QUAD

44


RADIO
AUX
DISC
TAPE 1
TAPE 2
BASS LIFT
FILTER SLOPE
CANCEL
QUAD

QUAD 44

If everything were perfect, a control unit would consist of a volume control and a programme selector switch. Unfortunately this is not the case. Today's music listener is faced with two major problems, how to ensure that his choice from the myriad range of pickup cartridges, tape recorders, radio tuners and microphones is correctly terminated by his amplifier; (a recent but by no means exhaustive guide lists 165 stereo pickups, 162 cassette decks, 44 open reel tape recorders, 115 radio tuners, 190 microphones, to say nothing of add-on equalisers, expanders, noise suppressors, etc); and how to cope with the problems of loudspeaker/room and programme/room interactions which become increasingly apparent with the steady improvement in the technical quality of programme material.

The Quad 44 has five inputs, Disc, Tape 1 and 2, Radio and Auxillary, which will terminate correctly virtually every applicable programme source available now and in the foreseeable future. All five inputs are interchangeable, so that any combination of inputs can be obtained, and options such as moving coil pickup, or microphone inputs can be included.

The Quad 44 has tone controls, consisting of Filter, Bass and Tilt which enable the listener to correct for those acoustic problems which are amenable to frequency response shaping. Used intelligently these controls can improve the results obtained from almost any programme.

The performance of the Quad 44 meets the simple Quad criterion, that programme fed through the unit shall suffer no audible degradation, in other words, with the filter switch in the Cancel position there shall be no audible difference between the programme at the input* to and output from the Quad 44, when compared at identical levels. This is true for all inputs when used with their specified source impedances and within their specified input signal limits.

The Quad 44 will sound no better, or worse than the programme fed into it.

Construction and inherent reliability continue in the Quad tradition and reflect care in both design and workmanship. While there should be no need to remove the cover of the Quad 44, except when changing input modules, it is worthwhile to look inside just to see how high fidelity equipment should be manufactured.

It is extremely unlikely that the Quad 44 will be out-dated, since any future developments in programme source or circuit technology can readily be accommodated simply by changing input modules.

Servicing is very simple and quick since all the active circuitry is carried on plug-in modules which are readily interchangeable.

As with previous Quad pre-amplifiers great care has been taken to ensure that the probability of interference from external sources is reduced to a minimum.

INPUTS/OUTPUTS

In standard form the Quad 44 is supplied with five inputs, one for Disc, two for Tape, one for Radio and an Auxiliary, selected by pushbuttons on the left of the front fascia. Switching is electronic and completely silent. All inputs are built on identical format boards with gold plated connectors to the mother board and can be interchanged or replaced as necessary simply by undoing two screws and withdrawing the module.

*With correction for RIAA pre-emphasis when using a disc source.

Any combination of inputs can be used to suit the user's needs. A third (and fourth and fifth) tape input can be substituted for one of the existing inputs, with the facility to record on one or all tape machines, and to dub from one to the others. A second disc input can be substituted when both moving magnet and moving coil cartridges are being used.

Disc

The Disc input has three sensitivity settings and can either be purely resistive or provide extra capacity if required to match the load requirements of a particular cartridge, selected by switches accessible through a small door in the top of the control unit.

The Disc input is designed to provide an exact inverse of the RIAA recording characteristic. When the correct sensitivity setting is chosen, the dynamic range of the programme is optimised in relation to the input noise level and the input cannot be overloaded. Performance of the Disc input is totally unaffected by the source impedance of the cartridge. A high pass filter is incorporated to remove spurious signals below 20Hz. Input to Disc is via either a standard 5 pin Din socket or phono sockets.

Disc input boards providing up to 20dB more gain and with suitable load impedances are available from your dealer for use with low output moving coil pickups, and can be used as an alternative or in addition to the standard disc input.

Tape

The Quad 44 is provided with two identical Tape inputs, which provide optimum matching for all commercially available open reel and cassette recorders. The correct record level and replay sensitivities are selected by switches on the Tape boards accessible through the small door in the top of the control unit.

Recording can be made on either or both machines at once and dubbing either way is possible, simply by pressing the appropriate pushbuttons. The signal at the record out socket is unaffected by either Volume or Tone and Filter controls.

Radio & Auxiliary

The Radio and Auxiliary inputs provide a flat response over the audio band with an input sensitivity suitable for most radio tuners including the Quad FM3, and since the load impedance is very high the output from any source, including a ceramic cartridge may be used.

Output to Amplifiers

The Quad 44 has three outputs, low level using the standard 4 pin Din socket to drive the Quad 405 or Quad 303 power amplifiers and amplifiers with similar input sensitivities, medium level via phono sockets to drive amplifiers with an input sensitivity of between 0.775 and 2 volts, and high level via phono sockets with a maximum output of 5 volts.

A.C. Input and Outputs

The Quad 44 has a double insulated power supply and is suitable for operation on 120v or 240v 50 or 60Hz. There are three switched A.C. outlets to supply the power amplifier and ancillary equipment.

CONTROLS

Volume

The Volume control is of the detente type with a specially designed law to give the user maximum

control at normal listening levels, and inter-channel balance is extremely accurate over the entire range of the control. The volume control varies feedback over the amplifier stage so that the noise and signal are attenuated together, and the specified noise level is maintained at normal listening levels.

Balance

The Balance control enables the listener to adjust the balance of output level between the two channels, but can also be used in the 'Mono' position to provide a monophonic output to both loudspeakers. With the slide control central, the output is the sum of both inputs. As the control is moved to the right, the sound from both loudspeakers contains progressively more right input and less left input until when the control is fully over, the output on both loudspeakers is from the right channel input only. Movement to the left produces the converse.

Tone Controls

It is widely believed that music should be reproduced through a system with a flat frequency response, but while this may be "hi-fi", it is unlikely to produce the closest approach to the original sound. This is easily demonstrable. Take a familiar recording and listen to it on the same equipment in two different rooms. The results will be markedly different. Even with perfect equipment the aggregate effect of the recording environment, listening room acoustics and loudspeaker placement ensures that what the listener hears is not the closest approach to the original.

Frequency response shaping can make worthwhile improvement but because environmental effects are delayed in time with respect to the direct sound only certain errors can be corrected in this way. The Quad 44 has a system of tone controls which enables the listener to correct for those environmental effects which are amenable to simple frequency response shaping, and to remove spurious high frequency components in the incoming signal, without adding colouration or altering the musical content of the programme.

The accompanying curves show what can be achieved with the Tilt, Bass and Filter controls. The operation of each control is unaffected by the setting of the other tone controls, and used in conjunction their effect is cumulative.

The layout of the Filter and Tone controls is designed so that the user can tell at a glance exactly what corrections he is applying, and each control is clearly calibrated so that a setting once noted as suitable for a particular recording is immediately repeatable whenever that recording is played.

Tilt

The Tilt control has the effect of gently shifting the tonal balance, about a centre frequency of 1kHz. The operation of the control is self evident and the result is subtle but effective. A notch clockwise and an over bright recording/listening room will sound more natural and vice versa.

Bass

The Bass control has two functions; Lift when it can be used to boost the low frequency response of small loudspeakers, where the operation is smooth and progressive, and Step to attenuate bass output when it operates as a filter giving a 5dB drop at two frequencies. The step filter is designed to remove the 'honk' which characterises so many loudspeaker/listening room combinations, particularly when the loudspeakers have to be placed close to the floor or walls.

Filters

The filter remains an essential tool for removing unwanted by-products from programme in the upper frequency range without impairing the musical content and the Quad 44 retains the Filter system used on its predecessors, the Quad 22 and 33, having a constantly variable slope with three operating frequencies. The Cancel position of the filter switch bypasses the Filter and Tilt and Bass controls.

QUAD 44

Quad 44 Control Unit Specification

Distortion: Worst case, any input, 0·05%
Typically, any input, 0·02%
both at 30–10,000Hz.

Residual Noise: 'A' weighting.
Volume control set minimum -104dB.

Frequency Response: Any input except Disc.
Any output +0dB -1dB
Disc ± 0·5dB IEC 98–4
both at 30–20,000Hz.

Tilt and Bass: See curves.

Filters: See curves.

Interchannel Balance: ± 0·5dB with volume control varied from maximum to -72dB.

Crosstalk: Replay/record typically better than 70dB.
Interchannel typically better than 50dB.
Both 30–10,000Hz.

A.C. Input: 100–130 or 200–250v 50–60Hz.

Weight: 4kg.

Dimensions: Width: 321mm, Height: 103mm, Depth: 207mm.

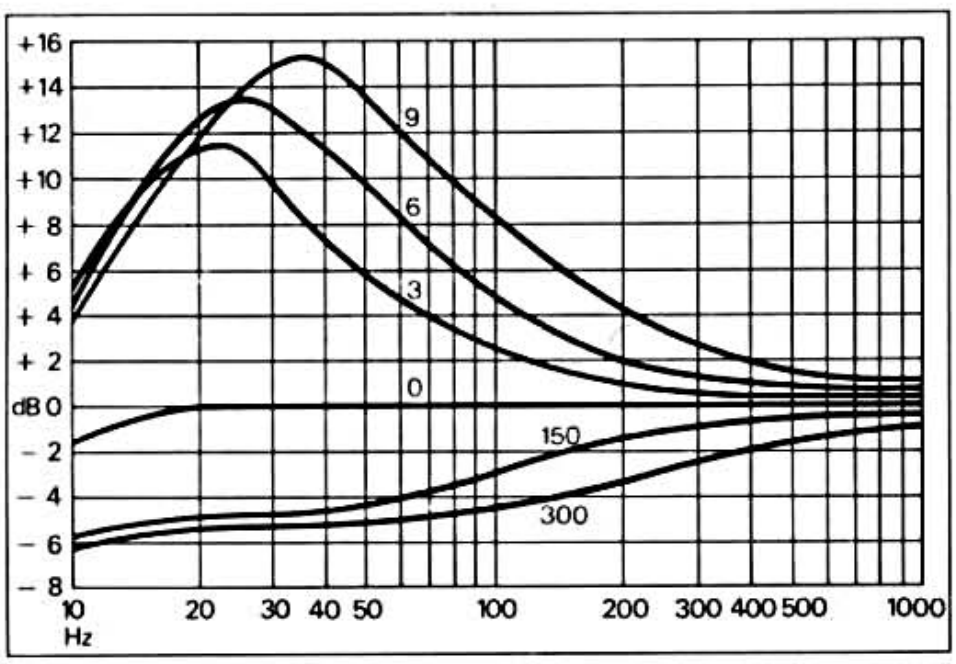
Note: Figures refer to 5V output for convenience.
All voltages quoted are rms.

Inputs

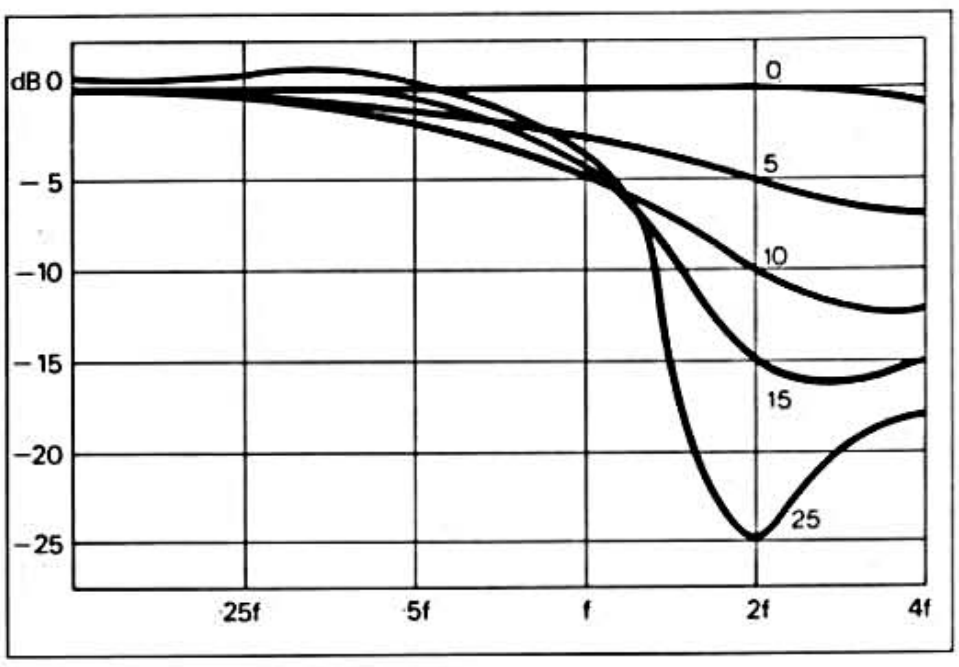
Source	Input Sensitivity for full Output at 1kHz	Maximum Input at 1kHz	Load Impedance	Signal to Noise 'A' weighted Input loaded
Disc	1mV	>35mV	47k//47pF	63dB
	3mV	>100mV	or	72dB
	10mV	>300mV	47k//227pF	82dB
Radio	100mV	5V	1M	86dB
Auxiliary	500mV	25V	500k	82dB
Tape Replay	100mV	5V	39k	
	300mV	15V	121k	
	0dBm (775mV)	40V	94k	86dB
	3V	100V	85k	
	10V	100V	82k	

Outputs

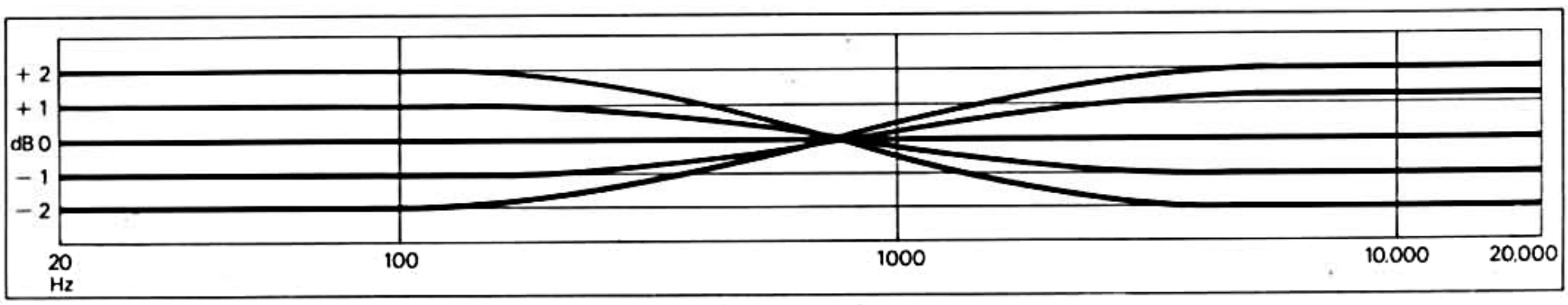
To	Output Level	Source Impedance	
		Low Z	
Tape Recorder	3mV	32Ω	Or 33k
	10mV	100Ω	
	24mV	32Ω	
	100mV	1k	
	0dBm (775mV)	1k	
Power Amplifier	0·5V	1k	
	1·6V	3k2	
	5V	75Ω	



Bass control lift and step



Filter slope



Tilt control

QUAD for the closest approach to the original sound

Quad Electroacoustics Limited
Huntingdon, England.