



FIRNET™

The FIRNET™ Linear Phase FIR Controller is a 2-in/4-out system controller, developed specifically for HK AUDIO systems. It was born of more than ten years experience working with FIR filtering technology, developing state-of-art AD/DA converters, and programming cutting-edge DSPs. The FIRNET™ Controller incorporates all the functions necessary to equalize, protect, control, and remotely manage COHEDRA™, COHEDRA COMPACT™, and CONTOUR SERIES™ systems.

FIR

FIR (Finite Impulse Response) filtering technology provides total phase linearity across all components (speakers, controllers, and amps), enabling you to equalize a sound system's frequency response and phase (or group delay) while maintaining complete phase linearity. Thus, the system renders the different frequency ranges of a sonic image coherently; that is, in time and faithfully.

Differences in phase response, experienced as listening fatigue, are gone, dramatically improving transparency and three-dimensional imaging.

Unlike IIR (Infinite Impulse Response) filters, FIR filters do not consist of a specific number of separately computed filter elements. Instead, they contain a complete sampled copy, with the magnitude and phase function required for equalization. The FIR filters in the FIRNET™ Controller equalize all components of HK AUDIO sound reinforcement systems, including the speaker chassis, speaker enclosures, passive crossovers, power amps, and the controller itself.

The FIRNET™ Controller exploits the benefits of FIR filters at a maximum latency of just 5.8 ms – that is, the round-trip time the audio signal takes to flow through the controller and its signal processing components. Such low latency was

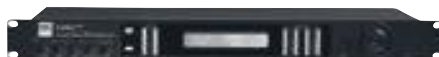
previously confined to conventional IIR controllers. The A/D converter's dynamic range of more than 128 db and an internal sampling frequency of 96 kHz enable extremely high resolution, attaining far more transparent audio signals. The sophisticated combination of RMS limiters with overshoot functions and look-ahead peak limiters afford loudspeakers optimum protection. The free LIPAN™ PC software runs on PCs and laptops, allowing control of up to 60 networked controllers remotely in real time (see page 41).



General Features

- 2x In / 4x Out signal routing
- AES/EBU
- FIR filtering for phase accuracy and true response
- Minimum latency of 5.8 ms (including filters)
- Top-drawer converter technology for outstanding dynamic range of over 128 dB (A/D)
- Sophisticated limiters with advanced features (PEAK, RMS, Overshoot)
- 96-kHz sampling rate for highest resolution and transparency
- Ethernet ports for network integration
- Option slot for future interface upgrades
- GPIO interface
- LIPAN™—PC software for remote monitoring with IIR Master EQ

CONTROLLING



	FIRNET™	DSM 2060
Input /output channel	2x In, 4x Out	2x In, 6x Out
Input impedance	9 k-ohms	>10 k-ohms, electron. balanced
Output impedance	35 ohms	<100 ohms, balanced to ground
Maximum input level	+6, +12, +18 +24 dBu, switchable	+20 dBu
Max. output level	+6, +12, +18 +24 dBu, switchable	+22 dB 600 Ohm
Dynamic range, input	>128 dB A weighted (A/D)	>112 dB A weighted (A/D)
Dynamic range, output	125 dB(A)	>112 dB (A)
Internal-bit depth	28 bit A/D, 24 bit D/A	24 bit A/D, 24 bit D/A
Frequency response (-1 dB)	5,5 Hz – 34 KHz	10 Hz – 40 KHz, -1 dB
Output channel source	A-A/B, B-C/D, fixed	Input A,B, Master A+B
Filter type	FIR	IIR
Latency	AD/DA 96 kHz, 3,15 ms+ FIR filter: max 5,8 ms	AD/DA 96 kHz, > 0,85 ms
Limiters	Peak overshoot protection, RMS limiter	High-perform. limiter, threshold adjustable in 0.2 dB steps
Options	GPIO option slot	BVNet option module
Digital interfaces	In-Out (3-pol. XLR)	-
Sampling rate	96 kHz	-
Protocols	AES 3 (AES/EBU)	-
Input impedance digital	110 ohms	-
Output impedance digital	110 ohms	-
Delay	Input 500 ms, Output 25 ms	Input 400 ms, Output 80 ms
Network	Ethernet X,II – RJ45	optional
Serial ports		RS232
Mains	IEC connector	IEC connector
Mains voltage / frequency	100 – 240 V / 50 – 60 Hz	100 – 250 V / 50 – 60 Hz
Power consumption	40 VA	19 VA
Weight	3 kg / 6.6 lbs.	2,7 kg / 5.9 lbs.
Dimensions (w x h x t)	48 x 4.4 x 23.2 cm	48.2 x 4.4 x 25.4 cm