



Preface

Objective

Cisco VCO/4K Supervision and Call Progress Tone Detection provides detailed information for application developers to define and control supervision processing within their VCO/4K applications. This information is focused on general network supervision processing, and does not include information pertinent to SS7 system configurations. For information pertaining to SS7 operations, refer to the appropriate ANSI or ITU SS7 manual for the VCO/4K.

Audience

This manual is intended for all personnel responsible for VCO/4K system application development.

Document Organization

This book is divided into the following chapters:

- Chapter 1, “Network Signaling Overview,” provides a fundamental understanding of network signaling, describing the various signaling formats. Basic signal types are defined and applied to a simple call example to illustrate when and where they occur during a call.
- Chapter 2, “Supervision Processing,” demonstrates the system's relationship to the network based on the system application and establishes basic terminology used throughout this document. General call processing by the system is illustrated with emphasis placed on supervision signaling and processing.
- Chapter 3, “Call Supervision Signaling and Supervision Timing,” describes the generation/detection of call supervision signaling (seizure, wink, hook flash, answer supervision and disconnect) for each network interface type. Supervision timers for grace timing, guard timing and other uses are also explained.
- Chapter 4, “Call Progress Tones,” discusses the tone generation capabilities of the system and how the system recognizes call progress tones. Call Progress Analysis (CPA) topics, including allocation and processing information, system administration support and application/template download procedures are also presented.

- Chapter 5, “Answer Supervision Template Processing,” explains the interaction between supervision control outpulse rules and answer supervision templates. Supervision template condition tokens are defined and a brief example demonstrates outpulse rule and answer supervision template processing. Guidelines for designing templates are also discussed.
- Chapter 6, “Call Examples,” provides detailed models that demonstrate various aspects of call supervision processing on the system. Each example identifies the interactions between the system, a host computer and connected equipment.

Document Conventions

This guide uses the following conventions:



Note

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



Tips

Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information.



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

Refer to the following documents that apply to your Cisco VCO/4K configuration:

- *Cisco VCO/4K System Software Version 5.n(n) Release Notes*
- *Cisco VCO/4K System Administrator's Guide*
- *Cisco VCO/4K System Messages*
- *Cisco VCO/4K Software Installation Guide*
- *Cisco VCO/4K Hardware Installation Guide*
- *Cisco VCO/4K Card Technical Descriptions*
- *Cisco VCO/4K Standard Programming Reference*
- *Cisco VCO/4K Extended Programming Reference*
- *Cisco VCO/4K Ethernet Guide*

- Product supplements for optional software, including:
 - *Cisco VCO/4K Management Information Base (MIB) Reference*
 - *Cisco VCO/4K ASIST Programming Reference*
 - *Cisco VCO/4K TeleRouter Reference Guide*
 - *Cisco VCO/4K ISDN Supplement*
 - *Cisco VCO/4K IPRC Supplement*

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

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

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.cisco.com>

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships 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 as 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
- 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, in North America, by calling 800 553-NETS(6387).

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To submit your comments by mail, for your convenience many documents contain a response card behind the front cover. Otherwise, you can mail your comments to the following address:

Cisco Systems, Inc.
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. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

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

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

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

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

