

# ADDITIONAL MODIFICATIONS TO THE FT-100B

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In AR March 1978, pages 10 and 11, a number of modifications to the FT-100B were described. It should be noted that in Fig. 2 the value of two capacitors shown as 0.002  $\mu\text{F}$  should read 0.022  $\mu\text{F}$ . Since making the earlier modifications several others have been made which have further improved the performance of the transceiver.

## 1. RECEIVER PRE-AMPLIFIER:

As with many transceivers the FT-100B worked very well on 80-20m, but lacked some sensitivity on 15m and was quite deaf on 10m. A broadband pre-amp. was added between the antenna relay and the receiver front-end and the improvement in sensitivity was dramatic. The circuit used has been tried in many situations where extra gain was needed ahead of a transceiver and numerous versions have all performed well. The gain is low below 20m and then increases with frequency. No band switching is required and it can be built either on PC board or tag strips. To improve stability keep the input components as far from the output as possible. Despite the apparent simplicity of the circuit there have been no serious problems even with quite solid local signals. The only minor problem was Channel O TV signals getting through the pre-amp. and mixing with internal signals in later stages of the receiver. This was cured by using a low-pass filter on the antenna coax which effectively removed the TV signal before it reached the receiver.

## 2. INCREASED CALIBRATOR SIGNAL

In the FT-100B when the calibrator is turned on the antenna is cut off, which means the 100 kHz osc. signal doesn't

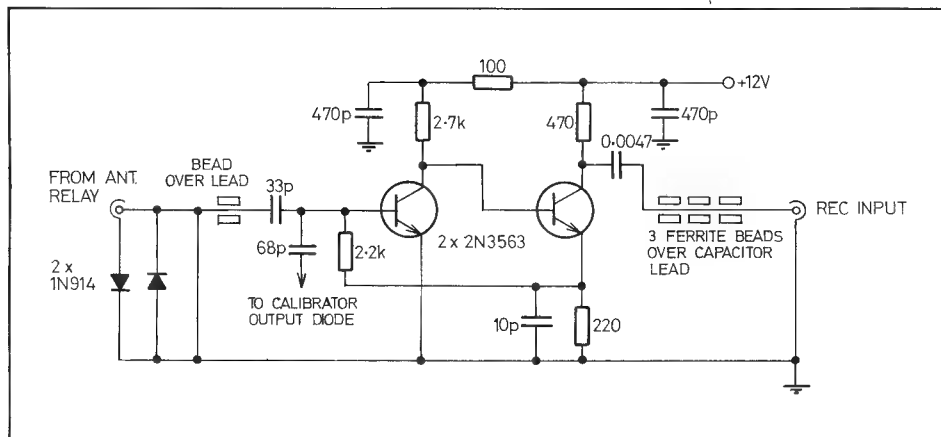


FIG. 1: Receiver Pre-amplifier.

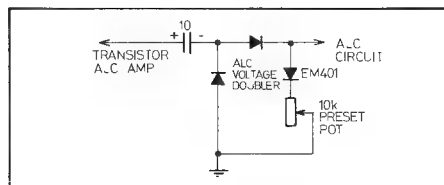


FIG. 2: ALC Level Control.

have to compete with band noises to be heard. Despite this the signal was weak on 15m and all but non-existent on 10m. This was probably a combination of falling receiver sensitivity and harmonic output as the frequency went higher. As supplied, the calibrator signal is taken to the base of TR101 (RF amp.) via a diode and capacitor (C111). After fitting the pre-amp. described above the lead to C111 was removed and connected via a 68 pF capacitor to the base of the first 2N3563 in the pre-amp. This produced a much stronger 100 kHz signal on all bands on 10m, instead

of no "S" meter reading at all, read almost half scale with a good strong signal making calibration on 10m much easier.

## 3. ALC LEVEL CONTROL

The ALC circuit in the FT-100B uses a transistor amplifier which in my opinion produces too much control voltage and prevents the 6JM6 finals from operating at full output. The relatively low power level available makes it important that the transceiver operates as well as possible, especially in difficult conditions. A diode and preset pot were added to the ALC circuit, as shown in Fig. 2, and this allowed the ALC level to be set to a more realistic position, without reaching distortion of course. The correct setting can be reached by trial and error, but a scope will give a far better indication of the linearity and how much increase can be tolerated. ■