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DMS-100 Family

C7TU

Technical Assistance Manual

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C7TU

Technical Assistance Manual

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BCS36 Standard 02.02 release of this document changed various commands, parameters, and variables

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BCS34 Standard 01.02 release of this document

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BCS34 Preliminary 01.01 first release of this document

Contents

About this document

This technical assistance manual (TAM) describes the common channel signalling number 7 test utility (C7TU). You can monitor common channel signalling number 7 (CCS7) messages on CCS7 links, either message switch and buffer #7 (MSB7), or link interface units #7 (LIU7), using the C7TU utility.

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 BCS36 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.

Where to find information

The chart below lists the documents that you require to understand the content of this document, or to perform the tasks it describes. These documents are also referred to in the appropriate places in the text.

More than one version of these documents may exist. To determine which version of a document applies to the BCS in your office, check the release information in *DMS-100 Family Guide to Northern Telecom Publications*, 297-1001-001.

Number	Title
297-1001-001	*Master Index of Practices*
297-1001-010	*Maintenance and Administration Position (MAP)*
297-1001-100	*System Description*
297-1001-103	*Peripheral Modules*
297-1001-129	*Input/Output System Reference Manual*
297-1001-509	*Command Reference Manual*
297-1001-510	*Log Report Manual*
297-1001-513	*Input/Output Devices Man-Machine Interface Description*
297-1001-515	*Peripheral Modules Maintenance Reference Manual*
TAM-1001-000	*Technical Assistance Manual Index of Documents*
TAM-1001-001	*TAS Non-res Tool Listing*

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 in command descriptions

Two command conventions exist:

- command expansion - representations of commands including all parameters, variables and syntactic characteristics
- command example - representations of commands as they are entered

Command expansion conventions

A command table is used for a command expansion. This table consists of the following two sections:

- the command expansion, which contains
  - all parameters
  - all variables
  - hierarchy (the order in which elements must be entered)
  - syntax
  - truncated and abbreviated forms when allowed

- defaults

- the parameter and variable descriptions. This section follows the command expansion and contains an alphabetical listing of all parameters and variables with a description of each.

Command elements are represented exactly as they are entered, except when Italic font is used to indicate that an element is a variable name or a certain default.

Commands

The command is represented in bold type. When commands are not case-sensitive, they are in lowercase.

The command appears to the left of all other elements (parameters and variables).

When truncated or abbreviated forms of a command are allowed, they appear directly beneath the long form of the command.

Parameters

Parameters are represented in unbolded type. When parameters are not case-sensitive, they are in lowercase.

Variables

Variables are represented in italic. Italics indicates that the variable, as represented, is not entered, but replaced with an element, a value, range, number, or item from a list.

The numbers, values, ranges, and lists are described in detail for each variable in the parameters and variables description section below the expansion.

Hierarchy

The order in which command elements are entered is represented by their order of appearance, from left to right. When several elements appear in a vertical list, only one of them may be selected for that position.

Defaults

A default parameter is underlined.

The action the system takes when an element in a vertical list is not required is called a default action, and is usually an action indicated by one of the elements that can be selected. Occasionally, the default action is something different than one indicated. These non-selectable defaults are represented by the word, “default,” in italics, to indicate that it is never entered. The default is then described in the parameters and variables section.

Related groups of elements

When an element is directly followed by another element, the second element is required when the first element is selected.

To distinguish which elements relate to which, brackets surround those elements that, as a group, pertain to other elements. Only those elements that horizontally directly precede or follow the brackets are related to the elements within the brackets. When elements are not in brackets, only those elements that directly precede or follow them are related.

The following is an example of a command expansion.

bsy command parameters and variables

Command	**Parameters and variables**			
bsy	[link	*ps_link*]	*noforce*	*wait*
	pm		force	nowait
	unit	*unit_no*]		

Parameters and variables	Description
force	This parameter overrides all other commands and states in effect on the specified units. If the whole PM is to be taken out-of-service, confirmation, yes or no, is required.
link	This parameter busies one of the P-side links specified by *ps_link.*
noforce	This parameter indicates default condition when “force” is not entered.
nowait	This parameter enables the MAP to be used for other command entries before bsy force is confirmed. Nowait is used only with force.
pm	This parameter busies both units of the peripheral module.
ps_link	This variable specifies which of the P-side links is to be busied. Range is 0 to 3.
unit	This parameter busies one unit of the PM specified by *unit_no.*
unit_no	This variable specifies which unit of the PM is to be busied. Range is 0 to 1.
wait	This parameter indicates default condition when “nowait” is not entered.

Command examples

Command examples use the same conventions as a command expansion, except that all command elements are bold and are entered just as represented. If the variable is shown with a value, it is entered exactly like a command or parameter. If the variable name is used, it is in bold italics to indicate that it is not entered as represented. The following two examples illustrate this difference.

- This is a command example containing a variable name.

  bsy link *ps_link*
  and pressing the Enter key.

- This is a command example containing a variable value.

  bsy link 2
  and pressing the Enter key.

C7TU utility

This chapter describes the C7TU utility, its uses, restrictions and limitations.

C7TU description

C7TU monitors CCS7 messages on CCS7 links, either MSB7 or LIU7. C7TU can be used on the service switching point (SSP), signal transfer point (STP) and service control point (SCP) of the DMS product line. There are two versions of C7TU: CCS7 protocol monitor tool (PMT7), and CCS7 integrated link protocol test tool (ILPT7). C7TULINK is a level in the PMT7 and ILPT7 version of C7TU.

You can access the C7TU level versions PMT7 or ILPT7 from the Command interpreter (CI) prompt. Refer to the beginning of each chapter for instructions on accessing the appropriate C7TU level.

PMT7 (no password required)

PMT7 allows users to monitor messages. Message monitoring is preset to 10 messages per minute and cannot be changed. This version of C7TU has a limited command list as compared to the C7TU_ILPT7 version.

ILPT7 (password protected)

ILPT7 allows users to monitor, intercept, build, and send messages. The ILPT7 version contains the PMT7 commands and several other commands that allow you to create and send messages. In the ILPT7 version, the user can define the number of logs monitored per minute by using the select command.

CAUTION
Improper use of ILPT7 can seriously degrade CCS7 traffic capacities and may cause serious CCS7 traffic loss.
The ILPT7 version of C7TU should be used only by experienced TAS or telco personnel who understand the effects of using C7TU on a switch carrying traffic.

CAUTION
Service and CCS7 message degradation may occur when ILPT7 is used on a high traffic link.
C7TU should only be used on low traffic links. From the map level, post the link sets. Use the tool QUERYTRF on a specific link you want to monitor messages using C7TU to determine the amount of traffic on the link.

C7TULINK

You can monitor specific message types on selected links with the C7TULINK level in C7TU_PMT7 and C7TU_ILPT7. The C7TULINK level in the ILPT7 version has the same commands as the PMT7 version with the addition of several other commands to intercept, build and send messages to the link.

C7TU Logs

C7TU logs usually consist of a routing label followed by the S7 data in hex code. Depending on the message type, the code can be broken down into various formats. The American National Standards Institute document or the Bellcore TR documents can be used to decode the hex data.

Interactions among C7TU users

Only two users can have access to C7TU. After a user has accessed a C7TU version (PMT7 or ILPT7), the second user can only access the version being used by the other user. For example, if user 1 accesses the PMT7 version, user 2 can only access PMT7 provided that PMT7 and ILPT7 are resident in the switch.

Online help

You can display a help message for all commands in C7TU by using the help command and the CI query command. The help command will display a brief description of the command. You can display more information and the command's syntax by using the resident query command.

Informative references

The listed publications provide a foundation for understanding a broad scope of information surrounding the C7TU utility. These publications are not referenced within the text of this document.

Note: The documents listed may exist in more than one version. See 297-1001-001 to determine the release code of the version compatible with a specific release of software.

Number	Title
297-1001-001	*Master Index of Practices*
297-1001-010	*Maintenance and Administration Position (MAP)*
297-1001-100	*System Description*
297-1001-103	*Peripheral Modules*
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TAM-1001-000	*Technical Assistance Manual Index of Documents*
TAM-1001-001	*TAS Non-res Tool Listing*

C7TU_PMT7 commands

Use the C7TU_PMT7 (CCS7 test utility) level of the MAP to access the common channel signaling number 7 (CCS7) test utility.

Accessing the C7TU_PMT7 level (no password required)

To access the C7TU_PMT7 level, enter the following from the CI (command interpreter) level:

c7tu ↵

C7TU_PMT7 commands

The commands available at the C7TU_PMT7 MAP level are described in this chapter and arranged in alphabetical order. The page number for each command is listed in the following table.

C7TU_PMT7 commands

Command		Page
c7tulink	C7TU	2-3
c7tuprt	C7TU	2-5
c7turec	C7TU	2-11
dpc	C7TU	2-15
dump	C7TU_PMT7	2-23
dump	C7TULINK_PMT7	2-49
help	C7TU_PMT7	2-27
help	C7TULINK_PMT7	2-53
mask	C7TULINK_PMT7	2-55
match	C7TULINK_PMT7	2-59
monitor	C7TU_PMT7	2-29
monitor	C7TULINK_PMT7	2-63

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C7TU_PMT7 commands (continued)

Command		Page
msgcode	C7TU	2-19
quit	C7TU	2-21
quit	C7TU_PMT7	2-37
quit	C7TULINK_PMT7	2-71
remove	C7TU_PMT7	2-39
remove	C7TULINK_PMT7	3-73
restore	C7TU_PMT7	2-41
restore	C7TULINK_PMT7	2-75
select	C7TU_PMT7	2-43
select	C7TULINK_PMT7	2-77
status	C7TU_PMT7	2-47
status	C7TULINK_PMT7	2-81

End

c7tulink

Function

Use the c7tulink command to access the C7TULINK directory and test environment.

c7tulink command parameters and variables

Command	Parameters and variables
c7tulink	There are no parameters or variables.

Qualifications

None

Example

The following table provides an example of the c7tulink command.

Examples of the c7tulink command

Example	Task, response, and explanation	
c7tulink ↵		
	Task:	This command is used to access the C7TULINK directory.
	Response:	`C7TULINK:`
	Explanation:	The user has gained access to the C7TULINK directory.

Response

The following table provides an explanation of the response to the c7tulink command.

Responses for the c7tulink command

MAP output	Meaning and action
`C7TULINK:`	
	Meaning: The user has accessed the C7TULINK directory.
	Action: None

c7tuprt

Function

Use the c7tuprt command to print all CCS7 messages that were saved in a specified file by using the c7turec command.

c7tuprt command parameters and variables

Command	Parameters and variables
c7tuprt	*file*

Parameters and variables	Description
file	This variable specifies a valid file name.

Qualifications

None

Example

The following table provides an example of the c7tuprt command.

c7tuprt (continued)

Example of the c7tuprt command

Example	**Task, response, and explanation**

c7tuprt tempfile ↵
where

tempfile is the name of the specified file

Task: This command is used to print all CCS7 messages in the specified file.

Response:

```
TIME: 09:14:37 INCOMING LINK MSG
C7 HEADER: LEN= 34 MSG= 2 LINK= 1 SLC= 0 CLLI= C7LKSET
C7 SIO: NETWORK= 2 PRIORITY= 2 SERV IND= 5
C7 LABEL: DPC = 001-001-001 OPC = 002-002-002 SLS = 2
C7 DATA FOLLOWING HEADER: 01 01 01 01 01 01 01 01 01 01

TIME: 09:14:37 OUTGOING LINK MSG
C7 HEADER: LEN= 32 MSG= 2 LINK= 2 SLC= 1 CLLI= C7LKSET2
C7 SIO: NETWORK= 2 PRIORITY= 2 SERV IND= 2
C7 LABEL: DPC = 003-003-003 OPC = 001-001-001 SLS = 2
BODY: 02 03 04 05 06 07 08 01 02

TIME: 09:14:38 INVALID MESSAGE
INVALID MESSAGE TYPE
1909 55 07 E4 FF 32 45 09 A4 D2 FF C3 E9 D0 AA ED

TIME: 09:15:01 C7TU TRACING ON LIU7 201
```

Explanation: The user has been provided with all CCS7 messages saved in the specified file.

Responses

The following table provides explanations of the responses to the c7tuprt command.

c7tuprt (continued)

Responses for the c7tuprt command

MAP output	Meaning and action
`Error: While opening file.`	**Meaning:** A system error occurred. The C7TU was unable to open a file on the specified device. The command halts execution, and no messages will be recorded. **Action:** Retry the command.
`Error: File is not in C7TU format.`	**Meaning:** The user-specified file is not a valid C7TU log file. The command halts execution. No C7TU log messages will be interpreted and displayed. **Action:** Retry the command with a valid C7TU log file.
`Error while reading file header.`	**Meaning:** An error occurred when trying to read the file header of the specified file. The command halts execution. The file will be closed. **Action:** None
`Error while reading next record.`	**Meaning:** An error occurred when trying to read a C7TU log record from the specified file. The command halts execution. The file will be closed. **Action:** None

-continued-

c7tuprt (continued)

Responses for the c7tuprt command (continued)

MAP output	Meaning and action

`TIME: time logtype`
`INCOMING LINK MSG,OUTGOING LINK MSG, SEND TO LINK MSG, SEND FROM LINK MSG`
`C7 HEADER: LEN= len MSG= msg LINK= lk SLC= slc CLLI= ls`
`C7 SIO: NETWORK= ni PRIORITY= pr SERV IND= si`
`C7 LABEL: DPC= dpc OPC= opc SLS = sls`
`BODY: hex bytes`
`S7 DATA FOLLOWING LABEL: hex bytes`
`N7 DATA FOLLOWING LABEL: hex1 hex2 hex bytes`
`J7 DATA FOLLOWING LABEL: hex1 hex2 hex bytes`
	Meaning: This is the output seen for messages that have been injected and monitored. Following the time stamp, the logtype of `INCOMING LINK MSG` or `OUTGOING LINK MSG` is from monitoring the link. `SEND TO LINK MSG` and `SEND FROM LINK MSG` result from the send command to inject messages. The header of the C7 message is displayed, and the data following the header is shown in hexadecimal format. The header displays the length (`len`) of the message, type of the message (`msg`), linkset number (`lk`), link number (`slc`), and linkset name (`ls`). Then the `SIO` is displayed with the network indicator (`ni`), priority (`pr`), and service indicator (`si`). The labels containing the `DPC` (`dpc`), `OPC` (`opc`) and `SLS` (`sls`) are then shown. If the message type is an SNM message, then the body of the message is shown in `BODY:`. Otherwise, if the message is in ANSI format, it is shown in `S7 DATA FOLLOWING LABEL:`. If the message is in CCITT format, it is shown in `N7 DATA FOLLOWING LABEL:`, and if the message format is TTC (Japan), then it is shown in `J7 DATA FOLLOWING LABEL:`.
	
	Action: None

`TIME: time INVALID MESSAGE INVALID MESSAGE TYPE msg type hex bytes`	**Meaning:** This is the output seen for a message that the C7TU is unable to interpret. The invalid message type and the complete message in hexadecimal format follow the time stamp of the message. **Action:** None

-continued-

c7tuprt (end)

Responses for the c7tuprt command (continued)

MAP output	Meaning and action

`TIME: time ROUTESET STATUS routeset STATUS: st`
`CONGESTION LEVEL: cong NETW IND: ni DPC: dpc`
`STATUS: st`
`CONGESTION LEVEL: cong`
	Meaning: This is the message displayed when the routeset changes state, if using the dpc command in the C7TU level of this tool and a routeset is monitored by the user. If the routeset name is known, then it is displayed in the log as `routeset`; otherwise the network indicator `(ni)` and the destination point code `(dpc)` is displayed in the log. The routeset status `(st)` is either available or unavailable. The congestion level `(cong)` is displayed as a numeric value, either 1, 2, or 3.
	
	Action: None

`TIME: time`
`C7TU TRACING ON`
`C7TU TRACING OFF pm num`
	Meaning: This report is produced when a peripheral is selected or removed by the user. It displays the PM `(pm)` and number `(num)`, which are selected (`C7TU TRACING ON`) or removed (`C7TU TRACING OFF`).
	
	Action: None

End	

c7turec

Function

Use the c7turec command to specify a device in which to save CCS7 messages from the peripheral modules (PM) in the form of C7TU logs. The recording device must be specified as part of the command.

c7turec command parameters and variables

Command	Parameters and variables		
c7turec	query start stop	*device_name*	*file_name*

Parameters and variables	Description
device_name	This variable specifies the name of the device where the CCS7 messages will be stored.
file_name	This variable specifies the name of the file where the CCS7 messages will be stored.
query	This parameter is used to query the active recording device and file.
start	This parameter is used to start recording on a specified device and file.
stop	This parameter is used to stop recording the CCS7 messages in the specified device and file.

Qualifications

None

Examples

The following table provides examples of the c7turec command.

c7turec (continued)

Examples of the c7turec command

Example	**Task, response, and explanation**
c7turec query ↵ *where* query is used to query the active recording device and file	**Task:** This command is used to query the active recording device and file. **Response:** `C7TU RECORD onto SFDEV TEMPFILE` **Explanation:** The user is provided with the identity of the active recording device and file.
c7turec start sfdev tempfile ↵ *where* start is used to start recording on a specified device and file *sdev* specifies the name of the device where the CCS7 messages will be stored *tempfile* specifies the name of the file where the CCS7 messages will be stored	**Task:** This command is used to start recording on a specified file. **Response:** `C7TU RECORD START onto sfdev tempfile` **Explanation:** The file has been successfully opened by the C7TU and is ready to save messages.
c7turec stop ↵ *where* stop is used to stop recording the CCS7 messages in the specified device and file.	**Task:** This command is used to stop recording. **Response:** `C7TU RECORD STOP` **Explanation:** The system has stopped recording CCS7 messages.

Responses

The following table provides explanations of the responses to the c7turec command.

c7turec (continued)

Responses for the c7turec command

MAP output	Meaning and action
`Error: Unable to get volume information.`	**Meaning:** The user specified a device name that is not valid or is not recognized. The command halts execution. No messages will be recorded. **Action:** Retry the command with a valid device name.
`Error: Unable to get file information.`	**Meaning:** The user specified a file name that is not valid or is not recognized. The command halts execution. No messages will be recorded. **Action:** Retry the command with a valid file name.
`Error: Device is not valid.`	**Meaning:** The user specified a device name that is not valid or is not recognized. The command halts execution. No messages will be recorded. **Action:** Retry the command with a valid device name.
`Error: While creating the file.`	**Meaning:** The system failed to create the user-specified file at the specified device. The command halts execution. No messages will be recorded. **Action:** Retry the command with a different device name.
`C7TU RECORD START onto device file`	**Meaning:** The file has been successfully opened by the C7TU and is ready to save messages. **Action:** None
`C7TU RECORD STOP.`	**Meaning:** The file has been successfully closed by the C7TU. This message is displayed in response to the query command when the C7TU is not recording to a file. **Action:** None

-continued-

c7turec (end)

Responses for the c7turec command (continued)

MAP output	Meaning and action
`Recording already started.`	**Meaning:** This is the response to the c7turec start command when the C7TU is already recording. **Action:** None
End	

dpc

Function

Use the dpc command to monitor a routeset for changes in availability and congestion. The user may also query a routeset state with this command. The responses from the command are produced as a C7TU log.

dpc command parameters and variables

Command	Parameters and variables
dpc	report [on / off] query *routset*

Parameters and variables	Description
off	This parameter disables reporting on any routeset state changes or changes in congestion level.
on	This parameter enables reporting on any routeset state changes or changes in congestion level.
query	This parameter queries a routeset state.
report	This parameter provides reporting on any routeset state changes or changes in congestion level.
routset	This variable specifies a valid routeset name that is datafilled in the C7RTESET table.

Qualifications

None

Examples

The following table provides examples of the dpc command.

dpc (continued)

Examples of the dpc command

Example	Task, response, and explanation
dpc report on ↵ *where* report on	 provides reporting on any routeset state changes or changes in congestion level enables reporting on any routeset state changes or changes in congestion level
	Task: This command enables reporting of a routset state.
dpc query c7rteset1 ↵ *where* query c7rteset	 queries a routeset state specifies a valid routeset name that is datafilled in the C7RTESET table
	Task: This command is used to query the routeset state of a specified route.

Responses

The following table provides explanations of the responses to the dpc command.

Responses for the dpc command

MAP output	Meaning and action
`ERROR: INVALID ROUTESET NAME`	
	Meaning: The user specified a routeset name that is not datafilled in the C7RTESET table. The command halts execution. No messages will be printed.
	Action: Retry command with a valid routeset name present in C7RTESET table.
`ERROR: CANNOT FIND DPC`	
	Meaning: The dpc command was unable to find the destination point code (DPC) associated with the routeset. The command halts execution. No messages will be printed.
	Action: Check the routeset name and the entry in the C7RTESET table, then retry the command with the correct routeset name.

-continued-

dpc (end)

Responses for the dpc command (continued)

MAP output	Meaning and action
ERROR: QUERY FAILED	**Meaning:** The query command was unable to query the DPC associated with the routeset. The command halts execution. No messages will be printed. **Action:** Verify the routeset and retry the query command.
INVALID DPC OPERATION	**Meaning:** The user has specified an operation that is not allowed with the dpc command. The command halts execution. No messages will be printed. **Action:** Retry the dpc command with the correct options.
End	

msgcode

Function

Use the msgcode command to print a list of valid message codes that are available for use in the message code fields prompted for in the build and monitor commands. The message codes are displayed in a hierarchical format. The hierarchy is distribution id, service indicator, h0 and h1. each level in the hierarchy has its own 3- or 4-letter message code.

msgcode command parameters and variables

Command	Parameters and variables
msgcode	*msgcode*

Parameters and variables	Description
msgcode	This variable specifies a message code in a 3- or 4-letter format.

Qualifications

None

Example

The following table provides an example of the msgcode command.

Examples of the msgcode command

Example	Task, response, and explanation

msgcode ecm ↵
where
 	
ecm is the desired message code.
	Task: This command is used to print a list of valid message codes.
	
	Response:
	`MSG CODE  DESCRIPTION                  DI SI   H1  H0`
	`--------  --------------------------  __ __   __`
	`EXT       C7 External                  04 X    XX`
	`. SNM     Signalling Network Management . 00       XX`
	`. . ECM   Emergency Changeover Msgs    .  .        02`
	`. . . ECO Emergency Changeover Order   .  .        12`
	`. . . ECA Emergency Changeover Ack     .  .        22`
	
	Explanation: The user has been provided with a list of message code fields.

msgcode (end)

Responses

The following table provides explanations of the responses to the msgcode command.

Responses for the msgcode command

MAP output	Meaning and action
`INVALID MSGCODE: msgcode`	**Meaning:** The user has entered a message code that is not recognized by the C7TU. No message codes are displayed. **Action:** Check the message code entered to ensure it is correct. If correct, retry the command. Otherwise, display the entire message code table by entering the msgcode command with no options.

`MSGCODE DESCRIPTION DI SI H1H0`
`------- ------------ -- -- ----`
`msgcode description di si h1h0`
	Meaning: This table is displayed for the message code requested by the user. The fields are as follows:
	
	▪ `MSGCODE` is a 3- or 4-character string representing the message code.
	▪ `DESCRIPTION` is a short description of the message code.
	▪ `DI` displays the distributor id that is associated with this message code.
	▪ `SI` displays the service indicator associated with the message code.
	▪ `H1H0` is the actual message code placed in the CCS7 message.
	
	Action: None

quit

Function

Use the quit command to exit from the C7TU level commands directory and return to the CI MAP level.

quit command	
Command	**Parameters and variables**
quit	There are no parameters or variables.

Qualifications

None

Example

The following table provides an example of the quit command.

Example of the quit command	
Example	**Task, response, and explanation**
quit ↵	
	Task: This command is used to quit this directory. **Response:** `CI:` **Explanation:** This command exits this directory and returns to the CI MAP level.

Response

The following table provides an explanation of the response to the quit command.

Response for the quit command	
MAP output	**Meaning and action**
`CI:`	
	Meaning: This prompt indicates that the user has returned to the CI MAP level. **Action:** Access another directory from the CI MAP level or end this session.

dump

Function

Use the dump command to display the match table, allowing the user to see the criteria for monitor and intercept requests of C7TU messages.

dump command parameters and variables

Command	Parameters and variables	
dump	*start*	*stop*

Parameters and variables	Description
start	This variable is an entry number defining the starting position for the display in the match table.
stop	This variable is an entry number defining where the display stops in the match table.

Qualifications

None

dump (continued)

Example

The following table provides an example of the dump command.

Example of the dump command

Example	Task, response, and explanation

dump 0 1 ↵
where

0 is an entry number defining the starting position for the display in the match table
1 is an entry number defining where the display stops in the match table

Task: This command is used to display the match table from entry number 0 to 1.

Response:

```
MATCH COUNT: 3
C7TU {MONITOR, INTERCEPT}
           SIO           DPC          OPC
NUM  DIR  NET   NI PR  SI MEM CLU NET  MEM CLU NET  SLS  MSGT
YPE
 0   BOTH ANSI   2 00   5 001 002 003  000 000 000   00  IAM
          0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
         -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
Match:   00 04 00 00 82 01 01 01 00 00 00 00 01
Mask:    00 FF 00 00 CF FF FF FF 00 00 00 00 1F

C7TU INTERCEPT      SIO           DPC          OPC
NUM  DIR  NET   NI PR  SI MEM CLU NET  MEM CLU NET  SLS  MSGT
YPE
 1   BOTH ANSI   0 00   2 000 000 000  000 000 000   00  SLTM
          0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
         -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
Match:   00 04 00 00 02 00 00 00 00 00 00 00 11
Mask:    00 FF 00 00 0F 00 00 00 00 00 00 00 1F
```

Explanation: The user has been provided with a display of the match table from entry numbers 0-1.

Responses

The following table provides explanations of the responses to the dump command.

Responses for the dump command

MAP output	Meaning and action
`ERROR: FIRST ITEM MUST NOT BE GREATER THAN LAST ITEM`	**Meaning:** The user attempted to display a range where the first item had a larger entry number in the match table than the last item. The dump command does not execute. **Action:** Verify the start and stop numbers and retry the command with a correct range.

`MATCH COUNT: n`
`C7TU MONITOR, INTERCEPT`
`SIO DPC OPC`
`NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET SLS MSGT`
`YPE num dir net ni pr si dpc opc sls mt`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16`
`-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --`
`Match: hex bytes`
`Mask: hex bytes`
	Meaning: The dump command uses the above format to show the user the contents of the C7TU match table.
	
	Action: None

help

Function

Use the help command to receive online documentation for this directory. If entered alone, the help command takes the default value (all). If entered with the name of a valid C7TU_PMT7 level commands directory command, the help command provides a short description of that command.

help command parameters and variables

Command	Parameters and variables
help	all *command _name*

Parameters and variables	Description
all	This parameter produces a list of all commands in this directory.
command_name	This variable, used with the help command, produces a short description of the specified command.

Qualifications

None

Example

The following table provides an example of the help command.

Example of the help command

Example	Task, response, and explanation

help status ↵
where
 	
status is the name of the command
	Task: Provide a short description of the command.
	
	Response:
	`DISPLAY THE STATUS OF THE C7TU LINK ENVIRONMENT`
	`Parms: [ <BRIEF> {BRIEF,`
	`VERBOSE}]`
	
	Explanation: A short description of the command and the command parameters and variables are displayed.

help (end)

Response

The following table provides an explanation of the response to the help command.

Response for the help command

MAP output	Meaning and action
`MODULE NOT LOADED OR NEEDS OTHER CI INCREMENT TO BE BUILT.`	**Meaning:** The directory the user is trying to access is not loaded. **Action:** None

monitor

Function

Use the monitor command to monitor specific CCS7 link messages.

monitor command parameters and variables

Command	Parameters and variables
monitor	link *linkset slc* *direction* [in / out / both] *nettype* [ccitt / ansi / ttc]
	ccitt *rout_lbl* [all / label] *ni* [intl / intlsp / natl / natlsp] *priority*
	dpc_frmt basic *pc*
	intl *intlzone* / *areanetw* / *intlsgpt*
	austria *austzone* / *region* / *austsgpt*
	china *chinzone* / *exchange* / *chinsigpt*
	opc_frmt basic *pc*
	intl *intlzone* / *areanetw* / *intlsgpt*
	austria *austzone* / *region* / *austsgpt*
	china *chinzone* / *exchange* / *chinsigpt*
	ccittsls

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Command	Parameters and variables						
monitor	ansi	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mbr	*dpc_cls*	*dpc_ntw*	*opc_mbr*	*opc_cls*	*opc_ntw*	
	ansisls						
	ttc	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mnar	*dpc_sbar*	*dpc_arun*	*opc_mnar*	*opc_sbar*	*opc_arun*	
	ttcsls						
	msg_type	*code*					
	msgbody	*body*					
	hexbytes						

Parameters and variables	Description
ansls	This variable is the signaling link selector of the ANSI message to monitor. Entering 32 monitors all of the SLSs. The value range is 0-32.
areanetw	This variable is the area network of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the area networks. The value range is 0-31.
austsgpt	This variable is the signal point of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-31.
body	The message body to be monitored.
ccittsls	This variable is the signaling link selector (SLS) of the CCITT message to monitor. Entering 16 monitors all of the SLSs. The value range is 0-16.
chinsigpt	This variable is the signal point of the point code in china format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-7.

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Parameters and variables	Description
chinzone	This variable is the zone of the point code, in china format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-15.
code	The message code corresponding to the message type to be monitored.
direction	This variable is the direction of the message that is being monitored. Possible values are in, out, and both.
dpc_arun	This variable is the destination point code area unit number of the TTC message to monitor. Entering 0 monitors all of the area units. The value range is 0-127.
dpc_cls	This variable is the destination point code cluster number of the ANSI message to monitor. Entering 0 monitors all of the clusters. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message to monitor. Possible values are basic, intl, austria, and china.
dpc_mbr	This variable is the destination point code member number of the ANSI message to monitor. Entering 0 monitors all of the members. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC message to monitor. Entering 0 monitors all of the main areas. The value range is 0-31.
dpc_ntw	This variable is the destination point code network number of the ANSI message to monitor. Entering 0 monitors all of the networks. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC message to monitor. Entering 0 monitors all of the subareas. The value range is 0-15.
exchange	This variable is the exchange of the point code, in china format, of the CCITT message to monitor. Entering 0 monitors all of the exchanges. The value range is 0-127.
hexbytes	This parameter is the message body, in hexadecimal format, of the CCS7 message to be monitored.
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-7.

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Parameters and variables	Description
link	The name of the link corresponding to the linkset to be monitored.
linkset	This variable is the name of the linkset to be monitored.
msgbody	This parameter is the message body of the CCS7 message to be monitored.
msg type	This parameter is the message type of the message to be monitored.
nettype	This variable specifies the network type of the message. Possible values are ccitt, ansi, and ttc.
ni	This variable is the network indicator of the message. It is possible to monitor all of the network indicators. Possible values are intl, intlsp, natl, natlsp, and all.
opc_arun	This variable is the origination point code area unit number of the TTC message to monitor. Entering 0 monitors all of the main units. The value range is 0-127.
opc_cls	This variable is the origination point code cluster number of the ANSI message to monitor. Entering 0 monitors all of the clusters. The value range is 0-255.
opc_frmt	This parameter is the origination point code format of the CCITT test message to monitor. Possible values are basic, intl, austria, and china.
opc_mbr	This variable is the origination point code member number of the ANSI message to monitor. Entering 0 monitors all of the members. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC message to monitor. Entering 0 monitors all of the main areas. The value range is 0-31.
opc_ntw	This variable is the origination point code network number of the ANSI message to monitor. Entering 0 monitors all of the networks. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC message to monitor. Entering 0 monitors all of the subareas. The value range is 0-15.
pc	This variable is the point code of the CCITT message to monitor, in basic format. Entering 0 monitors all of the point codes. The value range is 0-16383.
priority	This variable is the CCS7 priority to monitor. The value range is 0-4, (4=all).
region	This variable is the region of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the regions. The value range is 0-15.

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Parameters and variables	Description
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label will automatically select all messages of any routing label. The value range is all or label.
slc	This variable is the link number of the linkset to be monitored. The value range is 0-15.
ttcisls	This variable is the signaling link selector of the TTC message to monitor. Entering 16 monitors all of the SLSs. The value range is 0-16.

End

Qualifications

None

monitor (continued)

Examples

The following table provides examples of the monitor command.

Examples of the monitor command

Example	Task, response, and explanation
monitor link c7lkset2 1 both ansi all sltm ↵ c7lkset1 1 both ansi all sltm	
monitor link c7lkset1 0 both ansi label natl 4 1 1 1 0 0 0 32 iam ↵ c7lkset1 0 both ansi label natl 4 1 1 1 0 0 0 32 iam	

Responses

The following table provides explanations of the responses to the monitor command.

Responses for the monitor command

MAP output	Meaning and action
`ONLY FOUR MONITORS ALLOWED IN FIELD ENVIRONMENT`	**Meaning:** The user attempted to monitor when four entries were already in the match table. The field environment allows only four entries in the match table. The monitor command does not execute. **Action:** Remove an existing monitor, or monitor request, and retry the monitor command.
`ERROR: invalid linkset name`	**Meaning:** The user specified a linkset name that does not appear in table C7LKSET. **Action:** Verify the linkset name and retry the monitor command with the correct linkset.
`ERROR: INVALID LINK NUMBER`	**Meaning:** The user specified a link number that is not datafilled for the specified linkset in the C7LINK table. The monitor command does not execute. **Action:** Verify the link number and retry the monitor command with the correct number.
`ERROR: MATCHING msg code MESSAGES IS NOT PERMITTED`	**Meaning:** The user entered a message code that was recognized by C7TU, but a match is not allowed for the specified code. The monitor command does not execute. **Action:** Verify the message code and retry the monitor command with a correct message code.
`ERROR: INVALID MSGCODE msg code`	**Meaning:** The user entered a message code that is not recognized by C7TU. The monitor command does not execute. **Action:** Verify the message code and retry the command.

-continued-

monitor (end)

Responses for the monitor command (continued)

MAP output	Meaning and action
`ERROR: MATCH TABLE FULL`	**Meaning:** The user attempted to monitor a message when the match table already had four entries. No further requests can be made. The monitor command does not execute. **Action:** Remove an existing entry from the match table and retry the command.
`WARNING: C7TU IS NOT ENABLED IN ANY PMs`	**Meaning:** The command is executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used, with the select command.
`WARNING: C7TU IS NOT ENABLED ON pm num WHERE THIS LINK RESIDES`	**Meaning:** The monitor command executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used, with the select command.
End	

quit

Function

Use the quit command to exit from the C7TU_PMT7 level commands directory and return to the CI MAP level.

quit command

Command	Parameters and variables
quit	There are no parameters or variables.

Qualifications

None

Example

The following table provides an example of the quit command.

Example of the quit command

Example	Task, response, and explanation
quit ↵	**Task:** This command is used to quit this directory. **Response:** `CI:` **Explanation:** This command exits this directory and returns to the CI MAP level.

Response

The following table provides an explanation of the response to the quit command.

Response for the quit command

MAP output	Meaning and action
`CI:`	**Meaning:** This prompt indicates that the user has returned to the CI MAP level. **Action:** Access another directory from the CI MAP level or end this session.

remove

Function

Use the command to remove all or a single monitor entry.

remove command parameters and variables

Command	Parameters and variables
remove	match [*num* | all]
	message [*num* | all]

Parameters and variables	Description
all	This parameter specifies that all entries be removed.
match	This parameter removes an entry from the match table.
message	This parameter removes an entry from the message table.
num	This variable is the number of the entry to be removed.

Qualifications

The limits and operations of the Match Table and the Message Table are of the global nature. If a user issues a remove match all or a remove message all command, the respective table will be cleared.

Examples

The following table provides an example of the remove command.

Examples of the remove command

Example	Task, response, and explanation
remove match 8 ↵ *where* match 8	 removes an entry from the match table specifies what entry to be removed
	Task: Remove entry 8 from the match table. **Explanation:** No system response. Entry 8 is removed from the table.

remove (end)

Responses

The following table provides explanations of the responses to the remove command.

Responses for the remove command

MAP output	Meaning and action
`Message number <num> has not been built.`	**Meaning:** The user entered a message number which has not been built using the build command. **Action:** Check the message number and retry the command.
`Item number <num> is currently not defined in the match table.`	**Meaning:** The user entered a match entry number which has not been built using the monitor or intercept commands. **Action:** Check the message number and retry the command.
`Must specify Entry Number or ALL for REMOVE`	**Meaning:** The user has not entered a number in the range of 0 to 7 or the parameter all for the remove command. **Action:** Retry the command with a valid entry number or the parameter all.

restore

Function

Use the restore command to restore monitor entries in MSB7s. The monitor entries are restored automatically in the LIU7s. This command is used following a restart reload.

restore command parameters and variables

Command	Parameters and variables
restore	There are no parameters or variables.

Qualifications

The restore command will enable monitors on certain types of restarts.

Examples

The following shows an example of the restore command.

Examples of the restore command

Example	Task, response, and explanation
restore ↵	
	Task: Enable the monitors that were disabled on a restart.
	Explanation: There is no system response. The monitors are enabled.

Responses

None

select

Function

Use the select command to select the peripherals that enable the matching of CCS7 messages with the match table for the specified link. These peripherals are

- link interface unit 7 (LIU7)
- message switch and buffer 7 (MSB7)

The select command can also release a link that is currently selected.

select command parameters and variables

Command	Parameters and variables
select	*pm_select* [all | liu7 [*number* | all | *msg_trc* [on | off]] | msb7]

Parameters and variables	Description
all	This parameter selects all datafilled MSB7s or LIU7s.
msg_trc	This variable either selects a link (on) or releases a link (off). The default is on.
number	This variable is the LIU7 or the MSB7 number.
pm_select	This variable is the link specification. The following parameters are available: all liu7 msb7

Qualifications

None

Examples

The following table provides examples of the select command.

select (continued)

Examples of the select command

Example	**Task, response, and explanation**
select msb7 0 ↵ *where* msb7 is the link specification 0 is the MSB7 number	**Task:** This command is used to select MSB7 link 0. **Response:** `SELECT done.`
select msb7 1 off ↵ *where* msb7 is the link specification. 1 is the MSB7 number. off is the option to release a link	**Task:** This command is used to release MSB7 link 1. **Response:** `SELECT done.`

Responses

The following table provides explanations of the responses to the select command.

Responses for the select command

MAP output	**Meaning and action**
`ERROR: WRONG PM SELECTION`	**Meaning:** The user entered a parameter that was not among the valid choices for PM selection (all, msb7, liu7). The select command does not execute. **Action:** Retry the command with a valid parameter.

-continued-

select (continued)

Responses for the select command (continued)

MAP output	Meaning and action
`ONLY FOUR SELECTS ALLOWED IN FIELD ENVIRONMENT`	**Meaning:** The user attempted to select when four entries were already in the match table. The field environment allows only four entries in the match table. The select command does not execute. **Action:** Release a link that is currently selected and retry the select command.
`LIU7 num IS NOT INSERVICE` `TRACING WILL BE ENABLED WHEN THE LIU7 GOES INSERVICE`	**Meaning:** The user selected an LIU7 number that is not in service. Monitoring starts when the LIU7 comes in service.The select command continues execution. **Action:** None
`LIU7 num IS NOT INSERVICE` `THE LIU7 HAS BEEN DESELECTED`	**Meaning:** The user released an LIU7 number that is currently not in service. Monitoring does not start when the LIU7 comes in service, because the link is released. The select command continues execution. **Action:** None
`LIU7 num IS NOT DEFINED FOR THIS OFFICE`	**Meaning:** The user attempted to select an LIU7 that is not datafilled for this office. The select command does not execute. **Action:** Retry the select command specifying an LIU7 that is datafilled for this office.
`MSB7 num IS NOT INSERVICE`	**Meaning:** The user specified an MSB7 that is not currently in service. The select command does not execute. **Action:** Check the status of the MSB7 and retry the select command.

-continued-

select (end)

Responses for the select command (continued)

MAP output	Meaning and action
`MSB7 num IS NOT DEFINED FOR THIS OFFICE`	**Meaning:** The user attempted to select an MSB7 that is not datafilled for this office. The select command does not execute. **Action:** Retry the select command specifying an MSB7 that is datafilled for this office.
End	

status

Function

Use the status command to display the current status of the C7TU environment. The display includes links that are currently selected with the select command and a shortened dump of the entries in the match table.

status command parameters and variables

Command	Parameters and variables
status	*disp_frm* [brief / verbose]

Parameters and variables	Description
brief	This parameter displays only the links that are selected.
disp_frm	This variable defines the type of output display.
verbose	This parameter displays all links, marking the ones that are selected.

Qualifications

None

Examples

The following table provides an example of the status command.

Examples of the status command

Example	Task, response, and explanation
status verbose ↵	

Task: Print the status of all LIU7s.

Response:

```
LIU7        FTA     TRACING     THROTTLE
201     4248 1000   ENABLE      20
205     4248 1000   DISABLE     10
207     4248 1000   DISABLE     10

ITEM DISP NI NETTYPE DIR LINK DIST MSG SI H0 H1

0 MON ALL ANSI BOTH LS001 1 EXT XXX ISUP XXX XXX
```

Explanation: The status of all LIU7s was printed.

status (end)

Response

The following table provides an explanation of the response to the status command.

Response for the status command

MAP output	Meaning and action
********** C7TU LINK ENVIRONMENT ********** MSB7 NODE TRACING MSGS NACK msb node trace msg nack LIU7 FTA TRACING THROTTLE liu fta trace 20 ITEM DISP NETW DIR ST DIST MSG SI H0 HI num disp net dir st dist msg si h0 h1	**Meaning:** The display includes links that are currently selected with the select command and a shortened dump of the entries in the match table. **Action:** None

dump

Function

Use the dump command to display the match table, allowing the user to see the criteria for monitor and intercept requests of C7TU messages.

dump command parameters and variables

Command	Parameters and variables	
dump	*start*	*stop*

Parameters and variables	Description
start	This variable is an entry number defining the starting position for the display in the match table.
stop	This variable is an entry number defining where the display stops in the match table.

Qualifications

None

dump (continued)

Example

The following table provides an example of the dump command.

Example of the dump command

Example	Task, response, and explanation

dump 0 1 ↵
where

0 is an entry number defining the starting position for the display in the match table
1 is an entry number defining where the display stops in the match table

Task: This command is used to display the match table from entry number 0 to 1.

Response:

```
MATCH COUNT: 3
C7TU {MONITOR, INTERCEPT}
            SIO            DPC           OPC
NUM  DIR  NET   NI PR  SI MEM CLU NET  MEM CLU NET  SLS  MSGT
YPE
 0   BOTH ANSI   2 00   5 001 002 003  000 000 000   00  IAM
           0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
          -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
Match:   00 04 00 00 82 01 01 01 00 00 00 00 01
Mask:    00 FF 00 00 CF FF FF FF 00 00 00 00 1F

C7TU INTERCEPT      SIO            DPC           OPC
NUM  DIR  NET   NI PR  SI MEM CLU NET  MEM CLU NET  SLS  MSGT
YPE
 1   BOTH ANSI   0 00   2 000 000 000  000 000 000   00  SLTM
           0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
          -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
Match:   00 04 00 00 02 00 00 00 00 00 00 00 11
Mask:    00 FF 00 00 0F 00 00 00 00 00 00 00 1F
```

Explanation: The user has been provided with a display of the match table from entry numbers 0-1.

Responses

The following table provides explanations of the responses to the dump command.

Responses for the dump command

MAP output	Meaning and action
`ERROR: FIRST ITEM MUST NOT BE GREATER THAN LAST ITEM`	**Meaning:** The user attempted to display a range where the first item had a larger entry number in the match table than the last item. The dump command does not execute. **Action:** Verify the start and stop numbers and retry the command with a correct range.

`MATCH COUNT: n`
`C7TU MONITOR, INTERCEPT`
`SIO DPC OPC`
`NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET SLS MSGT`
`YPE num dir net ni pr si dpc opc sls mt`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16`
`-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --`
`Match: hex bytes`
`Mask: hex bytes`
	Meaning: The dump command uses the above format to show the user the contents of the C7TU match table.
	
	Action: None

help

Function

Use the help command to receive online documentation for this directory. If entered alone, the help command takes the default value (all). If entered with the name of a valid C7TULINK_PMT7 directory command, the help command provides a short description of that command.

help command parameters and variables

Command	Parameters and variables
help	all *command _name*

Parameters and variables	Description
all	This parameter produces a list of all commands in this directory.
command_name	This variable, used with the help command, produces a short description of the specified command.

Qualifications

None

Example

The following table provides an example of the help command.

Example of the help command

Example	Task, response, and explanation

help status ↵
where
 	
status is the name of the command
	Task: Provide a short description of the command.
	
	Response:
	`DISPLAY THE STATUS OF THE C7TU LINK ENVIRONMENT`
	`Parms: [ <BRIEF> {BRIEF,`
	`VERBOSE}]`
	
	Explanation: A short description of the command and the command parameters and variables are displayed.

help (end)

Response

The following table provides an explanation of the response to the help command.

Response for the help command

MAP output	Meaning and action
`MODULE NOT LOADED OR NEEDS OTHER CI INCREMENT TO BE BUILT.`	**Meaning:** The directory the user is trying to access is not loaded. **Action:** None

mask

Function

Use the mask command to mask out bytes in a monitor or intercept entry. The masked bytes are not used to compare for matching messages. This command is used to customize a monitor or intercept entry.

mask command parameters and variables

Command	Parameters and variables
mask	*item_no* *byte_offset* *mask_bytes*

Parameters and variables	Description
byte_offset	Specifies the number of bytes used to describe the type of CCS7 messages to monitor or intercept. In a monitor or intercept entry the number of bytes is 16.
item_no	Specifies the number of the monitor or intercept entry. Possible values are 0 through 7.
mask_bytes	Specifies how the bytes, starting at the byte_offset, should be masked.

Qualifications

None

Examples

The following show examples of the mask command.

Examples of the mask command

Example	Task, response, and explanation
mask 0 01 aa ↵ *where* 0 specifies the number of the monitor or intercept entry 01 specifies the number of bytes to describe the type of CCS7 messages to monitor or intercept aa describes how the bytes, starting at the byte_offset, should be masked.	**Task:** Change a mask offset value. **Response:** See Figure 2-1 for a response. **Explanation:** The value of the offset is changed.

mask (continued)

Figure 2-1xxx
Response to mask 0 01 aa command

FW-xxxxx

```
C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
           0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
           -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 05 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 FF 00 00 0F 00 00 00 00 00 00 FF 00 00 00


C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
           0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
           -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 05 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00
```

Responses

The following table shows examples of the mask command.

Responses for the mask command

MAP output	Meaning and action
`ERROR:  MASK ENTRY 1 IS NOT IN USE`	**Meaning:** Mask entry 1 has not been assigned. **Action:** Assign the entry before attempting to alter or use it.

`C7TU  MON  SIO  DPC  OPC  SLS TYPE`
`NUM  DIR NET  NI  PR  SI  MEM CLU NET  MEM CLU NET`
`0  BOTH ANSI  ALL XX  SNTS XXX XXX XXX  XXX XXX XXX  XXX SLTM`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15`
`- - - - - - - - - - -- -- - -- -- --`
`MATCH:  00 06 00 00 02 00 00 00 00 00 05 11 00 00 00`
`MASK:  00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00`
`EITHER incorrect optional parameter(s) OR too many parameters.`
 	
`C7TU  MON  SIO  DPC  OPC  SLS TYPE`
`NUM  DIR NET  NI  PR  SI  MEM CLU NET  MEM CLU NET`
`0  BOTH ANSI  ALL XX  SNTS XXX XXX XXX  XXX XXX XXX  XXX SLTM`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15`
`- - - - - - - - - - -- -- - -- -- --`
`MATCH:  00 06 00 00 02 00 00 00 00 00 05 11 00 00 00`
`MASK:  00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00`
	Meaning: When entering the command, either incorrect optional parameters or too many parameters were entered.
	
	Action: Re-enter the command.

`Out of range: <BYTE OFFSET> (0 TO 15)` `Enter:  <BYTE OFFSET> [<MASK BYTES>] . . .`	**Meaning:** The byte offset parameters was entered incorrectly. **Action:** Re-enter the command.

match

Function

Use the match command to specify bytes to match on in a monitor or intercept entry. The match bytes are used to compare for matching messages. This command is used to customize a monitor or intercept entry.

match command parameters and variables

Command	Parameters and variables
match	*item_no* *byte_offset* *mask_bytes*

Parameters and variables	Description
byte_offset	This variable specifies the number of bytes used to describe the type of CCS7 messages to monitor or intercept. In a monitor or intercept entry the number of bytes is 16.
item_no	This variable specifies the number of the monitor or intercept entry. Values range from 0 through 7.
mask_bytes	This variable is a string that describes the bytes to match messages against.

Qualifications

None

Examples

The following show examples of the match command.

Examples of the match command

Example **Task, response, and explanation**

match 0 01 06 ↵
where
0 specifies the number of the monitor or intercept entry
01 specifies the number of bytes to describe the type of CCS7 messages to monitor or intercept
06 describes how the bytes, starting at the byte_offset, should be matched.

Task: Change a match offset value.

Response: See Figure 2-2 for the response.

Explanation: The offset value is changed.

match (continued)

Figure 2-2xxx
Response to match 0 01 06 command

```
C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
           0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
           -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 05 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:      00 FF 00 00 0F 00 00 00 00 00 00 FF 00 00 00


C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
           0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
           -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 06 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:      00 FF 00 00 0F 00 00 00 00 00 00 FF 00 00 00
```

Responses

The following table shows examples of the match command.

Responses for the match command

MAP output	Meaning and action
`ERROR: MATCH ENTRY 1 IS NOT IN USE`	**Meaning:** Match entry 1 has not been assigned. **Action:** Assign the entry before attempting to alter or use it.

`C7TU MON SIO DPC OPC SLS TYPE`
`NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET`
`0 BOTH ANSI ALL XX SNTS XXX XXX XXX XXX XXX XXX XXX SLTM`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15`
`- - - - - - - - - - -- -- - -- -- --`
`MATCH: 00 06 00 00 02 00 00 00 00 00 05 11 00 00 00`
`MASK: 00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00`
`EITHER incorrect optional parameter(s) OR too many parameters.`
 	
`C7TU MON SIO DPC OPC SLS TYPE`
`NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET`
`0 BOTH ANSI ALL XX SNTS XXX XXX XXX XXX XXX XXX XXX SLTM`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15`
`- - - - - - - - - - -- -- - -- -- --`
`MATCH: 00 06 00 00 02 00 00 00 00 00 05 11 00 00 00`
`MASK: 00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00`
	Meaning: When entering the command, either incorrect optional parameters or too many parameters were entered.
	
	Action: Retry the command.

`Out of range: <BYTE OFFSET> (0 TO 15)` `Enter: <BYTE OFFSET> [<MATCH BYTES>] . . .`	**Meaning:** The byte offset parameter was entered incorrectly. **Action:** Retry the command.

monitor

Function

Use the monitor command to monitor specific CCS7 link messages.

monitor command parameters and variables

Command	Parameters and variables
monitor	link *linkset slc* *direction* [in | out | both] *nettype* [ccitt | ansi | ttc]
	ccitt *rout_lbl* [all | label] *ni* [intl | intlsp | natl | natlsp] *priority*
	dpc_frmt basic *pc*
	intl *pc* [*intlzone* | *areanetw* | *intlsgpt*]
	austria *pc* [*austzone* | *region* | *austsgpt*]
	china *pc* [*chinzone* | *exchange* | *chinsigpt*]
	opc_frmt basic *pc*
	intl *pc* [*intlzone* | *areanetw* | *intlsgpt*]
	austria *pc* [*austzone* | *region* | *austsgpt*]
	china *pc* [*chinzone* | *exchange* | *chinsigpt*]
	ccittsls

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Command	Parameters and variables						
monitor	ansi	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mbr	*dpc_cls*	*dpc_ntw*	*opc_mbr*	*opc_cls*	*opc_ntw*	
	ansisls						
	ttc	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mnar	*dpc_sbar*	*dpc_arun*	*opc_mnar*	*opc_sbar*	*opc_arun*	
	ttcsls						
	msg_type	*code*					
	msgbody	*body*					
	hexbytes						

Parameters and variables	Description
ansls	This variable is the signaling link selector of the ANSI message to monitor. Entering 32 monitors all of the SLSs. The value range is 0-32.
areanetw	This variable is the area network of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the area networks. The value range is 0-31.
austsgpt	This variable is the signal point of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-31.
body	The message body to be monitored.
ccittsls	This variable is the signaling link selector (SLS) of the CCITT message to monitor. Entering 16 monitors all of the SLSs. The value range is 0-16.
chinsigpt	This variable is the signal point of the point code in china format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-7.

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Parameters and variables	Description
chinzone	This variable is the zone of the point code, in china format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-15.
code	The message code corresponding to the message type to be monitored.
direction	This variable is the direction of the message that is being monitored. Possible values are in, out, and both.
dpc_arun	This variable is the destination point code area unit number of the TTC message to monitor. Entering 0 monitors all of the area units. The value range is 0-127.
dpc_cls	This variable is the destination point code cluster number of the ANSI message to monitor. Entering 0 monitors all of the clusters. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message to monitor. Possible values are basic, intl, austria, and china.
dpc_mbr	This variable is the destination point code member number of the ANSI message to monitor. Entering 0 monitors all of the members. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC message to monitor. Entering 0 monitors all of the main areas. The value range is 0-31.
dpc_ntw	This variable is the destination point code network number of the ANSI message to monitor. Entering 0 monitors all of the networks. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC message to monitor. Entering 0 monitors all of the subareas. The value range is 0-15.
exchange	This variable is the exchange of the point code, in china format, of the CCITT message to monitor. Entering 0 monitors all of the exchanges. The value range is 0-127.
hexbytes	This parameter is the message body, in hexadecimal format, of the CCS7 message to be monitored.
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-7.

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Parameters and variables	Description
link	The name of the link corresponding to the linkset to be monitored.
linkset	This variable is the name of the linkset to be monitored.
msgbody	This parameter is the message body of the CCS7 message to be monitored.
msg type	This parameter is the message type of the message to be monitored.
nettype	This variable specifies the network type of the message. Possible values are ccitt, ansi, and ttc.
ni	This variable is the network indicator of the message. It is possible to monitor all of the network indicators. Possible values are intl, intlsp, natl, natlsp, and all.
opc_arun	This variable is the origination point code area unit number of the TTC message to monitor. Entering 0 monitors all of the main units. The value range is 0-127.
opc_cls	This variable is the origination point code cluster number of the ANSI message to monitor. Entering 0 monitors all of the clusters. The value range is 0-255.
opc_frmt	This parameter is the origination point code format of the CCITT test message to monitor. Possible values are basic, intl, austria, and china.
opc_mbr	This variable is the origination point code member number of the ANSI message to monitor. Entering 0 monitors all of the members. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC message to monitor. Entering 0 monitors all of the main areas. The value range is 0-31.
opc_ntw	This variable is the origination point code network number of the ANSI message to monitor. Entering 0 monitors all of the networks. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC message to monitor. Entering 0 monitors all of the subareas. The value range is 0-15.
pc	This variable is the point code of the CCITT message to monitor, in basic format. Entering 0 monitors all of the point codes. The value range is 0-16383.
priority	This variable is the CCS7 priority to monitor. The value range is 0-4, (4=all).
region	This variable is the region of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the regions. The value range is 0-15.

-continued-

monitor command parameters and variables (continued)

Parameters and variables	Description
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label will automatically select all messages of any routing label. The value range is all or label.
slc	This variable is the link number of the linkset to be monitored. The value range is 0-15.
ttcisls	This variable is the signaling link selector of the TTC message to monitor. Entering 16 monitors all of the SLSs. The value range is 0-16.

End

Qualifications

None

monitor (continued)

Examples

The following table provides examples of the monitor command.

Examples of the monitor command

Example	**Task, response, and explanation**
monitor link c7lkset2 1 both ansi all sltm ↵ c7lkset1 1 both ansi all sltm	
monitor link c7lkset1 0 both ansi label natl 4 1 1 1 0 0 0 32 iam ↵ c7lkset1 0 both ansi label natl 4 1 1 1 0 0 0 32 iam	
End	

Responses

The following table provides explanations of the responses to the monitor command.

Responses for the monitor command

MAP output	Meaning and action
`ONLY FOUR MONITORS ALLOWED IN FIELD ENVIRONMENT`	**Meaning:** The user attempted to monitor when four entries were already in the match table. The field environment allows only four entries in the match table. The monitor command does not execute. **Action:** Remove an existing monitor, or monitor request, and retry the monitor command.
`ERROR: invalid linkset name`	**Meaning:** The user specified a linkset name that does not appear in table C7LKSET. **Action:** Verify the linkset name and retry the monitor command with the correct linkset.
`ERROR: INVALID LINK NUMBER`	**Meaning:** The user specified a link number that is not datafilled for the specified linkset in the C7LINK table. The monitor command does not execute. **Action:** Verify the link number and retry the monitor command with the correct number.
`ERROR: MATCHING msg code MESSAGES IS NOT PERMITTED`	**Meaning:** The user entered a message code that was recognized by C7TU, but a match is not allowed for the specified code. The monitor command does not execute. **Action:** Verify the message code and retry the monitor command with a correct message code.
`ERROR: INVALID MSGCODE msg code`	**Meaning:** The user entered a message code that is not recognized by C7TU. The monitor command does not execute. **Action:** Verify the message code and retry the command.

-continued-

monitor (end)

Responses for the monitor command (continued)

MAP output	Meaning and action
ERROR: MATCH TABLE FULL	**Meaning:** The user attempted to monitor a message when the match table already had four entries. No further requests can be made. The monitor command does not execute. **Action:** Remove an existing entry from the match table and retry the command.
WARNING: C7TU IS NOT ENABLED IN ANY PMs	**Meaning:** The command is executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used, with the select command.
WARNING: C7TU IS NOT ENABLED ON pm num WHERE THIS LINK RESIDES	**Meaning:** The monitor command executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used, with the select command.
End	

quit

Function

Use the quit command to exit the C7TULINK_PMT7 environment and return to the C7TU level. The user has the option to clear C7TULINK.

quit command

Command	Parameters and variables
quit	*option* [clear / noclear]

Parameters and variables	Description
option	This variable allows the user two options before quitting.
clear	This parameter clears the C7TULINK environment before quitting.
noclear	This parameter exits, leaving the C7TULINK environment intact.

Qualifications

None

Example

The following table provides an example of the quit command.

Example of the quit command

Example	Task, response, and explanation
quit clear ↵ *where* clear clears the C7TULINK environment before quitting	**Task:** This command is used to clear the C7TULINK environment before quitting. **Response:** `CI:` **Explanation:** This command exits this directory and returns to the CI MAP level.

quit (end)

Response

The following table provides an explanation of the response to the quit command.

Response for the quit command

MAP output	Meaning and action
`CI:`	**Meaning:** This prompt indicates that the user has returned to the CI MAP level. **Action:** Access another directory from the CI MAP level or end this session.

remove

Function

Use the remove command to remove all or a single monitor entry.

remove command parameters and variables

Command	Parameters and variables	
remove	match	[*num* | all]
	msg	[*num* | all]

Parameters and variables	Description
all	This parameter specifies that all entries be removed.
match	This parameter removes an entry from the match table.
msg	This parameter removes an entry from the message table.
num	This variable is the number of the entry to be removed.

Qualifications

The limits and operations of the Match Table and the Message Table are of the global nature. If a user issues a remove match all or a remove message all command, the respective table will be cleared.

Examples

The following table provides an example of the remove command.

Examples of the remove command

Example	Task, response, and explanation
remove match 8 ↵ *where* match 8	removes an entry from the match table specifies what entry to be removed
	Task: Remove entry 8 from the match table.
	Explanation: No system response. Entry 8 is removed from the table.

remove (end)

Responses

The following table provides explanations of the responses to the remove command.

Responses for the remove command

MAP output	Meaning and action
`Message number <num> has not been built.`	**Meaning:** The user entered a message number which has not been built using the build command. **Action:** Check the message number and retry the command.
`Item number <num> is currently not defined in the match table.`	**Meaning:** The user entered a match entry number which has not been built using the monitor or intercept commands. **Action:** Check the message number and retry the command.
`Must specify Entry Number or ALL for REMOVE`	**Meaning:** The user has not entered a number in the range of 0 to 7 or the parameter all for the remove command. **Action:** Retry the command with a valid entry number or the parameter all.

restore

Function

Use the restore command to restore monitor entries in MSB7s. The monitor entries are restored automatically in the LIU7s. This command is used following a restart reload.

restore command parameters and variables

Command	Parameters and variables
restore	There are no parameters or variables for this command.

Qualifications

The restore command will enable monitors on certain types of restarts.

Examples

The following shows an example of the restore command.

Examples of the restore command

Example	Task, response, and explanation
restore ↵	**Task:** Enable the monitors and intercepts that were disabled on a restart. **Explanation:** There is no system response. The monitors and intercepts are enabled.

Responses

None

select

Function

Use the select command to select the peripherals that enable the matching of CCS7 messages with the match table for the specified link. These peripherals are

- link interface unit 7 (LIU7)
- message switch and buffer 7 (MSB7)

The select command can also release a link that is currently selected.

select command parameters and variables

Command	Parameters and variables
select	*pm_select* [all | liu7 [*number* | all | *msg_trc* [on | off]] | msb7]

Parameters and variables	Description
all	This parameter selects all datafilled MSB7s or LIU7s.
msg_trc	This variable either selects a link (on) or releases a link (off). The default is on.
number	This variable is the LIU7 or the MSB7 number.
pm_select	This variable is the link specification. The following parameters are available: all liu7 msb7

Qualifications

None

select (continued)

Examples

The following table provides examples of the select command.

Examples of the select command

Example	Task, response, and explanation
select msb7 0 ↵ *where* msb7 is the link specification 0 is the MSB7 number	**Task:** This command is used to select MSB7 link 0. **Response:** `SELECT done.`
select msb7 1 off ↵ *where* msb7 is the link specification. 1 is the MSB7 number. off is the option to release a link	**Task:** This command is used to release MSB7 link 1. **Response:** `SELECT done.`

Responses

The following table provides explanations of the responses to the select command.

Responses for the select command

MAP output	Meaning and action
`ERROR: WRONG PM SELECTION`	**Meaning:** The user entered a parameter that was not among the valid choices for PM selection (all, msb7, liu7). The select command does not execute. **Action:** Retry the command with a valid parameter.
`ONLY FOUR SELECTS ALLOWED IN FIELD ENVIRONMENT`	**Meaning:** The user attempted to select when four entries were already in the match table. The field environment allows only four entries in the match table. The select command does not execute. **Action:** Release a link that is currently selected and retry the select command.
`LIU7 num IS NOT INSERVICE` `TRACING WILL BE ENABLED WHEN THE LIU7 GOES INSERVICE`	**Meaning:** The user selected an LIU7 number that is not in service. Monitoring starts when the LIU7 comes in service.The select command continues execution. **Action:** None
`LIU7 num IS NOT INSERVICE` `THE LIU7 HAS BEEN DESELECTED`	**Meaning:** The user released an LIU7 number that is currently not in service. Monitoring does not start when the LIU7 comes in service, because the link is released. The select command continues execution. **Action:** None
`LIU7 num IS NOT DEFINED FOR THIS OFFICE`	**Meaning:** The user attempted to select an LIU7 that is not datafilled for this office. The select command does not execute. **Action:** Retry the select command specifying an LIU7 that is datafilled for this office.

-continued-

select (end)

Responses for the select command (continued)

MAP output	Meaning and action
`MSB7 num IS NOT INSERVICE`	
	Meaning: The user specified an MSB7 that is not currently in service. The select command does not execute.
	Action: Check the status of the MSB7 and retry the select command.
`MSB7 num IS NOT DEFINED FOR THIS OFFICE`	
	Meaning: The user attempted to select an MSB7 that is not datafilled for this office. The select command does not execute.
	Action: Retry the select command specifying an MSB7 that is datafilled for this office.
End	

status

Function

Use the status command to display the current status of the C7TULINK environment. The display includes links that are currently selected with the select command and a shortened dump of the entries in the match table.

status command parameters and variables

Command	Parameters and variables
status	*disp_frm* [brief / verbose]

Parameters and variables	Description
brief	This parameter displays only the links that are selected.
disp_frm	This variable defines the type of output display.
verbose	This parameter displays all links, marking the ones that are selected.

Qualifications

None

Examples

The following table provides an example of the status command.

Examples of the status command

Example	Task, response, and explanation
status verbose ↵	

Task: Print the status of all LIU7s.

Response:

```
LIU7        FTA     TRACING     THROTTLE
201     4248 1000   ENABLE      20
205     4248 1000   DISABLE     10
207     4248 1000   DISABLE     10

ITEM DISP NI NETTYPE DIR LINK DIST MSG SI H0 H1

0 MON ALL ANSI BOTH LS001 1 EXT XXX ISUP XXX XXX
```

Explanation: The status of all LIU7s was printed.

status (end)

Response

The following table provides an explanation of the response to the status command.

Response for the status command

MAP output **Meaning and action**

```
********** C7TU LINK ENVIRONMENT ***********
 MSB7  NODE    TRACING   MSGS  NACK
 msb   node    trace     msg   nack

 LIU7        FTA     TRACING
 liu         fta     trace

 ITEM  DISP NETW  DIR  ST  DIST  MSG  SI  H0  HI
 num  disp net   dir  st  dist  msg  si  h0  h1
```

Meaning: The display includes links that are currently selected with the select command and a shortened dump of the entries in the match table.

Action: None

C7TU_ILPT7 commands

Accessing the C7TU_ILPT7 level (password protected)

Use the C7TU_ILPT7 version to build and send CCS7 test utility (C7TU) messages, intercept messages, and to monitor these messages.

This version of C7TU is password protected and may only be accessed by supplying the password residing in the tool supervisor TOOLSUP. The tool supervisor also provides a history of when the tool was used.

To access the C7TU_ILPT7 level, enter the following from the command interpreter (CI) level:

toolsup ↵

```
TOOLSUP - Tool supervisor
Type HELP to display available commands
TOOLSUP:
```

access on c7tu_ilpt7 ↵

```
Enter Password:
```

password ↵

```
C7TU_ILPT7 permitted
C7TU_ILPT7 access will expire 48 hours from now.

                  ** WARNING **

You have permitted access to command(s) that require
skilled and knowledgeable users. Proper use is required
to avoid possible service degradations. Please ensure
that only fully trained and qualified personnel proceed.

TOOLSUP:
```

tools ↵

```
Available tools --> C7TU_PMT7
                    C7TU_ILPT7
TOOLSUP:
```

quit ↵

```
CI:
```

c7tu ↵

```
** ILPT7 - INTEGRATED LINK PROTOCOL TEST TOOL **

ILPT7allows messages to be monitored or intercepted
on a CCS7 signaling link. In addition, messages may be
sent in or out on a CCS7 signaling link.

      ** WARNING ** WARNING ** WARNING **

C7TU should only be used under the strict supervision of TAS
or TELCO personnel who completely understand the
ramifications of using C7TU on a switch carrying traffic.
Improper use of C7TU can seriously degrade C7 traffic
capacity and/or cause total C7 or office failure.
DO YOU WISH TO CONTINUE ?
Please confirm (YES or NO):
```

yes ↵

```
C7TU:
type HELP for commands
```

help ↵

```
COMMON CHANNEL SIGNALLING #7 TEST UTILITY
C7TULINK    -     access the C7TU LINK test environment
C7TUREC     -     record C7TU reports from PMs to a device
C7TUPRT     -     print C7TU reports recorded on a device
DPC         -     turn on/off routeset status change report
MSGCODE     -     list C7TU message codes
QUIT  -     exit C7TU
Enter “Q <command name> for more information
```

c7tulink ↵

```
C7TULINK
type help for commands
```

help ↵

```
*********C7TULINK ILPT7 ENVIRONMENT********

ALTER -     alter the bytes in the built message
BUILD -     build a CCS7 message to be sent
DISPLAY     -     display the built message
DUMP  -     display MATCH table in hex format
HELP  -     generate this text
INTercept   -     intercept messages at the ST interface
MASK  -     set the MASK bytes of an entry
MATCH -     set the MATCH bytes of an entry
MONitor     - monitor messages at the ST interface
QUIT  -     exit C7TULINK environment
REMOVE      -     cancel an intercept/monitor request or
build
```

```
RESTORE     -     send the MATCH table entries to MSB
SELECT      -     select PMs and attributes
SEND  -     insert the message at ST interface
STATUS      -     display the status of the C7TULINK
environment
```

C7TU_ILPT7 commands

The commands available at the C7TU_ILPT7 MAP level are described in this chapter and arranged in alphabetical order. The page number for each command is listed in the following table.

C7TU_ILPT7 commands

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C7TU_ILPT7 commands (continued)		
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End		

c7tulink

Function

Use the c7tulink command to access the C7TULINK directory and test environment.

c7tulink command parameters and variables

Command	Parameters and variables
c7tulink	There are no parameters or variables.

Qualifications

None

Example

The following table provides an example of the c7tulink command.

Examples of the c7tulink command

Example	Task, response, and explanation	
c7tulink ↵		
	Task:	This command is used to access the C7TULINK directory.
	Response:	`C7TULINK:`
	Explanation:	The user has gained access to the C7TULINK directory.

Response

The following table provides an explanation of the response to the c7tulink command.

Responses for the c7tulink command

MAP output	Meaning and action
`C7TULINK:`	
	Meaning: The user has accessed the C7TULINK directory.
	Action: None

c7tuprt

Function

Use the c7tuprt command to print all CCS7 messages that were saved in a specified file by using the c7turec command.

c7tuprt command parameters and variables

Command	Parameters and variables
c7tuprt	*file*

Parameters and variables	Description
file	This variable specifies a valid file name.

Qualifications

None

Example

The following table provides an example of the c7tuprt command.

c7tuprt (continued)

Example of the c7tuprt command

Example	**Task, response, and explanation**

c7tuprt tempfile ↵
where

tempfile is the name of the specified file

Task: This command is used to print all CCS7 messages in the specified file.

Response:

```
TIME: 09:14:37 INCOMING LINK MSG
C7 HEADER: LEN= 34 MSG= 2 LINK= 1 SLC= 0 CLLI= C7LKSET
C7 SIO: NETWORK= 2 PRIORITY= 2 SERV IND= 5
C7 LABEL: DPC = 001-001-001 OPC = 002-002-002 SLS = 2
C7 DATA FOLLOWING HEADER: 01 01 01 01 01 01 01 01 01 01

TIME: 09:14:37 OUTGOING LINK MSG
C7 HEADER: LEN= 32 MSG= 2 LINK= 2 SLC= 1 CLLI= C7LKSET2
C7 SIO: NETWORK= 2 PRIORITY= 2 SERV IND= 2
C7 LABEL: DPC = 003-003-003 OPC = 001-001-001 SLS = 2
BODY: 02 03 04 05 06 07 08 01 02

TIME: 09:14:38 INVALID MESSAGE
INVALID MESSAGE TYPE
1909 55 07 E4 FF 32 45 09 A4 D2 FF C3 E9 D0 AA ED

TIME: 09:15:01 C7TU TRACING ON LIU7 201
```

Explanation: The user has been provided with all CCS7 messages saved in the specified file.

Responses

The following table provides explanations of the responses to the c7tuprt command.

c7tuprt (continued)

Responses for the c7tuprt command

MAP output	Meaning and action
`Error: While opening file.`	**Meaning:** A system error occurred. The C7TU was unable to open a file on the specified device. The command halts execution, and no messages will be recorded. **Action:** Retry the command.
`Error: File is not in C7TU format.`	**Meaning:** The user-specified file is not a valid C7TU log file. The command halts execution. No C7TU log messages will be interpreted and displayed. **Action:** Retry the command with a valid C7TU log file.
`Error while reading file header.`	**Meaning:** An error occurred when trying to read the file header of the specified file. The command halts execution. The file will be closed. **Action:** None
`Error while reading next record.`	**Meaning:** An error occurred when trying to read a C7TU log record from the specified file. The command halts execution. The file will be closed. **Action:** None

-continued-

c7tuprt (continued)

Responses for the c7tuprt command (continued)

MAP output	Meaning and action

`TIME: time logtype`
`INCOMING LINK MSG,OUTGOING LINK MSG, SEND TO LINK MSG, SEND FROM LINK MSG`
`C7 HEADER: LEN= len MSG= msg LINK= lk SLC= slc CLLI= ls`
`C7 SIO: NETWORK= ni PRIORITY= pr SERV IND= si`
`C7 LABEL: DPC= dpc OPC= opc SLS = sls`
`BODY: hex bytes`
`S7 DATA FOLLOWING LABEL: hex bytes`
`N7 DATA FOLLOWING LABEL: hex1 hex2 hex bytes`
`J7 DATA FOLLOWING LABEL: hex1 hex2 hex bytes`
	Meaning: This is the output seen for messages that have been injected and monitored. Following the time stamp, the logtype of `INCOMING LINK MSG` or `OUTGOING LINK MSG` is from monitoring the link. `SEND TO LINK MSG` and `SEND FROM LINK MSG` result from the send command to inject messages. The header of the C7 message is displayed, and the data following the header is shown in hexadecimal format. The header displays the length (`len`) of the message, type of the message (`msg`), linkset number (`lk`), link number (`slc`), and linkset name (`ls`). Then the `SIO` is displayed with the network indicator (`ni`), priority (`pr`), and service indicator (`si`). The labels containing the `DPC` (`dpc`), `OPC` (`opc`) and `SLS` (`sls`) are then shown. If the message type is an SNM message, then the body of the message is shown in `BODY:`. Otherwise, if the message is in ANSI format, it is shown in `S7 DATA FOLLOWING LABEL:`. If the message is in CCITT format, it is shown in `N7 DATA FOLLOWING LABEL:`, and if the message format is TTC (Japan), then it is shown in `J7 DATA FOLLOWING LABEL:`.
	
	Action: None

`TIME: time INVALID MESSAGE INVALID MESSAGE TYPE msg type hex bytes`	**Meaning:** This is the output seen for a message that the C7TU is unable to interpret. The invalid message type and the complete message in hexadecimal format follow the time stamp of the message. **Action:** None

-continued-

c7tuprt (end)

Responses for the c7tuprt command (continued)

MAP output	Meaning and action

`TIME: time ROUTESET STATUS routeset STATUS: st`
`CONGESTION LEVEL: cong NETW IND: ni DPC: dpc`
`STATUS: st`
`CONGESTION LEVEL: cong`
	Meaning: This is the message displayed when the routeset changes state, if using the dpc command in the C7TU level of this tool and a routeset is monitored by the user. If the routeset name is known, then it is displayed in the log as `routeset`; otherwise the network indicator `(ni)` and the destination point code `(dpc)` is displayed in the log. The routeset status `(st)` is either available or unavailable. The congestion level `(cong)` is displayed as a numeric value, either 1, 2, or 3.
	
	Action: None

`TIME: time`
`C7TU TRACING ON`
`C7TU TRACING OFF pm num`
	Meaning: This report is produced when a peripheral is selected or removed by the user. It displays the PM `(pm)` and number `(num)`, which are selected (`C7TU TRACING ON`) or removed (`C7TU TRACING OFF`).
	
	Action: None

End	

c7turec

Function

Use the c7turec command to specify a device in which to save CCS7 messages from the peripheral modules (PM) in the form of C7TU logs. The recording device must be specified as part of the command.

c7turec command parameters and variables

Command	Parameters and variables		
c7turec	query start stop	*device_name*	*file_name*

Parameters and variables	Description
device_name	This variable specifies the name of the device where the CCS7 messages will be stored.
file_name	This variable specifies the name of the file where the CCS7 messages will be stored.
query	This parameter is used to query the active recording device and file.
start	This parameter is used to start recording on a specified device and file.
stop	This parameter is used to stop recording the CCS7 messages in the specified device and file.

Qualifications

None

c7turec (continued)

Examples

The following table provides examples of the c7turec command.

Examples of the c7turec command

Example	Task, response, and explanation
c7turec query ↵ *where* query	is used to query the active recording device and file **Task:** This command is used to query the active recording device and file. **Response:** `C7TU RECORD onto SFDEV TEMPFILE` **Explanation:** The user is provided with the identity of the active recording device and file.
c7turec start sfdev tempfile ↵ *where* start *sdev* *tempfile*	is used to start recording on a specified device and file specifies the name of the device where the CCS7 messages will be stored specifies the name of the file where the CCS7 messages will be stored **Task:** This command is used to start recording on a specified file. **Response:** `C7TU RECORD START onto sfdev tempfile` **Explanation:** The file has been successfully opened by the C7TU and is ready to save messages.
c7turec stop ↵ *where* stop	is used to stop recording the CCS7 messages in the specified device and file. **Task:** This command is used to stop recording. **Response:** `C7TU RECORD STOP` **Explanation:** The system has stopped recording CCS7 messages.

c7turec (continued)

Responses

The following table provides explanations of the responses to the c7turec command.

Responses for the c7turec command

MAP output	Meaning and action
`Error: Unable to get volume information.`	**Meaning:** The user specified a device name that is not valid or is not recognized. The command halts execution. No messages will be recorded. **Action:** Retry the command with a valid device name.
`Error: Unable to get file information.`	**Meaning:** The user specified a file name that is not valid or is not recognized. The command halts execution. No messages will be recorded. **Action:** Retry the command with a valid file name.
`Error: Device is not valid.`	**Meaning:** The user specified a device name that is not valid or is not recognized. The command halts execution. No messages will be recorded. **Action:** Retry the command with a valid device name.
`Error: While creating the file.`	**Meaning:** The system failed to create the user-specified file at the specified device. The command halts execution. No messages will be recorded. **Action:** Retry the command with a different device name.
`C7TU RECORD START onto device file`	**Meaning:** The file has been successfully opened by the C7TU and is ready to save messages. **Action:** None

-continued-

c7turec (end)

Responses for the c7turec command (continued)

MAP output	Meaning and action
`C7TU RECORD STOP.`	**Meaning:** The file has been successfully closed by the C7TU. This message is displayed in response to the query command when the C7TU is not recording to a file. **Action:** None
`Recording already started.`	**Meaning:** This is the response to the c7turec start command when the C7TU is already recording. **Action:** None
End	

dpc

Function

Use the dpc command to monitor a routeset for changes in availability and congestion. The user may also query a routeset state with this command. The responses from the command are produced as a C7TU log.

dpc command parameters and variables

Command	Parameters and variables
dpc	report [on / off] query *routset*

Parameters and variables	Description
off	This parameter disables reporting on any routeset state changes or changes in congestion level.
on	This parameter enables reporting on any routeset state changes or changes in congestion level.
query	This parameter queries a routeset state.
report	This parameter provides reporting on any routeset state changes or changes in congestion level.
routset	This variable specifies a valid routeset name that is datafilled in the C7RTESET table.

Qualifications

None

dpc (continued)

Examples

The following table provides examples of the dpc command.

Examples of the dpc command

Example	Task, response, and explanation
dpc report on ↵ *where* report on	 provides reporting on any routeset state changes or changes in congestion level enables reporting on any routeset state changes or changes in congestion level
	Task: This command enables reporting of a routset state.
dpc query c7rteset1 ↵ *where* query c7rteset	 queries a routeset state specifies a valid routeset name that is datafilled in the C7RTESET table
	Task: This command is used to query the routeset state of a specified route.

Responses

The following table provides explanations of the responses to the dpc command.

Responses for the dpc command

MAP output	Meaning and action
`ERROR: INVALID ROUTESET NAME`	
	Meaning: The user specified a routeset name that is not datafilled in the C7RTESET table. The command halts execution. No messages will be printed. **Action:** Retry command with a valid routeset name present in C7RTESET table.

-continued-

dpc (end)

Responses for the dpc command (continued)

MAP output	Meaning and action
ERROR: CANNOT FIND DPC	**Meaning:** The dpc command was unable to find the destination point code (DPC) associated with the routeset. The command halts execution. No messages will be printed. **Action:** Check the routeset name and the entry in the C7RTESET table, then retry the command with the correct routeset name.
ERROR: QUERY FAILED	**Meaning:** The query command was unable to query the DPC associated with the routeset. The command halts execution. No messages will be printed. **Action:** Verify the routeset and retry the query command.
INVALID DPC OPERATION	**Meaning:** The user has specified an operation that is not allowed with the dpc command. The command halts execution. No messages will be printed. **Action:** Retry the dpc command with the correct options.

End

msgcode

Function

Use the msgcode command to print a list of valid message codes that are available for use in the message code fields prompted for in the build and monitor commands. The message codes are displayed in a hierarchical format. The hierarchy is distribution id, service indicator, h0 and h1. each level in the hierarchy has its own 3- or 4-letter message code.

msgcode command parameters and variables

Command	Parameters and variables
msgcode	*msgcode*

Parameters and variables	Description
msgcode	This variable specifies a message code in a 3- or 4-letter format.

Qualifications

None

Example

The following table provides an example of the msgcode command.

Examples of the msgcode command

Example	Task, response, and explanation

msgcode ecm ↵
where
 	
ecm is the desired message code.
	Task: This command is used to print a list of valid message codes.
	
	Response:
	`MSG CODE  DESCRIPTION                  DI SI   H1  H0`
	`--------  --------------------------  __ __   __`
	`EXT       C7 External                  04 X    XX`
	`. SNM     Signalling Network Management . 00       XX`
	`. . ECM   Emergency Changeover Msgs    .  .        02`
	`. . . ECO Emergency Changeover Order   .  .        12`
	`. . . ECA Emergency Changeover Ack     .  .        22`
	
	Explanation: The user has been provided with a list of message code fields.

msgcode (end)

Responses

The following table provides explanations of the responses to the msgcode command.

Responses for the msgcode command

MAP output	Meaning and action
`INVALID MSGCODE: msgcode`	**Meaning:** The user has entered a message code that is not recognized by the C7TU. No message codes are displayed. **Action:** Check the message code entered to ensure it is correct and retry the command. Otherwise, display the entire message code table by entering the msgcode command with no options.

`MSGCODE DESCRIPTION DI SI H1H0`
`------- ------------ -- -- ----`
`msgcode description di si h1h0`
	Meaning: This table is displayed for the message code requested by the user. The fields are as follows:
	
	▪ `MSGCODE` is a 3- or 4-character string representing the message code.
	▪ `DESCRIPTION` is a short description of the message code.
	▪ `DI` displays the distributor id that is associated with this message code.
	▪ `SI` displays the service indicator associated with the message code.
	▪ `H1H0` is the actual message code placed in the CCS7 message.
	
	Action: None

quit

Function

Use the quit command to exit from the C7TU level commands directory and return to the CI MAP level.

quit command	
Command	**Parameters and variables**
quit	There are no parameters or variables.

Qualifications

None

Example

The following table provides an example of the quit command.

Example of the quit command	
Example	**Task, response, and explanation**
quit ↵	
	Task: This command is used to quit this directory. **Response:** `CI:` **Explanation:** This command exits this directory and returns to the CI MAP level.

Response

The following table provides an explanation of the response to the quit command.

Response for the quit command	
MAP output	**Meaning and action**
`CI:`	
	Meaning: This prompt indicates that the user has returned to the CI MAP level. **Action:** Access another directory from the CI MAP level or end this session.

alter

Function

Use the alter command to modify a test message in the C7TU message table by changing individual bytes. The old test message is overwritten with the altered version.

alter command parameters and variables

Command	Parameters and variables						
alter	*mssg_num*	*selector*	routing / length / data / parms	*label*	ccitt / ansi / ttc		
	ccitt	*rout_lbl*	all / label	*ni*	intl / intlsp / natl / natlsp	*priority*	
		dpc_frmt	basic		*pc*		
			intl		*intlzone* / *areanetw* / *intlsgpt*		
			austria		*austzone* / *region* / *austsigpt*		
			china		*chinzone* / *exchange* / *chinsigpt*		
		opc_frmt	basic		*pc*		
			intl		*intlzone* / *areanetw* / *intlsgpt*		
			austria		*austzone* / *region* / *austgpt*		
			china		*chinzone* / *exchange* / *chinsigpt*		
		ccittsls					

-continued-

alter (continued)

alter command parameters and variables (continued)

Command	Parameters and variables						
alter	ansi	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mbr	*dpc_cls*	*dpc_ntw*	*opc_mbr*	*opc_cls*	*opc_ntw*	
	ansisls						
	ttc	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mnar	*dpc_sbar*	*dpc_arun*	*opc_mnar*	*opc_sbar*	*opc_arun*	
	ttcsls						
	length	data	[*offset* / *hexbytes*]	*userdefined parameters*			

Parameters and variables	Description
ansisls	This variable is the signaling link selector of the ANSI test message. The value range is 0-31.
areanetw	This variable is the area network of the point code, in intl format, of the CCITT test message. The value range is 0-255.
austria	
austsigpt	This variable is the signal point of the point code, in austria format, of the CCITT test message. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT test message. The value range is 0-31.
basic	
ccittsls	This variable is the signaling link selector of the CCITT test message. The value range is 0-15.
china	

-continued-

alter (continued)

alter command parameters and variables (continued)

Parameters and variables	Description
chinsigpt	This variable is the signal point of the point code, in china format, of the CCITT test message. The value range is 0-7.
chinzone	This variable is the zone of the point code, in china format, of the CCITT test message. The value range is 0-15.
dpc_arun	This variable is the destination point code area unit number of the TTC test message. The value range is 0-255.
dpc_cls	This variable is the destination point code cluster number of the ANSI test message. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message. Possible values are basic, intl, austria, and china.
dpc_mbr	This variable is the destination point code member number of the ANSI test message. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC test message. The value range is 0-255.
dpc_ntw	This variable is the destination point code network number of the ANSI test message. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC test message. The value range is 0-255.
exchange	This variable is the exchange of the point code, in china format, of the CCITT test message. The value range is 0-127.
hex_bytes	This variable string is the new hex bytes to overwrite the existing bytes in the message.
hex bytes	This parameter is the message body, in hexadecimal format, of the CCS7 message being built.
intl	
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT test message. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT test message. The value range is 0-7.

-continued-

alter (continued)

alter command parameters and variables (continued)

Parameters and variables	Description
msg_body	This parameter is the message body of the CCS7 test message being altered.
msg_type	This parameter is the message type of the test message being altered.
mssg_num	This variable is the message number of the selected message. The value range is 0-7.
ni	This variable is the network indicator of the message. Possible values are intl, intlsp, natl, and natlsp.
offset	This variable is the starting offset of the CCS7 message bytes to be altered. The value range is 0-279.
opc_arun	This variable is the origination point code area unit number of the TTC test message. The value range is 0-255.
opc_cls	This variable is the origination point code cluster number of the ANSI test message. The value range is 0-255.
opc_mbr	This variable is the origination point code member number of the ANSI test message. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC test message. The value range is 0-255.
opc_ntw	This variable is the origination point code network number of the ANSI test message. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC test message. The value range is 0-255.
pc	This variable is the point code of the CCITT message in basic format. The value range is 0-16838.
priority	This variable is the CCS7 priority of the test message. The value range is 0-3.
region	This variable is the region of the point code, in austria format, of the CCITT test message. The value range is 0-15.

-continued-

alter (continued)

alter command parameters and variables (continued)

Parameters and variables	Description
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label automatically selects all messages of any routing label. The default label automatically sets the priority, origination point code (OPC), destination point code (DPC), and signaling link selector (SLS) of the message. The value range is default or label.
selector	This variable selects the bytes to be modified.
ttcsls	This variable is the signaling link selector of the TTC test message. The value range is 0-15.
value	This variable is the new length of the CCS7 test message being altered. The value range is 0-279.

End

Qualifications

None

alter (continued)

Example

The following table provides an example of the alter command.

Example of the alter command

Example	Task, response, and explanation

alter 0 200 ↵
where

0 is the message number of the selected message
200 is the new length of the CCS7 test message being altered

Task: This command is used to change the length of a specified message.

Response:

```
C7TU MESSAGE       SIO           DPC          OPC       SLS
  num type length  ni pr  si   mem clu net  mem clu net
   0  SLTM   9      2  3   2   001 001 001  002 002 002    0
  Message bytes:
   0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19
  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
  00 00 09 00 00 02 01 B2 01 01 01 02 02 02 00 11 01 01
  C7TU MESSAGE       SIO           DPC          OPC       SLS
  num type length  ni pr  si   mem clu net  mem clu net
   0  SLTM  200     2  3   2   001 001 001  002 002 002    0
  Message bytes:
   0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19
  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
  00 00 C8 00 00 02 01 B2 01 01 01 02 02 02 00 11 01 01
```

Explanation: The system shows the display of the original message number 0 and the subsequent display of the altered message number 0.

Responses

The following table provides explanations of the responses to the alter command.

Responses for the alter command

MAP output	Meaning and action
`MESSAGE NUMBER num HAS NOT BEEN BUILT YET`	**Meaning:** The user entered a message number that has not been built in the message table. The alter command does not execute. **Action:** Retry the alter command with a valid message number.
`THE OFFSET DOES NOT FALL WITHIN THE DEFINED MESSAGE AREA`	**Meaning:** The user entered a bytes offset that is outside the current length of the test message. The test message is displayed in the same format as the display command. The alter command does not execute. **Action:** Retry the command with the correct offset.

`C7TU MESSAGE SIO DPC OPC SLS`
`num type length ni pr si mem clu net mem clu net`
`num mt len ni pr si dpc opc sls`
`Message bytes:`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19`
`-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --`
`hex bytes`
	Meaning: This response indicates that the alter command executed successfully. The specified message is displayed, in the format as shown above, before and after changes are made to the message table.
	
	Action: None

build

Function

Use the build command to build a test message and save it in the message table. This message can then be sent out on a CCS7 link, using the send command.

build command parameters and variables

Command	Parameters and variables						
build	*mssg_num*	*network_type*		ccitt / ansi / ttc			
	ccitt	*rout_lbl*	all / label	*ni*	intl / intlsp / natl / natlsp	*priority*	
		dpc_frmt	basic	*pc*			
			intl	*intlzone* / *areanetw* / *intlsgpt*			
			austria	*austzone* / *region* / *austsigpt*			
			china	*chinzone* / *exchange* / *chinsigpt*			
		opc_frmt	basic	*pc*			
			intl	*intlzone* / *areanetw* / *intlsgpt*			
			austria	*austzone* / *region* / *austsigpt*			
			china	*chinzone* / *exchange* / *chinsigpt*			
		ccittsls					

-continued-

build (continued)

build command parameters and variables

Command	Parameters and variables						
build	ansi	*rout_lbl*	[all | label]	*ni*	[intl | intlsp | natl | natlsp]		*priority*
	dpc_mbr	*dpc_cls*	*dpc_ntw*	*opc_mbr*	*opc_cls*		*opc_ntw*
	ansisls						
	ttc	*rout_lbl*	[all | label]	*ni*	[intl | intlsp | natl | natlsp]		*priority*
	dpc_mnar	*dpc_sbar*	*dpc_arun*	*opc_mnar*	*opc_sbar*		*opc_arun*
	ttcsls						
	length	data	[*offset* | *hexbytes*]	*userdefined parameters*			

Parameters and variables	Description
areanetw	This variable is the area network of the point code, in intl format, of the CCITT test message. The value range is 0-255.
ansisls	This variable is the signaling link selector of the ANSI test message. The value range is 0-31.
austria	
austsigpt	This variable is the signal point of the point code, in austria format, of the CCITT test message. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT test message. The value range is 0-31.
basic	
ccittsls	This variable is the signaling link selector of the CCITT test message. The value range is 0-15.
china	

-continued-

build (continued)

build command parameters and variables (continued)

Parameters and variables	Description
chinsigpt	This variable is the signal point of the point code, in china format, of the CCITT test message. The value range is 0-7.
chinzone	This variable is the zone of the point code, in china format, of the CCITT test message. The value range is 0-15.
dpc_arun	This variable is the destination point code area unit number of the TTC test message. The value range is 0-255.
dpc_cls	This variable is the destination point code cluster number of the ANSI test message. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message. Possible values are basic, intl, austria, and china.
dpc_mbr	This variable is the destination point code member number of the ANSI test message. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC test message. The value range is 0-255.
dpc_ntw	This variable is the destination point code network number of the ANSI test message. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC test message. The value range is 0-255.
exchange	This variable is the exchange of the point code, in china format, of the CCITT test message. The value range is 0-127.
hex bytes	This parameter is the message body, in hexadecimal format, of the CCS7 message being built.
intl	
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT test message. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT test message. The value range is 0-7.
msg body	This parameter is the message body of the CCS7 test message being altered.

-continued-

build (continued)

build command parameters and variables (continued)

Parameters and variables	Description
msg type	This parameter is the message type of the test message being altered.
mssg_num	This variable is the test message number to be built. The value range is 0-7.
network_type	This variable specifies the network type of the message. Possible values are ccitt, ansi, and ttc.
ni	This variable is the network indicator of the message. Possible values are intl, intlsp, natl, and natlsp.
opc_arun	This variable is the origination point code area unit number of the TTC test message. The value range is 0-255.
opc_cls	This variable is the origination point code cluster number of the ANSI test message. The value range is 0-255.
opc_frmt	This parameter is the origination point code format of the CCITT test message. Possible values are basic, intl, austria, and china.
opc_mbr	This variable is the origination point code member number of the ANSI test message. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC test message. The value range is 0-255.
opc_ntw	This variable is the origination point code network number of the ANSI test message. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC test message. The value range is 0-255.
pc	This variable is the point code of the CCITT message in basic format. The value range is 0-16383.
priority	This variable is the CCS7 priority of the test message. The value range is 0-3.
region	This variable is the region of the point code, in austria format, of the CCITT test message. The value range is 0-15.

-continued-

build command parameters and variables (continued)

Parameters and variables	Description
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label automatically selects all messages of any routing label. The default label automatically sets the priority, origination point code (OPC), destination point code (DPC), and signaling link selector (SLS) of the message.The value range is default or label.
ttcsls	This variable is the signaling link selector of the TTC test message. The value range is 0-15.

End

Qualifications

The build command is qualified by the following exceptions, restrictions and limitations:

CAUTION

The user should exercise caution with the build command. The system cannot distinguish between these CCS7 test messages and normal CCS7 messages once they are sent into the network.

build (continued)

Example

The following table provides an example of the build command.

Example of the build command

Example	Task, response, and explanation
build 0 *ansi natl* 0 1 2 3 6 7 8 0 *sltm parms* 01 01 ↵ *where* 0 is the test message number of the selected message ansi variable is the network type of the message natl is the type of routing label used in the CCS7 message 0 is the CCS7 priority to intercept 1 is the destination point code member number of the ANSI test message 2 is the destination point code cluster number of the ANSI test message 3 is the destination point code network number of the ANSI test message 6 is the origination point code member number of the ANSI test message 7 is the origination point code cluster number of the ANSI test message 8 is the origination point code network number of the ANSI test message 01 is a user defined parameter 01 is a user defined parameter	**Task:** This command is used to build a specified message. **Response:** `MESSAGE 0 WAS BUILT SUCCESSFULLY` **Explanation:** The specified message was successfully built.

Responses

The following table provides explanations of the responses to the build command.

Responses for the build command

MAP output	Meaning and action
`MESSAGE WAS NOT BUILT SUCCESSFULLY`	**Meaning:** The user entered an invalid message number. The build command does not execute. **Action:** Retry the build command with a valid message number.

-continued-

Responses for the build command (continued)

MAP output	Meaning and action
`MESSAGE num WAS NOT BUILT SUCCESSFULLY`	**Meaning:** The user entered errors in the message input. The message number `num` is echoed in the error message. The build command does not execute. **Action:** Retry the build command with a valid message input.
`ERROR: INVALID MESSAGE CODE msg code`	**Meaning:** The user entered a message code that is not recognized by C7TU. The build command does not execute. **Action:** Retry the build command with a valid message code.
`ERROR: CANNOT BUILD A msg MESSAGE`	**Meaning:** The user entered a recognizable code, but the utility cannot build a message for the specified code. The message code is echoed in the error message. The build command does not execute. **Action:** Retry the build command with a valid message code.
`MESSAGE num WAS BUILT SUCCESSFULLY`	**Meaning:** The message was built by the C7TU and stored in the message table with message number `num.` **Action:** None

End

dump

Function

Use the dump command to display the match table, allowing the user to see the criteria for monitor and intercept requests of C7TU messages.

dump command parameters and variables

Command	Parameters and variables	
dump	*start*	*stop*

Parameters and variables	Description
start	This variable is an entry number defining the starting position for the display in the match table.
stop	This variable is an entry number defining where the display stops in the match table.

Qualifications

None

dump (continued)

Example

The following table provides an example of the dump command.

Example of the dump command

Example	Task, response, and explanation

dump 0 1 ↵
where

0 is an entry number defining the starting position for the display in the match table
1 is an entry number defining where the display stops in the match table

Task: This command is used to display the match table from entry number 0 to 1.

Response:

```
MATCH COUNT: 3
C7TU {MONITOR, INTERCEPT}
            SIO            DPC           OPC
NUM  DIR  NET   NI PR  SI MEM CLU NET  MEM CLU NET  SLS  MSGT
YPE
 0   BOTH ANSI   2 00   5 001 002 003  000 000 000   00  IAM
           0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
          -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
Match:   00 04 00 00 82 01 01 01 00 00 00 00 01
Mask:    00 FF 00 00 CF FF FF FF 00 00 00 00 1F

C7TU INTERCEPT      SIO            DPC           OPC
NUM  DIR  NET   NI PR  SI MEM CLU NET  MEM CLU NET  SLS  MSGT
YPE
 1   BOTH ANSI   0 00   2 000 000 000  000 000 000   00  SLTM
           0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
          -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
Match:   00 04 00 00 02 00 00 00 00 00 00 00 11
Mask:    00 FF 00 00 0F 00 00 00 00 00 00 00 1F
```

Explanation: The user has been provided with a display of the match table from entry numbers 0-1.

Responses

The following table provides explanations of the responses to the dump command.

Responses for the dump command

MAP output	Meaning and action
`ERROR: FIRST ITEM MUST NOT BE GREATER THAN LAST ITEM`	**Meaning:** The user attempted to display a range where the first item had a larger entry number in the match table than the last item. The dump command does not execute. **Action:** Verify the start and stop numbers and retry the command with a correct range.

`MATCH COUNT: n`
`C7TU MONITOR, INTERCEPT`
`SIO DPC OPC`
`NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET SLS MSGT`
`YPE num dir net ni pr si dpc opc sls mt`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16`
`-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --`
`Match: hex bytes`
`Mask: hex bytes`
	Meaning: The dump command uses the above format to show the user the contents of the C7TU match table.
	
	Action: None

help

Function

Use the help command to receive online documentation for this directory. If entered alone, the help command takes the default value (all). If entered with the name of a valid C7TU_ILPT7 level commands directory command, the help command provides a short description of that command.

help command parameters and variables

Command	Parameters and variables
help	all *command _name*

Parameters and variables	Description
all	This parameter produces a list of all commands in this directory.
command_name	This variable, used with the help command, produces a short description of the specified command.

Qualifications

None

Example

The following table provides an example of the help command.

Example of the help command

Example	Task, response, and explanation

help status ↵
where
 	
status is the name of the command
	Task: Provide a short description of the command.
	
	Response:
	`DISPLAY THE STATUS OF THE C7TU LINK ENVIRONMENT`
	`Parms: [ <BRIEF> {BRIEF,`
	`VERBOSE}]`
	
	Explanation: A short description of the command and the command parameters and variables are displayed.

help (end)

Response

The following table provides an explanation of the response to the help command.

Response for the help command

MAP output	Meaning and action
`MODULE NOT LOADED OR NEEDS OTHER CI INCREMENT TO BE BUILT.`	**Meaning:** The directory the user is trying to access is not loaded. **Action:** None

intercept

Function

Use the intercept command to intercept CCS7 messages coming off the link. The intercept command accesses the match table to remove the message from the link. The CCS7 system never sees the message.

intercept command parameters and variables

Command	Parameters and variables							
intercept	*linkset*	*slc*	*direction*	[in / out / both]	*nettype*	[ccitt / ansi / ttc]		
	ccitt	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*		
		dpc_frmt	basic	*pc*				
			intl	[*intlzone* / *areanetw* / *intlsgpt*]				
			austria	[*austzone* / *region* / *austsgpt*]				
			china	[*chinzone* / *exchange* / *chinsigpt*]				
		opc_frmt	basic	*pc*				
			intl	[*intlzone* / *areanetw* / *intlsgpt*]				
			austria	[*austzone* / *region* / *austsgpt*]				
			china	[*chinzone* / *exchange* / *chinsigpt*]				
		ccittsls						

-continued-

intercept (continued)

intercept command parameters and variables (continued)

Command	Parameters and variables						
intercept	ansi	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mbr	*dpc_cls*	*dpc_ntw*	*opc_mbr*	*opc_cls*	*opc_ntw*	
	ansisls						
	ttc	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mnar	*dpc_sbar*	*dpc_arun*	*opc_mnar*	*opc_sbar*	*opc_arun*	
	ttcsls						
	msg_type						
	msgbody						
	hexbytes						

Parameters and variables	Description
ansls	This variable is the signaling link selector of the ANSI message to intercept. Entering 32 intercepts all of the SLSs. The value range is 0-32.
areanetw	This variable is the area network of the point code, in intl format, of the CCITT message to intercept. Entering 0 intercepts all of the area networks. The value range is 0-31.
austsgpt	This variable is the signal point of the point code, in austria format, of the CCITT message to intercept. Entering 0 intercepts all of the signal points. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT message to intercept. Entering 0 intercepts all of the zones. The value range is 0-31.
ccittsls	This variable is the signaling link selector (SLS) of the CCITT message to intercept. Entering 16 intercepts all of the SLSs. The value range is 0-16.
chinsigpt	This variable is the signal point of the point code in china format, of the CCITT message to intercept. Entering 0 intercepts all of the signal points. The value range is 0-7.
chinzone	This variable is the zone of the point code, in china format, of the CCITT message to intercept. Entering 0 intercepts all of the zones. The value range is 0-15.

-continued-

intercept (continued)

intercept command parameters and variables (continued)

Parameters and variables	Description
direction	This variable is the direction of the message that is being intercepted. The posible values are: in out both
dpc_arun	This variable is the destination point code area unit number of the TTC message to intercept. Entering 0 intercepts all of the area units. The value range is 0-127.
dpc_cls	This variable is the destination point code cluster number of the ANSI message to intercept. Entering 0 intercepts all of the clusters. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message to intercept. Possible values are basic, intl, austria, or china.
dpc_mbr	This variable is the destination point code member number of the ANSI message to intercept. Entering 0 intercepts all of the members. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC message to intercept. Entering 0 intercepts all of the main areas. The value range is 0-31.
dpc_ntw	This variable is the destination point code network number of the ANSI message to intercept. Entering 0 intercepts all of the networks. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC message to intercept. Entering 0 intercepts all of the subareas. The value range is 0-15.
exchange	This variable is the exchange of the point code, in china format, of the CCITT message to intercept. Entering 0 intercepts all of the exchanges. The value range is 0-127.
hexbytes	This parameter is the message body, in hexadecimal format, of the CCS7 message to be intercepted.
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT message to monitor. Entering 0 intercepts all of the signal points. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT message to intercept. Entering 0 intercepts all of the zones. The value range is 0-7.
linkset	This variable is the name of the linkset to be intercepted.

-continued-

intercept (continued)

intercept command parameters and variables (continued)

Parameters and variables	Description
msg type	This parameter is the message type of the message to be intercepted.
msgbody	This parameter is the message body of the CCS7 message to be intercepted.
nettype	This variable specifies the network type of the message. There are currently three accepted network types: • ccitt • ansi • ttc
ni	This variable is the network indicator of the message. It is possible to intercept all of the network indicators. The value range is intl, intlsp, natl, natlsp, or all.
opc_arun	This variable is the origination point code area unit number of the TTC message to intercept. Entering 0 intercepts all of the main units. The value range is 0-127.
opc_cls	This variable is the origination point code cluster number of the ANSI message to intercept. Entering 0 intercepts all of the clusters. The value range is 0-255.
opc_frmt	This parameter is the origination point code format of the CCITT text message to intercept. Possible values are basic, intl, austri, or china.
opc_mbr	This variable is the origination point code member number of the ANSI message to intercept. Entering 0 intercepts all of the members. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC message to intercept. Entering 0 intercepts all of the main areas. The value range is 0-31.
opc_ntw	This variable is the origination point code network number of the ANSI message to intercept. Entering 0 intercepts all of the networks. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC message to intercept. Entering 0 intercepts all of the subareas. The value range is 0-15.
priority	This variable is the CCS7 priority to intercept. The value range is 0-4, (4 = all).
pc	This variable is the point code of the CCITT message to intercept, in basic format. Entering 0 intercepts all of the point codes. The value range is 0-16383.

-continued-

intercept command parameters and variables (continued)

Parameters and variables	Description
region	This variable is the region of the point code, in austria format, of the CCITT message to intercept. Entering 0 intercepts all of the regions. The value range is 0-15.
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label will automatically select all messages of any routing label. Possible values are all or label.
slc	This variable is the link number of the linkset to be intercepted. The value range is 0-15.
ttcisls	This variable is the signaling link selector of the TTC message to intercept. Entering 16 intercepts all of the SLSs. The value range is 0-16.

End

Qualifications

The intercept command is qualified by the following exceptions, restrictions and limitations:

CAUTION

Caution must be used with the intercept command, as removing a CCS7 message may have consequences for the node and the network.

Example

The following table provides an example of the intercept command.

Example of the intercept command

Example	Task, response, and explanation
intercept	**C7LKSET1 0 BOTH ANSI LABEL NATL 4 1 1 1 0 0 0 32 CSLTM** ↵

intercept (continued)

Responses

The following table provides explanations of the responses to the intercept command.

Responses for the intercept command

MAP output	Meaning and action
`ONLY FOUR MONITORS ALLOWED IN FIELD ENVIRONMENT`	**Meaning:** The user attempted to intercept when four entries were already in the match table. The field environment allows only four entries in the match table. The intercept command does not execute. **Action:** Remove an existing intercept or monitor request and retry the intercept command.
`ALL IS NOT PERMITTED IN A FIELD ENVIRONMENT`	**Meaning:** The field environment allows only four entries in the match table; therefore the all option is not valid. The intercept command does not execute. **Action:** Retry the command with a linkset name in place of the all option.
`ERROR: INVALID LINKSET NAME`	**Meaning:** The user specified a linkset name that does not appear in table C7LKSET. **Action:** Verify the linkset name and retry the intercept command with the correct linkset.
`ERROR: INVALID LINK NUMBER`	**Meaning:** The user specified a link number that is not datafilled for the specified linkset in the C7LINK table. The intercept command does not execute. **Action:** Verify the link number and retry the intercept command with the correct number.

-continued-

Responses for the intercept command (continued)

MAP output	Meaning and action
`ERROR: MATCHING msg code MESSAGES IS NOT PERMITTED`	**Meaning:** The user entered a message code that was recognized by C7TU, but a match is not allowed for the specified code. The intercept command does not execute. **Action:** Verify the message code and retry the intercept command with a correct message code.
`ERROR: INVALID MSGCODE msg code`	**Meaning:** The user entered a message code that is not recognized by C7TU. The intercept command does not execute. **Action:** Verify the message code and retry the command.
`ERROR: MATCH TABLE FULL`	**Meaning:** The user attempted to intercept a message when the match table already had eight entries. No further requests can be made. The intercept command does not execute. **Action:** Remove an existing entry from the match table and retry the command.
`WARNING: C7TU IS NOT ENABLED IN ANY PMs`	**Meaning:** The command is executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used with the select command.
`WARNING: C7TU IS NOT ENABLED ON pm num WHERE THIS LINK RESIDES`	**Meaning:** The monitor command executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used with the select command.

End

mask

Function

Use the mask command to mask out bytes in a monitor or intercept entry. The masked bytes are not used to compare for matching messages. This command is used to customize a monitor or intercept entry.

mask command parameters and variables

Command	Parameters and variables
mask	*item_no* *byte_offset* *mask_bytes*

Parameters and variables	Description
byte_offset	Specifies the number of bytes used to describe the type of CCS7 messages to monitor or intercept. Values are 0 through 15.
item_no	Specifies the number of the monitor or intercept entry. Values are 0 through 7.
mask_bytes	Specifies how the bytes, starting at the byte_offset, should be masked.

Qualifications

None

Examples

The following show examples of the mask command.

Examples of the mask command

Example	Task, response, and explanation
mask 0 01 aa ↵ *where* 0 specifies the number of the monitor or intercept entry 01 specifies the number of bytes to describe the type of CCS7 messages to monitor or intercept aa describes how the bytes, starting at the byte_offset, should be masked.	**Task:** Change a mask offset value. **Response:** See Figure 3-1 for a response. **Explanation:** The value of the offset is changed.

mask (continued)

Figure 3-1xxx
Response to mask 0 01 06 command

```
C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
            0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
            -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 05 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 FF 00 00 0F 00 00 00 00 00 00 FF 00 00 00


C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
            0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
            -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 05 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00
```

Responses

The following table shows examples of the mask command.

Responses for the mask command

MAP output	Meaning and action
`ERROR: MASK ENTRY 1 IS NOT IN USE`	**Meaning:** Mask entry 1 has not been assigned. **Action:** Assign the entry before attempting to alter or use it.

-continued-

Responses for the mask command (continued)

MAP output **Meaning and action**

```
C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX    XXX XXX XXX     XXX SLTM
            0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
            -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 06 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00
EITHER incorrect optional parameter(s) OR too many parameters.

C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX    XXX XXX XXX     XXX SLTM
            0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
            -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 06 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00
```

Meaning: When entering the command, either incorrect optional parameters or too many parameters were entered.

Action: Re-enter the command.

```
Out of range: <BYTE OFFSET> (0 TO 15)
Enter:  <BYTE OFFSET> [<MASK BYTES>] . . .
```

Meaning: The byte offset parameters was entered incorrectly.

Action: Re-enter the command.

End

match

Function

Use the match command to specify bytes to match on in a monitor or intercept entry. The match bytes are used to compare for matching messages. This command is used to customize a monitor or intercept entry.

match command parameters and variables

Command	Parameters and variables
match	*item_no* *byte_offset* *mask_bytes*

Parameters and variables	Description
byte_offset	This variable specifies the number of bytes used to describe the type of CCS7 messages to monitor or intercept. In a monitor or intercept entry the number of bytes is 16.
item_no	This variable specifies the number of the monitor or intercept entry. Values range from 0 through 7.
mask_bytes	This variable is a string that describes the bytes to match messages against.

Qualifications

None

Examples

The following show examples of the match command.

Examples of the match command

Example	Task, response, and explanation
match 0 01 06 ↵ *where* 0 01 06	specifies the number of the monitor or intercept entry specifies the number of bytes to describe the type of CCS7 messages to monitor or intercept describes how the bytes, starting at the byte_offset, should be matched.
	Task: Change a match offset value. **Response:** See Figure 3-2 for the response. **Explanation:** The offset value is changed.

match (continued)

Figure 3-2xxx
Response to match 0 01 06 command

FW-xxxxx

```
C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
           0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
           -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 05 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:      00 FF 00 00 0F 00 00 00 00 00 00 FF 00 00 00


C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
           0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
           -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 06 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:      00 FF 00 00 0F 00 00 00 00 00 00 FF 00 00 00
```

Responses

The following table shows examples of the match command.

Responses for the match command

MAP output	Meaning and action
`ERROR: MATCH ENTRY 1 IS NOT IN USE`	**Meaning:** Match entry 1 has not been assigned. **Action:** Assign the entry before attempting to alter or use it.

`C7TU MON SIO DPC OPC SLS TYPE`
`NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET`
`0 BOTH ANSI ALL XX SNTS XXX XXX XXX XXX XXX XXX XXX SLTM`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15`
`- - - - - - - - - - -- -- - -- -- --`
`MATCH: 00 06 00 00 02 00 00 00 00 00 05 11 00 00 00`
`MASK: 00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00`
`EITHER incorrect optional parameter(s) OR too many parameters.`
 	
`C7TU MON SIO DPC OPC SLS TYPE`
`NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET`
`0 BOTH ANSI ALL XX SNTS XXX XXX XXX XXX XXX XXX XXX SLTM`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15`
`- - - - - - - - - - -- -- - -- -- --`
`MATCH: 00 06 00 00 02 00 00 00 00 00 05 11 00 00 00`
`MASK: 00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00`
	Meaning: When entering the command, either incorrect optional parameters or too many parameters were entered.
	
	Action: Retry the command.

`Out of range: <BYTE OFFSET> (0 TO 15)` `Enter: <BYTE OFFSET> [<MATCH BYTES>] . . .`	**Meaning:** The byte offset parameter was entered incorrectly. **Action:** Retry the command.

monitor

Function

Use the monitor command to monitor specific CCS7 link messages.

monitor command parameters and variables

Command	Parameters and variables
monitor	link *linkset* *slc* *direction* [in / out / both] *nettype* [ccitt / ansi / ttc]
	ccitt *rout_lbl* [all / label] *ni* [intl / intlsp / natl / natlsp] *priority*
	dpc_frmt basic *pc*
	intl [*intlzone* / *areanetw* / *intlsgpt*]
	austria [*austzone* / *region* / *austsgpt*]
	china [*chinzone* / *exchange* / *chinsigpt*]
	opc_frmt basic *pc*
	intl [*intlzone* / *areanetw* / *intlsgpt*]
	austria [*austzone* / *region* / *austsgpt*]
	china [*chinzone* / *exchange* / *chinsigpt*]
	ccittsls

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Command	Parameters and variables						
monitor	ansi	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mbr	*dpc_cls*	*dpc_ntw*	*opc_mbr*	*opc_cls*	*opc_ntw*	
	ansisls						
	ttc	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mnar	*dpc_sbar*	*dpc_arun*	*opc_mnar*	*opc_sbar*	*opc_arun*	
	ttcsls						
	msg_type	*code*					
	msgbody	*body*					
	hexbytes						

Parameters and variables	Description
ansls	This variable is the signaling link selector of the ANSI message to monitor. Entering 32 monitors all of the SLSs. The value range is 0-32.
areanetw	This variable is the area network of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the area networks. The value range is 0-31.
austsgpt	This variable is the signal point of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-31.
body	The message body to be monitored.
ccittsls	This variable is the signaling link selector (SLS) of the CCITT message to monitor. Entering 16 monitors all of the SLSs. The value range is 0-16.
chinsigpt	This variable is the signal point of the point code in china format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-7.

-continued-

monitor command parameters and variables (continued)

Parameters and variables	Description
chinzone	This variable is the zone of the point code, in china format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-15.
code	The message code corresponding to the message type to be monitored.
direction	This variable is the direction of the message that is being monitored. Possible values are in, out, and both.
dpc_arun	This variable is the destination point code area unit number of the TTC message to monitor. Entering 0 monitors all of the area units. The value range is 0-127.
dpc_cls	This variable is the destination point code cluster number of the ANSI message to monitor. Entering 0 monitors all of the clusters. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message to monitor. Possible values are basic, intl, austria, and china.
dpc_mbr	This variable is the destination point code member number of the ANSI message to monitor. Entering 0 monitors all of the members. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC message to monitor. Entering 0 monitors all of the main areas. The value range is 0-31.
dpc_ntw	This variable is the destination point code network number of the ANSI message to monitor. Entering 0 monitors all of the networks. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC message to monitor. Entering 0 monitors all of the subareas. The value range is 0-15.
exchange	This variable is the exchange of the point code, in china format, of the CCITT message to monitor. Entering 0 monitors all of the exchanges. The value range is 0-127.
hexbytes	This parameter is the message body, in hexadecimal format, of the CCS7 message to be monitored.
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-7.

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Parameters and variables	Description
link	The name of the link corresponding to the linkset to be monitored.
linkset	This variable is the name of the linkset to be monitored.
msgbody	This parameter is the message body of the CCS7 message to be monitored.
msg type	This parameter is the message type of the message to be monitored.
nettype	This variable specifies the network type of the message. Possible values are ccitt, ansi, and ttc.
ni	This variable is the network indicator of the message. It is possible to monitor all of the network indicators. Possible values are intl, intlsp, natl, natlsp, and all.
opc_arun	This variable is the origination point code area unit number of the TTC message to monitor. Entering 0 monitors all of the main units. The value range is 0-127.
opc_cls	This variable is the origination point code cluster number of the ANSI message to monitor. Entering 0 monitors all of the clusters. The value range is 0-255.
opc_frmt	This parameter is the origination point code format of the CCITT test message to monitor. Possible values are basic, intl, austria, and china.
opc_mbr	This variable is the origination point code member number of the ANSI message to monitor. Entering 0 monitors all of the members. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC message to monitor. Entering 0 monitors all of the main areas. The value range is 0-31.
opc_ntw	This variable is the origination point code network number of the ANSI message to monitor. Entering 0 monitors all of the networks. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC message to monitor. Entering 0 monitors all of the subareas. The value range is 0-15.
pc	This variable is the point code of the CCITT message to monitor, in basic format. Entering 0 monitors all of the point codes. The value range is 0-16383.
priority	This variable is the CCS7 priority to monitor. The value range is 0-4, (4=all).
region	This variable is the region of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the regions. The value range is 0-15.

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Parameters and variables	Description
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label will automatically select all messages of any routing label. The value range is all or label.
slc	This variable is the link number of the linkset to be monitored. The value range is 0-15.
ttcisls	This variable is the signaling link selector of the TTC message to monitor. Entering 16 monitors all of the SLSs. The value range is 0-16.

End

Qualifications

None

monitor (continued)

Examples

The following table provides examples of the monitor command.

Examples of the monitor command

Example	**Task, response, and explanation**
monitor link c7lkset2 1 both ansi all sltm ↵ c7lkset1 1 both ansi all sltm	
monitor link c7lkset1 0 both ansi label natl 4 1 1 1 0 0 0 32 iam ↵ c7lkset1 0 both ansi label natl 4 1 1 1 0 0 0 32 iam	

Responses

The following table provides explanations of the responses to the monitor command.

Responses for the monitor command

MAP output	Meaning and action
`ONLY FOUR MONITORS ALLOWED IN FIELD ENVIRONMENT`	**Meaning:** The user attempted to monitor when four entries were already in the match table. The field environment allows only four entries in the match table. The monitor command does not execute. **Action:** Remove an existing monitor, or monitor request, and retry the monitor command.
`ERROR: invalid linkset name`	**Meaning:** The user specified a linkset name that does not appear in table C7LKSET. **Action:** Verify the linkset name and retry the monitor command with the correct linkset.
`ERROR: INVALID LINK NUMBER`	**Meaning:** The user specified a link number that is not datafilled for the specified linkset in the C7LINK table. The monitor command does not execute. **Action:** Verify the link number and retry the monitor command with the correct number.
`ERROR: MATCHING msg code MESSAGES IS NOT PERMITTED`	**Meaning:** The user entered a message code that was recognized by C7TU, but a match is not allowed for the specified code. The monitor command does not execute. **Action:** Verify the message code and retry the monitor command with a correct message code.
`ERROR: INVALID MSGCODE msg code`	**Meaning:** The user entered a message code that is not recognized by C7TU. The monitor command does not execute. **Action:** Verify the message code and retry the command.

-continued-

monitor (end)

Responses for the monitor command (continued)

MAP output	Meaning and action
`ERROR: MATCH TABLE FULL`	**Meaning:** The user attempted to monitor a message when the match table already had four entries. No further requests can be made. The monitor command does not execute. **Action:** Remove an existing entry from the match table and retry the command.
`WARNING: C7TU IS NOT ENABLED IN ANY PMs`	**Meaning:** The command is executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used, with the select command.
`WARNING: C7TU IS NOT ENABLED ON pm num WHERE THIS LINK RESIDES`	**Meaning:** The monitor command executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used, with the select command.
End	

quit

Function

Use the quit command to exit from the C7TU_ILPT7 directory and return to the CI MAP level.

quit command

Command	Parameters and variables
quit	There are no parameters or variables.

Qualifications

None

Example

The following table provides an example of the quit command.

Example of the quit command

Example	Task, response, and explanation
quit ↵	**Task:** This command is used to quit this directory. **Response:** `CI:` **Explanation:** This command exits this directory and returns to the CI MAP level.

Response

The following table provides an explanation of the response to the quit command.

Response for the quit command

MAP output	Meaning and action
`CI:`	**Meaning:** This prompt indicates that the user has returned to the CI MAP level. **Action:** Access another directory from the CI MAP level or end this session.

remove

Function

Use the remove command to remove monitor or intercept entries, or to remove test message entries.

remove command parameters and variables

Command	Parameters and variables
remove	match [*num* | all] message [*num* | all]

Parameters and variables	Description
all	This parameter specifies that all entries be removed.
match	This parameter removes an entry from the match table.
message	This parameter removes an entry from the message table.
num	This variable is the number of the entry to be removed.

Qualifications

The limits and operations of the Match Table and the Message Table are of the global nature. If a user issues a remove match all or a remove message all command, the respective table will be cleared.

Example

The following table provides an example of the remove command.

Examples of the remove command

Example	Task, response, and explanation
remove match 8 ↵ *where* match 8	removes an entry from the match table specifies what entry to be removed
	Task: Remove entry 8 from the match table.
	Explanation: No system response. Entry 8 is removed from the table.

remove (end)

Responses

The following table provides explanations of the responses to the remove command.

Responses for the remove command

MAP output	Meaning and action
`Message number <num> has not been built.`	**Meaning:** The user entered a message number which has not been built using the build command. **Action:** Check the message number and retry the command.
`Item number <num> is currently not defined in the match table.`	**Meaning:** The user entered a match entry number which has not been built using the monitor or intercept commands. **Action:** Check the message number and retry the command.
`Must specify Entry Number or ALL for REMOVE`	**Meaning:** The user has not entered a number in the range of 0 to 7 or the parameter all for the remove command. **Action:** Retry the command with a valid entry number or the parameter all.

restore

Function

Use the restore command to restore monitor and intercept entries in MSB7s. The monitor and intercept entries are restored automatically in the LIU7s. This command is used following a restart reload.

restore command parameters and variables

Command	Parameters and variables
restore	There are no parameters or variables for this command.

Qualifications

The restore command will enable monitors and intercepts on certain types of restarts.

Examples

The following shows an example of the restore command.

Examples of the restore command

Example	Task, response, and explanation
restore ↵	**Task:** Enable the monitors and intercepts that were disabled on a restart. **Explanation:** There is no system response. The monitors and intercepts are enabled.

Responses

None

select

Function

Use the select command to select the peripherals that enable the matching of CCS7 messages with the match table for the specified link. These peripherals are

- link interface unit 7 (LIU7)
- message switch and buffer 7 (MSB7)

The select command can also release a link that is currently selected.

The select command can also be used to vary the C7TU log throttle in the selected LIU7. By using the select command and throttle variable, you can specify the number of messages monitored per minute.

select command parameters and variables

Command	Parameters and variables
select	*pm_select* [all / liu7 [*number* / all / *msg_trc* [on / off] / *throttle*] / msb7]

Parameters and variables	Description
all	This parameter selects all datafilled MSB7s or LIU7s.
msg_trc	This variable either selects a link (on) or releases a link (off). The default is on.
number	This variable is the LIU7 or the MSB7 number.
pm_select	This variable is the link specification. The following parameters are available: all liu7 msb7
throttle	This variable is used to vary the C7TU log throttle in the selected LIU7. Valid range is 1 through 60.

select (continued)

Qualifications

The following risks exist in increasing the throttle value above its default setting:

- At a higher throttle rate, there is a risk of running out of letters to receive logs sent up from the LIU7s.
- At high traffic levels, there is the potential for message loss if the user does not take care in the types of messages being monitored for.

Examples

The following table provides examples of the select command.

Examples of the select command

Example	**Task, response, and explanation**
select msb7 0 ↵ *where* msb7 is the link specification 0 is the MSB7 number	**Task:** This command is used to select MSB7 link 0. **Response:** `SELECT done`
select msb7 1 off ↵ *where* msb7 is the link specification. 1 is the MSB7 number. off is the option to release a link	**Task:** This command is used to release MSB7 link 1. **Response:** `SELECT done`

Responses

The following table provides explanations of the responses to the select command.

Responses for the select command

MAP output	Meaning and action
`ERROR: WRONG PM SELECTION`	**Meaning:** The user entered a parameter that was not among the valid choices for PM selection (all, msb7, liu7). The select command does not execute. **Action:** Retry the command with a valid parameter.
`ONLY FOUR SELECTS ALLOWED IN FIELD ENVIRONMENT`	**Meaning:** The user attempted to select when four entries were already in the match table. The field environment allows only four entries in the match table. The select command does not execute. **Action:** Release a link that is currently selected and retry the select command.
`LIU7 num IS NOT INSERVICE` `TRACING WILL BE ENABLED WHEN THE LIU7 GOES INSERVICE`	**Meaning:** The user selected an LIU7 number that is not in service. Monitoring starts when the LIU7 comes in service.The select command continues execution. **Action:** None
`LIU7 num IS NOT INSERVICE` `THE LIU7 HAS BEEN DESELECTED`	**Meaning:** The user released an LIU7 number that is currently not in service. Monitoring does not start when the LIU7 comes in service, because the link is released. The select command continues execution. **Action:** None
`LIU7 num IS NOT DEFINED FOR THIS OFFICE`	**Meaning:** The user attempted to select an LIU7 that is not datafilled for this office. The select command does not execute. **Action:** Retry the select command specifying an LIU7 that is datafilled for this office.

-continued-

select (end)

Responses for the select command (continued)

MAP output	Meaning and action
`MSB7 num IS NOT INSERVICE`	
	Meaning: The user specified an MSB7 that is not currently in service. The select command does not execute.
	Action: Check the status of the MSB7 and retry the select command.
`MSB7 num IS NOT DEFINED FOR THIS OFFICE`	
	Meaning: The user attempted to select an MSB7 that is not datafilled for this office. The select command does not execute.
	Action: Retry the select command specifying an MSB7 that is datafilled for this office.
End	

send

Function

Use the send command to take the specified message from the message table and inject it into the given link. Once a message is sent, the system treats it the same way as any other CCS7 message.

send command parameters and variables

Command	Parameters and variables			
send	*msg*	*direct*	*linkset*	*slc*

Parameters and variables	Description
direct	This variable is the sending direction for the specified message, either in on the link, into the node; or out on the link, into the network.
linkset	This variable is the name of the linkset on which to send the test message.
msg	This variable is the message number of the test message to be sent.
slc	This variable is the link number of the linkset on which to send the test message.

Qualifications

None

Example

The following table provides an example of the send command.

Example of the send command

Example	Task, response, and explanation
send 0 in c7lkset1 0 ↵ *where* 0 is the message number of the test message to be sent in is the sending direction for the specified message c7lkset1 is the name of the linkset on which to send the test message 0 is the link number of the linkset on which to send the test message	**Task:** This command is used to take the specified message from the message table and inject it into the given link.

send (continued)

Responses

The following table provides explanations of the responses to the send command.

Responses for the send command

MAP output	Meaning and action
`MESSAGE NUMBER msg HAS NOT BEEN BUILT YET`	**Meaning:** The user attempted to send a message specifying a message number that has not been built with the build command. The send command does not execute. **Action:** Verify the message number and retry the send command.
`INVALID LINKSET NAME`	**Meaning:** The user entered a linkset name that is not datafilled in the C7LKSET table.The send command does not execute. **Action:** Verify the linkset name and retry the send command.
`ERROR: INVALID LINK NUMBER`	**Meaning:** The user entered a link number that is not datafilled for the specified linkset in the C7LINK table. The send command does not execute. **Action:** Verify the link number and retry the send command.
`UNABLE TO RESOLVE POINT CODES`	**Meaning:** The user attempted to send a message using a default linkset. The error occurred either because this linkset is not part of a routeset, or because the routeset is not a valid network. The send command does not execute. **Action:** Verify that the specified linkset is part of a routeset, and that the routeset is part of a valid network. Retry the send command.
`INVALID NETWORK TYPE IN DPC`	**Meaning:** The user specified a network type other than ANSI, CCITT, or TTC. The send command does not execute. **Action:** Change the network type of the message to one of the three valid network types, then retry the send command.

-continued-

Responses for the send command (continued)

MAP output	Meaning and action
`ERROR: pm num IS NOT INSERVICE`	**Meaning:** The peripheral that is attached to the specified link, in the linkset, is not in service. The send command does not execute. **Action:** Assure that the peripheral is in service or choose a different link, then retry the send command.
`THE LIU7 IS NOT IN USE BY C7TU`	**Meaning:** The LIU7 attached to the specified link is not in use by C7TU. The send command does not execute. **Action:** Use the select command to select the LIU7, then retry the send command.
`WARNING: LINK MUST BE IN SYNC STATE FOR MESSAGE INJECTION` `WARNING: MESSAGE WILL BE SENT ANYWAY`	**Meaning:** The peripheral that is attached to the specified link in the linkset is in service, but the link state is not set to synchronized. The message is sent to the peripheral. **Action:** None

End

status

Function

Use the status command to display the current status of the C7TU environment. The display includes links that are currently selected with the select command and a shortened dump of the entries in the match table.

status command parameters and variables

Command	Parameters and variables
status	*disp_frm* [brief / verbose]

Parameters and variables	Description
brief	This parameter displays only the links that are selected.
disp_frm	This variable defines the type of output display.
verbose	This parameter displays all links, marking the ones that are selected.

Qualifications

None

Examples

The following table provides an example of the status command.

Examples of the status command

Example	Task, response, and explanation
status verbose ↵	

Task: Print the status of all LIU7s.

Response:

```
LIU7        FTA     TRACING     THROTTLE
201     4248 1000   ENABLE      20
205     4248 1000   DISABLE     10
207     4248 1000   DISABLE     10

ITEM DISP NI NETTYPE DIR LINK DIST MSG SI H0 H1

0 MON ALL ANSI BOTH LS001 1 EXT XXX ISUP XXX XXX
```

Explanation: The status of all LIU7s was printed.

status (end)

Response

The following table provides an explanation of the response to the status command.

Response for the status command

MAP output	Meaning and action
********** C7TU LINK ENVIRONMENT ********** MSB7 NODE TRACING MSGS NACK msb node trace msg nack LIU7 FTA TRACING THROTTLE liu fta trace 20 ITEM DISP NETW DIR ST DIST MSG SI H0 HI num disp net dir st dist msg si h0 h1	**Meaning:** The display includes links that are currently selected with the select command and a shortened dump of the entries in the match table. **Action:** None

alter

Function

Use the alter command to modify a test message in the C7TU message table by changing individual bytes. The old test message is overwritten with the altered version.

alter command parameters and variables

Command	Parameters and variables						
alter	*mssg_num*	*selector*	routing / length / data / parms	*label*	ccitt / ansi / ttc		
	ccitt	*rout_lbl*	all / label	*ni*	intl / intlsp / natl / natlsp	*priority*	
		dpc_frmt	basic	*pc*			
			intl	*intlzone* / *areanetw* / *intlsgpt*			
			austria	*austzone* / *region* / *austsigpt*			
			china	*chinzone* / *exchange* / *chinsigpt*			
		opc_frmt	basic	*pc*			
			intl	*intlzone* / *areanetw* / *intlsgpt*			
			austria	*austzone* / *region* / *austgpt*			
			china	*chinzone* / *exchange* / *chinsigpt*			
		ccittsls					

-continued-

alter (continued)

alter command parameters and variables

alter ansi *rout_lbl* [all | label] *ni* [intl | intlsp | natl | natlsp] *priority*
dpc_mbr *dpc_cls* *dpc_ntw* *opc_mbr* *opc_cls* *opc_ntw*
ansisls

ttc *rout_lbl* [all | label] *ni* [intl | intlsp | natl | natlsp] *priority*
dpc_mnar *dpc_sbar* *dpc_arun* *opc_mnar* *opc_sbar* *opc_arun*
ttcsls

length data [*offset* | *hexbytes*] *userdefined parameters*

Parameters and variables	Description
ansisls	This variable is the signaling link selector of the ANSI test message. The value range is 0-31.
areanetw	This variable is the area network of the point code, in intl format, of the CCITT test message. The value range is 0-255.
austria	
austsigpt	This variable is the signal point of the point code, in austria format, of the CCITT test message. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT test message. The value range is 0-31.
basic	
ccittsls	This variable is the signaling link selector of the CCITT test message. The value range is 0-15.
china	
chinsigpt	This variable is the signal point of the point code, in china format, of the CCITT test message. The value range is 0-7.

-continued-

alter (continued)

alter command parameters and variables (continued)

Parameters and variables	Description
chinzone	This variable is the zone of the point code, in china format, of the CCITT test message. The value range is 0-15.
dpc_arun	This variable is the destination point code area unit number of the TTC test message. The value range is 0-255.
dpc_cls	This variable is the destination point code cluster number of the ANSI test message. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message. Possible values are basic, intl, austria, and china.
dpc_mbr	This variable is the destination point code member number of the ANSI test message. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC test message. The value range is 0-255.
dpc_ntw	This variable is the destination point code network number of the ANSI test message. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC test message. The value range is 0-255.
exchange	This variable is the exchange of the point code, in china format, of the CCITT test message. The value range is 0-127.
hex_bytes	This variable string is the new hex bytes to overwrite the existing bytes in the message.
hex bytes	This parameter is the message body, in hexadecimal format, of the CCS7 message being built.
intl	
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT test message. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT test message. The value range is 0-7.
msg_body	This parameter is the message body of the CCS7 test message being altered.

-continued-

alter (continued)

alter command parameters and variables (continued)

Parameters and variables	Description
msg_type	This parameter is the message type of the test message being altered.
mssg_num	This variable is the message number of the selected message. The value range is 0-7.
ni	This variable is the network indicator of the message. Possible values are intl, intlsp, natl, and natlsp.
offset	This variable is the starting offset of the CCS7 message bytes to be altered. The value range is 0-279.
opc_arun	This variable is the origination point code area unit number of the TTC test message. The value range is 0-255.
opc_cls	This variable is the origination point code cluster number of the ANSI test message. The value range is 0-255.
opc_mbr	This variable is the origination point code member number of the ANSI test message. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC test message. The value range is 0-255.
opc_ntw	This variable is the origination point code network number of the ANSI test message. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC test message. The value range is 0-255.
pc	This variable is the point code of the CCITT message in basic format. The value range is 0-16838.
priority	This variable is the CCS7 priority of the test message. The value range is 0-3.
region	This variable is the region of the point code, in austria format, of the CCITT test message. The value range is 0-15.
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label automatically selects all messages of any routing label. The default label automatically sets the priority, origination point code (OPC), destination point code (DPC), and signaling link selector (SLS) of the message. The value range is default or label.

-continued-

alter command parameters and variables (continued)

Parameters and variables	Description
selector	This variable selects the bytes to be modified.
ttcsls	This variable is the signaling link selector of the TTC test message. The value range is 0-15.
value	This variable is the new length of the CCS7 test message being altered. The value range is 0-279.

End

Qualifications

None

alter (continued)

Example

The following table provides an example of the alter command.

Example of the alter command

Example	**Task, response, and explanation**

alter 0 200 ↵
where

0 is the message number of the selected message
200 is the new length of the CCS7 test message being altered

Task: This command is used to change the length of a specified message.

Response:

```
C7TU MESSAGE       SIO           DPC          OPC       SLS
  num type length  ni pr  si   mem clu net  mem clu net
   0  SLTM   9      2  3   2   001 001 001  002 002 002    0
  Message bytes:
   0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19
  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
  00 00 09 00 00 02 01 B2 01 01 01 02 02 02 00 11 01 01
  C7TU MESSAGE       SIO           DPC          OPC       SLS
  num type length  ni pr  si   mem clu net  mem clu net
   0  SLTM  200     2  3   2   001 001 001  002 002 002    0
  Message bytes:
   0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19
  -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
  00 00 C8 00 00 02 01 B2 01 01 01 02 02 02 00 11 01 01
```

Explanation: The system shows the display of the original message number 0 and the subsequent display of the altered message number 0.

Responses

The following table provides explanations of the responses to the alter command.

Responses for the alter command

MAP output	Meaning and action
`MESSAGE NUMBER num HAS NOT BEEN BUILT YET`	**Meaning:** The user entered a message number that has not been built in the message table. The alter command does not execute. **Action:** Retry the alter command with a valid message number.
`THE OFFSET DOES NOT FALL WITHIN THE DEFINED MESSAGE AREA`	**Meaning:** The user entered a bytes offset that is outside the current length of the test message. The test message is displayed in the same format as the display command. The alter command does not execute. **Action:** Retry the command with the correct offset.

`C7TU MESSAGE SIO DPC OPC SLS`
`num type length ni pr si mem clu net mem clu net`
`num mt len ni pr si dpc opc sls`
`Message bytes:`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19`
`-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --`
`hex bytes`
	Meaning: This response indicates that the alter command executed successfully. The specified message is displayed, in the format as shown above, before and after changes are made to the message table.
	
	Action: None

build

Function

Use the build command to build a test message and save it in the message table. This message can then be sent out on a CCS7 link, using the send command.

build command parameters and variables

Command	Parameters and variables						
build	*mssg_num*	*network_type*		ccitt ansi ttc			
	ccitt	*rout_lbl*	all label	*ni*	intl intlsp natl natlsp	*priority*	
		dpc_frmt	basic	*pc*			
			intl	*intlzone* *areanetw* *intlsgpt*			
			austria	*austzone* *region* *austsigpt*			
			china	*chinzone* *exchange* *chinsigpt*			
		opc_frmt	basic	*pc*			
			intl	*intlzone* *areanetw* *intlsgpt*			
			austria	*austzone* *region* *austsigpt*			
			china	*chinzone* *exchange* *chinsigpt*			
		ccittsls					

-continued-

build (continued)

build command parameters and variables (continued)

Command	Parameters and variables						
build	ansi	*rout_lbl*	[all | label]	*ni*	[intl | intlsp | natl | natlsp]		*priority*
	dpc_mbr	*dpc_cls*	*dpc_ntw*	*opc_mbr*	*opc_cls*		*opc_ntw*
	ansisls						
	ttc	*rout_lbl*	[all | label]	*ni*	[intl | intlsp | natl | natlsp]		*priority*
	dpc_mnar	*dpc_sbar*	*dpc_arun*	*opc_mnar*	*opc_sbar*		*opc_arun*
	ttcsls						
	length	data	[*offset* | *hexbytes*]	*userdefined parameters*			

Parameters and variables	Description
areanetw	This variable is the area network of the point code, in intl format, of the CCITT test message. The value range is 0-255.
ansisls	This variable is the signaling link selector of the ANSI test message. The value range is 0-31.
austria	
austsigpt	This variable is the signal point of the point code, in austria format, of the CCITT test message. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT test message. The value range is 0-31.
basic	
ccittsls	This variable is the signaling link selector of the CCITT test message. The value range is 0-15.
china	

-continued-

build (continued)

build command parameters and variables (continued)

Parameters and variables	Description
chinsigpt	This variable is the signal point of the point code, in china format, of the CCITT test message. The value range is 0-7.
chinzone	This variable is the zone of the point code, in china format, of the CCITT test message. The value range is 0-15.
dpc_arun	This variable is the destination point code area unit number of the TTC test message. The value range is 0-255.
dpc_cls	This variable is the destination point code cluster number of the ANSI test message. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message. Possible values are basic, intl, austria, and china.
dpc_mbr	This variable is the destination point code member number of the ANSI test message. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC test message. The value range is 0-255.
dpc_ntw	This variable is the destination point code network number of the ANSI test message. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC test message. The value range is 0-255.
exchange	This variable is the exchange of the point code, in china format, of the CCITT test message. The value range is 0-127.
hex bytes	This parameter is the message body, in hexadecimal format, of the CCS7 message being built.
intl	
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT test message. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT test message. The value range is 0-7.
msg body	This parameter is the message body of the CCS7 test message being altered.

-continued-

build (continued)

build command parameters and variables (continued)

Parameters and variables	Description
msg type	This parameter is the message type of the test message being altered.
mssg_num	This variable is the test message number to be built. The value range is 0-7.
network_type	This variable specifies the network type of the message. Possible values are ccitt, ansi, and ttc.
ni	This variable is the network indicator of the message. Possible values are intl, intlsp, natl, and natlsp.
opc_arun	This variable is the origination point code area unit number of the TTC test message. The value range is 0-255.
opc_cls	This variable is the origination point code cluster number of the ANSI test message. The value range is 0-255.
opc_frmt	This parameter is the origination point code format of the CCITT test message. Possible values are basic, intl, austria, and china.
opc_mbr	This variable is the origination point code member number of the ANSI test message. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC test message. The value range is 0-255.
opc_ntw	This variable is the origination point code network number of the ANSI test message. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC test message. The value range is 0-255.
pc	This variable is the point code of the CCITT message in basic format. The value range is 0-16383.
priority	This variable is the CCS7 priority of the test message. The value range is 0-3.
region	This variable is the region of the point code, in austria format, of the CCITT test message. The value range is 0-15.

-continued-

build command parameters and variables (continued)

Parameters and variables	Description
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label automatically selects all messages of any routing label. The default label automatically sets the priority, origination point code (OPC), destination point code (DPC), and signaling link selector (SLS) of the message.The value range is default or label.
ttcsls	This variable is the signaling link selector of the TTC test message. The value range is 0-15.

End

Qualifications

The build command is qualified by the following exceptions, restrictions and limitations:

CAUTION

The user should exercise caution with the build command. The system cannot distinguish between these CCS7 test messages and normal CCS7 messages once they are sent into the network.

build (continued)

Example

The following table provides an example of the build command.

Example of the build command

Example	Task, response, and explanation
build 0 *ansi natl* 0 1 2 3 6 7 8 0 *sltm parms* 01 01 ↵ *where* 0 is the test message number of the selected message ansi variable is the network type of the message natl is the type of routing label used in the CCS7 message 0 is the CCS7 priority to intercept 1 is the destination point code member number of the ANSI test message 2 is the destination point code cluster number of the ANSI test message 3 is the destination point code network number of the ANSI test message 6 is the origination point code member number of the ANSI test message 7 is the origination point code cluster number of the ANSI test message 8 is the origination point code network number of the ANSI test message 01 is a user defined parameter 01 is a user defined parameter	**Task:** This command is used to build a specified message. **Response:** `MESSAGE 0 WAS BUILT SUCCESSFULLY` **Explanation:** The specified message was successfully built.

Responses

The following table provides explanations of the responses to the build command.

Responses for the build command

MAP output	Meaning and action
`MESSAGE WAS NOT BUILT SUCCESSFULLY`	**Meaning:** The user entered an invalid message number. The build command does not execute. **Action:** Retry the build command with a valid message number.

-continued-

Responses for the build command (continued)

MAP output	Meaning and action
MESSAGE num WAS NOT BUILT SUCCESSFULLY	**Meaning:** The user entered errors in the message input. The message number num is echoed in the error message. The build command does not execute. **Action:** Retry the build command with a valid message input.
ERROR: INVALID MESSAGE CODE msg code	**Meaning:** The user entered a message code that is not recognized by C7TU. The build command does not execute. **Action:** Retry the build command with a valid message code.
ERROR: CANNOT BUILD A msg MESSAGE	**Meaning:** The user entered a recognizable code, but the utility cannot build a message for the specified code. The message code is echoed in the error message. The build command does not execute. **Action:** Retry the build command with a valid message code.
MESSAGE num WAS BUILT SUCCESSFULLY	**Meaning:** The message was built by the C7TU and stored in the message table with message number num. **Action:** None

End

display

Function

Use the display command to display the messages stored in a disk file. The file must be closed before using this command.

display command parameters and variables

Command	Parameters and variables
display	*file_name* *format* [short / long]

Parameters and variables	Description
file_name	This variable specifies the name of the file in which messages are stored.
format	This optional variable specifies the output format. The default is short.
long	This parameter specifies that in this format the data field in the message will be decoded according to the user part (such as TUP+, ISUP). Long parameters are output in hexadecimal form with spaces between bytes.
short	This parameter specifies that those messages that are short and decoded as bits in the CCITT recommendations are displayed in binary form.

Qualifications

None

display (continued)

Example

The following table provides an example of the display command.

Example of the display command

Example	**Task, response, and explanation**

display ***tracefile*** **long** ↵
where

tracefile	specifies the name of the file that messages are stored in
long	specifies a long format output

Task: This command is used to display a specified file in a required format.

Response:

```
C7 HEADER: length= link= clli= C7
SIO: NI= PI= SI= C7
LABEL: DPC= OPC= CIC= SLS= C7
DATA: F1 A5 02 C9 67
........
Incoming IAM on ISUP trunk LONDONOG 0
OPC: INTL CCITT 4-5-3
CIC:22
 Parameter-name-1
:  4F C3 33 12
 Parameter-name-2:
0010 1101 1101 1010 0011 1001
:
:
:
:Parameter-name-n:
12 22 CC AD 01
```

Explanation: The system has provided a display of a specified file in long format.

Response

The following table provides an explanation of the response to the display command.

Response for the display command

MAP output	Meaning and action
`File cannot be found.`	**Meaning:** The file entered cannot be found in the current symbol dictionary. The command halts execution. This could be due to one of the following reasons: ▪ wrong file name entered ▪ correct file name but it is not in the symbol dictionary **Action:** Verify the file name and enter the correct name, or list the files in the volumes where the file is likely to be.

dump

Function

Use the dump command to display the match table, allowing the user to see the criteria for monitor and intercept requests of C7TU messages.

dump command parameters and variables

Command	Parameters and variables	
dump	*start*	*stop*

Parameters and variables	Description
start	This variable is an entry number defining the starting position for the display in the match table.
stop	This variable is an entry number defining where the display stops in the match table.

Qualifications

None

dump (continued)

Example

The following table provides an example of the dump command.

Example of the dump command

Example	Task, response, and explanation

dump 0 1 ↵
where

0 is an entry number defining the starting position for the display in the match table
1 is an entry number defining where the display stops in the match table

Task: This command is used to display the match table from entry number 0 to 1.

Response:

```
MATCH COUNT: 3
C7TU {MONITOR, INTERCEPT}
            SIO            DPC           OPC
NUM  DIR  NET   NI PR  SI MEM CLU NET  MEM CLU NET  SLS  MSGT
YPE
 0   BOTH ANSI   2 00   5 001 002 003  000 000 000   00  IAM
           0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
          -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
Match:   00 04 00 00 82 01 01 01 00 00 00 00 01
Mask:    00 FF 00 00 CF FF FF FF 00 00 00 00 1F

C7TU INTERCEPT      SIO            DPC           OPC
NUM  DIR  NET   NI PR  SI MEM CLU NET  MEM CLU NET  SLS  MSGT
YPE
 1   BOTH ANSI   0 00   2 000 000 000  000 000 000   00  SLTM
           0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
          -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
Match:   00 04 00 00 02 00 00 00 00 00 00 00 11
Mask:    00 FF 00 00 0F 00 00 00 00 00 00 00 1F
```

Explanation: The user has been provided with a display of the match table from entry numbers 0-1.

Responses

The following table provides explanations of the responses to the dump command.

Responses for the dump command

MAP output	Meaning and action
ERROR: FIRST ITEM MUST NOT BE GREATER THAN LAST ITEM	**Meaning:** The user attempted to display a range where the first item had a larger entry number in the match table than the last item. The dump command does not execute. **Action:** Verify the start and stop numbers and retry the command with a correct range.
MATCH COUNT: n C7TU MONITOR, INTERCEPT SIO DPC OPC NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET SLS MSGT YPE num dir net ni pr si dpc opc sls mt 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- Match: hex bytes Mask: hex bytes	**Meaning:** The dump command uses the above format to show the user the contents of the C7TU match table. **Action:** None

help

Function

Use the help command to receive online documentation for this directory. If entered alone, the help command takes the default value (all). If entered with the name of a valid C7TULINK_ILPT7 directory command, the help command provides a short description of that command.

help command parameters and variables

Command	Parameters and variables
help	all *command _name*

Parameters and variables	Description
all	This parameter produces a list of all commands in this directory.
command_name	This variable, when used with the help command, produces a short description of the specified command.

Qualifications

None

Example

The following table provides an example of the help command.

Example of the help command

Example	Task, response, and explanation

help status ↵
where
 	
status is the name of the command
	Task: Provide a short description of the command.
	
	Response:
	`DISPLAY THE STATUS OF THE C7TU LINK ENVIRONMENT`
	`Parms: [ <BRIEF> {BRIEF,`
	`VERBOSE}]`
	
	Explanation: A short description of the command and the command parameters and variables are displayed.

help (end)

Response

The following table provides an explanation of the response to the help command.

Response for the help command

MAP output	Meaning and action
`MODULE NOT LOADED OR NEEDS OTHER CI INCREMENT TO BE BUILT.`	**Meaning:** The directory the user is trying to access is not loaded. **Action:** None

intercept

Function

Use the intercept command to intercept CCS7 messages coming off the link. The intercept command accesses the match table to remove the message from the link. The CCS7 system never sees the message.

intercept command parameters and variables

Command	Parameters and variables							
intercept	*linkset*	*slc*	*direction*	[in / out / both]	*nettype*	[ccitt / ansi / ttc]		
	ccitt	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*		
		dpc_frmt	basic	*pc*				
			intl	[*intlzone* / *areanetw* / *intlsgpt*]				
			austria	[*austzone* / *region* / *austsgpt*]				
			china	[*chinzone* / *exchange* / *chinsigpt*]				
		opc_frmt	basic	*pc*				
			intl	[*intlzone* / *areanetw* / *intlsgpt*]				
			austria	[*austzone* / *region* / *austsgpt*]				
			china	[*chinzone* / *exchange* / *chinsigpt*]				
		ccittsls						

-continued-

intercept (continued)

intercept command parameters and variables (continued)

Command	Parameters and variables						
intercept	ansi	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mbr	*dpc_cls*	*dpc_ntw*	*opc_mbr*	*opc_cls*	*opc_ntw*	
	ansisls						
	ttc	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mnar	*dpc_sbar*	*dpc_arun*	*opc_mnar*	*opc_sbar*	*opc_arun*	
	ttcsls						
	msg_type						
	msgbody						
	hexbytes						

Parameters and variables	Description
ansls	This variable is the signaling link selector of the ANSI message to intercept. Entering 32 intercepts all of the SLSs. The value range is 0-32.
areanetw	This variable is the area network of the point code, in intl format, of the CCITT message to intercept. Entering 0 intercepts all of the area networks. The value range is 0-31.
austsgpt	This variable is the signal point of the point code, in austria format, of the CCITT message to intercept. Entering 0 intercepts all of the signal points. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT message to intercept. Entering 0 intercepts all of the zones. The value range is 0-31.
ccittsls	This variable is the signaling link selector (SLS) of the CCITT message to intercept. Entering 16 intercepts all of the SLSs. The value range is 0-16.
chinsigpt	This variable is the signal point of the point code in china format, of the CCITT message to intercept. Entering 0 intercepts all of the signal points. The value range is 0-7.
chinzone	This variable is the zone of the point code, in china format, of the CCITT message to intercept. Entering 0 intercepts all of the zones. The value range is 0-15.

-continued-

intercept (continued)

intercept command parameters and variables (continued)

Parameters and variables	Description
direction	This variable is the direction of the message that is being intercepted. The posible values are: in out both
dpc_arun	This variable is the destination point code area unit number of the TTC message to intercept. Entering 0 intercepts all of the area units. The value range is 0-127.
dpc_cls	This variable is the destination point code cluster number of the ANSI message to intercept. Entering 0 intercepts all of the clusters. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message to intercept. Possible values are basic, intl, austria, or china.
dpc_mbr	This variable is the destination point code member number of the ANSI message to intercept. Entering 0 intercepts all of the members. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC message to intercept. Entering 0 intercepts all of the main areas. The value range is 0-31.
dpc_ntw	This variable is the destination point code network number of the ANSI message to intercept. Entering 0 intercepts all of the networks. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC message to intercept. Entering 0 intercepts all of the subareas. The value range is 0-15.
exchange	This variable is the exchange of the point code, in china format, of the CCITT message to intercept. Entering 0 intercepts all of the exchanges. The value range is 0-127.
hexbytes	This parameter is the message body, in hexadecimal format, of the CCS7 message to be intercepted.
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT message to monitor. Entering 0 intercepts all of the signal points. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT message to intercept. Entering 0 intercepts all of the zones. The value range is 0-7.
linkset	This variable is the name of the linkset to be intercepted.

-continued-

intercept (continued)

intercept command parameters and variables (continued)

Parameters and variables	Description
msg type	This parameter is the message type of the message to be intercepted.
msgbody	This parameter is the message body of the CCS7 message to be intercepted.
nettype	This variable specifies the network type of the message. There are currently three accepted network types: • ccitt • ansi • ttc
ni	This variable is the network indicator of the message. It is possible to intercept all of the network indicators. The value range is intl, intlsp, natl, natlsp, or all.
opc_arun	This variable is the origination point code area unit number of the TTC message to intercept. Entering 0 intercepts all of the main units. The value range is 0-127.
opc_cls	This variable is the origination point code cluster number of the ANSI message to intercept. Entering 0 intercepts all of the clusters. The value range is 0-255.
opc_frmt	This parameter is the origination point code format of the CCITT text message to intercept. Possible values are basic, intl, austri, or china.
opc_mbr	This variable is the origination point code member number of the ANSI message to intercept. Entering 0 intercepts all of the members. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC message to intercept. Entering 0 intercepts all of the main areas. The value range is 0-31.
opc_ntw	This variable is the origination point code network number of the ANSI message to intercept. Entering 0 intercepts all of the networks. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC message to intercept. Entering 0 intercepts all of the subareas. The value range is 0-15.
priority	This variable is the CCS7 priority to intercept. The value range is 0-4, (4 = all).
pc	This variable is the point code of the CCITT message to intercept, in basic format. Entering 0 intercepts all of the point codes. The value range is 0-16383.

-continued-

intercept command parameters and variables (continued)

Parameters and variables	Description
region	This variable is the region of the point code, in austria format, of the CCITT message to intercept. Entering 0 intercepts all of the regions. The value range is 0-15.
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label will automatically select all messages of any routing label. Possible values are all or label.
slc	This variable is the link number of the linkset to be intercepted. The value range is 0-15.
ttcisls	This variable is the signaling link selector of the TTC message to intercept. Entering 16 intercepts all of the SLSs. The value range is 0-16.

End

Qualifications

The intercept command is qualified by the following exceptions, restrictions and limitations:

CAUTION

Caution must be used with the intercept command, as removing a CCS7 message may have consequences for the node and the network.

Example

The following table provides an example of the intercept command.

Example of the intercept command

Example	Task, response, and explanation
intercept	**C7LKSET1 0 BOTH ANSI LABEL NATL 4 1 1 1 0 0 0 32 CSLTM** ↵

intercept (continued)

Responses

The following table provides explanations of the responses to the intercept command.

Responses for the intercept command

MAP output	Meaning and action
`ONLY FOUR MONITORS ALLOWED IN FIELD ENVIRONMENT`	**Meaning:** The user attempted to intercept when four entries were already in the match table. The field environment allows only four entries in the match table. The intercept command does not execute. **Action:** Remove an existing intercept or monitor request and retry the intercept command.
`ALL IS NOT PERMITTED IN A FIELD ENVIRONMENT`	**Meaning:** The field environment allows only four entries in the match table; therefore the all option is not valid. The intercept command does not execute. **Action:** Retry the command with a linkset name in place of the all option.
`ERROR: INVALID LINKSET NAME`	**Meaning:** The user specified a linkset name that does not appear in table C7LKSET. **Action:** Verify the linkset name and retry the intercept command with the correct linkset.
`ERROR: INVALID LINK NUMBER`	**Meaning:** The user specified a link number that is not datafilled for the specified linkset in the C7LINK table. The intercept command does not execute. **Action:** Verify the link number and retry the intercept command with the correct number.

-continued-

Responses for the intercept command (continued)

MAP output	Meaning and action
`ERROR: MATCHING msg code MESSAGES IS NOT PERMITTED`	**Meaning:** The user entered a message code that was recognized by C7TU, but a match is not allowed for the specified code. The intercept command does not execute. **Action:** Verify the message code and retry the intercept command with a correct message code.
`ERROR: INVALID MSGCODE msg code`	**Meaning:** The user entered a message code that is not recognized by C7TU. The intercept command does not execute. **Action:** Verify the message code and retry the command.
`ERROR: MATCH TABLE FULL`	**Meaning:** The user attempted to intercept a message when the match table already had eight entries. No further requests can be made. The intercept command does not execute. **Action:** Remove an existing entry from the match table and retry the command.
`WARNING: C7TU IS NOT ENABLED IN ANY PMs`	**Meaning:** The command is executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used with the select command.
`WARNING: C7TU IS NOT ENABLED ON pm num WHERE THIS LINK RESIDES`	**Meaning:** The monitor command executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used with the select command.

End

mask

Function

Use the mask command to mask out bytes in a monitor or intercept entry. The masked bytes are not used to compare for matching messages. This command is used to customize a monitor or intercept entry.

mask command parameters and variables

Command	Parameters and variables
mask	*item_no* *byte_offset* *mask_bytes*

Parameters and variables	Description
byte_offset	Specifies the number of bytes used to describe the type of CCS7 messages to monitor or intercept. In a monitor or intercept entry the number of bytes is 16.
item_no	Specifies the number of the monitor or intercept entry. Values are 0 through 7.
mask_bytes	A string that describes how the bytes, starting at the byte_offset, should be masked.

Qualifications

None

Examples

The following show examples of the mask command.

Examples of the mask command

Example	Task, response, and explanation
mask 0 01 aa ↵ *where* 0 specifies the number of the monitor or intercept entry 01 specifies the number of bytes to describe the type of CCS7 messages to monitor or intercept aa describes how the bytes, starting at the byte_offset, should be masked.	**Task:** Change a mask offset value. **Response:** See Figure 2-1 for a response. **Explanation:** The value of the offset is changed.

mask (continued)

Figure 3-3xxx
Response to mask 0 01 06 command

```
C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
            0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
            -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 05 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 FF 00 00 0F 00 00 00 00 00 00 FF 00 00 00


C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
            0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
            -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 05 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00
```

Responses

The following table shows examples of the mask command.

Responses for the mask command

MAP output	Meaning and action
`ERROR: MASK ENTRY 1 IS NOT IN USE`	**Meaning:** Mask entry 1 has not been assigned. **Action:** Assign the entry before attempting to alter or use it.

-continued-

Responses for the mask command (continued)

MAP output **Meaning and action**

```
C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX    XXX XXX XXX     XXX SLTM
            0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
            -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 06 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00
EITHER incorrect optional parameter(s) OR too many parameters.

C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX    XXX XXX XXX     XXX SLTM
            0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
            -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 06 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:       00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00
```

Meaning: When entering the command, either incorrect optional parameters or too many parameters were entered.

Action: Re-enter the command.

```
Out of range: <BYTE OFFSET> (0 TO 15)
Enter:  <BYTE OFFSET> [<MASK BYTES>] . . .
```

Meaning: The byte offset parameters was entered incorrectly.

Action: Re-enter the command.

End

match

Function

Use the match command to specify bytes to match on in a monitor or intercept entry. The match bytes are used to compare for matching messages. This command is used to customize a monitor or intercept entry.

match command parameters and variables

Command	Parameters and variables
match	*item_no* *byte_offset* *mask_bytes*

Parameters and variables	Description
byte_offset	This variable specifies the number of bytes used to describe the type of CCS7 messages to monitor or intercept. In a monitor or intercept entry the number of bytes is 16.
item_no	This variable specifies the number of the monitor or intercept entry. Values range from 0 through 7.
mask_bytes	This variable is a string that describes the bytes to match messages against.

Qualifications

None

Examples

The following show examples of the match command.

Examples of the match command

Example **Task, response, and explanation**

match 0 01 06 ↵
where
0 specifies the number of the monitor or intercept entry
01 specifies the number of bytes to describe the type of CCS7 messages to monitor or intercept
06 describes how the bytes, starting at the byte_offset, should be matched.

Task: Change a match offset value.

Response: See Figure 3-4 for the response.

Explanation: The offset value is changed.

match (continued)

Figure 3-4xxx
Response to match 0 01 06 command

```
C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
           0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
           -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 05 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:      00 FF 00 00 0F 00 00 00 00 00 00 FF 00 00 00


C7TU    MON             SIO         DPC             OPC         SLS TYPE
NUM     DIR NET     NI  PR  SI  MEM CLU NET     MEM CLU NET
 0      BOTH ANSI   ALL XX  SNTS XXX XXX XXX   XXX XXX XXX     XXX SLTM
           0   1 2 3 4 5   6 7 8   9 10 11 12 13 14 15
           -   - - - - -   - - -   - --  -- - -- -- --
MATCH:      00 06 00 00 02 00 00 00 00 00 05 11 00 00 00
MASK:      00 FF 00 00 0F 00 00 00 00 00 00 FF 00 00 00
```

Responses

The following table shows examples of the match command.

Responses for the match command

MAP output	Meaning and action
`ERROR: MATCH ENTRY 1 IS NOT IN USE`	**Meaning:** Match entry 1 has not been assigned. **Action:** Assign the entry before attempting to alter or use it.

`C7TU MON SIO DPC OPC SLS TYPE`
`NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET`
`0 BOTH ANSI ALL XX SNTS XXX XXX XXX XXX XXX XXX XXX SLTM`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15`
`- - - - - - - - - - -- -- - -- -- --`
`MATCH: 00 06 00 00 02 00 00 00 00 00 05 11 00 00 00`
`MASK: 00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00`
`EITHER incorrect optional parameter(s) OR too many parameters.`
 	
`C7TU MON SIO DPC OPC SLS TYPE`
`NUM DIR NET NI PR SI MEM CLU NET MEM CLU NET`
`0 BOTH ANSI ALL XX SNTS XXX XXX XXX XXX XXX XXX XXX SLTM`
`0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15`
`- - - - - - - - - - -- -- - -- -- --`
`MATCH: 00 06 00 00 02 00 00 00 00 00 05 11 00 00 00`
`MASK: 00 AA 00 00 0F 00 00 00 00 00 00 FF 00 00 00`
	Meaning: When entering the command, either incorrect optional parameters or too many parameters were entered.
	
	Action: Retry the command.

`Out of range: <BYTE OFFSET> (0 TO 15)` `Enter: <BYTE OFFSET> [<MATCH BYTES>] . . .`	**Meaning:** The byte offset parameter was entered incorrectly. **Action:** Retry the command.

monitor

Function

Use the monitor command to monitor specific CCS7 link messages.

monitor command parameters and variables

Command	Parameters and variables
monitor	link *linkset slc direction* [in / out / both] *nettype* [ccitt / ansi / ttc]
	ccitt *rout_lbl* [all / label] *ni* [intl / intlsp / natl / natlsp] *priority*
	dpc_frmt basic *pc*
	intl [*intlzone* / *areanetw* / *intlsgpt*]
	austria [*austzone* / *region* / *austsgpt*]
	china [*chinzone* / *exchange* / *chinsigpt*]
	opc_frmt basic *pc*
	intl [*intlzone* / *areanetw* / *intlsgpt*]
	austria [*austzone* / *region* / *austsgpt*]
	china [*chinzone* / *exchange* / *chinsigpt*]
	ccittsls

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Command	Parameters and variables						
monitor	ansi	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mbr	*dpc_cls*	*dpc_ntw*	*opc_mbr*	*opc_cls*	*opc_ntw*	
	ansisls						
	ttc	*rout_lbl*	[all / label]	*ni*	[intl / intlsp / natl / natlsp]	*priority*	
	dpc_mnar	*dpc_sbar*	*dpc_arun*	*opc_mnar*	*opc_sbar*	*opc_arun*	
	ttcsls						
	msg_type	*code*					
	msgbody	*body*					
	hexbytes						

Parameters and variables	Description
ansls	This variable is the signaling link selector of the ANSI message to monitor. Entering 32 monitors all of the SLSs. The value range is 0-32.
areanetw	This variable is the area network of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the area networks. The value range is 0-31.
austsgpt	This variable is the signal point of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-31.
austzone	This variable is the zone of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-31.
body	The message body to be monitored.
ccittsls	This variable is the signaling link selector (SLS) of the CCITT message to monitor. Entering 16 monitors all of the SLSs. The value range is 0-16.
chinsigpt	This variable is the signal point of the point code in china format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-7.

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Parameters and variables	Description
chinzone	This variable is the zone of the point code, in china format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-15.
code	The message code corresponding to the message type to be monitored.
direction	This variable is the direction of the message that is being monitored. Possible values are in, out, and both.
dpc_arun	This variable is the destination point code area unit number of the TTC message to monitor. Entering 0 monitors all of the area units. The value range is 0-127.
dpc_cls	This variable is the destination point code cluster number of the ANSI message to monitor. Entering 0 monitors all of the clusters. The value range is 0-255.
dpc_frmt	This parameter is the destination point code format of the CCITT test message to monitor. Possible values are basic, intl, austria, and china.
dpc_mbr	This variable is the destination point code member number of the ANSI message to monitor. Entering 0 monitors all of the members. The value range is 0-255.
dpc_mnar	This variable is the destination point code main area number of the TTC message to monitor. Entering 0 monitors all of the main areas. The value range is 0-31.
dpc_ntw	This variable is the destination point code network number of the ANSI message to monitor. Entering 0 monitors all of the networks. The value range is 0-255.
dpc_sbar	This variable is the destination point code subarea number of the TTC message to monitor. Entering 0 monitors all of the subareas. The value range is 0-15.
exchange	This variable is the exchange of the point code, in china format, of the CCITT message to monitor. Entering 0 monitors all of the exchanges. The value range is 0-127.
hexbytes	This parameter is the message body, in hexadecimal format, of the CCS7 message to be monitored.
intlsgpt	This variable is the signal point of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the signal points. The value range is 0-7.
intlzone	This variable is the zone of the point code, in intl format, of the CCITT message to monitor. Entering 0 monitors all of the zones. The value range is 0-7.

-continued-

monitor (continued)

monitor command parameters and variables (continued)

Parameters and variables	Description
link	The name of the link corresponding to the linkset to be monitored.
linkset	This variable is the name of the linkset to be monitored.
msgbody	This parameter is the message body of the CCS7 message to be monitored.
msg type	This parameter is the message type of the message to be monitored.
nettype	This variable specifies the network type of the message. Possible values are ccitt, ansi, and ttc.
ni	This variable is the network indicator of the message. It is possible to monitor all of the network indicators. Possible values are intl, intlsp, natl, natlsp, and all.
opc_arun	This variable is the origination point code area unit number of the TTC message to monitor. Entering 0 monitors all of the main units. The value range is 0-127.
opc_cls	This variable is the origination point code cluster number of the ANSI message to monitor. Entering 0 monitors all of the clusters. The value range is 0-255.
opc_frmt	This parameter is the origination point code format of the CCITT test message to monitor. Possible values are basic, intl, austria, and china.
opc_mbr	This variable is the origination point code member number of the ANSI message to monitor. Entering 0 monitors all of the members. The value range is 0-255.
opc_mnar	This variable is the origination point code main area number of the TTC message to monitor. Entering 0 monitors all of the main areas. The value range is 0-31.
opc_ntw	This variable is the origination point code network number of the ANSI message to monitor. Entering 0 monitors all of the networks. The value range is 0-255.
opc_sbar	This variable is the origination point code subarea number of the TTC message to monitor. Entering 0 monitors all of the subareas. The value range is 0-15.
pc	This variable is the point code of the CCITT message to monitor, in basic format. Entering 0 monitors all of the point codes. The value range is 0-16383.
priority	This variable is the CCS7 priority to monitor. The value range is 0-4, (4=all).
region	This variable is the region of the point code, in austria format, of the CCITT message to monitor. Entering 0 monitors all of the regions. The value range is 0-15.

-continued-

monitor command parameters and variables (continued)

Parameters and variables	Description
rout_lbl	This variable is the type of routing label used in the CCS7 message. The all label will automatically select all messages of any routing label. The value range is all or label.
slc	This variable is the link number of the linkset to be monitored. The value range is 0-15.
ttcisls	This variable is the signaling link selector of the TTC message to monitor. Entering 16 monitors all of the SLSs. The value range is 0-16.

End

Qualifications

None

monitor (continued)

Examples

The following table provides examples of the monitor command.

Examples of the monitor command

Example	**Task, response, and explanation**
monitor link c7lkset2 1 both ansi all sltm ↵ c7lkset1 1 both ansi all sltm	
monitor link c7lkset1 0 both ansi label natl 4 1 1 1 0 0 0 32 iam ↵ c7lkset1 0 both ansi label natl 4 1 1 1 0 0 0 32 iam	

Responses

The following table provides explanations of the responses to the monitor command.

Responses for the monitor command

MAP output	Meaning and action
`ONLY FOUR MONITORS ALLOWED IN FIELD ENVIRONMENT`	**Meaning:** The user attempted to monitor when four entries were already in the match table. The field environment allows only four entries in the match table. The monitor command does not execute. **Action:** Remove an existing monitor, or monitor request, and retry the monitor command.
`ERROR: invalid linkset name`	**Meaning:** The user specified a linkset name that does not appear in table C7LKSET. **Action:** Verify the linkset name and retry the monitor command with the correct linkset.
`ERROR: INVALID LINK NUMBER`	**Meaning:** The user specified a link number that is not datafilled for the specified linkset in the C7LINK table. The monitor command does not execute. **Action:** Verify the link number and retry the monitor command with the correct number.
`ERROR: MATCHING msg code MESSAGES IS NOT PERMITTED`	**Meaning:** The user entered a message code that was recognized by C7TU, but a match is not allowed for the specified code. The monitor command does not execute. **Action:** Verify the message code and retry the monitor command with a correct message code.
`ERROR: INVALID MSGCODE msg code`	**Meaning:** The user entered a message code that is not recognized by C7TU. The monitor command does not execute. **Action:** Verify the message code and retry the command.

-continued-

monitor (end)

Responses for the monitor command (continued)

MAP output	Meaning and action
`ERROR: MATCH TABLE FULL`	**Meaning:** The user attempted to monitor a message when the match table already had four entries. No further requests can be made. The monitor command does not execute. **Action:** Remove an existing entry from the match table and retry the command.
`WARNING: C7TU IS NOT ENABLED IN ANY PMs`	**Meaning:** The command is executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used, with the select command.
`WARNING: C7TU IS NOT ENABLED ON pm num WHERE THIS LINK RESIDES`	**Meaning:** The monitor command executed, and the request is added to the match table. **Action:** Enable the C7TU in the peripheral modules that are to be used, with the select command.
End	

quit

Function

Use the quit command to exit the C7TULINK_ILPT7 environment and return to the C7TU level. The options allow the user to clear the match table.

quit command

Command	Parameters and variables
quit	*option* [clear / noclear]

Parameters and variables	Description
option	This variable allows the user two options before quitting.
clear	This parameter clears the C7TULINK environment before quitting.
noclear	This parameter exits, leaving the C7TULINK environment intact.

Qualifications

None

Example

The following table provides an example of the quit command.

Example of the quit command

Example	Task, response, and explanation
quit clear ↵ *where* clear clears the C7TULINK environment before quitting	**Task:** This command is used to clear the C7TULINK environment before quitting. **Response:** `CI:` **Explanation:** This command exits this directory and returns to the CI MAP level.

quit (end)

Response

The following table provides an explanation of the response to the quit command.

Response for the quit command	
MAP output	**Meaning and action**
`CI:`	
	Meaning: This prompt indicates that the user has returned to the CI MAP level. **Action:** Access another directory from the CI MAP level or end this session.

remove

Function

Use the remove command to remove monitor or intercept entries, or to remove test message entries.

remove command parameters and variables

Command	Parameters and variables
remove	match [*num* | all] message [*num* | all]

Parameters and variables	Description
all	This parameter specifies that all entries be removed.
match	This parameter removes an entry from the match table.
message	This parameter removes an entry from the message table.
num	This variable is the number of the entry to be removed.

Qualifications

The limits and operations of the match table and the message table are of the global nature. If a user issues a remove match all or a remove message all command, the respective table will be cleared.

Example

The following table provides an example of the remove command.

Examples of the remove command

Example	Task, response, and explanation
remove match 8 ↵ *where* match 8	removes an entry from the match table specifies what entry to be removed
	Task: Remove entry 8 from the match table. **Explanation:** No system response. Entry 8 is removed from the table.

remove (end)

Responses

The following table provides explanations of the responses to the remove command.

Responses for the remove command

MAP output	Meaning and action
`Message number <num> has not been built.`	**Meaning:** The user entered a messge number which has not been built using the build command. **Action:** Check the message number and retry the command.
`Item number <num> is currently not defined in the match table.`	**Meaning:** The user entered a match entry number which has not been built using the monitor or intercept commands. **Action:** Check the message number and retry the command.
`Must specify Entry Number or ALL for REMOVE`	**Meaning:** The user has not entered a number in the range of 0 to 7 or the parameter all for the remove command. **Action:** Retry the command with a valid entry number or the parameter all.

restore

Function

Use the restore command to restore monitor and intercept entries in MSB7s. The monitor and intercept entries are restored automatically in the LIU7s. This command is used following a restart reload.

restore command parameters and variables

Command	Parameters and variables
restore	There are no parameters or variables for this command.

Qualifications

The restore command will enable monitors and intercepts on certain types of restarts.

Examples

The following shows an example of the restore command.

Examples of the restore command

Example	Task, response, and explanation
restore ↵	**Task:** Enable the monitors and intercepts that were disabled on a restart. **Explanation:** There is no system response. The monitors and intercepts are enabled.

Responses

None

select

Function

Use the select command to select the peripherals that enable the matching of CCS7 messages with the match table for the specified link. These peripherals are

- link interface unit 7 (LIU7)
- message switch and buffer 7 (MSB7)

The select command can also release a link that is currently selected.

The select command can also be used to vary the C7TU log throttle in the selected LIU7. By using the select command and throttle variable, you can specifiy the number of messages monitored per minute.

select command parameters and variables

Command	Parameters and variables
select	*pm_select* [all / liu7 [*number* / all / *msg_trc* [on / off] / *throttle*] / msb7]

Parameters and variables	Description
all	This parameter is the option to select all datafilled MSB7s or LIU7s.
msg_trc	This variable is the option to either select a link (on) or release a link (off). The default is on.
number	This variable is the LIU7 or the MSB7 number.
pm_select	This variable is the link specification. The following parameters are available: all liu7 msb7
throttle	This variable is used to vary the C7TU log throttle in the selected LIU7. Valid range is 1 through 60.

select (continued)

Qualifications

The following risks exist in increasing the throttle value above its default setting:

- At a higher throttle rate, there is a risk of running out of letters to receive logs sent up from the LIU7s.
- At high traffic levels, there is the potential for message loss if the user does not take care in the types of messages being monitored for.

Examples

The following table provides examples of the select command.

Examples of the select command

Example	**Task, response, and explanation**
select msb7 0 ↵ *where* msb7 is the link specification 0 is the MSB7 number	**Task:** This command is used to select MSB7 link 0. **Response:** `SELECT done`
select msb7 1 off ↵ *where* msb7 is the link specification. 1 is the MSB7 number. off is the option to release a link	**Task:** This command is used to release MSB7 link 1. **Response:** `SELECT done`

Responses

The following table provides explanations of the responses to the select command.

Responses for the select command

MAP output	Meaning and action
ERROR: WRONG PM SELECTION	**Meaning:** The user entered a parameter that was not among the valid choices for PM selection (all, msb7, liu7). The select command exits. **Action:** Retry the command with a valid parameter.
ONLY FOUR SELECTS ALLOWED IN FIELD ENVIRONMENT	**Meaning:** The user attempted to select when four entries were already in the match table. The field environment allows only four entries in the match table. The select command exits. **Action:** Release a link that is currently selected and retry the select command.
LIU7 num IS NOT INSERVICE TRACING WILL BE ENABLED WHEN THE LIU7 GOES INSERVICE	**Meaning:** The user selected an LIU7 number that is not in service. Monitoring starts when the LIU7 comes in service.The select command continues execution. **Action:** None
LIU7 num IS NOT INSERVICE THE LIU7 HAS BEEN DESELECTED	**Meaning:** The user released an LIU7 number that is currently not in service. Monitoring does not start when the LIU7 comes in service, because the link is released. The select command continues execution. **Action:** None
LIU7 num IS NOT DEFINED FOR THIS OFFICE	**Meaning:** The user attempted to select an LIU7 that is not datafilled for this office. The select command exits. **Action:** Retry the select command specifying an LIU7 that is datafilled for this office.

-continued-

select (end)

Responses for the select command (continued)

MAP output	Meaning and action
`MSB7 num IS NOT INSERVICE`	
	Meaning: The user specified an MSB7 that is not currently in service. The select command exits.
	Action: Check the status of the MSB7 and retry the select command.
`MSB7 num IS NOT DEFINED FOR THIS OFFICE`	
	Meaning: The user attempted to select an MSB7 that is not datafilled for this office. The select command exits.
	Action: Retry the select command specifying an MSB7 that is datafilled for this office.
End	

send

Function

Use the send command to take the specified message from the message table and inject it into the given link. Once a message is sent, the system treats it the same way as any other CCS7 message.

send command parameters and variables

Command	Parameters and variables			
send	*msg*	*direct*	*linkset*	*slc*

Parameters and variables	Description
direct	This variable is the sending direction for the specified message, either in on the link, into the node; or out on the link, into the network.
linkset	This variable is the name of the linkset on which to send the test message.
msg	This variable is the message number of the test message to be sent.
slc	This variable is the link number of the linkset on which to send the test message.

Qualifications

None

Example

The following table provides an example of the send command.

Example of the send command

Example	Task, response, and explanation
send 0 in c7lkset1 0 ↵ *where* 0 is the message number of the test message to be sent in is the sending direction for the specified message c7lkset1 is the name of the linkset on which to send the test message 0 is the link number of the linkset on which to send the test message	**Task:** This command is used to take the specified message from the message table and inject it into the given link.

send (continued)

Responses

The following table provides explanations of the responses to the send command.

Responses for the send command

MAP output	Meaning and action
`MESSAGE NUMBER msg HAS NOT BEEN BUILT YET`	**Meaning:** The user attempted to send a message specifying a message number that has not been built with the build command. The send command does not execute. **Action:** Verify the message number and retry the send command.
`INVALID LINKSET NAME`	**Meaning:** The user entered a linkset name that is not datafilled in the C7LKSET table.The send command does not execute. **Action:** Verify the linkset name and retry the send command.
`ERROR: INVALID LINK NUMBER`	**Meaning:** The user entered a link number that is not datafilled for the specified linkset in the C7LINK table. The send command does not execute. **Action:** Verify the link number and retry the send command.
`UNABLE TO RESOLVE POINT CODES`	**Meaning:** The user attempted to send a message using a default linkset. The error occurred either because this linkset is not part of a routeset, or because the routeset is not a valid network. The send command does not execute. **Action:** Verify that the specified linkset is part of a routeset, and that the routeset is part of a valid network. Retry the send command.
`INVALID NETWORK TYPE IN DPC`	**Meaning:** The user specified a network type other than ANSI, CCITT, or TTC. The send command does not execute. **Action:** Change the network type of the message to one of the three valid network types, then retry the send command.

-continued-

Responses for the send command (continued)

MAP output	Meaning and action
`ERROR: pm num IS NOT INSERVICE`	**Meaning:** The peripheral that is attached to the specified link, in the linkset, is not in service. The send command does not execute. **Action:** Assure that the peripheral is in service or choose a different link, then retry the send command.
`THE LIU7 IS NOT IN USE BY C7TU`	**Meaning:** The LIU7 attached to the specified link is not in use by C7TU. The send command does not execute. **Action:** Use the select command to select the LIU7, then retry the send command.
`WARNING: LINK MUST BE IN SYNC STATE FOR MESSAGE INJECTION` `WARNING: MESSAGE WILL BE SENT ANYWAY`	**Meaning:** The peripheral that is attached to the specified link in the linkset is in service, but the link state is not set to synchronized. The message is sent to the peripheral. **Action:** None

End

status

Function

Use the status command to display the current status of the C7TULINK environment. The display includes links that are currently selected with the select command and a shortened dump of the entries in the match table.

status command parameters and variables

Command	Parameters and variables
status	*disp_frm* [brief / verbose]

Parameters and variables	Description
brief	This parameter displays only the links that are selected.
disp_frm	This variable defines the type of output display.
verbose	This parameter displays all links, marking the ones that are selected.

Qualifications

None

Examples

The following table provides an example of the status command.

Examples of the status command

Example	Task, response, and explanation
status verbose ↵	

Task: Print the status of all LIU7s.

Response:

```
LIU7        FTA     TRACING     THROTTLE
201     4248 1000   ENABLE      20
205     4248 1000   DISABLE     10
207     4248 1000   DISABLE     10

ITEM DISP NI NETTYPE DIR LINK DIST MSG SI H0 H1

0 MON ALL ANSI BOTH LS001 1 EXT XXX ISUP XXX XXX
```

Explanation: The status of all LIU7s was printed.

status (end)

Response

The following table provides an explanation of the response to the status command.

Response for the status command

MAP output	Meaning and action
********** C7TU LINK ENVIRONMENT ********** MSB7 NODE TRACING MSGS NACK msb node trace msg nack LIU7 FTA TRACING THROTTLE liu fta trace 20 ITEM DISP NETW DIR ST DIST MSG SI H0 HI num disp net dir st dist msg si h0 h1	**Meaning:** The display includes links that are currently selected with the select command and a shortened dump of the entries in the match table. **Action:** None

List of terms

AMA

Automatic message accounting

automatic message accounting (AMA)

An automatic recording system that documents all the necessary billing data of subscriber-dialed long distance calls.

batch change supplement (BCS)

A DMS-100 Family software release.

BCS

Batch change supplement

Bell-Northern Research (BNR)

Part of the tri-corporate structure consisting of Bell Canada, Northern Telecom, and Bell-Northern Research.

BNR

Bell-Northern Research

busy signal

1. An audible signal, a flashing signal, or both, often 60 impulses per minute, indicating that the called number is unavailable. 2. A signal, transmitted at 120 impulses per minute, indicating that all voice paths are temporarily unavailable.

C7TU

Common channel signalling number 7 test utility.

call

In a DMS, any demand to set up a connection through the switch. Also used as a unit of telephone traffic. Synonymous with cue.

call duration

The interval of time between the moment a connection is established between the calling and called stations and the moment the calling station

gives the clearing signal (or the moment that the connection is taken down by the operator).

called number

The number of the party being called.

calling number

The number of the party initiating the call.

call processing (CP)

The software system that handles the processes involved in setting up connections through the DMS-100 Family network between calling and called parties.

card

A plug-in circuit pack containing components. In a DMS, card is the preferred term for a printed circuit pack or a printed circuit board.

carrier

1. In a DMS, the communications links between switching offices. 2. The protocol by which these links communicate.

CC

Central control

central control (CC)

Comprises the data processing functions of the DMS-100 Family with associated data store and program store.

CI

Command interpreter level

CLLI

Common language location identifier

CM

Communications module, computing module, connection memory

CP

Call processing

command

1. A control signal. 2. In user interface language, the specification of an expected action or function by the system.

command interpreter (CI) level

Initial MAP level where commands are entered.

common language location identifier (CLLI)

A standard identification method for trunk groups in the form:

aaaa bb xx yyyy

Where:

aaaa=City code
bb=Province or state code
xx=Trunk group identity
yyyy=Trunk number

See also short common language location identifier.

computing module (CM)

The processor or memory complex of DMS SuperNode.

Digital Multiplex System (DMS)

A central office switching system in which all external signals are converted to digital data and stored in assigned time slots. Switching is performed by reassigning the original time slots. DMS is a trademark of Northern Telecom.

directory number (DN)

The full complement of digits required to designate a subscriber's station within one NPA-usually a three-digit central office code followed by a four-digit station number.

display

A command used by CallTrak, MSGTRACE, PGMTRACE, and TIMECALL to show the output.

DMS

Digital Multiplex System

DMS SuperNode

A central control complex for the DMS-100. The two major components of DMS SuperNode are the computing module and the message switch. Both are compatible with the current network module, the input/output controller, and XMS-based peripheral modules.

DN

Directory number

EAEO

Equal access end office

EBS

Electronic business set

electronic business set (EBS)

A telephone set that provides subscribers with push-button access to various business features.

electronic telephone set (ETS)

An alternate name for electronic business set.

equal access end office (EAEO)

A central office that provides access to several long distance carriers.

ETS

Electronic telephone set

IBN

Integrated Business Network

IBN EBS

Integrated Business Network electronic business set

ILPT7

Integrated link protocol test tool #7.

Integrated Business Network (IBN)

Now known as Meridian Digital Centrex. A special DMS business services package that utilizes the data-handling capabilities of a DMS-100 Family office to provide a centralized telephone exchange service. Many optional features also are available.

Integrated Business Network electronic business set (IBN EBS)

A control device with addressable points (for example, directory number keys, feature keys, and display units). Business sets can support multiple simultaneous calls. They also can support premium voice features and low-speed data service.

integrated services digital network (ISDN)

A set of standards proposed by the CCITT to establish compatibility between the telephone network and various data terminals and devices. ISDN is a communications network that provides access to voice, data, and imaging services from a single type of connector.

ISDN

Integrated services digital network

LEN

Line equipment number

line equipment number (LEN)

A 7-digit function reference used to identify line circuits.

LIU7

Link interface units #7.

logical terminal

The datafilled instance of an abstract terminal that is provided with a subset of the features and services (service profile) datafilled in the access termination for the abstract terminal.

logical terminal identifier (LTID)

The unique identifier that is assigned to a logical terminal when it is datafilled in the ISDN access termination.

log report

A message from the DMS whenever a significant event has occurred in the switch or one of its peripherals. A log report includes state and activity reports as well as reports on hardware and software faults, test results, and other events or conditions likely to affect the performance of the switch. A log report can be generated in response to a system or manual action.

loop (LP)

1. A local circuit between a central office and a subscriber telephone station. Synonymous with subscriber loop and local loop. 2. A signaling method whereby on-hook/off-hook signals are transmitted by bridging the loop on a two-wire trunk or circuit. Signals are received by detecting the flow of loop current. In a trunk, LP signaling occurs in one direction at a time.

LP

Loop

LTID

Logical terminal identifier

MAP

The maintenance and administration position. MAP is a group of components that provides a user interface between operating company personnel and the DMS-100 Family systems. A MAP consists of a visual display unit and keyboard, a voice communications module, test facilities, and MAP furniture. MAP is a trademark of Northern Telecom.

MAPCI

MAP command interpreter

MAP command interpreter (MAPCI)

A MAP level for accessisng maintenance and other functional levels.

message (MSG)

The unit of information transfer between nodes in the DMS-100 system. A message is incoming if it is sent from a peripheral to central control (CC) and outgoing if it is sent from CC to a peripheral.

A message is a type of control mechanism used in the input/output message system of the DMS-100 Family. The MSG byte specifies that the information to come is a data message.

message type

Identifies the function of a message. Stimulus call control has only one message type-information. Functional call control has a number of message types related to call establishment, call dis-establishment, and call status.

MSG

Message

MSB7

Message switch and buffer #7.

node

The terminating point of a link. Node is a relative term in that its meaning depends entirely on the context in which it is used. For example, a circuit can be a node in the context of another circuit within a module; the module itself can be a node in the context of another component of the network, and so forth. Some common applications are

- in network topology, a terminal of any branch of a network or a terminal common to two or more branches of a network
- in a switched communications network, the switching points, including patching and control facilities
- in a data network, the location of a data station that interconnects data transmission lines
- a unit of intelligence within a system; in a DMS, includes the central processing unit, network module, and peripheral modules

Northern Telecom Publication (NTP)

A document that contains descriptive information about DMS-100 Family hardware and software modules and performance-oriented practices for

testing and maintaining the system. These documents are supplied as part of the standard documentation package provided to an operating company.

NTP

Northern Telecom Publication

off-hook

1. In telephone operations, the condition existing when the receiver or handset is removed from its hook-switch. 2. One of two possible signaling states: tone or no-tone; ground connection or battery connection. 3. The active state (closed loop) of a subscriber or PBX line loop. *See also* on-hook.

on-hook

1. In telephone operation, the condition existing when the receiver or handset is resting on its hook-switch. 2. One of two possible signaling states such as tone or no-tone or ground connection or battery connection. 3. The idle state (open loop) of a subscriber or PBX line loop. *See also* off-hook.

peripheral module (PM)

A generic term referring to all hardware modules of DMS-100 Family systems that provide interfaces with external line, trunk, or service facilities. A PM contains peripheral processors, which perform local routines, thus relieving the load on the central processing unit.

peripheral module intercept system test (PMIST)

A debugging tool that traces messages between the peripheral modules.

plain ordinary telephone service (POTS)

Basic conventional telephone service. In the context of service screening, POTS is a pseudo-service that is derived from the combination of a bearer service of speech with no supplementary services.

PM

Peripheral module

PMT7

Protocol monitor tool #7.

POTS

Plain ordinary telephone service

process entry module

A module that contains a procedure where a process begins running after initialization.

PROTEL

Procedure-oriented type enforcing language

qdn

A command used at the CI level to query the directory number of a terminal.

qlen

A command used at the CI level to query the LEN of a terminal.

quit

A C7TU command used to leave the C7TU environment and return to the CI level.

realtime

The actual time during which the CPU (NT40) or DMS-Core SuperNode performs its functions. The time is divided into two main categories: call processing time and noncall processing time.

run time

In a DMS, the time during which the central processing unit is allocated to a process.

service order system (SERVORD)

A user interface used to change, add, or delete a subscriber line. Standard telephone industry command format is used.

SERVORD

Service order system

SOS

Support operating system

SCP

Service control point

SSP

Service switching point

STP

Signal transfer point

support operating system (SOS)

The software that sets up the environment for loading and executing the application software in the DMS-100 Family system. SOS includes the nucleus, file system, command interpreter, and loader.

terminal

1. The point of origination or termination in a communications network. 2. Any device capable of sending information, receiving information, or both over a communication channel. 3. In a DMS, the smallest unit of address space within the input/output system.

terminal ID (TID)

In DMS software, the TID uniquely identifies anything on which a call can be originated or terminated.

TID

Terminal ID

timecall

A CallTrak command used to collect and output call timing information.

TOPS

Traffic operator position system

traffic operator position system (TOPS)

A call processing system made up of a number of operator positions. Each operator position consists of a visual display unit (VDU), a controller, a keyboard, and a headset. TOPS is a trademark of Northern Telecom.

tuple

The horizontal row of a table.

user

A person, group, or organization who uses the services of a DMS switch.

VID

Virtual identifier.

virtual circuit

In packet switching, a network facility used for transferring data between those data stations emulating physically-connected stations.

Virtual identifier

A node and terminal number used to identifier agents on loops containing multiple TIDs per terminal.

DMS-100 Family

C7TU

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