ASM-40

High Speed Short Range Modem

RAD

- Transmit and receive timing can be provided internally, or derived externally from the data terminal or receive signal. Internal FIFOs provide jitter attenuation or phase difference correction either from the incoming analog signal (line side) or from the external clock on the DTE side.

- ASM-40 has comprehensive diagnostics capabilities that including:

  - Local analog, remote digital and local digital loopbacks in compliance with ITU V.54 requirements

  - Built-in pattern generator and tester in compliance with ITU V.52 requirements.

- ASM-40 is also available as a plug-in card for RAD's ASM-MN-214, 19-inch card cage.

FEATURES

- High speed, synchronous short range modem

- Operates in full duplex over unconditioned 4-wire lines or BNC coaxial cable

- Utilizes HDB3, AMI or B8ZS line coding for extending the operation range to 1.75 km (1 mile)

- Operates at 2048, 1544, 1536, or 1920 kbps line rate

- Supports a wide range of serial and Ethernet DTE interfaces, operating at 13 user-selectable data rates

- Can be used in rate and interface conversion applications

- Conforms to special telecom standards (Austel, TUV, BABT etc)

- Provides extensive diagnostics, including loopbacks and BER testing

- Available as a card for RAD's ASM-MN-214 card cage

DESCRIPTION

- ASM-40, a synchronous short range modem, operates in full duplex over 4-wire lines or BNC coaxial cable. The modem extends data transmission range for up to 1.75 km (1 mile).

- ASM-40 employs HDB3, AMI or B8ZS line coding in compliance with the G.703 standard requirements.

- ASM-40 supports a wide range of serial and Ethernet interfaces, including V.24, V.35, X.21, V.36, RS-530, G.703-HDB3, G.703 Codirectional, IR-ETH (Ethernet bridge), Ethernet bridge, Ethernet bridge with VLAN support, Ethernet/Fast Ethernet bridge with VLAN support, IP router.

- The modem line rates support different data rates, which enables ASM-40 to be used as a rate converter:

  - **2048 kbps** – 32, 64, 128, 256, 512, 1024 and 2048 kbps

  - **1536 kbps** – 192, 384, 768 and 1536 kbps

  - **1544 kbps** – 1544 kbps

  - **1920 kbps** – 1920 kbps.

- ASM-40 operation complies with the AUSTEL (A95/76A/0020), TUV (E9471050.01), BABT and NET-1 requirements.

ASM-40

High Speed Short Range Modem

SPECIFICATIONS

LINE INTERFACE

- **Line Type**
  - Unloaded 4-wire twisted pair, 19 to 26 AWG
  - BNC coaxial cable, 75Ω
- **Line Code**
  User-selectable: HDB3, AMI or B8ZS
- **Framing**
  Unframed
- **Transmit Level**
  According to G.703
- **Line Rate**
  2048, 1544, 1536, 1920 kbps

- **Impedance**
  - 75Ω for 2048 and 1920 kbps, unbalanced (BNC coax)
  - 100Ω for 1544 and 1536 kbps, balanced
  - 120Ω for 2048 and 1920 kbps, balanced
- **Return Loss**
  Better than 15 dB
- **Attenuation**
  Up to 40 dB
- **Range**
  1.75 km (1 mile) over 24 AWG wire

- **Connector**
  DB-15 or 5-clip terminal block:
  - 100Ω for 1544 kbps and 1536 kbps, balanced
  - 120Ω for 2048 kbps and 1920 kbps, balanced
  BNC coax:
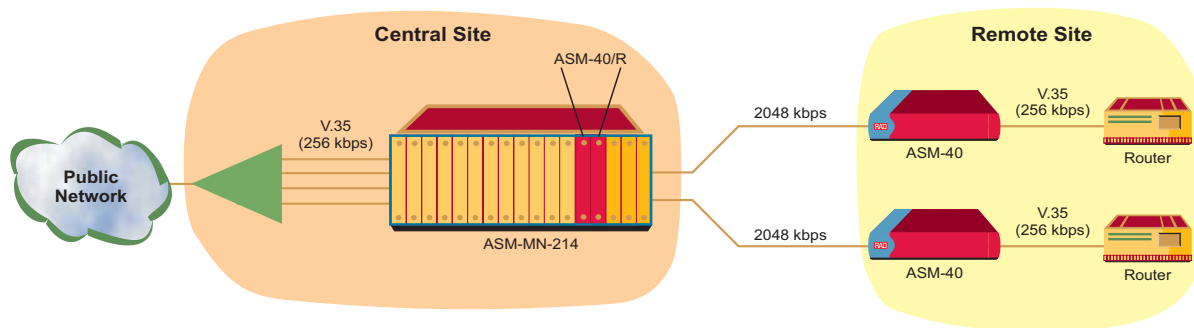 - 75Ω for 2048 and 1920 kbps, unbalanced

APPLICATIONS

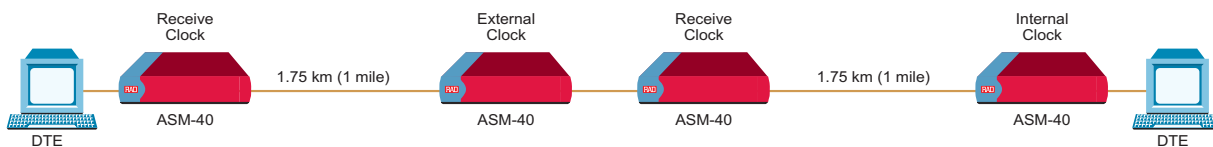**Figure 1. Point-to-Point Interface and Rate Conversion Application**

Figure 2. Tail-End Application for DDS Service

DTE INTERFACE

- **Type**
  - V.24: 25-pin, D-type, female
  - V.35: 34-pin, female
  - X.21: 15-pin, D-type, female
  - RS-530: 25-pin, D-type, female
  - V.36: via adapter cable converting between RS-530 connector and 37-pin, D-type, female connector
  - G.703-HDB3: 15-pin D-type, female or BNC coax
  - G.703 Codirectional: 5-clip terminal block or RJ-45
  - IR-ETH (Ethernet bridge): RJ-45 or BNC coax
  - IR-ETH/Q (Ethernet bridge with VLAN support): RJ-45
  - IR-ETH/QN (Ethernet/Fast Ethernet bridge with VLAN support): RJ-45
  - IR-IP (IP router): RJ-45

- **Data Rate**
  - 32, 64, 128, 192, 256, 384, 512, 768, 1024, 1536, 1544, 1920 or 2048 kbps
  - G.703-HDB3: 128, 256, 512, 1024, or 2048 kbps
  - G.703 Codirectional: 64 kbps

- **Signal Attenuation (G.703/HDB3)**
  6 dB

- **Output Level (G.703/HDB3)**
  ±3V

GENERAL

- **Timing**
  - Internal, from internal oscillator
  - External, from attached DTE
  - Receive, from received signal

- **Diagnostics**
  Loopbacks:
  - Local analog loopback in compliance with ITU V.54
  - Remote digital loopback in compliance with ITU V.54
  - Local digital loopback in compliance with ITU V.54
  BER testing:
  - Built-in pattern generator and tester in compliance with V.52 requirements

- **Indicators**
  PWR (green) – Power
  RTS (yellow) – Request to Send
  DCD (yellow) – Data Carrier Detect
  TD (yellow) – Transmit Data
  RD (yellow) – Receive Data
  TST (red) – Test
  ERR (yellow) – Error

- **Physical**
  ASM-40:

Height:	443	mm	/ 1.7	in
Width:	214	mm	/ 8.4	in
Depth:	258	mm	/ 10.1	in
Weight	0.88	kg	/ 1.9	lb

  ASM-40/R:
  Fits one slot in the ASM-MN-214 card cage

- **Power**
  AC: 100 to 240 VAC (±10%), 50 to 60 Hz, 6.8 VA max
  DC: 24 VDC (18 to 36 VDC) or -48 VDC (-36 to -72 VDC), 5.7W

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

ASM-40

High Speed Short Range Modem

ORDERING

ASM-40/*/#/@
High speed short range modem

ASM-40/R/@
High speed short range modem, card version for ASM-MN-214 card cage

Note: *When using V.35, X.21, V.36 or one of the Ethernet interface modules, a special interface adaper is required.*

* Specify power supply:
   AC for 100 to 240 VAC
   24 for 24 VDC
   48 for -48 VDC

Specify line connector:
   TB for balanced terminal block connector
   B for balanced DB-15 connector
   UB for unbalanced BNC coax connector

@ Specify DTE interface:
   V24 for V.24 interface
   V35 for V.35 interface
   X21 for X.21 interface
   530 for RS-530 interface
   703TB for G.703 Codirectional interface, terminal block connector
   703RJ for G.703 Codirectional interface, RJ-45 connector
   703 for G.703-HDB3 balanced interface
   703UB for G.703-HDB3 unbalanced interface
   UTP for IR-ETH module, RJ-45 connector
   BNC for IR-ETH module, BNC coax connector
   UTP/Q for IR-ETH/Q module
   UTP/QN for IR-ETH/QN module
   IP for IR-IP module

CIA/$
Connector interface adapter for the ASM-MN-214 modem rack

$ Specify CIA type:
   V35/1 for converting one DB-25 DTE connector into one 34-pin connector
   X21/1 for converting one DB-25 DTE connector into one DB-15 connector
   ETH for converting one DB-25 DTE connector into one RJ-45 connector
   TB-BNC/214 for converting one terminal block line connector into two BNC coax connectors

CBL-530/449F
Adapter cable converting one DB-25 connector into one DB-37 connector

RM-28
Special hardware for mouinting one or two ASM-40 units in a 19-inch rack