



# Spain Tone Plan

This chapter details the modifications to the Digital Tone Generator (DTG or DTG-2) and Call Progress Analyzer (CPA) cards, and SPC-CPA service circuits to support the supervision tones specific to the Spain 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 2-1 summarizes the characteristics of the most frequently used supervision tones in the Spain network.

*Table 2-1 Spain Digital Tone Generator Supervision Tones*

Tone	Frequencies (Hz)	Amplitude (dBm)	Cadence	Detected by CPA?
Dial	425	-10	Continuous	Yes
Ringback	425	-10	1.5 seconds on, 4.0 seconds off, REPEATED	Yes
Busy	425	-10	0.2 seconds on, 0.2 seconds off, REPEATED	Yes
Fast Busy	425	-10	0.2 seconds on, 0.2 seconds off, 0.2 seconds on, 0.2 seconds off, 0.2 seconds on, 0.6 seconds off, REPEATED	Yes

# Tone Detection

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

*Table 2-2 Answer Supervision Template Screen Terminology for Spain*

Answer Supervision Template Event and Tone Names	Spain Tone Names
Dial Tone	Dial
Ringback	Ringback
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	Not Available
ISUP Cess. <sup>1</sup>	Not Applicable

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 2-3 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 2-3.

*Table 2-3 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 Test	0 dBm	2	02	04C1
<b>Dial</b>	<b>-10 dBm/freq</b>	<b>3</b>	<b>03</b>	<b>04C2</b>
380 Hz Digit Trip	-10 dBm	4	04	04C3
440 Hz	-13 dBm	5	05	04C4
480 Hz High	-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	0 dBm	10	0A	04C9
1004 Hz Test	0 dBm	11	0B	04CA
2804 Hz Test	0 dBm	12	0C	04CB
400+450 Hz 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</b>	<b>-10 dBm/freq</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 Digit Trip	-10 dBm	20	14	04D3
Reserved	—	21	15	04D4
Reserved	—	22	16	04D5
Reserved	—	23	17	04D6
Reserved	—	24 to 32	18 to 20	04D7 to 04 DF
DTMF digit 0 (steady)	-13/-11 dBm/freq	33	21	04E0
DTMF digit 1 (steady)	-13/-11 dBm/freq	34	22	04E1
DTMF digit 2 (steady)	-13/-11 dBm/freq	35	23	04E2
DTMF digit 3 (steady)	-13/-11 dBm/freq	36	24	04E3
DTMF digit 4 (steady)	-13/-11 dBm/freq	37	25	04E4

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

Tone	Output Level	Decimal Value	Hex Value	Port Addresses
DTMF digit 5 (steady)	-13/-11 dBm/freq	38	26	04E5
DTMF digit 6 (steady)	-13/-11 dBm/freq	39	27	04E6
DTMF digit 7 (steady)	-13/-11 dBm/freq	40	28	04E7
DTMF digit 8 (steady)	-13/-11 dBm/freq	41	29	04E8
DTMF digit 9 (steady)	-13/-11 dBm/freq	42	2A	04E9
DTMF digit A (steady)	-13/-11 dBm/freq	43	2B	04EA
DTMF digit B (steady)	-13/-11 dBm/freq	44	2C	04EB
DTMF digit C (steady)	-13/-11 dBm/freq	45	2D	04EC
DTMF digit D (steady)	-13/-11 dBm/freq	46	2E	04ED
DTMF digit * (steady)	-13/-11 dBm/freq	47	2F	04EE
DTMF digit # (steady)	-13/-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
MF digit STP	-7 dBm/freq	62	3E	04FD
MF digit ST2P	-7 dBm/freq	63	3F	04FE