

High-Density Packet Voice/Fax Digital Signal Processor Module for Cisco AS5400XM and AS5350XM Voice Gateways

PRODUCT OVERVIEW

The Cisco® High-Density Packet Voice/Fax DSP Module (AS54-PVDM2-64) helps the Cisco AS5400XM and AS5350XM Voice Gateways provide high-density voice connectivity to Cisco Voice Infrastructure and Applications (VIA) solutions. Cisco AS5000XM Series Voice Gateways offer service providers and large enterprises intelligent, high-capacity voice gateways that can be used for several solutions, including voice services over broadband, wholesale voice transport, unified communications, call-center services, IP-enabled interactive voice response (IVR), toll bypass, hosted IP telephony, and prepaid calling card services. The high-density packet voice/fax digital-signal-processor (DSP) module is available and supported in a single version (part number AS5X-PVDM2-64), shown in Figure 1.

Figure 1. Cisco High-Density Packet Voice/Fax DSP Module



Both sides of the module are shown in Table 1 and the numbers of voice channels and codecs that this module supports are shown in Table 2 and Table 3.

Table 1. Cisco PVDM2 Top and Bottom Views

Part Number	Top	Bottom
AS5X-PVDM2-64		

Table 2. Channel Density of Each Cisco AS54-PVDM2-64 Module

Part Number	Description	Maximum Channels in High-Complexity Codec	Maximum Channels in Medium-Complexity Codec	Maximum Channels in Low-Complexity Codec
AS5X-PVDM2-64	64-channel packet voice/fax DSP module	24	32	64

Table 3. Codec Support on Cisco AS54-PVDM2-64 Module

Part Number	High-Complexity Codecs	Medium-Complexity Codecs	Low-Complexity Codecs
AS5X-PVDM2-64	<ul style="list-style-type: none"> Adaptive multirate AMR-NB: 4.75K, 5.15K, 5.9K, 6.7K, 7.4K, 7.95K, 10.2K, 12.2K, and silence insertion descriptor (SID) G.723.1: 5.3K and 6.3K G.723.1A: 5.3K and 6.3K G.728 Modem relay Internet Low Bit Rate Codec (iLBC)* 	<ul style="list-style-type: none"> G.729 a G.729 ab G.726: 16K, 24K, and 32K T.38 Fax Relay Cisco Fax Relay 	<ul style="list-style-type: none"> G.711 mu-law G.711 a-law Fax pass-through Modem pass-through Clear channel codec

* Support is planned for a future Cisco IOS® Software release.

The Cisco AS54-PVDM2-64 connects to the Cisco AS5000XM Feature Card (part number AS5X-FC) through 80-pin single inline memory module (SIMM) slots. The module is field-insertable and removable. The Cisco AS5400XM and AS5350XM manage DSP resources on a call-by-call basis to service all codec types (low, medium, and high complexity). Six Cisco AS54-PVDM2-64 modules can be plugged into a Cisco AS5000XM Feature Card. Table 2 shows the number of calls supported per Cisco PVDM2 on the Cisco AS5000XM. Figure 2 shows how a Cisco PVDM2 is plugged into the feature card.

Figure 2. Cisco AS54-PVDM2-64 SIMM Slots on the Cisco AS5000XM Feature Card



KEY FEATURES AND BENEFITS

Investment Protection and Field-Upgradeable Capability

The Cisco AS54-PVDM2-64 is used across the series of Cisco AS5000XM Series Voice Gateways. This module shares the technology with the modules used in the Cisco Integrated Services Routers, facilitating continued evolution of capabilities and investment protection. The field upgradeable capability helps users easily scale their voice deployment and redeploy DSPs where needed. The high performance of the module supports future growth.

High Density and Flexibility

The Cisco AS5X-PVDM2-64 provides high call density per DSP and flexibility on the channel allocation. The maximized support of uncompressed G.711 voice calls optimizes the DSP usage for the solutions where G.711 codecs are appropriate, including call centers and interactive-voice-response (IVR) solutions, and the flexibility allows for high compression where required, such as toll-bypass and wireless solutions.

Industry-Leading Voice Quality

The Cisco AS54-PVDM2-64 performs compression, voice activity detection (VAD), jitter management and echo-cancellation functions to help ensure that the voice quality on Cisco Voice over IP (VoIP) solutions is toll quality. The echo cancellation offered in the module has a 64-ms tail length and is ITU-T G.168-compliant. Tables 3 through 5 describes the feature availability, supported IOS images, licenses, standards supported and ordering information regarding the module.

Table 4. Features Availability

Part Number	Platform Support	Availability	Release
AS5X-PVDM2-64	Cisco AS5400XM and AS5350XM	All images	Cisco IOS Software Release 12.4(4)XC
FR535XM-AMR-LIC(=)	Cisco AS5350XM	Special license required to support AMR codecs on the Cisco AS5X-PVDM2-64 DSP; contact sales channel to obtain	Cisco IOS Software Release 12.4(4)XC
FR54XM-AMR-LIC(=)	Cisco AS5400XM	Special license required to support AMR codecs on the Cisco AS5X-PVDM2-64 DSP; contact sales channel to obtain	Cisco IOS Software Release 12.4(4)XC

Table 5. Product Specifications

Product	Specification
Components	
DSP	Texas Instruments TNETV2510GGW
DSP CPU Clock	200 MHz for TNETV2510GGW
DSP External Memory	128-Mb synchronous dynamic RAM (SDRAM) for each DSP (there are a total of 4 DSP modules on the Cisco AS5X-PVDM2-64)
Interface	80-pin SIMM interface
Features	
Echo Cancellation	Software echo cancellation compliant with ITU-I G.168 with 64-ms tail coverage
Approvals and Compliance	
Safety	<ul style="list-style-type: none">• IEC 60950 (worldwide)• AS/NZS 3260 (Australia and New Zealand)• CAN/CSA-C22.2 No. 60950 (Canada)• GB4943-95 (Peoples Republic of China)• EN60950 (CENELEC; includes EU and EFTA)• SS337 (Singapore; PSB approval)• NOM-019-SCFI-1998 (Mexico)• UL 60950 3rd edition (United States)
Homologation	Platform dependent
Mean Time Between Failure (MTBF)	System dependent

Product	Specification
EMC	
CISPR22, Class B	Emissions
EN55022, Class B	Emissions
CFR47, Part 15, Subpart B, Class B	Emissions
EN61000-3-2	Harmonics
EN61000-3-3	Flicker
CISPR24	Immunity
EN 55024	Immunity
EN50082-1	Immunity
EN61000-3-2	Harmonics
EN 61000-3-3	Flicker
EN 61000-4-2	ESD
EN 61000-4-3	RF fields
EN 61000-4-4	EFT
EN 61000-4-5	Surge
EN 61000-4-6	Conducted RF
EN 6100-4-8	Power-Frequency Magnetic Fields
EN 61000-4-11	Voltage dips/sags/interruptions

Table 6. Ordering Information

Product Description	Product Part Number
64-Channel Packet Voice/Fax DSP Module, or Spare	AS5X-PVDM2-64 or AS5X-PVDM2-64=
AMR License for Cisco AS5350XM, or Spare	FR535XM-AMR-LIC or FR535XM-AMR-LIC=
AMR License for Cisco AS5400XM, or Spare	FR54XM-AMR-LIC or FR54XM-AMR-LIC=

To place an order, go to the Cisco Ordering homepage: <http://www.cisco.com/en/US/ordering/index.shtml>

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