

# EDDYSTONE

## TRANSISTOR HF COMMUNICATIONS RECEIVER MODEL 960



The Eddystone "960" receiver is a fully transistorised communications receiver, giving continuous coverage over the frequency range 500 kc/s to 30 Mc/s. It is a receiver capable of a good all-round performance, which can be brought into immediate operation and is quite independent of a mains supply of any type.

Provision is made for the reception of A1, A2, A3 and A3a signals. Printed circuit techniques are employed in this receiver, which is robustly constructed and functions reliably over a wide range of ambient temperatures. Operation is from a 12 volt dry battery housed inside the receiver, or from an external 12 volt direct current supply.

Styling and presentation are in keeping with modern practice.

# Eddystone 960 Receiver

## SPECIFICATION

### Frequency Coverage

Six switched ranges as follows :—

Range 1	20 Mc/s to	30 Mc/s.
Range 2	9.0 Mc/s to	20 Mc/s.
Range 3	4.2 Mc/s to	9.0 Mc/s.
Range 4	2.2 Mc/s to	4.2 Mc/s.
Range 5	1.13 Mc/s to	2.2 Mc/s.
Range 6	500 kc/s to	1130 kc/s.

### Semi-Conductor Complement

TR1	OC171	RF Amplifier
TR2	OC170	Mixer
TR3	OC171	Local Oscillator
TR4	OC45	1st IF Amplifier
TR5	OC45	2nd IF Amplifier
TR6	OC45	3rd IF Amplifier
TR7	OC45	AGC Amplifier
TR8	OC45	Beat Frequency Oscillator
TR9	OC71	Audio Amplifier
TR10	OC83	Audio Driver
TR11 } TR12 }	OC83	Push-pull Audio Output
D1	OAZ204	Voltage Stabiliser
D2	OA70	Detector
D3	OA70	AGC Rectifier (IF)
D4	OA70	AGC Rectifier (RF)
D5	GEX23	BFO Pitch (capacity diode)
D6	OA70	Noise Limiter.
D7	DD006 or 2E1	Reverse Polarity Protection

### Tuning Drive and Scales

The geared tuning mechanism is made to precision limits and has a reduction ratio of 140/1. The movement is smooth, positive and free from backlash. The long horizontal scales are clearly marked in frequency, to an accuracy better than 1%. A secondary logging scale is also provided.

### Construction

The receiver is robustly constructed and is housed in a steel cabinet, with diecast front panel and coil unit. Modern printed circuit techniques are

employed, using components of high quality. Long reliable service is thus ensured.

### Controls

The following controls are conveniently located, and appropriately marked, on the front panel.

Tuning : Wavechange : RF Gain : AF Gain : Crystal in/out : BFO Pitch : Standby Switch : NL Switch : AGC Switch : BFO Switch : Battery check switch : Meter zero (at rear).

The main battery supply on/off switch is part of the AF gain control.

### Other Features

A carrier level meter is fitted on the front panel, with a zero adjustment control at the rear. The same meter has a secondary scale and, by operating a panel switch, the battery voltage can be checked.

A standby switch reduces the sensitivity and mutes the receiver.

The noise limiter is an efficient protection against ignition and other pulse types of noise.

It is intended that normally the internal speaker be used but an external one (2.5 ohms impedance) can easily be connected if desired.

## AVERAGE TECHNICAL FIGURES

### Sensitivity

For a 15dB signal/noise ratio, 30% modulation at 400 c/s, AM sensitivity is better than 6 uV on all ranges except No. 6 where the figure is better than 20 uV. Absolute sensitivity is better than 3 uV on ranges 1 to 5, and better than 6 uV on range 6.

### Selectivity

Crystal out ; bandwidth is 5 kc/s at 6 dB points and 12 kc/s at 30 dB points.

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Crystal in ; bandwidth at 6 dB points 500 c/s ; at 30 dB points 4 kc/s. The intermediate frequency is 465 kc/s.

## Image Rejection

50 dB at 1.6 Mc/s ; 20 dB at 18 Mc/s.

## AGC Characteristic

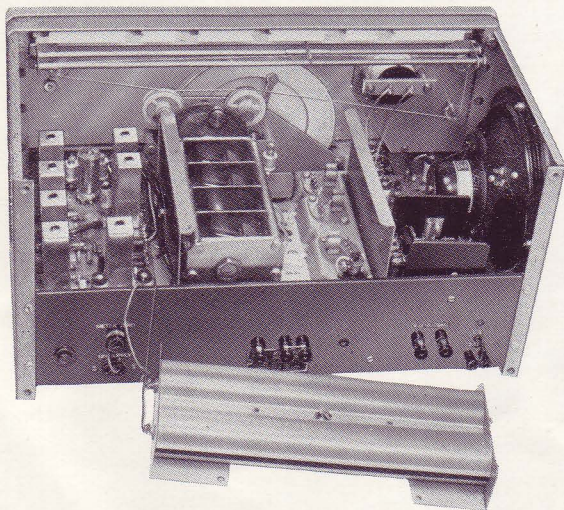
For a change of input level of 90 dB above 5  $\mu$ V (at 6 Mc/s), audio level does not change by more than 16 dB.

## Stability

Oscillator stability is better than 1 part in  $10^5$  per degree Centigrade change in ambient temperature.

## Audio Outputs

Maximum output to internal or external speaker (nominal 2.5 ohms) 1 watt. Jack for telephones, nominal impedance 2000 ohms. Connections for 600 ohm line. The frequency response does not deviate more than 3 dB from 50 c/s to 8000 c/s (taken at AF gain control).



*Interior view of the "960" transistorised receiver. RF and oscillator section is in the centre, with the coils in a diecast housing ; intermediate frequency stages on the left ; and audio section on the right. The unit in the foreground is the battery container, normally fixed above the centre section.*

## Aerial Input

Nominal 75 ohms, balanced or unbalanced.

## Power Supply

The receiver is supplied complete with eight fresh "Ever Ready" "U2" leak-proof cells, giving a working voltage of 12. These are housed internally in a firmly mounted steel container which is readily accessible for replenishment by removing the cabinet. The receiver can also be energised from an external source by disengaging the plug at the rear and inserting one connected to a 12 volt battery. In either case, the voltage can be immediately checked on the panel meter. Approximate current consumption is as follows:—

quiescent .. ..	35 mA.
50 milliwatt output	65 mA.
1 watt output ..	210 mA.

## Protection Against Reversed Polarity

It is essential care is taken to ensure correct polarity of the energising battery. A silicon diode is incorporated to minimise the possibility of damage to the transistors should the polarity be inadvertently reversed.

## Temperature Range

The receiver performs satisfactorily over a temperature range from  $-20^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ .

## Physical Details

Width :  $16\frac{7}{8}$ " (43 cms). Depth 11" (27.9 cms). Height  $8\frac{3}{4}$ " (22.2 cms). Weight : 32 lbs. (14.5 kgs) approx.

The finish is in two-tone grey.

## Manual

A comprehensive Instruction Manual is supplied.

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*In the interests of continued improvement, we reserve the right to amend this specification without notice.*

Manufacturers :

**STRATTON & CO. LTD.**  
**BIRMINGHAM 31 :: ENGLAND**

Telephone : PRIORY 2231/4

Cables : STRATNOID, BIRMINGHAM



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