ADTRAN®

SHDSL
6542 NTU 2-Wire/4-Wire
Span or DC Powered

jobAid +

Product P/N: 1230009E1

Issue Date: September 2011
Document P/N: 61230009E1-22C

6542 Front Panel

6542 Rear Panel

DESCRIPTION

The Span or DC Powered 6542 SHDSL 2-Wire/4-Wire NTU (P/N 1230009E1) functions as an interface between the SHDSL network and the Data Terminal Equipment (DTE).

The 6542 supports applications such as LAN-to-LAN bridging, Frame Relay circuit, and PABX termination.

The 6542 is designed to be used as a remote unit to the ADTRAN Total Access® 3000 multiservice platform, or as a pair of units in a point-to-point limited distance campus configuration, with one 6542 configured to "LT" mode.

FEATURES

The 6542 has the following features:

- Housed in a standalone plastic case
- Provides four front panel recessed pushbuttons and eight front panel LED indicators
- Provides rear panel SHDSL, G.703 and/or Nx64K ports, and a local management port
- Provides a rear panel local power DC connection
- Provides bad splice protection using the ADTRAN proprietary Runtime TScan™ 2.0 splice protection feature (for more information on this feature and how to locally manage TScan, refer to the *SHDSL 2-Wire/4-Wire NTU Product Series Installation and Maintenance Guide*, P/N 61230001E1-5)

LED INDICATORS

Label	Status		Description
SHDSL	○	Off	Unit is powered off
	● Green	Green	Port is trained; no active alarms
	● Yellow	Yellow	Port is trained with a minor active alarm [1]
	● Red	Red	Port is attempting to or is trained with a major alarm [2]

Label	Status		Description
G.703	○	Off	Port is not active
	●	Green	Active Port with no active alarm
	●	Yellow	Active Port with a minor alarm [3]
	●	Red	Active Port with a major alarm [4]
SPN PWR	○	Off	Unit is not SHDSL span powered
	●	Green	Unit is SHDSL span powered
DC PWR	○	Off	Unit is not DC powered
	●	Green	Unit is DC powered
PRGM	○	Off	Firmware is not being programmed
	●	Green	Local unit firmware is being locally programmed
	●	Yellow	Remote unit firmware is being locally programmed
			Local unit formware is being remotelt programmed
LLOOP	○	Off	Local Loop is not active
	●	Yellow	Active Local Loopback on the selected port
	●	Red	Active Local Loop on one or more ports or services (when no port is selected)
RLOOP	○	Off	Remote Loop is not active
	●	Yellow	Active Remote Loopback on the selected port (when determined via established EOC)
	●	Red	Active Remote Loop on one or more ports or services (when no port is selected)
BERT	○	Off	BERT is not active
	●	Green	Active BERT and the test pattern detector is synchronized with no received bit errors
	●	Yellow	Active BERT and one or more test pattern bit errors have been received
	●	Red	Active BERT but the test pattern detector is not synchronized

1. Minor SHDSL port alarms: CRC errors, Loop Attenuation Threshold Alarm, SNR Margin Threshold Alarm, Segment Anomaly, and any ES, SES, UAS, CVC, and LOSWS 15-Minute Threshold Alarm
2. Major SHDSL port alarms: LOS, LOSW, or Segment Defect
3. Minor G.703 port alarms: Rx RAI, Frame Slip, CRC-4 errors, LBER, and any ES, SES, UAS, and CVC 15-Minute Threshold Alarm
4. Major G.703 port alarms: LOS, LOF, LOMF, Rx AIS, or HBER

PUSH BUTTONS

Push Button	Description
PORT SELECT	Press the **PORT SELECT** button to select the active port. Selection choices cycle through the following order: No Port, Nx64k, G.703, SHDSL.
LOCAL LOOP/ ERR INJ	If a port is selected, and a Bit Error Rate Test (BERT) is not in progress, press the **LOCAL LOOP/ ERR INJ** button to initiate or terminate a local loop on the selected port. If a BERT is in progress, press the button to inject a single bit error.
REMOTE LOOP	If the SHDSL port is selected, press the **REMOTE LOOP** button to place or remove a remote loop on the port by sending a EOC request message to the LTU (or NTU in campus mode). If the Nx64K port or G.703 port (with only one service defined) is selected, press this button to place or remove a remote loop on the selected port's single data service by sending respective inband loop up or loop down patterns to the far end (in the associated data service timeslots).
BERT	If a port is selected and there are no local loops, press the **BERT** button to start or stop a BERT on the selected port.

MAINTENANCE

The 6542 does not require routine hardware maintenance for normal operation. Do not attempt repairs in the field. Repair services may be obtained by returning the defective unit to ADTRAN. Refer to the warranty for further information. Field support for software is provided through upgrade facilities.

SPECIFICATIONS

Specifications for the 6542 are as follows:

- Electrical
  - ◆ Operating Voltage: –48 VDC
  - ◆ Typical Current and Power Consumption: 120 mA, 5.7 W @ -48 VDC
  - ◆ Maximum Current Draw: 200 mA @ 35 – 80 VDC
  - ◆ Maximum Power Consumption: 6.5 watts @ 35 VDC
- Environmental
  - ◆ Operational Temperature Range: –5°C to +55°C
  - ◆ Storage Temperature Range: –40°C to +85°C
  - ◆ Relative Humidity: up to 95%, noncondensing
- Physical
  - ◆ Height: 2.215 inches (5.63 cm)
  - ◆ Width: 9.25 inches (23.5 cm)
  - ◆ Depth: 6.625 inches (16.8 cm)
  - ◆ Weight: Less than 1 pound (0.45 kg)

INDUSTRY STANDARDS COMPLIANCE

The SHDSL 2-Wire/4-Wire NTU interfaces adhere to these industry standards, either partially or in full:

- SHDSL: ITU-T G.991.2 (12/03 and 2003 amendments) and G.994.1 (05/03)
- G.703: ITU-T G.703 (10/98), G.704 (10/98), G.706 (4/91), G.732 (11/88), G.775 (10/98), G.784 (1/94), G.797 (3/96), G.821 (8/96), G.823 (03/93), and G.826 (2/99)

SAFETY AND REGULATORY COMPLIANCE

Refer to the Safety and Regulatory Compliance Notice for this product (P/N 61230009E1-17) for detailed safety and regulatory information.
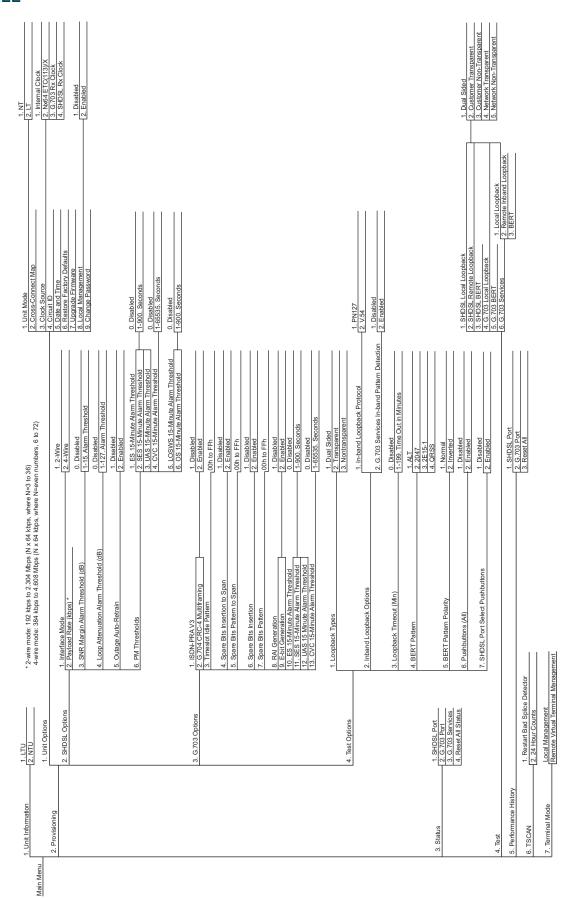
Consultez l'avis sur la sécurité et la conformité à la réglementation pour ce produit (61230009E1-17) pour obtenir des renseignements détaillés sur la sécurité et la réglementation.

Ausführliche Sicherheits- und regulatorische Informationen sind in der Konformitätserklärung zur Sicherheit und Einhaltung von Normen zu diesem Produkt (61230009E1-17) aufgeführt.

MENU TREE

Main Menu

- **1. Unit Information**
  - 1. LTU
  - 2. NTU

- **2. Provisioning**
  - **1. Unit Options**
    - 1. Unit Mode
      - 1. NT
      - 2. LT
    - 2. Cross-Connect Map
    - 3. Clock Source
      - 1. Internal Clock
      - 2. Nx64 ETC(113)/X
      - 3. G.703 Rx Clock
      - 4. SHDSL Rx Clock
    - 4. Circuit ID
    - 5. Date and Time
    - 6. Restore Factory Defaults
    - 7. Upgrade Firmware
    - 8. Local Management
      - 1. Disabled
      - 2. Enabled
    - 9. Change Password
  - **2. SHDSL Options**
    - 1. Interface Mode
      - 1. 2-Wire
      - 2. 4-Wire
    - 2. Payload Rate (kbps) *
      - *2-wire mode: 192 kbps to 2.304 Mbps (N x 64 kbps, where N=3 to 36)
      - 4-wire mode: 384 kbps to 4.608 Mbps (N x 64 kbps, where N=even numbers, 6 to 72)
    - 3. SNR Margin Alarm Threshold (dB)
      - 0. Disabled
      - 1-15. Alarm Threshold
    - 4. Loop Attenuation Alarm Threshold (dB)
      - 0. Disabled
      - 1-127. Alarm Threshold
    - 5. Outage Auto-Retrain
      - 1. Disabled
      - 2. Enabled
    - 6. PM Thresholds
      - 1. ES 15-Minute Alarm Threshold
      - 2. SES 15-Minute Alarm Threshold
      - 3. UAS 15-Minute Alarm Threshold
      - 4. CVC 15-Minute Alarm Threshold
      - 5. LOSWS 15-Minute Alarm Threshold
      - 6. OS 15-Minute Alarm Threshold
        - 0. Disabled / 1-900. Seconds
        - 0. Disabled / 1-65535. Seconds
  - **3. G.703 Options**
    - 1. ISDN-PRA V3
    - 2. G.704 CRC-4 Multiframing
      - 1. Disabled
      - 2. Enabled
    - 3. Timeslot Idle Pattern
      - 00h to FFh
    - 4. Spare Bits Insertion to Span
      - 1. Disabled
      - 2. Enabled
    - 5. Spare Bits Pattern to Span
      - 00h to FFh
    - 6. Spare Bits Insertion
      - 1. Disabled
      - 2. Enabled
    - 7. Spare Bits Pattern
      - 00h to FFh
    - 8. RAI Generation
      - 1. Disabled
      - 2. Enabled
    - 9. E-bit Generation
      - 1. Disabled
      - 2. Enabled
    - 10. ES 15-Minute Alarm Threshold
      - 0. Disabled / 1-900. Seconds
    - 11. SES 15-Minute Alarm Threshold
    - 12. UAS 15 Minute Alarm Threshold
      - 0. Disabled / 1-65535. Seconds
    - 13. CVC 15-Minute Alarm Threshold
  - **4. Test Options**
    - 1. Loopback Types
      - 1. Dual Sided
      - 2. Transparent
      - 3. Nontransparent
    - 2. Inband Loopback Options
      - 1. In-band Loopback Protocol
        - 1. PN127
        - 2. V.54
      - 2. G.703 Services In-band Pattern Detection
        - 1. Disabled
        - 2. Enabled
    - 3. Loopback Timeout (Min)
      - 0. Disabled
      - 1-199. Time Out in Minutes
    - 4. BERT Pattern
      - 1. ALT
      - 2. 2047
      - 3. 2E15-1
      - 4. QRSS
    - 5. BERT Pattern Polarity
      - 1. Normal
      - 2. Inverted
    - 6. Pushbuttons (All)
      - 1. Disabled
      - 2. Enabled
    - 7. SHDSL Port Select Pushbuttons
      - 1. Disabled
      - 2. Enabled

- **3. Status**
  - 1. SHDSL Port
  - 2. G.703 Port
  - 3. G.703 Services
  - 4. Reset All Status
    - 1. SHDSL Port
    - 2. G.703 Port
    - 3. Reset All

- **4. Test**
  - 1. SHDSL Local Loopback
  - 2. SHDSL Remote Loopback
  - 3. SHDSL BERT
  - 4. G.703 Local Loopback
    - 1. Local Loopback
    - 2. Remote Inband Loopback
    - 3. BERT
  - 5. G.703 BERT
  - 6. G.703 Services
    - 1. Dual Sided
    - 2. Customer Transparent
    - 3. Customer Non-Transparent
    - 4. Network Transparent
    - 5. Network Non-Transparent

- **5. Performance History**
  - 1. Restart Bad Splice Detector
  - 2. 24 Hour Counts

- **6. TSCAN**

- **7. Terminal Mode**
  - Local Management
  - Remote Virtual Terminal Management

![ADTRAN logo]

Technical
Publications
CarrierNetworkDivision

Technical
Publications
CarrierNetworkDivision

C A U T I O N !
SUBJECT TO ELECTROSTATIC DAMAGE
OR DECREASE IN RELIABILITY
HANDLING PRECAUTIONS REQUIRED

ADTRAN CUSTOMER CARE:

From within the U.S.   1.800.726.8663
From outside the U.S. +1 256.963.8716

PRICING AND AVAILABILITY   1.800.827.0807

6123 0009E1-22C