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# EFJ Call-Guard tone chart

Compiled and HTML'd by Mike Morris WA6ILQ

E. F. Johnson company numbers their CTCSS tones, and you will find the tone numbers stamped on their tone elements, not the frequencies.

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Here's the list from the pre-synthesized days when the frequency determining element was a small daughterboard that plugged onto the tone board.

Tone Freq (Hz)	Tone Code	Tone Number
67.0	XZ	1
69.3 *	(none)	39
71.9	XA	2
74.4	WA	3
77.0	XB	4
79.7	WB	5
82.5	YZ	6
85.4	YA	7
88.5	YB	8
91.5	ZZ	9
94.8	ZA	10
97.4	ZB	11
97.4	ZB	11
100.0	1Z	12
103.5	1A	13
107.2	1B	14
110.9	2Z	15

Tone Freq (Hz)	Tone Code	Tone Number
136.5	4Z	21
141.3	4A	22
146.2	4B	23
151.4	5Z	24
156.7	5A	25
162.2	5B	26
167.9	6Z	27
173.8	6A	28
179.9	6B	29
186.2	7Z	30
192.8	7A	31
203.5	M1	32
210.7	M2	33
218.1	M3	34
225.7	M4	35
233.6	M5	36
241.8	M6	37

114.8	2A	16
118.8	2B	17
123.0	3Z	18
127.3	3A	19
131.8	3B	20

250.3	M7	38
206.5	8Z	40
229.1	9Z	41
254.1	ØZ*	42

\* ØZ: That's a zero, then the letter "Z"

\* The 69.3 Hz tone is a non-standard tone. The manufacturers that did make it available used 69.4, and in many cases the Johnson radios would be flaky or just not work with other manufacturers 69.4 equipment.



The programmable radios like the Challenger use a different tone numbering scheme... the 69.3 tone (tone 39) and the tones above 250.3 (40, 41 and 42) are dropped... (and tones 1-32 are identical to a TS-32):

Tone Freq (Hz)	Tone Code	Tone Number
67.0	XZ	1
71.9	XA	2
74.4	WA	3
77.0	XB	4
79.7	WB	5
82.5	YZ	6
85.4	YA	7
88.5	YB	8
91.5	ZZ	9
94.8	ZA	10
97.4	ZB	11
100.0	1Z	12
103.5	1A	13
107.2	1B	14

Tone Freq (Hz)	Tone Code	Tone Number
131.8	3B	20
136.5	4Z	21
141.3	4A	22
146.2	4B	23
151.4	5Z	24
156.7	5A	25
162.2	5B	26
167.9	6Z	27
173.8	6A	28
179.9	6B	29
186.2	7Z	30
192.8	7A	31
203.5	M1	32
210.7	M2	33

110.9	2Z	15	218.1	M3	34
114.8	2A	16	225.7	M4	35
118.8	2B	17	233.6	M5	36
123.0	3Z	18	241.8	M6	37
127.3	3A	19	250.3	M7	38

Johnsons literature makes the point that subaudible tones above 200hz are not recommended due to the propensity for talk-off and falsing on lower pitched voices.

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