

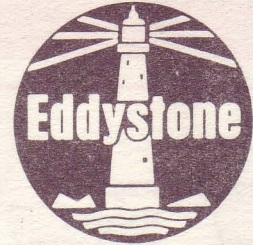
Eddystone Radio Limited

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Noise Measuring Set

No. 31A

General Description The Eddystone Model 31A* is a solid-state equipment meeting the requirements of British Post Office Specification W6912 for a Portable VHF Interference Tracing and Measuring Receiver. It covers the frequency band 31–250MHz in three ranges and operates from an internal rechargeable battery supply.

A double-conversion circuit is employed with separate switched tuning units for each of the three frequency ranges. Output is displayed on a large panel meter and the design incorporates many special features to permit accurate measurement of impulse and continuous wave radio interference. First circuit and other internal receiver noise is used as a stable reference for standardising the meter, so ensuring long-term accuracy of a very high order. Step attenuators and a 30dB pad give variable attenuation from 0–110dB in 1dB steps to facilitate RFI investigation. A low-level audio output is available for connection to a standard telephone headset. Mk. II version has additional audio amplifier and loudspeaker.

Rugged, light-weight construction is employed throughout, the receiver is fully screened and suitable for field use even under inclement weather conditions. Aerials are supplied as part of the outfit, these being housed in a removable cover which protects the panel controls and meter during transportation. In normal use the cover is attached for convenience to the rear of the receiver case. A carrying handle is provided which also serves as a mount for the aerial system in use.

(*) A Ministry of Posts and Telecommunications design marketed under licence from the Post Office.

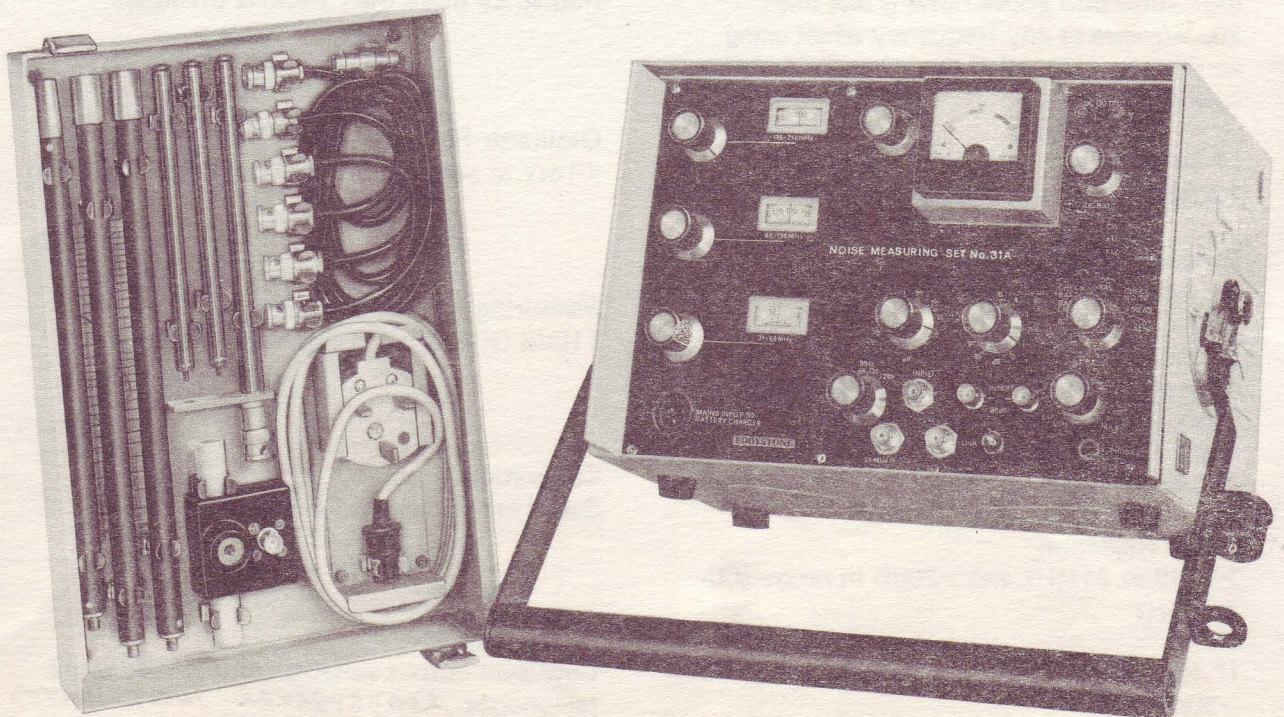
31–250MHz in three ranges

110dB measuring range with high accuracy

CISPR quasi-peak detector

Collapsible antenna

Suitable for field use



GENERAL SPECIFICATION

Frequency Coverage

Range 1	Range 2	Range 3
31-68MHz	68-135MHz	135-250MHz

Intermediate Frequencies

1st IF :: 25MHz	2nd IF :: 3MHz
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Reception Modes

CW - AM - FM

Detector

CISPR quasi-peak

Input Impedance

75Ω ± 40% (less than 20% reactive)

Aerial Systems

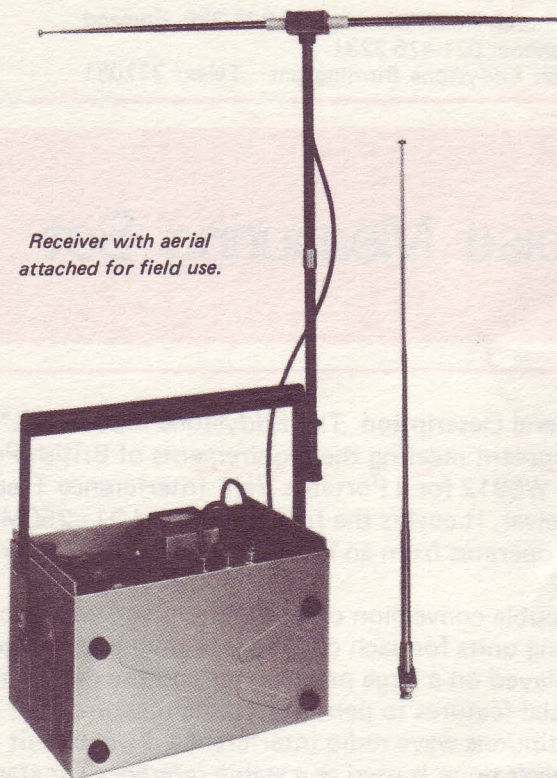
Type 1: Dipole fitted with telescopic elements, adjustable to resonate at all frequencies 50-250MHz (includes balun and feeder).

Type 2: Telescopic rod antenna adjustable up to approximately 1.2 metres.

Mast: An insulated sectional mast is provided for use with either antenna.

Power Supply

Internal rechargeable nickel-cadmium battery of 2Ah capacity. Built-in charger operates from 50Hz supplies of 100/125V and 200/250V. Over-discharge protection is provided: charge current and battery state can be monitored on panel meter.



Receiver with aerial attached for field use.

Overall Case Dimensions and Weight

Width:	302mm	(11.875in)
Height:	206mm	(8.125in)
Depth:	256mm	(10.0625in)
Weight:	8.6kg	(19 lb)

TYPICAL PERFORMANCE*

Sensitivity

CW field strength necessary to produce an indication 6dB above noise is less than 20μV/metre at any frequency when using aerial system supplied (less than 2μV at input socket).

IF Selectivity

120kHz B/W at -6dB, 200kHz B/W at -20dB

Frequency Stability

Of the order 1 part in 10⁵ per °C.

Screening

With aerial disconnected, indicated field strength falls by at least 55dB (31-70MHz), 45dB (70-150MHz) and 40dB (150-250MHz).

Image Rejection

>30dB at 31MHz and >20dB in range 150-250MHz

IF Rejection

>30dB

Spurious Response

Sensitivity at least 30dB down at any frequency more than 140kHz off-tune.

Oscillator Radiation

<1mV at aerial input over range 31-250MHz.

Measuring Range and Accuracy

110dB (± 2dB) with sine-wave voltage.

Calibration Accuracy

Scales are accurate to within 2%.

Audio Outputs

Low-level output suitable for low/medium-Z telephones. **LOUDSPEAKER INCORPORATED IN MKII VERSION DELIVERS APPROXIMATELY 100mW.**

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