

# *KiloModem*<sup>™</sup> 2-Wire/4-Wire Baseband Modem



## The Patton Model 1092A

### FEATURES

- ◇ Synchronous data rates of 32, 56, 64 and 128 kbps in all clock modes (Asynchronous data rates to 38.4 kbps)
- ◇ Full duplex operation over one or two twisted pairs (**2 or 4 wires**)
- ◇ 4-Wire distances up to **18 km** (all data rates) on 19 AWG twisted pair
- ◇ Replaceable interface modules: G.703, V.35, X.21, RS-422/530, V.24 (RS-232), Ethernet WAN bridge & data + voice
- ◇ **2B1Q** Modulation
- ◇ In-Band and Out-of-Band **remote management** capabilities

The **Patton Model 1092A KiloModem<sup>™</sup>** supports point-to-point, synchronous or asynchronous communication over one or two twisted pairs (2 or 4 wires). Offering switch selectable synchronous data rates of 32, 56, 64 and 128 kbps, the *KiloModem<sup>™</sup>* also supports asynchronous speeds up to 38.4 kbps. The *Kilo-Modem<sup>™</sup>* is an excellent choice for connecting two bridge/routers, or for similar networking applications at distances up to 11.4 miles/18.2 km (4 wires).

Using the 2B1Q modulation scheme, the *KiloModem<sup>™</sup>* is able to send remote management information on the “D” channel. This means that a terminal connected to the *KiloModem's* RS-232 control port can be used to send in-band

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# SPECIFICATIONS

**Transmission Format:** Sync or Async  
**Transmission Line:** Full duplex over one or two unconditioned twisted pairs (2 or 4 wires)  
**Line Encoding:** 2B1Q with Integrated Echo Cancellation.  
**Clocking:** Internal, external or receive loopback  
**Distance:** Up to 11.4 m/18.2 km (see table below)  
**Data Rates:** 32, 56, 64, 128, synchronous (switch selectable); 0 - 38.4 kbps, asynchronous  
**Carrier Control:** "Constantly on" or "Contr. by RTS"  
**RTS/CTS Delay:** no delay, short delay (4-8 ms), or long delay (33-58 ms)  
**Diagnostics:** local analog loopback, remote digital loopback, V.52 compliant bit error rate pattern (511/511E pattern) generator and detector with error injection mode  
**LED Status Indicators:** Dual red/green LEDs for TD, RD, CTS and DC; green for DTR; red for ER, TM and NS  
**Isolation & Protection:** 1500V RMS (gas tube surge protection optional)  
**DTE Interface:** Depends upon interface module

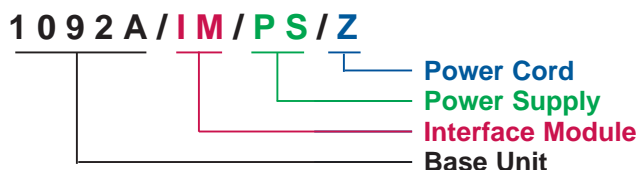
**Twisted Pair Interface:** RJ-45 jack  
**Power:** 120/230 VAC (switch selectable), 50/60 Hz; 100 - 240 VAC, 50/60 Hz (universal input option); 48 VDC (option). 5 watts.  
**Compliance:** CE Marked per EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC. UL and cUL Safety Approvals.  
**Dimensions:** 7.3" x 6.6" x 1.62" (185mm x 168mm x 41mm)  
**Weight:** 2.02 lbs.

Model 1092A 2-Wire Distances - Miles (Km)				
Data Rate (kbps)	Wire Gauge (AWG/mm)			
	19 (.7mm)	22 (.6mm)	24 (.5mm)	26 (.4mm)
128	10.8 (17.3)	7.2 (11.5)	5.0 (8.0)	3.4 (5.5)
64	10.8 (17.3)	7.2 (11.5)	5.0 (8.0)	3.4 (5.5)
56	10.8 (17.3)	7.2 (11.5)	5.0 (8.0)	3.4 (5.5)
32	10.8 (17.3)	7.2 (11.5)	5.0 (8.0)	3.4 (5.5)
0 - 38.4	10.8 (17.3)	7.2 (11.5)	5.0 (8.0)	3.4 (5.5)

Model 1092A 4-Wire Distances - Miles (Km)				
Data Rate (kbps)	Wire Gauge (AWG/mm)			
	19 (.7mm)	22 (.6mm)	24 (.5mm)	26 (.4mm)
128	11.4 (18.2)	7.6 (12.1)	5.3 (8.5)	3.6 (5.7)
64	11.4 (18.2)	7.6 (12.1)	5.3 (8.5)	3.6 (5.7)
56	11.4 (18.2)	7.6 (12.1)	5.3 (8.5)	3.6 (5.7)
32	11.4 (18.2)	7.6 (12.1)	5.3 (8.5)	3.6 (5.7)
0 - 38.4	11.4 (18.2)	7.6 (12.1)	5.3 (8.5)	3.6 (5.7)

# ORDERING INFO

Factory Part Numbers:



## Interface Modules:

**IM** = A = V24, DB25F  
 B = RS422/RS530, DB25F  
 C = V35, M34F  
 D = X21, DB15F

## Examples:

1092A/A/120/A (V.24 DB-25F interface module, 120 VAC power supply, US power cord)  
 1092A/E/230/D (G.703 RJ-48S interface module, 230 VAC power supply, UK power cord)

## Model 1092A KiloModem™, 2/4-wire, sync/async baseband modem

F = G703, RJ45  
 G = V.24, DB-25F (Async 57.6/115.2 kbps)  
 I = Ethernet WAN Bridge, RJ-45F  
 J = Data + Voice Combination (modular ports)

## Power Supplies:

**PS** = 120 = Switchable 120/230 Configured 120V  
 230 = Switchable 120/230 Configured 230V  
 UI = Universal Input Supply 100-240VAC  
 48 = 48 VDC

## Power Cord Sets:

**K** = American, **A** = European CEE 7, **D** = United Kingdom,  
**C** = Australia, **E** = Denmark, **F** = France/Belgium, **G** = India,  
**H** = Israel, **J** = Japan, **L** = Switzerland. (Others Available)



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## DESCRIPTION

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configuration and control commands to both the local and remote *KiloModems™*. In addition, the *KiloModem™* is able to send an out-of-band alarm signal through its control port.

The *KiloModem™* incorporates local analog and remote digital loopback test modes, as well as a V.52 BERT pattern generator. Eight front panel LED indicators (TD, RD, CTS, CD, DTR, No Signal, Error, and Test Mode) provide real-time

diagnostic information. Extended distances are accomplished using automatic equalization, gain control and echo cancellation. Data integrity is enhanced by transformer isolation and surge protection. Synchronous clocking options include internal, external and receive recovered clock. For flexible connection of WAN hardware, the *KiloModem™* accepts replaceable *QuikConnect™* interface modules. These modules adapt to a variety of popular terminal interfaces (see below). Standard AC power supply options include 120/230VAC (switchable) or 85-256VAC (universal). A 48VDC power supply is also available.

## SPECIAL FEATURE

The Ethernet Bridge QuikConnect Module (model no. IM1/I) adds transparent Ethernet bridging capability to all its CSU/DSU, fiber, shorthaul, baseband, and transmission products. Now, two remote LANs can be peered across a 2/4 wire leased line, T1 (DSX-1), G.703 (64K and E1), multi-mode fiber or 56/64 kbps DDS network through a screw-in QuikConnect package. The Ethernet Bridge Module is a Media

### *Ethernet Bridge QuikConnect™ Interface Modules*

Access Control (MAC) layer bridge and is transparent to layer-3 network protocols. It can be used in many environments, including IP, IPX, NetBIOS and DECnet™ LANs. The Ethernet Bridge Module connects to an 802.3 Ethernet LAN using a standard 10BaseT interface with an RJ45 connector. Its transparent bridging function allows broadcast, multicast and data frames to be passed.



**64K G.703**



**Ethernet Bridge**



**Voice + Data**



**V.35**



**X.21**



**RS-232, 422, 530**



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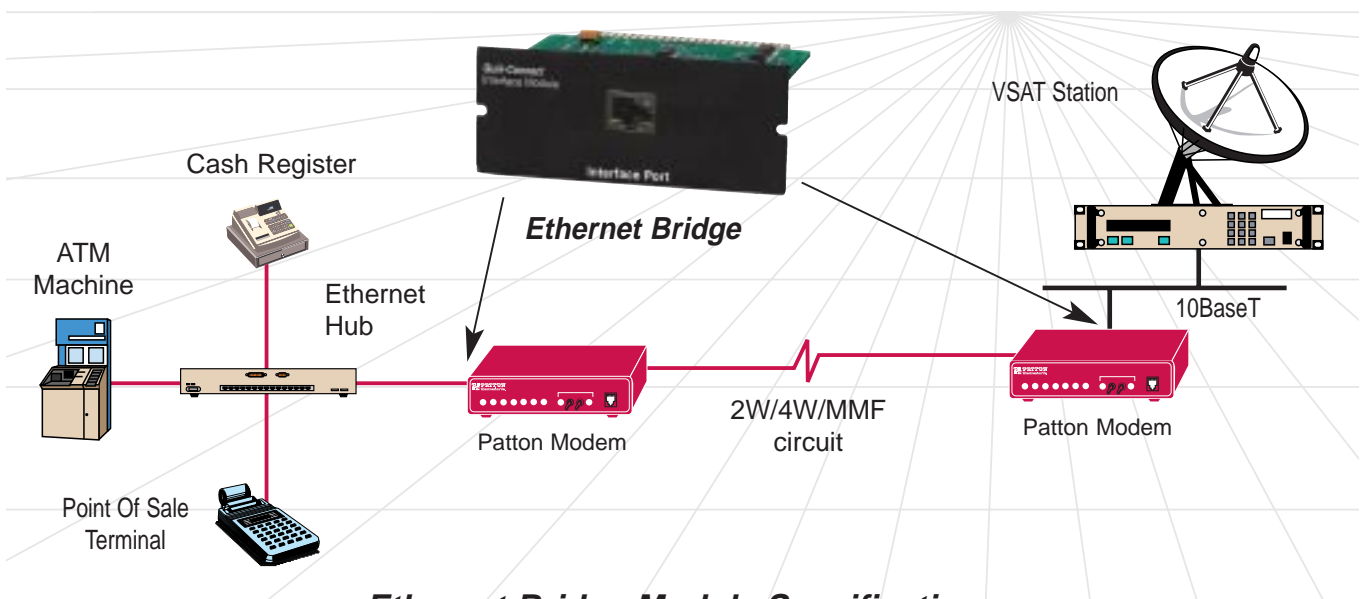
# APPLICATIONS

## Ethernet Bridge Module

The Ethernet Bridge Module is a likely solution for connecting LANs over fiber or copper in a campus. It can also be used to connect LANs between remote branches or satellite offices and the head office. In wide area networks, the Ethernet Bridge Module connects LANs across distances up to 18.2km at speeds up to 2.048Mbps.

The screw-in QuikConnect package allows the Ethernet Bridge Module to be installed into the rear panel of any Patton transmission product with two thumb-screws. No tools are necessary. Dual LEDs monitor the Ethernet link and CPU status. Scalable onboard RAM allows the Ethernet Bridge Module to buffer up to 4,000 frames.

Up to 4,096 MAC addresses are dynamically learned by the Ethernet Bridge Module and addresses age out of the table after a period of inactivity.



### Ethernet Bridge Module Specifications

<b>LAN Interface</b>	10BaseT to 802.3 Ethernet via RJ45 connector
<b>LAN Address Table</b>	4,096 MAC addresses
<b>Frame Latency</b>	1 frame
<b>Frame Buffer</b>	512 frames (standard), upgradeable to 4,000 frames
<b>WAN throughput</b>	Up to 2Mbps dependent on transmission product
<b>Address Aging</b>	1-20 minutes (factory configured)
<b>Approvals</b>	FCC Part 15, Class A; CE Mark per EEC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC
<b>Dimensions</b>	2.9" x 3.2" (7.36 x 8.12 cm)

