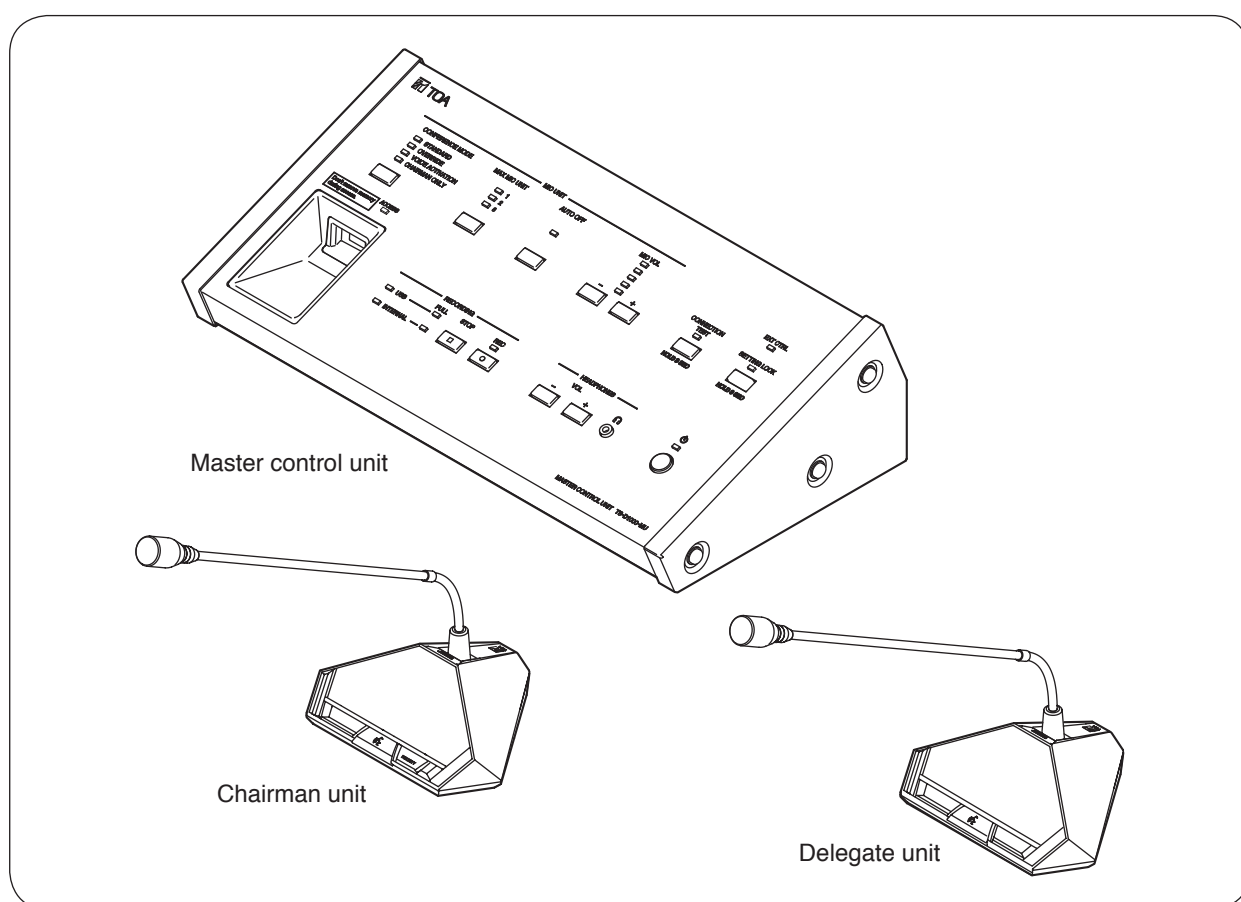




INSTRUCTION MANUAL

DIGITAL CONFERENCE SYSTEM

TS-D1000 SERIES



Thank you for purchasing TOA's Digital Conference System.

Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

TABLE OF CONTENTS

1. SAFETY PRECAUTIONS	4
2. GENERAL DESCRIPTION	6
3. FEATURES	6
4. AVAILABLE INSTRUCTION MANUALS	6
5. NOMENCLATURE AND FUNCTIONS	7
5.1. TS-D1000-MU Master Control Unit	7
5.2. TS-D1000-SU Sub Control Unit	10
5.3. TS-D1000-EX Extension Unit	11
5.4. TS-D1000-CU Chairman Unit	12
5.5. TS-D1000-DU Delegate Unit	14
6. CONFERENCE SYSTEM OPERATION	16
6.1. Requesting Permission to Speak	16
6.2. Initiating Priority Speech (TS-D1000-CU Chairman Unit Only)	17
7. USING THE RECORDING FUNCTION	19
7.1. Notes on Use	19
7.2. Usable USB Memory Devices	19
7.3. Sound Source File Specifications and Filenames	20
7.4. Recording to a USB Memory Device	21
7.5. Recording to the Internal Memory	22
8. SYSTEM EXAMPLES	23
8.1. Basic System Example	23
8.2. Expanded System Example – Connected Unit Expansion	24
8.3. Expanded System Example – Distance Extension	25
9. CONNECTIONS	26
9.1. Power Supply Connections	26
9.2. Signal Ground Connections	26
9.3. Conference Unit and Sub Control Unit Connections	27
9.4. LAN Connection	27
9.5. External Device Connections	27
10. INSTALLATION	28
10.1. Mounting the Control Unit in an Equipment Rack	28
10.2. Microphone Connection	30
10.3. Connection Test	30
11. SETTINGS	31
11.1. Conference Mode Setting	31
11.2. Max. Open Mic No. Setting	32
11.3. Mic Auto-Off Setting	33
11.4. Conference Unit Monitor Volume Setting	34
11.5. Setting Lock	35

12. BROWSER SETTING	36
13. FEEDBACK SUPPRESSION MEASURES	37
13.1. Internal FBS Function	37
13.2. Using an External Processor	37
14. IF A FAILURE IS DETECTED	38
14.1. TS-D1000-MU Master Control Unit	38
14.2. TS-D1000-SU Sub Control Unit	39
14.3. TS-D1000-EX Extension Unit	39
14.4. TS-D1000-CU Chairman Unit and TS-D1000-DU Delegate Unit	39
15. SPECIFICATIONS	41
15.1. TS-D1000-MU Master Control Unit	41
15.2. TS-D1000-SU Sub Control Unit	42
15.3. TS-D1000-EX Extension Unit	43
15.4. TS-D1000-CU Chairman Unit	43
15.5. TS-D1000-DU Delegate Unit	44
15.6. TS-D1000-M1 Standard Microphone and TS-D1000-M2 Long Microphone ...	44

1. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and/or cautions regarding safety.
- After reading, keep this manual handy for future reference.



WARNING

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

Applicable to TS-D1000-MU, TS-D1000-CU, TS-D1000-DU, TS-D1000-SU, and TS-D1000-EX

- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in fire or electric shock.
- Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down and causing personal injury and/or property damage.
- Since the unit is designed for indoor use, do not install it outdoors. If installed outdoors, the aging of parts causes the unit to fall off, resulting in personal injury. Also, when it gets wet with rain, there is a danger of electric shock.
- Should the following irregularity be found during use, immediately switch off the power, disconnect the power supply plug from the AC outlet and contact your nearest TOA dealer. Make no further attempt to operate the unit in this condition as this may cause fire or electric shock.
 - If you detect smoke or a strange smell coming from the unit
 - If water or any metallic object gets into the unit
 - If the unit falls, or the unit case breaks
 - If the power supply cord is damaged (exposure of the core, disconnection, etc.)
 - If it is malfunctioning (no tone sounds)
- To prevent a fire or electric shock, never open nor remove the unit case as there are high voltage components inside the unit. Refer all servicing to qualified service personnel.
- Do not place cups, bowls, or other containers of liquid or metallic objects on top of the unit. If they accidentally spill into the unit, this may cause a fire or electric shock.

Applicable to TS-D1000-MU, TS-D1000-SU, and TS-D1000-EX

- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock.
- Do not cut, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects -- including the unit itself -- on the power cord, as doing so may result in fire or electric shock.
- Do not touch a power supply plug during thunder and lightning, as this may result in electric shock.

Applicable to TS-D1000-MU, TS-D1000-CU, and TS-D1000-DU

- Do not insert nor drop metallic objects or flammable materials in the ventilation slots of the unit's cover as this may result in fire or electric shock.

Applicable to TS-D1000-MU, TS-D1000-CU, and TS-D1000-DU



- To prevent possible hearing damage, do not listen at high volume levels for long periods.



CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

Applicable to TS-D1000-MU, TS-D1000-CU, TS-D1000-DU, TS-D1000-SU, and TS-D1000-EX

- Avoid installing the unit in humid or dusty locations, in locations exposed to the direct sunlight, near the heaters, or in locations generating sooty smoke or steam as doing otherwise may result in fire or electric shock.
- Do not place heavy objects on the unit as this may cause it to fall or break which may result in personal injury and/or property damage. In addition, the object itself may fall off and cause injury and/or damage.

Applicable to TS-D1000-MU, TS-D1000-SU, and TS-D1000-EX

- Never plug in nor remove the power supply plug with wet hands, as doing so may cause electric shock.
- When unplugging the power supply cord, be sure to grasp the power supply plug; never pull on the cord itself. Operating the unit with a damaged power supply cord may cause a fire or electric shock.
- When moving the unit, be sure to remove its power supply cord from the wall outlet. Moving the unit with the power cord connected to the outlet may cause damage to the power cord, resulting in fire or electric shock. When removing the power cord, be sure to hold its plug to pull.
- Use the specified AC adapter for the unit. Note that the use of other adapter may cause a fire.
- If dust accumulates on the power supply plug or in the wall AC outlet, a fire may result. Clean it periodically. In addition, insert the plug in the wall outlet securely.
- Switch off the power, and unplug the power supply plug from the AC outlet for safety purposes when cleaning or leaving the unit unused for 10 days or more. Doing otherwise may cause a fire or electric shock.

Applicable to TS-D1000-MU and TS-D1000-SU

- Be sure to follow the instructions below when rack-mounting the unit. Failure to do so may cause a fire or personal injury.
 - Install the equipment rack on a stable, hard floor. Fix it with anchor bolts or take other arrangements to prevent it from falling down.
 - When connecting the unit's power cord to an AC outlet, use the AC outlet with current capacity allowable to the unit.
 - The rack-mounting screws supplied with the optional rack-mounting brackets* can be used for the TOA equipment rack only. Do not use them for other rack.

* For TS-D1000-MU : MB-TS920

For TS-D1000-SU : MB-15B-BK, MB-15B-J

Applicable to TS-D1000-MU, TS-D1000-SU, TS-D1000-EX, TS-D1000-CU, and TS-D1000-DU

Warning: Operation of this equipment in a residential environment could cause radio interference.

2. GENERAL DESCRIPTION

The TOA TS-D1000 Series is a conference system specially designed for easy set up, disassembly and storage. It can be used by merely connecting a number of conference units* to the TS-D1000-MU Master control unit. Up to 32 Conference units can be connected. This number can be increased to up to 246 units (up to 2 Chairman Units) by further connecting a maximum of 5 TS-D1000-SU Sub control units.

* Collective name of the two models: TS-D1000-CU Chairman unit and TS-D1000-DU Delegate unit

3. FEATURES

- By simply connecting the required number of Conference units to the Master control unit, the system's fully digital audio processing system can clearly amplify all conference participant voices.
- Up to 32 Conference units can be connected to each Master control unit (1 line: 16 units × 2 lines).
- Up to 246 Conference units can be connected in a system if the maximum of 5 Sub control units are also used.
- Inter-equipment connections can be performed in a daisy chain configuration using Cat5e STP LAN cable.
- Either 'Standard' or 'Long' versions of the flexible microphone arm can be selected for use with the Conference unit.
- The Conference unit's microphone arm is designed to be easily detachable for space-saving storage.
- A test function allows easy confirmation of the Conference unit's connection status.
- Conference mode can be selected for more effective operation during conference proceedings.
- The number of Delegate units that can simultaneously speak can be limited using the Max. open mic No. restriction function.
- The Mic auto-off function automatically turns off the microphone after approximately 30 seconds, even if the user forgets to turn off the microphone after speaking.
- Since the Master control unit is provided with its own individual recording function, the contents of the conference can be recorded to either internal memory or a commercially-available USB memory device. External recording devices can also be connected.
- The Master control unit's power save function automatically powers down the system if the user forgets to turn the power off.
- Conference units can be set to mute the monitor speaker or reduce sound volume when the microphone is switched ON to eliminate concerns about feedback (howling).* Even if feedback briefly occurs, the Master Control unit's feedback suppressor (FBS) function provides highly effective control.

* Squeal or howling sounds caused by a feedback loop created when the microphone picks up sound output from the speaker, which is then further amplified by an amplifier.

4. AVAILABLE INSTRUCTION MANUALS

The following two instruction manuals are made available for the TS-D1000 Series digital conference system:

	Manual Name	Manual Outline	Remarks
(1)	Instruction manual	General explanations of installation, connection, operation, settings, etc	The manual currently in hand
(2)	Instruction manual (Browser settings)	Explanation of browser settings	Web only

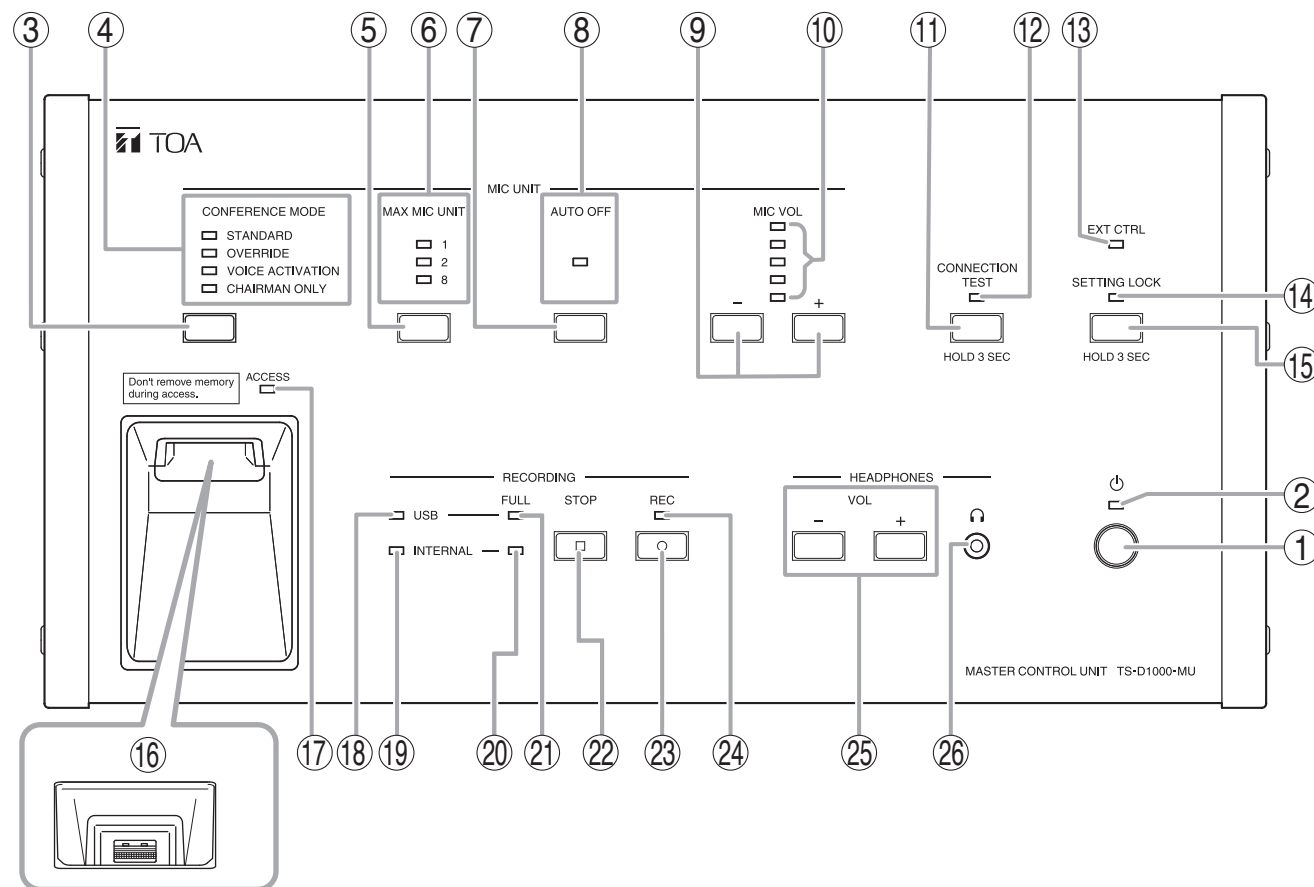
Note

Regarding (2) above, since some items can only be set using a web browser, download the manual from the TOA DATA Library. (<https://www.toa-products.com/international/>).

5. NOMENCLATURE AND FUNCTIONS

5.1. TS-D1000-MU Master Control Unit

[Top]



1. Power switch (For 24 V DC)

Press this switch to turn the Power ON. Press the switch again to switch the power OFF.

Note

The TS-D1000-MU is equipped with a Power save function. If any device connected to the system, including Conference units, is not operated for more than two hours, power is automatically turned OFF. However, when recording or speech operations are in progress, the power turns off two hours after such operations are terminated.

2. Power indicator (White)

Lights when power is turned ON.

3. Conference mode selector key

Used to select one of the following four conference modes when a Conference unit's Talk key is pressed and the allowable number of speaking Delegate units is exceeded:

- Standard (factory default setting)
- Override
- Voice activation
- Chairman only

Note

Refer to "Conference Mode Setting" on p. 31 for details regarding each conference mode.

4. Conference mode indicators (Green)

The indicator corresponding to the selected by conference mode selector key (3) lights.

5. Max. open mic No. setting Key

Used to set the number of units that can be used simultaneously. Max. open mic No. indicators 1, 2 and 8 show the number of Delegate unit who can simultaneously speak. (See "Max. Open Mic No. Setting" on p. 32.)

6. Max. open mic No. indicators (Green)

The indicator that corresponds to the number of speaking parties (selected with the Max. open mic No. setting key) (5) lights.

All indicators light when the Max. open mic No. is set to between 3 and 7 using the browser.

All indicators remain unlit when Voice activation or Chairman only modes are selected using the Conference mode selector key (3).

7. Mic auto-off setting key

Delegate unit microphones can be set to automatically disable approximately 30 seconds after speaking ends if the user forgets to turn it OFF. The function switches between Enabled and Disabled with each depression of this key.

Note

Factory preset to Disabled.

8. Mic auto-off indicator (green)

Lights when Mic auto-off is enabled, and extinguishes when disabled.

Note

Factory preset to Disabled.

9. Monitor volume control Keys (–, +)

[–]: Pressing this key reduces the Conference unit's monitor speaker volume.

[+]: Pressing this key increases the Conference unit's monitor speaker volume.

10. Monitor volume indicators (Green)

Provide visual indication of the Conference unit's monitor sound volume level.

11. Connection test key

Pressing this key for 3 seconds or more provides confirmation of a connection to the Conference unit. Pressing the key again for 3 seconds or more terminates the Connection test function. (See "Connection Test" on p. 30.)

12. Connection test indicator (Orange)

Lights when Conference unit connection test is enabled and extinguishes when finished.

13. External control indicator (Orange)

Lights when put in centralized control mode using special-order software.

14. Setting lock indicator (Orange)

Lights when the Setting lock function is enabled, and extinguishes when setting adjustment can be performed.

15. Setting lock key

Press this key for 3 seconds or more when disabling Master control unit key operation to avoid mistaken operation. ("Setting Lock" on p. 35.)

16. USB memory device port

Insert a USB memory device into this port for recording. For information on compatible USB memory device types, please refer to "Usable USB memory devices" on p. 19.

Note

Internal memory recording is disabled whenever a USB memory device is inserted into this port.

17. Access indicator (Green)

Remains continuously lit until a compatible USB memory device is inserted into the USB memory device port (16). Also remains lit during recording to the USB memory device.

Note

Do not remove the USB memory device or turn OFF the power while this indicator is lit.

18. USB memory device indicator (Green)

Lights when the inserted USB memory device is ready for recording.

19. Internal memory indicator (Green)

Lights when a USB memory device is not inserted in the USB memory device port to indicate that recording can be made to internal memory.

20. Internal memory remaining capacity warning indicator (Orange)

Flashes whenever the internal memory's remaining available recording time falls to less than one hour. Continuously lights to indicate that no internal memory recording time remains.

21. USB memory device remaining capacity warning indicator (Orange)

Flashes whenever the USB memory device's remaining available recording time falls to less than one hour. Continuously lights to indicate that no USB memory device recording time remains.

22. Recording STOP key

Press this key to stop recording.

23. Recording START key

Press this key to start recording.

24. Recording status indicator (Red)

Remains lit during recording.

25. Headphone volume control keys (–, +)

[–]: Pressing this key reduces the headphone sound volume.

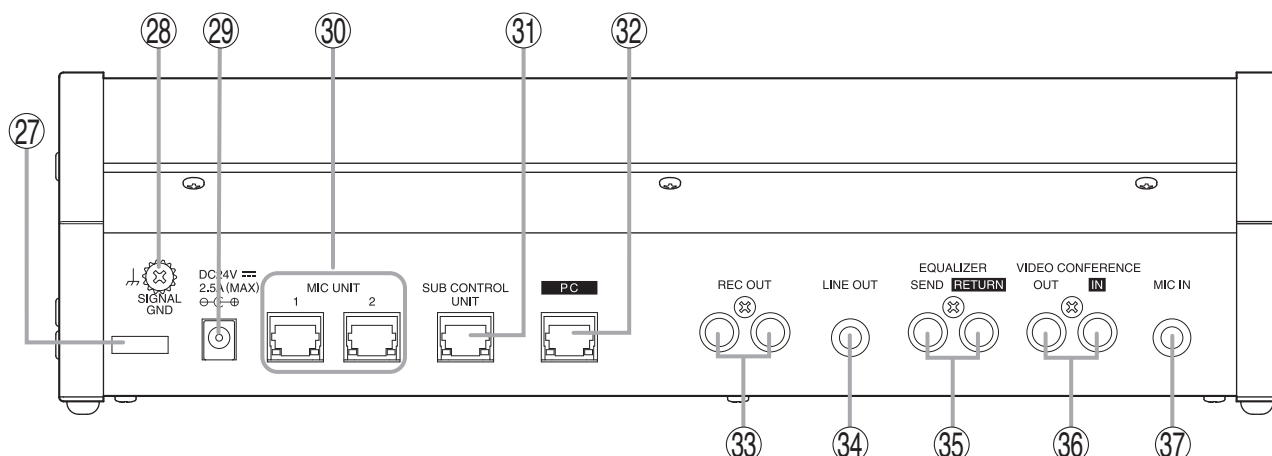
[+]: Pressing this key increases the headphone sound volume.

26. Headphone jack (Mini-Jack)

Connect any compatible monaural headphone to this jack.

If the headphone is disconnected, headphone sound volume will revert to the factory default setting (–10 dB). Restarting the unit's power will also cause the sound volume to revert to the default setting (–10 dB).

[Rear]



27. Cable clamp

Route the power cable through this clamp to prevent the AC adapter plug from accidentally being disconnected.

28. Signal ground terminal

When connection of an external device to the TS-D1000-MU results in the generation of audible noise, connect this terminal to the Signal ground terminal of the external device. Noise output should be greatly reduced.

Note

This is not a protective ground connection.

29. DC inlet

Insert the power plug from the unit's supplied AC adapter into this inlet.

30. Conference unit connection terminal

RJ45 x 2

Connects to the Conference unit by way of a Cat5e STP LAN cable. Up to 16 conference units can be daisy chain connected to each terminals.

31. Sub control unit connection terminal

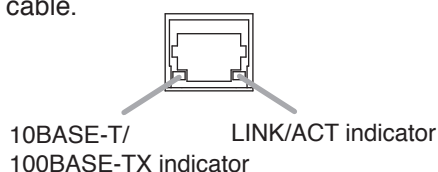
RJ45

Connects to a maximum of 5 Sub-Control units by way of a Cat5e STP LAN cable. If 5 Sub-Control units are connected, up to 246 Conference units can be connected to the system.

32. Network connection terminal

RJ45

Connects the PC to the network by way of a Cat5e STP LAN cable.



- 10 BASE-T/100BASE-TX indicator (Orange)
Extinguishes when a 10BASE-T network is connected to the TS-D1000-MU, and lights when a 100BASE-TX network is connected.

- LINK/ACT indicator (Green)

Lights when the TS-D1000-MU is connected to a network and flashes during data transmission/reception.

33. Recording output terminals

(-10 dB*, 10 kΩ, unbalanced, RCA pin jack x 2)

Connect to external recording devices, such as IC recorders. The same sound output is delivered to both jacks so that simultaneous recordings can be made using two recording devices.

34. Line output terminal

(-10 dB*, 10 kΩ, unbalanced, phone jack)

Connects to a PA amplifier or other public address device.

35. Equalizer connection terminals

(-10 dB*, 10 kΩ, unbalanced, RCA pin jack x 2)

Connect to an external processor, such as a feedback suppressor (FBS). Depending on the status of the input and output terminals, sound routing and internal FBS ON/OFF status are automatically switched.

[When connected to an external processor]

When an external processor is connected to these SEND and RETURN terminals, the internal FBS circuit is switched OFF.

[When not connected to an external processor]

When no external processor is connected to these SEND and RETURN terminals, the internal FBS circuit remains ON.

36. Video conference system connection terminals

(-10 dB*, 10 kΩ, unbalanced, RCA pin jack x 2)

Connect to external devices such as a video conference system. Mix-minus function eliminates unit-generated signals from the output.

37. Microphone input terminal

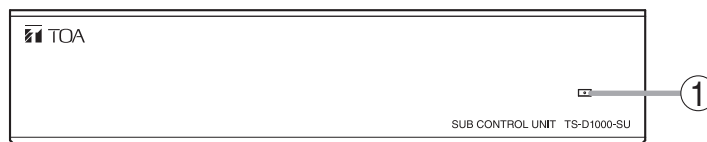
(-54 dB*, 600 Ω, unbalanced, phone jack)

Connects to a wired microphone.

* 0 dB = 1 V

5.2. TS-D1000-SU Sub Control Unit

[Front]

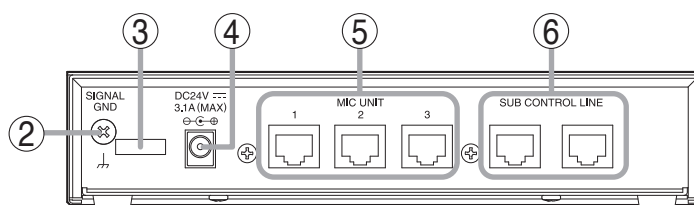


1. Power indicator (White)

Lights when power is switched ON.

This indicator interlocks with the Master control unit's power switch operation when the Master control unit and the supplied AC adapter are connected to the Sub control unit.

[Rear]



2. Signal ground terminal

When connection of an external device to the TS-D1000-SU results in the generation of audible noise, connect this terminal to the Signal ground terminal of the external device. Noise output should be greatly reduced.

Note

This is not a protective ground connection.

3. Cable clamp

Route the power cable through this clamp to prevent the AC adapter plug from accidentally being disconnected.

4. DC inlet

Insert the power plug from the unit's supplied AC adapter into this inlet.

5. Conference unit connection terminals

RJ45 × 3

Connect conference units to these terminals using CAT5e STP LAN cables. Up to 16 Conference units can be daisy chain connected to each terminal.

6. Sub-control unit connection terminals

RJ45 × 2

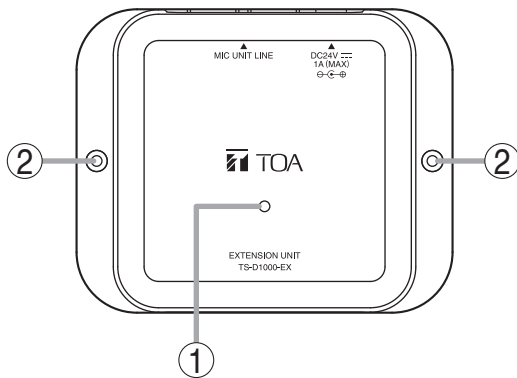
Connect the Master control unit or other Sub control units to these terminals using CAT5e STP LAN cables.

Tip

Either terminal may be used for connection.

5.3. TS-D1000-EX Extension Unit

[Top]



1. Power indicator (Green)

Lights when power is switched ON.

This indicator interlocks with the Master control unit's power switch operation when the Master control or the Sub control unit, and the supplied AC adapter are connected to the Extension unit.

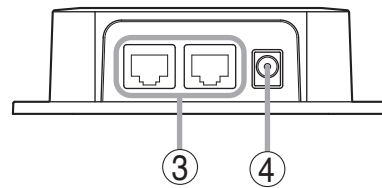
2. Mounting holes

Mounting holes for 3 mm (0.12") diameter screws. Use these holes when attaching the unit to a wall or other surface.

Note

Please note that the mounting screws themselves are not supplied with the unit.

[Rear]



3. Conference unit connection terminals

RJ45 × 2

When extending the distance between two Conference units, connect to either of these terminals using a CAT5e STP LAN cable.

Tip

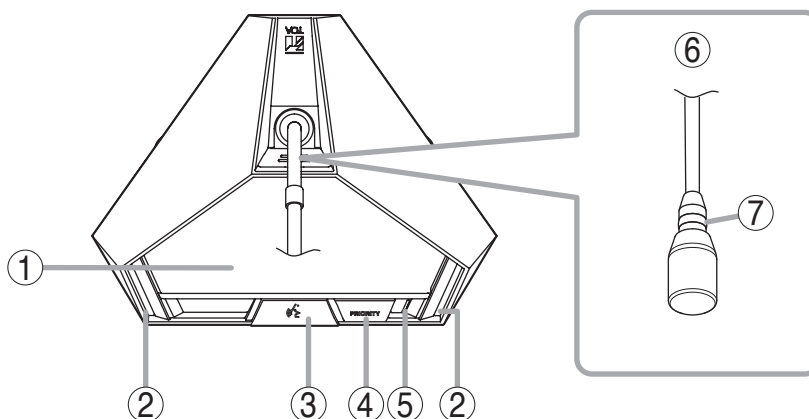
Either terminal may be used for connection.

4. DC inlet

Insert the power plug from the unit's supplied AC adapter into this inlet.

5.4. TS-D1000-CU Chairman Unit

[Top]



Note: No microphone is supplied with the TS-D1000-CU.

1. Monitor speaker

Speech signals from other Conference units and other audio signals from the Master control unit are output from this speaker.

Use the right-side Monitor volume control (10) to adjust the volume. The sound volume of the monitor speaker is attenuated whenever the unit is being used for speaking.

Tip

Speaker output can be muted by way of browser setting.*

2. Speech indicator (Red)

Remains lit while the microphone is in use (during speech).

3. Talk key

When this key is pressed, both the Speech indicator (2) and the Microphone in-use indicator (7) light, and the microphone turns on. Pressing this key again turns off both indicators and the microphone.

4. Priority speech key

Gives speaking priority to the current speaker. When this key is used for speech, no other delegate units can be used. Sound from both external microphone and video conference inputs are also muted. The key has 2 different operating modes, PTT mode and ALT.

Factory preset to PTT mode.

PTT mode: Microphone turns ON only while the Talk key is pressed.

ALT mode: Microphone turns ON when the Talk key is pressed, and OFF when pressed again.

If Chime is set to sound, a chime tone sounds when the key is pressed.

Factory preset to ON.

A browser can be used to set key operation and chime volume.

For more information regarding key operation and its actions, please refer to "Initiating Priority Speech" on p. 17.

5. Power indicator (White)

Lights when the power is switched ON.

6. Microphone

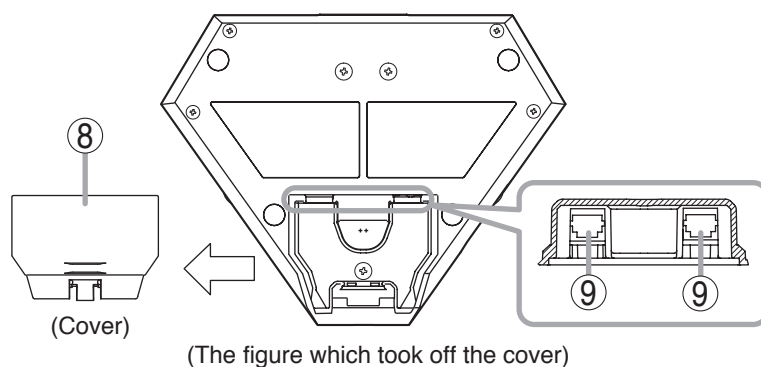
Use either the TS-D1000-M1 Standard microphone or TS-D1000-M2 Long microphone.

7. In-use indicator (Red)

Lights when the microphone is turned on (for speech).

* For details, please refer to the separate Instruction Manual (Browser Settings), which can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

[Bottom]



8. Connection terminal cover

Detach this cover when connecting Conference units to the Conference unit connection terminals (9). After completing connection, replace the cover where it was.

9. Conference unit connection terminals

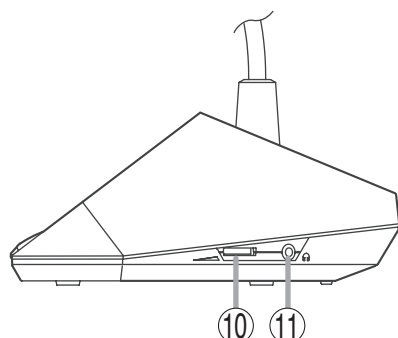
RJ45 x 2

Connect these terminals to the Conference unit connection terminal of the TS-D1000-MU Master control unit, a TS-D1000-SU Sub control unit, a TS-D1000-EX Extension unit or another Conference unit using CAT5e STP LAN cables.

Tip

Either terminal may be used for connection.

[Right side]



10. Monitor volume control

Adjusts the output volume of the monitor speaker and right-side earphone output.

11. Earphone Jacks

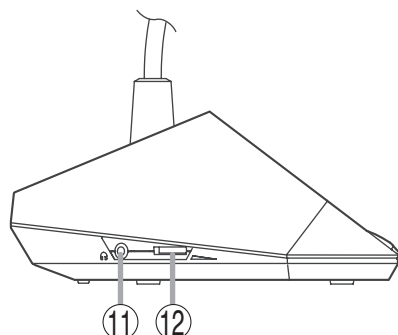
Connect earphone to this jack (mini-jack).

Note

A earphone jack is located on both the left and right side panels.

Monitor speaker output is muted only when the earphone plug is inserted into the right-side earphone jack.

[Left side]

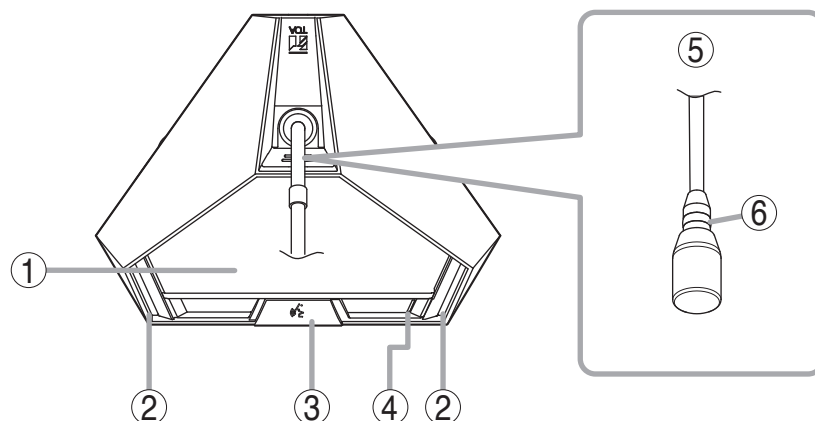


12. Earphone volume control

Adjusts the output volume of the left-side earphone output.

5.5. TS-D1000-DU Delegate Unit

[Top]



Note: No microphone is supplied with the TS-D1000-DU.

1. Monitor speaker

Speech signals from other Conference units and other audio signals from the Master control unit are output from this speaker.

Use the right-side Monitor volume control (9) to adjust the volume. The sound volume of the monitor speaker is attenuated whenever the unit is being used for speaking.

Tip

Speaker output can be muted by way of browser setting.*

2. Speech indicator (Red)

Remains lit while the microphone is in use (during speech).

3. Talk key

When this key is pressed, both the Speech indicator (2) and the Microphone in-use indicator (6) light, and the microphone turns on. Pressing this key again turns off both indicators and the microphone.

4. Power indicator (White)

Lights when the power is switched ON.

5. Microphone

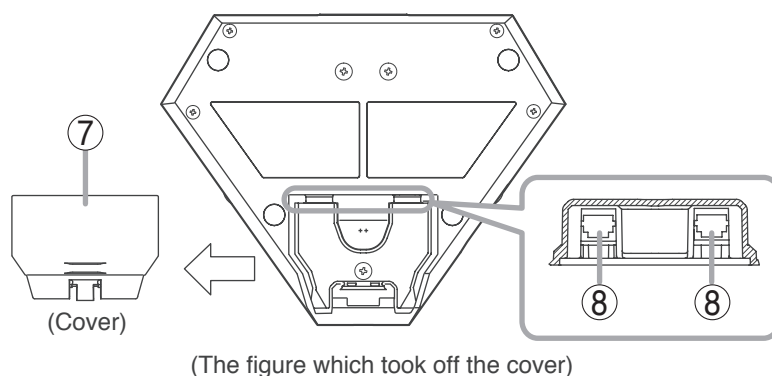
Use either the TS-D1000-M1 Standard microphone or TS-D1000-M2 Long microphone.

6. In-use indicator (Red)

Lights when the microphone is turned on (for speech).

* For details, please refer to the separate Instruction Manual (Browser Settings), which can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

[Bottom]



7. Connection terminal cover

Detach this cover when connecting Conference units to the Conference unit connection terminals (8). After completing connection, replace the cover where it was.

8. Conference unit connection terminals

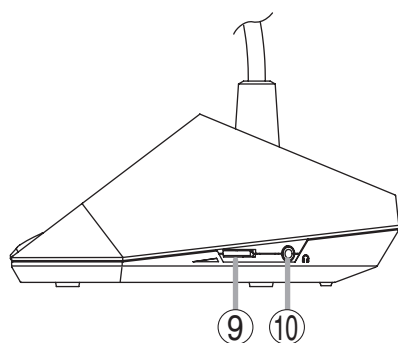
RJ45 x 2

Connect these terminals to the Conference unit connection terminal of the TS-D1000-MU Master control unit, a TS-D1000-SU Sub control unit, a TS-D1000-EX Extension unit or another Conference unit using CAT5e STP LAN cables.

Tip

Either terminal may be used for connection.

[Right side]



9. Monitor volume control

Adjusts the output volume of the monitor speaker and right-side earphone output.

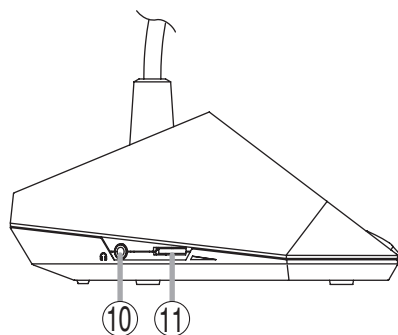
10. Earphone jacks

Connect earphones to this jack (mini-jack).

Note

A earphone jack is located on both the left and right side panels. Monitor speaker output is muted only when the earphone plug is inserted into the right-side earphone jack.

[Left side]



11. Earphone volume control

Adjusts the output volume of the left-side earphone output.

6. CONFERENCE SYSTEM OPERATION

When the Voice activation conference mode is selected, no further operation of the Conference unit is required.
(See p. 31.)

6.1. Requesting Permission to Speak

Step 1. Press the Talk key.

Both the Speech and the microphone's In-use indicators light up, and the microphone turns on.

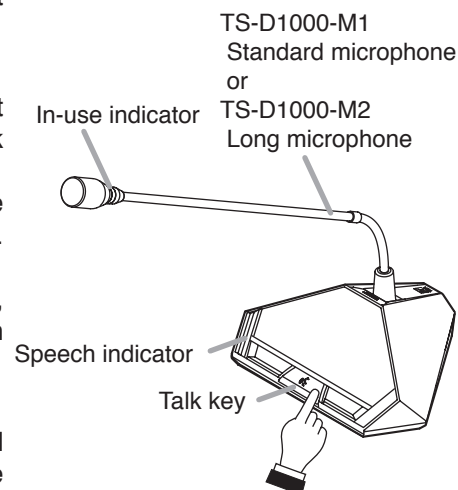
Notes

- The microphone cannot be turned on while the Chairman unit has Priority speech enabled (the next page), even if the Talk key is pressed.
- In the case of the TS-D1000-DU Delegate unit, the microphone may not turn on, even if the Talk key is pressed, due to Max. open mic No. restrictions being enabled (p. 32).
- Up to two Chairman units can always be used for speaking, regardless of Max. open mic No. restrictions (Priority speech excepted).

Tips

- Monitor speaker sound volume is automatically attenuated whenever both the Speech and the microphone's In-use indicators are lit.
- Speaker volume can also be muted in the browser settings. For details, please refer to the separate Instruction Manual (Browser Settings), which can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

[TS-D1000-DU Delegate unit example]



Step 2. Speak.



Step 3. After speaking is finished, press the Talk key again.

Both the Speech and the microphone's In-use indicators extinguish, returning the monitor speaker output to its original volume.



6.2. Initiating Priority Speech (TS-D1000-CU Chairman Unit Only)

Only the TS-D1000-CU Chairman unit has Priority control over speaking functions. Even when a speech is in progress among Conference units, the Chairman unit can terminate the speech and supersede other speakers.

Chairman unit priority speech activation can differ depending on whether operation is set to PTT (see below) or ALT (the next page). Priority speech operation can be changed by browser. For details, please refer to the separate Instruction Manual (Browser Settings).*

Note

Chairman unit priority speech cannot be activated when the Conference mode is set to Voice activation. (See "Conference Mode Setting" on p. 31).

6.2.1. When priority speech activation is set to PTT (factory default setting)

Step 1. Speak while holding down the Priority speech key.

Both the Speech and the microphone's In-use indicators light, and the microphone turns on.

A single-tone chime is sounded at all other Conference units, indicating that the Delegate units cannot be used for speaking. Chime ON/OFF settings can be changed via the browser (factory default setting: ON).

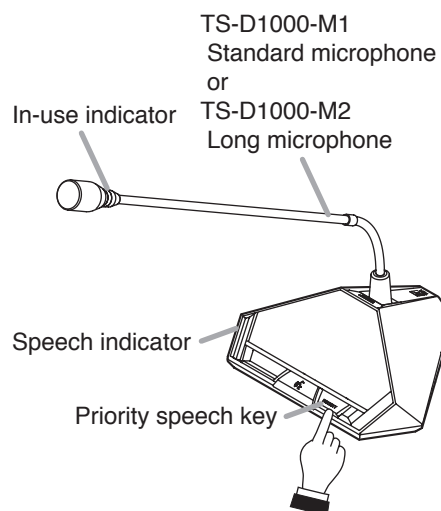
For details, please refer to the separate Instruction Manual (Browser Settings).*

Notes

- During Chairman unit priority speech, sound output from connected wired microphones and the video conference system are muted.
- In the case of systems configured with multiple Chairman units, if one Chairman unit has initiated Priority speech, other Chairman units cannot initiate Priority speech, even if their Priority speech keys are pressed.

Tips

- Monitor speaker sound volume is attenuated when both Speech and the microphone's In-use indicators are lit.
- Monitor speaker volume can be muted in the browser settings. For details, please refer to the separate Instruction Manual (Browser Settings).



Step 2. Release the Priority speech key after speaking is completed.

Both the Speech and the microphone's In-use indicators extinguish, returning monitor speaker output to its original volume.

Note

Terminated Conference units do not automatically revert to their previous speaking modes after Priority speech is terminated. In such cases, first press the Talk key again to cause both the Speech and the microphone's In-use indicators to light, then begin speaking.



* Can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

6.2.2. When priority speech activation is set to ALT

Step 1. Press the Priority speech key.

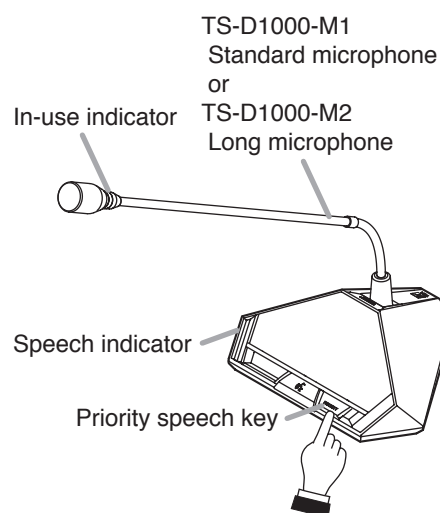
Both the Speech and the microphone's In-use indicators light, and the microphone turns on.

A single-tone chime is sounded at all other Conference units, disabling speech from the Delegate units.

The chime can be turned ON or OFF in the browser settings (factory default setting: ON). For details, please refer to the separate Instruction Manual (Browser Settings).*

Notes

- Monitor speaker sound volume is attenuated when both Speech and the microphone's In-use indicators are lit.
- Monitor speaker volume can be muted in the browser settings. For details, please refer to the separate Instruction Manual (Browser Settings).*



Step 2. Speak.

While speaking in Priority speech mode, no Delegate units can speak.

Notes

- During Chairman unit Priority speech, sound output from connected wired microphones and the video conference system are muted.
- In the case of systems configured with multiple Chairman units, if one Chairman unit has initiated Priority speech, other Chairman units cannot use Priority speech, even if their Priority speech keys are pressed.



Step 3. After speaking is finished, press the Priority speech key again.

Both the Speech and the microphone's In-use indicators extinguish, returning monitor speaker output to its original volume.

Note

Terminated Conference units do not automatically revert to their previous speaking modes after Priority speech is terminated. In such cases, first press the Talk key again to cause both the Speech and the microphone's In-use indicators to light, then begin speaking.



* Can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

7. USING THE RECORDING FUNCTION

The TS-D1000-MU Master control unit is equipped with a recording function, making it possible to create sound source files by recording conference dialog and the like to a commercially available USB memory device. The TS-D1000-MU is also equipped with internal memory for recording operations, and allows recording even when abnormalities arise with the USB memory device.

Note

Only recording can be performed by the TS-D1000-MU. Use a PC to reproduce, delete or copy sound source files.

7.1. Notes on Use

Important

Avoid removing the USB memory device during recording. If removed, the USB memory device might not continue to function properly, or data could be lost.

- The USB memory device cannot be formatted by the TS-D1000-MU.
- Only USB memory devices can be inserted into the USB memory port. Inserting other USB devices could result in operational failure.
- Move the sound source file created in the USB memory device to a PC or other device without saving it to the USB memory device.
- When inserting or removing the USB memory device, do not apply unreasonable force to the port. Failure to observe this instruction could lead to failure of the TS-D1000-MU or damage to the PC or other devices.
- Ensure that the USB memory device is removed when moving the TS-D1000-MU from one place to another. Moving the TS-D1000-MU with such devices inserted could cause failure to the TS-D1000-MU or damage to the USB memory device.
- Be sure to back up recorded internal memory sound source data to a PC or other device, as data could be lost due to the TS-D1000-MU's failure or faulty operation.

7.2. Usable USB Memory Devices

- USB memory device (flash drive) with a capacity of up to 32 GB.
- Compatible with USB 2.0 devices.
- When using a USB memory device with the TS-D1000-MU for the first time, format it with a PC before using. Formatting conditions are as follows:
 - File system: FAT32
 - Allocation unit size: At least 4KB
- Insert the USB memory device into the PC and perform error checking before use.
- Ensure that the USB memory device is ONLY used with the TS-D1000-MU, and avoid using it for other purposes.
- USB memory devices having other specialized functions, such as security functions, cannot be used with the TS-D1000-MU
- There may be cases in which a USB memory device cannot be used with the TS-D1000-MU, depending on the drive's attributes or recording conditions.

7.3. Sound Source File Specifications and Filenames

Notes

- All sound inputs are mixed and recorded.
- Noise may be generated, depending on the contents or volume settings of the input sound source. If annoying, adjust the sound volume of the conference unit or external sound source.

Shown below are specifications and filename format for recorded sound source files:

- Specifications

Recording format: MP3 (monaural)
Sampling frequency: 32 kHz
Bit rate: 128 kbps
Maximum file size: 54.9 MB (recording time: 1 hour)

Tips

- Since the sound source file is automatically divided each time one hour elapses, the above is the maximum size.
- The size of the internal memory is 1 GB, allowing recordings to be made for a total of approximately 18 hours.

- Filename format

A filename indicating the Year, Month, Date, Hour, Minute and Second of the time that the recording was started is automatically assigned to each file as follows:

Sound source filename: YYYYMMDD_HHMMSS.mp3

Example

In the case of a recording started at precisely 10 o'clock AM on January 1, 2020, the filename "20200101_100000.mp3" is assigned when the recording is stopped.

When a recording is continuously made for longer than one hour, the sound source file will automatically be divided whenever one hour passes, and the resulting file saved under a newly assigned filename.

[Time Setting and Confirmation]

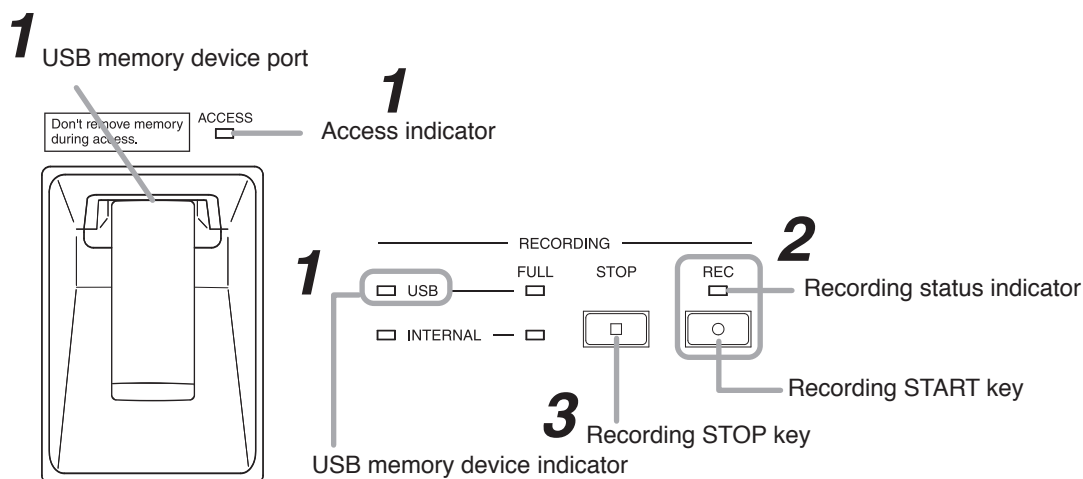
The recording start time included in the sound source filename corresponds to the Master control unit's internal clock. The internal clock can be set via network using a PC browser.

For details, please refer to the separate Instruction Manual (Browser Settings), which can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

7.4. Recording to a USB Memory Device

A commercially available USB memory device (flash drive/thumb drive) is required to make USB memory recordings using the Master control unit. Prepare a USB memory device that meets all the conditions shown in the section, "Usable USB memory devices" on p. 19

7.4.1. Procedure for recording to a USB memory device



Step 1. Insert the USB memory device into the USB memory device port.

If the inserted USB memory device is usable, the USB memory device indicator lights green.

Important

When a USB memory device is inserted, do not remove it or turn off the power switch while the Access indicator is lit. Failure to observe this instruction could cause damage to the USB memory device.

Step 2. Press the Recording START key.

Recording begins. The Recording status indicator lights red and the Access indicator lights green.

Important

Do not remove the USB memory device during recording, as the recording will be interrupted and the sound source file being recorded could be lost.

Tip

If the USB memory device's remaining recordable time falls to less than one hour, the Remaining USB memory capacity warning indicator will flash orange.

Step 3. Press the Recording STOP key to stop the recording.

The Recording status and Access indicators are extinguished when recording operation is complete.

Important

After the Recording STOP key is pressed, do not remove the USB memory nor turn off the power switch while the Recording status and Access indicators remain lit. The red light indicates that the Master control unit is in the process of saving the sound source file for the previously stopped recording.

Step 4. First check to be sure that the Recording status and the Access Indicators are both unlit before removing the USB memory device from the USB memory device port.

7.4.2. Moving a sound source file from the USB memory device

Using a PC, copy the sound source file to the PC's hard drive. Refer to the instruction manual enclosed with the USB memory device or the PC for the correct copy procedure.

Important

When disconnecting and removing the USB memory device from the PC, be sure to perform "Safely remove Hardware" using the PC. Please read the PC's instruction manual regarding this removal procedure.

7.4.3. Selecting sound source files on the USB memory device and deleting them

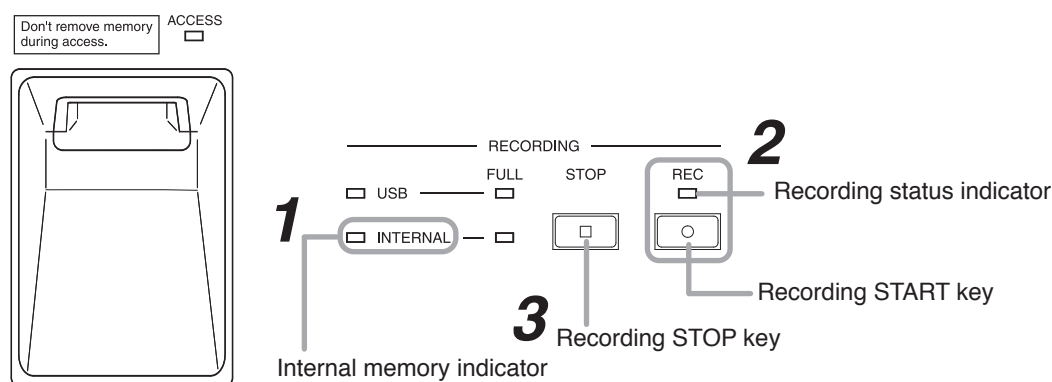
Delete the selected sound source file using a PC. Please refer to the instruction manual for either the USB memory device or the PC concerning file deletion procedures.

Important

When disconnecting and removing the USB memory device from the PC, be sure to perform "Safely remove Hardware" using the PC. Please read the PC's instruction manual regarding this removal procedure.

7.5. Recording to the Internal Memory

7.5.1. Procedure for recording to the internal memory



Step 1. Confirm that no USB memory device is inserted in the USB memory device port and that the Internal memory indicator is lit green.

Step 2. Press the Recording START key.
Recording begins and the Recording status indicator lights red.

Tip

If the internal memory's remaining recordable time falls to less than one hour, the internal memory remaining capacity warning indicator will flash orange.

Step 3. Press the Recording STOP key to stop the recording.
The Recording status indicator is extinguished when recording operation is complete.

Important

After the Recording STOP key is pressed, do not turn off the power switch while the Recording status indicator remains lit red. The red light indicates that the Master control unit is in the process of saving the sound source file for the previously stopped recording. Turning off the power switch could interrupt the save operation and possibly result in the sound source file being lost.

7.5.2. Accessing and deleting sound source files from the internal memory

A PC connected to the TS-D1000-MU via network is required to access or delete sound source files recorded to the TS-D1000-MU's internal memory.

A PC having the following specifications is recommended:

Compatible PC	Windows PC
Recommended operating system	Windows 10 (64-bit)

Note

Windows is the registered trademark of Microsoft Corporation in the United States and other countries.

For more information regarding network connections and how to access or delete sound source files, please refer to the separate Instruction Manual (Browser Settings), which can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

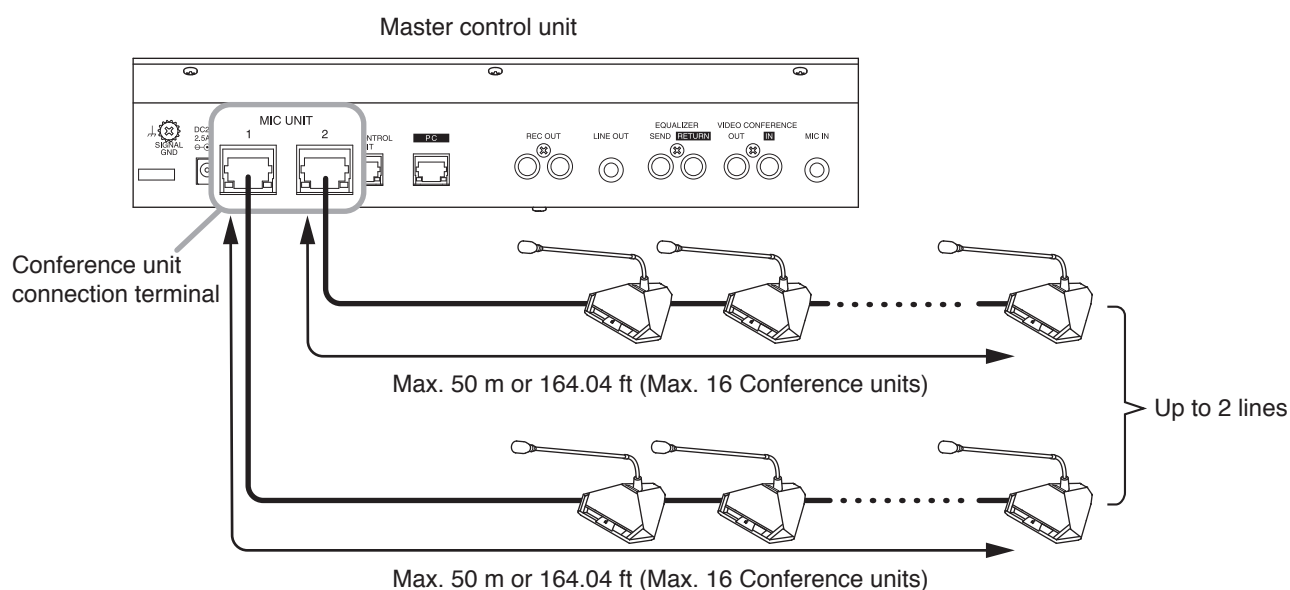
8. SYSTEM EXAMPLES

- In a basic system, a maximum of 32 Conference units can be connected to the Master control unit. (See the "Basic System Example" below.)
- To connect more Conference units (33 to 246), add as many Sub control units as required to support the total number of Conference units. (See "Expanded System Example – Connected Unit Expansion" on the next page.)
- To extend the maximum distance of Conference unit connectivity, add the Extension unit. (See "Expanded System Example – Distance Extension" on p. 25.)

Use a CAT5e STP cable fitted with RJ45 connectors at both ends for connection.

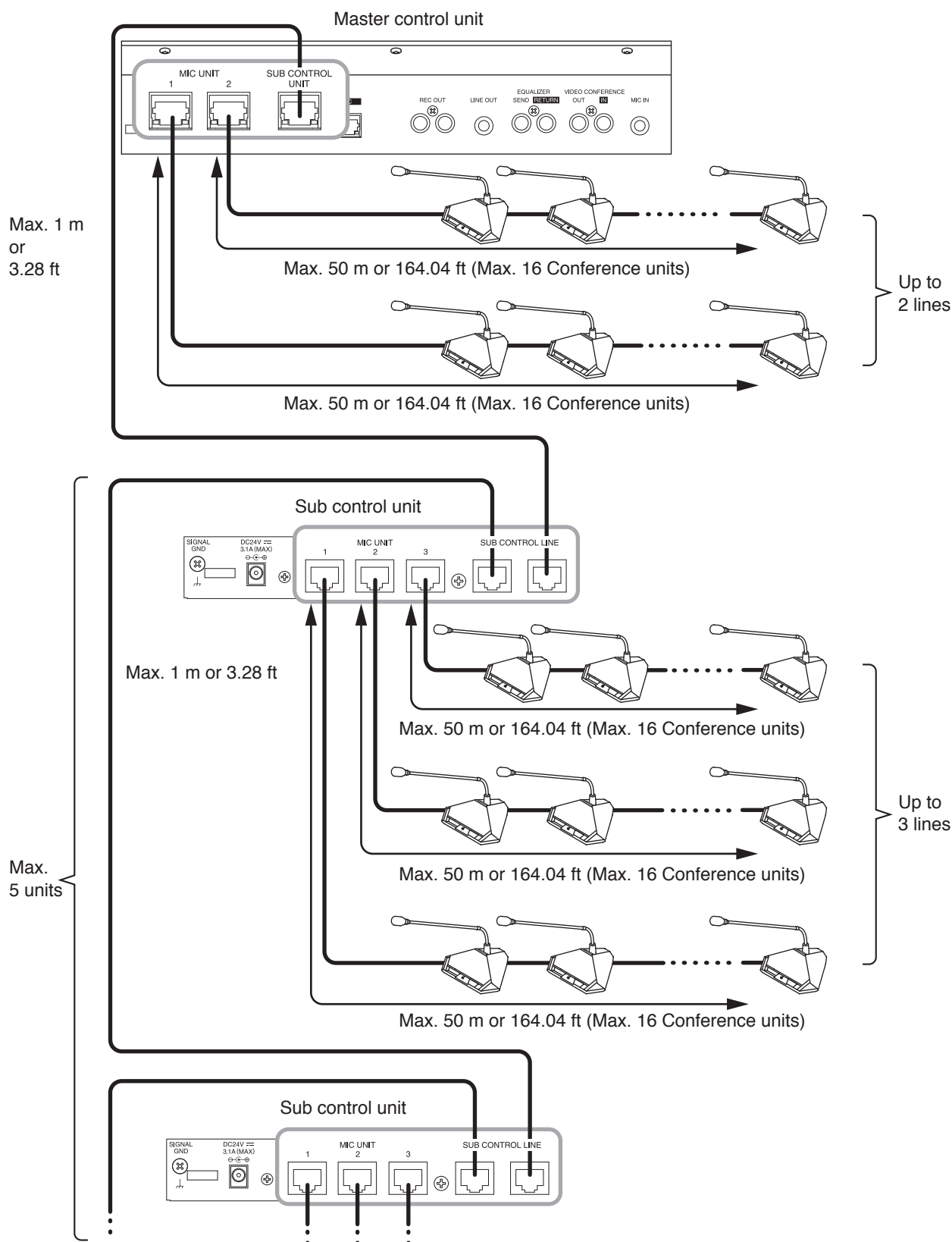
8.1. Basic System Example

The Master control unit is equipped with 2 Conference unit connection terminals, each of which allows up to 16 Conference units to be connected in a daisy chain. The maximum distance from the Master control unit to the last Conference unit in the daisy chain is 50 m (164.04 ft).



8.2. Expanded System Example – Connected Unit Expansion

- Up to 246 Conference units can be connected to the basic system with the addition of Sub control units.
- Up to 5 Sub control units can be connected to the Master control unit.
- The Master control unit has 2 Conference unit connection terminals. Each Sub control unit has 3.
- Up to 16 Conference units can be connected to each terminal in a daisy chain.
- The maximum distance from each Sub control unit to the last Conference unit in the daisy chain is 50 m (164.04 ft).
- The maximum distance between the Master control unit and a Sub control unit, or between Sub control units is 1 m (3.28 ft).

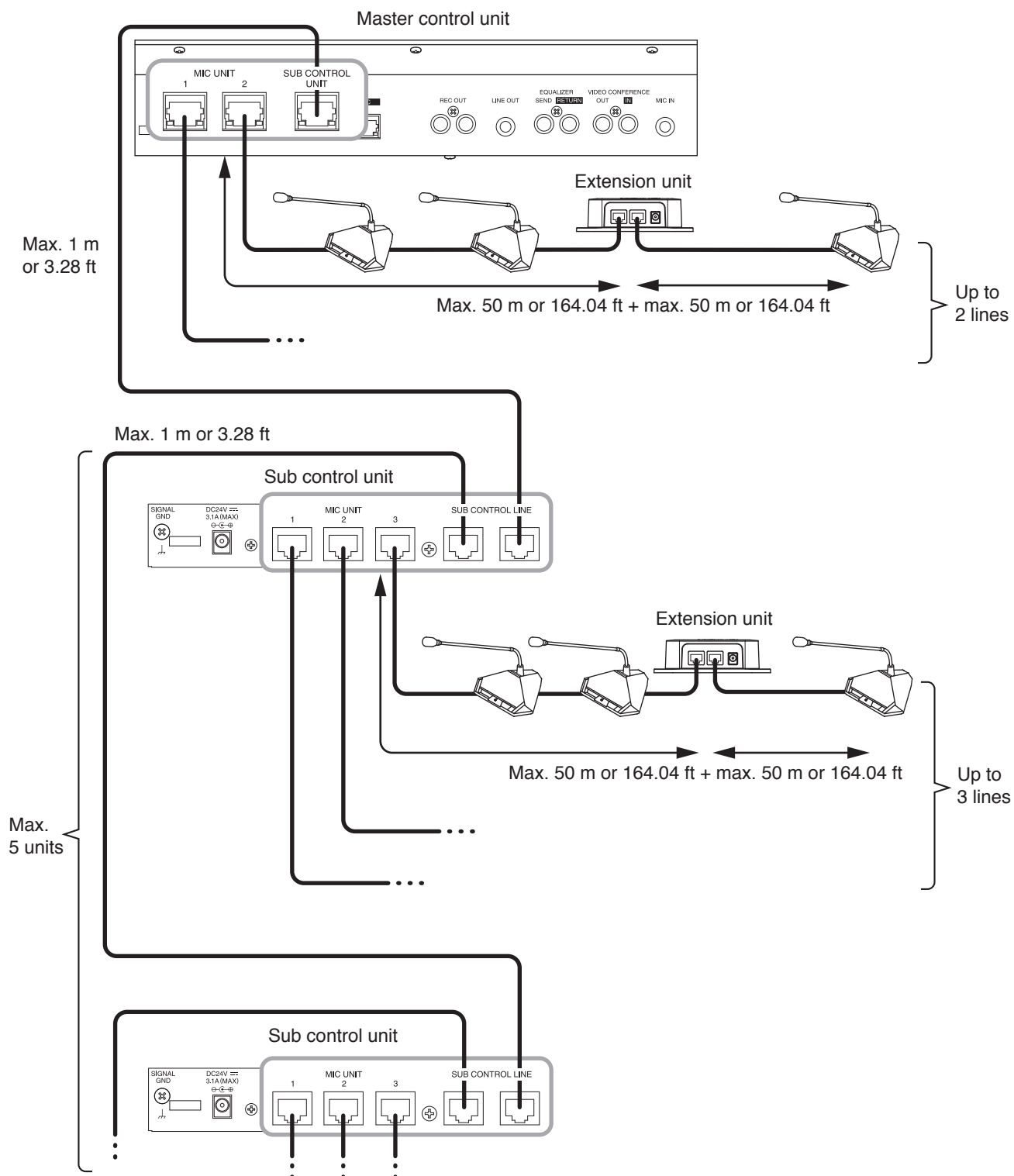


8.3. Expanded System Example – Distance Extension

Use the TS-D1000-EX Extension unit when wishing to extend the distance from the Master control unit or Sub control unit to the Conference units in the basic system or in systems in which the number of connected units has been increased.

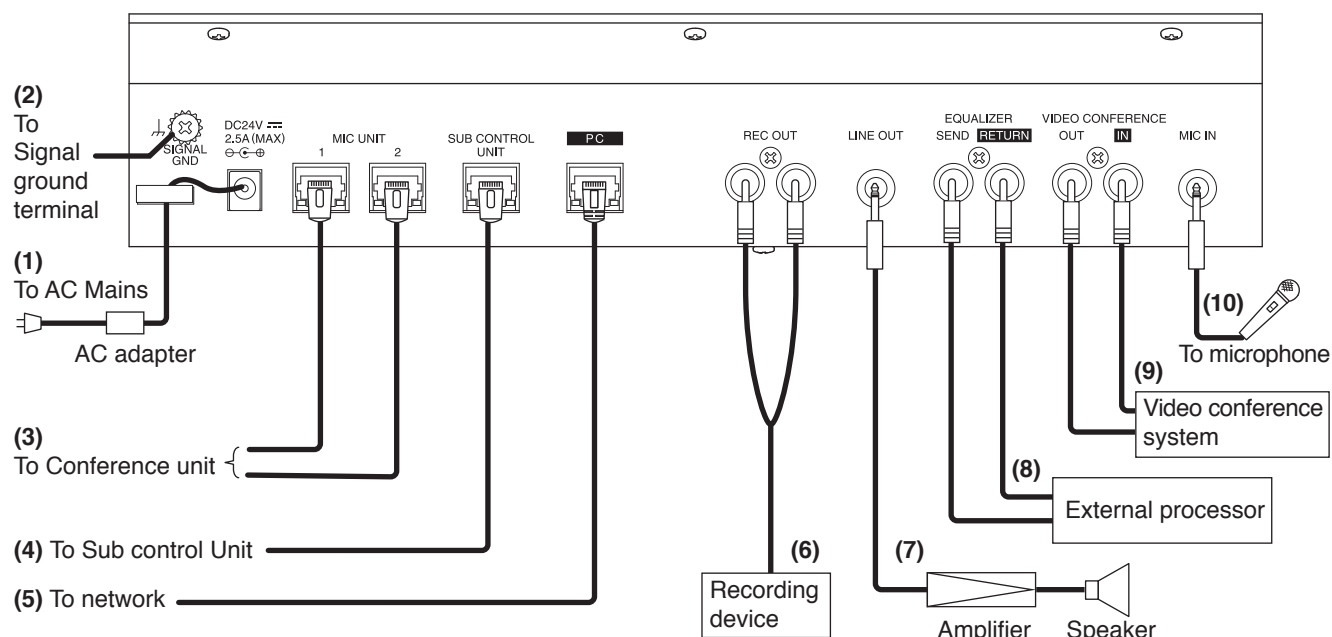
Note

Only one TS-D1000-EX can be connected per line. It may be connected in any position on the line.



9. CONNECTIONS

[TS-D1000-MU]



9.1. Power Supply Connections

(1) AC Adapter Connection

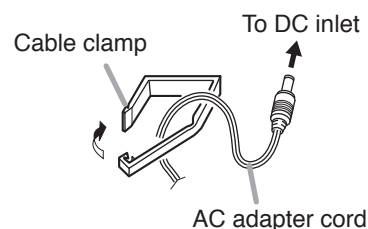
Use the supplied AC adapter.



CAUTION

Use only the supplied AC adapter. Using any other AC adapter could result in overheating and fire.

Secure the AC adapter cable in the cable clamp as shown at right to prevent the adapter plug from accidentally being pulled out.



9.2. Signal Ground Connections

(2) Signal Ground Connection

When connection of an external device to the TS-D1000-MU results in the generation of audible noise, connect this terminal to the Signal ground terminal of the external device. Noise output should be greatly reduced.

Note

This is not a protective ground connection.

9.3. Conference Unit and Sub Control Unit Connections

(3) Conference unit Connection

Connect Conference units to the TS-D1000-MU Master control unit using a CAT5e STP LAN cable fitted with RJ45 connectors at both ends (refer to "SYSTEM EXAMPLES" on p. 23).

(4) Sub control unit Connection

Connect Sub control units to the TS-D1000-MU using a CAT5e STP LAN cable fitted with the RJ45 connector at both ends (refer to "Expanded System Example – Connected Unit Expansion" on p. 24).

9.4. LAN Connection

(5) LAN Connection

Connect the TS-D1000-MU to the network.

Connectable network interface: 10 BASE-T, 100BASE-TX

9.5. External Device Connections

(6) External Recording Device Connection

The spoken contents of the conference can be recorded by connecting a recording device, such as an IC recorder.

Recording output specifications: –10 dB*, 10 k Ω , unbalanced, RCA pin jack (monaural)

Note

The same sound output is directed to both left and right channels.

(7) External Amplifier Connection

Output from the TS-D1000-MU can be input to an external amplifier or mixer.

Line output specifications: –10 dB*, 10 k Ω , unbalanced, phone jack (monaural)

(8) External Processor Connection

In cases where feedback cannot be controlled by the internal FBS function, a graphic equalizer or other external processor can be connected for use.

External processor output (SEND) specifications: –10 dB*, 10 k Ω , unbalanced, RCA pin jack

External processor input (RETURN) specifications: –10 dB*, 10 k Ω , unbalanced, RCA pin jack

(9) Video Conference System Connection

Video conference systems can also be connected and used.

Video conference output (OUT) specifications: –10 dB*, 10 k Ω , unbalanced, RCA pin jack

Video conference input (IN) specifications: –10 dB*, 10 k Ω , unbalanced, RCA pin jack

(10) Microphone Connection

An external microphone can be connected to this jack for amplified output at all Conference units.

Microphone input specifications: –54 dB*, 600 Ω , unbalanced, phone jack (monaural)

* 0 dB = 1 V

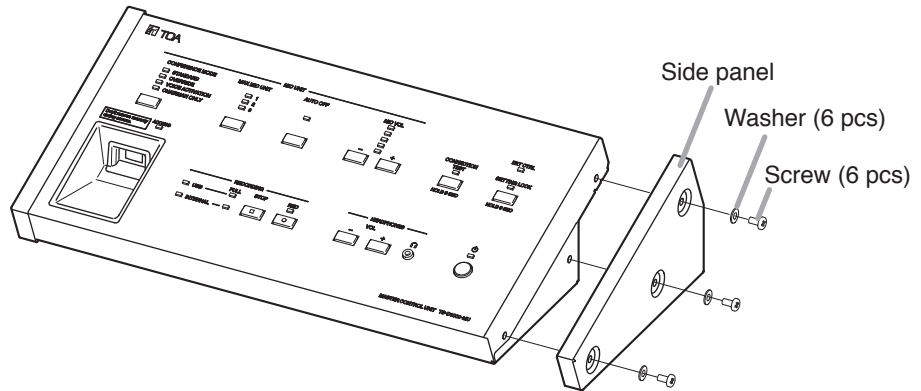
10. INSTALLATION

10.1. Mounting the Control Unit in an Equipment Rack

Use the following optionally available mounting bracket set when installing the TS-D1000-MU Master control unit or TS-D1000-SU Sub control unit in an equipment rack.

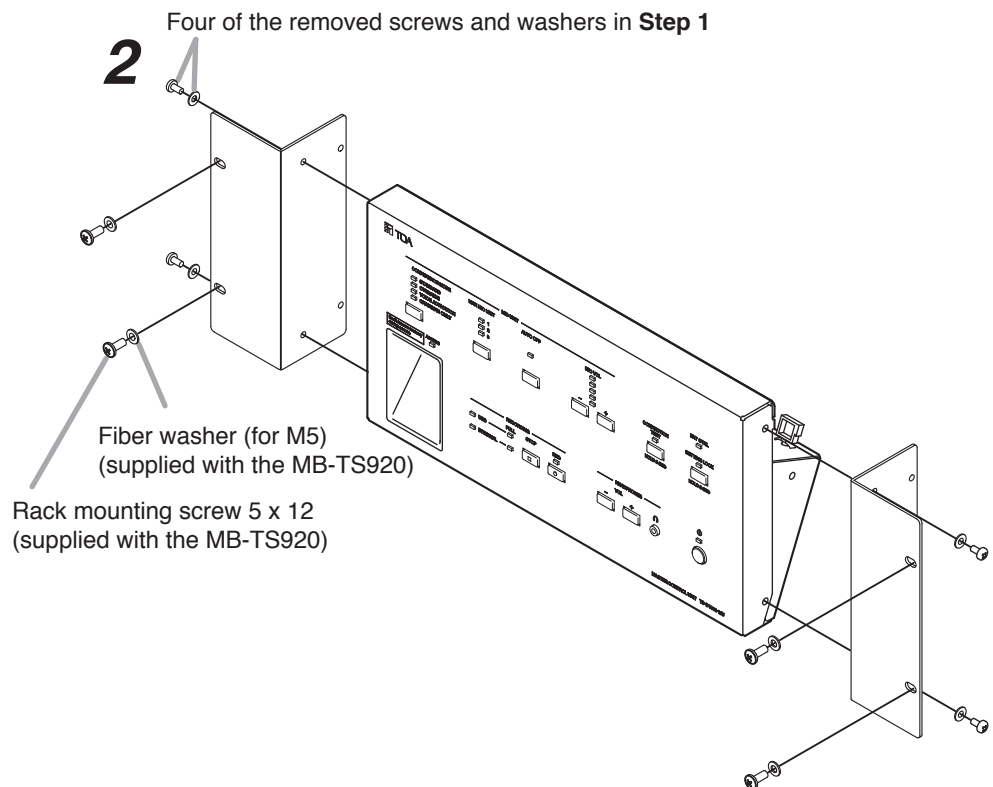
10.1.1. TS-D1000-MU

- Step 1.** Detach both side panels of the TS-D1000-MU.
Four of the removed screws and washers are used in **Step 2**.



- Step 2.** Attach the MB-TS920 Rack mounting bracket to both sides of the TS-D1000-MU.
Use the screws and washers removed in **Step 1**.

- Step 3.** Mount the TS-D1000-MU equipped with the mounting brackets in the rack.
Use the rack mounting screws and fiber washers supplied with the rack mounting bracket.



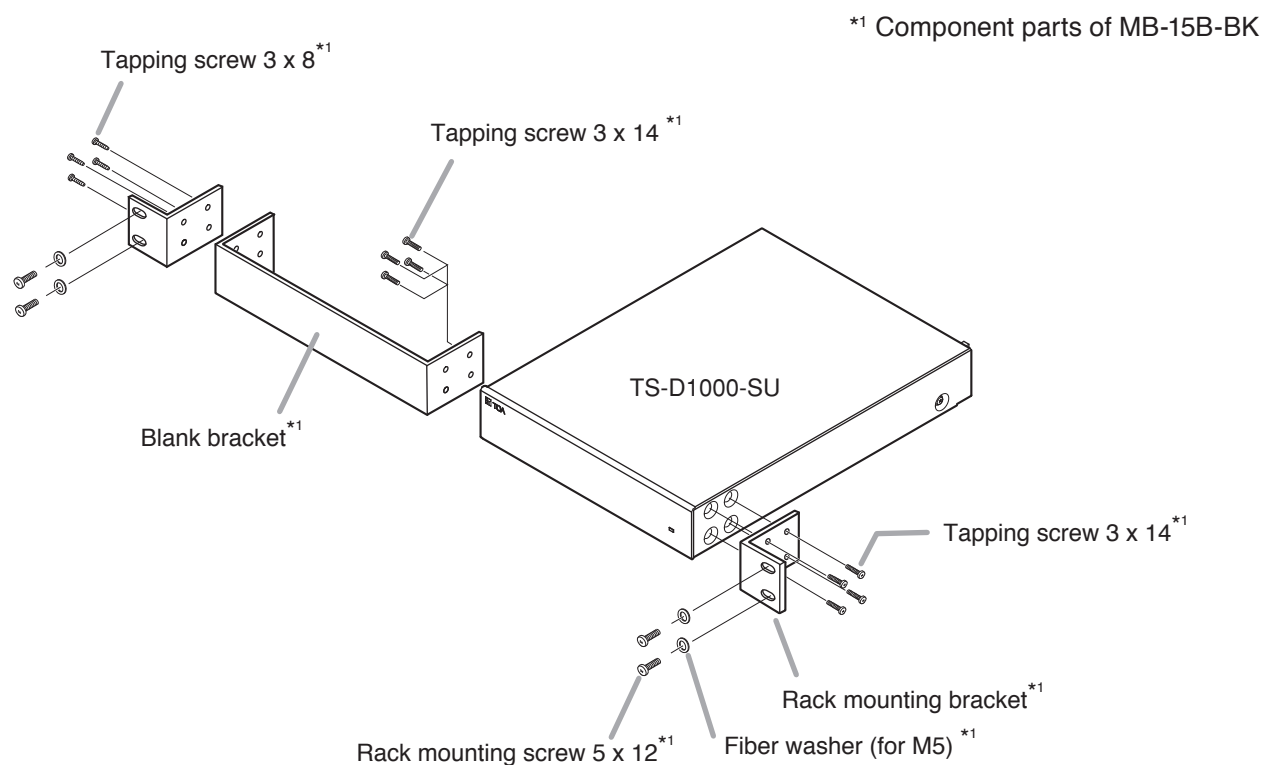
CAUTION

The rack mounting screws 5 x 12 supplied with the MB-TS920 can be used for the TOA equipment rack only. Do not use them for other racks.

10.1.2. TS-D1000-SU

[Rack-mounting a single unit]

Use the MB-15B-BK Bracket kit.

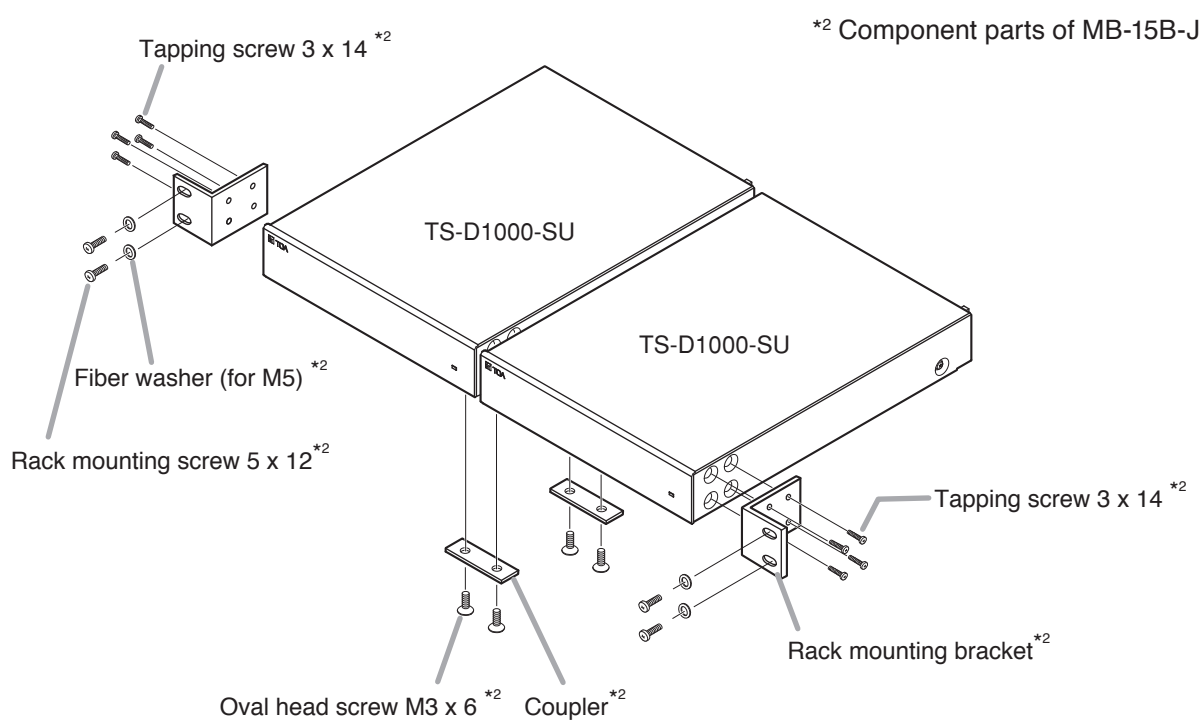


[Rack-mounting two units]

Use the MB-15B-J Bracket kit.

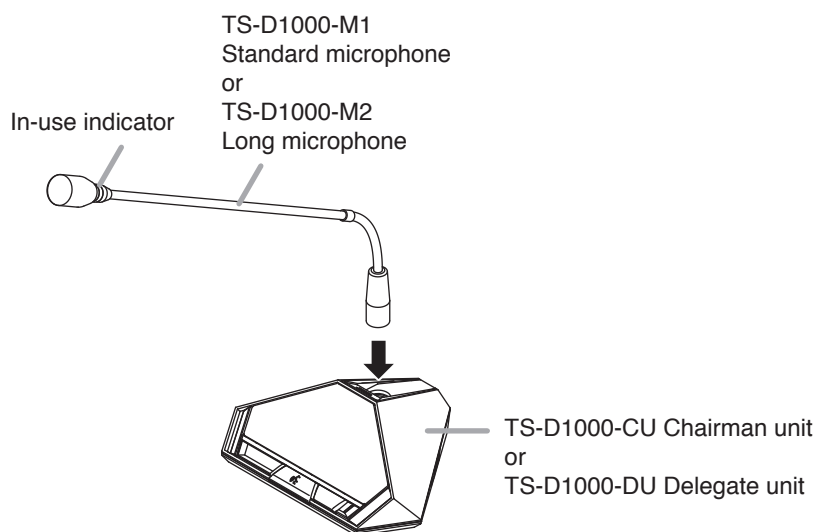
Note

The MB-15B-J Bracket kit cannot be used to connect the TS-D1000-SU to other equipment components for rack-mounting.



10.2. Microphone Connection

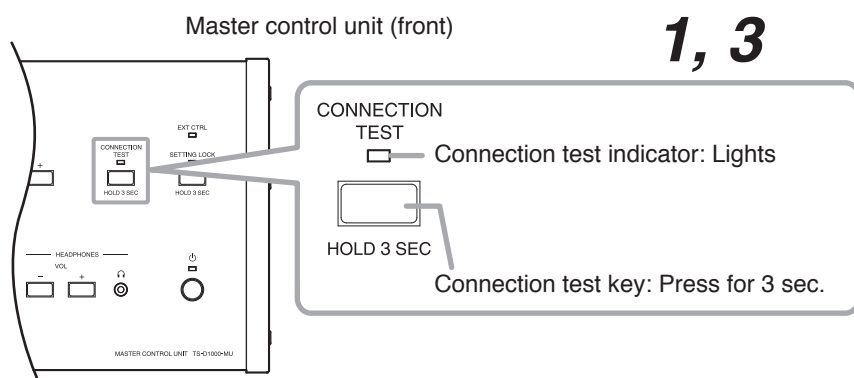
Attach the TS-D1000-M1 Standard microphone or TS-D1000-M2 Long microphone to the Conference unit as shown below.



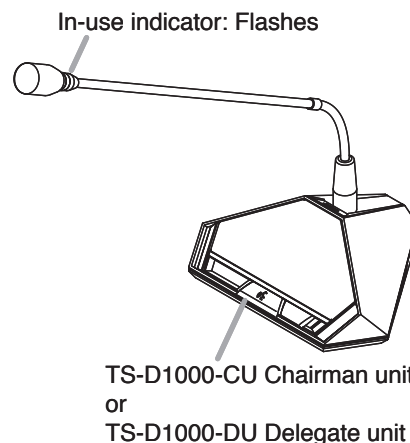
10.3. Connection Test

It is possible to confirm whether all Conference units are correctly connected following system setup.

Step 1. Press the Connection test key on the Master control unit's top panel for 3 seconds or more. The unit is placed in Connection test mode, causing the Connection test indicator to light and all connected microphones' In-use indicators to flash.



Step 2. Visually check to confirm that the microphone's In-use indicators of all connected Conference units are flashing. Conference units displaying flashing microphone's In-use indicators are correctly connected. If any units have Microphone indicators that do not flash, check the connection between the unresponsive Conference unit and its microphone, as well as the connection between that Conference unit and the Master control unit or Sub control unit.



Step 3. Press the Connection test key again for 3 seconds to terminate the Connection test mode. This causes both the Connection test and microphone's In-use indicators to extinguish.

Note

Even if connected correctly, there are cases in which the Connection test indicator continues to flash due to such reasons as ID number (device identification number) setting irregularities. In such cases, turn the TS-D1000-MU's Power switch OFF, then ON again while holding down the Connection test key. Since the ID number has been reset, restart the confirmation process again from **Step 1**.

11. SETTINGS

The following settings can be performed with the Setting key on the TS-D1000-MU unit's top panel.

[Setting Items]

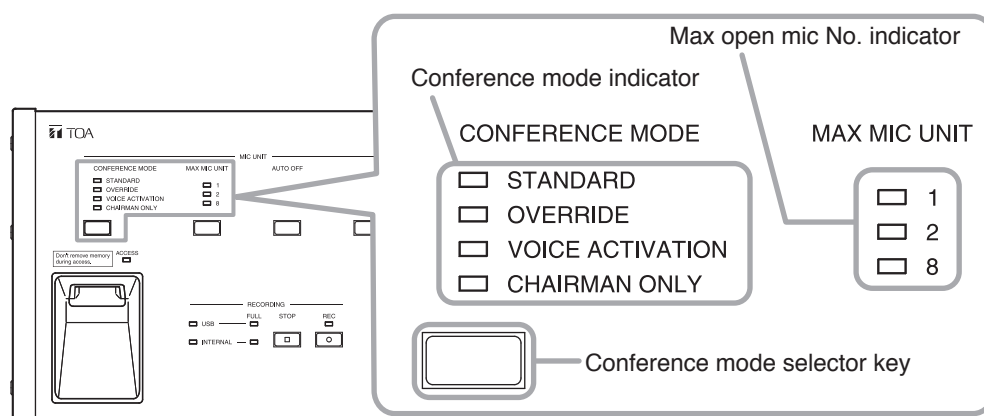
- Conference mode (see below)
- Max. open mic No. (see p. 32)
- Mic auto-off (see p. 33)
- Conference sound volume (see p. 34)

Notes

- Some items can only be set by way of a browser. For details, please refer to p. 36.
- There is no priority relationship between settings performed using the top panel Setting key and by way of a browser. Later set contents take precedence.

11.1. Conference Mode Setting

Set the Conference unit's conference mode. The conference mode changes each time the Conference mode selector key is pressed and the indicator for the selected Conference mode lights.



Conference Mode	Description
Standard (Factory default setting)	Permits speaking to start in order of Talk key depression. When the Talk key is pressed, if its Conference unit exceeds the preset Max. open mic No., that unit cannot be used for speaking (first-in-first-out priority). The Chairman unit can start speaking at any time (up to 2 Chairman units).
Override	Permits speaking to start anytime the Talk key is pressed. When the Talk key is pressed, if its Conference unit exceeds the preset Max. open mic No., the unit that first started speaking is forced to terminate speaking, allowing the last-operated unit to speak. (last-in-first-out priority). The Chairman unit can start speaking at any time (up to 2 Chairman units).
Voice activation	Permits speaking to start simply by speaking into the microphone. The Talk key cannot be used to speak. Up to 8 Delegate units and up to 2 Chairman units can speak simultaneously. If a Conference unit with microphone turned on is not used for speaking for over 2 seconds, it is assumed that speaking has terminated and the microphone automatically turns off. While any 8 Delegate units are simultaneously in use, if a 9th user attempts to speak into a microphone, the 9th unit will be rejected (first-in-first-out priority).
Chairman only	Only the Chairman unit can start speaking (up to 2 Chairman units). Speaking from the Delegate units is prohibited.

11.2. Max. Open Mic No. Setting

Set the number of Delegate units that can be simultaneously used.

The number of Delegate units capable of speaking simultaneously varies with each depression of the Max. open mic No. setting key, lighting up the corresponding Max. open mic No. indicator.

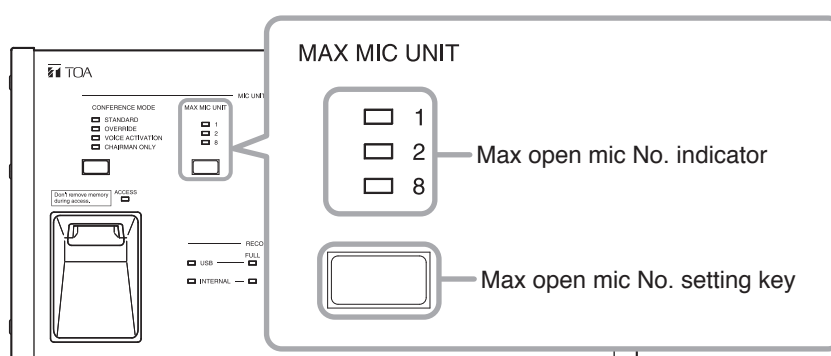
The number of units that can be set on the TS-D1000-MU top panel is 1, 2 and 8 (factory default setting: 8).

Tips

An arbitrary number of units (1 – 8) can be set using a browser. When set to numbers 3 through 7, all Max. open mic No. indicators light. For details, please refer to the separate Instruction Manual (Browser Settings), which can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

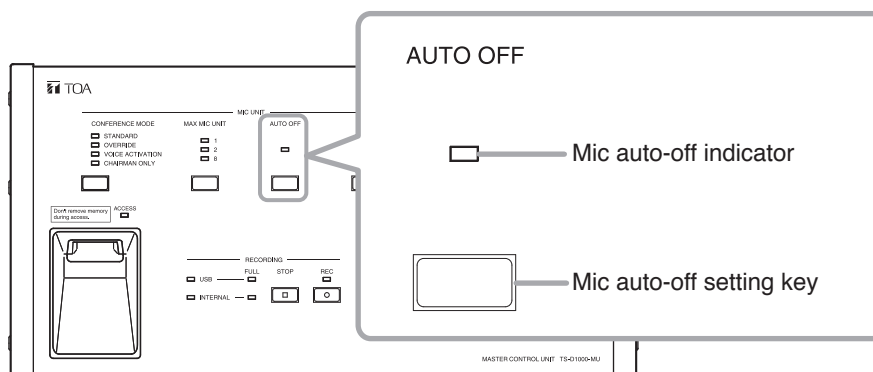
Notes

- The Chairman unit is not included in this setting, as it can be used to start speaking at any time (only possible for up to 2 units).
- If the conference mode is set to Voice activation, the Max. open mic No. of Delegate units is fixed at 8.
- If the conference mode is set to Voice activation or Chairman only, all Max. open mic No. indicators are extinguished.



11.3. Mic Auto-Off Setting

Even if a speaker forgets to turn off the microphone after speaking, if more than 30 seconds of silence is detected, this function automatically assumes that speaking has ended and turns off the microphone.



Notes

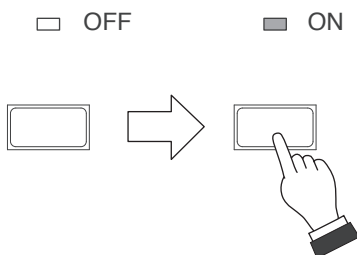
- When the Mic auto-off function is enabled, if more than 30 seconds of silence is detected, the microphone will automatically turn off, even if during speaking. For conferences in which such long pauses are expected, set this function to Disabled.
- This function may not work correctly in high-noise locations.

Tips

- The Mic auto-off function is only operable while the Delegate unit is being used for speaking.
- Setting the conference mode to "Voice activation" or "Chairman only" disables the Mic auto-off function, which causes the Mic auto-off indicator to extinguish.

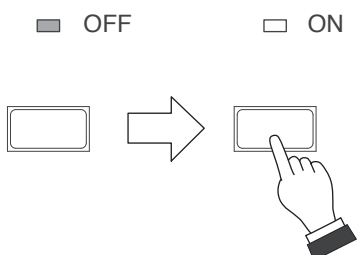
11.3.1. Enabling the Mic auto-off function

Step Press the Mic auto-off setting key when the Mic auto-off indicator is off. The Mic auto-off indicator lights, enabling the function.



11.3.2. Disabling the Mic auto-off function

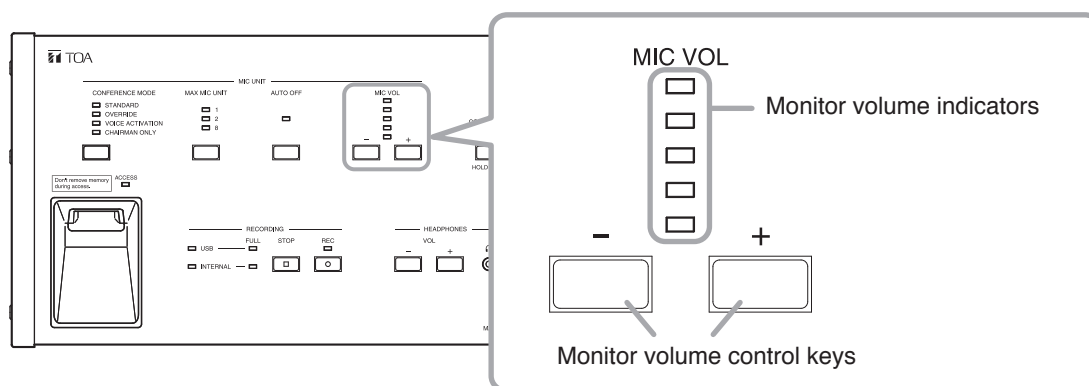
Step Press the Mic auto-off setting key when the Mic auto-off indicator is on. The Mic auto-off indicator extinguishes, disabling the function.



11.4. Conference Unit Monitor Volume Setting

Set the Conference unit's monitor speaker volume to an appropriate level using the Monitor volume control keys. Pressing the [-] key lowers the volume and pressing the [+] key increases the volume. The set volume level is displayed by the Monitor volume indicators in 16 steps.*

*The brightness of each LED indicator varies in 3 steps to show 16 steps.

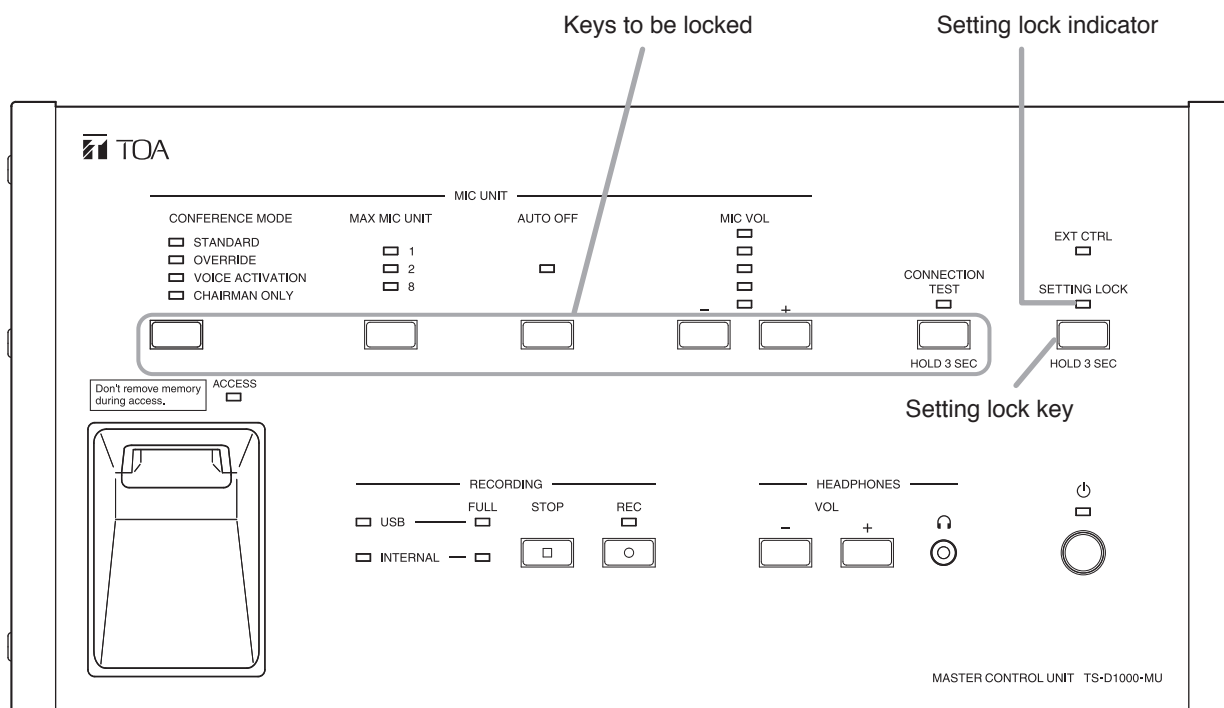


Notes

- During speech, the volume of the Conference unit monitor speaker attenuates to make it easier for the user to speak.
- The monitor speaker can be muted using a browser if desired because of feedback or other reasons. For details, please refer to the separate Instruction Manual (Browser Settings), which can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

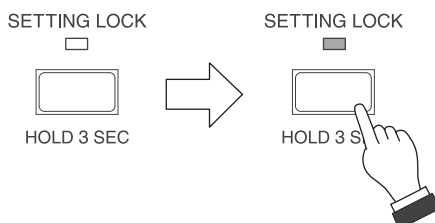
11.5. Setting Lock

Mistaken operation can be minimized by disabling all setting-related key operations. Performing the Setting lock function causes all setting-related keys shown below to be locked, making their operations impossible.



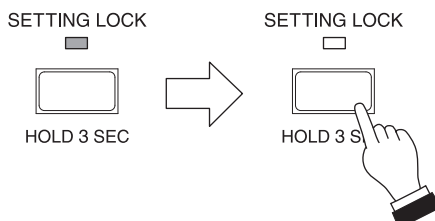
11.5.1. Enabling the setting lock function

Step: Press the Setting lock key for 3 seconds or more when the Setting lock indicator is off. The Setting lock indicator lights, disabling all settings-related key operations.



11.5.2. Cancelling the Setting lock function

Step: Press the Setting lock key for 3 seconds or more when the Setting lock indicator is lit. The Setting lock indicator extinguishes, enabling all settings-related key operations.



12. BROWSER SETTING

The following items can be set via a network using a PC:

Setting Item	Browser Settings	Master Control unit Settings (See p. 31.)
Conference mode	✓	✓
Max. open mic No.		✓
Mic auto-off		✓
Chairman unit priority speech operation		—
Chairman unit priority chime		—
Conference sound volume		✓
In-use conference unit's monitor speaker on/off		—

Note

There is no priority relationship between settings performed by the Master control unit or a browser. The contents last set take precedence.

Regarding the method used to perform settings using the browser, please refer to the separate Instruction Manual (Browser Settings), which can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>). On this site, enter the product number to search for the Instruction Manual (Browser Settings) file and download it.

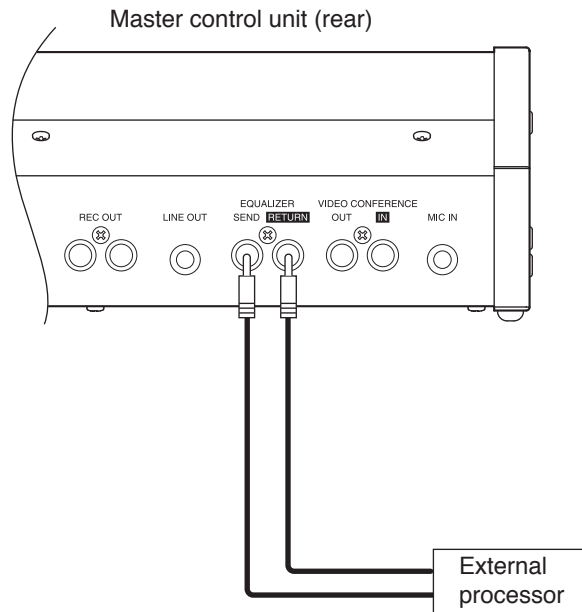
13. FEEDBACK SUPPRESSION MEASURES

13.1. Internal FBS Function

The TS-D1000-MU features a digital feedback suppressor (FBS) function as a means of minimizing feedback. When feedback cannot be suppressed by the internal FBS function, try to minimize it by using an optional external processor or the like. Please note that connecting an external processor will disable the internal FBS function.

13.2. Using an External Processor

Connect the external processor as shown below. Regarding operation, please refer to the instruction manual supplied with the processor. If an external processor is connected, the internal FBS function will be disabled.



Note

The ON/OFF status of the internal FBS function is interlocked with the existence of a connection to an external processor. If the processor's wiring is left connected to the TS-D1000-MU after use, the internal FBS function will be left OFF and not work.

14. IF A FAILURE IS DETECTED

14.1. TS-D1000-MU Master Control Unit

Symptom	Cause and Points to Check	Remedy
Cannot switch ON the power.	Is the power cord or DC plug not connected?	Correctly connect the power cord and DC plug supplied with the Master control unit.
Recording cannot be made to the USB memory device or otherwise recording stops.	Is USB memory capacity insufficient? When its capacity is insufficient, the USB memory device remaining capacity warning indicator lights and the USB memory device indicator extinguishes.	Insert a USB memory device that has sufficient remaining capacity, then confirm that the USB memory device indicator lights green before commencing recording. (See p. 21.)
	USB memory failure? If any failure of the USB memory device is detected, the USB memory device indicator extinguishes.	Insert a different USB memory device, then confirm that the USB memory device indicator lights green before commencing recording. (See p. 21.)
Recordings cannot be made to the internal memory, or otherwise recording stops.	Is Remaining internal memory capacity insufficient? When recording capacity is insufficient, the Internal memory remaining capacity warning indicator lights and the Internal memory indicator extinguishes.	Delete any files recorded to the internal memory from the browser to create sufficient free space, then make a recording after ensuring that the Internal memory indicator lights green. (Refer to the separate Instruction Manual (Browser Settings)*.)
	Internal memory failure? If any failure of the internal memory is detected, the Internal memory indicator extinguishes.	Return the equipment status to the factory default status from a browser, then make a recording after ensuring that the Internal memory indicator lights green. (Refer to the separate Instruction Manual (Browser Settings)*.) Note All recorded files will be deleted if a unit's status is returned to factory default settings.
No sound output.	Is the external processor correctly connected? Sound cannot be output if not correctly connected.	Correctly connect the external processor. (See p. 37.)
No sound output from headphones.	Is headphone volume control properly adjusted?	Adjust the sound volume to an appropriate level.
	Is headphone plug fully inserted?	Ensure that the headphone plug is fully inserted and secure.

* Can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

14.2. TS-D1000-SU Sub Control Unit

Symptom	Cause and Points to Check	Remedy
Power does not turn on.	Is the power cord or DC plug connected?	Ensure that the power cord and DC plug, which are supplied with the Sub control unit, are correctly connected.
	Is the Sub control unit correctly connected to the Master control unit? The Sub control unit's power is interlocked with that of the Master control unit it is connected to.	Ensure that the Master control and Sub control units are correctly connected using the supplied cable.

14.3. TS-D1000-EX Extension Unit

Symptom	Cause and Points to Check	Remedy
Power does not turn on.	Is the power cord or DC plug connected?	Ensure that the power cord and DC plug, which are supplied with the Extension unit, are correctly connected.
	Is the Extension unit correctly connected to the Master control or Sub control unit? The Extension unit's power is interlocked with that of the Master control or Sub control unit it is connected to.	Correctly connect the Extension unit to the Master control or Sub control unit.

14.4. TS-D1000-CU Chairman Unit and TS-D1000-DU Delegate Unit

Symptom	Cause and Points to Check	Remedy
Power not supplied.	Is power supplied to the Master control unit (Sub control unit or Extension unit)?	Turn ON the Master control unit's power and connect the AC adapters supplied with both the Sub control unit and the Extension unit.
	Connected correctly?	Check all connections. (See p. 23.)
Power indicator flashes.	Connected correctly?	Check all connections. (See p. 23.)
No output from either speaker or earphone.	Is the monitor volume control adjusted appropriately?	Set the volume control to an appropriate level. (See p. 34.)
	(If speaking is in progress) Is the monitor speaker of the Conference unit in use set to OFF?	(If speaking is in progress) Use the browser to change the setting of the in-use Conference unit's monitor speaker to ON. Refer to the separate Instruction Manual (Browser Settings)*.
	Is the earphone plug fully inserted?	Ensure that the earphone plug is fully inserted and secure.

Symptom	Cause and Points to Check	Remedy
Unable to start speaking.	Connected correctly?	Check all connections. (See p. 23.)
	Is the Master control unit's connection test indicator flashing?	It may be possible that the Conference unit is assigned the same ID number as another unit. Reset the ID number. (See p. 30.)
	Is the conference mode correctly set?	Use the conference mode best suited to the type of conference to be held. (See p. 31.) • The Talk key cannot be used to start speaking if the mode is set to Voice activation. • Delegate units cannot be used for speaking if the mode is set to Chairman only.
Microphone's In-use indicator extinguishes while speaking.	Is the Mic auto-off set to Enabled?	When the Mic auto-off function is set to Enabled, the microphone will automatically turn off if silent for more than 30 seconds. If pauses of 30 seconds or more are expected during speaking, disable the Mic auto-off function. (See p. 33.)
	Is the conference mode set to Voice activation?	In Voice activation mode, if a pause of 2 seconds or more is detected during speaking, speaking is assumed to have ended, turning off the microphone. If the microphone turns off frequently while speaking, use a different conference mode. (See p. 31.)
Mic auto-off function does not work.	Is the background noise level too high due to air conditioners or the like?	There may be cases in which the Mic auto-off function does not work in locations where the background noise level is high. Install the units in locations with a low noise level or disable the Mic auto-off function. (See p. 33.)

* Can be downloaded from the TOA DATA Library (<https://www.toa-products.com/international/>).

15. SPECIFICATIONS

15.1. TS-D1000-MU Master Control Unit

Power Source	100 to 240 V AC, 50/60 Hz (use of the supplied AC adapter)
Power Consumption	60 W or less
Audio Transmission System	Time division multiplexing (TDM), 10 channels 16-bit, PCM, 32 kHz sampling frequency
MIC Input	−54 dB * ¹ , 600 Ω, unbalance, ø6.3 mm phone jack (2P)
Output	LINE: −10 dB * ¹ , 10 kΩ, unbalance, ø6.3 mm phone jack (2P) REC: −10 dB * ¹ , 10 kΩ, unbalance, RCA pin jack, monaural HEADPHONES: ø3.5 mm mini jack, monaural
EQ Insert Input/Output Terminal	−10 dB * ¹ , 10 kΩ, unbalance, RCA pin jack
Video Conference system Input/Output Terminal	−10 dB * ¹ , 10 kΩ, unbalance, RCA pin jack
Number of Connectable Chairman/Delegate Units	32 units
Number of Connectable Sub Control Units	5 units
Maximum Cable Distance	50 m or 164.04 ft (between Master control unit and terminal Chairman/Delegate unit at end of daisy chain)* ² 1 m or 3.28 ft (between Master control unit and Sub control units, use the cable supplied with the Sub control unit.)
Maximum Number of Open Microphones	2 chairman units, 8 delegate units
Chairman/Delegate Units Terminal	RJ45 connector x 2
Sub Control Units Terminal	RJ45 connector
LED Indicator	Power indicator, Conference mode indicator, Max. open mic No. indicator, Mic auto-off indicator, Monitor volume indicator, Connection test indicator, External control indicator, Setting lock indicator, Recording status indicator, Access indicator, USB memory device indicator, Internal memory indicator, USB memory device remaining capacity warning indicator, Internal memory remaining capacity warning indicator, LINK/ACT indicator, 10 BASE-T/100BASE-TX indicator,
Function Key	Conference mode selector key: Standard/Override/Voice activation/Chairman Only Max. open mic No. setting Key: 1/2/8 Mic auto-off setting key: ON/OFF Monitor volume control Key: −, + Setting lock key: ON/OFF Headphone volume setting key: −, +
Operation Key	Connection test key, Recording STOP key, Recording START key
Recording Ports	USB-A
Recording Function	Recordings can be made to a USB memory device * ³ or the internal memory. Recording format: MP3 (MPEG-1 Audio Layer-3), monaural, Sampling frequency: 32 kHz, Bit rate: 128 kbps
Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)
Network Protocol	TCP, HTTP, DHCP, ARP (APIPA), UDP (mDNS)
Network Connector	RJ45 connector
Operating Temperature	0 to 40 °C (32 to 104 °F)
Operating Humidity	90%RH or less (no condensation)
Finish	Panel: Surface-treated steel plate, black, 30% glossy, paint
Dimensions	361 (w) x 100.4 (h) x 184.2 (d) mm (14.21" x 3.95" x 7.25")
Weight	2.2 kg (4.85 lb)

*1 0 dB = 1 V

*2 Cable length can be extended to a maximum of 100 m (323.08 ft) with the use of the Extension unit.

*3 A USB 2.0 – Compatible FAT32 – formatted flash memory device of up 32 GB in capacity can be used. There may be cases in which a USB flash drive cannot be used with the TS-D1000-MU, depending on the drive's attributes or recording conditions.

Note: The design and specifications are subject to change without notice for improvement.

• Accessories

AC adapter (Cord length: 1.8 m or 5.91 ft DC cord, and 2 m or 6.56 ft detachable AC cord) 1

• Optional product

Rack mounting bracket: MB-TS920

15.2. TS-D1000-SU Sub Control Unit

Power Source	100 to 240 V AC, 50/60 Hz (use of the supplied AC adapter)
Power Consumption	80 W or less
Number of Connectable Conference Units	48 units
Conference units Terminal	RJ45 connector ×3
Sub-Control Units Terminal	RJ45 connector ×2
Maximum Cable Distance	50 m or 164.04 ft (between this unit and Conference unit at the end of daisy chain)*
LED Indicator	Power indicator
Operating Temperature	0 to 40 °C (32 to 104 °F)
Operating Humidity	90%RH or less (no condensation)
Finish	Panel: Aluminum, black, 30% glossy, paint Case: Surface-treated steel plate, black, 30% glossy, paint
Dimensions	210 (w) x 45.8 (h) x 294.8 (d) mm (8.27" x 1.8" x 11.61")
Weight	1.6 kg (3.53 lb)

* Cable length can be extended to a maximum of 100 m (323.08 ft) with the use of the Extension unit.

Note: The design and specifications are subject to change without notice for improvement.

• Accessories

AC adapter (Cord length: 1.8 m or 5.91 ft DC cord, and 2 m or 6.56 ft detachable AC cord) 1

Connection cable (Cat5e STP, 1 m or 3.28 ft) 1

• Optional products

Rack mounting bracket: MB-15B-BK (for rack mounting one TS-D1000-SU unit)

Rack mounting bracket: MB-15B-J (for rack mounting two TS-D1000-SU units)

15.3. TS-D1000-EX Extension Unit

Power Source	100 to 240 V AC, 50/60 Hz (use of the supplied AC adapter)
Power Consumption	25 W or less
Connection Terminal	RJ45 connector x2
LED Indicator	Power indicator
Operating Temperature	0 to 40 °C (32 to 104 °F)
Operating Humidity	90%RH or less (no condensation)
Finish	ABS resin, white (RAL 9003 equivalent)
Dimensions	124.3 (w) x 100.3 (h) x 35 (d) mm (4.89" x 3.95" x 1.38")
Weight	150 g (0.33 lb) (unit only)

Note: The design and specifications are subject to change without notice for improvement.

• Accessory

AC adapter (Cord length: 1.8 m or 5.91 ft DC cord, and 2 m or 6.56 ft detachable AC cord) 1

15.4. TS-D1000-CU Chairman Unit

Power Source	24 V DC (supplied from the TS-D1000-MU Master control unit, TS-D1000-SU Sub control units or TS-D1000-EX Extension units)
Power Consumption	1.5 W or less
Input	Microphone terminal: XLR-3-31 type
Output	Monitor speaker: 8 Ω, 0.4 W Earphone: ø3.5 mm mini Jack (3P: monaural) x 2
Connecting Terminal	RJ-45 connector x 2
LED Indicator	Power indicator, Speech indicator
Function	Speech function, Priority speech function, Earphone volume control x 2
Operating Temperature	0 to 40 °C (32 to 104 °F)
Operating Humidity	90%RH or less (no condensation)
Finish	Case: ABS resin, black, mat finish, paint Speaker net: Black, mat finish, paint
Dimensions	208.9 (w) x 71.3 (h) x 160.5 (d) mm (8.22" x 2.81" x 6.32")
Weight	880 g (1.94 lb)

Note: The design and specifications are subject to change without notice for improvement.

15.5. TS-D1000-DU Delegate Unit

Power Source	24 V DC (supplied from the TS-D1000-MU Master control unit, TS-D1000-SU Sub control units or TS-D1000-EX Extension units)
Power Consumption	1.5 W or less
Input	Microphone terminal: XLR-3-31 type
Output	Monitor speaker: 8 Ω , 0.4 W Earphone: ϕ 3.5 mm mini Jack (3P: monaural) x 2
Connecting Terminal	RJ-45 connector x 2
LED Indicator	Power indicator, Speech indicator
Function	Speech function, Earphone volume control x 2
Operating Temperature	0 to 40 °C (32 to 104 °F)
Operating Humidity	90%RH or less (no condensation)
Finish	Case: ABS resin, black, mat finish, paint Speaker net: Black, mat finish, paint
Dimensions	208.9 (w) x 71.3 (h) x 160.5 (d) mm (8.22" x 2.81" x 6.32")
Weight	875 g (1.93 lb)

Note: The design and specifications are subject to change without notice for improvement.

15.6. TS-D1000-M1 Standard Microphone and TS-D1000-M2 Long Microphone

Model No.	TS-D1000-M1	TS-D1000-M2
Type	Electret condenser microphone	
Directivity	Unidirectional	
Rated Impedance	1.4 k Ω	
Rated Sensitivity	-37 dB (1 kHz, 0 dB = 1 V/Pa)	
LED Indicator	In-use indicator (ring type), Red	
Frequency Response	100 Hz to 13 kHz	
Output Connector	Combined type of XLR-3-12C	
Operating Temperature	0 to 40 °C (32 to 104 °F)	
Operating Humidity	90%RH or less (no condensation)	
Finish	Gooseneck: Stainless steel, black Other: ABS resin, black	
Length	518 mm (1.7 ft)	668 mm (2.19 ft)
Weight	110 g (0.24 lb)	125 g (0.28 lb)
Applicable Unit	Chairman unit: TS-D1000-CU, Delegate unit: TS-D1000-DU	

Note: The design and specifications are subject to change without notice for improvement.

Traceability Information for Europe

Manufacturer:
TOA Corporation
7-2-1, Minatojima-Nakamachi, Chuo-ku, Kobe, Hyogo,
Japan

Authorized representative:
TOA Electronics Europe GmbH
Suederstrasse 282, 20537 Hamburg,
Germany

URL: <https://www.toa.jp/>