



Korea Tone Plan

This chapter details the modifications to the Digital Tone Generator (DTG or DTG-2), Call Progress Analyzer (CPA), and Service Platform (SPC) cards to support the supervision tones specific to the Korean 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 Progress Tone Detection*

Tone Characteristics

Table 3-1 summarizes the characteristics of the most frequently used supervision tones in the Korean network.

Table 3-1 *Korean Digital Tone Generator Supervision Tones*

Tone	Frequencies (Hz)	Amplitude (dBm)	Cadence	Detected by CPA?
Dial	350 + 440	-10 +/- 5	Continuous	Yes
Ring 1	440 + 480	-15 +/- 5	Continuous	No
Ring 2	440 + 480	-15 +/- 5	1.0 seconds on, 2.0 seconds off, REPEATED	Yes
Busy	480 + 620	-20 +/- 5	0.5 seconds on, 0.5 seconds off, REPEATED	Yes
Fast Busy	480 + 620	-20 +/- 5	0.3 seconds on, 0.2 seconds off, REPEATED	Yes

Table 3-1 Korean Digital Tone Generator Supervision Tones (continued)

Tone	Frequencies (Hz)	Amplitude (dBm)	Cadence	Detected by CPA?
Wait	350 + 440	-10 +/- 5	0.25 seconds on, 0.25 seconds off, 0.25 seconds on, 3.25 seconds off, REPEATED	No
Hold	440 + 480	-15	0.5 seconds on, 0.5 seconds off, REPEATED	No
	350 + 440	-10	0.5 seconds on, 2.5 seconds off, REPEATED	
Interrupt	350 + 440	-10 +/- 5	0.12 seconds on, 0.25 seconds off, 0.12 seconds on, 1.5 seconds off, REPEATED	No
Error	480 + 620	-20 +/- 5	0.3 seconds on, 0.2 seconds off, REPEATED	Yes—as Fast Busy
Auto Response	1000	0 +/- 5	Continuous	No
Paging	1700	-10 +/- 5	0.2 seconds on, 0.1 seconds off, 0.2 seconds on, 0.5 seconds off, 0.2 seconds on, 0.1 seconds off, 0.2 seconds on, 2.5 seconds off, REPEATED	Yes
Paging Complete	1700	-10 +/- 5	0.2 seconds on, 0.2 seconds off, REPEATED (2 seconds on impulse rules)	Yes—as Paging

Tone Detection

CPA processing is modified to support the Korean network requirements. Use the system administration answer supervision templates function to control tone detection for the tones listed in Table 3-1. 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 3-2 shows the Answer Supervision Template screen terms to use with the Korea country feature package.

Table 3-2 Answer Supervision Template Screen Terminology for Korea

Answer Supervision Template Event and Tone Names	Korea Tone Names
Dial Tone	Dial Tone
Ringback	Ring 2
Busy	Busy
Reorder	Fast Busy/Error
SIT Tones	—
Ring Cess. ¹	—
Voice Det. ¹	—
Voice Cess. ¹	—
Wink ¹	—
Answer ¹	—
Time ¹	—
Hook Flash ¹	—
Pager Cue	Paging/Paging Complete
ISUP Tone	—
ISUP Cess. ¹	—

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) and DTMF Collection Control (\$67) commands.

Table 3-3 supersedes the tone generation table listed in 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 3-3.



Note

The DTMF outpulses have been modified from the international standard to 70 ms on/70 ms off, and high tone -7 dBm, low tone -9 dBm.

Table 3-3 Tone Levels, Values and Port Addresses

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
Beep		0	00	None
Quiet (PCM idle pattern 01010100)	—	1	01	04C0
Auto Response	0 +/- 5 dBm	2	02	04C1
Dial	-10 dBm/freq.	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
920 Hz	-13 dBm	9	09	04C8
404 Hz Test Tone	0 dBm	10	0A	04C9
1004 Hz Test Tone	0 dBm	11	0B	04CA
2804 Hz Test Tone	0 dBm	12	0C	04CB
Ring 1	-15 +/-5 dBm	13	0D	04CC
1760 Hz	-10 dBm	14	0E	04CD
Digital Test Pattern	—	15	0F	04CE
400 Hz	-14 dBm	16	10	04CF
Ring 2	-15 +/-5 dBm	17	11	04D0
Busy	-20 +/-5 dBm	18	12	04D1
Fast Busy/Error	-20 +/-5 dBm	19	13	04D2
380 Hz Digit Trip	-10 dBm	20	14	04D3
Reserved	—	21	15	04D4
Hold	First: -15 dBm Second: -10 dBm	22	16	04D5
Reserved	—	23	17	04D6
Interrupt	-10 +/- 5 dBm	24	18	04D7
Wait	-10 +/- 5 dBm	25	19	04D8
Paging	-10 +/- 5 dBm	26	1A	04D9
Paging Complete	-10 +/- 5 dBm	27	1B	04DA
Reserved	—	28	1C	04DB
Reserved	—	29	1D	04DC
Reserved	—	30	1E	04DD
Reserved	—	31	1F	04DE
Reserved	—	32	20	04DF

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

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
DTMF digit 0 (steady)	low -9 dBm/ high -7 dBm dBm	33	21	04E0
DTMF digit 1 (steady)	low -9 dBm/ high -7 dBm	34	22	04E1
DTMF digit 2 (steady)	low -9 dBm/ high -7 dBm	35	23	04E2
DTMF digit 3 (steady)	low -9 dBm/ high -7 dBm	36	24	04E3
DTMF digit 4 (steady)	low -9 dBm/ high -7 dBm	37	25	04E4
DTMF digit 5 (steady)	low -9 dBm/ high -7 dBm	38	26	04E5
DTMF digit 6 (steady)	low -9 dBm/ high -7 dBm	39	27	04E6
DTMF digit 7 (steady)	low -9 dBm/ high -7 dBm	40	28	04E7
DTMF digit 8 (steady)	low -9 dBm/ high -7 dBm	41	29	04E8
DTMF digit 9 (steady)	low -9 dBm/ high -7 dBm	42	2A	04E9
DTMF digit A (steady)	low -9 dBm/ high -7 dBm	43	2B	04EA
DTMF digit B (steady)	low -9 dBm/ high -7 dBm	44	2C	04EB
DTMF digit C (steady)	low -9 dBm/ high -7 dBm	45	2D	04EC
DTMF digit D (steady)	low -9 dBm/ high -7 dBm	46	2E	04ED
DTMF digit * (steady)	low -9 dBm/ high -7 dBm	47	2F	04EE
DTMF digit # (steady)	low -9 dBm/ high -7 dBm	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

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

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
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