



Singapore Tone Plan

This chapter details the modifications to the Digital Tone Generator (DTG or DTG-2) and Call Progress Analyzer (CPA), and Service Platform (SPC) cards to support the supervision tones specific to the Singapore 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 and conference tones in the Singapore network.

Table 3-1 Singapore Digital Tone Generator Supervision and Conference Tones

Tone	Frequencies (Hz)	Amplitude (dBm)	Cadence	Detected by CPA?
Dial	425	-15	Continuous	Yes
Ringing	425 (modified by 25)	-10	0.4 seconds on, 0.2 seconds off, 0.4 seconds on, 0.2 seconds off, REPEATED	Yes
Busy	425	-10	750 milliseconds on, 750 milliseconds off, REPEATED	Yes
Reorder	425	-10	250 milliseconds on, 250 milliseconds off, REPEATED	Yes
PIP	900	-10	Continuous	No

Table 3-1 Singapore Digital Tone Generator Supervision and Conference Tones (continued)

Tone	Frequencies (Hz)	Amplitude (dBm)	Cadence	Detected by CPA?
Fax	2100	—	Continuous	Yes ¹
SIT	950 1400 1800	-12	0.33 seconds on, 0.33 seconds off, 0.33 seconds on, 1.0 second off, REPEATED	Yes

1. The fax tone is not generated, but is detected as ISUP cessation.

Tone Detection

CPA processing is modified to support the Singapore 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 Singapore country feature package.

Table 3-2 Answer Supervision Template Screen Terminology for Singapore

Answer Supervision Template Event and Tone Names	Singapore Tone Names
Dial Tone	Dial
Ringback	Ringing
Busy	Busy
Reorder	Reorder
SIT Tones	SIT
Ring Cess. ¹	Not Applicable
Voice Det. ¹	Not Applicable
Voice Cess. ¹	Not Applicable
Wink ¹	Not Applicable
Answer ¹	Not Applicable
Time ¹	Not Applicable
Hook Flash ¹	Not Applicable
Pager Cue	Not Available

Table 3-2 Answer Supervision Template Screen Terminology for Singapore (continued)

Answer Supervision Template Event and Tone Names	Singapore Tone Names
ISUP Tone	Not Available
ISUP Cessation	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.

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.

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
1 KHz	0 dBm	2	02	04C1
Dial	-15 dBm	3	03	04C2
380 Hz	-10 dBm	4	04	04C3
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
PIP	-10 dBm	9	09	04C8
404 Hz	0 dBm	10	0A	04C9
Reserved	0 dBm	11	0B	04CA
Reserved	0 dBm	12	0C	04CB
Steady Ringback	-10 dBm	13	0D	04CC
1800 Hz	-10 dBm	14	0E	04CD
Digital Test Pattern	—	15	0F	04CE
425 Hz	-10 dBm	16	10	04CF
Ringling	-10 dBm	17	11	04D0

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

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
Busy	-10 dBm	18	12	04D1
Reorder	-10 dBm	19	13	04D2
Reserved	—	20	14	04D3
Special Information Tone (SIT)	-12 dBm	21	15	04D4
Reserved	—	22 to 32	11 to 20	04D8 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
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

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

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
MF digit STP	-7 dBm/freq	62	3E	04FD
MF digit ST2P	-7 dBm/freq	63	3F	04FE

