

Think of the ISA 428 “Pre Pack” as a new ‘Old Master’; a unique blend of classic vintage analogue mic pre’s with state-of-the-art 192kHz digital technology means that it’s now possible to record using the best of past, present and future audio designs.



- Four classic designed transformer-based pre amps. ○ Eight line inputs ○ 4 Front Panel Instrument Inputs – no separate DI box required.
- 8 Channels of optional cutting-edge 192kHz A/D conversion ○ Custom global ADC soft limiter ○ Switchable Impedance for unparalleled mic matching or extended microphone creativity (includes ‘Vintage ISA110’ setting for the original Focusrite settings.)
- Analogue insert points on every channel. ○ Focusrite vintage variable High Pass Filters on every channel ○ New moving coil peak meters and full 8 channel metering

Four classic transformer-based mic pre amps with switchable impedance and direct instrument inputs form the heart of this unit. These, alongside a custom ‘Soft Clip Limiter’ circuit and an optional eight channel 192kHz ADC, provide the perfect path into any Digital Audio Workstation.

The ISA428 also functions as the perfect input expander for mixing consoles, featuring the four microphone pre amps, four instrument inputs, and 8 line inputs. Any combination of 8 of these inputs can be routed discretely to the 8-channel ADC option. The ISA428 is also ideal for more traditional stand-alone pre amp roles in broadcast, post-production, live sound and installations.

The original design transformer-based pre amps featured in the ISA428 Pre Pack are the very same originals to be found in the Focusrite consoles and classic early ISA110’s. The benefits of this classic pre-amp topology include superb common-mode rejection, an excellent overload margin, and, courtesy of the shared gain structure, (20dB from the hand-wound transformer and up to 40dB from the amplifier,) an extremely low noise floor and super-wide bandwidth. This pre-amp design is the cornerstone of Focusrite’s signature ‘warm-yet-transparent’ sound and is a standard point of reference for many of the industry’s most discerning audio professionals.

The input stage now also provides enhanced control and creativity, by allowing the user to switch between four carefully selected input impedance settings. The original ISA110 setting is supplemented by three further impedance settings, to either perfectly match the pre-amp with any microphone, (and so maximise level,) or to use different settings creatively to interactively shape the sound of your chosen classic mic.

Switchable insert points are also featured on every channel, allowing routing (between pre amp and output) to additional external processing if desired.

Focusrite’s new Soft Limiter is a custom optical design, which both protects the ADC by preventing ‘digital overload’, and also eliminates the unpleasant distortion that standard limiter circuits often generate.* *

Full output metering for all 8 channels is provided as standard by 6-segment LEDs on the ISA428’s front fascia, whilst input levels can be tracked using the new ‘moving coil’ peak meters, designed to catch even the fastest and most elusive of transients.

A brand new optional 8 channel, 24 bit 192kHz ADC embodies cutting-edge conversion technology, encompassed within pristine Focusrite circuitry, providing eight channels of the highest quality conversion at frequency

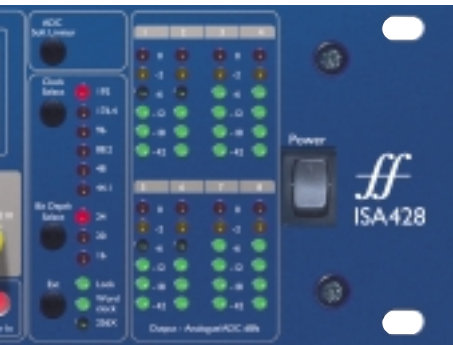
rates of up to 192kHz. (Running at 96kHz provides 16 simultaneous digital outputs alongside the four main analogue outputs.) Digital output formats include 8 channel single/dual wire AES/EBU, 8 channel SPDIF and single/dual port 8-channel ADAT lightpipe, all available on a single ADC card.

Two ISA428’s can be used with a single ADC, utilising the four extra line input channels on the rear of the unit containing the optional ADC. This allows expansion from a 4-pre amp system to an 8-pre amp system – hence why we named the product “Four t(w)o Eight!”

Revering the past, embracing the future; combining classic pre amp technology, innovative custom Focusrite input – and limiter – circuits, and the very best in A/D conversion technology, the ISA 428 Pre Pack raises the bar for multi-channel recording solutions.

“As a stand alone mic pre amp, this unit is very capable indeed, but with the optional converter card installed it makes a very competent and cost effective eight-channel (four mic, four line) front end for a DAW or digital recorder.”

Hugh Robjohns, Sound On Sound, May 2003



ISA 428 SPECIFICATIONS

Inputs

GAIN RANGE

- Line = +/- 18dB
- Mic = 0 to 60dB (both in 6dB steps)
- Inst = +10 to +40 dB variable

INPUT IMPEDANCE

- Line = 10K Ω
- Mic = Variable - 600 Ω , 2K4 Ω , 6K8 Ω and original ISA110 settings
- Inst = >1M Ω

NOISE

- Line = -96dB
- Mic = -128dB (EIN with 150 Ω input resistance at 60dB of gain)

THD

- Line = 0.003% with 0dBu, 1kHz input and 20Hz to 22kHz band pass filter
- Mic = 0.003%

Analogue Input and Output connectors (balanced)

- | | |
|--------------------------|----------------------------|
| Inst inputs | 1/4 inch Jack (unbalanced) |
| Mic inputs | XLR (balanced) |
| Line | TRS Jack (balanced) |
| Insert Sends and Returns | TRS Jack (balanced) |
| Additional ADC inputs | XLR (balanced) |
| Analogue Outputs | 4 x XLR (balanced) |

192KHZ A/D SPECIFICATIONS

- | | |
|-----------------------------|------------------------------------|
| AES/EBU and S/PDIF | Dual 9 pin D-types - 8 channel |
| ADAT Lightpipe (max .96kHz) | Optical - 8channel |
| Bit depths | 16, 20 or 24 bit |
| Frequency options | 44.1, 48, 88.2, 96, 176.4 & 192kHz |
| Clock options | Standard or '256 x' |
| SNR | 120dB A weighted |
| 0dBfs | +22dBu |
| Dithering | Adaptive |



192 kHz A/D conversion and the Soft Limiter.

Focusrite's new ADC converter is the company's first 192kHz design, (it's also amongst the world's first multi-channel 192kHz audio input devices.) As ever, Focusrite's bespoke A/D designs have been crafted in order to maximise the specifications achievable with any given converter chip-set. The ISA428's ADC offers extremely low distortion, (compare our figures with any of the A/D 'heavyweight' brand names in the market...) and ultra-high signal/noise ratio specifications (better than 120dB "A-weighted", comparable with e.g. Digidesign's Pro Tools HD™.)

All the advantages of integral A/D conversion within the main analogue unit's chassis apply;

the shortest possible record path is achieved, all unnecessary external analogue connections are dispensed with, and a quiet and controlled operating environment for the conversion process is ensured. There are no extraneous clocks or sources of digital noise, (as are all too often found in multi I/O DSP environments, digital mixers etc) so there is no loss of accuracy nor clarity. The result is simply detailed, crystal clear, beautiful audio conversion.

Focusrite's revolutionary custom Soft Limiter provides worry-free, musical A/D conversion, handling even the hottest analogue signals with style and grace. It brings warmth to the

conversion process whilst eliminating the undesirable artefacts caused by digital clipping. Rather than simply protecting the A/D in a brick-wall fashion, the Soft Limiter tailors the last 6dB dynamic range of the A/D converter to cater for the last 12dB of analogue headroom. This ensures the A/D converter never overloads at any point during the analogue performance. Unlike conventional limiters, it provides an absolute limit without destroying the audio integrity of the source signal.



8 channel systems

8 channels of A/D conversion are fed from the outputs of channels 1 to 4 (Mic/Line/Inst channels) with channels 5 to 8 fed from the 4 additional external line inputs on the rear panel. This allows a single ISA428 unit to act as an 8-channel digital input expansion unit (mic inputs + line inputs) to any DAW. Alternatively, (see diagram right) two ISA428 units with a single A/D option can be used to create an 8-channel mic pre to A/D system.

Simply feed the analogue outputs of the second unit into inputs 5-8 of the ADC-equipped unit.

