Network Connecting System

interM


Start of network integrated
Control via Inter-M
Network Connecting System

We have developed a network connecting system according to the demand of market to control in integrated way independent broadcasting systems distributed to wide regions by linking each other.

There are many difficulties in costs, efficiency, and time aspects to change all of established existing equipment and to introduce a new system.
The new network system can link or extend other total products as well as Inter-M equipment including already installed 6000 system, NPX system, and ARM-911A, and can control each region in integrated way.

In addition, it provides easy wiring and installation with the operation of system based not on line method of wiring but on TCP/IP network, and can control the whole system in convenient and integrated way through a control program based on web control method.

Inter-M Network Connecting System

User can build **network-based integrated systems** by adding network converters to existing Inter-M's analog devices.

User can configure optimized system for **various environment of requirement** when expanding and integrating a broadcasting system.

Introduction of Network Connecting System

A network connecting system is a system expandable over 512 zones based on 48 sources (24 tone generating devices / 24 remote microphones) input and 24 buses output. This system enables to link each other in independent space and many places and to control in wide and integrated method. In addition, when it is needed to extend to additional equipment, it can extend simply even in any place where the network is connected.

The network connecting system enables the output to various zones with only one amplifier and can diversify by zone using one amplifier to one zone. It can be installed with a simple hardware installation and its detailed setting is completed with the software.

Product Line-up

No	Model Name	Description	Remark
1	NCS-1000	Network Control Server	Main Network Management Server
2	NC-900	**6000 Analog** Network Converter	6000 Analog Converter
3	NC-600	**6000 1BUS/8BUS** Network Converter	6000 1/8 BUS Converter
4	NC-S01	**Source** Network Converter	Source Converter (CD Player, Tuner, etc)
5	NC-M01	**Remote MIC** Network Converter	Remote MIC Converter
6	MS-N300	Network Control Software	Main Network Management Program

The Suggestion to the Customers Who Will Use the Network Connecting System

❶ Saving Line Construction Time and Costs

By connecting with networks not using line installation method needed to the integration but it saves costs and time for routing line by using the converter.
<Refer to page #8 on brochure.>

❷ Response to Market Demands

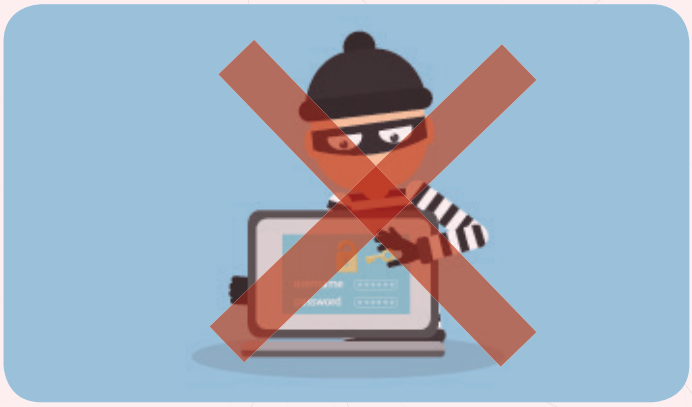
Currently, most markets demand to using independent broadcasting systems in many places by linking and integrating, and in order to control this, we respond to the market demands with NCS System to control decentralized various regions in integrated method.
<Refer to page #9 on brochure.>

❸ Save Labor Costs

It reduces laboring costs via network solution instead of managing personnel for the broadcast, and the use period can be guaranteed.
<Refer to page #9 on brochure.>

❹ Compatible Among Products

It is compatible with any other product which is not even Inter-M product and you only have to do is adding the converter to your used product.
<Refer to page #10 on brochure.>

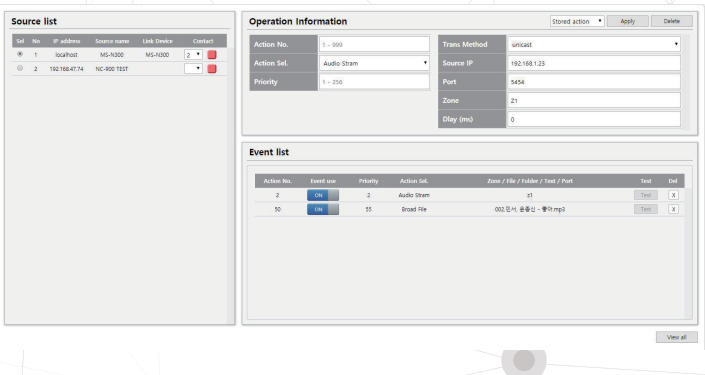


❺ Security and Safety to Hacking

It secures the safety from hacking with the software based product.
<Refer to page #11 on brochure.>

❻ The software to freely control the broadcast environment

S/W MS-N300 is provided which can integrally control the connected devices.
To fulfill the condition of complicated field, it can set the various actions of contact through Event & Preset.
It receives broadcasting, plays music files and folders according to the requirements of the real site, and outputs contacts.
<Refer to page #12 on brochure.>



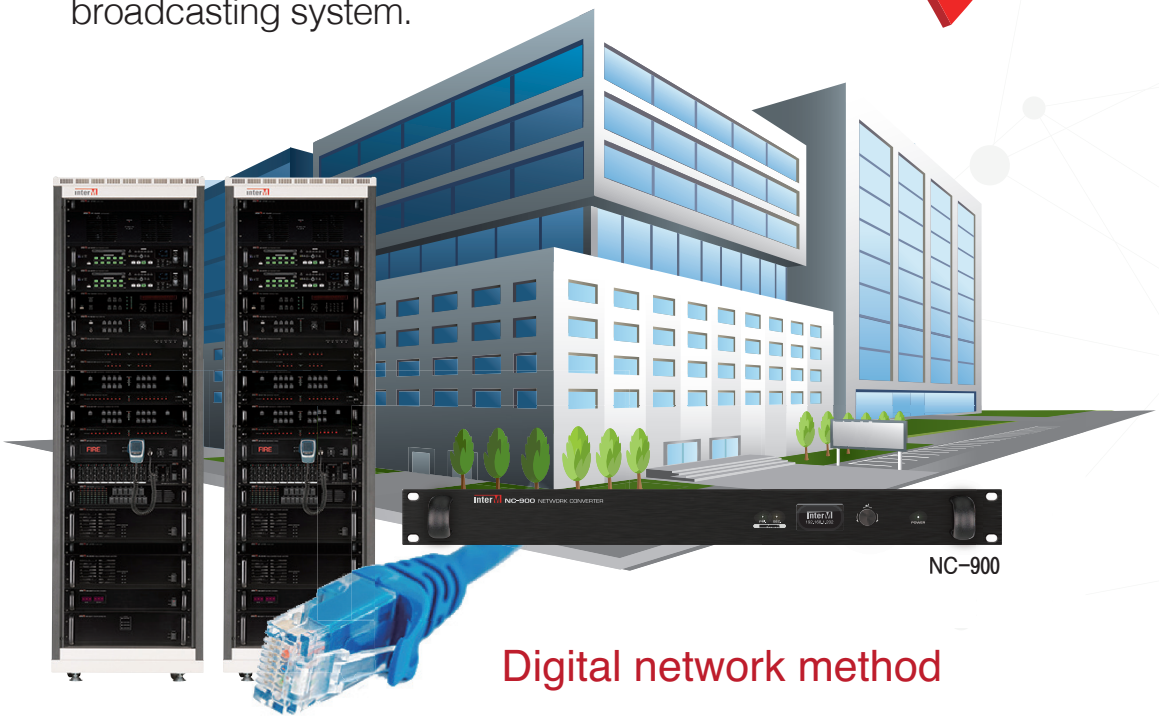
Convenient Broadcasting System Through Network

Analog line method

Existing analogue method of broadcasting system required a complicated and expensive hardware configuration as it is directly wired with line in order to install to wider regions.

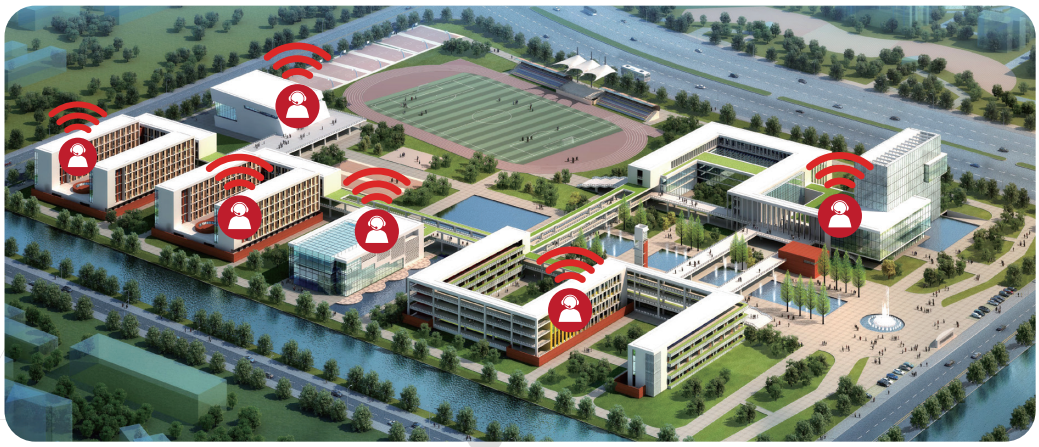
However, the complicated wiring method becomes simpler with one wire and the costs to establish integrated broadcasting system based on the new network are largely saved due to digitalization of broadcasting system.

Saving the expenses of line installation and the time



Digital network method

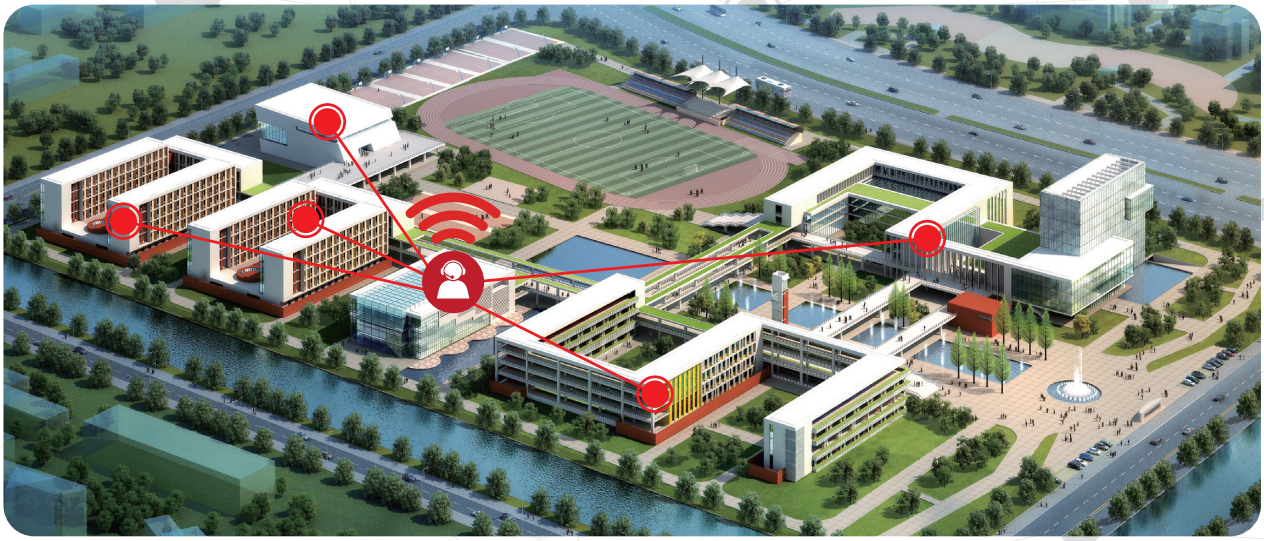
All-In-One Remote Integrated Control



Configuration with independent managing point

The existing broadcasting system has separate management points for each building, so now it requires the building to be controlled with integrated using.
Network converter can respond to the needs of market requirements by organize and control the isolated management point integrally.

Reduce labor costs
Respond to market requirements



Remote integrated control configuration

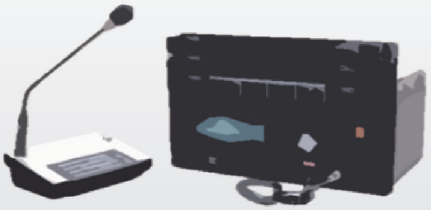
Compatible with Multiple Products

6000 SYSTEM

NPX SYSTEM

ARM SYSTEM

TABLE TYPE AMPLIFIER



OTHER COMPANIES

OUTSTANDING COMPATIBILITY BETWEEN PRODUCTS

The network converter in the network connecting system allows to using with various Inter-M products including 6000 systems, NPX systems, and table type amplifiers. It is also compatible with the products of other companies, not just the Inter-M product, and you can easily and conveniently control the network integrally adding only our converter on your existing system.

Security and Safety for Hacking

MS-N300 is a software based product that provides a safe use environment by ensuring protection and security against hacking. In addition, access accounts have four levels to minimize any confusion to consumers using the announcements and to ensure reliable maintenance due to indiscriminate settings changes.

Step 1. **Admin**
Operation
Maintenance
Setting
User preferences

Step 2. **Setup**
Operation
Maintenance
Setting

Step 3. **User**
Operation
Maintenance

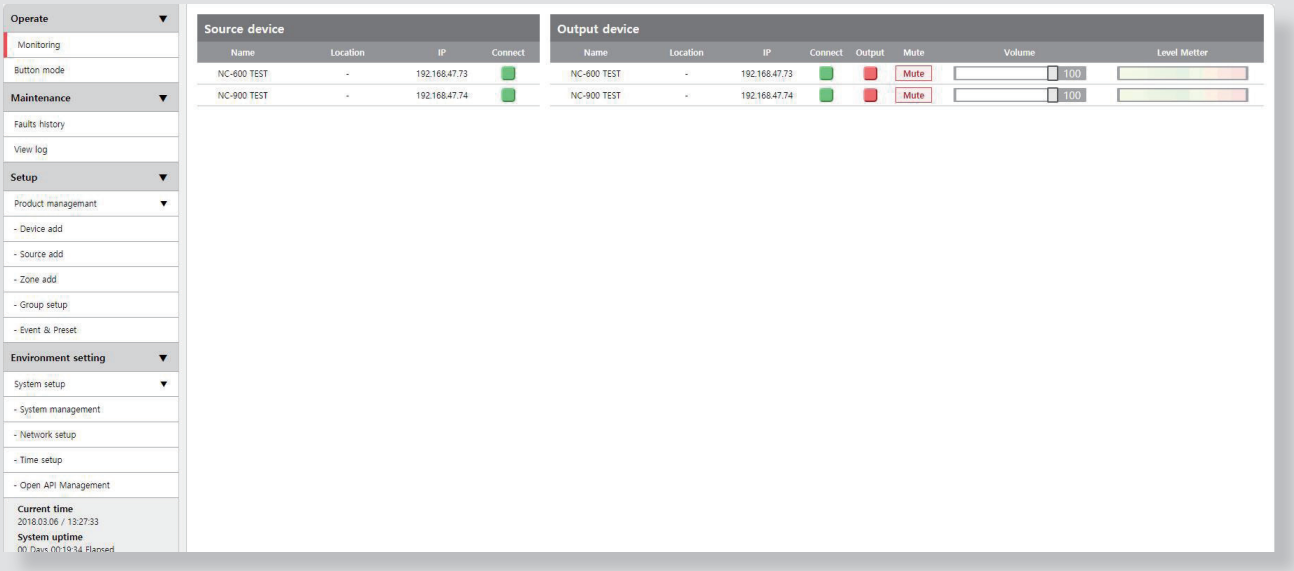
Step 4. **Guest**
Operation

Powerful Software to Control All Connected Equipment

It provides familiar and accustomed user environment through similar GUI with MS-6800, a software of existing 6000 system.
You can monitor all equipment connected to the network and can control a variety of broadcasting regions equipments via intuitive interface.

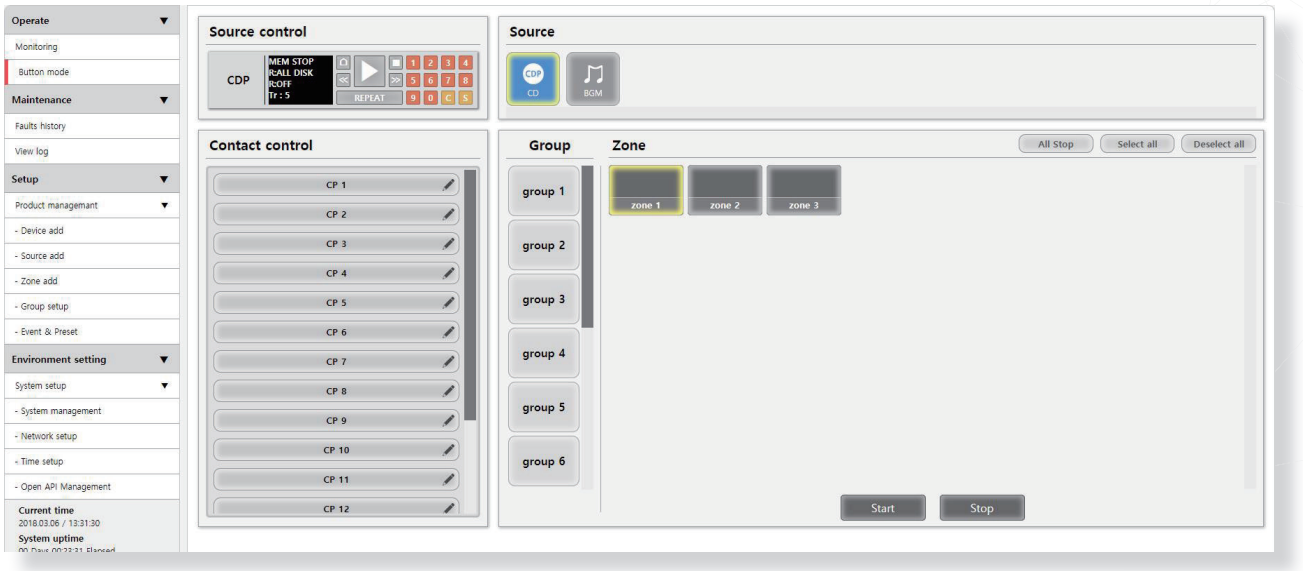
◆ Operating Menu _ Equipment Monitoring

You can check and control the status of equipment via equipment monitoring menu.



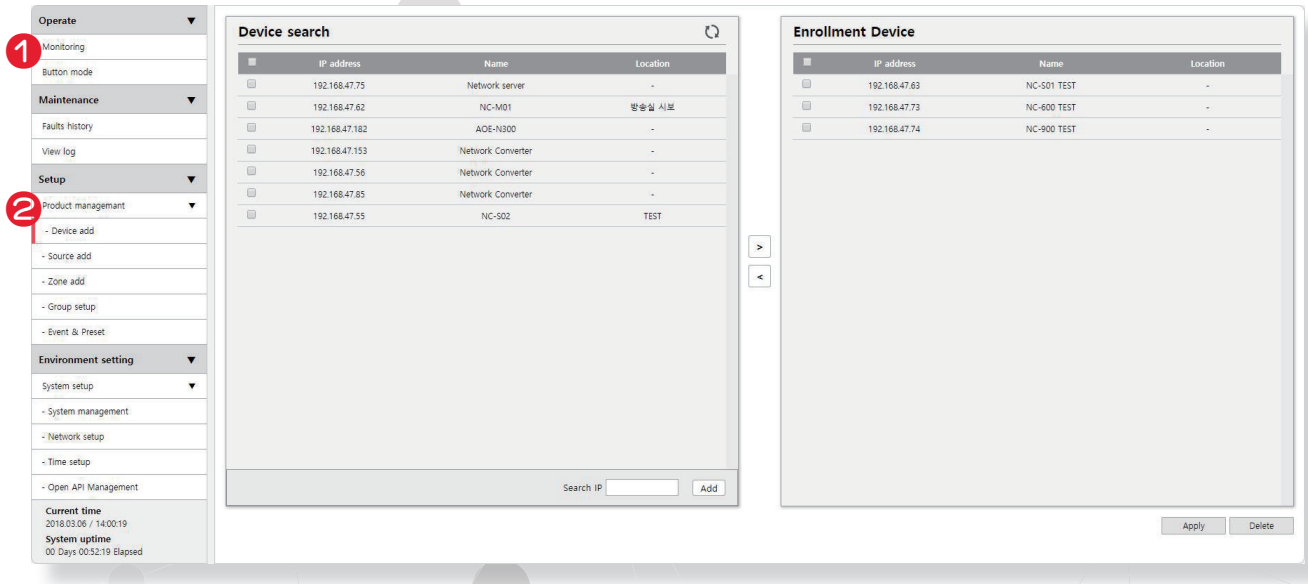
◆ Operating Menu _ Button Mode

Under button mode, you can select the tone generator via registered source equipment to send by each group and region. You can adjust the tone generator and control the contact.



GUI Optimal to Environment

It provides [Setting Menu] for providing GUI optimized to environment and provides [Operating Menu] for operating the actual broadcasting when installing the broadcasting system.

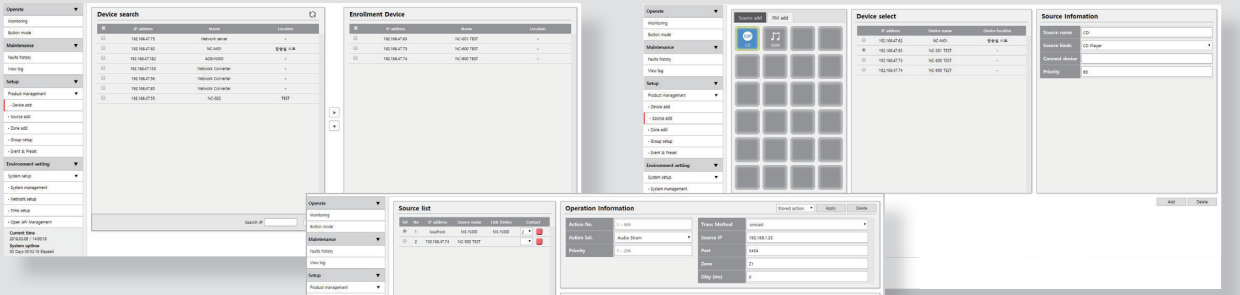


❶ You can select the source of zone and can control the broadcasting from operating menu.

❷ You can search the equipment via network to register or can configure & group the zone in the broadcasting region from setting menu.

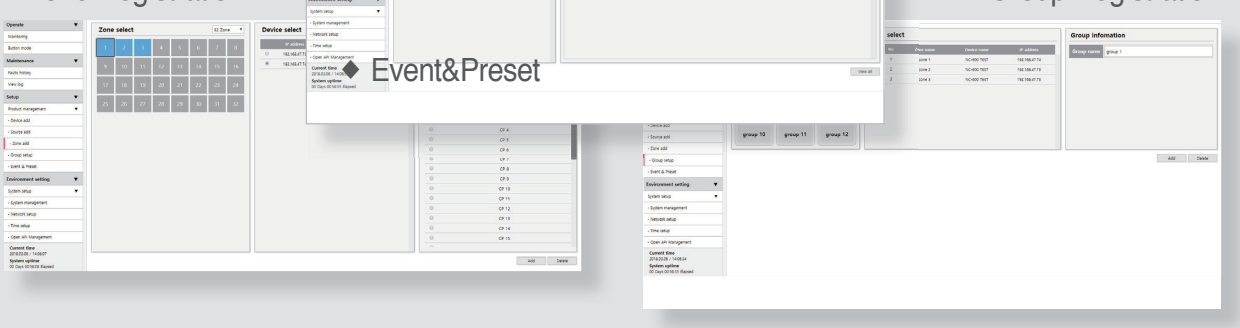
◆ Equipment Search/Registration Control

◆ Source Registration



◆ Zone Registration

◆ Group Registration



◆ Event&Preset

Product Line Up _ Main Network Management Server

NCS-1000 Network Control Server

NCS-1000 is a server to control all equipment connected with
the network as a hardware equipment for integrated network control.

- Controls all sound equipment connected to network in integrated method
- Applies a standard network protocol
- Supports DHCP, STATIC IP (Default setting: STATIC IP, 192.168.1.99)
- Supports network redundancy
- Provides web-based integrated control software (MS-N300)

NCS-1000	
Network Communication	10/100/1000 Base-T (RJ-45)
Operating Temperature	0°C~+40°C
Power Source	120-240V, 50/60Hz, 10W, DC 24V, 350mA
Weight (Set)	3.02kg
Dimension (Set)	482(W)×44(H)×280(D)mm

» Front Panel

❶ Network (primary,secondary) LED
❷ OLED display
❸ Display mode switch
❹ Power LED

» Rear Panel

❶ AC inlet
❷ AC power switch
❸ DC power connection terminal
❹ Network (secondary) connection terminal
❺ Network (primary) connection terminal
❻ Factory reset switch

Product Line Up _ 6000 Analog System Converter

NC-900 Network Converter

NC-900 is an equipment to send & receive contact signal to from network for integrated network control of 6000 Analog System.

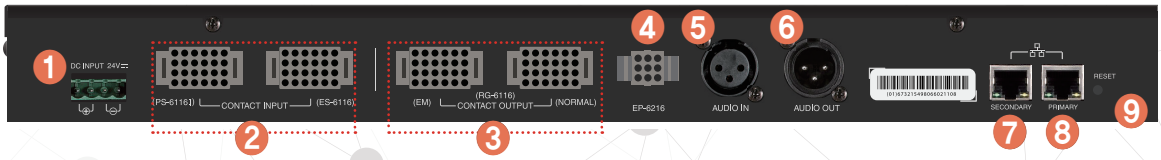
- Controls ES-6116, PS-6116, RG-6116, EP-6216 via network
- Sends/receives Audio (MP3, PCM, RTSP) via network
- Supports DHCP, STATIC IP (Default setting: STATIC IP, 192.168.1.99)
- Supports network redundancy

NC-900 (6000 Analog Converter)		
AUDIO	Audio Input	1 Channel
	Audio Output	1 Channel
	Input Sensitivity	0dBV
	Frequency Response	20Hz~20kHz
	THD+N ratio (20kHz LPF, 0 dBV, 1kHz)	less than 0.1%
	S/N (20kHz LPF, 0 dBV, 1kHz)	more than 80dB
	Sampling Frequency	44.1, 48kHz
Contact Closure	Contact Closure Iutput	16 Channel
	Contact Closure Output	16 Channel
Communication	Network Communication	10/100/1000 Base-T (RJ-45)
Operating Temperature		0°C~+40°C
Power Source		DC 24V, 350mA
Weight (Set)		3.04kg
Dimension (Set)		482(W)×44(H)×280(D)mm

» Front Panel

1. Network (primary,secondary) LED
2. OLED display
3. Display mode switch
4. Power LED

» Rear Panel



1. DC adapter connection terminal
2. Contact closure input terminal
3. Contact closure output terminal
4. EP-6216 connection terminal
5. Audio input terminal
6. Audio output terminal
7. Network (secondary) connection terminal
8. Network (primary) connection terminal
9. Factory reset switch

Product Line Up _ 6000 1/8 BUS System Converter

NC-600 Network Converter

NC-600 is an equipment to send audio, contact, and data signal to network for integrated network control of 6000 1/8 Bus system.

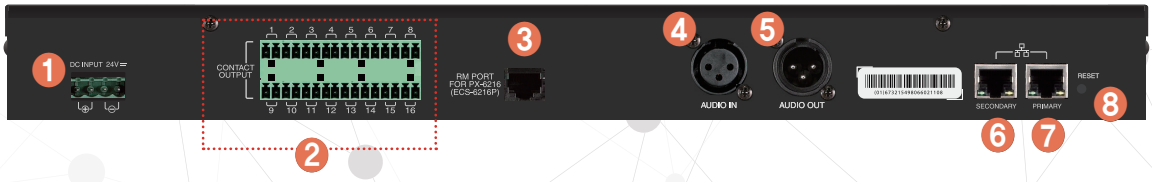
- PX-6216/ECS-6216P RM Interface via network
- Contact terminal interface of ECS-6216MS via network
- Sends/receives Audio (MP3, PCM, RTSP) via network
- Supports DHCP, STATIC IP (Default setting: STATIC IP, 192.168.1.99)
- Supports network redundancy

NC-600 (6000 1/8 BUS Converter)		
AUDIO	Audio Input	1 Channel
	Audio Output	1 Channel
	Input Sensitivity	0dBV
	Frequency Response	20Hz~20kHz
	THD+N ratio (20kHz LPF, 0 dBV, 1kHz)	less than 0.1%
	S/N (20kHz LPF, 0 dBV, 1kHz)	more than 80dB
	Sampling Frequency	44.1, 48kHz
Contact Closure	Contact Closure Output	16 Channel
Communication	Serial Communication	RS-422
	Network Communication	10/100/1000 Base-T (RJ-45)
Operating Temperature		0°C~+40°C
Power Source		DC 24V, 550mA
Weight (Set)		2.84kg
Dimension (Set)		482(W)×44(H)×280(D)mm

» Front Panel

1. Network (primary,secondary) LED
2. OLED display
3. Display mode switch
4. Power LED

» Rear Panel



1. DC adapter connection terminal
2. Contact closure output terminal
3. PX-6216 / ECS-6216P connection terminal
4. Audio input terminal
5. Audio output terminal
6. Network (secondary) connection terminal
7. Network (primary) connection terminal
8. Factory reset switch

Product Line Up _ Source Device Converter

NC-S01 Network Converter

NC-S01 is an equipment to control source equipment like
CD player and Tuner with network in integrated way.

- 1U Half Rack Size
- RS-232C control via network (remote control of source equipment, CD-6208)
- Audio (MP3, PCM, RTSP) sending via network
- Supports DHCP, STATIC IP (Default setting: STATIC IP, 192.168.1.99)
- Supports network redundancy

NC-S01 (RM-6024, CD-6208 Converter)			
AUDIO	Audio Input		1 Channel
	Input Sensitivity	CD INPUT	6±3dBV
		RM-6024	0±3dBV
	Frequency Response		20Hz~20kHz
	THD+N ratio (20kHz LPF, 0 dBV, 1kHz)		less than 0.1%
	S/N (20kHz LPF, 0 dBV, 1kHz)		more than 80dB
	Sampling Frequency		44.1, 48kHz
Communication	Serial Communication		RS-232, RS-422
	Network Communication		10/100/1000 Base-T (RJ-45)
Operating Temperature			0°C~+40°C
Power Source			Input : DC 24V, 800mA
			Output : DC 24V, 500mA
Weight (Set)			1kg
Dimension (Set)			210(W)×44(H)×180(D)mm

» Front Panel

❶ Network (primary, secondary) LED

❷ Power LED

» Rear Panel

❶ DC adapter connection terminal

❷ DC input power connection terminal

❸ DC output power connection terminal

❹ Audio input terminal

❺ RM-6024 connection terminal

❻ RS-232 connection terminal

❼ Network (secondary) connection Terminal

❽ Network (primary) connection Terminal

❾ Factory reset switch

Product Line Up _ Remote MIC Converter

NC-M01 Network Converter

NC-M01 is an equipment to send audio, contact, and data signal to network for integrated network control of remote MIC such as RM-6016.

- 1U Half Rack Size
- Contact interface of RM-6016 via network
- Audio (MP3, PCM, RTSP) sending via network
- Supports DHCP, STATIC IP (Default setting: STATIC IP, 192.168.1.99)
- Supports network redundancy

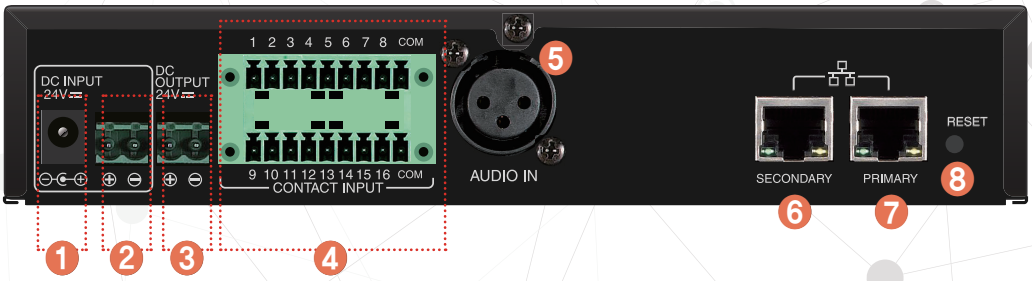
NC-M01 (RM-6016 Converter)		
AUDIO	Audio Input	1 Channel
	Input Sensitivity	0dBV
	Frequency Response	20Hz~20kHz
	THD+N ratio (20kHz LPF, 0 dBV, 1kHz)	less than 0.1%
	S/N (20kHz LPF, 0 dBV, 1kHz)	more than 80dB
	Sampling Frequency	44.1, 48kHz
Contact Closure	Contact Closure Output (NC-M01)	16 Channel
Communication	Network Communication	10/100/1000 Base-T (RJ-45)
Operating Temperature		0°C~+40°C
Power Source		Input : DC 24V, 800mA
		Output : DC 24V, 500mA
Weight (Set)		1kg
Dimension (Set)		210(W)×44(H)×180(D)mm

» Front Panel

❶ Network (primary, secondary) LED

❷ Power LED

» Rear Panel



❶ DC adapter connection terminal

❷ DC input power connection terminal

❸ DC output power connection terminal

❹ Contact closure input terminal

❺ Audio input terminal

❻ Network (secondary) connection Terminal

❼ Network (primary) connection terminal

❽ Factory reset switch

MS-N300 Network Management Controller

MS-N300 is a control program of NCS-1000,
a main server and it can control & monitors the
whole system easily via web page.

UI style & button type broadcasting operation of 6000 system.

Extending the broadcasting zone with 24 source microphones & 512 remote microphones.

Sending of remote equipment and monitoring of tone generator.

Editing of source and zone information.

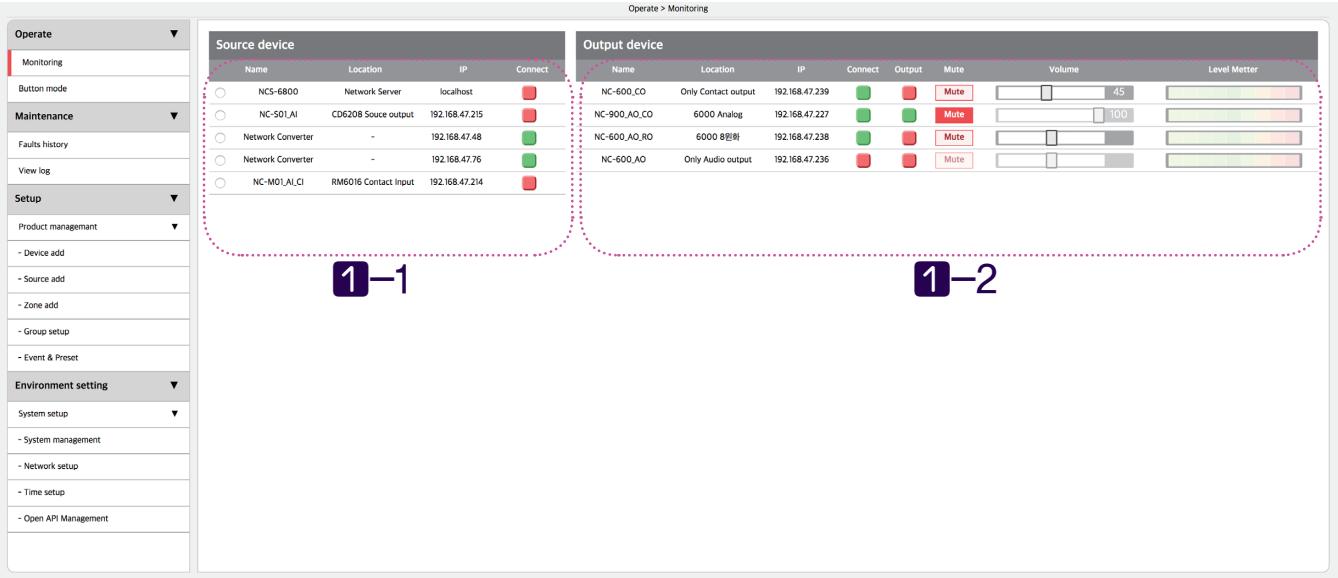
Editing of events and broadcasting preset motions.

Synchronizing of internet time.

Equipment updating via web.

Applying 256 bit security access key.

How to Use Software MS-N300



Equipment Monitoring

As a window for administrator to operate, it is possible to check the status of equipment connected to network.
※ To monitor devices on the network, each device should be registered using Device management menu in advance.

1-1 Source equipment

It indicates a source equipment list connected to network and thus, user can check easily.

Source device

Name	Location	IP	Connect
NCS-6800	Network Server	localhost	
NC-S01_AI	CD6208 Souce output	192.168.47.215	
Network Converter	-	192.168.47.48	
Network Converter	-	192.168.47.76	
NC-M01_AI_CI	RM6016 Contact Input	192.168.47.214	

A. Equipment Name: It indicates the equipment name of registered source equipment.

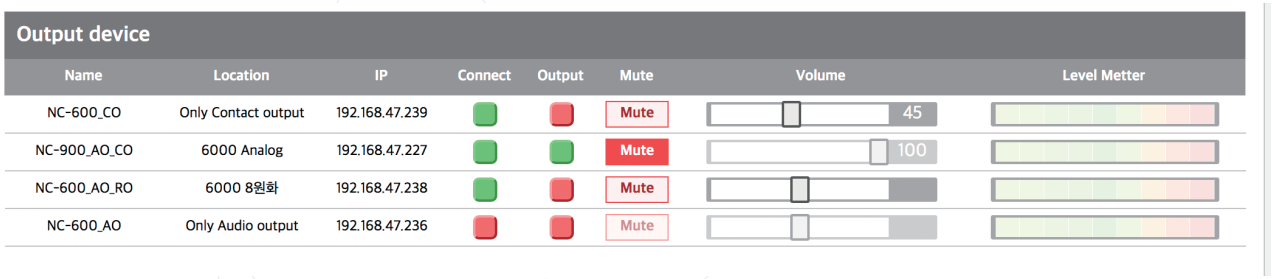
B. Position: It indicates the position of registered source equipment.

C. IP: It indicates IP of registered source equipment.

D. Connection Status: It indicates the connection status of registered source equipment as green & red LEDs.

1–2 Output equipment

It indicates status & manipulation of output equipment connected to network and makes the user manage easily.



A. Equipment Name: It indicates the equipment name of registered output equipment.

B. Equipment: It indicates the position of registered output equipment.

C. IP: It indicates IP of registered output equipment.

D. Connection Status: It indicates the connection status of registered output equipment as green & red LEDs.

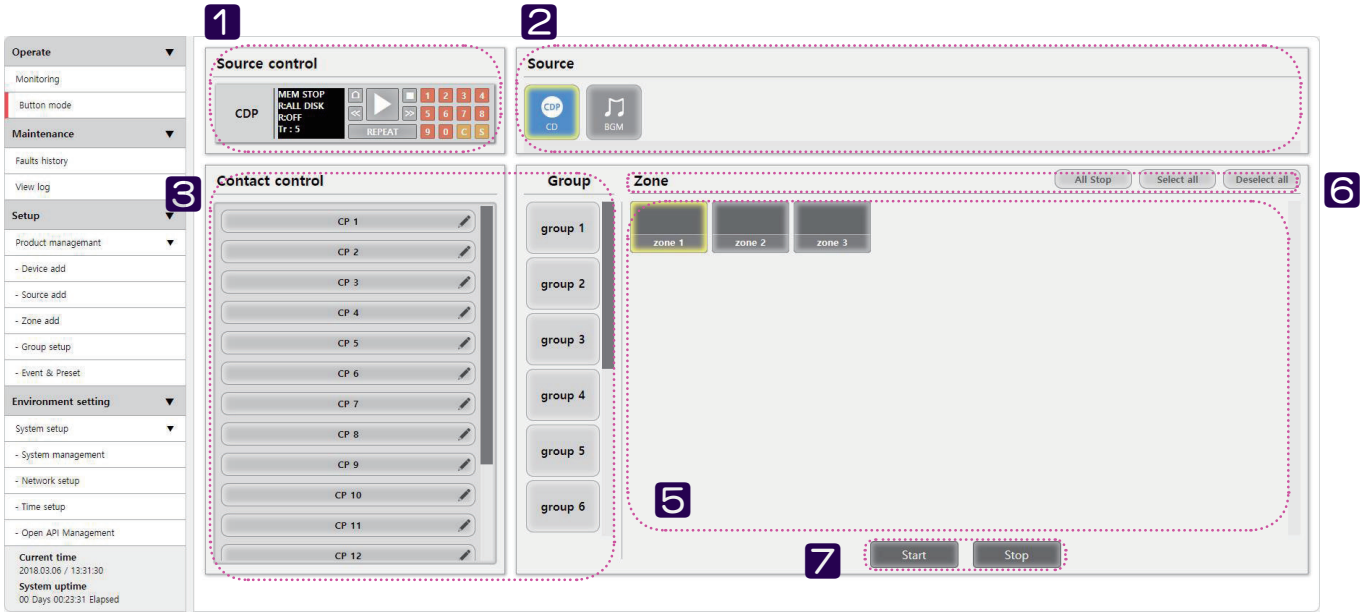
E. Output: It indicates the output status of registered output equipment. Display green LED if it is on output, otherwise display red LED.

F. Mute: When pressing Mute button, the background of button is changed as red together with mute function.

G. Volume: You can adjust the volume from 0 to 100 using volume control bar.

H. Level Meter: It displays broadcasting output level meter.

Button Operating Mode



1 Source control

The image of selected source device (CD or TUNER) is displayed.

CD control window

TUNER control window

2 Source selection

It is a window to select the source meeting the requirements of user.

- Source type -

- ▷ **CD Player**
- ▷ **BGM**
- ▷ **Tuner**
- ▷ **RM**

- Source status -

- ▷ **Network connected (Source device can be controlled remotely)**
- ▷ **Network disconnected (Unable to control source device remotely)**

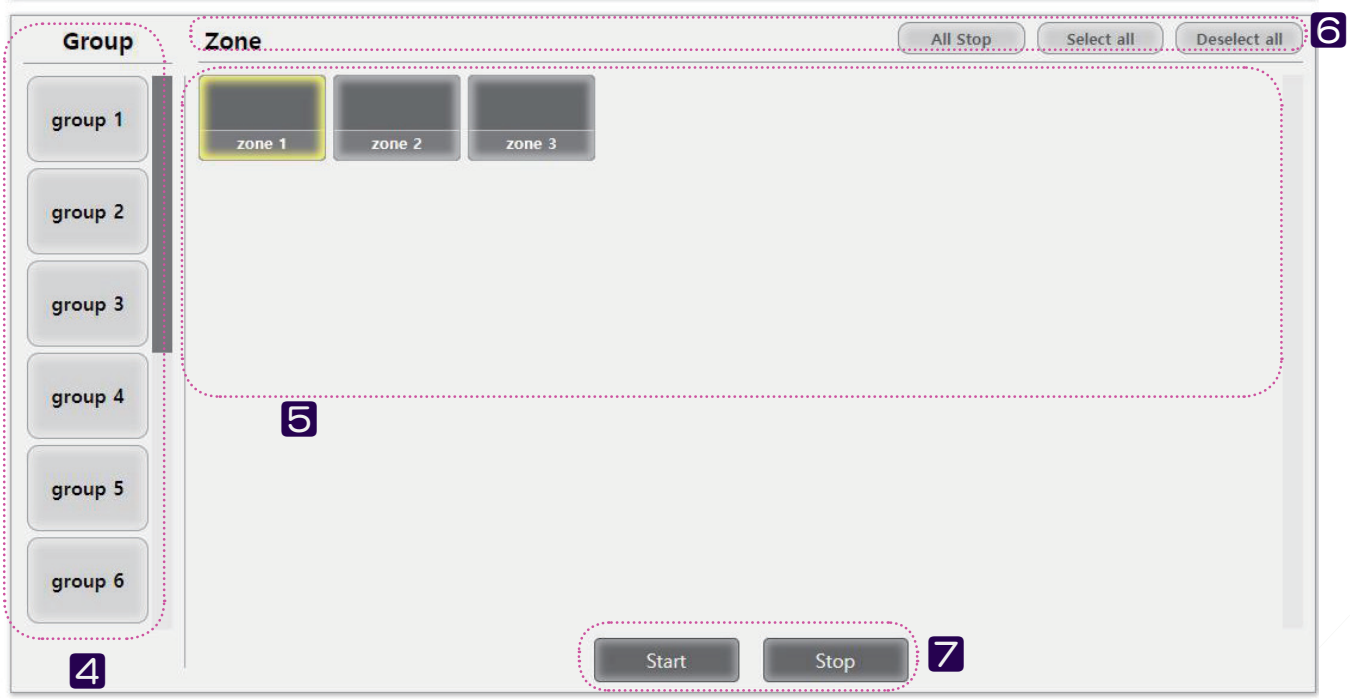
3 Contact control

- Contacts selected in Event&Preset are activated and displayed on the list.
- Up to 16 virtual contacts can be set up
- Contact can be selected in Event&Preset to be applied to a certain OUTPUT zone.
- When clicking on an activated contact, broadcasting Is outputted to selected OUTPUT zones without clicking START BROADCASTING button.
- Clicking on an activated contact(1~16), the name of contact can be changed.

Button Operating Mode

4 Group selection

The image of selected source device (CD or TUNER) is displayed.



1) Group selection is possible in the range of Group 1 ~ 12 and you can view the group number list by scrolling the right BAR up/down.
2) When selecting the group with the preset group information, the region is selected.
3) Multiple selection is possible.

5 Region selection

1) When selecting directly group selection or region, the selected region indicates the border to divide the selection.
2) When re-selecting the selected region, the selection is canceled.

6 Select all, Deselect all, End all broadcastings

1) All selection: All regions are selected.

2) Canceling all selection: The selection of all regions is canceled.

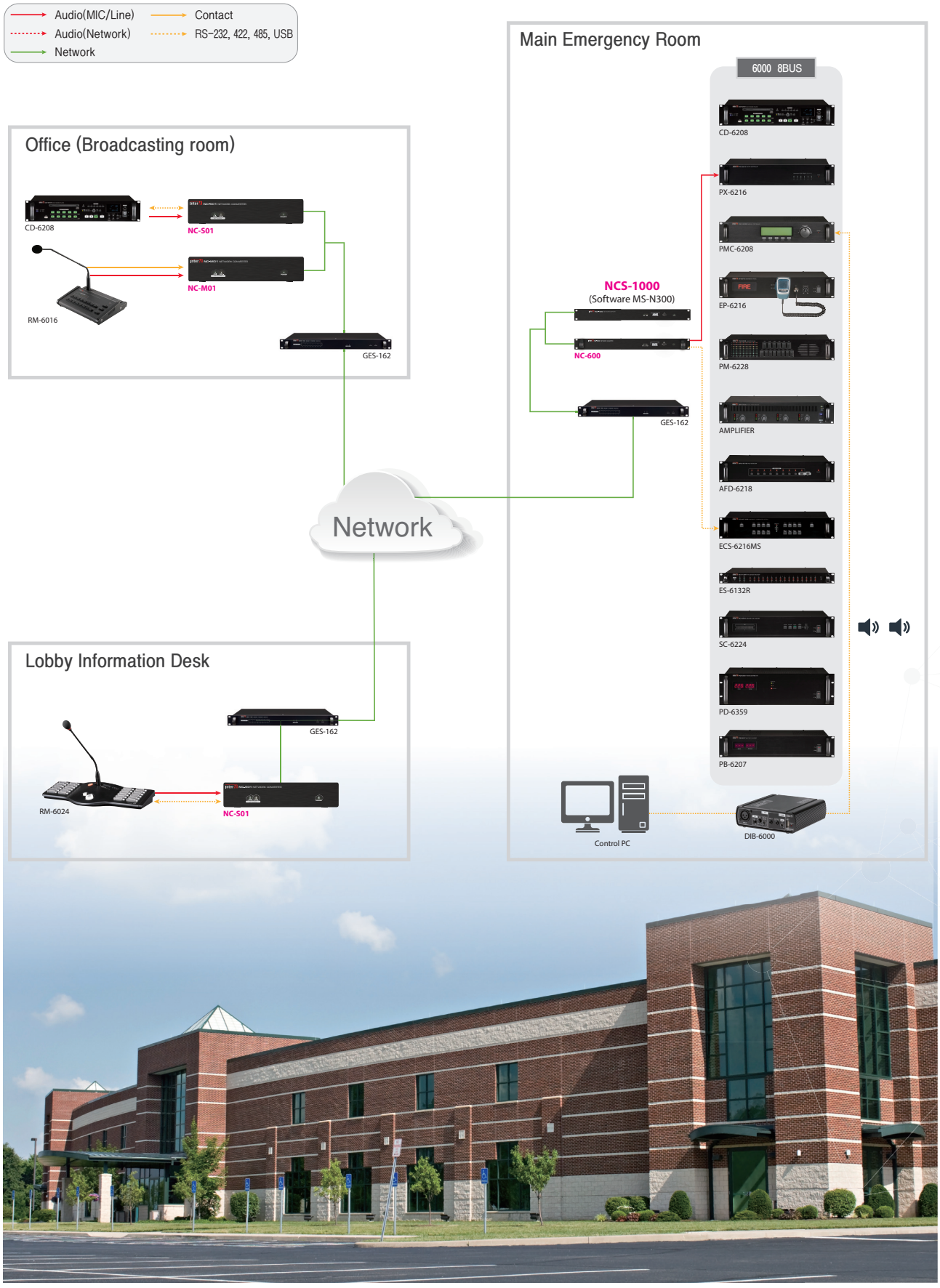
3) End all broadcastings: All priority broadcastings are reset and terminated.
Please note that priorities set in Event&Preset are preserved.

7 Broadcasting start and broadcasting end

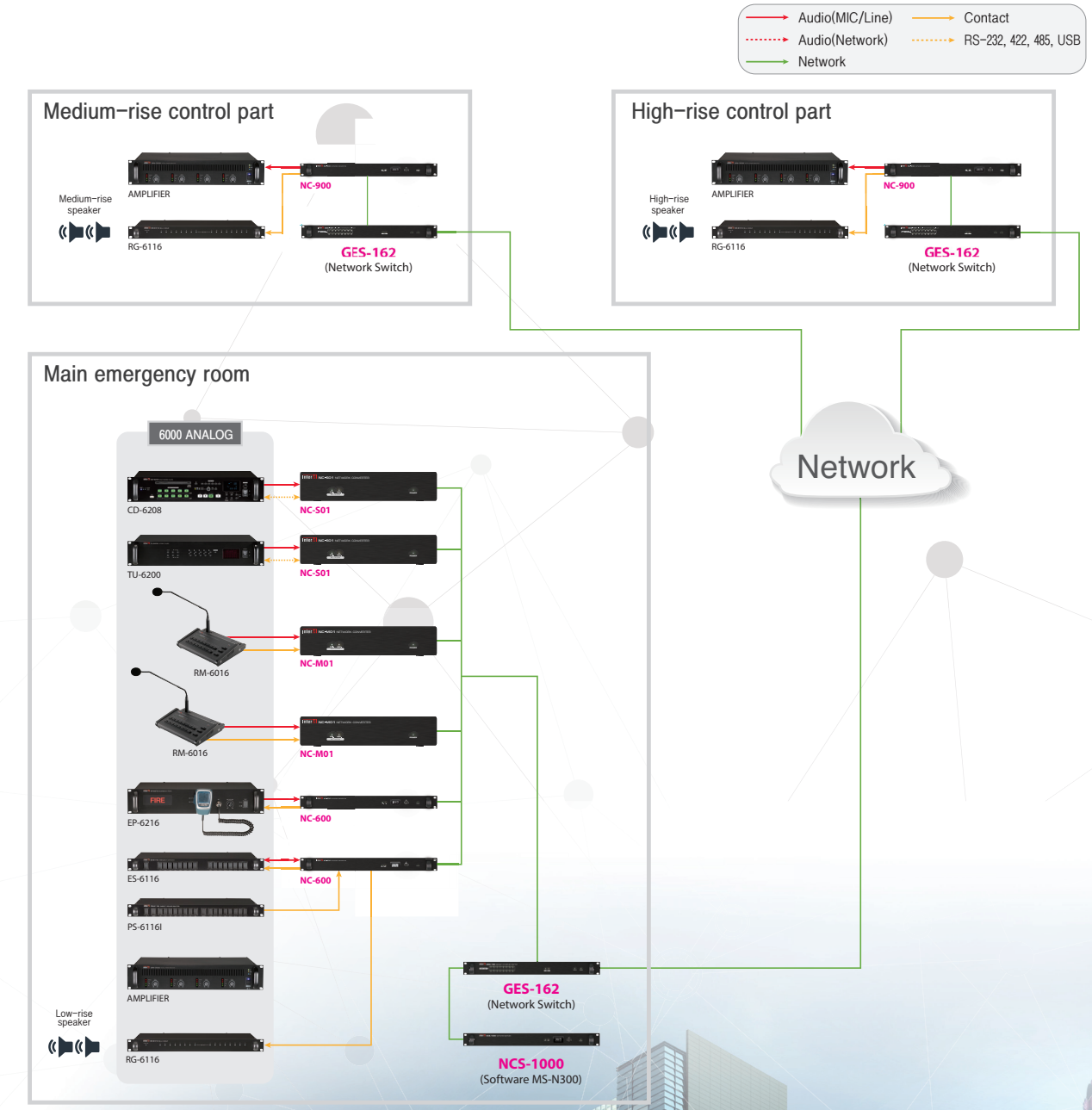
▷ **Broadcasting start:** The selected tone generator is sent to the selected region.

▷ **Broadcasting end:** The sending broadcasting is ended.

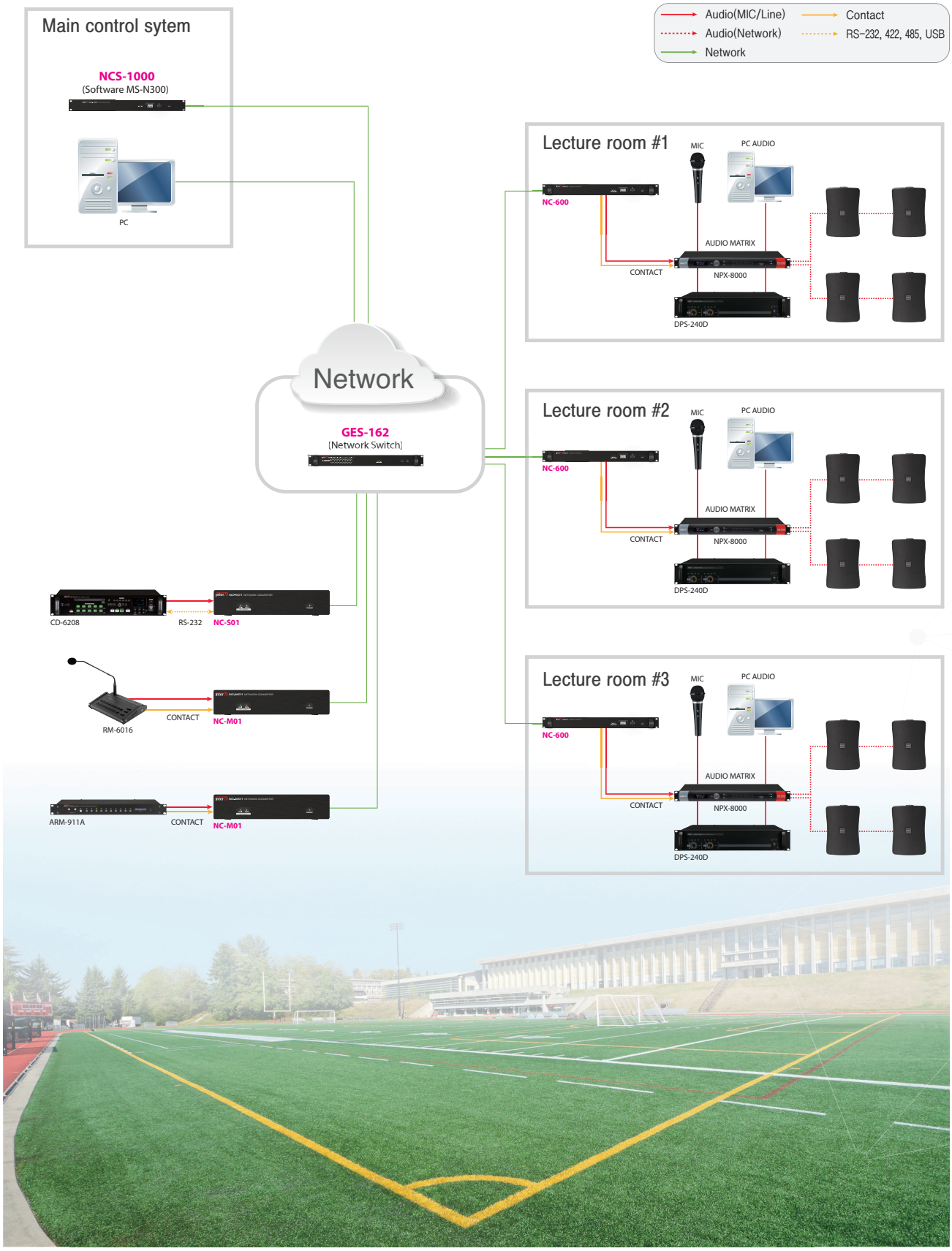
Government Office Application Cases



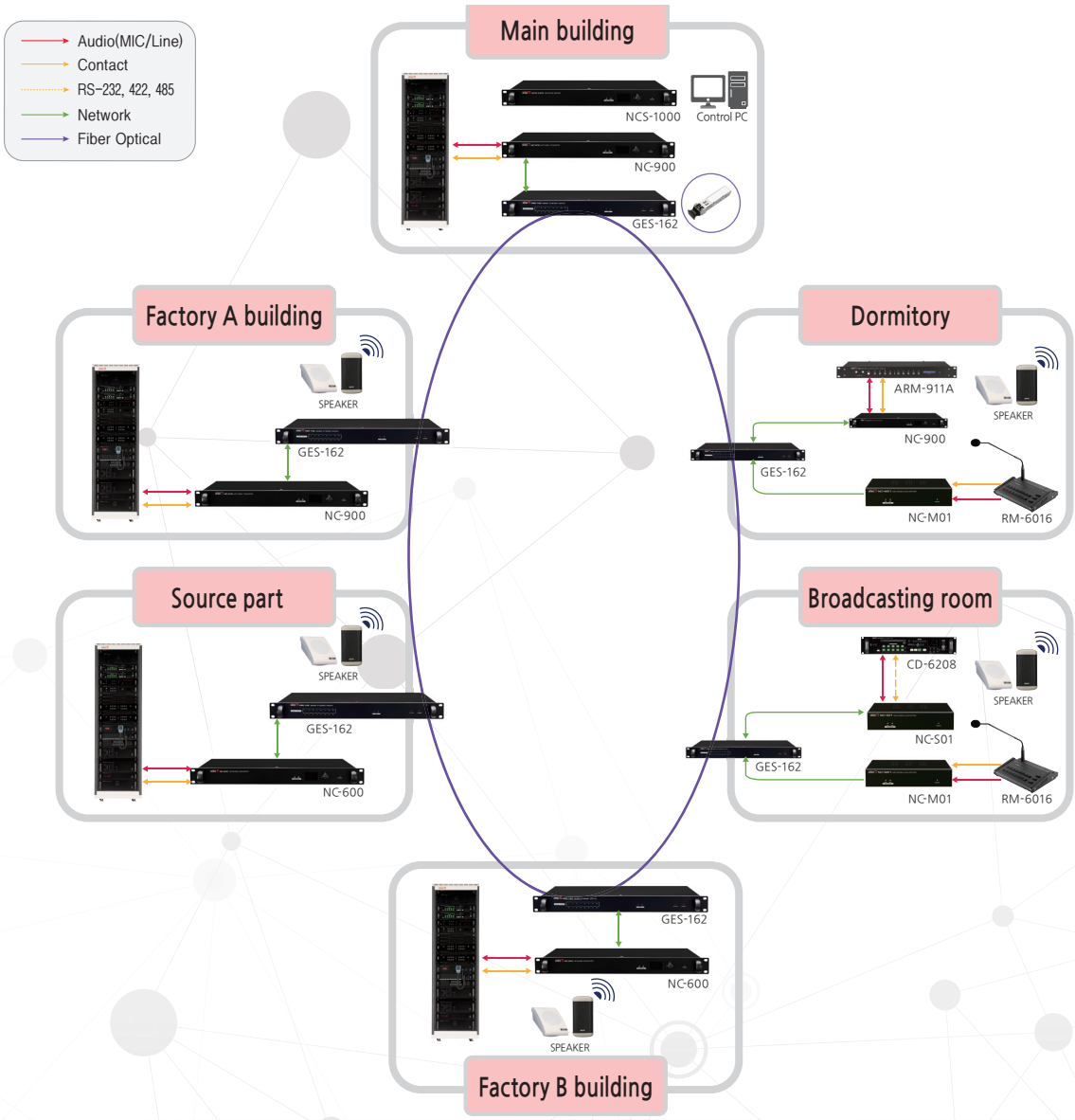
High-Rise Building Application Cases



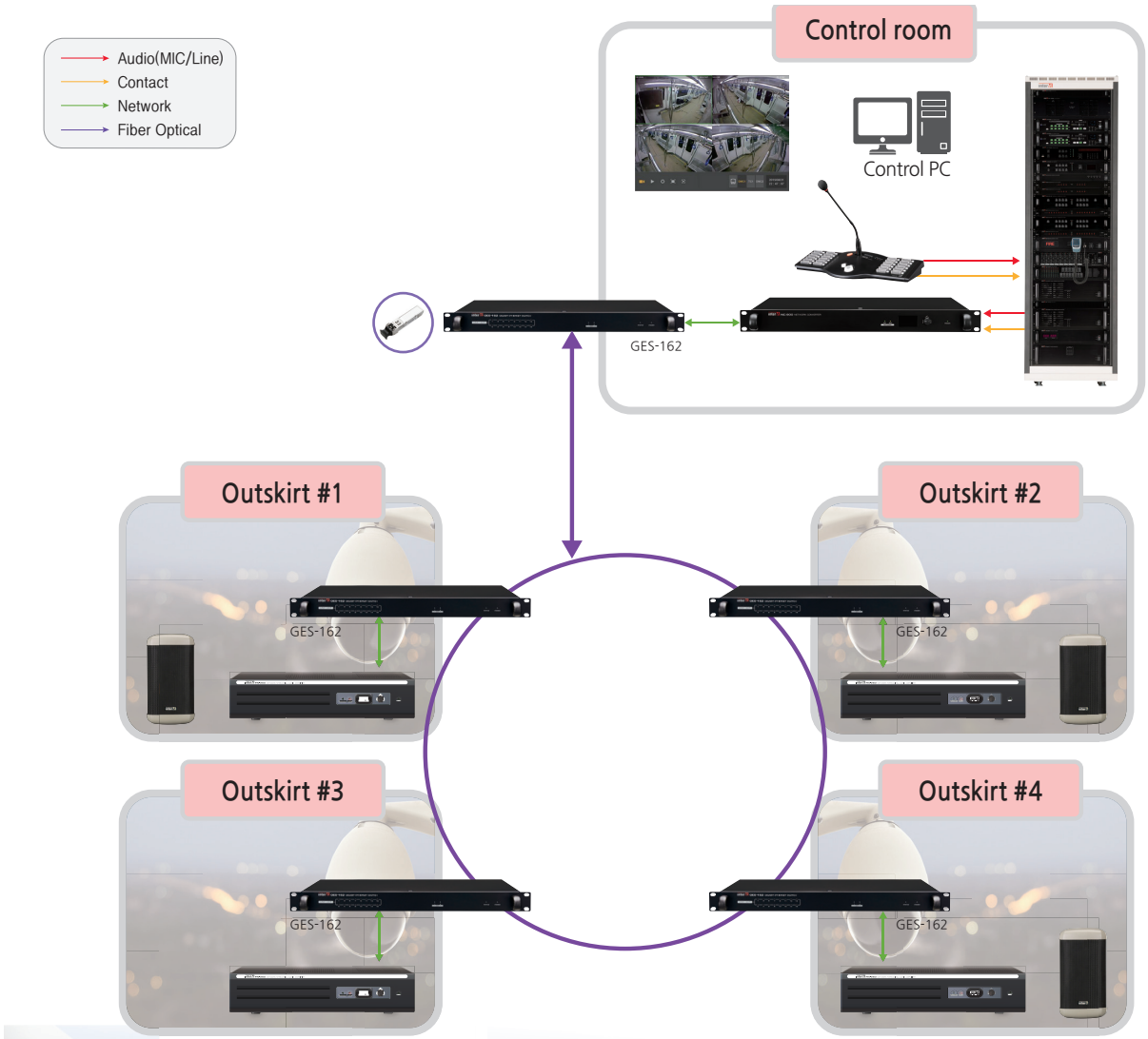
University Application Cases



Industrial Complex (Network Converter + GES-162)



CCTV Broadcasting Facility System



Note

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