



N-8000 Series & N-SP80 SIP System IP & SIP Intercom Systems



Schools



Corporate Buildings



Commercial Buildings



Hospitals / Institutions



Parking Garages



Transportation



N-SP80 SIP Intercom System



**A smart product that's easy to set up.
The N-SP80 opens up the world of access control.**



Overview

N-SP80 SIP Intercom Station

Talk, See and Control via Network

The N-SP80 Series SIP Intercom Station employs the Session Initiation Protocol to enable both audio and video communication. Compatible with the G.722 audio codec, the N-SP80 supports high-quality audio and video transmission. The device features easy unlocking operation that gives you simple access to controls. This makes it ideal for installing at a building entrance, carpark gate, or other point of entry. And with TOA you're assured of thorough after-sales service - we're a specialist manufacturer of security and audio equipment serving customers in over 120 countries worldwide.

The N-SP80 series SIP Video Intercom System offers flexible audio and video communications using standard SIP and Onvif protocols. It can integrate with external SIP compatible systems through a SIP server. Peer-to-Peer mode is also available for standalone system operations without SIP server environment. TOA's N-8000SG SIP gateway software is also available to integrate with TOA's N-8000 IP intercom system.



Applications

N-SP80 SIP Intercom Station

The N-SP80 Series SIP Intercom Station employs the Session Initiation Protocol to enable both audio and video communication. Compatible with the G.722 audio codec, the N-SP80 supports high-quality audio and video transmission. The device features easy unlocking operation that gives you simple access to controls. This makes it ideal for installing at a building entrance, carpark gate, or other point of entry. And with TOA you're assured of thorough after-sales service—we're a specialist manufacturer of security and audio equipment serving customers in over 120 countries worldwide.



Product Features

N-SP80VS1 SIP Video Door Station

- Robust and weatherproof hardware
- Built-in AEC (acoustic echo canceller) enables intelligible full-duplex communication
- Less cabling thanks to PoE
- 3MP camera resolution
- Photosensitive sensor detects brightness and turns on infrared light to capture pictures in darkness
- Flexible LED color and behavior setting
- ONVIF compatible
- Anti-vandal function via external control input



N-SP80AS1 SIP Audio Door Station

- Robust and weatherproof hardware
- Built-in AEC (acoustic echo canceller) enables intelligible full-duplex communication
- Less cabling thanks to PoE
- Flexible LED color and behavior setting
- Anti-vandal function via external control input



N-SP80MS1 SIP Multimedia Station

- Intuitive operation with 7-inch touch screen and dial keys
- Less cabling thanks to PoE
- Address book stores up to 3000 names
- Forwarding setting (always/call/no answer)
- DND (do not disturb) – ignore incoming calls
- Auto Redial – redial an unsuccessful call a set number of times within a designated interval



System Features

- Supports G.711a, G.711μ, G.722, G.729 audio codec's for high-quality conversation
- Unlimited number of stations are connectable in one system using peer-to-peer mode
- System configuration and setting via web browser
- Secondary SIP server for server redundancy
- Detects server disconnection
- Flexible ringtone setting



Clearly see and hear the person at the door.

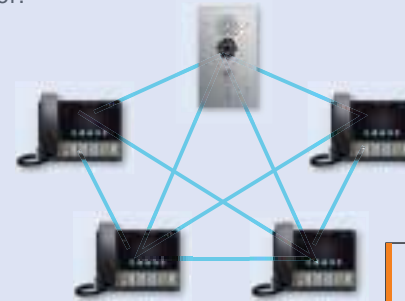
TOA's N-SP80 SIP Intercom System offers flexible audio and video communications using standard SIP and Onvif protocols. It is compatible with a variety of SIP servers. The N-SP80 can work as a stand-alone system or it can be integrated with TOA's N-8000 IP Intercom system via the N-8000SG SIP Gateway to audible communications as well as door access control.



Key Benefits

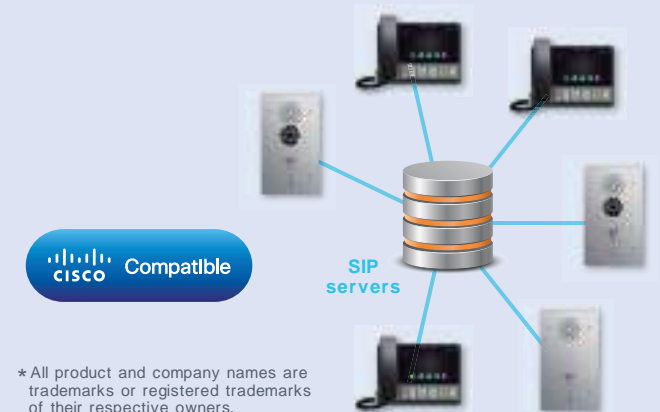
Supports peer-to-peer communication

Build a system with stations only—no need for an SIP server.



Compatible with variety of SIP servers

Where an SIP server is already in place, adding an N-SP80 station is easy. It's compatible with Cisco CUCM, Asterisk and Genetec Sipelia.*



* All product and company names are trademarks or registered trademarks of their respective owners.

Key Benefits

Doors unlockable from master station keypad



Can be part of a scalable system

The N-SP80VS1 SIP Video Door Station complies with ONVIF Profile S, so it can be integrated with third-party systems.

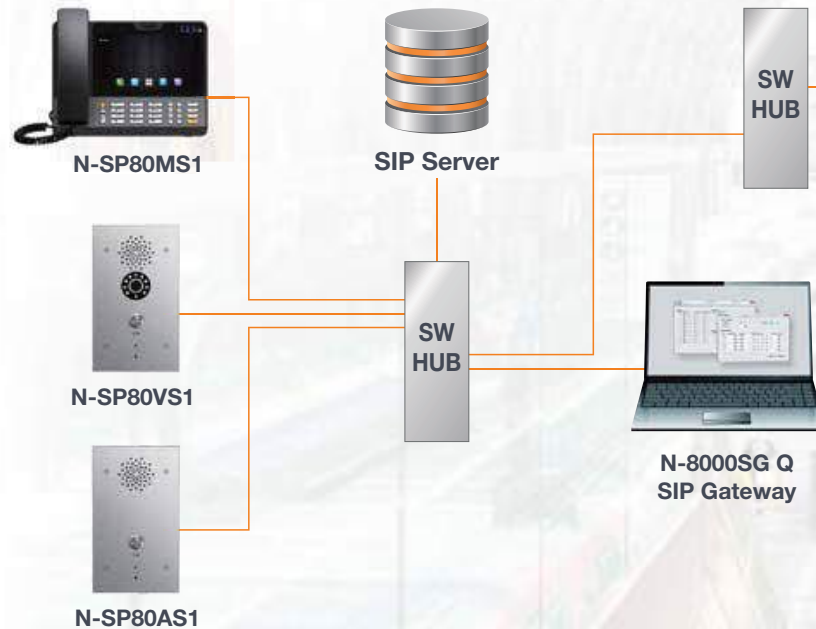


Conservation & Door Remote Control...

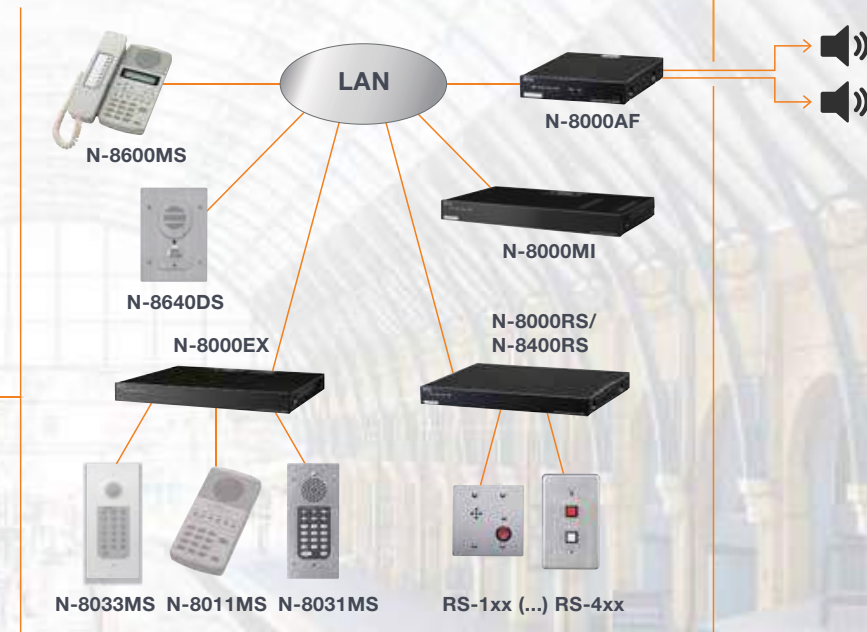
... can be done easily with the latest Video Intercom System.

System Examples

The N-SP80MS1 can be used in tandem with TOA's N-8000 to deliver public announcements and support access control. Adding the optional N-8000SG allows you to add a video access control function to an existing N-8000 Series intercom.



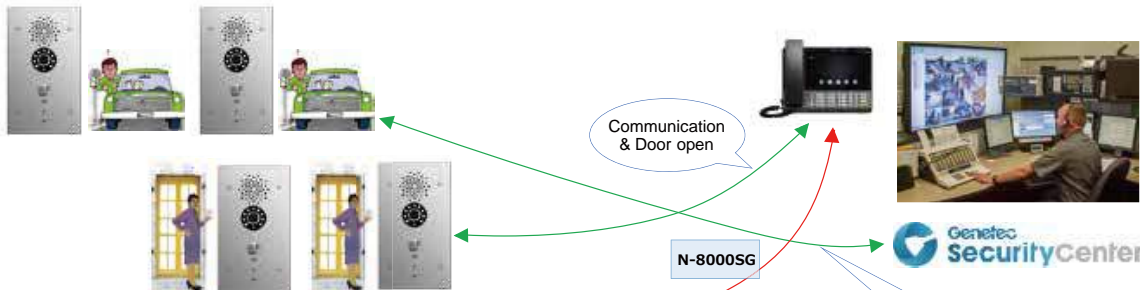
N-8000 IP Intercom System



System Examples

Commercial Building

Standard Security Application, such as Building entrance, Parking. The N-SP80MS SIP Multimedia Station can communicate with the N-SP80VS1 Video Door Station or N-SP80VS1 Audio Door Station. 'Door remote control' function can be directly operated from SIP Multimedia Station to the door stations. The N-SP80 Series are compatible with a variety of SIP servers, e.g. the Genetec Security Center that the Genetec Security Center can communicate and have door open with the N-SP80 Series Door Station. The SIP multimedia station can also integrate with the N-8000 system with paging function, door remote control and conversation function.

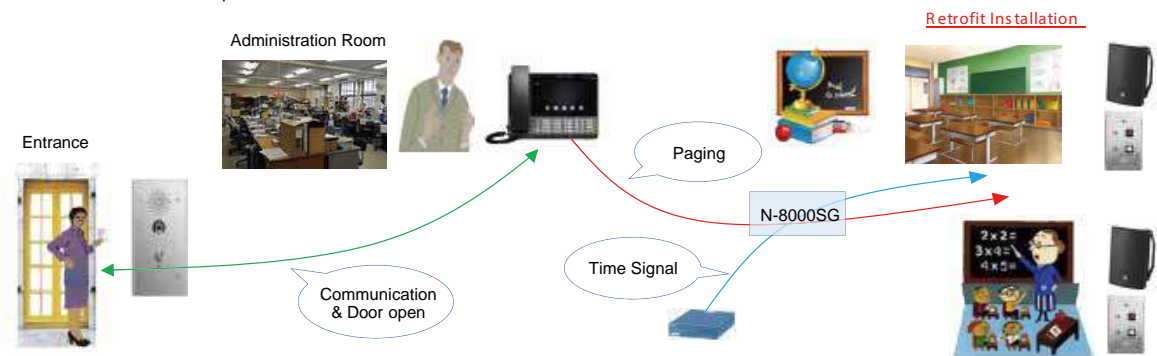


Retrofit Installation



Schools

Paging can be from SIP Multimedia Station in administration room to the classroom with the integration of N-8000 system as well as PA system. Conversation and door open can be done from N-SP80 SIP Multimedia Station in administration room to the entrance.



Specifications

Phone	N-SP80MS1 (SIP Multimedia Station)
Power Supply	PoE (IEEE802.3af) or 12V DC (use of the optional AC adapter)
Speech Method	Hands-free, Handset or Headset conversation
Audio Frequency Range	180 Hz - 14 kHz
Graphic Display	7-inch capacitive touch screen TFT LCD, 800 x 480 pixels, 16:9 wide screen
Camera	1/5" CMOS, 2M pixels, Max 1080p resolution, Free-rotation
Video	QCIF, QVGA, CIF, 4CIF, VGA, 64 kbps - 2 Mbps
Network Interface	10BASE-T/100BASE-TX (Auto-Negotiation)
Network Protocol	UDP/TCP/IP, RTP/RTCP, ARP/RARP, NAT, NTP, IGMP, SIP, etc.
Packet Transmission System	Unicast, Multicast
Paging	1 x Multicast transmission
Connector	RJ45 2 ports
Quantifying bit number	Maximum 16 bits
Voice encoding method	G.711 μ-Law/A-law, G.722, G.729
Video compression method	H.263, H.264
External Interface	USB2.0, HDMI type A
Dimensions	240(W) x 213(H) x 120(D) mm (9.45" x 8.39" x 4.72") (excluding a curl cord section)
Accessory	1 x Handset, 1 x CarL cord, 1 x LAN cable

* HDMI, HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries. Connections to all HDMI devices are not guaranteed.

Phone	N-SP80VS1 (SIP Video Door Station)	N-SP80AS1 (SIP Audio Door Station)
Power Supply	PoE (IEEE802.3af) or 12V DC	
Speech Method	Hands-free conversation	
Audio Frequency Range	300 Hz - 14 kHz	
Control Input	2 channels, no-voltage make contact input	
Control Output	2 channels, relay output, normal open/normal close output	
DC Power Input	12-24V DC, 12-50V DC	
Camera	1/3" CMOS, 3M pixels, Max. 1080p, Horizontal angle: 120°, Vertical angle: 178°, Day& Night mode, Auto-Negotiation	
Network Interface	10BASE-T/100BASE-TX (Auto-Negotiation)	
Network Protocol	IPv4, HTTP, HTTPS, FTP, SNMP, DNS, NTP, RTSP, RTP, TCP, UDP, ICMP, DHCP, ARP, SIP	
Packet Transmission System	Unicast, Multicast	
Paging	1 x Multicast receipt	
Connector	RJ45 2 ports	
Quantifying bit number	Maximum 16 bits	
Voice encoding method	G.711 μ-Law/A-law, G.722, G.729	
Video compression method	H.264, MPEG-4, MJPEG	
Security	Password protection, IP address filtering, SIP over TLS, HTTPS	
Installation Method	Flush-mount	
Dust/Water Protection	IP65	
Finish	Panel: Stainless steel	
Dimensions	120(W) x 210(H) x 49.5(D) mm (4.72" x 8.27" x 1.95")	
Applicable Box	4-gang size back box: YC-400	

Specifications

Options

N-8000SG Q SIP Gateway

The N-8000SG Q SIP Gateway allows you to connect the TOA's N-8000 IP Intercom System to a SIP phone system.



SP-11N Module

The SP-11N is a VoIP phone paging module supported SIP (Session Initiation Protocol) with Auto-answer function. This module can be used with TOA's 9000M2 Series, A-700 Series, A-900 Series and BG Series amplifiers.

*Availability differs from countries. Please contact your nearest dealers for more details.



YC-400 4-Gang Box

Designed to flush-mount N-SP80VS1 and N-SP80AS1 in a wall.



YC-400



YC-831HSW AM

YC-831HSW-AM

Weatherized Back Box w/Heater and Temper Switch for N-SP80VS1 and N-SP80AS1

N-8000 IP Intercom System

A versatile, highly reliable IP Intercom system designed to meet user needs for flexible, cost-effective configuration and operation.



Features & Functions

System Features

- System configuration by LAN with intuitive software
- Master-to-Master and Master-to-Sub station communication
- Choice of four wiring configurations: CAT5, 2-core shielded cables, 2 wires or 4 wires
- Integration with access control, voice alarm, CCTV and other such systems
- Time correction
- Operation and stream logs
- System diagnosis



Overview

TOA's unique N-8000 IP Intercom System is an integrated audio communication system that employs packet audio technology over the IP network to achieve fast, accurate communications with optimal security and reliability. Applications range from conversation, paging broadcasting and BGM broadcasting to emergency paging and broadcasting, audio triggering and other security functions.

System scalability

The cost-effective N-8000 System can be configured to a scale that meets users' specific requirements, however small or large. As few as two stations can be linked in a small system, or up to 192 components can be interconnected to operate as many as 3,072 stations.

Borderless communications

Since the N-8000 System is IP network-compatible, it supports linkage between local areas and other locations worldwide. Centralized PC control with dedicated TOA software enables connection of all exchanges, IP stations and interface units with LAN, WAN and optical fiber networks.

Integrated communications and safety features

Efficient centralized control integrates various systems to handle communications ranging from duplex conversations between stations to paging broadcasts, scheduled broadcasts and BGM broadcasting. The N-8000 System also provides master control for connection to users' per-existing intercom, alarm, surveillance, door entry/departure authorization and other systems as well as to telephone lines.

Basic Communication Features

- Handset or hands-free conversation
- Recall
- Redial
- Camp on busy
- Mic-Off
- Remote response
- Single-digit dialing
- Call transfer
- Comprehensive call-forwarding features
- Three-party conferencing



Easy installation and maintenance

The surprisingly easy system installation requires a minimum of on-site work, since existing wiring can be used and new components simply plugged in. The dedicated TOA software includes a maintenance application for system status monitoring, troubleshooting and logging as well as for system updating and remote control.

Long-term cost-effectiveness

Since N-8000 software and all calls between stations are free of charge, users enjoy the benefit of significantly lower telephone bills. Overall ownership costs are also reduced by the open-ended system architecture and network scalability permitting individualized configuration.

Superior sound quality

The N-8000 system provides high-quality audio for BGM, paging and recording applications.

Full logging options

The complete menu of operation and stream logging options includes operation verification, voice communications and line supervision logs, all of which can be archived easily for instant recall.

Internal and external system security

The N-8000 System is equipped with both a round-the-clock internal surveillance function to minimize downtime and a proprietary packet audio protocol to prevent wiretapping.



System Specifications

LAN Connections

Max. 192 units (total no. of Exchanges, Interface Units and IP stations)

Station Connections

Max. 3,072 stations (16 stations connected to each of 192 Exchanges)

Voice Links

Max. 768 links (4 links for each of 192 connected N-8000EX Exchanges)

Paging Zones

Max. 192 zones

Paging Outputs

Max. 384 outputs (2 outputs for each of 192 connected N-8000 Exchanges or Multi-Interface units)

BGM

Max. 8 channels (number of channels selectable from a station)

PBX Interface

Max. 384 units (2 units for each of 192 connected Multi-Interface units)

Tie-Line Interface

Max. 384 units (2 units for each of 192 connected Multi-Interface units)

Outside-Line Interface

Max. 192 units

Telephone Interface

Max. 192 units (when 192 Telephone Interface units are connected)

External Contact Output

Permits the creation of a wide variety of system configurations through the free combination of individual interface units

- PBX Connection
- Tie-line connection
- External equipment control
- Remote door control
- External input broadcast
- Paging interlock contact output control
- Call station indicator
- Remote dialing
- Contact bridge
- Office line connection
- BGM
- Paging
- Conversation recording
- CCTV interlock
- Direct select
- System diagnosis
- Time correction
- Time signal

N-8000MI

Max. 3,072 (16 outputs for each of 192 connected Multi-Interface units)

N-8000DI

Max. 6,144 (32 outputs for each of 192 connected Direct Select units)

N-8000AF

Max. 1,536 (8 outputs for each of 192 connected Audio Interface units)

External Contact Input

N-8000MI

Max. 3,072 (16 inputs for each of 192 connected Multi-Interface units)

N-8000DI

Max. 6,144 (32 inputs for each of 192 connected Direct Select units)

N-8000AF

Max. 1,536 (8 inputs for each of 192 connected Audio Interface units)

[Network Relations]

Audio Delay Time

80 ms/320 ms; changeable

Connection Delay Time

Max. 1 second (when 191 multicast paging destinations are set)

Bandwidth Used

Max. 2.08 Mbps (one-way)/unicast paging to 16 locations
Max. 130 Kbps (two-way)/per call

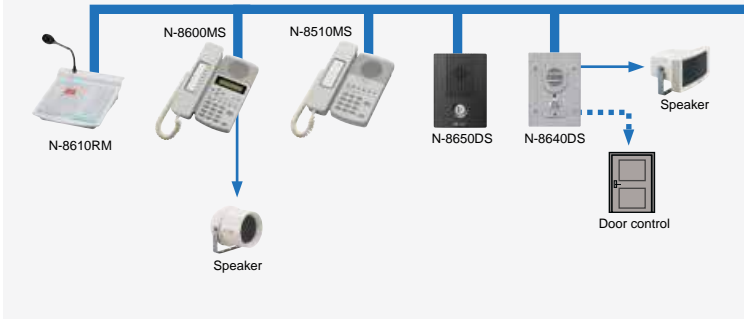
A variety of convenient functions

- Voice calling
- Automatic connection
- One-touch dialing
- Automatic call forwarding
- Emergency call interruption
- Emergency all-group paging
- Emergency message broadcasts
- Three-party conference
- Emergency paging
- Hands-free conversation
- Continuous call
- Call hold
- Busy call
- Paging call
- Paging response
- Scan monitor
- Door remote
- Audio trigger

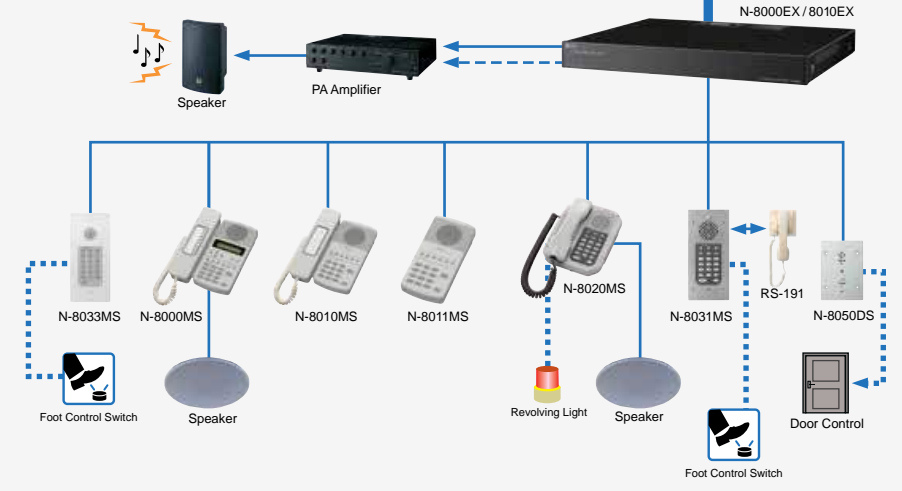
System Overview on page #4.

N-8000 System Overview

Direct Network Connection

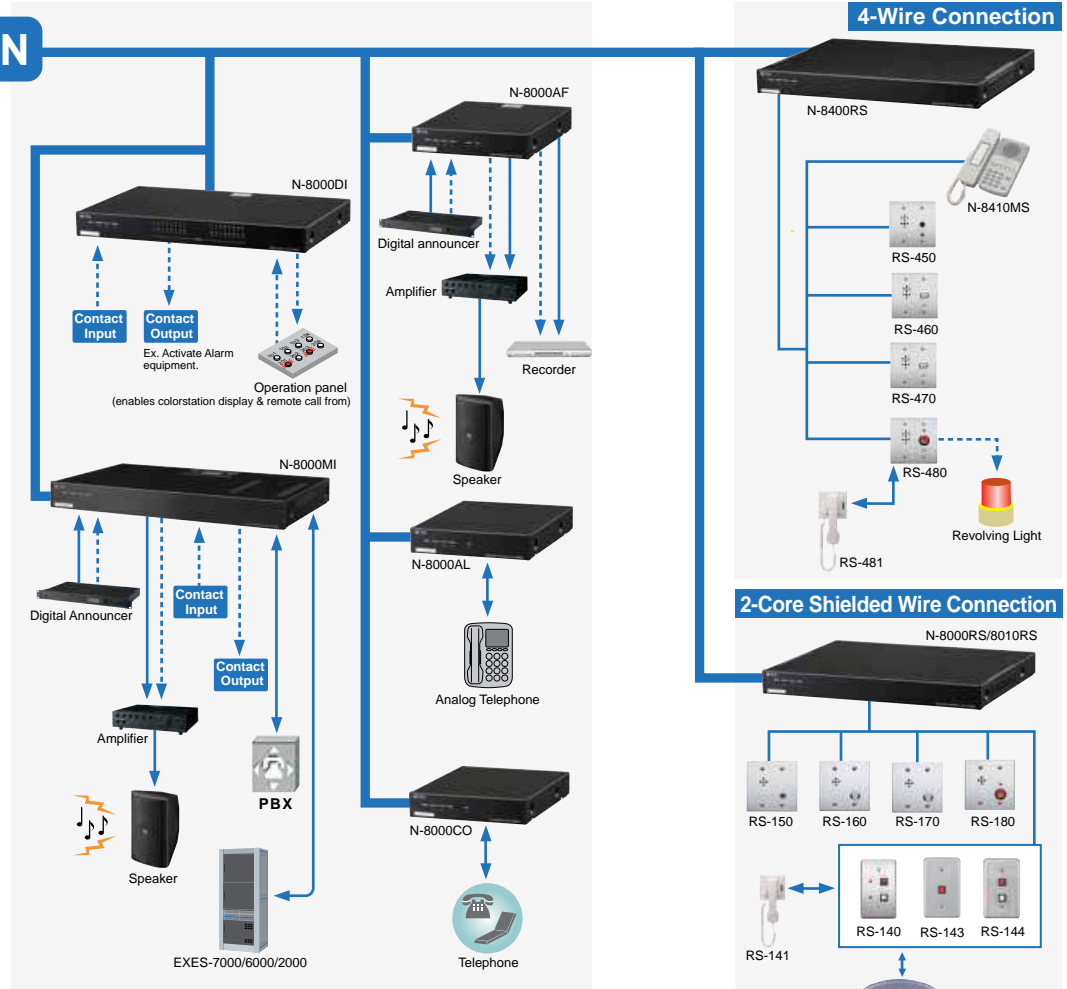


2-Wire Connection



LAN

WAN



System Specifications on page #3.

System Specifications on page #3.

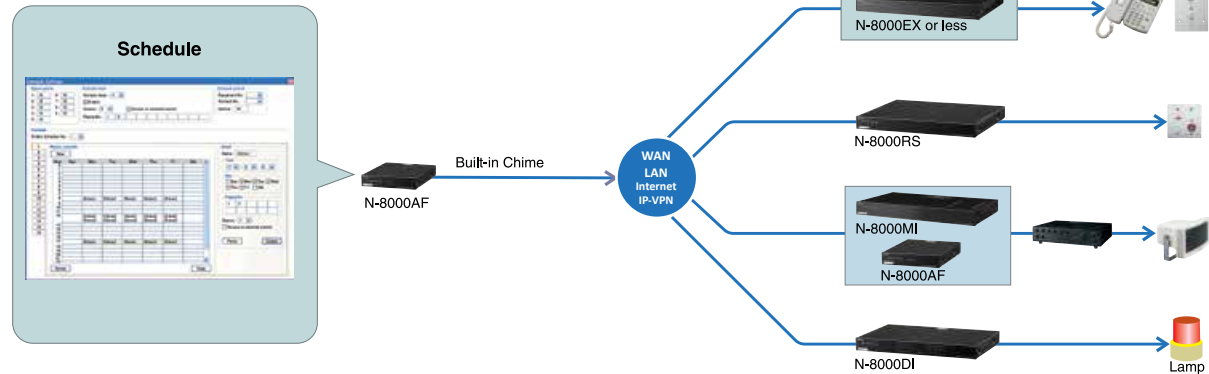
Application Examples



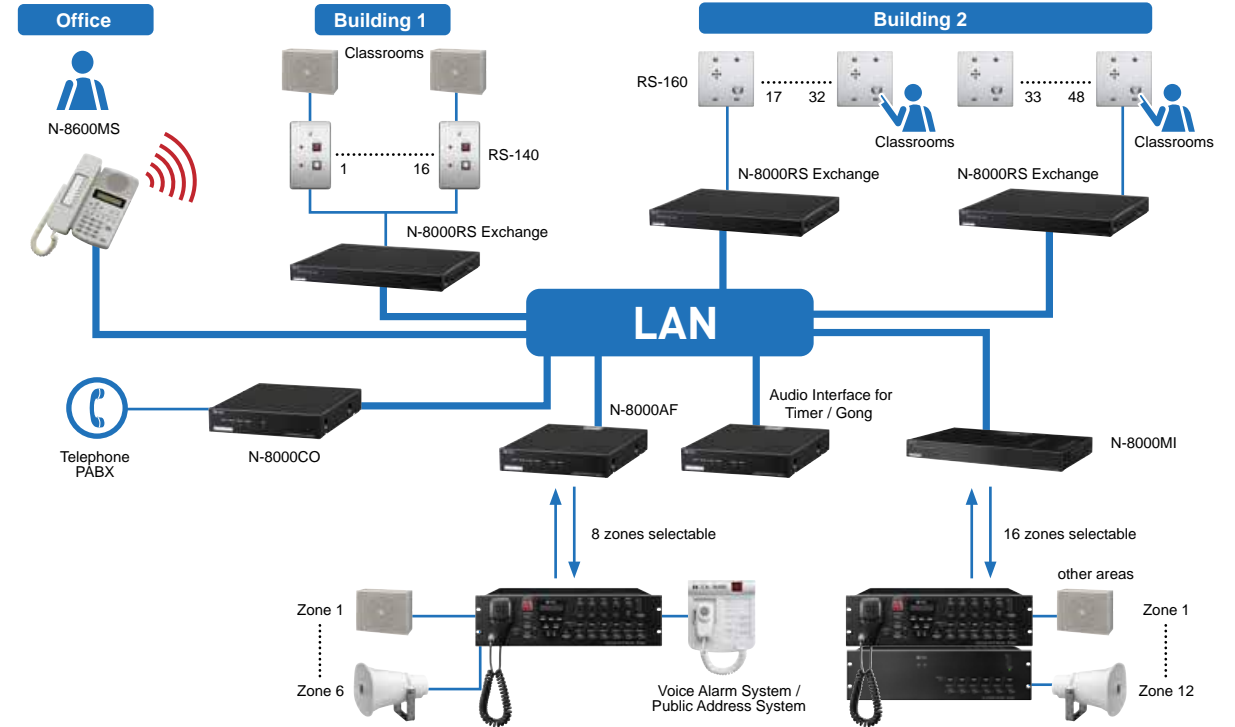
TOA has your school's security locked down!

- Building Security
- Door control, including; building access, lock down
- Bell scheduling
- Classroom communication
- Multi building communications
- LAN/WAN capabilities
- Paging, emergency broadcast, voice alarm
- PC Control

School Time Signal Function Enables the built-in chime of the N-8000AF or an externally connected audio source to be broadcast to stations and PA equipment according to a preset schedule. The time signal function allows schools to manage the schedule of their bells (end and start) for class changes, breaks. The N-8000AF also allows control of an external/optional digital recorder, such as TOA's EV-20R, to play pre-recorded (into EV-20R) special tones or selected melody, on schedule.

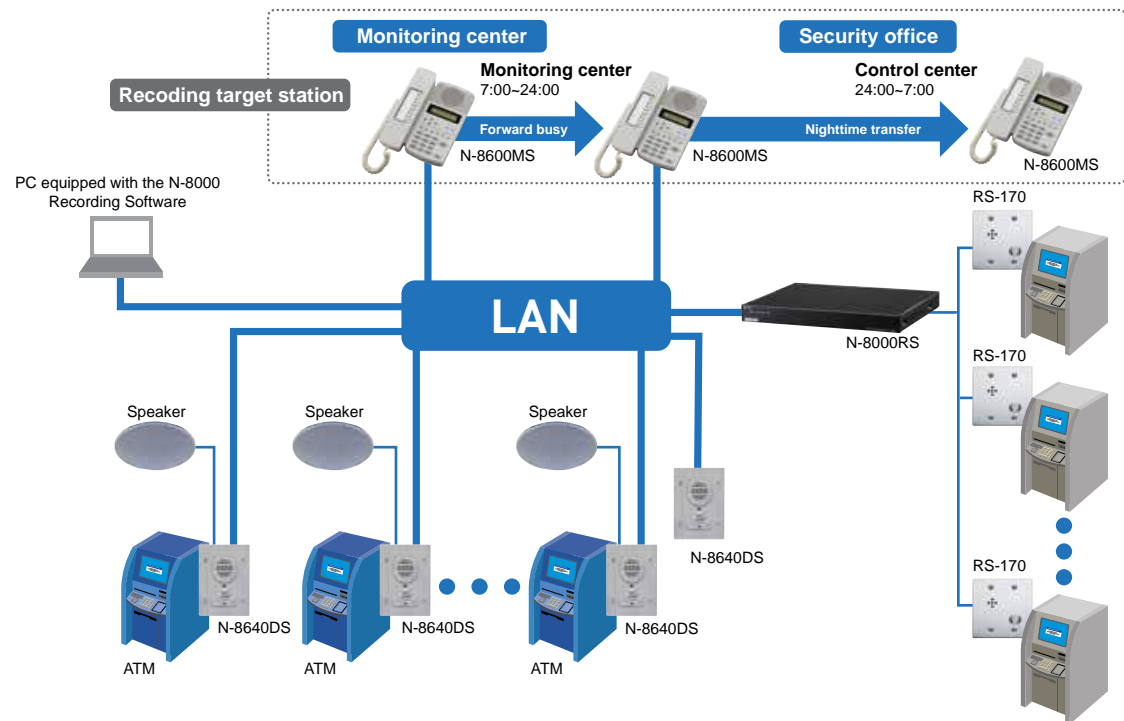


School

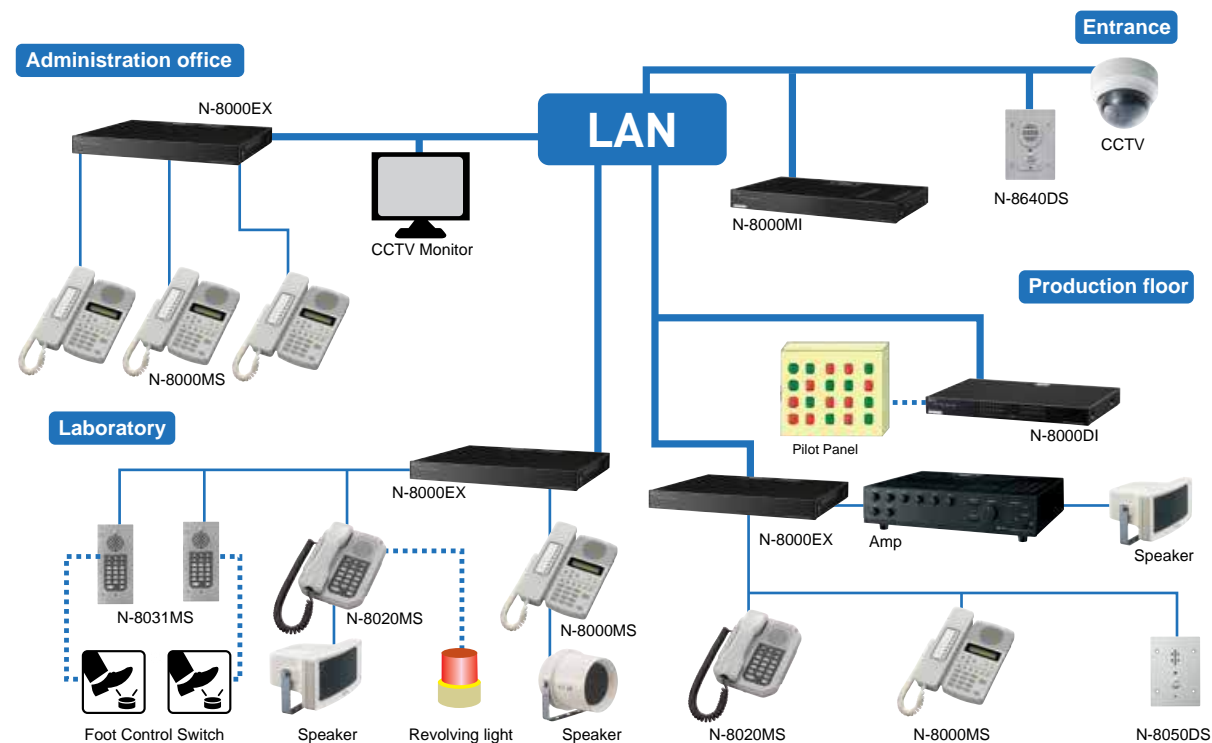


Application Examples

Bank

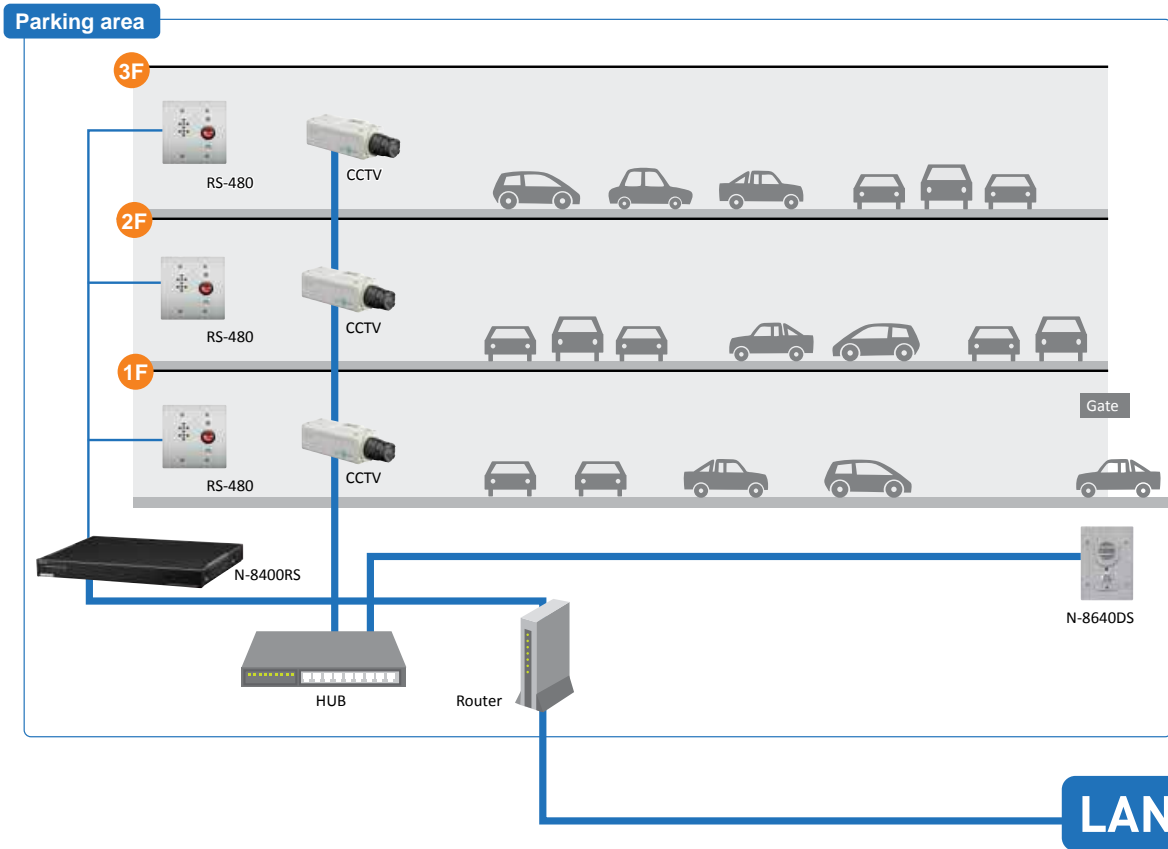


Factory

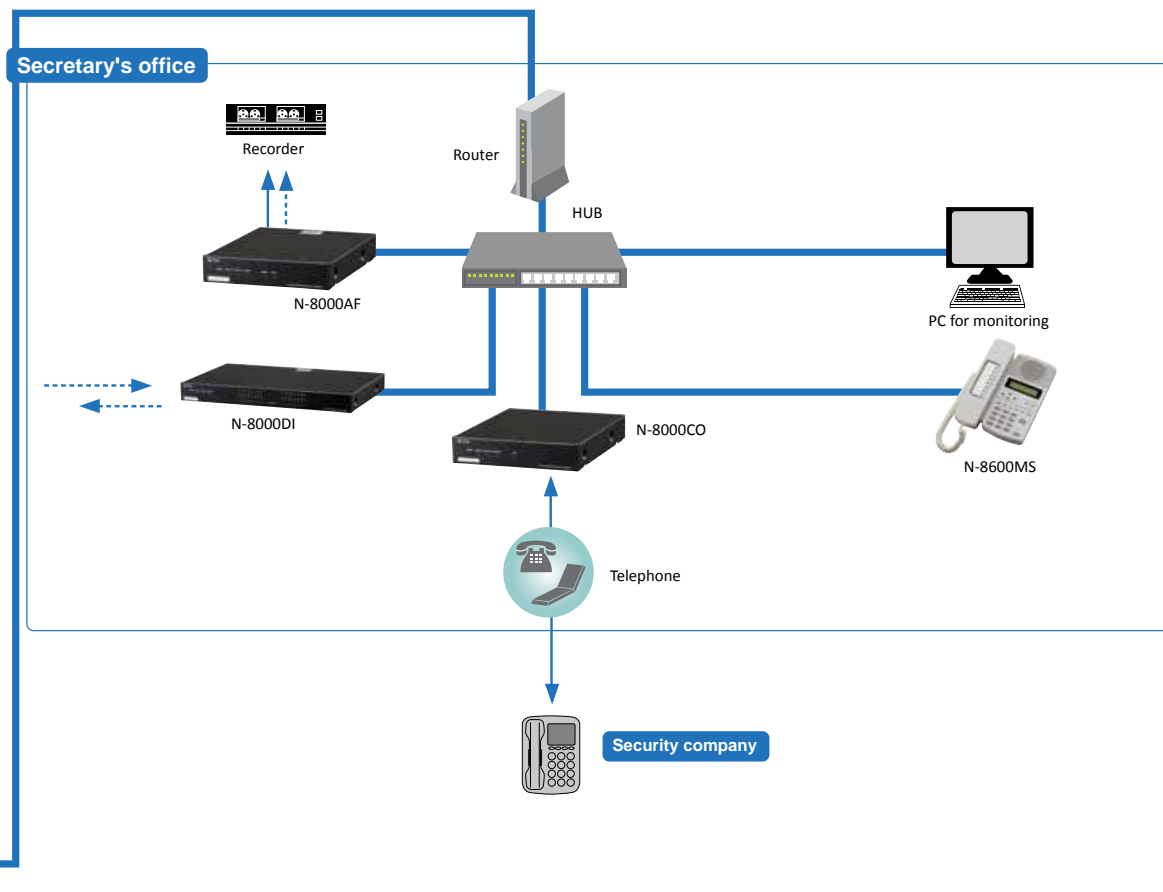


Application Examples

Parking garage

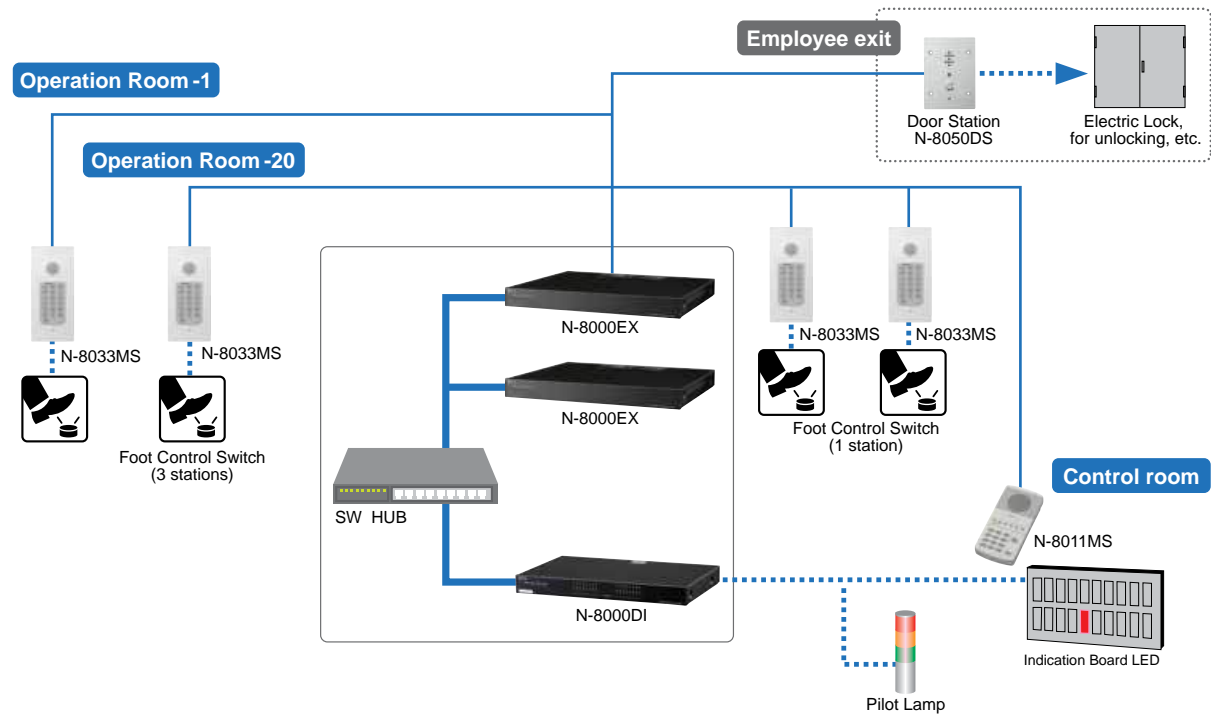


Parking garage



Application Examples

Hospital



Building security, door access, emergency paging, communications, via IP Intercom.



Application Examples

Large-scale communication & Paging system at Airport



Large-scale communication & Paging system at Airport

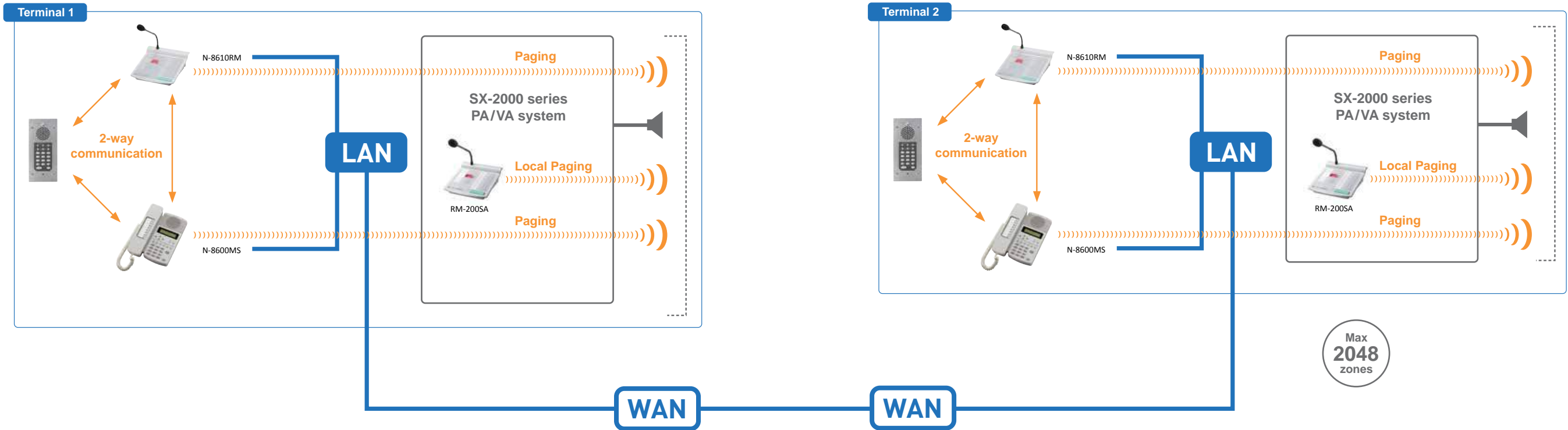


Integration of N-8000 with SX-2000 Audio Management System strengthens system capabilities.

A large system with up to 2048 zones is realized on the IP Network.

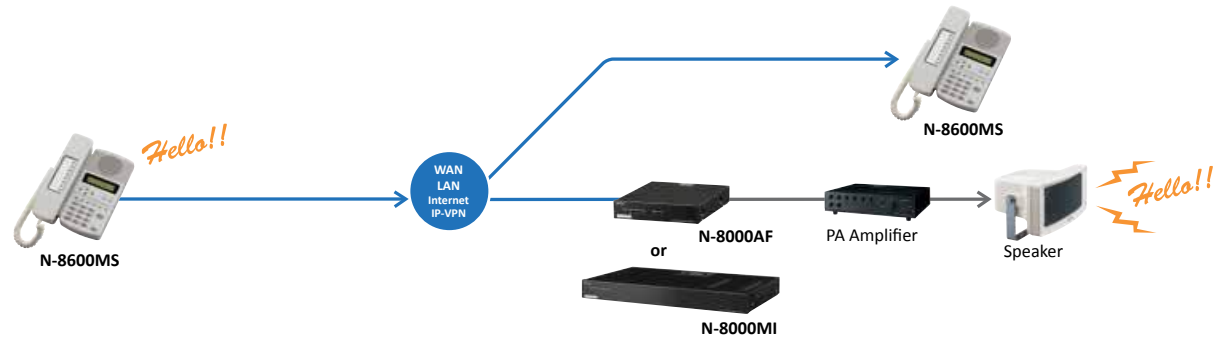
From a remote location, IP Station* can make a paging call to any selected zone(s).

*N-8610RM and N-8600MS.

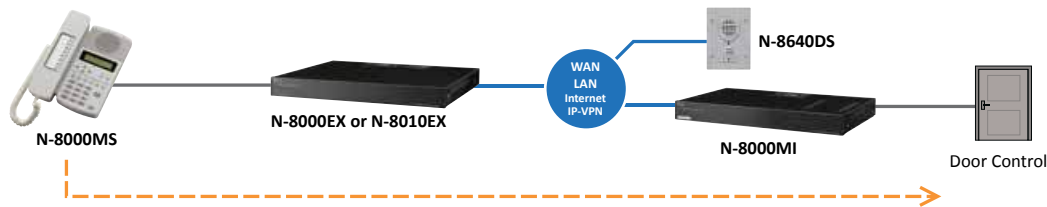


Key Functions

Paging Function Allows the master station as well as external input equipment to initiate paging by PA equipment or the speakers of individual stations. Operators can use the setup software to configure up to 192 paging zones to which paging calls can be made as desired.



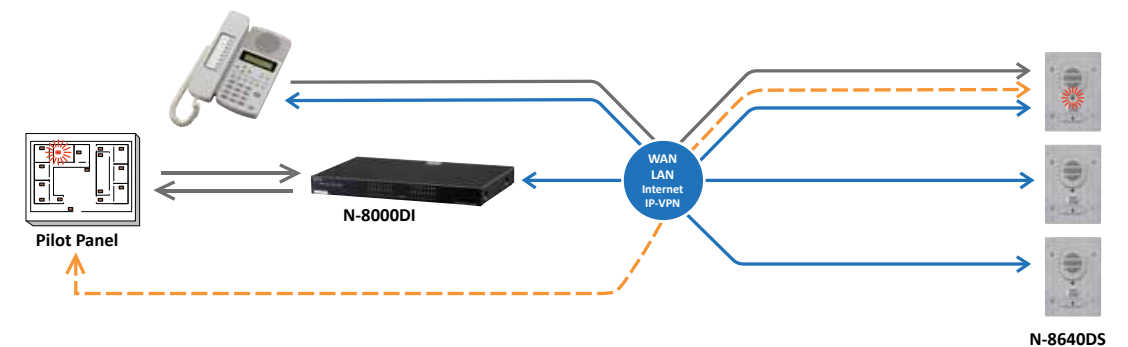
Remote Control of External System Makes it possible to execute door lock control easily through a contact output when the master station is engaged in ongoing conversation with the N-8640DS or N-8050DS Door Station.



Privacy Mode Activated by a control on the RS-140 Switch Panel, blocks paging calls to connected speakers and prevents scan monitoring except for emergency calls.

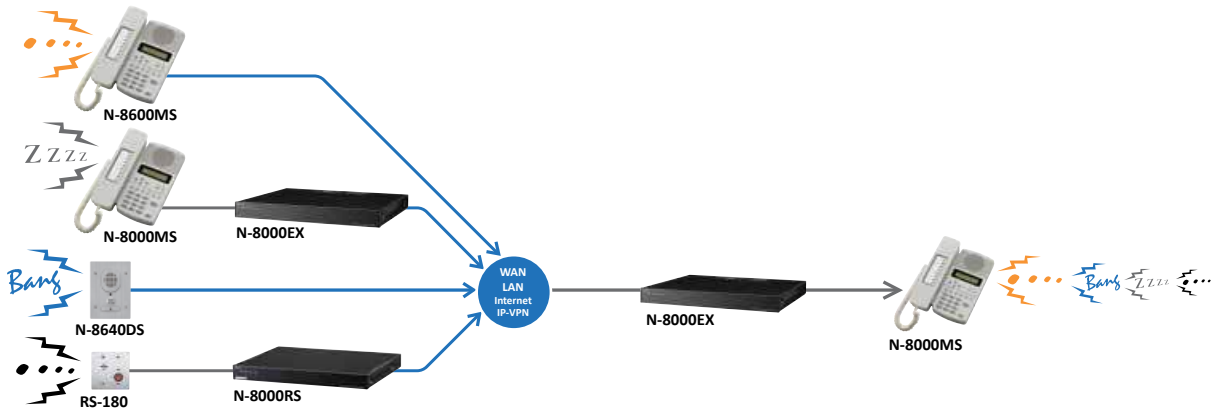


Direct Select Configures an operation panel equipped with indicator lamps and control buttons for the master station. Compatible with other stations, the panel assigns the various contact input and output channels to the master station and substations for purposes of identifying which substation is calling the programmed master station.

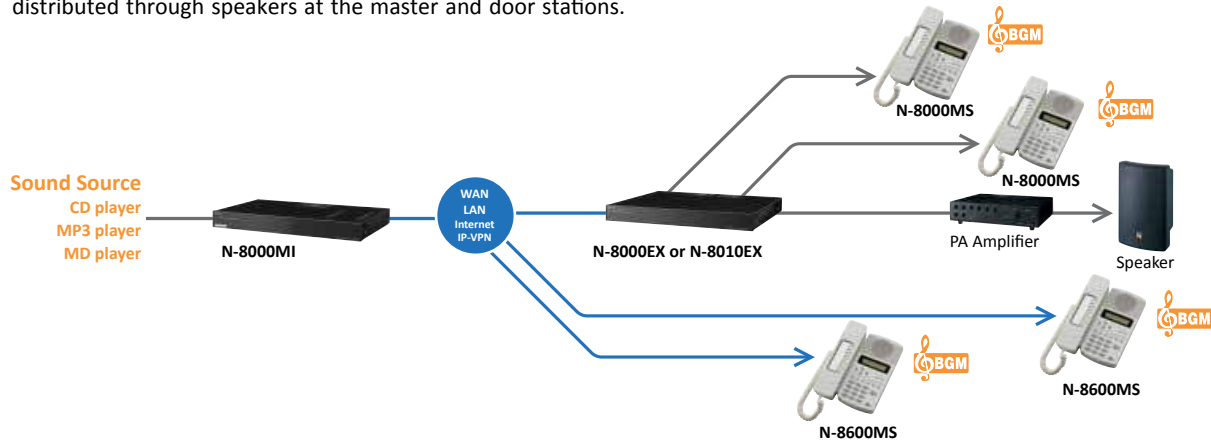


Key Functions

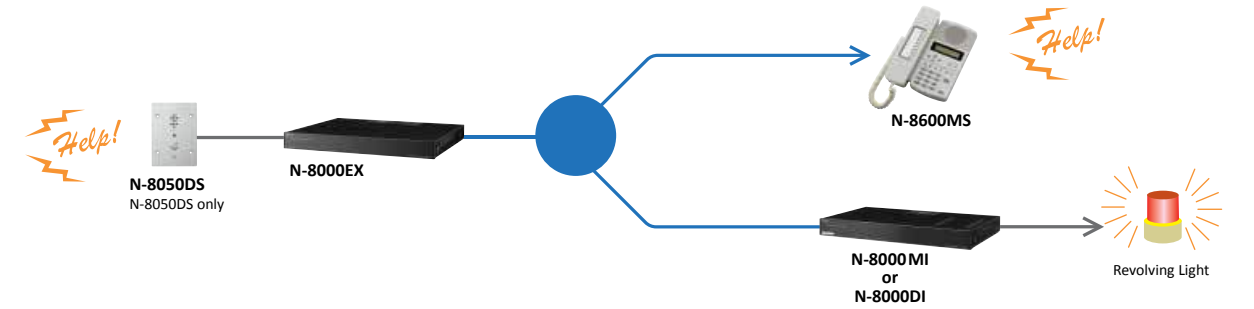
Scan Monitor Enables remote security monitoring by allowing the master station as well as analog telephones and external telephones to audio monitor two or more pre-programmed stations.



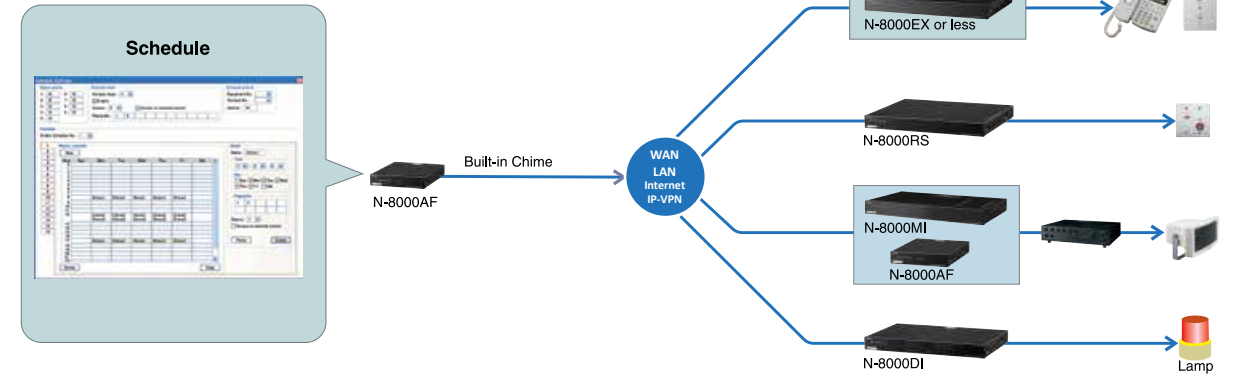
BGM Broadcasting Enables music from any of eight BGM sources connected to the N-8000MI to be distributed through speakers at the master and door stations.



Audio Trigger Sets off an alarm if audio input to a pre-programmed station's microphone fulfils pre-set conditions (detection time or signal level). Examples include calls to the designated master station or contact output generated by another interface unit.

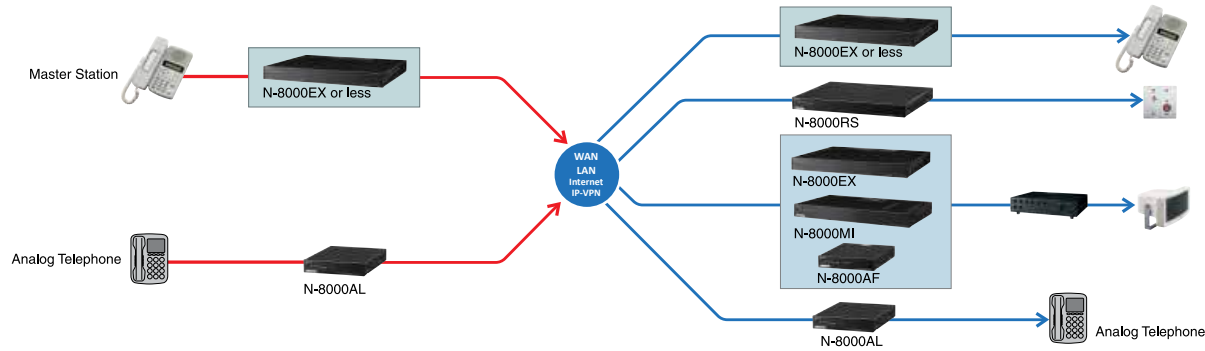


Time Signal Function Enables the built-in chime of the N-8000AF or an externally connected audio source to be broadcast to stations and PA equipment according to a preset schedule.

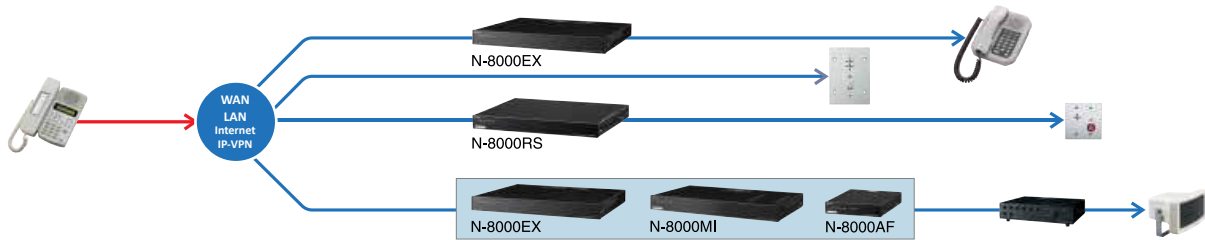


Key Functions

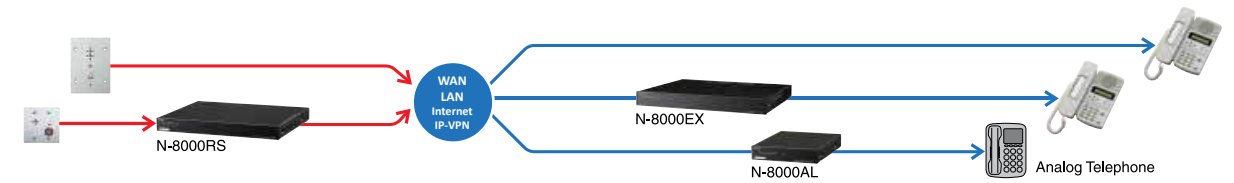
Emergency All-Group Paging A function that suspends ongoing conversations, paging and other operations to allow emergency all-group paging to all stations, PA equipment and lines.



Message Paging Initiates emergency paging with prerecorded emergency messages on the IP Master Stations.



Emergency Call Pushing the call button twice quickly commands the door station and substation to make an emergency call to master stations and analog telephones.



Recording Any conversation between master station/telephones and during a three-party conference, paging messages, and scan monitored audio can be recorded on recording equipment connected to the N-8000AF.



System Software

Setting Software

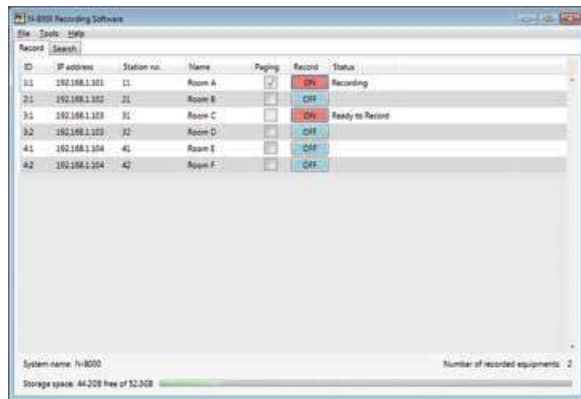
The network settings and the detection of the equipment connected to the local network can be set. The paging system settings, advanced settings of functions for each individual equipment, and settings for the whole system can also be adjusted.



[Minimum System Requirements]
OS: Windows® XP Professional SP2 or later/
Vista Business/7 Professional
CPU: Pentium® 4 2 GHz or faster
Memory: 1 GB or more
Required component: Microsoft® .NET Framework 3.5 SP1 or later, and Microsoft® SQL Server 2005 Express Edition

Recording Software

Telephone calls, paging, and 3-Party Conference on the N-8000 system and recording of the voice during the Scan Monitor can be managed as a wav format. After selecting the recording subjected equipment, recording related settings can be adjusted. It is possible to easily search the recorded audio files and also to export the audio files to an external storage.

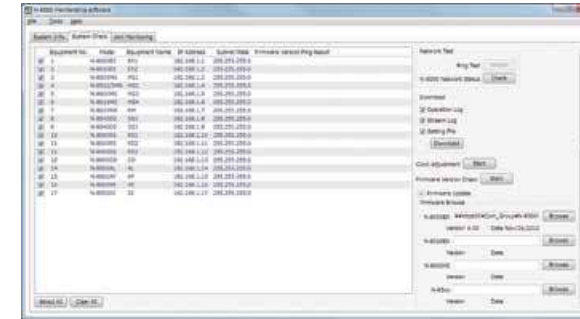


[Minimum System Requirements]
OS: Windows® 7 Professional SP1 (32/64bit)
Screen resolution: Over 1024 x 768 pixels
Required component: Microsoft® .NET Framework 4

[Recommended Specifications]
CPU: Intel® Core® i5-2400 CPU @3.10GHz or faster
Memory: 4 GB or more
Free Hard Disk Space: 100GB or more
(About 2.7 GB is used per sound source at 24-hour continuous recording)

Maintenance Software

This software displays the equipment name, station number, station name, etc. of individual equipment components within the system in the form of an at-a-glance list. System check function is used to confirm equipment firmware versions, update firmware, check connections between a PC and equipment components and between components, download various equipment log and setting files, and perform equipment clock settings. Although the above functions can be done on the browser, use of the N-8000 Maintenance Software permits such functions to be performed simultaneously for multiple components. Moreover, it displays the operation status of individual components in real time. Equipment operation logs can also be automatically saved to a designated file on the PC.



[Minimum System Requirements]
OS: Windows® XP SP2 or later
Required component: Microsoft® .NET Framework 3.5 SP1 or later
Screen resolution: Over 800 x 600 pixels

[Recommended Specifications]
OS: Windows® Vista Business/7 Professional
CPU: Pentium® 4, 2 GHz or faster
Memory: 2 GB or more
Screen resolution: Over 1024 x 768 pixels

*Microsoft, Windows XP, Windows Vista, Windows 7 and .NET Framework are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

*Intel, Pentium and Intel Core are either trademarks of Intel Corporation in the United States and/or other countries.

*By use of different software, it is possible to configure for a large amount of telephone calls. For more information, please contact your nearest dealer.

SDK

TOA Canada is now offering software developers a software development tool for the N-8000 Intercom in the form of an SDK. With the SDK, a software developer will be able to create and/or interface the N-8000 platform into existing or newly developed software. Also supplied with the SDK will be an SDK application example, SDK user manual and the N-8000 protocol.

Please contact TOA Canada to obtain the SDK and support files.
technicalsupport@toacanada.com or 1-800-263-7639.



System Software

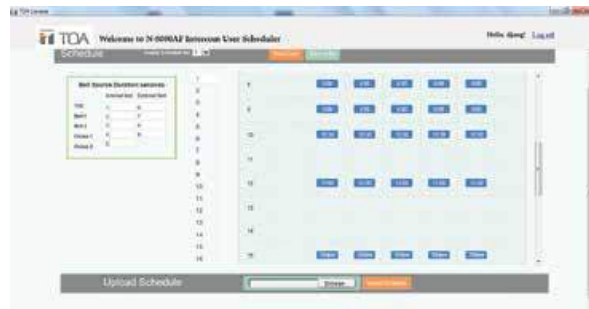
Software Application to Control N-8000AF Scheduler

TOA Canada will soon release a software application to control the N-8000AF Audio Interface Unit. This software gives access to the schedule and bell configuration portion of the existing N-8000 scheduling software. With this software multiple users can be granted access to make changes to the schedule.

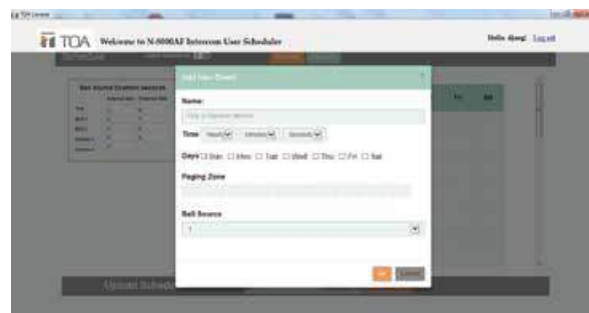
»» Main Page - Top Section



»» Main Page - Bottom Section



»» Add an Event



»» Login Screen



SIP Gateway

The N-8000SG Q SIP Gateway allows you to connect the N-8000 intercom system to a SIP phone system.

Communication can be established from the N-8000 to the SIP phone system and vice versa. This also allows up to 5 conversations at one time with the ability to initiate a page and access the door remote control features.

Interconnection between N-8000 system and SIP system

- Call and transfer from N-8000 to SIP, and vice versa

Digital domain connection

- Audio conversion from N-8000 to SIP and vice versa
- N-8000 uses G.722, fs=16kHz/8kHz, 16bit; SIP uses G.711 u-law

5 speech paths at the same time

- 5 conversations with SIP and N-8000 at the same time
- 5 paging zones from SIP telephone at the same time
- e.g., 2 conversations and 3 paging zones in total at the same time

Additional functions from SIP system

- Paging function from SIP telephone to N-8000 system
- "Door remote control" from SIP telephone to N-8050DS, N-8640/50DS



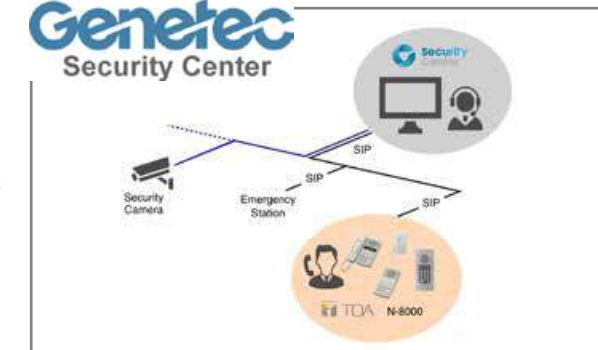
[Minimum System Requirements]

OS: Windows® 7 Professional (32/64bit)


















License: "USB Dongle" required



















TOA Partners with Genetec Security Center



Station Selection Chart

		Desk-top	Optional Bracket	Wall-mount	Applicable Exchanges/ Interfaces
IP Base	Master/Door Stations		WB-200RM		
			YC-280		
			YC-280		
2-Wire Type	Master/Door Stations		YC-280		
			YC-280		
			YC-290		
			YC-280		
					

Continued on next page.

		Desk-top	Optional Bracket	Wall-mount	Applicable Exchanges/ Interfaces
2-core Shielded Type	RS Sub-stations			 RS-150  RS-140  RS-142  RS-144  RS-143	 N-8000RS  N-8010RS
		 N-8410MS	YC-280	 RS-450  RS-442	<div style="border: 2px solid orange; padding: 5px;">  RS-160  RS-170  RS-180  RS-460  RS-470  RS-480 </div>
4-wire Type					

Overview

Applications

Key Functions

Software

Station Selection

Product Specs

Overview

Applications

Key Functions

Software

Station Selection

Product Specs

Specifications

IP Base Station

»» N-8600MS: IP Multi-functional Master Station

- System Allows Full-duplex conversation in Hands-free mode with new stations
- External mic and headset connections for hands free operation
- LCD, speed-dial, Power-over-Ethernet



»» N-8510MS: IP Standard Master Station

- Employs packet audio technology
- Connect to a LAN or WAN network
- Power can supplied to the microphone using a PoE-compatible switching hub



»» N-8610RM: IP Remote Microphone Station

- Employs packet audio technology
- Connect to a LAN or WAN network
- Power can supplied to the microphone using a PoE-compatible switching hub



*0 dB = 1 V

Model	N-8600MS	N-8510MS	N-8610RM
Power Source	Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))		
Power Consumption	Use of the AC adapter (12 V DC): 2.5 W (station only) Use of the PoW (48 V DC): 3W	4.2 W (at rated), 6W (max.)	Use of the AC adapter (12 V DC): 4W (microphone only), 8.5W (when connecting 4 RM-210 Extension units) Use of the PoE (48 V DC): 5.2W (microphone only), 7.5W (when connecting 4 RM-210 Extension units)
Speech Method	Hands-free or handset conversation		Hands-free or handset conversation (Use of goose-neck microphone)
Audio Frequency Range	300 Hz - 7 kHz		
External Speaker Terminal	Maximum output 0.5W, 8Ω, screwless connector (2P)	--	
External Control Input Terminal	--	No-voltage contact input, open voltage: 5V DC short-circuit current: 5mA or less, screwless connector (2 pins)	--
No. of Connectable Expansion	--		Max. 4 units (max. 2 units at PoE power supply)
NETWORK SECTION	Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)	
	Network Protocol	TCP/IP, UDP, ARP, ICMP, TFTP, RTP, IGMP	
	Audio Packet Transmission System	Unicast, Multicast	
	Voice Packet Loss Recovery	Silence insertion	
	Audio Delay Time	80 ms, 320 ms (controllable by the software)	
Finish	Body, handset: ABS resin, gray		ABS resin, blueish-gray
Dimensions	148 (W) x 208 (H) x 70.5 (D) mm (5.8" x 8.2" x 2.8") (excluding a curl cord section)		190 (W) x 76.5 (H) x 215 (D) mm (7.5" x 3" x 8.5") (excluding microphone)
Weight	770 g (1.7 lb)	640 g (1.6 lb)	700 g (1.5 lb)
Accessory	CD (for PC setting, maintenance use) x 1	CD (for PC setting, maintenance use, emergency message creating software) x 1	CD (for PC setting, maintenance use) x 1
Option	Wall mounting bracket: YC-280, AC adapter: AD-1215P		Remote Microphone extension: RM-210, AC adapter: AD-1215P

Optional accessories on page #52.

Specifications

IP Base Station

»» N-8640DS: IP Door Station Q-N8640DS: IP Door Station Weather-resistant

- Chemical resistant for use in industrial/harsh environments.
- 4 contact outputs / one input for use with access control systems and remote dialers.
- External speaker connection 0.5W @ 8 ohms.
- Allows Full-duplex conversation with master stations.
- Q-N8640DS has a rubber boot covering the call button



»» N-8650DS: IP Indoor Station

- Indoor use IP door station employing packet audio technology
- Connected to an IP network (LAN or WAN) permits hands-free conversation
- Equipped with 1 channel of control input, 5 channels of control outputs (including 1 channel of relay control output), and 1 speaker output



»» N-8640SB: IP Door Station Board Unit

- Chemical resistant for use in industrial/harsh environments.
- 4 contact outputs / one input for use with access control systems and remote dialers.
- External speaker connection 0.5W @ 8 ohms.
- Allows Full-duplex conversation with master stations.



*0 dB = 1 V

Model	N-8640DS	Q-N8640DS	N-8650DS	N-8640SB
Power Source	Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))			
Power Consumption	Use of the AC adapter (12 V DC): 3.5 W (station only), Use of the PoW (48 V DC): 5W			
Speech Method	Hands-free conversation			
Audio Frequency Range	300 Hz - 7 kHz			
Control Input	1 channel, no-voltage make contact input, open circuit voltage: 5 V DC, short circuit current: 10 mA or less, unterminated ends			
Control Output	Open collector output, 4 channels, withstand voltage: 30 V DC, control current: Max. 50 mA (4 output 1COMMON), unterminated ends Relay contact output, 1 channel, withstand voltage: 30 V DC, control current: Max. 500 mA, unterminated ends			
External Speaker Terminal	Maximum output 0.5 W, 8 Ω, unterminated ends			
NETWORK SECTION	Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)		
	Network Protocol	TCP/IP, UDP, ARP, ICMP, TFTP, RTP, IGMP		
	Audio Packet Transmission System	Unicast, Multicast		
	Voice Packet Loss Recovery	Silence insertion		
	Audio Delay Time	80 ms, 320 ms (controllable by the software)		
Dust/Water Protection	IP 65 (note that panel edges must be sealed at installation)			--
Finish	Plate: Stainless steel, hairline, Call button: Metal			--
Dimensions	115 (W) x 162 (H) x 58.5 (D) mm (4.5" x 6.4" x 2.3")		117.2(W) x 162(H) x 60(D) mm (4.6" x 6.4" x 2.3")	79 (W) x 134 (H) x 53 (D) mm (3.1" x 5.3" x 2.1")
Weight	780 g (1.7 lb)		400 g (0.8 lb)	350 g (0.8 lb)
Accessory	Box mounting screw (No.6-32UNC x 20) x 4, Box mounting screw (M4 x 20) x 4, Waterproof washer x 4, LAN coupler x 1	--	Box mounting screw (No.6-32UNC x 20) x 4, Box mounting screw (M4 x 20) x 4, LAN coupler x 1	--
Option	AC adapter: AD-1215P; Applicable Box: Wall mount: Wall-mount box YS-13A, Flush Mount: 3-gang electrical box or Back box YC-150			AC adapter: AD-1215P

Optional accessories on page #52.

Specifications

2-Wire Type Station

»»» N-8000MS: Multi-functional Master Station

- Full-Duplex (aka: Duplex) communication is supported by this station
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Handset or hands-free duplex communication



»»» N-8010MS: Standard Master Station

- Full-Duplex (aka: Duplex) communication is supported by this station
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Handset or hands-free duplex communication



»»» N-8011MS: Standard Hands-Free Master Station

- Full-Duplex (aka: Duplex) communication is supported by this station (handset mode only)
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Hands-free duplex communication



»»» N-8020MS: Industrial-use Master Station

- Full-Duplex (aka: Duplex) communication is supported by this station
- Heavy duty dust proof and waterproof construction (IP54 rating)
- External speaker terminal (0.6 W / 8 ohms)



*0 dB = 1 V

Model	N-8000MS	N-8010MS	N-8011MS	N-8020MS
Power Source	48V DC (supplied from the IP network intercom exchange (option))			
Power Consumption	1.8 W (at rated), 2.4W (max.)			
Wiring Method	1 set of twisted pair cable			
Speech Method	Hands-free or handset conversation		Hands-free conversation	Hands-free or handset conversation
Audio Frequency Range	300 Hz – 7 kHz			
Transmission Range	Max. 1500 m (ø0.65 mm, Loop resistance 170 Ω)			
Dial-in Contact Output	--			Open collector output (polarized), Withstand voltage: Max. 30V DC, Control current: Max. 50 mA, screwless connector (2P)
External Speaker Terminal	0.6W, 8Ω, screwless connector (2P)	--		0.6W, 8Ω, screwless connector (2P)
Dust/Water Protection	--			IP54
Finish	Body, Handset: ABS resin, gray		Body: ABS resin, gray	Body, Handset: ABS resin, gray
Dimensions	148 (W) x 208 (H) x 70.5 (D) mm (5.2" x 8.2" x 2.8") (excluding a curl cord section)		92 (W) x 195 (H) x 56.1 (D) mm (3.6" x 7.7" x 2.2")	170 (W) x 220 (H) x 97.8 (D) mm (6.7" x 8.7" x 3.9") (excluding a curl cord section)
Weight	800 g (1.8 lbs)	700 g (1.5 lbs)	400 g (0.9 lbs)	1 kg (2.2 lbs)
Accessory	Connection cord (3m (9.84 ft)) x 1			Rubber cap x 2
Option	Wall mounting bracket: YC-280		Wall mounting bracket: YC-290	Wall mounting bracket: YC-280

Optional accessories on page #52.

Specifications

2-Wire Type Station

»» N-8033MS: Flush Mount Master Station



- Especially for hospitals
- IP-65 rated outdoor in-wall Master Station.
- Chemical resistant for use in industrial/harsh environments.
- One input for use with foot switch dialing.

»» N-8031MS: Flush-Mount Hands-Free Master Station



- Full-Duplex (aka: Duplex) communication is supported by this station (handset mode only)
- Two-wire connection to N-8000EX or N-8010EX Exchange
- Hands-free duplex communication
- External dial inputs (7, 8, 9 and C keys)
- Optional Handset, model RS-191

»» N-8031SB: Hands-Free Master Station Board Unit



- Full-Duplex (aka: Duplex) communication is supported by this station
- N-8031 PCB for custom station applications
- Speaker and microphone included
- External dial inputs (7, 8, 9 and C keys) plus switch matrix connection
- LED Status Indicator output

*0 dB = 1 V

Model	N-8033MS	N-8031MS	N-8031SB
Power Source	48V DC (supplied from the IP network intercom exchange (option))		
Power Consumption	1.8 W (at rated), 2.4 W (max.)		
Wiring Method	1 set of twisted pair cable		Non-polar 1 pair stranded wire system
Speech Method	Hands-free conversation	Hands-free conversation (Handset conversation can be established in conjunction with the RS-191 (option))	
Audio Frequency Range	300 Hz – 7 kHz		
Transmission Range	Max. 1500 m (ø0.65 mm, Loop resistance 170 Ω)		
External Dial Input	No-voltage make contact input, open voltage: 5 V DC, short-circuit current: 1 mA, screwless connector (5 p)		
Dust/Water Protection	IP65*	--	
Resistance to Environment	Chemical Resistant	--	
Finish	Body, Handset: ABS resin, gray	Panel: Stainless steel, hairline	--
Dimensions	115 (W) x 254 (H) x 51 (D) mm (4.5" x 10" x 2.1")		70 (W) x 185 (H) x 20.6 (D) mm (2.6" x 7.3" x 0.8")
Weight	850 g (1.9 lbs)		205 g (0.6 lbs)
Accessory	Box mounting screw (M4 x 35) x 4, Acoustic absorbent x 1, Removable terminal plug (2P, preinstalled on the unit) x 1	Box mounting screw (N..6-32UNC x 18) x4, Box mounting screw (M4 x 25) x 4, Acoustic absorbent x 1, Removable terminal plug (2P, preinstalled on the unit) x 1, Handset jumper (8P, preinstalled on the unit) x 1, Ferrite clamp x 1	Removable terminal plug (2P, pre-installed on the unit) x 1, Handset jumper (8P, preinstalled on the unit) x 1, Ferrite clamp x 1, Hands-free speaker (with connection cord) x 1, Hands-free microphone (with connection cord) x 1
Option	Back Box: YC-841	Flush mount: Back Box: YC-241, Surface mount: Wall-mount box: YC-251, Handset: RS-191	Handset: RS-191

*Note that panel edges must be sealed at installation

Optional accessories on page #52.

Specifications

2-Wire Type Station

»» N-8050DS: Door Station Q-N8050WPB51800**: Door Station

- Full-Duplex (aka: Duplex) communication is supported by this station
- Hands-free duplex communication
- Separate mic and speaker
- Control output (open collector)
- IP-54 rated
- Q-N8050WPB51800 has a rubber boot covering the call button



N-8050DS



Q-N8050WPB51800**

»» N-8050SB: Hands-Free Substation Board Unit

- Full-Duplex (aka: Duplex) communication is supported by this station
- N-8050DS PCB for custom station applications
- Speaker and microphone included
- Control output (open collector)
- Call switch input
- LED Status Indicator output



»» RS-191: Optional Handset



** Special Order Product

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*0 dB = 1 V

Model	N-8050DS	Q-N8050WPB- 51800**	N-8050SB
Power Source	48V DC (supplied from the IP network intercom exchange (option))		
Power Consumption	1.8 W (at rated), 2.4 W (max.)		
Wiring Method	1 set of twisted pair cable	Non-polar 1 pair stranded wire system	
Speech Method	Hands-free conversation		
Audio Frequency Range	300 Hz – 7 kHz		
Transmission Range	Max. 1500 m (ø0.65 mm, Loop resistance 170 Ω)		
Contact Output	Open collector output, withstand voltage: Max. 30V DC, Control current: Max. 50 mA, one shot: can be set from 1 to 9 s, screw terminal (polarized)		
Dust/Water Protection	IP54*		--
Housing Protection	BS EN62262: 2002 IK02 equivalent		--
Resistance to Environment	--	Passed our gas corrosion test and neutral salt spray test	--
Finish	Plate: Stainless steel, hairline, Call button: Metal	Plate: Stainless steel, hairline, Call button: Metal; Circuit board: Silicone sealing agent-coated board	--
Dimensions	115 (W) x 162 (H) x 54 (D) mm (4.5" x 6.4" x 2.1")		67 (W) x 128.3 (H) x 26 (D) mm (2.6" x 5" x 1")
Weight	680 g (1.5 lbs)		100 g (0.2 lbs) (incl. accessories)
Accessory	Box mounting screw (No.6-32UNC x 18) x 4, Box mounting screw (M4 x 25) x 4, Acoustic absorbent (made of felt) x 1	Box mounting screw (No.6-32UNC x 18) x 4, Box mounting screw (M4 x 25) x 4	Hands-free speaker (with connection cord) x 1, Hands-free microphone (with connection cord) x 1
Option	Flush mount: 3-gang electrical box or Back Box: YC-150, Wall mount: Wall-mount box: YS-13A		--

*Note that panel edges must be sealed at installation

** Special Order Product

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Optional accessories on page #52.

Specifications

IP Network Exchange

»» N-8000EX: IP Network Intercom Exchange

- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Sixteen (16) station capacity
- Speech links: 4 internal / 8 external
- Two (2) audio paging outputs (0 dBV)
- Two (2) relay outputs



»» N-8010EX: IP Network Intercom Exchange

- Stations connect to exchange via two-wire twisted pair
- Provides 48 VDC to each station
- Speech links: 1 internal / 2 external
- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Includes rack-mount and wall-mount brackets



*0 dB = 1 V

Model		N-8000EX	N-8010EX
Power Source		120V AC, 50/60Hz	
Power Consumption		50W (at rated), 75W (max.)	
INTERFACE SECTION OR STATION	Speech Link	Internal: 4/External: 8	Internal: 1/External: 2
	Line Capacity	Up to 16 stations	
	Wiring Method	1 set of twisted pair cables	
	Transmission Range	Max. 1500 m (ø0.65 mm, Loop resistance 170 Ω)	
Paging Output		Audio: 2 channels Max. 0dB*, 600Ω, balanced Control: 2 channels, no-voltage make contact output (24V DC/0.5A) Connector: removable terminal block	Station paging only
NETWORK SECTION	Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)	
	Network Protocol	TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP	
	Audio Packet Transmission System	Unicast, Multicast	
	Audio Packet Omission	Silence insertion	
Audio Delay Time		80 ms, 320 ms (Controllable by the software)	
Finish		Pre-coated steel plate, black, 30% gloss	
Dimensions		420 (W) x 44.3 (H) x 356 (D) mm (16.5" x 1.7" x 14")	
Weight		4.1 kg (9 lbs)	4.2 kg (9.3 lbs)
Accessory		AC power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Removable terminal plug (4 pins) x 2, Mini-clamp plug (2 pins) x 20, Plastic foot x 4, Screw for fitting plastic foot x 4, Rack mounting bracket x 2, Screw for rack mounting x 4, Wall mounting bracket x 2, Screw for mounting bracket x 8, Screw for wall mounting x 4	

Specifications

Interface Units

»» N-8000AL: Telephone Interface Unit

- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Single telephone line allowing an analog telephone to be connected.
- Allows any analog telephone to function as a master station.



»» N-8000CO: C/O Interface Unit

- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Analog central office line circuit allowing the stations to make and receive calls to and from the telephone line.



»» SX-200IP: IP Interface Module

- 10BASE-T/100BASE-TX (Automatic-Negotiation)
- Voice sampling frequency of 16 kHz, 8 kHz (controllable on the software); 48 kHz, sample rate is used for SX-2000 system only
- Voice encoding method - Sub-band ADPCM, Cryptosystem
- Voice Packet Loss Recovery - Silence insertion
- Allows for a page to be made from the N-8000 Series Stations (N-8600MS, N-8610RM only) to the SX-2000 Series.



Model	SX-200IP	
NETWORK SECTION	Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)
	Network Protocol	TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP
	Audio Packet Omission	Silence insertion
	Audio Delay Time	80ms, 320ms (Controllable by the software)
Finish	Pre-coated steel plate, black, 30% gloss	
Dimensions	35 (W) x 119.5 (H) x 117.4 (D) mm (1.38" x 4.7" x 7.02")	
Weight	150 g (0.33 lbs)	

*0 dB = 1 V

Model	N-8000AL	N-8000CO	
Power Source	120V AC, 50/60Hz		
Power Consumption	8W (Max.)	7W (Max.)	
INTERFACE (Telephone or C/O)	Number of Lines	1 line	
	Selective Signal Type	DTMF Signal	
	Signal System	--	Compatible with loop start signaling
	Monitor Function	Line loop detection	--
	Control Function	Caller ID Function	--
	Wiring Method	1 pair of twisted pair cable	
NETWORK SECTION	Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)	
	Network Protocol	TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP	
	Audio Packet Transmission System	Unicast, Multicast	
	Audio Packet Omission	Silence insertion	
Audio Delay Time	80 ms, 320 ms (Controllable by the software)		
Finish	Pre-coated steel plate, black, 30% gloss		
Dimensions	420 (W) x 44.3 (H) x 356 (D) mm (16.5" x 1.7" x 14")		
Weight	4.1 kg (9 lbs)	4.2 kg (9.3 lbs)	
Accessory	Power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Mini-clamp plug (2 pins) x 2, Plastic foot x 4, Screw for fitting plastic foot x 4		
Option	Rack mounting bracket: MB-15B-BK, MB-15B-J; Wall mounting bracket: YC-850		

Specifications

Interface Units

»» N-8000MI: Multi Interface Unit

- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- Contact Bridge
- Sixteen contact inputs
- Sixteen relay outputs
- Telephone Interface (E&M type), two channels



»» N-8000DI: Direct Select Unit

- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- 32 contact inputs
- 32 contact outputs
- Events may be activated by contact closures or master station dialing commands.
- Provides control interface to CCTV, door access and other external systems.



»» N-8000AF: Audio Interface Unit

- 10/100BaseTX Ethernet network connection
- Occupies one network node (192 max.)
- One MIC/LINE audio line input
- One audio line output
- Eight contact inputs
- Time Synchronization input
- Built-in timer and chime



Optional accessories on page #52.

*0 dB = 1 V

Model	N-8000MI	N-8000DI	N-8000AF	
Power Source	120V AC, 50/60Hz			
Power Consumption	21W (330 mA) (Max.)	16W (Max.)	7W (Max.)	
Audio Input	Input: 2 inputs (2P/input), Max. 0dB*, under 600Ω, balanced, with a semi-fixed volume for adjustment (0 to -25dB); Control: 2 inputs (2P/input), no-voltage make contact input, open voltage: 12V DC, short-circuit current: 10mA; Removable terminal block (8 pins)	--	1 input (transformer isolated), -58dB* to 0dB*, 2kΩ, balanced (MIC/LINE input, controllable by the software) with input volume control knob, removable terminal block (3 pins)	
Audio Output	Output: 2 outputs (2P/output), Max. 0dB*, under 600Ω, balanced Control: 2 outputs (2P/output), relay contact output, contact capacity: 24V DC/0.5A, Removable terminal block (8 pins)	--	1 output (transformer isolated), 0dB*, 600Ω, balanced, removable terminal block (3 pins)	
Contact Input	16 inputs, no-voltage make contact input, open voltage; 12V DC, short-circuit current: 10mA, removable terminal block (18 pins)	32 inputs, no-voltage make contact input, open voltage: 24V DC, short-circuit current: 5mA or less, removable terminal block (20 pins), (1 common terminal for 4 inputs)	--	
Contact Output	16 outputs, relay contact output, contact capacity: 24V DC/0.5A, removable terminal block (18 pins)	32 outputs, relay contact output, contact capacity: 24V DC/2 – 500mA, removable terminal block (32 pins)	8 outputs, relay contact output, contact capacity: 24V DC/2 – 500mA, removable terminal block (16 pins)	
NETWORK SECTION	Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)		
	Network Protocol	TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP		
	Audio Packet Transmission System	Unicast, Multicast	--	Unicast, Multicast
	Audio Packet Omission	Silence insertion	--	Silence insertion
	Audio Delay Time	80ms, 320ms (Controllable by software)	--	80ms, 320ms (Controllable by software)
Finish	Pre-coated steel plate, black, 30% gloss			
Dimensions	420 (W) x 44.3 (H) x 239.5 (D) mm (16.5" x 1.7" x 9.4")	420 (W) x 44.3 (H) x 267 (D) mm (16.5" x 1.7" x 10.5")	210 (W) x 44.3 (H) x 267 (D) mm (8.3" x 1.7" x 10.5")	
Weight	2.8 kg (6.2 lbs)		1.7 kg (3.7 lbs)	
Accessory	Power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Mini-clamp plug (2 pins) x 10, Removable terminal plug (8 pins) x 2, Removable terminal plug (3 pins) x 2, Removable terminal plug (9 pins) x 4, Plastic foot x 4, Screw for fitting plastic foot x 4, Rack mounting bracket x 2, Screw for rack mounting x 4	Power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Removable terminal plug (10 pins) x 4, Removable terminal plug (16 pins) x 4, Plastic foot x 4, Screw for fitting plastic foot x 4, Rack mounting bracket x 2, Screw for rack mounting bracket x 8, Screw for rack mounting x 4	Power cord (2m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Removable terminal plug (2 pins) x 1, Removable terminal plug (3 pins) x 2, Removable terminal plug (5 pins) x 2, Removable terminal plug (8 pins) x 2, Plastic foot x 4, Screw for fitting plastic foot x 4	
Option	--	Wall mounting bracket: YC-850	Rack mounting bracket: MB-15B-BK, MB-15B-J; Wall mounting bracket: YC-850	

Specifications

2-Core Shielded Cable Type

»» N-8000RS: Sub-station Interface Unit

- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Up to 16 substations connectable using twisted pair shielded cable
- Speech links: 2



»» N-8010RS: Substation Interface Unit

- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Up to 16 substations connectable using twisted pair shielded cable
- Speech links: 1



Model	N-8000RS	N-8010RS
Power Source	120V AC, 50/60Hz	
Power Consumption	35 W (at rated), 45 W (Max.)	26 W (at rated), 32 W (Max.)
INTERFACE SECTION FOR SUB-STATION	Number of Lines	16 lines
	Number of Speech Links	2 links
	Transmission Range	500 m (546.81 yd)/ø0.5 mm (AWG24, 800 m (874.89 yd)/ø0.65 mm (AWG21), 1300 m (1421.7 yd) ø0.9 mm (AWG19)
	Wiring Method	Two-core shielded cable
NETWORK SECTION	Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)
	Network Protocol	TCP/IP, UDP, ARP, ICMP, TTTP, RTP, IGMP
	Audio Packet Transmission System	Unicast, Multicast
	Voice Packet Loss Recovery	Silence insertion
	Audio Delay Time	80 ms, 320 ms (controllable by the software)
Finish	Pre-coated steel plate, black, 30% gloss	
Dimensions	420 (W) x 44.3 (H) x 325.5 (D) mm (16.54" x 1.74" x 12.81")	117.2 (W) x 162 (H) x 60 (D) mm (4.6" x 6.4" x 2.3")
Weight	3.9 kg (8.6 lb)	400 g (0.8 lb)
Accessory	Power cord (2 m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Removable terminal plug (3P) x 16, Plastic foot x 4, Screw for fitting plastic foot x 4, Rack mounting bracket x 2, Screw for mounting bracket x 8, Screw for rack mounting x 4	
Option	Wall mounting bracket: YC-850	

Specifications

2-Core Shielded Cable Type

»» RS-180: Sub-station (Emergency use)

- Heavy-duty brushed stainless steel faceplate, #11 Gauge.
- Vandal resistant call button and speaker plate.
- Red Call Assurance LED for ADA-compliance.
- Weather resistant conformal printed circuit board coating.



»» RS-170: Sub-station (Outdoor vandal-resistant type)

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate, #11 Gauge.
- Vandal resistant call button and speaker plate.
- May be programmed to communicate with a single master station.
- Weather resistant conformal printed circuit board coating.



»» RS-160: Sub-station (Indoor vandal-resistant type)

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate, #11 Gauge.
- Vandal resistant call button and speaker plate.
- May be programmed to communicate with a single master station.



»» RS-150: Sub-station (Indoor type)

- Provides half-duplex communication.
- Hairline brushed stainless steel faceplate, #14 Gauge.
- Connects to N-8000RS/N-8010RS.
- May be programmed to communicate with a single master station.



»» Q-RS180BZ: Sub-station (ASA-Compliant emergency outdoor type)

- ADA compliant with Braille labeling
- Large easy-access mushroom button
- Contact output for use with emergency lighting or access control systems.
- Works with N-8000RS & N-8010RS exchanges using shielded twisted pair connection.



Model	RS-180	Q-RS180BZ	RS-170	RS-160	RS-150
Rated Impedance	625 Ω (1 W/25 V)				
Internal Speaker	4 cm cone-type				
Wiring	Two-core shielded cable				
Transmission Range	0.5 km (546 yd)/ø0.5 mm (AWG24); 0.8 km (874 yd)/ø0.65 mm (AWG22); 1.3 km (1421 yd)/ø0.9 mm (AWG19)				
Control Output	Open collector output: 30 V DC, 30 mA (The open collector output is kept turned on till the conversation is finished after the call button was pressed.)		--		
Finish	Panel: Stainless steel, hairline, Call button: Metal, Printed circuit board: Weather-resistant coating	Panel: Stainless steel, hairline Braille: "EMERGENCY PUSH FOR HELP" "FLASHING: CALL PLACED STEADY: CALL ANSWERED" Call button: Metal (RED mushroom); Printed circuit board: Weather-resistant coating	Panel: Stainless steel, hairline, Call button: Metal, Printed circuit board: Weather-resistant coating	Panel: Stainless steel, hairline, Call button: Metal	Panel: Stainless steel, hairline, Call button: Resin
Dimensions	120 (W) x 120 (H) x 58.5 (D) mm (4.72" x 4.72" x 2.3")	115 (W) x 162 (H) x 66.8 (D) mm (4.53" x 6.38" x 2.63")	120 (W) x 120 (H) x 57.5 (D) mm (4.72" x 4.72" x 2.26")		120 (W) x 120 (H) x 48.5 (D) mm (4.72" x 4.72" x 1.91")
Weight	570 g (1.26 lb)	700 g (1.54 lb)	540 g (1.19 lb)		410 g (0.90 lb)
Accessory	Box mounting screw (No.6-32UNC x 8) x 4, Box mounting screw (M4 x 25) x 4				
Option	For flush mount: 2-gang electrical box: YC-302 For surface mount: Indoor wall-mount box: YC-822 Outdoor wall-mount box: YC-823	3-gang electrical box: YC-150 or YS-13A	For flush mount: 2-gang electrical box: YC-302 For surface mount: Indoor wall-mount box: YC-822 Outdoor wall-mount box: YC-823	For flush mount: 2-gang electrical box: YC-302 For surface mount: Indoor wall-mount box: YC-822	

Specifications

2-Core Shielded Cable Type

»» RS-144: IP Intercom Switch Panel

- May be programmed for dual-priority call or call into two different master stations.
- Connects to N-8000RS & N-8010RS exchanges via shielded twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-141 handset may also be used.



»» RS-143: IP Intercom Switch Panel

- Connects to N-8000RS & N-8010RS exchanges via shielded twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-141 handset may also be used.



»» RS-140: Switch Panel

- Call button and privacy button with LED Indicators.
- Supports two-way (half-duplex) communication.
- Prevents incoming calls, pages & scans by pushing the privacy switch.
- Private, handset conversation is available using the RS-141.
- Connects to N-8000RS/8010RS using twisted two-core, shielded cable.



»» RS-142: IP Intercom Switch Board

- Allows configuration with custom housing and switch.
- May be programmed for dual-priority call or call into two different master stations.
- Connects to N-8000RS & N-8010RS exchanges via shielded twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-141 handset may also be used two-core, shielded cable.



Model	RS-144	RS-143	RS-140
Call Button	Momentary (EMERGENCY, NORMAL)	Momentary	
Privacy Switch		--	Latching
Wiring	Two-core shielded cable		
Transmission Range	0.5 km (546 yd)/ø0.5 mm (AWG24); 0.8 km (874 yd)/ø0.65 mm (AWG22); 1.3 km (1421 yd)/ø0.9 mm (AWG19)		
Finish	Plate: Stainless steel, hairline Call button (emergency): resin, red Call button (normal): resin, white	Plate: Stainless steel, hairline Call button (normal): resin, red	Plate: Stainless steel, hairline; Call button: resin, red Privacy button (normal): resin, white
Dimensions	70.1 (W) x 115.1 (H) x 28.6 (D) mm (2.76" x 4.53" x 1.13")		
Weight	80 g (0.18 lb)		
Accessory	Mounting bracket x 1, bracket mounting screw (No.6-32UNC x 18) x 2, Box mounting screw (M4 x 30) x 2, Box mounting screw (No.6-32UNC x 30) x 2		
Option	Optional Handset: RS-141		

Model	RS-142
Call Switch Wiring	Wiring: 4 cables (for 2 momentary switches)
Wiring	Two-core shielded cable
Transmission Range	0.5 km (546 yd)/ø0.5 mm (AWG24); 0.8 km (874 yd)/ø0.65 mm (AWG22); 1.3 km (1421 yd)/ø0.9 mm (AWG19)
Weight	30 g (0.07 lb)
Option	Optional Handset: RS-141

»» RS-141: Optional Handset



Optional accessories on page #52.

Specifications

4-Wire Type

» N-8400RS: Sub-station Interface Unit

- 10/100BaseTX Ethernet network connection
- Occupies one network node (191 max - at least one node must be a master station or N-8000/8010EX exchange)
- Up to 16 substations connectable using 2 sets of twisted pair cables
- Speech links: Internal 1, External 2



Model	N-8400RS	
Power Source	120V AC, 50/60Hz	
Power Consumption	35 W (at rated), 45 W (Max.)	
INTERFACE SECTION FOR SUB-STATION	Number of Lines	16 lines
	Number of Speech Links	Internal 1, External 2
	Transmission Range	1000 m (1093.61 yd)/ø0.5 mm (AWG24), 1500 m (1640.42 yd)/ ø0.65 mm (AWG21), 2000 m (2187.23 yd) ø0.9 mm (AWG19)
	Wiring Method	2 sets of twisted pair cables
NETWORK SECTION	Network I/F	10BASE-T/100BASE-TX (Automatic-Negotiation)
	Network Protocol	TCP/IP, UDP, ARP, ICMP, TFTP, RTP, IGMP
	Audio Packet Transmission System	Unicast, Multicast
	Voice Packet Loss Recovery	Silence insertion
	Audio Delay Time	80 ms, 320 ms (controllable by the software)
Finish	Pre-coated steel plate, black, 30% gloss	
Dimensions	420 (W) x 44.3 (H) x 325.5 (D) mm (16.54" x 1.74" x 12.81")	
Weight	4 kg (8.82 lb)	
Accessory	Power cord (2 m (6.56 ft)) x 1, CD (for PC setting, maintenance use) x 1, Removable terminal plug (4P) x 16, Plastic foot x 4, Screw for fitting plastic foot x4, Rack mounting bracket x 2, Screw for mounting bracket x8, Screw for rack mounting x 4	
Option	Wall mounting bracket: YC-850	

Optional accessories on page #52.

» N-8410RS: Analog Standard Master Station

- Low-cost analog Master Station operates on 4-wire connection with N-8400RS.
- Complete system can be configured on one exchange with RS-4xx substations.



Model	N-8410MS
Power Source	24 V DC (supplied from the sub station interface unit N-8400RS)
Current Consumption	1.8 W (at rated), 2.4W (max.)
Wiring Method	1 set of twisted pair cable
Speech Method	Hands-free or handset conversation
Audio Frequency Range	300 Hz – 7 kHz
Transmission Range	1 km (1093 yd)/ø0.5mm (AWG24); 1.5 km (1640 yd)/ø0.65mm (AWG22); 2 km (2187 yd)/ø0.9 mm (AWG19)
Finish	Body, Handset: ABS resin, gray
Dimensions	148 (W) x 208 (H) x 70.5 (D) mm (5.83" x 8.19" x 2.78")
Weight	720 g (1.59 lb)
Accessory	Connection cord (3m (9.84 ft)) x 1
Option	Wall mounting bracket: YC-280

» RS-480VSET: Sub-station (Video Intercom)

- Colour video camera
- Indoor and outdoor use
- Includes 1 of each:
RS-480V + IF-480V



Model	RS-480VSET [RS-480V]
Power Source	Supplied from IF-480V
Call Button	Momentary (Emergency call: Press twice within 400 ms)
Rated Input	1W
Internal Speaker	Cone-type
Internal Microphone	Electret condenser type
Wiring	CAT5 cable, RJ45 female connector attached
Control Output	3,000ft (AWG24)
Finish	Panel: Stainless steel, hairline Call button: Metal, silver
Dimensions	120(W)x120(H)x50.5(D)mm 4.72"x4.72"x1.9"
Weight	605 g (1.3 lb)
Accessory	Box mounting screw (No.6-32UNC x 18) x 4 Machine screw (M4 x 25) x 4
Option	2-gang electrical box: YC-302

Model	RS-480VSET [IF-480V]
Power Source	Supplied AC adapter must be used
Indicator	Power LED (green), Lock LED (blue), Colour LED (orange)
Connectors	RJ45 (to RS-480V), Removable terminal block 4P (to N-8400RS), BNC (video out) x 2
Finish	Anodized aluminum, black
Dimensions	105 (W)x 33 (H)x 127 (D) mm (4.13"x1.3"x5")
Weight	285 g (0.6 lb)
Accessory	AC adapter
Option	Rack mount plate: MB-480V4 (up to four IF-480Vs are mountable in 1 unit)

» MB-480V4: Optional IF-480V Rack Mounting Panel

- Up to 4 IF-480V are mountable in 1 rack unit.



Specifications

4-Wire Type

»» RS-480: Sub-station (Emergency use)

- Provides half-duplex communication.
- Dust proof and waterproof construction (IP54 rating).
- Heavy-duty brushed stainless steel faceplate.
- Red vandal resistant call button.
- Control output - open collector type for external relay control.
- Weather resistant conformal printed circuit board coating.
- Built-in electret condenser microphone.



»» RS-470: Sub-station (Outdoor vandal-resistant type)

- Provides half-duplex communication.
- Dust proof and waterproof construction (IP54 rating).
- Heavy-duty brushed stainless steel faceplate.
- Vandal resistant call button.
- Weather resistant conformal printed circuit board coating.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.



»» RS-460: Sub-station (Indoor vandal-resistant type)

- Provides half-duplex communication.
- Heavy-duty brushed stainless steel faceplate.
- Vandal resistant call button and speaker plate.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.



»» RS-450: Sub-station (Indoor type)

- Provides half-duplex communication.
- Hairline brushed stainless steel faceplate.
- Built-in electret condenser microphone.
- Connects to N-8400RS using two twisted pair cable.



»» RS-442: IP Intercom Switch Board

- Allows configuration with custom housing and switch.
- May be programmed for dual-priority call or call into two different master stations.
- Switch board to make custom sub-station interface
- Allows for three call in switches
- Connects to N-8400RS Sub-station interface unit via twisted pair wire and 25V speaker for half-duplex communication with assigned master station.
- Optional RS-481 handset may also be used



Model	RS-480	RS-470	RS-460	RS-450	RS-442
Call Button	Momentary (Emergency call: Press twice within 400 ms)				Call Button Wiring: 6 cables (for 3 momentary switches)
Rated Input	1W				
Internal Speaker	Cone-type				--
Internal Microphone	Electret condenser type				
Wiring	Twisted pair cables (2 pairs)				
Transmission Range	1 km (1093 yd)/ø0.5 mm (AWG24); 1.5 km (1640 yd)/ø0.65 mm (AWG22); 2 km (2187 yd)/ø0.9 mm (AWG19)				
Control Output	Open collector, Maximum controlled voltage: 30 V DC; Control current: 30 mA	--			Open collector, Maximum controlled voltage: 30 V DC; Control current: 30 mA
Dust/Water Protection	IP54		--		
Finish	Panel: Stainless steel, hairline; Call button: Metal, silver; Printed circuit board: Weather-resistant coating	Panel: Stainless steel, hairline; Call button: Metal, silver	Panel: Stainless steel, hairline; Call button: Resin, black	--	
Dimensions	120(W) x 120(H) x 50.5(D)mm (4.72" x 4.72" x 1.9")	120 (W) x 120 (H) x 49.5 (D) mm (4.72" x 4.72" x 1.9")		120(W) x 120(H) x 41.5(D)mm (4.72" x 4.72" x 1.6")	--
Weight	575 g (1.27 lb)	550 g (1.21 lb)	540 g (1.19 lb)	510 g (1.12 lb)	140 g (0.31 lb)
Accessory	Box mounting screw (No.6-32UNC x 8) x 4, Box mounting screw (M4 x 25) x 4				--
Option	For flush mount: 2-gang electrical box: YC-302 For surface-mount: Indoor wall-mount box: YC-822 Outdoor wall-mount box: YC-823		For flush mount: 2-gang electrical box: YC-302 For surface-mount: Indoor wall-mount box: YC-822		Handset: RS-481

»» RS-481: Optional Handset



- Two-way, half-duplex communication using any 25V wall/ceiling speaker
- Prevents incoming calls by pushing a privacy switch

Optional Accessories

»» YC-850: Wall-Mount Bracket

- Designed to mount N-8000RS, N-8010RS, N-8400RS, N-8000DI, N-8000AF, N-8000AL and N-8000CO on a wall.
- Finish: Surface-treated steel plate, black, 30% gloss
- Dimensions: 45.1 (W) x 220 (H) x 10 (D) mm (1.78" x 8.66" x 0.39")



»» YC-280: Wall-Mount Bracket

- Designed to mount N-8000MS, N-8010MS, N-8020MS, N-8410MS, N-8510MS and N-8600MS on a wall.
- Finish: Surface-treated steel plate, gray, paint
- Dimensions: 100 (W) x 140 (H) x 31.8 (D) mm (3.94" x 5.51" x 1.25")



»» YC-290: Wall-Mount Bracket

- Designed to mount N-8011MS on a wall.
- Finish: Surface-treated steel plate, gray, paint
- Dimensions: 64 (W) x 131.5 (H) x 31.8 (D) mm (2.52" x 5.18" x 1.25")



»» YC-251: Surface-Mount Back Box

- Designed to mount N-8031MS on a wall.
- Finish: Surface-treated steel plate, white
- Dimensions: 124 (W) x 258.5 (H) x 50.5 (D) mm (4.88" x 10.16" x 1.99")



»» YC-241: Flush-Mounted Back Box

- Designed to surface-mount N-8031MS on a wall.
- Finish: Coloured chrome painting
- Dimensions: 276 (W) x 119 (H) x 67 (D) mm (10.87" x 4.69" x 2.64")



»» YC-150: Flush-Mount Back Box

- Designed to flush-mount N-8050DS and N-8640DS on a wall.
- Finish: Zinc-plating
- Dimensions: 184 (W) x 119 (H) x 57 (D) mm (7.24" x 4.69" x 2.24")



»» YC-841: Back Box

- Designed to flush-mount N-8033MS on a wall.
- Finish: Surface-treated steel plate, white
- Dimensions: 119 (W) x 258 (H) x 57 (D) mm (4.69" x 10.16" x 2.24")



»» YS-13A: Surface-Mount Back Box

- Designed to surface-mount N-8050DS and N-8640DS on a wall.
- Finish: Zinc-plating
- Dimensions: 163.5 (W) x 116.5 (H) x 55 (D) mm (6.44" x 4.59" x 2.17")



Optional Accessories

»» YC-822: Indoor Wall-Mount Bracket



- Designed to mount RS-150, RS-160, RS-170, RS-180, RS-450, RS-460, RS-470 and RS-480 on a wall.
- Finish: Surface-treated steel plate, white
- Dimensions: 124 (W) x 124 (H) x 61 (D) mm (4.88" x 4.88" x 2.4")

»» YC-302: 2-Gang Electrical Box



- Designed to mount RS-150, RS-160, RS-170, RS-180, RS-450, RS-460, RS-470 and RS-480 on a wall.
- Finish: SPHT, MFZn4 (glazed chromate)
- Dimensions:
Outlet box: 102 (W) x 102 (H) x 44 (D) mm (4.02"x4.02"x1.73")
Cover: 106 (W) x 106 (H) x 13 (D) mm (4.17" x 4.17" x 0.51")

»» YC-823: Outdoor Wall-Mount Box



- Designed to mount RS-170, RS-180, RS-470 and RS-480 on a wall.
- Finish: Stainless plate, off-white
- Dimensions: 124 (W) x 124 (H) x 62 (D) mm (4.88" x 4.88" x 2.44")

»» AD-1215P: AC Adapter



- The AD-1215P is an AC adapter to operate the IP Station on AC.

»» MB-15B-BK: Half Width Blank Panel



- Rack mounting bracket kit for one N-8000/AG/AL/CO (1 RU)
- Mount a one-unit size component that is 210 mm (8.27") in width in a component rack.
- Finish: Black

»» MB-15B-J: Rack Joint Bracket



- Rack mounting bracket kit for two N-8000/AG/AL/CO (1 RU)
- Side-by-side connection of two one-unit size components that are 210 mm (8.27") in width in a component rack.
- Finish: Black

»» Q-N8000LC: N-8000RS Adapter



- Conversion adapter for N-8000RS or N-8010RS.
- Select between speaker, RS station or line level
- Dimensions: 69 (W) x 39 (H) x 28 (D) mm (2.72" x 1.54" x 2.17") (Not including output connectors)

»» E-7000TB: Terminal Board Unit



- Rack mountable terminal board designed exclusively for use with the N-8000 Packet Intercom System (IP network compatible intercom). Up to 40 stations can be connected to the E-7000TB.
- Finish: Panel: Surface-treated steel plate, black, 30% gloss
- Dimensions: 482 (W) x 132.6 (H) x 108.8 (D) mm (18.98" x 5.22" x 4.28")

Index

N-SP80 Product Code / Section

N-SP80 SIP Intercom System - Overview	3
N-SP80 SIP Intercom System - Applications	4/5
N-SP80 SIP Intercom System - Product Features	6/7
N-SP80 SIP Intercom System - Key Benefits	9/10
N-SP80 SIP Intercom System - System Examples	12/13

Page

N-SP80 Product Code / Section

N-SP80 SIP Intercom System - Commercial Building	14
N-SP80 SIP Intercom System - School	14
N-SP80 SIP Intercom System - Specifications	15
N-SP80 SIP Intercom System - Specs & Options	16

Page

N-8000 Product Code / Section

AD-1215P: AC Adapter	72
Application Examples	22
Application Examples - School	23
Application Examples - Bank	24
Application Examples - Factory	25
Application Examples - Parking Garage	26/27
Application Examples - Hospital	28
Application Examples - Airport	30/31
E-7000TB: Terminal Board Unit	73
Key Functions	32
Key Functions - Audio Trigger	35
Key Functions - BGM Broadcasting	34
Key Functions - Direct Select	33
Key Functions - Emergency All-group Paging	36
Key Functions - Emergency Call	37
Key Functions - Message Paging	36
Key Functions - Paging	32
Key Functions - Privacy Mode	33
Key Functions - Recording	37
Key Functions - Remote Control of External System	34
Key Functions - Scan Monitor	34
Key Functions - Time Signal	35
MB-15B-BK: Half Width Blank Panel	73
MB-15B-J: Rack Joint Bracket	73
MB-480V4: Optional IF-480V Rack Mounting Panel	67
N-8000 Features & Functions	18/19
N-8000 System Overview	20/21
N-8000AF: Audio Interface Unit	58/59
N-8000AL: Telephone Interface Unit	56/57
N-8000CO: C/O Interface Unit	56/57
N-8000DI: Direct Select Unit	58/59
N-8000EX: IP Network Intercom Exchange	54/55
N-8000MI: Multi Interface Unit	58/59
N-8000MS: Multifunctional Master Station	48/49
N-8000RS: Sub-station Interface Unit	60/61
N-8010EX: IP Network Intercom Exchange	54/55
N-8010MS: Standard Master Station	48/49
N-8010RS: Substation Interface Unit	60/61
N-8011MS: Standard Hands-free Master Station	48/49
N-8020MS: Industrial-use Master Station	48/49
N-8031MS: Flush Mount Hands-free Master Station	50/51
N-8031SB: Hands-free Master Station Board Unit	50/51
N-8033MS: Flush Mount Master Station	50/51
N-8050DS: Door Station	52/53
N-8050SB: Hands-free Substation Board Unit	52/53
N-8400RS: Sub-station Interface Unit	66
N-8410RS: Analog Standard Master Station	66
N-8510MS: IP Standard Master Station	44/45
N-8600MS: IP Multifunctional Master Station	44/45

Page

N-8000 Product Code / Section

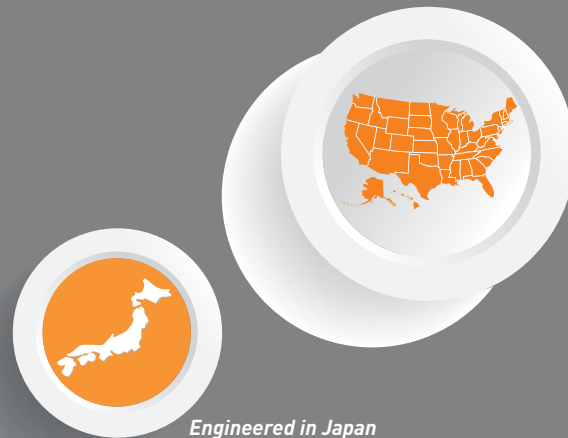
N-8610RM: IP Remote Microphone Station	44/45
N-8640DS: IP Door Station	46/47
N-8640SB: IP Door Station Board Unit	46/47
N-8650DS: IP Indoor Station	46/47
Optional Accessories	72
Q-N8000LC: N-8000RS Adapter	73
Q-N8050WPB51800** : Door Station	52/53
Q-N8640DS: IP Door Station Weather-resistant	46/47
Q-RS180BZ: Sub-station (ASA-Compliant emergency outdoor type)	62/63
RS-140: Switch Panel	64/65
RS-141: Optional Handset	64/65
RS-142: IP Intercom Switch Board	64/65
RS-143: IP Intercom Switch Panel	64/65
RS-144: IP Intercom Switch Panel	64/65
RS-150: Sub-station (Indoor type)	62/63
RS-160: Sub-station (Indoor vandal-resistant type)	62/63
RS-170: Sub-station (Outdoor vandal-resistant type)	62/63
RS-180: Sub-station (Emergency Use)	62/63
RS-191: Optional Handset	56/57
RS-442: IP Intercom Switch Board	68/69
RS-450: Sub-station (Indoor type)	68/69
RS-460: Sub-station (Indoor vandal-resistant type)	68/69
RS-470: Sub-station (Outdoor vandal-resistant type)	68/69
RS-480: Sub-station (Emergency use)	68/69
RS-480VSET: Sub-station (Video Intercom)	66
RS-481: Optional Handset	69
Station Selection Chart	42/43
SX-200IP: IP Interface Module	56/57
System Software	38
System Software - AF Scheduler	40
System Software - Maintenance	39
System Software - SDK	39
System Software - SIP Gateway	41
System Specifications	21
YC-150: Flush-Mount Back Box	71
YC-241: Flush-Mounted Back Box	71
YC-251: Surface-Mount Back Box	70
YC-280: Wall-Mount Bracket	70
YC-290: Wall-Mount Bracket	70
YC-302: 2-Gang Electrical Box	72
YC-822: Indoor Wall-Mount Bracket	72
YC-823: Outdoor Wall-Mount Box	72
YC-841: Back Box	71
YC-850: Wall-Mount Bracket	70
YS-13A: Surface-Mount Back Box	71

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