

Understanding High Density Voice Network Modules

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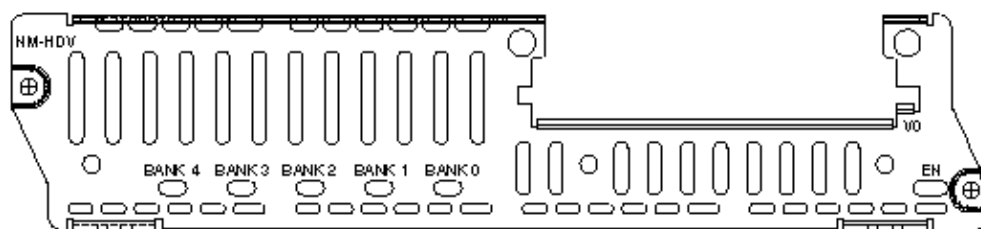
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Introduction

High Density Voice Network Modules combine WAN Interface Card (WIC) and Voice Interface Card (VIC) functionality to provide unparalleled flexibility and power. The high density voice network module is capable of supporting up to 60 simultaneous mid-complexity voice compression codecs / algorithms.



Product Numbers

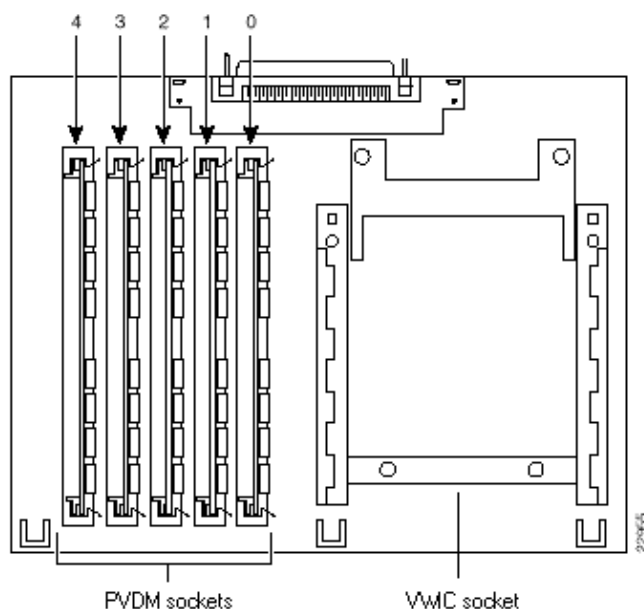
NM-HDV-1E1-12	High Density Voice Network Module, with 1 VWIC-1MFT-E1 and 1 PVDM-12
NM-HDV-1E1-30	High Density Voice Network Module, with 1 VWIC-1MFT-E1 and 3 PVDM-12
NM-HDV-1E1-30E	High Density Voice Network Module, with 1 VWIC-1MFT-E1 and 5 PVDM-12
NM-HDV-2E1-60	High Density Voice Network Module, with 1 VWIC-2MFT-E1-DI and 5 PVDM-12
NM-HDV-1T1-12	High Density Voice Network Module, with 1 VWIC-1MFT-T1 and 1 PVDM-12
NM-HDV-1T1-24	High Density Voice Network Module, with 1 VWIC-1MFT-T1 and 2 PVDM-12
NM-HDV-1T1-24E	High Density Voice Network Module, with 1 VWIC-1MFT-T1 and 4 PVDM-12
NM-HDV-2T1-48	High Density Voice Network Module, with 1 VWIC-2MFT-T1-DI and 4 PVDM-12
NM-HDV	High Density Voice Network Module (no VWIC, no PVDMs)
PVDM-12	12-Channel Packet Voice DSP Module

Features

Signaling	Minimum Cisco IOS® Required
T1 CAS	12.0(5)XK, 12.0(7)T, 12.1(1), 12.1(1)T
T1 ISDN PRI Q.SIG and Q.931	12.1(2)XH, 12.1(3)T
E1 ISDN PRI Q.SIG	12.0(7)XK, 12.1(2)T
E1 ISDN Q.931	12.1(2)XH, 12.1(3)T
E1 R2	12.1(2)XH, 12.1(3)T

- Supports 1 or 2 T1 or E1 interfaces
- Uses VWICs to supply physical interface [1 and 2 Port T1 Multi-Flex Trunk VWIC] [1 and 2 Port E1 Multi-Flex Trunk VWIC]
- Each PVDM-12 contains 3 TI 549 DSPs
 - ◆ Runs up to twelve voice calls using a low complexity CODEC (G.711, G.729a/b, G.726, fax).
 - ◆ Runs up to six voice calls using a high complexity CODEC (G.729, G.728, G.723.1).
 - ◆ PVDM-12 fits into SIMM sockets on the NM-1HDV network module
 - ◆ Five PVDM SIMM sockets on the NM-1HDV network module

High Density Network Module Top View

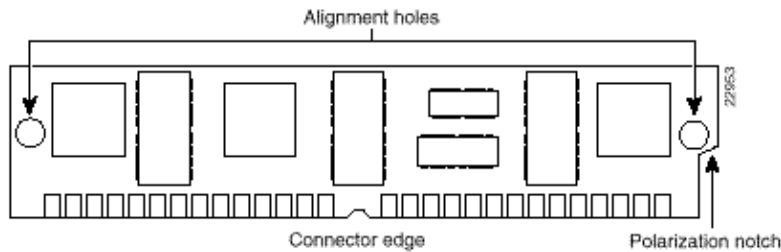


DSP IDs on the NM-1HDV PVDM-12 (Packet Voice DSP Module) When configuring ds0-group or pri-group, the timeslots are assigned DSP channels dynamically. The ID of the DSPs is as follows:

- The DSPs on the PVDM-12 on SIMM socket 4 have an id=0,1,2
- The DSPs on the PVDM-12 on SIMM socket 3 have an id=3,4,5
- The DSPs on the PVDM-12 on SIMM socket 2 have an id=6,7,8
- The DSPs on the PVDM-12 on SIMM socket 1 have an id=9,10,11
- The DSPs on the PVDM-12 on SIMM socket 0 have an id=12,13,14

Use the **show voice dsp** command to view DSP ID information.

PVDM (Packet Voice DSP Module)



Platform Support

IOS Support ¹	VG200	2600	2600XM	3620, 3640	3631	3660
NM-HDV-1E1-12		12.0(7)XK, 12.1(2)T, 12.2, 12.2T	12.2(8)T1	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	Not Supported	12.0(7)XK, 12.1(2)T, 12.2, 12.2T
NM-HDV-1E1-30	12.1(5)XM1	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	12.2(8)T1	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	Not Supported	12.0(7)XK, 12.1(2)T, 12.2, 12.2T
NM-HDV-1E1-30E	12.1(5)XM1	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	12.2(8)T1	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	Not Supported	12.0(7)XK, 12.1(2)T, 12.2, 12.2T
NM-HDV-2E1-60	12.1(5)XM1	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	12.2(8)T1	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	Not Supported	12.0(7)XK, 12.1(2)T, 12.2, 12.2T
NM-HDV-1T1-12		12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	All IOS Versions	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	Not Supported	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T
NM-HDV-1T1-24	12.1(3)T	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	All IOS Versions	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	Not Supported	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T
NM-HDV-1T1-24E	12.1(3)T	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	All IOS Versions	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	Not Supported	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T
NM-HDV-2T1-48	12.1(3)T	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	All IOS Versions	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	Not Supported	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T
NM-HDV	12.1(3)T	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	All IOS Versions	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	Not Supported	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T
PVDM-12	12.1(3)T	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	All IOS Versions	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T	Not Supported	12.0(5)XK, 12.0(7)T, 12.1, 12.1T, 12.2, 12.2T

¹ Requires an IOS "Plus" feature set.

Note: The Cisco IOS versions provided are typically the minimum version required to support the platform, module or feature in question. To find out a complete list of Cisco IOS software versions a feature, module, interface card, or chassis is supported in, use the Software Advisor tool. This tool is linked below in the Tools Information section of this document.

Tools Information

For additional resources, refer to Cisco TAC Tools for Voice, Telephony and Messaging Technologies.

Related Information

- **Voice Hardware Compatibility Matrix for Cisco 1750, 2600, 3600 and VG200 Routers and Catalyst 4000, 5000 and 6000 Switches**
 - **Network Module Installation Guide**
 - **Voice, Telephony and Messaging Technical Tips**
 - **Voice, Telephony and Messaging Technologies**
 - **Voice, Telephony and Messaging Products**
 - **Cisco Solutions: Voice, Telephony and Messaging**
 - **Voice, Telephony and Messaging Top Issues**
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