

3. Technical Specification

Frequency range:	1 – 30 Mc/s																					
Stability:	Afterwarm-up, overall drift is less than 50 c/s per hour under conditions of constant supply voltage and ambient temperature.																					
Input impedance:	(1) Wideband 2000-ohms approx. (2) Wideband 75 ohms. (3) 5 double-tuned circuits, 75 ohms. (a) 1 – 2 Mc/s (b) 2 – 4 Mc/s (c) 4 – 8 Mc/s (d) 8 – 16 Mc/s (e) 16 – 30 Mc/s																					
Tuning:	Effective scale length of approximately 145 feet, i.e. 6 inches of scale length corresponds to 100 kc/s Frequency increments remain constant over the entire range.																					
Calibration:	A 100 kc/s signal derived from a 1 Mc/s crystal oscillator having an accuracy of 5 parts in 10^6 provides check points at 100 kc/s intervals.																					
Sensitivity:	A1 reception, bandwidth 3 Kc/s; $1\mu\text{V}$ for 18dB signal-to-noise ratio. A2 reception, 30% modulated, bandwidth 3 Kc/s; $3\mu\text{V}$ for 18dB signal-to-noise ratio.																					
Intermodulation:	More than 100dB down for interfering signals at least 10% removed from the wanted signal.																					
Cross modulation:	For wanted signal levels between $3\mu\text{V}$ and 1mV, an interfering signal 10 Kc/s removed and modulated 30% must have a level greater than 50dB above that of the wanted signal to produce a cross modulation of 3%. The ratio of wanted to unwanted signal is improved up to 10% off tune, at the rate of 3dB per cent.																					
Blocking:	With similar conditions to those for cross modulation an unwanted signal f_2 must be 60dB greater before the audio output of the wanted signal f_1 is reduced by 3dB due to blocking.																					
Selectivity:	Six alternative I.F. bandwidths are obtained by means of a selector switch. Filter details are: <table><thead><tr><th></th><th>-6dB</th><th>-66dB</th></tr></thead><tbody><tr><td>(1)</td><td>13 kc/s</td><td>35 kc/s</td></tr><tr><td>(2)</td><td>6.5 kc/s</td><td>22 kc/s</td></tr><tr><td>(3)</td><td>3.0 kc/s</td><td>15 kc/s</td></tr><tr><td>(4)</td><td>1.2 kc/s</td><td>8 kc/s</td></tr><tr><td>(5)</td><td>0.3 kc/s</td><td>Less than 2 kc/s</td></tr><tr><td>(6)</td><td>0.1 kc/s</td><td>Less than 1.5 kc/s</td></tr></tbody></table>		-6dB	-66dB	(1)	13 kc/s	35 kc/s	(2)	6.5 kc/s	22 kc/s	(3)	3.0 kc/s	15 kc/s	(4)	1.2 kc/s	8 kc/s	(5)	0.3 kc/s	Less than 2 kc/s	(6)	0.1 kc/s	Less than 1.5 kc/s
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Bandwidths 5 and 6 are obtained with crystal-lattice filters; differences in centre frequencies of these bandwidth settings do not exceed 50c/s.

I.F. Output:	100 kc/s at 75-ohms impedance. Level 0.2 V approx, with A.V.C. in operation. Two outlets in parallel are provided.																
Image and Spurious Responses:	With wideband or tuned input, external image signals are at least 60dB down. Internally generated spurious responses are less than 2dB above noise level in all cases.																
Noise Factor:	Better than 7dB throughout entire range.																
B.F.O. Range:	± 8 kc/s																
B.F.O. Stability:	With constant ambient temperature and supply voltage, drift after warm-up does not exceed 50 c/s. For input level variations from $10\mu\text{V}$ to 1mV, B.F.O. drift is negligible.																
Automatic Volume Control:	An increase in signal level of 20dB above $1\mu\text{V}$ improves the signal-to-noise ratio by 18dB. An increase in signal level of 100dB above $1\mu\text{V}$ increases the A.F. output by less than 7dB.																
A.V.C. Time Constants:	<table border="0" style="margin-left: 20px;"> <tr> <td style="vertical-align: top;">Short:</td> <td>Charge</td> <td>25</td> <td>milliseconds</td> </tr> <tr> <td></td> <td>Discharge</td> <td>200</td> <td>milliseconds</td> </tr> <tr> <td style="vertical-align: top;">Long:</td> <td>Charge</td> <td>200</td> <td>milliseconds</td> </tr> <tr> <td></td> <td>Discharge</td> <td>1</td> <td>second</td> </tr> </table>	Short:	Charge	25	milliseconds		Discharge	200	milliseconds	Long:	Charge	200	milliseconds		Discharge	1	second
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A.F. Response:	With 13 kc/s bandwidth, response remains within $\pm 4\text{dB}$ from 250 c/s to 600 c/s.																
A.F. Output:	<ol style="list-style-type: none"> 1. 2.5-in. loudspeaker on front panel (switched). 2. Two headphone sockets in parallel on front panel. (see Note) 3. Three independent outputs of 3mW at 600-ohms at rear of chassis. 4. One output of 10mW at 600-ohms. Preset level is independent of A.F.GAIN control setting. 5. One output of 1W at 3-ohms. Note: The two headphone sockets are connected across one of the 600-ohms, 3mW outlets. 																
Distortion:	Not greater than 5% at 1W output.																
Hum Level:	With A.F.GAIN control at maximum, the hum level is never worse than 40dB below rated output (1W)																
Noise Limiter:	A series noise limiter circuit can be switched into operation to provide limiting at modulation levels exceeding 30%.																
Meter Indication:	Alternative switching for indication of signal carrier level, A.F. output level or "S" meter indication.																
Power Supply:	100-125V and 200-250V, 45-65 c/s. Power consumption 100W approx.																

Dimensions:

	Height	Width	Depth
For rack mounting (fitted dust cover)	10.5in 26.7cm	19in 48.25cm	20.125in 51cm.
Fitted cabinet	12in 30.5 cm	20.5in 52cm	21.875in 55.6cm

Weight:

Rack mounted 62 lb (28 kg)
In cabinet 92 lb (42 kg)