



PERHAPS NOT EVERYONE KNOWS THAT... BC654

RIFERIMENTI

Genere	DATA	Generalità	Note	Distribuzione
Radio surplus	16	Note BC654		Af-web

OVERVIEW

Observing a complex known as RADIO SET SCR - 284 - A, or the type BC654 transceiver I noticed that the local oscillator has a double variable capacitor and has'nt an adjustable inductance (ie lacking the pace setting of the low-frequency scale segment) .

Reading the manual TM 11-275 I saw a high value of inductance for the VFO coil.

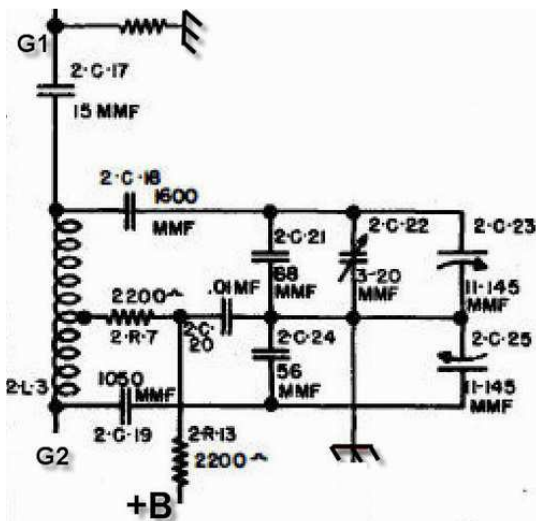
RECEIVER
TABLE OF INDUCTANCE OF COIL IN SHIELD AND THEIR Q

Circuit Symbol	Function	Inductance in Shield	Q in Shield
2-L-1	Antenna Coil Assembly Primary	45.1 μ h at 1.5 and 3 mc	36 at 3 mc
2-L-1	Antenna Coil Assembly Secondary	7.46 μ h at 3 and 6 mc	151 at 6 mc
2-L-2	R. F. Coil Assembly	7.54 μ h at 3 and 6 mc	159 at 6 mc
2-L-3	Oscillator Coil Assembly	14.6 μ h at 2 and 4 mc	142 at 6 mc
2-L-4	1st I. F. Transformer Primary	330 μ h at 455 kc	76 at 455 kc
2-L-5	1st I. F. Transformer Secondary	330 μ h at 455 kc	76 at 455 kc
2-L-6	2nd I. F. Transformer Primary	330 μ h at 455 kc	76 at 455 kc
2-L-7	2nd I. F. Transformer Secondary	330 μ h at 455 kc	76 at 455 kc
2-L-8	Beat Frequency Oscillator	330 μ h at 455 kc	76 at 455 kc
2-L-9	3rd I. F. Transformer Primary	330 μ h at 455 kc	65 at 455 kc
2-L-10	3rd I. F. Transformer Secondary	330 μ h at 455 kc	76 at 455 kc

All of the above measurements include $1\frac{1}{2}$ " lead lengths.

A simple calculus with EXCEL reveals about the project, showing that the local oscillator is'nt below the received frequency, instead I saw that the conversion freq. is above the signal but it is the second harmonic, i.e. the VFO works at half of real f- conv.

It can be seen that in line with the concepts valid in the years 30 and 40 the tuning accuracy of a mobile radio receiver was not held in great account. The real master oscillator is that the transmitter and typically has a precise numerical scale with frequency matching tables. The receiver VFO allows in practice to make iso-wave. But this is not a precision listening receiver.





There are also other examples of that time, the English WS21 has a mechanically sturdy ladder for the transmitter while the receiver is very thin.

In these conditions it is not appropriate to expect great performance from BC654 receiver, because the VFO is one with the mixer, a valve type 1A7 or VT147, eptode. However having an RF amplifier stage helps, and so let me explain the favorable reviews from many OM who have used this system, which in theory could go better than a direct conversion rx.

So: oscillator between G1 and G2 of 1A7 (2V2) between 2098 kHz and 3166kHz, and second harmonic 4195-6335 above the received frequency.



Have fun with surplus, Alessandro Frezzotti