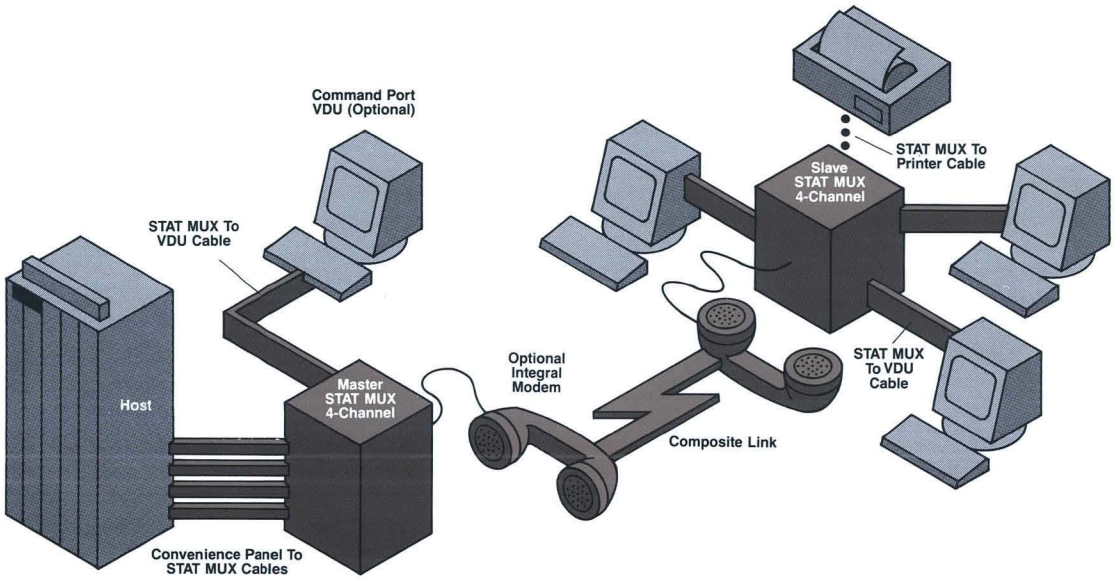
PERKIN-ELMER

Custom Product

POINT-TO-POINT STAT MUX

With Optional 9600-Baud Modem

Typical Customer Configuration



Product Description

The Perkin-Elmer Point-to-Point (Pt-Pt) Statistical Multiplexor (STAT MUX) is a high-speed data concentrator offered with optional integral modem. The Pt-Pt STAT MUX provides a communications link with up to 16 channels between a remote site and a central host.

A Pt-Pt STAT MUX system consists of a master STAT MUX at the host computer site with a slave STAT MUX at the remote site. Each channel at the master represents one RS-232 port at the host while each channel at the slave represents one printer or terminal.

All terminals at the remote site operate transparently to each other, while sharing a single, unconditioned, leased telephone line. The Pt-Pt STAT MUX thus eliminates multiple telephone line costs while maintaining an error-free link between the host and all terminals at the remote site.

An optional version with a 9600-baud built-in modem eliminates recurring modem costs while supplying a single source solution.

Specially designed microprocessor-based technology and statistical algorithms handle high throughput in the most efficient manner. A 15kb data buffer helps control the data flow and prevents data loss during periods of peak channel activity.

The STAT MUX provides numerous switch-selectable features: up to seven channels (printers) operating in a background mode, data compression during transmission over the communications line, and baud rate conversion between the remote and host site. Each master STAT MUX contains a Command Port for on-line testing, channel monitoring, and system configuration.

These units are simple to install, easy to configure, and require no special software modifications at the host for support. A front panel LED constantly exhibits channel and system status while comprehensive built-in diagnostics isolate faults quickly.

Features

- Connection for up to 16 terminals/printers at a remote site to a central host
- RS-232C channel interface
- Automatic retransmission on error and flow control to provide error-free channels
- XON/XOFF or clear-to-send buffer flow control
- 15k byte data buffer
- Command port control
- Self-test with fault detection display
- Data compression over the composite link
- Echoplex
- Baud rate conversion between the host and remote terminal(s)
- Background task (low-priority mode) operation for up to seven channels
- No unique software requirements

Optional Features

- Rack-mount kit*
- Module to allow up to four synchronous channels*
- Command port cable (K54-25X)
- 9600-baud integral modems

*Available by special quote only

Product Characteristics

The Pt-Pt STAT MUX is available in 2, 4, 8, 12 or 16-channel units. The optional version wth built-in modem requires only a leased telephone line, while the standard no-modem unit requires external modems for the composite link between the master and slave STAT MUX. The external modems can be synchronous or asynchronous.

All units with built-in modems must be used with similar units. The master talks to only one slave and both units should contain equal channel capacities.

The 2-channel units have a 4kb buffer while the 4, 8, 12, and 16-channel units have 15kb data buffer for incoming data storage. The large buffer provides capacity for data storage during excessive retransmissions or prolonged peak channel activity. At 50% of buffer capacity, the STAT MUX begins to limit control from the most active channel using XON/XOFF or clear-to-send buffer control. As the buffer continues to fill, this action is gradually extended to all channels. When the buffer is about 85% full, a warning indicator light appears, and the STAT MUX limits data flow from all active channels. Buffer control is switch-selectable.

A command port is provided to conveniently perform configuration and operational testing. Easy-to-use commands are entered for system configuration from the command port terminal via an RS-232C interface. The command port can be used to change channel parameters such as baud rates, stop bits, parity, and flow control. The user can perform tests, receive alarm messages, broadcast messages, and review periodic system reports at the command port terminal.

Configuration Suggestions

Caution must be exercised when a remote site with eight or more channels has high terminal usage at the maximum possible baud rate; for instance, when many of the terminals are simultaneously sending Block Mode transfers. If a large amount of data is sent from the terminals to the slave STAT MUX during a 10-second interval, data overflow can occur when the terminals do not respond to flow control.

To avoid data loss, the total throughput toward the host during any 10-second period should not exceed the buffer overflow limits of the STAT MUX.

The following throughput guidelines for 8, 12 and 16-channel units must be observed when all channels have terminals operating in the Block Transfer mode, and each terminal is configured at the maximum possible baud rate. The possibility of overflow will be diminished when the terminals are operating in the character transfer mode.

Unit	Maximum Burst Throughput
8-channel	1500 bytes/10 sec./chan.
12-channel	1000 bytes/10 sec./chan.
16-channel	750 bytes/10 sec./chan.

Also, the possibility of buffer overflow is reduced and the above throughput numbers can be increased when all channels are not simultaneously active, or a number of printers are connected instead of all terminals. When printers are connected to the STAT MUX, the user should set their channel baud rates efficiently, as high printer channel rates may fill the STAT MUX buffer unnecessarily. Also, using a 19,200-baud line between STAT MUXs in high throughput conditions will increase, instead of decrease, the possibility of buffer overflow.

The aggregate data rate is the sum of all channel baud rates connected to the STAT MUX. The following is a table of the aggregate baud rates for each STAT MUX unit. These rates must not be exceeded.

Unit	Aggregate Data Rate
2-channel	19200 baud
4-channel	38400 baud
8-channel	76800 baud
*12-channel	76800 baud
*16-channel	76800 baud

*When using 12- and 16-channel units, all channels should not be set at 9600 baud except in low use applications. For applications with medium to high use, consult the following guidelines.

8-channel unit: All channels may be run at 9600 baud

12-channel unit: Four channels at 9600 baud and eight channels at 4800 baud or lower

16-channel unit: Two channels at 9600 baud, 10 channels at 4800 baud, and 4 channels at 2400 baud, or all channels at 4800 baud or lower

Safety Standards

The Pt-Pt STAT MUX product has been UL, CSA, and FCC approved, and is designed for VDE approval. This equipment complies with requirements in part 15 of FCC rules of class A computing devices.

Specifications
STAT MUX

Channel Quantity:
2, 4, 6, 8, 12, or 16

Data Transfer Rate Channel:
50, 75, 110, 134.5, 150, 200, 300, 600, 1200, 1800, 2400, 4800, or 9600 baud asynchronous

Composite Link:
(without internal modem): 1200, 1800, 2400, 4800, 9600 asynchronous, or automatic baud up to 19,200 baud synchronous.

Composite Link:
(with internal modem): 9600 baud synchronous

Buffer Size:
2-Channel Units: 4k bytes
4 to 16-Channel Units: 15k bytes

Buffer Overflow:
XOFF begins at 50% of buffer capacity with a warning light and all channel flow control at 85%

Displays:
Activity Channel, Active Mode, Sync Loss, Retransmission Request, Link Alarm, Composite Loopback, Buffer Overflow, Self-Test Failure, and Remote Alarm

Diagnostics:
Self-Test, Terminal-Activated Channel Test (TACT), Terminal Initiated Channel Configuration (TICC), and Composite Loopback Test

Configuration:
Switch and/or command port selectable

Modem

Data Transfer Rate:
9600 baud

Carrier Frequency:
1700 Hz

Equalization Time:
253 ms

Line Impedance:
600 ohms nominal, transformer coupled and transient protected.

Line Requirements:
4-wire, leased, point-to-point unconditioned, Type 3002 or equivalent

Modulation:
8-phase, 4 amplitude, quadrature amplitude modulation (QAM)

Transmitter Output Level:
0 to −12dBm in −2dB increments

Carrier Detect Level:
OFF to ON: −26 dBm
On to OFF: −31 dBm

Physical Dimensions Without Modem

2-Channel Units
Height: 6 cm (2.3 in.)
Width: 22 cm (8.8 in.)
Depth: 28 cm (11 in.)
Weight: 13-31 kg (6-14 lbs)

4 & 8-Channel Units
Height: 7 cm (2.8 in.)
Width: 31 cm (12 in.)
Depth: 28 cm (11 in.)
Weight: 13-31 kg (6-14 lbs)

12 & 16-Channel Units
Height: 13 cm (5 in.)
Width: 31 cm (12 in.)
Depth: 28 cm (11 in.)
Weight: 13-31 kg (6-14 lbs)

Physical Dimensions With Modem

2, 4, 8-Channel Units
Height: 10 cm (4 in.)
Width: 22 cm (12.8 in.)
Depth: 28 cm (11 in.)
Weight: 13-31 kg (6-14 lbs)

12 & 16-Channel Units
Height: 15 cm (5.8 in.)
Width: 32 cm (12.8 in.)
Depth: 28 cm (11 in.)
Weight: 13-31 kg (6-14 lbs)

Electrical Requirements

Voltage:
90 to 128 VAC
180 to 256 VAC (Special quote)

Frequency:
50/60 Hz, ±2 Hz

Phase:
Single

Power (without modem):
2-Channel Unit: 30 watts
4-Channel Unit: 40 watts
8-Channel Unit: 50 watts
12-Channel Unit: 61 watts
16-Channel Unit: 75 watts

Power (with modem):
2-Channel Unit: 30 watts
4-Channel Unit: 40 watts
8-Channel Unit: 52 watts
12-Channel Unit: 65 watts
16-Channel Unit: 75 watts

Environmental	Operating Temperature: 0° to 45°C (32° to 114°F) Storage Temperature: −10° to 50°C (14° to 120°F) Operating Humidity: 0 to 95% (non-condensing)

Product Numbers

K54-200 2-Channel Master/Slave Pt-Pt STAT MUX (without modem), 115 VAC, 50/60 Hz.

K54-201 4-Channel Master/Slave Pt-Pt STAT MUX (without modem), 115 VAC, 50/60 Hz.

K54-202 8-Channel Master/Slave Pt-Pt STAT MUX (without modem), 115 VAC, 50/60 Hz.

K54-203 12-Channel Master/Slave Pt-Pt STAT MUX (without modem), 115 VAC, 50/60 Hz.

K54-204 16-Channel Master/Slave Pt-Pt STAT MUX (without modem), 115 VAC, 50/60 Hz.

K54-210 2-Channel Master/Slave Pt-Pt STAT MUX (with 9600-baud modem), 115 VAC, 50/60 Hz.

K54-211 4-Channel Master/Slave Pt-Pt STAT MUX (with 9600-baud modem), 115 VAC, 50/60 Hz.

K54-212 8-Channel Master/Slave Pt-Pt STAT MUX (with 9600-baud modem), 115 VAC, 50/60 Hz.

K54-213 12-Channel Master/Slave Pt-Pt STAT MUX (with 9600-baud modem), 115 VAC, 50/60 Hz.

K54-214 16-Channel Master/Slave Pt-Pt STAT MUX (with 9600-baud modem), 115 VAC, 50/60 Hz.

Note: All units are available configured for 230 VAC, 50/60 Hz, by special quote.

Related Products

K54-240 Convenience Panel to STAT MUX, 25′ cable assembly

K54-250 MUX to VDU, 50′ cable assembly

K54-251 MUX to VDU, 100′ cable assembly

K54-252 MUX to VDU, 150′ cable assembly

K54-253 MUX to VDU, 200′ cable assembly

K54-260 MUX to printer (K52-100/101 and K52-110/111) 50′ cable assembly

K54-261 Same as K54-260 except, 100′

K54-262 Same as K54-260 except, 150′

K54-263 Same as K54-260 except, 200′

Related Documentation

91-363 Statistical Multiplexor Diagnostic Manual

The information contained herein is intended to be a general description and is subject to change with product enhancement.

PERKIN-ELMER

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