

SPD-703-1

G.703 Codirectional Rate and Interface Converter



Connects devices with Codirectional G.703 interfaces to devices with various serial and Ethernet interfaces

- Converts codirectional G.703 Interfaces to V.24/RS-232, V.35, X.21, RS-530, or Ethernet
- Operates with selectable timing source
- Meets G.823 jitter requirements

Recognizing the use of straight or cross cables, SPD-703-1 enables communication between devices with codirectional G.703 interfaces and such with V.24, V.35, X.21, RS-530, or Ethernet interfaces ETH/AGM operate at 64 kbps and covers a range of up to 0.8 km (0.5 miles).

In addition, SPD-703-1 can convert the rate from 48 kbps or 56 kbps to 64 kbps or non-Ethernet ports.

SPD-703-1 recovers the receive timing from the G.703 signal. The transmit timing is user selectable and can be either the recovered clock from the G.703 signal or the internal clock. Two internal 16-bit elastic buffers accommodate for difference in the clocking phase.

If the traffic rate becomes too high on the Ethernet interface and auto-negotiation is enabled, the control mechanism (FLC) reduces the traffic rate.

In Half-Duplex mode, if autonegotiation is disabled, collisions can be forced to create back pressure to ensure the flow of data.

SPD-703-1 supports activation of local analog, remote digital and local digital loopbacks according to ITU V.54. In addition, SPD-703-1 generates and tests a pseudo-random test pattern according to ITU V.52.

When operating at 48 kbps or 56 kbps, SPD-703-1 transfers RTS to DCD control signal end-to-end. Alternatively, the available bandwidth can be used for a 1.2 kbps async subchannel for connecting additional DTE equipment over the same link.

SPD-703-1 is available either as a standalone unit or as a card for the ASM-MN-214 rack.



SPD-703-1

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Specifications

DTE INTERFACE

Type

- V.24/RS-232: 25-pin, D-type, female
- V.35: 34-pin, female
- X.21: 15-pin, D-type, female
- RS-530: 25-pin, D-type, female
- Ethernet: RJ-45

Data Rate

48, 56 or 64 kbps

Note: Ethernet interfaces operate at 64 kbps only.

Spare Bandwidth Utilization

- Additional 1.2 kbps async channel
- Transfer of RTS to DCD control signal end-to-end
- Fixed "1" to guarantee "1"s density over T1 network

Note: Available when operating non-Ethernet interfaces at 48 or 56 kbps.

GENERAL

Timing

Receive (LBT), derived from G.703 receive pair:

- RC and TC delivered from SPD-703-1 to DTE
- RC from SPD-703-1 and TC from an external tail modem
- RC and TC from an external DCE to SPD-703-1

External (EXT): from DTE

Internal (INT): from an internal source.

Clock Frequency

64 kHz

Frequency Tracking

±500 ppm

"Pulse" Amplitude

1.0V nominal

"Zero" Amplitude

0V±0.1V max

Jitter Performance

According to G.823 requirements

Connector

5-clip terminal block

Diagnostics

V.54 loopbacks:

- Local analog (ANA), activated using front panel or DTE.
- Remote digital (REM), activated using front panel or DTE.
- Local digital (DIG), activated using front panel.

BERT:

- Internal pattern generator and tester in compliance with V.52

Note: ANA and REM loopback activation using DTE is not available for X.21 and Ethernet interfaces.

Power

AC/DC: 100 to 240 VAC
or -48 VDC (-42 to -72 VDC)

Power Consumption

5W

Physical

Height: 4.4 cm (1.7 in)
Width: 21.5 cm (8.5 in)
Depth: 24.0 cm (9.6 in)
Weight: 1.4 kg (3.1 lb)

Environment

Temperature: 0–50°C (32–122°F)

Humidity: Up to 90%,
non-condensing

Ordering

SPD-703-1/*/#

G.703 rate and interface converter

SPD-703-1/R/#

G.703 rate and interface converter, card version for the ASM-MN-214 modem rack.

Legend

- * Power supply (for standalone units):
 - 115 115 VAC
 - 230 230 VAC
 - 48 -48 VDC
- # DTE Interface:
 - V35 V.35 interface
 - 530 RS-530 interface
 - X21 X.21 interface
 - UTP Built-in Ethernet bridge (RJ-45)

OPTIONAL ACCESSORIES

CIA/&

Connector interface adapter for the ASM-MN-214 modem rack

& Connector type:

- V35/1 One modem rack 25-pin connector to one V.35 34-pin connector
- X21/1 for adapting one modem rack 25-pin connector to one X.21 15-pin connector

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