

518 Digital Audio Processor

The 518 Digital Audio Processor is a consumer product based directly on the well proven technology of 618 Digital Mastering Processor. The hardware provides digital input selection, advanced de-jittering with a crystal-controlled twin phase-lock-loop (PLL), word length conversion and noise shaping utilising a DSP engine. The supplied user programs make it three products in one – each aimed at a different application: a Control Unit, a de-jittering Resolution Enhancement box and a Mastering Processor. Run the program that suits your application.



The 518 Digital Audio Processor can provide a most stunning replacement for an audio preamp. In this application, the 518 sits between digital sources like CD or LaserDisc and a Digital/Analogue converter (DAC) which is connected directly to a power amp or active loudspeakers. In this very straight-line architecture, the conventional analogue preamp is not required and the improvement in transparency is remarkable. This Control Unit also enhances resolution by providing options for word-length expansion and adaptive pre-emphasis. Four sources can be connected to 518 each remembering settings for the precision of the incoming signal. All incoming sources are de-jittered using the twin PLL stabiliser. More sources can be catered for (including analogue) by adding a Meridian 562.

The 518 provides a remarkable 72-bit DSP volume control, the output of which is re-dithered to exactly match the precision of your DAC. All features including volume, mute, standby and source are remotely controllable using a Meridian MSR, 500 Comms or the 518's RS232 port.

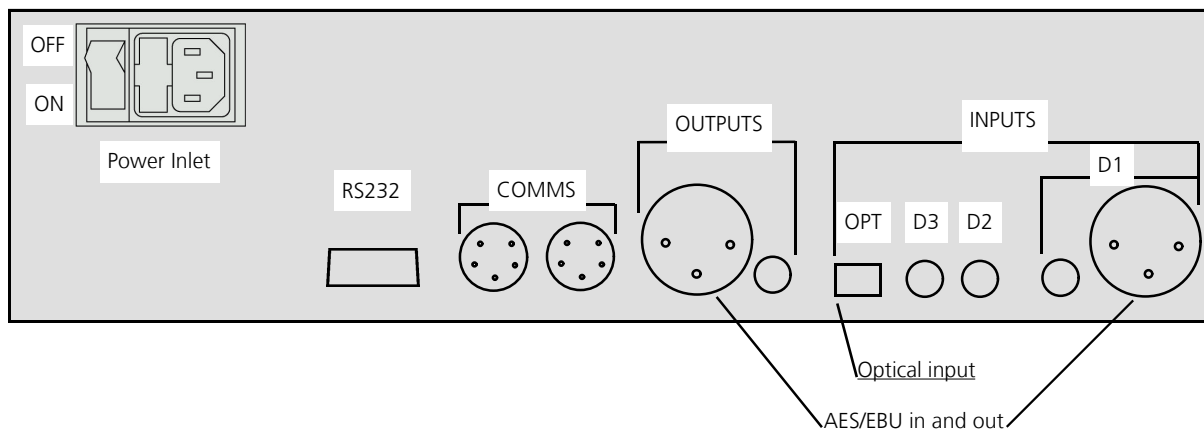
Resolution Enhancement

Resolution enhancement begins with de-jittering provided by the twin PLL. There are several 'jitter-busting' devices on the market, this one is

unequaled so far as output jitter is concerned, but the process does not stop there.

The 518 brings the power of DSP to provide more resolution enhancement in a number of ways. It allows an accurate match between the precision of the incoming source (which may be between 16 and 24 bits) and the capability of the following device whether it be an 18 or 20-bit DAC, a Meridian DSP device like 565 or DSP speaker that can use 22 or 24-bit data. The sound of DACs can be radically improved by matching the word size with the right noise-shaped dither. 518 provides a total of 8 different dithers for you to try. The higher-energy inaudible noise-shaped dither significantly linearises many DACs by averaging out their errors. This results in considerably improved resolution – which can be easily heard.

518 also brings a third resolution enhancement process that we call 'adaptive pre-emphasis'. If you use this mode, 518 ensures that the outgoing signal is always pre-emphasised. By doing this, the DAC gives almost an extra bit of subjective resolution. For more details on noise-shaped dither, pre-emphasis etc., please contact Meridian.



Performance

Signal-level adjustment with precision digital-domain gain control: from +12dB to –99dB

Option to pre- or de-emphasise the signals in the digital domain (pre-emphasis gives a 1-bit advantage to subjective dynamic range).

Signal processing to an internal accuracy of 72 bits.

Inputs and outputs

Input and output digital serial interfaces to AES/EBU and SPDIF: 2 channels at 24 bits.

4 inputs: 3 on SPDIF (phono), 1 TOSLINK (optical) and 1 also AES/EBU (XLR) – parallel with SPDIF 1

Output on SPDIF (phono) and AES/EBU (XLR).

User adjustable channel status between consumer and professional modes.

Flexible handling of Pre-emphasis and Copy flags.

Input word-size selection: 16, 18, 20, 22, 24 bits. Input masked at LSB.

Output word-size selection: 16, 18, 20, 22, 24 bits.

Construction

Internal twin phase-lock-loop gives extremely low jitter on the output

8-character display to monitor settings

Clip or overload display

Incoming and outgoing Emphasis indication

RS232 interface, full remote control by infrared (handset extra).

Meridian 500 Comms connections

Dimensions 88mm (3.46in) H, 321 (12.64) W, 332 (13.07) D – Weight 5kg (10lbs)