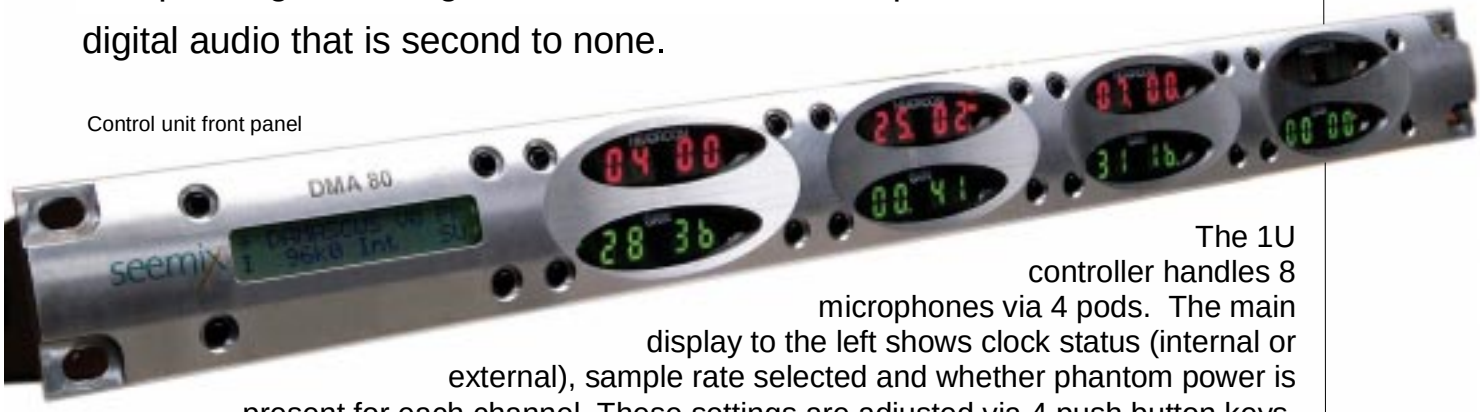
DMA 80
Remote 8ch. Digital Mic Amp

Seemix Sound

The DMA 80 is an integrated microphone amplifier and A/D converter system combining exceptional sonic transparency with sophisticated remote control facilities. Local microphone 'pods' house state-of-the-art microphone amplifiers and A/D converters. AES3 audio is transmitted via standard audio cable to a remote control unit, whilst the same cable transmits control data, power and clock information to the microphone pods.

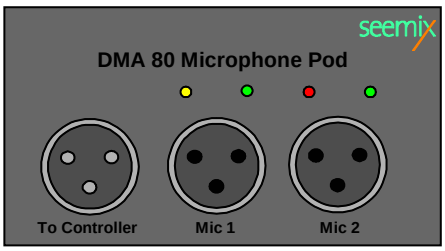
The system is highly resilient to noise and interference and will work faultlessly over long standard audio lines. AES data received by the controller is re-clocked prior to re-transmission. With A/D converters in close vicinity to the microphone and dynamic headroom information allowing for optimal gain settings at all times, the DMA 80 provides 24-bit, 96kHz digital audio that is second to none.

Control unit front panel

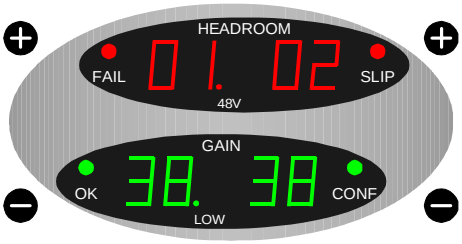


The 1U controller handles 8 microphones via 4 pods. The main display to the left shows clock status (internal or external), sample rate selected and whether phantom power is present for each channel. These settings are adjusted via 4 push button keys.

Microphone pod front panel



Each microphone pod has 2 inputs and one link connection to the control unit. The link cable carries AES3 digital audio, control data, phantom power and clock information. Each pod must be set with a dedicated ID corresponding to the input position on the control unit. The pods store gain and power settings in non-volatile RAM enabling hot connection.



Microphones are controlled via elliptical control clusters, set out in pairs to correspond to each microphone pod. The green displays show selected analogue gain. Two gain ranges are available, low and high, spanning respectively 0 - 30dB and 25 - 65dB. Gain adjustments are in 1dB steps, smooth and virtually silent. Adjustments are made independently for each microphone via push button toggle switches. Channels can also be ganged such that global gain changes can be made. The red displays show peak levels held since last peak reset and thus available headroom. The display range is from 0 to –63dB. Clipping from 0 to +5dB is displayed in 1dB steps.

The remaining LED's indicate the condition of the link: OK confirms that the phase locked loop in the AES receiver is locked. CONF indicates that the link is of compromised quality due to the received date eye opening being less than half a bit period. SLIP warns that the incoming data is asynchronous with the selected clock. Samples will in this instance be slipped or repeated causing low level clicks in the audio. FAIL indicates that the connected pod is faulty or badly connected.

DMA 80 Technical Specifications

Inputs

Balancing type	Electronic.
Number	8 mono.
Impedance	5 kΩ @ 1 kHz.
Phantom power	48V, ±5%, via 6k8 in each leg (remotely switched).
Max. input level	+24dBu (produces full swing digital output with gain set to 0dB).
Gain range	0 - 30 dB (low), 25 - 65dB (high), adjustable in 1dB steps.
Gain adjust element	4 segment low distortion opto coupler.

Outputs

Number	4 stereo AES/EBU.
Impedance	110Ω nominal.

A/D converters

Type	24 bit Delta-Sigma, 128 x over-sampled (64 x oversampled for 88.2 and 96 kHz Fs)

Performance

EIN	-127dBu, 20Hz to 22 kHz. Measured at 60dB gain with 200Ω loading.
THD + Noise	<0.006% with 1kHz at 1dB below digital clip. Any gain/input combination.
Frequency response	± 0.5dB, 20 Hz to 22 kHz (at 44.1kHz Fs).
Sample rates	32, 44.1, 88.2, and 96 kHz.

Metering

Remaining headroom	-63dB to +5dB clip (sensed before ADC). Shown by 2 digits of red 7 segment displays per channel.
Gain setting	0 to 65 dB. Shown by 2 digits of green 7 segment displays per channel.
Coloured LED displays	AES Pod Link Rx Lock (green), Link Confidence Warning (yellow), Sample Slip (orange), Link Rx Fail (red).

Controller Connections

Word Clock	BNC. Unit slaves if clock is detected (lock condition on display).
AES outputs	XLR 3-pin male. Timebase corrected AES audio from microphone pairs.
Link connections to pods	XLR 3-pin female. Receives AES3 audio while sending power, clock and control signals.
Serial control	RS232 available for control from a PC.

Maximum Cable Lengths

Maximum cable lengths between controller and pod depend on cable quality and sample rate selected. Typically, the following lengths apply:

Standard microphone cable, Fs 44.1kHz:	<150m
110Ω digital cable, Fs 44.1kHz:	<300m

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