Eddystone Radio Limited

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NOISE MEASURING SET MODEL 40A

GENERAL DESCRIPTION

The Eddystone Model 40A is a portable Radio Frequency Interference (RFI) measuring set, manufactured to British Home Office design to meet the special requirements of The British Post Office and, in general, the conditions set down in CISPR 1. The equipment is primarily intended for the investigation of RFI in the frequency range 130kHz to 32MHz, but is also ideally suited to many industrial uses, including acceptance testing on a wide range of electrical appliances.

130kHz - 32MHz in eight ranges.

110dB measuring range with high accuracy.

Meets CISPR 1 conditions.

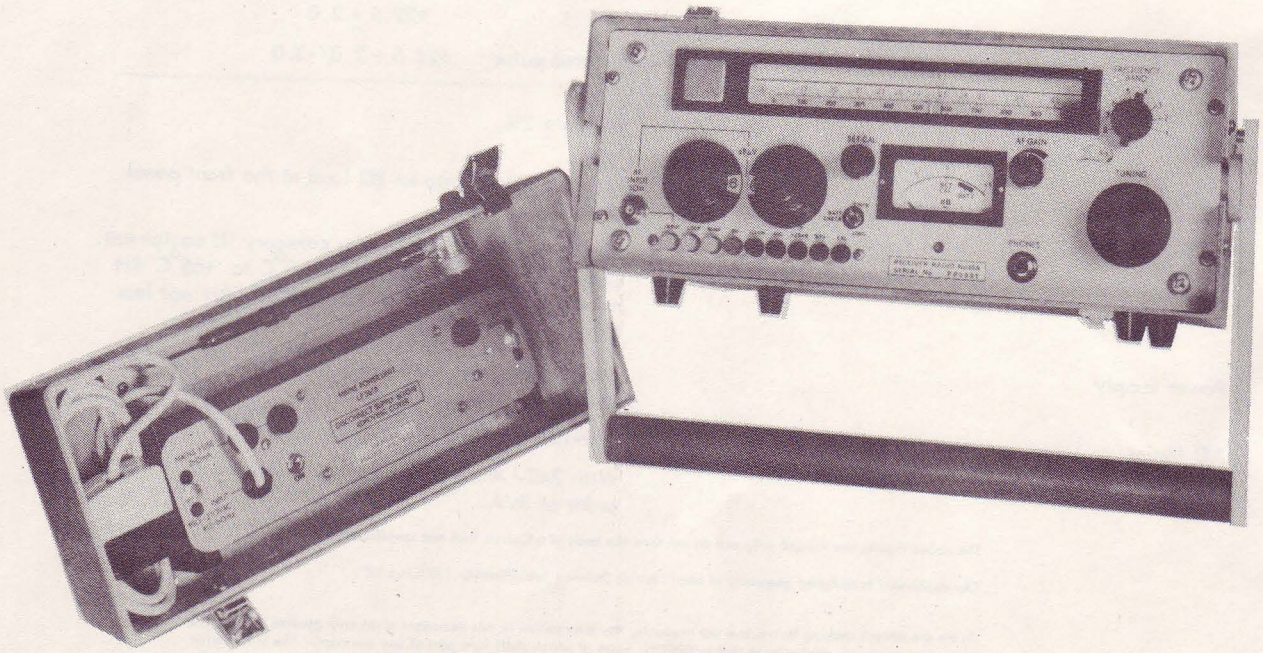
Extendable Whip Aerial.

Suitable for Field use.

Measurements can be taken of the voltage or field strength of CW signals, or impulsive noise with pulse repetition frequencies as low as 1Hz. Integral ferrite loop aerials or the "whip" aerial supplied, are utilized for interference tracing. Separate correction and conversion tables are supplied with calibrated aerials specifically intended for field strength measurements or radiated noise measurements, or to facilitate the assessment of conducted noise using a suitable artificial mains network.

The equipment is extremely simple to operate and long term accuracy of a high order is assured by standardising the overall system gain against an internal impulse calibrator, prior to taking each reading. Power is derived from a self-contained battery supply (type LP3627) utilizing six International Type D dry cells ("U2" or equivalent) for field operation.

Alternatively, a standard AC source in the range 105-125/190-270V 40-60Hz can be used via the mains power supply module (type LP3618) supplied.



TECHNICAL DATA SUMMARY

Frequency range :	130kHz to 32MHz.
Input impedance :	50Ω ± 10% at the tuned frequency with 10dB or more attenuation being used.
Measurement range :	(equivalent sinewave p.d. input) 0dBμV to 100dBμV with use of 'IF +20dB' facility. An extra ±5dB range at any point is obtainable using the meter, but with a slight reduction in accuracy (0.5dB).
IF Output :	≧50mV p. to p. emf with a sinewave input giving 'SET CAL' on meter.
IF Frequency :	1.75MHz.
External power supply input :	+8.0 to +10.5V DC for optimum operation (n.b. this input is diode protected against accidental reversal of polarity).
Weight :	= 10kg total package (approx).
Dimensions :	Width : 385mm (inc. handle) Height : 161mm Depth : 358mm (inc. feet)
Bandwidth :	9kHz ± 1kHz.
Bandwidth at 60dB. :	36kHz maximum.
IF and image rejection : (150kHz - 30MHz) :	better than 40dB.
Spurious response rejection :	better than 40dB.
Accuracy of sinewave voltage : measurement :	within ± 2dB (at 'SET CAL' mark on meter).
Screening :	With the receiver in an RF field 80dBμV/M in frequency range 130kHz-32MHz, the indication on the meter shall not exceed 'SET CAL' after calibration.
Internal noise :	Does not exceed -5dB point on meter after calibration.
Pulse response ('CISPR' selected):	Between 150kHz and 30MHz after calibration.

n.b. When 'LONG' is selected the variation in response at low prfs is widened by a few dB.

PRF (Hz)	Relative equivalent level of pulse for 'SET CAL' on meter (dB)
1000	-4.5 ± 1.0
100 (ref)	0 (ZERO)
20	+6.5 ± 1.0
10	+ 10 ± 1.0
2	+20.5 ± 2.0
1	+22.5 ± 2.0
Isolated pulse	+23.5 + 2.0/-3.0

Frequency Calibration :	Within ± 2%.
Audio Output :	At least 100mW into an 8Ω load at the front panel phone jack.
Environmental :	Equipment meets DEF 135 for category III equipment. Operating temperature - range -5°C to +55°C RH not exceeding 30% and 0°C to 40°C, RH not less than 95% at +40°C.
Power Supply :	6 x International Type D dry cells (or external DC source).
AC Mains :	105-125/190-270V 40-60Hz.
Power Consumption :	With 240V AC mains input, consumption is of the order of 3VA.

The above figures are typical only and do not form the basis of a Contractual test specification.

Our equipment is designed generally to meet "British Defence Specification 133 Class L2".

As we are always seeking to improve our products, the information in this document gives only general indications of product capacity, performance and suitability, none of which shall form part of any contract. The information herein is subject to confirmation at the time of ordering.

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