



# TECHNICAL SPECIFICATIONS

AUDIO INTERFACE / INTERFACE AUDIO /  
INTERFAZ DE AUDIO / АУДИОИНТЕРФЕЙС /  
音频界面 / 신호변 환장치 / オーディオインターフェース

## RUiO16-D

### General Specifications / Caractéristiques générales / 常规规格 / 一般规格 / 一般仕様

<b>Local connectors</b>	<b>Analog inputs</b>	2 Mic / Line (XLR)
	<b>Analog outputs</b>	2 (XLR)
	<b>Phones output</b>	1 (TRS Phone)
	<b>Dante I/O</b>	2 (etherCON: Primary / Secondary)
	<b>USB 2.0 (PC)</b>	1 (USB Type-C)
	<b>DC power input</b>	1 (USB Type-C)
<b>Sampling frequency</b>	44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz	
<b>Signal delay</b>	Less than 250 $\mu$ s, Analog INPUT to Analog OUTPUT @Fs = 96 kHz Bypass USB mode	
<b>Power requirements</b>	5 V / 1.5 A	
<b>Power consumption</b>	7.5 W	
<b>Dimensions</b>	<b>W × H × D</b>	180 (W) × 42 (H) × 121 (D) mm (without rubber feet)
<b>Weight</b>	1.0 kg	
<b>Operating temperature range</b>	0 – 40°C	
<b>Storage temperature range</b>	-20 – 60°C	
<b>Included accessories</b>	USB 2.0 Cable (Type-A to Type-C, 1.5 m) USB 2.0 Cable (Type-C to Type-C, 1.5 m) Cable hook Rubber feet Owner's Manual VST Rack Pro Download Information	

### Technical Specifications / Caractéristiques techniques / 技术规格 / 技術規格 / 技術仕様

At the time of measurement, all levels are set to nominal. Output impedance of the signal generator is 150  $\Omega$ . 0 dBu is referenced to 0.775 Vrms.

#### Frequency response @ 20 Hz – 20 kHz, reference to the nominal output level @ 1 kHz

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 15, 16	OUTPUT 15, 16	10 k $\Omega$	Gain: max, PAD: off	-1.5	0.0	+1.0	dB

#### Total harmonic distortion

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 15, 16	OUTPUT 15, 16	10 k $\Omega$	+4 dBu @ 20 Hz – 20 kHz, Gain: min, PAD: on	–	–	0.02	%
INPUT 15, 16	PHONES	40 $\Omega$	100 mW (Max.before clip level) @ 1 kHz, Gain: min, PAD: off	–	–	0.05	%

\* Total Harmonic Distortion is measured with 22 kHz low pass filter.

#### Hum & noise

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 15, 16	OUTPUT 15, 16	10 k $\Omega$	Rs = 150 $\Omega$ , Gain: max, PAD: off	–	-128 EIN	–	dBu
				–	-64 NOISE	–	dBu
–	OUTPUT 15, 16	10 k $\Omega$	Residual output noise, output level control min.	–	-95	–	dBu
–	PHONES	40 $\Omega$	Residual output noise, phones level control min.	–	-102	–	dBu

\* Hum & noise is measured with A-weighting filter equivalent to a 20 kHz filter with infinite dB/octave attenuation.

\* EIN = Equivalent Input Noise

#### Dynamic range

Input	Output	RL	Conditions	Min.	Typ.	Max.	Unit
INPUT 15, 16	OUTPUT 15, 16	10 k $\Omega$	AD + DA, Gain: min, PAD: on	–	110	–	dB
			DA Converter	–	118	–	dB

\* Dynamic range is measured with A-weighting filter equivalent to a 20 kHz filter with infinite dB/octave attenuation.

#### Crosstalk @ 1 kHz

From / To	To / From	Conditions	Min.	Typ.	Max.	Unit
INPUT 15/16	INPUT 16/15	Gain: min (INPUT 15) → Gain: min (INPUT 16) Gain: min (INPUT 16) → Gain: min (INPUT 15)	–	–	-100	dB
		Gain: max (INPUT 15) → Gain: max (INPUT 16) Gain: max (INPUT 16) → Gain: max (INPUT 15)	–	–	-80	dB
		Gain: min (INPUT 15) → Gain: max (INPUT 16) Gain: min (INPUT 16) → Gain: max (INPUT 15)	–	–	-80	dB

\* Crosstalk is measured with a 30 dB/oct filter @ 22 kHz.

## Analog Input Characteristics / Caractéristiques des entrées / 模拟输入特点 / 類比輸入特性 / アナログ入力特性

0 dBu is referenced to 0.775 Vrms. +48 V DC (Phantom power) is supplied to both INPUT 15 and INPUT 16 connectors by using +48 V switch.

Input Terminals	PAD	Gain Trim	Actual Load Impedance	For Use with Nominal	Input level		Connector	Balanced / Unbalanced
					Nominal	Max. before clip		
INPUT 15, 16	0 dB	+64 dB	3 k $\Omega$	50 – 600 $\Omega$ Mics	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	XLR-3-31 *1	Balanced
		+20 dB			-16 dBu (123 mV)	+4 dBu (1.23 V)		
	-26 dB	+38 dB	600 $\Omega$ Lines	-34 dBu (15.5 mV)	-14 dBu (155 mV)			
		-6 dB		+10 dBu (2.45 V)	+30 dBu (24.5 V)			

\*1 XLR Jack pin assign: 1 = GND, 2 = HOT, 3 = COLD

## Analog Output Characteristics / Caractéristiques des sorties analogiques / 模拟输出特点 / 類比輸出特性 / アナログ出力特性

0 dBu is referenced to 0.775 Vrms.

Output Terminals	Actual Source Impedance	For Use with Nominal	Output level		Connector	Balanced / Unbalanced
			Nominal	Max. before clip		
OUTPUT 15, 16	75 $\Omega$	10 k $\Omega$ Lines	+4 dBu (1.23 V)	+24 dBu (12.3 V)	XLR-3-32 *1	Balanced
PHONES	10 $\Omega$	40 $\Omega$ Phones	2.5 mW	100 mW	Stereo Phone Jack (TRS) *2	Unbalanced

\*1 XLR pin assign: 1 = GND, 2 = HOT, 3 = COLD

\*2 Stereo Phone Jack pin assign: Tip = LEFT, Ring = RIGHT, Sleeve = GND

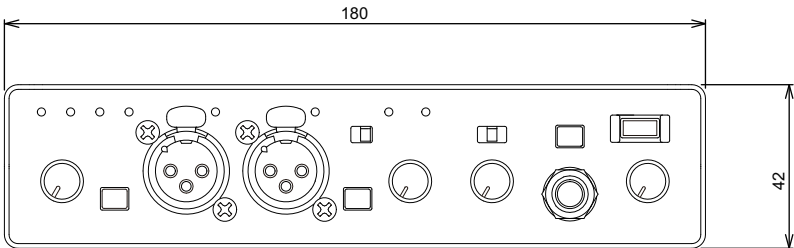
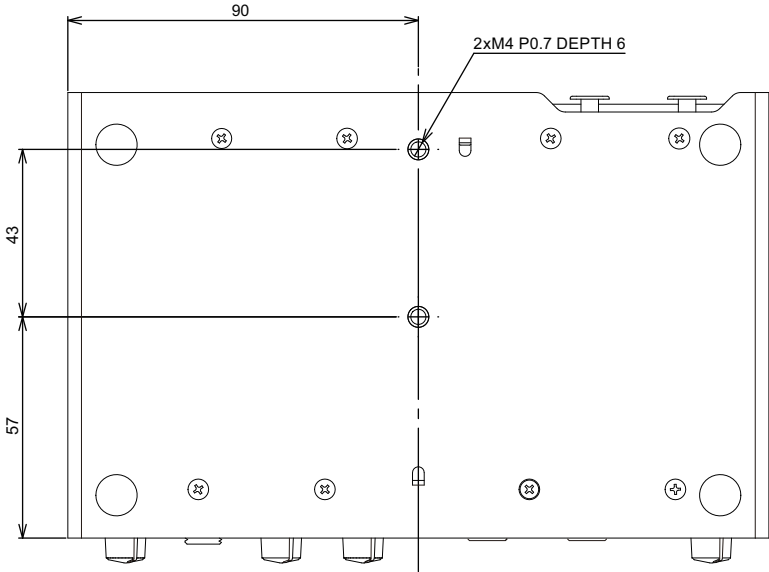
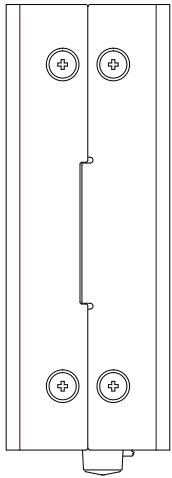
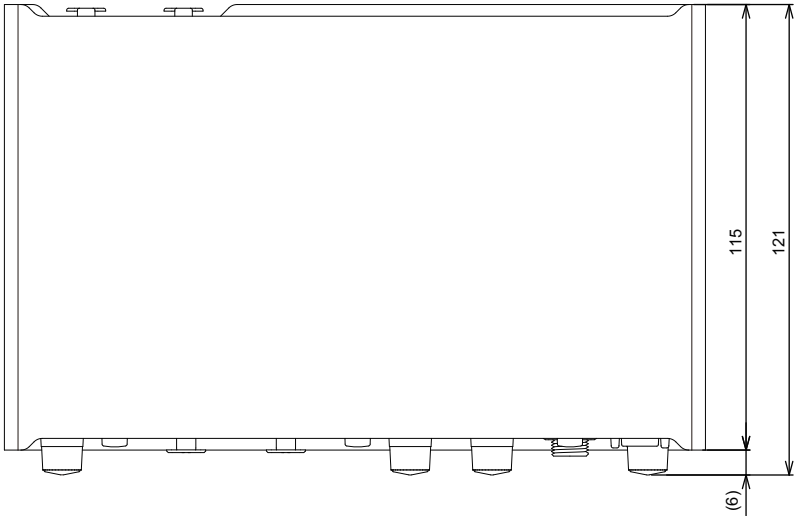
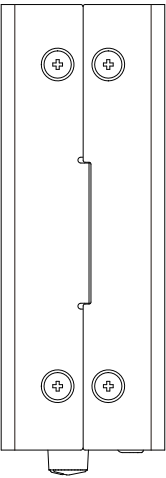
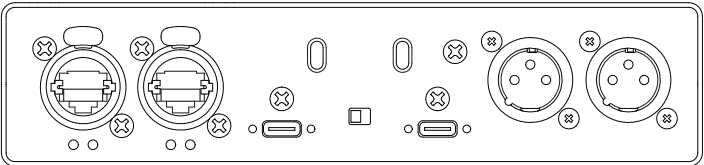
## Digital I/O Characteristics / Caractéristiques des E/S numériques / 数字 I/O 特点 / 數位輸入/輸出特性 / デジタルI/O特性

Terminal	Format	Data length	Level	Audio	Connector
Dante Primary/ Secondary	Dante	24 bit / 32 bit	1000 Base-T	16 ch input (From other devices) 16 ch output (To other devices)	etherCON (CAT5e) $\times$ 2 *1,2
USB 2.0 (PC)	USB 2.0	24 bit	480 Mbps	18 ch input (From PC) 16 ch output (To PC)	USB Type-C

\*1 CAT5e or higher cable is used for connection.

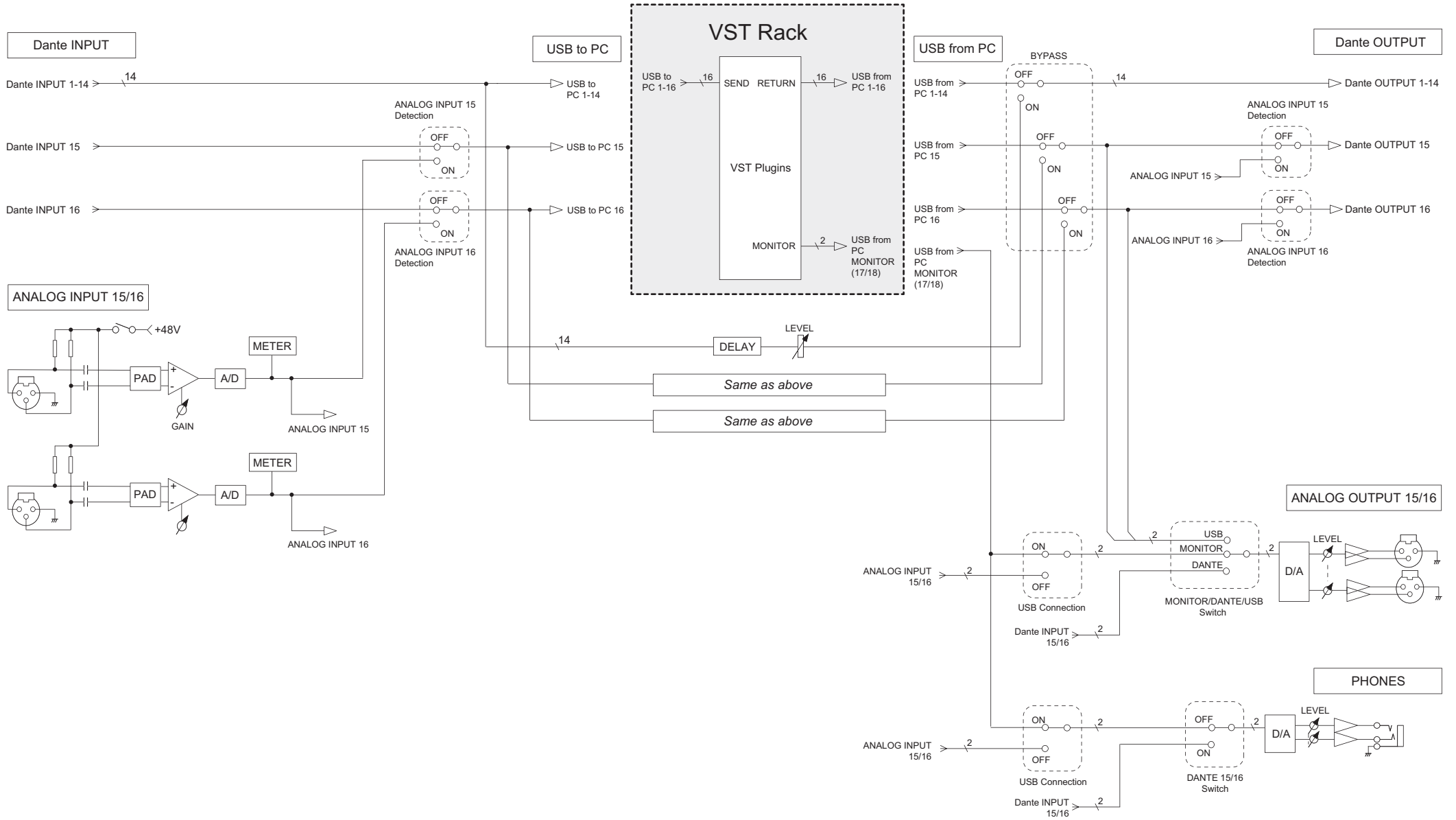
\*2 STP cable is recommended for connection.

Dimensions / 尺寸 / 寸法図

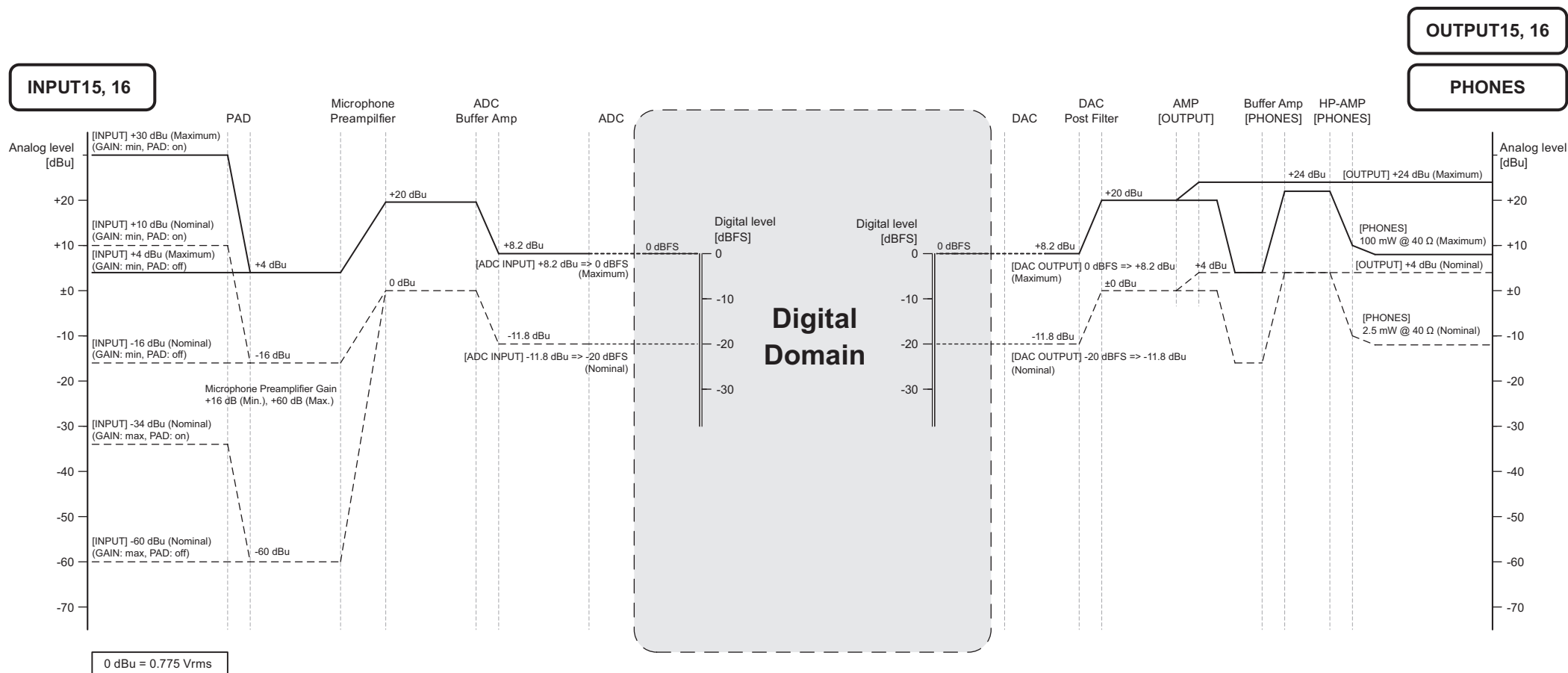


(Unit: mm)

# Block Diagram / Schéma fonctionnel / 框图 / 方塊圖 / ブロックダイアグラム



# Level Diagram / Schéma de niveau / 电平图 / 階層圖 / レベルダイアグラム



\* The contents of this manual apply to the latest specifications as of the publishing date. To obtain the latest manual, access the Yamaha website then download the manual file.

\* Le contenu de ce mode d'emploi s'applique aux dernières caractéristiques techniques connues à la date de publication du manuel. Pour obtenir la version la plus récente du manuel, accédez au site Web de Yamaha puis téléchargez le fichier du manuel concerné.

\* 本使用说明书的内容为出版时最新的技术规格。请至 Yamaha 网站下载最新版本的使用说明书。

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