



## Preface

---

### Objectives

The *Cisco VCO/4K Hardware and Software Planning Guide* contains hardware and software configuration guidelines for VCO/4K systems. System engineers can use this document to determine the VCO/4K hardware requirements for their application.



Note

---

This document represents the most current information about VCO/4K mechanical assemblies. If you need information pertaining to VCO/4K assemblies, circuit cards, or other components that are not included in this document, see the following URL on Cisco's web site for legacy VCO/4K information:

[http://www.cisco.com/univercd/cc/td/doc/product/tel\\_pswt/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/tel_pswt/index.htm)

---

### Audience

This manual is intended for VCO/4K system users and third-party support personnel. If you are unfamiliar with the VCO/4K system, refer to the "Related Documentation" section on page viii.

This manual assumes that the host application (if it is a hosted system) is written to conform to the *VCO API Programming Reference Manual*. However, that does not preclude problems occurring between the application and the VCO/4K system.

Each release of the VCO/4K system software is described in the *Cisco VCO/4K System Software Release Notes*, the *Cisco VCO/4K SS7 ISUP Release Notes*, and the *Cisco VCO/4K TCAP Release Notes* that contain detailed information on changes from one release to the next. If your VCO/4K system includes the SS7 subsystem, refer to the *SS7 Release Notes*.

### Document Organization

This document is organized as follows:

- [Chapter 1, "VCO/4K Hardware Configuration Guidelines,"](#) presents the guidelines that govern proper configuration of a VCO/4K system.
- [Chapter 2, "Network Interface and Service Circuit Cards,"](#) describes the VCO/4K port interface and service circuit cards.

- Chapter 3, “Peripheral Equipment,” describes the VCO/4K peripherals.
- Chapter 4, “Spare Parts Lists,” lists the spare parts.
- Chapter 5, “Software and System Capacity,” describes VCO/4K system software capacity guidelines.
- Chapter 6, “System Configuration Guidelines,” describes VCO/4K configuration guidelines and Cisco recommendations.
- Appendix A, “Service Circuit Channel Requirements,” contains guidelines for determining the service circuit card requirements for your application.

## Document Conventions

This document uses the following conventions:



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.



Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.



Warning

Means ***danger***. You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translated versions of the warning, refer to the *Regulatory Compliance and Safety* document that accompanied the device.

## Related Documentation

The following documents are referenced from this guide or contain information that is directly related to system performance and configuration.

Knowledge of PSTN communication protocols is also important.

## VCO/4K System

- *Cisco VCO/4K System Software Release Notes*
- *Cisco VCO/4K SS7 ISUP Release Notes*
- *Cisco VCO/4K TCAP Release Notes*
- *Cisco VCO/4K Product Overview*
- *Cisco VCO/4K Mechanical Assemblies*
- *Cisco VCO/4K System Maintenance Manual*
- *Cisco VCO/4K Standard Programming Reference*

- *Cisco VCO/4K Extended Programming Reference*
- *Cisco VCO/4K System Administrator's Guide*
- *Cisco VCO/4K Ethernet Guide*
- *Cisco VCO/4K Site Preparation Guide*
- *Cisco VCO/4K Hardware Installation Guide*
- *Cisco VCO/4K Card Technical Descriptions*
- *Cisco VCO/4K Troubleshooting Guide*
- *Cisco VCO/4K TeleRouter Reference Guide*
- *Ring Generator Instruction Sheet* (included with the ring generator kit)

The VCO/4K documents are available at:

[http://www.cisco.com/univercd/cc/td/doc/product/tel\\_pswt/](http://www.cisco.com/univercd/cc/td/doc/product/tel_pswt/)

## Third-Party Documents

The following third-party documents are recommended by Cisco:

- Theodore Frankel's *ABC Of the Telephone: Traffic Series – Tables For Traffic Management And Design*
- International Telecommunications Union ITU-T Q.931 ISDN documentation
- ANSI T1.113-1992, SS7 ISUP documentation
- OEM manuals supplied with peripheral equipment installed as part of the system configuration
- The documentation set produced for the host computer system
- Documentation for the application software package developed to run on the host

## Obtaining Documentation

The following sections explain how to obtain documentation from Cisco Systems.

### World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following URL:

<http://www.cisco.com>

Translated documentation is available at the following URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

## Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

## Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products MarketPlace:  
[http://www.cisco.com/cgi-bin/order/order\\_root.pl](http://www.cisco.com/cgi-bin/order/order_root.pl)
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:  
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

## Documentation Feedback

If you are reading Cisco product documentation on Cisco.com, you can submit technical comments electronically. Click **Leave Feedback** at the bottom of the Cisco Documentation home page. After you complete the form, print it out and fax it to Cisco at 408 527-0730.

You can e-mail your comments to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Cisco Systems  
Attn: Document Resource Connection  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate your comments.

## Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

## Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you to

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following URL:

<http://www.cisco.com>

## Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available through the Cisco TAC: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Inquiries to Cisco TAC are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

## Cisco TAC Web Site

The Cisco TAC Web Site allows you to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to the following URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to the following URL to register:

<http://www.cisco.com/register/>

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered user, you can open a case online by using the TAC Case Open tool at the following URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

## Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; these classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled; for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). In addition, please have available your service agreement number and your product serial number.