

*New UTP hub for the AS/400[®], System/36[™]
and System/38[™] hosts*

IBM 6299 Hub for Midrange Systems

Device Communication Module

- **Highly flexible, fault-tolerant solution for attaching 5250-type devices to IBM midrange hosts using low-cost UTP cabling**
- **Advanced repeater-per-port technology that reduces noise and eliminates jitter**
- **Module hot-swapping permitting online component exchange**
- **Enhanced diagnostics that monitor host and device channels, providing rapid evaluation of transmission problems**
- **Available in modular RJ-45 or RJ-11 connections in 5 standard pin/pair assignments**
- **Optional, redundant power supply (in Model 900 only)**

Host Port Multiplexer

- **Multiplexing up to 8 host ports onto a single UTP, twinaxial or duplex optic fiber cable link**
- **Connections of midrange hosts to remote sites using minimal cabling**
- **Support for distances up to 2012 m (6600 ft) over a single cable**
- **Separately orderable as Model 8TC**

UTP Distribution Block

- **Creation of 8 UTP host port connections from a single workstation controller DB-25 cable**
- **Available in modular RJ-45 or RJ-11 connections in five standard pin/pair assignments**
- **6299 Models 200 and 900 only—separately orderable as Model 8DB**

The IBM 6299 Hub for Midrange Systems is a complete line of networking hubs that enable twinaxial devices (for example PCs with 5250 emulation adapters, InfoWindow[®] displays and twinaxial-attached printers) to be attached to AS/400, System/36, System/38 and 5x94 Remote Controllers using low-cost UTP wiring. These hubs convert a midrange network's cabling scheme from a daisy-chain topology to a highly flexible, expandable star topology.

The 6299 is compatible with all AS/400, System/36 and System/38 twinaxial controllers. It supports 100% IBM compatible twinaxial 5250-type devices and 5250 emulation products. No unique host or device software is required to use the 6299.

Product Overview

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Why UTP?

Cost-savings

The primary advantage of UTP wiring is its low cost relative to traditional twinaxial cabling. UTP is approximately one-fifth the cost of twinaxial. Cabling expenses can possibly be further reduced if a spare pair of wires is available in the telephone wiring installed in your building. The deciding factors regarding use of existing cable are its ability to meet minimum standards and obtaining permission to use the cable from the owner—sometimes the phone company.

Flexibility

The primary advantage of star topology is that devices are individually cabled to an isolated hub port instead of physically daisy-chained together, as with twinaxial cabling. Removing a device and its attachment cable from a twinaxial line will break the chain and bring down everyone else on the line. The 6299's star topology resolves this problem by enabling devices to be dynamically added, moved or removed without affecting other devices. The 6299 offers customers increased flexibility to quickly and easily rewire offices and expand the midrange network as needed.

What kind of UTP?

The 6299 supports EIA/TIA categories 3, 4 and 5 UTP cabling and is available with modular RJ-11 and RJ-45 connections in 5 standard pin/pair assignments.

Configuration Guide

This guide gives the most popular configurations. For more configuration options, refer to the *6299 Planning, Installation and Maintenance Guide* that is shipped with the 5494 or contact Installation and Technical Support.

Use the local and remote attachment tables in the *6299 Planning, Installation and Maintenance Guide* to identify which 6299 part numbers will support a given number of 5250-type devices attached to a host (AS/400, System/3x or 5x94 Remote Controller):

- In the second column, find the current number of devices to be attached to the host.
- In the third column, find the maximum number of devices that you will require in the future.

Although multiple chassis can be installed in the same rack, you might save money by purchasing the largest chassis that will accommodate your future device requirements.

For example local attachment option 5 would support between 15 and 28 devices attached to the host. For this option the maximum devices per chassis is 56, which is the largest chassis, so future devices could be added by installing additional Device Communication Modules (FC 1142).

If one to seven devices were to be attached today with a future requirement of up to 14, then local attachment option 3 would be the best choice.

Local Attachment

Pick one of the following configuration options for your local attachment:

Options	Current Devices ¹	MaxDevices ¹ Chassis	Models	Qty	Host Attachment Cabling	Mounting	FC ²
1	1-7	7	100	1	UTP/Twinaxial	Tabletop	4142
2 ³	1-7	7	100	1	UTP/Twinaxial	Tabletop	4111
3	1-7	14	200	1	UTP/Twinaxial	Rack	5142
4	8-14	14	200	1	UTP/Twinaxial	Rack	5242
5	15-28	56	900	1	UTP/Twinaxial/DB-25 ⁴	Rack	6442
6	29-35	56	900	1 1	UTP/Twinaxial/DB-25 ⁴	Rack	6442 1142
7	36-42	56	900	1 2	UTP/Twinaxial/DB-25 ⁴	Rack	6442 1142
8	43-49	56	900	1 3	UTP/Twinaxial/DB-25 ⁴	Rack	6442 1142
9	50-56	56	900	1	UTP/Twinaxial/DB-25 ⁴	Rack	6842

Notes: ¹ The number of devices listed assumes one address (0-6) for each device.

² All FCs (except those in option 2) are for RJ-45 connectors with pins 4 and 5 active. For other connector types see the ordering information.

³ This 6299 configuration is the same as the IBM 5299 Terminal Multiconnector's configuration.

⁴ For this configuration: Twinaxial support requires an 8-Port Twinaxial I/O Panel (FC 3000). DB-25 cable (FC 2054) connects directly to the AS/400 workstation controller port and requires an 8-Port Twinaxial I/O Panel (FC 3000).

This figure shows configuration option 1 for local attachment, which connects one device to the host using UTP cable and baluns. To attach a device to the host using option 1:

1. Attach a balun, such as 31H5077, to the host twinaxial port.
2. Attach the UTP cable from the balun to the host input of the Device Communication Module.
3. Attach the UTP cable from one of the 6299 device ports to the balun at the device side.

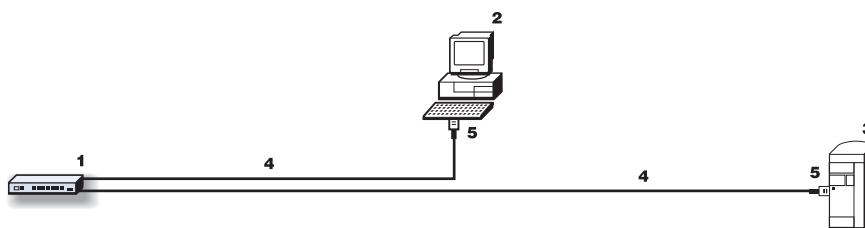
1. IBM 6299 Hub for Midrange Systems

2. Terminal

3. Host

4. Short UTP cables

5. Balun



Remote Attachment

Pick one of the following configuration options for your remote attachment:

Options	Current Devices	Max. Devices ¹ /Chassis	Model	Host Attachment Cable	FC ²
1	28	56	900	76 m (25 ft) DB-25	6442
			900		1000
			100		4100
			100		2054
2	56	56	900	76 m (25 ft) DB-25	6842
			900		1000
			100		4100
			100		2054
3	56	56	8TC	Twinaxial	
			900		6842
			900		1000

Notes: ¹ The number of devices listed assumes one address (0-6) for each device.

² All FCs are for RJ-45 connectors with pins 4 and 5 active.

The following figure shows configuration option 2 for remote attachment, which provides up to eight host ports to a remote site through one cable. To attach devices to the host using option 2:

1. Attach a controller-side multiplexer to the host using 76-m (25-ft) DB-25 cabling.
2. Connect the controller-side multiplexer to the device-side multiplexer using one UTP, twinaxial or duplex optical fiber cable.
3. Using UTP cabling connect up to 56 devices to the Device Communication Modules that are installed in the chassis. (The backplane of the chassis connects the Device Communication Modules to the device-side multiplexer.)

1. Device-side multiplexer
2. AS/400 System
3. Controller-side multiplexer



Baluns

Almost all twinaxial devices sold today (including displays, 5250 emulation adapters and printers) include automatic termination. Usually the following balun can be used at both the host and device ends of the connection: twinaxial male-to-RJ female balun with 3-m (10-ft) UTP male-to-male (FC 2074).

For 5250 emulation adapters the following balun can be used instead of separate balun and terminating twinaxial cables: DB-15-to-RJ female balun with 3-m (10-ft) UTP male-to-male (FC 2084).

For older displays, printers or 5250 emulation adapters that are not terminated, the following balun can be used: twinaxial male-to-RJ female balun self-terminating with 3-m (10-ft) UTP male-to-male (FC 2079).

Chassis

The family of 6299 hubs consists of 1-, 2- and 9-slot chassis supporting up to seven, 14 or 56 devices, respectively. These chassis are field-upgradable with three different customer-installable modules — the UTP Distribution Block, the Device Communication Module and the Host Port Multiplexer. All three 6299 models include a 90–260 V ac power supply that provides power to installed modules.

1-s (Model 100): The 1-slot chassis includes a twinaxial connector on the rear for connection to a host port.

2-s (Model 200): The 2-slot chassis includes two twinaxial connectors on the rear for connection to two host ports.

9-s (Model 900): The 9-slot chassis has no standard host port connectors. This chassis accepts host input via the optional 8-Port Twinaxial I/O Panel. It also supports a redundant power supply for increased network reliability. The 9-slot chassis has four power-supply status LEDs on the rear of the chassis.

All three chassis can accept UTP host input via the modular UTP jack on the front of a Device Communication Module if installed in the chassis. All three chassis can also accept input from an AS/400 workstation controller via a DB-25 cable if a UTP Distribution Block or Host Port Multiplexer is installed.

UTP Distribution Block: Start at the host

The UTP Distribution Block consists of input and output female DB-25 connectors and eight integrated baluns with RJ-11 or RJ-45 output connectors. The UTP Distribution Block attaches to an AS/400 twinaxial workstation controller adapter via a DB-25 cable and provides UTP host port connections as an alternative to the standard AS/400 “brick” twinaxial connectors. The second DB-25 connector could be used as output to pass several host ports on to another UTP Distribution Block or to a Host Port Multiplexer.

The UTP Distribution Block can be installed in the 2-slot or 9-slot chassis or ordered in its own 1-slot chassis as Model 8DB.

Device Communication Module: Attach your terminals, 5250 PCs and printers

The Device Communication Module features seven UTP device ports and one UTP host port. The module takes a UTP host port input (for example from a UTP Distribution Block or 5x94 Remote Controller using a balun to convert from twinaxial to UTP) and creates seven UTP device outputs. Twinaxial host input is provided when the module is installed in a chassis (optional with the 9-slot chassis). The module can be hot-swapped into available chassis slots as the network grows without bringing down devices attached to other modules. Individual devices can be moved, added or removed without affecting any of the other devices attached to the module.

The module features state-of-the-art repeater-per-port technology that increases transmission distance and network reliability by providing a cleaner signal with reduced signal noise and jitter. It also contains POST diagnostics and integrated diagnostics that continuously monitor host and device channels for rapid diagnosis of any transmission problems.

The module has eight bicolor LEDs on the front panel. One LED indicates the status of the workstation controller-to-6299 channel and the seven other LEDs indicate the status of the 6299-to-device link. The 6299 also has one power-on LED on the front panel.

The Device Communication Module supports EIA/TIA category 3, 4 and 5 UTP cabling and is available with modular RJ-11 and RJ-45 connections in five standard pin/pair assignments.

Host Port Multiplexer: Extend your reach!

In a campus environment with a centralized host, adding twinaxial 5250 devices to remote buildings or even remote floors of the same building via long cable runs can be expensive and time-consuming. The Host Port Multiplexer, operating in a sending/receiving pair, can simplify this task by multiplexing and routing up to eight host ports from a workstation controller over a single UTP, twinaxial or duplex optical fiber cable link and transmitting the combined signal up to 2012 m (6600 ft) away.

The Host Port Multiplexer module can be installed in any of the 6299 chassis (Models 100, 200 and 900). The Host Port Multiplexer is especially effective in a 9-slot chassis fully configured with 8 Device Communication Modules since it enables a single rack-mounted chassis to provide up to 56 device ports to a remote location from a single multiplexed input. The 9-slot chassis is optimized for this configuration since it includes a backplane connection for the multiplexer that allows it to break out the host ports to the Device Communication Modules without using a UTP Distribution Block.

The multiplexers must be used in pairs—one attached to the host and the other at the remote device location as described in the next section.

Sending

The multiplexer attaches to the AS/400 twinaxial workstation controller adapter (eight ports) via a DB-25 cable and converts the relatively low-speed analog twinaxial link to a high-speed digital link over one of the supported cable types—twinaxial, UTP or optical fiber. Note: The multiplexer and 5x94 Remote Controllers cannot be used in the same host-to-device line.

For hosts with twinaxial port connectors (for example a System/36 computer), an 8-Port Twinaxial Multiplexer is available with eight twinaxial connectors instead of a DB-25 connection.

Receiving

The multiplexer at the device end demultiplexes the signal and provides it as output through a DB-25 connector. A UTP Distribution Block is then attached to the multiplexer via a DB-25 cable and breaks out the de-multiplexed host port signals into eight UTP host ports.

If twinaxial cabling is already in place at the receiving end, the 8-Port Twinaxial Multiplexer is available to demultiplex the signal directly to twinaxial host port connectors.

The Host Port Multiplexer and 8-Port Twinaxial Multiplexer feature a POST, which checks the internal logic circuitry and all front-panel LED displays every time the unit is powered on. These units have eight bicolor controller-to-multiplexer status LEDs, a bicolor status LED for each of the different cable links and a power-on indicator LED on the front panel.

8-Port Twinaxial Multiplexer

The 8-Port Twinaxial Multiplexer includes a Host Port Multiplexer, a host DB-25 port, and eight twinaxial host ports in one chassis. The following examples show how the 8-Port Twinaxial Multiplexer could be used:

On the local host side: If you have a System/36 with host ports on the rear of the unit, or if you have an AS/400 with a twinaxial “brick” already in place, you could connect up to eight of the twinaxial host ports to the twinaxial connectors on the multiplexer.

On the remote device side: An 8-Port Twinaxial Multiplexer accepts the single multiplexed signal and demultiplexes it into eight twinaxial host port connectors. This is perfect for an established office with twinaxial-cabled devices that has to be attached to a new remote host on campus.

Cable and balun requirements

The baluns required to convert from twinaxial to UTP are included in the 6299's UTP jacks, but external baluns are required when converting from a twinaxial workstation controller port to UTP and to convert back to twinaxial at each attached device.

The UTP Distribution Block requires the following cabling:

Input:	Output:
- DB-25 cable such as 15.2-m (50-ft), DB-25 WSC Cable PN 82H4704	- EIA/TIA category 3, 4 or 5 UTP - DB-25 cable to pass ports on to another UTP Distribution Block or Host Port Multiplexer

The Device Communication Module requires the following cabling:

Input:	Output:
- EIA/TIA category 3, 4 or 5 UTP - Standard twinaxial—as an alternative to UTP when the module is installed in a 1- or 2-slot chassis or a 9-slot chassis with optional 8-Port Twinaxial I/O Panel	- EIA/TIA category 3, 4 or 5 UTP

The Host Port Multiplexer requires the following cabling at the controller (sending) side:

Input:	Output:
- DB-25 cable - Standard twinaxial (when installed in a 9-slot chassis [Model 900] which has the 8-Port Twinaxial I/O Panel installed)	- Standard twinaxial - ST multimode FDDI rated optical fiber cable (62.5/125- μ m diameter, glass duplex fiber with industry-standard ST connector) - EIA/TIA category 3, 4 or 5 UTP

The Host Port Multiplexer requires the following cabling at the terminal (receiving) side:

Input:	Output:
- Standard twinaxial - ST multimode FDDI rated optical fiber cable (62.5/125- μ m diameter, glass duplex fiber with industry-standard ST connector) - EIA/TIA category 3, 4 and 5 UTP	- DB-25 cable - Direct to Device Communication Modules (when installed in a 9-slot chassis [Model 900])

The 8-Port Twinaxial Multiplexer requires the following cabling at the controller (sending) side (reverse for terminal side):

Input:	Output:
- Standard twinaxial	- Same as Host Port Multiplexer

Which UTP connector type?

The person responsible for 6299 installation should determine the connector type and active pin pairs available in the establishment cabling system. Here are some helpful notes:

- If IBM 5299s are already installed, RJ-11 connectors with pins 2 and 5 active are probably in use.
- The most popular configuration in the industry is RJ-45 connectors with pins 4 and 5 active.

6299 Hub for Midrange Systems Specifications

Configuration

The following table provides basic information about the Model 100, 200 and 900 chassis and the supported configurations of installable modules.

Model	100	200	900
Chassis	1	2	9
Total slots	1	2	9
Twinaxial ports	1	2	0
International power supply included	Yes	Yes	Yes
Redundant power supply option (see note)	No	No	Yes
8-Port Twinaxial I/O Panel option (see note)	No	No	Yes
Device Communication modules (minimum/maximum)	0/1	0/2	0/8
Host Port Multiplexer modules (minimum/maximum)	0/1	0/2	0/8
UTP Distribution Block modules (minimum/maximum)	0/1	0/2	0/8

Note: These options are CE-installable.

The following table illustrates the connections provided by the installable modules.

Description	Ports to Host	Ports to Devices	Ports to/from Multiplexer
Device Communication Module	1 UTP	7 UTP	None
UTP Distribution Block	2 DB-25 8 UTP	None	2 DB-25
Host Port Multiplexer	DB-25	None	UTP; twinaxial, optical fiber
8-Port Twinaxial Multiplexer (see note)	Twinaxial DB-25	None	UTP; twinaxial, optical fiber

Note: Available only as a stand-alone unit—listed in this table for reference.

The following modular UTP connectors and active pin pair assignments (see note) are available with the 6299:

Connector	Active Pins	Connector	Active Pins
RJ-11	2 and 5	RJ-45	1 and 2
RJ-11	3 and 4	RJ-45	4 and 5
		RJ-45	3 and 6

Note: The selected active pinout is factory-set but can be altered using jumper blocks if necessary.

Supported cable distances

Since the 6299 is a powered hub, it supports greater host-to-device distances than do unpowered hubs. The following distances are supported if the cable is installed according to the requirements stated in the *Planning, Installation and Maintenance Guide*.

Connection	UTP Cat 3	UTP Cat 4/5	Twinaxial	Optical Fiber
Host-to-DCM	610 m (2000 ft.)	671 m (2200 ft.)	1220 m (4000 ft.)*	N/A
DCM-to-device	610 m (2000 ft.)	671 m (2200 ft.)	N/A	N/A
Distance Block-to-DCM	610 m (2000 ft.)	671 m (2200 ft.)	N/A	N/A
Mux-to-Mux	610 m (2000 ft.)	671 m (2200 ft.)	1220 m (4000 ft.)	2012 m (6600 ft.)
Host-to-Twinaxial Mux	N/A	N/A	1220 m (4000 ft.)	N/A

* 1- and 2-slot chassis have built-in twinaxial connectors. An optional 8-Port Twinaxial I/O Panel is available for the 9-slot chassis.

Maximum host-to-device distance (examples)

Network Path	Cabling	Maximum
Host-to-DCM	UTP cat 4 and 5	671 m (2200 ft.)
DCM-to-device	UTP cat 4 and 5	671 m (2200 ft.)
<i>Total</i>		<i>1341 m (4400 ft.)</i>
Host-to-DCM	Twinaxial	1220 m (4000 ft.)
DCM-to-device	UTP cat 4 and 5	671 m (2200 ft.)
<i>Total</i>		<i>1891 m (6200 ft.)</i>
Host-to-Mux	DB-25	15.2 m (50 ft.)
Mux-to-Mux	Optical fiber	2012 m (6600 ft.)
Mux-to-Dist Block	DB-25	15.2 m (50 ft.)
Dist Block-to-DCM	UTP	671 m (2200 ft.)
DCM-to-Device	UTP cat 4 and 5	671 m (2200 ft.)
<i>Total</i>		<i>3368 m (11100 ft.)</i>
Host-to-Twx Mux	Twinaxial	1220 m (4000 ft.)
Twx Mux-to-Mux/DCM*	Optical fiber	2012 m (6600 ft.)
Mux/DCM-to-Device	UTP cat 4 and 5	671 m (2200 ft.)
<i>Total</i>		<i>3903 m (12800 ft.)</i>

* For this configuration the device-side Host Port Multiplexer and the Device Communication Module must both be installed in the same 9-slot chassis.

Physical specifications

Model	Width	Depth	Height	Weight
1-Slot Chassis	220 mm (8.50 in.)	228 mm (9 in.)	44 mm (1.75 in.)	1.36kg (3 lb)
2-Slot Chassis	430 mm (17 in.)	228 mm (9 in.)	44 mm (1.75 in.)	1.8 kg (4 lb)
9-Slot Chassis	393 mm (15.5 in.)	228 mm (9 in.)	220 mm (8.75 in.)	7.2 kg (16 lb)
UTP Distribution Block	220 mm (8.5 in.)	44 mm (1.75 in.)	44 mm (1.75 in.)	0.45 kg (1 lb)
8-Port Twinaxial Mux	430 mm (17 in.)	228 mm (9 in.)	44 mm (1.75 in.)	1.8 kg (4 lb)

Power considerations

The following information applies to 6299 Models 100, 200, 8TC and 900 (Model 8DB has no power supply). The correct power cord will be shipped based on the country code of the ordering country.

Power supply	60 watts output (peak)
Voltage	90 V to 260 V nominal, auto-ranging; 47 Hz/63 Hz
Acoustic noise	None (no fan)
Thermal output	52 kcal/hr (207 BTU/hr) max
Power source loading	0.11 kVA

Operating Environment

Leakage and starting current	0.0005/45 A
Temperature (operating)	0° to 55° C (32° to 131° F)
Temperature (non-operating)	-20° to 85° C (-4° to 185° F)
Relative humidity (non-condensing)	10% to 90%
Maximum wet-bulb temperature	26.7° C (80° F)

Description	Machine Type	Model	FC
Chassis			
1-slot chassis	6299	100	
2-slot chassis	6299	200	
9-slot chassis	6299	900	
UTP Distribution Block			
RJ-11 pins 2 and 5	6299	8DB	2111
RJ-11 pins 3 and 4	6299	8DB	2112
RJ-45 pins 1 and 2	6299	8DB	2141
RJ-45 pins 4 and 5 (see note)	6299	8DB	2142
RJ-45 pins 3 and 6	6299	8DB	2143
Twinaxial Multiplexer			
8-Port Twinaxial Multiplexer	6299	8TC	

Note: RJ-45 pins 4 and 5 is the most popular, industry-standard connector type and is recommended for most installations.

Customer-installable features	6299 Models	FC
Host Port Multiplexer		
Host Port Multiplexer Module	100, 200, 900	1000
Device Communication Expansion Modules		
RJ-11 pins 2 and 5	100, 200, 900	1112
RJ-11 pins 3 and 4	100, 200, 900	1111
RJ-45 pins 1 and 2	100, 200, 900	1141
RJ-45 pins 4 and 5 (see note)	100, 200, 900	1142
RJ-45 pins 3 and 6	100, 200, 900	1143
UTP Distribution Block Modules		
RJ-11 pins 2 and 5	100, 200, 900	2011
RJ-11 pins 3 and 4	100, 200, 900	2012
RJ-45 pins 1 and 2	100, 200, 900	2041
RJ-45 pins 4 and 5 (see note)	100, 200, 900	2042
RJ-45 pins 3 and 6	100, 200, 900	2043
9-Slot Chassis Options		
8-Port Twinaxial I/O Panel	900	3000
Redundant Power Supply	900	3001

Note: RJ-45 pins 4 and 5 is the most popular, industry-standard connector type and is recommended for most installations.

Preconfigured chassis	Machine Type	Model	FC
1-Slot chassis			
Host Port Multiplexer	6299	100	4100
<i>Device Communication Module</i>			
RJ-11 pins 2 and 5	6299	100	4111
RJ-11 pins 3 and 4	6299	100	4112
RJ-45 pins 1 and 2	6299	100	4141
RJ-45 pins 4 and 5 (see note)	6299	100	4142
RJ-45 pins 3 and 6	6299	100	4143
2-Slot chassis			
1 Host Port Multiplexer	6299	200	5100
2 Host Port Multiplexers	6299	200	5200
<i>1 Device Communication Module</i>			
RJ-11 pins 2 and 5	6299	200	5111
RJ-11 pins 3 and 4	6299	200	5112
RJ-45 pins 1 and 2	6299	200	5141
RJ-45 pins 4 and 5 (see note)	6299	200	5142
RJ-45 pins 3 and 6	6299	200	5143
<i>2 Device Communication Modules</i>			
RJ-11 pins 2 and 5	6299	200	5211
RJ-11 pins 3 and 4	6299	200	5212
RJ-45 pins 1 and 2	6299	200	5241
RJ-45 pins 4 and 5 (see note)	6299	200	5242
RJ-45 pins 3 and 6	6299	200	5243
9-Slot chassis			
<i>4 Device Communication Modules</i>			
RJ-11 pins 2 and 5	6299	900	6411
RJ-11 pins 3 and 4	6299	900	6412
RJ-45 pins 1 and 2	6299	900	6441
RJ-45 pins 4 and 5 (see note)	6299	900	6442
RJ-45 pins 3 and 6	6299	900	6443
<i>8 Device Communication Modules</i>			
RJ-11 pins 2 and 5	6299	900	6811
RJ-11 pins 3 and 4	6299	900	6812
RJ-45 pins 1 and 2	6299	900	6841
RJ-45 pins 4 and 5 (see note)	6299	900	6842
RJ-45 pins 3 and 6	6299	900	6843

Note: RJ-45 pins 4 and 5 is the most popular, industry-standard connector type and is recommended for most installations.

Accessories and cables	6299	Models	FC
Filler Panel for Empty Slots	100, 200, 900		2051
Flush Wall Mounting Kit	200, 8TC		2052
25-ft DB-25-DB-25 WSC Cable	ALL		2054
Cables			
<i>Twinaxial Male-to-RJ Female Balun with 3-m (10-ft) UTP Male-to-Male</i>			
RJ-11 pins 2 and 5	ALL		2070
RJ-11 pins 3 and 4	ALL		2071
RJ-45 pins 1 and 2	ALL		2072
RJ-45 pins 4 and 5 (see note)	ALL		2074
RJ-45 pins 3 and 6	ALL		2073
<i>Twinaxial Male Pigtail-to-RJ Female Balun 3-m (10-ft) UTP Male-to-Male, Self-Terminating</i>			
RJ-11 pins 2 and 5	ALL		2075
RJ-11 pins 3 and 4	ALL		2076
RJ-45 pins 1 and 2	ALL		2077
RJ-45 pins 4 and 5 (see note)	ALL		2079
RJ-45 pins 3 and 6	ALL		2078
<i>DB15-to-RJ Female Balun 3-m (10-ft) UTP Male-to-Male, Self-Terminating</i>			
RJ-11 pins 2 and 5	ALL		2080
RJ-11 pins 3 and 4	ALL		2081
RJ-45 pins 1 and 2	ALL		2082
RJ-45 pins 4 and 5 (see note)	ALL		2084
RJ-45 pins 3 and 6	ALL		2083

Note: RJ-45 pins 4 and 5 is the most popular, industry standard connector type and is recommended for most installations.

Supplementary Information

Information on the IBM 6299 Hub for Midrange Systems and other AS/400 connectivity solutions is available at:
www.networking.ibm.com/525/525home.html