AM3

Although a VHF/FM service provides the highest possible quality of broadcast reproduction such transmissions are not available to all listeners, since the reception range is usually under 100 miles, and even less with stereo broadcasts. Where a VHF/FM service is not available, AM on Long, Medium or Short wavebands must be used and in many parts of the world this also means a loss of quality due to reception conditions and the overcrowded state of some wavebands. A strong signal from a local transmitter, however, can provide a quality comparable with that of VHF/FM.

AM reception thus falls into two categories:

(i) high quality reproduction under the latter conditions, requiring a wide bandwidth, and

(ii) extracting the best signal possible under difficult conditions requiring a narrow bandwidth.

This tuner provides for both conditions at the turn of a switch and in addition there is a filter for removing the adjacent channel heterodyne whistle.

It is a self-powered unit primarily intended for use with the Quad 33/303 amplifier but it may be used with other amplifiers if required.

Selectivity Switch. In the Wide position the IF response extends to over 10 kHz and the RF amplifier ensures a very low level of receiver background noise. When reception conditions permit the quality of reproduction is comparable with that provided by a VHF/FM service.

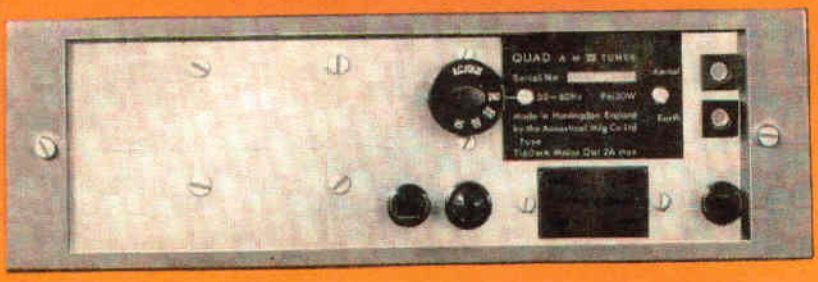
In the Filter position the wide-band IF response remains, but a rejection filter is included to eliminate the high pitched whistle due to inter-action of the received and adjacent channel carriers. The filter rejection is so narrow that it has little effect upon the quality of reproduction.

In the Narrow position the IF passband is reduced to improve separation between transmissions. This, with the RF amplifier, gives high sensitivity, good selectivity, image rejection and AGC characteristics resulting in acceptable reproduction from distant transmitters despite the congested state of the broadcast bands.

Tuning Indicator. This is of the luminous ribbon type giving a clear indication of the correct tuning point in the Narrow position. Since the tuning does not alter when the selectivity switch is changed the tuning indicator is inoperative in the Wide and Filter positions.

Mounting. As with other Quad units, the AM3 is enclosed in a removable metal cover which permits mounting through a cabinet cut-out. The mains fuse and voltage adjustments are on the rear panel together with the aerial and earth sockets and the mains and audio connectors.

Aerial. An outdoor vertical or inverted L aerial should be used, erected as high and clear of buildings as possible.



Circuit Detail. A variable-μ RF pentode is followed by a triode-heptode frequency changer, critically coupled to the IF stage in the Narrow position. In the Wide position the coupling is increased by a tertiary winding which ensures the response remains symmetrical about the centre frequency.
One diode of the EBF89 provides delayed AGC for RF, mixer and IF stages, permitting large signals to be handled without overload.
The other diode is the signal rectifier and is critically coupled to the IF. On Wide the IF response is within ± 1dB to 12 kHz and on Narrow it is − 3dB at 3·5 kHz. On Filter, a bridged-T rejection circuit tuned to the adjacent channel heterodyne whistle is combined with the wide-band response.
The tuning indicator has a variable-μ characteristic and gives a clear indication of correct tuning over a wide range of input signal levels.

Specification

Tuning range:	AM3/European Long wave: 2070–800 m (145–375 kHz) Medium wave: 588–185 m (510–1620 kHz) Short wave: 5·8–18·5 MHz (52–16·2 m) AM3/Overseas Medium wave: 510–1620 kHz (588–185 m) Short wave 1: 2·2–6·6 MHz (136–45 m) Short wave 2: 5·8–18·5 MHz (52–16·2 m)
IF Frequency:	470 kHz
Output level:	100mV (Nominal for 30% modulation)
Output resistance:	15,000 ohms
Filter rejection frequency:	AM3/European: 9 kHz AM3/Overseas: 10 kHz
Power requirement:	100–130 or 200–250 Volts AC 50–60 Hz 25 Watts
Power and Signal cablelengths:	4 ft. (120 cm)
Valve complement:	EF 89, ECH 81, EBF 89, EM 84.
Dimensions:	Width: 10¼" (260 mm) Height: 3⅝" (92 mm) free standing 3¼" (83 mm) panel Depth: 8" (200 mm) free standing 7⅛" (180 mm) behind cabinet panel when mounted—allow up to a further 1" (25 mm) for connectors depending on panel thickness.
Weight:	8 lbs. (3·5 Kg)

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