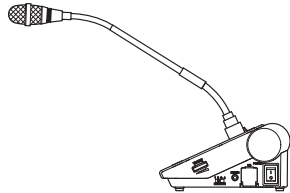


Instruction Manual

ATCS-60

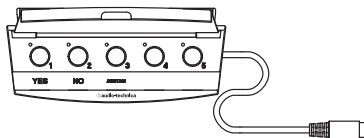
Infrared Wireless Conference Microphone System



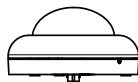
Conference microphone unit
ATCS-M60a/ATCS-M65
Dedicated microphone
ATCS-60MIC



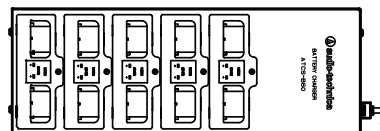
Master control unit
ATCS-C60a



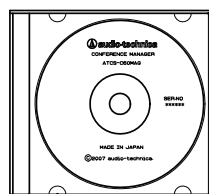
Voting module
ATCS-V60



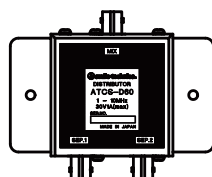
IR transmitter/receiver unit
ATCS-A60



Battery charger
ATCS-B60



Conference Manager
(extended system)
ATCS-C60MAG



Distributor
ATCS-D60

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1. Safety Instructions

Important information

Warning:

To prevent fire or shock hazard, do not expose this apparatus to rain or moisture.

Caution:

Do not expose this apparatus to drips or splashes.

To avoid electric shock, do not open the cabinet.

Refer servicing to qualified personnel only.

Do not expose this apparatus to excessive heat such as sunshine, fire or the like.

Do not subject this apparatus to strong impact.

This apparatus should be located close enough to the AC outlet so that you can easily grasp the power cord plug at any time.

In case of emergency, disconnect the power cord plug of this apparatus quickly.

This apparatus should be located close enough to the AC outlet so that you can easily grasp the AC adapter at any time.

In case of emergency, disconnect the AC adapter quickly.

Do not place any objects filled with liquids, such as vases, on this apparatus.

To prevent fire, do not place any naked flame sources (such as lighted candles) on this apparatus.

Do not install this apparatus in a confined space such as a bookcase or similar unit.

Install this apparatus only in places where ventilation is good.

To prevent fire, do not cover the ventilation of this apparatus with newspapers, tablecloths, curtains, etc.

This apparatus with Class I construction shall be connected to an AC outlet with a protective grounding connection.

Batteries caution

Keep batteries out of the reach of children.

Observe correct polarity as marked.

Do not expose batteries to excessive heat, such as sunshine, fire or the like.

Always consider environmental issues and follow local regulations when disposing of batteries.

Remove depleted battery immediately.





Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

Do not use a leaking battery. If battery leakage occurs, avoid contact with skin.

If contact occurs, immediately wash skin thoroughly with soap and water.

If battery leakage comes into contact with your eyes, immediately flush them with water and seek medical attention.

For customers in the USA/Canada Important Safety Instructions

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>Caution: To prevent electric shock, do not remove the cover. There are no user-serviceable parts inside. Internal adjustments are for qualified professionals only. Refer all servicing to qualified service personnel.</p>		
	<p>The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product enclosure that may be of sufficient magnitude to constitute a risk of shock to persons.</p>	
	<p>The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.</p>	

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other.
A grounding-type plug has two blades and a third grounding prong.
The wide blade or the third prong are provided for your safety.
If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged; liquid has been spilled or objects have fallen into the apparatus; the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



FCC Notice

Warning:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution:

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For customers in Canada IC statement

CAN ICES-3 (B)/NMB-3(B)

Notes on use

■Microphone Unit

- To move the microphone unit, pick it up by its base; do not lift or pull on the microphone.
- Slowly bend and straighten the flexible part of the microphone. Do not bend it with excessive force.
- Do not drop the unit.
- Do not cover the infrared transmitting/receiving section.
- When the microphone units are too close together, high sound volume may cause acoustic feedback.
In this case, increase the space between the microphone units or turn down the volume.
- After installing a new battery, confirm that the power LED turns on.

■Installing

- Do not install the IR transmitter/receiver units or the microphone units near infrared-emitting objects such as direct sunlight, incandescent lamps, halogen lamps, inverter fluorescent lamps, or plasma displays.
- Noise may be generated by interference regardless of the operating distance between the IR transmitter/receiver and the microphone unit; in this case, move transmitter/receiver unit away from infrared-emitting objects.

■DVD-ROM (Conference Manager)

- Handle with care to keep fingerprints, dust, or water (or oil) drops off the recording surface (blue side).
- Be careful to avoid scratching the recording surface (blue side).
- Use a felt-tip pen to write on the label. Do not use a pen with a hard tip, such as a ballpoint pen.

■Battery charger

- If the charging terminal is dirty, poor contact will prevent the battery from being charged properly. Periodically clean the charging terminals.
- The battery charger may become hot during charging. Use it in a well-ventilated area.
- After the battery is fully charged, turn off the battery charger or remove the batteries.

■Battery(optional)

- The newly purchased battery is not charged.
- If the battery is installed on the microphone unit and left with the power switch ON for a long period, the battery may become over-discharged. IN such case, charging the battery one time may be insufficient, so please charge it again.
- The battery is dedicated to the microphone unit (ATCS-M60a/ATCS-M65). Do not use it for other applications.
- Dispose of used batteries properly as industrial waste, or contact our business office in your area.

2. Overview of System Operation

2.1. Features

2.1.1. Using an infrared wireless system

There is no need to wire the microphone units, allowing for easy layout changes in conference rooms. In addition, there is no risk of interference or eavesdropping.

2.1.2. High reliability

The conference unit hardware has a self-diagnostic function. In addition, it is possible to recover from service interruptions due to battery replacement or PC problems. This is a highly reliable system.

2.1.3. Simple operation and intuitive display

Graphic display of conference conditions on optional PC and optional touch panel operation allow for easy organization of conferences.

2.1.4. Well-developed functions (multimedia function version)

When the system is connected to a PC, the following functions are available: video and sound recording, camera control, and switcher control. Display of remaining speech time and current time are also available.

2.1.5. Automatic operation (supported by ATCS-M60a only)

You do not need to push the TALK (speech) button on the microphone unit. Just begin speaking.

2.1.6. Simultaneous interpretation mode (multimedia function version)

The system can be connected with a simultaneous interpretation system.

2.2. Functions

2.2.1. Speech function

Settings of the master control unit and the microphone unit allow speaking management as shown below.

Setting for number of speaking microphones

It is possible to set the number of microphones that are available for simultaneous use (number of “speaking microphones”) in a range from 1 to 5. This can be set via the PRIORITY left switch on the master control unit or through Conference Manager.

Setting for number of priority microphones

It is possible to set the number of microphones that can be used at any time (number of “priority microphones”) in a range from 0 to 4. This can be set via the PRIORITY right switch on the master control unit or through Conference Manager. When this is set, the speaking priority is assigned to microphone unit IDs in order from the smallest to the largest number.

(Refer to section 6.5 “Setting the ID switches”.)

Setting for number of non-priority microphones

This function sets the number of microphones other than priority microphones (number of “non-priority microphones”), based on the number of speaking microphones and the number of priority microphones, as shown in the table below.

Setting the master control unit			Setting for number of non-priority microphones
Number of speaking microphones (PRIORITY left switch)	Number of priority microphones (PRIORITY right switch)		
1	0	...	1
2	0	...	2
2	1	...	1
3	0	...	3
3	1	...	2
3	2	...	1
4	0	...	4
4	1	...	3
4	2	...	2
4	3	...	1
5	0	...	5
5	1	...	4
5	2	...	3
5	3	...	2
5	4	...	1

* Number of speaking microphones – number of priority microphones = number of non-priority microphones.

* It is not possible to set the number of priority microphones greater than the number of speaking microphones.

* For the setting method of the master control unit, refer to section 10 “How to Operate the Basic System”.

Speaking mode

It is possible to add the following settings to the speaking operation.

- Automatic mode (supported by ATCS-M60a only).
Speaking toward a microphone automatically turns it on.
The microphone shuts off after a predetermined period during which no sound is input.
The vocal volume needed to turn the microphone on and the amount of time it will remain on without speaking can be set on the master control unit or through Conference Manager. The number of microphone units that can operate automatically is determined by the set number of speaking microphones.
- Manual mode
It is possible to switch the speaking state by pressing the TALK button.
The following conference modes can be used only in manual mode.
(It is possible to speak from the priority microphones anytime, regardless of the following conference modes.)

<FIFO (First In, First Out) mode>

Microphone is turned on by pressing the TALK button. But once the number of non-priority microphones in use reaches the set number, microphone units on which the TALK button is subsequently pressed will switch to the speaking standby state (up to 10 microphone units can simultaneously be in standby).

<LIFO (Last In, First Out) mode>

Microphone is turned on anytime by pressing the TALK button. But once the number of non-priority microphones in use reaches the set number, the pressing the TALK button on an additional microphone unit will turn off the microphone that was first turned on.

<Chairperson priority mode> (usable only during use of Conference Manager)

It is possible to turn a microphone on and off through PC operation.
When the TALK button on a microphone unit is pressed, its microphone switches to the speaking standby state until the speaking mode is turned on via PC.

2.2.2. Display function

Indication of low battery level (microphone unit)

When the remaining power is low, the light ring LED and power LED flash.

Speaking ON (microphone unit)

On a microphone unit with speaking turned ON, the light ring LED and the TALK LED are lit.

Speaking OFF (microphone unit)

On a microphone unit with speaking turned OFF, the light ring LED and the TALK LED are not lit.

Speaking standby (microphone unit)

On a microphone unit in the speaking standby state, the light ring LED and the TALK LED flash.

Speech request (Microphone unit)

When the microphone unit is in Speech Request mode, the light ring LED and TALK LED flash on and off.

Audio level meter (Master control unit)

This indicates the audio level on the master control unit.

Transmitting /receiving indicator (Master control unit)

This indicates the infrared transmitting/receiving condition.
(Speaking ON, speaking OFF, speaking standby, speaking time, speaking standby request order, battery remaining capacity warning, voting status, etc.)

2.2.3. Presetting of conference (preset mode)

It is possible to preset the sound volume level of the master control unit and the individual microphone units (sound volume level and voice detection level).

* When the preset mode is not used, the above presetting is not available.

* For more information about the preset mode, contact our sales department (page 55).

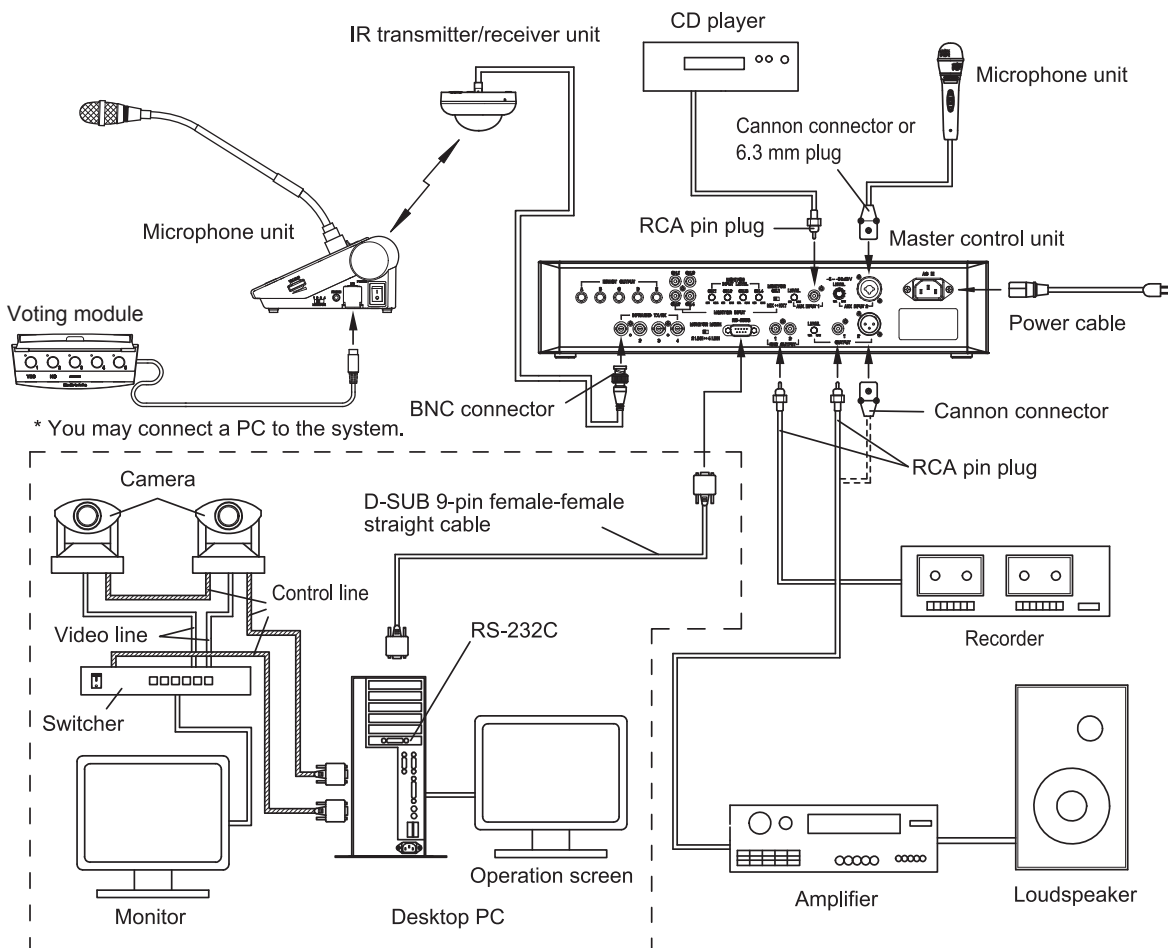
3. System Components and Connection Diagram

3.1. System components

The components of this system are described below.

- Microphone unit
 - • • To pick up and monitor speech.
- Voting module
 - • • To carry out voting.
- Master control unit
 - • • For integrated management of the microphone units.
 - It is also possible to connect with external devices such as wired microphones, PCs, loudspeakers and recording devices.
- IR transmitter/receiver unit
 - • • To transmit and receive infrared signals.
- Battery charger
 - • • To charge batteries for the microphone units.
- Conference manager
 - • • To control speaking modes of microphone units and operation of peripheral devices, such as cameras and switcher, from a PC.

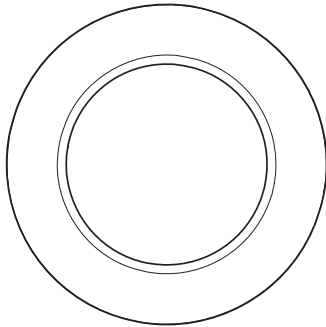
3.2. System connection diagram



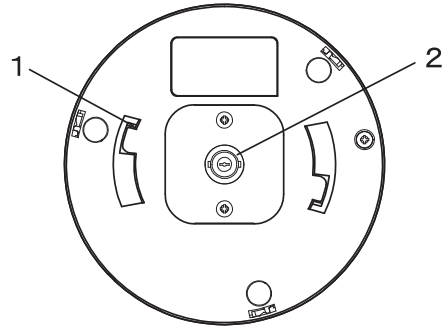
4. IR Transmitter/Receiver Unit

4.1. Part names and functions of the IR transmitter/receiver unit

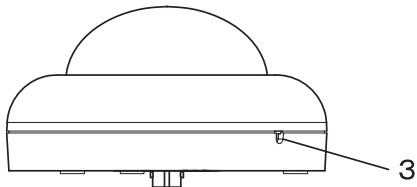
<IR transmitter/receiver unit (top view)>



<IR transmitter/receiver unit (bottom view)>



<IR transmitter/receiver unit (side view)>



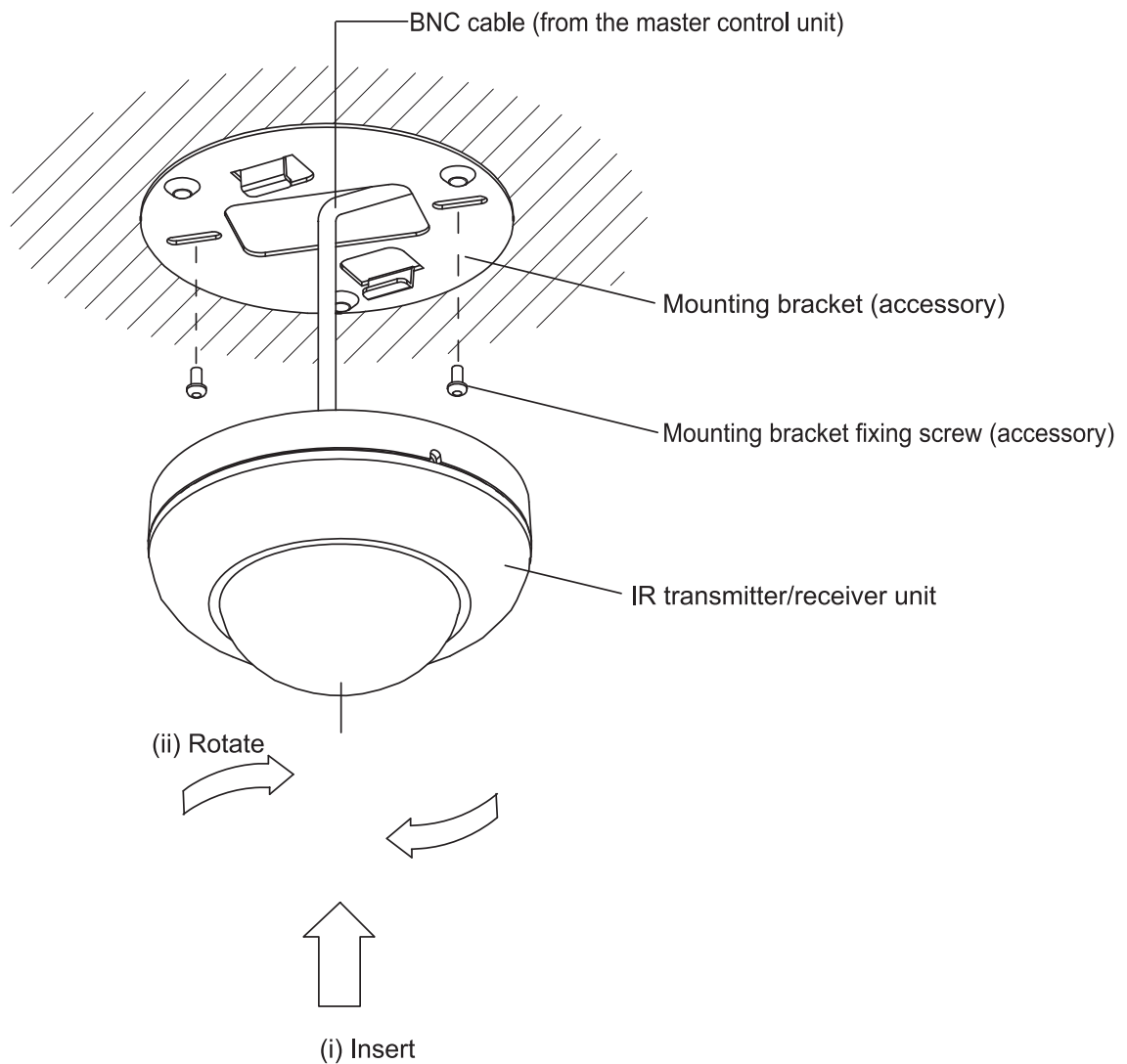
1. Mounting hook ▪ ▪ ▪ This is used to mount the unit on the mounting bracket (accessory).
2. BNC connector ▪ ▪ ▪ For wiring, refer to section 4.2 “Installation of IR transmitter/receiver unit” and section 9.2 “Wiring between IR transmitter/receiver units and master control unit when using distributors” and section 9.3 “Checking the wiring design”.

* The BCN cable is not included.

3. Power LED ▪ ▪ ▪ ▪ This LED will light when the master control unit turns ON after wiring.

4.2. Installation of IR transmitter/receiver unit

Installation of IR transmitter/receiver unit (when the mounting bracket is used)

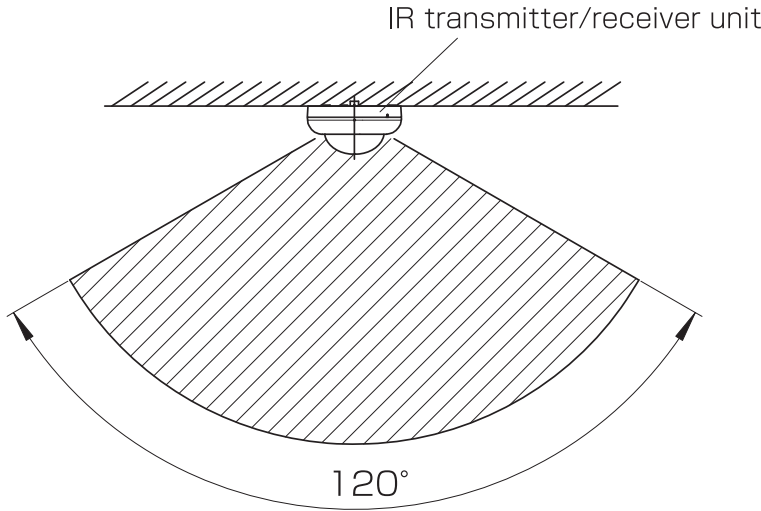


(i) Checking the mounting hook position, mount the IR transmitter/receiver unit on the mounting bracket.

(ii) Then, rotate the IR transmitter/receiver unit clockwise to fasten it securely.

* Be sure that the IR transmitter/receiver unit is securely fastened.

4.3. Infrared operating range of the IR transmitter/receiver unit(image)



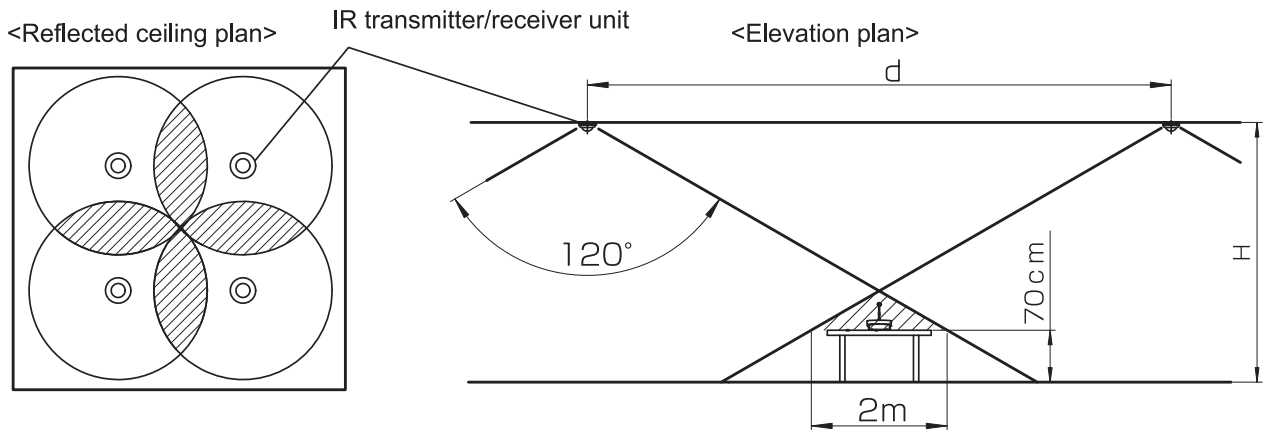
* Infrared operating distance is approximately 5 m and the transmitting/receiving range is approximately 120 degrees.

CAUTION

- Install each microphone unit so that multiple IR transmitter/receiver units are visible from it.
- Do not cover the infrared transmitting/receiving sensor with your hands.

4.4. Installation diagram of IR transmitter/receiver units and microphone units

a) When the IR transmitter/receiver units are installed on the ceiling



H = the height of the ceiling (m)
d = the distance between IR transmitter/receiver units (m)

* Be sure to overlap the infrared operating areas by approximately 2 m.

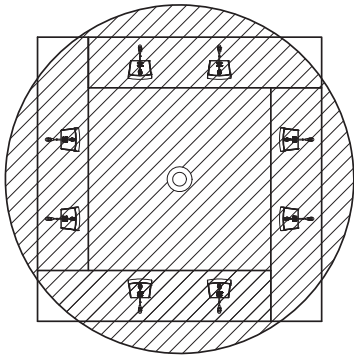
Example
(When the height of a desk is 70 cm)

Height of the ceiling, H	Interval, d
2.7m	Within 4.9 m
3.0m	Within 6.0 m
3.5m	Within 6.3 m
5.5m	Within 5.5 m

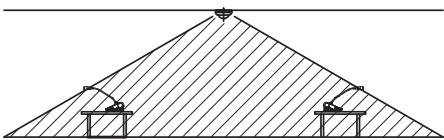
Examples of square arrangements

In a little room

<Reflected ceiling plan>

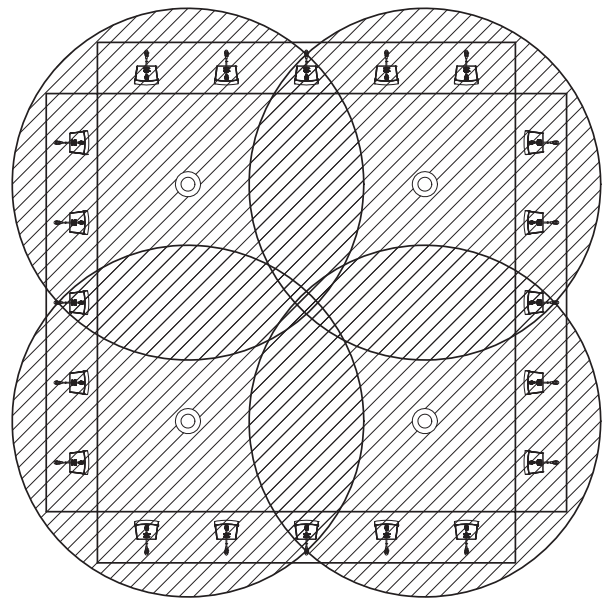


<Elevation plan>

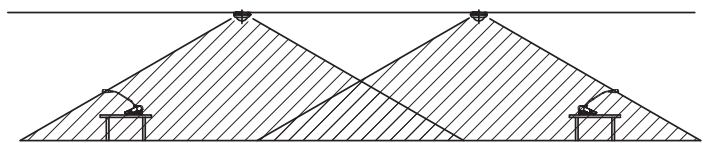


In a large room

<Reflected ceiling plan>

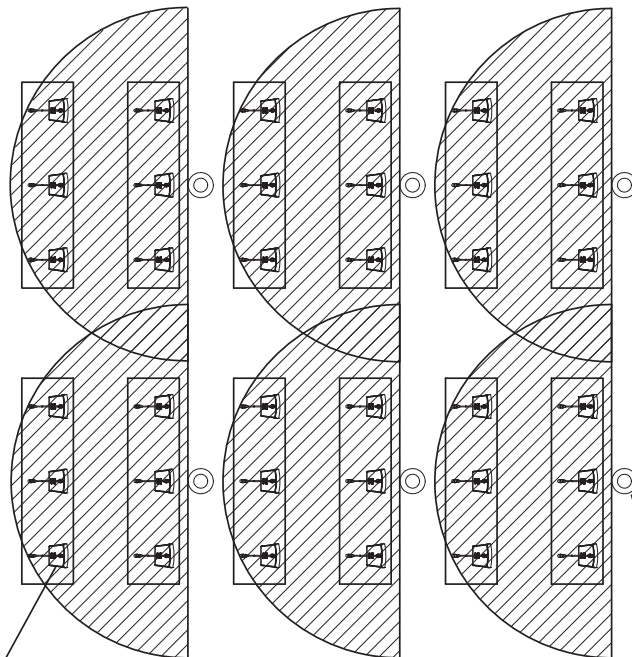


<Elevation plan>



Example of school type arrangement

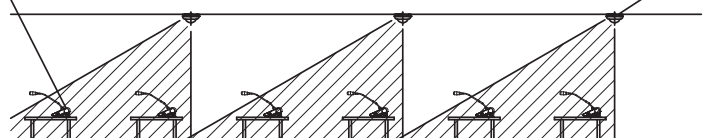
<Reflected ceiling plan>



Microphone unit

IR transmitter/receiver unit

<Elevation plan>



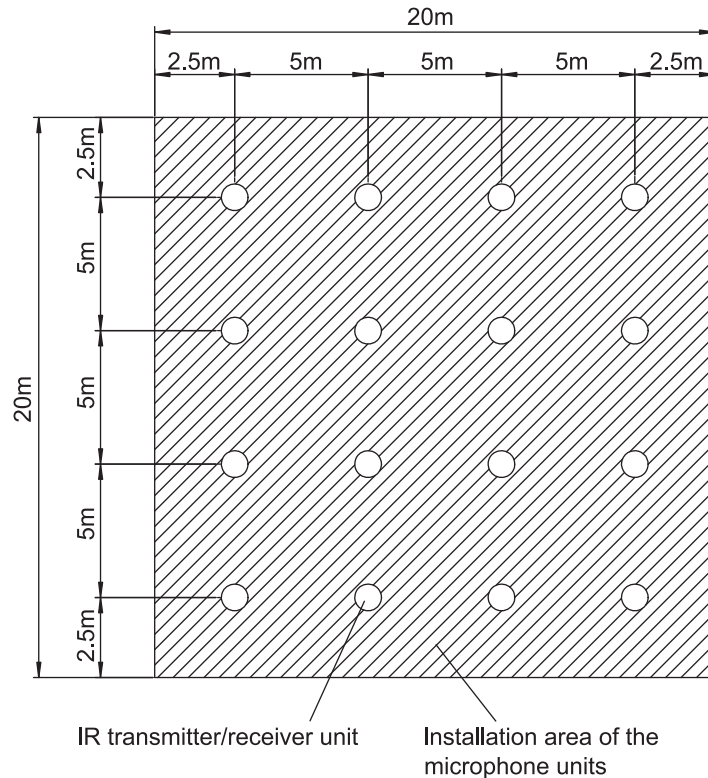
Arrange the IR transmitter/receiver units (up to 16 units) so that all the microphones units can be laid out within covered areas.

Example :

【20m square conference room】

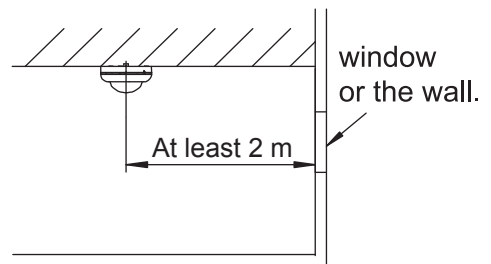
If the ceiling height is 3m or less, install the IR transmitter/receiver units at 5m intervals as shown in the schematic so that the 20m square conference room is completely covered.

Note that under certain conditions, such as a glass room, the covered area becomes smaller.



Installation precautions

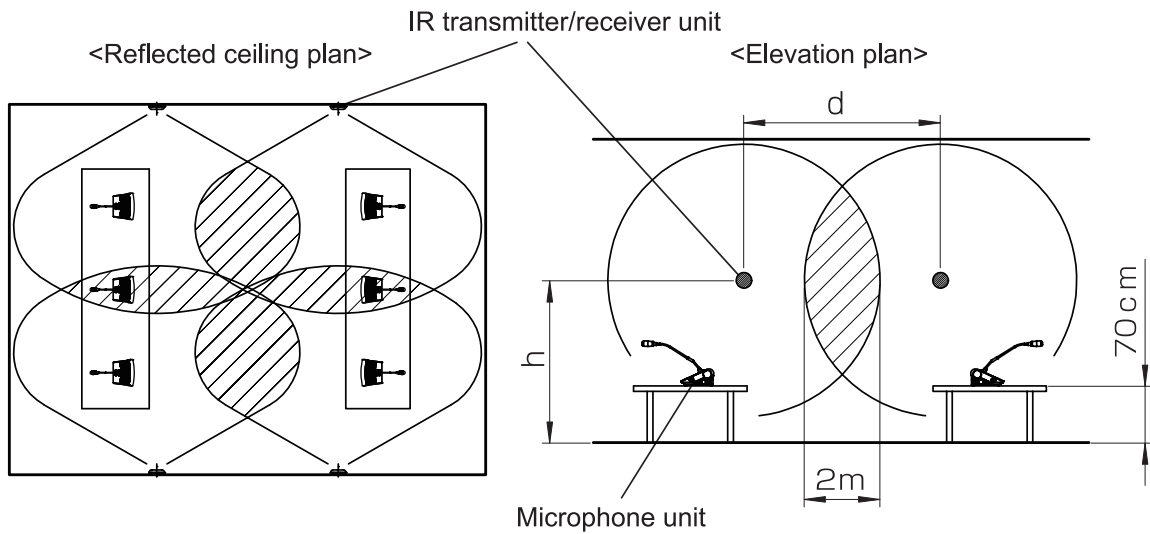
- Infrared operating distance varies depending on the color of the ceiling and walls.
- Noise may be generated by interference regardless of the operating distance between the IR transmitter/receiver unit and the microphone unit; in this case, move transmitter/receiver unit away from infrared-emitting objects.
- Do not place any obstructions around the microphone units.
- Block direct sunlight from the units using curtains or blinds.
- When installing an IR transmitter/receiver unit on a ceiling, keep the unit at least 2 m from windows and walls. (See the figure on the right.)
- When installing an IR transmitter/receiver unit on a wall, keep the unit at least 2 m from the ceiling and floor.
- Install the IR transmitter/receiver units more than 50cm from fluorescent lamps.
- In addition, if the IR transmitter/receiver units are installed near the infrared-emitting sources listed below, the system may malfunction or noise may be generated. When installing the IR transmitter/receiver units, and the microphone units, take care to avoid placing them near the following.



infrared-emitting and noise sources:

- Lighting equipment
- Projector(liquid crystal,DLP),OHP,incandescent bulbs
- Mercury lamp, halogen lamps, and inverter fluorescent lamps
- Plasma displays
- Infrared devices such as remote control, infrared microphones, and infrared LAN
- Dimmer controls
- Digital equipment like the digital power amplifier and cable wiring to this.
(Such as speaker output wiring of the digital power amplifier)

b) When the IR transmitter/receiver units are installed on walls or stands

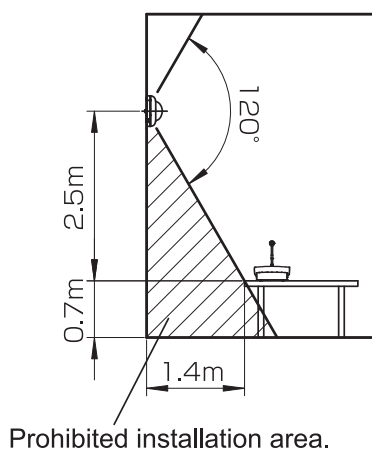


h = the height of the IR transmitter/receiver unit from the floor (m)

d = the distance between IR transmitter/receiver units (m)

- * Infrared operating distance is approximately 5 m and transmitting/receiving range is approximately 120 degrees.
- * Be sure to overlap the infrared operating areas by approximately 2 m.
- * Be careful not to place the units behind users or objects.
- * When the IR transmitter/receiver units are installed on side walls, take care not to install the microphone units near the side walls.

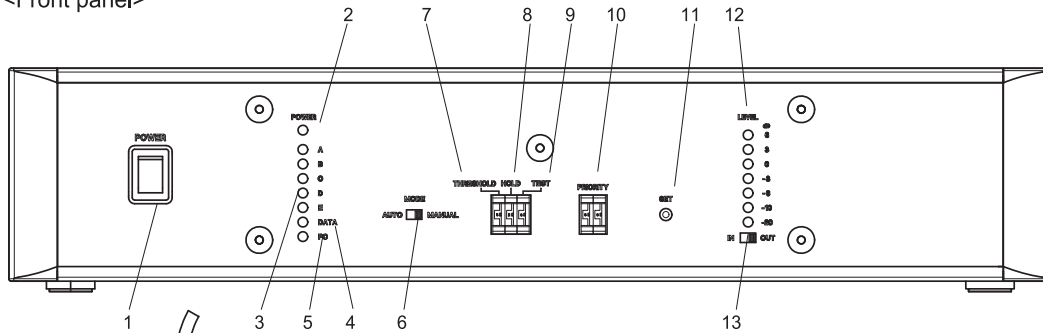
Example: If the IR transmitter/receiver units are installed 2.5 m above the microphone units, keep the microphone units approximately more than 1.4 m away from the side wall. (Receiving angle: 120 degrees)



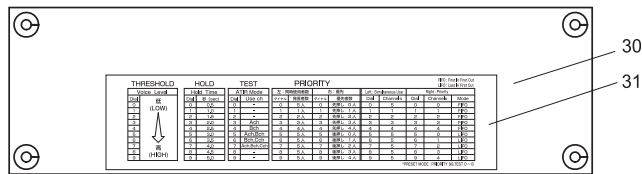
5. Master Control Unit

5.1. Part names and functions of the master control unit

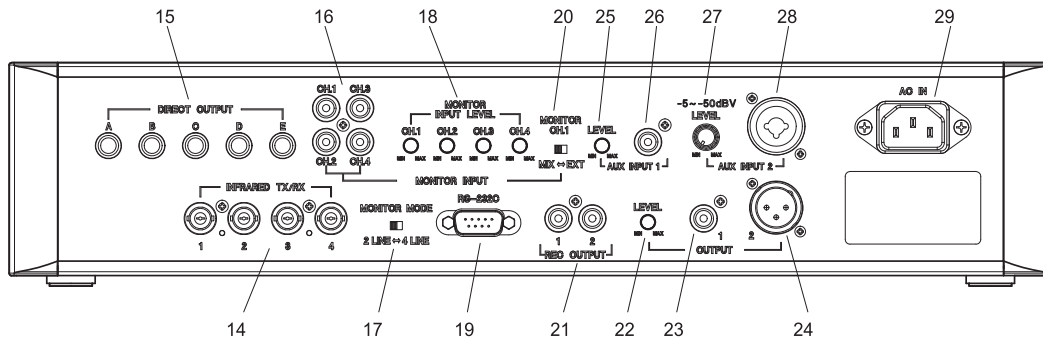
<Front panel>



<Inside of the front panel>



<Rear panel>



- 1. POWER (power switch) To turn on/off the master control unit.
- 2. POWER (power LED) This LED lights when the master control unit turns on.
- 3. Active audio channel Indicates the active audio channels (CH. A to CH. E) used by a microphone unit.

- 4. DATA signal LED Turns on when data is received from the microphone units.
- 5. PC signal LED Turns on when a PC is connected.
- 6. Mode selector switch Sets automatic mode operation and manual mode operation.
(Refer to section 10 “How to Operater the Basic System”)
- 7. THRESHOLD switch Sets the speech detection level of microphone units during
automatic mode operation.
(Refer to section 10 “How to Operater the Basic System”)
(Default value: 5)
- 8. HOLD switch Sets the length of time a microphone will remain on without
receiving sound input during automatic mode operation.
(Refer to section 10 “How to Operater the Basic System”)
(Default value: 2)
- 9. TEST switch Not used for system setup. (Default value: 0)
- 10. PRIORITY switch Sets the number of speaking microphones (1 to 5) and priority
microphones (0 to 4), and when the MODE selector switch is set
to MANUAL, sets the FIFO/LIFO mode.
(Refer to section 10 “How to Operater the Basic System”)
- 11. SET button This is used when setting switches 6. to 10.
(Refer to section 10 “How to Operater the Basic System”)
- 12. Level meter LEDs Indicates monitor input/output level.
- 13. Input/output level change-over switch
. 12.Sets the level meter LEDs to display the input level
(monitor CH. 1 only) or the output level (OUT 1 and 2).
- 14. INFRARED TX/RX Terminals for the IR transmitter/receiver unit connection.
(the IR transmitter/receiver unit TX/RX terminals)
- 15. DIRECT OUTPUT Outputs the sound of CH. A to CH. E.
(the monitor sound input terminals) When using a 6.3 mm mono plug, you can cbtain direct output
from CH. A through CH. E. In this configuration the direct output
will not feed into the mix bus. When using a 6.3 mm stereo plug
with the tip and ring wired together, you can also obtain direct
outputfrom CH. A through CH. E. In this configuration the direct
output signalwill feed into the mix bus. When using a 6.3 mm
stereo plug with the tip and ring individually wired, you can obtain
a direct output from the tip and a return input to the ring.
- 16. MONITOR INPUT Inputs the sound of CH. 1 to CH. 4.
(the monitor sound input terminals) The input sound is output from the earphone terminal of a
microphone unit by setting the microphone unit's monitor selector
switch (CH. 1 to CH. 4).

- 17. MONITOR MODE Switches the monitor mode between 2 LINE (monitor CH. 1 to CH. 2 are used) and 4 LINE (CH. 1 to CH. 4 are used) inside the master control unit.
Ordinarily select 2 LINE.
- 18. MONITOR INPUT LEVEL Volume control for input level adjustment of item #16, the (the monitor input volume) four monitor input terminals.
- 19. RS-232C Connection terminal for a PC. (for the extended system)
(PC connection terminal) Use a straight cable to connect with PC.
- 20. MONITOR CH. 1 When set to MIX, the sound output from REC OUTPUT (Monitor CH. 1 input selector switch) (terminals for sound recording) is sent to MONITOR CH. 1. When it is set to EXT, the external sound input to “16. MONITOR INPUT (the monitor sound input terminals)” CH. 1 is sent to MONITOR CH. 1.
- 21. REC OUTPUT Output terminals for recorders.
(the output terminals for sound recording)
- 22. OUTPUT LEVEL Volume control for sound output level adjustment of “23 (the output volume) and 24. OUTPUT (the output terminals)” .
- 23. OUTPUT 1 Output terminal (unbalanced).
(the output terminal 1, pin jack)
- 24. OUTPUT 2 Output terminal (balanced).
(the output terminal 2, cannon connector)
- 25. AUX INPUT 1 LEVEL Volume control for AUX input terminal 1 level adjustment.
- 26. AUX INPUT 1 AUX input terminal (unbalanced).
(the AUX input terminal 1, pin jack)
- 27. AUX INPUT 2 LEVEL Volume control for AUX input terminal 2 level adjustment.
- 28. AUX INPUT 2 AUX input terminal (balanced/unbalanced common use).
(the AUX input terminal 2, cannon connector/microphone jack common use)
- 29. AC IN (AC inlet) Connection terminals for the power cable. Make sure to connect the ground.
- 30. Panel Removed to change the settings.
- 31. Setting chart Settings are summarized (below).

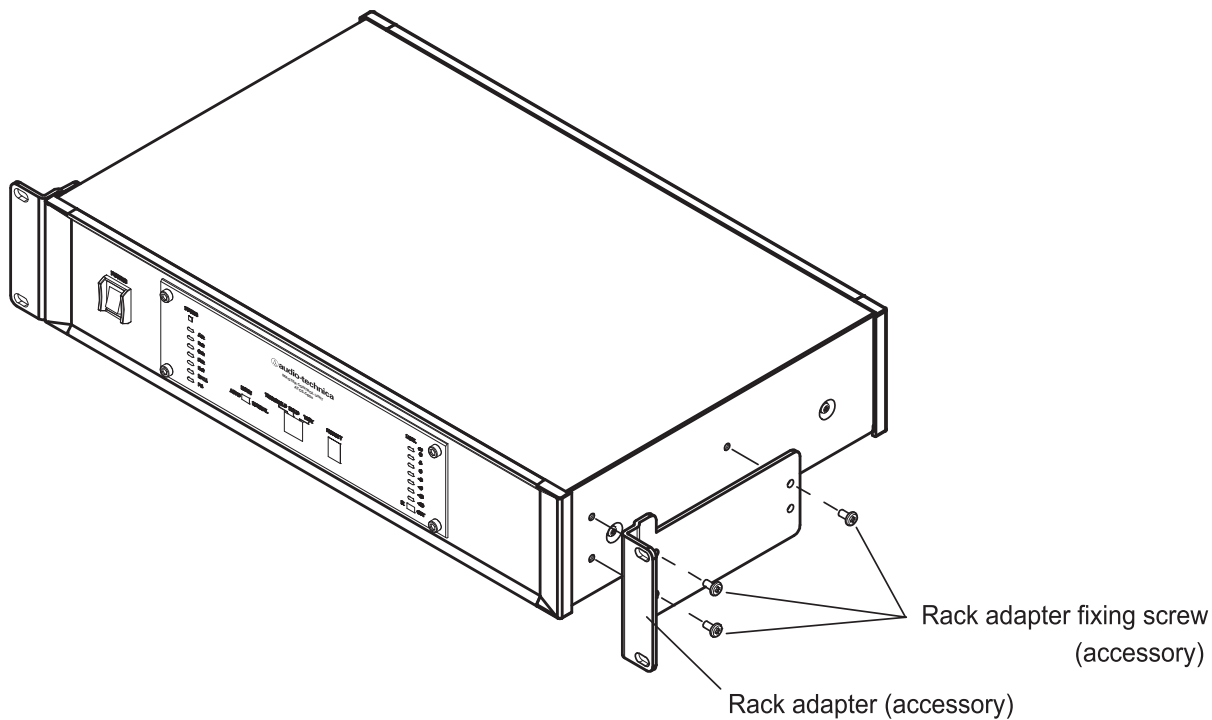
THRESHOLD		HOLD		TEST		PRIORITY				FIFO : First In First Out LIFO : Last In First Out				
Voice Level		Hold Time		ATIR Mode		左 : 同時使用者数		右 : 優先		Left : Simultaneous Use		Right : Priority		
Dial		Dial	秒 (sec)	Dial	Use ch	ダイヤル	発言者数	ダイヤル	優先者数	Dial	Channels	Dial	Channels	Mode
0	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 5px;">低</div> <div style="margin-bottom: 5px;">(LOW)</div> <div style="margin-bottom: 5px;">↑</div> <div style="margin-bottom: 5px;">↓</div> <div style="margin-bottom: 5px;">高</div> <div style="margin-bottom: 5px;">(HIGH)</div> </div>	0	0.5	0	-	0	5人	0	先押し 0人	0	5	0	0	FIFO
1		1	1.0	1	-	1	1人	1	先押し 1人	1	1	1	1	FIFO
2		2	1.5	2	-	2	2人	2	先押し 2人	2	2	2	2	FIFO
3		3	2.0	3	Ach	3	3人	3	先押し 3人	3	3	3	3	FIFO
4		4	2.5	4	Bch	4	4人	4	先押し 4人	4	4	4	4	FIFO
5		5	3.0	5	Ach,Bch	5	5人	5	後押し 0人	5	5	5	0	LIFO
6		6	3.5	6	Bch,Cch	6	5人	6	後押し 1人	6	5	6	1	LIFO
7		7	4.0	7	Ach,Bch,Cch	7	5人	7	後押し 2人	7	5	7	2	LIFO
8		8	4.5	8	-	8	5人	8	後押し 3人	8	5	8	3	LIFO
9		9	5.0	9	-	9	5人	9	後押し 4人	9	5	9	4	LIFO

*PRESET MODE : PRIORITY 99,TEST 0 ~ 8

5.2. Mounting the master control unit

Attach the rack adapters (accessory) to place the master control unit on a rack.

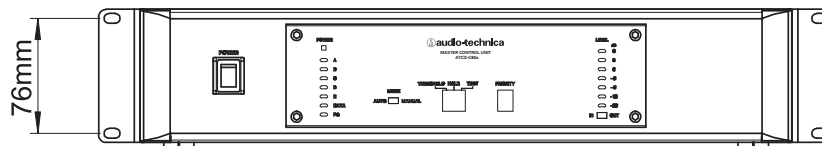
<How to attach the rack adapters>



1. Attach a rack adapter using the rack adapter screws.
2. Attach a rack adapter on the opposite side in the same way.

* Screws to mount the unit on a rack are not included.

Use the specified screws for the rack.

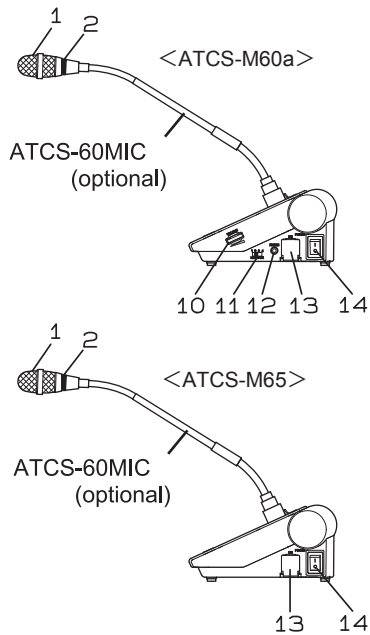


When the unit is placed on the rack, remove the four pads.

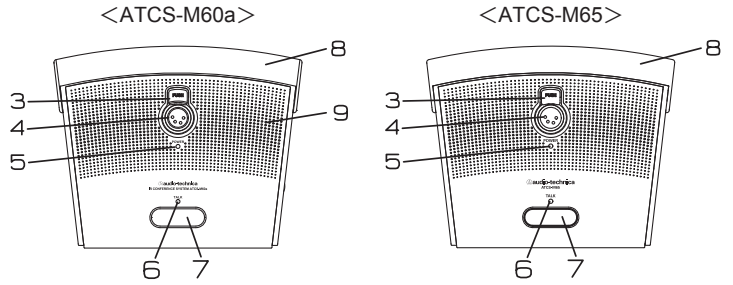
6. Microphone Unit

6.1. Part names and functions of the microphone unit

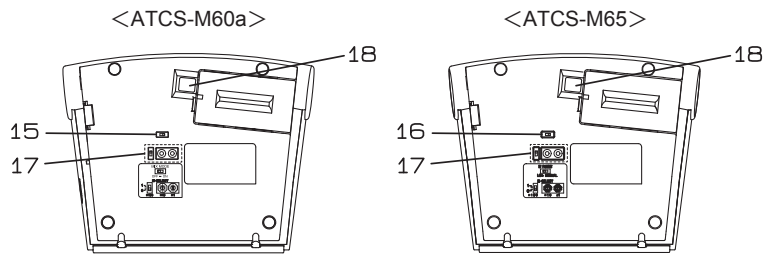
< Microphone unit (side view) >



<Microphone unit main body (top view) >



<Microphone unit main body (bottom view)>



- 1. Microphone Used for speech
- 2. Light ring LED Turns on during speech and flashes if the unit enters speech request mode or the remaining battery capacity gets lower. Also flashes until the unit becomes available after being turned on.
- 3. Microphone detaching button Detach the microphone with the button pushed.
- 4. Microphone mounting socket Socket for mounting the dedicated microphone.
- 5. Power LED Turns on while the power is on and flashes when the remaining battery capacity drops.
- 6. TALK (speech) LED Lights during speech and flashes if the unit enters speech request mode.
- 7. TALK (speech) button Push when you want to speak during manual operation.
- 8. Infrared transmitting/receiving area Transmits and receives infrared signals. Do not cover the infrared transmitting/receiving area.
- 9. Loudspeaker* Outputs the monitor signal. Only CH. 1 sound is output.
- 10. Volume control* Adjusts the sound volume of the speaker (or earphones).
- 11. Monitor selector switch* Selects the sound of CH. 1 to CH. 4. CH. 2 to CH. 4 are only for earphones.
- 12. Earphone terminal* Terminal for earphones (optional). Sound of CH. 1 to CH. 4 is output.
- 13. I/O terminal Terminal for the voting module.
- 14. Power switch Turns the unit ON/OFF.
- 15. MIX MODE selector switch* Individually sets automatic mode and manual mode. (Refer to section 6.6 “Setting method for MIX MODE switch (ATCS-M60a only)”)
- 16. Transmitter power selector switch** Switches the infrared transmitting power. (LO / NORMAL) Ordinarily set to NORMAL. If the system is used in a small room, set the switch to LO to prolong the operating time.

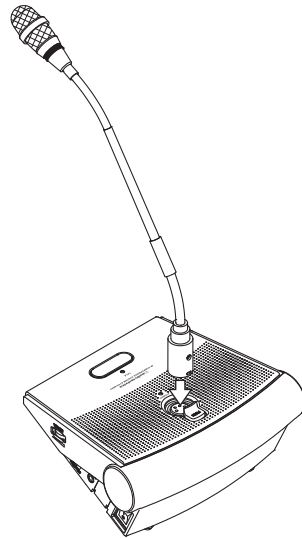
* . . . ATCS-M60a only

** . . . ATCS-M65 only

- 17. ID setting switches Sets the ID number.
(Refer to section 6.5 “Setting the ID switches”)
- 18. Battery detaching button Used to remove the battery.
(Refer to section 6.3 “Mounting and dismounting the battery and the battery cover”)

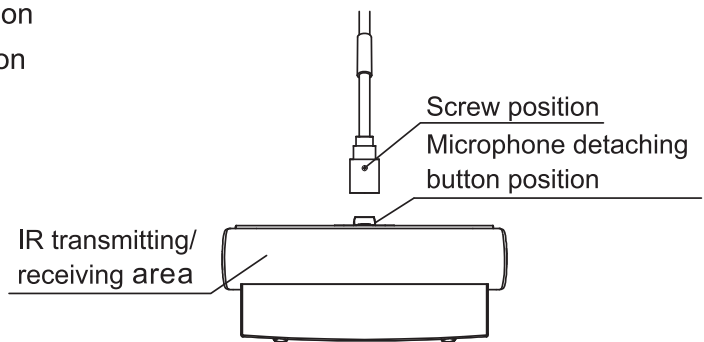
6.2. Mounting and dismounting the microphone unit

<How to mount the microphone>

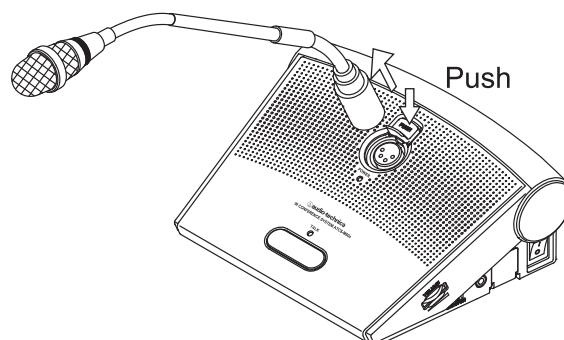


1. Insert the microphone into the microphone mounting socket in a straight line.
2. When an audible click is heard, the microphone is fastened.

* Match the microphone screw position with the microphone dismount button position to insert the microphone (drawing at right).



<How to dismount the microphone>

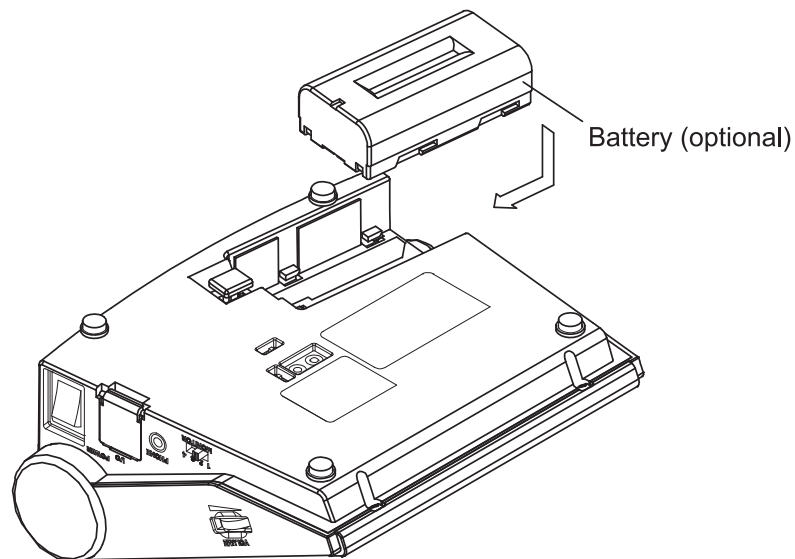


1. Pull the microphone upward with the microphone dismount button pushed.
Be sure to hold the base of the microphone connector.

6.3. Mounting and dismounting the battery and the battery cover

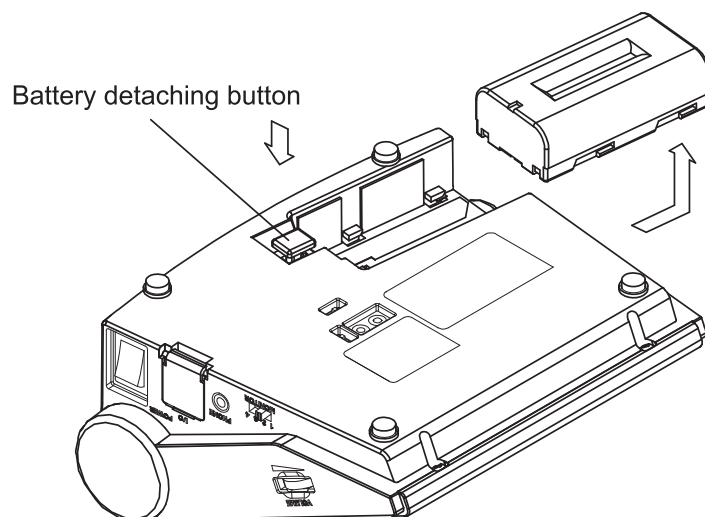
* When mounting or dismounting the battery, be careful not to drop it.

<How to mount the battery>



1. Put the battery on the bottom side of the microphone unit.
 2. Slide the battery in the direction of the arrow to fasten it.
- * Listen for the click sound and make sure the battery is securely inserted.

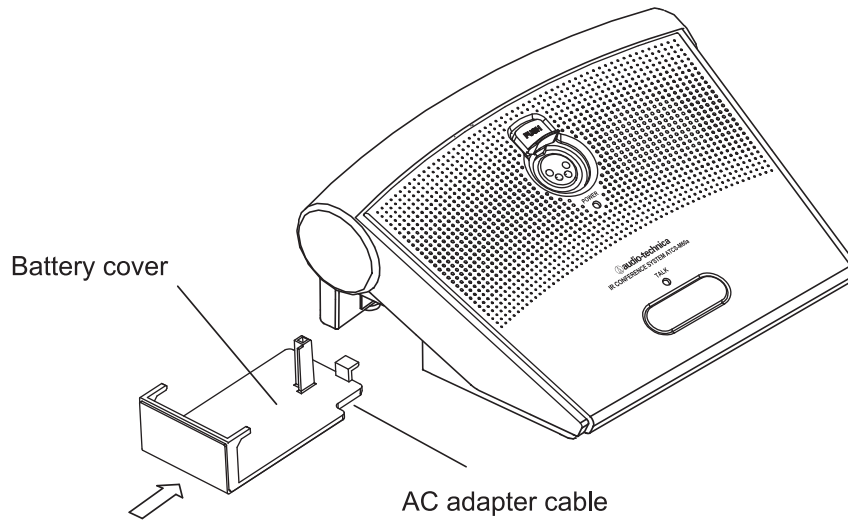
<How to dismount the battery>



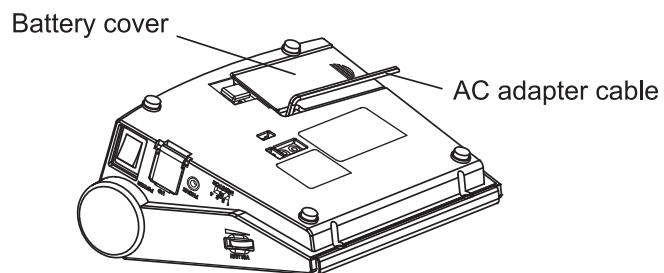
1. Slide the battery in the direction of the arrow and pull it out by pushing the battery removal button.

When the AC adapter (optional) is used, attach the battery cover (accessory).

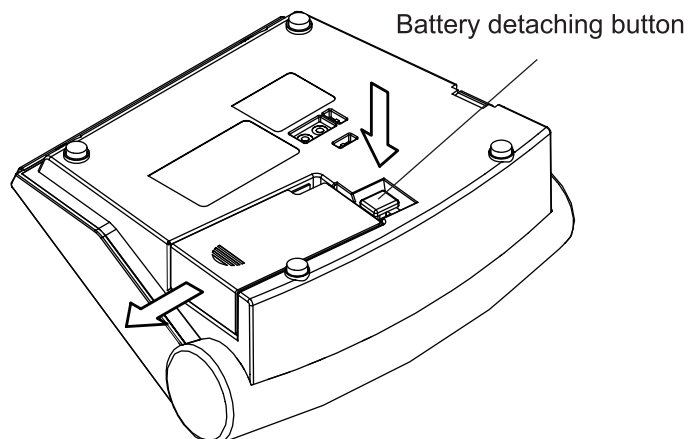
<How to attach the battery cover>



1. Slide the battery cover in the direction of the arrow.
 - * Pull the AC adapter cable through the cable outlet.
 - * Be careful not to pinch the cable when attaching the battery cover. It may break.

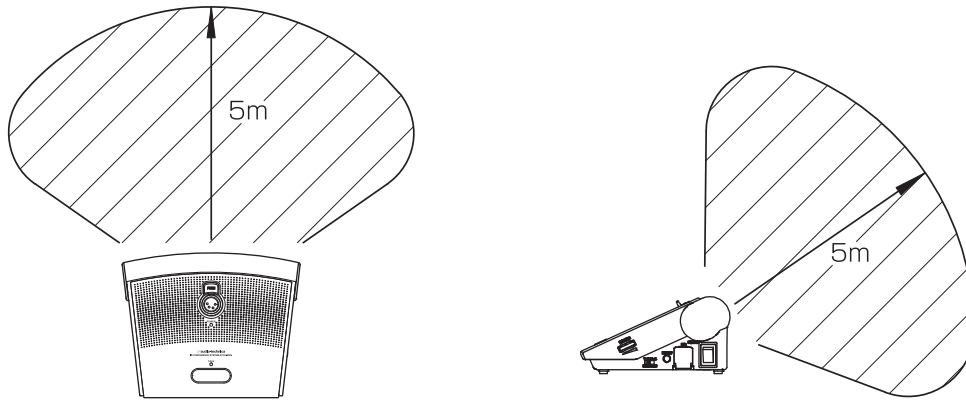


<How to detach the battery cover>



1. Pull the battery cover in the direction of the arrow.

6.4. Infrared operating range of the microphone unit (image)



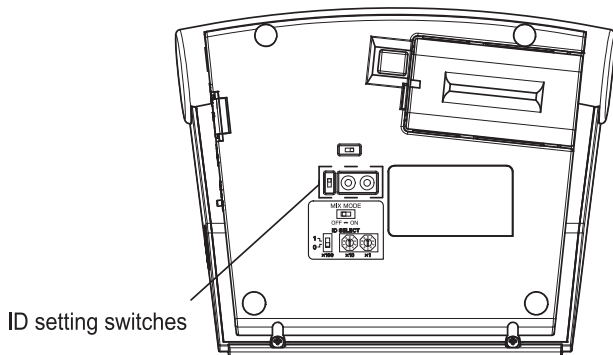
6.5. Setting the ID switches

- * Turn off the microphone unit when the ID number is set.
- * ID number should be set from [001] to [188].

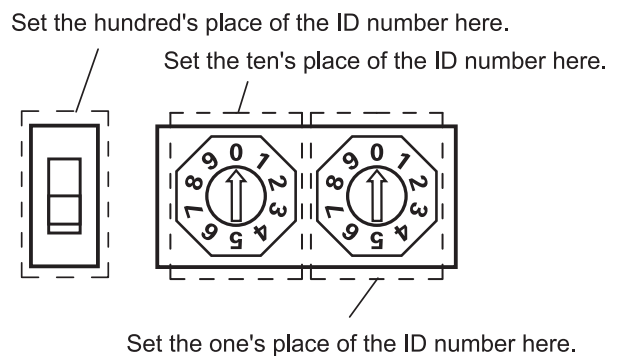
[Example] If you have 50 units, their ID numbers should be set from [001] to [050]. If any units have the same ID number, the system will not work properly.

- * Use the precision screwdriver (supplied with the master control unit) to set the ID switches.

<Bottom of microphone unit>

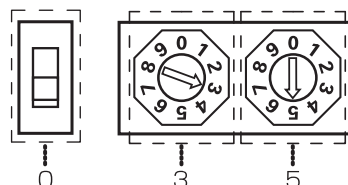


<ID setting switches>



1. The ID setting switches are on the bottom surface of the microphone unit.
2. Set the ID number using the precision screwdriver. (Refer to [Setting example] below.)
 - Hundred's place ▪ ▪ ▪ Push up the slide switch of the far left ID setting switch to 1; push it down to set to 0 (zero).
 - Ten's place ▪ ▪ ▪ ▪ Turn the arrow in the center of the rotary switch using the precision screwdriver. Adjust the setting by pointing the arrow to a number (0 to 9).
 - One's place ▪ ▪ ▪ ▪ Turn the arrow in the center of the rotary switch using the precision screwdriver. Adjust the setting by pointing the arrow to a number (0 to 9).

[Setting example] When the seat ID is set to [035], the setting switches should be as shown in the right schematic.



6.6. Setting method for MIX MODE switch (ATCS-M60a only)

MIX MODE should be set to ON when microphone units that perform automatic mode operation and microphone units that perform manual mode operation are used together.

- * When this function is not used, turn the setting to OFF to prevent erroneous setting.
- * Set MIX MODE while the power supply to the microphone unit is turned off.
- * When the power supply to the microphone unit is turned on while the MIX MODE switch is set to ON, the light ring LED lights.

1. The MIX MODE switch is located on the bottom of the microphone unit.
2. Set the MIX MODE switch by using a small-sized screwdriver (refer to the setting example shown below).
3. Through a combination of the MIX MODE setting and the setting of the master control unit or Conference Manager, mixed operation can be performed.

		Setting of master control unit/Conference Manager			
		AUTO		MANUAL	
		Priority microphone unit	Non-priority microphone unit	Priority microphone unit	Non-priority microphone unit
MIX MODE setting	OFF	Automatic	Automatic	Manual	Manual
	ON	Manual	Automatic	Automatic	Manual

- * Note that only when the priority microphone is set and the MIX MODE is set to ON, is the operation mode the inverse of the mode that is set on the master control unit/Conference Manager.

6.7. All finish from chairperson's microphone

When the priority microphone is set, it is possible to suspend the speech and speech-request functionality of all microphone units other than the chairperson's by holding down (for 2 seconds or longer) the TALK button on the chairperson's microphone unit (ID 001).

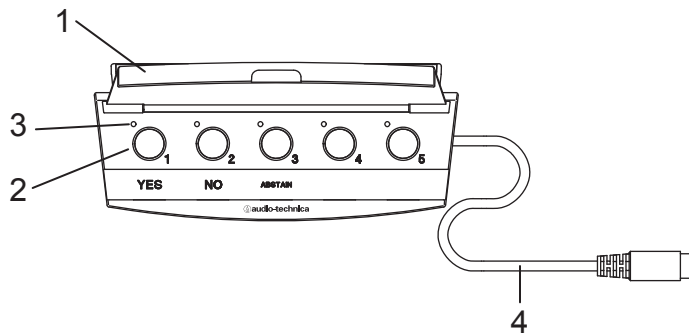
1. All finish and speech forbiddance
 - 1.1. Hold down the TALK (speech) button on the chairperson microphone unit.
 - 1.2. The chairperson microphone unit becomes the active speech state.
 - 1.3. All the speech and speech requests except the chairperson's microphone unit are finished.
 - 1.4. The chairperson can forbid speech of other microphone units by holding down the TALK (speech) button.
2. Release of speech prohibition
 - 2.1. Release the TALK (speech) button on the chairperson microphone unit.
 - 2.2. Prohibition of speech from all microphones is lifted.

7. Voting module

* To use the voting module, a PC with Conference Manager (Refer to section 12 “Conference Manager (extension system)”) installed and settings appropriately configured is required.

For assistance with connecting and using the voting modules with the microphone units, refer to the online help for Conference Manager.

7.1. Part names and functions of voting module

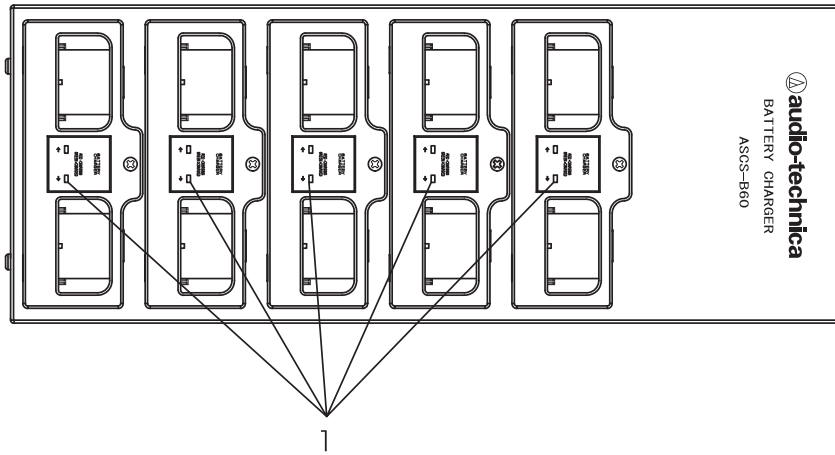


- 1. Cover Protective cover of the main body.
- 2. Voting button Press to vote.
Module supports two to five voting choices.
- 3. Voting indicator Displays the voting status.
- 4. Connection cable Cable connects the voting module to a microphone unit.

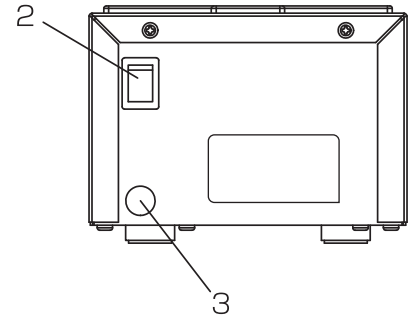
8. Battery Charger

8.1. Part names and functions of the battery charger

< Battery charger (top view) >

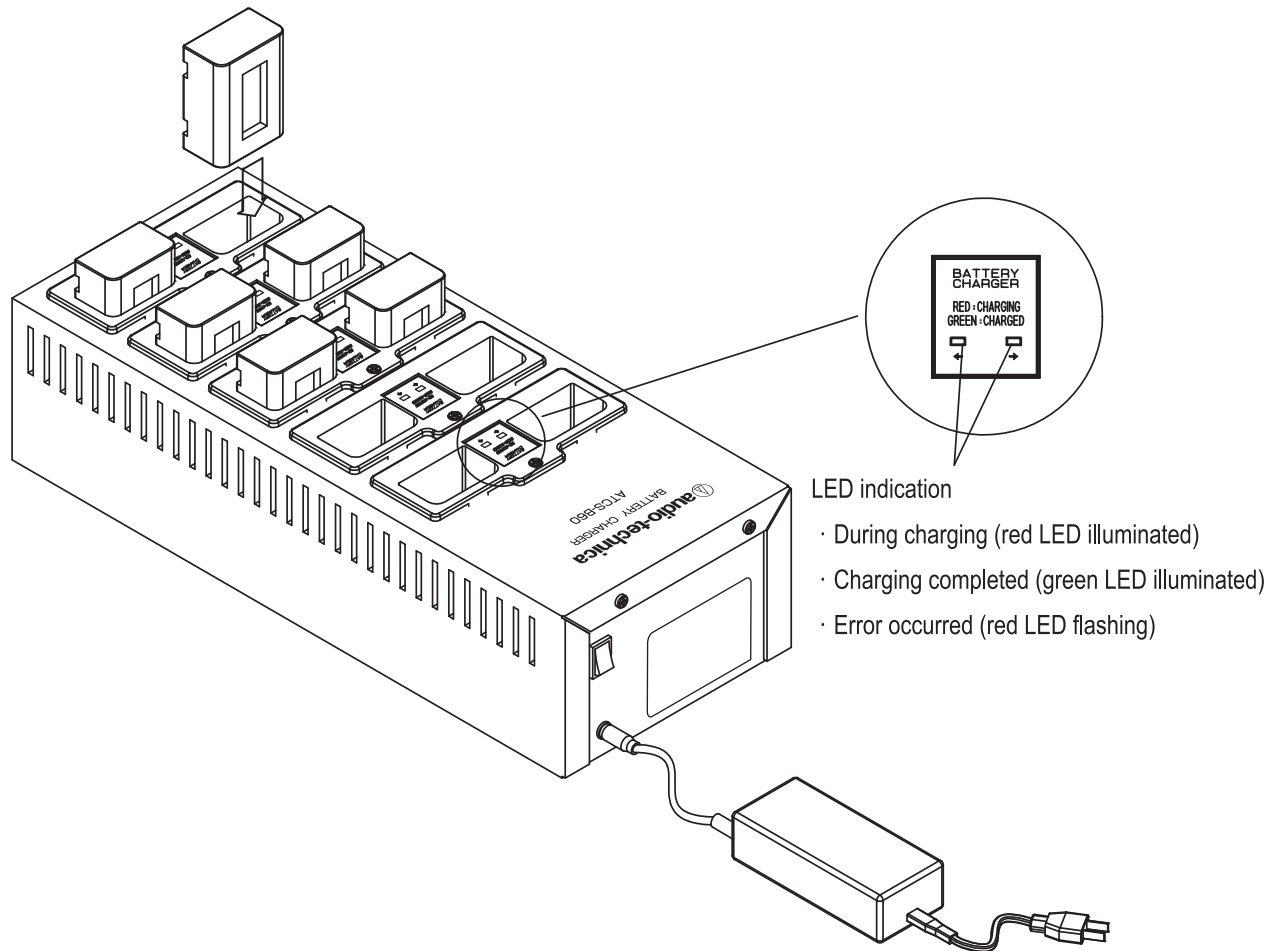


< Battery charger (side view) >



1. Charging status indicator LED
▪ ▪ Green LED illuminated: Charging completed
Red LED illuminated: During charging
Flashing red LED: Error occurred
2. Power switch
▪ ▪ ▪ ▪ ▪ ▪ Turn the unit on/off.
3. AC adapter jack
▪ ▪ ▪ ▪ ▪ ▪ Connect the AC adapter plug here.

8.2. Battery charging



1. Insert the batteries into the charging ports.

* If the battery is upside down, the LED will not light.

2. The charging status indicator LED turns red.

* If a charging error occurs, the LED flashes red. Insert the battery again.

If the error continues to occur, refer to section 14 “Troubleshooting”.

3. When the charging status indicator LED turns green, charging is completed.

* Charging completes in approximately 5.5 hours.

* Charging time varies depending on the remaining battery capacity.

8.3. For longer battery life

1. Charge the batteries at an ambient temperature of 10° C to 30° C (50° F to 86° F) and store them in temperatures of 0°C to 20°C (32°F to 68°F).
2. When batteries are not used for an extended period of time, remove them from the charger (ATCS-B60). Leaving a rechargeable battery in the charger with the power supply turned off will discharge the battery and shorten its service life or even make it impossible to recharge it.
If a battery will not be used for an extended period of time, store it as is, without charging; wait until the battery is needed again before charging.

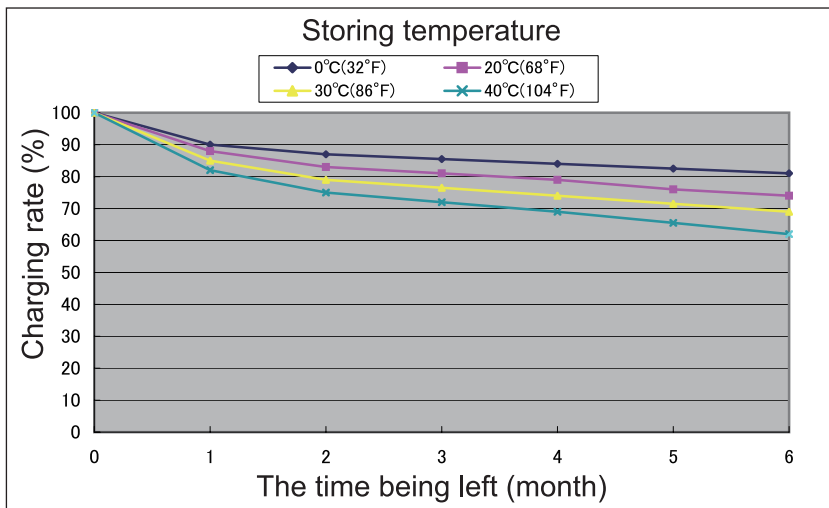
[Note]

1. Charging rate

The charging rate decreases during long-term storage or high temperature exposure.

Figure ① below indicates changes in the charging rate due to long-term storage.

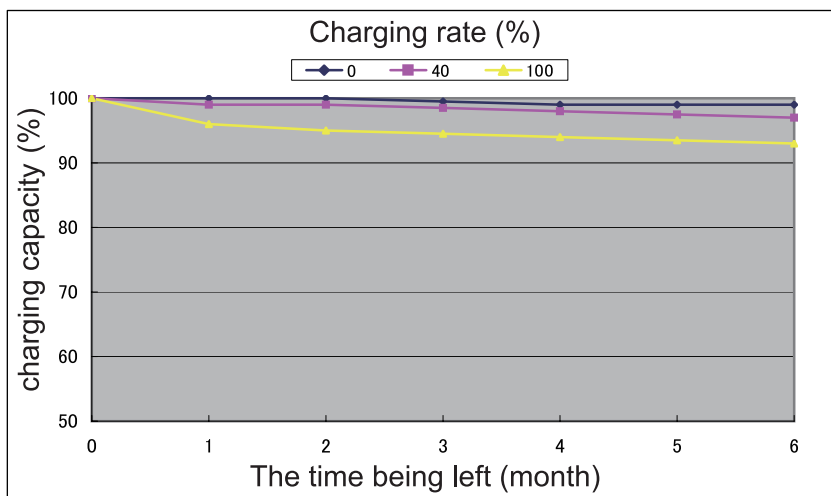
(However, batteries left in the charger for an extended period of time (not recommended) will have a greater charge rate decrease.)



2. Rate of battery capacity change

Battery capacity decreases as a result of long-term storage in a fully charged state.

Figure ② below indicates the rate of change in battery capacity at 20 degrees C (68 degrees F).



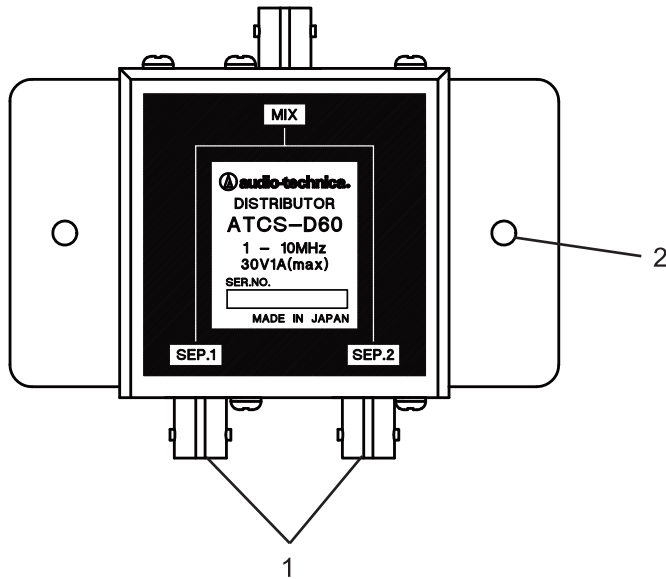
※Once battery capacity has been reduced, it cannot be recovered.

3. Discharge and charge cycle

The discharge/charge cycle life is approximately 300 complete cycles.

9. Distributor

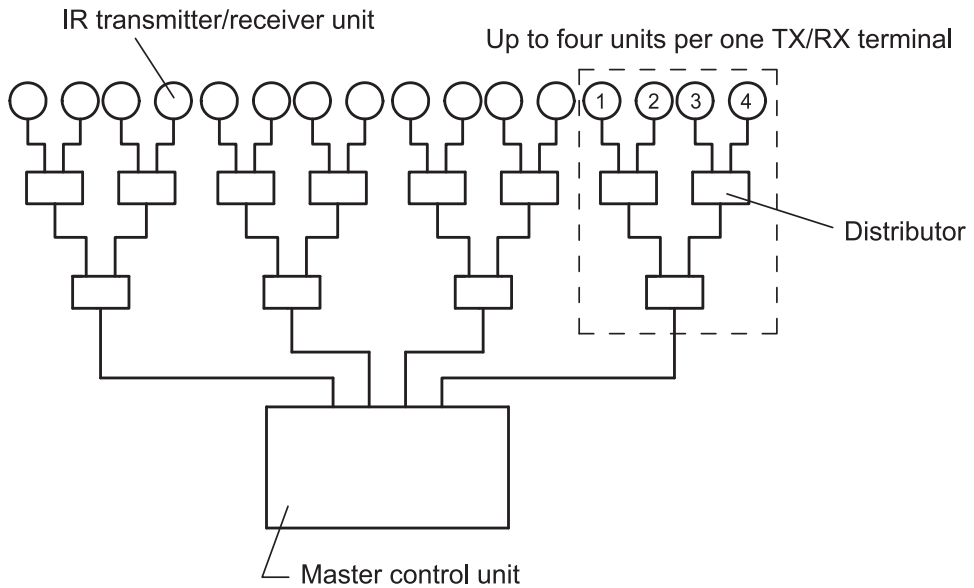
9.1. Part names of the distributor



- 1. BNC connector Connector for the BNC cable connection
 - 2. Mounting and fixing holes Holes for mounting distributor body.
- * The BNC cable is not included.

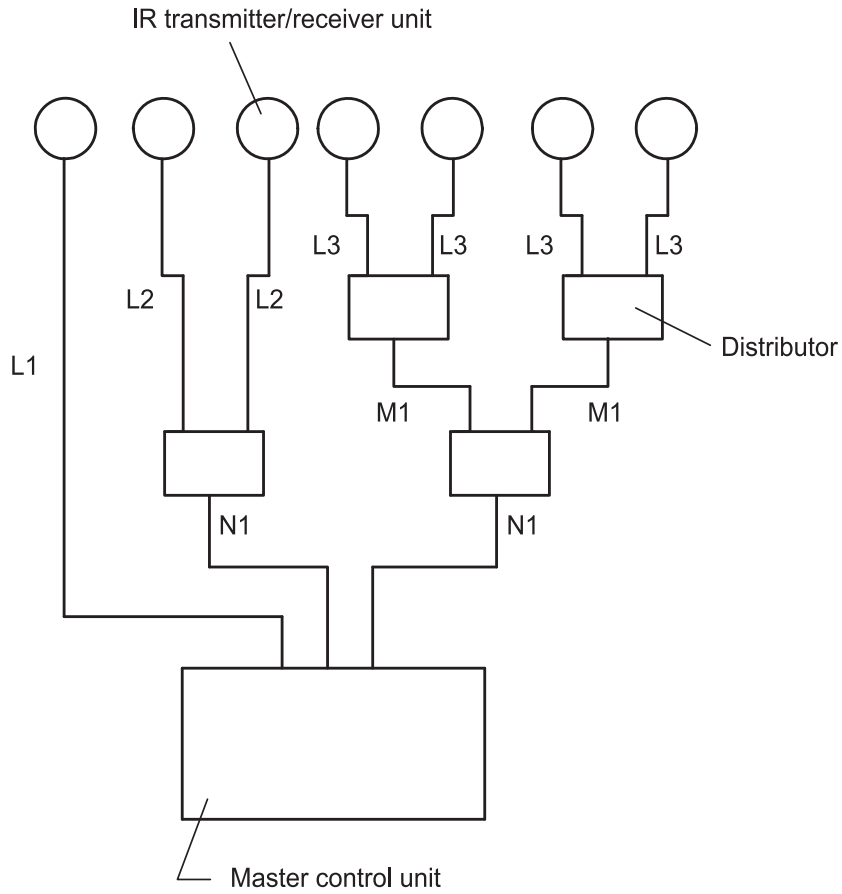
9.2. Wiring between IR transmitter/receiver units and master control unit when using distributors

Up to four IR transmitter/receiver units can be connected to one TX/RX terminal of the master control unit. Using the distributors, up to sixteen IR transmitter/receiver units can be installed.



If the input signals of the IR transmitter/receiver units are not in the same phase, the reception level may decrease.

To match the signal phases, use the same amount of cable between each IR transmitter/receiver unit and the master control unit.



Cable length to the IR transmitter/receiver unit $L1 = L2 + N1 = L3 + M1 + N1$

Difference in length among $L1$, $L2+N1$, $L3+M1+N1$ should be within +/- 3 meters (9.8 feet).

9.3. Checking the wiring design

The wiring between the IR transmitter/receiver units and the master control unit must satisfy the following two conditions.

- (i) Maximum power dissipation of wiring path: 15 dB (total loss from cables and distributors)
- (ii) Maximum DC voltage drop: 3V

The values needed for the calculation are shown below.

- Values to calculate the dissipation
 - (i) Dissipation of the distributor: 4 dB
 - (ii) Attenuation per 100 m of the coaxial cable

<Reference values>

3C-2V	4.2dB	RG-59U	3.0dB
5C-2V	2.7dB	RG-6U	2.3dB
7C-2V	2.2dB	RG-11U	1.3dB

- Values to calculate the voltage drop

- (i) Operating current per one IR transmitter/receiver unit: 0.15 A
- (ii) Resistance of the distributor: 0.5 Ω
- (iii) Loop resistance per 100 m (328.1 ft.) of the coaxial cable (at 20°C (68°F))

<Reference values>

3C-2V	9.14 Ω	RG-59U	4.5 Ω
5C-2V	3.59 Ω	RG-6U	3.0 Ω
7C-2V	2.07 Ω	RG-11U	1.3 Ω

- * Attenuation and loop resistance values of the coaxial cable are for reference.
Check the values of the cables used for the actual installation.

■ Calculating expressions

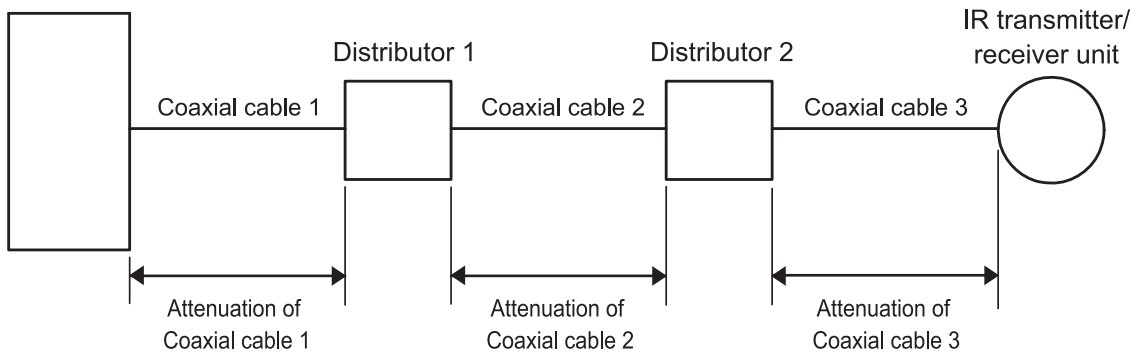
● Calculation for dissipation of wiring path:

Conditions: Total attenuation ≤ 15 dB

Attenuation of a cable = (Length / 100) x (Attenuation per 100 m)

Total attenuation = Attenuation of Cable 1 + Attenuation of Cable 2 + Attenuation of Distributor 3 + Attenuation of Distributor 1 + Attenuation of Distributor 2

Master control unit



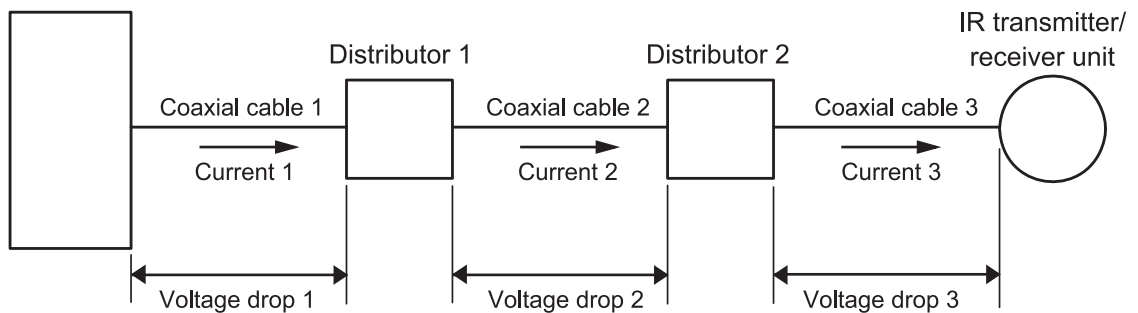
Conditions: Total voltage drop ≤ 3 V

Voltage drop of a cable = (Length / 100) x (Loop resistance per 100 m of cable) x current

Current through a cable = (The number of IR transmitter/receiver units connected to one TX/RX terminal) x 0.15 A

Total voltage drop = Voltage drop 1 + Voltage drop 2 + Voltage drop 3

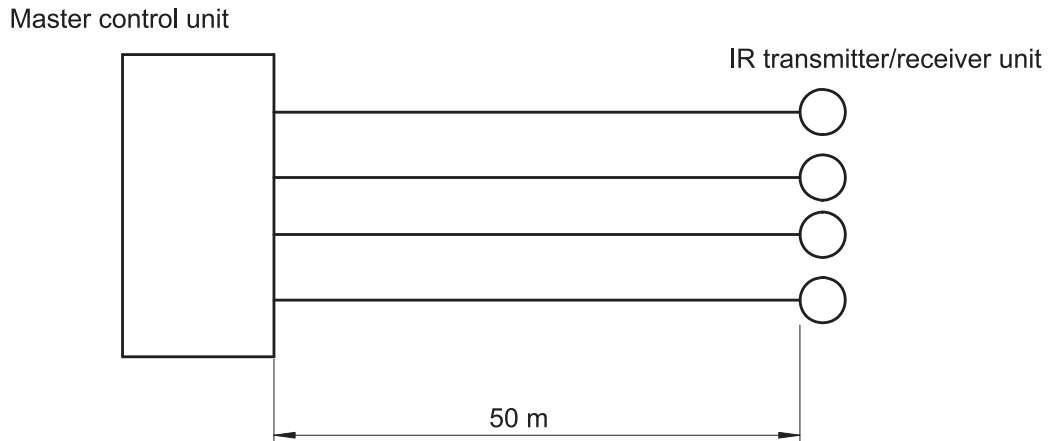
Master control unit



● Example 1: For 4 IR transmitter/receiver units

Conditions: The distance between the master control unit and the IR transmitter/receiver units is assumed to be 50 m (164 ft.).

The coaxial cables are 5C-2V.



1) Calculation for maximum power dissipation of cables

The attenuation between the master control unit and the IR transmitter/receiver units

$$= 2.7 \text{ dB} \times (50 \text{ m}/100 \text{ m}) = 1.35 \text{ dB}$$

This is below the maximum tolerance (15 dB).

2) Calculation for maximum voltage drop

The voltage drop between the master control unit and the IR transmitter/receiver units

$$= 3.59 \Omega \times (50 \text{ m}/100 \text{ m}) \times 0.15 \text{ A}$$

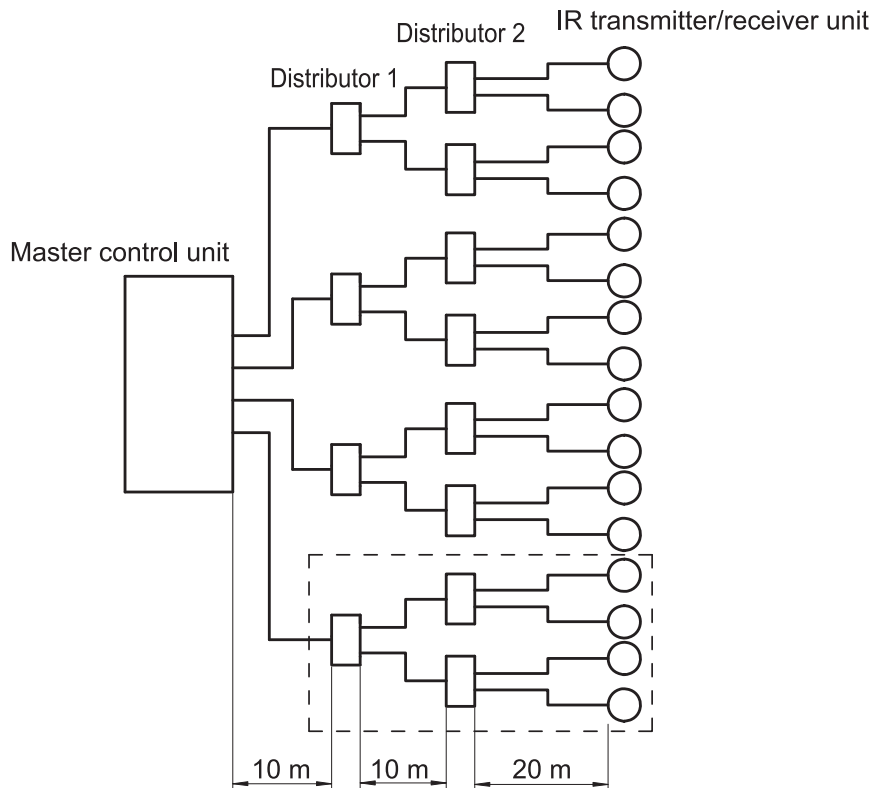
$$= 0.27 \text{ V}$$

This is below the maximum tolerance (3 V).

Set the cable length so that both 1) and 2) are equal to or less than the maximum tolerance.

● Example 2: For 16 IR transmitter/receiver units

Conditions: It is assumed that the distance between the master control unit and the Distributor 1 is 10 m (32.8 ft.), that between the Distributors 1 and 2 is 10 m (32.8 ft.), and that between the Distributor 2 and the IR transmitter/receiver units is 20 m (65.8 ft.).
The coaxial cables are 5C-2V.



1) Calculation for maximum power dissipation

- (i) The attenuation between the master control unit and the Distributor 1
= $2.7 \text{ dB} \times (10 \text{ m}/100 \text{ m}) = 0.27 \text{ dB}$
- (ii) The attenuation between the Distributors 1 and 2 = $2.7 \text{ dB} \times (10 \text{ m}/100 \text{ m}) = 0.27 \text{ dB}$
- (iii) The attenuation between the Distributor 2 and the IR transmitter/receiver units
= $2.7 \text{ dB} \times (20 \text{ m}/100 \text{ m}) = 0.54 \text{ dB}$
- (iv) The dissipation of the Distributors 1 and 2 = $4 \text{ dB} + 4 \text{ dB} = 8 \text{ dB}$

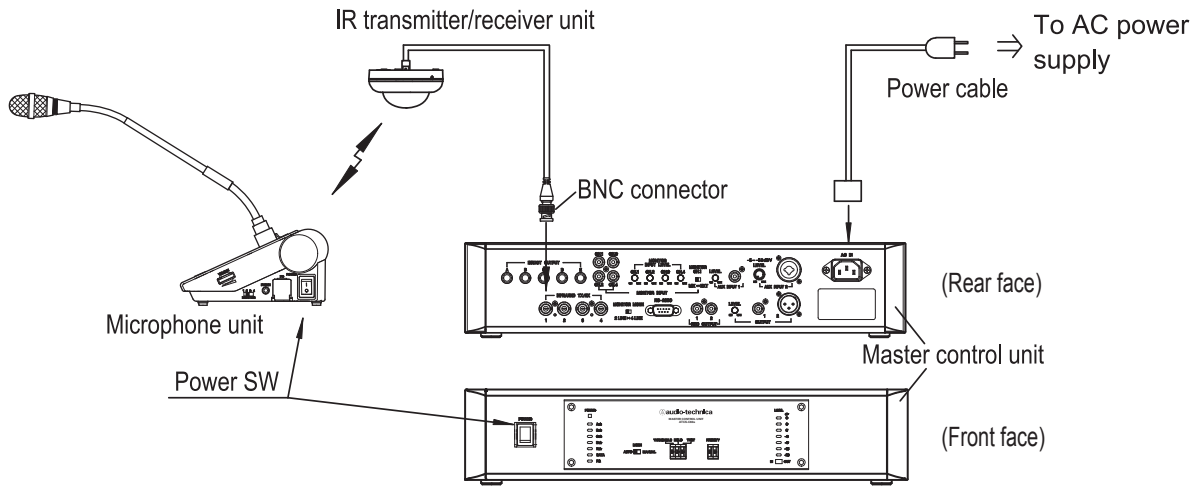
Summation of the above cable attenuation and distributor dissipation is
 $9.08 \text{ dB} (0.27 \text{ dB} + 0.27 \text{ dB} + 0.54 \text{ dB} + 8 \text{ dB})$,
which is the less than the maximum power dissipation (15 dB).

2) Calculation for maximum voltage drop

- (i) The voltage drop between the master control unit and the Distributor 1
= $3.59 \Omega \times (10 \text{ m}/100 \text{ m}) \times 0.15 \text{ A} \times 4 = 0.215 \text{ V}$
- (ii) The dissipation of the Distributor 1 = $0.5 \Omega \times 0.15 \text{ A} \times 4 = 0.3 \text{ V}$
- (iii) The dissipation between the Distributors 1 and 2 = $3.59 \Omega \times (10 \text{ m}/100 \text{ m}) \times 0.15 \text{ A} \times 2 = 0.108 \text{ V}$
- (iv) The dissipation of the Distributor 2 = $0.5 \Omega \times 0.3 \text{ A} = 0.15 \text{ V}$
- (v) The dissipation between the Distributor 2 and the IR transmitter/receiver unit = $3.59 \Omega \times (20 \text{ m}/100 \text{ m}) \times 0.15 \text{ A} = 0.108 \text{ V}$

The total voltage drop is $0.881 \text{ V} (0.215 \text{ V} + 0.3 \text{ V} + 0.108 \text{ V} + 0.15 \text{ V} + 0.108 \text{ V})$,
which is the less than the maximum voltage drop (3V).

10. How to Operate the Basic System

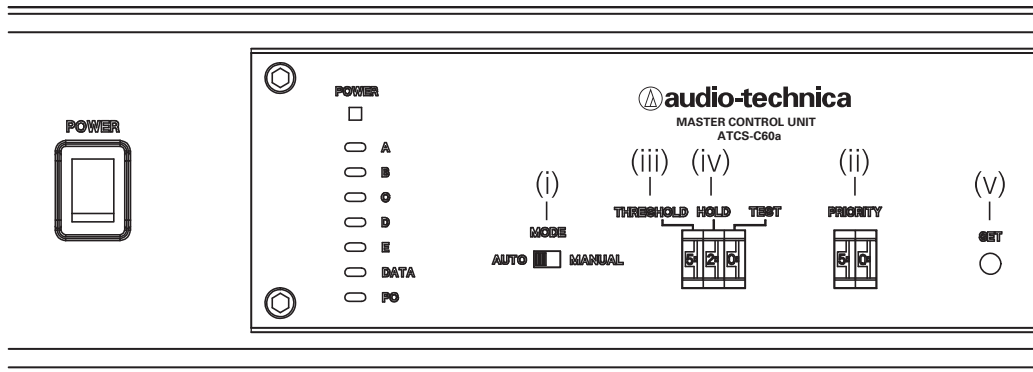


[Setting of microphone unit]

1. Set the microphone ID. (Refer to section 6.5 “Setting the ID switches”)
2. Set the MIX MODE switch. (ATCS-M60a only) (Refer to section 6.6 “Setting method for MIX MODE switch (ATCS-M60a only)”)
3. Turn on the power supply to the microphone unit.

* We recommend that you turn on the power supply to the microphone unit first and then turn on the power supply to the master control unit.

When the power supply to the master control unit is turned on first, the microphone's light ring LED flashes and the microphone unit remains inoperative for approximately one minute.



Master control unit (front view)

[Setting the master control unit]

Using the MODE selector switch ((i) in the figure), select automatic mode (AUTO) or manual mode (MANUAL). Using the PRIORITY switch ((ii) in the figure), set the number of speaking microphones and the number of priority microphones.

Use the left switch to set the number of speaking microphones (from 1 to 5).

Use the right switch to set the number of priority microphones (from 0 to 4). When manual mode has been selected, use the right switch to set the FIFO/LIFO operation.

Set the voice detection level of microphone units with the THRESHOLD switch ((iii) in the figure). When manual mode has been selected, this step is unnecessary.

Set the length of time that a microphone will remain on without receiving sound input by using the HOLD switch ((iv) in the figure). When manual mode has been selected, this step is unnecessary.

Press the SET button ((v) in the figure) for 2 seconds or longer, or turn the power supply to the master control unit off and on again, to complete the setting.

* To operate the system in the preset mode, set the PRIORITY switch to “99” and the TEST switch to any number from 0 to 8.

Appendix table

List of settings of switches on master control unit

MODE selector switch ((i) in the figure)

	Mode operation
AUTO	Performs automatic mode operation.
MANUAL	Performs manual mode operation. * right PRIORITY switch sets FIFO/LIFO mode.


PRIORITY switch, left ((ii) in the figure)

Setting	Number of speaking microphones
0	5
1	1
2	2
3	3
4	4
5	5
6	5
7	5
8	5
9	5

PRIORITY switch, right ((ii) in the figure)

Setting	Number of priority microphones	Priority microphone ID	FIFO/LIFO
0	0	—	FIFO mode
1	1	ID001	FIFO mode
2	2	ID001 , ID002	FIFO mode
3	3	ID001 , ID002 , ID003	FIFO mode
4	4	ID001 , ID002 , ID003 , ID004	FIFO mode
5	0	—	LIFO mode
6	1	ID001	LIFO mode
7	2	ID001 , ID002	LIFO mode
8	3	ID001 , ID002 , ID003	LIFO mode
9	4	ID001 , ID002 , ID003 , ID004	LIFO mode

THRESHOLD switch ((iii) in the figure)

Setting	Voice detection level
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
	Detects high-volume speech.

HOLD switch ((iv) in the figure)

Setting	Automatic mic OFF time (seconds)
0	0.5
1	1.0
2	1.5
3	2.0
4	2.5
5	3.0
6	3.5
7	4.0
8	4.5
9	5.0

* THRESHOLD is set to “5” at the time of shipment.

* HOLD is set to “2” (1.5 seconds) at the time of shipment.

11. Simultaneous Interpreting Mode

The system is used as a simultaneous interpretation system in a certain combination of language output and the monitor CH on the microphone units.

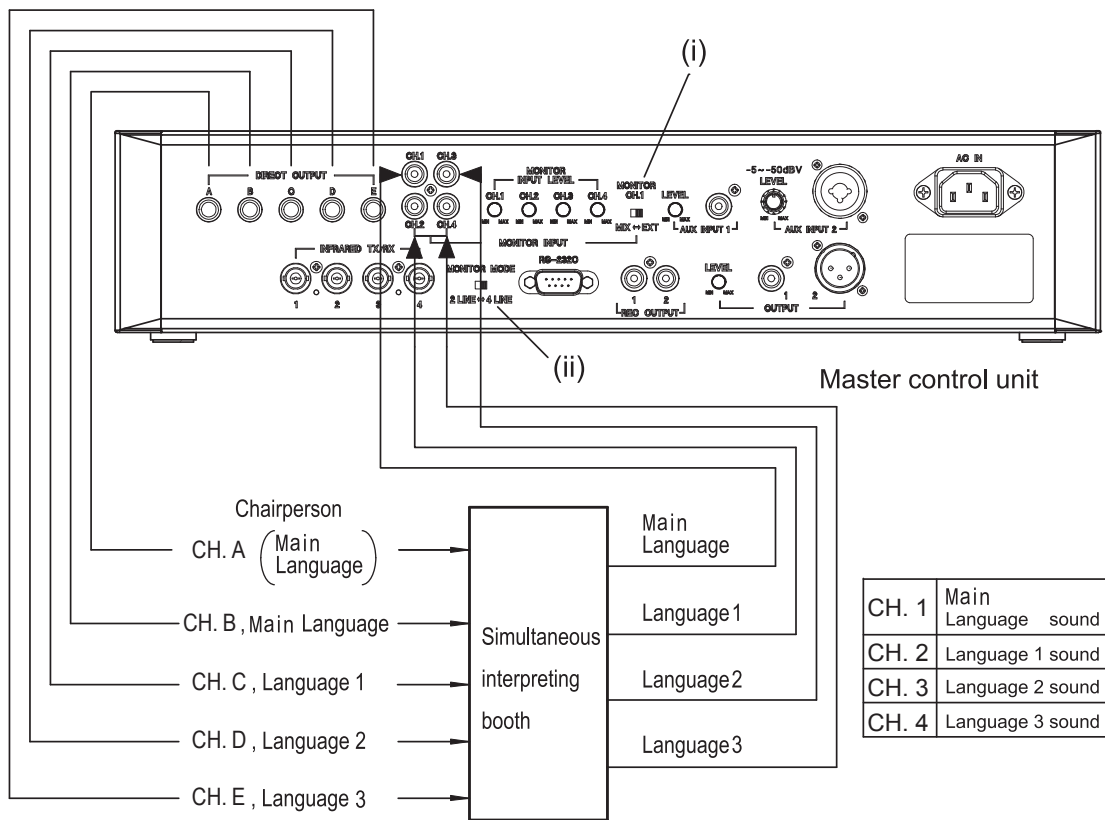
For details about the settings, refer to ATCS-C60MAG online help.

Example of four languages simultaneous interpreting

Chairperson (Main Language)	ID1	CH. A
Main Language	ID2 to ID20	CH. B
Language 1	ID21 to ID40	CH. C
Language 2	ID41 to ID60	CH. D
Language 3	ID61 to ID80	CH. E

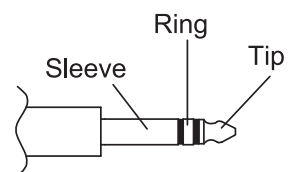
(i) MONITOR CH. 1 selector switch -----EXT

(ii) MONITOR MODE selector switch -----4LINE



* When a 6.3 mm microphone plug (mono) is connected to DIRECT OUTPUT, no sound is output except from DIRECT OUTPUT.

If you want to output sound from other OUTPUT terminals, short-circuit the tip and the ring (see the right schematic).



12. Conference Manager (extended system)

To use the conference manager function of this conference system, set up the optional conference manager (ATCS-C60MAG) on the operation PC using the DVD-ROM.

Connect the master control unit with the operation PC via the RS-232C communication board.

(Refer to section 3.2 “System connection diagram”)

For details including software operation, refer to ATCS-C60MAG online help.

(To start the online help , install ATCS-C60MAG and select Start > All apps > ATCS-C60MAG > Online help.)

12.1. Setting up

[Required environment]

Hardware

Item	Recommended
CPU	Intel Core i3-4160 CPU @3.60 GHz and above * Intel Core 2 Duo 2.4 GHz (if video recording is required)
RAM	4.00 GB and above
Available hard-disk space	40 GB and above
Monitor resolution	Monitor with 1280 x 1024 (SXGA) resolution and above
Sub monitor (if the sub screen is to be used)	Monitor/projector with 1280 x 1024 (SXGA) resolution and above
RS-232C port	1 port and above
Video input (if video recording is required)	Microsoft DirectShow compliant video input
Sound input (if sound recording is required)	SoundBlaster compatible
Operating system	Microsoft Windows 7 32bit / 64bit Microsoft Windows 10 32bit / 64bit

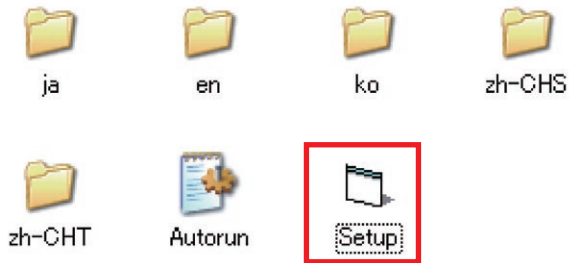
PC settings

Item	Recommended
Power Options	Each sleep function: OFF
Windows Update	Do not check for updates
Security software	Standard software
Windows Aero	Disable

If the operating system is Microsoft Windows 8 or 8.1, we strongly recommend that you upgrade it to Microsoft Windows 10 for safe operation.

[Install the dedicated conference system software, ATCS-C60MAG]

Insert the DVD-ROM of the dedicated conference system software, ATCS-C60MAG.
The conference system installation automatically starts.



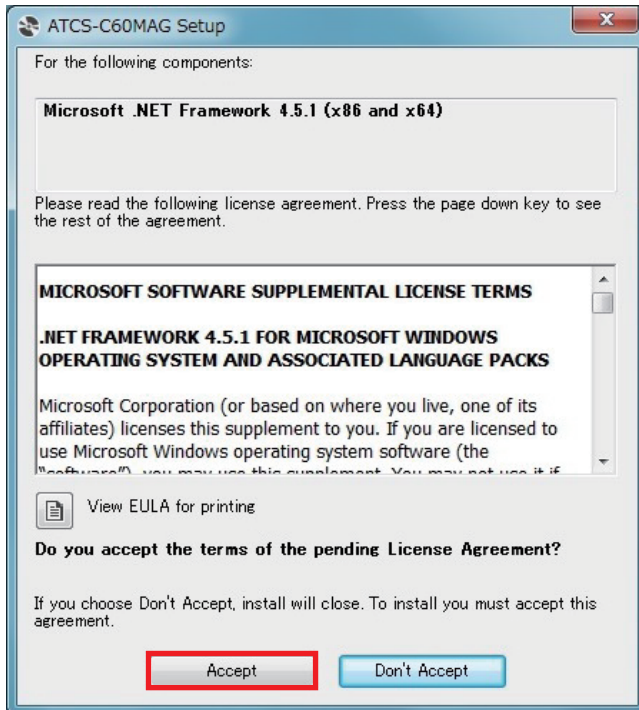
If Autorun is disabled, run Setup. exe from the DVD-ROM .

* The software may not work properly if anti-virus software is running. Therefore, disable anti-virus software before installing this software.

To learn how to disable anti-virus software, read the software's instruction manual.

[Installation of .NET Framework 4.5.1]

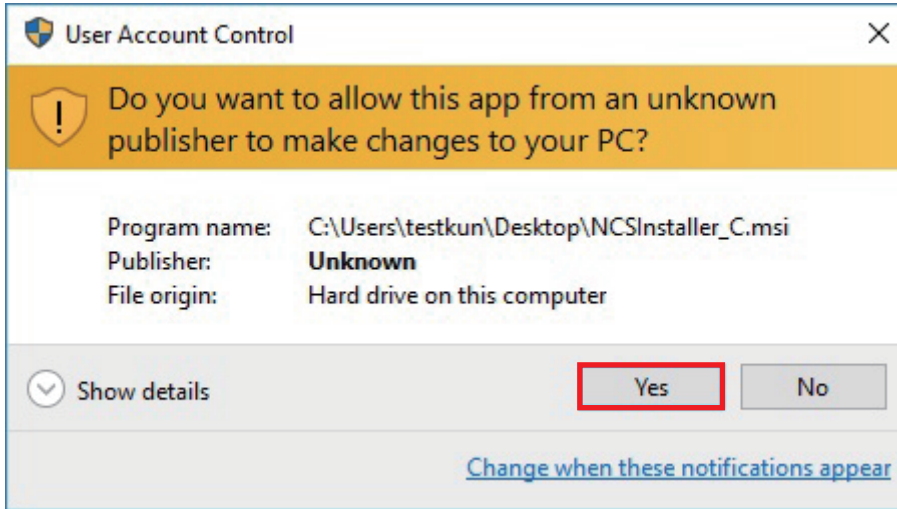
* This dialog box does not appear when .NET Framework 4.5.1 is already installed.



Click [Accept].

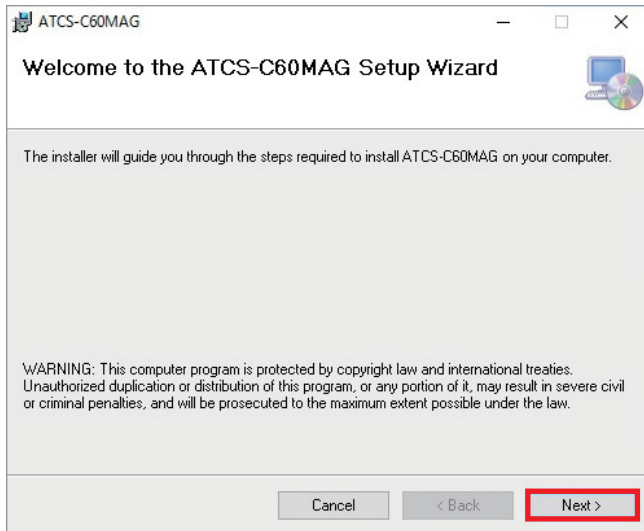
[Installation procedures]

- * When the ATCS-C60MAG installation begins, the confirmation dialog box shown below is displayed.



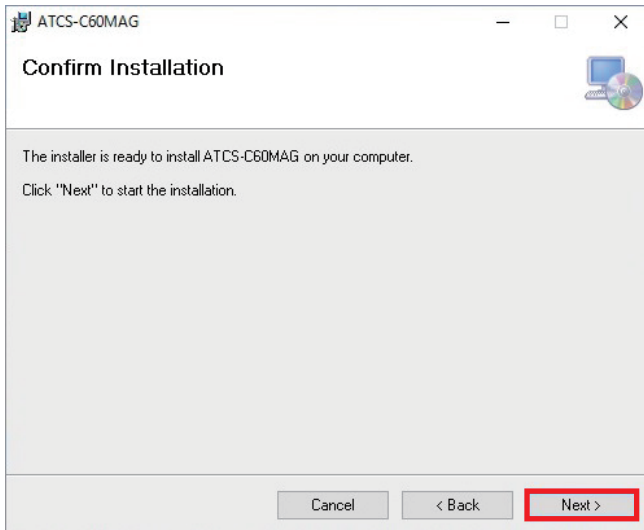
Click[Yes].

[Installation of ATCS-C60MAG]

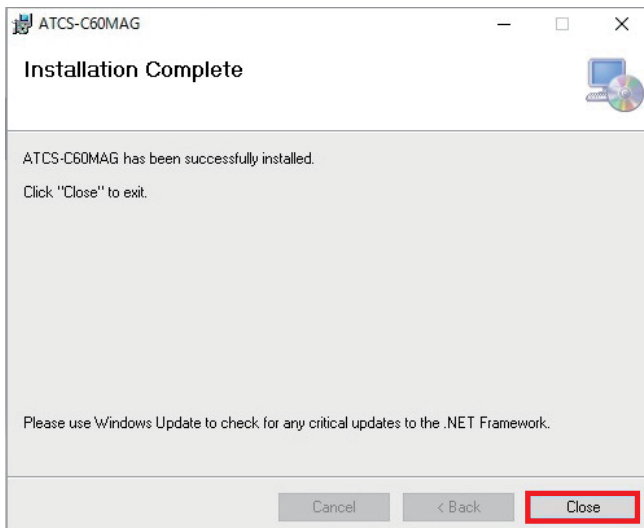


After the required system requirements are met, the ATCS-C60MAG installer starts and the dialog box on the left is displayed.

Click [Next >].



Click [Next >].



Click [Close].

Now the installation is complete.

Restart Windows.

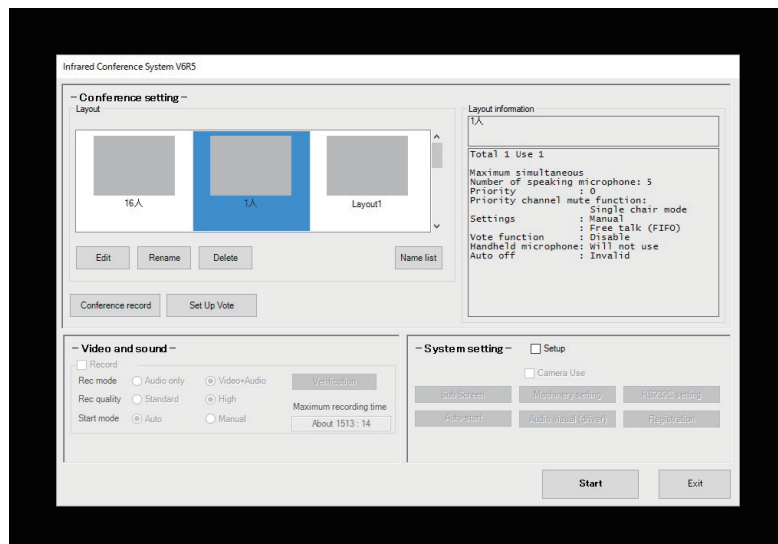
On the desktop, the icon to the right is displayed.
Double-click it to run the conference manager.



The startup window of the conference manager (ATCS-C60MAG) is shown below.



Starting



Settings

12.2. Setting the communication port

Configure the COM port on the RS-232C communication board as shown below. If the COM port is not properly set, the PC will not communicate with the master control unit.

1. Set up the RS-232C communication board as follows.

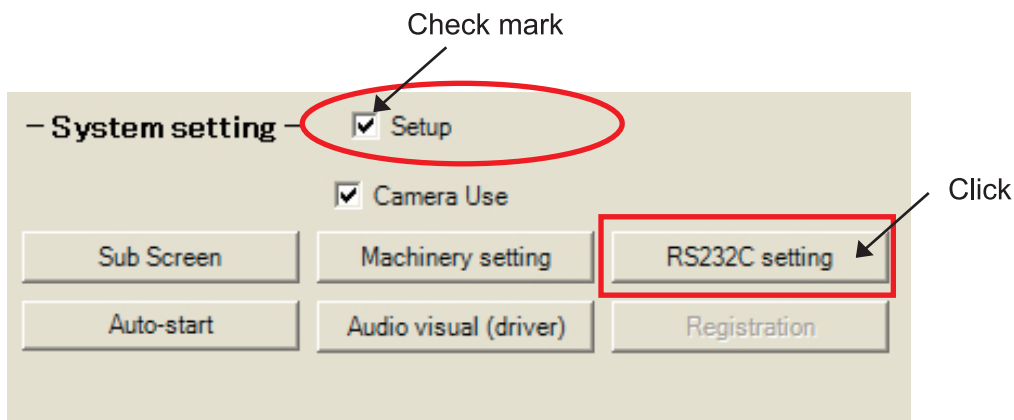
Transmission method	Asynchronous serial transmission
Baud rate	19200 bps

* For details about the setting, refer to the instruction manual for the communication board.

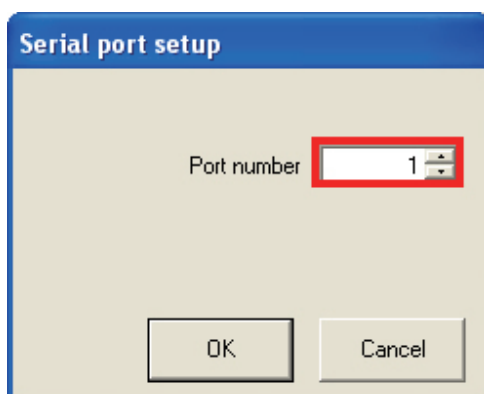
2. Connect the serial connector of the RS-232C communication board with the master control unit using a cable.

D-SUB (9-pin female-female) straight cable is used.

3. Run the conference manager. Check Setup in the System setting window and click RS-232C setting.

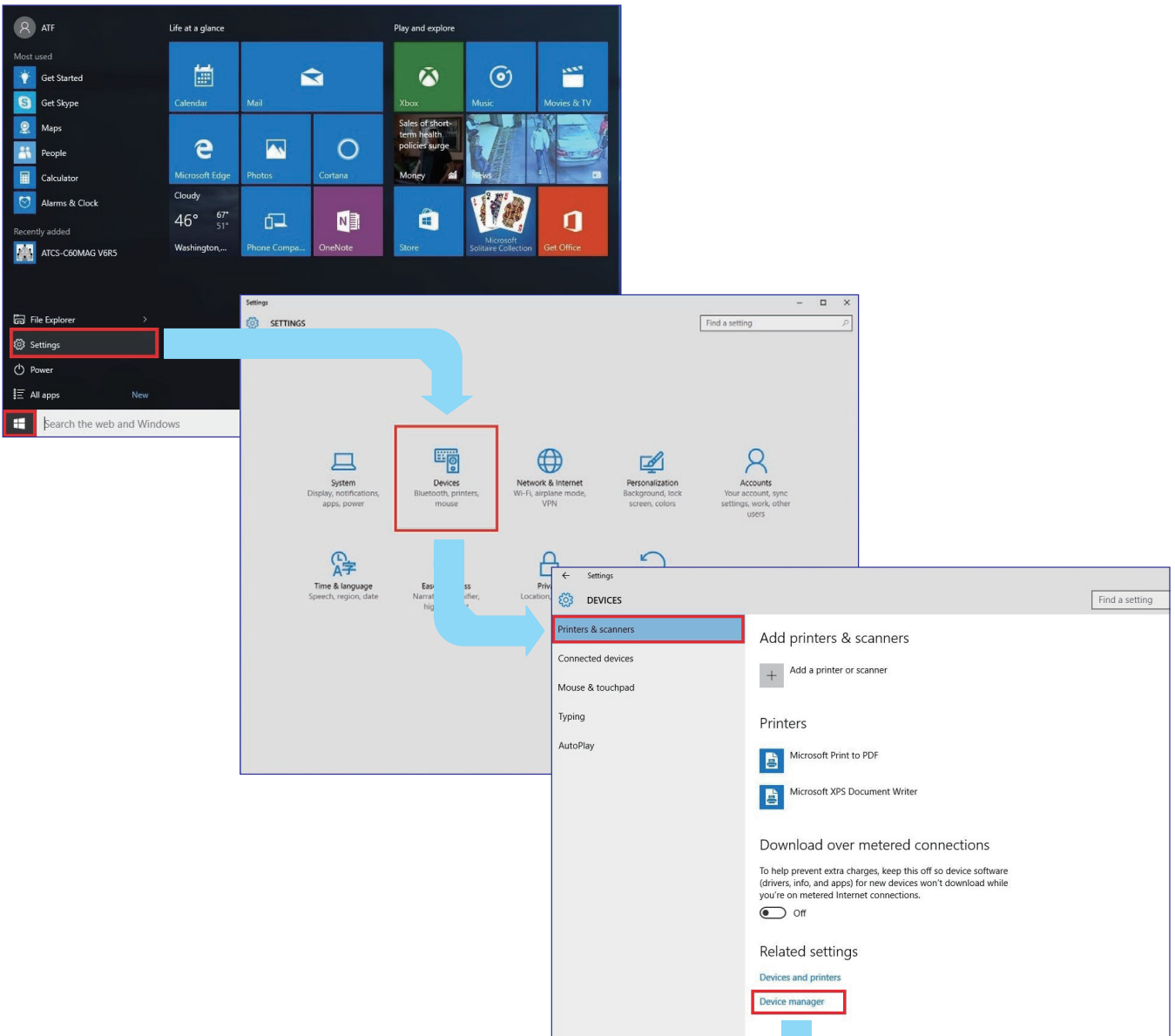


4. Set up the connection with the master control unit.



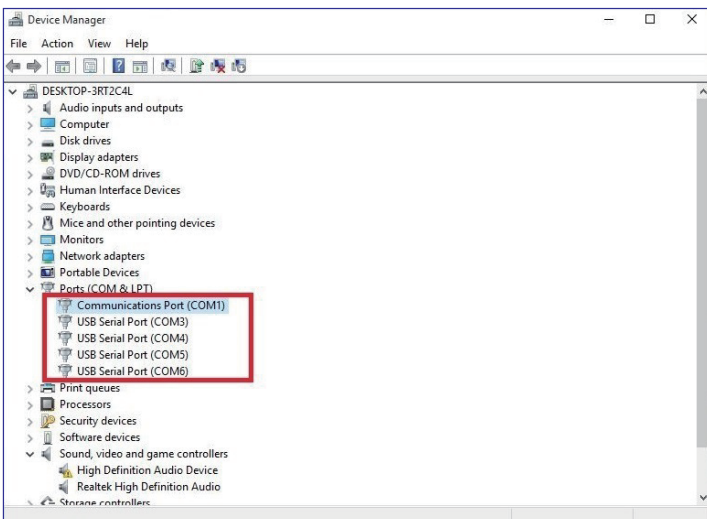
Select the number of the COM port to be connected with the master control unit.

* Follow the procedures described below to check the communication port number.



See Ports (COM & LPT).

<Checking the communication port>



12.3. Conference manager function

The main functions of the conference manager are listed below.

Basic functions

1. Microphone unit ON/OFF
2. Sound volume setting (entire / individual)
3. Lump finish
4. Speaking mode
 - Automatic mode
 - Manual mode [FIFO, LIFO, chairperson priority]
5. Layout editing

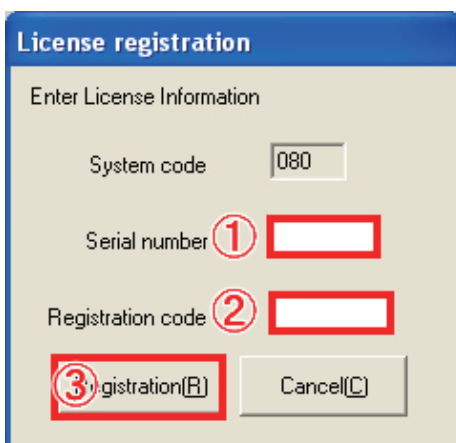
The basic functions are available just after completing the procedures described in “Installation of conference manager” and “Setting the communication port.”

Multimedia system function (basic functions and the following functions)

1. Display of speech time left and current time
2. Camera control
3. Video and sound recording and playback
4. Speech mode
 - Simultaneous interpreting mode
5. Voting function

* In order to use the multimedia functions, “Multimedia system registration” is required.

12.4. Multimedia system registration



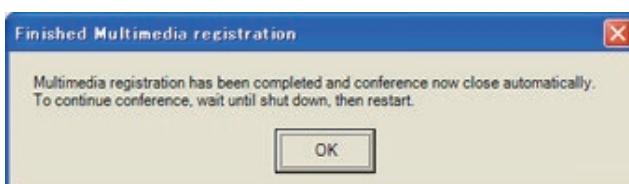
(i) Input the serial number found on the product DVD-ROM.

(ii) For the registration code, please contact the local Audio-Technica or local distributor of Audio-Technica.

* The system code and serial number are required when requesting the registration code.

* Contact information is listed on the last page.

(iii) Click [Registration].



Input the correct code to complete multimedia system registration.

Click the [OK] button, and launch Conference Manager again.

13. Technical Data

13.1. IR transmitter/receiver unit (ATCS-A60)

- a. Transmission method : Infrared Wireless system
- b. Carrier frequency band : 1 to 10 MHz
- c. Infrared wave length : 870 nm
- d. Modulation method : Frequency modulation
- e. Operating distance : ATCS-M60a . . . Approx. 5 m
: ATCS-M65 . . . Approx. 5 m (when the Transmitter power selector switch is set to NORMAL)
Approx. 4 m (when the Transmitter power selector switch is set to LO)
- f. Operating temperature range : 0°C to +40°C
- g. Connection terminal : BNC jack
- h. Power supply : Supplied from the master control unit (24 VDC)
- i. Dimensions : Dia. 108 x H 55.5 mm
- j. Weight : 178 g
- k. Accessories : Mounting bracket x 1, mounting bracket fixing screw x 2

13.2. Master control unit (ATCS-C60a)

- a. Transmission method : Infrared Wireless system
- b. Carrier frequency band : 1 to 10 MHz
- c. Modulation method : Frequency modulation
- d. Infrared data communication method : 9600 bps GMSK system
- e. Input MONITOR INPUT CH. 1 to CH. 4 : -10dBV, unbalanced, pin jack
AUX INPUT 1 : -10dBV, unbalanced, pin jack
AUX INPUT 2 : -10dBV, balanced, SLR-3P/-50dBV, unbalanced, 6.3 mm standard jack
- f. Output DIRECT OUTPUT CH. A to CH. E : -10dBV, unbalanced, 6.3 mm standard jack
OUTPUT 1 : -10dBV, unbalanced, pin jack
OUTPUT 2 : -10dBV, balanced, XLR-3P(male)
REC OUTPUT 1 and 2 : -10dBV, unbalanced, pin jack
- g. Number of connected IR transmitter/receiver units : 4 units (up to 16 units when ATCS-D60 is used.)
- h. External control connection terminal : D-sub connector (9P, male)
RS-232C straight connection (3-wire connection)
Pin number
2. . . RxD reception data
3. . . TxD transmission data
5. . . SG ground for signal
- i. Input volume : Monitor CH. 1 to CH. 4 (GAIN +6 dB to -∞)
: AUX INPUT 1 (GAIN +40 dB to -5 dB)
: AUX INPUT 2 (GAIN +6 dB to -∞)
- j. Output volume : OUTPUT 1 (GAIN +6 dB to -∞)
: OUTPUT 2 (GAIN +6 dB to -∞)
- k. Monitor CH. 1 input switch : MIX (OUTPUT)⇔EXT (INPUT)
- l. Monitor mode switch : 2 LINE (Monitor CH. 1 and CH. 2 are used)⇔4 LINE (Monitor CH. 1 to CH. 4 are used)
- m. Operating temperature range : 0°C to +40°C

- n. Power supply : 100 to 240 VAC, 50/60 Hz, 75W
- o. Dimensions : W431 x D274 x H88 mm (except protrusion)
- p. Weight : 4.3 kg (main body only)
- q. Accessories : Instruction Manual x 1
: Warranty card x 1
: Rack adapter x 2
: Rack adapter fixing screw x 6
: Precision screwdriver x 5
: Power cable x 1

13.3. Microphone unit (ATCS-M60a/ATCS-M65)

- a. Transmission method : Infrared Wireless system
- b. Carrier frequency band : 1 to 10 MHz
- c. Modulation method : Frequency modulation
- d. Infrared wave length : 870 nm
- e. Operating distance : ATCS-M60a . . . Approx. 5 m
: ATCS-M65 Approx. 5 m (when the Transmitter power selector switch is set to NORMAL)
Approx. 4 m (when the Transmitter power selector switch is set to LO)
- f. Input Microphone connection terminal : XLR-4P (female)
- g. Output (ATCS-M60a only)
Monitor loudspeaker : Maximum level 2W8Ω
Headphone output : φ3.5 monaural mini jack
- h. External control connection terminal : MINI-DIN connector 9P (female)
- i. Operating temperature range : 0°C to +40°C
- j. Power supply : Dedicated lithium ion battery with 7.4 VDC, 2400 mAh
or AC adaptor with 12 VDC, 1A
- k. Battery life : Approx. 8 hours when the operation ratio of NORMAL
(Using dedicated battery) transmitting to receiving is 1 : 4
Approx. 9 hours when the operation ratio of LO transmitting to receiving is 1 : 4
(Can be varied according to sound volume of the loudspeaker and operating time and charge condition of the battery.)
- l. Dimensions : W187 x D149 x H75.5 mm
- m. Weight : ATCS-M60a . . . 600 g (excluding microphone or battery)
: ATCS-M65 520 g (excluding microphone or battery)
- n. Accessories : Battery cover x 1

13.4. Voting module(ATCS-V60)

- a. External control connection terminal : MINI-DIN connector 9P (male)
- b. Powersupply : Supplied from the microphone unit (5VDC)
- c. Operating temperature range : 0°C to + 40°C
- d. Dimensions : W 150 x D 67 x H 20 mm
- e. Cable length : 480 mm
- f. Weight : 110 g (including the cable)

13.5. Battery Charger (ATCS-B60)

- a. Power supply : 100 to 240 VAC, 50/60 Hz
(Using AC adaptor with 10 V, 7.2 A)
- b. Rated capacity : 60 VA (10 V, 6 A)
- c. Charging current : 550 mA
- d. Charging time : Approx. 5.5 hours (using dedicated battery)
- e. Dimensions : W 130 x D 340 x H 86.7 mm (except protrusion)
- f. Weight : 2 kg (excluding AC adaptor or power cable)
- g. Accessories : AC adaptor x 1, Power cable x 1

13.6. Distributor (ATCS-D60)

- a. Number of distribution : 2
- b. Frequency band : 1 to 10 MHz
- c. Mixing and distributing loss : 5 dB or less
- d. Input and output impedance : 75 Ω
- e. Connection terminal : BNC jack (DC bypass: 30V 1A or less)
- f. Operating temperature range : -10°C to +50°C
- g. Dimensions : W 100 x D 82.6 x H 30 mm
- h. Weight : 167 g

13.7. Dedicated battery (optional)

Lithium ion battery (7.4 VDC, 2200 mAh)

13.8. Dedicated AC adaptor (optional)

12V 1000mA

13.9. Dedicated microphones (optional)

ATCS-60MIC

- Entire length : 430 mm
- Dimensions : Dia. 24 mm
- Weight : 115 g
- Polar Pattern : Hypercardioid

14. Troubleshooting

14.1. Basic checklist

Situation	Check	Solutions
The microphone unit will not turn on.	<ul style="list-style-type: none"> Is the battery charged? 	<ul style="list-style-type: none"> The batteries must be charged before initial use. Charge before use.
The master control unit is not turned on.	<ul style="list-style-type: none"> Is the power plug inserted into the outlet? Is the venue's main power supply turned off? 	<ul style="list-style-type: none"> Insert the power plug into the outlet. Check the venue's distributor to see whether the corresponding circuit breaker is turned off.
No sound is output from the loudspeaker or the earphone terminal. (ATCS-M60a)	<ul style="list-style-type: none"> Is the monitor selector switch on the microphone unit set correctly? Is the volume turned down on the connected equipment? Is the earphone jack securely inserted? 	<ul style="list-style-type: none"> Switch the monitor number. (Match it with the input terminal number for the master control unit.) Turn up the volume. Insert the earphone jack securely.
<p>The buttons on the microphone unit do not work.</p> <p>The microphone unit cannot be operated on PC.</p>	<ul style="list-style-type: none"> Is the correct ID number set? Is the unit exposed to sunlight or spotlights? Is there any obstruction between the microphone unit and the IR transmitter/receiver unit? Is the microphone unit located over 5 m away from an IR transmitter/receiver unit? * The distance depends on the room condition. Is the power LED on the IR transmitter/receiver unit lit? 	<ul style="list-style-type: none"> Set the ID number from [001] to [188]. Install it and avoid exposure to sunlight or spotlights. Install them so that they can see each other directly. Refer to the installation diagram. Use them within the operating range. Connect the cable between the master control unit and the IR transmitter/receiver units properly.
Operating time of the microphone unit battery is short.	_____	<ul style="list-style-type: none"> The battery is dying.(*1) Purchase a new battery.
<p>The microphone unit battery cannot be charged.</p> <ul style="list-style-type: none"> The charging lamp does not light. The charging lamp is flashing. Charging does not complete after 7 hours. 	<ul style="list-style-type: none"> Are the charging terminals dirty? Has the battery been left for a long time after charging? Can other batteries be charged? 	<ul style="list-style-type: none"> Clean the charging terminals. Replace it with new one.

*1 The discharge/charge cycle life is approximately 300 complete cycles.

14.2. Checking transmission and reception of infrared signals.

Set the microphone unit ID numbers as shown in the table to check receiving condition of the master control unit.

Set ID of the microphone unit	Condition of the master control unit
191	The IR receiving LED [A] on the master control unit front panel turns on and the microphone sound is output.
192	The IR receiving LED [B] on the master control unit front panel turns on and the microphone sound is output.
193	The IR receiving LED [C] on the master control unit front panel turns on and the microphone sound is output.
194	The IR receiving LED [D] on the master control unit front panel turns on and the microphone sound is output.
195	The IR receiving LED [E] on the master control unit front panel turns on and the microphone sound is output.
196	The IR receiving LED [DATA] on the master control unit front panel turns on.

1. Set the THRESHOLD switch to 0, HOLD switch to 0, and TEST switch to 2. Then turn on the master control unit again. Set the microphone unit ID number to [191] and turn the unit on. Check whether the IR receiving LED [A] lights and microphone sound is output.
2. Next, turn off the microphone unit temporarily to set the microphone unit ID number to [192] to [196] and turn it on again. Check whether the IR receiving LED [B] to [E] corresponding to the ID number on the master control unit front panel lights and microphone sound is output. (Refer to the table above.) Note that when the ID number is [196], only [DATA] lights and no sound is output.

* If sound is not output or the indicator LEDs on the front panel of the master control unit flicker or do not light, the system may not be operating properly.

For the product warranty and repairs, contact your sales representative or our business office.

Audio-Technica Overseas offices

Audio-Technica U.S., Inc.

1221, Commerce Drive, Stow, Ohio 44224 USA

+1 (330) 68 6-2600

Audio-Technica Limited (UK)

Unit 5, Millennium Way Leeds, LS11 5AL United Kingdom

+44 (0) 113 277 1441

Audio-Technica Niederlassung Deutschland

Lorenz Schott Strasse 5 55252 Mainz-Kastel Germany

+49 (0) 6134 -25734-0

Audio-Technica SAS

11 rue des Pyramides 75001 PARIS France

+01 43 72 82 82

Audio-Technica (Greater China) Limited

Unit K, 9/F1, Kaiser Estate (Phase2)

51 Man Yue Street, Hunghom, Kowloon Hong Kong

+852-2356-9268

Audio-Technica (S.E.A) Pte.Ltd.

1 Ubi View #01-14 Focus One Singapore 408555

+65-6749 5686

Audio-Technica Taiwan Co.,Ltd.Taipei Branch

2F, No.85, Sec. 1, Da-an Rd., Taipei City 10688, Taiwan

+886-2-8772-8608

Audio-Technica Corp.

2-46-1 Nishi-naruse, Machida, Tokyo 194-8666, Japan

+81-42-739-9111

<http://www.audio-technica.co.jp/overseas>