

MIZUHO MX-2 Review SSB for £89

By Frank Ogden G4JST, Editor



I was looking through a stack of amateur radio magazines, attempting to seek out an interesting subject for review. I turned page after page of glossy ads all showing a succession of archetypal Japanese black boxes which mostly did the same thing.

There they were. Everyone a multimode/two VFOs/scanning/ten memories/10W PEP+/advanced PLL circuitry/latest GaAsFET front ends and all the rest. I was bored.

I turned a few pages to the Waters & Stanton ad which prominently

depicted the FDK series of gear including, of course, the 750E multimode. Yes, we are going to review it because I'm told that this sort of thing is very popular. However, what took my interest was a little SSB/CW hand-talkie that cost just £89. Can you believe it? A piece of amateur radio gear which left some change out of £100. Incredible. Furthermore this little box had neither dual VFOs nor a PLL synthesiser which was enough to make me want to do the review personally.

What you get for £89

The MX-2, as delivered, covers the frequency range from 144.25 to 144.35MHz in two bands selected by slide switch on the front panel. A similar sized slide switch selects SSB/CW operation while a third, rather smaller, switches the internal noise blanking circuitry. A single 15mm wide knob provides the 50kHz VFO swing over its 180 degrees of rotation. Finally, a miniature push-to-make switch acts as an integral Morse key. The front panel also carries a BNC aerial socket which accepts a ¼ wave rubber duck (supplied) together with external microphone and earphone sockets. The PTT (push-to-talk) switch and edgewise volume/on/off control are mounted on the side of the sturdy metal case, the 1½" internal speaker to the front, and the external key jack socket and power supply socket at the bottom.

The battery carrier, designed to accept six AAA size 1.5V dry cells, fits into a recess at the bottom of the set reached by removing a sliding cover. The innards of the MX-2 comprise two boards mounted on top of each other, offering reasonable access for servicing and modifications. The VFO crystals are of the plug-in variety and are easily replaced to alter the set's frequency coverage.

Circuit description

I must say at the outset that the circuitry design meets with my full approval on pure performance criteria. It is a single conversion super-het, entirely conventional (mostly not a bad thing) which has, at its heart, a variable crystal oscillator for LO injection.

VXOs, as they are known, may seem to be rather limiting with their inherent narrow frequency span—just 50kHz/crystal in the case of the MX-2. However, when it comes to pure performance, they are streets ahead of any synthesised VFO system. Even the simple one transistor VXO circuit of the MX-2 offers a lower noise performance—the characteristic which enables you to operate in the presence of adjacent frequency high power 2m stations—than the best of the synthesised multimodes. There is another payoff. The low local oscillator noise results in 'cleaner' single sideband and CW reception. More of this later.

On the receive side, the front end