# **\* YAMAHA** RM Series Wireless Microphone System

**Reference Manual** 

Microphone Access Point
RM-WAP-16 RM-WAP-8

Wireless Microphone
RM-WOM RM-WDR RM-WGL RM-WGS

Microphone Charger

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| RM-WCH-8  |    |

## Information

• The illustrations and images shown in this manual are for instructional purposes only.

- The company names and product names in this manual are trademarks or registered trademarks of their respective companies.
- We are continuously improving the software for our products. The latest version can be downloaded from the Yamaha website.

- This document is based on the latest specifications at the time of publication. The latest version can be downloaded from the Yamaha website.
- · Reproduction of this manual in whole or in part without permission is prohibited.
- In this manual, the microphone access point is referred to as "access point", the wireless microphone is referred to as "microphone", and the microphone charger is referred to as "charger".

# **INTRODUCTION**

Thank you for purchasing these Yamaha RM series wireless microphone system products.

These products, which include a wireless microphone, access point, battery, charger, etc., are part of the ADECIA wireless solution. For correct and safe use of this unit, be sure to first read this manual carefully together with the Owner's Manual included with each product.

#### Available utility software

This utility software can be used to set up this unit according to its use and environment.

| Web GUI "RM-WAP Device Manager" | This allows you to use a computer browser to configure and operate this unit.   |
|---------------------------------|---|
| RM Device Finder                | This is application software for controlling ADECIA devices on the network. It detects the ADECIA devices on the network and displays the Device Manager for each device. |
| ProVisionaire Design            | This is Windows application software for designing and managing an entire sound system made up of a combination of various devices.                                       |
| ProVisionaire Control           | This is Windows application software that allows you to remotely control parameters for various devices from a single control panel.                                      |
| ProVisionaire Touch             | This is iPad application software that allows you to remotely control parameters for various devices from a single control panel.   |

#### Available manuals

This describes the manuals related to this product.

|           | RM-WAP Owner's Manual (included)                    | This contains the precautions for using this unit safely as well as the   |
|-----------|---|---|
|           | RM-WOM Owner's Manual (included)                    | installation procedure.   |
|           | RM-WCH Owner's Manual (included)                    |   |
|           | RM-WBT Owner's Manual (included)                    |   |
| $\square$ | RM Series Wireless Microphone System                | This provides details on connecting and using this unit.  |
|           | Reference Manual (this manual/PDF)                  |   |
|           | RM Series Wireless Microphone System                | This provides details on the Web GUI Device Manager, which allows you use   |
|           | Web GUI Device Manager Operation Guide              | your computer to configure and operate this unit.   |
|           | RM Series Remote Control Protocol<br>Specifications | This provides details on command information for acquiring and controlling information about this unit from external devices. |
|           | ProVisionaire Design User Guide                     | This provides details on using ProVisionaire Design.  |
|           | ProVisionaire Control Setup Guide                   | This provides details on using ProVisionaire Control.   |

Software and manuals related to this product can be downloaded from the following website.

#### ▼ Yamaha website (Downloads)

U.S.A. and Canada: https://uc.yamaha.com/support/ Other Countries: https://download.yamaha.com/

# **CONTROLS AND FUNCTIONS**

## **RM-WAP-16 RM-WAP-8**

## [Front panel]



#### 1 Dewer indicator

| Condition                             | Power indicator     | Unit status            |
|---------------------------------------|---------------------|------------------------|
| LAN cable plugged into Dante/PoE port | Lit green           | Operating              |
| -                                     | Flashes red quickly | System error occurring |

#### ② ! Status indicator

| Condition                        | Status indicator                                      | Unit status                       |
|----------------------------------|---|-----------------------------------|
| Pairing using Web GUI            | Flashes blue quickly                                  | Waiting for pairing/Pairing       |
| Pairing using Web GUI            | (After flashing blue quickly)<br>Flashes blue twice   | Paired successfully               |
| Pairing using Web GUI            | (After flashing blue quickly)<br>Flashes red twice    | Pairing failed                    |
| Identify icon in Web GUI clicked | Flashes white   | Responding (to Identify function) |
| Updating firmware                | Flashes white quickly                                 | Firmware being updated            |
| Updating firmware                | (After flashing white quickly)<br>Flashes white twice | Firmware updated successfully     |
| Updating firmware                | (After flashing white quickly)<br>Flashes red twice   | Firmware update failed            |
| _                                | Flashes red   | Transmission error occurring      |
| -                                | Flashes red quickly                                   | System error occurring            |

#### **③** Reset button

| Condition  | Status indicator   | Unit status   |
|--|--|---|
| Reset button long-pressed for 4 seconds to less than 8 seconds, then released  | Flashes blue twice per second (during long-pressing/resetting)       | Network-related settings<br>Waiting for resetting/Resetting<br>(Automatically restarts after reset) |
| Reset button long-pressed for 8 seconds to less than 12 seconds, then released | Flashes blue three times per second (during long-pressing/resetting) | All settings<br>Waiting for resetting/Resetting<br>(Automatically restarts after reset)             |

**NOTE:** Use a fine-tipped object to press the Reset button.

## [Bottom panel]



#### ① Network port indicators (Dante/PoE port)

| Network port indicator         | Unit status   |
|--------------------------------|---|
| Left indicator lit green       | Link up   |
| Left indicator flashes green   | Transferring data                                     |
| Left indicator unlit           | Link down   |
| Right indicator lit green      | Operating on word clock of peripheral device (leader) |
| Right indicator flashes green  | Acting as word-clock leader                           |
| Right indicator flashes orange | Word clock unlocked                                   |

NOTICE:

- When disconnecting the LAN cable from the Dante/PoE port, wait at least five seconds before reconnecting the cable. Otherwise, damage or malfunctions may result.
  - With a Dante network, do not use the EEE function\* of the network switch. Although mutual power consumption settings are automatically adjusted between switches that support the EEE function, some switches do not perform that properly. As a result, the switch's EEE function may be enabled inappropriately in the Dante network, possibly degrading clock synchronization performance and interrupting audio. Therefore, please note the following.
    - When using managed switches, turn off the EEE function on all ports used for Dante. Do not use a switch that does not allow the EEE function to be turned off.
    - When using unmanaged switches, do not use switches that support the EEE function. In such switches, the EEE function cannot be turned off.
    - \* EEE (Energy-Efficient Ethernet) function: Technology that reduces the power consumption of Ethernet devices during periods of low network traffic; also known as Green Ethernet or IEEE802.3az.

## [Top panel/side panel]



#### Mic buttons/indicators

| Condition                        | Mic indicator   | Unit status                       |
|----------------------------------|---|-----------------------------------|
| Mic button touched               | Lit green   | Microphone on                     |
| Mic button touched               | Lit red<br>(Flashes every 2 seconds)                  | Microphone off                    |
| Identify icon in Web GUI clicked | Flashes white   | Responding (to Identify function) |
| Updating firmware                | Flashes white quickly                                 | Firmware being updated            |
| Updating firmware                | (After flashing white quickly)<br>Flashes white twice | Firmware updated successfully     |
| Updating firmware                | (After flashing white quickly)<br>Flashes red twice   | Firmware update failed            |
| -                                | Flashes red   | Transmission error occurring      |
| _                                | Flashes red quickly                                   | System error occurring            |
| _                                | Flashes red slowly                                    | Out of range for DECT connection  |

#### ② □ Battery button

- Pressing the Battery button while the unit is off will turn it on in either standby mode or startup mode.
  - Standby mode: A power-saving state in which the unit is not connected to the access point.
  - Startup mode: A state in which the unit continuously tries to establish or maintains a connection with the access point.
- Whether the unit enters standby mode or startup mode when it is turned on can be selected via [SETTINGS]→[MICROPHONE]→[Start Mode] in RM-WAP Device Manager.
- When the unit is in standby mode, long-pressing the Battery button (2 seconds) puts the unit in startup mode.
- When the unit is in startup mode, long-pressing the Battery button (2 seconds) puts the unit in standby mode.

#### **③** Battery indicator

| Condition                                      | Battery indicator          | Unit status  |
|--|----------------------------|--|
| Charging the unit                              | Lit green                  | Charging (available operating time of 15 hours or more)              |
| Charging the unit                              | Lit orange                 | Charging (available operating time of 3 hours to less than 15 hours) |
| Charging the unit                              | Lit red                    | Charging (available operating time of less than 3 hours)             |
| Charging the unit                              | Unlit                      | Charging finished  |
| Battery button pressed                         | Lit green for two seconds  | Remaining operating time of 15 hours or more                         |
| Battery button pressed                         | Lit orange for two seconds | Remaining operating time of 3 hours to less than 15 hours            |
| Battery button pressed                         | Lit red for two seconds    | Remaining operating time of less than 3 hours                        |
| (Continuing to use the unit without charging)  | Flashes red                | Remaining operating time of less than 1 hour                         |
| Battery button long-pressed for 2 to 3 seconds | Flashes orange slowly      | Enters standby mode  |

**IMPORTANT:** • The microphone is pre-installed with an RM-WBT battery. In order to maintain battery capacity, charge the microphone (battery) once every six months.

NOTE:

• Power consumption can be reduced by putting the microphone in standby mode.

• Do not remove the battery from the microphone while it is on.

• Putting the microphone in standby mode cuts the DECT connection with the access point. When the standby mode is exited (by long-pressing the Battery button again for 2 to 3 seconds), the connection is re-established.

## [Bottom panel]



#### 1 PAIR button

| Condition                                       | Mic indicator                                       | Unit status                 |
|---|---|-----------------------------|
| PAIR button long-pressed for at least 2 seconds | Flashes blue quickly                                | Waiting for pairing/Pairing |
| PAIR button long-pressed for at least 2 seconds | (After flashing blue quickly)<br>Flashes blue twice | Paired successfully         |
| PAIR button long-pressed for at least 2 seconds | (After flashing blue quickly)<br>Flashes red twice  | Pairing failed              |

**NOTE:** In an RM series wireless solution that includes a charger, pairing is done by using the ACTIVATE button on the charger. Accidentally long-pressing the PAIR button after the microphone has already been paired will break the pairing. In that case, place the microphone on the charger and long-press the ACTIVATE button for at least 2 seconds to pair it again.

## [Top panel/side panel]



#### Mic buttons/indicators

| Condition  | Mic indicator                        | Unit status                               |
|--|--------------------------------------|---|
| In Toggle mode:<br>Mic button touched continuously       | Lit green                            | Microphone on                             |
| In Toggle mode: Mic button released                      | Lit red<br>(Flashes every 2 seconds) | Microphone off                            |
| In Push to talk mode:<br>Mic button touched continuously | Lit green                            | Microphone on while the button is touched |
| In Push to talk mode: Mic button released                | Lit red<br>(Flashes every 2 seconds) | Microphone off                            |

3

(4)

**NOTE:** Push to talk is a communication method that allows you to talk only while a button is pressed. Multiple devices cannot be used to talk at the same time. For details on switching between the Toggle and Push to talk modes, refer to the RM Series Wireless Microphone System Web GUI Device Manager Operation Guide.

All other Mic button/indicator functions are the same as described for RM-WOM and RM-WDR.

#### **2** Ring indicator

Flashes together with the Mic indicators.

#### ③ □ Battery button

#### **④** Battery indicator

Functions in the same way as the Battery button/indicator of the RM-WOM and RM-WDR.

## [Bottom panel]

#### **⑤ PAIR button**

Functions in the same way as the PAIR button of the RM-WOM and RM-WDR.



## RM-WCH-8

## [Top panel]



### ① ACTIVATE button/indicator

| Condition  | ACTIVATE indicator                                    | Unit status   |
|--|---|---|
| Power plug inserted into electrical outlet             | Lit green   | Operating   |
| ACTIVATE button long-pressed for at least<br>2 seconds | Flashes blue quickly                                  | Waiting for pairing/Pairing of access point and<br>microphone(s)<br>The pairing process will time out after 120<br>seconds. |
| ACTIVATE button long-pressed for at least<br>2 seconds | (After flashing blue quickly)<br>Flashes blue twice   | Access point and microphone(s) paired<br>successfully   |
| ACTIVATE button long-pressed for at least 2 seconds    | (After flashing blue quickly)<br>Flashes red twice    | Pairing of access point and microphone(s) failed  |
| Identify icon in Web GUI clicked                       | Flashes white   | Responding (to Identify function)   |
| Updating firmware                                      | Flashes white quickly                                 | Firmware being updated  |
| Updating firmware                                      | (After flashing white quickly)<br>Flashes white twice | Firmware updated successfully   |
| Updating firmware                                      | (After flashing white quickly)<br>Flashes red twice   | Firmware update failed  |
| -  | Flashes red   | Transmission error occurring  |
| -  | Flashes red quickly                                   | System error occurring  |

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# [Bottom panel]



#### 1 PAIR button

| Condition                                       | ACTIVATE indicator                                  | Unit status  |
|---|---|--|
| PAIR button long-pressed for at least 2 seconds | Flashes blue quickly                                | Waiting for pairing/Pairing<br>The pairing process will time out after 120<br>seconds. |
| PAIR button long-pressed for at least 2 seconds | (After flashing blue quickly)<br>Flashes blue twice | Paired successfully  |
| PAIR button long-pressed for at least 2 seconds | (After flashing blue quickly)<br>Flashes red twice  | Pairing failed   |

# **INSTALLATION AND SETUP**

Before installing the unit, the SITE SURVEY function of RM-WAP Device Manager must be used to measure the signal conditions in the area.

#### **1.** Prepare the environment for RM-WAP Device Manager to operate.

For details, refer to "Starting up the Web GUI Device Manager".

**2.** Use the SITE SURVEY function to determine the number of microphones that can be used in the electric field environment of the vicinity.

For details, refer to "Using the SITE SURVEY function".

#### 3. Install the device.

For details on mounting the access point to the wall or ceiling, read the RM-WAP Owner's Manual.

#### **4.** Use the AUTO SETUP function to set up the devices.

For details, refer to "Using the AUTO SETUP function".

# **AVAILABLE UTILITY SOFTWARE**

Use the Web GUI "RM-WAP Device Manager" to check/change the settings of the devices.

Prepare the following.

- Computer
- LAN cable

## Starting up the Web GUI Device Manager

**1.** Download the application "RM Device Finder" from the Yamaha website (http://download.yamaha.com/), and then start it.

**NOTE:** For details on RM Device Finder, refer to the User Guide included with RM Device Finder.

#### **2.** Using a LAN cable, connect the computer to the network switch where the access point is connected.



3. Select a network in the [Select Network Interface Card] window, and then click [OK].

| Name     | IP Address   | Subnet Mask   |  |
|----------|--------------|---------------|--|
| イーサネット 3 | 10.130.63.41 | 255.255.255.0 |  |
|          |              |               |  |
|          |              |               |  |
|          |              |               |  |
|          |              |               |  |
|          |              |               |  |
|          |              |               |  |

**4.** Double-click this unit in the [Detected Devices] window. Alternatively, select this unit, and then click the [Browse] button.

The password settings window of RM-WAP Device Manager appears.

| RM Device F    | inder       |             |               |                   |             |         |
|----------------|-------------|-------------|---------------|-------------------|-------------|---------|
| le(F) Help(    | H)          |             |               |                   |             |         |
| etected Device | es          |             |               |                   |             | Refresh |
| 1odel ^        | Label       | Version     | IP Address    | MAC Address       | Subnet Mask | Web UI  |
| RM-WAP-8       | Y001-Yamaha | 1.7.12b.125 | 169.254.7.181 | AC:44:F2:A2:8E:16 | 255.255.0.0 |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |
|                |             |             |               |                   |             |         |

As an example, the RM-WAP-8 is shown in the following screen.

**5.** Specify a password in the password settings window, and then click the [SET PASSWORD] button.

| RM-WAP Device Man                     | lager        |
|---------------------------------------|--------------|
| Please set a password                 |              |
| Device Management Account 🚺           |              |
| Device Management User Account Passwo | ord O        |
| Repeat Password                       | 0            |
|                                       | SET PASSWORD |

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**6.** Type the password into the login window, and then click the [LOGIN] button.



The [HOME] window appears.

This completes the startup.

**NOTE:** For details on using RM-WAP Device Manager, refer to the RM Series Wireless Microphone System Web GUI Device Manager Operation Guide.

The latest software and manuals can be downloaded from the following website.

▼ Yamaha website (Downloads) U.S.A. and Canada: https://uc.yamaha.com/support/ Other Countries: https://download.yamaha.com/

## Using the SITE SURVEY function

The SITE SURVEY function in RM-WAP Device Manager can be used to check the signal conditions in the installation environment and to estimate how many microphones can be installed. In addition, the SITE SURVEY results can be saved to a file, and the saved file can be imported.

**IMPORTANT:** If radio frequency interference occurs, there may be no sound from the microphones or the microphone connection may be unexpectedly cut. We recommend thoroughly examining the environment before installation.

## **Displaying the SITE SURVEY window**

The SITE SURVEY function is available via [TOOLS]→[SITE SURVEY] in RM-WAP Device Manager. Click the [RSSI SCAN MODE] button or [SYSTEM LIST MODE] button to switch the mode.

| Byamaha   | RM-WAP Devic  | e Manager  | Logout 🗗   |
|---|---|--|--|
| A   | 0   |  | UP 🔅   |
|   |   | TOOLS  |  |
| SITE SURVEY   | UPDATE  | CONFIGURATION  | LOGS   |
| Discover wireless traffic in the DECT fr  | equencies and estimate the ava  | ilable DECT channels   |  |
| RSSI SCAN MODE SYSTEM LIST MODE   |   |  |  |
| START Please note: Audio connectio  | ns to Microphones are disconnec   | ted during the Site Survey.  |  |
| Record duration (hours)   |   |  |  |
|   |   |  | 1  |
| RSSI SCAN MODE meassures the wireless u<br>the vicinity. For a most reliable estimate, pl | utilization status of the DECT freque<br>ease ensure that all wireless microp | ncies and estimate how many additional mi<br>phones and other DECT devices in the vicini | crophones might be added in<br>ty are switched on and active.    |
| It is recommended to run the scan over set<br>and time slots used for DECT communication  | veral hours and during typical use t<br>on between RM-WAP and wireless n      | mes of the microphones to achieve the mos<br>nicrophones change during operations. To p  | st accurate result. Frequency<br>revent unexpected audio loss or |
| microphone disconnections, ensure that en   | ough free channels are available wh   | nen determining how many additional micro  | phones can be added.   |
| Export History  | ^   | Import History   | ^  |
|   |   |  |  |
| 8 Sept 2023, 13:43  |   | Survey csv file  |  |
|   | EXPORT HISTORY  |  | IMPORT HISTORY   |
|   |   |  |  |
|   | RM-WAP Device Manager © Yamaha 20.  | 21. All rights reserved. Show licenses   |  |

### Starting a SITE SURVEY

Click the [START] button in the [RSSI SCAN MODE] window or [SYSTEM LIST MODE] window.

The access point begins measuring the signal strength and channel usage status in the installation environment.

## [RSSI SCAN MODE] window

Click the [RSSI SCAN MODE] button. Click the [START] button to start measuring.

The measurement results of the signal conditions and the estimated number of microphones that can be used in the installation environment are displayed.

For highly accurate measurements, make sure that all nearby wireless microphones and other DECT devices are operational. In addition, it is recommended to measure for several hours under typical usage conditions in order to obtain accurate results.

| YAMAHA   | RM-WAP Dev   | ce Manager   |   | LOGOUT 🗗  |
|--|--|--|---|---|
| A  | ¢  | $\mathbf{X}$   | AUTO SETUP 🙀  |   |
|  |  | TOOLS  |   |   |
|  |  |  |   |   |
| SITE SURVEY  | UPDATE   | CONFIGU  | RATION  | LUGS  |
| Discover wireless traffic in the DECT frequenci  | es and estimate the av   | ailable DECT channe  | s   |   |
| RSSI SCAN MODE SYSTEM LIST MODE  |  |  |   |   |
| STOP Please note: Audio connections to Mic   | rophones are disconnec   | ted during the Site Sur  | vev.  |   |
|  | 0.0  | 1%   |   |   |
| Record duration (hours)<br>168   |  |  |   | [1]   |
| XSSI SCAN MODE meassures the wireless utilization<br>the vicinity. For a most reliable estimate, please ensit<br>it is recommended to run the scan over several hour<br>and time slots used for DECT communication betwee<br>microphone disconnections, ensure that enough free<br>Current Microphone Canachy Estimate.  | a status of the DECT frequere that all wireless micrors and during typical use<br>en RM-WAP and wireless<br>e channels are available v | encies and estimate ho<br>ophones and other DEC<br>times of the nicrophor<br>microphones shange di<br>when determiring how n | w many additional microphon<br>T devices in the vicinity are so<br>the sto achieve the most accura<br>uring operations. To prevent u<br>many additional microphones | es might be added in<br>vitched on and active.<br>ite result. Frequency<br>nexpected audio loss or<br>can be added. |
| Estimation of capacity based on current measurements.  |  |  |   |   |
| _  |  | Estimated number   | of microphones that can be in   | nstalled in the vicinity  |
| 100  |  | High Density Audio Mo  | ide<br>de   | 2   |
| 50   |  | right goonly radio rid   |   |   |
| 0  | Occupied   |  |   |   |
|  |  |  |   |   |
| sest microphone Capacity Estimate<br>The capacity estimation is based on all signal levels measured r  | uring the time of the site surve   |  |   |   |
|  |  | Estimated number   | of microphones that can be in   | nstalled in the vicinity  |
| 100  |  | High Densit/ Audio Mo  | de  | 0   |
| 50   |  | High Quality Audio Mo  | de  | 0   |
| 0  |  |  |   |   |
| 100<br>80<br>60<br>40  |  |  |   |   |
| 20   |  |  |   |   |
|  |  |  |   |   |
| 0 16:19:25<br>Sep 13, 2023   | 16:19:30   | 14:19:35   | 16:19:40  |   |
| SECT Heatmap This heatmap shows the received signal strength for each SECT momunication. If DECT synchronization is not available or not a synchronization on all devices in the vicinity where possible.  | channel. Any channel with a sig  | nal strength above -62 dBm<br>DECT device willoccupy two   | is deemed to be currently used by an<br>adjacent channels. For maximized D  | other device for DECT<br>ECT usage please enable  |
|  |  |  |   |   |
| end of the second secon |  | Import Hist  | 10 19 20 21 22<br>OFY   | -30<br>-40<br>-50<br>-60<br>-70<br>-80<br>-90<br>-90<br>-90<br>-90<br>-90<br>-90<br>-90<br>-90<br>-90<br>-9         |
| end of the second secon | 0 10 11 12 11<br>5lota   | Import Hist  | 10 10 20 21 22<br>Ory   |   |
| end of the second secon |  | i4 i5 i6 i7<br>Import Hist   | 18 19 20 21 22<br>Ory   |   |
| egged<br>a<br>a<br>a<br>b<br>c<br>c<br>c<br>c<br>c<br>c<br>c<br>c<br>c<br>c<br>c<br>c<br>c   | to ti  | i i i i i i i i i i i i i i i i i i i  | 10 19 20 21 22<br>Ory   |   |

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## [SYSTEM LIST MODE] window

Click the [SYSTEM LIST MODE] button. Click the [START] button to start measuring. This displays the DECT base units in the installation environment and their signal strengths.

|  |  | RM-WAP Devic  | e Manager  | LOGOUT 🗗   |
|--|--|---|--|--|
|  | A  | •   |  | a di   |
| _  | _  |   | TOOLS  |  |
| SITE SURV  | EY   | UPDATE  | CONFIGURATION  | LOGS   |
| ISCOVER WIRELESS TRA   | ffic in the DECT free<br>SYSTEM LIST MODE  | quencies and estimate the avai  | lable DECT channels  |  |
| Please not   | e: Audio connections   | to Microphones are disconnecte  | a during the Site Survey.  |  |
| ecord duration (hours)   |  | 0.0%  | 0  |  |
| b8   |  |   |  |  |
| RFPI<br>0357040FC8   | RSSI<br>-52  | First discovered<br>13 Sept 2023 - 16:22:52   | Last update<br>13 Sept 2023 - 16:22  | 2:52   |
| 03570A85A0   | -52  | 13 Sept 2023 - 16:22:54   | 13 Sept 2023 - 16:23   | 3:32   |
| 035703F788   | -48  | 13 Sept 2023 - 16:22:56   | 13 Sept 2023 - 16:22   | 2:56   |
|  |  | 10.0 1.0000 10.00 50  | 12 Cent 2022 - 16-2  | 2.24   |
| 035703F748   | -55  | 13 Sept 2023 - 16:22:58   | 15 Sept 2025 10.2.   | 3:34   |
| 035703F748<br>035703F660   | -55  | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00  | 13 Sept 2023 - 16:2:   | 3:15   |
| 035703F748<br>035703F660<br>035700D800   | -55<br>-50<br>-48  | 13 Sept 2023 - 16:22:58           13 Sept 2023 - 16:23:00           13 Sept 2023 - 16:23:02   | 13 Sept 2023 - 16:2:<br>13 Sept 2023 - 16:2:<br>13 Sept 2023 - 16:2:   | 3:15<br>3:38   |
| 035703F748<br>035703F660<br>035700D800<br>03571FB980   | -55<br>-50<br>-48<br>-14   | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00<br>13 Sept 2023 - 16:23:02<br>13 Sept 2023 - 16:23:04  | 13 Sept 2023 - 16:2:<br>13 Sept 2023 - 16:2:<br>13 Sept 2023 - 16:2:<br>13 Sept 2023 - 16:2:   | 3:34<br>3:15<br>3:38<br>3:40   |
| 035703F748<br>035703F660<br>035700D800<br>03571FB980<br>035703F740   | -55<br>-50<br>-48<br>-14<br>-52  | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00<br>13 Sept 2023 - 16:23:02<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:08   | 13 Sept 2023 - 16:2<br>13 Sept 2023 - 16:2<br>13 Sept 2023 - 16:2<br>13 Sept 2023 - 16:2<br>13 Sept 2023 - 16:2  | 3:15<br>3:38<br>3:40<br>3:36   |
| 035703F748<br>035703F660<br>035700B800<br>03571FB980<br>035703F740<br>035700B808   | -55<br>-50<br>-48<br>-14<br>-52<br>-52   | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00<br>13 Sept 2023 - 16:23:02<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:08<br>13 Sept 2023 - 16:23:19  | 13 Sept 2023 - 16:2<br>13 Sept 2023 - 16:2   | 3:15<br>3:15<br>3:38<br>3:40<br>3:36<br>3:19   |
| 035703F748<br>035703F660<br>03570D800<br>03571FB980<br>035703F740<br>035700B088<br>03570A85B8  | -55<br>-50<br>-48<br>-14<br>-52<br>-52<br>-52<br>-53                                   | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00<br>13 Sept 2023 - 16:23:02<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:08<br>13 Sept 2023 - 16:23:19<br>13 Sept 2023 - 16:23:21   | 13 Sept 2023 - 16:2<br>13 Sept 2023 - 16:2   | 3:34<br>3:36<br>3:319<br>3:36<br>3:319<br>3:21   |
| 035703F748<br>035703F660<br>035700D800<br>03571FB980<br>035703F740<br>035700D808<br>035700A8588<br>035703F888  | -55<br>-50<br>-48<br>-14<br>-52<br>-52<br>-53<br>-55                                   | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00<br>13 Sept 2023 - 16:23:02<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:19<br>13 Sept 2023 - 16:23:21<br>13 Sept 2023 - 16:23:26   | 13 Sept 2023 - 16:22<br>13 Sept 2023 - 16:22   | 3:34<br>3:15<br>3:38<br>3:36<br>3:19<br>3:21<br>3:26   |
| 035703F748<br>035703F660<br>035700B00<br>03571FB980<br>035703F740<br>035700B08<br>035700A8588<br>035703F888<br>035703F888  | 55<br>50<br>48<br>14<br>52<br>52<br>53<br>55<br>53                                     | 13 Sept 2023 - 16:22:58           13 Sept 2023 - 16:23:00           13 Sept 2023 - 16:23:02           13 Sept 2023 - 16:23:08           13 Sept 2023 - 16:23:19           13 Sept 2023 - 16:23:21           13 Sept 2023 - 16:23:26           13 Sept 2023 - 16:23:26   | 13 Sept 2023 - 16:22<br>13 Sept 2023 - 16:22<br>14 Sept 2023 - 16:22<br>15 Sept 2023 - 16:22 | 3:34<br>3:15<br>3:30<br>3:30<br>3:36<br>3:19<br>3:21<br>3:26<br>3:28                         |
| 035703F748<br>035703F660<br>035700B80<br>03571FB980<br>035703F40<br>035700B88<br>0357005888<br>035703F888<br>035703F888<br>035703F880<br>0357040FC0                | 55<br>50<br>48<br>14<br>52<br>52<br>53<br>55<br>53<br>49                               | 13 Sept 2023 - 16:22:58           13 Sept 2023 - 16:23:00           13 Sept 2023 - 16:23:02           13 Sept 2023 - 16:23:04           13 Sept 2023 - 16:23:08           13 Sept 2023 - 16:23:19           13 Sept 2023 - 16:23:21           13 Sept 2023 - 16:23:26           13 Sept 2023 - 16:23:28           13 Sept 2023 - 16:23:28 | 13 Sept 2023 - 16:22<br>13 Sept 2023 - 16:22<br>14 Sept 2023 - 16:22<br>15 Sept 2023 - 16:22 | 3:15<br>3:15<br>3:40<br>3:36<br>3:19<br>3:21<br>3:26<br>3:28<br>3:30                         |
| 035703F748<br>035703F660<br>035700B80<br>03571FB980<br>035703F740<br>035700B88<br>035700A8588<br>035703F888<br>035703F888<br>035703F880<br>035704FC0<br>035703F630 | 55<br>50<br>48<br>14<br>52<br>53<br>53<br>55<br>53<br>49<br>57                         | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:08<br>13 Sept 2023 - 16:23:21<br>13 Sept 2023 - 16:23:26<br>13 Sept 2023 - 16:23:28<br>13 Sept 2023 - 16:23:30<br>13 Sept 2023 - 16:23:34  | 13 Sept 2023 - 16:2:<br>13 Sept 2023 - 16:2: | 3:34<br>3:36<br>3:36<br>3:32<br>3:36<br>3:21<br>3:26<br>3:28<br>3:30<br>3:34                 |
| 035703F748<br>035703F660<br>035700D800<br>03571F8980<br>035705F740<br>035700B808<br>035700B808<br>035703F888<br>035703F880<br>035703F630<br>Export Histo           | 55<br>-50<br>-48<br>-14<br>-52<br>-53<br>-55<br>-53<br>-55<br>-53<br>-49<br>-57        | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:08<br>13 Sept 2023 - 16:23:21<br>13 Sept 2023 - 16:23:26<br>13 Sept 2023 - 16:23:28<br>13 Sept 2023 - 16:23:30<br>13 Sept 2023 - 16:23:34  | 13 Sept 2023 - 16:2:<br>13 Sept 2023 - 16:2:<br>14 Sept 2023 - 16:2:<br>15 Sept 2023 - 16:2:<br>16 Sept 2023 - 16:2:<br>17 Sept 2023 - 16:2:<br>18 Sept 2023 - 16:2:<br>19 Sept 2023 - 16:2:<br>19 Sept 2023 - 16:2:<br>19 Sept 2023 - 16:2:<br>10 Sept 2023 - 16:2: | 3:34<br>3:40<br>3:36<br>3:36<br>3:21<br>3:26<br>3:28<br>3:30<br>3:34                         |
| 035703F748<br>035703F660<br>035700B80<br>03571FB980<br>035707F740<br>035700B88<br>035703F888<br>035703F888<br>035703F880<br>035703F630<br>Export Histo             | 55<br>50<br>48<br>14<br>52<br>52<br>53<br>55<br>53<br>53<br>57<br>ODY<br>0.0%          | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:08<br>13 Sept 2023 - 16:23:19<br>13 Sept 2023 - 16:23:28<br>13 Sept 2023 - 16:23:28<br>13 Sept 2023 - 16:23:30<br>13 Sept 2023 - 16:23:34  | 13 Sept 2023 - 16:21         13 Sept 2023 - 16:22         14 Supper Letter L  | 3:34<br>3:40<br>3:36<br>3:21<br>3:26<br>3:28<br>3:30<br>3:34                                 |
| 035703F748<br>035703F660<br>035700B80<br>03571FB980<br>03570740<br>035700B88<br>035700B88<br>035703F888<br>035703F888<br>035703F880<br>035703F630<br>Export Histo  | 55<br>-50<br>-48<br>-14<br>-52<br>-52<br>-53<br>-55<br>-53<br>-53<br>-53<br>-57<br>ODY | 13 Sept 2023 - 16:22:58<br>13 Sept 2023 - 16:23:00<br>13 Sept 2023 - 16:23:04<br>13 Sept 2023 - 16:23:08<br>13 Sept 2023 - 16:23:08<br>13 Sept 2023 - 16:23:21<br>13 Sept 2023 - 16:23:26<br>13 Sept 2023 - 16:23:28<br>13 Sept 2023 - 16:23:30<br>13 Sept 2023 - 16:23:34<br><b>C</b>  | 13 Sept 2023 - 16:22         Import History         Survey csv file  | 3:34<br>3:36<br>3:36<br>3:37<br>3:36<br>3:39<br>3:32<br>3:32<br>3:32<br>3:30<br>3:33<br>3:34 |

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## Using the AUTO SETUP function

With the AUTO SETUP function, devices can be easily set up using the wizard.

Even in an environment where the AUTO SETUP function cannot be used, RM-WAP Device Manager can be used to manually specify settings.

**NOTE:** RM-WCH is required in order to use the AUTO SETUP function.

### **1.** Click the [AUTO SETUP] button.

| YAMAHA                       | RM-WAP Dev                  | ice Manager              | LOGOUT           |
|------------------------------|-----------------------------|--------------------------|------------------|
|                              | •                           | ×   [                    | AUTO SETUP 🙀     |
|                              | INTE                        |                          |                  |
| view status of system and p  | aired devices               |                          |                  |
| System Status                | r 🕷 🔺 O                     | Clock Synchroniza        | tion Status      |
| Hostname:                    | Y001-Yamaha-RM-WAP-8-a28e16 | Dante:                   | Follower         |
| RFPI:                        | 035700D800                  | DECT:                    | Leader           |
| MAC Address:                 | ac:44:f2:a2:8e:16           |                          |                  |
| Network IP Address:          | 169.254.7.181               | Microphone Charg         | ger Status 🛛 🗠 🖸 |
| Model:                       | RM-WAP-8                    | Charner Name             | IDEI EW Statue   |
| Main / Dante / Dect Version: | 1.7.12b.125 / 4.2.6.4 / 107 | 1 01-RM-WCH-8-0357026748 | 0357026748 🗸     |
| Serial Number:               | Z6K000103                   |                          |                  |
| Region:                      | Japan                       |                          |                  |
| LED Indication S             | tatus 🔷 🖸                   |                          |                  |
| Power:                       | ок                          |                          |                  |
|                              |                             |                          |                  |

The wizard starts up.

## **2.** Follow the wizard's instructions to continue the setup.

## [ Site Survey]

#### Check the contents of the window, and then click the [CONTINUE] button.

The window shows the number of microphones that can be used in the installation environment. It also shows the signal strength in the installation environment and the channel usage status.

| Litt Barrey  | General Settings  | Chargers Pairing   | irmware Update   | Microphones<br>Pairing  | 6<br>Audio Routing  | Summary   |
|--|---|--|--|---|---|---|
|  |   |  | 0.0%   |   |   |   |
| cord duration (hours   | s)  |  | 01000  |   |   |   |
| SI SCAN MODE r<br>iable estimate, p<br>urs and during ty<br>crophones chang<br>any additional mi                           | meassures the wireless utilizat<br>please ensure that all wireless<br>ypical use times of the micropi<br>ge during operations. To preve<br>icrophones can be added. | ion status of the DECT frequencie<br>microphones and other DECT dev<br>nones to achieve the most accura<br>nt unexpected audio loss or micro | es and estimate how many<br>ices in the vicinity are swit<br>te result. Frequency and ti<br>pphone disconnections, ens | additional microphor<br>ched on and active. I<br>me slots used for DE<br>ure that enough free | nes might be added in the vici<br>It is recommended to run the<br>CT communication between R<br>e channels are available when | nity. For a most<br>scan over severa<br>M-WAP and wire<br>determining how |
| irrent Microphor   | ne Capacity Estimate  |  |  |   |   |   |
| imation of capacity b  | based on current measurements.  |  |  |   |   |   |
|  |   |  | Estimate   | ed number of microp   | inones that can be installed in   | i the vicinity  |
| 100  |   |  | High Density A   | udio Mode   |   | 2   |
| 50   |   |  | High Quality Ac  | and Flode   |   | 2   |
| 0  |   |  |  |   |   |   |
| U.S.   | Available   | Occupied   |  |   |   |   |
| st Microphone (  | Capacity Estimate   |  |  |   |   |   |
| e capacity estimation  | is based on all signal levels meassure  | ed during the time of the site survey.   |  |   |   |   |
|  |   |  | Estimate   | ed number of microp   | hones that can be installed in  | the vicinity  |
| 100  |   |  | High Density A   | udio Mode   |   | 0   |
| 50   |   |  | High Quality At  | Idio Mode   |   | 0   |
|  |   |  |  |   |   |   |
|  |   |  |  |   |   |   |
| 0  | Available   | Occupied   |  |   |   |   |
| e capacity estim<br>timates.<br>crophone Chanr<br>s figure shows the nu  | Available<br>hation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied<br>al levels. Moving or removing, po<br>phone channels since start of the survey  | wering on or off additional  | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| o<br>e capacity estim<br>timates.<br>crophone Chanr<br>s figure shows the nu<br>140  | Available<br>hation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied<br>al levels. Moving or removing, por   | wering on or off additional  | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>e capacity estim<br>timates.<br>crophone Chanr<br>s figure shows the nu<br>140  | Available<br>nation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied<br>al levels. Moving or removing, por   | wering on or off additional  | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>e capacity estim<br>timates.<br>crophone Chanr<br>s figure shows the nu<br>140<br>120                                 | Available<br>hation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied<br>al levels. Moving or removing, por   | wering on or off additional  | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>e capacity estim<br>timates.<br>crophone Chanr<br>s figure shows the nu<br>140  | Available<br>nation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied<br>al levels. Moving or removing, por   | wering on or off additional<br>Occupied<br>Available   | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>te Capacity estim<br>timates.<br>crophone Chanr<br>s figure shows the nu<br>140<br>120                                | Available<br>hation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied<br>al levels. Moving or removing, por   | vering on or off additional<br>Occupied<br>Available   | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>timates.<br>crophone Chanr<br>s figure shows the nu<br>140<br>120<br>100<br>80  | Available<br>hation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied<br>al levels. Moving or removing, por   | wering on or off additional<br>Occupied<br>Available   | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>ie capacity estim<br>timates.<br>crophone Chanr<br>s figure shows the nu<br>140<br>120<br>100<br>80                   | Available<br>Nation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied al levels. Moving or removing, por  | wering on or off additional  | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>e capacity estim<br>timates.<br>crophone Chanr<br>s figure shows the nu<br>140<br>120<br>100<br>80<br>60              | Available<br>nation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied al levels. Moving or removing, por  | wering on or off additional  | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>e capacity estim<br>timates.<br>crophone Chanr<br>s figure shows the nu<br>140<br>120<br>100<br>80<br>60<br>40        | Available<br>nation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied al levels. Moving or removing, por phone channels since start of the survey   | wering on or off additional  | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>e capacity estim<br>timates.<br>crophone Chann<br>s figure shows the nu<br>140<br>120<br>100<br>80<br>60<br>40        | Available Nation is based on current sign nel usage umber of available and occupied micr  | Occupied al levels. Moving or removing, por ophone channels since start of the survey  | wering on or off additional  | wireless DECT syste   | ms or microphones will influe   | nce the capacity  |
| 0<br>e Capacity estim<br>timates.<br>icrophone Chanr<br>s figure shows the nu<br>140<br>120<br>100<br>80<br>60<br>40<br>20 | Available<br>nation is based on current sign<br>nel usage<br>umber of available and occupied micr   | Occupied al levels. Moving or removing, por  | wering on or off additional  | wireless DECT system  | ms or microphones will influe   | nce the capacity  |

RM Series Wireless Microphone System Reference Manual



• You can also click the title of the next window (in this case, [2] General Settings]) to display the next window.

NOTE:

• Once the window has been displayed, the circled number in the window title is replaced with 🖉. Clicking a window title where the circled number has been replaced with 🔗 displays that window again.



## [ General Settings]

| Site Survey Gener                          | 2 (3)<br>ral Settings Chargers Pa | Iring Firmware Update                          | 5<br>Microphones<br>Pairing | 6<br>Audio Routing  | Summary |
|--|-----------------------------------|--|-----------------------------|---------------------|---------|
| AP Name                                    |                                   | 3<br>Tim                                       | e Settings                  |                     | ^ @     |
| Mode: NAME USING U<br>Unit ID<br>1         | UNIT ID MANUAL                    | 1         Current D           Date         01/ | iate & Time<br>13/2022      | Time<br>11:10:24 AM |         |
| AP Name<br>Yamaha-RM-WAP-8                 |                                   | i<br>Date Form<br>MM/dd/                       | at<br>УУУУУ                 |                     |         |
| Locale                                     |                                   | ^ () E   | nable 24 hour time format   |                     |         |
| System Language<br>English (US)            |                                   | • • • • •                                      | TP Support                  |                     | i       |
| Time Zone<br>-05:00 Eastern Time (UTC-05:0 | 0)                                | - i Network                                    | Time Server 1               |                     | i       |
|  |                                   | Network  | Time Server 2               |                     | i       |
|  |                                   | Network  | Time Server 3               |                     | i       |
|  |                                   | Network  | Time Server 4               |                     | i       |

Check the access point settings, and then click the [CONTINUE] button.

**NOTE:** The access point settings can be changed if necessary.

#### ① [AP Name]

Allows you to select whether to specify the name of the access point automatically or manually.

#### 2 [Locale]

Allows you to specify the time zone.

#### ③ [Time Settings]

- Allows you to specify the date and time.
- Allows you to select whether to use NTP.

## [ Chargers Pairing]

- ① Insert the charger power plug into an electrical outlet. The charger starts up.
- ② Long-press the PAIR button (on the bottom panel of the charger) for at least two seconds.

The access point and charger are paired. When pairing is finished, the charger name appears in the window.

**NOTE:** Pairing means that the products register each other with the information required for a DECT connection. The access point and charger are paired, and a DECT connection is established at the same time.





#### ③ Click the [CONTINUE] button.

## [ Firmware Update]

① If C appears to the left of the charger name, click the [UPDATE ALL] button.

The charger firmware is updated. When the update is finished,  $\bigcirc$  changes to  $\checkmark$  .

**NOTE:** If  $\checkmark$  appeared from the beginning, step ① does not need to be performed.

| Site Survey  | General Settings  | Chargers Pairing   | •<br>Firmware Update   | Microphone<br>Pairing        |
|--|---|--|--|------------------------------|
| Firmware   | e Update  |  |  |                              |
| The system is cu   | rrently in Firmware update mo   | de. Audio is not available. Turn o   | off Firmware update mode to h  | ave audio.                   |
| Chargers   |   | Required version: 27   |  | Microphones                  |
| C Y001-  | Yamaha-RM-WCH-8-000   | 0130   |  |                              |
|  |   | <b>☆</b> UPDATE ALL  |  |                              |
|  |   |  |  |                              |
|  |   |  |  |                              |
|  |   |  |  |                              |
| to Setup \   | Wizard  |  |  |                              |
| to Setup V   | Wizard  | 0  | 0  | 0                            |
| to Setup V   | Wizard<br>General Settings  | Chargers Pairing   | Image: Second | (S)<br>Microphone<br>Painng  |
| co Setup V   | Wizard<br>Ø<br>General Settings   | Chargers Pairing   | <b>O</b><br>Firmware Update  | (S)<br>Microphone<br>Pairing |
| o Setup V<br>site survey<br>Firmware   | Wizard<br>General Settings  | Chargers Pairing   | <b>F</b> irmware Update  | S<br>Microphone<br>Pairing   |
| to Setup V<br>Site Survey<br>Firmware  | Wizard<br>General Settings<br>e Update  | Chargers Pairing   | Image: Second system         Firmware update mode to here  | (S)<br>Microphone<br>Paining |
| to Setup V<br>Site Survey<br>Firmware<br>The system is cur                         | Wizard<br>General Settings<br>e Update<br>rrently in Firmware update mor                        | Chargers Pairing   | Image: Second system         Firmware update mode to here  | Microphone<br>Peiring        |
| to Setup \<br>Site Survey<br>Firmware<br>The system is cur<br>Chargers             | Vizard<br>General Settings<br>e Update<br>rrently in Firmware update mor                        | Chargers Pairing<br>de. Audio is not available. Turn o<br>Required version: 27         | Firmware Update  | Microphones                  |
| to Setup V<br>Site Survey<br>Firmware<br>The system is cur<br>Chargers<br>V Y001-1 | Vizard<br>General Settings<br>e Update<br>rrently in Firmware update mor<br>Yamaha-RM-WCH-8-000 | Chargers Pairing<br>de. Audio is not available. Turn o<br>Required version: 27<br>1130 | Firmware Update  | S<br>Nicrophone<br>Paining   |

#### ② Place the microphone(s) on the charger.

The microphone firmware is updated. During the update, the Mic indicators (on the top panel of the microphone) flashes white quickly. When the update is finished, the indicators go off.

IMPORTANT: Do not remove the microphone(s) from the charger until setup is finished.

**NOTE:** The microphones are updated one at a time.

#### ③ Click the [CONTINUE] button.

## [ Microphones Pairing]

The name(s) of the microphone(s) appear faintly in the window.

| Site Survey      | General Settings  | Chargers Pairing     | Firmware Update       | 5<br>Microphones<br>Pairing            | 6 Audio Routing     | Summary      |
|------------------|---|----------------------|-----------------------|--|---------------------|--------------|
| אם ור            |   | 7026740              |                       |  |                     |              |
| JI-RIVI          | -WCH-8-035  | 0/020/48             |                       |  |                     |              |
| i Plea           | ise insert microphones  | to pair in the charg | ger. Use long press o | n ACTIVATE button                      | to start pairing of | microphones. |
|                  | Name  |                      |                       | FV                                     | /U Status           |              |
|                  |   |                      |                       |  |                     |              |
| 1                | RM-WDR-035700D68  | 38                   |                       | ~                                      | /                   |              |
| 2                | RM-WDR-035700D68  | 38<br>E0             |                       | ~                                      | /                   |              |
| 1<br>2<br>3      | RM-WDR-035700D66<br>RM-WOM-035700D2<br>RM-WGS-035703B25                     | 38<br>E0<br>50       |                       | ~                                      | /<br>/              |              |
| 1<br>2<br>3<br>4 | RM-WDR-035700D6F<br>RM-WOM-035700D2<br>RM-WGS-035703B25<br>RM-WGL-035700BA0 | 38<br>E0<br>50<br>C8 |                       | •<br>•<br>•                            | /<br>/<br>/         |              |
| 1<br>2<br>3<br>4 | RM-WDR-035700D6f<br>RM-WOM-035700D2<br>RM-WGS-035703B25<br>RM-WGL-035700BA0 | 38<br>E0<br>50<br>C8 |                       |  | ,<br>,<br>,         |              |
| 1<br>2<br>3<br>4 | RM-WDR-035700D6f<br>RM-WOM-035700D2<br>RM-WGS-035703825<br>RM-WGL-0357008A0 | 38<br>E0<br>50<br>28 |                       | •<br>•<br>•                            | ·<br>·<br>·         |              |
| 1<br>2<br>3<br>4 | RM-WDR-035700D64<br>RM-WOM-035700D2<br>RM-WGS-035703B25<br>RM-WGL-035700BA0 | 38<br>E0<br>50<br>C8 |                       | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | ·<br>·<br>·         |              |
| 1 2 3 4          | RM-WDR-035700D64<br>RM-WOM-035700D2<br>RM-WGS-035703B23<br>RM-WGL-035700BA0 | 38<br>E0<br>50<br>C8 |                       |  |                     |              |

① Long-press the ACTIVATE button (on the top panel of the charger) for at least two seconds. The access point and microphone(s) are paired. When pairing is finished, the name(s) of the microphone(s) change from appearing faintly to appearing in black.

**NOTE:** All microphones placed on the charger can be paired with a single long press.

| Site Survey | General Settings | Chargers Pairing | Firmware Update | 5<br>Microphones<br>Pairing | 6 Audio Routing | Summary |
|-------------|------------------|------------------|-----------------|-----------------------------|-----------------|---------|
| 01-RM       | WCH-8-035        | 57026748         |                 |                             |                 | × 0     |
| ⊘           |                  |                  | Pairing complet | e.                          |                 |         |
|             | Name             |                  |                 |                             | FWU Status      |         |
| 1           | 01-RM-WDR-035700 | D6B8             |                 |                             | ~               |         |
| 2           | 02-RM-WOM-035700 | ID2E0            |                 |                             | $\checkmark$    |         |
| 3           | 03-RM-WGS-035703 | B250             |                 |                             | $\checkmark$    |         |
| 4           | 04-RM-WGL-035700 | BAC8             |                 |                             | ~               |         |
|             |                  |                  |                 |                             |                 |         |
|             |                  |                  |                 |                             |                 |         |
|             |                  |                  |                 |                             |                 |         |

② Click the [CONTINUE] button.

## [ Audio Routing]

Check the Dante channel to which each microphone is assigned, and then click the [CONTINUE] button.

**NOTE:** You can change the channel assignment by dragging the microphone name to the row of the desired Dante channel.

| Site Survey | General Settings | Chargers Pairing | Firmware Update | Microphones<br>Pairing | 6<br>Audio Routing | Summary      |
|-------------|------------------|------------------|-----------------|------------------------|--------------------|--------------|
| Dante Cł    | nannels S        | etup             |                 |                        |                    | <u>i</u> ^ C |
| Channel     |                  | Name             |                 |                        |                    | Туре         |
| (1)         |                  | 01-RM-W          | DR-035700D6B8   |                        |                    | DR           |
| 2           |                  | 02-RM-W          | OM-035700D2E0   |                        |                    | OM           |
| 3           |                  | 03-RM-W          | GS-035703B250   |                        |                    | GS           |
| (4)         | 1                | 04-RM-W          | GL-035700BAC8   |                        |                    | GL           |
| 5           |                  |                  |                 |                        |                    |              |
| 6           |                  |                  |                 |                        |                    |              |
| 7           |                  |                  |                 |                        |                    |              |
| (8)         |                  |                  |                 |                        |                    |              |
|             | II               |                  |                 |                        |                    |              |
|             |                  |                  |                 |                        |                    |              |
|             |                  |                  |                 |                        |                    |              |

## [ Summary]

Check the microphone settings, and then click the [FINISH] button.

| Site Survey | General    | Settings Chargers Pairing | Firmware Update | Microphone<br>Pairing | s Audio Roo   | uting Summary    |
|-------------|------------|---------------------------|-----------------|-----------------------|---------------|------------------|
| Micro       | phone S    | Status                    |                 |                       |               | C                |
| Mic         | Mute Group | Name                      | Туре            | IPEI                  | Dante Channel | FW Update Status |
| 1           | 5          | 01-RM-WDR-035700D6B8      | DR              | 035700D6B8            | 1             | ~                |
| 2           | 53         | 02-RM-WOM-035700D2E0      | OM              | 035700D2E0            | 2             | ~                |
| 3           | <b>3</b> 3 | 03-RM-WGS-035703B250      | GS              | 035703B250            | 3             | ~                |
| 4           | 55         | 04-RM-WGL-035700BAC8      | GL              | 035700BAC8            | 4             | ~                |
|             |            |                           |                 |                       |               |                  |

This completes the setup. When a microphone is removed from the charger, a DECT connection between the access point and microphone will be established.

# **APPENDIX**

# Block diagram



RM Series Wireless Microphone System Reference Manual

# EXPLANATIONS

## About DECT

DECT (Digital Enhanced Cordless Telecommunications) is a digital cordless telephone standard established by the European Telecommunications Standards Institute (ETSI) in 1988. RM-W is not a cordless telephone device, but uses DECT as a method for wireless audio communication. DECT comprises conventional as well as next-generation DECT. RM-W uses next-generation DECT.

## **Stable communication**

DECT uses the 1.9 GHz band for wireless communication.

Since the 2.4 GHz wireless communication band is used by wireless LAN access points, the many products using this band raise its susceptibility to radio frequency interference.

By using the 1.9 GHz band, DECT is less likely to incur radio frequency interference, ensuring more stable communication.

## **DECT-related settings (RM-WAP Device Manager)**

- [HOME] → [Clock Synchronization Status] → [DECT]
- [HOME]  $\rightarrow$  [Microphone Status]  $\rightarrow$  [IPEI]
- [HOME]  $\rightarrow$  [Microphone Status]  $\rightarrow$  [Link Quality]
- [SETTINGS] → [AUDIO] → [DECT Audio Mode]
- [SETTINGS] → [DECT] → [RF Power Levels]
- [SETTINGS] → [DECT] → [DECT Synchronization]
- [TOOLS] → [SITE SURVEY]

## **DECT-related terms**

#### RFPI

RFPI (Radio Fixed Part Identity) is the identification number of the access point for DECT communication. Yamaha IDs are "035\*\*\*\*".

#### RSSI

RSSI (Received Signal Strength Indicator) is an indication of the strength of the received signal.

RSSI indicates how strongly a particular WAP is receiving signals from other WAPs. The longer the distance, the smaller the RSSI. By checking the RSSI, the degree of interference between WAPs can be quantified.

In the [SYSTEM LIST MODE] window of the SITE SURVEY function in RM-WAP Device Manager, the measurement unit for RSSI is dBm.

#### Cell

Cell is the signal range of a WAP.

#### ■ Same Space

This is the space where multiple cells overlap. Signals from multiple systems affect each other.

#### RF Power Level

RF Power level (Radio Frequency Power level) is the strength of the signals output by a WAP.

By changing this strength, the cell size can be changed.

When installing multiple WAPs, set them up so that their signals do not affect each other.

Reduced signal strength is one cause of sound quality problems. Do not change the signal strength from "Full" unless there is a specific reason.

#### ■ Carrier

DECT uses the 1.9 GHz band.

The 1.9 GHz band can be divided into smaller frequency bands, and each band partition can be used for separate communications. This method is called FDMA (Frequency-Division Multiple Access), and the carrier waves in these band partitions are called carriers. The number and locations of available carriers in the 1.9 GHz band differ depending on the region (product distribution area). There are 10 carriers in the EU, 5 carriers in the US, and 6 carriers in Japan.

#### Frame and slot

The carrier wave is divided into regular periods called frames. Additionally, a frame is divided into multiple slots. Frames are transmitted continuously as containers for transmitting audio signals.

By assigning each channel of the audio signal to a different slot, the signals of multiple audio channels can be transmitted simultaneously.

#### Bearer

Bearers are spaces into which the 1.9 GHz band has been divided along the time and frequency axes. One bearer can transmit one channel of microphone audio signals.



Different regions have different numbers of carriers and, therefore, different numbers of bearers.

| Region |                        | Bearers |
|--------|------------------------|---------|
| US     | 5 Carriers × 24 Slots  | 120     |
| EU     | 10 Carriers × 24 Slots | 240     |
| JPN    | 6 Carriers × 24 Slots  | 144     |

#### ■ FP (Fixed Part) and PP (Portable Part)

DECT communication involves a relationship between the host unit and client unit. The host unit is called FP (Fixed Part), and the client unit is called PP (Portable Part). For this wireless microphone system, the WAP is the FP, and the wireless microphone is the PP.

| Unit type   | Part type          | Wireless microphone system  |
|-------------|--------------------|-----------------------------|
| Host Unit   | FP (Fixed Part)    | Wireless Access Point (WAP) |
| Client Unit | PP (Portable Part) | Wireless Microphone         |

## Understanding the [SITE SURVEY] window

The SITE SURVEY function measures signals in the installation environment and displays the signal usage status, signal strength, and estimated number of microphones that can be used. The measurement results can be saved to a file, and the saved file can be imported and displayed. The following explains how to read the measurement results displayed in the [SITE SURVEY] window.

## **RSSI SCAN MODE**

In this mode, the signal usage status of DECT frequencies and the estimated number of microphones that can be used in the installation environment can be checked.



## **Microphone Capacity Estimate**

This is the estimated number of microphones that can be used.



#### ① Number of bearers (channels)

| Available | This indicates the number of free bearers (channels).   |
|-----------|---|
| Cccupied  | This indicates the number of bearers (channels) in use. |

**NOTE:** Some bearers (channels) are used for control communication or as reserved areas and are not used for audio communication.

As a result, the number of microphones that can be used is less than the number of free bearers (channels).

#### 2 Estimated number of microphones that can be installed in the vicinity

This is the estimated number of microphones that can be used in each mode.

| High Density Audio Mode | This mode prioritizes the number of microphones. |
|-------------------------|--|
| High Quality Audio Mode | This mode prioritizes microphone sound quality.  |

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## **Microphone Channel usage**

This graph shows the usage status of bearers (channels) since the start of measurement.



| Vertical axis   | This indicates the number of bearers (channels).        |
|-----------------|---|
| Horizontal axis | This indicates the time since the start of measurement. |
| Available       | This indicates the number of free bearers (channels).   |
| Occupied        | This indicates the number of bearers (channels) in use. |

### **DECT Heatmap**

This heatmap shows the strength of the received signal of each bearer (channel). A color toward red indicates the bearer (channel) is in use; a color toward green indicates that it is not in use.

Hovering the mouse pointer over a bearer displays the RSSI value for the bearer with the corresponding carrier number and slot number.



| Vertical axis   | This indicates the carrier number. |
|-----------------|------------------------------------|
| Horizontal axis | This indicates the slot number.    |

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| -10<br>-20<br>-30<br>-40<br>-50<br>-60 | A bearer (channel) with a signal strength exceeding –62 dBm can be concluded to be in use for other DECT communications. |
|--|--|
| -70<br>-80<br>-90<br>-100<br>-110      | A bearer (channel) with a signal strength below –62 dBm can be concluded not to be in use for DECT communications.       |

## SYSTEM LIST MODE

In this mode, the DECT base units in the installation environment and their signal strengths can be checked.

|   |  | RM-WAP Device  | Manager   | LOGOUT 🗗  |
|---|--|--|---|---|
|   | A  | 0  |   | тир 🔅   |
| SITE SURV   | EY   | UPDATE   | CONFIGURATION   | LOGS  |
| )iscover wireless tra   | affic in the DECT freq   | uencies and estimate the availab   | le DECT channels  |   |
| RSSI SCAN MODE  | SYSTEM LIST MODE   | )  |   |   |
| STOP Please not   | e: Audio connections !   | to Microphones are disconnected d  | uring the Site Survey.  |   |
|   |  |  |   |   |
| Record duration (hours)   |  | 0.0%   |   |   |
| Record duration (hours)<br>168  |  | 0.0%   |   |   |
| Record duration (hours)<br>168<br>SYSTEM LIST MODE all<br>Part Identity) and the f<br>communication of the I<br>recommended to enabl<br>interferences. Please n<br>REPI                             | lows to search and find<br>SSSI (Radio Signal Stre<br>2M-WAP that is running<br>le DECT synchronizatio<br>ote that RM wireless m<br>RSSI               | 0.0%<br>d other RM-WAPs and neighboring DE<br>ength Indicator). Devices with a signa<br>g the scan. Interference might lead t<br>in to synchronize the DECT clock betw<br>icrophone and other DECT mobile de<br>First discovered   | CT base stations. Devices will be listed<br>I strength of -62 dBm or higher might<br>o unexpected audio loss or microphone<br>veen different WAPs and adjust RF pov<br>vices, known as Portable Parts, cannol<br>Last undate  | I with their RFPI (Radio Fixed<br>interfere with the DECT<br>e disconnections. It is<br>wer levels to prevent signal<br>t be found in this mode.                  |
| Record duration (hours)<br>168<br>SYSTEM LIST MODE all<br>Part Identity) and the f<br>communication of the I<br>recommended to enablin<br>interferences. Please n<br>RFPI<br>0357040FC8             | lows to search and find<br>SSSI (Radio Signal Stre<br>RM-WAP that is running<br>le DECT synchronizatio<br>ote that RM wireless m<br>RSSI<br>-52        | 0.0%<br>d other RM-WAPs and neighboring DE<br>ength Indicator). Devices with a signa<br>g the scan. Interference might lead to<br>in to synchronize the DECT clock betw<br>iccophone and other DECT mobile de<br>First discovered<br>13 Sept 2023 - 16:22:52                             | CT base stations. Devices will be listed<br>of strength of -62 dBm or higher might<br>o unexpected audio loss or microphone<br>ween different WAPs and adjust RF pov<br>vices, known as Portable Parts, cannol<br>Last update<br>13 Sept 2023 - 16                      | I with their RFPI (Radio Fixed<br>interfere with the DECT<br>e disconnections. It is<br>wer levels to prevent signal<br>t be found in this mode.<br>:22:52        |
| Record duration (hours)<br>168<br>SYSTEM LIST MODE all<br>Part Identity) and the f<br>communication of the I<br>recommended to enabl<br>interferences. Please n<br>RFPI<br>0357040FC8<br>03570A85A0 | lows to search and find<br>RSSI (Radio Signal Stre<br>RM-WAP that is running<br>le DECT synchronizatio<br>ote that RM wireless m<br>RSSI<br>-52<br>-52 | 0.0%<br>d other RM-WAPs and neighboring DE<br>ength Indicator). Devices with a signa<br>g the scan. Interference might lead to<br>in to synchronize the DECT clock bett<br>hicrophone and other DECT mobile de<br>First discovered<br>13 Sept 2023 - 16:22:52<br>13 Sept 2023 - 16:22:54 | CT base stations. Devices will be listed<br>of strength of -62 dBm or higher might<br>o unexpected audio loss or microphone<br>veen different WAPs and adjust RF pov<br>vices, known as Portable Parts, cannol<br>Last update<br>13 Sept 2023 - 16<br>13 Sept 2023 - 16 | With their RFPI (Radio Fixed<br>interfere with the DECT<br>edisconnections. It is<br>wer levels to prevent signal<br>t be found in this mode.<br>:22:52<br>:23:32 |

| RFPI   | This is the identification number of the access point for DECT communication.  |
|--|--|
| (Radio Fixed Part Identity)                  | Yamaha IDs are "035******".  |
| RSSI<br>(Received Signal Strength Indicator) | This is the strength of the received signal.<br>Devices with a signal strength greater than –62 dBm may interfere with this unit's<br>DECT communications. |

**NOTE:** In this mode, RM wireless microphones and other DECT mobile devices will not be detected.

### Increasing the number of microphones that can be used

With [RSSI SCAN MODE] in the SITE SURVEY function, you can check the estimated number of microphones that can be used. If the number of microphones that can be used is inadequate, the issue may be resolved by considering the following.

#### **DECT** audio mode

Changing the microphone audio quality changes the number of microphones that can be used. "High Density" mode allows approximately twice as many microphones to be used as "High Quality" mode. Setting: [SETTINGS]→[AUDIO]→[DECT Audio Mode]

#### DECT synchronization (when using multiple RM-WAPs)

Although this system is designed to prevent interference even when multiple RM-WAPs are used, the bearer (channel) range cannot be used effectively, and the number of bearers (channels) that can be used may be halved. This means fewer microphones can be used. In order to resolve this, synchronize the slot timing. Select [DECT Synchronization] on all RM-WAPs that are to be synchronized. Setting: [SETTINGS]→[DECT]→[DECT] Synchronization]

#### **RM-WAP signal strength**

It is important to suppress signal interference with other DECT devices. Set the signal strength according to the usage range of the microphone. Setting: [SETTINGS]→[DECT]→[RF Power Levels]

#### **RM-WAP** installation location

It is important to suppress signal interference with other DECT devices.

If RM-WAP is receiving strong signals from other DECT devices, move it away from those devices. Take into account devices not only in the same room, but also in neighboring rooms as well as on floors above and below.

The strength of signals received from other DECT devices can be checked via [TOOLS]→[SITE SURVEY]→[SYSTEM LIST MODE] in RM-WAP Device Manager.

## Updating the firmware

There are multiple ways to update the firmware.

### **Using RM Device Finder**

RM Device Finder is application software for detecting and controlling ADECIA devices on the network. It can also be used to update the firmware of each device.

For operating procedures, refer to the RM Device Finder User Guide included with RM Device Finder.

## Using the Web GUI "RM-WAP Device Manager"

Firmware can be updated via [TOOLS]→[UPDATE]→[Upload New Firmware]/[Firmware Update] in the Web GUI "RM-WAP Device Manager".

For operating procedures, refer to the RM Series Wireless Microphone System Web GUI Device Manager Operation Guide.

#### Using the Web GUI "RM-CR Device Manager"

By using the Web GUI "RM-CR Device Manager", it is possible to update the firmware of RM-WAP at the same time as the firmware of RM-CR.

Firmware can be updated via [TOOLS] $\rightarrow$ [Update] $\rightarrow$ [FIRMWARE UPDATE] in the Web GUI "RM-CR Device Manager". However, only the firmware of RM-WAP can be updated, not the firmware of the charger and microphones.

For operating procedures, refer to the RM-CR RM-CG RM-TT Web GUI Device Manager Operation Guide.

The latest utility software, firmware files and manuals can be downloaded from the following website.

▼ Yamaha website (Downloads) U.S.A. and Canada: https://uc.yamaha.com/support/ Other Countries: https://download.yamaha.com/

### Initializing

There are two ways to initialize an RM-WAP: using the reset button on the unit and using the Web GUI "RM-WAP Device Manager". For details on using the reset button on the unit, refer to "CONTROLS AND FUNCTIONS" in this manual.

Alternatively, it can be initialized via [TOOLS]→[Configuration]→[RESET DEFAULTS] in the Web GUI "RM-WAP Device Manager". For operating procedures, refer to the RM Series Wireless Microphone System Web GUI Device Manager Operation Guide.

# MAIN SPECIFICATIONS

## RM-WAP-16 RM-WAP-8

### **General specifications**

|             | W 171 2 mm x D 172 5 mm x H 42 8 mm  |  |  |
|-------------|--|--|--|
| DM WAD 40   |  |  |  |
| RM-WAP-16   | 812 g (including mounting bracket)   |  |  |
| RM-WAP-8    | 650 g (including mounting bracket)   |  |  |
|             | PoE (IEEE802.3af), 48 V DC   |  |  |
| ion         | 48 V, 0.2 A  |  |  |
| Temperature | 0 °C – 40 °C   |  |  |
| Humidity    | 20% – 85% (no condensation)  |  |  |
| Temperature | –20 °C – 60 °C   |  |  |
| Humidity    | 10% – 90% (no condensation)  |  |  |
|             | Power  |  |  |
|             | Status   |  |  |
|             | Network port   |  |  |
| RM-WAP-16   | 1  |  |  |
| RM-WAP-8    | 2  |  |  |
| RM-WAP-16   | 16 (up to 32 can be paired)  |  |  |
| RM-WAP-8    | 8 (up to 16 can be paired)   |  |  |
| RM-WAP-16   | 4  |  |  |
| RM-WAP-8    | 2  |  |  |
| •           | Mounting bracket : 1   |  |  |
|             | Owner's Manual : 1   |  |  |
|             | RM-WAP-16<br>RM-WAP-8<br>ion<br>Temperature<br>Humidity<br>Temperature<br>Humidity<br>RM-WAP-16<br>RM-WAP-8<br>RM-WAP-8<br>RM-WAP-16<br>RM-WAP-8<br>RM-WAP-8 |  |  |

## Network specifications

|                 | Dante audio/Dante control                                    |
|-----------------|--|
| Dente/De En ent | External control   |
| Dante/POE port  | • PoE  |
|                 | <ul> <li>Cable requirements: CAT5e or higher, STP</li> </ul> |

## Audio specifications

| Sampling rate                 |           | 48 kHz                                       |
|-------------------------------|-----------|--|
| Bit depth                     |           | 24-bit                                       |
| Audio input/output<br>(Dante) | RM-WAP-16 | 16 out                                       |
|                               |           | out 1-out 16: Mic input signals (maximum 16) |
|                               | RM-WAP-8  | 8 out  |
|                               |           | out 1-out 8: Mic input signals (maximum 8)   |

## Wireless specifications

| Supported standard          | 1.9 GHz DECT standard  |  |  |
|-----------------------------|--|--|--|
|                             | • USA/Canada: 1920.0 MHz – 1930.0 MHz  |  |  |
| Radio frequency             | <ul> <li>Europe/Northern Europe/UK/Australia/New Zealand:<br/>1880.0 MHz – 1900.0 MHz</li> </ul> |  |  |
|                             | • Japan: 1893.5 MHz – 1906.1 MHz   |  |  |
|                             | USA/Canada: 20.1 dBm   |  |  |
| Maximum output power (EIRP) | Europe/Northern Europe/UK/Australia/New Zealand: 25.9 dBm  |  |  |
|                             | • Japan: 27.0 dBm  |  |  |
| Antenna (built-in)          | Supports space diversity   |  |  |
|                             | Audio communication and control between access point and microphone                              |  |  |
|                             | Control between access point and charger   |  |  |
| Maximum coverage distance   | 50 m (depends on the usage environment)  |  |  |
| Encryption method           | AES (256-bit)  |  |  |

## **RM-WOM RM-WDR RM-WGL RM-WGS**

## **General specifications**

| Dimensions          | RM-WOM<br>RM-WDR | W 89.0 mm × D 89.0 mm × H 26.0 mm                        |  |  |
|---------------------|------------------|--|--|--|
|                     | RM-WGL           | W 89.0 mm × D 89.0 mm × H 308.4 mm                       |  |  |
|                     | RM-WGS           | W 89.0 mm × D 89.0 mm × H 171.2 mm                       |  |  |
| W-:                 | RM-WOM           | 126 g  |  |  |
|                     | RM-WDR           | 130 g  |  |  |
| weight              | RM-WGL           | 152 g  |  |  |
|                     | RM-WGS           | 140 g  |  |  |
| Power requirement   |                  | RM-WBT (lithium-ion battery)<br>Output: 3.60 V, 2350 mAh |  |  |
| Maximum power cons  | sumption         | 5 V, 0.7 A   |  |  |
| In operation        | Temperature      | 0 °C – 40 °C   |  |  |
|                     | Humidity         | 20% – 85% (no condensation)                              |  |  |
| In charging Tem Hum | Temperature      | 5 °C – 40 °C   |  |  |
|                     | Humidity         | 20% – 85% (no condensation)                              |  |  |
| Storage             | Temperature      | –20 °C – 60 °C   |  |  |
| Slorage             | Humidity         | 10% – 90% (no condensation)                              |  |  |
| RM-V                | RM-WOM           | • Mic  |  |  |
|                     | RM-WDR           | Battery  |  |  |
| Indicators          | BM-WGI           | • Mic  |  |  |
|                     | RM-WGL           | • Ring   |  |  |
|                     |                  | • Battery  |  |  |
|                     | RM-WOM           | • RM-WBT (battery) : 1                                   |  |  |
|                     | RM-WDR           | Owner's Manual : 1                                       |  |  |
| Accessories         | RM-WGL<br>RM-WGS | • Windscreen : 1   |  |  |
|                     |                  | • RM-WBT (battery) : 1                                   |  |  |
|                     |                  | Owner's Manual : 1                                       |  |  |

# Audio specifications

| Frequency response                     |                  | 160 Hz – 16 kHz (–10 dB)                                      |  |
|--|------------------|---|--|
| Sampling rate                          |                  | 48 kHz  |  |
| Bit depth                              |                  | 24-bit  |  |
| Latency                                |                  | 30 – 35 ms nominal (no sound processing, High Quality mode) / |  |
|  |                  | 110 ms nominal (with sound processing, High Quality mode)     |  |
| Maximum input level of<br>SPL (0 dBFS) | RM-WOM           | 99.4 dB SPL   |  |
|  | RM-WDR           | 100.2 dB SPL  |  |
|  | RM-WGL<br>RM-WGS | 106.2 dB SPL  |  |
| Self noise                             | RM-WOM           | -23.0 dBA SPL   |  |
|  | RM-WDR           | -24.7 dBA SPL   |  |
|  | RM-WGL<br>RM-WGS | -19.3 dBA SPL   |  |
|  | RM-WOM           | 117.0 dBA   |  |
| SNR                                    | RM-WDR           | 118.7 dBA   |  |
| (Ref. 94 dB SPL at 1 kHz)              | RM-WGL<br>RM-WGS | 113.3 dBA   |  |
|  | RM-WOM           | -5.4 dBFS/Pa  |  |
| Sensitivity                            | RM-WDR           | -6.2 dBFS/Pa  |  |
| Sensitivity                            | RM-WGL<br>RM-WGS | -12.2 dBFS/Pa   |  |
| Dynamic range                          | RM-WOM           | 122.4 dBA   |  |
|  | RM-WDR           | 124.9 dBA   |  |
|  | RM-WGL<br>RM-WGS | 125.5 dBA   |  |

# Wireless specifications

| Supported standard          | 1.9 GHz DECT standard   |
|-----------------------------|---|
|                             | • USA/Canada: 1920.0 MHz – 1930.0 MHz   |
| Radio frequency             | Europe/Northern Europe/UK/Australia/New Zealand: 1880.0 MHz – 1900.0 MHz      |
|                             | • Japan: 1893.5 MHz – 1906.1 MHz  |
|                             | USA/Canada: 20.1 dBm  |
| Maximum output power (EIRP) | <ul> <li>Europe/Northern Europe/UK/Australia/New Zealand: 25.9 dBm</li> </ul> |
|                             | • Japan: 27.0 dBm   |
| Antenna (built-in)          | Supports space diversity  |
| Use                         | Audio communication and control between access point and microphone           |
| Maximum coverage distance   | 50 m (depends on the usage environment)                                       |
| Encryption method           | AES (256-bit)   |

## **General specifications**

| Dimensions         |             | W 304.0 mm × D 188.0 mm ×                 | H 41.5 mm |  |
|--------------------|-------------|---|-----------|--|
| Weight             |             | 800 g                                     |           |  |
| Power requirement  |             | P16V2.4A-R (AC adaptor)                   |           |  |
|                    |             | Output: 16.0 V DC, 2.4 A � <b>-</b> € + � |           |  |
| Maximum power cons | sumption    | 16 V, 2.0 A                               |           |  |
| In operation       | Temperature | 0 °C – 40 °C                              |           |  |
|                    | Humidity    | 20% – 85% (no condensation)               |           |  |
| Storage            | Temperature | –20 °C – 60 °C                            |           |  |
|                    | Humidity    | 10% – 90% (no condensation)               |           |  |
| Indicator          |             | Activate                                  |           |  |
| Accessories        |             | P16V2.4A-R (AC adaptor)                   | :1        |  |
|                    |             | Power cord                                | : 1 or 3  |  |
|                    |             | Owner's Manual                            | :1        |  |

## Wireless specifications

| Supported standard          | 1.9 GHz DECT standard   |  |
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|                             | • USA/Canada: 1920.0 MHz – 1930.0 MHz   |  |
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|                             | USA/Canada: 20.1 dBm  |  |
| Maximum output power (EIRP) | <ul> <li>Europe/Northern Europe/UK/Australia/New Zealand: 25.9 dBm</li> </ul> |  |
|                             | • Japan: 27.0 dBm   |  |
| Antenna (built-in)          | Supports space diversity  |  |
| Use                         | Control between access point and charger                                      |  |
| Maximum coverage distance   | 50 m (depends on the usage environment)                                       |  |
| Encryption method           | AES (256-bit)   |  |