

# APPLICATION NOTE: 117

## CHQ-WSB2 Wall Sounder Beacon Tones & Volumes

This Application Note covers the CHQ-WSB2, ST-AWSF Wall Sounder Beacon.

### Description

The CHQ-WSB2 & ST-AWSF Wall Sounder Beacon is designed to fit onto either a Sounder Mounting Base (YBO-R/3) or a Short-Circuit Isolator Mounting Base (YBO-R/SCI). The CHQ-WSB2 is an EN 54-3 Type A audible alarm device, or type B when used in conjunction with a weatherproofing kit (CHQ-WPK).

### EN54-3 Approved Tones

The following tables give the minimum sounder performance (dB(A)@1m) of each Tone when tested under EN54-3 test conditions. Figures are given for six horizontal and six vertical directions, measured when the CHQ-WSB2 mounting base is installed as shown in Fig. 1.

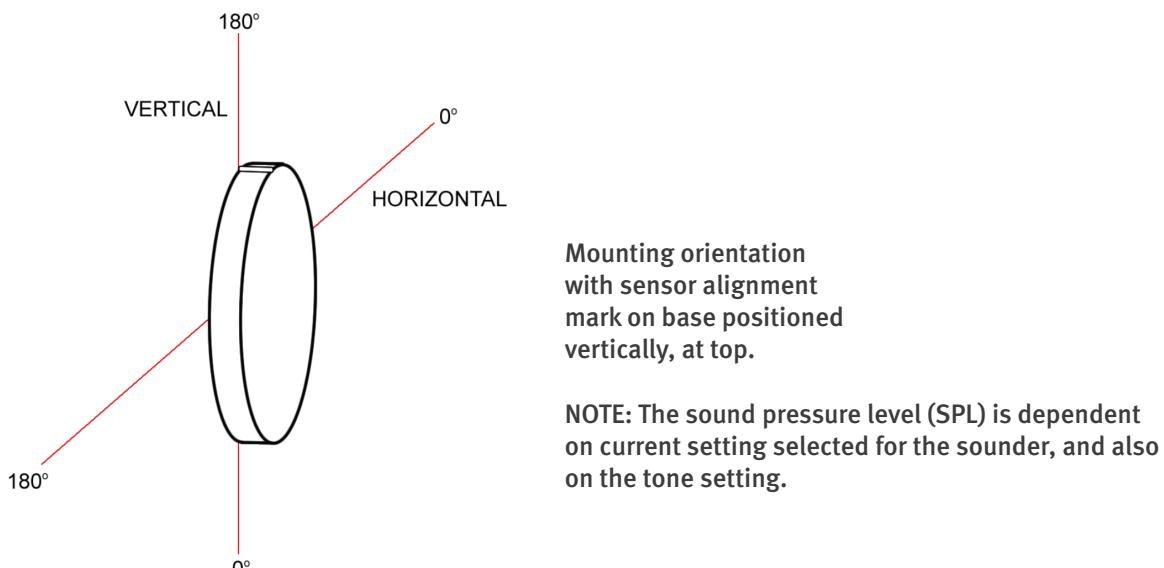


Fig. 1

TONE 1 (YBO-BS Tone 1)														
925Hz/0.25s 628Hz/0.25s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	80	92	98	98	90	79	80	91	98	97	89	79



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# APPLICATION NOTE: 117

## CHQ-WSB2 Wall Sounder Beacon Tones & Volumes

TONE 2 (YBO-BS Tone 2)														
925Hz			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	90	98	98	88	78	79	91	98	98	89	78

TONE 3 (YBO-BS Tone 3)														
628Hz			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	80	87	91	91	88	79	79	87	91	90	88	79

TONE 4 (YBO-BS Tone 4)														
554Hz/0.1s 440Hz/0.4s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	89	92	92	89	80	79	89	93	92	89	79

TONE 5 (YBO-BS Tone 5)														
660Hz/0.15s 0Hz/0.15s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	78	88	89	88	88	78	79	89	88	88	88	79

TONE 6 (YBO-BS Tone 6)														
925Hz/0.15s 0Hz/0.6s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	77	89	97	96	86	76	78	90	98	97	88	77

TONE 7 (YBO-BS Tone 7)														
670Hz/0.25s 845Hz/0.37s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	91	98	97	88	77	79	90	98	97	90	79



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# APPLICATION NOTE: 117

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TONE 8														
500Hz-1200Hz/3s 0Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	85	94	98	98	94	86	86	95	98	95	94	85

TONE 9														
1200Hz/0.5s 500Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	85	94	98	97	94	85	84	92	97	96	92	85

TONE 10														
970Hz/0.5s 0Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	74	88	96	96	87	78	75	87	95	95	86	75

TONE 11														
800-970Hz/0.14s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	80	92	99	98	92	80	81	91	98	98	91	80

TONE 12														
800-970Hz/1s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	92	99	99	92	80	83	92	99	99	92	81

TONE 13														
800-970Hz/0.02s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	90	96	96	91	80	80	90	96	96	91	80



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# APPLICATION NOTE: 117

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TONE 14														
2400-2850Hz/0.14s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	94	101	100	93	80	82	93	101	101	93	81

TONE 15														
2400-2850Hz/1s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	84	95	101	101	94	82	84	94	101	101	94	83

TONE 16														
300-1200Hz/1s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	92	96	96	92	80	82	92	97	96	92	82

TONE 17														
970Hz/0.5s 0Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	74	86	94	94	86	75	76	88	95	95	85	75

TONE 18														
2850Hz/0.5s 0Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	80	94	102	102	95	83	82	94	101	101	93	82

TONE 19														
800Hz/0.25s 970Hz/0.25s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	92	97	96	92	80	80	91	97	96	91	82



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TONE 20														
2850Hz			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	78	92	100	100	93	83	80	92	99	99	91	80

TONE 21														
2400Hz/0.25s 2850Hz/0.25s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	94	101	100	93	81	83	93	99	99	93	83

TONE 22														
800Hz/0.5s 970Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	91	96	96	91	80	81	91	97	96	92	83

TONE 23														
2850Hz/0.5s 0Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	80	94	102	102	95	84	82	95	102	102	94	83

TONE 24														
925Hz/0.25s 0Hz/1s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	74	88	96	96	87	76	75	87	95	95	85	75

TONE 25														
970Hz			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	74	88	96	96	87	75	75	88	95	95	86	75



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# APPLICATION NOTE: 117

## CHQ-WSB2 Wall Sounder Beacon Tones & Volumes

TONE 26														
660Hz/1.8s 0Hz/1.8s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	89	90	89	88	79	81	90	90	89	89	79

TONE 27														
660Hz/6.5s 0Hz/13s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	89	90	90	88	79	81	90	91	90	90	80

TONE 28														
660Hz			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	89	90	89	88	79	80	90	90	90	90	80

TONE 29														
554Hz/0.5s 440Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	78	89	93	93	90	82	80	91	94	94	90	81

TONE 30														
660Hz/0.5s 0Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	78	89	89	89	89	78	80	90	90	89	90	80

TONE 31														
2850Hz/0.15s 0Hz/0.1s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	93	102	101	94	83	82	94	101	101	93	82



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# APPLICATION NOTE: 117

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TONE 32														
2400-2850Hz/0.02s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	93	100	99	93	81	81	93	99	99	93	82

TONE 33														
800-970Hz/0.5s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	92	99	99	92	81	81	91	99	98	91	80

TONE 34														
988Hz/0.25s 645Hz/0.25s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	89	93	93	88	81	80	89	93	92	89	80

TONE 35														
510Hz/0.25s 610Hz/0.25s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	80	88	91	91	87	81	80	88	91	90	87	80

TONE 36														
800-970Hz/0.11s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	80	92	99	98	91	80	80	91	98	98	91	80

TONE 37														
800-970Hz/0.33s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	80	92	99	98	92	80	81	91	99	98	91	80



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# APPLICATION NOTE: 117

## CHQ-WSB2 Wall Sounder Beacon Tones & Volumes

TONE 38														
845Hz			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	93	99	98	93	80	78	91	98	97	91	80

TONE 39														
970Hz/1s 0Hz/1s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	74	88	95	95	87	77	75	88	95	96	86	75

TONE 40														
800Hz/0.15s 970Hz/0.15s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	79	90	96	96	91	82	79	91	96	96	91	82

TONE 41														
2400-2850Hz/0.11s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	94	101	100	93	80	82	93	100	100	92	81

TONE 42														
2400-2850Hz/0.33s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	94	101	100	94	81	81	93	101	100	93	81

TONE 43														
2850Hz/1s 0Hz/1s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	81	94	102	101	94	81	81	94	101	101	93	82



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# APPLICATION NOTE: 117

## CHQ-WSB2 Wall Sounder Beacon Tones & Volumes

TONE 44														
2400Hz/0.15s 2850Hz/0.15s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	82	93	100	100	93	83	81	93	99	99	93	84

TONE 45														
1200-500Hz/1s 0Hz/0.01s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	84	93	97	96	94	86	85	94	97	97	93	85

TONE 46														
440Hz/0.6s 0Hz/0.6s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	76	86	90	90	88	79	77	87	91	90	87	76

TONE 47														
500-1200Hz/3.75s 0Hz/.025s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	84	94	98	97	94	85	85	95	98	98	95	85

TONE 48														
925/628Hz/0.25s 0Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	16	0F	79	92	98	97	89	81	79	89	98	97	88	79

TONE 49														
300-1200Hz/0.5s 0Hz/0.5s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	83	93	98	97	94	86	84	94	97	97	94	84



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TONE 50														
1200-300Hz/0.5s 0Hz/0.5s Sweep			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	82	91	95	94	92	83	84	92	95	95	92	82

TONE 51														
500-1200Hz/3.5s 0Hz/0.5s			HORIZONTAL Angle°						VERTICAL Angle°					
dB (nom)	Current mA	Volume Code	15	45	75	105	135	165	15	45	75	105	135	165
102	8	0F	84	94	98	97	94	86	85	95	98	98	95	85

- ▶ YBO-BS tone equivalents (in brackets): this is the tone that corresponds to the previous version of Base Sounder, and applies to the first 7 tones listed. The other tone patterns are new to the CHQ-WSB2 or ST-AWSF sounder device.
- ▶ dB (nom): this is the nominal or target SPL level expected.
- ▶ Current: this is the current in mA drawn from the loop by the sounder only, when activated.

Note: If the beacon is flashing, add 7mA on CHQ-WSB2 to this value.

- ▶ Volume code: this is the volume code required to set the current level and overall SPL.
- ▶ Sound input: this is the minimum sound output that the CHQ-WSB2 or ST-AWSF Wall Sounder Beacon will produce, taking into account manufacturing tolerances, temperature and conditions of operation



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