

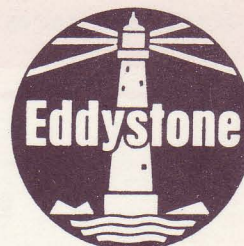
## Eddystone Radio Limited

Member of Marconi Communications Systems Limited

Alvechurch Road, Birmingham B31 3PP, England

Telephone: 021-475 2231

Cables: Eddystone Birmingham Telex: 337081



## General-Purpose HF/MF

1000

## Communication Receivers

1001

General Description Eddystone Models 1000 and 1001 are compact general-purpose communication receivers with reception facilities for CW, MCW, AM and SSB transmissions in the frequency band 550kHz to 30MHz. The two receivers are identical in all respects except that Model 1001 has provision for crystal-controlling the local oscillator for spot frequency working in the band from 1.6MHz to 30MHz. Up to ten crystal-controlled channels can be accommodated with manual tuning of the front-end circuits. Crystals can be fitted without removing the outer covers.

Internal power units are fitted for operation from standard 40-60Hz AC supplies and a rechargeable nickel-cadmium battery is incorporated for emergency working in the event of mains failure. A socket is provided to allow connection to an external 12V battery for continuous operation at sites where an AC supply is not available. All forms of battery arrangement can be employed irrespective of earthing polarity.

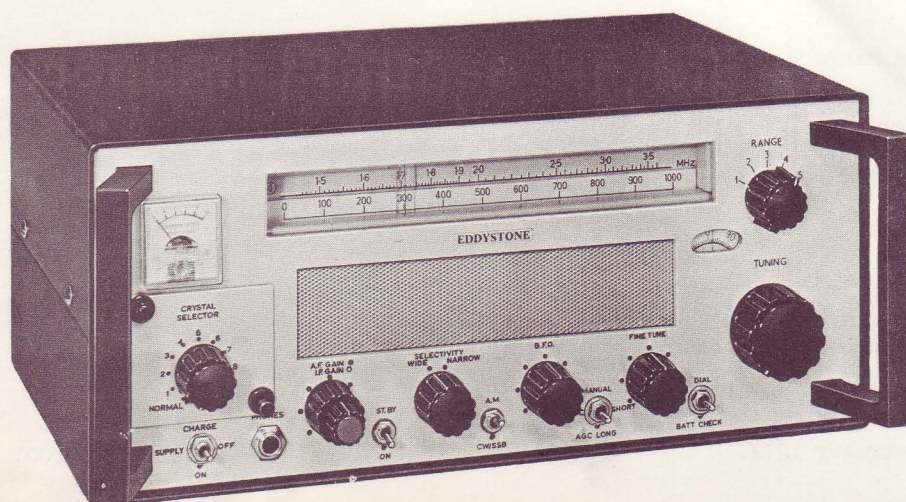
An advanced single-conversion design is employed using a mixture of solid-state devices including IC's and FET's. The RF Amplifier utilises the cascode configuration for best two-signal performance and this is maintained in the Mixer which uses a dual-gate MOSFET. Input protection is provided and a desensitizing facility is available for use when the receivers are operated in conjunction with an associated transmitter.

The IF Section is designed around an integrated circuit with switched high-grade multi element ceramic ladder filters at 455kHz: a separate detector with tunable BFO is provided for CW and SSB reception. AGC is permanently connected to the RF Stage but the IF Amplifier can be manually controlled when required: AGC time constant is selectable to suit signal mode.

A second integrated circuit is utilised in the Audio Section which provides output to a pair of miniature loudspeakers situated at the rear of the front panel. Telephones can also be connected, the circuit being arranged so that the loudspeaker output is interrupted when these are in use.

Frequency calibrations for tuning are marked on a horizontal scale drum which displays each range separately. Scale length is of the order 165mm (6.5in) on each range and a secondary scale below the main calibration can be used in conjunction with a vernier dial to provide a useful logging facility. Dial illumination is provided but this can be switched off to conserve power when operating from the internal battery pack. Tuning is by means of a flywheel-loaded reduction drive.

Other features common to both receivers include a separate fine tuning control and a carrier-level meter which can be switched to monitor the state of the internal or external batteries.



Model  
1001

GENERAL SPECIFICATIONFrequency Coverage

550kHz to 30MHz in five ranges. Model 1001 has provision for crystal-controlled working on up to ten spot-frequencies in the band 1.6 - 30MHz using Style 'D' crystals: lower frequencies to special order.

Range 1	18.0-30.0MHz	Range 4	1.5- 3.8MHz
Range 2	8.5-18.0MHz	Range 5	550-1500kHz
Range 3	3.6- 8.5MHz		

Intermediate Frequency

455kHz. BFO coverage : 455kHz  $\pm$  3kHz.

Reception Modes

A1, A2 & A2H telegraphy. A3, A3A, A3H & A3J telephony with upper sideband or lower sideband selectable in SSB mode.

Scale Accuracy

1% on all ranges.

Environmental

Operational: 0°/+50°C. Storage: -20°C/+70°C.

Aerial Input

75 $\Omega$  on Ranges 1-4, 400 $\Omega$  on Range 5.

Power Supplies

DC :: 12V from internal re-chargeable nickel-cadmium battery for short periods of operation, or 12V from external battery of higher capacity. Also available to special order for use with 24V supply in lieu of 12V. Consumption (12V) 38mA quiescent, 230mA at 1-watt output.

AC :: 100/125V or 200/250V (40-60Hz). Consumption approximately 12VA.

Dimensions and Weight

Height : 137mm (5.375in).  
Width : 335mm (13.2in).  
Depth (excl'dg projns) : 242mm (9.5in).  
Weight (incl'dg battery) : 8.2kg (18lb).

Also available to special order with standard 483mm (19in) rack panel. Single loudspeaker fitted in lieu of two miniature speakers.

Controls

Main Tuning, Fine Tuning (Local Osc. V.V.C.), Range Switch, Mode Switch, Selectivity, IF & AF Gains, BFO Pitch, AGC Switch, Meter/Dial Light Switch, Standby Switch (desensitizing), Supply Switch (CHARGE/SUPPLY OFF/ON): Crystal Selector on Model 1001 only.

TYPICAL PERFORMANCE †Sensitivity (15dB S+N/N)

5 $\mu$ V on Ranges 1-4 and 15 $\mu$ V on Range 5. Taken in 'AM' mode with 4kHz IF B/W for 50mW output with signal modulated 30% at 1kHz.

Selectivity

WIDE: 10kHz at -6dB, 22kHz at -40dB.  
NARROW: 4kHz at -6dB, 12kHz at -40dB.

Image Rejection

50dB at 2.0MHz, 40dB at 18.0MHz.

IF Rejection

85dB on Ranges 1-4, 65dB on Range 5.

Stability

Better than 1 part in 10<sup>4</sup>/°C or 3 in 10<sup>5</sup>/°C with crystal-controlled oscillator (1001).

Radiation

Not greater than 400pW.

AGC Characteristic

Less than 12dB change in output for an 80dB increase in input level from 6 $\mu$ V. Taken at 2MHz on Range 4.

Audio Output

Loudspeaker : 800mW @ 5% distortion (1W max).  
Telephones : suitable for low/med-Z headset.

Audio Response

Level within 6dB from 300Hz to 6kHz.

(†) Not to be interpreted as a test specification.

The information contained herein is subject to confirmation at the time of ordering