



BLACK BOX[®]

NETWORK SERVICES

4.6 Mbps G.SHDSL Modem

Key Features

- ▶ Dedicated G.SHDSL modem with remote management
- ▶ Operates over 2-wire and 4-wire lines, enabling service over any copper infrastructure
- ▶ Utilizes TC-PAM line coding for extending the operation range to 12.0 km and eliminating the need for repeaters
- ▶ Operates at multiple data rates between 64 kbps and 4608 kbps enabling single-platform system upgrades
- ▶ Supports X.21, V.35, G.703/G.704 E1 and Ethernet interfaces, allowing connection to different DTE types
- ▶ Supports embedded operation channel for end-to-end system management and supervision as per ITU-T G.991.2
- ▶ Provides extensive diagnostics, including loopbacks, G.SHDSL and E1 performance monitoring

MDSR52, a G.SHDSL modem, operates in full duplex mode over 2-wire and 4-wire lines.

MDSR52 supports multiple data rates in the range of 64 to 4608 kbps. The data rates depend on the line interface and DTE interface types, and operating clock modes.

MDSR52 employs standard G.SHDSL TC-PAM technology to extend the transmission range (see Table 1 and Table 2), enabling carriers to reach more customers at lower costs.

MDSR52 supports X.21, V.35 and G.703/G.704 E1 interfaces. In addition, the modem supports Ethernet interface modules with a built-in bridge with VLAN support (UTP) or an IP router (IP), which allow LAN-to-LAN connectivity using G.SHDSL technology.

The modem uses an Embedded Operation Channel (EOC) for controlling and monitoring the remote unit. The management channel uses G.SHDSL overhead bits, operating

without interfering with the data transmission in compliance with the ITU-T G.991.2 requirements.

Master units with 4-wire line interface can be configured to operate over 2-wire lines.

MDSR52 is managed via an ASCII terminal connected to the modem's supervisory port by an embedded menu-driven software.

MDSR52 has comprehensive diagnostics capabilities that including:

- Real-time alarms to alert user on fault conditions
- V.54 local analog and remote digital loopbacks
- G.SHDSL and E1 statistics collection for 15-minute and day intervals.

The modem provides high voltage line protection in compliance with ITU K.21 and UL1950.

Table 1. Typical MDSR52 Ranges over 2-Wire Lines (24 AWG)

Data Rate kbps	Range km
64	12.0
128	11.0
256	8.0
512	7.0
1024	6.2
2048	5.0
2304	4.2

Table 2. Typical MDSR52 Ranges over 4-Wire Lines (24 AWG)

Data Rate kbps	Range km
384	8.7
512	7.7
1024	7.0
2048	6.0
4608	3.5

Note: Typical ranges are based on the error-free real line lab tests without noise.

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Ordering information

ITEM	CODE
G. SHDSL 4.6 MBPS, 4 wire	
IP-Router with remote management, master unitMDSR52M-IP
IP-Router with remote management, slave unitMDSR52S-IP
Bridge (VLAN) with remote management, master unitMDSR52M-UTP
Bridge (VLAN) with remote management, slave unitMDSR52S-UTP
V.35 with remote management, master unitMDSR52M-V35
V.35 with remote management, slave unitMDSR52S-V35
X.21 with remote management, master unitMDSR52M-X21
X.21 with remote management, slave unitMDSR52S-X21