

## **The Yaesu Musen FT-7B** John Teague G3GTJ.

The Yaesu FT-7B was conceived originally as the FT-7, a solid state QRP HF transceiver for mobile use which hit the amateur market in UK early in 1979. I have owned an FT-7 but some years ago I sold this and bought an FT-7B which I still have. The B model was advertised first in UK in June 1979 and incorporates several additional features including, importantly from our point of view, an AM mode and a higher power output – 40/50w instead of 10/15w. Other differences between the two are minor – there is a noise blanker and an optional input RF attenuator.

In my view the FT-7 is underrated and should appeal to anyone interested in early solid state gear. It has much in common with the military manpack radios which is one of my main interests since it is compact and low powered and indeed shares technology with the near contemporary Yaesu FT 70 commercial manpack which was very popular for expedition use a decade or more ago. It is a low density discrete component radio and amenable to home servicing.

The set provides excellent performance on the traditional 10 – 80 metre amateur bands; neither the WARC bands nor top band are covered. The 10m band is divided into four 500 kHz segments provided that a full complement of crystals has been fitted. Normal modes of operation are CW and upper or lower sideband SSB and (true) AM.

### **Description**

The receiver is a single conversion with an IF of 9MHz. The VFO frequency is 5 – 5.5 MHz so that the receiver covers the 80m band directly. The VFO output is mixed with appropriate crystal oscillator outputs for the other bands. An analogue tuning dial is used with excellent slow motion drive; frequency read out is calibrated to one kilohertz divisions. An add-on external digital display was available. An RF amplifier stage is included, with a signal frequency tuned input by front panel knob. A crystal calibrator can be switched in when required with varactor trimming of the main VFO for calibration correction. Provision is made for one optional crystal controlled channel on each band. In my experience the VFO drifts but not seriously. The receiver operates on the lower sideband on all bands for CW operation and a narrow audio filter is switched into the audio chain in this mode. AGC is applied to the RF and IF stages. A loudspeaker is carried on the top cover of the set.

On transmit the receiver IF section provides the filtering and VFO – crystal mixing regenerates the signal frequency. An automatic level control circuit protects the final amplifier transistors from mismatched output. The microphone gain level can be set with reference to the front panel meter

which otherwise indicates final amplifier input current or receiver signal strength.

Contemporary amateur literature recommended strongly that the FT-7 should not be fed into seriously mismatched load despite the protection circuits. A number of designs have been published in RadCom for tuning devices which do not mismatch the transmitter while tuning was in progress. It is a pity that Yaesu did not provide for meter indication of SWR since all the information needed is available. However tuning up can be carried out at reduced drive level by detuning the drive control.

Power input is 13.8 volts DC and the FT-7 draws about half an amp on receive and around 10amps on full power transmit on CW.

In operation I have noticed no problems with the single conversion receiver but it does have the advantage of a tuned RF stage. The construction of the set is modular which assists in servicing and the component density is not high but a fine tipped iron is necessary.

### **Accessories**

For use with the low power FT-7 Yaesu produced an excellent compact solid state linear amplifier to boost the power output by ten times to 100 watts, designated the FL-110. This is not needed with the FT-7B but I commend this unit to members. It operates from 13.8v and is an ideal add-on for boosting the output power of the weaker army radios like the WS19 and WS22 sets. The unit covers all the traditional amateur bands including 160m with automatic or manual PTT. Normally these amplifiers are offered at £50 to £70 and are good value, I think.

I am sure that other accessories were sold with the FT-7/7B but apart from the frequency read-out already mentioned I do not know what was available. The set needs a matching compact aerial tuning unit but I have never seen or heard of a Yaesu-made matching one.