

# DSM 2060 DIGITAL SPEAKER MANAGEMENT SYSTEM



The HK AUDIO® DSM 2060 Digital Speaker Management System is a digital controller rich in practical features for both touring and fixed installations. With its innovative HFT™ Hardman Filter Technology, it exceeds standard requirements and offers the kind of high-end audio quality that until now could only be obtained from considerably higher priced units.

The HK AUDIO® DSM 2060 system incorporates high-end 24-bit, 96-kHz converters that ensure extremely accurate and natural digital signal processing and a frequency response up to 40 kHz. The two inputs and six outputs can be configured separately for front-of-house and monitor use in touring applications, and likewise allow for a great deal of flexibility in fixed installation projects. To best meet the needs of any given venue, you can apply as many as six parametric EQs plus two shelving filters to each input and output channel. To facilitate setup of delay zones and time alignment of loudspeaker components in multi-amped systems, the DMS 2060 offers input delays up to 400 ms and output delays up to 80 ms. For greater speaker and driver protection different limiters

can be applied to each output in steps as fine as 0.2 dB. Attack and release times of these limiters are optimally preconfigured. At the heart of the controller is a comprehensive set of crossover types, including Butterworth, Bessel, and Linkwitz-Riley, with selectable slopes from 6 to 24 dB.

Unique to the HK AUDIO® DSM 2060 are the fourth-order and eighth-order HFT™ filters that create crossover slopes of 36 dB and 52 dB. But unlike other steeply sloped filters, the HFT™ crossover achieves absolutely minimal phase shift and group delay, even at maximum slopes, thereby maintaining an extraordinarily natural-sounding signal. As a result, HFT™ produces exceptionally smooth response in the crossover region and faster roll-off rates, which in turn minimise distortion, permit lower crossover frequencies and safely expand the effective frequency range of the drivers. This technology allows you to take maximum advantage of your sound system's headroom and increase its operational reliability at the same time.

## FEATURES/BENEFITS

- **High-end audio design** for exceptional sonics using audiophile 24/96 converters with cutting edge Sharc DSP. Dynamic range >112 dB (A-weighted). Frequency response to 40 kHz.
- **2 Inputs - 6 outputs**
- **Flexibility** (FOH, Monitoring, Fixed installations)
- **Hardman Filter Technology HFT™**—Less dynamic distortion and a more natural sound—unique 36 dB and 52 dB HFT™ crossover. The 4th-order and 8th-order Hardman filters minimise group delay and phase shift in the crossover region.
- **Extensive Crossover-Functions.** Choose between classic 1st-order, 12 dB, 18 dB or 24 dB Bessel or Butterworth characteristics; 12 or 24-dB-per-octave Linkwitz-Riley.
- **64 EQ bands in total** with precise and sensitive Equalisation 2 Shelving EQs on all inputs and outputs and 6 parametric EQs on all inputs and outputs, 1/36 octave steps, Bandwidth from 0.1 to 5 octaves in 0.2 dB steps, +/- 15 dB. Polarity can be switched between 0° and 180° per channel.
- **Comprehensive delay** correction for the establishment of delay zones and speaker time alignment with up to 480 ms (ca. 153 m) of total delay.
- **Loudspeaker protection** using high-performance limiters. Adjustable threshold in 0.2 dB steps, from -40 dB to +20 dB, easy adjustment thanks to automatic attack and release times.
- **Illuminated blue full-text display** (2x24-characters) and analog user interface with 3 "Jog Dial"-style knobs.
- **Full monitoring - complete overview** with 8-segment LED meter for input signal, -6 dB, Limit and Mute-LED for all outputs.
- **Quick access to all parameters** with analog-style display knobs and intuitive menus.
- **45 memory banks** for stock HK AUDIO® presets and user configurable settings.
- **Remote operation** via PC.
- **Front panel deactivation** to prevent unauthorised use.
- **Extension slot** for network integration.
- **Wide-range power supply** for worldwide use (85 V – 250 V).

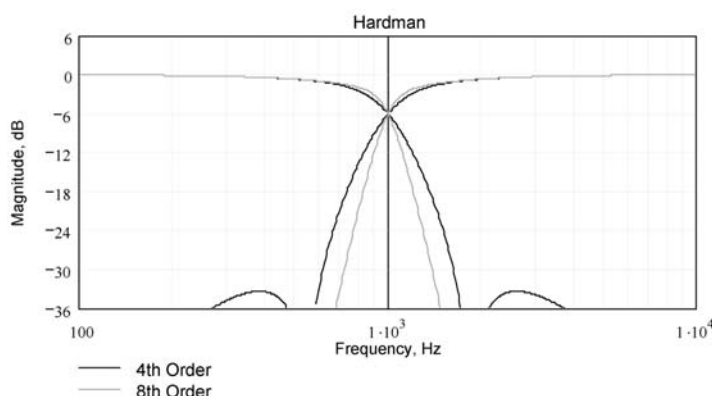
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## HFT™ HARDMAN FILTER TECHNOLOGY BENEFITS

Less dynamic distortion and more natural sound.

- Faster roll-off rates enabling lower distortion to avoid driver anomalies such as resonance and over-exursion distortion at low frequencies
- Highest rate of attenuation of all filters of similar order
- Higher cut off rate than other filter types but with a well defined phase response which is identical between the drivers throughout the crossover region



## TECHNICAL SPECIFICATIONS

General		Processing	
Inputs / Outputs	2 / 6	Gain	+20 dB to -80 dB and mute, 0.2 dB steps
Input Impedance	>10 kOhm Electronically balanced	Output Ch. Source	Input A, Input B and Sum A+B
Maximum Input level	+20 dBu	HP filter frequency	Off, 10 Hz to 25.4 kHz, 1/36 octave steps
Output Impedance	<100 Ohm, ground balanced	LP filter frequency	10 Hz to 25.4 kHz and off, 1/36 octave steps
Maximum Output Level	+22 dBu into 600 ohm load	LP / HP filter type	12, 18 & 24 dB/octave Bessel and Butterworth 12, 24 and 48 dB/octave Linkwitz-Riley 4th or 8th order Hardman
Sample Rate	96 kHz	Delay	Input 400 ms, output 80 ms
Bit Depth	24 bit	Limiter	High performance limiter, adjustable threshold in 0.2 dB steps, automatic time constants
Frequency Response	10 Hz to 40 kHz, +/- 3 dB (filters disabled) 20 Hz to 20 kHz, +/- 0.5 dB (filters disabled)	EQ frequency	10 Hz to 25 kHz, 1/36 octave steps
THD	<0.01 %, (+10 dBu, 20 Hz to 20 kHz, 30 kHz bandwidth)	EQ gain	+15 dB to -15 dB, 0.2 dB steps
Dynamic Range	>112 dB (A weighted, 22 kHz bandwidth)	EQ width	5.0 to 0.1 octaves bandwidth, 1/36 octave steps
Serial Comms Data	38.4 kbaud, format: 8 data, 1 stop, no parity		
Dimensions WxHxD	48.2 x 4.4 x 25.4 cm		
Weight	2.7 kg		

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