Overview

The Dante-compatible RUio1608SB-D is a compact I/O stagebox featuring 16 analog inputs and 8 analog outputs. Designed for seamless integration with Yamaha digital mixers and processors, its rugged construction makes it ideal for on-stage deployment, while an optional rack-mount kit provides additional installation flexibility.





Features

- Analog I/O: 16 inputs, 8 outputs
- Dante: 8 receive channels, 16 transmit channels
- Local display and control of gain and phantom power settings
- Dimensions (W x H x D): 374 × 170 × 145 mm (14.8” x 6.7” x 5.8”)
- Net weight: 3.5 kg (7.7 lb)

Specifications

General Specifications

I/O Connectors	Analog Input	16
	Analog Output	8
Sampling Frequency Rate	External	44.1 kHz / 48 kHz / 88.2 kHz / 96 kHz ±200 ppm +4.1667%, +0.1%, −0.1%, −4.0% ±200 ppm
Signal Delay		Less than 1.7 ms @ Fs = 96 kHz, 2.0 ms @ Fs = 48 kHz Analog INPUT to analog OUTPUT of this product via DM5 over Dante Dante Receive Latency set to 0.25 ms.
Power Requirements		100 - 240 V, 50 Hz/60 Hz
Power Consumption		40 W
Heat Dissipation		35 kcal/h
Dimensions	W	374 mm (14.8")
	H	170 mm (6.7")
	D	145 mm (5.8")
Net Weight		3.5 kg (7.7 lb)
NC value*1	Fan Speed LOW	20
	Fan Speed HIGH	25
Approximate Munsell value of exterior color		N5
Operating Temperature Range		0°C to 40 °C
Storage Temperature Range		−20°C to 60°C
Included Accessories		Read This First × 1, AC Power cord × 1*2

*1 Measurement position: 1m from the front of the unit

*2 Multiple AC power cords which have different kinds of plug shapes may be included depending on the region.

Audio Characteristics 1/2

During the measurement, the output impedance of the signal generator is 150 Ω. The output load impedance is 10 kΩ.

Frequency Response

Fs = 96 kHz or Fs = 48 kHz @ 20 Hz - 20 kHz, reference to the nominal output level @ 1 kHz

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1-16	OUTPUT 1-8	10 kΩ	GAIN: +64 dB	–1.5	0.0	0.5	dB

Total Harmonic Distortion

Fs = 96 kHz or Fs = 48 kHz

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1-16	OUTPUT 1-8	10 kΩ	+4 dBu @ 20 Hz - 20 kHz, GAIN: +64 dB			0.15	%
INPUT 1-16	OUTPUT 1-8	10 kΩ	+4 dBu @ 20 Hz - 20 kHz, GAIN: 0 dB			0.05	%

* Total harmonic distortion was measured using an 80 kHz, 48 dB/octave low pass filter.

Hum & Noise

Fs = 96 kHz or Fs = 48 kHz, EIN = Equivalent Input Noise

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1-16	OUTPUT 1-8	10 kΩ	Rs = 150 Ω, GAIN: +64 dB		–128 EIN		dBu
					–64		dBu
INPUT 1-16	OUTPUT 1-8	10 kΩ	Rs = 150 Ω, GAIN: 0 dB		–85	–83	dBu
All Inputs	OUTPUT 1-8	10 kΩ	Rs = 150 Ω, GAIN: 0 dB Main fader at nominal level and all INPUT 1-16 in faders at nominal level. Measured with DM5 (or DM5 Compact) through Dante			–71	dBu
-	OUTPUT 1-8	10 kΩ	Residual output noise, Main stereo channel off.		–90	–88	dBu

* Hum & Noise are measured with A-weight filter.

Dynamic Range

Fs = 96 kHz or 48 kHz

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 1-16	OUTPUT 1-8	10 kΩ	AD+DA, GAIN: 0 dB		109		dB
-	OUTPUT 1-8	10 kΩ	DA Converter		114		dB

* Dynamic range are measured with A-weight filter.

Crosstalk (@ 1 kHz)

From/To	To/From	Conditions	Min.	Typ.	Max.	Unit
INPUT N	INPUT (N-1) or (N+1)	INPUT 1-16, adjacent inputs, GAIN: 0 dB			–100	dB
OUTPUT N	OUTPUT (N-1) or (N+1)	OUTPUT 1-8, input to output			–100	dB

* Crosstalk was measured using a 22 kHz, 48 dB/octave filter.

Audio Characteristics 2/2

Analog Input Standards*3*4

Input Terminal	GAIN	Actual Source Impedance	For Use with Nominal	Input Level			Connector
				Sensitivity*1	Nominal	Max. before clip	
INPUT 1-16	+64 dB	10 kΩ	50 - 600 Ω Mics 600 Ω Lines	−80 dBu (0.078 mV)	−60 dBu (0.775 mV)	−40 dBu (7.75 mV)	XLR 3-hole chassis (Balanced)*2
	0 dB			−16 dBu (123 mV)	+4 dBu (1.23 V)	+24 dBu (12.3 V)	

*1 Sensitivity is the minimum level needed to output +4 dBu (1.23 V) or the specified level when the gain is set to maximum. (All faders and level controls are set to maximum.)
*2 1 = GND, 2 = HOT, 3 = COLD
*3 0 dBu = 0.775 Vrms
*4 +48V DC (phantom power) is supplied to INPUT XLR type connectors via each individual software controlled switch.

Analog Output Standards*2

Output Terminal	Actual Source Impedance	For Use with Nominal	Output Level*3		Connector
			Nominal	Max. before clip	
OUTPUT 1-8	75 Ω	10 kΩ Lines	+4 dBu (1.23 V)	+24 dBu (12.3 V)	XLR 3-pin chassis (Balanced)*1

*1 1 = GND, 2 = HOT, 3 = COLD
*2 0 dBu = 0.775 Vrms.
*3 You can change the output level for the OUTPUT 1–16 connectors. Contact your Yamaha dealer.

Digital I/O Standards

Terminal	Format	Data Length	Level	Audio	Connector
Dante PRIMARY/SECONDARY	Dante	24-bit / 32-bit	1000Base-T	16ch TX / 8ch RX	etherCON CAT5e*1

*1 CAT5e or higher cables are recommended for connections.

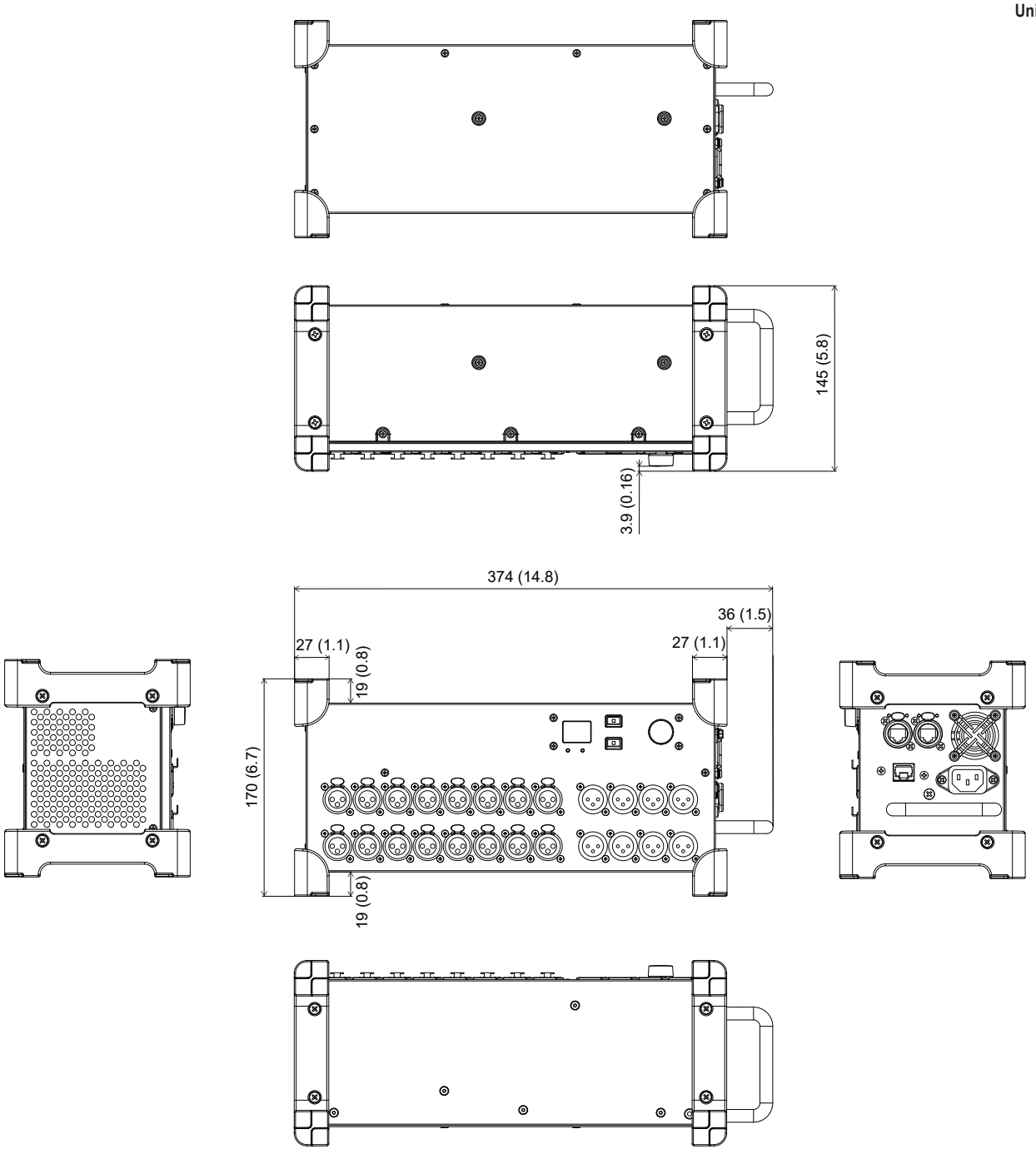
Control I/O Standards

Terminal	Format	Level	Connector
NETWORK	IEEE802.3	1000BASE-T / 100BASE-TX	RJ-45*1

*1 CAT5e or higher cables are recommended for connections.

Dimensions

Unit: mm (inch)



Software

- R Remote

Architectural and Engineering Specifications for RUio1608SB-D

The Yamaha RUio1608SB-D shall be a compact, rugged Dante-compatible I/O rack with 16 balanced analog mic/line inputs and 8 balanced analog line outputs. It shall be suitable for on-stage deployment and shall support installation with an optional rack-mount kit, 3u in height. The unit shall be designed for integration with Yamaha digital mixers and processors.

Dante digital audio networking shall be provided through PRIMARY and SECONDARY etherCON connections supporting 1000BASE-T, 24-bit/32-bit audio, 16 transmit channels, and 8 receive channels. A NETWORK terminal shall support IEEE 802.3 at 1000BASE-T/100BASE-TX via an RJ45 connector.

A front panel display and controls shall be provided for gain and phantom power settings. +48 V DC phantom power shall be individually software-switchable for each analog input. The display shall also provide level metering functionality. The RUio1608SB-D shall include a Gain Compensation function.

The 16 analog inputs shall use balanced XLR-3-hole chassis connectors, and the 8 analog outputs shall use balanced XLR3-pin chassis connectors. The nominal analog output level shall be +4 dBu, with a maximum level of +24 dBu before clipping.

Supported external sampling frequencies shall be 44.1 kHz, 48 kHz, 88.2 kHz, and 96 kHz.

Power requirements shall be 100 - 240 V, 50/60 Hz, and power consumption shall be 40 W. Dimensions, including rubber bumpers and carry handle, shall be 374 (W) × 170 (H) × 145 (D) mm. Net weight shall be 3.5 kg.

*All information subject to change without notice.
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