

DIGITAL CLOCK DISTRIBUTOR

500 SERIES

OPERATIONS

RELEASE 5.01.xx

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A. Switch Setting	7	1.01 This practice provides procedures for operat- ing Telecom Solutions' Digital Clock Distributor (DCD) 500 System when equipped with the MIS card 090-44018-15. The language used in this practice is Transaction Language 1 (TL1).	
B. Command Levels	7	1.02 This practice has been reissued for the reasons listed below. Changed areas are marked by change bars.	
8. DATABASE DOWNLOAD	7	<ul style="list-style-type: none"> • Throughout the practice, the range for timing output (TO) cards was changed to 1–8. • Throughout the practice, the range for PSM cards was changed to 1–10. • Throughout the practice, all references to LTI cards were deleted. • Throughout the practice, all references to 1-for- N protection were deleted. • Part 4, Addressing Rules, was changed to Shelf Addressing and modified. • In Table D, the available GTI card types were changed. • In Chart 11, Enter Port, a note was added to the ENT-PORT command. 	
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- In the OPR-SYCNCSW and RLS-SYCNCSW commands, the aid was changed to TO-ALL.

1.03 The following abbreviations are used in this document:

GPS	Global Positioning System
GTI	GPS Timing Interface
GTR	GPS Timing Antenna/Receiver
MIS	Maintenance Interface, System
MRC	Multi-Reference Controller
PSM	Precision Synchronization Monitor
TO	Timing Output

2. TASKS

2.01 Table A lists the tasks required to operate DCD-500 System and the charts that show how to perform the tasks.

Table A. Tasks

CHART	TASK
LOGON/LOGOFF	
1	<ul style="list-style-type: none"> • Logon • Logoff
ALARM & STATUS INFORMATION	
2	<ul style="list-style-type: none"> • Silence alarms • Display all current alarms • Display current alarms in specified equipment • Display current conditions in all equipment • Display current conditions in specified equipment • Display current port alarms in specified equipment • Display message log • Clear message log
SECURITY INFORMATION	
3	<ul style="list-style-type: none"> • Display access level of a single user • Display access level of all users • Assign user • Change password • Change user name, password & access level • Reassign lost name or password of system administrator • Delete user

Table A. Tasks (Contd)

CHART	TASK
COMMUNICATION PORT CONFIGURATION	
4	<ul style="list-style-type: none"> • Display communication parameters • Change communication parameters • Drop DTR signal for 5 seconds
SYSTEM CONFIGURATION	
5	<ul style="list-style-type: none"> • Display date and time • Change date and time • Reset system • Display system name • Change system name
PUT CARD IN DATABASE	
6	<ul style="list-style-type: none"> • Enter clock card • Enter GTI card • Enter MRC card • Enter PSM card • Enter timing output card
PUT CARD IN SERVICE	
7	<ul style="list-style-type: none"> • Restore clock card • Restore GTI card • Restore MRC card • Restore PSM card • Restore timing output card
TAKE CARD OUT OF SERVICE	
8	<ul style="list-style-type: none"> • Remove clock card • Remove GTI card • Remove MRC card • Remove PSM card • Remove timing output card
TAKE CARD OUT OF DATABASE	
9	<ul style="list-style-type: none"> • Delete clock card • Delete GTI card • Delete MRC card • Delete PSM card • Delete timing output card
CARD CONFIGURATION	
10	<ul style="list-style-type: none"> • Display GTI card parameters • Change GTI card parameters • Display MRC card parameters • Change MRC card parameters • Display PSM card parameters • Change PSM card parameters • Display timing output card parameters • Change timing output card parameters

Table A. Tasks (Contd)

CHART	TASK
REFERENCE INPUT PORTS	
11	<ul style="list-style-type: none"> • Enter port • Restore port • Display performance monitoring data • Clear performance monitoring data • Display priority, reference type, & signal type • Change priority, reference type, & signal type • Display threshold • Change threshold • Display alarm severity • Change alarm severity • Remove port • Delete port
MONITOR INPUT PORTS	
12	<ul style="list-style-type: none"> • Enter port • Restore port • Display performance monitoring data • Clear performance monitoring data • Display signal type • Display threshold • Change threshold • Display alarm severity • Change alarm severity • Remove port • Delete port
TIMING OUTPUT PORTS	
13	<ul style="list-style-type: none"> • Enter port • Restore port • Display signal type • Change signal type • Display alarm severity • Change alarm severity • Remove port • Delete port
OUTPUT SYNCHRONIZATION SOURCE	
14	<ul style="list-style-type: none"> • Display source mode for timing output cards • Change source mode for timing output cards • Select source for timing output cards • Release source for timing output cards
OUTPUT PROTECTION	
15	<ul style="list-style-type: none"> • Display output protection type for TO cards • Change output protection type for TO cards • Switch to protection TO card • Release protection TO card

Table A. Tasks (Contd)

CHART	TASK
GPS INFORMATION	
16	<ul style="list-style-type: none"> • Display GPS statistics

3. COMMAND CONVENTIONS

3.01 For a more complete description of the TL1 language syntax and language structure, refer to the User's Guide section of this manual.

3.02 The following symbols are used in the input and response messages:

- [] encloses an optional parameter
- { } encloses a group of parameters, at least one of which must be entered
- | separates alternative parameters
- separates Command Code fields
- & means “and” as a&b (a and b)
- && means “through” as a&&d (a through d)
- : separates parameter blocks
- ,
- separates parameters within a block
- ; terminates a command and causes execution
- " " encloses text formatted for a machine
- /* */ encloses an explanation of the message
- indicates a space in a response
- < > encloses a parameter in a response
- ... indicates a line of parameters may be repeated as necessary in a response

4. SHELF ADDRESSING

4.01 A particular shelf in a particular system is addressed through the tid. All commands are directed to the master shelf of the system unless an expansion or remote shelf identifier is added to the tid. When seen in a response, the sid identifies the shelf that is reporting the condition.

4.02 The shelf types are identified as follows:

Master: The shelf that is the communications interface for the system and contains the highest-quality clocks in the system.

Expansion: A shelf that has no input cards, no clock cards, and is timed from the master shelf via a ribbon cable (generally collocated with the master shelf).

Remote: A shelf that contains timing input cards that use composite clock timing signals from the master or an expansion shelf (generally located distant from the master shelf).

4.03 When directing a command to a shelf in a system without remote shelves (which can have up to three expansion shelves), modify the tid (if necessary) as follows:

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

4.04 If the system includes a remote shelf, a maximum of two expansion shelves can be collocated with the master shelf, and no expansion shelves can be timed from the remote shelf. Therefore, modify the tid (if necessary) as follows:

<tid> = Master shelf
 <tid>E1 = Expansion shelf #1
 <tid>E2 = Expansion shelf #2
 <tid>E3 = Remote shelf

Note: In a system with a remote shelf, E3 is used to identify the remote shelf even if there are no expansion shelves.

Note: To allow the master and remote shelf to communicate (transfer commands and responses), the COM3 port on the master shelf must be connected to the COM3 port on the remote shelf.

4.05 The tid can be omitted if the system is being addressed locally or if there is only one system that can be accessed. Otherwise, the tid must be included to ensure that the correct shelf is addressed.

5. STANDARD VS. NONSTANDARD CARDS

5.01 Standard cards are those cards which contain a database where card configuration information is stored. Also, standard cards can communicate with the MIS card. Nonstandard cards do not contain a database and cannot communicate with the MIS card. Table B lists the standard cards; all other cards are nonstandard.

Table B. Standard Cards

CARD	PART NUMBER
Version 5 MRC-EA/C	090-44010-56
Version 5 PSM-E/C	090-44025-52
Version 5 TO-EA/C	090-44029-51

5.02 Standard cards are shipped with factory settings for those parameters which can be set. These settings are stored in the card database. When the standard card is entered (ENT-EQPT command), the card information (factory settings, serial number, CLEI code, etc.) is copied to the MIS card which stores a complete shelf database about all cards.

5.03 Nonstandard cards are not entered into the database, cannot communicate with the MIS card, and show as unequipped if queried.

5.04 Standard cards and ports must go through the sequence listed below. Failure to follow the listed sequence will result in a deny message.

Card installed: when the card is first installed, all outputs are enabled and the card and ports perform their prescribed function. In this state, the card cannot communicate with the MIS card; therefore, card information and alarm reporting is not sent to the MIS card.

Card entered: after the card is entered via the ENT-EQPT command, the card information and entered card configuration is copied to the system database in the MIS card and stored in nonvolatile memory; outputs are squelched and alarms are not reported.

Port entered: (applies only to input cards, monitor cards, and timing output cards) after the port is entered via the ENT-PORT command, the entered port configuration is copied to the system database in the MIS card and stored in nonvolatile memory; outputs are squelched and alarms are not reported.

Card restored: after the card is restored via the RST-EQPT command, the card performs all its prescribed functions (except that the inputs and outputs of input cards, monitor cards, and timing output cards are disabled); outputs are enabled and alarms are reported.

Port restored: (applies only to input cards, monitor cards, and timing output cards) after the port is restored via the RST-PORT command, the card is in the same state as card restored above.

Port removed: (applies only to input cards, monitor cards, and timing output cards) after the port is removed via the RMV-PORT command, the card performs all its prescribed functions except that the removed port is squelched; alarms are reported.

Card removed: after the card is removed via the RMV-EQPT command, the card no longer performs its prescribed functions; outputs are squelched and alarms are not reported.

Port deleted: (applies only to input cards, monitor cards, and timing output cards) after the port is deleted via the DLT-PORT command, the card performs all its prescribed functions except that the deleted port is removed from the system database; outputs are squelched and alarms are reported.

Card deleted: after the card is deleted via the DLT-EQPT command, the card is erased from the system database; outputs are squelched and alarms are not reported.

5.05 Nonstandard cards are fully functional when plugged into the shelf.

6. PROVISIONING SEQUENCE

6.01 Use the steps in Table C to put a system in service.

Caution: Using an *EDIT* command on an *in-service input or output card will cause a service interruption. The interruption will occur because the transmission circuits will be reinitialized.*

Table C. Steps to Put a System in Service

STEP	PROCEDURE	COMMAND TO USE
1	Insert cards into shelf	N/A
2	Log on	ACT-USER
3	Set communication parameters (Note 1)	ED-COM
4	Enter current date and time (or local hour if connected to a GTI card) (Note 2)	ED-DAT
5	Enter system/shelf identification	SET-SID
6	Assign users	ENT-USER-SECU
7	Enter cards into system database	ENT-EQPT
8	Enter ports into system database	ENT-PORT
9	Set source mode for timing output cards	SET-ATTR-CONT
10	Set output protection type for timing output cards	SET-ATTR-CONT
11	Set notification codes for port events	SET-ATTR-PORT
12	Set threshold level for monitored parameters	SET-TH-PORT
13	Put cards in service	RST-EQPT
14	Put ports in service	RST-PORT

Notes:

1. If any communication parameters are changed which causes loss of communication, set the terminal parameters to match the set parameters, then restart the terminal.
2. Failure to use the ED-DAT command to set the current date and time on initial power-up will result in erroneous time stamps on alarms and events reported by the MIS card.

7. SECURITY

7.01 Security is controlled by a combination of a switch on the MIS card and by assigning users with passwords and particular access levels. To enable security, 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

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

B. Command Levels

7.03 Security consists of restricting access to commands. Restriction is accomplished by requiring a particular access level for each command. The access level is listed with each command in the applicable chart. The access levels are from 1 (lowest) to 5 (highest). Each user is assigned an access level allowing access to all commands at that level and below. One user (the system administrator) with level 5 can access all commands.

7.04 As shipped from the factory, one user is assigned with a user name of “super”, a password of

“sparky”, and an access level of 5. Additional users can be assigned up to a maximum of 16.

8. DATABASE DOWNLOAD

8.01 Database downloading is the process of copying card configuration information from the nonvolatile memory in the MIS card to the standard cards. Database downloading is used to automatically configure standard cards, which do not have nonvolatile memory, following a power cycle of the card or the shelf.

8.02 Section 5 of switch SW1 on the MIS card controls whether the card database configuration is downloaded from the MIS card to the standard cards. To enable downloading, section 5 must be set to ON. When enabled, the database download will occur when a standard card is power cycled (does not require a craft terminal).

8.03 If section 5 of SW1 is set to OFF, the switch settings on the card will control the card configuration. In this case, if a card is replaced, a message indicating a database mismatch will occur and the card must be provisioned by commands (requires a craft terminal).

9. FACTORY SETTINGS

9.01 For a list of factory settings, refer to the Card Information section of this manual.

Chart 1. Logon/Logoff

TASK	PROCEDURE
	<p>This chart provides the steps for logging on and logging off the System. The user name and password must have been assigned using the ENT-SECU-USER command unless the factory-supplied user name (super) and password (sparky) are being used.</p> <p>Note: The user name and password are case (uppercase/lowercase) sensitive and must be entered exactly as assigned.</p>
Logon	<p>Access level 1 is required to use this command. Enter:</p> <pre>ACT-USER:[<tid>]:<username>:<ctag>::<password>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Logoff	<p>Access level 1 is required to use this command. Enter:</p> <pre>CANC-USER:[<tid>]:<username>:<ctag>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 2. Alarm & Status Information

TASK	PROCEDURE
<p>This chart provides the steps for silencing audible alarms, and for displaying alarms, conditions, and messages.</p>	
<p>Silence Alarms</p>	<p>Access level 1 is required to use this command. Enter:</p> <p style="text-align: center;">OPR-ACO-ALL:[<tid>]::<ctag>;</p> <p>Response:</p> <p style="text-align: center;"><source identifier> <date> <time> M <ctag> COMPLD</p>
<p>Display All Current Alarms</p>	<p>Access level 1 is required to use this command. Enter:</p> <p style="text-align: center;">RTRV-ALM-ALL:[<tid>]:ALL:<ctag>;</p> <p>Response:</p> <p style="text-align: center;">If there are no alarms, the format is:</p> <p style="text-align: center;"><source identifier> <date> <time> M <ctag> COMPLD</p> <p style="text-align: center;">If there is at least one alarm to report, the format is:</p> <p style="text-align: center;"><source identifier> <date> <time> M <ctag> COMPLD <aid>:<ntfcncde>,<condtype>,<service effecting>,<date>,<time>,,:<conddescr>," ...</p> <p style="margin-left: 40px;">aid = see Table E</p> <p style="margin-left: 40px;">ntfcncde = notification code:</p> <p style="margin-left: 80px;">CR = critical alarm</p> <p style="margin-left: 80px;">MJ = major alarm</p> <p style="margin-left: 80px;">MN = minor alarm</p> <p style="margin-left: 80px;">NA = not alarmed</p> <p style="margin-left: 80px;">NR = not reported</p> <p style="margin-left: 40px;">condtype = see typerep in Table E</p> <p style="margin-left: 40px;">service effecting = the effect on service:</p> <p style="margin-left: 80px;">SA = service effecting</p> <p style="margin-left: 80px;">NSA = not service effecting</p> <p style="margin-left: 40px;">date = date of the alarm</p> <p style="margin-left: 40px;">time = time of the alarm</p> <p style="margin-left: 40px;">conddescr = see Table E</p>

Chart 2. Alarm & Status Information (Contd)

TASK	PROCEDURE
<p>Display Current Alarms in Specified Equipment</p>	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-ALM-EQPT:[<tid>]:<card>:<ctag>;</pre> <p>card = card: CLK-a = clock card (a = 1-2) SHELF = shelf GTI-a = GTI card (a = 1-2) MRC-a = MRC card (a = 1-2) PSM-a = PSM card (a = 1-10) TO-a = TO card (a = 1-8)</p> <p>Response:</p> <p>If there are no alarms in the specified card, the format is:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre> <p>If there is at least one alarm to report in the specified card, the format is:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD <aid>:<ntfcncde>,<condtype>,<service effecting>, <date>,<time>,,:<conddescr>," ...</pre> <p>aid = see Table E ntfcncde = notification code: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported</p> <p>condtype = see typerep in Table E service effecting = the effect on service: SA = service effecting NSA = not service effecting</p> <p>date = date of the alarm time = time of the alarm conddescr = see Table E</p>

Chart 2. Alarm & Status Information (Contd)

TASK	PROCEDURE
Display Current Conditions in All Equipment	<p>Access level 1 is required to use this command. Enter:</p> <p style="text-align: center;">RTRV-COND-EQPT:[<tid>]:ALL:<ctag>;</p> <p>Response:</p> <p style="text-align: center;"><source identifier> <date> <time> M <ctag> COMPLD <aid>:<ntfcncde>,<typerep>,<service effecting>,<conddescr>," ...</p> <p>aid = see Table E</p> <p>ntfcncde = notification code: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported</p> <p>typerep = see Table A in the Input/Output Reference Guide section of this manual, and also see condtype in Table E in this section</p> <p>service effecting = the effect on service: SA = service effecting NSA = not service effecting</p> <p>conddescr = see Table E</p>

Chart 2. Alarm & Status Information (Contd)

TASK	PROCEDURE
<p>Display Current Conditions in Specified Equipment</p>	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-COND-EQPT:[<tid>]:<card>:<ctag>;</pre> <p>card = card: CLK-a = clock card (a = 1-2) FUSE-a = fuse (a = 1-2) GTI-a = GTI card (a = 1-2) MRC-a = MRC card (a = 1-2) PSM-a = PSM card (a = 1-10) TO-a = TO card (a = 1-8)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD <aid>:<ntfcncde>,<typerep>,<service effecting>,<conddescr>," ...</pre> <p>aid = see Table E ntfcncde = notification code: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported typerep = see Table A in the Input/Output Reference Guide section of this manual, and also see condtype in Table E service effecting = the effect on service: SA = service effecting NSA = not service effecting conddescr = see Table E</p>

Chart 2. Alarm & Status Information (Contd)

TASK	PROCEDURE
<p>Display Current Port Alarms in Specified Equipment</p>	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-ALM-PORT:[<tid>]:<port>:<ctag>;</pre> <p>port = port: MRC-a-b = MRC card (a = 1-2 or ALL) and port (b = 1-4 or ALL) PSM-a-b = PSM card (a = 1-10 or ALL) and port (b = 1-4 or ALL) TO-a-b = TO card (a = 1-8 or ALL) and port (b = 1-10 or ALL)</p> <p>Response:</p> <p>If there are no port alarms on the specified card, the format is:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre> <p>If there is at least one port alarm on the specified card, the format is:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD <aid>:<ntfcncde>,<condtype>,<service effecting>,<date>,<time>,,<conddescr>," ...</pre> <p>aid = see Table E ntfcncde = notification code: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported</p> <p>condtype = see typerep in Table E service effecting = the effect on service: SA = service effecting NSA = not service effecting</p> <p>date = date of the alarm time = time of the alarm conddescr = see Table E</p>

Chart 2. Alarm & Status Information (Contd)

TASK	PROCEDURE
Display Message Log	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-LOG:[<tid>]:<card>:<ctag>::LOG;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "SYSTEM" /* "<message>" ... */ ;</pre>
Clear Message Log	<p>Access level 3 is required to use this command. Enter:</p> <pre>INIT-LOG:[<tid>]:<card>:<ctag>::LOG;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 3. Security Information

TASK	PROCEDURE
	<p>This chart provides the steps for displaying and changing security parameters. As shipped from the factory, there is one user named "super" with a password of "sparky" and an access level of 5. For password protection to be enabled, section 4 of switch SW1 on the MIS card must be set to the ON position.</p> <p>Note: The user name and password are case (uppercase/lowercase) sensitive and must be entered exactly as assigned.</p>
Display Access Level of a Single User	<p>Access level 5 is required to use this command. Enter:</p> <pre>RTRV-USER-SECU:[<tid>]:<username>:<ctag>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMLPD <username>:,<access level></pre>
Display Access Level of All Users	<p>Access level 5 is required to use this command. Enter:</p> <pre>RTRV-USER-SECU:[<tid>]:ALL:<ctag>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMLPD <username>:,<access level> ...</pre>
Assign User	<p>Access level 5 is required to use this command. This command enters a new user into the system. A maximum of 16 users can be assigned. Enter:</p> <pre>ENT-USER-SECU:[<tid>]:<username>:<ctag>::<password>,, <access level>;</pre> <p>username = name of new user (up to 10 alpha-numeric characters) password = password for new user (see note below) access level = access level of new user (1-4 with 4 the highest [5 is reserved for system administrator])</p> <p>Note: The password can have a minimum of 1 character and a maximum of 10 characters. At least one alpha character must be used. Alpha characters can be uppercase, lowercase, or a mixture of both. Any printable character can be used except: comma (,), colon (:), semicolon (;), null (), space (), ampersand (&), and equal sign (=).</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 3. Security Information (Contd)

TASK	PROCEDURE
Change Password	<p>Access level 1 is required to use this command. This command enters a new user into the system. Up to eight users are allowed. Enter:</p> <pre>ED-PID:[<tid>]:<username>:<ctag>::<old password>, <new password>;</pre> <p>username = name of user whose password is being changed old password = existing password new password = new password (see note below)</p> <p>Note: The password can have a minimum of 1 character and a maximum of 10 characters. At least one alpha character must be used. Alpha characters can be uppercase, lowercase, or a mixture of both. Any printable character can be used except: comma (,), colon (:), semicolon (;), null (), space (), ampersand (&), and equal sign (=).</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Change User Name, Password, & Access Level	<p>Access level 5 is required to use this command. Enter:</p> <pre>ED-USER-SECU:[<tid>]:<old username>:<ctag>:: <new username>,<new password>,,<new access level>;</pre> <p>old username = name of user whose name, password, and/or access level is being changed new username = new user name (up to 10 alpha-numeric characters) new password = new password (see note below) new access level = new access level (1–4 with 4 the highest [5 is reserved for the system administrator])</p> <p>Note: The password can have a minimum of 1 character and a maximum of 10 characters. At least one alpha character must be used. Alpha characters can be uppercase, lowercase, or a mixture of both. Any printable character can be used except: comma (,), colon (:), semicolon (;), null (), space (), ampersand (&), and equal sign (=).</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 3. Security Information (Contd)

TASK	PROCEDURE
Reassign Lost Name or Password Of System Administra- tor	<p>If the name or password of the system administrator has been lost, proceed as follows:</p> <ol style="list-style-type: none"> 1. Remove the MIS card and set section 4 of switch SW1 to OFF to disable password protection (allows any user access to all commands). 2. Replace the MIS card and wait approximately 60 seconds. 3. If the system administrator's name has been lost, use the RTRV-USER-SECU command to determine the name of the level 5 user (system administrator) as follows: <pre>RTRV-USER-SECU:[<tid>]:<username>:<ctag>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMLPD <username>:,<access level></pre> 4. Use the ED-USER-SECU to change the name or password as follows: <pre>ED-USER-SECU:[<tid>]:<old username>:<ctag>:: <new username>,<new password>,,5;</pre> <p>old username = name of user whose name, password, and/or access level is being changed new username = new user name (up to 10 alpha-numeric characters) new password = new password (see note below) new access level = new access level (with 4 the highest [5 is reserved for the system administrator])</p> <p>Note: The password can have a minimum of 1 character and a maximum of 10 characters. At least one alpha character must be used. Alpha characters can be uppercase, lowercase, or a mixture of both. Any printable character can be used except: comma (,), colon (:), semicolon (;), null (), space (), ampersand (&), and equal sign (=).</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre> 5. Remove the MIS card and set section 4 of switch SW1 to ON to enable password protection. 6. Replace the MIS card and wait approximately 60 seconds.

Chart 3. Security Information (Contd)

TASK	PROCEDURE
Delete User	<p>Access level 5 is required to use this command. Enter:</p> <pre>DLT-USER-SECU:[<tid>]:<username>:<ctag>;</pre> <p>username = name of user being deleted</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 4. Communication Port Configuration

TASK	PROCEDURE
<p>This chart provides the steps for displaying and changing the communication parameters.</p>	
<p>Display Communication Parameters</p>	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-COM:[<tid>]:COM-a:ctag;</pre> <p>a = communication port number (1-3 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "COM-a" ... /*<baud>,<monitor>,<keepalive>,<comtype>,<endoftext>,<echo>,<alarmmessage>,<hwcontrol>,<swcontrol>...*/</pre> <p>baud = data rate (baud rate) for this communication port: 9600 = 9600 baud 1200 = 1200 baud</p> <p>monitor = specifies whether this communication port is allowed to view communication messages associated with other ports: ALW = allowed INH = inhibited</p> <p>keepalive = specifies whether this communication port is allowed to autonomously output a COMPL messages every 15 to 20 minutes: ALW = allowed INH = inhibited</p> <p>comtype = communication type for this communication port: X25 = PAD MODEM = modem TERM = dumb terminal REMOTE = remote shelf</p> <p>endoftext = specifies an additional end-of-text character for this communication port: 0 = no additional end-of-text character x = the additional end-of-text character which is a hexadecimal number</p> <p>echo = specifies whether this communication port allows local echo: ALW = allowed INH = inhibited</p> <p>alarmmessage = specifies whether alarm and event messages are allowed to be transmitted from this communication port: ALW = allowed INH = inhibited</p>

Chart 4. Communication Port Configuration (Contd)

TASK	PROCEDURE
Display Communication Parameters (Contd)	<p>hwcontrol = specifies whether external equipment is allowed to stop the DCD system from sending messages by setting the clear to send (CTS) lead low, or continue messages by setting the CTS lead high on this communication port: ALW = allowed INH = inhibited</p> <p>swcontrol = specifies whether user is allowed to use a Control-s key combination to stop the DCD system from sending messages or use a Control-q key combination to cause the DCD system to continue sending messages via this communication port: ALW = allowed INH = inhibited</p>
Change Communication Parameters	<p>Access level 3 is required to use this command. Enter:</p> <pre>ED-COM:[<tid>]:COM-a:ctag::[<baud>],[<monitor>],[<keepalive>],[<comtype>],[<endoftext>],[<echo>],[<alarmmessage>],[<hwcontrol>],[<swcontrol>];</pre> <p>a = communication port number (1-3)</p> <p>baud = data rate (baud rate) for this communication port (baud rate for port 2 can only be changed by a switch on the MIS card): 9600 = 9600 baud 1200 = 1200 baud (null) = no change</p> <p>monitor = specifies whether this communication port is allowed to view communication messages associated with other ports: ALW = allowed INH = inhibited (null) = no change</p> <p>keepalive = specifies whether this communication port is allowed to autonomously output a COMPL messages every 15 to 20 minutes: ALW = allowed INH = inhibited (null) = no change</p> <p>comtype = specifies the communication type for this communication port: X25 = PAD MODEM = modem TERM = dumb terminal REMOTE = remote shelf (null) = no change</p>

Chart 4. Communication Port Configuration (Contd)

TASK	PROCEDURE
<p>Change Communication Parameters (Contd)</p>	<p>endoftext = specifies an additional end-of-text character for this communication port: 0 = no additional end-of-text character x = the additional end-of-text character which is a hexadecimal number (1-9F) (null) = no change</p> <p>echo = specifies whether this communication port allows local echo: ALW = allowed INH = inhibited (null) = no change</p> <p>alarmmessage = specifies whether alarm and event messages are allowed to be transmitted from this communication port: ALW = allowed INH = inhibited (null) = no change</p> <p>hwcontrol = specifies whether external equipment is allowed to stop the DCD system from sending messages by setting the clear to send (CTS) lead low, or cause the DCD system to continue sending messages by setting the CTS lead high on this communication port: ALW = allowed INH = inhibited (null) = no change</p> <p>swcontrol = specifies whether user is allowed to use a Control-s key combination to stop the DCD system from sending messages, or use a Control-q key combination to cause the DCD system to continue sending messages via this communication port: ALW = allowed INH = inhibited (null) = no change</p> <p>Response: <source identifier> <date> <time> M <ctag> COMPLD</p>
<p>Drop DTR Signal for 5 Seconds</p>	<p>Access level 3 is required to use this command. Enter: INIT-COM:[<tid>]:COM-a:ctag; a = communication port number (1-3)</p> <p>Response: <source identifier> <date> <time> M <ctag> COMPLD</p>

Chart 5. System Configuration

TASK	PROCEDURE
	<p>This chart provides the steps for displaying the date & time and changing the date & time. Steps are included for displaying and changing the system name, and how to reset the system database. Also included is a step for displaying the MIS card software revision. The system name is set at the factory to TELECOM. The system name is entered (optional) as the target identifier (tid) and is included with every response from the system as the source identifier (sid).</p> <p>Refer to Part 4, Shelf Addressing, for expansion or remote shelf addressing details.</p>
Display Date & Time	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-HDR:[<tid>]::<ctag>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Change Date & Time	<p>Access level 4 is required to use this command. If connected to a GTI card, the system will adjust the minutes and seconds to coincide with UTC time. The current hour (entered with <time>) will be used so that local time is displayed. Enter:</p> <pre>ED-DAT:[<tid>]::<ctag>::{<date>,<time>;}</pre> <p>date = date in the format yyyy-mm-dd: yyyy = year (1997–2096) mm = month (01–12) dd = day (01–31)</p> <p>time = time in the format hh-mm-ss: hh = hour (00–23) mm = minute (00–59) ss = second (00–59)</p> <p>current hour = current local hour (00–23)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 5. System Configuration (Contd)

TASK	PROCEDURE
Reset System	<p>Access level 4 is required to use this command. Enter:</p> <pre>INIT-SYS:[<tid>]:MIS:<ctag>::<reset>;</pre> <p>reset = type of reset: 9 = resets all security information and the source ID (SID) to the factory settings (there will be only one user named "super" with a password of "sparky", and the DCD system SID will be TELECOM); also all card information will be deleted (no cards will be entered in the data-base); also all communication parameters will be reset to factory settings</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Display System Name	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-HDR:[<tid>]::<ctag>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Change System Name	<p>Access level 4 is required to use this command. This command changes the source identifier for a system. Enter:</p> <pre>SET-SID:<old name>::<ctag>::<new name>;</pre> <p>old name = old source identifier of the system new name = new source identifier of the system (20 characters max using letters, numbers, and hyphens; the source identifier must begin with a letter; the target's CLLI code [if available] is recommended as the source identifier, or the office name can be used)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 6. Enter Card in Database

TASK	PROCEDURE
<p>This chart provides the steps for entering cards into the system database with the card parameters.</p>	
<p>Enter Clock Card</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>ENT-EQPT:[<tid>]:CLK-a:<ctag>::,,,,,;</pre> <p>a = clock card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
<p>Enter GTI Card</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>ENT-EQPT:[<tid>]:GTI-a:<ctag>::<framing>, <troublecode>,,<osc1>,<osc2>,<integration>;</pre> <p>a = GTI card slot (1 or 2)</p> <p>framing = framing type:</p> <ul style="list-style-type: none"> CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing <p>troublecode = output signals when card has major alarm:</p> <ul style="list-style-type: none"> ALW = AIS is sent on all outputs INH = all outputs are squelched <p>osc1 = clock type on oscillator 1 (OSC A) input:</p> <ul style="list-style-type: none"> RB = rubidium QTZ = quartz <p>osc2 = clock type on oscillator 2 (OSC B) input:</p> <ul style="list-style-type: none"> RB = rubidium QTZ = quartz <p>integration = integration time until an alarm is declared:</p> <ul style="list-style-type: none"> 1 = see Table D 2 = see Table D 3 = see Table D 4 = see Table D <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 6. Enter Card in Database (Contd)

TASK	PROCEDURE
<p>Enter MRC Card</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>ENT-EQPT:[<tid>]:MRC-a:<ctag>::,,,,,;</pre> <p>a = MRC card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
<p>Enter PSM Card</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>ENT-EQPT:[<tid>]:PSM-a:<ctag>::,,,,,;</pre> <p>a = PSM card slot (1-10)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
<p>Enter Timing Output Card</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>ENT-EQPT:[<tid>]:TO-a:<ctag>::<framing>,<troublecode>,<portseverity>,;,;</pre> <p>a = TO card slot (1-8)</p> <p>framing = framing type: CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing</p> <p>troublecode = output signals when card fails: ALW = AIS is sent on all outputs INH = all outputs are squelched</p> <p>portseverity = alarm type caused by port failure: MJ = major MN = minor</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Table D. GTI Card Alarm Integration Times

INTEGRATION PARAMETER SETTING	GTI CARD TYPE	ALARM INTEGRATION TIME (SIGNAL DEFECT ONLY)	
		MINOR ALARM	MAJOR ALARM
1	GTI -13, & -14	4 hours	24 hours
	GTI -15, & -16	Rubidium ref: 4 hours	Rubidium ref: 24 hours
		Quartz ref: 3/4 hour	Quartz ref: 6 hours
2	GTI -13, & -14	3 hours	18 hours
	GTI -15, & -16	Rubidium ref: 8 hours	Rubidium ref: 48 hours
		Quartz ref: no minor alarm	Quartz ref: 6 hours
3	GTI -13, & -14	1 hour	6 hours
	GTI -15, & -16	Rubidium ref: no minor alarm	Rubidium ref: 24 hours
		Quartz ref: no minor alarm	Quartz ref: 1 hour
4	GTI -13, & -14	10 minutes	1 hour
	GTI -15, & -16	Rubidium ref: 1/2 hour	Rubidium ref: 1 hour
		Quartz ref: 1/2 hour	Quartz ref: 1 hour

Notes:

1. The GTI types are as follows:

<u>type</u>	<u>part #</u>
GTI -13	090-42140-13
GTI -14	090-42140-14 & 090-44140-14
GTI -15	090-42140-15
GTI -16	090-42140-16 & 090-44140-16

2. The times listed are from when a SIGNAL DEFECT occurs until a minor or major alarm is declared.

Chart 7. Put Card In Service

TASK	PROCEDURE
	This chart provides the steps for putting cards into service. Once in service, cards can report alarm and conditions.
Restore Clock Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>RST-EQPT:[<tid>]:CLK-a:<ctag>;</pre> <p>a = clock card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Restore GTI Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>RST-EQPT:[<tid>]:GTI-a:<ctag>;</pre> <p>a = GTI card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Restore MRC Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>RST-EQPT:[<tid>]:MRC-a:<ctag>;</pre> <p>a = MRC card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Restore PSM Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>RST-EQPT:[<tid>]:PSM-a:<ctag>;</pre> <p>a = PSM card slot (1-10)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 8. Take Card Out of Service

TASK	PROCEDURE
This chart provides the steps for taking cards out of service. When out of service, cards can no longer report alarms and conditions.	
Remove Clock Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>RMV-EQPT:[<tid>]:CLK-a:<ctag>;</pre> <p>a = clock card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Remove GTI Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>RMV-EQPT:[<tid>]:GTI-a:<ctag>;</pre> <p>a = GTI card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Remove MRC Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>RMV-EQPT:[<tid>]:MRC-a:<ctag>;</pre> <p>a = MRC card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Remove PSM Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>RMV-EQPT:[<tid>]:PSM-a:<ctag>;</pre> <p>a = PSM card slot (1-10)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 8. Take Card Out of Service (Contd)

TASK	PROCEDURE
Remove Timing Output Card	<p>Access level 4 is required to use this command. When a timing output card is removed (taken out of service), its outputs are disabled. Enter:</p> <pre> RMV-EQPT:[<tid>]:TO-a:<ctag>; a = TO card slot (1-8) </pre> <p>Response:</p> <pre> <source identifier> <date> <time> M <ctag> COMPLD </pre>

Chart 9. Delete Card from Database

TASK	PROCEDURE
This chart provides the steps for deleting cards from the system database.	
Delete Clock Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>DLT-EQPT:[<tid>]:CLK-a:<ctag>;</pre> <p>a = clock card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Delete GTI Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>DLT-EQPT:[<tid>]:GTI-a:<ctag>;</pre> <p>a = GTI card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Delete MRC Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>DLT-EQPT:[<tid>]:MRC-a:<ctag>;</pre> <p>a = MRC card slot (1 or 2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Delete PSM Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>DLT-EQPT:[<tid>]:PSM-a:<ctag>;</pre> <p>a = PSM card slot (1-10)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 9. Delete Card from Database (Contd)

TASK	PROCEDURE
Delete Timing Output Card	<p>Access level 4 is required to use this command. Enter:</p> <pre>DLT-EQPT:[<tid>]:TO-a:<ctag>; a = TO card slot (1-8)</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 10. Card Configuration

TASK	PROCEDURE
	<p>This chart provides the steps for displaying and changing parameters on the GTI and Timing Output cards.</p> <p>Note: No information is returned for clock cards, MRC cards, or PSM cards, therefore, individual commands for these cards have not been included in this chart.</p>
<p>Display Parameters for All Cards</p>	<p>Access level 2 is required to use this command. Enter:</p> <pre>RTRV-EQPT:[<tid>]:ALL:<ctag>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "<aid>:[<framing>],[<troublecode>], [<portseverity>],[<osc1>],[<osc2>], [<integration>]" ...</pre> <p>framing = framing type:</p> <ul style="list-style-type: none"> CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing <p>troublecode = output signals when card has major alarm:</p> <ul style="list-style-type: none"> ALW = AIS is sent on all outputs INH = all outputs are squelched <p>osc1 = clock type on oscillator 1 (OSC A) input:</p> <ul style="list-style-type: none"> RB = rubidium QTZ = quartz <p>osc2 = clock type on oscillator 2 (OSC B) input:</p> <ul style="list-style-type: none"> RB = rubidium QTZ = quartz <p>integration = integration time until an alarm is declared:</p> <ul style="list-style-type: none"> 1 = see Table D 2 = see Table D 3 = see Table D 4 = see Table D

Chart 10. Card Configuration (Contd)

TASK	PROCEDURE
Display GTI Card Parameters	<p>Access level 2 is required to use this command. Enter:</p> <pre>RTRV-EQPT:[<tid>]:GTI-a:<ctag>;</pre> <p>a = GTI card slot (1-2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "GTI-a:<framing>,<troublecode>,,<osc1>,<osc2> , <integration>" ...</pre> <p>framing = framing type: CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing</p> <p>troublecode = output signals when card has major alarm: ALW = AIS is sent on all outputs INH = all outputs are squelched</p> <p>osc1 = clock type on oscillator 1 (OSC A) input: RB = rubidium QTZ = quartz</p> <p>osc2 = clock type on oscillator 2 (OSC B) input: RB = rubidium QTZ = quartz</p> <p>integration = integration time until an alarm is declared: 1 = see Table D 2 = see Table D 3 = see Table D 4 = see Table D</p>

Chart 10. Card Configuration (Contd)

TASK	PROCEDURE
<p>Change GTI Card Parameters</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>ED-EQPT:[<tid>]:GTI-a:<ctag>::<framing>,<troublecode>,, <osc1>,<osc2>,<integration>;</pre> <p>a = GTI card slot (1 or 2)</p> <p>framing = framing type:</p> <ul style="list-style-type: none"> CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing <p>troublecode = output signals when card has major alarm:</p> <ul style="list-style-type: none"> ALW = AIS is sent on all outputs INH = all outputs are squelched <p>osc1 = clock type on oscillator 1 (OSC A) input:</p> <ul style="list-style-type: none"> RB = rubidium QTZ = quartz <p>osc2 = clock type on oscillator 2 (OSC B) input:</p> <ul style="list-style-type: none"> RB = rubidium QTZ = quartz <p>integration = integration time until an alarm is declared:</p> <ul style="list-style-type: none"> 1 = see Table D 2 = see Table D 3 = see Table D 4 = see Table D <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 10. Card Configuration (Contd)

TASK	PROCEDURE
Display Timing Output Card Parameters	<p>Access level 2 is required to use this command. Enter:</p> <pre>RTRV-EQPT:[<tid>]:TO-a:<ctag></pre> <p style="margin-left: 40px;">a = TO card slot (1-8)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "GTI-a:<framing>,<troublecode>,<portseverity>" ...</pre> <p style="margin-left: 40px;">framing = framing type:</p> <ul style="list-style-type: none"> CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing <p style="margin-left: 40px;">troublecode = output signals when card fails:</p> <ul style="list-style-type: none"> ALW = AIS is sent on all outputs INH = all outputs are squelched <p style="margin-left: 40px;">portseverity = alarm type caused by port failure:</p> <ul style="list-style-type: none"> MJ = major MN = minor

Chart 10. Card Configuration (Contd)

TASK	PROCEDURE
<p>Change Timing Output Card Parameters</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>ED-EQPT:[<tid>]:TO-a:<ctag>::<framing>,<troublecode>,<portseverity>,,,,;</pre> <p>a = TO card slot (1-8)</p> <p>framing = framing type: CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing</p> <p>troublecode = output signals when card fails: ALW = AIS is sent on all outputs INH = all outputs are squelched</p> <p>portseverity = alarm type caused by port failure: MJ = major MN = minor</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 11. Reference Input Ports

TASK	PROCEDURE
	<p>This chart provides the steps for controlling reference input ports including: entering ports into the system database, putting ports into service, displaying port parameters, changing port parameters, taking ports out of service, and deleting ports from the system database.</p>
<p>Enter Port</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>ENT-PORT: [<tid>]:MRC-a-b[&&-c]:<ctag>::<framing>, <priority>,<reference type>,<signal type>;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4 or ALL) c = ending MRC card port (2-4 with c > b) framing = type of framing: CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing priority = priority of the reference on this port (1-4 with 1 the highest) reference type = type of reference: CESIUM = cesium GPS = global positioning system LORAN = LORAN NETWORK = network signal type = type of signal: ANALOG = analog DIGITAL = digital</p> <p>Note: If all the reference ports of an MRC card are configured for the same priority, the references will be selected based on the numerical order of the ports. The same numerical order will be listed if the settings are retrieved.</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 11. Reference Input Ports (Contd)

TASK	PROCEDURE
Restore Port	<p>Access level 3 is required to use this command. Enter:</p> <pre>RST-PORT:[<tid>]:MRC-a-b:<ctag>;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Display Performance Monitoring Data	<p>Access level 2 is required to use this command. Enter:</p> <pre>RTRV-PM-PORT:[<tid>]:MRC-a-b:<ctag>:: <monitor type>,,,,,;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4 or ALL) monitor type = the monitored parameter: ALL = all monitor types BPV = bipolar violations CRC = cyclic redundancy check</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "MRC-a-b:<monitor type>,<monitor value>,,,,,, <monitor date>,<monitor time>" ...</pre> <p>monitor value = value retrieved for the monitor type monitor date = current date monitor time = current time</p>
Clear Performance Monitoring Data	<p>Access level 3 is required to use this command. Enter:</p> <pre>INIT-REG:[<tid>]:MRC-a-b:<ctag>::<monitor type>;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4) monitor type = the monitored parameter: ALL = all monitor register types BPV = bipolar violations register CRC = cyclic redundancy check register</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 11. Reference Input Ports (Contd)

TASK	PROCEDURE
Display Priority, Reference Type, Signal Type, & Framing	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-PORT:[<tid>]:MRC-a-b[&&-c]:<ctag>;</pre> <p> a = MRC card slot (1-2) b = MRC card port (1-4) c = ending MRC card port (2-4 with c > b) </p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "MRC-a-b:<ctag>::<framing>,<priority>, <reference type>,<signal type>," ...</pre> <p> framing = type of framing: CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing </p> <p> priority = priority of the reference on this port (1-4 with 1 the highest) </p> <p> reference type = type of reference: CESIUM = cesium GPS = global positioning system LORAN = LORAN NETWORK = network </p> <p> signal type = type of signal: ANALOG = analog DIGITAL = digital </p>

Chart 11. Reference Input Ports (Contd)

TASK	PROCEDURE
<p>Change Priority, Reference Type, & Signal Type</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>ED-PORT: [<tid>]:MRC-a-b[&&-c]:<ctag>::<framing>, <priority>,<reference type>,<signal type>;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4 or ALL) c = ending MRC card port (2-4 with c > b) framing = type of framing: CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing priority = priority of the reference on this port (1-4 with 1 the highest) reference type = type of reference: CESIUM = cesium GPS = global positioning system LORAN = LORAN NETWORK = network signal type = type of signal: ANALOG = analog DIGITAL = digital</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 11. Reference Input Ports (Contd)

TASK	PROCEDURE																																		
<p>Display Threshold</p>	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-TH-PORT:[<tid>]:MRC-a-b[&&-c]:<ctag>:: <monitor type>;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4 or ALL) c = ending MRC card port (2-4 with c > b) monitor type = the monitored parameter: ALL = all monitored parameters BPV = bipolar violations CRC = cyclic redundancy check</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "MRC-a-b:<monitor type>,,,<threshold>" ...</pre> <p>threshold = threshold level in decimal numerals</p> <p>Note for monitor type of BPV: Only in-service (restored) ports are sampled; therefore, the BPV counts displayed correspond to a particular error rate depending on the number of in-service ports. Find the BPV count in the table below that is closest to the displayed BPV count and in the column which represents the number of ports in service, then follow across to the corresponding error rate. Because the ports are sampled in turn, there is some amount of settling time for the framing circuit. This settling time causes an error of ±4% in the specified error rate. The observation interval is 15 minutes.</p> <table border="1" data-bbox="381 1283 1338 1688"> <thead> <tr> <th colspan="4">BPV count</th> <th rowspan="2">Error Rate</th> </tr> <tr> <th>1 port in service</th> <th>2 ports in service</th> <th>3 ports in service</th> <th>4 ports in service</th> </tr> </thead> <tbody> <tr> <td>14</td> <td>7</td> <td>5</td> <td>4</td> <td>1 x 10⁻⁸</td> </tr> <tr> <td>139</td> <td>70</td> <td>46</td> <td>35</td> <td>1 x 10⁻⁷</td> </tr> <tr> <td>1390</td> <td>695</td> <td>464</td> <td>348</td> <td>1 x 10⁻⁶</td> </tr> <tr> <td>13896</td> <td>6948</td> <td>4632</td> <td>3474</td> <td>1 x 10⁻⁵</td> </tr> <tr> <td>32767</td> <td>16348</td> <td>10922</td> <td>8192</td> <td>2.35 x 10⁻⁵</td> </tr> </tbody> </table>	BPV count				Error Rate	1 port in service	2 ports in service	3 ports in service	4 ports in service	14	7	5	4	1 x 10 ⁻⁸	139	70	46	35	1 x 10 ⁻⁷	1390	695	464	348	1 x 10 ⁻⁶	13896	6948	4632	3474	1 x 10 ⁻⁵	32767	16348	10922	8192	2.35 x 10 ⁻⁵
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Chart 11. Reference Input Ports (Contd)

TASK	PROCEDURE																																		
<p>Change Threshold</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>SET-TH-PORT:[<tid>]:MRC-a-b:<ctag>::<monitor type>,<threshold>;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4 or ALL) monitor type = the monitored parameter: BPV = bipolar violations CRC = cyclic redundancy check threshold = 0-32767</p> <p>Note for BPVs: Only in-service (restored) ports are sampled; therefore, the BPV counts entered to obtain a desired error rate depends on the number of in-service ports. Enter a BPV count from the table below based on the desired error rate and the number of ports in service as the <thlev> parameter in the command.</p> <table border="1" data-bbox="479 871 1433 1276"> <thead> <tr> <th rowspan="2">Error Rate</th> <th colspan="4">BPV count</th> </tr> <tr> <th>1 port in service</th> <th>2 ports in service</th> <th>3 ports in service</th> <th>4 ports in service</th> </tr> </thead> <tbody> <tr> <td>1×10^{-8}</td> <td>14</td> <td>7</td> <td>5</td> <td>4</td> </tr> <tr> <td>1×10^{-7}</td> <td>139</td> <td>70</td> <td>46</td> <td>35</td> </tr> <tr> <td>1×10^{-6}</td> <td>1390</td> <td>695</td> <td>464</td> <td>348</td> </tr> <tr> <td>1×10^{-5}</td> <td>13896</td> <td>6948</td> <td>4632</td> <td>3474</td> </tr> <tr> <td>2.35×10^{-5}</td> <td>32767</td> <td>16348</td> <td>10922</td> <td>8192</td> </tr> </tbody> </table> <p>Because the ports are sampled in turn, there is some amount of settling time for the framing circuit. This settling time causes an error of $\pm 4\%$ in the specified error rate. The observation interval is 15 minutes.</p> <p>Note: If an MRC or PSM card has only one port active, no sampling occurs, and events are accumulated in real time.</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>	Error Rate	BPV count				1 port in service	2 ports in service	3 ports in service	4 ports in service	1×10^{-8}	14	7	5	4	1×10^{-7}	139	70	46	35	1×10^{-6}	1390	695	464	348	1×10^{-5}	13896	6948	4632	3474	2.35×10^{-5}	32767	16348	10922	8192
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Chart 11. Reference Input Ports (Contd)

TASK	PROCEDURE
Display Alarm Severity	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-ATTR-PORT:[<tid>]:MRC-a-b[&&-c]:<ctag>;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4 or ALL) c = ending MRC card port (2-4 with c > b)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "MRC-a-b:<severity>,<condition>" ...</pre> <p>severity = severity set for the condition: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported CL = cleared</p> <p>condition = port condition: AIS = alarm indication signal ALL = all monitor types BPV = bipolar violations CRC = cyclic redundancy check FFREQ = fractional frequency LOS = loss of signal OOF = out-of-fame errors</p>

Chart 11. Reference Input Ports (Contd)

TASK	PROCEDURE
<p>Change Alarm Severity</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>SET-ATTR-PORT:[<tid>]:MRC-a-b:<ctag>::<severity>,<condition>;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "MRC-a-b:<severity>,<condition>" ...</pre> <p>severity = severity set for the condition: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported</p> <p>condition = port condition: AIS = alarm indication signal ALL = all monitor types BPV = bipolar violations CRC = cyclic redundancy check FFREQ = fractional frequency LOS = loss of signal OOF = out-of-fame errors</p>
<p>Remove Port</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>RMV-PORT:[<tid>]:MRC-a-b[&&-c]:<ctag>;</pre> <p>a = MRC card slot (1-2) b = MRC card port (1-4 or ALL) c = ending MRC card port (2-4 with c > b)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 11. Reference Input Ports (Contd)

TASK	PROCEDURE
Delete Port	<p>Access level 4 is required to use this command. Enter:</p> <pre>DLT-PORT:[<tid>]:MRC-a-b:<ctag>;</pre> <p style="margin-left: 40px;">a = MRC card slot (1-2) b = MRC card port (1-4 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 12. Monitor Input Ports

TASK	PROCEDURE
	<p>This chart provides the steps for controlling monitor input ports including: entering ports into the system database, putting ports into service, displaying port parameters, changing port parameters, taking ports out of service, and deleting ports from the system database.</p>
Enter Port	<p>Access level 4 is required to use this command. Enter:</p> <pre>ENT-PORT:[<tid>]:PSM-a-b[&&-c]:<ctag>::<framing>, , , ;</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4 or ALL) c = ending PSM card port (2-4 with c > b) framing = type of framing: CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Restore Port	<p>Access level 3 is required to use this command. Enter:</p> <pre>RST-PORT:[<tid>]:PSM-a-b:<ctag>;</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 12. Monitor Input Ports (Contd)

TASK	PROCEDURE
Display Performance Monitoring Data	<p>Access level 2 is required to use this command. Enter:</p> <pre>RTRV-PM-PORT:[<tid>]:PSM-a-b:<ctag>::<monitor type> ,,,,,,<monitor date>, [<monitor time 1> <monitor time 2>];</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4 or ALL) monitor type = the monitored parameter:</p> <ul style="list-style-type: none"> SLIPS = number of slips since the previous mid-night (used with monitor date = null and monitor time 1) BPV = bipolar violations since the previous 15-min reset (used with monitor time 2) CRC = cyclic redundancy check errors since the previous 15-min reset (used with monitor time 2) OOF = out-of-frame errors since the previous 15-min reset (used with monitor time 2) MTIE = 900-second MTIE accumulated between monitor time 2 and 1 hour after monitor time 2 TDEV = 128-second TDEV accumulated between monitor time 2 and 1 hour after monitor time 2 PHASE1M = 1-minute average phase accumulated between monitor time 2 and 1 hour after monitor time 2 <p>monitor date = date: mm-dd = mm = month, dd = day (null) = current day</p> <p>monitor time 1 = current time (null) monitor time 2 = time the accumulation period ends:</p> <ul style="list-style-type: none"> hh-00 = hour of the day (hh = 00-23) hh-15 = 15 minutes past hour hh hh-30 = 30 minutes past hour hh hh-45 = 45 minutes past hour hh

Chart 12. Monitor Input Ports (Contd)

TASK	PROCEDURE
Display Performance Monitoring Data (Contd)	<p>Response:</p> <p><u>For BPV (CRC, SLIPS, MTIE, and TDEV will appear similarly):</u></p> <pre> <source identifier> <date> <time> M <ctag> COMPLD "PSM-a-b:<monitor type>,<monitor value>,<validity> , , , ,<monitor date>,<monitor time>" ... monitor value = value retrieved for the monitor type monitor date = current date monitor time = current time Note: The <monitor value> units of measure for MTIE and TDEV are nanosec- onds. <u>For PHASE1M:</u> <source identifier> <date> <time> M <ctag> COMPLD "PSM-a-b:<monitor type>,<MIN1=val>,<MIN2=val>,<MIN3=val>,<MIN4=val>,<MIN5=val>,<MIN6=val>,<MIN7=val>,<MIN8=val>,<MIN9=val>,<MIN10=val>,<MIN11=val>,<MIN12=val>,<MIN13=val>,<MIN14=val>,<MIN15=val>,<validity> , , , , <monitor date>,<monitor time>" ; Note: The units of measure for <MINxx=val> are nanoseconds. The hh:mm at the end of each line is the 15-minute measurement interval starting at the next 15-minute interval after the specified <montm2> (Example: 10:15, 10:30, 10:45, 11:00).</pre>

Chart 12. Monitor Input Ports (Contd)

TASK	PROCEDURE
<p>Clear Performance Monitoring Data</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>INIT-REG:[<tid>]:PSM-a-b:<ctag>::<monitor type>;</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4 or ALL) monitor type = the monitored parameter: ALL = all register types BPV = bipolar violations register CRC = cyclic redundancy check register FFREQ = fractional frequency register MTIE = MTIE register OOF = out-of-frame errors register PHASE1M = phase 1-minute register SLIPS = slips register TDEV = TDEV register</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
<p>Display Signal Type & Framing</p>	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-PORT:[<tid>]:PSM-a-b[&&-c]:<ctag>;</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4) c = ending PSM card port (2-4 with c > b)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "PSM-a-b:<ctag>::<framing>,,,<signal type>" ...</pre> <p>framing = type of framing: CAS = channel assigned signaling CAS4 = channel assigned signaling with frame aligned sequence with cyclic redundancy check 4 CRC4 = frame alignment sequence framing with cyclic redundancy check 4 D4 = D4 framing format ESF = ESF framing format FAS = frame alignment sequence framing</p> <p>signal type = digital signal (DIGITAL)</p>

Chart 12. Monitor Input Ports (Contd)

TASK	PROCEDURE
<p>Display Threshold</p>	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-TH-PORT:[<tid>]:PSM-a-b[&&-c]:<ctag>:: <monitor type>;</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4 or ALL) c = ending PSM card port (2-4 with c > b) monitor type = the monitored parameter: ALL = all monitor types BPV = bipolar violations CRC = cyclic redundancy check MTIE_x = MTIE x-second threshold (x = 1, 4, 16, 64, 128, 512, 900) TDEV_x = TDEV x-second threshold (x = 1, 4, 16, 64, 128)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "PSM-a-b:<monitor type>,,,<threshold>" ...</pre> <p>threshold = threshold level in decimal numerals</p>

Chart 12. Monitor Input Ports (Contd)

TASK	PROCEDURE																																		
Display Threshold (Contd)	<p>Response:</p> <pre> <source identifier> <date> <time> M <ctag> COMPLD "PSM-a-b:<monitor type>,,,<threshold>" ... threshold = threshold level in decimal numerals </pre> <p>Note for monitor type of BPV: Only in-service (restored) ports are sampled; therefore, the BPV counts displayed correspond to a particular error rate depending on the number of in-service ports. Find the BPV count in the table below that is closest to the displayed BPV count and in the column which represents the number of ports in service, then follow across to the corresponding error rate. Because the ports are sampled in turn, there is some amount of settling time for the framing circuit. This settling time causes an error of $\pm 4\%$ in the specified error rate. The observation interval is 15 minutes.</p> <table border="1" data-bbox="383 840 1338 1243"> <thead> <tr> <th colspan="4">BPV count</th> <th rowspan="2">Error Rate</th> </tr> <tr> <th>1 port in service</th> <th>2 ports in service</th> <th>3 ports in service</th> <th>4 ports in service</th> </tr> </thead> <tbody> <tr> <td>14</td> <td>7</td> <td>5</td> <td>4</td> <td>1×10^{-8}</td> </tr> <tr> <td>139</td> <td>70</td> <td>46</td> <td>35</td> <td>1×10^{-7}</td> </tr> <tr> <td>1390</td> <td>695</td> <td>464</td> <td>348</td> <td>1×10^{-6}</td> </tr> <tr> <td>13896</td> <td>6948</td> <td>4632</td> <td>3474</td> <td>1×10^{-5}</td> </tr> <tr> <td>32767</td> <td>16348</td> <td>10922</td> <td>8192</td> <td>2.35×10^{-5}</td> </tr> </tbody> </table>	BPV count				Error Rate	1 port in service	2 ports in service	3 ports in service	4 ports in service	14	7	5	4	1×10^{-8}	139	70	46	35	1×10^{-7}	1390	695	464	348	1×10^{-6}	13896	6948	4632	3474	1×10^{-5}	32767	16348	10922	8192	2.35×10^{-5}
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Chart 12. Monitor Input Ports (Contd)

TASK	PROCEDURE																																		
<p>Change Threshold</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>SET-TH-PORT:[<tid>]:PSM-a-b:<ctag>::<monitor type>,<threshold>;</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4 or ALL) monitor type = the monitored parameter: BPV = bipolar violations CRC = cyclic redundancy check OOF = out-of-frame errors MTIE_x = MTIE x-second threshold (x = 1, 4, 16, 64, 128, 512, 900) TDEV_x = TDEV x-second threshold (x = 1, 4, 16, 64, 128) threshold = 0-32767</p> <p>Note for BPVs: Only in-service (restored) ports are sampled; therefore, the BPV counts entered to obtain a desired error rate depends on the number of in-service ports. Enter a BPV count from the table below based on the desired error rate and the number of ports in service as the <thlev> parameter in the command.</p> <table border="1" data-bbox="479 1031 1433 1434"> <thead> <tr> <th rowspan="2">Error Rate</th> <th colspan="4">BPV count</th> </tr> <tr> <th>1 port in service</th> <th>2 ports in service</th> <th>3 ports in service</th> <th>4 ports in service</th> </tr> </thead> <tbody> <tr> <td>1 x 10⁻⁸</td> <td>14</td> <td>7</td> <td>5</td> <td>4</td> </tr> <tr> <td>1 x 10⁻⁷</td> <td>139</td> <td>70</td> <td>46</td> <td>35</td> </tr> <tr> <td>1 x 10⁻⁶</td> <td>1390</td> <td>695</td> <td>464</td> <td>348</td> </tr> <tr> <td>1 x 10⁻⁵</td> <td>13896</td> <td>6948</td> <td>4632</td> <td>3474</td> </tr> <tr> <td>2.35 x 10⁻⁵</td> <td>32767</td> <td>16348</td> <td>10922</td> <td>8192</td> </tr> </tbody> </table> <p>Because the ports are sampled in turn, there is some amount of settling time for the framing circuit. This settling time causes an error of ±4% in the specified error rate. The observation interval is 15 minutes.</p> <p>If an MRC or PSM card has only one port active, no sampling occurs, and events are accumulated in real time.</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>	Error Rate	BPV count				1 port in service	2 ports in service	3 ports in service	4 ports in service	1 x 10 ⁻⁸	14	7	5	4	1 x 10 ⁻⁷	139	70	46	35	1 x 10 ⁻⁶	1390	695	464	348	1 x 10 ⁻⁵	13896	6948	4632	3474	2.35 x 10 ⁻⁵	32767	16348	10922	8192
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Chart 12. Monitor Input Ports (Contd)

TASK	PROCEDURE
Display Alarm Severity	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-ATTR-PORT::PSM-a-b[&&-c]:<ctag>;</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4 or ALL) c = ending PSM card port (2-4 with c > b)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "PSM-a-b:<severity>,<condition>" ...</pre> <p>severity = severity set for the condition: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported</p> <p>condition = port condition (refer to Table E) ALL = all monitor types BPV = bipolar violations CRC = cyclic redundancy check OOF = out-of-frame errors MTIE_x = MTIE x-second threshold (x = 1, 4, 16, 64, 128, 512, 900) TDEV_x = TDEV x-second threshold (x = 1, 4, 16, 64, 128)</p>

Chart 12. Monitor Input Ports (Contd)

TASK	PROCEDURE
<p>Change Alarm Severity</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>SET-ATTR-PORT:[<tid>]:PSM-a-b:<ctag>::<severity>,<condition>;</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "PSM-a-b:<severity>,<condition>" ...</pre> <p>severity = severity set for the condition: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported</p> <p>condition = port condition: ALL = all monitor types BPV = bipolar violations CRC = cyclic redundancy check OOF = out-of-frame errors MTIE_x = MTIE x-second threshold (x = 1, 4, 16, 64, 128, 512, 900) TDEV_x = TDEV x-second threshold (x = 1, 4, 16, 64, 128)</p>
<p>Remove Port</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>RMV-PORT:[<tid>]:PSM-a-b[&&-c]:<ctag>;</pre> <p>a = PSM card slot (1-10) b = PSM card port (1-4 or ALL) c = ending PSM card port (2-4 with c > b)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 12. Monitor Input Ports (Contd)

TASK	PROCEDURE
Delete Port	<p>Access level 4 is required to use this command. Enter:</p> <pre>DLT-PORT:[<tid>]:PSM-a-b:<ctag>;</pre> <p style="margin-left: 40px;">a = PSM card slot (1-10)</p> <p style="margin-left: 40px;">b = PSM card port (1-4 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 13. Timing Output Ports

TASK	PROCEDURE
	<p>This chart provides the steps for controlling timing output ports including: entering ports into the system database, putting ports into service, displaying port parameters, changing port parameters, taking ports out of service, and deleting ports from the system database.</p>
Enter Port	<p>Access level 4 is required to use this command. Enter:</p> <pre>ENT-PORT:[<tid>]:TO-a-b[&&-c]:<ctag>::,,,<signal type>;</pre> <p>a = TO card slot (1-8) b = TO card port (1-10 or ALL) c = ending TO card port (2-10 with c > b) signal type = type of signal: ANALOG = analog DIGITAL = digital</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Restore Port	<p>Access level 3 is required to use this command. Enter:</p> <pre>RST-PORT:[<tid>]:TO-a-b:<ctag>;</pre> <p>a = TO card slot (1-8) b = TO card port (1-10 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Display Signal Type	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-PORT:[<tid>]:TO-a-b[&&-c]:<ctag>;</pre> <p>a = TO card slot (1-8) b = TO card port (1-10) c = ending TO card port (2-10 with c > b)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "TO-a-b:<ctag>::,,<signal type>," ...</pre> <p>signal type = type of signal: ANALOG = analog DIGITAL = digital</p>

Chart 13. Timing Output Ports (Contd)

TASK	PROCEDURE
Change Signal Type	<p>Access level 3 is required to use this command. Enter:</p> <pre>ED-PORT:[<tid>]:TO-a-b[&&-c]:<ctag>::,,,<signal type>;</pre> <p>a = TO card slot (1-8) b = TO card port (1-10) c = ending TO card port (2-10 with c > b) signal type = type of signal: ANALOG = analog DIGITAL = digital</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Display Alarm Severity	<p>Access level 1 is required to use this command. Enter:</p> <pre>RTRV-ATTR-PORT:[<tid>]:TO-a-b[&&-c]:<ctag>;</pre> <p>a = TO card slot (1-8) b = TO card port (1-10 or ALL) c = ending TO card port (2-10 with c > b)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "TO-a-b:<severity>,<condition>" ...</pre> <p>severity = severity set for the condition: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported</p> <p>condition = port condition: PORT = port failed</p>

Chart 13. Timing Output Ports (Contd)

TASK	PROCEDURE
<p>Change Alarm Severity</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>SET-ATTR-PORT:[<tid>]:TO-a-b:<ctag>::<severity>, <condition>;</pre> <p>a = TO card slot (1-8) b = TO card port (1-10 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "TO-a-b:<severity>,<condition>" ...</pre> <p>severity = severity set for the condition: CR = critical alarm MJ = major alarm MN = minor alarm NA = not alarmed NR = not reported</p> <p>condition = port condition: PORT = port failed</p>
<p>Remove Port</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>RMV-PORT:[<tid>]:TO-a-b[&&-c]:<ctag>;</pre> <p>a = TO card slot (1-8) b = TO card port (1-10 or ALL) c = ending TO card port (2-10 with c > b)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
<p>Delete Port</p>	<p>Access level 4 is required to use this command. Enter:</p> <pre>DLT-PORT:[<tid>]:TO-a-b:<ctag>;</pre> <p>a = TO card slot (1-8) b = TO card port (1-10 or ALL)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 14. Output Synchronization Source

TASK	PROCEDURE
<p>This chart provides the steps for displaying and changing the synchronization source mode for the timing output cards, and for selecting and releasing a specific synchronization source for the timing output cards.</p>	
<p>Display Source Mode for Timing Output Cards</p>	<p>Access level 2 is required to use this command. Enter:</p> <pre>RTRV-ATTR-CONT:[<tid>]:SYSTEM:<ctag>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "SHLF:<source mode>" ...</pre> <p>source mode = source mode for timing output cards: RVRT = revertive NRVRT = nonrevertive</p>
<p>Change Source Mode for Timing Output Cards</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>SET-ATTR-CONT:[<tid>]:SYSTEM:<ctag>::<source mode>;</pre> <p>source mode = source mode for timing output cards: RVRT = revertive NRVRT = nonrevertive</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
<p>Select Source for Timing Output Cards</p>	<p>Access level 3 is required to use this command. Enter:</p> <pre>OPR-SYNCHNSW:[<tid>]:TO-ALL:<ctag>::<source>;</pre> <p>source = internal source for timing output cards: CLK1 = clock card 1 CLK2 = clock card 2 IN1 = system input card 1 IN2 = system input card 2</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 14. Output Synchronization Source (Contd)

TASK	PROCEDURE
Release Source for Timing Output Cards	<p>Access level 3 is required to use this command. This command cancels the OPR-SYNCNSW command. Enter:</p> <pre> RLS-SYNCNSW:[<tid>]:TO-ALL:<ctag>; </pre> <p>Response:</p> <pre> <source identifier> <date> <time> M <ctag> COMPLD </pre>

Chart 15. Output Protection

TASK	PROCEDURE						
<p>This chart provides the steps for displaying and setting the output protection type for the timing output cards, and for switching to and releasing from a protection timing output card.</p>							
<p>Display Output Protection Type for TO Cards</p>	<p>Access level 2 is required to use this command. Enter:</p> <pre>RTRV-ATTR-CONT:[<tid>]:TO-ALL:<ctag>;</pre> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "TO-ALL:<protection type>" ...</pre> <p>protection type = type of protection:</p> <table border="0"> <tr> <td>1-1</td> <td>= 1-for-1 protection</td> </tr> <tr> <td>1+1</td> <td>= 1-plus-1 protection</td> </tr> <tr> <td>NO</td> <td>= no protection</td> </tr> </table>	1-1	= 1-for-1 protection	1+1	= 1-plus-1 protection	NO	= no protection
1-1	= 1-for-1 protection						
1+1	= 1-plus-1 protection						
NO	= no protection						
<p>Change Output Protection Type for TO Cards</p>	<p>Access level 3 is required to use this command. (For a more complete definition of the command, refer to the Input/Output Reference Guide section of this manual.) For Enter:</p> <pre>SET-ATTR-CONT:[<tid>]:TO-a:<ctag>::<protection type>;</pre> <p>a = TO card (1-8 or ALL)</p> <p>protection type = type of protection:</p> <table border="0"> <tr> <td>1-1</td> <td>= 1-for-1 protection</td> </tr> <tr> <td>1+1</td> <td>= 1-plus-1 protection</td> </tr> <tr> <td>NO</td> <td>= no protection</td> </tr> </table> <p>Note: When configuring cards for 1-for-1 or 1-plus-1, both the odd and even slots must be configured identically. The SET-ATTR-CONT command must be issued to both cards, otherwise a database mismatch will occur. The 1-for-1 or 1-plus-1 pairing is 1 and 2, 3 and 4, 5 and 6, 7 and 8.</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>	1-1	= 1-for-1 protection	1+1	= 1-plus-1 protection	NO	= no protection
1-1	= 1-for-1 protection						
1+1	= 1-plus-1 protection						
NO	= no protection						

Chart 15. Output Protection (Contd)

TASK	PROCEDURE
Switch to Protection TO Card	<p>Access level 2 is required to use this command. This command forces a protection switch between a normally working timing output card and a protection timing output card (or visa versa) for maintenance purposes. This command will be denied if the protection type has not been entered (SET-ATTR-CONT), or if the protection card is out of service. (For a more complete definition of the command, refer to the Input/Output Reference Guide section of this manual.) Enter:</p> <pre>OPR-PROTNSW:[<tid>]:TO-a:<ctag>::MAN;</pre> <p style="padding-left: 40px;">a = working TO card (1-8)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>
Release Protection TO Card	<p>Access level 2 is required to use this command. This command switches from a protection to a working timing output card. The switch to the working timing output card is performed only if the original switch was initiated by the OPR-PROTNSW command. Enter:</p> <pre>RLS-PROTNSW:[<tid>]:TO-a:<ctag>::MAN;</pre> <p style="padding-left: 40px;">a = working TO card (1-8)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD</pre>

Chart 16. GPS Information

TASK	PROCEDURE
<p>This chart provides the steps for displaying the GPS operating statistics.</p>	
<p>Display GPS Statistics</p>	<p>Access level 2 is required to use this command. Enter:</p> <pre>RTRV-GPS-STAT:[<tid>]:GTI-a:<ctag>;</pre> <p>a = GTI card slot (1-2)</p> <p>Response:</p> <pre><source identifier> <date> <time> M <ctag> COMPLD "GTI-a" /* UTC-TIME=b, LOCATION=c, SAT-IN-VIEW=d, [SAT-e=f], ... GTIMDEV=g, OSC1FFREQ=h, OSC2FFREQ=i */</pre> <p>b = universal coordinated time (hours:minutes:seconds)</p> <p>c = format is ddmm.mmm-x-dddmm.mmm-y-aa ddmm.mmm-x = latitude: dd = degrees mm.mmm = minutes x = north (N) or south (S) dddmm.mmm-y = longitude: ddd = degrees mm.mmm = minutes x = east (E) or west (W) aa = altitude in meters</p> <p>d = number of satellites in view</p> <p>e = satellite number</p> <p>f = format is d1-d2-sn: d1 = satellite azimuth (degrees relative to true north) d2 = satellite elevation (degrees relative from horizontal) sn = signal-to-noise ratio (dB)</p> <p>g = modified Allen deviation of the GTI card</p> <p>h = oscillator 1 fractional frequency</p> <p>i = oscillator 2 fractional frequency</p>

Table E. Alarm/Event Summary

aid	condtype	conddescr
CLK-x	ACTIVE	CLOCK IS SUPPLYING SIGNAL TO OUTPUT CARDS
	DRIFT	INPUT IS DRIFTING
	FREERUN	CLOCK IN FREERUN
	HOLDOVER	CLOCK IN HOLDOVER
	INACTIVE	CLOCK IS NOT SUPPLYING SIGNAL TO OUTPUT CARD
	INPUT-FAIL-a	TIMING SIGNAL FROM INPUT CARD LOSS
	LOCKED	CLOCK LOCKED TO INPUT SIGNAL
	MATCH	CARD INFORMATION DOES NOT MATCH DATABASE
	NOT-LOCKED	CLOCK NOT CONVERGED ON REFERENCE INPUT
	TOLERANCE	SYSTEM INPUT TO CLOCK OUT OF TOLERANCE
	UNEQUIPPED	CARD IS MISSING
GTI-x	ACQUIRE	GTI ACQUIRED
	COMM-LOSS	COMMUNICATION LOSS
	CONVERGING	TIMING SIGNAL NOT YET STABLE (SKY PROBLEM)
	FAIL	CARD FAULT:REFERENCE PLL OUT OF LOCK
	FAIL	CARD FAIL:PRIMARY REFERENCE PLL OUT OF LOCK
	FAIL	CARD FAIL:OSCILLATOR PLL OUT OF LOCK
	FREQ-TOL	GPS FREQUENCY OUT OF TOLERANCE
	FUSE-x	LPR FUSE HAS BLOWN OR POWER FAIL
	GTI-LOCK	GTI IS LOCKED
	GTR-COMM-LOS	GTR COMMUNICATIONS FAIL
	GTR-FAIL	GTR FAIL:ANTENNA CURRENT FAIL
	GTR-FAIL	GTR FAIL:GTR PLL OUT OF LOCK
	GTR-FAIL	GTR FAIL:NOT LOCKED TO UTC TIME
	GTR-FAIL	GTR FAIL:FLASH MEMORY FAIL
	GTR-FAIL	GTR FAIL:RAM MEMORY FAIL
	GTR-LOCK	GTR IS LOCKED
	GTR-NOT-LOCKED	GTR UNLOCK
	GTR-PWR-FLT	GTR POWER FAULT
	GTR-SIG-LOS	SIGNAL FROM THE GTR HAS BEEN LOST
	LOS	OUTPUT FROM THE GTR HAS BEEN LOST
	MATCH	CARD INFORMATION DOES NOT MATCH DATABASE
	NO-INPUTS	ALL INPUTS TO THE GTI HAVE BEEN LOST
	OSC-x-LOS	LOCAL OSCILLATOR SIGNAL LOSS
OSC-x-TOL	OSCILLATOR OUT OF FREQUENCY TOLERANCE	

Table E. Alarm/Event Summary (Contd)

aid	condtype	conddescr
GTI-x (Contd)	SATELLITE	INSUFFICIENT SATELLITES
	SEARCH	GTI IN SEARCH MODE
	SIGNAL-DEFECT	GTR LOCATION, SKY PROBLEM OR GND/OSCILLATOR NOISE
	TRACK	GTI TRACKING
	UNEQUIPPED	CARD IS MISSING
LTI-x	ANTENNA	CURRENT TO ANTENNA IS OUT OF TOLERANCE
	FAIL	LTI FAIL:TRANSFER OSC PLL OUT OF LOCK
	FAIL	LTI FAIL:SYNTHESIZER PLL OUT OF LOCK
	FAIL	LTI FAIL:PRIMARY REFERENCE PLL OUT OF LOCK
	FAIL	LTI FAIL:LOSS OF COMM TO DSP OR DSP FAIL
	FAIL	LTI FAIL:LOSS OF SIGNAL TO DSP OR DSP FAIL
	FUSE-x	LPR FUSE HAS BLOWN OR POWER FAIL
	LOS	OUTPUT FROM THE LTI HAS BEEN LOST
	MATCH	CARD INFORMATION DOES NOT MATCH DATABASE
	NO-INPUTS	ALL INPUTS TO THE LTI HAVE BEEN LOST
	OSC-x-LOS	LOSS OF LOCAL OSCILLATOR SIGNAL
	OSC-LOS	LOSS OF BOTH LOCAL OSCILLATOR SIGNALS
	SEARCH	LTI IS IN SEARCH MODE
	UNEQUIPPED	CARD IS MISSING
	MIS	RESET
MRC-x	ACTIVE	CARD IS SUPPLYING A SIGNAL TO THE CLOCK(S)
	ALL-REF	LOSS OF ALL EXTERNAL INPUT REFERENCES
	CLOCK-z	LOSS OF INPUT FROM THE CLOCK
	FAIL	CARD FAILED
	FAIL	CARD FAIL:CLOCK SYNTHESIZER FAILURE
	FAIL	CARD FAIL: FRAMER FAILURE
	FFREQ-z	CLOCK DISQUALIFIED:FREQ THRESHOLD EXCEEDED
	INACTIVE	CARD IS NOT SUPPLYING A SIGNAL TO THE CLOCK(S)
	MATCH	CARD INFORMATION DOES NOT MATCH DATABASE
	UNEQUIPPED	CARD IS MISSING

Table E. Alarm/Event Summary (Contd)

aid	condtype	conddescr
MRC-x-y	AIS	ALARM INDICATION SIGNAL RECEIVED
	BPV	BPV DETECTED
	CRC	CRC DETECTED
	FFREQ	REF INPUT FRACTIONAL FREQ THRESHOLD EXCEEDED
	LOS	REFERENCE INPUT SIGNAL HAS BEEN LOST
	OOF	OOF DETECTED
	SWITCH	INPUT TIMING SIGNAL SWITCHED
PSM-x	CLOCK-z	LOSS OF INPUT FROM THE CLOCK
	FAIL	CARD FAILED
	FAIL	CARD FAIL: FRAMER FAILURE
	MATCH	CARD INFORMATION DOES NOT MATCH DATABASE
	UNEQUIPPED	CARD IS MISSING
PSM-x-y	AIS	ALARM INDICATION SIGNAL RECEIVED
	BPV	BPV DETECTED
	CRC	CRC DETECTED
	LOS	REFERENCE INPUT SIGNAL HAS BEEN LOST
	MTIE _x	x SECOND THRESHOLD EXCEEDED
	OOF	OOF DETECTED
	TDEV _x	x SECOND THRESHOLD EXCEEDED
SHELF	FUSE-x	FUSE BLOWN OR POWER FAIL
	GP	SHELF INPUT ALARM
	GP	SHELF MAJOR
	GP	SHELF MINOR
	GP	EXPANSION MINOR
	GP	EXPANSION MAJOR
	OVERRIDE	TIMING OUTPUT SOURCE SELECTED BY COMMAND

Table E. Alarm/Event Summary (Contd)

aid	condtype	conddescr
TO-x	CLOCK-y	TIMING SIGNAL FROM CLOCK CARD DISQUALIFIED
	FAIL	CARD FAIL:A/D FAILURE
	FAIL	CARD FAIL:INTERNAL FAILURE
	FAIL	CARD FAIL:REFERENCE VOLTAGE FAILURE
	FAIL	CARD FAIL:PLL OUT OF LOCK
	INPUT-x	TIMING SIGNAL FROM INPUT CARD DISQUALIFIED
	MATCH	PROTECTION CARD CONFIGURATION MISMATCH OR PAIRED CARD MISSING
	MATCH	CARD INFORMATION DOES NOT MATCH DATABASE
	SOURCE-CLKx	OUTPUT CARD IS USING CLK x
	SOURCE-INPUTx	OUTPUT CARD IS USING INPUT x
	SWITCH	INPUT SWITCHED
	SWITCH	FAILURE TO SWITCH TO CLK x
	SWITCH	FAILURE TO SWITCH TO INPUT x
	SWITCH	OUTPUT CARD PROTECTION SWITCH
	UNEQUIPPED	CARD IS MISSING
TO-x-y	PORT	OUTPUT PORT HAS FAILED