

the  
**HF-125**  
general coverage  
receiver.

made  
in  
Britain.

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## the HF~125 general coverage receiver . . .

On one side of Japan is the vast expanse of the Pacific ocean, on the other, China, Mongolia and some very inhospitable parts of the USSR. Compared with the clutter of countries in Europe, the Far East has few high powered broadcast stations. This fundamental difference must be taken into account when designing a general coverage receiver for the European short wave listener, as opposed to one for the Japanese enthusiast. However, surrounded by relative radio silence it is easy for the Japanese designer to fall into the trap of thinking this lack of RF is the same the world over. Unfortunately, the European DX enthusiast has many strong, very strong and excruciatingly strong long, medium and short wave stations literally on his door step.

It is a difference which is sometimes overlooked by the non-European designer.

The HF-125 short wave receiver was conceived, designed and is "Made in Britain" for the DX enthusiast. Its ability to perform on a crowded band with strong adjacent stations was a major consideration in its design. The HF-125 is also easy to use, the controls being simple and sensible. Essential bandwidth filters which are often options on other equipment are fitted as standard. Unnecessary frills are not included and their omission is deliberate. The result is an affordable receiver.

The HF-125 has continuous coverage from 30 kHz to 30 MHz. Operating modes are AM, USB, LSB and CW. An optional board (D-125) adds FM and synchronous AM. Unlike other receivers, the HF-125 comes complete with a comprehensive range of bandwidths; a 2.5 kHz filter for SSB transmissions or for resolving an AM station using SSB mode and ECSS technique (exalted carrier, selectable side band),

a 4 kHz, 7 kHz or 10 kHz filter for AM reception, the width chosen dependent on the signal and band conditions (10 kHz for BBC Radio 4, 7 kHz for Vatican Radio on 6185 kHz and 4 kHz to resolve a signal when conditions are not ideal). For the CW enthusiast a 400Hz audio filter is included as standard.

Operating the HF-125 is refreshingly simple. The receiver is switched on by a combined on/off volume knob and displays the last frequency used on a large backlit liquid crystal display.

Two buttons, one marked up, the other down, select the correct megahertz and you tune to the required frequency using a large heavy knob with a thoughtfully provided finger recess. The tuning rates relate to a simple design concept of two stations per knob revolution on each mode. Tuning on SSB and CW is in 15.6 Hz steps. This allows accurate resolution of SSB signals and ECSS reception of AM. On AM and FM the tuning step is increased to provide comfortable station selection. As well as providing the optimum tuning rate whilst you are carefully looking for a weak signal, the HF-125 automatically increases its stepping increment as the knob rotation speed increases. The result is an extra rapid frequency shift to a new part of the band. There is also an optional "Genie" keypad controller (K-125) for even quicker frequency selection.

Mode selection is by a front panel switch. Initial filter selection is automatic and dependent on mode. AM switches in the 7 kHz filter and SSB/CW the 2.5 kHz filter. Checking the filter in use is easy, a momentary press of the FILTER SELECT button and the frequency display changes to indicate the current filter width, another press of the button identifies the next filter on the display and at the same time switches to it. Repeated pressing of the button switches in the other filters in turn. After a period of 3 seconds or immediately the VFO knob is turned, the display reverts to frequency. Filters available for use on AM and SSB are 2.5, 4, 7 and 10 kHz and on CW, 2.5 kHz and 400 Hz. If the D-125 optional board is fitted and Synchronous AM is selected the receiver automatically switches to the 4 kHz filter. Again this choice can be overridden. On FM, filter width is fixed at 12 kHz, the filter select button now switching the squelch in or out. The squelch level control is found on the rear panel.

To further enhance reception other facilities are included. A noise blanker is permanently in circuit to deal with vehicle ignition interference, 20 dB of R.F. attenuation can be switched in when required and an HF or LF cut tone control can be applied to the audio output.

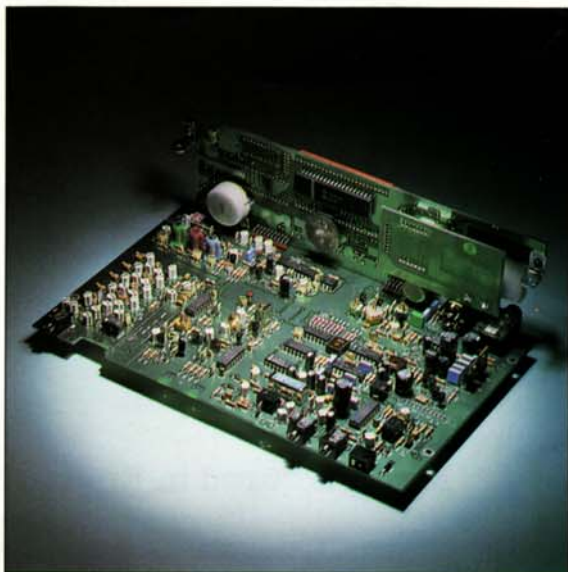
Although memory facilities are not essential in a short wave receiver they are useful. The HF-125 has 30 memories which are available in two banks of fifteen. There are four memory functions; review where by pressing the MEMORY SELECT button, frequencies stored in memory are briefly displayed (during memory select the receiver is still tuned to the original VFO frequency), RECALL which transfers memory frequency to VFO, RESTORE which returns the receiver to the original VFO frequency and STORE which transfers a frequency from VFO to memory.

Having now found the optimum reception the outstanding performance of the HF-125 is revealed. Typical values for frequencies greater than 500 kHz are a sensitivity on SSB of  $0.3 \mu\text{V}$  for 10 dB S/N and on AM,  $0.7 \mu\text{V}$  for 10 dB S/N at 70% modulation. Dynamic range is greater than 90 dB at 50 kHz from the tuned frequency (both IMD and RM) and image and spurious responses have greater than 80 dB rejection.

Connections are included for both 50 and 600 ohm impedance aerials (SO-239 and a terminal block). The receiver has a 6mm jack socket for headphones on the front panel and two 3.5mm sockets on the rear panel, one for an external loudspeaker and the other for tape recording.

The HF-125 operates from 12 volts DC and, as such, is suitable for use from an external battery whilst caravanning or boating. For home use an AC mains adapter is supplied with the receiver. For truly portable listening, in the garden or on a hilltop, an internal rechargeable battery, charger and active whip aerial option (P-125) is available. Operation on a fully charged Nicad pack is around 8 hours.

Compact and light weight, the HF-125 is 255mm wide, 100mm high and 200mm deep, a portable high performance short wave receiver.



# specification

Frequency coverage	30kHz to 30 MHz continuous coverage. Optionally 150 kHz to 26.1 MHz restricted coverage.
Detection Modes	AM SSB (USB, LSB) CW FM (narrow band) (Optional with D-125 unit) Synchronous AM (Optional with D-125 unit)
Tuning	By spin-wheel - continuous tuning in 15.6 Hz steps. Step size increases with faster tuning knob rotation. MHz quick selection by push button. Keypad frequency entry. (Optional with K-125 keypad unit and interface).
Memories	30 frequency memories in two banks of 15, with lithium battery backup.
I. F. Filter bandwidths	2.5 kHz, 4 kHz, 7 kHz, 10 kHz 400 Hz audio filter (CW mode only). (Filters are user selectable).
Sensitivity	SSB mode: $<0.3\mu\text{V}$ for 10 dB S/N AM mode: $<0.7\mu\text{V}$ for 10 dB S/N @ 70% mod. (For received frequencies $>500$ kHz).
R. F. Attenuator	User selectable 20 dB attenuator.
Dynamic range	$>90$ dB at 50 kHz from tuned frequency. $>80$ dB at 20 kHz from tuned frequency. (Measurements made in SSB mode with the 2.5 kHz filter, and cover both 3rd order intermodulation and reciprocal mixing effects).
Image and spurious responses	$>75$ dB rejection.
Audio output	0.75 W into internal loudspeaker. 1.25 W into external 4 ohm loudspeaker.
Connections	Antenna input: 50 ohm via SO-239 socket. 600 ohm + GND terminals. Active whip antenna. (Optional P-125 unit) External loudspeaker output - 3.5mm jack. Headphone output - 6mm mono/stereo jack. Record output (100 mV) - 3.5mm jack. 12V DC power input - 2.1mm power jack.
Power supply	External 12V DC supply at approx 250 mA. Internal NICAD batteries and charger to give typically 8 hrs. operation (Optional P-125 unit).
Size	Approx. 255 × 100 × 200mm (W × H × D)
Weight	Approx. 1.8 kg (Basic receiver) Approx. 2.5 kg with P-125 option fitted.

Specification subject to change without notice.

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