

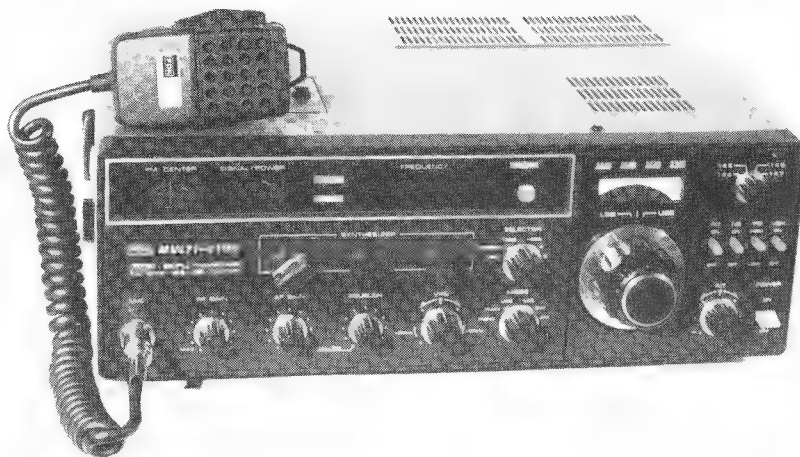
REVIEW OF THE MULTI 2700 TRANSCEIVER

New equipment for the two metre amateur seems to be never ending. Further, it appears that technical innovations are appearing more often with this section of amateur gear than perhaps for all other types. The subject of this review is the Multi-2700 transceiver. In a nutshell we have a rig with 144 to 148 MHz coverage on FM, SSB, CW, and AM. Two different methods are provided to cover this range, firstly with a switch selected synthesizer in ten kilohertz steps with a VXO to allow operation between these points. Then secondly a normal VFO with continuous coverage of the range in four, one megahertz, steps. All the usual facilities such as noise blanker, VOX, repeater offset, speech compression, S meter and centre zero discriminator meter are there. But there is even more. Included in the package is a ten metre converter to allow operation through OSCAR. It is hard at this time to think up any addition that needs inclusion.

However, back to the beginning. The Multi-2700, which is a product of the Fukuyama Co. of Tokyo, is imported into Australia by Sideband Electronics Imports of Springwood, N.S.W. For the present time these rigs will only be available on order, and it is not anticipated that they will be a stock item. For this reason our review will not be quite as lengthy as usual. We will, however, present a description and performance summary which will enable any interested amateur to decide whether this rig is for him or not.

The Fukuyama Co. is of course well known in Australia with its "MULTI" products and the MULTI 7 was the subject of a review in this magazine some time ago. The MULTI 2700 is actually an adaptation of the MULTI 2000, which was possibly the very first of the multi-mode two metre transceivers available on the Australian market. For those readers interested a review of this transceiver appeared in CQ magazine for January 1976. For some reason the Multi 2000 was not a great success on the Australian market, perhaps because of the lack of a normal continuous tuning arrangement. It seems that this might have been the reason for the Fukuyama Co. to add this to the 2000, making the 2700. However, as well as the VFO, other changes have been incorporated to set this rig apart from most of the other multi-mode transceivers on the market. The synthesized section now has a full LED digital readout, while the VFO section has a very smooth and clearly illuminated dial. The one megahertz steps are indicated by illuminated signs above the VFO dial scale.

In use it was found to be a very convenient system. The synthesized section with the digital readout could be set up on the FM portion of the band and easily switched from one channel to another while



The FDK Multi 2700

Photo: Reg Goudg

the VFO could be set up for SSB operation. There is no doubt that this overcomes one of the problems with the fully tuneable two metre transceivers, that is, accurately setting up the dial for each of the required FM channels. The built-in speech compressor is most effective and with weak signals makes the difference between the signal being readable or not. In appearance the MULTI-2700 is unusual. It has a somewhat wide, low look, with the VFO section looking rather tacked on. The dimensions are 128 mm high, 378 mm wide, and 305 mm deep, and the weight is 14 kg. The transceiver is entirely self-contained with built-in AC power supply and loud speaker. Operation from twelve volts DC is also provided by changing the power cord. In appearance the 2700 has a somewhat "plastic" look. Whilst no doubt attractive overall, it would be very much a matter of opinion whether you would consider it professional. The meters and dial scale are illuminated in vivid green, the LED readout in red, and with red and green indicator light.

THE MULTI 2700 ON TEST

We submitted the 2700 to our normal series of tests. In general it exceeded the published specifications by quite a wide margin.

Power output was first checked with the rig in the high power position.

144 MHz 16 watts; 145 MHz 18 watts; 146 MHz 18 watts; 147 MHz 16 watts; 147.99 MHz 14 watts.

The power output at 148 MHz exactly had dropped to 6 watts. These figures greatly exceed the published output of ten watts.

On SSB, the PEP output was 144 MHz 14 watts; 145 MHz 16 watts; 146 MHz 16.5 watts; 147 MHz 16 watts; 147.9 MHz 14 watts.

Transmitted audio quality was judged to be well balanced and clean on SSB but somewhat bassy on FM.

The receiver section was next tested. Three degrees of selectivity are provided. The mode switch allows either wide or narrow FM reception, while on SSB, AM and CW a common 2.4 kHz bandwidth is provided. The FM bandwidth was checked at a receiver input of .5 mV. The narrow position would handle 5 kHz deviation with low distortion and the wide, 7 kHz. Increasing either of these by only one kilohertz produced noticeable distortion. With stronger signal input the receiver would handle somewhat higher amounts of deviation, but it proved beyond doubt that deviation must be kept down for weak signal reception.

Next the receiver was checked for sensitivity.

FM reception. The mute opened .2 uV.

At .5 uV 18 dB quieting was produced and at 1.0 uV the figure was 24 dB. On SSB, the signal to noise ratio was 15 dB at .2 uV and 23 dB at .5 uV. The calibration of the "S" meter was checked.

"S" Reading	SSB	FM
1	.35 uV	.7 uV
2	.4 uV	.9 uV
3	.5 uV	1.7 uV
5	.55 uV	2.1 uV
7	.7 uV	2.5 uV
9	1.9 uV	3.5 uV
9 + 20	5.0 uV	8.0 uV
9 + 40	45.0 uV	30.0 uV

From this it can be seen that S meter readings are somewhat generous but as it is normal to work with very weak signals on VHF they are probably useful in relation to the average signal encountered. The accuracy of the synthesizer was checked and it was found to be 400 Hz high. The 600 kHz offset was within 100

