ASM-60

4-Wire Symmetrical VDSL-Based Modem

- ASM-60 is managed via an ASCII terminal connected to the front-panel supervisory port. The embedded menu-driven software allows to perform the following activities:
  - Data rate selection
  - Modem's status display
  - VDSL statistics collection
  - Real time alert of fault conditions.

FEATURES

- 4-wire VDSL-based modem, enabling symmetrical full duplex data transmission for ranges of up to 2.0 km (1.2 miles)

- Supports data rates of up to 10.24 Mbps (depending on application)

- Employs VDSL QAM line coding for better bandwidth utilization

- Supports Ethernet and high speed DTE interfaces

- Setup, control and monitoring via an ASCII terminal connected to the supervisory port

- Diagnostics include LED testing and VDSL performance monitoring

DESCRIPTION

- ASM-60, a VDSL-based modem, operates in full duplex over 4-wire 19–26 AWG lines.

- Transmitting data at 4.096 Mbps, 6.144 Mbps or 10.24 Mbps, ASM-60 eliminates the need for fiber optic cables in the last mile (local loop) or campus network environment.

- ASM-60 uses the VDSL QAM technology to improve the bandwidth utilization and ensure efficient transmission, even over poor quality lines.

- Two versions of the modem are available:
  - ASM-60/CO, for installation at central office
  - ASM-60/CPE, for installation at customer premises.

- DTE interfaces supported:
  - HSSI
  - Ethernet bridge (IR-ETH)
  - 10/100BaseT bridge with VLAN support (IR-ETH/QH)
  - IP router (IR-IP).

Table 1. Typical ASM-60 Ranges over 24 AWG STP Cat. 5 Lines

Data Rate	Range	
[Mbps]	[km]	[miles]
4.096	2.0	1.2
6.144	2.0	1.2
10.24	1.8	1.1

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SPECIFICATIONS

LINE INTERFACE

- **Type**
  4-wire, unconditioned dedicated lines (twisted pair), Cat.3 and Cat.5, 19 AWG to 26 AWG

- **Line Coding**
  QAM

- **Range**
  See *Table 1*

- **Output Level**
  11 dBm

- **Impedance**
  100Ω

- **Return Loss**
  More than 15 dB

- **Carrier**
  Constantly ON

DTE INTERFACE

- **Data Rate**
  User-selectable: 4.096, 6.144 or 10.24 Mbps

- **Type**
  - HSSI: SCSI 50, female
  - IR-ETH (Ethernet bridge): RJ-45 or BNC coax
  - IR-ETH/QH (Ethernet/Fast Ethernet bridge with VLAN support): RJ-45
  - IR-IP (IP router): RJ-45

SUPERVISORY PORT

- **Interface**
  V.24 (RS-232)

- **Type**
  DCE

- **Format**
  8 bits, no parity, 1 stop bit

- **Data Rate**
  19.2 kbps

- **Connector**
  9-pin, D-type female

GENERAL

- **Diagnostics**
  Performance monitoring by collecting VDSL statistics

- **Indicators**
  PWR (green) – Power
  RTS (yellow) – Request to Send
  DCD (yellow) – Data Carrier Detect
  TD (yellow) – Transmit Data
  RD (yellow) – Receive Data
  ALM (yellow) – Alarm
  TST (red) – Test
  SYNC A/B (red/green) – Synchronization Line A/Line B

- **Power**
  100 to 240 VAC (±10%), 50 to 60 Hz

- **Power Consumption**
  6W

- **Physical**
  Height: 44   mm / 1.7 in
  Width: 215 mm / 8.5 in
  Depth: 243 mm / 9.5 in
  Weight   1.0   kg   / 3.5 lb

- **Environment**
  Temperature: 0–50°C/32–122°F
  Humidity: Up to 90%, non-condensing

ORDERING

ASM-60/CO/#
4-wire symmetrical VDSL-based modem for central office installation

ASM-60/CPE/#
4-wire symmetrical VDSL-based modem for customer premises installation

Specify DTE interface:
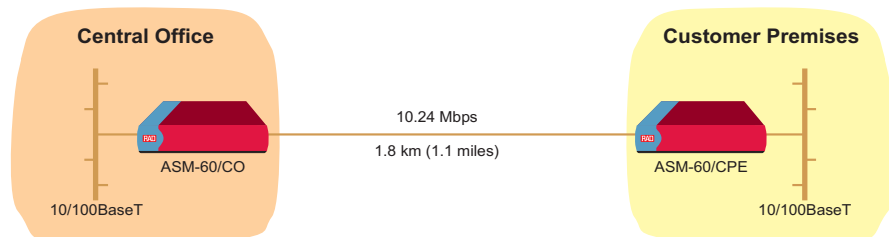 **HSSI** for HSSI interface
  UTP for IR-ETH module with RJ-45 connector
  BNC for IR-ETH module with BNC connector
  UTP/QH for IR-ETH/QH module
  IP for IR-IP module

APPLICATION

Central Office — ASM-60/CO — 10/100BaseT
10.24 Mbps
1.8 km (1.1 miles)
Customer Premises — ASM-60/CPE — 10/100BaseT