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SOLUTIONS

Leased Line

APPLICATIONS

- Economical T1 Internet Access
- Central Site T1 Management

PRODUCTS

D-SERV 56/64-SNMP

DataSMART 456

DataSMART 458

FrameVision Upgrade Kit
554 & 558

DataSMART 656

DataSMART 658

FrameVision Upgrade Kit
656 & 658

Alarms Utility

DataSMART Installer

FAQs

SW UPDATES

MANUALS

Products: DSU/CSUs: DataSMART® 554 & 558

Key Features

Specifications

Ordering Information

Back Panel & Cabling Information

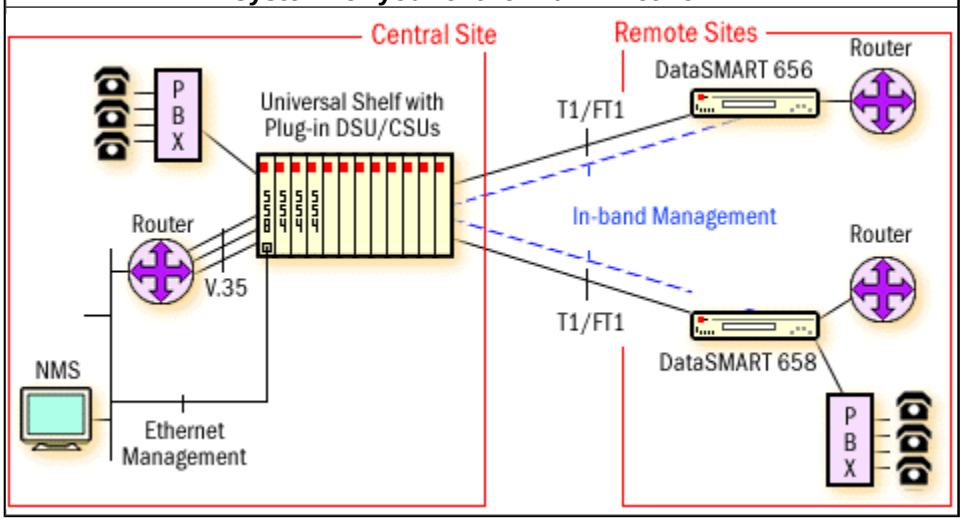
Ask An Expert

T1/FT1 Single-port Plug-in DSU/CSUs

Description

The DataSMART Single-port Plug-In DSU/CSUs are designed for high-density T1/FT1 network installation. These DSUs provide rapid expansion capabilities and comprehensive management options appropriate for central offices, and corporate and government networks.

The DataSMART Plug-ins provide a management system for your entire T1/FT1 network.



Key Features

- Plug-ins for the the Universal Shelf
- Future-proof with easy field upgrade to FrameVision managed Frame Relay
- Comprehensive T1/FT1 performance monitoring, control and diagnostic tools
- Standards-based in-band management with embedded SNMP
- DataSMART 554 includes data port for router or video connectivity
- 5-year warranty

The DataSMART 558 also provides:

- T1 add/drop port for PBX connectivity
- Ethernet port manages one shelf, multiple shelves, or your entire T1 network

The DataSMART Plug-ins offer auto-configuration for fast provisioning of additional circuits in rapidly growing environments. Combined with DataSMART Installer, this eliminates the need for highly skilled on-site technicians.

You can manage all DataSMART Plug-Ins and remote DataSMARTs over a native Ethernet connection on the DataSMART 558 unit. With multiple SNMP or TELNET sessions to a shelf, precious time can be saved at the network control center, by allowing multiple operators to troubleshoot problems concurrently.

The DataSMART 558 DSU/CSU controller card loads complete configuration information to new DataSMART 554 Plug-in cards when they power up -- pre-assigning T1 network parameters, allocating bandwidth to the data port, initializing system information, and activating the embedded SNMP agent.

Specifications

Network Interface

Common	
Line Rate	Internal or external clock; 1.544 Mbps +/- 50 bps. When timing is derived from input signal: 1.544 Mbps +/- 200 bps. Output line rate follows input line rate.
Line Code	AMI, B8ZS
Line Impedance	100 ohms +/- 10 ohms at 772 kHz. 100 ohms +/- 20% over the frequency band 100 kHz to 1 MHz.
Connectors	2-slot shelf: RJ48C socket. 12-slot shelf: DA15 plug.
Lightning Protection	Lightning surges defined per FCC Part 68 will not damage unit.
Framing Format	SF or ESF per ANSI T1.403-1989, and TR-54016-1989. Ericsson Framing (defined as valid F_T bits only).
Protocol	Frame Relay or ATM DXI
Input Only	
Input Level	DSX-1 to -27.5 dB
Input Jitter Tolerance	Per TR 62411-1990 (p. 4.7.1)
Output Only	
Output Level	Per ANSI T1.403-1989 3.0 Volt peak +/- 10% into 100 ohms at output connector
Output Signal	Tolerant to impedance mismatches
Line Build Out	0, 7.5, 15.0 selectable
Output Jitter	TR 62411-1990 (p. 4.7.2)
Jitter Transfer	DSU: TR 62411-1990 (p. 4.7.3)

Terminal Interface (Add/Drop Port: Model 558 only)

Common

Line Rate	Internal; 1.544 Mbps +/- 50 bps. When timing is derived from input signal: 1.544 Mbps +/ - 200 bps. Output line rate follows input line rate.
Line Code	AMI, B8ZS (selectable)
Line Impedance	100 ohms +/- 10 ohms at 772 kHz. 100 ohms +/- 20% over the frequency band 100 kHz to 1 MHz.
Connectors	2-slot shelf: RJ48C socket. 12-slot shelf: DA15 plug.
Framing Format	SF or ESF per ANSI T1.403-1989, and TR-54016-1989. Ericsson Framing (defined as valid F_T bits only). Idle ESF Data Link is set to 1s.

Input Only

Input Level	DSX-1 to -10.0 dB
Input Jitter Tolerance	Per TR 62411-1990 (p. 4.7.1)
Input Jitter Transfer	Per TR 62411-1990 (p. 4.7.2)

Output Only

Output Level	DSX-1 at connector (no equalization enabled)
Equalization	Up to 655 feet selectable, 5 steps

Serial Control Port Interface

Baud Rate	2400, 9600, 19200, 38400
Electrical	EIA-574
DCE Connector	DB9S
DTE Connector	DB9P

Data Port Interface

Bit Rates	Nx56 Kbps or Nx64 Kbps (N=1...24)
Electrical	V.35 compatible
Connector	DB25 socket

Power

AC Input Range	24 to 48 VDC @ 7 watts
Power Interruptions	Loss of power does not damage unit.

	Loss of power for less than five years does not change the configuration settings which may have been set by the user. Loss of power for less than two hours (nominal) does not affect the real-time clock setting.

Management

Control Ports	DCE and DTE EIA-574 DE9 socket Daisy chain 38.4 kbps maximum English menus Async ASCII or SLIP/PPP
Ethernet Port **(Model 558 only)**	10Base-T RJ45 socket Transmit and receive LEDs
SNMP Agent	MIB II (RFC 1213) Frame Relay DTE MIB, Circuit Table (RFC 1315) DS1 MIB (RFC 1406) Enterprise MIB TELNET server Responds to Ping Security filters (for IP source addresses) Up to 10 SNMP Trap hosts
In-band	From network or router Shared or dedicated VC Frame Relay or ATM DXI

Diagnostics

LEDs	Power/fail Auto Configuration (558 only) Network Interface Data Network Interface Code Violation Network Interface Red Alarm Network Interface Yellow Alarm T1 Code Violation (558 only) T1 Status (558 only) Test status Data port transmit Data port receive Data port CTS Data port RTS Ethernet Link (558 only) Ethernet Transmit (558 only)
Loop Tests	Local loopback Data terminal loopback Terminal interface loopback (558 only)

T1 Local Loop Diagnostics

Loop Tests	Line loopback Payload loopback Data port loopback
Line Test Codes	QRS

	3-in-24 1-in-8 All 1s All 0s
Data Test Codes	511 2047
BERT Tester	Independent BERT on all test codes

T1 Local Loop Performance Monitoring

Methodology	T1.403 in-band performance monitoring
Data Storage	Last 24 hours of data in 15 minute increments. Last 7 days of data in 24-hour increments.
Monitors	Network interface
Registers	Separate for carrier and user
Reports	Based on G.821 for performance Far end Alarm history Network interface statistical

Alarms

Traps	SNMP Traps via SLIP/PPP, Ethernet or in-band
ASCII	Transmitted out async control port

Physical

Usage	Rack mount
Dimensions	2-slot shelf: 17" W x 1.75" H x 12" D 12-slot shelf: 17" W x 7" H x 12" D
Weight	2-slot shelf: 8 lbs, empty 12-slot shelf: 12 lbs, empty Plug-in models: 1 lb (approx)

Environment

Operating	0º to 50º C 5% to 90% RH, non-condensing
Storage	-20º to 66º C 5% to 65% RH

Compatibility

AT&T	TR 54016-1989 TR 62411-1990 TR 54019A PUB 43802
ANSI	T1.403-1995

Bellcore	TR 194

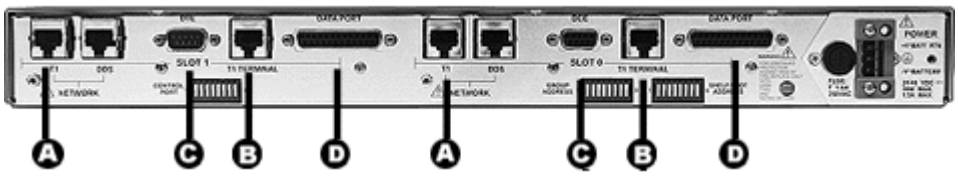
Regulatory	
FCC Compliance	Part 68; Part 15, Class A
NRTL Listed	UL 1950, 3rd Edition
CSA	22.2; No. 950
IC	CS-03

Ordering Information

Part Number	Description
72554	DataSMART 554 T1 DSU/CSU Plug-in
72558	DataSMART 558 T1 Add/Drop DSU/CSU Plug-in with Ethernet
72081	FrameVision Upgrade Kit for DataSMART 554 and DataSMART 558 Plug-in DSU/CSUs
78270	Universal Shelf, 12 slots, DC
78272	Universal Shelf, 12 slots, DC, for use in Canada (CSA)
78075	Universal Shelf, 2 slots, AC
78070	Universal Shelf, 2 slots, DC
	Power Supplies 120VAC to:
77092	24/48 VDC, 1.25 amps up to 4 units
72073	48 VDC, 100 watts up to 1 shelf (12 units)
72075	48 VDC, 100w x 2 (2 shelves), or 100w redundant (1 shelf)
72079	48 VDC, 100w x 4 (4 shelves), or 100w redundant (2 shelves)

Back Panel and Cabling Information

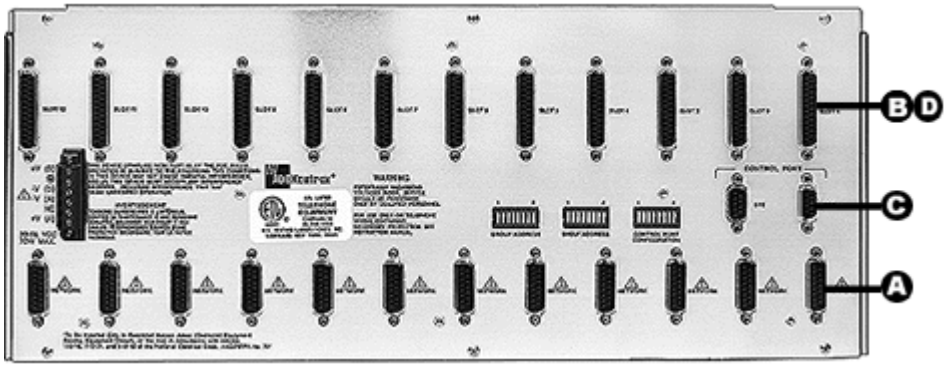
2-slot shelf



A	**RJ48 - To Network**	
	930xx141	RJ48C Plug to RJ48C Plug
	930xx142	RJ48C Plug to RJ48C Plug, Crossover
B	**RJ48-To Terminal Equipment**	
	930xx142	RJ48C Plug to RJ48C Plug, Crossover

C	**DE9-To Control Terminal**	
	95006022	DE9S to DE9P, 6 feet
	95005023	DE9S to DB25P, 5 feet
	93001211	DE9P to RJ48, Cisco 2500 SLIP, Control Port
	78899	DE9S to RJ45 Adapter
	78891	DataSMART Installation Kit
D	**DB25 - To Data Terminal Equipment**	
	V.35	
	95010054	DB25P to MRAC34P, 10 feet
	95010073	DB25P to MRAC34P, tail circuit timing
	95001074	DB25P to MRAC34S, 1 foot
	78904	DB25P to MRAC34S Adapter
	78905001	V.35 Adapter to existing DataSMART single-port cable
	78906001	DB25P to MRAC34S (Wellfleet)
	EIA-530	
	950xx042	DB25P to DC37S
	95010061	DB25P to DB25P, 10 feet
	95010058	DB25P to DB25P, tail circuit timing
	95010066	DB25P to DC37P (EIA-530 to RS449)

12-slot shelf



A	**DA15 - To Network**	
	930xx091	DA15S to DA15P
	930xx111	DA15S to Stub
	930xx151	DA15S to RJ48C Modular Plug
	77891	DA15S to RJ48C Jack Adapter
	77993004	DA15S to Barrier Strip Adapter
B	**DB25-To Terminal Equipment**	
	Terminal Equipment Only	
	950xx094	DB25P to RJ48C Plug
	Terminal and Data Equipment The 12-slot Shelf requires split cables to access data and terminal equipment simultaneously	
	95001088	DB25P to DB25S and DA15P
	95001089	DB25P to DB25S and DA15S
	95001090	DB25P to MRAC34S and DA15P

95001090	DB25P to MRAC34S and DA15S
95001091	DB25P to MRAC34S and DA15S

C DE9-To Control Terminal

95006022	DE9S to DE9P, 6 feet
95005023	DE9S to DB25P, 5 feet
93001211	DE9P to RJ48, Cisco 2500 SLIP, Control Port
78899	DE9S to RJ45 Adapter
78891	DataSMART Installation Kit

D DB25 - To Data Equipment

The 12-slot shelf requires split cables to access both data and terminal equipment simultaneously.

V.35	
95010054	DB25P to MRAC34P, 10 feet
95010073	DB25P to MRAC34P, tail circuit timing
95001074	DB25P to MRAC34S, 1 foot
78904	DB25P to MRAC34S Adapter
78905001	V.35 Adapter to existing DataSMART single-port cable
78906001	DB25P to MRAC34S (Wellfleet)
EIA-530	
950xx042	DB25P to DC37S
95010061	DB25P to DB25P, 10 feet
95010058	DB25P to DB25P, tail circuit timing
95010066	DB25P to DC37P (EIA-530 to RS449)

xx denotes length of cable, contact factory for available lengths. DA, DB, DC, DE designate the size of the shell which encapsulates the cable connector. P = Plug (male); S= Socket (female).

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