following OM group associates with NTXE14AA:

- NSC

NTXE21AA

The following OM groups associate with NTXE21AA:

- ACMS
- ATRK

NTXE22AA

The following OM groups associate with NTXE22AA:

- ACDGRP
- NACDGRP1
- NACDGRP2

NTXE27AA

The following OM groups associates with NTXE27AA:

- CND

NTXE35AA

The following OM group associates with NTXE35AA:

- TOPSEA

NTXE36AA

The following OM group associates with NTXE36AA:

- TOPSDACC

NTXE38AA

The following OM group associates with NTXE38AA:

- CND

NTXE40AA

The following OM group associates with NTXE40AA:

- IBNGRP

NTXE46AA

The following OM group associates with NTXE46AA:

- CNDB

NTXE47AA

The following OM group associates with NTXE47AA:

- MWTCAR

NTXE68AA

The following OM group associates with NTXE68AA:

- TOPSINCC

NTXE71AA

The following OM group associates with NTXE71AA:

- TOPSBRND

NTXE77AA

The following OM group associates with NTXE77AA:

- NSSTCAP

NTXF04AA

The following OM groups associate with NTXF04AA:

- FPDABM
- FPDEVICE
- FPSCSI

NTXF05AA

The following OM groups associate with NTXF05AA:

- EIUETHER
- LIUFBUS
- NCMCPUST

NTXF06AA

The following OM groups associate with NTXF06AA:

- APOCCS
- APSYS

NTXF10AA

The following OM group associates with NTXF10AA:

- TOPSCCAB

NTXF25AA

The following OM groups associate with NTXF25AA:

- FRSAGENT
- FRSPM
- FRT1

NTXF25AD

The following OM group associates with NTXF25AD:

- FRSAGENT

NTXF55AA

The following OM groups associate with NTXF55AA:

- BCLID
- BCLIDNL
- BCLIDO

NTXF70AA

The following OM groups associate with NTXF70AA:

- CM
- MS

NTXF82AA

The following OM group associates with NTXF82AA:

- SLVPOPT

NTXF85AA

The following OM group associates with NTXF85AA:

- MWTCAR2

NTXF86AA

The following OM group associates with NTXF86AA:

- CACHEMGR

NTXF88AA

The following OM groups associate with NTXF88AA:

- TME

NTXG06AA

The following OM group associates with NTXG06AA:

- EIOC

NTXG12AA

The following OM group associates with NTXG12AA:

- EXT

NTXG12CA

The following OM group associates with NTXG12CA:

- EXT

NTXG13AA

The following OM groups associate with NTXG13AA:

- DAISGEN
- DUTLGEN

NTXG24AA

The following OM group associates with NTXG24AA:

- DS1CARR

NTXG43AA

The following OM group associates with NTXG43AA:

- TRMTFR

NTXG47AA

The following OM group associates with NTXG47AA:

- TRMTFR2

NTXG81AA

The following OM groups associate with NTXG81AA:

- TCAPERRS
- TCAPUSAG

NTXG83AA

The following OM group associates with NTXG83AA:

- EXT

NTXG84AA

The following OM group associates with NTXG84AA:

- EXT

NTXG85AA

The following OM group associates with NTXG85AA:

- EXT

NTXH11AA

The following OM groups associate with NTXH11AA:

- M20CARR1
- M20CARR2

NTXH41AA

The following OM group associates with NTXH41AA:

- C7GTWSCR

NTXH48AA

The following OM group associates with NTXH38AA:

- CDACCS

NTXH52AA

The following OM groups associate with NTXH52AA:

- PM2
- XPMOCC
- XPMOVLD

NTXH54AA

The following OM group associates with NTXH54AA:

- ACCTCODE

NTXH84AA

The following OM group associates with NTXH84AA:

- NSC

NTXJ00AA

The following OM groups associate with NTXJ00AA:

- RSCIR
- RSCIS

NTXJ10AA

The following OM group associates with NTXJ10AA:

- AABSHAND

NTXJ37AA

The following OM groups associate with NTXJ37AA:

- TOPSPARS

NTXJ59AA

The following OM groups associate with NTXJ59AA:

- SCAISERV
- SCAISRV2

NTXJ59AC

The following OM group associates with NTXJ59AC:

- SCAITRAN

NTXJ69AA

The following OM group associates with NTXJ69AA:

- RCHDOPT

NTXJ91AA

The following OM groups associate with NTXJ91AA:

- C7MDR
- MDR7GW

NTXK06AA

The following OM group associates with NTXK06AA:

- ISUPCGRP

NTXK50AB

The following OM group associates with NTXK50AB:

- NDS0CARR

NTXK51AA

The following OM groups associate with NTXK51AA:

- C7GWSCCP
- C7SCCPA1
- C7SCCPA2

NTXK60AA

The following OM group associates with NTXK60AA:

- DCMEBSS

NTXK65AA

The following OM groups associate with NTXK65AA:

- NDS0CARR

NTXL39AA

The following OM groups associates with NTXL39AA:

- TCAPERRS
- TCAPUSAG

NTXL86AA

The following OM group associates with NTXL86AA:

- TRMTFR2

NTXM99AA

The following OM group associates with NTXM99AA:

- C7SCCPCO

NTXN10AA

The following OM group associates with NTXN10AA:

- SLLNKINC

NTXN21AA

The following OM group associates with NTXN21AA:

- SCPUBHMT
- SCPUPTF

NTXN25AA

The following OM groups associate with NTXN25AA:

- LMD
- PM
- SITE3
- XPMOCC
- XPMOVLD

NTXN33AA

The following OM group associates with NTXN33AA:

- NSSTCN

NTXN49AA

The following OM group associates with NTXN49AA:

- TOPSAICC

NTXN54AA

The following OM group associates with NTXN54AA:

- TOPSALT

NTXN75AA

The following OM group associates with NTXN5AA:

- SPP

NTXN83AA

The following OM groups associate with NTXN83AA:

- MSFBUS
- MSFBUSTP

NTXN97AA

The following OM groups associate with NTXN97AA:

- CND
- CNDXPM

NTXP00AA

The following OM group associates with NTXP00AA:

- LINEHAZ

NTXP12AA

The following OM group associates with NTXP12AA:

- ACRJ

NTXP41AA

The following OM groups associate with NTXP41AA:

- OGTQMS
- TOPSQMS

NTXP49AA

The following OM groups associate with NTXP49AA:

- TOPPACT1
- TOPPACT2
- TOPPACT3
- TOPPDID1
- TOPPDID2
- TOPPDID3
- TOPPDID4
- TOPPDID5
- TOPPMSG

NTXP57AA

The following OM group associates with NTXP57AA:

- MDCWAKUP

NTXP78AA

The following OM group associates with NTXP78AA:

- TOPS950

NTXP79AA

The following OM group associates with NTXP79AA:

- AABSFILT

NTXP81AA

The following OM group associates with NTXP81AA:

- SLLCOM

NTXP96AA

The following OM group associates with NTXP96AA:

- CALLOG

NTXQ00AA

The following OM group associates with NTXQ00AA:

- DCOMLINK

NTXQ23AA

The following OM groups associate with NTXQ23AA:

- ADASSRV
- VSNCOM
- VSNLINK

NTXQ29AA

The following OM group associates with NTXQ29AA:

- CNAB

NTXQ36AA

The following OM groups associate with NTXQ36AA:

- P8NPA
- P8NXX
- P8QUERY

- P8QUERY2
- P8SSP
- P8SSP2
- P8TEL

NTXQ42AA

The following OM group associates with NTXQ42AA:

- AIN

NTXQ43AA

The following OM group associates with NTXQ43AA:

- TRMTFR2

NTXQ46AA

The following OM groups associate with NTXQ46AA:

- SCPDBMTC
- SCPQPQTC
- SCPQPQTM
- SCPQPQTT
- SCPQPUTM
- SCPQUMTC
- SCPSVAVL
- SCPUPUT
- SCPUPUTM

NTXQ65AA

The following OM group associates with NTXQ65AA:

- CCTOOM

NTXQ91AA

The following OM group associates with NTXQ91AA:

- DSCWID

NTXR21AA

The following OM groups associate with NTXR21AA:

- RLCDIS
- RSCIS

NTXR48AA

The following OM groups associate with NTXR48AA:

- QMSACT
- QMSDATA

NTXR49AA

The following OM group associates with NTXR49AA:

- WIDEBAND

NTXR50AA

The following OM group associates with NTXR50AA:

- QMSMIS

NTXR66AA

The following OM group associates with NTXR66AA:

- WIDEBAND

NTXR77AA

The following OM group associates with NTXR77AA:

- EXT

NTXR88AA

The following OM group associates with NTXR88AA:

- NARUSAGE

NTXR95AA

The following OM group associates with NTXR95AA:

- CNAMD
- CND

NTXS17AA

The following OM groups associate with NTXS17AA:

- EXT

NTXS22AA

The following OM groups associate with NTXS22AA:

- SCAISERV
- SCAISRV2

NTXS30AA

The following OM groups associate with NTXS30AA:

- COVMDISK
- COVMDSPP
- COVMFLTY
- COVMISCD
- COVMISCH
- COVMISND
- COVMISPT
- COVMT1CH
- PM1
- UCVPACT
- XPMOCC
- XPMOVLD

NTXS31AA

The following OM groups associate with NTXS31AA:

- AASV
- PM1
- VPSC
- XPMOCC
- XPMOCC
- XPMOVLD

NTXS37AA

The following OM group associates with NTXS37AA:

- MDSACT

NTXS68AA

The following OM group associates with NTXS68AA:

- RSCIR

NTXS77AA

The following OM group associates with NTXS77AA:

- C7ROUTER

NTXU25AA

The following OM group associates with NTXU25AA:

- TCN7ERRS
- TCN7USAG

NTXU37AA

The following OM group associates with NTXU37AA:

- SAFDQP
- SAIDQP
- SAUDQP
- SAVDQP

NTXV24AA

The following OM group associates with NTXV24AA:

- FCS

NTXV58AA

The following OM group associates with NTXV58AA:

- DCND

NTXV91AA

The following OM group associates with NTXV91AA:

- SA8AQP

5 Operating group to OM group

Listed under each operating group heading are the OM groups that monitor the function and related activities on the switch.

500/2500 set

The following OM groups are specific to 500/2500 set:

- IBNGRP
- PRKOM
- UCDGRP

8-port 64-kbit/s interface circuit pack

The following OM groups are specific to 8-port 64-kbit/s interface circuit pack:

- NDS0CARR

800 Plus

The following OM groups are specific to 800 Plus:

- NSC
- NSCACG

AT&T EADAS office

The following OM groups are specific to AT&T EADAS office:

- USAGSAMP

Access tandem

The following OM groups are specific to access tandem:

- EACARR
- EASHTRK
- EATSMS

Attendant consoles

The following OM groups are specific to attendant consoles:

- IBNSG

Automated Alternate Billing System

The following OM groups are specific to Automated Alternate Billing System:

- MDSACT
- VSNCOM

Automated Directory Assistance Service

The following OM groups are specific to Automated Directory Assistance: Service:

- AASV
- ADASAPU
- ADASSRV
- VSNCOM

Automatic Call Distribution

The following OM groups are specific to Automatic Call Distribution:

- DCND
- DMCT
- SCAISRV2
- SLLNK
- SLLNKINC

Automatic Calling Card Services

The following OM groups are specific to Automatic Calling Card Services:

- TCAPERRS
- TCAPUSAG

Bulk Calling Line Identification

The following OM groups are specific to Bulk Calling Line Identification:

- BCLIDNL

Centralized AMA

The following OM groups are specific to Centralized AMA:

- BLUEBOX

CCIS

The following OM groups are specific to CCIS:

- DSINWTS
- DSMTP

CCIS6

The following OM groups are specific to CCIS6:

- C6LINK
- C6VFL

CCITT No. 6

The following OM groups are specific to CCITT No. 6:

- N6LINK
- N6LK
- N6OFFICE
- N6XR

CCS7

The following OM groups are specific to CCS7:

- ACCSBNS
- ACCSCCV
- C7DCIS6
- C7GTWSCR
- C7LINK1
- C7LINK2
- C7LINK3
- C7LKSET
- C7ROUTE

- C7ROUTER
- C7RTESET
- C7SCCP
- CCTOOM
- FTRQ
- ISUPCGRP
- ISUPCONN
- ISUPERRS
- ISUPUSAG
- NETMSG
- NSC
- NSCACG
- TCAPERRS
- TCAPUSAG

CLASS

The following OM groups are specific to CLASS:

- BLUEBOX
- CFRA
- CNAMD
- CNDXPM
- COT
- SCRJ

CLASS/CMS

The following OM groups are specific to CLASS/CMS:

- ACB
- AR
- CND
- CNDB

CMS

The following OM groups are specific to CMS:

- CFRA
- CNAMD
- CNDXPM
- COT

Central message controller

The following OM groups are specific to Central message controller:

- EIOC

Centralized MAP (CMAP)

The following OM groups are specific to CMAP:

- ROAPPL
- ROMISC

DCM

The following OM groups are specific to DCM:

- DCM

DIRP

The following OM groups are specific to DIRP:

- AMA

DMS-300 gateway

The following OM groups are specific to DMS-300 gateway:

- ICBK

DMS Auxiliary Operator Service System (AOSS)

The following OM groups are specific to DMS AOSS:

- TRMTCU

DMS Family

The following OM groups are specific to DMS Family:

- CFWPOTS
- CMC
- CP

- CP2
- CWTPOTS
- EXT
- LMD
- NMC
- NRS
- PRP
- RCF
- RRTE
- RTFEAT
- RTLTSUM
- SCPOTS
- SETRAF
- TM
- TONES
- TRKVERDS
- TS
- TWCPOTS

DMS international

The following OM groups are specific to DMS international:

- DDU
- ESUP
- SVCT

DMS-100

The following OM groups are specific to DMS-100:

- ACRJ
- CDCOM
- CPUSTAT
- CRMDBM
- CSL
- DALINK
- DAMISC

- DCRDEST
- DCRICTRK
- DCRLINK
- DCRMISC
- DDU
- DRCW
- ENG640M1
- ESUP
- FRSAGENT
- FRSPM
- FRT1
- FTRQ
- HUNT
- IOC
- IOSYS
- LOGS
- MACHCONG
- MPB
- MTA
- NETMSG
- NSSTCN
- OFZ
- OFZ2
- OHQCBQR2
- OHQCBQR3
- OHQCBQR4
- OTS
- PCMCARR
- PM
- PM1
- PM2
- PMOVLD

- PMTYP
- RADR
- RCHDOPT
- RCVR
- REVALLO
- RLCDIS
- ROAPPL
- ROMISC
- SCAISERV
- SCF
- SITE
- SITE2
- SITE3
- SLLCOM
- SLVPOPT
- SOTS
- SPP
- STORE
- SVCT
- SYSPERF
- TFCANA
- TOPSAICC
- TOPSALT
- TOPSDEV
- TOPSTRAF
- TRA125M1
- TRA125M2
- TRA250M1
- TRK
- TRMTCM
- TRMTCU
- TRMTCU2

- TRMTER
- TRMTFR
- TRMTFR2
- TRMTRS
- TROUBLEQ
- VFGIWUSE
- XPMOCC
- XPMOVLD

DMS-100/200

The following OM groups are specific to DMS-100/200:

- AABSHAND
- CPUSTAT
- CSL
- ESUP
- IOC
- IOSYS
- LOGS
- MPB
- OFZ
- OFZ2
- OTS
- PM
- PM1
- PM2
- PMOVLD
- PMTYP
- ROAPPL
- ROMISC
- SME
- SOTS
- SYSPERF
- TOPSDA

- TOPSDEV
- TOPSMTCE
- TOPSOC
- TOPSOCPS
- TOPSPSZ
- TOPSQS
- TOPSRON
- TRK
- TRMTCM
- TRMTCU
- TRMTCU2
- TRMTER
- TRMTFR
- TRMTRS
- TROUBLEQ
- XPMOCC
- XPMOVLD

DMS-100/200 Austrian combined local and toll

The following OM groups are specific to DMS-100/200 Austrian combined local and toll:

- OFZ

DMS-200

The following OM groups are specific to DMS-200:

- AABSHAND
- BLUEBOX
- CPUSTAT
- CSL
- DDU
- ESUP
- IOC
- IOSYS
- LOGS

- MACHCONG
- OFZ
- OFZ2
- OTS
- PM
- PM1
- PM2
- PMOVLD
- PMTYP
- SOTS
- SYSPERF
- TDCLAPD
- TDCPROT
- TDCROUT
- TOPSAICC
- TOPSALT
- TOPSBRND
- TOPSCCAB
- TOPSDA
- TOPSDEV
- TOPSINCC
- TOPSKFAM
- TOPSMTCE
- TOPSOC
- TOPSOCPS
- TOPSPSZ
- TOPSQS
- TOPSRON
- TOPSTRAF
- TRK
- TRMSCRND
- TRMSCRNO

- TRMTCM
- TRMTCU
- TRMTCU2
- TRMTER
- TRMTRS
- VSNLINK
- XPMOCC
- XPMOVLD

DMS-200 with international ACCS

The following OM groups are specific to DMS-200 with international ACCS:

- CDACCS

DMS-200/300

The following OM groups are specific to DMS-200/300:

- OFZ
- OFZ2
- SYSPERF
- TRK

DMS-250

The following OM groups are specific to DMS-250:

- CPUSTAT
- CSL
- DDU
- ESUP
- FTRQ
- IOC
- IOSYS
- LOGS
- MACHCONG
- OFZ
- OFZ2
- PM

- PM1
- PM2
- PMOVLD
- PMTYP
- ROAPPL
- ROMISC
- SVCT
- SYSPERF
- TOPSDEV
- TRK
- TRMTCM
- TRMTCU
- TRMTCU2
- TRMTER
- TRMTFR
- TRMTFR2
- TRMTRS
- XPMOCC
- XPMOVLD

DMS-250/SL-100

The following OM groups are specific to DMS-250/SL-100:

- OFZ2
- SYSPERF
- TRK

DMS-300

The following OM groups are specific to DMS-300:

- C7GWSCCP
- CDR
- CPUSTAT
- CSL
- DDU
- ESUP

- FTRQ
- IHTRP
- IOC
- IOSYS
- IPRP
- LOGS
- MACHCONG
- OFZ
- OFZ2
- PCMCARR
- PM
- PM1
- PM2
- PMOVLD
- PMTYP
- ROAPPL
- ROMISC
- SRCDISP
- SVCT
- SYSPERF
- TOPSDEV
- TRK
- TRMTCM
- TRMTCU
- TRMTER
- TRMTFR
- TRMTRS
- XPMOCC
- XPMOVLD

DMS-MTX

The following OM groups are specific to DMS-MTX:

- CPUSTAT
- CSL
- DDU
- ESUP
- FTRQ
- IOC
- IOSYS
- LOGS
- MACHCONG
- PM
- PM1
- PM2
- PMOVLD
- PMTYP
- SVCT
- TOPSDEV
- TRMTCM
- TRMTCU
- TRMTER
- TRMTFR
- TRMTRS
- TROUBLEQ
- XPMOCC
- XPMOVLD

DMS-250/SL-100

The following OM groups are specific to DMS-250/SL-100:

- OFZ

DataSPAN

The following OM groups are specific to DataSPAN:

- FRSAGENT
- FRSPM
- FRT1

Datapath

The following OM groups are specific to Datapath:

- FTRQ

Digital trunk controllers

The following OM groups are specific to digital trunk controllers:

- ISDD

Directory Assistance System (DAS)

The following OM groups are specific to Directory Assistance System:

- DALINK
- DAMISC

Display electronic business set

The following OM groups are specific to display electronic business set:

- TME

E800

The following OM groups are specific to E800:

- NSC
- NSCACG
- P8QUERY
- P8QUERY2
- TCAPERRS
- TCAPUSAG

EIU

The following OM groups are specific to EIU:

- EIUETHER
- LIUFBUS

Electronic business set (EBS)

The following OM groups are specific to EBS:

- DMCT

Electronic business sets

The following OM groups are specific to electronic business sets:

- CALLWAIT
- EBSMSGCT

Enhanced input/output controller

The following OM groups are specific to enhanced input/output controller:

- DAISGEN
- DUTLGEN
- EIOC

Essential service protection

The following OM groups are specific to essential service protection:

- ESP

Ethernet interface unit

The following OM groups are specific to Ethernet interface unit:

- NCMCPUST

Extended call management

The following OM groups are specific to extended call management:

- SCAISRV2

Extended peripheral modules

The following OM groups are specific to extended peripheral modules:

- ISDD

File processor

The following OM groups are specific to file processor:

- APOCCS
- APSYS
- FPDABM
- FPDEVICE
- FPSCSI
- SCPQPQTC

IBN attendant console

The following OM groups are specific to IBN attendant console:

- IBNAC
- MPCFASTA

INWATS

The following OM groups are specific to INWATS:

- DSINWTS

ISDN

The following OM groups are specific to ISDN:

- BCAPCG
- BCAPOF
- CPICG
- ISDNBD
- ISDNLL
- ISGBD
- ISGBRA
- ISGCPU
- ISGOVLD
- ISUPCGRP
- ISUPCKTA
- ISUPCONN
- ISUPERRS
- ISUPUSAG
- PRADCHL2
- PRAFAC
- TRMTCU2

Integrated Business Network

The following OM groups are specific to Integrated Business Network:

- DCND
- DMCT

ISDN user part

The following OM groups are specific to ISDN user part:

- CCTOOM

International DMS-200 for ITOPS

The following OM groups are specific to International DMS-200 for ITOPS:

- ACCTCODE

LAN-supported external nodes

The following OM groups are specific to LAN-supported external nodes:

- EXNDINV

LCM

The following OM groups are specific to LCM:

- PMMSGCNT

Large business remote

The following OM groups are specific to large business remote:

- ROAPPL
- ROMISC
- TOPSDEV

Line card (type A and B)

The following OM groups are specific to line card (type A and B):

- LINEHAZ

Line concentrating module

The following OM groups are specific to line concentrating module:

- DS1CARR
- DTSR
- LINAC

Line group controller

The following OM groups are specific to line group controller:

- BCLID
- BCLIDO

Line information database

The following OM groups are specific to line information database:

- ACCSBNS
- ACCSCCV

Line module

The following OM groups are specific to line module:

- DTSRPM
- LM

Line trunk controller

The following OM groups are specific to line trunk controller:

- BCLID
- BCLIDO

Line trunk controllers

The following OM groups are specific to line trunk controllers:

- ISDD

Line trunk server

The following OM groups are specific to line trunk server:

- APOCCS
- APSYS

Link interface unit for CCS7

The following OM groups are specific to link interface unit for CCS7:

- C7MDR

Local exchange carrier wideband

The following OM groups are specific to local exchange carrier wideband:

- WBORIGAT
- WBTERMIN
- WIDEBAND

MDC

The following OM groups are specific to MDC:

- ACDGRP
- ACDMISPL
- ACRTS
- ACSYSTR
- ACTAKEDN
- ACTRBL
- ATTAMA
- ATTLAMA
- CFRA
- CNAMD
- CPICKUP
- DRCW
- GIACGRP
- IBNSGLDN
- LNREDIAL
- MDCWAKUP
- MPHCON
- MPHGRP
- NARUSAGE
- SCA
- SITE3
- SPEEDCAL
- SPP
- XPMOCC
- XPMOVLD

Mechanized Calling Card Service

The following OM groups are specific to Mechanized Calling Card Service:

- DSMCCS

Meridian business set

The following OM groups are specific to Meridian business set:

- DCND
- KSHUNT

Meridian SL-100

The following OM groups are specific to Meridian SL-100:

- ACDGRP
- ACDMISPL
- ACRTS
- ACSYSTR
- ACTAKEDN
- ACTRBL
- CPICKUP
- CPUSTAT
- CRMDBM
- CSL
- FTRQ
- IOC
- IOSYS
- LNREDIAL
- LOGS
- PM
- PM1
- PMOVLD
- PMTYP
- SITE3
- SPEEDCAL
- TOPSDEV
- TROUBLEQ

- XPMOCC
- XPMOVLD

Message Detail Recording for CCS7

The following OM groups are specific to Message Detail Recording for CCS7:

- MDR7GW

Message switch and buffer for CCS7

The following OM groups are specific to message switch and buffer for CCS7:

- C7GWSCCP

Multiprotocol controller

The following OM groups are specific to multiprotocol controller:

- MPCLINK2
- MPCLINK3

Multiprotocol Converter

The following OM groups are specific to Multiprotocol Converter:

- MPCBASE

Network Access Registers

The following OM groups are specific to Network Access Registers:

- NARUSAGE

Network Management Internal Dynamic Overload Control

The following OM groups are specific to Network Management Internal Dynamic Overload Control:

- MACHCONG

Network Operations Protocol

The following OM groups are specific to Network Operations Protocol:

- ROAPPL
- ROMISC

Network Operations System

The following OM groups are specific to Network Operations System:

- ROAPPL
- ROMISC

Network Service Database System

The following OM groups are specific to Network Service Database System:

- ACCSBNS
- ACCSCCV

Network Services System Database Control Point

The following OM groups are specific to Network Services System Database Control Point:

- NSSTCAP

Overseas operator center

The following OM groups are specific to overseas operator center:

- OOCBILL

PBX

The following OM groups are specific to PBX:

- AIOD

POTS

The following OM groups are specific to POTS:

- ATTAMA
- ATTLAMA

Peripheral module

The following OM groups are specific to peripheral module:

- DTSR

Private virtual network

The following OM groups are specific to private virtual network:

- NSC

RCT

The following OM groups are specific to RCT:

- DTSR

Remote cluster controller

The following OM groups are specific to remote cluster controller:

- BCLID
- BCLIDO

Remote cluster controllers

The following OM groups are specific to remote cluster controllers:

- ISDD

Remote line module

The following OM groups are specific to remote line module:

- DS1CARR
- DTSRPM

Remote line modules

The following OM groups are specific to remote line modules:

- LM

Remote switching center

The following OM groups are specific to remote switching center:

- RSCIR
- RSCIS
- TME

Residential Enhanced Services

The following OM groups are specific to Residential Enhanced Services:

- CALLFWD
- CFRA
- CND
- CNDB
- CNDXPM
- COT

S/DMS

The following OM groups are specific to S/DMS:

- NMTCLINK
- NMTCNODE
- NMTCTYPE
- NMTCUNIT

SEAC

The following OM groups are specific to SEAC:

- C7LINK3
- C7MTP

SEAS

The following OM groups are specific to SEAS:

- C7LINK3
- C7MTP

SOS store allocator

The following OM groups are specific to SOS store allocator:

- STORE

Stored program control/CMS

The following OM groups are specific to stored program control/CMS:

- ATRK

STP

The following OM groups are specific to STP:

- C7GTWSCR
- C7MTP

Service control point - Virtual Network Service

The following OM groups are specific to service control point - Virtual Network Service:

- SAVFOQP
- SAVFTQP

Signal control point II

The following OM groups are specific to signal control point II:

- CACHEMGR

Stored Program Control/CMS

The following OM groups are specific to stored program control/CMS:

- ACMS

SuperNode

The following OM groups are specific to SuperNode:

- CM
- CPU
- CPUSTAT
- ENETMAT
- ENETOCC
- ENETPLNK
- ENETSYS
- IOC

- MS
- OHQCBQR3
- OHQCBQR4
- SLLCOM
- SLM
- STORE

SuperNode computing module

The following OM groups are specific to SuperNode computing module:

- OHQCBQR2

SuperNode DMS switch

The following OM groups are specific to SuperNode DMS switch:

- MSCHAIN
- MSCHNLK

Switch Performance Monitoring System

The following OM groups are specific to Switch Performance Monitoring System:

- EIOC

TCAP

The following OM groups are specific to TCAP:

- ACCSBNS
- ACCSCCV

TOPS

The following OM groups are specific to TOPS:

- AABS
- AABSHAND
- AASV
- AMA
- AOSS
- AOSSVR
- AVRARU
- CF3P

- DALINK
- DAMISC
- DSMCCS
- DUAQ
- DUAQMOD
- MDSACT
- OGTMP
- OGTSP
- ONI
- TDCLAPD
- TDCPROT
- TDCROUT
- TOPSDACC
- TOPSEA
- TOPSMISC
- TOPSPARS
- TOPSUSE
- TOPSVC
- TRMSCRND
- TRMSCRNO

TOPS ADAS APU

The following OM groups are specific to TOPS ADAS APU:

- ADASAPU

TOPS MP

The following OM groups are specific to TOPS MP:

- TOPSARU

Traffic Separation Measurement System

The following OM groups are specific to Traffic Separation Measurement System:

- EATSMS

VPU peripherals

The following OM groups are specific to VPU peripherals:

- VPSC

Voice services node

The following OM groups are specific to voice services node:

- AABS

XLCM peripherals

The following OM groups are specific to XLCM peripherals:

- PMSTAT

XPM

The following OM groups are specific to XPM:

- LINAC
- OGTMP
- OGTSP
- ONI
- TDCLAPD
- TDCPROT
- TDCROUT
- TOPSDACC
- TOPSEA
- TOPSMISC

- TOPSPARS
- TOPSUSE
- TOPSVC
- TRMSCRND
- TRMSCRNO

6 OM registers to OM groups cross-references

The following tables list OM registers in alphanumeric order. Beside each register name is the OM group to which it belongs

Register 1PTYLINE to AVRXFR2

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 19)

Register	OM group
1PTYLINE	LINEREF
AABSACBF	AABS
AABSACBS	AABS
AABSATT	AABS
AABSCCSC	AABS
AABSCOSC	AABS
AABSDABT	AABS
AABSIDFL	AABS
AABSIVFL	AABS
AABSNOVL	AABS
AABSOPRB	AABS
AABSOPRF	AABS
AABSRCVR	AABS
AABSTHSC	AABS
AABSVABA	AABS
AABSVABN	AABS
AABSVABT	AABS
AACCPT	TOPSDACC
AASVALOC	AASV
AASVFL	AASV
AASVHWM	AASV
AASVIDLE	AASV

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 2 of 19)

Register	OM group
AASVSFL	AASV
AASVTRAF	AASV
AASVUNAV	AASV
ABANDON	SDS
ABANDONS	DSINWTS
ABNDN	IBNSG
ABORTRCV	RTRTCAP
ABORTS	FRSAGENT
ABORTSNT	RTRTCAP
ACALARM	IBNGRP
ACBABT	ACB
ACBACBN	ACB
ACBATT	ACB
ACBDATT	ACB
ACBDENY	ACB
ACBDLAY	ACB
ACBFDEN	ACB
ACBIMED	ACB
ACBLTDA	ACB
ACBNIMED	ACB
ACBOSCN	ACB
ACBOVFL	ACB
ACBRACT	ACB
ACBRSCN	ACB

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 3 of 19)

Register	OM group
ACBSCR	ACB
ACBSTDA	ACB
ACBSTDT	ACB
ACBSTR	ACB
ACBSYSDR	IBNSG
ACBTIME	ACB
ACBTSCN	ACB
ACBUNIV	ACB
ACC3RD	MDSACT
ACCCC	MDSACT
ACCCOL	MDSACT
ACCDFIL	ISUPCONG
ACCF3PFL	ACSYSTR
ACCF3POV	ACSYSTR
ACCONG	TRK
ACCSABN	CDACCS
ACCSATT	CDACCS
ACCSFAIL	CDACCS
ACCSOPR	CDACCS
ACCSROPR	CDACCS
ACCSSUCC	CDACCS
ACCTATMP	ACCTCODE
ACCTFAIL	ACCTCODE
ACCTSUCC	ACCTCODE

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 4 of 19)

Register	OM group
ACCTSYSF	ACCTCODE
ACDABNDN	ACDGRP
ACDANSR	ACDGRP
ACDATAER	ACSYSTR
ACDBLOCK	ACDGRP
ACDCPK	ACDGRP
ACDDFLCT	ACDGRP
ACDDMCT	ACDGRP
ACDICQD	ACDGRP
ACDMFL	ACSYSTR
ACDMOVFL	ACSYSTR
ACDNS	ACDGRP
ACDOFFR	ACDGRP
ACDREQD	ACDGRP
ACDTMANS	ACDGRP
ACDTMINF	ACDGRP
ACDTMOFL	ACDGRP
ACDUSAG2	ACDGRP
ACDUSAGE	ACDGRP
ACDXFER	ACDGRP
ACERR	ACSYSTR
ACEXOVFL	ACSYSTR
ACFLT	ACSYSTR
ACKRECD	NACDGRP2

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 5 of 19)

Register	OM group
ACKSENT	NACDGRP2
ACMSDERR	ACMS
ACMSIDX	ACMS
ACMSNORT	ACMS
ACMSOVFL	ACMS
ACPOSBV	IBNSG
ACRJACT	ACRJ
ACRJANN	ACRJ
ACRJAUNV	ACRJ
ACRJDACT	ACRJ
ACRJDENY	ACRJ
ACRJDUNV	ACRJ
ACRTSCAR	ACRTS
ACRTSCC	ACRTS
ACRTSCHC	ACRTS
ACRTSCR	ACRTS
ACRTSIL	ACRTS
ACRTSMAT	ACRTS
ACRTSNOR	ACRTS
ACRTSNWB	ACRTS
ACRTSSAT	ACRTS
ACRTSSE	ACRTS
ACTATT	MWICTCAP
ACTATT	PRIMWIC

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 6 of 19)

Register	OM group
ACTDAUD	ACTAKEDN
ACTDCARF	ACTAKEDN
ACTDCC	ACTAKEDN
ACTDCNR	ACTAKEDN
ACTDCTRL	ACTAKEDN
ACTDDMFL	ACTAKEDN
ACTDINKY	ACTAKEDN
ACTDINLO	ACTAKEDN
ACTDMAN	ACTAKEDN
ACTDPFO	ACTAKEDN
ACTDRES	ACTAKEDN
ACTDSERR	ACTAKEDN
ACTIVAT2	SDS
ACTIVATE	SDS
ACTDSYS	ACTAKEDN
ACTPROB	MWICTCAP
ACTQD	TOPPDID1
ACTQD2	TOPPDID1
ACTRCARF	ACTRBL
ACTRCC	ACTRBL
ACTRCLFR	ACTRBL
ACTRCNR	ACTRBL
ACTRCNR	ACTRBL
ACTRCTRL	ACTRBL

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 7 of 19)

Register	OM group
ACTRDMFL	ACTRBL
ACTRINKY	ACTRBL
ACTRINLO	ACTRBL
ACTRPFO	ACTRBL
ACTRQST	TOPPMSG
ACTRQST2	TOPPMSG
ACTRRES	ACTRBL
ACTRSERR	ACTRBL
ACTRSFLT	ACTRBL
ACTRSYS	ACTRBL
ACTSABN	CDACTS
ACTSCHG	CDACTS
ACTSCNFY	CDACTS
ACTSD	TOPPDID1
ACTSD2	TOPPDID1
ACTSFAIL	CDACTS
ACTSINI	CDACTS
ACTSNFY	CDACTS
ACTSOPRI	CDACTS
ACTSOPRR	CDACTS
ACTSSUCC	CDACTS
ACTSTAC	CDACTS
ACTSTEST	CDACTS
ACTSWALK	CDACTS

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 8 of 19)

Register	OM group
ACTVTU	IBNSG
ADASFTIM	ADASSRV
ADASFTM2	ADASSRV
ADASLS	ADASSRV
ADASLU	ADASSRV
ADASOHV	ADASSRV
ADASOPV	ADASSRV
ADASOTIM	ADASSRV
ADASOTM2	ADASSRV
ADASSTIM	ADASSRV
ADASSTM2	ADASSRV
ADDNCERR	CONF
ADDNDENY	CONF
ADDNOVFL	CONF
ADDNUSGE	CONF
ADDPYRE	SCAISERV
ADDPYRR	SCAISERV
ADENY	TOPSDACC
ADLCERR	IADL
AGLDINU	SCAISERV
AGLDOUTU	SCAISERV
AGNRDYU	SCAISERV
AGRDYU	SCAISERV
AGREQCAN	QMSACT

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 9 of 19)

Register	OM group
AGTSTACT	SCAISRV3
AIODBIL	AIOD
AIODCAL	AIOD
AIODDAT	AIOD
AIODDEF	AIOD
AIODMB	AIOD
AIODMBU	AIOD
AIODSB	AIOD
AIODSBU	AIOD
AIS16ERR	PCMCARR
AIS16FLT	PCMCARR
AISERR	PCMCARR
AISERROR	TTCCARR
AISFAULT	TTCCARR
AISFLT	PCMCARR
AISSERR	M20CARR1
AISSFLT	M20CARR1
AL10CERR	ADL
AL10INTG	ADL
AL10PROG	ADL
AL10USGE	ADL
AL30CERR	ADL
AL30INTG	ADL
AL30PROG	ADL

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 10 of 19)

Register	OM group
AL30USGE	ADL
AL60CERR	ADL
AL60INTG	ADL
AL60PROG	ADL
AL60USGE	ADL
ALERR	M20CARR1
ALFLT	M20CARR1
ALHNCERR	ADL
ALHNINTG	ADL
ALHNPROG	ADL
ALHNUSGE	ADL
ALT2SNT	TOPSCCAB
ALTDEF	TOPSALT
ALTDL	TOPSALT
ALTFRMIC	TOPSEA
ALTOFL	TOPSALT
ALTRTED	TOPPDID5
ALTRTED2	TOPPDID5
ALTTOIC	TOPSEA
ALTTOT	TOPSALT
ALTVL	TOPSALT
AMACONV	AIN
AMAEMTR	AMA
AMAENT	AMA

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 11 of 19)

Register	OM group
AMAENT2	AMA
AMAFREE	AMA
AMAMAX	AIN
AMANS	ATTAMA
AMAROUTE	AMA
AMASCRN	AMA
AMASLPID	AIN
AMASTTA	TOPPACT1
AMASTTA2	TOPPACT1
AMASTTD	TOPPDID1
AMASTTD2	TOPPDID1
AMDA411	ATTAMA
AMDA555	ATTAMA
AMED411	ATTAMA
AMED555	ATTAMA
AMEDIWAT	ATTLAMA
AMEDOTHR	ATTAMA
AMEDOWAT	ATTLAMA
AMEDR	ATTLAMA
AMEDSTPD	ATTAMA
AMLT411	ATTAMA
AMLT555	ATTAMA
AMLTIWAT	ATTLAMA
AMLTLONG	ATTAMA

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 12 of 19)

Register	OM group
AMLTMR	ATTLAMA
AMLTOTHR	ATTAMA
AMLTOWAT	ATTLAMA
AMLTSTPD	ATTAMA
AMLTTRCR	ATTAMA
AMNA411	ATTAMA
AMNA555	ATTAMA
AMNAIWAT	ATTLAMA
AMNAMR	ATTLAMA
AMNAOTHR	ATTAMA
AMNAOWAT	ATTLAMA
AMNASTPD	ATTAMA
AMNOTRMT	ATTAMA
AMORIGS	ATTAMA
AMRC411	ATTAMA
AMRC555	ATTAMA
AMRCIWAT	ATTLAMA
AMRCLONG	ATTAMA
AMRCMR	ATTLAMA
AMRCOTHR	ATTAMA
AMRCOWAT	ATTLAMA
AMRCSST	ATTAMA
AMRCSTPD	ATTAMA
AMRCTRCR	ATTAMA

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 13 of 19)

Register	OM group
AMSST	ATTAMA
AMTRMT	ATTAMA
AMUNANS	ATTAMA
ANCRVD	N6LINK
ANCXMT	N6LINK
ANF	TRK
ANNATT	ANN
ANNCFAIL	SDS
ANNMBU	ANN
ANNOVFL	ANN
ANNRVD	N6LINK
ANNSBU	ANN
ANNTRU	ANN
ANNXMT	N6LINK
ANSCFW	IBNSG
ANSDELAY	IBNSG
ANSDIAL0	IBNSG
ANSINC	C6LINK
ANSINTRP	IBNSG
ANSLDN	IBNSG
ANSOUT	C6LINK
ANSU	TRK
ANSWATT	CMG
ANSWER	TRK

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 14 of 19)

Register	OM group
ANSXFRAT	IBNSG
AOF	TRK
AOFFER	TOPSDACC
AOPRIFD	TOPPDID1
AOPRIFD2	TOPPDID1
AOSSABN	AOSS
AOSSABN1	AOSS
AOSSABN2	AOSS
AOSSCW	AOSS
AOSSABN	AOSS
AOSSABN1	AOSS
AOSSD	AOSS
AOSSDF	AOSS
AOSSINT	AOSS
AOSSIPS	AOSS
AOSSIPSO	AOSS
AOSSOC	AOSS
AOSSOCO	AOSS
AOSSOD	AOSS
AOSSQDEF	AOSS
AOSSQOV	AOSS
AOSSTRBL	AOSS
AOSSTRCE	AOSS
AOSSWV	AOSS

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 15 of 19)

Register	OM group
AOSSWVO	AOSS
AOSSXFR1	AOSS
AOSSXFR2	AOSS
APBKG	APOCCS
APCPOCC	APOCCS
APCPUERR	APSYS
APCPUFLT	APSYS
APFORE	APOCCS
APIDLE	APOCCS
APIO	APOCCS
APMAINT	APOCCS
APMEMERR	APSYS
APMEMFLT	APSYS
APMSMPXU	APSYS
APMSWACT	APSYS
APPRTERR	APSYS
APPRTFLT	APSYS
APRCPUFL	APSYS
APREXFLT	APSYS
APRMEMFL	APSYS
APRPRTFL	APSYS
APRSMPXU	APSYS
APRSWACT	APSYS
APSCHED	APOCCS

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 16 of 19)

Register	OM group
APSDROP	APSYS
APSSMPXU	APSYS
APSSWACT	APSYS
APSSYNC	APSYS
APSWERR	APSYS
APTRAP	APSYS
APTRMISM	APSYS
ARABT	AR
ARARN	AR
ARATT	AR
ARBDIN	AR
ARCVRFL	AABS
ARCVRSUC	AABS
ARDATT	AR
ARDENY	AR
ARDLAY	AR
AREQST	TOPSDACC
ARFDEN	AR
ARIMED	AR
ARLTDA	AR
ARNABDN	ARN
ARNATT	ARN
ARNCON	ARN
ARNDNERR	ARN

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 17 of 19)

Register	OM group
ARNT1	ARN
ARNT2	ARN
ARNIMED	AR
AROPTO	AR
AROSCN	AR
AROVFL	AR
ARPRCD	AR
ARRACT	AR
ARRSCN	AR
ARSCR	AR
ARSTDA	AR
ARSTDT	AR
ARSTR	AR
ARTIME	AR
ARTSCN	AR
ARUNIV	AR
ASUDSAVL	ASUMEMUT
ASUDSTOT	ASUMEMUT
ASUPSAVL	ASUMEMUT
ASUPSTOT	ASUMEMUT
ATOMCCSI	AABS
ATOMCCSS	AABS
ATQDFL	IBNSG
ATRKDIG	ATRK

Register 1PTYLINE to AVRXFR2 (continued)

(Sheet 18 of 19)

Register	OM group
ATRKEXP	ATRK
ATRKNOC	ATRK
ATRKOUT	ATRK
ATRKOVR	ATRK
ATRKSUCC	ATRK
ATTOPRA	TOPPACT3
ATTOPRD	TOPPDID1
ATTOPRD2	TOPPDID1
ATUP_CAT	SRCDISP
AUDITA	TOPPACT1
AUDITA2	TOPPACT1
AUDITD	TOPPDID1
AUDITD2	TOPPDID1
AUTHATT	TOPSMISC
AUTHCALL	IBNSG
AUTHFAIL	TOPSMISC
AUTINTFL	DAMISC
AUTOCOL	TOPSCCAB
AUTOFAIL	C7AUTOIM
AUTOPASS	C7AUTOIM
AUTORATE	TOPSMISC
AUTSRVD	TOPPDID1
AUTSRVD2	TOPPDID1
AVRAI	AOSSVR

Register 1PTYLINE to AVRXFR2 (end)

(Sheet 19 of 19)

Register	OM group
AVGCPOCC	XPMOCC
AVGLPOCC	XPMOCC
AVRAIAF	AOSSVR
AVRAICT	AOSSVR
AVRAIRO	AOSSVR
AVRARUD	AVRARU
AVRARUFL	AVRARU
AVRARUI	AVRARU
AVRARUOV	AVRARU
AVRDAR	AOSSVR
AVRINTR	AOSSVR
AVRXFR1R	AOSSVR
AVRXFR2r	AOSSVR

Register B3RDDEN to BUSYLINE

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 6)

Register	OM group
B3RDDEN	DSMCCS
BBATTACH	BLUEBOX
BBDETECT	BLUEBOX
BBWINKS	BLUEBOX
BARGEIN	ADASAPU
BCDBA	TOPPACT3
BCDBA2	TOPPACT3
BCLDCLD2	BCLID
BCLDCLDN	BCLID
BCLDNOLK	BCLIDNL
BCLDOOA	BCLID
BCLDOOA2	BCLIDO
BCLDOVLD	BCLIDO
BCLDPRI2	BCLID
BCLDPRIV	BCLID
BCMSGD	TOPPDID1
BCMSGD2	TOPPDID1
BCOL3DEN	DSMCCS
BCOLDEN	DSMCCS
BDAPPERR	MPCBASE
BECNORIG	FRSAGENT
BERERR	PCMCARR

Register B3RDDEN to BUSYLINE (continued)

(Sheet 2 of 6)

Register	OM group
BERFLT	PCMCARR
BFROVFL	C6LINK
BFROVLD	C6LINK
BLKCTRK	TRK
BLKECPT	DCRMISC
BLKRECMD	DCRDEST
BLKRSYOK	N6LINK
BLKSYLOS	N6LINK
BNSACGBL	ACCSBNS
BNSALLCO	ACCSBNS
BNSALLTH	ACCSBNS
BNSCANQY	ACCSBNS
BNSCOMP	ACCSBNS
BNSDATA	ACCSBNS
BNSDATUN	ACCSBNSE
BNSDBFC	ACCSBNS
BNSMISCE	ACCSBNSE
BNSMISCF	ACCSBNS
BNSMISGR	ACCSBNSE
BNSMISRT	ACCSBNSE
BNSMISSR	ACCSBNSE
BNSNETCG	ACCSBNSE
BNSNETFL	ACCSBNSE
BNSNETRE	ACCSBNS

Register B3RDDEN to BUSYLINE (continued)

(Sheet 3 of 6)

Register	OM group
BNSNOACG	ACCSBNS
BNSNOCOL	ACCSBNS
BNSNONGR	ACCSBNSE
BNSNOREC	ACCSBNS
BNSNOTH	ACCSBNS
BNSNOXLA	ACCSBNSE
BNSNOXLS	ACCSBNSE
BNSPCNLS	ACCSBNS
BNSPROTP	ACCSBNSE
BNSPUBCN	ACCSBNS
BNSRAFTT	ACCSBNS
BNSSCRND	ACCSBNSE
BNSSEMIC	ACCSBNS
BNSSPTRA	ACCSBNS
BNSSUBCG	ACCSBNSE
BNSSUBFL	ACCSBNSE
BNSTIOUT	ACCSBNS
BNSTMOUT	ACCSBNSE
BNSTOTAL	ACCSBNS
BNSUNAVA	ACCSBNS
BNSUNEQU	ACCSBNSE
BNSUNEXD	ACCSBNSE
BNSUNNET	ACCSBNSE
BNSUNOWN	ACCSBNS

Register B3RDDEN to BUSYLINE (continued)

(Sheet 4 of 6)

Register	OM group
BNSVACGR	ACCSBNSE
BNSVCOOP	ACCSBNS
BNSVERCO	ACCSBNS
BNSVERTH	ACCSBNS
BNSVTHOP	ACCSBNS
BNWN	DSMCCS
BNWNNEQ	DSMCCS
BOKAY	DSMCCS
BPBCOIN	DSMCCS
BPBNCOIN	DSMCCS
BPTNEQ	DSMCCS
BPTNWNNQ	DSMCCS
BRNDABDN	TOPSBAND
BRNDFAIL	TOPSBAND
BRNDSUC	TOPSBAND
BRNDSUC2	TOPSBAND
BRSAUXCP	BRSTAT
BRSBKG	BRSTAT
BRSCAP	BRSTAT
BRSCMPLX	BRSTAT
BRSDNC	BRSTAT
BRSFORE	BRSTAT
BRSGTERM	BRSTAT
BRSIDLE	BRSTAT

Register B3RDDEN to BUSYLINE (continued)

(Sheet 5 of 6)

Register	OM group
BRSMAINT	BRSTAT
BRSNETM	BRSTAT
BRSOM	BRSTAT
BRSSCHED	BRSTAT
BRSSNIP	BRSTAT
BSEMIPB	DSMCCS
BSSN3K1	DCMEBSS
BSSN3K1U	DCMEBSS
BSSN64K	DCMEBSS
BSSN64KU	DCMEBSS
BSSNSPCH	DCMEBSS
BSSNSPCU	DCMEBSS
BSYOOSP2	MDSSTATS
BSYACTIV	SDS
BSYMNATT	CMG
BSYOFFER	SDS
BUFERR	XIPMISC
BUFFAIL	QMSMIS
BUFFSX	QMSMIS
BUFIP1S2	QMSMIS
BUFIP1SX	QMSMIS
BUFIP2S2	QMSMIS
BUFIP2SX	QMSMIS
BUFIP3S2	QMSMIS

Register B3RDDEN to BUSYLINE (end)

(Sheet 6 of 6)

Register	OM group
BUFIP3SX	QMSMIS
BUFIP4S2	QMSMIS
BUFIP4SX	QMSMIS
BUFIP1T2	QMSMIS
BUFIP1TL	QMSMIS
BUFIP2T2	QMSMIS
BUFIP2TL	QMSMIS
BUFIP3T2	QMSMIS
BUFIP3TL	QMSMIS
BUFIP4T2	QMSMIS
BUFIP4TL	QMSMIS
BUSYLINE	DSINWTS

Register C71TRX to CYCLES

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 52)

Register	OM group
C71TRX	C7SCCPCO
C71TTX	C7SCCPCO
C795GTT	C7GTLNK
C795NGTT	C7GTLNK
C7ABATE1	C7LINK2
C7ABATE2	C7LINK2
C7ABATE3	C7LINK2
C7ABATEV	C7LINK2
C7ABNRFB	C7LINK1
C7ABUFOC	C7LINK4
C7AISSP	C7HSLCAR
C7ALIGNF	C7LINK1
C7ALKODY	C7LINK4
C7AUTOCO	C7LINK1
C7BFOVFL	C7LINK3
C7BSYOFF	C7LINK1
C7BSYON	C7LINK1
C7BUFOVF	C7ROUTER
C7BYTRT	C7LINK2
C7BYTRT2	C7LINK2
C7BYTRX	C7LINK2
C7BYTRX2	C7LINK2

Register C71TRX to CYCLES (continued)

(Sheet 2 of 52)

Register	OM group
C7BYTTX	C7LINK2
C7BYTTX2	C7LINK2
C7CBK	C7LINK1
C7CCR2	C7SCCPCO
C7CCRX	C7SCCPCO
C7CCT2	C7SCCPCO
C7CCTX	C7SCCPCO
C7CDFEPO	C7HSLAL2
C7CDLOC	C7HSLAL2
C7CDLPO	C7HSLAL2
C7CLB	C7LINK1
C7CLBU	C7LINK3
C7CLS0R2	C7SCCP
C7CLS0RX	C7SCCP
C7CLS0T2	C7SCCP
C7CLS0TX	C7SCCP
C7CLS1R2	C7SCCP
C7CLS1RX	C7SCCP
C7CLS1T2	C7SCCP
C7CLS1TX	C7SCCP
C7CLS2R2	C7SCCPCO
C7CLS2RX	C7SCCPCO
C7CLS2T2	C7SCCPCO
C7CLS2TX	C7SCCPCO

Register C71TRX to CYCLES (continued)

(Sheet 3 of 52)

Register	OM group
C7CNTRER	C7ROUTE
C7COFAIL	C7SCCPCO
C7COMREJ	C7SCCPCO
C7COV	C7LINK1
C7CREFRX	C7SCCPCO
C7CREFTX	C7SCCPCO
C7CRR2	C7SCCPCO
C7CRRX	C7SCCPCO
C7CRT2	C7SCCPCO
C7CRTX	C7SCCPCO
C7CSPF	C7HSLCAR
C7CVL	C7HSLCAR
C7CVP	C7HSLCAR
C7CVPF	C7HSLCAR
C7D6FAIL	C7DCIS6
C7D6GTT	C7DCIS6
C7D6GTT2	C7DCIS6
C7DISHEC	C7HSLATM
C7DISPE	C7HSLATM
C7DT1R2	C7SCCPCO
C7DT1RX	C7SCCPCO
C7DT1T2	C7SCCPCO
C7DT1TX	C7SCCPCO
C7ERRSEC	C7LINK1

Register C71TRX to CYCLES (continued)

(Sheet 4 of 52)

Register	OM group
C7ESL	C7HSLCAR
C7ESLF	C7HSLCAR
C7ESP	C7HSLCAR
C7ESPF	C7HSLCAR
C7EXCONG	C7LINK1
C7EXDLAY	C7LINK1
C7EXERR	C7LINK1
C7EXTPR0	C7SMH
C7EXTPR1	C7SMH
C7EXTPR2	C7SMH
C7EXTPR3	C7SMH
C7FCP	C7HSLCAR
C7FCPF	C7HSLCAR
C7FRCRER	C7ROUTE
C7GTT	C7GTLNK
C7GTT2	C7GTLNK
C7GTT95	C7MTP
C7H1CRX	C7LPP
C7H1CTX	C7LPP
C7H2CRX	C7LPP
C7H2CTX	C7LPP
C7H3CRX	C7LPP
C7H3CTX	C7LPP
C7H4CRX	C7LPP

Register C71TRX to CYCLES (continued)

(Sheet 5 of 52)

Register	OM group
C7H4CTX	C7LPP
C7HOPERR	C7GTLNK
C7HTEACO	C7LINK4
C7HTSCSC	C7HSLAL2
C7HTSEPC	C7HSLAL2
C7HTSPRR	C7HSLAL2
C7HWILLP	C7LINK3
C7HWMTS	C7LINK3
C7HWST	C7LINK3
C7HWTOT	C7LINK3
C7ILLPHW	C7ROUTER
C7INTOVL	C7ROUTER
C7ISPDUR	C7HSLAL2
C7L0CSS	C7SCCP
C7L0CSS2	C7SCCP
C7L27RX	C7LPP
C7L27TX	C7LPP
C7L43RX	C7LPP
C7L43TX	C7LPP
C7L74RX	C7LPP
C7L74TX	C7LPP
C7L75RX	C7LPP
C7L75TX	C7LPP
C7LINH	C7LINK1

Register C71TRX to CYCLES (continued)

(Sheet 6 of 52)

Register	OM group
C7LKFAIL	C7LINK1
C7LKFLU	C7LINK4
C7LKMTCU	C7LINK4
C7LKSYNU	C7LINK1
C7LKUNAU	C7LINK1
C7LOCE	C7HSLAL2
C7LOSSL	C7HSLCAR
C7LPO	C7LINK1
C7LPOU	C7LINK3
C7LSEMRU	C7LKSET
C7LSFAIL	C7LKSET
C7LSUNAU	C7LKSET
C7LUNINH	C7LINK1
C7LV1CGU	C7LINK3
C7LV2CGU	C7LINK3
C7LV3CGU	C7LINK3
C7MANB	C7LINK1
C7MSBRET	C7LINK2
C7MSGCC	C7GWSCCP
C7MSGCC2	C7GWSCCP
C7MSGGT	C7SCCP
C7MSGGT2	C7SCCP
C7MSGHD2	C7SCCP
C7MSGHDL	C7SCCP

Register C71TRX to CYCLES (continued)

(Sheet 7 of 52)

Register	OM group
C7MSGLOS	C7LINK2
C7MSGMSQ	C7LINK2
C7MSIDPC	C7MTP
C7MSISIO	C7MTP
C7MSOR	C7LINK3
C7MSOR2	C7LINK3
C7MSTE	C7LINK3
C7MSTE2	C7LINK3
C7MSTS	C7LINK3
C7MSTS2	C7LINK3
C7MSUBOV	C7LINK3
C7MSUDC1	C7LINK2
C7MSUDC2	C7LINK2
C7MSUDC3	C7LINK2
C7MSUDSC	C7LINK2
C7MSUOR	C7LINK2
C7MSUOR2	C7LINK2
C7MSURX	C7LINK2
C7MSURX2	C7LINK2
C7MSUTE	C7LINK2
C7MSUTE2	C7LINK2
C7MSUTS	C7LINK2
C7MSUTS2	C7LINK2
C7MSUTX	C7LINK2

Register C71TRX to CYCLES (continued)

(Sheet 8 of 52)

Register	OM group
C7MSUTX2	C7LINK2
C7MTSHW	C7ROUTER
C7NETCON	C7LINK1
C7NMALOD	C7LINK4
C7OCDAN	C7HSLATM
C7ONSET1	C7LINK2
C7ONSET2	C7LINK2
C7ONSET3	C7LINK2
C7ONSETV	C7LINK2
C7OSMSUD	C7LINK4
C7PBUFOC	C7LINK4
C7RCAUI	C7HSLATM
C7RCAUI2	C7HSLATM
C7RCNDC2	C7HSLATM
C7RCNDCV	C7HSLATM
C7RFNTA	C7GTLNK
C7RFNTN	C7GTLNK
C7RLSDRX	C7SCCPCO
C7RLSDT2	C7SCCPCO
C7RLSDTX	C7SCCPCO
C7RPO	C7LINK1
C7RPOU	C7LINK3
C7RSCNGU	C7RTESET
C7RSFAIL	C7RTESET

Register C71TRX to CYCLES (continued)

(Sheet 9 of 52)

Register	OM group
C7RSMANB	C7RTESET
C7RSUNAU	C7RTESET
C7RTBKSS	C7SCCP
C7RTBTR	C7ROUTER
C7RTBTR2	C7ROUTER
C7RTCNG	C7ROUTER
C7RTCNGU	C7ROUTER
C7RTERR	C7RTESET
C7RTFALL	C7SCCP
C7RTFNTA	C7SCCP
C7RTFNTN	C7SCCP
C7RTFNWC	C7SCCP
C7RTFNWF	C7SCCP
C7RTFSSC	C7SCCP
C7RTFSSF	C7SCCP
C7RTFUEQ	C7SCCP
C7RTMSR	C7ROUTER
C7RTMSR2	C7ROUTER
C7RTOOS	C7ROUTER
C7RTOOSU	C7ROUTER
C7RTOVLD	C7LINK3
C7RTUNAU	C7ROUTE
C7RUNINH	C7LINK1
C7SASP	C7HSLCAR

Register C71TRX to CYCLES (continued)

(Sheet 10 of 52)

Register	OM group
C7SCDIS	C7HSLAL2
C7SCGT01	C7SCCPA1
C7SCGT02	C7SCCPA1
C7SCGT03	C7SCCPA1
C7SCGT04	C7SCCPA1
C7SCGT05	C7SCCPA1
C7SCGT06	C7SCCPA1
C7SCGT07	C7SCCPA1
C7SCGT08	C7SCCPA1
C7SCGT09	C7SCCPA1
C7SCGT10	C7SCCPA1
C7SCGT11	C7SCCPA1
C7SCGT12	C7SCCPA1
C7SCGT13	C7SCCPA1
C7SCGT14	C7SCCPA1
C7SCGT15	C7SCCPA1
C7SCGT16	C7SCCPA1
C7SCGT17	C7SCCPA1
C7SCGT18	C7SCCPA1
C7SCGT19	C7SCCPA1
C7SCGT20	C7SCCPA1
C7SCGT21	C7SCCPA1
C7SCGT22	C7SCCPA1
C7SCGT23	C7SCCPA1

Register C71TRX to CYCLES (continued)

(Sheet 11 of 52)

Register	OM group
C7SCGT24	C7SCCPA1
C7SCGT25	C7SCCPA1
C7SCGT26	C7SCCPA1
C7SCGT27	C7SCCPA1
C7SCGT28	C7SCCPA1
C7SCGT29	C7SCCPA1
C7SCGT30	C7SCCPA1
C7SCGTIV	C7SCCPA2
C7SCGTOH	C7SCCPA1
C7SCIF	C7HSLAL2
C7SCOTH	C7SCCPA2
C7SCRRSY	C7HSLAL2
C7SCSEC	C7HSLAL2
C7SCSYN	C7SCCPA2
C7SDISS	C7HSLAL2
C7SDISS2	C7HSLAL2
C7SEFSPF	C7HSLCAR
C7SEPSEC	C7HSLAL2
C7SESL	C7HSLCAR
C7SESP	C7HSLCAR
C7SESPF	C7HSLCAR
C7SLTFL	C7LINK1
C7SMHCT1	C7SMH
C7SMHCT2	C7SMH

Register C71TRX to CYCLES (continued)

(Sheet 12 of 52)

Register	OM group
C7SMHCT3	C7SMH
C7SMHCT4	C7SMH
C7SMHDR1	C7SMH
C7SMHDR2	C7SMH
C7SMHDR3	C7SMH
C7SMHDR4	C7SMH
C7SMHPR0	C7SMH
C7SMHPR1	C7SMH
C7SMHPR2	C7SMH
C7SMHPR3	C7SMH
C7SMPNT1	C7MTP
C7SMPNT2	C7MTP
C7SMPWT1	C7MTP
C7SMPWT2	C7MTP
C7SPDURR	C7HSLAL2
C7SPOR1	C7HSLAL1
C7SPOR2	C7HSLAL1
C7SPORT1	C7HSLAL1
C7SPORT2	C7HSLAL1
C7SPR1	C7HSLAL1
C7SPR2	C7HSLAL1
C7SPRLEE	C7HSLAL2
C7SSPOT1	C7HSLAL1
C7SSPOT2	C7HSLAL1

Register C71TRX to CYCLES (continued)

(Sheet 13 of 52)

Register	OM group
C7SSPRT1	C7HSLAL1
C7SSPRT2	C7HSLAL1
C7SSPT1	C7HSLAL1
C7SSPT2	C7HSLAL1
C7STALFL	C7LINK1
C7STHW	C7ROUTER
C7STPOR1	C7HSLAL1
C7STPOR2	C7HSLAL1
C7STPOT1	C7HSLAL1
C7STPOT2	C7HSLAL1
C7STPR1	C7HSLAL1
C7STPR2	C7HSLAL1
C7STPT1	C7HSLAL1
C7STPT2	C7HSLAL1
C7STRET	C7LINK2
C7SUERR	C7LINK1
C7SYNERR	C7SCCP
C7TCAUI	C7HSLATM
C7TCAUI2	C7HSLATM
C7TCNDC2	C7HSLATM
C7TCNDCV	C7HSLATM
C7TFA	C7ROUTE
C7TFC0	C7ROUTE
C7TFC1	C7ROUTE

Register C71TRX to CYCLES (continued)

(Sheet 14 of 52)

Register	OM group
C7TFC2	C7ROUTE
C7TFC3	C7ROUTE
C7TFP	C7ROUTE
C7TFR	C7ROUTE
C7THROWN	C7GWSCCP
C7TLALFL	C7LINK1
C7TOTHW	C7ROUTER
C7UASP	C7HSLCAR
C7UASPF	C7HSLCAR
C7UDTRX	C7SCCP
C7UDTRX2	C7SCCP
C7UDTS00	C7SCCPA2
C7UDTS01	C7SCCPA2
C7UDTS05	C7SCCPA2
C7UDTS07	C7SCCPA2
C7UDTSRX	C7SCCP
C7UDTSTX	C7SCCP
C7UDTTX	C7SCCP
C7UDTTX2	C7SCCP
C7USPDUR	C7HSLAL2
C7XSDYNT	C7MTP
C7XSDYWT	C7MTP
C7XTFA	C7ROUTE
C7XTFP	C7ROUTE

Register C71TRX to CYCLES (continued)

(Sheet 15 of 52)

Register	OM group
C7XTFR	C7ROUTE
CABANDON	TOPSQMS
CALLACT	CALLOG
CALLANSU	SCAISERV
CALLARIV	QMSACT
CALLBEG	TOPPMSG
CALLBEG2	TOPPMSG
CALLDEFL	QMSACT
CALLEND	TOPPMSG
CALLEND2	TOPPMSG
CALLOFFU	SCAISERV
CALLQD	QMSACT
CALLQUED	SCAISERV
CALLRECC	SCAISERV
CALLRELU	SCAISERV
CALLRES	TOPPSMG
CALLRES2	TOPPMSG
CALLSUS	TOPPMSG
CALLSUS2	TOPPMSG
CALLUPD	TOPPMSG
CALLUPD2	TOPPMST
CALREDRE	SCAISERV
CALREDRR	SCAISERV
CANCRECD	NACDGRP2

Register C71TRX to CYCLES (continued)

(Sheet 16 of 52)

Register	OM group
CANCSENT	NACDGRP2
CARABD	TOPPDID1
CARABD2	TOPPDID1
CARATT	MWTCAR
CARCBSY	M20CARR1
CARCSBSY	NDSOCARR
CARDOVFL	MWTCAR
CARFAIL	MWTCAR
CARINFD	TOPPDID1
CARINFD2	TOPPDID1
CARMANB	M20CARR1
CARMBSY	NDSOCARR
CARNUMA	TOPPACT1
CARNUMA2	TOPPACT1
CARODACT	MWTCAR
CAROVFL	MWTCAR
CARRATD	TOPPDID1
CARRATD2	TOPPDID1
CARRCBSY	PCMCARR
CARRETRV	MWTCAR
CARRFAIL	MWTCAR
CARRMANB	PCMCARR
CARROVFL	MWCAR
CARRPBSY	PCMCARR

Register C71TRX to CYCLES (continued)

(Sheet 17 of 52)

Register	OM group
CARRSYSB	PCMCARR
CARSBSY	NDSOCARR
CARSYSB	M20CARR1
CARTDACT	MWTCAR
CBKCNT	CBK
CBKPASS	CBK
CBNSQRE	OAPCP
CBNSQRQ	OAPCP
CBNSQRS	OAPCP
CBQDEACT	OHQCBQCG
CBQDELT	OHQCBQCG
CBQOK	OHQCBQCG
CBWOVFL	OHQCBQCG
CBQOVWRT	OHQCBQCG
CBQPPT	OHQCBQCG
CBQRAT	OHQCBQCG
CBSYCARR	TTCCARR
CCANBSCR	CDACCS
CCARDA	TOPPACT1
CCARDA2	TOPPACT1
CCARDD	TOPPDID1
CCARDD2	TOPPDID1
CCATCUPS	MTRUSG
CCBHI	CP2

Register C71TRX to CYCLES (continued)

(Sheet 18 of 52)

Register	OM group
CCBOVFL	CP
CCBSZ	CP
CCBSZ2	CP
CCMATADD	MTRUSG
CCMATCDV	MTRUSG
CCMATCPM	MTRUSG
CCMATCUP	MTRUSG
CCMATERR	MTRUSG
CCMATINI	MTRUSG
CCMATTBI	MTRUSG
CCMATXPM	MTRUSG
CCPAVAIL	CPUSTAT
CCREPLYR	NACDGRP2
CCREPLYS	NACDGRP2
CCTORCVD	CCTOOM
CCTORQST	CCTOOM
CCVACGBL	ACCSCCV
CCVATT	MWTCAR
CCVCANQY	ACCSCCV
CCVCCDEN	ACCSCCV
CCVCOMP	ACCSCCV
CCVDATA	ACCSCCV
CCVDATUN	ACCSCCVN
CCVDBFC	ACCSCCV

Register C71TRX to CYCLES (continued)

(Sheet 19 of 52)

Register	OM group
CCVDND	DSMCCS
CCVFAIL	MWTCAR
CCVINVLD	DSMCCS
CCVMISCE	ACCSCCVE
CCVMISCF	ACCSCCV
CCVMISGR	A CCSCCVE
CCVMISRT	ACCSCCVE
CCVMISSR	ACCSCCVE
CCVMMTCH	DSMCCS
CCVNETCG	ACCSCCVE
CCVNETFL	ACCSCCVE
CCVNETRE	ACCSCCV
CCVNOACG	ACCSCCV
CCVNONGR	ACCSCCVE
CCVNOPAY	ACCSCCV
CCVNOPIN	ACCSCCV
CCVNOREC	ACCSCCV
CCVNOXLA	ACCSCCVE
CCVNOXLS	ACCSCCVE
CCVOVFL	MWTCAR
CCVPINHT	ACCSCCV
CCVPINRE	ACCSCCV
CCVPINUN	ACCSCCV
CCVPNRES	DSMCCS

Register C71TRX to CYCLES (continued)

(Sheet 20 of 52)

Register	OM group
CCVPRES	DSMCCS
CCVPROTP	ACCSCCVE
CCVRAFTT	ACCSCCV
CCVSCRND	ACCSCCVE
CCVSPTRA	ACCSCCV
CCVSUBCG	ACCSCCVE
CCVSUBFL	ACCSCCVE
CCVSVRES	ACCSCCV
CCVTHREX	ACCSCCV
CCVTIOUT	ACCSCCV
CCVTMOUT	ACCSCCVE
CCVTOTAL	ACCSCCV
CCVUNAVA	ACCSCCV
CCVUNEQU	ACCSCCVE
CCVUNEXD	ACCVCCVE
CCVUNEXD	ACCSCCVE
CCVUNNET	ACCSCCVE
CCVVACGR	ACCSCCVE
CCWACT	CWT
CCWCERR	CWT
CCWGRANT	CALLWAIT
CCWPATT	CWTPOTS
CCWPNOWT	CWTPOTS
CCWUSGE	ICWT

Register C71TRX to CYCLES (continued)

(Sheet 21 of 52)

Register	OM group
CDAACT	ICDIVP
CDACERR	ICDIVP
CDADACT	ICDIVP
CDADENY	ICDIVP
CDADERR	ICDIVP
CDAINTG	ICDIVP
CDAOVFL	ICDIVP
CDAPROG	ICDIVP
CDAUSGE	ICDIVP
CDBACT	ICDIVP
CDBCERR	ICDIVP
CDBDACT	ICDIVP
CDBDENY	ICDIVP
CDBDERR	ICDIVP
CDBINTG	ICDIVP
CDBOVFL	ICDIVP
CDBPROG	ICDIVP
CDBQD	TOPPDID1
CDBQD2	TOPPDID1
CDBUSGE	ICDIVP
CDCLGCNT	CDCOM
CDUSAGE	CDCOM
CDEFLECT	TOPSQMS
CDFACT	ICDIVF

Register C71TRX to CYCLES (continued)

(Sheet 22 of 52)

Register	OM group
CDFCERR	ICDIVF
CDFDACT	ICDIVF
CDFDENY	ICDIVF
CDFDERR	ICDIVF
CDFINTG	ICDIVF
CDFOVFL	ICDIVF
CDFUSGE	ICDIVF
CDIRCO	CTRYDIR
CDIRFL	CTRYDIR
CDIRHA	CTRYDIR
CDIRQD	CTRYDIR
CDIRSV	CTRYDIR
CDOACT	ICDIVF
CDOCERR	ICDIVF
CDODACT	ICDIVF
CDODENY	ICDIVF
CDODERR	ICDIVF
CDOINTG	ICDIVF
CDOOVFL	ICDIVF
CDOUSGE	ICDIVF
CDRATT	CDR
CDRATT2	CDR
CDREMTR	CDR
CDRENT	CDR

Register C71TRX to CYCLES (continued)

(Sheet 23 of 52)

Register	OM group
CDRENT2	CDR
CDROVFL	CDR
CDRU	CDR
CDRU2	CDR
CDSACT	ICDIVP
CDSCERR	ICDIVP
CDSDACT	ICDIVP
CDSDENY	ICDIVP
CDSDERR	ICDIVP
CDSINTG	ICDIVP
CDSOVFL	ICDIVP
CDSPROG	ICDIVP
CDSUSGE	ICDIVP
CF6MBU	CF6P
CF6OVFL	CF6P
CF6QABAN	CF6P
CF6QOCC	CF6P
CF6QOVFL	CF6P
CF6SBU	CF6P
CF6SZRS	CF6P
CF6TRU	CF6P
CFBATT	CALLFWD
CFBATT2	CALLFWD
CFBATTD	CALLFWD

Register C71TRX to CYCLES (continued)

(Sheet 24 of 52)

Register	OM group
CFBEXMPTD	CALLFWD
CFBFAIL	CALLFWD
CFBOVFL	CALLFWD
CFBPATT	CFWPOTS
CFBPDENY	CFWPOTS
CFBPOVFL	CFWPOTS
CFBPOSOV	CFWPOTS
CFBSOV	CALLFWD
CFDATT	CALLFWD
CFDATT2	CALLFWD
CFDCNCI	CALLFWD
CFDCNL	CALLFWD
CFDCNL2	CALLFWD
CFDCNCI2	CALLFWD
CFDEXEMPT	CALLFWD
CFDFAIL	CALLFWD
CDFOVFL	CALLFWD
CFDPATT1	CFWPOTS
CFDPATT2	CFWPOTS
CFDPCNC1	CFWPOTS
CFDPCNC2	CFWPOTS
CFDPDENY	CFWPOTS
CFDPFAIL	CFWPOTS
CFDPOVFL	CFWPOTS

Register C71TRX to CYCLES (continued)

(Sheet 25 of 52)

Register	OM group
CFDPSOV	CFWPOTS
CFDSOV	CALLFWD
CFDXMPTD	CALLFWD
CFIBAMAF	RTESVCS
CFIBBNM	RTESVCS
CFIBOGTB	RTESVCS
CFIBRCR	RTESVCS
CFIBRDNA	RTESVCS
CFIBRDNB	RTESVCS
CFIBRDNN	RTESVCS
CFIBRNAR	RTESVCS
CFIBRTEF	RTESVCS
CFIBRUAV	RTESVCS
CFIBTRMF	RTESVCS
CFIBXLAF	RTESVCS
CFPADNEY	CFWPOTS
CFPAOVFL	CFWPOTS
CFPFDENY	CFWPOTS
CFPFOVFL	CFWPOTS
CFRADENY	CFRA
CFRARAIL	CFRA
CFRAHWOV	CFRA
CFRALIMT	CFRA
CFRASWOV	CFRA

Register C71TRX to CYCLES (continued)

(Sheet 26 of 52)

Register	OM group
CFRATT	CFRA
CFTBATT	CALLFWD
CFTBFAIL	CALLFWD
CFTDATT	CALLFWD
CFTDFAIL	CALLFWD
CRUATT	CALLFWD
CFUATT	CALLFWD
CFUATT2	CALLFWD
CFUATTD	CALLFWD
CFUFAIL	CALLFWD
CFUIFSOV	CALLFWD
CFUOVFL	CALLFWD
CFWPAAT	CFWPOTS
CFWPFATT	CFWPOTS
CFWPFATT	CFWPOTS
CFWPSUC1	CFWPOTS
CFWPSUC2	CFWPOTS
CFWSOV	CFWPOTS
CGWRNGBC	BCAPCG
CHANDISC	FRSAGENT
CHANORG	FRSAGENT
CHDABDN	CALLHOLD
CHDATT	CALLHOLD
CHDFAIL	CALLHOLD

Register C71TRX to CYCLES (continued)

(Sheet 27 of 52)

Register	OM group
CHDOVFL	CALLHOLD
CHDRBK	CALLHOLD
CHGADJA	TOPPACT1
CHGADJA2	TOPPACT1
CHGADJD	TOPPDID1
CHGADJD2	TOPPDID1
CHGSD	TOPPDID1
CHGSD2	TOPPDID1
CHGSTTA	TOPPACT1
CHGSTTA2	TOPPACT1
CHGSTTD	TOPPDID1
CHGSTTD2	TOPPDID1
CINITC	CP
CINTEGFL	SYSPERF
CIOVFAFQ	AIN
CIOVFBFQ	AIN
CIRDISC	FRSAGENT
CIREXCES	FRSAGENT
CLGBLKA	TOPPACT2
CLGBLKA2	TOPPACT2
CLGBLKD	TOPSMISC
CLGAMEU	SCAISRV3
CLSCHGA	TOPPACT1

Register C71TRX to CYCLES (continued)

(Sheet 28 of 52)

Register	OM group
CLSCHGA2	TOPPACT1
CLSCHGD	TOPPDID2
CLSCHGD2	TOPPDID2
CMATT	MWTCAR
CMCDIAG	CMC
CMCERR	CMC
CMCFEOV	CALLFWD
CMCFIOV	CALLFWD
CMCFLT	CMC
CMCLERR	CMC
CMCLKMBU	CMC
CMCLKSBU	CMC
CMCMBU	CMC
CMCPUFLT	CM
CMCSBU	CMC
CMDPSYNC	CM
CMFAIL	MWTCAR
CMMCINIT	CM
CMMCSBSY	CM
CMMEMFLT	CM
CMMSMPXU	CM
CMMSWACT	CM
CMMWINIT	CM
CMOVFL	MWTCAR

Register C71TRX to CYCLES (continued)

(Sheet 29 of 52)

Register	OM group
CMPLTANN	TOPSAICC
CMPLTNIL	TOPSAICC
CMRBASFL	CM
CMRCPUFL	CM
CMREXFLT	CM
CMRFULFL	CM
CMRLNKFL	CM
CMRMCFL	CM
CMRMEMFL	CM
CMRPMCFL	CM
CMRSMPXU	CM
CMRSSCFL	CM
CMRSWACT	CM
CMSCINIT	CM
CMSPARE1	TRMTCM2
CMSPARE2	TRMTCM2
CMSPARE3	TRMTCM2
CMSPARE4	TRMTCM2
CMSPARE5	TRMTCM2
CMSPARE6	TRMTCM2
CMSPARE7	TRMTCM2
CMSPARE8	TRMTCM2
CMSPARE9	TRMTCM2
CMSPARE10	TRMTCM2

Register C71TRX to CYCLES (continued)

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Register	OM group
CMSPARE11	TRMTCM2
CMSPARE12	TRMTCM2
CMSPARE13	TRMTCM2
CMSPARE14	TRMTCM2
CMSPARE15	TRMTCM2
CMSPARE16	TRMTCM2
CMSPARE17	TRMTCM2
CMSPARE18	TRMTCM2
CMSPARE19	TRMTCM2
CMSPARE20	TRMTCM2
CMSPARE21	TRMTCM2
CMSPARE22	TRMTCM2
CMSPARE23	TRMTCM2
CMSPARE24	TRMTCM2
CMSPARE25	TRMTCM2
CMSPARE26	TRMTCM2
CMSPARE27	TRMTCM2
CMSPARE28	TRMTCM2
CMSPARE29	TRMTCM2
CMSPARE30	TRMTCM2
CMSPARE31	TRMTCM2
CMSSCFLT	CM
CMSSMPXU	CM
CMSSWACT	CM

Register C71TRX to CYCLES (continued)

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Register	OM group
CMSWINIT	CM
CMTRAP	CM
CMTRMISM	CM
CMWIACT	MWTCAR
CMWIDACT	MWTCAR
CMWINACK	MWTCAR
CMWISW	MWTCAR
CMWITRMS	MWTCAR
CMWIUNAV	MWTCAR
CMWRACT	MWTCAR
CMWRDACT	MWTCAR
CMWRDNAC	MWTCAR
CMWRDNDA	MWTCAR
COMFAIL	LINEACT
CNABATT	CNAB
CNABDENY	CNAB
CNABFDEN	CNAB
CNABSACT	CNAB
CNABUNIV	CNAB
CNAMDEL	CNAMD
CNAMDEL2	CNAMD
CNAMODEL	CNAMD
CNAMPDEL	CNAMD
CNBDENY	ICDIVP

Register C71TRX to CYCLES (continued)

(Sheet 32 of 52)

Register	OM group
CNDACT	CND
CNDBATT	CNDB
CNDBDENY	CNDB
CNDBFDEN	CNDB
CNDBOVFL	CNDB
CNDBSUP	CNDB
CNDBUNIV	CNDB
CNDBUSUP	CNDB
CNDDACT	CND
CNDDDEL2	CND
CNDDNDEL	CND
CNDEANS	CNDXPM
CNDFDNA	CND
CNDFDND	CND
CNDMSG	CNDXPM
CNDNOMDM	CNDXPM
CNDNOMON	CNDXPM
CNDOABND	CNDXPM
CNDODEL	CND
CNDODEL2	CND
CNDOVFL	CND
CNDPDEL	CND
CNDPDEL2	CND
CNDUNAVL	CND

Register C71TRX to CYCLES (continued)

(Sheet 33 of 52)

Register	OM group
CNFMBU	CF3P
CNFMBUT	CF3P
CNFOVFL	CF3P
CNFOVFLT	CF3P
C NFQABAN	CF3P
CNFQABNT	CF3P
CNFQOCC	CF3P
CNFQOCCT	CF3P
CNFQOVFL	CF3P
CNFQOVFLT	CF3P
CNFSBU	CF3P
CNFSBUT	CF3P
CNFSZRS	CF3P
CNFSZRST	CF3P
CNFTRU	CF3P
CNFTRUT	CF3P
CNMDNDEL	CND
CNMDODEL	CND
CNNBDENY	CNDB
CNNBSUP	CNDB
CNNDDENY	CNAB
CNNDSDEL	CNAB
CNTRECMD	DCRDEST
CNTRLREL	SCAISRV4

Register C71TRX to CYCLES (continued)

(Sheet 34 of 52)

Register	OM group
CODEBLK	IBNGRP
COINLINE	LINEREF
COMFAIL	LINEACT
CONFPYRE	SCAISERV
CONFPYRR	SCAISERV
CONFU	SCAISRV2
CONGENTR	SGOVLD
CONGEST	TRK
CONGEXIT	ISGOVLD
CONGTIME	ISGOVLD
CONNECT	TRK
CONSULTO	SCAISRV2
CONTALT	TOPSCCAB
CONTSNT	TOPSCCAB
CONTSTRE	SCAISERV
CONTSTRR	SCAISERV
CONVERR	MPCBASE
CONVESTB	MPCBASE
CONVIREF	MPCBASE
CORECALL	IBNSG
CORIGD	TOPPDID2
CORIGD2	TOPPDID2
COTATT	COT
COTBDIN	COT

Register C71TRX to CYCLES (continued)

(Sheet 35 of 52)

Register	OM group
COTCMPL	COT
COTDENY	COT
COTFDEN	COT
COTINCM	COT
COTOPTO	COT
COTOVFL	COT
COTPFLR	COT
COTPRCD	COT
COTUNIV	COT
COUNTERR	MTRPERF
COVFLMAX	TOPSQMS
COVFLNCQ	TOPSQMS
COVMFL02	COVMDSPP
COVMFL02	COVMFLTY
COVMFL02	COVMISCD
COVMFL02	COVMISCH
COVMFL02	COVMISND
COVMFL02	COVMISPT
COVMFL02	COVMT1CH
COVMFL03	COVMDISK
COVMFL03	COVMDSPP
COVMFL03	COVMFLTY
COVMFL03	COVMISCD
COVMFL03	COVMISCH

Register C71TRX to CYCLES (continued)

(Sheet 36 of 52)

Register	OM group
COVMFL03	COVMISND
COVMFL03	COVMISPT
COVMFL03	COVMT1CH
COVMFL04	COVMDISK
COVMFL04	COVMDSPP
COVMFL04	COVMFLTY
COVMFL04	COVMISCD
COVMFL04	COVMISCH
COVMFL04	COVMISND
COVMFL04	COVMISPT
COVMFL04	COVMT1CH
COVMFL05	COVMDISK
COVMFL05	COVMDSPP
COVMFL05	COVMFLTY
COVMFL05	COVMISCH
COVMFL05	COVMISND
COVMFL05	COVMISPT
COVMFL05	COVMT1CH
COVMFL06	COVMDISK
COVMFL06	COVMDSPP
COVMFL06	COVMFLTY
COVMFL06	COVMISCD
COVMFL06	COVMISCH
COVMFL06	COVMISND

Register C71TRX to CYCLES (continued)

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Register	OM group
COVMFL06	COVMISPT
COVMFL06	COVMT1CH
COVMFL07	COVMDISK
COVMFL07	COVMDSPP
COVMFL07	COVMFLTY
COVMFL07	COVMISCD
COVMFL07	COVMISCH
COVMFL07	COVMISND
COVMFL07	COVMISPT
COVMFL07	COVMT1CH
COVMFL08	COVMDISK
COVMFL08	COVMDSPP
COVMFL08	COVMFLTY
COVMFL08	COVMISCD
COVMFL08	COVMISCH
COVMFL08	COVMISND
COVMFL08	COVMISPT
COVMFL08	COVMT1CH
COVMFL09	COVMDISK
COVMFL09	COVMDSPP
COVMFL09	COVMFLTY
COVMFL09	COVMISCD
COVMFL09	COVMISCH
COVMFL09	COVMISND

Register C71TRX to CYCLES (continued)

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Register	OM group
COVMFL09	COVMISPT
COVMFL09	COVMT1CH
COVMFL10	COVMDISK
COVMFL10	COVMDSPP
COVMFL10	COVMFLTY
COVMFL10	COVMISCD
COVMFL10	COVMISCH
COVMFL10	COVMISND
COVMFL10	COVMISPT
COVMFL10	COVMT1CH
COVMFL11	COVMDISK
COVMFL11	COVMDSPP
COVMFL11	COVMFLTY
COVMFL11	COVMISCD
COVMFL11	COVMISCH
COVMFL11	COVMISND
COVMFL11	COVMISPT
COVMFL11	COVMT1CH
COVMFL12	COVMDISK
COVMFL12	COVMDSPP
COVMFL12	COVMFLTY
COVMFL12	COVMISCD
COVMFL12	COVMISCH
COVMFL12	COVMISND

Register C71TRX to CYCLES (continued)

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Register	OM group
COVMFL12	COVMISPT
COVMFL12	COVMT1CH
COVMFL13	COVMDISK
COVMFL13	COVMDSPP
COVMFL13	COVMFLTY
COVMFL13	COVMISCD
COVMFL13	COVMISCH
COVMFL13	COVMISND
COVMFL13	COVMISPT
COVMFL13	COVMT1CH
COVMFL14	COVMDISK
COVMFL14	COVMDSPP
COVMFL14	COVMFLTY
COVMFL14	COVMISCD
COVMFL14	COVMISCH
COVMFL14	COVMISND
COVMFL14	COVMISPT
COVMFL14	COVMT1CH
COVMFL15	COVMDISK
COVMFL15	COVMDSPP
COVMFL15	COVMFLTY
COVMFL15	COVMISCD
COVMFL15	COVMISCH
COVMFL15	COVMISND

Register C71TRX to CYCLES (continued)

(Sheet 40 of 52)

Register	OM group
COVMFL15	COVMISPT
COVMFL15	COVMT1CH
COVMFL16	COVMDISK
COVMFL16	COVMDSPP
COVMFL16	COVMFLTY
COVMFL16	COVMISCD
COVMFL16	COVMISCH
COVMFL16	COVMISND
COVMFL16	COVMISPT
COVMFL16	COVMT1CH
COVMFL17	COVMDISK
COVMFL17	COVMDSPP
COVMFL17	COVMFLTY
COVMFL17	COVMISCD
COVMFL17	COVMISCH
COVMFL17	COVMISND
COVMFL17	COVMISPT
COVMFL17	COVMT1CH
COVMFL18	COVMDISK
COVMFL18	COVMDSPP
COVMFL18	COVMFLTY
COVMFL18	COVMISCD
COVMFL18	COVMISCH
COVMFL18	COVMISND

Register C71TRX to CYCLES (continued)

(Sheet 41 of 52)

Register	OM group
COVMFL18	COVMISPT
COVMFL18	COVMT1CH
COVMFL19	COVMDISK
COVMFL19	COVMDSPP
COVMFL19	COVMFLTY
COVMFL19	COVMISCD
COVMFL19	COVMISCH
COVMFL19	COVMISND
COVMFL19	COVMISPT
COVMFL19	COVMT1CH
COVMFL20	COVMDISK
COVMFL20	COVMDSPP
COVMFL20	COVMFLTY
COVMFL20	COVMISCD
COVMFL20	COVMISCH
COVMFL20	COVMISND
COVMFL20	COVMISPT
COVMFL20	COVMT1CH
COVMFL21	COVMDISK
COVMFL21	COVMDSPP
COVMFL21	COVMFLTY
COVMFL21	COVMISCD
COVMFL21	COVMISCH
COVMFL21	COVMISND

Register C71TRX to CYCLES (continued)

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Register	OM group
COVMFL21	COVMISPT
COVMFL21	COVMT1CH
COVMFL22	COVMDISK
COVMFL22	COVMDSPP
COVMFL22	COVMFLTY
COVMFL22	COVMISCD
COVMFL22	COVMISCH
COVMFL22	COVMISND
COVMFL22	COVMISPT
COVMFL22	COVMT1CH
COVMFL23	COVMDISK
COVMFL23	COVMDSPP
COVMFL23	COVMFLTY
COVMFL23	COVMISCD
COVMFL23	COVMISCH
COVMFL23	COVMISND
COVMFL23	COVMISPT
COVMFL23	COVMT1CH
COVMFL24	COVMDISK
COVMFL24	COVMDSPP
COVMFL24	COVMFLTY
COVMFL24	COVMISCD
COVMFL24	COVMISCH
COVMFL24	COVMISND

Register C71TRX to CYCLES (continued)

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Register	OM group
COVMFL24	COVMISPT
COVMFL24	COVMT1CH
COVMFL25	COVMDISK
COVMFL25	COVMDSPP
COVMFL25	COVMFLTY
COVMFL25	COVMISCD
COVMFL25	COVMISCH
COVMFL25	COVMISND
COVMFL25	COVMISPT
COVMFL25	COVMT1CH
COVMFL26	COVMDISK
COVMFL26	COVMDSPP
COVMFL26	COVMFLTY
COVMFL26	COVMISCD
COVMFL26	COVMISCH
COVMFL26	COVMISND
COVMFL26	COVMISPT
COVMFL26	COVMT1CH
COVMFL27	COVMDISK
COVMFL27	COVMDSPP
COVMFL27	COVMFLTY
COVMFL27	COVMISCD
COVMFL27	COVMISCH
COVMFL27	COVMISND

Register C71TRX to CYCLES (continued)

(Sheet 44 of 52)

Register	OM group
COVMFL27	COVMISPT
COVMFL27	COVMT1CH
COVMFL28	COVMDISK
COVMFL28	COVMDSPP
COVMFL28	COVMFLTY
COVMFL28	COVMISCD
COVMFL28	COVMISCH
COVMFL28	COVMISND
COVMFL28	COVMISPT
COVMFL28	COVMT1CH
COVMFL29	COVMDISK
COVMFL29	COVMDSPP
COVMFL29	COVMFLTY
COVMFL29	COVMISCD
COVMFL29	COVMISCH
COVMFL29	COVMISND
COVMFL29	COVMISPT
COVMFL29	COVMT1CH
COVMFL30	COVMDISK
COVMFL30	COVMDSPP
COVMFL30	COVMFLTY
COVMFL30	COVMISCD
COVMFL30	COVMISCH
COVMFL30	COVMISND

Register C71TRX to CYCLES (continued)

(Sheet 45 of 52)

Register	OM group
COVMFL30	COVMISPT
COVMFL30	COVMT1CH
COVMFL31	COVMDISK
COVMFL31	COVMDSPP
COVMFL31	COVMFLTY
COVMFL31	COVMISCD
COVMFL31	COVMISCH
COVMFL31	COVMISND
COVMFL31	COVMISPT
COVMFL31	COVMT1CH
COVMFL32	COVMDISK
COVMFL32	COVMDSPP
COVMFL32	COVMFLTY
COVMFL32	COVMISCD
COVMFL32	COVMISCH
COVMFL32	COVMISND
COVMFL32	COVMISPT
COVMFL32	COVMT1CH
CPFLAFQ	AIN
CPFLBFQ	AIN
CPGBUSYU	SCAISRV4
CPGCONNU	SCAISRV4
CPGDIGCU	SCAISRV4
CPGMUSCU	SCAISRV4

Register C71TRX to CYCLES (continued)

(Sheet 46 of 52)

Register	OM group
CPGRANU	SCAISRV4
CPGRINGU	SCAISRV4
CPGSILU	SCAISRV4
CPHI	CP2
CPKABAN	PRKOM
CPKFEXT	PRKOM
CPKFLIM	PRKOM
CPKFOVF	PRKOM
CPKRCLL	PRKOM
CPKSUCC	PRKOM
CPLBOOVF	CP
CPLHI	CP2
CPLOOVFL	CP
CPLOSZ	CP
CPLPOVFL	CP
CPLSZ	CP
CPLSZ2	CP
CPSAUXCP	CPUSTAT
CPSBKG	CPUSTAT
CPSCPOCC	CPUSTAT
CPSDNC	CPUSTAT
CPSFORE	CPUSTAT
CPSGTERM	CPUSTAT
CPSIDLE	CPUSTAT

Register C71TRX to CYCLES (continued)

(Sheet 47 of 52)

Register	OM group
CPSMAINT	CPUSTAT
CPSNETM	CPUSTAT
CPSOM	CPUSTAT
CPSSCHED	CPUSTAT
CPSSNIP	CPUSTAT
CPSUIC	CP
CPSZ	CP
CPSZ2	CP
CPTRAP	CP
CPU30	XPMOCC
CPU40	XPMOCC
CPU50	XPMOCC
CPU60	XPMOCC
CPU70	XPMOCC
CPU80	XPMOCC
CPU85	XPMOCC
CPU90	XPMOCC
CPU95	XPMOCC
CPU100	XPMOCC
CPUATT	CPICKUP
CPUFAIL	CPICKUP
CPUFLT	CPU
CPUINVLD	CPICKUP
CPWORKU	CP2

Register C71TRX to CYCLES (continued)

(Sheet 48 of 52)

Register	OM group
CPUTOTL	XPMOCC
CQAQATT	QMSDATA
CQAQDEPT	QMSDATA
CQAQSRCH	QMSDATA
CQDENIED	TOPSQMS
CQELHIGH	QMSDATA
CQSCONS	QMSDATA
CQSRCATT	QMSDATA
CQUEDD	TOPPDID2
CQUEDD2	TOPPDID2
CQUEUED	TOPSQMS
CRC4ERR	PCMCARR
CRC4FLT	PCMCARR
CRDNOTIN	COVMISCD
CREERR	PCMCARR
CREFLT	PCMCARR
CREQUEUE	TOPSQMS
CRMOVFL	CRMDBM
CRMSEIZ	CRMDBM
CRMUSAGE	CRMDBM
CRTACT	CALLRDT
CRTATTPT	CALLRDT
CRTOPHUP	CALLRDT
CRTUACT	CALLRDT

Register C71TRX to CYCLES (continued)

(Sheet 49 of 52)

Register	OM group
CSCWDACT	CND
CSERVD	TOPPDID2
CSERVD2	TOPPDID2
CSLAA	XPMLINK
CSLBLK	XPMLINK
CSLCBU	XPMLINK
CSLERR	CSL
CSLFLT	CSL
CSLMBU	CSL
CSLMU	XPMLINK
CSLSBU	CSL
CT4QD	TOPPDID3
CT4QD2	TOPPDID3
CTAQATT	QMSDATA
CTAQDEPT	QMSDATA
CTFPSCRN	CTFP
CTFPTHRO	CTFP
CTRAFD	TOPPDID2
CTRAFD2	TOPPDID2
CTRTIME	C6VFL
CUSPACT	CALLFWD
CUSPDEA	CALLFWD
CUSPFAIL	CALLFWD
CUSPOVR	CALLFWD

Register C71TRX to CYCLES (continued)

(Sheet 50 of 52)

Register	OM group
CUSPARE1	TRMTCU3
CUSPARE2	TRMTCU3
CUSPARE3	TRMTCU3
CUSPARE4	TRMTCU3
CUSPARE5	TRMTCU3
CUSPARE6	TRMTCU3
CUSPARE7	TRMTCU3
CUSPARE8	TRMTCU3
CUSPARE9	TRMTCU3
CUSPARE10	TRMTCU3
CUSPARE11	TRMTCU3
CUSPARE12	TRMTCU3
CUSPARE13	TRMTCU3
CUSPARE14	TRMTCU3
CUSPARE15	TRMTCU3
CUSPARE16	TRMTCU3
CUSPARE17	TRMTCU3
CUSPARE18	TRMTCU3
CUSPARE19	TRMTCU3
CUSPARE20	TRMTCU3
CUSPARE21	TRMTCU3
CUSPARE22	TRMTCU3
CUSPARE23	TRMTCU3
CUSPARE24	TRMTCU3

Register C71TRX to CYCLES (continued)

(Sheet 51 of 52)

Register	OM group
CUSPARE25	TRMTCU3
CUSPARE26	TRMTCU3
CUSPARE27	TRMTCU3
CUSPARE28	TRMTCU3
CUSPARE29	TRMTCU3
CUSPARE30	TRMTCU3
CUSPARE31	TRMTCU3
CWAITD	TOPPDID2
CWAITD2	TOPPDID2
CWBQD	TOPPDID2
CWBQD2	TOPPDID2
CWDABDN	CALLWAIT
CWDATT	CALLWAIT
CWDEXMPT	CALLWAIT
CWDFAIL	CALLWAIT
CWINQU	IBNSG
CWOABDN	CALLWAIT
CWOATT	CALLWAIT
CWOEXMPT	CALLWAIT
CWOFAIL	CALLWAIT
CWOOVFL	CALLWAIT
CWRCL	CALLWAIT
CWRECALL	IBNSG
CWTABDN	CALLWAIT

Register C71TRX to CYCLES (end)

(Sheet 52 of 52)

Register	OM group
CWTABNDN	ICWT
CWTCERR	ICWT
CWTDENY	ICWT
CWTFAIL	CALLWAIT
CWTOVFL	ICWT
CWTPABDN	CWTPOTS
CWTPATT	CWTPOTS
CWTPDENY	CWTPOTS
CWTPOVFL	CWTPOTS
CWTTATT	CALLWAIT
CWTTOVFL	CALLWAIT
CWTUSGE	CWT
CXFR	IBNGRP
ICXFRATT	TWCIBN
ICXFRATT2	TWCIBN
CXFRFAIL	TWCIBN
CXFRTOAT	IBNGRP
CXRRABAN	TWICBN
CXRRSUCC	TWICBN

Register DAAABSUC to DUTLSYEV

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 13)

Register	OM group
DAAABSUC	DAMISC
DAACTSUC	DAMISC
DAARUAF	TOPSARU
DAARUSC2	TOPSARU
DAARUSUC	TOPSARU
DARRUUN	TOPSARU
DABEACT	ILR
DABEDACT	ILR
DABEUSGE	ILR
DACALL	TOPSDA
DACALL2	TOPSDA
DACCFAIL	TOPSRTRS
DACCRATE	TOPSRTRS
DAFAIL	TOPSRTRS
DAGENAMA	TOPSKFAM
DAIACT	ILR
DAIDACT	ILR
DAISABEV	DAISGEN
DAISCOEV	DAISGEN
DAISNFEV	DAISGEN
DAISPRER	DAISGEN
DAISREEV	DAISGEN

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 2 of 13)

Register	OM group
DAISRLEV	DAISGEN
DAISSYER	DAISGEN
DAISSYEV	DAISGEN
DAIUSGE	ILR
DAMCCSUC	DAMISC
DAQATT	DUAQ
DAQNOACK	DUAQ
DAQNOANS	DUAQ
DAQNOCAR	DUAQ
DAQNODM	DUAQ
DAQNOTRK	DUAQ
DAQSUCC	DUAQ
DAQTXERR	DUAQ
DARATE	TOPSRTRS
DARCL	TOPSDA
DARECALL	IBNSG
DATOARU	TOPSARU
DATOARU2	TOPSARU
DAVGDBM	TDCROUT
DAVGMS	TDCROUT
DAVGQS	TDCROUT
DBACTD	TOPPDID5
DBACTD2	TOPPDID5
DBCLASD	TOPPDID5

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 3 of 13)

Register	OM group
DBCLASD2	TOPPDID5
DBDCRC	ISGBD
DBDRXDSC	ISGBD
DBDRXPH	ISGBD
DBDTXDSC	ISGBD
DBDTXPH	ISGBD
DBFLAPER	SCPDBMTC
DBFLDBER	SCPDBMTC
DBFLDFIL	SCPDBMTC
DBFLDFUL	SCPDBMTC
DBFLMFER	SCPDBMTC
DBFLSVER	SCPDBMTC
DBFLTRMS	SCPDBMTC
DBITAPER	SCPDBMTC
DBITDBER	SCPDBMTC
DBITDFIL	SCPDBMTC
DBITDFUL	SCPDBMTC
DBITMFER	SCPDBMTC
DBITSVER	SCPDBMTC
DBITTRMS	SCPDBMTC
DBMTCCT	SCPDBMTC
DBMTCTV	SCPDBMTC
DBNAU	SCPDBMTC
DBNUMD	TOPPDID5

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 4 of 13)

Register	OM group
DBNUMD2	TOPPDID5
DBOVLD	DSINWTS
DBRCRC	ISGBRA
DBRLKRED	ISGBRA
DBRLKREP	ISGBRA
DBRREJRX	ISGBRA
DBRREJTX	ISGBRA
DBRRNRD	ISGBRA
DBRRNRP	ISGBRA
DBRRXDSC	ISGBRA
DBRS16RX	ISGBRA
DBRS16TX	ISGBRA
DBRSARX	ISGBRA
DBRSATX	ISGBRA
DBRSORX	ISGBRA
DBRSOTX	ISGBRA
DBRTXDSC	ISGBRA
DCMCCTDG	DCM
DCMCCTFL	DCM
DCMCCTOP	DCM
DCMERR	DCM
DCMFLT	DCM
DCMMBP	DCM
DCMMBTCO	DCM

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 5 of 13)

Register	OM group
DCMMBU	DCM
DCMSBP	DCM
DCMSBTCO	DCM
DCMSBU	DCM
DCNDABND	DCND
DCNDATT	DCND
DCNDATTE	DCND
DCNDDEL	DCND
DCNDDELE	DCND
DCNDEANS	DCM
DCPKSUCC	PRKOM
DCPU10	ISGCPU
DCPU100	ISGCPU
DCPU20	ISGCPU
DCPU30	ISGCPU
DCPU40	ISGCPU
DCPU50	ISGCPU
DCPU60	ISGCPU
DCPU70	ISGCPU
DCPU80	ISGCPU
DCPU90	ISGCPU
DCPURTR	ISGCPU
DCPUTOT	ISGCPU
DCRBDREC	DCRMISC

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 6 of 13)

Register	OM group
DCRBLK	DCRMISC
DCRNOREC	DCRMISC
DCRTAND	DCRICTRK
DDNDEL	CND
DDNDEL2	CND
DDNNUNIQ	CND
DDNTRUNC	CND
DDNUNAVL	CND
DDUERROR	DDU
DDUFAULT	DDU
DDUMBUSY	DDU
DDUSBUSY	DDU
DE0DISC	FRSAGENT
DE1DISC	FRSAGENT
DEACTATT	MWICTCAP
DEACTATT	PRIMWIC
DEACTPRB	MWICTCAP
DEFLDCA	TRK
DELAY	DTSR
DELAY_2	DTSR
DELTADIF	C7AUTOIM
DENOTISN	CPICG
DENYANN	TOPSAICC
DENYNIL	TOPSAICC

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 7 of 13)

Register	OM group
DESMBU	ESUP
DESOVFL	ESUP
DESSBU	ESUP
DESSZRS	ESUP
DESTNEQ	DSMTP
DESTRU	ESUP
DGTDLY	DTSRPM
DGTTOT	DTSRPM
DIDDACT	ILR
DIDDDACT	ILR
DIDDUSGE	ILR
DIRNUMA	TOPPACT1
DIRNUMA2	TOPPACT1
DIRNUMD	TOPPDID2
DIRNUMD2	TOPPDID2
DISCNGST	PRAFAC
DISNORTX	PRAFAC
DISRTUNA	PRAFAC
DLMER	EXDINV
DLMKS_D	SITE
DLMKS_D2	SITE
DLMKS_T	SITE
DLMKS_T2	SITE
DMCTDENY	DMCT

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 8 of 13)

Register	OM group
DMCTDREG	DMCT
DMCTDUP	DMCT
DMCTENTR	DMCT
DMCTINV	DMCT
DMCTLATT	DMCT
DMCTNIL	DMCT
DMCTNOID	DMCT
DMCTREG	DMCT
DMDISC	TDCROUT
DMISPRX	TDCROUT
DMISPTX	TDCROUT
DMRECV	TDCROUT
DMSENT	TDCROUT
DNACK	PMMSGCNT
DNASSRE	SCAISERV
DNASSRR	SCAISERV
DNDACT	IDND
DNDCERR	IDND
DNDDACT	IDND
DNDDENY	IDND
DNDDERR	IDND
DNDINTG	IDND
DNDOVFL	IDND
DNDUSGE	IDND

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 9 of 13)

Register	OM group
DNIACT	ILR
DNIDACT	ILR
DNIDDACT	ILR
DNIDEACT	ILR
DNIDUSGE	ILR
DNIUSGE	ILR
DNQRYRE	SCAISRV2
DNQRYRR	SCAISRV2
DNYBYCCW	CALLWAIT
DOD	IBNGRP
DPABDN	ISDD
DPATMPT	ISDD
DPDELAY	SITE
DPLDLY	DTSRPM
DPLTOT	DTSRPM
DPSEIZ	ISDD
DPTDLY	ISDD
DPTESTC	SITE
DRATEA	TOPPACT1
DRATEA2	TOPPACT1
DRATED	TOPPDID2
DRATED2	TOPPDID2
DRCWACT	DRCW
DRCWAUNV	DRCW

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 10 of 13)

Register	OM group
DRCWDACT	DRCW
DRCWDENY	DRCW
DRCWDUNV	DRCW
DRCWEATT	DRCW
DRCWEDEN	DRCW
DRCWEOVF	DRCW
DRCWEUSG	DRCW
DRCWRING	DRCW
DRCWSAT	DRCW
DRCWSAT2	DRCW
DRCWSBLK	DRCW
DRCWSDEN	DRCW
DRCWTATT	DRCW
DRCWTOVF	DRCW
DRCWUNIV	DRCW
DREU	TRK
DRIFTREP	N6LINK
DRIFTSKP	N6LINK
DROPPYRE	SCAISERV
DRTEOVF	DCRDEST
DS1AIS	DS1CARR
DS1BER	DS1CARR
DS1CBU	DS1CARR
DS1ECF	DS1CARR

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 11 of 13)

Register	OM group
DS1ES	DS1CARR
DS1LCGA	DS1CARR
DS1LOF	DS1CARR
DS1MBU	DS1CARR
DS1PBU	DS1CARR
DS1RCGA	DS1CARR
DS1SBU	DS1CARR
DS1SES	DS1CARR
DS1SLP	DS1CARR
DS1UAS	DS1CARR
DSAVAILK	STORE
DSAVAILM	STORE
DSCWDANN	DSCWID
DSCWDANS	DSCWID
DSCWDCNF	DSCWID
DSCWDCSM	DSCWID
DSCWDDPF	DSCWID
DSCWDDRP	DSCWID
DSCWDDSC	DSCWID
DSCWDDTM	DSCWID
DSCWDFHK	DSCWID
DSCWDFWD	DSCWID
DSCWDHLD	DSCWID
DSCWDPPL	DSCWID

Register DAAABSUC to DUTLSYEV (continued)

(Sheet 12 of 13)

Register	OM group
DSCWDRER	DSCWID
DSCWDRTN	DSCWID
DSCWDSND	DSCWID
DSCWDTIM	DSCWID
DSCWDWAT	DSCWID
DSINMSG	C6LINK
DSINSU	C6LINK
DSKREAD	CACHEMGR
DSKREAD2	CACHEMGR
DSKWRIT	CACHEMGR
DSKWRIT2	CACHEMGR
DSOGMSG	C6LINK
DSOGSU	C6LINK
DSPNOTIN	COVMISPT
DSUSEDK	STORE
DSUSEDM	STORE
DTABND	ISDD
DTATMPT	ISDD
DTCALLP	MTRPERF
DTDELAY	SITE
DTFEAT	MTRPERF
DTMFFAIL	ADASAPU
DTSDLYPC	DTSR
DTSEIZ	ISDD

Register DAAABSUC to DUTLSYEV (end)

(Sheet 13 of 13)

Register	OM group
DTSTESTC	DTSR
DTTDLY	ISDD
DTTESTC	SITE
DTXPM	MTRPERF
DUAQFAIL	DUAQMOD
DUAQMBU	DUAQMOD
DUAQREQ	DUAQMOD
DUAQSBU	DUAQMOD
DUAQTRU	DUAQMOD
DURERR	MTRPERF
DUTLCOEV	DUTLGEN
DUTLDIEV	DUTLGEN
DUTLPRER	DUTLGEN
DUTLREEV	DUTLGEN
DUTLSYER	DUTLGEN
DUTLSYEV	DUTLGEN

Register EAACKFL to EXTSEIZ

Register EAACKFL to EXTSEIZ

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 6)

Register	OM group
EAACKFL	EACARR
EADOMES	EACARR
EADOMPIC	EACARR
EADOMXXX	EACARR
EAINTL	EACARR
EAINTPIC	EACARR
EAINTRM	EACARR
EAINTXXX	EACARR
EAWNKFL	EACARR
ECCBOVFL	CP2
ECCBSZ	CP2
ECCBTRU	CP2
EENOTISN	CPICG
EIOCERR	EIOC
EIOCFLT	EIOC
EIOCMBU	EIOC
EIOCSBU	EIOC
EIURXBC2	EIUETHER
EIURXBCA	EIUETHER
EIURXBY2	EIUETHER
EIURXBYT	EIUETHER
EIURXDI2	EIUETHER

Register EAACKFL to EXTSEIZ (continued)

(Sheet 2 of 6)

Register	OM group
EIURXDIS	EIUETHER
EIURXER2	EIUETHER
EIURXERR	EIUETHER
EIURXPK2	EIUETHER
EIURXPKT	EIUETHER
EIURXUP2	EIUETHER
EIURXUPP	EIUETHER
EIUTXBC2	EIUETHER
EIUTXBCA	EIUETHER
EIUTXBY2	EIUETHER
EIUTXBYT	EIUETHER
EIUTXDI2	EIUETHER
EIUTXDIS	EIUETHER
EIUTXER2	EIUETHER
EIUTXERR	EIUETHER
EIUTXPK2	EIUETHER
EIUTXPKT	EIUETHER
ELIG3RD	MDSACT
ELIG3RD2	MDSACT
ELIGCC	MDSACT
ELIGCC2	MDSACT
ELIGCOL	MDSACT
ELPTIMD	TOPPDID2
ELPTIMD2	TOPPDID2

Register EAACKFL to EXTSEIZ (continued)

(Sheet 3 of 6)

Register	OM group
EMERESTA	N6OFFICE
EMR	C6LINK
EMRTIME	C6LINK
ENBKG	ENETOCC
ENCALDND	ENETSYS
ENCDERR	ENETMAT
ENCDFLT	ENETMAT
ENCDISOU	ENETMAT
ENCDPARU	ENETMAT
ENCOLD	ENETSYS
ENCPOCC	ENETOCC
ENERR	ENETSYS
ENFLT	ENETSYS
ENFORE	ENETOCC
ENIDLE	ENETOCC
ENISOU	EMETSYS
ENLKERR	ENETPLNK
ENLKFLT	ENETPLNK
ENLKISOU	ENETPLNK
ENLKPARU	ENETPLNK
ENMAINT	EMETOCC
ENMBCDU	ENETMAT
ENMBLKU	ENETPLNK
ENMBPBU	ENETMAT

Register EAACKFL to EXTSEIZ (continued)

(Sheet 4 of 6)

Register	OM group
ENMBU	ENETSYS
ENMCDISO	ENETMAT
ENMCDPAR	ENETMAT
ENMISOP	ENETSYS
ENMLKISO	ENETPLNK
ENMLKPAR	ENETPLNK
ENMPARP	ENETSYS
ENMPBISO	ENETMAT
ENMPBPAR	ENETMAT
ENOFCDU	ENETMAT
ENPARU	ENETSYS
ENPBERR	ENETMAT
ENPBFLT	ENETMAT
ENPBISOU	ENETMAT
ENPBPARU	ENETMAT
ENRELOAD	ENETSYS
ENSBCDU	ENETMAT
ENSBLKU	ENETPLNK
ENSBPBU	ENETMAT
ENSBU	ENETSYS
ENSCDISO	ENETMAT
ENSCDPAR	ENETMAT
ENSCHED	ENETOCC
ENSISOP	ENETSYS

Register EAACKFL to EXTSEIZ (continued)

(Sheet 5 of 6)

Register	OM group
ENSLKISO	ENETPLNK
ENSLKPAR	ENETPLNK
ENSPARP	ENETSYS
ENSPBISO	ENETMAT
ENSPBPAR	ENETMAT
ENSPCHER	ENETPLNK
ENSWERRS	ENETSYS
ENTRAPS	ENETSYS
ENWARM	ENETSYS
EQINCTOT	WBTRK
EQOVATB	WBTRK
EQTMPT	WBTRK
ERRAIS	NDS0CARR
ERRBVRX	NDS0CARR
ERRBVTX	NDS0CARR
ERRCLRX	NDS0CARR
ERRCLTX	NDS0CARR
ERRLOS	NDS0CARR
ERRSLRX	NDS0CARR
ERRSLTX	NDS0CARR
ERSPARE1	TRMTER
ERSPARE2	TRMTER
ERSPARE3	TRMTER
ERSPARE4	TRMTER

Register EAACKFL to EXTSEIZ (end)

(Sheet 6 of 6)

Register	OM group
ERSPARE5	TRMTER
ERSPARE6	TRMTER
ESPDELAY	ESP
ESPORIG	ESP
ESPOVRD	ESP
ESPPMBLK	ESP
ESPPMCCO	ESP
ESPPMORIG	ESP
ESPPMSTL	ESP
EXTDCALL	IBNSG
EXTFAIL	TOPSRTRS
EXTHI	EXT
EXTOVFL	EXT
EXTRATE	TOPSRTRS
EXTSEIZ	EXT

Register FA to FWDTOIC

Register FA to FWDTOIC

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 9)

Register	OM group
FA	TRK
FACMSGOR	PRAFAC
FACMSGTM	PRAFAC
FACMSGTR	PRAFAC
FAERR	M20CARR1
FAERROR	TTCCARR
FAFAULT	TTCCARR
FAFLT	M20CARR1
FAMSGOUT	MPCFASTA
FAOUTFLD	MPCFASTA
FASTSAMP	USAGSAMP
FB0RXERR	ASUFBUS
FB0RXER2	ASUFBUS
FB0RXOC2	ASUFBUS
FB0RXOCT	ASUFBUS
FB0RXPKT	ASUFBUS
FB0RXPK2	ASUFBUS
FB0TXCON	ASUFBUS
FB0TXEN2	ASUFBUS
FB0TXENQ	ASUFBUS
FB0TXER2	ASUFBUS
FB0TXERR	ASUFBUS

Register FA to FWDTOIC (continued)

(Sheet 2 of 9)

Register	OM group
FB0TXOC2	ASUFBUS
FB0TXOCT	ASUFBUS
FB0TXPK2	ASUFBUS
FB0TXPKT	ASUFBUS
FB0TXPRI	ASUFBUS
FB1RXER2	ASUFBUS
FB1RXERR	ASUFBUS
FB1RXOC2	ASUFBUS
FB1RXOCT	ASUFBUS
FB1RXPK2	ASUFBUS
FB1RXPKT	ASUFBUS
FB1TXCON	ASUFBUS
FB1TXEN2	ASUFBUS
FB1TXENQ	ASUFBUS
FB1TXER2	ASUFBUS
FB1TXERR	ASUFBUS
FB1TXOC2	ASUFBUS
FB1TXOCT	ASUFBUS
FB1TXPK2	ASUFBUS
FB1TXPKT	ASUFBUS
FB1TXPRI	ASUFBUS
FBUSY	TRK
FCONG	TRK
FCSCNAC	FCS

Register FA to FWDTOIC (continued)

(Sheet 3 of 9)

Register	OM group
FCSDNTR	FCS
FCTRLDEL	MPCBASE
FCXC2CA2	FC
FCXC2CAT	FC
FCXC2CFL	FC
FCXC2CSU	FC
FCXCONA2	FC
FCXCONAT	FC
FCXCONFL	FC
FEATFAIL	TME
FEATUPD	TME
FECNORIG	FRSAGENT
FECOV	C6VFL
FEPRO	C6LINK
FIXDURA	TOPPACT3
FIXDURA2	TOPPACT3
FIXDURD	TOPPDID5
FIXDURD2	TOPPDID5
FLRLT3	C6LINK
FLROOSTI	C6LINK
FLTAIS	NDS0CARR
FLTAUTO	AABSFILT
FLTBOTH	AABSFILT
FLTBVRX	NDS0CARR

Register FA to FWDTOIC (continued)

(Sheet 4 of 9)

Register	OM group
FLTBVTX	NDS0CARR
FLTCLRX	NDS0CARR
FLTCLTX	NDS0CARR
FLTFL	TOPSTRAF
FLTFRAUD	AABSFILT
FLTHAND	AABSFILT
FLTLOS	NDS0CARR
FLTSLRX	NDS0CARR
FLTSLTX	NDS0CARR
FLTVOICE	AABSFILT
FLTYSPN	COVMFLTY
FNLHOVER	LINEXPT
FORASTA	TOPPACT3
FORASTA2	TOPPACT3
FORASTD	TOPPDID5
FORASTD2	TOPPDID5
FORCCA	TOPPACT1
FORCCA2	TOPPACT1
FORCCD	TOPPDID2
FORCCD2	TOPPDID2
FPDABMIT	FPDABM
FPDABMRX	FPDABM
FPDABMSB	FPDABM
FPDEVBR	FPDEVICE

Register FA to FWDTOIC (continued)

(Sheet 5 of 9)

Register	OM group
FPDEVBW	FPDEVICE
FPDEVIT	FPDEVICE
FPDEVITU	FPDEVICE
FPDEVMB	FPDEVICE
FPDEVMBU	FPDEVICE
FPDEVNA	FPDEVICE
FPDEVNAU	FPDEVICE
FPDEVNU	FPDEVICE
FPDEVRA	FPDEVICE
FPDEVRAR	FPDEVICE
FPDEVRB	FPDEVICE
FPDEVRBU	FPDEVICE
FPDEVRQ	FPDEVICE
FPDEVSB	FPDEVICE
FPDEVSBU	FPDEVICE
FPDIP0EU	FPDEVICE
FPDIP1EU	FPDEVICE
FPSCSIEU	FPSCSI
FPSCSIIT	FPSCSI
FPSCSIIU	FPSCSI
FPSCSIMB	FPSCSI
FPSCSINU	FPSCSI
FPSCSIRB	FPSCSI
FPSCSIRS	FPSCSI

Register FA to FWDTOIC (continued)

(Sheet 6 of 9)

Register	OM group
FPSCSIRX	FPSCSI
FPSCSISB	FPSCSI
FPSCSISW	FPSCSI
FPSIPPDO	FPSCSI
FPSIPPIO	FPSCSI
FPSIPPMO	FPSCSI
FRAREC	FRSAGENT
FRARECX	FRSAGENT
FRASENT	FRSAGENT
FRASENTX	FRSAGENT
FREEKB	STORE
FREEMB	STORE
FREERECD	NACDGRP2
FREESENT	NACDGRP2
FRMERR	CDCOM
FRRATTCT	NWMFRRCT
FRREC	CDCOM
FRRECX	CDCOM
FRRFLCT	NWMFRRCT
FRRTGATT	NWMFRRTG
FRRTGLF	NWMFRRTG
FRSENT	CDCOM

Register FA to FWDTOIC (continued)

(Sheet 7 of 9)

Register	OM group
FRSENTX	CDCOM
FRSPARE1	TRMTFR3
FRSPARE2	TRMTFR3
FRSPARE3	TRMTFR3
FRSPARE4	TRMTFR3
FRSPARE5	TRMTFR3
FRSPARE6	TRMTFR3
FRSPARE7	TRMTFR3
FRSPARE8	TRMTFR3
FRSPARE9	TRMTFR3
FRSPARE10	TRMTFR3
FRSPARE11	TRMTFR3
FRSPARE12	TRMTFR3
FRSPARE13	TRMTFR3
FRSPARE14	TRMTFR3
FRSPARE16	TRMTFR3
FRSPARE17	TRMTFR3
FRSPARE18	TRMTFR3
FRSPARE19	TRMTFR3
FRSPARE20	TRMTFR3
FRSPARE21	TRMTFR3
FRSPARE22	TRMTFR3
FRSPARE23	TRMTFR3
FRSPARE24	TRMTFR3

Register FA to FWDTOIC (continued)

(Sheet 8 of 9)

Register	OM group
FRSPARE25	TRMTFR3
FRSPARE26	TRMTFR3
FRSPARE27	TRMTFR3
FRSPARE28	TRMTFR3
FRSPARE29	TRMTFR3
FRSPARE30	TRMTFR3
FRSPARE31	TRMTFR3
FRSTLOFR	DCRLINK
FRSTLOVF	DCRLINK
FRSTOFRD	DCRDEST
FRT1AIS	FRT1
FRT1BER	FRT1
FRT1CBU	FRT1
FRT1CRC	FRT1
FRT1ES	FRT1
FRT1LCGA	FRT1
FRT1LOF	FRT1
FRT1MBU	FRT1
FRT1RCGA	FRT1
FRT1SBU	FRT1
FRT1SES	FRT1
FRT1UAS	FRT1
FTRQHI	FRT1
FTRQOVFL	FRT1

Register FA to FWDTOIC (end)

(Sheet 9 of 9)

Register	OM group
FTRQSEIZ	FRT1
FV	TRK
FWDTOCAR	TOPS950
FWDTOIC	TOPSEA

Register GENOOSP2 to GOTSPLCL

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

Register	OM group
GENOOSP2	MDSSTATS
GIACATT	GIACGRP
GIACCGRO	GIACGRP
GIACNOSC	GIACGRP
GICORIG	IBNGRP
GINCATOT	IBNGRP
GINTRCPT	IBNGRP
GLARE	TRK
GOTAVAG	QMSACT
GOTPOSIM	TOPSQMS
GOTSPLCL	QMSACT

Register H1MANB to HUNTRHNT

Register H1MANB to HUNTRHNT

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 3)

Register	OM group
H1MANB	M20CARR2
HISYSB	M20CARR2
H2MANB	M20CARR2
H2SYSB	M20CARR2
H3MANB	M20CARR2
N3SYSB	M20CARR2
H4MANB	M20CARR2
H4SYSB	M20CARR2
H5MANB	M20CARR2
H5SYSB	M20CARR2
HANDCOFL	AABSHAND
HANDCOSC	AABSHAND
HANDD	TOPPDID2
HANDD2	TOPPDID2
HANDTHFL	AABSHAND
HANDTHSC	AABSHAND
HATTANIF	AABSHAND
HATTMISC	AABSHAND
HATTONI	AABSHAND
HATTZMIN	AABSHAND
HAZCLR	LINEHAZ
HAZDET	LINEHAZ

Register H1MANB to HUNTRHNT (continued)

(Sheet 2 of 3)

Register	OM group
HAZSCAN	LINEHAZ
HDLFORIC	TOPSEA
HGCFL	M20CARR2
HLDABAN	IBNGRP
HLDCALL	IBNSG
HLDFRES	IBNGRP
HLDRCLL	IBNGRP
HLDSUCC	IBNGRP
HNGMBA	HTGP
HNGMBD	HTGP
HNGOVF	DNCT/HTGP
HNGRHT	DNCT/HTGP
HNGSHA	HTGP
HNGSHD	HTGP
HNTGATT	HNTG
HNTGOVFL	HNTG
HNTGRHNT	HNTG
HOLDATT	CMG
HOOKACC2	MDSSTATS
HPCATT	HPCTRKGP
HPCOVFL	HPCTRKGP
HTDNATT	DNCT/HTGP
HTLOVFL	FDL
HTLUSGE	FDL

Register H1MANB to HUNTRHNT (end)

(Sheet 3 of 3)

Register	OM group
HTRANS	HTRP
HTRATT	HTRP
HTROUTP	HTRP
HUNTATT	HUNT
HUNTOVFL	HUNT
HUNTRHNT	HUNT

Register IAA1TRX to ISUP_CAT

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 10)

Register	OM group
IAA1TRX	C7LPP
IAA1TTX	C7LPP
IACAUTH	IBNAC
IACBSYDR	IBNAC
IACCFW	IBNAC
IACCTVTU	IBNAC
IACDIALO	IBNAC
IACEXTD	IBNAC
IACHLD	IBNAC
IACINTRP	IBNAC
IACLDN	IBNAC
IACLDN1	IBNAC
IACLDN2	IBNAC
IACLDN3	IBNAC
IACLDN4	IBNAC
IACLDN6	IBNAC
IACLDN7	IBNAC
IACLDNR	IBNAC
IACORGDR	IBNAC
IACORIG	IBNAC
IACPOSBY	IBNAC
IACQTOTL	IBNAC

Register IAA1TRX to ISUP_CAT (continued)

(Sheet 2 of 10)

Register	OM group
IACRECAL	IBNAC
IACSPCL	IBNAC
IACTOTDR	IBNAC
IACXFRAT	IBNAC
IAH1TRX	C7LPP
IAH1TTX	C7LPP
IAH5SRX	C7LPP
IAH5STX	C7LPP
IAMINC	C6LINK
IAMOUT	C6LINK
IAMRVD	N6LINK
IAMXMT	N6LINK
IAVGMSG	TDCROUT
IBDCRC	ISDNBD
IBDRXDSC	ISDNBD
IBDRXPH	ISDNBD
IBDTXDSC	ISDNBD
IBDTXPH	ISDNBD
ICMUOPER	CMISEOM
ICMMARG	CMISEOM
ICPRECV	TDCROUT
ICPSENT	TDCROUT
ICREPF	XIPDCOM
ICREPRC	XIPDCOM

Register IAA1TRX to ISUP_CAT (continued)

(Sheet 3 of 10)

Register	OM group
ICREQS	XIPDCOM
ICREQSF	XIPDCOM
ICTCERR	ICT
ICTDENY	ICT
ICTOVFL	ICT
ICTUSGE	ICT
IDCATT	EBSMSGCT
IDLSTATE	PMMSGCNT
IEA1TRX	C7LPP
IEA1TTX	C7LPP
IEH1TRX	C7LPP
IEH1TTX	C7LPP
IEH5SRX	C7LPP
IEH5STX	C7LPP
FNLHOVER	LINEXPT
INTRATE	TOPSRTRS
IINVBYTE	PMMSGCNT
IINVCHAR	PMMSGCNT
IINVCKSM	PMMSGCNT
IINVMSG	PMMSGCNT
ILNRCERR	ILNRR
ILNRUSGE	ILNRR
ILRCERR	ILR
ILRINTG	ILR

Register IAA1TRX to ISUP_CAT (continued)

(Sheet 4 of 10)

Register	OM group
IMDISC	TDCROUT
IMEDPAG	QMSACT
IMEDQAG	QMSACT
IMEDTAG	QMSACT
IMINFLCL	NACDGRP1
IMINFQED	NACDGRP1
IMINFREM	NACDGRP1
IMMTMOFL	NACDGRP1
IMOFLLCL	NACDGRP1
IMOFLREM	NACDGRP1
IMTRECV	TDCROUT
IMTSENT	TDCROUT
INABNC	OFZ
INABNM	OFZ
INACK	PMMSGCNT
INANN	OFZ
INARUSC2	TOPSARU
INARUSUC	TOPSARU
INCABNC	OTS
INCABNM,	OTS
INCATOT	TRK
INCFSET	OTS
INCLKT	OTS
INCOUT	OTS

Register IAA1TRX to ISUP_CAT (continued)

(Sheet 5 of 10)

Register	OM group
INCOUT2	OTS
INCTRM	OTS
INCTRM2	OTS
INCTRMT	OTS
INEFDENY	CP2
INELG3R2	MDSACT
INELG3RD	MDSACT
INELGCC	MDSACT
INELGCOL	MDSCAT
INFAIL	TRK
INITDENY	CP
INLBOVFL	CP
INLBSZ	CP
INLBSZ2	CP
INLKT	OFZ
INOUT	OFZ
INOUT2	OFZ
INREJ	SCAISERV
INRTERM	SITE
INSPECT	IBNGRP
INTARUAF	TOPSARU
INTARUUN	TOPSARU
INTCANIF	TOPSDA
INTCAUT	TOPSDA

Register IAA1TRX to ISUP_CAT (continued)

(Sheet 6 of 10)

Register	OM group
INTCAUT2	TOPSDA
INTCCAL2	TOPSDA
INTCCALL	TOPSDA
INTCCFMT	TOPSINCC
INTCCUT	TOPSDA
INTCONI	TOPSDA
INTCRCL	TOPSDA
INTCSPL	TOPSDA
INTERSIT	SITE
INTFLTTO	DAMISC
INTOARU2	TOPSARU
INTONE	OFZ
INTRAISN	CPICG
INTRASIT	SITE
INTRM	OFZ
INTRM2	OFZ
INTRMLU	TRK
INTRNSU	TRK
INTROFF	AIN
INTROFF2	AIN
INTTOARU	TOPSARU
INVALEN	FRSAGENT
INVARG	PRIMWIC
INVAUTH	TRK

Register IAA1TRX to ISUP_CAT (continued)

(Sheet 7 of 10)

Register	OM group
INVCMDMG	AIN
INVCMDSE	AIN
INVDIGIT	NSSTCAP
INVDLCI	FRSAGENT
INVKRCV	RTRTCAP
INVKRSNT	RTRTCAP
INVLDSU	C6VFL
INVNODE	PMMSGCNT
INVPR1	ADASAPU
INVPR2	ADASAPU
INWFRIC	TOPSEA
IOCERR	IOC
IOCFLT	IOC
IOCLKERR	IOC
IOCLKMBU	IOC
IOCLKSBU	IOC
IOCMBU	IOC
IOCSBU	IOC
IOSYSERR	IOSYS
IPDATTMP	GIPDOMS
IPDFAIL	GIPDOMS
IPEDP_D	SITE3
IPEDP_D2	SITE3
IPEDP_T	SITE3

Register IAA1TRX to ISUP_CAT (continued)

(Sheet 8 of 10)

Register	OM group
IPEDP_T2	SITE3
IPEDT_D	SITE3
IPEDT_D2	SITE3
IPEDT_T	SITE3
IPEDT_T2	SITE3
IPEKS_D	SITE3
IPEKS_D2	SITE3
IPEKS_T	SITE3
IPEKS_T2	SITE3
IPS2	TOPSPSZ
IPSZ	TOPSPSZ
IROUAPDU	ROSEOMS
IROMAPDU	ROSEOMS
IROBAPDU	ROSEOMS
ISCKTBLO	ISUPCKTA
ISCKTCGU	ISUPCKTA
ISCKTGBF	ISUPCKTA
ISCKTGBT	ISUPCKTA
ISCKTLBT	ISUPCKTA
ISCKTRAC	ISUPCGRP
ISCKTRAE	ISUPCGRP
ISCKTRAO	ISUPCGRP
ISCKTRBT	ISUPCKTA
ISCKTUBL	ISUPCKTA

Register IAA1TRX to ISUP_CAT (continued)

(Sheet 9 of 10)

Register	OM group
ISCONBAD	ISUPCONN
ISCONBD2	ISUPCONN
ISCONCOT	ISUPCONN
ISCONFAR	ISUPCONN
ISCONIC2	ISUPCONN
ISCONICC	ISUPCONN
ICSONINR	ISUPCONN
ISCONU02	ISUPCONN
ISCONUB2	ISUPCONN
ISCONUCA	ISUPCONN
ISCONUCB	ISUPCONN
ISCONUCC	ISUPCONN
ISCONUCE	ISUPCONN
ISCONUCF	ISUPCONN
ISCONUCN	ISUPCONN
ISCONUCO	ISUPCONN
ISCONUCS	ISUPCONN
ISDDMSG	ISDD
ISDNLIN	LINEREF
ISEQATT	CDACCS
ISEQFAIL	CDACCS
ISEQQRY	CDACCS
ISERRBAD	ISUPERRS
ISERRBLO	ISUPERRS

Register IAA1TRX to ISUP_CAT (end)

(Sheet 10 of 10)

Register	OM group
ISERRGRS	ISUPERRS
ISERRHOP	ISUPERRS
ISERRREL	ISUPERRS
ISERRRLC	ISUPERRS
ISERRRSC	ISUPERRS
ISMSGIN	SUPUSAG
ISMSGIN2	SUPUSAG
ISMSGOT2	SUPUSAG
ISMSGOUT	SUPUSAG
ISTOTATT	RLCDIS
ISTOTBLK	RLCDIS
ISTOTTRU	RLCDIS
ISUN0ATT	RLCDIS
ISUN0BLK	RLCDIS
ISUN0TRU	RLCDIS
ISUN1ATT	RLCDIS
ISUN1BLK	RLCDIS
ISUN1TRU	RLCDIS
ISUP_CAT	SRCDISP

Register KEYHITS to KSTOT

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

Register	OM group
KEYHITS	OGTQMS
KSDLY	DTSRPM
KSHATT	KSHUNT
KSHBLKD	KSHUNT
KSHBUSY	KSHUNT
KSHDFLCT	KSHUNT
KSHOVFL	KSHUNT
KSTOT	DTSRPM

Register L1BFOV to LXMIT

Register L1BFOV to LXMIT

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 10)

Register	OM group
L1BFOV	TDCPROT
L1INIT	TDCPROT
L1RXABRT	TDCPROT
L1RXBF	TDCPROT
L1RXCRC	TDCPROT
L1RXERR	TDCPROT
L1RXGOOD	TDCPROT
L1RXOVRN	TDCPROT
L1TXBF	TDCPROT
L1TXERR	TDCPROT
L1TXGOOD	TDCPROT
L2CTLERR	TDCLAPD
L2DISC	TDCPROT
L2FRMRRX	TDCPROT
L2FRMRTX	TDCPROT
L2HSETUP	TDCLAPD
L2IFRRX	TDCLAPD
L2IFRTX	TDCLAPD
L2LACKTO	MPCLINK2
L2LDISC	MPCLINK2
L2LDOWN	MPCLINK2
L2LLVIO	MPCLINK2

Register L1BFOV to LXMIT (continued)

(Sheet 2 of 10)

Register	OM group
L2LNUXMIT	MPCLINK2
L2LRCV	MPCLINK2
L2LRVIO	MPCLINK2
L2LRXMIT	MPCLINK2
L2LSETUP	MPCLINK2
L2LXMIT	MPCLINK2
L2MDLERR	TDCLAPD
L2MSGLST	MPCLINK2
L2NURCV	MPCLINK2
L2PABORT	MPCLINK2
L2PDOWN	MPCLINK2
L2PHWERR	MPCLINK2
L2PSETUP	TDCLAPD
L2PSYNCU	MPCLINK2
L2REJRX	TDCLAPD
L2REJTX	TDCLAPD
L2RETX	TDCLAPD
L2RLSE	TDCLAPD
L2RNRRX	TDCLAPD
L2RNRTX	TDCLAPD
L2RTXI	TDCPROT
L2RXIFR	TDCPROT
L2SECSTP	TDCPROT
L2SETUP	TDCPROT

Register L1BFOV to LXMIT (continued)

(Sheet 3 of 10)

Register	OM group
L2TITIME	TDCPROT
L2TXIFR	TDCPROT
L2UDSIN	MPCBASE
L2UDSOUT	MPCBASE
L3DRECV	TDCPROT
L3DSENT	TDCPROT
L3LACKTO	MPCLINK3
L3LDISC	MPCLINK3
L3LDOWN	MPCLINK3
L3LLVIO	MPCLINK3
L3LRCV	MPCLINK3
L3LRVIO	MPCLINK3
L3LRXMIT	MPCLINK3
L3LSETUP	MPCLINK3
L3LXMIT	MPCLINK3
L3MSGLST	MPCLINK3
L3NURCV	MPCLINK3
L3NUXMIT	MPCLINK3
L3PABORT	MPCLINK3
L3PDOWN	MPCLINK3
L3PHWERR	MPCLINK3
L3PKTIME	TDCPROT
L3PSYNCU	MPCLINK3
L3UDSIN	MPCBASE

Register L1BFOV to LXMIT (continued)

(Sheet 4 of 10)

Register	OM group
L3UDSOUR	MPCBASE
LACKTO	DCOMLINK
LANGD	TOPPDID2
LANGD2	TOPPDID2
LATAD	TOPPDID2
LATAD2	TOPPDID2
LCMDP_D	SITE
LCMDP_D2	SITE
LCMDP_T	SITE
LCMDP_T2	SITE
LCMDT_D	SITE
LCMDT_D2	SITE
LCMDT_T	SITE
LCMDT_T2	SITE
LCMKS_D	SITE
LCMKS_D2	SITE
LCMKS_T	SITE
LCMKS_T2	SITE
LDBFOV	TDCLAPD
LDIDEL	CND
LDIDEL2	CND
LDINIT	TDCLAPD
LDIOVFL	CND
LDISC	DCOMLINK

Register L1BFOV to LXMIT (continued)

(Sheet 5 of 10)

Register	OM group
LDN1	IBNSGLDN
LDN2	IBNSGLDN
LDN3	IBNSGLDN
LDN4	IBNSGLDN
LDN5	IBNSGLDN
LDN6	IBNSGLDN
LDN7	IBNSGLDN
LDNR	IBNSGLDN
LDOWN	DCOMLINK
LDRXABRT	TDCLAPD
LDRXBF	TDCLAPD
LDRXCRC	TDCLAPD
LDRXERR	TDCLAPD
LDRXGOOD	TDCLAPD
LDRXOVRN	TDCLAPD
LDSBUSY	LDS
LDSCWA	LDS
LDSCWNA	LDS
LDSNCWA	LDS
LDSNCWNA	LDS
LDSRCWA	LDS
LDSRCWNA	LDS
LDTXBF	TDCLAPD
LDTXERR	TDCLAPD

Register L1BFOV to LXMIT (continued)

(Sheet 6 of 10)

Register	OM group
LDTXGOOD	TDCLAPD
LIDBRD	TOPPDID2
LIDBRD2	TOPPDID2
LIINCATF	LINAC
LINABAN	LINAC
LINAGRE	SCAISRV2
LINAGRR	SCAISRV2
LINBADDG	SYSPERF
LINCAT	LINAC
LINCCTBU	SYSPERF
LINEATT	HPCBASIC
LINEUSE	LCD
LINKMANB	N6LINK
LINKOOS	SMDLINK
LINKSYSB	N6LINK
LINPMBU	SYSPERF
LINTDEL	LINAC
LIUFXPK2	LIUFBUS
LIURXDI2	LIUFBUS
LIURXDIS	LIUFBUS
LIURXER2	LIUFBUS
LIURXERR	LIUFBUS
LIURXPKT	LIUFBUS
LIUTXER2	LIUFBUS

Register L1BFOV to LXMIT (continued)

(Sheet 7 of 10)

Register	OM group
LIUTXERR	LIUFBUS
LIUTXPK2	LIUFBUS
LIUTXPKT	LIUFBUS
LLCMAERR	PCMCARR
LLCMAFLT	PCMCARR
LLFAERR	PCMCARR
LLFAFLT	PCMCARR
LLMAERR	PCMCARR
LLMAFLT	PCMCARR
LLNKAVBL	MPCFASTA
LLNKXFRD	MPCFASTA
LLVIO	DCOMLINK
LMCCTDG	LM
LMCCTFL	LM
LMCCTOP	LM
LMCMDP_T	SITE
LMDP_D	SITE
LMDP_T	SITE
LMDT_D	SITE
LMDT_T	SITE
LMERR	LM
LMFLT	LM
LMILOST	FRSAGENT
LMMBP	LM

Register L1BFOV to LXMIT (continued)

(Sheet 8 of 10)

Register	OM group
LMMBTCO	LM
LMMBU	LM
LMSBP	LM
LMSBTCO	LM
LMSBU	LM
LMTRU	LMD
LNCCM1	MTRUSG
LNCCM2	MTRUSG
LNMBPC	OFZ
LNRCATT	LNREDIAL
LNRCFAIL	LNREDIAL
LNRPOVFL	LNREDIAL
LNXPMM1	MTRUSG
LNXPMM2	MTRUSG
LOCAL_CA	SRCDISP
LOCLKUP	CNAMD
LOGDEND	TOPPDID2
LOGDEND2	TOPPDID2
LOGQFULL	NACDGRP1
LOGQLCL	NACDGRP1
LOGSUCD	TOPPDID3
LOGSUCD2	TOPPDID3
LOOPSTD	TOPPDID3
LOOPSTD2	TOPPDID3

Register L1BFOV to LXMIT (continued)

(Sheet 9 of 10)

Register	OM group
LOSTMSG	MPCBASE
LOSTREC	LOGS
LOUTAGRE	SCAISRV2
LOUTAGRR	SCAISRV2
LP2NIL2	C7LPP2
LPACTA	TOPPACT1
LPACTA2	TOPPACT1
LPHLDREC	IBNSG
LPMTPRX	C7LPP2
LPMTPRX2	C7LPP2
LPMTPTX	C7LPP2
LPMTPTX2	C7LPP2
LPOVFL	IBNSG
LPP2NIL1	C7LPP2
LPP2NIL2	C7LPP2
LPP2NIL3	C7LPP2
LPPSCRX	C7LPP2
LPPSCRX2	C7LPP2
LPPSCTX	C7LPP2
LPPSCTX2	C7LPP2
LPPUPRX	C7LPP2
LPPUPRX2	C7LPP2
LPPUPTX	C7LPP2
LPPUPTX2	C7LPP2

Register L1BFOV to LXMIT (end)

(Sheet 10 of 10)

Register	OM group
LPU	IBNSG
LRCV	DCOMLINK
LRCVOF	DCOMLINK
LRVIO	DCOMLINK
LRXMIT	DCOMLINK
LSCCPRX	C7LINK3
LSCCPRX2	C7LINK3
LSCCPTX	C7LINK3
LSCCPTX2	C7LINK3
LSETUP	DCOMLINK
LSMITOF	DCOMLINK
LSURVD	N6LINK
LSUXMT	N6LINK
LUHNFAIL	TOPSINCC
LUHNPASS	TOPSINCC
LUPARX	C7LINK3
LUPARX2	C7LINK3
LUPATX	C7LINK3
LUPATX2	C7LINK3
LXMIT	DCOMLINK

Register MADNTATT to MWTQUERY

Register MADNTATT to MWTQUERY

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 9)

Register	OM group
MADNTATT	LMD
MAERROR	TTCCARR
MAFAULT	TTCCARR
MAKECRE	SCAISERV
MAKECRR	SCAISERV
MANBCARR	TTCCARR
MANFAIL	C7AUTOIM
MANFECOV	C6VFL
MANNECOV	C6VFL
MANOOSTI	C6LINK
MANPASS	C7AUTOIM
MANRATE	TOPSMISC
MAXBU	TRK
MAXCHNLS	COVMT1CH
MAXPORTS	COVMDSPP
MAXQEXCD	AIN
MBSCABDN	CALLWAIT
MBSCATT	CALLWAIT
MBSCFAIL	CALLWAIT
MBSEXMPT	CALLWAIT
MBU	TRK
MCCPUCT	MACHCONG

Register MADNTATT to MWTQUERY (continued)

(Sheet 2 of 9)

Register	OM group
MCCSABN	CDMCCS
MCCSABND	DSMCCS
MCCSACBF	CDMCCS
MCCSACBS	CDMCCS
MCCSATT	CDMCCS
MCCSDBBK	DSMCCS
MCCSDBOV	DSMCCS
MCCSDBTM	DSMCCS
MCCSFAIL	CDMCCS
MCCSMERR	DSMCCS
MCCSMTPB	DSMCCS
MCCSNAXR	DSMCCS
MCCSNEQ	DSMCCS
MCCSOPR	CDMCCS
MCCSQRY	DSMCCS
MCCSSUCC	CDMCCS
MCCSVCNT	DSMCCS
MCMFCT	MACHONG
MCU	MACHONG
MEMREAD	CACHEMGR
MEMREAD2	CACHEMGR
MEMWRIT	CACHEMGR
MEMWRIT2	CACHEMGR
MFABCN	ISDD

Register MADNTATT to MWTQUERY (continued)

(Sheet 3 of 9)

Register	OM group
MFATMPT	ISDD
MFSEIZ	ISDD
MFTDLY	ISDD
MISCA	TOPPACT1
MISCA2	TOPPACT1
MISCERR	DSINWTS
MISCIMAT	LINEXPT
MISLOST	ACDMISPL
MISQUSAG	ACDMISPL
MISRTED	DSMTP
MISTRANS	ACDMISPL
MON3RDFA	MDSACT
MON3RDS2	MDSACT
MON3RDSU	MDSACT
MONCCFA	MDSACT
MONCCSU	MDSACT
MONCCSU2	MDSACT
MONCOLFA	MDSACT
MONCOLSU	MDSACT
MOND	TOPPDID3
MOND2	TOPPDID3
MPBCONF	MPB

Register MADNTATT to MWTQUERY (continued)

(Sheet 4 of 9)

Register	OM group
MPBFAIL	MPB
MPCNSMBU	MPCBASE
MPCNSOK	MPCBASE
MPCNSSBU	MPCBASE
MPHCANS	MPHCON
MPHCOFRD	MPHCON
MPHGABDN	MPHGRP
MPHGENQ	MPHGRP
MPHGNSER	MPHGRP
MPHGOFRD	MPHGRP
MPHGOVFL	MPHGRP
MRVATX	MRVT
MRVRRX	MRVT
MRVRTX	MRVT
MRVTERR	MRVT
MRVTFAIL	MRVT
MRVTINIT	MRVT
MRVTPASS	MRVT
MRVTPSUC	MRVT
MRVTRX	MRVT
MRVTT1XP	MRVT
MRVTTX	MRVT
MSCDDIA	MS
MSCDDIAF	MS

Register MADNTATT to MWTQUERY (continued)

(Sheet 5 of 9)

Register	OM group
MSCDERR	MS
MSCDFLT	MS
MSCDMBP	MS
MSCDMBU	MS
MSCDSBU	MS
MSCHDIA	MSCHAIN
MSCHDIAF	MSCHAIN
MSCHERR	MSCHAIN
MSCHFLT	MSCHAIN
MSCHMBP	MSCHAIN
MSCHMBU	MSCHAIN
MSCHSBU	MSCHAIN
MSCLDIA	MSCHNLK
MSCLDIAF	MSCHNLK
MSCLERR	MSCHNLK
MSCLFLT	MSCHNLK
MSCLMBP	MSCHNLK
MSCLMBU	MSCHNLK
MSCLSBU	MSCHNLK
MSDIA	MS
MSDIAF	MS
MSERR	MS
MSFBDIA	MSFBUS
MSFBDIAF	MSFBUS

Register MADNTATT to MWTQUERY (continued)

(Sheet 6 of 9)

Register	OM group
MSFBERR	MSFBUS
MSFBFLT	MSFBUS
MSFBMBP	MSFBUS
MSFBMBP	MSFBUS
MSFBMBU	MSFBUS
MSFBSBU	MSFBUS
MSFLT	MS
MSGOVFL	N6LINK
MSGOVLD	N6LINK
MSGRCVD	DALINK
MSGRCVD2	DALINK
MSGSENT	DALINK
MSGSENT2	DALINK
MSGSNDFL	DALINK
MSGSNDSC	DALINK
MSGSNSC2	DALINK
MSGWAITU	SCAISRV2
MSLKDIA	MS
MSLKDIAF	MS
MSLKERR	MS
MSLKERRP	CDCOM
MSLKFLT	MS
MSLKMBP	MS
MSLKMBU	MS

Register MADNTATT to MWTQUERY (continued)

(Sheet 7 of 9)

Register	OM group
MSLKSBU	MS
MSMBP	MS
MSMBU	MS
MSSBU	MS
MSTPDIA	MSFBUSTP
MSTPDIAF	MSFBUSTP
MSTPERR	MSFBUSTP
MSTPFLT	MSFBUSTP
MSTPMBP	MSFBUSTP
MSTPMBU	MSFBUSTP
MSTPSBU	MSFBUSTP
MSUDSCRD	C7GTWSCR
MSUDSCRD2	C7GTWSCR
MSURJACP	C7GTWSCR
MSURJCPA	C7GTWSCR
MSURJDPC	C7GTWSCR
MSURJDSN	C7GTWSCR
MSURJDST	C7GTWSCR
MSURJHO1	C7GTWSCR
MSURJMT	C7GTWSCR
MSURJNIC	C7GTWSCR
MSURJOPC	C7GTWSCR
MSURJPCS	C7GTWSCR
MSURJPRI	C7GTWSCR

Register MADNTATT to MWTQUERY (continued)

(Sheet 8 of 9)

Register	OM group
MSURJSI	C7GTWSCR
MSURJTM	C7GTWSCR
MSURJTT	C7GTWSCR
MSUSCRER	C7GTWSCR
MSYLOSSU	CPU
MTAMBU	MTA
MTASZFL	MTA
MTASZRS	MTA
MTATRU	MTA
MTCHINT	CPU
MTPBLK	DSINWTS
MTRAUDER	MTRPERF
MTRBKERR	MTRPERF
MTRPULS	TRK
MTSFAIL	TOPSRTRS
MTSRATE	TOPSRTRS
MTUERR	MTU
MTUFLT	MTU
MTUMBU	MTU
MTUSBU	MTU
MULTHI	CP2
MULTOVFL	CP
MULTSZ	CP
MUMRVD	N6LINK

Register MADNTATT to MWTQUERY (end)

(Sheet 9 of 9)

Register	OM group
MUMXMT	N6LINK
MUSLNOFL	LENMUSIC
MWTACT	MWTCAR
MWTACTRE	SCAISRV3
MWTACTRR	SCAISRV3
MWTATT	MWTCAR
MWTDEACT	MWTCAR
MWTOVFL	MWTCAR
MWTQUERY	MWTCAR

Register N5_CAT to NWMTAGTT

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 12)

Register	OM group
N5_CAT	SRCDISP
N6ANSRCD	N6LK
N6AUTOTR	N6XR
N6BKRSYN	N6LK
N6BKSYN	N6LK
N6DRFTCP	N6LK
N6IAMRCD	N6LK
N6IAMXMT	N6LK
N6LKINIT	N6XR
N6LKMBU	N6LK
N6LKSBU	N6LK
N6LKSTEM	N6XR
N6MANTR	N6XR
N6MBU	N6XR
N6MPOOLU	N6XR
N6MSELAT	N6XR
N6MSELUN	N6XR
N6MSGQOV	N6LK
N6MSGTOU	N6LK
N6MUMCXM	N6LK
N6MUMRCD	N6LK
N6QUARCD	N6LK

Register N5_CAT to NWMTAGTT (continued)

(Sheet 2 of 12)

Register	OM group
N6QUAXMT	N6LK
N6REXMT	N6LK
N6SBU	N6XR
N6SUCNT	N6LK
N6SUERR	N6LK
N6TOTRCD	N6LK
N6TOTXMT	N6LK
N6UNRMSG	N6LK
NA4B4	DCTS
NAMACGBK	CNAMD
NAMACGOV	CNAMD
NAMEFAIL	TME
NAMEUPED	TME
NAMISPTO	CNAMD
ANMTCPQ	CNAMD
NAMTCPQ2	CNAMD
NAMTCPTO	CNAMD
NANS	TRK
NANSO	DCTS
NANST	TRKDCTS
NANUMDEL	CNAMD
NARBLCKD	NARUSAGE
NARTOTAL	NARUSAGE
NARTRAF	NARUSAGE

Register N5_CAT to NWMTAGTT (continued)

(Sheet 3 of 12)

Register	OM group
NATTMPT	TRK
NB2	DCTS
NB3	DCTS
NB5	DCTS
NCALLUP2	TOPPMSG
NCALLUPD	TOPPMSG
NCAO	DCTS
NCAT	TRKDCTS
NCHG2ALT	TOPSCCAB
NCHG2SNT	TOPSCCAB
NCMBKG	NCMCPUST
NCMCPOCC	NCMCPUST
NCMIDLE	NCMCPUST
NCMIO	NCMCPUST
NCMMAINT	NCMCPUST
NCMSCHED	NCMCPUST
NCMSYS	NCMCPUST
NCTRLREL	SCAISRV4
NDCACT	INDC
NDCCERR	INDC
NDCDACT	INDC
NDCINTG	INDC
NDCUSGE	INDC
NDIALO	IBNGRP

Register N5_CAT to NWMTAGTT (continued)

(Sheet 4 of 12)

Register	OM group
NDMCHERR	NMTCLINK
NDMCHFLT	NMTCLINK
NDMCHMBP	NMTCLINK
NDMCHSBP	NMTCLINK
NDNERR	NMTCNODE
NDNFLT	NMTCNODE
NDNLRP	NMTCNODE
NDNLRU	NMTCNODE
NDNMBP	NMTCNODE
NDNMBU	NMTCNODE
NDNMCRST	NMTCNODE
NDNMCXFR	NMTCNODE
NDNMRRST	NMTCNODE
NDNMWRST	NMTCNODE
NDNNAP	NMTCNODE
NDNNAU	NMTCNODE
NDNSBP	NMTCNODE
NDNSBU	NMTCNODE
NDNSCRST	NMTCNODE
NDNSCXFR	NMTCNODE
NDNSRRST	NMTCNODE
NDNSUXFR	NMTCNODE
NDNSWERR	NMTCNODE
NDNSWRST	NMTCNODE

Register N5_CAT to NWMTAGTT (continued)

(Sheet 5 of 12)

Register	OM group
NDNTRAP	NMTCNODE
NDPLKERR	NMTCLINK
NDPLKFLT	NMTCLINK
NDPLKMBP	NMTCLINK
NDPLKSBP	NMTCLINK
NTERR	NMTCTYPE
NDTFLT	NMTCTYPE
NDTLRP	NMTCTYPE
NDTLRU	NMTCTYPE
NDTMBP	NMTCTYPE
NDTMBU	NMTCTYPE
NDTMCRST	NMTCTYPE
NDTMCXFR	NMTCTYPE
NDTMRRST	NMTCTYPE
NDTMWRST	NMTCTYPE
NDTNAP	NMTCTYPE
NDTNAU	NMTCTYPE
NDTSBP	NMTCTYPE
NDTSBU	NMTCTYPE
NDTSCRST	NMTCTYPE
NDTSCXFR	NMTCTYPE
NDTSRRST	NMTCTYPE
NDTSUXFR	NMTCTYPE
NDTSWERR	NMTCTYPE

Register N5_CAT to NWMTAGTT (continued)

(Sheet 6 of 12)

Register	OM group
NDTSWRST	NMTCTYPE
NDTTRAP	NMTCTYPE
NDUERR	NMTCUNIT
NDUFLT	NMTCUNIT
NDUMBP	NMTCUNIT
NDUMBU	NMTCUNIT
NDUMCRST	NMTCUNIT
NDUMRRST	NMTCUNIT
NDUMWRST	NMTCUNIT
NDUNAP	NMTCUNIT
NDUNAU	NMTCUNIT
NDUSBP	NMTCUNIT
NDUSBU	NMTCUNIT
NDUSCRST	NMTCUNIT
NDUSRRST	NMTCUNIT
NDUSWERR	NMTCUNIT
NDUSWRST	NMTCUNIT
NDUTRAP	NMTCUNIT
NECOV	C6VFL
NETACTA	TOPPACT1
NETACTA2	TOPPACT1
NETACTD	TOPPDID3
NETACTD2	TOPPDID3
NETOOSP2	MDSSTATS

Register N5_CAT to NWMTAGTT (continued)

(Sheet 7 of 12)

Register	**OM group**
NFYA	TOPPACT1
NFYA2	TOPPACT1
NFYD	TOPPDID3
NFYD2	TOPPDID3
NHTDNATT	DNCT/HTGP
NILREG1	C7LPP
NILREG2	C7LPP
NILREG3	C7LPP
NIN	OFZ
NIN2	OFZ
NINC	OTS
NINC2	OTS
NMCERR	NMC
NMCFLT	NMC
NMJRMBU	NMC
NMJRSBU	NMC
NMMBU	NMC
NMMSGER	NMC
NMMSGFL	NMC
NMPRMBU	NMC
NMPTSBU	NMC
NMSBU	NMC
NMSDENL	NETMSG
NMSINVAD	NETMSG

Register N5_CAT to NWMTAGTT (continued)

(Sheet 8 of 12)

Register	OM group
NMSPCHER	NMC
NMSPCHFL	NMC
NMSTIME	NETMSG
NMSVACT	NETMSG
NO6_CAT	SRCDISP
NOACC3R2	MDSACT
NOACC3RD	MDSACT
NOACCCC	MDSACT
NOACCCC2	MDSACT
NOACCCOL	MDSACT
NOACTD	TOPPDID3
NOACTD2	TOPPDID3
NOAUXREG	DSINWTS
NOCIDCP	VSNLINK
NOCIDNCM	VSNLINK
NOCLIDCN	SDS
NODEOUT	COVMISND
NONCINW	TOPSMISC
NONRA1	DCTS
NONRA3	DCTS
NONRKB	DCTS
NONRKD	DCTS
NONSBNPA	DSINWTS
NOOFLGRP	NACDGRP1

Register N5_CAT to NWMTAGTT (continued)

(Sheet 9 of 12)

Register	OM group
NOREPLY	DSMTP
NORESRCE	NSSTCAP
NORG	OTS
NORGG	LINEACT
NORG2	OTS
NORIG	OFZ
NORIG0	IBNGRP
NORIG1	IBNGRP
NORIG2	OFZ
NORIGATT	LMD
NORIGG	LCD
NORTEDAT	DSMTP
NOSIGRTE	DSMTP
NOSPLCL	QMSACT
NOTFUNAV	PRIMWIC
NOTRID	RTRTCAP
NO_TSP	AUTSPID
NOVFLATB	TRK
NPDIL	DCTS
NRDYAGRE	SCAISRV2
NRDYAGRR	SCAISRV2
NRSCON	NRS
NRSCONU	NRS
NRSFCON	NRS

Register N5_CAT to NWMTAGTT (continued)

(Sheet 10 of 12)

Register	OM group
NRSFRES	NRS
NRSMBU	NRS
NRSNMP	NRS
NRSOVFL	NRS
NRSRES	NRS
NRSRESU	NRS
NRSSBU	NRS
NSCABNAS	NSC
NSCABNBS	NSC
NSCALLS	IBNSG
NSCATIN	NSC
NSCATMPT	NSCACG
NSCBKMCC	NSCACG
NSCBKSIC	NSCACG
NSCBKSOC	NSCACG
NSCBKVC	NSCACG
NSCCOMC	NSCACG
NSCCONPN	NSCACG
NSCCOSCP	NSCAGC
NSCCOSI	NSCACG
NSCCOSVC	NSCACG
NSCCOTVC	NSCACG
NSCDBOVL	NSC
NSCEIGHT	NSC

Register N5_CAT to NWMTAGTT (continued)

(Sheet 11 of 12)

Register	OM group
NSCFLICM	NSC
NSCFLICS	NSC
NSCFPRIQ	NSC
NSCINVY	NSC
NSCIVCAR	NSC
NSCNSNPA	NSC
NSCO	DCTS
NSCORIG	NSC
NSCOUTSV	NSC
NSCQUERY	NSC
NSCSFLEA	NSC
NSCSFLTO	NSC
NSCT	TRKDCTS
NSCT2TO	NSC
NSCTIOVF	NSC
NSCUNSOR	NSC
NSCVACDR	NSC
NSSRCNTE	NSSTCN
NSSTCNFC	NSSTCN
NSSTCNIV	NSSTCN
NSSTCNNP	NSSTCN
NSSTCNNR	NSSTCN
NSSTCNQP	NSSTCN
NSSTCNQS	NSSTCN

Register N5_CAT to NWMTAGTT (end)

(Sheet 12 of 12)

Register	OM group
NSYS	OTS
NSYS2	OTS
NSZGO	DCTS
NSZGT	TRKDCTS
NTERMATT	LMD
NUMBLOCK	ISUPCONG
NTWKBLK	DSMTP
NTWKOVLD	DSMTP
NTWKPROB	NSSTCAP
NULLMSG	PMMSGCNT
NUMMSGS	TOPSDEV
NURCV	DCOMLINK
NUMRPTS	XPMOCC
NUXMIT	DCOMLINK
NWMBLK	DSINWTS
NWMTGAFF	NWMTGCNT
NWMTGATT	NWMTGCNT

Register OAICOIN to OVRLD

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 7)

Register	OM group
OAICOIN	REVALLO
OAICOIN2	REVALLO
OAINCDC	REVALLO
OAINCDC2	REVALLO
OAITOT	REVALLO
OAITOT2	REVALLO
OCCTSCU	EATSMS
OCCTSCU2	EATSMS
OCCTSOVF	EATSMS
OCCTSPEG	EATSMS
OCCTSPG2	EATSMS
OCCTSSU	EATSMS
OCCTSSU2	EATSMS
OCINI	TOPSOC
OCMCCS	TOPSOC
OCQABN	TOPSOC
OCTREC	FRSAGENT
OCTSENT	FRSAGENT
OFSYNDN	BCAPOF
OFWRNGBC	BCAPOF
OFZNCBN	OFZ2
OFZNCID	OFZ2

Register OAICOIN to OVRLD (continued)

(Sheet 2 of 7)

Register	OM group
OFZNCIM	OFZ2
OFZNCIT	OFZ2
OFZNCLT	OFZ2
OFZNCOF	OFZ2
OFZNCON	OFZ2
OFZNCOT	OFZ2
OFZNCRT	OFZ2
OFZNCTC	OFZ2
OFZNOSC	OFZ2
OHACCPT	TOPSDACC
OHIMPOSE	DAMISC
OHQABN	OHQCBQCG
OHQBLOCK	OHQCBQCG
OHQOFFER	OHQCBQCG
OHQOVFL	OHQCBQCG
OIAD	TOPPDID3
OIAD2	TOPPDID3
OMASERR	MRVT
ONIATT	ONI
ONICHDLU	ONI
ONIDELGT	ONI
ONIFDISC	ONI
ONIMBU	ONI
ONIMTCHC	ONI

Register OAICOIN to OVRLD (continued)

(Sheet 3 of 7)

Register	OM group
ONIOCCU	ONI
ONIOVFL	ONI
ONIQABAN	ONI
ONIQOCC	ONI
ONIQOVFL	ONI
ONIQTOUT	ONI
ONISBU	ONI
ONISZRS	ONI
ONIWRGCA	ONI
OOCASST	OOCBILL
OOCASST2	OOCBILL
OOCCAN	OOCBILL
OOCCAN2	OOCBILL
OOCCIR	OOCBOOK
OOCCIR2	OOCBOOK
OOCCOMP	OOCBILL
OOCCOMP2	OOCBILL
OOCDADS	OOCBOOK
OOCDEL	OOCBOOK
OOCDEL2	OOCBOOK
OOCMASS	OOCBOOK
OOCMESS	OOCBOOK
OOCMESS2	OOCBOOK
OOCPRI	OOCBOOK

Register OAICOIN to OVRLD (continued)

(Sheet 4 of 7)

Register	OM group
OOCREBLD	OOCBOOK
OPRADMD	TOPPDID3
OPRADMD2	TOPPDID3
OPRFBA	TOPPACT1
OPRFBA2	TOPPACT1
OPRFBD	TOPPDID3
OPRFBD2	TOPPDID3
OPRFLT	TOPSTRAF
OPRMAND	TOPPDID3
OPRMAND2	TOPPDID3
OPRNUMA	TOPPACT1
OPRNUMA2	TOPPACT1
OPRQPRD	TOPPDID5
OPRQPRD2	TOPPDID5
OPRSSPD	TOPPDID3
OPRSSPD2	TOPPDID3
ORGABDGG	LINEXPT
ORGABDN	OTS
ORGCALL	LINEACT
ORGFSET	OTS
ORGFSET2	OTS
ORGLKT	OTS
ORGOUT	OTS
ORGOUT2	OTS

Register OAICOIN to OVRLD (continued)

(Sheet 5 of 7)

Register	OM group
ORGTRM	OTS
ORGTRM2	OTS
ORGTRMT	OTS
ORIG0	ENG640M1
ORIG1	TRA250M1
ORIG2	TRA125M1
ORIG3	TRA125M2
ORIGABD1	LINEXPT
ORIGABDN	OFZ
ORIGABN	LMD
ORIGANN	OFZ
ORIGBLK	LMD
ORIGBLKG	LINEXPY
ORIGCALL	IBNSGLCD
ORIGDENY	CP
ORIGDPAT	LINEACT
ORIGDTAT	LINEACT
ORIGDR	IBNSG
ORIGFAIL	LMD
ORIGLKT	OFZ
ORIGOUT2	OFZ
ORIGOUT	OFZ
ORIGOUTU	LINEACT
ORIGOUTG	LINEACT

Register OAICOIN to OVRLD (continued)

(Sheet 6 of 7)

Register	OM group
ORIGPDIA	LINEACT
ORIGPDIL	LINEXPT
ORIGPSIG	LINEXPT
ORIGTONE	OFZ
ORIGTRM2	OFZ
ORIGTRM	OFZ
ORIGTRMU	LINEXPT
ORIGTRMG	LINEACT
ORNOTISN	CPICG
OSTANNC	DSMCCS
OSTOPER	DSMCCS
OSTTONE	DSMCCS
OSTUNSPC	DSMCCS
OTHABDN	ISDD
OTHATMPT	ISDD
OTHSEIZ	ISDD
OTHTDLY	ISDD
OTOOLOSS	LINEXPT
OTOONOCT	LINEXPT
OTOLOSS	LINEXPT
OTOTBSY	LINEXPT
OUTBHI	CP2
OUTBOVFL	CP
OUTBSZ	CP

Register OAICOIN to OVRLD (end)

(Sheet 7 of 7)

Register	OM group
OUTFAIL	TRK
OUTMFL	OFZ
OUTMTCHF	TRK
OUTNWAT	OFZ
OUTNWAT2	OFZ
OUTOSF	OFZ
OUTREJ	SCAISERV
OUTRMFL	OFZ
OUTROSF	OFZ
OUTTRKA	TOPPACT2
OUTTRKA2	TOPPACT2
OUTTRMLU	TRK
OUTTRNSU	TRK
OV16DSC	ISGOVLD
OVLDENTR	ISGOVLD
OVLDEXIT	ISGOVLD
OVLDTIME	ISGOVLD
OVLMAX	QMSACT
OVLNOCQE	QMSACT
OVRCOLA	TOPPACT2
OVRCOLA2	TOPPACT2
OVRLD	CP2

Register P8NBADSK to PVOVFL

Register P8NBADSK to PVOVFL

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 18)

Register	OM group
P8NBADSK	P8NPA
P8NBASIC	P8NPA
P8NCA	P8NPA
P8NCMDRT	P8NPA
P8NCND	P8NPA
P8NCP	P8NPA
P8NCRSP	P8NPA
P8NDMSTC	P8NPA
P8NDNID	P8NPA
P8NFLXRT	P8NPA
P8NHIRES	P8NPA
P8NINT	P8NPA
P8NINTL	P8NPA
P8NISW	P8NPA
P8NIZ	P8NPA
P8NLE	P8NPA
P8NLESVC	P8NPA
P8NMREC	P8NPA
P8NNB	P8NPA
P8NOCR	P8NPA
P8NOOB	P8NPA
P8NOOZ	P8NPA

Register P8NBADSK to PVOVFL (continued)

(Sheet 2 of 18)

Register	OM group
P8NPROER	P8NPA
P8NROUTE	P8NPA
P8NSB	P8NPA
P8NSCOM	P8NPA
P8NSGLNM	P8NPA
P8NTOTAL	P8NPA
P8NTRSN	P8NPA
P8NTRT1	P8NPA
P8NTRT2	P8NPA
P8NVCNT	P8NPA
P8QBADSK	P8QUERY
P8QBASI2	P8QUERY
P8QBASIC	P8QUERY
P8QBCLID	P8QUERY
P8QCA	P8QUERY2
P8QCMDRT	P8QUERY2
P8QCND	P8QUERY2
P8QCP	P8QUERY2
P8QCRSP	P8QUERY2
P8QDCOM2	P8QUERY2
P8QDMST2	P8QUERY
P8QDMSTC	P8QUERY
P8QDNID	P8QUERY2
P8QFLXR2	P8QUERY2

Register P8NBADSK to PVOVFL (continued)

(Sheet 3 of 18)

Register	OM group
P8QFLXRT	P8QUERY2
P8QHIRE2	P8QUERY2
P8QHIRES	P8QUERY2
P8QINT	P8QUERY2
P8QINTL	P8QUERY
P8QISW	P8QUERY
P8QIZ	P8QUERY
P8QIZ2	P8QUERY
P8QLE	P8QUERY2
P8QLE2	P8QUERY2
P8QLESV2	P8QUERY
P8QLESVC	P8QUERY
P8QMREC	P8QUERY
P8QMREC2	P8QUERY
P8QNB	P8QUERY
P8QNB2	P8QUERY
P8QOCR	P8QUERY2
P8QOCR2	P8QUERY2
P8QOOB	P8QUERY
P8QOOZ	P8QUERY
P8QOOZ2	P8QUERY
P8QPROER	P8QUERY
P8QROUT2	P8QUERY
P8QROUTE	P8QUERY

Register P8NBADSK to PVOVFL (continued)

(Sheet 4 of 18)

Register	OM group
P8QSB	P8QUERY
P8QSB2	P8QUERY
P8QSCOM	P8QUERY
P8QSCOM2	P8QUERY
P8QSGLN2	P8QUERY2
P8QSGLNM	P8QUERY2
P8QTOTA2	P8QUERY
P8QTOTAL	P8QUERY
P8QTRSN	P8QUERY
P8QTRT1	P8QUERY
P8QTRT2	P8QUERY
P8QVCNT	P8QUERY
P8SBADSK	P8SSP
P8SBASIC	P8SSP
P8SBCLID	P8SSP
P8SCA	P8SSP
P8SCMDRT	P8SSP
P8SCND	P8SSP
P8SCP	P8SSP
P8SCRSP	P8SSP
P8SDMSTC	P8SSP
P8SDNID	P8SSP
P8SFLXRT	P8SSP
P8SHIRES	P8SSP

Register P8NBADSK to PVOVFL (continued)

(Sheet 5 of 18)

Register	OM group
P8SINT	P8SSP2
P8SINTL	P8SSP
P8SISW	P8SSP
P8SIZ	P8SSP
P8SLE	P8SSP
P8SLESVC	P8SSP
P8SMREC	P8SSP
P8SNB	P8SSP
P8SOCR	P8SSP
P8SOOB	P8SSP
P8SOOZ	P8SSP
P8SPROER	P8SSP
P8SROUTE	P8SSP
P8SSB	P8SSP
P8SSCOM	P8SSP
P8SSGLNM	P8SSP
P8STOTAL	P8SSP
P8STRSN	P8SSP
P8STRT1	P8SSP
P8STRT2	P8SSP
P8SVCNT	P8SSP
P8TBASIC	P8TEL
P8TBCLID	P8TEL
P8TCA	P8TEL

Register P8NBADSK to PVOVFL (continued)

(Sheet 6 of 18)

Register	OM group
P8TCMDRT	P8TEL
P8TCND	P8TEL
P8TCP	P8TEL
P8TCRSP	P8TEL
P8TDMSTC	P8TEL
P8TDNID	P8TEL
P8TFLXRT	P8TEL
P8THIRES	P8TEL
P8TINT	P8TEL
P8TINTL	P8TEL
P8TISW	P8TEL
P8TIZ	P8TEL
P8TLE	P8TEL
P8TLESVC	P8TEL
P8TNB	P8TEL
P8TOCR	P8TEL
P8TOOB	P8TEL
P8TOOZ	P8TEL
P8TPROER	P8TEL
P8TROUTE	P8TEL
P8TSB	P8TEL
P8TSCOM	P8TEL
P8TSGLNM	P8TEL
P8TTOTAL	P8TEL

Register P8NBADSK to PVOVFL (continued)

(Sheet 7 of 18)

Register	OM group
P8TTRSN	P8TEL
P8TTRT1	P8TEL
P8TTRT2	P8TEL
P8TVCNT	P8TEL
P8XBASIC	P8NXX
P8XBCLID	P8NXX
P8XCA	P8NXX
P8XCMDRT	P8NXX
P8XCND	P8NXX
P8XCP	P8NXX
P8XCRSP	P8NXX
P8XDMSTC	P8NXX
P8XDNID	P8NXX
P8XFLXRT	P8NXX
P8XHIRES	P8NXX
P8XINT	P8NXX
P8XINTL	P8NXX
P8XISW	P8NXX
P8XIZ	P8NXX
P8XLE	P8NXX
P8XLESVC	P8NXX
P8XMREC	P8NXX
P8XNB	P8NXX
P8XOCR	P8NXX

Register P8NBADSK to PVOVFL (continued)

(Sheet 8 of 18)

Register	OM group
P8XOOB	P8NXX
P8XOOZ	P8NXX
P8XPROER	P8NXX
P8XROUTE	P8NXX
P8XSB	P8NXX
P8XSCOM	P8NXX
P8XSGLNM	P8NXX
P8XTOTAL	P8NXX
P8XTRSN	P8NXX
P8XTRT1	P8NXX
P8XTRT2	P8NXX
PABORT	DCOMLINK
PAGINGD	TOPPDID3
PAGINGD2	TOPPDID3
PARSATM2	TOPSPARS
PARSATMP	TOPSPARS
PARSFAIL	TOPSPARS
PARSFAL2	TOPSPARS
PASSWDD	TOPPDID3
PASSWDD2	TOPPDID3
PCBA	TOPPACT2
PCBA2	TOPPACT2
PCBD	TOPPDID3
PCBD2	TOPPDID3

Register P8NBADSK to PVOVFL (continued)

(Sheet 9 of 18)

Register	OM group
PCNFATT	PCNF
PCXRATT	TWCPE
PCXRATT2	TWCPE
PCXRABAN	TWCPE
PCXRFAIL	TWCPE
PDATTMPT	ISDNPDOM
PDCOMPLT	ISDNPDOM
PDFAILRE	ISDNPDOM
PDLM	OFZ2
PDOWN	DCOMLINK
PDTRC	XIPMISC
PERCLFL	LMD
PHWERR	DCOMLINK
PHYQLOGQ	NACDGRP1
PKGSRCV	RTRTCAP
PKGSSNT	RTRTCAP
PKGTMOUT	RTRTCAP
PKTRC2	XIPMISC
PKTRCER	XIPMISC
PKTSN	XIPMISC
PKTSN2	XIPMISC
PKTSNER	XIPMISC
PM1ERR	PM1
PM1FLT	PM1

Register P8NBADSK to PVOVFL (continued)

(Sheet 10 of 18)

Register	OM group
PM1INITS	PM1
PM1LOAD	PM1
PM1MBU	PM1
PM1SBU	PM1
PM2CCTER	PM2
PM2CCTFL	PM2
PM2CCTMB	PM2
PM2CCTSB	PM2
PM2CXFR	PM2
PM2ECXFR	PM2
PM2ERR	PM2
PM2FLT	PM2
PM2INITS	PM2
PM2LOAD	PM2
PM2MBTCO	PM2
PM2MCXFR	PM2
PM2MMBU	PM2
PM2MSBU	PM2
PM2MWXFR	PM2
PM2PSERR	PM2
PM2PSFLT	PM2
PM2RGERR	PM2
PM2RGFLT	PM2
PM2SBTCO	PM2

Register P8NBADSK to PVOVFL (continued)

(Sheet 11 of 18)

Register	OM group
PM2SCXFR	PM2
PM2SWXFR	PM2
PM2UMBU	PM2
PM2USBU	PM2
PMAVAIL	PMSTAT
PMAVCP	PMSTAT
PMAVOC	PMSTAT
PMCCTDG	PM
PMCCTFL	PM
PMCCTOP	PM
PMCLKBSY	CM
PMCNDBSY	CM
PMCRC	PMMSGCNT
PMDRERR	PM
PMDRFLT	PM
PMDRMBU	PM
PMDRSBU	PM
PMERR	PM
PMFAULT	CDCOM
PMFLT	PM
PMINTEG	PM
PMLOWOC	PMSTAT
PMMBP	PM
PMMBTCO	PM

Register P8NBADSK to PVOVFL (continued)

(Sheet 12 of 18)

Register	OM group
PMMCXFR	PM
PMMMBU	PM
PMMSBU	PM
PMMWXFR	PM
PMNACK	PMMSGCNT
PMORIGS	XPMOCC
PMOVHEAD	PMSTAT
PMPEAKOC	PMSTAT
PMPSERR	PM
PMPSFLT	PM
PMRGERR	PM
PMRGFLT	PM
PMSBP	PM
PMSBTCO	PM
PMSCXFR	PM
PMSGIPC	XPMOVLD
PMSWERCT	LOGS
PMSWXFR	PM
PMTCCTDG	PMTYP
PMTCCTFL	PMTYP
PMTCCTOP	PMTYP
PMTDRERR	PMTYP
PMTDRFLT	PMTYP
PMTDRMBU	PMTYP

Register P8NBADSK to PVOVFL (continued)

(Sheet 13 of 18)

Register	OM group
PMTDRSBU	PMTYP
PMTERMS	XPMOCC
PMTERR	PMTYP
PMTFLT	PMTYP
PMTINTEG	PMTYP
PMTMBP	PMTYP
PMTMBTCO	PMTYP
PMTMCXFR	PMTYP
PMTMMBU	PMTYP
PMTMSBU	PMTYP
PMTMWXFR	PMTYP
PMTPSERR	PMTYP
PMTPSFLT	PMTYP
PMTRAPCT	LOGS
PMTRGERR	PMTYP
PMTRGFLT	PMTYP
PMTSBP	PMTYP
PMTSBTCO	PMTYP
PMTSCXFR	PMTYP
PMTSWXFR	PMTYP
PMTUMBU	PMTYP
PMTUSBU	PMTYP
PMUMBU	PM
PMUSBU	PM

Register P8NBADSK to PVOVFL (continued)

(Sheet 14 of 18)

Register	OM group
PORGDENY	PMOVLD
PORGDLY	XPMOVLD
PORGIPC	XPMOVLD
PORGLCM	XPMOVLD
PORGMISC	XPMOVLD
PORGMSG	XPMOVLD
PORGPTQ	XPMOVLD
PORGSLLC	XPMOVLD
PORTERR	CDCOM
PORTSTD	TOPPDID3
PORTSTD	TOPPDID3
PORTSTD2	TOPPDID3
POSACS	TOPSMISC
POSD	TOPSMTCE
POSDATD	TOPPDID4
POSDATD2	TOPPDID4
POSDF	TOPSMTCE
POSDMDF	TOPSMTCE
POSINFD	TOPPDID5
POSINFD2	TOPPDID5
POSMSG	QMSMIS
POSNUMA	TOPPACT2
POSNUMA2	TOPPACT2
POSOCC	TOPSUSE

Register P8NBADSK to PVOVFL (continued)

(Sheet 15 of 18)

Register	OM group
POSOCCO	TOPSUSE
POSRQSTD	TOPSQMS
POSSTA	TOPPACT2
POSSTA2	TOPPACT2
POSSTD	TOPPDID4
POSSTD2	TOPPDID4
POSTMTCE	TOPSUSE
POSTRKDF	TOPSMTCE
POTSLIN	LINEREF
POTSLINE	LCD
PRAQATT	QMSDATA
PRAQDEPT	QMSDATA
PRDCRC	PRADCHL2
PRDDISCR	PRADCHL2
PRDDISCT	PRADCHL2
PRDREJRX	PRADCHL2
PRDREJTX	PRADCHL2
PRDRNRRX	PRADCHL2
PRDRNRTX	PRADCHL2
PRDSBMRX	PRADCHL2
PRDSBMTX	PRADCHL2
PRDSORX	PRADCHL2
PRDSOTX	PRADCHL2
PRERTEAB	TRK

Register P8NBADSK to PVOVFL (continued)

(Sheet 16 of 18)

Register	OM group
PREU	TRK
PRFLSHED	PRADCHL2
PRIMRY	TOPSARU
PRIMRY2	TOPSARU
PRIMSEC	TOPSARU
PRIMSEC2	TOPSARU
PRIVLN_C	SRCDISP
PRMTABD2	MDSSTATS
PRMTSTP2	MDSSTATS
PRNACT	MWTCAR2
PRNRACT	MWTCAR2
PRNRDACT	MWTCAR2
PRPCNT	PRP
PRPCNT	PRP
PRSPARE1	TRMTPR
PRSPARE2	TRMTPR
PRSPARE3	TRMTPR
PRSPARE4	TRMTPR
PRSPARE5	TRMTPR
PRSPARE6	TRMTPR
PRSPARE7	TRMTPR
PRSPARE8	TRMTPR
PRSPARE9	TRMTPR
PRSPARE10	TRMTPR

Register P8NBADSK to PVOVFL (continued)

(Sheet 17 of 18)

Register	OM group
PRSPARE11	TRMTPR
PRSPARE12	TRMTPR
PRSPARE13	TRMTPR
PRSPARE14	TRMTPR
PRSPARE15	TRMTPR
PRSPARE16	TRMTPR
PRSPARE17	TRMTPR
PRSPARE18	TRMTPR
PRSPARE19	TRMTPR
PRSPARE20	TRMTPR
PRSPARE21	TRMTPR
PRSPARE22	TRMTPR
PRSPARE23	TRMTPR
PRSPARE24	TRMTPR
PRTFTNA	TOPPACT2
PRTFTNA2	TOPPACT2
PSAVAILK	STORE
PSAVAILM	STORE
PSCRCD	C6LINK
PSGM	OFZ2
PSLAA	XPMLNK
PSLBLK	XPMLNK
PSLCBU	XPMLNK
PSLMU	XPMLNK

Register P8NBADSK to PVOVFL (end)

(Sheet 18 of 18)

Register	OM group
PSTIMOUT	TOPSMISC
PSUSEDK	STORE
PSUSEDM	STORE
PSYNC	DCOMLINK
PTERR	FRSAGENT
PTRMDENY	PMOVLD
PTRMDLY	XPMOVLD
PTRMMISC	XPMOVLD
PTRMMSG	XPMOVLD
PTRMPTQ	XPMOVLD
PTWCABDN	TWCPE
PTWCATT	TWCPE
PTWCATT2	TWCPE
PTWCDENY	TWCPE
PTWCOVFL	TWCPE
PVOVFL	PMMSGCNT

Register QABDN to QWPSN

Register QABDN to QWPSNT

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 4)

Register	OM group
QERYSENT	NSSTCAP
QMSCFAIL	TOPSRTRS
QMSCRATE	TOPSRTRS
QPBKLG	SCPQPUTM
QPBKLGU	SCPQPUTM
QPDBCF	SCPQPUTM
QPDBIT	SCPQPUTM
QPDISC	SCPQPQTC
QPDISC2	SCPQPQTC
QPDISFQ	SCPQPQTC
QPDISFQ2	SCPQPQTC
QPDSCOS	SCPQPQTC
QPDSCOS2	SCPQPQTC
QPG1000	SCPQPQTT
QPG10002	SCPQPQTT
QPISIT	SCPQPQTM
QPITU	SCPQPQTM
QPM0025	SCPQPQTT
QPM00252	SCPQPQTT
QPM0050	SCPQPQTT
QPM00502	SCPQPQTT
QPM0100	SCPQPQTT

Register QABDN to QWPSN (continued)

(Sheet 2 of 4)

Register	OM group
QPM01002	SCPQPQTT
QPM0150	SCPQPQTT
QPM01502	SCPQPQTT
QPM0200	SCPQPQTT
QPM02002	SCPQPQTT
QPM0300	SCPQPQTT
QPM03002	SCPQPQTT
QPM0500	SCPQPQTT
QPM05002	SCPQPQTT
QPM0750	SCPQPQTT
QPM07502	SCPQPQTT
QPM1000	SCPQPQTT
QPM10002	SCPQPQTT
QPMSRBU	SCPQPQTM
QPNASU	SCPQPQTM
QPNAU	SCPQPQTM
QPOBSOL	SCPQPQTM
QPOSBKLG	SCPQPQTM
QPQCG	SCPQPQTM
QPQCGU	SCPQPQTM
QPQREC	SCPQPQTC
QPQREC2	SCPQPQTC
QPQTCTV	SCPQPQTC
QPQTMCT	SCPQPQTM

Register QABDN to QWPSN (continued)

(Sheet 3 of 4)

Register	OM group
QPQTMTV	SCPQPQTM
QPQTRTTV	SCPQPQTT
QPQUISIT	SCPQUMTC
QPQUITU	SCPQUMTC
QPQUSSMB	SCPQUMTC
QPQUSSNA	SCPQUMTC
QPQUSSRB	SCPQUMTC
QPQUSSSB	SCPQUMTC
QPRBU	SCPQPQTM
QPRECCG	SCPQPQTC
QPRECCG2	SCPQPQTC
QPRSPST	SCPQPQTC
QPRSPST2	SCPQPQTC
QPSSMB	SCPQPQTM
QPSSNA	SCPQPQTM
QPSSRB	SCPQPQTM
QPSSSB	SCPQPQTM
QPSTDAPL	SCPQPUTM
QPSTDDIS	SCPQPUTM
QPUDTCT	SCPQPUTM
QPUDTTV	SCPQPUTM
QPUMTCCT	SCPQUMTC
QPUMTCTV	SCPQUMTC
QRYATT	EBSMSGCT

Register QABDN to QWPSN (end)

(Sheet 4 of 4)

Register	OM group
QRYFAIL	EBSMSGCT
QRYPROCD	NSSTCAP
QRYRECD	NACDGRP2
QRYSENT	NACDGRP2
QTOTAL	IBNSG
QUEMSG	QMSMIS
QUERIES	DSINWTS
QUERYA	TOPPACT2
QUERYA2	TOPPACT2
QUERYD	TOPPDID4
QUERYD2	TOPPDID4
QWPSNT	RTRTCAP

Register R1_CAT to RXPK3FB1

Register R1_CAT to RXPK3FB1

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 13)

Register	OM group
R1_CAT	SRCDISP
R2CBQABN	OHQCBQR2
R2CBQDEA	OHQCBQR2
R2CBQDEL	OHQCBQR2
R2CBQOK	OHQCBQR2
R2CBQOVF	OHQCBQR2
R2CBQOWR	OHQCBQR2
R2CBQPPT	OHQCBQR2
R2CBQRAT	OHQCBQR2
R2OHQBLK	OHQCBQR2
R2OHQOFR	OHQCBQR2
R2OHQOVF	OHQCBQR2
R2_CAT	SRCDISP
R3CBQDEA	OHQCBQR3
R3CBQDEL	OHQCBQR3
R3CBQOK	OHQCBQR3
R3CBQOVF	OHQCBQR3
R3CBQOWR	OHQCBQR3
R3CBQPPT	OHQCBQR3
R3CBQRAT	OHQCBQR3
R3OHQABN	OHQCBQR3
R3OHQBLK	OHQCBQR3

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 2 of 13)

Register	OM group
R3OHQOFR	OHQCBQR3
R3OHQOVF	OHQCBQR3
R4CBQDEA	OHQCBQR4
R4CBQDEA	OHQCBQR4
R4CBQDEL	OHQCBQR4
R4CBQOK	OHQCBQR4
R4CBQOVF	OHQCBQR4
R4CBQDEA	OHQCBQR4
R4CBQDEL	OHQCBQR4
R4CBQOK	OHQCBQR4
R4CBQOVF	OHQCBQR4
R4CBQOWR	OHQCBQR4
R4CBQPPT	OHQCBQR4
R4CBQRAT	OHQCBQR4
R4OHQABN	OHQCBQR4
R4OHQBLK	OHQCBQR4
R4OHQOFR	OHQCBQR4
R4OHQOVF	OHQCBQR4
RACU	C6LINK
RADLDLYP	RADR
RADTESTC	RADR
RADUDLYP	RADR
RAGABDN	RAG
RAGACT	RAG

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 3 of 13)

Register	OM group
RAGCERR	RAG
RAGDACT	RAG
RAGINTG	RAG
RAGOVFL	RAG
RAGUSGE	RAG
RATESTA	TOPPACT2
RATESTA2	TOPPACT2
RATESTD	TOPPDID4
RATESTD2	TOPPDID4
RCFDFLD	RCF
RCFOFFRD	RCF
RCFUSAG	RCF
RCHDABD	RCHDOPT
RCHDATT	RCHDOPT
RCHDOVFL	RCHDOPT
RCHDTEX	RCHDOPT
RCSDP_D	SITE2
RCSDP_D2	SITE2
RCSDP_T	SITE2
RCSDP_T2	SITE2
RCSDT_D	SITE2
RCSDT_D2	SITE2
RCSDT_T	SITE2
RCSDT_T2	SITE2

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 4 of 13)

Register	OM group
RCTDP_D	SITE
RCTDP_D2	SITE
RCTDP_T	SITE
RCTDP_T2	SITE
RCTDT_D	SITE
RCTDT_D2	SITE
RCTDT_T	SITE
RCTDT_T2	SITE
RCTRLFA	SPRING
RCTRLLA	SPRING
RCTRLRA	SPRING
RCTRLSLA	SPRING
RTCRLSRA	SPRING
RCUDP_D	SITE2
RCUDP_D2	SITE2
RCUDP_T	SITE2
RCUDP_T2	SITE2
RCUDT_D	SITE2
RCUDT_D2	SITE2
RCUDT_T	SITE2
RCUDT_T2	SITE2
RCUKS_D	SITE
RCUKS_D2	SITE2
RCUKS_T	SITE2

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 5 of 13)

Register	OM group
RCUKS_T2	SITE2
RCVDSUCC	PMMSGCNT
RCVMBU	RCVR
RCVOVFL	RCVR
RCVQABAN	RCVR
RCVQOCC	RCVR
RCVQOVFL	RCVR
RCVSBU	RCVR
RCVSZ2	RCVR
RCVSZRS	RCVR
RCVTRU	RCVR
RCVTRU2	RCVR
RDTDP_D	SITE2
RDTDP_D2	SITE2
RDTDP_T	SITE2
RDTDP_T2	SITE2
RDTDT_D	SITE2
RDTDT_D2	SITE2
RDTDT_T	SITE2
RDTDT_T2	SITE2
RDTKS_D	SITE2
RDTKS_D2	SITE2
RDTKS_T	SITE2
RDTKS_T2	SITE2

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 6 of 13)

Register	OM group
RDYAGRE	SCAISRV2
RDYAGRR	SCAISRV2
RECABDN	IREC
RECACT	IREC
RECALLS	IBNSG
RECCERR	IREC
RECCIGNR	SCAISERV
RECCRE	SCAISERV
RECFAIL	ADASAPU
RECMDOVF	DCRDEST
RECOVFL	IREC
RECUSGE	IREC
RECYCCLR	MTRPERF
RECYCFND	MTRPERF
REJCNGST	PRAFAC
REJMSGDS	PRAFAC
REJMSGOR	PRAFAC
REJMSGTM	PRAFAC
REJMSGTR	PRAFAC
REJNORTX	PRAFAC
REJRCV	RTRTCAP
REJRECD	NACDGRP2
REJRTUNA	PRAFAC
REJSENT	NACDGRP2

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 7 of 13)

Register	OM group
REQSTANN	TOPSAICC
REQSTNIL	TOPSAICC
RERQ	C6VFL
RESENDTO	NACDGRP2
RESETL2	MPCBASE
RESETL3	MPCBASE
RESQRYRE	SCAISERV
RESQRYRR	SCAISERV
RESRVDTO	NACDGRP2
RESUNAV	PRIMWIC
RETANRE	OAPCP
RETANRQ	OAPCP
RETANRS	OAPCP
REVERT	LMD
REXMTREQ	N6LINK
RFAIERR	PCMCARR
RFAIFLT	PCMCARR
RGADEACT	IBNGRP
RGADELTN	IBNGRP
RGAOVWRT	IBNGRP
RINGATT	CMG
RIRECD	NACDGRP2
RIREPLYR	NACDGRP2
RIREPLYS	NACDGRP2

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 8 of 13)

Register	OM group
RISENT	NACDGRP2
RJSNT	RTRTCAP
RLSFWD	TOPSTRAF
RMAIERR	PCMCARR
RMAIFLT	PCMCARR
RMBRIOOS	RMSGOMGP
RNAACTIV	SDS
RNAOFFER	SDS
RNAOOSP2	MDSSTATS
RNDDEL	RND
RNDDEL2	RND
RNDODEL	RND
RNDODEL2	RND
RNDPDEL	RND
RNDPDEL2	RND
RNUPDRE	OAPCP
RNUPDRQ	OAPCP
RNUPDRS	OAPCP
ROAPCON	ROAPPL
ROAPCONF	ROAPPL
ROAPFLOG	ROAPPL
ROAPIC	ROAPPL
ROAPLOGA	ROAPPL
ROAPOG	ROAPPL

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 9 of 13)

Register	OM group
ROAPUSE	ROAPPL
ROCON	ROMISC
ROCONF	ROMISC
ROMFLOG	ROMISC
ROMLOGA	ROMISC
ROMTERM	ROMISC
RONATT	TOPSRON
RONITBL	TOPSMISC
RONQABN	TOPSRON
RONRECL	TOPSRON
RORIGOUT	SITE
RRTCNT	RRTE
RSCIRALL	RSCIR
RSCIRALT	RSCIR
RSCIRATL	RSCIR
RSCIRATT	RSCIR
RSCIRBLL	RSCIR
RSCIRBLT	RSCIR
RSCIRBTL	RSCIR
RSCIRBTT	RSCIR
RSCIRCBU	RSCIR
RSCISALL	RSCIS
RSCISALT	RSCIS
RSCISATL	RSCIS

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 10 of 13)

Register	OM group
RSCISATT	RSCIS
RSCISBLL	RSCIS
RSCISBLT	RSCIS
RSCISBTL	RSCIS
RSCISBTT	RSCIS
RSCISCBU	RSCIS
RSPTMOUT	AIN
RSRVAGRE	SCAISRV3
RSRVAGRR	SCAISRV3
RSSPARE1	TRMTRS
RSSPARE2	TRMTRS
RSSPARE3	TRMTRS
RSSPARE4	TRMTRS
RSSPARE5	TRMTRS
RSSPARE6	TRMTRS
RSSPARE7	TRMTRS
RSSPARE8	TRMTRS
RSSPARE9	TRMTRS
RSSPARE10	TRMTRS
RSSPARE11	TRMTRS
RSSPARE12	TRMTRS
RSSPARE13	TRMTRS
RTCBQDEA	OHQCBQRT
RTCBQDEL	OHQCBQRT

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 11 of 13)

Register	OM group
RTCBQOK	OHQCBQRT
RTCBQOVF	OHQCBQRT
RTCBQOWR	OHQCBQRT
RTCBQPPT	OHQCBQRT
RTCBQRAT	OHQCBQRT
RTEA7AT	RTEASUM
RTEA7AT2	RTEASUM
RTEAATT	RTEASUM
RTEAATT2	RTEASUM
RTECCLLRE	SCAISRV2
RTECCLLRR	SCAISRV2
RTERNRES	RTRTCAP
RTERRRCV	RTRTCAP
RTERRSNT	RTRTCAP
RTNETQUY	RTFEAT
RTOATT	RTLTSUM
RTOATT2	RTLTSUM
RTOHQABN	OHQCBQRT
RTOHQBLK	OHQCBQRT
RTOHQOFR	OHQCBQRT
RTOHQOVF	OHQCBQRT
RTPBXLA	RTFEAT
RTPBXLA2	RTFEAT
RTPBXTA	RTFEAT

Register R1_CAT to RXPK3FB1 (continued)

(Sheet 12 of 13)

Register	OM group
RTPBXTA2	RTFEAT
RTPVNLA	RTFEAT
RTPVNLA2	RTFEAT
RTPVNTA	RTFEAT
RTPVNTA2	RTFEAT
RTRNETCG	RTRSCCP
RTRNEETFL	RTRSCCP
RTRNISN	CPICG
RTRNOXLA	RTRSCCP
RTRNOXLAS	RTRSCCP
RTRSUBCG	RTRSCCP
RTRSUBFL	RTRSCCP
RTRUNEQJ	RTRSCCP
RTTATT	RTLTSUM
RTTATT2	RTLTSUM
RXOC1FB0	FBTRAFF
RXOC2FB0	FBTRAFF
RXOC3FB0	FBTRAFF
RXOC1FB1	FBTRAFF
RXOC2FB1	FBTRAFF
RXOC3FB1	FBTRAFF
RXPCFB0	FBTRAFF
RXPCFB1	FBTRAFF
RXPK1FB0	FBTRAFF

Register R1_CAT to RXPK3FB1 (end)

(Sheet 13 of 13)

Register	OM group
RXPK2FB0	FBTRAFF
RXPK3FB0	FBTRAFF
RXPK1FB1	FBTRAFF
RXPK2FB1	FBTRAFF
RXPK3FB1	FBTRAFF

Register SA8AFCM2 to SYSWINIT

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 19)

Register	OM group
SA8AFCM2	SA8AQP
SA8AFCMA	SA8AQP
SA8AFCU2	SA8AQP
SA8AFCUM	SA8AQP
SA8AINV2	SA8AQP
SA8AINVD	SA8AQP
SA8ANPR2	SA8AQP
SA8ANPRC	SA8AQP
SA8APCM2	SA8AQP
SA8APCMA	SA8AQP
SA8APCU2	SA8AQP
SA8APCUM	SA8AQP
SA8ATOT2	SA8AQP
SA8ATOTL	SA8AQP
SA8ATRS2	SA8AQP
SA8ATRSN	SA8AQP
SA8AVCN2	SA8AQP
SA8AVCNT	SA8AQP
SACBACT	SACB
SACBDACT	SACB
SACBEPIN	SACB
SACBIPIN	SACB

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 2 of 19)

Register	OM group
SACBTNOR	SACB
SACTINF	OAPCALP9
SACTINF2	OAPCALP9
SACU	C6LINK
SAFDFCM2	SAFDQP
SAFDFCMA	SAFDQP
SAFDFCU2	SAFDQP
SAFDFCUM	SAFDQP
SAFDINV2	SAFDQP
SAFDINVD	SAFDQP
SAFDNPR2	SAFDQP
SAFDNPRC	SAFDQP
SAFDPCM2	SAFDQP
SAFDPCMA	SAFDQP
SAFDPCU2	SAFDQP
SAFDPCUM	SAFDQP
SAFDTOT2	SAFDQP
SAFDTOTL	SAFDQP
SAFDTRS2	SAFDQP
SAFDTRSN	SAFDQP
SAFDVCN2	SAFDQP
SAFDVCNT	SAFDQP
SAIDFCM2	SAIDQP
SAIDFCMA	SAIDQP

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 3 of 19)

Register	OM group
SAIDFCU2	SAIDQP
SAIDFCUM	SAIDQP
SAIDINV2	SAIDQP
SAIDINVD	SAIDQP
SAIDNPR2	SAIDQP
SAIDNPRC	SAIDQP
SAIDPCM2	SAIDQP
SAIDPCMA	SAIDQP
SAIDPCU2	SAIDQP
SAIDPCUM	SAIDQP
SAIDTOT2	SAIDQP
SAIDTOTL	SAIDQP
SAIDTRS2	SAIDQP
SAIDTRSN	SAIDQP
SAIDVCN2	SAIDQP
SAIDVCNT	SAIDQP
SAMRVD	N6LINK
SAMXMT	N6LINK
SAUDFCM2	SAUDQP
SAUDFCMA	SAUDQP
SAUDFCU2	SAUDQP
SAUDFCUM	SAUDQP
SAUDINV2	SAUDQP

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 4 of 19)

Register	OM group
SAUDINVD	SAUDQP
SAUDNPR2	SAUDQP
SAUDNPRC	SAUDQP
SAUDPCM2	SAUDQP
SAUDPCMA	SAUDQP
SAUDPCU2	SAUDQP
SAUDPCUM	SAUDQP
SAUDTOT2	SAUDQP
SAUDTOTL	SAUDQP
SAUDTRS2	SAUDQP
SAUDTRSN	SAUDQP
SAUDVCN2	SAUDQP
SAUDVCNT	SAUDQP
SAVDFCM2	SAVDQP
SAVDFCU2	SAVDQP
SAVDFCUM	SAVDQP
SAVDINV2	SAVDQP
SAVDINVD	SAVDQP
SAVDNPR2	SAVDQP
SAVDNPRC	SAVDQP
SAVDPCM2	SAVDQP
SAVDPCMA	SAVDQP
SAVDPCU2	SAVDQP
SAVDPCUM	SAVDQP

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 5 of 19)

Register	OM group
SAVDTOT2	SAVDQP
SAVDTOTL	SAVDQP
SAVDTRS2	SAVDQP
SAVDTRSN	SAVDQP
SAVDVCN2	SAVDQP
SAVDVCNT	SAVDQP
SAVOCIIN	SAVFOQP
SAVOCIV1	SAVFOQP
SAVOCIV2	SAVFOQP
SAVOCNIN	SAVFOQP
SAVOCNVC	SAVFOQP
SAVONPRC	SAVFOQP
SAVONTR1	SAVFOQP
SAVONTR2	SAVFOQP
SAVOQUE1	SAVFOQP
SAVOQUE2	SAVFOQP
SAVOSIIN	SAVFOQP
SAVOSIVC	SAVFOQP
SAVOTRL1	SAVFOQP
SAVOTRL2	SAVFOQP
SAVOUPR1	SAVFOQP
SAVOUPR2	SAVFOQP
SAVTCIIN	SAVFTQP
SAVTCIV1	SAVFTQP

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 6 of 19)

Register	OM group
SAVTCIV2	SAVFTQP
SAVTCNIN	SAVFTQP
SAVTCNVC	SAVFTQP
SAVTNPRC	SAVFTQP
SAVTNTR1	SAVFTQP
SAVTNTR2	SAVFTQP
SAVTQUE1	SAVFTQP
SAVTQUE2	SAVFTQP
SAVTSIIN	SAVFTQP
SAVTSIVC	SAVFTQP
SAVTTRL1	SAVFTQP
SAVTTRL2	SAVFTQP
SAVTUPR1	SAVFTQP
SAVTUPR2	SAVFTQP
SBERROR	TTCCARR
SBFAULT	TTCCARR
SBU	TRK
SCAACT	SCA
SCAAUNV	SCA
SCADACT	SCA
SCADENY	SCA
SCADUNV	SCA
SCAEATT	SCA
SCAEDEN	SCA

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 7 of 19)

Register	OM group
SCAEOVF	SCA
SCAEUSG	SCA
SCASAT	SCA
SCASAT2	SCA
SCASBLK	SCA
SCASDEN	SCA
SCASRJT	SCA
SCASRJT2	SCA
SCASTRM	SCA
SCAUNIV	SCA
SCFACT	SCF
SCFAUNV	SCF
SCFDACT	SCF
SCFDENY	SCF
SCFDUNV	SCF
SCFEATT	SCF
SCFEDEN	SCF
SCFEOVF	SCF
SCFEUSG	SCF
SCFFAIL	SCF
SCFFWD	SCF
SCFFWD2	SCF
SCFOVFL	SCF
SCFSAT	SCF

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 8 of 19)

Register	OM group
SCFSAT2	SCF
SCFSBLK	SCF
SCFSDEN	SCF
SCFSOVFL	SCF
SCFUNIV	SCF
SCICQHI1	SCAITRAN
SCICQHI2	SCAITRAN
SCICQHI3	SCAITRAN
SCICQHI4	SCAITRAN
SCICQHI5	SCAITRAN
SCICQHI6	SCAITRAN
SCICQHI7	SCAITRAN
SCICQHI8	SCAITRAN
SCLATT	SPEEDCAL
SCLFAIL	SPEEDCAL
SCNDLOFR	DCRLINK
SCNDLOVF	DCRLINK
SCNLOVF	DCRMISC
SCOGQHI1	SCAITRAN
SCOGQHI2	SCAITRAN
SCOGQHI3	SCAITRAN
SCOGQHI4	SCAITRAN
SCOGQHI5	SCAITRAN
SCOGQHI6	SCAITRAN

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 9 of 19)

Register	OM group
SCOGQHI7	SCAITRAN
SCOGQHI8	SCAITRAN
SCPAATT	SCPOTS
SCPADENY	SCPOTS
SCPAOVFL	SCPOTS
SCPFATT	SCPOTS
SCPFDENY	SCPOTS
SCREPLYR	NACDGRP2
SCREPLYS	NACDGRP2
SCRJACT	SCRJ
SCRJAUNV	SCRJ
SCRJDACT	SCRJ
SCRJDENY	SCRJ
SCRJDUNV	SCRJ
SCRJEATT	SCRJ
SCRJEDEN	SCRJ
SCRJEOVF	SCRJ
SCRJEUSG	SCRJ
SCRJSAT	SCRJ
SCRJSAT2	SCRJ
SCRJSBLK	SCRJ
SCRJSDEN	SCRJ
SCRJSRJT	SCRJ
SCRJUNIV	SCRJ

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 10 of 19)

Register	OM group
SCSATT	SPEEDCAL
SCSFAIL	SPEEDCAL
SCWDATTS	CNDXPM
SCWDCOMP	CNDXPM
SCWDFAIL	CNDXPM
SCWDNAKA	CNDXPM
SCWDNAKR	CNDXPM
SCWDNUTR	CNDXPM
SCWDNYDS	CND
SCWDOVLP	CNDXPM
SCWIDDEL	CND
SDNBCNT	EKTSOMS
SDNBUSG	EKTSOMS
SDNBOVER	EKTSOMS
SECINVAL	IBNGRP
SECNDRY	TOPSARU
SECNDRY2	TOPSARU
SECPRIM	TOPSARU
SECPRIM2	TOPSARU
SEEACC	SETRAF
SEEACC2	SETRAF
SEEACCE	SETRAF
SEIUMSGI	SEIUTRAN
SEIUMSGO	SEIUTRAN

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 11 of 19)

Register	OM group
SEIUQINC	SEIUTRAN
SEIUQOUG	SEIUTRAN
SENEACC	SETRAF
SENEACC2	SETRAF
SENEACCE	SETRAF
SEQATT	CDMCCS
SEQFAIL	CDMCCS
SEQQRY	CDMCCS
SERIALRC	IBNSG
SERVA	TOPPACT2
SERVA2	TOPPACT2
SETCONRE	SCAISRV3
SETCONRR	SCAISRV3
SETFTRRE	SCAISRV2
SETNFAIL	ADASAPU
SETOFHKU	SCAISRV2
SETOT	SETRAF
SETOT2	SETRAF
SICQFAIL	SCAITRAN
SIGLERR	PCMCARR
SIGLFLT	PCMCARR
SILENR1	ADASAPU
SILENR2	ADASAPU
SIMRACT	SIMRING

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 12 of 19)

Register	OM group
SIMRDACT	SIMRING
SIMREATT	SIMRING
SIMREDEN	SIMRING
SIMREOVF	SIMRING
SIMRFAIL	SIMRING
SIMRINV	SIMRING
SIMSGLST	SCAITRAN
SLIPERR	PCMCARR
SLIPFLT	PCMCARR
SLIPPERR	M20CARR1
SLIPPFLT	M20CARR1
SLLCOGD	SLLCOM
SLLCOTG	SLLCOM
SLLKBAD	SLLNKINC
SLLNKIOF	SLLNKINC
SLLNKIOK	SLLNKINC
SLLNKIOV	SLLNKINC
SLLNKIQU	SLLNKINC
SLLNKOK	SLLNK
SLLNKOVF	SLLNK
SLLNKQU	SLLNK
SLMFLT	SLM
SLMMBSU	SLM
SLMSBSU	SLM

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 13 of 19)

Register	**OM group**
SLOWSAMP	USAGSAMP
SLPERROR	TTCCARR
SLPFAULT	TTCCARR
SLQABNDN	SLQ
SLQANSR	SLQ
SLQBLOCK	SLQ
SLQDFLCT	SLQ
SLQOFFR	SLQ
SLVPHOLD	SLVPOPT
SLVPINT	SLVPOPT
SLVPTRAN	SLVPOPT
SMEATTS	SME
SMEATTS2	SME
SMEOVFL	SME
SMEPEAK	SME
SMESEIZ	SME
SMESEIZ2	SME
SNT2ALT	TOPSCCAB
SOFTFAIL	SDS
SOGQFAIL	SCAITRAN
SOMSGLST	SCAITRAN
SOTSNCBN	SOTS
SOTSNCID	SOTS
SOTSNCIM	SOTS

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 14 of 19)

Register	OM group
SOTSNCIT	SOTS
SOTSNCLT	SOTS
SOTSNCOF	SOTS
SOTSNCON	SOTS
SOTSNCOT	SOTS
SOTSNCRT	SOTS
SOTSNCTC	SOTS
SOTSNOCS	SOTS
SOTSPDLM	SOTS
SOTSPSGM	SOTS
SOUTMFL	SOTS
SOUTNWT	SOTS
SOUTNWWT2	SOTS
SOUTOSF	SOTS
SOUTRMFL	SOTS
SOUTROSF	SOTS
SPAREKB	STORE
SPAREMB	STORE
SPCLCCT	IBNSG
SPCNAUAT	SPC
SPCNAUSU	SPC
SPCNTCAT	SPC
SPCNTCSU	SPC
SPDISCAU	SPC

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 15 of 19)

Register	OM group
SPDISCTC	SPC
SPDUNVL	AUTSPID
SPLCLREQ	QMSACT
SPLNUMA	TOPPACT2
SPLNUMA2	TOPPACT2
SPLVRFY	TOPSTRAF
SPPLIMEX	SPP
SPPNOMAT	SPP
SPPNOVER	SPP
SPPPROG	SPP
SPPRETRY	SPP
SPPSUCC	SPP
SPSZ	TOPSPSZ
SRA_ATT	SRAOM
SRA_BUSY	SRAOM
SRA_DISC	SRAOM
SRA_INTR	SRAOM
SRA_LOPT	SRAOM
SRA_SECU	SRAOM
SRA_TCAL	SRAOM
SRA_TOH	SRAOM
SRA_USE	SRAOM
SRGACMPL	IBNGRP
SRVBLLD	TOPPDID4

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 16 of 19)

Register	OM group
SRVBLLD2	TOPPDID4
SRVCIDD	TOPPDID4
SRVCIDD2	TOPPDID4
SRVCOMPR	NACDGRP2
SRVCOMPS	NACDGRP2
SRVLOGA	TOPPACT2
SRVLOGA2	TOPPACT2
SRVLOGD	TOPPDID4
SRVLOGD2	TOPPDID4
SRVNUMA	TOPPACT2
SRVNUMA2	TOPPACT2
SRVOPTD	TOPPDID4
SRVOPTD2	TOPPDID4
SRVVRD	TOPPDID4
SRVVRD2	TOPPDID4
SSYLOSSU	CPU
STACLSD	TOPPDID4
STACLSD2	TOPPDID4
STRACC2	MDSSTATS
STGOPEG	EASHTRK
STGOVFL	EASHTRK
STGUSG	EASHTRK
STKCOINS	LMD
STNATT2	STN

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 17 of 19)

Register	OM group
STNATTS	STN
STNMBU	STN
STNMTCHF	STN
STNOVFL	STN
STNSBU	STN
STNSTN	IBNGRP
STNTRU	STN
STNTRU2	STN
STOTMSGI	SCAITRAN
STOTMSGO	SCAITRAN
STRMBLK	SOTS
STRMGSGI	SOTS
STRMMFL	SOTS
STRMNWT	SOTS
STRMRBLK	SOTS
SUCREPLY	DSINWTS
SUERROR	N6LINK
SUIE	C6VFL
SUSOFLOW	SDS
SUSTOCLR	SDS
SUSTOMON	SDS
SVAVLCT	SCPSVAVL
SVAVLTV	SCPSVAVL
SVCMBU	SVCT

Register SA8AFCM2 to SYSWINIT (continued)

(Sheet 18 of 19)

Register	OM group
SVCOVFL	SVCT
SVCQABAN	SVCT
SVCQOCC	SVCT
SVCQOVFL	SVCT
SVCSBU	SVCT
SVCSZ2	SVCT
SVCSZRS	SVCT
SVCTRU	SVCT
SVCTRU2	SVCT
SVLQPQTU	SCPSVAVL
SVLQPUDU	SCPSVAVL
SVQCG	SCPSVAVL
SVQCGU	SCPSVAVL
SVUPBLG	SCPSVAVL
SVUPBLGU	SCPSVAVL
SWCCERR	ICONF
SWCDENY	ICONF
SWCOVFL	ICONF
SWCUSGE	ICONF
SWERRCT	LOGS
SYNCLOSS	CPU
SYSABDN	OTS
SYSBCARR	TTCCARR
SYSCINIT	CPU

Register SA8AFCM2 to SYSWINIT (end)

(Sheet 19 of 19)

Register	OM group
SYSFSET	OTS
SYSLKT	OTS
SYSOUT	OTS
SYSTIMD	TOPPDID4
SYSTIMD2	TOPPDID4
SYSTRM	OTS
SYSTRMT	OTS
SYSWINIT	CPU
See PRP	PRP

Register T4TIMEOUT to TRXPCFB1

Register T4TIMEOUT to TRXPCFB1

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 24)

Register	OM group
T4TIMEOUT	NACDGRP2
TACA	TOPPACT2
TACA2	TOPPACT2
TACD	TOPPDID4
TACD2	TOPPDID4
TACFAIL	TOPSRTRS
TACRATE	TOPSRTRS
TAGENAMA	TOPSKFAM
TASKRFSD	PRIMWIC
TANDEM	TRK
TBIACC	TOPSMISC
TBIATT	TOPSMISC
TBLREPRT	TOPSMISC
TBU0	ENG640M1
TBU1	TRA1250M1
TBU2	TRA125M1
TBU3	TRA125M2
TCCNPER	TCAPUSAG
TCCNPERM	TCAPUSAG
TCCPEICP	TCAPERRS
TCCPESCP	TCAPERRS
TCCPEUCT	TCAPERRS

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 2 of 24)

Register	OM group
TCCWPER2	TCAPUSAG
TCCWPERM	TCAPUSAG
TCECEIP	TCAPERRS
TCECEUCI	TCAPERRS
TCECEUPC	TCAPERRS
TCECEXEC	TCAPERRS
TCECEXPC	TCAPERRS
TCICEDII	TCAPERRS
TCICEUCI	TCAPERRS
TCICEUOC	TCAPERRS
TCICEUXP	TCAPERRS
TCINVKL	TCAPUSAG
TCINVKL2	TCAPUSAG
TCINVKN2	TCAPUSAG
TCINVKNL	TCAPUSAG
TCMANCT	TRMTCM
TCMANTO	TRMTCM
TCMATBS	TRMTCM
TCMATDT	TRMTCM
TCMBLDN	TRMTCM
TCMCBTN	TRMTCM
TCMCFWV	TRMTCM
TCMCHAF	TRMTCM
TCMCHAN	TRMTCM

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 3 of 24)

Register	OM group
TCMCNAD	TRMTCM
TCMCREJ	TRMTCM
TCMDISC	TRMTCM
TCMMTBL	TRMTCM
TCMN90B	TRMTCM
TCMN9DF	TRMTCM
TCMN9NS	TRMTCM
TCMNC8F	TRMTCM
TCMNTRS	TRMTCM
TCMOPRT	TRMTCM
TCMOSVR	TRMTCM
TCMPDIL	TRMTCM
TCMPSIG	TRMTCM
TCMRING	TRMTCM
TCMSGIN	TCAPUSAG
TCMSGIN2	TCAPUSAG
TCMSGOU2	TCAPUSAG
TCMSGOUT	TCAPUSAG
TCMTDBR	TRMTCM
TCMTRBL	TRMTCM
TCMUNDN	TRMTCM
TCMUNDT	TRMTCM
TCMUPAB	TRMTCM
TCMVACS	TRMTCM

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 4 of 24)

Register	OM group
TCMVACT	TRMTCM
TCMVACTG	LINEXPT
TCMVCCT	TRMTCM
TCMVPFX	TRMTCM
TCNFREEC	NSSTCAP
TCQNPER2	TCAPUSAG
TCQNPERM	TCAPUSAG
TCQWPER	TCAPUSAG
TCQWPERM	TCAPUSAG
TCRCEUCI	TCAPERRS
TCRCEUXP	TCAPERRS
TCRCEXRR	TCAPERRS
TCREJEC2	TCAPUSAG
TCREJECT	TCAPUSAG
TCRESPN2	TCAPUSAG
TCRESPNS	TCAPUSAG
TCRSLTL	TCAPUSAG
TCRSLTL2	TCAPUSAG
TCRSLTN2	TCAPUSAG
TCRSLTNL	TCAPUSAG
TCRTERR	TCAPUSAG
TCRTERR2	TCAPUSAG
TCSCCD	TRMSCRND
TCSCCO	TRMSCRND

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 5 of 24)

Register	OM group
TCSCOLD	TRMSCRND
TCSCOLO	TRMSCRNO
TCSCOMPD	TRMSCRND
TCSCOMPO	TRMSCRNO
TCSTHRDD	TRMSCRND
TCSTHRDO	TRMSCRNO
TCTPEITP	TCAPERRS
TCTPESTP	TCAPERRS
TCTPEUPT	TCAPERRS
TCTPEUTI	TCAPERRS
TCUAARD	TRMTCU2
TCUACFD	TRMTCU2
TCUADBF	TRMTCU
TCUANBB	TRMTCU2
TCUANIA	TRMTCU
TCUBBFS	TRMTCU2
TCUBCNI	TRMTCU2
TCUCACB	TRMTCU2
TCUCACE	TRMTCU
TCUCCCF	TRMTCU2
TCUCCIR	TRMTCU2
TCUCCNA	TRMTCU2
TCUCCNV	TRMTCU2
TCUCGFL	TRMTCU2

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 6 of 24)

Register	OM group
TCUCNAC	TRMTCU2
TCUCNDT	TRMTCU
TCUCNOT	TRMTCU
TCUCOSX	TRMTCU2
TCUD950	TRMTCU
TCUDACD	TRMTCU
TCUDCFC	TRMTCU
TCUDNTR	TRMTCU
TCUDODT	TRMTCU
TCUEROR	TRMTCU2
TCUERTO	TRMTCU2
TCUERTR	TRMTCU2
TCUESNF	TRMTCU2
TCUFDNZ	TRMTCU
TCUFNAL	TRMTCU
TCUGFNV	TRMTCU2
TCUHNPI	TRMTCU
TCUIDPB	TRMTCU2
TCUILRS	TRMTCU
TCUINAC	TRMTCU
TCUINAU	TRMTCU
TCUINCC	TRMTCU2
TCUINPD	TRMTCU2
TCUITCF	TRMTCU2

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 7 of 24)

Register	OM group
TCUIVCC	TRMTCU2
TCUJACK	TRMTCU2
TCULCAB	TRMTCU2
TCULCNV	TRMTCU2
TCUMSCA	TRMTCU
TCUMSLC	TRMTCU
TCUN00B	TRMTCU2
TCUN950	TRMTCU
TCUNACD	TRMTCU
TCUNACK	TRMTCU
TCUNIDI2	TCAPUSAG
TCUNIIR	TCAPUSAG
TCUNOCN	TRMTCU
TCUNPAR	TRMTCU2
TCUORRS	TRMTCU
TCUORSS	TRMTCU
TCUPTFL	TRMTCU2
TCURSDT	TRMTCU
TCUSCUN	TRMTCU2
TCUTDND	TRMTCU
TCUTESS	TRMTCU
TCUTINV	TRMTCU
TCUUCCN	TRMTCU2
TCUUMOB	TRMTCU

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 8 of 24)

Register	OM group
TCUUNCA	TRMTCU
TCUUNIN	TRMTCU
TCUUNOW	TRMTCU
TCUVPFL	TRMTCU2
TCWABDN	TCW
TCWATT	TCW
TCWCON	TCW
TCWDNERR	TCW
TCWFLSH	TCW
TCWT1	TCW
TCWT2	TCW
TDUNLOST	TOPSMISC
TERAIFL	TRMTER
TERANFL	TRMTER
TERCONP	TRMTER
TERERDS	TRMTER
TERFDER	TRMTER
TERINBT	TRMTER
TERINOC	TRMTER
TERINVM	TRMTER
TERM0	ENG640M1
TERM1	TRA250M1
TERM2	TRA125M1
TERM3	TRA125M2

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 9 of 24)

Register	OM group
TERMANSW	LINEACT
TERMBLK	LMD
TERMIEC	HPCBASIC
TERMIECN	HPCBASIC
TERMINTR	LINEXPT
TERMLINE	HPCBASIC
TERMNC	HPCBASIC
TERMRNOA	LINEACT
TERMTOC	TRMTER
TERMTRK	HPCBASIC
TERNCUN	TRMTER
TERNMZN	TRMTER
TERNONT	TRMTER
TERPRR	TRMTER
TERPNOH	TRMTER
TERPTOF	TRMTER
TERQ33A	TRMTER
TERQ33B	TRMTER
TERRODR	TRMTER
TERSCFL	TRMTER
TERSONI	TRMTER
TERSSTO	TRMTER
TERSTOB	TRMTER
TERSTOC	TRMTER

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 10 of 24)

Register	OM group
TERSYFL	TRMTER
TESTLN_C	SRCDISP
TEXTA	TOPPACT2
TEXTA2	TOPPACT2
TEXTD	TOPPDID4
TEXTD2	TPOPPDID4
TEXTDSK	COVMDISK
TFAILLCL	NACDGRP1
TFAILREM	NACDGRP1
TFANCU	TFCANA
TFANCU2	TFCANA
TFANPEG	TFCANA
TFANEG2	TFCANA
TFANSU	TFCANA
TFANSU2	TFCANA
TFRACPR	TRMTFR
TFRACRJ	TRMTFR2
TFRADPA	TRMTFR
TFRAIND	TRMTFR2
TFRAINF	TRMTFR2
TFRBUSY	TRMTFR
TFRB900	TRMTFR3
TFRCBDN	TRMTFR
TFRCCAP	TRMTFR

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 11 of 24)

Register	OM group
TFRCCDT	TRMTFR
TFRCCTO	TRMTFR
TFRCDAF	TRMTFR2
TFRCDDF	TRMTFR2
TFRCDDS	TRMTFR2
TFRCFOV	TRMTFR
TFRCMGA	TRMTFR3
TFRCMGD	TRMTFR3
TFRCONF	TRMTFR
TFRDSCN	TRMTFR2
TFRFCNI	TRMTFR2
TFRFRDR	TRMTFR
TFRICNF	TRMTFR
TFRIIEC	TRMTFR2
TFRILRR	TRMTFR
TFRINRF	TRMTFR2
TFRIWUC	TRMTFR
TFRLECV	TRMTFR2
TFRMANL	TRMTFR
TFRMBIA	TRMTFR2
TFRMHLD	TRMTFR
TFRMWKP	TRMTFR2
TFRNCII	TRMTFR
TFRNCIX	TRMTFR

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 12 of 24)

Register	**OM group**
TFRNCS0	TRMTFR2
TFRNCS1	TRMTFR2
TFRNCTF	TRMTFR
TFRNINT	TRMTFR
TFRNVIP	TRMTFR2
TFRORAC	TRMTFR
TFRORAF	TRMTFR
TFRORMC	TRMTFR
TFRORMF	TRMTFR
TFRPGTO	TRMTFR
TFRPRSC	TRMTFR
TFRRFCD	TRMTFR2
TFRRFCE	TRMTFR2
TFRRFCS	TRMTFR2
TFRRRPA	TRMTFR
TFRRTTE	TRMTFR2
TFRSCA	TRMTFR2
TFRSINT	TRMTFR
TFRSORE	TRMTFR
TFRSRRR	TRMTFR
TFRTRGB	TRMTFR2
TFRTRRF	TRMTFR
TFRWUCR	TRMTFR2
THQERR	MTRPERF

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 13 of 24)

Register	OM group
THQOVFL	MTRPERF
TIMEREXP	NSSTCAP
TIMESTO	MTRPERF
TINOTIN	COVMISCH
TIOVFAFQ	AIN
TIOVFBFQ	AIN
TKBADDG	SYSPERF
TKCCM1	MTRUSG
TKCCM2	MTRUSG
TKPCBU	SYSPERF
TKXPMM1	MTRUSG
TKXPMM2	MTRUSG
TLONGR1	ADASAPU
TLONGR2	ADASAPU
TMANSLCL	NACDGRP1
TMANSREM	NACDGRP1
TMCCTDG	TM
TMCCTFL	TM
TMCCTOP	TM
TMEKEY	TME
TMERR	TM
TMFLT	TM
TMINFLCL	NACDGRP1
TMINFREM	NACDGRP1

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 14 of 24)

Register	OM group
TMMBP	TM
TMMBTCO	TM
TMMBU	TM
TMOFLLCL	NACDGRP1
TMOFLREM	NACDGRP1
TMREXPRD	PRIMWIC
TMSBP	TM
TMSBTCO	TM
TMSBU	TM
TMSGRCV	XIPSRVCS
TMSGRCV2	XIPSRVCS
TMSGRCVF	XIPSRVCS
TMSGSND	XIPSRVCS
TMSGSND2	XIPSRVCS
TMSGSNDF	XIPSRVCS
TMSGRC	XIPDCOM
TMSGRC2	XIPDCOM
TMSGRCF	XIPDCOM
TMSGSN	XIPDCOM
TMSGSN2	XIPDCOM
TMSGSNF	XIPDCOM
TMSRC	XIPCOMID
TMSRC2	XIPCOMID
TMSRCF	XIPCOMID

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 15 of 24)

Register	OM group
TMSSND	XIPCOMID
TMSSND2	XIPCOMID
TMSSNF	XIPCOMID
TNABORT	TCN7USAG
TNBEGIN	TCN7USAG
TNBLOCK	WIDEBAND
TNBWBAT	WBORIGAT
TNCONTIN	TCN7USAG
TNCPEMIC	TCN7ERRS
TNCPESCP	TCN7ERRS
TNCPEUCT	TCN7ERRS
TNECEMIP	TCN7ERRS
TNECEUII	TCN7ERRS
TNECEUPC	TCN7ERRS
TNECEXEC	TCN7ERRS
TNECEXPC	TCN7ERRS
TNEND	TCN7USAG
TNICEDII	TCN7ERRS
TNICELRU	TCN7ERRS
TNICEMIP	TCN7ERRS
TNICERLM	TCN7ERRS
TNICERLS	TCN7ERRS
TNICEUCI	TCN7ERRS
TNICEULO	TCN7ERRS

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 16 of 24)

Register	**OM group**
TNICEUOC	TCN7ERRS
TNINVK	TCN7USAG
TNMSGIN	TCN7USAG
TNMSGOUT	TCN7USAG
TNR11ERR	M20CARR2
TNR11FLT	M20CARR2
TNR12ERR	M20CARR2
TNR12FLT	M20CARR2
TNR13ERR	M20CARR2
TNR13FLT	M20CARR2
TNR14ERR	M20CARR2
TNR14FLT	M20CARR2
TNR15ERR	M20CARR2
TNR15FLT	M20CARR2
TNR21ERR	M20CARR2
TNR21FLT	M20CARR2
TNR22ERR	M20CARR2
TNR22FLT	M20CARR2
TNR23ERR	M20CARR2
TNR23FLT	M20CARR2
TNR24ERR	M20CARR2
TNR24FLT	M20CARR2
TNR25ERR	M20CARR2
TNR25FLT	M20CARR2

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 17 of 24)

Register	OM group
TNRCEMIP	TCN7ERRS
TNRCEUII	TCN7ERRS
TNRCEXRR	TCN7ERRS
TNREJECT	TCN7USAG
TNRSLTL	TCN7USAG
TNRSLTNL	TCN7USAG
TNRTERR	TCN7USAG
TNTPEITP	TCN7ERRS
TNTPERLM	TCN7ERRS
TNTPESTP	TCN7ERRS
TNTPEUPT	TCN7ERRS
TNTPEUTI	TCN7ERRS
TNUNIDIR	TCN7USAG
TODDTZ	ADASAPU
TODXPMFL	MTRPERF
TONE4NATT	MOC4TONE
TONEATT	TONES
TONED	TOPPDID4
TONED2	TOPPDID4
TONEOVFL	TONES
TONE_ANN	SRCDISP

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 18 of 24)

Register	OM group
TOPSANN	TOPSTRAF
TOPSCAN	TOPSTRAF
TOPSNIN	TOPSTRAF
TOPSNIN2	TOPSTRAF
TOPSOVFL	CF3P
TOPSTON	TOPSTRAF
TOPSTRK	TOPSTRAF
TOPSTRK2	TOPSTRAF
TOPSTRU	CF3P
TOPSZRS	CF3P
TOTAL	DTSR
TOTALKB	STORE
TOTALMB	STORE
TOTAL_2	DTSR
TOTDR	IBNSG
TOTHFL	ADASAPU
TOTNMUM	C6LINK
TOTINSU	C6LINK
TOTINVD	ADASAPU
TOTLACC2	MDSSTATS
TOTLINW	TOPSMISC
TOTOGMUM	C6LINK

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 19 of 24)

Register	OM group
TOTOGSU	C6LINK
TOTOOSP2	MDSSTATS
TOTSURVD	N6LINK
TOTSUXMT	N6LINK
TOTU	TRK
TPRCER1	TRMTPR
TPRNOBC	TRMTPR
TPRNORA	TRMTPR
TPRPER1	TRMTPR
TPRPER2	TRMTPR
TPRPER2	TRMTPR
TPRPER4	TRMTPR
TPRPER5	TRMTPR
TRANPYRE	SCAISERV
TRANPYRR	SCAISERV
TRAPINT	CPU
TRBLCDA	TOPPACT2
TRBLCDA2	TOPPACT2
TRBLCDD	TOPDID4
TRBLCDD2	TOPDID4
TRBQATT	TROUBLEQ
TRBQOCC	TROUBLEQ
TRBQOVFL	TROUBLEQ
TRFCDAS	TRMTFR2

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 20 of 24)

Register	OM group
TRFUO	DCTS
TRFUT	TRKDCTS
TRIDUVAL	CNAMD
TRIG	AIN
TRIG2	AIN
TRKSILC	NWMSILC
TRMBLK	OFZ
TRMLNFL	SYSPERF
TRMMFL	OFZ
TRMNWAT	OFZ
TRMNWAT2	OFZ
TRMNWATG	LINEACT
TRNDDEL	PRIMWIC
TRNDPBPB	PRIMWIC
TRNDPVPB	PRIMWIC
TRNDPVPV	PRIMWIC
TRSCGRO	TRMTRS
TRSCHNF	TRMTRS
TRSCQOV	TRMTRS
TRSEMR1	TRMTRS
TRSEMR2	TRMTRS
TRSEMR3	TRMTRS

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 21 of 24)

Register	OM group
TRSEMR4	TRMTRS
TRSEMR5	TRMTRS
TRSEMR6	TRMTRS
TRSFECG	TRMTRS
TRSGNCT	TRMTRS
TRSNBLH	TRMTRS
TRSNBLN	TRMTRS
TRSNCRT	TRMTRS
TRSNECG	TRMTRS
TRSNOSC	TRMTRS
TRSNOSR	TRMTRS
TRSSORD	TRMTRS
TRSTOVD	TRMTRS
TRTBSYRE	SCAISRV3
TRTBSYRR	SCAISRV3
TRTCOMPU	SCAISRV2
TRTDSCRE	SCAISRV3
TRTDSCRR	SCAISRV3
TRTFBYRE	SCAISRV3
TRTFBYRR	SCAISRV3
TRTMUSRE	SCAISRV2
TRTMUSRR	SCAISRV2
TRTRANRE	SCAISRV2
TRTRANRR	SCAISRV2

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 22 of 24)

Register	OM group
TRTRNGRE	SCAISRV3
TRTRNGRR	SCAISRV3
TRTSILRE	SCAISRV3
TRTSILRR	SCAISRV3
TRU	TRK
TRU2WIN	TRK
TS0	TS
TS1	TS
TS2	TS
TS3	TS
TS4	TS
TS5	TS
TS6	TS
TS7	TS
TSOONR1	ADASAPU
TSOONR2	ADASAPU
TSTATD	TOPPDID4
TSTATD2	TOPPDID4
TTCAPIN	NACDGRP2
TTCAPOUT	NACDGRP2
TTFRSCRJ	TRMTFR
TUP_CAT	SRCDISP
TVDSABDN	TRKVERDS
TVDSATP	TRKVERDS

Register T4TIMEOUT to TRXPCFB1 (continued)

(Sheet 23 of 24)

Register	OM group
TVDSCPB	TRKVERDS
TVDSFAIL	TRKVERDS
TVDSINV	TRKVERDS
TVDSMANB	TRKVERDS
TVDSOVFL	TRKVERDS
TWBATB	WIDEBAND
TWBATMPT	WIDEBAND
TWBCONNT	WIDEBAND
TWBFAIL	WIDEBAND
TWBGLR	WIDEBAND
TWBINTER	WIDEBAND
TWBINTRA	WIDEBAND
TWBORGAT	WBORIGAT
TWBRTSUB	WGORIGAT
TWBSWTCH	WIDEBAND
TWBTERM	WBTERMIN
TWCATT	TWCIBN
TWCATT2	TWCIBN
TWCCERR	ICONF
TWCDENY	ICONF
TWCFAIL	TWCIBN
TWCOVFL	TWCIBN
TWCOVRFL	ICONF
TWCPABDN	TWCPOTS

Register T4TIMEOUT to TRXPCFB1 (end)

(Sheet 24 of 24)

Register	OM group
TWCPATT	TWCPOTS
TWCPDENY	TWCPOTS
TWCPOVLF	TWCPOTS
TWCUSGE	ICONF
TXOC1FB0	FBTRAFF
TXOC2FB0	FBTRAFF
TXOC3FB0	FBTRAFF
TXOC1FB1	FBTRAFF
TXOC2FB1	FBTRAFF
TXOC3FB1	FBTRAFF
TXPCFB0	FBTRAFF
TXPCFB1	FBTRAFF
TXPK1FB0	FBTRAFF
TXPK2FB0	FBTRAFF
TXPK3FB0	FBTRAFF
TXPK1FB1	FBTRAFF
TXPK2FB1	FBTRAFF
TXPK3FB1	FBTRAFF
TXRPCFB0	FBTRAFF
TXRPCFB1	FBTRAFF

Register U3WCATT to UTRUDYLP

Register U3WCATT to UTRUDYLP

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 6)

Register	OM group
U3WCATT	U3WC
U3WCCONF	U3WC
U3WCCONS	U3WC
UBHEMRUP	SCPUBHMT
UBHERIT	SCPUBHMT
UBHERMB	SCPUBHMT
UBHERQFL	SCPUBHMT
UBHERSB	SCPUBHMT
UBHERSBU	SCPUBHMT
UBHFPNA	SCPUBHMT
UBHFPNAU	SCPUBHMT
UBHFPRB	SCPUBHMT
UBHFPRBU	SCPUBHMT
UBHIV80	SCPUBHMT
UVHIVFL	SCPUBHMT
UBHIVNA	SCPUBHMT
UBHIVNAU	SCPUBHMT
UBHMCT	SCPUBHMT
UBHMTV	SCPUBHMT
UBHNORUP	SCPUBHMT
UBHNRIT	SCPUBHMT
UBHNRMB	SCPUBHMT

Register U3WCATT to UTRUDYLP (continued)

(Sheet 2 of 6)

Register	OM group
UBHNRQFL	SCPUBHMT
UBHNRSB	SCPUBHMT
UBHNRSBU	SCPUBHMT
UBHOV80	SCPUBHMT
UBHOVFL	SCPUBHMT
UBHOVNA	SCPUBHMT
UBHOVNAU	SCPUBHMT
UBHRQQ80	SCPUBHMT
UBHRQQFL	SCPUBHMT
UCDABNDN	UCDGRP
UCDANSR	UCDGRP
UCDBLOCK	UCDGRP
UCDDFLCT	UCDGRP
UCDNS	UCDGRP
UCDOFFR	UCDGRP
UMSGRCV	XIPSRVCS
UMSGRCV2	XIPSRVCS
UMSGRCVF	XIPSRVCS
UMSGSND	XIPSRVCS
UMSGSND2	XIPSRVCS
UMSGSNDF	XIPSRVCS
UMSGRC	XIPDCOM
UMSGRC2	XIPDCOM
UMSGRCF	XIPDCOM

Register U3WCATT to UTRUDYLP (continued)

(Sheet 3 of 6)

Register	OM group
UMSGSN	XIPDCOM
UMSGSN2	XIPDCOM
UMSGSNF	XIPDCOM
UMSRC	XIPCOMID
UMSRC2	XIPCOMID
UMSRCF	XIPCOMID
UMSSN	XIPCOMID
UMSSN2	XIPCOMID
UMSSNF	XIPCOMID
UNDECSU	N6LINK
UNIDIREC	MWICTCAP
UNITDATS	MWICTCAP
UNRSAGRE	SCAISRV3
UNRSAGRR	SCAISRV3
UNSPDREQ	AUTSPID
UNSUCACT	PRIMWIC
UNSUCDAC	PRIMWIC
UPBBUCON	SCPUPUT
UPCFDB	SCPUPUTM
UPEBKLG	SCPUPUTM
UPEBKLGU	SCPUPUTM
UPEU15M	SCPUPUT
UPEU1M	SCPUPUT
UPEU20X	SCPUPUT

Register U3WCATT to UTRUDYLP (continued)

(Sheet 4 of 6)

Register	OM group
UPEU5M	SCPUPUT
UPEU5S	SCPUPUT
UPEUAP	SCPUPUT
UPEUBAP	SCPUPUT
UPEUG15M	SCPUPUT
UPEUNAVL	SCPUPUTM
UPEUPRJT	SCPUPUT
UPISITEP	SCPUPUTM
UPISITNP	SCPUPUTM
UPITDB	SCPUPUTM
UPITEPU	SCPUPUTM
UPITNPU	SCPUPUTM
UPMTCCT	SCPUPUTM
UPMTCTV	SCPUPUTM
UPNAU	SCPUPUTM
UPNAUPU	SCPUPUTM
UPNBKLG	SCPUPUTM
UPNBKLGU	SCPUPUTM
UPNUAP	SCPUPUT
UPNUBAP	SCPUPUT
UPNUNAVL	SCPUPUTM
UPNUPREM	SCPUPUT
UPNUPRJT	SCPUPUT
UPRBSYU	SCPUPUTM

Register U3WCATT to UTRUDYLP (continued)

(Sheet 5 of 6)

Register	OM group
UPSSMBEP	SCPUPUTM
UPSSMBNP	SCPUPUTM
UPSSNA	SCPUPUTM
UPSSRB	SCPUPUTM
UPSSSBEP	SCPUPUTM
UPSSSBNP	SCPUPUTM
UPTFEURD	SCPUPTF
UPTFEURR	SCPUPTF
UPTFEURS	SCPUPTF
UPTFNRRD	SCPUPTF
UPTFNRRR	SCPUPTF
UPTFNRRS	SCPUPTF
UPTFNURD	SCPUPTF
UPTFNURR	SCPUPTF
UPTFNURS	SCPUPTF
UPTFPRRD	SCPUPTF
UPTFPRRR	SCPUPTF
UPTFPRRS	SCPUPTF
UPTFRXRR	SCPUPTF
UPTFRXRS	SCPUPTF
UPTFSYNC	SCPUPTF
UPTFTV	SCPUPTF
UPTFURSC	SCPUPTF
UPTFURSM	SCPUPTF

Register U3WCATT to UTRUDYLP (end)

(Sheet 6 of 6)

Register	OM group
UPTFURST	SCPUPTF
UPBUCON	SCPUPTF
UPUTTV	SCPUPTF
USRABNDN	NACDGRP1
UTRLDLYP	UTR
UTROVFL	UTR
UTRQABAN	UTR
UTRQOCC	UTR
UTRQOVFL	UTR
UTRRADA	UTR
UTRSAMPL	UTR
UTRSHORT	SDS
UTRSZRS	UTR
UTRTRU	UTR
UTRUDLYP	UTR

Register VALCCTRN to VSNVABT

Register VALCCTRN to VSNVABT

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 3)

Register	OM group
VALCCTRN	TOPSINCC
VALIDFL	C7LPP
VALIDFL2	C7LPP2
VALIDLK	C7LINK3
VCATT	TOPSVC
VCDEF	TOPSVC
VCFL	TOPSVC
VCNMSG	TOPSVC
VCNTLINE	DSINWTS
VCNTNXX	DSINWTS
VFGBLCKD	VFGUSAGE
VFGIWATT	VFGIWUSE
VFGIWOVF	VFGIWUSE
VFGIWTRU	VFGIWUSE
VFGLSCBL	VFGUSAGE
VFGTOTAL	VFGUSAGE
VFGTRU	VFGUSAGE
VMSGFAIL	VSNLINK
VMSGRCV	VSNLINK
VMSGRCV2	VSNLINK
VMSGSNT	VSNLINK
VMSGSNT2	VSNLINK

Register VALCCTRN to VSNVABT (continued)

(Sheet 2 of 3)

Register	OM group
VMSGSUC	VSNLINK
VMSGSUC2	VSNLINK
VNCALLFL	VSNLINK
VOICEDSK	COVMDISK
VPNAULT	VPN
VPNCITYW	VPN
WPNDPERR	VPN
VPNINTER	VPN
VPNINTRA	VPN
VPNLCR	VPN
VPNNOTON	VPN
VPNONTRE	VPN
VPNPDIAL	VPN
VPNPRERR	VPN
VPNSCP	VPN
VPNSCPGN	VPN
VPNSCPOF	VPN
VPCNSPOS	VPN
VPNSTDAC	VPN
VPNTRERR	VPN
VPSCAUD	VPSC
VPSCFLT	VPSC
VPSCIDL	VPSC
VPSCMAX	VPSC

Register VALCCTRN to VSNVABT (end)

(Sheet 3 of 3)

Register	OM group
VPSCMBU	VPSC
VPSCMIS	VPSC
VPSCMTC	VPSC
VPSCOVF	VPSC
VPSCSBU	VPSC
VPSCSZR	VPSC
VPSCTRU	VPSC
VPSCUSE	VPSC
VSNATT	VSNCOM
VSNDABT	VSNCOM
VSNIDFL	VSNCOM
VSNIVLF	VSNCOM
VSNNOVL	VSNCOM
VSNOPRB	VSNCOM
VSNOPRF	VSNCOM
VSNVABA	VSNCOM
VSNVABN	VSNCOM
VSNVABT	VSNCOM

Register WAITDENY to WUCUSGE

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

(Sheet 1 of 4)

Register	OM group
WAITDENY	CP
WAKEHI	CP2
WAKEOVFL	CP
WAKESZ	CP
WBAT1	WIDEBAND
WBAT10	WIDEBAND
WBAT11	WIDEBAND
WBAT12	WIDEBAND
WBAT13	WIDEBAND
WBAT14	WIDEBAND
WBAT15	WIDEBAND
WBAT16	WIDEBAND
WBAT17	WIDEBAND
WBAT18	WIDEBAND
WBAT19	WIDEBAND
WBAT2	WIDEBAND
WBAT20	WIDEBAND
WBAT21	WIDEBAND
WBAT22	WIDEBAND
WBAT23	WIDEBAND
WBAT24	WIDEBAND
WBAT3	WIDEBAND

Register WAITDENY to WUCUSGE (continued)

(Sheet 2 of 4)

Register	OM group
WBAT4	WIDEBAND
WBAT5	WIDEBAND
WBAT6	WIDEBAND
WBAT7	WIDEBAND
WBAT8	WIDEBAND
WBAT9	WIDEBAND
WCABDN	WC
WCATT	WC
WCCON	WC
WCDNERR	WC
WCOFR	WC
WCPRST	WC
WCREC	WC
WCSCRN	WC
WCT1	WC
WCT2	WC
WCT3	WC
WCT4	WC
WCT5	WC
WFACK	PMMSGCNT
WFMSG	PMMSGCNT
WFNR	PMMSGCNT
WFNX	PMMSGCNT
WFSND	PMMSGCNT

Register WAITDENY to WUCUSGE (continued)

(Sheet 3 of 4)

Register	OM group
WINITC	CP
WLNACT	IFDL
WLNCERR	IFDL
WLNDACT	IFDL
WLNINTG	IFDL
WLNOVFL	IFDL
WLNPROG	IFDL
WLNUSGE	IFDL
WORKVOL	TOPSUSE
WORKVOLO	TOPSUSE
WRKTMU	IBNSG
WUCABDN	IWUC
WUCACT	IWUC
VUCBLCK	MDCWAKUP
WUCCERR	IWUC
WUCCOMP	MDCWAKUP
WUCDACT	IWUC
WUCDCT	MDCWAKUP
WUCDENY	IWUC
WUCDNY	MDCWAKUP
WUCDSCRD	MDCWAKUP
WUCDTC	MDCWAKUP
WUCINTG	IWUC
WUCNRSC	IWUC

Register WAITDENY to WUCUSGE (end)

(Sheet 4 of 4)

Register	OM group
WUCOVFL	IWUC
WUCOVRDU	MDCWAKUP
WUCRSET	IWUC
WUCRTRY1	MDCWAKUP
WUCRTRY2	MDCWAKUP
WUCSACT	MDCWAKUP
WUCUSGE	IWUC

Register XFRIC to ZEROACC2

This list shows OM registers in alphanumeric order. Next to each register name is the OM group to which the register belongs.

Register	OM group
XFRIC	TOPSTRAF
XFROPRD	TOPPDID5
XFROPRD2	TOPPDID5
XFRTOIC	TOPSEA
XMITSUCC	PMMSGCNT
ZEROACC2	MDSSTATS

DMS-100 Family

North American DMS-100

Operational Measurements Reference Manual

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Product Performance and Reference

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