

Operation Manual

Audio Over Ethernet **A0E-212N**



* Rack mount products in the Western Hemisphere(North America, South America, and the Caribbean) do not have handles installed due to customer preference.

interM

Welcome

A personal welcome to you from the management and employees of Inter-M

All of the co-workers here at Inter-M are dedicated to providing excellent products with inherently good value, and we are delighted you have purchased one of our products.

We sincerely trust this product will provide years of satisfactory service, but if anything is not to your complete satisfaction, we will endeavor to make things right.

Welcome to Inter-M, and thank you for becoming part of our worldwide extended family!



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution: To prevent electric shock do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Attentions: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant ou une autre sortie de courant, sauf si les lames peuvent être insérées à fond sans en laisser aucune partie à découvert.
Pour deconnecter complètement l'appareil du reseau d'alimentation. deconnecter le cordon d'alimentation de la prise murale.
La prise du reseau d'alimentation doit demeurer aisement accessible.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

*WARNING FOR YOUR PROTECTION PLEASE READ THE FOLLOWING-WATER AND MOISTURE: Unit should not be used near water(e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so than objects do not fall and liquids are not spilled into the enclosure through openings.

*Do not install this equipment in a confined space such as a book case or similar unit.

*Warning : To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.

*This apparatus shall be connected to a mains socket outlet with a protective earthing connection.

*To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle.

*The mains plug of the power supply cord shall remain readily accessible.

CAUTION

*These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

NOTE

*This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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FOR EACH TYPE	USER NOTICE
Class 'A' device (Broadcast device for business purpose)	This device is business purpose (Class 'A') and seller or user should (Broadcast device for business purpose) be aware of it, and it is to use in other than home.

Unpacking

Although your AOE-212N is neither complicated nor difficult to operate, we recommend you take a few minutes to read this brief manual and familiarize yourself with the important information regarding product features, setup and operation.

As with most electronic devices, we strongly recommend you retain the original packaging. In the unlikely event the product must be returned for servicing, the original packaging (or reasonable equivalent) is required.

Installation

Environment

Never place this product in an environment which could alter its performance or reduce its service life. Such environments usually include high levels of heat, dust, moisture, and vibration.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



Features

THE AOE AUDIO over ETHERNET NETWORK is an easy to use solution for transporting audiosignals over Ethernet TCP/IP based local and wide area networks (LAN/WAN), as well as the Internet.

- REAL TIME 2 CHANNEL AUDIO SIGNAL TRANSCEIVER (TRANSMITTER/RECEIVER)

Ethernet to 2channel analog audio signal real time transmitter, receiver.

- FULL-DUPLEX DATA COMMUNICATION TO ETHERNET NETWORK.

Contact: function of IN/OUT contact data transceiver
(transmitter/receiver). (each of the 8 channels)

Communication: function of serial data transceiver
(transmitter/receiver). (RS-232C, RS-422)

- EXPANSION OF DEVICE

Multicast (1:70) (This function is planned to upgrade)

Unicast (1:20) (This function is planned to upgrade)

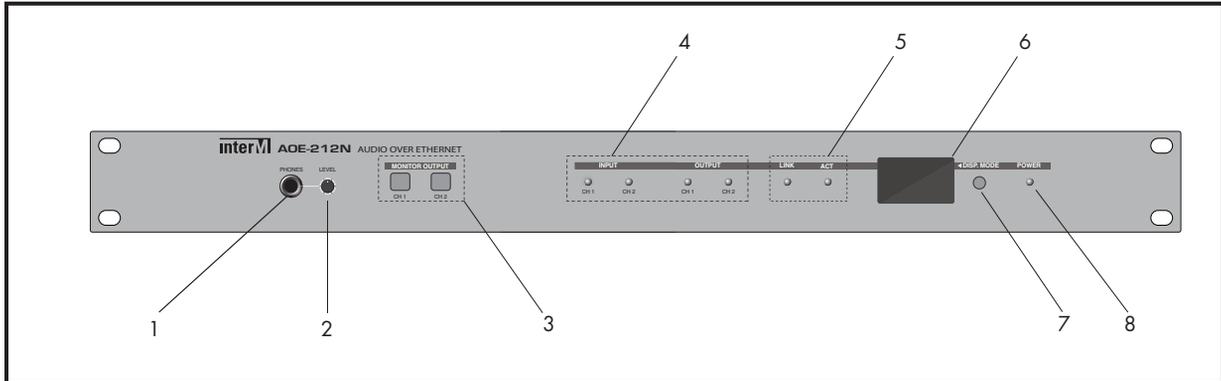
Composition and accessory

1. AOE-212N main set x1
2. AC power cord x 1
3. 3P terminal block x 4
4. 4P terminal block x 2
5. 16P terminal block x 2
6. RS-232C cable x 1
7. Rack mount screw x 4
8. Lan cable x 1

※ Network setting

- AOE-212N SET can be set to dynamic IP, or static IP.
- AOE-212N SET use the 5454~5474 port, we need for 5454~5474 port is required for port forwarding or DMZ setting.
- Used under authorized to provide Internet service providers assign a static IP or dynamic IP in case of WAN network.
- LAN/WAN use is recommended to use a dedicated network configuration.

Front Panel



1. MONITOR TERMINAL

Terminal monitoring the output signal of selected channel by using 3.5 Φ earphone terminal.

2. MONITOR VOLUME

Control the monitor output volume.

3. MONITOR OUTPUT SWITCH

Switch selecting the desired channel output to monitor.

4. SIGNAL LED

LED displaying the input and output audio signals for each channel.

5. LINK / ACT

LED displaying the network status and data status of equipment.

6. LCD

LCD displaying the network (IP, Mac Address, S/W Version, etc.) settings and server connection status in the set.

7. DISPLAY SWITCH

Switch checking out the setting on the display.

When the power switch is ON, the indicator will be it.

Display contents are as below.

1) Inter-M logo + IP Address



2) MAC Address + Bandwidth + S/W Version

```

Inter-M:01:05:08
Ver. 1.0.0.1
TX: 3 kbps
RX: 2 kbps

```

3) Audio state

```

Audio
Server On, 1
Client On
192.168.1.99

```

- (1) Sever on/off state
- (2) Sever on, Quantity of Client access device
- (3) Client on/off state
- (4) Accessed server IP

4) RS-232 state

```

RS-232
Server Off
Client Off

```

- (1) Server on/off state
- (2) Client on/off state

5) RS-422 state

```

RS-422
Server Off
Client Off

```

- (1) Server on/off state
- (2) Client on/off state

6) PIO state

```

PIO
Server Off
Client Off

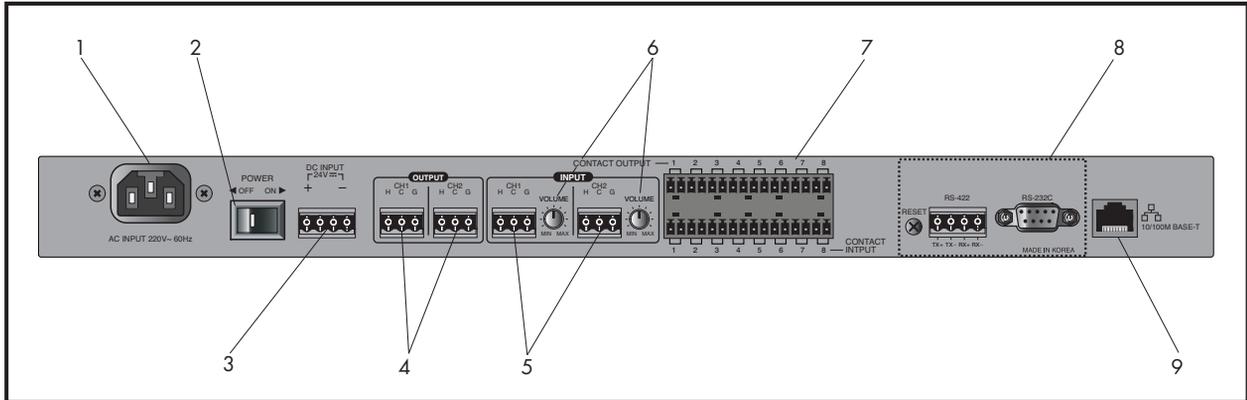
```

- (1) Server on/off state
- (2) Client on/off state

8. Power LED

LED displaying the power supply status of set.

Rear Panel



1. AC INLET

Terminal which inputs the AC power.

2. POWER SWITCH

Switch turning On/Off the AC Power.

3. DC INPUT TERMINAL

Backup battery(24DC) connecting terminal. In case of black out of AC power, connected backup battery supplies the power to the device. DC 24V input supplies the power to the set regardless of switch On/Off.

4. AUDIO OUTPUT TERMINAL

It consists of 2-channel with balance outputs (Hot, Cold, GND) with transmitted audio output terminal.

5. AUDIO INPUT TERMINAL

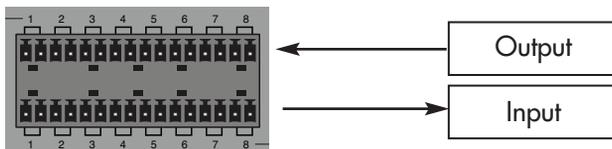
It consists of 2-channel with balance outputs (Hot, Cold, GND) with audio output terminal to be transmitted.

6. AUDIO INPUT VOLUME

Control the volume of input audio signal.
Control level is (-10dB ~ +10dB)

7. CONTACT POINT INPUT AND OUTPUT TERMINALS

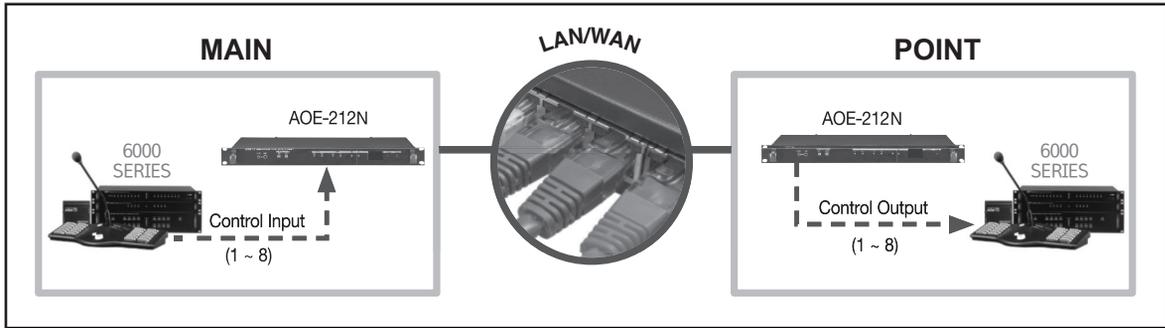
If contact point signal is inserted in each contact point terminal of transmit AOE-212N device, contact point signal will be transmitted from the contact point output terminal of transmit AOE-212N device.



Input contact point: Contact point signal can be inserted if pin of each channel is short.

Output contact point: Same signals with input signal will be transmitted on the input contact point of transmitter.

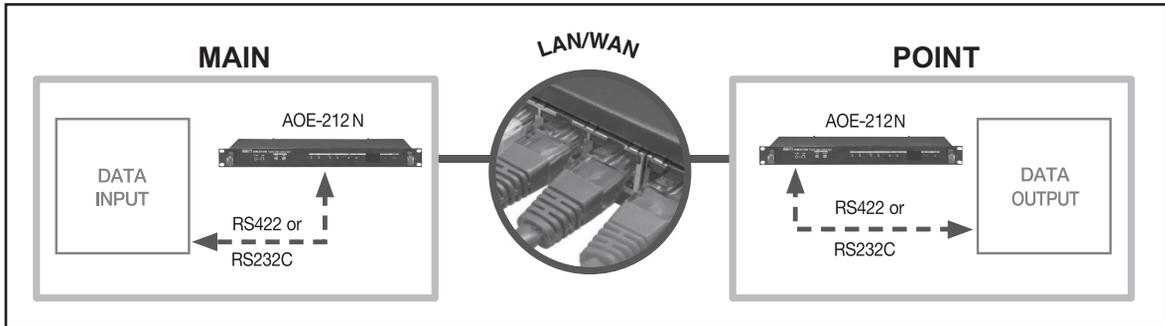
※ Caution: Contact point signal is only transmitted when AOE-212N is operated under normal conditions, and please input the signal after checking out the equipment operation status. Because data is transmitted in real times, signal will not be transmitted when device is off.



※ Example Connect the device to be controlled to the contact point terminal of AOE-212N from point 'A', and insert the control signal from the main building, then device of point 'A' can be controlled.

8. RS-232C/RS-422 communication terminal

Display the signals inserted in RS-232C or RS-422 terminal on the rear of AOE-212N on the RS-232C and RS-422 terminals of AOE-212N. For example, if signals, 'A B C D' are inserted in the transmitter, signals 'A B C D' will be displayed on the receiver.



RS-232C communication: No. 1 pin (Rx), No. 3 pin (Tx), No. 5 pin (GND)

RS-422 communication: Tx+, Tx-, Rx+, Rx-

※ Transmit and receive data communication using RS-232C/RS-422 ports supports 1:1

※ Example: Connect the device to be controlled to the RS-232/RS-422 terminal of AOE-212 from point 'A', and insert the control signal from the main building, then device of point 'A' can be controlled.

9. Network terminal

It is network connecting terminal (RJ-45) and supports 10/100 Base-Tx.

Equipment setting using AOE-212N internal CGI server

It provides the web-page to check the status and control of AOE-212N.

- ※ Contents of this Operation Manual are subjected to be changed by revision of firmware. please refer to "www.inter-m.com/en" for latest one.
- ※ AOE-212N uses HTML5 and Websocket standards, therefore, some browsers may not work. Supported browsers are as follows:

Support	Support Status
Unsupported	Internet Explorer 8, Internet Explorer 9 Opera, Opera Mini Android 4.3(Jelly Bean) or less browser
Supported	Internet Explorer 10 or higher browser Chrome, Chrome mobile Safari, Safari mobile FireFox, FireFox mobile Android 4.4(KitKat) or higher browser

- ※ AOE-212N web page is optimized for Google Chrome browser.

I. Accessing AOE-212N Web-page

- I. 1 Access to the web-page by using internet browser (Explorer, Chrome, FireFox, etc.)
- I. 2 Insert the IP address displayed on the front LCD of AOE-212N.
If it is connected normally, user verification window will pop-up..
User verification is required to access the AOE-212N web-page.
Default value for factory setting is as below.

	ID	PASSWORD	REMARKS
Administrator	admin	1	All functions admin configuration
User	user	1	All functions except system management

- ※ Please be sure to change the password after the connection you use.
- ※ When properly connected, AOE-212N Web page will be displayed in the browser.

II. Device mode setup

Use Device mode setup to modify the operating capabilities.

Device Mode	Remarks
Legacy mode (Default Mode)	Sets the default setting of AOE-212N. Audio/Serial(232/422): set the contact transmissions.
Time Signal	MP3/Internet Radio: set the operation times. (MP3, Internet Radio) Set the source playback schedule.
Internet Radio	Set Internet Radio operations. Set Internet Radio stations.
Contact Output	Set the junction interface operations. Link devices that use the same junction/contacts.

interM

AOE-212N

Language : Engli

admin [logout] / aoe-212n / 192.168.1.147 / Ver:

Device mode setup

- Legacy mode ▾
- Legacy mode
- Time signal
- Internet radio
- Contact output

Serial setup(422)

Contact closure setup

System setup

- Network setup
- Time setup
- View log

Management menu

- System management

System information

- Current time
- 09.02.2015 / 01:09:26
- System uptime
- 04.02.2015 / 07:20:21
- 04 days 17:49:06 elapsed

Setup audio configurations

Audio server
Audio client

Settings of audio server

The audio server is operating as below information.

Audio server is operating.

Server environment info

Communication method	TCP/IP	PCM playback info	Sampling rate 16,000 Hz
		Channel	Mono (1 Ch)
Transmission method	Unicast	MP3 playback info	Sampling rate -
		Bit rate	-
Compression method	PCM		

Server operating info

IP address	192.168.1.147	The maximum number of accessible client	20 Q'ty
Port	5454	The total number of client	1 Q'ty
Host name	aoe-212n	The number of client currently connected	1 Q'ty

List of connected client

List	IP address	Host name	Status	Connection time
01	192.168.1.147	aoe-212n	ACT	2015-02-09 01:09:28

III. Operation setup

※ Menu corresponding to the selected menu from Device Mode Setup is displayed. Following menu is displayed when Legacy mode (Default Mode) is selected from the Device Mode Setup.

III. 1 Legacy mode

III.1.1 Audio setup

III.1.1-1 Setting of audio server

- Select PCM playback mode for Unicast TCP/IP Transition

The screenshot shows the 'Setup audio configurations' page for the AOE-212N device. The interface includes a navigation menu on the left with categories like 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'. The main content area is titled 'Setup audio configurations' and has two tabs: 'Audio server' and 'Audio client'. Under 'Settings of audio server', there are several sections:

- Selection of communication method (TCP/IP):** 'TCP/IP' is selected. Description: TCP/IP - It is the Internet protocol suite (IP), provides reliable, and enables to error-control and stream control. There are unicast and multicast transmission mode. RTSP - It is real time streaming protocol and compatible to the other device. It enables to control the delivery and error.
- Selection of transmission method (Unicast):** 'Unicast' is selected. Description: Unicast transfer mode - It is 1:N communication and indicates Server-Client structured transmission. The Server is able to monitor the information of clients. Multicast transfer mode - It describes communication where a piece of information is sent from one or more points to a set of other points. The Server is unable to monitor the information of clients.
- Selection of playback method (PCM):** 'PCM' is selected. Description: PCM(Pulse-code modulation) - It is the uncompressed voice data and the sound quality determines according to the sampling rate and channel. It consumes a lot of traffic. MP3 - It describes an audio coding format for digital audio which uses a form of lossy data compression, but has lower traffic consumption than PCM(About 8~10 times of traffic reduced compared to the PCM).
- Selection of playback info (16K Hz 1 Ch):** 'Sampling rate' is set to '16,000 Hz' and 'Channel' is set to 'Mono (1 Ch)'. Description: Sampling rate - More sampling rate higher it is similar to the original sound, but the capacity is bigger (TEL: 16KHz, CD AUDIO 44,1kHz, DVD AUDIO 48kHz). Channel - There are a single audio channel(MONO) and two audio channels(Stereo). Bitrate - It describes the quality of MP3 audio file and the audio with the higher bitrate sounds more clear, but more capacity.
- Selection of operating information (5454):** 'Default information' is selected. Description: Port - 5454. IP address - It is used for multicast mode and the IP address set by server is sent to the corresponding multicast group. Port - Select the desired port for server's operating. It cannot choose the duplicated port.

At the bottom right, there are 'Apply' and 'Initialize' buttons.

If Unicast TCP communication is transmitted in PCM playback mode, in Audio setup mode, setting is shown as above.

- Select MP3 playback mode for Unicast TCP/IP Transition

The screenshot displays the 'Setup audio configurations' page for the AOE-212N device. The interface includes a sidebar with navigation options like 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'. The main content area is titled 'Setup audio configurations' and has two tabs: 'Audio server' and 'Audio client'. The 'Audio client' tab is selected, showing 'Settings of audio server'. A note states: 'To use the audio server, the below procedure proceeds accordingly.' The settings are organized into several sections:

- Selection of communication method (TCP/IP):** Radio buttons for 'TCP/IP' (selected) and 'RTSP'. Descriptions explain that TCP/IP is reliable and enables error control, while RTSP is for real-time streaming.
- Selection of transmission method (Unicast):** Radio buttons for 'Unicast' (selected) and 'Multicast'. Descriptions explain that Unicast is 1-N communication, while Multicast sends data to multiple points.
- Selection of playback method (MP3):** Radio buttons for 'PCM' and 'MP3' (selected). Descriptions explain that PCM is uncompressed and MP3 uses lossy data compression.
- Selection of playback info (48K Hz 192K bps):** Includes 'MP3 playback info' with dropdowns for 'Sampling rate' (48,000 Hz) and 'Bit rate' (192,000 bps). Descriptions explain that higher sampling rates are more similar to original sound and higher bitrates result in clearer audio.
- Selection of operating information (5454):** Radio buttons for 'Default information' (selected) and 'Change information'. The 'Port' is set to 5454. Descriptions explain IP address usage for multicast and port selection rules.

At the bottom right, there are 'Apply' and 'Initialize' buttons.

If Unicast TCP communication is transmitted in PCM playback mode, in Audio setup mode, setting is shown as above.

- Select PCM playback mode for Multicast TCP/IP Transition

The screenshot displays the 'Setup audio configurations' page for the AOE-212N device. The interface includes a sidebar menu on the left with categories like Device mode setup, Operation setup, System setup, Management menu, and System information. The main content area is titled 'Settings of audio server' and contains several sections:

- Selection of communication method (TCP/IP):** The 'TCP/IP' radio button is selected. Text explains that TCP/IP is the Internet protocol suite (IP), providing reliable control and stream control with unicast and multicast transmission modes. RTSP is also mentioned as a real-time streaming protocol.
- Selection of transmission method (Multicast):** The 'Multicast' radio button is selected. Text describes unicast (1:N) and multicast (one-to-many) transmission modes.
- Selection of playback method (PCM):** The 'PCM' radio button is selected. Text explains that PCM (Pulse-code modulation) is uncompressed voice data, while MP3 uses lossy data compression.
- PCM playback info:** 'Sampling rate' is set to 16,000 Hz and 'Channel' is set to Mono (1 Ch).
- Selection of operating information (224.124.0.1/5000):** The 'Default information' radio button is selected. It shows the IP address as 224.124.0.1 and the Port as 5000.

Buttons for 'Apply' and 'Initialize' are located at the bottom right of the configuration area.

If Multicast TCP communication is transmitted in PCM playback mode, in Audio setup mode, setting is shown as above.

- Select MP3 playback mode for Multicast TCP/IP Transition

The screenshot displays the 'Setup audio configurations' page for the AOE-212N device. The interface includes a sidebar menu on the left with categories like 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'. The main content area is titled 'Setup audio configurations' and has two tabs: 'Audio server' and 'Audio client'. The 'Audio client' tab is selected, showing 'Settings of audio server'.

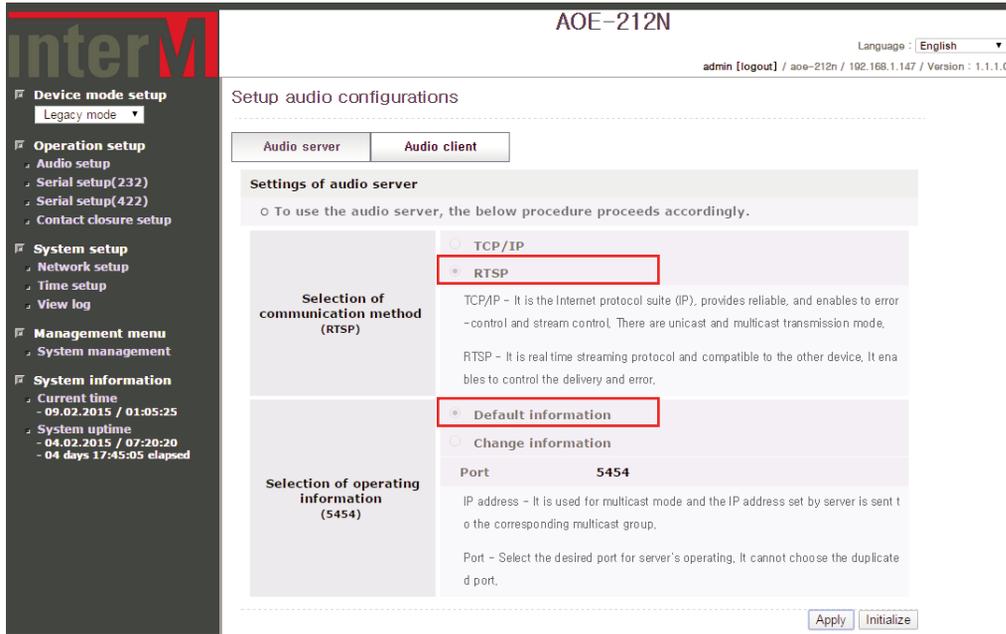
Under 'Settings of audio server', there is a note: 'To use the audio server, the below procedure proceeds accordingly.' Below this, there are several sections:

- Selection of communication method (TCP/IP):** The 'TCP/IP' radio button is selected and highlighted with a red box. Below it, 'RTSP' is listed as an option.
- Selection of transmission method (Multicast):** The 'Multicast' radio button is selected and highlighted with a red box. Below it, 'Unicast' is listed as an option.
- Selection of playback method (MP3):** The 'MP3' radio button is selected and highlighted with a red box. Below it, 'PCM' is listed as an option.
- MP3 playback info:** This section contains two dropdown menus: 'Sampling rate' is set to '48,000 Hz' and 'Bit rate' is set to '192,000 bps', both highlighted with red boxes.
- Selection of operating information (224.124.0.1/5000):** The 'Default information' radio button is selected and highlighted with a red box. Below it, the 'Change information' radio button is also visible. A table shows 'IP address' as '224.124.0.1' and 'Port' as '5000', both highlighted with red boxes.

At the bottom right of the configuration area, there are 'Apply' and 'Initialize' buttons. The footer of the page reads 'Copyright (c) 2012 Inter-M All rights reserved.'

If Multicast TCP communication is transmitted in PCM playback mode, in Audio setup mode, setting is shown as above.

- Select RTSP transition mode



If in RTSP communication mode, in Audio setup mode, setting is shown as above.

Category	Contents	Default
Selection of communication method	TCP/IP - It is the Internet protocol suite (IP), provides reliable, and enables to error-control and stream control. There are unicast and multicast transmission mode. RTSP - It is real time streaming protocol and compatible to the other device. It enables to control the delivery and error.	TCP/IP
Selection of transmission method	Unicast transfer mode - It is 1:N communication and indicates Server-Client structured transmission. The Server is able to monitor the information of clients. Multicast transfer mode - it describes communication where a piece of information is sent from one or more points to a set of other points. The Server is unable to monitor the information of clients.	Unicast
Selection of playback method	PCM(Pulse-code modulation) - It is the uncompressed voice data and the sound quality determines according to the sampling rate and channel. It consumes a lot of traffic. MP3 - It describes an audio coding format for digital audio which uses a form of lossy data compression, but has lower traffic consumption than PCM(About 8~10 times of traffic reduced compared to the PCM)	PCM
Selection of playback info	Sampling rate - More sampling rate higher it is similar to the original sound, but the capacity is bigger (TEL: 16KHz, CD AUDIO 44.1kHz, DVD AUDIO 48kHz) Channel - There are a single audio channel (MONO) and two audio channels (Stereo). Bitrate - It describes the quality of MP3 audio file and the audio with the higher bitrate sounds more clear, but more capacity.	Sampling rate 48,000 Hz Channel Stereo(2Ch)
Selection of operating information	IP address - It is used for multicast mode and the IP address set by server is sent to the corresponding multicast group. Port - Select the desired port for servers operating. It cannot choose the duplicated port.	Port: 5454
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	
Initialize	Reverts to the default setting.	

III.1.1-2 Audio Server Monitoring

interM AOE-212N Language : English admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0

Setup audio configurations

Audio server Audio client

Settings of audio server

The audio server is operating as below information.

Audio server is operating.

Start Stop Reset

Server environment info

Communication method	TCP/IP	PCM playback info	Sampling rate	16,000 Hz
			Channel	Mono (1 Ch)
Transmission method	Unicast	MP3 playback info	Sampling rate	-
			Bit rate	-
Compression method	PCM			

Server operating info

IP address	192.168.1.147	The maximum number of accessible client	20 Q'ty
Port	5454	The total number of client	1 Q'ty
Host name	aoe-212n	The number of client currently connected	1 Q'ty

List of connected client

List	IP address	Host name	Status	Connection time
01	192.168.1.147	aoe-212n	ACT	2015-02-09 01:09:28

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Once the audio server configuration is completed, one can monitor the audio server status as shown above.

Category	Contents	Default
Start	Starts the Audio Server with the currently stored information.	
Stop	Stops the Audio Server.	
Reset	Stop and reset the Audio Server settings.	

- A pop-up window will display when the client list number is selected.

III.1.1-3 Settings of audio client

※ Audio client receives the server’s information and sets the playback operations automatically.

- Allows to receive Unicast TCP/IP communication

The screenshot shows the 'Settings of audio client' configuration page in the AOE-212N web interface. The page is titled 'Setup audio configurations' and has tabs for 'Audio server' and 'Audio client'. The 'Audio client' tab is active. The settings are organized into five sections:

- Selection of communication method (TCP/IP):** Radio buttons for 'TCP/IP' (selected) and 'RTSP'. Descriptions for both are provided.
- Selection of transmission method (Unicast):** Radio buttons for 'Unicast' (selected) and 'Multicast'. Descriptions for both are provided.
- Selection of buffering time (0 Seconds 0 MSeconds):** Two dropdown menus, both set to '0'.
- Selection of redundancy operating (Main server operating):** Radio buttons for 'Main server operating' (selected) and 'Secondary server operating'. A description is provided.
- Selection of operating information (192.168.1.147/5454):** Radio buttons for 'Default information' (selected) and 'Change information'. Below, a table shows 'Main server IP address' as 192.168.1.147 and 'Port' as 5454. Descriptions for IP address and Port are provided.

Buttons for 'Apply' and 'Initialize' are located at the bottom right of the configuration area.

If Unicast TCP communication is receiving, in Audio setup mode, setting is shown as above.

- Allows to receive redundant Unicast TCP/IP communication

The screenshot shows the 'interM' web interface for 'AOE-212N'. The top right corner displays 'Language : English' and user information 'admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0'. The left sidebar contains a navigation menu with categories like 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'. The main content area is titled 'Setup audio configurations' and has tabs for 'Audio server' and 'Audio client'. Under 'Settings of audio client', there are several sections:

- Selection of communication method (TCP/IP):** Radio buttons for 'TCP/IP' (selected) and 'RTSP'. Descriptions explain that TCP/IP is reliable and enables error control, while RTSP is for real-time streaming.
- Selection of transmission method (Unicast):** Radio buttons for 'Unicast' (selected) and 'Multicast'. Descriptions explain that Unicast is 1:N communication and Multicast is one-to-many.
- Selection of buffering time:** Two dropdown menus for 'Seconds' and 'MSeconds', both set to '0'.
- Selection of redundancy operating (Secondary server operating):** Radio buttons for 'Main server operating' and 'Secondary server operating' (selected). Description: 'It describes the prevention of downtime of service and dispersion of service load. When the main server breaks down, it switches to the redundancy server.'
- Selection of operating information (192.168.1.147/5454) (192.168.1.199/5454):** Radio buttons for 'Default information' (selected) and 'Change information'. A table shows:

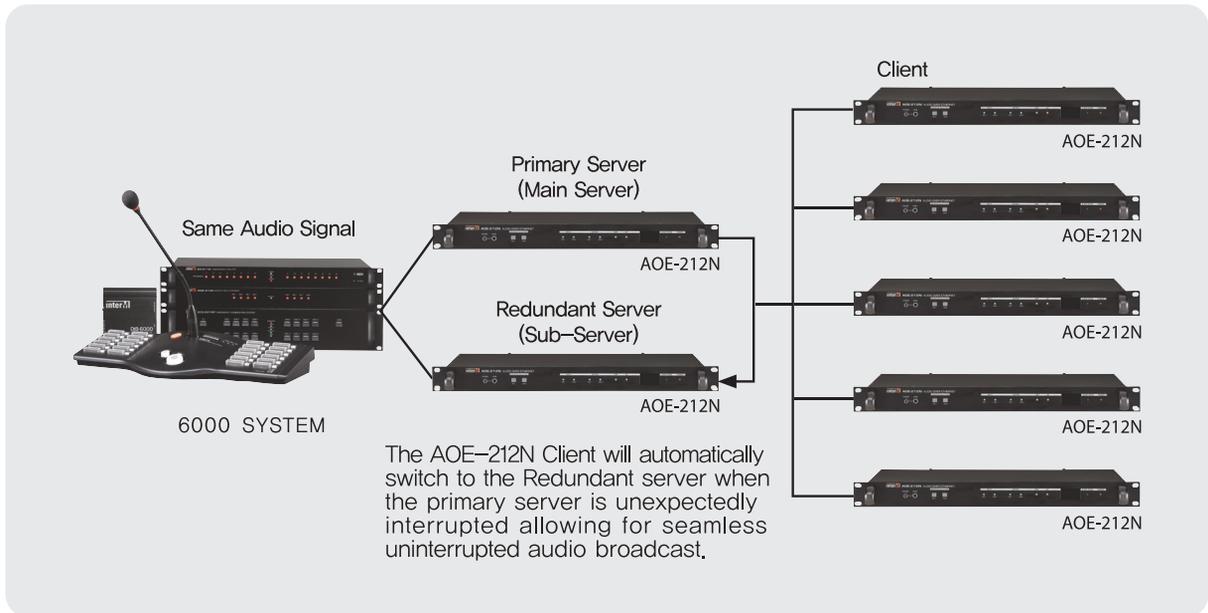
Main server IP address	192.168.1.147	Port	5454
Secondary sever IP address	192.168.1.199	Port	5454

At the bottom right of the settings area, there are 'Apply' and 'Initialize' buttons.

If Unicast TCP communication is receiving, in Audio setup mode, setting is shown as above.

※ **Server Dualization**

The main purpose of server dualization is assuring redundancy. Audio can be received from a secondary or sub-server in the event of trouble or failure from the main server. The Secondary Server is only used to enable redundancy if the AOE-212N main server is not able to transmit/receive in the event of network or equipment failure. When the AOE-212N Client is configured with dual redundant server, The AOE-212N Client will automatically switch to the secondary or sub-server when the primary server is unexpectedly interrupted allowing for seamless uninterrupted audio broadcast.



※ **Reference:** When using only one AOE-212N Server on a network the disconnect probability is 1/1,000. On the other hand, if use dual redundant Servers are used as above, the disconnection ration will be decreased to 1/1,000,000.

※ **Server setting**

Configure two AOE-212Ns as Servers with 2 different IP addresses. Connect the first AOE-212N and name it as main-server and name the second AOE-212N as sub-server. This is done via the by web-browser in the 'Network setup' of 'System setup' Menu on the left side menu. Activate the server mode by selecting in the 'Audio setup' on the left side menu, then checking on "Start" box in "Audio server" section.

- ※ **Main server and sub-servers IP address must be set with different values.**
- ※ **Main server and sub-servers must be connected to same audio source.**

- Allows to receive multicast TCP/IP communication

The screenshot displays the 'Setup audio configurations' page for the AOE-212N device. The left sidebar contains navigation options such as 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'. The main content area is titled 'Setup audio configurations' and has two tabs: 'Audio server' and 'Audio client'. The 'Audio client' tab is selected, showing the 'Settings of audio client' section. A note states: 'To use the audio client, the below procedure proceeds accordingly.' The settings are as follows:

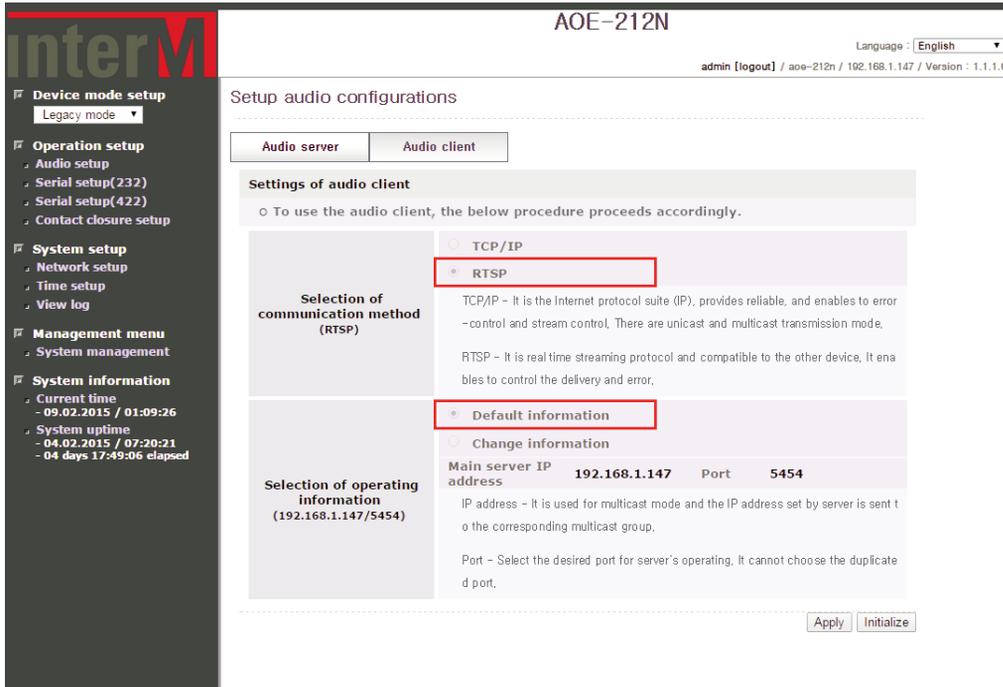
- Selection of communication method (TCP/IP):** TCP/IP, RTSP.
 - TCP/IP - It is the Internet protocol suite (IP), provides reliable, and enables to error-control and stream control. There are unicast and multicast transmission mode.
 - RTSP - It is real time streaming protocol and compatible to the other device, It enables to control the delivery and error.
- Selection of transmission method (Multicast):** Unicast, Multicast.
 - Unicast transfer mode - It is 1:N communication and indicates Server-Client structured transmission. The Server is able to monitor the information of clients.
 - Multicast transfer mode - It describes communication where a piece of information is sent from one or more points to a set of other points. The Server is unable to monitor the information of clients. Select the playback method.
- Selection of buffering time (0 Seconds 0 MSeconds):** 0 Seconds, 0 MSeconds.
- Selection of operating information (224.124.0.1/5000):** Default information, Change information.

Main server IP address	224.124.0.1	Port	5000
IP address - It is used for multicast mode and the IP address set by server is sent to the corresponding multicast group.			
Port - Select the desired port for server's operating. It cannot choose the duplicated port.			

Buttons for 'Apply' and 'Initialize' are located at the bottom right of the settings area.

If Multicast TCP communication is receiving, in Audio setup mode, setting is shown as above.

- Allows to receive RTSP communication



If in RTSP receive mode, in Audio setup mode, setting is shown as above.

Category	Contents	Default
Selection of communication method	TCP/IP - It is the Internet protocol suite (IP), provides reliable, and enables to error-control and stream control. There are unicast and multicast transmission mode. RTSP - It is real time streaming protocol and compatible to the other device. It enables to control the delivery and error.	TCP/IP
Selection of transmission method	Unicast transfer mode - It is 1:N communication and indicates Server-Client structured transmission. The Server is able to monitor the information of clients. Multicast transfer mode - it describes communication where a piece of information is sent from one or more points to a set of other points. The Server is unable to monitor the information of clients.	Unicast
Selection of buffering time	It is for the time delay of playback. In case of 0 second, it takes the minimum delay of the network. It can be delayed up to 10 seconds.	0s 0ms
Selection of redundancy operating	It describes the prevention of downtime of service and dispersion of service load. When the main server breaks down, it switches to the redundancy server.	Main server operating
Selection of operating information	IP address - It is used for multicast mode and the IP address set by server is sent to the corresponding multicast group. Port - Select the desired port for servers operating. It cannot choose the duplicated port.	IP: 192.168.1.99 Port: 5454
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	
Initialize	Reverts to the default setting.	

III.1.1-4 Audio Client Monitoring

The screenshot shows the 'Setup audio configurations' page for the AOE-212N device. The interface includes a sidebar with navigation menus for Device mode setup, Operation setup, System setup, Management menu, and System information. The main content area is titled 'Setup audio configurations' and features tabs for 'Audio server' and 'Audio client'. Under the 'Audio client' tab, there is a status message 'Audio client is operating.' and buttons for 'Start', 'Stop', and 'Reset'. Below this, there are sections for 'Playback info', 'Server info', and 'Operating info'. The 'Playback info' section contains two tables: one for PCM playback info (Sampling rate: 16,000 Hz, Channel: Mono (1 Ch)) and one for MP3 playback info (Sampling rate: -, Bit rate: -). The 'Server info' section compares 'Main server' (IP: 192.168.1.147, Port: 5454, Status: Connected) and 'Secondary sever' (IP: -, Port: -, Status: -). The 'Operating info' section shows the host name 'aoe-212n', a level meter, and a volume level slider set to 100.

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Once the audio server configuration is completed, one can monitor the audio server status as shown above.

Category	Contents	Default
Start	Starts the Audio Client using the currently stored information.	
Stop	Stops the Audio Client.	
Reset	Stop and reset the Audio Client settings.	
Volume level	Set the volume output.	100
Playback info	Audio Server displays the received playback information.	

III.1.2 Serial setup (232)

III.1.2-1 Settings of serial (232) server

Category	Contents	Default
Selection of baud rate	The baud rate indicates the rate at which information is transferred in a serial communication channel for 1 second. It sets as same as the baud rate of relevant device.	9600
Selection of operating information	Port - Select the desired port for servers operating. It cannot choose the duplicated port.	5455
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	
Initialize	Reverts to the default setting.	

III.1.2-2 Serial (232) Server Monitoring

interM

AOE-212N

Language : English

admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0

Setup serial(232) configurations

Serial(232) server Serial(232) client

Settings of serial(232) server

- Serial(232) server is operating as below information.

Serial(232) server is operating.

Start Stop Reset

Server operating info

IP address	192.168.1.147	The maximum number of accessible client	20 Q'ty
Port	5455	The total number of client	1 Q'ty
Baud rate	9600	The number of client currently connected	1 Q'ty

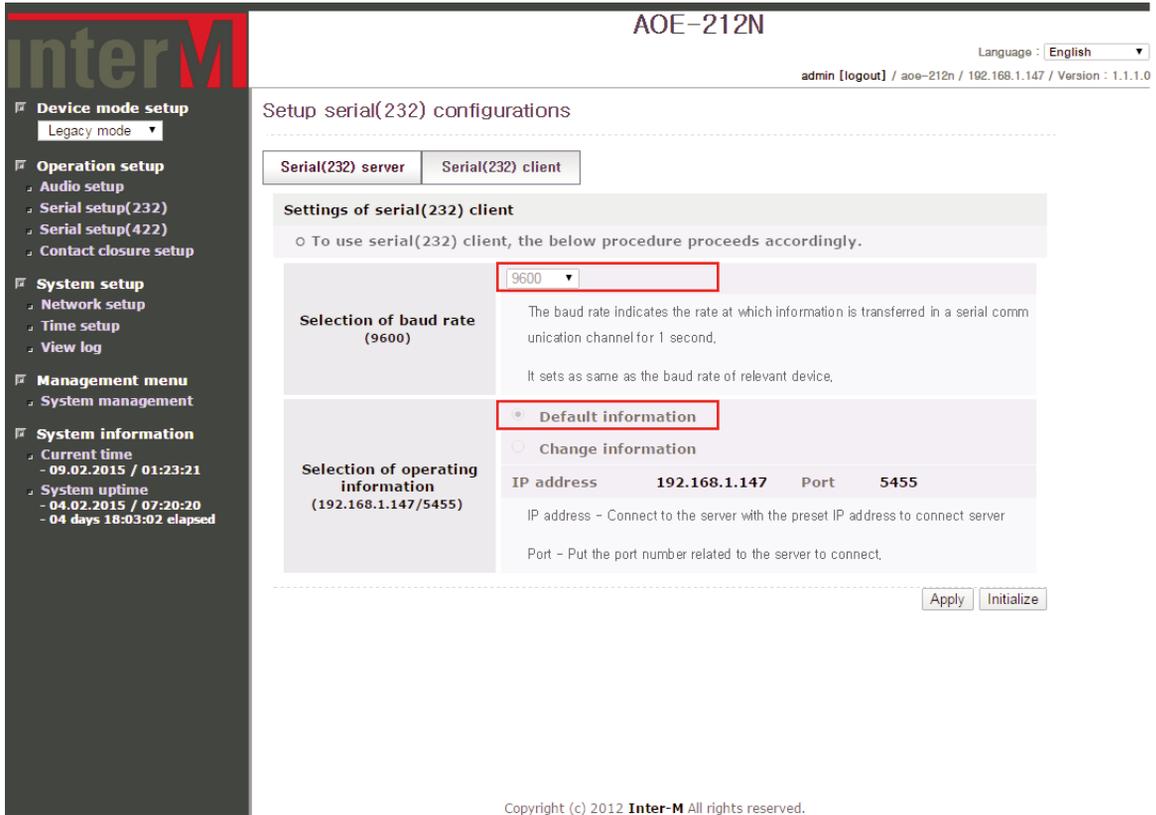
Connected client list

List	IP address	Host name	Status	Connection time
01	192.168.1.147	aoe-212n	ACT	2015-02-09 01:23:21

Once the Serial (232) server configuration is completed, one can monitor the Serial (232) server status as shown above.

Category	Contents	Default
Start	Starts the Serial (232) Server using the currently stored information.	
Stop	Stops the Serial (232) Server.	
Reset	Stop and reset the Serial (232) Server.	

III.1.2-3 Settings of serial (232) client



Category	Contents	Default
Selection of baud rate	The baud rate indicates the rate at which information is transferred in a serial communication channel for 1 second. It sets as same as the baud rate of relevant device.	9600
Selection of operating information	IP address - Connect to the server with the preset IP address to connect server. Port - Put the port number related to the server to connect.	IP: 192.168.1.99 Port: 5455
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	
Initialize	Reverts to the default setting.	

III.1.2-4 Serial (RS-232) Client Monitoring

The screenshot shows the AOE-212N web interface. The top right corner displays 'Language : English' and 'admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0'. The main content area is titled 'Setup serial(232) configurations' and has two tabs: 'Serial(232) server' and 'Serial(232) client'. The 'Serial(232) client' tab is selected, showing a status message: 'Serial(232) client is operating.' Below this is a table with two columns: 'Server information' and 'Operating information'. The 'Server information' column lists 'IP address' as 192.168.1.147 and 'Port' as 5455. The 'Operating information' column lists 'Baud rate' as 9600. At the bottom of the table are 'Start', 'Stop', and 'Reset' buttons. A sidebar menu on the left contains sections for 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'.

Once the Serial (232) client configuration is completed, one can monitor the Serial (232) client status as shown above.

Category	Contents	Default
Start	Starts the Serial (232) Client using the currently stored information.	9600
Stop	Stops the Serial (232) Client.	IP: 192.168.1.99 Port: 5455
Reset	Stop and reset the Serial (232) Client.	

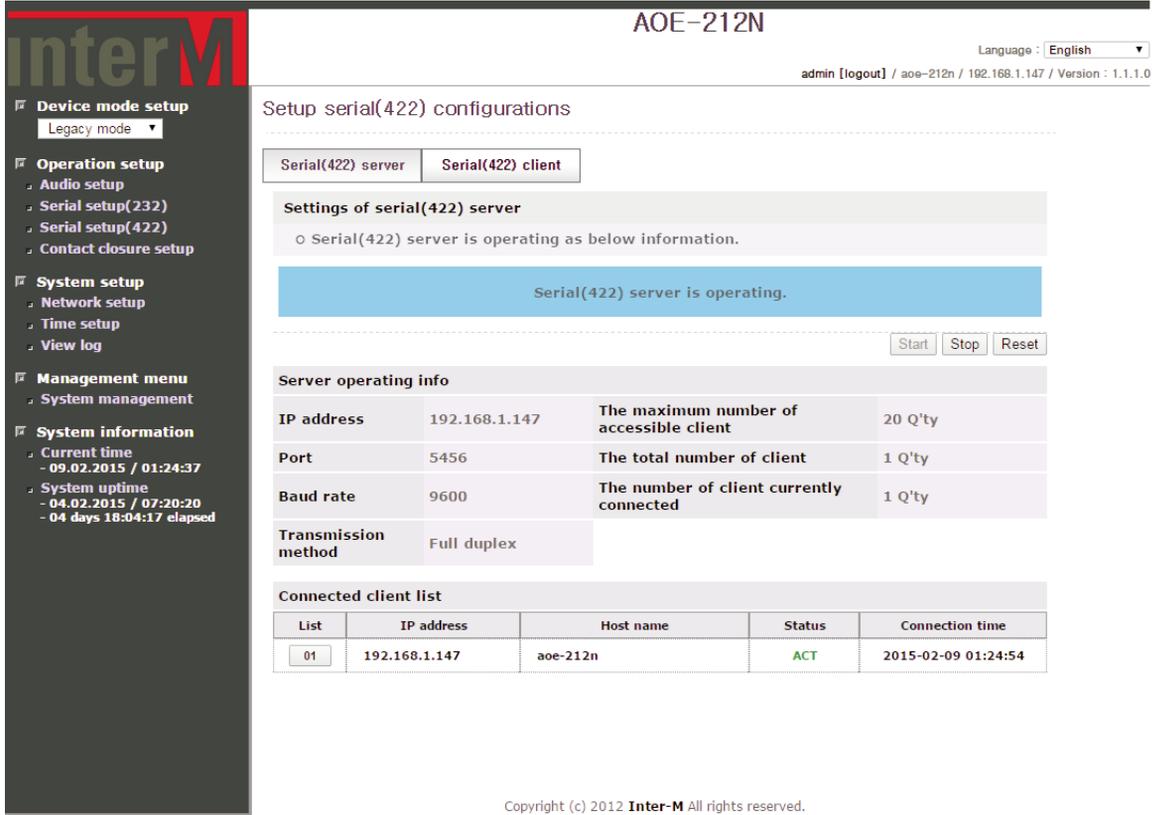
III.1.3 Serial setup (422)

III.1.3-1 Settings of serial (422) server

The screenshot shows the 'Setup serial(422) configurations' page in the AOE-212N web interface. The page has a sidebar menu on the left with categories like Device mode setup, Operation setup, System setup, Management menu, and System information. The main content area is titled 'Setup serial(422) configurations' and includes tabs for 'Serial(422) server' and 'Serial(422) client'. Under the 'Serial(422) server' tab, there are three main configuration sections: 'Settings of serial(422) server', 'Setting of serial transmission method', and 'Selection of operating information'. Each section contains a dropdown menu, a radio button for 'Default information', and a text input field for 'Port'. The 'Apply' and 'Initialize' buttons are located at the bottom right of the configuration area.

Category	Contents	Default
Selection of baud rate	The baud rate indicates the rate at which information is transferred in a serial communication channel for 1 second. It sets as same as the baud rate of relevant device.	9600
Setting of serial transmission method	As one of the communication system, you can refer to a method of communication in a point-to-point high interactivity. Half duplex - Provides communication in both directions, but only one direction at a time (not simultaneously). Full duplex - Allows communication in both directions, and allows this to happen simultaneously in a time. 485 mode - Support the serial (485) operating through 422 serial port.	Full duplex
Selection of operating information	Port - Select the desired port for servers operating. It cannot choose the duplicated port.	5456
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	
Initialize	Reverts to the default setting.	

III.1.3-2 Serial (422) Server Monitoring



interM

AOE-212N

Language : English

admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0

Setup serial(422) configurations

Serial(422) server Serial(422) client

Settings of serial(422) server

Serial(422) server is operating as below information.

Serial(422) server is operating.

Start Stop Reset

Server operating info

IP address	192.168.1.147	The maximum number of accessible client	20 Q'ty
Port	5456	The total number of client	1 Q'ty
Baud rate	9600	The number of client currently connected	1 Q'ty
Transmission method	Full duplex		

Connected client list

List	IP address	Host name	Status	Connection time
01	192.168.1.147	aoe-212n	ACT	2015-02-09 01:24:54

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Once the Serial (422) server configuration is completed, one can monitor the Serial (422) server status as shown above.

Category	Contents	Default
Start	Starts the Serial (422) Server using the currently stored information.	
Stop	Stops the Serial (422) Server.	
Reset	Stop and reset the Serial (422) Server.	

III.1.3-3 Settings of serial (422) client

Category	Contents	Default
Selection of baud rate	The baud rate indicates the rate at which information is transferred in a serial communication channel for 1 second.	9600
Setting of serial transmission method	As one of the communication system, you can refer to a method of communication in a point-to-point high interactivity. Half duplex - Provides communication in both directions, but only one direction at a time (not simultaneously). Full duplex - Allows communication in both directions, and allows this to happen simultaneously in a time. 485 mode - Support the serial (485) operating through 422 serial port.	Full duplex
Selection of operating information	IP address - Connect to the server with the preset IP address to connect server. Port - Put the port number related to the server to connect.	IP: 192.168.1.99 Port: 5456
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	
Initialize	Reverts to the default setting.	

III.1.3-4 Serial (422) Client Monitoring

The screenshot shows the web interface for AOE-212N. The sidebar on the left contains the following menu items:

- Device mode setup
 - Legacy mode
- Operation setup
 - Audio setup
 - Serial setup(232)
 - Serial setup(422)
 - Contact closure setup
- System setup
 - Network setup
 - Time setup
 - View log
- Management menu
 - System management
- System information
 - Current time
 - 09.02.2015 / 01:24:37
 - System uptime
 - 04.02.2015 / 07:20:20
 - 04 days 18:04:17 elapsed

The main content area is titled 'Setup serial(422) configurations'. It has two tabs: 'Serial(422) server' and 'Serial(422) client'. The 'Serial(422) client' tab is selected, showing 'Settings of serial(422) client' with a sub-message: 'Serial(422) client is operating as below information.' Below this is a blue banner that says 'Serial(422) client is operating.' At the bottom right of this section are three buttons: 'Start', 'Stop', and 'Reset'.

Below the buttons is a table with two main sections: 'Server information' and 'Operating information'.

Server information		Operating information	
IP address	192.168.1.147	Baud rate	9600
Port	5456	Transfer mode	Full duplex

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Once the Serial (422) client configuration is completed, one can monitor the Serial (422) client status as shown above.

Category	Contents	Default
Start	Starts the Serial (422) Client using the currently stored information.	
Stop	Stops the Serial (422) Client.	
Reset	Stop and reset the Serial (422) Client.	

III.1.4 Contact closure setup

III.1.4-1 Settings of contact closure server

The screenshot shows the web interface for the AOE-212N device. The main content area is titled 'Setup contact closure configurations'. There are two tabs: 'Contact closure server' (selected) and 'Contact closure client'. Under the 'Contact closure server' tab, there is a section 'Settings of contact closure server'. A note states: 'To use Contact closure server, the below procedure proceeds accordingly.' Below this, there is a 'Selection of operating information (5457)' section. It contains two radio buttons: 'Default information' (which is selected and highlighted with a red box) and 'Change information'. Under 'Default information', the 'Port' is set to '5457'. A description below the port field reads: 'Port - Select the desired port for server's operating. It cannot choose the duplicated port.' At the bottom right of this section, there are 'Apply' and 'Initialize' buttons. The sidebar on the left contains a menu with categories like 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'. The top right of the page shows 'Language: English' and user information 'admin [logout] / aoe-212n / 192.168.1.147 / Version: 1.1.1.0'. A copyright notice at the bottom reads 'Copyright (c) 2012 Inter-M All rights reserved.'

Category	Contents	Default
Selection of operating information	Port - Select the desired port for server's operating. It cannot choose the duplicated port. 5457	5457
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	Full duplex
Initialize	Reverts to the default setting.	5456

III.1.4-2 Contact Closure Server Monitoring

interM AOE-212N Language : English admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0

Setup contact closure configurations

Contact closure server | Contact closure client

Settings of contact closure server

Contact closure server is operating as below information.

Contact closure server is operating.

Start Stop Reset

Server operating info

IP address	192.168.1.147	The maximum number of accessible client	20 Q'ty
Port	5457	The total number of client	1 Q'ty
Host name	aoe-212n	The number of client currently connected	1 Q'ty

Operating information

Verify the contact closure status

PIN #1	PIN #2	PIN #3	PIN #4	PIN #5	PIN #6	PIN #7	PIN #8

Connected client list

List	IP address	Host name	Status	Connection time
01	192.168.1.147	aoe-212n	ACT	2015-02-09 01:31:19

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Once the contact server configuration is completed, one can monitor the contact server status as shown above.

Category	Contents	Default
Verify the contact closure status	Contact closure status is displayed in real-time.	On: Blue, Off: Red
Start	Runs the Contact Closure Server using the currently stored information.	
Stop	Stops the Contact Closure Server.	
Reset	Stop and resets the Contact Closure Server.	

III.1.4-3 Setting of contact closure client
 - A Single Server Setup Screen

The screenshot displays the 'Setup contact closure configurations' screen in the AOE-212N web interface. The interface features a sidebar menu on the left with categories like 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'. The main content area is titled 'Setup contact closure configurations' and includes two tabs: 'Contact closure server' and 'Contact closure client'. The 'Contact closure client' tab is active, showing 'Settings of contact closure client'. A note states: 'To use contact closure client, the below procedure proceeds accordingly.' The configuration options are as follows:

- Selection of contact closure resetting (Inactive):** Radio buttons for 'Active' and 'Inactive' (highlighted with a red box). Description: 'Reset stands for the default of contact closure when the service stops.'
- Selection of contact closure delay (Inactive):** Radio buttons for 'Active' and 'Inactive' (highlighted with a red box). Description: 'In case the contact closure actives, the operating of contact closure delays, Maximum delay up to 9 seconds 900 milliseconds.'
- Selection of secondary operating (Main server operates.):** Radio buttons for 'Main server actives' (highlighted with a red box) and 'Secondary server actives'. Description: 'It describes the prevention of downtime of service and dispersion of service load. When the main server breaks down, it switches to the redundancy server.'
- Selection of operating information (192.168.1.147/5457):** Radio buttons for 'Default information' (highlighted with a red box) and 'Change information'. The 'Default information' section shows:

Main server IP address	192.168.1.147	Port	5457
------------------------	---------------	------	------

 Description: 'IP address - Connect to the server with the preset IP address to connect server. Port - Put the port number related to the server to connect.'

At the bottom right, there are 'Apply' and 'Initialize' buttons. The footer contains the text: 'Copyright (c) 2012 Inter-M All rights reserved.'

To configure a single server, set as shown above in Contact closure setup screen.

- Dual Server Setup Screen

To configure a dual server, set as shown above in Contact closure setup screen.

※ To get more information about dual server, please see .1.1-3 Settings of audio client- Server Dualization.

Category	Contents	Default
Selection of contact closure resetting	Reset stands for the default of contact closure when the service stops.	Inactive
Selection of contact closure delay	In case the contact closure actives, the operating of contact closure delays. Maximum delay up to 9 seconds 900 miliseconds.	Inactive
Selection of secondary operating	It describes the prevention of downtime of service and dispersion of service load. When the main server breaks down, it switches to the redundancy server.	Main server actives
Selection of operating information	IP address - Connect to the server with the preset IP address to connect server. Port - Put the port number related to the server to connect.	IP: 192.168.1.99 Port: 5457
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	
Initialzie	Reverts to the default setting.	

III.1.4-4 Contact Closure Client Monitoring

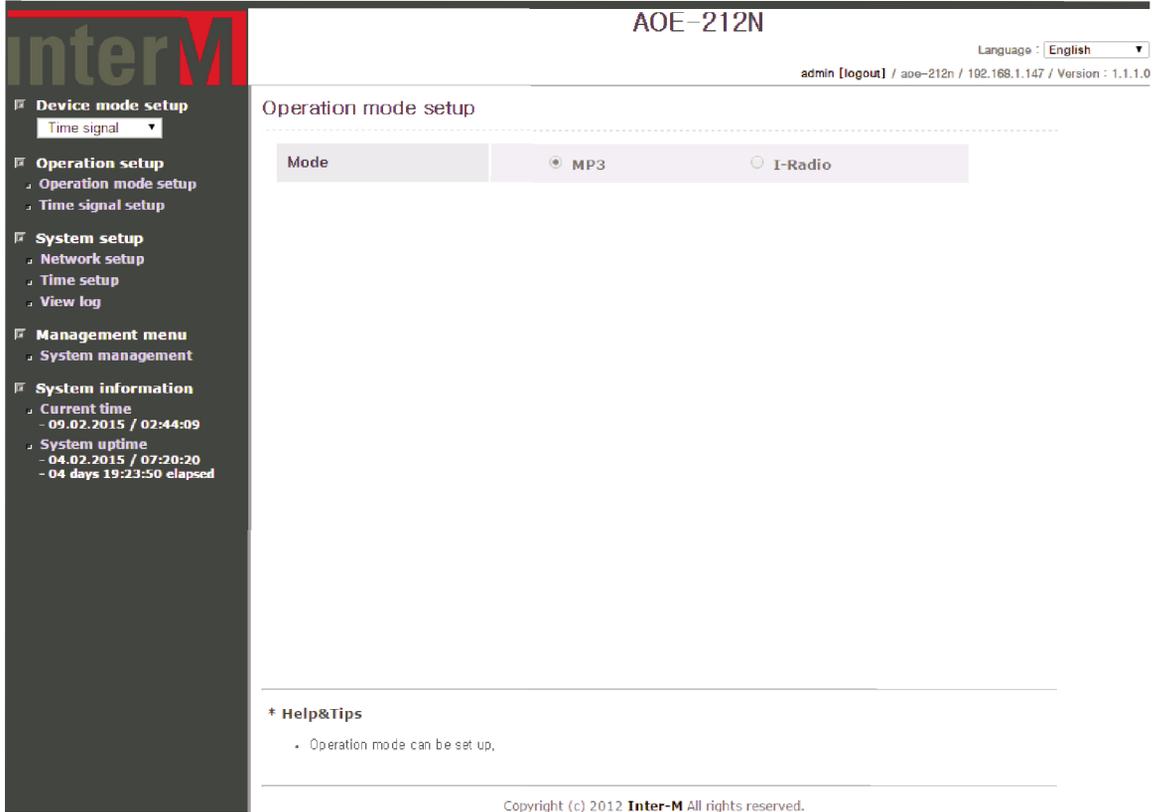
Once the contact client configuration is completed, one can monitor the contact client status as shown above.

Category	Contents	Default
Verify the contact closure status	Contact closure status is monitored in real-time.	On: Blue, Off: Red
Start	Runs the Contact Closure Client using the currently stored information.	
Stop	Stops the Contact Closure Client.	
Reset	Stop and reset the Contact Closure Client.	
Contact closure	Termination of service activity will reset the Contact Closure status. However, inactivity of service will still maintain Contact Closure status.	
Delay value of contact closure	The operation is delayed by the specified set time.	

III. 2 Time signal

※ The following menu is displayed when Time signal is selected from Device mode setup.

III.2.1 Operation mode setup



The screenshot shows the web interface for the AOE-212N device. The top right corner displays the device name 'AOE-212N', the language set to 'English', and the user 'admin [logout]' with the IP address '192.168.1.147' and version '1.1.1.0'. The left sidebar menu is expanded to 'Device mode setup', with 'Time signal' selected. Under 'Operation setup', 'Operation mode setup' is chosen. The main content area is titled 'Operation mode setup' and features a 'Mode' section with two radio buttons: 'MP3' (which is selected) and 'I-Radio'. Below this, there is a 'Help&Tips' section with a single bullet point: 'Operation mode can be set up.' The footer of the page states 'Copyright (c) 2012 Inter-M All rights reserved.'

Category	Contents	Default
Mode	Can select MP3 and Internet Radio timed operations. MP3 timed broadcast is the ability to upload the MP3 files and play at specified time period. Internet Radio timed broadcast is the ability to play the radio at specified time period.	Internet Radio

III.2.2 Time signal setup

III.2.2-1 MP3 Reserved Broadcast Setup

The screenshot shows the 'Time signal setup' page in the AOE-212N web interface. The sidebar on the left contains a menu with categories like 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'. The main content area is titled 'Time signal setup' and includes the following sections:

- Enable:** Radio buttons for 'ON' (selected) and 'OFF'.
- Config file:** A text field containing 'info_mp3_schedule.xml', a 'Download' button, an empty text field with a '...' menu icon, and an 'Upload' button.
- Schedule table view:** A 'View table' button.
- Schedule list:** 'Add', 'Delete', and 'Modify' buttons.
- Holiday:** 'Setup' and 'Delete' buttons.
- Source file management:** A 'Setup' button.

Below the configuration area is a 'Help&Tips' section with the following points:

- Time signal can be set up.
- Red letters in the table view if the title to play the file does not exist.
- The maximum number of time signal list is 50.
- The maximum number of holiday list is 30.
- Upload the maximum capacity of the disk usage is up to 95 percent.

At the bottom of the page, it states: Copyright (c) 2012 Inter-M All rights reserved.

Category	Contents	Default
Enable	[ON] Button to operate the functions. [OFF] Button to stop the functions.	ON
Config file	[Download] Button to download the stored files. [Upload] Button to upload the stored files and apply to the device.	
Schedule table view	[View Table] Button to view the status of all reserved broadcasts.	
Schedule list	[Add] Button to add reserved broadcast. Up to 50 reserved broadcasts can be registered. [Delete] Button to delete reserved broadcast. [Modify] Button to modify registered reserved broadcasts.	
Holiday	[Setup] Button to add holidays. During holidays reserved broadcast is not active. Up to 30 holidays can be reserved registered. [Delete] Button to delete holiday setting.	
Source file management	[Setup] Button to upload the MP3 files to be used in reserved broadcast.	

III.2.2-2 Internet Radio Reserved Broadcast Setup

The screenshot shows the 'Time signal setup' page for the AOE-212N device. The interface includes a sidebar menu on the left with the following sections: Device mode setup (Time signal), Operation setup (Operation mode setup, Time signal setup), System setup (Network setup, Time setup, View log), Management menu (System management), and System information (Current time: 09.02.2015 / 01:33:25, System uptime: 04.02.2015 / 07:20:20, 04 days 18:13:05 elapsed). The main content area is titled 'Time signal setup' and contains several sections: 'Enable' with radio buttons for ON (selected) and OFF; 'Config file' showing 'info_radio_schedule.xml' with a 'Download' button and an 'Upload' button; 'Schedule table view' with a 'View table' button; 'Schedule list' with 'Add', 'Delete', and 'Modify' buttons; and 'Holiday' with 'Setup' and 'Delete' buttons. At the bottom, there is a '* Help&Tips' section with three bullet points: 'Time signal can be set up.', 'The maximum number of time signal list is 50.', and 'The maximum number of holiday list is 30.'. The footer of the page reads 'Copyright (c) 2012 Inter-M All rights reserved.'

Category	Contents	Default
Enable	[ON] Button to operate the functions. [OFF] Button to stop the functions.	ON
Config file	[Download] Button to download the stored files. [Upload] Button to upload the stored files and apply to the device.	
Schedule table view	[View table] Button to view the status of all reserved broadcasts.	
Schedule list	[Add] Button to add reserved broadcast. Up to 50 reserved broadcasts can be registered. [Delete] Button to delete the reserved broadcast. [Modify] Button to modify registered reserved broadcasts.	
Holiday	[Setup] Button to add holidays. During holidays reserved broadcast is not active. Up to 30 holidays can be reserved registered. [Delete] Button to delete holiday setting.	

- Click [Delete] button in [Schedule list] to display as shown below.

Time schedule delete event

Title

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From above screen display delete can be made. Click [Select all] button to delete all of the reserved broadcast settings.

- Click [Modify] from [Schedule list] to display as shown below.

MP3 Mode	Internet Radio Mode																																																																																				
<div style="background-color: #333; color: white; padding: 5px; text-align: center;">Time schedule modify event</div> <div style="border: 1px solid #ccc; padding: 5px;"> <p>Schedule list <input style="width: 80%;" type="text" value="test time table"/></p> <p>Title <input style="width: 80%;" type="text" value="test time table"/></p> <p>File <div style="border: 1px solid #ccc; padding: 2px; min-height: 40px;"> Maid_with_the_Flaxen_Hair.mp3 Sleep_Away.mp3 </div></p> <p>Current Time : 09.02.2015 / 02:45:10</p> <p><input type="radio"/> Recurrences <input type="text" value="0 Min"/></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>00</td><td>01</td><td>02</td><td>03</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>AM</td> </tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>PM</td> </tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> </table> <p><input type="radio"/> Specified time</p> <p>Start <input type="text" value="07"/> HH <input type="text" value="00"/> MM</p> <p>End <input type="text" value="19"/> HH <input type="text" value="00"/> MM</p> <p>Day of week <table style="display: inline-table; border-collapse: collapse;"> <tr> <td>SUN</td><td>MON</td><td>TUE</td><td>WED</td><td>THU</td><td>FRI</td><td>SAT</td><td>ALL</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td> </tr> </table></p> <p style="text-align: right;"><input type="button" value="Initialize"/> <input type="button" value="Apply"/></p> <p style="font-size: small; text-align: center;">Copyright (c) 2012 Inter-M All rights reserved.</p> </div>	00	01	02	03	04	05	06	07	08	09	10	11	AM	<input type="checkbox"/>	12	13	14	15	16	17	18	19	20	21	22	23	PM	<input type="checkbox"/>	SUN	MON	TUE	WED	THU	FRI	SAT	ALL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<div style="background-color: #333; color: white; padding: 5px; text-align: center;">Time schedule modify event</div> <div style="border: 1px solid #ccc; padding: 5px;"> <p>Schedule list <input style="width: 80%;" type="text" value="test time table"/></p> <p>Title <input style="width: 80%;" type="text" value="test time table"/></p> <p>File <div style="border: 1px solid #ccc; padding: 2px; min-height: 40px;"> mbc standard fm MBC FM4U MBC AM SBS PowerFM CBS STANDARD FM CBS MUSIC FM YTN FM 94.5MHz KUKDONG BROADCASTING BUDDHISM BROADCASTING BBS </div></p> <p>Current Time : 09.02.2015 / 02:46:54</p> <p>Time Start <input type="text" value="09"/> HH <input type="text" value="01"/> MM</p> <p>End <input type="text" value="17"/> HH <input type="text" value="09"/> MM</p> <p>Day of week <table style="display: inline-table; border-collapse: collapse;"> <tr> <td>SUN</td><td>MON</td><td>TUE</td><td>WED</td><td>THU</td><td>FRI</td><td>SAT</td><td>ALL</td> </tr> <tr> <td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td> </tr> </table></p> <p style="text-align: right;"><input type="button" value="Initialize"/> <input type="button" value="Apply"/></p> <p style="font-size: small; text-align: center;">Copyright (c) 2012 Inter-M All rights reserved.</p> </div>	SUN	MON	TUE	WED	THU	FRI	SAT	ALL	<input checked="" type="checkbox"/>	<input type="checkbox"/>																																				
00	01	02	03	04	05	06	07	08	09	10	11	AM																																																																									
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12	13	14	15	16	17	18	19	20	21	22	23	PM																																																																									
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At the screen above, reserved broadcast can be modified. Only the registered broadcasts can be modified.

- Click [Setup] button in [Holiday] to display as shown below.

Holiday setup event

Enable <input type="checkbox"/>	Event title No Title		
Start Date	02.03 <input type="text"/>	Start time	00:00 <input type="text"/>
End date	02.03 <input type="text"/>	End time	11:42 <input type="text"/>

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At the screen above, holiday can be set. During the holiday setting, reserved broadcast is inactive.

- Click [Delete] button at [Holiday] to display as shown below.

Holiday delete event

Event title	No Title <input type="text"/>	<input type="checkbox"/>
Event title	No Title <input type="text"/>	<input type="checkbox"/>
Event title	No Title <input type="text"/>	<input type="checkbox"/>
Event title	TEST <input type="text"/>	<input type="checkbox"/>

At the above screen, holiday can be deleted. Click [Select all] button to delete all of holiday settings.

- Click [Setup] button at [Source file management] to display as shown below. (Applies only to MP3 reserved broadcast setting)

Sound file manager

Select	<div style="border: 1px solid #ccc; padding: 5px; min-height: 100px;"> Maid_with_the_Flaxen_Hair.mp3 Sleep_Away.mp3 </div> <p style="text-align: right; margin-top: 5px;"> <input type="button" value="Delete"/> <input type="button" value="Play"/> <input type="button" value="Stop"/> </p>
Disk usage	<div style="border: 1px solid #ccc; padding: 2px;"> <div style="background-color: #27ae60; width: 33%; height: 10px; margin-bottom: 2px;"></div> 33% </div>
Upload	<input type="text"/> <input type="button" value="..."/> <input type="button" value="Upload"/>

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At the above screen, select the MP3 file to be used for MP3 reserved broadcast.

[Delete], [Play], [Stop] are used to manage MP3 files.

Can use up to 95% of the total disk storage space.

III. 3 Internet radio

※ At the Device mode setup clicking Internet radio will display the following menu screen.

III.3.1 I-Radio setup

The screenshot displays the AOE-212N web interface. At the top right, it shows 'Language : English' and 'admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0'. The left sidebar contains a navigation menu with the following items:

- Device mode setup
 - Internet radio
- Operation setup
 - I-Radio setup
- System setup
 - Network setup
 - Time setup
 - View log
- Management menu
 - System management
- System information
 - Current time: 09.02.2015 / 01:39:12
 - System uptime: 04.02.2015 / 07:20:20 (04 days 18:18:53 elapsed)

The main content area is titled 'I-Radio setup' and features a 'Channel title' dropdown menu with 'mbc standard fm' selected. Below the dropdown are three buttons: 'Play', 'Stop', and 'Edit'. A 'Help&Tips' section at the bottom states: 'When you press the Play button, the radio button that corresponds to the [title of the channel] is playing.'

Category	Contents	Default
Play	Plays Internet Radio on the selected channel.	Play
Stop	Stops Internet Radio play.	
Edit	Modify the channel list. The number of channels can be added without limits.	

III.3.2 I-Radio List Modify

Click [Edit] button at [I-Radio setup] to display as shown below.

User defined broadcast

The number of channels : 3 Q'ty

Title	URL	Remove
mbc standard fm	mms://VODSTR.cjmbc.co.kr/STFM	<input type="button" value="Remove"/>
MBC FM4U	mms://222.113.53.4/chmbcfm	<input type="button" value="Remove"/>
MBC AM	mms://222.113.53.4/chmbcam	<input type="button" value="Remove"/>

Title	URL	Add
		<input type="button" value="Add"/>

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Category	Contents	Default
Export	Can download saved internet radio channel file.	ON
Import	Can upload saved internet radio channel file.	
Apply	Apply the internet radio channel list.	
Initialize	Reset to previous set state.	
Add	Add internet radio channel. As applied, it is added to the internet radio list.	
Remove	Deletes the selected internet radio channel. As applied, it is reflected in the internet radio list.	

III. 4 Contact output

※ At the Device mode setup clicking Contact output will display the following menu screen.

III.4.1 Settings of contact closure output

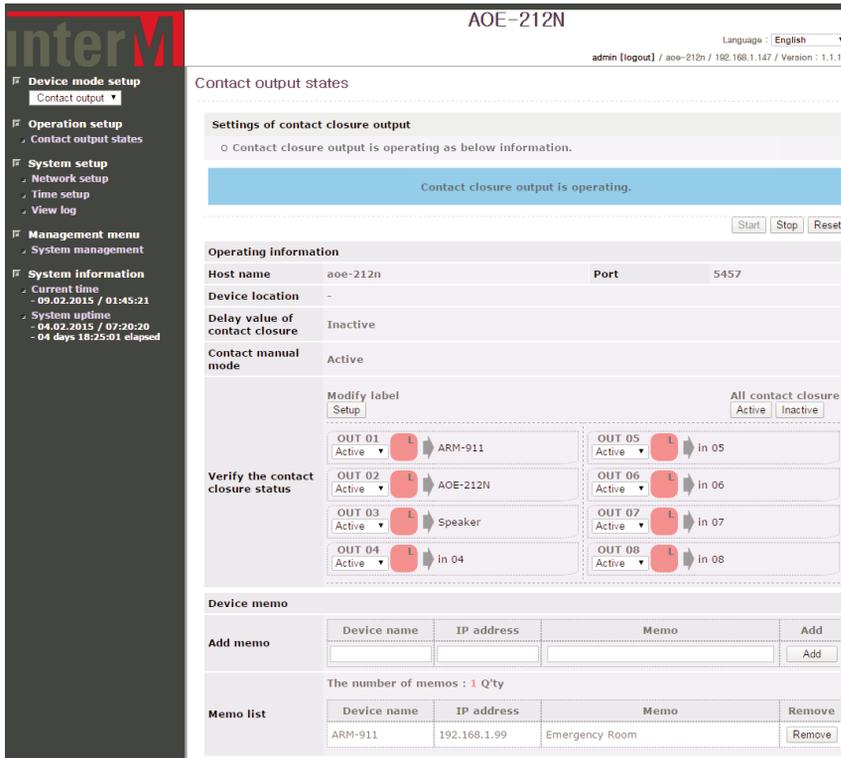
The screenshot shows the 'Contact output states' configuration page in the Inter-M AOE-212N web interface. The page title is 'AOE-212N' and the language is set to 'English'. The user is logged in as 'admin'. The sidebar menu includes 'Device mode setup', 'Operation setup', 'System setup', 'Management menu', and 'System information'. The main content area is titled 'Contact output states' and contains the following sections:

- Settings of contact closure output**: A note states 'To use contact closure output, the below procedure proceeds accordingly.' Below this are three sections:
 - Selection of contact closure delay (Inactive)**: Radio buttons for 'Active' and 'Inactive' (selected). Description: 'In case the contact closure activates, the operating of contact closure delays. Maximum delay up to 9 seconds 900 milliseconds.'
 - Selection of contact manual mode (Active)**: Radio buttons for 'Active' (selected) and 'Inactive'. Description: 'When the user activates the manual mode set point, you can control the contact closure directly through the UI.'
 - Selection of operating information (5457)**: Radio buttons for 'Default information' (selected) and 'Change information'. The 'Port' is set to '5457'. Description: 'Port - Select the desired port for contact closure output's operating. It cannot choose the duplicated port.'

At the bottom right, there are 'Apply' and 'Initialize' buttons. The footer contains the copyright notice: 'Copyright (c) 2012 Inter-M All rights reserved.'

Category	Contents	Default
Selection of contact closure delay	In case the contact closure activates, the operating of contact closure delays. Maximum delay up to 9 seconds 900 milliseconds.	Inactive
Selection of contact manual mode	User can directly generate the virtual contact point via the web UI.	Inactive
Selection of Operating information	Port - Select the port information for the server operation. Cannot use same port for duplicate services.	5457
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	
Initialize	Reverts to the default setting.	

III.4.2 Contact Output Monitoring



After completing the contact output settings, one can monitor the contact output status as shown above.

Category	Contents	Default
Host name	Displays the name of host.	aoe-212n
Port	The port information while in operation.	5457
Device location	Device location entered in the network settings. Used for device identification purposes.	-
Delay value of contact closure	Delays the contact operation per set time period.	Inactive
Contact manual mode	User can directly generate the virtual contact activity via the web UI.	Inactive
Verify the contact closure status	[Modify label] can attach a name to each contact. [Active] of [All contact state] sets all contacts to the usable state. [Inactive] of [All contact state] sets all contacts to the unusable state. [Red L] current contact state is Low (Closed) state. [Green H] current contact state is High (Open) state. [Active] Contacts are operating normal. [Inactive] Contacts are not operating even with inputs. Click [Contact manual mode] to generate a virtual contact to change the contact status.	L
Add memo	The name of the interlocking devices, IP address and other contents are added to memo.	
Memo list	Displays the saved memo list. Use [Remove] button to delete each memo.	

IV. System Setup
IV. 1 Network Setup

AOE-212N Language : English admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0

Setup network configurations

MAC address: 00:1D:1D:02:11:87

Host name: aoe-212n

Device location: .

IP address:

- Dynamic IP assignment from DHCP server
- Manual setting
 - IP address: 192.168.1.147
 - Subnet mask: 255.255.255.0
 - Gateway: 192.168.1.1
 - DNS 1 server: 168.126.63.1
 - DNS 2 server: 168.126.63.2

Buttons: Apply, Initialize

*** Help&Tips**

- It configures the way for system to connect to Internet.
- If the IP address changes please access the web page again.
- Space cannot be included in the host name.
- The character of the host name must be an alphabet or a digit!

Category	Contents	Default
MAC address	Display the MAC address the device.	
Host name	Displays the name of device. If it displays the location of device, management will be convenience. All characters are supported except blank spaces.	aoe-212n
Device location	Indicates the location of the device. Operates as contact output function is used.	
IP address	Setup the IP address of device. There are two ways "Dynamic IP assignment from DHCP Server" and "Manual Setting" Setting a Static IP address.	192.168.1.99
Subnet mask	Identifying method used to separate the host and the network portion of the IP address.	255.255.255.0
Gateway	Setup the gateway of network connected to the gateway.	192.168.1.1
DNS 1 server	Setup the address of DNS1 server. Follow the setup of property setup of device.	168.126.63.1
DNS 2 server	Setup the address of DNS2 server. Follow the setup of property setup of device.	168.126.63.2
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	
Initialize	Reverts to the default setting.	

IV. 2 Time setup

The screenshot shows the web interface for the AOE-212N device. The title bar displays 'interM AOE-212N' and 'Language : English'. The user is logged in as 'admin' with a 'logout' link. The version is '1.1.1.0'. The main heading is 'Setup time and date configurations'. The interface includes a sidebar menu with the following items: Device mode setup (Contact output), Operation setup (Contact output states), System setup (Network setup, Time setup, View log), Management menu (System management), and System information (Current time: 09.02.2015 / 01:51:34, System uptime: 04.02.2015 / 13:20:20, 04 days 18:31:14 elapsed). The main configuration area shows: Time zone: (GMT+09:00) Seoul; Current time: 09.02.2015 / 01:51:48; Time setup: Manual setup (2015 year, 02 month, 09 day, 07 hh, 51 mm, 34 ss) and Automatic time synchronization (Server address: time.bora.net). An 'Apply' button is present at the bottom right of the configuration area. A 'Help&Tips' section contains two bullet points: 'There can be a couple of difference between the current time of this system and real time due to Internet connection delay.' and 'This system must be connected to Internet to use automatic time synchronization.' The footer states 'Copyright (c) 2012 Inter-M All rights reserved.'

Category	Contents	Default
Time Zone	Set the time in accordance with GMT.	GMT+09:00
Current Time	Current time in accordance with set GMT.	1970.01.01
Time Setup	Manual Setup	Setup the time manually by user.
	Automatic time synchronization	If device is connected to internet, time can be synchronized automatically by using the time server.
GMT Change	Change the GMT.	
Apply	After completing the changes to the equipment, press the Apply button to saves the updated settings.	

IV. 3 View log

interM

AOE-212N

Language : English

admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0

- ▣ Device mode setup
 - Contact output ▾
- ▣ Operation setup
 - Contact output states
- ▣ System setup
 - Network setup
 - Time setup
 - View log
- ▣ Management menu
 - System management
- ▣ System information
 - Current time
- 09.02.2015 / 01:51:55
 - System uptime
- 04.02.2015 / 07:20:20
- 04 days 18:31:36 elapsed

View log

Download the log

```

[2015/02/09 01:31:18] Contact closure sever setting starts.
[2015/02/09 01:31:18] Settings of contact closure server - Operation [no] -> [yes]
[2015/02/09 01:31:18] Contact closure sever setting completes.
[2015/02/09 01:31:19] Contact closure client - Connected to server : [192.168.1.147]
[2015/02/09 01:31:19] Contact closure server - Client was connected : [aoe-212n/192.168.1.147]
[2015/02/09 01:31:19] Contact closure client - state : [ #1:[off] #2:[off] #3:[off] #4:[off] #5:[off] #6:[off]
#7:[off] #8:[off] ]
[2015/02/09 01:31:51] Settings of contact closure client - Contact closure client stops.
[2015/02/09 01:31:51] Settings of contact closure client - Operation [yes] -> [no]
[2015/02/09 01:31:51] Contact closure client - Disconnected from server : [192.168.1.147]
[2015/02/09 01:31:51] Contact closure server - Client was disconnected : [aoe-212n/192.168.1.147]
[2015/02/09 01:32:34] Device mode setup - Device mode [legacy] -> [timeSignal]
[2015/02/09 01:32:34] Audio client - Disconnected from server : [192.168.1.147]
[2015/02/09 01:32:34] Audio server - Client was disconnected : [aoe-212n/192.168.1.147]
[2015/02/09 01:32:34] Serial (232) client - Disconnected from server : [192.168.1.147]
[2015/02/09 01:32:34] Serial (232) server - Client was disconnected : [aoe-212n/192.168.1.147]
[2015/02/09 01:32:34] Serial (422) client - Disconnected from server : [192.168.1.147]
[2015/02/09 01:32:34] Serial (422) server - Client was disconnected : [aoe-212n/192.168.1.147]
[2015/02/09 01:33:24] [Time signal mode setup] MP3 -> IRADIO
[2015/02/09 01:34:23] [Time signal mode setup] IRADIO -> MP3
[2015/02/09 01:35:46] [Time signal mode setup] MP3 -> IRADIO
[2015/02/09 01:37:00] [Time signal mode setup] IRADIO -> MP3
[2015/02/09 01:37:39] [Time signal mode setup] MP3 -> IRADIO
[2015/02/09 01:39:10] Device mode setup - Device mode [timeSignal] -> [iradio]
[2015/02/09 01:40:18] Device mode setup - Device mode [iradio] -> [contact]
[2015/02/09 01:40:42] Contact closure input setting starts.
[2015/02/09 01:40:43] Settings of contact closure output - Operation [no] -> [yes]
[2015/02/09 01:40:43] Contact closure input setting completes.
                    
```

*** Help&Tips**

- You may clear all log by clicking 'Clear log' button.

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Category	Contents	Default
View log file	Check the system information such as setup of device and upgrade information, etc. Recorded information is recorded with time and date.	ON
Refresh	Update the log information to latest status.	
Clear Log	Press the Clear Log button to erase the log, the log records will be deleted.	
Download the log	Download the current log information and store in a PC. Dedicated viewer is required.	

V. System management



- ▣ Device mode setup
 - Contact output ▾
- ▣ Operation setup
 - Contact output states
- ▣ System setup
 - Network setup
 - Time setup
 - View log
- ▣ Management menu
 - System management
- ▣ System information
 - Current time
- 09.02.2015 / 01:52:36
 - System uptime
- 04.02.2015 / 07:20:20
- 04 days 18:32:16 elapsed

AOE-212N

Language : English ▾

admin [logout] / aoe-212n / 192.168.1.147 / Version : 1.1.1.0

System management

System upgrade	<p>Find file</p> <input style="width: 100%;" type="text"/> ...
	<input type="button" value="Apply"/> <input type="button" value="Initialize"/>
	<p>Firmware file is an upgrade-file that is located in your local PC.</p> <p>It may several minutes to complete upgrading. Please do not leave this page until a new page appears.</p> <p>(Caution) Upgrading with inappropriate file may cause harm to the system.</p> <p>(Caution) Do not turn off the system during upgrading.</p>
Password change	<p>User account <input type="text" value="admin"/></p> <p>Current password <input style="width: 100%;" type="password"/></p> <p>New password <input style="width: 100%;" type="password"/></p> <p>Password confirm <input style="width: 100%;" type="password"/></p>
	<input type="button" value="Apply"/> <input type="button" value="Initialize"/>
	<p>Change the new password.</p> <p>32 letters and numbers you entered.</p>
System check setup	<p>System check time <input type="text" value="12"/> Hour <input type="text" value="00"/> Minute</p> <p>Operation <input type="text" value="Inactive"/></p>
	<input type="button" value="Apply"/> <input type="button" value="Initialize"/>
	<p>System will reboot at the appointed time.</p>
Restart system	<input type="button" value="Apply"/>
	<p>Restart will reboot the system.</p>
Factory set system	<input type="button" value="Apply"/>
	<p>Factory set system will initialize the device to the default settings.</p>

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V. 1 System Upgrade

Category	Contents	Default
Find File	<p>Select the file to upgrade the AOE-212N</p> <p>Select the file you want if file explorer is opened by pushing the  button next to the text box.</p> <p>Only *.tar' file can be selected.</p>	
Set	<p>Upgrade the device after selecting the file.</p> <div data-bbox="576 629 1179 878" style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;"> <p>The page at 192.168.1.198 says: x</p> <p>Are you sure to System upgrade?</p> <p style="text-align: right;"> <input type="button" value="OK"/> <input type="button" value="Cancel"/> </p> </div> <p>Go to next step if confirm is pushed.</p> <div data-bbox="576 981 1179 1257" style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;"> <p>The page at 192.168.1.198 says: x</p> <p>Firmware has been successfully uploaded. Proceed with the upgrade.</p> <p style="text-align: right;"><input type="button" value="OK"/></p> </div> <p>It will take about 1 minute to upgrade the system. System will restart after upgrading.</p> <div data-bbox="576 1389 865 1481" style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">  loading... 10% </div>	

V. 2 Password Change

Item	Contents	Default Value
User account	Change the password for the Selected the account. The administrator "admin" can change the password for all accounts.	
New password	Change the password to connect to the equipment.	1
Apply	Save the changes by clicking Apply button.	
Initialize	Reverts to previous setting before the change.	

V. 3 System check setup

Item	Contents	Default Value
System check time	Set daily system check time.	
Operation	When activated, performs a system check at the set time and reboots the system.	
Apply	Save the changes by using Apply button to store the changes.	
Initialize	Reverts to its default state before saving the settings.	

V. 4 Restart system

Item	Contents	Default Value
Apply	Restart the device by using the Apply button.	

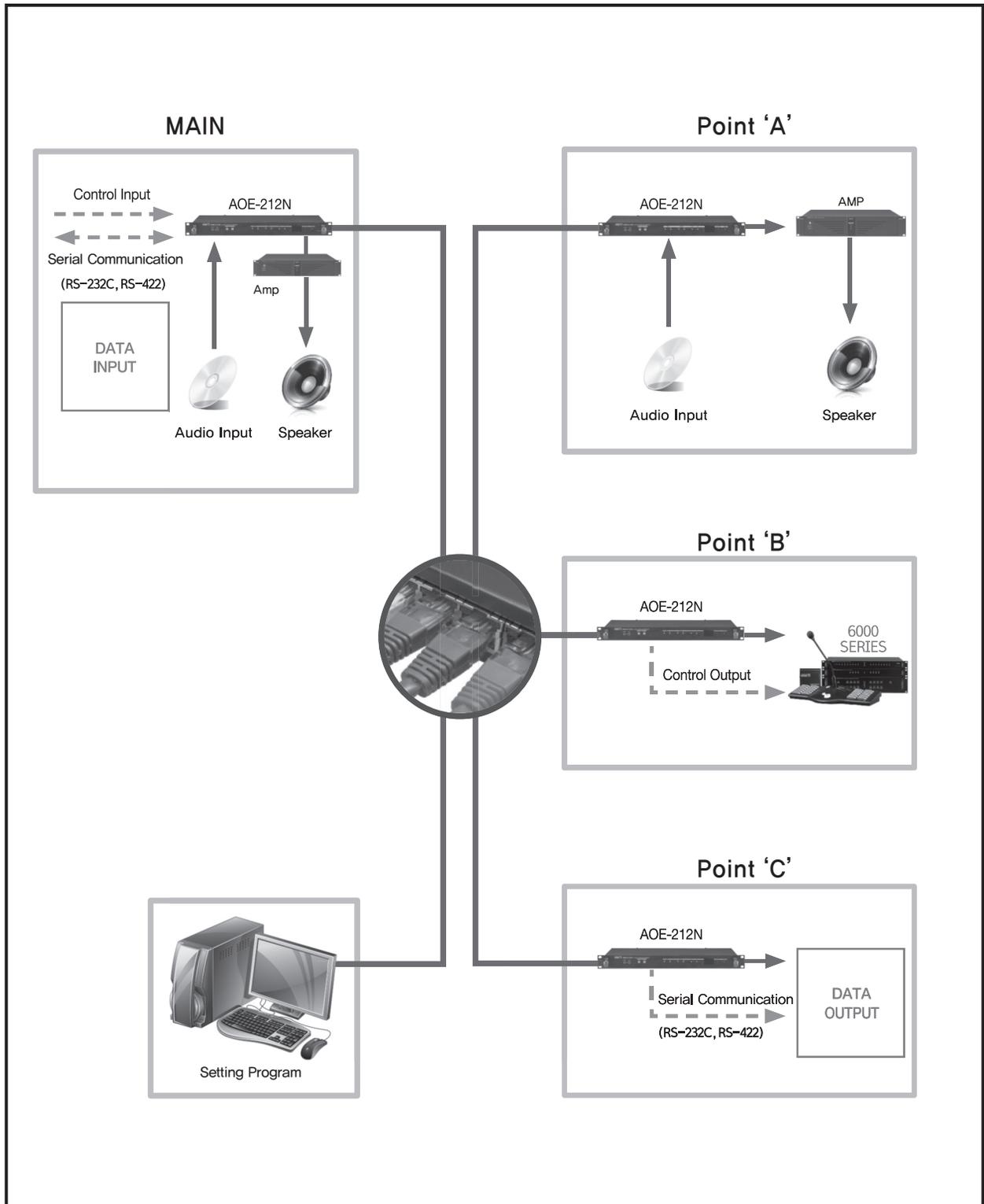
V. 5 Factory set system

Item	Contents	Default Value
Apply	Click the Apply button to reset the device to Factory Reset the device defaults. All settings are returned to the factory default settings and or to the last system upgraded state.	

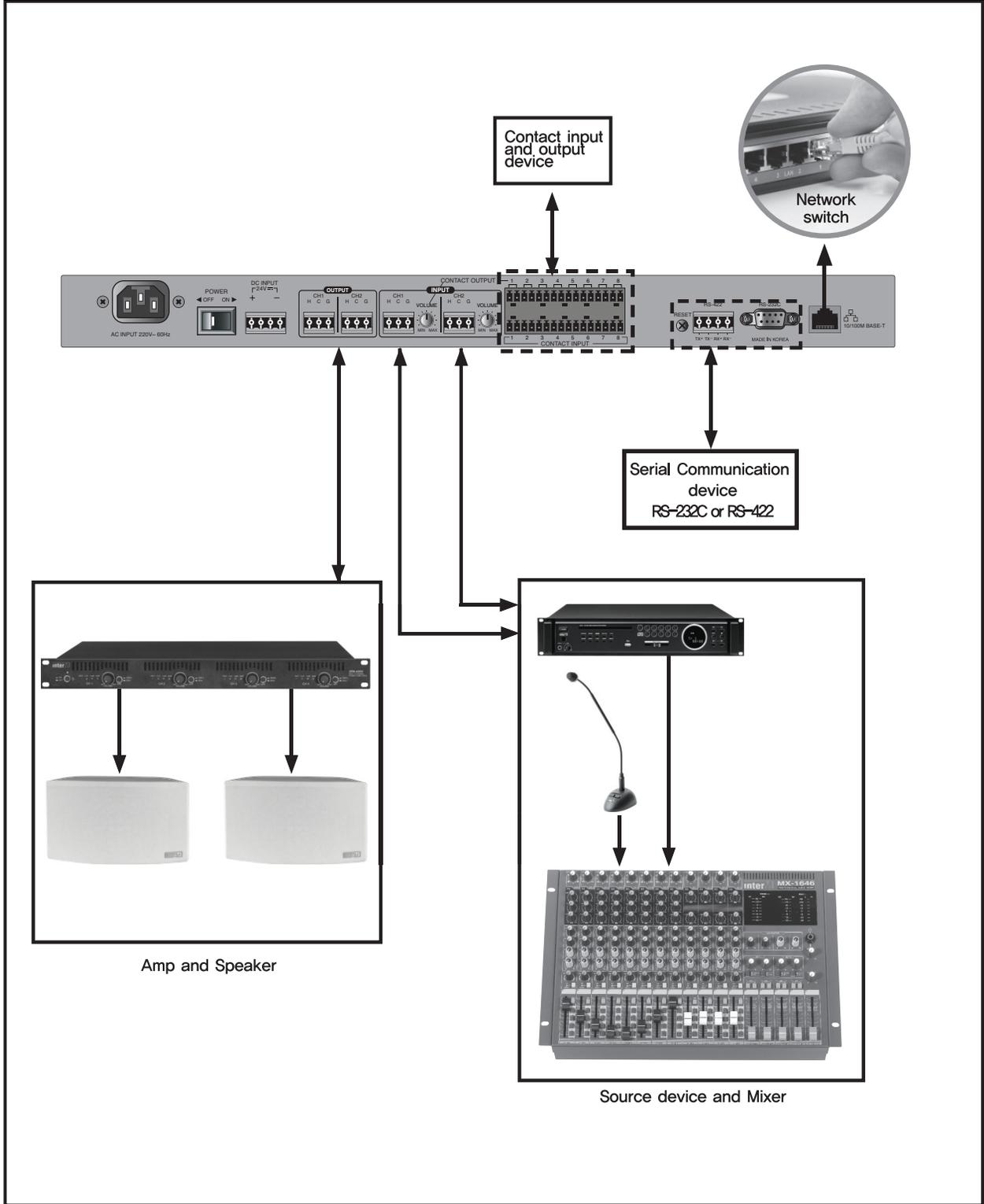
VI. System information

Item	Contents	Default Value
Current Time	Displays current time of the device. Updated as web connection is made.	
System uptime	Equipment turned on time and elapsed time display.	

Device structure block



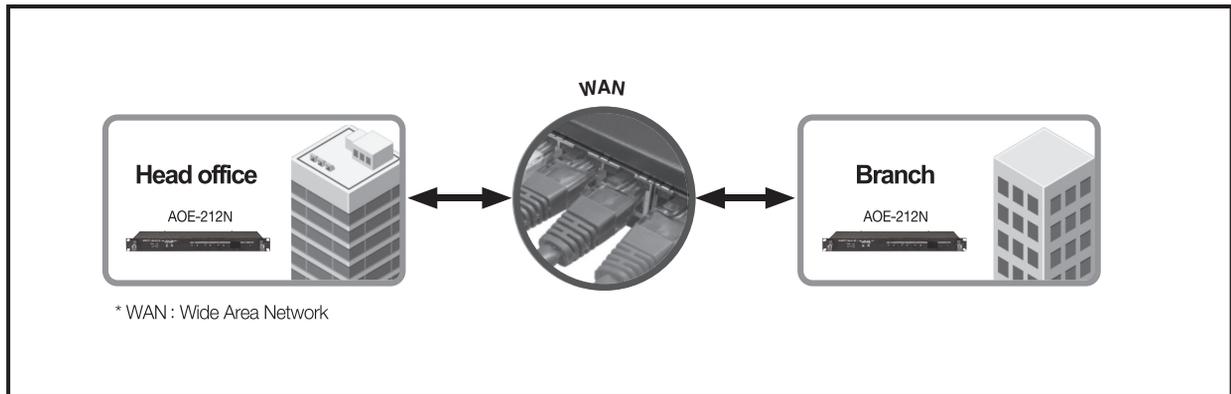
How to connect



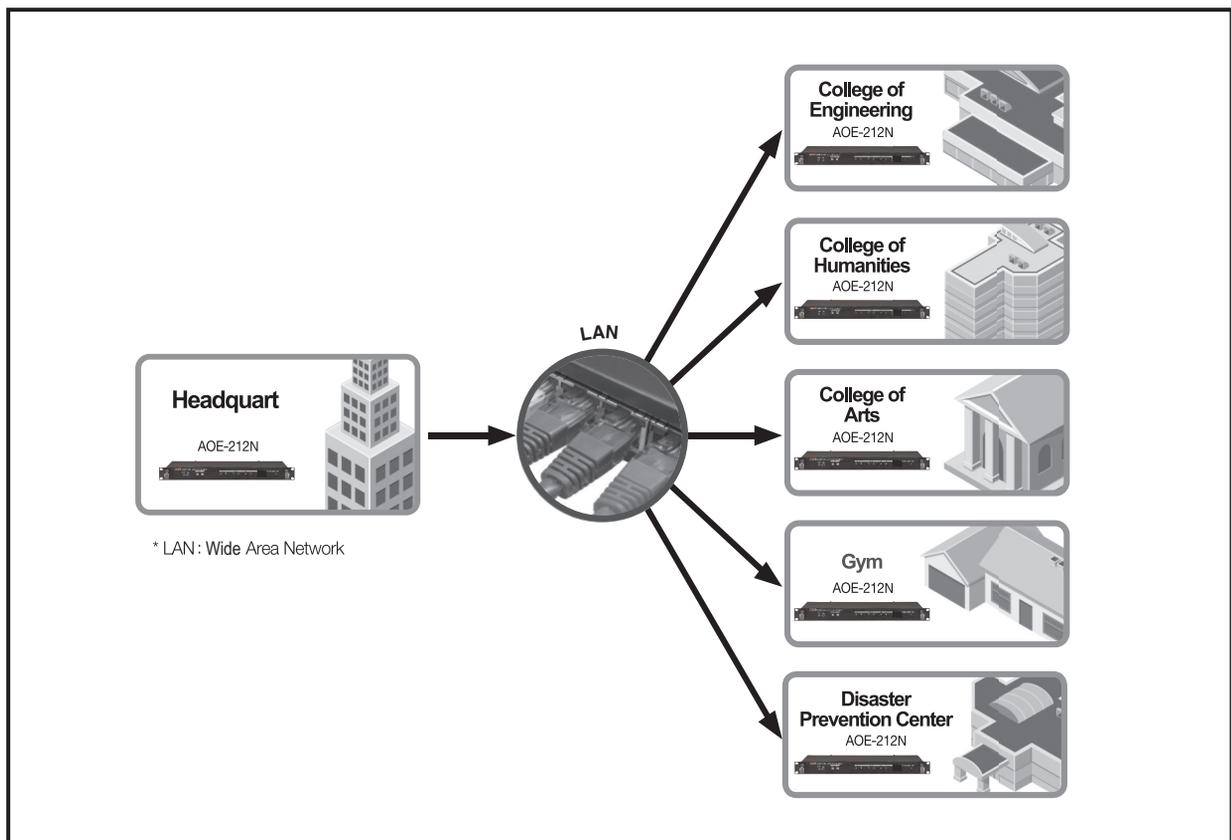
Applications

Education institute, commercial facility, business facility, religion facility, gym, exhibition room, facility, leisure facility, them park, etc. 1:1 or 1: N functions are flexible to use in any space.

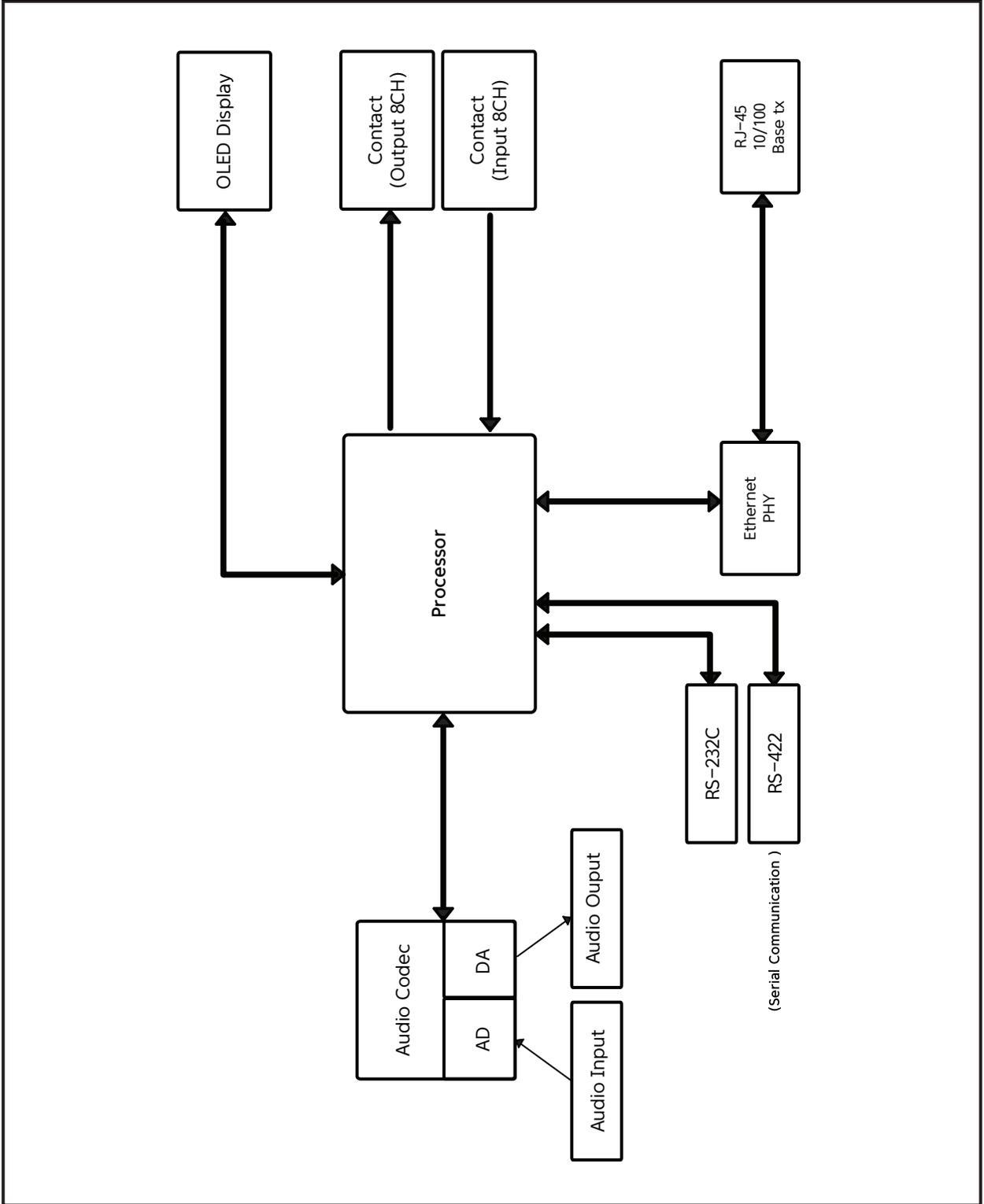
-1:1 Purpose



-1:20 (WAN network) and 1:64 (LAN) purpose (School, resort, theme park, exhibition room, museum, etc.)



Block Diagram



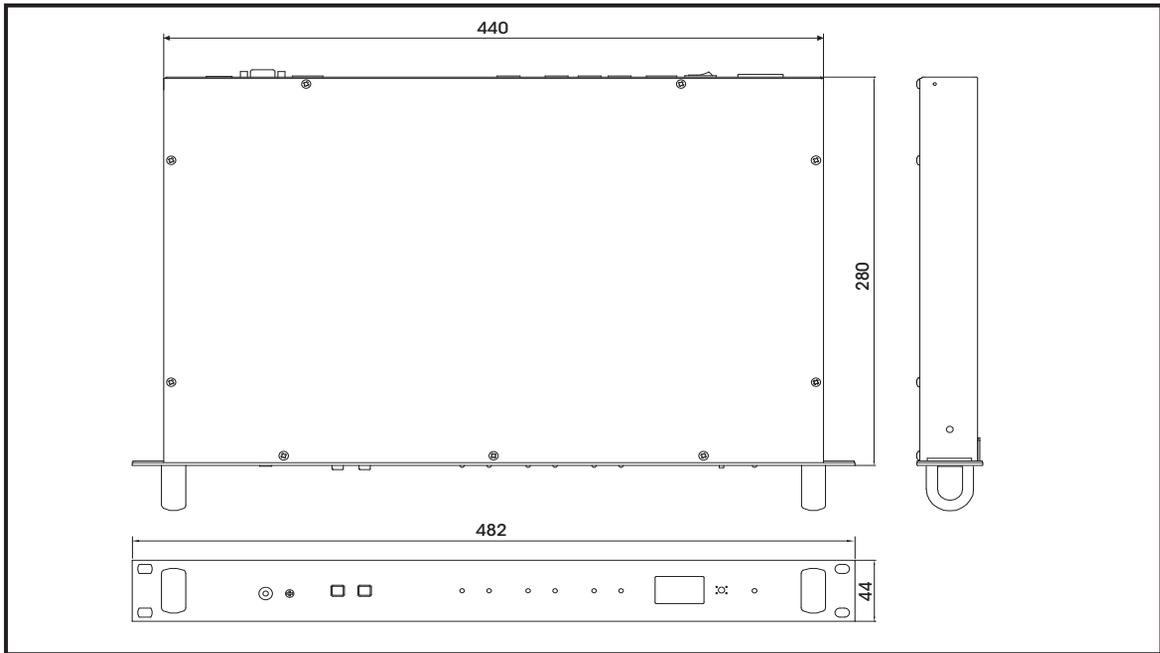
Specifications

AOE-212N	
AUDIO	
Maximum Input Level	+ 20 dBu
Maximum Output Level	+ 20 dBu
Frequency characteristics (48Khz Sampling, ± 1dB)	30Hz ~ 20kHz
T.H.D (48Khz Sampling)	0.1% (under)
SNR	92 dB
Support Sampling Frequency	16, 32, 44.1, 48Khz
Quantization bits	24 bit
Data communication	
Communication type	Contact, RS-232C, RS-422
Contact Input, Output	Input 8-Channel, Output 8-Channel
Serial communication rate	2400 bps~115200 bps
ETHERNET(LAN)	10-100 Base-T, (RJ-45)
General characteristics	
Operating temperature	-10°C ~ 40°C
Using Power	100-120VAC or 220-240VAC:50/60Hz (Supplied AC mains transformer or DC 24V depends on country requirements)
Power Consumption	28W under
Weight (SET)	3.27kg/7.2lb
Dimension (SET)	482(W)×44(H)×280(D)mm/18.9(W)×1.73(H)×3.14(D)in

* Design and specification are subject to be changed for the improvement of product quality without pre notice.

* Signal propagation Latency CL2 Switch 1 via to audio : About 1sec/ Data: about 100ms / Contact : about 100ms

* Dimensions



Service

Procedures

Take steps to insure the problem is not related to operator error or other products within the system. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

Schematic

A Schematic is available by contacting your warranty provider.

Parts List

A Parts List is available by contacting your warranty provider.

Variations and Options

Variations

Products supplied through legitimate sources are compatible with local AC power requirements.

Options

No optional items are available for this product.

Warranty

Warranty terms and conditions vary by country and may not be the same for all products. Terms and conditions of warranty for a given product may be determined first by locating the appropriate country which the product was purchased in, then by locating the product type.

To obtain specific warranty information and available service locations contact Inter-M directly or the authorized Inter-M Distributor for your specific country or region.

interM



Inter-M, Ltd. (Korea) began operations in 1983.

Since then, Inter-M has grown to become one of the largest manufacturers of professional audio and commercial sound electronics equipment in the world.

Inter-M has gained worldwide recognition for its own branded products, as well as private label manufacturing of electronics sold under other names (OEM).

The company is no longer just a Korean company, but rather a global company that is truly international in scope, with factories and offices in Korea and China, and sales and marketing operations located in Japan, Europe, and the U.S.A.

With more than 850 employees around the globe, Inter-M is well-poised for further growth and expansion.

Inter-M Americas, INC.

13875 ARTESIA BLVD. CERRITOS, CA 90703 USA
TEL : +1-562-921-0313, FAX : +1-562-921-0370
Home Page : <http://www.inter-m.net>, E-mail : info@inter-m.net

Inter-M Corporation

SEOUL OFFICE : 719, DOBONG-RO, DOBONG-GU, SEOUL, KOREA
TEL : +82-2-2289-8140~8, FAX : +82-2-2289-8149
Home Page : <http://www.inter-m.com>, E-mail : overseas@inter-m.com

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