

JT65 Offsets for Various Beacons

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<i>Callsign</i>	<i>Nominal Carrier MHz</i>	<i>JT65 Tuning Tone</i>	<i>SSB Reference Tuning point (USB) MHz</i>	<i>Locator</i>
GB3RAL	40.050	1500Hz	40.0485	IO91EN
"	50.050	1500Hz	50.0485	"
"	60.050	1500Hz	60.0485	"
"	70.050	1500Hz	70.0485	"
144MHz				
GB3VHF	144.430	1500Hz	144.4285	JO01EH
GB3NGI	144.482	800Hz	144.4812	IO65VB
GB3WGI	144.487	1500Hz	144.4855	IO64BL
F5ZRB	144.405	1500Hz	144.4035	IN87KW
432MHz				
GB3NGI	432.482	1475Hz	432.48052	IO65VB
1296MHz				
G8MBU	1296.8000	1400Hz	1296.7986	IO90IR

Other beacons will be added when the information is made available

For optimal tuning of the JT65 modulation for DF = 0, set the SSB tuning point (often referred to as the 'Dial Frequency' below that of the nominal frequency of the beacon by a value equal to the *JT65 Tuning Tone*. This means that the carrier will then appear as a tone at that frequency.

Notes and some history :

A 1500Hz tone means the carrier sits more or less in the middle of the tone span of JT65, and was informally defined as a specification when first implemented on GB3VHF and GB3RAL

The resulting 1500Hz audio tone is a bit high for aural reception, so it was experimentally changed to 800Hz for GB3NGI on 144MHz. By an oversight during programming the GB3WGI code, 1500Hz was used here although the original intention had been to make it the same as GB3NGI.

GB3NGI on 432MHz uses a different type of frequency generator meaning an exact 'nice' tone value could not be properly implemented. However, the value of 1475Hz is close enough to 1500Hz to not affect JT65 tuning, even with the lowest 'Tol' setting

G8MBU on 1296.8MHz was set up with the intention of making the JT65 sync equal to the carrier, but setting offsets in the fractional-N implementation mean an offset of approximately 1400Hz resulted.

Different people programmed the beacons for 432MHz and above, and not everyone had the same targets – hence the various offsets seen.

For *JT4g* (note, the *g* version only) things are much simpler. *JT4g* Tone-0 ideally comes out at 797.8Hz. This is so close to 800Hz as to be insignificant, therefore it is usually set at the nominal carrier frequency, with the SSB tuning point exactly 800Hz lower. This results in a 'nice' audible tone, with no need to retune for *JT4g*.