

EQUIPMENT REVIEW.

THE KENWOOD TH-75A DUAL BAND HANDHELD TRANSCEIVER

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As I have pointed out in reviews over the last few years, handheld transceivers seem to show more advanced design features than mobile or fixed station equipment. The new KENWOOD TH-75A seems again to support this view.

The TH-75A is the latest dual band FM transceiver that covers the 2 metre and 70 cm bands. Like most of the current dual-band handhelds, the Kenwood is quite a deal larger and heavier than many of the midget single-banders that are around these days. I guess it's a matter of deciding whether you need the extra facilities or not, and if you do, whether the extra size and weight is acceptable.

Transmitter power output up to five watts is available, depending on the battery pack selected, or as an alternative, the rig can be powered from a 12 Volt car battery system. As with many dual-band transceivers, full duplex operation is possible; that is, you can transmit and receive simultaneously, but of course on separate bands. I was unable to actually check this feature out, but it seems that an ear piece or headphone set would be required at each end. I wonder if this facility is often or every used?

The four optional battery packs are as follows: PB-5 has an output of 7.2 Volts at



Charging system with Battery connected to Adaptor

200 mAh. The PB-6 also has an output of 7.2 Volts, but at an increased capacity of 600 mAh. The BP-7 is again 7.2 Volts, but gives the highest capacity of 1100 mAh. All of these produce the same transmitter power output. If higher output is required, then the PB-8 delivers 12 volts at 600 mAh. As with all handhelds, the battery life depends on how long you talk, as, even at the lowest voltage, the current drain exceeds one amp.

Let's look at some of the facilities offered on the TH-75A. In addition to the full duplex operation mentioned above, it is also possible to listen on both bands at the same time. Two squelch controls, one for VHF and one for UHF are provided. Only one audio volume control is available but a balance control allows the relative audio output on each band to be set. Although dual receive is possible, dual transmit is not. You can only transmit on one band at a time.

A total of twenty memory channels, ten for VHF and ten for UHF, are provided. These can be programmed with information on frequency, repeater splits, tone frequency data and call channel information. Frequency selection is via either the front panel key pad, or from the top panel rotary "tuning" control. This same control is also used to select memories when in that mode.

The liquid crystal frequency and status display is reasonably large and has good clarity. In addition to frequency, there are something like twenty other status indicators. You will need both a good memory and good eye sight to work them all out. The "S" meter is a vertical bar graph set between the main and sub-frequency displays, and indicates battery voltage while in transmit mode. The instruction book has some helpful charts to tell you what to expect from this when using the various battery packs.

Illumination is provided for the display but not the key board. This is actuated by a button near the PTT button on the side of the transceiver. It's not too easy to find.

A tone squelch and CTCSS module is available as an option and was not fitted to our review transceiver. I feel that, if manufacturers expect this to become popular, then it should be fitted as a standard feature.



Close-up of display and key pad

The TH-75A On The Air

I am going to start this section with a grouch, which applies not only to the TH-75A, but to most of the Kenwood range of handhelds. The battery must be removed from the transceiver before it can be recharged. In addition to this, there is no indication that the recharging process is actually going on. No LED indication, just nothing. I know that the chances of putting the charge adaptor on to the battery incorrectly are remote, but it can happen. You might even forget to turn on the AC. How about it Kenwood? One little red LED would not cost much. I must admit to using my handheld (not Kenwood) on receive with the charger connected. I know it's not recommended, but it works fine and keeps you listening.

To balance this though, there are lots of very good points about the TH-75A. The transmitted audio quality was rated as very good, with just the right amount of deviation. I would like to try the exter-



Complete view of TH-75A

nal speaker microphone some time, but would expect it to be good. Received audio quality was rated as adequate. Small speakers in small boxes always sound like small speakers in small boxes. As mentioned earlier, an external speaker would be a decided advantage for mobile use, or for just plain better quality for home station use.

On of the more tricky points of using the transceiver is the PTT switch. There are three of them! Not all PTT switches of course, but three push button switches one above the other. The top one is called the monitor switch. It opens the squelch to check if any weak signals are on the frequency. The second button down is the display light switch, which lights the display only and not very well at that. And the third button is the PTT. Believe me, it's easy to push the wrong one. Below all of these, and well out of the way, is the battery lock button. The external DC input socket is on the other side. Both memory and programmed scanning are available, as is a priority channel function. I have always preferred the Kenwood priority channel alert system to other makes. Your favourite channel is monitored every five seconds and if it becomes active, the transceiver beeps

at you. Select channel one (the priority channel) and there you are. Another nice feature is the auto band-change. This comes into effect when a station comes up on the frequency being monitored on the sub-band. Press the PTT within three seconds and you are on the sub-band. You won't miss anything while using the TH-75A. There are more chirps from this rig than from a cage full of birds.

The TH-75A On Test

All of these tests were conducted using an external regulated power supply set to simulate the various battery voltages.

Receiver current drain; Power supply, 7.2 Volts

With no receiver audio output; 105 mA

With full receiver output on one band only; 200 mA

With full receiver output on two bands; 300 mA

With battery save function in operation; 20/30 mA

Kenwood kindly supplied power output and current drain figures as measured in their lab using professional test equipment.

At 146 MHz

7.0V 2.4 Watts output 0.98 Amps

9.0V 3.8 Watts output 1.24 Amps

12.0V 6.0 Watts output 1.42 Amps

13.8V 6.0 Watts output 1.43 Amps

At 430 MHz

7.0V 1.9 Watts output 1.17 Amps

9.0V 4.0 Watts output 1.36 Amps

12.0V 4.6 Watts output 1.42 Amps

13.8V 6.0 Watts output 1.43 Amps

Low power selection produced an output of 0.4 Watts on both bands at 7.2 volts and strangely a slightly lower 0.35 Watts at 12 Volts.

The receiver audio power output was measured next. The signal generator was set for 1 kHz modulation with 3 kHz deviation. With an 8 Ohm load, a maximum power output of 520 milliwatts was produced. With a 4 Ohm load, the output was slightly higher at 625 milliwatts. The 10% distortion level was at 400 milliwatts and this dropped to 2% at 200 milliwatts.

This output, fed to an effective external speaker, produced a reasonable acoustic level. The internal speaker was able to produce a good level for normal locations, but could be lacking in noisy situations.

Receiver sensitivity was excellent, with a 12 dB signal to noise ratio at 0.15 μ V input on both bands.

The squelch opened at well below 0.1 μ V

again an excellent figure. The "S" meter, as usual, proved to be of limited use, reaching full scale at just above 1 μ V input. There are twelve segments of bar graph for the S meter, and no calibration points are provided. The receiver proved to be very free from spurious responses on both bands. I have a police UHF repeater operating in my back yard and no hint of its operation was noted.

The Instruction Book

There is no doubt about it, the TH-75A is a complicated machine. Basic operation is fairly straight forward, but if you want to make full use of the facilities that are offered, then you will need to study the book carefully. In this regard the instruction is excellent. As is unfortunately the normal situation these days, very little technical information is included. A full circuit diagram is provided, but you might be hard pressed to find the adjustments for mic gain or deviation.

Conclusion

If you are in the market for a dual-band handheld, the TH-75A must be a strong contender. As I have pointed out before, dual-band rigs of this type are bigger and heavier than their single-band cousins. Also the slightly higher output power capability must be paid for by high battery consumption. If you intend to talk a lot, a spare battery would be essential. Kenwood offers a wide range of accessories to complement the TH-75A. Here are a few to consider: three battery chargers — three optional batteries (in addition to the one supplied with the rig) — a battery case to take either AA style manganese or alkaline cells (this presumably might also take AA size nicad batteries) — a speaker microphone unit — and the TSU-6 tone squelch unit. A selection of carrying cases to fit the transceiver, with the varying size batteries, DC connecting cables and telescopic antennas, is available. The current price of the TH-75A is \$900. Our review transceiver was supplied by Kenwood Electronics Australia Pty Ltd to whom all enquiries should be addressed.

Kenwood Comment

Regarding the BC9 wall charger "The reviewer is only commenting on the BC-9 wall charger which is supplied with the TH-75A. If he had the BC-11 rapid charger or the BC-10 compact charger, he would get the results and features he is complaining the BC-9 lacks". **ar**

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