



Netherlands Tone Plan

This chapter describes the changes to the Digital Tone Generator (DTG) and Call Progress Analyzer (CPA) cards to support the supervision tones specific to the Netherlands public switched telephone network.

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 Process Tone Detection*



Note

Make certain that you have installed the proper DTG firmware and are running the correct version of the CPA download. Refer to Table 1-1 and Table 1-2 in Chapter 1, “System Administration Support” for this information.

Tone Characteristics

Table 3-1 lists the characteristics of the supervision tones used in the Netherlands network.

Table 3-1 Netherlands Supervision Tones

Tone	Frequencies (Hz)	Cadence
Dial Tone	425	Continuous
Ringing Tone	425	1 second on, 1 second off
Busy Tone	425	500 ms on, 500 ms off
Reorder Tone	425	250 ms on, 250 ms off
SIT ¹	425	75 ms on, 75 ms off, 33%
Pager Cue ¹	1600	Continuous

1. The CPA will detect the presence of SIT and Pager Cue but the DTG does not generate these tones.

Tone Detection

CPA processing was modified to support the Netherlands network requirements. Use the answer supervision templates function to control tone detection for busy tone, ringing tone, dial tone, reorder, SIT, and pager cue. Supervision template processing is described in the *Cisco VCO/4K System Administrator's Guide*.

Tone Generation

Tone generation is performed using DTG outpulse and static tone channels. Allocate these tones using 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 *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 about generating tones, refer to the *Cisco VCO/4K System Administrator's Guide*.

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

Table 3-2 Tone Levels, Values & Port Addresses

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
Beep	—	0	00	None
Quiet (PCM idle pattern 01010100)	—	1	01	04C0
1 KHz	0 dBm	2	02	04C1
Dial Tone (425 Hz)	-10 dBm	3	03	04C2
380 Hz	-10 dBm	4	04	04C3

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

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
Beep (440 Hz)	-13 dBm	5	05	04C4
480 Hz	-17 dBm	6	06	04C5
1400 Hz	-10 dBm	7	07	04C6
1000 Hz @max CODEC output	—	8	08	04C7
920 Hz	-13 dBm	9	09	04C8
404 Hz	0 dBm	10	0A	04C9
1004 Hz	0 dBm	11	0B	04CA
2804 Hz	0 dBm	12	0C	04CB
Steady Ringback	-10 dBm	13	0D	04CC
1760 Hz	-10 dBm	14	0E	04CD
Digital test pattern	—	15	0F	04CE
425 Hz	-10 dBm	16	10	04CF
Ringing tone (425 Hz)	-10 dBm	17	11	04D0
Busy tone (425 Hz)	-10 dBm	18	12	04D1
Reorder Tone (425 Hz)	-10 dBm	19	13	04D2
Reserved	—	20 to 32	14 to 20	04D3 to 04DF
DTMF digit 0 (steady)	-9/-11 dBm/freq	33	21	04E0
DTMF digit 1 (steady)	-9/-11 dBm/freq	34	22	04E1
DTMF digit 2 (steady)	-9/-11 dBm/freq	35	23	04E2
DTMF digit 3 (steady)	-9/-11 dBm/freq	36	24	04E3
DTMF digit 4 (steady)	-9/-11 dBm/freq	37	25	04E4
DTMF digit 5 (steady)	-9/-11 dBm/freq	38	26	04E5
DTMF digit 6 (steady)	-9/-11 dBm/freq	39	27	04E6
DTMF digit 7 (steady)	-9/-11 dBm/freq	40	28	04E7
DTMF digit 8 (steady)	-9/-11 dBm/freq	41	29	04E8
DTMF digit 9 (steady)	-9/-11 dBm/freq	42	2A	04E9
DTMF digit A (steady)	-9/-11 dBm/freq	43	2B	04EA
DTMF digit B (steady)	-9/-11 dBm/freq	44	2C	04EB
DTMF digit C (steady)	-9/-11 dBm/freq	45	2D	04EC
DTMF digit D (steady)	-9/-11 dBm/freq	46	2E	04ED
DTMF digit * (steady)	-9/-11 dBm/freq	47	2F	04EE
DTMF digit # (steady)	-9/-11 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

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

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
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 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