TOA

NX-100

Network Audio Adapter

COOKBOOK

Packet Audio

General Description

The NX-100 Network Audio Adapter can transmit high-quality audio signals and such control data as serial data over IP networks, such as LAN or Internet, in real time.
It is especially useful when transmitting audio signals to remote locations, as Internet use keeps running costs lower than the use of dedicated lines.
With the use of an optional rack-mounting bracket, it can be mounted in an EIA Standard rack (1 unit size).

Features

- If there is no network delay, audio signals have only a minimal millisecond delay.
- Control data including contact and serial data can also be transmitted along with the audio signals.
- Two-way audio signal transmission is possible with a single NX-100 unit as every unit is equipped with an audio input and output.
- The multicast-capable NX-100 allows simultaneous transmission of audio signals to be made to multiple locations depending on transmission method:
  Unicast — up to 4 locations,
  Multicast — up to 64 locations.
- No audio signal degradation or loss, even when transmitting over crowded networks such as the internet.
- Greater data reliability using IP networks with the protocol's ability to prevent data problems during transmission.
- The NX-100's contact input can initiate and terminate audio transmissions without having to use dedicated control equipment such as a PC.
- Hardware use ensures operational reliability over software only driven applications.
- Using IP to transmit audio signals over the internet allows low cost operation rather than dedicated lines.
- The NX-100 is equipped with a DC input to allow operation on AC as well as DC.
- Software-driven operational menus enhance ease of use.

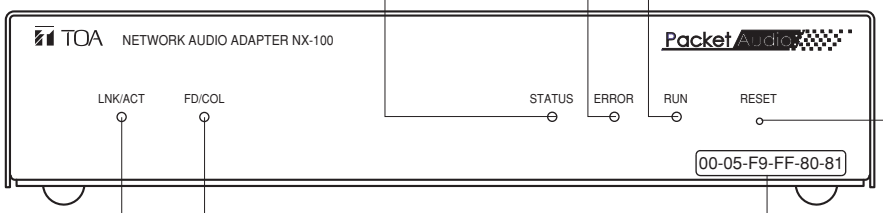
Network Audio Adapter NX-100

[Front]

Error Indicator (Red)
Lights if an error is detected during transmission, etc.

Status Indicator (Yellow)
Remains lit during broadcasts.
Flashes while the unit is writing data into the internal storage medium (flash memory).

Run Indicator (Green)
Remains lit during normal operation.
Flashes at 2-second intervals when a failure is detected.



Reset Button
Restarts the unit when pressed.

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

FD/COL Indicator (Yellow)
Remains lit while the network is in full-duplex communications mode.
Flashes whenever data collision is detected.

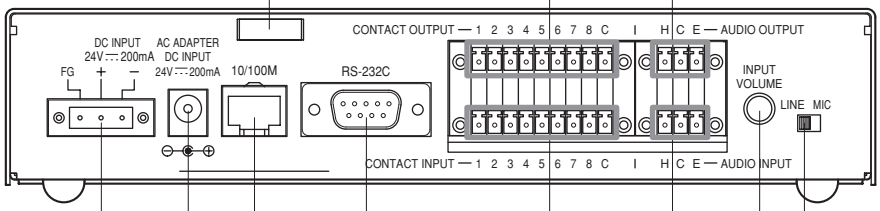
MAC Address
The unit's MAC address consists of 12 hyphenated alphanumeric characters.

[Rear]

Control Output Terminal [CONTACT OUTPUT]
An open collector output (Withstand voltage: 30 V DC, Control current: 50 mA maximum).

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

Audio Output Terminal [AUDIO OUTPUT]
A 0 dB/600 Ω balanced output.
Line level audio signal output.
H: Hot C: Cold E: Ground (shield)



DC Power Input Terminal [DC INPUT]
A 24 V DC input.

RS-232C Terminal
A 9-pin D-sub connector (male).

Input Level Selection Switch [LINE/MIC]
Set this switch to the MIC (right side) position when using a microphone, and to the LINE (left side) for other inputs.
(Factory-preset to the LINE position.)

Power Input Terminal [AC ADAPTER]
Connect the AC adapter* to this terminal.
* Use the AD-246 (optional) or its equivalent.

Control Input Terminal [CONTACT INPUT]
A no-voltage "make" contact input
(Short circuit current: 10 mA, Open voltage: 12 V).

Input Volume Control [INPUT VOLUME]
Adjusts the audio input level. Set this control to eliminate distortion in the input signal.

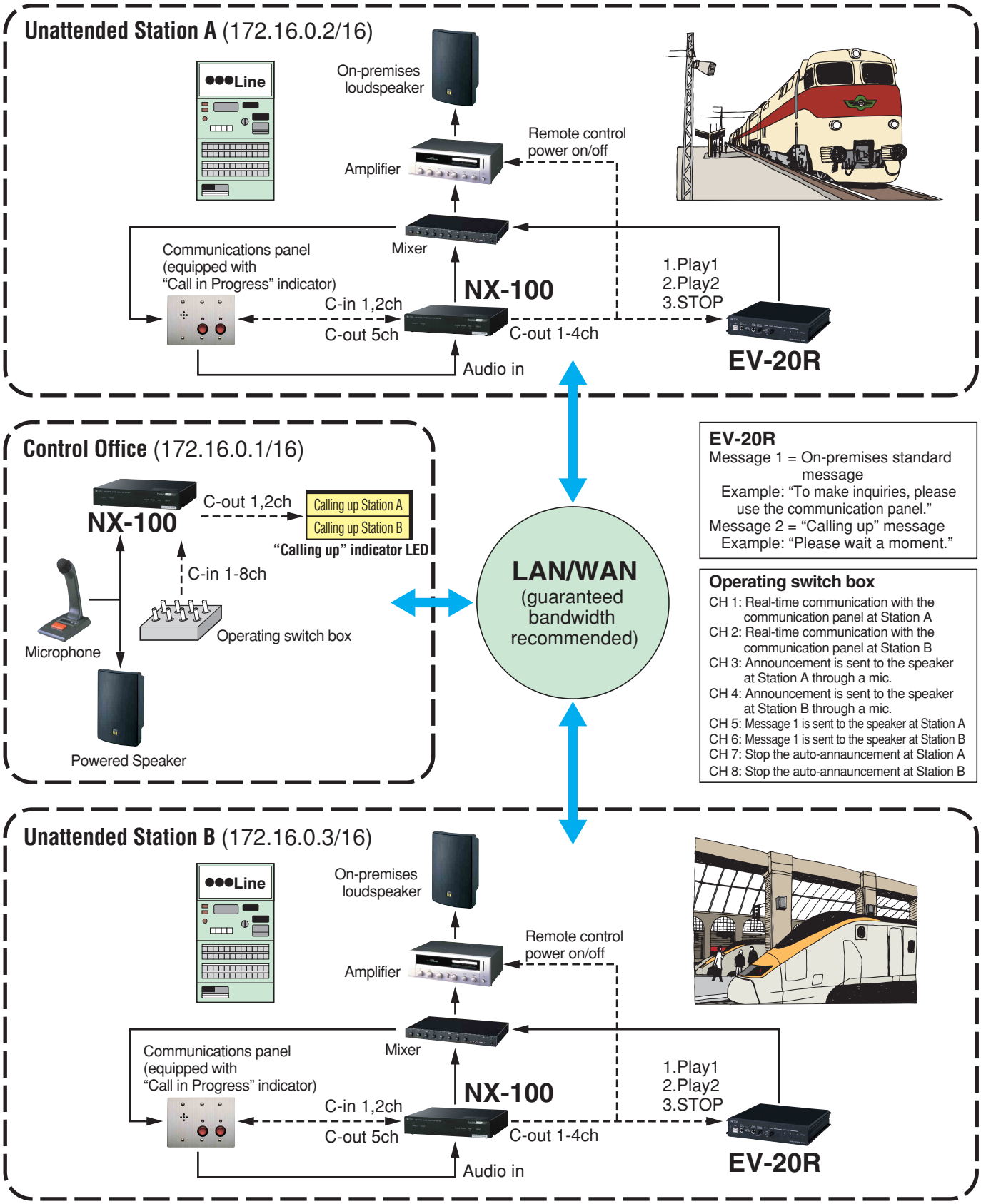
Network Connection Terminal [10/100M]
Connects to 10/100 Base-T networks.
(RJ-45 Ethernet jack)

Audio Input Terminal [AUDIO INPUT]
A -58 to 0 dB/2 kΩ balanced input.
Microphone or line level audio signals can be connected to this terminal.
H: Hot C: Cold E: Ground (shield)

APPLICATION EXAMPLE-1

Passenger Handling System for Unattended Railway Stations

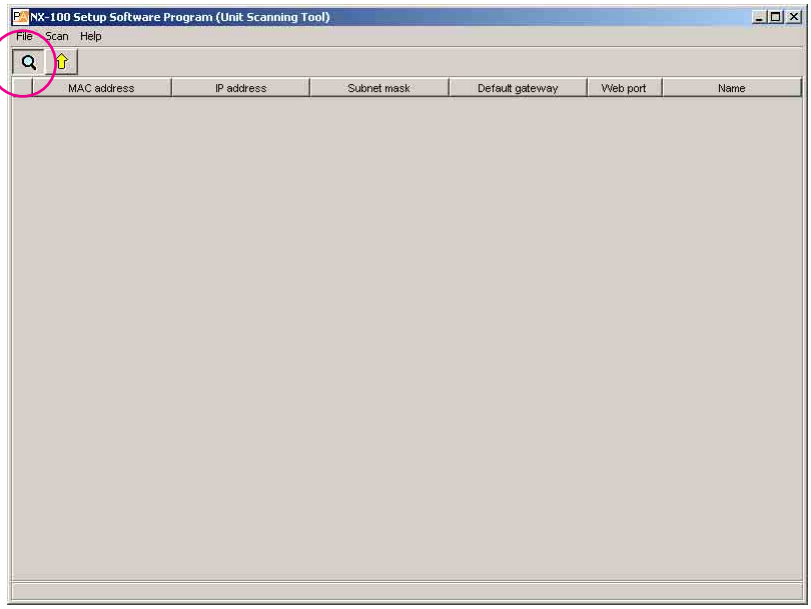
Filling the need to provide useful communication for passengers at unattended stations, this system allows automated announcements such as train times and messages for two unattended stations from a remote location. It also makes it possible for a passenger waiting at the station to use the system's communication panel for realtime communication with railway personnel for inquiries as well as emergencies.



Passenger Handling System for Unattended Railway Stations

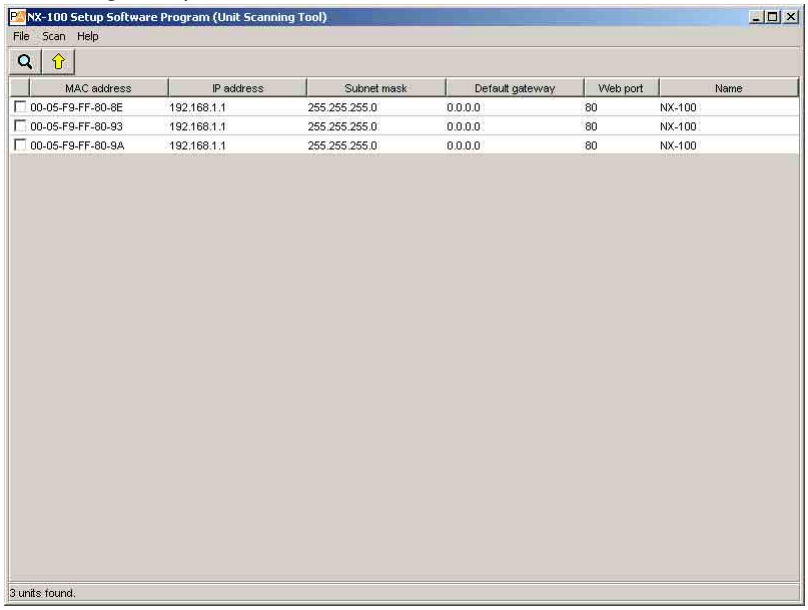
Click
“Unit Scan
(Network Setting)”

Click
(Scanning start)

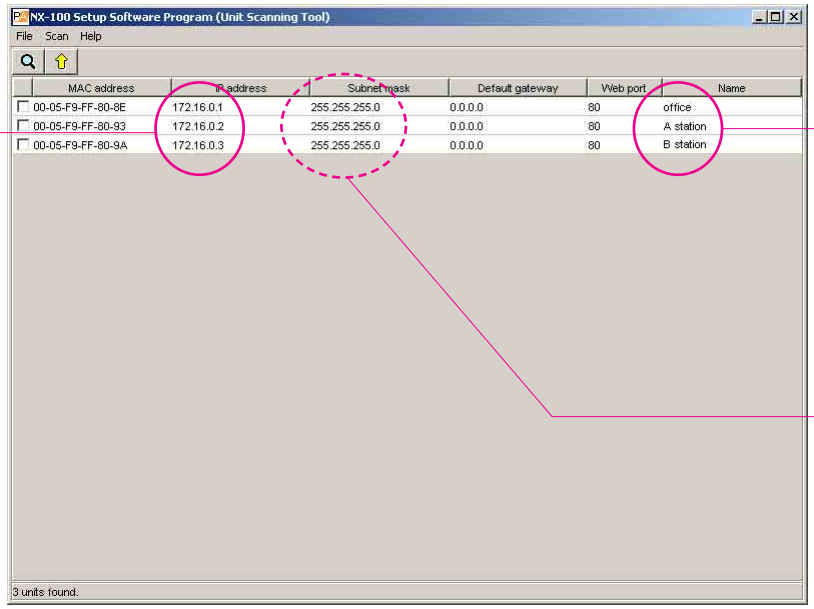


Passenger Handling System for Unattended Railway Stations

Scanning Complete



MAC address	IP address	Subnet mask	Default gateway	Web port	Name
00-05-F9-FF-80-8E	192.168.1.1	255.255.255.0	0.0.0.0	80	NX-100
00-05-F9-FF-80-93	192.168.1.1	255.255.255.0	0.0.0.0	80	NX-100
00-05-F9-FF-80-9A	192.168.1.1	255.255.255.0	0.0.0.0	80	NX-100



MAC address	IP address	Subnet mask	Default gateway	Web port	Name
00-05-F9-FF-80-8E	172.16.0.1	255.255.255.0	0.0.0.0	80	office
00-05-F9-FF-80-93	172.16.0.2	255.255.255.0	0.0.0.0	80	A station
00-05-F9-FF-80-9A	172.16.0.3	255.255.255.0	0.0.0.0	80	B station

Change IP address

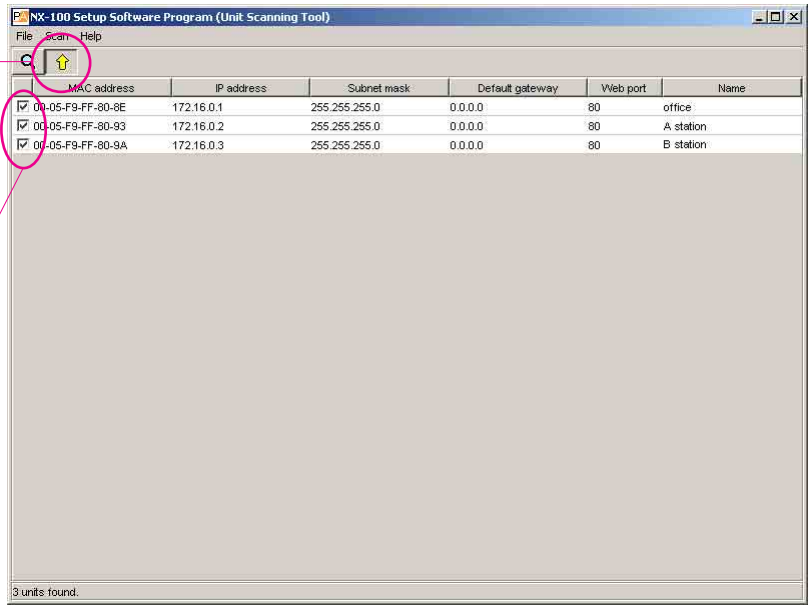
Change Unit name

Change Subnet mask and Default gateway as required. (There is no in a change by this example)

Passenger Handling System for Unattended Railway Stations

1) Click (Change settings)

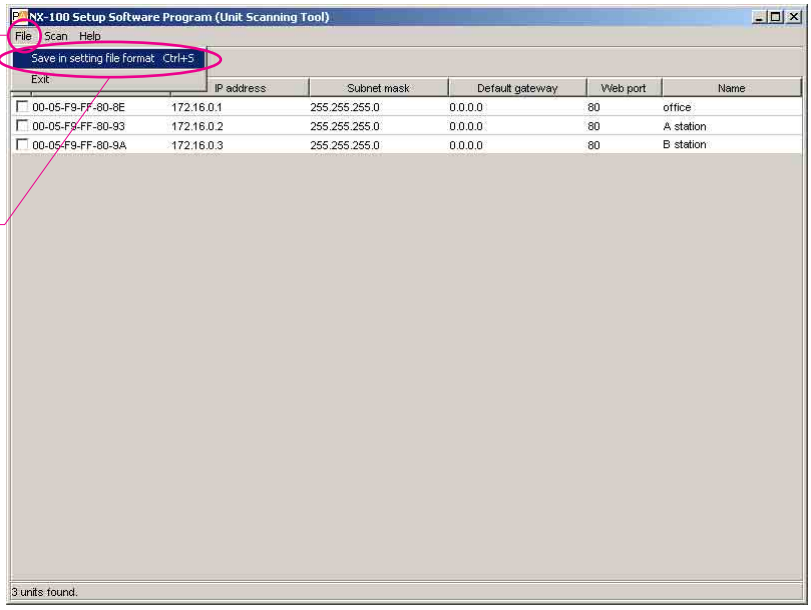
2) Check all units



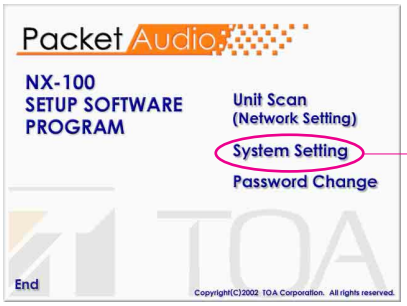
1) Confirm changed data

2) Click “File”

3) Select “Save in setting file format”



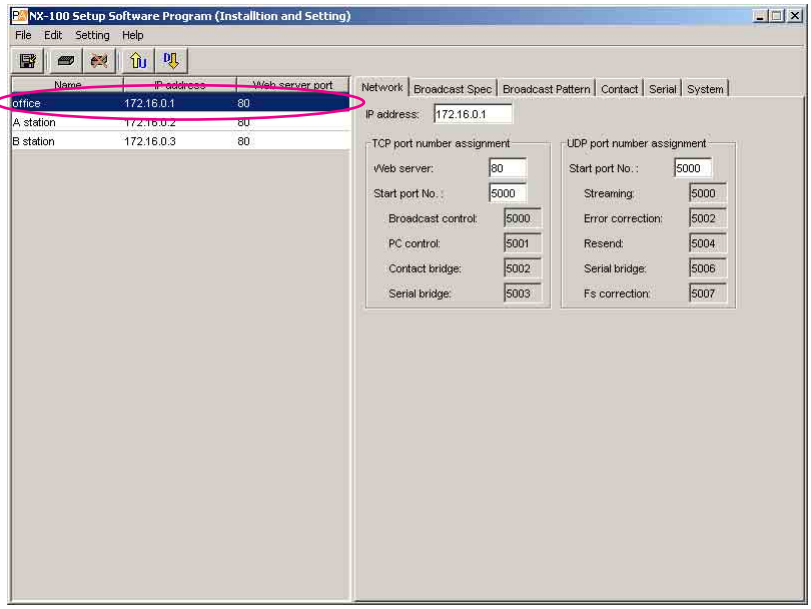
Passenger Handling System for Unattended Railway Stations



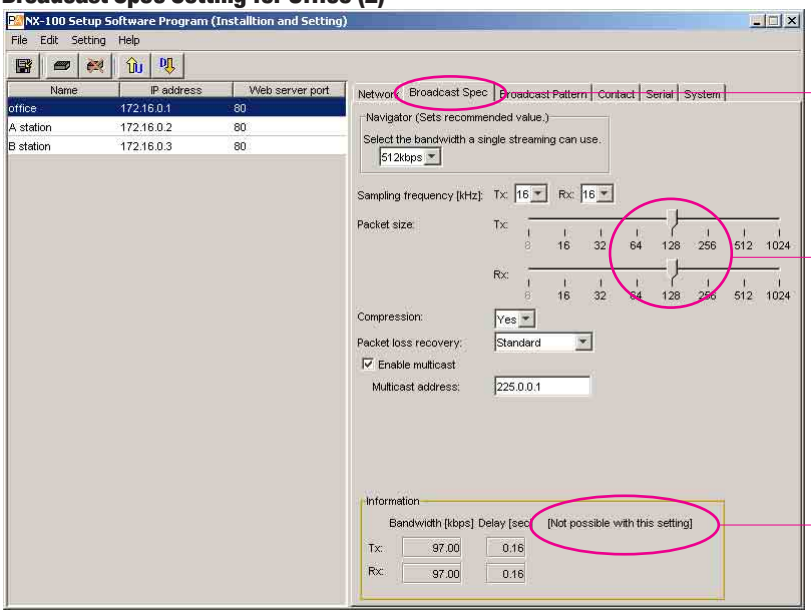
Click “System Setting”

Broadcast Spec Setting for Office (1)

Select “office”



Broadcast Spec Setting for Office (2)



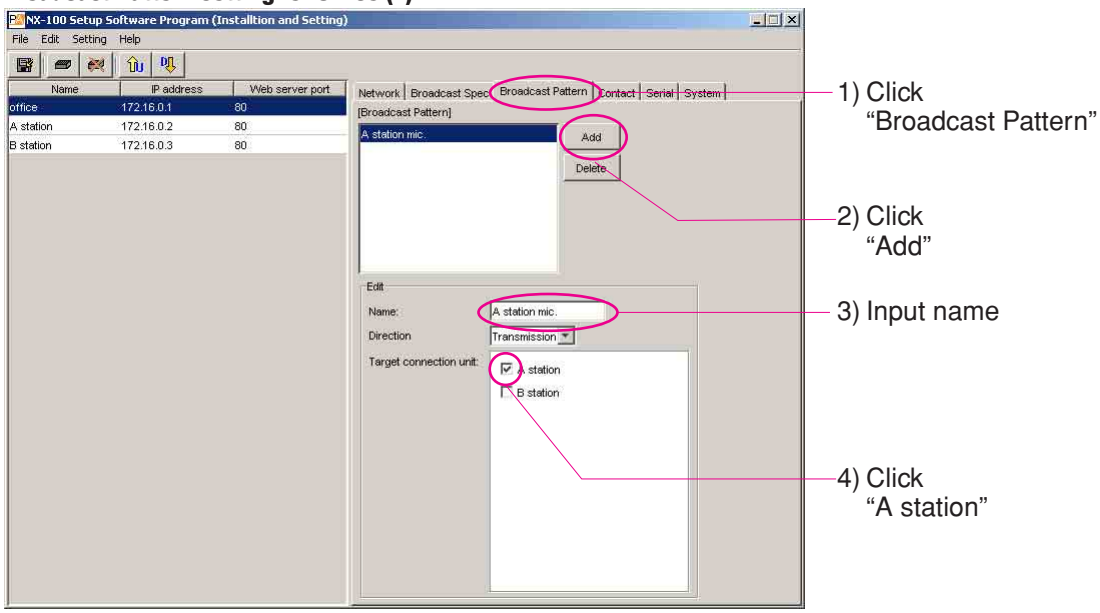
1) Click “Broadcast Spec”

2) Change packet size from 64 to 128

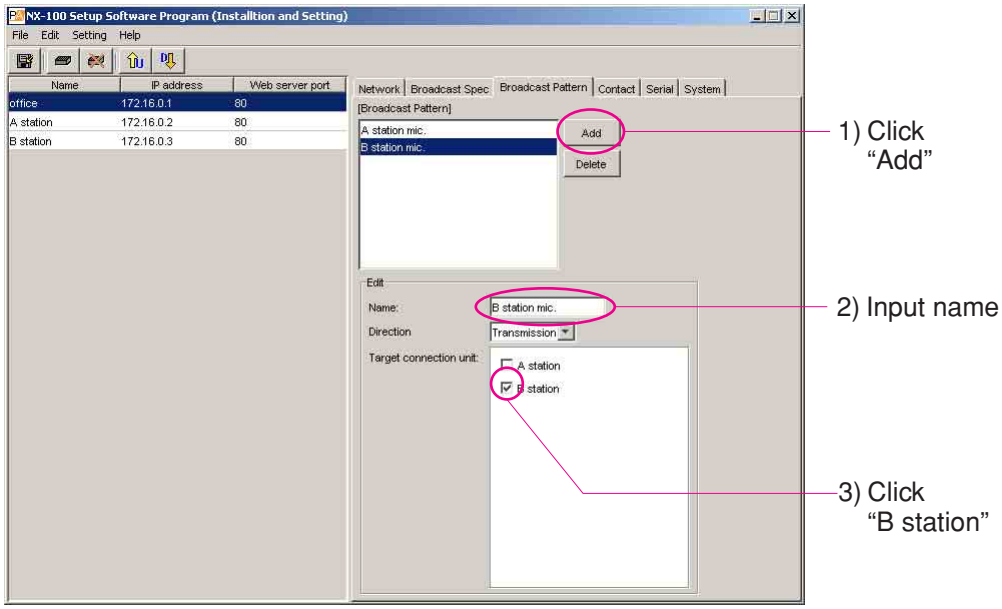
3) Confirm that there is not “Two-ways streaming” in “Not possible with this setting”

Passenger Handling System for Unattended Railway Stations

Broadcast Pattern Setting for Office (1)

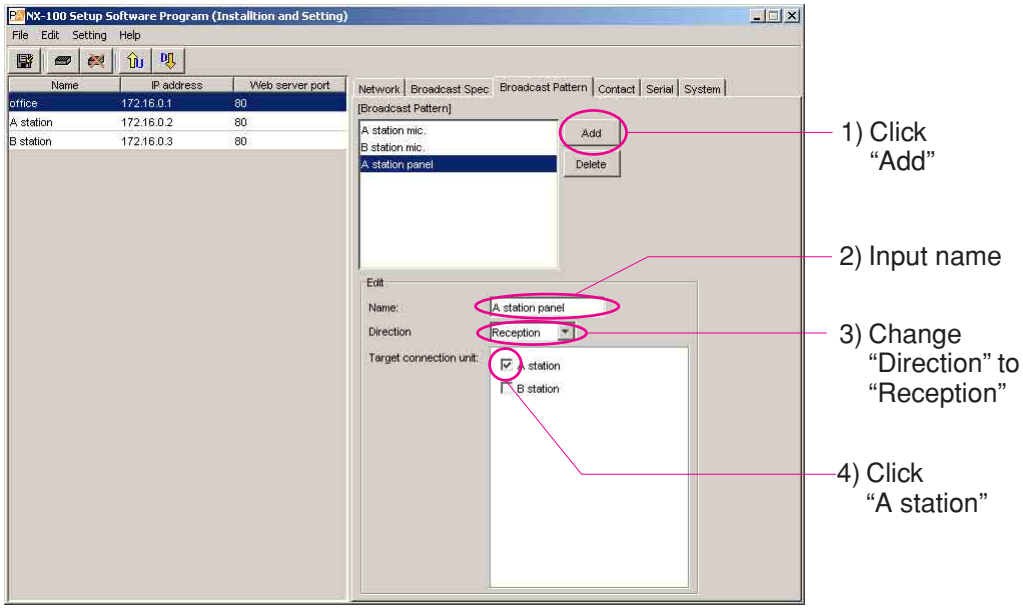


Broadcast Pattern Setting for Office (2)

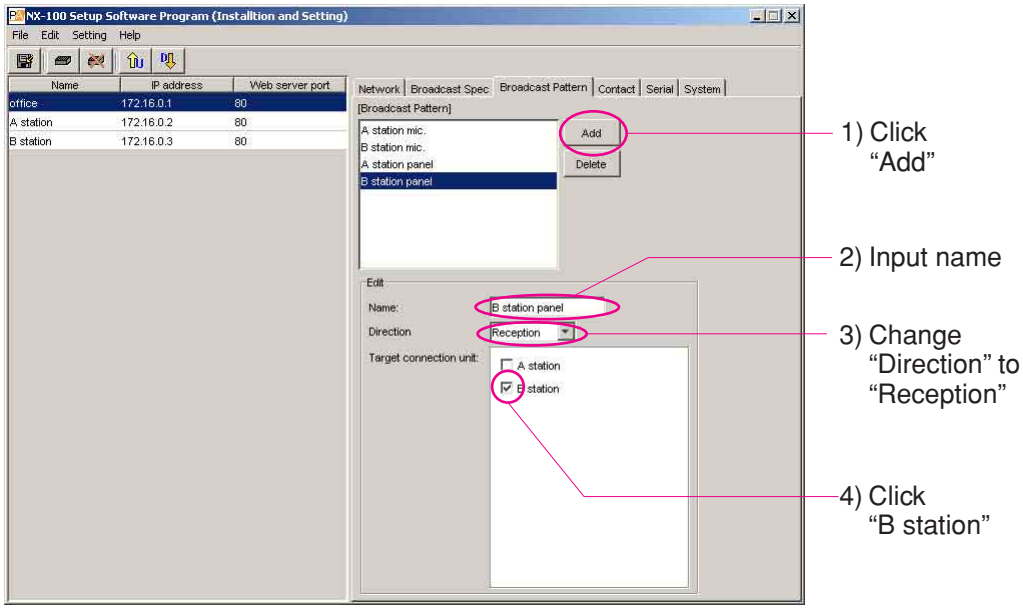


Passenger Handling System for Unattended Railway Stations

Broadcast Pattern Setting for Office (3)

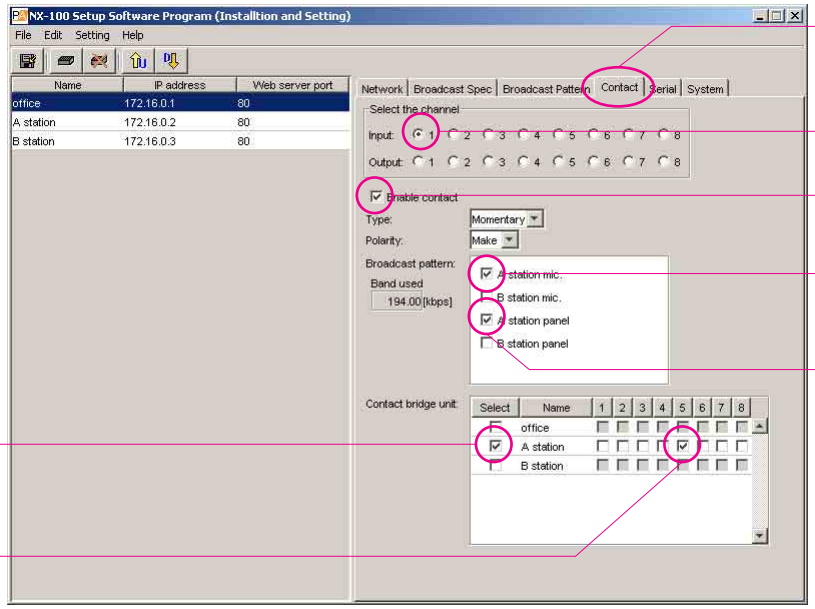


Broadcast Pattern Setting for Office (4)



Passenger Handling System for Unattended Railway Stations

Contact Input Setting for Office (1)



1) Click "Contact"

2) Click "Input 1"

3) Crick "Enable contact"

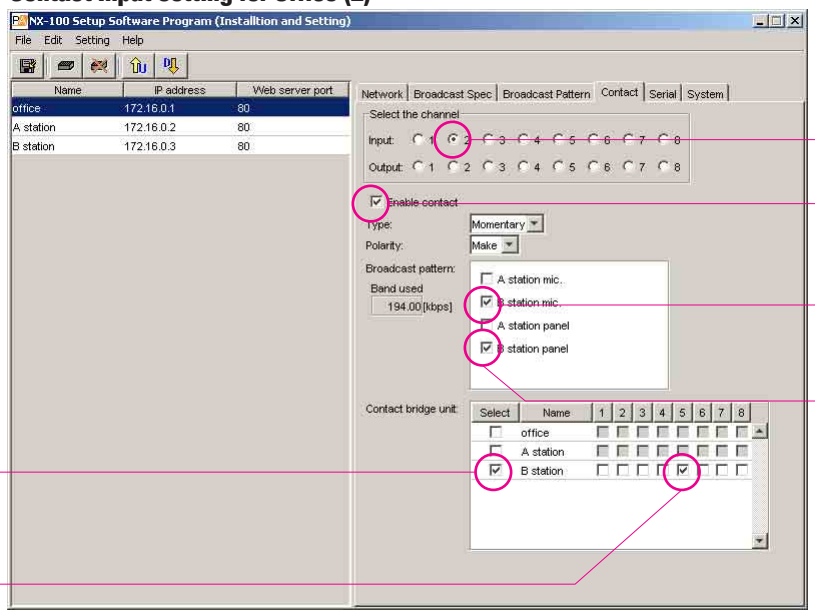
4) Click "A station mic"

5) Click "A station panel"

6) Click "A station"

7) Click "5"

Contact Input Setting for Office (2)



1) Click "Input 1"

2) Click "Enable contact"

3) Click "A station mic"

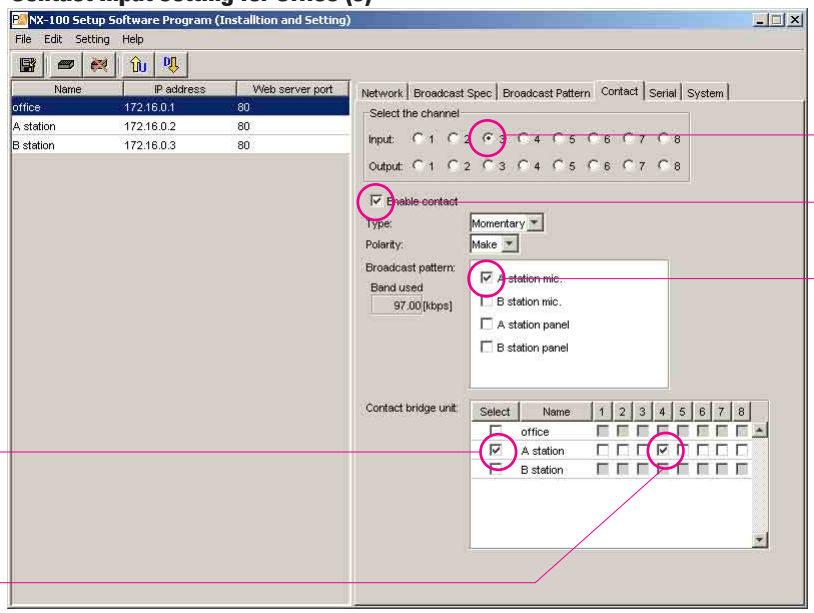
4) Click "A station panel"

5) Click "B station"

6) Click "5"

Passenger Handling System for Unattended Railway Stations

Contact Input Setting for Office (3)



1) Click “Input 3”

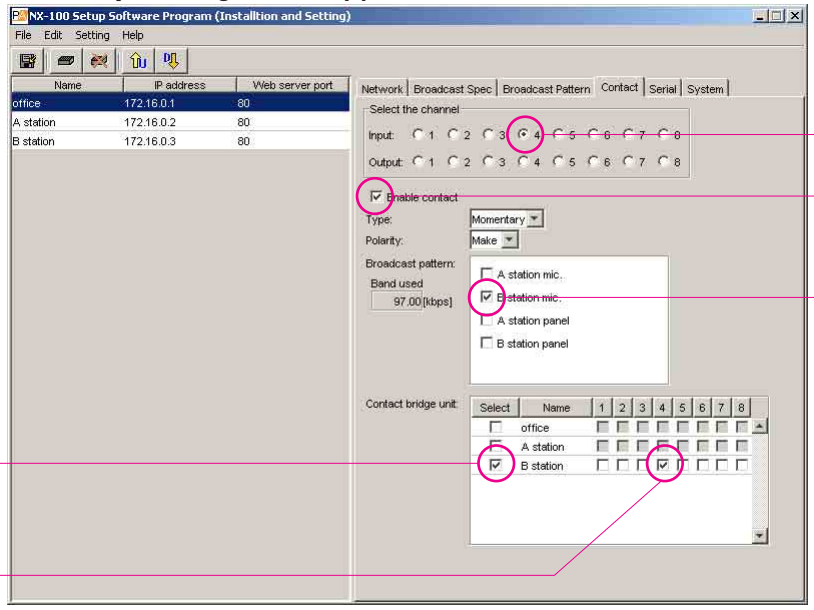
2) Click “Enable contact”

3) Click “A station mic”

5) Click “A station”

6) Click “4”

Contact Input Setting for Office (4)



1) Click “Input 4”

2) Click “Enable contact”

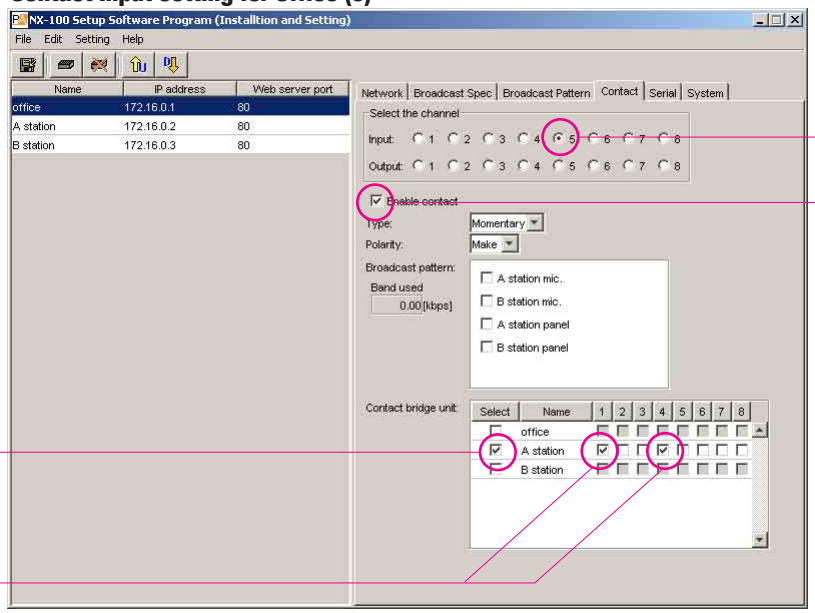
3) Click “B station mic”

4) Click “B station”

5) Click “4”

Passenger Handling System for Unattended Railway Stations

Contact Input Setting for Office (5)



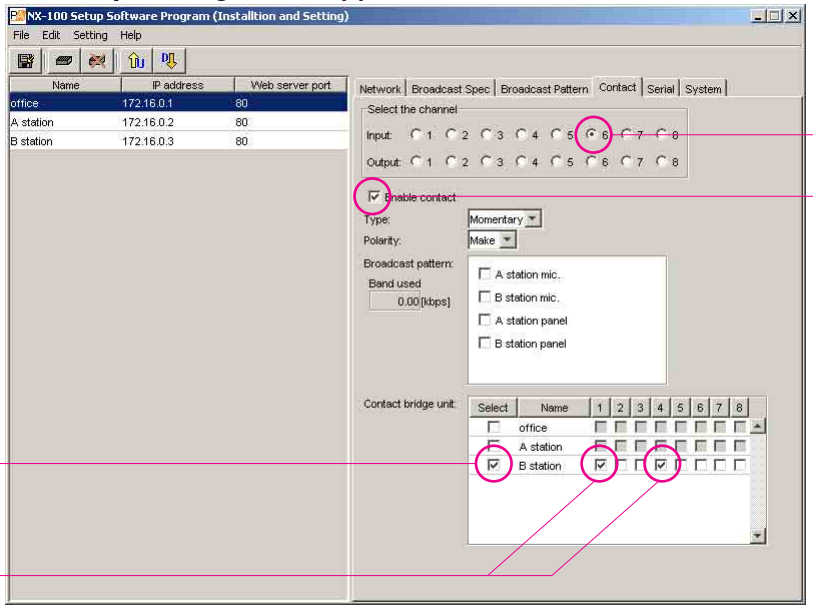
1) Click “Input 5”

2) Click “Enable contact”

3) Click “A station”

4) Click “1” and “4”

Contact Input Setting for Office (6)



1) Click “Input 6”

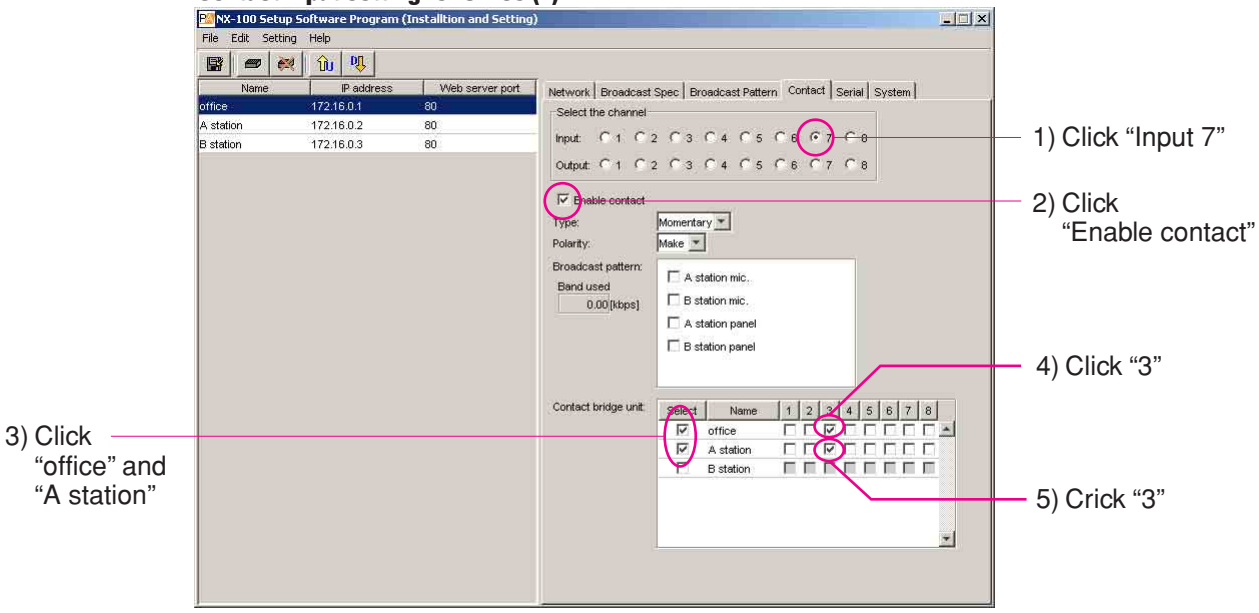
2) Click “Enable contact”

3) Click “B station”

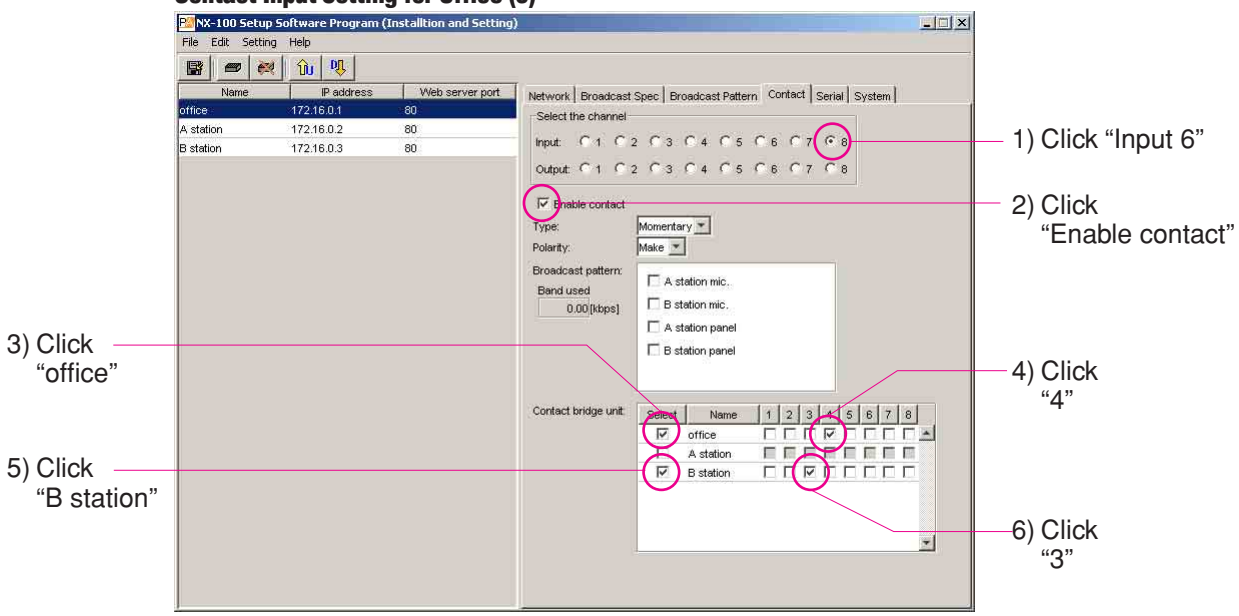
4) Click “1” and “4”

Passenger Handling System for Unattended Railway Stations

Contact Input Setting for Office (7)

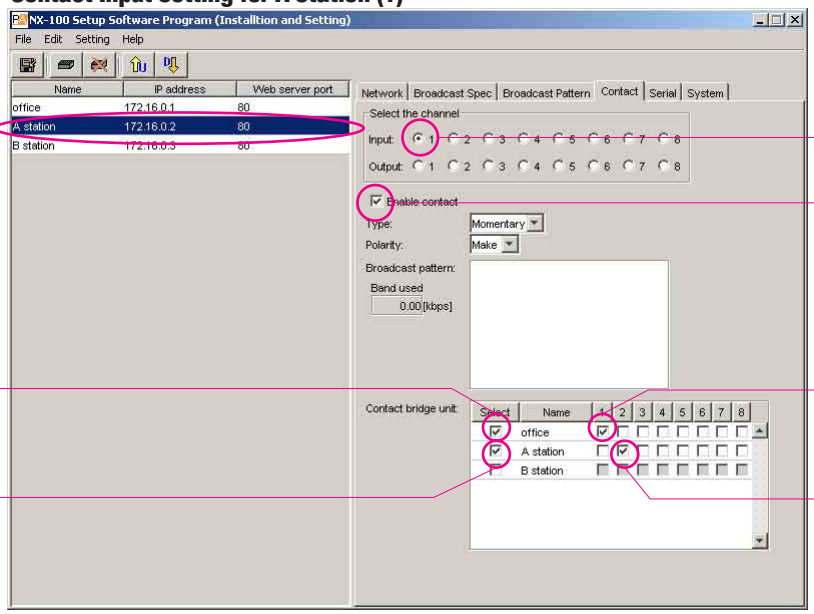


Contact Input Setting for Office (8)



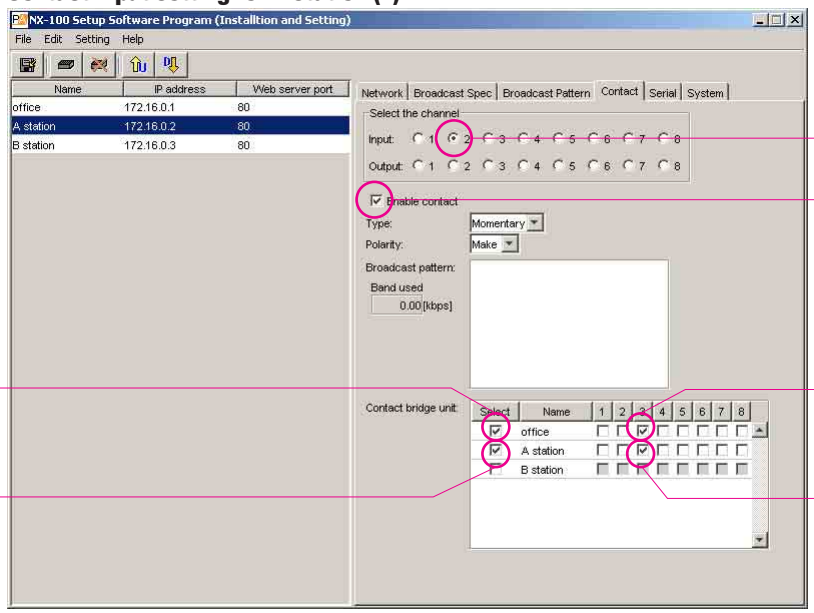
Passenger Handling System for Unattended Railway Stations

Contact Input Setting for A Station (1)



1) Select "A station"
2) Click "Input 1"
3) Click "Enable contact"
4) Click "office"
5) Click "1"
6) Click "A station"
7) Click "2"

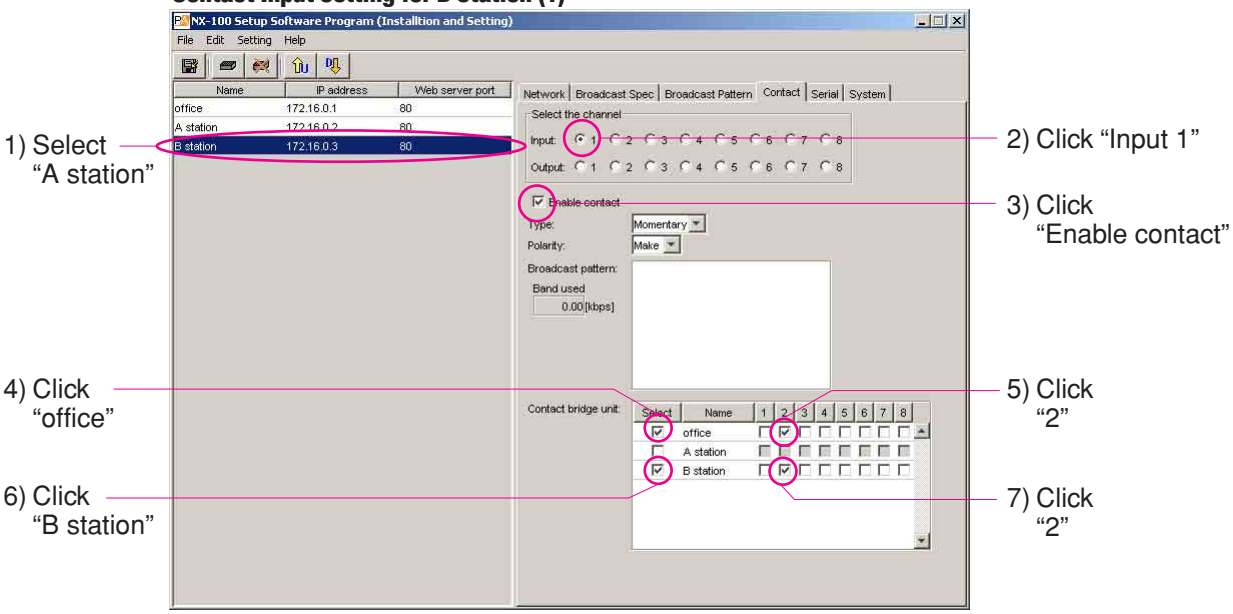
Contact Input Setting for A Station (2)



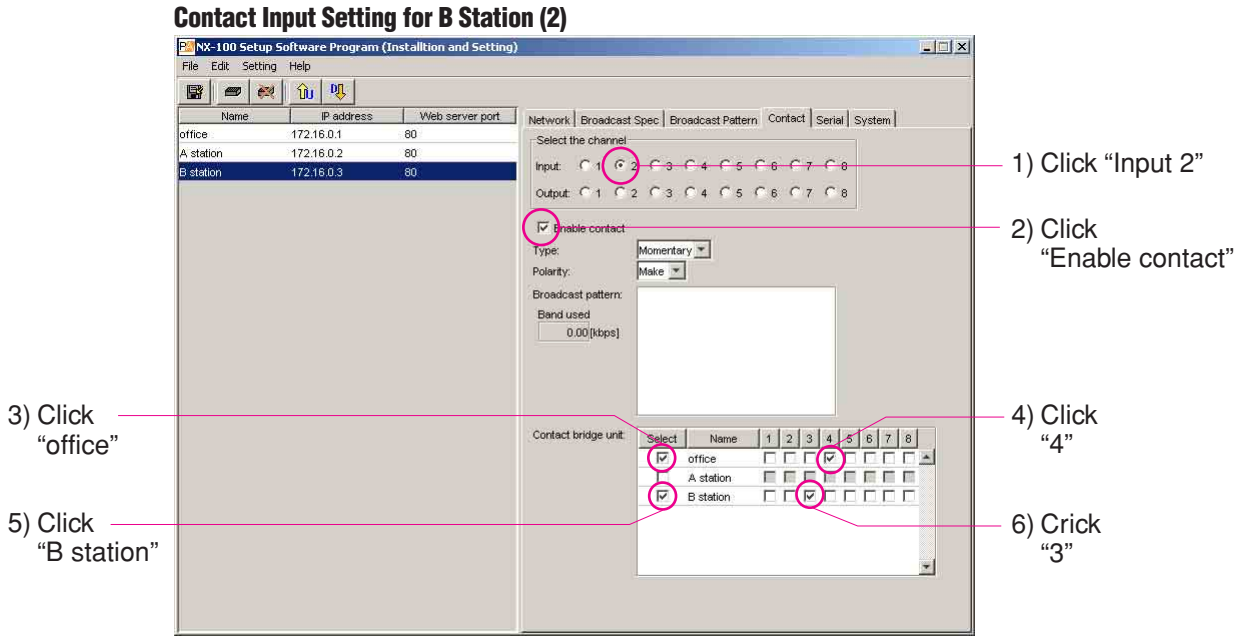
1) Click "Input 2"
2) Click "Enable contact"
3) Click "office"
4) Click "3"
5) Click "A station"
6) Click "3"

Passenger Handling System for Unattended Railway Stations

Contact Input Setting for B Station (1)



Contact Input Setting for B Station (2)

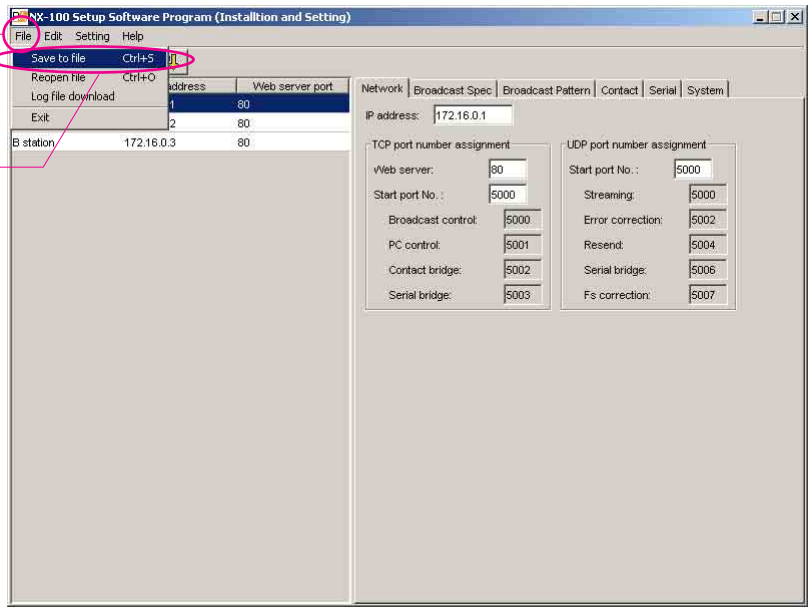


Passenger Handling System for Unattended Railway Stations

Save

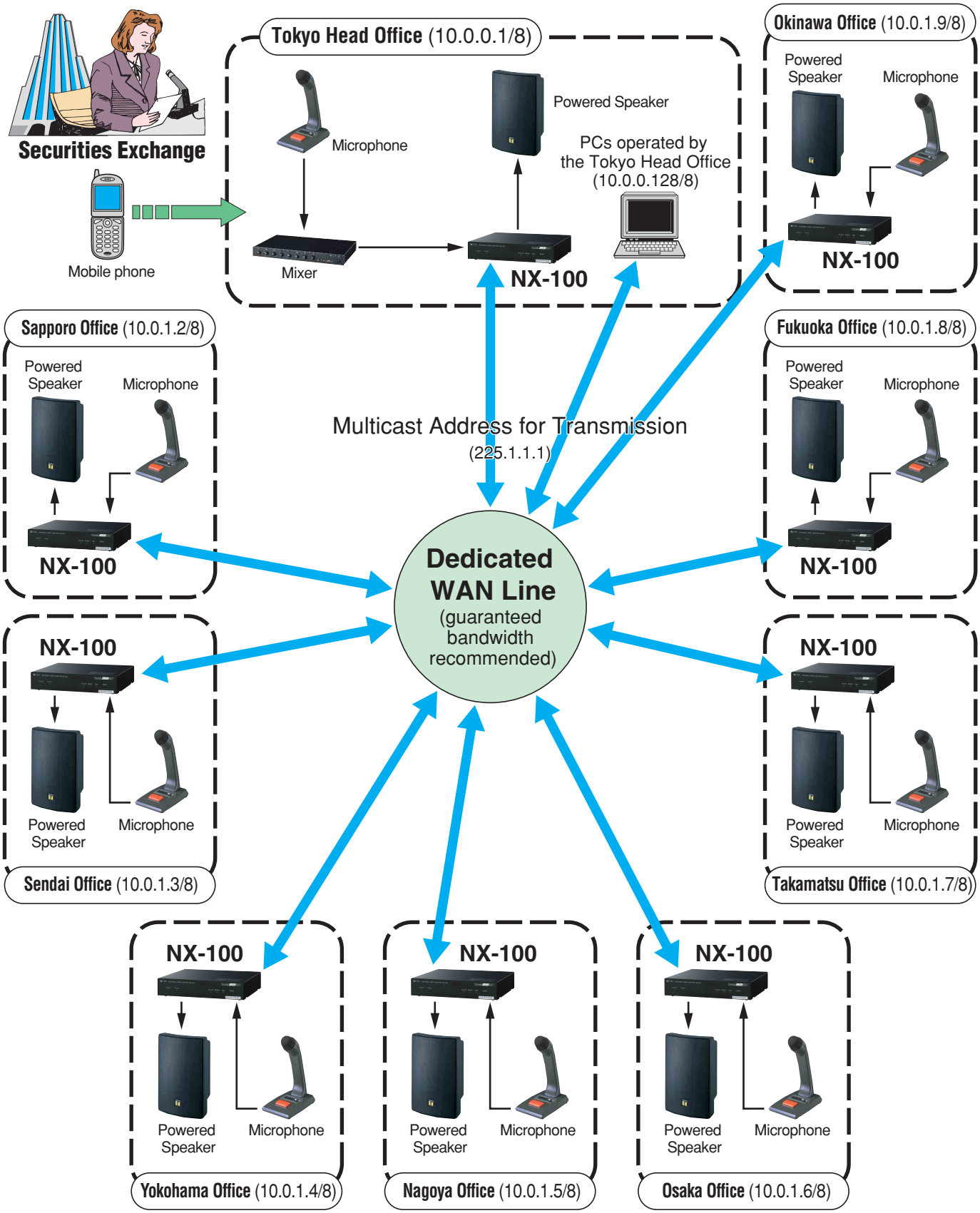
1) Click “File”

2) Select “Save to file”



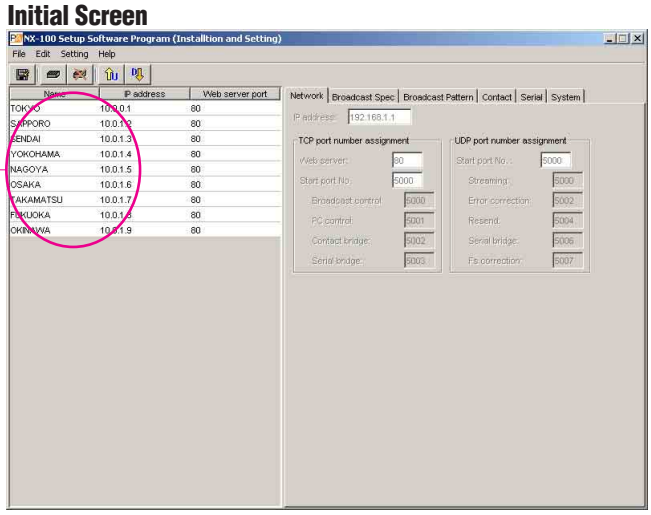
Transaction Information Transmission System for Securities Trading Companies

Businesses such as these require cost-effective and versatile communications systems that facilitate realtime communication between various offices and a head office. TOA systems provide the communication reliability that these companies absolutely require and make it easy for all offices to receive important announcements and messages at the same time.



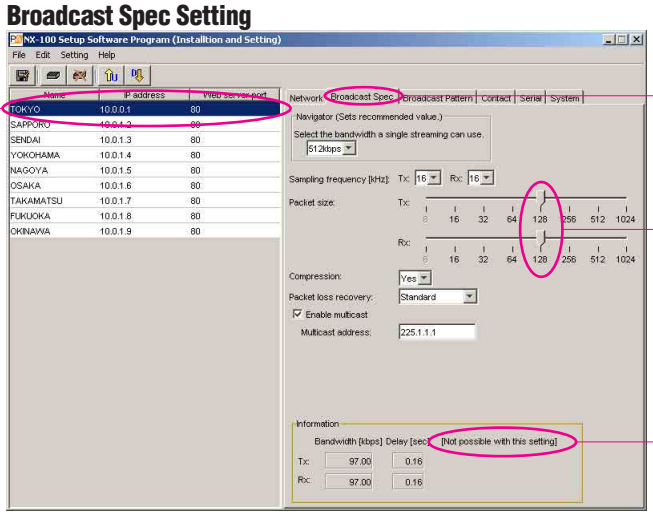
Transaction Information Transmission System for Securities Trading Companies

Initial Screen



Set IP address and name beforehand

Broadcast Spec Setting



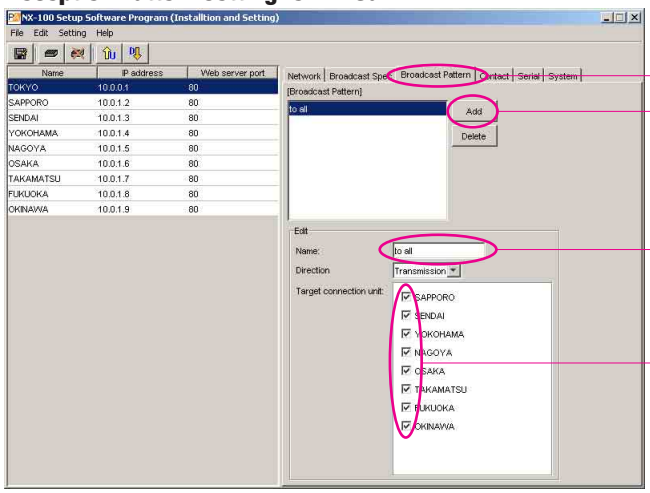
1) Select "TOKYO"

2) Click "Broadcast Spec"

3) Select "128"

4) Confirm that there is not "Two-ways streaming" in "Not possible with this setting"

Reception Pattern Setting for All Call



1) Click "Broadcast Pattern"

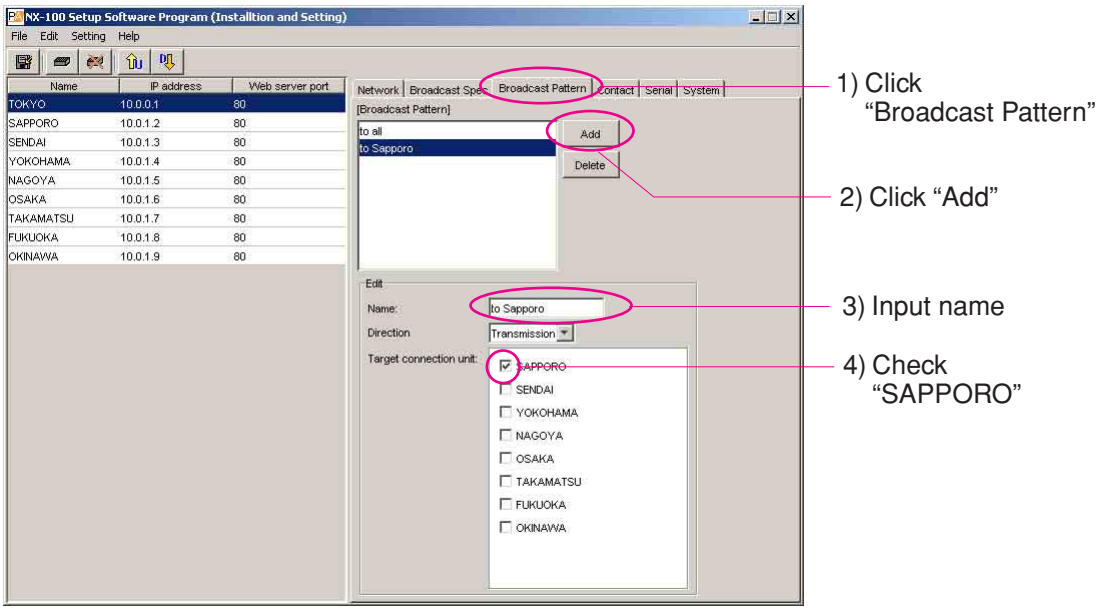
2) Click "Add"

3) Input name

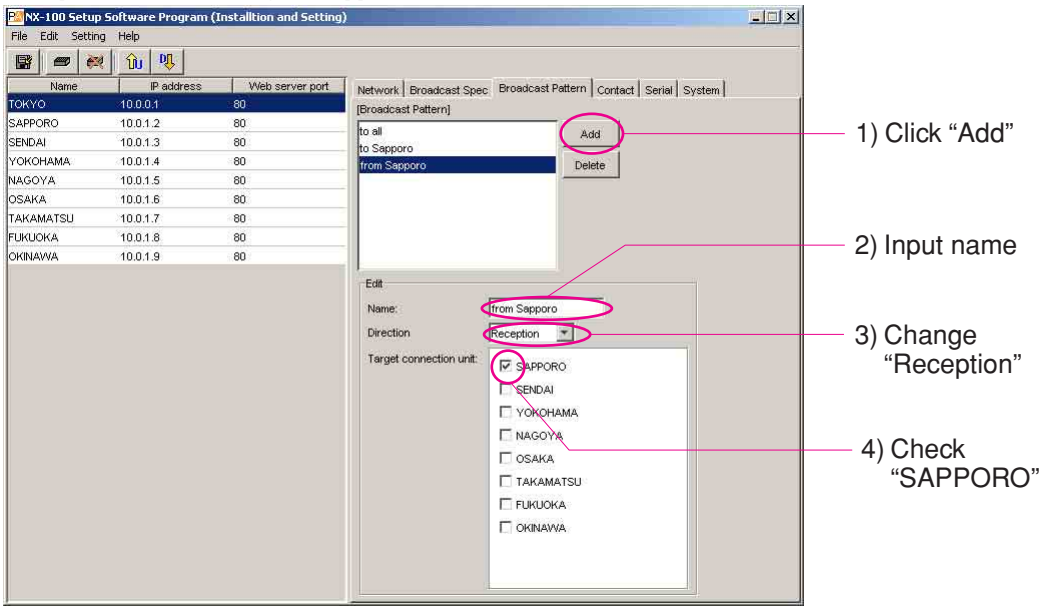
4) Check all items

Transaction Information Transmission System for Securities Trading Companies

Transmission Pattern Setting for Sapporo

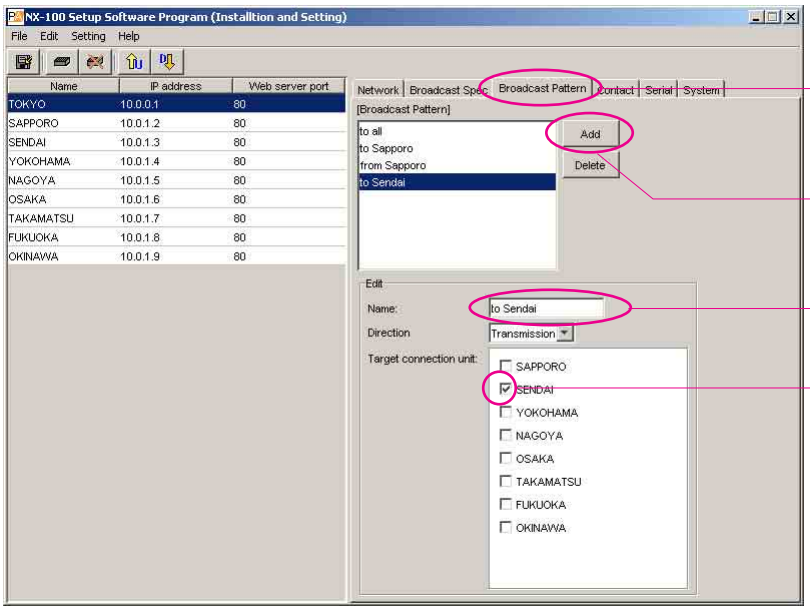


Reception Pattern Setting for Sapporo

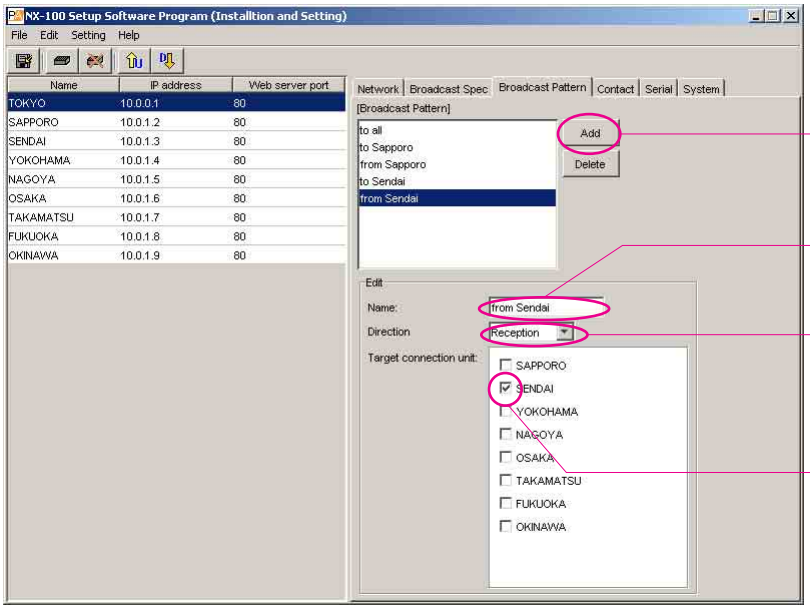


Transaction Information Transmission System for Securities Trading Companies

Transmission Pattern Setting for Sendai

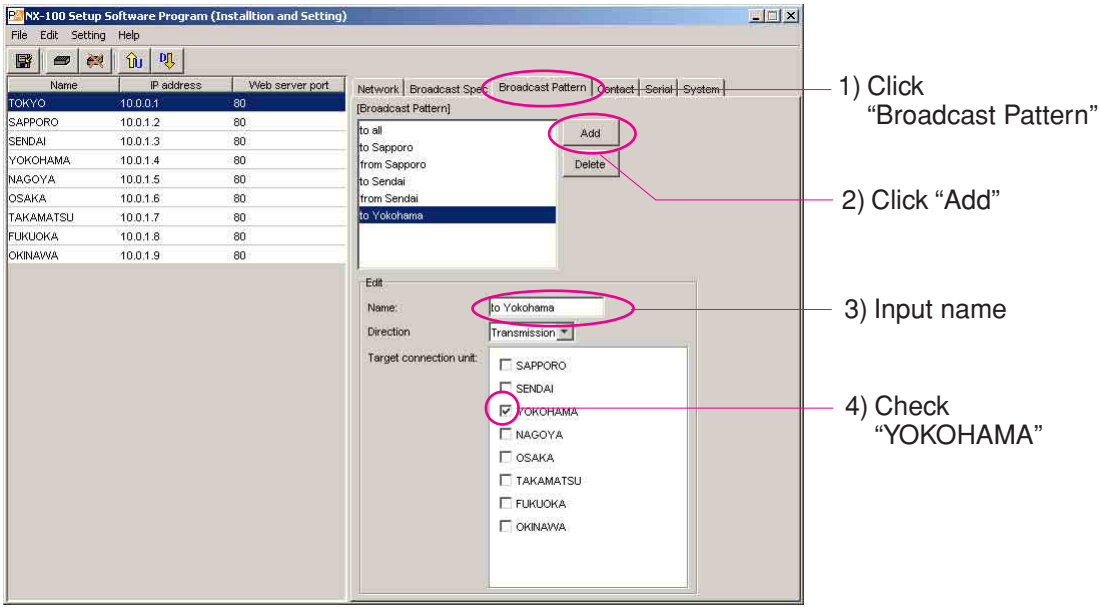


Reception Pattern Setting for Sendai

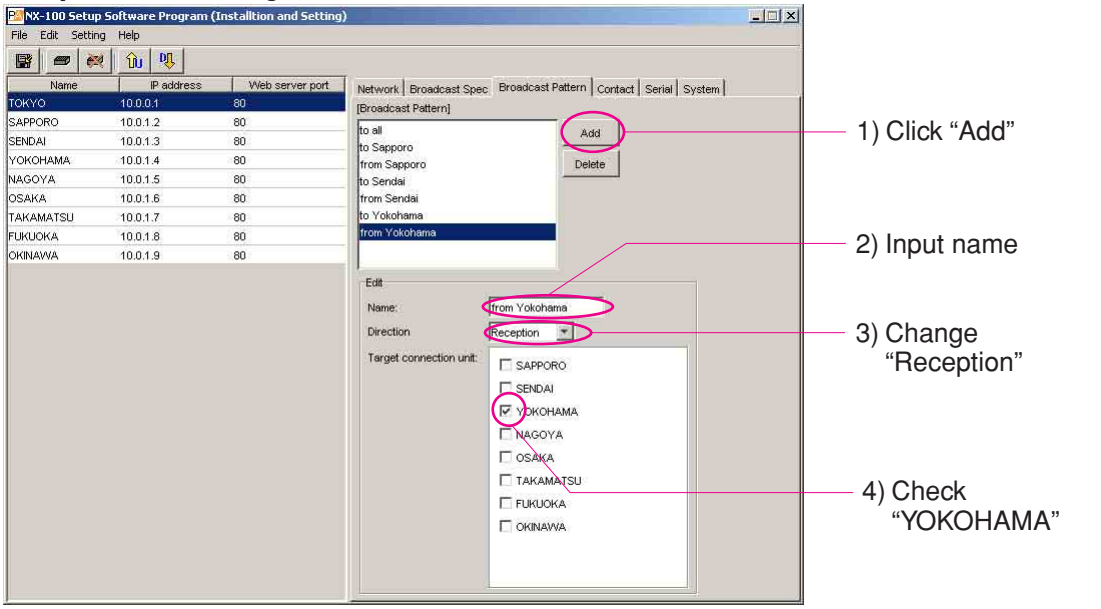


Transaction Information Transmission System for Securities Trading Companies

Transmission Pattern Setting for Yokohama

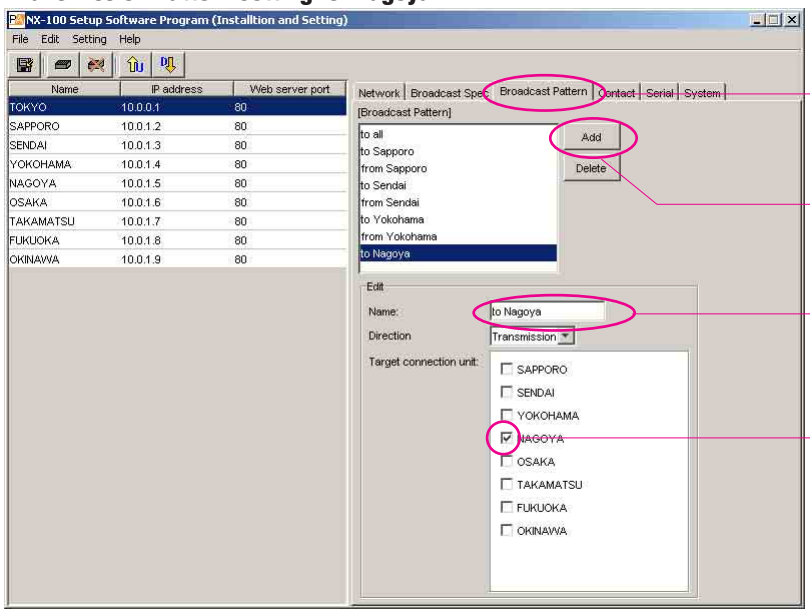


Reception Pattern Setting for Yokohama

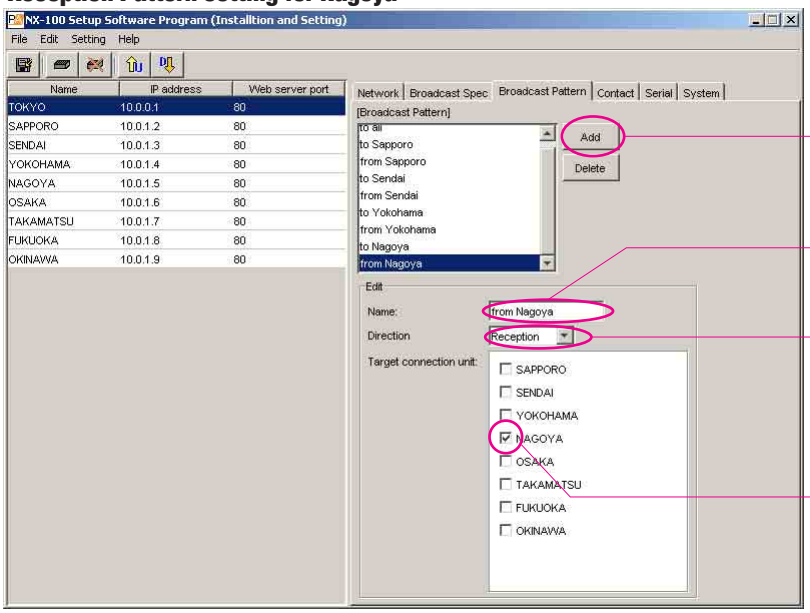


Transaction Information Transmission System for Securities Trading Companies

Transmission Pattern Setting for Nagoya

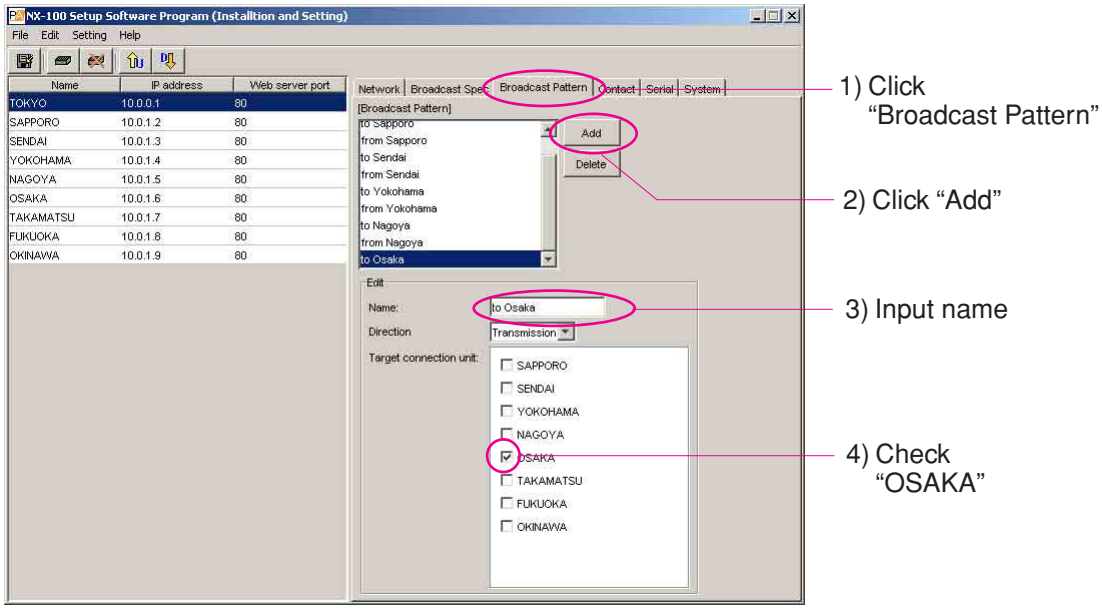


Reception Pattern Setting for Nagoya

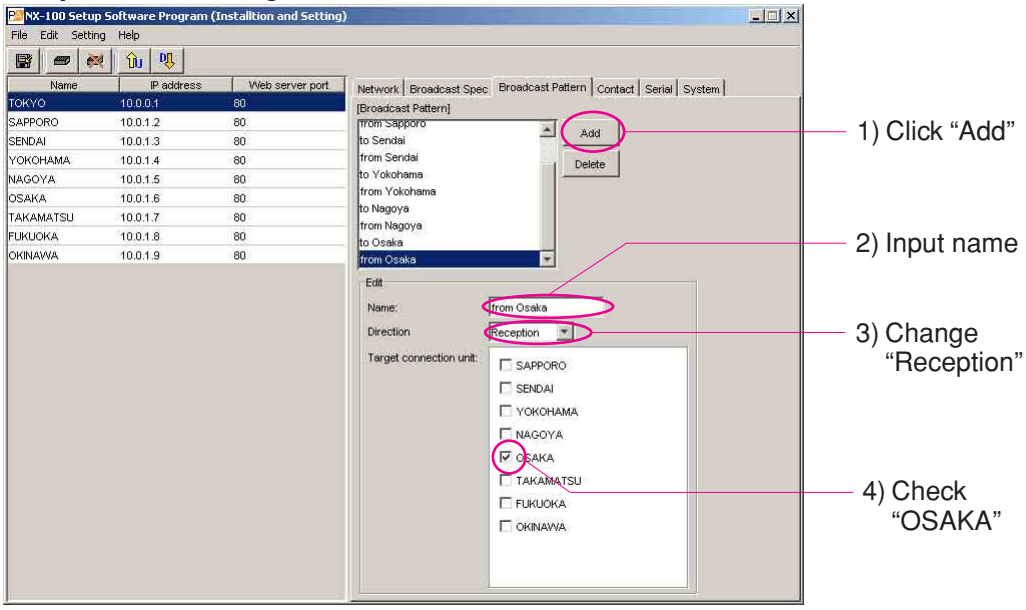


Transaction Information Transmission System for Securities Trading Companies

Transmission Pattern Setting for Osaka

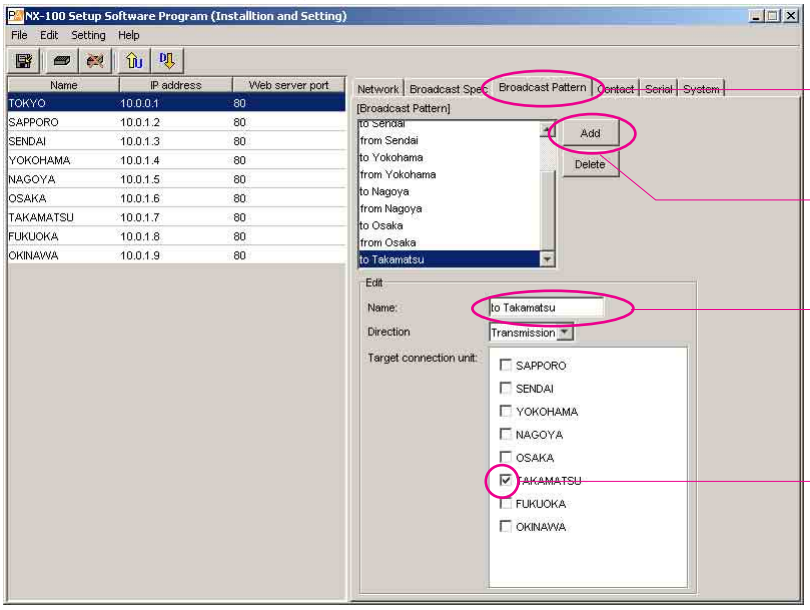


Reception Pattern Setting for Osaka



Transaction Information Transmission System for Securities Trading Companies

Transmission Pattern Setting for Takamatsu



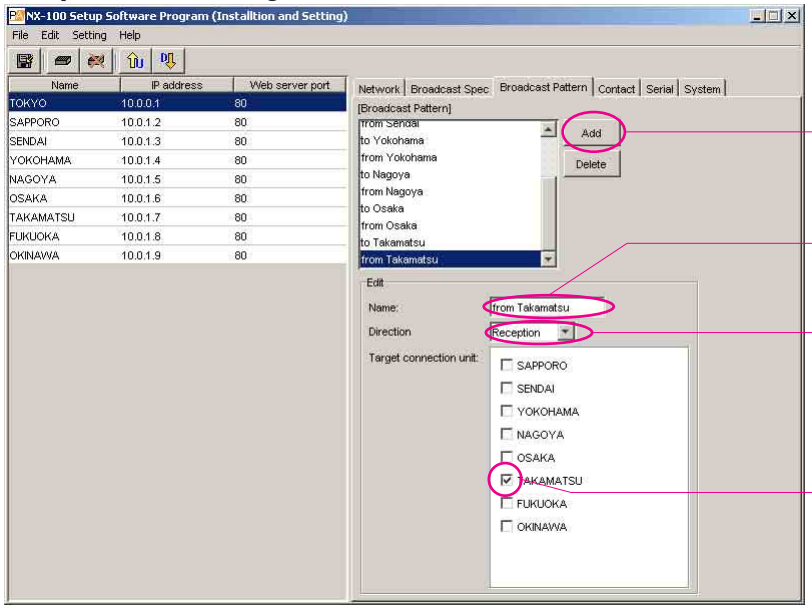
1) Click "Broadcast Pattern"

2) Click "Add"

3) Input name

4) Check "TAKAMATSU"

Reception Pattern Setting for Takamatsu



1) Click "Add"

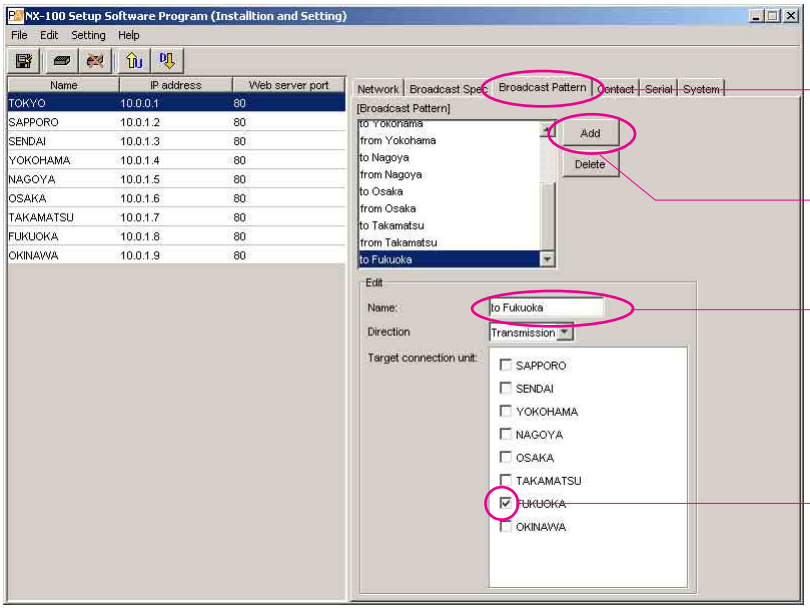
2) Input name

3) Change "Reception"

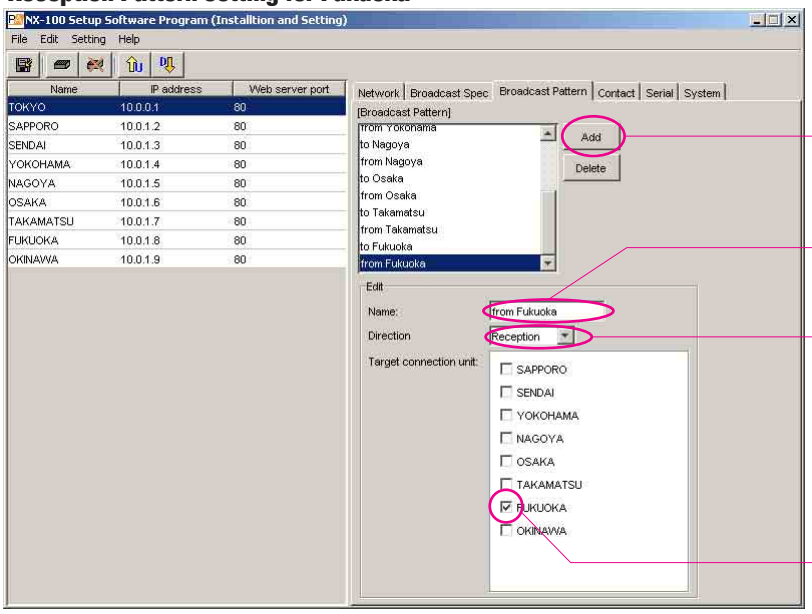
4) Check "TAKAMATSU"

Transaction Information Transmission System for Securities Trading Companies

Transmission Pattern Setting for Fukuoka

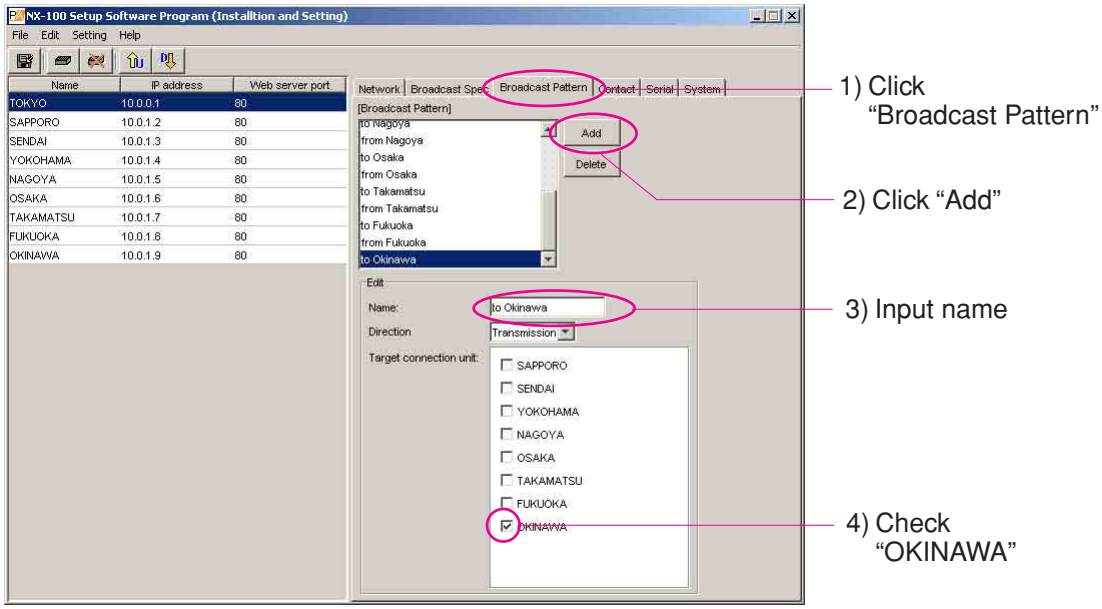


Reception Pattern Setting for Fukuoka

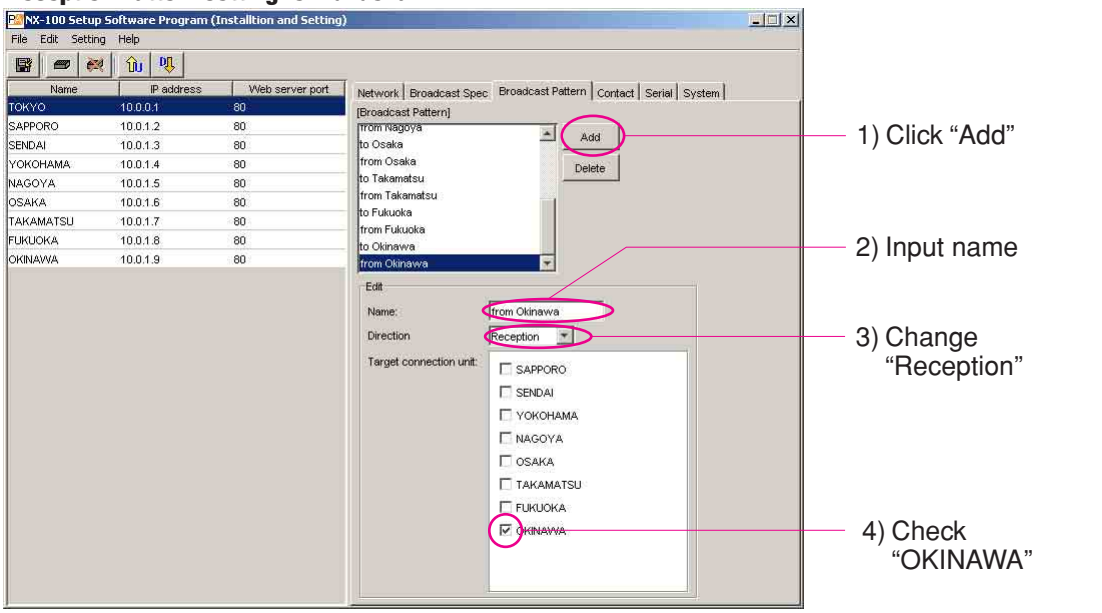


Transaction Information Transmission System for Securities Trading Companies

Transmission Pattern Setting for Okinawa



Reception Pattern Setting for Fukuoka

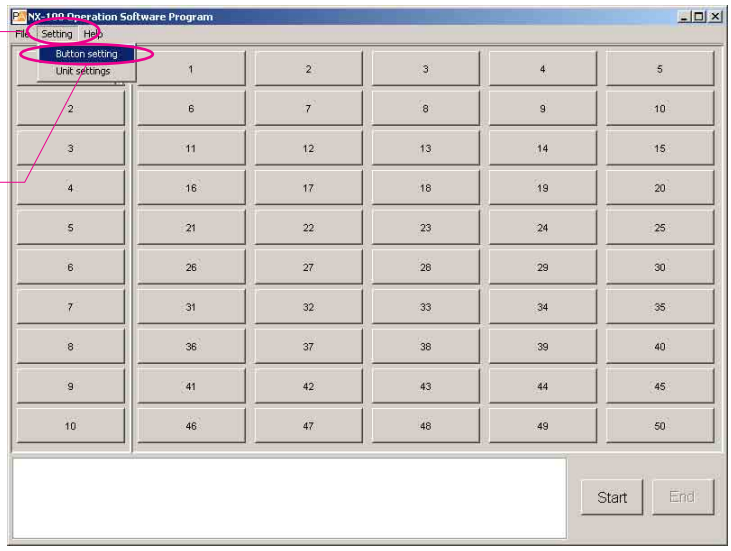


Transaction Information Transmission System for Securities Trading Companies

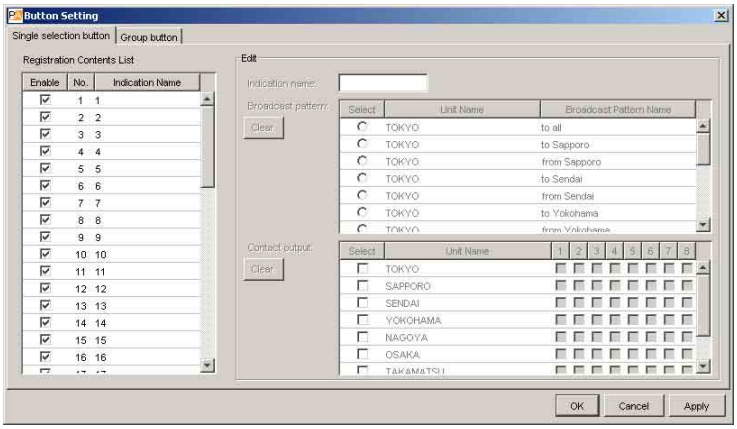
Initial Screen

1) Click “Setting” Button

2) Select “Button Setting”



Button Setting Initial Screen

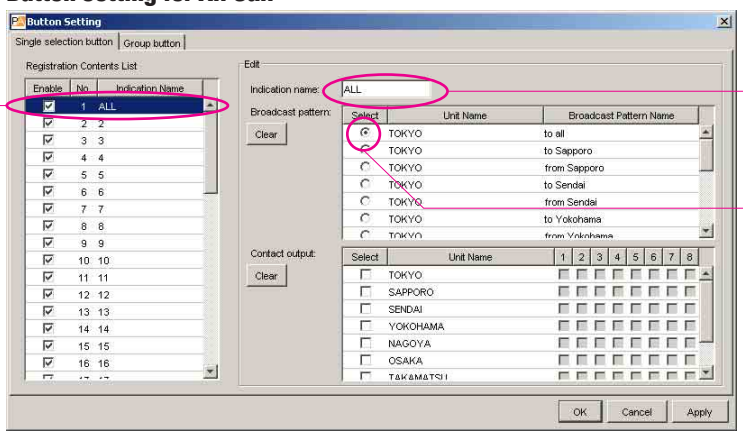


Button Setting for All Call

1) Select “Button 1”

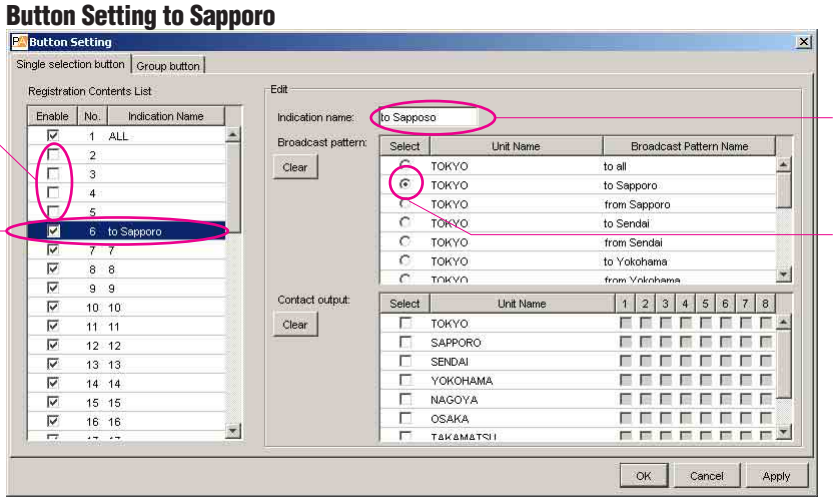
2) Indication Name Setting

3) Select Broadcast Pattern “All Call”



Transaction Information Transmission System for Securities Trading Companies

Button Setting to Sapporo



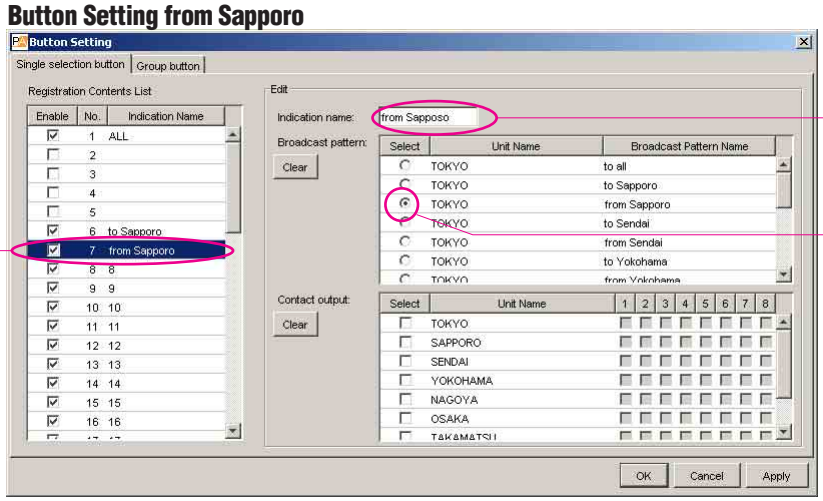
1) Unselect "Button 2 – 5"

2) Select "Button 6"

3) Indication Name Setting

4) Select Broadcast Pattern "to Sapporo"

Button Setting from Sapporo



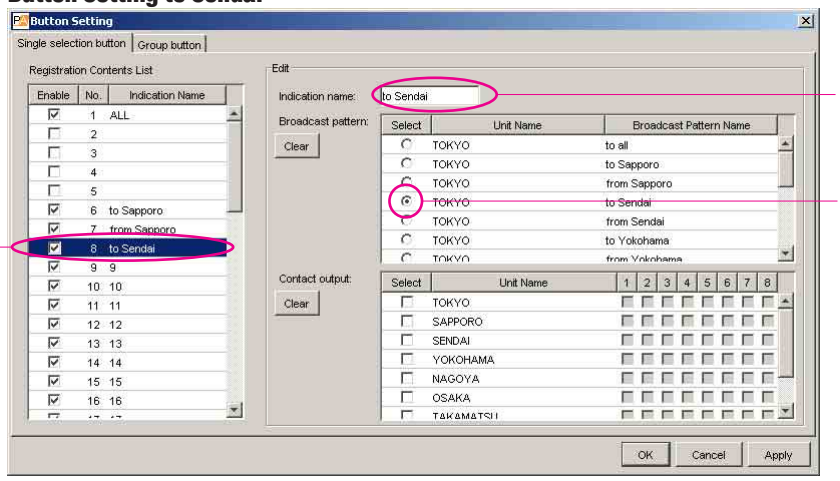
1) Select "Button 7"

2) Indication Name Setting

3) Select Broadcast Pattern "to Sapporo"

Transaction Information Transmission System for Securities Trading Companies

Button Setting to Sendai

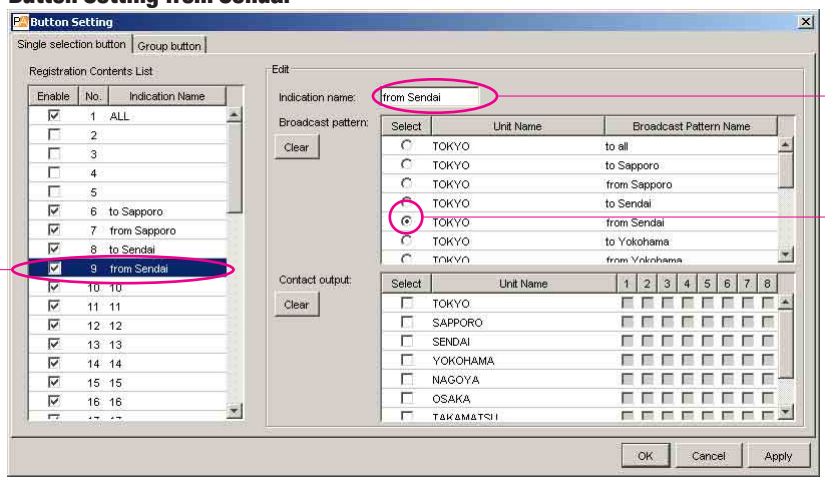


1) Select "Button 8"

2) Indication Name Setting

3) Select Broadcast Pattern "to Sendai"

Button Setting from Sendai



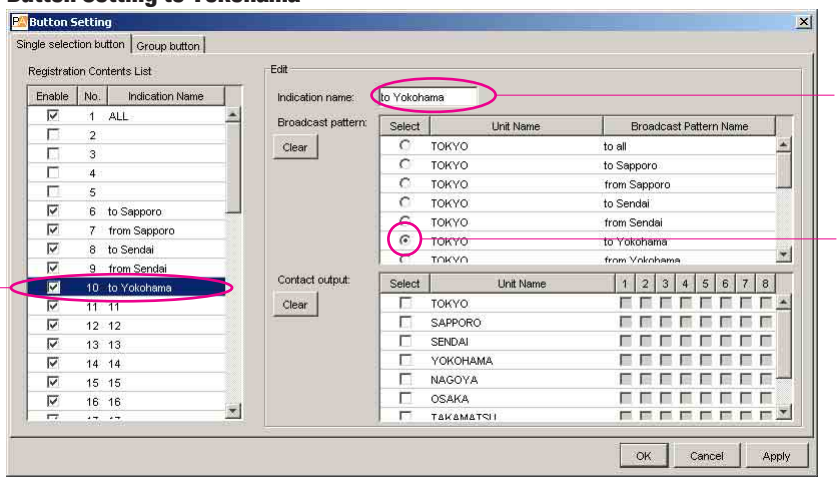
1) Select "Button 9"

2) Indication Name Setting

3) Select Broadcast Pattern "from Sendai"

Transaction Information Transmission System for Securities Trading Companies

Button Setting to Yokohama

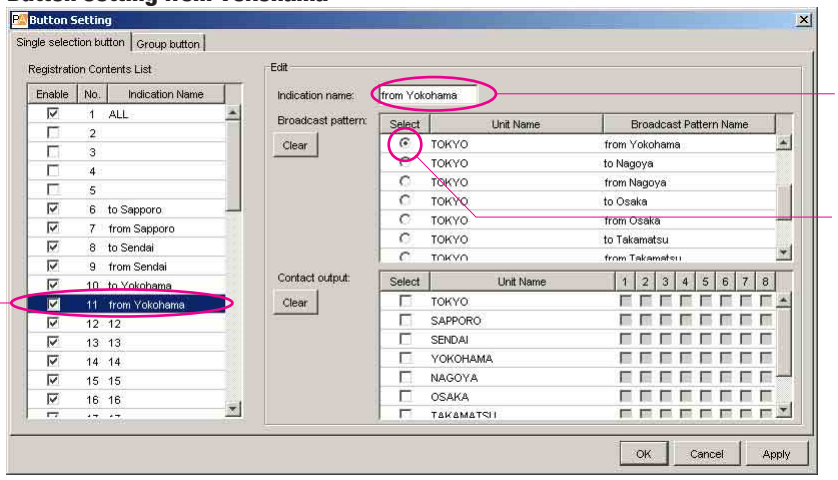


1) Select "Button 10"

2) Indication Name Setting

3) Select Broadcast Pattern "to Yokohama"

Button Setting from Yokohama



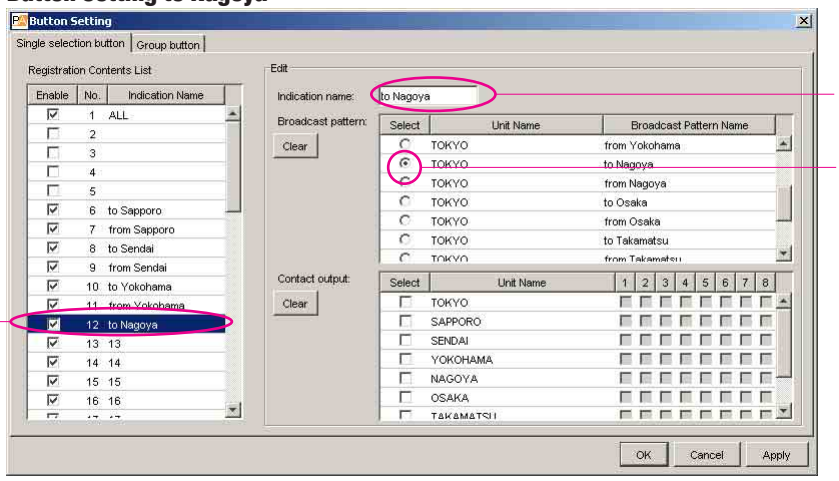
1) Select "Button 11"

2) Indication Name Setting

3) Select Broadcast Pattern "from Yokohama"

Transaction Information Transmission System for Securities Trading Companies

Button Setting to Nagoya

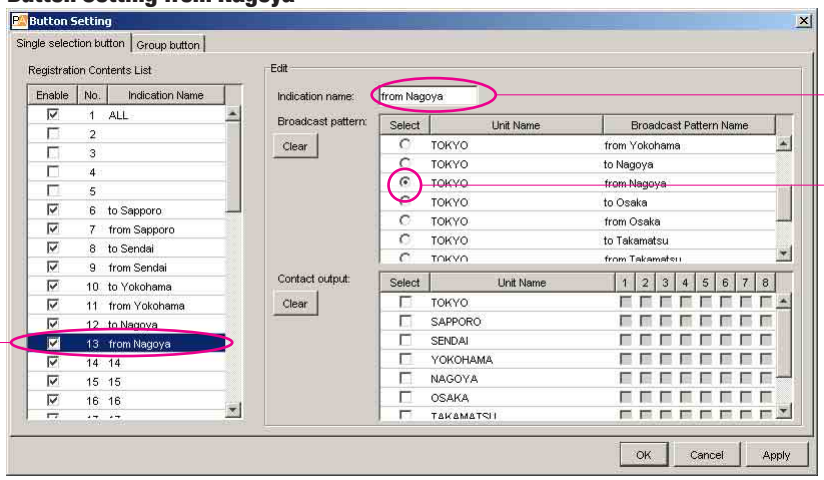


1) Select "Button 12"

2) Indication Name Setting

3) Select Broadcast Pattern "to Nagano"

Button Setting from Nagoya



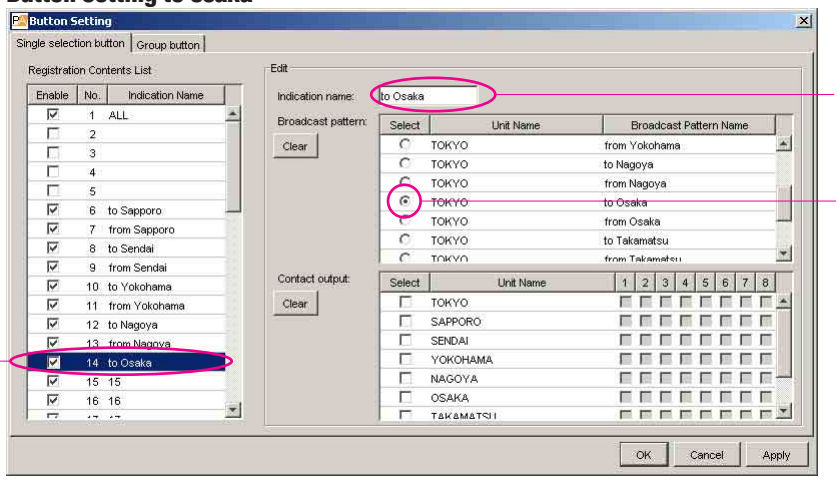
1) Select "Button 13"

2) Indication Name Setting

3) Select Broadcast Pattern "from Nagoya"

Transaction Information Transmission System for Securities Trading Companies

Button Setting to Osaka

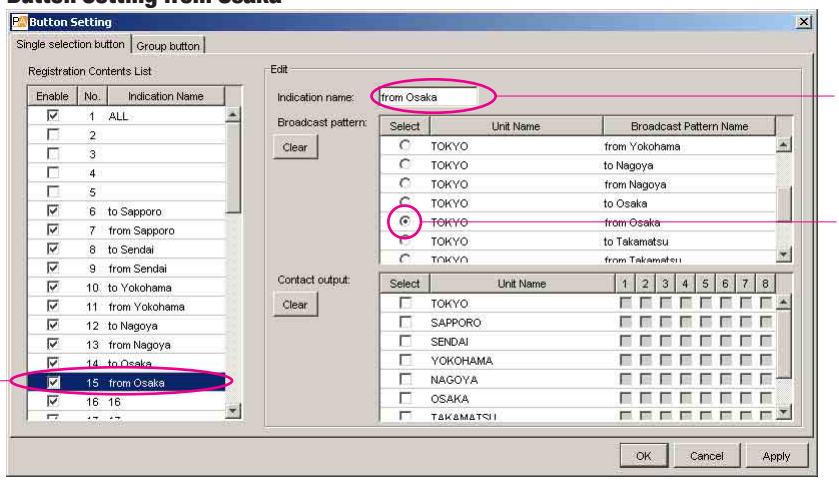


1) Select "Button 14"

2) Indication Name Setting

3) Select Broadcast Pattern "to Osaka"

Button Setting from Osaka



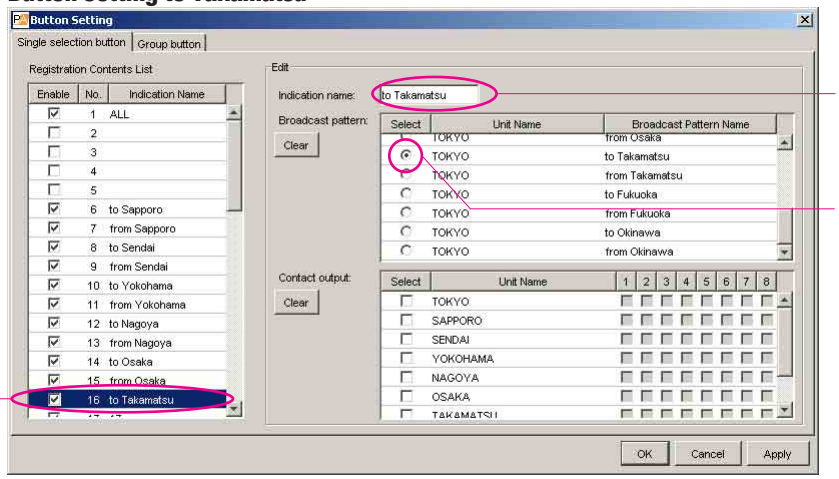
1) Select "Button 15"

2) Indication Name Setting

3) Select Broadcast Pattern "from Osaka"

Transaction Information Transmission System for Securities Trading Companies

Button Setting to Takamatsu

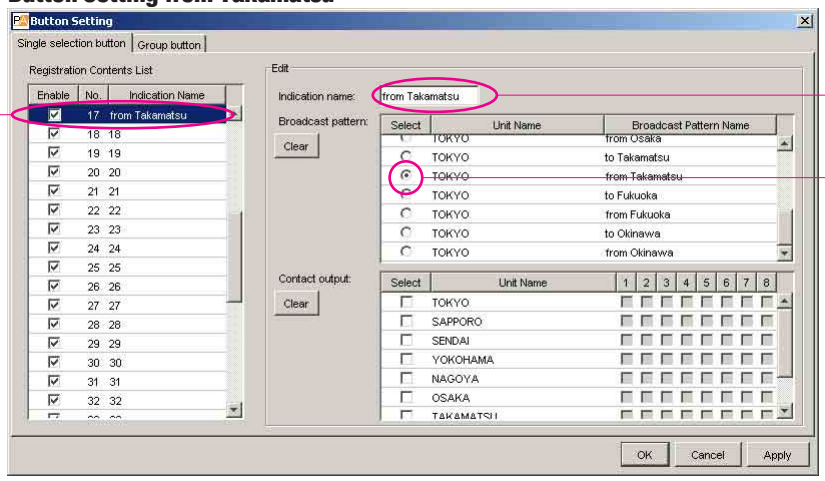


1) Select "Button 16"

2) Indication Name Setting

3) Select Broadcast Pattern "to Takamatsu"

Button Setting from Takamatsu



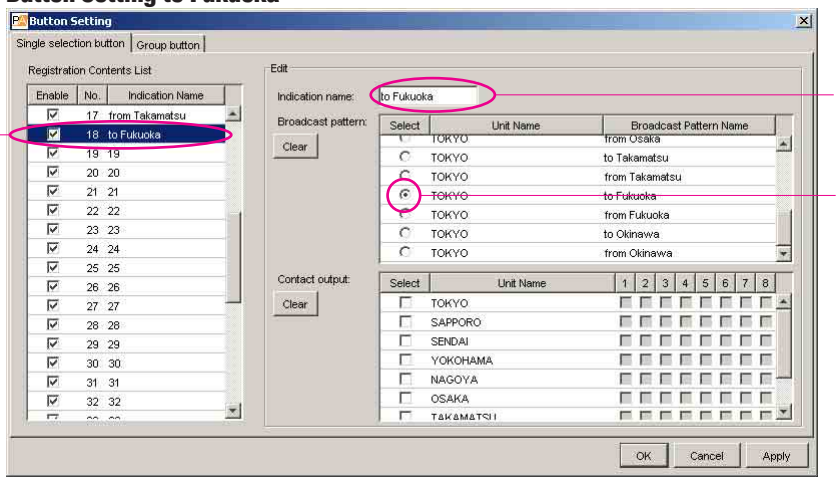
1) Select "Button 17"

2) Indication Name Setting

3) Select Broadcast Pattern "from Takamatsu"

Transaction Information Transmission System for Securities Trading Companies

Button Setting to Fukuoka

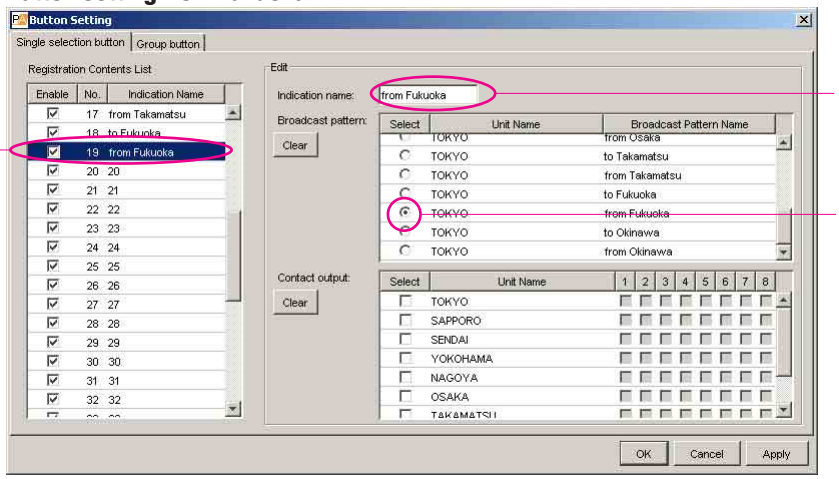


1) Select "Button 18"

2) Indication Name Setting

3) Select Broadcast Pattern "to Fukuoka"

Button Setting from Fukuoka



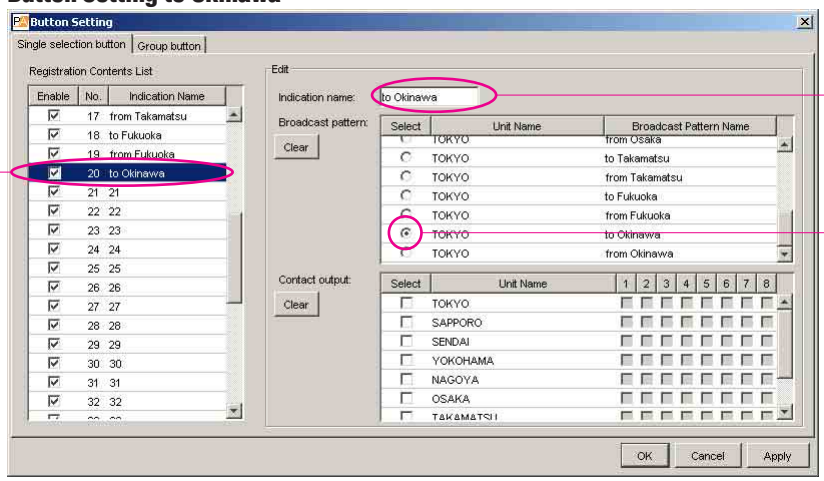
1) Select "Button 19"

2) Indication Name Setting

3) Select Broadcast Pattern "from Fukuoka"

Transaction Information Transmission System for Securities Trading Companies

Button Setting to Okinawa

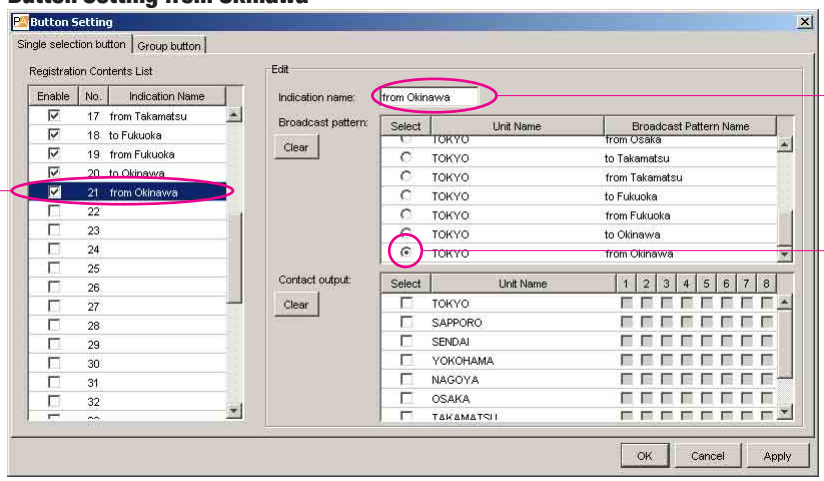


1) Select "Button 20"

2) Indication Name Setting

3) Select Broadcast Pattern "to Okinawa"

Button Setting from Okinawa



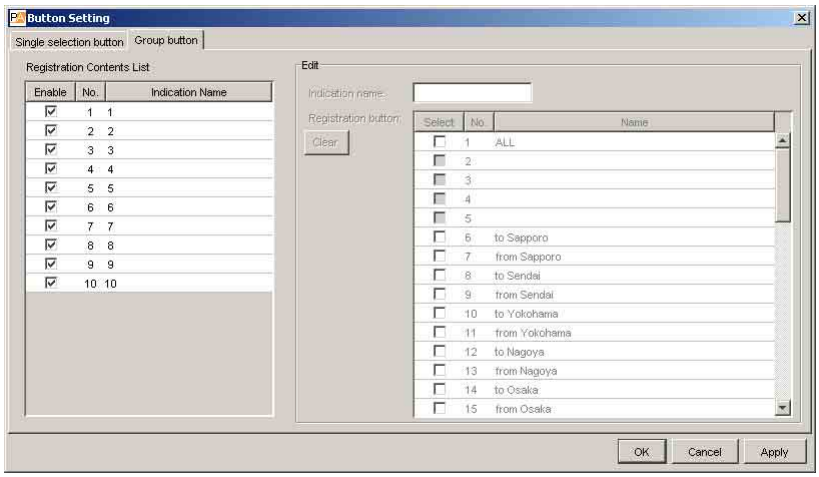
1) Select "Button 21"

2) Indication Name Setting

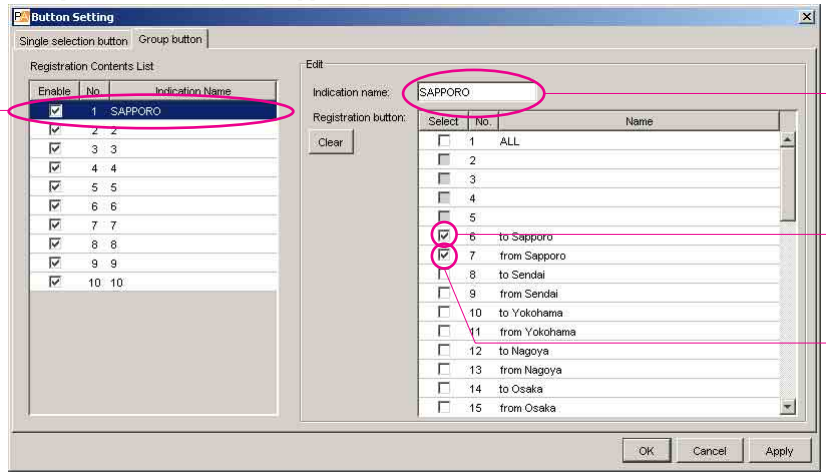
3) Select Broadcast Pattern "from Okinawa"

Transaction Information Transmission System for Securities Trading Companies

Group Button Setting Initial Screen



Group Button Setting for Sapporo



1) Select "Button 1"

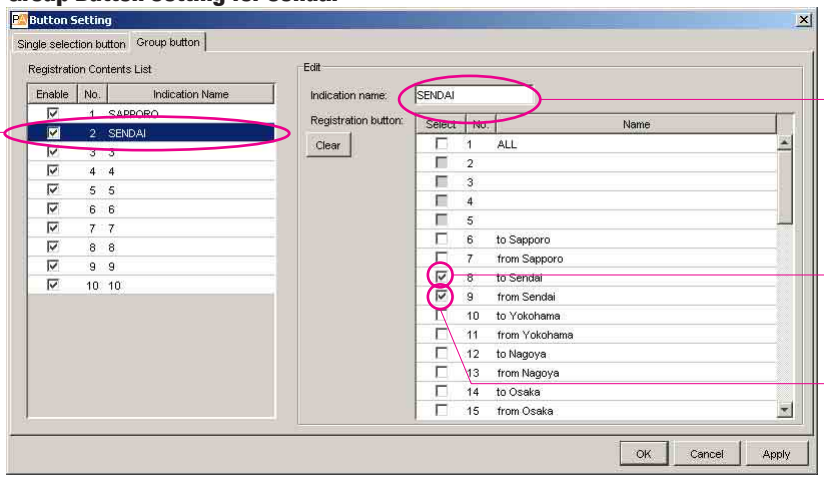
2) Indication Name Setting

3) Select Broadcast Pattern "to Sapporo"

4) Select Broadcast Pattern "from Sapporo"

Transaction Information Transmission System for Securities Trading Companies

Group Button Setting for Sendai



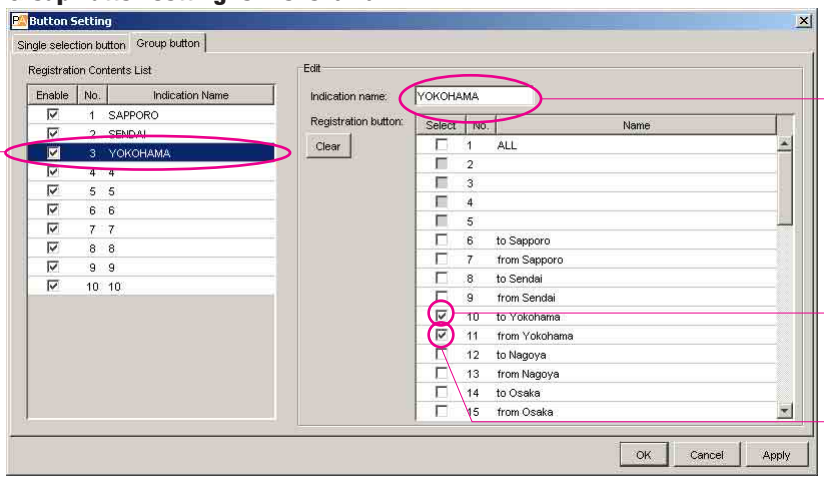
1) Select "Button 2"

2) Indication Name Setting

3) Select Broadcast Pattern "to Sendai"

4) Select Broadcast Pattern "from Sendai"

Group Button Setting for Yokohama



1) Select "Button 3"

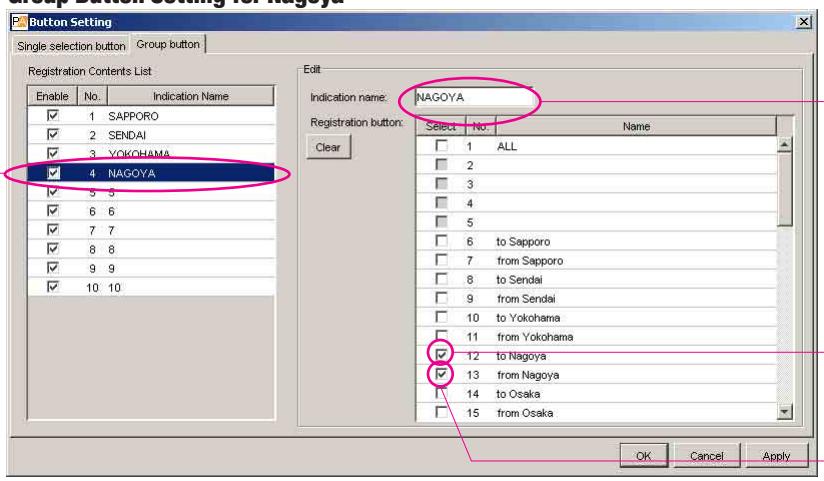
2) Indication Name Setting

3) Select Broadcast Pattern "to Yokohama"

4) Select Broadcast Pattern "from Yokohama"

Transaction Information Transmission System for Securities Trading Companies

Group Button Setting for Nagoya



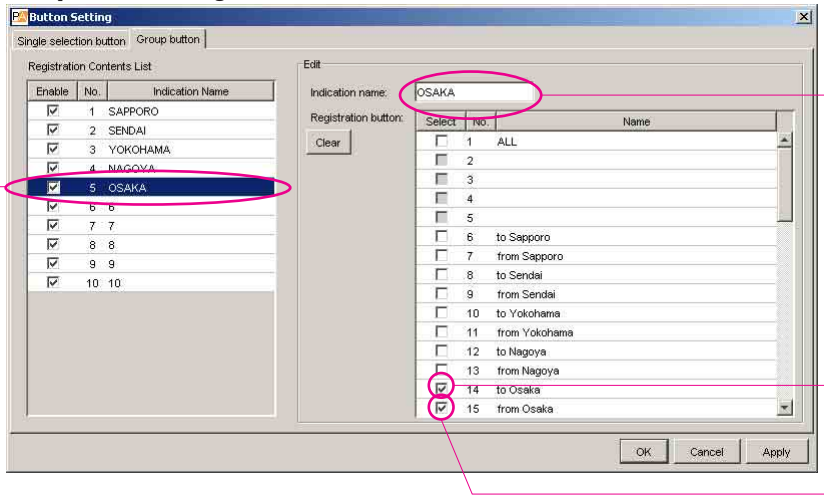
1) Select "Button 4"

2) Indication Name Setting

3) Select Broadcast Pattern "to Nagoya"

4) Select Broadcast Pattern "from Nagoya"

Group Button Setting for Osaka



1) Select "Button 5"

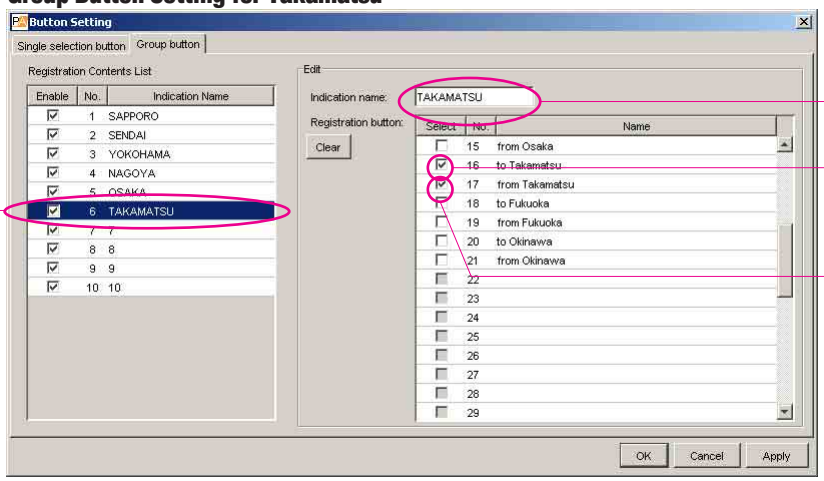
2) Indication Name Setting

3) Select Broadcast Pattern "to Osaka"

4) Select Broadcast Pattern "from Osaka"

Transaction Information Transmission System for Securities Trading Companies

Group Button Setting for Takamatsu



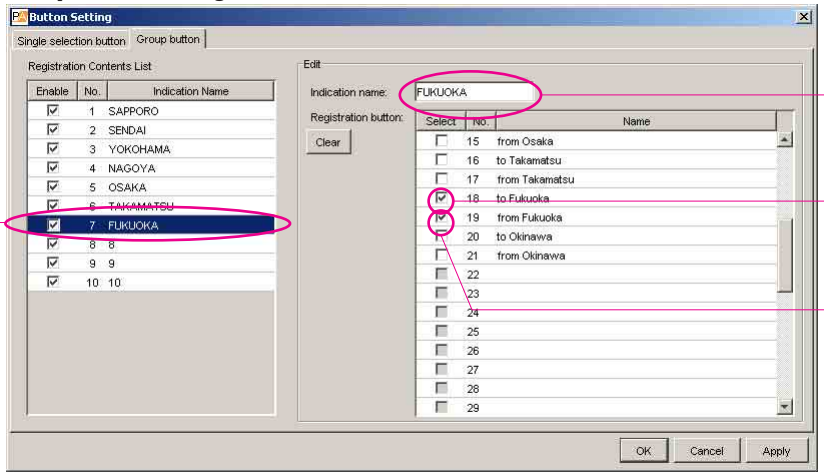
1) Select "Button 6"

2) Indication Name Setting

3) Select Broadcast Pattern "to Takamatsu"

4) Select Broadcast Pattern "from Takamatsu"

Group Button Setting for Fukuoka



1) Select "Button 7"

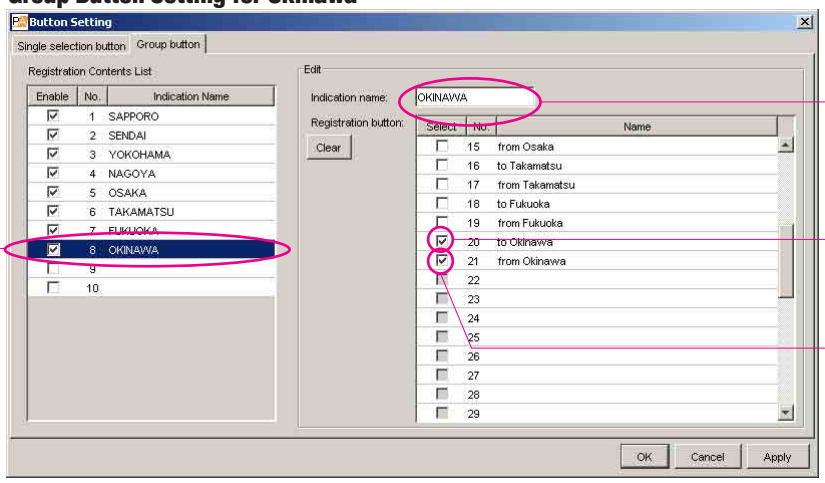
2) Indication Name Setting

3) Select Broadcast Pattern "to Fukuoka"

4) Select Broadcast Pattern "from Fukuoka"

Transaction Information Transmission System for Securities Trading Companies

Group Button Setting for Okinawa



1) Select "Button 8"

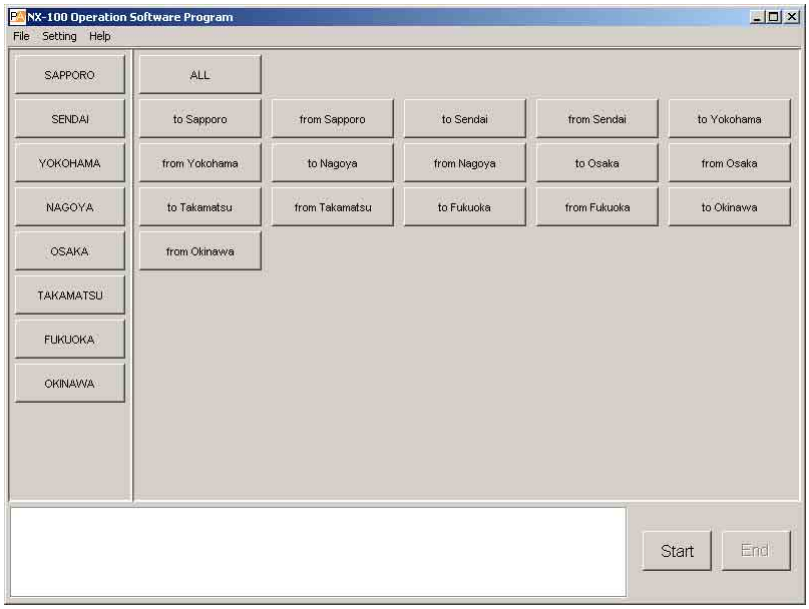
2) Indication Name Setting

3) Select Broadcast Pattern "to Okinawa"

4) Select Broadcast Pattern "from Okinawa"

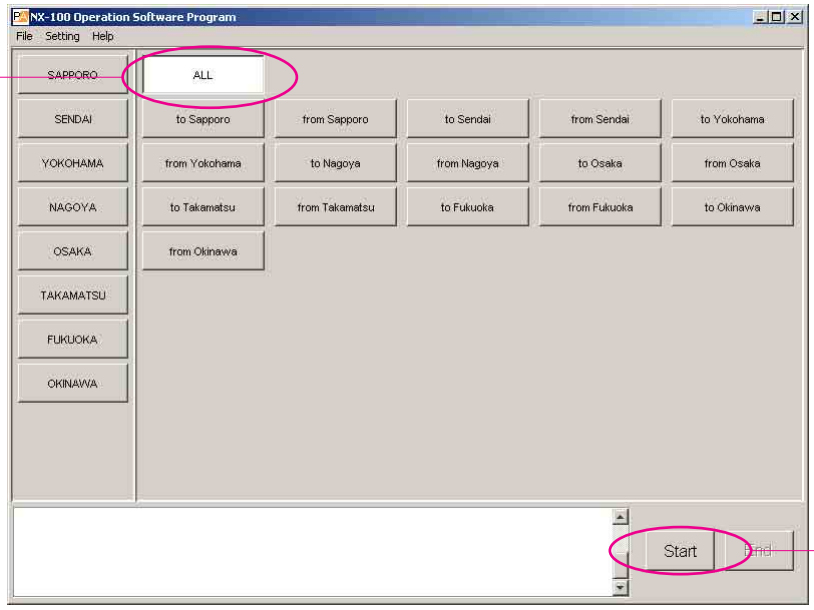
Transaction Information Transmission System for Securities Trading Companies

After Button Setting



Broadcasting All Call

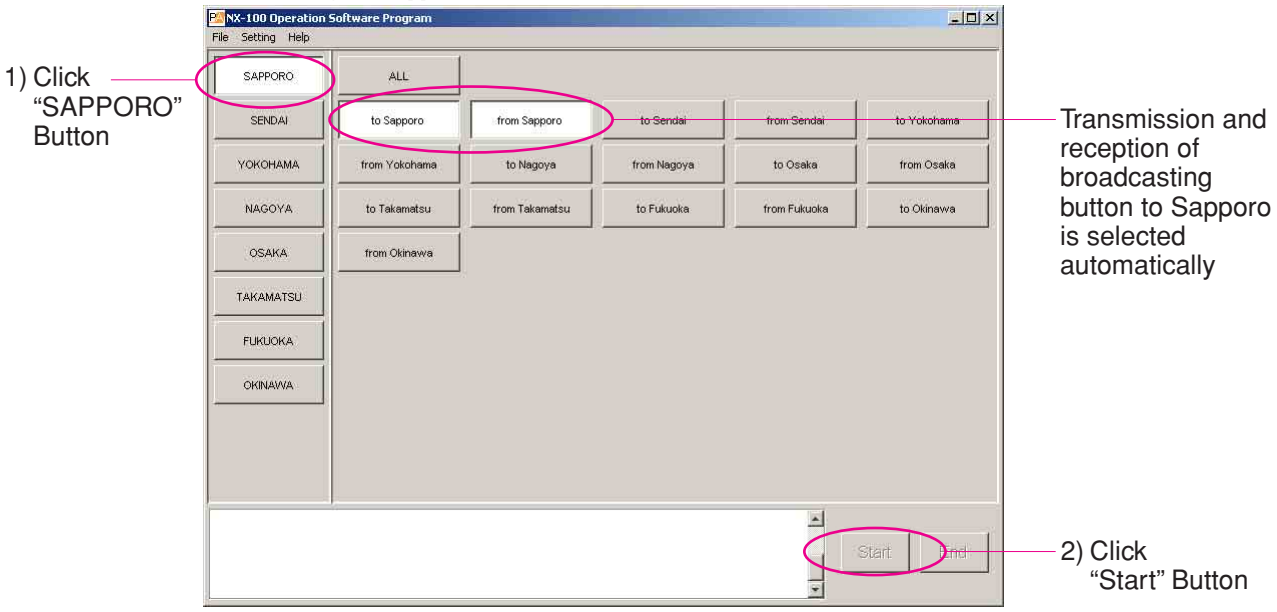
1) Click "ALL" Button



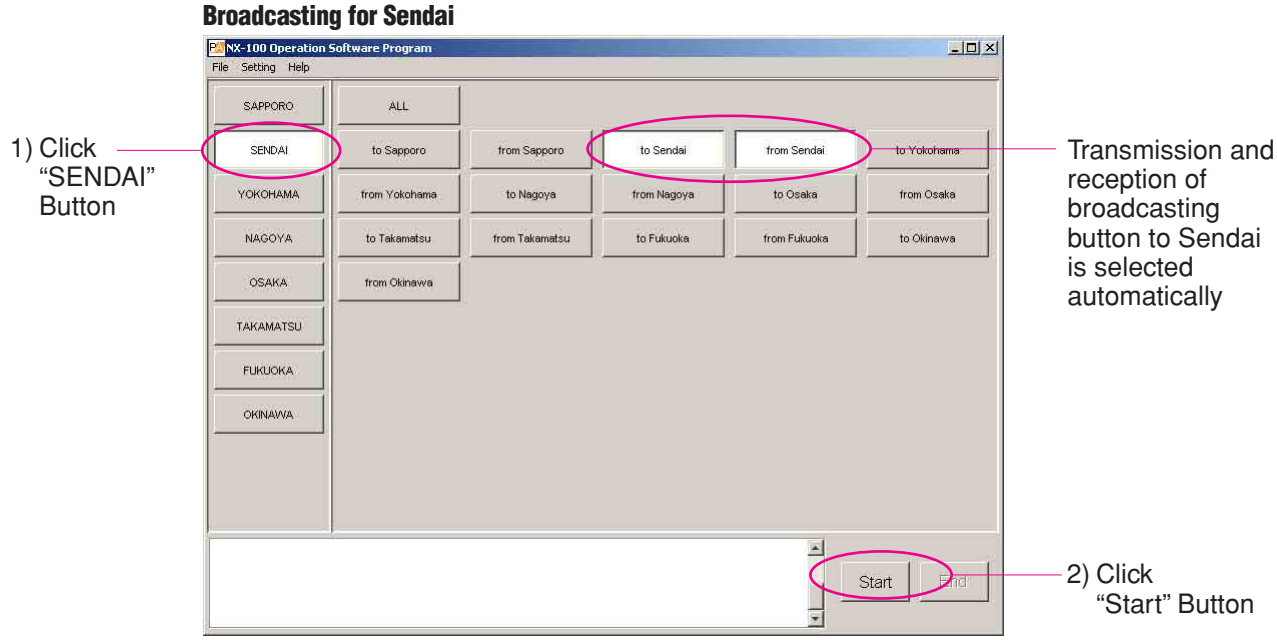
2) Click "Start" Button

Transaction Information Transmission System for Securities Trading Companies

Broadcasting for Sapporo

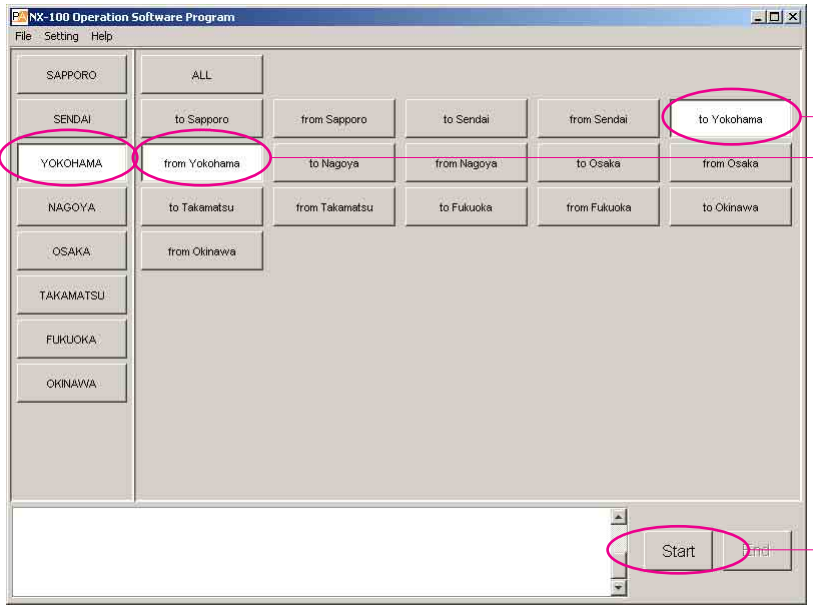


Broadcasting for Sendai



Transaction Information Transmission System for Securities Trading Companies

Broadcasting for Yokohama

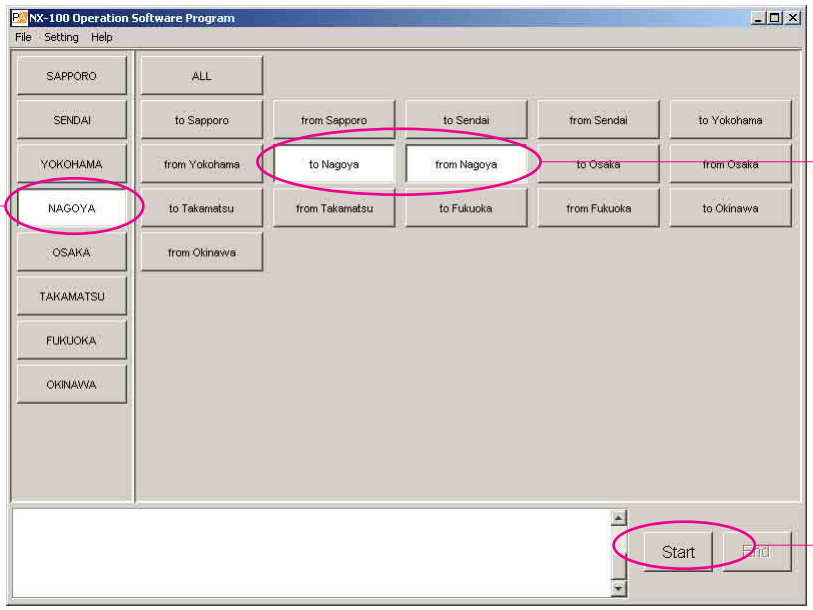


1) Click "YOKOHAMA" Button

Transmission and reception of broadcasting button to Yokohama is selected automatically

2) Click "Start" Button

Broadcasting for Nagoya



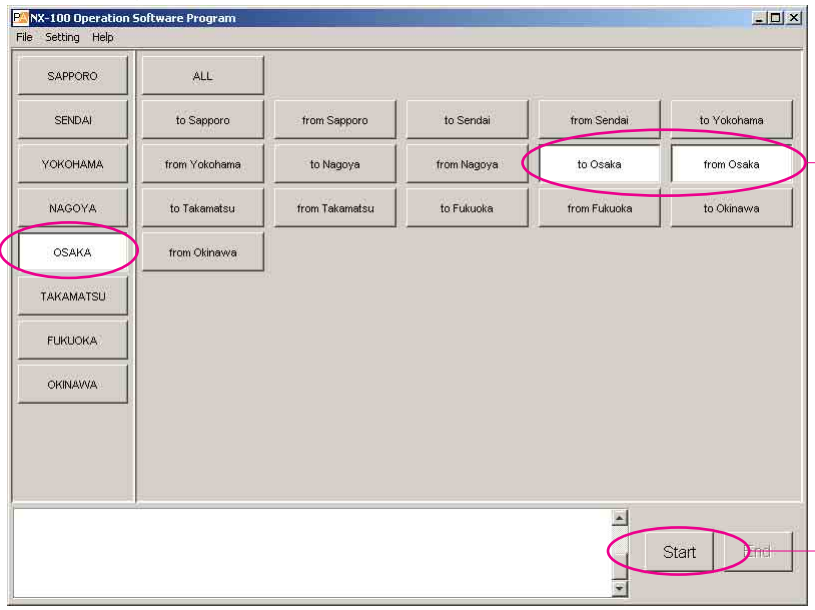
1) Click "NAGOYA" Button

Transmission and reception of broadcasting button to Nagoya is selected automatically

2) Click "Start" Button

Transaction Information Transmission System for Securities Trading Companies

Broadcasting for Osaka

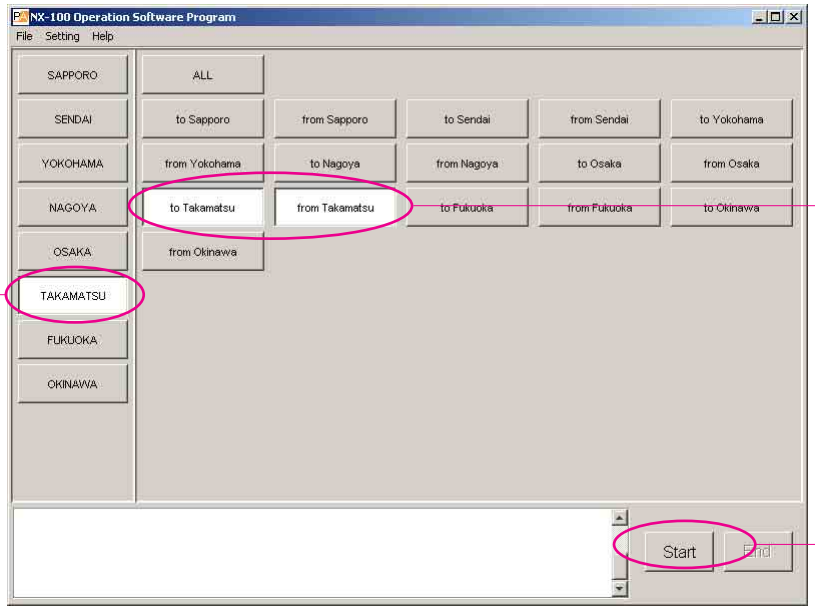


1) Click "OSAKA" Button

Transmission and reception of broadcasting button to Osaka is selected automatically

2) Click "Start" Button

Broadcasting for Takamatsu



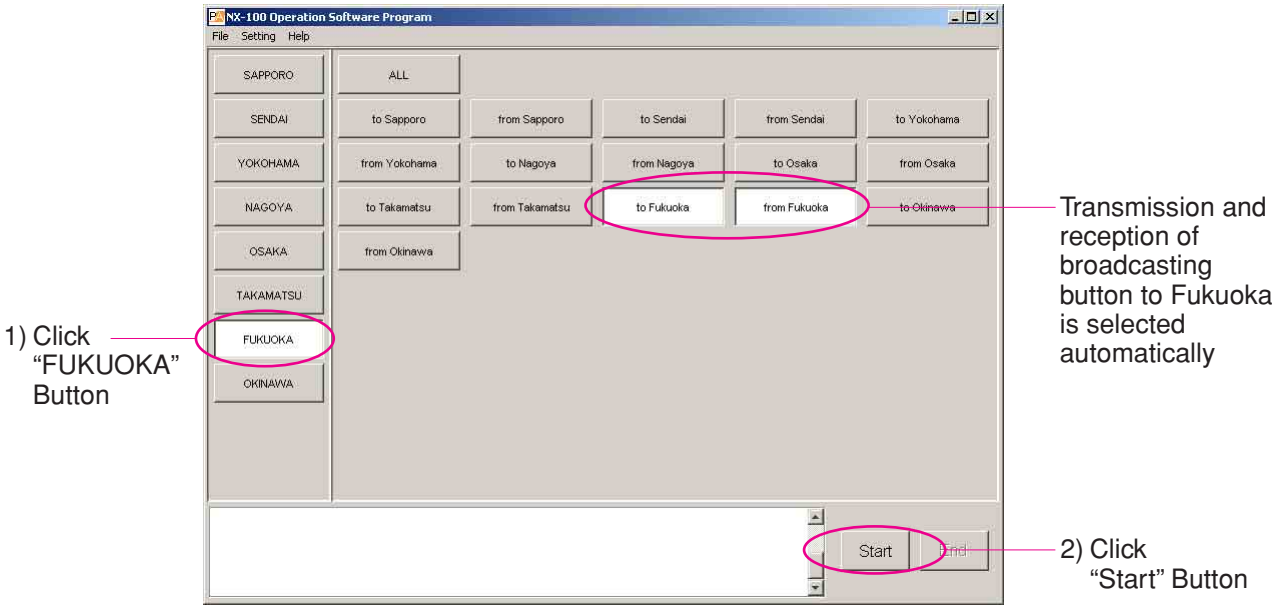
1) Click "TAKAMATSU" Button

Transmission and reception of broadcasting button to Takamatsu is selected automatically

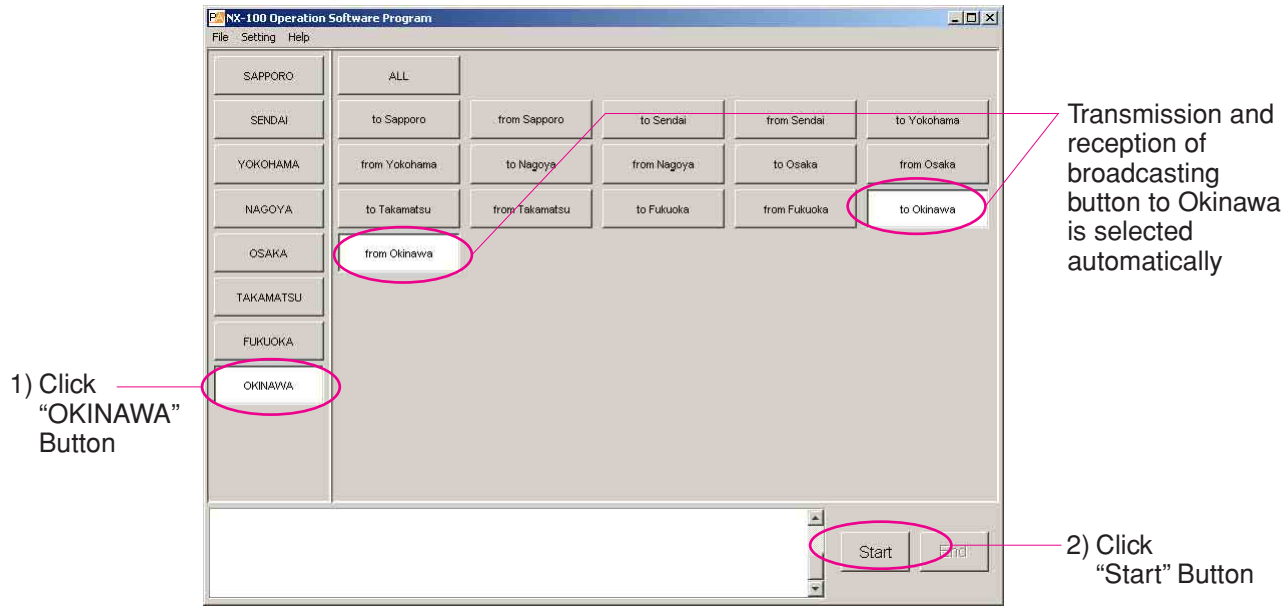
2) Click "Start" Button

Transaction Information Transmission System for Securities Trading Companies

Broadcasting for Fukuoka



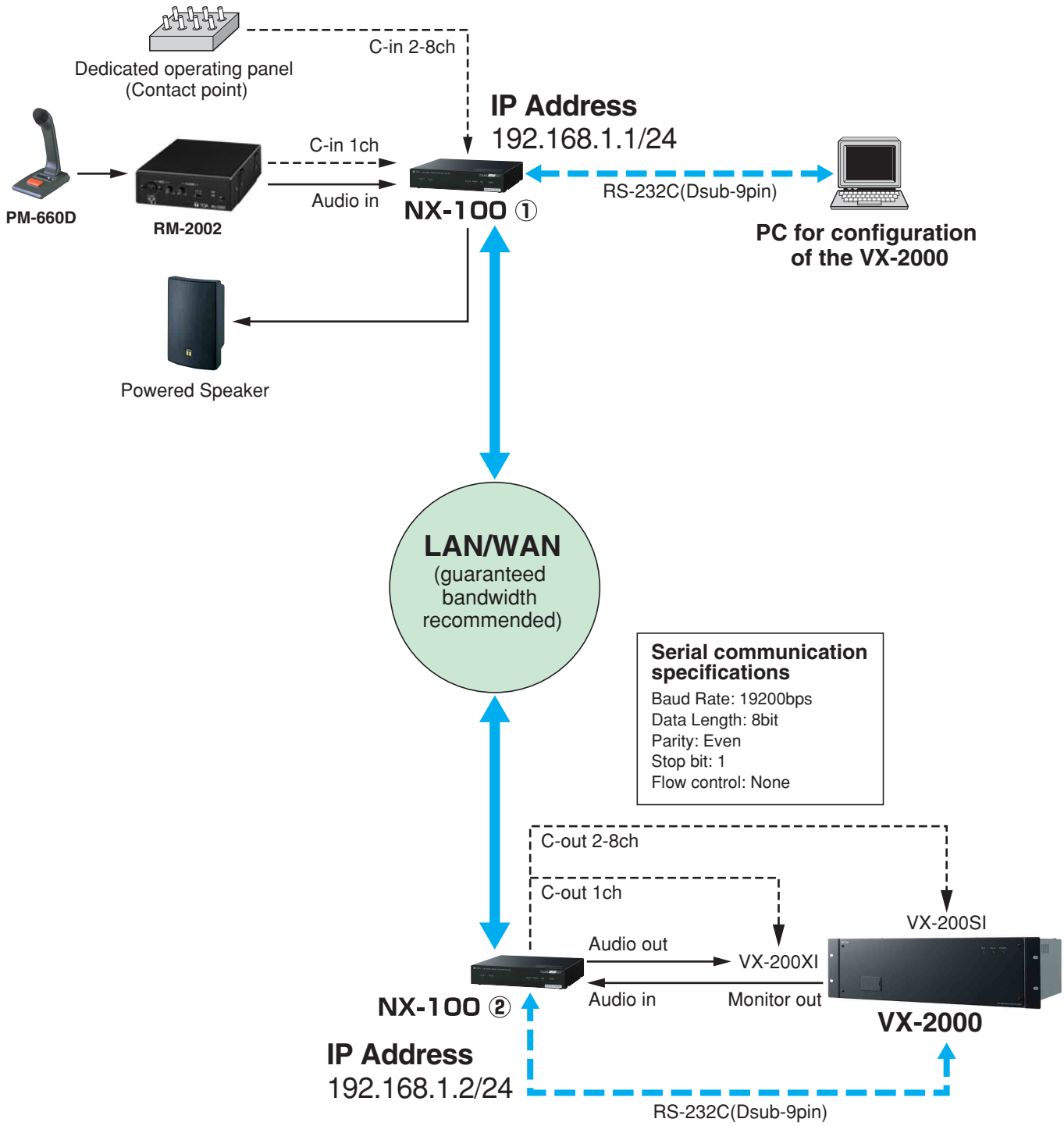
Broadcasting for Okinawa



APPLICATION EXAMPLE-3

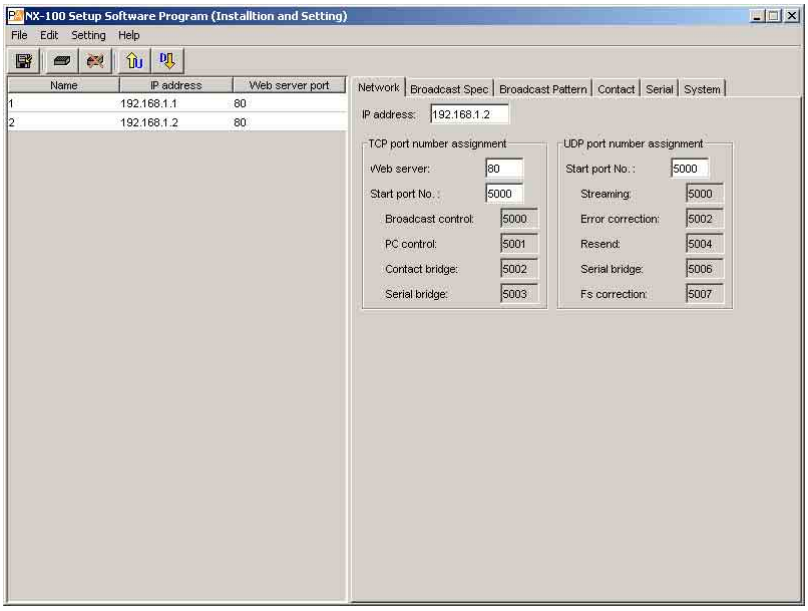
Combined Use with the VX-2000 System

An ideal application for mid-sized buildings that require an effective general purpose communications system for announcements and emergencies, combining the NX-100 with the VX-2000 creates an ideal system that can easily be expanded to meet specific user requirements and one that offers superb reliability.

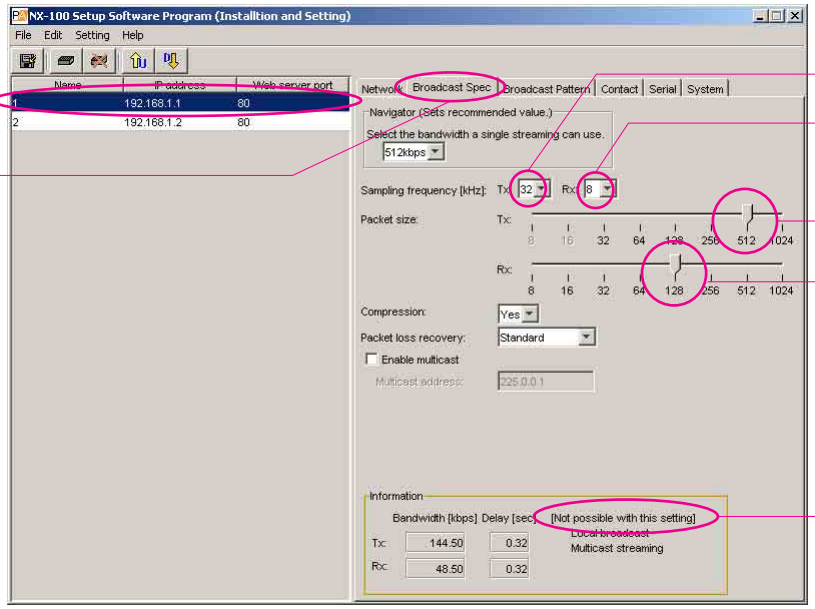


Combined Use with the VX-2000 System

Initial Screen



Broadcast Spec Setting for Equipment 1



1) Select “1”

2) Click “Broadcast Spec”

3) Set “32”

4) Set “8”

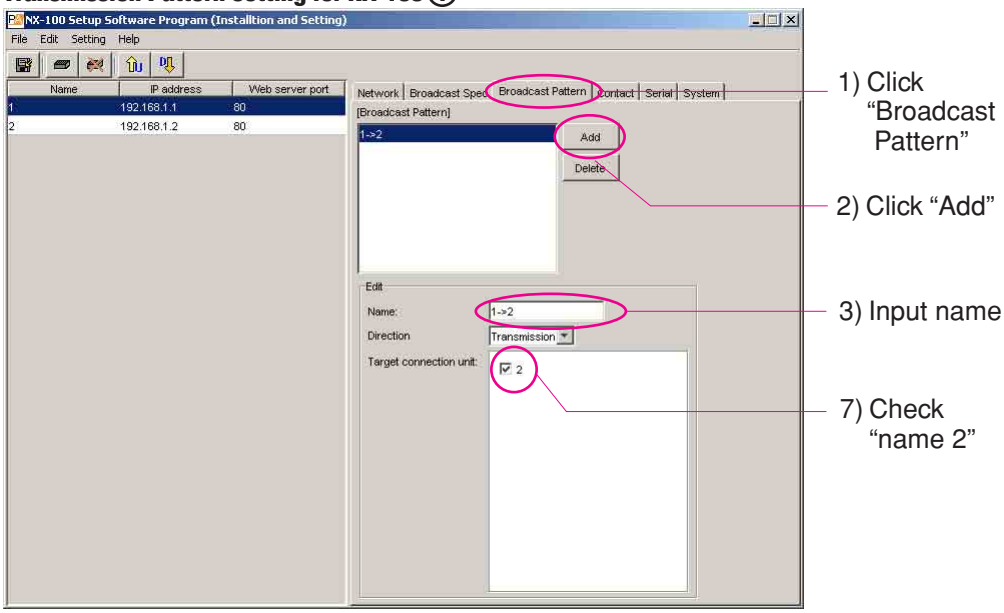
5) Set “512”

6) Set “128”

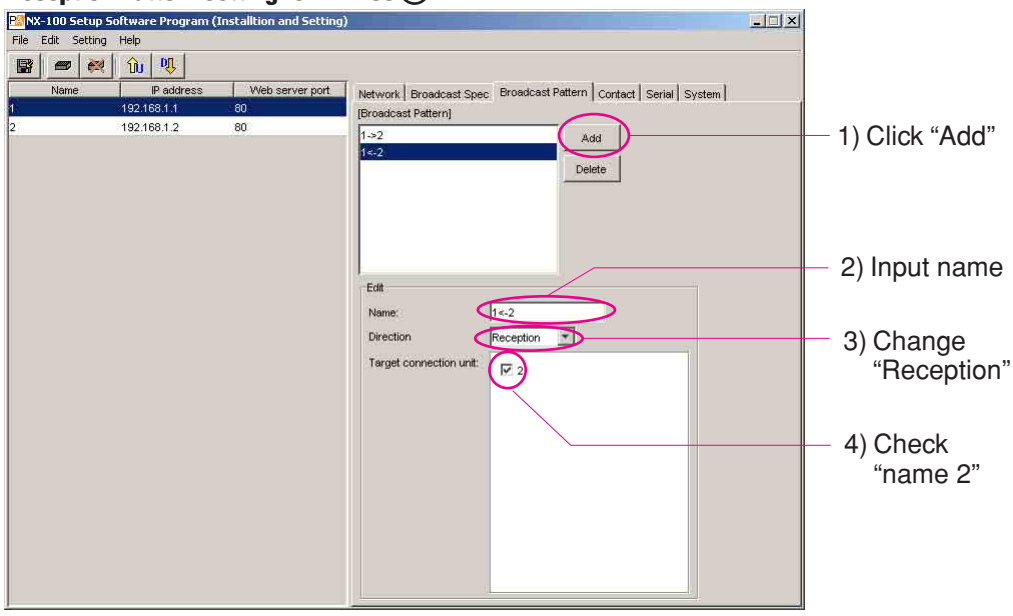
7) Confirm that there is not “Two-ways streaming” in “Not possible with this setting”

Combined Use with the VX-2000 System

Transmission Pattern Setting for NX-100①

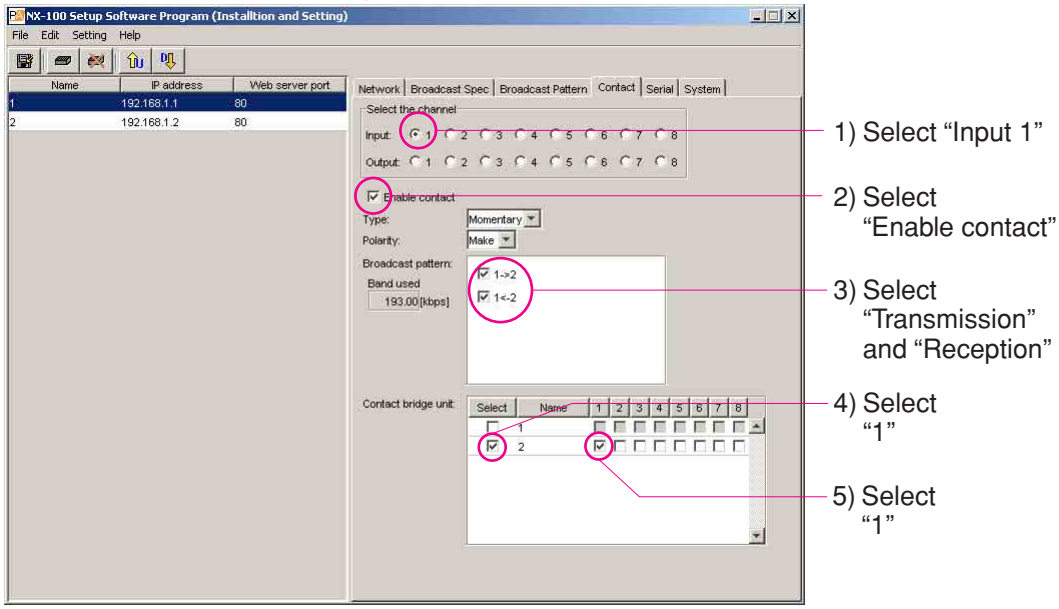


Reception Pattern Setting for NX-100①

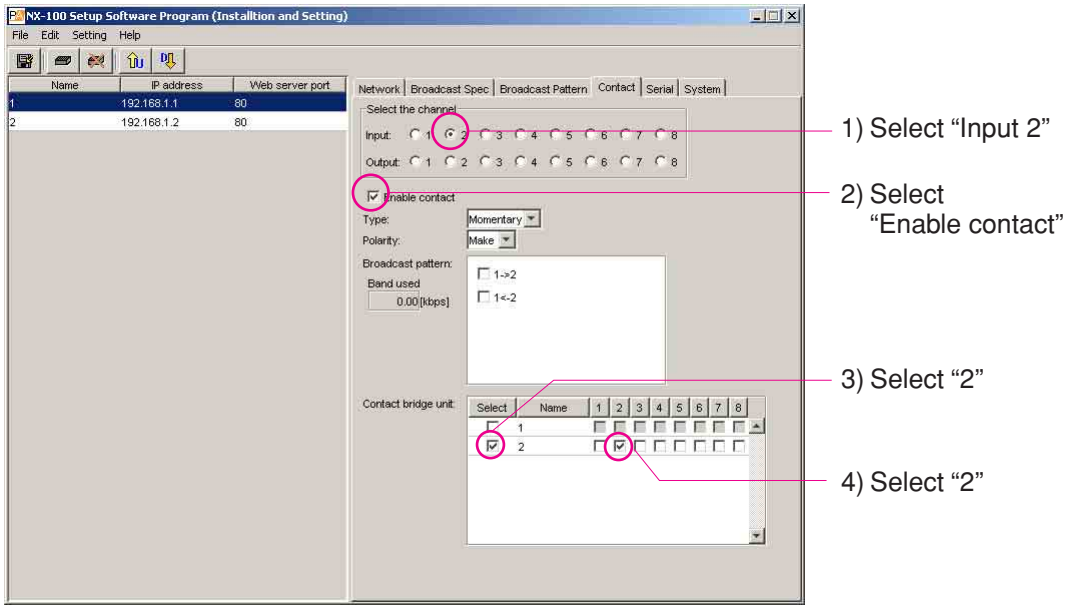


Combined Use with the VX-2000 System

Contact Input Setting for NX-100①(1)

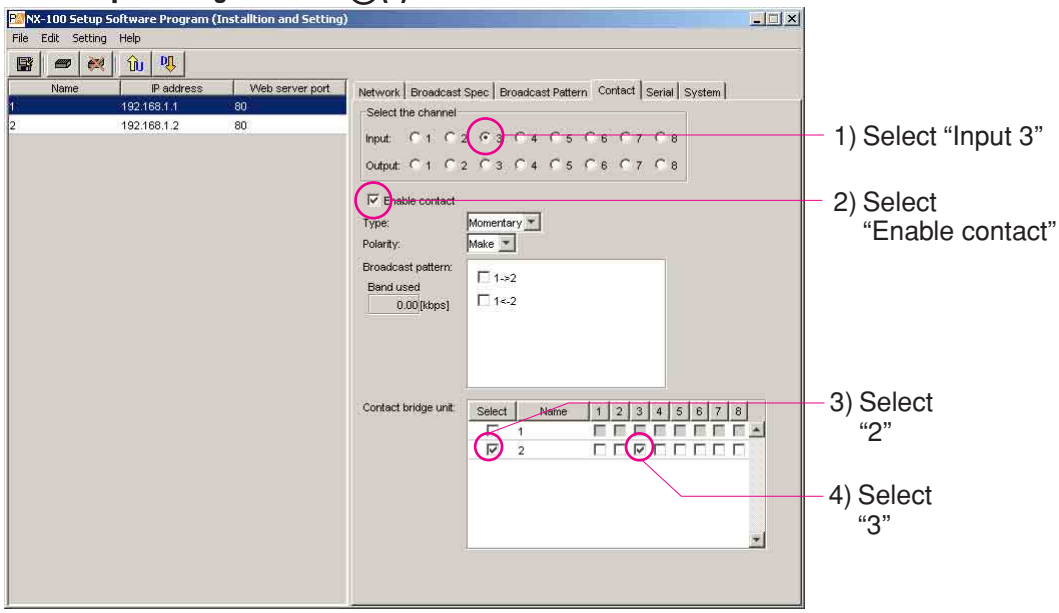


Contact Input Setting for NX-100①(2)

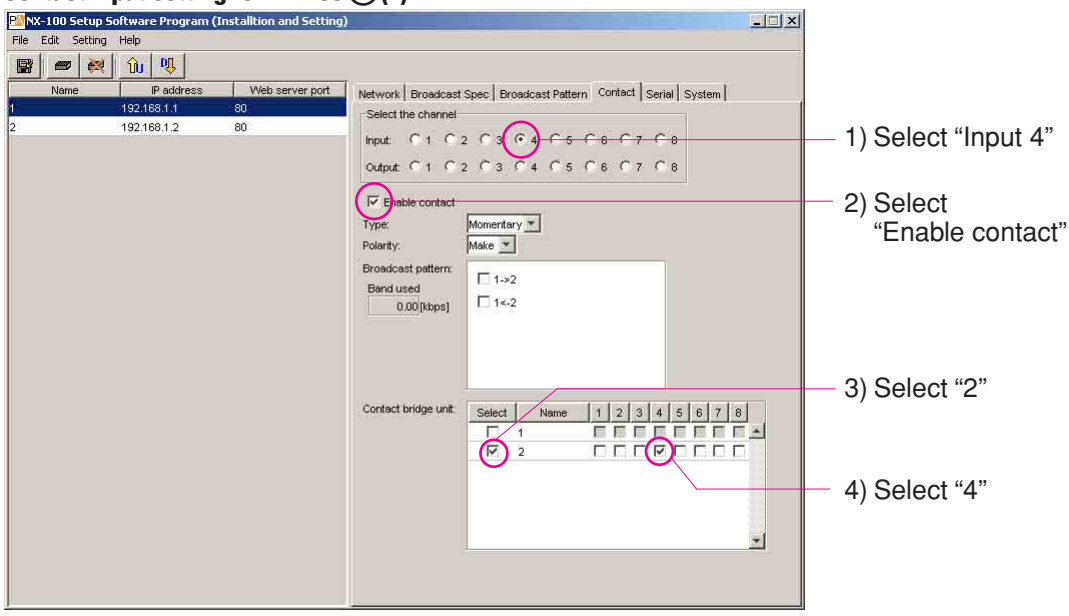


Combined Use with the VX-2000 System

Contact Input Setting for NX-100 ①(3)

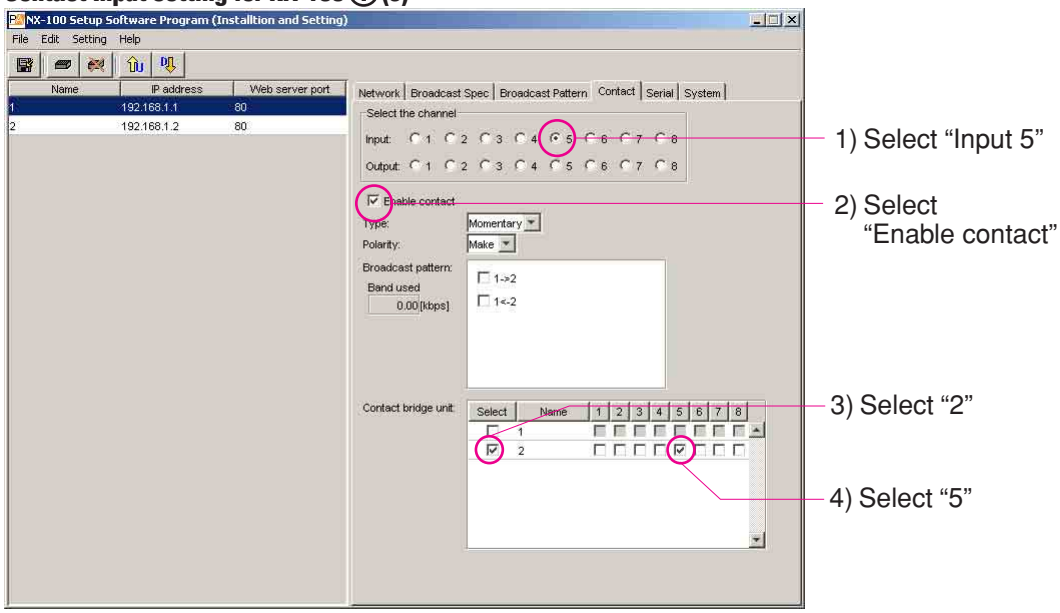


Contact Input Setting for NX-100 ①(4)

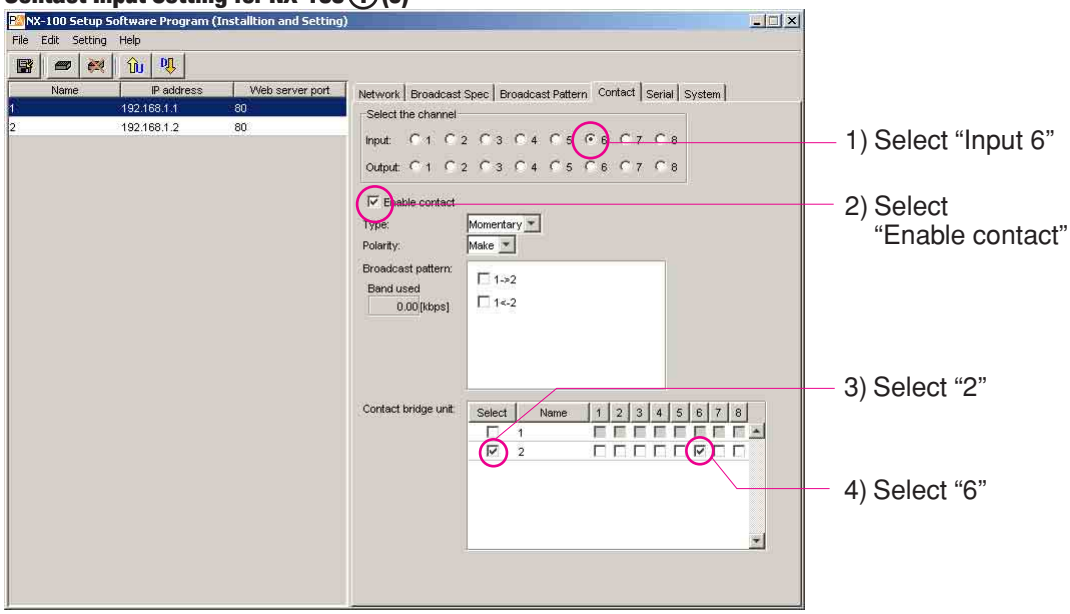


Combined Use with the VX-2000 System

Contact Input Setting for NX-100①(5)

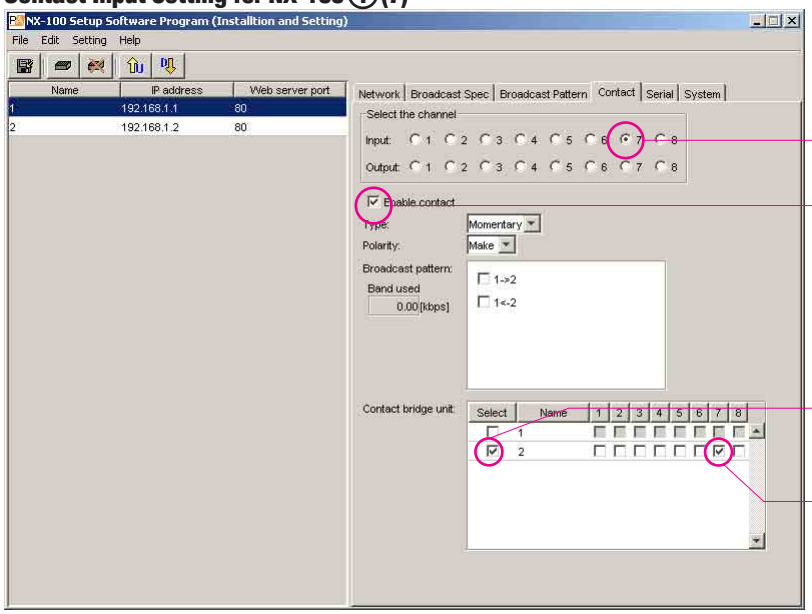


Contact Input Setting for NX-100①(6)

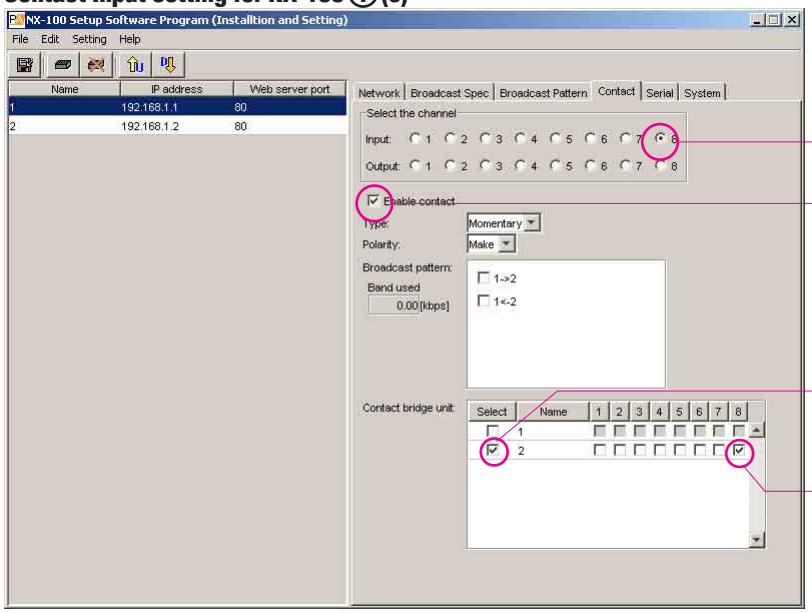


Combined Use with the VX-2000 System

Contact Input Setting for NX-100①(7)

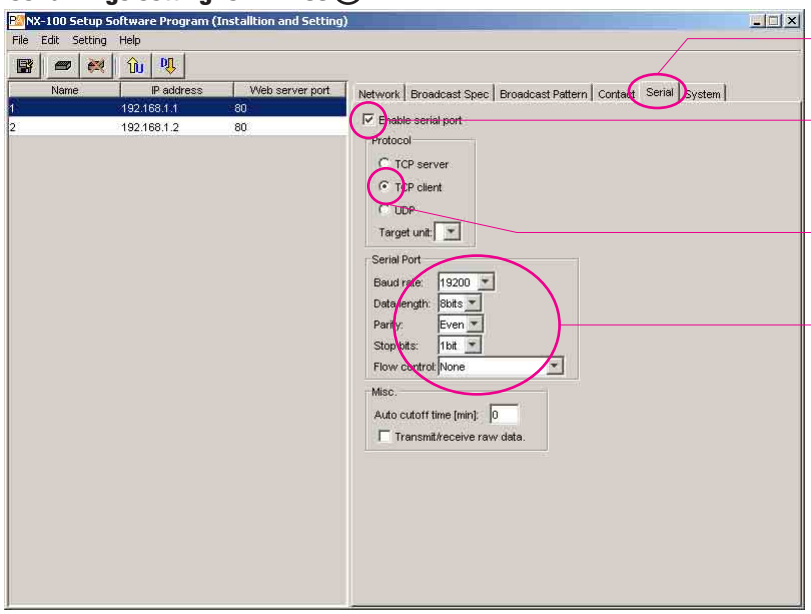


Contact Input Setting for NX-100①(8)



Combined Use with the VX-2000 System

Serial Brige Setting for NX-100①



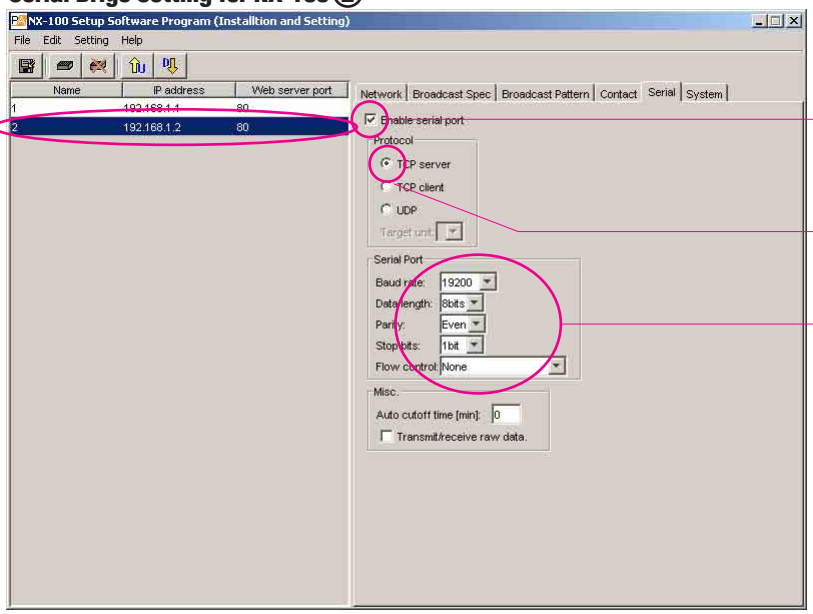
1) Select “Serial”

2) Select “Enable serial port”

3) Select “TCP client”

4) Match spec. of Serial port with spec. of VX-2000

Serial Brige Setting for NX-100②



1) Select “2”

2) Select “Enable serial port”

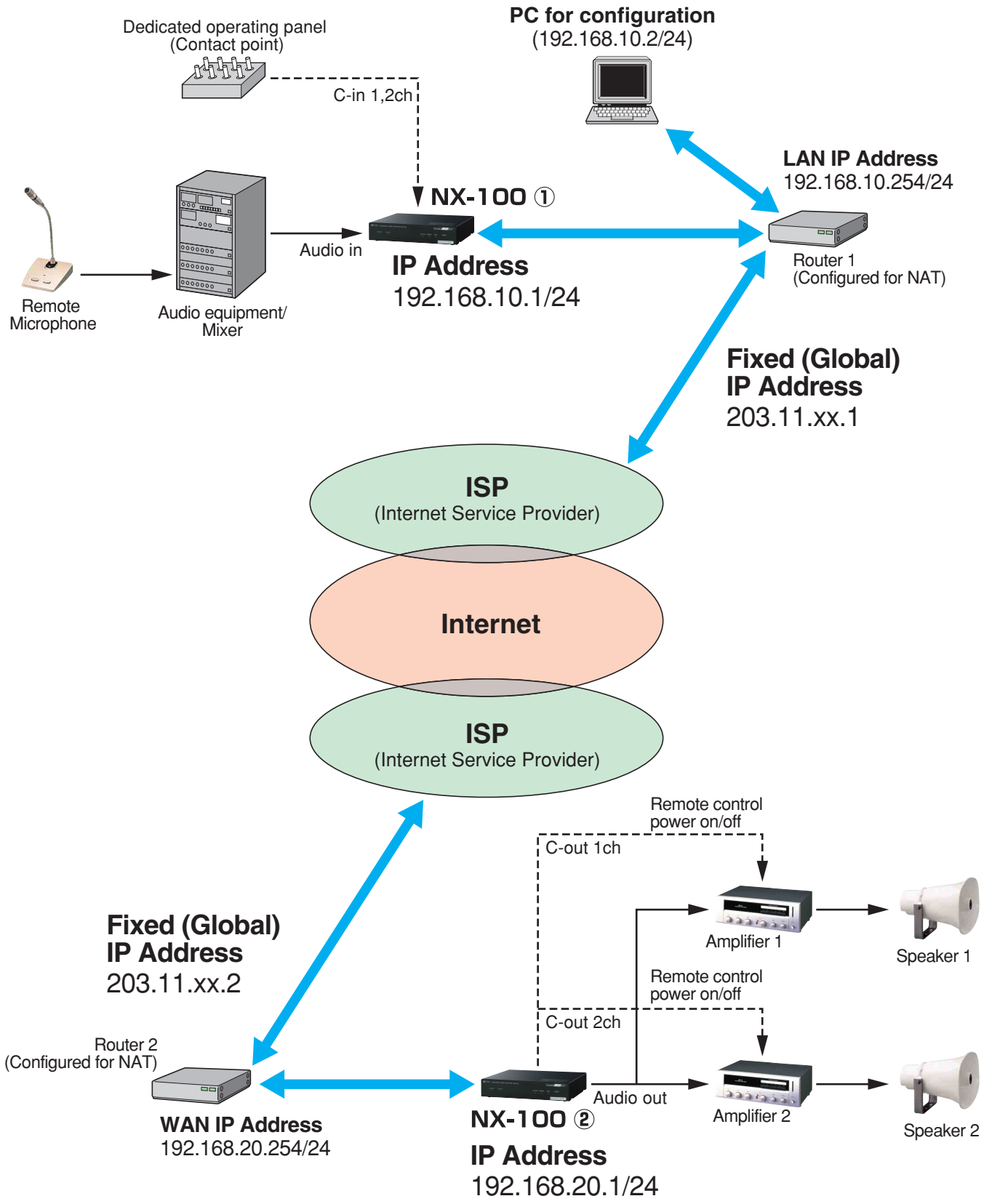
3) Select “TCP server”

4) Match spec. of Serial port with spec. of VX-2000

APPLICATION EXAMPLE-4

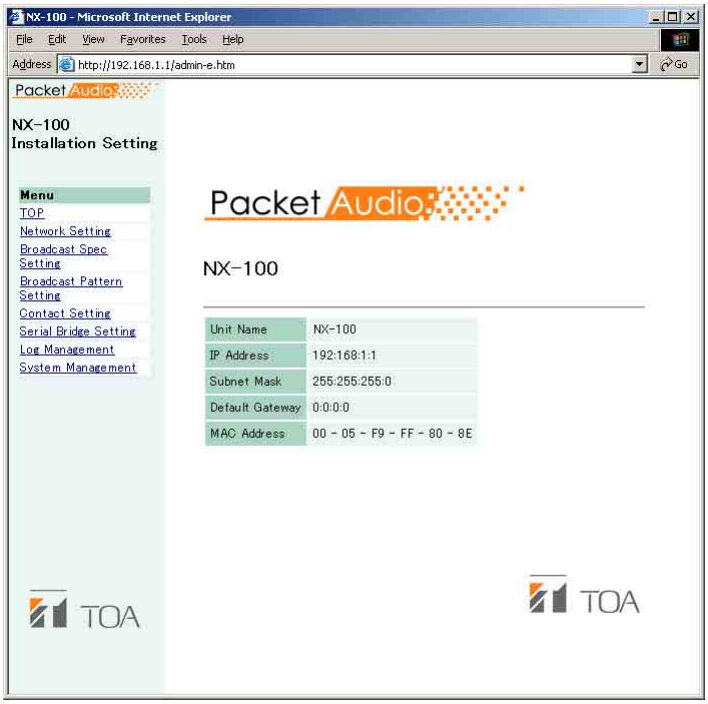
Voice Transmission via the Internet (NAT)

The NX-100 is an ideal product that makes it easy to utilize the internet to create an effective and extremely cost-effective system to broadcast announcements and messages at various remote locations.

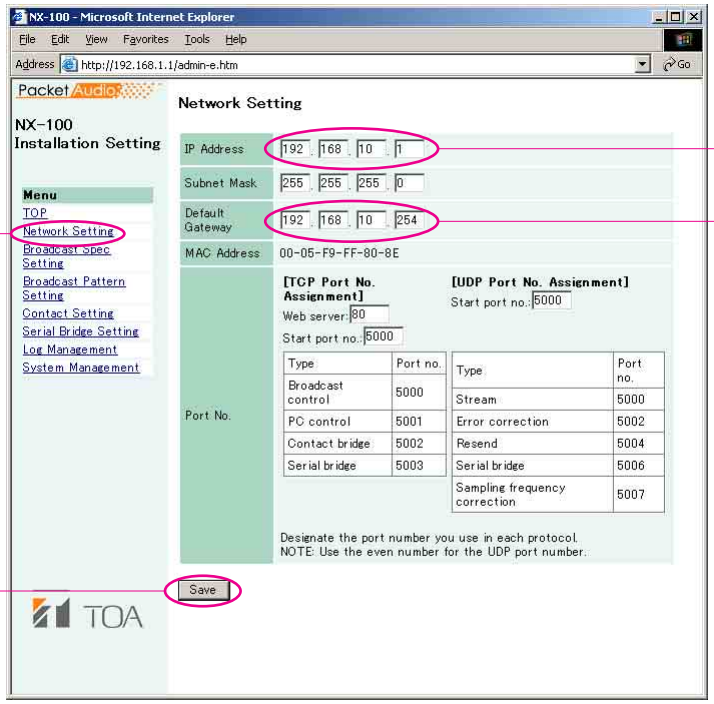


Voice Transmission via the Internet (NAT)

Initial Screen (http://192.168.1.1/admin-e.htm)



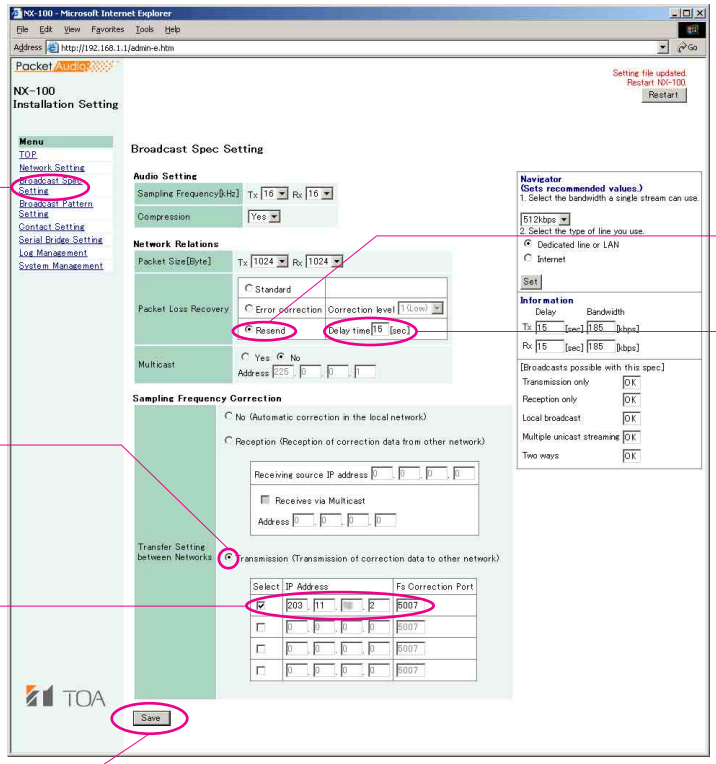
Network Setting



Setting IP address (192.168.10.1/24) for NX-100 (1) in system configuration for voice transmission over the internet application.

Voice Transmission via the Internet (NAT)

Broadcast Spec Setting



1) Select "Broadcast Spec Setting"

2) Select "Resend"

3) Input 15 "Delay Time"

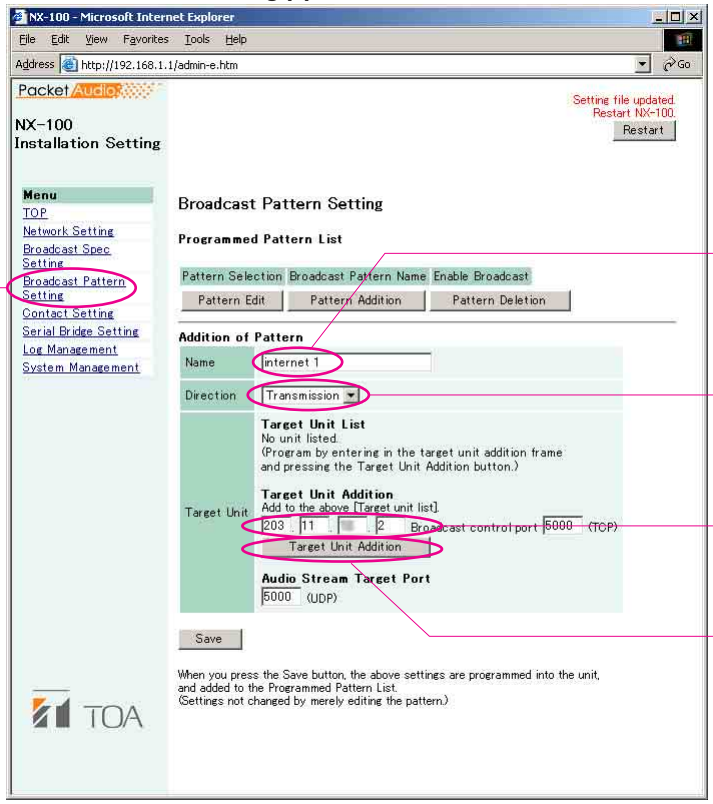
4) Select "Transmission"

5) Input WAN IP address of Router 2 (203.11.xx.2)

6) Click "Save" button

Voice Transmission via the Internet (NAT)

Broadcast Pattern Setting (1)



1) Select "Broadcast Pattern Setting"

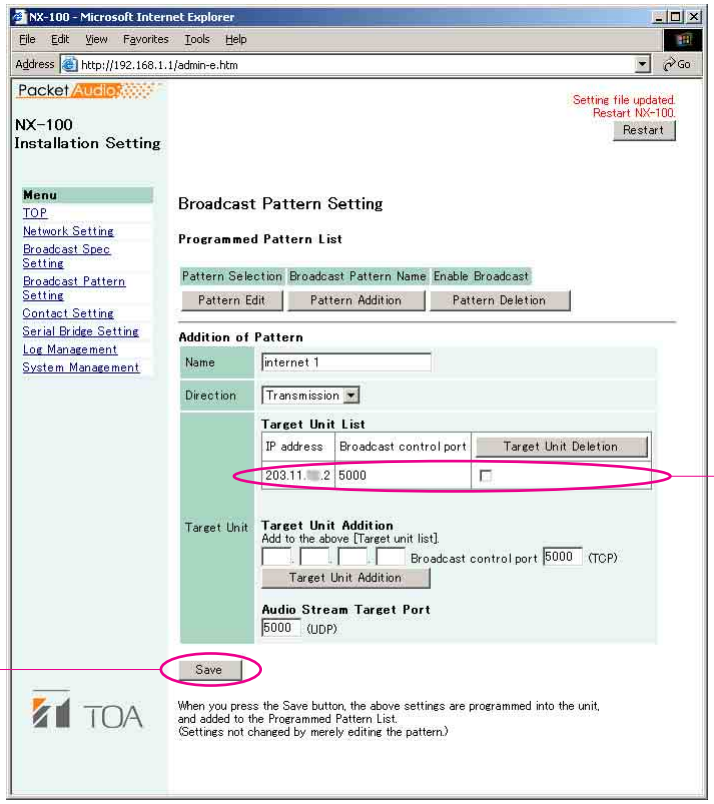
2) Input name

3) Select "Transmission"

4) Input WAN IP address of Router 2

5) Select "Target Unit Addition"

Broadcast Pattern Setting (2)

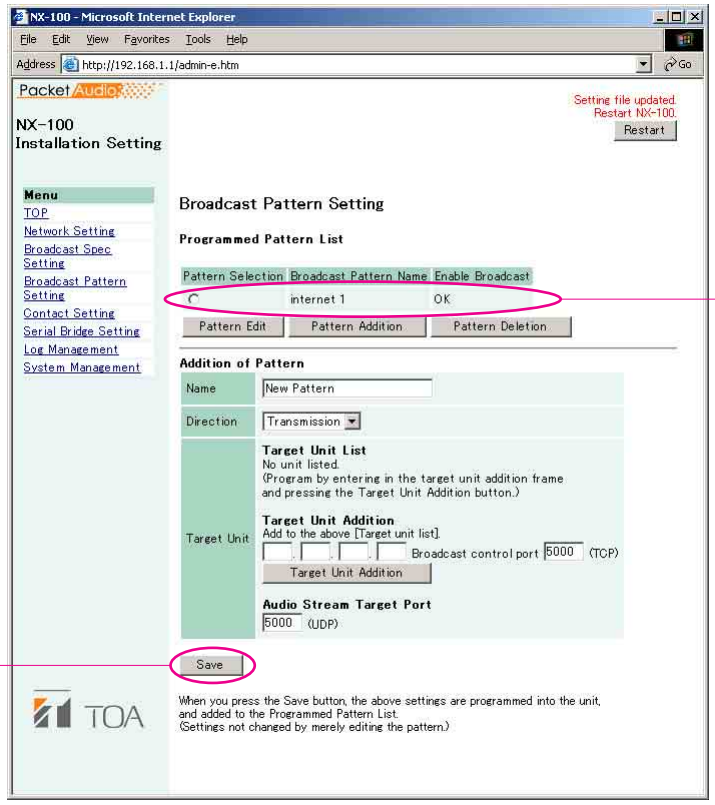


1) Confirm that data was added by "Target Unit List"

2) Click "Save" button

Voice Transmission via the Internet (NAT)

Broadcast Pattern Setting (3)

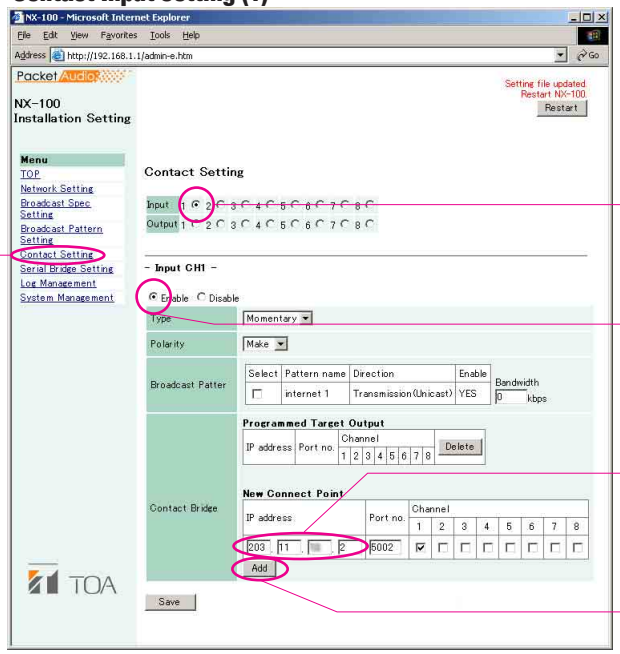


1) Confirm that name was added

2) Click “Save” button

Voice Transmission via the Internet (NAT)

Contact Input Setting (1)



1) Select "Contact Setting"

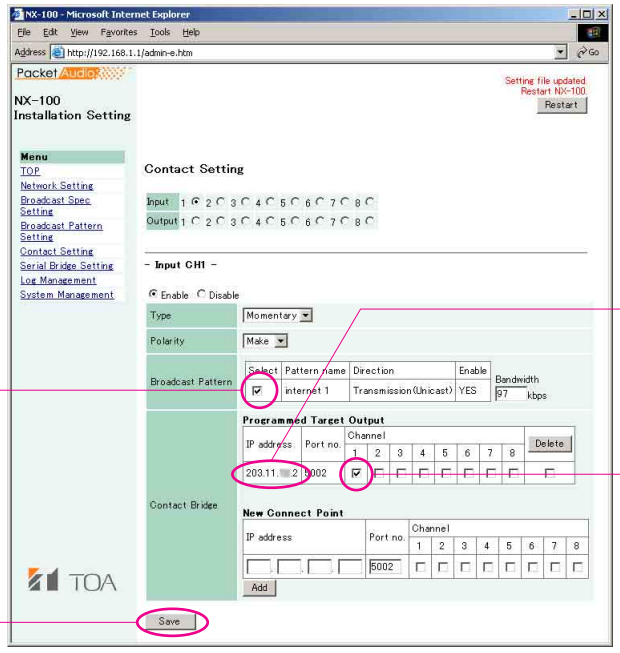
2) Check Input 1 is selected

3) Select "Enable"

4) Input WAN IP address of Router B

5) Select "Add"

Contact Input Setting (2)



1) Confirm that was added IP address of Router 2

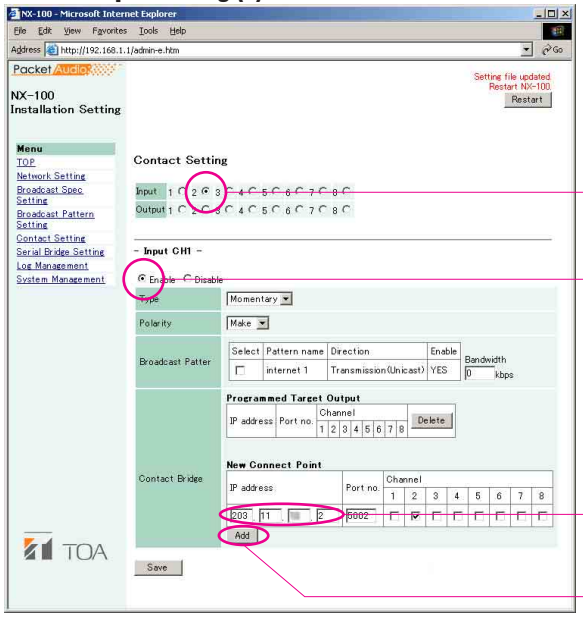
2) Select "1"

3) Select

4) Click "Save" button

Voice Transmission via the Internet (NAT)

Contact Input Setting (3)



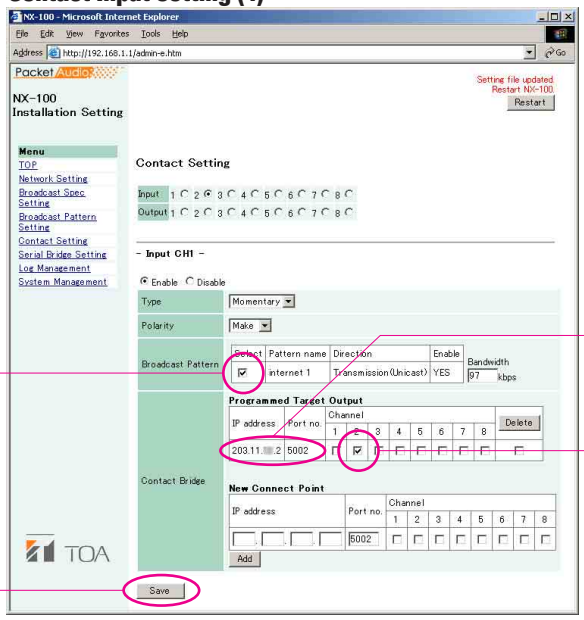
2) Select “2”

3) Select “Enable”

4) Input WAN IP address of Router 2

5) Select “Add”

Contact Input Setting (4)



1) Confirm that was added IP address of Router 2

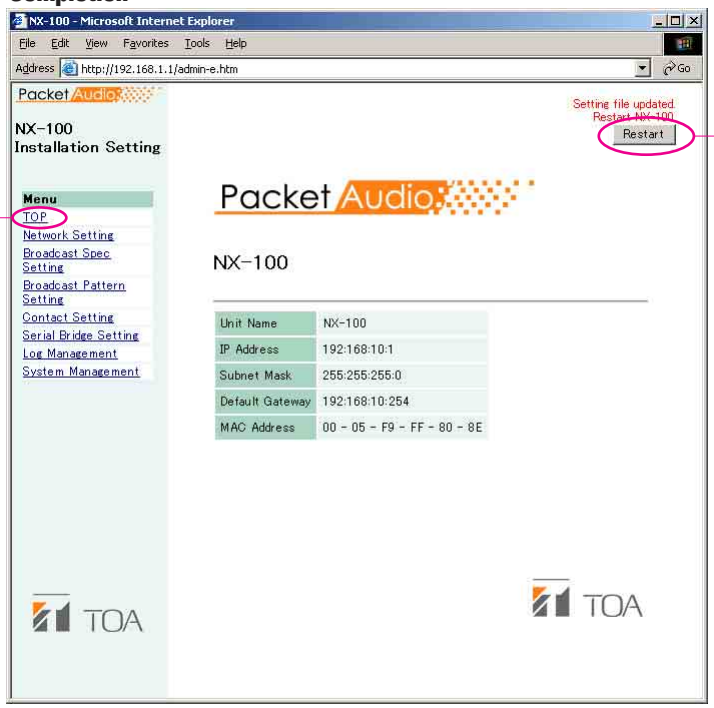
2) Select “2”

3) Select

4) Click “Save” button

Voice Transmission via the Internet (NAT)

Completion

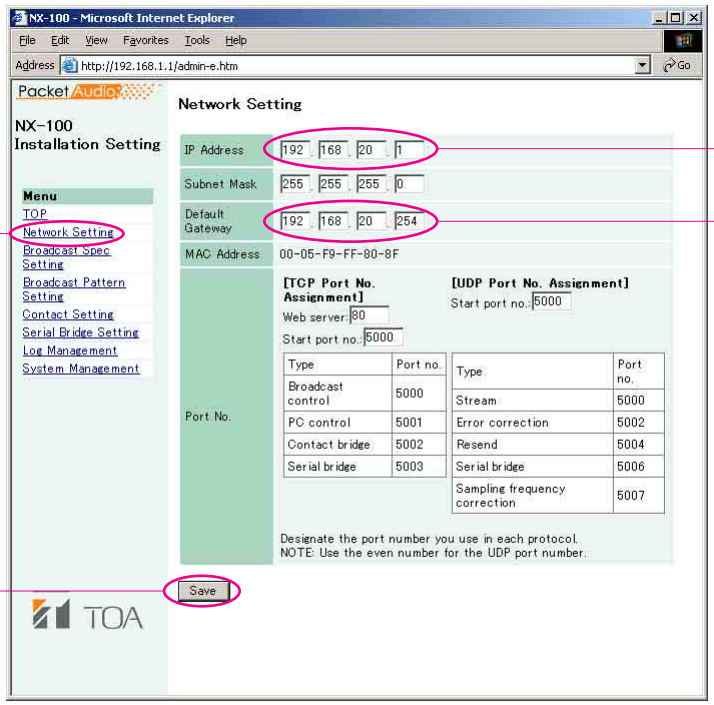


1) Select “TOP”

2) Click “Restart” button

Voice Transmission via the Internet (NAT)

Network Setting (http://192.168.1.1/admin-e.htm)



1) Select "Network Setting"

2) Setting IP address

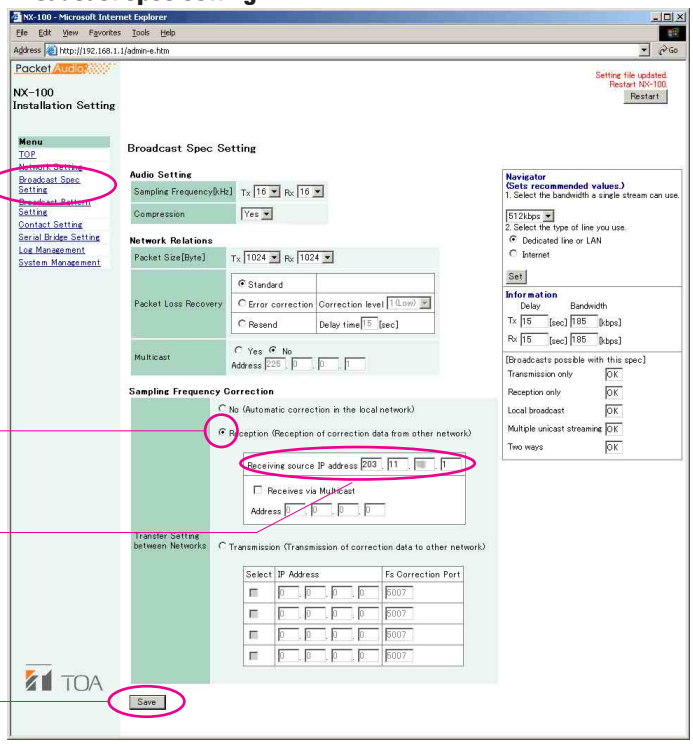
3) Setting (Router 1) LAN IP address

4) Click "Save" button

Setting IP address (192.168.20.1/24) for NX-100 (2) in system configuration for voice transmission over the internet application.

Voice Transmission via the Internet (NAT)

Broadcast Spec Setting



1) Select "Broadcast Spec Setting"

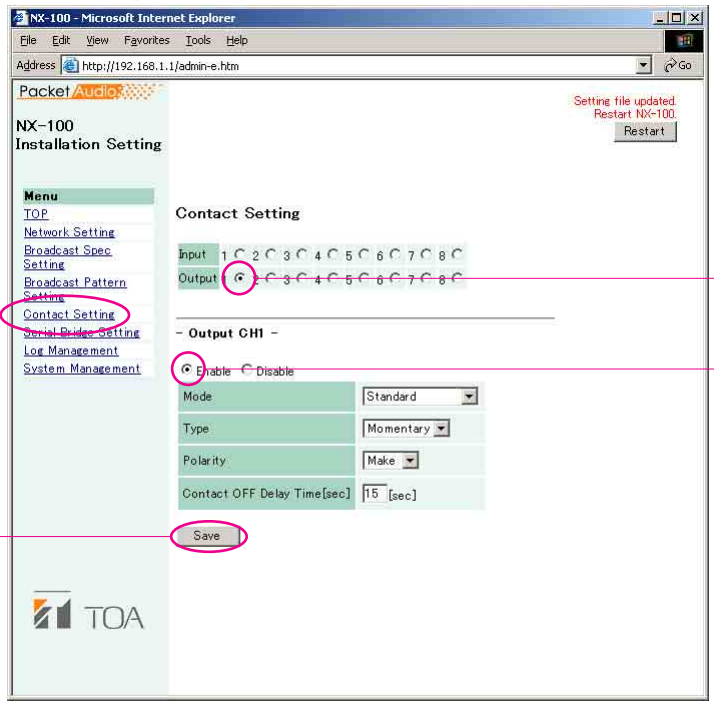
2) Check "Reception"

3) Input WAN IP address (203.11.xx.1) of Router 1

4) Click "Save" button

Voice Transmission via the Internet (NAT)

Contact Output Setting (1)



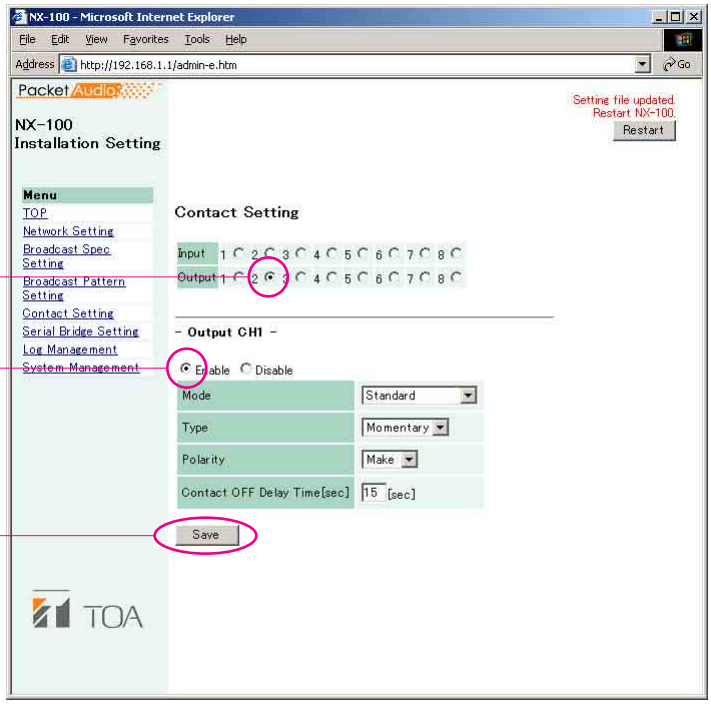
1) Select "Contact Setting"

2) Check "Output 1"

3) Check "Enable"

4) Click "Save" button

Contact Output Setting (2)



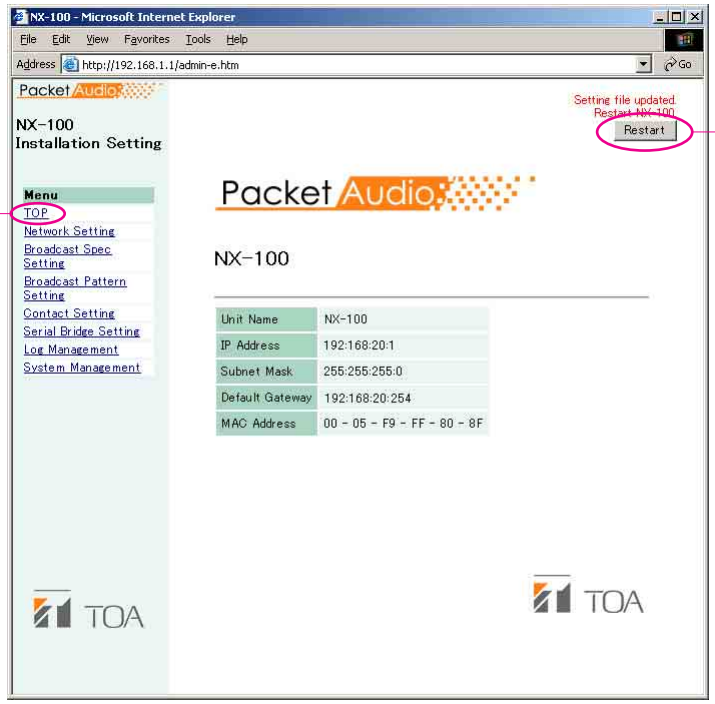
2) Check "Output 2"

3) Check "Enable"

4) Click "Save" button

Voice Transmission via the Internet (NAT)

Completion



1) Select “TOP”

2) Click “Restart” button

NX-100 Serial Communication Specifications

Electrical Specifications

- The D-sub 9-pin connector used for the NX-100's serial bridge comprises a DCE circuit. Of its 9 pins, only the GND (pin 5), TxD (pin 3), RxD (pin 2), RTS (pin 7) and CTS (pin 8) pins are wired. Since other pins are not wired, they cannot be used for connection, flow control or verification.
- Regarding output pins, until data communications are started after activation, the RxD pin (pin 2) is kept at low voltage level, while the CTS pin (pin 8) is kept at high voltage level. As long as the NX-100 Setting's Flow Control is not set to "Hardware," the CTS pin is kept at high voltage level even during communications.
- Setting the NX-100 Setting's Flow Control to "Hardware" executes the "RTS-CTS handshake" which informs serial-connected equipment of the receiving status of connected equipment data (transmitting status to the network) through the CTS pin, or controls data transmission to serial-connected equipment by checking the RTS pin status.
- If the Flow Control is set to "Software," the CTS pin's output does not change. However, "XON/XOFF system" flow control functions when the request to resume transmission (11H, CTRL-Q) and the request to stop transmission (13H, CTRL-S) are simultaneously transmitted to each other.

Software Specifications

TCP session connection processing flow

When a TCP error and an alive check (30-second interval) error occur during communications between the connected TCP server and the set NX-100, the NX-100 designated as the TCP client cuts off the TCP session and begins to retry the session connection after a 5-second interval.

The TCP client continuously retries failed session connections to the server. The in-session TCP server connected to the designated NX-100 TCP client cuts off the TCP session and waits for connection if a TCP error and an alive check (30-second interval) error occur during communications with the designated NX-100 TCP client.

Serial Reception-to-Packet Transmission Processing Flow

UDP/TCP Transmission

- Previously received serial data is transmitted as packets at 20 millisecond intervals. There are cases in which even consecutively received serial data is transmitted in two packets at 20 millisecond intervals. Also, unless an interval of 20 millisecond or more exists between two serial data transmissions, they may be transmitted as the same packet with essentially no interval between the two.

Packet Reception-to-Serial Transmission Processing Flow

Both the UDP and TCP transmissions begin to output serial data as soon as a packet is received.

NX-100 Serial Communication Specifications

Possible Bridging Function Communication Troubles

Serial Data Loss and Data Interval Change Caused by Network Malfunction

Output serial data may be lost or transmitted at intervals different from those for input due to jitter in network transmission time, packet loss, or TCP retransmission.

Serial Data Interval Change (Division/Link) Attributable to the NX-100's Packet Transmission Flow

The above-mentioned NX-100's transmission processing flow could cause data to be divided or linked.

Data divided into two packets is transmitted over the network as serial data with intervals of approximately 20 millisecond.

Data linked and transmitted as single packets is output as consecutive serial data with no interval.

NX-100 Internal Buffer Overflow

When packets are consecutively received due to network transmission time jitter, etc. or when serial output data is collected during flow control, the NX-100's internal buffer may generate an overflow, possibly causing serial output data loss.

Outline of PacketAudio Remote Control Protocol

- The NX-100 is capable of simultaneously holding a maximum of 8 TCP sessions with such equipment as a PC (collectively “PC” herein) by using its PC control TCP port (the NX-100 functions as a server).

- In these sessions, communications are possible by transmitting and receiving commands made up of ASCII character strings (TCP/IP packets).

- When a TCP session has been established with the NX-100, the PC needs to first enter into a “management status” by sending a request-to-manage command and receiving an acknowledgement command. (Be sure to exit the “management status” after control operation completion.)

- As long as the PC remains in the “management status,” it must transmit the alive check command to the NX-100 every 60 seconds. (If the NX-100 does not receive the check command for 2 minutes or a TCP error is detected, it cuts off the session, releasing the PC from the “management status.”)

- The NX-100 is capable of performing the tasks listed below by receiving a variety of commands from the PC in the “management status.” When a task has been performed, the PC receives from the NX-100 data of the executed task. If the task cannot be executed, because for instance the target receiver is busy, the PC receives data of its reason.

  (NOTE: In the figure, NX-100 Unit 1 is the unit that receives commands from the PC.)

  - Start and end of the “transmission stream” from the NX-100 Unit 1 to another NX-100 Unit 2.
  - Start and end of the “reception stream” from another NX-100 Unit 2 to the NX-100 Unit 1.
  - Make and break of the contact outputs of the NX-100 Unit 1.

- The NX-100 transmits the following data to the PC in the “management status” whenever the status changes:
  - Details such as the target receiving device and broadcast specifications of the “transmission stream” that was started and ended.
  - Details such as the original transmitting source and broadcast specifications of the “reception stream” that was started and ended.
  - NX-100 Unit 1’s contact inputs and outputs of which make/break status has changed.

- Upon receipt of the request-to-report command from the PC(s) in the “management status, ” the NX-100 Unit 1 informs all such PCs of its current status as shown below:
  - Details such as the target receiving device and broadcast specifications of the “transmission stream” that is currently being executed.
  - Details such as the original transmitting source and broadcast specifications of the “reception stream” that is currently being executed.
  - Make/break status of NX-100 Unit 1’s contact inputs and outputs.

Software developers desiring to incorporate TOA proprietary protocol in software are invited to contact their nearby authorized TOA dealer.