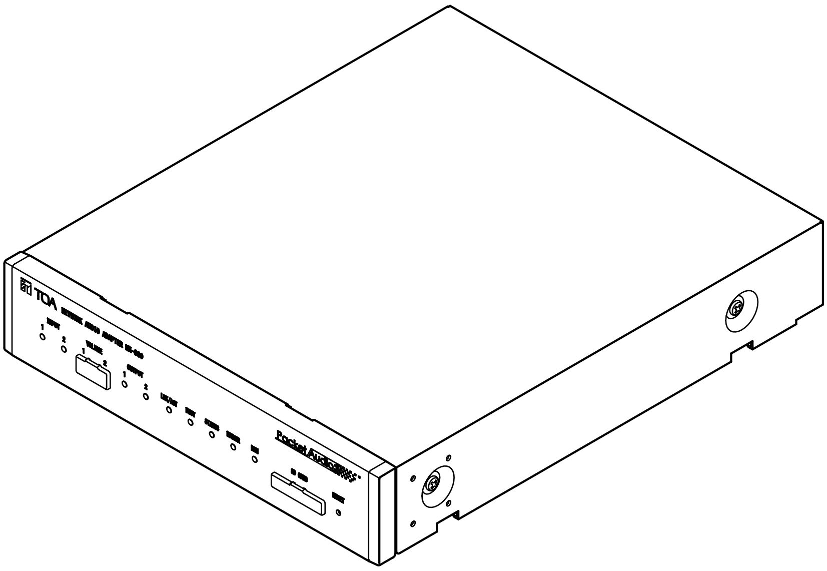
TOA

INSTALLATION SETUP MANUAL

NETWORK AUDIO ADAPTER NX-300



Thank you for purchasing TOA's Network Audio Adapter.
Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

TABLE OF CONTENTS

Chapter 1 SYSTEM SUMMARY

1. GENERAL DESCRIPTION 1-2

2. FEATURES 1-2

3. NOMENCLATURE AND FUNCTIONS 1-3
  - Front 1-3
  - Rear 1-4

4. SETTING TASK FLOWS 1-5

Chapter 2 INSTALLATION AND CONNECTION

1. CONNECTIONS 2-2
  - 1.1. Power Source Connections 2-2
  - 1.2. Terminal Connections 2-3
  - 1.3. Removable Terminal Plug Connection 2-7

2. INSTALLATION 2-8
  - 2.1. Rack Mounting 2-8
  - 2.2. Wall Mounting 2-9
  - 2.3. Desk-Top Installation 2-10

3. BEFORE SETUP 2-11
  - 3.1. MAC Addresses and Installation Locations 2-11
  - 3.2. Input Level Adjustment 2-11

Chapter 3 SYSTEM SETTINGS (NX-300 SETTING SOFTWARE)

1. GENERAL DESCRIPTION 3-2
  - 1.1. NX-300 Finder and NX-300 Setting Software 3-2
  - 1.2. About Network Settings 3-2
  - 1.3. Backing-Up Setting Files 3-2
  - 1.4. Cautions Concerning Setting Updates 3-2

2. SOFTWARE INSTALLATION 3-3
  - 2.1. System Conditions 3-3
  - 2.2. Downloading the Software 3-3
  - 2.3. Required Component Installation 3-3
  - 2.4. NX-300 Setting Software Installation 3-4
  - 2.5. When NX-300 Software Uninstallation 3-5
  - 2.6. Folder Configuration 3-6

3. SOFTWARE CONFIGURATION AND SETTING ITEMS 3-7

4. SETTING PROCEDURE 3-8

5. STARTING THE NX-300 FINDER 3-10
5.1. How to Start the NX-300 Finder 3-10
5.2. Menu 3-11
5.3. Button 3-11
5.4. Detecting Units 3-12
5.5. Screen Description 3-13
5.6. Changing the Unit Setting Values Related to the Network 3-14
5.7. Saving the Unit Detection List Data 3-15

6. STARTING THE NX-300 SETTING SOFTWARE 3-16

7. OPERATION FROM THE SYSTEM EDITING SCREEN 3-16
7.1. Creating a New System 3-17
7.2. Editing Registered Systems 3-18
7.3. Deleting Registered Systems 3-19

8. SETUP EDITING SCREEN 3-20
8.1. Screen Explanation 3-20
8.2. Menu 3-22

9. SYSTEM CONFIGURATION SETTINGS 3-23
9.1. Importing Unit Detection Results 3-23
9.2. Adding Units to the Unit List 3-24
9.3. Deleting Units from the Unit List 3-25

10. GENERAL SYSTEM SETTINGS 3-26
10.1. Network Settings 3-28
10.2. External Server Settings (NX-300 only) 3-34
10.3. Broadcast Spec Settings 3-35

11. PATTERN SETTINGS 3-38
11.1. Pattern Setting Summary 3-39
11.2. Broadcast Pattern Settings 3-40
11.3. Contact Bridge Pattern Settings 3-46
11.4. Control Pattern Settings 3-51

12. CONTROL INPUT SETTINGS 3-56
12.1. For the NX-300 Units 3-56
12.2. For the NX-100/100S Units 3-58

13. CONTROL OUTPUT SETTINGS 3-61

14. SERIAL BRIDGE SETTING (NX-100 ONLY) 3-63

15. AUDIO FILE SETTINGS 3-65
15.1. Uploading Audio Files 3-65
15.2. Deleting Audio Files 3-67

16. OPERATIONS ACCESSIBLE FROM THE SETUP EDITING SCREEN MENU 3-68
16.1. Saving the Unit Setting Files 3-68
16.2. Changing the System Name and Password 3-68
16.3. Changing the System Password 3-69
16.4. Uploading Unit Setting Files 3-70
16.5. Downloading Unit Setting Files 3-71
16.6. Uploading PC Clock Settings 3-72
16.7. Disabling Network Item Editing 3-72
16.8. Accessing the TOA Product Data Download Site 3-72
16.9. Confirming NX-300 Setting Software Version Number 3-72

17. SYSTEM SETTING EXAMPLES 3-73
17.1. System Application Examples 3-73
17.2. Broadcasting Announcements Over Station Premises 3-74
17.3. Broadcasting Departure Melodies Over the Station Premises 3-78
17.4. Broadcasting Departure Melodies Using the PC 3-82
17.5. Using a Microphone to Make an Emergency Broadcast from the Central Station to Station C during a Departure Melody Broadcast 3-85
17.6. Reducing the Nighttime Broadcasting Volume 3-89

Chapter 4 SYSTEM AND MANAGEMENT BY BROWSER

1. OUTLINE OF SETTINGS USING BROWSER 4-2

2. DISPLAYING THE SETTING MENU SCREEN 4-3

3. MENU ITEMS 4-4

4. NETWORK SETTING 4-5

5. AUDIO FILE MANAGEMENT 4-7
5.1. Adding Audio Files 4-8
5.2. Deleting Audio Files From the File List 4-10
5.3. Deleting All Audio Files 4-10

6. LOG MANAGEMENT 4-11
6.1. Operation Log 4-12
6.2. Stream Log 4-14
6.3. Save Logs 4-16
6.4. Operating Status 4-17

7. SYSTEM MANAGEMENT 4-19
7.1. System Names and Passwords Change 4-21
7.2. Setting File Upload 4-22
7.3. Downloading the Unit Setting Files 4-24

7.4. Setting All Settings to Default Status 4-25
7.5. Updating Firmware 4-26
7.6. Clock Setting 4-27
7.7. Reflecting Changed Settings (Unit Restart) 4-27

Chapter 5 SETTINGS NECESSARY WHEN USING THE NX-300 OPERATION SOFTWARE

1. NX-300 OPERATION SOFTWARE SUMMARY 5-2

2. STARTUP AND INITIAL SCREEN 5-2

3. OPERATION SCREEN DESCRIPTION 5-4
3.1. Button Screen 5-4
3.2. Unit List Screen 5-5
3.3. Status Screen 5-7
3.4. Detail Screen 5-8

4. OPERATION SCREEN MENU 5-10

5. SETTING PROCEDURES USING THE NX-300 OPERATION SOFTWARE 5-11

6. BUTTON SETTINGS 5-12
6.1. Creating Single Selection Buttons 5-12
6.2. Creating the Group Selection Button 5-15
6.3. Deleting Created Buttons 5-18

7. PERFORMING VARIOUS OTHER SETTINGS 5-20
7.1. Setting the Administrator Password 5-20
7.2. Changing the Title for the NX-300 Operation Software 5-22

8. ERROR MESSAGES 5-23

Chapter 6 APPENDIX

1. EXPLANATION 6-2
1.1. IP Network and Address 6-2
1.2. Network Address Port Translation (NAPT) 6-3
1.3. IP Broadcast and Unit Scan 6-3
1.4. Multicast and Simultaneous Multiple Broadcasts 6-4
1.5. How the Contact Bridge Works 6-5
1.6. Maximum Number of Broadcasting Destinations 6-8
1.7. Priority Levels 6-9
1.8. Transmitting a Single Sound Source to Multiple Channels 6-10
1.9. About Operation Log Acquisition 6-11
1.10. Disabling the Reset Switch 6-12
1.11. Changing the Input Volume Control to the Output Volume Control 6-13

2. INDICATOR STATUS AND TROUBLESHOOTING 6-14

3. LEVEL DIAGRAM 6-16
3.1. Block Diagram 6-16
3.2. Level Diagram 6-16
3.3. About Setting Values and Audio Input Level Adjustments 6-17

4. IF A FAILURE IS DETECTED 6-18

5. SPECIFICATIONS 6-20

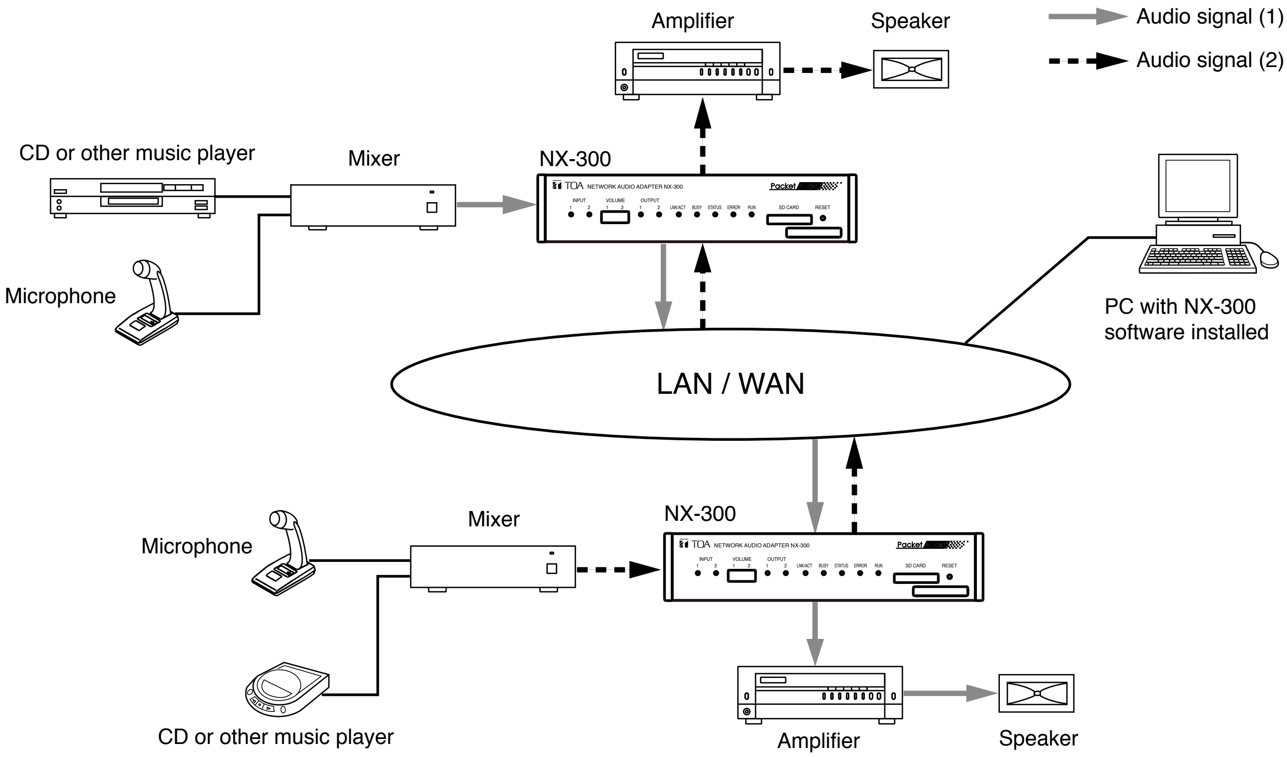
Chapter 1

SYSTEM SUMMARY

1. GENERAL DESCRIPTION

TOA's NX-300 Network Audio Adapter is specially developed to transmit high-quality audio signals over IP networks such as LAN or Internet in real time.

[Audio Signal Flow Chart]



2. FEATURES

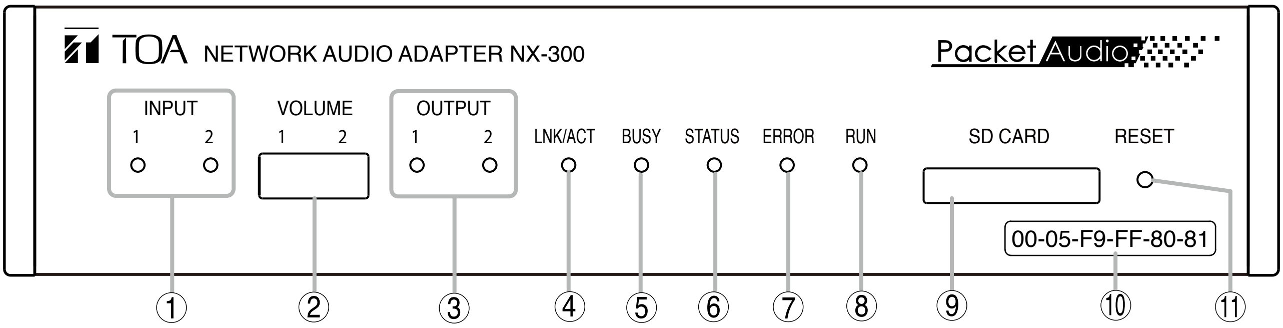
- Permits use of not only dedicated lines, but also the Internet, which greatly reduces operating costs when transmitting audio signals to remote locations.
- Under peak conditions with no network delay, audio signals can be transmitted with a minimal delay of about 20 ms.
- Transmission of control data of control input and output terminals possible.
- Equipped with 2 audio inputs and 2 audio outputs, permitting audio file broadcasting.
- Simultaneous bi-directional transmission of audio signals possible.
- Broadcasts can be made of audio files stored in the built-in memory.
- Audio signals can be simultaneously transmitted to multiple locations (16 locations by unicast*[1] or 64 locations by multicast*[2] per channel).
- Enables audio signal transmission even over congested networks such as the Internet.
- Surveillance function keeps a constant watch on the audio inputs and outputs, and network and control input (1 channel only), and sends an alarm through the indicators or control output when a malfunction or failure is detected.
- The entire system can be remotely operated or managed from a single PC (personal computer) using the software program.
- Operation log can be saved to an installed SD card (commercial product).
- Because audio transmissions can be started and finished via the unit's contact inputs, systems can be configured even without the use of a PC.
- Designed to operate on either AC adapter (option) or DC power source.

*[1] UNICAST : A communications method used to transmit audio data to designated addresses in a matched ratio of 1:1.

*[2] MULTICAST : A communications method used to simultaneously transmit a single audio data source to multiple destinations.

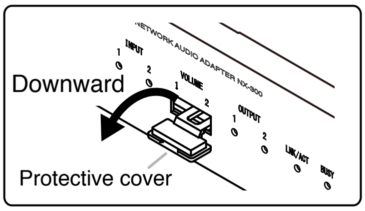
3. NOMENCLATURE AND FUNCTIONS

[Front]


TOA NETWORK AUDIO ADAPTER NX-300
Packet Audio
INPUT
1
2
VOLUME
1
2
OUTPUT
1
2
LNK/ACT
BUSY
STATUS
ERROR
RUN
SD CARD
RESET
00-05-F9-FF-80-81
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪

1. **Input indicator (Green/Red)**
   This indicator lights green when signal received at the audio input terminal (21) reaches a level high enough to transmit it to a network after adjustment with the input level control. When the indicator lights red, this means that distortion has been detected in the audio signal. Set the input volume control (2) or switches 5 and 6 (audio input pad setting switch) of DIP switch for equipment settings (22) to appropriate settings.

2. **Input volume control**
   When adjusting the level, remove the protective cover by pulling it downward as shown in the figure below. The level increases with clockwise rotation and decreases with counterclockwise rotation.
   Adjust the input volume control so that the input indicator (1) lights green, but not red.
   For more information on level adjustments, see p. 2-11, "Input Level Adjustment."


Downward
Protective cover
NETWORK AUDIO ADAPTER NX-300
INPUT
VOLUME
OUTPUT
LNK/ACT
BUSY

Note
The protective cover cannot be detached from the NX-300.

3. **Output indicator (Green)**
   Lights when the level of the signal sent out from the audio output terminal is sufficient.

4. **LNK/ACT indicator (Green)**
   Lights when the unit is connected to a network.
   Flashes while the unit is transmitting or receiving data.

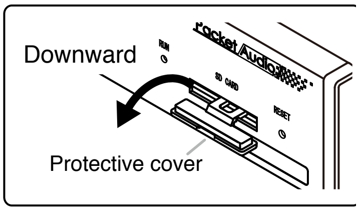
5. **Busy indicator (Green)**
   Continuously flashes while reading and writing data into a built-in memory or SD card.
   Lights for one second and then extinguishes when another broadcast with lower priority made during a broadcast with higher priority is rejected.

6. **Status indicator (Green)**
   Continuously lights during broadcasting.

7. **Error indicator (Yellow)**
   Either flashes or lights when a failure or communication error occurs.

8. **Run indicator (Green)**
   Flashes when the NX-300 is operating normally, and either continuously lights or extinguishes when a malfunction is detected.

9. **SD card insertion slot**
   Remove the protective cover by pulling it downward as shown in the figure below, and fully insert the SD card into the slot with the card's label facing upward.

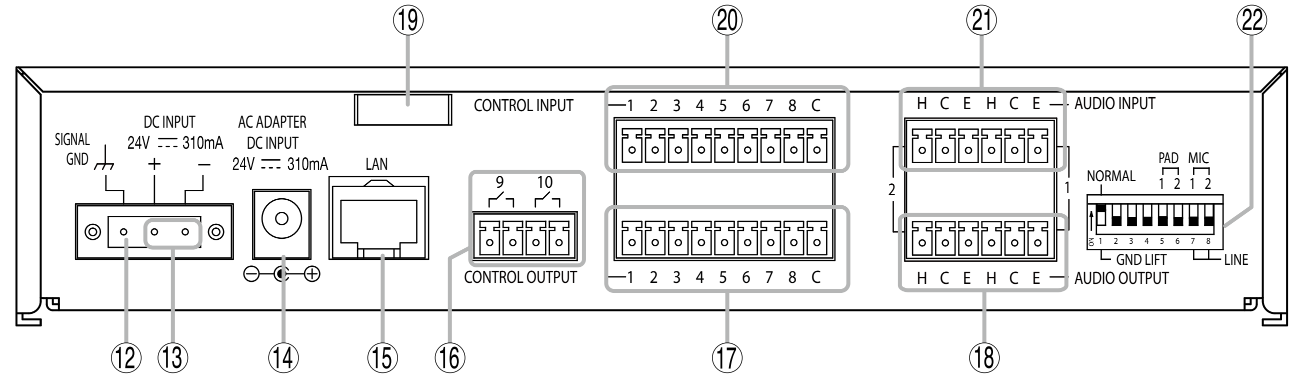

Downward
Protective cover
Packet Audio
RUN
SD CARD
RESET

Note
The protective cover cannot be detached from the NX-300.

10. **MAC address**
    The unit's MAC address consists of 12 hyphenated alphanumeric characters.

11. **Reset button**
    Restarts the unit when pressed.

[Rear]



12. Signal GND terminal

Be sure this terminal is securely grounded.

Note: This terminal is not for protective ground.

13. DC power input terminal

A 24 V DC input.

14. AC adapter terminal

Connects to the optional AD-246 AC Adapter or the equivalent.

As for the usable adapter, consult your TOA dealer.

15. Network connection terminal

Connects to 10BASE-T or 100BASE-TX networks. (RJ-45 Ethernet jack)

16. Control output terminal (9, 10)

Relay contact outputs (withstand voltage: 30 V DC, control current: 0.5 A maximum).

17. Control output terminal (1 – 8)

An open collector output (withstand voltage: 30 V DC, control current: 50 mA maximum).

18. Audio output terminal

0 dB*, under 600 Ω, balanced type.

Provide audio signals of line signal level.

H: Hot, C: Cold, E: Earth (shield)

19. Cord clamp

Pinches and securely holds the AC adapter cord to prevent its plug from detaching.

20. Control input terminal

No-voltage make contact input (short-circuit current: under 2 mA; open-circuit voltage: 24 V).

21. Audio input terminal

–20 dB* for line signal level, –60 dB* for microphone signal level, 2 kΩ, balanced/unbalanced switchable.

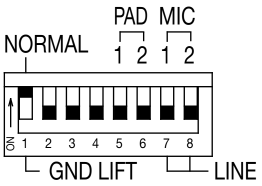
Receive audio signals of microphone or line signal level.

H: Hot, C: Cold, E: Earth (shield)

22. DIP switch for equipment settings

Used when performing audio input settings.

[Default DIP switch setting]



- **Switch 1**
  Ground lift selection switch (NORMAL/GND LIFT)
  A ground loop can potentially be created when the NX-300 is connected to other equipment, resulting in a hum noise. Ground loops can be cut off by setting this switch to GND LIFT (lower position). Settings are common to both Audio Inputs 1 and 2. This switch is factory-preset to NORMAL (upper position).

- **Switches 2 – 4**
  Not used.
  These switches are factory-preset to OFF (lower position). Always keep them to the OFF (lower position).

- **Switches 5, 6**
  Audio input pad setting switch (PAD)
  Enables or disables the audio input pad (–16 dB). When the input level is large, set the PAD to ON (upper position). These switches are factory-preset to OFF (lower position). Switch 5 (PAD 1) corresponds to Audio Input 1 and Switch 6 (PAD 2) corresponds to Audio Input 2.

- **Switches 7, 8**
  Audio input level selection switch (MIC/LINE)
  Set these switches to MIC (upper position) when a microphone is connected, and to LINE (lower position) in other cases.
  These switches are factory-preset to LINE (lower position). Switch 7 (MIC 1) corresponds to Audio Input 1 and Switch 8 (MIC 2) corresponds to Audio Input 2.

---

* 0 dB = 1 V

4. SETTING TASK FLOWS

(1) Unit Installation and Connection

See Chapter 2, "INSTALLATION AND CONNECTION."

(2) Software Installation

Install the NX-300 Setting Software, the NX-300 Finder, and the NX-300 Operation Software in the PC.

- The NX-300 Setting Software can perform settings for multiple NX-300 units connected to the same network.
- The NX-300 Finder is used to detect NX-300 units on a network and change network settings.
- The NX-300 Operation Software enables the PC to remotely operate the NX-300 to make broadcasts.

Note

See p. 3-3, "SOFTWARE INSTALLATION," for the installation procedure.

(3) System Setting

To perform settings, use the NX-300 Setting Software and NX-300 Finder.

The entire system can be set and managed with the NX-300 Setting Software by automatically detecting any NX-300 units connected to a local network using the NX-300 Finder.

Note

See Chapter 3, "SYSTEM SETTINGS (NX-300 SETTING SOFTWARE)," for the setting procedure.

(4) Operation-Related Settings

The NX-300 Operation Program is required to make broadcasts from the PC. The NX-300 Operation Software performs settings using the setting data prepared in System Setting (3) above.

Note

See Chapter 5, "SETTINGS NECESSARY WHEN USING THE NX-300 OPERATION SOFTWARE," for the setting procedure.

Chapter 2

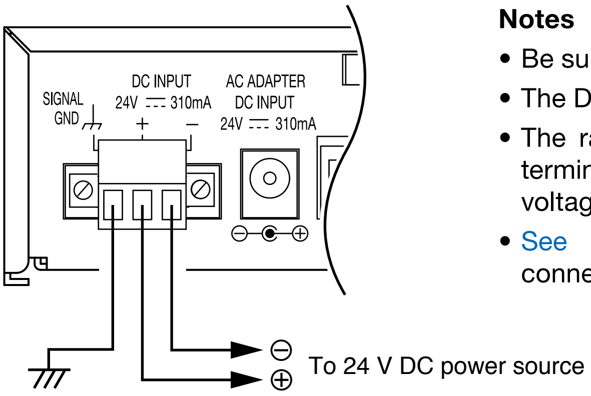
INSTALLATION AND CONNECTION

1. CONNECTIONS

1.1. Power Source Connections

1.1.1. When using a 24 V DC power source

Connect a 24 V DC power source to the unit's DC power input terminal.


SIGNAL GND
DC INPUT
24V ⎓ 310mA
+
–
AC ADAPTER
DC INPUT
24V ⎓ 310mA
⊖
⊕
To 24 V DC power source

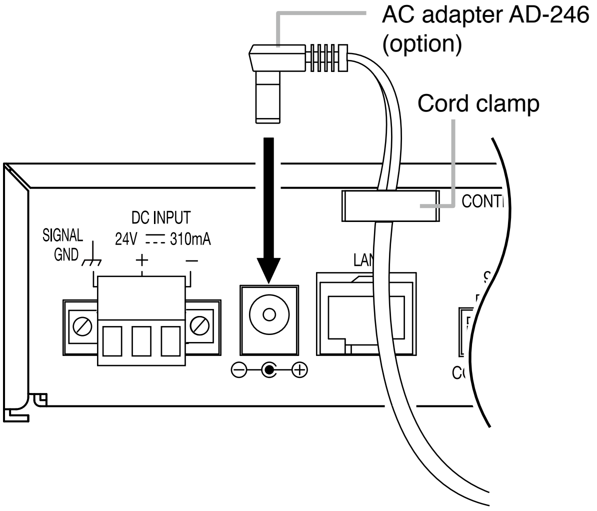
Notes

- Be sure the signal GND terminal is securely grounded.
- The DC power supply must have a capacity of over 400 mA.
- The range of input voltage to be fed to the DC power input terminal should be between 21.6 V and 26.4 V DC. If the input voltage is out of this range, the unit may malfunction or fail.
- See p. 2-7, "Removable Terminal Plug Connection," for connector connection procedures.

1.1.2. When using the AC adapter

Connect the AC adapter* to the unit's AC adapter terminal. Pinch the cord with a clamp and securely fix it.

* Use the optional AC adapter AD-246 or the equivalent. As for the usable adapter, consult your TOA dealer.


AC adapter AD-246
(option)
Cord clamp
SIGNAL GND
DC INPUT
24V ⎓ 310mA
+
–
LAN
CONT

Note

Be sure the signal GND terminal is securely grounded.

Tip

If power is sent to both the AC adapter terminal and DC power input terminal, power is supplied to the NX-300 from the terminal having the higher voltage.

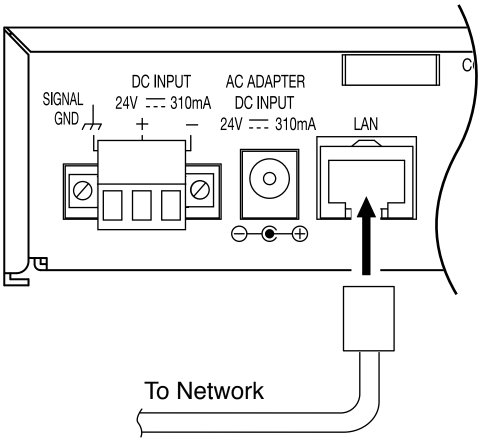
⚠ CAUTION

For AC adapters, use an optional AD-246 Adapter or the equivalent. The use of other adapters could result in a fire or other possible damage.

1.2. Terminal Connections

1.2.1. Network connections

The NX-300 automatically distinguishes between 10BASE-T and 100BASE-TX networks, and establishes a connection. For this connection, use a"straight" UTP Category 5 or greater LAN (Ethernet) cable fitted with an RJ-45 connector.

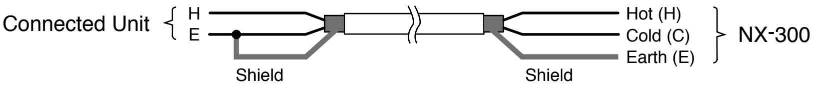

SIGNAL GND
DC INPUT 24V ⎓ 310mA
+ −
AC ADAPTER DC INPUT 24V ⎓ 310mA
LAN
To Network

Tip
It is recommended that the unit be connected to network equipment capable of performing full-duplex communications.

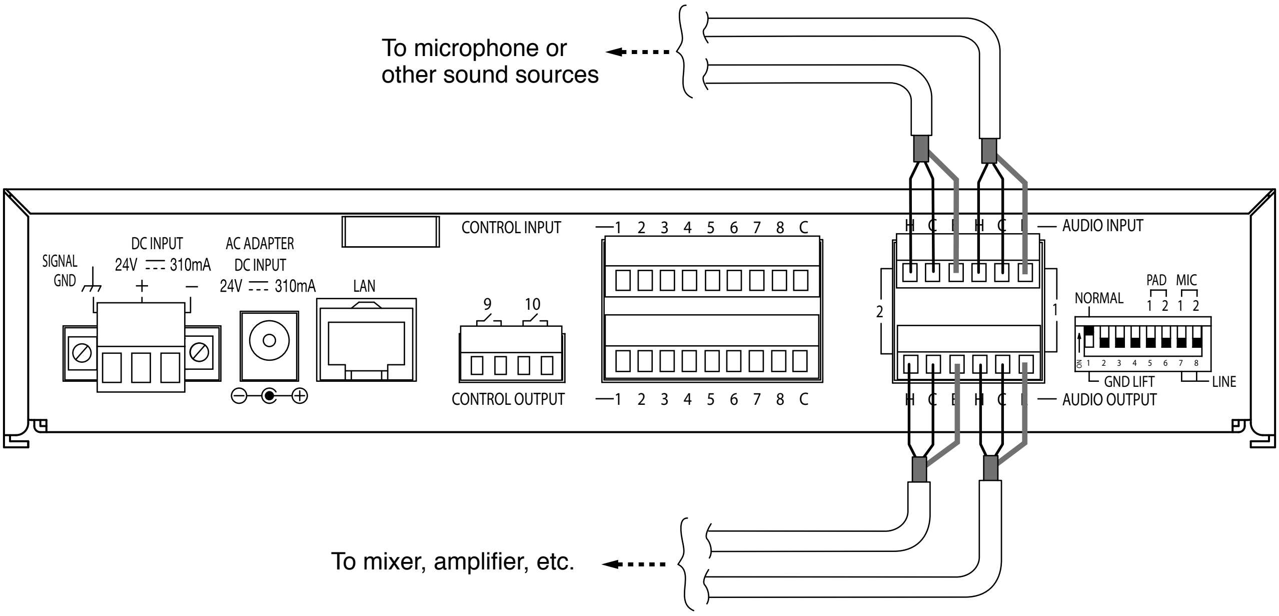
1.2.2. Connections to audio input and output terminals

See p. 2-7, "Removable Terminal Plug Connection," for audio input and output terminals connection procedures.

When the connected unit has an unbalanced input, make the connections as follows:


Connected Unit
H
E
Shield
Shield
Hot (H)
Cold (C)
Earth (E)
NX-300

- **Audio input terminal connections**
  Connect the microphone or other sound sources using 2-core shielded cable.


To microphone or other sound sources
SIGNAL GND
DC INPUT 24V ⎓ 310mA
+ −
AC ADAPTER DC INPUT 24V ⎓ 310mA
LAN
CONTROL INPUT
1 2 3 4 5 6 7 8 C
9 10
CONTROL OUTPUT
1 2 3 4 5 6 7 8 C
H C E H C E
AUDIO INPUT
2
1
NORMAL
PAD MIC
1 2 1 2
GND LIFT
LINE
H C E H C E
AUDIO OUTPUT
To mixer, amplifier, etc.

- **Audio output terminal connections**
  Connect the mixer, amplifier, etc. using 2-core shielded cable.

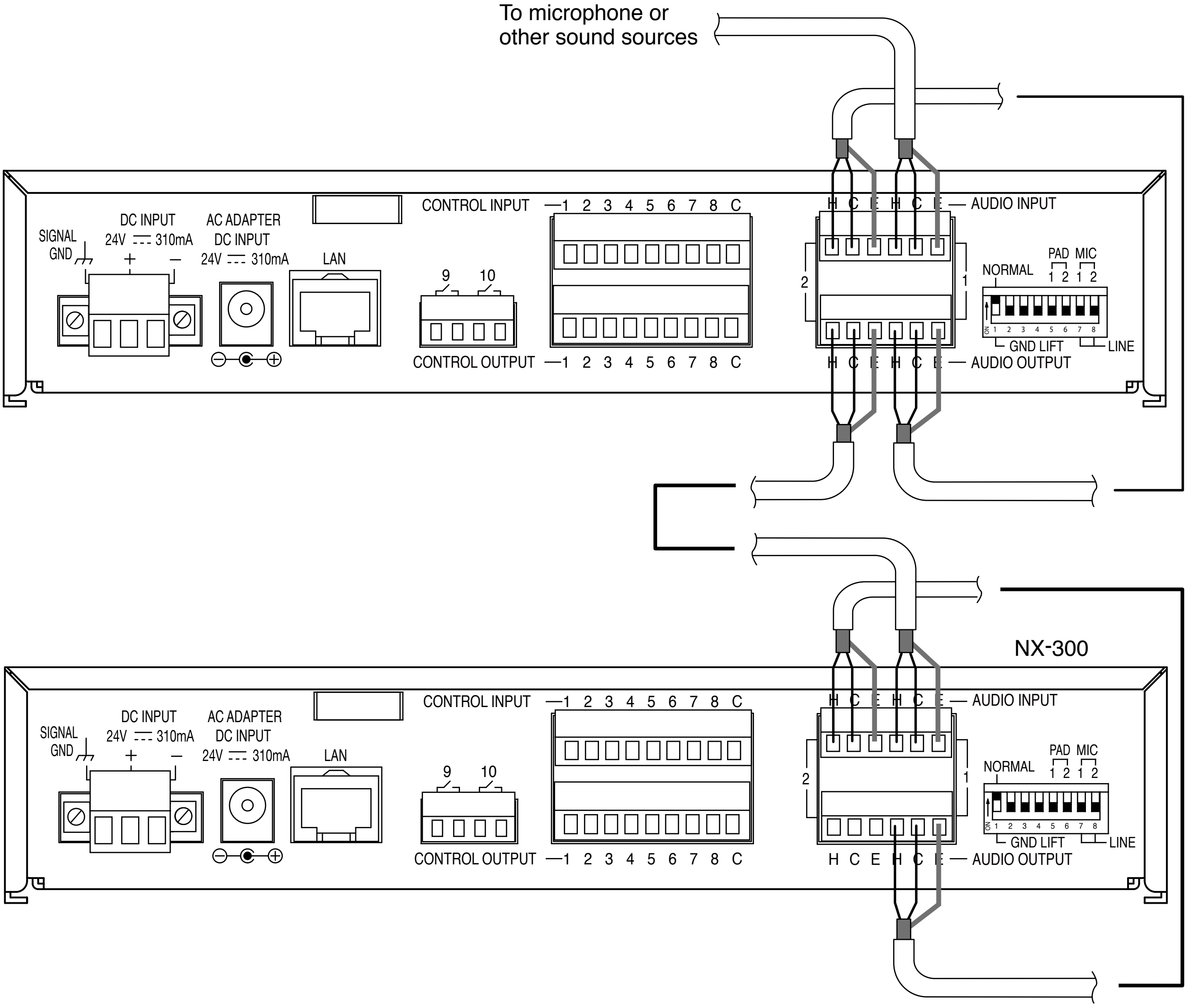
[When transmitting audio from one sound source to multiple channels]

To use the same sound source between channels or NX-300 units through the NX-300's audio input terminal, perform connections as shown below using the bridge out Function*.

This type of connection is required in the following cases:

- Broadcasting to multiple destinations in excess of the maximum number of locations that can receive broadcasts per channel.
- Using multiple broadcasting patterns for the same sound source.

* A function that always provides the same audio signal as the audio input from the audio output.
The connection method shown in the figure is an example. For more information on the bridge out function, see p. 6-10, "Transmitting a Single Sound Source to Multiple Channels."


To microphone or other sound sources
NX-300
SIGNAL GND
DC INPUT 24V ⎓ 310mA
+ –
AC ADAPTER DC INPUT 24V ⎓ 310mA
LAN
9 10
CONTROL INPUT 1 2 3 4 5 6 7 8 C
CONTROL OUTPUT 1 2 3 4 5 6 7 8 C
H C E H C E AUDIO INPUT
H C E H C E AUDIO OUTPUT
2 1
NORMAL
PAD MIC
1 2 1 2
GND LIFT
LINE

Note

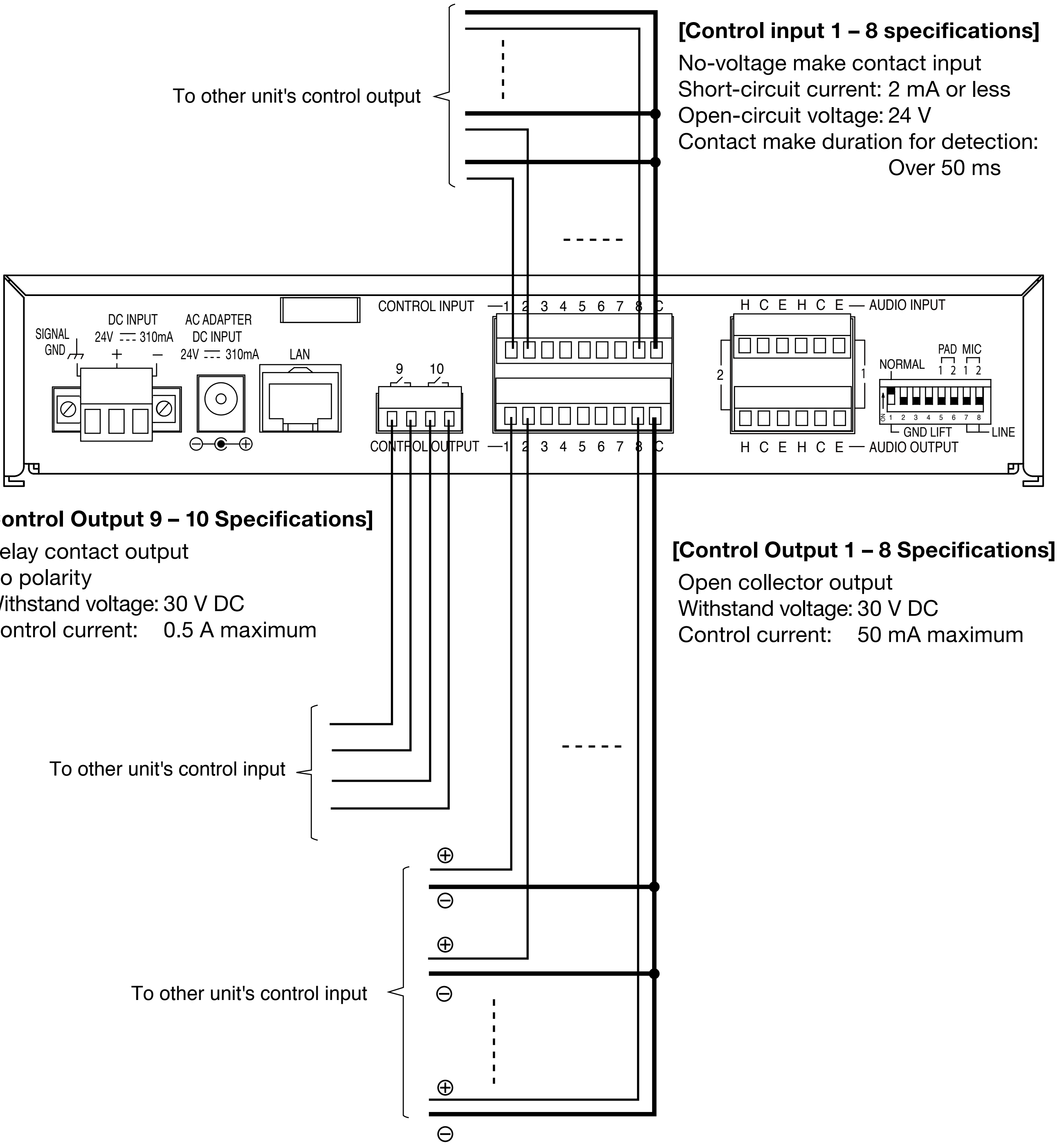
Since the attenuation per 1-channel passage changes depending on the NX-300's input settings, use care when connecting multiple units.

- In the case of unbalanced input settings: 0 dB
- In the case of balanced input settings: –2 dB

1.2.3. Connections to control input and output terminals

Connect the control input and output terminals of all other connected units using 2 control lines.

Note
Be sure to connect only these control lines to other unit's control input terminals.
Connecting in parallel with control lines from other equipment may cause the unit to malfunction.


To other unit's control output
SIGNAL GND
DC INPUT 24V ⎓ 310mA
+ –
AC ADAPTER DC INPUT 24V ⎓ 310mA
LAN
CONTROL INPUT —1 2 3 4 5 6 7 8 C
9 10
CONTROL OUTPUT —1 2 3 4 5 6 7 8 C
H C E H C E — AUDIO INPUT
2
1
NORMAL
PAD MIC
1 2 1 2
GND LIFT
LINE
H C E H C E — AUDIO OUTPUT
To other unit's control input
To other unit's control input
⊕
⊖
⊕
⊖
⊕
⊖

[Control input 1 – 8 specifications]
No-voltage make contact input
Short-circuit current: 2 mA or less
Open-circuit voltage: 24 V
Contact make duration for detection:
Over 50 ms

[Control Output 9 – 10 Specifications]
Relay contact output
No polarity
Withstand voltage: 30 V DC
Control current: 0.5 A maximum

[Control Output 1 – 8 Specifications]
Open collector output
Withstand voltage: 30 V DC
Control current: 50 mA maximum

Tip
See p. 2-7, "Removable Terminal Plug Connection" for control input and output terminals connection procedures.

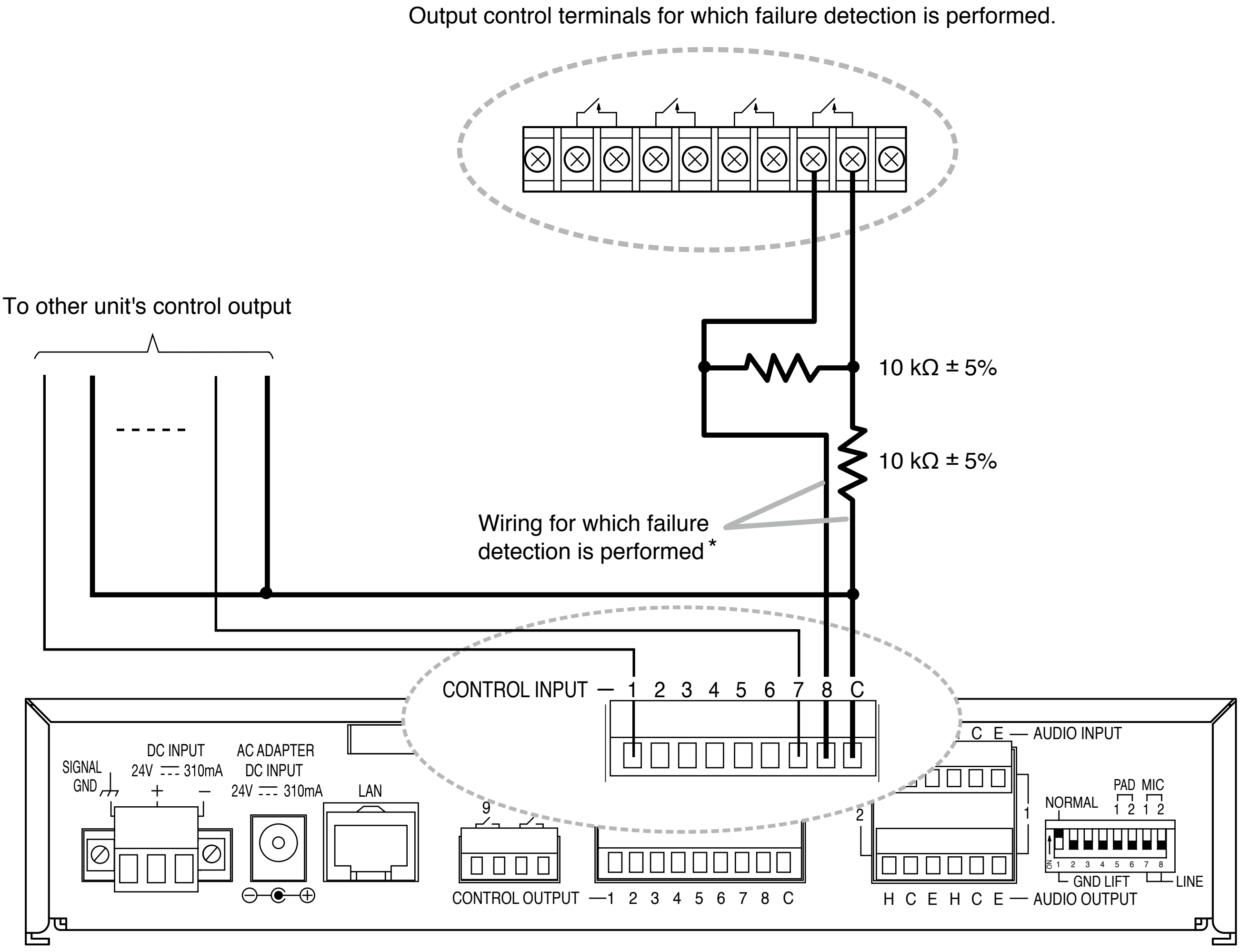
[Control input connection for failure detection]

The function of detecting failures in wiring with external control output equipment can only be set to control input terminal 8. For wiring for which failure detection is performed, insert resistors as shown below:

For instructions on setting the failure detection function to the control input terminal, see p. 3-56, "CONTROL INPUT SETTINGS."

Notes

- Be sure to connect resistors as shown in the figure below. The failure detection function will not work correctly if no resistors are connected, or if resistors of different values from those specified are used.
- To ensure stable NX-300 operation, it is recommended that failure detection wiring be made independent from that of control input terminals 1 – 7, for which shielded twisted pair cables shorter than 10 m (32.81 ft) should be used.
- Connect the cable's shielded wire to the NX-300's signal GND terminal.


Output control terminals for which failure detection is performed.
To other unit's control output
10 kΩ ± 5%
10 kΩ ± 5%
Wiring for which failure detection is performed*
CONTROL INPUT — 1 2 3 4 5 6 7 8 C
SIGNAL GND
DC INPUT 24V ⎓ 310mA
+ –
AC ADAPTER DC INPUT 24V ⎓ 310mA
LAN
9
CONTROL OUTPUT —1 2 3 4 5 6 7 8 C
C E — AUDIO INPUT
2
1
NORMAL
PAD MIC
1 2 1 2
GND LIFT
LINE
H C E H C E — AUDIO OUTPUT

* Only Control Input Terminal 8 supports the control input failure detection function.

1.3. Removable Terminal Plug Connection

Step 1. Wiring the supplied removable terminal plug.

1-1. Loosen the terminal screws to insert the wire.

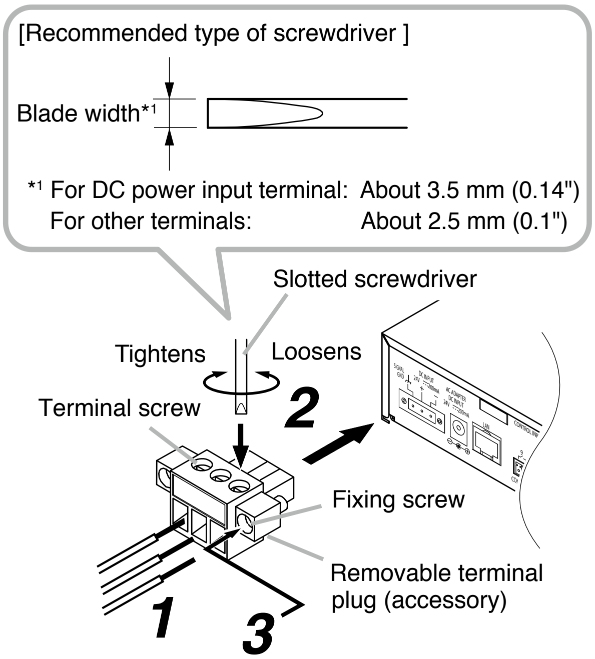
1-2. Tighten the terminal screws.
Ensure that the wire does not break free when pulled. If the wire does pull free, repeat the connection procedure from the start.

Step 2. Insert the wired terminal plug into the corresponding terminal block in the unit's rear panel.

Step 3. Tighten the fixing screw (DC power input terminal only).

Notes

- Do not reverse Steps 1 and 2 above. Poor contact may result if force is applied to the unit's internal circuit board pins while the terminal screws are being tightened.
- When detaching the terminal plug, pull it straight out. Pulling it out at an angle may cause the terminal plug or terminal block to break.


[Recommended type of screwdriver]

Blade width*1

*1 For DC power input terminal: About 3.5 mm (0.14")
For other terminals: About 2.5 mm (0.1")

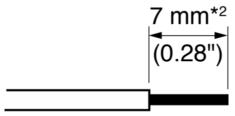
Tips

- Applicable cable size

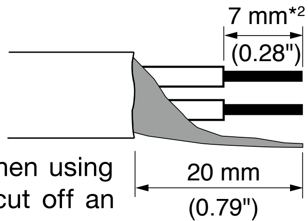
	For DC power input terminal	For other terminals
Conductor cross-section area	0.2 – 2.5 mm^2	0.14 – 1.5 mm^2
AWG	AWG 24 – 12 or equivalent	AWG 28 – 16 or equivalent

- Cable sheath to trim

Solid cable and stranded cable



Shielded cable



*2 Expose 8 mm (0.31") or more when using the above ferrule terminal, and cut off an extra conductor protruding from the sleeve.

Note

Avoid soldering stranded or shielded cable, as contact resistance may increase when the cable is tightened and the solder is crushed, possibly resulting in an excessive rise in joint temperatures.

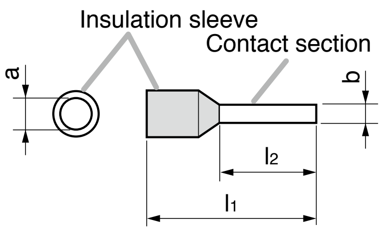
- When connecting 2 cables or a shielded cable to a single terminal, use a ferrule terminal with an insulation sleeve to crimp the cables because such cable conductors could become loose.

(1) Recommended ferrule terminals for cables other than power supply cables (made by Phoenix Contact)

Unit: mm (in)

	Model Number	a	b	l_1	l_2
①	AI 0,34-8 TQ	2 (0.08)	0.8 (0.03)	12.5 (0.49)	8 (0.31)
②	AI 0,5-8 WH	2.5 (0.1)	1.1 (0.04)	14 (0.55)	8 (0.31)

① ② ③



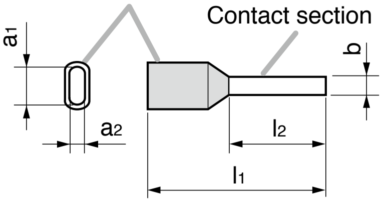
(2) Recommended ferrule terminals for power supply cables (made by Phoenix Contact)

Unit: mm (in)

	Model Number	a	a_1	a_2	b	l_1	l_2
③	AI 1,5-8 BK	3.4 (0.13)	—	—	1.8 (0.07)	14 (0.55)	8 (0.31)
④	AI-TWIN 2 x 1,5-8 BK	—	6.6 (0.26)	3.6 (0.14)	2.3 (0.09)	16 (0.63)	8 (0.31)

Crimping tool: CRIMPFOX 10S (made by Phoenix Contact)

④



2. INSTALLATION

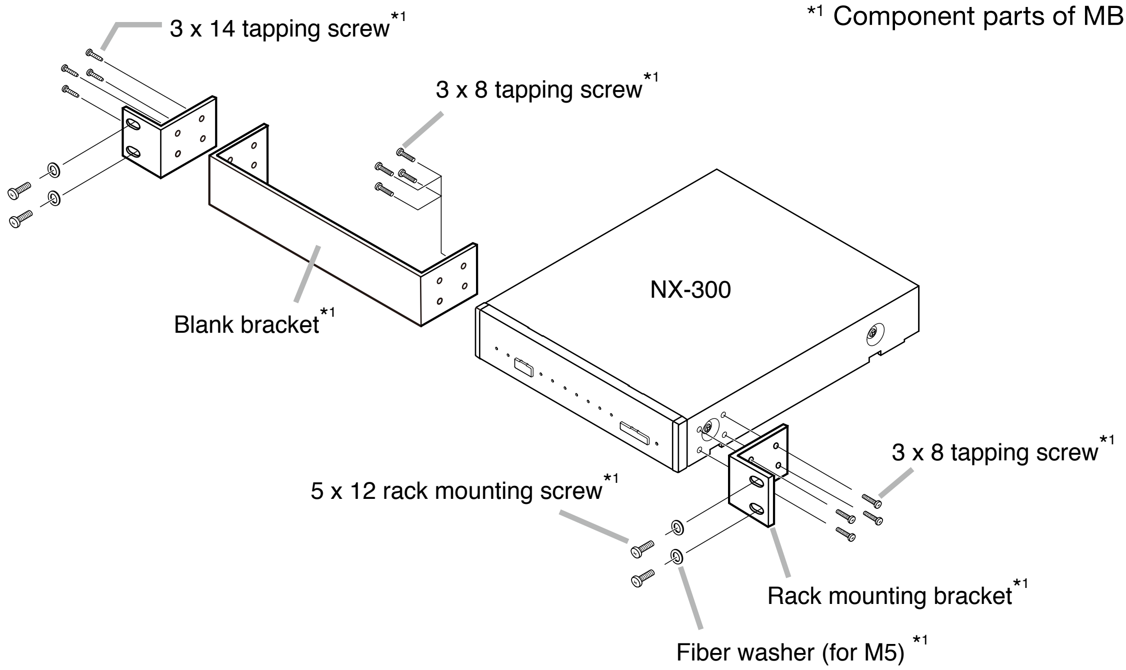
2.1. Rack Mounting

Use the optional mounting hardware set when installing the unit in an equipment rack.

2.1.1. When mounting a single unit

Use the optional MB-15B-BK hardware set when mounting a single unit.

*1 Component parts of MB-15B-BK

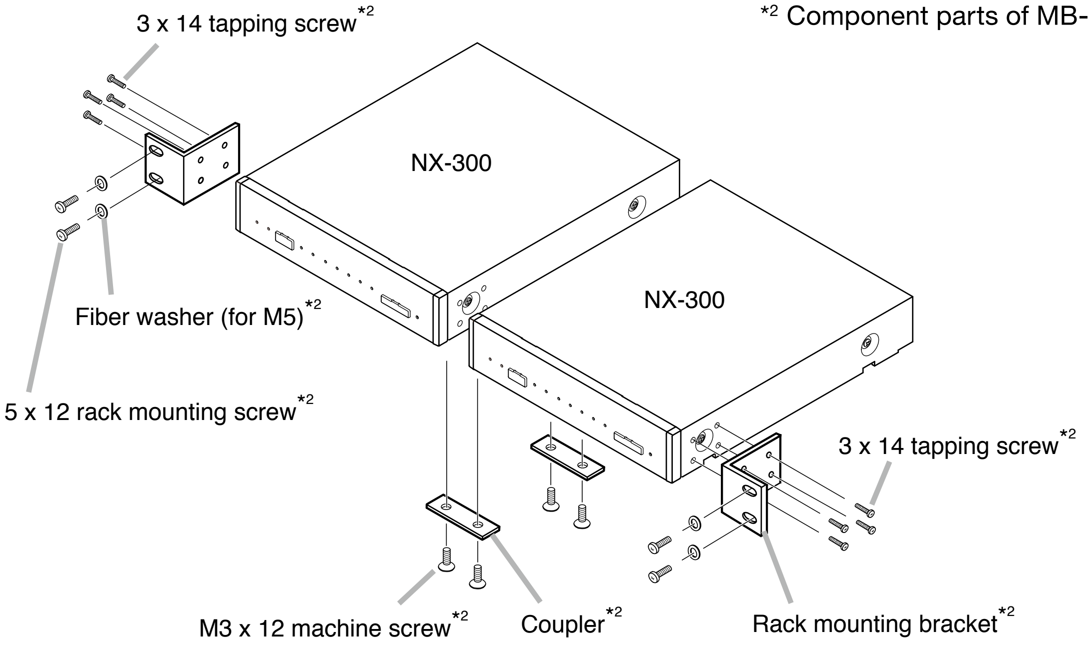

3 x 14 tapping screw*1
3 x 8 tapping screw*1
Blank bracket*1
NX-300
3 x 8 tapping screw*1
5 x 12 rack mounting screw*1
Rack mounting bracket*1
Fiber washer (for M5) *1

2.1.2. When mounting 2 units

Use the optional MB-15B-J hardware set when mounting 2 units.

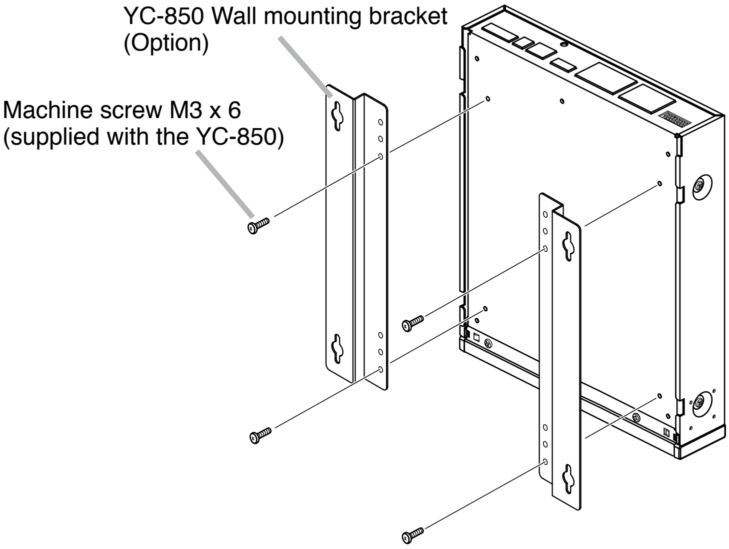
Note
The NX-300 and other equipment cannot be linked together and mounted in a rack using the MB-15B-J.

*2 Component parts of MB-15B-J


3 x 14 tapping screw*2
NX-300
NX-300
Fiber washer (for M5)*2
5 x 12 rack mounting screw*2
3 x 14 tapping screw*2
M3 x 12 machine screw*2
Coupler*2
Rack mounting bracket*2

2.2. Wall Mounting

Step 1. Install the optional YC-850 Wall Mounting Bracket to the NX-300.

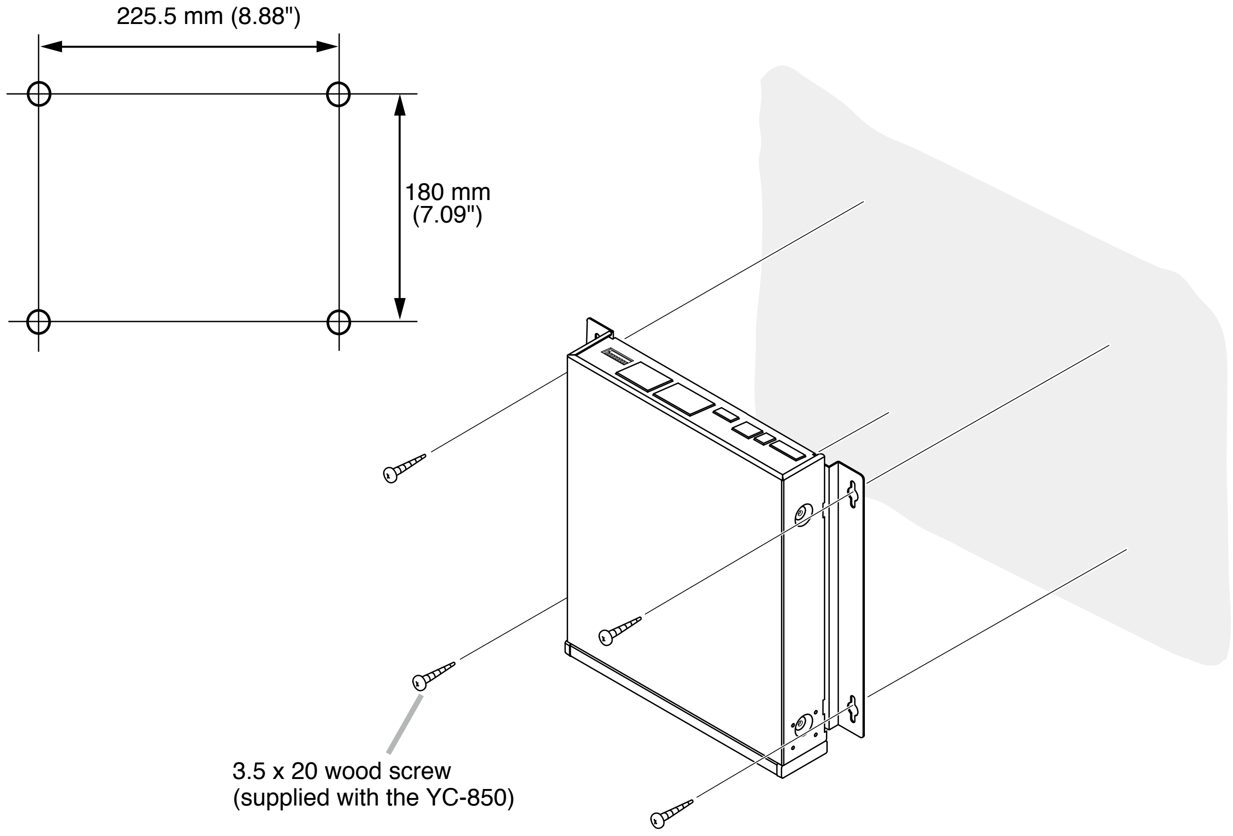

YC-850 Wall mounting bracket
(Option)
Machine screw M3 x 6
(supplied with the YC-850)

Step 2. Mount the NX-300 on the wall.

Notes

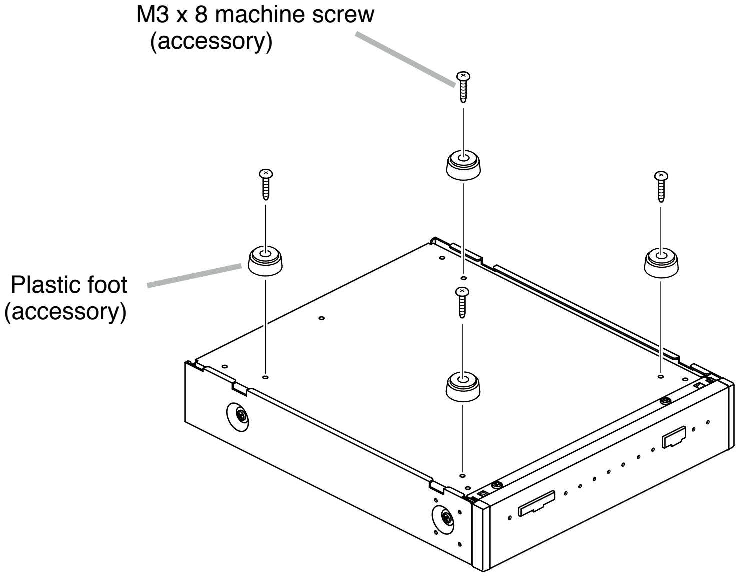
- Use appropriate screws for the construction of wall.
- 3.5 x 20 wood screws are supplied with the YC-850.

[Wall mounting dimensions]


225.5 mm (8.88")
180 mm
(7.09")
3.5 x 20 wood screw
(supplied with the YC-850)

2.3. Desk-Top Installation

When installing the NX-300 on a desk, secure the supplied plastic feet to the unit's bottom using the supplied machine screws.

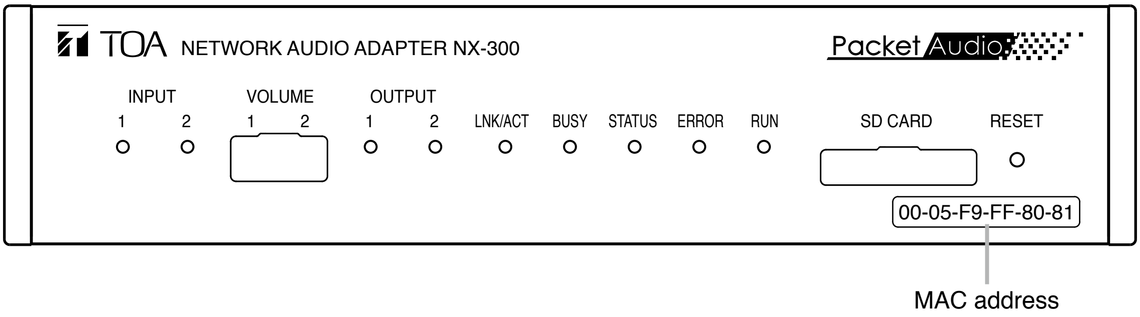

M3 x 8 machine screw (accessory)
Plastic foot (accessory)

3. BEFORE SETUP

3.1. MAC Addresses and Installation Locations

When making the unit's network settings, the unit's MAC address* must have a clear association with its corresponding installation location. Be sure to record the relationship during installation to facilitate later network settings.

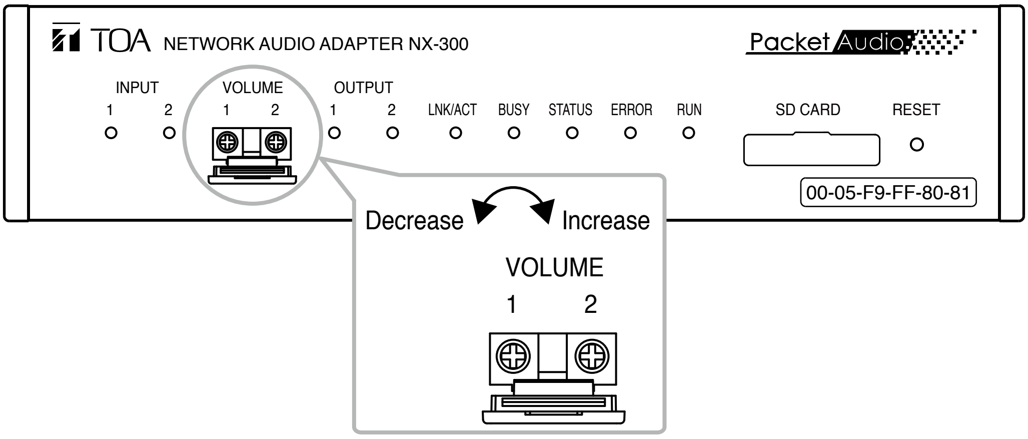
* An address inherently assigned to and unique to a networking device, consisting of 12 hyphenated alphanumeric characters.


TOA NETWORK AUDIO ADAPTER NX-300
Packet Audio
INPUT
1
2
VOLUME
1
2
OUTPUT
1
2
LNK/ACT
BUSY
STATUS
ERROR
RUN
SD CARD
RESET
00-05-F9-FF-80-81
MAC address

3.2. Input Level Adjustment

Use the input volume control (VOLUME) to adjust the audio input level.
Rotating the adjuster clockwise as shown in the figure increases the level and rotating it counterclockwise decreases the level. Adjust the level so that the input indicator lights green, and not red.

Note
Rotate the input volume control screw using an appropriate screwdriver. When rotating, do not press on the screwdriver with too much force, so as to avoid damage to the adjuster.


TOA NETWORK AUDIO ADAPTER NX-300
Packet Audio
INPUT
1
2
VOLUME
1
2
OUTPUT
1
2
LNK/ACT
BUSY
STATUS
ERROR
RUN
SD CARD
RESET
00-05-F9-FF-80-81
Decrease
Increase
VOLUME
1
2

Chapter 3

SYSTEM SETTINGS (NX-300 SETTING SOFTWARE)

1. GENERAL DESCRIPTION

1.1. NX-300 Finder and NX-300 Setting Software

1.1.1. What is the NX-300 Finder?

This software detects any NX-300 units connected to a local network and performs settings for the network.
NX-100 and NX-100S units can also be detected.

1.1.2. What is the NX-300 Setting Software?

This software is used to set all the NX-300 connected to a LAN.
Its main features are as follows:

- The software can perform settings for multiple NX-300 units and can upload their settings files simultaneously.
- The software can also handle settings files for multiple systems.

1.1.3. Devices that can be set up

The NX-300 Setting Software can also be used to set up the NX-100 and NX-100S units in the same manner.
Therefore, even for combined systems configured with the NX-300, NX-100 and NX-100S units, settings can be performed using only the NX-300 Setting Software.
In this manual, the NX-300's settings are taken as the basis for explaining the setting method.
When on-screen display contents differ or the screen is not displayed depending on the model, explanations are provided separately on a case-by-case basis. Items that cannot be set are displayed in gray on the screen.

1.2. About Network Settings

Perform settings for the NX-300, NX-100 and NX-100S units, and PC networks beforehand according to the instructions of an administrator of the facility in which the unit is installed.
Incorrect settings may adversely influence other units connected to the same network.

1.3. Backing-Up Setting Files

Saved setting contents are stored in the NX-300 Setting Software's data folder.
Backups made to different locations on the PC or an external storage drive can facilitate recovery if the NX-300 or the PC should fail for any reason. It is recommended to make backup copies.
To save backup copies, copy the NX-300 Setting Software's entire data folder.

Note
When settings are changed, be sure to update the backup files as well.

1.4. Cautions Concerning Setting Updates

Never restart the NX-300, NX-100 and NX-100S units nor turn off their power supply while updating* the setting contents.

* The busy indicator on the NX-300's front panel flashes during an update.
The status indicator on the NX-100 / NX-100S's front panel flashes during an update.

2. SOFTWARE INSTALLATION

When the NX-300 Software Collection is installed on a PC, the NX-300 Finder, NX-300 Setting Software, and NX-300 Operation Software* are also installed.

* This software is used to operate the NX-300 from a PC. For details, see Chapter 5, "SETTINGS NECESSARY WHEN USING THE NX-300 OPERATION SOFTWARE."

2.1. System Conditions

The following minimum PC specifications are recommended in order to correctly operate NX-300 software programs.

• OS:	Windows 7 Home Premium, Windows 7 Professional, Windows 8.1, Windows 8.1 Pro, Windows 10 Home, Windows 10 Pro
• Required Component:	Microsoft .NET Framework 4.5.2 (in the case of Windows 7 or Windows 8.1)
• CPU:	1 GHz or greater
• RAM:	1 GB or greater (32-bit) or 2 GB or greater (64-bit)

Notes
- Microsoft and Windows are the registered trademarks of Microsoft Corporation in the United States and other countries.
- Regarding other company names and products, they are also trademarks of individual companies.

2.2. Downloading the Software

To use the following items related to the NX-300 Network Audio Adapter, select the latest versions from the TOA product download site (http://www.toa-products.com/international/). Be sure to download them anew when installing, setting or operating them for the first time after initial purchase. Other than these, such items as photos, specifications, exterior drawings and firmware can also be downloaded from the above site.

- NX-300 Software (These dedicated softwares permit the NX-300 to be operated from a connected PC.)
  - NX-300 Setting Software
  - NX-300 Finder
  - NX-300 Operation Software
- NX-300 Installation Setup Manual (This manual)
- NX-300 Operations Manual

[Update information]
- To confirm the NX-300 firmware version or to update the firmware, use the browser on the PC. See p. 4-19, "SYSTEM MANAGEMENT."
- To confirm the NX-300 software version, use the Help menu of the software.

2.3. Required Component Installation

To activate the NX-300 Setting Software, the following components are required.
  - Microsoft .NET Framework 4.5.2 or later*

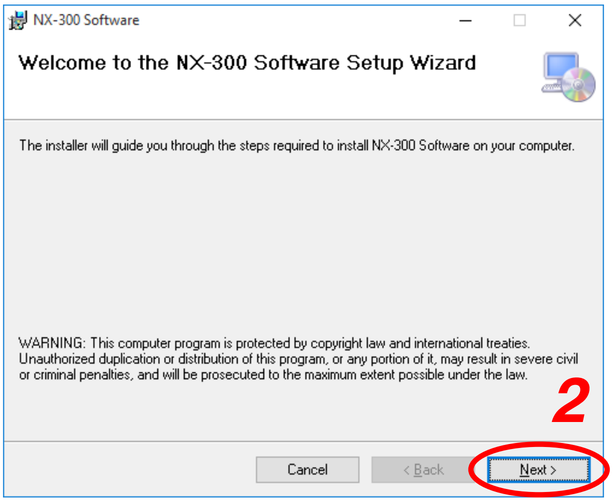
  * This component need not be installed when the OS is Windows 10.

Note
If Microsoft .NET Framework 4.5.2 is not previously installed, connect the PC to the Internet and download the installer from Microsoft Corporation’s download center to install it.

2.4. NX-300 Setting Software Installation

Step 1. Expand the zip file downloaded from TOA product data download site and double-click on the resulting "setup.exe" file.

The installer will start up.



NX-300 Software

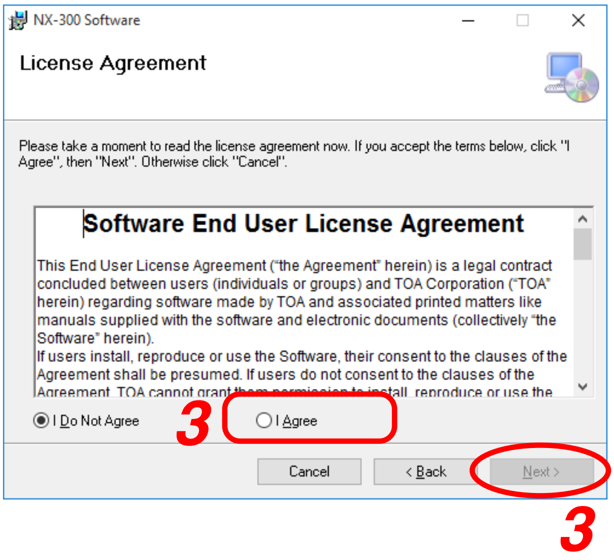
Welcome to the NX-300 Software Setup Wizard

The installer will guide you through the steps required to install NX-300 Software on your computer.

WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.

Step 2. Click the Next button.

The screen "License Agreement" will be displayed.



NX-300 Software

License Agreement

Please take a moment to read the license agreement now. If you accept the terms below, click "I Agree", then "Next". Otherwise click "Cancel".

Software End User License Agreement

This End User License Agreement ("the Agreement" herein) is a legal contract concluded between users (individuals or groups) and TOA Corporation ("TOA" herein) regarding software made by TOA and associated printed matters like manuals supplied with the software and electronic documents (collectively "the Software" herein).
If users install, reproduce or use the Software, their consent to the clauses of the Agreement shall be presumed. If users do not consent to the clauses of the Agreement, TOA cannot grant them permission to install, reproduce or use the

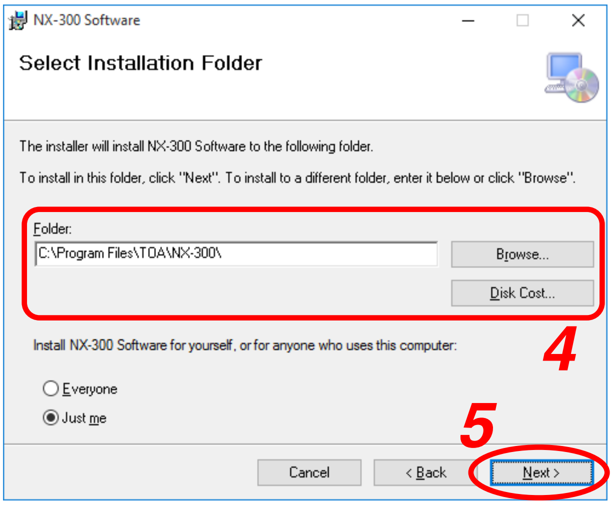
● I Do Not Agree ○ I Agree

Step 3. Carefully read the contents of the License Agreement, and select "I Agree." Then, click the Next button.

Note
Selecting "I Do Not Agree," followed by the Cancel button will exit the software without installing it.

The "Select Installation Folder" screen will be displayed.

Step 4. If you need to change the folder to install the program, select a desired folder.
To install the software into a different folder other than indicated on the screen, click the [Browse...] button or [Disk Cost...] button to select a desired folder.



NX-300 Software

Select Installation Folder

The installer will install NX-300 Software to the following folder.

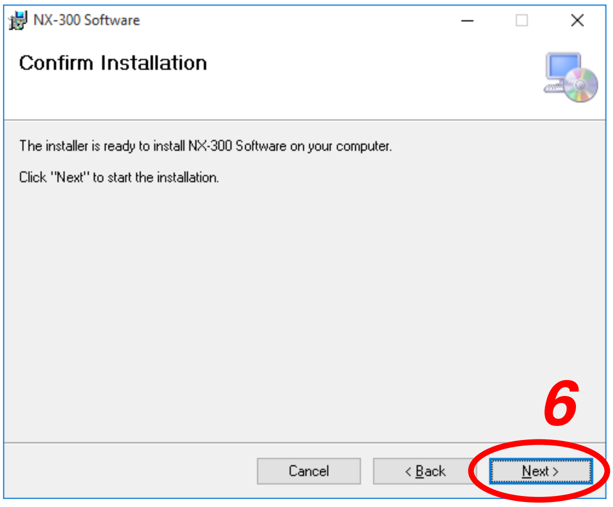
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".

Folder:
C:\Program Files\TOA\NX-300\

Install NX-300 Software for yourself, or for anyone who uses this computer:

○ Everyone
● Just me

Step 5. Click the Next button.
The screen ready for program installation is displayed.



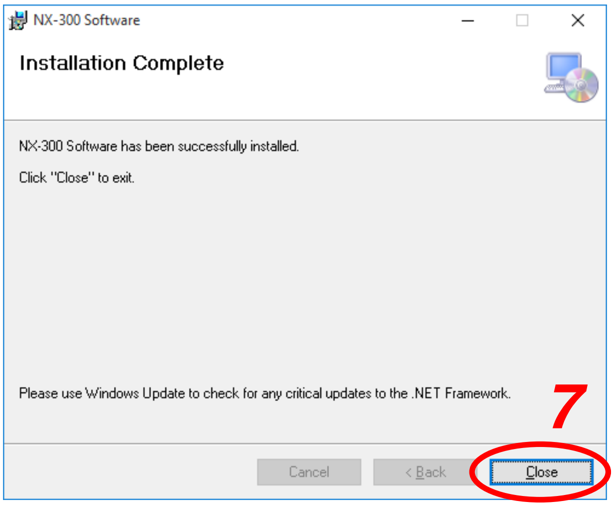
NX-300 Software

Confirm Installation

The installer is ready to install NX-300 Software on your computer.

Click "Next" to start the installation.

Step 6. Click the Next button to install the software program into the selected folder.
The "Installation Complete" screen is displayed when the installation is correctly completed.



NX-300 Software

Installation Complete

NX-300 Software has been successfully installed.

Click "Close" to exit.

Please use Windows Update to check for any critical updates to the .NET Framework.

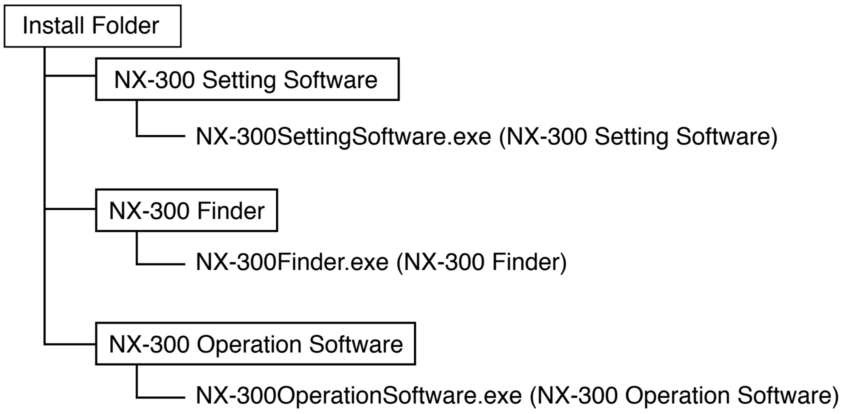
Step 7. Click the Close button.

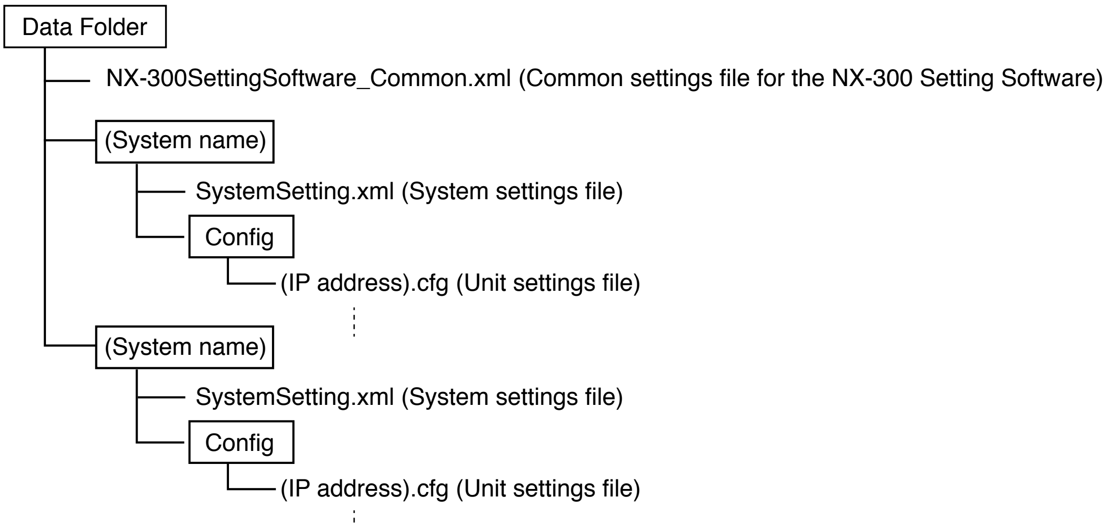
2.5. When NX-300 Software Uninstallation

Select [Control Panel] → [Programs and Features] to delete the NX-300 Software program.

2.6. Folder Configuration

The NX-300 Software is installed in the following folders by default:
32 bit OS: C:\Program Files\TOA\NX-300
64 bit OS: C:\Program Files (x86)\TOA\NX-300
The software settings files are saved to the following folders:
C:\ProgramData\TOA\NX-300
The configuration of the folders is as follows.
Do not change the folder configuration (file location) or the folder and file names.


Install Folder
NX-300 Setting Software
NX-300SettingSoftware.exe (NX-300 Setting Software)
NX-300 Finder
NX-300Finder.exe (NX-300 Finder)
NX-300 Operation Software
NX-300OperationSoftware.exe (NX-300 Operation Software)


Data Folder
NX-300SettingSoftware_Common.xml (Common settings file for the NX-300 Setting Software)
(System name)
SystemSetting.xml (System settings file)
Config
(IP address).cfg (Unit settings file)
(System name)
SystemSetting.xml (System settings file)
Config
(IP address).cfg (Unit settings file)

* Files are created inside the data folder when the settings data is saved.

3. SOFTWARE CONFIGURATION AND SETTING ITEMS

The use of both the NX-300 Setting Software and the NX-300 Finder allows settings of all items, including device detection and network settings.
When installing the system, first set all items using these software programs.

[NX-300 Finder]
Performs unit scanning and network settings. Using this software, first scan the NX-300, NX-100 and NX-100S units connected to the LAN for the system initial setting.

Setting Item	
Unit scanning	(See p. 3-12.)
Settings Update	(See p. 3-14.)

[NX-300 Setting Software]
Used to set up broadcasts, control inputs and outputs, and various other settings of the NX-300.
Upload the device settings file created with the NX-300 Setting Software after performing network settings using the NX-300 Finder.
Unit settings files can also be created in advance by inputting the unit settings before installation.

Setting Item	
General settings	(See p. 3-26.)
Network	(See p. 3-28.)
Broadcast spec	(See p. 3-35.)
Pattern	(See p. 3-38.)
Control input and output	(See p. 3-56.)
Serial	(See p. 3-63.)
Audio file	(See p. 3-65.)

4. SETTING PROCEDURE

Pattern 1: Initial On-Site Setup

(1) Unit Scanning (Network Setting)

- After the unit is detected using the NX-300 Finder, set the IP address, default gateway, subnet mask, and unit name.
- Upload the network setting data.
- Save the network setting data in File format of the unit list information ("arbitrary name".xml).

(2) System Setting

Create a new system with the NX-300 Setting Software and read the unit list information created in Item (1) above, then set up all the items other than network settings.
Manually add any units that could not be scanned, and enter their IP addresses, default gateways, subnet masks, and unit names.
Set the following items in the order listed:

• General settings:	Set the items related to the entire system. (NX-300 only)
• Network:	Set the unit's IP address and port number.
• Broadcast Spec:	Set the broadcast quality.
• Pattern:	Set the destinations for the unit's broadcasts and contact bridge.
• Control input and output:	Set unit operations when control signals are input or output.
• Serial:	Set the unit's serial bridge connection destinations. (NX-100 only)
• Audio file:	Upload the audio file to be used for broadcast to the unit. (NX-300 only)

(3) Setting Upload

Upload the unit setting file in order to enable the settings set in Step (2) above.

Pattern 2: Uploading the programmed system setting file after scanning the connected units on-site.

(1) System Setting

Register all the units in the system using the NX-300 Setting Software, and enter their IP addresses, default gateways, subnet masks, and unit names.

- General settings: Set the items related to the entire system. (NX-300 only)
- Network: Set the unit’s IP address and port number.
- Broadcast Spec: Set the broadcast quality.
- Pattern: Set the destinations for the unit’s broadcasts and contact bridge.
- Control input and output: Set unit operations when control signals are input or output.
- Serial: Set the unit’s serial bridge connection destinations. (NX-100 only)
- Audio file: Upload the audio file to be used for broadcast to the unit. (NX-300 only)

(2) Saving Data Files

Save the NX-300 Setting Software's data folder to the PC's hard disk drive or a connected external storage device. Also be sure to save backup copies.

(3) Unit Scanning (Network Setting)

- After installing the system's NX-300 Setting Software on-site, copy the contents of the data folder saved in Step (2) above to the data folder.
- After the unit is detected using the NX-300 Finder, set the IP address, default gateway, subnet mask and unit name.
- Upload the unit settings file using the NX-300 Setting Software.

5. STARTING THE NX-300 FINDER

5.1. How to Start the NX-300 Finder

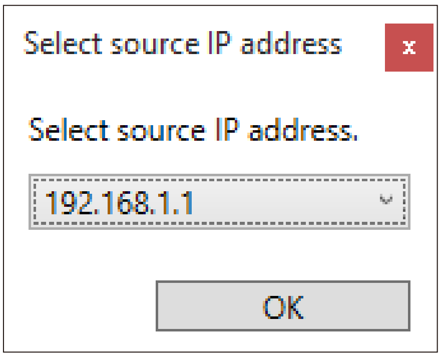
Detect all units connected to the local network.

Note
The NX-300 Setting Software cannot be used to write settings information to units if their IP addresses are not correctly set using the NX-300 Finder or browser.

Step : Double-click the shortcut for the NX-300 Finder which was created on the desktop when installed. Or directly double-click the "NX-300Finder.exe" software created in the installed folder.

Tip
The Select source IP address screen is only displayed when multiple IP addresses are set in the PC. Select the correct source IP address and click the OK button.

[Select source IP address]

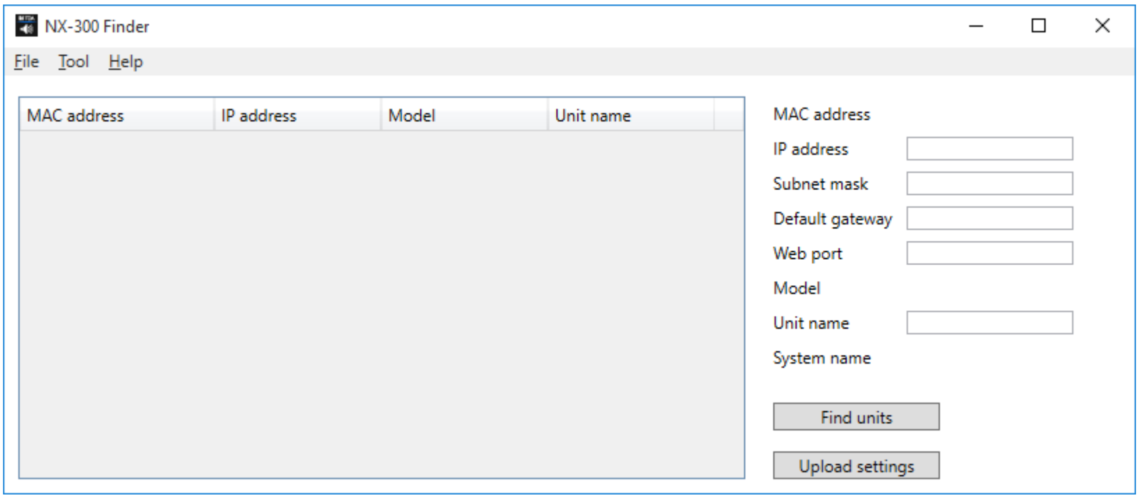


Select source IP address

Select source IP address.

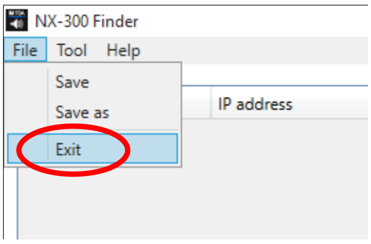
192.168.1.1

The NX-300 Finder's initial screen is displayed.



NX-300 Finder
File
Tool
Help
MAC address
IP address
Model
Unit name
MAC address
IP address
Subnet mask
Default gateway
Web port
Model
Unit name
System name
Find units
Upload settings

Tip
To terminate the software, select "File" → "Exit" from the menu.



NX-300 Finder
File
Tool
Help
Save
Save as
Exit
IP address

5.2. Menu

5.2.1. File

Save (S): Saved to the XML format file saved in "Save As."
Save As (A): Saves information on the detected unit to the PC in the unit list information format ("arbitrary name".xml).
Exit (X): Exits the program.

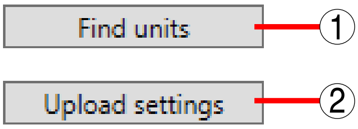
5.2.2. Tool

Select Source IP Address (I): Selects the IP address of the PC to be used for unit detection. Only units connected to the local network having the selected IP address can be detected.
Find units (F): Detects and displays all units connected to the local network.
Upload Settings (U): Uploads the settings contents changed on the software screen to the unit.

5.2.3. Help

About (A): Displays the version number of the current software.

5.3. Button



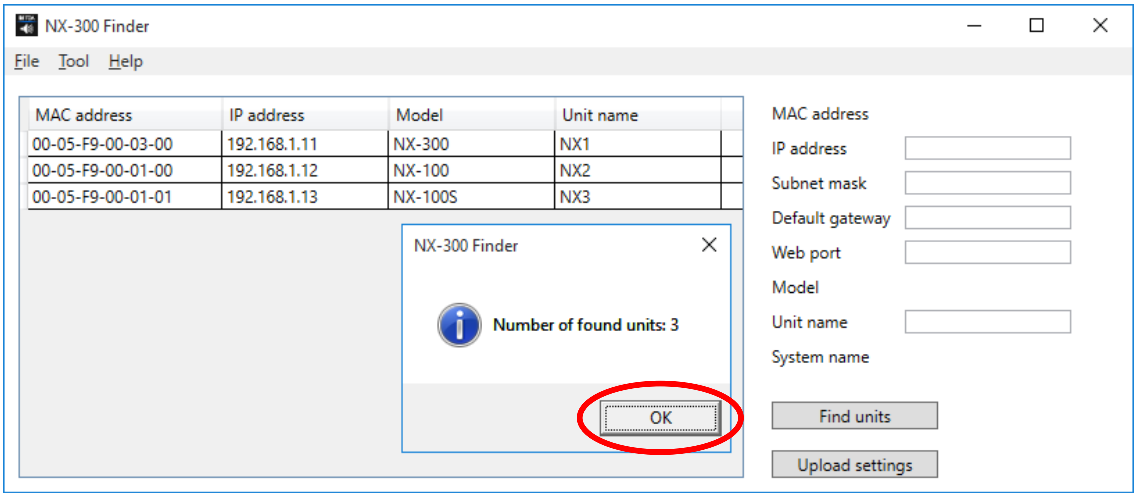
1. Find units button: Detects and displays all units connected to the local network.
2. Upload settings button: Uploads the settings contents changed on the software screen to the unit.

5.4. Detecting Units

Detect all units connected to the local network.

Step 1. Connect the NX-300 to the network and connect the power supply to the NX-300.
The "LNK/ACT" indicator lights.

Step 2. Click the "Find units" button on the NX-300 Finder's initial screen or select "Tool" → "Find units" from the menu.
A dialog showing the number of detected units is displayed.


NX-300 Finder
File
Tool
Help
MAC address
IP address
Subnet mask
Default gateway
Web port
Model
Unit name
System name
Find units
Upload settings
NX-300 Finder
OK

MAC address	IP address	Model	Unit name
00-05-F9-00-03-00	192.168.1.11	NX-300	NX1
00-05-F9-00-01-00	192.168.1.12	NX-100	NX2
00-05-F9-00-01-01	192.168.1.13	NX-100S	NX3

Number of found units: 3

Step 3. Click the OK button.
The list of all network information on the NX-300 units connected to the local network is displayed.
The following values are set by default:

IP address:	192.168.1.1
Subnet mask:	255.255.255.0
Default gateway:	0.0.0.0
Web port:	80
Unit name:	NX-300

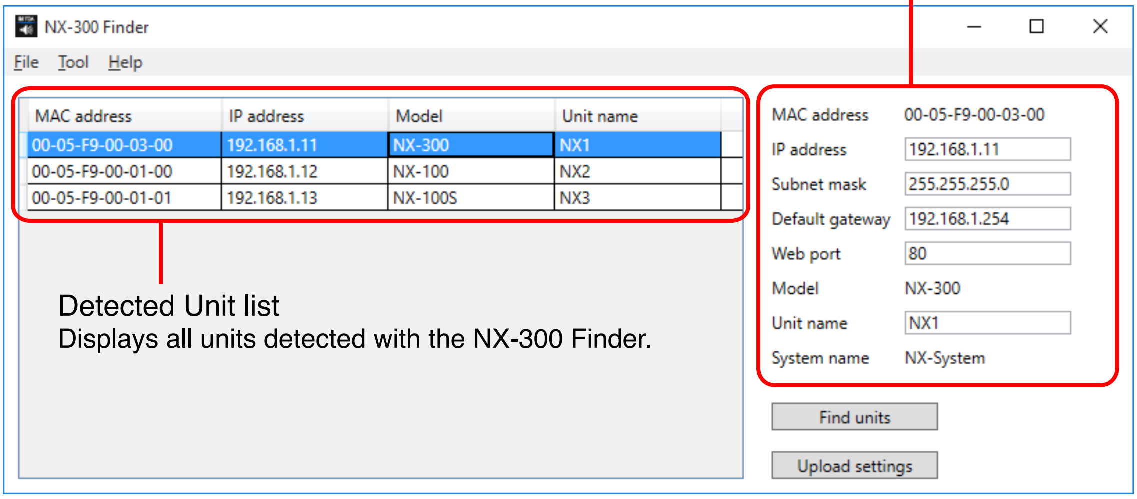
Notes

- The range that can be detected is only the range that is valid for broadcast communication from the source IP address. (See p. 6-3, "IP Broadcast and Unit Scan.")
- For the units that cannot be scanned, manually add only the units connected to the LAN with the NX-300 Setting Software.
- Units may not be detected if the firewall function of the PC on which the NX-300 Finder is installed is enabled. In such cases, change the firewall settings and remove the block to the NX-300 Finder.

5.5. Screen Description

Shown below is an example of the screen displayed after the units have been scanned.
When selecting the unit, click the relevant unit in the detected unit list.

Unit Information list
Displays information on the unit selected in the detected unit list.



MAC address	IP address	Model	Unit name
00-05-F9-00-03-00	192.168.1.11	NX-300	NX1
00-05-F9-00-01-00	192.168.1.12	NX-100	NX2
00-05-F9-00-01-01	192.168.1.13	NX-100S	NX3

MAC address	00-05-F9-00-03-00
IP address	192.168.1.11
Subnet mask	255.255.255.0
Default gateway	192.168.1.254
Web port	80
Model	NX-300
Unit name	NX1
System name	NX-System

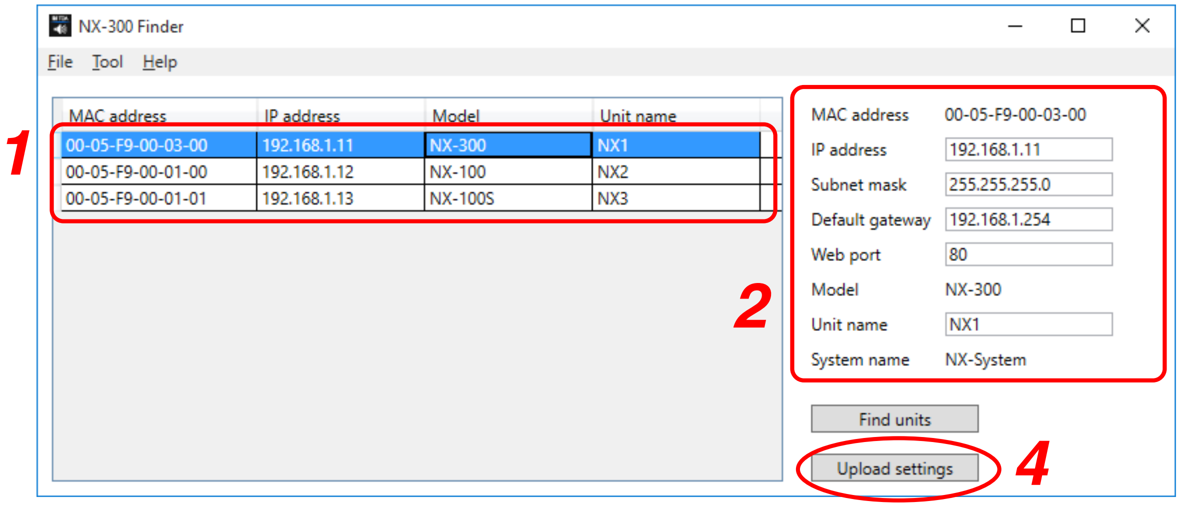
Detected Unit list
Displays all units detected with the NX-300 Finder.

[Settings items for the unit information list]

1. **MAC address**
   Displays the detected unit's MAC address.
   Cannot be changed.
2. **IP address**
   Sets the detected unit's IP address.
3. **Subnet mask**
   Sets the detected unit's subnet mask.
4. **Default gateway**
   Sets the detected unit's default gateway.
5. **Web port**
   Sets the web server's port number.
6. **Model**
   Displays the unit's model name.
   Cannot be changed.
7. **Unit name**
   Sets the name of the unit registered in the system.
8. **System name (NX-300 only)**
   Displays the system name set in the system.

5.6. Changing the Unit Setting Values Related to the Network

Unit setting values can be changed individually.



MAC address	IP address	Model	Unit name
00-05-F9-00-03-00	192.168.1.11	NX-300	NX1
00-05-F9-00-01-00	192.168.1.12	NX-100	NX2
00-05-F9-00-01-01	192.168.1.13	NX-100S	NX3

MAC address	00-05-F9-00-03-00
IP address	192.168.1.11
Subnet mask	255.255.255.0
Default gateway	192.168.1.254
Web port	80
Model	NX-300
Unit name	NX1
System name	NX-System

Step 1. Click the cell on the detected unit list to be changed.
The unit information list is placed in a mode that allows the unit information list to be input.

Step 2. Input a new setting value into the unit information list.
Items that can be set are as follows:
- IP address
- Subnet mask
- Default gateway
- Web port
- Unit name

Step 3. Follow **Steps 1** and **2** for all devices to be changed.

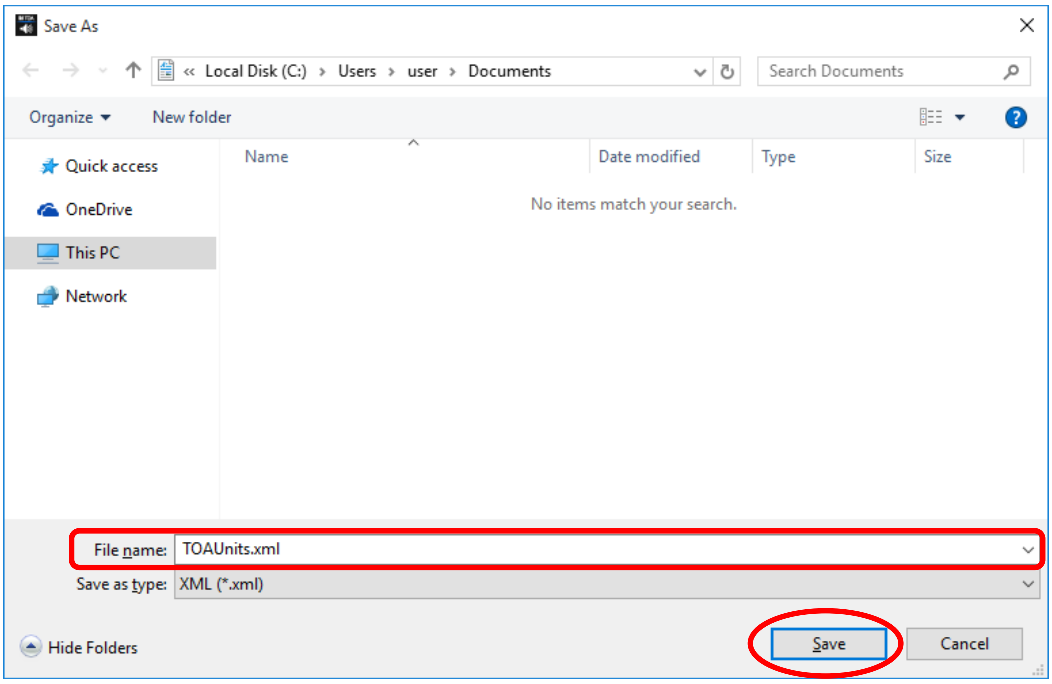
Step 4. After editing all changes, click the Upload settings button.
The new setting values are uploaded to the device.

Note
Since the unit is automatically reset after uploading, the broadcast stops and may be terminated.

5.7. Saving the Unit Detection List Data

Save the unit detection results to the PC.
Unit settings can be efficiently done by reading the detection results using the NX-300 Setting Software. (See p. 3-20, "SETUP EDITING SCREEN.")

Step 1. Select "File" → "Save As" from the menu while the unit is displayed on the detected unit list.
The "Save As" dialog is displayed.



Save As
« Local Disk (C:) › Users › user › Documents
Search Documents
Organize
New folder
Quick access
OneDrive
This PC
Network
Name
Date modified
Type
Size
No items match your search.
Hide Folders
Save
Cancel

File name: TOAUnits.xml
Save as type: XML (*.xml)

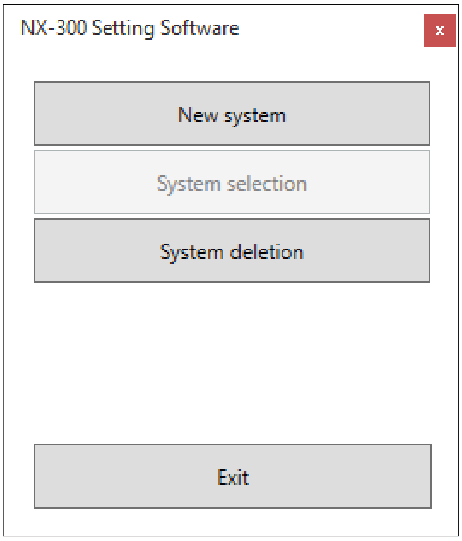
Step 2. Designate a filename and click the Save button.
The unit detection list data is saved in the XML format.

6. STARTING THE NX-300 SETTING SOFTWARE

Step : Double-click the shortcut for the NX-300 Setting Software which was created on the desktop when installed. Or directly double-click the "NX-300SettingSoftware.exe" software created in the installed folder.

7. OPERATION FROM THE SYSTEM EDITING SCREEN

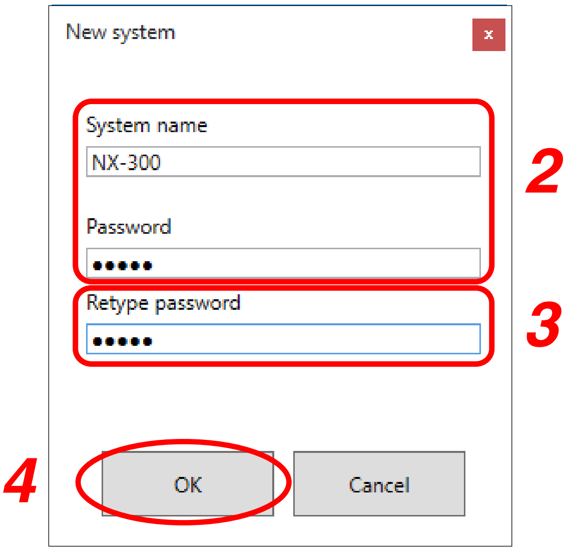
Starting the NX-300 Setting Software displays the following screen.
Create or edit a new system on this screen.


NX-300 Setting Software
x
New system
System selection
System deletion
Exit

7.1. Creating a New System

A new system is created.

Step 1. Click the New system button on the system editing screen.
The new system creation screen is displayed.



New system

System name: NX-300

Password: •••••

Retype password: •••••

Step 2. Enter a system name and password.
Use 1 – 15 characters for the system name and the password.

Note
The symbols \, /, :, *, ?, <>, |, and blank spaces cannot be used for the system name.

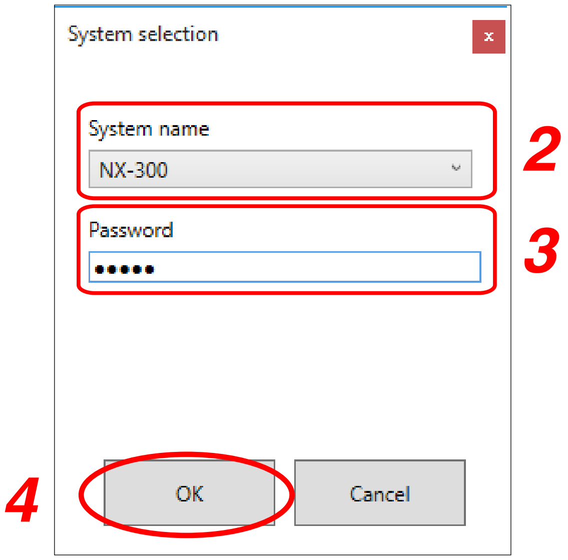
Step 3. For confirmation, enter the same password entered in **Step 2** in the "Retype password" space.

Step 4. Click the OK button.
The display is switched to the setup editing screen (see p. 3-20).

7.2. Editing Registered Systems

Edit the system registered in the NX-300 Setting Software.

Step 1. Click the System selection button on the system editing screen.
The screen for selecting the system is displayed.


System selection
×
System name
NX-300
Password
•••••
OK
Cancel
2
3
4

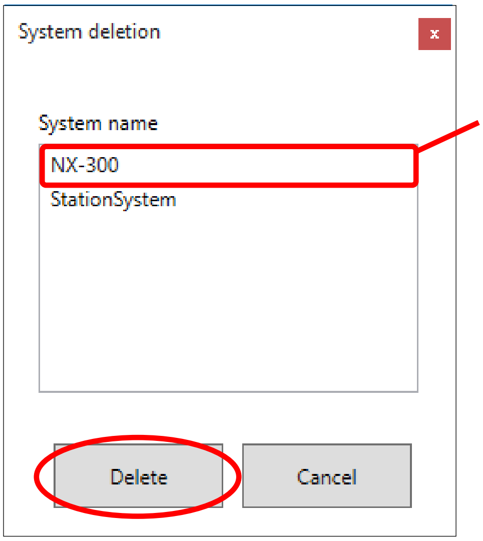
Step 2. From the registered system names, select the system to be edited.

Step 3. Enter the system's password.

Step 4. Click the OK button.
The display is switched to the setup editing screen (see p. 3-20).

7.3. Deleting Registered Systems

Delete the system registered in the NX-300 Setting Software's data folder.
Click the "System deletion" button on the system editing screen to display the screen for selecting the existing system.


System deletion
x
System name
NX-300
StationSystem
Delete
Cancel

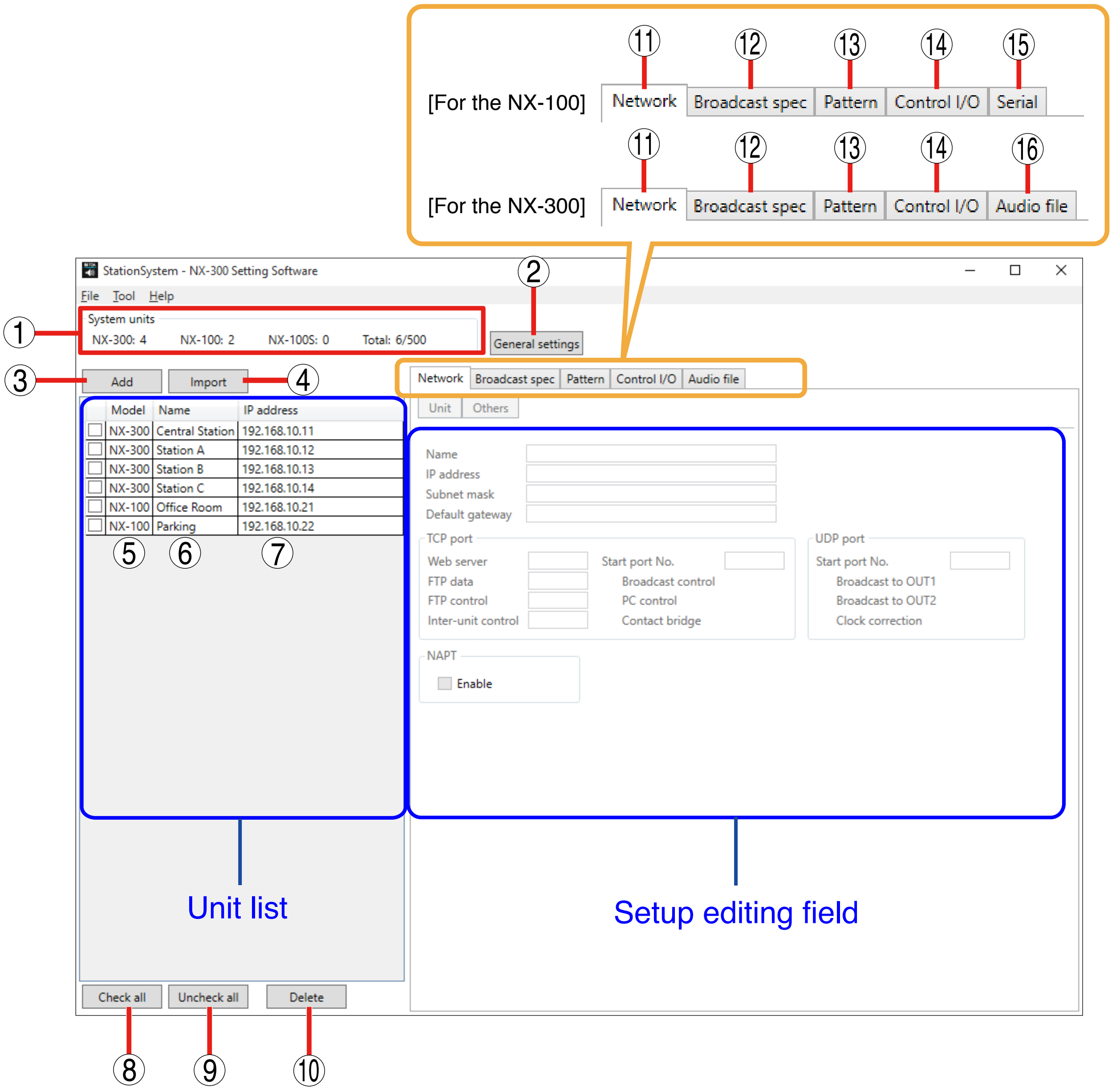
Select the system to be deleted.

Select the system to be deleted and click the Delete button. A confirmation dialog is displayed.
Clicking the OK button deletes the system.

8. SETUP EDITING SCREEN

8.1. Screen Explanation

If a new system is created or a system file is selected on the system editing screen, the setup editing screen is displayed. Use this screen to display the unit's setting contents and change them. When selecting the unit, click the corresponding unit on the unit list. Selecting the unit to be set, the current setting contents are displayed in the settings form on the right.


[For the NX-100]
⑪ Network
⑫ Broadcast spec
⑬ Pattern
⑭ Control I/O
⑮ Serial
[For the NX-300]
⑪ Network
⑫ Broadcast spec
⑬ Pattern
⑭ Control I/O
⑯ Audio file
StationSystem - NX-300 Setting Software
File Tool Help
① System units
NX-300: 4 NX-100: 2 NX-100S: 0 Total: 6/500
② General settings
③ Add
④ Import
Network Broadcast spec Pattern Control I/O Audio file
Unit Others
Name
IP address
Subnet mask
Default gateway
TCP port
Web server
FTP data
FTP control
Inter-unit control
Start port No.
Broadcast control
PC control
Contact bridge
UDP port
Start port No.
Broadcast to OUT1
Broadcast to OUT2
Clock correction
NAPT
☐ Enable
⑤ ⑥ ⑦
Unit list
Setup editing field
⑧ Check all
⑨ Uncheck all
⑩ Delete

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14
☐	NX-100	Office Room	192.168.10.21
☐	NX-100	Parking	192.168.10.22

1. **System units**
   Displays the number of units that make up the system for each model.

2. **General settings button**
   Used to perform settings related to the entire system. Clicking this button displays the overall setting screen. (See p. 3-26.)

3. **Add button**
   Clicking this button displays the dialog for adding units.

4. **Import button**
   Capable of reading settings by selecting the XML-formatted file stored using the NX-300 Finder.

5. **Model**
   Displays the list of unit model names registered in the system.

6. **Name**
   Displays the list of unit names registered in the system.

7. **IP address**
   Displays the list of unit IP addresses registered in the system.

8. **Check all button**
   Selects all units shown in the unit list.

9. **Uncheck all button**
   Deselects all units shown in the unit list.

10. **Delete button**
    Deletes all units checked in the unit list.

11. **Network tab**
    Used to set each unit's IP address and port number. (See p. 3-28.)

12. **Broadcast spec tab**
    Used to set broadcast quality. (See p. 3-35.)

13. **Pattern tab**
    Used to set each unit's broadcast and contact bridge destinations.
    The Control Pattern, Broadcast Pattern and Contact Bridge Pattern buttons can be used to switch between pattern setting screens.
    (See p. 3-38.)

14. **Control I/O tab**
    Used to set operations at the moment the unit's control input (see p. 3-56) and control output (see p. 3-61) are activated.

15. **Serial tab (NX-100 only)**
    Used to perform settings for transmission and reception of serial data (RS-232C).

16. **Audio file (NX-300 only)**
    Stores audio files in the unit's built-in memory.

8.2. Menu

8.2.1. File

Save :	Saves the file being edited.
Save As :	Saves the setting file currently being edited as the setting file for a different system.
Change Password :	Changes the password registered in the system.
Exit:	Terminates the software.

8.2.2. Tool

Upload settings:	Writes the setting contents to the unit.
Download settings:	Downloads the unit’s setting contents to a PC.
Upload clock settings:	Writes the current PC time to the unit.
Options:	Allows access to network settings.

8.2.3. Help

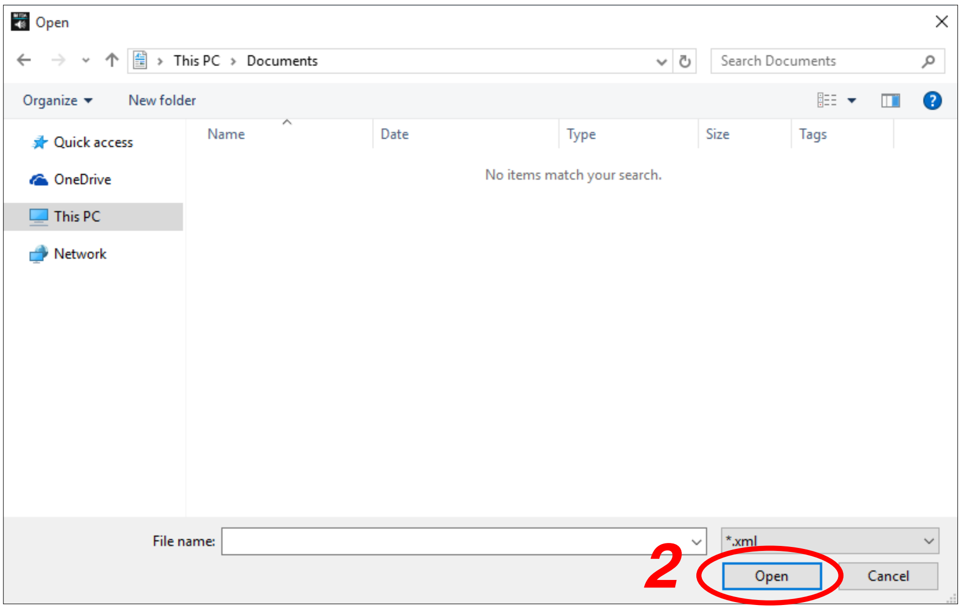
Toa data library:	Starts the web browser and accesses the TOA product data download site.
About:	Displays the software’s version information.

9. SYSTEM CONFIGURATION SETTINGS

Register the units that make up the system.

9.1. Importing Unit Detection Results

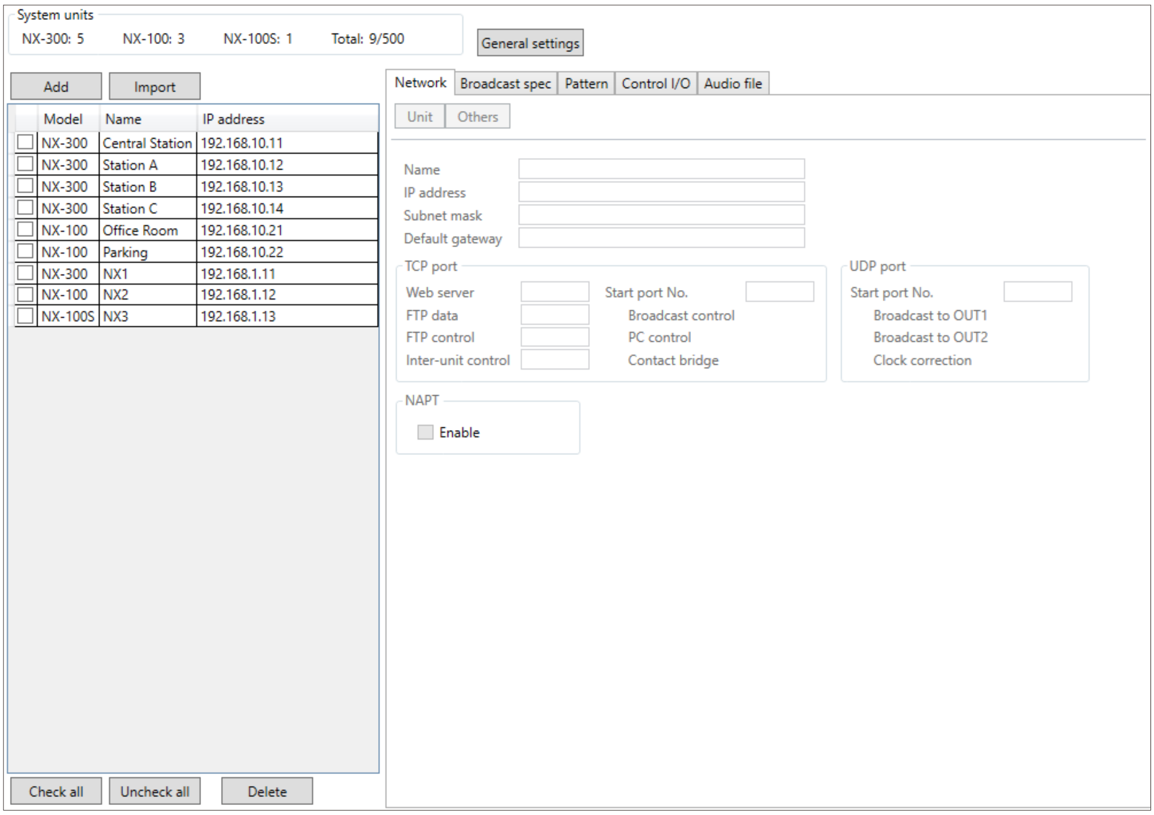
Step 1. Click on the Import button on the setup editing screen.
A dialog for file selection is displayed.


Open
This PC › Documents
Search Documents
Organize
New folder
Quick access
OneDrive
This PC
Network
Name
Date
Type
Size
Tags
File name:
Open
Cancel
2

No items match your search.

*.xml

Step 2. Select the unit selection list data (XML format) saved with the NX-300 Finder and click on the Open button.
Designated data is imported and reflected in the unit list and Network tab.

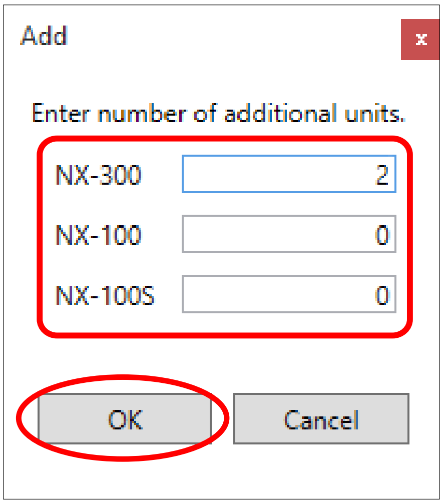

General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Unit
Others
Name
IP address
Subnet mask
Default gateway
TCP port
Web server
FTP data
FTP control
Inter-unit control
Start port No.
Broadcast control
PC control
Contact bridge
UDP port
Start port No.
Broadcast to OUT1
Broadcast to OUT2
Clock correction
NAPT
Enable
Check all
Uncheck all
Delete

System units
NX-300: 5 NX-100: 3 NX-100S: 1 Total: 9/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14
☐	NX-100	Office Room	192.168.10.21
☐	NX-100	Parking	192.168.10.22
☐	NX-300	NX1	192.168.1.11
☐	NX-100	NX2	192.168.1.12
☐	NX-100S	NX3	192.168.1.13

9.2. Adding Units to the Unit List

Step 1. Click the Add button on the setup editing screen.
A dialog for device addition is displayed.



Add

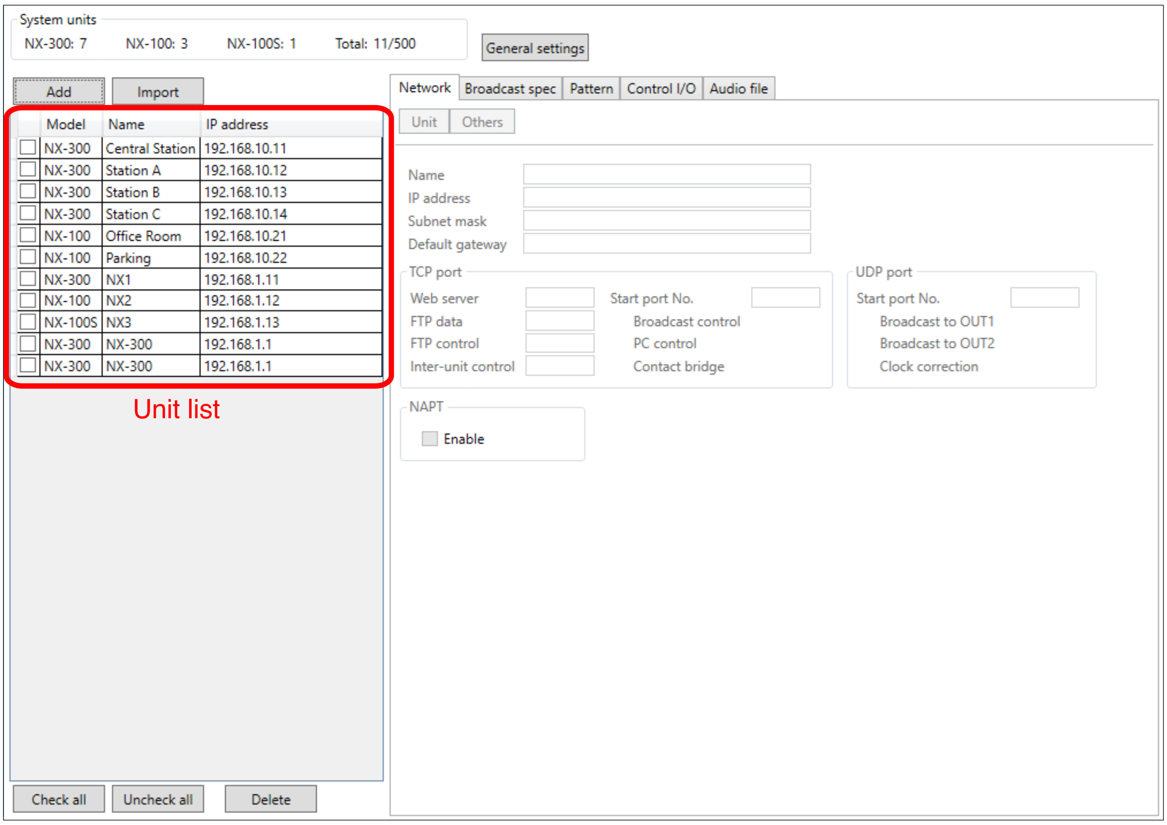
Enter number of additional units.

NX-300: 2

NX-100: 0

NX-100S: 0

Step 2. Enter the number of units to be added and click the OK button.
The set units are added to the unit list.



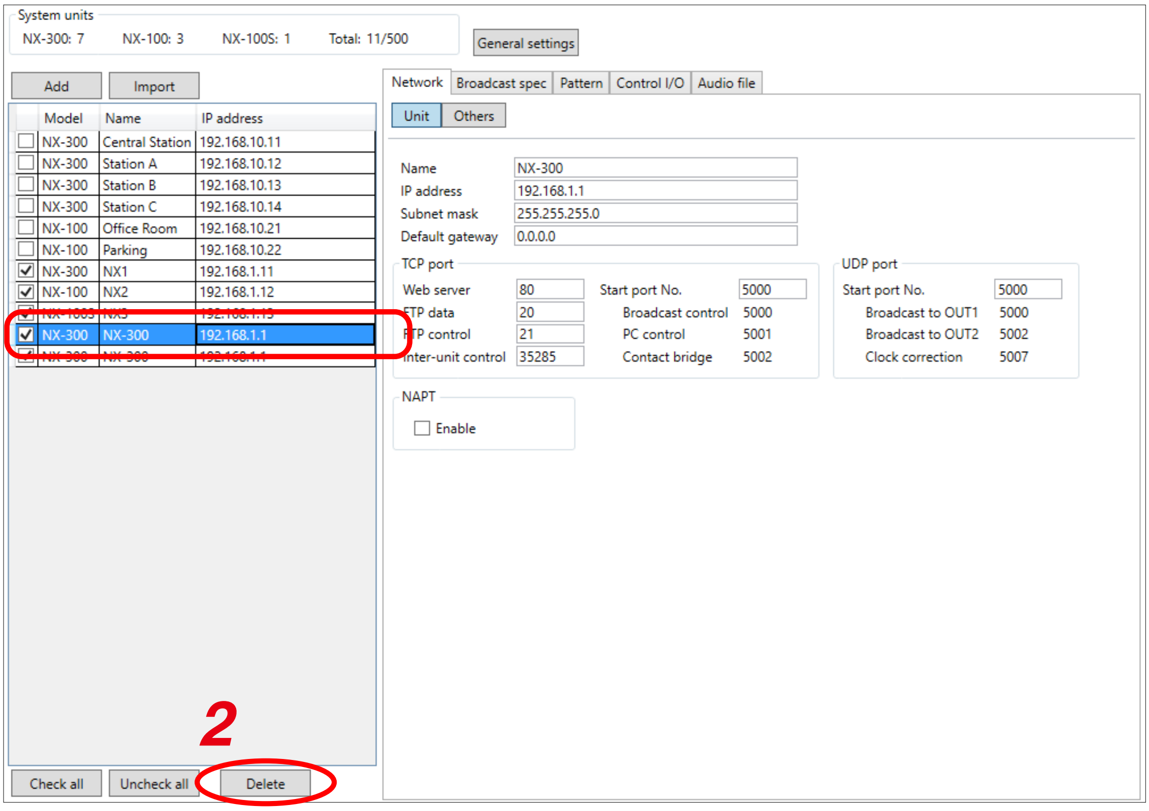
System units
NX-300: 7   NX-100: 3   NX-100S: 1   Total: 11/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14
☐	NX-100	Office Room	192.168.10.21
☐	NX-100	Parking	192.168.10.22
☐	NX-300	NX1	192.168.1.11
☐	NX-100	NX2	192.168.1.12
☐	NX-100S	NX3	192.168.1.13
☐	NX-300	NX-300	192.168.1.1
☐	NX-300	NX-300	192.168.1.1

General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Unit
Others
Name
IP address
Subnet mask
Default gateway
TCP port
Web server
FTP data
FTP control
Inter-unit control
Start port No.
Broadcast control
PC control
Contact bridge
UDP port
Start port No.
Broadcast to OUT1
Broadcast to OUT2
Clock correction
NAPT
☐ Enable
Unit list
Check all
Uncheck all
Delete

9.3. Deleting Units from the Unit List

Step 1. Check the unit to be deleted.


1
2
Add
Import
General settings
Network
Broadcast spec
Pattern
Control I/O
Audio file
Unit
Others
Check all
Uncheck all
Delete

System units
NX-300: 7 NX-100: 3 NX-100S: 1 Total: 11/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14
☐	NX-100	Office Room	192.168.10.21
☐	NX-100	Parking	192.168.10.22
☑	NX-300	NX1	192.168.1.11
☑	NX-100	NX2	192.168.1.12
☑	NX-100S	NX3	192.168.1.13
☑	NX-300	NX-300	192.168.1.1
☑	NX-300	NX-300	192.168.1.1

Name: NX-300
IP address: 192.168.1.1
Subnet mask: 255.255.255.0
Default gateway: 0.0.0.0

TCP port
Web server: 80
FTP data: 20
FTP control: 21
Inter-unit control: 35285
Start port No.: 5000
Broadcast control: 5000
PC control: 5001
Contact bridge: 5002

UDP port
Start port No.: 5000
Broadcast to OUT1: 5000
Broadcast to OUT2: 5002
Clock correction: 5007

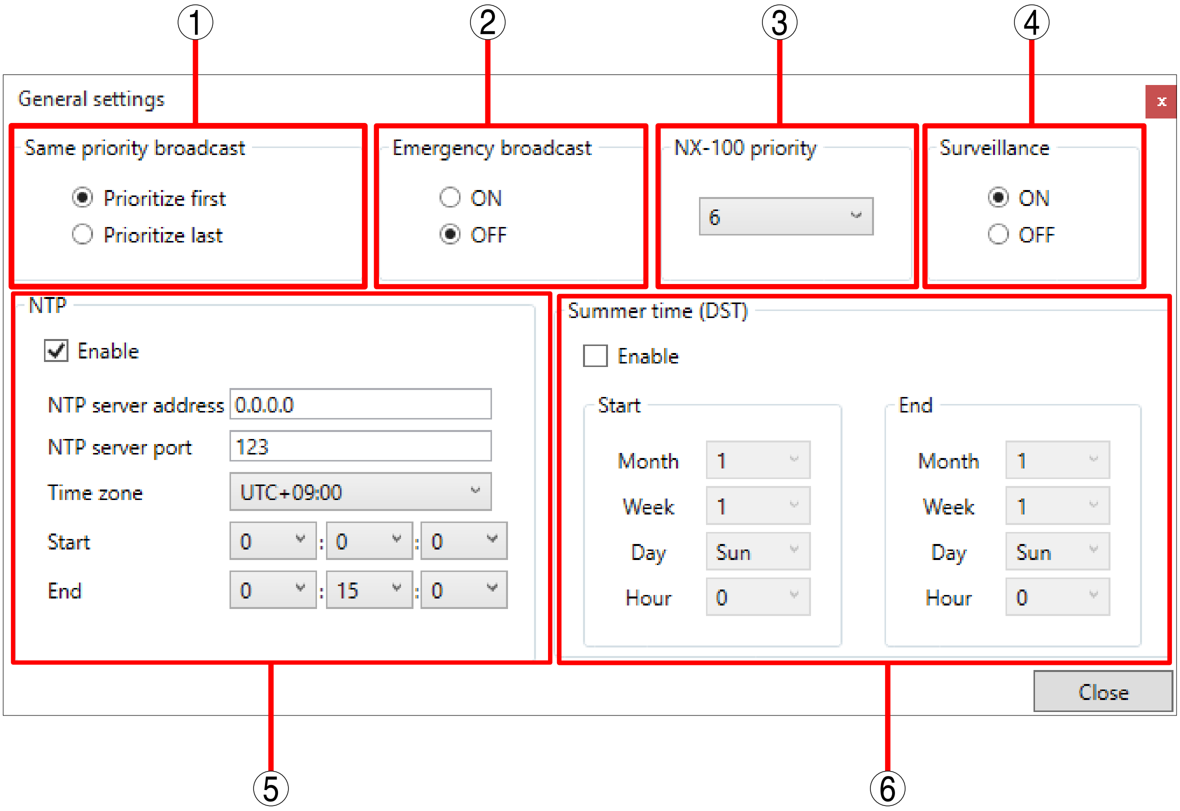
NAPT
☐ Enable

Tip
All units can be simultaneously checked using the Check all button.
All displayed units can be simultaneously unchecked with the Uncheck all button.

Step 2. Click the Delete button.
Checked units are deleted from the unit list.

10. GENERAL SYSTEM SETTINGS

Step 1. Click the General Settings button on the setup editing screen.
The general settings screen is displayed.
This setting is only possible when an NX-300 unit is detected in the system.



Same priority broadcast
● Prioritize first
○ Prioritize last

Emergency broadcast
○ ON
● OFF

NX-100 priority
6

Surveillance
● ON
○ OFF

NTP
☑ Enable
NTP server address 0.0.0.0
NTP server port 123
Time zone UTC+09:00
Start 0 : 0 : 0
End 0 : 15 : 0

Summer time (DST)
☐ Enable

	Start	End
Month	1	1
Week	1	1
Day	Sun	Sun
Hour	0	0

Step 2. Set each item.

1. **Same priority broadcast**
   Select the preferred operation when a new broadcast with the same priority is made while a broadcast is currently in progress.
   Prioritize first: The new broadcast is made after the current broadcast is completed.
   Prioritize last: The current broadcast is automatically terminated, allowing the new broadcast to go through.

   Note
   When an NX-100 or NX-100S is included in the system, the priority level is fixed at Prioritize first.

2. **Emergency broadcast**
   The output sound volume can be set to increase when making a broadcast with a control pattern priority level of 1 (see p. 3-38, "PATTERN SETTINGS").
   ON: Enables 6 dB louder broadcasts than those with priority levels of 2 – 8.
   OFF: Broadcasts at the same sound volume as other broadcasts with priority levels of 2 – 8.

3. **NX-100 priority**
   Sets the priority level of NX-100 broadcasts when NX-100 units are detected in the system. The level is set to "6" by default.

4. Surveillance

Selects whether to enable or disable the surveillance function.

ON: Enables failure detection.
OFF: Disables failure detection.

5. NTP

Time is corrected using the NTP client function.

A time signal is acquired once a day from the NTP server at startup, and time correction terminates when time synchronization is successful. If a failure is detected, re-connection attempts continue until an end time is reached.

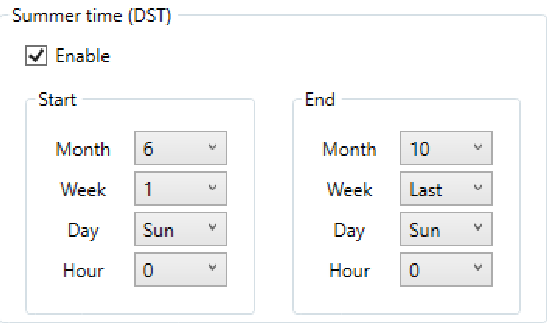
Enable:	Check when using the NTP client function.
NTP server address:	Enter the NTP server's address. (Default: 0.0.0.0)
NTP server port:	Enter the NTP server's port number.
Time zone:	Sets the unit's time zone.
Start:	Sets the time to start time correction.
End:	Sets the time to end time correction.

6. Summer time (DST)

Set daylight saving time (DST).

Enable:	Set whether or not to enable daylight saving time.
Start/End:	Set the date and time to start and end daylight saving time. Designate it in the format [Hour] of [Day] of [nth Week] of [Month]. The last day of the week in the month can also be designated.

(Setting example)



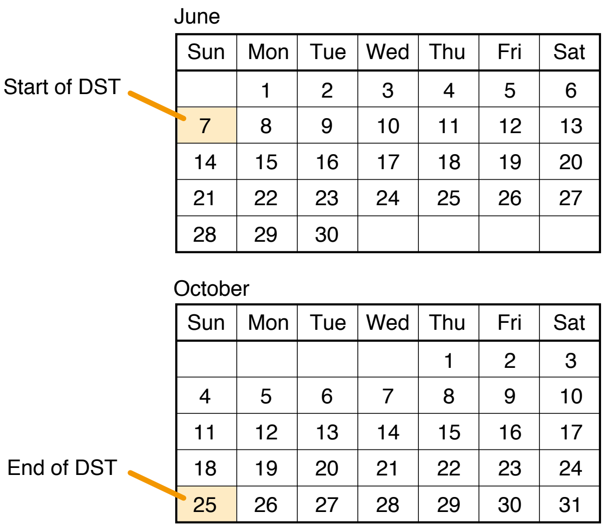
Summer time (DST)

☑ Enable

Start
Month 6
Week 1
Day Sun
Hour 0

End
Month 10
Week Last
Day Sun
Hour 0

When set as above, the DST will start and end as shown on the calendar at right.



June

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Start of DST

October

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

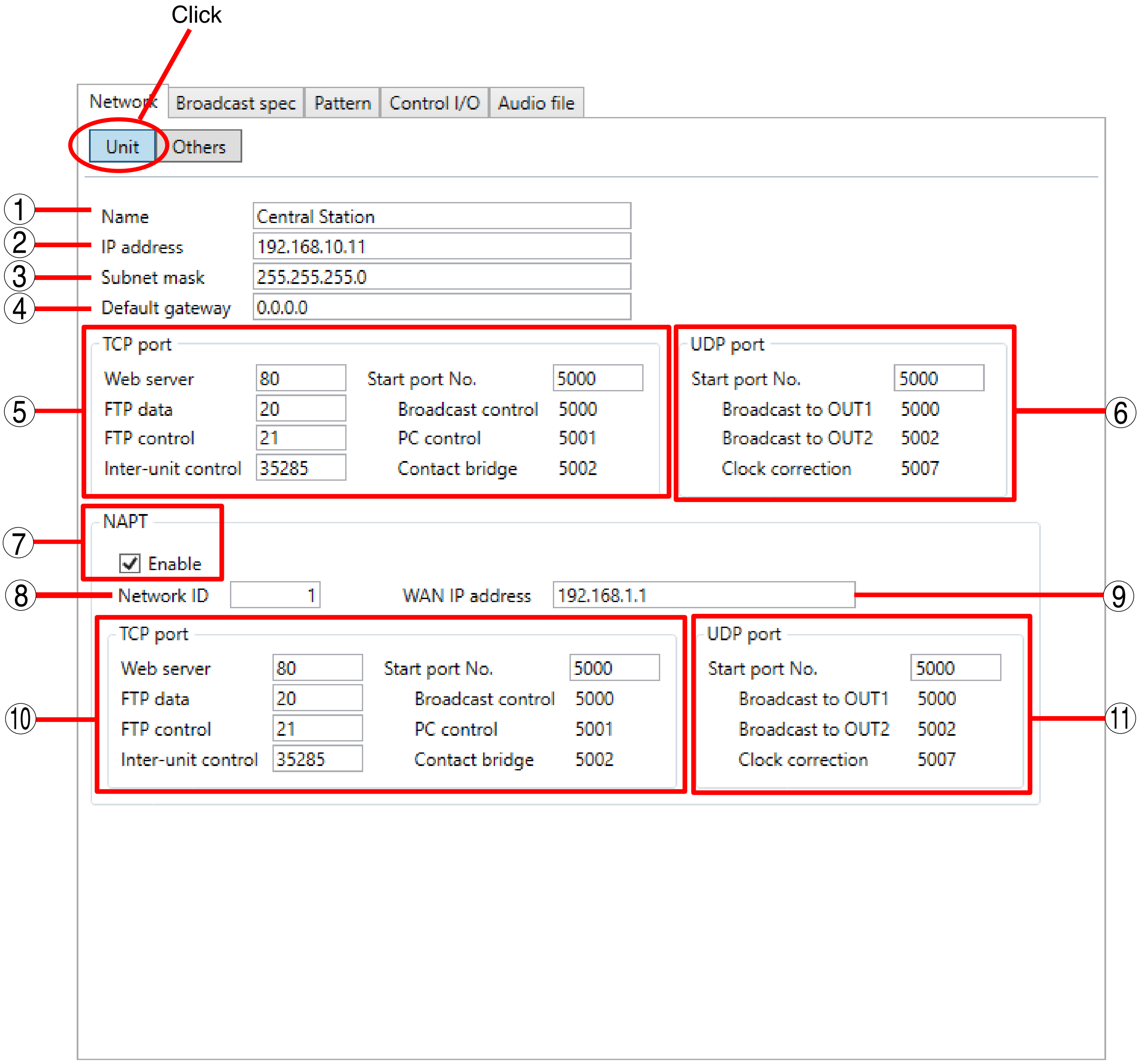
End of DST

10.1. Network Settings

10.1.1. For the NX-300

Step 1. Select the unit to be set from the unit list on the setup editing screen.

Step 2. Select the Network tab and click the Unit button.
The network setting screen is displayed.



Name: Central Station
IP address: 192.168.10.11
Subnet mask: 255.255.255.0
Default gateway: 0.0.0.0

TCP port
Web server: 80
FTP data: 20
FTP control: 21
Inter-unit control: 35285
Start port No.: 5000
Broadcast control: 5000
PC control: 5001
Contact bridge: 5002

UDP port
Start port No.: 5000
Broadcast to OUT1: 5000
Broadcast to OUT2: 5002
Clock correction: 5007

NAPT
☑ Enable
Network ID: 1
WAN IP address: 192.168.1.1

TCP port
Web server: 80
FTP data: 20
FTP control: 21
Inter-unit control: 35285
Start port No.: 5000
Broadcast control: 5000
PC control: 5001
Contact bridge: 5002

UDP port
Start port No.: 5000
Broadcast to OUT1: 5000
Broadcast to OUT2: 5002
Clock correction: 5007

Step 3. Set each item.

1. **Name**
   Enter the name of the device. Up to 31 characters can be used.

2. **IP address**
   Enter the IP address of the unit.
   When the detected unit list data is imported after the IP address is set with the NX-300 Finder, an assigned IP address is displayed.

3. **Subnet mask**
Enter the subnet mask.

4. **Default gateway**
Enter the default gateway.

5. **TCP port**
Designate the ports to be used by the web server, FTP and inter-unit control, and the first number of other TCP ports.
The range of port numbers that can be set is 1 – 65535.

[Web server]
Enter the web server port number. (Default: 80)

[FTP data]
Enter the unit's FTP server data port number, which can be set within the range of 1 – 65535. (Default: 20)

[FTP control]
Enter the unit's FTP server control port number, which can be set within the range of 1 – 65535. (Default: 21)

[Inter-unit control]
Used to control broadcast and contact bridge operations between NX-300 units. (Default: 35285)

[Start port No.]
Enter the first number of the unit's TCP ports other than those noted above.
Enter the number from within the range of 1 – 65532. (Default: 5000)

The TCP ports are assigned as follows:

Port	Protocol	Port No.	Default
Broadcast control	TCP	Start port No. + 0	5000
PC control	TCP	Start port No. + 1	5001
Contact bridge	TCP	Start port No. + 2	5002

Broadcast Control and Contact Bridge are used to control operations between the NX-300 and NX-100/NX-100S units. Use PC Control to control operations using the NX-300 Operation Software.

Note
The same port number cannot be used for each TCP port.

6. **UDP port**
Designate the base port number to be used by UDP.

[Start port No.]
Enter the base UDP port number to be used by the unit.
Enter an even number from within the range of 1 – 65526. (Default: 5000)
The UDP ports are assigned as follows:

Port	Protocol	Port No.	Default
Broadcast to OUT1	UDP	Start port No. + 0	5000
Broadcast to OUT2	UDP	Start port No. + 2	5002
Clock correction	UDP	Start port No. + 7	5007

Note
Since UDP port numbers 15000 and 35286 are used internally, the numbers of 14990 – 15000 and 35276 – 35286 cannot be entered.

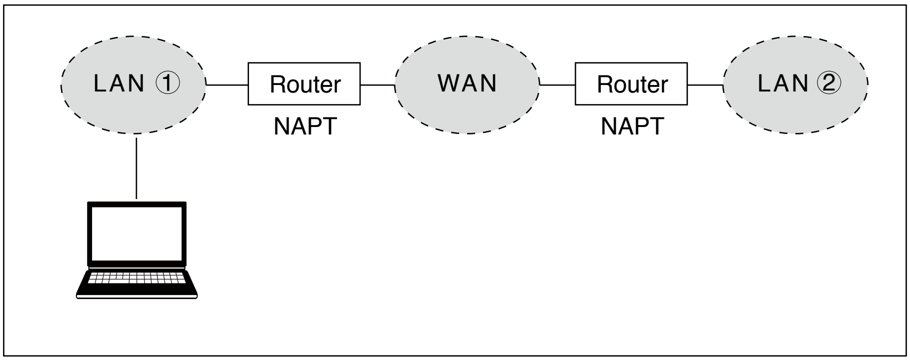
7. NAPT

When connecting a PC to the NX-300 using the global IP address, mark the [Enable] checkbox to make the items from [Network ID] (9) to [WAN UDP port] (12) available for input.

8. Network ID

When connecting a PC to the exchange using the global IP address, enter the number that identifies networks for each range accessible by the PC using the local address.

When networks are connected as shown below, for example, assign different ID numbers for each, such as "1" to equipment connected to LAN (1) and "2" to equipment connected to LAN (2).
Network ID No. 1 is assigned to the PC for setting. Set network ID No. 1 to equipment that can be accessed by the PC (for example, equipment connected to LAN 1) using the local address.



9. WAN IP address

Allows entry of the NX-300's IP address as viewed from the WAN side.

10. WAN TCP Port

Set the start TCP port number to be used for each protocol as viewed from the WAN side.

[Web server]
Enter the web server port number. (Default: 80)

[FTP data]
Enter the unit's FTP server data port number, which can be set within the range of 1 – 65535. (Default: 20)

[FTP control]
Enter the unit's FTP server control port number, which can be set within the range of 1 – 65535. (Default: 21)

[Inter-unit control]
This port is used for controlling operations between units. (Default: 35285)

[Start port No.]
Enter the first number of the unit's TCP ports other than those noted above.
Enter the number from within the range of 1 – 65532. (Default: 5000)

The TCP ports are assigned as follows:

Port	Protocol	Port No.	Default
Broadcast control	TCP	Start port No. + 0	5000
PC control	TCP	Start port No. + 1	5001
Contact bridge	TCP	Start port No. + 2	5002

Note
The same port number cannot be used for each TCP port.

11. WAN UDP Port

Set the start UDP port number to be used for each protocol as viewed from the WAN side.

[Start port No.]

Enter the first number of the unit's UDP ports other than those noted above.
Enter an even number from within the range of 1 – 65526. (Default: 5000)
The UDP ports are assigned as follows:

Port	Protocol	Port No.	Default
Broadcast to OUT1	UDP	Start port No. + 0	5000
Broadcast to OUT2	UDP	Start port No. + 2	5002
Clock correction	UDP	Start port No. + 7	5007

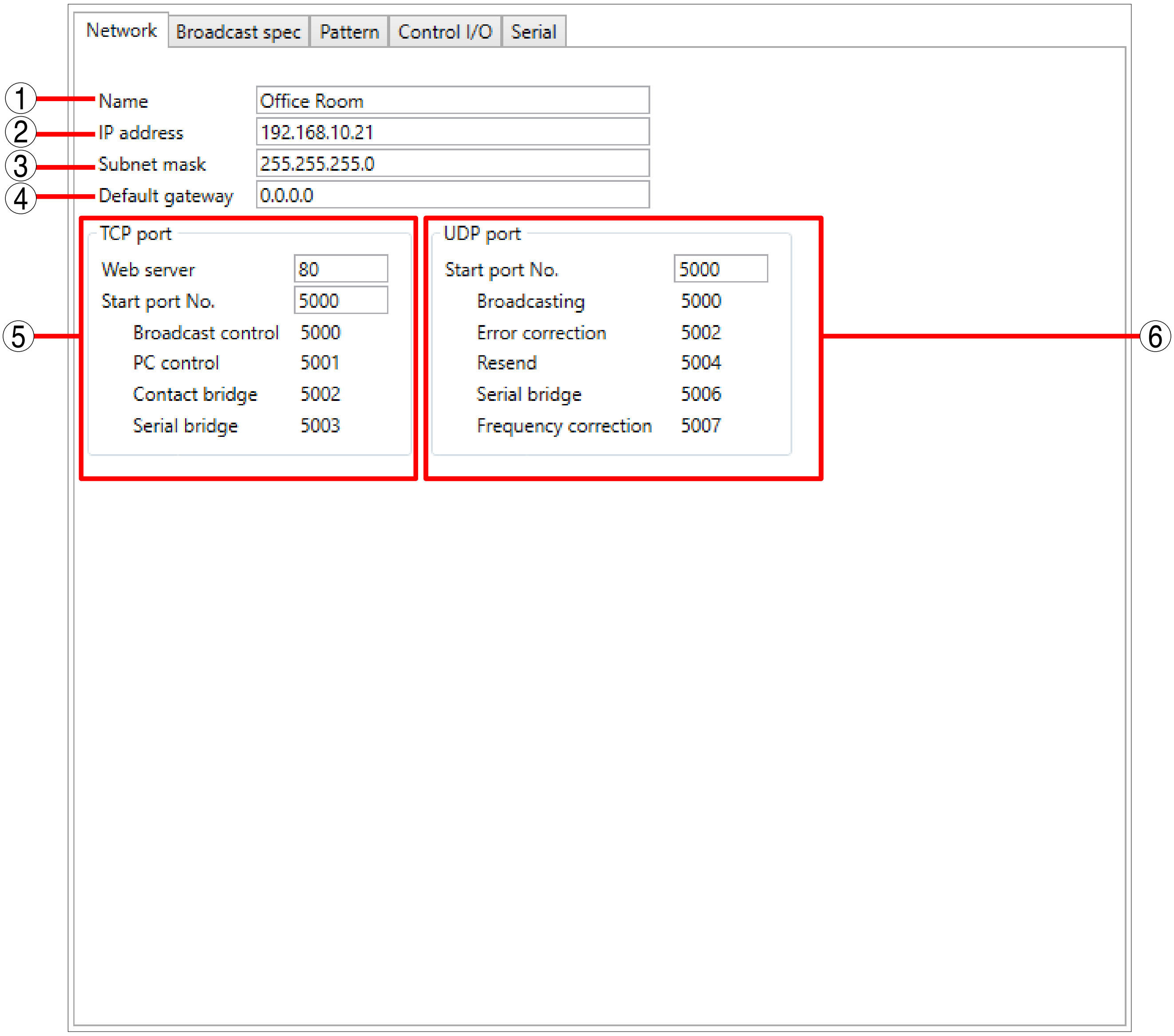
Note

Since UDP port numbers 15000 and 35286 are used internally, the numbers of 14990 – 15000 and 35276 – 35286 cannot be entered.

10.1.2. For the NX-100/100S

Step 1. Select the unit to be set from the unit list on the setup editing screen.

Step 2. Select the Network tab.
The network setting screen is displayed.



Name: Office Room
IP address: 192.168.10.21
Subnet mask: 255.255.255.0
Default gateway: 0.0.0.0

TCP port
Web server: 80
Start port No.: 5000
Broadcast control: 5000
PC control: 5001
Contact bridge: 5002
Serial bridge: 5003

UDP port
Start port No.: 5000
Broadcasting: 5000
Error correction: 5002
Resend: 5004
Serial bridge: 5006
Frequency correction: 5007

Step 3. Set each item.

1. **Name**
   Enter the name of the unit. Up to 31 characters can be used.

2. **IP address**
   Enter the IP address of the unit.
   When the detected unit list data is imported after the IP address is set with the NX-300 Finder, an assigned IP address is displayed.

3. **Subnet mask**
   Enter the subnet mask.

4. **Default gateway**
   Enter the default gateway.

5. TCP port

Designate the ports to be used by the web server and the first number of other TCP ports.
The range of port numbers that can be set is 1 – 65535.

[Web server]
Enter the web server port number. (Default: 80)

[Start port No.]
Enter the first number of the unit's TCP ports other than Web server.
Enter the number from within the range of 1 – 65532. (Default: 5000)

The TCP ports are assigned as follows:

Port	Protocol	Port No.	Default
Broadcast control	TCP	Start port No. + 0	5000
PC control	TCP	Start port No. + 1	5001
Contact bridge	TCP	Start port No. + 2	5002
Serial bridge (NX-100 only)	TCP	Start port No. + 3	5003

6. UDP port

Designate the base port number to be used by UDP.

[Start port No.]
Enter the first number of the unit's UDP ports.
Enter an even number from within the range of 1 – 65526. (Default: 5000)
The UDP ports are assigned as follows:

Port	Protocol	Port No.	Default
Broadcasting	UDP	Start port No. + 0	5000
Error correction	UDP	Start port No. + 2	5002
Resend	UDP	Start port No. + 4	5004
Serial bridge (NX-100 only)	UDP	Start port No. + 6	5006
Frequency correction	UDP	Start port No. + 7	5007

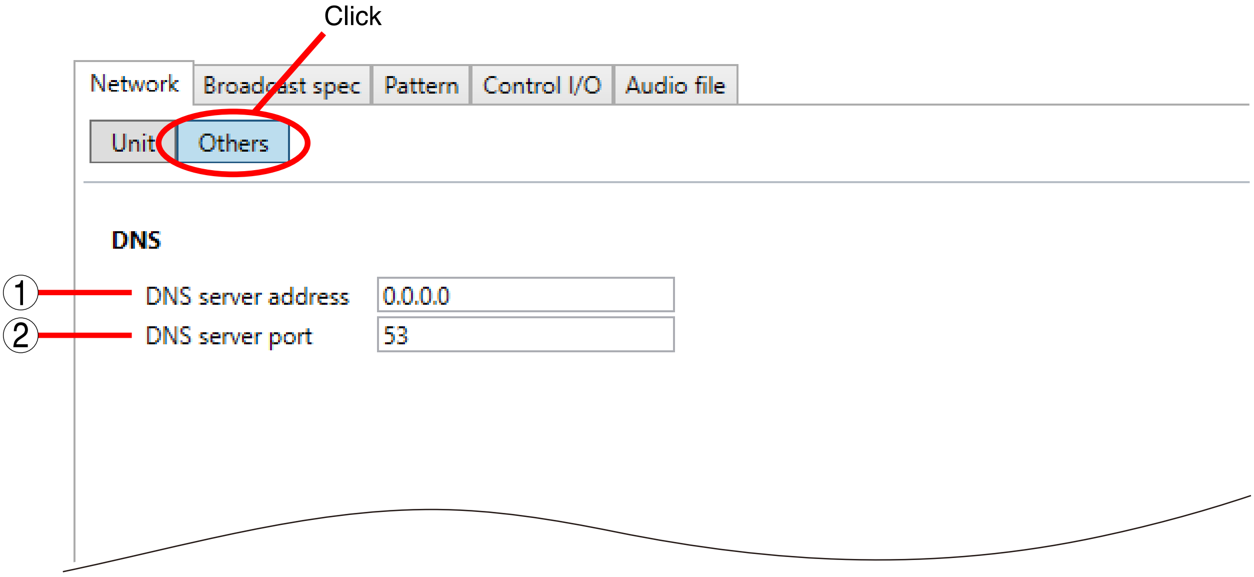
Note
Since UDP port numbers 15000 and 35286 are used internally, the numbers of 14990 – 15000 and 35276 – 35286 cannot be entered.

10.2. External Server Settings (NX-300 only)

Necessary external servers can be set.

Step 1. Select the unit to be set from the unit list on the setup editing screen.

Step 2. Select the "Network" tab and click the Others button.
The external server setting screen is displayed.


Click
Network
Broadcast spec
Pattern
Control I/O
Audio file
Unit
Others
DNS
①
②

DNS server address: 0.0.0.0

DNS server port: 53

Step 3. Set each item.

1. **DNS server address**
   Enter the IP address of the DNS server. (Default: 0.0.0.0)

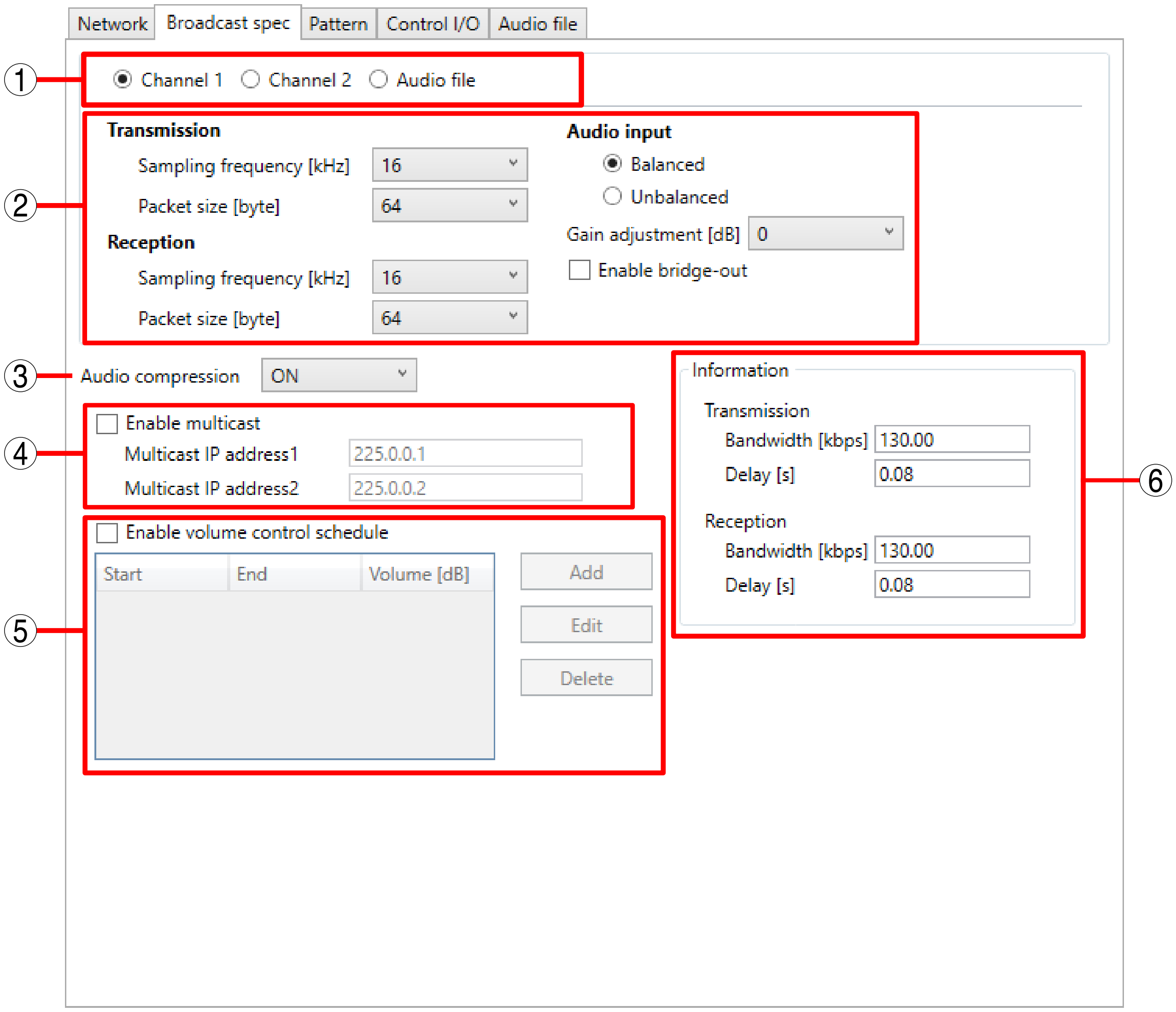
2. **DNS server port**
   Enter the port number of the DNS server from within the range of 1 – 65535. (Default: 53)

10.3. Broadcast Spec Settings

Set the broadcasting quality.
The maximum number of broadcast destinations may vary depending on broadcast specifications.
See p. 6-8, "Maximum Number of Broadcasting Destinations" for the maximum number of broadcast destinations for individual broadcast specifications.

Step 1. Select the unit to be set from the unit list.

Step 2. Select the NX-300 Setting Software's "Broadcast spec" tab.
The broadcast spec setting screen is displayed.



● Channel 1 ○ Channel 2 ○ Audio file

Transmission
Sampling frequency [kHz]: 16
Packet size [byte]: 64

Reception
Sampling frequency [kHz]: 16
Packet size [byte]: 64

Audio input
● Balanced
○ Unbalanced
Gain adjustment [dB]: 0
☐ Enable bridge-out

Audio compression: ON

☐ Enable multicast
Multicast IP address1: 225.0.0.1
Multicast IP address2: 225.0.0.2

☐ Enable volume control schedule

Information
Transmission
Bandwidth [kbps]: 130.00
Delay [s]: 0.08
Reception
Bandwidth [kbps]: 130.00
Delay [s]: 0.08

Step 3. Set each item.

1. **Channel Settings**
Select the channel to be set from among "Channel 1," "Channel 2" and "Audio file."
Channel 1: Select this channel when setting broadcast specs that use Audio Input 1 and Audio Output 1.
Channel 2: Select this channel when setting broadcast specs that use Audio Input 2 and Audio Output 2.
Audio file: Select this file when setting broadcast specs that use wav files.

Tip
When NX-100 or NX-100S units are used, this setting is fixed at "Channel 1."

2. Parameters for each channel

Select the channel to be set and set each parameter.

[Transmission Sampling frequency (kHz)]

Select the sampling frequency for transmission: 8, 16, 32, 48 kHz.

The higher the number, the more the sound quality is improved, however the utilized bandwidth also expands.

Tips

- Cannot be set when "Audio File" is selected in the channel settings. Transmission sampling frequencies are automatically determined by the audio source's sampling frequency when the audio source is broadcast.
- "48" cannot be selected for NX-100 and NX-100S units.

[Transmission Packet size (byte)]

Set the size of all transmission audio packets.

Reducing the packet size expands the bandwidth used, however delay time is also shortened.

Note

The audio source cannot be broadcast if the packet size is not compatible with the audio source's sampling frequency. Set the appropriate packet size to match the audio source's sampling frequency. (p. 6-8, " Maximum Number of Broadcasting Destinations.")

[Reception Sampling frequency (kHz)]

Select the receiving sampling frequency: 8, 16, 32, 48 kHz. The higher the number, the more the sound quality is improved, however the utilized bandwidth also expands.

Tips

- Cannot be set when "Audio file" is selected in the channel settings.
- Cannot be set when the Bridge-out settings are enabled.
- "48" cannot be selected for NX-100 or NX-100S units.

[Reception Packet size (byte)]

Set the size of all reception audio packets.

Reducing the packet size expands the bandwidth used, however delay time is also shortened.

Tips

- Cannot be set when "Audio file" is selected in the channel settings.
- Cannot be set when Bridge-Out settings are enabled.

[Audio input]

Can only be set when "Channel 1" or "Channel 2" is selected.

Select "Balanced" or "Unbalanced" types for audio input. However, if the audio input signal level is "Microphone" level, the input will be Unbalanced regardless of this setting.

Tip

Selecting "Unbalanced" for audio input makes the output 2 dB lower than the balanced input.

[Gain adjustment (dB)]

Can only be set when "Channel 1" or "Channel 2" is selected.

Set the input signal gain adjustment value: 0, –10, –20, –26 dB.

When the input level is sufficiently large, the S/N ratio can be improved by making the gain adjustment value smaller.

[Enable bridge-out]

Can only be set when "Channel 1" or "Channel 2" is selected.

Marking the checkbox causes the audio output to always provide the same audio signal as the audio input.

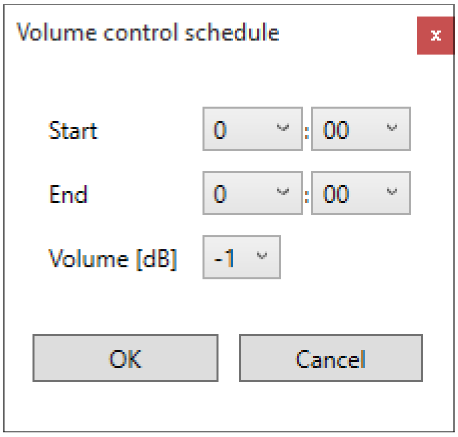
3. **Audio compression**
   Select ON or OFF.
   Selecting ON reduces the utilized bandwidth. It is recommended that ON (compression) be selected to reduce the size of the network bandwidth.

4. **Enable multicast**
   Marking the checkbox enables multicast settings.

   [Multicast IP address1] , [Multicast IP address2]
   Use these when making multicast broadcasts from audio inputs. The broadcast address is automatically selected depending on the operating status of the active unit.

   Note
   Set different addresses for Multicast Addresses 1 and 2.
   When setting, take care that Addresses 1 and 2 do not duplicate the multicast addresses of other NX-300 units connected to the same network.

5. **Enable volume control schedule (NX-300 only)**
   This function adjusts the audio output level provided during the preset time period.
   Up to 5 patterns can be registered per unit.
   Marking the checkbox enables the sound volume control schedule function.
   Clicking the add button displays the sound volume control schedule setting dialog.



Volume control schedule

Start 0 : 00

End 0 : 00

Volume [dB] -1

   [Start] and [End]
   Set the start time and end time for the Sound Volume Control Schedule. The start and end times can be set across dates.

   [Volume (dB)]
   Set the audio output level during the preset time period. (–1 through –20 dB or mute)

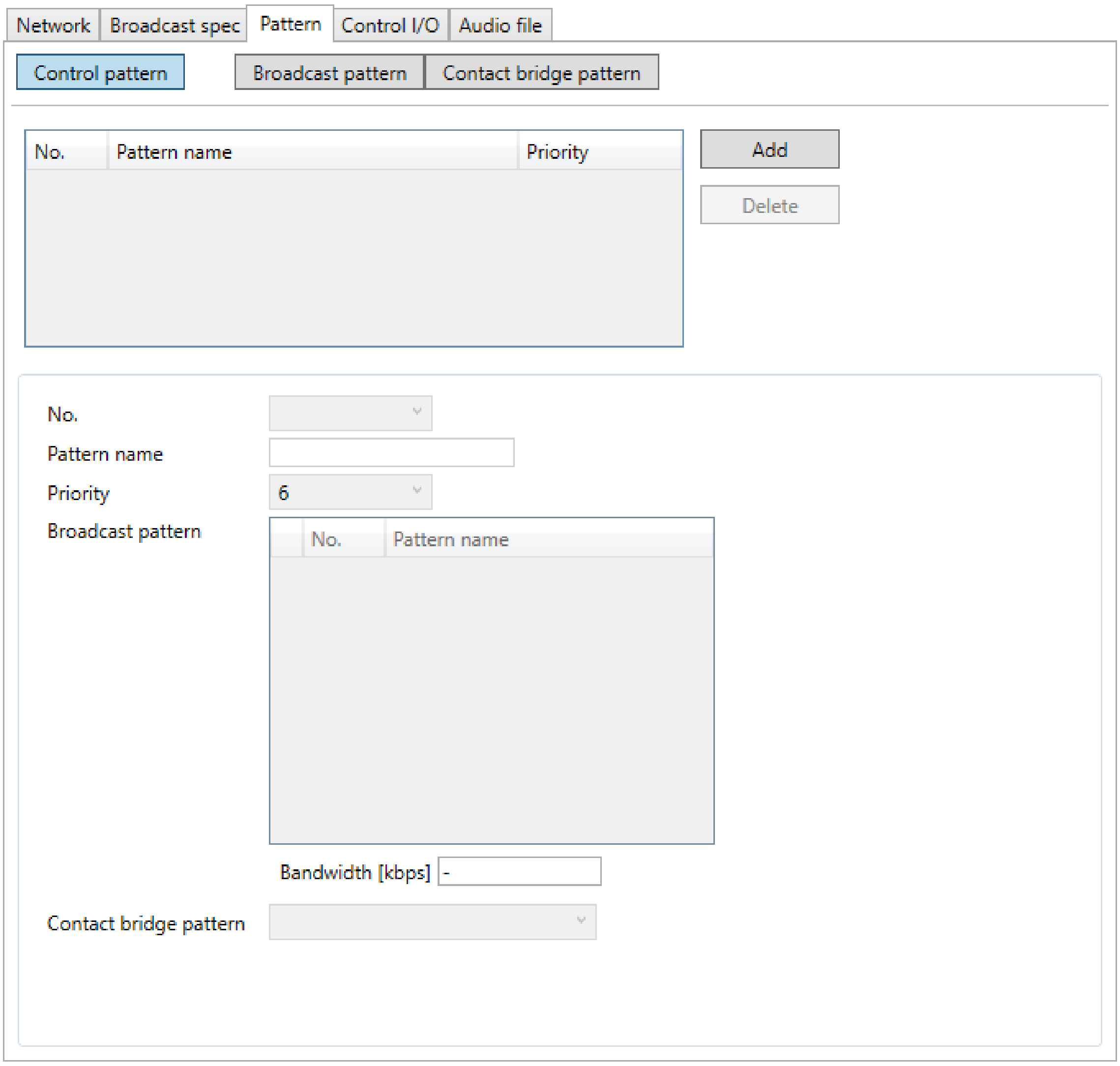
   Tip
   Clicking the Edit button after selecting a registered pattern allows the pattern to be edited. Similarly, patterns can be deleted by clicking the Delete button.

   Note
   When Emergency Broadcast is set to ON and a Priority Level 1 broadcast is made, the sound volume control schedule function is reset and the emergency broadcast is output at 6 dB louder volume than other broadcasts with priority levels of 2 – 8.

6. **Information**
   Displays the operating bandwidth (kbps) and the delay time (second) for transmission and reception when Channel 1 or 2 is selected.
   Displays broadcasts that cannot be made due to limited Broadcast Spec settings for NX-100 and NX-100S units.

11. PATTERN SETTINGS

Selecting the Pattern tab on the setup editing screen displays the pattern setting screen. Control pattern, Broadcast pattern, and Contact bridge pattern buttons allow switching between the Control pattern, Broadcast pattern or Contact bridge pattern setting screens.


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
No.
Pattern name
Priority
Add
Delete
No.
Pattern name
Broadcast pattern
No.
Pattern name
Bandwidth [kbps]
Contact bridge pattern

Priority: 6

Bandwidth [kbps]: -

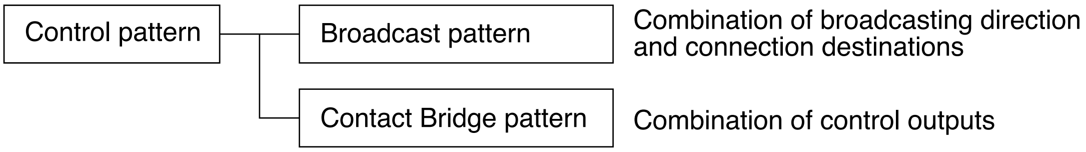
11.1. Pattern Setting Summary

11.1.1. Devices that require pattern settings

Pattern settings are performed for devices that make broadcasts from either the control input or the NX-300 Operation Software.
When starting broadcasts from the control input, select Control Pattern.
When starting broadcasts from the NX-300 Operation Software, select Broadcast Pattern.

11.1.2. Pattern type and configuration

Control, Broadcast, and Contact Bridge patterns are configured as follows.
The Control pattern is configured by a combination of Broadcast and Contact Bridge patterns. It may consist of only the Broadcast patterns or Contact Bridge patterns.


Control pattern
Broadcast pattern
Combination of broadcasting direction and connection destinations
Contact Bridge pattern
Combination of control outputs

11.1.3. Control pattern setting procedure

Set both the Broadcast and Contact Bridge patterns in advance when using the Control pattern.

Step 1. Select the unit to set using the unit list on the setup editing screen.

Step 2. Set the Broadcast pattern. (See p. 3-40.)

Step 3. Set the Contact Bridge pattern. (See p. 3-46.)

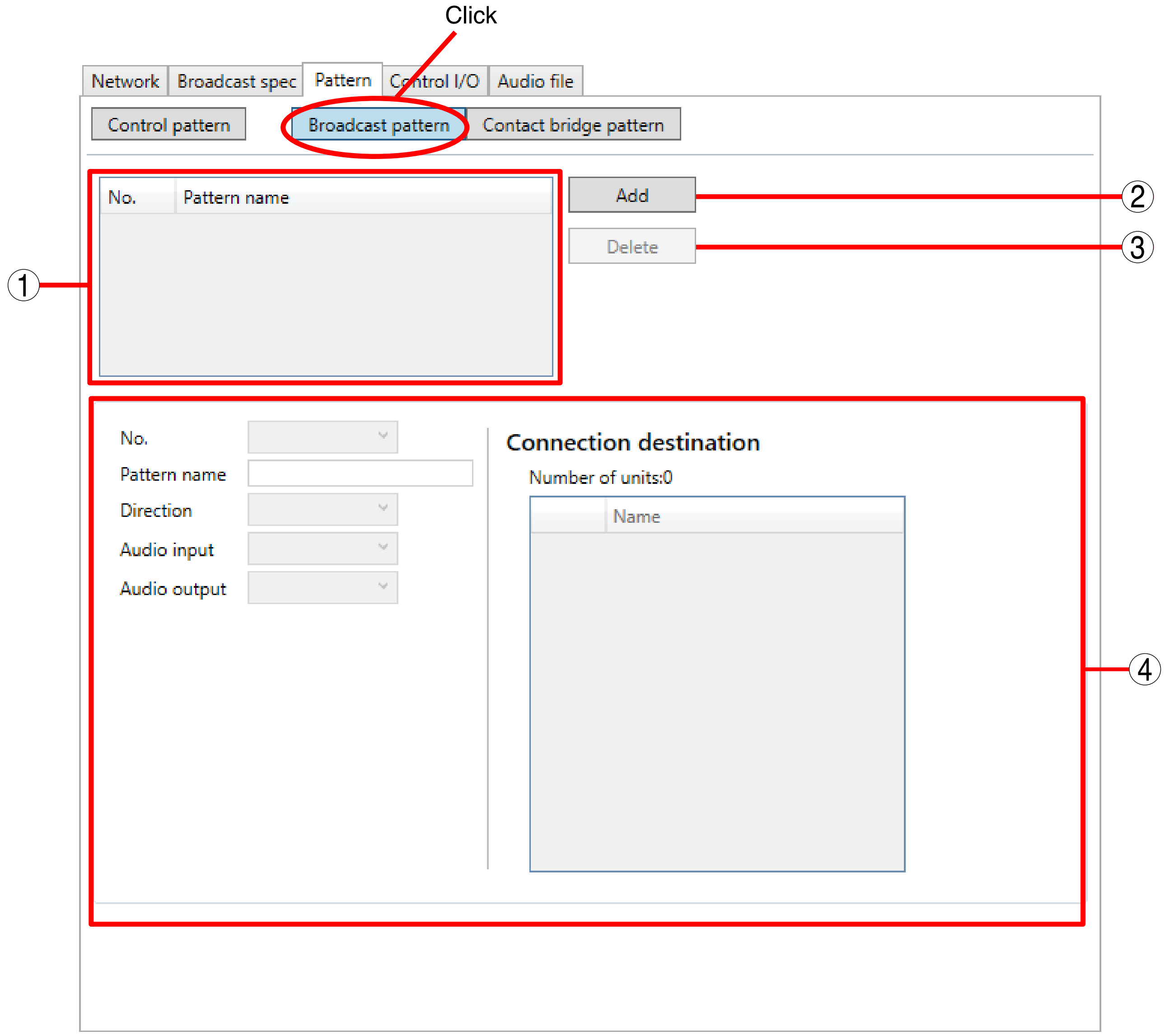
Step 4. Set the Control pattern. (See p. 3-51.)

11.2. Broadcast Pattern Settings

The broadcast pattern represents a combination of broadcasting direction and connection destinations which are set in units that make broadcasts activated from the NX-300 Operation Software.
The Broadcast pattern can be set for local broadcasts that do not use a network or a combination that allows single stream broadcasts. (Reception connection destinations: 1 location; unicast transmission connection destinations: 16 locations*; multicast transmission connection destinations: 64 locations)
* The number of connected destinations may drop below 16 depending on audio specification settings.
For details, see p. 6-8, "Maximum Number of Broadcasting Destinations."

11.2.1. Broadcast pattern setting screen

Clicking on the Broadcast pattern button displays the broadcast pattern setting screen.


Click
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
No.
Pattern name
Add
Delete
①
②
③
④
No.
Pattern name
Direction
Audio input
Audio output
Connection destination
Number of units:0
Name

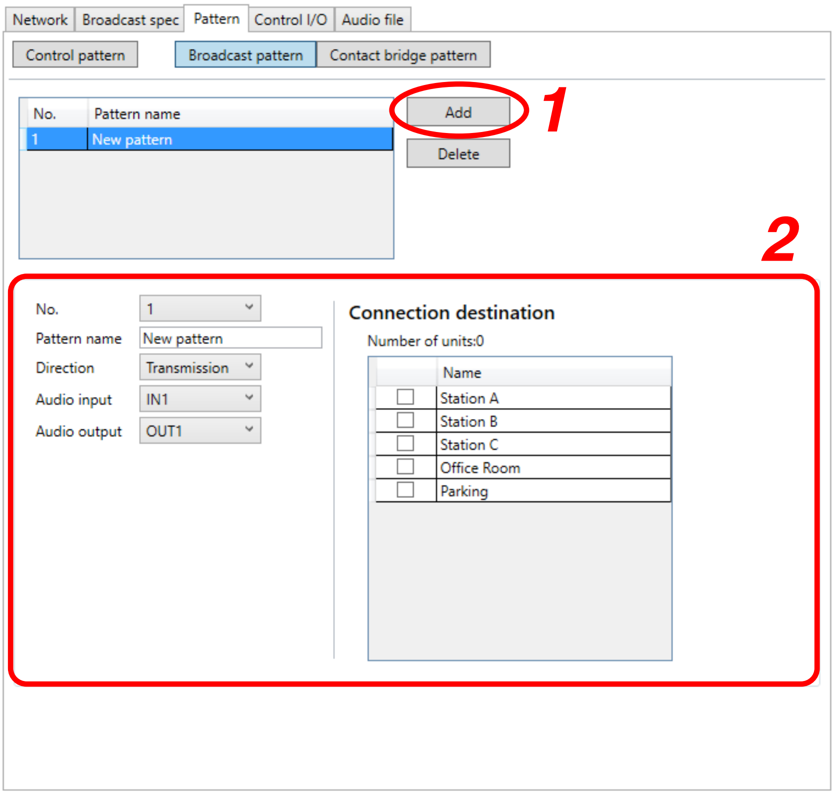
1. **Broadcast pattern list**
   The list of all registered broadcast patterns is displayed.
   Up to 20 patterns can be set per unit.

2. **Add Broadcast pattern button**
   Used to add new broadcast patterns.

3. **Delete Broadcast pattern button**
   Used to delete registered broadcast patterns.

4. **Editing Field**
   Sets broadcast pattern contents.

11.2.2. Creating a new broadcast pattern


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
1
2
Connection destination

No.	Pattern name
1	New pattern

No. 1
Pattern name New pattern
Direction Transmission
Audio input IN1
Audio output OUT1

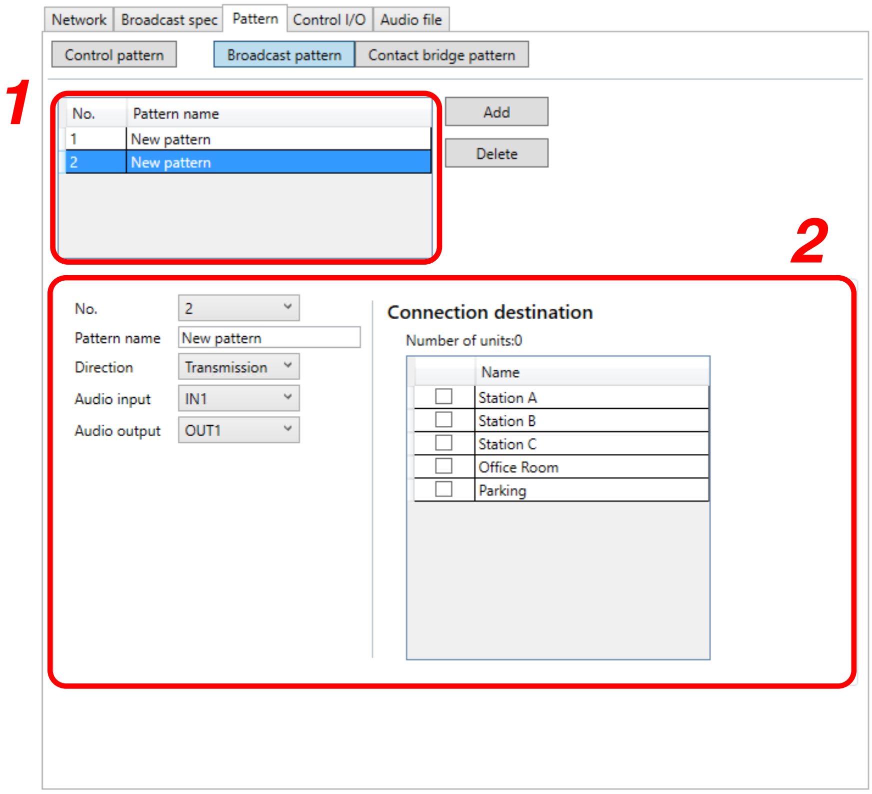
Number of units:0

	Name
☐	Station A
☐	Station B
☐	Station C
☐	Office Room
☐	Parking

Step 1. Click the Add Broadcast pattern button.
The new pattern can be edited on the editing field.

Step 2. Set each item. (See p. 3-44, "Broadcast pattern setting items.")

11.2.3. Changing the broadcast pattern setting contents


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
1
2

No.	Pattern name
1	New pattern
2	New pattern

No. 2

Pattern name New pattern

Direction Transmission

Audio input IN1

Audio output OUT1

Connection destination

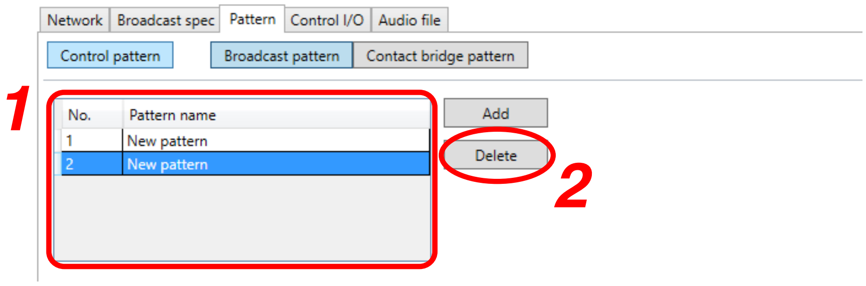
Number of units:0

	Name
☐	Station A
☐	Station B
☐	Station C
☐	Office Room
☐	Parking

Step 1. Select the broadcast pattern to be changed on the broadcast pattern list.
The change can be edited on the editing field.

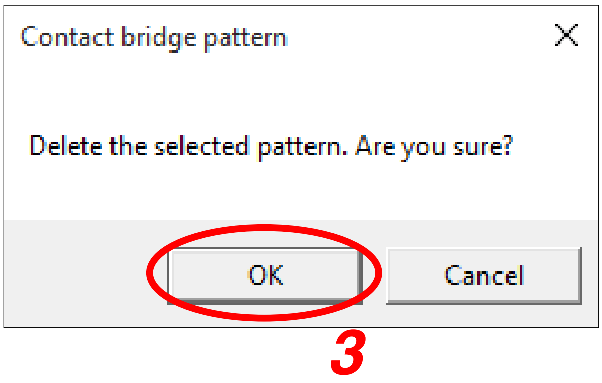
Step 2. Change the setting contents of the item to be changed. (See p. 3-44, "Broadcast pattern setting items.")

11.2.4. Deleting the broadcast pattern


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
No.
Pattern name
1 New pattern
2 New pattern
Add
Delete
1
2

Step 1. Select the broadcast pattern to be deleted on the broadcast pattern list.

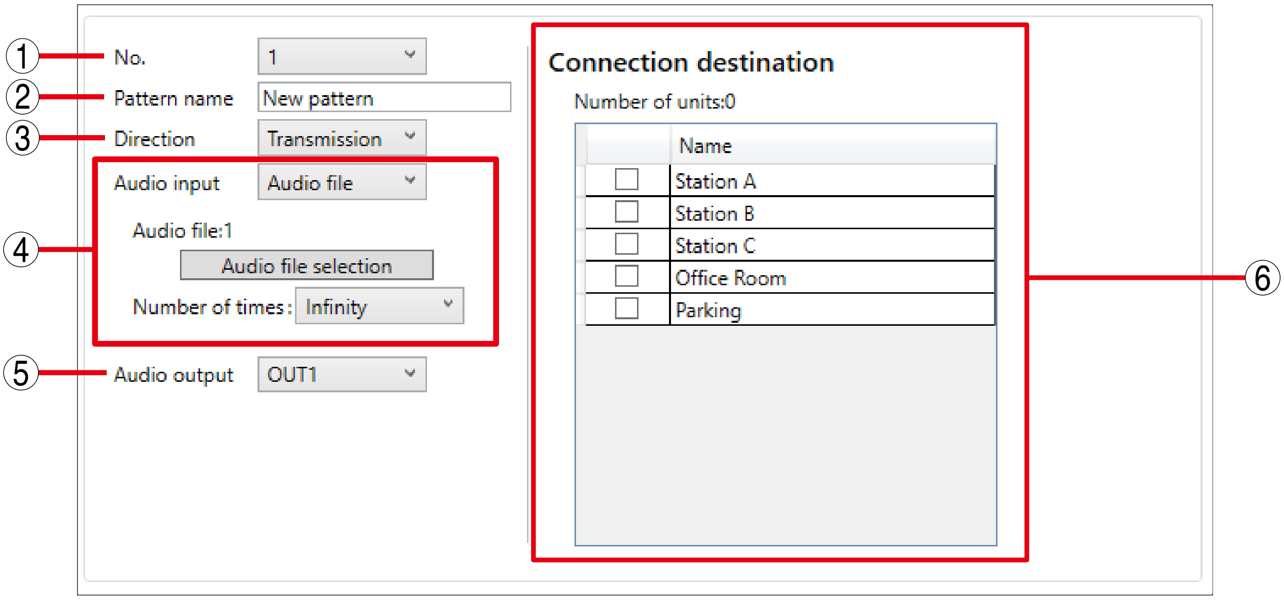
Step 2. Click the Delete Broadcast patterns button.
A confirmation dialog is displayed.


Contact bridge pattern

Delete the selected pattern. Are you sure?

Step 3. Click the OK button.

11.2.5. Broadcast pattern setting items



No.: 1

Pattern name: New pattern

Direction: Transmission

Audio input: Audio file

Audio file:1

Number of times: Infinity

Audio output: OUT1

Connection destination

Number of units:0

	Name
☐	Station A
☐	Station B
☐	Station C
☐	Office Room
☐	Parking

1. **No.**
   Select the broadcast pattern number.

2. **Pattern name**
   Enter the broadcast pattern name (up to 31 characters).

3. **Direction**
   Select the direction in which broadcasts are to be made.

Transmission:	Transmits broadcasts from an operated unit to another unit.
Reception:	Allows the operated unit to receive broadcasts from another unit.
Local:	Makes broadcasts from the operated unit's audio input to its audio output.

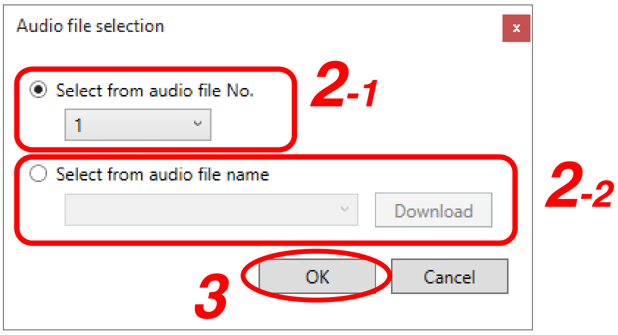
4. **Audio input**
   Select the channel to be used as the input: IN1, IN2, or Audio file.

   Note
   Audio Files cannot be selected when Direction (3) is set to "Reception."

   [Audio file selection button] (Only when the Audio input is set to "Audio file")
   The audio file can be selected.

   [Number of times] (Only when the Audio input is set to "Audio file")
   Set the number of times that the audio file will be reproduced in a single broadcast. (1 – 10, Infinity)

Step 1. Click on the "Audio file selection" button.
The Audio file selection dialog is displayed.



● Select from audio file No.: 1

○ Select from audio file name

Step 2. Select the audio file.

2-1. Selecting from the audio file number (when unable to connect to the unit):
Click "Select from audio file number." and select the number from the pull-down list.

2-2. Selecting from the audio file name (when able to connect to the unit):
Click "Select from audio file name" and click the Download button. The audio file list is acquired from the unit and displayed on the pull-down list. Select the filename from the pull-down list.

Step 3. Click the OK button.

5. Audio output
Select "OUT1" or "OUT2" for the channel to be used at the output destination.

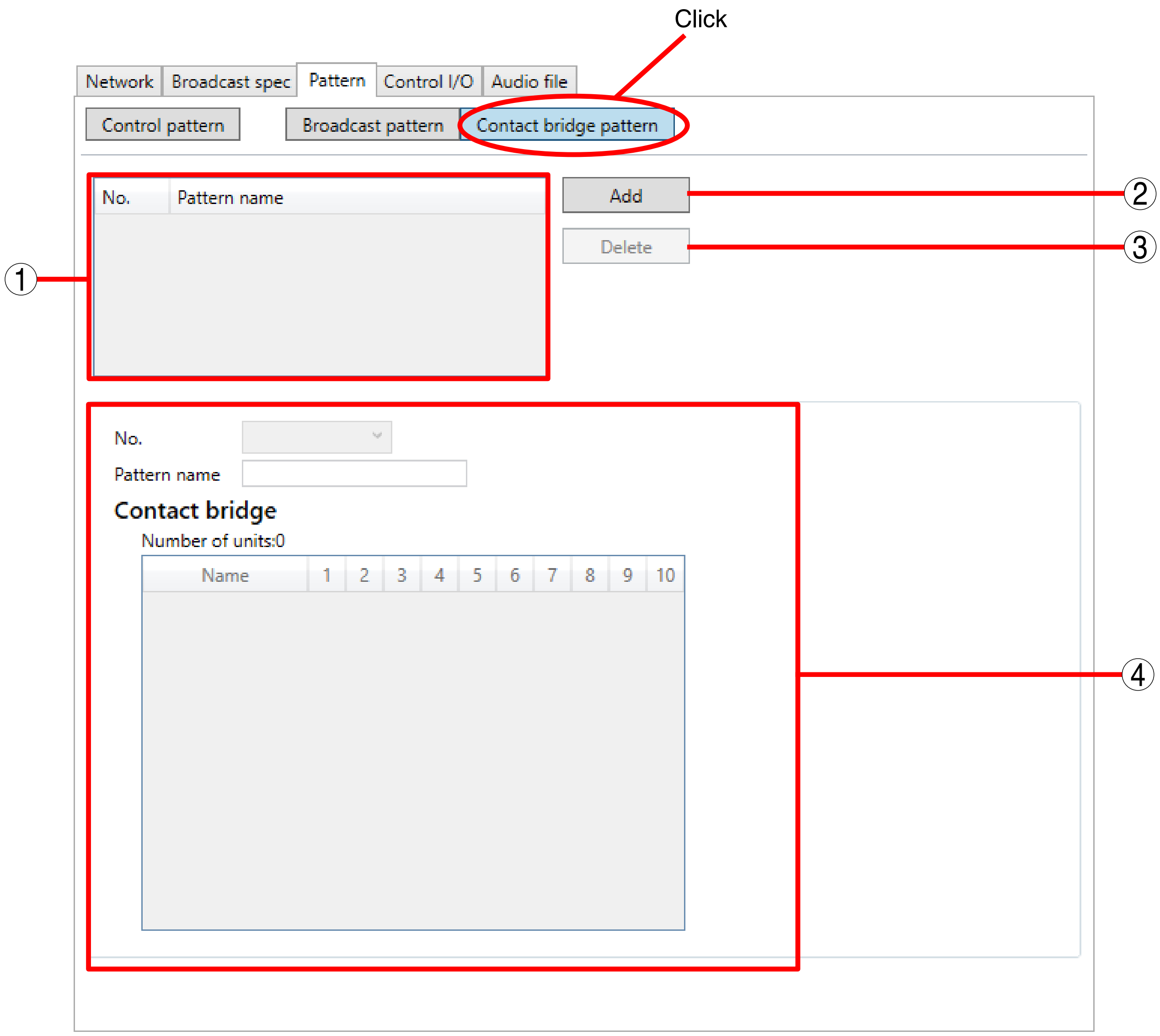
6. Connection destination
A list of units to be used for broadcast.
The names of the internal units that make up the system are displayed.
To select, click the checkbox on the left side of the unit name.
The total number of selected units is displayed at the right of the "Number of units" indicator.

11.3. Contact Bridge Pattern Settings

The contact bridge pattern represents a control output combination to be set in units that make broadcasts activated from the control input or NX-300 Operation Software.
Up to 64 connection destinations can be set in a contact bridge pattern.

11.3.1. Contact bridge pattern setting screen

Clicking the Contact bridge pattern button displays the setting screen.


Click
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
No.
Pattern name
Add
Delete
No.
Pattern name
Contact bridge
Number of units:0
Name
1
2
3
4
5
6
7
8
9
10
①
②
③
④

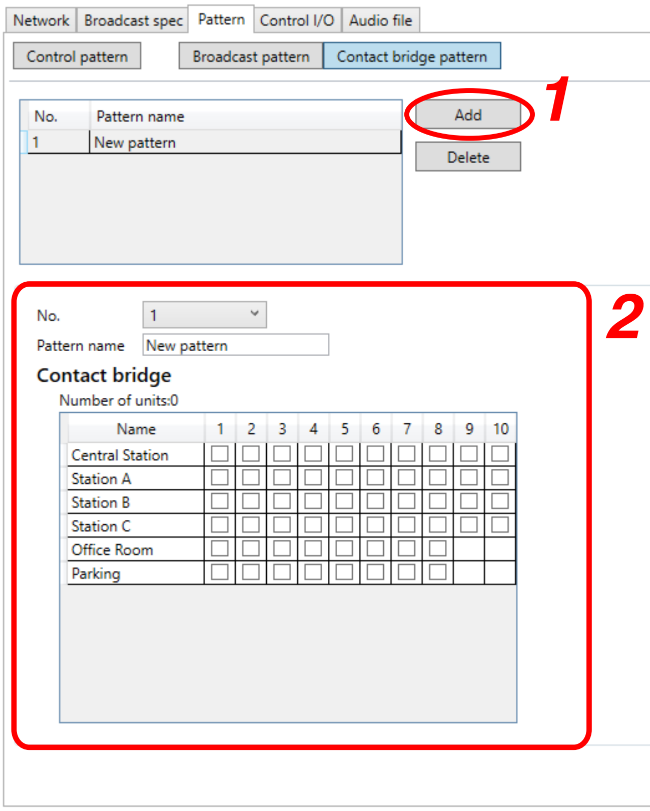
1. **Contact bridge pattern list**
   The list of registered contact bridge patterns is displayed.
   Up to 20 patterns can be set per unit.

2. **Add contact bridge pattern button**
   Used to add new contact bridge patterns.

3. **Delete contact bridge pattern button**
   Used to delete registered contact bridge patterns.

4. **Editing Field**
   Set the contact bridge pattern contents here.

11.3.2. Creating a new contact bridge pattern


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
1
2

No.	Pattern name
1	New pattern

No. 1

Pattern name New pattern

Contact bridge

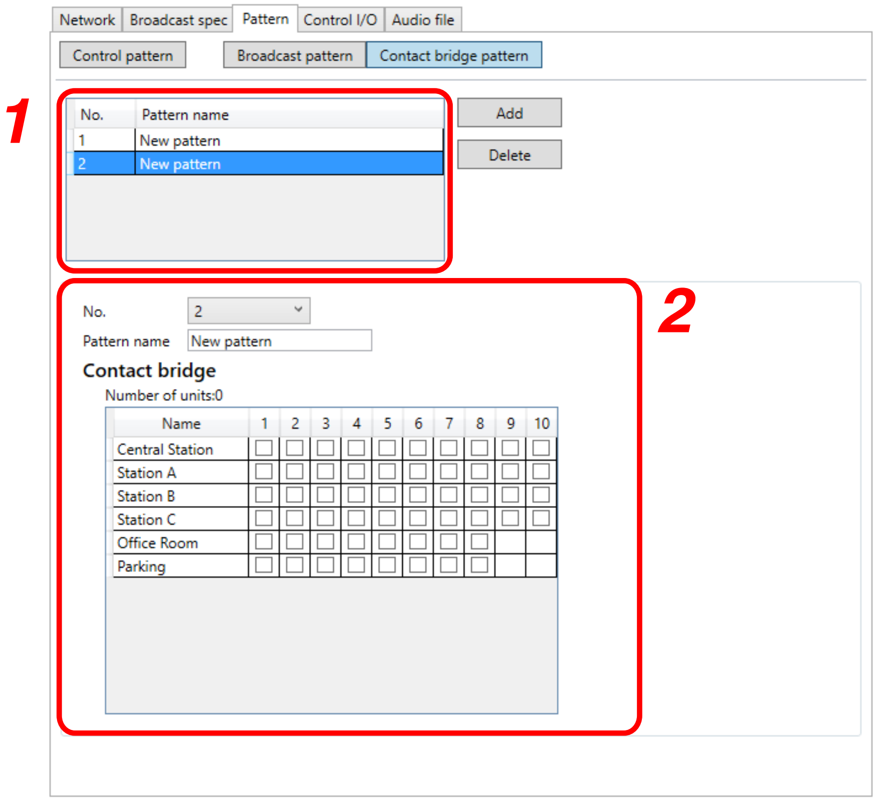
Number of units:0

Name	1	2	3	4	5	6	7	8	9	10
Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Office Room	☐	☐	☐	☐	☐	☐	☐	☐		
Parking	☐	☐	☐	☐	☐	☐	☐	☐		

Step 1. Click the Add contact bridge pattern button.
The new pattern can be edited on the editing field.

Step 2. Set each item. (See p. 3-50, "Contact bridge pattern setting items.")

11.3.3. Changing the contact bridge pattern setting contents


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
1
Add
Delete
2

No.	Pattern name
1	New pattern
2	New pattern

No. 2

Pattern name New pattern

Contact bridge

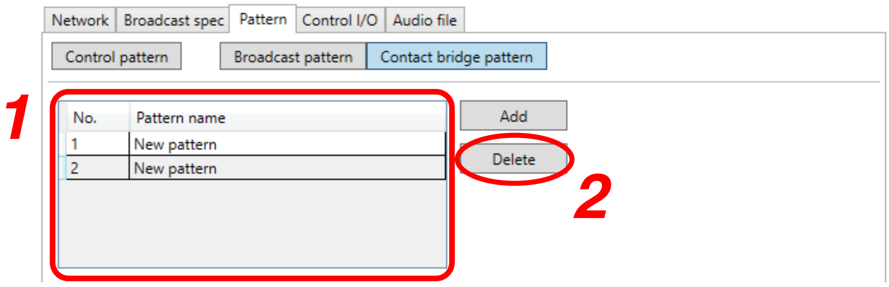
Number of units:0

Name	1	2	3	4	5	6	7	8	9	10
Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Office Room	☐	☐	☐	☐	☐	☐	☐	☐		
Parking	☐	☐	☐	☐	☐	☐	☐	☐		

Step 1. Select the contact bridge pattern to be changed on the Contact Bridge Pattern list.
The change can be edited on the editing field.

Step 2. Change the setting contents of the item to be changed. (See p. 3-50, "Contact bridge pattern setting items.")

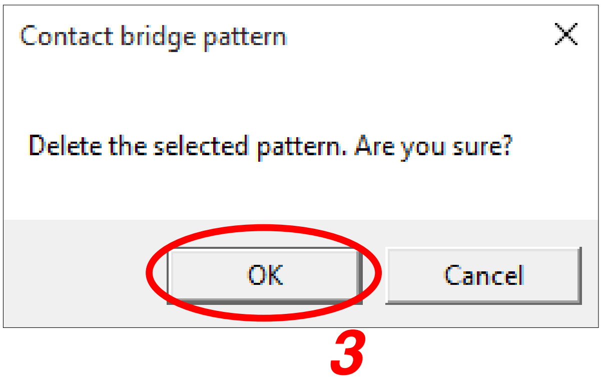
11.3.4. Deleting the contact bridge pattern


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
1
2

No.	Pattern name
1	New pattern
2	New pattern

Step 1. Select the contact bridge pattern to be deleted on the Contact Bridge Pattern list.

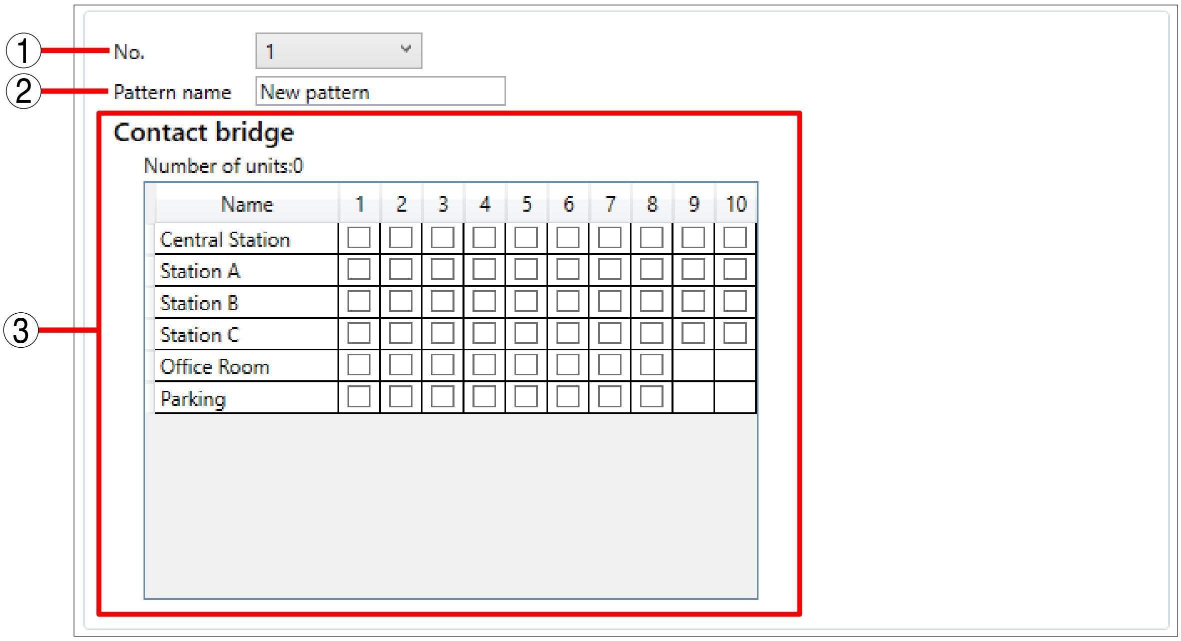
Step 2. Click the Delete contact bridge pattern button.
A confirmation dialog is displayed.


Contact bridge pattern
OK
Cancel
3

Delete the selected pattern. Are you sure?

Step 3. Click the OK button.

11.3.5. Contact bridge pattern setting items



No. 1

Pattern name New pattern

Contact bridge

Number of units:0

Name	1	2	3	4	5	6	7	8	9	10
Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Office Room	☐	☐	☐	☐	☐	☐	☐	☐		
Parking	☐	☐	☐	☐	☐	☐	☐	☐		

1. **No.**
   Select the contact bridge pattern number.

2. **Pattern name**
   Set the contact bridge pattern name (up to 31 characters).

3. **Contact bridge**
   Set the unit’s control output number to be activated.
   Use the units shown on the unit list to execute the contact bridge. The list of unit names that constitute the system and the control output numbers are displayed.
   To select a control output number, mark the control output number checkbox located at the right side of the unit name indication.
   The total number of selected units is displayed at the right of the "Number of units" indicator.

11.4. Control Pattern Settings

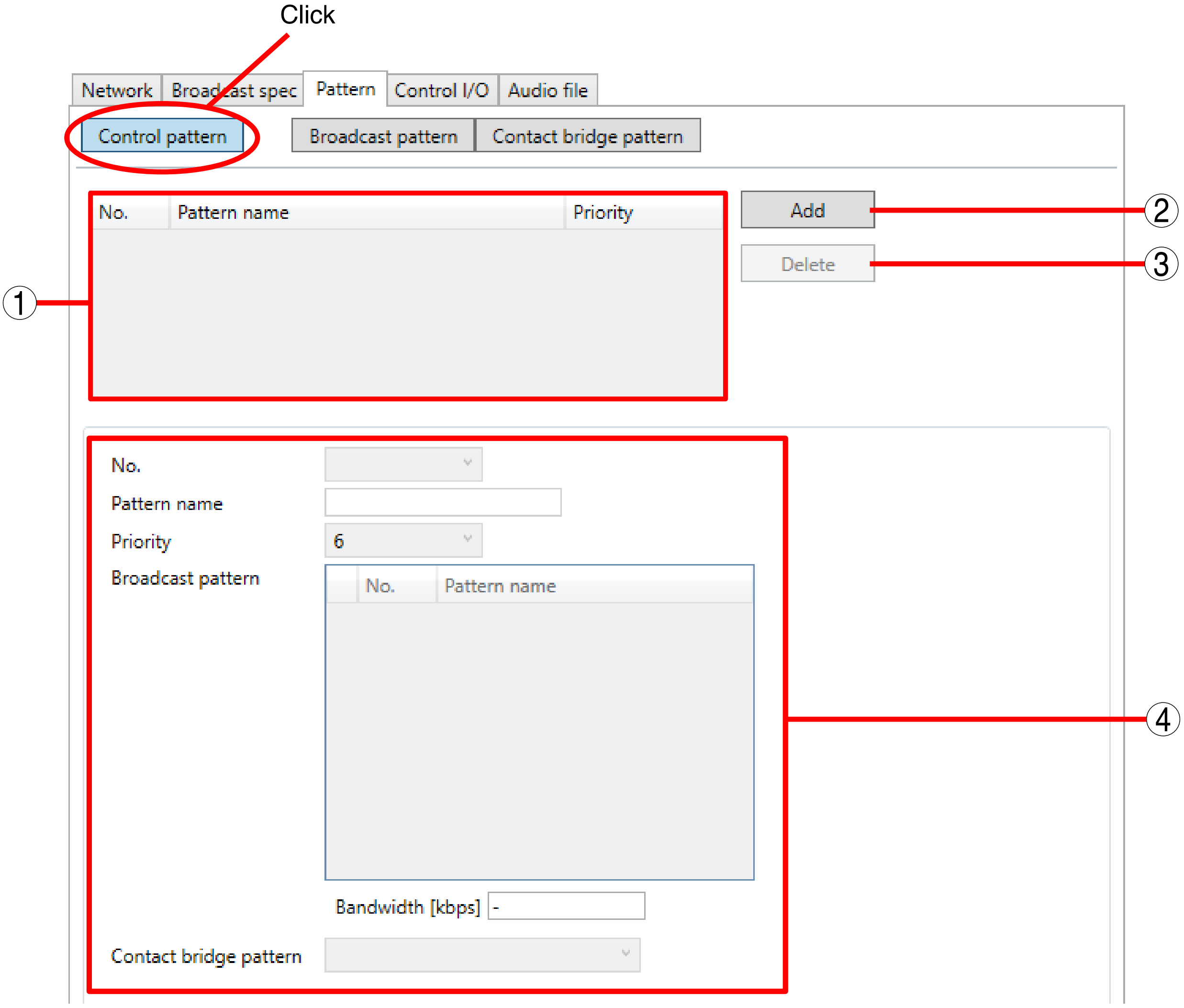
Patterns that combine both broadcast patterns and contact bridge patterns can be set. Up to 6 broadcast patterns (and up to 4 transmission patterns and 2 reception or local patterns) can be set.

Notes

- Broadcast pattern combinations that transmit more than 2 types of input audio sources cannot be set.
  [Example]
  Input 1 transmission + Input 2 transmission + Audio Source 1 file transmission, or Audio Source 1 file transmission + Audio Source 2 file transmission + Audio Source 3 file transmission
- Only one broadcast pattern (reception and local) can be set for Output 1 and Output 2, respectively.

11.4.1. Control pattern setting screen

Clicking the Control pattern button displays the control pattern setting screen.


Click
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
No.
Pattern name
Priority
Add
Delete
①
②
③
④
No.
Pattern name
Broadcast pattern
No.
Pattern name
Contact bridge pattern

Priority 6

Bandwidth [kbps] -

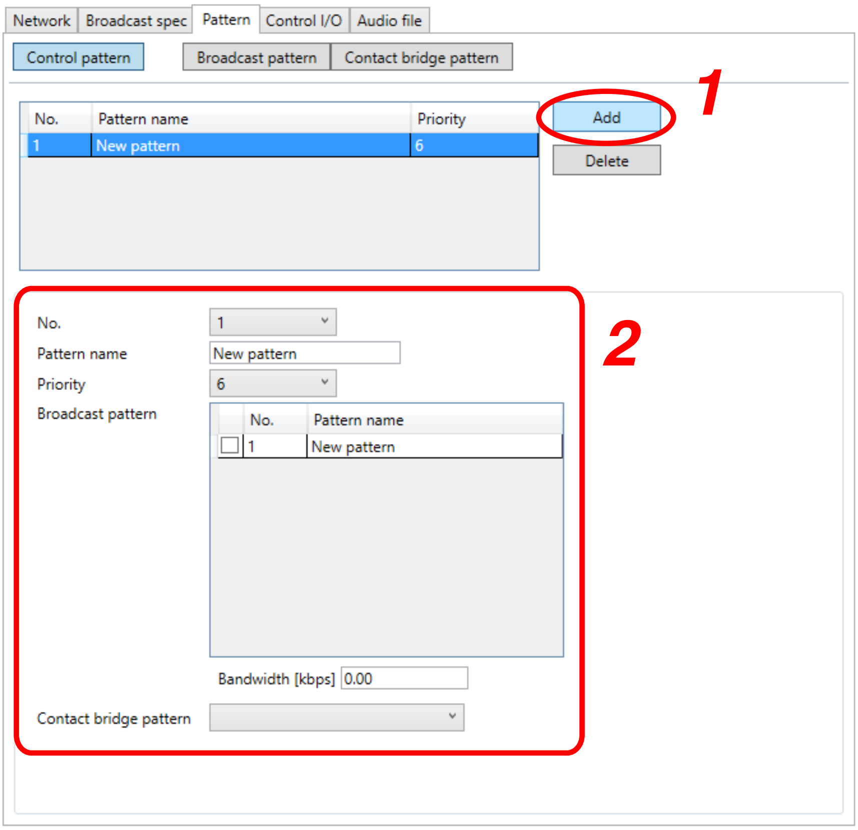
1. **Control pattern list**
   Displays the list of registered control patterns.
   Up to 20 patterns can be set per unit.

2. **Add control pattern button**
   Used to add new control patterns.

3. **Delete control pattern button**
   Used to delete registered control patterns.

4. **Editing field**
   Sets the control pattern contents.

11.4.2. Creating a new control pattern


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
1
2

No.	Pattern name	Priority
1	New pattern	6

No. 1

Pattern name New pattern

Priority 6

Broadcast pattern

	No.	Pattern name
☐	1	New pattern

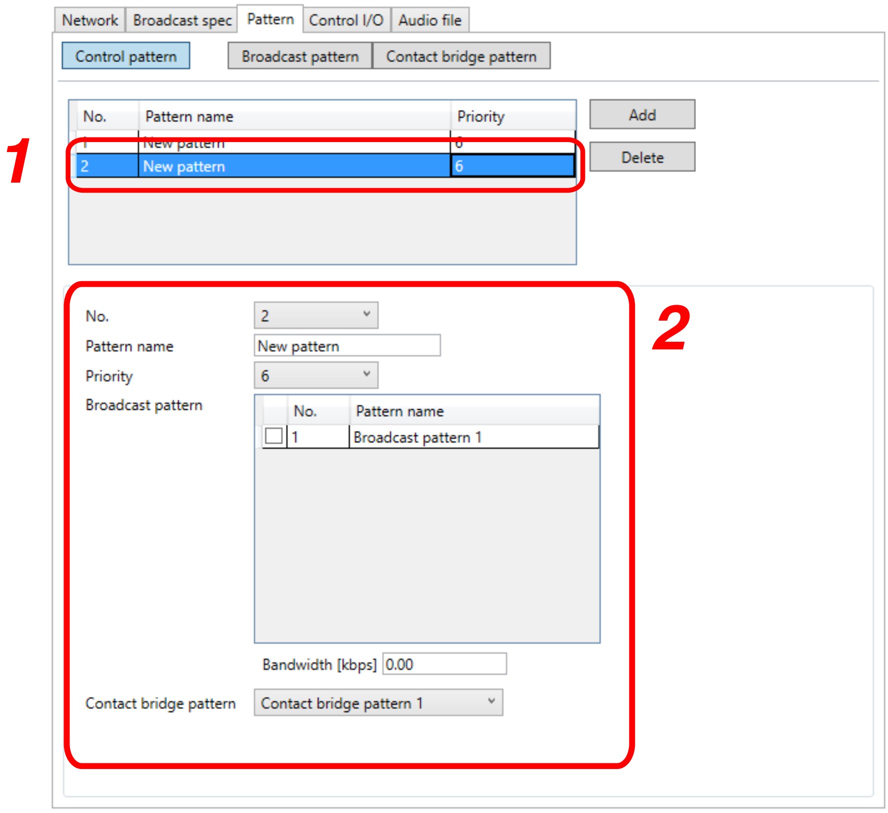
Bandwidth [kbps] 0.00

Contact bridge pattern

Step 1. Click the Add control pattern button.
The new pattern can be edited on the editing field.

Step 2. Set each item. (See p. 3-55, "Control pattern setting items.")

11.4.3. Changing the control pattern setting contents


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
1
2

No.	Pattern name	Priority
1	New pattern	0
2	New pattern	6

No. 2

Pattern name New pattern

Priority 6

Broadcast pattern

	No.	Pattern name
☐	1	Broadcast pattern 1

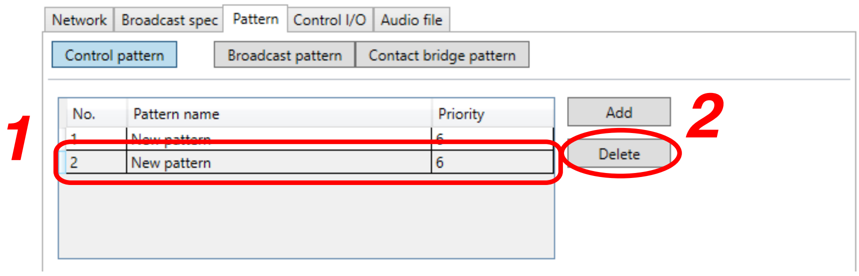
Bandwidth [kbps] 0.00

Contact bridge pattern Contact bridge pattern 1

Step 1. Select the control pattern to be changed on the control pattern list.
The change can be edited on the editing field.

Step 2. Change the setting contents of the item to be changed. (See p. 3-55, "Control pattern setting items.")

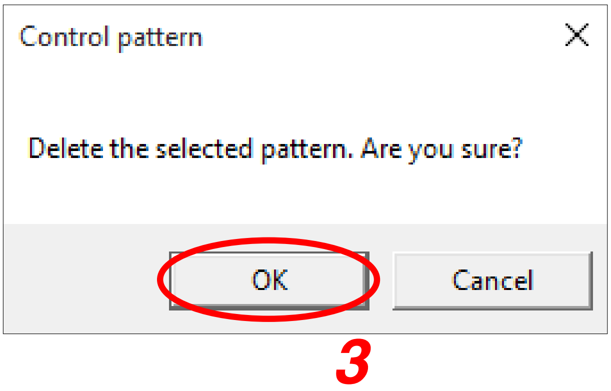
11.4.4. Deleting the control pattern


Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
1
2

No.	Pattern name	Priority
1	New pattern	6
2	New pattern	6

Step 1. Select the control pattern to be deleted on the control pattern list.

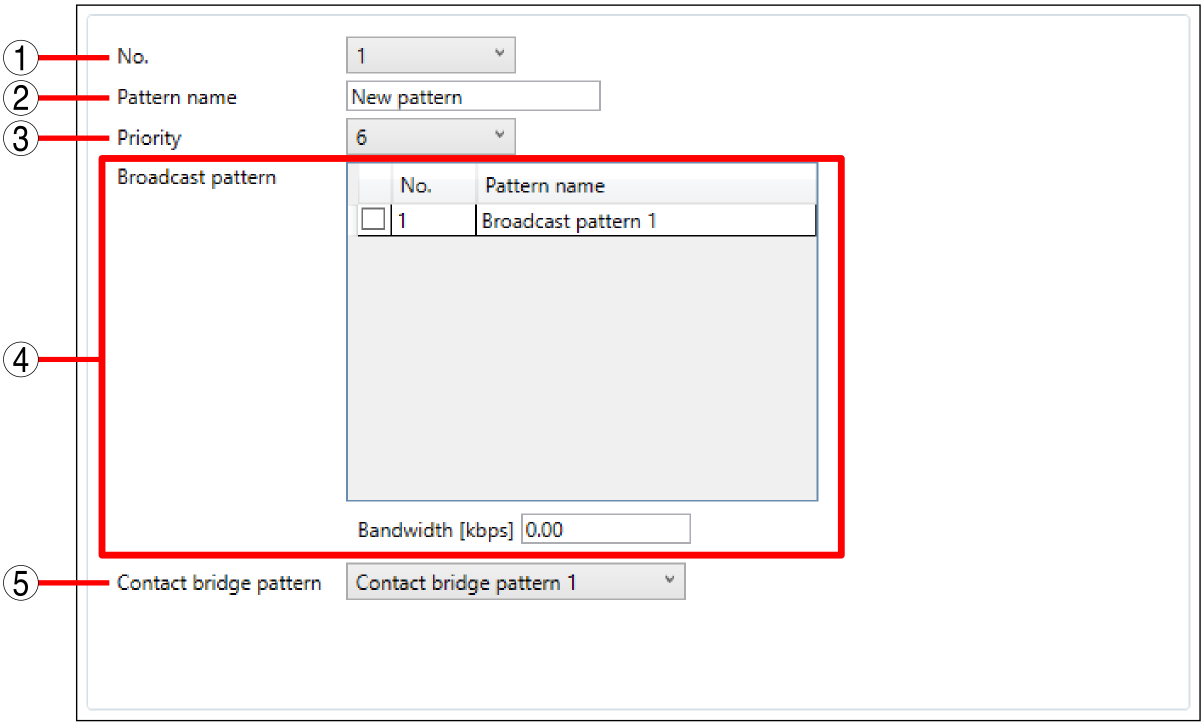
Step 2. Click the Delete Control patterns button.
A confirmation dialog is displayed.


Control pattern
OK
Cancel
3

Delete the selected pattern. Are you sure?

Step 3. Click the OK button.

11.4.5. Control pattern setting items



No. 1

Pattern name New pattern

Priority 6

Broadcast pattern

	No.	Pattern name
☐	1	Broadcast pattern 1

Bandwidth [kbps] 0.00

Contact bridge pattern Contact bridge pattern 1

1. **No.**
   Select the control pattern number.

2. **Pattern name**
   Set the control pattern name (up to 31 characters).

3. **Priority**
   Set the priority level of the control pattern. (1: Emergency, 2: High to 8: Low)

4. **Broadcast pattern**
   The list of broadcast patterns set on the broadcast pattern setting screen is displayed.
   Mark the checkbox of the broadcast pattern to use.

   [Bandwidth]
   Displays the bandwidth to be used for the selected broadcast pattern.
   Note
   When a broadcast pattern that uses an audio file is included in the selected broadcast pattern, the bandwidth is not displayed.

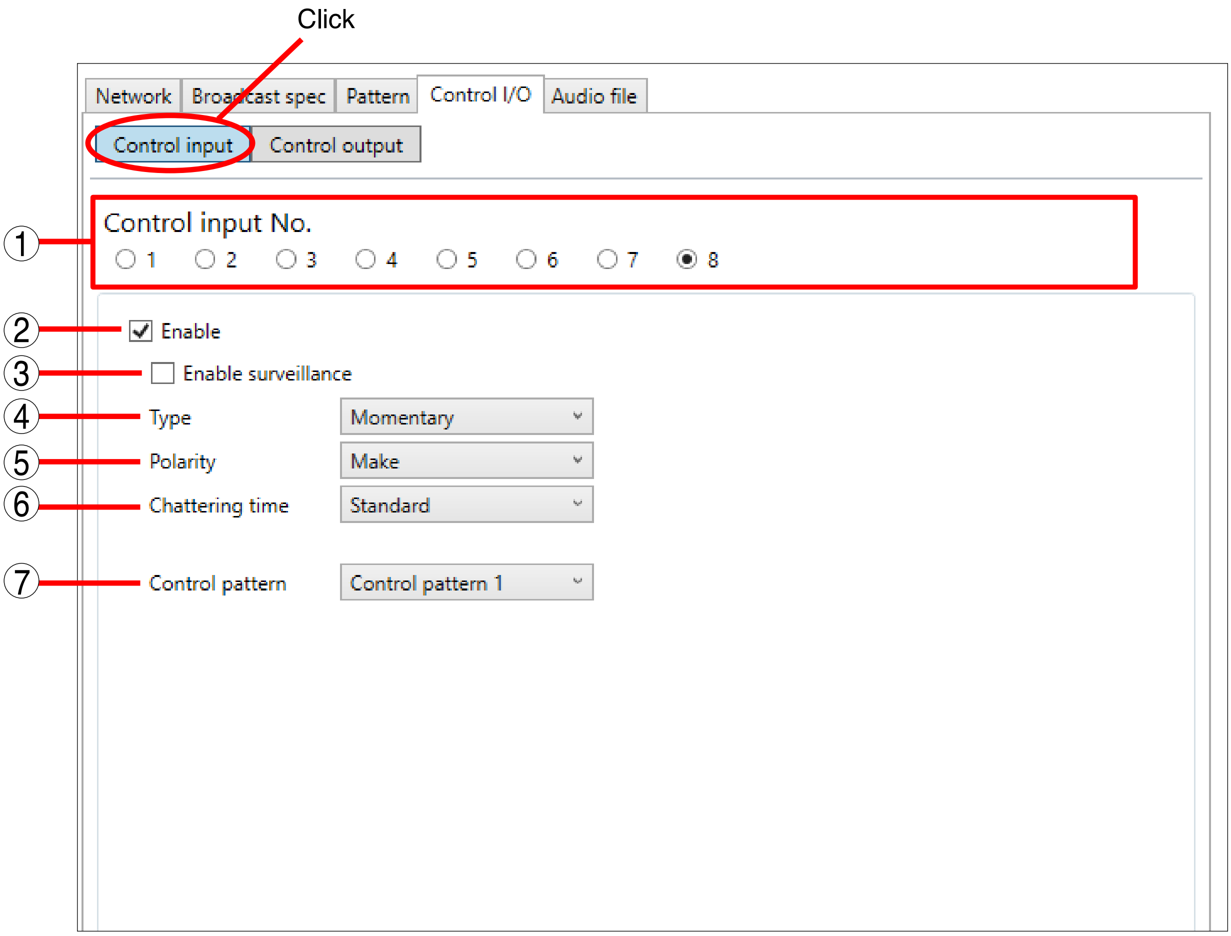
5. **Contact bridge pattern**
   Select from the contact bridge patterns set on the contact bridge pattern setting screen.

12. CONTROL INPUT SETTINGS

12.1. For the NX-300 Units

Step 1. Select the units to set from the Unit list on the setup editing screen.

Step 2. Select the Control I/O tab and click on the Control input button.
The control input setting screen is displayed.


Click
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control input
Control output
①
②
③
④
⑤
⑥
⑦

Control input No.
○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ● 8

☑ Enable
☐ Enable surveillance

Type	Momentary
Polarity	Make
Chattering time	Standard
Control pattern	Control pattern 1

Step 3. Set each item.

1. **Control input No.**
   Click the control input number to be set.

2. **Enable**
   Marking this checkbox validates the item settings for the control input.

3. **Enable surveillance**
   This function can only be set for Control Input 8 when Surveillance is enabled in the General Settings. Marking the checkbox allows Surveillance to be used.

4. Type

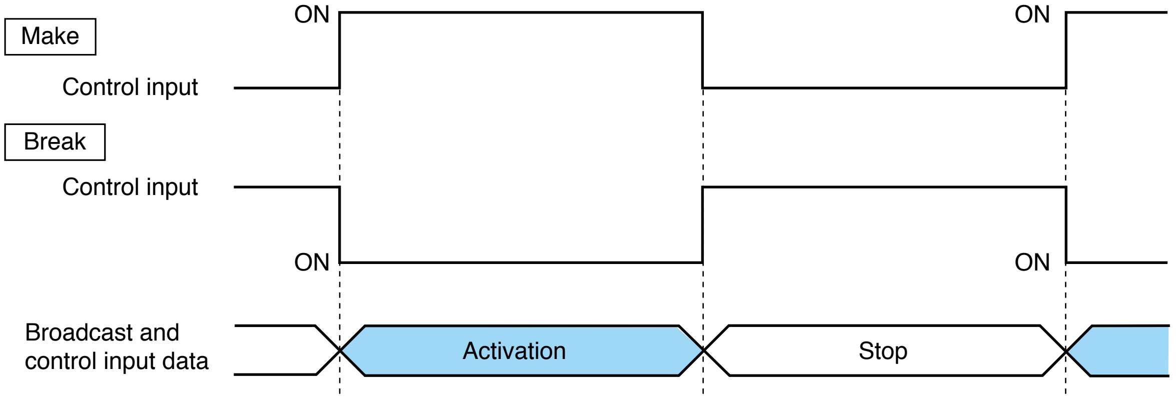
Select the type of control input.

Momentary:	While the input is ON, the designated control pattern is kept activated. The activation stops when the input becomes OFF.
Latch:	If the input is ON, the designated control pattern is activated and this condition lasts even if the input becomes OFF. If the input becomes ON again, the activation stops.

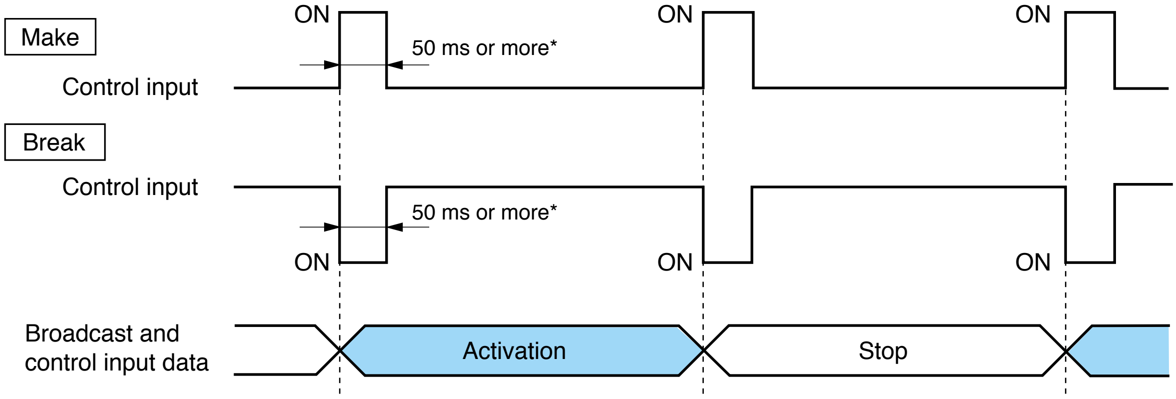
Note

- When a broadcast pattern with the audio source set to "Audio File" and the number of repetitions set to "1 – 10" is activated, the broadcast does not stop until it has completed its designated number of repetitions, even if the control input is turned OFF.
- When multiple control inputs are simultaneously set to ON, each control pattern is started at 20 ms intervals.
- If the start of the control pattern is interrupted, the broadcast will be quickly terminated at the receiving end.

[Momentary]


Make
Control input
Break
Control input
ON
ON
ON
ON
Broadcast and control input data
Activation
Stop

[Latch]


Make
Control input
Break
Control input
ON
ON
ON
ON
ON
ON
50 ms or more*
50 ms or more*
Broadcast and control input data
Activation
Stop

* When the chattering time is set to "Long," its duration is 300 ms or more.

5. Polarity

Select the polarity of the control input.

Make:	The closing of the control input is regarded as "ON."
Break:	The opening of the control input is regarded as "ON."

6. Chattering time

Set a standby time until the control input becomes stable to prevent the chattering of the control input.

Standard:	Standard setting duration (50 ms).
Long:	Makes the standby time longer (300 ms) than the standard time. Select the long duration if chattering occurs in standard mode.

7. Control pattern

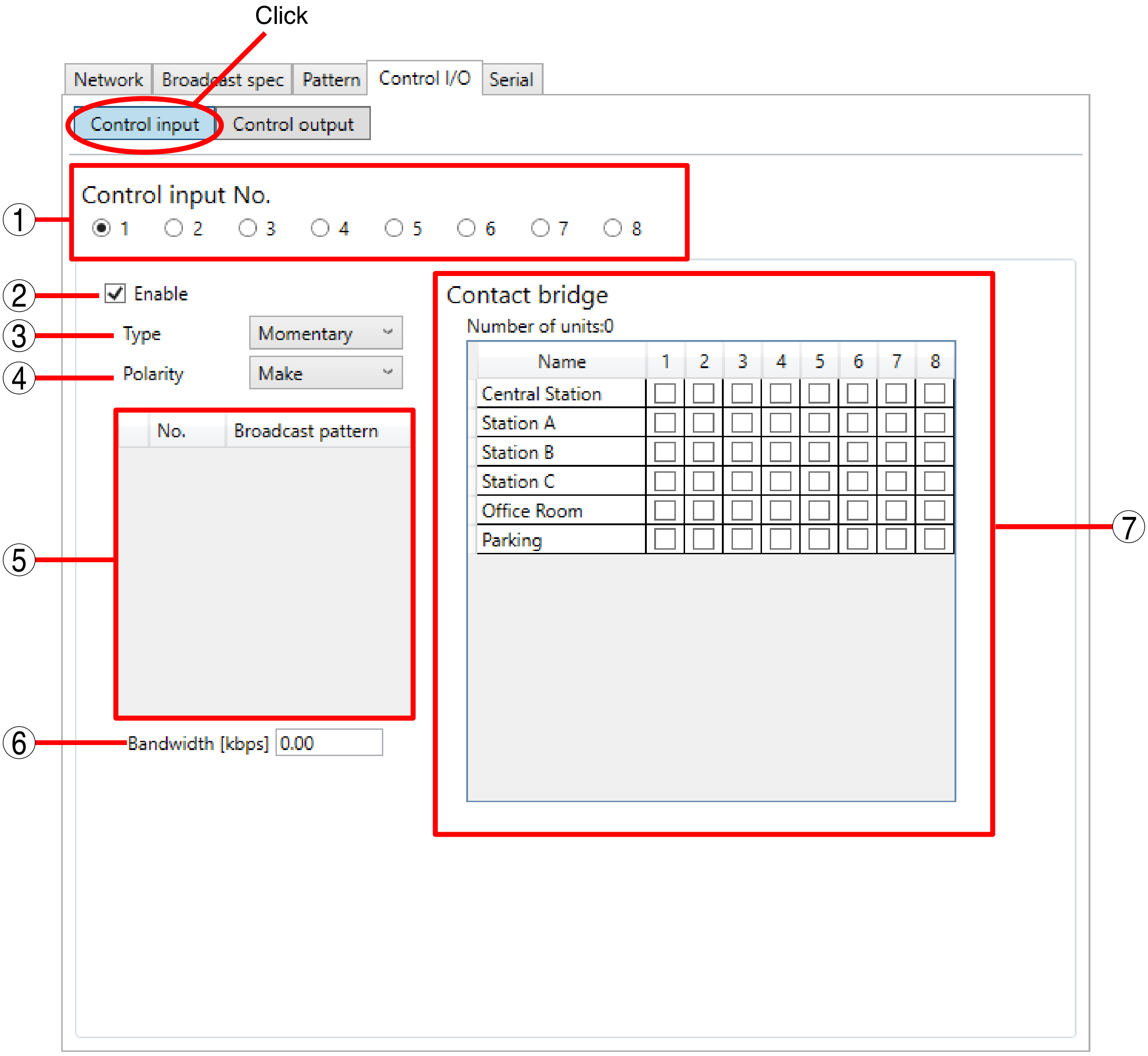
Designate the control pattern to be activated when the control input turns ON.

12.2. For the NX-100/100S Units

The control inputs of both NX-100 and NX-100S units can be set using the NX-300 Setting Software

Step 1. Select the units to set from the unit list on the setup editing screen.

Step 2. Select the Control I/O tab and click on the Control input button.
The control input setting screen is displayed.


Click
Network
Broadcast spec
Pattern
Control I/O
Serial
Control input
Control output
①
②
③
④
⑤
⑥
⑦

Control input No.
● 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8

☑ Enable

Type: Momentary

Polarity: Make

No.	Broadcast pattern

Bandwidth [kbps] 0.00

Contact bridge
Number of units:0

Name	1	2	3	4	5	6	7	8
Central Station	☐	☐	☐	☐	☐	☐	☐	☐
Station A	☐	☐	☐	☐	☐	☐	☐	☐
Station B	☐	☐	☐	☐	☐	☐	☐	☐
Station C	☐	☐	☐	☐	☐	☐	☐	☐
Office Room	☐	☐	☐	☐	☐	☐	☐	☐
Parking	☐	☐	☐	☐	☐	☐	☐	☐

Step 3. Set each item.

1. **Control input No.**
   Click the control input number to be set.

2. **Enable**
   Marking this checkbox validates the item settings for the control input.

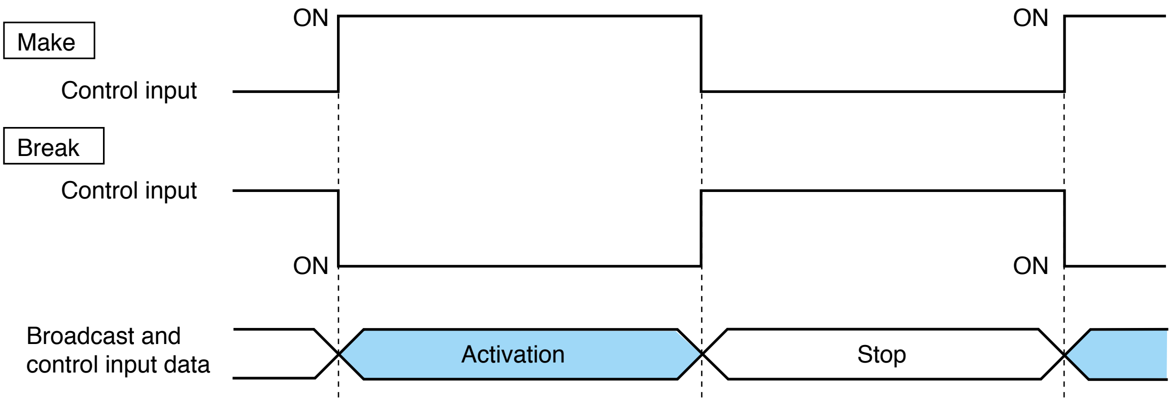
3. Type

Select the type of control input.

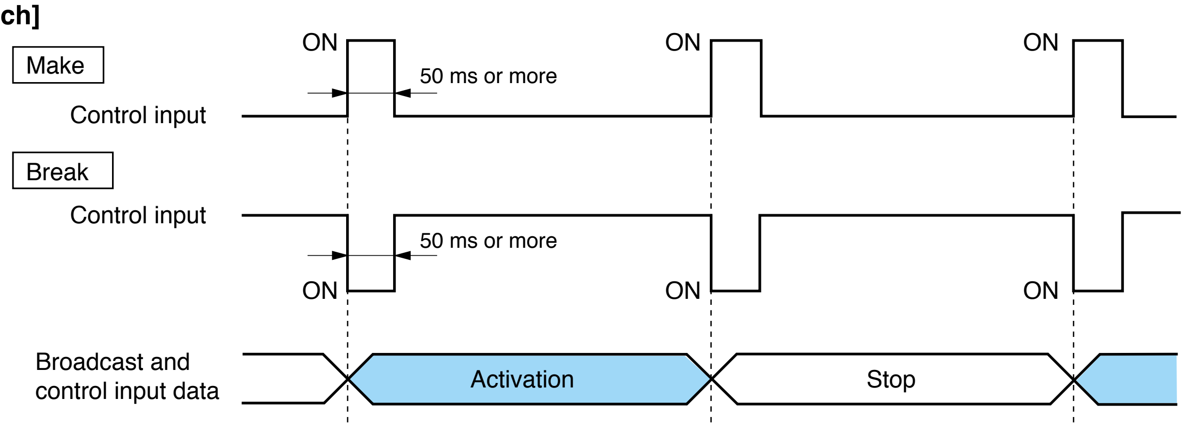
Momentary: While the input is ON, the designated control pattern is kept activated. The activation stops when the input becomes OFF.

Latch: If the input is ON, the designated control pattern is activated and this condition lasts even if the input becomes OFF. If the input becomes ON again, the activation stops.

[Momentary]


ON
ON
Make
Control input
Break
Control input
ON
ON
Broadcast and
control input data
Activation
Stop

[Latch]


ON
ON
ON
Make
50 ms or more
Control input
Break
Control input
50 ms or more
ON
ON
ON
Broadcast and
control input data
Activation
Stop

4. Polarity

Select the polarity of the control input.

Make: The closing of the control input is regarded as "ON."

Break: The opening of the control input is regarded as "ON."

5. Broadcast pattern

Designate the broadcast pattern to be activated when the control input is turned ON. The maximum number of connection destinations is as follows:

Reception: 1 location; unicast transmission: 4 locations; multicast transmission: 64 locations

Note

Broadcasts to multiple transmission destinations, two-way broadcasts and local broadcasts may not be made, depending on the broadcast spec settings.

6. Bandwidth (kbps)

Displays the total of bandwidth of the designated broadcast patterns.

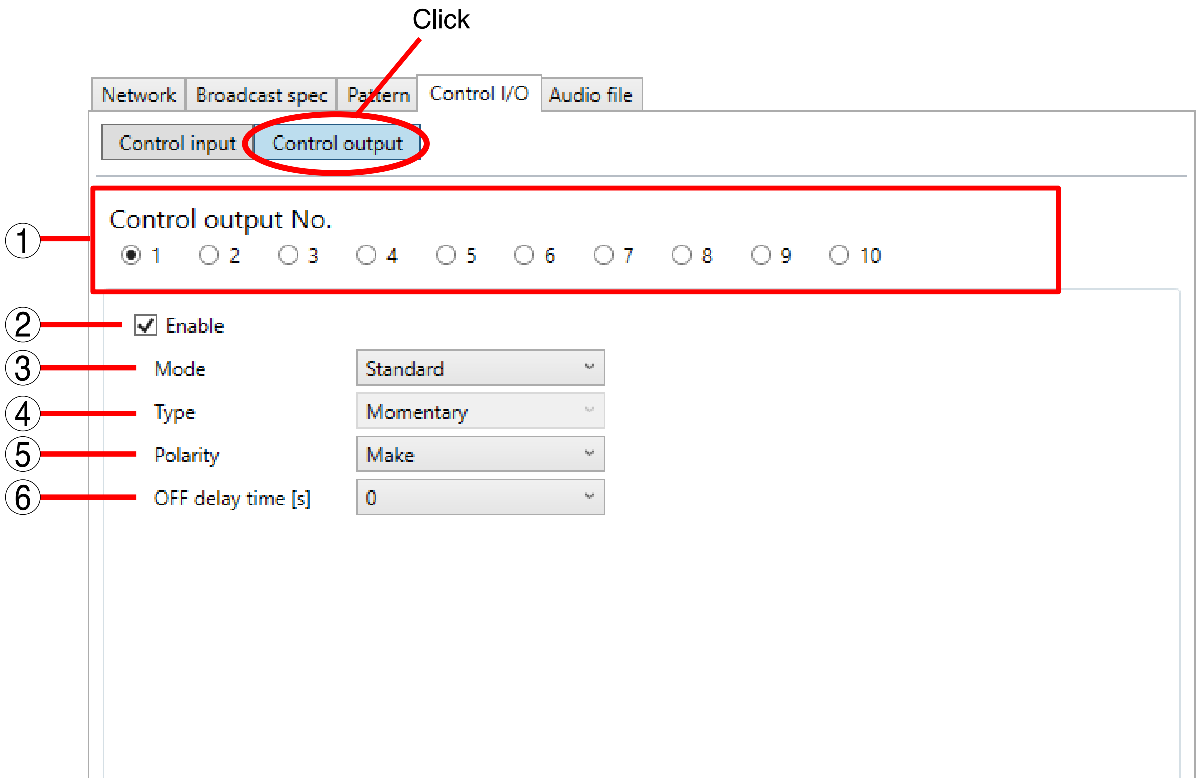
7. **Contact bridge**
   Select the unit and control output number that use the contact bridge.
   Execute the contact bridge using the unit shown in the unit list.
   The list of unit names and control output numbers that constitute the system is displayed.
   To select, mark the desired control output number checkbox located on the right of the unit name indication.
   The total number of selected units is displayed at the right of the "Number of units" indicator.

   Note
   NX-100 and NX-100S units cannot be used to control NX-300 unit control outputs 9 and 10.

13. CONTROL OUTPUT SETTINGS

Step 1. Select the units to be set from the unit list in the setup editing screen.

Step 2. Select the "Control I/O" tab and click the Control output button.
The control output setting screen is displayed.



Control output No.
● 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

☑ Enable

Mode: Standard

Type: Momentary

Polarity: Make

OFF delay time [s]: 0

Step 3. Set each item.

1. **Control output No.**
   Click the control output number to be set.
   Selectable in the range of 1 – 10 for the NX-300 units and 1 – 8 for the NX-100 and NX-100S units.

2. **Enable**
   Set to be checked by default.
   When the control output is not used, uncheck the checkbox to invalidate the control output settings.

3. **Mode**
   Select the operation mode. Contents differ depending on the unit being set.

- **For the NX-300 units**

Standard:	Standard operation mode. Control output is activated by the PC or contact bridge control of an operated unit or other unit.
Broadcasting:	Control output is activated during a broadcast.
OUT1-broadcasting:	When audio is provided from Audio Output 1, the control output is activated.
OUT2-broadcasting:	When audio is provided from Audio Output 2, the control output is activated.
Error:	Control output is activated while the error indicator lights.

- **For the NX-100/100S units**

Standard: Standard operation mode. Control output is activated by the PC or contact bridge control of an operated unit or other unit.
Status: Control output is activated while the status indicator lights.
Error: Control output is activated while the error indicator lights.

4. Type

Select the type of control output.
Selectable content may differ depending on the units to be set.

- If setting an NX-300 unit
  Control Output is fixed to "Momentary."
- If setting an NX-100/100S unit

Momentary: Provides output during the period between reception of a start request till reception of a stop request.
Latch: Provides output for a period of 1 second after a start request or stop request is received.

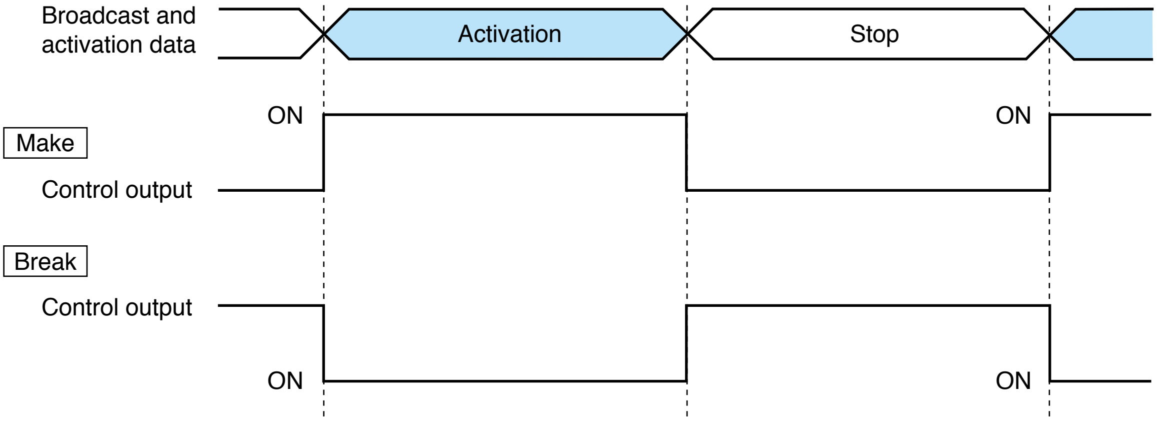
Note

The unit may not function correctly if operations from start to stop are completed within 1 second.

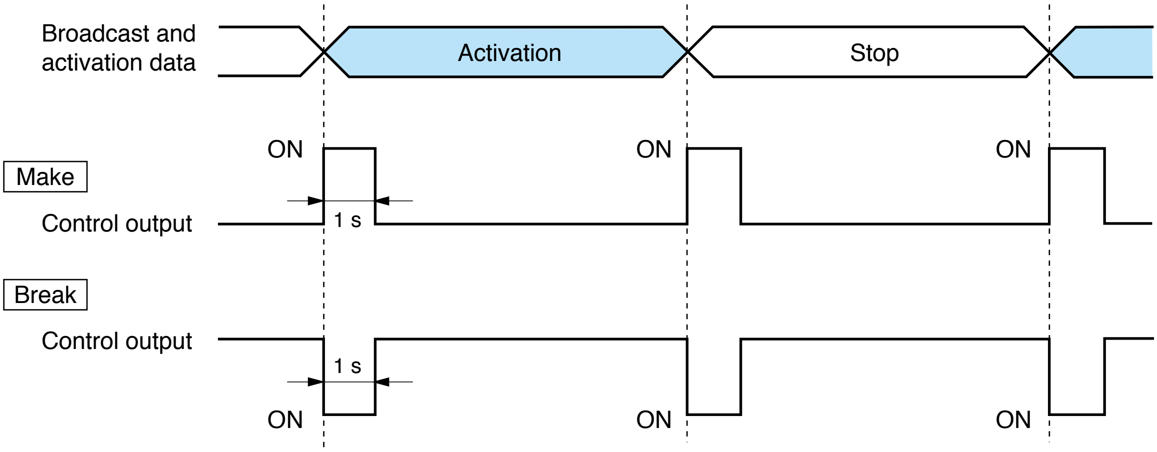
Tip

Type is fixed at "Momentary" when the mode is set to any other than "Standard" in the control output settings.

- **Momentary**


Broadcast and activation data
Activation
Stop
ON
ON
Make
Control output
Break
Control output
ON
ON

- **Latch**


Broadcast and activation data
Activation
Stop
ON
ON
ON
Make
Control output
1 s
Break
Control output
1 s
ON
ON
ON

5. Polarity

Select control output polarity.
Make: Outputs current when ON, and cuts off current output when OFF.
Break: Cuts off current output when ON, and outputs current when OFF.

6. OFF delay time [s]

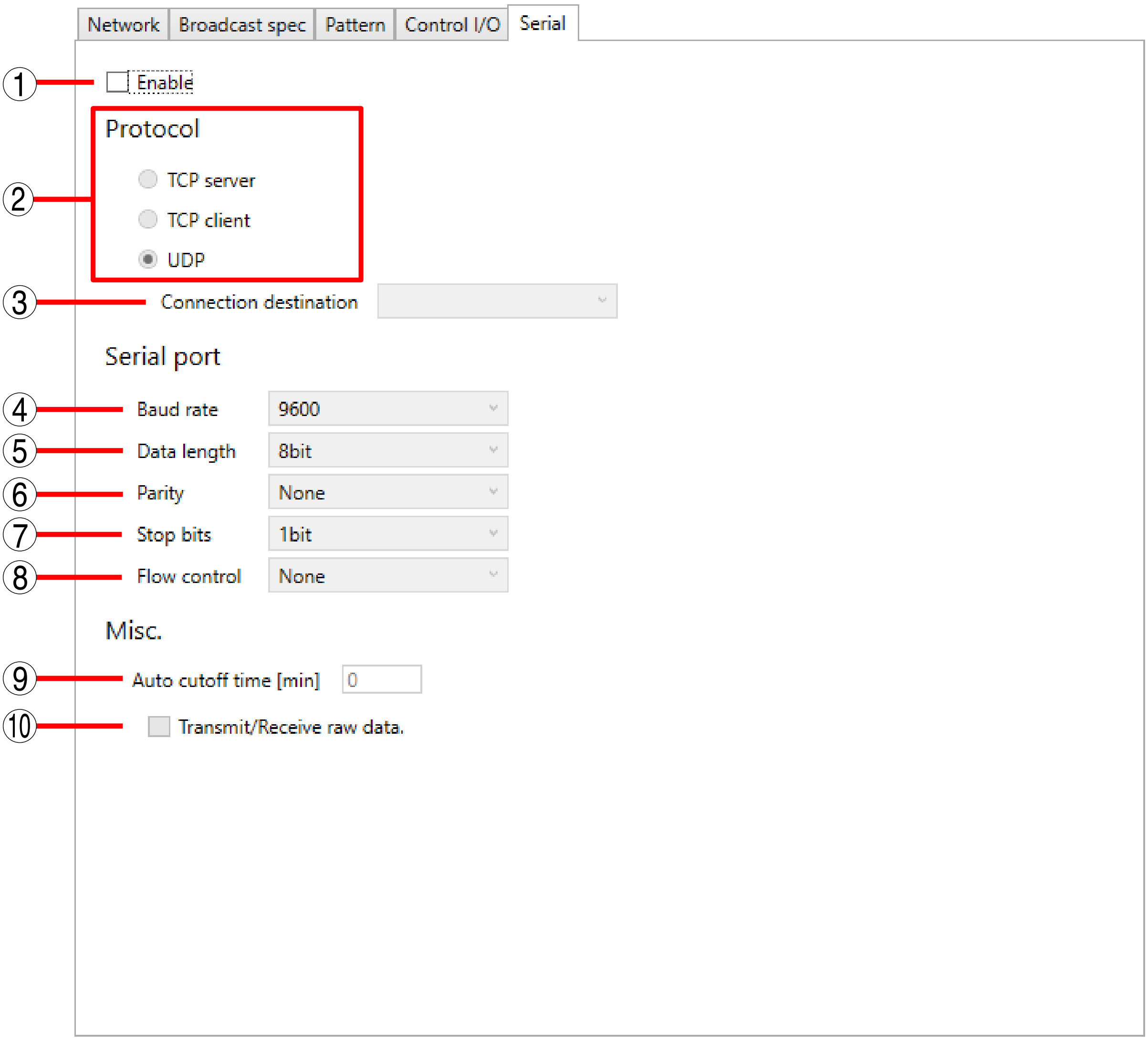
Set the delay period between receiving an end request till actually turning the control output OFF (0 – 60 sec).
This setting can only be set in the "Standard" operation mode.

14. SERIAL BRIDGE SETTING (NX-100 ONLY)

Serial bridge settings can only be made when setting the NX-100 unit.

Step 1. Select the device to be set on the setup editing screen.

Step 2. Select the "Serial" tab.
The serial bridge setting screen is displayed.



☐ Enable

○ TCP server
○ TCP client
● UDP

Connection destination

Baud rate: 9600
Data length: 8bit
Parity: None
Stop bits: 1bit
Flow control: None

Auto cutoff time [min]: 0

☐ Transmit/Receive raw data.

Step 3. Set each item.

1. **Enable**
   Mark the checkbox to allow input of each item.

2. **Protocol**
   Select the serial bridge communication method.

TCP server:	The unit selected on the setting screen functions as a TCP server and carries out communications.
TCP client:	The unit selected on the setting screen functions as a TCP client and carries out communications. Clicking the radio button permits selection of the connected unit.
UDP:	Carries out UDP communications. Clicking the radio button permits selection of the connected unit.

3. Connection destination

Select the unit to be connected.

Note

Selection is only possible when "TCP Client" or "UDP" is checked in the protocol settings.

4. Baud rate

Select [9600], [19200], [38400], [57600] or [115200].

5. Data length

Set to either [7 bits] or [8 bits].

6. Parity

Select [Even], [Odd] or [None].

7. Stop bits

Select [1 bit] or [2 bits].

8. Flow control

Select the type of flow control.

None:	Flow control is not performed.
Xon/Xoff:	Performs software flow control.
Hardware:	Performs hardware flow control.

9. Auto cutoff time [min]

Set the time interval (timeout duration: 0 – 60 minutes) before the connected unit is automatically disconnected following the end of the last communication. The connected unit is not disconnected if the timeout duration is set to [0]. Valid only when "TCP Server" or "TCP Client" is selected in the protocol settings.

10. Transmit/Receive raw data.

Tick the checkbox when transmitting and receiving raw data. Data with control information to be utilized between NX-100 units is usually transmitted, but raw data communications are generally carried out without such control information. However, when communications with other connected units are cut off, this cannot be detected. Valid only when "TCP Server" or "TCP Client" is selected in the protocol settings.

Note

Serial bridge function data can be transmitted at every 20 ms intervals or when its data length becomes 1024 bytes within 20 ms.

This serial bridge function cannot be used for the equipment that communicate with data less than 1024 bytes long at intervals shorter than 20 ms.

15. AUDIO FILE SETTINGS

Audio files can be uploaded to the NX-300 unit or subsequently deleted. Conditions for adding an audio file are as follows:

File format: WAV
Sampling frequency: 8, 16, 32, and 48 kHz
Codec: PCM, Sub-band ADPCM
Maximum number of storages: 8
Maximum storage capacity: 1 MB per storage
Quantization bit number: 16 bits
Channel number: Monaural

Notes

- The busy indicator on the unit’s front panel flashes while adding or deleting audio files. Take care not to restart the unit nor switch off its power while these operations are in progress.
- When the codec is "Sub-Band ADPCM" or when setting the number of audio file play repetitions (1 – 10), insert silence intervals at both the beginning and end of the audio file.

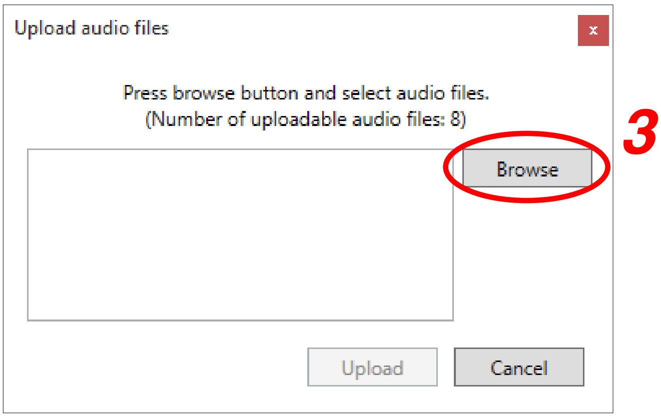
Tip

Audio file upload and deletion can also be set using the browser.
For details, please see p. 4-7, "AUDIO FILE MANAGEMENT."

15.1. Uploading Audio Files

Step 1. Select the unit to be set from the unit list on the setup editing screen.

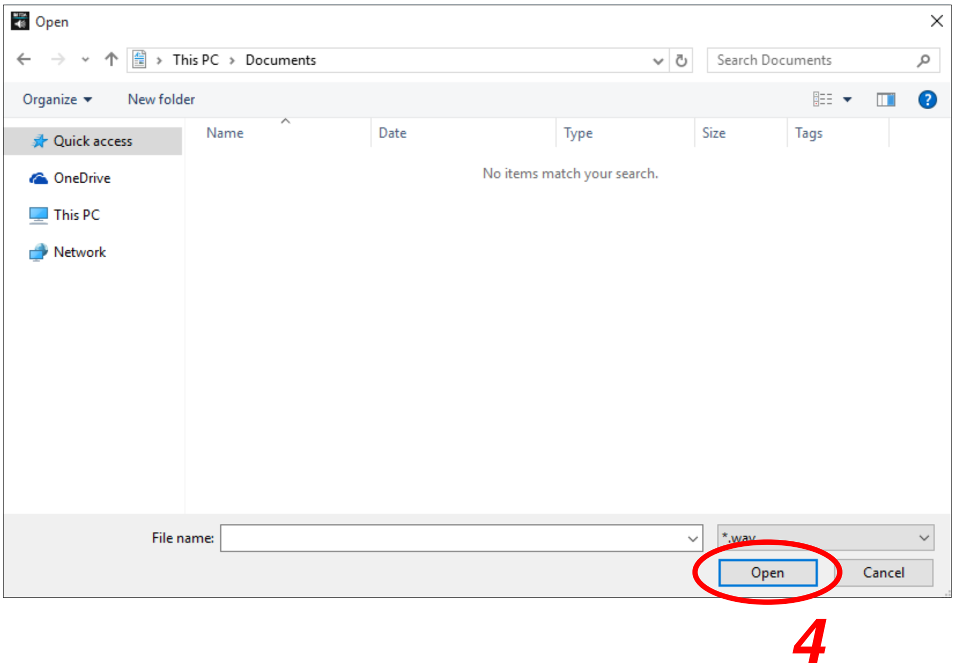
Step 2. Select the "Audio File" tab and click the "Upload audio source file" button.
The upload audio files screen is displayed.
An error dialog is displayed if the PC cannot be connected to the unit.



Upload audio files

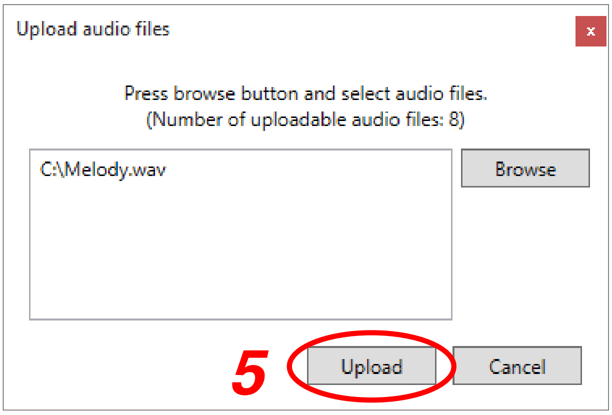
Press browse button and select audio files.
(Number of uploadable audio files: 8)

Step 3. Click the Browse button.
A file selection dialog is displayed.
To select multiple audio files, click on the file names while holding down the Ctrl button of the PC.


Open
This PC › Documents
Search Documents
Organize
New folder
Quick access
OneDrive
This PC
Network
Name
Date
Type
Size
Tags
File name:
*.wav
Open
Cancel
4

No items match your search.

Step 4. Select the audio file and click the Open button.
The list of audio files to be uploaded is displayed.


Upload audio files
×
Browse
5
Upload
Cancel

Press browse button and select audio files.
(Number of uploadable audio files: 8)

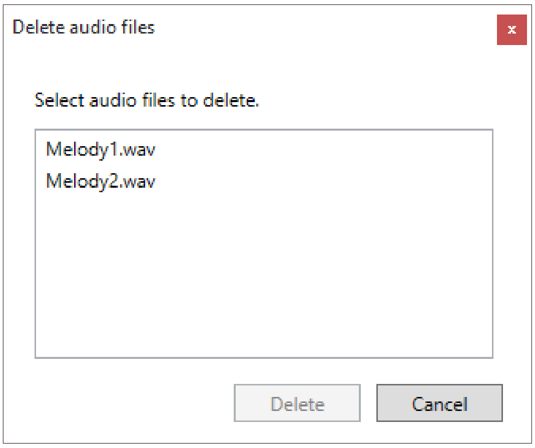
C:\Melody.wav

Step 5. Click the Upload button.
The audio file is uploaded to the NX-300 unit.

15.2. Deleting Audio Files

Step 1. Select the unit to be set from the unit list on the setup editing screen.

Step 2. Select the "Audio File" tab and click the "Delete audio file" button.
The delete audio files screen is displayed.
An error dialog is displayed if the PC cannot be connected to the unit.



Delete audio files

Select audio files to delete.

Melody1.wav
Melody2.wav

Step 3. Click the audio file to be deleted and click the Delete button.
The audio file is deleted.
Also clicking multiple audio files allows the files to be selected to delete.

16. OPERATIONS ACCESSIBLE FROM THE SETUP EDITING SCREEN MENU

16.1. Saving the Unit Setting Files

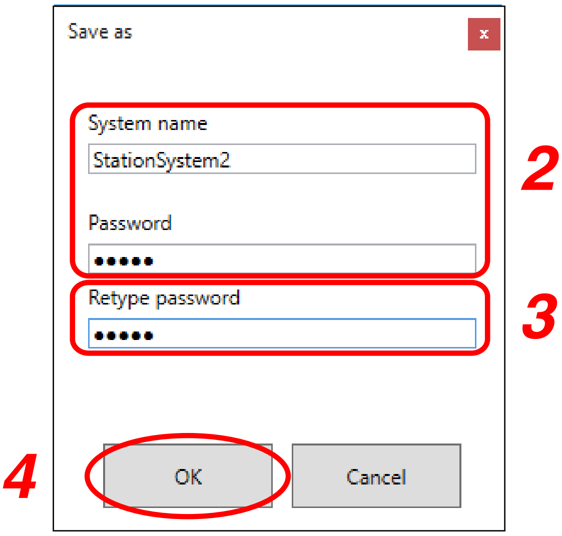
Save the unit setting file to the specified location.*
* NX-300 Setting Software's data folder. The save location cannot be manually designated.

Select "File" → "Save" from the menu.

16.2. Changing the System Name and Password

The current system name can be changed by assigning another name and saving it. Passwords can also be changed.

Step 1. Select "File" → "Save As" from the menu.
A dialog for saving the system is displayed.



System name
StationSystem2

Password
●●●●●

Retype password
●●●●●

Step 2. Enter a system name and password.
Use 1 – 15 characters for the system name and the password.
Note
The symbols \, /, :, *, ?, <>, |, and blank spaces cannot be used for the system name.

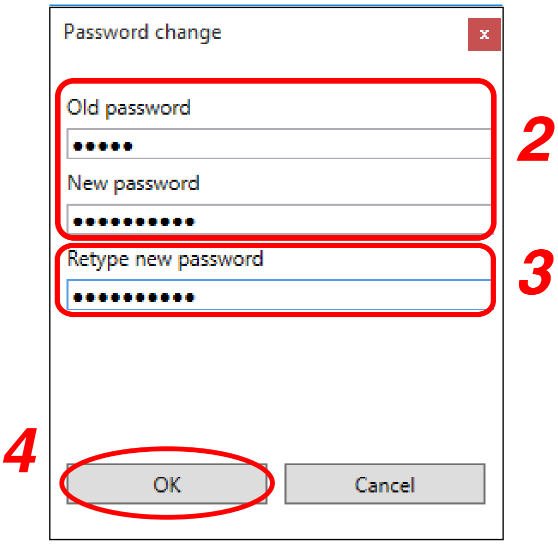
Step 3. For confirmation, enter the same password entered in **Step 2** in the "Retype password" space.

Step 4. Click the OK button.

16.3. Changing the System Password

The current system's password can be changed.

Step 1. Select "File" → "Change password" from the menu.
A dialog for changing the password is displayed.


Password change
×
Old password
New password
Retype new password
OK
Cancel
2
3
4

Step 2. Enter the old password and a new password.
Set the password using 1 – 15 characters.

Step 3. For confirmation, enter the new password entered in **Step 2** in the "Retype new password" space.

Step 4. Click the OK button.

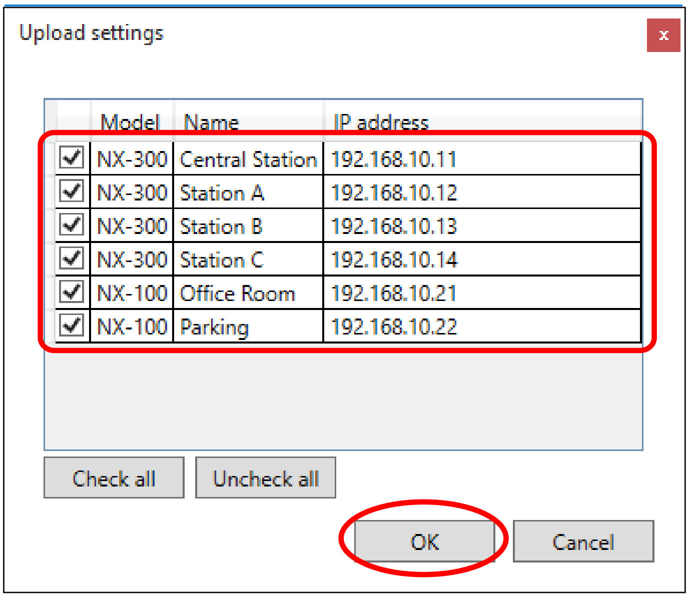
Step 5. Select "File" → "Save" from the menu.
The device file with the changed password is saved.

16.4. Uploading Unit Setting Files

Upload the currently opened unit setting to the NX-300, NX-100, or NX-100S.

Step 1. Select "File" → "Save" from the menu.
The unit setting file is saved.

Step 2. Select "Tool" → "Upload settings" from the menu.
A dialog for selecting the units to be uploaded is displayed.



Upload settings

	Model	Name	IP address
☑	NX-300	Central Station	192.168.10.11
☑	NX-300	Station A	192.168.10.12
☑	NX-300	Station B	192.168.10.13
☑	NX-300	Station C	192.168.10.14
☑	NX-100	Office Room	192.168.10.21
☑	NX-100	Parking	192.168.10.22

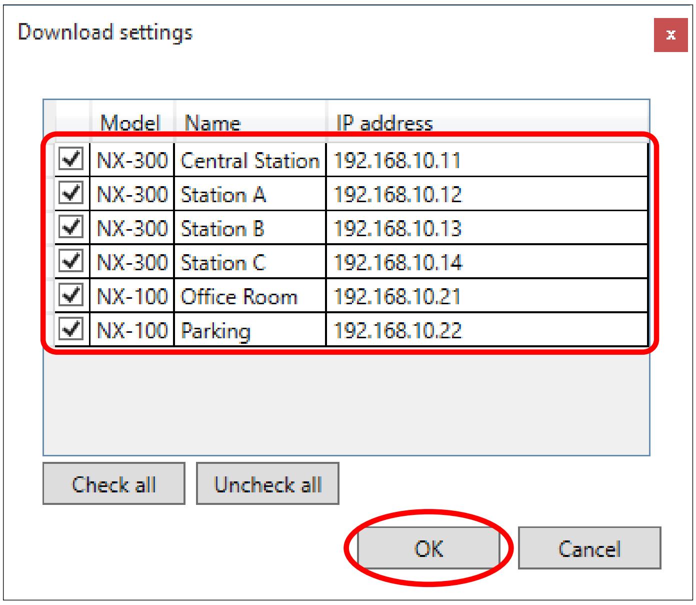
Step 3. Select the unit to be uploaded from the unit list and click the OK button.

Note
Unit setting file upload takes some time. Take care to never switch off the NX-300, NX-100, or NX-100S power during the upload.
The unit is automatically restarted after upload completion.

16.5. Downloading Unit Setting Files

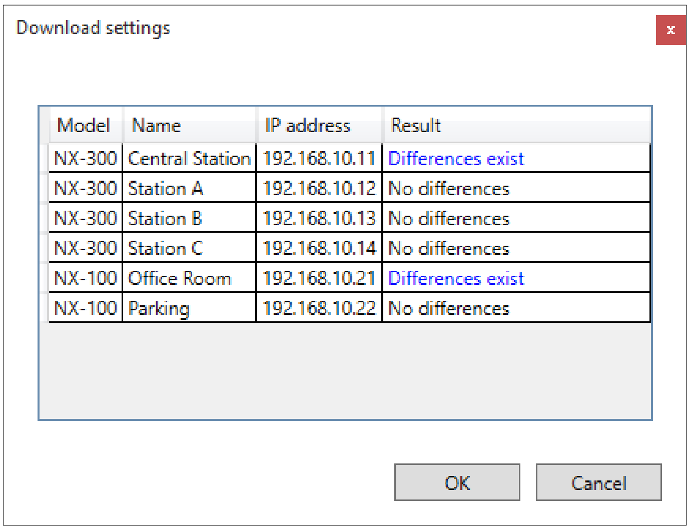
Read the currently-connected NX-300's, NX-100's, and NX-100S' setting contents into the NX-300 Setting Software.

Step 1. Select "Tool" → "Download settings" from the menu.
A dialog for selecting the units to be downloaded is displayed.



	Model	Name	IP address
☑	NX-300	Central Station	192.168.10.11
☑	NX-300	Station A	192.168.10.12
☑	NX-300	Station B	192.168.10.13
☑	NX-300	Station C	192.168.10.14
☑	NX-100	Office Room	192.168.10.21
☑	NX-100	Parking	192.168.10.22

Step 2. Select the unit to be downloaded from the unit list and click the OK button.
After download, the results of a comparison of the new unit settings with those retained by the NX-300 Setting Software are shown. If both settings match, the "No differences" indicator is displayed. If they do not match, the "Differences exist" indictor is displayed.



Model	Name	IP address	Result
NX-300	Central Station	192.168.10.11	Differences exist
NX-300	Station A	192.168.10.12	No differences
NX-300	Station B	192.168.10.13	No differences
NX-300	Station C	192.168.10.14	No differences
NX-100	Office Room	192.168.10.21	Differences exist
NX-100	Parking	192.168.10.22	No differences

Step 3. Check the contents and click the OK button.
Settings downloaded from the unit are reflected in the NX-300 Setting Software. To prevent them from being written to the Setting Software, click the Cancel button.

Step 4. To save the downloaded settings, select "File" → "Save" from the menu.
The unit setting file is saved.

16.6. Uploading PC Clock Settings

The system's clock can be corrected using an NTP function. However, the PC's clock information can also be uploaded to the NX-300 unit.

Step 1. Select "Tool" → "Upload clock settings."
A dialog for selecting the unit to which the clock information is to be uploaded is displayed.

Step 2. Select the desired unit from the unit list and click the OK button.
The NX-300's time setting is synchronized with the PC's clock.

16.7. Disabling Network Item Editing

Network setting item editing capability can be set.
This function prevents the PC from being incapable of connecting to the NX-300 unit when network settings are incorrectly rewritten and uploaded.

Step 1. Select "Tool" → "Option" from the menu.
The option screen is displayed.

Step 2. Uncheck the "Enable to change network settings" box.

Step 3. Click the OK button.
The option screen is closed.
Click on the "Network" tab to confirm that the network settings are disabled.

Tip
To re-edit network settings, check "Enable to change network settings" on the option screen.

16.8. Accessing the TOA Product Data Download Site

To access the TOA product data download site, select "Help" → "TOA data library" from the menu.
Then the PC's browser starts up.

16.9. Confirming NX-300 Setting Software Version Number

The NX-300 Setting Software's version number is displayed.
Select "Help" → "About" from the menu.

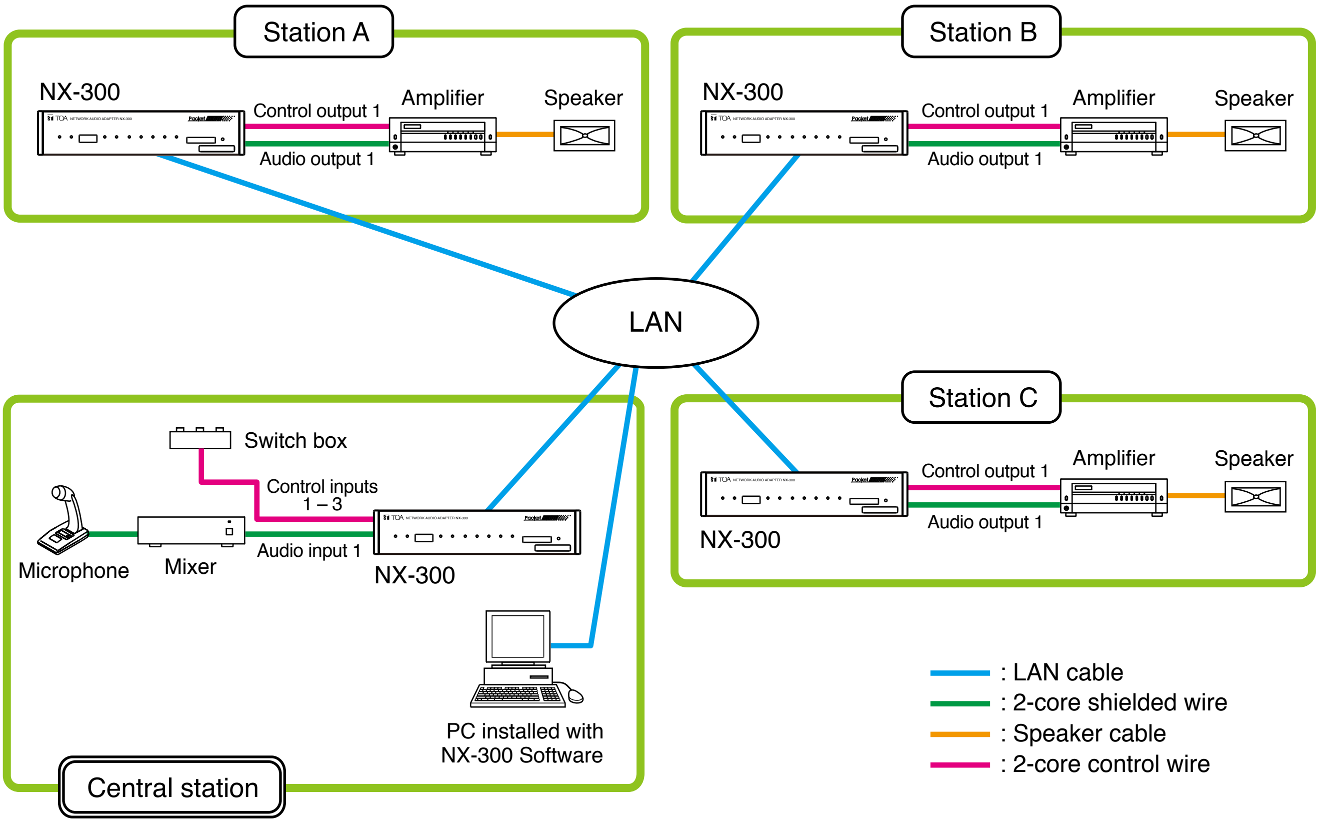
[Version upgrade information]
The latest versions of the NX-300 firmware, NX-300 Software (NX-300 Setting Software, NX-300 Finder, and NX-300 Operation Software), and manuals (NX-300 Installation Setup Manual and NX-300 Operations manual) can be found on the TOA Product Download site (http://www.toa-products.com/international). Access the download site to download and install the latest version.

17. SYSTEM SETTING EXAMPLES

Here, the setting procedures for Control Patterns, Broadcast Patterns, Contact Bridge Patterns, Control Inputs and Outputs, etc., are explained using system application examples.

17.1. System Application Examples

Broadcast systems used between network-connected railway stations are provided as examples.
These examples assume broadcasting between 3 stations (Stations A, B and C) are managed at a central station.


Station A
NX-300
Control output 1
Amplifier
Speaker
Audio output 1
Station B
NX-300
Control output 1
Amplifier
Speaker
Audio output 1
LAN
Station C
Control output 1
Amplifier
Speaker
Audio output 1
NX-300
Switch box
Control inputs 1 – 3
Microphone
Mixer
Audio input 1
NX-300
PC installed with NX-300 Software
Central station
: LAN cable
: 2-core shielded wire
: Speaker cable
: 2-core control wire

The following devices are installed at each station:

Installation Location	Devices Installed	Remarks
Central station	NX-300	
	Microphone	
	Mixer	Connect a line level audio signal from the mixer to the unit's Audio Input 1.
	Switch box	Use a momentary switch that only outputs a no-voltage signal while the switch is held down. Three switches are required to execute all application examples shown in this section.
	PC	Install the NX-300 Finder, NX-300 Setting Software and NX-300 Operation Software in advance. (See p. 3-3, "SOFTWARE INSTALLATION.")
Stations A, B and C	NX-300	
	Amplifier	Use amplifiers that can be activated with a no-voltage control signal. Further, connect the unit's Audio Output 1 to the amplifiers' line input terminals.
	Speaker	

17.2. Broadcasting Announcements Over Station Premises

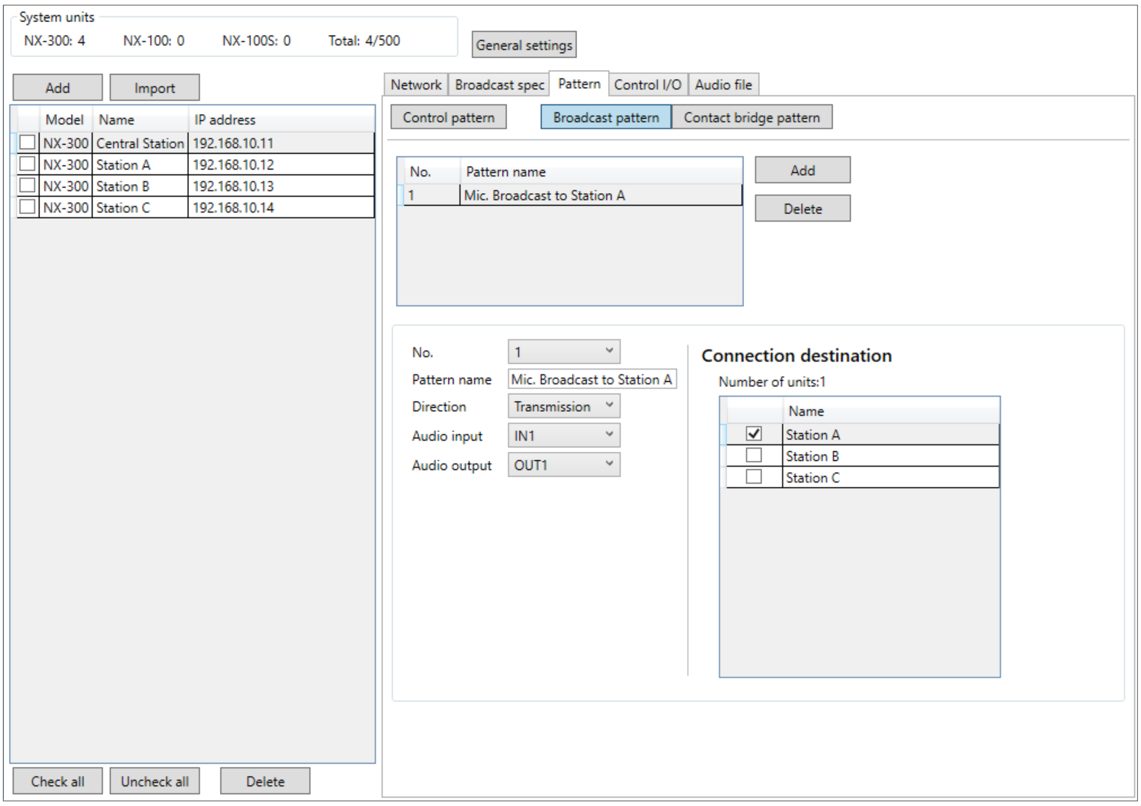
Application Example (1)

Make microphone announcements from the central station to Station A premises by actuating the amplifier with a make contact from the switch box.

17.2.1. Setting procedure

Step 1. Start the NX-300 Finder with the central station's PC and set the IP address of the NX-300 unit installed at each station. (For setting procedures, see p. 3-10, "STARTING THE NX-300 FINDER.")

Step 2. Start the NX-300 Setting Software with the central station's PC and set the broadcast patterns for the NX-300 unit installed at the central station as follows.


General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
Check all
Uncheck all
Delete

System units
NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

No.	Pattern name
1	Mic. Broadcast to Station A

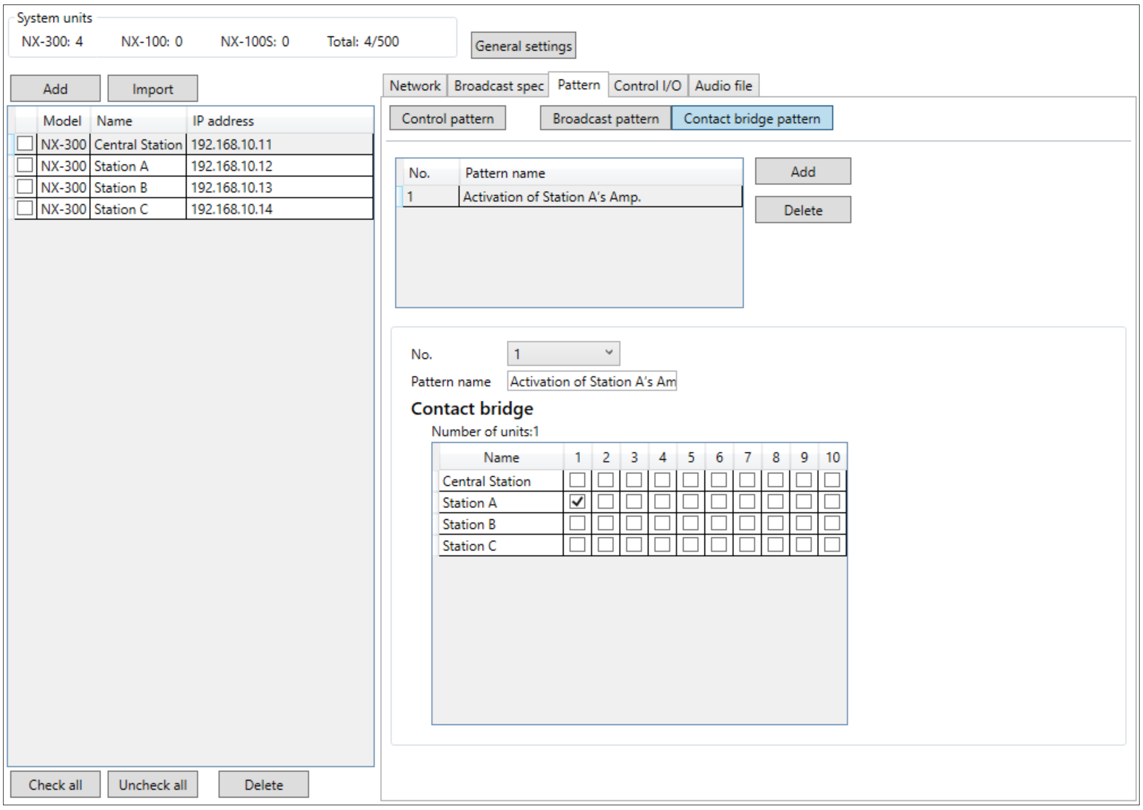
No. 1
Pattern name Mic. Broadcast to Station A
Direction Transmission
Audio input IN1
Audio output OUT1

Connection destination
Number of units:1

	Name
☑	Station A
☐	Station B
☐	Station C

Pattern name	Mic. Broadcast to Station A
Direction	Transmission
Audio input	IN1
Audio output	OUT1
Connection destination	NX-300 unit name of station A

Step 3. As in **Step 2**, set contact bridge patterns for the NX-300 unit installed at the central station using the NX-300 Setting Software as follows.


General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
Check all
Uncheck all
Delete

System units

NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

No.	Pattern name
1	Activation of Station A's Amp.

No. 1

Pattern name Activation of Station A's Am

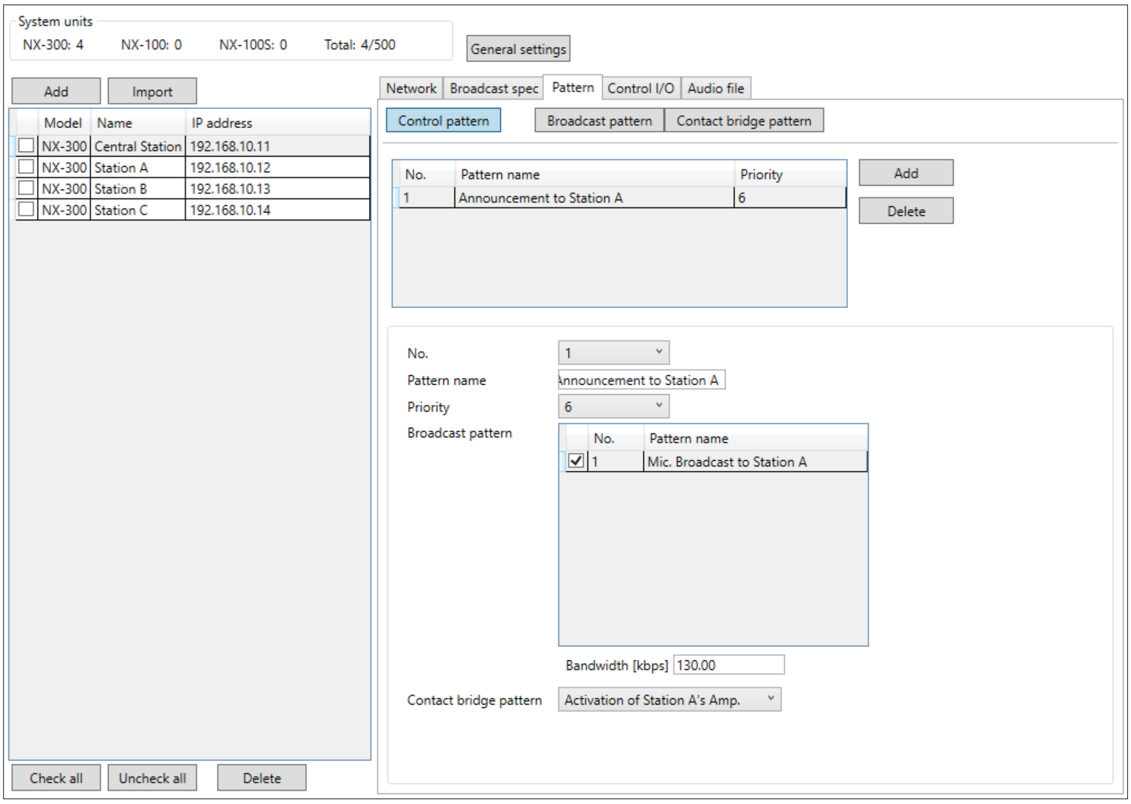
Contact bridge

Number of units:1

Name	1	2	3	4	5	6	7	8	9	10
Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station A	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Pattern name		Activation of Station A's Amp.
Contact bridge	Name	NX-300 unit name of station A
	Control output No.	Number of NX-300's control output terminal which station A's amplifier is connected to.

Step 4. As in **Step 2**, set control patterns for the NX-300 unit installed at the central station using the NX-300 Setting Software as follows.


General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
Check all
Uncheck all
Delete

System units

NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

No.	Pattern name	Priority
1	Announcement to Station A	6

No.: 1

Pattern name: Announcement to Station A

Priority: 6

Broadcast pattern

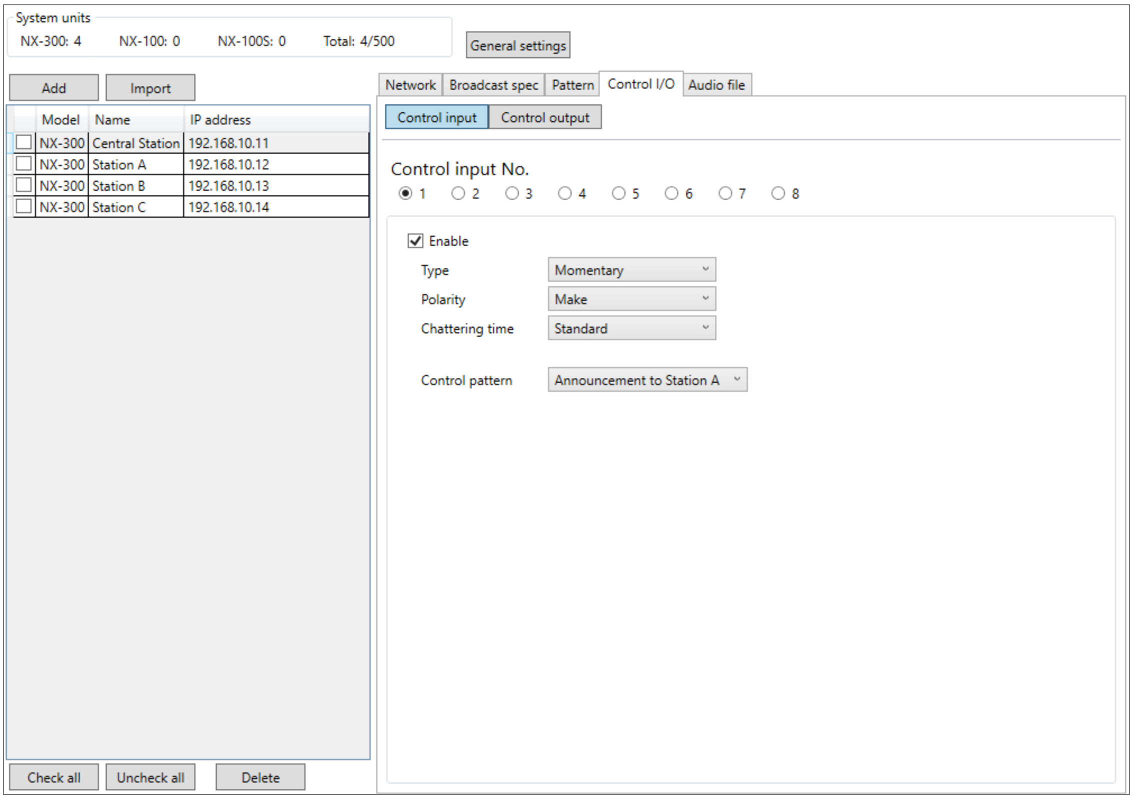
	No.	Pattern name
☑	1	Mic. Broadcast to Station A

Bandwidth [kbps]: 130.00

Contact bridge pattern: Activation of Station A's Amp.

Pattern name	Announcement to Station A
Priority	6
Broadcast pattern	Mic. Broadcast to Station A
Contact bridge pattern	Activation of Station A’s Amp.

Step 5. As in **Step 2**, perform contact input settings for the NX-300 unit installed at the central station using the NX-300 Setting Software as follows.



System units
NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

Control input No.
● 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8

☑ Enable
Type: Momentary
Polarity: Make
Chattering time: Standard
Control pattern: Announcement to Station A

General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control input
Control output
Check all
Uncheck all
Delete

Control input No.	1
Enable/Disable	Enable
Type	Momentary
Polarity	Make
Chattering time	Standard
Control pattern	Announcement to Station A

Step 6. Upload all settings to each unit.
For the upload procedure, see p. 3-70, "Uploading Unit Setting Files."

17.2.2. Operating procedure and device operation

Step 1. Hold down Switch 1 on the central station’s switch box.
The control output terminal of Station A’s NX-300 unit is closed, actuating Station A’s amplifier with a make contact.

Step 2. Make the announcement using the central station’s microphone while holding down the switch.
The announcement is broadcast over Station A.

Step 3. Release Switch 1.
The microphone announcement is terminated.

17.3. Broadcasting Departure Melodies Over the Station Premises

Application Example (2)

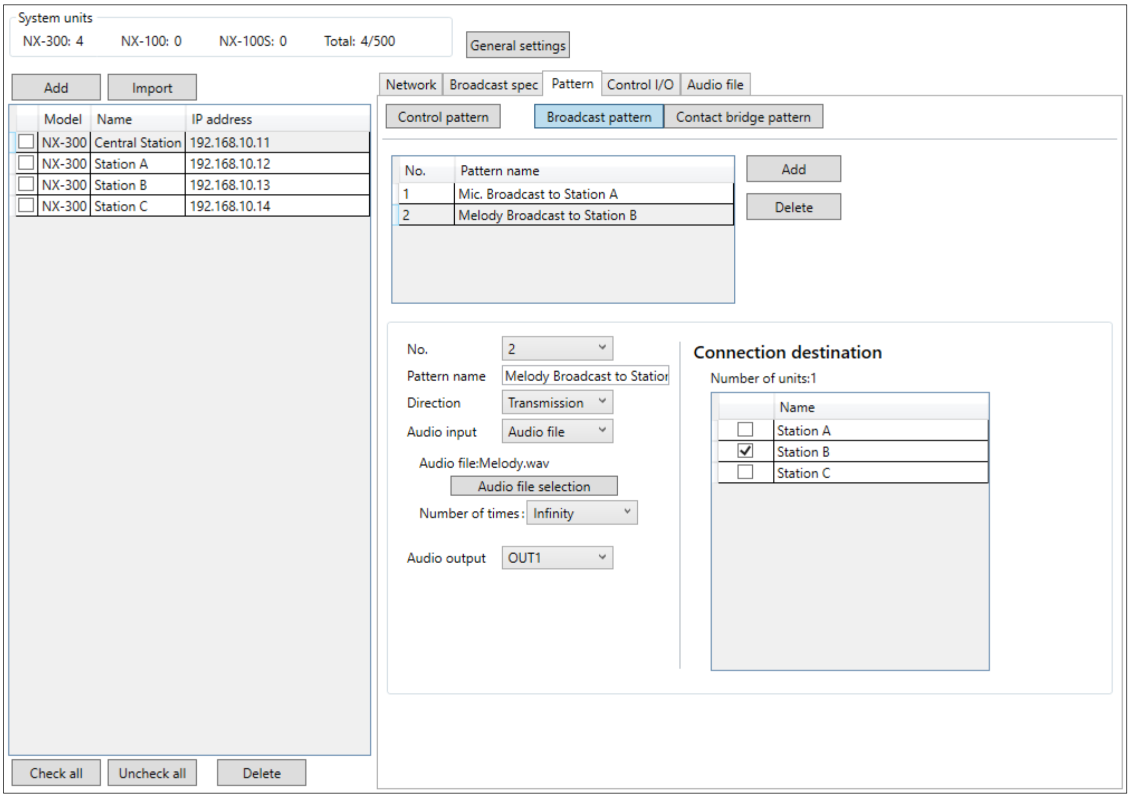
Broadcast a departure melody from the central station to Station B by actuating the amplifier with a make contact from the switch box.

17.3.1. Setting procedure

Step 1. Start the NX-300 Finder with the central station's PC and set the IP address of the NX-300 unit installed at each station. (For setting procedures, see p. 3-10, "STARTING THE NX-300 FINDER.")

Step 2. Using the central station's PC, upload the departure melody audio source (Melody.wav) to the NX-300 unit installed at the central station.
For the NX-300 Setting Software's audio file upload procedure, see p. 3-65, "AUDIO FILE SETTINGS."
For the browser connection's audio file upload procedure, see p. 4-7, "AUDIO FILE MANAGEMENT."

Step 3. Start the NX-300 Setting Software with the central station's PC and set the broadcast patterns for the NX-300 unit installed at the central station as follows:



System units
NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

No.	Pattern name
1	Mic. Broadcast to Station A
2	Melody Broadcast to Station B

No. 2
Pattern name Melody Broadcast to Statior
Direction Transmission
Audio input Audio file
Audio file:Melody.wav
Number of times : Infinity
Audio output OUT1

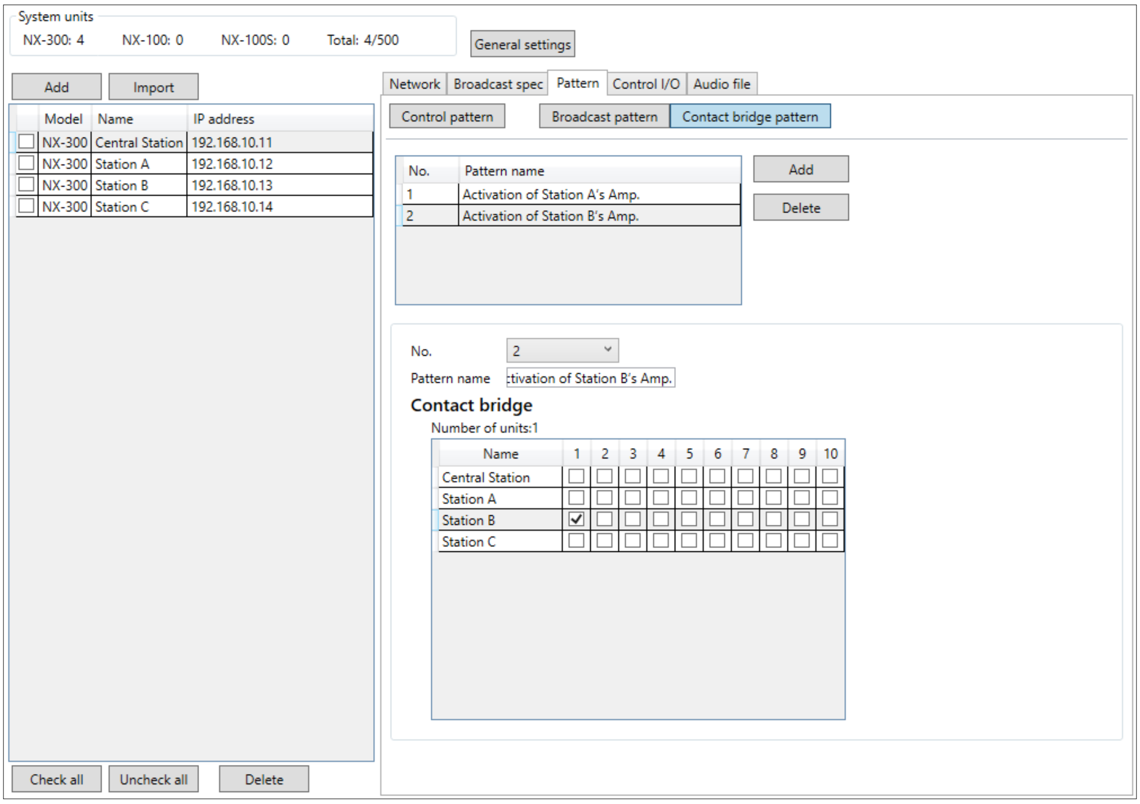
Connection destination
Number of units:1

	Name
☐	Station A
☑	Station B
☐	Station C

General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
Audio file selection
Check all
Uncheck all
Delete

Pattern name	Melody Broadcast to Station B
Direction	Transmission
Audio input	Audio file : Melody. wav Number of times : Infinity
Audio output	OUT1
Connection destination	NX-300 unit name of station B

Step 4. As in **Step 3**, set contact bridge patterns for the NX-300 unit installed at the central station using the NX-300 Setting Software as follows.


System units
General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
Check all
Uncheck all
Delete

NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

No.	Pattern name
1	Activation of Station A's Amp.
2	Activation of Station B's Amp.

No. 2

Pattern name ctivation of Station B's Amp.

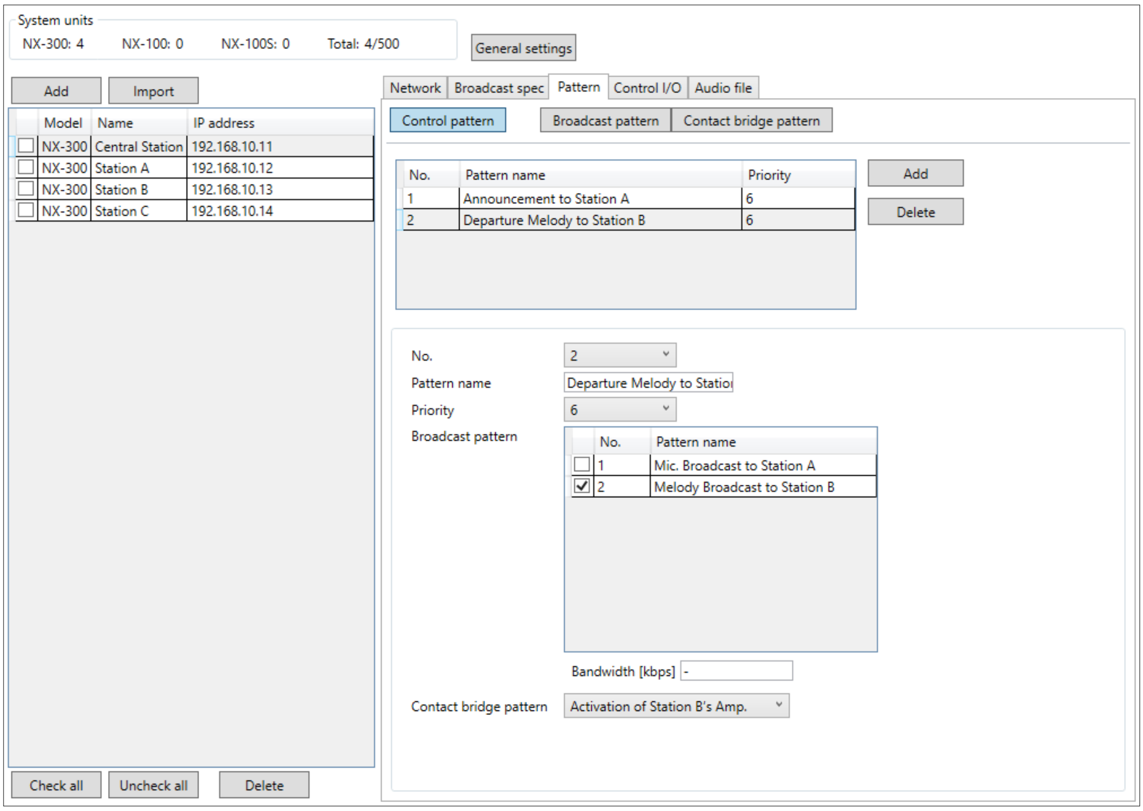
Contact bridge

Number of units:1

Name	1	2	3	4	5	6	7	8	9	10
Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station B	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐
Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Pattern name		Activation of Station B's Amp.
Contact bridge	Name	NX-300 unit name of station B
	Control output No.	Number of NX-300's control output terminal which station B's amplifier is connected to.

Step 5. As in **Step 3**, set control patterns for the NX-300 unit installed at the central station using the NX-300 Setting Software as follows.


General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
Check all
Uncheck all
Delete

System units
NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

No.	Pattern name	Priority
1	Announcement to Station A	6
2	Departure Melody to Station B	6

No. 2

Pattern name Departure Melody to Statio

Priority 6

Broadcast pattern

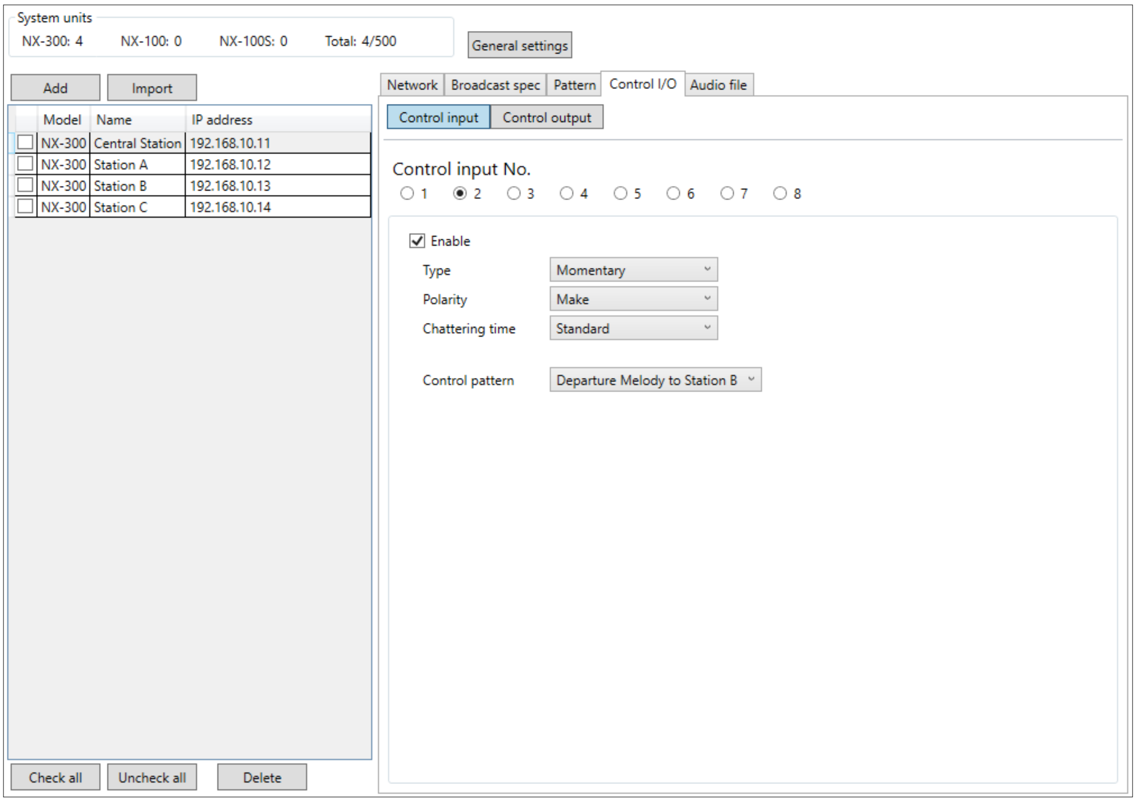
	No.	Pattern name
☐	1	Mic. Broadcast to Station A
☑	2	Melody Broadcast to Station B

Bandwidth [kbps] -

Contact bridge pattern Activation of Station B's Amp.

Pattern name	Departure Melody to Station B
Priority	6
Broadcast pattern	Melody Broadcast to Station B
Contact bridge pattern	Activation of Station B’s Amp.

Step 6. As in **Step 3**, perform contact input settings for the NX-300 unit installed at the central station using the NX-300 Setting Software as follows.


General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control input
Control output
Check all
Uncheck all
Delete

System units
NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

Control input No.
○ 1 ● 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8

☑ Enable

Type: Momentary

Polarity: Make

Chattering time: Standard

Control pattern: Departure Melody to Station B

Control input No.	2
Enable/Disable	Enable
Type	Momentary
Polarity	Make
Chattering time	Standard
Control pattern	Departure Melody to Station B

Step 7. Upload all settings to each unit.
For the upload procedure, see p. 3-70, "Uploading Unit Setting Files."

17.3.2. Operating Procedure and Unit Operation

Step 1. Hold down Switch 2 on the central station's switch box.
The control output terminal of Station B's NX-300 unit is closed, actuating Station B's amplifier with a make contact.
The departure melody is broadcast while Switch 2 is held down.

Step 2. Release Switch 2.
The departure melody broadcast is terminated.

17.4. Broadcasting Departure Melodies Using the PC

Application Example (3)

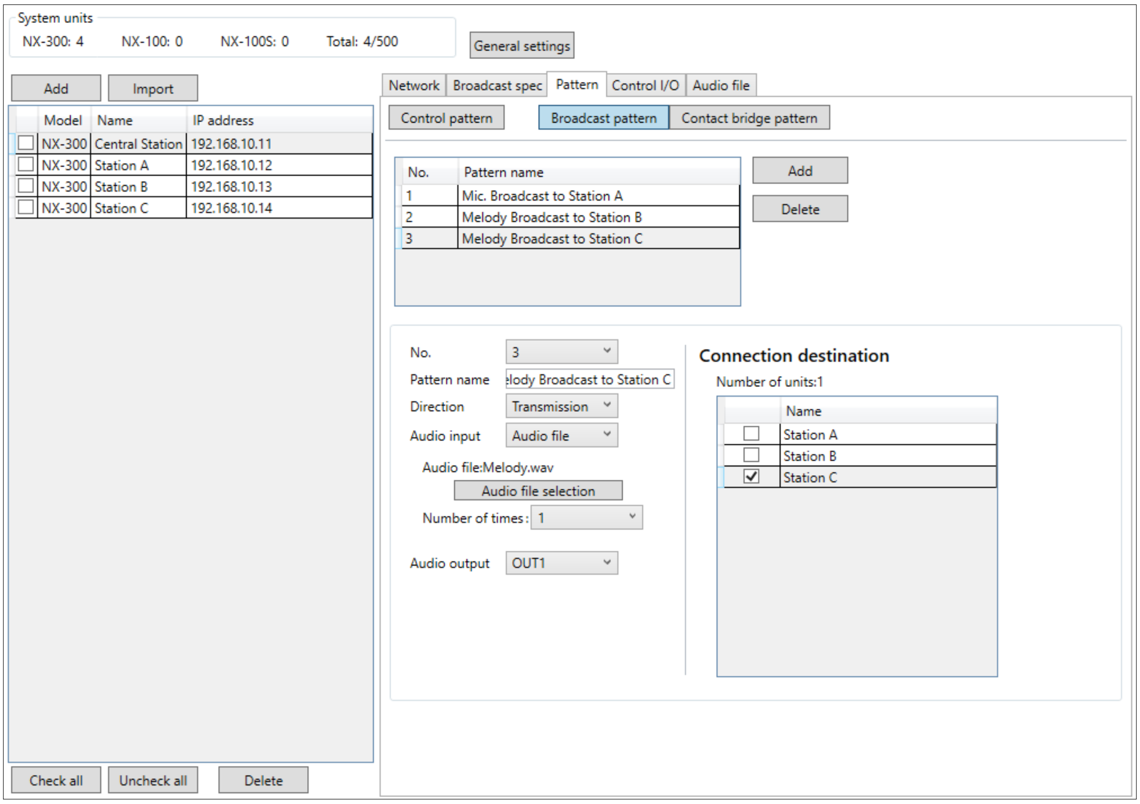
Broadcast the departure melody from the central station to Station C by using the NX-300 Operation Software to actuate the amplifier with a make contact.

17.4.1. Setting procedure

Step 1. Start the NX-300 Finder with the central station's PC and set the IP address of the NX-300 unit installed at each station. (For setting procedures, see p. 3-10, "STARTING THE NX-300 FINDER.")

Step 2. Using the central station's PC, upload the departure melody audio source (Melody.wav) to the NX-300 unit installed at the central station.
For the NX-300 Setting Software's audio file upload procedure, see p. 3-65, "AUDIO FILE SETTINGS."
For the browser connection's audio file upload procedure, see p. 4-7, "AUDIO FILE MANAGEMENT."

Step 3. Start the NX-300 Setting Software with the central station's PC and set the broadcast patterns for the NX-300 unit installed at the central station as follows.


System units
General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
Audio file selection
Check all
Uncheck all
Delete

System units
NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

No.	Pattern name
1	Mic. Broadcast to Station A
2	Melody Broadcast to Station B
3	Melody Broadcast to Station C

No.: 3
Pattern name: ·lody Broadcast to Station C
Direction: Transmission
Audio input: Audio file
Audio file:Melody.wav
Number of times : 1
Audio output: OUT1

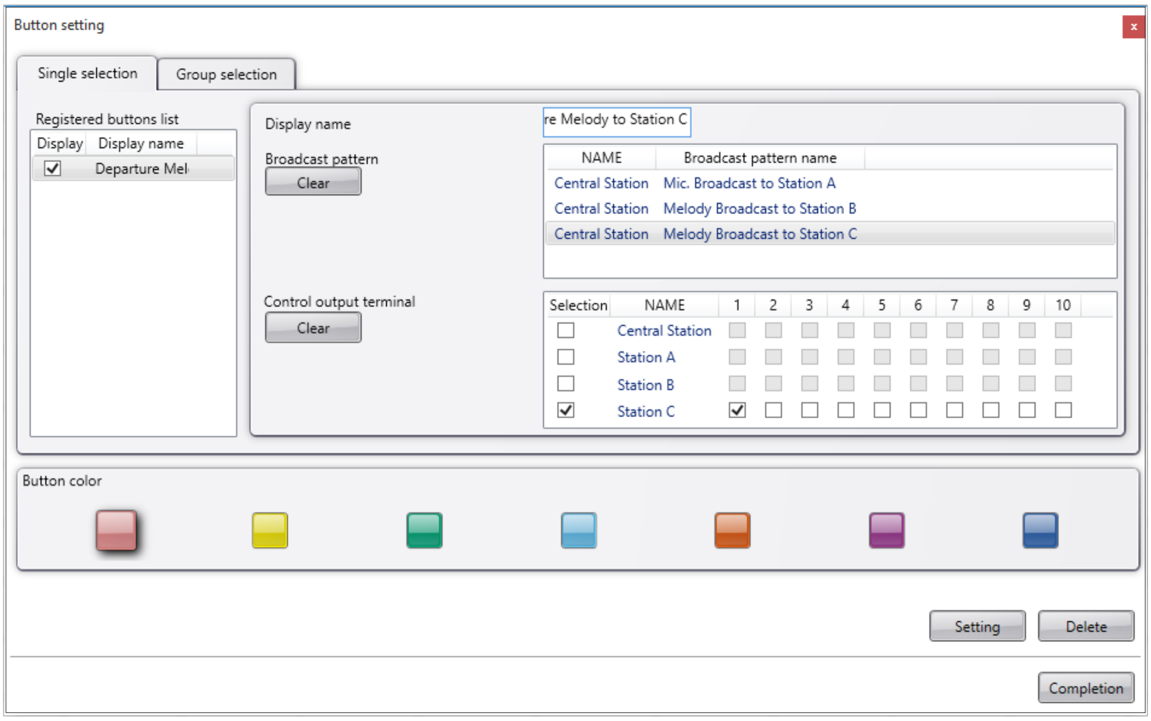
Connection destination
Number of units:1

	Name
☐	Station A
☐	Station B
☑	Station C

Pattern name	Melody Broadcast to Station C
Direction	Transmission
Audio input	Audio file : Melody. wav Number of times : 1
Audio output	OUT1
Connection destination	NX-300 unit name of station C

Step 4. Upload all settings to each device.
For the upload procedure, see p. 3-70, "Uploading Unit Setting Files."

Step 5. Start the NX-300 Operation Software with the central station's PC and set the Individual Selection buttons for the NX-300 unit installed at the central station as follows.


Button setting
×
Single selection
Group selection
Button color
Setting
Delete
Completion

Registered buttons list

Display	Display name
☑	Departure Mel

Display name: re Melody to Station C

Broadcast pattern
Clear

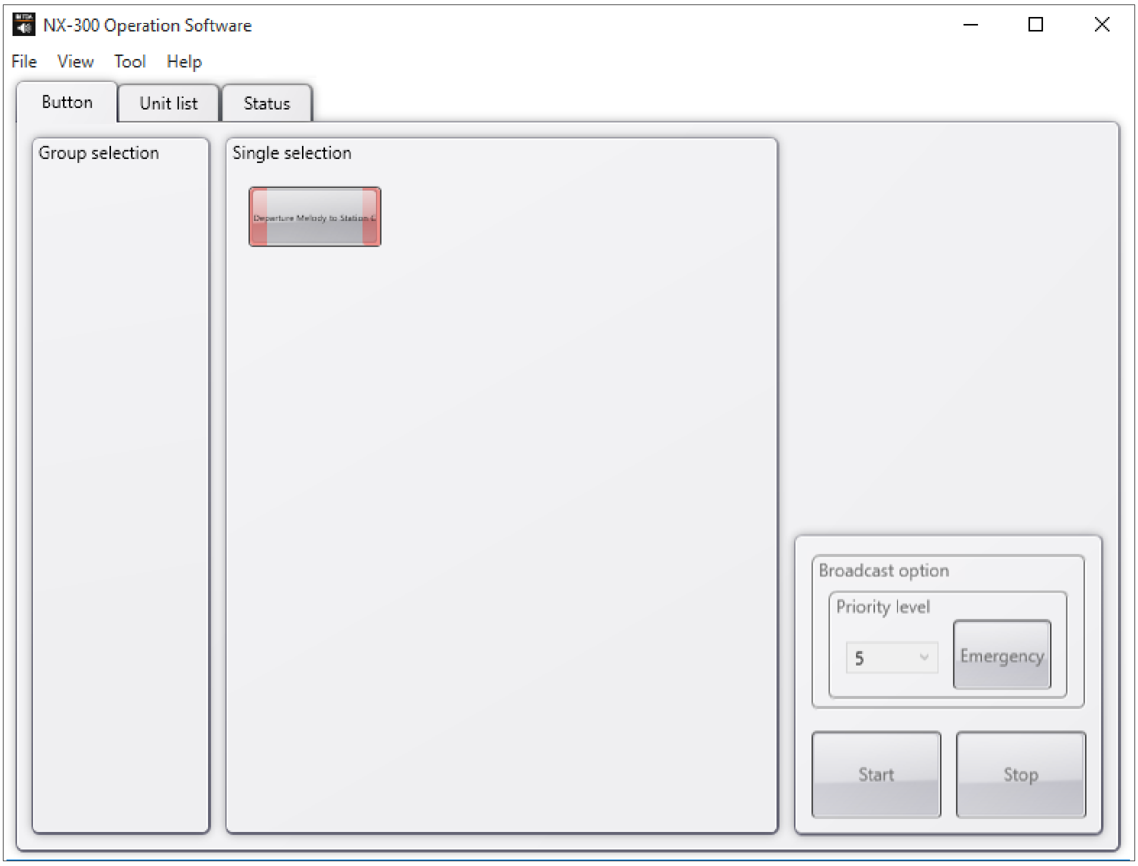
NAME	Broadcast pattern name
Central Station	Mic. Broadcast to Station A
Central Station	Melody Broadcast to Station B
Central Station	Melody Broadcast to Station C

Control output terminal
Clear

Selection	NAME	1	2	3	4	5	6	7	8	9	10
☐	Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☑	Station C	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐

Display name	Departure Melody to Station C
Broadcast pattern	Melody Broadcast to Station C
Control output No.	Number of NX-300's control output terminal which station C's amplifier is connected to.

17.4.2. Operating procedure and unit operation


NX-300 Operation Software
File
View
Tool
Help
Button
Unit list
Status
Group selection
Single selection
Departure Melody to Station C
Broadcast option
Priority level
5
Emergency
Start
Stop

Step : Using the NX-300 Operation Software, click on the "Departure Melody to Station C" button.
Station C’s NX-300 control output terminal 1 is closed.
Station C’s amplifier is actuated with a make contact and the departure melody is broadcast.

17.5. Using a Microphone to Make an Emergency Broadcast from the Central Station to Station C during a Departure Melody Broadcast

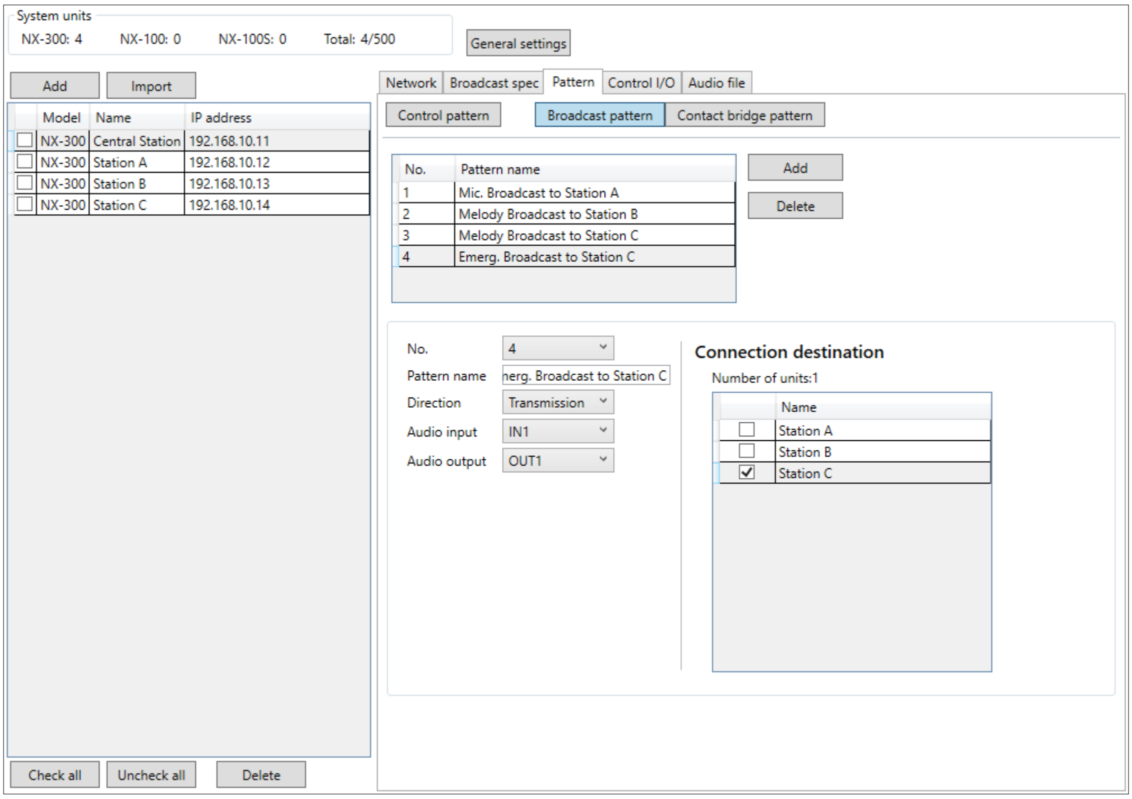
Application Example (4)

With the NX-300 Operation Software, actuate the amplifier with a make contact and using a microphone, make the Emergency Broadcast from the central station to Station C during the departure melody broadcast.

17.5.1. Setting procedure

Step 1. Follow **Steps 1 – 5** of Application Example (3) to perform settings.

Step 2. Using the NX-300 Setting Software, set the broadcast patterns as follows for the NX-300 unit installed at the central station.


General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
Check all
Uncheck all
Delete

System units
NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

No.	Pattern name
1	Mic. Broadcast to Station A
2	Melody Broadcast to Station B
3	Melody Broadcast to Station C
4	Emerg. Broadcast to Station C

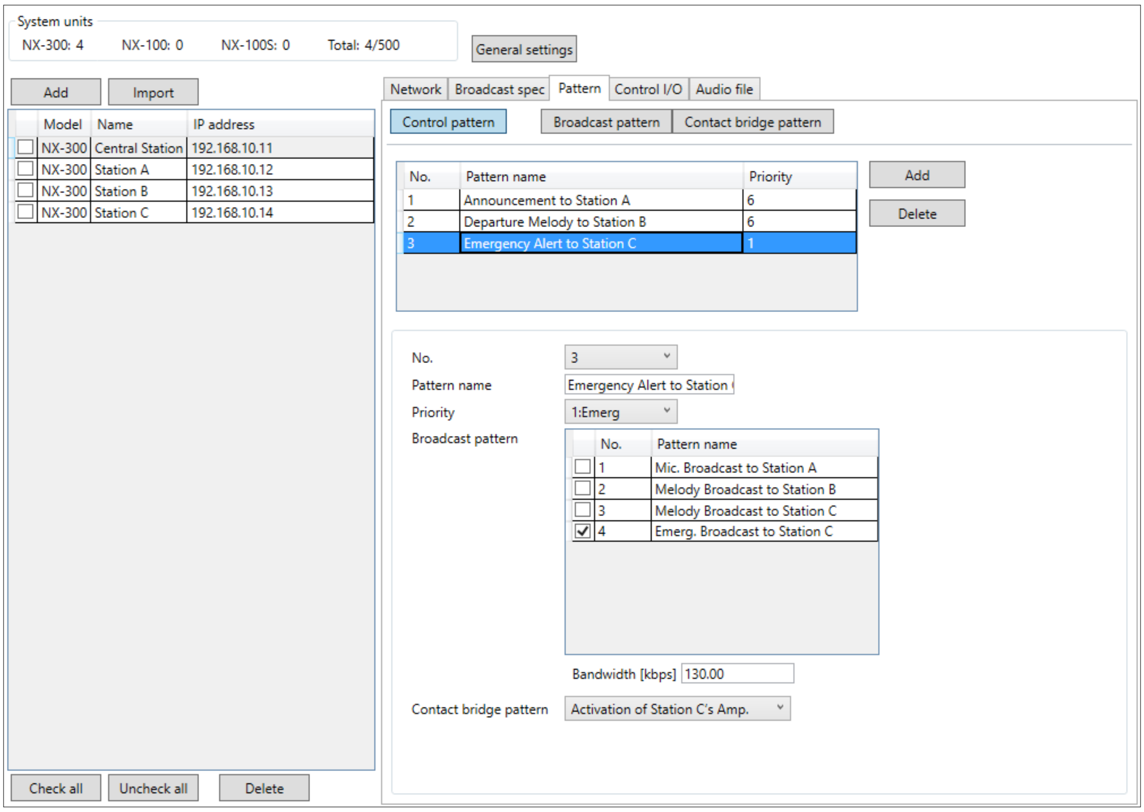
No. 4
Pattern name herg. Broadcast to Station C
Direction Transmission
Audio input IN1
Audio output OUT1

Connection destination
Number of units:1

	Name
☐	Station A
☐	Station B
☑	Station C

Pattern name	Emerg. Broadcast to Station C
Direction	Transmission
Audio input	IN1
Audio output	OUT1
Connection destination	NX-300 unit name of station C

Step 3. As in **Step 2**, set control patterns for the NX-300 unit installed at the station C using the NX-300 Setting Software as follows.



General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control pattern
Broadcast pattern
Contact bridge pattern
Add
Delete
Check all
Uncheck all
Delete

System units

NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

No.	Pattern name	Priority
1	Announcement to Station A	6
2	Departure Melody to Station B	6
3	Emergency Alert to Station C	1

No. 3

Pattern name Emergency Alert to Station (

Priority 1:Emerg

Broadcast pattern

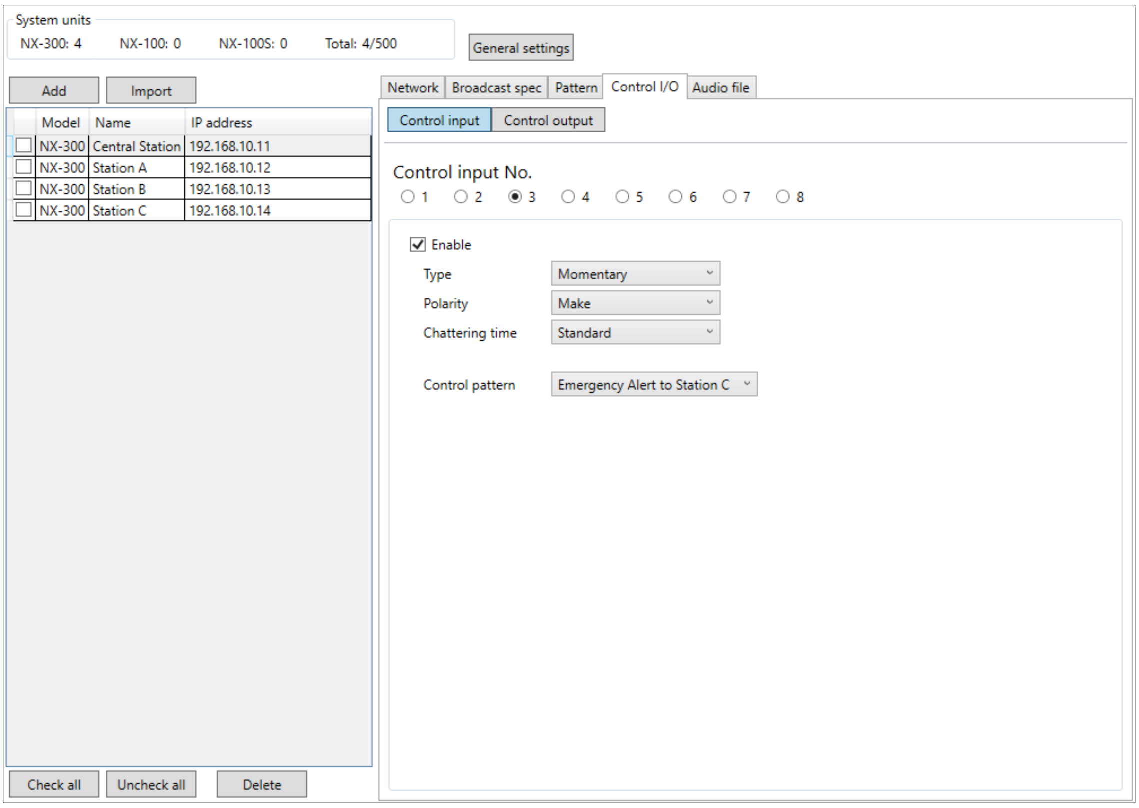
	No.	Pattern name
☐	1	Mic. Broadcast to Station A
☐	2	Melody Broadcast to Station B
☐	3	Melody Broadcast to Station C
☑	4	Emerg. Broadcast to Station C

Bandwidth [kbps] 130.00

Contact bridge pattern Activation of Station C's Amp.

Pattern name	Emergency Alert to Station C
Priority	1
Broadcast pattern	Emerg. Broadcast to Station C
Contact bridge pattern	Activation of Station C’s Amp.

Step 4. As in **Step 2**, perform contact input settings for the NX-300 unit installed at the central station using the NX-300 Setting Software as follows.


System units
General settings
Add
Import
Network
Broadcast spec
Pattern
Control I/O
Audio file
Control input
Control output
Check all
Uncheck all
Delete

NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

Control input No.
○ 1 ○ 2 ● 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8

☑ Enable
Type: Momentary
Polarity: Make
Chattering time: Standard
Control pattern: Emergency Alert to Station C

Control input No.	3
Enable/Disable	Enable
Type	Momentary
Polarity	Make
Chattering time	Standard
Control pattern	Emergency Alert to Station C

Step 5. Upload all settings to each unit.
For the upload procedure, see p. 3-70, "Uploading Unit Setting Files."

17.5.2. Operating procedure and unit operation

Step 1. Using the NX-300 Operation Software, click on the "Departure Melody to Station C" button.
Station C’s NX-300 control output terminal 1 is closed.
Station C’s amplifier is actuated with a make contact and the departure melody is broadcast.

Step 2. When an Emergency Broadcast is required, continue to press Switch 3.
The departure melody broadcast is terminated.

Step 3. Make announcements at the central station’s microphone while holding down Switch 3.
The announcements are broadcast over Station C.

Step 4. Release Switch 3.
The microphone announcement is terminated.

17.6. Reducing the Nighttime Broadcasting Volume

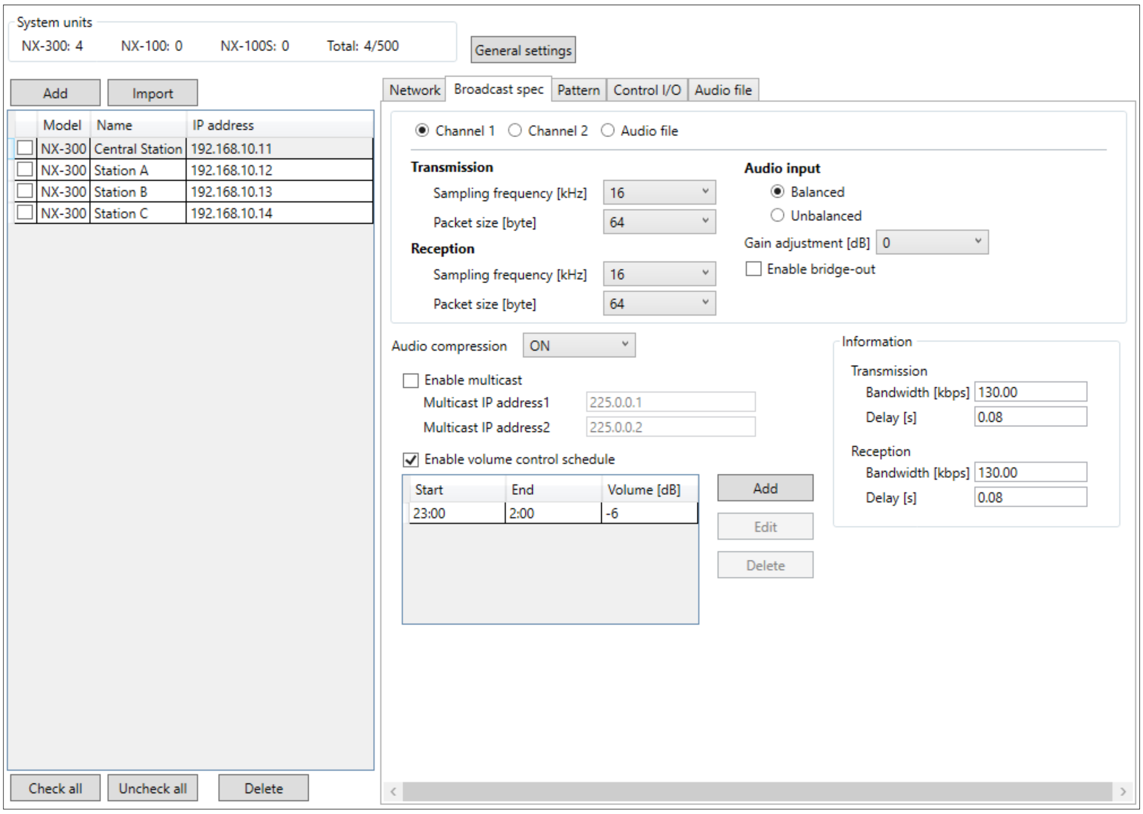
Application Example (5)

Station premise broadcasts at Stations A, B and C are made at a lower volume at night (11:00 PM – 2:00 AM) than during daytime hours.

17.6.1. Setting procedure

Step 1. Start the NX-300 Finder with the central station's PC and set the IP address of the NX-300 unit installed at each station. (For setting procedures, see p. 3-10, "STARTING THE NX-300 FINDER.")

Step 2. Using the NX-300 Setting Software, set the volume control schedule as follows for the NX-300 unit installed at each station.



System units
NX-300: 4 NX-100: 0 NX-100S: 0 Total: 4/500

	Model	Name	IP address
☐	NX-300	Central Station	192.168.10.11
☐	NX-300	Station A	192.168.10.12
☐	NX-300	Station B	192.168.10.13
☐	NX-300	Station C	192.168.10.14

● Channel 1 ○ Channel 2 ○ Audio file

Transmission
Sampling frequency [kHz] 16
Packet size [byte] 64

Reception
Sampling frequency [kHz] 16
Packet size [byte] 64

Audio input
● Balanced
○ Unbalanced
Gain adjustment [dB] 0
☐ Enable bridge-out

Audio compression ON

☐ Enable multicast
Multicast IP address1 225.0.0.1
Multicast IP address2 225.0.0.2

☑ Enable volume control schedule

Start	End	Volume [dB]
23:00	2:00	-6

Information
Transmission
Bandwidth [kbps] 130.00
Delay [s] 0.08
Reception
Bandwidth [kbps] 130.00
Delay [s] 0.08

Enable	ON
Start	Hour : 23 Minute : 00
End	Hour : 02 Minute : 00
Volume [dB]	– 6

Step 3. Upload all settings to each unit.
For the upload procedure, see p. 3-70, "Uploading Unit Setting Files."

17.6.2. Unit operation

At each station, the daily broadcast volume between the hours of 11:00 PM and 2:00 AM is 6 dB lower than during daytime hours.

Tip: After setting completion, no further operations are required for each unit.

Chapter 4

SETTINGS AND MANAGEMENT BY BROWSER

1. OUTLINE OF SETTINGS USING BROWSER

For NX-300 units located outside the broadcast communication range of the PC managing the system, use the browser* of another PC to connect to these NX-300 units and rewrite their network settings.
Only their network settings and maintenance functions can be operated from the remote browser.

* Recommended Windows browser: Internet Explorer 11/Google Chrome/Mozilla Firefox/Microsoft Edge

Notes

- Not all settings can be performed via the browser. After updating the network settings, add the units manually using a PC installed with the NX-300 Setting Software, then perform the required settings. (See p. 3-8, "SETTING PROCEDURE.")
- There may be cases in which an IP address is duplicated, or the PC and NX-300 unit are set up to be connected to different networks. When performing network settings using a browser, connect only one (1) NX-300 unit within the same network, or isolate from the network the PC and unit to be set up, then set these after directly connecting them with Ethernet crossover cables.
- If the power supply is shut off during setting change, this may cause a system failure.
- Updated settings become valid only after the unit is restarted. Be sure to restart the unit if settings are changed. Broadcasts are interrupted during restart.

2. DISPLAYING THE SETTING MENU SCREEN

Note
Perform network settings for the PC in advance to allow communication between it and the NX-300 units.
If the network settings are not correctly performed, the user authentication screen cannot be displayed.

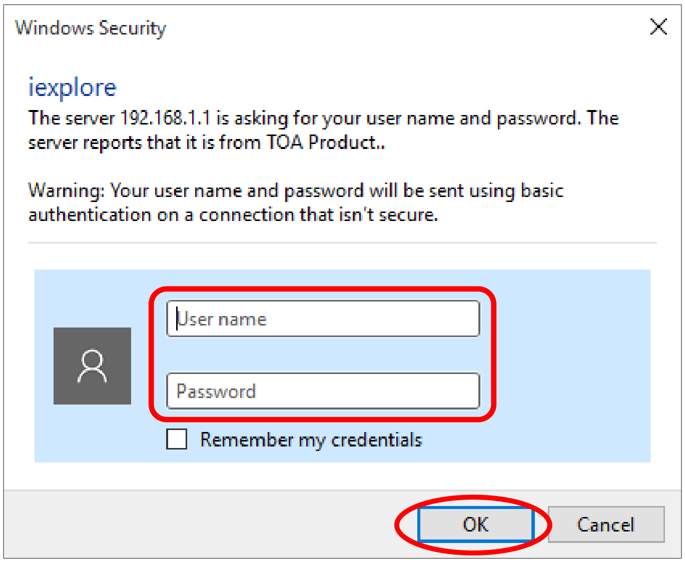
Step 1. Start up the browser and enter the URL.

Note
The unit's default IP address is 192.168.1.1, and web server port number is 80.
When the web server port number is 80, the ":80" description can be omitted as follows:

URL	Example
http://IP address:Web server port number	http://192.168.1.1

The user authentication screen appears.

Note
This screen will look slightly different depending on the browser being used.



Windows Security

iexplore

The server 192.168.1.1 is asking for your user name and password. The server reports that it is from TOA Product..

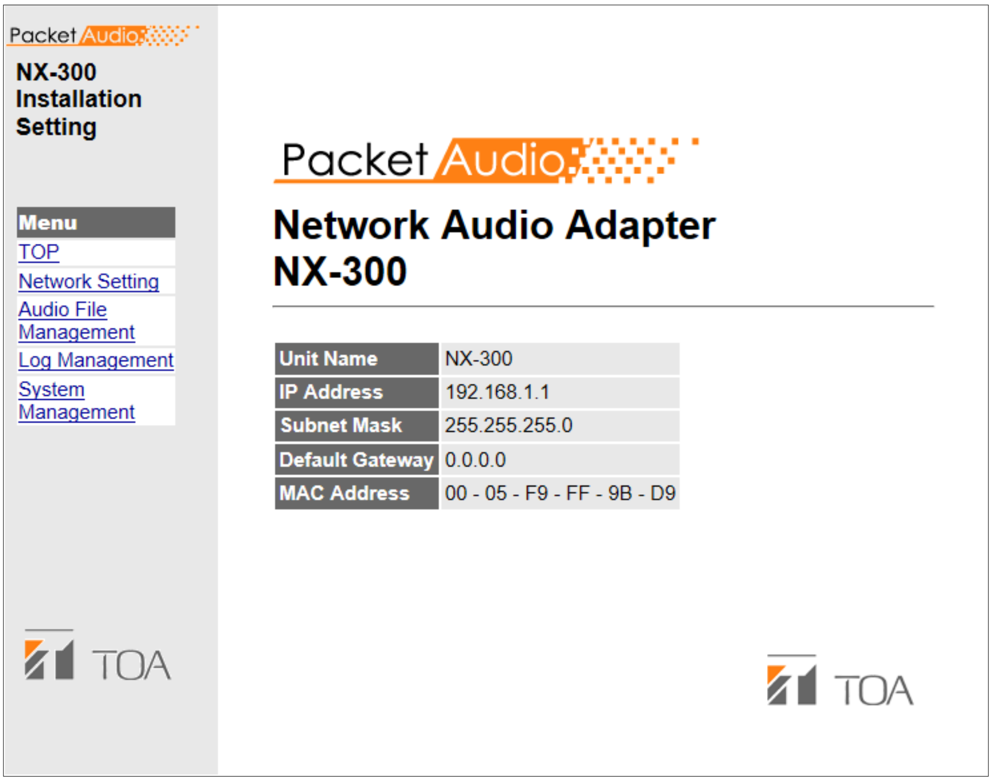
Warning: Your user name and password will be sent using basic authentication on a connection that isn't secure.

Step 2. Enter the user name and the password, then press the OK button.

Notes
- For the user name, enter the system name set for the NX-300 unit to be connected.
- The user name and the password are case-sensitive.

The system name is factory-preset to "NX-300" and the password to "guest."
See p. 4-21 for information on how to change the system name and password.

The setting menu screen is displayed once you have entered the correct user name and the password.


Packet Audio
NX-300
Installation
Setting
Menu
TOP
Network Setting
Audio File Management
Log Management
System Management
TOA

Packet Audio

Network Audio Adapter
NX-300

Unit Name	NX-300
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
MAC Address	00 - 05 - F9 - FF - 9B - D9

Note
Use the menu located on the left of the screen to display each setting screen. These screens will not be displayed properly using the browser's "Back" or "Forward" buttons.

3. MENU ITEMS

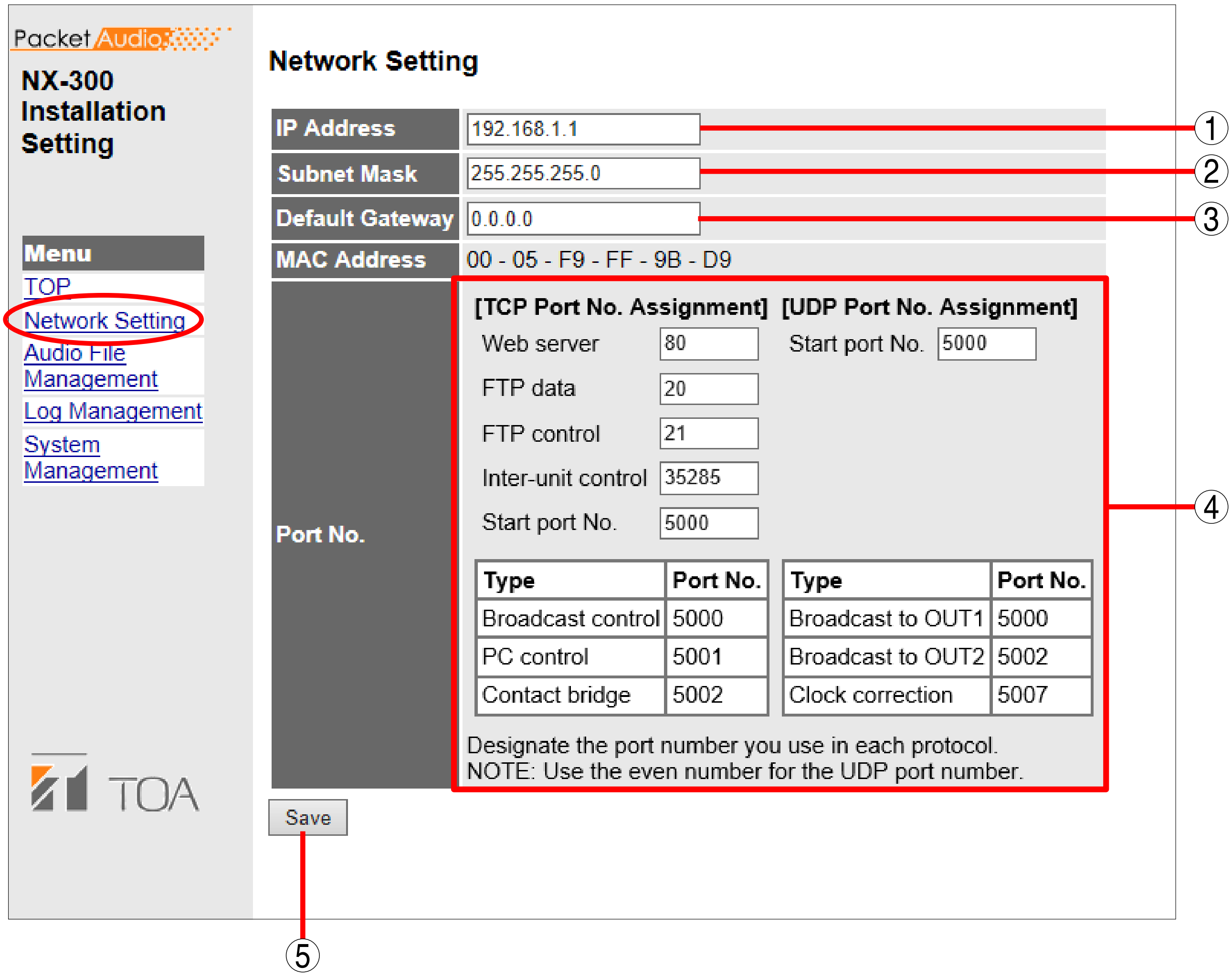
Menu

Network Setting (See p. 4-5.)	Change the connected NX-300 unit's IP address, subnet mask and default gateway.
Audio File Management (See p. 4-7.)	Audio files stored in the connected NX-300 unit are displayed. Audio files can also be added or deleted.
Log Management (See p. 4-11.)	Operation logs and stream logs can be browsed and saved, and the current operating status can also be browsed.
System Management (See p. 4-19.)	Change passwords or upload and download unit setting files.

Note
The system management menu is used for the maintenance of the NX-300 unit for which system and function settings have been completed using the software.

4. NETWORK SETTING

Click "Network Setting" indication on the menu on the left of the screen.



Network Setting

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
MAC Address	00 - 05 - F9 - FF - 9B - D9

Port No.

[TCP Port No. Assignment]

Web server	80
FTP data	20
FTP control	21
Inter-unit control	35285
Start port No.	5000

Type	Port No.
Broadcast control	5000
PC control	5001
Contact bridge	5002

[UDP Port No. Assignment]

Start port No.	5000

Type	Port No.
Broadcast to OUT1	5000
Broadcast to OUT2	5002
Clock correction	5007

Designate the port number you use in each protocol.
NOTE: Use the even number for the UDP port number.

1. IP Address

Enter the connected NX-300 unit's IP address.
(Default: 192.168.1.1)

2. Subnet Mask

Set the subnet mask. (Default: 255.255.255.0)

3. Default Gateway

Set this gateway if using unit outside the assigned subnet. (Default: 0.0.0.0)

4. Port No.

[TCP Port No. Assignment]

Web server:	Enter the web server port number (1 – 65535). (Default: 80)
FTP data:	Enter the FTP server data port number. (Default: 20)
FTP control:	Enter the FTP server control port number. (Default: 21)
Inter-unit control:	Enter the control port number between NX-300 units. (Default: 35285)
Start port No.:	Enter the first number of the unit's TCP port (other than the web server, FTP and inter-unit control). (Default: 5000)
Type and Port No.:	A list of port types and numbers used for controlling NX-100/100S units and the NX-300 Operation Software is displayed. The TCP ports are assigned as follows:

Type	Port No.	Default
Broadcast control	TCP Start port No. + 0	5000
PC control	TCP Start port No. + 1	5001
Contact bridge	TCP Start port No. + 2	5002

[UDP Port No. Assignment]

Start port No.:	Enter the unit's first UDP port number. (Default: 5000)
Type and Port No.:	A list of port types and port numbers used for the UDP is displayed. The UDP ports are assigned as follows:

Type	Port No.	Default
Broadcast to OUT1	UDP Start port No. + 0	5000
Broadcast to OUT2	UDP Start port No. + 2	5002
Clock correction	UDP Start port No. + 7	5007

5. Save button

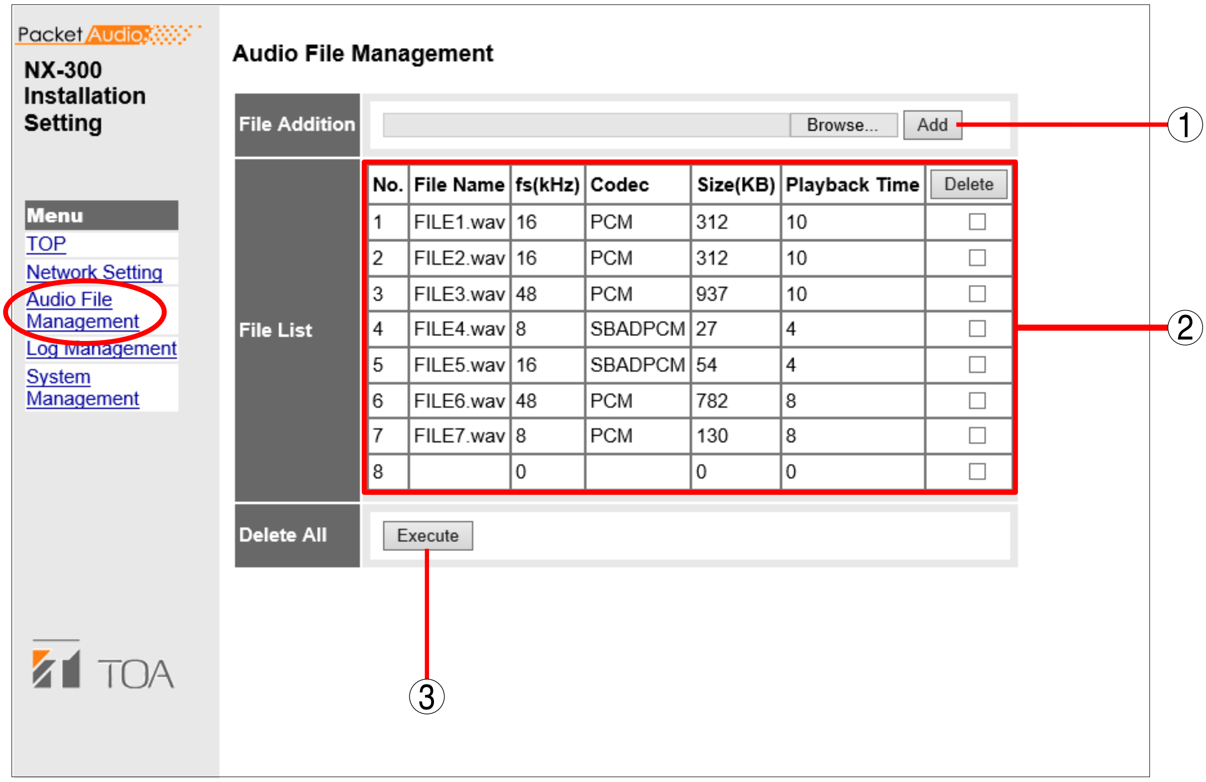
Writes settings to the connected NX-300 unit's internal unit setting file.

Notes

Changed network settings are not immediately updated. The unit's settings change to the new setting contents upon restart. Restart the unit by pressing the restart button that appears at the upper right of the screen whenever settings have been changed.

5. AUDIO FILE MANAGEMENT

Click "Audio File Management" indication on the menu at the left side of the screen.


Packet Audio
NX-300
Installation
Setting
Menu
TOP
Network Setting
Audio File Management
Log Management
System Management
TOA
Audio File Management
File Addition
Browse...
Add
File List
Delete All
Execute
①
②
③

No.	File Name	fs(kHz)	Codec	Size(KB)	Playback Time	Delete
1	FILE1.wav	16	PCM	312	10	☐
2	FILE2.wav	16	PCM	312	10	☐
3	FILE3.wav	48	PCM	937	10	☐
4	FILE4.wav	8	SBADPCM	27	4	☐
5	FILE5.wav	16	SBADPCM	54	4	☐
6	FILE6.wav	48	PCM	782	8	☐
7	FILE7.wav	8	PCM	130	8	☐
8		0		0	0	☐

1. **File Addition**
   Adds audio files to the connected NX-300 unit.

2. **File List**
   Displays the list of all audio files registered in the connected NX-300 unit.
   When wishing to delete audio files, check the desired file and click the Delete button.

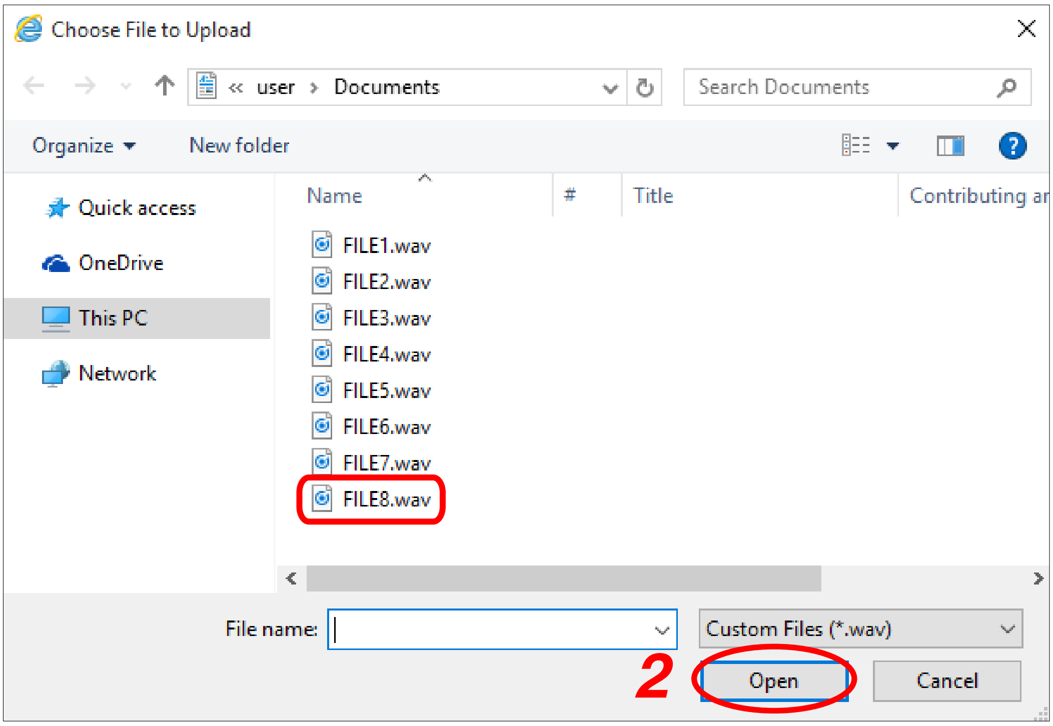
File Name:	Displays the filename.
fs (kHz):	Displays the sampling frequency of the audio file.
Codec:	Displays the compression format of the audio file.
Size (KB):	Displays the size of the audio file.
Playback Time:	Displays the length (second) of the audio file.

3. **Delete All**
   To delete all audio files registered in the connected NX-300 unit, click the Execute button.

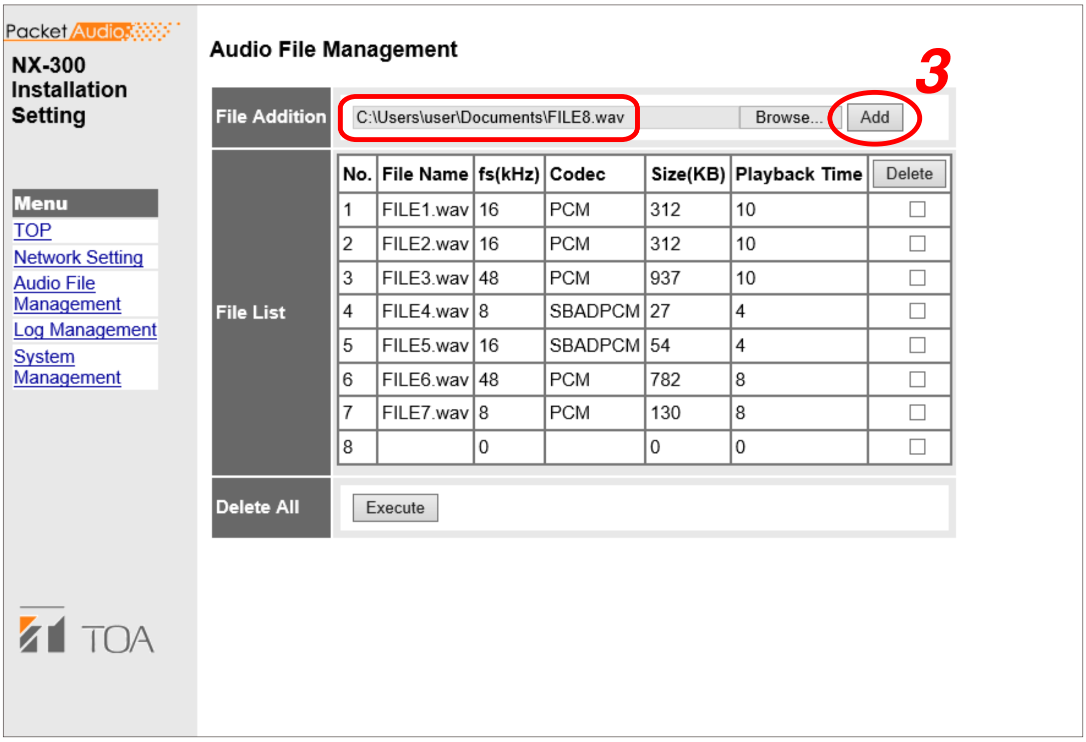
5.1. Adding Audio Files

Follow the procedure below to add audio files to the connected NX-300:

Step 1. Click the Browse button.
The file selection dialog opens.


Choose File to Upload
« user › Documents
Search Documents
Organize ▾
New folder
Quick access
OneDrive
This PC
Network
Name
#
Title
Contributing ar
FILE1.wav
FILE2.wav
FILE3.wav
FILE4.wav
FILE5.wav
FILE6.wav
FILE7.wav
FILE8.wav
File name:
Custom Files (*.wav)
2
Open
Cancel

Step 2. Select the audio file (extension: wav) and click the Open button.
The selected audio file's filename is displayed.


PacketAudio
NX-300
Installation
Setting
Menu
TOP
Network Setting
Audio File Management
Log Management
System Management
TOA
3
Browse...
Add
Delete All
Execute

Audio File Management

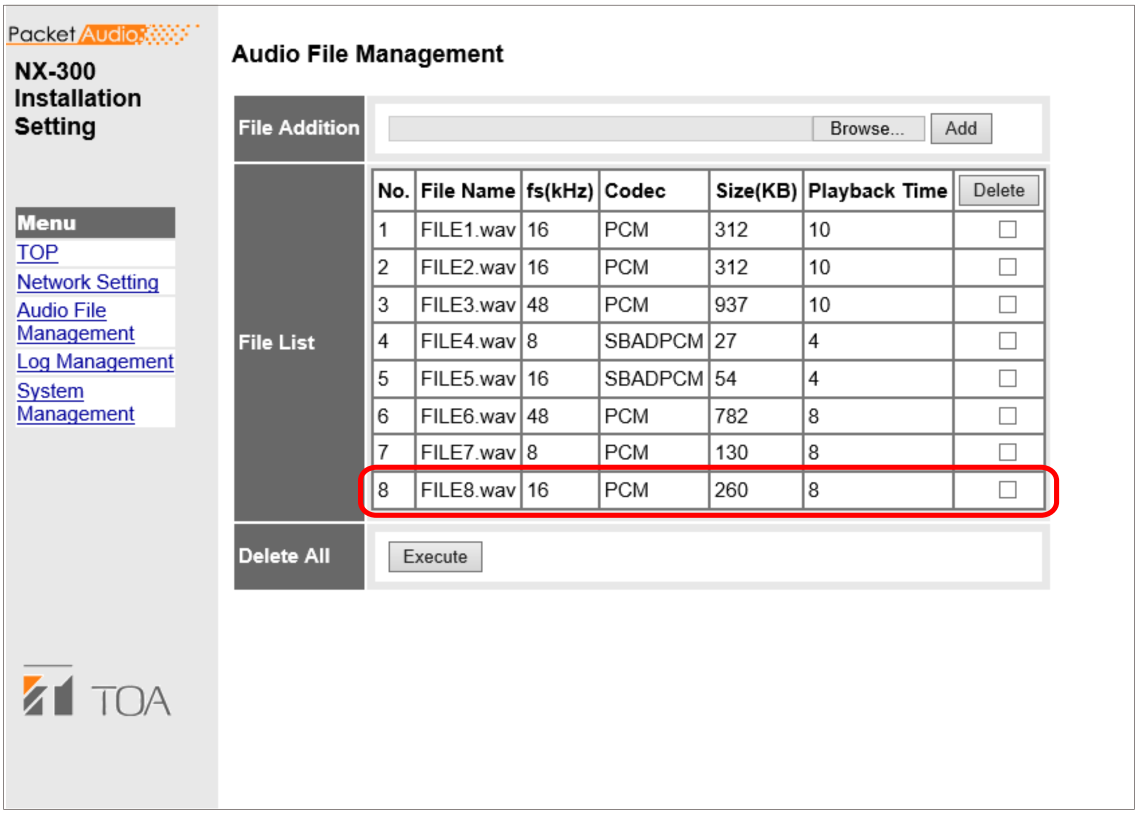
File Addition: C:\Users\user\Documents\FILE8.wav

File List

No.	File Name	fs(kHz)	Codec	Size(KB)	Playback Time	Delete
1	FILE1.wav	16	PCM	312	10	☐
2	FILE2.wav	16	PCM	312	10	☐
3	FILE3.wav	48	PCM	937	10	☐
4	FILE4.wav	8	SBADPCM	27	4	☐
5	FILE5.wav	16	SBADPCM	54	4	☐
6	FILE6.wav	48	PCM	782	8	☐
7	FILE7.wav	8	PCM	130	8	☐
8		0		0	0	☐

Step 3. Click the Add button.

The selected audio file is transmitted and added to the connected NX-300.


PacketAudio
NX-300 Installation Setting
Menu
TOP
Network Setting
Audio File Management
Log Management
System Management
TOA
Audio File Management
File Addition
Browse...
Add
File List
Delete All
Execute

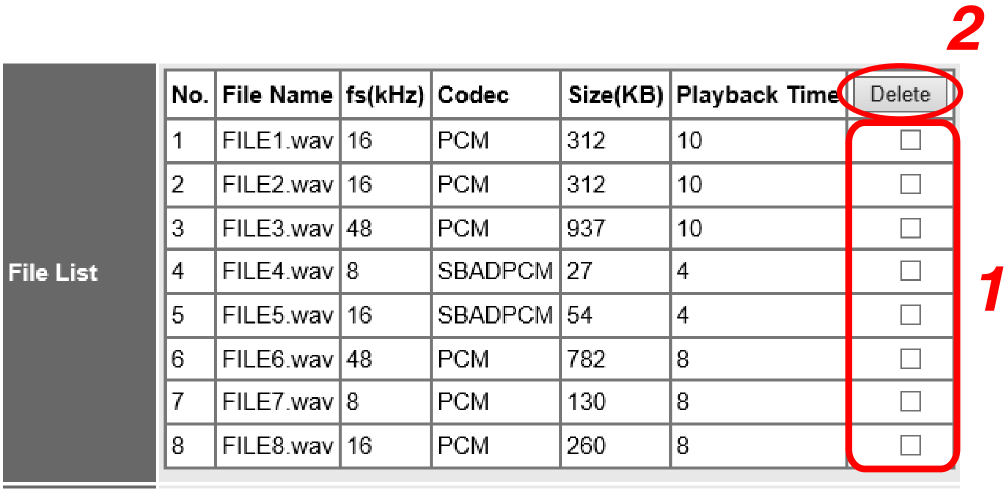
No.	File Name	fs(kHz)	Codec	Size(KB)	Playback Time	Delete
1	FILE1.wav	16	PCM	312	10	☐
2	FILE2.wav	16	PCM	312	10	☐
3	FILE3.wav	48	PCM	937	10	☐
4	FILE4.wav	8	SBADPCM	27	4	☐
5	FILE5.wav	16	SBADPCM	54	4	☐
6	FILE6.wav	48	PCM	782	8	☐
7	FILE7.wav	8	PCM	130	8	☐
8	FILE8.wav	16	PCM	260	8	☐

Notes

- The busy indicator located on the front panel of the unit flashes while audio files are added. Never disconnect the power supply or restart the system while the busy indicator is flashing.
- Conditions for adding an audio file are as follows:
  File Format: WAV
  Sampling Frequencies: 8, 16, 32, 48 kHz
  Codec: PCM, Sub-band ADPCM
  Maximum No. of Stored Files: 8
  Maximum Storage Capacity: 1 MB per audio file
  Quantization Bit No.: 16 bits
  Channel Number: Monaural
- When the codec is "Sub-Band ADPCM" or when setting the number of audio file play repetitions (1 – 10), insert silence intervals at both the beginning and end of the audio file.
- Added audio files can be used after the unit is restarted. Restart the unit after the busy indicator extinguishes.

5.2. Deleting Audio Files From the File List

Follow the procedure below to delete audio files from the File list of the connected NX-300 unit:



No.	File Name	fs(kHz)	Codec	Size(KB)	Playback Time	Delete
1	FILE1.wav	16	PCM	312	10	☐
2	FILE2.wav	16	PCM	312	10	☐
3	FILE3.wav	48	PCM	937	10	☐
4	FILE4.wav	8	SBADPCM	27	4	☐
5	FILE5.wav	16	SBADPCM	54	4	☐
6	FILE6.wav	48	PCM	782	8	☐
7	FILE7.wav	8	PCM	130	8	☐
8	FILE8.wav	16	PCM	260	8	☐

Step 1. Check the audio file to be deleted.

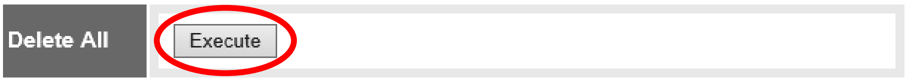
Step 2. Click the Delete button.
The selected audio file is deleted.

Notes

- The busy indicator located on the front panel of the unit flashes while audio files are deleted. Never disconnect the power supply or restart the system while the busy indicator is flashing.
- Audio files are deleted from the file list after the unit is restarted.

5.3. Deleting All Audio Files

Click the Execute button in the Delete All field to delete all audio files stored in the connected NX-300 unit.

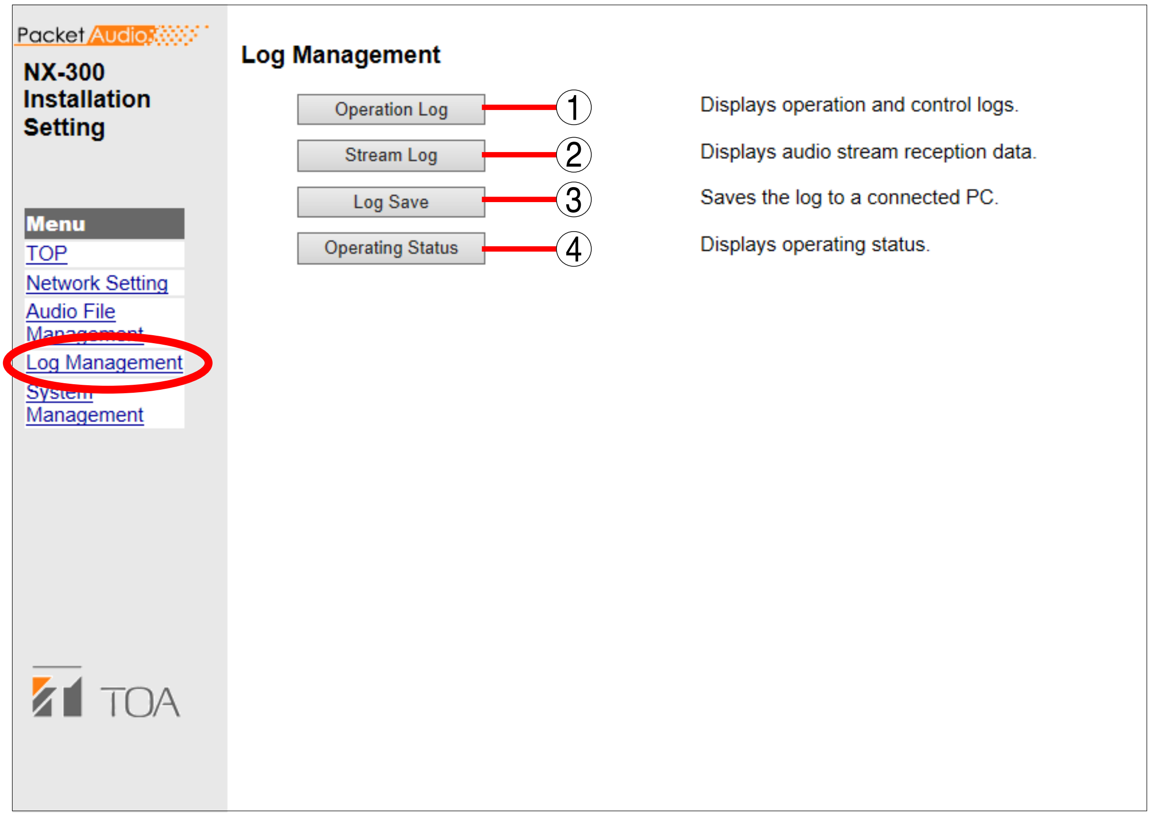


Notes

- The busy indicator located on the front panel of the unit flashes while audio files are deleted. Never disconnect the power supply or restart the system while the busy indicator is flashing.
- Audio files are deleted from the file list after the unit is restarted.

6. LOG MANAGEMENT

From the menu at the left side of the screen, click "Log Management" indication to display the Log Management menu. Operation logs for the connected NX-300 unit are displayed and saved in this menu.


PacketAudio
NX-300 Installation Setting
Menu
TOP
Network Setting
Audio File Management
Log Management
System Management
TOA
Log Management
Operation Log
Stream Log
Log Save
Operating Status
①
②
③
④

Displays operation and control logs.

Displays audio stream reception data.

Saves the log to a connected PC.

Displays operating status.

1. Operation Log button
Displays operation logs.

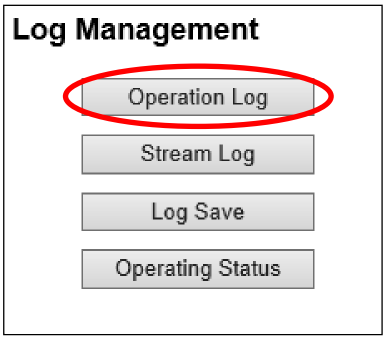
2. Stream Log button
Displays streaming reception log.

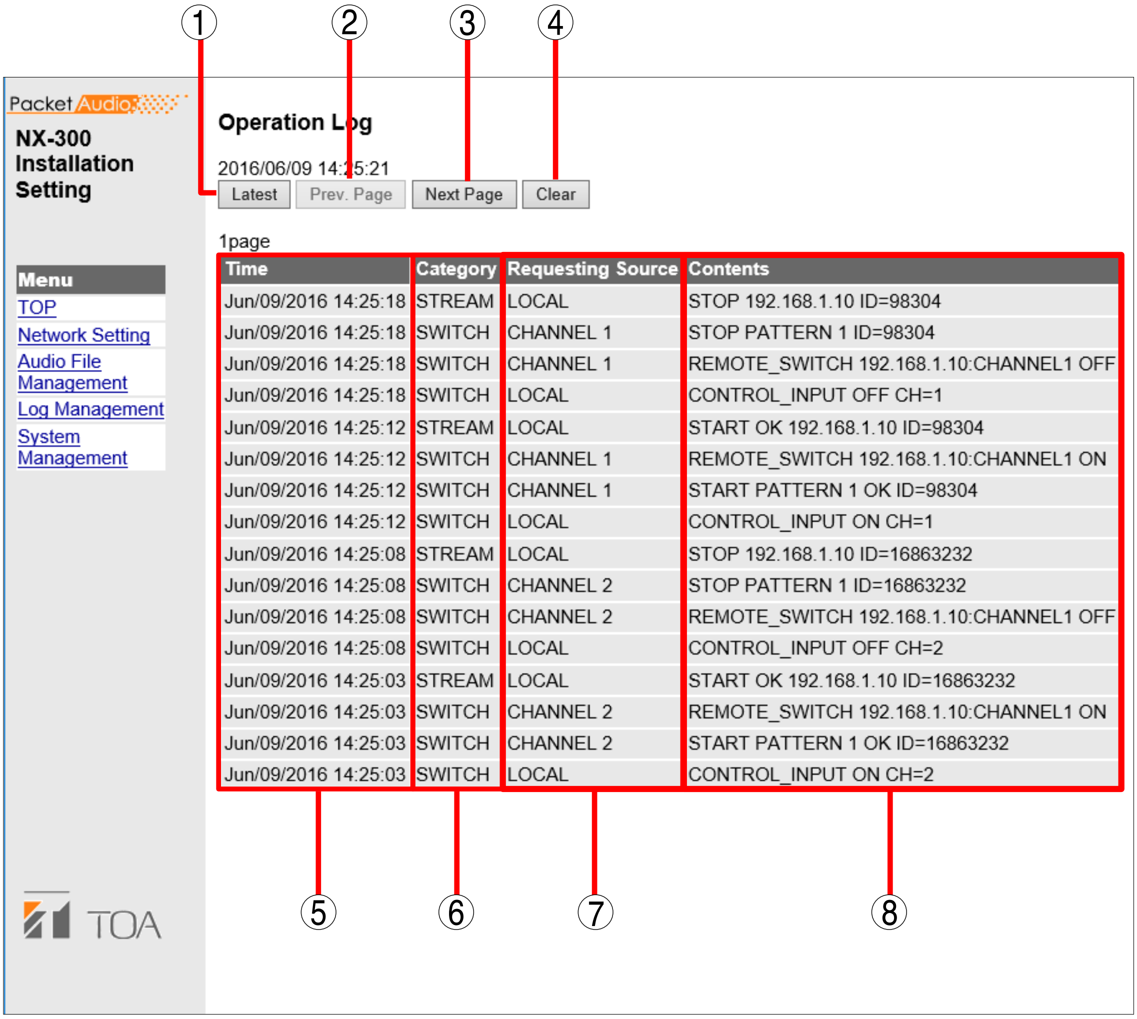
3. Log Save button
Saves log as a file in the PC.

4. Operation Status button
Displays the connected NX-300’s current operating status.

6.1. Operation Log

Clicking the Operation Log button on the log management menu screen displays the operation log screen.
Operation logs are displayed over multiple pages.


Log Management
Operation Log
Stream Log
Log Save
Operating Status


①
②
③
④
Packet Audio
NX-300 Installation Setting
Menu
TOP
Network Setting
Audio File Management
Log Management
System Management
TOA
Latest
Prev. Page
Next Page
Clear
⑤
⑥
⑦
⑧

Operation Log

2016/06/09 14:25:21

1page

Time	Category	Requesting Source	Contents
Jun/09/2016 14:25:18	STREAM	LOCAL	STOP 192.168.1.10 ID=98304
Jun/09/2016 14:25:18	SWITCH	CHANNEL 1	STOP PATTERN 1 ID=98304
Jun/09/2016 14:25:18	SWITCH	CHANNEL 1	REMOTE_SWITCH 192.168.1.10:CHANNEL1 OFF
Jun/09/2016 14:25:18	SWITCH	LOCAL	CONTROL_INPUT OFF CH=1
Jun/09/2016 14:25:12	STREAM	LOCAL	START OK 192.168.1.10 ID=98304
Jun/09/2016 14:25:12	SWITCH	CHANNEL 1	REMOTE_SWITCH 192.168.1.10:CHANNEL1 ON
Jun/09/2016 14:25:12	SWITCH	CHANNEL 1	START PATTERN 1 OK ID=98304
Jun/09/2016 14:25:12	SWITCH	LOCAL	CONTROL_INPUT ON CH=1
Jun/09/2016 14:25:08	STREAM	LOCAL	STOP 192.168.1.10 ID=16863232
Jun/09/2016 14:25:08	SWITCH	CHANNEL 2	STOP PATTERN 1 ID=16863232
Jun/09/2016 14:25:08	SWITCH	CHANNEL 2	REMOTE_SWITCH 192.168.1.10:CHANNEL1 OFF
Jun/09/2016 14:25:08	SWITCH	LOCAL	CONTROL_INPUT OFF CH=2
Jun/09/2016 14:25:03	STREAM	LOCAL	START OK 192.168.1.10 ID=16863232
Jun/09/2016 14:25:03	SWITCH	CHANNEL 2	REMOTE_SWITCH 192.168.1.10:CHANNEL1 ON
Jun/09/2016 14:25:03	SWITCH	CHANNEL 2	START PATTERN 1 OK ID=16863232
Jun/09/2016 14:25:03	SWITCH	LOCAL	CONTROL_INPUT ON CH=2

[Operation button]

1. Latest button
Updates the operation log to current data.

2. Prev. Page button
Moves to the previous page.

3. Next Page button
Moves to the next page.

4. Clear button
Deletes all operation logs.

[Items in the Table]

5. Time

Indicates the time the event took place.

6. Category

Indicates the type of log.

SESSION:	Communications between units
REMOTE:	Control by a PC
SWITCH:	Monitoring of the control input and the contact bridge control
SYSTEM:	System information
STREAM:	Status of audio stream
CLOCK:	Time correction

7. Requesting Source

Indicates the IP addresses of communication parties or requesting sources of the events such as designating control inputs.

8. Contents

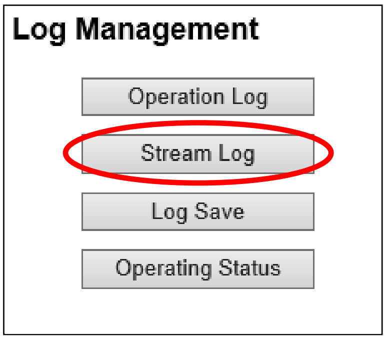
Indicates the contents of events.
The contents of the caution level are displayed in yellow, and errors are displayed in red.

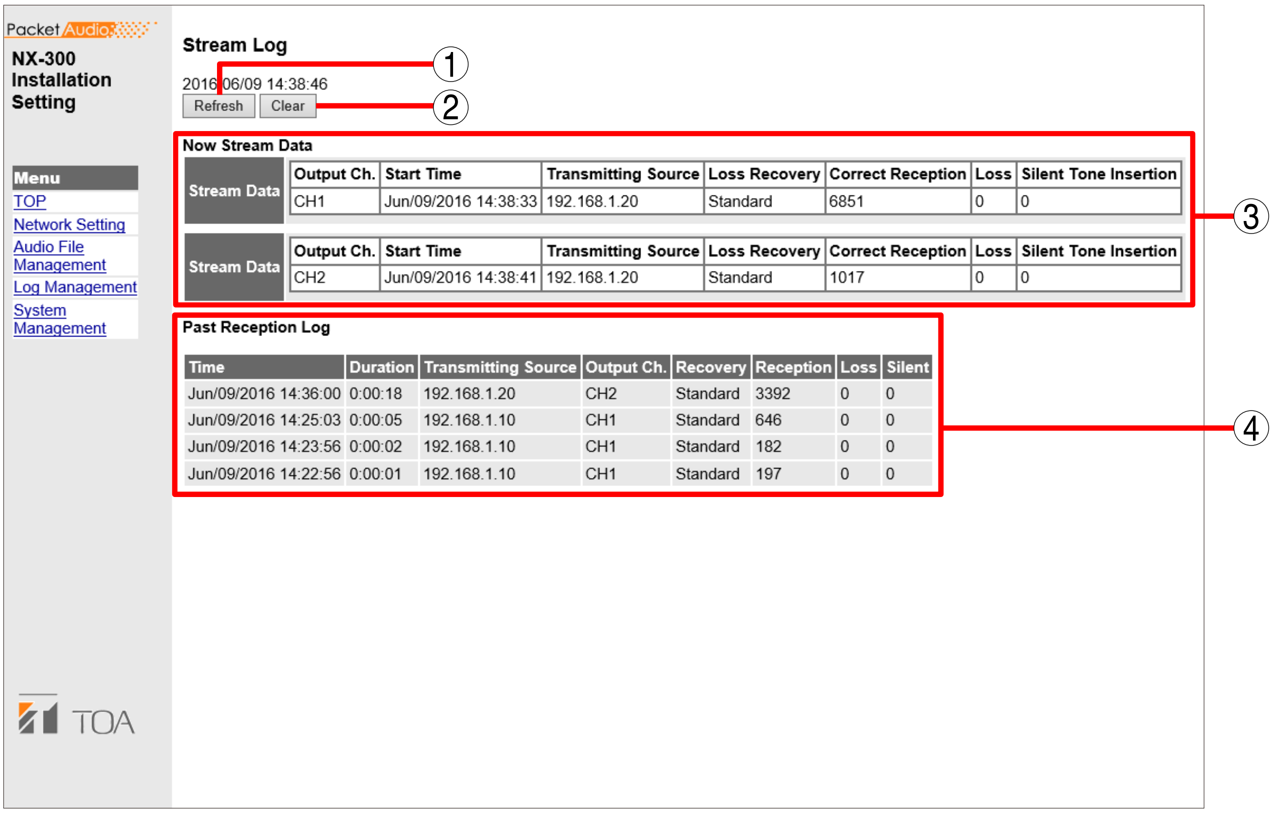
Tip

Displaying the operation log page of the unit that has failed disables the control output when the control output operation mode is set to "Error."

6.2. Stream Log

Clicking the Stream Log button on the log management menu screen displays the stream log screen.


Log Management
Operation Log
Stream Log
Log Save
Operating Status


Packet Audio
NX-300
Installation
Setting
Menu
TOP
Network Setting
Audio File Management
Log Management
System Management
TOA
Stream Log
Refresh
Clear
①
②
③
④

2016/06/09 14:38:46

Now Stream Data

	Output Ch.	Start Time	Transmitting Source	Loss Recovery	Correct Reception	Loss	Silent Tone Insertion
Stream Data	CH1	Jun/09/2016 14:38:33	192.168.1.20	Standard	6851	0	0
Stream Data	CH2	Jun/09/2016 14:38:41	192.168.1.20	Standard	1017	0	0

Past Reception Log

Time	Duration	Transmitting Source	Output Ch.	Recovery	Reception	Loss	Silent
Jun/09/2016 14:36:00	0:00:18	192.168.1.20	CH2	Standard	3392	0	0
Jun/09/2016 14:25:03	0:00:05	192.168.1.10	CH1	Standard	646	0	0
Jun/09/2016 14:23:56	0:00:02	192.168.1.10	CH1	Standard	182	0	0
Jun/09/2016 14:22:56	0:00:01	192.168.1.10	CH1	Standard	197	0	0

[Operation buttons]

1. Refresh button
Updates to the most recent data.

2. Clear button
Deletes all stream reception logs.

[Items in the Table]

3. Current Stream Data

- Stream Data

  Displays the individual output channels to provide streaming data currently being received.

- Reception Log

Output Ch.:	Displays the output channel.
Start Time:	Displays the time the event took place.
Transmitting Source:	Displays the IP address of the audio stream transmission source.
Loss Recovery:	Displays the correction method at the time a missing packet is detected.
Correct Reception:	Shows the number of correctly received packets (the number of error packets and recovered packets is not included).
Loss:	Displays the number of unrecovered packets out of those lost due to network failure.
Silent Tone Insertion:	Displays the number of packets reproduced without sound at the audio output.

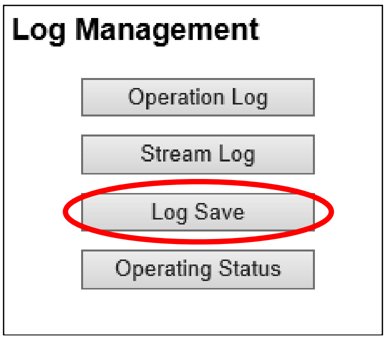
4. Past Reception Log

Displays earlier received event logs (max. 20 logs).

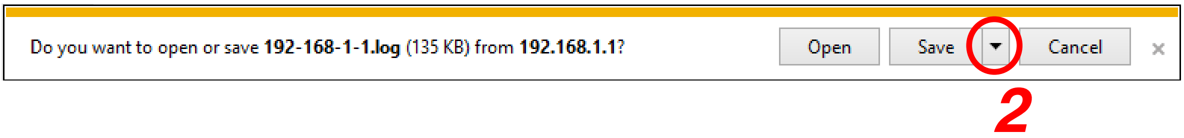
The network is possibly congested when the "Loss" number increases.

6.3. Save Logs

Follow the procedures below to save logs to a PC:
The displayed screen differs depending on the OS and browser of the PC used.


Log Management
Operation Log
Stream Log
Log Save
Operating Status

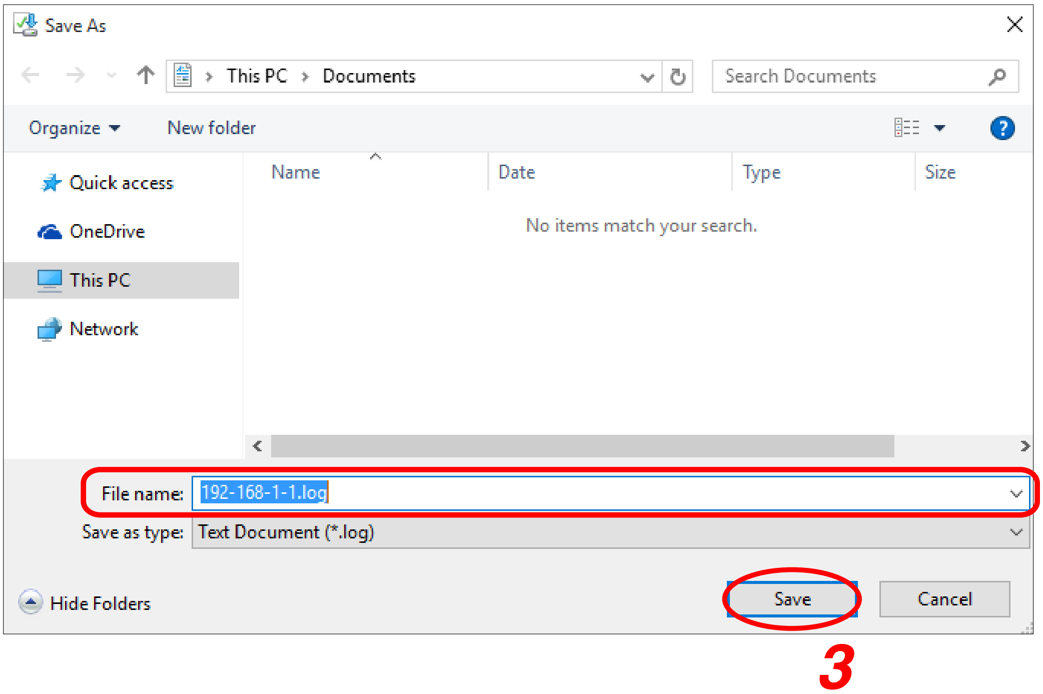
Step 1. Click the Log Save button on the log management menu screen.
A notification bar is displayed.



Do you want to open or save **192-168-1-1.log** (135 KB) from **192.168.1.1**?

Open
Save
Cancel
×
2

Step 2. Click ▾ at the right side of the Save button and select Save As.
The screen for selecting the save location is displayed.



File name: 192-168-1-1.log

Save as type: Text Document (*.log)

No items match your search.

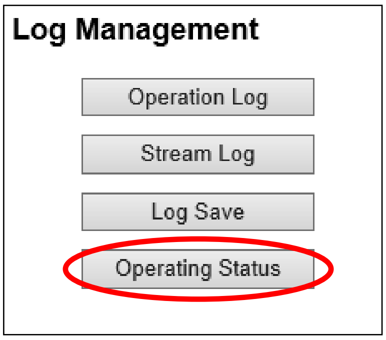
Save As
This PC › Documents
Search Documents
Organize ▾
New folder
Name
Date
Type
Size
Quick access
OneDrive
This PC
Network
Hide Folders
Save
Cancel
3

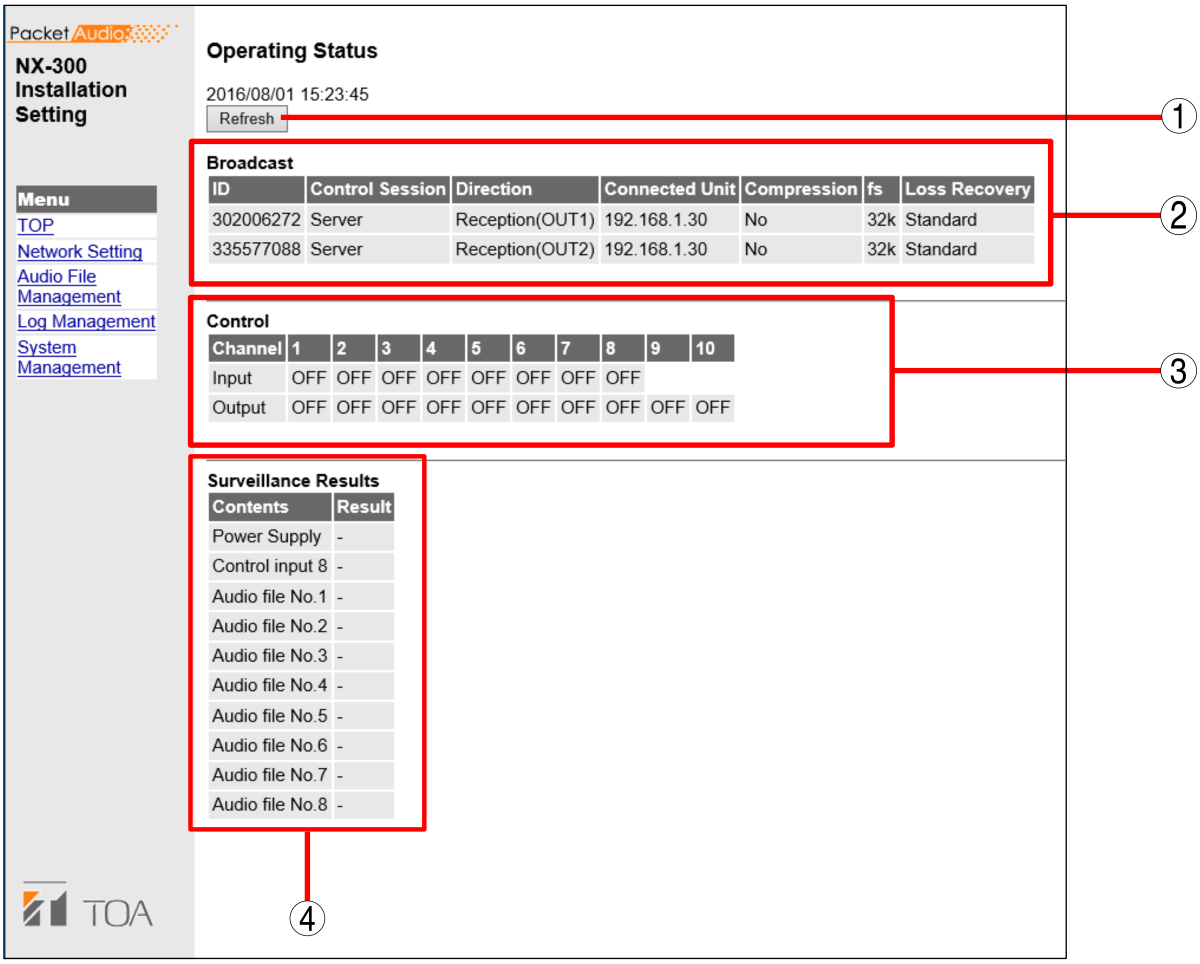
Step 3. Select the save location and enter a filename, then click the Save button.

Tip
The default filename is "[IP address].log."

6.4. Operating Status

Clicking the Operating Status button on the log management menu screen displays the operating status screen.


Log Management
Operation Log
Stream Log
Log Save
Operating Status


PacketAudio
NX-300
Installation
Setting
Menu
TOP
Network Setting
Audio File Management
Log Management
System Management
TOA
Refresh
①
②
③
④

Operating Status

2016/08/01 15:23:45

Broadcast

ID	Control Session	Direction	Connected Unit	Compression	fs	Loss Recovery
302006272	Server	Reception(OUT1)	192.168.1.30	No	32k	Standard
335577088	Server	Reception(OUT2)	192.168.1.30	No	32k	Standard

Control

Channel	1	2	3	4	5	6	7	8	9	10
Input	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
Output	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Surveillance Results

Contents	Result
Power Supply	-
Control input 8	-
Audio file No.1	-
Audio file No.2	-
Audio file No.3	-
Audio file No.4	-
Audio file No.5	-
Audio file No.6	-
Audio file No.7	-
Audio file No.8	-

[Operation buttons]

1. Refresh button
Updates to the most recent data.

[Items in the Table]

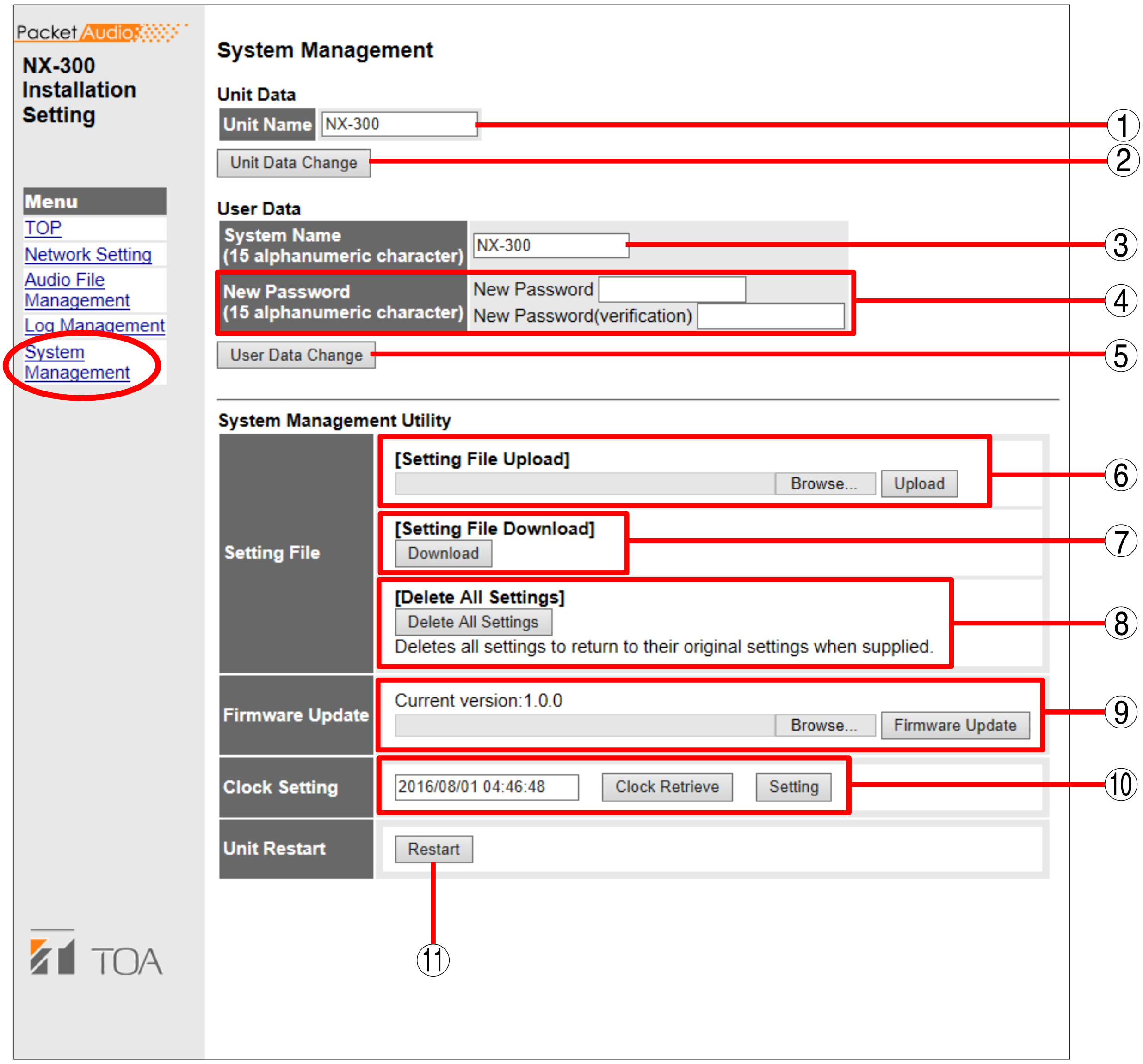
2. Broadcast
Indicates the condition of the current broadcast.

3. Control
Displays the ON/OFF status of the control inputs and outputs. If set to disabled, the "—" indication is displayed.

4. Surveillance Results
Displays the results of inspection of the surveillance function (see p. 3-27).
Displays the indication “OK” for normal status and “NG” when a failure is detected. The "—" indication is displayed when the surveillance function is disabled.

Power Supply:	Detects power voltage drop.
Control input 8:	Detects failure of the Control Input 8 circuit. Displayed when the failure detection function is enabled for Control Input 8 (see p. 3-56).
Audio File No. 1 – 8:	Detects read errors at the startup of audio file data uploaded to the NX-300. Displayed when the audio file has been uploaded.

7. SYSTEM MANAGEMENT


PacketAudio
NX-300 Installation Setting
Menu
TOP
Network Setting
Audio File Management
Log Management
System Management
TOA
System Management
Unit Data
Unit Data Change
User Data
User Data Change
System Management Utility
Setting File
[Setting File Upload]
Browse...
Upload
[Setting File Download]
Download
[Delete All Settings]
Delete All Settings
Firmware Update
Browse...
Firmware Update
Clock Setting
Clock Retrieve
Setting
Unit Restart
Restart
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪

Unit Name: NX-300

System Name (15 alphanumeric character): NX-300

New Password (15 alphanumeric character): New Password / New Password(verification)

Deletes all settings to return to their original settings when supplied.

Current version:1.0.0

2016/08/01 04:46:48

[Unit Data]

1. Unit Name

Enter the name of the unit using up to 31 characters.

2. Unit Data Change button

Updates only the unit information of the unit setting file.

[User Data]

3. System Name
Change the system name using 1 – 15 characters.
Note
The symbols \, /, :, *, ?, <> |, and blank spaces cannot be used for the system name.

4. New Password
Changes a password. Set the new password using 1 – 15 characters.

5. User Data Change
Updates the changed system name and password.

[System Management Utility]

6. Setting File Upload
Uploads backed up unit setting files.

7. Setting File Download
Backs up the unit setting file to a PC.

8. Delete All Settings
Deletes all settings to return them to their original settings when supplied.

The unit is factory-preset as follows:

IP Address:	192.168.1.1
Unit Name:	NX-300
System Name:	NX-300
Password:	guest

Note
To view other settings, use the browser or connect with the NX-300 Setting Software.

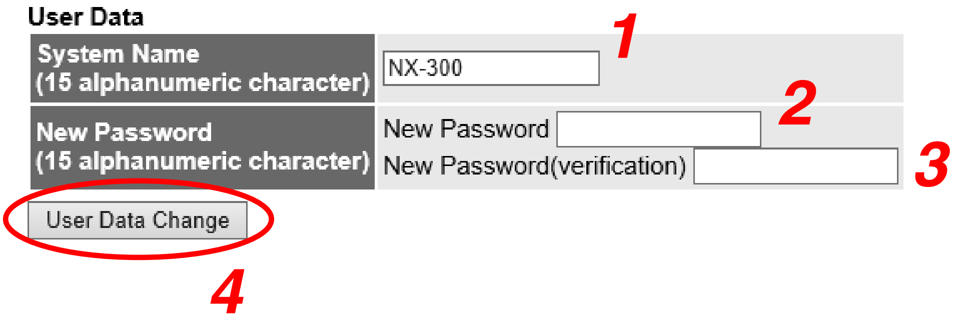
9. Firmware Update
Updates firmware.

10. Clock Setting
Set the NX-300 unit's clock.

11. Unit Restart
Click the Restart button to restart the unit. Be sure to restart any time the setting contents are changed. The change is only enabled after restart.
Notes
- Never restart the unit during updates of setting files or program.
- Broadcasts are interrupted when the unit is restarted.

7.1. System Names and Passwords Change

System names and passwords can be changed.



User Data

System Name (15 alphanumeric character)	NX-300
New Password (15 alphanumeric character)	New Password New Password(verification)

Step 1. Enter the new system name in the System Name frame.

Note
The symbols \, /, :, *, ?, <>, |, and blank spaces cannot be used for the system name.

Tips
- The current system name is displayed.
- Use 1 – 15 characters to enter the system name.

Step 2. Enter the changed password in the New Password field using 1 – 15 characters.

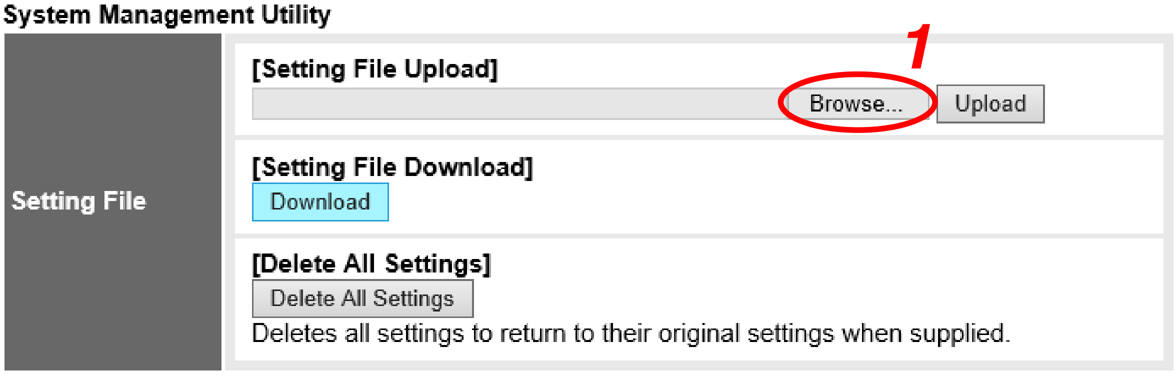
Step 3. For confirmation, enter the changed password entered in **Step 2** in the New Password (Verification) field.
Enter the same password again for verification.

Step 4. Click the User Data Change button.
Updates only the user data of the unit setting file.

Note
Never restart the unit or unplug the power supply cord during updates.

7.2. Setting File Upload

Uploads backed up unit setting files.



System Management Utility

Setting File

[Setting File Upload]

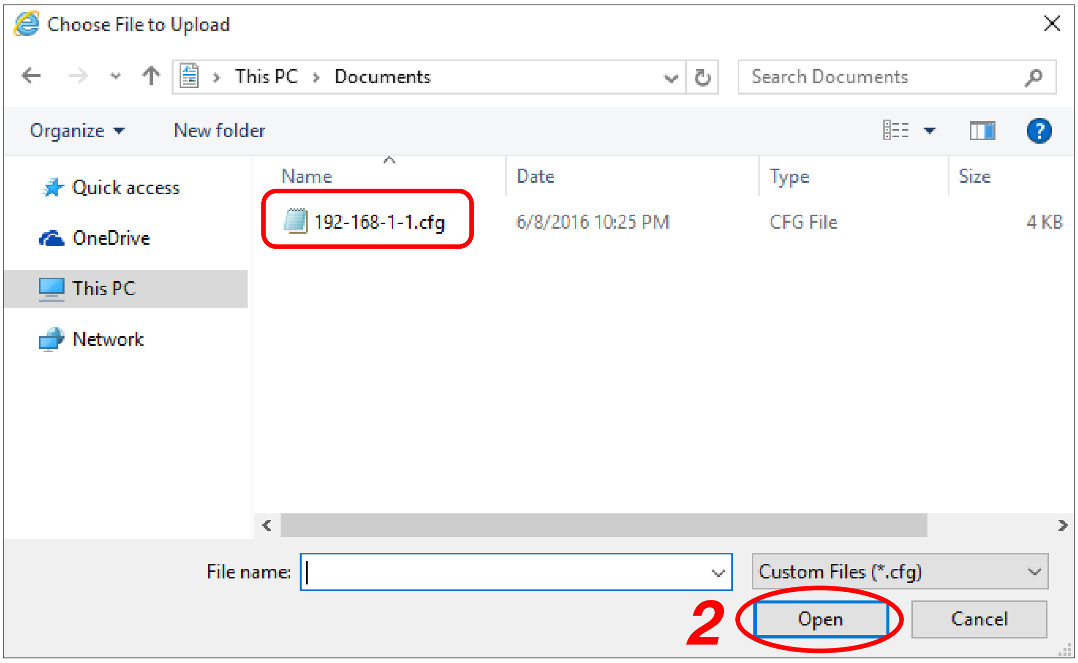
[Setting File Download]

[Delete All Settings]

Deletes all settings to return to their original settings when supplied.

1
Browse...
Upload
Download
Delete All Settings

Step 1. Click the Browse button.
The file selection dialog opens.



Choose File to Upload

This PC › Documents

Name	Date	Type	Size
192-168-1-1.cfg	6/8/2016 10:25 PM	CFG File	4 KB

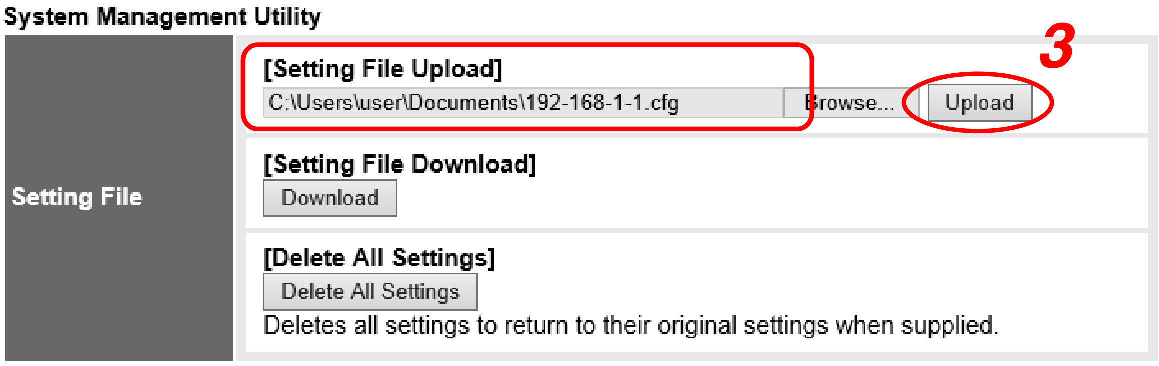
File name:

Custom Files (*.cfg)

Search Documents
Organize
New folder
Quick access
OneDrive
This PC
Network
2
Open
Cancel

Step 2. Select the backup file (extension: cfg) and click the Open button.

The selected backup file name is displayed.



System Management Utility

Setting File

[Setting File Upload]

C:\Users\user\Documents\192-168-1-1.cfg

[Setting File Download]

[Delete All Settings]

Deletes all settings to return to their original settings when supplied.

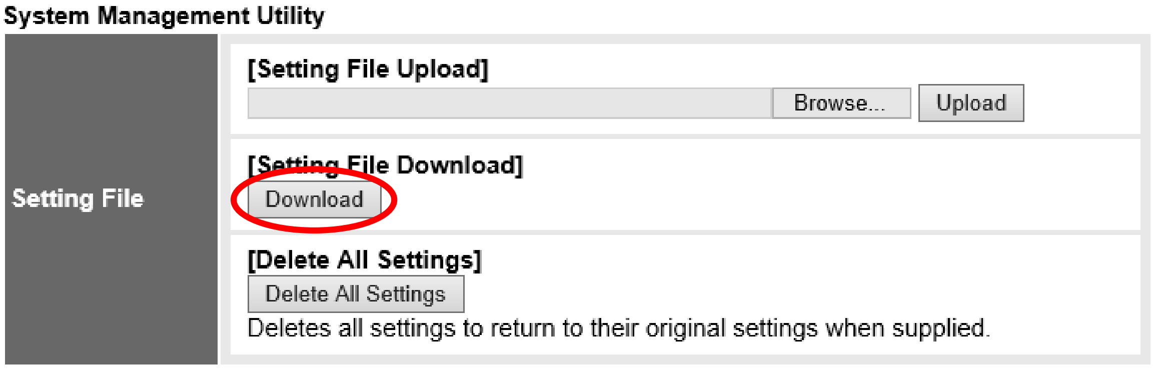
Step 3. Click the Upload button.
Update of the unit setting file commences.

Note

Never restart the unit or unplug the power supply cord during updates.

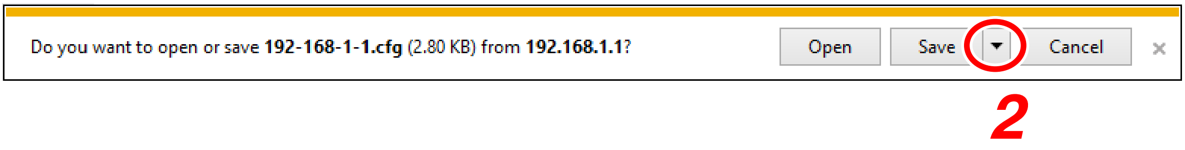
7.3. Downloading the Unit Setting Files

Back up the unit setting files to a PC.
The displayed screen differs depending on the OS and browser of the PC used.


System Management Utility
Setting File
[Setting File Upload]
Browse...
Upload
[Setting File Download]
Download
[Delete All Settings]
Delete All Settings

Deletes all settings to return to their original settings when supplied.

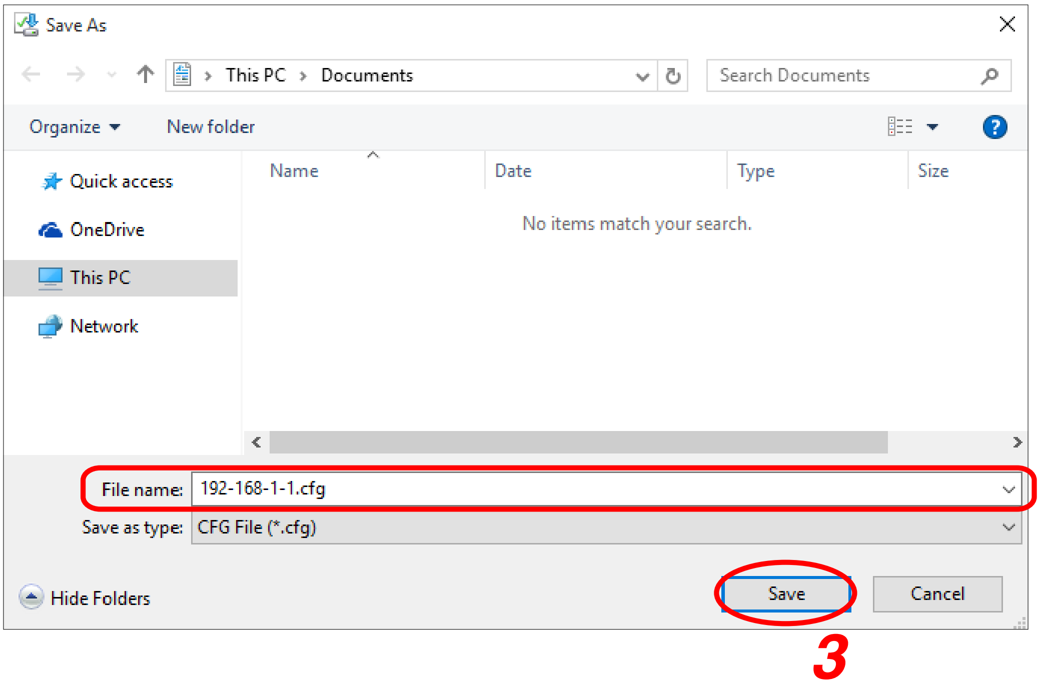
Step 1. Click the Download button.
A notification bar is displayed.



Do you want to open or save **192-168-1-1.cfg** (2.80 KB) from **192.168.1.1**?

Open
Save
▾
Cancel
×
2

Step 2. Click ▾ at the right side of the Save button and select Save As.
The screen for selecting the save location is displayed.


Save As
This PC › Documents
Search Documents
Organize ▾
New folder
Quick access
OneDrive
This PC
Network
Name
Date
Type
Size
Hide Folders
Save
Cancel
3

No items match your search.

File name: 192-168-1-1.cfg

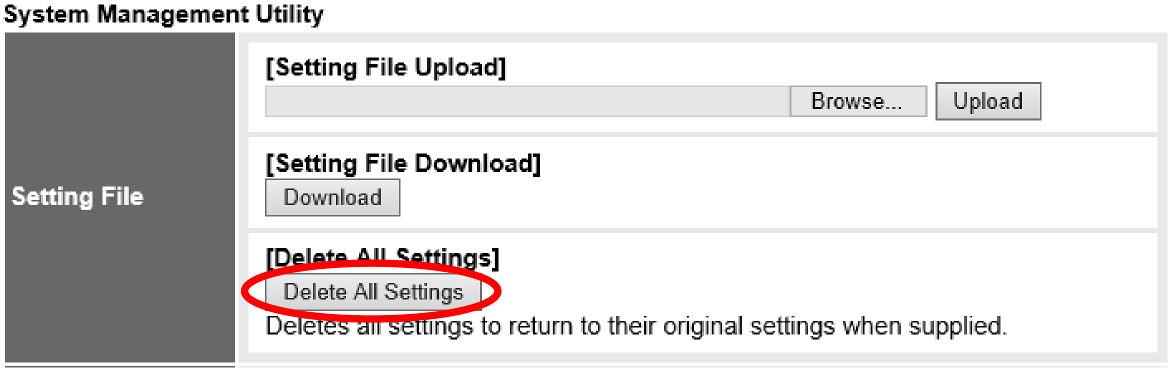
Save as type: CFG File (*.cfg)

Step 3. Select the save location and enter a filename, then click the Save button.

Tip
The default filename is "[IP address].cfg."

7.4. Setting All Settings to Default Status

Delete all settings to return them to their default settings.


System Management Utility
Setting File
[Setting File Upload]
Browse...
Upload
[Setting File Download]
Download
[Delete All Settings]
Delete All Settings

Deletes all settings to return to their original settings when supplied.

Step : Click the Delete All Settings button.
All settings are deleted, returning them to their default settings.

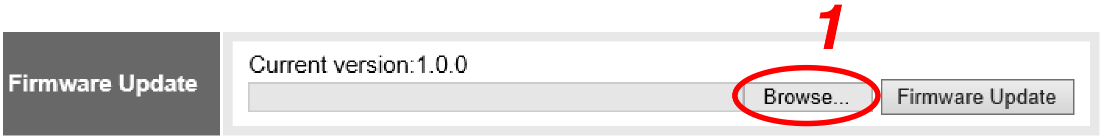
The unit is factory-preset as follows:

IP Address:	192.168.1.1
Unit Name:	NX-300
System Name:	NX-300
Password:	guest

To view other settings, use the browser or connect with the NX-300 Setting Software.

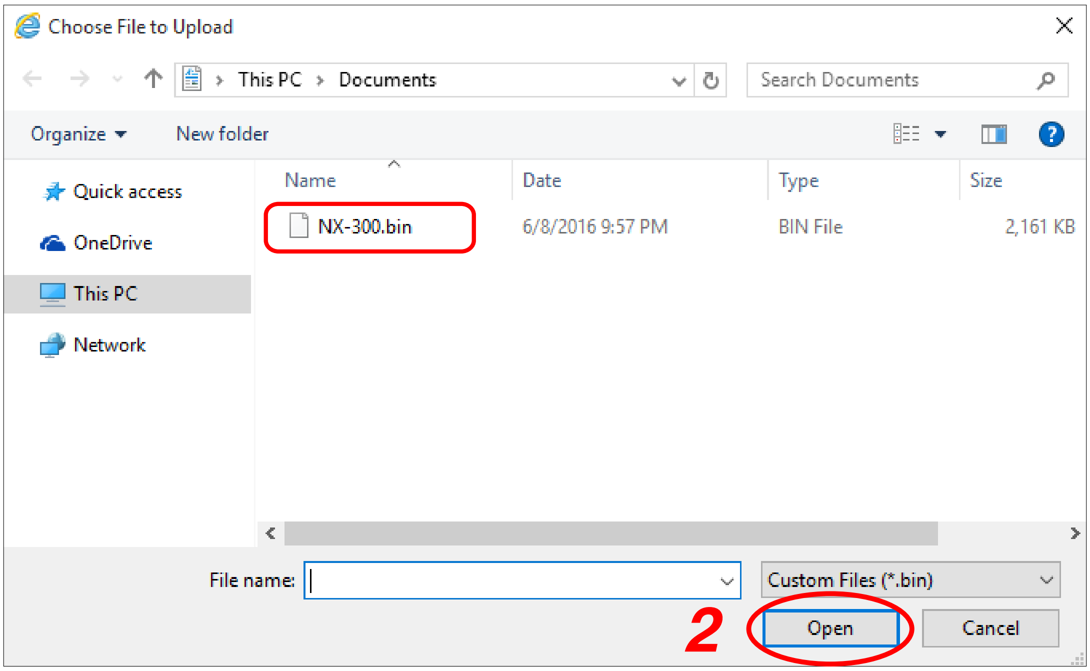
7.5. Updating Firmware

Firmware is updated.


1
Firmware Update
Browse...
Firmware Update

Current version:1.0.0

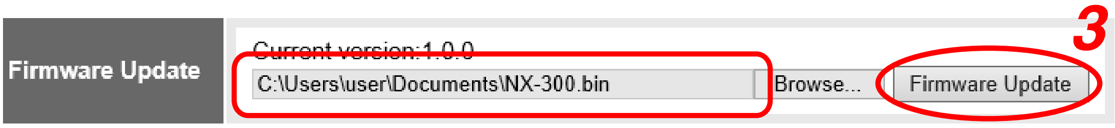
Step 1. Click the Browse button.
The file selection dialog opens.


Choose File to Upload
This PC
Documents
Search Documents
Organize
New folder
Quick access
OneDrive
This PC
Network
Name
Date
Type
Size
Custom Files (*.bin)
2
Open
Cancel

Name	Date	Type	Size
NX-300.bin	6/8/2016 9:57 PM	BIN File	2,161 KB

File name:

Step 2. Select the NX-300 Firmware (extension: bin) and click the Open button.
The selected firmware's file name is displayed.


3
Firmware Update
Browse...
Firmware Update

Current version:1.0.0

C:\Users\user\Documents\NX-300.bin

Step 3. Click the Firmware Update button.
Update of the Firmware commences.

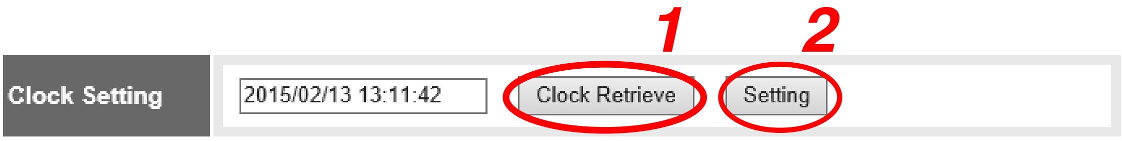
Note
Never restart the unit or unplug the power supply cord during updates, or while the busy indicator on the front panel of the this unit is flashing.

Tip
The latest versions of the NX-300 firmware and instruction manuals (NX-300 Installation Setup Manual and NX-300 Operation Manual) can be found on the TOA Product Data Download site (http://www.toa-products.com/international/).
Access the download site to download and use the latest version.

7.6. Clock Setting

Clock setting can be synchronized with the PC's date and time.

Tip
The unit's current time is displayed in the clock Setting field.

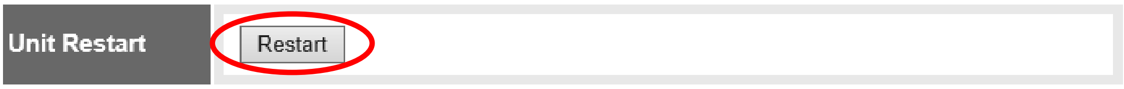


Step 1. Click the Clock Retrieve button.
The PC's current date and time are acquired.

Step 2. Click the Setting button.
The unit's clock is updated to the acquired time.

7.7. Reflecting Changed Settings (Unit Restart)

Clicking the Unit Restart button restarts the unit. Be sure to restart any time the setting contents are changed.



Step: **Click the Unit Restart button.**
The unit restarts, reflecting the contents changed after it was started.

Notes
- Never restart the unit or unplug the power supply cord during updates, or while the busy indicator on the front panel of the this unit is flashing.
- Broadcasts are interrupted when the unit is restarted.

Chapter 5

SETTINGS NECESSARY WHEN USING THE NX-300 OPERATION SOFTWARE

1. NX-300 OPERATION SOFTWARE SUMMARY

This operation software is used to set the control buttons used for broadcasts, and activate set NX-300 broadcast patterns[*1] or operate the control output[*2].

[*1] The broadcast pattern is determined by the combination of the contents of the audio source and the units targeted to receive the broadcast. Up to 16 broadcasting destinations can be set per channel for unicast, and up to 64 destinations for multicast. Only one pattern can be set per button.

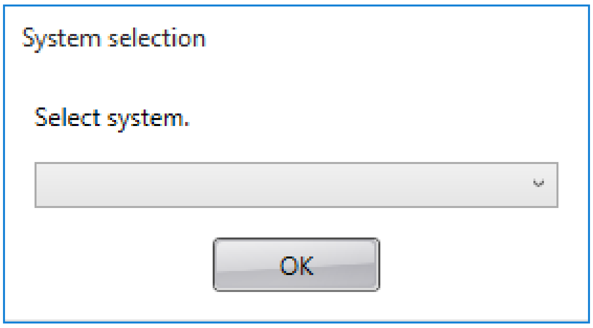
Note
For more information concerning broadcast pattern settings, see p. 3-40, "Broadcast Pattern Settings."

[*2] Controls the NX-300's control outputs by way of the network. Control output can be controlled for up to 500 units (×10 control output channels) per button.

2. STARTUP AND INITIAL SCREEN

Step 1. Either double-click on the NX-300 Operation Software shortcut created on the desktop during installation (see p. 3-4) or double-click on the "NX-300OperationSoftware.exe" file created in the installed folder.

The following screen is displayed:

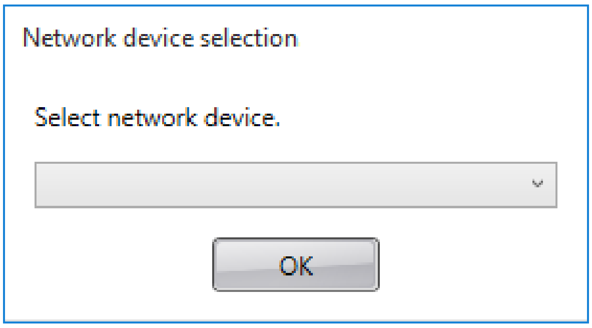


System selection

Select system.

Step 2. Select the system.
Select the system created beforehand and click the OK button.

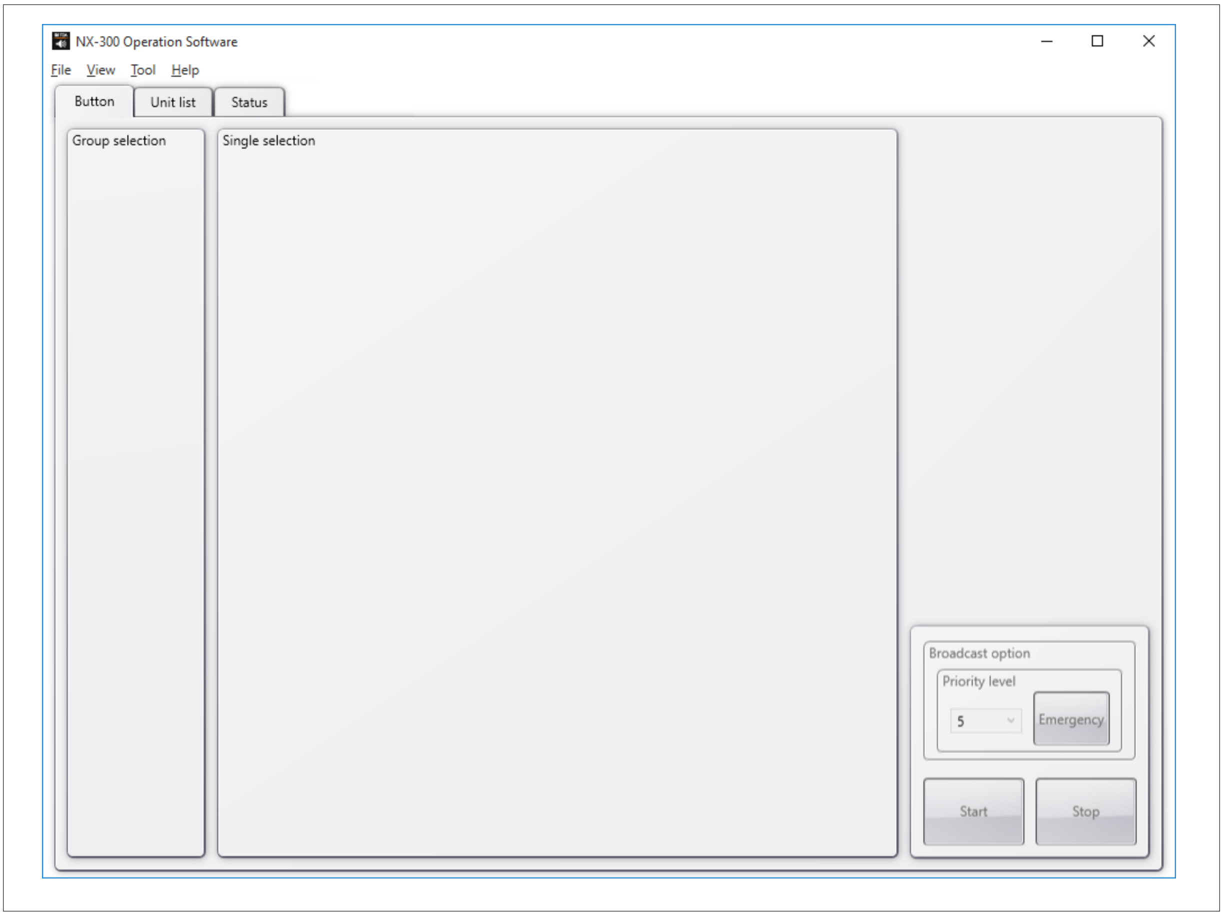
Tip
If using a PC with multiple network interface cards installed, the following screen is displayed after system selection. Select the network interface card connected to the system, then click the OK button.



Network device selection

Select network device.

The following screen is displayed during initialized status (when nothing has yet been set) after system selection.

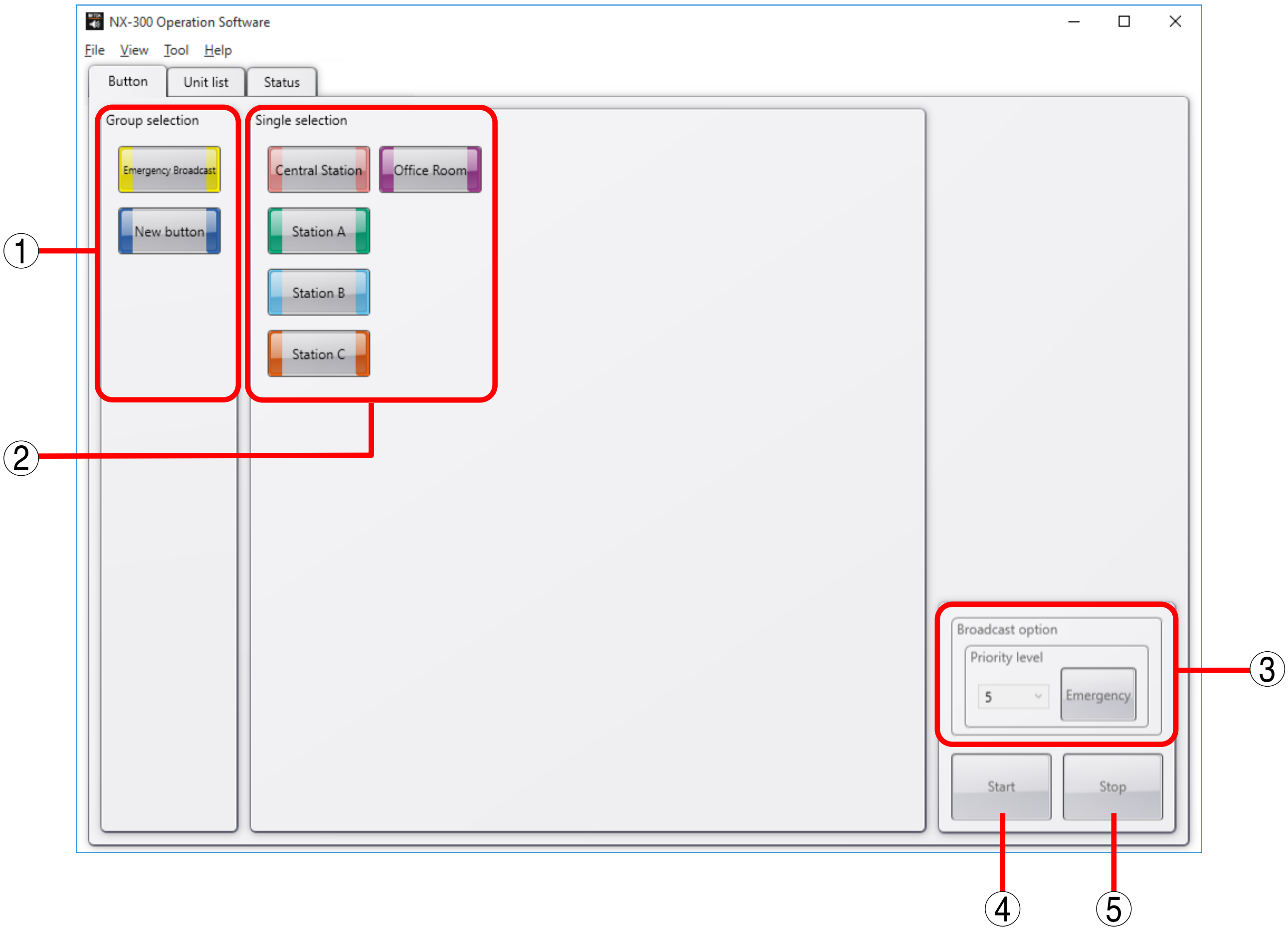

NX-300 Operation Software
File View Tool Help
Button
Unit list
Status
Group selection
Single selection
Broadcast option
Priority level
5
Emergency
Start
Stop

3. OPERATION SCREEN DESCRIPTION

This section explains the screen layout, using the accompanying operation setting screen as an example.

3.1. Button Screen

Clicking the Button tab displays the button screen.


NX-300 Operation Software
File
View
Tool
Help
Button
Unit list
Status
Group selection
Emergency Broadcast
New button
Single selection
Central Station
Office Room
Station A
Station B
Station C
Broadcast option
Priority level
5
Emergency
Start
Stop
①
②
③
④
⑤

1. Group selection button

Used to simultaneously select two or more Single Selection buttons. The maximum number of buttons that can be registered is 100.

2. Single selection button

Selects the broadcast pattern and control output to be activated. The maximum number of buttons that can be registered is 3200. One broadcast pattern or up to 500 units X 10 control output channels can be set per Selection button.

3. Streaming option

Broadcast priority can be selected.
If the Emergency button is selected, priority level 1 is assigned to the broadcast.

Tip

Setting the emergency broadcast setting to ON using the NX-300 Setting Software makes the output sound volume of the broadcast 6 dB louder than broadcasts with priority levels 2 – 8.

4. Start button

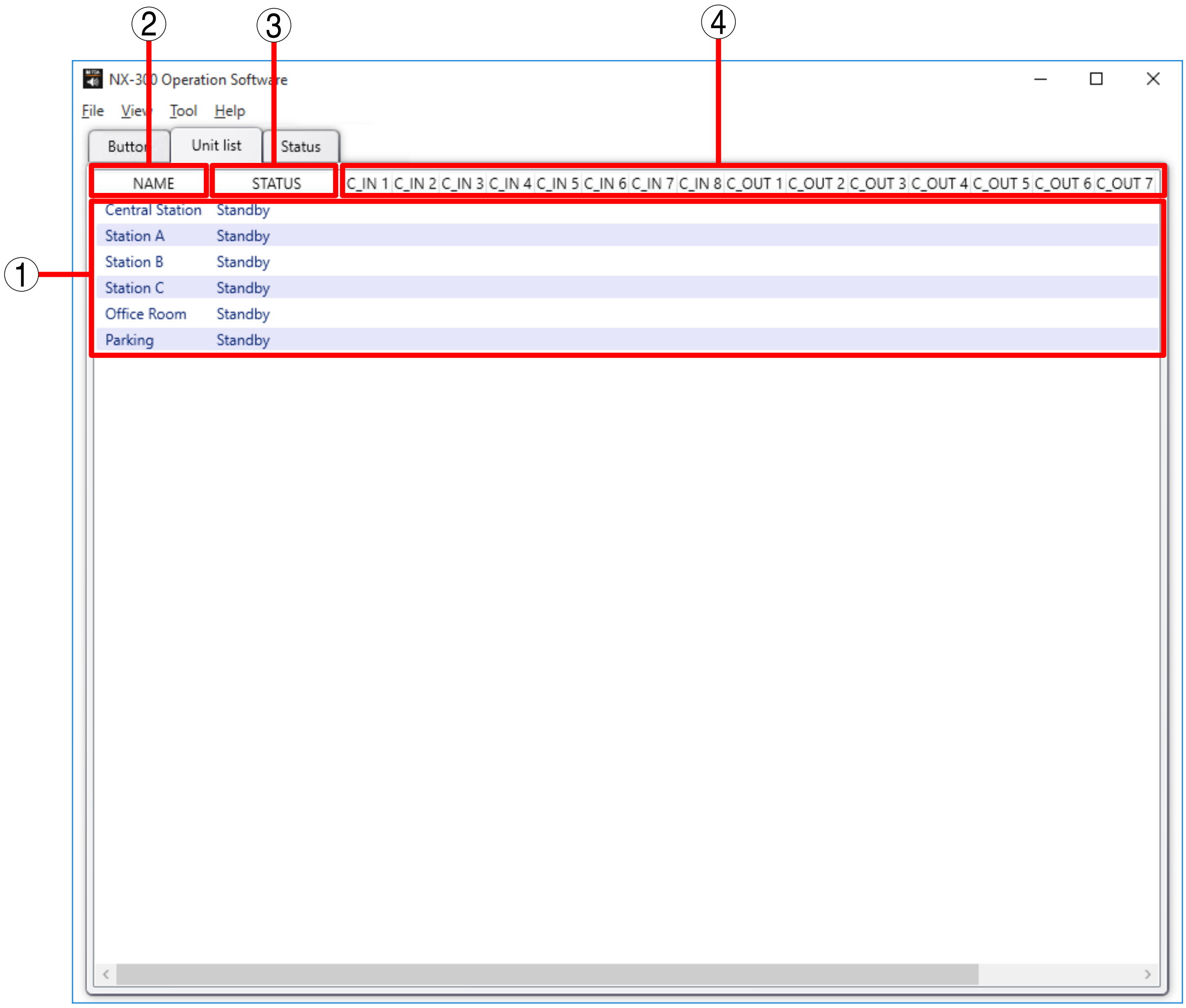
Starts up the activation contents (broadcast pattern and control output) selected with the Single or Group Selection buttons.

5. Stop button

Terminates activated broadcasts or control outputs.

3.2. Unit List Screen

Clicking the Unit list tab displays the unit list screen.

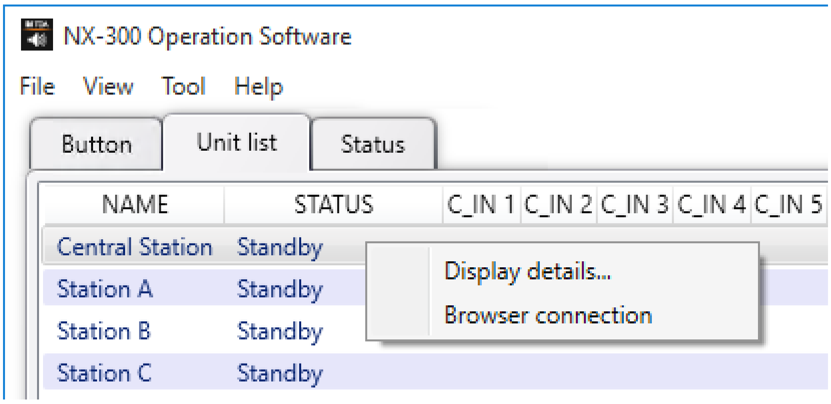

②
③
④
①
NX-300 Operation Software
File View Tool Help
Button
Unit list
Status

NAME	STATUS	C_IN 1	C_IN 2	C_IN 3	C_IN 4	C_IN 5	C_IN 6	C_IN 7	C_IN 8	C_OUT 1	C_OUT 2	C_OUT 3	C_OUT 4	C_OUT 5	C_OUT 6	C_OUT 7
Central Station	Standby															
Station A	Standby															
Station B	Standby															
Station C	Standby															
Office Room	Standby															
Parking	Standby															

1. Unit list

Displays the status of managed units.
Double-clicking a line on the list displays detailed information.

[Right-click menu]
Right-clicking the line on the list displays the following menu:


NX-300 Operation Software
File View Tool Help
Button
Unit list
Status
Display details...
Browser connection

NAME	STATUS	C_IN 1	C_IN 2	C_IN 3	C_IN 4	C_IN 5
Central Station	Standby					
Station A	Standby					
Station B	Standby					
Station C	Standby					

Display details:	Displays detailed unit information. (See p. 5-8, "Detail Screen.")
Browser connection:	Starts up the browser and displays the device setting screen.

2. NAME

Displays unit names.

3. STATUS

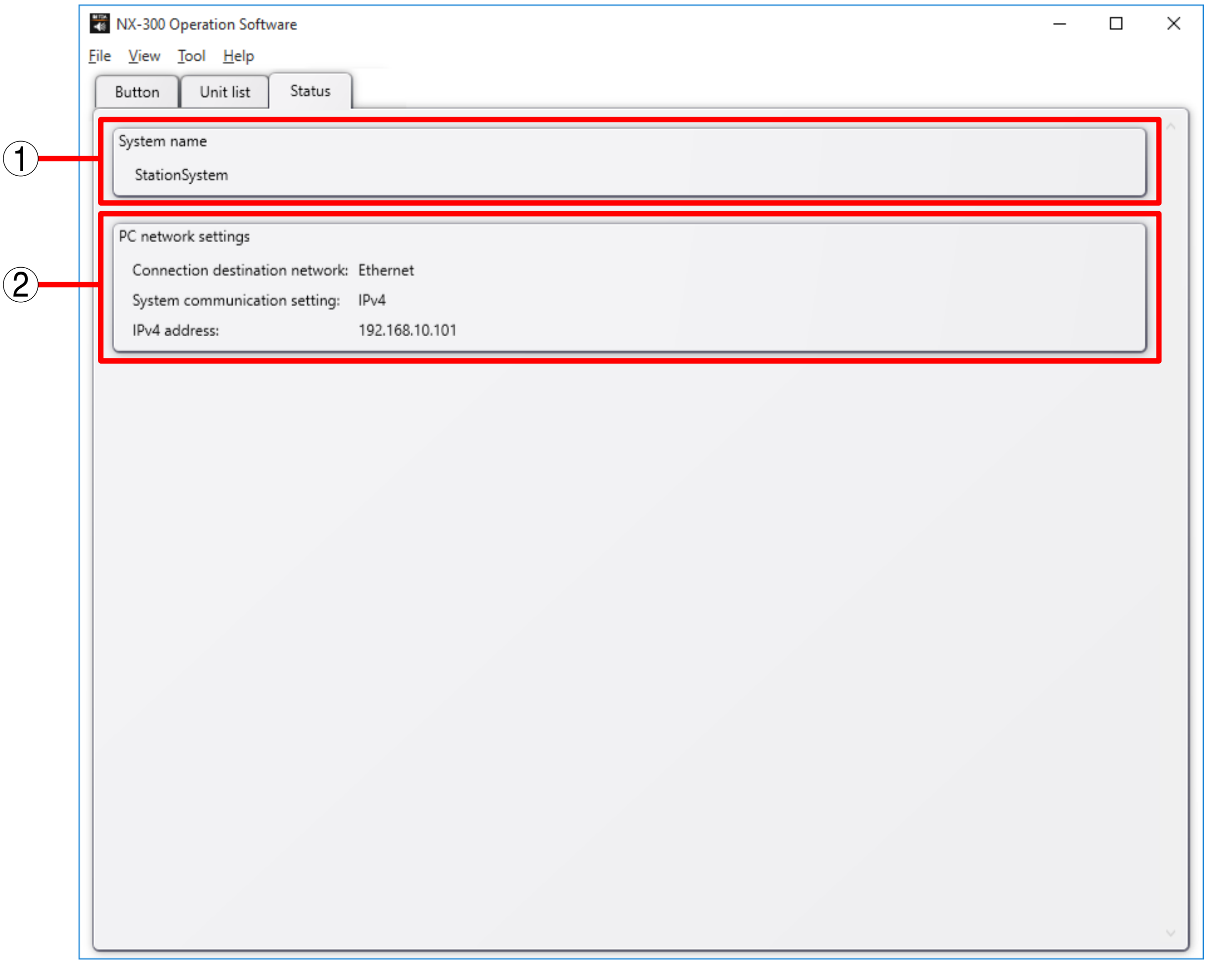
Displays unit status.
Standby: Indicates that unit is in standby mode.
Broadcasting: Indicates that unit is being used for broadcast.
Connection failure: Indicates that unit is in a state of being incapable of communication.

4. C_IN 1 – 8, C_OUT 1 – 10

Displays the status of control inputs and outputs.

3.3. Status Screen

Clicking the Status tab displays the status screen showing the NX-300 Operation Software's operating status.


NX-300 Operation Software
File
View
Tool
Help
Button
Unit list
Status
①
②

System name

StationSystem

PC network settings

Connection destination network: Ethernet
System communication setting: IPv4
IPv4 address: 192.168.10.101

1. System name

Displays the system name.

2. PC network settings

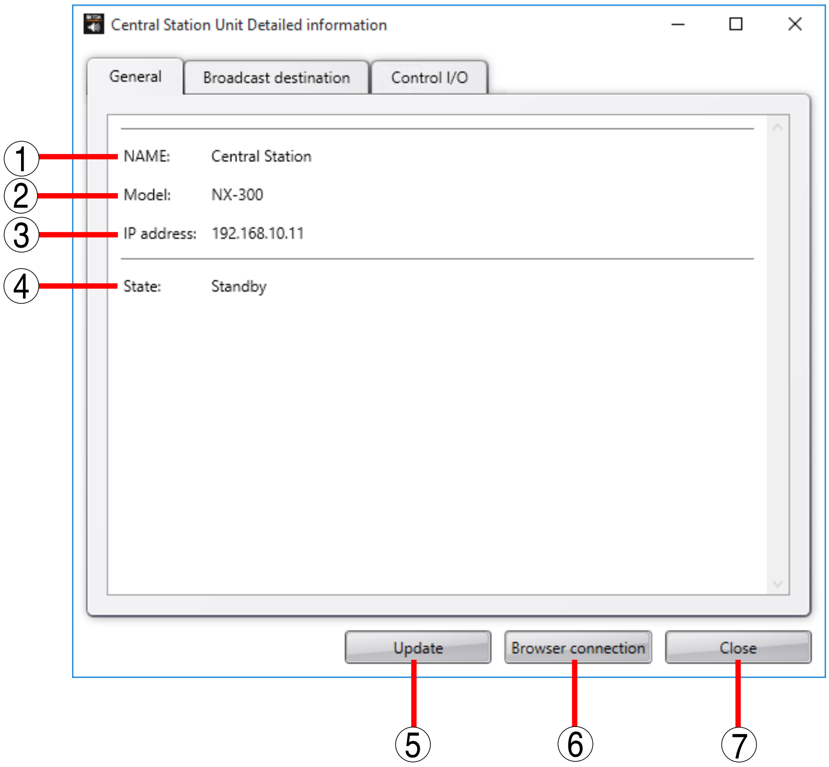
Displays PC network information.
Connection destination network: Displays the network interface card in use.
System communication setting: Indicates that the PC is operating on IPv4.
IPv4 address: Displays the PC's IPv4 address.

3.4. Detail Screen

Display detailed unit information.

3.4.1. Detail screen descriptions

[General tab]



Central Station Unit Detailed information
General
Broadcast destination
Control I/O
Update
Browser connection
Close
①
②
③
④
⑤
⑥
⑦

NAME: Central Station
Model: NX-300
IP address: 192.168.10.11
State: Standby

1. NAME
Displays the unit name.

2. Model
Displays the model name.

3. IP address
Displays the IP address.

4. State
Displays the current status, such as “Broadcasting” or “Standby”

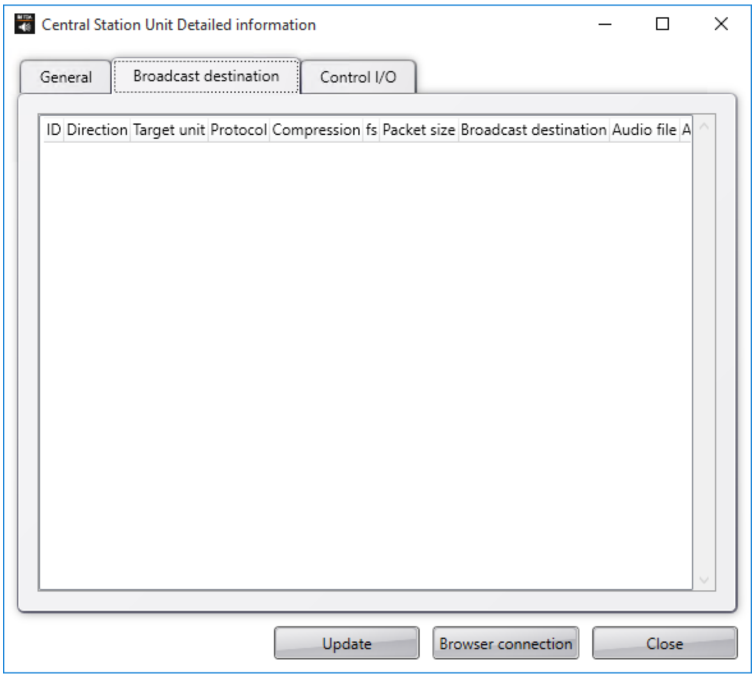
5. Update button
Updates the displayed content of the detail screen to the latest conditions.

6. Browser connection button
Starts up the browser and accesses the unit.

7. Close button
Closes the detail screen.

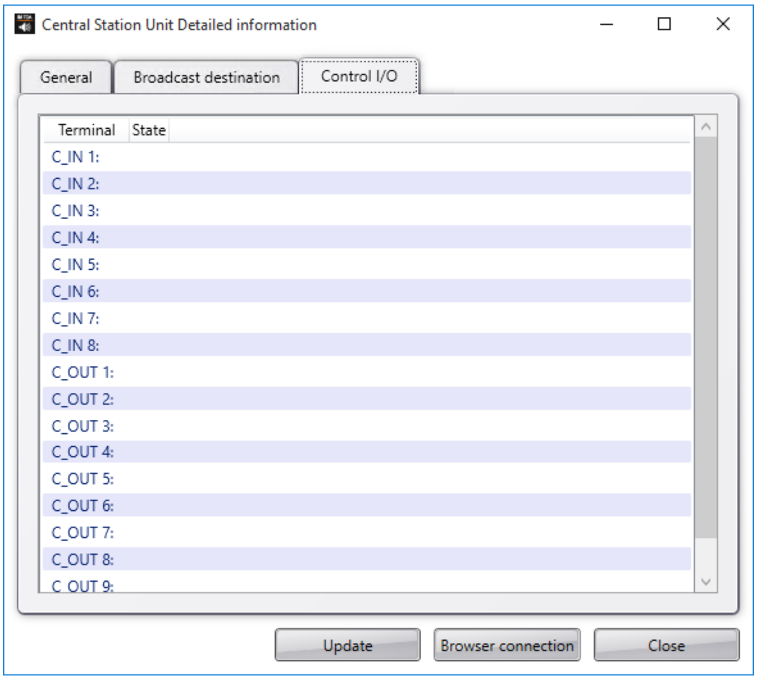
[Broadcast destination tab]

When the unit is broadcasting, the list of all destinations the unit is broadcasting to is displayed.


Central Station Unit Detailed information
General
Broadcast destination
Control I/O
ID
Direction
Target unit
Protocol
Compression
fs
Packet size
Broadcast destination
Audio file
A
Update
Browser connection
Close

[Control I/O tab]

Displays unit input and output status.


Central Station Unit Detailed information
General
Broadcast destination
Control I/O
Update
Browser connection
Close

Terminal	State
C_IN 1:	
C_IN 2:	
C_IN 3:	
C_IN 4:	
C_IN 5:	
C_IN 6:	
C_IN 7:	
C_IN 8:	
C_OUT 1:	
C_OUT 2:	
C_OUT 3:	
C_OUT 4:	
C_OUT 5:	
C_OUT 6:	
C_OUT 7:	
C_OUT 8:	
C_OUT 9:	

4. OPERATION SCREEN MENU

4.1.1. File

Exit: Terminates the NX-300 Operation Software.

4.1.2. Display

Single selection button size: Changes the size of the single selection button.
Group selection button size: Changes the size of the group selection button.
Operation log: Displays the operation log screen.

4.1.3. Tool

Setting tool: Displays the setup tool screen.
Button setting: Creates or edits the single and group selection buttons.

4.1.4. Help

About: Displays the NX-300 Operation Software’s version information.

5. SETTING PROCEDURES USING THE NX-300 OPERATION SOFTWARE

Before performing the setting using the NX-300 Operation Software

Set the NX-300 units in the system using the NX-300 Setting Software.
All broadcasting destinations to be actuated by the NX-300 Operation Software must be set as "Broadcast Pattern" for the system's NX-300, NX-100 and NX-100S units.

(1) Set the Button.

Set the Selection buttons that select the broadcast patterns or control outputs to be activated.

(2) Set the Button layout.

Edit the layout of the single and group selection buttons on the operation screen.

6. BUTTON SETTINGS

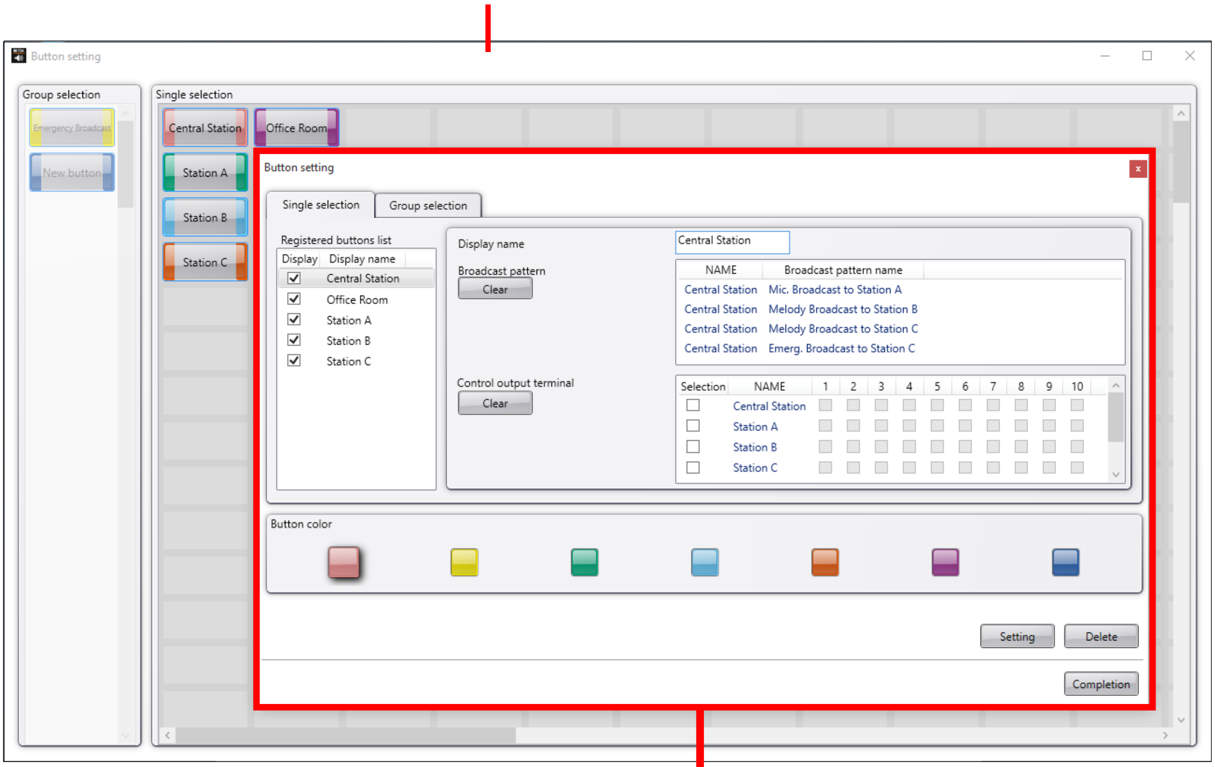
Create single selection buttons for selecting broadcasting destinations and the group selection button.

6.1. Creating Single Selection Buttons

Create buttons to select broadcast patterns and control outputs.

Step 1. Select “Tool” → ”Button setting...” from the menu bar.
The button setting screen and pallet are displayed.

Button setting screen


Button setting
Group selection
Emergency Broadcast
New button
Single selection
Central Station
Office Room
Station A
Station B
Station C
Button setting
Single selection
Group selection
Registered buttons list
Broadcast pattern
Clear
Control output terminal
Clear
Button color
Setting
Delete
Completion

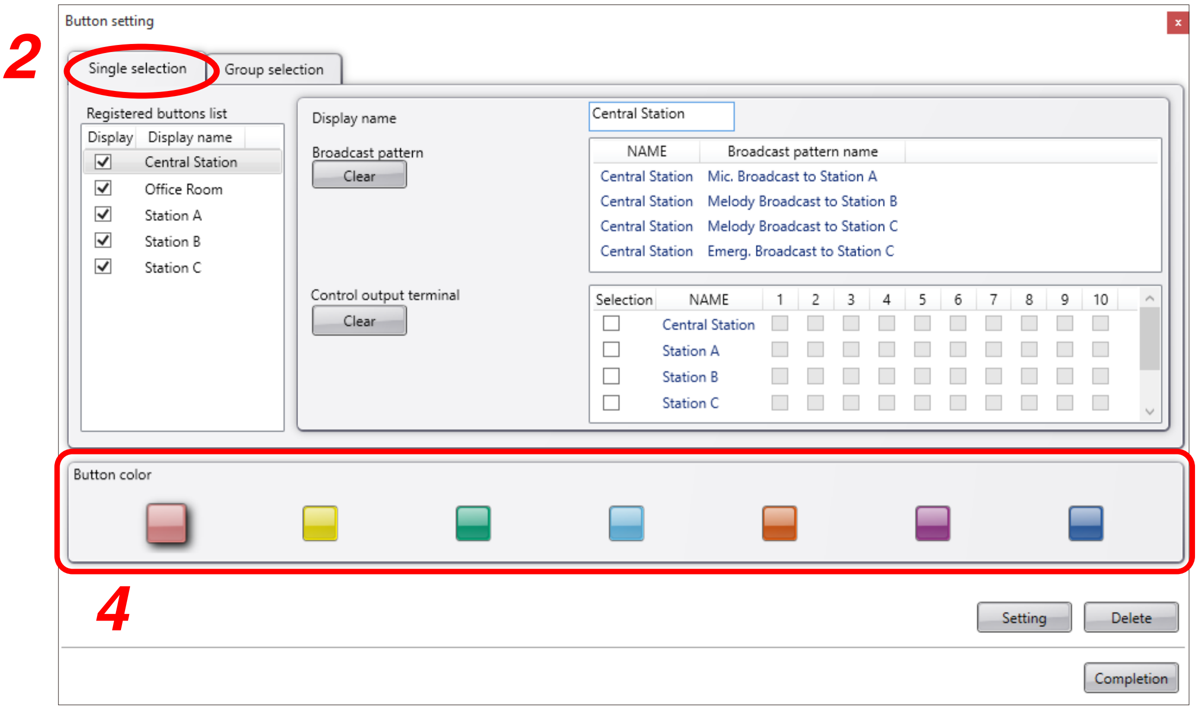
Display name: Central Station

Display	Display name
☑	Central Station
☑	Office Room
☑	Station A
☑	Station B
☑	Station C

NAME	Broadcast pattern name
Central Station	Mic. Broadcast to Station A
Central Station	Melody Broadcast to Station B
Central Station	Melody Broadcast to Station C
Central Station	Emerg. Broadcast to Station C

Selection	NAME	1	2	3	4	5	6	7	8	9	10
☐	Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Button setting pallet


2
Button setting
Single selection
Group selection
Clear
Clear
Button color
4
Setting
Delete
Completion

Registered buttons list

Display	Display name
☑	Central Station
☑	Office Room
☑	Station A
☑	Station B
☑	Station C

Display name: Central Station

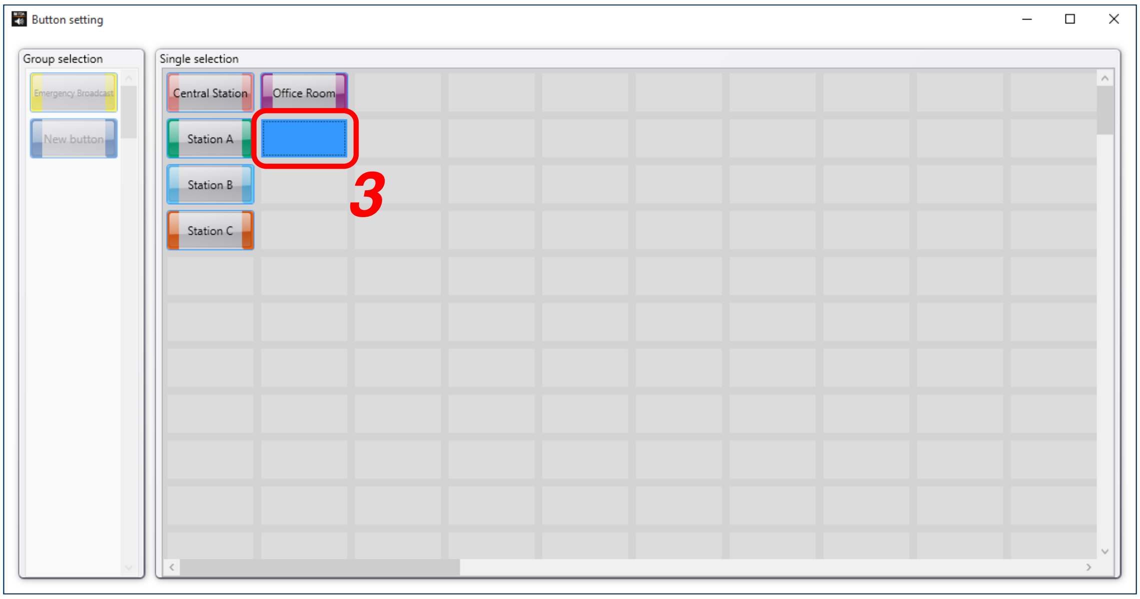
Broadcast pattern

NAME	Broadcast pattern name
Central Station	Mic. Broadcast to Station A
Central Station	Melody Broadcast to Station B
Central Station	Melody Broadcast to Station C
Central Station	Emerg. Broadcast to Station C

Control output terminal

Selection	NAME	1	2	3	4	5	6	7	8	9	10
☐	Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Step 2. Select the Single selection tab on the button setting pallet.


Button setting
Group selection
Emergency Broadcast
New button
Single selection
Central Station
Office Room
Station A
Station B
Station C
3

Step 3. Select the position of the button on the button setting screen.
To select, click the grid where the button is to be located in the single selection button location area.

Step 4. Select the color of the button.
Clicking the desired button color on the button setting pallet causes the clicked color to appear floating in the display.

Step 5. Click the Setting button on the button setting pallet.
The image of the button is displayed on the grid of the button setting screen.

Step 6. Enter the display name in the editing field of the button setting pallet.

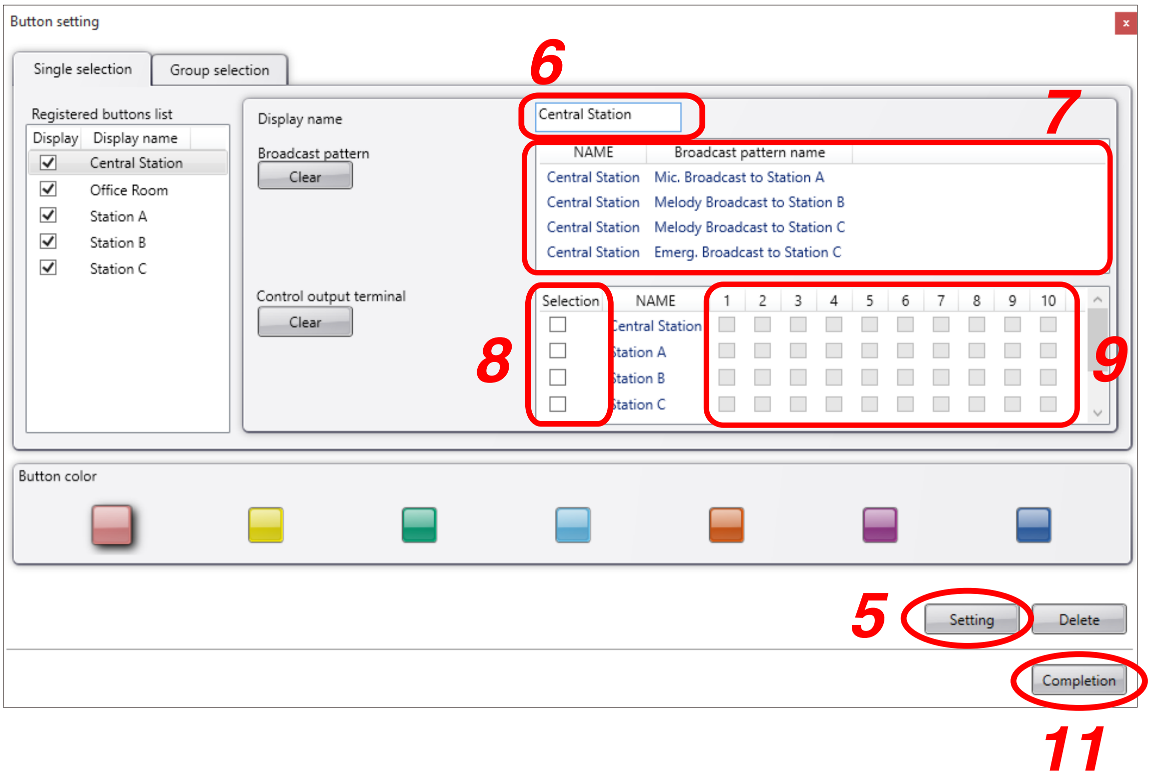
Step 7. Select the broadcast pattern to be activated in the Broadcast pattern list.

Tips

- All patterns registered for the NX-300, NX-100 and NX-100S units in the system are displayed in the broadcast pattern list.
- Only one broadcast pattern at a time can be selected.
- To clear the setting contents of the selected NX-300, NX-100 and NX-100S broadcast pattern, click the leftmost Clear button in the Edit area.

Step 8. Check the control output to be activated in the Control output list.
The channel number of the control output can be selected.

Step 9. Check the channel number of the control output.
To clear the setting contents of all NX-300, NX-100 and NX-100S control outputs, click the leftmost Clear button in the Edit area.


Button setting
×
Single selection
Group selection
Registered buttons list
Display name
Broadcast pattern
Clear
Control output terminal
Clear
Button color
Setting
Delete
Completion
6
7
8
9
5
11

Display name: Central Station

Display	Display name
☑	Central Station
☑	Office Room
☑	Station A
☑	Station B
☑	Station C

NAME	Broadcast pattern name
Central Station	Mic. Broadcast to Station A
Central Station	Melody Broadcast to Station B
Central Station	Melody Broadcast to Station C
Central Station	Emerg. Broadcast to Station C

Selection	NAME	1	2	3	4	5	6	7	8	9	10
☐	Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

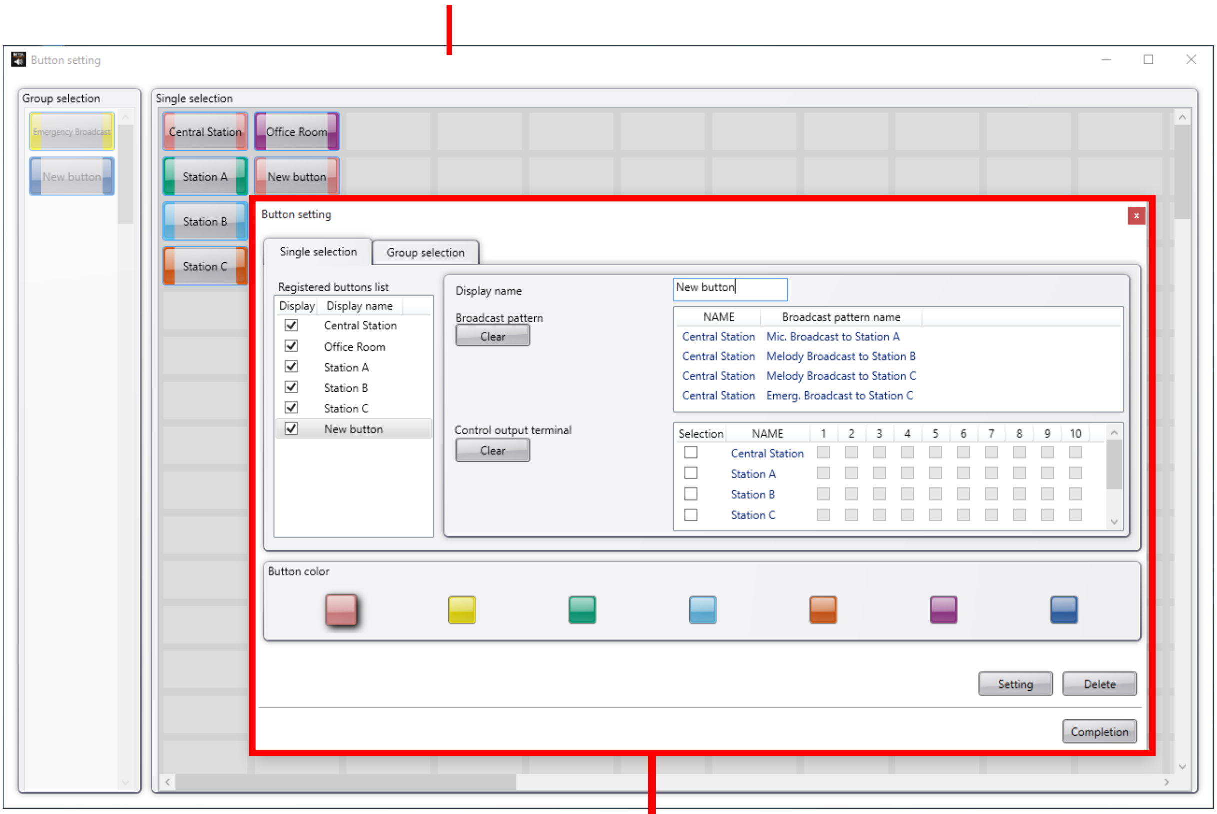
Step 10. Repeat **Steps 2 – 9** as often as required.

Step 11. Click the Completion button on the button setting pallet.
Both the button setting screen and button setting pallet are closed, causing the newly created button to appear on the button screen.

6.2. Creating the Group Selection Button

The Group Selection button is used to simultaneously select multiple Single Selection buttons.
Register the Single Selection buttons to be controlled by the Group Selection button.

Step 1. Select “Tool” ⟶ ”Button setting...” from the menu bar.
The button setting screen and pallet are displayed.



Button setting screen

Button setting pallet

Button setting
Group selection
Emergency Broadcast
New button
Single selection
Central Station
Office Room
Station A
New button
Station B
Station C
Button setting
Single selection
Group selection
Clear
Clear
Button color
Setting
Delete
Completion

Registered buttons list

Display	Display name
☑	Central Station
☑	Office Room
☑	Station A
☑	Station B
☑	Station C
☑	New button

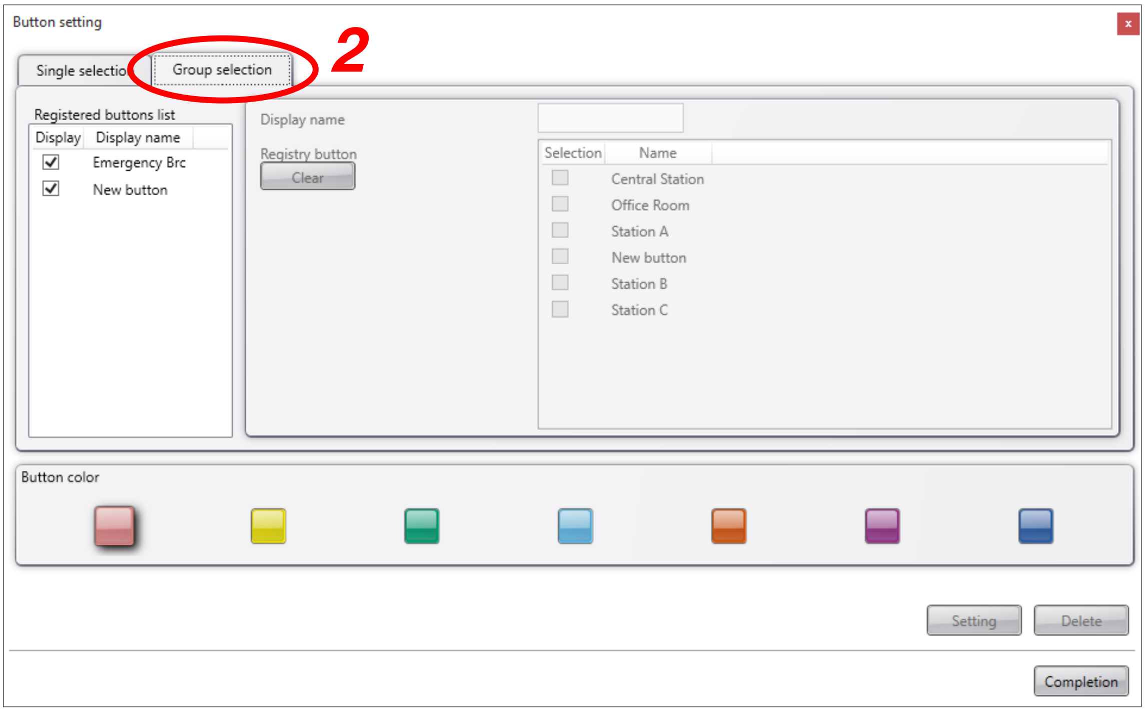
Display name: New button

Broadcast pattern

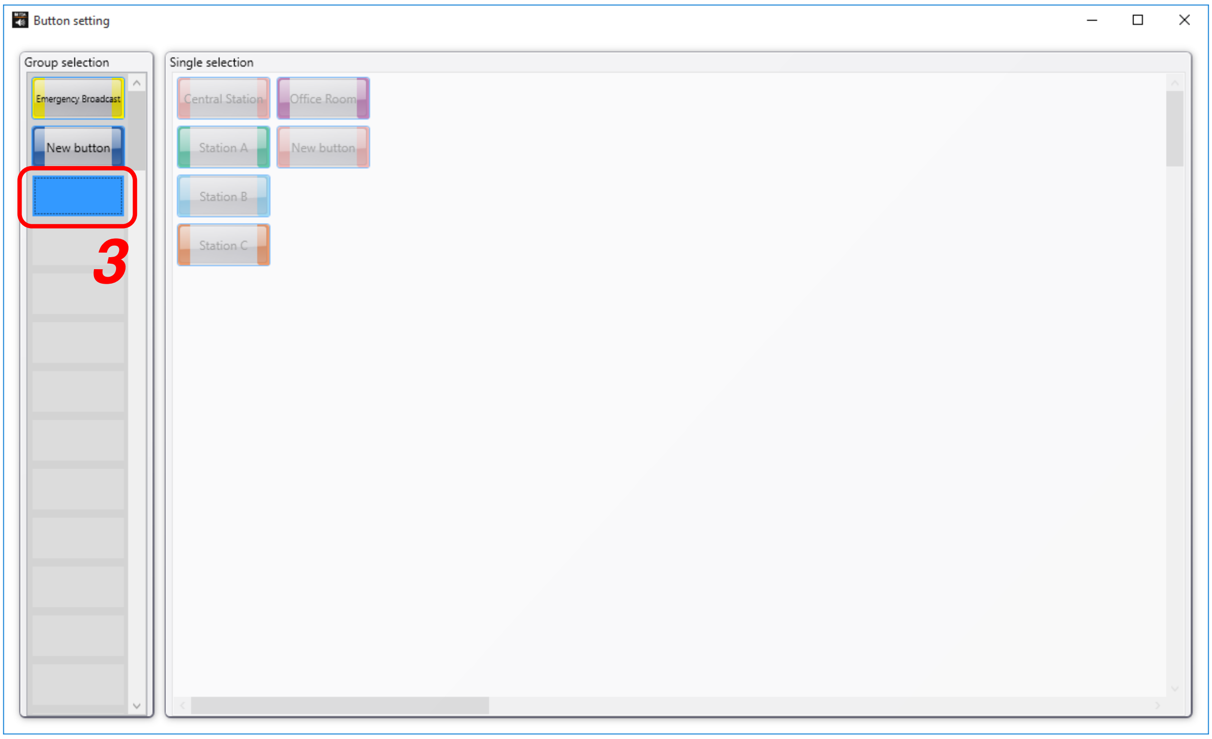
NAME	Broadcast pattern name
Central Station	Mic. Broadcast to Station A
Central Station	Melody Broadcast to Station B
Central Station	Melody Broadcast to Station C
Central Station	Emerg. Broadcast to Station C

Control output terminal

Selection	NAME	1	2	3	4	5	6	7	8	9	10
☐	Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐


Button setting
Single selectio
Group selection
2
Registered buttons list
Display
Display name
☑ Emergency Brc
☑ New button
Display name
Registry button
Clear
Selection
Name
☐ Central Station
☐ Office Room
☐ Station A
☐ New button
☐ Station B
☐ Station C
Button color
Setting
Delete
Completion

Step 2. Select the Group selection tab on the button setting pallet.


Button setting
Group selection
Emergency Broadcast
New button
3
Single selection
Central Station
Office Room
Station A
New button
Station B
Station C

Step 3. Select the position of the button on the button setting screen.
To select, click the grid where the button is to be located in the group selection button location area.

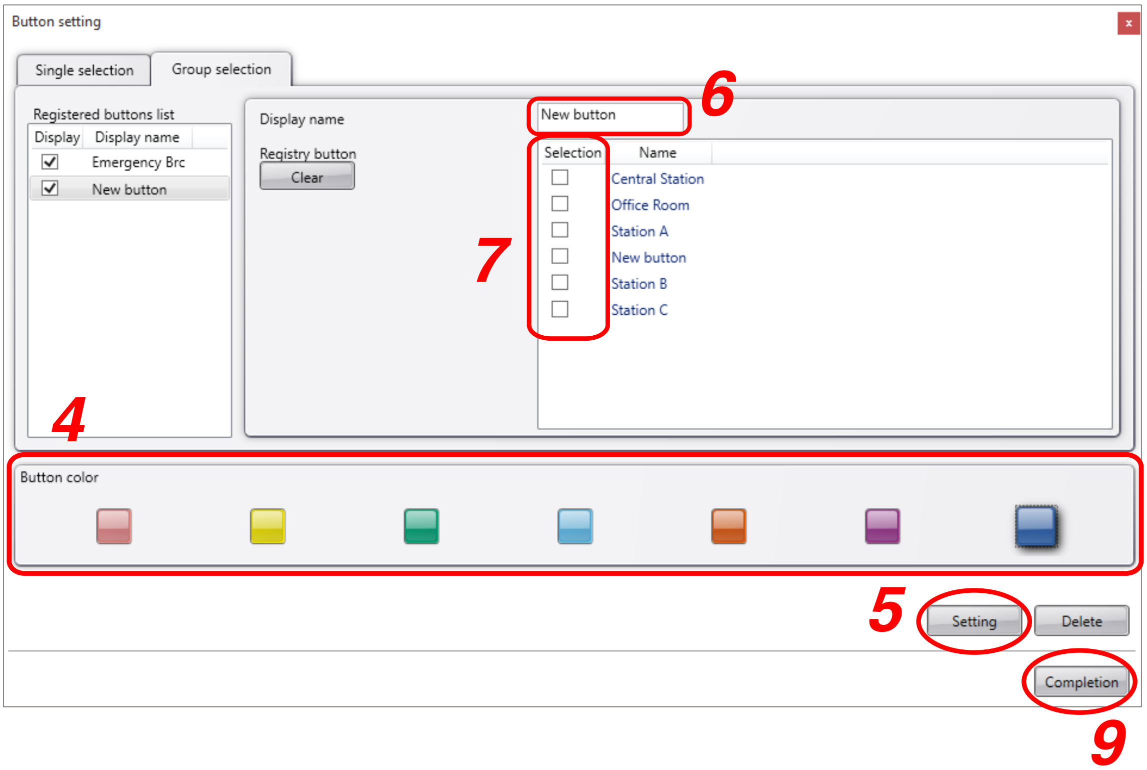
Step 4. Select the color of the button.
Clicking the desired button color on the button setting pallet causes the clicked color to appear floating in the display.

Step 5. Click the Setting button on the button setting pallet.
The image of the button is displayed on the grid of the button setting screen.

Step 6. Enter the display name in the editing field of the button setting pallet.

Step 7. Check the Single Selection buttons to be simultaneously selected on the registered button list.

Step 8. Repeat **Steps 2 – 7** as often as required.


Button setting
×
Single selection
Group selection
Registry button
Clear
Button color
Setting
Delete
Completion
4
5
6
7
9

Registered buttons list

Display	Display name
☑	Emergency Brc
☑	New button

Display name: New button

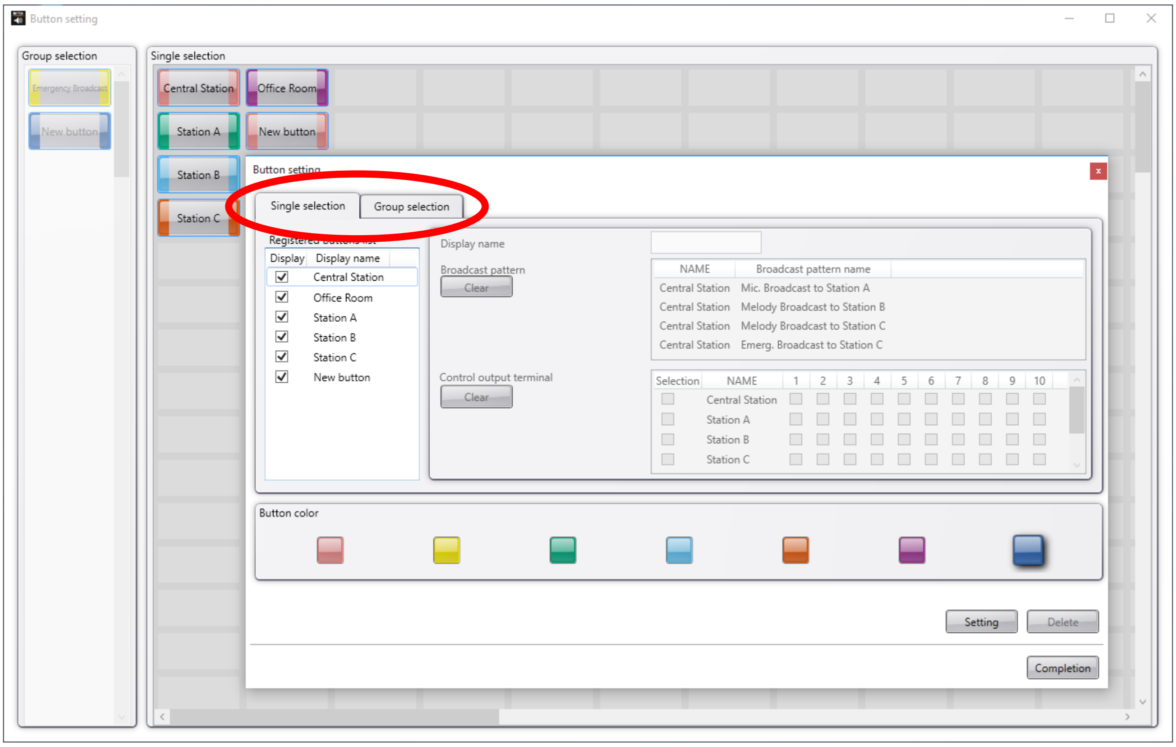
Selection	Name
☐	Central Station
☐	Office Room
☐	Station A
☐	New button
☐	Station B
☐	Station C

Step 9. Click the Completion button on the button setting pallet.
Both the button setting screen and button setting pallet are closed, causing the newly created button to appear on the button screen.

6.3. Deleting Created Buttons

Both Single Selection and Group Selection buttons can be deleted using the same procedure.

Step 1. Select the type of button to be deleted on the button setting pallet.
Select the Single Selection tab to delete Single Selection buttons, and the Group Selection tab to delete Group Selection buttons.

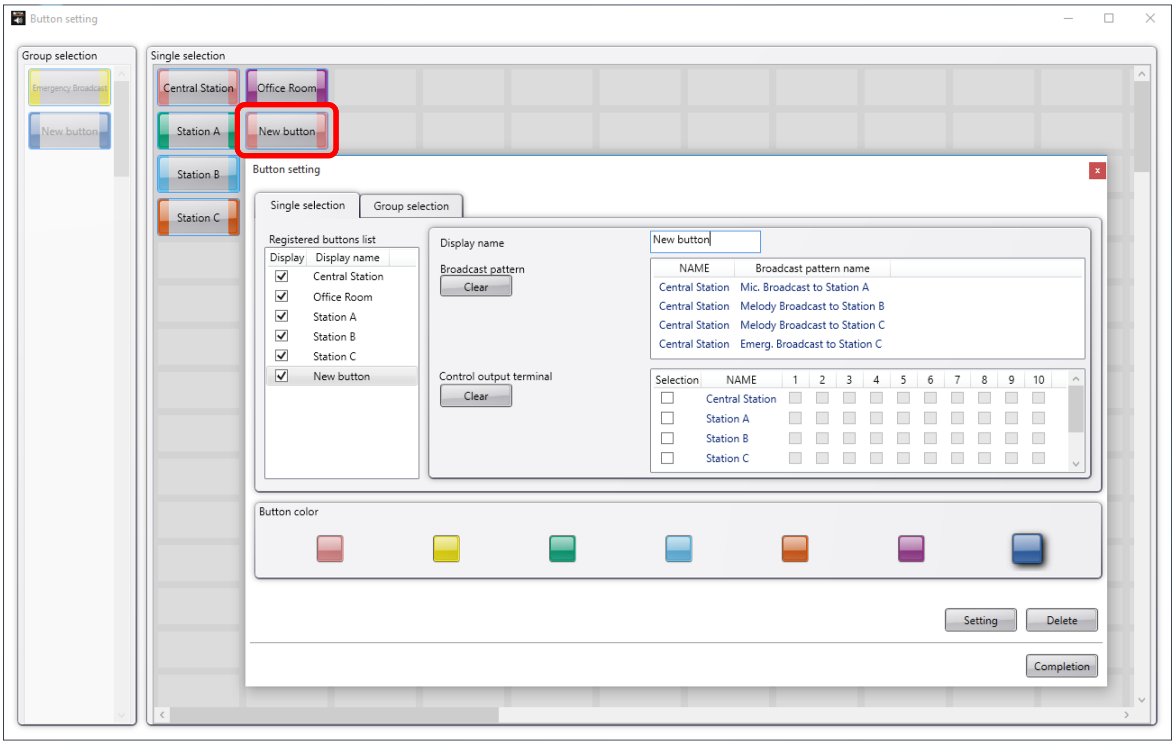

Button setting
Group selection
Emergency Broadcast
New button
Single selection
Central Station
Office Room
Station A
New button
Station B
Station C
Button setting
Single selection
Group selection
Registered buttons list
Display name
Broadcast pattern
Clear
Control output terminal
Clear
Button color
Setting
Delete
Completion

Display	Display name
☑	Central Station
☑	Office Room
☑	Station A
☑	Station B
☑	Station C
☑	New button

NAME	Broadcast pattern name
Central Station	Mic. Broadcast to Station A
Central Station	Melody Broadcast to Station B
Central Station	Melody Broadcast to Station C
Central Station	Emerg. Broadcast to Station C

Selection	NAME	1	2	3	4	5	6	7	8	9	10
☐	Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Step 2. Select the button to be deleted on the button setting screen.
To select, click the grid where the button to be deleted is located.
If the button is located on the grid, the Delete button in the button selection pallet can be clicked.


Button setting
Group selection
Emergency Broadcast
New button
Single selection
Central Station
Office Room
Station A
New button
Station B
Station C
Button setting
Single selection
Group selection
Registered buttons list
Broadcast pattern
Clear
Control output terminal
Clear
Button color
Setting
Delete
Completion

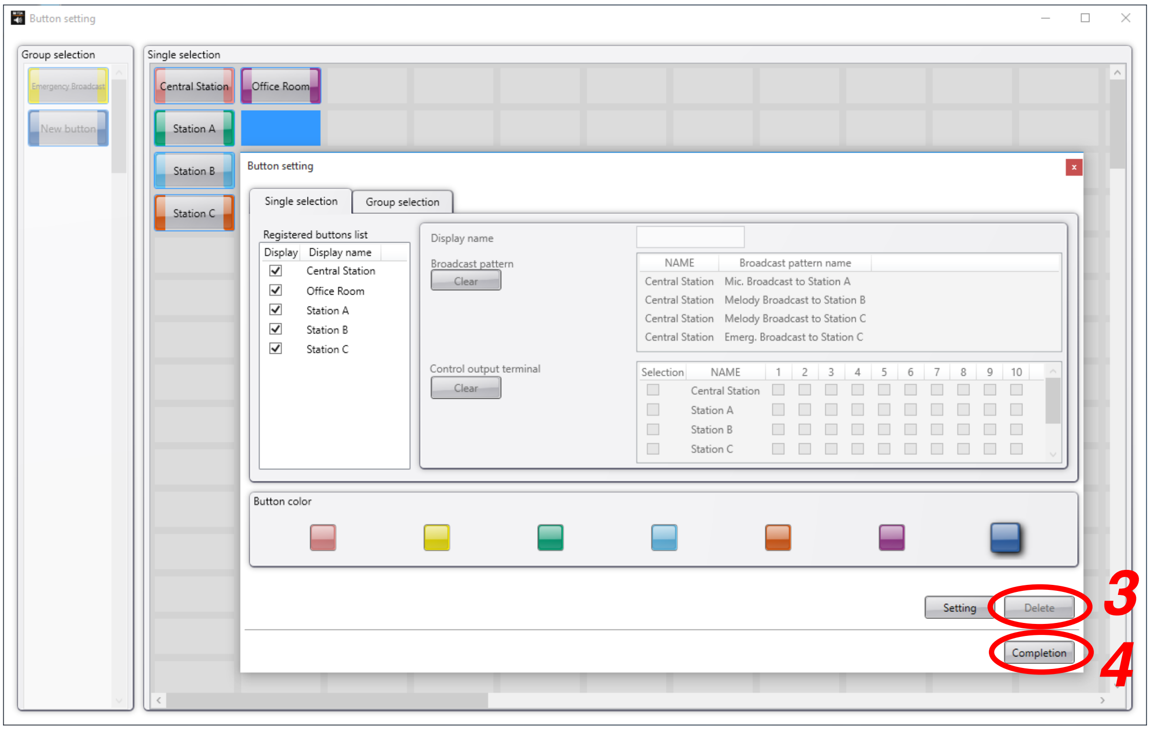
Display name: New button

Display	Display name
☑	Central Station
☑	Office Room
☑	Station A
☑	Station B
☑	Station C
☑	New button

NAME	Broadcast pattern name
Central Station	Mic. Broadcast to Station A
Central Station	Melody Broadcast to Station B
Central Station	Melody Broadcast to Station C
Central Station	Emerg. Broadcast to Station C

Selection	NAME	1	2	3	4	5	6	7	8	9	10
☐	Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Step 3. Click the Delete button on the button setting pallet.
The button selected on the button setting screen is deleted.


Button setting
Group selection
Emergency Broadcast
New button
Single selection
Central Station
Office Room
Station A
Station B
Station C
Button setting
Single selection
Group selection
Display name
Broadcast pattern
Clear
Control output terminal
Clear
Button color
Setting
Delete
Completion
3
4

Registered buttons list

Display	Display name
☑	Central Station
☑	Office Room
☑	Station A
☑	Station B
☑	Station C

NAME	Broadcast pattern name
Central Station	Mic. Broadcast to Station A
Central Station	Melody Broadcast to Station B
Central Station	Melody Broadcast to Station C
Central Station	Emerg. Broadcast to Station C

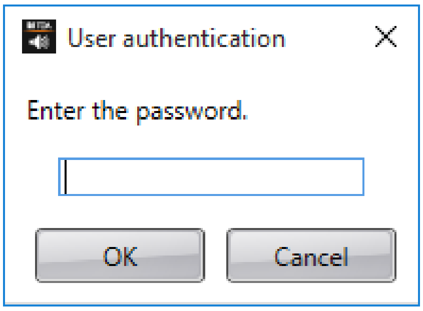
Selection	NAME	1	2	3	4	5	6	7	8	9	10
☐	Central Station	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station A	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station B	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐	Station C	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Step 4. Click the Completion button on the button setting pallet.
Both the button setting screen and pallet are closed and the designated button is deleted from the button screen.

7. PERFORMING VARIOUS OTHER SETTINGS

Various other settings can be performed using setting tools.

7.1. Setting the Administrator Password

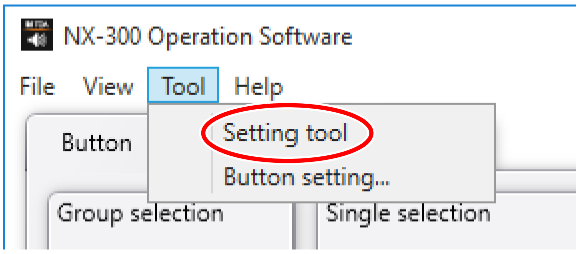

User authentication
OK
Cancel

Enter the password.

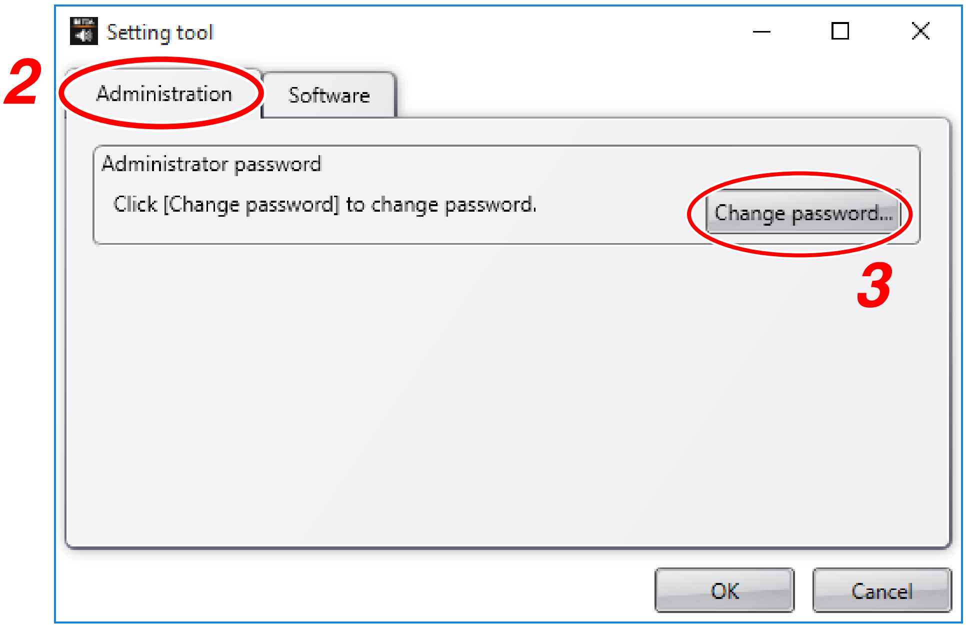
By setting the administrator password, unauthorized modifications of settings can be prevented.

Once the password has been set, the user authentication screen shown at right is displayed when attempting to operate the Setting Tool and Button Settings.
When the user authentication screen is displayed, enter the correct password and click the OK button.

Step 1. Select “Tool” ⟶ ”Setting tool” from the menu bar.


NX-300 Operation Software
File
View
Tool
Help
Button
Setting tool
Button setting...
Group selection
Single selection

The setting tool screen is displayed.

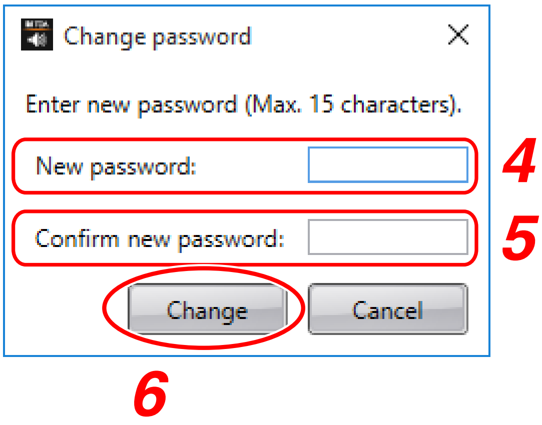

Setting tool
2
Administration
Software
Change password...
3
OK
Cancel

Administrator password

Click [Change password] to change password.

Step 2. Select the type of settings.
Select the Administration tab on the setting tool screen.

Step 3. Click the Change password button.
The change password screen is displayed.


Change password
Enter new password (Max. 15 characters).
New password:
Confirm new password:
Change
Cancel
4
5
6

Step 4. Enter a new password using up to 15 characters.

Tip
Password settings can be reset if a change is made with the New Password field left blank.

Step 5. For confirmation, enter the new password entered in **Step 4** in the "Confirm new password" field.

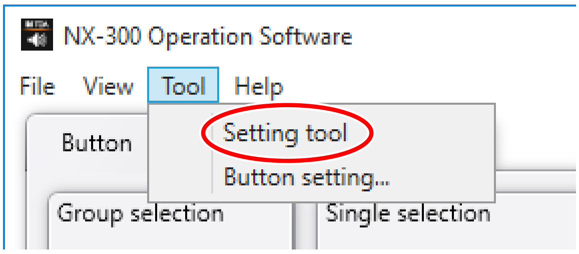
Step 6. Click the Change button.
The confirmation screen is displayed.

Step 7. Click the Yes button on the confirmation screen.
The new password is set.

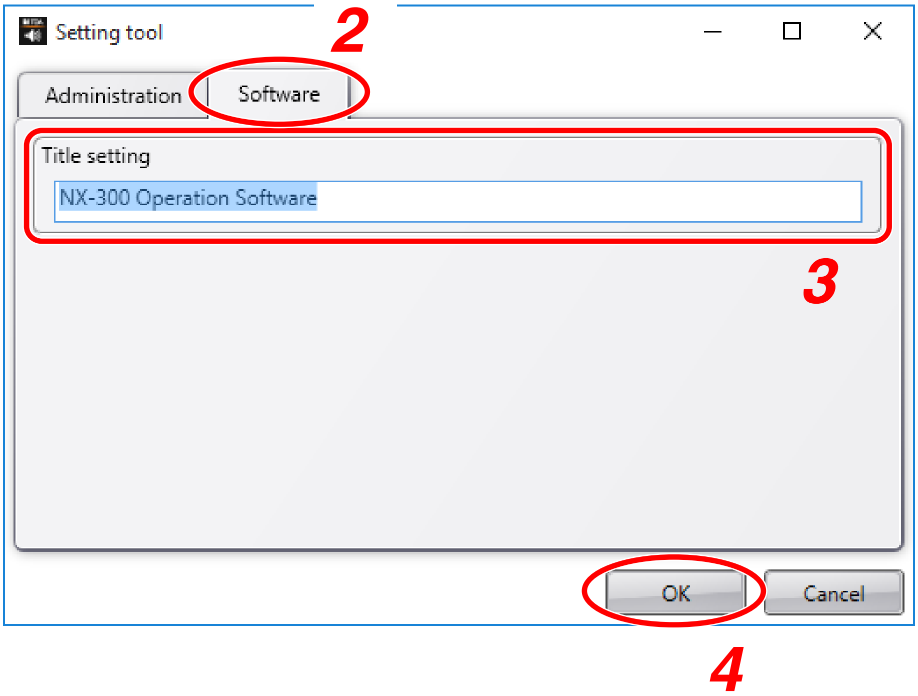
7.2. Changing the Title for the NX-300 Operation Software

The “NX-300 Operation Software” title displayed in the title bar and task bar can be changed.

Step 1. Select “Tool” → ”Setting tool” from the menu bar.


NX-300 Operation Software
File
View
Tool
Help
Button
Setting tool
Button setting...
Group selection
Single selection

The setting tool screen is displayed.


Setting tool
2
Administration
Software
Title setting
3
OK
Cancel
4

NX-300 Operation Software

Step 2. Click the Software tab.
The software screen is displayed.

Step 3. Enter the title to be set in the title setting field.
(Default: “NX-300 Operation Software”)

Step 4. Click the OK button
The setting tool screen is closed and the title is changed.

8. ERROR MESSAGES

When an error message is displayed during NX-300 Operation Software use, correct the problem as follows:

Error Message	Remedy
Failed to acquire network device information. Check network connections, then restart.	Check whether the network interface is enabled.
Failed to read unit list.	Confirm the unit list file.
System information not found. Create unit list, then restart.	Create system settings using the NX-300 Setting Software, then restart the NX-300 Operation Software.
Failed to save edited data.	Terminate the NX-300 Operation Software and restart, then save again.
Broadcast failed.	Terminate operation and try again later.
Terminate broadcast and control output during activation, then close window.	Click the Stop button and terminate the NX-300 Operation Software.
Error detected. Quitting.	Restart and use the NX-300 Operation Software.

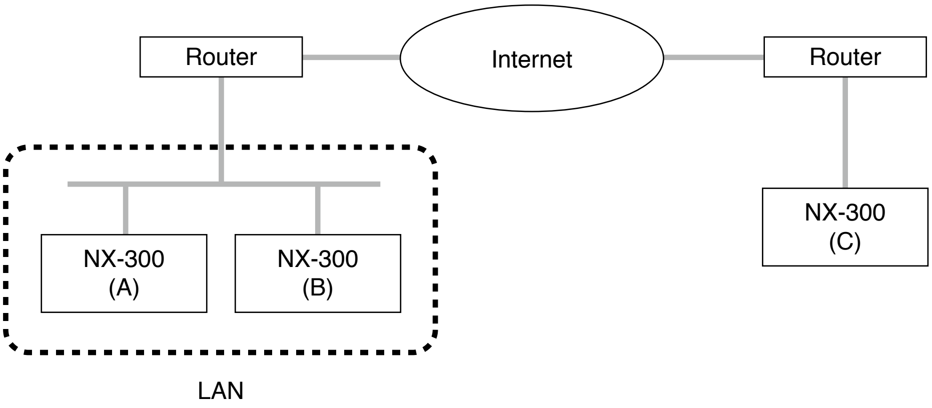
Chapter 6

APPENDIX

1. EXPLANATION

1.1. IP Network and Address

The IP networks the NX-300 can use include Local Area Networks (LAN) used in small-scale areas, such as within or on the premises of a company, and the Internet, which covers a wide area over remote distances.



LANs differ from the Internet in the IP address to be used.

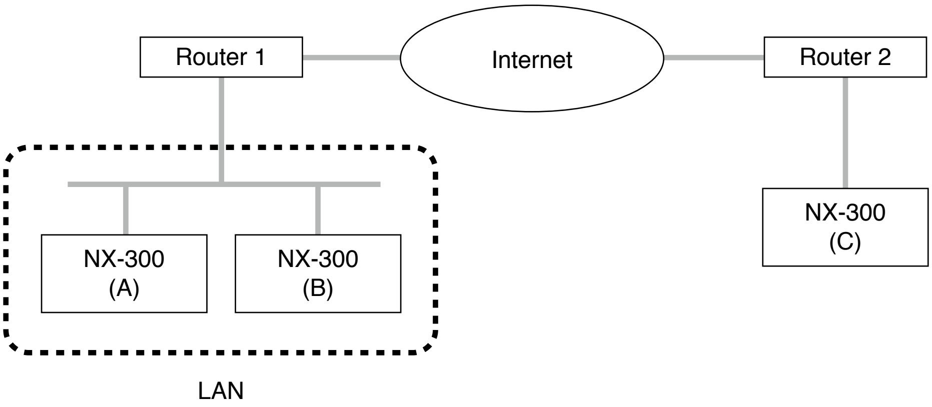
Local IP address (private IP address):	This address is used and can be freely set within the LAN.
Global IP address:	This is the only address that is used to access the Internet. To use the NX-300 unit through the Internet, fixed global IP addresses must be acquired and assigned to it or the router if it is used.

When a connection is made from Unit B to Unit A in the figure, the local address can be used. However, when a connection is made from Unit C to Unit A, the global IP address must be used.

The fixed global IP address must be assigned to the units connected via the Internet.
Consult with network management personnel or the ISP (Internet service provider) concerning the acquisition of a fixed global IP address.

1.2. Network Address Port Translation (NAPT)

Because the Internet cannot be accessed using the local IP address, the local IP address must be converted into the global IP address by means of network address port translation (NAPT).

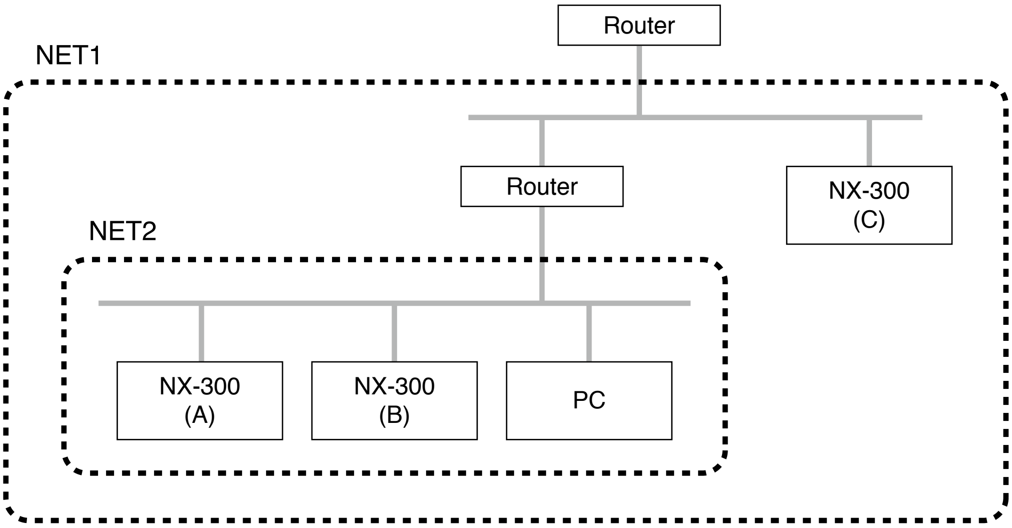


The global IP address is used to connect Unit C to Unit A. It is then converted to Unit A’s local address by Router 1.

The NX-300 Setting Software is compatible with NAPT. To set a unit connected using NAPT, click the Enable NAPT checkbox on the Network tab and enter the required items. (See p. 3-28, "Network Settings.")

1.3. IP Broadcast and Unit Scan

The IP broadcast communication method is used to scan the units connected to the network. Units can only be scanned within the effective range of the IP broadcast.
The address to be used is 255.255.255.255.
IP broadcast does not reach beyond the router covering range even in the LAN.



In the above figure, NET1 represents the LAN and NET2 represents the effective range for IP broadcast. For example, if the PC is used to scan the units in the figure, Unit C cannot be scanned even though it is located within the same LAN.

Note
Consult a network administrator about the effective range of the IP broadcast.

1.4. Multicast and Simultaneous Multiple Broadcasts

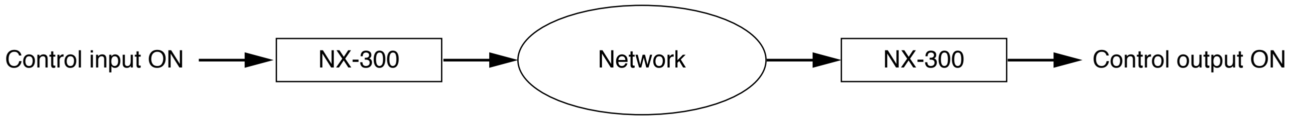
The multicast communication method can be utilized to make simultaneous broadcasts to two or more units. The advantage of multicast operation is the possibility of decreasing traffic. Networks that use multicast communication need to be supported by multicast addresses and Internet Group Management Protocol (IGMP). The effective multicast address range is from 224.0.0.0 to 239.255.255.255.

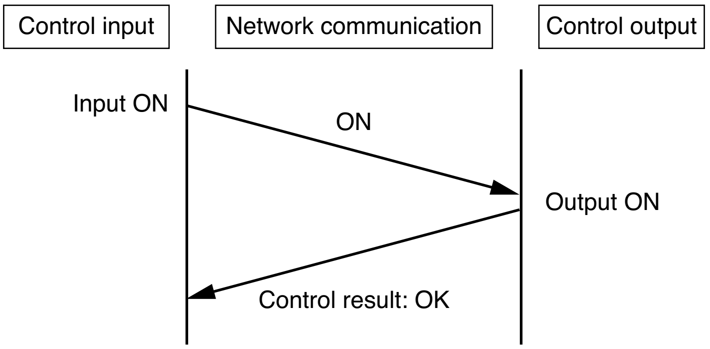
Note
Consult a network administrator when performing settings.

1.5. How the Contact Bridge Works

1.5.1. Basic operation

Whenever any variation in the control input occurs, the input change information is communicated to the preprogrammed output destination.
Note: No information is communicated when the control input remains unchanged.

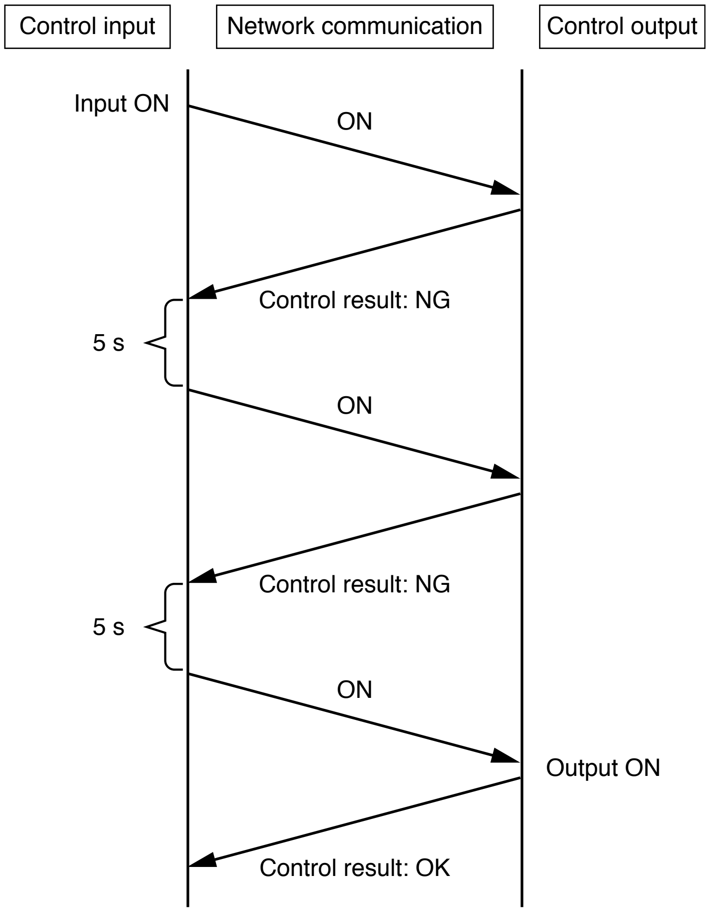

Control input ON
NX-300
Network
NX-300
Control output ON


Control input
Network communication
Control output
Input ON
ON
Output ON
Control result: OK

1.5.2. Retry operation

If a failure of contact bridge control is detected, the system automatically attempts to reestablish control after a 5-second interval (retry operation). The retry operation continues until the contact bridge has been successfully controlled or the control input status has changed.

[Factors attributable to contact bridge control failure]
- Control input and output devices are not recognized as existing in the same system. (Their respective system names differ from each other.)
- Control output not set to standard mode.
- Timeout or error occurs in network communications.

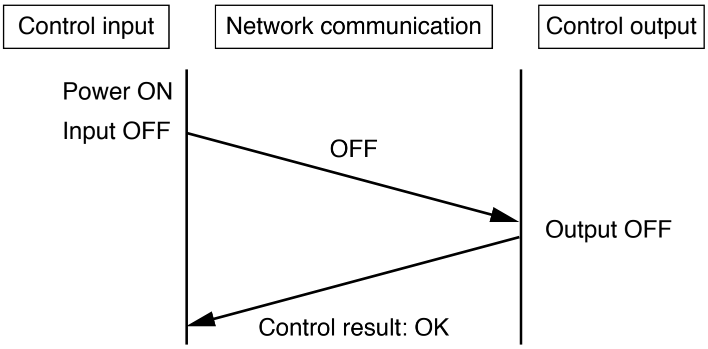

Control input
Network communication
Control output
Input ON
ON
Control result: NG
5 s
ON
Control result: NG
5 s
ON
Output ON
Control result: OK

1.5.3. Operation at system startup

When contact bridges are registered, the control input device transmits control input status information to the control output device immediately after power is switched ON. This operation is performed for all registered control inputs.

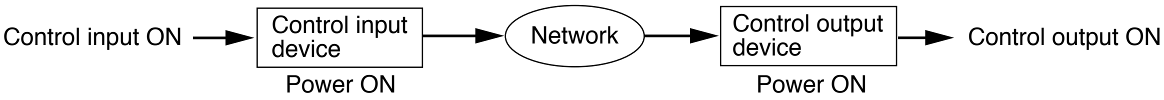
Note

If a contact bridge output destination device is not connected to the network or if the power is OFF, the control input device repeatedly continues retry operation after power is switched ON. Whenever control results in failure, the error indicator on the front panel lights for 1 second.

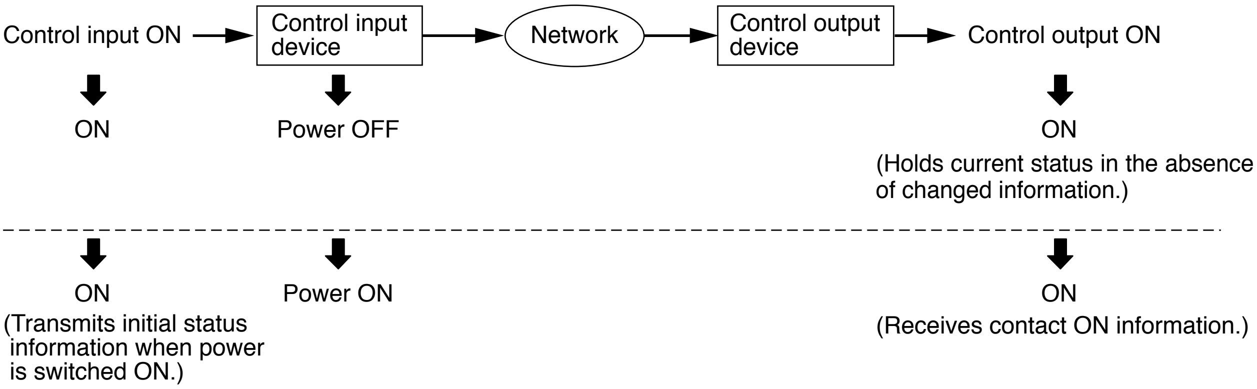

Control input
Network communication
Control output
Power ON
Input OFF
OFF
Output OFF
Control result: OK

1.5.4. Operation at power-off or power restoration

The following examples show the contact status changes from the status illustrated below when the control input or output device's power is switched ON or OFF.


Control input ON
Control input device
Power ON
Network
Control output device
Power ON
Control output ON

[Operations caused by a change in the control input device’s power status]

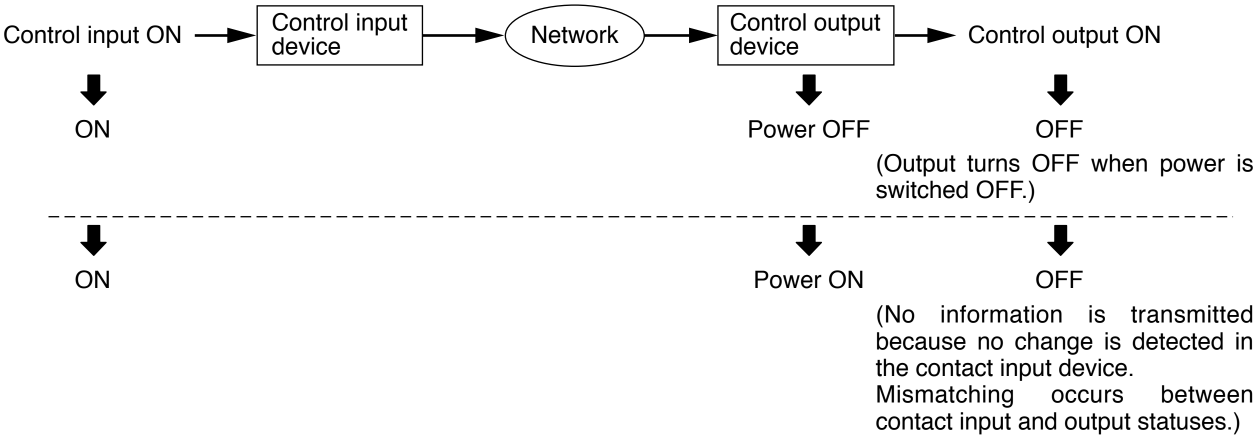

Control input ON
Control input device
Network
Control output device
Control output ON
ON
Power OFF
ON
ON
Power ON
ON

(Holds current status in the absence of changed information.)

(Transmits initial status information when power is switched ON.)

(Receives contact ON information.)

[Operations caused by a change in the control output device’s power status]


Control input ON
Control input device
Network
Control output device
Control output ON
ON
Power OFF
OFF
ON
Power ON
OFF

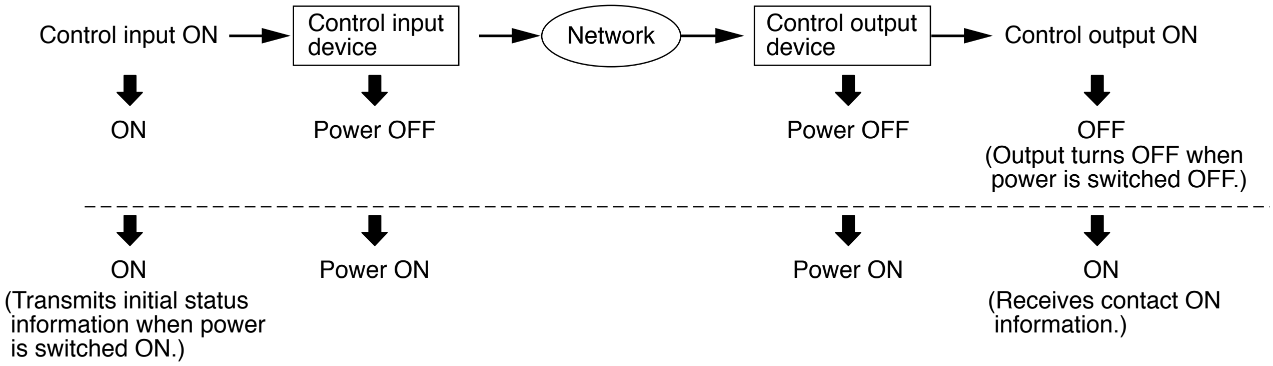
(Output turns OFF when power is switched OFF.)

(No information is transmitted because no change is detected in the contact input device. Mismatching occurs between contact input and output statuses.)

Note

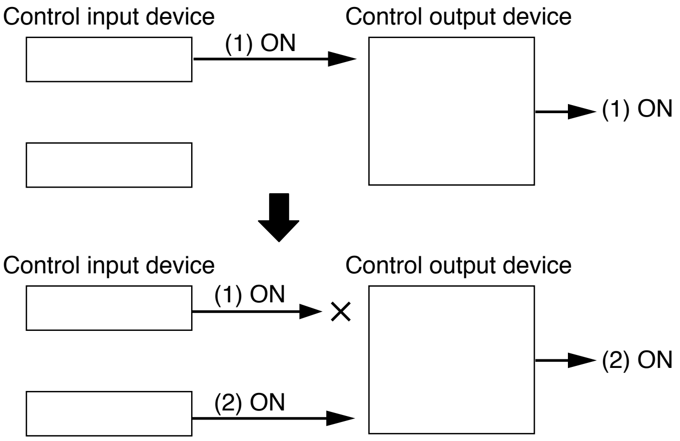
If this malfunction should occur, switch OFF the control input device’s control input, then switch it ON again.

[Operations caused by a change in the control input and output devices' power statuses]


Control input ON
Control input device
Network
Control output device
Control output ON
ON
Power OFF
Power OFF
OFF
(Output turns OFF when power is switched OFF.)
ON
(Transmits initial status information when power is switched ON.)
Power ON
Power ON
ON
(Receives contact ON information.)

1.5.5. Operation when multiple contact bridges are simultaneously activated for the same control output

While a contact bridge signal is being received from the first entered control input (1), if another contact bridge signal is received from control input (2), the control bridge (1) is terminated, allowing the last control bridge (2) to be executed.


Control input device
Control output device
(1) ON
(1) ON
Control input device
Control output device
(1) ON
(2) ON
(2) ON

1.6. Maximum Number of Broadcasting Destinations

- The maximum number of broadcasting destinations per channel is as follows:

Model	Multicast	Unicast
NX-300	64	16*
NX-100/100S		4

[Example]
In the case of multicast, the NX-300 can simultaneously broadcast to up to 64 locations each for both Channel 1 and Channel 2.
* The maximum number of broadcast destinations could be reduced to 16 or less as shown below, depending on audio specification settings.

Thansmission Sampling [kHz]		8		16		32		48	
Audio compression		ON	OFF	ON	OFF	ON	OFF	ON	OFF
Transmission Packet size [byte]	8	4	–	–	–	–	–	–	–
	16	4	–	4	–	–	–	–	–
	32	16	4	4	–	4	–	–	–
	64	16	4	16	4	4	–	4	–
	128	16	16	16	4	16	4	4	–
	256	16	16	16	16	16	4	16	4
	512	16	16	16	16	16	16	16	4
	1024	16	16	16	16	16	16	16	16

- If the number of broadcasts activated from each channel exceeds the above limit, the priority control function is automatically enabled, as described below, disabling broadcasts that exceed the maximum limit:
When another broadcast with a priority higher than that of the current broadcast is made, the broadcast with the lower priority is interrupted, allowing the last high-priority broadcast to go through.
When another broadcast with the same priority level as that of the current broadcast is made, if LIFO mode is selected in the Same Priority Broadcast settings, the current broadcast is interrupted and the last broadcast is output. All subsequent broadcasts are disabled if FIFO is selected in the settings.

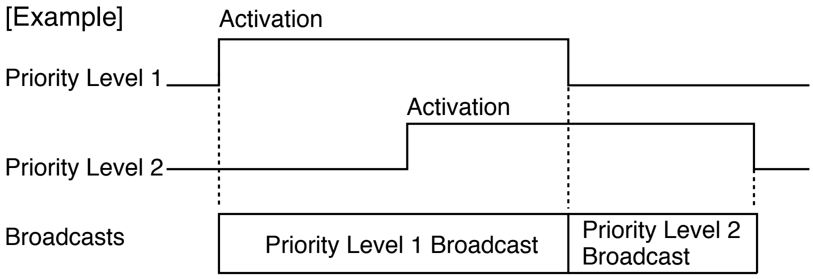
Tips
Use the NX-300 Setting Software to perform the Same Priority Broadcast settings. (See p. 3-35, "Broadcast Spec Settings.")
In the case of systems in which NX-100 and NX-100S units are mixed, the same priority broadcast setting is fixed at FIFO.

1.7. Priority Levels

When a broadcast is activated, operations at the time that another broadcast is already in progress at the broadcasting destination are as follows:

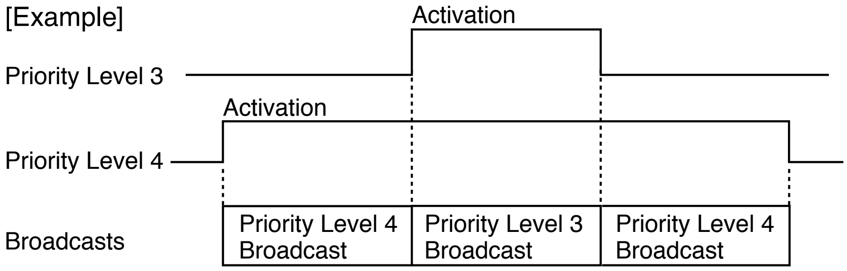
- New broadcasts cannot be made if the broadcast already in progress has a higher priority.
  Newer broadcasts can only be output after the higher priority broadcast is completed.

[Example]


Activation
Priority Level 1
Activation
Priority Level 2
Broadcasts
Priority Level 1 Broadcast
Priority Level 2 Broadcast

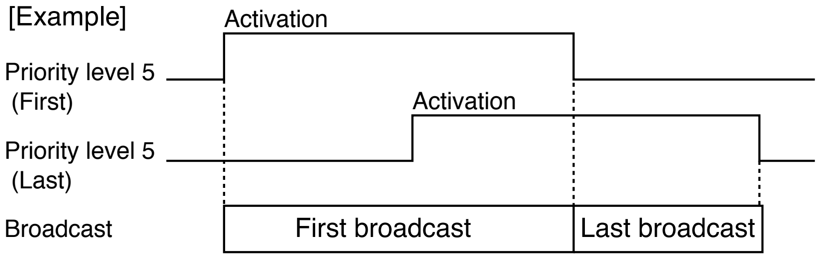
- If the priority of the broadcast in progress is lower, a new broadcast can interrupt it and be allowed to go through.
  The original broadcast resumes after the interrupting broadcast is completed.

[Example]


Activation
Priority Level 3
Activation
Priority Level 4
Broadcasts
Priority Level 4 Broadcast
Priority Level 3 Broadcast
Priority Level 4 Broadcast

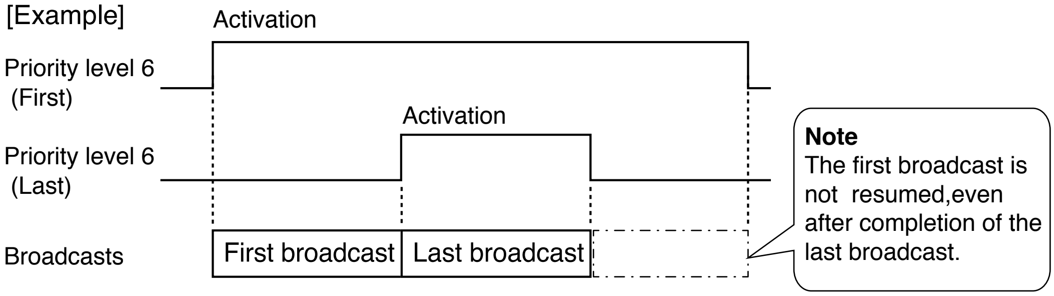
- If a broadcast with the same priority level is in progress, operation differs depending on the same priority broadcast setting.
  If set to FIFO: The last broadcast cannot be made until completion of the first broadcast.

[Example]


Activation
Priority level 5
(First)
Activation
Priority level 5
(Last)
Broadcast
First broadcast
Last broadcast

If set to LIFO: The last broadcast is made by interrupting the first broadcast.
The original broadcast is not resumed, even after the interrupting broadcast is completed.

[Example]


Activation
Priority level 6
(First)
Activation
Priority level 6
(Last)
Broadcasts
First broadcast
Last broadcast

Note
The first broadcast is not resumed,even after completion of the last broadcast.

Tip
Use the NX-300 Setting Software to perform the same priority broadcast settings. (See p. 3-26, "GENERAL SYSTEM SETTINGS.")

Notes
- Priority levels (1 – 8), set using the NX-300 Setting Software, are only valid for broadcasts with NX-300 units on the receiving side.
- Broadcasts with NX-100/100S units on the receiving side in systems in which both NX-300 and NX-100/100S units are used are always performed on a FIFO basis, regardless of priority settings.
- If both the broadcast and contact bridge are used in combination, the contact bridge always operates based on control input information, regardless of the broadcasting status.

1.8. Transmitting a Single Sound Source to Multiple Channels

The NX-300 audio adapter can transmit a single sound source to multiple locations via the network. However, when wishing to transmit to more than the number of transmission destinations* specified per channel, the bridge-out function allows it to be transmitted to the NX-300's multiple channels in sequential order. A single audio source can be transmitted even without using a mixer with multiple output terminals for signal distribution.

* Unicast: 16 locations; Multicast: 64 locations

Note

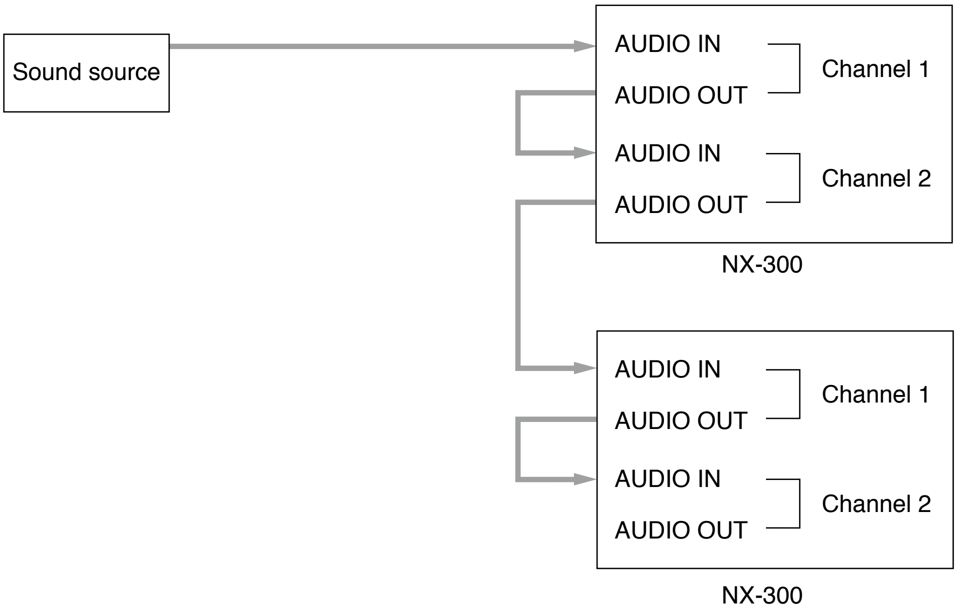
Since the passing gain per channel changes depending on the NX-300's input settings, take care when connecting multiple units.

- When the input is set to LINE and unbalanced input: 0 dB
- When the input is set to LINE and balanced input: –2 dB
- When the input is set to MIC and unbalanced input: +40 dB

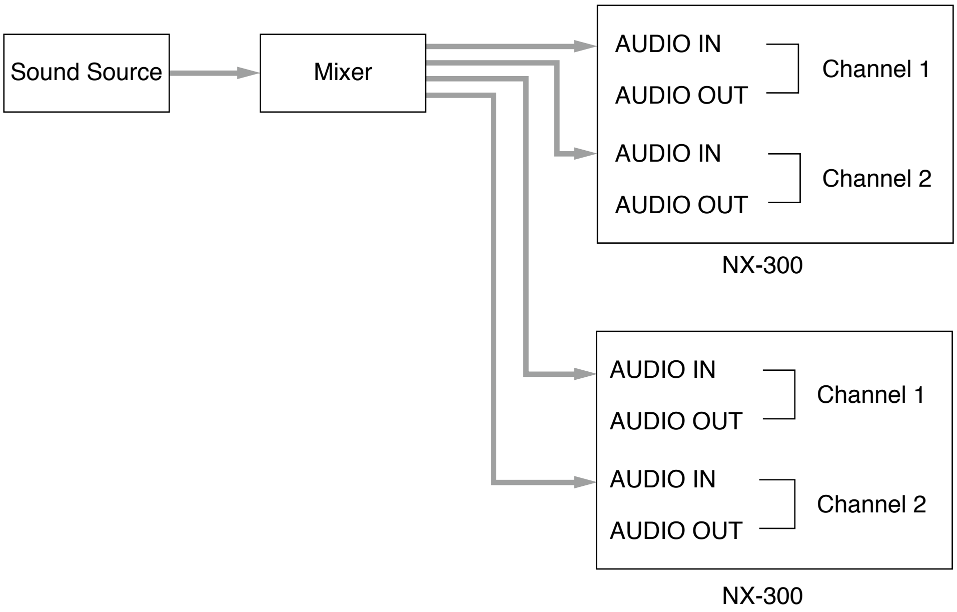
Tips

- Up to 4 channels of sequential audio source transmission are possible.
- The NX-300 Setting Software is necessary to enable this function. (See p. 3-35, "Broadcast Spec Settings.")

[Distributing an audio source using the bridge-out function]


Sound source
AUDIO IN
AUDIO OUT
Channel 1
AUDIO IN
AUDIO OUT
Channel 2
NX-300
AUDIO IN
AUDIO OUT
Channel 1
AUDIO IN
AUDIO OUT
Channel 2
NX-300

[Distributing an audio source using a mixer (not using the bridge-out function)]


Sound Source
Mixer
AUDIO IN
AUDIO OUT
Channel 1
AUDIO IN
AUDIO OUT
Channel 2
NX-300
AUDIO IN
AUDIO OUT
Channel 1
AUDIO IN
AUDIO OUT
Channel 2
NX-300

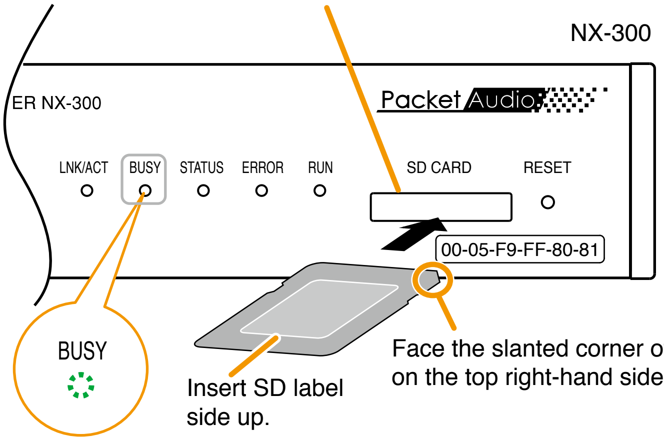
1.9. About Operation Log Acquisition

1.9.1. Acquiring operation logs

Insert an SD card (commercial product) into the SD card slot located on the front panel. Operation and stream logs* saved to the NX-300 adapter are automatically saved to the SD card. (The operation log file size is approximately 2 MB max.)
* Stream logs are saved to the operation log file. Their individual files are not created.

Tips

- Insert the SD card in the direction shown in the figure at right until it locks into place.
- The busy indicator flashes while the operation log is being acquired. Pull out the card after the indicator extinguishes.



SD card slot

NX-300

Face the slanted corner of the SD card on the top right-hand side.

Insert SD label side up.

BUSY indicator
(Flashing green)

- Operation logs are saved in the text file format under the following filename:
  Filename: [IP address].log
- Use a PC to confirm the contents of the acquired operation logs.

1.9.2. About the usable SD cards

- Separately prepare the SD/SDHC card to be used. Cards with capacities of up to 32 GB can be used.
- Neither mini SD cards nor micro SD cards can be used.
- The NX-300 is not compatible with SDXC cards.
- When using SD cards of up to 2 GB, use FAT16-formatted cards. When using SDHC cards of up to 32 GB, use FAT32-formatted cards. When formatting with a PC, be sure to use only the dedicated formatter software provided by the SD Association.

SD and SDHC Logos are registered trademarks.

Note
There may be cases in which even cards that meet the above conditions cannot be used in conjunction with the NX-300 due to SD/SDHC card characteristics, recording conditions, etc.

1.10. Disabling the Reset Switch

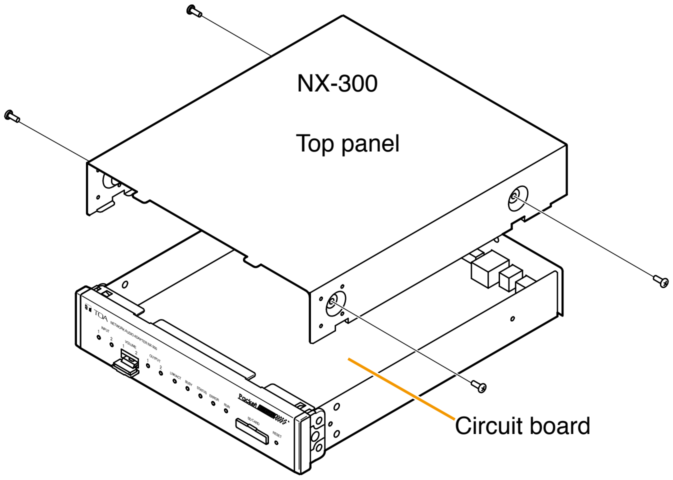
⚠ WARNING Leave the work described here to the professionals. Fire or electrical shock could result from the customer opening the case or modifying the unit.

The NX-300 is equipped with a reset switch, but the switch can be made unusable. To do this, follow the procedures below to cut off corresponding jumpers:

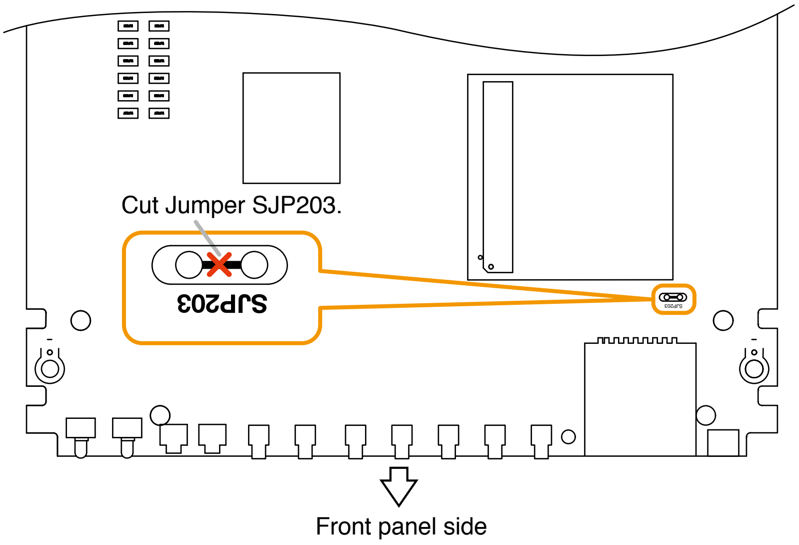
Notes

- Be sure to switch OFF the power before starting this work.
- Do not touch any components on the circuit board, as static electricity could cause irreparable damage.

Step 1. Remove the unit's top panel.



Step 2. Cut jumper SJP203 on the circuit board using a pair of nippers.



Step 3. Replace the top panel.

1.11. Changing the Input Volume Control to the Output Volume Control

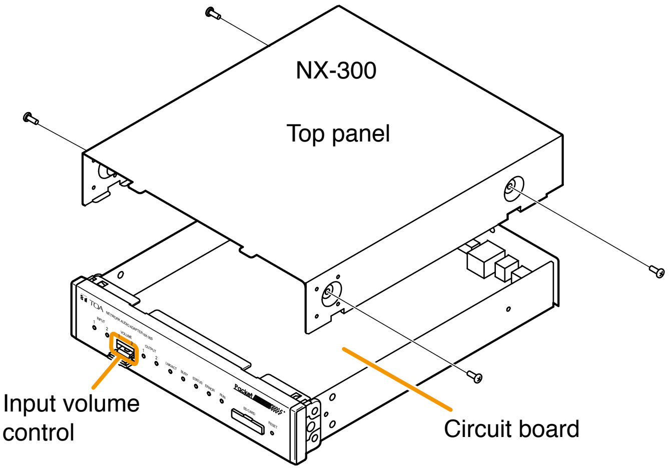
⚠ WARNING Leave the work described here to the professionals. Fire or electrical shock could result from the customer opening the case or modifying the unit.

If the audio signal level from the NX-300's audio output terminal is overly high, the audio from the power amplifiers, etc. could sound distorted. In such cases, changes can be made using the following method so that the output level can be adjusted using the input volume control. This change can be made individually for Channels.

Notes

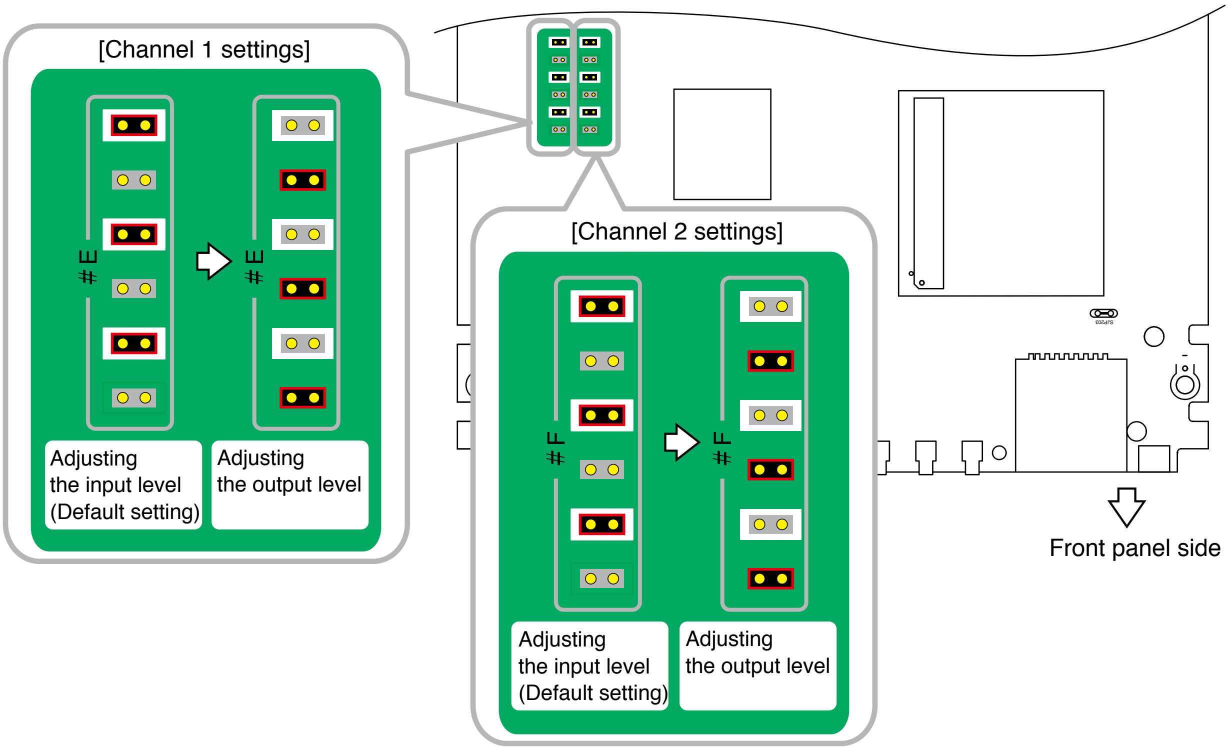
- Be sure to switch OFF the power before starting this work.
- Do not touch any components on the circuit board, as static electricity could cause irreparable damage.

Step 1. Remove the unit's top panel.


NX-300
Top panel
Input volume control
Circuit board

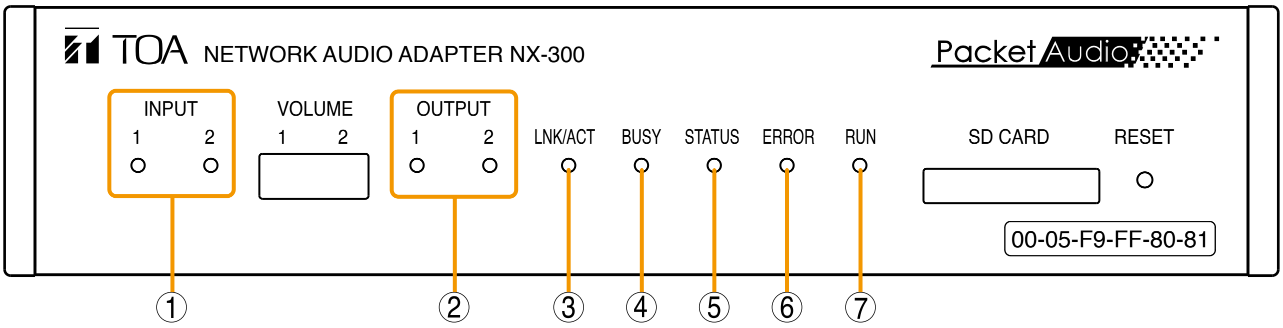
Step 2. Change jumper positions on the circuit board.

■ indicates the jumper positions in the figures below. For Channel 1 move the jumpers within Group #E, and for Channel 2 move the jumpers within Group #F closer to the front panel.


[Channel 1 settings]
#E
#E
Adjusting the input level (Default setting)
Adjusting the output level
[Channel 2 settings]
#F
#F
Adjusting the input level (Default setting)
Adjusting the output level
Front panel side

Step 3. Replace the top panel.

2. INDICATOR STATUS AND TROUBLESHOOTING



Indicator status: 🟢🔴🟠 Lighting, ◌◌◌ Flashing, ○ Unlit

1. Input indicator (Green)

- 🟢 Input signal level high enough for network transmission
- 🔴 Input signal distorted
- ◌ Input signal reaching clipping level

2. Output indicator (Green)

- 🟢 Output signal level high enough for broadcast

3. LNK/ACT indicator (Green)

- 🟢 Being network-connected
- ◌ Transmitting or receiving data

4. Busy indicator (Green)

- ◌ Writing data, updating firmware, etc.
- 🟢 to ○ Broadcasts rejected due to priority control (on for 1 s, then off)

5. Status indicator (Green)

- 🟢 Broadcasting

6. Error indicator (Yellow)

- 🟠 Failures or other system errors detected
- ◌ Communications error (on for 1 s, then off)

7. Run indicator (Green)

- 🟢 or ○ Firmware malfunction
- ◌ Firmware normal operation

[Normal indicator status]

Indicator / NX-300's status	INPUT (1)	OUTPUT (2)	LNK/ACT (3)	BUSY (4)	STATUS (5)	ERROR (6)	RUN (7)	Description
Starting up (for 30 seconds)	🟢 or ○	🟢 or ○	🟢 or ○	🟢 or ○	🟢	🟠	🟢	Continues for 30 seconds after the unit is turned on. If this status remains unchanged over 30 seconds, this shows unit failure. Contact your TOA dealer.
No audio signals input and output	○	○	🟢 or ◌	○	○	○	◌	Normal condition when broadcast is not performed.
Audio signals input and output	🟢 or ○	🟢	◌ (Rapidly)	○	🟢	○	◌	Normal condition when broadcast is performed.
When rejected due to priority control				🟢 to ○ (on for 1 s, then off)				A lower-priority broadcast made while another broadcast is in progress is not allowed to go through.
Updating firmware Writing data	🟢 or ◌	○	🟢 or ◌	◌	○	○	◌	Automatically changes to the "Starting up" status above when the firmware update or data write ends. **Note** Never restart nor turn off the unit in this condition, as doing so may cause the unit to fail.

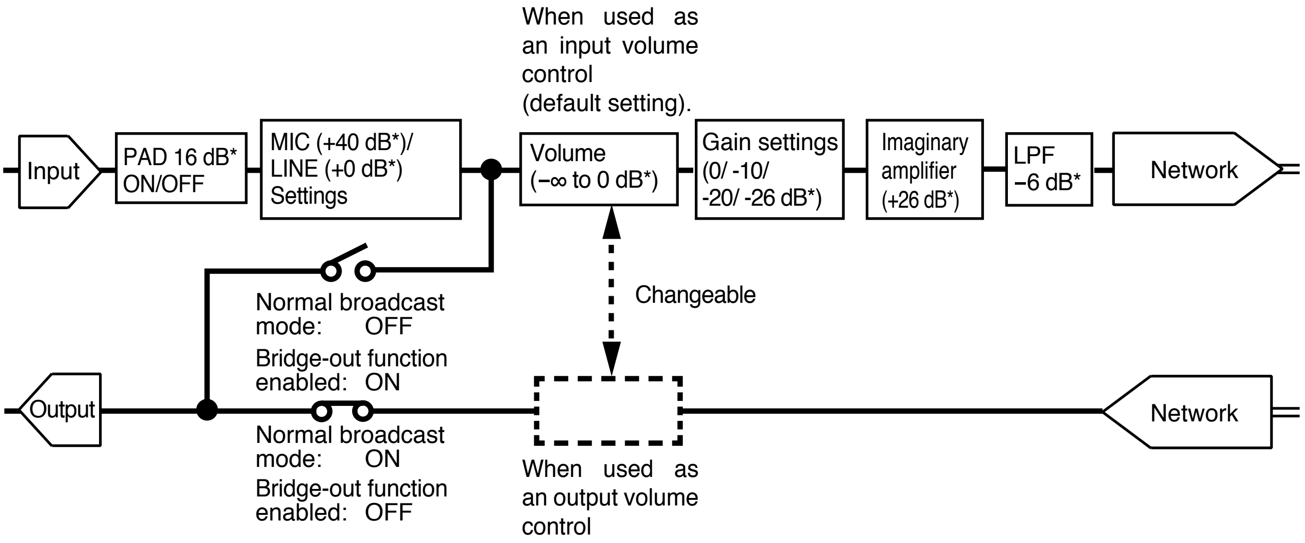
[Error indicator status]

INPUT (1)	OUTPUT (2)	LNK/ACT (3)	BUSY (4)	STATUS (5)	ERROR (6)	RUN (7)	Possible cause and remedy
○	○	○	○	○	○	○	Power off AC adapter is disconnected. → Ensure the connection of power supply.
						🟢 or ○	Firmware error (firmware runaway) → Contact your TOA dealer if detected even after the PC is restarted.
			○	◌ (Flashes simultaneously.)	◌	○	Data write error Writing data failed because the unit's power is shut off or other trouble occurs during data write or firmware update. → Contact your TOA dealer.
					◌ (Lights for 1 second in several-second cycles)		Communications-related errors on network and control Causes may be the following: Power-off or network disconnection of the unit set to be controlled, duplicate control (busy), NX-300 setting errors (impossible control or communications settings), and network equipment setting errors. → Establish a connection to the unit to be controlled,
		○					Network disconnection LAN cable is disconnected or network equipment is turned off. → Ensure each connection to the network equipment.
					🟠		Failure detection → Check power supply, and control inputs, and ensure they are all correctly connected. → Upload audio files correctly.
○							No audio signal input If this happens though the Audio input terminal is connected to equipment, the cause may be the following case: the external equipment is turned off, or its connection cable is disconnected, or the NX-300 input volume control is fully turned down. → Ensure the connection and power of external equipment, and the NX-300 input volume control adjustment.
🔴 or ◌							Excessive audio signal input (Distorted output signal) Audio signal level applied is excessively high. → Set the input volume control and the input level selection switch appropriately.

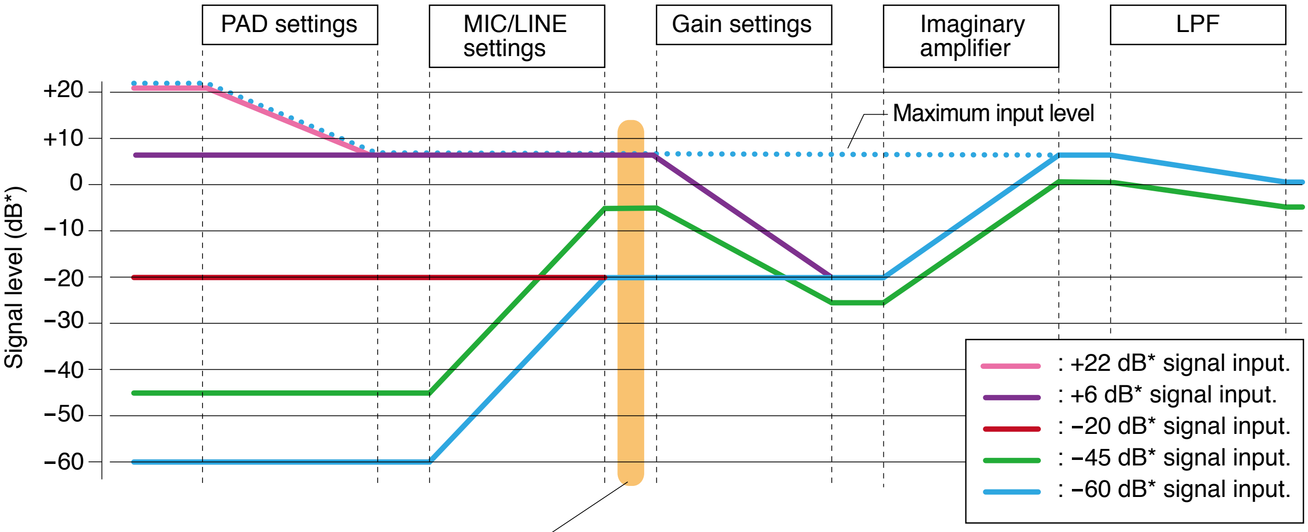
For indicator status other than the above,contact your nearest TOA dealer.

3. LEVEL DIAGRAM

3.1. Block Diagram


When used as an input volume control (default setting).
Input
PAD 16 dB* ON/OFF
MIC (+40 dB*)/ LINE (+0 dB*) Settings
Volume (−∞ to 0 dB*)
Gain settings (0/ -10/ -20/ -26 dB*)
Imaginary amplifier (+26 dB*)
LPF −6 dB*
Network
Changeable
Normal broadcast mode: OFF
Bridge-out function enabled: ON
Output
Normal broadcast mode: ON
Bridge-out function enabled: OFF
Network
When used as an output volume control

3.2. Level Diagram



Output level
when bridge-out function is set

Tips
- Volume control is set to maximum.
- Maximum input level to the head amplifier is +6 dB*.

* 0 dB = 1 V

3.3. About Setting Values and Audio Input Level Adjustments

Input source level (dB*1)	Setting Values			Output Values	
	PAD settings*2	MIC/LINE settings*2	Gain settings*3 (dB*1)	NX-300 output to streaming destination. (dB*1)	Output when bridge-out function is set. (dB*1)
+22*4	ON*4	LINE	–26	0	+6
+6	OFF	LINE	–20	0	+6
–20	OFF*5	LINE*5	0*5	0	–20
–45	OFF	MIC	–20	–5	–5
–60	OFF	MIC	0	0	–20

*1 0 dB = 1 V
*2 Use the DIP switch for equipment settings located on the rear panel to perform settings.
*3 Use the NX-300 Setting Software to perform settings.
*4 Be sure to set the PAD settings to ON when inputting an audio source of this level.
*5 Default settings

After setting completion, if the input indicator lights or flashes red, audio distortion is being indicated. In such cases, make adjustments using the input level control, or change the setting value so that the input indicator lights green.

Tips

- The input volume control is set to adjust the input volume level by default, but can be changed to the output volume control by changing jumper settings (see p. 6-12). Even if changed to the output volume control, the audio input setting values and output values remain the same as shown above.
- If jumper settings are changed, the audio output levels provided by the NX-300 can be adjusted with the input level control. When the audio output to a connected amplifier is too high, adjust it to an appropriate level with the input level control.
- If the "Volume Control Schedule" function*6 is valid, the output values can be changed within the range of –1 through –20 dB attenuated from the values in the above table, or muted.
- When the "Emergency Broadcast" function*6 is valid, if a priority level 1 broadcast is made, any other broadcasts with priority levels 2 – 8 are output with the following values:
  Outputs of priority 1: Output value shown in the above table
  Outputs of priority 2 – 8: Values attenuated by 6 dB from the output values in the above table

*6 The "Emergency Broadcast" function takes precedence when this function and the "Volume Control Schedule" function are both operated simultaneously.

4. IF A FAILURE IS DETECTED

Symptom	Remedy
Cannot start up. No LEDs light.	Confirm that power is correctly connected.
	Turn power on again.
LNK/ACT LED does not light.	Confirm that LAN cable is correctly connected.
	Confirm that the NX-300 is connected to the correct switching hub's port and that the proper type of cable is used for the connection. → See p. 2-3, "Network connections," for connections to other networks.
NX-300 software* do not start up.	Check to ensure that the "Microsoft .NET Framework 4.5.2" is installed in the PC on which the NX-300 Software* will be used, and that it is validated.
NX-300 software* cannot recognize NX-300 unit.	Confirm that PC using NX-300 software* is correctly connected to network.
	Confirm that unit's IP address, subnet mask, and default gateway are correctly set. → See p. 3-12, "Detecting Units," or p. 3-28, "Network Settings," for network setting procedures.
	When connected to other networks via router, confirm with network management personnel if the router is properly set.
Browser setting screen is not properly displayed.	Check PC using browser for correct connection. Also, confirm that browser is correctly set.
	Setting screen uses JavaScript. Confirm that browser is JavaScript-compatible and that the function is set to Enable.
	Screen may not be properly displayed if browser is set to use a proxy server. Do not use proxy server.
Control inputs and outputs do not operate.	Confirm that connections are correctly made to equipment that meets unit's control I/O specification requirements.

* NX-300 Finder, NX-300 Setting Software, and NX-300 Operation Software.

Symptom	Remedy
Outputs no audio signal or distorted signal.	Confirm that sound source equipment, amplifier, and speaker are correctly connected.
	Confirm that input volume control is properly adjusted.
	Confirm that the rear-mounted input level selection switch (Switches 7 and 8 of the DIP switch for equipment settings) is set to appropriate position.
	Check audio activation control input for correct setting. → See p. 3-56, "CONTROL INPUT SETTINGS," for control input activation.
	Check to see if audio-related settings, such as sampling frequency and compression, are correct. → See p. 3-35, "Broadcast Spec Settings," for audio-related settings.
Audio output is affected by noise or lost.	When hum noise is heard, unit's SIGNAL GND terminal may not be correctly connected. → Check to see if it is correctly connected.
	When short noises are heard or when audio output is lost, network may be congested. Check log contents. If congestion is found, consult with network management personnel. → See p. 4-14, "Stream Log," to confirm log contents.
Audio outputs are mixed.	When broadcasts are heard mixed in multicast streaming, the same multicast address may have been set for some broadcasts in broadcast spec setting. → Avoid duplication of multicast address when performing settings for system units.
Other malfunctions	When other malfunctions occur, error indicator may light. → Since serious failure may have occurred when error indicator lights, check log. See p. 4-12, "Operation Log," to confirm log contents.
Forgot password.	Contact your TOA dealer.

5. SPECIFICATIONS

Power Source	Supplied from an external 24 V DC (21.6 – 26.4 V) power supply or AC adapter AD-246 (option) or the equivalent
Power/Current Consumption	10 W (AC operation), 310 mA (DC operation)
Audio Input	2 channels, balanced (transformer isolated)/unbalanced changeable,2 kΩ, LINE/MIC changeable, volume adjustable Rated input: –20 dB[*1] (LINE)/–60 dB[*1] (MIC) PAD function (–16 dB[*1]), removable terminal block (6 pins)
Audio Output	2 channels, balanced (transformer isolated), 600 Ω or less Rated output: 0 dB[*1] (unbalanced input)/–2 dB[*1] (balanced input), removable terminal block (6 pins)
Frequency Response	50 Hz – 18 kHz (48 kHz sampling frequency, PCM, 0 to –6 dB deviation referred to 1 kHz)
Distortion	0.2% or less (1 kHz, LINE signal level, 48 kHz sampling frequency, PCM, BPF)
Signal to Noise Ratio	73 dB or more (LINE signal level, at rated output)
Separation	70 dB or more (1 kHz, LINE signal level, BPF)
Audio Format	WAV file
Number of Storable Audio Files	Max. 8
Storable Time of Audio File	Max. 2 min. per audio file (16 kHz sampling frequency, Sub-band-ADPCM, monaural operation)
Control Input	8 channels, no-voltage make contact input, open voltage: 24 V DC, short-circuit current: 2 mA or less, removable terminal block (9 pins) (Only Channel 8 equipped with failure detection.)
Control Input Failure Detection Section	Connection resistance to make the function inactive: 20 kΩ ±5% Connection resistance to make the function active: 10 kΩ ±5% Connector cable: Twisted pair cable (Shielded type is recommended.) Maximum cable distance: 10 m
Control Output	8 channels, open collector output (polarized), withstand voltage: 30 V DC, control current: 50 mA max., removable terminal block (9 pins) 2 channels, relay output (non-polar), withstand voltage: 30 V DC, control current: 500 mA max., removable terminal block (4 pins)
Network Section	Network I/F: 10BASE-T/100BASE-TX, Full-duplex/Half-duplex, Auto-negotiation Network protocol: TCP, UDP, ARP, HTTP, RTP, IGMP, FTP, NTP Audio packet transmission system: Unicast (Up to 16 simultaneous transmissions), Multicast (Up to 64 simultaneous transmissions) Connector: RJ45 connector Voice sampling frequency: 8 kHz, 16 kHz, 32 kHz, 48 kHz (controllable on the software) Quantifying bit number: 16 bits Voice encoding method: PCM, Sub-band ADPCM (controllable on the software) Voice packet loss recovery: Silence insertion Audio delay time: Min. 20 ms
Operation	2 channels, Audio input level control (Convertible to Audio output level control)
Indicator	2 channels, audio input, SIGNAL (green)/PEAK (red), 2 channels, audio output, SIGNAL (green) LNK/ACT (green), BUSY (green), STATUS (green), ERROR (yellow), RUN (green)
Setting Switch	Reset, grand lift changeable, audio input 2 channels PAD changeable, audio input 2 channels LINE/MIC changeable

SD Section	For log storage (Max. 10000) Media: SD/SDHC card (Max. 32 GB) *2 File system: FAT16, FAT32 • Use only SD memory cards rated at 100mA current consumption or less. • No SD card provided.
Installation Method	Rack, Desk, Surface mount
Operating Temperature	–10 to 50 °C (14 to 122 °F) (0 to 40 °C, or 32 to 104 °F, when AC adapter is in use)
Operating Humidity	90%RH or less (no condensation)
Finish	Pre-coated steel plate, black, 30% gloss
Dimensions	210 (w) x 44.3 (h) x 258 (d) mm (8.27" x 1.74" x 10.16")
Weight	1.7 kg (3.75 lb)

*1 0 dB = 1 V
*2 Not compatible with SDXC memory cards.

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

- **Accessories**

9-pin removable terminal plug (for control I/O)	2
6-pin removable terminal plug (for audio I/O)	2
3-pin removable terminal plug (for power supply)	1
4-pin removable terminal plug (for relay terminals)	1
Plastic foot	4
M3 x 8 machine screw	4

- **Optional products**

Rack mounting bracket:	MB-15B-BK (for rack mounting one NX-300 unit)
Rack mounting bracket:	MB-15B-J (for rack mounting two NX-300 units)
Wall mounting bracket:	YC-850
AC adapter:	AD-246

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: http://www.toa.jp/

TOA Corporation

201609