QUAD
FM3

Quad FM3
stereo tuner

The purpose of VHF/FM broadcasting is to provide reception, within the service area of the transmitter (normally 50 to 100 miles) free of interference and capable of reproduction at very high quality. The Quad FM3 tuner will completely fulfil this purpose with any transmission which arrives at the aerial in a condition capable of full quality recovery.

Outside the service area of the transmitter it is the nature of VHF/FM for signal strength to fall rapidly and there will be a tendency to fading but the high sensitivity of the FM3 tuner enables it to receive such signals with two reservations: A. no tuner can improve the signal/noise ratio of the signal as it arrives at the aerial and B. the considerable bandwidth essential for low distortion reproduction means that a weak station can be resolved only if it is sufficiently separated (i.e. by at least 400kHz) from any other more powerful signal.

In most areas the local VHF/FM services are normally receivable at reasonable signal levels. Between these stations on the tuning scale, among the background noise, there will usually be distant stations spilling over from other areas. Because the FM3 inter-station noise suppression circuit is adjustable the owner can decide where to set the suppression level between complete silence between one strong station and the next, on the one hand, and no suppression at all so as to rake in every scrap of signal (and noise) on the other. Also as the suppression system provides muting until the station is correctly tuned, not only is background 'hash' suppressed but the unpleasant noises associated with tuning through the sidebands of the station are also avoided, and with strong stations it is possible to proceed from one perfectly tuned programme through silence to the next perfectly tuned programme.

Operating the FM3 is simple, the only control on the front of the FM3 tuner being the tuning knob (which is also used for setting the station markers) and no others are required. The noise suppression adjustment is a pre-set control at the rear of the tuner and all other controls, volume, stereo-mono switching, mono hold, on/off, are provided by the associated Quad 33 control unit.

The positions on the scale of any five stations may be indicated by pre-set markers. These are positioned by pressing the tuning knob to engage its pointer with each marker in turn, tuning to the stations to be marked and releasing the knob. The markers then stay in position for future reference. The tuning indicator is the original Quad twin lamp* system which provides for simple, positive and highly accurate tuning. The tuner is self powered.

Circuit Detail

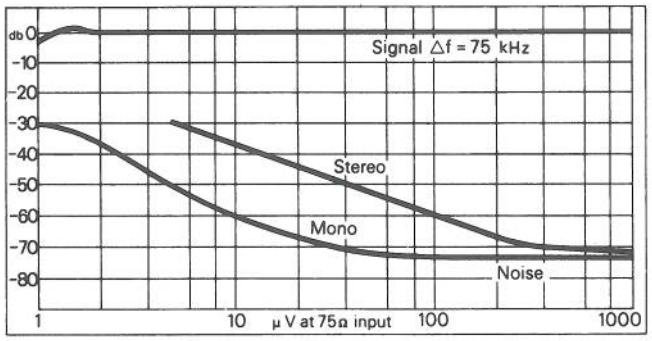
The RF and frequency changer stages use protected, dual gate MOS FET, and the IF stages and decoder section IC devices. Tuning is by means of a three gang capacitor and the stability is such that AFC is unnecessary. To achieve (and maintain) the desired bandwidth and shape the tuner employs ceramic filtering.

The audio output is via a 5 pin DIN plug on which pins 3 and 5 carry either mono or left and right stereo channels respectively, according to the incoming programme. In addition pin 1 carries a separate mono output, useful if an over-ride facility is required.

* First developed by Quad in 1955.

Quad FM3
stereo tuner specification

Frequency range 88–108 MHz.
Sensitivity See graph.
Aerial input 75Ω coaxial, 300Ω balanced.
Full limiting From less than 2μV.
Image rejection 56dB.
IF rejection 80dB.
400kHz selectivity 46dB.
Capture ratio 3dB.
IF Bandwidth Less than –3dB at ±120kHz, greater than. –60dB at ±400kHz.
Output at 38kHz and above –50dB.
Frequency response ±1dB 20Hz– 15kHz.
Channel separation 40dB at 1kHz.
Distortion At 1kHz and ±40kHz deviation: 0.3%.
Output 100mV per channel for 30% modulation.
Source impedance 5kΩ.
Recommended load impedance Greater than 50kΩ.
Recommended load capacity Less than 1000pF.
De-emphasis 50μ Sec or 75μ Sec as required.
Power input 100–125 or 200–250V. 50–60Hz 6VA.
Weight 2.7 Kg.
Dimensions Width 260 mm,
Height 92mm freestanding; 83mm panel only.
Depth 165mm freestanding; 140mm behind cabinet panel when mounted. (Plus 64mm for connectors).



QUAD for the closest approach to the original sound

THE QUEEN'S AWARD FOR TECHNOLOGICAL ACHIEVEMENT 1978

The Acoustical Manufacturing Company Ltd.
Huntingdon PE18 7DB, England.
Telephone Huntingdon (0480) 52561