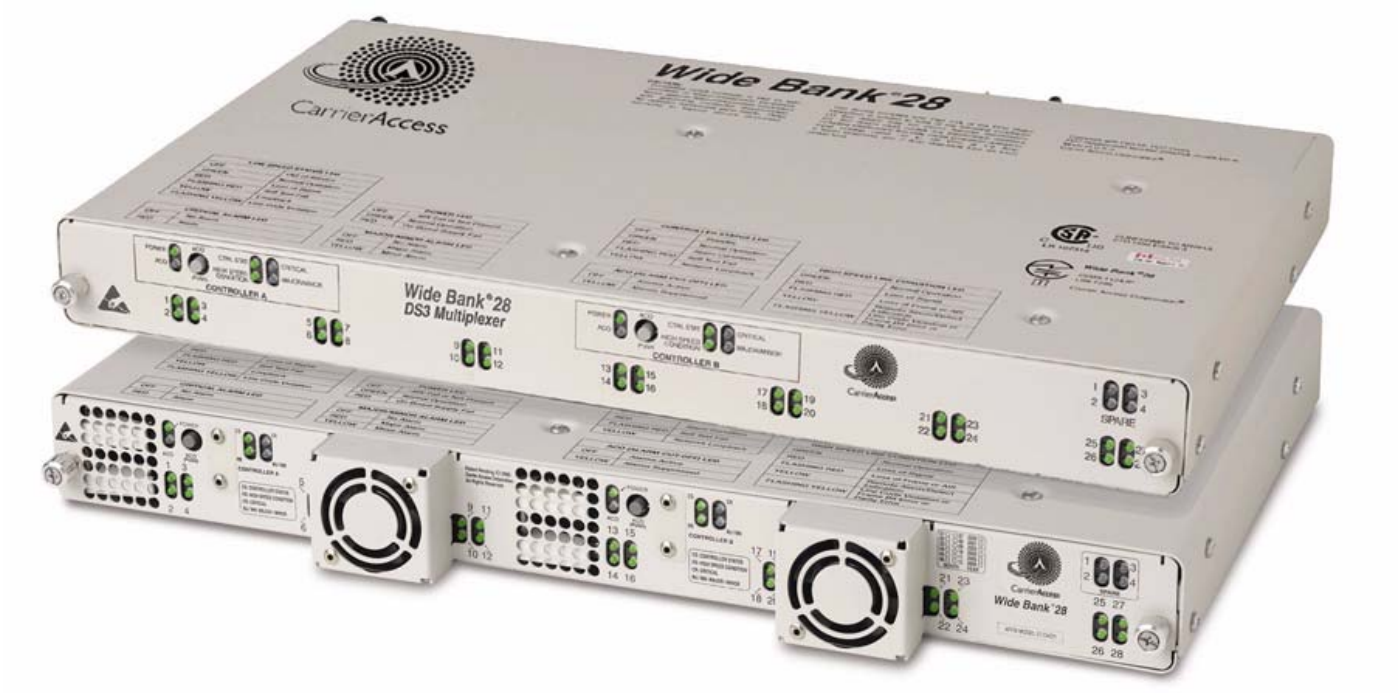
Wide Bank 28 DS3

QUICK START GUIDE



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QUICK START GUIDE

In this Guide

- Overview
- Physical Installation
- Electrical Connections and Cabling
- Provision Services
- Maintenance Commands
- LED Status Indicators
- Fault Isolation

Overview

This Wide Bank® 28 DS3 Quick Start Guide is intended for experienced installers and users who do not need the detailed installation and setup instructions provided in the User Manual. For detailed information and instructions, refer to the following chapters in the User Manual, included on the CD-ROM disk in the shipping box.

- Chapter 3 – Technical Specifications
- Chapter 4 – Physical Installation
- Chapter 5 – Electrical Installation and Cabling
- Chapter 6 – Configuration
- Chapter 7 – Diagnostics and Troubleshooting
- Chapter 8 – CLI Commands and Messages
- Chapter 10 – Maintenance
- Chapter 12 – Alarm Reporting

Physical Installation

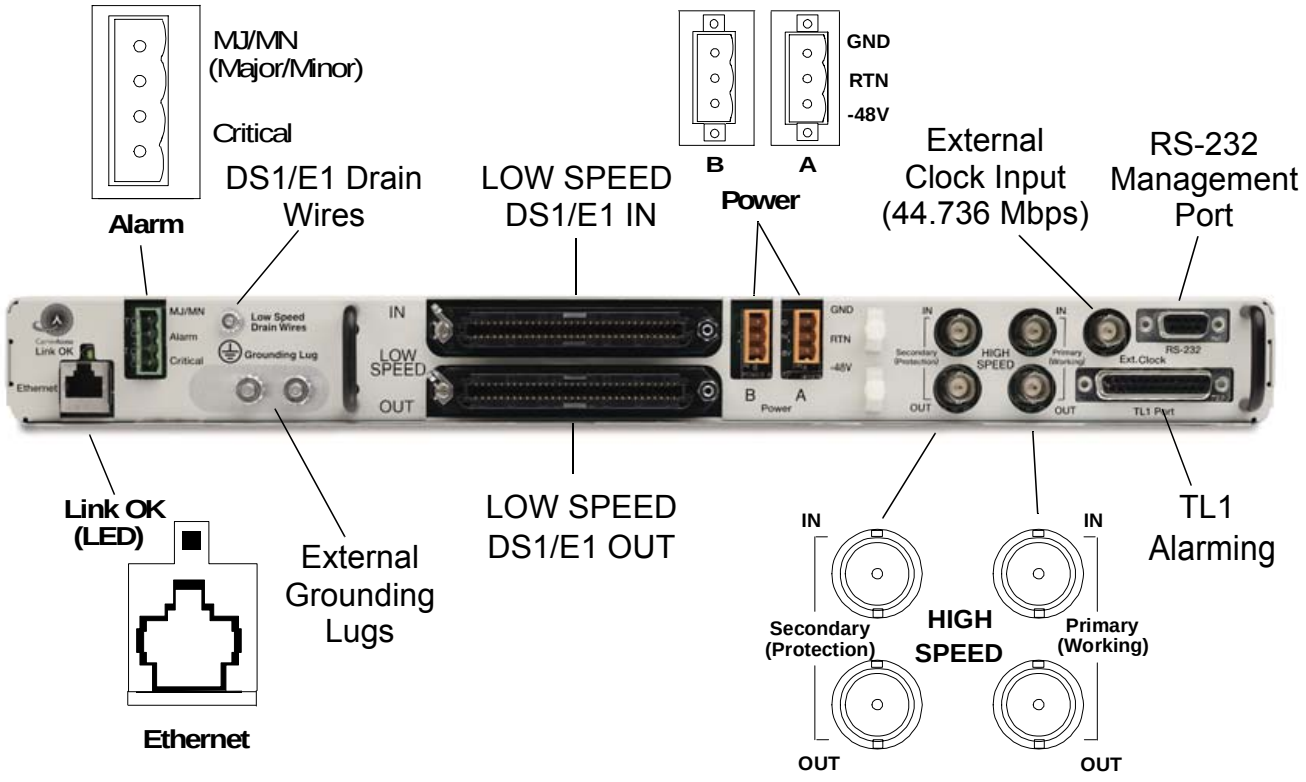
Ensure adequate clearance and spacing for thermal cooling. For detailed information, refer to Chapter 4 in the Wide Bank 28 DS3 User Manual.

- **FFO-Equipped Units**. Only units equipped with the Fan Faceplate Option can be mounted flush together without any free air space between units.
- **Non-FFO Units, Horizontal Mounting.** Ensure 1 RU (1.75 inches) minimum free air space between units and 4 RU minimum space between each group of 4 units.
- **Non-FFO Units, Vertical Mounting.** Requires Carrier Access Vertical Mount Crossbars, which provide proper spacing between units.

Electrical Connections and Cabling

For detailed information, refer to Chapter 5 in the Wide Bank 28 DS3 User Manual.

1. **Power Connection.** ALWAYS Connect BOTH –48VDC Connectors, and connect the ground lugs to the building ground.
2. **Connect High-Speed DS3 and Low-Speed DS1/E1 Cables**. Attach ferrite RF suppressors to low-speed cables.
3. **Connect Ethernet, RS-232 Management, TL1 Alarming and Management, and Alarm Outputs**, if used. Attach ferrite RF suppressors to RS-232 cable.



Provision Services

- CLI Tips and Tricks
- Starting CLI Session
- Verifying Status
- Setup Commands

Initial provisioning normally uses the local Craft RS-232 CLI management port. (The RS-232 port must be used to set up the Ethernet and TL1 ports for remote management.)

For detailed information, refer to Chapter 6 in the Wide Bank 28 DS3 User Manual.

CLI Tips and Tricks

The following tips and tricks can be helpful when using the Command Line Interface:

- If you initiate a craft RS-232 session and find that a Telnet session is already active, you can cancel (kill) the conflicting session by pressing *CTRL+k*.
- You can back up (reverse) through the last three commands that were issued by pressing *CTRL+r*, and move forward by pressing *CTRL+f*.
- When the screen scrolling stops with a *more...* message, pressing *Enter* advances the scroll one line, and pressing the *space bar* advances the scroll one page. For continuous scrolling (no stops), set the screen lines to zero by entering the command *screen 0*.
- To stop a long scroll from completing, press *Esc*.

Starting CLI Session

1. Connect PC to Craft RS-232 Port on Wide Bank 28 DS3 connector panel.
2. Set PC terminal interface for: 9600 baud, 8 data bits, no parity bit, one stop bit, no flow control.
3. Press the *Enter* key to initialize connection and produce the Command Line prompt.
4. Log into the Wide Bank, if required, by providing a user name and password.

NOTE: For convenience in new installations, the Wide Bank is shipped with security turned off. For information about setting up security for the Wide Bank, see Chapter 6 in the Wide Bank 28 DS3 User Manual.

If the Ethernet and TL1 ports have already been configured for remote management, you can also use a CLI/Telnet session or TL1 session. See Chapter 5 in the Wide Bank 28 DS3 User Manual for detailed informations.

Verifying Status

1. Initiate self-test of all DS3, DS1, and cooling fan circuits with the following command:

   test all

2. Display current alarms with the following command:

   alarms

3. Display current configuration settings with the following command:

   config

Setup Commands

NOTE: Low-speed connections can be DS1 or E1. The following examples of commands refer only to DS1, but the same information applies to E1 as well, except that there are only three E1 channels per card, numbered 1-3, 5-7, 9-11, etc.

Setup Commands **Notes:** Asterisk * indicates default setting. Brackets [ ] enclose optional settings. Braces { } enclose required settings. *Italics* indicate variable names.	**1 – DS3 Path** **1 – Controller**	**1 – DS3 Path** **2 – Controllers**	**2 – DS3 Paths** **2 – Controllers**
CONTROLLER SETUP:			
Protection DS3:			
protect ds3 {off|on}	off	off*	on
arm {off|on*}			
Revertive DS3:			
revertive ds3 {off|on}	off	on*	on
Protection DS1:			
protect ds1 {off|on*)			
Revertive DS1:			
revertive ds1 {off|on*)			
Autocopy:			
autocopy {off|on*}	off	on*	on|off
Alarm Output Relay Contacts:			
alarmout {nc|no*}			

Setup Commands	Comments
FAN FACEPLATE OPTION (FFO): **ffo present {off*|on}**	Enables and disables the Fan Faceplate Not Present alarm. Note: When an FFO-capable controller is powered up, or a fan faceplate is removed and reinstalled, the controller will detect the fan faceplate and set ffo present on.
HIGH-SPEED DS3 PORT SETUP: **Framing:** **ds3 framing {m23*|cbit}** **Timing:** **ds3 clock {line|internal*|external}** **Build-out:** **ds3 length {short*|long}** **Threshold:** **ds3 threshold {4|5|6|off*}** **Circuit ID:** **ds3 circuitid "***id***"** **Loopdetect** **ds3 loopdetect {off|on*}**	 External source must be 44.736 Mbps. Short is < 50 ft., Long is ≥ 50 ft. LCV=10^{-n} where n=3 to 6.
DS3 C-BIT ID SETUP: **ds3 equipmentid** "*identifier*" **ds3 facilityid** "*identifier*" **ds3 frameid** "*identifier*" **ds3 gennumber** "*number*" **ds3 locationid** "*identifier*" **ds3 portnumber** "*number*" **ds3 unit** "*unit*"	Note: Used only with DS3 C-bit Framing. Set DS3 Equipment ID. Set DS3 Facility ID. Set DS3 Frame ID. Set DS3 Generator Number. Set DS3 Location ID. Set DS3 Port Number. Set DS3 Unit ID.

Setup Commands	Comments
LOW-SPEED PORT SETUP: **Low-speed mode:** **lsmode {ds1*|ds1ls|e1ls}** **Linecode:** **ds1** *n* **linecode {ami|b8zs*}** **Buildout:** **ds1** *n* **length** *dsxnnn* **Circuit ID:** **ds1** *n* **circuitid** "*identifier*" **Loopdetect:** **ds1** *n* **loopdetect {off*|on}** **Disable Unused DS1s:** **ds1{***n***|all} disable** **Automatic in-service detection:** **ds1 auto/in service {off*|on|delay** *hours***}** **ds1 ains {off*|on|delay** *hours***}**	*n*=1..28, *range* (e.g., 5-8), or all channels. For E1 cards, change mode to *e1ls* and replace *ds1* with *ls* in the following commands. E1 linecode is fixed at HDB3. E1 buildout is fixed. DS1 buildouts *dsxnnn* = dsx0*,dsx110,dsx220,dsx330,dsx440,dsx550. Set DS1 Circuit ID. Disabling DS1s prevents alarms. Disable all DS1s, then enable each as it is connected. Detects new low-speed service connections and inhibits LOS alarms until a new service has been connected for the specified delay. Release 2.40 uses **ds1 ains**.
IP ADDRESSES FOR SNMP & TELNET: **ip address** *xxx.xxx.xxx.xxx* **ip mask** *xxx.xxx.xxx.xxx* **ip gateway** *xxx.xxx.xxx.xxx* **ip nms1** *xxx.xxx.xxx.xxx* **ip nms2** *xxx.xxx.xxx.xxx* **ip nms3** *xxx.xxx.xxx.xxx* **ip ppp** *xxx.xxx.xxx.xxx* **ip route {ethernet*|ppp** *xxx.xxx.xxx.xxx***}** **snmp name** "Wide Bank 28 M13 Multiplexer" **snmp location** "Wide Bank 28 Location" **snmp contact** "Wide Bank 28 Contact" **snmp getcomm** "public" **snmp setcomm** "public" **snmp trapcomm** "public"	*xxx* = 0-255. Fields in quotes are stored as character strings and must be entered with the quotes. Set Network Maintenance System addresses. **ip ppp** and **ip route** are valid only when Wide Bank is configured for C-bit framing. SNMP values are defaults.

Setup Commands	Comments
SYSTEM TIME AND DATE: **date** *mm*/*dd*/*yyyy* **time** *hh*:*mm*:*ss*	Sets the date and time so that the alarm reports and the logs will make sense. Note: Time and Date are reset when unit is powered up.
CLEAR STATISTICS AND LOGS: **clear {all|ds1 [***n*|*range*|**all]** **|ds3|log [standby]|wtr}**	*n* = 1-28, *range* = *n*-*n* (as in *5*-*8*). wtr clears 5 minute wait-to-restore period.

Maintenance Commands

For a quick list of all CLI commands, use the *help* command. For more information on a specific command, type the command followed by *help*. See Chapter 8 of Wide Bank 28 DS3 User Manual for detailed information.

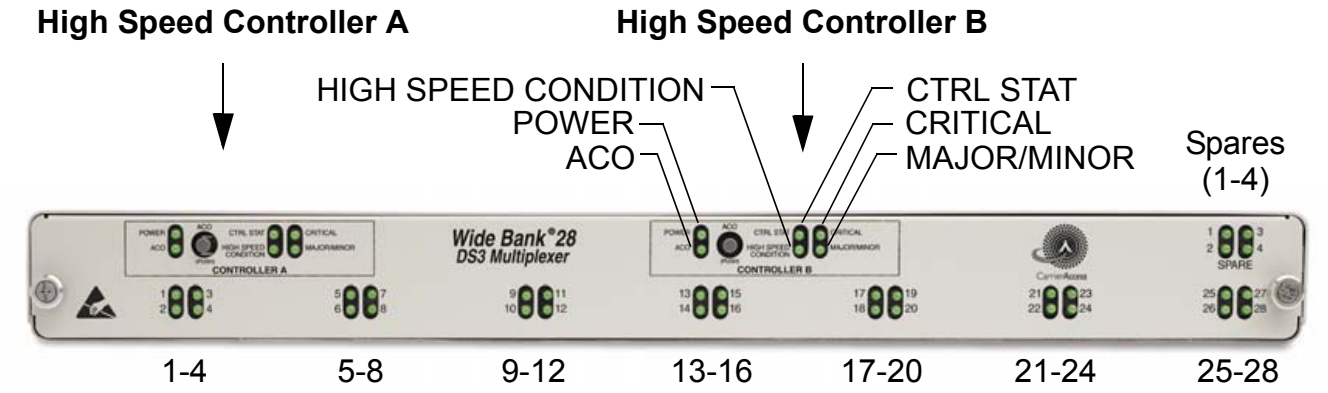
The following tables and commands are for low-speed mode DS1. When using the other modes (DS1LS and E1LS), replace *ds1* command with *ls*.

Maintenance Operation	Commands	
Checking Configurations	**alarmout**	Display Alarm Output Contact Setting
	controller	Display Controller Settings
	config	Display All Settings
	ds1 [*n*|*range*|**all**]	Set/Display Low-speed Settings *n*=1..28, *range* (e.g., 5-8), or all channels
	ds3	Set/Display DS3 Settings
	equipment	Display the Equipment List
	status	Display Status of Interface(s)
	version	Display Controller Software Version
Checking Alarms, Logs, and Performance	**alarms**	Display Active Alarms
	log	Display the Alarm History Log
	clear	Clear Statistics or Logs
	hour	Display 1-Hour Performance
	day	Display Day (24-Hour) Performance
Managing Controller Memory	**temp copy**	Temporarily save Current Configuration Settings
	restore	Restore Settings with defaults, temp copy, or tftp file
	copy	Copy Settings from Active to Standby Controller Card
	save tftp	Copy Settings to FTTP Server File
	switch	Switch to Standby Controller Card

Maintenance Operation	Commands	
Testing Equipment	**ds3**	Set/Display DS3
	equipment	Apply Equipment Loopback to DS3
	line	Apply Line Loopback to DS3
	payload	Apply Payload Loopback to DS3
	send	Send a Code toward DS3 Network
	loopdetect [**off**|**on**]	Set detection of loop codes on or off
	ds1 {*n*|*range*|**all**}	Set/Display Low-speed Settings *n*=1..28, range (e.g., 5-8), or all channels
	equipment	Apply low-speed Equipment Loopback
	line	Apply Line Loopback to low-speed
	metallic	Apply low-speed Metallic Loopback
	move	Move low-speed channel to Spare
	loopdetect [**off**|**on**]	Set detection of loop codes on or off
	send	Send a Code toward low-speed drop
	test	Perform selected self-test(s)
	ping ipaddr [*n*] [*d*]	Send IP Ping to ipaddr up to *n* times with *d* milliseconds delay between pings
	results	Display Results of Last Test(s)

LED Status Indicators

Status LED indicators on the Wide Bank 28 DS3 Control Panel provide a visual means of identifying system status, high-speed DS3 line condition, low-speed DS1/E1 line status, and Ethernet link status. (See next page for LED meanings.) For more information about Wide Bank 28 DS3 alarms and reporting, see Chapter 7 of Wide Bank 28 DS3 User Manual.



Standard Faceplate **Low Speed Status LEDs 1-28**

Fan Faceplate FAN A FAN B

Rear View

CS - CTRL STAT (DS3 CONTROLLER STATUS)	
LED State	Meaning
OFF	Standby
GREEN	Normal (Active) Operation
RED	Alarm Condition
RED Flashing	Self-Test Fail
YELLOW	Network Loopback

CR - CRITICAL ALARM	
LED State	Meaning
OFF	No Alarms
RED	Traffic-Affecting Fault

MJ/MN - MAJOR/MINOR ALARM	
LED State	Meaning
OFF	No Alarms
YELLOW	Minor Alarm
RED	Major Alarm

POWER	
LED State	Meaning
OFF	-48V Input Power Is High, Low or Missing, or -48V Internal Power Failed
GREEN	Normal Operation
RED	5V Onboard Power Supply Failed

ACO - ALARM CUTOFF	
LED State	Meaning
OFF	Alarms Active
YELLOW	Alarms Suppressed

HS - HIGH SPEED LINE CONDITION (DS3 CONDITION)	
LED State	Meaning
GREEN	Normal Operation
RED	Loss of Signal
RED Flashing	LOF or AIS Received
YELLOW	Remote Alarm Detection
YELLOW Flashing	Line Code Violation, Frame Bit Error, or Parity Error

LS - LOW SPEED STATUS (DS1, E1 & SPARE CIRCUITS)	
LED State	Meaning
OFF	Off Line
GREEN	Normal Operation
RED	Loss of Signal or Metallic Loopback
RED Flashing	Self-Test Fail
YELLOW	Line or Equipment Loopback
YELLOW Flashing	Line Code Violation

ETHERNET STATUS (On Rear Panel)	
LED State	Meaning
OFF	No Power or No Link
GREEN	Link OK

Fault Isolation

Test and loop-backs provided on the low-speed (LS) side. LS cards can be DS1 or E1, but not both in same unit. Tests can be commanded locally via CLI or remotely through Telnet. For LS mode, substitute "ls [n]" in the examples below.

Toward DS1/E1 ← **Toward DS3** →

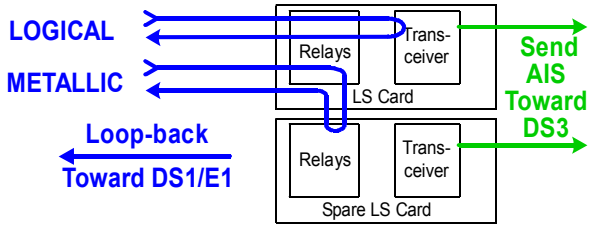
Test and loop-backs provided on the high-speed (HS) side. HS card is DS3 Controller. Tests can be commanded locally via CLI or remotely through Telnet.

Toward DS1/E1 ← **Toward DS3** →

Line Loop-backs for the DS1

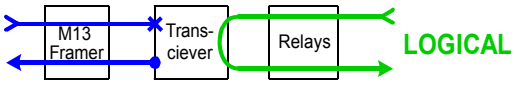
LOGICAL COMMAND: ds1 [n] line on

METALLIC COMMAND: ds1 [n] metallic on



Line Loop-back for the DS3

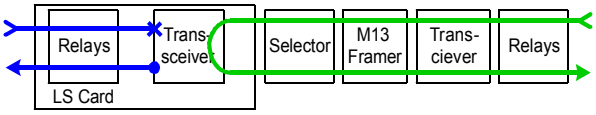
COMMAND: ds3 line on



Send AIS Toward DS1/E1 ← **Loop-back Toward DS3** →

Equipment Loop-back for the DS1

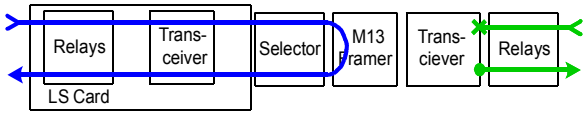
COMMAND: ds1 [n] equipment on



Send AIS Toward DS1/E1 ← **Loop-back Toward DS3** →

Equipment Loop-back for the DS3

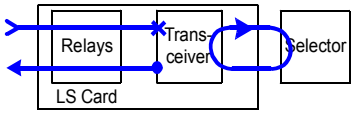
COMMAND: ds3 equipment on



Loop-back Toward DS1/E1s ← **Send AIS Toward DS3** →

DS1 Self-Test (Lasts 1/4 Sec.)

COMMAND: test ds1 [n]

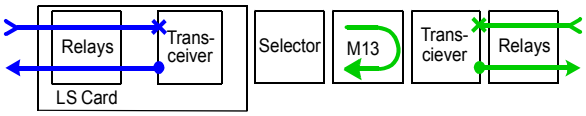


Send AIS Toward DS1/E1 ←

Perform Self-Test on QDSX IC

DS3 Self-Test (Lasts 1/4 Sec.)

COMMAND: test ds3



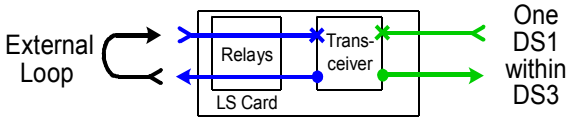
Send AIS Toward DS1/E1 ←

Perform Self-Test

Send AIS Toward DS3 →

DS1 Diagnostic

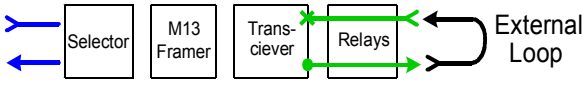
COMMAND: ds1 [n] send prbs [drop | network]



Send PRBS Toward DS1/E1 ← **Send AIS on DS1 Toward DS3** →

DS3 Diagnostic

COMMAND: ds3 send prbs



Send AIS Toward DS1/E1 ← **Send PRBS Toward DS3** →