Sounding bells, stamping feet, screaming children – yet still be notified clearly and in good time of every danger.
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. Users can select between two communication modes according to their needs: Master-to-Master station communication for duplex conversation at factories, hospitals and various other facilities; or Master-to-Sub station communication for use by institutions such as schools or prisons. The system frequency response extends to 7 kHz, enabling reliable transmission of a full range of emergency communications, including clear, easily understandable PA announcements.

The N-8000 System’s impressive scalability enables users to configure an intercom system that satisfies their precise requirements, from a small system with just two stations to a large, complex system with up to 192 components and 3,072 stations. Its open architecture permits flexible interfacing with other systems, moreover, reducing costs by enabling users to upgrade and expand their intercom system without replacing currently installed equipment, such as surveillance cameras, telephones and access controls. Since the N-8000 System is not server based, users can use dedicated TOA software to manage settings and centralized control on a PC and to conduct real-time monitoring of system operation and line status using an Internet browser.
A versatile, highly reliable IP intercom system designed to meet user needs for flexible, cost-effective configuration and operation.

**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

**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

**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 and 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' pre-existing intercom, alarm, surveillance, door entry/departure authorization and other systems as well as to telephone lines.

**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.
N-8000 System Overview

**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**
- 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)

**[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

---

**Direct Network Connection**

**2-Wire Connection**
**Permits the creation of a wide variety of system configurations through the free combination of individual interface units**

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

**A variety of convenient functions**

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

Hospital

Operation Room -1

Operation Room -20

Employee exit

Door Station N-8000DS

Electric Lock, for unlocking, etc.

Control room

Foot Control Switch (1 station)

Foot Control Switch (3 stations)

Pilot Lamp

Indication Board LED

School

Office

Building 1

Classrooms

Classrooms

Building 2

Classrooms

Classrooms

LAN

N-8000CO

Voice Alarm System / Public Address System

N-8000AF

Audio Interface for Timer / Gong

N-8000MI

N-8000RS Exchange

N-8000RS Exchange

Telephone PABX

N-8600MS

N-8000 Series IP Intercom System
Application Examples

Parking garage

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.

Parking area

Secretary’s office

Large-scale communication & Paging system at Airport

Parking area

Secretary’s office

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.
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.
**Application Examples**

<table>
<thead>
<tr>
<th>Desk-top</th>
<th>Optional Bracket</th>
<th>Wall-mount</th>
<th>Applicable Exchanges/Interfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IP Base</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master/Door Stations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Wire Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master/Door Stations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-core Shielded Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS Sub-stations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-wire Type</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Optional Bracket**:
  - WB-200RM
  - YC-280
  - N-8600MS
- **Wall-mount**:
  - N-8640DS
  - N-8650DS
- **Applicable Exchanges/Interfaces**:
  - N-8000EX
  - N-8010EX
  - N-8640DS
  - N-8640SB
  - N-8650DS

**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.

**[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

*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.**

**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.**

**[System Requirements]**

- **OS**: Windows® 7 Professional SP1 (32/64bit)
- **Screen resolution**: Over 1024 × 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)

**Recording 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.

**[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
N-8000 Series IP Intercom System

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.

- **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.

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  - CPU: Pentium® 4, 2 GHz or faster
  - Memory: 2 GB or more
  - Screen resolution: Over 1024 × 768 pixels

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*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.
**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.
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.
### Specifications

#### IP Base Station

<table>
<thead>
<tr>
<th>N-8600MS</th>
<th>N-8610RM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Source</strong></td>
<td>Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))</td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>3 W (max.)</td>
</tr>
<tr>
<td><strong>Speech Method</strong></td>
<td>Hands-free or handset conversation</td>
</tr>
<tr>
<td><strong>Audio Frequency Range</strong></td>
<td>300 Hz – 7 kHz</td>
</tr>
<tr>
<td><strong>External Speaker Terminal</strong></td>
<td>Maximum output 0.5W, 8Ω, screwless connector (2P)</td>
</tr>
<tr>
<td><strong>No. of Connectable Expansion</strong></td>
<td>Max.4 units (maximum 2 units at PoE power supply)</td>
</tr>
<tr>
<td><strong>Network Section</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Network I/F</strong></td>
<td>10BASE-T/100BASE-TX (Automatic-Negotiation)</td>
</tr>
<tr>
<td><strong>Network Protocol</strong></td>
<td>TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP</td>
</tr>
<tr>
<td><strong>Voice Packet Loss Recovery</strong></td>
<td>Silence insertion</td>
</tr>
<tr>
<td><strong>Audio Delay Time</strong></td>
<td>80ms, 320ms (controllable on the software)</td>
</tr>
<tr>
<td><strong>Finish</strong></td>
<td>Body, Handset: ABS resin, gray, ABS resin, blueishgray</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>148 (W) x 208 (H) x 70.5 (D)mm (excluding a curl cord section) 190 (W) x 76.5 (H) x 215 (D)mm (excluding microphone)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>770 g 700 g</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>Wall mounting bracket: YC-280, AC adapter: AD-1210P, AD-1215P</td>
</tr>
</tbody>
</table>

#### N-8640DS 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** | 5 W (max.) |
| **Speech Method** | Hands-free conversation |
| **Audio Frequency Range** | 300 Hz – 7 kHz |
| **Contact Input** | 1 channel, no-voltage make contact input, open circuit voltage: 5V DC, short circuit current: 10mA or less, unterminated ends |
| **Contact Output** | Open collector output, 4 channels, withstand voltage: 30V DC, control current: Max. 50mA (output 1COMMON), unterminated ends Relay contact output, 1 channel, withstand voltage: 30V DC, control current: Max. 500mA, unterminated ends |
| **External Speaker Terminal** | 0.5 W, 8 ohms |
| **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 |
| **Voice Packet Loss Recovery** | Silence insertion |
| **Audio Delay Time** | 80ms, 320ms (controllable on the software) |
| **Finish** | Panel: Stainless steel, hairline/ Call button: Metal ABS resin, dark gray |
| **Dimensions** | 115 (W) x 162 (H) x 58.5 (D)mm 117.2 (W) x 162 (H) x 60 (D)mm 79 (W) x 134 (H) x 53 (D)mm |
| **Weight** | 780 g 400 g 350 g |
| **Options** | For flush-mount: 3-gang electrical box or Back Box YC-150, Wall surface-mount: Wall mount Box YS-13A, AC adapter: AD-1210P, AD-1215P |

#### IP Door Station

<table>
<thead>
<tr>
<th>N-8640DS</th>
<th>N-8650DS</th>
<th>N-8640SB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Source</strong></td>
<td>Power supply device that complies with IEEE802.3af standard or 12V DC (supplied from the AC adapter (option))</td>
<td></td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>5 W (max.)</td>
<td></td>
</tr>
<tr>
<td><strong>Speech Method</strong></td>
<td>Hands-free conversation</td>
<td></td>
</tr>
<tr>
<td><strong>Audio Frequency Range</strong></td>
<td>300 Hz – 7 kHz</td>
<td></td>
</tr>
<tr>
<td><strong>Contact Input</strong></td>
<td>1 channel, no-voltage make contact input, open circuit voltage: 5V DC, short circuit current: 10mA or less, unterminated ends</td>
<td></td>
</tr>
<tr>
<td><strong>Contact Output</strong></td>
<td>Open collector output, 4 channels, withstand voltage: 30V DC, control current: Max. 50mA (output 1COMMON), unterminated ends Relay contact output, 1 channel, withstand voltage: 30V DC, control current: Max. 500mA, unterminated ends</td>
<td></td>
</tr>
<tr>
<td><strong>External Speaker Terminal</strong></td>
<td>0.5 W, 8 ohms</td>
<td></td>
</tr>
<tr>
<td><strong>Network Section</strong></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Network I/F</strong></td>
<td>10BASE-T/100BASE-TX (Automatic-Negotiation)</td>
<td></td>
</tr>
<tr>
<td><strong>Network Protocol</strong></td>
<td>TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP</td>
<td></td>
</tr>
<tr>
<td><strong>Audio Packet Transmission System</strong></td>
<td>Unicast, Multicast</td>
<td></td>
</tr>
<tr>
<td><strong>Voice Packet Loss Recovery</strong></td>
<td>Silence insertion</td>
<td></td>
</tr>
<tr>
<td><strong>Audio Delay Time</strong></td>
<td>80ms, 320ms (controllable on the software)</td>
<td></td>
</tr>
<tr>
<td><strong>Finish</strong></td>
<td>Panel: Stainless steel, hairline/ Call button: Metal ABS resin, dark gray</td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>115 (W) x 162 (H) x 58.5 (D)mm 117.2 (W) x 162 (H) x 60 (D)mm 79 (W) x 134 (H) x 53 (D)mm</td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>780 g 400 g 350 g</td>
<td></td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>AC adapter: AD-1210P, AD-1215P</td>
<td></td>
</tr>
</tbody>
</table>
**2-Wire Type Station**

<table>
<thead>
<tr>
<th>Multifunctional Master Station</th>
<th>Standard Master Station</th>
<th>Standard Hands-free Master Station</th>
<th>Industrial-use Master Station</th>
<th>Heavy Industrial Station</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td>N-8000MS</td>
<td>N-8010MS</td>
<td>N-8011MS</td>
<td>N-8020MS</td>
</tr>
<tr>
<td><strong>Power Source</strong></td>
<td>48V DC (supplied from the IP network intercom exchange)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>2.4 W (max.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wiring Method</strong></td>
<td>1 set of twisted pair cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Speech Method</strong></td>
<td>Hands-free or handset conversation</td>
<td>Hands-free conversation</td>
<td>Hands-free or handset conversation</td>
<td>Hands-free conversation</td>
</tr>
<tr>
<td><strong>Audio Frequency Range</strong></td>
<td>300 – 15,000 Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transmission Range</strong></td>
<td>Max. 1500 m (ø0.65 mm, Loop resistance 170Ω)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dial-in Contact Output</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>External Speaker Terminal</strong></td>
<td>0.6W, 8Ω, screwless connector (2P)</td>
<td>-</td>
<td>0.6W, 8Ω, screwless connector (2P)</td>
<td>0.5W, 8Ω, screwless connector</td>
</tr>
<tr>
<td><strong>Dust/Water Protection</strong></td>
<td>-</td>
<td>-</td>
<td>IP54</td>
<td>IP65</td>
</tr>
<tr>
<td><strong>Resistance to Environment</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>148 (W) x 208 (H) x 70.5 (D)mm (excluding a curl cord section)</td>
<td>2 (W) x 195 (H) x 56.1 (D)mm</td>
<td>170 (W) x 220 (H) x 97.8 (D)mm (excluding a curl cord section)</td>
<td>160 (W) x 360 (H) x 91 (D) mm (without cable glands)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>800 g</td>
<td>700 g</td>
<td>400 g</td>
<td>1 kg</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>Wall mounting bracket: YC-280</td>
<td>Wall mounting bracket: YC-290</td>
<td>Wall mounting bracket: YC-280</td>
<td>-</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Flush-Mount Master Station</th>
<th>Flush-Mount Hands-free Master Station</th>
<th>Master Station Board</th>
<th>Door Station</th>
<th>Door Station Board</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td>N-8033MS</td>
<td>N-8031MS</td>
<td>N-8031SB</td>
<td>N-8050DS</td>
</tr>
<tr>
<td><strong>Power Source</strong></td>
<td>48V DC (supplied from the IP network intercom exchange)</td>
<td>48V DC (max.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>2.4 W</td>
<td>2.4 W (max.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wiring Method</strong></td>
<td>1 set of twisted pair cable</td>
<td>1 set of twisted pair cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Speech Method</strong></td>
<td>Hands-free or handset conversation</td>
<td>Hands-free conversation</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Audio Frequency Range</strong></td>
<td>300 – 7,000 Hz</td>
<td>300 – 7,000 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transmission Range</strong></td>
<td>Max. 1500 m (ø0.65 mm, Loop resistance 170Ω)</td>
<td>300 – 7,000 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Contact Output</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>External Dial Input</strong></td>
<td>No-voltage make contact input, open voltage: 5V DC, short-circuit current: 1mA, screwless connector (5 pins)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Housing Protection</strong></td>
<td>BS EN62262: 2002: IK02 equivalent</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Dust/Water Protection</strong></td>
<td>IP54 (Note that panel edges must be sealed at installation.)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Resistance to Environment</strong></td>
<td>Chemical Resistant</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Finish</strong></td>
<td>Membrane switch (Front pasting): Polyester film</td>
<td>-</td>
<td>Panel: Stainless steel (SUS304), hairline</td>
<td>-</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>115 (W) x 254 (H) x 54.6 (D)mm</td>
<td>70 (W) x 185 (H) x 20.6 (D)mm</td>
<td>115 (W) x 162 (H) x 54 (D)mm</td>
<td>67 (W) x 128.3 (H) x 26 (D) mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>850 g</td>
<td>205 g</td>
<td>680 g</td>
<td>100 g (including accessories)</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>Back Box YC-841</td>
<td>Flush-mount: Back Box, YC-241</td>
<td>Wall surface-mount: Wall mount Box YC-251</td>
<td>Handset: RS-191</td>
</tr>
</tbody>
</table>

---

0 dB = 1 V
### Specifications

#### Power Source
- N-8000EX: CE ver.: 220 - 240 V AC, 50/60 Hz | CU ver.: 120 V AC, 50/60 Hz
- N-8000EX: 500 W (at rated), 75 W (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, detachable terminal block
- Control: 2 channels, no-voltage make contact output (24V DC/0.5A), removable terminal block

#### 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
- Voice Packet Loss Recovery: Silence insertion
- Audio Delay Time: 80ms, 320ms (controllable on the software)

#### Finish
- Pre-coated steel plate, black, 30% gloss

#### Dimensions
- N-8000EX: 420 (W) x 44.3 (H) x 356 (D)mm
- N-8000EX: 420 (W) x 44.3 (H) x 239.5 (D)mm
- N-8000EX: 420 (W) x 44.3 (H) x 267 (D)mm

#### Weight
- N-8000EX: 4.1kg
- N-8000EX: 4.2kg

#### Options
- Wall mounting bracket: YC-850
- Rack mounting bracket: MB-15B-BK, MB-15B-J

### Interface Unit

#### Multi Interface Unit

<table>
<thead>
<tr>
<th>N-8000MI</th>
<th>N-8000DI</th>
<th>N-8000AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Source</td>
<td>CE ver.: 220 - 240 V AC, 50/60 Hz</td>
<td>CE ver.: 220 - 240 V AC, 50/60 Hz</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>CE ver.: 24W (230mA)</td>
<td>CE ver.: 16W (Max.)</td>
</tr>
<tr>
<td>Audio Input</td>
<td>Input: 2 inputs (2P/input), Max. 0dB*, under 600Ω, balanced, with a semi-fixed volume for adjustment (0 to -25dB)</td>
<td>Control: 2 inputs (2P/input), no-voltage make contact input, open voltage: 12V DC, short-circuit current: 10mA Removable terminal block (8 pins)</td>
</tr>
<tr>
<td>Audio Output</td>
<td>Output: 2 outputs (2P/output), Max. 0dB*, under 600Ω, balanced</td>
<td>Control: 2 outputs (2P/output), relay contact output, contact capacity: 24V DC/0.5A Removable terminal block (8 pins)</td>
</tr>
<tr>
<td>Contact Input</td>
<td>16 inputs, no-voltage make contact input, open voltage; 12V DC, short-circuit current: 10mA, removable terminal block (18 pins) (1 common terminal for 4 inputs)</td>
<td>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)</td>
</tr>
<tr>
<td>Contact Output</td>
<td>16 outputs, relay contact output, contact capacity: 24V DC/0.5A, removable terminal block (18 pins)</td>
<td>32 outputs, relay contact output, contact capacity: 24V DC/0.5A, removable terminal block (32 pins)</td>
</tr>
</tbody>
</table>

#### Direct Select Unit

#### Audio Interface Unit

- 0 dB = 1 V

**N-8000 Series IP Intercom System**
<table>
<thead>
<tr>
<th>Feature</th>
<th>N-8000AL</th>
<th>N-8000CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Source</td>
<td>CE ver.: 220 - 240 V AC, 50/60 Hz / CU ver.: 120 V AC, 50/60 Hz</td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td>8 W (Max.)</td>
<td>7 W (Max.)</td>
</tr>
<tr>
<td>Line: Public Switched telephone networks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Lines</td>
<td>1 line</td>
<td></td>
</tr>
<tr>
<td>Selective Signal Type</td>
<td>DTMF Signal</td>
<td></td>
</tr>
<tr>
<td>Signal System</td>
<td>-</td>
<td>Compatible with loop start signaling</td>
</tr>
<tr>
<td>Monitor Function</td>
<td>Line Loop detection</td>
<td>-</td>
</tr>
<tr>
<td>Control Function</td>
<td>Caller ID function</td>
<td>-</td>
</tr>
<tr>
<td>Wiring Method</td>
<td>1 pair of twisted pair cables</td>
<td></td>
</tr>
<tr>
<td>Transmission Range</td>
<td>Max. 1500 m (ø0.65 mm, Loop resistance 170 Ω)</td>
<td></td>
</tr>
<tr>
<td>Network Section</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network I/F</td>
<td>10BASE-T/100BASE-TX (Automatic-Negotiation)</td>
<td></td>
</tr>
<tr>
<td>Network Protocol</td>
<td>TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP</td>
<td></td>
</tr>
<tr>
<td>Audio Packet Transmission System</td>
<td>Unicast, Multicast</td>
<td></td>
</tr>
<tr>
<td>Voice Packet Loss Recovery</td>
<td>Silence insertion</td>
<td></td>
</tr>
<tr>
<td>Finish</td>
<td>Pre-coated steel plate, black, 30% gloss</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>210 (W) x 44.3 (H) x 267 (D) mm</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>1.7 kg</td>
<td></td>
</tr>
</tbody>
</table>

**IP Interface Module**

<table>
<thead>
<tr>
<th>Feature</th>
<th>SX-200IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Section</td>
<td></td>
</tr>
<tr>
<td>Network I/F</td>
<td>10BASE-T/100BASE-TX (Automatic-Negotiation)</td>
</tr>
<tr>
<td>Network Protocol</td>
<td>TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP</td>
</tr>
<tr>
<td>Connector</td>
<td>RJ45 connector</td>
</tr>
<tr>
<td>Voice sampling frequency</td>
<td>16 kHz, 8 kHz (controllable on the software) 48 kHz, sample rate is used for SX-2000 system only</td>
</tr>
<tr>
<td>Quantizing bit number</td>
<td>16-bit</td>
</tr>
<tr>
<td>Voice encoding method</td>
<td>Sub-band ADPCM, Cryptosystem</td>
</tr>
<tr>
<td>Voice Packet Loss Recovery</td>
<td>Silence insertion</td>
</tr>
<tr>
<td>Audio Delay Time</td>
<td>80ms, 320ms (controllable on the software)</td>
</tr>
<tr>
<td>Indicator</td>
<td>Operation indicator (RUN)</td>
</tr>
<tr>
<td>Finish</td>
<td>Panel: Pre-coated steel plate, black, 30% gloss</td>
</tr>
<tr>
<td>Dimensions</td>
<td>35(W) x 119.5(H) x 178.4 (D) mm</td>
</tr>
<tr>
<td>Weight</td>
<td>150 g</td>
</tr>
</tbody>
</table>
Specifications

Sub-station Interface Unit

<table>
<thead>
<tr>
<th></th>
<th>N-8000RS</th>
<th>N-8010RS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Source</strong></td>
<td>CE ver.: 220 - 240 V AC, 50/60 Hz / CU ver.: 120 V AC, 50/60 Hz</td>
<td>CE ver.: 32W (at rated), 38W (max.) / CU ver.: 26W (at rated), 32W (max.)</td>
</tr>
<tr>
<td><strong>Power Consumption</strong></td>
<td>CE ver.: 40W(at rated), 50W(max.) / CU ver.: 35W(at rated), 45W(max.)</td>
<td>CE ver.: 32W (at rated), 38W (max.) / CU ver.: 26W (at rated), 32W (max.)</td>
</tr>
<tr>
<td><strong>Interface Section for Sub-station</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number of links</strong></td>
<td>16 lines</td>
<td>1 link</td>
</tr>
<tr>
<td><strong>Number of Speech Links</strong></td>
<td>2 links</td>
<td>1 link</td>
</tr>
<tr>
<td><strong>Transmission Range</strong></td>
<td>500m ø0.5mm, 800m ø0.65mm, 1300m ø0.9mm</td>
<td></td>
</tr>
<tr>
<td><strong>Wiring Method</strong></td>
<td>Two-core shielded cable</td>
<td></td>
</tr>
<tr>
<td><strong>Network Section</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Network I/F</strong></td>
<td>10BASE-T/100BASE-TX (Automatic-Negotiation)</td>
<td></td>
</tr>
<tr>
<td><strong>Network Protocol</strong></td>
<td>TCP/IP, UDP, ARP, ICMP, HTTP, RTP, IGMP</td>
<td></td>
</tr>
<tr>
<td><strong>Audio Packet Transmission System</strong></td>
<td>Unicast, Multicast</td>
<td></td>
</tr>
<tr>
<td><strong>Voice Packet Loss Recovery</strong></td>
<td>Silence insertion</td>
<td></td>
</tr>
<tr>
<td><strong>Audio Delay Time</strong></td>
<td>80ms, 320ms (controllable on the software)</td>
<td></td>
</tr>
<tr>
<td><strong>Finish</strong></td>
<td>Pre-coated steel plate, black, 30% gloss</td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>420 (W) x 44.3 (H) x 325.5 (D)mm</td>
<td>320 (W) x 44.3 (H) x 341 (D)mm</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>3.9 kg</td>
<td>3.8 kg</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>Wall mounting bracket: YC-850</td>
<td></td>
</tr>
</tbody>
</table>

Sub-station Interface Unit

- RS-180
- RS-170
- RS-160
- RS-150

**Contact Output**

- RS-180: Open collector output: 24V DC, 30mA (The open collector output is kept turned on till the conversation is finished after the call button was pressed.)
- RS-170: -
- RS-160: Panel: Stainless steel (SUS304), hairline Call Button: Metal, red
- RS-150: Panel: Stainless steel (SUS304), hairline Call Button: Metal

**Dimensions**

- RS-180: 120 (W) x 120 (H) x 58.5 (D)mm
- RS-170: 120 (W) x 120 (H) x 57.5 (D)mm
- RS-160: 120 (W) x 120 (H) x 57.5 (D)mm
- RS-150: 120 (W) x 120 (H) x 48.5 (D)mm

**Weight**

- RS-180: 570g
- RS-170: 540g
- RS-160: 410g
- RS-150: 410g

**Options**

- RS-170: -
- RS-150: 2-gang electrical box: YC-302, Indoor wall-mount box: YC-822

IP Intercom Switch Panel

- RS-144
- RS-143
- RS-140

**Call-in Switch**

- RS-144: Momentary (EMERGENCY, NORMAL)
- RS-143: Momentary
- RS-140: Momentary

**Privacy Switch**

- RS-144: -
- RS-143: Latching
- RS-140: -

**Wiring**

- RS-144: Two-core shielded cable
- RS-143: Two-core shielded cable
- RS-140: Two-core shielded cable

**Finish**

- RS-144: Panel: Stainless steel, hairline Call-in Switch: Resin, red
- RS-143: Panel: Stainless steel, hairline Privacy Switch (normal): Resin, white
- RS-140: Panel: Stainless steel, hairline Call-in Switch: Resin, red

**Dimensions**

- RS-144: 70 (W) x 115 (H) x 28.6 (D)mm
- RS-143: -
- RS-140: -

**Weight**

- RS-144: 80g
- RS-143: -
- RS-140: -

**Options**

- RS-143: -
- RS-140: -
### N-8400RS

**Power Source**
- CE ver.: 220 - 240 V AC, 50/60 Hz / CU ver.: 120 V AC, 50/60 Hz

**Power Consumption**
- CE ver.: 35 W (at rated), 50 W (max) / CU ver.: 30 W (at rated), 45W (max)

**Interface Section for Sub-station**
- Number of links: 16 lines
- Number of Speech Links: 2 links
- Transmission Range: 1 km (ø0.5mm), 1.5 km (ø0.65mm), 2 km (ø0.9mm)
- 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, HTTP, RTP, IGMP
- Audio Packet Transmission System: Unicast, Multicast
- Voice Packet Loss Recovery: Silence insertion
- Audio Delay Time: 30ms, 320ms (controllable on the software)
- Finish: Pre-coated steel plate, black, 30% gloss
- Dimensions: 420 (W) x 44.3 (H) x 325.5 (D)mm
- Weight: 4 kg
- Options: Wall mounting bracket: YC-850

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### N-8410MS

**Power Source**
- 24V DC (supplied from the sub station interface unit N-8400RS)

**Current Consumption**
- Max. 30 mA

**Wiring Method**
- 2 sets of twisted pair cables

**Speech Method**
- Hands-free or handset conversation

**Audio Frequency Range**
- 300 Hz – 7 kHz

**Transmission Range**
- 1 km (ø0.5mm, AWG24), 1.5 km (ø0.65mm, AWG22), 2 km (ø0.9mm, AWG19)

**Finish**
- Body, Handset: ABS resin, gray

**Dimensions**
- 148 (W) x 208 (H) x 70.5 (D)mm (excluding a curl cord section)
- Weight: 720 g
- Options: Wall mounting bracket: YC-280

---

**Sub-station Interface Unit (Emergency use)**
- RS-480

Call-in Switch: Momentary (Emergency call: Press twice within 400 ms)
Contact Output: Open collector output: 30V DC, 30mA
Wiring: Twisted pair cables (2-pair)
Finish: Panel: Stainless steel, hairline
Circuit Board: Weather-resistant coating
Dimensions: 120 (W) x 120 (H) x 50.5 (D)mm
Weight: 575 g
Options: 2-gang electrical box: YC-302, Handset: RS-481

**Sub-station Interface Unit (Indoor use)**
- RS-470

Call-in Switch: Momentary (Emergency call: Press twice within 400 ms)
Contact Output: Open collector output: 30V DC, 30mA
Wiring: Twisted pair cables (2-pair)
Finish: Panel: Stainless steel, hairline
Circuit Board: Weather-resistant coating
Dimensions: 120 (W) x 120 (H) x 49.5 (D)mm
Weight: 550 g

**Sub-station Interface Unit (Outdoor Vandal-Resistant Type)**
- RS-460

Call-in Switch: Momentary (Emergency call: Press twice within 400 ms)
Contact Output: Open collector output: 30V DC, 30mA
Wiring: Twisted pair cables (2-pair)
Finish: Panel: Stainless steel, hairline
Circuit Board: Weather-resistant coating
Dimensions: 120 (W) x 120 (H) x 41.5 (D)mm
Weight: 540 g
Options: 2-gang electrical box: YC-302, Outdoor wall-mount box: YC-822

**Sub-station Interface Unit (Outdoor Vandal-Resistant Type)**
- RS-450

Call-in Switch: Momentary (Emergency call: Press twice within 400 ms)
Contact Output: Open collector output: 30V DC, 30mA
Wiring: Twisted pair cables (2-pair)
Finish: Panel: Stainless steel, hairline
Circuit Board: Weather-resistant coating
Dimensions: 120 (W) x 120 (H) x 41.5 (D)mm
Weight: 510 g
Options: 2-gang electrical box: YC-302, Outdoor wall-mount box: YC-822

---

**Sub-station Interface Unit (Indoor Vandal-Resistant Type)**
- RS-442

Call Switch Wiring: 6 cables (for 3 momentary switches)
Wiring: Twisted pair cable (2-pair)
Weight: 140 g
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>YC-850</td>
<td>Wall-Mount Bracket</td>
<td>45.1 (W) x 220 (H) x 10 (D) mm</td>
</tr>
<tr>
<td>YC-290</td>
<td>Wall-Mount Bracket</td>
<td>64 (W) x 131.5 (H) x 31.8 (D) mm</td>
</tr>
<tr>
<td>YC-241</td>
<td>Flush-Mount Back Box</td>
<td>72 (W) x 119 (H) x 57 (D) mm</td>
</tr>
<tr>
<td>YC-801</td>
<td>Flush-Mount Box</td>
<td>75 (W) x 124 (H) x 50.5 (D) mm</td>
</tr>
<tr>
<td>YC-802</td>
<td>Wall-Mount Box</td>
<td>119 (W) x 258 (H) x 57 (D) mm</td>
</tr>
<tr>
<td>YC-841</td>
<td>Back Box</td>
<td>119 (W) x 258 (H) x 57 (D) mm</td>
</tr>
<tr>
<td>YC-280</td>
<td>Wall-Mount Bracket</td>
<td>100 (W) x 140 (H) x 31.8 (D) mm</td>
</tr>
<tr>
<td>YC-251</td>
<td>Surface-Mount back Box</td>
<td>124 (W) x 258.5 (H) x 50.5 (D) mm</td>
</tr>
<tr>
<td>YC-150</td>
<td>Flush-Mount Back Box</td>
<td>184 (W) x 119 (H) x 57 (D) mm</td>
</tr>
<tr>
<td>YS-13A</td>
<td>Surface-Mount Back Box</td>
<td>163.5 (W) x 116.5 (H) x 55 (D) mm</td>
</tr>
<tr>
<td>YC-302</td>
<td>2-Gang Electrical Box</td>
<td>Outlet box: 102 (W) x 102 (H) x 44 (D) mm / Cover: 106 (W) x 106 (H) x 13 (D) mm</td>
</tr>
<tr>
<td>YC-823</td>
<td>Outdoor Wall-Mount Box</td>
<td>124 (W) x 124 (H) x 62 (D) mm</td>
</tr>
<tr>
<td>YC-822</td>
<td>Indoor Wall-Mount Box</td>
<td>124 (W) x 124 (H) x 62 (D) mm</td>
</tr>
</tbody>
</table>

Specifications are subject to change without notice. (1706) 8336110001021

AC Adapter
AC adapters to operate the IP Station on AC.
Power Source:
- AD-1210P: 230 V AC
- AD-1215P: 100 - 240 V AC

TOA Corporation
www.toa.jp