YAMAHA

MUSIC LABORATORY SYSTEM
MLA-200
Installation Guide
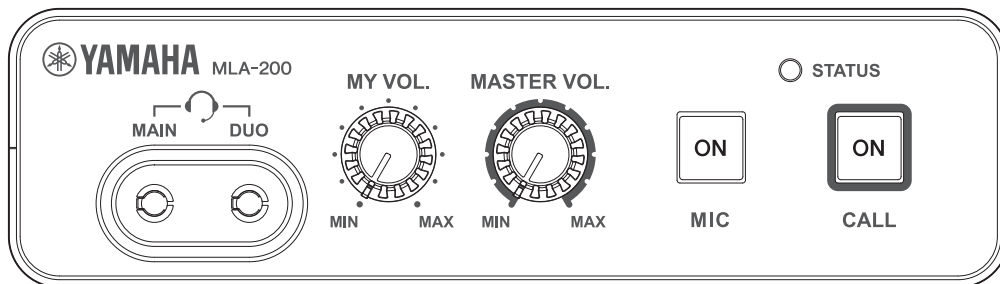
Contents

Introduction

Overview of the Music Laboratory System

The Yamaha Music Laboratory System is a music education system that combines Yamaha's abundant know-how in music education and electronics technology. This system is built to support communication between students and instructors and to provide more fluid guidance on individual and group performances. Instructors can use the application on an iPad to operate the entire system, such as checking students' performances, responding to questions and sending performance data.

This system combines MRX7-D as the core of the audio network and MLA-200 (with a master unit for the instructor and subordinate units for the students). Up to 24 subordinate units for students can be connected to one MRX7-D. At maximum, a system can be built to connect 96 subordinate units with four MRX7-Ds.

This Setup Guide provides the necessary information for building and setting up the Music Laboratory System in a classroom. We recommend that you read this information before and during setup.

Preparations

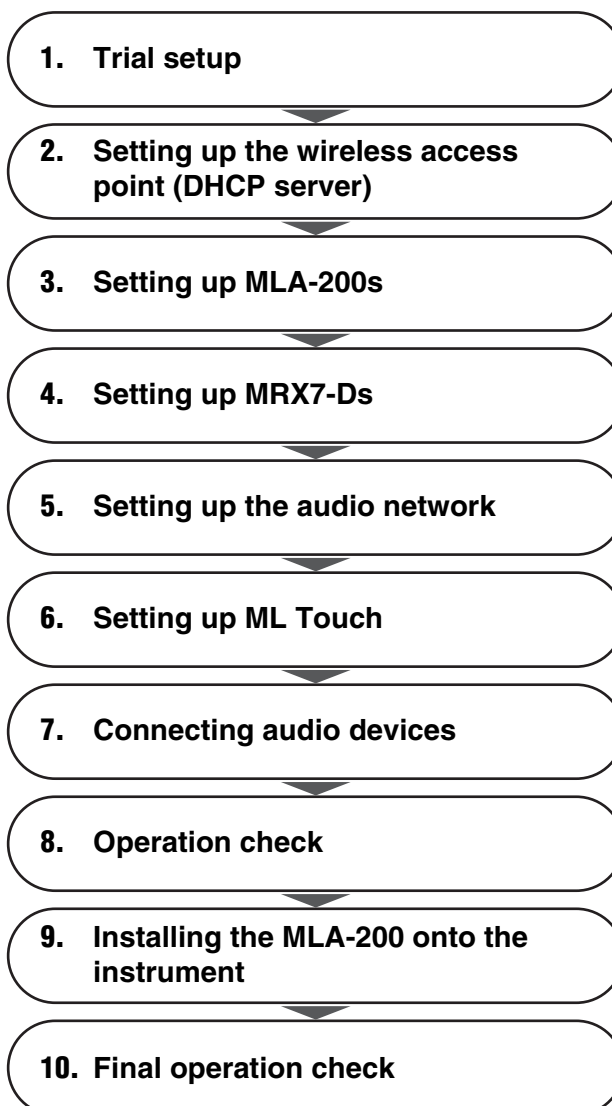### Items necessary for building the system

MLA-200	One for the instructor and a maximum of 96 for students.
MRX7-D	A maximum of one MLA-200 for the instructor and 24 MLA-200s for students can be connected to one MRX7-D. Up to four MRX7-Ds can be connected. Insert the SD Memory Card into all MRX7-Ds.
PoE powered Ethernet switch	A power supply of 6 W or more per port is required.
STP Ethernet cable	STP cables must be of CAT5e (1000BASE-T) or higher grade. Prepare a total number of cables equal to the number of MLA-200s + the number of MRX7-Ds × 2 + the computer + the wireless access point + the Ethernet switch.
USB cable (Type AB)	Use to communicate MIDI data with the instrument. Prepare the same number as MLA-200s.
Audio cable	Use to connect the instrument and MLA-200. Prepare stereo cables with standard headphones plugs.
Headphones/microphone headset	With 3.5 mm mini plugs (CTIA compliant)
Wireless access point/DHCP server	Use for communication between the iPad application and the hardware. This device must be able to perform the DHCP server function of assigning addresses to both wireless devices and LAN devices.
Audio playback device	Use a CD player, etc., to play back audio teaching materials.
Microphone	For audio input by the instructor.
iPad	Use to operate the "ML Touch" control application for the instructor. iOS 12 or later is required.
ML Touch	This iPad application for instructors can be obtained for free from the App Store.

Items necessary only for setup

Windows computer	Use to specify settings during setup. A computer with an RJ45 connector and running Windows 10 or Windows 11 is required.
MTX-MRX Editor	Use to transfer the MRX7-D setup file data to MRX7-D when specifying settings during setup. Install this application on a Windows computer. For details on the installation and settings, refer to the MRX Setup Manual.
MRX7-D setup file	This file provides the settings for the Music Laboratory System. One file per MRX7-D used is required.
ML Config Tool	This software automatically configures the audio network connection between the MRX7-Ds and MLA-200s. Install this software on a Windows computer.
Dante Controller	Use to change the audio network setup manually (for special settings) and to check the status of the system.

Workflow

Follow the workflow below to build and set up the Music Laboratory System.

1. **Trial setup**

2. **Setting up the wireless access point (DHCP server)**

3. **Setting up MLA-200s**

4. **Setting up MRX7-Ds**

5. **Setting up the audio network**

6. **Setting up ML Touch**

7. **Connecting audio devices**

8. **Operation check**

9. **Installing the MLA-200 onto the instrument**

10. **Final operation check**

1. Trial setup

Before installing the devices in the classroom, perform a trial setup of the entire system to check the setup and operation of each device.

Since it will be difficult to remove and attach the DIP switch cover and change the DIP switch settings after the MLA-200 is installed onto an instrument, we recommend checking the setup and operation of each device beforehand.

2. Setting up the wireless access point (DHCP server)

The "ML Touch" application for the instructor communicates with each device via Wi-Fi. For that reason, the network must include a wireless access point.

The wireless access point used here must be able to perform the DHCP server function of assigning addresses to both wireless devices and LAN devices.

Connect the wireless access point to the Windows computer, and then set it up.

2-1. Connect the computer and wireless access point with an Ethernet cable.

2-2. Specify the IP address of the computer.

For example, if the network setting of the wireless access point contains an IP address of "192.168.100.240" and subnet mask of "255.255.255.0", specify the following settings in the "Internet Protocol Version 4 (TCP/IPv4) Properties" dialog box of "Network and Sharing Center" in the Windows Control Panel.

Example)

IP address	192.168.100.1 (Use the IP address of the wireless access point up to "192.168.100", and then add "1" at the end.)
Subnet mask	255.255.255.0
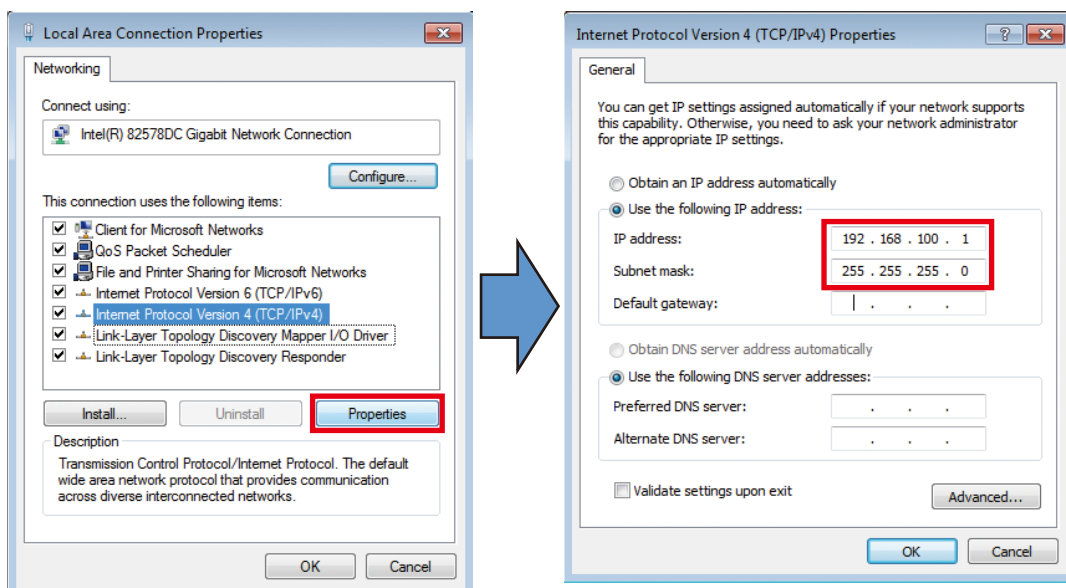
After specifying the settings, click the "OK" button in each dialog box.

2-3. Change the settings for the wireless access point (DHCP server).

Start the browser (Internet Explorer, etc.), and then type "http://192.168.100.240/" (with the default IP address of the wireless access point being "192.168.100.240") to access the setup screen for the wireless access point. Use the default IP address of the wireless access point. In addition, some types of wireless access points may have a dedicated application or unique address.

Refer to the manual for the wireless access point, and then specify the following settings.

DHCP server function	ON
Assigned address	192.168.0.110 to 192.168.0.240
DHCP lease timeout	Never (maximum)

LAN port settings

|	
IP address (IPv4)	192.168.0.254
Subnet mask	255.255.255.0

NOTE

If the DHCP server is assigned an address other than those listed above, there may be a conflict with the IP address used by the Music Laboratory System and the server may not work properly.

2-4. Change the IP address of the computer.

Change the IP address specified in step **2-2.** to one for an MRX7-D setup.

Select "Obtain an IP address automatically" in the "Internet Protocol Version 4 (TCP/IPv4) Properties" dialog box of "Network and Sharing Center" in the Windows Control Panel.
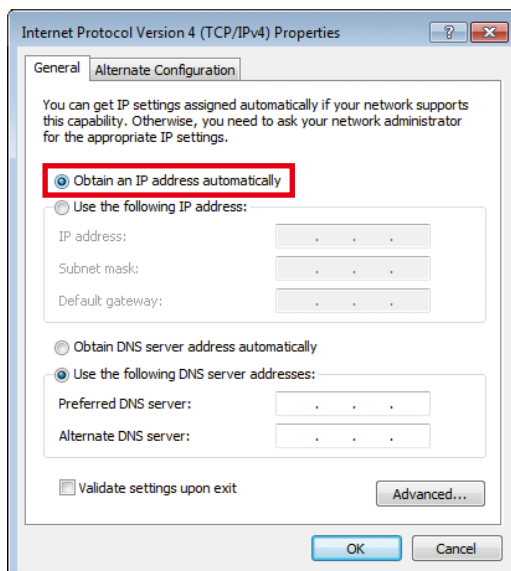
After selecting the setting, click the "OK" button.

This completes the setup of the wireless access point.

3. Setting up MLA-200s

Each MLA-200 in an audio network is differentiated by the unique ID that is specified.

Specify this ID with the DIP switch.

3-1. With nothing connected, open the DIP switch cover on the rear panel.

One side of the cover remains attached. Disengage the side that does not remain attached, and then slowly open the cover.

DIP switch cover
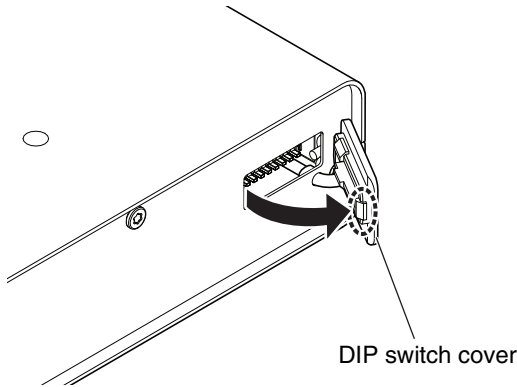
3-2. Set the DIP switch.
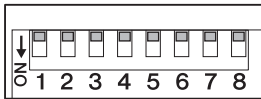
The switches of the DIP switch are set to ON when it is down and OFF when it is up. As a default, all switches are set to OFF (up).

NOTE
Be sure to view the DIP switch in its proper orientation.

Set the DIP switch for each MLA-200 according to the following table.

Instructor and students 1 to 24 (MRX7-D ID=1)

	SW							
	1	2	3	4	5	6	7	8
Instructor (ID=1)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
Student 1 (ID=2)	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
Student 2 (ID=3)	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
Student 3 (ID=4)	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
Student 4 (ID=5)	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON
Student 5 (ID=6)	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF
Student 6 (ID=7)	OFF	OFF	OFF	OFF	OFF	ON	ON	ON
Student 7 (ID=8)	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
Student 8 (ID=9)	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON

	1	2	3	4	5	6	7	8
Student 9 (ID=10)	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
Student 10 (ID=11)	OFF	OFF	OFF	OFF	ON	OFF	ON	ON
Student 11 (ID=12)	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
Student 12 (ID=13)	OFF	OFF	OFF	OFF	ON	ON	OFF	ON
Student 13 (ID=14)	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
Student 14 (ID=15)	OFF	OFF	OFF	OFF	ON	ON	ON	ON
Student 15 (ID=16)	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
Student 16 (ID=17)	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
Student 17 (ID=18)	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
Student 18 (ID=19)	OFF	OFF	OFF	ON	OFF	OFF	ON	ON
Student 19 (ID=20)	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
Student 20 (ID=21)	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
Student 21 (ID=22)	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
Student 22 (ID=23)	OFF	OFF	OFF	ON	OFF	ON	ON	ON
Student 23 (ID=24)	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
Student 24 (ID=25)	OFF	OFF	OFF	ON	ON	OFF	OFF	ON

Students 25 to 48 (MRX7-D ID=2)

	SW							
	1	2	3	4	5	6	7	8
Student 25 (ID=26)	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
Student 26 (ID=27)	OFF	OFF	OFF	ON	ON	OFF	ON	ON
Student 27 (ID=28)	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
Student 28 (ID=29)	OFF	OFF	OFF	ON	ON	ON	OFF	ON
Student 29 (ID=30)	OFF	OFF	OFF	ON	ON	ON	ON	OFF
Student 30 (ID=31)	OFF	OFF	OFF	ON	ON	ON	ON	ON
Student 31 (ID=32)	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
Student 32 (ID=33)	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
Student 33 (ID=34)	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
Student 34 (ID=35)	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
Student 35 (ID=36)	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
Student 36 (ID=37)	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
Student 37 (ID=38)	OFF	OFF	ON	OFF	OFF	ON	ON	OFF
Student 38 (ID=39)	OFF	OFF	ON	OFF	OFF	ON	ON	ON
Student 39 (ID=40)	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
Student 40 (ID=41)	OFF	OFF	ON	OFF	ON	OFF	OFF	ON

Student 41 (ID=42)	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
Student 42 (ID=43)	OFF	OFF	ON	OFF	ON	OFF	ON	ON
Student 43 (ID=44)	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
Student 44 (ID=45)	OFF	OFF	ON	OFF	ON	ON	OFF	ON
Student 45 (ID=46)	OFF	OFF	ON	OFF	ON	ON	ON	OFF
Student 46 (ID=47)	OFF	OFF	ON	OFF	ON	ON	ON	ON
Student 47 (ID=48)	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
Student 48 (ID=49)	OFF	OFF	ON	ON	OFF	OFF	OFF	ON

Students 49 to 72 (MRX7-D ID=3)

	SW							
	1	2	3	4	5	6	7	8
Student 49 (ID=50)	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
Student 50 (ID=51)	OFF	OFF	ON	ON	OFF	OFF	ON	ON
Student 51 (ID=52)	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
Student 52 (ID=53)	OFF	OFF	ON	ON	OFF	ON	OFF	ON
Student 53 (ID=54)	OFF	OFF	ON	ON	OFF	ON	ON	OFF
Student 54 (ID=55)	OFF	OFF	ON	ON	OFF	ON	ON	ON
Student 55 (ID=56)	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
Student 56 (ID=57)	OFF	OFF	ON	ON	ON	OFF	OFF	ON
Student 57 (ID=58)	OFF	OFF	ON	ON	ON	OFF	ON	OFF
Student 58 (ID=59)	OFF	OFF	ON	ON	ON	OFF	ON	ON
Student 59 (ID=60)	OFF	OFF	ON	ON	ON	ON	OFF	OFF
Student 60 (ID=61)	OFF	OFF	ON	ON	ON	ON	OFF	ON
Student 61 (ID=62)	OFF	OFF	ON	ON	ON	ON	ON	OFF
Student 62 (ID=63)	OFF	OFF	ON	ON	ON	ON	ON	ON
Student 63 (ID=64)	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
Student 64 (ID=65)	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
Student 65 (ID=66)	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
Student 66 (ID=67)	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
Student 67 (ID=68)	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
Student 68 (ID=69)	OFF	ON	OFF	OFF	OFF	ON	OFF	ON
Student 69 (ID=70)	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
Student 70 (ID=71)	OFF	ON	OFF	OFF	OFF	ON	ON	ON
Student 71 (ID=72)	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
Student 72 (ID=73)	OFF	ON	OFF	OFF	ON	OFF	OFF	ON

Students 73 to 96 (MRX7-D ID=4)

	SW							
	1	2	3	4	5	6	7	8
Student 73 (ID=74)	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
Student 74 (ID=75)	OFF	ON	OFF	OFF	ON	OFF	ON	ON
Student 75 (ID=76)	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
Student 76 (ID=77)	OFF	ON	OFF	OFF	ON	ON	OFF	ON
Student 77 (ID=78)	OFF	ON	OFF	OFF	ON	ON	ON	OFF
Student 78 (ID=79)	OFF	ON	OFF	OFF	ON	ON	ON	ON
Student 79 (ID=80)	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
Student 80 (ID=81)	OFF	ON	OFF	ON	OFF	OFF	OFF	ON
Student 81 (ID=82)	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
Student 82 (ID=83)	OFF	ON	OFF	ON	OFF	OFF	ON	ON
Student 83 (ID=84)	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
Student 84 (ID=85)	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Student 85 (ID=86)	OFF	ON	OFF	ON	OFF	ON	ON	OFF
Student 86 (ID=87)	OFF	ON	OFF	ON	OFF	ON	ON	ON
Student 87 (ID=88)	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
Student 88 (ID=89)	OFF	ON	OFF	ON	ON	OFF	OFF	ON
Student 89 (ID=90)	OFF	ON	OFF	ON	ON	OFF	ON	OFF
Student 90 (ID=91)	OFF	ON	OFF	ON	ON	OFF	ON	ON
Student 91 (ID=92)	OFF	ON	OFF	ON	ON	ON	OFF	OFF
Student 92 (ID=93)	OFF	ON	OFF	ON	ON	ON	OFF	ON
Student 93 (ID=94)	OFF	ON	OFF	ON	ON	ON	ON	OFF
Student 94 (ID=95)	OFF	ON	OFF	ON	ON	ON	ON	ON
Student 95 (ID=96)	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
Student 96 (ID=97)	OFF	ON	ON	OFF	OFF	OFF	OFF	ON

This completes the setup of the MLA-200s.

4. Setting up MRX7-Ds

The MRX7-D is the core of the Music Laboratory System and controls the audio network.

Twenty-four MLA-200s for students can be connected to one MRX7-D. By using four MRX7-Ds in one audio network, one MLA-200 for the instructor and a maximum of ninety-six MLA-200s for students can be connected.

Each MRX7-D in an audio network is differentiated by the unique ID that is specified. ID=1 is used for the instructor and students 1 to 24, ID=2 for students 25 to 48, ID=3 for students 49 to 72, and ID=4 for students 73 to 96.

The MRX7-Ds are set up using MTX-MRX Editor, installed on the Windows computer. Open the MRX7-D setup file in MTX-MRX Editor, and then load it onto the MRX7-D to complete the setup.

For details on the installation and settings of MTX-MRX Editor, refer to the MRX Setup Manual.

4-1. Before turning on MRX7-D, set the rotary switch and DIP switch.

Specify the following settings.

MRX7-D ID=1 (instructor and students 1 to 24)

Rotary switch=1, DIP switch=All switches set to OFF (up)
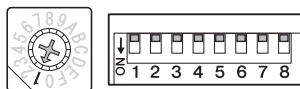
MRX7-D ID=2 (students 25 to 48)

Rotary switch=2, DIP switch=All switches set to OFF (up)
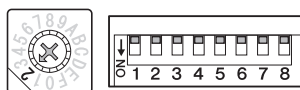
MRX7-D ID=3 (students 49 to 72)

Rotary switch=3, DIP switch=All switches set to OFF (up)
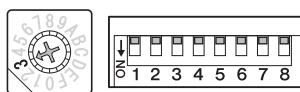
MRX7-D ID=4 (students 73 to 96)

Rotary switch=4, DIP switch=All switches set to OFF (up)
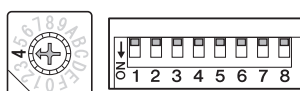
4-2. Using an Ethernet cable, connect the Windows computer installed with MTX-MRX Editor and the MRX7-Ds to be set up.

Connection diagram
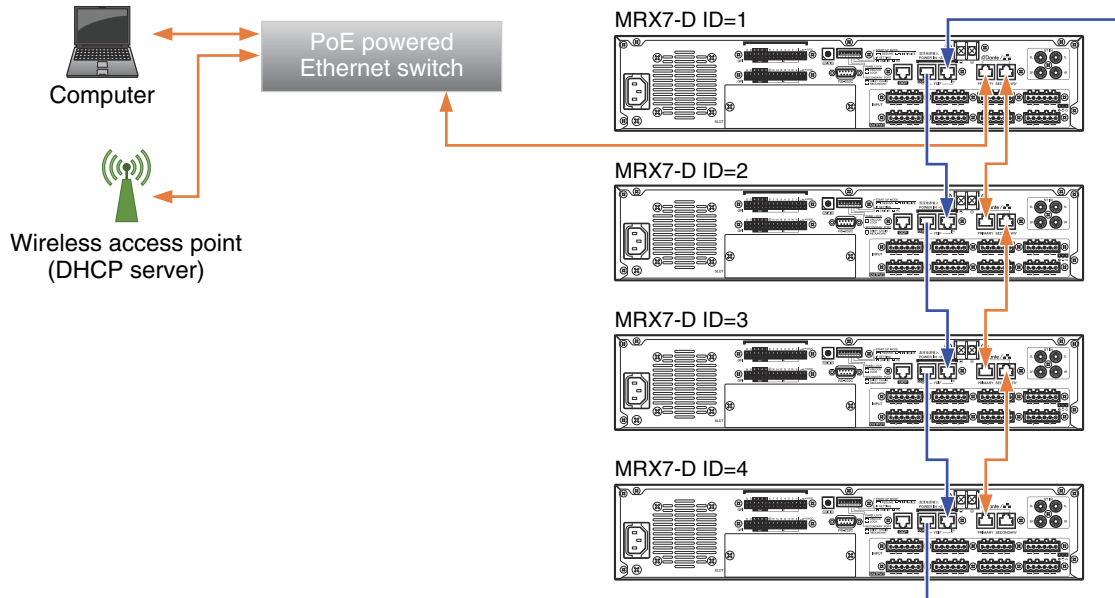
With the Ethernet switch in the center, connect the wireless access point (DHCP server) and MRX7-Ds with Ethernet cables. The MRX7-Ds connect daisy chain in order from ID=1.

When using multiple MRX7-Ds, they must be connected via the YDIF ports. The connections between the ports are as follows.

YDIF OUT port of MRX7-D ID=1 → YDIF IN port of MRX7-D ID=2

YDIF OUT port of MRX7-D ID=2 → YDIF IN port of MRX7-D ID=3

YDIF OUT port of MRX7-D ID=3 → YDIF IN port of MRX7-D ID=4

YDIF OUT port of MRX7-D ID=4 → YDIF IN port of MRX7-D ID=1

When there are two, connect the YDIF OUT port of ID=2 to the YDIF IN port of ID=1. When there are three, connect the YDIF OUT port of ID=3 to the YDIF IN port of ID=1.

4-3. Turn on MRX7-D.

4-4. Start MTX-MRX Editor on the Windows computer.

4-5. In MTX-MRX Editor, select "File" menu → "Open", and then open the previously downloaded MRX7-D setup file.

The file to be opened differs depending on the number of MRX7-Ds that are connected. Select the setup file according to the number of devices in the system.

4-6. In MTX-MRX Editor, select "System" menu → "Network Setup", and then select the name of the network card of the computer.

At this time, a dialog box appears if the firmware of MRX7-D is not a compatible version for MTX-MRX Editor. Follow the on-screen instructions to update the firmware.

4-7. Click the "ONLINE" button in the upper-right corner of MTX-MRX Editor.

The Synchronization dialog box appears.

4-8. Select the "To Device" check box, and then click the "OK" button.

A different dialog box appears.

4-9. Select the check box for the system to be put online, and then click the "ONLINE" button.

The MRX7-D setup is loaded. When loading is completed, the dialog box closes automatically.

This completes the setup of the MRX7-Ds.

5. Setting up the audio network

Communications between the instructor and students as well as audio of the performance is sent and received through the audio network. In the Music Laboratory System, Dante has been adopted as the structure of the audio network. Although software called Dante Controller is normally used to set up a Dante audio network, its high degree of flexibility requires knowledge about audio networks.

Therefore, the dedicated software ML Config Tool is used in the Music Laboratory System to make setup easier. Be sure to copy ML Config Tool beforehand onto the Windows computer that was using MTX-MRX Editor.

NOTE
In the Dante audio network of the Music Laboratory System, both the ID number and MAC address (physical address) of each device are used to control communication. Therefore, the audio network must be set up in all of the following cases.

• The system is installed for the first time.

• The number of MLA-200s or MRX7-Ds is increased or decreased.

• The ID of a device is changed with the DIP switch.

• A device is replaced.

5-1. Connect all MLA-200s to Ethernet switches.

The [STATUS] indicator flashes while the device is starting up. The indicator lights up when the device is finished starting up.

Check that the [STATUS] indicator of all MLA-200s are lit.

Connection diagram
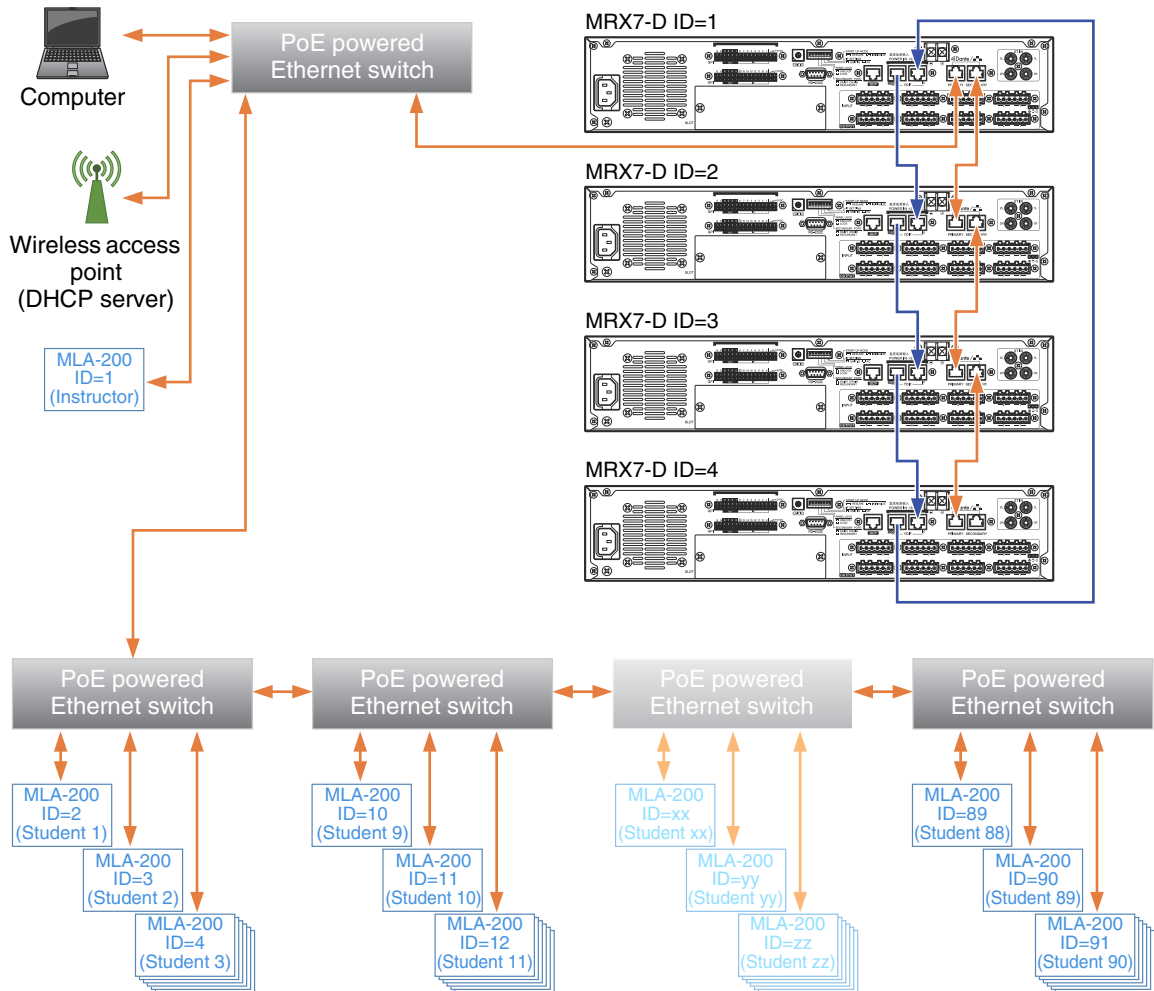
NOTE

* Before making connections, be sure to complete the procedure in "3. Setting up MLA-200s" (Page 7). The changes to the DIP switch settings are applied when the Ethernet cable is connected and the MLA-200 is turned on. Before changing the settings, unplug the Ethernet cable from the MLA-200.

* The Ethernet switches and MLA-200s can be connected in any configuration, depending on the layout of the classroom.

* In a system with a large number of students, it may take some time for all [STATUS] indicators to light up after the MLA-200 (ID=1) for the instructor is finished starting up.

* When connecting the Windows computer used for setup, be sure to plug an Ethernet cable into the computer's built-in RJ45 network connector.

5-2. Start the ML Config Tool installed onto the Windows computer.

A window appears.
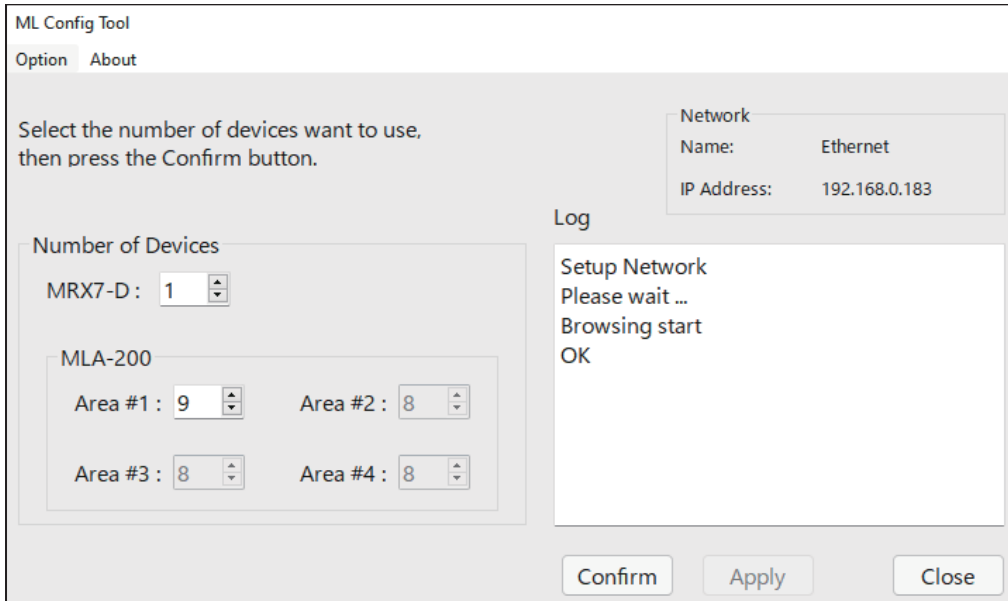
5-3. Select "Network List" on the "Option" menu.

A window appears.
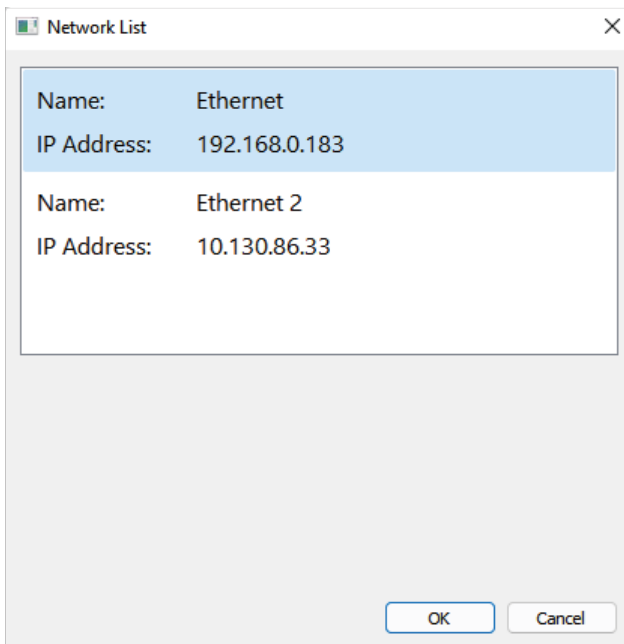
5-4. Select the network adapter connected to the Music Laboratory System, and then click the "OK" button.

The connection process, including restarting the application, will take some time.

When the process is finished, the name of the selected network adapter appears in the upper right of the screen.

Network
Name: Ethernet
IP Address: 192.168.0.183
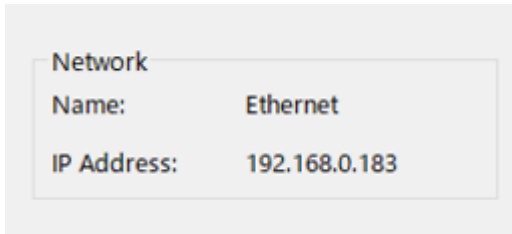
When the Music Laboratory System is correctly connected, the IP address of the network will appear as 192.168.0.xxx (where "xxx" is any number).

5-5. In "The number of MRX7-D" box, type the number of MRX7-Ds to be used.

5-6. In "The number of MLA-200" box, type the number of MLA-200s connected for each MRX7-D ID.

For example, if there is one MRX7-D, only "Area #1" will be available.

Include the MLA-200 for the instructor with the number of devices for Area #1. Area #1 can be set between 2 (for 1 instructor + 1 student) and 25 (for 1 instructor + 24 students); Area #2 to #4 can be set between 1 (for 1 student) and 24 (for 24 students).

5-7. Click the "Confirm" button.

The software automatically checks that the MRX7-Ds and MLA-200s are correctly set up. If they are correctly set up, "Succeed" appears in the "Output" box on the right side of the window. If this does not appear, return to the previous steps and check each of the settings.

5-8. Check that "Succeed" appears, and then click the "Apply" button.

This completes the setup of the audio network.

6. Setting up ML Touch

ML Touch is an iPad application used by instructors to operate the entire system. It can be downloaded from the App Store.

This describes the setup operations that must be performed before the application can be used. For details on using ML Touch, refer to the ML Touch User's Guide.

6-1. Download ML Touch from the App Store.

6-2. Tap the ML Touch icon to start the application.

The initial setup window appears.

Then, if there are no problems, the Home window appears.

If an error appears, check the following.

- Are the MRX7-Ds connected and set up correctly?
- Are the MLA-200s connected correctly and are there no duplicate IP addresses?

If an error appeared, the Home window does not appear. Exit ML Touch, and then start it again.

If the iPad is not connected via Wi-Fi, make settings in iOS.

This completes the setup of ML Touch.

7. Connecting audio devices

Connect audio devices, such as the instructor's microphone or a CD player used for teaching, to the MRX7-D set to ID=1.

NOTE
Use the Euroblock connectors on the MRX7-D to make the microphone input and speaker output connections.
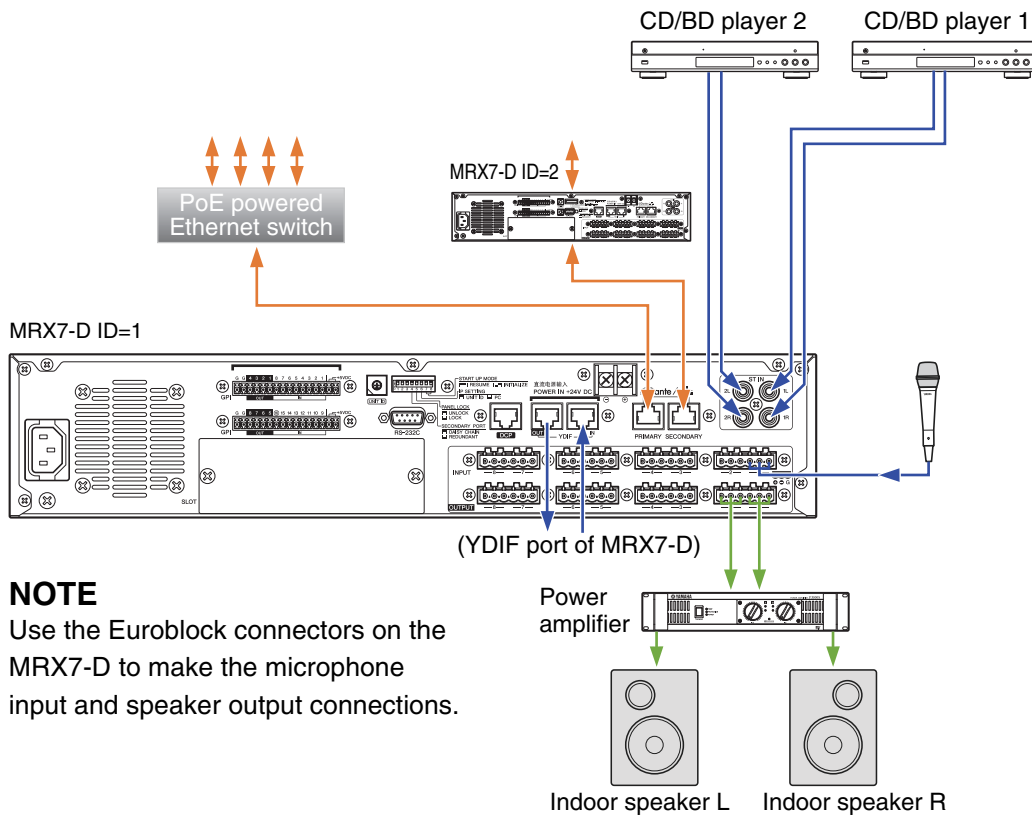
7-1. Turn off all devices to be connected.

7-2. Connect the audio devices as shown above.

Use the Euroblock connectors on the MRX7-D to make connections for the microphone input and power amplifier (powered speakers). For details on using the Euroblock connectors, refer to "Euroblock plug connection" in the MRX7-D Owner's Manual.

When using multiple MRX7-Ds, connect them via their YDIF ports.

7-3. Turn on the MRX7-Ds.

When using multiple MRX7-Ds, turn them on in order, starting with ID=1.

7-4. Turn on the power amplifier (powered speakers).

7-5. Start ML Touch.

7-6. Adjust the volume of the power amplifier.

At this time, adjust the volume to check that the connection has been made.

7-7. **Use ML Touch to check that sound from the microphone or CD player is output from the speakers.**

If no sound is output, return to the previous steps and perform each one again.

This completes the connection of the audio devices.

8. Operation check

After completing this trial setup, check communication with MLA-200s for students.

8-1. **Turn on all connected devices.**

8-2. **Start ML Touch.**

8-3. **Perform each function to check that it operates correctly.**

For details on operating ML Touch, refer to the ML Touch User's Guide.

The operation check is completed when communication with all MLA-200s can be performed correctly.

9. Installing onto an instrument

After performing the operation check, unplug all cables connected to the MLA-200s, and then install the MLA-200 onto the instrument.

The MLA-200 can be installed in the following two ways.

- Attaching to the instrument with the included mounting screws

- Placing on a flat surface of the instrument with the included rubber feet

Installation precautions (attaching to the instrument with included screws)

- Install so that the cables on the side panel face downward.

- Install so that there is no interference with headphones or connectors on the instrument.

- Install so that the knobs of the MLA-200 and connected cables do not extend past the body of the instrument.

- Be careful not to trip over connected cables while performing operations.

- Be sure to use the included screws for the installation.

- In order to prevent wood parts of the instrument from cracking, install the screws at least 15 mm inside the edge of the leg or stand of the instrument onto which the MLA-200 is mounted.

Installation procedure

9-1. Attach the mounting bracket to the MLA-200.

Use the included mounting screws for installing the product.

Mounting bracket   Mounting bracket
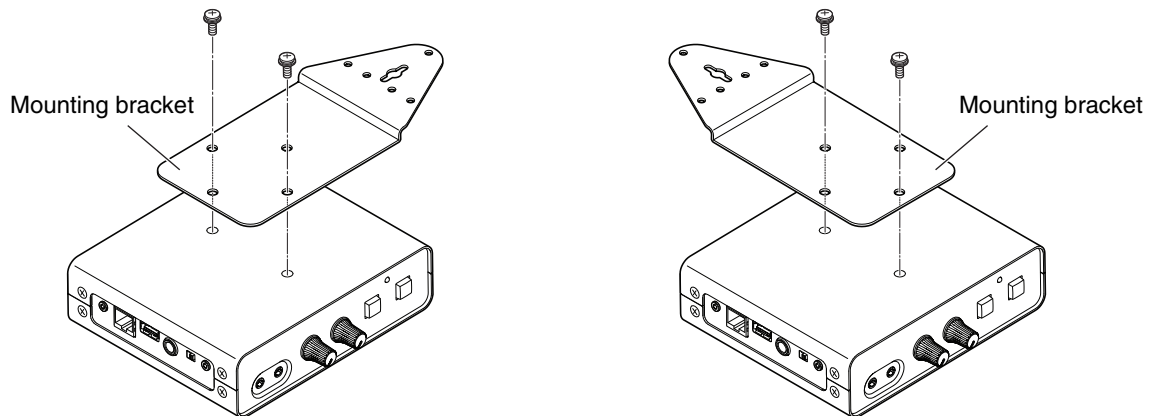
9-2. While holding the MLA-200 in the desired position, drill four holes (for attaching the mounting bracket) into the instrument's stand (leg).

Drill holes with a depth of 15 mm and diameter of 2.5 mm at the center of the screw holes, positioned at least 15 mm inside the edge of the stand (leg). Be careful not to drill the holes too deep. In addition, be sure to drill all four holes.
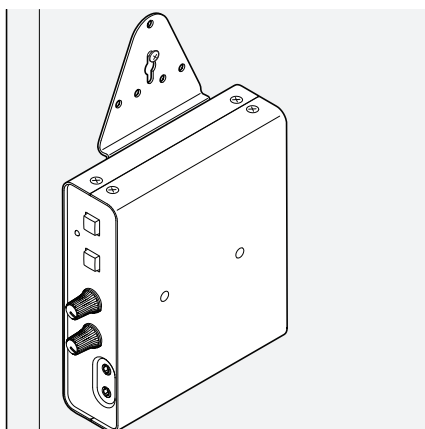
NOTE
If the exterior of the instrument has a polished (mirror) finish, also countersink the holes to about 6 to 6.5 mm in diameter.

6 to 6.5 mm

15 mm

2.5 mm
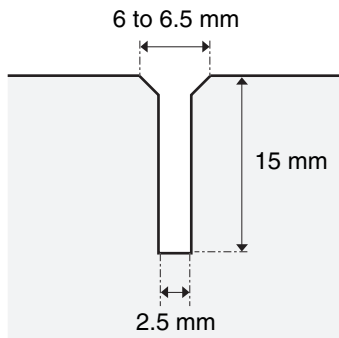
9-3. Drive in the center screw about halfway.
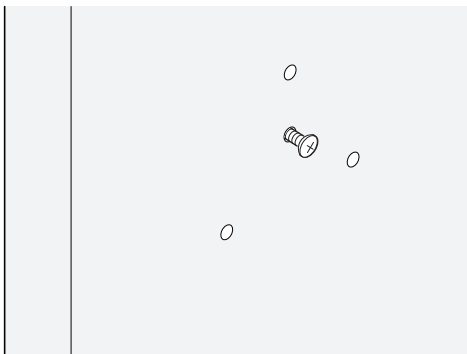
9-4. Hook the guide hole at the center of the mounting bracket onto the center screw.

9-5. Install and tighten the other screws.
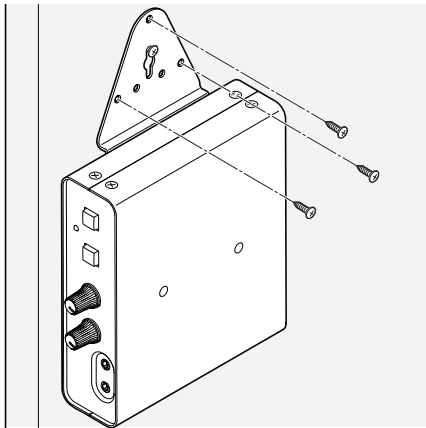
9-6. Tighten the center screw last.

9-7. Make sure that no screw is loose.

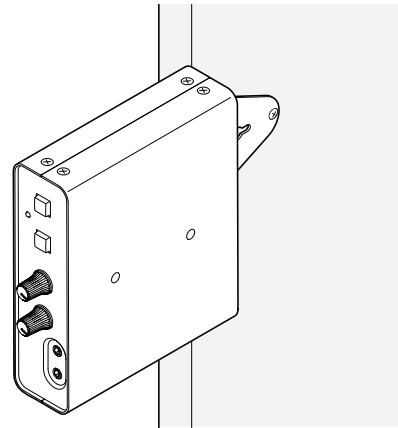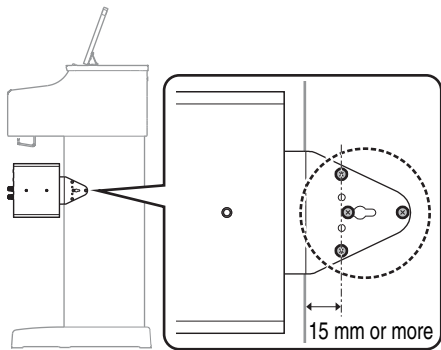This completes the installation onto the instrument.

Installation examples

Mounted with screws at the top
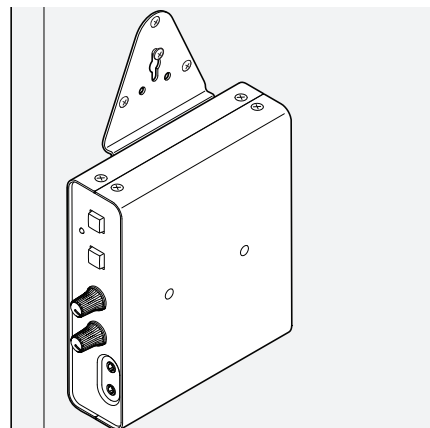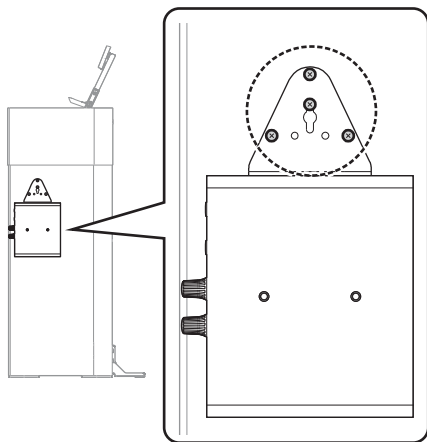
This is the most common installation method. Use this method when the stand (leg) of the instrument is wide.

Mounted with screws on the side

Use this installation method when the instrument stand is toward the back of the keyboard.

As described in "Installation precautions (attaching to the instrument with included screws)" (Page 21), maintain a distance of 15 mm or more between the center screw and the edge of the stand, and install by using all four screws.

Mounted with screws at the bottom
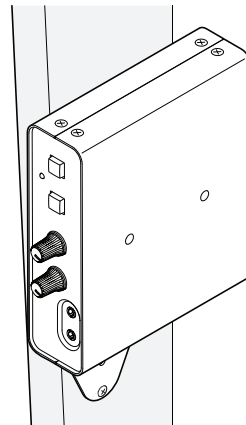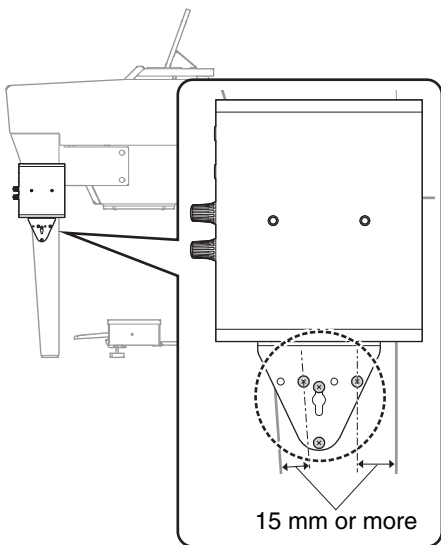
If the instrument has a thin stand, mount the MLA-200 with the screws at the top, or at the bottom using this installation method. With this method, also maintain a distance of 15 mm or more between the center screw and the edge of the stand, and install by using all four screws, as described in "Installation precautions (attaching to the instrument with included screws)" (Page 21).

When placed on a flat surface

When placed on a flat surface of the instrument, be sure to attach the included rubber feet to prevent slipping.

The installation positions should be about 15 mm inside each edge as shown below. Be sure to attach all four.

⚠ **Caution**

Position the MLA-200 so that no one will trip and nothing will catch on the cables. If the MLA-200 falls, it may be damaged or cause injuries.

Less than 15 mm

Less than 15 mm
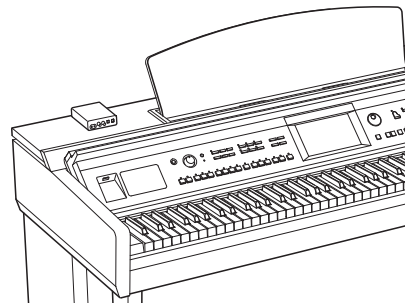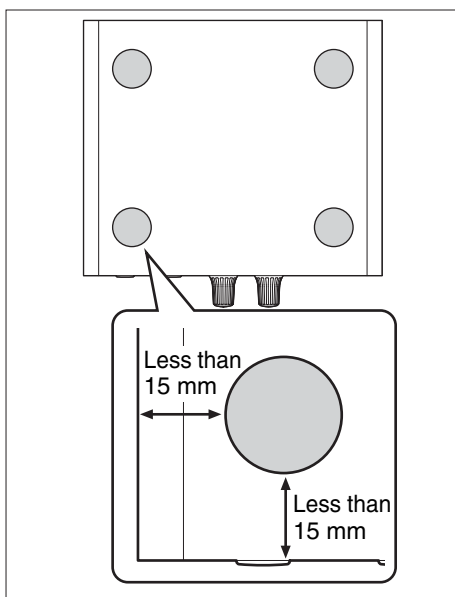
10. Final operation check

After installing the MLA-200s onto instruments and setting up the devices, reconnect the cables, and then perform the final operation check.

The procedure for this operation check is the same as that described in "8. Operation check" (Page 20), but this time the operation is checked after setting up the system in the classroom.

10-1. Adjust the volume of the power amplifier (powered speakers) to the level necessary for use in the actual classroom.

10-2. Check that the MLA-200 for the instructor as well as audio devices, such as the microphone or CD player, can be operated from ML Touch.

10-3. Check the communication between ML Touch and the MLA-200s for students.

This completes the final operation check.

11. Troubleshooting

Symptom	Cause	Remedy
A device does not turn on.	• The Ethernet cable is disconnected.	Disconnect, and then reconnect.
	• PoE power is not supplied by the network switch.	Make sure that a PoE powered Ethernet switch is used.
	• The PoE power supplied by the network switch is insufficient.	Check the power supply specifications of the Ethernet switch.
No sound is output./ Minimal sound is output.	• The [MASTER VOL.] knob or [MY VOL.] knob is incorrectly adjusted.	Make sure that both knobs are turned to the 12 o'clock position.
	• The master volume of instrument settings are incorrect.	Adjust the master volume of instrument.
	• Headphones are incorrectly connected.	Disconnect, and then reconnect.
		Change to a microphone headset compatible with the CTIA standard.
	• The [INPUT GAIN] switch is incorrectly set.	Make sure that it is set to "+10 dB".
A humming sound can be heard.	• The power supply for the Ethernet switch is not grounded.	Make sure that the Ethernet switch is grounded. Connect to a 3-pin electrical outlet.
	• An STP cable is not being used.	Change the Ethernet cable to an STP cable.
The sound from the microphone is not transmitted to the other party.	A microphone headset that is not compatible with the CTIA standard is being used.	Change to a microphone headset compatible with the CTIA standard.
		A conversion cable that converts from the OMTP standard to the CTIA standard is being used.
	The microphone headset is connected to the [DUO] jack.	Connect the microphone headset to the [MAIN] jack. A microphone headset connected to the [DUO] jack operates only when a microphone headset is also connected to the [MAIN] jack (DUO mode).
Cannot communicate with ML Touch.	• The wireless access point and iPad are not connected.	Check the Wi-Fi settings for the iPad, and then correctly select the specified wireless access point.
	• The DIP switch settings on the MLA-200 are incorrect.	Check that the ID specified with the DIP switch is the intended ID.
	• The ID of the MRX7-D is incorrectly specified.	Check that it is the intended ID.
	• The network address is incorrectly specified.	Check the DHCP server settings. Specify according to the table in step 2-3.

Symptom	Cause	Remedy
Cannot communicate with the audio network.	• The audio network is incorrectly set up.	Specify settings according to "5. Setting up the audio network".
	• The network address is incorrectly specified.	Check the DHCP server settings. Specify according to the table in step 2-3.
"Succeed" did not appear after the "Confirm" button was clicked during the audio network setup.	A network adapter other than that for the wired RJ45 network connector has been selected.	Select the network adapter connected to the Music Laboratory System.