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HEWLETT PACKARD

HP-PB Asynchronous 8-Channel Multiplexer

Technical Data

Product Number 40299A

The HP 40299A Multiplexer provides eight asynchronous RS-232-C compatible ports with full duplex modem control capability. It connects up to eight devices having RS-232-C interfaces to HP 9000 Hewlett-Packard Precision Bus (HP-PB) Series 800 Computers. A wide range of configurable transmission modes and formats permits hardwired and remote connection of various CRT terminals, printers, plotters, and other asynchronous devices.

Features

- Eight full-duplex asynchronous serial I/O ports with 11-wire modem control capability (8 modem signal, 1 transmit, 1 receive, 1 ground). Some European license requirements still pending. Consult field representative for status.
- EIA RS-232-C and V.24/V.28 compatibiity
- Full duplex modem support (8 signals per channel)
- Programmable data-rate for each channel
- Programmable character size: 7 or 8 data bits
- Programmable parity: odd, even, or none
- Programmable number of stop bits: 1 or 2
- Parity, overrun, framing error check detects transmission faults
- Firmware based self-test helps assure interface integrity
- Automatic and Programmable device XON/XOFF handshaking to pace MUX input and output data transmission
- On-board buffering to send/receive data to/from host for multiple ports

Functional Description

The HP 40299A Asynchronous 8-Channel Multiplexer is used for interfacing up to eight EIA RS-232-C compatible devices to the HP-PB backplane. As a 68000 microprocessor-based interface, the HP 40299A MUX accesses a 64 Kbyte EPROM which contains a power-up self-test. Moreover, it monitors the download process into the 512 Kbyte RAM and verifies the integrity of the code. Download operation and card diagnostics are performed through special supervisor on-card buffer. The HP 40299A does not support the system console.

Functional Specifications

Capacity

Channels: Eight channels — full-duplex, connected through a standalone Active Distribution Panel (ADP)

Buffering: On-card buffering to send/receive data for multiple ports to increase throughput and reduce host CPU load.

Transmit Buffer Size: 255 bytes per port

Receive Buffer Size: 511 bytes per port

Software: HP 9000 Series 800 HP-UX revision 7.0 or later. Supported on HP-PB based HP 9000 Series 800 Computers.

Communications

Interface Level: RS-232-C; CCITT V.24/V.28

Data Rates: Baud rate defaults to 9600 and is software programmable to any of the following rates: 75, 150, 300, 600, 1200, 2400, 4800, 9600, 19200.

Modem Support includes:
- originate mode
- auto answer mode
- modem connection timer
- lost receiver-ready timer
- no-activity timer
- host control of every interface output modem line

RS-232-C	V.24	Common Abbreviation	Description	Input/ Output	Connector Pin Nos.
AB	102	SG	Signal Ground	N/A	7
BA	103	SD	Transmit Data	O	3
BB	104	RD	Receive Data	I	2
CA	105	RS	Request to Send	O	8
CB	106	CS	Clear to Send	I	22
CC	107	DM	Data Set Ready	I	20
CD	108	TR	Data Terminal Ready	O	6
CF	109	RR	Data Carrier Detect	I	4
CH	111	SR	Signal Rate Selector	O	23
CE	125	IC	Ring Indicator	O	9
—	—	GPO	General Purpose Output	O	5

Throughput: Although the 40299A 8-channel MUX hardware and firmware is able to support a data throughput of 19.2K baud simultaneously on each channel, the global performance of the MUX is dependent on the HP 9000 HP-PB Series 800 Computer performance.

Communication Mode: Asynchronous, bit serial.

Break Detection and Transmission: Break condition is recognized by the interface and message is sent to the host. Break condition can also be generated by the MUX at the request of the host.

Optional Device Handshakes: The MUX is capable of pacing both inbound and outbound data via an "XON/XOFF" type of protocol. The "XON/XOFF" characters are programmable. The host may program the MUX card to automatically manage "XON/XOFF" flow control, thus avoiding any character loss. The "XON/XOFF" may also be under application control, but no data loss is only guaranteed if the MUX is responsible for flow-control.

Edit Functions

Edit functions such as backspace, character delete, and line delete are passed to the host and managed by the host operating system.

Physical Specifications

	Height	Width	Depth	Weight
MUX card (Part #40299-60001)	29.5 mm (1.15 in.)	100 mm (3.90 in.)	220 mm (8.58 in.)	0.25 kg
ADP box (Part #40299-60002)	255 mm (9.95 in.)	110 mm (4.29 in.)	32 mm (1.25 in.)	0.4 kg

Electrical Specifications

Direct Current Requirements:

Voltage	Typical Current	MAX Current
+ 5	1.00 A	1.20 A
+12	0.10 A	0.13 A
–12	0.10 A	0.13 A

Environmental Specifications

RFI: HP 40299A complies with FTZ 1046/48 and FCC Class A Regulations.

Installation and Support

Installation: The HP 40299A is not customer installable when purchased as an add-on product. Otherwise the product is bundled with the system. Installation cost is billed back to manufacturing division.

Diagnostic: A self-test is performed at power-on by the system. Additional online diagnostics and reset capabilities are provided through the system diagnostic environment.

Support Services: Hardware support services available for this product are included in the System Support series.

Training: The training on the HP 40299A is provided with a self-paced training course numbered 40299A+49A–90101.

Ordering Information

The 40299A includes:

40299-60001 8-channel multiplexer printed circuit assembly

40299-60002 Active distribution panel

40299-60003 Cable assembly

40299-60004 Packaging kit

40299-60005 Loopback connector

40299-60006 Fix-plate assembly

40299-80003 Packaging

40299-90002 Installation manual

40299A options:

0B0: Deletes manual and loopback

Recommended Peripheral Cables

For direct connection to RS-232-C terminals, printers, plotters, etc., minimum wiring requires pins 1, 2, 3, 7 to be wired end-to-end.

13242M 5 metre 25-pin M to 25-pin M connector: pins 1–8, 12, 15, 17, 20, 22, 24 wired end-to-end.

13242N 5 metre 25-pin M to 25-pin M connector: pins 1–8, 12, 15, 17, 20, 22, 23, 24 wired end-to-end. (11 and 19 are switched.)

13242Y 5 metre 25-pin M to 25-pin M connector: pins 1–3, 7 wired end-to-end.

92219G 3.8 metre 25-pin M to 25-pin M connector: pins 1–8, 11, 12, 19, 20, 22, 23, 25 wired end-to-end.

Connection to RS-232-C Modems

92219Q 5 metre 25-pin M to 25-pin M connector.

Computer End Pin Number	Data Set End Pin Number
1	1
2	3
3	2
4	8
6	20
7	7
8	4
9	22
20	6
22	5
23	23

For UUCP direct connect applications from 40299A to 40299A, the following cables could be used:
- 92219Q
- 30062B

The cables listed above are available from the Direct Marketing Division (DMK).

Supported Devices

Devices	Direct Connect RS-232-C	Modem Connect RS-232-C
Terminals		
2392A/2393A/2394A/2397A	Yes	Yes
2394A Graphic Athena	Yes	Yes
3081A Data Capture	Yes	No
C1001A Settler I low cost 2392/94	Yes	No
C1003A Pioneer low cost ASCII term	Yes	No
Personal Computers		
HP 110+ with 2392A Reflector I*	Yes	Yes
HP 150 I/II with HP 2623 emulator	Yes	Yes
Vectra with HP 2392/93/94 emulator	Yes	Yes
Integral PC with 2622 emulator†	Yes	???
9836A/9837A	Yes	???
HP 9000 S200/300 2392A emulator*	Yes	???
Printers		
2225D ThinkJet	Yes	No
2227A QuietJet	Yes	No
2563B	Yes	No
2565A	Yes	???
2566A	Yes	???
2932A/Bearfoot	Yes	Yes
2934A	Yes	Yes
2686A LaserJet	Yes	No
Plotters		
7440A/B Joey 8 pen B size	Yes	No
7470A opt. 001	Yes	No
7475A opt. 001	Yes	No
7550A	Yes	No
7580A/B	Yes	No
7585A/B	Yes	No
7586A/B	Yes	No
Multiplexers		
None		

*Block mode support will be determined after testing
†No block mode support

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