



Sweden Tone Plan

This chapter details the modifications to the Digital Tone Generator (DTG or DTG-2) and Call Progress Analyzer (CPA) cards to support the following features:

- Supervision tones specific to the Sweden telephone network
- Additional tones used with the conferencing capabilities of the VCO

The information in this chapter supersedes the information in the following manuals:

- *Cisco VCO/4K System Administrator's Guide*
- *Cisco VCO/4K Standard Programming Reference*
- *Cisco VCO/4K Extended Programming Reference*
- *Cisco VCO/4K Supervision and Call Progress Tone Detection*

Tone Characteristics

Table 2-1 summarizes the characteristics of the most frequently used supervision tones in the Sweden network.

Table 2-1 Supervision Tones

Tone	Frequencies (Hz)	Amplitude (dBm)	Cadence
Dial	425	-10	Continuous
Ring	425	-10	1 sec on 5 sec off Repeated
Busy	425	-10	250 ms on 250 ms off Repeated
Reorder	425	-10	250 ms on 750 ms off Repeated

Table 2-1 Supervision Tones (continued)

Tone	Frequencies (Hz)	Amplitude (dBm)	Cadence
Special Dial	425	-10	320 ms on 40 ms off Repeated
SIT	950 1400 1800	-20	330 ms on 1.0 sec off Repeated
Recorder Warning	1400	-30	500 ms on 15 sec off Repeated
Operator Warning	1400	-30	100 ms on 1.5 sec off Repeated

Tone Detection

CPA processing is modified to support the Sweden network requirements. Use the system administration answer supervision templates function to control tone detection for the tones listed in Table 2-1. Supervision template processing is described in the *Cisco VCO/4K System Administrator's Guide*.

Answer Supervision Template Screen Terminology

The supervision events and tones listed in the Answer Supervision Template screen use standard North American network terminology. Table 2-2 shows the Answer Supervision Template screen terms to use with the Sweden country feature package.

Because the conference tones are used only in conference structures and are not transmitted or received over the network, no detection functions are required.

Table 2-2 Answer Supervision Template Screen Terminology for Sweden

Answer Supervision Template Event and Tone Name	Sweden Tone Name
Dial Tone	Dial
Ringback	Ringback
Busy	Busy
Reorder	Reorder
SIT Tones	SIT
Ring Cess. ¹	—
Voice Det. ¹	—
Voice Cess. ¹	—

Table 2-2 Answer Supervision Template Screen Terminology for Sweden (continued)

Answer Supervision Template Event and Tone Name	Sweden Tone Name
Wink ¹	—
Answer ¹	—
Time ¹	—
Hook Flash ¹	—
Pager Cue	—
ISUP Tone	—
ISUP Cess.	Fax

1. Not a tone.

Tone Generation

Tone generation is performed through DTG outpulse and static tone channels. The allocation of these tones is controlled via inpulse rules, Voice Path Control (\$66) commands, and DTMF Collection Control (\$67) commands.

The tone generation information affects the *Cisco VCO/4K Standard Programming Reference* and the *Cisco VCO/4K Extended Programming Reference*. It also supersedes the tone output level specifications found in the *Cisco VCO/4K Card Technical Descriptions*. For more information on generating tones, refer to the *Cisco VCO/4K System Administrator's Guide*.

The tones and their corresponding output levels, decimal values, hexadecimal values, and port addresses are summarized in Table 2-3.

Table 2-3 Tone Levels, Values, and Port Addresses

Tone	Amplitude/Output Level	Decimal Value	Hex Value	Port Address
Beep	—	0	00	None
Quiet (PCM idle pattern 01010100)	—	1	01	04C0
1 KHz Test Tone	0 dBm	2	02	04C1
Dial Tone 425 Hz	-10 dBm	3	03	04C2
380 Hz Digit Trip	-10 dBm	4	04	04C3
440 Hz	-13 dBm	5	05	04C4
480 Hz High Tone	-17 dBm	6	06	04C5
1400 Hz	-12 dBm	7	07	04C6
1000 Hz @max CODEC output	5.79 dBm	8	08	04C7
Reserved	—	9	09	04C8
404 Hz Test Tone	0 dBm	10	0A	04C9
Reserved	—	11	0B	04CA
2804 Hz Test Tone	0 dBm	12	0C	04CB

Table 2-3 Tone Levels, Values, and Port Addresses (continued)

Tone	Amplitude/Output Level	Decimal Value	Hex Value	Port Address
440+480 Hz Steady Ringback	-19 dBm/freq	13	0D	04CC
425 Hz + 400 Hz	-13 dBm/freq	14	0E	04CD
Digital Test Pattern	—	15	0F	04CE
425 Hz	-10 dBm	16	10	04CF
Ring 425 Hz	-10 dBm	17	11	04D0
Busy Tone 425 Hz	-10 dBm	17	11	04D1
Reorder Tone 425 Hz	-10 dBm	19	13	04D2
Reserved	—	20	14	04D3
Reserved	—	21	15	04D4
Reserved	—	22	16	04D5
Reserved	—	23	17	04D6
SIT	-20 dBm	24	18	04D7
Special Dial 425 Hz	-10 dBm	25	19	04D8
Reserved	—	26	1A	04D9
Recorder Warning 1400 Hz	-30 dBm	27	1B	04DA
Operator Warning 1400 Hz	-30 dBm	28	1C	04DB
Reserved	—	29	1D	04DC
Reserved	—	30	1E	04DD
Reserved	—	31	1F	04DE
Reserved	—	32	20	04DF
DTMF digit 0 (steady)	-10 and -9 dBm/freq	33	21	04E0
DTMF digit 1 (steady)	-10 and -9 dBm/freq	34	22	04E1
DTMF digit 2 (steady)	-10 and -9 dBm/freq	35	23	04E2
DTMF digit 3 (steady)	-10 and -9 dBm/freq	36	24	04E3
DTMF digit 4 (steady)	-10 and -9 dBm/freq	37	25	04E4
DTMF digit 5 (steady)	-10 and -9 dBm/freq	38	26	04E5
DTMF digit 6 (steady)	-10 and -9 dBm/freq	39	27	04E6
DTMF digit 7 (steady)	-10 and -9 dBm/freq	40	28	04E7
DTMF digit 8 (steady)	-10 and -9 dBm/freq	41	29	04E8
DTMF digit 9 (steady)	-10 and -9 dBm/freq	42	2A	04E9
DTMF digit A (steady)	-10 and -9 dBm/freq	43	2B	04EA
DTMF digit B (steady)	-10 and -9 dBm/freq	44	2C	04EB
DTMF digit C (steady)	-10 and -9 dBm/freq	45	2D	04EC
DTMF digit D (steady)	-10 and -9 dBm/freq	46	2E	04ED
DTMF digit * (steady)	-10 and -9 dBm/freq	47	2F	04EE

Table 2-3 Tone Levels, Values, and Port Addresses (continued)

Tone	Amplitude/Output Level	Decimal Value	Hex Value	Port Address
DTMF digit # (steady)	-10 and -9 dBm/freq	48	30	04EF
MF digit 0 (steady)	-7 dBm/freq	49	31	04F0
MF digit 1 (steady)	-7 dBm/freq	50	32	04F1
MF digit 2 (steady)	-7 dBm/freq	51	33	04F2
MF digit 3 (steady)	-7 dBm/freq	52	34	04F3
MF digit 4 (steady)	-7 dBm/freq	53	35	04F4
MF digit 5 (steady)	-7 dBm/freq	54	36	04F5
MF digit 6 (steady)	-7 dBm/freq	55	37	04F6
MF digit 7 (steady)	-7 dBm/freq	56	38	04F7
MF digit 7 (steady)	-7 dBm/freq	56	38	04F7
MF digit 8 (steady)	-7 dBm/freq	57	39	04F8
MF digit 9 (steady)	-7 dBm/freq	58	3A	04F9
MF digit KP (steady)	-7 dBm/freq	59	3B	04FA
MF digit ST (steady)	-7 dBm/freq	60	3C	04FB
MF digit ST3P	-7 dBm/freq	61	3D	04FC
MF digit STP	-7 dBm/freq	62	3E	04FD
MF digit ST2P	-7 dBm/freq	63	3F	04FE

