EVAMATRIX

Full Digital Network
Voice Alarm and Public Address System



EN 54 16

Dante™

Always around you

inter M

Inter-M Corporation

Inter-M is

based in South Korea over the decades has created total solution of network Audio, Video and communication systems.

Inter-M guarantees

reliable products and services in compliance with European EN54 standard, International ISO and Railroad IRIS standards.

ISO 9001 ISO 14001 ISO 45001

EN 54 16

RoHS COMPLIANT

CE

IRIS Certification

We collaborate

to provide the best products and services, we are collaborating with 150 distribution channels over 60 countries around the world and establishing a global distribution network and service network.



Head Office & R&D Dep.
Seoul, South Korea



Headquarter Factory
Deokjeong, South Korea



Smart Factory
Hongjuk, South Korea

We Offer

Total Solution of Audio, Video and Communication



Commercial Audio

- Source
- Wire / Wireless Microphone
- Matrix Controller
- Amplifier
- Speaker
- Line Checker
- Power Distributer
- Rack / Stand



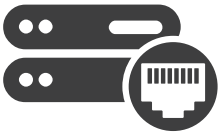
Professional Audio

- Player / Recorder
- Microphone
- Audio Mixer
- Processor
- Power Amplifier
- Passive Speaker
- Powered Speaker
- Conference System



AV System

- Video Mixer
- AV Switcher
- Converter / Splitter
- CCTV System
- Railroad System



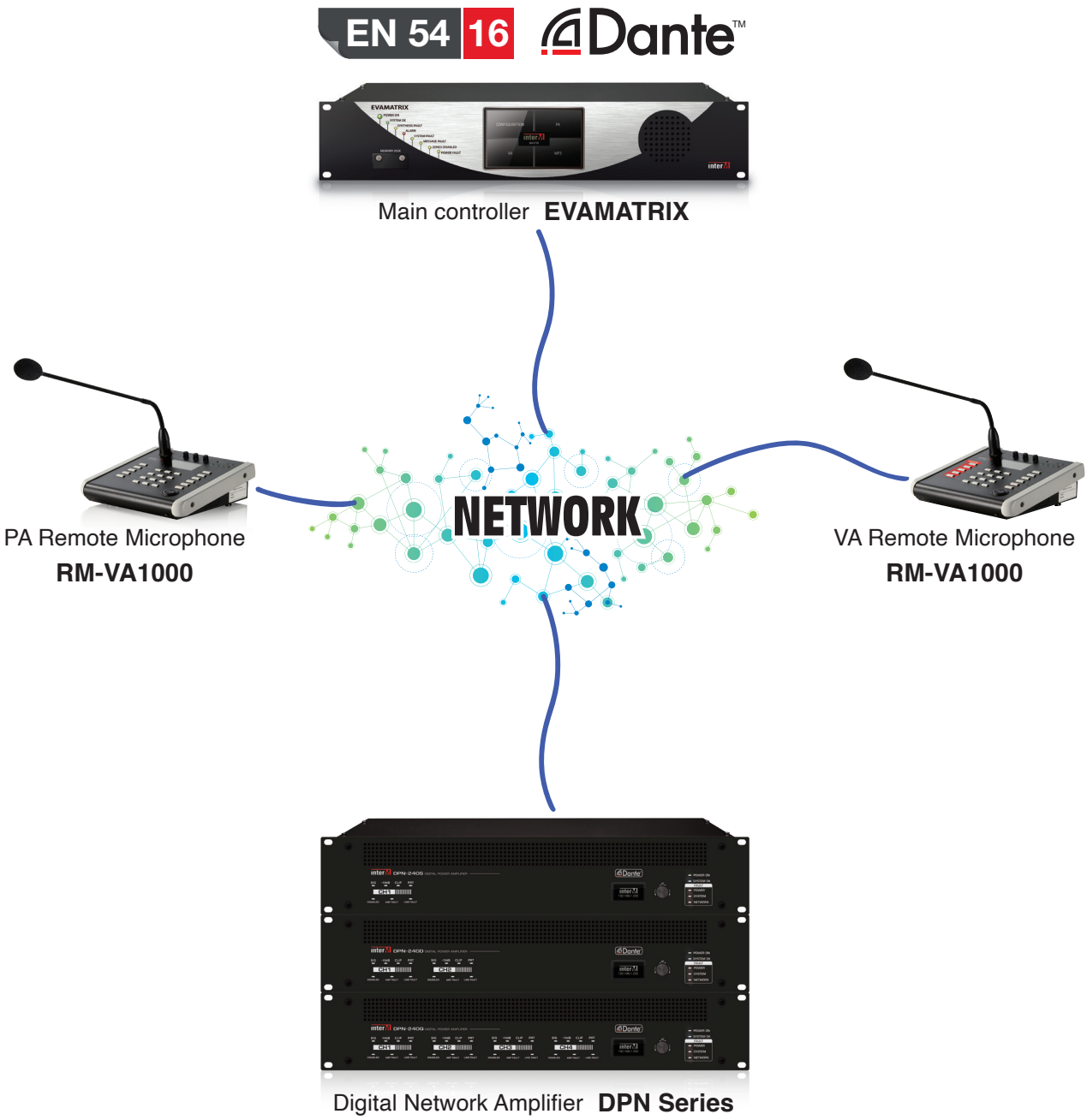
Communication

- Audio / Video / Data
- IP Transmitter
- RF Transmitter
- Fiber Transmitter
- Switch Hub

EVAMATRIX

High performance
Voice Alarm and Public Address System

Scalable, Stable, Secure



EVAMATRIX is brand-new EN 54-16 certified evacuation and PA sound integration system that provides excellent sound quality and economically advantageous through the most innovative technology.

EVAMATRIX is very simple to use and offer for great operation flexibility with its touchscreen on the front panel or via an intuitive web browser control without platform [Smartphone, tablet, PC, MAC] constraints.

EVAMATRIX is complete digital network system for easy installation and integration. It uses Dante™ technology with redundancy for seamless availability in both centralized and decentralized architecture.

PA & VA Audio Matrix	IP Network	Easy to Use	System Integration	Supervision & Security
EN54-16	Dante™ Technology	Touchscreen	Network redundancy	Role-based Access control
1024 Zones	Flexibility and scalability	Multi-Platform WEB Interface	Powerful event engine	HTTPS over SSL/ TLS 1.2
2048 Speaker lines	Centralized Management	Real-time Monitoring	Annual scheduler	AES-256 SHA-256
512 Alarm Zones	SNMP	Bird's Eye View Control	TTS (Text-to-Speech)	Encryption API Key

Airports · Metro Stations · Hotels · Hospitals
Stadiums · Shopping malls · Exhibition parks
Educational establishments · Buildings and industrial sites

and where you are…



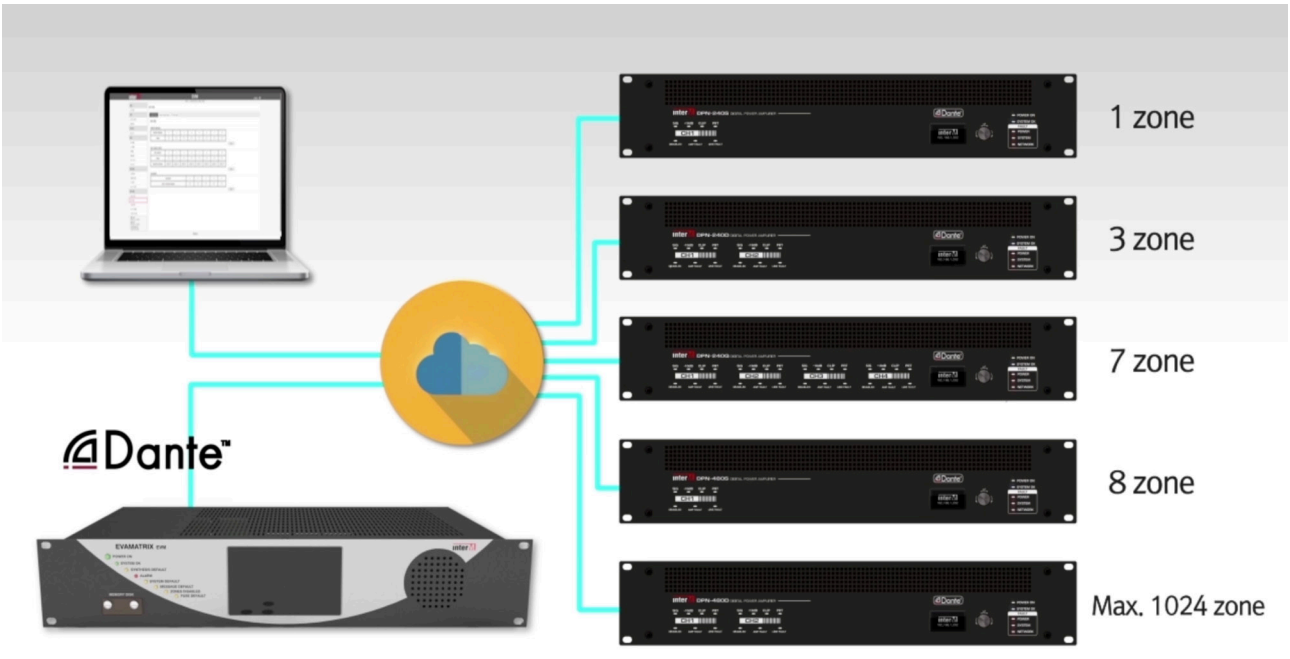
EN 54-16 certification

EVAMATRIX system is EN 54-16 certified and can be installed in any rack in accordance with regulatory recommendations.

IP Network & Dante™

EVAMATRIX system runs entirely over IP networks, providing full flexibility and optimal scalability, integrating the latest and most recognized Dante™ technologies.

1024 Zones, 2048 Speaker lines, 512 Alarm Zones



1024 Zones | **2048 Speaker lines** | **512 Alarm Zones**

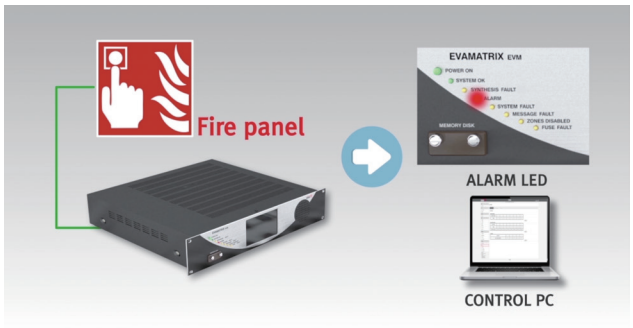




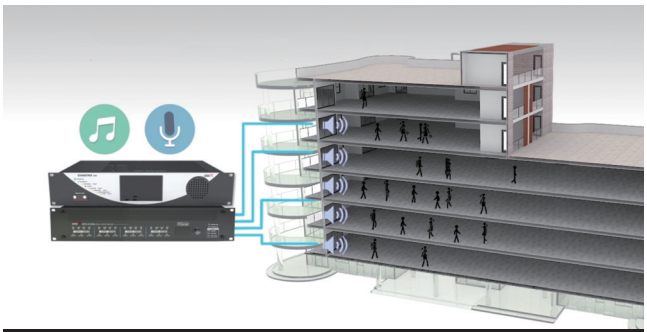


All-in-one evacuation and PA Sound system

EVAMATRIX is Highly advanced and reliable voice alarm and public address system in a box. It will save you the cost of installation by combining the two systems in a single application.



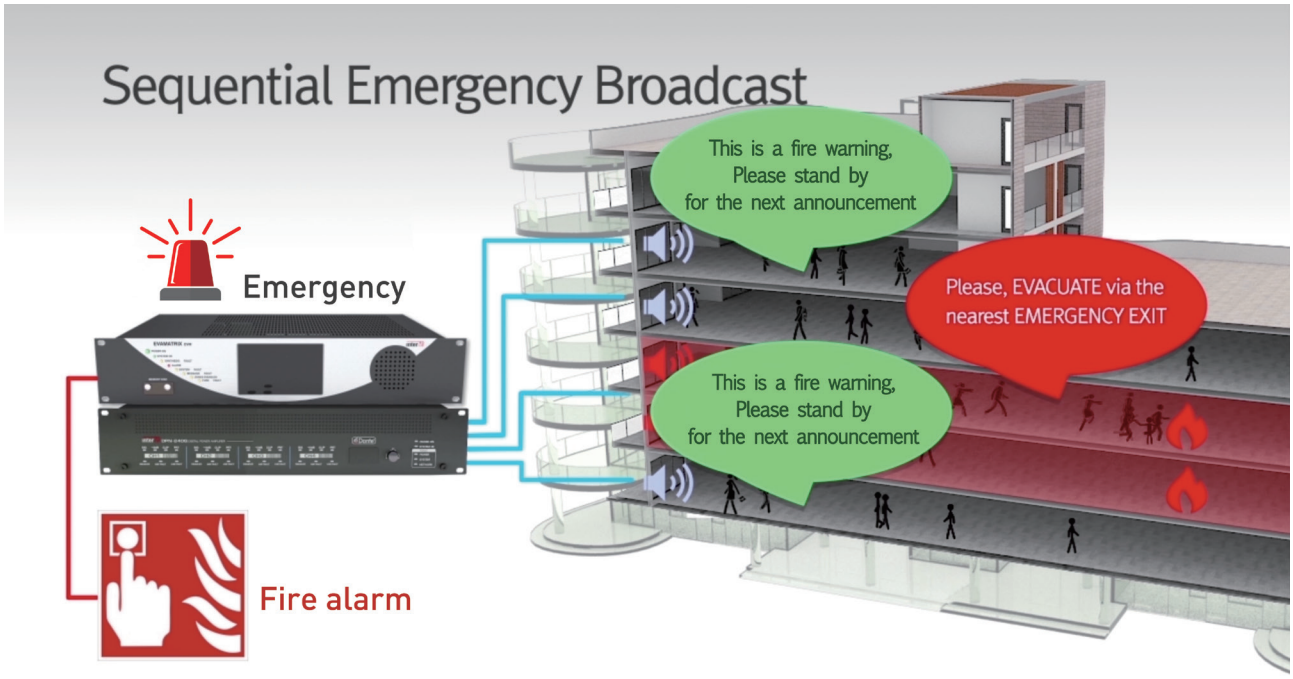
VA (Alarm, Alert)



PA (BGM, Paging)

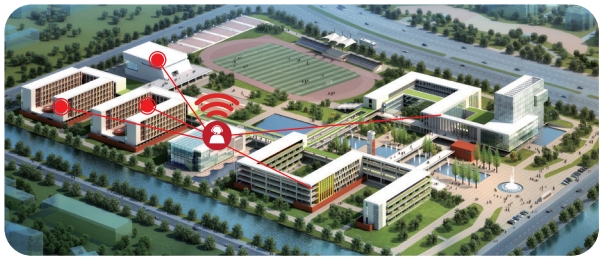
Progressive evacuation

Two different VA messages of Alarm and Alert can be played simultaneously to different zones and changed from PA automatically by contact of emergency signal.
On each alarm zone, it is possible to configure a delay (variable duration) and a pre-alert mechanism with the evacuation.





Flexible system configuration & centralized management



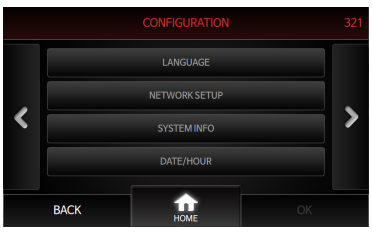
EVAMATRIX system makes it easier than ever to configure and install evacuation and PA sound systems, whether the facility is located at a single site or decentralized. Users can conveniently operate and manage centrally using the touch screen and web interface.

Intuitive Touch interface GUI

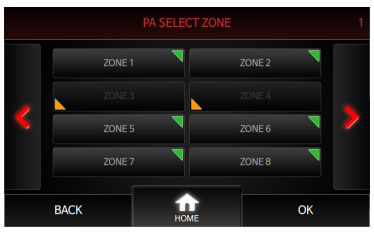
EVAMATRIX can be easily managed and control using the 5" color LCD touchscreen and its very intuitive navigation. Some functions are accessible according to access levels and permissions.

- **MAIN :** CONFIGURATION, PA, VA, MP3
- **CONFIGURATION :** LANGUAGE, NETWORK SETUP, SYSTEM INFO, DATE/HOUR
- **PA :** SOURCE VOLUME, SELECT SOURCES OF ZONE, RELEASE ROUTE OF ZONE, ZONE VOLUME, PRESET
- **VA :** RESET, ALARM ROUTE/PLAY, ALARM RELEASE ROUTE/ STOP, ALERT ROUTE/PLAY, EMERGENCY LOG, TEST
- **MP3 :** MP3 PLAYER

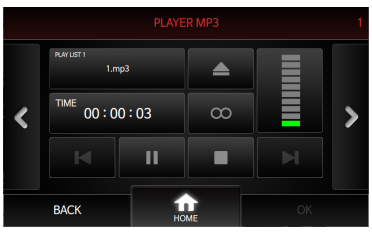




Configuration



Zone Control



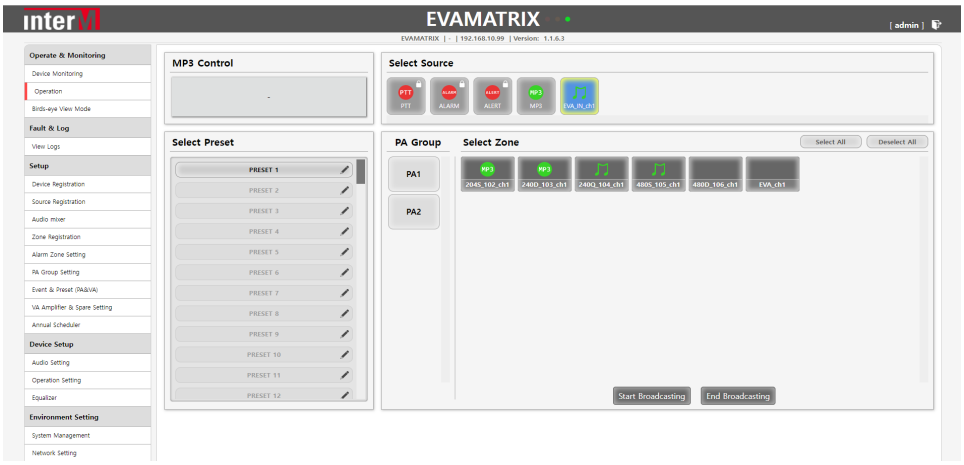
MP3 Player

User-friendly web interface

EVAMATRIX system is operated and managed through a user-friendly web interface. it doesn't require any heavy software or additional hardware, only a simple web browser from any PC, MAC or tablet.

Operation& Monitoring

Great simplicity of use



BirdEye View

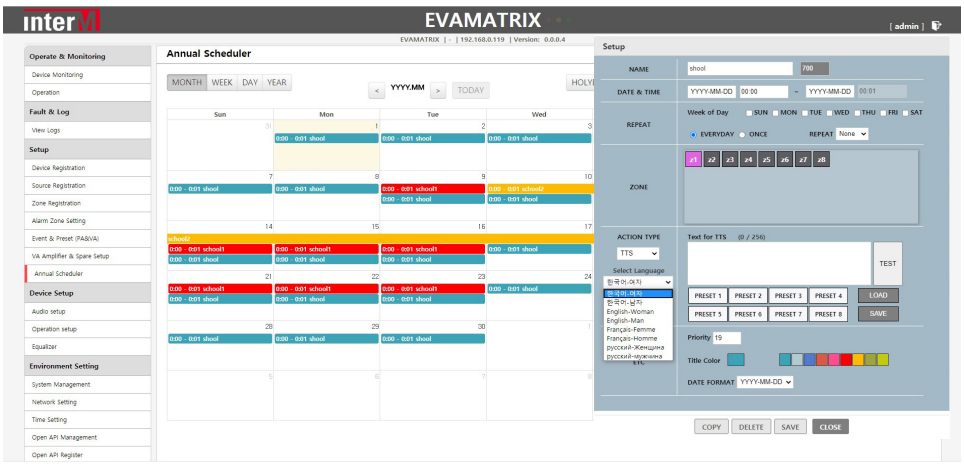
Multi-plan management



Annual Scheduler

TTS Text To Speech

Annual Scheduler with TTS Engine



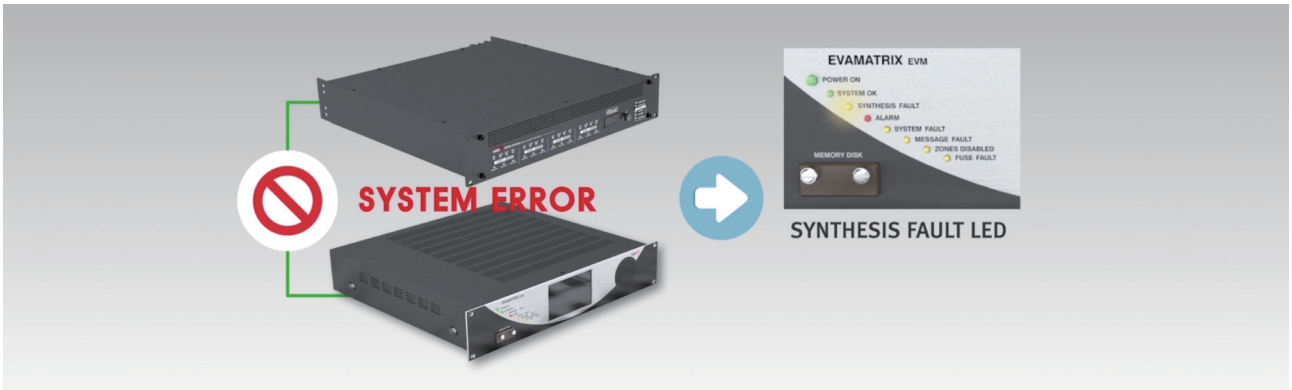


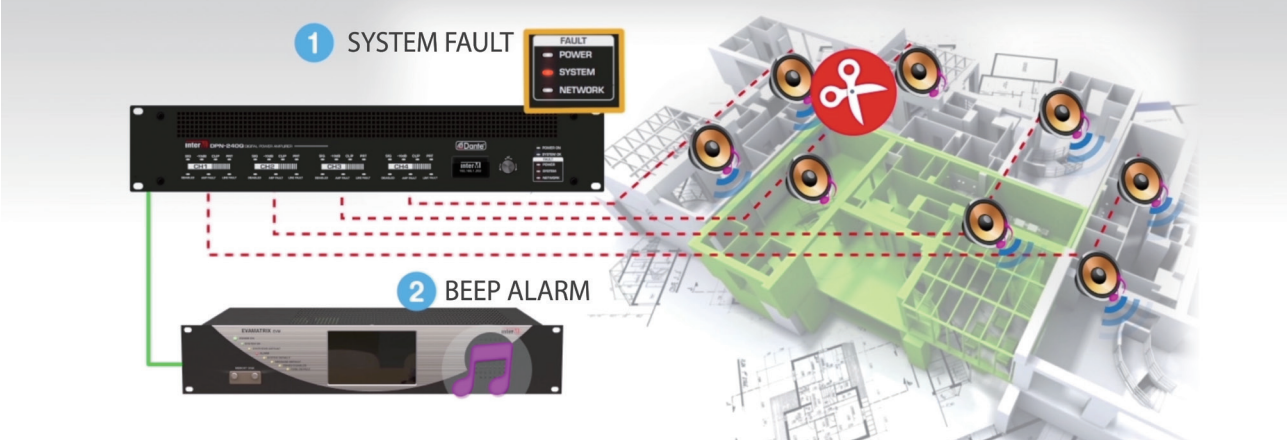
Real time supervision

EVAMATRIX provides a variety of supervisory functions for stable system operation. Administrators can monitor status and fault of the system in real time through LEDs and buzzer and the web interface.
In accordance with EN 54-16 standards, abnormalities and defects are detected, reported to the system, and forwarded to the CIE fire alarm interface. All defects can be recorded in the log file to check for system problems at any time and perform immediate maintenance.

The functions supported for supervision are :

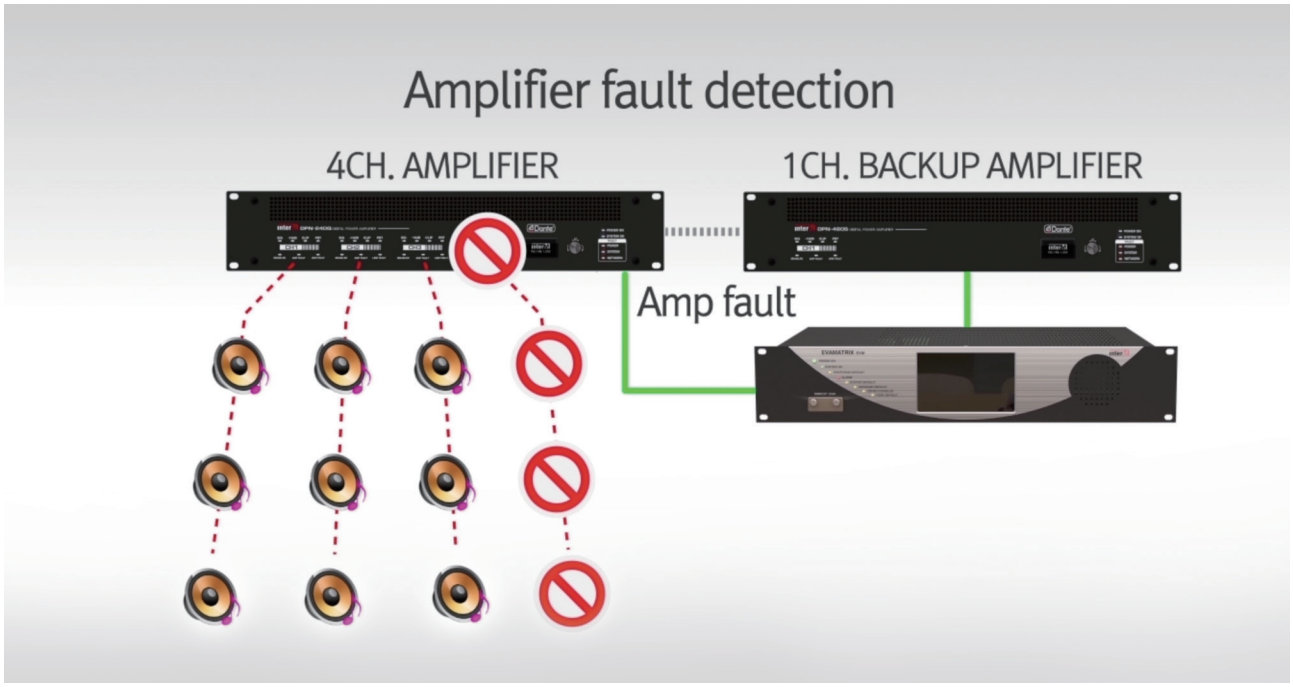
- Short circuit fault, line opening, impedance variation, earth fault below 50kΩ.
- Power failure : emergency 54-4, 230V AC power supplies, AC/DC fuses.
- Failure and monitoring of contact connections and UGA link interface to the CIE.
- Amplifier Fault and backup amplifier auto-switching.
- Evacuation memory disk fault and emergency function.
- Failure of network connections with redundancy management.
- Emergency PTT microphone and remote microphone fault.
- Etc..



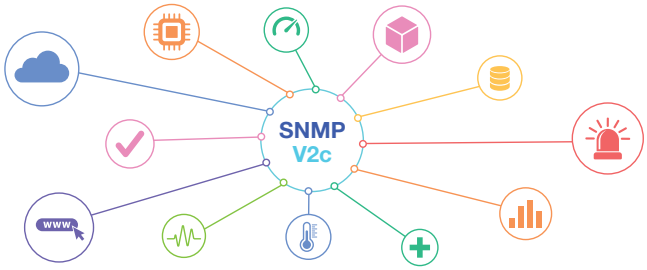


Amplifier redundancy for stability

Emergency amplifier management has been simplified. Each amplifier channel has two independently monitored, controlled and protected speaker line outputs. As soon as an amplifier fault is detected, the system will reassign the faulty channel automatically.



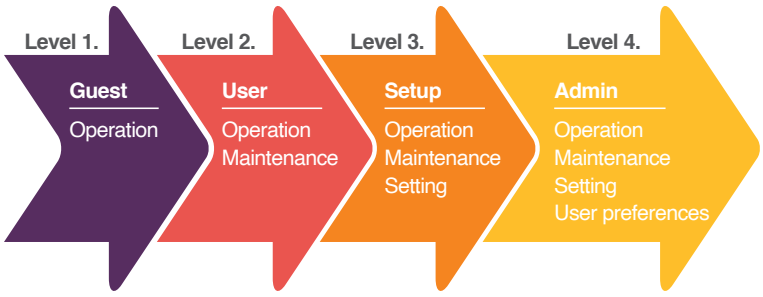
Monitor your System via SNMP



The EVAMATRIX system integrates SNMP V2c protocol (Simple Network Management Protocol), enabling immediate detection and reporting of sound equipment and faults through network monitoring and management software.

Seamless security

EVAMATRIX provides four-step role-based access control and grants system operation, maintenance, and setup per account. It also provides a safe user environment by securing protection and security against hacking.











Application

Multi Source Player
CD-6208



Stereo Tuner
TU-6200



Main controller
EVAMATRIX



Fire Alarm





Switch



Remote MIC
RM-VA1000

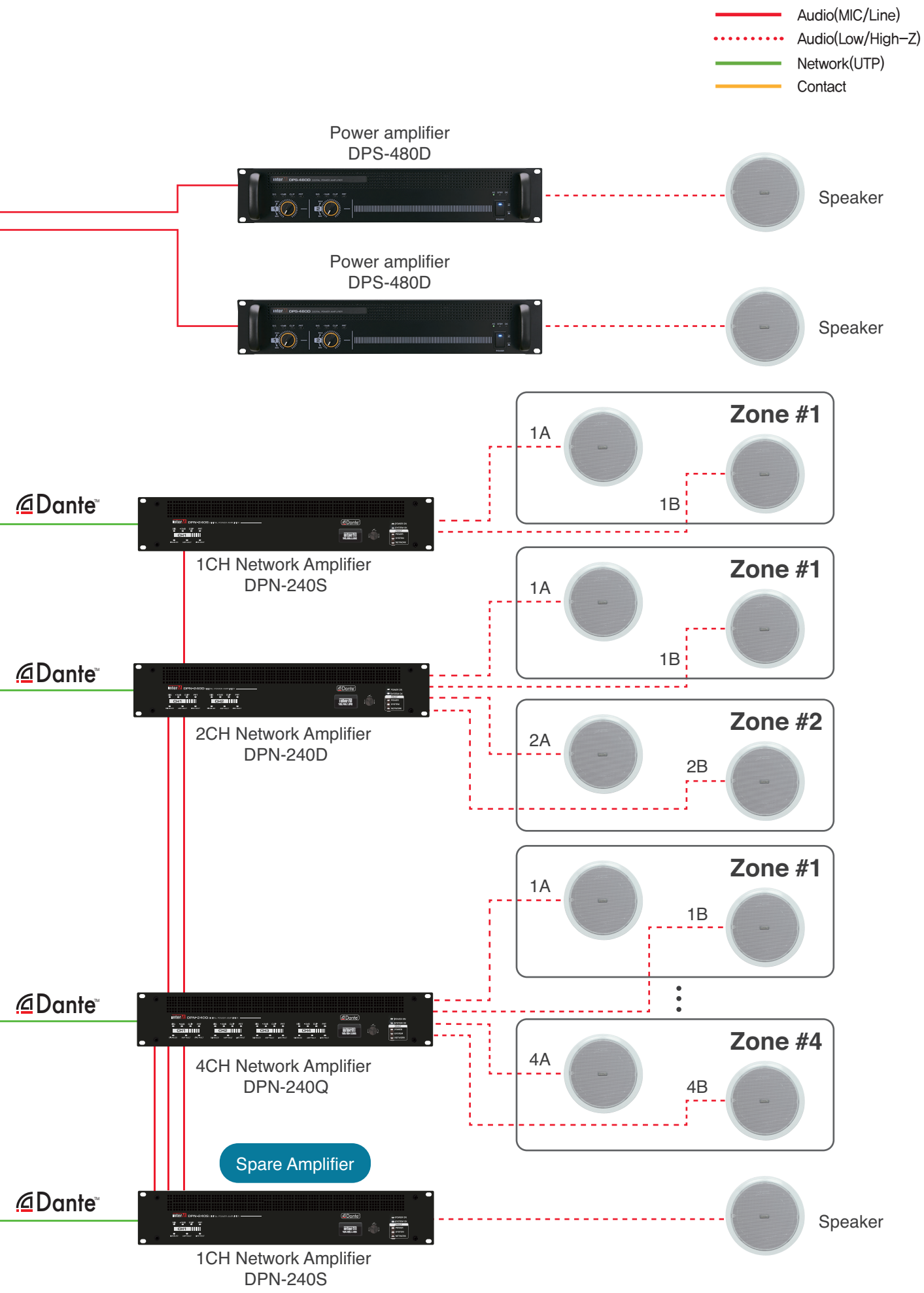
LAN (Dante™/TCP/IP)



Network

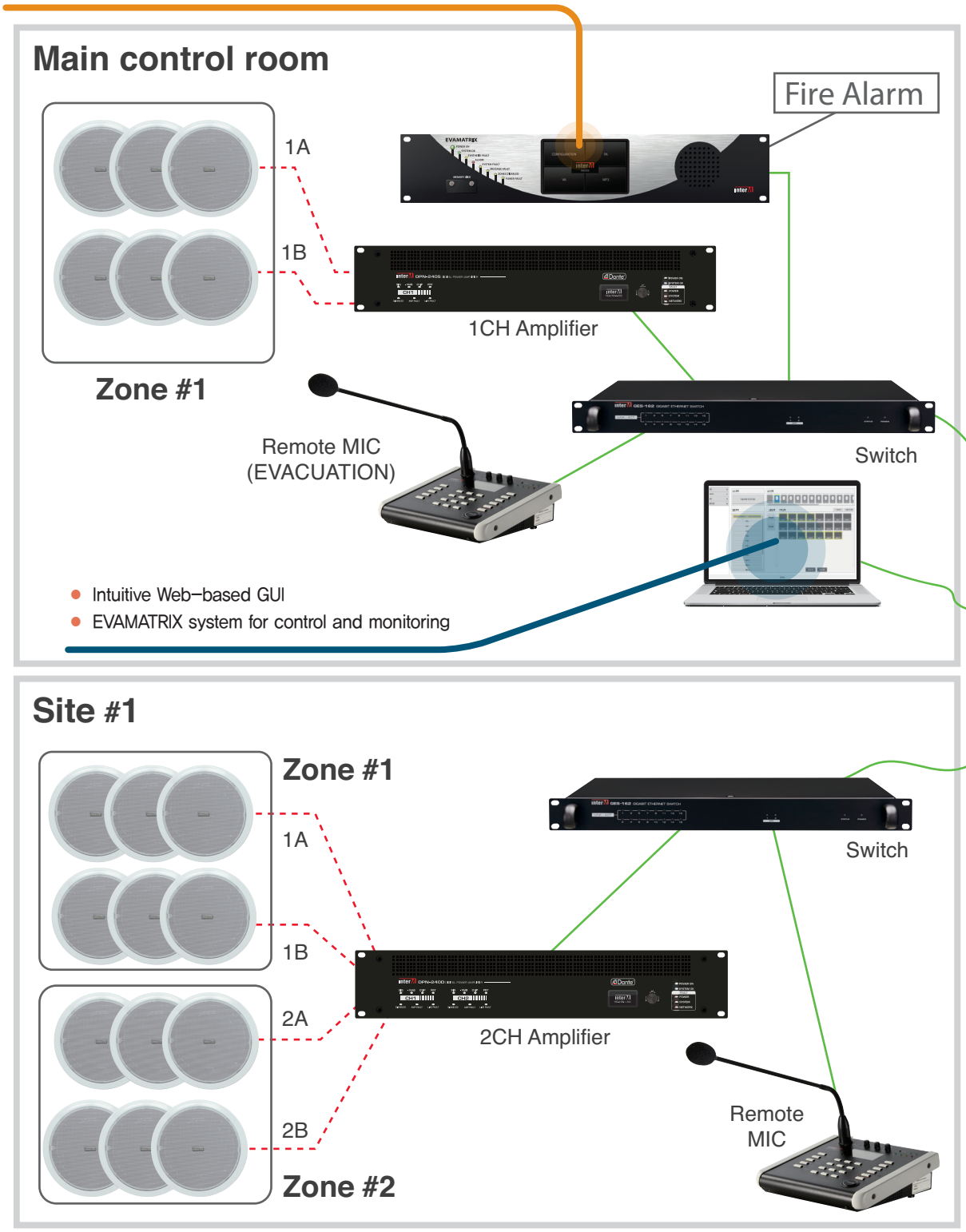


Fireman
Remote MIC
RM-VA1000


Audio(MIC/Line)
Audio(Low/High-Z)
Network(UTP)
Contact
Power amplifier
DPS-480D
Speaker
Power amplifier
DPS-480D
Speaker
Zone #1
1A
1B
Dante
1CH Network Amplifier
DPN-240S
Zone #1
1A
1B
Dante
2CH Network Amplifier
DPN-240D
Zone #2
2A
2B
Zone #1
1A
1B
Dante
4CH Network Amplifier
DPN-240Q
Zone #4
4A
4B
Spare Amplifier
Dante
1CH Network Amplifier
DPN-240S
Speaker

Application_Easy zone expansion

- Built-in 20 x 8 BUS Matrix
- Dante™ network audio transmission
- Emergency system that can detect main signal errors and communication line in advance



Audio(Low/High-Z)
Network(UTP)

Site #2





4CH Amplifier

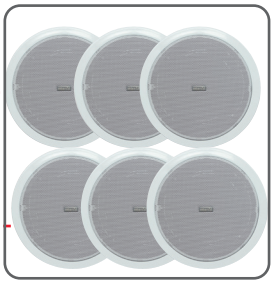


Switch



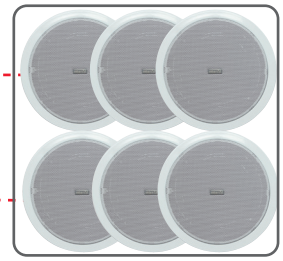
Remote
MIC

1A
1B



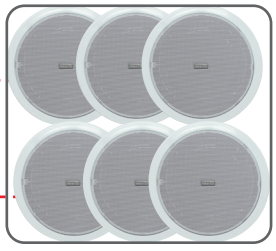
Zone #1

2A
2B



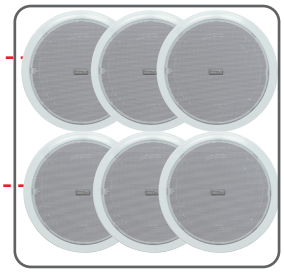
Zone #2

3A
3B



Zone #3

4A
4B



Zone #4

- TCP/IP based remote microphone
- PA (for paging) and VA mode (for fireman)
- Support up to 48 Units

20×8 Bus Matrix Controller

EVAMATRIX



- Main server unit
- Main unit redundancy
- Network redundancy (All components)
- Embedded DSP (All source devices)
- EM MIC (PTT MIC), Emergency messages
- MP3 player for BGM
- 8 CH Analog audio input/output
- Contact In / Out

	EVAMATRIX	
Power Voltage	100-230VAC, 50-60Hz / 24VDC	
Frequency response	20Hz – 20kHz at -3dB	
THD	<0.5%	
S/N ratio	>85dB	
Audio specification	AD/DA converters 48khz, 32bit – for DSP Function	
Inputs	MIC / LINE (1 ~ 8, Euro 3pin)	Switchable 0dBV 10kΩ(LINE) / -60dBV 600Ω Balanced (MIC, w/Phantom Power 24VDC)
Outputs	AUDIO OUT (1 ~ 8)	0dBV balanced
	MONITOR	0dBV balanced
PC Link	RJ45 connector, TCP/IP Protocol	
Extension Link	Input and Output, RJ-45 connector (Dante™), Cat. 5 cable (Maximum distance : 100m)	
Security Input	UGA Inputs 1 ~ 5: Triggered by voltage Dry Contact Inputs 1 to 8: Triggered by Dry Contact NO/NC	
Synthesis default Output	Synthesis detect outputs SD 1 ~ 5 : Relay Output	
Output to other devices	Dry Contact Outputs (1 ~ 16) : Relay Output	
Operating Temperature	-10°C ~ +40°C	
Relative Humidity	5 ~ 95% RH	
Dimensions (W x H x D)	483 x 88 x 279 mm (19” rack 2U)	

» Front Panel



❶ LED INDICATORS

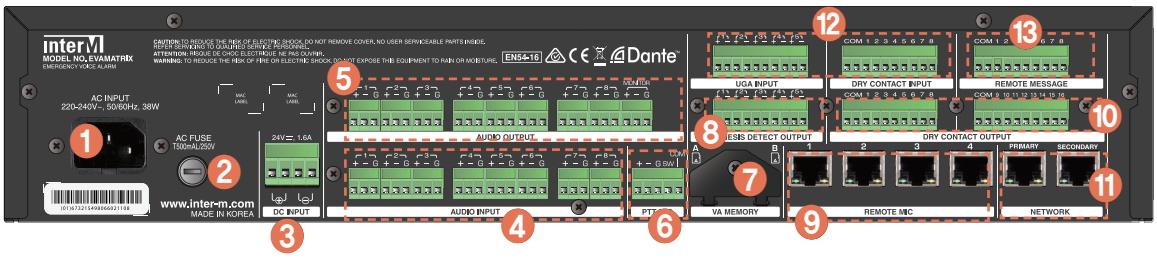
ITEM	COLOR	DESCRIPTION
POWER ON	GRN	Lights when power (both AC 230V or DC 24V) is normal
SYSTEM OK	GRN	Lights at start-up when there is no fault in system
SYNTHESIS FAULT	YEL	FAULT lights when there is an error in the system (Output to the relevant area with SYNTHESIS DEFAULT contact)
ALARM	RED	Lights when ALARM mode is on.
SYSTEM FAULT	YEL	Lights up when there is a fault in the system (memory fault, processor fault, program monitoring fault)
MESSAGE FAULT	YEL	Lights when the EM player is not working or there is a falult on SD card
ZONES DISABLED	YEL	Lights when some zone area is unavailable FUSE FAULT YEL Lights when AC or DC FUSE is blown out
POWER FAULT	YEL	Lights when AC or DC POWER is blown out

❷ SD CARD SLOT

❸ 5" COLOR LCD TOUCH SCREEN

❹ MONITORING SPEAKER

» Rear Panel



❶ AC INPUT

❷ AC FUSE HOLDER

❸ DC INPUT TERMINAL

❹ MIC/PAHNTOM MIC/LINE INPUT TERMINAL (1-8)

❺ AUDIO OUTPUT TERMINAL

❻ PTT MIC CONNECTION TERMINAL

❼ SD CARD (MESSAGE 1, 2)
A space for storing emergency messages and consists of two slots

❽ SYNTHESIS DETECT OUTPUT TERMINAL
A terminal for informing the self-diagnosis result to an external device

❾ REMOTE MIC
Connect to RM-VA1000

❿ DRY CONTACT OUTPUT (1~12)
Notify the system in alarm mode.
Configure setting on the configuration menu

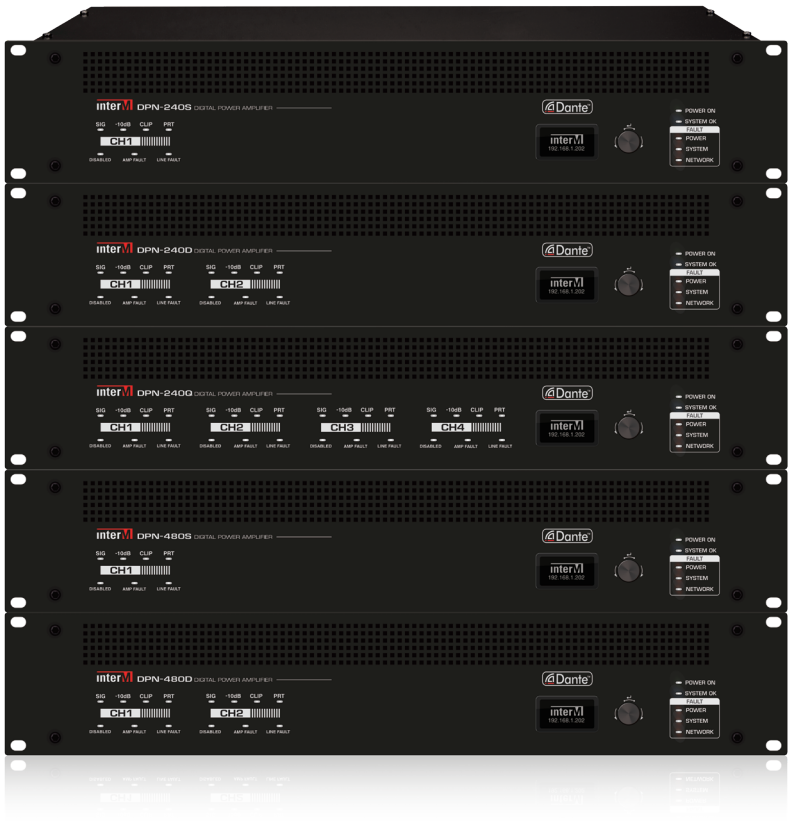
⓫ TCP/IP NETWORK (10/100/1000) TERMINAL
Network port to support redundancy TCP/IP Network for system control Dante network for audio transmission

⓬ UGA / DRY CONTACT INPUT TERMINAL
Allowed to send an alarm after receiving fire occurrence information

⓭ REMOTE MESSAGE TERMINAL (1~8)
Read presets to contact input and send specific sound source file built in sd card to specific place

DPN series Network Digital Amplifier

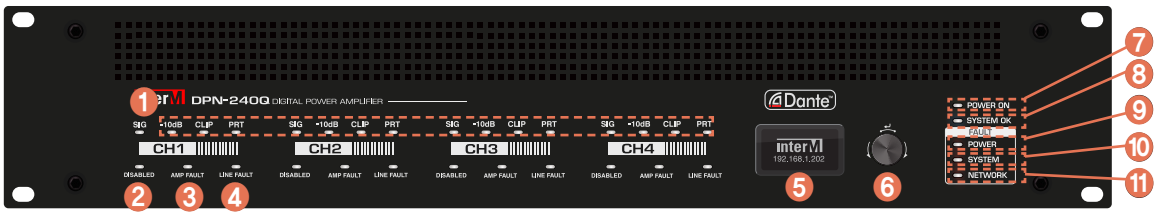
DPN-240S/D/Q
DPN-480S/D



- 240W 1/2/4CH or 480W 1/2CH network amplifier for EVAMATRIX
- High-quality audio network transmission via Dante™
- DSP processing for the audio
- Web-based network communication and monitoring and control on GUI
- Built in speaker line checker
- Log history management
- Compelte protection circuitry (overheat, output short circuit, overload and DC output protection)
- Supports DC backup power
- Supports UGA input and dry contact input per each channel
- 1 Audio-in available per each device

	Model	Description
DPN Series LINE UP	DPN-240S	240W 1CH Network Amplifier
	DPN-240D	240W 2CH Network Amplifier
	DPN-240Q	240W 4CH Network Amplifier
	DPN-480S	480W 1CH Network Amplifier
	DPN-480D	480W 2CH Network Amplifier

» Front Panel



❶ SIG / -10dB / CLIP / PRT
Indicate the amplifier input level by –30/–10/clip/protect

❷ DISABLED
Indicate that the amplifier is DISABLED (YELLOW)

❸ AMP FAULT
Indicate that the amplifier is in FAULT (YELLOW)

❹ LINE FAULT
Indicate the speaker line FAULT status (YELLOW)

❺ OLED DISPLAY
The network status is displayed on OLED Display

❻ DISPLAY CONTROL SWITCH
Use the switch to control the OLED Display

❼ POWER ON
Indicate that the power is ON (GREEN)

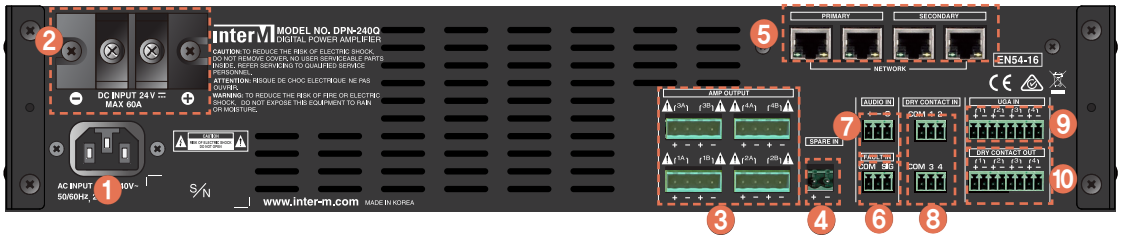
❽ SYSTEM OK
Indicate that the system is normal (GREEN)

❾ POWER FAULT
Indicate that the power is in FAULT (RED)

❿ SYSTEM FAULT
Indicate that the system is in FAULT (RED)

⓫ NETWORK FAULT
Indicate that the network is in FAULT (RED)

» Rear Panel



❶ AC IN

❷ DC IN

❸ AMP OUTPUT
Each channel has two output channels: A and B

❹ SPARE IN
A terminal to receive the output of the spare amplifier

❺ NETWORK
Network port to support redundancy TCP/IP Network for system control Dante network for audio transmission

❻ FAULT IN
A contact closure input terminal to detect FAULT

❼ AUDIO IN
External analog audio input

❽ DRY CONTACT IN
A contact closure input terminal for each channel

❾ UGA IN
A UGA contact closure input terminal

❿ DRY CONTACT OUT
A contact closure output terminal for each channel

EVA System Remote MIC
RM-VA1000



- EVAMATRIX interface through the network
- A device to broadcast paging to each zone
- Gooseneck Mic input
- All Zone On / Off selection
- Chime Mode selection
- Emergency sound selection function
- Audio transmission through Dante™
- 10 / 100 / 1000Mbps support
- DC 24V adapter power input terminal
- Check the output signal in real time through a monitor speaker
- Supports PA mode (for paging) and VA mode (for fireman)

» Front Panel (PA)



» Front Panel (Fireman)



» Rear Panel



EN 54 16 : Optional functions with requirements

The EVAMATRIX system includes the following optional functions as well as their requirements in accordance with the EN54-16 standard

OPTION	EN54-16 SECTION/SUBSECTION	YES/NO	
Audible warning	7.3	Yes	✓
Delay(s) to entering the voice alarm condition	7.4	Yes	✓
Phased evacuation	7.5	Yes	✓
Manual silencing of the voice alarm condition	7.6.2	Yes	✓
Manual reset of the voice alarm condition	7.7.2	Yes	✓
Voice alarm conditions output	7.9	Yes	✓
Indication of faults related to voice alarm zones	8.4	Yes	✓
Disabled condition	9	Yes	✓
Voice alarm manual control	10	Yes	✓
Emergency microphone(s)	12	Yes	✓
Redundant power amplifiers	13.14	Yes	✓
Interface to external control device(s)	11	Yes	✓

EVAMATRIX Special Functions

- Redundant powerful amplifier
- PTT microphone and table
- Sound and visual indication
- Progressive evacuation
- Voice alarm delay and timing
- Stop the alarm while remaining in emergency mode
- Manual alarm reset
- Monitored and controlled fire alarm system output
- Voice alarm exit mode
- Manual voice alarm control
- Defect indication of the CIE communication protocol
- Indication of a malfunction related to the voice alarm zones
- External control device interface
- Annual scheduler
- TTS [Voice Synthesis]
- View with “BirdEye View” plan
- Etc.



NOTE



NOTE



EVAMATRIX

Full Digital Network
Public Address and Voice Alarm System

Inter-M Corp. (IMK)

719, Dobong-ro, Dobong-gu, Seoul, Korea
Overseas Sales Team
Tel_ +82-2-2289-8141~7 **Fax**_ +82-2-2289-8149 **E-mail**_ overseas@inter-m.com **www.inter-m.net**

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

2022. 6. V1