RADCOM EQUIPMENT REVIEW

Alinco DR-M06 6 Metre FM Mobile

Reviewed by Dave McQue, G4NJU*, and RSGB HQ Staff

THIS LITTLE GEM is probably the smallest mobile rig yet. Measuring 140mm (W) x 40mm (H) x 115mm (D), there should be no difficulty in finding a place for it even in a modern car! Short of an aerial and 13.8V power source, the DR-M06 SX comes with all the bits and pieces you will need for either mobile or base station installation. It is one of the first dedicated 6m rigs from Japan and includes all of the 'bells and whistles' we have come to expect.

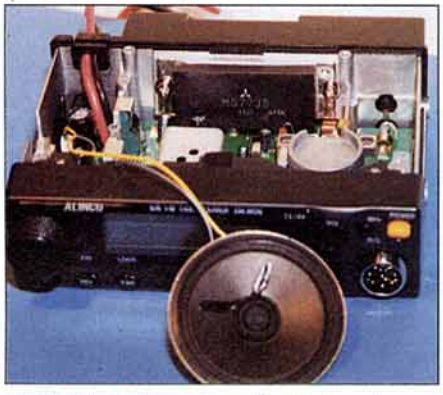
Due to surface mount circuit construction, the weight is only 860g, most of which is concentrated in the large rear-panel heat sink. Inside, the Alinco DR-M06 is deceptively empty, the most noticeable features being the power amplifier chip on the rear heatsink and display / scanning facilities etc located on a board behind the front panel.

The plain but comprehensive instruction manual is very clear and easy to follow and should be studied in detail before attempting to use the rig. It includes a copy of the UK / IARU band plan which has been reprinted from the RSGB *Call Book*. A wiring diagram of the microphone socket is shown for connection to a TNC, though it would have been nice to have had a separate socket. No other circuits are included.

FEATURES

AS SUPPLIED, THE Alinco DR-M06 SX covers 50 - 54MHz, FM only. It comes set up for 10kHz channel spacing, but is easily changed to a number of other options, including the UK standard of 20kHz channel spacing.

It can operate in either VFO mode, in which case the frequency is displayed on the front panel, or in Memory mode, in which case an 'M' and the channel number appears beside the frequency. There are 100 memory channels, more than enough to cover the whole of the top half of the UK band plus several extras for packet radio, etc. Each memory will store frequency, repeater shift (if any), and CTCSS tone.



The PA chip on the rear panel heatsink can be seen clearly.

Scanning can be accomplished in both VFO and Memory modes. In VFO mode it scans over the entire frequency range. Incidentally, the receiver (but not transmitter) coverage can be extended to 40 - 60MHz, which also increases the scan range to these limits.

A 'Priority' feature enables you to monitor two frequencies for activity more or less simultaneously by automatically switching between a selected channel or frequency and the primary channel. Reverse repeater mode can be selected simply by pushing a front panel button.

CTCSS encode is standard. With the optional tone squelch decoder, CTCSS tones can be decoded for selective receiving, too. A time-out timer can be set by the user for any period between 30 and 450 seconds. This should avoid the 'stuck mic' effect on repeaters? It can also serve as a most welcome anti-waffle feature.

The power cable supplied for connecting to the battery or power supply unit is fused in both the positive and negative leads with 15A fuses to protect the wiring, and a 5A fuse in the positive lead local to the rig. This method ensures that if the main earth strap fails the starter current will blow a fuse rather than set fire to the rig's negative lead!

*6 Labumum Gr, Bletchley, Milton Keynes, Bucks MK2 2JW.

CONTROLS

BECAUSE OF the tiny front panel, much thought has been given to the ergonomics. There are only three knobs: a small one for frequency or memory channel selection and two even smaller ones for volume and squelch. Eight buttons complete the operating controls, all serving a dual function. The primary functions are those most frequently required, such as VFO / MEMORY select which has the secondary function of Memory Write when used with the Function button. Even the Function button has a secondary function, as squelch defeat occurs when it is held down for more than half a second. Button presses are confirmed by a Beep which can be switched off if desired.

The microphone supplied with the rig has UP / DOWN buttons to control the VFO, Memory channels and shift, as well as the scanner start /stop and direction. These are disabled by a LOCK button.

IN USE

THE MICROPHONE IS strangely flat in shape but nevertheless comfortable to hold. The transmitted audio quality was reported to be clear and 'punchy'. Receive audio from the internal speaker was loud and clear, probably due it being mounted on the top of the case unlike many modern rigs.

The controls proved easy to use and the only real snag came when attempting to switch the repeater shift on and off (not important now but repeaters are proposed for this band). The process up to six key presses,

SPECIFICATIONS

GENERAL	
Frequency Coverage	50.00 - 54.00MHz TX. 40.00 - 60.00MHz RX
Frequency Steps	5, 10, 12.5, 15, 20 and 25kHz
Antenna Impedance	50ohms Unbalanced
Power Supply Requirements	13.8 + / - 10%V DC
Current Drain at 13.8V	RX: Squelched less than 700mA. TX: High / 3.0A
Dimensions	140mm (W) x 40mm (H) x 115mm (D)
Weight	0.86kg
Memory channels	100
Frequency Offset	0 to + / - 15.995MHz freely programmable any CH
CTCSS	50 tone encoder installed (decoder option)
Time-Out-Timer	30-450 Seconds
TRANSMITTER	
Output Power	High 10W / Low 1W
Emission Mode	F3E (FM)
Modulation System	Variable Reactance Frequency Modulation
Max Frequency Deviation	+ / - 5kHz
Spurious Emission	-60dB or under below carrier
Microphone	Electret Condenser Microphone
Operation Mode	Simplex / Semi-Duplex
RECEIVER	
Receiving System	Superheterodyne Dual Conversion
Intermediate Frequency	1st - 10.7MHz and 2nd - 455kHz
Sensitivity	12dB SINAD - 16dBu
Selectivity	+/- 6kHz or less - 6dB. +/- 15kHz or less - 60dB
Audio Power Output	More than 2.5W at 10% Dist.
Speaker Impedance	8Ω

Note: Specifications are guaranteed on the amateur radio band only.

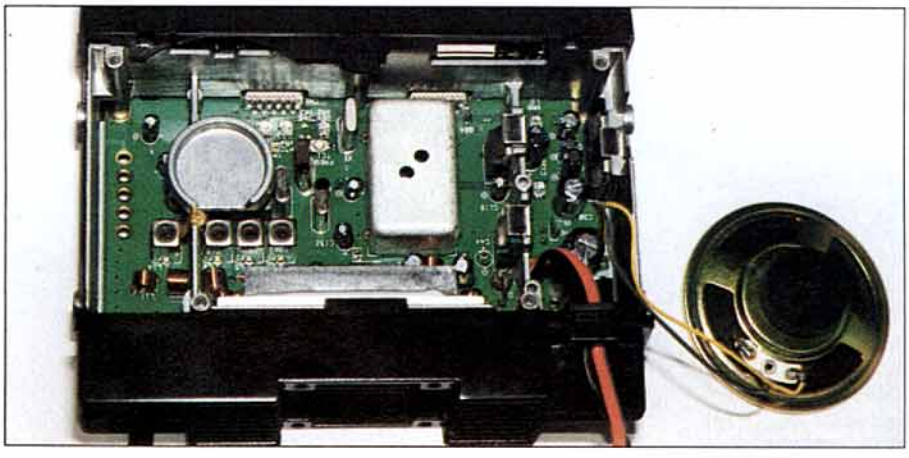
which would be virtually impossible to carry out while mobile. However, there is no problem if repeater channels are pre-programmed into the rig's memories; the DR-M06 is plainly designed to be used in Memory mode when mobile.

A similar niggle arose when setting the scanner as it is not possible to programme the scan limits when in VFO mode - it scans from 50 to 54MHz only (though the rig will scan between 40 and 60MHz if the extended receiver coverage has been selected). But since all useful FM channels can be stored in the 100 memories, and since 'programmed memory scan' mode allows empty or unprogrammed memory channels to be ignored, the problem is solved by making extensive use of the memories rather than the VFO.

The unit supplied performed to spec (see Specification box) as regards receiver sensitivity and selectivity. The transmitter uses a power amplifier 'brick' mounted on the rear panel heatsink. Setting the time-out to the maximum 450 seconds and running the full 10W, into a dummy load, the total power input from the 13.8V supply was 31W. The heatsink temperature had risen by only 16°C at the time-out.

If and when we get 50MHz repeaters this unit will prove a popular choice. It may well increase activity on a band which has plenty to offer during the sunspot minimum (and even more at maximum). The RSGB HQ beacon, GB3NHQ on 50.05MHz proved a useful guide to conditions; and it was possible to hear G0RDI/P, the new Amersham NBFM beacon running 1W on 50.83MHz, as well as the *GB2RS* news broadcast from G3MEH. Many packet bursts were heard on 50.65MHz, and 6m is plainly a useful band to obtain QRM-free access to the packet network. Though more expensive than the AKD 6001, the DR-MO6 SX should prove attractive to anyone wanting the higher power and additional facilities such as scanning, CTCSS etc.

The Alinco DR-MO6 SX retails at £299 and is obtainable from Waters & Stanton who are thanked for the loan of the review model. ♦



Inside view of the Alinco DR-M06 SX.

RADCOM HELPLINES Helplines FOR MEMBERS

● Kenneth Graham, GM0AVB, requires information on how to modify the frequency coverage of the **FDK Multi-700E** 2m FM transceiver, in order to be able to use it on packet. If you can help, please write to Kenneth QTHR.

● Ambassador Leif Leifland, a Swedish diplomat historian, is writing a paper on a special mission by a team from the air ministry in **1945.** The team was sent to the **British Consulate in Malmö**, Sweden, in April 1945 to install navigational aids (GH station) to help to direct RAF bombing missions to Berlin and other German cities. The Swedish government issued visas to the following members of the team: Mr B Ewing, Mr G A Alderson, Miss R Barff, Miss J R Griffiths and Mr C Lee. Ambassador Leifland would like to get in touch with the members of the team or their families and friends who may have diaries, letters, photographs or reminiscences of the mission. Please write to Ambassador Leif Leifland, Nybrogatan 77, S-114 40 Stockholm, Sweden. [A similar request published in the August 1994 *Helplines* brought a couple of useful responses, for which Ambassador Leifland was most grateful - *Ed*]

● Ken Smith, G3JIX, requires any information such as a manual, circuit or setting-up instructions for a **Bridge Universal CT 375**, which is an RAF version of the **Wayne-Kerr Component Bridge B 521.** Contact Ken by writing QTHR or tel: 01304 812 723.

● Dick Biddulph, G8DPS, would like any information on a **Shimadzu [or Shimizu? - *Ed*] C-R3A chromatopac** (data logger?) or **Philips sampling 'scope PM3400.** If you have any data on either, please contact G8DPS QTHR, or tel: 0181 399 8787.

● Malcolm Perry, G8AKX, requires circuits, service and any other information on the main frame of an **Advance OS2200A storage 'scope.** Also the circuit for **'B' timebase of OS2005X (fig 4).** If you can help, please contact G8AKX QTHR.

● Douglas Byrne, G3KPO, is searching for a flat neon tube specially made for the **30-line Baird television receiver.** He is also looking for wartime and pre-war copies of ***Radio Times***, ***World Radio*** and other old wireless magazines and books. Contact Douglas on tel: 01983 567665 or write QTHR.

● Chris Doran, G3VZH, requires further information on a **Sytek radio modem** which was apparently originally used by the North Sea oil industry. The unit is marked **'LocalNet 20/100'.** If you can help, please write to G3VZH QTHR.

● Klaus Werner, G7RTI, requires a manual for a **Data Technology Corporation digital multimeter, model 30A.** All costs reimbursed. Tel: 01628 893403 (daytime) or 01494 438978 (evenings) or write to G7RTI QTHR. ♦