Digital Audio Matrix System

NPX System

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NPX System

Overview

Since modern buildings tend to become enlarged and diversified, a central control system is no longer to meet market demands. Now, the market needs to utilize multi–bus broadcast system in one building, and this is why we need to establish a dispersion control system. To establish the dispersion control system, a main controller with audio matrix function is essential.

Our new NPX system is an audio matrix system which enables users to broadcast diversified sources selectively.

Through various module compositions, it can be installed from small–size to large–size broadcast system for its application scale such as

hotel, restaurant, seminar room, hospital, and conference center.

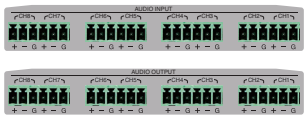
NPX–8000 not only provides excellent performance with better S/N ratio and THD, but also realizes a high sound quality level accompanied with various functions of built–in DSP for input/output audio tuning.

This NPX system can be used in a variety of places requiring independent zoning control such as schools, hospitals, seminar rooms, hotels, restaurants and even conference centers that require high–quality sound systems.

FEATURES

Advanced Audio Matrix System

Compare to the previous PX-8000 audio matrix system, NPX System introduces a whole advanced system which provides DSP (Digital Signal Processor) function for optimized audio tuning, and PC based program for remote control. Through NPX System, users can transmit multi-bus background music and paging broadcast to multiple output zone, and also can control broadcast output at assigned zone through local machine.

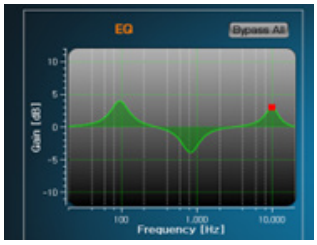


8x8 Analog Audio and Input/Output Configuration

The NPX-8000 consists of 8 channels of analog audio and contact input / output terminals. Users can input various sources such as CD, Tuner, MIC through analog audio input terminal. The input audio signal is output the sound through the analog audio output terminal according to the matrix settings of the NPX-8000. In addition, it can be linked with external equipment via 8 channel contact input / output terminals.

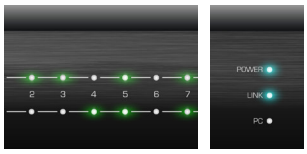
Play Sound Source through SD Card

With a SD card, users can play background music without extra sound source devices.



Audio Control through DSP

Through DSP (Digital Signal Processor) in the NPX system, users can control HPF, LPF, EQ, Programmable Delay, Limiter, Mute, and Gain to acquire optimized sound in each audio environments. Through MP-8000 (PC program) or NLM-8000C (local machine controller), users can control each zone's volume and EQ.



Various Front Status LED

Through NPX-8000's front status indicator LED, users can check audio input/output status, power, LM/RM link, and software (MP-8000) connection status intuitively.

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FEATURES

Local Machines for Separate Control

Through wall type local machine controllers in each zone, users can select audio source and control the volume. And users also can broadcast using own sound sources through wall type audio input device.

Remote MIC for Paging Broadcast

Users can do paging broadcast using remote MIC for calling and announcement.
They can choose a broadcasting zone through front LCD and 10-key buttons, and also broadcast sign-on/off signal through chime button.

PC Program for System Control and Management

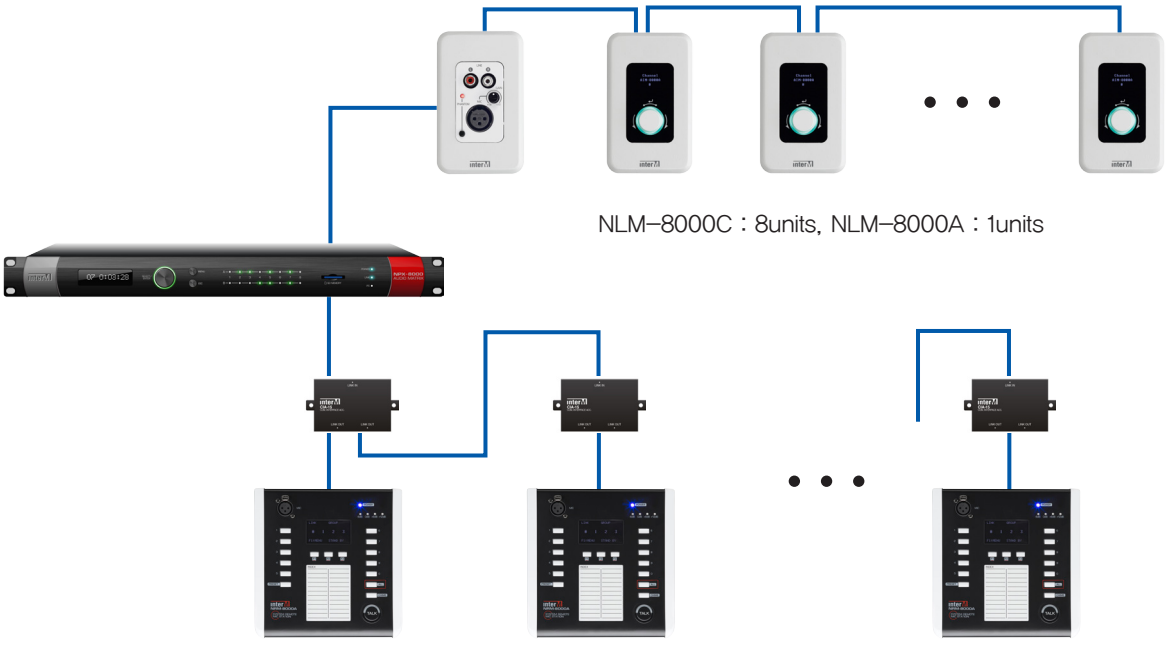
We also provide PC program for the NPX System Control and Management. Users can control every device in the system intuitively through PC program which connects to Ethernet network.

PRODUCTS LINE UP

Model	Description	Qty	Purpose
Single System, 8×8 Matrix			
NPX-8000	Audio Matrix Controller	1	Main controller, audio matrix
MR-8000	LM/RM Interface Module	1	Single system interface
NLM-8000C	LM Controller	8	Wall type local controller
NLM-8000A	Audio Input LM*	1	Wall type audio input
NRM-8000A	Analog RM*	4	Analog Remote MIC
Management Program			
MP-8000	Management Program	1	PC management program

*1 - LM : Local Machine, *2 RM : Remote Microphone

LM/RM Maximum Connection Devices



NLM–8000C : 8units, NLM–8000A : 1units

NRM–8000A : 4units

* When users connect more than 2 units, CIA–15(Communication Interface Accessory) is needed.

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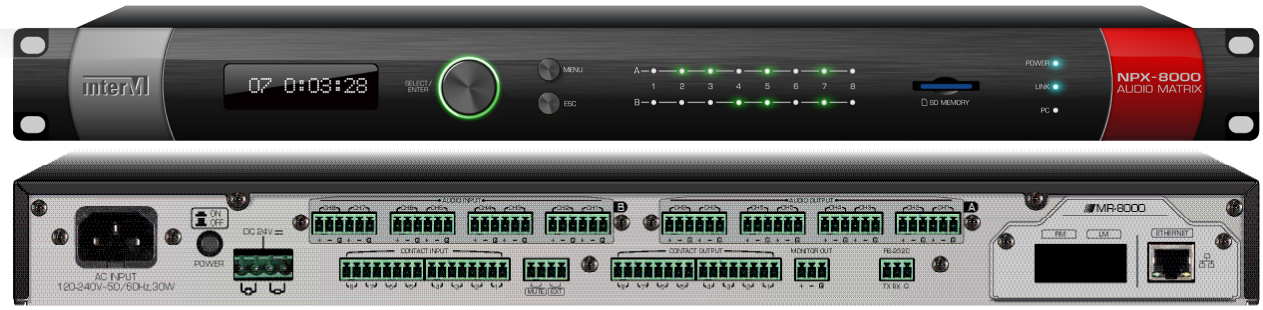
MAIN CONTROLLER

NPX-8000 Audio Matrix Controller



- Audio matrix controller of NPX system
- Digital Signal Processor(HPF, LPF, EQ, Programmable Delay, Limiter, Mute, Gain)
- 8 analog audio inputs / outputs
- Able to connect LM/RM via MR-8000 (Interface module)
- Device control through the front LCD and button
- Audio input/output and device status indication LEDs
- Audio monitoring with input/output audio via monitor out terminal
- 8×contact closure inputs and 8×contact closure outputs for connection with external device
- Audio output mute through music mute terminal(contact closure input)
- Remote SD card play control through EXT terminal(contact closure input)
- Remote control via RS-232C terminal (AMX/CRESTRON)
- PC Control via Ethernet network terminal(10/100BASE-T)

MP-8000 Management Program

- PC program for system setting, management and operation
- Input/output audio matrix control
- DSP control(volume, EQ, filter, compressor, limiter)
- Event scheduler setup
- Music player control (SD CARD)
- Input/output contact closure setup
- Wall type controller(LM) setup
- Remote mic(RM) setup
- LOG save function
- Windows OS Only

NOTE

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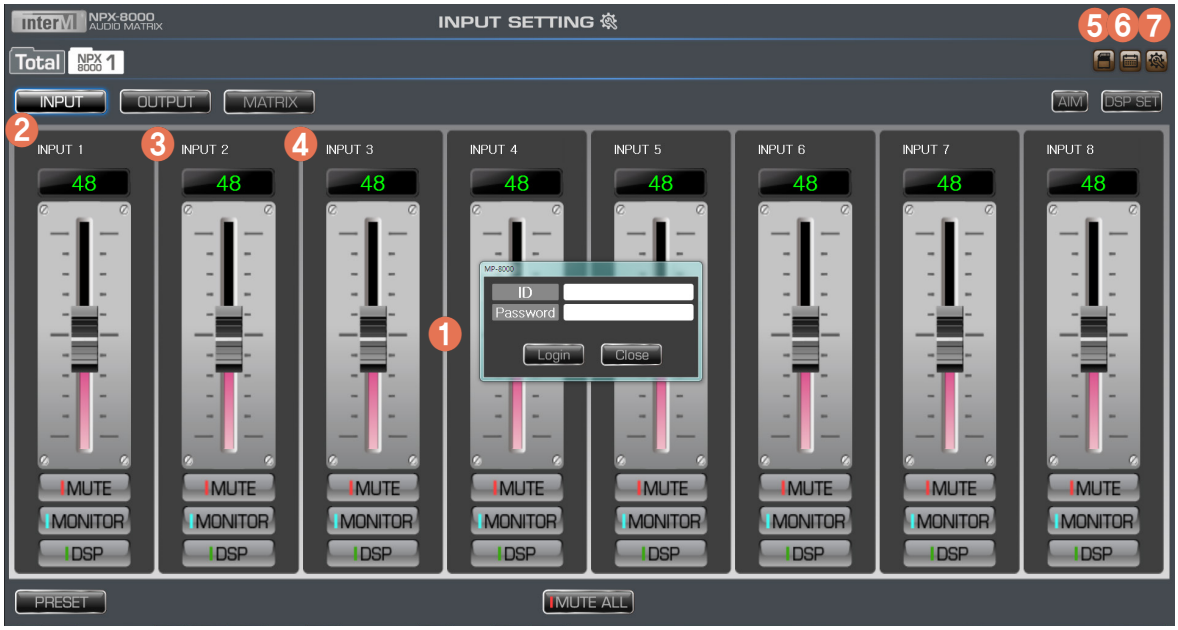
NPX System

MP-8000 GUI

MAIN SCREEN



❶ ID, PASSWORD

❷ INPUT DSP SETTING
Volume, EQ, DSP.

❸ OUTPUT DSP SETTING
Volume, EQ, DSP.

❹ AUDIO MATRIX SETTING
Input / Output matrix

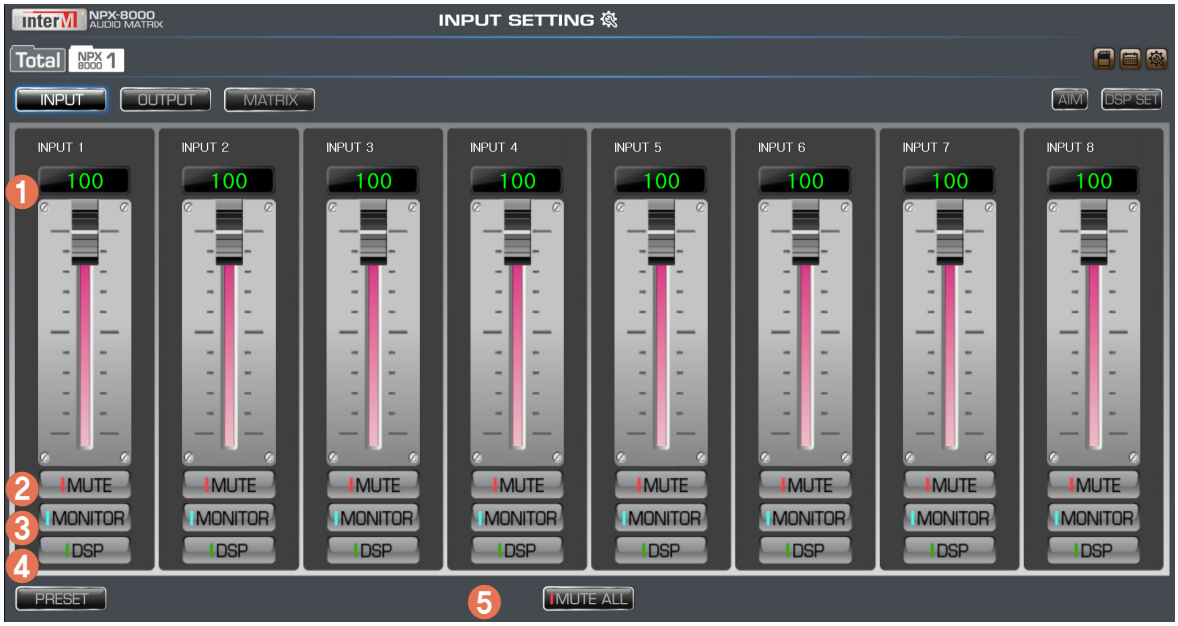
❺ SD CARD PLAYER CONTROLLER
MP3 files in SD card.

❻ TIME SCHEDULER SETTING

❼ DEVICE SETTING
Network, LM/RM, contact closure

MP-8000 GUI

INPUT / OUTPUT DSP SETTING SCREEN

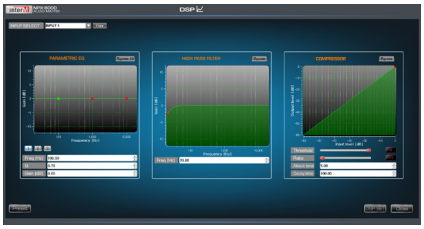


❶ VOLUME
Channel 1~8/ adjust between 0~100.

❷ MUTE

❸ MONITOR
Monitoring a selected channel through MONITOR terminal on NPX-8000.

❹ DSP



DSP setting screen shot

INPUT DSP
1) 3-BAND PEQ
2) HIGH PASS FILTER
3) COMPRESSOR

OUTPUT DSP
1) 7-BAND PEQ
2) HIGH PASS FILTER
3) LIMITER
4) DUCKER
5) DELAY

❺ MUTE ALL

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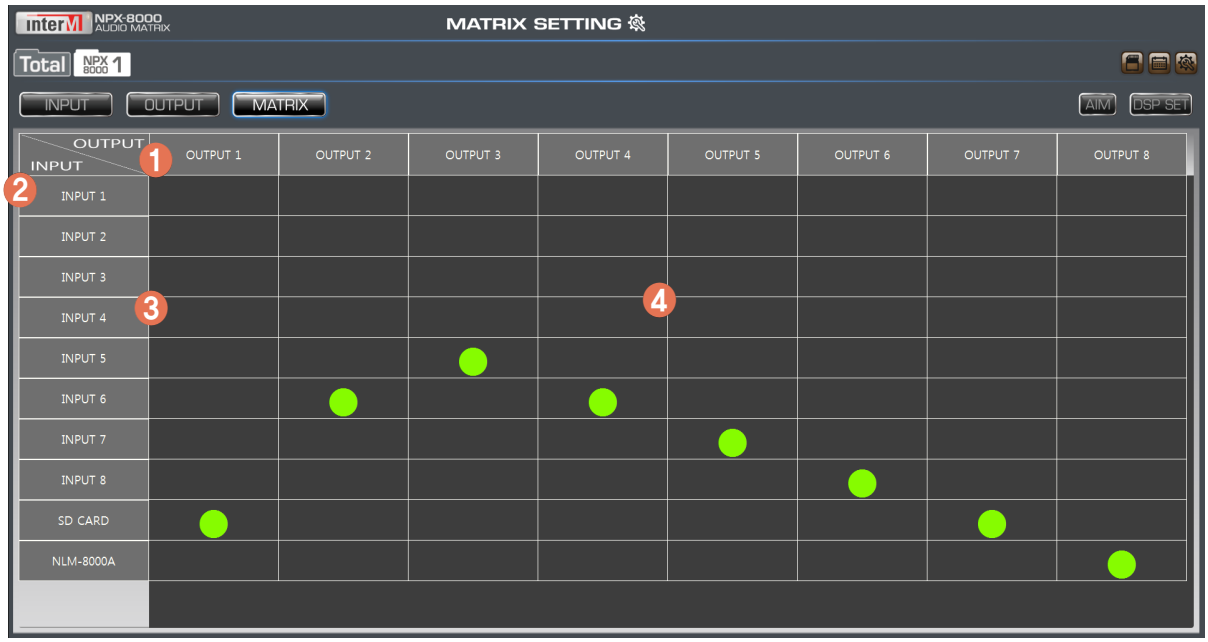
MP-8000 GUI

MATRIX SETTING SCREEN



❶ OUTPUT CHANNEL

Display 1~8 output channel and output name can be changed by user.

❷ INPUT CHANNEL

Display 1~8 input channel, SD card and NLM-8000A and input name can be changed by user.

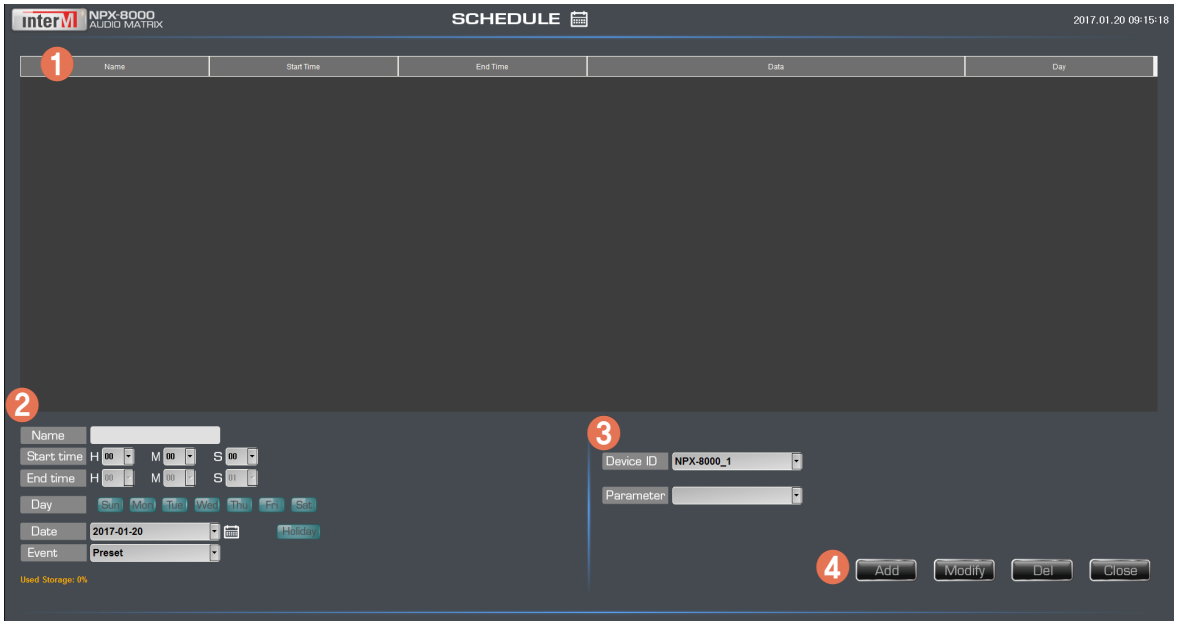
❸ CHANNEL NAME SETTING Window

❹ MATRIX SETTING

select the desired input audio signal to output channel. When selection is completed then green light is on.

MP-8000 GUI

TIME SCHEDULE SETTING SCREEN



❶ Time Schedule LIST

Display the list has been set by name, start/end time, sound source and day.

❷ Schedule set up

- Date can be selected by calendar
- Each day of week can be choose to repeat the schedule.
- The EVENT can be Selected from Preset/Output Contact/SD card.

❸ EVENT SETTING

Set the detail operation sequence for each event.

Can be set as PRESET, SD card playback, output channel and REPEAT.

❹ SCHEDULE SETTING

Add / Modify / Del / Close.

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LOCAL MACHINE

NLM-8000C Local Machine

- Used in a single and expansion system
- Wall type local machine controller
- 1.3" OLED display
- User control using rotary-push encoder
- Source selection or volume control
- Connected with NPX-8000 via LM LINK IN terminal
- Connectable to daisy chain via NLM-8000C LM LINK OUT terminal

NLM-8000A Local Machine

- Used in a single and expansion system
- Wall type local machine audio input
- 1xXLR audio Input(MONO, GAIN control)
- Phantom Power support(control button, LED)
- 1xRCA audio input(STEREO)
- Connected to NPX-8000 via LM LINK IN terminal
- Connectable to NLM-8000C LM LINK OUT terminal via daisy chain

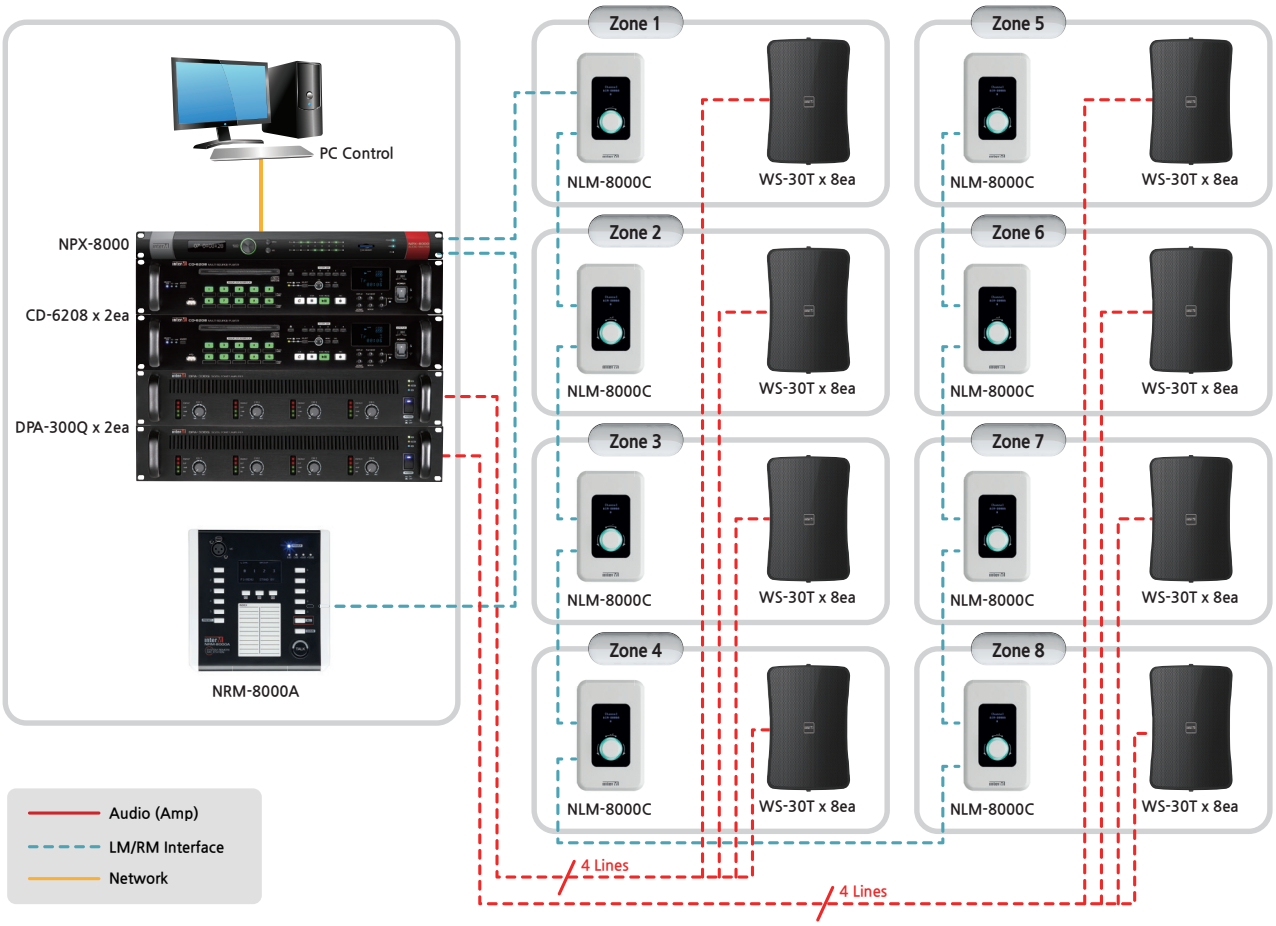
REMOTE MICROPHONE

NRM-8000A Remote Microphone

- Used in a single and expansion system
- Remote mic for paging broadcast
- Voice input using gooseneck condenser mic
- 2.4" OLED display
- Broadcasting zone selection & control through 10 key button
- Connected to NPX-8000 via RM LINK terminal
- Power supply via RM LINK terminal or power adaptor

APPLICATION

Application of NPX System to Education Facility



This application can be applied to places where different BGM is required such as a school.
Through NPX System, a user is able to construct an audio matrix system of independent zoning that requires broadcast various audio sources to desired zones, not only with CD player or tuner, but also with SD memory card which is applied to the device.
For example, the user can broadcast soft music through CD-6208(multi-source player) to classroom or rest area that needs to play BGM, Through NRM-8000A which can be synchronized up to 4 units, a user can broadcast announcement to classroom, teacher's room, or even whole school.
Through MP-8000 software, a user can set up a zone matrix, volume, audio DSP easily, and also can configure scheduled broadcast (time, day, and date are adjustable).
Moreover, wall audio inputs and local controller which are installed to each classroom and teacher's room enable users to select sources, control the volume, and input the audio.

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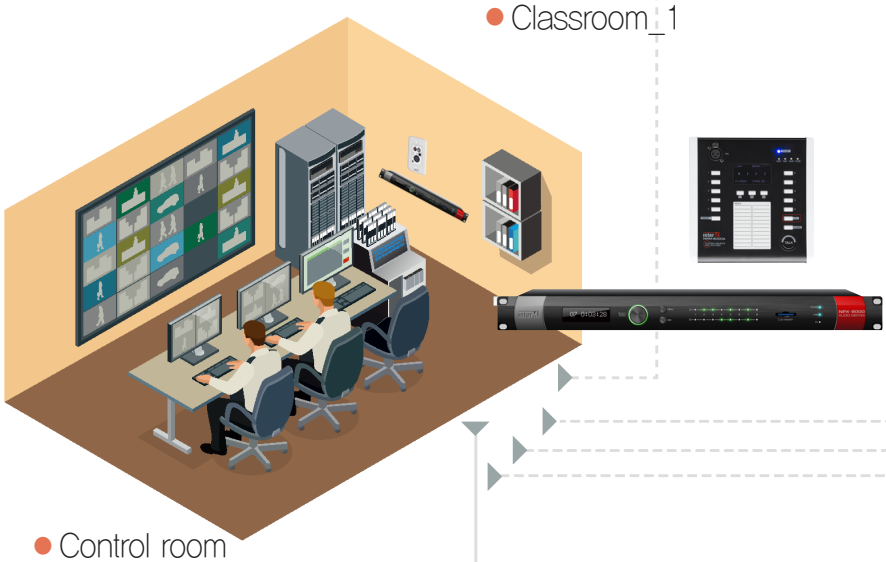
APPLICATION_ SCHOOL

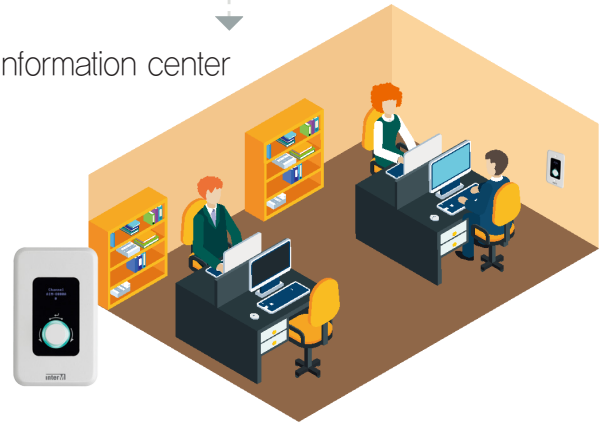
● Restaurant

● Classroom_1



● Control room

● Information center



● Classroom_2

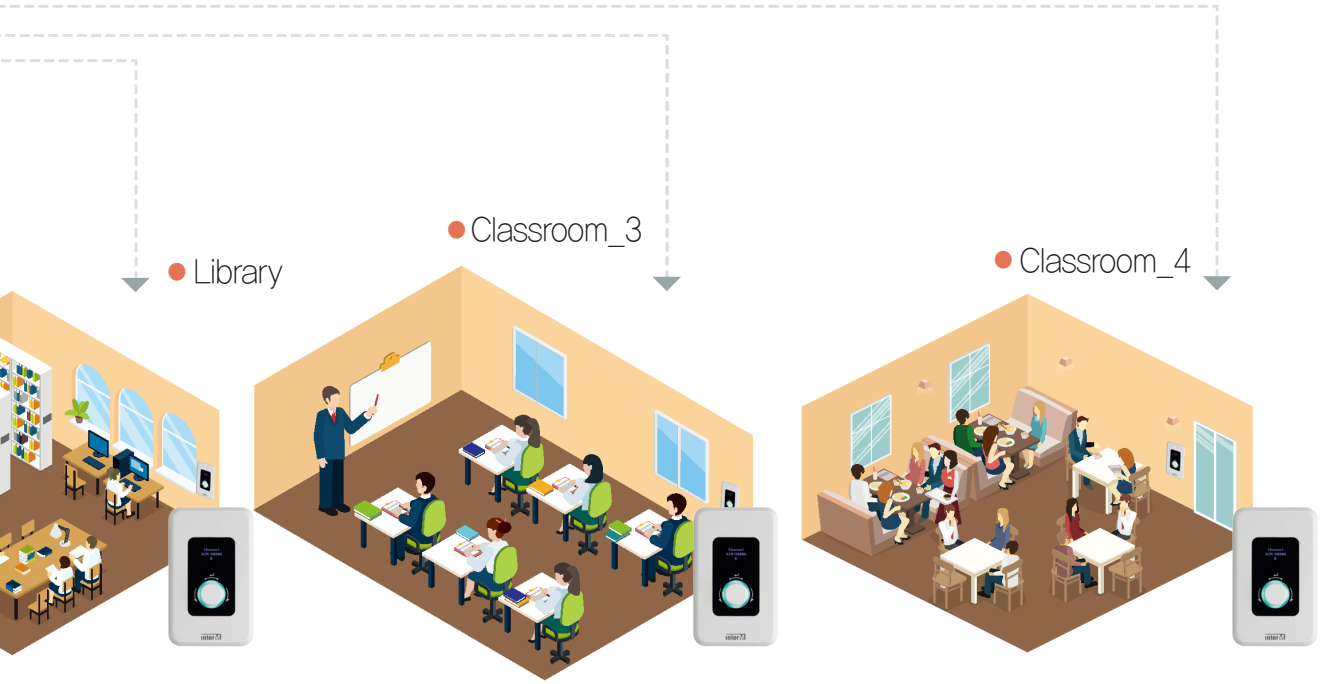
• NLM-8000A •

• NLM-8000C •

• NRM-8000A •

• NPX-8000 •

● Through wall type local machine controllers, users in each zone can select or input audio source, and control the volume directly, which make an optimum distributed system.



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SPECIFICATION

	NPX–8000
Data Communication	
Communication Protocol	Contact closure, RS–232C
Contact closure Input/Output	Iutput 8 Channel, Output 8 Channel, MUTE, EXT
Serial Communication Speed	9600bps
Module Installed Slot	
Audio Module slot	2EA
Interface Module slot	1EA
General Features	
Operation Temperature	–10℃ ~ +40℃
Power Source	AC 100–240V, 50/60Hz, DC 24V
Weight (SET)	3.6kg (7.94lb)
Dimensions (SET)	482(W) x 44(H) x 320(D) mm 19 x 1.73 x 12.6 in

	AIM/AOM–8000
Input Sensitivity	–60 ~ +23dBu
Output level	0dBu (AIM GAIN=0)
S/N @ Rated output (20kHz LPF)	MIC : more than 55dB LINE : more than 75dB
THD (20kHz LPF)	MIC : less than 0.5% LINE : less than 0.2%
Frequency Response 40Hz ~ 18kHz (DSP Bypass)	0dBu ± 3dBu
Operation Temperature	–10℃ ~ +40℃
Power Source	Provided inside the device
Power Consumption	–
Weight (SET)	AIM : 160g (0.35lb) AOM : 140g (0.31lb)
Dimensions (SET)	122.5(W) x 22.4(H) x 172.3(D) mm 4.82 x 0.89 x 6.78 in

	MR–8000
Communication Protocol	RM, LM PORT : CAN, ETHERNET NETWORK : LAN (TCP/IP)
Communication Speed	CAN : 20 kbps, LAN (TCP/IP) : 100Mbps
Communication Distance	CAN : MAX 300M, LAN (TCP/IP) : MAX 100M
Operation Temperature	–10℃ ~ +40℃
Power Source	DC 40V (Provided in NPX–8000)
Output Voltage	DC 40V
Weight (SET)	90g (0.20lb)
Dimensions (SET)	89(W) x 37.5(H) x 159.5(D) mm 3.50 x 1.48 x 6.30 in

SPECIFICATION

	NLM-8000C
Communication Protocol	CAN (Controller Area Network)
Communication Speed	20kbps
Communication Distance	MAX 300M (LINK Connection included)
Power Source	DC 40V
Power Consumption	2.4W
Weight (SET)	183g (0.40lb)
Dimensions (SET)	70(W) x 115(H) x 40(D) mm 2.76 x 4.52 x 1.57 in

	NLM-8000A
Input Sensitivity	MIC : -50dBu/2kΩ LINE : -10dBu/10kΩ
Output level	Normal : 0dBu
S/N @ Rated output (20kHz LPF)	MIC : more than 60dB LINE : more than 75dB
THD (20kHz LPF)	MIC : less than 0.5% LINE : less than 0.2%
Frequency Response (50Hz ~ 18kHz)	0dBu ±3dB
Power Source	DC 40V
Power Consumption	2W
Weight (SET)	119g (0.26lb)
Dimensions (SET)	70(W) x 115(H) x 53(D) mm 2.76 x 4.52 x 2.09 in

	NRM-8000A
Specifications	
Input Sensitivity	-50dBu
Output level	0dBu
S/N @ Rated output (20kHz LPF)	more than 60dB
THD (20kHz LPF)	less than 0.5%
Frequency Response 100Hz ~ 18kHz	0dBu ± 3dBu
Data Communication	
Communication Protocol	CAN (Controller Area Network)
Communication Speed	20kpbs
Communication Distance	MAX : 300M
General Features	
Operation Temperature	-10℃ ~ +40℃
Power Source	DC 40V (over 300M, DC 24V Adapter)
Power Consumption	MAX 10W
Weight (SET)	1.37kg (3.02lb)
Dimensions (SET)	200(W) × 73(H) × 206(D) mm 7.87 x 2.87 x 8.11 in

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