

# Rio3224-D / Rio1608-D

## I/O Rack



Rear Panel

**Rio3224-D** 32 in/16 out,  
4 AES/EBU out



Rear Panel

**Rio1608-D** 16 in/8 out



## High-performance remote I/O for CL series digital mixing consoles.

- Easy and flexible system setup with Dante for low-jitter and low-latency digital audio transmission.
- Up to eight I/O rack units can be connected to any single CL series console for star configuration.
- Simple DIP switch settings allow easy switching between star and daisy-chain configurations.
- Multiple CL series consoles can share control of the same I/O rack unit, for unprecedented system flexibility and efficient use of system resources.

### GENERAL SPECIFICATIONS

<b>Sampling frequency rate</b>	Internal: 44.1kHz, 48kHz, 88.2kHz, 96kHz External: 44.1kHz (+4.1667%, +0.1%, -0.1%, -4.0%) ±200ppm 48kHz (+4.1667%, +0.1%, -0.1%, -4.0%) ±200ppm 88.2kHz (+4.1667%, +0.1%, -0.1%, -4.0%) ±200ppm 96kHz (+4.1667%, +0.1%, -0.1%, -4.0%) ±200ppm
<b>Signal Delay</b>	Less than 3ms INPUT to OUTPUT, connect with CL5 using Dante, Dante Receive Latency set to 0.25ms (one way), Fs=48kHz
<b>Total harmonic distortion*1</b> OMNI IN to OMNI OUT Input Gain=Min.	Less than 0.05% 20Hz-20kHz@+4dBu into 600Ω, Fs=44.1kHz, 48kHz Less than 0.05% 20Hz-40kHz@+4dBu into 600Ω, Fs=88.2kHz, 96kHz
<b>Frequency response</b>	+0.5, -1.5dB 20Hz-20kHz, refer to +4dBu output @1kHz, INPUT to OUTPUT, Fs=44.1kHz, 48kHz +0.5, -1.5dB 20Hz-40kHz, refer to +4dBu output @1kHz, INPUT to OUTPUT, Fs=88.2kHz, 96kHz
<b>Dynamic range</b>	108dB typ., INPUT to OUTPUT, Input Gain = Min.
<b>Hum &amp; noise level*2</b> (20Hz to 20kHz), Rs=150Ω	-128dBu Equivalent input noise, Input Gain=Max., -88dBu Residual output noise, ST master off
<b>Crosstalk</b> (@1kHz) Input Gain=Min.	-100dB*3, Adjacent INPUT/OUTPUT channels
<b>Phantom Power</b>	+48V
<b>Power requirements</b>	AC110V-240V, 50/60Hz
<b>Power consumption</b>	Rio3224-D: 120W Rio1608-D: 70W
<b>Temperature Range</b>	Operating temperature range: 0 - 40° Storage temperature range: -20 - 60°
<b>Dimensions</b> (W x H x D)	Rio3224-D: 480mm x 232mm** x 361.5mm(18 7/8in x 9 1/4in x 14 1/4in) Rio1608-D: 480mm x 144mm** x 361.5mm(18 7/8in x 5 3/4in x 14 1/4in)
<b>Weight</b>	Rio3224-D: 12.4kg (27.3lb) Rio1608-D: 8.8kg (19.4lb)

\*1 Total harmonic distortion is measured with a 18dB/Oct filter @80kHz.  
\*2 Hum & noise level is measured with a 6dB/oct filter @12.7kHz; equivalent to 20kHz filter with infinite dB/Oct attenuation.  
\*3 Crosstalk is measured with a 30 dB/octave filter @22kHz.  
\*\* Including rubber feet.

### ANALOG INPUT SPECIFICATIONS

Input terminal	GAIN	Actual load impedance	For use with nominal	Input level		Connector
				Nominal	Max. before clip	
INPUT 1-16 17-32*1	+66dB	10kΩ	50-600Ω Mics & 600Ω Lines	-62dBu	-42dBu	XLR3-31 type*
	+18dB			-14dBu	+6dBu	
	+17dB	3kΩ		-13dBu	+7dBu	
	-6dB			+10dBu	+30dBu	

\*1 Rio3224-D only

### ANALOG OUTPUT SPECIFICATIONS

Output terminal	Actual source impedance	For use with nominal	Max. Output Level Select SW*1	Output terminals		Connector
				Nominal	Max. before clip	
OMNI OUT 1-8 9-16*2	75Ω	600Ω Lines	+24dB (default)	+4dBu	+24dBu	XLR3-32 type*
			+18dB	-2dBu	+18dBu	

\*1 There are switches inside the body to preset the maximum output level. \*2 Rio3224-D only

### DIGITAL I/O SPECIFICATIONS

Terminal	Format	Data length	Level	Audio	Connector
Primary/Secondary	Dante	24bit or 32bit	1000Base-T	24ch Input/32ch Output (Rio3224-D) 8ch Input/16ch Output (Rio1608-D)	etherCON Cat5e

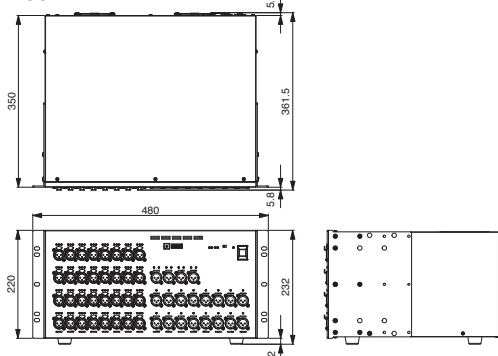
### DIGITAL OUTPUT SPECIFICATIONS

Terminal	Format	Data length	Level	Connector
AES/EBU OUT 1-4*1	AES/EBU	AES/EBU Professional Use	24bit	RS422

\*1 Rio3224-D only

### DIMENSIONS

Rio3224-D



Rio1608-D

unit : mm

