

DSP4.4-CORE

Applications

- High-end consumer audio
- Active speakers
- Active subwoofers
- Professional audio power amplifier
- PA systems
- Studio monitors



Introduction

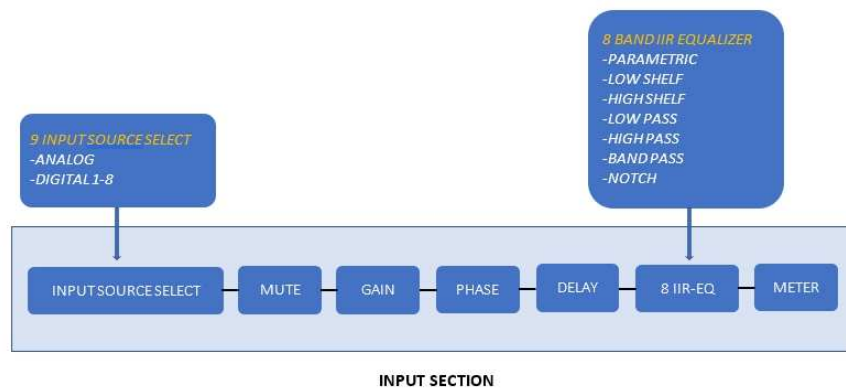
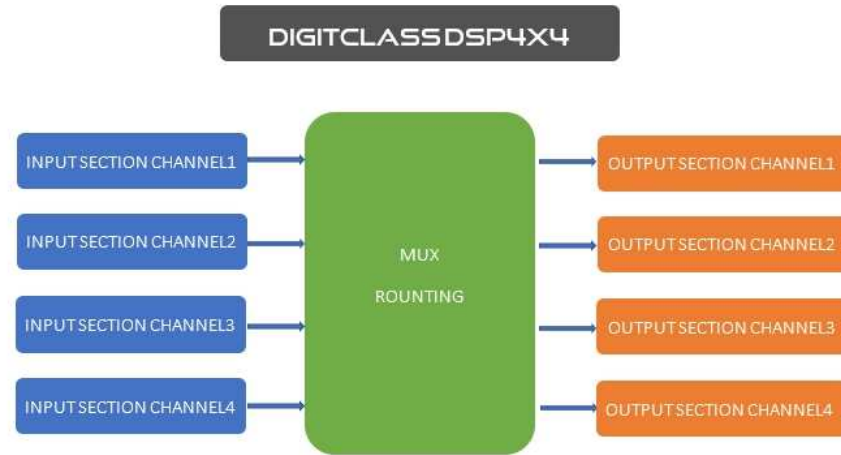
The Digitclass DSP4.4-CORE is a premium grade audio DSP module, on board 4 input channels and 4 output channels, there is need for external analog input buffer and analog output low-pass filter circuits. The module is equipped with high-end A/D and D/A converters for 4 channels of analog input and 4 channels of analog output. This module featuring 96 kHz audio clock frequency and extended network capabilities. The DSP4.4-CORE module with its comprehensive performance is the right choice for the professional manufacturer who design networked PA systems. The module offers outstanding operating and controlling capabilities for large and complex PA systems. The PC software "DigitDSP" allows therefore grouping and remote controlling of various modules. The outstanding audio experience is based on well designed analog circuits and an internal 96 kHz high performance audio processing.



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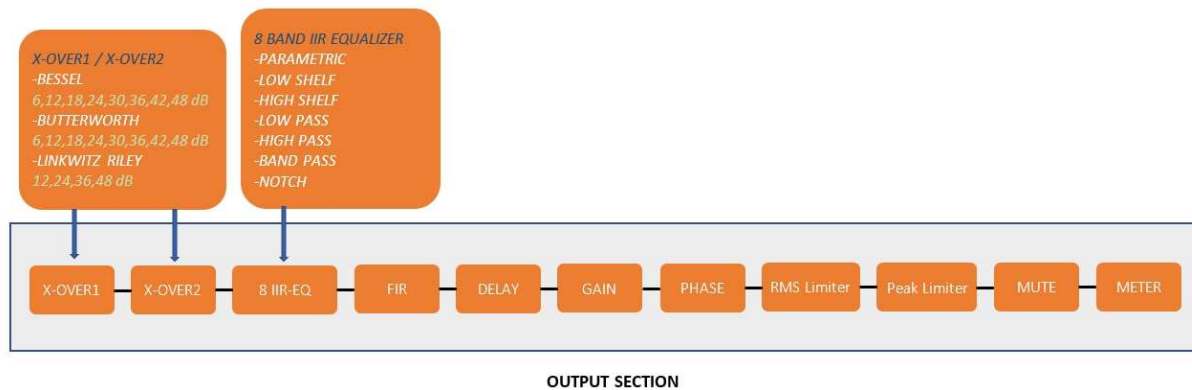
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General	
Dimensions	60 x 18 x 69 (W x H x D)
Weight	70 gr
Environmental	-10°C to +70°C
Power supply	+6.5V..12V (max 500mA)

Control options	
Digitclass	DigitDSP • Controlling multiple devices • Multiple-view and Real-Time Monitoring • Multiple PCs Control • Group features • Scene and Preset features • Firmware is upgradable over network • OEM branding option
Digi API	Digi Application Programming Interface (API) for host CPU monitor and controlling

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DSP features	
DSP	300MHz DSP
Sample Rates	24bit / 96 kHz
Limiter	Peak + RMS Limiter and External indicator pin
Delay	50ms at each input 30ms at each output
Input EQs	8x IIR-EQs with High-Shelf, Low-Shelf, High-Pass, Low-Pass, Band-Pass, Notch, Peak
Output EQs	8x IIR-EQs with High-Shelf, Low-Shelf, High-Pass, Low-Pass, Band-Pass, Notch, Peak 512 taps FIR each channel
Output crossovers	2x crossover filters up to 48dB / octave (Bessel, Butterworth, Linkwitz-Riley) <ul style="list-style-type: none"> • Bessel 6,12,18,24,30,36,48dB / octave • Butterworth 6,12,18,24,30,36,48dB / octave • Linkwitz-Riley 12,24,36,48dB / octave
Routing MUX	4x4 with addition / subtraction
Input/ Output	Level, Mute, Gain, Phase inversion
Input Source Select	1 analog and 8 digitals

Audio	
ADC Full scale input voltage	5.6Vpp(summed), 2.8Vpp (each side)
DAC output voltage (0dBFS)	5.6Vpp
DR, S/N ratio	115 dB
THD+N	-107dB
DAC	AKM AK4454 768kHz 32-bit (need for external LPF circuit)
ADC	AKM AK5554 768kHz 32-bit (need for external input buffer circuit)

PIN Assignment (P1)	
1	+6.5V..12V (max 500mA)
2	+6.5V..12V (max 500mA)
3	+6.5V..12V (max 500mA)
4	+6.5V..12V (max 500mA)
5	0V (+6.5V..12V Return)
6	0V (+6.5V..12V Return)
7	0V (+6.5V..12V Return)
8	0V (+6.5V..12V Return)
9	AGND (Analog ground)
10	AGND (Analog ground)
11	CH4 Out + (Positive Analog Output Channel 4)
12	CH4 Out - (Negative Analog Output Channel 4)
13	CH3 Out - (Negative Analog Output Channel 3)
14	CH3 Out + (Positive Analog Output Channel 3)
15	CH2 Out + (Positive Analog Output Channel 2)
16	CH2 Out - (Negative Analog Output Channel 2)
17	CH1 Out - (Negative Analog Output Channel 1)
18	CH1 Out + (Positive Analog Output Channel 1)
19	AGND (Analog ground)

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20	AGND (Analog ground)
21	Bias Voltage for Analog Input Buffer Circuit
22	+5VA Analog Output (max 200mA)
23	CH4 IN + (Positive Analog Input Channel 4)
24	CH4 IN - (Negative Analog Input Channel 4)
25	CH3 IN - (Negative Analog Input Channel 3)
26	CH3 IN + (Positive Analog Input Channel 3)
27	CH2 IN + (Positive Analog Input Channel 2)
28	CH2 IN - (Negative Analog Input Channel 2)
29	CH1 IN - (Negative Analog Input Channel 1)
30	CH1 IN + (Positive Analog Input Channel 1)
31	AGND (Analog ground)
32	AGND (Analog ground)
33	MCLK Input (Option for Dante/AES67)
34	LIM3 (Output channel 3 external limiter indicator pin)
35	BCLK Input (Option for Dante/AES67)
36	LRCLK Input (Option for Dante/AES67)
37	SDATA Input (Option for Dante/AES67)
38	LIM4 (Output channel 4 external limiter indicator pin)
39	LIM1 (Output channel 1 external limiter indicator pin)
40	LIM2 (Output channel 2 external limiter indicator pin)
41	DGND (Digital ground)
42	DGND (Digital ground)
43	USB D+
44	USB D-
45	TX (Serial uart transmit for host CPU controlling)
46	RX (Serial uart receive for host CPU controlling)
47	GP11 (General Purpose Input, 3.3V signal)
48	W5500 RST
49	GPO1 (General Purpose Output, 3.3V signal)
50	W5500 MISO
51	W5500 MOSI
52	W5500 SCK
53	W5500 CS
54	DGND (Digital ground)
55	SMUTE (Mute Output)
56	MUTE IN (Mute Input)
57	DGND (Digital ground)
58	DGND (Digital ground)
59	+3.3V Output (max 500mA)
60	+3.3V Output (max 500mA)

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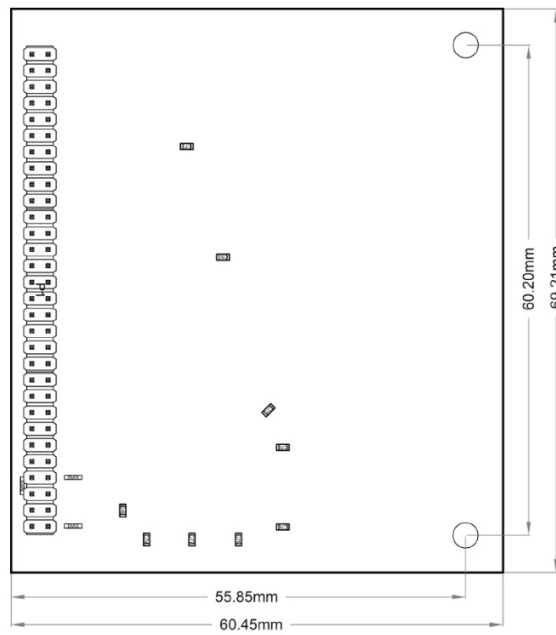
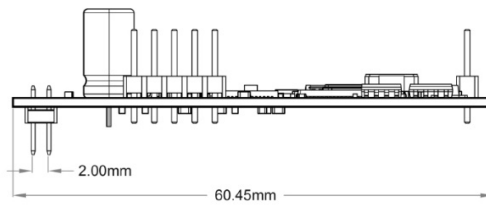
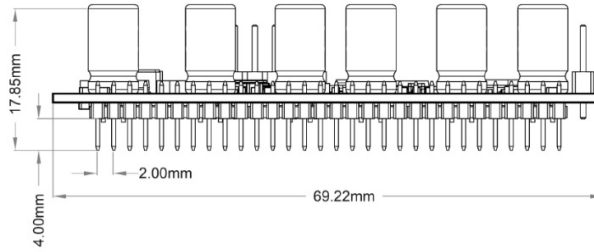
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Dimensions



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