

## Cisco Ethernet/Token Ring Mixed Media Network Modules

The NM-1FE2W, NM-2FE2W, NM-2W, NM-1FE1R2W, NM-1FE2W-V2, NM-2FE2W-V2, and NM-1FE-FX-V2 WAN combination 10/100 Ethernet and WAN Interface Cards carrier modules allow customers using Cisco 2600, 2800, 3600, 3700 and 3800 Series Routers to benefit from the increased performance and density capabilities delivered by this family of network modules. Features include auto-sensing 10/100 Mbps Fast Ethernet ports and TDM capabilities.

**Figure 1.** 10/100 LAN/WAN Combo Network Modules



### Introduction

**Table 1.** Four Different Network Modules Are Available to Increase LAN/WAN Densities for the Cisco 2600, 2691, 2800, 3600, 3700 and 3800 Series of Multi-Service and Integrated Services Routers

Part Number	Description
<b>NM-1FE2W and NM-1FE2W-V2</b>	1-port 10/100 Ethernet 2 WAN Card Slot Network Module
<b>NM-2FE2W and NM-2FE2W-V2</b>	2-port 10/100 Ethernet 2 WAN Card Slot Network Module
<b>NM-1FE1R2W</b>	1-port 10/100 Ethernet 1 4/16 Token Ring 2 WAN Card Slot NM
<b>NM-1FE-FX-V2</b>	1-Port Fast Ethernet Network Module, FX Only
<b>NM-2W</b>	2 WAN Card Slot Network Module (No LAN Interface)

### Features

- Supported on Cisco 2600 (NM-2W only) 2691, 2800, 3600, 3700 and 3800 Series Branch office routers
- Supports WICs and VWICs (see below for a complete list)
- Increase WIC density in Cisco 2600, 2691, 3700 and 3800 series
- Support for up to 8Mb throughput on a WIC interface
- 10/100 autosensing full/half duplex
- Full and half duplex Token Ring Support
- TDM enabled

The following WICs and VWICs are supported:

- WIC-1B-S/T
- WIC-1B-S/T-V3
- WIC-1B-U
- WIC-1B-V2
- WIC-1DSU-56K4
- WIC-1DSU-T1
- WIC-1DSU-T1-V2
- WIC-1T
- WIC-2T
- WIC-2A/S
- WIC-1AM
- WIC-2AM
- WIC-1ADSL
- WIC-1ADSL-V2
- WIC-1GSHDSL
- VWIC-1MFT-T1\*
- VWIC-1MFT-E1\*
- VWIC-1MFT-T1-DI\*
- VWIC-1MFT-E1-DI\*
- VWIC-2MFT-E1\*
- VWIC-2MFT-T1\*
- VWIC-2MFT-T1-DI\*
- VWIC-2MFT-E1-DI\*
- VWICs in data mode only

**Table 2.** Comparison of Supported Features and the Major Enhancements over the Current Legacy Mixed-Media Network Modules

Feature	NM-1E2W and NM-2E2W	NM-1FE2W, NM-2FE2W, NM-1FE1R2W
<b>Max T1/E1 WIC Connections</b>	2	4
<b>VWIC Support</b>	Limited	Full
<b>WIC Support</b>	Limited	Full
<b>WIC Throughput</b>	2 Mb	8 Mb
<b>TDM Support</b>	No	Yes
<b>Ethernet Support</b>	10 Mb	10/100 Mb
<b>G.703 WIC Support**</b>	No	Yes
<b>Full Duplex Token Ring</b>	No	Yes

\*\*FCS 2HW/00

**Table 3.** Maximum Number of Network Modules that Are Supported in the 2600, 2691, 3600, 3700 and 3800 Families

	2600	2691	2800	3640	3660	3725/3825	3745/3845
<b>NM-1FE2 and NM-1FE2W-V2</b>	N/A	1	N/A	4	6	2	4
<b>NM-2FE2W and NM-2FE2W-V2</b>	N/A	1	N/A	4	6	2	4
<b>NM-1FE1R2W</b>	N/A	1	N/A	4	6	2	4
<b>NM-2W</b>	1	1	N/A	3	6	2	4
<b>NM-1FE-FX-V2</b>	N/A	N/A	1	1	1	1	1

### Orderability, Availability, Compatibility, Minimum Software, and Memory Requirements

**Table 4.** 10/100 LAN/WAN Combo Network Modules Product Numbers and Description

Product Number	Description
<b>NM-1FE2W/NM-1FE2W-V2</b>	1-port 10/100 Ethernet with 2 WAN Card Slot Network Modules
<b>NM-2FE2W/NM-2FE2W-V2</b>	2-port 10/100 Ethernet with 2 WAN Card Slot Network Modules
<b>NM-1FE1R2W</b>	1-port 10/100 Ethernet, 1-4/16 Token Ring, 2 WAN Card Slot Network Modules
<b>NM-1FE-FX-V2</b>	1-Port Fast Ethernet Network Module, FX Only

For the NM-1FE2W, NM-2FE2W, NM-1FE1R2W, and NM-2W the minimum level of IOS is 12.0(7)XK or 12.1(1)T.

For the NM-1FE2W-V2 and NM-2FE2W-V2 the minimum level IOS is 12.2(12)M and 12.2(13)T.

**Table 5.** 10/100 LAN/WAN Combo Network Modules (NM-1FE2W, NM-2FE2W, NM-1FE1R2W, and NM-2W) Platforms Supported, Minimum Cisco IOS<sup>®</sup> Release, Minimum Memory and Maximum Number Supported

Product	Minimum Cisco IOS Software Required	Cisco IOS Feature Set	Maximum Supported
<b>Cisco 2600 Series</b>	12.0(7)XK	All Cisco IOS Feature Sets	1
<b>Cisco 2600XM Series</b>	12.2(8)T	All Cisco IOS Feature Sets	1
<b>Cisco 2691</b>	12.2(8)T	All Cisco IOS Feature Sets	1
<b>Cisco 3620</b>	12.0(7)XK	Any Cisco IOS Feature Set	2**
<b>Cisco 3640</b>	12.0(7)XK	All Cisco IOS Feature Sets	4**
<b>Cisco 3660</b>	12.0(7)XK	All Cisco IOS Feature Sets	6
<b>Cisco 3725</b>	12.2(8)T	All Cisco IOS Feature Sets	2
<b>Cisco 3825</b>	12.3(11)T	All Cisco IOS feature sets	2
<b>Cisco 3745</b>	12.2(8)T	All Cisco IOS Feature Sets	4
<b>Cisco 3845</b>	12.3(11)T	All Cisco IOS Feature Sets	4

\* The NM-1FE2W-V2 and NM-2FE2W-V2 have the same memory requirements as the non-V2 network modules.

\*\* Only 1 of the NM-2W is supported in the 3620, and only 3 NM-2W are supported in the 3640.

## Physical Specifications

**Table 6.** Standards and Compliance Support

Product Feature	Product Specifications
<b>Dimensions</b>	1.55 x 7.10 x 7.2 in (H x W x D)
<b>Weight</b>	2.5 lbs. Maximum
<b>Environmental Conditions</b>	<ul style="list-style-type: none"> <li>Operating temp. 32°-104°F (0°-40°C)</li> <li>Non-operating temp. -13° to -158°F (-25 to 70°C)</li> </ul>
<b>Power Requirements</b>	15 watts Maximum
<b>Relative Humidity</b>	5 to 95%
<b>MTBF</b>	<ul style="list-style-type: none"> <li>NM-2W-1,720,096 hours</li> <li>NM-1FE2W and NM-1FE2W-V2-846,192 hours</li> <li>NM-2FE2W and NM-2FE2W-V2-569,302 hours</li> <li>NM-1FE1R2W-507,634 hours</li> </ul>
<b>Protocols Supported</b>	Full Cisco IOS Software as of 12.0(7)XK
<b>WIC Performance</b>	Up to 8Mb/s per network module
<b>EMI</b>	FCC Part 15 Class B-CISPR 22 Class B
<b>Cabling</b>	<ul style="list-style-type: none"> <li>WAN cables dependent on WICs</li> <li>LAN interfaces have 10/100BaseT cables for Ethernet and STP/UTP cables for Token Ring</li> </ul>
<b>LEDs</b>	<ul style="list-style-type: none"> <li>Token ring 4/16 speed indication</li> <li>Ethernet 10/100 Speed Indication</li> <li>Link and full Duplex LEDS</li> </ul>
<b>Network Interfaces</b>	Compatible with all existing network modules and WICS supported by Cisco 2600/2691/3600/3700/3800 routers

## Supported Management Information Base (MLBS)

The 10/100 LAN/WAN network modules support the standard Management Information Base (MIBs).

For descriptions of supported MIBs and how to use MIBs, see the Cisco MIB web site at:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

## Regulatory Approval

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Americas Headquarters  
Cisco Systems, Inc.  
San Jose, CA

Asia Pacific Headquarters  
Cisco Systems (USA) Pte. Ltd.  
Singapore

Europe Headquarters  
Cisco Systems International BV  
Amsterdam, The Netherlands

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