Data Sheet

Four-Port High-Density Analog Voice Interface Cards for the Cisco ICS 7750 Integrated Communications System

The Cisco ICS 7750 Integrated Communications System brings the benefits of converged IP services to midmarket businesses and enterprise branch offices. The Cisco ICS 7750 is a versatile IP telephony and services solution that helps businesses harness the power of the Internet through converged applications, enabling them to anticipate and respond to customer needs more efficiently. Call processing, voice applications, and multiservice IP routing are integrated within the system chassis to deliver true convergence while enhancing system manageability. The modular system architecture enables expansion of call processing, routing capacity, and IP services to deliver high availability and scalability. The Cisco ICS 7750 gives customers the flexibility to choose the optimal configuration for their business environment, and allows them to increase profitability through improved customer interactions.

To keep up with the rapidly changing business environment in the Internet economy, businesses need cost-effective, yet scalable communication network solutions that seamlessly integrate traditional voice networks as well as into the Internet. The Cisco Multiservice Route Processor (MRP) for the Cisco ICS 7750 is flexible in that it can provide connection to both voice networks and the Internet based on the type of interface card required by the customer.

When combining the Cisco MRP with the high-density analog voice interface cards (VICs), the result is a cost-effective, yet scalable analog voice service solution that meets the demanding needs of today's customer.

Product Description: Cisco VIC-4FXO-M1

The high-density Cisco VIC-4FXO-M1 supports up to four foreign exchange office (FXO) M1 analog trunk ports with caller ID (see Figure 1). The Cisco VIC-4FXO-M1 is built from industry-proven Cisco hardware and uses industry-proven Cisco IOS® Software technology. Because the Cisco VIC-4FXO-M1 is the same size as the existing two-port VICs, it can slide into either one of the two voice WAN interface card (VWIC) slots located on the Cisco MRP card. Thus, when installing two

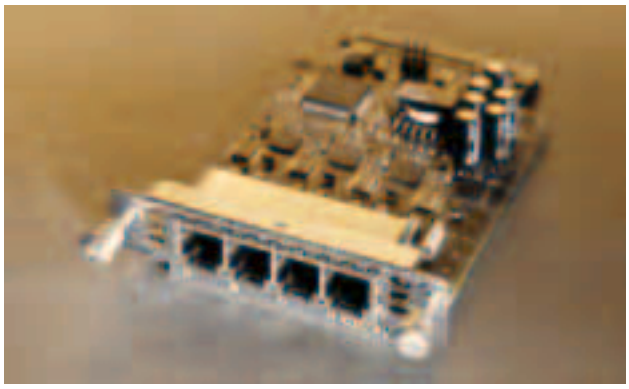
Figure 1
Four-Port Cisco FXO-M1 VIC with Battery Reversal Detection and Caller ID Support

Cisco VIC-4FXO-M1 cards within a Cisco MRP, up to eight FXO-M1 trunk ports can be provided.

Product Description: Cisco VIC-4FXS/DID

The high-density Cisco VIC-4FXS/DID VIC can support up to four foreign exchange station (FXS) ports for directly connecting phones or fax machines, or it can be used to connect up to four direct inward dial (DID) analog trunks, providing customers the flexibility they need for their unique business environment. Each port on the Cisco VIC-4FXS/DID is selectable for use as either FXS or DID mode and supports caller ID. Because the Cisco VIC-4FXS/DID is the same size as the existing two-port VWICs, it can slide into either one of the two VWIC slots located on the Cisco MRP card. Thus when installing two Cisco VIC-FXS/DID cards within a single Cisco MRP, any combination of up to eight FXS or DID ports can be supported. See Figure 2.

Figure 2
Four-Port Cisco FXS/DID VIC with Caller ID Support



DSP Requirements for the Cisco VIC-4FXO-M1 and VIC-4FXS/DID

Within the Cisco ICS 7750 system, the medium-complexity analog digital signal processor (DSP) image is the factory default for supporting the Cisco VIC-4FXO-M1 and VIC-4FXS/DID. This DSP image provides support for four voice channels (of G.711, G.729, or G.726) for each DSP chip. For example, the PVDM-4 has one DSP chip and is, therefore, capable of supporting four voice channels on the Cisco VIC-4FXO-M1 or when using the Cisco VIC-4FXS/DID. The medium-complexity analog DSP image supports four channels of G.711, G.729, G.726, fax relay, modem- or fax-pass through and provides support for 32-msec echo cancellation per DSP chip.

The Cisco VIC-4FXO-M1 and VIC-4FXS/DID VICs also support the high-complexity analog DSP image. This DSP image provides support for two voice channels (of G.711, G.729, G.723.1, or G.726) for each DSP chip. Therefore, a PVDM-8 (two DSP chips) is required to support four voice channels on the Cisco VIC-4FXO-M1 or when using the Cisco VIC-4FXS/DID. The high-complexity analog DSP image supports two channels of G.711, G.729, G.726, G.723.1 fax relay, modem- or fax-pass through and provides support for 32-msec echo cancellation per DSP chip.

Service and Support Solutions

Cisco Service and Support Solutions are designed for one purpose—to ensure customer success by delivering a suite of proactive services. Delivered directly or through an ecosystem of best-of-breed service partners, Cisco Service and Support offerings provide presales network audit planning, design consulting, network implementation, operational

support, and network optimization. Advanced Services enable you to plan, design, build, implement, and optimize your solution for rapid deployment and increased system stability and availability. Technical Support Services provide the maintenance and troubleshooting you need to keep your solution operational.

By purchasing service and support with the Cisco ICS 7750, customers can confidently deploy a converged network architecture using Cisco experience, expertise, and resources.

Table 1 gives the technical specifications and benefits of the Cisco VIC-4FXO-M1 and VIC-4FXS/DID.

Table 1 Technical Specifications and Benefits of the Cisco VIC-4FXO-M1 and VIC-4FXS/DID

VIC-4FXO-M1	Four-port FXO voice/fax trunk interface card with battery reversal detection and caller ID (for United States, Canada, Japan, and other countries)
Interface type	FXO
Supported platforms	Cisco ICS 7750
CallManager requirement	Cisco CallManager 3.1(2c)
Cisco ICS System Manager requirement	Cisco ICS System Manager Release 2.2
Cisco IOS Release on Cisco ICS 7750	12.2(4)XL3
Safety	UL 1950, UL 60950 (United States), CSA C22.2 950, CSA C22.2 No. 60950-00 (Canada), EN 60950 (Europe), AS 3260 (Australia), TS 001 (Australia)
Homologation	United States (TIA/EIA-1S-968), Canada (CS03 I), Japan (JATE Analog)
EMC	See Table 2
Spare	VIC-4FXO-M1=
Signaling formats	Ground Start and Loop Start
Address signaling formats	Inband DTMF[1] Out-of-band pulse (10/20 pps)
Tone disconnect supervision	Call disconnect supervisions and far-end answer supervision
Battery polarity disconnect	Call disconnects on power of < 600 msec
Physical connector	RJ-11
Number of connectors	Four
MTBF[2]	1,702,418 hours

VIC-4FXS/DID	Four-port FXS or DID voice/fax interface card with caller ID support (DID for United States, Canada, and other countries)
Interface type	FXS and DID trunk
Supported platforms	Cisco ICS 7750
CallManager requirement	Cisco CallManager 3.1(2c)
Cisco ICS System Manager requirement	Cisco ICS System Manager Release 2.2

Table 1 Technical Specifications and Benefits of the Cisco VIC-4FXO-M1 and VIC-4FXS/DID

Cisco IOS Release on Cisco ICS 7750	12.2(4)XL3
Safety	UL 1950, UL 60950 (United States), CSA C22.2 950, CSA C22.2 No. 60950-00 (Canada), EN 60950 (Europe), AS 3260 (Australia), TS 001 (Australia)
FXS homologation	United States (TIA/EIA-1S-968), Canada (CS-03 I)
DID homologation	United States (TIA/EIA-1S-968), Australia (ACIF S002/S003)
EMC	See Table 2
Spare	VIC-4FXS/DID=
Signaling modes	FXS—Loop Start DID—Wink, Immediate, and Delay Dial
Address signaling formats	In-band DTMF Out-of-band pulse (10/20 pps)
Tone disconnect supervision	DID—Power denial (caller party control, far-end disconnect)
Ringing frequencies	20 Hz, 50 Hz
Physical connector	RJ-11
Number of connectors	Four
MTBF	2,131,306 hours

1. Dual tone multifrequency
2. Mean time between failure

Table 2 EMC for Cisco VIC-4FXS/DID and VIC-FXO-M1

FCC Part 15 Class B	Emissions
EN55022: 1998, Class B	Emissions
EN61000-3-2: 1995	Harmonics
EN61000-3-3: 1995	Flicker
EN 50082-1: 1997	Immunity
EN55024: 1998	Immunity
EN61000-3-2	Harmonics
EN61000-3-3	Flicker
EN61000-4-2	ESD[1]
EN61000-4-3	RF[2] fields
EN61000-4-4	EFT
EN61000-4-5	Surge
EN61000-4-6	Conducted RF

Table 2 EMC for Cisco VIC-4FXS/DID and VIC-FXO-M1

FCC Part 15 Class B	Emissions
EN61000-4-11	Voltage dips/sags/interruptions

1. Electrostatic discharge
2. Radio frequency

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems Europe
11 Rue Camille Desmoulins
92782 Issy-les-Moulineaux
Cedex 9
France
www-europe.cisco.com
Tel: 33 1 58 04 60 00
Fax: 33 1 58 04 61 00

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
Capital Tower
168 Robinson Road
#22-01 to #29-01
Singapore 068912
www.cisco.com
Tel: +65 317 7777
Fax: +65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the

Cisco Web site at www.cisco.com/go/offices

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia
Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland
Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland
Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden
Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

LW3119 04/02