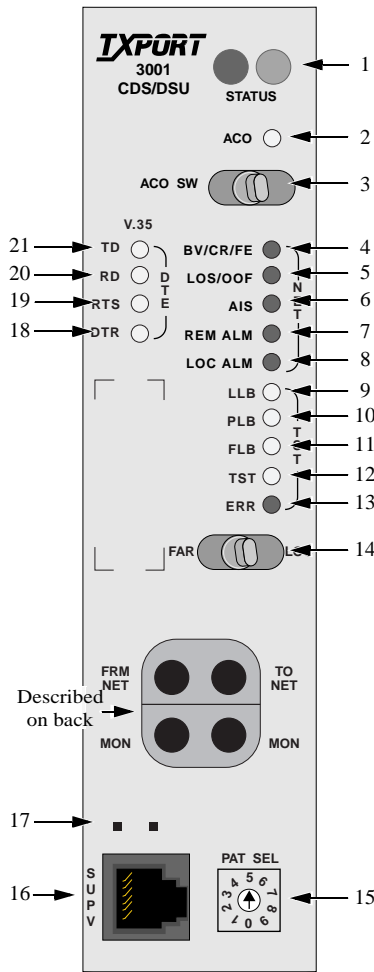


Configuration Guide (Stand-alone Version)

Front Panel Description



**PRISM 3001
Front Panel**

Item	Function
1	Status: The green LED lights when the unit is powered and operating normally. The red LED lights if an alarm exceeding thresholds is detected or for other unit failure.
2	ACO: This yellow LED lights if the ACO (alarm cut off) switch is placed in the left ON position. It indicates that the alarm relay contacts are disabled.
3	ACO SW: This ACO (alarm cut off) switch controls the alarm relay circuitry. If the switch is placed in the left ON position, this circuitry is deactivated.
4	BV/CR/FE: This LED lights one second for each occurrence of bipolar violations, cyclic redundancy check errors, or frame bit errors.
5	LOS/OOF: This LED blinks with a loss of signal (LOS) from the network. It lights constantly when an out of frame (OOF) condition is detected.
6	AIS: This alarm indication signal LED lights if an unframed all ones condition is detected from the network.
7	REM ALM: This LED lights constantly when a remote (yellow) alarm signal is received.
8	LOC ALM: This LED lights when a local alarm exceeding alarm thresholds exists.
9	LLB: This LED lights continuously when the network interface is in a line loopback. It flashes when the T1 DTE interface is in a line loopback.
10	PLB: This LED lights continuously when the network interface is in a payload loopback.
11	FLB: This LED is active for port loops. It lights continuously when the unit is in a fractional (high-speed port) loop.
12	TST: This LED lights continuously during a far or local test. It flashes while loop codes are transmitted at the start of a far test and while unloop codes are transmitted at the end of a far test. When FAR is selected, the unit sends five seconds of in-band loop code, then uses the test pattern set by the PAT SEL switch. When moved back to center, the unit sends five seconds of loop down code. When LOC is selected, the unit performs a network line loop. When moved back to center, the local loopback is removed.
13	ERR: This LED lights when BERT pattern errors are detected.
14	Test Switch: This switch is used for local testing with the test pattern selected by the rotary switch Pattern Select.
15	PAT SEL: This pattern select switch determines the BERT pattern sent by the unit when the test switch is in the FAR or LOC position. Refer to the table above.
16	SUPV: This 6-pin jack provides direct terminal access for controlling the unit and gathering status and facility performance data. Refer to the pinout table in the lower left corner.
17	Activity: These small, recessed LEDs indicate SUPV and NMS port activity.
18	DTR: This green LED lights when the data terminal ready signal is active.
19	RTS: This green LED lights when the request to send signal is active.
20	RD: This green LED lights during a mark condition on the high-speed receive data line.
21	TD: This green LED lights during a mark condition on the high-speed transmit data line.

Pattern Select

0	QRSS
1	1 in 8
2	3 in 24
3	2047
4	2 ²⁰ -1
5	Clear
6	63
7	511
8	Factory use only
9	Flash

SUPV Pinout

1	Control Out
2	Signal Ground
3	Data Out
4	Data In
5	Signal Ground
6	Control In

Network Interface

Line Rate:	1.544 Mbps, ± 50 ppm
Line Framing:	D4 or ESF
Line Code:	AMI or B8ZS
Input Signal:	DS1, 0 to -27 dB ALBO
Connection:	RJ-48C modular jack (100 Ω, ±5%) or terminal block
Output Signal:	DS1, 3.0 V (±10%) base to peak into 100 Ω with protection
Line Build Out:	0, -7.5, -15, and -22.5 dB attenuation
Line Protection:	1000 V lightning, fused input and output
Jitter Control:	per TR62411 and T1.403
Pulse Density:	15 or 175 zeros
Timing Source:	Internal, recovered line clock, station clock, external DTE

Equipment Interface

T1 DTE port	optional
Line Rate:	1.544 Mbps, ± 50 ppm
Line Framing:	D4 or ESF
Line Code:	AMI or B8ZS
Input Signal:	DSX1 to -6 dB
Connection:	RJ-48C modular jack (100 Ω, ±5%)
Output Signal:	Selectable DSX1 level from 0 to 655 feet in six increments

High-speed data port compatibility:

EIA-530 (RS-422), female DB-25
ITU V.35, female DB-25 female, 34-pin through adapter cable
Data Rate: Synchronous, N×56 or N×64 kbps (N = 1 to 24)
Clocking: Internal or external
Data Invert: Enable or disable
User Interface
Supervisory port: RS-232 6-pin modular connector, 1200 to 19200 baud
Element Manager, Site Controller: RS-232 6-pin modular connector, 1200 to 19200 baud (In and Out)

Diagnostics

Monitoring:	per TR54016 and T1.403
T1 Interface Loops:	Line loopback or payload loopback
Fractional Loop:	High-speed bidirectional port loop responds to in-band V.54 loop code
T1 DTE Loops:	Loop toward DTE or network
BERT:	Multiple test patterns toward network or DTE ports

Alarms

Activation:	Programmable thresholds
Reporting:	Front panel LEDs, COA, NO/NC contacts, TxPORT EM8000 and 8100A
Contact Ratings:	UL 0.3 A at 110 VAC 1.0 A at 30 VDC
Power	
DC Power:	-48 VDC (± 10%), 165 mA max, 8 watts, 27 BTU max
Connection:	Terminal block

Mechanical

Mounting:	desktop, wall, horizontal or vertical rack, vertical nest mount
Dimensions:	1.72" W, 6.8" H, 10.5" D
Weight:	3 pounds, 7 ounces

Compatibility

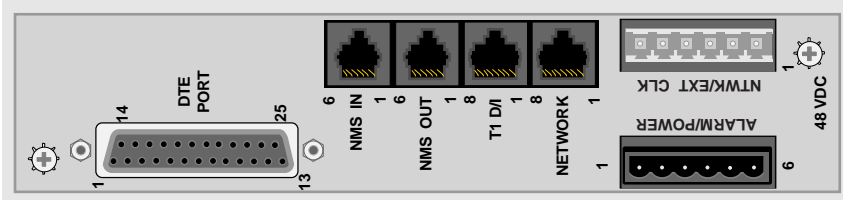
TR62411:	December, 1990
TR54016:	September, 1989
TR54019A:	April, 1988
T1.403:	1989

Industry Listings

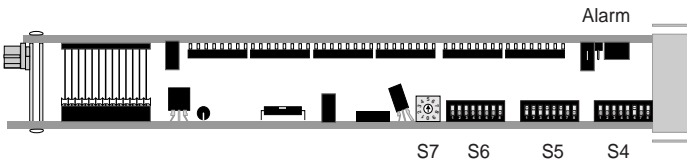
FCC Compliance:	Part 15 Subpart B, Class A, Part 68
US Safety:	UL 1459, 2nd Edition
Canadian Safety:	CSA C222, No. 225-M90
Industry Canada:	CS-03

1051-2 Chassis Rear Panel Pinouts

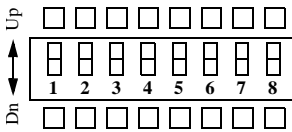
Pin	T1 D/I	T1 NET	NMS IN	NMS OUT	Alarm /Power	Net/Ext. Clk
1	Data Out	Data In	Not Used	Not Used	48 V Return	Net In (Tip)
2	Data Out	Data In	Signal Ground	Signal Ground	Signal Ground	Net In (Ring)
3	Not Used	Not Used	Data Out	Data Out	-48 VDC	Net Out (Tip)
4	Data In	Data Out	Data In	Not Used	Frame Ground	Net Out (Ring)
5	Data In	Data Out	Signal Ground	Signal Ground	Alarm Contact	Station Clk (Ring)
6	Not Used	Not Used	Not Used	Not Used	Alarm Common	Station Clk (Tip)
7, 8	Chassis Ground	Chassis Ground	Not Applicable	Not Applicable	Not Applicable	Not Applicable



Top-edge View of the 3001



Switch S4



S4-1: Network Framing

Dn: ESF Up: D4

S4-2: Network Coding

Dn: AMI Up: B8ZS

S4-3	S4-4	Network LBO
Dn	Dn	0 dB
Up	Dn	-7.5 dB
Dn	Up	-15.0 dB
Up	Up	-22.5 dB

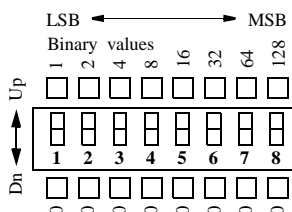
S4-5: Channel Assignment - Used to select DS0 channels (used with Switch S7). See Table S7 Bit Rates (kbps).

S4-6	S4-7	Timing Source
Dn	Dn	Internal Settings
Up	Dn	Network
Dn	Up	T1 DTE
Up	Up	High-speed port

S4-8: Channel Assignment - Used to select channel assignment mode (used with Switch S7).

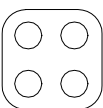
Dn: Contiguous Up: Alternate

Address Switch S5



Bantam Jacks

Receive signal from the network
Monitor signal from the network



Transmit signal to the network
Monitor signal from the DTE

Four front panel bantam test jacks are provided for access to the T1 line on the DTE side of the CSU. Two are used for non-intrusive bridge monitoring of the line in both directions (MON) and two are used to insert into the line in both directions (NET).

High-speed DTE Pinout

DB-25 25-pin A/B	Common Name	EIA-530 25-pin A/B	RS-449 37-pin A/B	V.35 34-pin A/B
1	Frame Ground	1	1	A
7	Signal Ground	7	19	B
2/14	Transmit Data	2/14	4/22	P/S
3/16	Receive Data	3/16	6/24	R/T
4/19	Request to Send	4/19	7/25	C
5/13	Clear to Send	5/13	9/27	D
6/22	Data Set Ready	6/22	11/29	E
20/23	Data Term Ready	20/23	12/30	H
8/10	Data Carrier Detect	8/10	13/31	F
15/12	Transmit Clock	15/12	5/23	Y/AA
17/9	Receive Clock	17/9	8/26	V/X
24/11	Terminal Timing	24/11	17/35	U/W

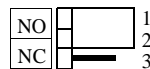
For reference, all DIP switches are provided with upper and lower boxes to check the particular user selection. Factory default settings are shown underlined.

S7 Bit Rates (kbps)

Switch S7	w/S4-5 <u>down</u>		w/S4-5 <u>up</u>	
	<u>x56</u>	<u>x64</u>	<u>x56</u>	<u>x64</u>
0	56	64	168	192
1	112	128	280	320
2	224	256	392	448
3	336	384	448	512
4	560	640	504	576
5	672	768	616	704
6	1008	1152	728	832
7	1120	1280	784	896
8	1232	1408	896	1024
9	1344	<u>1536</u>	1064	1216

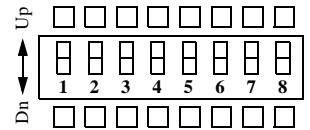
20 of the 24 possible bit rate configurations are available through Switch S7 (and Switch S4). The missing rates are N×56 and N×64, where N=15, 17, 21, and 23. All 24 rate configurations are available through software control.

Alarm Relay



This 3-pin header straps the ACO alarm contact. Position jumper over pins 1 and 2 for normally open operation (closes on alarm) or over pins 2 and 3 for normally closed operation (opens on alarm).

Switch S8 (T1 DTE)



If equipped, this board is located on the opposite side of the circuit board shown in Figure Top-edge View of the 3001.

S8-1: Used to set the line framing.

Dn: ESF Up: D4

S8-2: Used to set the line coding.

Dn: AMI Up: B8ZS

S8-3	S8-4	S8-5	DTE LBO
Dn	Dn	Dn	0 - 110 ft
Up	Dn	Dn	110 - 220 ft
Dn	Up	Dn	220 - 330 ft
Up	Up	Dn	330 - 440 ft
Dn	Dn	Up	440 - 550 ft
Up	Dn	Up	550 - 655 ft
Dn	Up	Up	>655 ft

S8-6, S8-7, and S8-8: Not used.



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