DIGITAL CLOCK DISTRIBUTOR

500 SERIES

TL1 USER'S GUIDE

(USED WITH MIS CARD 090-45018-04)

1.   GENERAL

1.01 This practice provides information on the input messages (commands), response messages, and automatic messages used with the Telecom Solutions DCD 500 series of products. The language used in this practice is Transaction Language 1 (TL1). A Maintenance Interface, System (MIS) card (p/n 090-45018-04) must be installed in the DCD-500 series system, and the DCD-500 series system to use the information presented here. Any command pertaining to a specific DCD card requires the specified card to be installed.

1.02 Whenever this document is reissued, the reason for reissue will be given in this paragraph.

2.   USING THIS PRACTICE

2.01 Part 3, Description, describes how to use the commands and read the responses, including: explanations of the typestyle conventions and syntax, finding a command to perform a desired task, definitions of the parameters, and other useful information.

2.02 Part 4, Commands, contains the commands, each one starting at the top of a page. Each command has a description, a format, examples, values for the parameters, and responses to the command.

3.   DESCRIPTION

A. Conventions

3.01 The syntax and language structure used with the 500 series systems comply with specifications in Bellcore's TR-TSY-000831, Section 12.1 of OTGR Issue 2, Feb. 1988. As a subset of the ITU's MML (Man-Machine Language), the language specifies Applications Messages which allow communication between an OS (Operations System) and an NE (Network Element) such as one of the 500 series systems.

3.02 The following conventions are used in this manual to define the syntax of input and response messages:

   < >   enclose parameters which must be used

   [ ]   enclose optional parameter(s)

   { }   enclose a series of parameters, at least one of which must be used

   | separates a list of parameters within the { } symbols, of which one and only one parameter may be selected

   " "   enclose a report of an alarm or event

   :   separates parameter blocks

   ...   indicates one or more parameters are repeated an appropriate number of times, and hence are omitted

   ,   separates parameters within a block

   ;   terminates a command and causes execution of the command

B. Application Message Types

3.03 Two TL1 standard types of messages are used:

a. *Input/Response*, a command with valid parameters is input to the 500 series system and a response message is returned.

b. *Automatic*, a message is generated by the 500 series system, stored in the Event Log, and sent to the Communications Port.

C. Command Definitions

3.04 A command consists of a Command Code followed by a colon, parameter blocks separated by colons, and a terminating semicolon; see Figure 1 for an example. A command can only be entered at the semicolon prompt (;).

3.05 Parameter blocks may be null (contain no parameters), or contain one or more parameters. Two colons occur next to each other if a parameter block is null. (Some parameters in the complete TL1 language set are not used. These unused parameters are left null in this command set.) Colons after the last active parameter and before the semicolon need not be entered.

3.06 Multiple parameters in a parameter block are separated by commas. Two commas occur next to each other if a parameter is null. Commas after the last active parameter and before a colon or semicolon need not be entered.

3.07 Entering a semicolon at the end of the command causes the command to execute.

3.08 If any mistakes are made while entering a command, send the bad command and reenter a good command. The system does not recognize edited commands.

3.09 In this practice, uppercase letters in a command are parameter values to be entered as shown. Lowercase letters in a command indicate a choice of values is available for that parameter. The values specific to that command are listed with the command.

D. Response Definitions

3.10 A response is returned by the 500 series system when it receives a command. All responses include the source identifier (the sender of the response), the date and time, and the correlation tag of the given command. A response to a command may be a Completed or an Error response.

  a. *Completed*: The command has been completed or information requested is returned. This response carries the COMPLD message.

  b. *Error*: The command was denied, and the response carries the DENY message. The Error Code parameter (errcde) shows the reason.

Note: All external communications ports are software-configurable to set one character as the end-of-text message. This character does not replace the TL1 specified end-of-text message terminator (;). Refer to the instructions for the ED-EQPT command for additional information.

E. Parameter Definitions and Values

3.11 The TL1 commands use parameters that direct and constrain their operation. The general definitions of the parameters, and the type of message in which they appear, are listed in Table A. The values of the parameters are listed with the command.

F. Task/Command Cross-reference

3.12 Consult Table B to find the command appropriate for a task. This table also lists the access level (if any) required to use a command. All commands can be accessed that are at the user's access level or lower. Levels are from 1 (lowest) to 5 (highest) with a level 5 user able to access all commands. Protected commands can only be accessed if the user logged on with a password. Unprotected commands can be accessed with or without a password.

Parameters

```
SET-DAT:[<tid>]::<ctag>:<date>,<time>;
```

Command Code | Optional parameter block | Parameter block | Parameter block with parameters separated by a comma | Terminating semicolon
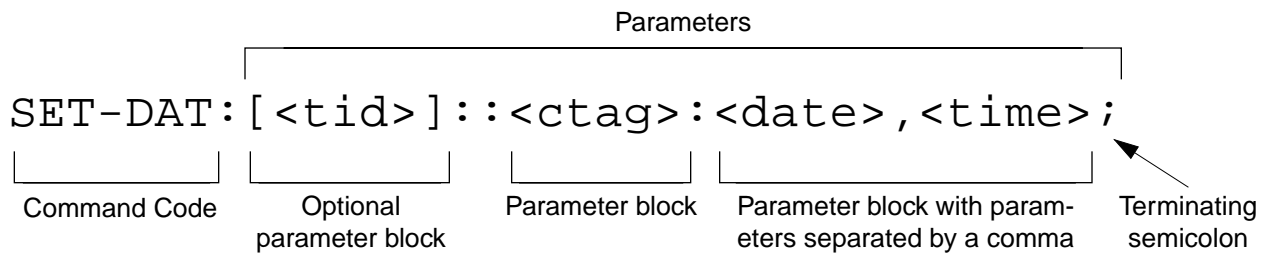
Example of a command format

Null parameter block

```
SET-DAT:::111:951208,153500;
```
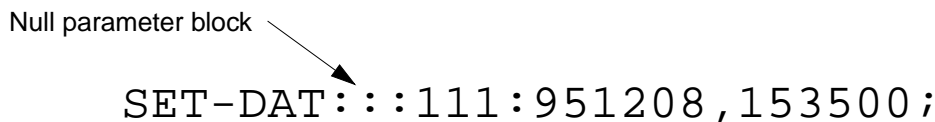
Example of a command generated using the above format

Figure 1. Command Format

Table A. Parameter Definitions

PARAMETER	USED IN MESSAGE TYPE	DEFINITION
aid	Command, response	This parameter is the access identifier. When used in a command, the aid is the equipment that the command affects. When seen in a response, the aid is the equipment reporting the condition.
almcde	Response	This parameter is the alarm code. It identifies the severity of the alarm. If multiple alarms are reported, the value for almcde is the highest severity of those reported.
atag	Response	This parameter is the automatic message tag, a decimal number with a maximum of 3 characters (1 through 999). It is assigned by the system to sequence and correlate automatic messages.
baud	Command, response	This parameter is the communications port baud rate; the baud rate for COM2 can only be changed via DIP switch on the MIS card; ports 1 and 3 are software-configurable only.
compri	Command, response	This parameter specifies the priority level of the communications port from 0 to 3; 0 inhibits alarm/event messages from being transmitted from a port; 1 is the highest priority, and 3 is the lowest.
comtype	Command, response	This parameter indicates the type of communications device used (X25 [PAD], MODEM, or [dumb] TERM)
condeff	Automatic message	This parameter is the condition effectivity. It reports that a standing condition is raised (SC), or that it is cleared (CL). This parameter is the only difference between a response that raises a standing condition, and a response that clears the same standing condition. If a standing condition is raised, it can be retrieved using the RTRV-COND-ALL or RTRV-COND-EQPT commands.
conddescr	Response	This parameter is the condition description. It is a text description of the alarm or condition reported by the system, enclosed within escaped quotes (\"). The system returns one conddescr per response message.
condtype	Command, response, automatic message	This parameter is the condition type. When used in a command, it indicates the type of alarm condition requested. When seen in a response, it indicates the type of alarm condition being reported, which is further explained in the conddescr parameter. When seen in an automatic message, it indicates the type of alarm condition reported as either raised or cleared (see the conddescr parameter).
crcmode	Command	This parameter specifies whether the selected Multi-Reference Controller (MRC) reference uses CRC validation.

Table A. Parameter Definitions (Contd)

PARAMETER	USED IN MESSAGE TYPE	DEFINITION
ctag	Command, response	This parameter is the correlation tag. The operator must enter a ctag for each command. This is the method the system uses to communicate the results of the command. For example, if "111" was entered as a ctag in a command, the response contains "111 COMPLD" or "111 DENY". If two commands were entered with the same ctag and one command was completed but the other was in error, both responses would have the same identification number. The operator may not be able to identify the command to re-enter. The ctag has a maximum of 6 characters beginning with either a letter or a non-zero numeral. It is assigned by the operator and must be included in a command.
date	Command, response	This parameter is the current date in the 6-digit form yy-mm-dd (year, month, day). For example, 95-12-08 is December 8, 1995. To enter the date in a command, do not use the hyphens. For example, 951208 is December 8, 1995.
endoftext	Command, response	This parameter is the end-of-text terminator; it does not replace the TL1-specified end-of-text terminator (;).
errcde	Response	This parameter is the error code returned by the system. It is a four-character mnemonic that identifies the reason the command was denied.
fmode	Command	This parameter specifies the framing format for the selected MRC reference.
keepalive	Command, response	This parameter is the keepalive message; if enabled, the keepalive message is sent every 15 to 20 minutes and consists of the response to the RTRV-HDR command (with the ctag used with this ED-EQPT command)
localecho	Command, response	This parameter enables or disables the local echo function; if enabled, local echo causes each character to be echoed back to the terminal when entered.
mondat	Command, response	This parameter is the date of the beginning of the requested performance-monitoring period specified by the tmper parameter.
monmode	Command, response	This parameter determines whether a port is allowed to view data traffic associated with other ports in real-time
montm	Command, response	This parameter is the beginning time of day of the requested performance-monitoring period specified by the tmper parameter.
montype	Command, response	This parameter is the type of performance-monitoring register in the memory storage.
monval	Command, response	This parameter is the value in the specified performance-monitoring register.

Table A. Parameter Definitions (Contd)

PARAMETER	USED IN MESSAGE TYPE	DEFINITION
ntfcncde	Command, response	This parameter is the notification code, indicating the severity of the alarm or event. When used in a command, it requests only those alarms or events of that severity level. When seen in a response, it indicates the severity of the alarm or event.
pid	Command	This parameter specifies the password identification; a pid is limited to a maximum of 10 (upper, lower, or mixed case) characters.
priority	Command	This parameter specifies the priority of the references available at the MRC. The reference with priority 1 is used first, then the priority 2 reference, and so on.
sid	Response	This parameter is the source identifier. It identifies the system sending the response or automatic message. The sid in a response message matches the tid in the input command, if a tid was used. The sid must be a valid TL1 identifier of no more than 20 characters, limited to letters, numerals and hyphens, beginning with a letter. The sid is recommended to be the target's office name, if available. All systems are manufactured with the sid TELECOMSOLUTIONS as the default. Assign unique sids in a multi-system installation with the SET-SID command. Note: The sids on the expansion shelves are automatically assigned.
srveff	Command, response	This parameter identifies how the alarm condition affects service.
state	Command	This parameter contains the primary maintenance state (in-service or out-of-service) into which the unit is moved, and may contain a secondary maintenance state indication that identifies a reason for the move to that maintenance state.
tid	Command	This parameter is the target identifier. Use this parameter in a command if there are multiple systems and you want to address a system other than the current one. If this parameter is not used, the command goes to the current system. The tid must be a valid sid, the name assigned to the target system with the SET-SID command. The sid in the response message is the same value as the tid.
time	Command, response	This parameter is the current time in the 6-digit form hh:mm:ss (hours, minutes, seconds). For example, 15:46:06 is 3:46:06 pm. To enter the date in a command, do not use the colons. For example, 154606 is 3:46:06 pm.
tmper	Command, response	This parameter is the accumulation time period for the specified performance-monitoring information.
type	Command	This parameter specifies the type of reference (GPS, Cesium, etc.) the selected MRC reference uses.
typereq	Command	This parameter is the type of condition or state to be retrieved.

Table B. Task/Command Cross-reference

TASK	COMMAND / MESSAGE	ACCESS LEVEL	PAGE
SECURITY			
Logon	ACT-USER	1	14
Logoff	CANC-USER	1	16
Modify password	ED-SECU-PID	2	20
Remove password	DLT-USER-SECU	5	18
Set access level	ENT-USER-SECU	5	22
Display password	RTRV-USER-SECU	2	24
CONFIGURATION AND CONTROL			
Modify communication ports	ED-EQPT	3	26
Modify reference parameters	ED-PRMTR-T1	3	29
Set or clear performance-monitoring registers	INIT-REG-T1	3	32
Initialize (clear) the system	INIT-SYS	5	35
Silence audible alarms	OPR-ACO-ALL	3	37
Take equipment out of service	RMV-T1	3	39
Put equipment in service	RST-T1	3	41
Clear 64-event system log	SET-ATTR-LOG	3	43
Set notification code associated with a specific event	SET-ATTR-T1	3	45
Set system date and time	SET-DAT	4	48
Set system identification code (source identifier)	SET-SID	5	50
Set threshold for equipment parameters	SET-TH-T1	3	52
Switch to duplicate equipment	SW-DX-EQPT	4	55
RETRIEVE ALARMS (MANUAL AND AUTOMATIC)			
Display alarms for all or specific equipment	RTRV-ALM-{ALL|EQPT|T1}	2	57
Displays the occurrence of alarmed events	REPT-ALM- {EQPT|T1}	—	68
Displays the occurrence of nonalarmed events	REPT-EVT	—	72
Display alarms and events in 64-event system log	RTRV-LOG	2	75

Table B. Task/Command Cross-reference (Contd)

TASK	COMMAND / MESSAGE	ACCESS LEVEL	PAGE
DISPLAY INFORMATION			
Display notification code and condition type associated with a specific event	RTRV-ATTR-T1	2	78
Display condition of all or specific equipment that is not in alarm	RTRV-COND-{EQPT|T1}	2	82
Display communications port(s) configuration	RTRV-EQPT	2	90
Display sid, date, and time (to verify equip. data path)	RTRV-HDR	1	88
Display performance-parameter data	RTRV-PRMTR-T1	2	93
Display performance-monitoring data	RTRV-PM-T1	2	96
Display threshold for equipment parameter	RTRV-TH-T1	2	102

G. Alarm Message Format

3.13 In the event an alarm is detected, a message is displayed on the terminal. The alarm message format displayed is as follows:

"<aid>:<ntfcncde>,<condtype>,<srveff>: \"[<conddescr>]\"

3.14 The <aid> is the equipment that the command affects.

3.15 The <ntfcncde> is the notification code, indicating the severity of the alarm or event.

3.16 The <condtype> is the condition type which indicates the type of alarm condition reported as either raised or cleared, which is also further explained in the conddescr parameter.

3.17 The <srveff> is the service effectivity which identifies how the alarm condition affects service.

3.18 The <condescr> is a text description of the alarm or condition reported by the system, enclosed within escaped quotes(\").

3.19 Refer to Table C for a list of alarm messages; the table is divided into two sections, one for alarm messages received from the GTI and the other section lists system alarm messages. The section for the GTI messages lists the entire terminal display; the section for the system messages lists only the condition description. Refer to Table A for additional information regarding the parameters for the alarm message format.

Table C. Terminal Alarm Displays

DISPLAY	MEANING
GTI MESSAGES	
"GTI-x:GPS-FREQTOL,SC:\"GPS FREQ TOL\"	The GTI has determined that, compared to oscillators A and B, the GPS timing solution from the GTR is out of tolerance (x = 1 or 2).
"GTI-x:MN,OSCA-LOS,SA:\"OSC LOSS OF SIGNAL\"	The GTI detects no signal energy on OSC A input (x = 1 or 2).
"GTI-x:MN,OSCB-LOS,SB:\"OSC LOSS OF SIGNAL\"	The GTI detects no signal energy on OSC B input (x = 1 or 2).
"GTI-x:MJ,GPS-LOS,SA:\"GPS LOSS OF SIGNAL\"	The GTI detects no signal energy on the GTR fiber link. This condition has exceeded the period of time set via DIP switch and has escalated into a major alarm (x = 1 or 2).
"GTI-x:MN,GPS-INVLD,NSA:\"GPS INVALID	The timing information from the GTR has been determined to be invalid for timing at this time (x = 1 or 2).
"GTI-x:MN,GTI-OUTFLT,SA:\"GTI OUT FAULT\"	The primary rate output of the GTI has been faulted by a short, improper termination, or equipment failure (x = 1 or 2).
"GTI-x:MN,GTR-PWR,SA:\"GTR POWER FAULT\"	The GTR power supply has been faulted by a short, an open, or equipment failure (x = 1 or 2).
"GTI-x:MN,FB,SA:\"FUSE OR POWER FAIL\"	A fuse of the DCD-LPR shelf has blown, or an office battery has failed (x = 1 or 2).
"GTI-x:MN,GTI-FAILxx,SA:\"GTI FAIL\"	The GTI has experienced a failure. Where x = 1 or 2, and xx = 1 through 3. The xx numbers are diagnostic codes for field service/engineering use only.
"GTI-x:MN,GTR-FAILxx,SA:\"GTR FAIL\"	The GTR has experienced a failure. Where x = 1 or 2, and xx = 1 through 5. The xx numbers are diagnostic codes for field service/engineering use only.
SYSTEM MESSAGES	
\"ALARM INDICATION SIGNAL RECEIVED\"	Received alarm indication
\"CARD FAIL\"	Card has failed
\"CLOCK ACTIVE\"	Clock is supplying signal to the 4-kHz timing bus
\"CLOCK FREERUNNING\"	Clock is being power cycled or powered-up for the first time
\"CLOCK IN HOLDOVER\"	Clock has had a reference and is using the last known value to steer the clock outputs
\"CLOCK NOT CONVERGED\"	Clock is not locked to the input signal

Table C. Terminal Alarm Displays (Contd)

DISPLAY	MEANING
SYSTEM MESSAGES (CONTD)	
\"DISCIPLINING REFERENCE SWITCHED\"	Timing input has switched to another reference
\"EXPANSION MAJOR\"	Expansion shelf has a major alarm
\"EXPANSION MINOR\"	Expansion shelf has a minor alarm
\"FRAMER FAILURE\"	Framing circuit has failed
\"FUSE OR POWER FAIL\"	Fuse or power at DCD system has failed
\"INPUT OUT OF TOLERANCE\"	Input signal is out of the clock unit's pull-in range
\"INPUT ACTIVE\"	Input card is supplying signal to the 4-kHz timing bus
\"LOSS OF SIGNAL\"	Signal is lost
\"LOSS OF ALL PRIMARY TIMING INPUT REFERENCES\"	All primary timing input references have been lost
\"LOSS OF STRATUM A INPUT\"	Input from clock in ST A slot has been lost
\"LOSS OF STRATUM B INPUT\"	Input from clock in ST B slot has been lost
\"OUTPUT SYNC PORT FAIL\"	Output port on an output card has failed
\"ST SYNTH SIGNAL FREQ DRIFT\"	Compared to the input reference signal, the signal from the clock card is drifting at a rate that exceeds 1.6×10^{-8}.
\"SYNC INPUTS UNLOCKED\"	Synchronization inputs are unlocked
\"SYNC INPUT FAILED\"	Input reference signal input has failed
\"SYNC SYSTEM FAIL\"	Entire system has failed
\"THRESHOLD VIOLATION FOR BPV\"	Bipolar violation threshold has been exceeded
\"THRESHOLD VIOLATION FOR CRC\"	Cyclic redundancy check threshold has been exceeded
\"THRESHOLD VIOLATION FOR FFREQ\"	Fractional frequency threshold has been exceeded
\"THRESHOLD VIOLATION FOR MTIE OBSERVATION\"	An MTIE threshold has been exceeded
\"THRESHOLD VIOLATION FOR MTIE1 OBSERVATION\"	Threshold for MTIE 1-second observation has been exceeded
\"THRESHOLD VIOLATION FOR MTIE4 OBSERVATION\"	Threshold for MTIE 4-second observation has been exceeded
\"THRESHOLD VIOLATION FOR MTIE16 OBSERVATION\"	Threshold for MTIE 16-second observation has been exceeded
\"THRESHOLD VIOLATION FOR MTIE64 OBSERVATION\"	Threshold for MTIE 64-second observation has been exceeded

Table C. Terminal Alarm Displays (Contd)

DISPLAY	MEANING
SYSTEM MESSAGES (CONTD)	
\"THRESHOLD VIOLATION FOR MTIE128 OBSERVATION\"	Threshold for MTIE 128-second observation has been exceeded
\"THRESHOLD VIOLATION FOR MTIE512 OBSERVATION\"	Threshold for MTIE 512-second observation has been exceeded
\"THRESHOLD VIOLATION FOR MTIE900 OBSERVATION\"	Threshold for MTIE 900-second observation has been exceeded
\"THRESHOLD VIOLATION FOR TVAR1 OBSERVATION\"	Time variance for TVAR 1-second observation has been exceeded
\"THRESHOLD VIOLATION FOR TVAR4 OBSERVATION\"	Time variance for TVAR 4-second observation has been exceeded
\"THRESHOLD VIOLATION FOR TVAR16 OBSERVATION\"	Time variance for TVAR 16-second observation has been exceeded
\"THRESHOLD VIOLATIONFOR TVAR64 OBSERVATION\"	Time variance for TVAR 64-second observation has been exceeded
\"THRESHOLD VIOLATION FOR TVAR128 OBSERVATION\"	Time variance for TVAR 128-second
\"THRESHOLD VIOLATION FOR OOF\"	Out-of-frame threshold has been exceeded
<null>	No descriptive information exists

4. SECURITY

4.01 Security for the MIS card is controlled by a combination of a switch on the MIS card and by assigning passwords to users. To enable security on the system, both the switch setting must be correct and all users must have non-null passwords. Once security is enabled, access to commands is controlled by assigning levels to users.

A. Switch Setting

4.02 To enable security, section 4 of SW1 (Figure 2) on the MIS card must be set to the OFF position. From the factory, the switch is set for no security (section 4 is in the ON position). While in this configuration, all commands can be accessed without logging onto the system.

> *Note:* Located on the MIS card daughter-board is a PROM with a label showing the SW1 switch designations (Figure 2); disregard this label.

B. Passwords

4.03 For security to be enabled, all users must have a password. If any user is assigned a password of null (no password), the entire system has no security. When there is no security, logging on is not required, and all commands can be accessed.

C. Command Levels

4.04 Security consists of restricting access to commands. Restriction is accomplished by assigning each command to a level. A user must have the required access level to access a command. The access level of each command is listed in Table B.

4.05 As shipped from the factory, one user is assigned. The user name is SUPER, and the password is null (no password). Assigning a password to this user (assuming that section 4 of SW1 on the MIS card is set to the OFF) will enable security.

4.06 Additional users can be assigned up to a maximum of 16. To setup additional users, perform the following:

  • Assign a user identification to each user

  • Assign a password to each user

  • Assign a security level to each user

D. General Operation

4.07 If the ACT-USER command is used to log onto the system, the CANC-USER command is used to log off. However, the user will be automatically logged off if no activity is detected for 5 minutes.

4.08 Configuration and control commands are used to configure card and system parameters.

4.09 Retrieve manual and/or automatic alarms commands are used to obtain alarm information.

4.10 Card information and date commands are used to obtain MRC and/or PSM card information.

5. COMMANDS

5.01 The commands used with the 500 series systems are listed in this section. Each command starts on a separate page with the command code, message category, and type. The first two paragraphs describe what the command is and what it does. The command paragraph shows the format and syntax of the command, shows an example of the command and what the example accomplishes, and provides the values for the parameters. The completed and error response formats are shown, with examples and messages that may be displayed for the parameters. Parameter definitions are listed in Table A. For a list of the available commands, refer to Table B. Operational considerations are listed in Table D.

Table D. Operational Considerations

NUMBER	CONSIDERATION
1	All systems are shipped with the factory-set sid TELECOMSOLUTIONS. In multi-system installations, the SET-SID command sets a unique sid for each system before entering other commands.
2	Upon initial installation of the MIS card, it is recommended to set the time and date using the SET-DAT command to allow for proper event correlation.
3	In a shelf, clock cards and clock input cards are labeled A and B. In the commands and responses, these cards are designated 1 and 2. For example, input 4 of clock input card MRC A is designated MRC-1-4 in the commands and responses.
4	All clock input cards are designated MRC, whether they are ECI cards, ACI cards, or MRC cards.
5	If multiple autonomous alarms appear that include a major (MJ) alarm and a card failure (CARD FAIL), ignore the MJ CARD FAIL message.

ON

SW1

1   8

LOCATED ON THE DAUGHTER BOARD

MOTHER BOARD   DAUGHTER BOARD

█ INDICATES ON

▯ INDICATES OFF

Note: All switches are shown
in the factory-set position.

J4   J5   J6   J7   J8   J9

LOCATED ON THE MOTHER BOARD

SET ALL JUMPERS TO
THIS POSITION FOR
LOCAL COMM

SET ALL JUMPERS TO
THIS POSITION FOR
COM2 RS-232 PORT
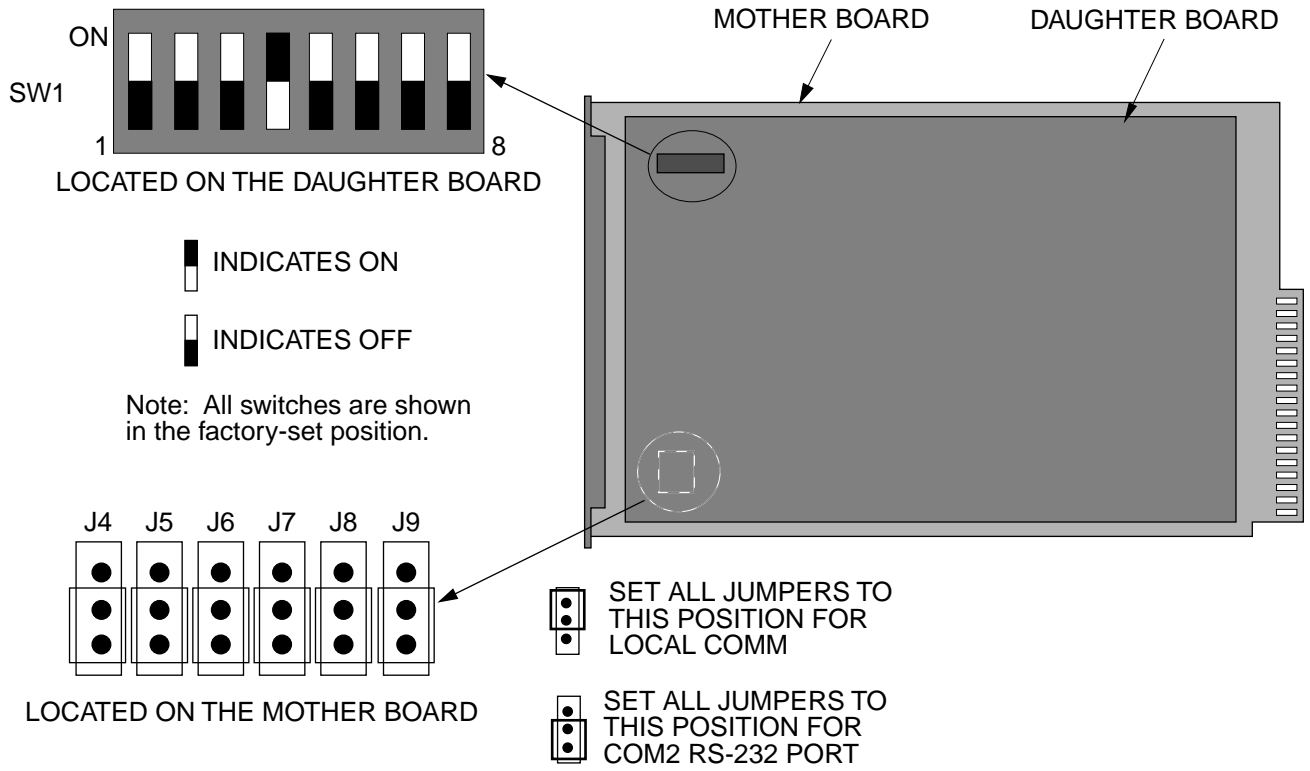
SW1 Switch Settings

SW1 Section	Position	Description	Factory Setting
1 (Note 1)	On	1200 Baud	—
	Off	9600 Baud	X
2 and 3	2=on, 3=any	Odd Parity	—
	2=off, 3=on	Even Parity	—
	2=off, 3=off	No Parity	X
4	On	Password Protection Not Enabled	X
	Off	Password Protection Enabled	—
7	On	Installed in an Expansion Shelf (Local or Remote)	—
	Off	Installed in the Master Shelf	X
8 (Note 2)	On	Communication between MIS cards in a Local and a Remote System is enabled via the COM 3 port	—
	Off	No Remote System (COM 3 is available)	X

Notes:
1.   Section 1 affects COM 2 and the front panel RJ45 jack only (active port selected by jumpers).
2.   To transfer information between MIS cards in a Local and a Remote System, the MIS card in the Master Shelf at the local location must be connected to the MIS card in the Expansion Shelf acting as a Master Shelf (contains clock input cards, but no clock cards) in the remote location. The COM 3 ports must be connected between the two shelves.
3.   Switch sections not listed are not used.

Figure 2. MIS Card Switch

COMMAND CODE: ACT-USER

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT

PURPOSE

ACTIVATE USER

This command logs the user onto the system and begins a session.

Note: During a session, if no activity is detected for five minutes, the user is automatically logged off.

INPUT FORMAT

```
ACT-USER:[<tid>]:<username>:<ctag>::<pid>;
```

pid: password identification; pid is limited to a maximum of 10 (upper, lower, or mixed case) letters

Example:

```
ACT-USER::SUPER:155::CASSIOPEIA;
```

This example, tagged as command 155, logs onto the designated `<tid>` with the username SUPER and the password CASSIOPEIA to begin a session.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```
Example:

```
    TELECOMSOLUTIONS 95-12-08 15:04:13
M  155 COMPLD
;
```

COMMAND CODE: ACT-USER (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
    errcde:    ENEQ     = not equipped
               IIAC     = invalid aid
               ICNV     = command not valid
               IICT     = invalid ctag
               IDNV     = data not valid
               IISP     = invalid syntax or punctuation
               IITA     = invalid tid
               INUP     = unimplemented non-null parameter
               SARB     = system resources are busy
               SCSN     = invalid sequence
               SDNA     = duplex unit not available
               SROF     = requested operation failed
               SNVS     = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:12:47
M  155 DENY
    IISP
;
```

COMMAND CODE: CANC-USER

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT

PURPOSE

CANCEL USER

This command logs the user off and ends the session. There is also a timeout feature; if no activity is detected for a 5-minute period, the user is automatically logged off.

INPUT FORMAT

```
CANC-USER:[<tid>]:<username>:<ctag>;
```

Example:

```
CANC-USER::SUPER:155;
```

This example, tagged as command 155, logs out and ends a session.

RESPONSE FORMAT

NORMAL RESPONSE

```
   <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
   TELECOMSOLUTIONS 95-12-08 15:04:13
M  155 COMPLD
;
```

COMMAND CODE: CANC-USER (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
    errcde:    ENEQ      = not equipped
               IIAC      = invalid aid
               ICNV      = command not valid
               IICT      = invalid ctag
               IDNV      = data not valid
               IISP      = invalid syntax or punctuation
               IITA      = invalid tid
               INUP      = unimplemented non-null parameter
               SARB      = system resources are busy
               SCSN      = invalid sequence
               SDNA      = duplex unit not available
               SROF      = requested operation failed
               SNVS      = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:12:47
M  155 DENY
    IISP
;
```

COMMAND CODE: DLT-USER-SECU

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT/RESPONSE

PURPOSE

DELETE USER SECURITY

This command removes a password.

INPUT FORMAT

```
DLT-USER-SECU:[<tid>]:<pid>:<ctag>;
```

pid: password identification

Example:

```
DLT-USER-SECU::TOP:155;
```

This example, tagged as command 155, removed the password TOP.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 93-12-08 15:04:13
M  155 COMPLD
;
```

COMMAND CODE: DLT-USER-SECU (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
errcde:    ENEQ      = not equipped
           IIAC      = invalid aid
           ICNV      = command not valid
           IICT      = invalid ctag
           IDNV      = data not valid
           IISP      = invalid syntax or punctuation
           IITA      = invalid tid
           INUP      = unimplemented non-null parameter
           SARB      = system resources are busy
           SCSN      = invalid sequence
           SDNA      = duplex unit not available
           SROF      = requested operation failed
           SNVS      = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 93-12-08 15:12:47
M  155 DENY
    IISP
;
```

COMMAND CODE: ED-SECU-PID

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT

PURPOSE

EDIT SECURITY PASSWORD

This command changes a password.

Notes:
1. For password protection to be enabled, DIP switch SW1, section 4, of the MIS card must be set to the OFF position.

2. To password protect all commands which can be protected (see Table B), a password must be entered. The factory-setting is no password. As long as there is no password, no protection is performed.

3. To remove the password and assign a new password (for example, used if the password is forgotten), perform the following:

   a. Remove the MIS card and set DIP switch SW1, section 4, to ON.

   b. Replace the MIS card and let it go through the power up sequence.

   c. Rename the password using the `ED-SECU-PID` command.

   d. Remove the MIS card and set DIP switch SW1, section 4, to OFF.

   e. Replace the MIS card and let it go through the power up sequence.

INPUT FORMAT

```
ED-SECU-PID:[<tid>]:SUPER:<ctag>::<pid>,<newpid>;
```

pid: password identification
new pid: maximum of 10 (upper, lower, or mixed case) characters
default pid: null; if a null password is detected, the system is placed in the non-secure (no password protection) mode.

Example:

```
ED-SECU-PID::SUPER:150::,ORION;
```

This example, tagged as command 150, changes the null password to ORION.

Example:

```
ED-SECU-PID::SUPER:155::ORION,CASSIOPEIA;
```

This example, tagged as command 155, changes the old password (ORION) to CASSIOPEIA.

COMMAND CODE: ED-SECU-PID (Contd)

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
 ;
```
Example:

```
    TELECOMSOLUTIONS 95-12-08 15:04:13
M  155 COMPLD
 ;
```

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
 ;
```

errcde:	ENEQ	= not equipped
	IIAC	= invalid aid
	ICNV	= command not valid
	IICT	= invalid ctag
	IDNV	= data not valid
	IISP	= invalid syntax or punctuation
	IITA	= invalid tid
	INUP	= unimplemented non-null parameter
	SARB	= system resources are busy
	SCSN	= invalid sequence
	SDNA	= duplex unit not available
	SROF	= requested operation failed
	SNVS	= not in valid state

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:12:47
M  155 DENY
    IISP
 ;
```

COMMAND CODE: ENT-USER-SECU

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT/RESPONSE

PURPOSE

ENTER USER SECURITY

This command changes the user access level.

INPUT FORMAT

```
ENT-USER-SECU:[<tid>]:<uid>:<ctag>::<pid>,,<ual>;
```

uid: user identification
pid: password identification
ual: user access level (1–5, where 5 is the highest)

Example:

```
ENT-USER-SECU::BIG:155::CLOUD,,3;
```

This example, tagged as command 155, changes the access level to 3 for user BIG whose password is CLOUD.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 93-12-08 15:04:13
M  155 COMPLD
;
```

COMMAND CODE: ENT-USER-SECU (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
errcde:    ENEQ      = not equipped
           IIAC      = invalid aid
           ICNV      = command not valid
           IICT      = invalid ctag
           IDNV      = data not valid
           IISP      = invalid syntax or punctuation
           IITA      = invalid tid
           INUP      = unimplemented non-null parameter
           SARB      = system resources are busy
           SCSN      = invalid sequence
           SDNA      = duplex unit not available
           SROF      = requested operation failed
           SNVS      = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 93-12-08 15:12:47
M  155 DENY
    IISP
;
```

COMMAND CODE: RTRV-USER-SECU

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT/RESPONSE

PURPOSE

RETREIVE USER SECURITY

This command displays the security settings for a single user or all users.

INPUT FORMAT

```
RTRV-USER-SECU:[<tid>]:<uid>::<ctag>;
```

uid: user identification or ALL

Example:

```
RTRV-USER-SECU::BIG:155;
```

This example, tagged as command 155, displays the security settings for user BIG.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 93-12-08 15:04:13
M  155 COMPLD
;
```

COMMAND CODE: RTRV-USER-SECU (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

errcde:		
	ENEQ	= not equipped
	IIAC	= invalid aid
	ICNV	= command not valid
	IICT	= invalid ctag
	IDNV	= data not valid
	IISP	= invalid syntax or punctuation
	IITA	= invalid tid
	INUP	= unimplemented non-null parameter
	SARB	= system resources are busy
	SCSN	= invalid sequence
	SDNA	= duplex unit not available
	SROF	= requested operation failed
	SNVS	= not in valid state

Example:

```
    TELECOMSOLUTIONS 93-12-08 15:12:47
M  155 DENY
    IISP
;
```

COMMAND CODE: ED-EQPT

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT

PURPOSE

EDIT EQUIPMENT

This command selects the communications device type.

INPUT FORMAT

```
ED-EQPT:[<tid>]:<aid>:<ctag>::[<baud>],[<monmode>],
    [<keepalive>],[<comtype>],[<endoftext>],[<localecho>],[<compri>];
```

aid:	COM-1	= COM port 1
	COM-2	= COM port 2
	COM-3	= COM port 3

baud:	1200	= 1200 bps
	9600	= 9600 bps (factory setting for all ports; baud rate for port 2 can only be changed by a switch on the MIS card)
	<null>	= no change

Note: The baud parameter must be set to null when the aid is COM-2.

monmode:	ALW	= allows a port to view data traffic associated with other user ports in real-time
	INH	= inhibits a port from viewing data traffic associated with other user ports in real-time (factory setting for all ports)
	<null>	= no change

keepalive:	ALW	= allows a port to autonomously output a COMPL message every 15 to 20 minutes
	INH	= inhibits a port from autonomously outputting a COMPL message every 15 to 20 minutes (factory setting for all ports)
	<null>	= no change

comtype:	X25	= PAD (sets configuration for Black Box Corporation's X.25 PAD-8 only with the following settings: a. drops call if idle time is greater than 1 minute b. fixed destination id c. fixed link speed of 9600 baud)
	MODEM	= modem (sets RS232 control leads to communicate with any general-purpose modem)
	TERM	= dumb terminal (VT100) (factory setting for all ports)
	<null>	= no change

COMMAND CODE: ED-EQPT (Contd)

INPUT FORMAT (Contd)

endoftext:	0 to 0xFF	= sets the 1 character at the end-of-text message. This character does not replace the TL1 end-of-text terminator (;). 0 indicates no end-of-text message (factory setting for all ports); 0xFF is a hexadecimal number range (the prefix 0xFF is not required)
localecho:	ALW	= allows local echo
	INH	= inhibits local echo (factory setting for all ports)
	<null>	= no change
compri:	0	= inhibits alarm/event messages from being transmitted from a port
	1, 2, or 3	= allows alarm/event messages to be transmitted from a port; 1 is the highest priority, 3 the lowest (factory setting is 1 for all ports)
	<null>	= no change

Example:

```
ED-EQPT::COM-1:115::9600,,,X25,,,;
```

This example, tagged as command 115, identifies port COM1 as set for 9600 baud, using a PAD as the communications device, and using the factory settings for the remaining parameters.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:04:13
M  170 COMPLD
;
```

COMMAND CODE: ED-EQPT (Contd)

RESPONSE FORMAT (Contd)

    ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

errcde:		
	ENEQ	= not equipped
	IIAC	= invalid aid
	ICNV	= command not valid
	IICT	= invalid ctag
	IDNV	= data not valid
	IISP	= invalid syntax or punctuation
	IITA	= invalid tid
	INUP	= unimplemented non-null parameter
	SARB	= system resources are busy
	SCSN	= invalid sequence
	SDNA	= duplex unit not available
	SROF	= requested operation failed
	SNVS	= not in valid state

    Example:

```
    TELECOMSOLUTIONS 95-12-08 15:12:47
M  170 DENY
    IISP
;
```

COMMAND CODE: ED-PRMTR-T1

MESSAGE CATEGORY: PROVISIONING
TYPE: INPUT/RESPONSE

PURPOSE

EDIT PARAMETER T1

This command modifies the facility parameter values for priority, reference type, framing, and CRC that are stored in the system database. If the priority of the reference is reassigned, the other references re-arrange their priorities automatically, for example, if MRC-1-2 (MRC A of span 2) is assigned a priority 4, the priority for MRC-1-3 becomes second, MRC-1-4 becomes third, and so on.

INPUT FORMAT

```
ED-PRMTR-T1:[<tid>]:<aid>:<ctag>:<priority>,<ref type>
                                ,,[<fmode>],[<crcmode>];
```

aid:	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

| priority: | MRC only (null for PSM): | |
| | 1 to 4 | = priority of the reference, 1 is highest priority |

ref type:	MRC only (null for PSM):	
	GPS	= global positioning system reference
	LORAN	= LORAN reference
	CESIUM	= cesium reference
	NETWORK	= network reference

fmode:	MRC and PSM:	
	D4	= D4 framing
	ESF	= ESF framing
	<null>	= ESF framing at power-up; after that, framing is set by the last setting

crcmode:	MRC and PSM:	
	NONCRC6	= do not use CRC6
	CRC6	= use CRC6
	<null>	= current crcmode does not change

COMMAND CODE: ED-PRMTR-T1 (Contd)

INPUT FORMAT (Contd)

Examples:

```
ED-PRMTR-T1::MRC-2-2:154:1,NETWORK,,ESF,NONCRC6;
```

This example, tagged as command 154, commands MRC B of span 2 to be the first priority reference, specifies it is using a network reference, T1 signal type, ESF framing, and no CRC6.

```
ED-PRMTR-T1::MRC-2-2:154:1,NETWORK,ANALOG;
```

This example, tagged as command 154, commands MRC B of span 2 to be the first priority reference, specifies it is using a network reference and analog signal type; framing mode, and crcmode parameters are not available and will cause an error to be initiated if input.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  154 COMPLD
;
```

COMMAND CODE: ED-PRMTR-T1 (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
    errcde:    ENEQ      = not equipped
               IIAC      = invalid aid
               ICNV      = command not valid
               IICT      = invalid ctag
               IDNV      = data not valid
               IISP      = invalid syntax or punctuation
               IITA      = invalid tid
               INUP      = unimplemented non-null parameter
               SARB      = system resources are busy
               SCSN      = invalid sequence
               SDNA      = duplex unit not available
               SROF      = requested operation failed
               SNVS      = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  154 DENY
    IISP
;
```

REFERENCE

AT&T 365-340-202, August, 1992

COMMAND CODE: INIT-REG-T1

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

INITIALIZE REGISTER T1

This command initializes the specified performance-monitoring storage registers on the specified equipment, and sets the register to the specified value. These registers contain PM information accumulated in previous intervals. The SET-ATTR-LOG command clears the 64-event system log. The INIT-SYS command performs a "cold restart", clearing all system registers.

Note: This command may be issued only once every 60 seconds.

INPUT FORMAT

```
INIT-REG-T1:[<tid>]:<aid>:<ctag>::[<montype>],[<monval>]
   [,,,,[<mondat>][,<montm>]];
```

aid:	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

montype:	AIS	= alarm indication signal
	BPV	= bipolar violations
	CRC	= cyclic redundancy check errors
	OOF	= out of frame errors
	LOS	= loss of signal
	<null>	= all montypes

Note: If the aid is MRC-1-x or MRC-2-x, the montypes AIS, BPV, CRC, OOF, and LOS are to be used only if E1 is selected as the input; if analog is the input, and AIS, BPV, CRC, OOF, or LOS are the montypes, the command will be denied.

montype:	For PSM only:	
	MTIE1	= maximum time interval error at 1 second
	MTIE4	= maximum time interval error at 4 seconds
	MTIE16	= maximum time interval error at 16 seconds
	MTIE64	= maximum time interval error at 64 seconds
	MTIE128	= maximum time interval error at 128 seconds
	MTIE512	= maximum time interval error at 512 seconds
	MTIE900	= maximum time interval error at 900 seconds
	TVAR1	= time variance error at 1 second
	TVAR4	= time variance error at 4 seconds
	TVAR16	= time variance error at 16 seconds
	TVAR64	= time variance error at 64 seconds
	TVAR128	= time variance error at 128 seconds
	<null>	= all of the above montypes

COMMAND CODE: INIT-REG-T1 (Contd)

INPUT FORMAT (Contd)

monval:	x	= value in the performance-monitoring register
	\<null\>	= zero

mondat:	<u>For PSM only:</u>	
	mm-dd	= date of the first initialization register
	\<null\>	= current date

montm:	<u>For PSM only:</u>	
	hh-mm	= start of the first register to be initialized (e.g., 14-00, 14-15, 14-30, 14-45) (registers are initialized from this point to the current register)
	\<null\>	= current time

Examples:

```
INIT-REG-T1::MRC-1-4:143::BPV,5;
```

The above example, if E1 is the input, tagged as command 143, sets the current BPV performance-monitoring register to 5 at MRC A, span 4.

The above example, if analog is the input, will be denied, and an IDNV error code produced.

```
INIT-REG-T1::PSM-1-ALL:144::,,,,,,06-23,14-17;
```

The current date and time in this example are June 23 (06-23) and 2:17 pm (14-17). The example above, tagged as command 144, sets all 24 hours of PSM performance-monitoring registers to zero, losing all stored maintenance data.

COMMAND CODE: INIT-REG-T1 (Contd)

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
 ;
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  143 COMPLD
 ;
```

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
 ;
```

```
    errcde:    ENEQ    = not equipped
               IIAC    = invalid aid
               ICNV    = command not valid
               IICT    = invalid ctag
               IDNV    = data not valid
               IISP    = invalid syntax or punctuation
               IITA    = invalid tid
               INUP    = unimplemented non-null parameter
               SARB    = system resources are busy
               SCSN    = invalid sequence
               SDNA    = duplex unit not available
               SROF    = requested operation failed
               SNVS    = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  143 DENY
    IISP
 ;
```

REFERENCE

TR-NWT-00833, Issue 5, Revision 1, April 1993

COMMAND CODE: INIT-SYS

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

INITIALIZE SYSTEM

The MIS option restarts the processor by executing the same routine that is performed on power-up. The restart initializes the system processor registers, which are on the MIS card, to the highest initialization level (9). All information except the sid, tid, date, and time are cleared. (The SET-ATTR-LOG command clears only the 64-event system log, and the INIT-REG-T1 command clears specific registers.) Use INIT-SYS command with care.

The COM-x option causes the data terminal ready (DTR) signal to drop for 5 seconds. The x can be any of the three communication ports (1, 2, or 3). However, the shelf must receive the command with the COM option on the same port as specified in the command.

Note: The "9" in the command indicates the high severity level (either the MIS processor will be restarted or a port will temporarily lose communications).

INPUT FORMAT

```
INIT-SYS:[<tid>]:<aid>:<ctag>::9;
```

aid:	MIS	= restarts the MIS card
	COM-1	= drops DTR for 5 seconds on the COM 1 port (the command must be input on the COM 1 port)
	COM-2	= drops DTR for 5 seconds on the COM 2 port (the command must be input on the COM 2 port)
	COM-3	= drops DTR for 5 seconds on the COM 3 port (the command must be input on the COM 3 port)

Example:

```
INIT-SYS::MIS:110::9;
```

This example, tagged as command 110, erases all system information (which is stored on the MIS card) except the sid, tid, date, and time.

COMMAND CODE: INIT-SYS (Contd)

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
  ;
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:41:32
M  110 COMPLD
  ;
```

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
  ;
```

```
errcde:    ENEQ     = not equipped
           IIAC     = invalid aid
           ICNV     = command not valid
           IICT     = invalid ctag
           IDNV     = data not valid
           IISP     = invalid syntax or punctuation
           IITA     = invalid tid
           INUP     = unimplemented non-null parameter
           SARB     = system resources are busy
           SCSN     = invalid sequence
           SDNA     = duplex unit not available
           SROF     = requested operation failed
           SNVS     = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:42:21
M  111 DENY
    IISP
  ;
```

REFERENCE

TR-NWT-000833, Issue 4, December 1990

COMMAND CODE: OPR-ACO-ALL

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT/RESPONSE

PURPOSE

OPERATE ALARM CUTOFF

This command silences all current audible alarm signals and lights the green ACO lamp on the MIS card.

INPUT FORMAT

```
OPR-ACO-ALL:[<tid>]:ALL:<ctag>;
```

Example:

```
OPR-ACO-ALL::ALL:111;
```

This example, tagged as command 111, silences all alarms in the current system.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:44:27
M  111 COMPLD
;
```

COMMAND CODE: OPR-ACO-ALL (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
   <errcde>
;
```

errcde: ENEQ   = not equipped
           IIAC   = invalid aid
           ICNV   = command not valid
           IICT   = invalid ctag
           IDNV   = data not valid
           IISP   = invalid syntax or punctuation
           IITA   = invalid tid
           INUP   = unimplemented non-null parameter
           SARB   = system resources are busy
           SCSN   = invalid sequence
           SDNA   = duplex unit not available
           SROF   = requested operation failed
           SNVS   = not in valid state

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:46:06
M  111 DENY
   IISP
;
```

REFERENCE

TA-TSY-000309, Issue 1, December 1990

COMMAND CODE: RMV-T1

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

REMOVE T1

This command removes an equipment unit or facility from service, and places it into a maintenance state. When the equipment or facility is in a maintenance state, service-affecting diagnostic routines may be performed or the unit may be replaced. No alarms are generated at the near end office as a result of this command.

INPUT FORMAT

```
RMV-T1:[<tid>]:<aid>:<ctag>;
```

aid: MRC-1-x   = Multi-Reference Controller A (x = span 1 to 4 or ALL)
                   MRC-2-x   = Multi-Reference Controller B (x = span 1 to 4 or ALL)
                   PSM-x-y   = Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4
                                        or ALL)

Example:

```
RMV-T1::PSM-3-3:133;
```

This example, tagged as command 133, removes PSM-3, span 3 from service.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 95-01-11 15:48:14
M  133 COMPLD
;
```

COMMAND CODE: RMV-T1 (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
errcde:    ENEQ    = not equipped
           IIAC    = invalid aid
           ICNV    = command not valid
           IICT    = invalid ctag
           IDNV    = data not valid
           IISP    = invalid syntax or punctuation
           IITA    = invalid tid
           INUP    = unimplemented non-null parameter
           SARB    = system resources are busy
           SCSN    = invalid sequence
           SDNA    = duplex unit not available
           SROF    = requested operation failed
           SNVS    = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:52:25
M  113 DENY
    IISP
;
```

REFERENCE

TR-NWT-000833, Issue 5, December 1992

COMMAND CODE: RST-T1

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

RESTORE T1

This command restores an equipment unit or facility into service from a maintenance state.

INPUT FORMAT

```
RST-T1:[<tid>]:<aid>:<ctag>;
```

aid: MRC-1-x   = Multi-Reference Controller A (x = span 1 to 4 or ALL)
           MRC-2-x   = Multi-Reference Controller B (x = span 1 to 4 or ALL)
           PSM-x-y   = Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

Example:

```
RST-T1::PSM-5-3:134;
```

This example, tagged as command 134, restores PSM-5, span 3 to service.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 95-01-11 15:53:12
M  134 COMPLD
;
```

COMMAND CODE: RST-T1 (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
errcde:    ENEQ     = not equipped
           IIAC     = invalid aid
           ICNV     = command not valid
           IICT     = invalid ctag
           IDNV     = data not valid
           IISP     = invalid syntax or punctuation
           IITA     = invalid tid
           INUP     = unimplemented non-null parameter
           SARB     = system resources are busy
           SCSN     = invalid sequence
           SDNA     = duplex unit not available
           SROF     = requested operation failed
           SNVS     = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 95-12-05 15:53:25
M  134 DENY
    IISP
;
```

REFERENCE

TR-NWT-000833, Issue 5, December 1992

COMMAND CODE: SET-ATTR-LOG

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT/RESPONSE

PURPOSE

SET ATTRIBUTE LOG

This command clears the 64-event system message log (which is in the MIS). It is useful after retrieving the messages with the RTRV-LOG command. (The INIT-SYS command performs a "cold restart" and clears all the system registers, and the INIT-REG-T1 command clears specific registers.)

INPUT FORMAT

```
SET-ATTR-LOG:[<tid>]::<ctag>::ALARMS,CLR;
```

Example:

```
SET-ATTR-LOG:::117::ALARMS,CLR;
```

This example, tagged as command 117, erases all information stored in the system message log.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 16:31:46
M  117 COMPLD
;
```

COMMAND CODE: SET-ATTR-LOG (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
   <errcde>
;
```

```
errcde:    ENEQ      = not equipped
           IIAC      = invalid aid
           ICNV      = command not valid
           IICT      = invalid ctag
           IDNV      = data not valid
           IISP      = invalid syntax or punctuation
           IITA      = invalid tid
           INUP      = unimplemented non-null parameter
           SARB      = system resources are busy
           SCSN      = invalid sequence
           SDNA      = duplex unit not available
           SROF      = requested operation failed
           SNVS      = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 16:31:51
M  117 DENY
   IISP
;
```

REFERENCE

TA-TSY-000309, Issue 1, December 1990

COMMAND CODE: SET-ATTR-T1

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

SET ATTRIBUTE T1

This command sets the notification code associated with the specified event. This attribute governs whether the event is reported automatically. Alarmed events are reported automatically by the REPORT ALARM message.

INPUT FORMAT

```
SET-ATTR-T1:[<tid>]:<aid>:<ctag>::[<ntfcncde>],[<condtype>];
```

aid:	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

ntfcncde:	MJ	= major alarm
	MN	= minor alarm
	NA	= not alarmed
	<null>	= not alarmed

condtype:	AIS	= alarm indication signal
	BPV	= bipolar violations
	CRC	= cyclic redundancy check errors
	OOF	= out of frame errors
	LOS	= loss of signal
	<null>	= all condtypes

Note: If the aid is MRC-1-x or MRC-2-x, the condtypes AIS, BPV, CRC, OOF, and LOS are to be used only if E1 is selected as the input; if analog is the input, and AIS, BPV, CRC, OOF, or LOS are the condition types, the command will be denied.

For PSM only:

MTIE1	= maximum time interval error at 1 second
MTIE4	= maximum time interval error at 4 seconds
MTIE16	= maximum time interval error at 16 seconds
MTIE64	= maximum time interval error at 64 seconds
MTIE128	= maximum time interval error at 128 seconds
MTIE512	= maximum time interval error at 512 seconds
MTIE900	= maximum time interval error at 900 seconds
TVAR1	= time variance error at 1 second
TVAR4	= time variance error at 4 seconds
TVAR16	= time variance error at 16 seconds
TVAR64	= time variance error at 64 seconds
TVAR128	= time variance error at 128 seconds
<null>	= all condtypes

COMMAND CODE: SET-ATTR-T1 (Contd)

INPUT FORMAT (Contd)

Examples:

```
SET-ATTR-T1::MRC-1-4:137::MJ,AIS;
```

This example, if E1 is the input, tagged as command 137, sets the alarm indication signal to a major alarm on MRC A, span 4.

This example, if analog is the input, will be denied, and an IDNV error code produced.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  137 COMPLD
;
```

COMMAND CODE: SET-ATTR-T1 (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

errcde:　　ENEQ　　= not equipped
　　　　　　IIAC　　= invalid aid
　　　　　　ICNV　　= command not valid
　　　　　　IICT　　= invalid ctag
　　　　　　IDNV　　= data not valid
　　　　　　IISP　　= invalid syntax or punctuation
　　　　　　IITA　　= invalid tid
　　　　　　INUP　　= unimplemented non-null parameter
　　　　　　SARB　　= system resources are busy
　　　　　　SCSN　　= invalid sequence
　　　　　　SDNA　　= duplex unit not available
　　　　　　SROF　　= requested operation failed
　　　　　　SNVS　　= not in valid state

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  137 DENY
    IISP
;
```

REFERENCE

TR-NWT-00833, Issue 5, Revision 1, April 1993

COMMAND CODE: SET-DAT

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT/RESPONSE

PURPOSE

SET DATE

This command sets the system (real-time) date and time clock to the given values.

INPUT FORMAT

```
SET-DAT:[<tid>]::<ctag>:<date>,<time>;
```

     date: 6-digit form yymmdd (year, month, day)
     time: 6-digit form hhmmss (hours, minutes, seconds)

Example:

```
SET-DAT:::118:951208,163500;
```

This example, tagged as command 118, sets the date to December 8th, 1995, and the time to 4:35 PM.

RESPONSE FORMAT

NORMAL RESPONSE

```
   <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
   TELECOMSOLUTIONS 95-12-08 16:35:00
M  118 COMPLD
;
```

COMMAND CODE: SET-DAT (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
    errcde:    ENEQ    = not equipped
               IIAC    = invalid aid
               ICNV    = command not valid
               IICT    = invalid ctag
               IDNV    = data not valid
               IISP    = invalid syntax or punctuation
               IITA    = invalid tid
               INUP    = unimplemented non-null parameter
               SARB    = system resources are busy
               SCSN    = invalid sequence
               SDNA    = duplex unit not available
               SROF    = requested operation failed
               SNVS    = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 16:35:02
M  118 DENY
    IISP
;
```

REFERENCE

TA-TSY-000309, Issue 1, December 1990

COMMAND CODE: SET-SID

MESSAGE CATEGORY: ADMINISTRATION
TYPE: INPUT/RESPONSE

PURPOSE

SET SOURCE IDENTIFIER

This command sets the system identification, or source identifier. The sid is included in every message sent by the system. The target identifier (tid) in a command is the sid of the system where the command is targeted. (The MIS card retains the sid for six to eight hours after the card is removed from the shelf.)

Note: The sids on the expansion shelves are automatically assigned. The expansion shelf sids are as follows:

- `<tid>E1` = Expansion shelf #1
- `<tid>E2` = Expansion shelf #2
- `<tid>E3` = Expansion shelf #3

INPUT FORMAT

```
SET-SID:[<tid>]::<ctag>:<sid>;
```

Example:

```
SET-SID:::119:TELECOMSOLUTIONS2;
```

This example, tagged as command 119, sets the sid as TELECOMSOLUTIONS2.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS2 95-12-08 16:37:08
M  119 COMPLD
;
```

COMMAND CODE: SET-SID (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

errcde: ENEQ   = not equipped
            IIAC   = invalid aid
            ICNV   = command not valid
            IICT   = invalid ctag
            IDNV   = data not valid
            IISP   = invalid syntax or punctuation
            IITA   = invalid tid
            INUP   = unimplemented non-null parameter
            SARB   = system resources are busy
            SCSN   = invalid sequence
            SDNA   = duplex unit not available
            SROF   = requested operation failed
            SNVS   = not in valid state

Example:

```
    TELECOMSOLUTIONS 95-12-08 16:37:12
M  119 DENY
    IISP
;
```

REFERENCE

TA-TSY-000309, Issue 1, December 1990

COMMAND CODE: SET-TH-T1

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

SET THRESHOLD T1

This command sets the threshold level for a monitored parameter. When the parameter exceeds the threshold value, an automatic message is sent. The threshold may apply to one or more units. One command is required for each threshold setting.

INPUT FORMAT

```
SET-TH-T1:[<tid>]:<aid>:<ctag>::<montype>,<thlev>;
```

aid:	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)
montype:	BPV	= bipolar violations
	CRC	= cyclic redundancy check errors
	OOF	= out of frame errors
	AIS	= alarm indication signal

> *Note:* If the aid is MRC-1-x or MRC-2-x, montypes BPV, CRC, OOF, and AIS are to be used only if E1 is selected as the input; if analog is the input, the command will be denied.

montype:	For PSM only:	
	MTIE1	= maximum time interval error at 1 second
	MTIE4	= maximum time interval error at 4 seconds
	MTIE16	= maximum time interval error at 16 seconds
	MTIE64	= maximum time interval error at 64 seconds
	MTIE128	= maximum time interval error at 128 seconds
	MTIE512	= maximum time interval error at 512 seconds
	MTIE900	= maximum time interval error at 900 seconds
	TVAR1	= time variance error at 1 second
	TVAR4	= time variance error at 4 seconds
	TVAR16	= time variance error at 16 seconds
	TVAR64	= time variance error at 64 seconds
	TVAR128	= time variance error at 128 seconds
thlev:	xxxxx	= where xxxxx equals a decimal numeral for the threshold level (max. 32767 nanoseconds)

COMMAND CODE: SET-TH-T1 (Contd)

INPUT FORMAT (Contd)

Examples:

```
SET-TH-T1::MRC-1-3:135::OOF,20;
```

This example, tagged as command 135, sets the out of frame errors of MRC-1, span 3, to 20.

This example, if analog is the input, will be denied, and an IDNV error code produced.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
    ;
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  135 COMPLD
    ;
```

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
    ;
```

errcde:		
	ENEQ	= not equipped
	IIAC	= invalid aid
	ICNV	= command not valid
	IICT	= invalid ctag
	IDNV	= data not valid
	IISP	= invalid syntax or punctuation
	IITA	= invalid tid
	INUP	= unimplemented non-null parameter
	SARB	= system resources are busy
	SCSN	= invalid sequence
	SDNA	= duplex unit not available
	SROF	= requested operation failed
	SNVS	= not in valid state

COMMAND CODE: SET-TH-T1 (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE (Contd)

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  135 DENY
    IISP
;
```

REFERENCE

TR-NWT-000833 Issue 5, Revision 1, April 1993

COMMAND CODE: SW-DX-EQPT

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

SWITCH DUPLEX EQUIPMENT

This command switches an equipment unit or facility with its mate. This command works only on shelves equipped with clocks other than ST2Es/TNC-Es.

INPUT FORMAT

```
SW-DX-EQPT:[<tid>]:<aid>:<ctag>;
```

        aid: MRC   = active Multi-Reference Controller

Example:

```
SW-DX-EQPT::MRC:140;
```

This example, tagged as command 140, switches the active MRC with its mate unit.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
    TELECOMSOLUTIONS2 95-01-10 14:44:36
M  140 COMPLD
;
```

COMMAND CODE: SW-DX-EQPT (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

Example:

```
    TELECOMSOLUTIONS 95-01-10 14:44:37
M  140 DENY
    IISP
;
```

REFERENCE

TR-NWT-000833 Issue 5, December 1992

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1}

MESSAGE CATEGORY: SYSTEM MAINTENANCE
TYPE: INPUT/RESPONSE

PURPOSE

RETRIEVE ALARMS

This command lists all the alarms in any equipment or facility in a system (RTRV-ALM-ALL), specific equipment alarms (RTRV-ALM-EQPT), or specific facilities (RTRV-ALM-T1). The optional parameters specify alarms by severity, type, or whether they affect service. If a piece of equipment is not in alarm, use the RTRV-COND command to retrieve its condition. Equipment that does not respond to either command is not installed.

INPUT FORMAT

```
RTRV-ALM-{ALL|EQPT|T1}:[<tid>]:<aid>:<ctag>[::[<ntfcncde>],
                                 [<condtype>],[<srveff>]][,,,];
```

> *Note:* The `<aid>` field is optional for RTRV-ALM-ALL.

aid:	For RTRV-ALM-ALL:	
	ALL	= all DCD-500 equipment types or states
	\<null\>	= all

For RTRV-ALM-EQPT:

EXPANS	= expansion shelf
FUSE-1	= fuse A
FUSE-2	= fuse B
MASTER	= master shelf
MRC-1	= Multi-Reference Controller A
MRC-2	= Multi-Reference Controller B
PSM-x	= Precision Sync Monitor card (x = 1 to 9)
MIS	= Maintenance Interface, System
CLK-1	= Stratum clock unit A
CLK-2	= Stratum clock unit B
GTI-1	= GTI installed in the A slot
GTI-2	= GTI installed in the B slot
LTI-1	= LTI installed in the A slot
LTI-2	= LTI installed in the B slot
SYSTEM	= all clocks
ALL	= all equipment

For RTRV-ALM-T1:

MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

INPUT FORMAT (Contd)

	ntfcncde:	CR	= critical alarm
		MJ	= major alarm
		MN	= minor alarm
		<null>	= all ntfcncdes

For RTRV-ALM-ALL only:

<null>   = all ntfcncdes

	condtype:	FA	= fuse alarm
		SYNCCLK	= output port failed
		HLDOVRSYNC	= clock in the holdover mode
		SYNC	= input reference failed
		FRNGSYNC	= clock in the freerunning mode
		SLTMSIG	= input references unlocked
		INT	= card failed
		FSTSYNC	= clock in the fast-converge mode
		BPV	= bipolar violations
		CRC	= cyclic redundancy check errors
		OOF	= out of frame errors
		LOS	= loss of signal
		AIS	= alarm indication signal
		<null>	= all of the above condtypes

Note: If the aid is MRC-1 or MRC-2, the condtypes AIS, BPV, CRC, OOF, and LOS are to be used only if E1 is selected as the input; if analog is the input, and AIS, BPV, CRC, OOF, or LOS are the condition types, the command will be denied.

For PSM only:

MTIE1	= maximum time interval error at 1 second
MTIE4	= maximum time interval error at 4 seconds
MTIE16	= maximum time interval error at 16 seconds
MTIE64	= maximum time interval error at 64 seconds
MTIE128	= maximum time interval error at 128 seconds
MTIE512	= maximum time interval error at 512 seconds
MTIE900	= maximum time interval error at 900 seconds
TVAR1	= time variance error at 1 second
TVAR4	= time variance error at 4 seconds
TVAR16	= time variance error at 16 seconds
TVAR64	= time variance error at 64 seconds
TVAR128	= time variance error at 128 seconds
<null>	= all condtypes, except those listed for GTI

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

INPUT FORMAT (Contd)

condtype:
(contd)

For GTI only:

FA	= fuse A
FB	= fuse B
GPSLOS	= GPS loss of signal
GPSINVLD	= GPS timing is invalid
GTINOINPUTS	= no oscillator A or B and no GPS
GTIOUTFLT	= output of the GTI has been faulted
GTIFAILx	= hard failure, where x = 1 through 5 (the numbers 1-5 are diagnostic codes for field service/engineering use only)
OSCALOS	= no OSC A input
OSCBLOS	= no OSC B input
OSCATOL	= OSC A out of tolerance
OSCBTOL	= OSC B out of tolerance
GTRPWR	= power supply has been faulted by a short, an open, or equipment failure
GTRFREQTOL	= 4-kHz output from the GTR is not phase-locked
GTRSAT	= insufficient satellites
GTRCOMM	= GTI has timed out waiting for a status message from the GTR
GTRFAILx	= hard failure, where x = 1 through 5 (the numbers 1-5 are diagnostic codes for field service/engineering use only)
<null>	= all condtypes, except those listed for PSM

For LTI only:

FUSE A	= fuse A
FUSE B	= fuse B
OSC A	= oscillator A
OSC B	= oscillator B
OSC BOTH	= oscillators A and B
DSP SEARCH	=
DSP COM LOSS	=
ANTENNA LOSS	=
NO INPUTS	=
DSP INPUT	=
PLL UNLOCKED	=
SYN UNLOCKED	=
PRR UNLOCKED	=
PRR OUTPUT	=

For RTRV-ALM-ALL:

<null>	= all condtypes

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

srveff: SA   = service-affecting condition
                  NSA   = nonservice-affecting condition
                  <null>   = service-affecting or nonservice-affecting conditions

                  For RTRV-ALM-ALL:
                  <null>   = service-affecting or nonservice-affecting conditions

Examples:

```
RTRV-ALM-T1::MRC-1-4:145::MJ,,NSA;
```

This example, if E1 is the input, tagged as command 145, retrieves major alarms (if any) from MRC A, span 4.

This example, if analog is the input, will be denied, and an IDNV error code produced.

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

RESPONSE FORMAT

NORMAL RESPONSE

If there are no alarms, the format is:

```
    <sid> <date> <time>
M  <ctag>  COMPLD
 ;
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  145  COMPLD
 ;
```

If there is at least one alarm to report, the format is:

```
    <sid> <date> <time>
M  <ctag>  COMPLD
    ["<aid>[,<aiddet>]:<ntfcncde>,<condtype>,<srveff>:
    [<conddescr>]"]...
    "[<aid>]:<ntfcncde>,<condtype>,<srveff>:
    [<conddescr>]"
 ;
```

aid:	For RTRV-ALM-EQPT:	
	EXPANS	= expansion shelf
	FUSE-1	= fuse A
	FUSE-2	= fuse B
	MASTER	= master shelf
	MRC-1	= Multi-Reference Controller A
	MRC-2	= Multi-Reference Controller B
	PSM-x	= Precision Sync Monitor card (x = 1 to 9)
	MIS	= Maintenance Interface, System
	CLK-1	= Stratum clock unit A
	CLK-2	= Stratum clock unit B
	GTI-1	= GTI installed in the A slot
	GTI-2	= GTI installed in the B slot
	SYSTEM	= all clocks have failed
	For RTRV-ALM-T1:	
	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

RESPONSE FORMAT (Contd)

NORMAL RESPONSE (Contd)

ntfcncde:	CR	= critical alarm
	MJ	= major alarm
	MN	= minor alarm
condtype:	AIS	= alarm indication signal
	FA	= fuse or power fail
	FRNGSYNC	= clock is in the freerunning mode
	FSTSYNC	= clock is in the fast-converge mode
	HLDOVRSYNC	= clock is in the holdover mode
	INT	= card has failed
	LOS	= loss of signal
	SFI	= loss of stratum input to MRC
	SLTMSIG	= input references are unlocked
	SYNC	= input reference has failed
	SYNCCLK	= output port has failed
	SYNCPRI	= loss of all primary timing references
	SYNCSEC	= loss of all secondary timing references
	TBPV	= threshold for BPVs has been exceeded
	TCRC	= threshold for CRCs has been exceeded
	TOOF	= threshold for OOFs has been exceeded

For PSM only:

MTIE1	= maximum time interval error at 1 second
MTIE4	= maximum time interval error at 4 seconds
MTIE16	= maximum time interval error at 16 seconds
MTIE64	= maximum time interval error at 64 seconds
MTIE128	= maximum time interval error at 128 seconds
MTIE512	= maximum time interval error at 512 seconds
MTIE900	= maximum time interval error at 900 seconds
TVAR1	= time variance error at 1 second
TVAR4	= time variance error at 4 seconds
TVAR16	= time variance error at 16 seconds
TVAR64	= time variance error at 64 seconds
TVAR128	= time variance error at 128 seconds

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

RESPONSE FORMAT (Contd)

NORMAL RESPONSE (Contd)

condtype: (contd)	For GTI only:	
	FA	= fuse A
	FB	= fuse B
	GPSLOS	= GPS loss of signal
	GPSINVLD	= GPS timing is invalid
	GTIOUTFLT	= output of the GTI has been faulted
	GTIFAILx	= hard failure, where x = 1 through 3 (the numbers 1-3 are diagnostic codes for field service/engineering use only)
	OSCALOS	= no OSC A input
	OSCBLOS	= no OSC B input
	GTRPWR	= power supply has been faulted by a short, an open, or equipment failure
	GTRCOMM	= GTI has timed out waiting for a status message from the GTR
	GTRFAILx	= hard failure, where x = 1 through 5 (the numbers 1-5 are diagnostic codes for field service/engineering use only)
	For LTI only:	
	FUSE A	= fuse A
	FUSE B	= fuse B
	OSC A	= oscillator A
	OSC B	= oscillator B
	OSC BOTH	= oscillators A and B
	DSP SEARCH	=
	DSP COM LOSS	=
	ANTENNA LOSS	=
	NO INPUTS	=
	DSP INPUT	=
	PLL UNLOCKED	=
	SYN UNLOCKED	=
	PRR UNLOCKED	=
	PRR OUTPUT	=
srveff:	SA	= service-affecting condition
	NSA	= nonservice-affecting condition

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

RESPONSE FORMAT (Contd)

NORMAL RESPONSE (Contd)

conddescr:	ALARM INDICATION SIGNAL RECEIVED	= received alarm indication signal
	CARD FAIL	= card has failed
	CLOCK ACTIVE	= clock is active
	CLOCK FREERUNNING	= clock is in the freerunning mode
	CLOCK IN HOLDOVER	= clock is in the holdover mode
	CLOCK NOT CONVERGED	= clock is not locked to the input signal
	DISCIPLINING REFERENCE SWITCHED	= timing input has switched to another reference
	EXPANSION MAJOR	= expansion shelf has a major alarm
	EXPANSION MINOR	= expansion shelf has a minor alarm
	FRAMER FAILURE	= framing
	FUSE OR POWER FAIL	= fuse or power at DCD system has failed
	INPUT OUT OF TOLERANCE	= input signal is out of the clock unit's pull-in range
	INPUT ACTIVE	= input signal is active
	LOSS OF SIGNAL	= signal is lost
	LOSS OF ALL PRIMARY TIMING INPUT REFERENCES	= all primary timing input references have been lost
	LOSS OF STRATUM A INPUT	= input from clock in ST A slot has been lost
	LOSS OF STRATUM B INPUT	= input from clock in ST B slot has been lost
	OUTPUT SYNC PORT FAIL	= output port on an output card has failed
	ST SYNTH SIGNAL FREQ DRIFT	= the synthesized signal from the clock card is showing frequency drift
	SYNC INPUTS UNLOCKED	= synchronization inputs are unlocked
	SYNC INPUT FAILED	= input reference signal input has failed
	SYNC SYSTEM FAIL	= entire system has failed

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

RESPONSE FORMAT (Contd)

NORMAL RESPONSE (Contd)

conddescr: (contd)	THRESHOLD VIOLATION FOR BPV	= bipolar violation threshold has been exceeded
	THRESHOLD VIOLATION FOR CRC	= cyclic redundancy check threshold has been exceeded
	THRESHOLD VIOLATION FOR FFREQ	= fractional frequency threshold has been exceeded
	THRESHOLD VIOLATION FOR MTIE OBSERVATION	= an MTIE threshold has been exceeded
	THRESHOLD VIOLATION FOR MTIE1 OBSERVATION	= threshold for MTIE 1-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE4 OBSERVATION	= threshold for MTIE 4-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE16 OBSERVATION	= threshold for MTIE 16-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE64 OBSERVATION	= threshold for MTIE 64-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE128 OBSERVATION	= threshold for MTIE 128-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE512 OBSERVATION	= threshold for MTIE 512-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE900 OBSERVATION	= threshold for MTIE 900-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR1 OBSERVATION	= time variance for TVAR 1-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR4 OBSERVATION	= time variance for TVAR 4-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR16 OBSERVATION	= time variance for TVAR 16-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR64 OBSERVATION	= time variance for TVAR 64-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR128 OBSERVATION	= time variance for TVAR 128-second observation has been exceeded
	THRESHOLD VIOLATION FOR OOF	= out-of-frame threshold has been exceeded
	<null>	= no descriptive information exists

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

RESPONSE FORMAT (Contd)

NORMAL RESPONSE (Contd)

conddescr:	For GTI only:	
(contd)	FUSE OR POWER FAIL	= DCD-LPR fuse has blown, or the office battery has failed
	GPS LOSS OF SIGNAL	= GPS loss of signal
	GPS INVALID	= GPS timing is invalid
	GTI OUT FAULT	= primary rate output of the GTI has been faulted by a short, improper termination, or equipment failure
	GTI-FAIL	= hardware failure; for field service and engineering use only
	OSCA LOSS OF SIGNAL	= no signal energy detected on OSC input
	GTR POWER FAULT	= power supply has been faulted by a short, an open, or equipment failure
	GTR COMM FAILURE	= The GTI has timed out waiting for a status message from the GTR
	GTR FAIL	= hardware failure; for field service and engineering use only
	<null>	= no descriptive information exists

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  145 COMPLD
    "MRC-1-4:MJ,LOS,NSA"
 ;
```

This example, in response to command 145, shows that MRC A, span 4, has two major alarms: loss of signal, and MTIE 1-second alarms.

COMMAND CODE: RTRV-ALM-{ALL|EQPT|T1} (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

errcde: ENEQ   = not equipped
         IIAC   = invalid aid
         ICNV   = command not valid
         IICT   = invalid ctag
         IDNV   = data not valid
         IISP   = invalid syntax or punctuation
         IITA   = invalid tid
         INUP   = unimplemented non-null parameter
         SARB   = system resources are busy
         SCSN   = invalid sequence
         SDNA   = duplex unit not available
         SROF   = requested operation failed
         SNVS   = not in valid state

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  145 DENY
    IISP
;
```

REFERENCE

TR-NWT-000833, Issue 5, Revision 1, April 1993

COMMAND CODE: REPT-ALM{EQPT|T1}

MESSAGE CATEGORY: SURVEILLANCE
TYPE: AUTOMATIC

PURPOSE

REPORT ALARM

This message reports the occurrence of alarmed events, including the access identifier, the severity of the alarm, the type of condition, whether it affects service, and a short description of the alarm.

MESSAGE FORMAT

```
    <sid> <date> <time>
<almcde> <atag> REPT ALM {EQPT|T1}
   "<aid>:<ntfcncde>,<condtype>,<srveff>:<conddescr>"
;
```

almcde:	*C	= critical alarm
	**	= major alarm
	*	= minor alarm
	A	= automatic message (only if a following ntfcncde is CL or NA)

aid:	ALL	= all DCD-500 object entities
	CLK-1	= Stratum clock unit A
	CLK-2	= Stratum clock unit B
	EXPANS	= expansion shelf
	FUSE-1	= fuse A
	FUSE-2	= fuse B
	MASTER	= master shelf
	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4)
	MIS	= Maintenance Interface, System
	GTI-1	= GTI installed in the A slot
	GTI-2	= GTI installed in the B slot
	SYSTEM	= all clocks have failed

ntfcncde:	CR	= critical alarm
	MJ	= major alarm
	MN	= minor alarm
	CL	= cleared alarm
	NA	= not alarmed

COMMAND CODE: REPT-ALM{EQPT|T1} (Contd)

MESSAGE FORMAT (Contd)

condtype:	AIS	= alarm indication signal
	FA	= fuse alarm
	FRNGSYNC	= clock is in the freerunning mode
	FSTSYNC	= clock is in the fast-converge mode
	HLDOVRSYNC	= clock is in the holdover mode
	INT	= card has failed
	LOS	= loss of signal
	SFI	= loss of stratum input to MRC
	SLTMSIG	= input references are unlocked
	SYNC	= input reference has failed
	SYNCCLK	= output port has failed
	SYNCPRI	= loss of all primary timing references
	SYNCSEC	= loss of all secondary timing references
	TBPV	= threshold violation for BPVs
	TCRC	= threshold violation for CRC errors
	TFFREQ	= threshold violation for fractional frequency
	TMTIE1	= threshold for MTIE 1 second has been exceeded
	TMTIE4	= threshold for MTIE 4 seconds has been exceeded
	TMTIE16	= threshold for MTIE 16 seconds has been exceeded
	TMTIE64	= threshold for MTIE 64 seconds has been exceeded
	TMTIE128	= threshold for MTIE 128 seconds has been exceeded
	TMTIE512	= threshold for MTIE 512 seconds has been exceeded
	TMTIE900	= threshold for MTIE 900 seconds has been exceeded
	TOOF	= threshold for OOFs has been exceeded
	TTVAR1	= threshold for TVAR 1 second has been exceeded
	TTVAR4	= threshold for TVAR 4 seconds has been exceeded
	TTVAR16	= threshold for TVAR 16 seconds has been exceeded
	TTVAR64	= threshold for TVAR 64 seconds has been exceeded
	TTVAR128	= threshold for TVAR 128 seconds has been exceeded

For GTI only:

	FA	= fuse A
	FB	= fuse B
	GPSLOS	= GPS loss of signal
	GPSINVLD	= GPS timing is invalid
	GTIOUTFLT	= primary rate output of the GTI has been faulted
	GTIFAILx	= hard failure, where x = 1 through 3. The numbers 1-3 are diagnostic codes for field service/engineering use only
	OSCALOS	= signal energy on OSC A input
	OSCBLOS	= signal energy on OSC B input
	GTRPWR	= power supply has been faulted by a short, an open, or equipment failure
	GTRCOMM	= The GTI has timed out waiting for a status message from the GTR
	GTRFAILx	= hard failure, where x = 1 through 5 (the numbers 1-5 are diagnostic codes for field service/engineering use only)

srveff:	SA	= service-affecting condition
	NSA	= nonservice-affecting condition

COMMAND CODE: REPT-ALM{EQPT|T1} (Contd)

MESSAGE FORMAT (Contd)

conddescr:

ALARM INDICATION SIGNAL RECEIVED	= received alarm indication
CARD FAIL	= card has failed
CLOCK ACTIVE	= clock is active
CLOCK FREERUNNING	= clock is in the freerunning mode
CLOCK IN HOLDOVER	= clock is in the holdover mode
CLOCK NOT CONVERGED	= clock is not locked to the input signal
DISCIPLINING REFERENCE SWITCHED	= timing input has switched to another reference
EXPANSION MAJOR	= expansion shelf has a major alarm
EXPANSION MINOR	= expansion shelf has a minor alarm
FRAMER FAILURE	= framing
FUSE OR POWER FAIL	= fuse or power at DCD system has failed
INPUT OUT OF TOLERANCE	= input signal is out of the clock unit's pull-in range
INPUT ACTIVE	= input signal is active
LOSS OF SIGNAL	= signal is lost
LOSS OF ALL PRIMARY TIMING INPUT REFERENCES	= all primary timing input references have been lost
OUTPUT SYNC PORT FAIL	= output port on an output card has failed
SYNC INPUTS UNLOCKED	= synchronization inputs are unlocked
SYNC INPUT FAILED	= input reference signal input has failed
SYNC SYSTEM FAIL	= entire system has failed
THRESHOLD VIOLATION FOR BPV	= bipolar violation threshold has been exceeded
THRESHOLD VIOLATION FOR CRC	= cyclic redundancy check threshold has been exceeded
THRESHOLD VIOLATION FOR FFREQ	= fractional frequency threshold has been exceeded
THRESHOLD VIOLATION FOR MTIE OBSERVATION	= an MTIE threshold has been exceeded
THRESHOLD VIOLATION FOR MTIE1 OBSERVATION	= threshold for MTIE 1-second observation has been exceeded
THRESHOLD VIOLATION FOR MTIE4 OBSERVATION	= threshold for MTIE 4-second observation has been exceeded
THRESHOLD VIOLATION FOR MTIE16 OBSERVATION	= threshold for MTIE 16-second observation has been exceeded
THRESHOLD VIOLATION FOR MTIE64 OBSERVATION	= threshold for MTIE 64-second observation has been exceeded
THRESHOLD VIOLATION FOR MTIE128 OBSERVATION	= threshold for MTIE 128-second observation has been exceeded
THRESHOLD VIOLATION FOR MTIE512 OBSERVATION	= threshold for MTIE 512-second observation has been exceeded
THRESHOLD VIOLATION FOR MTIE900 OBSERVATION	= threshold for MTIE 900-second observation has been exceeded
THRESHOLD VIOLATION FOR OOF	= out-of-frame threshold has been exceeded

COMMAND CODE: REPT-ALM{EQPT|T1} (Contd)

MESSAGE FORMAT (Contd)

conddescr: (contd)	THRESHOLD VIOLATION FOR TVAR1 OBSERVATION	= time variance for TVAR 1-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR4 OBSERVATION	= time variance for TVAR 4-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR16 OBSERVATION	= time variance for TVAR 16-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR64 OBSERVATION	= time variance for TVAR 64-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR128 OBSERVATION	= time variance for TVAR 128-second observation has been exceeded
	\<null\>	= no descriptive information exists

For GTI only:

FUSE OR POWER FAIL	= DCD-LPR fuse has blown, or the office battery has failed
GPS LOSS OF SIGNAL	= GPS loss of signal
GPS INVALID	= GPS timing is invalid
GTI OUT FAULT	= primary rate output of the GTI has been faulted by a short, improper termination, or equipment failure
GTI-FAIL	= hardware failure; for field service and engineering use only
OSCA LOSS OF SIGNAL	= no signal energy detected on OSC input
GTR POWER FAULT	= power supply has been faulted by a short, an open, or equipment failure
GTR COMM FAILURE	= The GTI has timed out waiting for a status message from the GTR
GTR FAIL	= hardware failure; for field service and engineering use only

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:41:32
*   14 REPT ALM EQPT
    "CLK-1:MN,HLDOVRSYNC,NSA:\"CLOCK IN HOLDOVER\""
;
```

This example, tagged as automatic message 14, shows that clock 1 has a minor alarm, the clock is in holdover, and service is not affected.

REFERENCE

TA-TSY-000309, Issue 1, December 1990

COMMAND CODE: REPT-EVT

MESSAGE CATEGORY: SURVEILLANCE
TYPE: AUTOMATIC

PURPOSE

REPORT EVENT

This message reports the occurrence of nonalarmed events, including the access identifier, the severity of the alarm, the type of condition, whether it affects service, and a short description of the alarm.

MESSAGE FORMAT

```
            <sid> <date> <time>
   <atag> REPT EVT {EQPT|T1}
            "<aid>:<condtype>,<condeff>:<conddescr>"
   ;
```

aid:	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)
	CLK-1	= clock card A
	CLK-2	= clock card B
condtype:	AIS	= alarm indication signal
	FFREQ	= fractional frequency exceeded for ST A or ST B
	LOS	= loss of signal
	SFI	= loss of stratum input
	TBPV	= threshold violation for BPVs
	TCRC	= threshold violation for CRC errors
	TFFREQ	= threshold for fractional frequency has been exceeded
	TMTIE	= an MTIE threshold has been exceeded
	TMTIE1	= threshold for MTIE 1 second has been exceeded
	TMTIE4	= threshold for MTIE 4 seconds has been exceeded
	TMTIE16	= threshold for MTIE 16 seconds has been exceeded
	TMTIE64	= threshold for MTIE 64 seconds has been exceeded
	TMTIE128	= threshold for MTIE 128 seconds has been exceeded
	TMTIE512	= threshold for MTIE 512 seconds has been exceeded
	TMTIE900	= threshold for MTIE 900 seconds has been exceeded
	TOOF	= threshold for OOFs has been exceeded
	TTVAR1	= time variance for TVAR 1 second has been exceeded
	TTVAR4	= time variance for TVAR 4 seconds has been exceeded
	TTVAR16	= time variance for TVAR 16 seconds has been exceeded
	TTVAR64	= time variance for TVAR 64 seconds has been exceeded
	TTVAR128	= time variance for TVAR 128 seconds has been exceeded
	WKSWPRx	= working facility switched back to working status (x = equipment number)
condeff:	CL	= standing condition cleared
	SC	= standing condition raised

COMMAND CODE: REPT-EVT (Contd)

MESSAGE FORMAT (Contd)

conddescr:	DISCIPLINING REFERENCE SWITCHED	= working facility switched back to working status
	LOSS OF STRATUM A INPUT	= input from clock in ST A slot has been lost
	LOSS OF STRATUM B INPUT	= input from clock in ST B slot has been lost
	THRESHOLD VIOLATION FOR BPV	= BPV errors exceed the BPV threshold
	THRESHOLD VIOLATION FOR OOF	= OOF errors exceed the OOF threshold
	THRESHOLD VIOLATION FOR CRC	= AIS errors exceed the AIS threshold
	ALARM INDICATION SIGNAL RECEIVED	= an alarm indication signal has been received
	ST SYNTH SIGNAL FREQ VIOLATION FOR	= the synthesized signal from the clock card is showing frequency drift
	THRESHOLD VIOLATION FOR MTIE OBSERVATION	= an MTIE threshold has been exceeded
	THRESHOLD VIOLATION FOR MTIE1 OBSERVATION	= threshold for MTIE 1-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE4 OBSERVATION	= threshold for MTIE 4-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE16 OBSERVATION	= threshold for MTIE 16-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE64 OBSERVATION	= threshold for MTIE 64-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE128 OBSERVATION	= threshold for MTIE 128-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE512 OBSERVATION	= threshold for MTIE 512-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE900 OBSERVATION	= threshold for MTIE 900-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR1 OBSERVATION	= time variance for TVAR 1-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR4 OBSERVATION	= time variance for TVAR 4-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR16 OBSERVATION	= time variance for TVAR 16-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR64 OBSERVATION	= time variance for TVAR 64-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR128 OBSERVATION	= time variance for TVAR 128-second observation has been exceeded

COMMAND CODE: REPT-EVT (Contd)

MESSAGE FORMAT (Contd)

Example:

```
    TELECOMSOLUTIONS 95-12-08 15:41:32
 2 REPT EVT T1
    "MRC-1-4:SFI,SC:\"LOSS OF STRATUM A INPUT\""
;
```

This example, tagged as automatic message 2, shows that a standing condition has been raised because of a loss of input from the stratum A clock at MRC 1, span 4.

REFERENCE

TA-TSY-000309, Issue 1, December 1990

COMMAND CODE: RTRV-LOG

MESSAGE CATEGORY: SYSTEM MAINTENANCE
TYPE: INPUT/RESPONSE

PURPOSE

RETRIEVE LOG

This command displays all alarm and non-alarm events in the 64-event system message log. RTRV-LOG does not erase the messages. (See SET-ATTR-LOG to erase the system message log, which is located on the MIS card.)

INPUT FORMAT

```
RTRV-LOG:[<tid>]::<ctag>::ALARMS;
```

Example:

```
RTRV-LOG:::115::ALARMS;
```

This example, tagged as command 115, displays all event information stored in the event log in the MIS card.

RESPONSE FORMAT

NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
    ALARMS
    /* <contents of message log> */
;
```

If the sequence /* or */ occurs within the contents of a message log, it is represented by the sequence \/* or */ respectively.

COMMAND CODE: RTRV-LOG (Contd)

RESPONSE FORMAT (Contd)

NORMAL RESPONSE (Contd)

Example:

```
    TELECOMSOLUTIONS 95-12-08 16:11:28
M  115 COMPLD
   ALARMS
/*
   "95-12-08 16:06:42  SET-ATTR-LOG:::1::ALARMS,CLR;"
   "95-12-08 16:06:42 AMRC-2:NORMAL,CL:\"INPUT ACTIVE\""
   "95-12-08 16:07:27 *MASTER:MN,SYNC,NSA:\"SYNC INPUT FAILED\""
   "95-12-08 16:07:27 *CLK-1:MN,HLDOVRSYNC,NSA:\"CLOCK IN HOLDOVER\""
   "95-12-08 16:07:27 ACLK-1:FSTSYNC,SC:\"CLOCK NOT CONVERGED\""
   "95-12-08 16:07:27 ACLK-2:FSTSYNC,SC:\"CLOCK NOT CONVERGED\""
   "95-12-08 16:07:27 *CLK-2:MN,HLDOVRSYNC,NSA:\"CLOCK IN
   HOLDOVER\""
   "95-12-08 16:07:27 AMRC-1:NORMAL,CL:\"INPUT ACTIVE\""
   */
;
```

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
   <errcde>
;
```

errcde:	ENEQ	= not equipped
	IIAC	= invalid aid
	ICNV	= command not valid
	IICT	= invalid ctag
	IDNV	= data not valid
	IISP	= invalid syntax or punctuation
	IITA	= invalid tid
	INUP	= unimplemented non-null parameter
	SARB	= system resources are busy
	SCSN	= invalid sequence
	SDNA	= duplex unit not available
	SROF	= requested operation failed
	SNVS	= not in valid state

COMMAND CODE: RTRV-LOG (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE (Contd)

Example:

```
     TELECOMSOLUTIONS 95-12-08 16:12:31
M  115 DENY
     IISP
  ;
```

REFERENCE

TA-NWT-000200, Issue 5, December 1990

COMMAND CODE: RTRV-ATTR-T1

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

RETRIEVE ATTRIBUTE T1

This command displays the notification code associated with the specified event. Alarmed events are reported automatically by the REPORT ALARM message. Use the <aid>, <ntfcncde>, and <condtype> parameters together or separately to display the notification code, or the type of events.

INPUT FORMAT

```
RTRV-ATTR-T1:[<tid>]:<aid>:<ctag>::[<ntfcncde>],[<condtype>];
```

aid:	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

ntfcncde:	MJ	= major alarm
	MN	= minor alarm
	NA	= not alarmed
	NR	= not reported (see Note below)
	<null>	= not alarmed

condtype:	AIS	= alarm indication signal
	BPV	= bipolar violations
	CRC	= cyclic redundancy check errors
	LOS	= loss of signal
	OOF	= out of frame errors
	<null>	= all the above condtypes

condtype:	For MRC-E and MRC-EA only:	
	FFREQ	= fractional frequency exceeded
	<null>	= all condtypes, including those listed previously

Note: If the aid is MRC-1 or MRC-2, and analog is the input, the AIS, BPV, CRC, and OOF condtypes have NR (not reported) notification codes (ntfcncde); LOS and FFREQ are not affected.

COMMAND CODE: RTRV-ATTR-T1 (Contd)

INPUT FORMAT (Cont)

condtype: For PSM only:

MTIE1	= maximum time interval error at 1 second
MTIE4	= maximum time interval error at 4 seconds
MTIE16	= maximum time interval error at 16 seconds
MTIE64	= maximum time interval error at 64 seconds
MTIE128	= maximum time interval error at 128 seconds
MTIE512	= maximum time interval error at 512 seconds
MTIE900	= maximum time interval error at 900 seconds
TVAR1	= time variance error at 1 second
TVAR4	= time variance error at 4 seconds
TVAR16	= time variance error at 16 seconds
TVAR64	= time variance error at 64 seconds
TVAR128	= time variance error at 128 seconds
<null>	= all condtypes

Example:

```
RTRV-ATTR-T1::MRC-1-4:153::MJ;
```

This example, tagged as command 153, retrieves and displays the major alarm notification codes associated with all performance-monitoring events for MRC A, span 4.

COMMAND CODE: RTRV-ATTR-T1 (Contd)

RESPONSE FORMAT

NORMAL RESPONSE

If there are no attributes for the items specified in the command, the response format is:

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

If attributes for the items specified in the command exist, the response format is:

```
    <sid> <date> <time>
M  <ctag> COMPLD
    ["<aid>:<ntfcncde>,<condtype>,,"]...
    "<aid>:<ntfcncde>,<condtype>,,"
;
```

Example:

If the aid is MRC-1, the response may be:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  153 COMPLD
"MRC-1-4:MJ,LOS,,"
"MRC-1-4:MJ,BPV,,"
;
```

COMMAND CODE: RTRV-ATTR-T1 (Contd)

RESPONSE FORMAT (Cont)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
    errcde:    ENEQ      = not equipped
               IIAC      = invalid aid
               ICNV      = command not valid
               IICT      = invalid ctag
               IDNV      = data not valid
               IISP      = invalid syntax or punctuation
               IITA      = invalid tid
               INUP      = unimplemented non-null parameter
               SARB      = system resources are busy
               SCSN      = invalid sequence
               SDNA      = duplex unit not available
               SROF      = requested operation failed
               SNVS      = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  153 DENY
    IISP
;
```

REFERENCE

TR-NWT-00833, Issue 5, Revision 1, April 1993

COMMAND CODE: RTRV-COND-{EQPT|T1}

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

RETRIEVE CONDITIONS

This command displays the current standing condition and/or state associated with one or more specified equipment units or facilities.

INPUT FORMAT

```
RTRV-COND-{EQPT|T1}:[<tid>]:<aid>:<ctag>[::<typereq>];
```

aid: For RTRV-COND-EQPT:

CLK-1	= Stratum clock unit A
CLK-2	= Stratum clock unit B
FUSE-1	= fuse A
FUSE-2	= fuse B
MIS	= Maintenance Interface, System
ALL	= all above equipment (does not include MRC or PSM)
MRC-1	= Multi-Reference Controller A
MRC-2	= Multi-Reference Controller B
PSM-x	= Precision Sync Monitor card (x = 1 to 9)

For RTRV-COND-T1:

MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

typereq: For RTRV-COND-T1:

AIS	= alarm indication signal
ALLCOND	= all condtypes
ALLSTAT	= all maintenance states
BPV	= bipolar violations
CRC	= cyclic redundancy check errors
IS-NR	= in service, normal
IS-NR,ACT	= in service: active
IS-NR,EQ	= in service: equipped
LOS	= loss of signal
OOF	= out of frame errors
OOS-MT	= out of service and in maintenance
OOS-MT,MAN	= out of service: manually removed
OOS-MT,FLT	= out of service: fault
OOS-MT,OOT	= out of service: out of tolerance
<null>	= all maintenance states

COMMAND CODE: RTRV-COND-{EQPT|T1} (Contd)

INPUT FORMAT (Cont)

typereq: (contd)	For PSM only: MTIE1	= maximum time interval error at 1 second
	MTIE4	= maximum time interval error at 4 seconds
	MTIE16	= maximum time interval error at 16 seconds
	MTIE64	= maximum time interval error at 64 seconds
	MTIE128	= maximum time interval error at 128 seconds
	MTIE512	= maximum time interval error at 512 seconds
	MTIE900	= maximum time interval error at 900 seconds
	TVAR1	= time variance error at 1 second
	TVAR4	= time variance error at 4 seconds
	TVAR16	= time variance error at 16 seconds
	TVAR64	= time variance error at 64 seconds
	TVAR128	= time variance error at 128 seconds
	<null>	= all maintenance states
	For RTRV-COND-EQPT: ALLSTAT	= all maintenance states
	<null>	= all maintenance states

Example:

```
RTRV-COND-T1::MRC-1-ALL:113::BPV;
```

This example, tagged as command 113, retrieves the non-alarmed bipolar violation status of all spans on MRC-1.

This example, if analog is the input, will be denied and an IDNV error code produced.

RESPONSE FORMAT

NORMAL RESPONSE

If there are no conditions (that is, if all of the equipment is in alarm or not installed), the format is:

```
    <sid> <date> <time>
M  <ctag> COMPLD
;
```

If there is at least one line of information to report, the format is:

```
    <sid> <date> <time>
M  <ctag> COMPLD
   ["<aid>[,<aidtype>]:[<ntfcncde>],{<condtype>|<state>},
   [<serveff>][,,,,,<conddescr>"]]...
   "<aid>[,<aidtype>]:[<ntfcncde>],{<condtype>|<state>},
   [<serveff>][,,,,,<conddescr>"
;
```

COMMAND CODE: RTRV-COND-{EQPT|T1} (Contd)

RESPONSE FORMAT (Cont)

    NORMAL RESPONSE (Contd)

aid:	For RTRV-COND-ALL and RTRV-COND-EQPT:	
	CLK-1	= Stratum clock unit A
	CLK-2	= Stratum clock unit B
	FUSE-1	= fuse A
	FUSE-2	= fuse B
	MIS	= Maintenance Interface, System
	MRC-1	= Multi-Reference Controller A
	MRC-2	= Multi-Reference Controller B
	MRC-ALL	= all Multi-Reference Controllers
	PSM-x	= Precision Sync Monitor card (x = 1 to 9 or ALL)
	For RTRV-COND-T1:	
	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)
aidtype:	T1	= RTRV-COND-T1 command was sent
ntfcncde:	For condtype:	
	CR	= critical alarm
	MJ	= major alarm
	MN	= minor alarm
	NA	= not alarmed
	NR	= not reported
	For state:	
	<null>	= ntfcncde has no meaning
condtype:	AIS	= alarm indication signal
	FA	= fuse alarm
	FRNGSYNC	= clock in the freerunning mode
	FSTSYNC	= clock in the fast-converge mode
	HLDOVRSYNC	= clock in the holdover mode
	INT	= card failed
	LOS	= loss of signal
	NORMAL	= input reference or clock is active
	SFI	= loss of stratum input to MRC
	SLTMSIG	= input references unlocked
	SYNC	= input reference failed
	SYNCCLK	= output port failed
	SYNCPRI	= loss of all primary timing references
	SYNCSEC	= loss of all secondary timing references
	TBPV	= threshold for BPVs has been exceeded
	TCRC	= threshold for CRCs has been exceeded

COMMAND CODE: RTRV-COND-{EQPT|T1} (Contd)

RESPONSE FORMAT (Cont)

NORMAL RESPONSE (Contd)

condtype:		
(contd)	TFFREQ	= threshold for fractional frequency has been exceeded
	TMTIE1	= threshold for MTIE 1 second has been exceeded
	TMTIE4	= threshold for MTIE 4 seconds has been exceeded
	TMTIE16	= threshold for MTIE 16 seconds has been exceeded
	TMTIE64	= threshold for MTIE 64 seconds has been exceeded
	TMTIE128	= threshold for MTIE 128 seconds has been exceeded
	TMTIE512	= threshold for MTIE 512 seconds has been exceeded
	TMTIE900	= threshold for MTIE 900 seconds has been exceeded
	TOOF	= threshold for OOFs has been exceeded
	TTVAR1	= threshold for TVAR 1 second has been exceeded
	TTVAR4	= threshold for TVAR 4 seconds has been exceeded
	TTVAR16	= threshold for TVAR 16 seconds has been exceeded
	TTVAR64	= threshold for TVAR 64 seconds has been exceeded
	TTVAR128	= threshold for TVAR 128 seconds has been exceeded

state:		
	IS-NR	= in service, normal
	IS-NR,ACT	= in service: active
	IS-NR,EQ	= in service:, equipped
	OOS-MT	= out of service and in maintenance
	OOS-MT,MAN	= out of service: manually removed
	OOS-MT,FLT	= out of service: fault
	OOS-MT,OOT	= out of service: out of tolerance

conddescr:		
	ALARM INDICATION SIGNAL RECEIVED	= received alarm indication signal
	CARD FAIL	= card has failed
	CLOCK ACTIVE	= clock is active
	CLOCK FREERUNNING	= clock is in the freerunning mode
	CLOCK IN HOLDOVER	= clock is in the holdover mode
	CLOCK NOT CONVERGED	= clock is not locked to the input signal
	DISCIPLINING REFERENCE SWITCHED	= timing input has switched to another reference
	EXPANSION MAJOR	= expansion shelf has a major alarm
	EXPANSION MINOR	= expansion shelf has a minor alarm
	FRAMER FAILURE	= framing
	FUSE OR POWER FAIL	= fuse or power at DCD system has failed
	INPUT OUT OF TOLERANCE	= input signal is out of the clock unit's pull-in range
	INPUT ACTIVE	= input signal is active
	LOSS OF SIGNAL	= signal has been lost
	LOSS OF ALL PRIMARY TIMING INPUT REFERENCES	= all primary timing input references have been lost
	LOSS OF STRATUM A INPUT	= input from clock in ST A slot has been lost
	LOSS OF STRATUM B INPUT	= input from clock in ST B slot has been lost
	OUTPUT SYNC PORT FAIL	= output port on an output card has failed

COMMAND CODE: RTRV-COND-{EQPT|T1} (Contd)

RESPONSE FORMAT (Cont)

NORMAL RESPONSE (Contd)

conddescr: (contd)	ST SYNTH SIGNAL FREQ VIOLATION	= the synthesized signal from the clock card is showing frequency drift
	SYNC INPUTS UNLOCKED	= synchronization inputs are unlocked
	SYNC INPUT FAILED	= input reference signal input has failed
	SYNC SYSTEM FAIL	= entire system has failed
	THRESHOLD VIOLATION FOR BPV	= bipolar violation threshold has been exceeded
	THRESHOLD VIOLATION FOR CRC	= cyclic redundancy check threshold has been exceeded
	THRESHOLD VIOLATION FOR FFREQ	= fractional frequency threshold has been exceeded
	THRESHOLD VIOLATION FOR MTIE OBSERVATION	= an MTIE threshold has been exceeded
	THRESHOLD VIOLATION FOR MTIE1 OBSERVATION	= threshold for MTIE 1-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE4 OBSERVATION	= threshold for MTIE 4-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE16 OBSERVATION	= threshold for MTIE 16-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE64 OBSERVATION	= threshold for MTIE 64-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE128 OBSERVATION	= threshold for MTIE 128-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE512 OBSERVATION	= threshold for MTIE 512-second observation has been exceeded
	THRESHOLD VIOLATION FOR MTIE900 OBSERVATION	= threshold for MTIE 900-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR1 OBSERVATION	= time variance for TVAR 1-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR4 OBSERVATION	= time variance for TVAR 4-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR16 OBSERVATION	= time variance for TVAR 16-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR64 OBSERVATION	= time variance for TVAR 64-second observation has been exceeded
	THRESHOLD VIOLATION FOR TVAR128 OBSERVATION	= time variance for TVAR 128-second observation has been exceeded
	THRESHOLD VIOLATION FOR OOF	= out-of-frame threshold has been exceeded
	<null>	= no descriptive information exists

COMMAND CODE: RTRV-COND-{EQPT|T1} (Contd)

RESPONSE FORMAT (Cont)

NORMAL RESPONSE (Contd)

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  113 COMPLD
    "MRC-1-2,T1:NA,T-BPV,,,,,,,"
 ;
```

This example, tagged as a response to command 113, reports that MRC 1, span 2 has a nonalarmed condition—the BPV threshold has been exceeded.

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
 ;
```

errcde:		
	ENEQ	= not equipped
	IIAC	= invalid aid
	ICNV	= command not valid
	IICT	= invalid ctag
	IDNV	= data not valid
	IISP	= invalid syntax or punctuation
	IITA	= invalid tid
	INUP	= unimplemented non-null parameter
	SARB	= system resources are busy
	SCSN	= invalid sequence
	SDNA	= duplex unit not available
	SROF	= requested operation failed
	SNVS	= not in valid state

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  113 DENY
    IISP
 ;
```

REFERENCE

TR-NWT-000833, Issue 4, December 1990

COMMAND CODE: RTRV-HDR

MESSAGE CATEGORY: SYSTEM MAINTENANCE
TYPE: INPUT/RESPONSE

PURPOSE

RETRIEVE HEADER

This command displays a normal response indicating COMPLD (completed). This command can be used to verify that parts of the system are good. If the response is returned, the cable, MIS, and communications link are viable; and the sid, date, and time can be verified.

INPUT FORMAT

```
RTRV-HDR:[<tid>]::<ctag>;
```

Example:

```
RTRV-HDR:::114;
```

This example, tagged as command 114, requests the header from the current system, including the sid, date, and time.

RESPONSE FORMAT

NORMAL RESPONSE

```
   <sid> <date> <time>
M  <ctag> COMPLD
;
```

Example:

```
   TELECOMSOLUTIONS 95-12-08 16:01:04
M  114 COMPLD
;
```

COMMAND CODE: RTRV-HDR (Contd)

RESPONSE FORMAT (Cont)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

```
errcde:    ENEQ     = not equipped
           IIAC     = invalid aid
           ICNV     = command not valid
           IICT     = invalid ctag
           IDNV     = data not valid
           IISP     = invalid syntax or punctuation
           IITA     = invalid tid
           INUP     = unimplemented non-null parameter
           SARB     = system resources are busy
           SCSN     = invalid sequence
           SDNA     = duplex unit not available
           SROF     = requested operation failed
           SNVS     = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 16:01:21
M  114 DENY
    IISP
;
```

REFERENCE

TA-NWT-000200, Issue 5, December 1990

COMMAND CODE: RTRV-EQPT

MESSAGE CATEGORY: SYSTEM MAINTENANCE
TYPE: INPUT/RESPONSE

PURPOSE

RETRIEVE EQUIPMENT

This command displays communications port(s) configuration information.

INPUT FORMAT

```
RTRV-EQPT:[<tid>]:<aid>:<ctag>::;
```

aid: COM-1   = COM port 1
                    COM-2   = COM port 2
                    COM-3   = COM port 3
                    COM-ALL   = shows all COM ports

Example:

```
RTRV-EQPT::COM-1:115;
```

This example, tagged as command 115, requests configuration information for communications port 1.

RESPONSE FORMAT

NORMAL RESPONSE

The response format depends on whether any alarm conditions exist to report for the input conditions. If there are no alarm conditions, the form is:

```
   <sid> <date> <time>
M <ctag> COMPLD
   ["<COM-1>:[<baud>],[<monmode>],[<keepalive>],[<comtype>],
                  [<endoftext>],[<localecho>],[<compri>];"cr lf]
   ["<COM-2>:[<baud>],[<monmode>],[<keepalive>],[<comtype>],
                  [<endoftext>],[<localecho>],[<compri>];"cr lf]
   ["<COM-3>:[<baud>],[<monmode>],[<keepalive>],[<comtype>],
                  [<endoftext>],[<localecho>],[<compri>];"cr lf]
   ;
```

COMMAND CODE: RTRV-EQPT (Contd)

RESPONSE FORMAT (Cont)

NORMAL RESPONSE (Contd)

baud:	1200	= 1200 bps
	9600	= 9600 bps
monmode:	ALW	= allows a port to view data traffic associated with other user ports in real-time
	INH	= inhibits a port from viewing data traffic associated with other user ports in real-time
keepalive:	ALW	= allows a port to autonomously output a COMPL message every 15 to 20 minutes
	INH	= inhibits a port from autonomously outputting a COMPL message every 15 to 20 minutes
comtype:	X25	= PAD
	MODEM	= modem
	TERM	= dumb terminal
endoftext:	0 to 0xFF	= sets the 1 character at the end-of-text message. This character does not replace the TL1 end-of-text terminator (;). 0 indicates no end-of-text message; 0xFF is a hexadecimal number range
localecho	ALW	= allows local echo
	INH	= inhibits local echo
compri:	0	= inhibits alarm/event messages from being transmitted from a port
	1, 2, or 3	= allows alarm/event messages to be transmitted from a port; 1 is the highest priority, 3 the lowest

Example:

```
    TELECOMSOLUTIONS 95-12-08 16:01:04
M  115 COMPLD
  ;
```

COMMAND CODE: RTRV-EQPT (Contd)

RESPONSE FORMAT (Cont)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
errcde:    ENEQ     = not equipped
           IIAC     = invalid aid
           ICNV     = command not valid
           IICT     = invalid ctag
           IDNV     = data not valid
           IISP     = invalid syntax or punctuation
           IITA     = invalid tid
           INUP     = unimplemented non-null parameter
           SARB     = system resources are busy
           SCSN     = invalid sequence
           SDNA     = duplex unit not available
           SROF     = requested operation failed
           SNVS     = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 95-12-08 16:01:21
M  115 DENY
    IISP
;
```

COMMAND CODE: RTRV-PRMTR-T1

MESSAGE CATEGORY: PROVISIONING
TYPE: INPUT/RESPONSE

PURPOSE

RETRIEVE PARAMETER T1

This command displays the facility parameter values for priority, reference type, framing, and CRC that are stored in the system database.

INPUT FORMAT

```
RTRV-PRMTR-T1:[<tid>]:<aid>:<ctag>;
```

aid: MRC-1-x   = Multi-Reference Controller A (x = span 1 to 4 or ALL)
                       MRC-2-x   = Multi-Reference Controller B (x = span 1 to 4 or ALL)
                       PSM-x-y   = Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

Example:

```
RTRV-PRMTR-T1::MRC-1-2:154;
```

This example, tagged as command 154, displays the facility parameters for span 2 of MRC-1.

RESPONSE FORMAT

NORMAL RESPONSE

If no facilities are assigned or equipped, the response is:

```
   <sid> <date> <time>
M  <ctag> COMPLD
;
```

COMMAND CODE: RTRV-PRMTR-T1 (Contd)

RESPONSE FORMAT (Cont)

NORMAL RESPONSE (Contd)

If the aid is MRC-1-x, and one or more facilities are assigned or equipped, the response is:

```
   <sid> <date> <time>
M  <ctag> COMPLD
   ["<aid>:,,,,,,,,<priority>,<type>"] ...
   "<aid>:,,,,,,,,<priority>,<type>" ...
;
```

priority:	1 to 4	= priority of the reference, 1 is the highest priority
	<null>	= PSM

type:	GPS	= global positioning system reference
	LORAN	= LORAN reference
	CESIUM	= cesium reference
	NETWORK	= network reference
	<null>	= PSM

crcmode:	For MRC only:	
	NONCRC4	= does not use CRC4
	CRC4	= uses CRC4

fmode:	For MRC only:	
	CAS	= CAS framing
	CCS	= CCS framing

Examples:

If E1 is the input:

```
   TELECOMSOLUTIONS 96-02-08 15:04:14
M  154 COMPLD
"MRC-1-2,,,,,,,,1,GPS,NONCRC4,,CCS"
;
```

If analog is the input:

```
   TELECOMSOLUTIONS 96-02-08 15:04:14
M  154 COMPLD
"MRC-1-2,,,,,,,,1,GPS,,,"
;
```

COMMAND CODE: RTRV-PRMTR-T1 (Contd)

RESPONSE FORMAT (Cont)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
errcde:     ENEQ      = not equipped
            IIAC      = invalid aid
            ICNV      = command not valid
            IICT      = invalid ctag
            IDNV      = data not valid
            IISP      = invalid syntax or punctuation
            IITA      = invalid tid
            INUP      = unimplemented non-null parameter
            SARB      = system resources are busy
            SCSN      = invalid sequence
            SDNA      = duplex unit not available
            SROF      = requested operation failed
            SNVS      = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  154 DENY
    IISP
;
```

REFERENCE

AT&T 365-340-202, August, 1992

COMMAND CODE: RTRV-PM-T1

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

RETRIEVE PERFORMANCE MONITORING T1

This command displays the current set of PM data for one or more equipment units or facilities. The PM data may be used to load or verify a database, to examine events that are not reported by automatic messages, or to evaluate the system after maintenance operations. Parameters are provided to display past PM data if the MIS card is configured to store such data. PM data is retrieved from the specified time period to the current time period.

INPUT FORMAT

```
RTRV-PM-T1:[<tid>]:<aid>:<ctag>::[<montype>],,,,,[mondat]
                                                    ,[montm];
```

aid:

	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4)

montype:

For PSM only:

BPV	= bipolar violations
CRC	= cyclic redundancy check errors
OOF	= out of frame errors
LOS	= loss of signal
AIS	= alarm indication signal
MTIE1	= maximum time interval error at 1 second
MTIE4	= maximum time interval error at 4 seconds
MTIE16	= maximum time interval error at 16 seconds
MTIE64	= maximum time interval error at 64 seconds
MTIE128	= maximum time interval error at 128 seconds
MTIE512	= maximum time interval error at 512 seconds
MTIE900	= maximum time interval error at 900 seconds
TVAR1	= time variance error at 1 second
TVAR4	= time variance error at 4 seconds
TVAR16	= time variance error at 16 seconds
TVAR64	= time variance error at 64 seconds
TVAR128	= time variance error at 128 seconds
PHASE	= 1 minute average raw phase value as computed by the PSM-E
SLIPS	= number of slips in a given time period
TOTALSLIP	= number of slips in a specified 24-hour time period
<null>	= not allowed

COMMAND CODE: RTRV-PM-T1 (Contd)

INPUT FORMAT (Contd)

montype: For MRC-E and MRC-EA only:
                         BPV   = bipolar violations
                         CRC   = cyclic redundancy check errors
                         OOF   = out of frame errors
                         LOS   = loss of signal
                         AIS   = alarm indication signal
                         FREQ   = fractional frequency threshold being exceeded
                         ALL   = all the above montypes
                         \<null>   = all the above montypes

Note: If the aid is MRC-1-x or MRC-2-x, and analog is the input, BPV, CRC, OOF, and AIS parameter types report -1 error counts.

mondat: For PSM only:
                         mm-dd   = where mm = month, dd = day (current or previous day only)
                         \<null>   = current day

mondat: For MRC only:
                         \<null>   = current day

montm: For PSM only:
                         hh-0   = where hh = 0, 1, ..., 23 (hour of the day)
                         hh-15   = 15 minutes past the hour (hh)
                         hh-30   = 30 minutes past the hour (hh)
                         hh-45   = 45 minutes past the hour (hh)
                         \<null>   = current time period of current day

                         For MRC only:
                         \<null>   = current time period of current day

                         For PSM only:
                         1-DAY   = past 24 hour period; applies to TOTALSLIP only
                         15-min   = specified 15 minute period beginning at the time specified in the montm field
                         \<null>   = current time period of current day

                         For MRC only:
                         15-min   = current 15-minute time period of the current day
                         \<null>   = current time period of the current day

COMMAND CODE: RTRV-PM-T1 (Contd)

INPUT FORMAT (Contd)

Note: Counts for each 15-minute time period from the specified period to the current are retrieved. If the date is not specified, the time period is assumed to be in the last 24 hours. If the previous day is specified, only starting times between midnight (00:00) and 24 hours ago are accepted. If the current day is specified, only starting times between midnight (00:00) and the current time are accepted. In all accepted cases, all data to the current time are retrieved.

Examples:

Note: For all the following examples, assume the current date and time are 06-23 and 19-37, or June 23 and 7:37 pm. The current time period is 19-30, the time period between 7:30 pm and 7:45 pm.

```
RTRV-PM-T1::MRC-1-4:141::OOF,,,,,,18-45;
```

The above example, tagged as command 141, retrieves and displays the out-of-frame performance monitoring data for span 4 on MRC-A. Data is displayed for each 15-minute count since 6:45 pm today.

```
RTRV-PM-T1::MRC-1-4:173::OOF,,,,,06-22,18-45;
```

The above example, tagged as command 173, is invalid. The time is more than 24 hours ago.

```
RTRV-PM-T1::MRC-1-4:174::OOF,,,,,,21-45;
```

The above example, tagged as command 174, retrieves and displays the out-of-frame performance monitoring data for span 4 on MRC-A. Data is displayed for each 15-minute count since 9:45 pm yesterday, which is the only 21-45 in the last 24-hour period. The result is the same if yesterday's date is specified.

```
RTRV-PM-T1::MRC-1-4:175::OOF,,,,,06-23,21-45;
```

The above example, tagged as command 175, is invalid. 9:45 pm today has not arrived yet.

```
RTRV-PM-T1::PSM-7-4:176::TOTALSLIP,,,,,1-DAY::;
```

The above example, tagged as command 176, retrieves and displays the total number of slips for span 4 on PSM-A for the past 24-hour period.

COMMAND CODE: RTRV-PM-T1 (Contd)

RESPONSE FORMAT

NORMAL RESPONSE

The following response occurs if T1 is the input:

```
    <sid> <date> <time>
M  <ctag> COMPLD
    ["<aid>:<montype>,<monval>,<valdty>,,,,15-MIN,<montm>,"] ...
    "<aid>:<montype>,<monval>,<valdty>,,,,15-MIN,<montm>,"
;
```

valdty:	COMPLD	= data was accumulated over the entire 15-minute time period
	PRTL	= data was accumulated over part of the 15-minute time period
	NA	= data not available

The following response occurs if analog is the input:

```
    <sid> <date> <time>
M  <ctag> COMPLD
    ["<aid>:<montype>,-1,,,,,,"
    "<aid>:<montype>,-1,,,,,,"
;
```

Examples:

The following response occurs if E1 is the input:

```
    TELECOMSOLUTIONS 96-02-08 19:35:35
M  177 COMPLD
    "MRC-1-4:OOF,1,COMPLD,,,,15-MIN,18-45"
    "MRC-1-4:OOF,3,COMPLD,,,,15-MIN,19-00"
    "MRC-1-4:OOF,0,COMPLD,,,,15-MIN,19-15"
    "MRC-1-4:OOF,1,PRTL,,,,15-MIN,19-30"
;
```

This example, the response to command 177, shows that MRC 1, span 4, had 1 out-of-frame (OOF) error in the 15-minute period ending at 6:45 pm, 3 OOFs in the period ending 7 pm, and 0 in the current 15-minute time period. The current time period is not complete, and is labeled "partial".

COMMAND CODE: RTRV-PM-T1 (Contd)

RESPONSE FORMAT (Contd)

NORMAL RESPONSE (Contd)

The following response occurs if analog is the input:

```
    TELECOMSOLUTIONS 96-02-08 19:35:35
M  177 COMPLD
    "MRC-1-4:OOF,-1,COMPLD,,,,15-MIN,18-45"
    "MRC-1-4:OOF,-1,COMPLD,,,,15-MIN,19-00"
    "MRC-1-4:OOF,-1,COMPLD,,,,15-MIN,19-15"
    "MRC-1-4:OOF,-1,PRTL,,,,15-MIN,19-30"
;
```

This example, the response to command 141, shows that MRC 1, span 4, had -1 out-of-frame (OOF) errors in the 15-minute period ending at 6:45 pm, -1 OOFs in the period ending 7 pm, and -1 in the current 15-minute time period. The current time period is not complete, and is labeled "partial".
```
;
```

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
```

errcde:		
	ENEQ	= not equipped
	IIAC	= invalid aid
	ICNV	= command not valid
	IICT	= invalid ctag
	IDNV	= data not valid
	IISP	= invalid syntax or punctuation
	IITA	= invalid tid
	INUP	= unimplemented non-null parameter
	SARB	= system resources are busy
	SCSN	= invalid sequence
	SDNA	= duplex unit not available
	SROF	= requested operation failed
	SNVS	= not in valid state

Example:

```
    TELECOMSOLUTIONS 96-02-08 19:35:35
M  177 DENY
    IISP
;
```

COMMAND CODE: RTRV-PM-T1 (Contd)

REFERENCE

TR-NWT-000833 Issue 5, Revision 1, April 1993

COMMAND CODE: RTRV-TH-T1

MESSAGE CATEGORY: SURVEILLANCE
TYPE: INPUT/RESPONSE

PURPOSE

RETRIEVE THRESHOLD T1

This command displays the threshold level for a monitored parameter. When the parameter exceeds the threshold value, an automatic message is sent. The threshold may apply to one or more units.

INPUT FORMAT

        RTRV-TH-T1:[<tid>]:<aid>:<ctag>[::<montype>];

aid:	MRC-1-x	= Multi-Reference Controller A (x = span 1 to 4 or ALL)
	MRC-2-x	= Multi-Reference Controller B (x = span 1 to 4 or ALL)
	PSM-x-y	= Precision Sync Monitor card (x = 1 to 9, y = span 1 to 4 or ALL)

montype:	AIS	= alarm indication signal
	BPV	= bipolar violations
	CRC	= cyclic redundancy check errors
	OOF	= out of frame errors
	LOS	= loss of signal
	<null>	= all the above montypes

montype:	For PSM only:	
	MTIE1	= maximum time interval error at 1 second
	MTIE4	= maximum time interval error at 4 seconds
	MTIE16	= maximum time interval error at 16 seconds
	MTIE64	= maximum time interval error at 64 seconds
	MTIE128	= maximum time interval error at 128 seconds
	MTIE512	= maximum time interval error at 512 seconds
	MTIE900	= maximum time interval error at 900 seconds
	TVAR1	= time variance error at 1 second
	TVAR4	= time variance error at 4 seconds
	TVAR16	= time variance error at 16 seconds
	TVAR64	= time variance error at 64 seconds
	TVAR128	= time variance error at 128 seconds
	<null>	= all the above montypes

Example:

        RTRV-TH-T1::MRC-1-1:136::BPV;

This example, for either E1 or analog input, tagged as command 136, retrieves and displays the BPV errors for span 1 on MRC-1.

COMMAND CODE: RTRV-TH-T1 (Contd)

RESPONSE FORMAT

    NORMAL RESPONSE

```
    <sid> <date> <time>
M  <ctag> COMPLD
    ["<aid>:<montype>,,,<thlev>"] ...
    "<aid>:<montype>,,,<thlev>"
;
```

                thlev: = threshold level in decimal numerals

Examples:

The following response occurs if E1 is the input:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  136 COMPLD
    "MRC-1-1:BPV,,,16"
    "MRC-1-2:BPV,,,16"
    "MRC-1-3:BPV,,,16"
    "MRC-1-4:BPV,,,16"
;
```

The following response occurs if analog is the input:

```
    TELECOMSOLUTIONS 96-02-08 15:04:14
M  136 COMPLD
    "MRC-1-1:BPV,,,-1"
    "MRC-1-2:BPV,,,-1"
    "MRC-1-3:BPV,,,-1"
    "MRC-1-4:BPV,,,-1"
;
```

COMMAND CODE: RTRV-TH-T1 (Contd)

RESPONSE FORMAT (Contd)

ERROR RESPONSE

```
    <sid> <date> <time>
M  <ctag> DENY
    <errcde>
;
errcde:    ENEQ    = not equipped
           IIAC    = invalid aid
           ICNV    = command not valid
           IICT    = invalid ctag
           IDNV    = data not valid
           IISP    = invalid syntax or punctuation
           IITA    = invalid tid
           INUP    = unimplemented non-null parameter
           SARB    = system resources are busy
           SCSN    = invalid sequence
           SDNA    = duplex unit not available
           SROF    = requested operation failed
           SNVS    = not in valid state
```

Example:

```
    TELECOMSOLUTIONS 96-02-08 19:04:35
M  136 DENY
    IISP
;
```

REFERENCE

TR-NWT-000833 Issue 5, Revision 1, April 1993

Table E. Expanded Command Names

ABREVIATED COMMAND NAME	EXPANDED COMMAND NAME
ACT-USER	Activate User
CANC-USER	Cancel User
DLT-USER-SECU	Delete User Security
ED-EQPT	Edit Equipment
ED-PRMTR-T1	Edit Parameter T1
ED-SECU-PID	Edit Security Password Identification
ENT-USER-SECU	Enter User Security
INIT-REG-T1	Initialize Register T1
INIT-SYS	Initialize System
OPR-ACO-ALL	Operate ACO All
REPT-ALM-{EQPT|T1}	Report Alarm {Equipment or T1}
REPT-EVT	Report Event
RMV-T1	Remove T1
RST-T1	Restore T1
RTRV-ALM-{ALL|EQPT|T1}	Retrieve Alarm {All or Equipment or T1}
RTRV-ATTR-T1	Retrieve Attributes T1
RTRV-COND-{EQPT|T1}	Retrieve Condition {Equipment or T1}
RTRV-EQPT	Retrieve Equipment
RTRV-HDR	Retrieve Header
RTRV-LOG	Retrieve Log
RTRV-PM-T1	Retrieve Performance Monitoring T1
RTRV-PRMTR-T1	Retrieve Parameter T1
RTRV-TH-T1	Retrieve Threshold T1
RTRV-USER-SECU	Retrieve User Security
SET-ATTR-LOG	Set Attribute Log
SET-ATTR-T1	Set Attribute T1
SET-DAT	Set Date
SET-SID	Set Source Identifier (System Identification)
SET-TH-T1	Set Threshold T1
SW-DX-EQPT	Switch Duplex Equipment