



Power over Ethernet supplies DC power over Category 5 or 5e Ethernet wiring.

FREQUENTLY ASKED QUESTIONS

Power Considerations for the 3Com® NJ100 Network Jack

General

What is Power over Ethernet?

Power over Ethernet is simply the transmission of power over the spare pairs or multiplexed onto the signal pairs of an existing Ethernet cable. It has become the preferred method for powering wireless access points and IP telephone handsets. The IEEE is currently developing a standard for Power over Ethernet, labeled 802.3af, which should be ratified in 2002.

Has the 802.3af specification been ratified?

No. The 802.3af standard is not yet fully ratified by the IEEE, and only a limited number of devices that support Power over Ethernet are truly compliant with it. However, 3Com is actively involved with the standard, and the 3Com® NJ100 Network Jack complies with the proposed IEEE 802.3af specification for Power over Ethernet.

What are the advantages of Power over Ethernet?

- Networked devices can obtain power and data over the same wiring, streamlining installation and configuration.
- Power over Ethernet uses DC power that won't affect existing Safety Extra Low Voltage (SELV) circuits—which must be kept isolated from AC power—in the wiring closet.

- Power can be supplied over existing Category 5 or 5e UTP wiring without additional modifications or requirements to the cabling plant.
- Power can be supplied to networked devices without relying on end-user action.

What power considerations are there for the 3Com NJ100 Network Jack?

The 3Com NJ100 Network Jack is an active device and requires power, which must be purchased separately. Power specifications are divided into two categories:

- Power to the network jack can come from a variety of sources. See *Table 1* for available options.
- Power forwarded from the network jack to an external device plugged into Port #1. See *Table 2* for a list of powered devices.

Powering the 3Com NJ100 Network Jack

How is the 3Com NJ100 Network Jack powered?

This active device requires a power source, which must be purchased separately. The 3Com NJ100 Network Jack supports the following power sources:

3Com Network Jack AC Power Supply (3CNJPSL) provides local power, without signal detection, to a single 3Com NJ100 Network Jack. List price: \$26.00

Customers can choose the power solution that fits their needs.

3Com Network Jack Single-Port Power-over-Ethernet Midspan Solution (3CNJPSE) provides midspan power to a single 3Com NJ100 Network Jack. This inline power source can be connected to a network jack at the end-user location or installed in the wiring closet. List price: \$29.00

3Com Network Jack Multiport Power-over-Ethernet Midspan Solution (3CNJPSE24) provides IEEE 802.3af-compatible midspan power for up to 24 3Com NJ100 Network Jacks. It must be installed in the wiring closet, where it adds Power over Ethernet to any manufacturer's switch. This is the optimal choice for installation convenience. List price: \$1,299.00

3Com Ethernet Power Sources (3C10220, 3C10222) provide midspan power for 12 or 24 ports, respectively. 3Com Ethernet Power Sources do

not conform to the proposed 802.3af standard. These 19-inch, rack-mountable units were originally designed to power 3Com NBX® telephone equipment, but can also power 3Com NJ100 Network Jacks with the proper dipswitch settings. 3C10220 list price: \$1,282.00 3C10222 list price: \$1,683.00

Any 802.3af-compliant power-forwarding device such as a power-integrated switch or midspan power source will power the 3Com NJ100 Network Jack.

Why doesn't the 3Com NJ100 Network Jack ship with a power supply?

The 3Com NJ100 Network Jack can be powered from several types of sources. Rather than burdening customers with the cost of a power solution they can't use, we offer a variety of options so they can choose the power solution to best fit their needs.

Table 1: Summary of 3Com NJ100 Network Jack power sources and signature methods

	Voltage Level	Power Discovery Method	Where Power Is Introduced
3Com Network Jack AC Power Supply (3CNJPSL)	48 V	N/A (Always on)	Local power connector
3Com Network Jack Single-Port Power-over-Ethernet Midspan Solution (3CNJPSE)	48 V	N/A (Always on)	Spare wires in Cat 5/5e Ethernet cable
3Com Network Jack Multiport Power-over-Ethernet Midspan Solution (3CNJPSE24)	48 V	Resistive	Spare wires in Cat 5/5e Ethernet cable
3Com Ethernet Power Source (3C10220, 3C10222)	24 V	Capacitive	Spare wires in Cat 5/5e Ethernet cable
802.3af-compliant power-forwarding device	48 V	Resistive	Spare wires in Cat 5/5e Ethernet cable
Pre-standard midspan solution	24 V	Capacitive	Spare wires in Cat 5/5e Ethernet cable
Pre-standard midspan solution	48 V	Capacitive	Spare wires in Cat 5/5e Ethernet cable

The 3Com® NJ100 Network Jack can forward Power over Ethernet to another device.

What are the dipswitches used for?

The dipswitches on the 3Com NJ100 Network Jack must be set to match the power source and signature method. The default setting is for IEEE 802.3af-compatible Power over Ethernet.

Before setting the dipswitches, make sure that power to the network jack is off. The dipswitches are located on the back, above the opening for the pass-through connectors. For more information on locating the dipswitches and the proper settings, consult your *Installation Guide*.

Note: Do not change dipswitches 1 and 2 from their factory default settings (OFF). Changing these settings may result in performance degradation.

Forwarding Power

Can the 3Com NJ100 Network Jack forward Power over Ethernet to another device?

If the 3Com NJ100 Network Jack is powered by a 3Com Network Jack Single-Port Power-over-Ethernet Midspan Solution (3CNJPSE) or 3Com Network Jack Multiport Power-over-Ethernet Midspan Solution (3CNJPSE24), it can also forward power from Port #1 to a device that needs it. This depends on the type of Power over Ethernet the device supports. For example, if an IP phone is compatible with the basic standards of the draft 802.3af Power-over-Ethernet standard—48 V

DC and a resistive power discovery scheme—the network jack will detect the phone and forward power to it.

Since the 802.3af standard has not been ratified, some equipment uses a pre-standard detection scheme called capacitive power discovery. The 3Com NJ100 Network Jack cannot forward power to devices that use capacitive detection.

3Com Ethernet Power Sources (3C10220, 3C10222) can power the network jack but do not have enough power to forward to a device plugged into Port #1. For example, if a 3Com NBX handset is connected to the network jack, the handset must use its own local power source.

Can a 3Com NJ100 Network Jack running on 48 V Power over Ethernet be used to power a 24 V device?

The 3Com NJ100 Network Jack forwards the same voltage it receives. If the network jack is powered by a 48 V power source, it forwards 48 V to the device plugged into Port #1. It cannot step down voltage.

If the network jack is powered by a 24 V power source, it forwards 24 V to the device plugged into Port #1. If you connect an 802.3af-compatible 48 V device it only receives 24 V, which may not be sufficient to power the device.

Table 2: Summary of devices that can be powered from Port #1

	Supported
802.3af-compliant device	Yes
3Com Wireless LAN Access Point 8000 (802.3af-compliant)	Yes
3Com Wireless LAN Access Point 6000	No
3Com AirConnect® Access Point	No
3Com NBX® Phone	No
Cisco phone	No

Web-based technical support includes the 3Com® Knowledgebase.

Are there plans to enable the 3Com NJ100 Network Jack to power a 3Com NBX handset in the future?

We anticipate that IEEE will ratify the 802.3af standard. Subsequently, other networking products will most likely transition to supporting this type of Power-over-Ethernet. In the interim, we are exploring possible power options.

Warranty Information

When I wire a building, I expect that cabling infrastructure to last at least 15 years. Does the 3Com NJ100 Network Jack have a comparable warranty?

The 3Com NJ100 Network Jack has a Lifetime Limited warranty on hardware repair or replacement. "Lifetime Limited" means that it is covered for as long as the customer owns the product or 5 years after the product is discontinued, whichever occurs first.

Does the warranty include technical support?

Phone-based technical support is available within the U.S. for 90 days through our toll-free number, 1-800-527-8677.

We offer around-the-clock, web-based support at <http://support.3com.com>, including product support, service and warranty information, training, and software downloads. Also available through our support page is the 3Com Knowledgebase. This interactive tool provides technical product information from top 3Com engineers around the globe.

For additional product information, such as technical tips, product data sheets, technology white papers, frequently asked questions (FAQs), and more, visit www.3com.com.

Are there any 3Com Maintenance Services available for the 3Com NJ100 Network Jack?

No maintenance services apply to this product.



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To learn more about 3Com solutions, visit www.3com.com. 3Com is publicly traded on Nasdaq under the symbol COMS.

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