YAMAHA

Ceiling Array Microphone
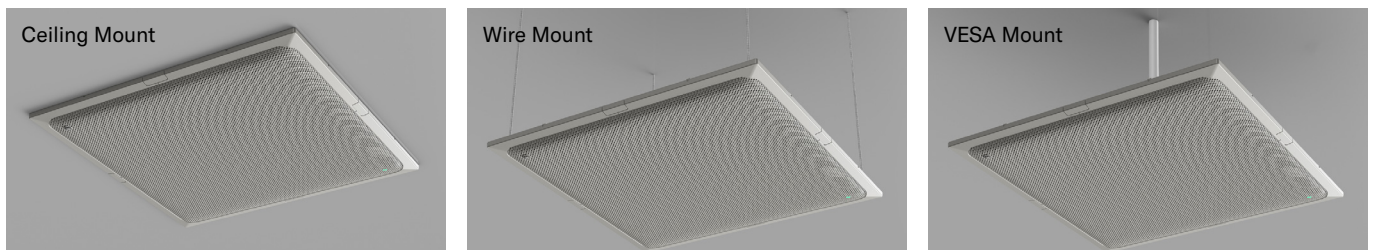
RM-CG

A ceiling array microphone equipped with unique audio signal processing technology that enables high-quality communication
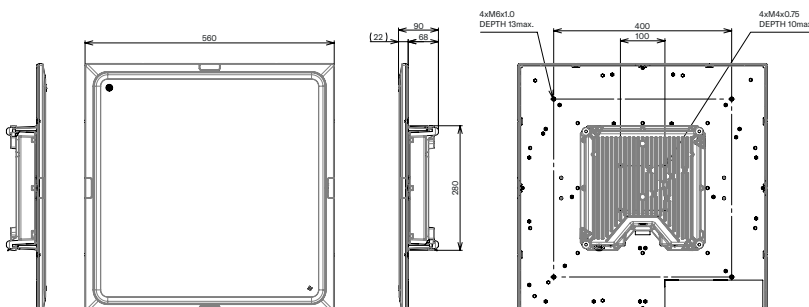
- "Dynamic Voice Tracking" that scans for human voice
- Four "Auto Tracking Beams" track simultaneous speech allowing for lively conversations
- Utilizes innovative Yamaha technologies like Adaptive Echo Canceller, Automatic Gain Control, Noise Reduction, and Dereverberation
- Automatic detection and configuration with Remote Conference Processor RM-CR
- Standard network audio support for "Dante"
- Utilizes one PoE+ network cable connection avoiding troublesome wiring and enabling audio control via Dante
- Supports 3 types of mounting methods for use with a variety of ceiling conditions

Installation

Supports 3 types of mounting methods for use with a variety of ceiling conditions.
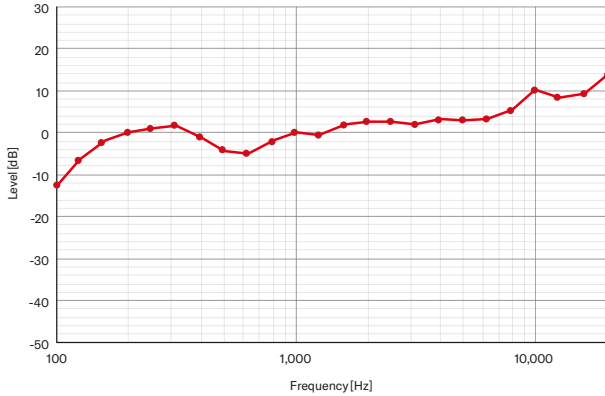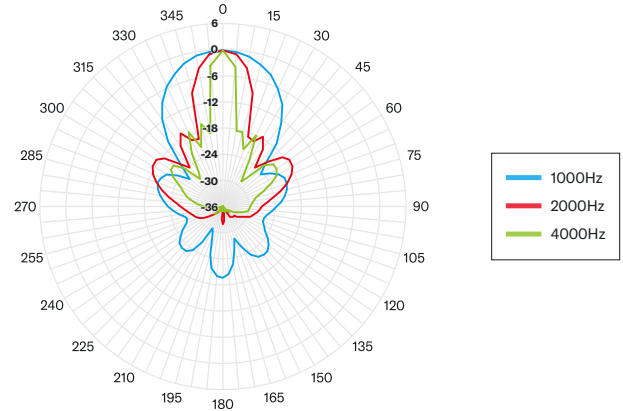
Ceiling Mount

Wire Mount

VESA Mount

External View

Unit: mm

![YAMAHA Make Waves logo]

Frequency Response

Directional Characteristics

Legend:
- 1000Hz
- 2000Hz
- 4000Hz

Specifications

General		
Dimensions		560 (W) x 90 (H) x 560 (D) mm (includes protrusion/microphone panel: 22mm)
Weight		5.6kg
Power Requirements		PoE (IEEE 802.3af), DC 48V
Maximum Power Consumption		7.2W
Connector		RJ45
In Operation	Temperature	0°C - 40°C
	Humidity	30% - 90% (no condensation)
Storage	Temperature	-20°C - 60°C
	Humidity	20% - 90% (no condensation)
Indicator		Front indicator (Mute/Unmute & Status), Network port indicator
Mount		Ceiling mount, Wire mount, VESA mount
Accessories * Including 1 spare		Construction description, (Guarantee), Grille x 1, Screws for grille (M3 x 8mm) x 5*, Screw cover x 4, Cutting template x 1, C ring x 1, Screws for C ring x 2, Hanger angle x 1, Screws for hanger angle (M4 x 20mm) x 5*, Terminal Cover x 1, Safety wire x 1, Binding band x 1, Clamp plate x 2 *Including a spare respectively
Dust Protection		IP5X equivalent (with junction cover)
Plenum Rating		UL2043 (with junction cover)

Network		
Ether		Dante, Remote Control, Web UI, PoE
Cable Requirements		Cat 5e or higher (STP)
Audio I/O	Dante	1in/2out

Audio		
Sampling Rate		48kHz
Bit Depth		24bit
Latency		58 [ms] (including signal processing)
Frequency Response		160Hz – 16kHz (-10dB)
Maximum Input Level of SPL (0dBFS)		117.8dB SPL
Self Noise		-0.8dBA SPL
SN Ratio (Ref. 94dB SPL at 1kHz)		94.8dBA
Sensitivity		-23.8 dBFS/Pa
Dynamic Range		118.6dBA
Signal Processing		Multi beam tracking, Adaptive Echo Canceler, Noise Reduction, Dereverberation, Auto Mixer, Auto Gain Control, Parametric EQ, Output Gain

Overview

Signal processor at the heart of the ADECIA, Yamaha's Complete and Customizable Communications Solutions.

Rear Panel

Features

- Up to 2 RM-CG and 2 VXL1B-16P can be connected via PoE switch SWR2311P-10G
- Automatically recognizes connected devices on the same network for audio routing
- Equipped with the Auto Tuning functions that automatically measure and provide the optimum sound settings for the environment
- Equipped with the Auto Mixer functions that automatically optimizes the mixing balance of audio input via Dante
- Equipped with various input/output connections such as USB, VoIP, analog, and Bluetooth
- Standard network audio support for "Dante"; all compatible devices can be connected with single network cable

Specifications

General Specifications

Description		Remote Conference Processor
Dimensions (W x D x H)		215mm x 260mm x 44mm
Weight		1.6kg
Power Requirements		PoE+ (IEEE 802.3at, LLDP, DC 48V)
Maximum Power Consumption		15.0W
In Operation	Temperature	0°C - 40°C
	Humidity	30% - 90% (no condensation)
Storage	Temperature	-20°C - 60°C
	Humidity	20% - 90% (no condensation)
Indicator		Power Indicator, Status Indicator, Bluetooth Indicator, Network Port Indicator x 3
Accessories		Installation manual, USB cable (A-B) 5m (16.4ft), USB cable (A-microB) 1m (3.3ft), Rubber foot x 4, Access panel
Options		RM-MTL: Table Mount Kit, RM-MRK: Rack Mount Kit

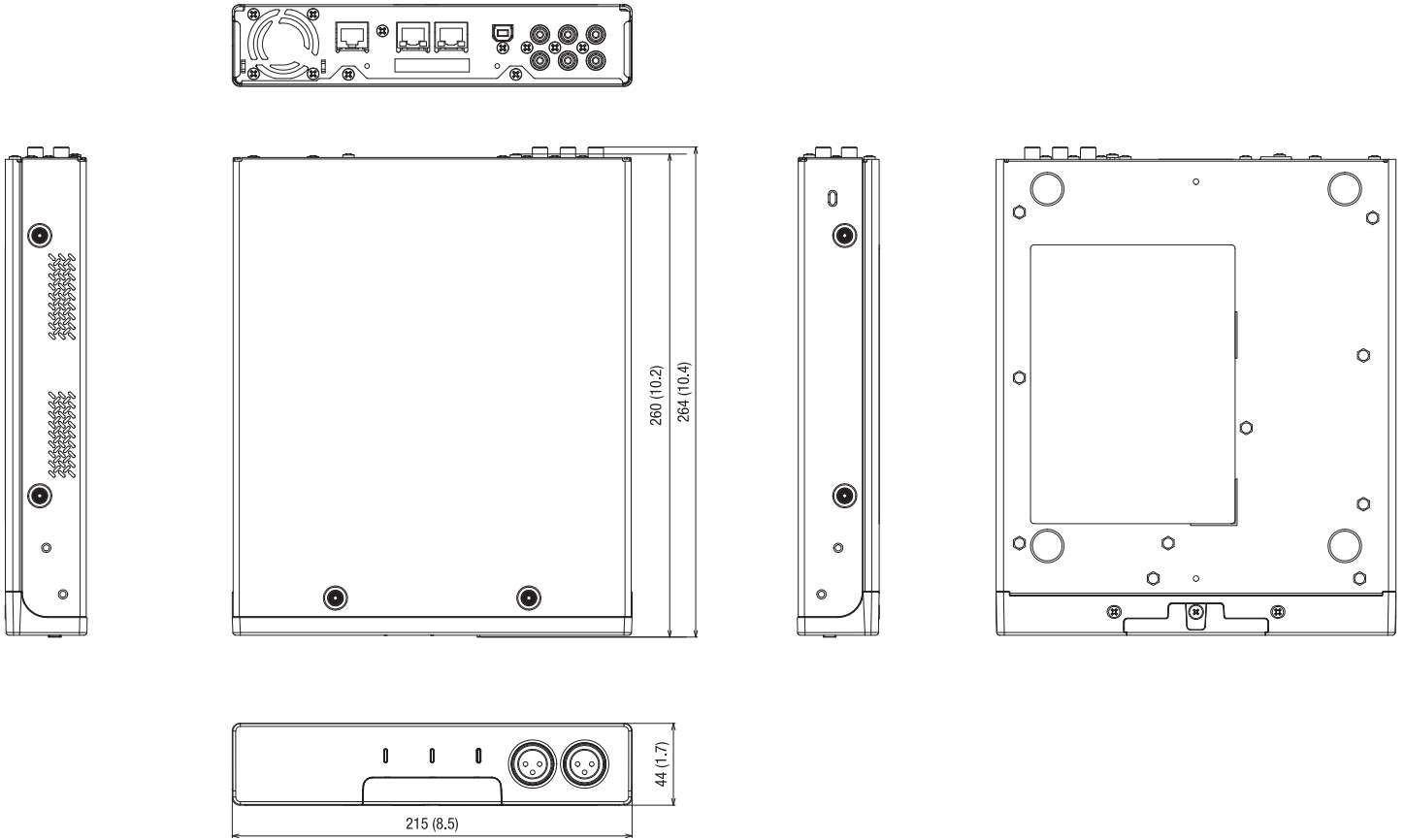## Network Specifications

Ethernet Port 1 (Dante)	Dante, Remote Control, Web UI, PoE+
Ethernet Port 2/3 (Corporate)	Corporate Network, Remote Control, SIP, Web UI
USB Network (Front)	USB2.0, Network Class: WebUI, Fixed IP
Cable Requirements	Ethernet port 1/2/3 : CAT5e or higher (STP) Front USB port: USB Cable (A-microB type)

Audio Specifications

Frequency Response		20Hz - 20kHz
Sampling Rate		48kHz
Bit Depth		24bit
Latency		8 ms (Dante In to USB Out, includes signal processing)
Audio I/O	Dante	16in x 16out
	USB	USB2.0. Audio Class 1.0, Input: 2ch, Output: 2ch @48kHz
	Microphone Input	XLR Balanced, Input: 2ch
	AUX	RCA Unbalanced (Line Level), Input: 2ch, Output: 2ch
	Speaker Out	RCA Unbalanced (Line Level), Output: 2ch
	Bluetooth	Version 4.2 Supported Profiles: HFP (1.6), A2DP, AVRCP Supported Codec: CVSD, SBC, mSBC Wireless Output: Class2 Maximum Communication Distance: 10m (32.8ft) (no obstacles) Radio Frequency (Operational Frequency): 2,402MHz to 2,480MHz Maximum Output Power (EIRP): 4.0dBm (2.5mW)
	SIP	Call Handling: Dial, Answer, Hold, Resume, Forwarding, Do not disturb, Call ID, Voice Mail Notifications (switch configured) Call Bridging: Supports bridging SIP, USB, BT and AUX calls. Join, Split, Hold, Resume, 5+1 lines: Up to 2 SIP calls, 1 USB call, 1 Bluetooth call, 1 AUX, Plus the user Codecs: G.711, G.722HD, G.729ab, G.726 DTMF Support: RTP event, SIP in-band, SIP info package Security: SRTP Support (RFC 1889), IETF SIP support (RFC 3261 and companion RFCs)

Input/Output Characteristics

Input Terminal	Input Level	Connector
	Nominal	
MIC IN 1,2	-46dBu	XLR-3-31 type (Balanced, 2pin hot)
AUX IN L,R	-14dBV	RCA Pin

Output Terminal	Source Impedance	Output Level		Connector
		Nominal	Max. before Clip	
AUX OUT L,R	1kΩ	-14dBV	+6dBV	RCA Pin
SP OUT L,R	1kΩ	-14dBV	+6dBV	RCA Pin

Dimensions

260 (10.2)

264 (10.4)

44 (1.7)

215 (8.5)

Options

• Rack Mount Kit RM-MRK
• Table Mount Kit RM-MTL

Block Diagrams
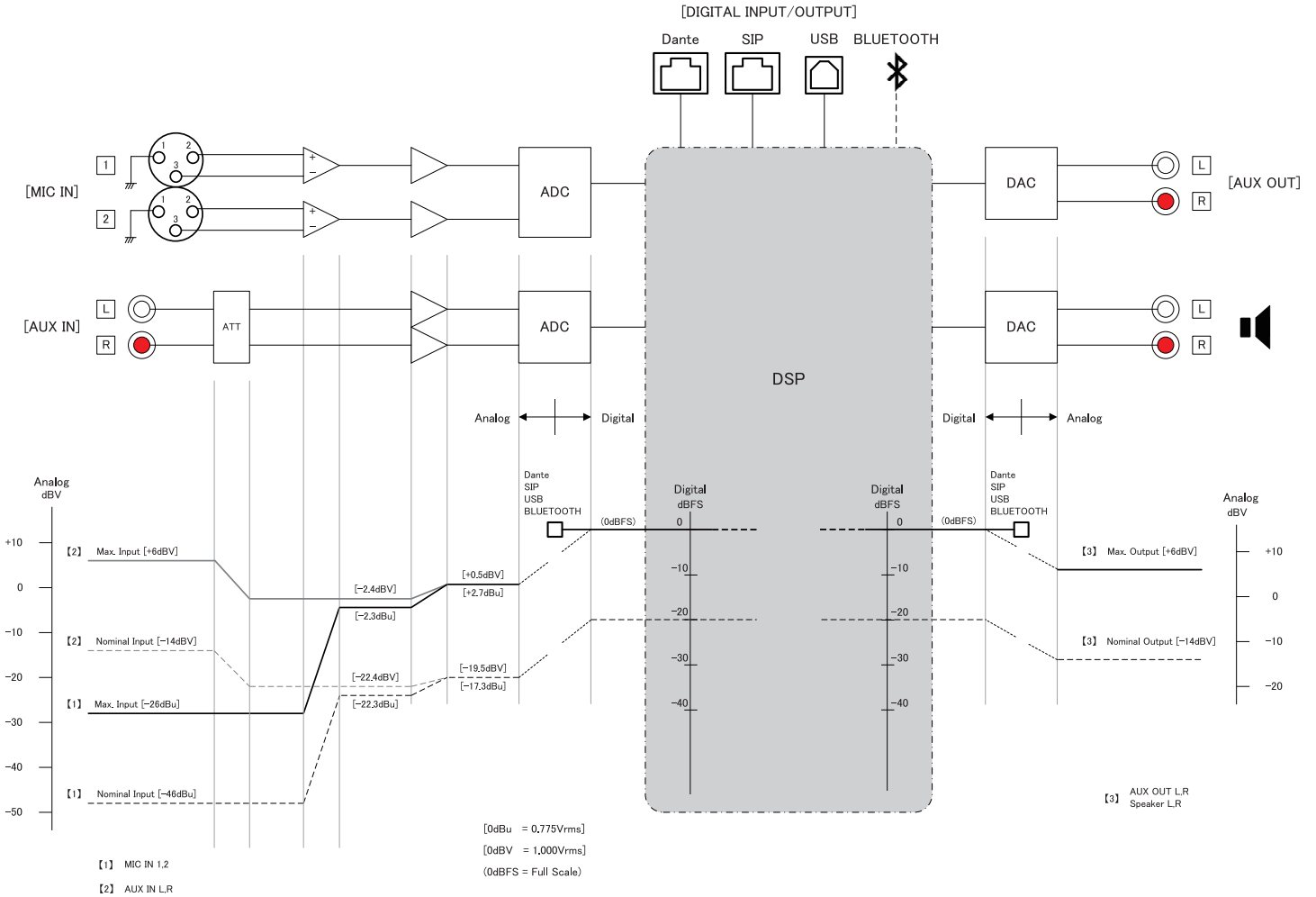
[DIGITAL INPUT/OUTPUT]

Dante SIP USB BLUETOOTH

[MIC IN]

[AUX IN]

ADC

ATT

ADC

DSP

DAC

DAC

[AUX OUT]

L R

L R

Analog ← → Digital

Digital ← → Analog

Analog dBV

Dante
SIP
USB
BLUETOOTH

Digital dBFS

Digital dBFS

Dante
SIP
USB
BLUETOOTH

Analog dBV

+10
0
−10
−20
−30
−40
−50

【2】 Max. Input [+6dBV]

【2】 Nominal Input [−14dBV]

【1】 Max. Input [−26dBu]

【1】 Nominal Input [−46dBu]

[−2.4dBV]
[−2.3dBu]

[−22.4dBV]
[−22.3dBu]

[+0.5dBV]
[+2.7dBu]

[−19.5dBV]
[−17.3dBu]

(0dBFS)

0
−10
−20
−30
−40

0
−10
−20
−30
−40

(0dBFS)

【3】 Max. Output [+6dBV]

+10
0
−10
−20

【3】 Nominal Output [−14dBV]

【3】 AUX OUT L,R
Speaker L,R

[0dBu = 0.775Vrms]
[0dBV = 1.000Vrms]
(0dBFS = Full Scale)

【1】 MIC IN 1,2

【2】 AUX IN L,R

YAMAHA CORPORATION

DS-RM-CR-20201106-EN

General Specifications

Models		SW2310-28GT	SW2310-18GT	SW2310-10G	SW2311P-10G	SW2100P-10G	SWP2100P-5G
LAN ports	Standard	IEEE802.3 (10BASE-T/100BASE-TX/1000BASE-T)					
	Number of ports	24	16	8	10*	10	5
	Connector type	RJ-45					
SFP+ ports	Standard	IEEE802.3z (1000BASE-SX/ 1000BASE-LX), IEEE802.3ae (10GBASE-SR/ 10GBASE-LR)		-	-	-	-
	Number of ports	4	2	-	-	-	-
SFP ports	Standard	-	-	IEEE802.3z (1000BASE-SX/ 1000BASE-LX)		-	-
	Number of ports	-	-	2	2*	-	-
CONSOLE port	Standard	RS-232C, USB 2.0				-	-
	Connector type	RJ-45, USB mini-B (5-pin)				-	-
	Data transmission speed	9600 bit/s				-	-
microSD slot	Standard	microSD/microSDHC (microSDXC is not supported)				-	-
PoE ports	Standard	-	-	-	IEEE 802.3at		
	Number of ports	-	-	-	8	9	4
	Power supply system	-	-	-	Alternative A		
	Max Power supply — Per port	-	-	-	30 W	30 W	30 W
	Max Power supply — All ports	-	-	-	240 W	70 W	70 W
MAC address		Indicated in product label on top panel of unit					
Operating environment conditions		Ambient temperature: 0–50℃, Ambient humidity 15–80% (non-condensing)					
Storage environment conditions		Ambient temperature: -20–60℃, Ambient humidity 10–90% (non-condensing)			Ambient temperature: -20–50℃, Ambient humidity 10–90% (non-condensing)		
Power supply voltage and frequency		AC100 – 240V, 50/60 Hz					
Maximum power consumption		25.2 W	19.0 W	11.7 W	280 W	90 W	86 W
Dimensions	Width	440 mm	330 mm	220 mm	220 mm	220 mm	220 mm
	Height	44 mm	43.5 mm	40.5 mm	42.4 mm	40.5 mm	40.5 mm
	Depth	300 mm	200 mm	250 mm	294 mm	250 mm	250 mm
Weight		3.9 kg	2.1 kg	1.7 kg	2.3 kg	1.8 kg	1.6 kg

*Mutually exclusive with LAN/SFP ports

Optional Accessories

Accessories / Switches	RK-SWR (Rack-mount)	WK-SWR (Wall-mount)	SFP-SWRG-SX (SFP module)	SFP-SWRG-LX (SFP module)	SFP-SWRT-SR (SFP+ module)	SFP-SWRT-LR (SFP+ module)	DAC-SWRT-1M (Direct Attached Cable)	DAC-SWRT-3M (Direct Attached Cable)
SWR2310-28GT	*		√	√	√	√	√	√
SWR2310-18GT	*	√	√	√	√	√	√	√
SWR2310-10G	√	√	√	√				
SWR2311P-10G	√	√	√	√				
SWR2100P-10G	√							
SWR2100P-5G	√							

* Rack-mount brackets are included in SWR2310-18GT / SWR2310-28GT

RK-SWR WK-SWR SFP-SWRG-SX SFP-SWRG-LX

SFP-SWRT-SR SFP-SWRT-LR DAC-SWRT-1M DAC-SWRT-3M

YAMAHA
Make Waves

Feb. 2020