



Network Audio Solution

Q-Sys I/O Frame



I/O Frames can be used to physically locate the input and output connection near their sources and destinations. Dual Gigabit Ethernet connections route the audio signals through the Core for processing. Each I/O Frame can house up to four I/O cards enabling up to 16 channels of input and/or output in a single unit.

Type 1 / Type 2 Transition

Beginning March 1, 2012 QSC Q-Sys I/O Cards and I/O Frames will employ a new internal ribbon cable and connector design, the Cores will follow suit on April 1, 2012. These new I/O Cards, Frames and Cores are designated Type 2. Type 2 cards may not be used in earlier Cores or Frames and the earlier Cores and Frames will not accept Type 2 cards. Type 2 devices will be clearly identified on the rear panels as such. Type 1 and Type 2 products are compatible and can be used together within a system.

The CobraNet (CCN32) and standard Mic/Line (CIML4) cards will only be available as Type 2 devices. Type 1 I/O cards for existing systems will continue to be available from QSC.

Available cards include:



Microphone/Line level input card:

- ◆ 4 channels
- ◆ Greater than 112 dB dynamic range
- ◆ Less than 0.004% THD+N
- ◆ Phantom power (configured via software)



Line level output card:

- ◆ 4 channels
- ◆ Greater than 112 dB dynamic range
- ◆ Less than 0.004% THD+N



QSC DataPort I/O and instrumentation card:

- ◆ 4 channels
- ◆ Greater than 114 dB dynamic range
- ◆ Less than 0.004% THD+N
- ◆ Supports dataport amplifiers (CX, PowerLight, PL2, PL3, DCA)



AES/EBU input/output card:

- ◆ 4 x 4 Digital audio channels
- ◆ Frequency Response +/- 0.2 dB
- ◆ 4 connectors



CobraNet input/output card:

- ◆ Up to 32 x 32 channels when in a Core
- ◆ Up to 16 x 16 channels when in an I/O Frame
- ◆ Selectable Latency



I/O Frame rear panel

SPECIFICATIONS	I/O Frame
Description	System audio input and output device
Front Panel Controls	LCD page forward momentary switch Unit ID button momentary switch Clear settings momentary switch
Front Panel Indicators	Power On: Blue LED Device Status: Tri-color LED Audio Signal: Five tri-color LEDs /per I/O card slot 240 x 64 monochrome LCD graphics display
Rear Panel Connectors	RS-232: DE-9 (male 9-pin D shell connector) GPIO A: DA-15 (female 15-pin D shell connector) Q-Sys Network LAN A: RJ45 1000 MBps only Q-Sys Network LAN B: RJ45 1000 MBps only
I/O Capacity	Up to 16 channels ¹ (Requires purchase of I/O cards)
Line Voltage Requirements	100-240 VAC, 50-60 Hz
Current Draw	625 mA (120V mains)
Thermal	205 BTU/h (typical)
Dimensions (HWD)	1.75" x 19" x 15" (44.45 mm x 482.6 mm x 381 mm)
Accessories Included	6 ft UL/CSA/IEC line cord User Manual Optional audio I/O ship kit

¹ The CAES4 card (AES-3 input/output) doubles the audio channel count of any slot in which it is used.

SPECIFICATIONS	CIML4	CIML4-HP	COL4	CODP4	CAES4
Description	Mic/Line Input Four channels of microphone / line-level analog audio input with 48V phantom power	High-Performance Mic/Line Input Four channels of microphone / line-level analog audio input with 48V phantom power and high performance pre-amplifiers and A/D converters	Line Output Four channels of balanced, line-level analog output	DataPort Output Four audio output channels (2 DataPorts) for connection to DataPort equipped QSC amplifiers	AES-3 Input/Output Four input and four output channels of AES-3 digital audio
Performance					
Dynamic Range Unweighted	> 105 dB	> 112 dB	> 112 dB	> 114 dB	-
Dynamic Range A-weighted	> 108 dB	> 115 dB	> 115 dB	> 117 dB	-
Distortion 20 Hz - 20 kHz +4 dBu (nominal input)	< 0.009% THD+N	< 0.004% THD+N	-	-	-
Distortion 20 Hz - 20 kHz 2 dB below clip (max)	< 0.08% THD+N	< 0.06% THD+N	< 0.004% THD+N	< 0.004% THD+N	-
Crosstalk 20 Hz - 20 kHz Inter-channel (max)	> 100 dB	> 110 dB	> 100 dB	> 95 dB	-
Inter-channel (typ)	> 110 dB	> 110 dB	> 110 dB	> 100 dB	-
Intra-channel (max)	> 100 dB	> 110 dB	> 100 dB	> 100 dB	-
Intra-channel (typ)	> 110 dB	> 110 dB	> 110 dB	> 110 dB	-
Frequency Response 20 Hz - 20 kHz (max)	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB	-
20 Hz - 20 kHz (typ)	± 0.2 dB	± 0.2 dB	± 0.2 dB	± 0.2 dB	± 0.2 dB
Input Impedance Balanced (nominal)	10 k ohms	10 k ohms	-	-	-
Unbalanced (nominal)	10 k ohms	10 k ohms	-	-	-
Common Mode Rejection 20 Hz - 20 kHz (max)	> 45 dB	> 45 dB	-	-	-
20 Hz - 20 kHz (typ)	> 50 dB	> 50 dB	-	-	-
Max Input Level	0.123 2.25 8.70 17.35 Vrms -16 10 21 27 dBu -18.2 7.04 18.8 24.78 dBv (4 selections)	1.23 to 17.35 Vrms -56 to 27 dBu -58.2 to 24.8 dBv (continuously variable)	-	-	-

Mute	Infinite attenuation (via digital mute)	Infinite attenuation (via digital mute)	Infinite attenuation (via electro-mechanical relays)	Infinite attenuation (via electro-mechanical relays)	Infinite attenuation (via digital mute)
Audio Converters					
Analog to Digital Conversion (ADCs)	24-bit delta-sigma at 48 or 96 kHz sample rate	24-bit delta-sigma at 48 or 96 kHz sample rate	-	-	-
Digital to Analog Conversion (DACs)	-	-	24-bit delta-sigma at 48 or 96 kHz sample rate	24-bit delta-sigma at 48 or 96 kHz sample rate	-
Group Delay	< 13 FS ($\approx 271 \mu\text{s}$) at 48 kHz	< 13 FS ($\approx 271 \mu\text{s}$) at 48 kHz	< 10 FS ($\approx 196 \mu\text{s}$) at 48 kHz	< 13 FS ($\approx 271 \mu\text{s}$) at 48 kHz	< 37 FS ($\approx 760 \mu\text{s}$) at 48 kHz*
Connectors	Four 3-terminal Euro-style detachable terminal blocks	Four 3-terminal Euro-style detachable terminal blocks	Four 3-terminal Euro-style detachable terminal blocks	Two 15-pin HD15 connectors	Four 3-terminal Euro-style detachable terminal blocks
User-configurable Options (software enabled)					
Phantom Power	+48 V phantom power (meets IEC 1938 [1996] spec)	+48 V phantom power (meets IEC 1938 [1996] spec)	-	-	-
Output Trim Vrms (max) dBu (max) dBv (max)	- - -	- - -	8.7 V 21 dBu 18.8 dBv	- - -	- - -
Amplifier Standby	-	-	Set or clear amplifier in standby mode	-	-
Mute	-	-	Set or clear individual channel mutes	-	-
Enable Meters	-	-	Enable data collection of meters for each channel	-	-
Audio Output Levels	-	-	Adjust individual audio channel levels	-	-
Amplifier Model Support	-	-	CX, PowerLight™ 3 Series, DCA, and legacy V1 models	-	-

*Group Delay assumes that the sample rate converter is enabled.

Specifications subject to change

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