



## China 3 (TUP) 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 following features:

- Supervision tones specific to the China 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 3-1 summarizes the characteristics of the most frequently used supervision tones in the China network.

*Table 3-1 China 3 Digital Tone Generator Supervision and Conference Tones*

Tone	Frequencies (Hz)	Amplitude (dBm)	Cadence	Detected by CPA?
Dial	450	-10	Continuous	Yes
Ringback	450	-10	1 second on, 4 seconds off, REPEATED	Yes
Busy	450	-10	0.35 seconds on, 0.35 seconds off, REPEATED	Yes
Fast Busy	450	-10	0.7 seconds on, 0.7 seconds off, REPEATED	Yes

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

Tone	Frequencies (Hz)	Amplitude (dBm)	Cadence	Detected by CPA?
Number Unavailable	450	-10	0.1 seconds on, 0.1 seconds off, 0.1 seconds on, 0.1 seconds off, 0.1 seconds on, 0.1 seconds off, 0.4 seconds on, 0.4 seconds off, REPEATED	No
Toll	450	-20	0.2 seconds on, 0.2 seconds off, 0.2 seconds on, 0.6 seconds off, REPEATED	No
Queue Wait	450	N/A	1 second on, 4 seconds off, REPEATED	Yes—as Ringback
Call Wait	450	-20	0.4 seconds on, 4 seconds off, REPEATED	No
Conference (Reminding)	450	-20	0.4 seconds on, 10 seconds off, REPEATED	No
Call Back	950	-20	Continuous	Yes—as Dial
ISUP Tone 1	2010	-12	Continuous	Yes
ISUP Tone 2	1800	-22	Continuous	Yes

**Note**

The China 3 Tone Plan was taken from a specification. The Howler tone, which has varying amplitude, was not implemented. The Number Unavailable tone with 100 ms tone pulses, cannot be detected by CPA. The ISUP tones at 1800 Hz and 2010 Hz are located in the same time slots as the North American tone plan.

## Tone Detection

CPA processing is modified to support the China 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 China 3 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 3-2 Answer Supervision Template Screen Terminology for China 3*

Answer Supervision Template Event and Tone Names	China 3 Tone Names
Dial Tone	Dial/Call Back
Ringback	Ringback/Queue Wait
Busy	Busy
Reorder	Fast Busy
SIT Tones	Not available
Ring Cess. <sup>1</sup>	Not applicable
Voice Det. <sup>1</sup>	Not applicable
Voice Cess. <sup>1</sup>	Not applicable
Wink <sup>1</sup>	Not applicable
Answer <sup>1</sup>	Not applicable
Time <sup>1</sup>	Not applicable
Hook Flash <sup>1</sup>	Not applicable
Pager Cue	Not available
ISUP Tone	ISUP Tone 1/ISUP Tone 2
ISUP Cess.	ISUP Tone 1/ISUP Tone 2

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 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
<b>Dial</b>	<b>-10 dBm</b>	<b>3</b>	<b>03</b>	<b>04C2</b>
380 Hz	-10 dBm	4	04	04C3
440 Hz	-13 dBm	5	05	04C4
480 Hz	-17 dBm	6	06	04C5
1400 Hz	—	7	07	04C6
1000 Hz @max CODEC output	—	8	08	04C7
<b>Call Back</b>	<b>-20 dBm</b>	<b>9</b>	<b>09</b>	<b>04C8</b>
404 Hz	0 dBm	10	0A	04C9
1004 Hz	0 dBm	11	0B	04CA
2804 Hz	0 dBm	12	0C	04CB
Steady RingBack	-15.5 dBm/freq	13	0D	04CC
1760 Hz	-10 dBm	14	0E	04CD
Digital Test Pattern	—	15	0F	04CE
400 Hz	-14 dBm	16	10	04CF
<b>Ringback/Queue Wait</b>	<b>-10 dBm</b>	<b>17</b>	<b>11</b>	<b>04D0</b>
<b>Busy</b>	<b>-10 dBm</b>	<b>18</b>	<b>12</b>	<b>04D1</b>
<b>Fast Busy</b>	<b>-10 dBm</b>	<b>19</b>	<b>13</b>	<b>04D2</b>
380 Hz	-10 dBm	20	14	04D3
CONFERENCE (Reminding) Tone	-20 dBm	21	15	04D4
<b>Toll</b>	<b>-20 dBm</b>	—	<b>16</b>	<b>04D5</b>
<b>Call Wait</b>	<b>-20 dBm</b>	—	<b>17</b>	<b>04D6</b>
<b>Number Unavailable</b>	<b>-10 dBm</b>	<b>24</b>	<b>18</b>	<b>04D7</b>
<b>ISUP Tone 1</b>	<b>2010 Hz</b>	<b>25</b>	<b>19</b>	<b>4D8 (ANSI)</b>
<b>ISUP Tone 2</b>	<b>1800 Hz</b>	<b>26</b>	<b>1A</b>	<b>4D9 (ANSI)</b>
Reserved	—	27 to 32	1B to 20	04DA to 04DF
DTMF digit 0 (steady)	-5/-7 dBm/freq	33	21	04E0
DTMF digit 1 (steady)	-5/-7 dBm/freq	34	22	04E1
DTMF digit 2 (steady)	-5/-7 dBm/freq	35	23	04E2
DTMF digit 3 (steady)	-5/-7 dBm/freq	36	24	04E3
DTMF digit 4 (steady)	-5/-7 dBm/freq	37	25	04E4
DTMF digit 5 (steady)	-5/-7 dBm/freq	38	26	04E5
DTMF digit 6 (steady)	-5/-7 dBm/freq	39	27	04E6

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

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
DTMF digit 7 (steady)	-5/-7 dBm/freq	40	28	04E7
DTMF digit 8 (steady)	-5/-7 dBm/freq	41	29	04E8
DTMF digit 9 (steady)	-5/-7 dBm/freq	42	2A	04E9
DTMF digit A (steady)	-5/-7 dBm/freq	43	2B	04EA
DTMF digit B (steady)	-5/-7 dBm/freq	44	2C	04EB
DTMF digit C (steady)	-5/-7 dBm/freq	45	2D	04EC
DTMF digit D (steady)	-5/-7 dBm/freq	46	2E	04ED
DTMF digit * (steady)	-5/-7 dBm/freq	47	2F	04EE
DTMF digit # (steady)	-5/-7 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
MF digit STP	-7 dBm/freq	62	3E	04FD
MF digit ST2P	-7 dBm/freq	63	3F	04FE

