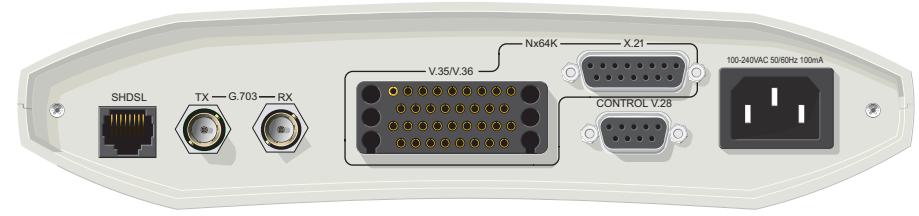**6541 Front Panel**

6541 Rear Panel

DESCRIPTION

The AC powered ADTRAN 6541 SHDSL 2-Wire/4-Wire NTU (P/N 1230007L1) functions as an interface between the SHDSL network and the Data Terminal Equipment (DTE) for applications such as LAN-to-LAN bridging, Frame Relay circuit, and PABX termination. The 6541 is designed to be used either 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 6541 configured to "LT" mode.

COMPLIANCE

EN 300 386-2; IEC 60950/EN 60950/AS NZS60950; S016; S043.2; ITU K.21 Enhanced; Telstra 1555.

FEATURES

The 6541 has the following features:

♦ Housed in a standalone plastic case

♦ Provides four front panel recessed pushbuttons and eight front panel LED indicators

♦ Provides SHDSL, G.703 and/or Nx64K ports, and a local management port

♦ Provides a rear panel local power AC 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 Practice*, P/N 61230001L1-5)

PUSHBUTTON FUNCTIONALITY

Pushbutton	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.

LED INDICATOR FUNCTIONALITY

Label	Status		Description
SHDSL	○	Off	Unit is powered off
	●	Green	Port is trained; no active alarms
	●	Yellow	Port is trained with a minor active alarm [1]
	●	Red	Port is attempting to or is trained with a major alarm [2]
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]
Nx64K	○	Off	Port is not active
	●	Green	Active Port with no active alarm
	●	Red	Active Port with an active alarm condition [5]
RTS/C	○	Off	Nx64K port is not active or when active, V.35/V.36 "Request To Send" or X.21 "Control" line from the DTE is off
	●	Green	V.35/V.36 "Request To Send" or X.21 "Control" line from the DTE is on
RLSD/I	○	Off	Nx64K port is inactive or when active, V.35/V.36 "Receive Line Signal Detector" and X.21 "Indication" control line from the NTU is off.
	●	Green	V.35/V.36 "Receive Line Signal Detector" or X.21 "Indication" control line from the NTU (DCE) is on
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
5. Nx64K port alarms: Clock Slip, Loss of External Clock, FIFO Underflow/Overflow, and Inactivity Alarm

ADTRAN®

6541 SHDSL 2-Wire/4-Wire NTU, AC Powered

PRICING AND AVAILABILITY 800.827.0807
TECH SUPPORT 800.726.8663
RETURN FOR REPAIR 256.963.8722
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61230007L1-22B

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) *
    - 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
        - 0. Disabled
        - 1-900. Seconds
      - 4. CVC 15-Minute Alarm Threshold
        - 0. Disabled
        - 1-65535. Seconds
      - 5. LOSWS 15-Minute Alarm Threshold
      - 6. OS 15-Minute Alarm Threshold
        - 0. Disabled
        - 1-900. Seconds
  - **3. G.703 Options**
    - 1. ISDN-PRA V3
      - 1. Disabled
      - 2. Enabled
    - 2. G.704 CRC-4 Multiframing
    - 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
    - 9. E-bit Generation
      - 1. Disabled
      - 2. Enabled
    - 10. ES 15-Minute Alarm Threshold
    - 11. SES 15-Minute Alarm Threshold
      - 0. Disabled
      - 1-900. Seconds
    - 12. UAS 15 Minute Alarm Threshold
    - 13. CVC 15-Minute Alarm Threshold
      - 0. Disabled
      - 1-65535. Seconds
  - **4. Nx64K Options**
    - 1. Interface Type Auto Detection
      - 1. Disabled
      - 2. Enabled
    - 2. Interface Type Manual Select
      - 1. X.21
      - 2. V.35
      - 3. V.36
    - 3. Inactivity Alarm Delay (Secs)
      - 0. Disabled
      - 1-100. Alarm Threshold
    - 4. Tx Clock Source
      - 1. From DCE, TC (Circuit 114)
      - 2. From DTE, ETC (Circuit 113)
    - 5. Tx Clock Polarity
      - 1. Normal
      - 2. Inverted
      - 3. Auto
    - 6. X.21 C Mode
      - 1. Permanent On
      - 2. DTE Driven
    - 7. X.21 I Mode
      - 1. Permanent On
      - 2. Sync Mode
    - 8. V.35/V.36 RTS (Circuit 105)
      - 1. Permanent On
      - 2. DTE Driven
    - 9. V.35/V.36 RTS (Circuit 106)
      - 1. Permanent Off
      - 2. Permanent On
      - 3. RTS Driven
    - 10. V.35/V.36 RTS to CTS Delay (ms)
      - 0 to 255 = Delay in ms
    - 11. V.35/V.36 DSR (Circuit 107)
      - 1. Permanent Off
      - 2. Permanent On
    - 12. V.35/V.36 DTR (Circuit 108/2)
      - 1. Permanent On
      - 2. DTE Driven
    - 13. CVC 15-Minute Alarm Threshold
      - 1. Permanent Off
      - 2. Permanent On
      - 3. Sync Mode
  - **5. 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. Nx64k 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)
    - 7. SHDSL Port Select Pushbuttons
      - 1. Disabled
      - 2. Enabled
    - 8. V.35/V.36 RL (Circuit 140)
    - 9. V.35/V.36 LL (Circuit 141)
      - 1. Permanent Off
      - 2. DTE Driven
    - 10. V.35/V.36 TI (Circuit 142)
      - 1. Permanent Off
      - 2. Test Driven

- **3. Status**
  - 1. SHDSL Port
  - 2. G.703 Port
  - 3. G.703 Services
  - 4. Nx64K Port
  - 5. Reset All Status

- **4. Test**
  - 1. SHDSL Local Loopback
  - 2. SHDSL Remote Loopback
  - 3. SHDSL BERT
  - 4. G.703 Local Loopback
  - 5. G.703 BERT
  - 6. G.703 Services
    - 1. Local Loopback
    - 2. Remote Inband Loopback
    - 3. BERT
  - 7. Nx64k Local Loopback
  - 8. Nx64k Remote Inband Loopback
  - 9. Nx64k BERT
    - 1. Dual Sided
    - 2. Customer Transparent
    - 3. Customer Non-Transparent
    - 4. Network Transparent
    - 5. Network Non-Transparent

- **5. Performance History**
  - 1. SHDSL Port
  - 2. G.703 Port
  - 3. Reset All

- **6. TSCAN**
  - 1. Restart Bad Splice Detector
  - 2. 24 Hour Counts

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

* 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)