

# SUNRISE TELECOM®

# Datacom/DDS Module

SSxDSL-9

**Data Sheet** 

The SSxDSL-9 Datacom/DDS Module, part of the SunSet Modular Test Toolkit (MTT) family of products, is a rugged, battery-operated handheld test solution for WAN/data, Frame Relay, and DDS service verification. The module is designed to assist technicians in bringing up new data communication service and troubleshooting the existing data network fast and effectively. The powerful test module can be used for all your testing requirements including, DTE/DCE emulation for end-to-end testing of data networks, bidirectional monitoring for a greater level of troubleshooting for data networks, FOX testing for Frame Relay CIR verification, and Frame Relay Ping testing for checking link connectivity.

# **FEATURES**

### **Datacom**

- DTE/DCE emulation
- Bidirectional monitoring with Y-adapter
- V.35, RS232, RS449, RS530, X.21
- Data rates from 2400 bps to 2.048 Mbps
- Bit error rate testing with stress patterns
- Control lead status monitor for CTS, RTS, DSR, DTR
- Received data display
- Frame relay UNI/NNI testing

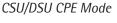
### **DDS 4-Wire**

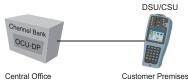
- CSU/DSU emulation
- Bit error rate testing on a primary channel
- Loopback testing
- Received data display

# BENEFITS

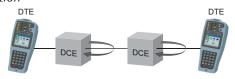
- Lightweight
- Flexible modular design
- Eliminates the need for multiple instruments
- Intuitive and easy-to-use
- · Cost-effective and future-proof

# **APPLICATIONS**





# DTE Emulation



# DCE Emulation



#### **Datacom Monitoring**





# DATACOM SPECIFICATIONS

Supports V.35, X.21/V.11, RS232/V.24, RS449/V.36, RS530 interfaces Test modes: DTE Emulation, DCE Emulation, Bidirectional monitoring Connector: SCSI port with adapter cables

# **Operation Modes**

#### **DTE Emulation**

- Point-to-point or point-to-loopback BERT
- Control and analyze datacom control leads

#### **DCE** Emulation

- Point-to-point BERT
- Control and analyze datacom control leads

#### **Datacom Monitoring**

- Bidirectional monitoring with Y-adapter cable
- Monitor control leads, frequency

#### **Measurements**

Bit error/G.821

Error count and rate ITU-T G.821 Analysis

Data loss, data loss seconds, pattern loss, pattern loss seconds

Datacom interface analysis

View received data

Propagation delay

# Frame Relay Basic (SWxDSL-9FRA)

LMI standards: ITU-T Q.933, ANSI T1.617, LMI (DLCI 1023, GOF

Vendors), NO LMI Modes: UNI DTE, UNI DCE

## LMI Analysis

Results: Link OK Total, Link Errored Total, Timeout Error, Response Sequence Number, Wrong Message

**PVC** status

#### **PING Test**

Results: Number of PINGs, Number of PINGs sent, PING status (Received, Unreached, Errored), Round Trip Time (Current, Average, Maximum, Minimum)

InARP support

IP encapsulation conforms to RFC1490 specification

Echo PING

# **FOX Test**

Results: PVC Status, Current Rate, Errored Frames, RSN Error, SSN Error, Frame Check Sequence (FCS) Error, Count of Frame Received with FECN, with BECN, with DE, Count of transmit frames, Count of received frames

### Statistics Analysis

Bidirectional monitoring Frame relay performance and statistics DLCI analysis and statistics

### Frame Relay NNI (SWxDSL-9FRNNI)

LMI standards: ITU-T Q.933, ANSI T1.617, LMI (DLCI 1023, GOF

Vendors), NO LMI

Modes: NNI USER, NNI NETWORK

LMI Analysis, PING Test, FOX Test, Statistic Analysis - as

described in Frame Relay Basic section

# DDS 4-WIRE SPECIFICATIONS

Test modes: CSU/DSU Emulation

Signal: Bipolar return to zero with alternate mark inversion

Primary channel conforms to AT&T PUB 62310

Connector: 8-pin modular RJ-48

# **Operation Mode**

### CSU/DSU CPE Mode

- BERT testing at the DDS-4W interface
- Test primary channels
- Respond to DSU/CSU loop codes

#### **Measurements**

Frequency, LOSS, LOFS, EXZS, OOS, OOFS, BPVs, FBEs Bit error/G.821 Analysis
View received data

## **Loopback Testing**

Transmit: Latching DSU/CSU

Internal loopback: Manual or auto-respond to DSU/CSU command

# Status/Alarm Indicators

**Dual-color LEDs indicator** 

Current status and alarm history conditions

# PRODUCT DESCRIPTION

Module size (WxLxH): 5.0 x 3.5 x 0.9 in (12.6 x 9 x 2.2 cm)

Operating temperature: 32° to 122°F (0° to 50°C) Storage temperature: -4° to 158°F (-20° to 70°C)

Humidity: 5% to 85% noncondensing

# ORDERING INFORMATION

SSxDSL-9 Datacom/DDS Module

Testing at both Datacom and DDS-4W interfaces

SWxDSL-9FRA Frame Relay Basic SWxDSL-9FRNNI Frame Relay NNI

[Requires SWxDSL-9FRA]

For more information or a directory of sales offices: info@sunrisetelecom.com | www.sunrisetelecom.com