

NM-16A/S 16-PORT ASYNCHRONOUS/SYNCHRONOUS NETWORK MODULE

Asynchronous/Synchronous interfaces are the most versatile serial connections that Cisco offers. These interfaces support a wide variety of protocols and applications, including WAN concentration, transport of SDLC and Bi-sync data, and asynchronous terminal connections. Cisco announces the availability of the NM-16A/S that has double the interface density of the NM-8A/S.

Figure 1. NM-16A/S



Q. What are the differences between the NM-4A/S, NM-8A/S, and NM-16A/S?

A. In order to achieve higher port density, the NM-16A/S uses the Smart Serial connector that is also used on the WIC-2T WAN Interface Card. Thus customers must order Smart Serial cables for use with the NM-16A/S instead of the “5-in-1” cables used on the NM-4A/S and NM-8A/S. The Smart Serial interface supports all of the physical interfaces that are supported by the “5-in-1” interface, plus EIA/TIA-530A. The Smart Serial cables are shown in Table 1.

Table 1. Smart Serial Cables

Product Number	Cable Type	Length	Connector Type
CAB-SS-V35MT	V.35 DTE	10 feet (3 meters)	Male
CAB-SS-V35FC	V.35 DCE	10 feet (3 meters)	Female
CAB-SS-232MT	EIA/TIA-232 DTE	10 feet (3 meters)	Male
CAB-SS-232FC	EIA/TIA-232 DCE	10 feet (3 meters)	Female
CAB-SS-449MT	EIA/TIA-449 DTE	10 feet (3 meters)	Male
CAB-SS-449FC	EIA/TIA-449 DCE	10 feet (3 meters)	Female
CAB-SS-X21MT	X.21 DTE	10 feet (3 meters)	Male
CAB-SS-X21FC	X.21 DCE	10 feet (3 meters)	Female
CAB-SS-530MT	EIA/TIA-530 DTE	10 feet (3 meters)	Male
CAB-SS-530AMT	EIA/TIA-530A DTE	10 feet (3 meters)	Male

Q. Is there a converter to go between my existing “5-in-1” DB-60 cables and the Smart Serial port on the NM-16A/S?

A. Cisco does not make such an adapter. Cisco recommends that customers purchase new cables for use with the NM-16A/S.

Q. Are there any cable management solutions available for the NM-16A/S?

A. Cisco has worked with Components Express Inc (<http://www.networkcable.com>) to produce patch panels to complement the NM-16A/S. Components Express Inc sells two models of patch panels for use with the NM-16A/S:

- **Smart Serial RS-232 DCE-DTE Patch Panel.** This patch panel accepts 16 Smart Serial connections from the NM-16A/S on one side, and provides 16 DB-25 RS-232 female connectors on the other side. Each port is individually configurable for DCE or DTE mode. This patch panel provides RS-232 cabling flexibility while taking just one rack unit.
- **Configurable Patch Panel.** This patch panel supports V.35, and EIA-530 as well as RS-232. Each port is individually configurable for interface type and DCE/DTE mode. This patch panel offers maximum cabling flexibility in two rack units.

For more information on these patch panels, please contact Components Express Inc.

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Q. What versions of Cisco IOS® are required to support the NM-16A/S?

A. NM-16A/S support is included in 12.2(15)ZJ and the first release of 12.3T. All IOS® 12.4 main line and 12.4T releases support the NM-16A/S. The NM-16A/S is supported in all IOS® feature sets.

Q. Which router models support the NM-16A/S?

A. The NM-16A/S is supported in the Cisco 2600XM Series, Cisco 2691, Cisco 2811, Cisco 2821, Cisco 2851, Cisco 3631, Cisco 3660, Cisco 3725, Cisco 3745, and Cisco 3800 Series.

Q. Why isn't the NM-16A/S supported in the 2600 non-XM models, 3620, 3640, or 3640A?

A. The 2600 non-XM models and the 3620 do not have enough memory capacity to introduce new hardware or software features. Refer to Product Bulletin 1975 for further details (http://www.cisco.com/warp/public/cc/pd/rt/2600/prodlit/1975_pp.htm).

Cisco has announced the End of Sales and End of Life of the Cisco 3640 and Cisco 3640A routers. Cisco policy is not to introduce new hardware features after announcing End of Sales.

Q. How many NM-16A/S Network Modules are supported in each router?

A. The number of NM-16A/S Network Modules in a router is limited only by the available network module slots.

Q. What are the maximum speeds supported by the NM-16A/S?

A. Like the NM-4A/S and NM-8A/S, the NM-16A/S interfaces support a maximum synchronous speed of 128 Kbps, and a maximum asynchronous speed of 115.2 Kbps.

Q. What is "lead manipulation"?

A. The NM-16A/S introduces a new feature called "lead manipulation". This allows the user to ignore input signals on the physical interface, view the state of the input signals, and to monitor the transitions of the input signals.

IGNORING INPUT SIGNALS

By default, IOS requires some of the input leads on the physical interface to be asserted. With lead manipulation, the user can configure the serial interface to ignore input signals. The syntax is shown in Table 2.

Table 2. Lead Manipulation

Mode	Required Input Leads	Syntax to Ignore Input Leads
DTE	CTS, DCD, DSR	[no] ignore {cts dcd dsr}
DCE	RTS, DTR	[no] ignore {dtr local-loopback rts}

VIEWING THE STATE OF THE INPUT SIGNALS

The IOS will display the state of the input signals on the physical interface via `show` commands:

- For serial interfaces configured for synchronous communication, issue the IOS `show interface` command.
- For serial interfaces configured for asynchronous communication, issue the IOS `show line` command.

MONITORING INPUT SIGNAL TRANSITION

IOS introduces new debug commands to monitor lead transitions on the physical interface. Enable debugging of lead transitions with the `no debug serial lead-transitions [serial slot/port]` command.



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