

Equaliser

System
9098

Classic Design
Performance & Reliability

The **Magical** Sound of
Mr. Rupert Neve

Brought to you by **AMEK**

“Purists might say they would like to set everything flat in the hope that this might provide a ‘natural’ or unprocessed sound. In nature, however, nothing is flat. Every sound we hear has been influenced by acoustic or mechanical resonances, be they from rooms, instruments, loudspeakers, microphones or other sources. The finest musical instruments have achieved their qualities through years - sometimes centuries of listening and adjusting resonances, and therefore, the generic frequency response and attendant shifts in phase. Let us never be reluctant to employ a good equaliser to get musically desirable results!

The System 9098 EQ is a high performance equaliser and preamplifier designed to originate microphone signals of the highest quality and to process signals generally in terms of frequency response. The circuitry is based on the research I put into the early 9098 console and the approach bears many similarities to that used in the 9098. Paramount importance has been given to the sonic quality of the audio path, taking great care to retain the highly-prized musical character of the famous old designs of this pedigree.”



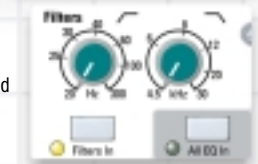
The Input Section

The mic amp uses Mr. Rupert Neve's TLA (transformer-like amplifier). It's exemplary overload capability and wide dynamic range allows the mic amp to adapt to the full spectrum of mic techniques. Phantom power, fine trim and phase reverse are provided.



The Filters

The high pass filter allows the removal of unwanted low frequency noise components, for example, rumble and hum. The low pass filter's extended range allows it to remove unwanted distortion in the conventional audio band caused by components in the inaudible upper frequency bands.



The Low Frequency Section

The LF band has the frequency range of 30-300Hz, with two ranges of cut/boost control. 'Bell' mode provides a Q factor of approx. 0.7. It is used to subtly control the signal around the set frequency with attenuation to either side. The 'Glow' switch subtly alters the response curve shape to give 'warmth' to a sound without changing its character.



The Low Mid Frequency Section

The LMF band has the range 30Hz-1kHz. Q is variable between 0.65-2. Low settings provide a gentle enhancement while higher settings produce a harsh resonant sound. 'Notch' converts the section into a band stop filter creating a narrow attenuation band with minimal effect on the rest of the sound.



The High Mid Frequency Section

The HMF band operates over the frequency range of 500Hz-4.5kHz. In common with the other frequency sections it has a cut/boost of +/-18dB. For finer control of complex programme material this range can be reduced to +/-9dB. Q control and 'Notch' operate in an identical manner to the LMF section.



The High Frequency Section

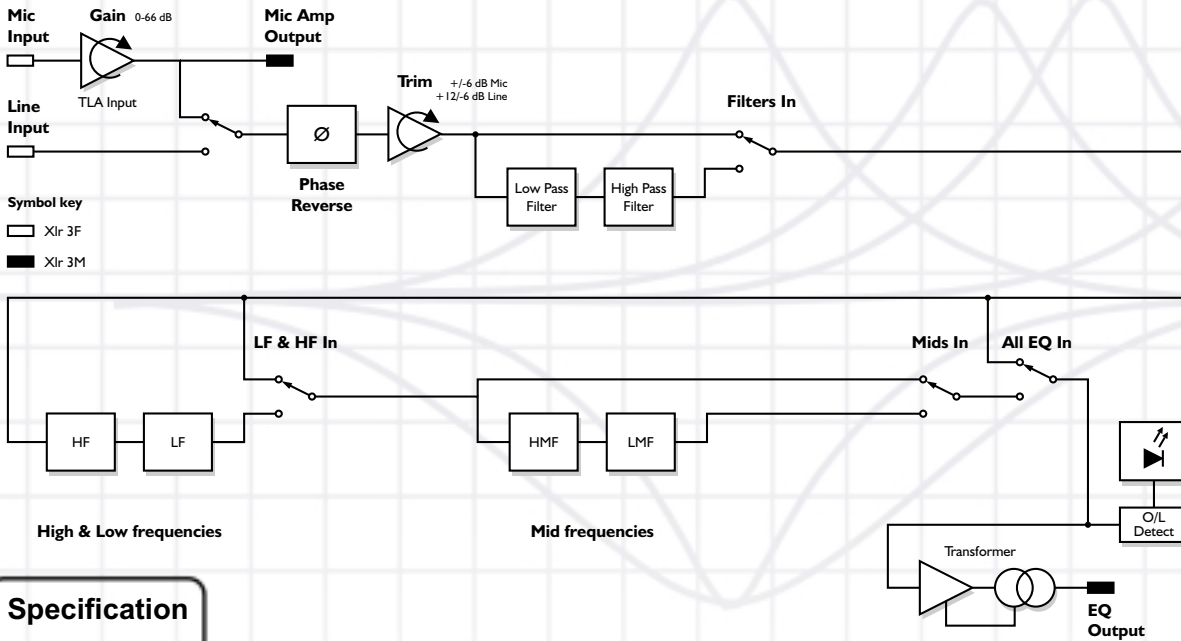
The HF band operates over the range 2-21kHz. Bell/Shelf mode is identical to the LF, a Q factor of 0.45 is used. Shelf mode raises or lowers the frequencies above the turnover point subtly altering the tonal balance without affecting the higher harmonics. 'Sheen' subtly alters the response curve shape to give 'warmth' to a sound without changing its character.



by **Rupert Neve** the designer[®]

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Specification

Mic Amplifier

Frequency Response - source 200R - load 10k

0db gain	<10Hz	-3dB
	20Hz	-0.2dB
	20kHz	-0.1dB
	>110kHz	-3dB
66dB gain	10Hz	-3dB
	20Hz	-1.2dB
	20kHz	-0.4dB
	>60kHz	-3dB

THD+Noise - source 200R - load 10k - measured @ +20dBu

0dB gain	20Hz	<0.01%
	20kHz	<0.01%
66dB gain	20Hz	0.03%
	20kHz	0.06%

Noise - source 200R - 22Hz to 22kHz (RMS)

EIN	66dB gain	-128dBu
Output Noise	0db gain	-105dBu

Crosstalk

Mic Amp to EQ - Input to mic amp +20dB, gain 0dB. Line input selected with source termination 200R. Measured at EQ output.

All EQ bands and filters bypassed, gain unity	20Hz	-112dB
	1kHz	-89dB
	20kHz	-65dB

EQ to Mic Amp - Input to Line amp +20dB, gain 0dB. Mic input selected with source termination 200R. Measured at mic amp output.

All EQ bands and filters bypassed, gain unity	20Hz	-119dB
	1kHz	-106dB
	20kHz	-82dB

Equaliser

Frequency Response - source 200R - load 10k - gain Unity

All EQ bands and filters bypassed	20Hz to 20kHz	+/-0.2db
All EQ bands only in	20Hz to 20kHz	-0.15dB to +0.6dB

THD+Noise - source 200R - load 10k - measured @ +20dBu

All EQ bands and filters bypassed	20Hz	<0.01%
	20kHz	<0.01%
All EQ bands and filters in	20Hz	<0.01%
	20kHz	<0.01%

Output Noise - source 200R - 22Hz to 22kHz (RMS)

All bypassed	-104dBu
All in	-90dBu

Maximum Levels

Input Level to Mic Amp	+26dBu (at Unity Gain)
Output Levels	+26dBu at 10k Load +25dBu at 600ohm Load



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