



SOFTWARE INSTRUCTIONS

REAL-TIME STEERING ARRAY MICROPHONES

AM-1B
AM-1W



Thank you for purchasing TOA's Real-Time Steering Array Microphone.
Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

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Notes

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- iPad and iPhone are registered trademarks of Apple Inc.
- Google Chrome is a trademark of Google Inc.
- Regarding other company names and products, they are also trademarks of individual companies.

1. GENERAL DESCRIPTION

1.1. Software Summary

The AM-1 iOS app is intended exclusively for use with the iPad.

It connects to the AM-1 Control Unit via a wireless network and allows setting, control and monitoring of the array microphone.

This app can be downloaded from Apple App Store free of cost.

1.2. System Settings Summary

By installing the dedicated AM-1 iOS app on an iPad, the following function settings, real-time monitoring and control can be performed:

Function settings and control can also be performed by way of a PC web browser.

[Real-Time Monitoring]

- Check of sound source position and input audio level.
- Check of audio input level of individual microphone elements.

[Function Settings]

- Tracking range setting: Horizontal angle and distance
- Detection sensitivity
- Tracking speed
- Sound volume correction: Function ON/OFF and effective distance settings
- Mute switch function ON/OFF
- Saving setting configuration

[Control]

- Output volume level adjustment
- Preset memory loading

1.3. System Requirements

Below is a list of the verified operating systems and web browser programs.

1.3.1. PC

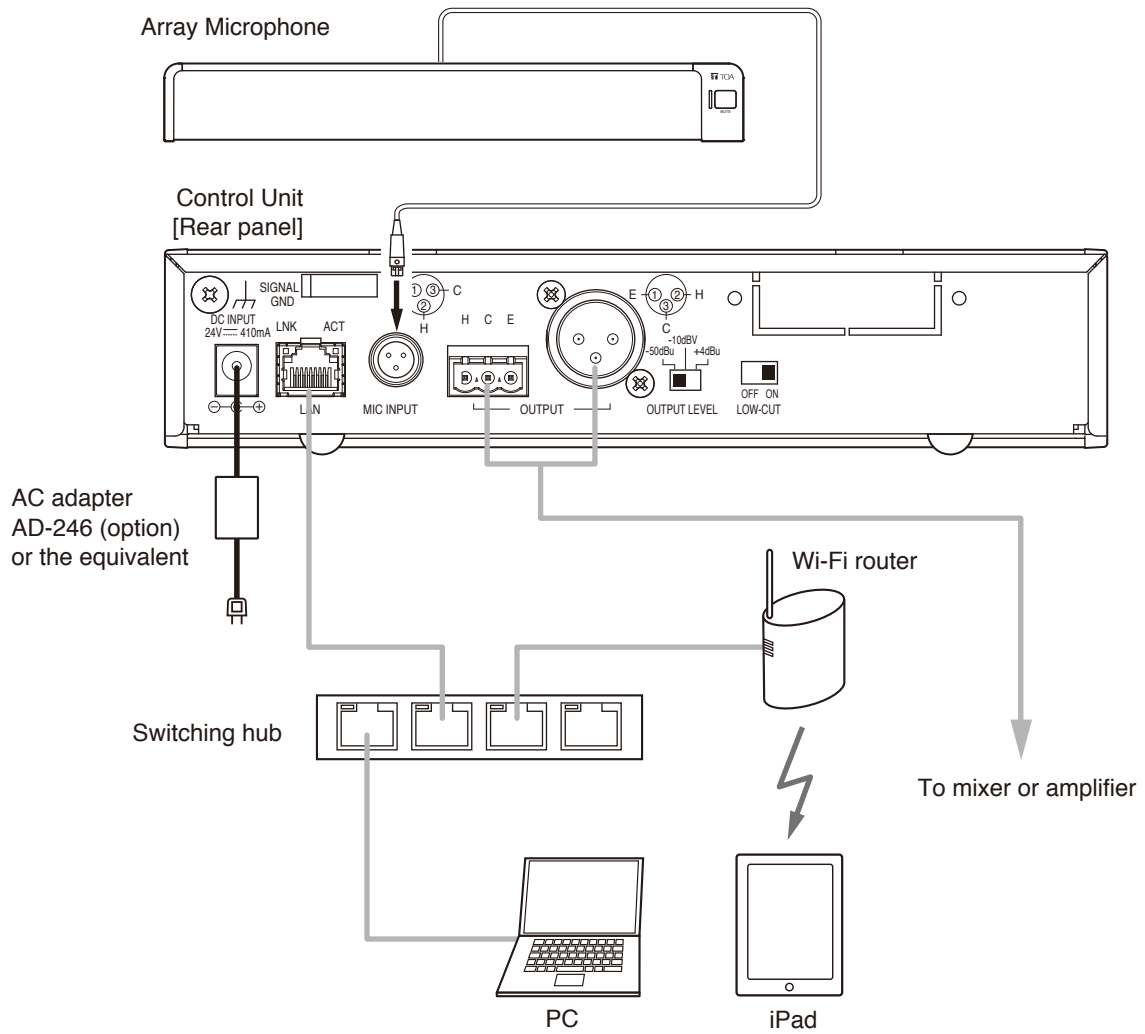
OS: Windows 7 Professional (32 bit), Windows 10 Pro (64 bit)

Web browser: Google Chrome (Version 56.0.2924.87),
Internet Explorer 10 (Version 10.0.9200.17609)

1.3.2. iPad®

OS Version: iOS 8.1.3, iOS 9.3.5, iOS 10.1.1

1.4. System Application Examples



2. SOFTWARE INSTALLATION AND START-UP

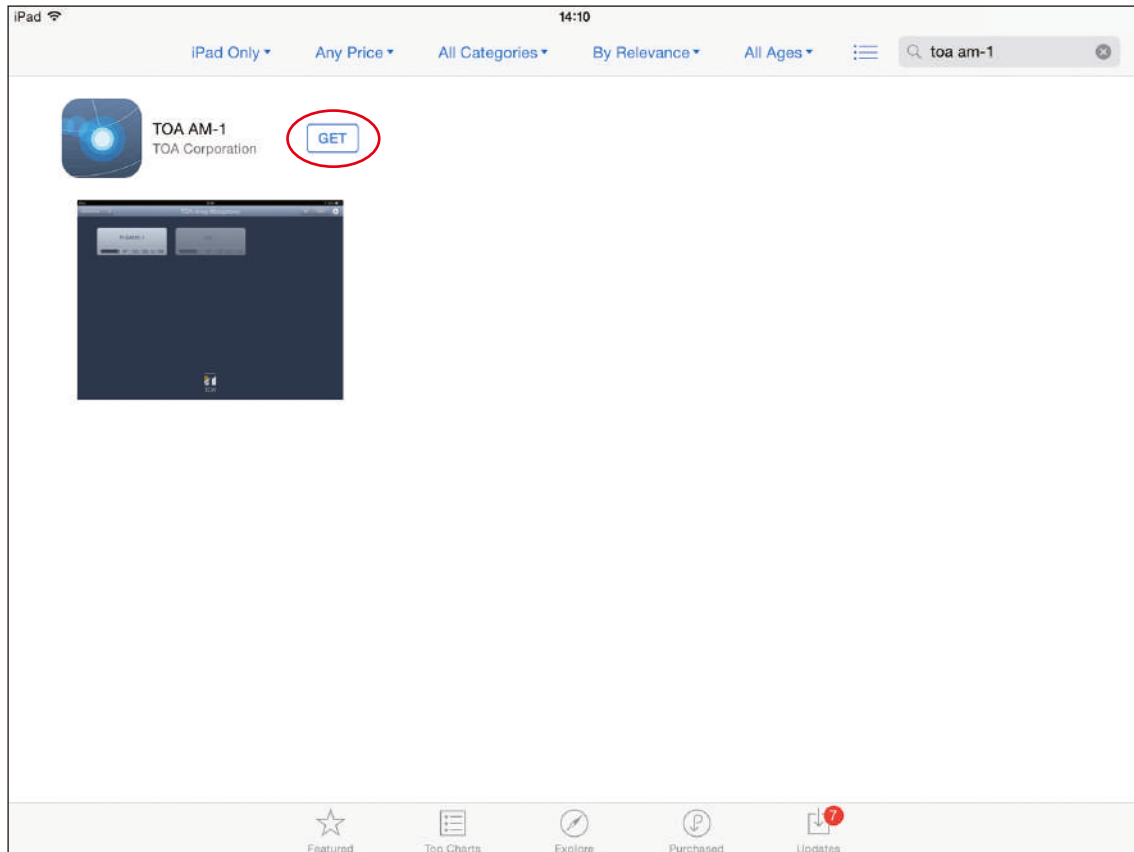
2.1. Installation

Using the iPad, download the AM-1 iOS app from App Store.

Note: iPhones are not compatible with the AM-1 iOS app.

Step 1. Access the App Store on the iPad.

Step 2. Search for the “AM-1” and tap the “GET” button.
Download and installation will begin automatically.

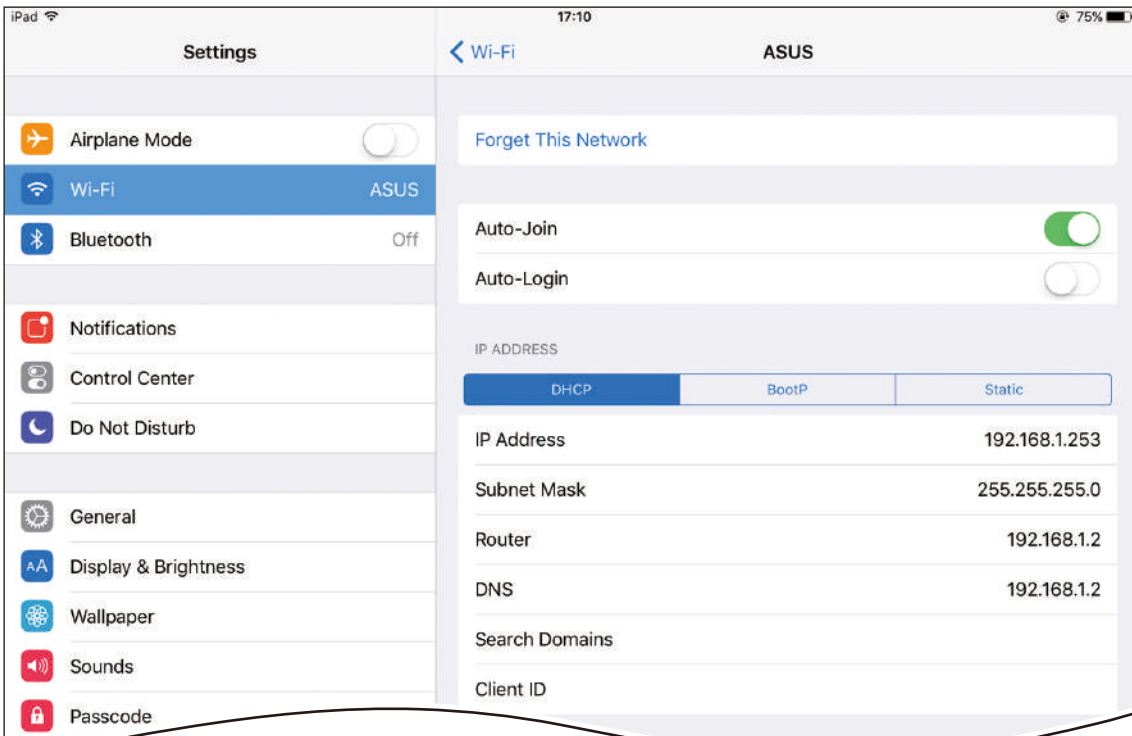


After installation is completed, the “TOA AM-1” icon will appear on the iPad’s home screen.



[Starting preparations]

Perform Wi-Fi setup using the iPad’s settings controls.
Confirm that the iPad’s IP address and the control unit’s IP address are set to the same network.



Note

The control unit’s factory-preset IP address is 192.168.1.14.
Before changing the IP address, see the “Network Settings” section of the instruction manual enclosed with the unit.

2.2. Starting the App

Either of the following two startup modes can be used:

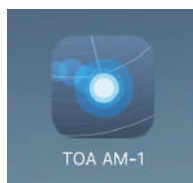
Basic Mode (Basic): Allows the array microphone's tracking status to be monitored.

Advanced Mode (Advanced): Allows the array microphone's tracking status to be monitored and tracking conditions to be changed.

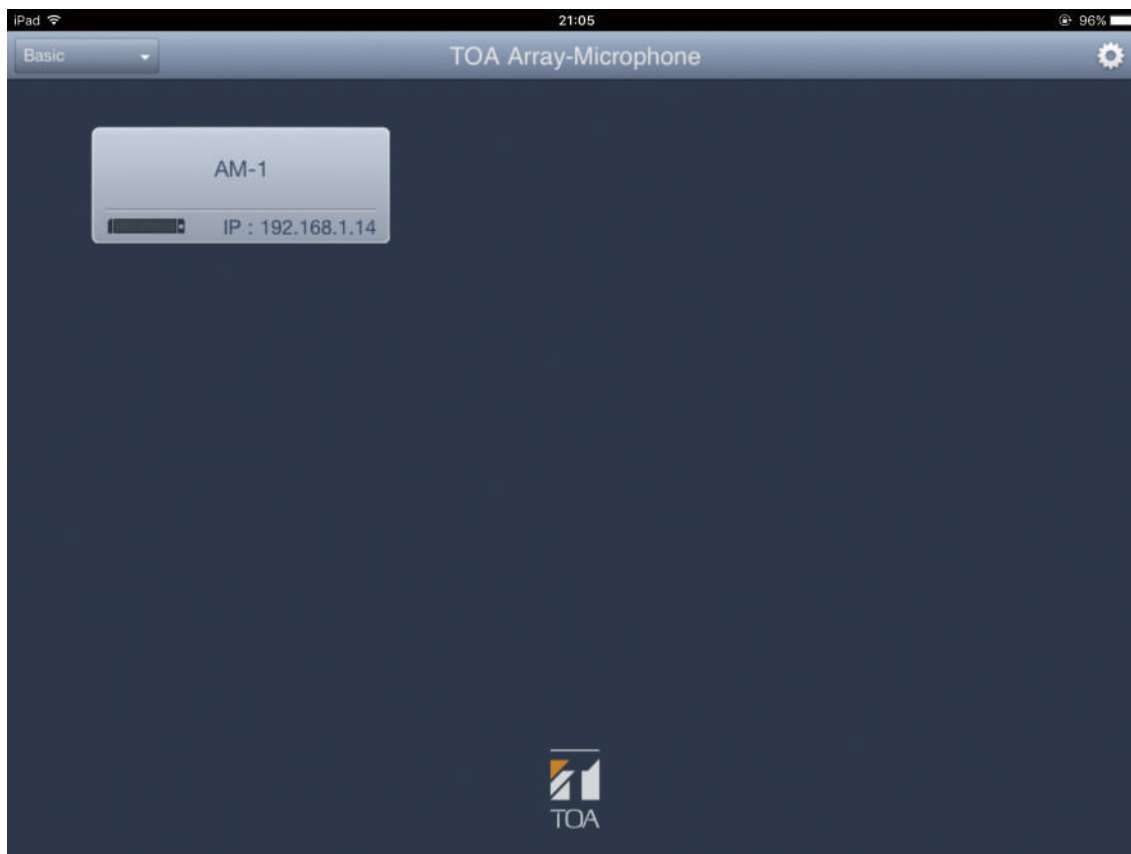
The following explanation assumes Advanced mode is being used.

Note that neither the password input screen nor tracking settings are displayed in the Basic mode.

Step 1. Tap the AM-1 iOS app icon.



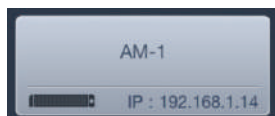
The following screen is displayed.



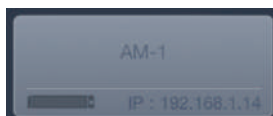
Note

The icons of connectable AM-1 systems turn white, and those of the systems that cannot be connected to are grayed out.

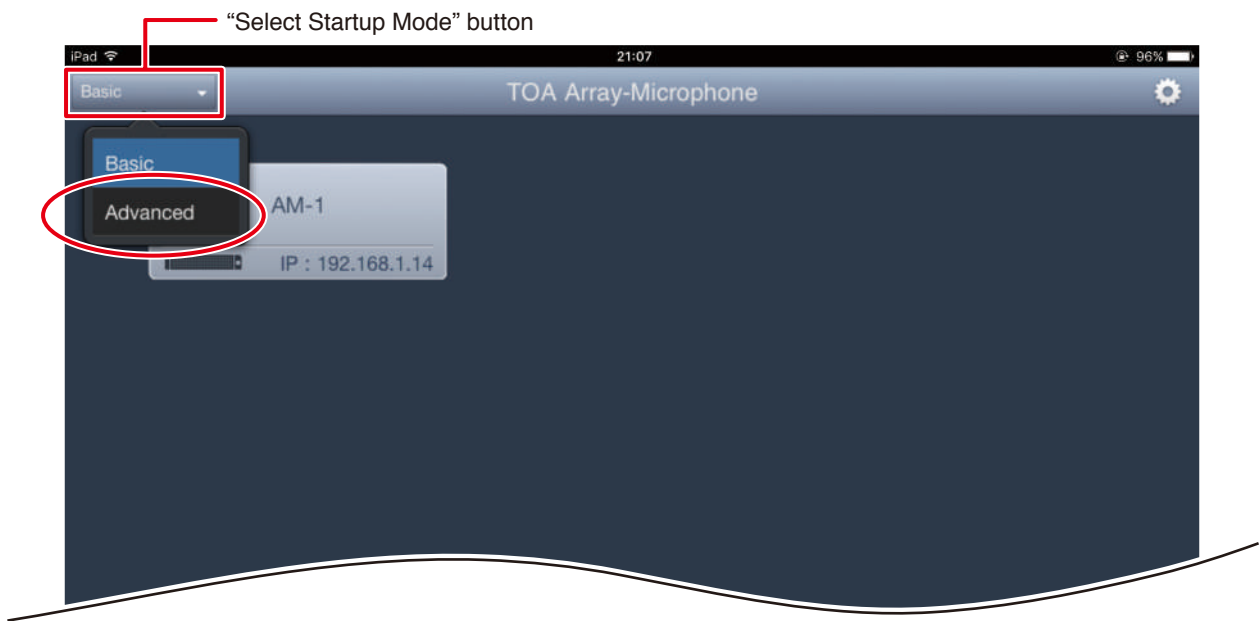
[Connectable condition]



[Unconnectable condition]



Step 2. Tap the “Select Startup Mode” button to select “Advanced.”

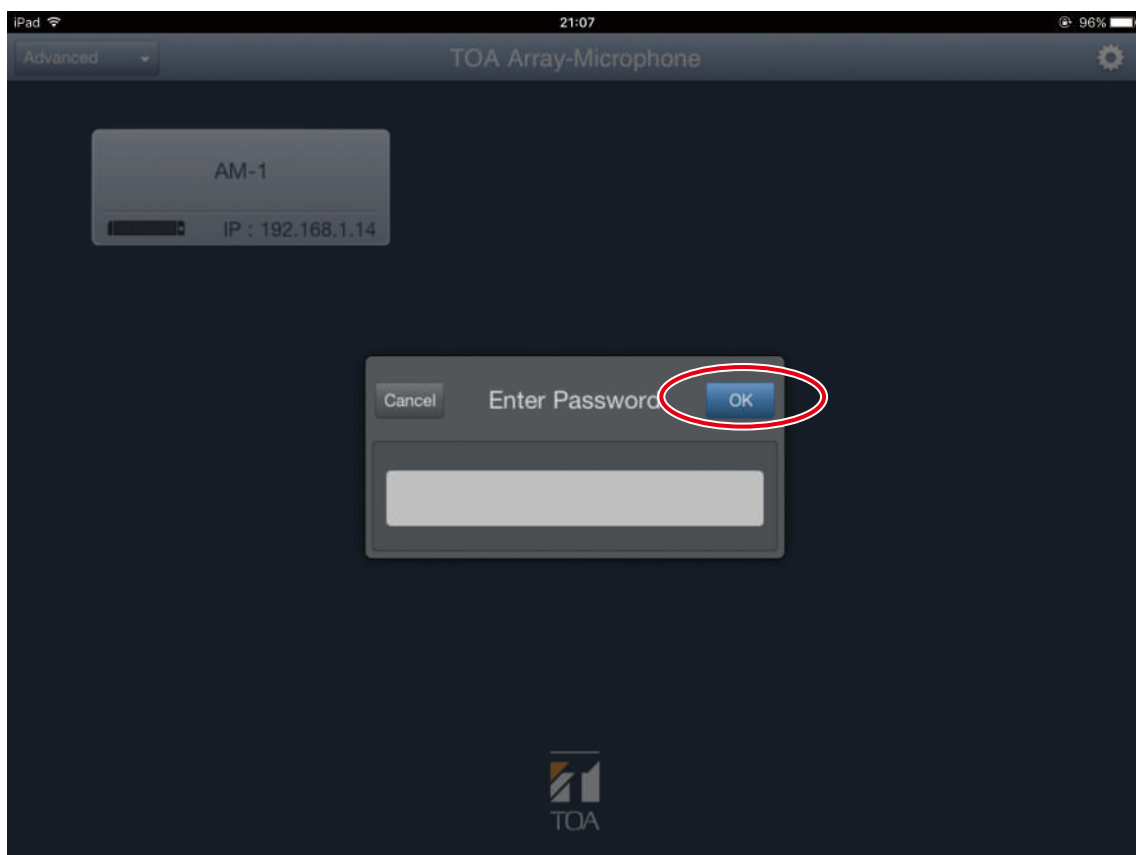


The password input screen is displayed.

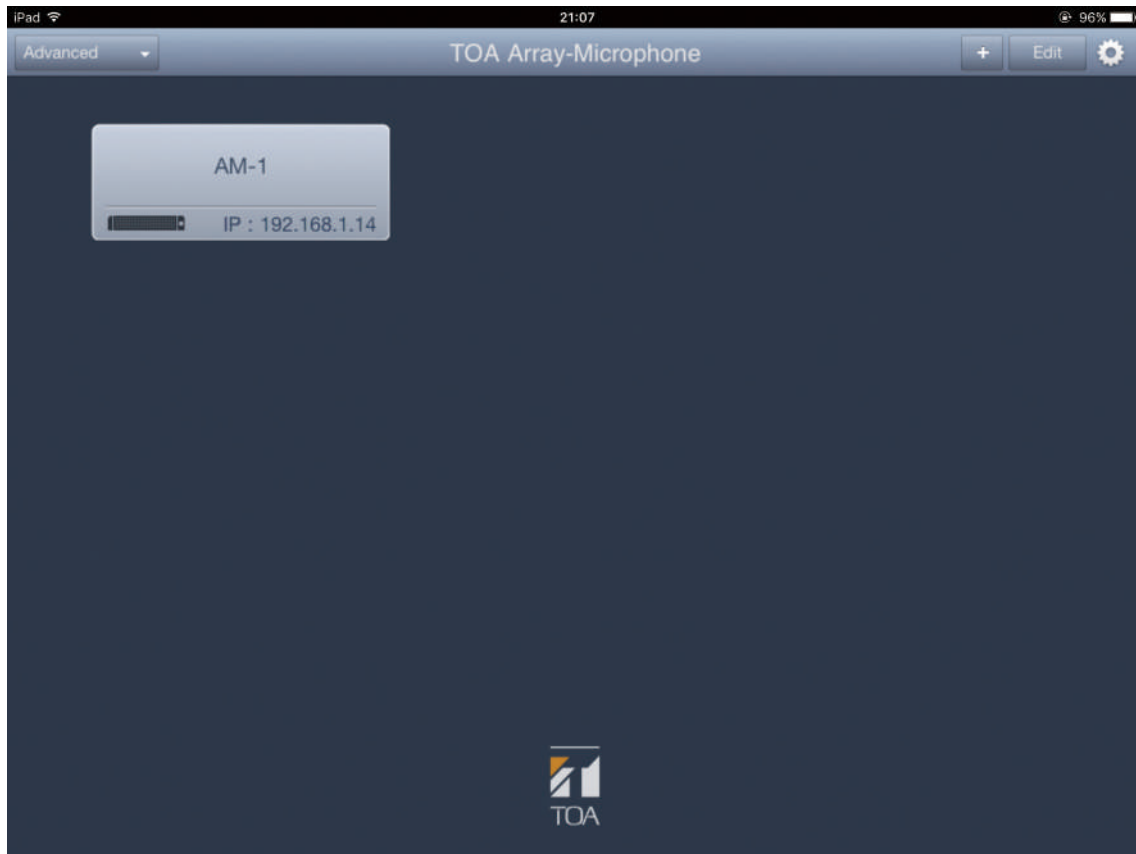
Step 3. Tap the “OK” button without entering the password.

Note

When the password has been set, it needs to be entered.
For password settings, see [p. 10, “Basic Settings.”](#)



The initial Advanced mode screen is displayed.



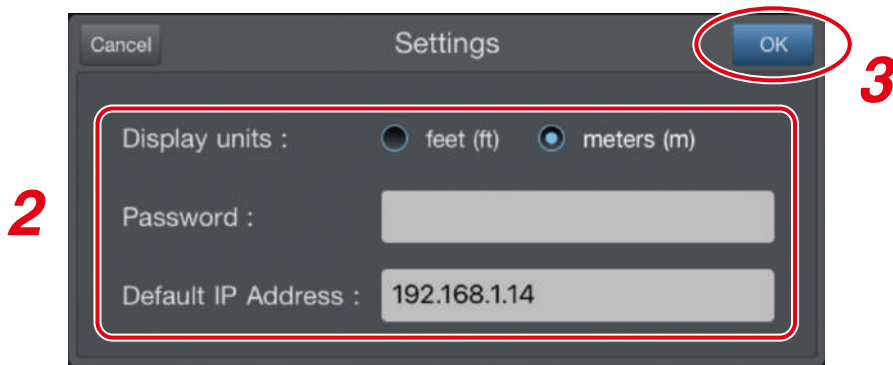
3. BASIC SYSTEM SETTINGS AND SETTING CHANGES

3.1. Basic Settings

Step 1. Tap the “Setting” button at the upper right of the initial screen.



The Settings screen is displayed.



Step 2. Set each item.

Display units: Changes display units from meters (m) to feet (ft).

Password*: Used to change the password. Enter up to 16 alphanumeric characters and symbols.

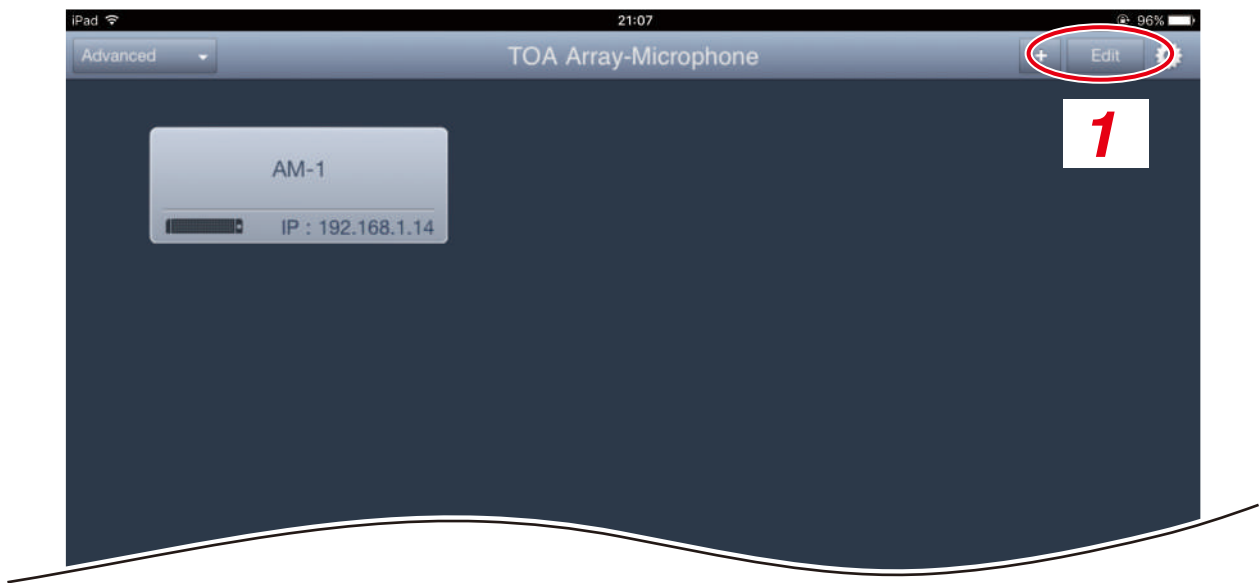
Default IP Address: Used to set the initial IP address of the control unit to be displayed on the screen.

*Advanced mode only.

Step 3. Tap the “OK” button.

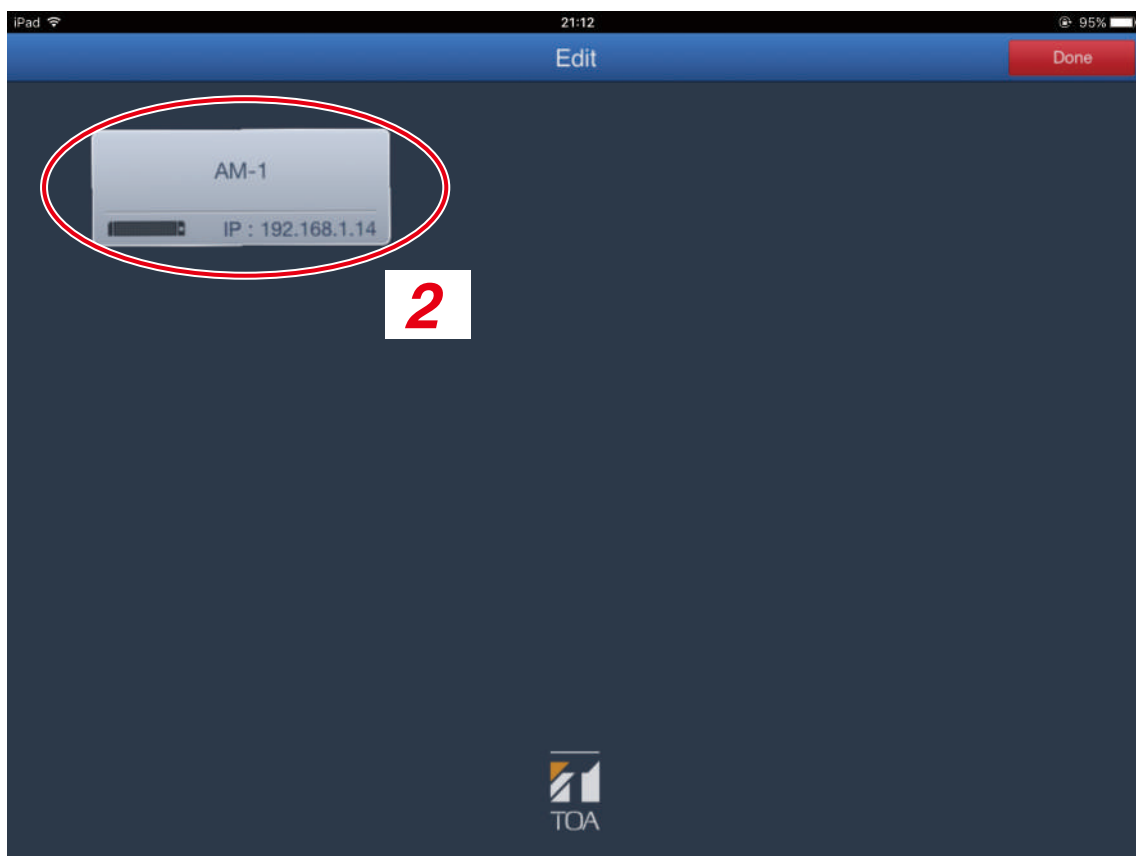
3.2. Setting Changes (Advanced Mode Only)

Step 1. Tap the “Edit” button at the upper right of the initial Advanced mode screen.



The Edit screen is displayed, allowing the AM-1 system icons to be selected.

Step 2. Tap the icon of the AM-1 system for which setting changes are to be made.

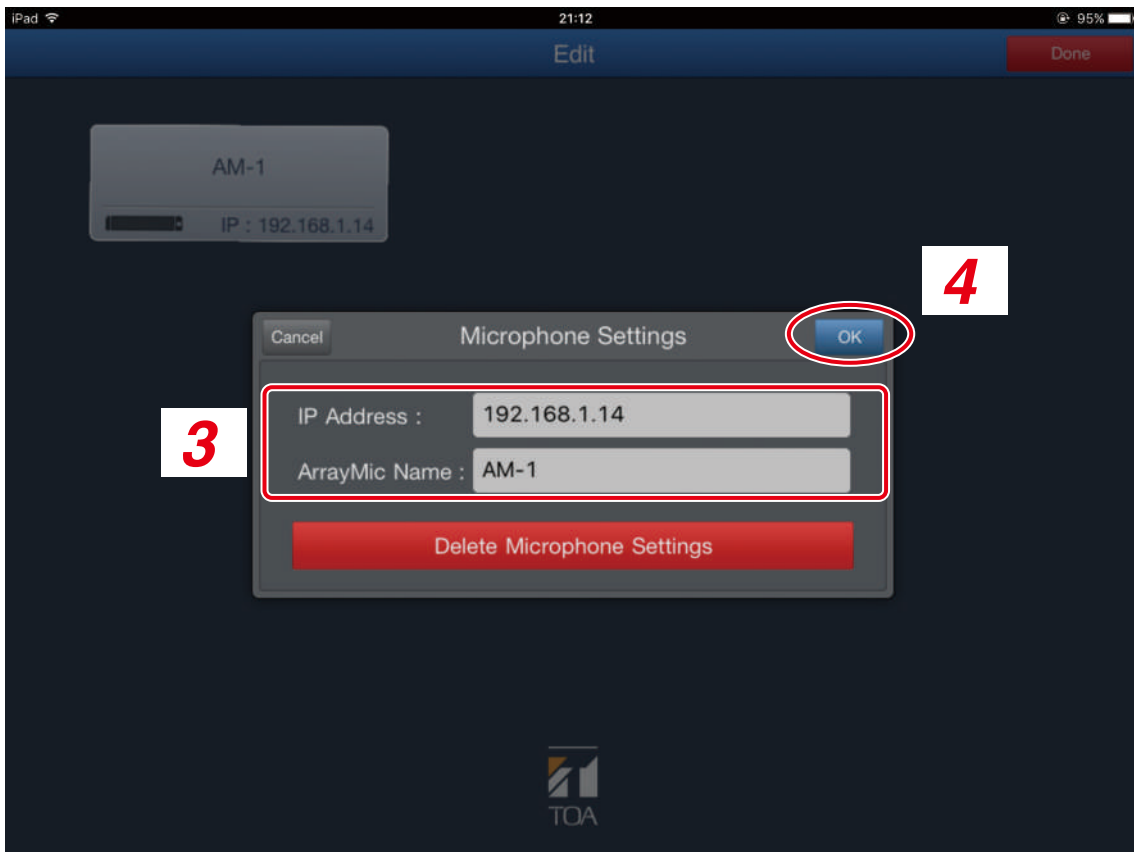


The input screen is displayed.

Step 3. Change the IP address (IP Address) and array microphone name (ArrayMic Name).

The IP address change is made to match the control unit's IP address. For control unit IP address settings, please refer to the instruction manual enclosed with the unit. Also, AM-1 system icons that have already been set can be deleted using the "Delete Microphone Settings" button.

Note: Up to 16 alphanumeric characters and symbols can be used for array microphone names.

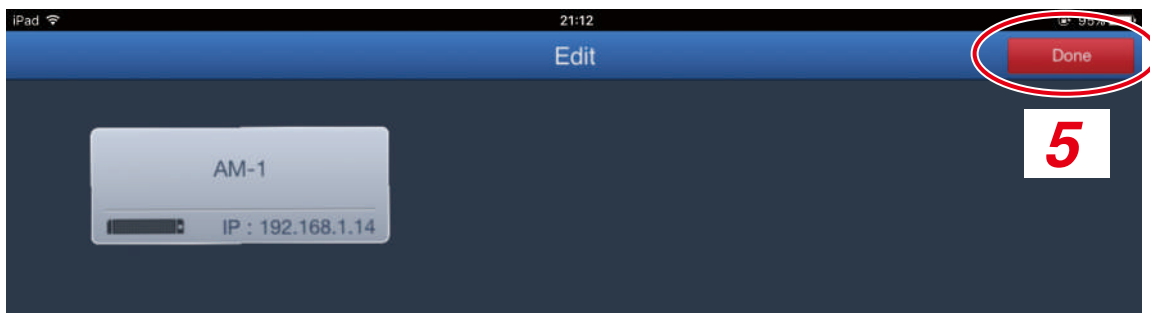


Step 4. Tap the "OK" button.

The display returns to the Edit screen.

Step 5. Tap the "Done" button at the upper right of the Edit screen.

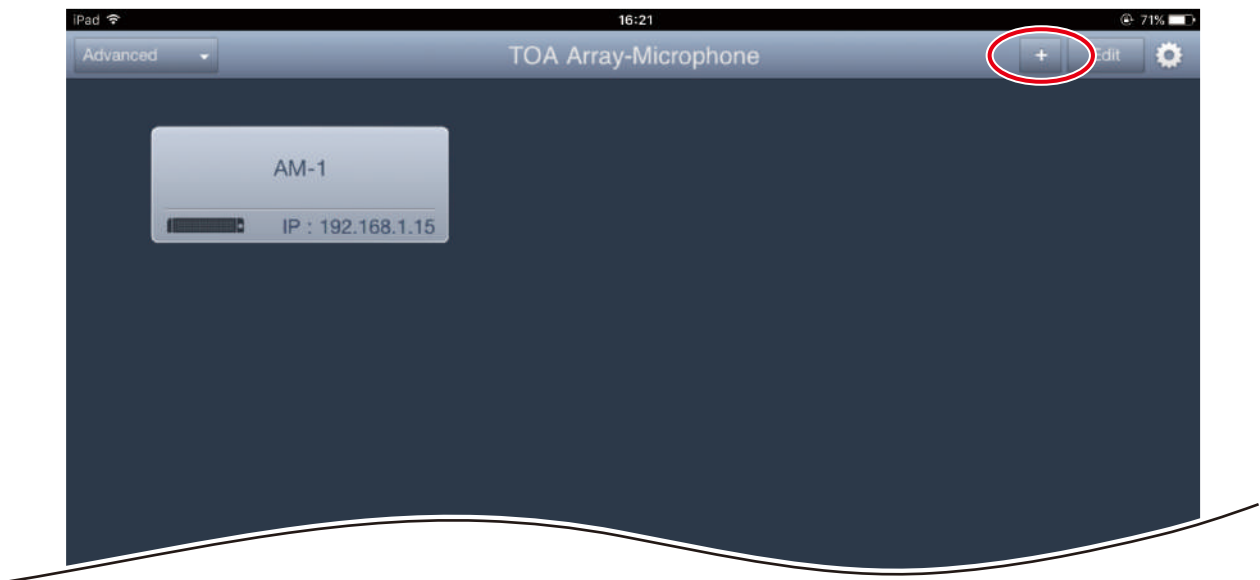
The Edit screen is closed, returning the display to the initial Advanced mode screen.



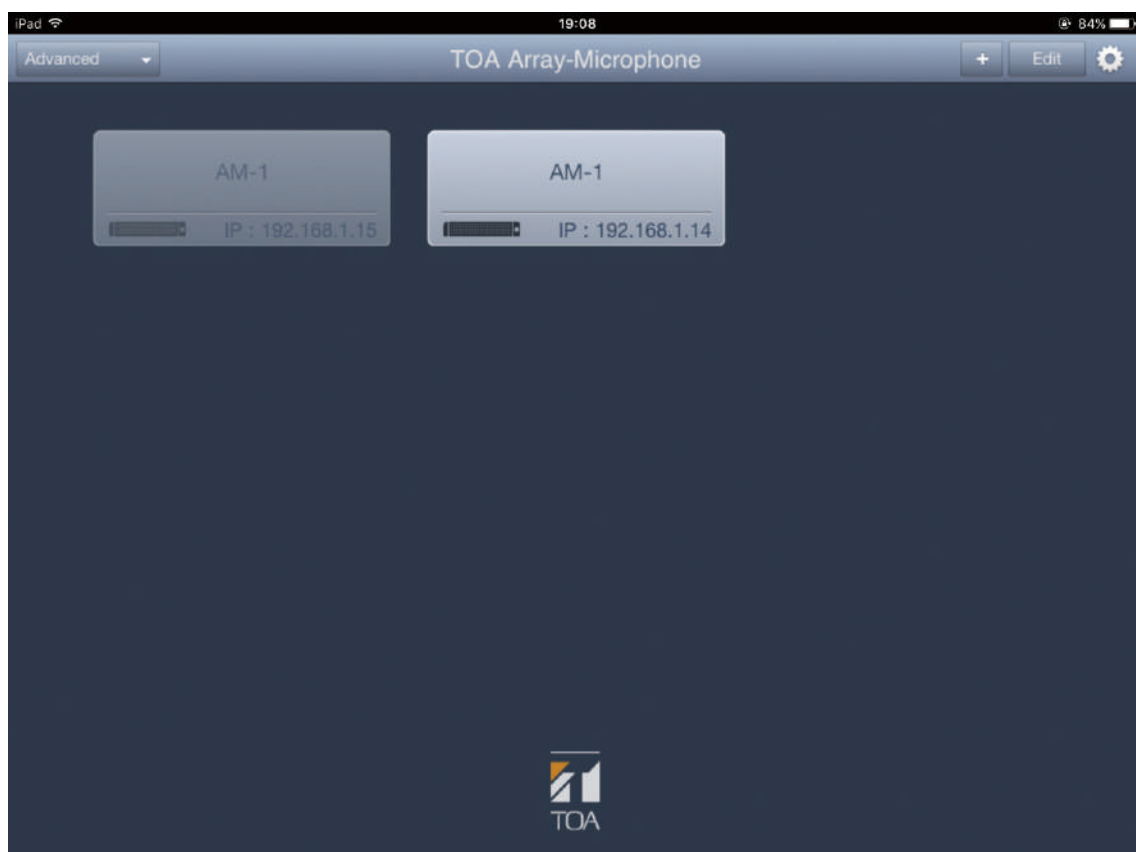
3.3. Adding Additional AM-1 Systems (Advanced Mode Only)

- Up to 12 systems can be displayed.
- Only 1 system can be connected at a time per iPad.
- Take care that the same IP address is not duplicated.

Step: Tap the “+” button on the initial Advanced mode screen.



The AM-1 system icon is added.



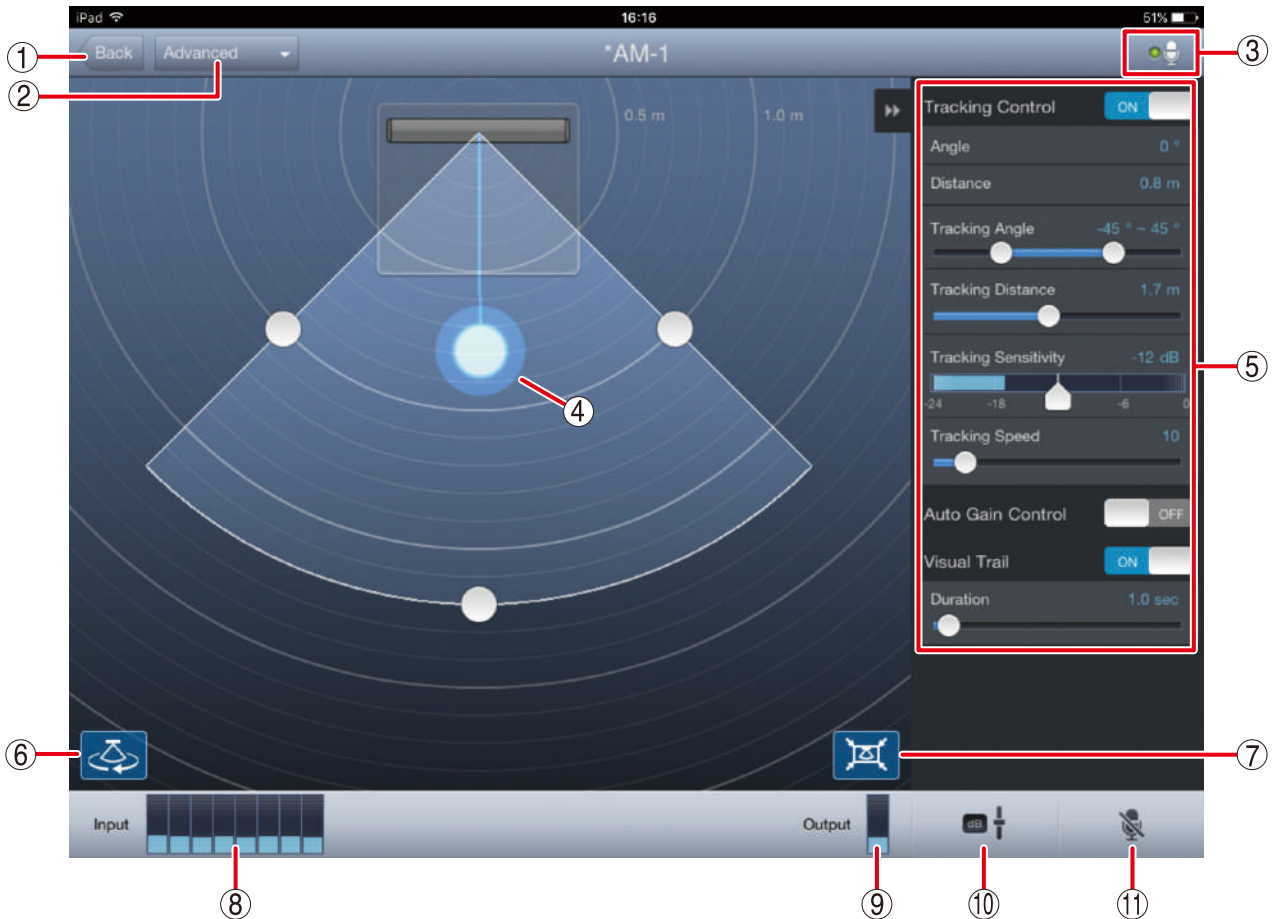
4. SOFTWARE FUNCTIONS AND OPERATION

4.1. Main Screen

If a connectable AM-1 system icon is selected and tapped on the initial screen, the selected AM-1 system's setting information is loaded and the main screen is displayed.

The following explanation assumes Advanced mode is being used.

A portion of the functions are restricted in Basic mode. Further, no tracking settings are displayed in Basic mode.



1. Back

Reverts to the initial screen.

2. Select operation mode

Selects either Basic mode or Advanced mode.

3. Operation setting and preset

Used to set the operation of each array microphone and load and save preset data. Preset data cannot be saved in Basic mode. (See p. 16, "Operation settings.")

4. Sound source position

Displays the position of the sound source as viewed from the front of the array microphone.

5. Tracking settings*

Performs various tracking settings. (See p. 23, "Tracking settings (Advanced mode only).") Can be hidden with the ►► button. To display again, use the ◀◀ button.

6. Horizontal inversion display

The screen can be inverted horizontally. (See p. 19, "Horizontal inversion display.")

7. Centering

The screen can be returned to the original position after it has been moved from the default position. (See p. 22, "Centering.")

8. Input level meter

Displays the input levels for 8 microphone elements.

9. Output level meter

Displays the output level.

10. Output level change

Tapping the [dB] button displays a fader. ([See p. 20, “Output level change.”](#))

11. Mute control

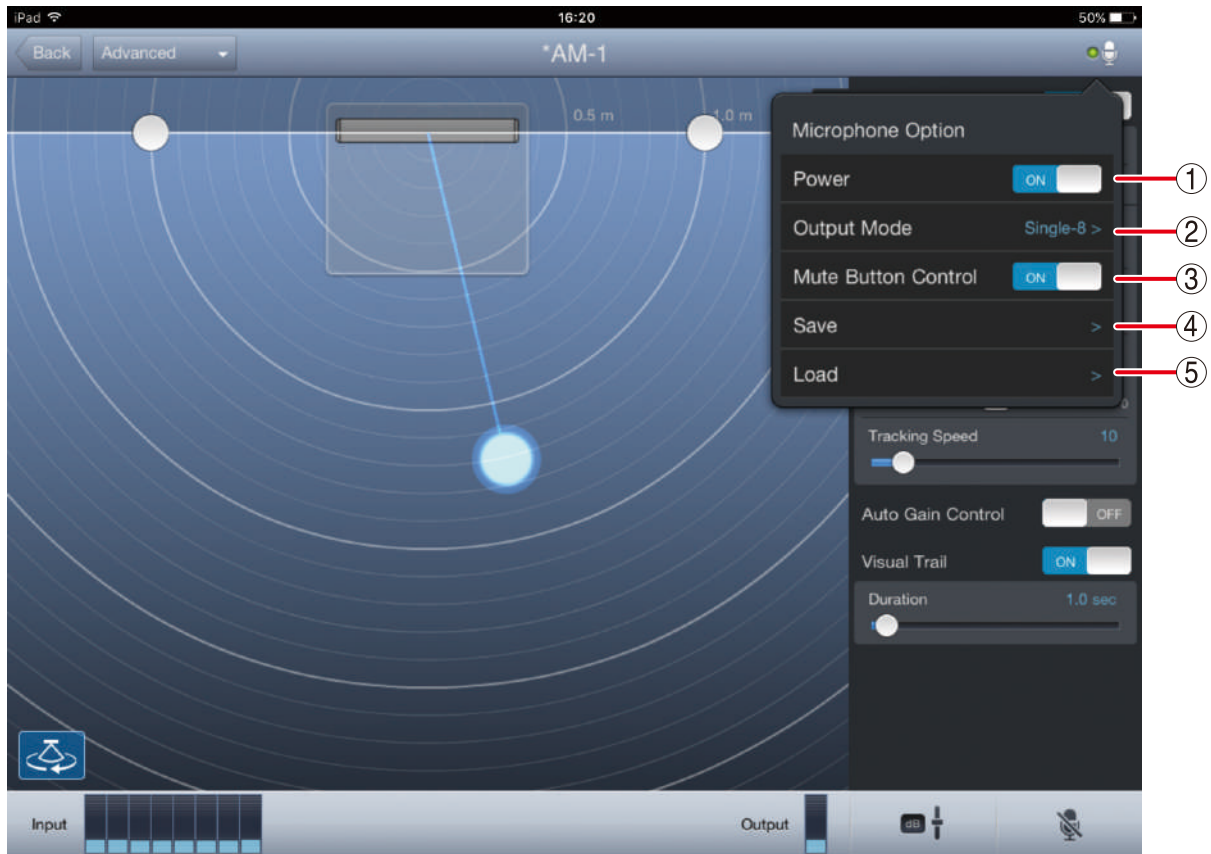
Allows the array microphone’s audio to be muted. ([See p. 21, “Mute control.”](#))

*Advanced mode only.

4.2. Main Screen Operation

4.2.1. Operation settings

Tapping the “Operation settings and preset” button at the upper right of the screen allows array microphone settings.



1. Power

Turns the array microphone power ON/OFF. This button is not normally used.

2. Output mode

Selects either Array mode (Array) or Cardioid mode (Cardioid). Array mode is normally used.

Array mode: The microphone operates as an array microphone, detecting the sound source position and performing signal processing to maintain a consistent sound volume.

Cardioid mode: The microphone operates as a unidirectional microphone.

3. Mute button control

Enables (ON) or disables (OFF) the array microphone’s mute function.

4. Save*

Saves operation settings as preset data.

5. Load

Loads preset data.

*Advance mode only.

[Loading preset data]

The Load screen is displayed if “Load” is selected on the operation setting screen. Preset data can be selected from among [Default], [Preset 1] and [Preset 2]. Tapping one of these buttons causes the corresponding data to be loaded.



Notes

- For the initial preset data values, please read the instruction manual enclosed with the unit.
- If nothing is selected and the “OK” or “Cancel” button is tapped, the display returns to the original screen without loading any preset data.

[Saving preset data (Advanced mode only)]

Selecting “Save” on the operation setting screen displays the Save screen.

Select the save destination from among [Default], [Preset 1] and [Preset 2].

Tapping one of these buttons causes the data to be saved to the corresponding internal memory of the control unit.

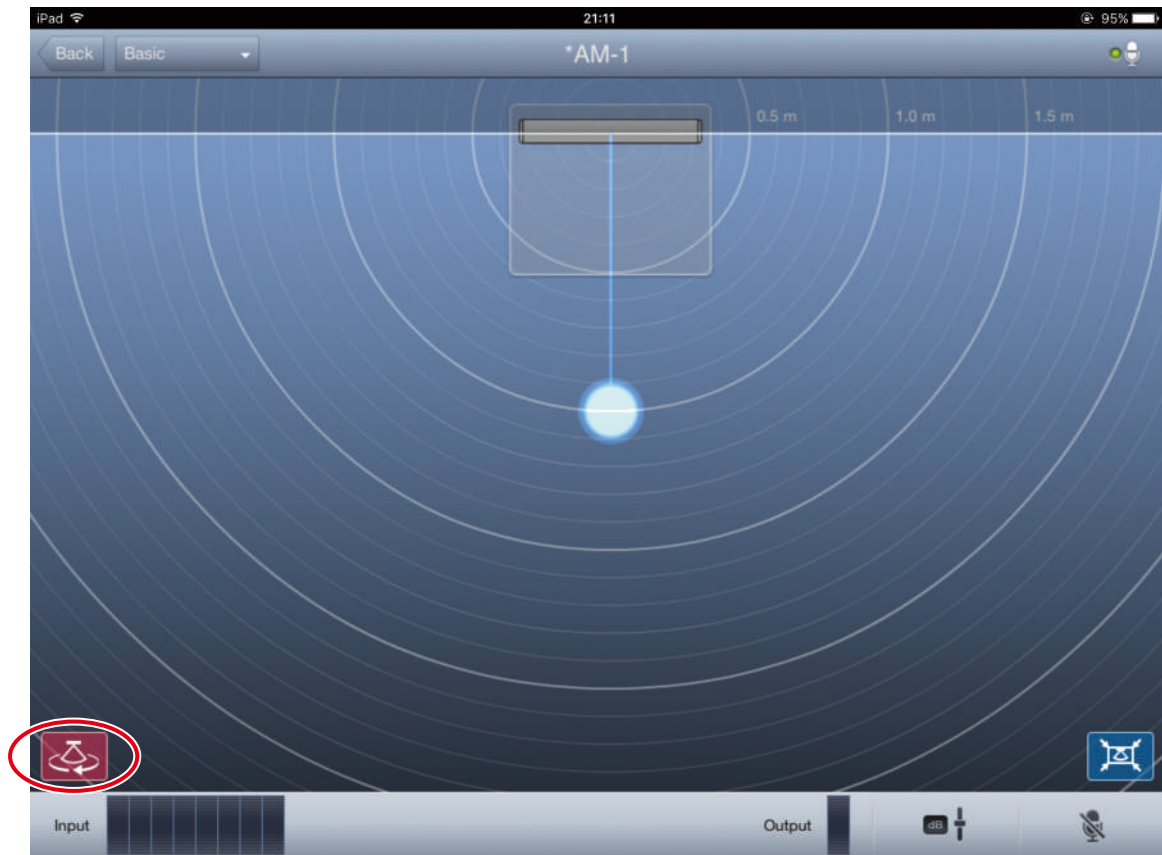


Note

If nothing is selected and the “OK” or “Cancel” button is tapped, the display returns to the original screen without saving preset data.

4.2.2. Horizontal inversion display

Use this function in such applications as when mounting the array microphone to a ceiling. Tap the “Horizontal inversion display” button to use. The “Horizontal inversion display” button is displayed in pink during use.



4.2.3. Output level change

Audio output level can be adjusted.

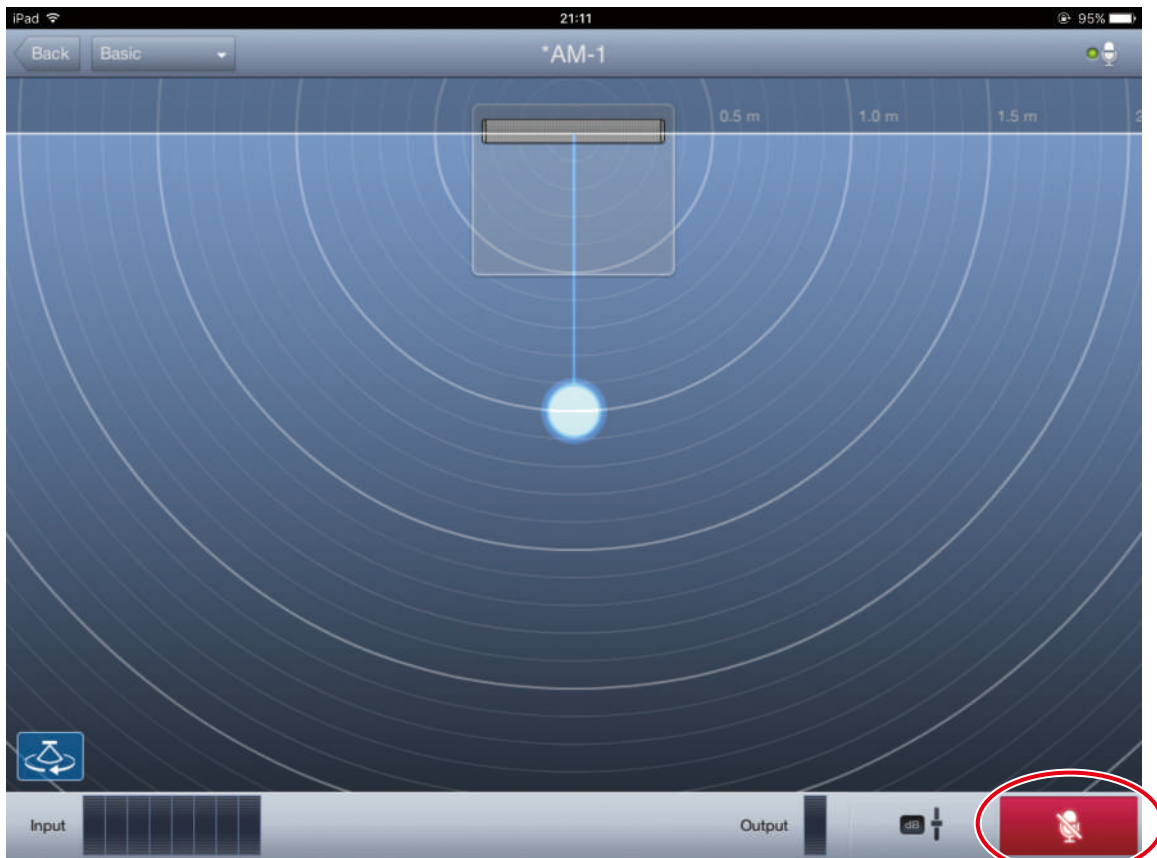
A fader is displayed when the “dB” button is tapped. Adjust the output level by moving the fader up and down.



4.2.4. Mute control

Audio from the array microphone can be muted.

Tapping the “Mute” button mutes the audio. The “Mute” button is displayed in red while enabled.

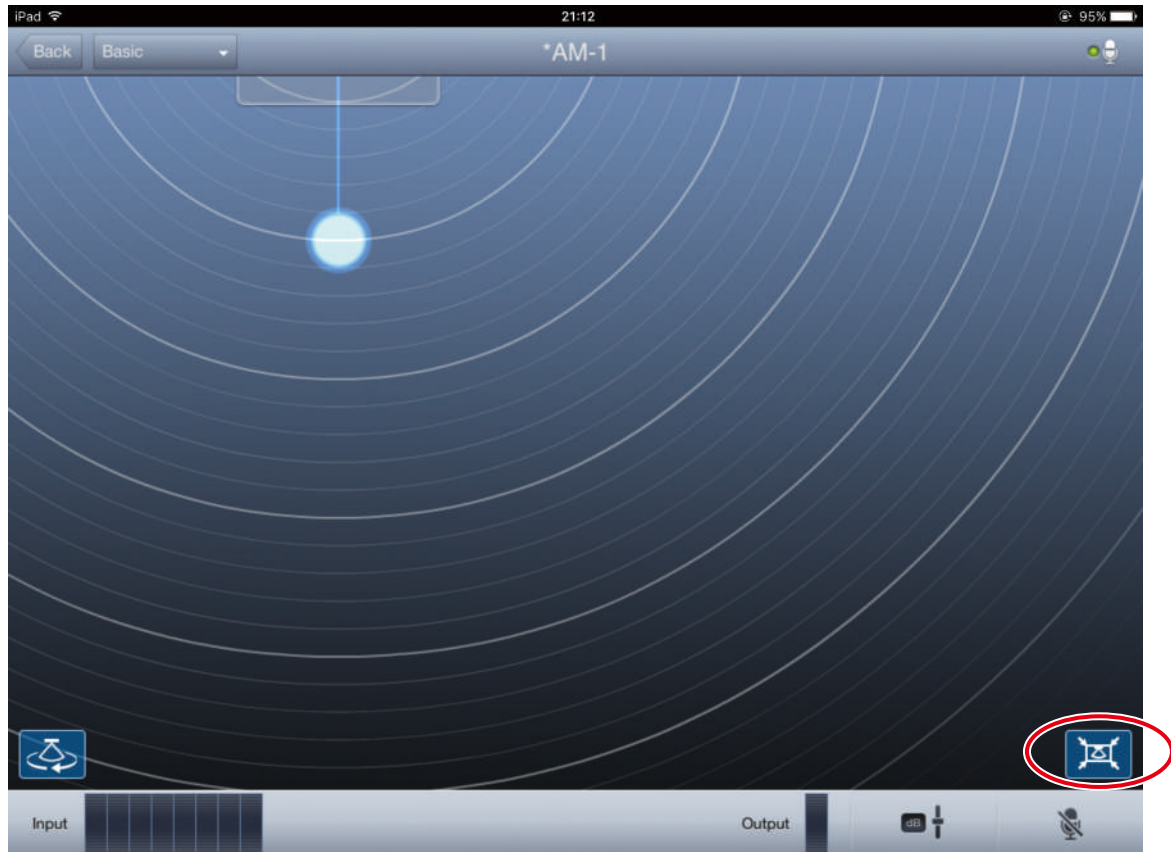


4.2.5. Moving the screen

The screen can be moved by dragging it.

4.2.6. Centering

It is possible to return the screen to its default position after it has been moved. To revert to the center of the screen (default position), tap the “Centering” button.



4.2.7. Tracking settings (Advanced mode only)

In such cases as when the sound source (speaker) is moving around, set the tracking control to ON. If the position of the sound source (speaker) is fixed at a certain degree, set the tracking control to OFF.



1. Tracking control

Selects whether or not to enable tracking control. Set this function to ON when the sound source position is not determined, and OFF when the sound source position is fixed.

2. Angle

Detects the sound and displays the sound source angle relative to the array microphone when Tracking Control is set to ON.

Display range: -90° to 90°

Sets the sound source angle relative to the array microphone when Tracking Control is set to OFF.

Setting range: -90° to 90°

3. Distance

Detects the sound and displays the distance between the sound source and the array microphone when Tracking Control is set to ON.

Display range: 0.5 m to 3.0 m or ∞ m (1.64 ft to 9.84 ft or ∞ ft)

Sets the distance between the sound source and the array microphone when Tracking Control is set to OFF.

Setting range: 0.0 m to 2.0 m (0 ft to 6.56 ft)

4. Tracking angle*

Sets the horizontal angle range within which the array microphone can detect the sound source. Set the sliding bar within the setting menu or pointer (sound source position) to the desired position.

Setting range: -90° to 90°

Note

If the sound source is detected outside the range, the automatic sound source tracking function is disabled.

5. Tracking distance*

Sets the maximum distance that the array microphone can detect the sound source. Set the sliding bar within the setting menu or pointer (sound source position) to the desired position.

Setting range: 0.5 m to 3.0 m (1.64 ft to 9.84 ft)

Note

If the sound source is detected outside this range, the automatic sound source tracking function is disabled.

6. Tracking sensitivity*

This is the threshold for sound source detection.

The sound source is detected whenever the input audio level is larger than the threshold value. Set the value according to surrounding sound volume conditions.

Setting range: -24 dB to 0 dB

Note

It is recommended that the threshold value be set a little higher than the ambient noise level.

7. Tracking speed*

Sets the speed at which the microphone tracks the sound source. The larger the number, the faster the tracking speed.

Setting range: 1 to 100

8. Audio gain control

Corrects the level. Selecting ON displays a light blue frame that indicates the effective distance. The range can be changed with the pointer or sliding bar.

Setting range: 0.5 m to 2.0 m (1.64 ft to 6.56 ft)

9. Visual trail

Leaves a visible sound source position trail on the screen.

Selecting ON makes it possible to leave a visual sound source trail. The amount of time the trail is left on the screen can be changed with the Duration setting.

Setting range: 0.5 sec to 30 sec

* Not displayed when Tracking Control is set to OFF. (See the figure below.)



4.3. Quitting the Software

Save the settings as required before quitting the app (See p. 16, “Save” in “Operation settings.”)
If any setting is changed, an asterisk (*) is shown before the array microphone name displayed on the menu bar.



Note: Settings cannot be changed or saved in Basic mode.

Traceability Information for Europe

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