

**RADCOM  
USER  
REVIEW**

# DX-70 Ten-band Transceiver

Reviewed by RSGB HQ Staff



The DX-70 is shown actual size.

**F**OR SOME YEARS, Alinco have been establishing a reputation for increasingly sophisticated VHF and UHF handhelds. Recently, their product range has expanded and Alinco is now arguably a contender for joining the 'big three' - Icom, Kenwood and Yaesu - as a company which can equip your entire station. The latest radio is a 100W HF transceiver with 10W of 6m built in - and plenty of 'bells and whistles' too.

The DX-70 is very small at 179W x 71H x 268Dmm (inc projections). It is quite astonishing that so much can be packed into such a tiny box. It can go even smaller, though, as the front panel is detachable. The radio comes with a long, double-fused power cable, a microphone, spare fuse and a manual.

The front panel is very full with no less than 23 controls and indicators in addition to the display panel. Double potentiometers control Audio Gain and Squelch, and RIT and IF Shift. On the bottom right of the panel is the tuning knob, grouped with the push buttons for VFO select, Memory and Split. A small button locks the controls and a screw adjustment varies the dial torque.

A secondary tuning knob - the Multi Function Dial - selects memory channels, changes band, tunes in 1MHz, 100kHz, 10kHz or 1kHz steps, and selects default settings.

As is normal these days, most buttons perform several jobs, selected by a function

key which may be pressed or held down to access the various facilities.

Below the display are the buttons which control the attenuator, mode, filters, power level, AGC, noise blanker, automatic Aerial Tuner (optional extra), upper and lower CW sideband and CTCSS encoder (optional extra).

The rear panel carries a heat sink, power and accessory connectors, and sockets for external speaker, Morse key, ALC and an external relay for use with a linear. Two aerial sockets (SO239) are provided - one for HF and the other for 6m.

The supplied microphone includes UP / DOWN buttons which control frequency or memory channels, and commence scanning.

An LCD display, backlit in yellow, shows frequency to 10Hz, signal strength and output power level on a bargraph, and the various settings of VFO, noise blanker etc.

## THE RF SIDE

THE DX-70 HAS A general coverage receiver from 150kHz to 30MHz, plus 50 to 54MHz, and provides SSB, AM (at 40% of maximum power), FM and CW on all bands. There are four filter widths fitted: 500Hz (CW narrow), 1kHz (CW standard and SSB narrow), 2.4kHz (SSB standard and AM narrow) and 9kHz (AM standard and NBFM). An interesting function is 'IF Shift' which moves the IF passband without changing the receive fre-

quency; useful for 'nudging' an unwanted signal off the edge of the filter or for making an SSB signal more 'toppy' to enhance readability.

There are four levels of RF gain: 'normal', a +10dB preamplifier, and two levels of attenuation, -10dB and -20dB. AGC recovery time is switchable from the front panel - long for SSB / AM or short for CW - and can be stored in the band-switch memories.

CW enthusiasts are provided for by a 500Hz filter fitted as standard, and the facility to receive on the upper or lower side of the carrier. Full or Semi Break-in are available, as is 'Auto Break-in' which automatically adjusts the delay with keying speed.

The transmitter has a switchable built-in speech compressor for use on SSB and AM. FM transmission is available as standard on all bands, so use can be made of 10m repeaters and those due to be available on 6m.

Split frequency operation for DX working is easily achieved by use of the two VFOs and the Split button. Even more useful is the Quick Offset function which equalises the VFOs and allows any offset up to +20kHz and -30kHz to be selected on the main tuning dial - no need to do a calculation when the DX station says "listening up six". Listening on your transmit frequency is available by pressing and holding the Function key.

Although there are no dedicated data facilities, a diagram shows how to connect a TNC or modem to the mic and speaker sockets.



MEMORIES ETC

ONE HUNDRED memories are provided in an EEPROM (no need for a back-up battery), each stores mode, filter setting, split frequencies, AGC time-constant, attenuator setting and whether the noise blanker is switched in. Memories are selected from the Multi Function Dial or from buttons on the microphone; unprogrammed channels are simply skipped.

Those who operate both CW and SSB will find the memories more useful for changing bands (eg 1.82MHz CW, Fast AGC; 1.95 LSB, Slow AGC; 3.52MHz CW . . .) than the standard single-option band switch. Split frequencies can be stored, eg for Mode K satellite operation or repeater working. Memory settings can be transferred to either VFO.

Three types of scanning are provided: band, memory and priority. Band scan searches an entire amateur band (or, in general coverage mode, the space between amateur bands) in user-specified steps. Memory scan checks either all programmed memories or a group of them, and priority scan checks a VFO or memory for 0.5s every 5s whilst the radio is tuned to another VFO or memory. The scan can be programmed to stop completely when a signal is received, to wait until 2 or 4 seconds after the squelch has closed, or not to stop at all; this latter could be useful for plotting band occupancy etc.

CUSTOMISING

MANY FUNCTIONS can be customised. These include changing the RIT to TXIT; setting sidetone and CW offset; display brightness; automatic power off (switches the radio off if no controls are activated for an hour); locking the transmit button (a useful safety feature if you leave the radio on); memory over-write protection; memory frequency access inhibit; scan modes; auto LSB / USB selection (default is LSB below 10MHz and USB above); break-in delay time, beep (a short tone sounds each time a key is pressed) and switching in the speech compressor.

Internal adjustments are for sidetone volume, mic gain, maximum power output (50 or 100W), beep volume and frequency set.

MANUAL

The 100-page instruction book. It contains plenty of advice for the beginner, though it can take some time to learn how to use all of the facilities. On most pages is a handy and relevant tip. An 18-page Getting Started section covers installation at home and in a car, the controls, the connectors and the display, together with a Controls Quick Reference chart. The basic controls for each mode are covered, plus use of the general coverage receiver, SSB operating techniques and how to connect up a data modem or TNC. No circuit diagram is provided.

The later pages detail the more advanced options, including split frequency, memory mode, scanning, interference reduction and customising. Diagrams show how to connect the DX-70 to automatic antenna tuners from Alinco, Kenwood, and Icom. A helpful three-page troubleshooting chart aims to avoid a visit to the dealer when the problem is simple - usually mis-operation of the controls.

ON THE AIR

THE DX-70 WAS tried out by two HQ staff members. It was used on HF CW and SSB, and 6m SSB (no FM stations were audible).

The small size provoked a mixed reaction. One reviewer found the front panel rather crowded, requiring the use of the dial lock to avoid accidental mis-tuning when using adjacent controls. The other was quick to see the advantage that this is a radio you can take on holiday without its size or weight being a problem. It certainly won't fill up even the smallest shack and is ideal for mobile operation. Due to the overall size of the rig, the main tuning knob is by necessity much smaller than those found on other HF transceivers, although it did feel nicely 'weighted' and was very smooth in operation.

In use, good audio reports were received on both HF and 6m. The receiver was given the ultimate test: the CQ WPX CW contest. It performed extremely well, with the IF shift control, switchable CW sideband and variable front-end sensitivity giving the DX-70 an edge over less well-equipped radios. With the attenuators properly adjusted, no blocking was noticeable. The narrow CW filter on the review model appeared to be misaligned as the 'S' meter and AGC responded to zero-

beat signals - this proved a little distracting.

On the 50MHz band, the pre-amp brought in DX signals with just an untuned wire aerial.

CONCLUSION

THE ALINCO DX-70 is a comprehensive rig, which not only offers ten bands, but also has features such as an audio compressor and adjustable IF. It is also one of the tiniest HF rigs around.

At just over £1k, it represents a relatively inexpensive way to get going on all of the HF bands plus 6 metres. As a mobile or portable radio, it really comes into its own, and the addition of 6m means catching the Sporadic E whilst on holiday or being able to use the repeaters which should be appearing on the band shortly.

AVAILABILITY

OPTIONAL EXTRAS ARE: automatic antenna tuner, power supplies, CTCSS tone encoder, remote extension cables, and a mobile mount bracket. The DX-70 costs £1095 and is available from various dealers including Waters & Stanton (see their advertisement in this issue), who are thanked for the loan of the review model.

SPECIFICATIONS

(SOURCE: ALINCO DX-70 HANDBOOK)



GENERAL

Table with 2 columns: Feature and Specification. Includes Operating modes (USB, LSB, CW, FM), Number of memory channels (100), Antenna impedance (50Ω unbalanced), Power requirements (13.8V DC +/- 15%), Current drain (Receive 1.0A max, Transmit 20A max), Operating temperature (-10°C to +60°C), Frequency stability (+/-10ppm), Dimensions (178(W) x 58(H) x 228mm(D)), Weight (Approx 2.7kg).

TRANSMITTER

Table with 2 columns: Feature and Specification. Includes Frequency coverage (1.8000 - 1.9999MHz to 17.9000 - 18.4999MHz), Power output (HF SSB, CW, FM up to 100W high), Modulation system (SSB balanced, AM low power, FM reactance), Spurious emissions (HF Better than -50dB), Carrier suppression (better than 40dB), Sideband suppression (better than 50dB), Microphone impedance (2kΩ).

RECEIVER

Table with 2 columns: Feature and Specification. Includes Circuitry (Double conversion superheterodyne), Frequency range (150kHz to 30.0MHz), Intermediate frequencies (71.75MHz and 455kHz), Sensitivity (0.5 - 1.8MHz to -16dBμ), Selectivity (SSB, AM, SSB, CW, AM), Spurious and image rejection (better than 70dB), Audio output power (More than 2.0W into 8Ω), RIT / TXIT range (+/- 1.4kHz).