G.703 Technology

Overview of 64 kbit/s Converters

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G703/64A Pack

Single Port G.703/64K Series Converters

*Model No: G703/64A-V35* *Model No: G703/64A-X21* *Model No: G703/64A-232*

The G.703/64A interface converter allows full conversion between G.703/64Kbps and ITU-T V.35, X.21 or EIA RS-232 hardware. The interface converters are very easy to implement. Simply connect the appropriate interface cables, connect the external DC power adapter, and select the required timing for translation. This product family features full compliance with all the relevant ITU-T & EIA standards under 64Kbps network environments with high reliability. This product can be used widely in the Packet Switching Network, ISDN and DDN. It is also useful for data terminals to access PCM, 64K/2048Kbps digital channels as well as digital microwave channels. Additionally, it can be connected to Satellite Communication Channels such as SPAR series.

Features

- Selectable codirectional, centradirectional or contradirectional
- Single port access to 64Kbps services
- Interface conversion between G.703/64K and V.35, X.21 and RS-232
- Diagnostic Loopback
- Data rate: 64Kbps for Synchronous mode
              19.2Kbps for Asynchronous mode
- Fully transparent signal conversion
- DC +9V input power AC adaptor included.
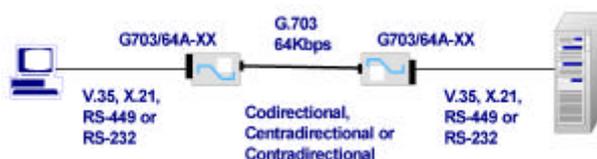
Specifications

ITU-T G.703 interface specification

TYPE	Codirectional, centradirectional or contradirectional 64Kbps
Line	4/6 wires, 19 to 26AWG twisted-pair cable
Range	Up to 800 meters over 24AWG wire
Impedance	120 Ohms
Pulse amplitude	$1.0V \pm 10\%$
Zero amplitude	$0V \pm 0.1V$
Clock frequency	64KHz
Frequency tracking	± 500ppm
Interface connector	RJ-45
Complies with	ITU-T G.703 and G.823
Frame format	Unframed only
Line code	Codirectional or AMI

Data communications interface specifications

Interface Type	RS-232 ; DB25 Female
	V.35 ; DB25 - MB34 adapter cable
	X.21 ; DB25 - DB15 adapter cable
Data rate	64Kbps for synchronous
	19.2Kbps for Asynchronous
Connector	DB25/F with adapter cables
	Balanced for V.35 and X.21
	Unbalanced for RS-232

Indicators

Signal Loss	G.703 Receive signal loss
Timing Loss	G.703 Receive timing loss
RD	Receive data
SD	Send data
POWER	DC9V input power
GRD	G.703 side receive data
GSD	G.703 side transmit data

Application

G703/64A-XX   G.703 64Kbps   G703/64A-XX

V.35, X.21, RS-449 or RS-232

Codirectional, Centradirectional or Contradirectional

V.35, X.21, RS-449 or RS-232

Ordering Information

- **G703/64A-XXX**

  Optional cable:
  V.35, X.21, RS232
  RS449, RS530

- **Example :**
  G703/64A-V35

  G.703/64A Pack with V.35 cable

G703/64A-STD *Standalone*

Single Port G.703/64k Series Converters

The **G703/64A-STD** interface converter allows full conversion between G.703 64Kbps services and a number of Data Port Interfaces including ITU V.35, X.21, RS-530, RS-449 and EIA RS-232 hardware. The interface converters are very easy to implement. Simply select the model and appropriate interface settings and adapter cable, configure the required timing for translation via internal DIP switches, and connect to AC power. This model features full compliance with all the relevant ITU & EIA standards under 64Kbps network environments with high reliability.

This product may be used widely in the Packet Switching Network, ISDN and DDN. It is also useful for data terminals which access PCM, 64K/2048Kbps digital channels as well as digital microwave channels. Additionally, it may be connected to Satellite Communication Channels such as SPAR series.

G703/64A-STD/AC
G703/64A-STD/48
G703/64A-STD/24

Data Communications Interface Specifications :
- **Interface Type :** RS-530; DB25F connector. RS-232; DB25F connector. V.35; MB34F adapter cable. X.21; DB15F adapter cable. RS-449; RS-530 to DB37M adapter cable.
- **Data rate :** 64Kbps for synchronous. 19.2Kbps for Asynchronous.
- **Data type :** Balanced for V.35, X.21, RS-530, RS-449 Unbalanced for RS-232.

Features

- Single port access to G.703 64Kbps services.
- Supports Interface for V.35, X.21, RS-530, RS-449 and RS-232.(DIP Setting & adapter cable)
- Data rate: 64Kbps for Synchronous mode. 19.2Kbps for Asynchronous (RS-232) mode.
- Fully transparent signal conversion.
- Diagnostics: local and remote analog and local digital loopback.
- Selectable timing modes: recovery, transparent, dataport or internal OSC.
- Data Port provides 10 bit FIFO.
- Accepts 90~240VAC input power.

LED Indicators

- **PWR** Input Power applied.
- **TD** Transmit data.
- **RD** Receive data.
- **RTS** Request To Send (Data).
- **DCD** Data Carrier Detect (Data).
- **TX** Transmit data (G.703).
- **RX** Receive data (G.703).
- **Signal Loss** G.703 side received data loss.
- **Timing Loss** G.703 side sync loss.
- **Err** Error in timing or received data.
- **Test** Loopback test active.

Specifications

ITU-T G.703 Interface Specifications :
- TYPE Codirectional/Contradirectional/ Centradirectional 64Kbps
- Line 4/6 wires, 0.5 -0.7mm twisted pair cable.
- Range Up to 800 meters over 24AWG twisted pair or better.
- Impedance 120 Ohms.
- "Pulse" amplitude 1.0V Nominal±10%.
- "Zero" amplitude 0V Nominal±0.1V.
- Clock frequency 64Kbps.
- Frequency tracking ±100ppm
- Interface connector DB9F.
- Complies with ITU-T G.703 and G.823.
- Frame format: Unframed only.
- Line code 64Kbps codirectional, contradirectional or centradirectional line code, selectable.

Ordering Information

G703/64A- STD/AC
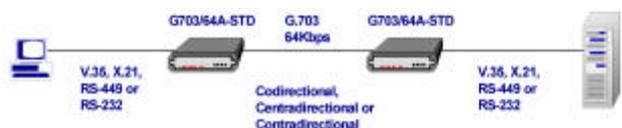   G703 Rack standalone with AC adapter & cable
G703/64A-STD/48
   G703 Rack standalone with DC 24V adapter & cable
G703/64A-STD/24
   G703 Rack standalone with DC 48V adapter & cable

Application

RM-G703/64

G.703/64K Rack Mount

The **RM-G703/64** is a Rack Type G.703/64K Interface Conventor for network access which is nested in a hub and provides an economic solution for central site users. There are 12 slots available for **RM-G703/64** cards for installation into the **RM-G703/64** rack. An optional SNMP card can be installed into the last slot for configuration and management. The SNMP card provides both local control via an RS-232 craft port and remote management using industry standard SNMP protocol via an Ethernet 10 Base-T connection.

The **RM-G703/64** allows full conversion between G.703 64Kbps services and a number of Data Port Interfaces including ITU V.35, X.21, RS-530, RS-449 and EIA RS-232 hardware. The **RM-G703/64** is very easy to implement. Simply select the model and appropriate interface settings and adapter cable, configure the required timing for translation via DIP switches on the card. This model features full compliance with all the relevant ITU & EIA standards under 64Kbps network environments with high reliability. This product may be used widely in the Packet Switching Network, ISDN and DDN. It is also useful for data terminals which access PCM, 64K/2048Kbps digital channels as well as digital microwave channels. Additionally, it may be connected to Satellite Communication Channels such as SPAR series.

The **RM-G703/64** optionally accommodates up to two separate power supplies, which may derive power from AC (110/220) or DC (-48V) power sources. When two power supplies are installed, the modules provide power redundancy and are hot swapable even during the I/O cards' transmission.

Features

- Central HUB Solution in a Standard 19" Rack. Up to 12 I/O cards may be installed.
- High density & compact design in a 4U high rack.
- Single port access to G.703 64Kbps services.
- Supports Interface for V.35, X.21, RS-530, RS-449 and RS-232.
- Data rate: 64Kbps for Synchronous mode. 19.2Kbps for Asynchronous (RS-232) mode.
- Fully transparent signal conversion.
- Diagnostics: local and remote analog and local digital loopback.
- Selectable timing modes: recovery, transparent, dataport or internal OSC.
- Data Port provides 10 bit FIFO.
- Accepts 90~240VAC input power. Hot Swapping of cards and redundant power supplies supported.
- Optional console port allows terminal to setup and monitor operation locally.
- Optional SNMP network management system card.
- LED Line status display on each card.

PWR	Sig-Loss
TD	Sync-Loss
RD	Err
Alarm	

- All Interface connectors are on the Rear Panel.

Specifications

ITU G.703/64K Interface Specifications :

- TYPE Codirectional/64Kbps
- Line 4 wires, 0.5 -0.7mm twisted pair cable.
- Range Up to 800 meters over 24AWG twisted pair or better.
- Impedance 120 Ohms.
  "Pulse" amplitude 1.0V Nominal±10%.
  "Zero" amplitude 0V Nominal±0.1V.
- Clock frequency 64Kbps.
- Frequency tracking±100ppm
- Interface connector wire-wrap connector.
- Complies with ITU-T G.703 and G.823.
- Frame format: Unframed only.
- Line code 64Kbps codirectional.

RM-G703/64

Interface Converter Family

Specifications (Cont.)

**Data Communications Interface Specifications :**

- **Interface Type :**
  RS-530; DB25F adapter cable.
  RS-232; DB25F adapter cable.
  V.35; MB34F adapter cable.
  X.21; DB15F adapter cable.
  RS-449; DB37M adapter cable.
- **Data rate :** 64Kbps for synchronous.
  19.2Kbps for Asynchronous.
- **Data type :** Balanced for V.35, X.21, RS-530,
  RS-449 Unbalanced for RS-232.

Data Port (Misc.)

- **Control signals**
  CTS constantly ON
  DSR constantly ON,
    except during test loops
  DCD constantly ON or follows RTS,
    except during signal loss

Ordering Information

RM-G703/64-Chassis	RACK Cage
RM-G703/64/AC	AC power plug-in module
RM-G703/64/DC	DC-48V power plug-in module
RM-G703/64 card	G.703/64K Line card
RM-G703/64/SNMP	SNMP plug-in card-

Secondary power — Terminal block / Interface connector
Main power (AC or DC)
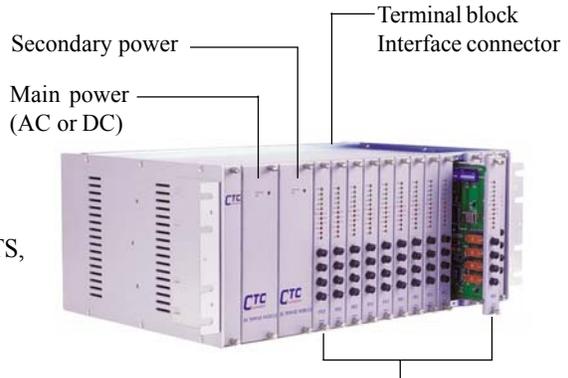
12 line card can be installed into the rack, 1 slot reservd for SNMP optional

RM-G703/64 OVERVIEW

Interface Connection

RM-G703/64/V35

RM-G703/64/RS232
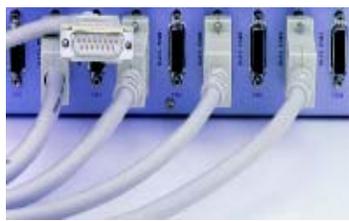
RM-G703/64/X21

RM-G703/64/RS530

RM-G703/64/RS449

Application

Data Comm V.35, X.21, RS-449, RS-530

G.703-64K Codirectional

G703/64KA Pack — Router

Data Comm V.35, X.21, RS-449, RS-530

Multiple twisted pairs

G703/64K-STD — Router

Modular Router — RM-G703/64