

Specifications

DS1 SPECIFICATIONS

Electrical Interface Connectors, RX, TX (2 sets)	Bantam Jacks
Pulse Shape: Recommendation CB119, CB132, pulse shape in 100 ohms	Conforms to TR-TSY-000499, ITU G.703; AT&T Publications CB113, CB143, PUB62508, and PUB62411 specifications when terminated and 0 LBO is selected
Line Code Line Build Out Input	AMI, B8ZS 0 dB, -7.5 dB, -15 dB
ohms Terminate	DSX +6 dB to DSX -36 dB, 100
ohms Monitor	DSX -14 dB to DSX -40 dB, 100
ohms Bridge	DSX +6 dB to DSX -36 dB, >1000
Clock	1.544 MHz
Internal	±5 ppm
External	±300 ppm
Recovered	±300 ppm
Transmitter and Receiver	
Framing	Unframed, D3/D4, ESF, & SLC96*
Channel Formats (56xN, 64xN) (opt. 01 required)	56x1, 64x1, Fractional T1
Test Patterns QRSS, Bridge, 3 in 24, Alt 1/0, 4, T1-5, 55 Octet, DDS-4, DDS-5, to 2048 bits	2047, 2E15-1, 2E20-1, 2E23-1, Multiple, All 0's, 1:7, 2 in 8, All 1's, T1-1, T1-2, T1-3, T1- T1-Daly, DDS-1, DDS-2, DDS-3, DDS-6, User defined patterns up
Error Injection Type Pattern	BPV, Frame, CRC,
Error Rate	Single, Fixed Rate, Burst

Alarms LOS, LOF, Yellow, AIS,
Idle

DSO SPECIFICATIONS

Interface

VF In/Out Connector 2.5mm Headset Jack

ESF/SLC DATALINK MONITORING AND CONTROL (Option 03)

ESF T1.403 Performance Report Messages (ANSI STANDARD)

Send Functions

Operating Mode Live, Fixed, or
Unscheduled

PRM Selections

CRC Errors No errors, 1 error, >1 to 5
errors, >5 to 10 errors, >10 to 100 errors, >100 319
errors, 320 errors

Application Specific Bits:

LB Payload Loopback Active
SL Controlled Slip 1
LV Line Code Violation
FE Framing Bit Error
SE Severely Errored Framing Bit

Event

Unscheduled Messages Any, including Yellow Alarms

Receive Functions CRC Events, ASB Status,
Unscheduled, Errored Seconds, Severely Errored Seconds,
Message Errors, Elapsed Time

SLC-96 Datalink Control and Monitoring

Send Functions (Alarm and Maintenance Messages)

Alarms Major, Minor,
Power/Miscellaneous
Shelf Alarms A, B, C, and D
Far-End Loopbacks A, B, C, D, and P
Maintenance Messages Idle, On-Hook/Seize, Proceed,
Test Alarm
Protection Messages Idle, Line A RX, Line B TX,
Line C TX, Line D TX, Line B TX/RX, Line C TX/RX,
Line D TX/RX

Receive Functions (Display decoded messages)

Miscellaneous),	Alarms (Major, Minor, Power,
Maintenance Messages,	Shelf Alarms, Far-End Loopback,
Concentrator Messages (SLC 96 II)	Protection Messages,

PM TEST ACCESS (Option 04)

Operations	Retrieve PM statistics, Clear
PM Statistics,	Set PM Clock

LOOPBACK/SPAN CONTROL

Device Type	CSU, NIU, Repeater and
Maintenance Switch	(Requires Option 05)
User-Defined Loopback Codes	Stores up to 8 with
alphanumeric labels	
Vendors	(Contact factory for current
(Intelligent T1 span devices)	list)

DIAL/SUPERVISION (Option 06)

Trunk Types	E&M, Ground start, Loop start
Emulation	FXS, FXO, SLC Station/Office
Dialing Mode	Autodialing (up to 30
characters entered	manually and outpulsed
automatically	
Types of Dialing	Pulse and DTMF (MF with opt.
08)	
Dial Sequence	Up to 30 digits
Store Telephone Numbers in Memory	
Number of memory files	8
Length (Each number)	Up to 30 digits
Alphanumeric Labels	
(Each file)	Up to 12 alphanumeric
characters	
Operation	
Channel Supervision	On/Off Hook and Ringing

Capture/Display Dialed Digits (Pulsed/DTMF)	Up to 30 digits
Wink Wink Measurements wink	Send momentary Off Hook signal Wink delay and duration of
Echo Disable to disable	Send 2100 Hz tone for 3 sec's echo cancellors
CCITT V.5554 DSU/CSU Loopdown Codes	Code sent for 4 minutes
PRIMARY RATE ISDN (Option 09) D-Channel	Selectable
Loop-Back placement and receipt or BERT testing	Supports simultaneous call to provide a loopback for voice
Interface Type NFASS	23B + D,
Call Type	Voice Call Data Call 56 Kbit/s 64 Kbit/s N x 64 Kbit/s (opt. 01
required) Kbit/s (Option 01 req'd.) Mbit/s	H0 - 6 B-channels or 384 H11 - 24 B-channels or 1.536
Call Control National ISDN-2	AT&T, Northern Telecom,
Dial Sequence	Up to 30 digits
Store Telephone Numbers in Memory	
Number of memory files	8
Length (Each number)	Up to 30 digits
Alphanumeric Labels (Each file) characters	Up to 12 alphanumeric
Transaction Display Call State	Cause Value, Layer 2 Status,
BERT Patterns 2047, 2E15-1, QRSS,	All 0's, All 1's, 1:7, 2 in 8,

Results
Errors, CRC Errors,

Voice Channel Data
Headset,

Status Display
Cause Value

language)

Programmable Options
Options, Calling Numbers

TERMINAL EMULATION (Option 10)

Interface Type
interconnect cable supplied

Display
20 lines
characters by 24 lines

Emulation

Responses
are provided

Equipment Supported
Customer Premises Unit
R, HFAC

Customer Premises Unit
611, 612, D41;
HDU-451

Interface

DDS CHANNEL TESTING (Option 11)

DS0-A Channel Rates
and 64 Kbps

55 Octet

BPV Errors, BIT Errors, Frame

Elapsed time

Digital Milliwatt, Idle Code,

DTMF entry through touchpad

Layer 2 Status, Call State,

(Both numeric and plain

Network Options, Facility

RS-232 25-pin to 9-pin

LCD screen of 32 characters by

Virtual display of 80

Auto, VT100, ASCII

Standard character responses

Adtran, Inc.

HDSL Central Office

Models: HTU-R, T400HTU-

PairGain Technologies, Inc.

HDSL Central Office and

Models:HLU-231, 319, 388,

HRU-412, 512; HLIU-960;

Teltrend, Inc.

PMDNI Digital Network

2.4, 4.8, 9.6, 19.2, 38.4, 56,

Loopbacks
(Latching and alternating)
8-bit user defined

Control Codes
Abnormal Station,
Channel,
Alert, Loopback Enable,
Progress, Block Code,
Code,

BERT Patterns
2E20-1, QRSS, All 0's,
All 1's, T1-1, T1-2,
T1-Daly, DDS-1, DDS-2,
User defined patterns

BERT Results
Elapsed Time

PRINTING

Print Functions
Current Setup,
Patterns, Captured Channel Data,

Captured Events
Types of Events
(Input Signal)
Severely Errored Second,

Number of Events
of event)
Event Triggers

Printer Interface

AUXILIARY PORT

Function
or Printer

Channel, DSU, OCU, DS0-DP, NIE,

Repeater Release, Idle,
Mux-Out-of-Sync, Unassigned MUX
Test Code, Test Alert, MJU
Far-End-Voice, Transition in
Release Code, MAP0 Code, MAP1
Eight-bit user defined

63, 127, 511, 2047, 2E15-1,
1:7, 2 in 8, 3 in 24, Alt 1/0,
T1-3, T1-4, T1-5, 55 Octet,
DDS-3, DDS-4, DDS-5, DDS-6,
up to 2048 bits

BPV, Bit, Frame, CRC Errors,

Last Results, Captured Events,
User Setups, User Test
Retrieved PM Data

Alarm changes, Errored Second,
DS1 Frame Slip

100 to 1500 (Depending on type
Automatic, Selectable, Manual

See AUXILIARY PORT

RS-232 Interface/Remote Control

Printer Width	80 columns
Connector	25-pin D female
Type of Interface	DTE or DCE
Transmission Speeds 28.8K	1200, 2400,9600,14.4K, 19.2K,
Bits per Character	7 or 8
Parity	Odd, Even, or None
Stop Bits	1 or 2

POWER

Batteries hydride (NiMH)	Rechargeable nickel metal
Battery Life	Basic unit - 4 hours/charge
AC Operation	100 - 240 VAC, 50/60 Hz (PS-6)

PHYSICAL SPECIFICATIONS

Size	10.2"L x 3.8"W x 3"H
Weight	3 lbs. (1.35 kilograms)
Display Screen characters	Backlit LCD, 24 lines x 32
Operating Temperature	-20° C to +60° C
Storage Temperature	-30° to + 90° C
Humidity	10% to 90% non-condensing

Specifications subject to change without notice.