

## Co-Directional G.703 Converters



### The Patton Model 2070 Series

#### FEATURES

- ◇ Bi-directionally converts **V.24, X.21** or **V.35** to G.703/64k co-directional
- ◇ Synchronous operation at **64 kbps**
- ◇ Internal, external or network clocking options
- ◇ Point-to-Point distance up to 5250 ft (1600m) on 24 AWG (.5mm) twisted pair
- ◇ Complies with CCITT/ITU G.823 Jitter Control Specifications
- ◇ Built-in surge protection and transformer isolation

The Patton Model 2070 Series interface converters allow a router—or similar WAN device—with a V.24 (RS-232), V.35 or X.21 port to connect to a G.703/64k co-directional (PCM) network. Offering switchable internal, external or network clocking options, the Patton Model 2070 Series converters support bi-directional, synchronous communication at a data rate of 64 kbps.

The Patton Model 2070 Series includes three variations: The Model 2070/AM plugs directly into an RS-232 DTE, and is equipped with a male DB-25 connector. The Model 2070/CM plugs directly into a V.35 DTE, and is equipped with an M/34 male connector. The Model 2070/DM plugs into an X.21 DTE, and is

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## DESCRIPTION

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equipped with a male DB-15 connector at the end of a 6" (15.25cm) cable. All versions come with an RJ-45 jack for 120 ohm twisted pair network termination (termination to a 75 ohm network can be accomplished using the Patton Model 460 balun—see below).

Patton Model 2070 Series converters incorporate local loopback and G.703 loopback diagnostic modes. Diagnostic modes are controlled by a switch, or by

the local DTE (V.24 or V.35 versions only). Rear panel LED indicators monitor Test Mode and Synchronization.

Synchronous clock jitter is attenuated in accordance with the G.823 specification. For protection against ground loops and transient surges, the Patton Model 2070 Series converters incorporate both transformer isolation and surge protection.

Power is supplied to the Patton Model 2070 Series converters by an external power supply. When used in a point-to-point environment, distances up to 5250 feet (1600m) are attainable using two 24 AWG (.5mm) twisted pairs.

## MORE FOR G.703

### G.703 Balun Adapter

When faced with the problem of connecting a piece of 120 ohm twisted pair hardware to a 75 ohm dual coax G.703 network, the perfect solution is Patton's Model 460 balun. (And by the way, the Model 460 works the other way 'round as well! )

### 2 Mbps G.703/E1 Converter

The Patton Model 2703 is both a 2.048 Mbps G.703/E1 interface converter (facilitating connection to EIA-530, V.36/RS-422, V.35 or X.21 hardware) and a rate adapter (accommodating DTE data rates of 256 kbps, 512 kbps, or 1.024 Mbps). In addition, both 120 and 75 ohm connections are standard.

## Patton has Even More G.703 Networking Products

*The Patton Model 460*



*The Patton Model 2703*



**PATTON**  
Electronics Co.

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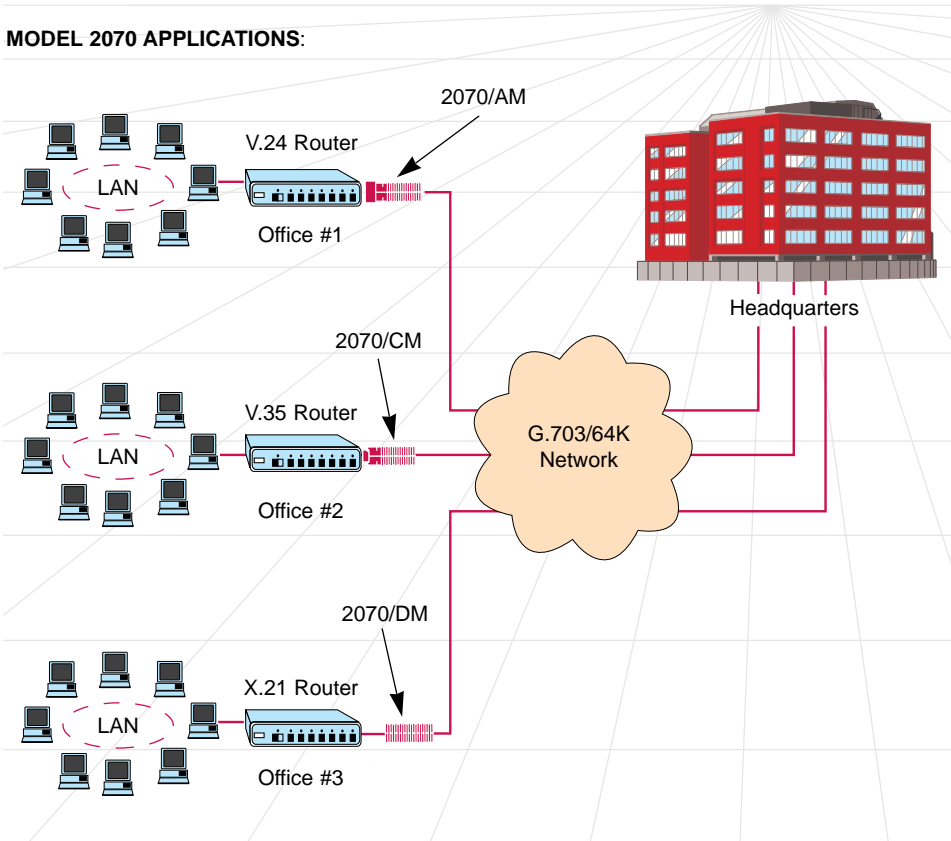
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# APPLICATIONS

The Patton Model 2070 Series is the perfect solution for connecting a router or other WAN device to a 64 kbps G.703 network: Their small size allows the Patton Model 2070 Series converters to plug directly into a DTE port, almost like a cable—they have no “footprint” at all! Besides their ultra-compact size, the

Patton Model 2070 Series converters are also available in three DTE interface types—V.24 (DB-25), V.35 (M/34) and X.21 (DB-15)—for easy adaptation to the myriad of brands and models in the WAN hardware marketplace. Whatever 64kbps G.703 connection you need to make, there’s likely a Patton Model 2070 Series converter that will plug right in! (And remember, these converters will operate point-to-point too.)

## MODEL 2070 APPLICATIONS:



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# SPECIFICATIONS

**Approvals:** CE Mark (X-Permission to Connect).

**Compliance:** FCC Class A; EN 55022, (EMC Emissions); EN 50082-1, (EMC Susceptibility); EN 60950, (LVD Safety); CTR 14, (Type Approval).

**Applications:** G.703/64k co-directional PCM network or CSU/DTE conversion to CCITT/ITU V.24, CCITT/ITU V.35, or CCITT/ITU X.21

**G.703 Interface:** Symmetrically balanced pairs, 4 wire, 120 Ohm terminated to female RJ-45.

**Terminal Interface:** *Model 2070/AM* CCITT/ITU V.24 Sync., DCE; *Model 2070/CM* CCITT/ITU V.35 Sync., DCE; *Model 2070/DM* CCITT/ITU X.21 Sync., DCE.

**Operating Speed:** Co-directional timing, Rx recovered: 64kbits  $\pm$  500ppm.

**Clocking:** Internal, External or Network Timing

**G.703 Input Signal Level:** 2.0V differential, into 120 Ohms, nominal.

**Max. Cable Loss:** 0 to -10dB

**Line Encoding:** AMI

**Jitter Performance:** CTR 14, G.823

**Surge Protection:** Device Response Time = 100ns; Clamp Voltage = 8.5V  $\pm$ 1V.

**Isolation:** 1500 VRMS isolation, transformer coupled.

**Indicators:** LED's monitor TM and SYNC.

**Power Requirements:** 5VDC @ 300mA, supplied by external transformer or on these DTE pins: pin 9 (V.24), pin KK (V.35), pin 15 (X.21)

**Power Supply:** 120VAC, 60Hz external wall mount transformer with North American power plug; UI, 100-240VAC, 50/60Hz external input transformer with IEC-320 input connector

**Temperature Range:** 32-140°F (0-60°C)

**Altitude:** 0-15,000 feet (0-4572m)

**Humidity:** 5 to 95% noncondensing

**Dimensions:** *Model 2070/A* 4.90" x 2.00" x 0.73" (12.45 x 5.08 x 1.85 cm); *Model 2070/C & 2070/D* 3.40" x 2.00" x 0.73" (8.63 x 5.08 x 1.85 cm).

# ORDERING INFO

**Factory Part Numbers:**

**2 0 7 0 / I T / P S**

**Interface Type (IT):**

AM = V.24, DB-25M

CM = V.35, M/34M

DM = X.21, DB-15M

**Power Supplies (PS):**

120 = 120VAC, wall mount type

UI = Universal Input, 100-240VAC, accepts standard international power cords

(**note:** power cord is not included with UI power supply. Customer may supply country-specific power cord, or may purchase country-specific power cord from Patton Electronics Company)

**Examples:** .....

**2070/AM/120**  
(RS-232, DB-25 male, 120V power)

**2070/CM/120**  
(V.35, M/34 male, 120V power)

**2070/AM/UI**  
(RS-232, DB-25 male, **Universal Input** power)

**2070/CM/UI**  
(V.35, M/34 male, **Universal Input** power)

**2070/DM/UI**  
(X.21, DB-15 male on 6" (15.25cm) cable, **Universal Input** power)



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