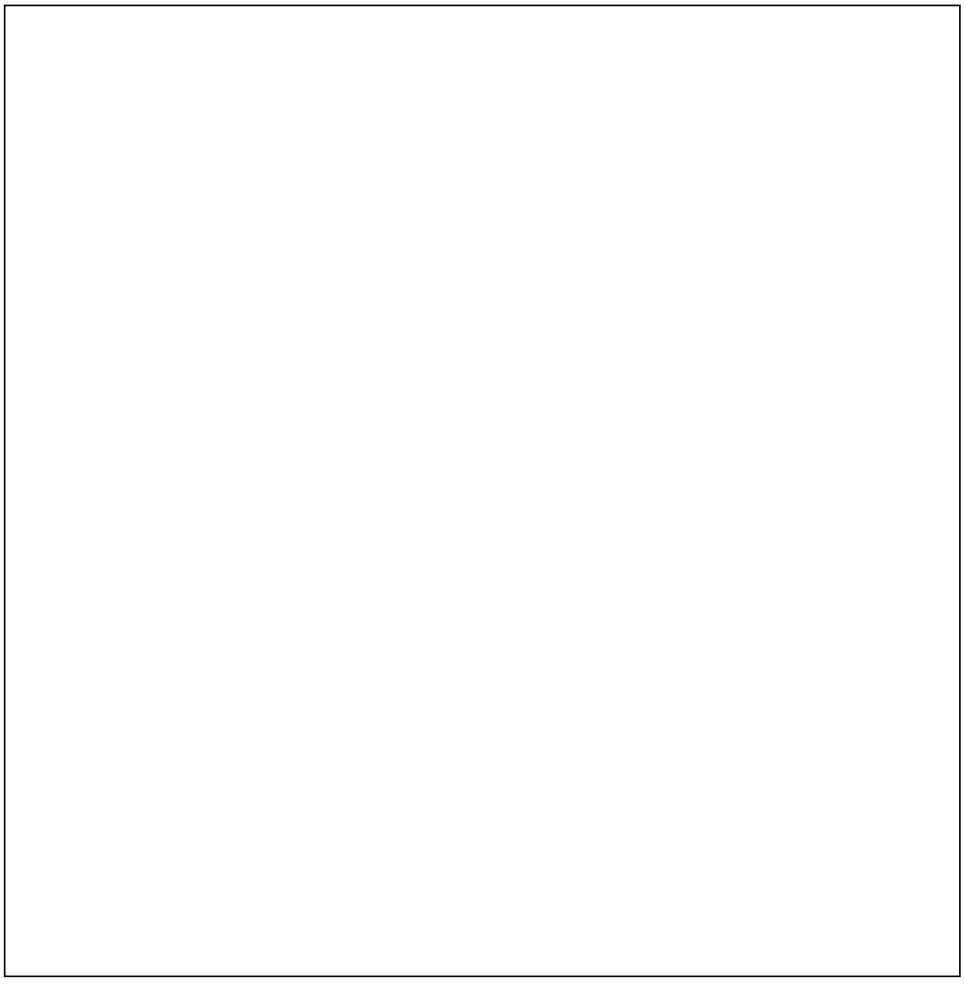
297-2031-100

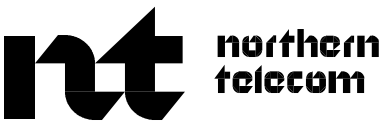
DMS-100 Family

Attendant Console

Operations, administration and maintenance

BCS30 and up Standard 02.04 September 1991





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September 1991

BCS30 Standard 02.04

Added information on ACOM to chapter 4.

March 1991

BCS30 Standard 02.03

- Reformatted to conform to new NT standards

March 1991

BCS30 Standard 02.02

- Added description of line diagnostics for offices serving Phase II consoles
- Added recommendations for separation of consoles and power supply

September 1989

BCS28 Standard 02.01

- Minor changes in power requirements

Revision bars in the table of contents identify the sections where technical information has been changed. Revision bars in the outside margin of a page indicate text that has been added or revised.

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About this document

This manual provides information on the provisioning, installation, and maintenance of the Meridian Attendant Console. It is intended for operating company personnel who perform these functions. For information about the operation and features of the console itself, refer to the *Attendant Console User Guide* (P0698946), which is enclosed in the console package.

When to use this document

Northern Telecom (NT) software releases are referred to as batch change supplements (BCS) and are identified by a number, for example, BCS29. This document is written for DMS-100 Family offices that have BCS30 and up.

More than one version of this document may exist. The version and issue are indicated throughout the document, for example, 01.01. The first two digits increase by one each time the document content is changed to support new BCS-related developments. For example, the first release of a document is 01.01, and the next release of the document in a subsequent BCS is 02.01. The second two digits increase by one each time a document is revised and rereleased for the same BCS.

To determine which version of this document applies to the BCS in your office, check the release information in *DMS-100 Family Guide to Northern Telecom Publications,* 297-1001-001.

How to identify the software in your office

The *Office Feature Record (D190)* lists your current BCS and the NT feature packages in it. You can view similar information on a MAP (maintenance and administration position) terminal by typing

>PATCHER;INFORM LIST;LEAVE

and pressing the Enter key.

How Attendant Console documentation is organized

This document is part of Attendant Console documentation that supports the Northern Telecom line of Attendant Console products. Attendant Console documentation is a subset of the DMS-100 Family library.

Attendant Console documentation consists of the following documents.

Number	Title
297-2031-100	*Attendant Console, Operations Administration and Maintenance*

The DMS-100 Family library is structured in numbered layers, and each layer is associated with an NT product. To understand Attendant Console products, you need documents from the following layers:

- DMS-100 Family basic documents in the 297-1001 layer
- Attendant Console documents in the 297-2031 layer

References in this document

The following documents are referred to in this document.

Number	Title
297-1001-100	*System Description*
297-2001-100	*Integrated Business Network Services General Description*
297-1001-001	*Guide to Northern Telecom Practices*
297-1001-510	*Log Report Manual*
297-1001-814	*Operational Measurements*
297-2001-450	*IBN Data Engineering Guide*
297-2001-451	*Meridian Customer Data Schema*
297-2101-503	*Lines Maintenance Procedures*
297-2101-516	*Line Maintenance Reference Manual*

What precautionary messages mean

Danger, warning, and caution messages in this document indicate potential risks. These messages and their meanings are listed in the following chart.

Message	Significance
DANGER	Possibility of personal injury
WARNING	Possibility of equipment damage
CAUTION	Possibility of service interruption or degradation

Examples of the precautionary messages follow.

DANGER
Risk of electrocution
The inverter contains high voltage lines. Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed first. Until these fuses are removed, the high voltage lines inside the inverter are active, and you risk being electrocuted.

WARNING
Damage to backplane connector pins
Use light thumb pressure to align the card with the connectors. Next, use the levers to seat the card into the connectors. Failure to align the card first may result in bending of the backplane connector pins.

CAUTION
Loss of service
Subscriber service will be lost if you accidentally remove a card from the active unit of the peripheral module (PM). Before continuing, confirm that you are removing the card from the inactive unit of the PM.

How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

Input prompt (>)

An input prompt (>) indicates that the information that follows it is a command:

>BSY

Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP are shown in uppercase letters:

>BSY LINK

Variables

Variables are shown in lowercase letters:

>BSY LINK ps_link

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

```
Any active calls may be lost
Please confirm (“YES” or “NO”):
```

Console description and operation

Physical overview

The console is a self-contained unit that is approximately 335mm x 305mm x 86mm (13.2in x 12.0in x 3.4in). With the exception of the volume controls that are located on the side, all user controls are located on the front panel. There are no user-controls inside the console. See Figure 1-1 on page 1-2, Figure 1-2 on page 1-3, and Figure 1-3 on page 1-4 for the location of keys and lamps.

The front panel has the following keys and indicators:

- a 12-button standard keypad
- six loop keys, each with an associated Source (S) lamp and Destination (D) lamp
- a Call Waiting (CW) lamp
- a Release key and its associated lamp
- a Hold key
- a Night Service key and its associated lamp
- a Console Test key and its associated lamp
- an Exclude Source key and its associated lamp
- an Exclude Destination (DEST) key and its associated lamp
- a Signal Source key
- a Signal Destination (DEST) key
- a Release Source key
- a Release Destination (DEST) key
- 42 (numbers 2 to 43) programmable feature keys and their associated lamps
- a 16-character alphanumeric display (key lamp display (KLD)).

Figure 1-1xxx
Layout of console front panel

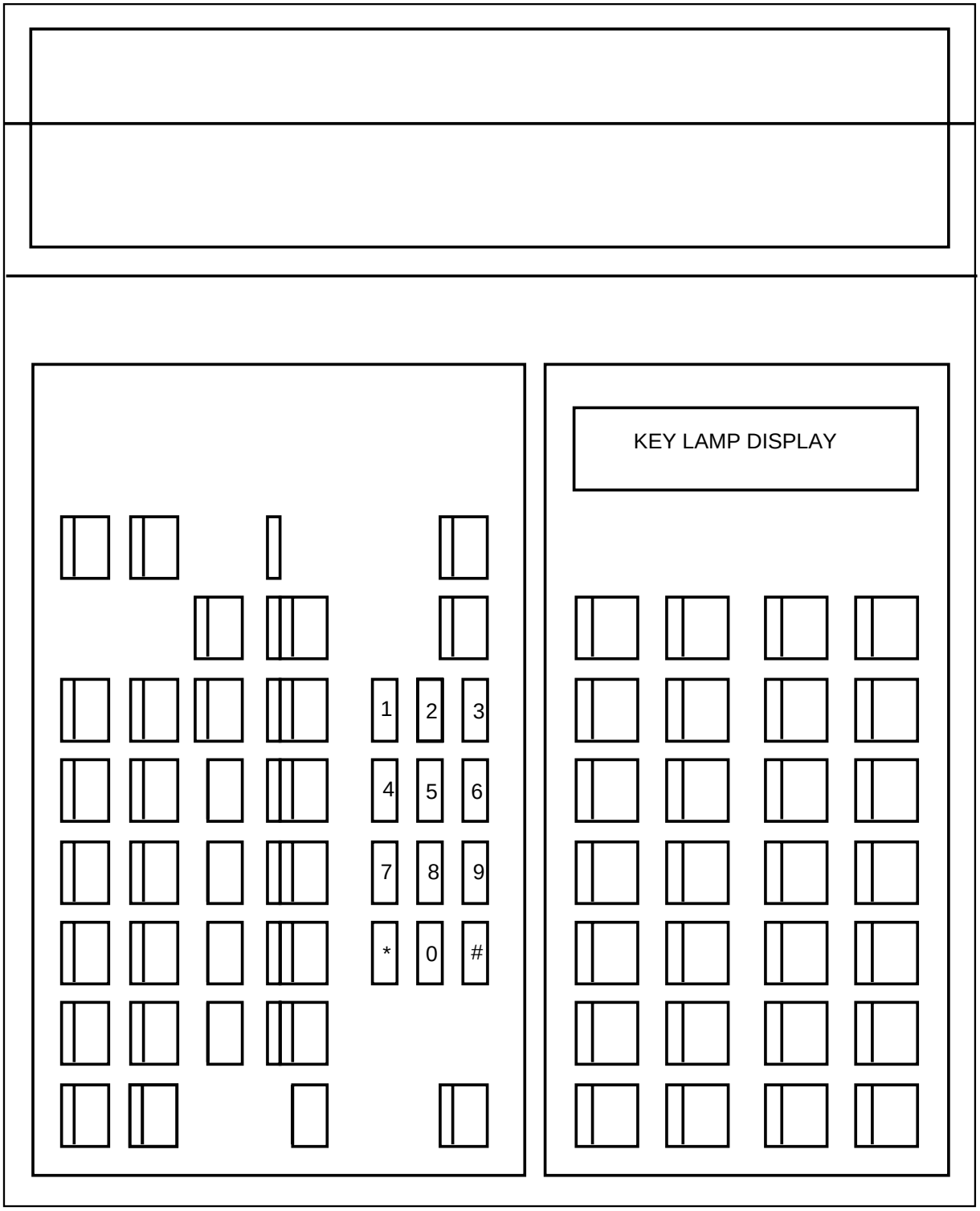


Figure 1-2xxx
Location of loop keys, operating keys and keypad

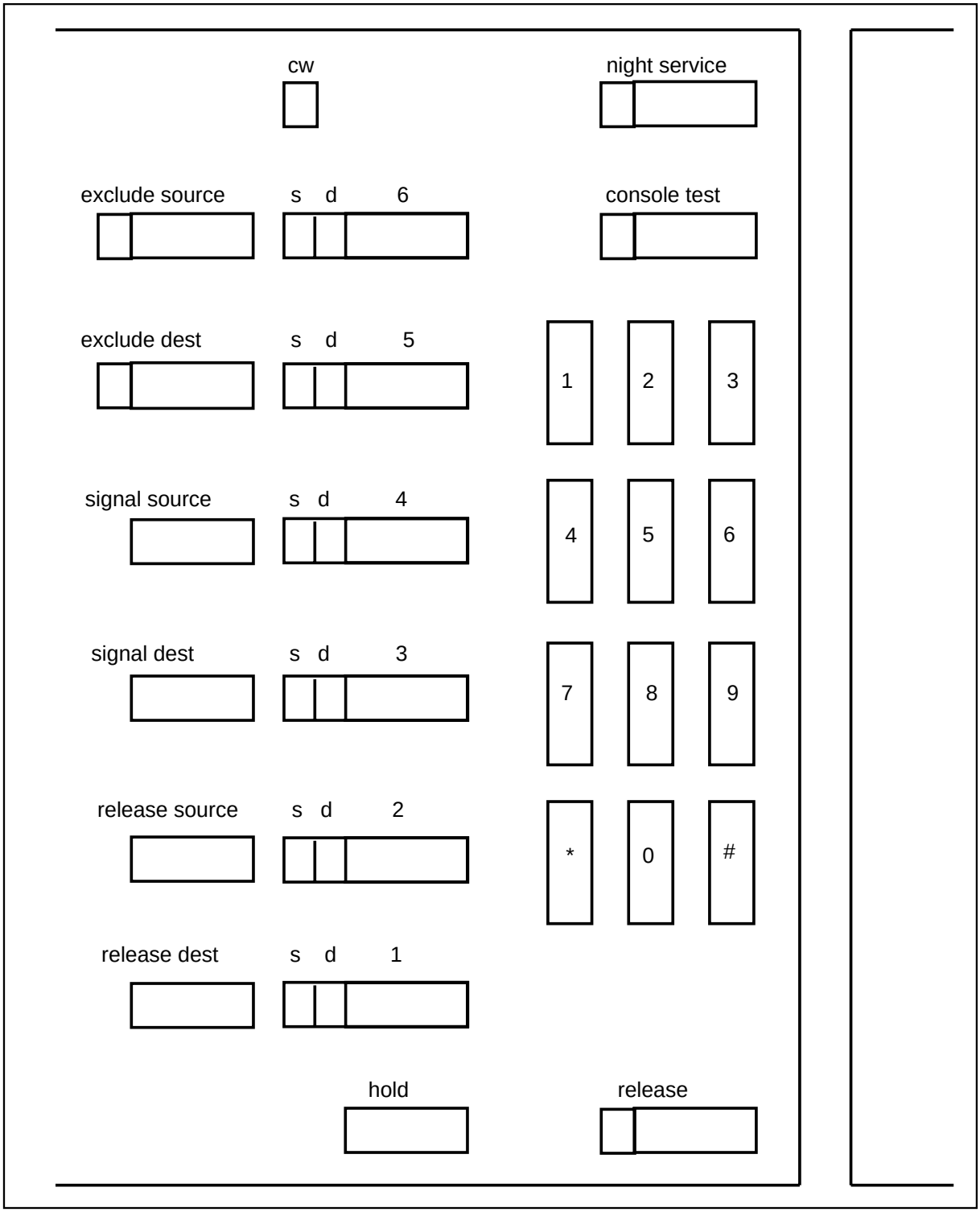
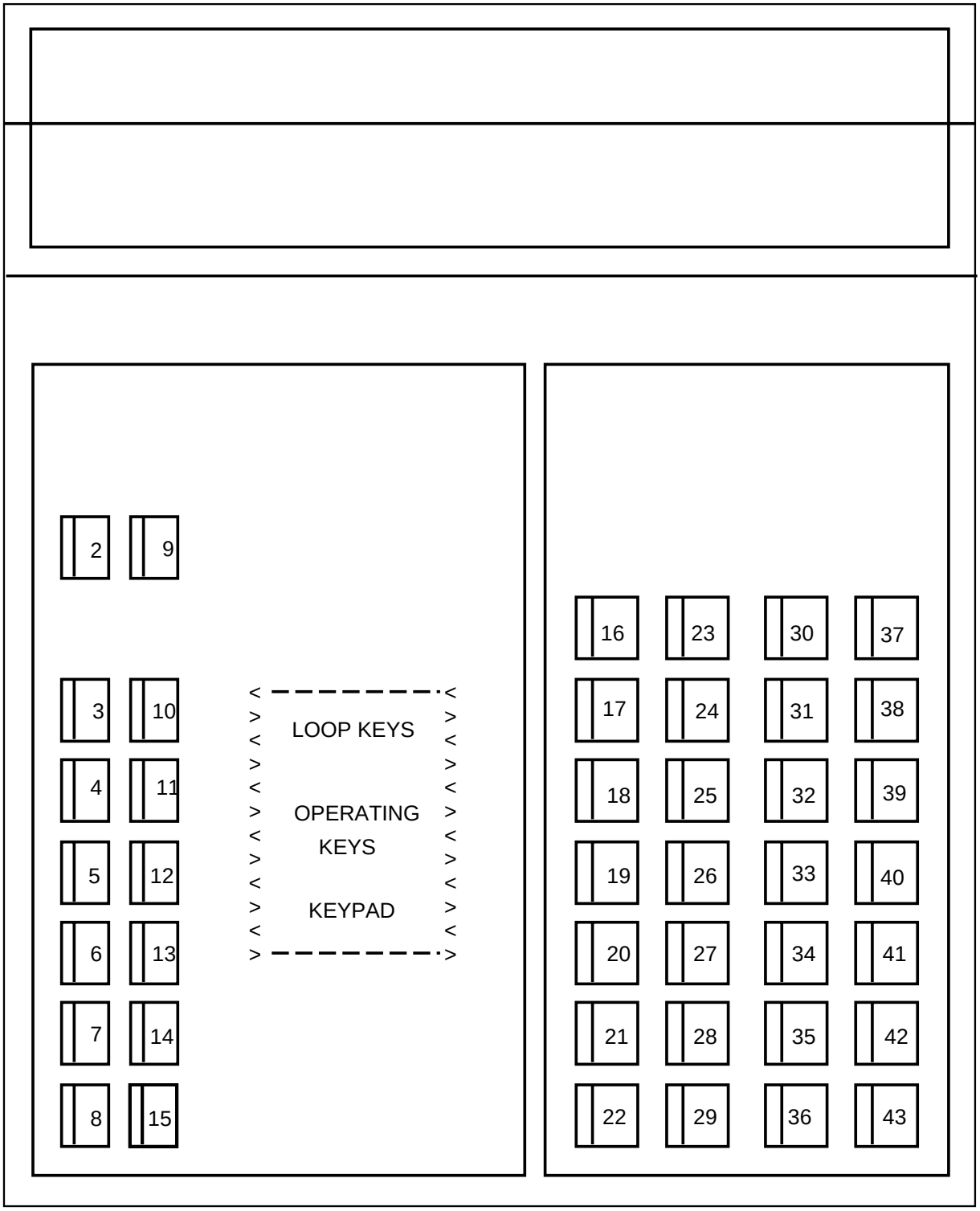


Figure 1-3xxx
Location of programmable feature keys



All keys are non-locking; a momentary depression is sufficient to activate the key.

The lamps are light emitting diodes (LED) that inform the attendant of the state of the call that is being processed.

The console is also equipped with

- two jacks - one on each side - for headsets
- a speaker for alerting the attendant
- two thumbwheels - on the left side - for controlling the speaker volume and the headset volume.

All power and signal connections are made through a connector that is mounted in the base of the console. An extension cable connects the console to the fixed wiring from the distribution frame.

Key lamp display function

The key lamp display (KLD) has two functions. It displays digits as they are entered by the attendant, and it displays messages from the switch describing the state of the call and any input-data required for the current call. The messages are in a fixed format to conform to the 16-character maximum display size. The messages and their description are contained in Table 1-1 on page 1-6.

As an optional feature, valid call processing messages may be displayed to inform the attendant of error conditions or processing states within the switching system. This feature is activated by pressing the appropriate feature key. Once activated, the feature may be cancelled by pressing any key. Treatment messages are described in Table 1-2 on page 1-9.

A date and time display feature is also provided. When the attendant presses the Date/Time key, the system responds with the date and time (switching system time) displayed in the following format:

```
aaa bbb dd hh mm
```

Where:

aaa	is an abbreviation for the day of the week
bbb	is an abbreviation for the month of the year
dd	is the calendar day
hh	is the hour
mm	is the minute

Table 1-1xxx
Console messages

Messages	Explanation
ACCT: INPUT	The attendant has activated the account code feature. The system is waiting for the attendant to enter a forward billing code.
AUTODIAL: INPUT	The attendant has activated the autodial programming feature. The system is waiting for the attendant to enter the digits to be dialed.
AUTH: INPUT	The attendant has activated the authorization code feature. The system is waiting for the authorization code.
AUVAL: INPUT	The authorization code has been assigned. The system is waiting for a validation code.
BUZZ: INPUT	The attendant has activated the flexible console alerting feature. The system is waiting for either a single digit to define the function, or an asterisk to display the current BUZZ state, or an octothorpe (#) to step through the BUZZ options.
1 SHORT BUZZ	The attendant has entered a 1 to choose a short buzz for the flexible console alerting feature.
2 TONE	The attendant has entered a 2 to choose a tone in the headset for the flexible console alerting feature.
3 TONE AND BUZZ	The attendant has entered a 3 to choose both a tone and a buzz for the flexible console alerting feature.
4 LONG BUZZ	The attendant has entered a 4 to choose a long buzz for the flexible console alerting feature.
BVL: INPUT	The attendant has activated the busy verification-line feature. The system is waiting for the station telephone number.
BVT: INPUT	The attendant has activated the busy verification-trunk feature. The system is waiting for the trunk group access code, directory number, and trunk member number.
CF: INPUT	The attendant has activated or deactivated the call forwarding feature. The system is waiting for the attendant to enter the directory number of the station to be displayed.
CONF DISCONNECT	All members of a conference call on a current loop have gone on hook.
CONFEREE ADDED	The attendant has added another destination to the conference call.

- continued -

Table 1-1xxx
Console messages (continued)

Messages	Explanation
CONFERENCE CALL	A member of a conference call has flashed to recall the attendant, or the attendant is recalling a held conference call.
DEST DGTS: INPUT	The attendant has activated the end-to-end signaling feature. System is waiting for destination digits.
DEST DISCONNECT	The destination is outside the customer group and has gone on hook.
DEST OFF HOOK	The destination has gone on hook followed by an off hook.
DEST ON HOOK	The destination is a member of its customer group and has gone on hook.
DIGITS SENT	The attendant has activated the end-to-end signaling feature. The system confirms the DTMF digits have been outpulsed.
DISALLOWED	Hardware resources are unavailable.
DND: INPUT	The attendant has activated the do-not-disturb feature. The system is waiting for the telephone number to which calls are to be transferred.
DQC: INPUT	The attendant has activated the display queued calls feature. System is waiting for a '#', ICI key, or ICI code.
GTAC: INPUT	The attendant has activated the global trunk access feature. The system is waiting for the trunk group number.
GTGB: INPUT	The attendant has activated the global trunk group busy feature. The system is waiting for the trunk group number.
GVAC: INPUT	The attendant has activated the attendant global virtual facility group (VFG) access control feature. The system is waiting for a four-digit VFG number.
GVGB: INPUT	Initial prompt for the global virtual facility group busy feature.
IDLE LOOP	Message indicates that the attendant has accessed an idle loop or the console. The system is ready for digit entry.
INVALID CODE	The code that was entered by the attendant in response to a previous prompt is incorrect.

- continued -

Table 1-1xxx
Console messages (continued)

Messages	Explanation
LANGUAGE: INPUT	The attendant has activated the flexible display language feature. The system is waiting for a single digit identifying the language required.
MW: INPUT	Initial prompt for the attendant message waiting feature.
NETWORK BLOCK	There is no available path through the network.
NO ACTIVE LOOP	The feature that was requested by the attendant was not activated. To activate the feature, press a loop key.
NO CALLS QUEUED	The attendant has activated the display queued calls feature. The response indicates no calls are queued in the subgroup or ICI queue.
NO FREE LOOP	All six loops on the console are busy. The attendant cannot handle another call until a loop becomes free.
NO NAME INFO	No source or destination name information is available for this call.
NO SUPV	The call is associated with a no-disconnect trunk.
NS: INPUT	The attendant has activated the programmable night service feature. The system is waiting for the night service number to be entered.
PARK: INPUT	The attendant has activated the call park feature. The system is waiting for the directory number of the call to be parked.
PLEASE TRY AGAIN	The information entered by the attendant is not allowed.
SC PROG: INPUT	The attendant has activated the speed call feature. The system is waiting for a single digit to assign to the telephone number being stored.
SRC DGTS: INPUT	The attendant has activated the end-to-end signaling feature. The system is waiting for source digits to be entered.
SRC DISCONNECT	The source is outside the customer group and has gone on-hook.
SRC OFF HOOK	The source is a member of its customer group and has gone on-hook followed by an off-hook.
SRC ON HOOK	The source is a member of its customer group and has gone on-hook.
3-WAY CALL	A party involved in a three-way call has called the Attendant Console.

- continued -

Table 1-1xxx
Console messages (continued)

Messages	Explanation
TOO MANY DIGITS	The system is warning the attendant that the number of digits entered for the autodial or end-to-end signaling features has exceeded the maximum allowed.
TROUBLE INPUT	The attendant has activated the trouble key. The system is waiting for a two-digit code denoting the type of trouble experienced to be entered.
UNPARK: INPUT	The attendant has activated the unpark feature. The system is waiting for the directory number of the call involved to be entered.
WAIT	The attendant has activated the end-to-end signaling feature. The system is instructing the attendant to wait and try again.
WAIT: 800 Call	This message is displayed while the system is waiting for the response from the database.
WC: INPUT	The attendant has activated the wild card key. The system is waiting for the two-digit feature code to be entered.
WRONG LOOP STATE	The loop is in the wrong state for the feature that was requested.
NO DATA-FILL	The key that was pressed by the attendant is not associated with a feature.

End

Table 1-2xxx
Treatment messages

Messages	Explanation
ACTIVATED	An optional feature such as night service has been activated at this console.
ALL CKTS BUSY	The switching system is not able to process the call selected by the attendant.
BARGE IN	The busy verify line feature is active for this call.
BSY NO CAMPON	The called party is busy with no camp on allowed on this call.
BUSY	The called party is busy.

- continued -

Table 1-2xxx
Treatment messages (continued)

Messages	Explanation
BUSY: CNTL ON	The virtual facility group (VFG) access feature has informed the attendant that control is activated, and the VFG is busy.
BUSY: NO CNTL	The VFG access feature has informed the attendant that control is currently not activated, and the VFG is busy.
CALL PARKED	The current call has been parked until the called party becomes available.
DEACTIVATED	An optional feature such as night service has been deactivated.
DEFLECTED	The incoming call has been deflected to the attendant.
DIALING ERROR	The attendant has dialed a number that is not a recognizable telephone number.
DISALLOWED	Hardware resources are not currently available.
DND ACTIVE	The do-not-disturb feature is active on this call.
DQC: INPUT	The attendant has activated the display queued calls feature and the system is waiting for input. If # is entered, the system displays the number of calls queued for the console subgroup. If an ICI code is input, the system displays the number of calls queued, and the number of seconds that the oldest call has waited.
GRP LIMIT MET	No more trunks are available for the customer group. As soon as a trunk is available the message will be erased.
IDLE: CNTL ON	The VFG access feature has informed the attendant that control is activated and the VFG is idle.
IDLE: NO CNTL	The VFG access feature has informed the attendant that control is currently not activated, and the VFG is idle.
IDLE LINE	The voice line to the console is in the idle state.
IDLE TRUNK	The trunk selected for the current call is in the idle state.
INPUT ERROR	The number entered in response to a prompt is invalid.
INTERCEPTED	The attendant has intercepted the current call.
INVALID CODE	The code entered in response to a prompt is invalid.
INVALID GROUP	The group number entered in response to a prompt is not a valid number for the group.

- continued -

Table 1-2xxx
Treatment messages (continued)

Messages	Explanation
INVALID ICI	The number entered in response to a prompt for an ICI number is invalid.
INVALID NMBR	The number entered in response to a prompt is invalid.
INVALID TRUNK	The trunk selected for the call is an invalid trunk.
MSB ACTIVE	The make-set-busy feature is active on this call.
NDC IN EFFECT	The no-double-connect feature is active for this call.
NETWORK BLOCK	There is no free path through the network for the call.
NO CALLS QUEUED	The display-queued-calls feature has been accessed, and a number has been entered in response to a prompt by the system. The display informs the attendant that no calls are waiting in the subgroup or ICI queue.
NO DISPLAY	The feature that was selected is not associated with a display.
NO THRU DIAL	The attendant is being alerted that the through-dialing feature cannot be activated for the current party.
PARTIAL DIAL	The number dialed is not a complete destination telephone number. The system has timed out and presented the message.
TERM DENIED	The destination is not allowed.
TEST: BARGE IN	The test-busy-verify line feature is active for this call.
TOLL DENIED	The dialed call is a toll call that is not allowed.
TRUNK TROUBLE	The trunk that was used for the call is unserviceable.
TRY AGAIN	Either the feature or digits that were entered are not recognized by the system software.
UNASSIGNED DN	The number dialed is a recognized number, but it has not been assigned to a customer.
UPDATE OK	A feature, such as a speed call list, has been successfully updated.
VALID CODE	The code that was entered in response to a prompt is a valid code.
UNDEFINED	The attendant has selected a key that is not associated with a feature.

End

Queueing

A new incoming call is placed in the appropriate subgroup queue. If an incoming call identification (ICI) is associated with the call, it is also placed in the ICI queue. The CW lamp goes ON on all consoles in the subgroup, to inform attendants that calls are waiting. The oldest call in a queue is presented to the console that has been idle the longest. The console responds to a presented call by causing the source lamp of a free loop to operate at 120 IPM (and if applicable the appropriate ICI lamp is set to ON). An attendant may accept the call by pressing either the loop key or the ICI key. Pressing the loop key selects the oldest call in the subgroup queue whereas pressing the ICI key selects the oldest call in the selected ICI queue. Note: The oldest call in the subgroup queue may not be the same call as the oldest call in the ICI queue.

Up to 256 definable call types can be identified by an ICI code, giving a maximum of 256 different ICI queues. Of the 256 call types, 27 are reserved for permanently assigned call types and 229 are available for assignment by the customer. Note that each console can only access 42 ICI queues (42 programmable keys).

Of the reserved call-types, the following 13 are currently allocated:

- Attendant Calls (dial 0)
- Don’t Answer Recalls
- Camp On Recall
- Call Waiting Recall
- Call Forward To Attendant
- Call Forward Don’t Answer To Attendant
- Call Forward Busy To Attendant
- Intercept
- Conference Call Recall
- Do Not Disturb
- Direct Inward System Access
- Message Waiting Indirect ICI
- Message Waiting Direct ICI.

Dual tone multifrequency (DTMF) signaling

The DTMF option gives the console the ability to generate tones after reaching a dialed destination.

End-to-end DTMF dialing is desirable in application where dialed equipment or services require additional dialing for further control. Example applications include:

- dialing into a PBX or other outside system where dialing additional numbers is required to reach a further destination
- common carrier services which may require additional digits for account codes, security codes, etc. after accessing the service
- paging services requiring dial pad DTMF to access specific paging zones
- using dial dictation equipment or message equipment which relies on dial pad DTMF to control its features.

Normal operation of the Attendant Console does not require DTMF to communicate with the telephone system, since it uses its own inaudible proprietary code transmission. However, some equipment that can be reached by the telephone system may still require DTMF to further control it. For this reason, the option of end-to-end DTMF dialing is provided in applications where this feature is desirable.

The DTMF feature is offered in one of two ways. In pre-BCS24 offices, a hardware board is provided on the console to produce DTMF. This board operates independently from the DMS-100 switch software; operation of this type of DTMF is described in the Hardware DTMF section. In offices with BCS24 and higher, DTMF is provided as a software feature on the switch (Feature F2791 of Package NTX101AA). Any customer desiring DTMF in an office on BCS24 or higher must use the software feature. Operation of the DTMF software feature is described in the Software DTMF section. The differences and restrictions between the hardware and software implementation of DTMF are also described in the Hardware DTMF vs. Software DTMF section.

Hardware DTMF

The hardware DTMF board was a temporary solution for customer requirements before BCS24. The hardware DTMF board has been replaced by the Software DTMF feature available in BCS24 and higher. An Attendant Console equipped with the DTMF hardware board is identified by the number ‘TEC00467’ stamped on the bottom of the console.

General operation information

The console has two modes of transmission: normal and DTMF. The two modes are controlled by the DTMF on/off key located in the lower left hand corner of the console. This key has an LED indicator to identify what mode of operation the console is in.

The DTMF mode is activated by pressing the key (LED goes on) and is deactivated by pressing the key again (LED goes off). When not lit, the console is in the normal mode of operation. (Refer to console User Guide

for normal operating instructions). When lit, the console is in the DTMF transmission mode. When in this mode, all other LEDs continue to give the appropriate status indication as in the normal mode. However, only the DTMF dialing keys will function, all other keys become non- functional.

Software DTMF

With this feature, the switch attaches a DTMF sender (NT3X68AB) through the network to the line or trunk to provide the necessary DTMF signaling.

Feature activation/deactivation

This feature can be activated and deactivated in two ways. Either a feature key can be assigned, or the wildcard key can be used in conjunction with a dialed access code. After the feature is activated, all dialed digits are sent as DTMF signals. When the feature is deactivated, normal operation resumes.

Feature interactions/restrictions

This feature is for use only when DTMF signaling is required. DTMF signaling is not to be used as the normal mode of operation; therefore, normal call processing is not allowed while DTMF signaling is activated. Specifically, the following functions cannot be activated while DTMF signaling is activated:

- Holding or releasing a call
- Entering another loop
- Excluding or releasing the port on which the feature is active
- Activating any Attendant Console feature except Position Busy, Night Service, and Query Time and Date
- Dialing another call

DTMF signaling can only be activated for a single line or trunk. For example, an attendant cannot send DTMF signals to another Attendant Console or a conference circuit. DTMF signaling cannot be activated while Busy Verify or Barge-in is activated.

Hardware DTMF vs. software DTMF

On consoles equipped with the DTMF hardware board, the DTMF key (key 8, the feature key in the bottom left corner) is dedicated for use in the Hardware DTMF feature. This means that no other feature can be assigned to this key, including the software DTMF feature. The Hardware DTMF feature can be used on consoles assigned to offices with any BCS; However, as of BCS24, the hardware board is no longer available and the Software DTMF feature is recommended. On consoles not equipped with the DTMF hardware board, any software assignable feature can be assigned to any of the feature keys. The Software DTMF feature is preferred over the Hardware DTMF feature due to the superior tone generation of the Software DTMF feature.

For provisioning details, see information for entry ACEES in Table 2-3 on page 2-12.

Planning and provisioning

Basic operating requirements

Power

Power is supplied from a fixed distribution frame or panel wiring through the console cable, which is connected to the console through a 50-pin Amphenol 50-10500-27 connector. A separate power supply (120V ac input/-48V dc output) is required near the console. It is furnished on request. U.S. applications require a UL listing, class 2 power source. Do not separate this power supply and the console more than 50 ft., particularly in new installations and at sites with a history of related problems. Use a talk-filtered power supply. We recommend the PYLON[1] Model KTS-3 with a NEVAFAIL[1] NF-3 standby unit. (It is capable of powering up to two consoles.)

Voltage is measured at the input to the power converter (with a console connected). The following thresholds apply:

- Normal Conditions: -48V to -53.5V . Normal conditions occur under battery float (high end) and maximum drop (low end) operation.
- Extreme Conditions: -42.5V to -55.8V . Extreme conditions occur during battery equalization charging (high end) and commercial power failure (low end). These limits may need to be modified for interface equipment which share a power plant with other equipment.

Note: To verify appropriate voltage across battery and ground leads, connect a meter and perform the Attendant Console lamp tests as described in Part 4 on page 3-1. The baud rate of the console has no effect on this measurement.

Line engineering

The Attendant Console operates through standard telephone wire, with a maximum loop-length of 4,877m (16,000 ft.). The recommended dc resistance is 1300 Ohms with no greater than 8dB loss at 1KHz.

Note: For effective performance, do not add a bridge-tap on the line.

[1] PYLON and NEVAFAIL are trademarks of Pylon Electronic Development Company, Ltd., Lachine, Quebec

Environmental considerations

The following environmental parameters must be observed to ensure reliable performance: OPERATING STATE

- Temperature Range: 4^0 to 38ØC (40^0 to 100^0F)
- Relative Humidity: 20% to 55% (non-condensing)

Non-operating state

- Temperature Range: $-40^0$to 60^0C (-40^0 to 140^0F)
- Relative Humidity: 10% to 95% (non-condensing)

Note: When operating at low humidity levels (below 30%), additional measures to control electrostatic discharge (ESD) may be required.

Console configurations

Note: A full description of the provisioning details for Attendant Console equipment is given in 297-1001-450. References to the relevant sections of that document are given as required.

General

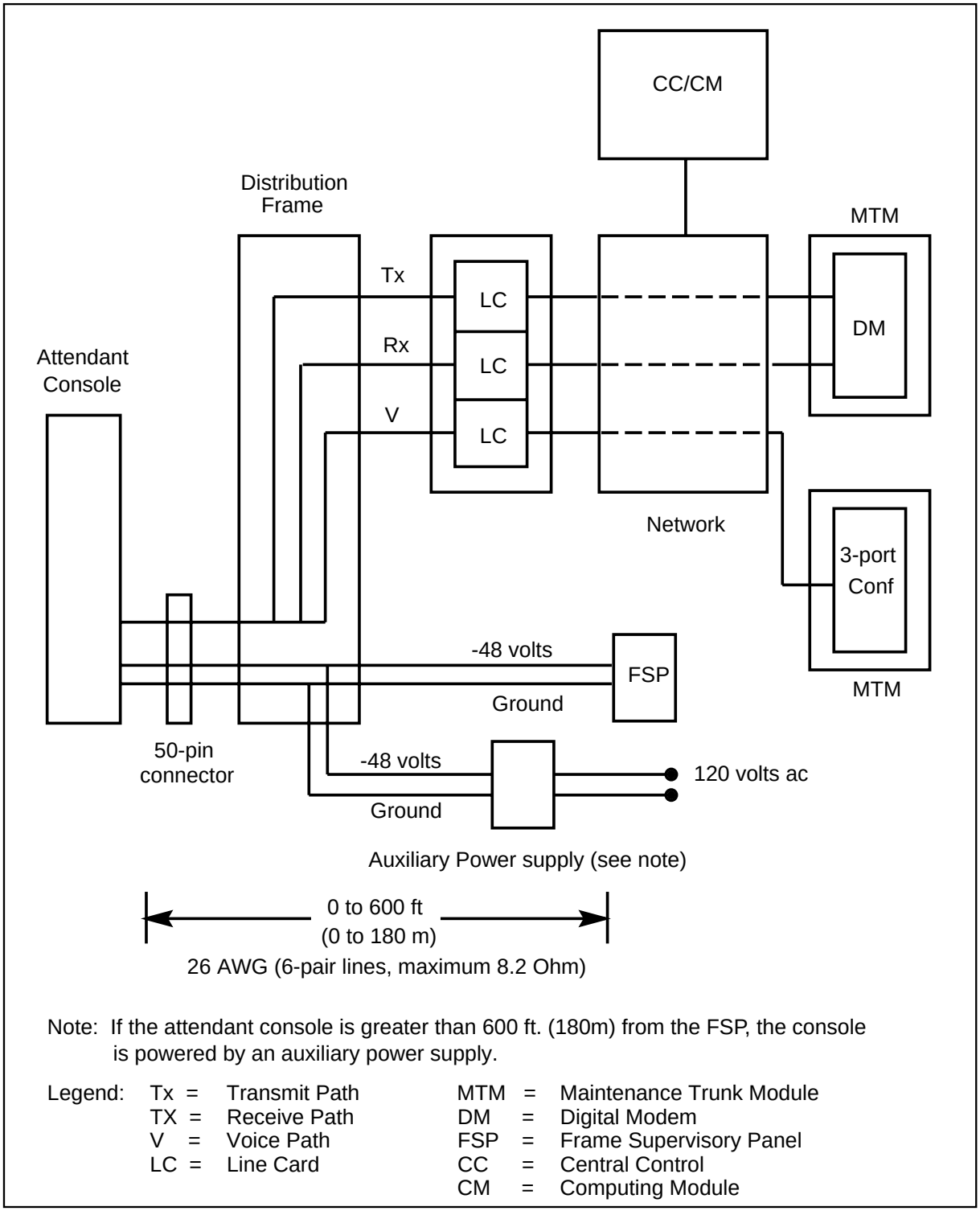
Consoles are members of customer groups assigned to a particular customer's premises. The number of consoles in a customer group is dependent on the customer's requirements, but cannot exceed 255. Figure 2-1 on page 2-3 shows a typical Attendant Console to DMS configuration. Note that each console is connected through a nailed up connection to its own three-port conference circuit (CF3P).

It is possible to subdivide the customer groups; a maximum of eight subgroups are allowed per customer group (numbered zero to seven). Subgroups allow customers to have attendant type calls answered locally during the day or throughout busy hours, and to centralize this function during the night or slack hours. If a customer group requires centralized attendant answering only, all consoles are placed in subgroup zero.

Circuit provisioning

The Attendant Console is connected to a LCM/RLCM/RLM/LM by three Type A Line Cards, one for voice and two for Frequency Shift Keying data. These cards must be assigned in the same line drawer. Standard 1300 ohm loops are to be used. Attendant Consoles should be spread over all line modules.

Figure 2-1xxx
Typical attendant console to DMS configuration



Note: If the attendant console is greater than 600 ft. (180m) from the FSP, the console is powered by an auxiliary power supply.

Legend:	Tx	=	Transmit Path	MTM	= Maintenance Trunk Module
	TX	=	Receive Path	DM	= Digital Modem
	V	=	Voice Path	FSP	= Frame Supervisory Panel
	LC	=	Line Card	CC	= Central Control
				CM	= Computing Module

Each console requires a digital modem (Dmodem) circuit. Two circuit packs, NT3X02AA and NT3X03AA, used together, provide four Dmodem circuits. Provision only one Dmodem card per MTM.

Provide a minimum of one Call Waiting Tone Generator card per central office equipped with Meridian Business Services. A second card may be provided for increased reliability. Each card contains four circuits. See Section 450/35 for provisioning details.

Provide one Six-Port Conference Circuit (NT3X67AA) per two attendant consoles, when the card is to be used as two three-port conference circuits; otherwise, provide one card per console. The circuits to be used are selected from a pool. See Section 450/35 for provisioning details.

One NT3X68AB Dual Tone Multifrequency (DTMF) Sender CP is required when the Attendant Console must outpulse DTMF to another switching system. This circuit is available on a one-per-office basis, two maximum for redundancy.

Language features

Currently the attendant receives messages on the alphanumeric display in response to call processing and feature processing events. These are system-defined English messages. For a list of these standard messages, see NTP 297-2101-451, Section 169.

The Attendant Console can be ordered as an English version (NT4X09BB) or as a French version (NT4X09BC).

The optional Display Language feature, which is part of software package NTX175AA, provides the ability to enter equivalent messages in other languages. With this feature, the customer can order one, four, or seven additional language alternatives to the standard English display.

The number of additional language alternatives can be changed only at the software load build time.

Attendant console data schema

Following is a description of the major Data Schema tables for the Attendant Console. For a detailed description of all related tables - including those required to provision each of the features applicable to your office - refer to 297-2001-451.

Figure 2-2 on page 2-5 illustrates the location of programmable feature keys on the console.

Figure 2-2xxx
Location of programmable feature keys

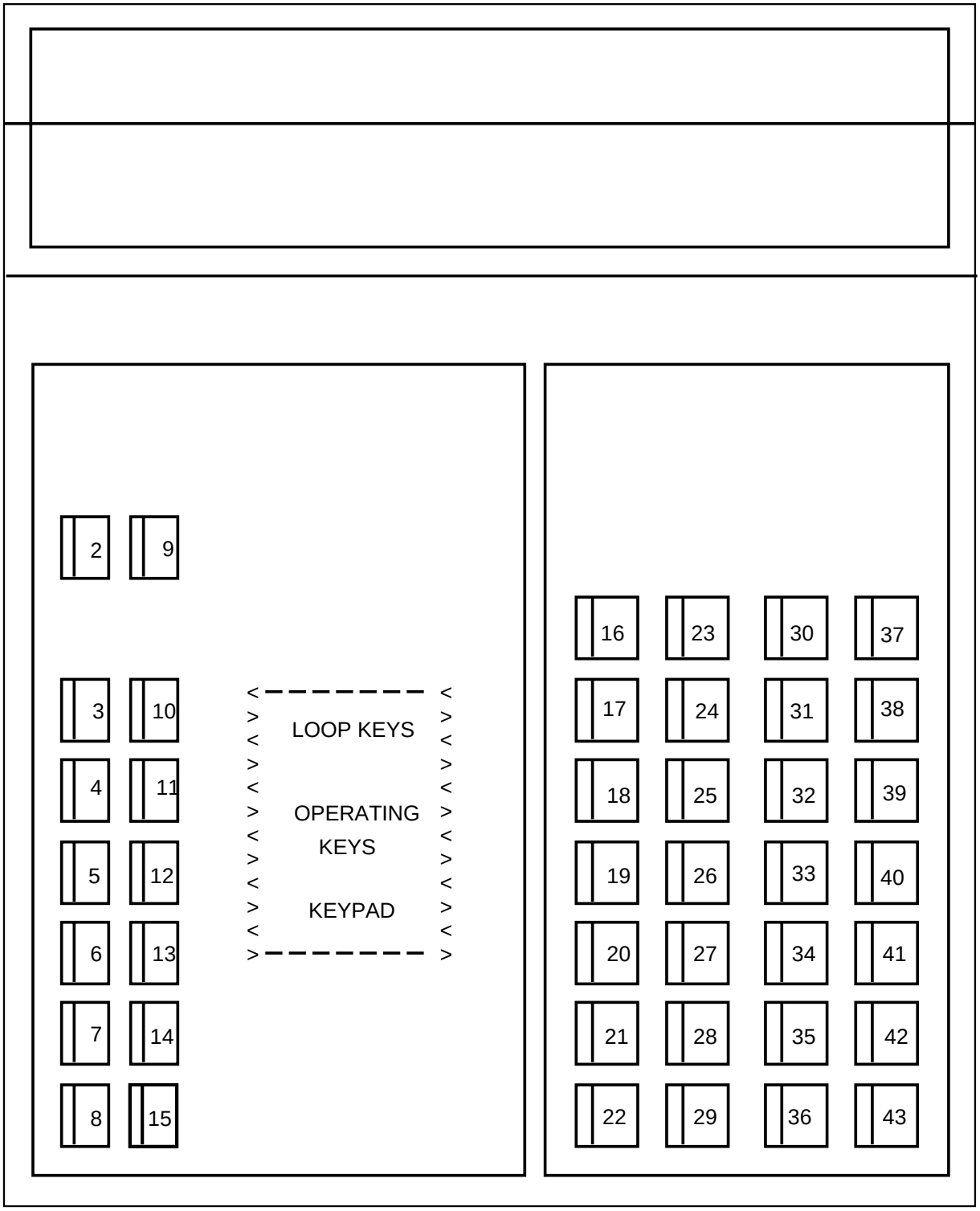


Table name: ATTCONS

Note: Ensure that Table IBNLINES has been datafilled before proceeding with ATTCONS.

Description:

This table identifies the individual consoles, the name of the customer group to which the console belongs, the line equipment numbers used by the console, and any optional features that may apply to the system.

Table 2-1xxx
Description of table ATTCONS

Field Name	Entry	Explanation
CONSOLE	alphanumeric	Enter the common language location identifier (clli) assigned to the console.
CUSTNAME	alphanumeric	Enter the name of the customer group that is assigned in table CUSTHEAD with 'CONSOLES = Y'. This field is also in table CUSTCONS.
SUBGRP	0 - 7	Enter the number of the attendant subgroup to which the console is assigned.
NCOS	0 - 255	Enter the network class of service number assigned to the attendant console.
CDR	Y or N	Enter Y (yes) when all calls originating from the Attendant Console are to be recorded in the station message detail recording (SMDR) format. For no record, enter N (no).
CARDCODE	4X08AA, 4X08AB, or 4X08BA	Enter the card code that identifies the type of hardware contained in the console. 4X08AA receives data at 300 baud, 4X08AB receives data at 1200 baud and 4x08BA receives data at 300 baud using A-law PCM format.
CONTMARK	+ or $	Enter a plus (+) sign to indicate that the data in this tuple continues on the next line. Enter a dollar ($) sign to indicate the end of the list of options and the end of the tuple.
INLEN	numeric	Enter the line equipment number (LEN) of the line card to which the signal line from console to switch is assigned. This field consists of the subfields SITE, FRAME, UNIT, DRAWER or LSG, and CIRCUIT. If the line is an ISDN line, the LEN is replaced by logical terminal identifier (LTID) and the LTGRP and LTNUM subfields.

- continued -

Table 2-1xxx
Description of table ATTCONS (continued)

Field Name	Entry	Explanation
OUTLEN	numeric	Enter the line equipment number (LEN) of the line card to which the signal line from switch to console is assigned. This field contains the same subfields as INLEN.
TALKLEN	numeric	Enter the LEN of the line card to which the talking line from the console is assigned. This field contains the same subfields as INLEN and OUTLEN.
INSV	Y or N	Enter Y (yes) for consoles that are to be brought into service over cold switch action or restarts. This allows a console to be brought into service even if it was offline initially. Enter N (no) for consoles that are not to be brought into service over cold switch action or restarts.
OPTION	alphabetic or blank	This field is comprised of a list of console options and in some cases an additional field to further refine the option. The options available are: BUZZ to specify the type of buzz message sent to the console; and LANG to define the display language of the console. Enter one of the following after BUZZ to define the type of buzz message: SHORT - sends a short buzz message to the console. TONE - sends no buzz message to the console but sends an alert tone to the headset. LONG - sends repeated timed buzz messages to the console. BOTH - sends a buzz message to the console and an alert tone to the headset.
End		

Table name: CUSTCONS

Description:

This table defines the customer groups, what consoles are present in the individual groups, and some of the features available to a console.

Table 2-2xxx
Description of table CUSTCONS

Field Name	Entry	Explanation
CUSTNAME	alphanumeric	Enter the one to 16 character name that is assigned to the customer group.
OPTIONS	alphanumeric	Enter the list of options and subfields that are assigned to the customer group. Separate each option and its subfield by a space. Use as many records as required to complete the list of options and associated subfields. If an option is not provided, then no input is required for that option.
CONTMARK	+ or $	When entry is other than the last for the customer group, enter a plus (+) sign, otherwise, if it is the last entry for the customer group, enter a dollar ($) sign.
OPTION	ACCFB	Enter ACCFB if the attendant is to extend calls to a station with the call forwarding busy (CFB) feature and the call is to be forwarded to a predetermined directory number when the station is busy.
ACFBOVCO	N or Y	Enter Y (yes) if CFB takes precedence over camp-on. Enter N (no) if camp-on takes precedence over CFB. Enter Y or N immediately after the ACCFB, with a space between them.
OPTION	ACCFD	Enter ACCFD if the attendant is to extend calls to a station with the call forward don't answer (ACD) feature and the call is to be forwarded to a predetermined directory number when the station does not answer.
OPTION	ACCPKTIM	Enter ACCPKTIM if the customer group is to have the calls parked option and the calls parked recall time is something other than 60 seconds. If this option is not specified, the default time is 60 seconds.
ACCPKTO	0 or 12 - 59, or 61 - 240	Enter the attendant calls parked recall timeout time. If set to zero, the timeout time is infinite.
OPTION	ACHOLD	Enter ACHOLD if music is to be applied to calls put on hold by the attendant.
AUDIOGRP	AUDIO1 to AUDIO15	Enter the audio group name of the announcement/music datafilled in table AUDIO that is to be applied to calls put on hold.

- continued -

Table 2-2xxx
Description of table CUSTCONS (continued)

Field Name	Entry	Explanation
OPTION	ACO	Enter ACO if the customer group is to have the attendant camp-on option. Complete subfields ACORECTO, FLASH, DURATION, ANNMUSIC, and AUDIOGRP.
ACORECTO	12-60, or 0.	Enter the time, in seconds, after which a camped-on call will be recalled to the attendant if the called station has not answered. If set to zero, the call will not be recalled to the attendant.
FLASH	CAMPON or FEATURES	Enter CAMPON if the party that has had a call camped on to it can flash to connect to the camped-on party. Enter FEATURES if the party that has had a call camped on to it cannot flash to connect to the camped-on party.
DURATION	0 - 15	Enter the time, in 100 millisecond intervals, for which camp-on tone is to be applied.
ANNMUSIC	Y or N	Enter Y (yes) if announcement or music is to be applied to the camped on caller. Otherwise, enter N (no).
AUDIOGRP	AUDIO1 to AUDIO15	If the field ANNMUSIC is Y, enter the audio group of the announcement or music datafilled in table AUDIO that is to be applied to camped-on calls
OPTION	ANN	If the customer group is to have the attendant announcement option, enter the option ANN.
OPTION	CWNATIM	Enter CWNATIM if the call waiting/no answer recall timeout is something other than 30 seconds. Complete the CWNATO option.
CWNATO	0 or 12-29 or 31-60	Enter the maximum time, in seconds, after which a call that has been call-waited or terminated on a ringing phone is recalled to an attendant. If set to zero, the call is never returned to an attendant.
OPTION	CQTIM	Enter CQTIM if the call queue timeout is something other than 30 seconds. Complete CQTIMOUT option.
CQTIMOUT	0 or 12-29 or 31-60.	Enter the call queue timeout time in seconds.
OPTION	FLASHTHR	Enter FLASHTHR and complete the ICIFLTHR option if the incoming call identification flashing threshold is less than 1020 seconds.

- continued -

Table 2-2xxx
Description of table CUSTCONS (continued)

Field Name	Entry	Explanation
ICIFLTHR	0-254	Enter the incoming call identification flashing threshold in four second increments. If set to zero, the threshold is infinite.
OPTION	ICINUM	Enter ICINUM if the customer group requires more than 26 fixed incoming call identification codes. Complete field NOICIS.
NOICIS	1 - 229	Enter the number of ICI codes required in addition to the fixed 26 ICI codes.
OPTION	IMMREL	Enter IMMREL if the customer group is to have the attendant immediate release option.
OPTION	LPKEY	Enter LPKEY if the attendant consoles for the customer group are to have less than the maximum of six loop keys. Complete field NOACLPKY.
NOACLPKY	2-5	Enter the number of attendant console loop keys.
OPTION	NDSCTIM	Enter NDSCTIM if the no disconnect supervision timeout is something other than 30 seconds. Complete field NDSCTO.
NDSCTO	12-29 or 31-60	Enter the time, in one-second intervals, for the no disconnect supervision timeout.
OPTION	NS2KEY	Enter NS2KEY if two key hits are required to initiate a night service mode change.
OPTION	PEGLA	Enter PEGLA if the attendant answer delay peg count time is less than 60 seconds. Complete field ANSTIME.
ANSTIME	1 - 14	Enter the attendant answer delay peg count time in four second increments. For example, 14 represents 56 seconds.
OPTION	SEC	Enter SEC if the customer group is to have the secrecy option. Complete field LOCKOUT.
LOCKOUT	Y or N	Enter Y (yes) if attendant lockout is required. Otherwise, enter N (no).
OPTION	SGRPNUM	Enter SGRPNUM if the number of attendant subgroups is more than one. Complete field NOSGRPS.

- continued -

Table 2-2xxx
Description of table CUSTCONS (continued)

Field Name	Entry	Explanation
NOSGRPS	2 - 8	Enter the maximum number of attendant console subgroups required for the customer group.
OPTION	TIM12	Enter TIM12 if a 12-hour clock is required for the time and date option.
		End

Table name: FNMAP

Description:

This table assigns features to keys 2 to 43 on specific consoles. Key numbers 0 and 1 on every console are the night service and console test keys respectively and have no corresponding entries in this table. Customers are able to position the features to suit their requirements.

To conserve keys, the wild card key may be used to invoke most special features that are not directly available on that console through a feature key. The assignment of wild card key access codes is defined in the WCKCODES table.

Each tuple of table FNMAP contains:

- the KEY, which consists of the subfields
  - CONSCLLI. Enter the common language location identifier (clli) of the attendant console in this field.
  - ACKEY . Enter the key number of the console that is assigned to the special feature.
- The RESULT, which consists of the subfields
  - KEYSEL, which is the key selector. In most cases, enter SPECL in this field.
  - SPFN, which is the special function code for the feature. Refer to the following SPECIAL FUNCTIONS table to determine the entry for each special function.

Table 2-3xxx
Special functions

Feature	Entry	Explanation
Account Code Entry	ACC	Enter ACC in the SPFN field if the customer group to which the console belongs is to have a dedicated key and lamp assigned to the account code entry feature.
Aggregate Trunk Access Control	ATAC	Enter ATAC in the SPFN field if the customer group to which the console belongs has one key and lamp that performs both the group trunk access control (GTAC) and virtual facility group access control (GVAC) features. This can only be assigned if the customer group in question is connected to a switching unit that has the GVAC software.
Attendant Autodial	AUTOD	Enter AUTOD in the SPFN field if the customer group to which the attendant console belongs has a key and lamp dedicated for attendant autodial. Also, subfields PROGRAM and NUMBER must be completed. Enter ATTPRG in the PROGRAM subfield if the attendant is to be allowed to program the autodial key at the console. Enter NOATTPRG if the attendant is not to be allowed to program the autodial key. Enter the number (up to 24 digits) that is dialed by the autodial feature in the NUMBER subfield.
Attendant Console End-to-End (DTMF) Signaling	ACEES	Enter ACEES in the SPFN field if the customer group to which the console belongs is to have a dedicated key and lamp assigned to the Attendant Console End to End Signaling feature.
Authorization Code	AUTH	Enter AUTH in the SPFN field if the customer group to which the attendant console belongs is to have a key and lamp on the console dedicated for the entry of authorization codes.
Authorization Validation	AUVAL	Enter AUVAL in the SPFN field if the customer group to which the console belongs is to have a key and lamp on the console dedicated for authorization code validation.
Busy Verification Line	BVL	Enter BVL in the SPFN field if the customer group to which the console belongs requires a dedicated key and lamp for the Busy Verification Line feature. Also, subfield APREEMPT must be completed. Enter Y (yes) in the APREEMPT subfield if the attendant is to be able to pre-empt all connections to the line. If not, enter N (no).

- continued -

Table 2-3xxx
Special functions (continued)

Feature	Entry	Explanation
Busy Verification Trunk	BVT	Enter BVT in the SPFN field if the customer group to which the console belongs requires a dedicated key and lamp for the Busy Verification Trunk feature. Also, subfields APREEMPT and BVTAUT must be completed. Enter Y (yes) in subfield APREEMPT if the attendant is to be able to pre-empt all connections to the trunk, otherwise, enter N (no). Enter Y (yes) in subfield BVTAUT to enable the attendant to verify the status of a trunk without immediate barge-in. The default is N (no).
Activate, Deactivate, Program Call Forwarding	CFS	Enter CFS in the SPFN field if the customer group requires a dedicated key and lamp on the Attendant Console to activate, deactivate, and program call forwarding by the attendant. This applies to centrex lines with the call forwarding universal (CFU) or call forwarding intragroup (CFI) features.
Conference Call	CONF	Enter CONF in the SPFN field if the customer group to which the console belongs requires a key and lamp that is dedicated for the conference call feature.
Display Queued Calls	DQC	Enter DQC in the SPFN field if the console requires a dedicated key and lamp to provide the attendant with a visual indication of the number of calls queued to be answered.
Do Not Disturb	DND	Enter DND in the SPFN field if the customer group to which the console belongs has a dedicated key and lamp on the attendant console for the activation and deactivation of the Do Not Disturb feature. This can be assigned only if the customer group has the DND feature assigned in customer data Table CUSTSTN.
Flexible Console Alerting	BUZZ	Enter BUZZ in the SPFN field if the customer group to which the console belongs is to have a key and lamp on the console dedicated for the Flexible Console Alerting feature. This feature permits longer console buzzing or eliminates buzzing to reduce noise. In this case, alerting is done through the headset instead of the console speaker.

- continued -

Table 2-3xxx
Special functions (continued)

Feature	Entry	Explanation
Flexible Display Language	LANG	Enter LANG in the SPFN field if the customer group to which the console belongs requires a key and lamp on the console dedicated for the flexible display language feature. This allows the attendant to change the display language of the console. The available languages are datafilled in Table ACLANG.
Global Virtual Facility Group Access Control	GVAC	Enter GVAC in the SPFN field if the customer group to which the console belongs requires a key and lamp on the console dedicated for the Global Virtual Facility Group Access Control feature. With this feature, only one key is required for all virtual facility groups.
Global Virtual Facility Group Busy	GVGB	Enter GVGB in the SPFN field if the customer group to which the console belongs requires a key and lamp on the console dedicated for the Global Virtual Facility Group Busy feature. With this feature, only one key is required for all virtual facility groups.
Group Trunk Access Control	GTAC	Enter GTAC in the SPFN field if the customer group to which the console belongs requires a key and lamp on the console dedicated for the Group Trunk Access Control feature. With this feature, only one key and lamp is required for all trunk groups which require this feature.
Group Trunk Group Busy	GTGB	Enter GTGB in the SPFN field if the customer group to which the console belongs requires a key and lamp on the console dedicated for the Group Trunk Group Busy feature. With this feature, only one lamp is required for all trunk groups which require this feature.
Incoming Call Identification Code	ICICODE	Enter ICICODE (instead of SPECL) in the KEYSEL field if a key and lamp are to be assigned for each incoming call identification code. The number of incoming call identification codes is 255. Field ICI must also be completed. Enter the Incoming Identification number (0-254) assigned to the attendant console key number defined in field ACKEY.
Key and Lamp Display	DSPC	Enter DSPC in the SPFN field if the customer group to which the console belongs requires a key and lamp on the console dedicated for the key and lamp display.

- continued -

Table 2-3xxx
Special functions (continued)

Feature	Entry	Explanation
Message Waiting	MSGIND	Enter MSGIND in the SPFN field if the Attendant Console is assigned as a message waiting center. The attendant uses this key to activate, deactivate, and query message indication for a station.
Name information of the source and destination	NAME	Enter NAME in the SPFN field if a key and lamp are to be assigned for the displaying of the name of the source or destination of the call.
Night Service Programming	NSPRG	Enter NSPRG in the SPFN field if the customer group to which the console belongs is to have a key and lamp on the console dedicated for the programming of the Night Service feature.
Park	PARK	Enter PARK in the SPFN field if the customer group to which the console belongs has a key and lamp on the Attendant Console dedicated for the parking of calls by the attendant. This can be assigned only if the customer group has the CPARK feature assigned in Table CUSTSTN.
Position Busy	POS	Enter POS in the SPFN field if a key and lamp is required with multiple console operation for the position busy feature. This feature allows the attendant to make the console unavailable to incoming calls.
Speed Calling List	SC10, SC30, SC50, SC70, or SCU	This feature permits an attendant to dial numbers that are frequently called by pressing a speed call key and dialing a one- or two-digit code. Enter SC10 to assign a key to Speed Calling List Short. Enter SC30, SC50, or SC70 to assign a key to Speed Calling List Long. Enter SCU to assign a key to Speed Calling User's List. In this case, the Attendant Console can use a long speed calling list belonging to another console. Subfield CONTROLAC must be completed to define the console that owns the long speed calling list.
CONTROLAC	clli	Enter the clli of the console that owns the speed calling list if SCU has been entered in the SPFN field.

- continued -

Table 2-3xxx
Special functions (continued)

Feature	Entry	Explanation
Time	TIME	Enter TIME in the SPFN field if the customer group to which the console belongs requires a dedicated key and lamp on the console dedicated for the time and date feature.
Trouble Code	TRBL	Enter TRBL in the SPFN field if the customer group to which the console belongs requires a key and lamp on the console that is dedicated for the trouble code feature.
Trunk Access Control	TAC	Enter TAC (instead of SPECL) in the KEYSEL field if a dedicated key and lamp on the console are required for this feature. Only one console may have a Trunk Access Control key for a specific trunk group. If one key is to be provided for all trunk groups, see assignment of GTAC to a key and lamp. If one key is to be provided for all trunk groups and virtual facility groups, see assignment of ATAC to a key and lamp. Subfield TRKCLLI must also be completed. Enter the clli of the trunk group which is assigned to the attendant console key.
Trunk Group Busy	TGB	Enter TGB (instead of SPECL) in the KEYSEL field if one lamp is required for each physical trunk group requiring this feature. This feature is only applicable to trunk groups which directly terminate on the switching unit. If one lamp is to be provided for all of the trunk groups with this feature, see assignment of GTGB to a key and lamp. Subfield TRKCLLI must also be completed. Enter the clli of the trunk group that is assigned to this Attendant Console key.
Unpark	UNPK	Enter UNPK in the SPFN field if the customer group to which the console belongs requires a key and lamp dedicated for the feature that allows the attendant to unpark calls. See also PARK assignment.

- continued -

Table 2-3xxx
Special functions (continued)

Feature	Entry	Explanation
Virtual Facility Group Access Control	VAC	Enter VAC (instead of SPECL) in the KEYSEL field if the customer group to which the console belongs requires a dedicated key and lamp on the console for this feature. If one key is to be provided for all virtual facility groups, see assignment for special function GVAC. If one key is to be provided for all virtual facility groups and trunk groups, see assignment for special function ATAC. Subfield VFGROUP must be completed. Enter the code of the virtual facility group that is assigned to the key.
Virtual Facility Group Busy	VGB	Enter VGB (instead of SPECL) in the KEYSEL field if one lamp is required for each virtual facility group requiring the group busy feature. If one lamp is to be provided for all the virtual facility groups, see assignment of special function GVGB. Subfield VFGROUP must be completed. Enter the code of the virtual facility group that is assigned to the Attendant Console key.
Wild Card	WC	Enter WC in the SPFN field if the customer group to which the console belongs requires a key and lamp on the console as a wild card key.
		End

Table name: WCKCODES

Description:

The Wild Card Key Table is required for each customer group that has the wild card key option. The wild card key is assigned in the Attendant Console Functional Key table (FNMAP).

To conserve keys, the wild card key may be used to invoke most special features that are not directly available on that console through a feature key.

Each tuple of Table WCKCODES contains:

- The WCKEY, which consists of the subfields:
  - CUSTNAME. Enter the 1-to-16-character name that is assigned to the customer group.
  - TABIDX. Enter the wild card key access code that is assigned to the special feature.
- The VALUE. This field consists of the subfield:

- WCSPN, which contains the wild card key special function. Refer to the table WILD CARD KEY SPECIAL FUNCTIONS to determine the entry for each special function.

Table 2-4xxx
Wild card key special functions

Feature	Entry	Explanation
Account Code Entry	ACC	Enter ACC in the WCSPFN field if the customer group has the Account Code Entry feature assigned to one of the wild card key access codes. It can be assigned only if the customer group has the ACCT option assigned in Table CUSTHEAD.
Attendant Console End to End (DTMF) Signaling	ACEES	Enter ACEES in the WCSPFN field if the customer group has the Attendant Console End-to-End (DTMF) Signaling feature assigned to one of the wild card key access codes.
Authorization Code	AUTH	Enter AUTH in the WCSPFN field if the customer group has the Entry of Authorization codes assigned to one of the wild card key access codes. This can be assigned only if the customer group has the AUTH option assigned in Table CUSTHEAD.
Authorization Validation	AUVAL	Enter AUVAL in the WCSPFN field if the customer group has the Authorization Code Validation feature assigned to one of the wild card key access codes. This can be assigned only if the customer group has the AUTH option assigned in Table CUSTHEAD.
Busy Verification Line	BVL	Enter BVL in the WCSPFN field if the customer group to which the console belongs has a wild card key access code assigned to the Busy Verification Line feature. Also, subfield APREEMPT must be completed. Enter Y (yes) in the APREEMPT subfield if the attendant is to be able to pre-empt all connections to the line. If not, enter N (no).

- continued -

Table 2-4xxx
Wild card key special functions (continued)

Feature	Entry	Explanation
Busy Verification Trunk	BVT	Enter BVT in the WCSPFN field if the customer group to which the console belongs has a wild card key access code assigned to the Busy Verification Trunk feature. Also, subfields APREEMPT and BVTAUT must be completed. Enter Y (yes) in subfield APREEMPT if the attendant is to be able to pre-empt all connections to the trunk, otherwise, enter N (no). Enter Y (yes) in subfield BVTAUT to enable the attendant to verify the status of a trunk without immediate barge-in. The default is N (no).
Call Forward Station	CFS	Enter CFS in the WCSPFN field if the customer group has the call forward station code validation feature assigned to one of the wild card key access codes.
Conference Call	CONF	Enter CONF in the WCSPFN field if the customer group has the conference call feature assigned to one of the wild card key access codes.
Display Queued Calls	DQC	Enter DQC in the WCSPFN field if the customer group has the Display Queued ICI Calls feature assigned to one of the wild card key access codes.
Flexible Console Alerting	BUZZ	Enter BUZZ in the WCSPFN field if the customer group has the Flexible Console Alerting feature assigned to one of the wild card key access codes. This feature permits longer console buzzing or eliminates buzzing to reduce noise. In this case, alerting is done through the headset instead of the console speaker.
Flexible Display Language	LANG	Enter LANG in the WCSPFN field if the customer group has the Flexible Display Language feature assigned to one of the wild card key access codes. This allows the attendant to change the display language of the console. The available languages are datafilled in Table ACLANG.
Group Trunk Access Control	GTAC	Enter GTAC in the WCSPFN field if the customer group has the Group Trunk Access Control feature assigned to one of the wild card key access codes. With this feature, only one access code is required for all trunk groups which require this feature.

- continued -

Table 2-4xxx
Wild card key special functions (continued)

Feature	Entry	Explanation
Group Trunk Group Busy	GTGB	Enter GTGB in the WCSPFN field if the customer group has the Group Trunk Group Busy feature assigned to one of the wild card key access codes. With this feature, only one access code is required for all trunk groups which require this feature.
Global Virtual Access Control (GVAC)	GVAC	Enter GVAC in the WCSPFN field if the Attendant Console is to have a wild card key access code assigned to this feature. This feature allows the attendant to select any virtual facility group (VFG) using wild card key access code and control its access by stations or incoming trunk groups.
Global Virtual Group Busy (GVGB)	GVGB	Enter GVGB in the WCSPFN field if the Attendant Console is to have a wild card key access code assigned to this feature.
Night Service Programming	NSPRG	Enter NSPRG in the WCSPFN field if the customer group has the programming of the Night Service feature assigned to one of the wild card key access codes.
Park	PARK	Enter PARK in the WCSPFN field if the customer group has the call park feature assigned to one of the wild card key access codes. This feature can be assigned only if the customer group has the CPARK feature assigned in Table CUSTSTN.
Speed Calling List	SC10, SC30, SC50, SC70, or SCU	This feature permits an attendant to dial numbers that are frequently called by depressing a speed call key and dialing a one- or two- digit code. Enter SC10 to assign a key to Speed Calling List Short. Enter SC30, SC50, or SC70 to assign a key to Speed Calling List Long. Enter SCU to assign a key to Speed Calling User's List. In this case, the Attendant Console can use a long speed calling list belonging to another console. Subfield CONTROLAC must be completed to define the console that owns the long speed calling list. Enter the clli of the console that owns the speed calling list if SCU has been entered in the WCSPFN field.
Time	TIME	Enter TIME in the WCSPFN field if the customer group has the time and date display feature assigned to a wild card key access code.

- continued -

Table 2-4xxx
Wild card key special functions (continued)

Feature	Entry	Explanation
Trouble Code	TRBL	Enter TRBL in the WCSPFN field if the customer group has the trouble code feature assigned to one of the wild card key access codes.
Unpark	UNPK	Enter UNPK in the WCSPFN field if the customer group has the feature which allows the attendant to unpark calls assigned to one of the wild card key access codes.

End

Table name: ICIDATA

Description:

Table ICIDATA assigns the flexible night service and the key and lamp display for each incoming call identification (ICI) number.

Flexible night service allows the attendant to program night service routes per ICI assigned to the customer group. The attendant uses a dedicated key or a wild card key access code to program the night service route.

All ICI categories that are eligible for attendant console programming must be included in the ICIDATA table. ICI categories may only be added or deleted by table control. If an attendant attempts to program an ICI category that is not included in Table ICIDATA, or if attendant night service programming is not allowed for that ICI, then a two-second reorder tone is given to the attendant.

This table contains all the ICI codes for a customer group, the name for key and lamp display purposes, and options for emergency and night service purposes. Option ATTPRG is used to permit Attendant Console programming. Option NSDIGS contains the night service forwarded directory number.

Table 2-5xxx
Incoming call identification DATA table (ICIDATA)

Field Name	Entry	Explanation
KEY	alphanumeric	This field is comprised of the two subfields CUSTGRP and ICICODE.
CUSTGRP	alphanumeric	Enter the one-to-16-character name assigned to the customer group.

- continued -

Table 2-5xxx
Incoming call identification DATA table (ICIDATA) (continued)

Field Name	Entry	Explanation
ICICODE	0-254	Enter the incoming call identification code.
NAME	alphanumeric, '_' or '$'	Enter the one-to-seven-character name for the key and lamp display at the Attendant Console. This name is assigned to the specified incoming call identification code in the specified customer group. An '_' (underscore) appears on the console display as a blank. On the MAP, an imbedded underscore appears as an underscore whereas a trailing underscore appears as a blank. If no key and lamp display is required, enter a dollar ($) sign. Refer to Table Recommended Names after this table.
OPTIONS	alphanumeric	Enter the list of options and associated subfields that are assigned to the ICICODE. Separate each option and its subfield by a blank. Use as many records as required to complete the list of options. If an option is not provided, no input for that option is required.
OPTION	EMERG	Enter EMERG if the emergency option is to be assigned to an ICICODE. The maximum number of emergency ICIs for each customer group is five. Only customer specified ICIs (26-254) should be datafilled as emergency ICIs. Incoming ICI codes 0-25 are reserved for special functions.
OPTION	ATTPRG	If the attendant is to be able to program the night service number assigned to the ICICODE, enter ATTPRG.
OPTION	NSDIGS	If the ICICODE is to have a night service number, enter NSDIGS and complete subfields DIGITS.
DIGITS	numeric	Enter the one-to-18-digit night service number assigned to the ICICODE. This means that when the customer group has night service active, all calls to the attendant with the ICICODE will be routed the number in this field.
CONTMARK	$ or +	Enter a dollar ($) sign to signify the end of the list of options and the end of the tuple. Enter a plus (+) sign for continuation of data on the next line.
		End

Recommended names

If keys and lamps are required for the following features, assign them to the following incoming call identification codes.

Table 2-6xxx
Recommended names

ICI	Name	Feature
1	DIAL0	Attendant
2	NOANSRC	Don't answer recalls
3	CMPONRC	Camp on recall
4	CWAITRC	Call waiting recall
5	CFW	Call forward to attendant
6	CFWNOAN	Call forward don't answer to attendant
7	CFWBUSY	Call forward busy to attendant
8	INTECPT	Intercept
9	SERIAL	Serial Call
12	CONF	Conference call recall
13	DND	Do not disturb
14	DISA	Direct inward system access
15	MWINDRT	Message waiting indirect ICI
16	MWDRCT	Message waiting direct ICI
25	DIRECT	Direct ICI

Table name: CUSTHEAD

Description:

Table CUSTHEAD contains the standard and optional features for a console in a customer group.

Table 2-7xxx
Description of table CUSTHEAD

Field Name	Entry	Explanation
CUSTNAME	alphanumeric	Enter the one to 16 character name that is assigned to the customer group.
CUSTXLA	alphanumeric	Enter the one to eight character name assigned to the customer translator in the IBNXLA table. The translator specifies the data for the translation of digits originating from a Meridian Digital Centrex station, attendant, incoming trunk group or incoming side of a two-way trunk group.
DIGCOLNM	alphanumeric	Enter the one to eight character digit collection name assigned to the block of data in table DIGCOL that specifies the MDC digit collection for the MDC lines.
OPTIONS	alphanumeric	Enter the list of options and associated subfields that are assigned to the customer group. Separate each option and subfield by a blank. Use as many records as required to complete the list of options and associated subfields. If an option is not provided, no input for that option is required.
CONTMARK	+ or $	Enter a plus (+) sign to indicate the tuple continues on the next line. Enter a dollar ($) sign to indicate the end of the tuple.
OPTION	ACCT	Enter ACCT if the customer group has the account code capability option. Complete the DIGINACC subfield. This option provides a station user with the ability to enter a cost accounting or client billing code into the call detail recording (CDR) system following completion of dialing of any access code call and in response to a tone.
DIGINACC	2-14	Enter the number of digits in the account code. Within a customer group, the number of digits in the account code is fixed.
OPTION	ACR	Enter ACR if the customer group has the authorization or account code last option. Complete subfields AUAC and FLEXINO. This option is required if the account code or authorization code or combined account authorization code is to be entered after the called number has been dialed.

- continued -

Table 2-7xxx
Description of table CUSTHEAD (continued)

Field Name	Entry	Explanation
AUAC	ACCT, AUTH, ARS, or AUARS	Enter ACCT if account code is to be entered last. Enter AUTH if authorization or combined authorization and account code is to be entered last. Enter ARS if the authorization code is to be used for automatic route selection. Enter AUARS if the authorization code is to be entered last and also be used for automatic route selection.
FLEXINO	0-63	Enter the treatment number in the IBNTREAT table to which a call with an invalid authorization or account code is to be routed.
OPTION	ACRANN	Enter ACRANN if an announcement is required to prompt for the authorization or account code last. Complete subfield ANNCLLI.
ANNCLLI	alphanumeric	Enter the common language location identifier (clli) of the announcement which prompts for the authorization or account code last.
OPTION	AUTH	Enter AUTH if the customer group has the authorization code option. Complete subfields PARTNM, SEC, and COMB.
PARTNM	alphanumeric	Enter the name that is assigned to the customer group in the authorization code and partition tables.
SEC	N or Y	Enter N (no) if the user of the authorization code must indicate end of dialing by keying in an octothorpe (#) or awaiting the expiration of interdigit timeout. Enter Y (yes) if an authorization code is required for DISA access.
COMB	N or Y	Enter Y (yes) if the code is a combined authorization and account code. Otherwise, enter N (no).
OPTION	CPK	Enter CPK if the customer group has the call park or directed call park option and ▪ the maximum number of calls that can be parked is other than 100 ▪ announcement and/or music is to be given to the caller.

- continued -

Table 2-7xxx
Description of table CUSTHEAD (continued)

Field Name	Entry	Explanation
ANNMUSIC	Y or N	Enter Y (yes) if announcement and/or music is to be given to the call parked. Otherwise, enter N (no).
AUDIOGRP	AUDIO1 to AUDIO15	If ANNMUSIC is set to Y, enter the audio group datafilled in table AUDIO. This specifies the announcement or music that is to be given to the call parked.
CPMAXNO	0-32767	Enter the maximum number of calls that can be parked simultaneously for the customer group.
OPTION	CUTIMOUT	Enter CUTIMOUT if the Cut Through Dial feature time out is something other than four seconds. Complete subfield TIMEOUT.
TIMEOUT	5 - 10	Enter the maximum number of seconds that the Cut Through Dial feature, if active, will wait for digits. If no digits are received, the feature times out.
OPTION	CUTPAUSE	Enter CUTPAUSE if the Cut Through Dial feature pause is something other than three seconds when a star (*) is dialed. Complete subfield PAUTIME.
PAUTIME	1-2 or 4-7	Enter the maximum number of seconds that the Cut Through Dial feature will pause when a star (*) is dialed.
OPTION	ERDT	Enter ERDT if the expensive route delay time is something other than six seconds. Complete subfield ERDTIME.
ERDTIME	0-5 or 7-10	Enter the number of seconds that will elapse before a call is terminated on an expensive route.
OPTION	ESAPXLA	Enter ESAPXLA if the customer group has the Emergency Standalone Prefix Translator feature. Complete the XLANAME subfield.
XLANAME	alphanumeric	Enter the one-to-eight-character prefix translator name that is assigned to the prefix translator in Table ESAPXLA.
OPTION	EXTNCOS	Enter EXTNCOS if the external Network Class Of Service (NCOS) number is something other than zero. Complete subfield EXTNCOS.

- continued -

Table 2-7xxx
Description of table CUSTHEAD (continued)

Field Name	Entry	Explanation
EXTNCOS	1-255	Enter the network class of service number that is assigned to calls originating from outside the customer group.
OPTION	FETXLA	Enter FETXLA if the customer group has a feature translator in the IBNXLA table. Complete the XLANAME subfield.
XLANAME	alphanumeric	Enter the one-to-eight-character name that is assigned to the feature translator.
OPTION	LSCCHECK	Enter LSCCHECK if the customer group requires line screening code checking for intergroup calls.
OPTION	MHOLD	Enter MHOLD if the customer group has the music-on-hold option. Complete subfields MOHTH and AUDIOGRP.
MOHTH	1-127	Enter the number of seconds that will elapse before music is applied. This is the Music On Hold Threshold.
AUDIOGRP	AUDIO1 to AUDIO15	Enter the audio group datafilled in table AUDIO. This specifies the announcement or music that is to be given to the call on hold.
OPTION	OCTXLA	Enter OCTXLA if the customer group has an octothorpe translator in the IBNXLA table. Complete subfield XLANAME.
XLANAME	alphanumeric	Enter the one-to-eight character name that is assigned to the feature translator.
OPTION	OHQA	Enter OHQA if the customer group has the off-hook queueing announcement option. Complete subfield ANNCLLI.
ANNCLLI	alphanumeric	Enter the clli that is assigned to the off-hook queuing announcement.
OPTION	PLMXLA	Enter PLMXLA if the customer group has a preliminary translator in the IBNXLA table. Complete subfield XLANAME.
XLANAME	alphanumeric	Enter the one-to-eight character name that is assigned to the preliminary translator.
OPTION	SUPERCNF	Enter SUPERCNF if the maximum number of conference call members on an attendant setup or meet me conference call is to be ten or more.

- continued -

Table 2-7xxx
Description of table CUSTHEAD (continued)

Field Name	Entry	Explanation
OPTION	TODNCOS	Enter TODNCOS if the time of day network class of service is required. Complete subfield TODNAME.
TODNAME	alphanumeric	Enter the one to eight character name assigned to the time of day network class of service system.
OPTION	VACTRMT	Enter VACTRMT if the default treatment number in the IBNTREAT table for all access codes in the IBNXLA table for which no input has been provided is something other than zero. Complete subfield VACTRMT.
VACTRMT	1-63	Enter the treatment number in the IBNTREAT table to which a call to a vacant digit or digits in the IBN translation table for which no input has been provided is to be routed.
		End

Table name: SUBGRP

Description:

One entry is required in this table for each customer group that has field CONSOLES set to Y in Table CUSTHEAD and has an entry in Table CUSTCONS.

A customer may have a number of locations within a city all served by the same switching unit and wish to centralize attendant service on a full- or part-time basis for these locations. To permit centralization on a part- time basis, assign each of the Attendant Consoles to subgroups. The switching unit will support a maximum of eight subgroups per customer group. During regular hours, attendant type calls will be directed to the appropriate attendant subgroup. Subgroup zero is always the controlling subgroup. If a customer does not require centralization, assign all attendant consoles to subgroup zero.

Table SUBGROUP defines the customer group, subgroup number, and several parameters particular to each subgroup.

Table 2-8xxx
Description of table SUBGRP

Field Name	Entry	Explanation
SGRPKEY	alphanumeric	This field consists of the subfields CUSTGRP and SUBGRPNO.
CUSTGRP	alphanumeric	Enter the 1-to-16 character name that is assigned to the customer group.
SUBGRPNO	0-7	Enter the subgroup number.
SNPADN	alphanumeric	This field consists of the subfields SNPA and DN.
SNPA	numeric	Enter the serving NPA that is assigned to the subgroup for billing purposes.
DN	numeric	Enter the directory number assigned to the subgroup for billing purposes.
CQOVTRMT	0-63	Enter the treatment number assigned in table IBNTREAT to which all calls to the attendant will be routed when all the attendant queue registers are busy.
CQFLTHR	0-255	Enter the diversion threshold in four-second increments. The threshold may be specified as infinite, in which case enter zero.
STNEXTLN	1-7	Enter the number of digits in the extension numbers assigned to the subgroup.
MINDIGSR	1-7	Enter the minimum number of digits that can be dialed by the attendants assigned to the subgroup.
OPTIONS	EMALTONE or blank.	If the subgroup has the emergency alerting tone option, enter EMALTONE. Otherwise, leave this field blank.
CONTMARK	$	Enter the continuation mark '$'.

Table name: DMODEM

Description:

This table lists the external trunk name assigned to each digital modem and the location and circuit number for each digital modem.

Table 2-9xxx
Description of table DMODEM

Field Name	Entry	Explanation
EXTRKNM	Numeric, must be a multiple of 4.	External Trunk Name. Enter the arbitrary but unique number assigned to each digital modem circuit.
TMTYPE	MTM	Trunk Module Type. Enter the type of trunk module on which the digital modem card is mounted.
TMNO	0 - 255	Trunk Module Circuit Number. Enter the trunk module circuit number to which the digital modem card is assigned. Only the first circuit in the modem card (or card pair) is assigned. Therefore only the six MTM circuit numbers shown can be used.
CARDCODE	3X02AA, 3X02CA	Card Code. Specify the digital modem card type. 3X02CA is reserved for future use, 3X02AA is the only valid entry.

Table name: CONF3PR

Description:

This table lists the conference trunk number, the external trunk number of the first port, and the equipment location of the conference trunk.

Table 2-10xxx
Description of table CONF3PR

Field Name	Entry	Explanation
CNFCTNO	0 - 999	Enter the circuit number assigned to the three-port conference trunk circuit.
EXTRKNM	0 - 9990 (0, 10, 20, 30, etc.)	External Trunk Number. Enter the lowest of the three consecutive external trunk numbers assigned to the three- port conference trunk circuit.
TMTYPE	TM2, TM4, TM8, ATM, or MTM	Trunk Module Type. Enter the type of trunk module on which the three-port conference trunk circuit is mounted. If CARDCODE is NT1X31AA, the three-port conference trunk circuit may be mounted on any of the listed trunk modules. If CARDCODE is NT3X67AA, BA, or BB, the three-port conference trunk circuit can be mounted only on a MTM.

- continued -

Table 2-10xxx
Description of table CONF3PR (continued)

Field Name	Entry	Explanation
TMNO	0 - 2047	Trunk Module Number. Enter the trunk module circuit number on which the three-port conference trunk circuit is mounted.
TMCKTNO	0 - 29	Trunk Module Circuit Number. Enter the lowest of the three trunk module circuit numbers assigned to the three-port conference trunk circuit. If CARDCODE is NT1X31AA, the lowest trunk circuit numbers are the circuit numbers assigned to port zero or three. If CARDCODE is NT1X31AA, BA, or BB, the lowest trunk circuit numbers are the circuit numbers assigned to port zero to one.

- continued -

Table 2-10xxx
Description of table CONF3PR (continued)

Field Name	Entry	Explanation
CARDCODE	NT1X31AA, NT3X67AA, NT3X67BA, NT3X67BB	Conference Card Code. Enter the card code used for the conference circuit. ▪ 1X31AA Domestic Three-port conference circuit (Mu-law PCM) (A&M) ▪ 3X67AA Domestic Six-port conference circuit (Mu-law PCM) ▪ 3X67BA International Six-party conference circuit (A-law PCM) ▪ 3X67BB International Six party conference circuit (A-law PCM) with continuous Toll Break Break-In (TBI) background tone. TBI is applicable only to the trunk signaling types NTLS06 and NTLS07. All the trunks, up to the near end switching unit, must be datafilled as the operator trunks 'OPR.'
PADGRP	CONF or alphabetic.	Pad group. Enter the name of the Pad group assigned to the conference circuit in the Pad Data table. The Pad Data table lists the value of the pad circuits which can be switched in the network when one of the members of the group is involved in a call. Different values for the pad circuits can be specified when the circuit connects to an agent with a different Pad group. Network pad switching is only applicable when the circuit is connected to a new network. The name can be the predefined name CONF in the Pad Data table or another specified name.
		End

Table name: TRBLCODE (forms 2265A and B)

Description:

The console trouble key (TRBL) allows an attendant to indicate a problem in the handling of a particular call. Some typical examples are noise, cannot hear, echo, clipping, no ring, call dropped, malicious call identification, and so forth.

A set of trouble codes - defined by the operating company through Table TRBLCODE - allows the the attendant to classify the problem into the most

appropriate category. Only trouble codes entered into this table are valid for use with the feature. Associated with each trouble code is a code meaning and alarm severity.

The meaning assigned to the code may include blank spaces, but these must be typed as underscores. Trailing blanks are automatically removed. The assigned meaning is presented to the attendant for confirmation, and also appears in the log report generated for maintenance personnel.

The alarm severity assigned determines the grade of alarm associated with each trouble code: critical, major, minor, or no alarm.

TRBL may be assigned to a console as a dedicated function key (through Table FNMAP), or as one of the functions of the wild card key (through Table WCKCODES).

Table 2-11xxx
Description of table TRBLCODE

Field Name	Entry	Explanation
CODE	0 - 99	Enter the trouble code number.
MESSAGE	alphanumeric	Describes the problem.
ALARM	NA,MN,MJ, CR	NA - no alarm; MN - minor alarm; MJ - major alarm; CR - critical alarm.

Examples:

1 Consider that the attendant has received an incoming trunk call, and can barely hear the caller. The attendant enters code 24 to activate the TRBL feature.

2 The attendant has answered a call and determines it to be malicious.

```
COMMAND  TABLE NAME
-------  ----------
  TAB    TRBLCODE

COMMAND  CODE  MESSAGE           ALARM
------   ----  -------           -----
INP
         24    NOISE_FROM_DEST    MN
         6     MALICIOUS_CALL     NA
QUI
```

Installation and verification

Environmental considerations

The following environmental parameters must be observed to ensure reliable performance:

OPERATING STATE

- Temperature Range: 4Ø to 38ØC (40Ø to 100ØF)
- Relative Humidity: 20% to 55% (non-condensing)

NON-OPERATING STATE

- Temperature Range: -40Ø to 60ØC (-40Ø to 140ØF)
- Relative Humidity: 10% to 95% (non-condensing)

Note: When operating at low humidity levels (below 30%), additional measures to control electrostatic discharge (ESD) may be required.

Wiring and power

Physical wiring requirements

The Attendant Console requires a connecting (running) cable of 10-, 12-, 16-, or 25-pair that terminates on a 66 block near the telephone company's RJ21X. Ten- or 12-pair cables are recommended. See Figure 3-2 on page 3-6 for configuration using 10- or 12-pair cable, Figure 3-3 on page 3-8 for A16QA cable, and Figure 3-5 on page 3-11 for 25-pair cable. For 16- or 25-pair cable, an E66 type block is required at the console power location to connect the non-functional leads to power and ground connections. Otherwise, non-terminated non-functional leads may pick up impulse noise, radio-frequency interference (RFI), or static.

1 The first six pairs; white-blue, white-orange, white-green, white-brown, white-slate, and red-blue are reserved for external power connections. See wiring diagrams.

2 Three Line Equipment Numbers (LENs) are terminated on the Attendant Console.

   a. For 10- or 12-pair running cable:

      i) Talk LEN - terminates on red-slate pair.

      ii) Data-out LEN (DT1 - DR1) - terminates on red-green pair.

iii) Data-in LEN (DT - DR) - terminates on red-orange pair.

b. For 16- or 25-pair running cable:

i) Talk LEN - terminates on yellow-green pair.

ii) Data-out LEN (DT1 - DR1) - terminates on black-green pair.

iii) Data-in LEN (DT - DR) - terminates on black-blue pair.

3 One pair is required to ground the Attendant Console. Up to three pairs are optional ground connections.

a. For 10-pair cable, the red-brown pair is the required ground connection (terminal 8 on the auxiliary power supply).

b. For 12-pair cable, the red-brown, black-blue, and black-orange pairs are required ground connections (terminal 8 on the auxiliary power supply).

c. For 16-pair cable, the black-brown and black-orange pairs are required ground connections (terminal 8 on the auxiliary power supply).

The Attendant Console is a data terminal. The console contains a 1200/300 baud modem and can be affected by data errors. If the path between the distributing frame on the customer's premises and the console passes through an electrically noisy environment (e.g., electric motors, fluorescent lights), then shielded cable is recommended. The pairs must be individually shielded, with the shield grounded at the distributing frame end. A shielded wiring arrangement is also recommended for new installations, and for those with a history of such problems.

Special service protection

To protect the attendant console from electrical interference, the main distributing frame near the DMS and the distributing frame located at the customer's premises (if applicable) should contain Special Service Protection (SSP) on all console voice and data lines. SSP involves placing red plastic tags on exposed MDF contacts to warn maintenance staff of the sensitive nature of the circuits.

Power requirements

The Attendant Console requires external power. A power source of 1.2 amps at -48V dc (+/- 10%) is required to ensure correct attendant console operation. The power source must be within 600 ft. or 180m of the console.

However, it is recommended that distance between the power supply and the console be kept within 50 ft. The resistance of the cable pairs used for power must not exceed 8.2 ohms. The power source recommendations are:

- The PYLON Nevafail NF-3 System, uninterruptable power supply, which consists of KTS-3 Power Supply, NF-3 interface, alarm and control units, LB-3 Battery Compartment, and four Gates battery packs (24 cells).
- Where the PYLON NF-3 system is not installed in a restricted environment, it must be housed in an enclosure. Order the NF-3E system to obtain this configuration.

The PYLON power supply provides sufficient power for two Attendant Consoles. Instructions for power supply installation are supplied with each power supply kit. If the battery backup is not provided, major commercial power fluctuations will cause the Attendant Console to fail.

Note: The strap between terminals 7 and 8 must be connected on the KTS-3 power supply. The strap will be in place on the NF-3 as it comes from the factory.

Line engineering

The Attendant Console operates through 26 AWG standard telephone wire, with a maximum loop-length of 4877m (16000 ft.). The recommended dc resistance is 1300 ohms with no greater than 8dB loss at 1KHz.

Note: For effective performance, there should be no bridge-tap on the line.

Recommended handset and headsets

The following handset and headsets have been determined to provide satisfactory operation with the Attendant Console:

- Plantronics Starset II Headset
- Plantronics Supra Headset
- Northern Telecom Type G Handset

Limitations

If major fluctuations of heat, humidity, or both occur, then the resulting electrostatic discharge may degrade the Attendant Console operation. Install static mats under the console and carpet treatment where applicable to prevent interruption of operation due to static electricity.

If you require additional information concerning the console and its operation:

- In the U.S. - contact Technical Services at 1-800-558-9936, ext. 4200, or 615-883-9220, ext. 4200.

- In Canada - contact your local Northern Telecom Field Service Engineering representative.

Figure 3-1xxx
Console connection using a 10 or 12 pair cable (part 1 of 2)

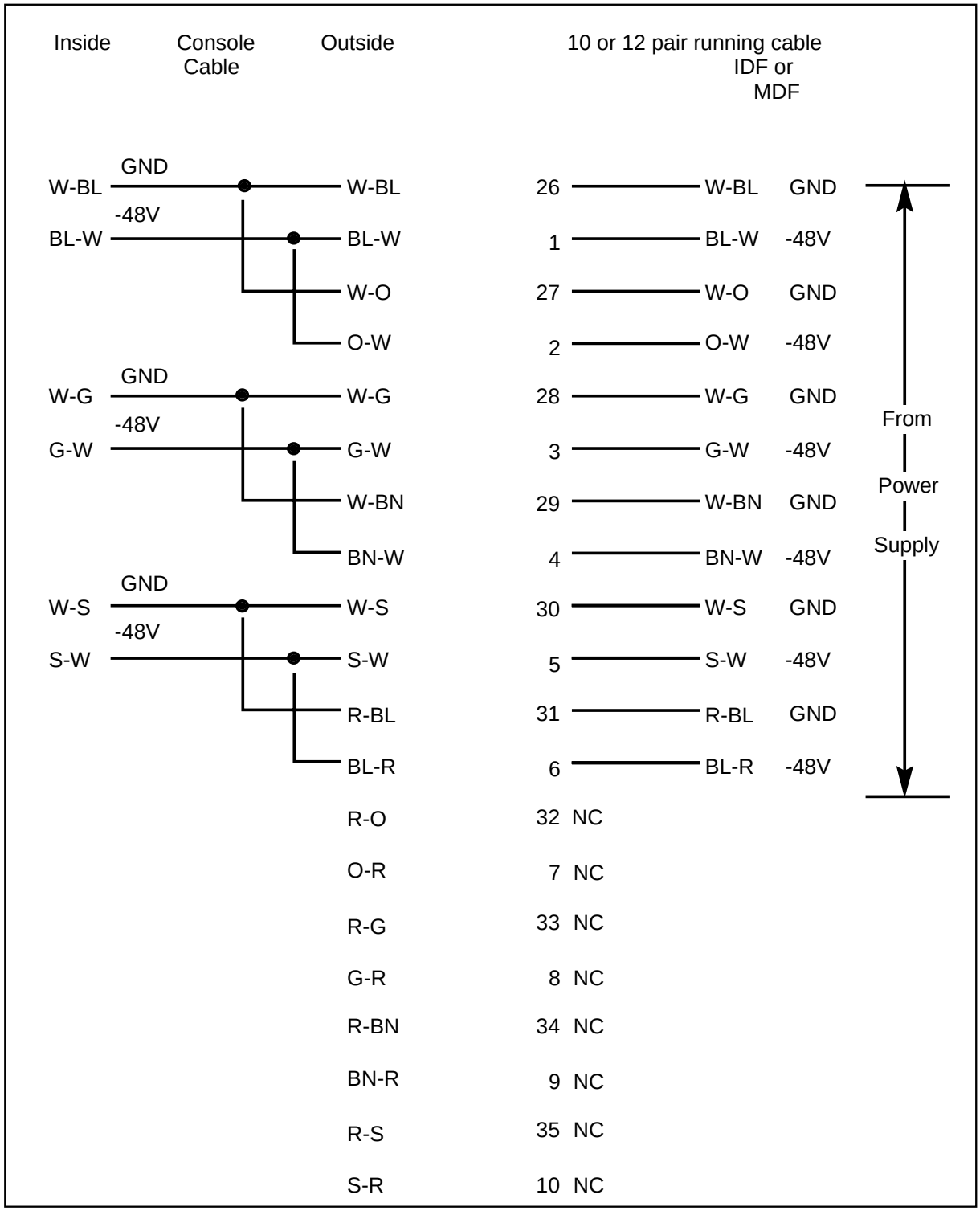
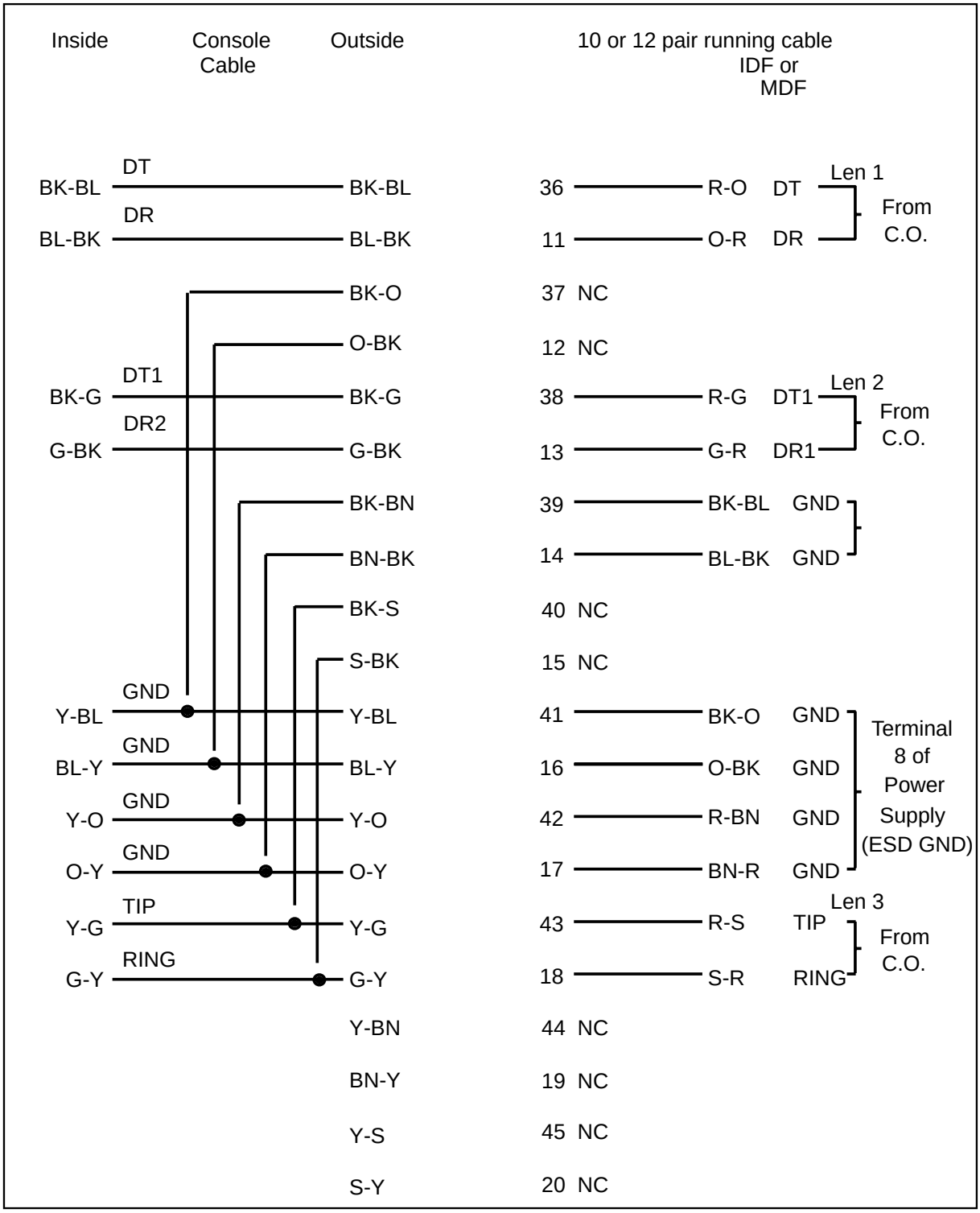


Figure 3-2xxx
Console connection using a 10 or 12 pair cable (part 2 of 2)



Note: 1 Connectivity shown is for 12-pair cables. For 10-pair cabling, omit BK-BL pair and BK-O pairs. All others are as shown.

Note: 2 There are no violet leads in 10- or 12-pair cables.

Figure 3-3xxx
Console connection using A16QA running cable (part 1 of 2)

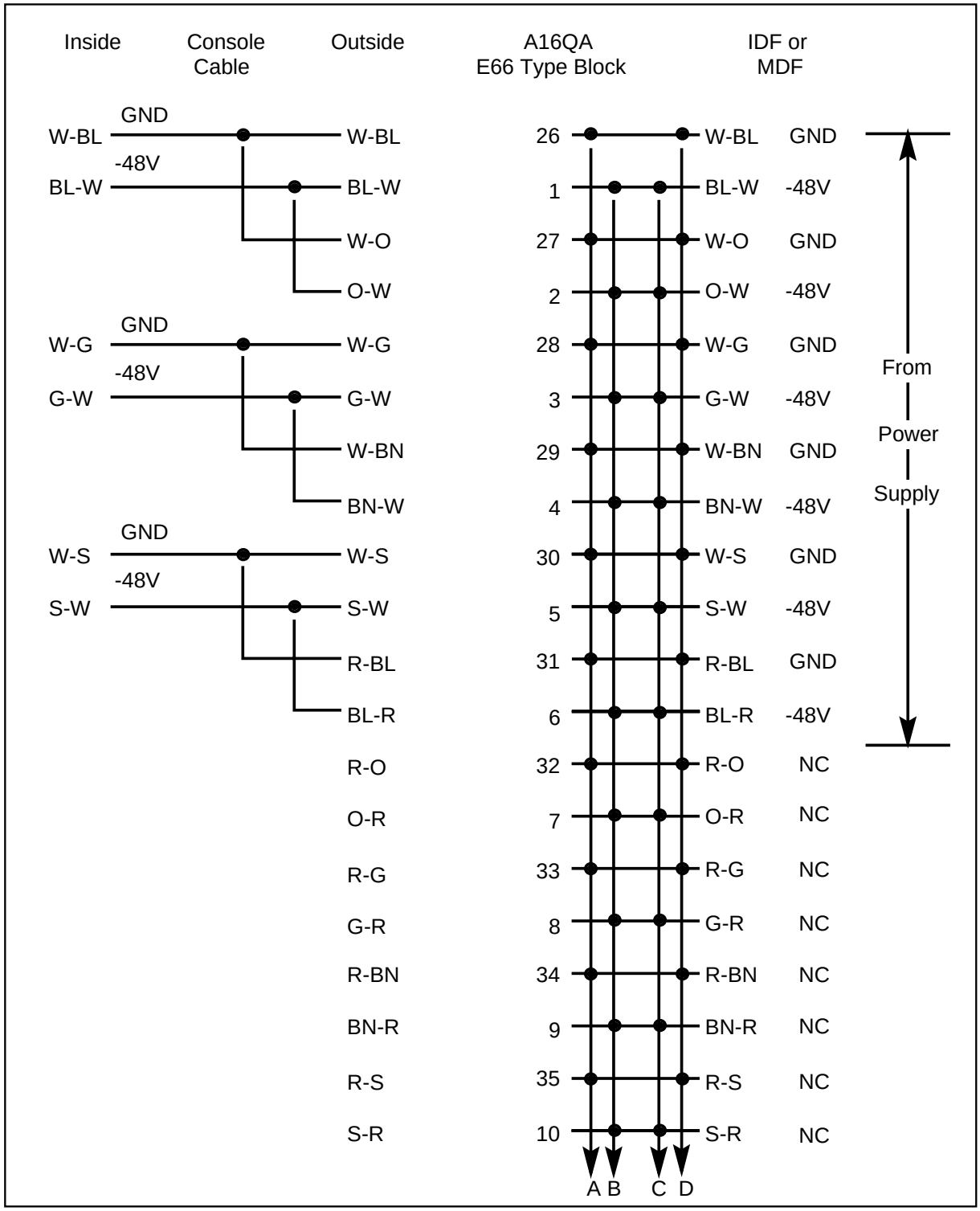
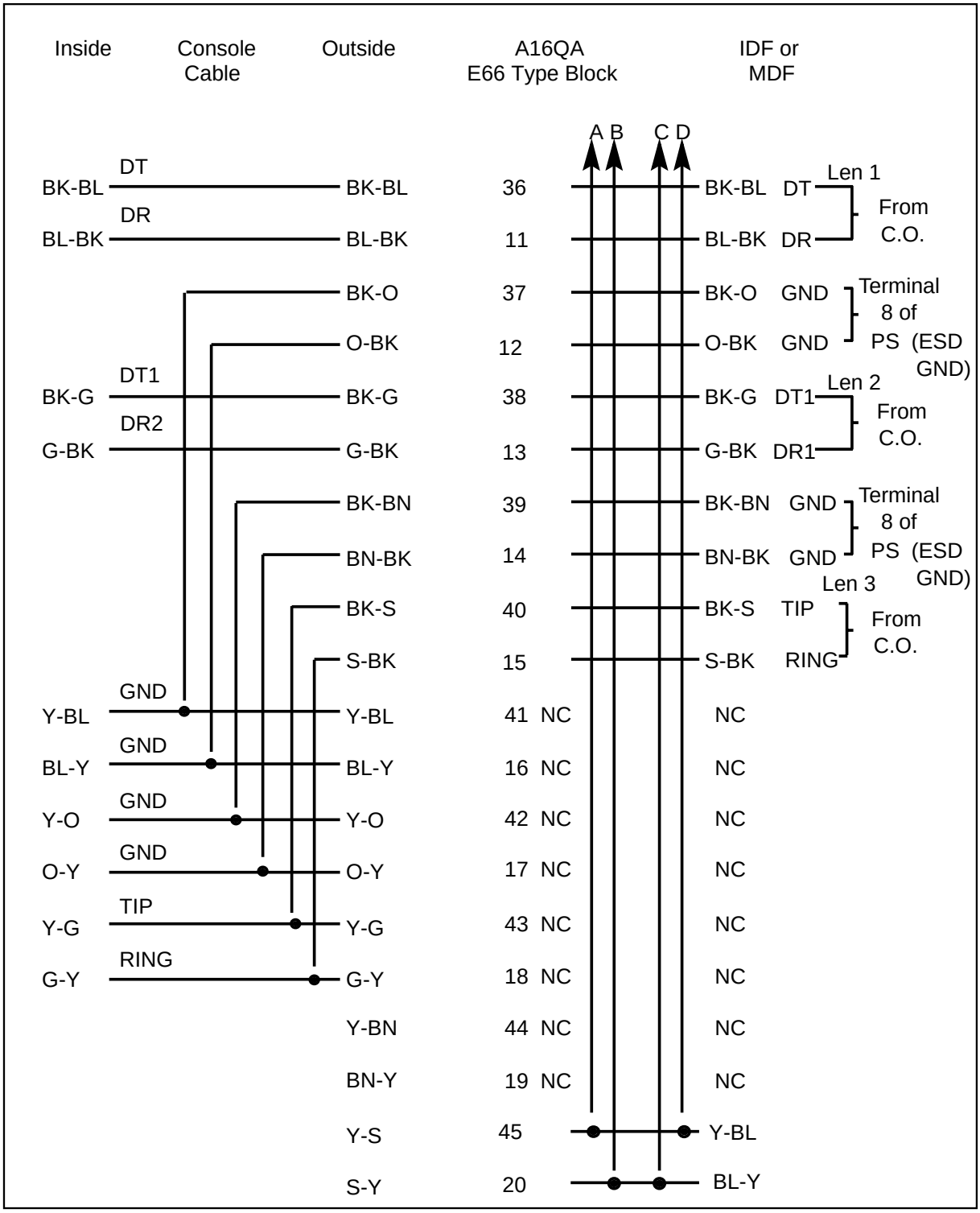


Figure 3-4xxx
Console connection using A16QA running cable (part 2 of 2)



Note: 1 There are no violet wires in an A16QA type cable; therefore, loops are not required.

Note: 2 An E66 type block may be required at the console for ease of looping all unused leads within an A16QA cable. Non-terminated leads are susceptible to RFI and environmental impulse noise.

Note: 3 Installations that are operating satisfactorily do not require re-cabling; however, all new installations and sites with RFI or impulse problems should be cabled or recabled as shown.

Note: 4 If a problem is encountered on talk path or ESD grounding, or both, inspect console Amphenol for straps as shown.

Figure 3-5xxx
Console connection using 25 pair running cable (part 1 of 3)

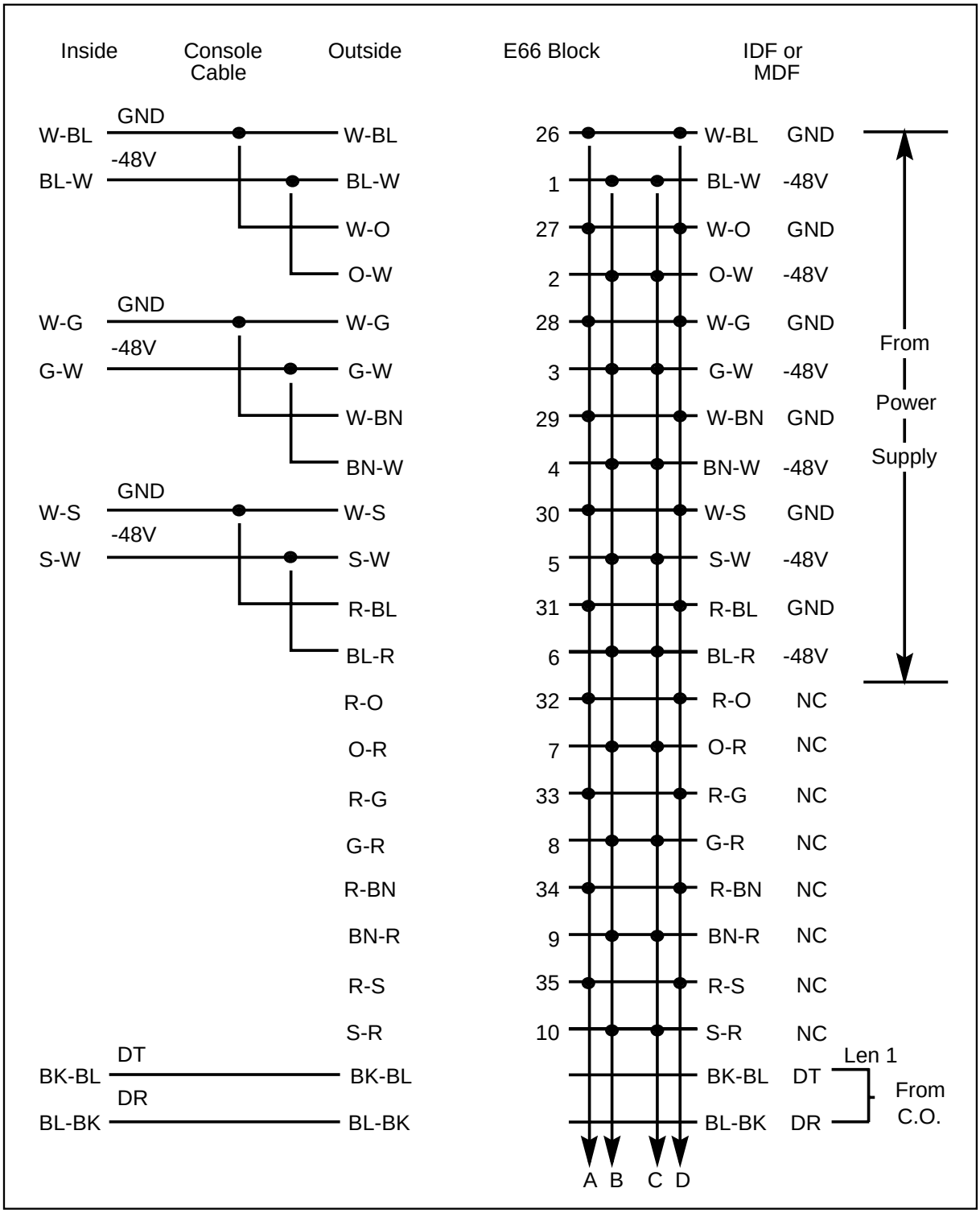


Figure 3-6xxx
Console connection using 25 pair running cable (part 2 of 3)

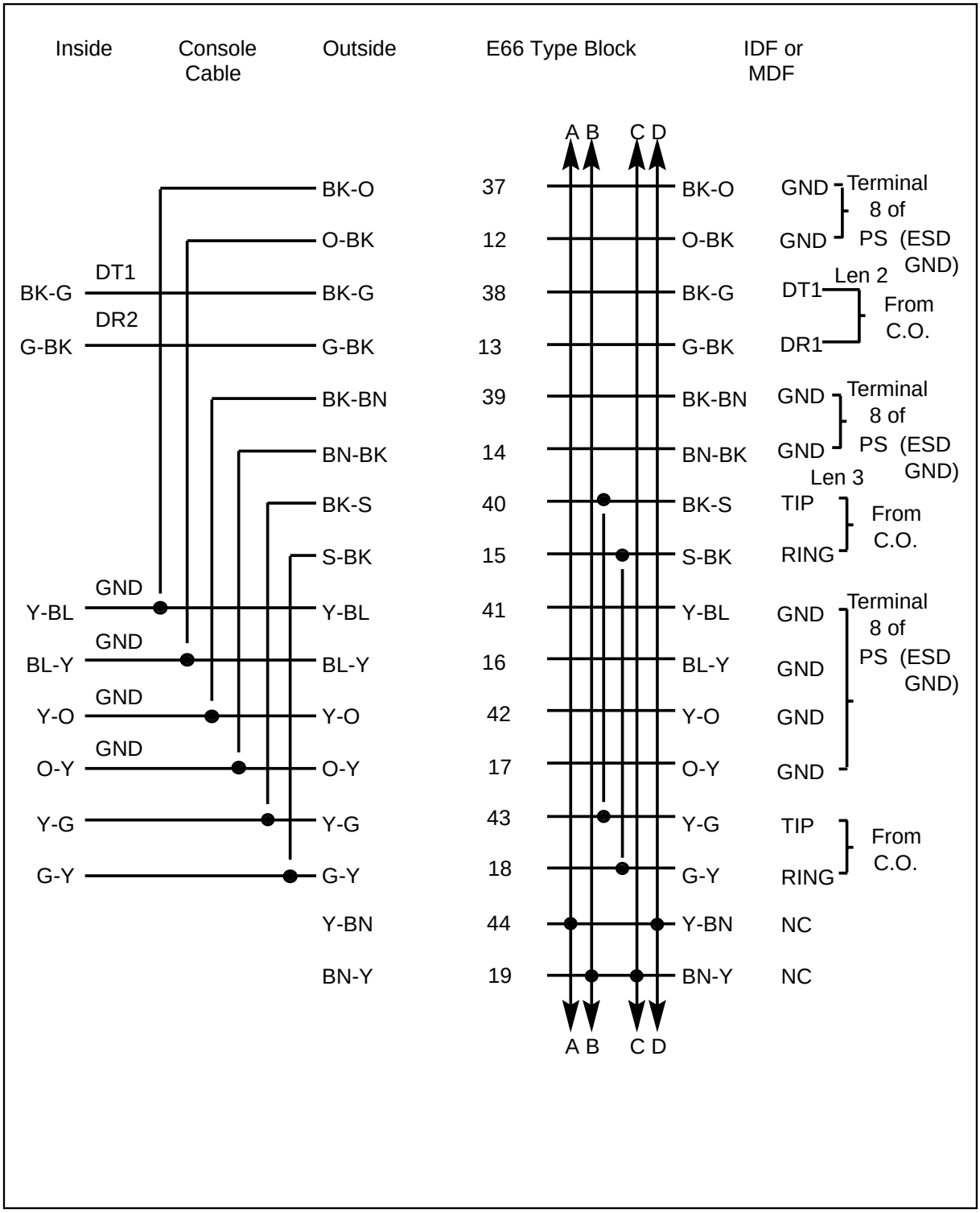
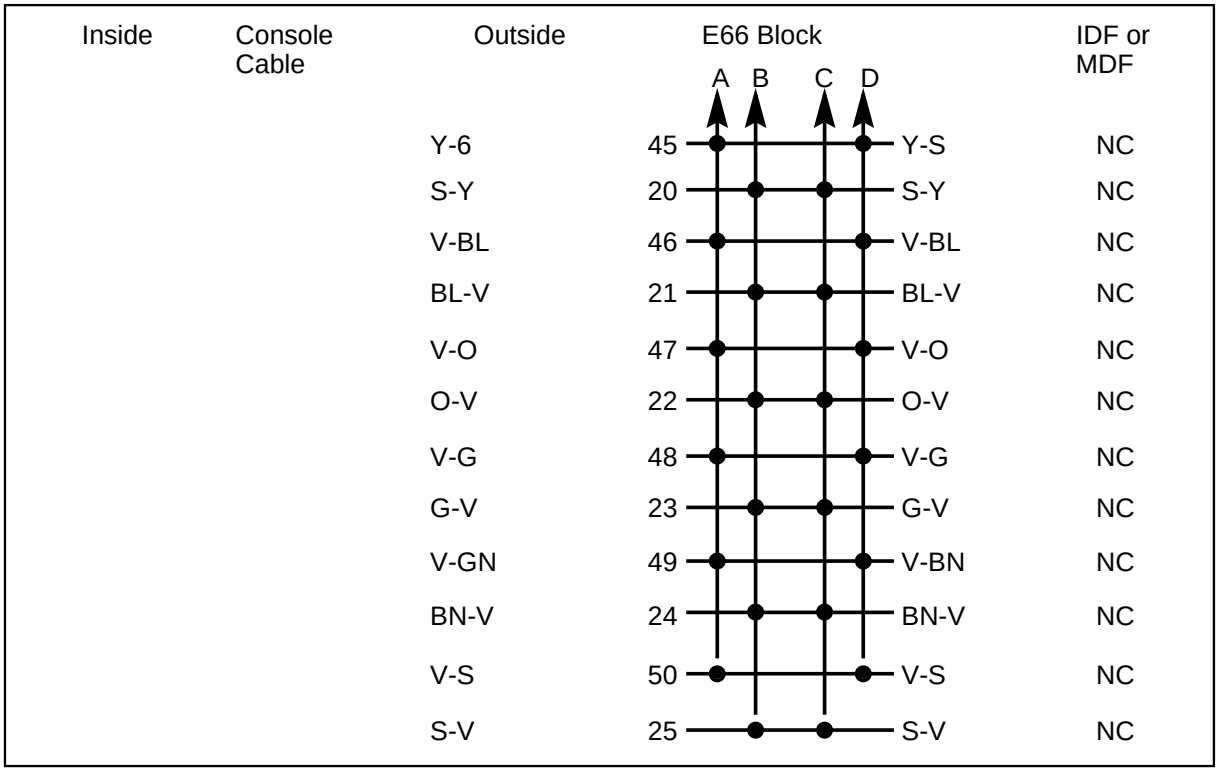


Figure 3-7xxx
Console connection using 25 pair running cable (part 3 of 3)



Note: Open-ended cable leads may pick up RFI or impulse noise. We strongly recommend, therefore, that all non-functional leads be looped to ground or -48V on both ends as shown. An E66 block or equivalent allows a convenient method of looping non-functional leads at the console; loop these leads at IDF or MDF as shown.

Installing the console

Unpacking the console

The Attendant Console comes packed in a static bag. Ensure that it remains in this bag during storage. Use proper care when unpacking the console. Check for damaged containers so that appropriate claims can be made to the transport company for items damaged in transit.

If a console has to be returned to the factory, ship it in the original container to avoid damage during transit. Include all loose parts (e.g. cords) in the shipment.

The connection cable, equipped with a 50-pin Amphenol connector with a metal hood, is plugged into the console circuit board by the manufacturer and must not be removed by customer or field personnel. When a console is to be returned to the manufacturer, do the following to prevent damaging the

console case or connector pins during shipment. Make sure that either the connector at the end of the connecting cable is placed in its original plastic bag or that it is wrapped in soft plastic and then taped.

Connecting the console

A NE-182A six-pair 22 AWG switchboard cable is run from the power source to the cross connecting block for the required power supply. A cable is run from the cross connecting block to the console. This cable is equipped with 50-pin Amphenol connectors at both ends and is used as an extension between the console and the cross connect block. If this cable is terminated directly at a distributing frame or panel, the female connector must be removed to permit hard-wiring to the frame terminals. Attendant Consoles are equipped with a connector ended NT4X0916 (CPC PP097287) eight-pair linecord which will plug into the connector of the cable.

Headset installation

Attendant Consoles are equipped with two sets of headset jacks (one on each side). The attendant headset can be plugged in on either side as convenient. Ensure that the jack is inserted all the way, until the body of the jack is flush with the console casing. The second headset jack may be used for training purposes. The volume of speaker and headset can be adjusted by two thumbwheel controls located in the underside of the console farthest away from the display screen. Adjusting the headset volume to a lower level will minimize background noise in silent mode.

> ***Note:*** When using the NT4X09AF or AG console models, the headset volume will be reduced when a second headset is jacked in, or increased when the second headset is unjacked. To avoid hearing-discomfort, reduce volume before unjacking a second headset.

Inserting key designation labels

To insert the key designation labels (supplied in sheet form with the console), the two faceplates - keyboard (dial pad) faceplate and key lamp display faceplate - must be removed from the console. Insert the blade of a small screwdriver (maximum blade width 5mm or 3/16 inch) in the slot at the bottom middle section of the faceplate and lever up carefully until the faceplate snaps out of position. Turn each faceplate around and insert designated labels following instructions as printed on the label sheet. When all required designation labels are installed, replace the faceplates by positioning in their respective openings and pushing down with the fingers on both sides (left and right) of each faceplate until a snapping sound is heard. Damaged or broken access door, faceplates, keys, and dialpad buttons can be replaced.

Auxiliary power supply

A separate auxiliary power supply is required and should be installed prior to any adjusting or testing procedures. The following PYLON equipment is recommended for that purpose:

- Model KTS-3 Talk Filtered Power Supply
- NF-3 NEVAFAIL Power Unit - battery charger and control monitor unit
- LB-3 Local Battery Supply equipped with a set of batteries providing a 48V dc output during commercial power failures.
- NF-3E system (enclosed) is required where the NF-3 power supply is not installed in a restricted environment.

KTS-3 talk filtered power supply

(1) Input::	
Input voltage (see Note 1)	117V ac
Frequency	60 Hz
Frequency range	+/- 5%
Input protection	5 A Fuse
Input current	1.5 A
(2) Output::	
DC talk voltage (see Notes 3, 4)	52V dc
Regulation (see Note 2)	+/- 2% max.
Current	1.5 A
Short circuit protection	Internal
Thermal overload protection	Internal
Output protection	30 dBrnC Max.

Note: 1 Taps available for 111V, 117V, and 123V input.

Note: 2 Regulation for input variations of +/- 5% and no load to full load.

Note: 3 The output voltage is adjustable over the range of 52V to 58V .

Note: 4 Factory setting is 117V tap, output 57.5V.

NEVAFAIL standby power unit NF-3

Input Voltage	57.5V
Output Current Load	0.9A
Output Current Charge	0.6A

NEVAFAIL standby power unit NF-3

Output Current Total	1.5A		
Protection	Reverse protection	battery	input
	Reverse protection	charger	input

Battery capacity (with one PYLON LB-3 local battery supply

Discharge Rate: 1.25A	Standby Capacity: 4 hours
Discharge Rate: 1.00A	Standby Capacity: 5 hours
Discharge Rate: 0.80A	Standby Capacity: 8 hours

Note: Adding additional PYLON LB-3 Local Battery units in parallel will increase the standby capacity proportionally.

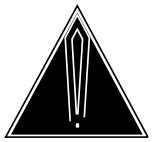
CAUTION

The PYLON power supply system provides four hours of battery backup after a commercial ac power failure. If the ac power is restored after four hours, a delay of a few minutes may be experienced before the load is reconnected because the batteries must charge to the 48V level before the battery connection relay can operate. Where additional batteries are used in parallel to extend the standby capacity, the delay will increase proportionally. This is a normal condition, not a fault. Do not try to make any adjustments to counteract the reconnect time-delay; it will not affect continuing operation of the Attendant Consoles.

Mounting and wiring

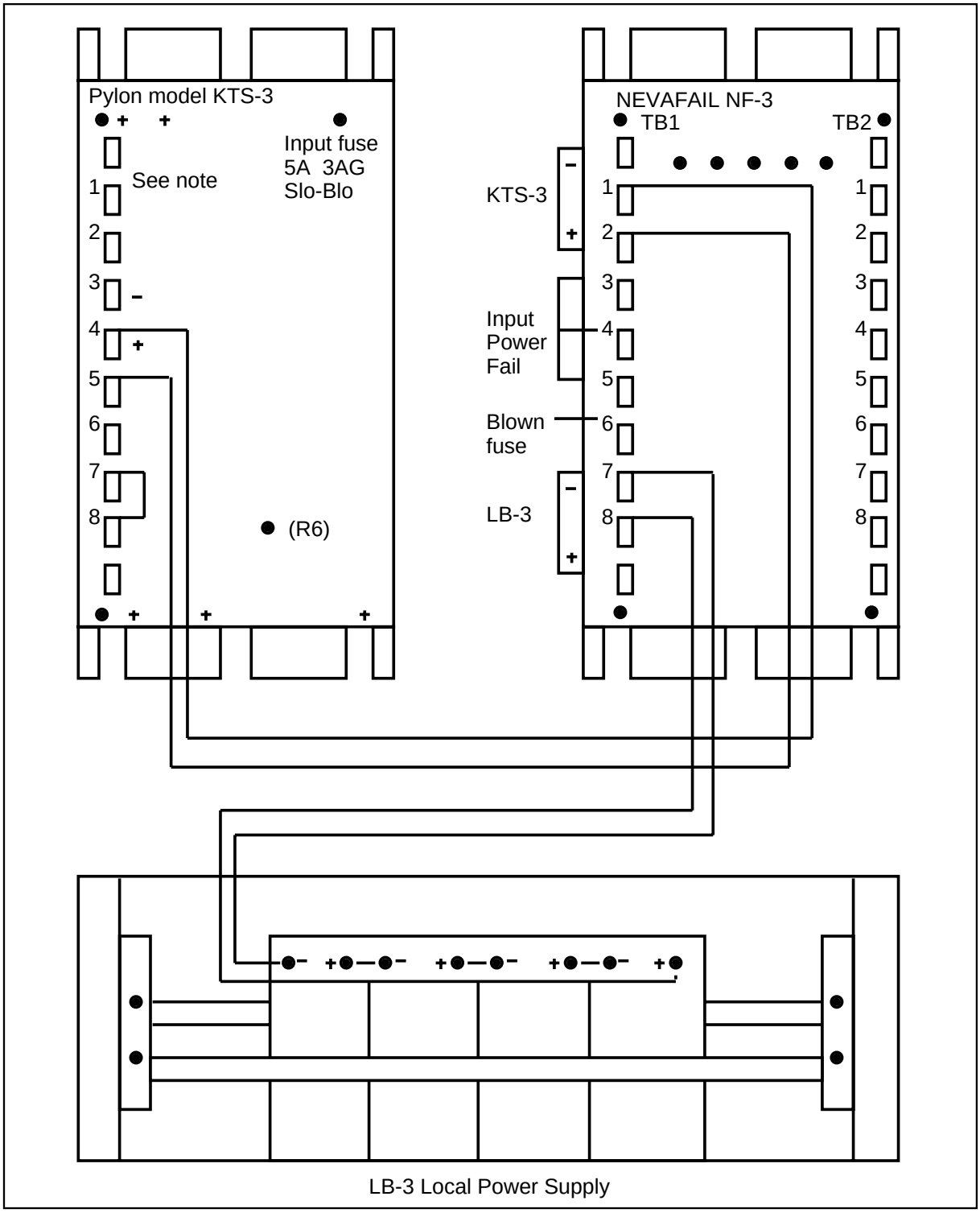
All three units are suitable for 19 inch (483 mm) relay racks or similar supporting structures. Figure 3-8 on page 3-18 gives the wiring arrangements for the units. Observe polarities as indicated in the illustration. Do not connect more than two Attendant Consoles to one power unit. The jumper between terminals 7 and 8 on the KTS-3 must be connected. Connect consoles to terminals 5 and 6 (O/P 1 in illustration) for the first console, and to terminals 7 and 8 (O/P 2 in illustration) for the second console. These terminals are on terminal strip TB2 of the NEVAFAIL NF-3 unit as shown in Figure 3-8 on page 3-18.

CAUTION



Make certain that there is a minimum of 1.75 in (45 mm) free space both above and below each of the units to permit air circulation through the ventilation holes in top and bottom of the units.

Figure 3-8xxx
PYLON power supply system - wiring and connecting



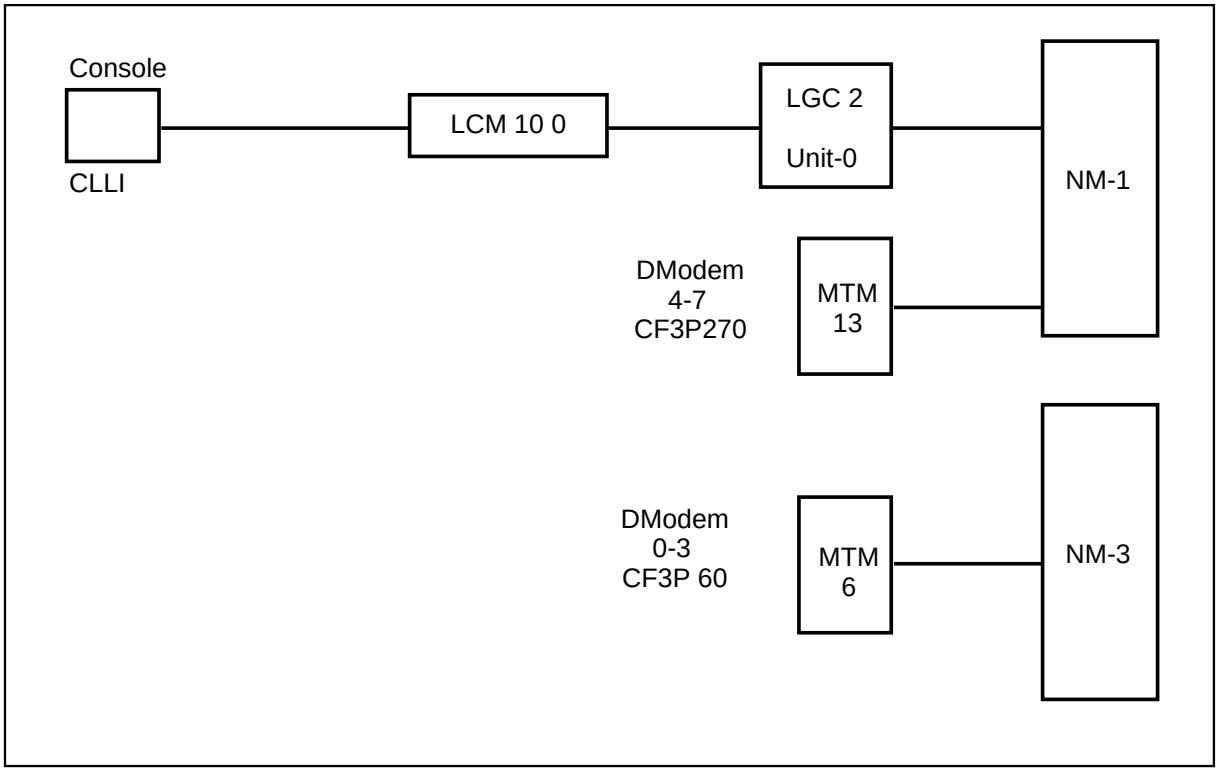
Note: On the KTS-3 Terminal Strip, terminals 1 to 4 are negative dc output. Terminals 5 to 7 are positive dc output. Terminal 8 is chassis ground.

Monitoring and troubleshooting

General

When attempting to troubleshoot Attendant Console problems, the analyzer must consider each component of the console system. The console system is comprised of the Central Control Complex (CCC), Network Modules (NM), Maintenance Trunk Modules (MTM), Digital Modems (Dmodems), Three-Port Conference Circuits (CF3P), Peripheral Modules (PM), Line Cards, carrier facilities, and the Attendant Console itself. To aid in troubleshooting, a reference diagram indicating console hardware configuration and system connections may be compiled by extracting data from DMS tables. This reference diagram should be assembled on a per-switch basis. Instructions on how to assemble the data for a reference diagram is included in the following sections. Figure 4-1 gives an example of a console system diagram.

Figure 4-1xxx
Example of system diagram



Console system

Peripheral modules

Attendant Consoles are connected to the console system by three nailed up connections through a standard line card or peripheral module. An interruption to these connections may cause an Attendant Console failure, depending on the severity of the problem. The console and line assignment portion of the system diagram may be compiled from the data in tables CUSTHEAD (customer group), ATTCONS (console CLLI & Line Equipment Numbers) and LCMINV (host LGC if applicable).

Dmodem

A digital modem (Dmodem) is a four-port I/O controller capable of handling communication to four consoles. A Dmodem is comprised of two adjacent circuit packs; NT3X02AA - TOPS Control Processor, and NT3X03AA - TOPS Digital Signal Processor. The cards are plugged into two adjacent slots within an MTM with the 3X02 in the odd- numbered slot. One of four Dmodem circuits is dedicated to a single console while the console is ‘in-service’. When assigned or ‘seized’, the Dmodem is in a CPB state. The Dmodem circuit is released or ‘idled’ if the console is taken out of service. When console service is restored, a new Dmodem circuit is

chosen out of the idle Dmodem queue. Dmodems are data-filled in Table DMODEM (refer to NTP 297-2101-451 section 141). The number of Dmodems in an office and their respective hosting MTM can be obtained from this table. Offices must maintain a minimum of one available Dmodem card pair (3X02/3X03) for every four consoles. It is recommended that at least one extra pair is provisioned to serve as a back up in the event of a Dmodem card failure.

Three-port conference circuit

An NT1X31AA Three-Port Conference Circuit (CF3P) or NT3X67AA Six-Port Conference Circuit is required to provide the Attendant Console with three-way calling. A CF3P is dedicated to a console while the console is in service, and released when the console is taken out of service. As with the Dmodem, the system attempts to assign a different CF3P to a console every time it is returned to service. CF3P's are data filled in table CONF3PR (refer to NTP 297-1001-451 section 032). An NT1X31AA contains two separate three-port conference circuits. An NT3X67 may be assigned as one six-port conference circuit (by data filling Table CONF6PR) or two three-ports (Table CONF3PR).

Customer trouble reports

Console problems are generally identified by customer trouble reports (CTRs) and by the DMS log system. A customer trouble report consists of a problem identified by the console operator to a repair service representative.

In most cases, the problem is cleared by the DMS system. Occasionally, a problem may require manual intervention from a MAP location or a visit from repair personnel. A thorough analysis of the customer trouble report, combined with a good understanding of the DMS log system will help the repair service representative to determine the appropriate corrective action.

The following sections are a guide to effective problem identification and resolution.

Get the facts

A customer trouble report should include:

1 Date & time of trouble

2 Customer (customer group & console name or CLLI)

3 Trouble details

4 Operator activity

Trouble details

This section should contain:

1 Observations made by the attendant such as console outage, improper lamp states, call cut-off, one-way transmission, cross-talk, etc.

2 Frequency of trouble. Has the problem happened before? If so, how often and when?

3 An indication of whether the problem has occurred on other consoles in the office (if applicable).

Before investigating the problem, make sure that the attendant's actions and the system responses follow the feature or operation as described in the attendant guide (supplied with console). If there is a discrepancy, instruct the attendant on the correct method of operation.

Operator activity

Operator activity includes information on the status of the console during and just before the trouble was identified. The following points may help identify operator activity:

- last feature or operation (i.e., call extension) successfully completed
- feature or operation that was attempted during trouble
- Attendant Console display messages
- incoming call type (ICI lamp, display messages, incoming trunk, inter-customer group, attendant recall)
- destination station type (inter-customer group, long distance, conference)
- inserting or removing the headset or handset jack

CTR summary

A customer trouble report (CTR) summary sheet can be used to identify problem trends, and consistency of failures. A summary sheet should be compiled from the Attendant Console trouble reports from all customers within a particular switch. A copy of the console system diagram and associated console logs (see next section) are required to complete the summary sheet. A sample CTR summary sheet is shown in Table 4-1 on page 4-4.

Table 4-1xxx
Customer trouble report summary

Date	Time	Customer	Trouble	Operator Activity	Comments
MAY 11	9:05	CITYCON0	CONSOLE DOWN	Jacked-in, attempted to place call	LM 3 0 take over
MAY 13	7:30	NTCLCON1	CALL CUT OFF	Placed caller on hold, SRC disconnect on	Explained display message to attendant

- continued -

Table 4-1xxx
Customer trouble report summary (continued)

Date	Time	Customer	Trouble	Operator Activity	Comments
JUN 2	13:55	BANKCON3	BUZZER TOO LOUD	Incoming call	Instructed operator to adjust volume
JUN 8	9:45	HYDROCON	NOISY LINE	Static noise on call XFER	Faulty CF3P, console taken down
End					

Log reports

General

A log report is a message output by DMS whenever a significant event has occurred in the switch or one of its peripherals. Log reports include status and activity reports, as well as reports on hardware or software faults, test results, changes in state, and other events or conditions likely to affect the performance of the switch. A log report may be generated in response to either a system or a manual action.

Controlling output from the log system

Log output - including storage, distribution, prioritization, suppression, and thresholding - may be controlled in two ways. First, individual offices may customize the output from the log system to meet local requirements by making changes to the appropriate customer data tables (refer to NTP 297-1001-451 for detailed information on the DMS data schema). Second, log-specific commands may be executed at the LOGUTIL utility of the Maintenance and Administration Position (MAP). LOGUTIL commands may be used to temporarily override parameters set in the customer data tables - for example, to turn log reports off, or to route output temporarily to a different device.

In most cases, a restart (re-initialization of the DMS operating system and user processes) will reset any temporary change made by the use of LOGUTIL commands.

For further log report information, consult 297-1001-510.

Attendant console logs

The Attendant Console log system is comprised of five major logs and associated trouble codes. Each log type represents a different stage of console activity. A good understanding of these logs and the specific console system involved (refer to console system diagram), will provide the

analyzer with a good basis for troubleshooting. Console log analysis may indicate the source of the problem or provide information on where to look for the source - for example, other DMS logs.

Console troubles may be caused by an interruption on any member of the console system. For example, if a Maintenance Trunk Module housing a Dmodem which services an Attendant Console experiences a problem, the console may be affected. An indication of this problem can be found in the PM logs.

The five major Attendant Console logs are IBN101, IBN102, IBN103, IBN104, and IBN105.

Log IBN101 indicates that a problem has been detected in the console system. In most cases, these logs do not correspond to operator perceivable problems. However, multiple occurrences of these reports will represent operational faults and may lead to a console take-down.

A console take-down is a temporary loss of console service. System connections are dropped and re-established through a new network connection, Dmodem, and three-port conference circuit. A take-down is identified by the IBN102 log. A take-down may be accompanied by IBN101 trouble reports which provide additional information concerning the event.

When console service is re-established, the event is recorded by an IBN103 log. If a console fails to return to service, an IBN104 log is generated. Attempts to restore console service are repeated until successful, or the console is placed in a manual busy state.

The IBN105 log is generated whenever an attendant console's digital modem is replaced by another digital modem.

Log components

Each Attendant Console log specifies:

- Report Type (IBN101, IBN102, IBN103, IBN104, IBN105)
- Date and Time
- Log Sequence Number
- Console Customer Group
- Console Identification (CLLI)
- Dmodem Circuit Identification
- CF3P Circuit Identification
- Console State

Console states

Attendant Console logs will indicate if the console has changed or remained in the same state as a result of the reported action. The state information is presented in a 'FROM' state and 'TO' state format, indicating before change-of-state and after change-of-state respectively.

Possible console states include:

AC_CP_BUSY	The console is in service with a headset or handset jacked-in. Call Processing can take place but a call is not necessarily in progress at the time. The console may be in night service mode.
AC_UNJACKED	The Attendant Console is in service but the headset or handset is unjacked.
AC_SEIZED	This is an intermediate state which indicates that the system is establishing a connection to the console (i.e., assigning a Dmodem).
AC_MAN_BUSY	The console has been taken out of service by operating company personnel.
AC_SYS_BUSY	The DMS system has taken the console out of service.
AC_UNEQUIPPED	The Attendant Console has not been software equipped (data filled).
AC_OFFLINE	The Attendant Console is software equipped but is not in service. Call processing cannot take place.
AC_NOT_READY	Console has just been unjacked and undergoing a 60 second time out. No call processing activity or maintenance activity (except Force Release) can occur.
AC_DELOADED	A temporary state assigned to an Attendant Console if maintenance personnel have requested (attempted to busy) the console while it was in a call processing busy (CPB) state.

Console trouble report - IBN101

Format:

```
IBN101 date time  seqnbr TBL CONSOLE TROUBLE
   Customer_Group: cust_grp, Console: cons_id
   DM: ckt_id  CONF: ckt_id
   FROM state  TO state
   TROUBLE: trble_code   CKT: ckt_id
   MSG: msg_type  CALLID: number
```

Example:
```
IBN101 JUN04 13:42:33 5169 TBL CONSOLE TROUBLE
    Customer_Group: COMKODAK, Console: ATTKDKA
    DM: DMODEM    7  CONF:          CF3P    20
    FROM AC_CP_BUSY    TO  AC_CP_BUSY
    TROUBLE:  AC_CKT_CONFUSION CKT: DMODEM 7
    MSG: 000D,    CALLID: 556093
```

The IBN101 contains a trouble code indicating the trouble identified by the console or DMS. The following are the possible IBN101 trouble codes, explanation, potential cause, and recommended actions:

- IBN101 AC_SW_FAULT
  IBN101 AC_SW_ERROR
  A software error has occurred during the processing of a console function. These logs are usually accompanied by a SWER or TRAP log. A SWER or software error message contains a traceback of the procedures executed at the time of the fault. If an AC_ SW_FAULT or AC_SW_ERROR occurs, collect all SWER, TRAP (CC103), and AUD logs output at the time of occurrence and forward the information to Northern Telecom personnel.
- IBN101 AC_CALL_FREED - This log indicates that an active call has been interrupted. An AC_CALL_FREED will accompany an Attendant Console take-down message if a call was killed as a result of the failure.
- IBN101 AC_CKT_CONFUSION - A confusion message came from a circuit associated with the Attendant Console. The circuit identification is included within the log message.
- IBN101 AC_INTEGRITY_LOST - An integrity failure has occurred on a circuit (voice or data network paths) associated with the Attendant Console. Check for NET logs at time of occurrence.
- IBN101 AC_CKT_RELEASED - The source or destination connection to the Attendant Console Three Port Conference Circuit has been taken out of service. Attendant may have observed a call disruption but overall console operation is unaffected.
- IBN101 AC_TO_DM_INVALID_KEY - An invalid key code has been detected on a transmission from the console to the Dmodem. The message is ignored. Data line errors (hits), console fault or a Dmodem fault are suspected. If this log appears frequently or leads to a console take-down (see IBN102 System Error), perform console and Dmodem diagnostics. If log report appears frequently, investigate console installation and cabling.

- IBN101 AC_PARITY_ERROR
  IBN101 AC_FRAMING_ERROR
  IBN101 AC_OVERRUN_ERROR
  IBN101 AC_SYSTEM_ERR A message error has been detected by the console on a transmission from the Dmodem. If these logs appear frequently or lead to a take-down (IBN102 System Error) perform Dmodem diagnostics on the associated Dmodem. If regular problems occur, investigate console installation and cabling.
- IBN101 AC_RESET - The processor within the Attendant Console has been reset. An AC_RESET does not affect console performance. A reset may occur if a drop in carrier is detected by the console or if the console is affected by static electricity.
- IBN101 AC_DM_CARRIER_FAILED - A momentary drop in carrier was detected by the Dmodem. If this log appears frequently, check NET (network) logs at time of occurrence and perform loop diagnostics.
- IBN101 AC_DM_MSG_ERROR
  IBN101 AC_DM_MSG_TOO_LONG
  A Dmodem report message has an error or contains too many bytes. If message appears in conjunction with a console take-down, perform Dmodem diagnostics.
- IBN101 AC_NO_RESPONSE - The DMS system sends out a console audit every 60 seconds. If a console does not respond to the audit or the response message is lost, an IBN101 NO_RESPONSE log is output. Two successive missed responses will lead to a No_Response console take-down (see IBN102 NO_RESPONSE) and the trouble should clear.

Attendant console take-down - IBN102

Format:

```
IBN102 date time seqnbr FAIL CONSOLE TAKE DOWN
    Customer_Group: cust_grp, Console: cons_id
    DM: ckt_id  CONF: ckt_id
    FROM state  TO state
    TROUBLE: trble_code   CKT: ckt_id
    MSG: msg_type  CALLID: number
```

Example:

```
IBN101 JUN04 13:42:38 5169 FAIL CONSOLE TAKE
    DOWN
    Customer_Group: COMKODAK, Console: ATTKDKA
    DM: DMODEM    7  CONF:          CF3P    20
    FROM AC_CP_BUSY    TO  AC_MAN_BUSY
    TROUBLE:  AC_MANUAL_FRLS     CKT: DMODEM 7
    MSG: 0033,    CALLID: 556093
```

The IBN102 log contains a trouble code which identifies the cause of the console take-down. In most cases, a take-down will clear the problem and restore normal console service. If an office experiences frequent failures, review the installation recommendations. The following are the possible trouble codes and recommended actions:

- IBN102 AC_SW_ERROR - A serious software error occurred while a call was in progress. This log is usually accompanied by a SWER or TRAP log. Collect all SWER, TRAP (CC103), and AUD logs output around the time of occurrence and forward the information to Northern Telecom personnel. If possible, contact the console operator and obtain the details of the last call processed on the console.
- IBN102 AC_MANUAL_FRLS - A console was taken out of service by maintenance personnel using the Force Release (FRLS) command from a MAP terminal.
- IBN102 AC_CKT_CONFUSION - Excessive confusion messages came from a circuit associated with an Attendant Console. The ID of the circuit involved with this failure is included within the log report. Diagnose the affected circuit.
- IBN102 AC_CKT_RELEASED - A circuit associated with the Attendant Console has been taken out of service. The ID of the circuit involved is supplied with the log. Refer to peripheral module (PM) logs and the console system diagram for the source of the failure.
- IBN102 AC_INTEGRITY LOST - Excessive integrity failures occurred on a circuit associated with the Attendant Console. Review the NET (network) logs and the console system diagram.
- IBN102 AC_SYSTEM_ERROR - A system error take-down is caused by exceeding the AC_MAX_NUM_ERRORS threshold specified in Table OFCSTD (refer to NTP 297-1001-455 section 013). AC_MAX_NUM_ERRORS is a count of message errors within a specified time: AC_AUDIT_INTERVAL. Office defaults for these parameters are: AC_MAX_NUM_ERRORS 15, AC_AUDIT_INTERVAL 1 min. AC_TO_DM_INVALID_KEY, AC_PARITY_ERROR, AC_FRAMING_ERROR, AC_OVERRUN_ERROR, and AC_SYSTEM_ERROR are the fault types which may contribute to an AC_SYSTEM_ERROR take-down. Faulty Dmodem circuits have been found to cause System_Errors. If a system error take-down occurs, perform Dmodem diagnostics. If problems occur regularly, investigate console installation and cabling.

- IBN102 AC_NO_RESPONSE - An IBN102 AC_NO_RESPONSE log is produced if a console is taken down due to two successive missed replies to the console audit. If the console does not immediately return to service, refer to the IBN104 RTS FAIL section of this document. An unplugged console (at 50-pin Amphenol connector) will cause a NO_RESPONSE take-down. If frequent NO_RESPONSE failures occur, perform console diagnostics and self test. Review the console installation and environmental parameters. Refer to LOG SUMMARY section for further action.

Attendant console return to service - IBN103

Format: IBN103 date time seqnbr RTS CONSOLE RTS SUCCESS
Customer_Group: cust_grp, Console: cons_id
DM: ckt_id CONF: ckt_id
FROM state TO state

Example: IBN103 JUN04 13:42:42 5169 RTS CONSOLE RTS SUCCESS
Customer_Group: COMKODAK, Console: ATTKDKA
DM: DMODEM 8 CONF: CF3P 160
FROM AC_MAN_BUSY
TO AC_CP_BUSY

There are no console trouble codes associated with this report. The 'FROM' state will indicate whether the return to service (RTS) was completed by the system or manual action. The purpose of this report is to indicate the time of service restoration and new circuit assignments.

Attendant console return to service failure - IBN104

Format: IBN104 date time seqnbr INFO CONSOLE RTS FAIL
Customer_Group: cust_grp, Console: cons_id
DM: ckt_id CONF: ckt_id
FROM state TO state
TROUBLE: trble_code CKT: ckt_id
MSG: msg_type CALLID: number

Example: IBN104 JUN04 13:42:40 5169 INFO CONSOLE RTS FAIL
Customer_Group: COMKODAK, Console: ATTKDKA
DM: DMODEM 0 CONF:
FROM AC_MAN_BUSY TO AC_SEIZED
TROUBLE: AC_DM_BUFFER_FULL CKT:
DMODEM 0
MSG: 0086, CALLID: 556093

An IBN104 is generated whenever the DMS has attempted to restore console service and failed. The RTS failure reason is identified by a trouble code within the log.

- IBN104 AC_DM_UNAVAILABLE
  IBN104 AC_CONF_UNAVAILABLE
  An idle Dmodem or three-port conference circuit is not available. Force release any training or test consoles within the switch in order to free up resources. For a permanent solution, review circuit provisioning and the proper guidelines.
- IBN104 AC_DM_CARRIER_FAILED - A momentary loss of carrier from the console to the Dmodem was detected while attempting to return a console to service.
- IBN104 AC_DM_NO_CARRIER - This log is output if a recently seized Dmodem does not detect a carrier signal from the console. This condition can occur if the console data- out pair is opened or the console is unplugged completely. If problem does not clear, visit console site and check facilities.
- IBN104 AC_NO_RESPONSE - This log indicates that a console fails to respond to any instructions while in a system busy state. Problem will occur if the console data-in pair is open. Check facilities.
- IBN104 AC_CONF_NO_RESPONSE - A conference circuit does not respond to any instructions. The system will select another CF3P for the next RTS attempt. Perform CF3P diagnostics.
- IBN104 AC_NO_EXT_RESOURCE - No extension blocks are available for the console. Report problem to the office engineer.
- IBN104 AC_CKT_CONFUSION
  IBN104 AC_INTEGRITY_LOST
  A confusion message or an integrity hit has occurred during an RTS attempt. Test CF3P or Dmodem specified or investigate NET logs accordingly.
- IBN104 AC_DATA_ERROR - An inconsistency was found among console translations. Check console tables.
- IBN104 AC_NETWORK_BLOCKAGE
  IBN104 AC_CHANNEL_CONGESTION
  A temporary network or channel blockage has delayed console service restoration.
- IBN104 AC_CKT_RELEASED - A circuit associated with the console was taken out of service during a console RTS attempt. Refer to PM logs for the source of the problem.

Attendant console digital modem swapped - IBN105

Format: IBN105 date time seqnbr INFO CONSOLE DM SWAPPED
Customer_Group: cust_grp, Console: cons_id
OLD DM: ckt_id CONF: ckt_id

NEW DM: ckt_id
REASON: reason
CALLID: number

Example: IBN105 MAR05 22:15:45 2100 INFO CONSOLE DM SWAPPED
Customer_Group: COMKODAK, Console: ATTKDKA
OLD DM: DMODEM 3 CONF: CKT CF3P 54
NEW DM: DMODEM 6
REASON: AC_CKT_RELEASED
CALLID: 132153

An IBN105 is generated every time a console's DM is successfully replaced with another DM. The condition that initiated the swapping of the DM is listed in the REASON field, and is one of the following:

- AC_CKT_RELEASED - The DM was force-released, or the MTM holding the DM was taken out of service.
- AC_DM_MESSAGE_ERROR - The console was unable to establish normal communications. This may be the result of a faulty physical connection.
- AC_INTEGRITY_LOST - Too many Integrity Lost messages were received from this console.
- AC_CKT_CONFUSION - A circuit confusion message was received from the DM.
- AC_SYSTEM_ERROR - Heavy messaging loads have caused excessive Terminal Process Block output busy messages.

A single instance of IBN105 does not require any immediate action. If excessive instances of IBN105 occur, the cause should be investigated and, if necessary, reported to your maintenance support group.

Log summary

An Attendant Console take-down summary will help the analyzer determine the poorest performing consoles and faulty hardware and circuits. A record of log information should be maintained - either in hard copy from the printer, or stored on disk. If a problem has just occurred, the following commands will display the most recent set of IBN logs:

1 > LOGUTIL

2 > OPEN IBN

3 > WHILE (BACK)()

4 > QUIT

Attendant Console log summaries should focus on the IBN102 take-down. A scan of a log summary should identify repeated offending consoles, Dmodems, CF3P circuits and any other component of the console system.

A summary sheet should include:

Date & time	Located in the IBN102 log.
Customer group	May indicate feature-related, common outside plant, remote power supply, or environmental problems.
Console ID	Console CLLI found in IBN102 log. May identify console hardware, software, or installation fault.
Dmodem & MTM #	Dmodem circuit is identified, by the IBN102 log. Given the circuit number refer to table DMODEM for hosting MTM. May indicate Dmodem circuit, Dmodem card, or MTM problems.
CF3P & MTM #	CF3P circuit is identified by the IBN102 log. Refer to Table CONF3PR for the hosting MTM. May indicate CF3P circuit or MTM problem.
Trouble	Trouble code on IBN102. See IBN102 trouble code section for possible codes.
PM	Refer to system diagram. May point to peripheral problems.
Associated logs	Preceding IBN101, SWER, TRAP, or console system related logs.
Failure duration	Time between IBN102 and the corresponding IBN103 Log.
Comments	Analyzer's remarks, for example: 'LCM HOST 0 1 Reloaded'

A sample take-down summary sheet is shown in Table 4-2 on page 4-14 and Table 4-3 on page 4-15.

Table 4-2xxx
Attendant console take-down summary sheet (left)

	Date	Time	CUSTGRP	Console	DM	MTM	CF3P	MTM
1	JUN 04	10:57:49	CITYHALL	CITYCONO	3	7	610	27
2	JUN 05	21:36:32	GENHOSP	HOSPCON2	16	27	740	21

- continued -

Table 4-2xxx
Attendant console take-down summary sheet (left) (continued)

	Date	Time	CUSTGRP	Console	DM	MTM	CF3P	MTM
3	JUN 05	21:36:32	HYDRO	HYDCONO	17	27	100	0
4	JUN 05	21:36:33	NTCL	NTCON3	18	27	200	3
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								

End

Table 4-3xxx
Attendant console take-down summary sheet (right)

<-	Trouble	PM	Logs	Duration	Comments
1	NO_RESPONSE	LM 3 0	IBN101	5 sec.	trap acutili
2	AC_CKT_REL	LM 8 1	PM125	12 sec.	MTM27 SYSB
3	AC_CKT_REL	LCM 10 0	PM125	10 sec.	MTM27 SYSB

- continued -

Table 4-3xxx
Attendant console take-down summary sheet (right) (continued)

<-	Trouble	PM	Logs	Duration	Comments
4	AC_CKT_REL	RSC 00 0	PM125	11 sec.	MTM27 SYSB
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
End					

Console system diagnostics

The diagnostics in this section should be performed either when the Attendant Console is not in use, or immediately following a console take-down. Console diagnostics are performed at the IBNCON level of the MAP. To access this level type: > MAPCI;MTC;LNS;LTP;IBNCON

IBNCON level

The following commands are available at the IBNCON MAP level. Commands are shown in the sequence in which they would normally be executed.

- SELECT - Allows a user to select a console by
  - Customer Group Name (G)
  - Customer Group and Subgroup (G)

- Console CLLI (C)
- Console Number (C)
- Console State (S)
- Currently Attached Dmodem (DM)
- Any line associated with a console (L).

- NEXT - If several consoles were selected (i.e., by customer group or state), the NEXT command will seek and display the next console meeting the criteria.
- BUSY - This places the console in the manual busy state if that transition is allowed. The console can be offlined by including the INB subcommand: >BUSY INB
- SEIZE - Seizes the console for maintenance use, and connects a Dmodem.
- DIAGNOSE - The console diagnostic will be run if the console is currently seized (SZD) by the user.
- RELEASE - Returns the console to its pending state prior to the SEIZE command. Disconnects the Dmodem.
- RTS - This returns the console to service, if allowed; it would leave the console call processing busy (CPB) if successful.
- CLEAR - Removes the selected console from the display.
- QCONLINE - Displays the lines associated with the selected console.
- QCUSTGRP - Provided with a station line, this command displays the customer group and subgroup.
- QSEATED - When the console is seized, this command displays if the headset or handset is jacked-in or jacked-out.

MAP display

The following data is displayed when a console is selected:

- NO. - console number
- GROUP - console customer group name and subgroup number
- CONSOLE - console CLLI
- DMODEM - currently attached dmodem
- STATE - console state

The user can request that all lines associated with the selected console be posted by adding the L or LINES option at the end of the select command: SELECT C CONCLLI L

The console ‘state’ displayed corresponds to the console states discussed in the log section of this manual.

The DIAGNOSE command

Console diagnostics will verify console operation and system connections. In order to diagnose a console you must first select it, using the SELECT command with one of the parameters listed above. The console under test must be in a Manual Busy state. If the posted console is CPB ensure that the console is not in use or contact the customer and obtain permission to work on the console (Table CUSTCONS contains a list of console directory numbers). The console can then be busied by using the force release (FRLS) command. If the console is not CPB, then the BUSY command can be used.

To diagnose the console, enter:

- >SEIZE
- >DIAGNOSE
- >RELEASE

If the console cannot be seized, ensure that table ATTCONS is filled correctly. The cardcode field must be set to 4X08AA if the console under test is a 300 baud model (NT4X09AE or AF), or 4X08AB if the console under test is a 1200 baud model (NT4X09AG/AH/BB or BC).

The diagnostic will return one of the following answers:

- Console Test OK
- Console Failure
- Transmission Failure

If the result is a 'Console Failure', perform the test again. If the same failure occurs repeatedly, an on-site visit is required. Replace the faulty console and repeat tests.

If 'Transmission Failure' is indicated, the problem occurs in route to the console. Check the continuity in the transmit and receive paths, and check line cards and Dmodem for failures.

Intermittent failures may be identified by repeating the diagnostic. A convenient way to do this is by using the REPEAT command. For example:
>REPEAT 50 (DIAGNOSE)

The console data loops may be diagnosed using the 'LOOP' subcommand:
>DIAGNOSE LOOP

The DIAGNOSE LOOP command performs a data loop-around test. This test should be conducted periodically for line maintenance purposes.

Line diagnostics

For consoles 4X08AG and lower, each line card and associated loop for the console can be tested in the same manner as any other line circuit in the switch. Tests are performed at the LTP, LTPLTA, and LTPMAN levels at the MAP.

For 4X09BB (Phase II) consoles, voice lines are tested using standard procedures as well; the data lines, however, are configured differently, and testing must be set up accordingly. These consoles have an 8.25K resistor between the tip and ring of the data lines (INLEN and OUTLEN) to allow current through the loop to help prevent corrosion build-up at splices in the outside cable plant. When a diagnostic is run at the MAP it will abort (the system response is 'CHECK FACILITY') as the resistance measurement applied by the test will detect the added resistance. The tester should adjust the measurements accordingly when the console is plugged in at the customer premises. Normal readings will be 8.25K Ohms plus the resistance of the loop.

Dmodem diagnostics

Dmodem diagnostics are performed at the TTP level of the MAP. To access this level type: >MAPCI;MTC;TRKS;TTP

All available Dmodems can be posted one at a time by entering the command:

> POST G DMODEM

and using the NEXT command.

A particular Dmodem can be posted by specifying the circuit number in the command. Example:

> POST G DMODEM 22

Before diagnosing the Dmodem, ensure that it is in an idle (IDL) or manual busy (MB) state. Due to the intermittence of some Dmodem faults, the diagnostic should be repeated at least 10 times as follows:

> REPEAT 10 (TST)

If the Dmodem fails, change the card(s) that are indicated on the fault card list that is displayed.

Three-port conference circuit diagnostics

Conference circuit diagnostics are also performed at the TTP level of the MAP. All available CF3P's can be posted one at a time by entering:

>POST G CF3P

and using the NEXT command for successive circuits.

A particular circuit can be posted by indicating the circuit number in the POST command:

>POST G CF3P 200

Before testing, ensure that the CF3P is idle or manual busy. If the circuit is idle, it should be busied to prevent a station from accessing it, as follows:

- > BSY
- > REPEAT 10 (TST)
- > RTS (if it passes)

If the conference circuit you are testing is an NT1X31, you may only diagnose port 0. For example, CF3P 200 would include circuits 200, 201 and 202. To test this card you need only test CF3P 200. If you are testing an NT3X67 you can test each port individually.

On-site testing

General

Before proceeding with a site visit, review the above troubleshooting tips. As stated earlier, most problems will either clear themselves or can be cleared from the central office. A site visit is required if either the system does not restore console service (refer to IBN104 RTS fail section for details), or if a takedown and return to service does not clear the problem and the rest of the console system is problem-free. Be sure to bring a replacement console to the site.

Console self test

The console is tested using a set of go no-go tests initiated by keys on the console. To initiate the tests, unplug the headset or handset and press the CONSOLE TEST key on the console. If the associated lamp does not light, wait 70 seconds and repeat. If the test environment cannot be entered, refer to the Console Powering section for action. Once the test environment has been entered, the console is not able to send or receive calls. Each test is self-contained and it is not necessary to carry out all of the tests at one time. Failure of a test indicates that a console component requires service and the unit should be replaced. The console self-test is detailed in Table 4-4 on page 4-21.

Table 4-4xxx
Console self test

Test	Name	Operation	Requirement
1	Lamp Test	Press Console Test key	Test lamp goes ON.
		Press 1 on key pad	All lamps to the left of key pad plus Release and Night Service go ON.
		Press Console Test key	All lamps go OFF.
2	Key Test	Press Console Test key	Test lamp goes ON.
		Press 2 on key pad	
		Press each key on pad	Night Service Lamp goes on for each key operation. (The Test key itself is not tested.)
		Press Console Test key	Test lamp goes OFF.
3	Speaker/Vol.	Press Console Test key	Test lamp goes ON
		Press 3 on key pad	Tone from speaker. Operate volume control to vary tone volume.
		Press Console Test key	Tone stops and test lamp goes OFF.
4	Hardware Test	Press Console Test key	Test lamp goes ON
		Press 4 on key pad	Night Service Lamp goes ON.
		Press Console Test key	Lamps go OFF.
5	Seated Test[1]	Press Console Test key	Test lamp goes ON. (See note.)
		Press 5 on key pad	
		Plug in head or handset	Night Service Lamp goes ON.
		Unplug head or handset	Night Service Lamp goes OFF.
		Press Console Test key	Test lamp goes OFF.
6	KLD Lamp Test	Press Console Test key	Test lamp goes ON.
		Press 7 on key pad	All lamps to the right of key pad go ON.
		Press Console Test key	All lamps go OFF.

- continued -

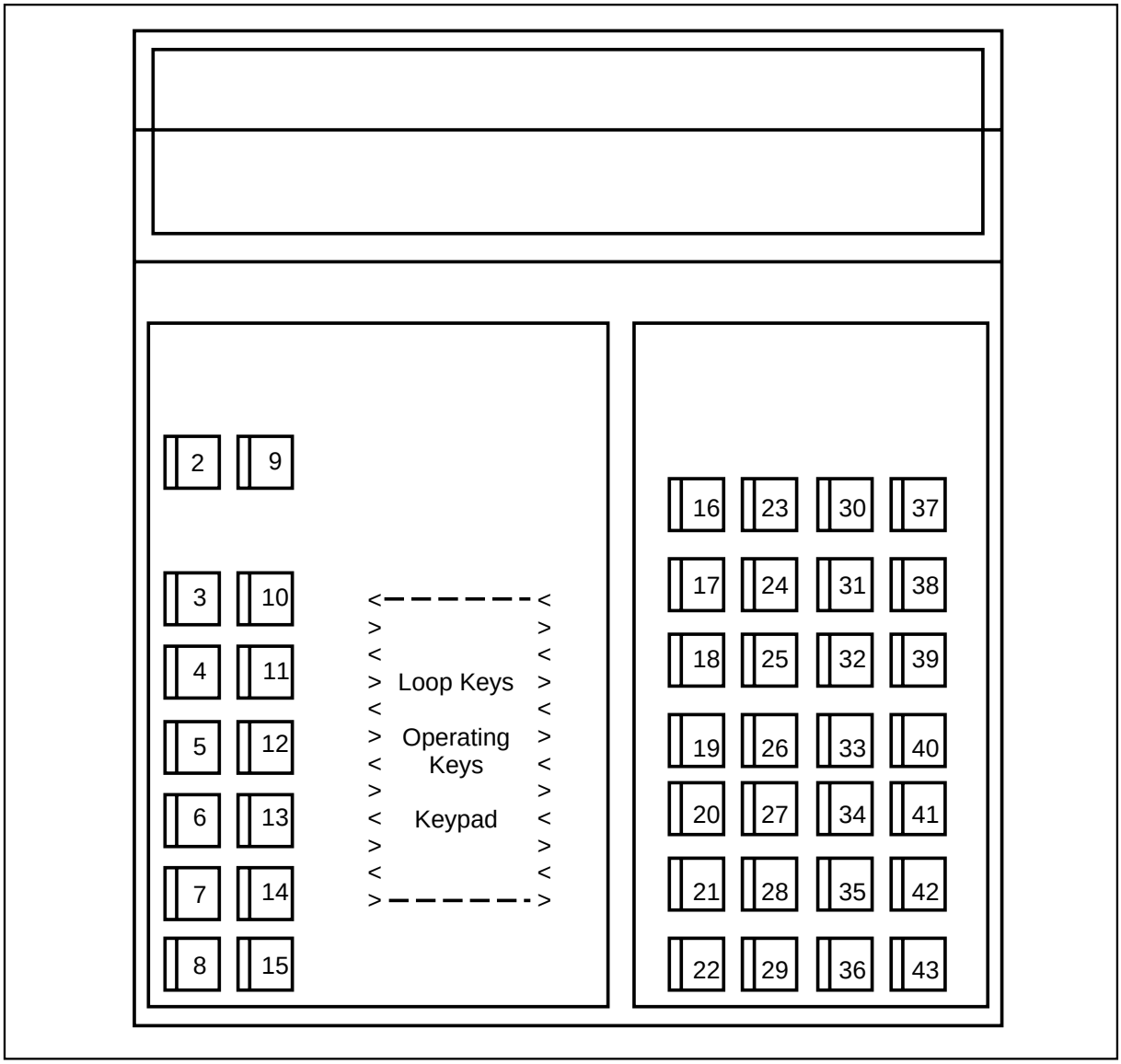
Table 4-4xxx
Console self test (continued)

Test	Name	Operation	Requirement
7	Display Test	Press Console Test key	Test Lamp goes ON.
		Press 8 on key pad	Display alternates between * and 0. Verify all segments.
		Press Console Test key	Display goes blank and test lamp goes OFF.
8	KLD H/W Test	Press Console Test key	Test lamp goes ON.
		Press 9 on key pad	Night Service Lamp goes ON.
		Press Console Test key	All lamps go OFF.
9	Checksum Test	Press Console Test key	Test lamp goes ON.
		Press 0 on key pad	Referring to Figure NO TAGNO TAG, check state of the lamp associated with key 3. If lamp is ON, Read Only Memory (ROM) has passed a checksum test. On 300 baud consoles (4X09AE/AF/BA) the lamp beside key 4 should also be ON. If either lamp is flashing, ROM has failed test. NOTE: key 6 lamp should also go ON, indicating that console has detected a carrier signal; if key 7 lamp goes ON, console has detected a space signal.
		Press and hold testkey	When all lamps have gone OFF, the Console Test key may be released.

Notes:
1 If the release lamp lights during the 'Seated Test', unplug headset/handset, wait 70 seconds and proceed with next test.

End

Figure 4-2xxx
Location of programmable feature keys



Power supply adjustments and tests

Adjustments

Central office power supply

No adjustments or tests are required for these facilities, because routine maintenance tests are performed by plant personnel on a regular basis. Failures are cleared through regular CO routines.

Console powering

If the console does not enter Self-Test Mode, the console may be faulty or be experiencing a power disruption. Verify that the console is plugged in at the Amphenol connector. If properly connected, unplug the console and measure the voltage on the appropriate pins (see installation diagram, section 3). The voltage reading should be between -48 V and -53.3 V .

If conducting an overall site inspection, check the voltage levels at the power supply and monitor the power lines for AC ripple.

PYLON power supplies

The strap between terminals 7 and 8 must be connected on the KTS-3 power supply prior to installation. The output voltage across terminals 5 and 6 or 7 and 8 on TB2 of the NEVAFAIL NF-3 unit should measure 53.5 Vdc with no consoles connected, commercial power present, and batteries fully charged.

It is recommended that the distance between the power supply and the console be kept within 50 ft. Where the PYLON NF-3 system is not installed in a restricted environment, it must be housed in an enclosure. Order the NF-3E system to obtain this configuration.

Tests

No initial tests are required; however, a yearly check is recommended to verify system operation. These routine tests are activated from the NEVAFAIL NF-3 Standby Power unit. Tests and corrective action should clear most faults; however, if faults persist, consult the supplier before returning the unit for repair.

1 Connect a dc voltmeter across battery terminals on the LB-3 Local Battery Supply input terminals (terminal strip TB1, terminals 7 and 8). The voltmeter should show a dc reading.

2 Unplug KTS-3 Key Talk Power Supply unit. The voltmeter should read 50 Vdc +/- 1%. If there is no reading, the batteries are defective and must be replaced (no further tests are possible until battery fault is cleared).

3 Observe voltmeter for 10 minutes. If the reading remains steady at 50 Vdc +/1 1%, the system has passed the test. If the reading drops to 48 V in less than 10 minutes, the batteries are out of specification and should be replaced (no further tests are possible before battery replacement).

4 Plug the KTS-3 unit back into a commercial ac power outlet. The system should return to normal operation.

5 Press the TEST button on the front panel of the NF-3 unit and keep it depressed while observing indicator lights and voltmeter. The voltmeter connected across terminals 7 and 8 on TB1 of the NF-3 unit reads 50 V +/- 1% and the red AC FAIL indicator lights up. When the TEST button is released, the green NORMAL indicator lights up while the red AC FAIL indicator light extinguishes. If other indicators light up and/or the voltage reading is incorrect while the TEST button is pressed, then continue with the next step. Otherwise, the system is functioning and the test may be terminated.

6 Check fuses F3 and F4, and check for overload condition. If one or both fuses are blown, replace them. Remove the overload condition if observed. Repeat step 5.

7 Check input fuse F1 and battery fuse F2. If one or both fuses are blown, check output of KTS-3 (measure voltage across terminals 1 and 2 of TB1 on the NF-3). Reading should be 57.5 Vdc; if not, adjust KTS-3 by turning the adjustment screw beneath the INPUT - OUTPUT label on the front panel (R6) to achieve a 57.5 Vdc reading. If this is not possible, the KTS-3 is defective and should be replaced. If the voltage reading was correct or adjustment was made successfully, replace any blown fuses and repeat step 5.

8 If the unit still fails to meet requirements, contact the supplier before returning equipment for repairs.

Transmit gain strap adjustments

If customers placing calls to the Attendant Console perceive that the (transmit) volume is too high or too low, the transmit gain strap can be adjusted accordingly. (This fix should not be necessary if the recommended headsets or handsets are used.)

If the Attendant Console operator is using a recommended headset or handset and is still getting complaints from callers that the volume is too loud, further line engineering may be required. The transmit gain strap is not intended to compensate for large loop losses.

Note: The transmit gain strap is P1 on the printed circuit board (PCB - 4X08BB).

To decrease the volume level by 6 dB, move the strap from the nominal setting (covering pins 2 and 3) to cover pins 1 and 2. To increase the volume level by 6 dB, move the strap to cover pins 3 and 4.

Operational measurements

General

The DMS operational measurements (OM) system controls the collection and display of operating data associated with the activity of the machine.

Each register has a unique name, and can measure either a single event, or a group of similar events.

OMs provide information on the load and performance of the DMS system and of its peripheral components. OM information is gathered through scans of equipment components and activities with data being collected, stored, and output according to a series of parameters defined by operating company administrators. The information appears in two different forms:

- Registers increment every time an activity occurs.
- Registers record busy states of equipment.

OM information disposition

OM information may be directed to an output device or stored for future use.

OM information output

OM information is output to a designated printing or terminal device using the Log system to control report distribution. The designation of the output device to which the OM data is sent is controlled by a series of software tables. OM data is reported by classes. OM groups must be assigned through MMI commands to a particular class.

Reports of OM information fall into one of the following categories:

- **OMPR Reports** This series of reports contains raw register readings. The content of the report and the data quantity and output times are flexible and are defined by the administrator in software tables.
- **OMRS Reports** These reports contain both register readings and calculations derived using both OM and information fields as raw data. The report format in each case is set with each report produced to accommodate a particular administrative need. The report output times and intervals used for their production are defined in a software table.

OM information storage

OM information may be routed to a storage device (a tape or disk). The Device Independent Recording Package (DIRP) may be used to control data storage activities.

OM group totals

OMPR reports for some groups may present multiple appearances of the same OM. This occurs in cases where more than one equipment component of the same type exists (as in the case of the PM OM group). The OM Group Totals feature provides the capability of totalling these similar measurements over equipment components or service types. The feature is enabled on a measurement group basis. When so enabled, all OMPR reports for that group will contain an extra line of data (the total measurements), separated from the normal display by a dashed line.

Measurement totals are presented for all fields except in the case where fields have been removed from the OMPR report (see the OMACCFLD command in OM Commands). Totals will include values in lines of data that have been deselected by the OMACCKEY command (see OM Commands).

The OM totalling capability permits a reduction in OMPR report volume. The OMACCTOT command causes only the measurement totals to be output.

OM administration

The receipt of OM information requires the completion of a series of tasks, using some OM-related commands, and definition of the content of a series of software tables in the switch. Operating company personnel should become familiar with the contents of the following before attempting to set up the OM system:

- 297-1001-451: This practice describes the OM-related tables
- 297-1001-455 This practice describes the OM-specific parameters of general office tables
- 297-1001-310 This practice describes the Table Editor commands used to establish or change field values in the tables.

OM commands

The interface between operating personnel and the OM system is by means of commands and responses entered and received at the MAP. A knowledge of the proper use of the MAP is assumed in the instructions contained in this section (see 297-1001-520 for detailed information).

The ability of positions to accept OM commands can be modified to suit operating company requirements (see 297-1001-129).

Command format

An OM command consists of a command name followed by a series of parameters. Parameters following the command name can be entered in one of two modes, the prompt mode or the no-prompt mode.

Prompt mode

After an OM command is entered, the switch prompts for the first parameter. Upon entry of a valid parameter, the switch presents the next prompt. This prompt and entry sequence is repeated until all required parameters are entered. If an invalid parameter is entered, the user is prompted for the correct information.

No-prompt mode

Experienced OM system users can choose to enter all command parameters on the same line, immediately after the command name. If a mistake is

made, the system reverts to the prompt mode. The switch begins prompting for data at the point in the sequence which follows the last correctly entered parameter.

Errors made while typing in data can be corrected before the CR key is pressed, by backspacing to the point where the error was made, and typing in the correct data.

MMI commands

Format

The syntax of OM commands is given using the following conventions: the command name is given in the left part of the figure and the associated parameters are given in the right part. Optional parameters are shown between square brackets []; required parameters are shown separately, without brackets, and are stacked vertically if a selection must be made. Characters required to be typed in are shown in UPPERCASE, and variable parameters, described in the text following the figure, are shown in lowercase.

The commands are described in the following order:

- OMACCFLD
- OMACCGRP
- OMACCKEY
- OMACCTOT
- OMCLASS
- OMDUMP
- OMFORMAT
- OMREPORT
- OMSHOW
- OMTOTAL

OMACCFLD	class	group	ADD DELETE	ALL FIELD field

assigns or deletes individual OM fields to accumulating classes. Before this command is used an OM class must be designated, and command OMACCGRP must be used to assign the group to the class.

Where:

class	is the name of the accumulating class to which the OM fields are to be added or deleted.
group	is the name of the OM group containing the identified field(s).
ADD	adds the identified field(s) to the accumulating class.
DELETE	deletes the identified field(s) from the accumulating class.
ALL	specifies that all fields in the identified OM group are to be added or deleted.
FIELD	identifies that individual register fields are to be added or deleted.
field	is the name of the field to be added or deleted. A complete list of OM fields is in 297-1001-814.

Responses:

```
GROUP group IS NOT IN CLASS class.
```

Explanation: The group is not included in the class.

User Action: Include the group in the class with the OMACCGRP command.

```
FIELD field OF GROUP group IS ALREADY SELECTED IN CLASS
class.
```

Explanation: An ADD FIELD command could not execute because the field is already assigned to the named class.

```
FIELD field OF GROUP group IS ALREADY DESELECTED IN CLASS
class.
```

Explanation: A DELETE FIELD command could not execute because the identified field is not in the named class.

```
field IS NOT A VALID FIELD OF GROUP group.
```

Explanation: The identified field name is not recognized.

User Action: Check the field name for a typing error. Review valid field names with the OMFORMAT command.

```
OK
```

Explanation: The command was processed successfully.

OMACCGRP	class	ADD DELETE	ALL GROUP group

assigns or deletes OM groups to or from classes previously defined by the OMCLASS command.

Where:

class	is the name of the class to or from which OM groups are to be added or deleted.
ADD	if used with the parameter ALL adds all OM groups to the named class; if used with the parameter GROUP, adds the specified OM group to the named class.
DELETE	if used with parameter ALL, deletes all OM groups from the named class; if used with a named OM group, deletes the designated group from the named class. For switches with the OMGRPORD feature, if an OM group is to be deleted from an Accumulating class, it must be first deleted from Table OMGRPORD.
ALL	indicates that all OM groups are to be added or deleted.
GROUP	indicates that a specific OM group is to be added or deleted.
group	specifies the OM group that is to be assigned to, or deleted from, a class. See 297-1001-814 for descriptions of all OM groups. A listing of OM groups can be obtained by using the Q OMSHOW command.

Note: To confirm that a command has been completed as entered, use the OMDUMP command.

Responses:

```
ACTIVE/HOLDING STORE IS NOT ALLOCATED FOR GROUP group
```

Explanation: The requested OM group is not recognized.

User Action: Check to see if a typing error was made when the group name was entered. Review valid OM group names using the Q OMACCGRP, Q OMACCFLD or Q OMSHOW commands.

```
GROUP group IS ALREADY IN CLASS class.
```

Explanation: An ADD GROUP command could not be executed because the named group is already in the identified class.

```
GROUP group IS NOT IN CLASS class.
```

Explanation: A DELETE GROUP command could not be executed because the named group is not in the identified class.

```
GROUP group NOT DELETED FROM CLASS class BECAUSE OF TUPLE IN
TABLE OMGRPORD.
```

Explanation: A DELETE command could not be executed because the group and class are named in table OMGRPORD. (If the command was DELETE ALL, other groups not named in Table OMGRPORD will be deleted as requested.)

User Action: Delete the entry from Table OMGRPORD.

```
OK
```

Explanation: The command was processed successfully.

OMACCKEY	class	group	ADD DELETE	ALL KEY	keynum keyname

selects specific tuples within an OM group and class for printout rather than all the tuples in an OM group. This eliminates the long print time of an OM scheduled output and, therefore, allows a user to monitor selective OM. For example, choosing keyname 'LIU7' for group PM1 will cause only LIU7 OM to be output for that group. Before this command is used, an OM class must be designated, and command OMACCGRP must be used to assign the group to the class.

Before selecting specific tuples to be output, all must be deleted from the requested class and group, using the DELETE ALL parameters.

Where:

class	is the name of the class of OM to or from which tuples are to be added or deleted.
group	is the name of the OM group in which the registers identified by the specific tuple are located.
ADD	specifies that a tuple (or tuples) is to be added.
DELETE	specifies that a tuple (or tuples) is to be deleted.
ALL	adds or deletes all tuples within the group and class.
KEY	identifies that an individual tuple is to be added or deleted.
keynum	is the number of the tuple to be added. Range is 0 to 9999.
keyname	is the key identification of the tuple to be added. The range is eight characters commencing with a letter.

```
ALL KEYS ARE RESTORED FOR PRINTING.
```

Explanation: An ADD ALL command was processed successfully. The key selection feature is no longer activated for the group and class.

```
ENTER ONLY ONE INTEGER OR STRING KEY.
```

Explanation: An ADD KEY or DELETE KEY command was denied because of an extraneous parameter.

```
GROUP group IS NOT IN CLASS class.
```

Explanation: The group is not included in the class.

User Action: Include the group in the class with the OMACCGRP command.

```
KEY IS INVALID.
```

Explanation: The key name that was entered does not exist.

User Action: Check to see if an error was made when the key name was entered.

```
KEY SELECTION IS ALREADY OFF FOR THIS KEY.
```

Explanation: A DELETE KEY command was denied because the key was already de-selected from the group and class.

```
KEY SELECTION IS ALREADY ON FOR THIS KEY.
```

Explanation: An ADD KEY command was denied because the key was already selected in the group and class, or all keys had not been de-selected first.

User Action: Review previous key assignments made with the OMACCKEY command. If necessary, issue the OMACCKEY command with the DELETE ALL parameters.

```
KEY SELECTION IS INVALID FOR HOLDING-PRECISION CLASSES.
```

Explanation: The command was denied because the class is assigned HOLDING precision. Key selection is not permitted.

```
KEY SELECTION IS INVALID FOR SINGLE-TUPLE GROUPS.
```

Explanation: The OM group has only one tuple. Key selection is not possible.

```
OK
```

Explanation: The command was processed successfully.

```
ONE INTEGER OR STRING KEY MUST BE ENTERED.
```

Explanation: An ADD KEY command was denied because no key parameter was supplied.

```
THE KEY IS NOT IN THIS EADAS CLASS.
```

Explanation: The command was denied because the class is an EADAS class and the key has been de-selected using the EADASKEY command.

```
THE KEY IS OUT OF RANGE.
```

Explanation: The tuple number supplied was greater than the highest in the group.

OMACCTOT	class	group	ON OFF

identifies that OM group totals only are required (or no longer required) for a particular OM group and class. This command is available with Feature Package NTX385AA. Before this command is used, the OM class must be designated and command OMACCGRP must be used to assign the group to the class.

Where:

class	is the name of the OM class for which OM totals only are required.
group	is the name of the OM group for which OM totals only are required.
ON	turns on the 'total only' capability
OFF	turns off the 'total only' capability.

Note: The OM group totals feature must be turned ON for this capability to work (see the OMTOTAL command).

Responses:

```
GROUP group IS NOT INCLUDED IN CLASS class.
```

Explanation: The requested group is not in the designated class.

User Action: Review the class assignment and include the group in the class using the OMACCGRP command.

```
KEY SELECTION IS NOT VALID FOR HOLDING PRECISION.
```

Explanation: The requested class has an assigned precision of HOLDING. Key selection is not permitted.

```
OK
```

Explanation: The command was processed successfully.

```
TOTALLING IS NOT VALID FOR SINGLE-TUPLE GROUPS.
```

Explanation: The requested OM group has only one tuple. Totalling and key selection are not possible.

```
TOTALONLY OPTION IS ALREADY ON FOR THIS GROUP AND CLASS.
```

Explanation: An ON request has been denied because the option was already turned on.

```
TOTALONLY OPTION IS ALREADY OFF FOR THIS GROUP AND CLASS.
```

Explanation: An OFF request has been denied because the option is already turned off for the OM group and class.

```
WARNING: TOTALLING IS TURNED OFF FOR THIS GROUP.
```

Explanation: The ON command was processed successfully, but totalling is not turned on for the requested OM group.

User Action: Use the OMTOTAL command to turn on totalling for the OM group.

OMCLASS	class	|SINGLE | |DOUBLE | |HOLDING | | | |RENAME class | | | |HISTORY [snapshots transfer] |

defines a new measurement class of Accumulating registers and adds corresponding tuples to table OMACC. Once defined, a class name cannot be deleted, but can be renamed. For a class name to have meaning, registers or register groups must be assigned to the class through the use of the OMACCFLD or OMACCGRP commands.

Where:

class	is the name to be assigned to a class of accumulating registers. The range is a maximum of eight characters commencing with an alphabetic character. Up to 30 class names can be defined - not including active and holding, which are predefined. The name should be meaningful, reflecting the purpose of the class.
SINGLE	specifies that registers assigned to the class are to be single precision, capacity 65 535 counts. If the data accumulated is likely to exceed 65 536 counts during the proposed accumulative period as set in table OMACC, a double precision accumulating register should be used. Accumulating registers do not overflow to an extension register. To change a class precision, all OM groups must first be deleted from the class. See command OMACCGRP.
DOUBLE	specifies that registers assigned to the class are to be double precision, with a capacity of 4 294 967 295 counts. To change a class precision, all OM groups must first be deleted from the class. See command OMACCGRP.
HOLDING	indicates that output is taken directly from the holding registers. Selection of fields using the command OMACCFLD is not possible. To be meaningful, the period of transfer of data should be set to AUTO (Table OMACC).
RENAME	indicates a new name is to be assigned to an existing class.
HISTORY	defines a History class of registers. History classes can be defined only if the switch has the OM transfer period and History Class Enhancements feature, NTX099AA.
snapshots	specifies the number of History registers per measurement; range one to six. (See Note.)
transfer	specifies the time, in minutes, that a single History register is current. For example, if the value is five, the History registers are cycled every five minutes; range 5, 10, 15, 20, or 30.

Note: When parameters snapshots and transfer are set using command OMCLASS, corresponding read-only fields are automatically data-filled in Table OMACC. The fields in Table OMACC cannot be changed by TE commands.

Responses:

OK

Explanation: The command has been processed as entered; or the class name already exists but registers have not been assigned to it.

User Action: The user can now assign registers or register groups to the class by using the OMACCGRP or OMACCFLD commands.

```
MAXIMUM NUMBER OF CLASSES ALREADY DEFINED.
```

Explanation: The maximum number of operating company-defined classes, 30, has been exceeded.

User Action: Review existing classes for usefulness and redefine a class if possible.

```
OM CLASS REDEFINITION FAILED.  GROUP(S) NOT DELETED.
```

Explanation: An attempt has been made to redefine an existing class (for example, a request to change an existing class from SINGLE to HOLDING).

User Action: Review the contents and collection parameters of the existing class to determine if it fulfills the purpose of the intended new class. If not, establish a new name and re-enter the command.

```
OM CLASS RENAMED.
```

Explanation: The renaming command has been processed as entered.

User Action: Review and reassign registers to the class, as necessary, by using the OMACCGRP or OMACCFLD commands.

```
RENAME FAILED.  NEW OM CLASS ALREADY DEFINED.
```

Explanation: The class name is already in use.

User Action: Review purpose of existing class, determine whether it can be used to meet the requirement, and redefine where applicable.

```
RENAME FAILED.  OLD OM CLASS UNDEFINED.
```

Explanation: The old class name entered does not exist.

User Action: Most likely, an error in entering the name has occurred. Re-check the entry for errors and use Q OMACCGRP or Q OMACCFLD to obtain a list of valid class names.

```
OM HISTORY CLASS FEATURE NOT ENABLED.
```

Explanation: Use of the History feature has not been authorized.

User Action: Using TE commands, check the OMHISTORYON parameter in Table OFCOPT. This parameter must be set to Y, but this can only be done using a nonresident program. Contact Northern Telecom if the feature is required.

OMDUMP	ALL CLASS class GROUP group	COMMANDS FORMAT

Displays assignment information about selected OM groups and classes.

Where:

ALL	specifies that the commands or format for all accumulating classes and all groups are to be displayed.
CLASS	specifies that information related to only one accumulating class is to be displayed.
class	is the name of the accumulating class for which information is to be displayed.
GROUP	specifies that assignment information related to a particular OM group is to be displayed.
group	is the name of the OM group for which information is to be displayed.
COMMANDS	displays a list of the last commands relevant to the specified group or class. When used with ALL, it displays a list of recent commands for all classes and groups. Delete commands or commands made noneffective by a delete command are not displayed.
FORMAT	when used with CLASS, displays a list of the group and field names of registers in the specified CLASS; when used with GROUP, requests a display of a list of the field names of registers in the specified group in all classes which include that group; when used with ALL, displays a list of all OM groups and field names in the OM system, except Active and Holding classes.

Where:

The requested information is output. A typical output in response to the ALL and COMMANDS parameters is as follows:

```
OMTOTAL LMD ON
OMTOTAL TRK ON
OMCLASS HOUR SINGLE
OMACCGRP HOUR ADD GROUP LMD
OMACCGRP HOUR ADD GROUP OFZ
  .
  .
  .
OMCLASS DAY DOUBLE
OMACCGRP DAY ADD GROUP LMD
  .
  .
  .
OMCLASS MONTH DOUBLE
OMACCGRP MONTH ADD GROUP LMD
  .
  .
  .
```

A typical output in response to the ALL and FORMAT parameters is as follows:

```
HOUR
   LMD NTERMATT NORIGATT LMTRU    TERMBLK
   LMD ORIGFAIL PERCLFL  STKCOINS REVERT
   LMD MADNTATT ORIGBLK  ORIGABN
   LMD
   OFZ INANN    INKLT    INOUT    INOUT2
   OFZ INTONE   NIN      NIN2     OUTNWAT
      .
      .
      .
DAY
   TRK INCATOT  PRERTEAB INFAIL   NATTMPT
     .
     .
     .
MONTH
   LMD NTERMATT NORIGATT LMTRU    TERMBLK
     .
     .
     .
```

The two preceding sample responses show what would be presented if the parameter ALL were selected. Requests by GROUP or CLASS would result in the appropriate subset of those examples being output.

```
INVALID CLASS
```

Explanation: The requested class has not been defined by the OMCLASS command.

```
INVALID GROUP
```

Explanation: The requested OM group does not exist.

OMFORMAT	group

displays the output format of an OMPR report for a selected OM group.

Where:

group	is the name of the OM group for which a view of the output format is being requested.

Responses:

The format of the OMPR report for the selected OM group is displayed.

OMREPORT Commands

The OMREPORT command environment enables information about selected tuples of the OMREPORT table to be obtained. Within the OMREPORT command environment the following commands may be used:

- REQUEST
- QUERY
- QUIT

OMREPORT	

enables the OMREPORT command environment.

Responses:

```
OMREPORT
```

Explanation: The OMREPORT command environment has been entered.

REQUEST	report

specifies that an OM Report is to be selected for display by tuple number (defined in Table OMREPORT).

Where:

report	is the tuple number in the OMREPORT table of the desired report; range zero to 23.

Responses:

```
OK
```

Explanation: A report name is associated with the tuple number entered, and the most recent report is printed out.

```
NUMBER INVALID, NO REPORT AVAILABLE
```

Explanation: A report name is not associated with the tuple number entered.

User Action: Check to see if an error was made in entering the tuple number. Use TE commands to list all reports scheduled in Table OMREPORT.

```
OUT OF RANGE <REPORT> (0 to 23) ENTER: <REPORT>
```

Explanation: The tuple number entered exceeds 23.

User Action: Check to see if an error was made in entering the tuple number. Enter a valid number.

QUERY	

specifies that a list of all available report names is to be printed out.

Responses:

```
OMREPORT NAMES
--------------
PRDTKMTC
ACHREP
ACHGXREP
TFCANA
CDSREP
ANARPT
DTDETECT
```

Explanation: Prints out a list of available report names in the OMREPORT system.

> ***Note:*** The DTDETECT report name appears only if the DTDETECT feature is enabled.

OMSHOW	group class |from_keynum [to_keynum] | | |from_keyname [to_keyname] |

displays the key structure, supplemental information, and the contents of all or part of the group and class named in the parameters.

Where:

group	is the name of the OM group to be displayed. For a list of valid group names use the Q OMSHOW command. If an invalid group name is entered, the switch responds with a list of valid names.
class	is the name of the class to be displayed: ACTIVE, HOLDING, or an operating company-defined name. For a list of valid classes use the Q OMACCGRP or the Q OMACCFLD command.
from_keynum	is the tuple (key) number specifying the first of a sequence of fields to be displayed (see notes 1 and 2).
to_keynum	is the tuple (key) number specifying the last of a sequence of fields to be displayed (see notes 1 and 2)
from_keyname	is the key identification specifying the first of a sequence of fields to be displayed (see notes 1 and 2). If from_keyname is 'TOTAL' and to_keyname is not specified, only total readings are displayed, providing totalling is turned on for the group (see OMTOTAL command).
to_keyname	is the key identification specifying the last of a sequence of fields to be displayed (see notes 1 and 2).

Note: 1 Tuple (key) numbers are not prompted for by the switch. They must be entered with the class name. If a from_keynum only entry is made (that is, no to_keynum entry) only that tuple is displayed. In cases where the OM group is arranged by a multi-part key, the information field is used as a pseudo-key. In this case, both from_keyname and to_keyname must be enclosed in quotes and all characters enclosed by the quotes must be in uppercase.

Note: 2 To determine the tuple (key) number for IBN subgroups use CI command IBNSGKEY.

Note: 3 If key is 'TOTAL' and totalling is not turned on for the group, the response will be 'Invalid Key'.

Note: 4 If no range of tuples is given, all tuples (including the total readings) will be displayed.

Responses:

Group Name	
CLASS:	Class name
START:	Date, time, and day-of-the-week of the start of the sampling period
STOP:	Date, time, and day-of-the-week of the end of the sampling period
SLOWSAMPLES:	The total number of slow samples made in the period
FASTSAMPLES:	The total number of fast samples made in the period
KEY:	As specified in 297-1001-814, first field of the group information
INFO:	Supplemental information related to the key value and other information for each tuple of the OM group displayed

A listing of all registers in the OM group.

A table of the counts in each register.

`TABLE UNAVAILABLE`

Explanation: An attempt was made to request usage data in Erlangs from the ACTIVE class. Usage information in Erlangs is not available until after the ACTIVE/HOLDING transfer has taken place.

User Action Wait until the data has been transferred to the HOLDING registers.

OMTOTAL	group	ON OFF

turns the OM totalling feature on or off for a specified OM group. When the feature is turned on, OMPR and OMSHOW reports will include group total measurements. This command is provided with Feature Package NTX385AA.

Where:

group	is the name of the OM group for which OM totalling is desired (or no longer required).
ON	turns the OM totalling feature on for the specified OM group.
OFF	turns the OM totalling feature off for the specified OM group.

Responses:

```
OK
```

Explanation: This identifies successful execution of the OMTOTAL command.

```
TOTALLING IS ALREADY OFF FOR group.
```

Explanation: Totalling is already turned off for the identified OM group.

```
TOTALLING IS ALREADY ON FOR group.
```

Explanation: Totalling is already turned on for the identified OM group.

```
TOTALLING IS NOT VALID FOR SINGLE-TUPLE GROUPS.
```

Explanation: The requested OM group does not have multiple appearances of any OM, so totalling is not possible.

OM report samples

This section presents samples of Operational Measurement output reports. In particular, an OMPR report produced by the OMSHOW command is given as an example.

OM register (OMPR) reports

This report series contains the outputs of OM groups that have been scheduled or requested using the commands and tables identified in OM administration on page 4-27. The reports consist of raw register readings. The registers are described in 297-1001-814. There may be a maximum of 32 OMPR output reports scheduled (OMPR200 to 231).

Figure 4-3 on page 4-44 shows a sample OMPR printout for register group TRK. The report is produced by an OMSHOW command for OM group TRK. The information items contained in the report are described in the key at the bottom. For a description of the register fields themselves, consult 297-1001-814.

OMPR reports continue to be printed until a maximum of OMPR231 is reached. The other OMPR numbers are reserved for future use.

Figure 4-3xxx
Display of TRK OM group information

```
TRK                                (The GROUP name)

CLASS:        ACTIVE  (The CLASS)
START: 1984/04/12  06:00:00 THU; STOP:  1984/04/12  06:22:39 THU
SLOWSAMPLES: 13  ;  FASTSAMPLES:                                 135  ;


          ┌ KEY  (COMMON_LANGUAGE_NAME)
          │ INFO  (OM2TRKINFO)
          │    INCATOT       PRERTEAB          INFAIL      NATTMPT
Note 1 ──┤    NOVFLATB         GLARE          OUTFAIL       DEFLDCA
          │      DREU           PREU              TRU          SBU
          │       MBU      OUTMTCHF          CONNECT       TANDEM
          │       AOF            ANF             TOTU
          └

        ┌ 12 OTWAON23CGO
        │      OG     2     2
        │
        │              0            0            0              0
Note 2 ─┤              0            0            0              0
        │              0            0            0              26
        │              0            0            0              0
        └              0            0            26

          13 TOROON45CGO
               OG     3     3
                       0            0            0              0
                       0            0            0              0
                       0            0            13             26
                       0            0            0              0
                       0            0            39
```

Notes:

(1) This section identifies the location of the register and information fields for the report. In this example the section contains the following information:

KEY: as the report contains information for many trunk groups, a key field is necessary for identification. The means of identification in this case is the common language location identifier (CLLI) of the trunk group.

INFO: is the information fields associated with each trunk group (see 297-1001-114).

The remainder of the section contains the register field names. Descriptions of these fields are contained in 297-1001-114.

(2) This is the actual OM data. The values printed here correspond to the register fields identified in the section above, and consists of key, information and register fields.

Attendant console OMs

ACSYSTR attendant console system trouble.

The following OM registers belong to the ACSYSTR group. This group measures shortages and faults of system resources such as digital modems (Dmodems), three-port conference circuits (CF3Ps) and PORTPERMEXT extension blocks that are encountered during the return to service (RTS) of an attendant console.

If the original attendant console state was system busy and the audit attempted to return the console to service, the audit will attempt to RTS the Attendant Console every minute. Therefore, the appropriate register will be incremented every minute for as long as the faulty condition or resource shortage exists. OM group PM provides maintenance measurements for peripheral modules. Attempts, failures and successes of RTS may not add up because the audit, for some error conditions, attempts to return the console to service more than once.

Field name	Register description
OMACINFO	Information field.

Indicates the number of Attendant Consoles that were datafilled for the switching office (maximum 255).

Field name	Register description
ACDMOVFL	Shortage of digital modems.

This register is incremented when the Attendant Console attempts to return to service and no digital modem is available. Register NRSOVFL of the NRS OM group is pegged too.

Log report IBN104 with trouble reason AC_DM_UNAVAILABLE is associated with this OM register.

Field name	Register description
ACCF3POV	Shortage of conference three-ports.

This register is incremented when an Attendant Console attempts to return to service and no CF3Ps are available. Registers CNFOVFL or CNFOVFLT of OM group CF3P is also pegged.

LOG IBN104 with trouble code AC_CONF_UNAVAILABLE is associated with this OM register.

Field name	Register description
ACDMFL	Digital modem problems

This OM register is pegged for any of the following digital modem problems:

- no response from Dmodem
- communication errors between the Dmodem and the MTM
- bad message from the Dmodem.

Field name	Register description
ACCF3PFL	Conference three-port problems

This OM register is pegged when a bad message came from a CF3P or when no response was received from a CF3P.

Log report IBN104 with trouble code AC_CONF_NO_RESPONSE is associated with this log report.

Field name	Register description
ACEXOVFL	Shortage of AC extension blocks

This register is incremented when no PORTPERMEXT extension block was available during the return to service of an Attendant Console. OM register EXTOVFL of EXT group and key number three is also pegged.

Log report IBN104 with trouble code AC_NO_EXT_RESOURCE is associated with this OM register.

Field name	Register description
ACDATAER	Datafill Error

This OM register is incremented when return to service failed because inconsistency among console data tables was encountered during the return to service of an Attendant Console. Tables IBNLINES and ATTCONS are probably faulty.

Log report IBN104 with trouble code AC_DATA_ERROR is associated with this OM register.

ACRTS attendant console return to service.

One of these OM groups exists for each Attendant Console. This group contains peg counts associated with AC return to service (RTS). Attempts, failures, and successes may not add up because the audit attempts to return the console to service more than once for some error conditions. The key

field of this group contains the CLLI of its associated Attendant Console as defined in table ATTCONS.

Field name	Register description
ACRTSMAT	Manual RTS attempts.

This register is incremented each time AC RTS is entered from a MAP.

Field name	Register description
ACRTSSAT	System audit RTS attempts.

This register is incremented each time an audit attempts an RTS of an Attendant Console.

Field name	Register description
ACRTSNOR	No response from AC.

This register is incremented each time RTS fails because of no response from the Attendant Console.

Log report IBN104 with trouble code AC_NO_RESPONSE is associated with this OM register.

Field name	Register description
ACRTSCC	Circuit confusion.

This OM register is incremented each time an AC RTS failed because a peripheral module (PM) managing the console has detected message or data inconsistency.

Log report IBN104 with trouble code AC_CKT_CONFUSION is associated with this OM register.

Field name	Register description
ACRTSIL	Integrity lost.

This OM register is incremented when AC RTS fails because integrity was lost on both planes of the network. Log report IBN104 with trouble code AC_INTEGRITY_LOST is associated with this OM register.

Field name	Register description
ACRTSNWB	Network blockage.

This register is incremented each time AC RTS fails because it could not get the connection between Attendant Console lines and a digital modem or a CF3P.

Log report IBN104 with trouble code AC_NETWORK_BLOCKAGE is associated with this OM register.

Field name	Register description
ACRTSCHC	Channel congestion.

This register is incremented each time AC RTS fails because it could not get PM speech path for data-in, data-out, or voice lines.

Log report IBN104 with trouble code AC_CHANNEL_CONGESTION is associated with this OM register.

Field name	Register description
ACRTSCRL	Circuit associated with AC put out of service.

This register is incremented when release call message is received. This could happen when someone seized the circuit that was just assigned to the Attendant Console.

Log report IBN104 with trouble code AC_CKT_RELEASED is associated with this OM register.

Field name	Register description
ACRTSCAR	Carrier failure.

This register is incremented when AC RTS fails because of carrier failure between the Attendant Console and the digital modem.

Log report IBN104 with trouble code AC_DM_CARRIER_FAILED is associated with this OM register.

Field name	Register description
ACRTSSE	System error.

This register is incremented when an AC RTS fails due to an error not covered by other registers of this group.

Log report IBN104 with trouble code AC_SYSTEM_ERROR is associated with this OM register.

ACTRBL Attendant Console Troubles

This register group indicates Attendant Console troubles not serious enough to take down the console. Such troubles are those encountered during the normal operation of the attendant console or during the audit. One such group exists for each Attendant Console.

> ***Note:*** Incrementing the ACTRCC, ACTRINLO, ACTRINKY , ACTRPFO, ACTRRES, ACTRCARF, ACTRSYS, ACTRDMFL, and ACTRCTRL peg counts will also increase one common internal counter which summarizes these troubles between audits. If the number of those troubles exceeds the value of office parameter AC_MAX_NUM_ERRORS, then the equivalent register in group ACTAKEDN (instead of ACTRBL group) is incremented and the Attendant Console is taken down.

The key field for this group contains the CLLI of the Attendant Console.

Field name	Register description
ACTRCC	Circuit confusion on circuit associated with AC.

This register is incremented when the confusion message occurred on a circuit associated with the AC during the normal AC operation. If it happens on source or destination, the source or destination is idled. The console stays up. If it happens on other connections, attempts are made to recover.

Log report IBN101 with trouble code AC_CKT_CONFUSION is associated with this OM register.

Field name	Register description
ACTRINLO	Integrity lost.

This register is incremented when integrity failure occurred on a circuit associated with an Attendant Console during normal AC operation. If it happens on source or destination, both are idled. If it happens on other connections, the system attempts to recover.

Log report IBN101 with trouble code AC_INTEGRITY_LOST is associated with this OM register.

Field name	Register description
ACTRINKY	Invalid key code sent from AC to DM.

This register is incremented when an Attendant Console sends an invalid key code to a digital modem.

Log report IBN101 with trouble code AC_TO_DM_INVALID_KEY is associated with this OM register.

Field name	Register description
ACTRPFO	Parity, framing, or overrun error.

This register is incremented each time a parity, framing, or message overrun error occurs on a digital modem to Attendant Console link.

Log report IBN101 with trouble codes AC_PARITY_ERROR, AC_FRAMING_ERROR, and AC_OVERRUN_ERROR are associated with this OM register.

Field name	Register description
ACTRRES	AC has reset.

This register is incremented each time a hardware reset has occurred on the console due to conditions such as local power problem or carrier fail from CC to AC. Log report IBN101 with trouble code AC_RESET is associated with this OM register.

Field name	Register description
ACTRCARF	Carrier failed.

This register is incremented when the digital modem stops receiving a carrier from an Attendant Console.

Log report IBN101 with trouble code AC_DM_CARRIER_FAILED is associated with this OM register.

Field name	Register description
ACTRSYS	Console system error.

This register is incremented when errors occur which are not covered by other peg counts.

Log report IBN101 with trouble code AC_SYSTEM_ERROR is associated with this OM register.

Field name	Register description
ACTRDMFL	Erroneous message came from Dmodem.

This register is incremented when a message from the digital modem contains an error or is too long.

Log report IBN101 with trouble codes AC_DM_MSG_ERROR and AC_DM_MSG_TOO_LONG are associated with this OM register.

Field name	Register description
ACTRCTRL	Circuit released.

This register is incremented when a circuit associated with an Attendant Console is taken out of service during normal AC operation. Either FRLS was performed on a MAP or a PM was taken down by the system or manually. This register will be pegged if it happens on source or destination. Any other occurrence will peg a register in the ACTAKEDN group.

Log report IBN101 with trouble code AC_CKT_RELEASED is associated with this OM register.

Field name	Register description
ACTRSERR	Console software failure.

This register is incremented when a software error occurs on the Attendant Console. The error is not serious enough to take down the console.

Log report IBN101 with trouble code AC_SW_ERROR is associated with this OM register.

Field name	Register description
ACTRSFLT	Call was lost on Attendant Console.

This register is incremented when a call was lost on a console due to software fault or trap.

Log report IBN101 with trouble code AC_SW_FAULT is associated with this OM register.

Field name	Register description
ACTRCLFR	Call was lost because of AC take-down.

This register is incremented when a call was lost because a console is being taken down. A register in group ACTAKEDN is also incremented.

Log report IBN101 with trouble code AC_CALL_FREED is associated with this OM register.

Field name	Register description
ACTRCNR	No response from Attendant Console.

This register is incremented when an audit finds that the console does not respond.

Log report IBN101 with trouble code AC_NO_RESPONSE is associated with this OM register.

ACTAKEDN Attendant Console Take-Down

This group pegs Attendant Console problems that bring the console down. These problems include those that occur during normal operation or during an audit. One of these groups exists per Attendant Console. Note: ACTDCC, ACTDINLO, ACTDINKY, ACTDPFO, ACTDRES, ACTDCARF, ACTDSYS, ACTDDMFL, and ACTDCTRL are pegged when excessive trouble messages cause the Attendant Console to be taken down. The key field of this group is the CLLI of the associated Attendant Console datafilled in Table ATTCONS.

Field name	Register description
ACTDCC	Circuit confusion.

This register is incremented when excessive troubles occur between audits. Messaging or data inconsistency from a peripheral on a circuit associated with the AC causes the AC to be taken down.

Log report IBN102 with trouble code AC_CKT_CONFUSION is associated with this OM register.

Field name	Register description
ACTRCLFR	Call was lost because of AC take-down.

This register is incremented when a call was lost because of a console being taken down. A register in group ACTRBL is also incremented.

Log report IBN101 with trouble code AC_CALL_FREED is associated with this OM register.

Field name	Register description
ACTDINLO	Integrity lost.

This register is incremented when excessive troubles occur between audits and integrity loss on circuits associated with the AC, causing the AC to be taken down.

Log report IBN102 with trouble code AC_INTEGRITY_LOST is associated with this OM register.

Field name	Register description
ACTDINKY	AC generated an invalid key code.

This register is incremented when excessive troubles occur between audits and an invalid key code on the DM to AC link, causing the AC to be taken down.

Log report IBN102 with trouble code AC_TO_DM_INVALID_KEY is associated with this OM register.

Field name	Register description
ACTDPFO	Parity, framing, or overrun error.

This register is incremented when excessive troubles occur between audits and hardware parity, framing, or overrun errors occur on the DM to AC link, causing the AC to be taken down.

Log report IBN102 with trouble codes AC_PARITY_ERROR, AC_FRAMING_ERROR, and AC_OVERRUN_ERROR are associated with this OM register.

Field name	Register description
ACTDRES	AC has reset.

This register is incremented when excessive troubles occur between audits and hardware reset on the Attendant Console, causing the console to be taken down.

Log report IBN102 with trouble code AC_RESET is associated with this OM register.

Field name	Register description
ACTDCARF	Carrier failed.

This register is incremented when excessive troubles occur between audits and carrier failure, causing the console to be taken down.

Log report IBN102 with trouble code AC_DM_CARRIER_FAILED is associated with this OM register.

Field name	Register description
ACTDSYS	Console system error.

This register is incremented when excessive troubles occur between audits and an unspecified error, causing the console to be taken down.

Log report IBN102 with trouble code AC_SYSTEM_ERROR is associated with this OM register.

Field name	Register description
ACTDDMFL	Erroneous message from digital modem.

This register is incremented when excessive troubles occur between audits and an erroneous message received from a digital modem, causing the Attendant Console to be taken down.

Log report IBN102 with trouble codes AC_DM_MSG_ERROR and AC_DM_MSG_TOO_LONG are associated with this OM register.

Field name	Register description
ACTDCTRL	Circuit released.

This register is incremented when a circuit associated with an Attendant Console is taken out of service and the console is taken down. Either the circuit has been force released from the MAP or a PM was taken down manually or by the system, and it does not happen at the source or destination.

Log report IBN102 with trouble code AC_CKT_RELEASED is associated with this OM register.

Field name	Register description
ACTDSERR	Console software failure.

This register is incremented when a software error occurs on the Attendant Console that is severe enough to take the console down.

Log report IBN102 with trouble code AC_SW_ERROR is associated with this OM register.

Field name	Register description
ACTDMAN	AC manual force release.

This register is incremented when an Attendant Console has been taken down manually from the MAP.

Log report IBN102 with trouble code AC_MANUAL_FRLS is associated with this OM register.

Field name	Register description
ACTDAUD	AC system audit force release.

This register is incremented when an Attendant Console has been taken down by a system audit, excluding take-downs due to AC_NO_RESPONSE trouble codes.

Log report IBN102 with trouble code AC_SYSTEM_AUDIT is associated with this OM register.

Field name	Register description
ACTDCNR	No response from AC.

This register is incremented when an Attendant Console has been taken down by a system audit because the AC does not respond.

Log report IBN102 with trouble code AC_NO_RESPONSE is associated with this OM register.

Attendant Console monitor display

Attendant Console monitor display (ACMON) displays information about a specified console at the maintenance and administration position (MAP).

Access to the ACMON MAP level

To access the ACMON MAP level, enter the following command at the CI level.

```
MAPCI;IBNMEAS;ACMON      (CR)
```

Figure 4-4 on page 4-57 shows a MAP display of ACMON with an Attendant Console displayed.

Selecting an Attendant Console

An Attendant Console must be selected before it can be monitored at the ACMON level. A console can be selected by specifying the console common language location identifier (CLLI) or customer group. The following commands show how to select a console.

Selecting a console by CLLI

To select a console by CLLI, enter a 3 (to specify the SELECT_ command) or type SELECT. Follow one of these command options with this syntax:

```
C (<console CLLI> <console number>)
```

The following examples show both command options being used to select a console by CLLI.

```
3_C ATTKDKA 14

SELECT_C ATTKDKA 14
```

Note: The CLLI is defined in Table CUSTHEAD. The console number is defined at Table IBNLINES.

Error messages If an invalid CLLI is specified, the following message is received.

```
INVALID CLLI
```

If an invalid console number is specified, the following message is received.

```
INCORRECT OPTIONAL PARAMETER OR TOO MANY PARAMETERS
```

Selecting a console by customer group

To select a console by customer group, enter a 3 (to specify the SELECT_ command) or type SELECT. Follow one of these command options this syntax:

```
G (<customer group> <subgrp>)
```

The following examples show both command options being used to select a console by customer group.

```
3_G COMKODAK 0

SELECT_G COMKODAK 0
```

Note: The customer subgroup can be omitted. If it is omitted, the customer group's first console in subgroup 0 is chosen.

Error messages If a customer group with no attendant consoles is specified, the following message is received.

```
INVALID SUBGROUP
```

If no parameter is input, the following message is received.

```
PARAMETER MISSING
```

Selecting the next console

The next console in a customer group can be selected by entering one of the following commands.

```
6
```

or

```
NEXTCON
```

Error messages If the current console is the last one in the subgroup and the next console command is executed, the following message will be received.

```
NO MORE CONSOLES IN CUSTOMER GROUP
```

MAP display

The following figure shows the ACMON level at a MAP station.

Figure 4-4xxx
MAP display for ACMON

```
    ACMON        CLLI          CUSTGRP      SUBGRP   AC STATE
                 ATTKDKA       COMKODAK       0       UNJK      *NS*
0   Quit
2                CONF:   CF3P  110                        DM: DMODEM 13
3   SELECT_      AC FEATS:  WILDCARD           IBN FEATS:  3WC
4                           PARK
5
6   NEXTCON
7                MSGCNT:  7                   RESENT:  0
8
9                        **LOOP INNFORMATION**
10
11
12              LOOP     SCR                      DEST          STATE
13               1:CKT INMF 15                DN 6137227005     ACT
14               2:DN 6137221235              DN 6136211235     HLD
15               3:DN 6139995132                                HLD
16               4:                                             IDL
17               5:                                             IDL
18               6:                                             IDL
```

Once the console has been selected, the MAP display shows the console CLLI, customer group, subgroup, and state.

CLLI
The console CLLI identified at field CLLI is defined in Table ATTCONS.

CUSTGRP
The customer group identified at field CUSTGRP is defined in Table CUSTHEAD.

SUBGRP
The subgroup identified at field SUBGRP is defined in Table ATTCONS.

STATE
The console state is identified at field STATE.

A console can be in one of the following states.

- UNEQ (Unequipped) - No hardware assigned to the console.
- OFFL (Offline) - The console is equipped but is out of service.
- MANB (Manbusy) - The console has been taken out of service by a maintenance personnel.
- SYSB (Sysbusy) - The console has been taken out of service by the system.
- SZD (Seized) - The console is being returned to service (RTS) or is being diagnosed.
- UNJK (Unjacked) - The console is in service but is unjacked.
- NRDY (Not ready) - The console is in sixty second jack out timing.
- CPB (Call processing busy) - The console is in service and is jacked in.

NS
If the selected console is in night service, *NS* will flash if the user's Video Display Terminal (VDT) support this capability.

Conf and DM
The 3-port conference circuits (CF3P) and Digital Modem (DMODEN) circuit are identified at field CONF and DM.

AC feats
Attendant Console features which are active at the console are identified at field AC FEATS.

> ***Note:*** See Attendant Console features table on page 4-59 for a definition of abbreviations.

IBN feats
Meridian Digital Centrex (MDC) (or Internal Business Network (IBN)) features which are active at the console are identified at field IBN FEAT.

Note: See IBN features table on page 4-62 for a definition of abbreviations.

MSGCNT

The MSGCNT (the count of outgoing messages from the central control (CC) to the console) is identified at field MSGCNT. The audit interval is defined in office parameter AC_AUDIT_INTERVAL in Table OFCSTD.

Resent

Resent is identified at the field RESENT. Resent is the count of the number of terminal process block (TPB) output busy messages that have been detected by this console during a audit interval.

Loop information

Field SCR, DEST, and STATE describe the source and destination of a loop key.

SCR and DEST The console has three ports. The ports are occupied by the console, originating party (SCR), and by the terminating party (DEST).

The SRC and DEST information will be in one of the following formats:

- line - L and DN are displayed
- trunk - CKT, the trunk CLLI, and trunk member are displayed
- console - AC and the console CLLI are displayed

STATE The state of each loop is shown at field STATE. The state of the console will be in one of the following formats.

- IDL (idle) - A call is not active on this loop.
- QUE (queued) - An unanswered call has been presented to this loop.
- HLD (held) - A call is currently being held on this loop.
- ACT (active) - The console is involved in this call.

Attendant Console features

The following table lists the console features and abbreviations that can be found in the AC FEATS: field.

Table 4-5xxx
Attendant Console features

Feature	Abbreviation
Signal SRC/DEST	SIGNAL
Treatment	TRMT
AC digit collection	DIGCOL

- continued -

Feature	Abbreviation
Busy Verify Trunks	BVT
AC 6-port conference	CONF
Busy Verify Lines	BVL
Setup for cpwakeup	SETUP
Unjacked console	UNJACK
AC to Trunk cross-processor	ACTK
AC Speed calling	SPDCL
Wildcard key	WILDCRD
Global TGB	GLOBTGB
Global TAC	GLOBTAC
Do Not Disturb	DND
Call Park Store	PARK
Call Park Retrieve	UNPARK
Code Calling	CDCL
AC End To End Signaling	ACEES
Account Code	ACC
Authcode	AUTH
Call Detail Recording	CDR
Query time and date	TIME
Authcode validation	AUVAL
AVTK	AVTK
Night Service programming	NS_PROG
Announcements	ANN
AC Trouble Key	TRBLKEY
AC Buzz Key	BUZZ
AC Long Buzz	BUZZING
AC Outpulsing on a Line	OPLS_LN
AC Flexible Language	LANGKEY
AC FPE Digit Collection	DGCOL
Preset Conference	PRECONF

- continued -

Feature	Abbreviation
AC to Operator Trunk processor	ACOP
AC Autodial	AUTODIAL
Message Waiting	MWT
AC Lamp Babysitting	BABYSIT
AC Camp on	ACO
AC FPE	FTRINDEX
Virtual Group Busy	GLOBVGB
Virtual Access Control	GLOBVAC
AC Call Forward	ACCFW
Display Queued Calls	DQC
E800/800 +	E800
Night Service pending	NSPEND
AC trunk queueing	ACTO
Private Virtual Network	PVN
AC ISUP Preempt	ACISAVTK
Private Virtual Network AUTH	PVNAUTH
Private Virtual Network SCORN	PVNSCRON
Private Virtual Network RMAC	PVNRMAC
Log In	LOGIN
Station Origination Restriction	SOR
Loudspeaker Page Answerback	LPA
SERIAL	SERIAL
PG Conference	PGCNF
End	

IBN Features

The following table lists the console features and abbreviations that can be found in the IBN FEATS: field.

Table 4-6xxx
IBN Features

Feature	Abbreviation
Arbitrator	FTRARB
Call Killer	KILLER
Flash	FLASH
Message	FTRMSG
System Test	SYSTAT
Digit Collect	DGCOL
Digit Collection	DIGCOL
Origination	ORIG
Outpulsing	OPULSE
Timing	TIMER
Tone	TONE
Tone Detection	TOMDET
Translation	TRANS
Treatment	TREAT
Intl Flash	1FLASH
Call Back Queueing	CBQUE
Complicated Outpulsing	COPULS
Direct inward System Access	DISA
Expensive Route Warning Tone	ERWT
Off Hook queuing	OHKQUE
Preempt	PREMPT
UCD Call Queuing	UCD
Attendant Console	ATTCON
Call Waiting	CWT
DMFT Outpulsing on A Line	DTMFOT

-continued-

Feature	Abbreviation
AC end-to end signalling	ACEES
MADN Termination	MDNTRM
Phone Auto Dial Usage	AUD
Attendant Immediate Release	ATTRLS
Preset Conference	PRECNF
LT CUTTD	LTCUT
ACD Agent Key	ACDAGT
Make Set Busy	MSB
Malicious Call Hold	MCH
MADN Privacy Release	MDNPRL
MADN Hold	MDNHLD
KSET DN Key	KSETDN
Call Transfer Warning Tone	CXR
MADN Multiple Call Arrangement	MDNMCA
Flip Flop	FLPFLP
Attendant Camp-on	ATTCPN
DMS-250 Original Conference	CNF250
RMP	RMP
Query Busy Station	QBS
Flash Termination Tone	FSHTRM
Multiparty Bridge	MPQ
UCD Call Dequeue	UCDDEQ
Display Query	DSPQRY
Calling Card Service	CCSERV
LCL to International Interworking	LCLINT
Automatic Call Distribution Call Queueing	ACD
Account Code	ACNTCD
Authorization Code	AUTHCD
Executive Busy Override	EBO
Permanent Hold	HLD

-continued-

Feature	Abbreviation
UCD Activation	UCDA
UCD Deactivation	UCDD
Release	RLS
6-port Conference	CNF
Privacy Release Dialed Access	PRLA
Privacy Release Cancel	PRLC
MADN Hold Dialed Access	MHLA
MADN Hold Cancel	MHLC
Call Request Activate	CRA
Call Request Retrieve	CRR
Call Request Delete All	CROA
Call Request Delete Specific	CRDS
Message Center Terminator	MCDN
Directed Call Pickup	DCP
Data Looparound	LOOP
Call Hold	CHD
Ring Again	RAG
Make Set Busy Activation	MSBA
Make Set Busy Deactivation	MSBD
Last Number redial	LNR
Auto Answer Back	AAB
Query Time	QTD
Call Forward Don’t Answer	CFD
Loudspeaker Paging Line Termination	LSPK
Network Resource Selector Outbound	NRSOB
Network Resource Selector Inbound	NRSIB
Call Forward Program	CFWP
Call Forward Cancel	CFWC
CFX Validation	CFXVAL
DCALL Park	DCPRK

-continued-

Feature	Abbreviation
Call Park	PRK
ACD Call Dequeue	ACDDEQ
ACD Not Ready	ADCNR
ACD Observe Agent	ACDOBS
ACD Observe Agent Notify	ACDNOT
ACD Emergency Key	ACDEMK
Park Retrieve	PRKRET
Trunk Answer From Any Station	TAFAS
ACD Call Agent	ACDCA
Answer Timing	ANSTIM
Closed User Group	CUG
IBN Trunk Verification from Design Station	TVDS
European Conference 250	EPNCNF
European Speed 250	EPNSC
Display Q Status	DSPQST
ACD Night Service	ACDNS
Three-way Calling	FTR3WC
ACD Login	ACDLOG
E to E Signal	E2ESIG
MADO User Self Test	MADO
ACD Call Supervisor	ACDSUP
Emergency Services	ESB
E800	E800
Call Forward Remote Access	CFRA
Loopback Trunk Access	LPBK
Call Pickup	CPU
Service Evaluation	SEVL
POTS - CFDA	CFDA
MWIDC	MWIDC
Message Waiting Query	MWQRY

-continued-

Feature	Abbreviation
CNF Interconn	CNFIC
Group Intercom Page	GIC
MADN Single Bridge Arrangement	MONBRG
MADN Bridge Privacy	MDNPRV
Private Virtual Network	PVN
LIU DTU CPI	LIUDTU
Key Set Music on Hold	KSMOH
Busy Verification Line	BVL
MAN Multi-Bridged Arrangement	MDNMBA
Customer Originated Trace	COT
Meet Me Conference	MMCONF
Meet Me Conference Lock	MMLOCK
Meet Me Conference Unlock	MMUNLK
MADN Ring Forward Manual	MDNRFM
Toll Break In	TBI
Start Ringing	FTRSRG
Malicious Call Trace	MCT
Faultsman Ringback	FTRFRB
Abbreviated Dialing	ADL
Community Dial Office	CDO
CDA	CDA
CDS	CDS
International Warm Line	WARMLN
Enquiry	ENQ
International Call Waiting	CWT
International Three Way Calling	TWC
Six-way Calling	CONF6
No Double Connect	NDC
International Cancel Call Waiting	CCW
Call Diversion on Busy	CDBSY

-continued-

Feature	Abbreviation
Call Diversion Fixed	CDFIX
Do Not Disturb	DND
International Line Restrictions	LNRES
DRT	FDTDRT
DNC	FDTDNC
International Last Number Redial	LNR
Wake-up Call	WAKEUP
Silence Switchman	SSM
International Ring Again	RAG
Selective Charge Recording	SCR
Emergency Service Groups	ESG
UCDLG	UCDLG
Call Forward Busy Program	CFBPGM
Call Forward Busy Cancel	CFBCAN
Call Forward Don’t Answer Program	CFBPGM
Call Forward Don’t Answer Cancel	CFDCAN
Reconfigure Prog Message	RPM
Calling Number Delivery Block	CNDB
Automatic Callback Activation	ACBACT
Automatic Callback Deactivation	ACBDEA
Automatic Recall Activation	ARACT
Automatic Recall Deactivation	ARDEA
Call Forward Group Don’t Answer	CFDGRP
ACD DISP Q Threshold	ACDDQT
Network Attendant Service Remote Control Recall	NASREM
Calling Number Delivery Activation	CNDACT
Calling Number Delivery Deactivation	CNDDEA
NETS	NETS
Three Way Call Public Announcement	TWCPUB

-continued-

Feature	Abbreviation
Call Forward Busy International Program	CFBINP
Call Forward Busy International Cancel	CF8INC
Call Forward Busy Extension Program	CFBEXP
Call Forward Busy Extension Cancel	CFBEXC
Call Forward International Program	CFDINP
Call Forward International Cancel	CFDINC
Call Forward Extension Program	CFDEXP
Call Forward Extension Cancel	CFDEXC
Loud Speaker Answerback ANS	LPAANS
Loudspeaker Page Answerback Activation	LPAACT
Station origination Restriction	ORGRES
International 250	INT250
ACD Login Activation	ACDACT
ACD Login Deactivation	ACDDEA
DISA	REORG
ACDNR Activation	ACDNRD
ACDNR Deactivation	ACONRA
Call Forward Universal Per Key Program	CFUKP
Call Forward Universal Per Key Cancel	CFUKC
Flexible Calling	FC
Auto MP Insertion	AUTOMP
Trunk Module Equipment	TME
Trunk Module Equipment Debug	TMEUBG
Selective Call Rejection	SCRJ
Selective Call Acceptance	SCA
Distinctive Ring Call Waiting	DRWC
Selective Call Forwarding	SCF
Meridian Offnet Access	MONA
Calling Number Blocking	CNB
Calling Number/Name Blocking	CNNB

-continued-

Feature	Abbreviation
ACD Line of Business	ACDLOB
ACD Management	ACDMGT
Attendant Serial	ACSER
Message List Editing	MLE
CCV	CCV
Multiple Position Hunt	MPH
Signal	SIGNAL
Meridian Offnet Trunk Access	MONTA
Release Line Trunk	RLT
DMS-250 Conference Calling	USSCNF
ACD DASK	ACDDAS
Service Profile Management	SPM
EES Speed Call	EESSC
ASR	ASR
ASR IN	ASRI
ASR OUT	ASRO
Group Intercom Call	GIAC
MAS Queueing	MAS
SLVP Hold	SLHOLD
CMWI	CMWI
CMWI Ring Activation	CMWIRA
CMWI Ring Deactivation	CMWIRD
Warm Line Activation/Deactivation	WML
ACD FAA	ACDFAA
WSS	WSS
Busy Lamp Field	BLF
Quick Conference Key	QCK
ANI Based Routing	ABR
Program Conference	PGCNF
Customer Service Change	CSCWID

-continued-

Feature	Abbreviation
BOC Calling Card	BCCO
E911 PSAP Ringback	RBACK
SON Origination	SONIO
Broadcast	BRDCST
ACRJ Activation	ACRHA
ACRJ Deactivation	ACRJD
Station Programmable PIN	SPP
Computer Aided Signaling	CAS
Network Executive Message Waiting	NEMW
PRN Ring Activation	PRNRA
PRN Ring Deactivation	PRNRD
Enhanced Call Management	ECM
Intercom	INT
End	

Leaving the ACMON level

To cancel the current display and return to the ACDTMS level of the MAP, enter the following command.

```
QUIT
```

List of terms

A

Amperes

A-law PCM

The method of encoding sampled audio signals used outside of North America

AC

Alternating Current

ACO

Attendant Camp-on

AWG

American Wire Gauge

BCS

Batch Change Supplement

CC

Central Control

CLLI

Common Language Location Identifier

CM

Computing Module

CONF

Conference

CP

Circuit Pack

CW

Call Waiting

DC
Direct Current

DCM
Digital Carrier Module

DF
Distribution Frame

DM
Digital Modem

DMODEM
Digital Modem

DMS
Digital Multiplex System

DR
Data Ring

DT
Data Tip

DTMF
Dual-Tone Multifrequency

FCC
Federal Communications Commission (USA)

FSP
Frame Supervisory Panel

GND
Ground

ICI
Incoming Call Identification

INB
Integrated Business Network

KLD
Key and Lamp Display

LC

Line Card

LCM

Line Card Module

LED

Light Emitting Diode

LEN

Line Equipment Number

LGC

Line Group Controller

LM

Line Module

MAP

Maintenance and Administration Position

MDC

Meridian Digital Centrex

MSAC

Meridian Services Attendant Console

MTM

Maintenance Trunk Module

Mu-Law PCM

The method of encoding sampled audio signals used in North America

NC

No Connection

NET

Network

NTLS06

A type of trunk signaling

NTLS07

A type of trunk signaling

NTP
Northern Telecom Practice

OM
Operational Measurement

PEC
Product Engineering Code

PS
Power Supply

RFI
Radio Frequency Interference

RLCM
Remote Line Concentrating Module

RLM
Remote Line Module

Rx
Receive

SCU
Speed Call User’s List

TBI
Toll Break-In

Tx
Transmit

V
Volts

WC
Wildcard

DMS-100 Family

Attendant Console

Operations, administration and maintenance

Publication number: 297-2031-100
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Document release: Standard 02.04
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