HINTS & kINKS

A 10.7 MHZ FILTER FOR YOUR HOME BREWED 2M RECEIVER

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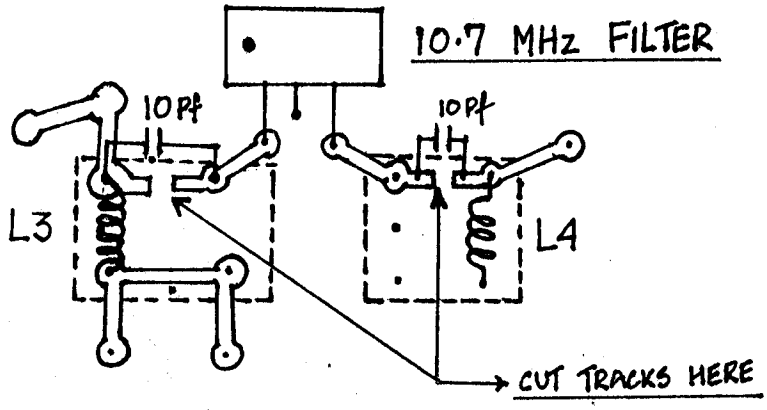
For quite some time we have been operating our home brewed 2M rigs on a single channel, i.e. 145.200 MHz. With time we also got accustomed to some spurious signals mainly in the shape of noise breaking the squelch. Image frequency response was also present and the cockpit voice from the Calcutta-Madras flight was regularly heard in the evenings. The greater the sensitivity the set achieved the greater was this encounter, but it was all fun. However recently after we got on the 2nd channel (145.500 MHz) a different phenomenon was noticed. Stations operating within a radius of 3-5 Km would find their squelch triggered with no audio when any one was transmitting on the other channel.

At first the 455 KHz ceramic filter was suspected to be the culprit. However further observation revealed that the Band Pass Filter at 10.7 MHz was pretty wide and could accept signals more than 2 MHz either way. Experiments with L/C ratio of the coils proved futile. Fortunately a ceramic filter for 10.7 MHz could be located. It is used by Philips in their FM receivers and economically priced around Rs. 10/-. On insertion of this filter with minor modifications, all spurious response could be eliminated. and inter channel interference reduced to within 1 Km radius. Naturally there is a loss in sensitivity of about 2 " S" units due to insertion loss of the filter. The modifications on the track of the RX card for incorporating the filter are given below. Sorry folks, you will be missing the captain's voice...

MODIFIED

TRACK SIDE

OF RX CARD



Notes :

1. L4 is removed and soldered back, turning it by 180° and removing centre pin.
2. Tracks are cut as shown and 10 pf discs connected across gaps on tracks.
3. 10.7 MHz ceramic filter :-
Red dot on input side; Centre pin ground; Right hand side output; Filter mounted on component side.
4. Grounding hole for filter provided in PCB - 1994 onwards.
5. Slight adjustment of cores of L3 and L4 will be required. No change in number of turns.