



# Understanding Foreign Exchange Office (FXO) Voice Interface Cards

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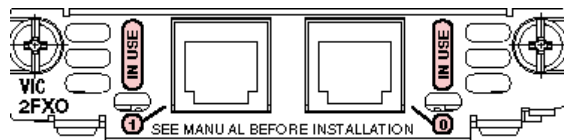
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## Introduction

The Cisco Foreign Exchange Office (FXO) interface is an RJ-11 connector that allows an analog connection to be directed at the public switched telephone network's (PSTN's) central office or to a station interface on a private branch exchange (PBX). The FXO sits on the switch end of the connection. It plugs directly into the line side of the switch so the switch thinks the FXO interface is a telephone.

**Note:** The FXO Voice Interface Card (VIC) is not the same as a Foreign Exchange Station (FXS) card and therefore does not provide dial tone. Do not plug a telephone set to the FXO VIC.



## Prerequisites

### Requirements

There are no specific requirements for this document.

## Components Used

This document is not restricted to specific software and hardware versions.

## Conventions

Refer to [Cisco Technical Tips Conventions](#) for more information on document conventions.

## Product Numbers

Product Number	Description
VIC-2FXO	Two-port FXO VIC
VIC-2FXO-EU	Two-port FXO for Europe
VIC-2FXO-M1	Two-port FXO for U.S. with battery reversal
VIC-2FXO-M2	Two-port FXO for Europe with battery reversal
VIC-2FXO-M3	Two-port FXO for Australia
VIC-4FXO-M1	Four-port FXO for U.S. with battery reversal only for the MRP
VIC2-2FXO	Two-port VIC – FXO (Universal). Also supports Centralized Automatic Message Accounting (CAMA) with software configuration
VIC2-4FXO	Four-port VIC – FXO (Universal). Also supports CAMA with software configuration
MRP3-8FXOM1	Eight-port FXO M1 card for the MRP

## Features

Product Number	Description
Voice Ports	Two, four, or eight FXO ports
Connections	<p>Connects to a telco line or to a PBX or key set that emulates a telco line. Uses RJ-11 connectors.</p> <p><b>Note:</b> The end to end connection between the CO RJ11 jack and the router voice-port must be a straight-through connection. This means that TIP goes to TIP and RING to RING. Normally the CO provides an interface for which a standard rolled RJ11 cable may be used since the resulting connection is straight. However, sometimes the CO may not reverse the pinouts and therefore a straight RJ11 cable is needed.</p> <p>Defintions:</p> <ul style="list-style-type: none"> <li>• Pinouts for Rolled RJ11 Cable =&gt; TIP to RING, RING to TIP</li> </ul>

	<ul style="list-style-type: none"> <li>• Pinouts for Straight RJ11 Cable=&gt; TIP to TIP, RING to RING</li> </ul> <p>Also note FXO ground-start services are polarity-sensitive and undesirable behavior, such as failed calls, will occur if proper polarity conventions are not observed.</p>
Cisco IOS® Software Feature Set	Requires a Plus feature set.
Caller ID	Requires VIC-2FXO-M1, VIC-2FXO-M2, VIC-4FXO-M1, VIC2-2FXO, VIC2-4FXO, or MRP3-8FXOM1
Battery Reversal	Requires VIC-2FXO-M1, VIC-2FXO-M2, VIC-4FXO-M1, VIC2-2FXO, VIC2-4FXO, or MRP3-8FXOM1
Ground Start	Requires VIC-2FXO, VIC-2FXO-M1, VIC-2FXO-M3, VIC-4FXO-M1, VIC2- 2FXO, VIC2-4FXO, or MRP3-8FXOM1
Loop Start	Supported on all cards.

## Configuration

For configuration of voice features in Cisco IOS Software, refer to [Voice over IP for the Cisco 3600 Series](#).

**Note:** In Cisco IOS Software, issue the **voice-port <slot>/<VIC slot>/<unit>** global configuration command to configure the voice port parameters.

The commands to configure VoIP on Cisco routers are very similar on all of the router platforms shown below.

For configuration of voice features in Catalyst OS (CatOS) on a Catalyst 4000, see [Configuring Voice Interfaces](#).

## Platform Support

The following table shows which platforms support the various FXO VICs including Cisco IOS Software release support selection.

**Note:** The original VIC only works in NM-1V and NM-2V network modules, and VIC2 only works in NM-HD-1V, NM-HD-2V, and NM-HD-2VE. These are not interchangeable.


Cisco IOS Software Support 1	1750 <sup>2</sup>	1751 <sup>2</sup>	1760 <sup>2</sup>	VG200	2600, 3620	2600XM, 2691, 3725, 3745			3640 <sup>3</sup> , 3660 <sup>3</sup>			2811 <sup>4</sup> , 2821 <sup>4</sup> , 2851 <sup>4</sup>	3825 <sup>4</sup> , 3845 <sup>4</sup>	MRP ICS7750	IAD2431, IAD2432	Catalyst 4000
Carrier Module	Not Required	Not Required	Not Required	NM-1V, NM-2V	NM-1V, NM-2V	NM-1V, NM-2V	NM-HD-1V, NM-HD-2V, NM-HD-2VE	NM-HDV2	NM-1V, NM-2V	NM-HD-1V, NM-HD-2V, NM-HD-2VE	NM-HDV2	NM-HD-1V, NM-HD-2V, NM-HD-2VE, NM-HDV2	NM-HD-1V, NM-HD-2V, NM-HD-2VE, NM-HDV2	Not Required	Not Required	WS-X4604 AGM

VIC-2FXO	All Versions	All Versions	All Versions	12.1(3)T	All Versions	All Versions	Not Supported	Not Supported	All Versions	Not Supported	Not Supported	Not Supported	Not Supported	12.2(1)XD	12.2(1)XD	12.1(3a)XI
VIC-2FXO-EU	All Versions	All Versions	All Versions	12.1(3)T	11.3(6)T, 12.0(2), 12.0(2)T, 12.0XK, 12.1, 12.1T, 12.2, 12.2T,	All Versions	Not Supported	Not Supported	11.3(6)T, 12.0(2), 12.0(2)T, 12.0XK, 12.1, 12.1T, 12.2, 12.2T,	Not Supported	Not Supported	Not Supported	Not Supported	12.2(1)XD	12.2(1)XD	12.1(3a)XI
VIC-2FXO-M1	12.2(2)XJ	12.2(2)XJ	All Versions	12.1(3)T	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	All Versions	Not Supported	Not Supported	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	Not Supported	Not Supported	Not Supported	Not Supported	12.2(1)XD	12.2(1)XD	Not Supported
VIC-2FXO-M2	12.2(2)XJ	12.2(2)XJ	All Versions	12.1(3)T	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	All Versions	Not Supported	Not Supported	12.0(7)XK, 12.1(2)T, 12.2, 12.2T	Not Supported	Not Supported	Not Supported	Not Supported	12.2(1)XD	12.2(1)XD	Not Supported
VIC-4FXO-M1	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	12.2(8)YN, 12.2(15)ZL	12.2(8)YN, 12.2(15)ZL	Not Supported
VIC-2FXO-M3	12.1(5)T, 12.2, 12.2T	12.1(5)T, 12.2, 12.2T	All Versions	12.1(3)T	11.3(6)T, 12.0(2), 12.0(2)T, 12.0XK, 12.1, 12.1T, 12.2, 12.2T,	All Versions	Not Supported	Not Supported	11.3(6)T, 12.0(2), 12.0(2)T, 12.0XK, 12.1, 12.1T, 12.2, 12.2T,	Not Supported	Not Supported	Not Supported	Not Supported	12.2(1)XD	12.2(1)XD	Not Supported
VIC-2FXO	Not Supported	12.2(15)ZL, 12.3(4)T, 12.3(4)XG, 12.3(5)	12.2(15)ZL, 12.3(4)T, 12.3(4)XG, 12.3(5)	Not Supported	Not Supported	Not Supported	12.2(15)ZJ, 12.3(4)T	12.3(7)T	Not Supported	12.2(15)ZJ, 12.3(4)T	12.3(7)T	12.3(8)T4	12.3(11)T	Not Supported	Not Supported	Not Supported
VIC-4FXO	Not Supported	12.2(15)ZL, 12.3(4)T, 12.3(4)XG, 12.3(5)	12.2(15)ZL, 12.3(4)T, 12.3(4)XG, 12.3(5)	Not Supported	Not Supported	Not Supported	12.2(15)ZJ, 12.3(4)T	12.3(7)T	12.3(7)T	Not Supported	12.3(7)T	12.3(8)T4	12.3(11)T	12.2(15)ZL	12.2(15)ZL	Not Supported
MRP3-8FXOM1	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	12.2(8)YN and 12.2(15)	12.2(8)YN and 12.2(15)	Not Supported



<a href="#">Location of phone configuration files?</a> - Feb 8, 2006 <a href="#">VIC2-2BRI NT/TE - link going down</a> - Feb 8, 2006 <a href="#">SIP and Cisco PIX 506e</a> - Feb 8, 2006 <a href="#">Q.SIG and MWI?</a> - Feb 8, 2006 <a href="#">ciscoworks &amp; callmanager</a> - Feb 8, 2006
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## Related Information

- [Voice - Understanding FXO Disconnect Problem](#)
- [Voice Hardware Compatibility Matrix for Cisco 1750, 2600, 3600 and VG200 Routers and Catalyst 4000, 5000 and 6000 Switches](#)
- [Voice Technology Support](#)
- [Voice and IP Communications Product Support](#)
- [Voice, Telephony and Messaging Technical Support eLearning Solutions](#)
- **Recommended Reading:** [Troubleshooting Cisco IP Telephony](#) 
- [Technical Support & Documentation - Cisco Systems](#)

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