

EVAMATRIX system

**EVAMATRIX**

# 640 Sources x 1024 Zones Matrix Controller



EN 54 16



EVAMATRIX is the first networked public address system co-developed by MAJORCOM and INTER-M that can be used in both centralized and decentralized locations.

EVAMATRIX is a powerful and scalable EN54-16 VA (Voice Alarm) and PA (Public Address) PA system for versatile PA configurations.

## FEATURES

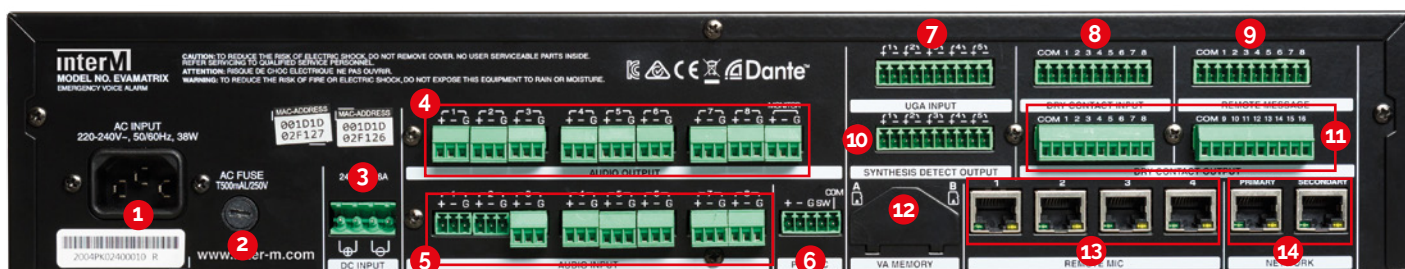
- Complete control of the EVAMATRIX system components and audio routing 640 Sources / 1024 Zones / 2048 speaker lines in A&B.
- A wide range of Class-D digital amplifiers, DPN range available in single or multi-channel and on network.
- Emergency PTT microphone monitored on the central, included.
- Supervised and integrated storage of ALARM & ALERT security message files on 2 drives.
- Support for Dante® and analogical audio input streams on EVAMATRIX, DPN and RM-VA 1000.
- A maximum of 128 networked microphone consoles RM-VA1000 (security and comfort).
- Redundant IP connections (Primary and Secondary) for audio and controls.
- Control and supervision of all system functions and faults. All data is centralized, reported and archived.
- Powerful DSP on the EVAMATRIX control unit and DPN amplifiers.
- MP3 player to play your audio contents on the SD card in the front panel of the EVAMATRIX.
- Automated announcements programmable by schedule (daily, weekly, yearly, vacations).
- Powerful multi-language and multi-channel TTS engine programmable by calendar.
- BIRD EYE VIEW feature to import your shots in PNG or JPG to make your user experience more personalized.
- A wide choice of connections and interfaces with the CMSI (UGA inputs and monitored dry contact in inputs and outputs).
- Ergonomic and user-friendly interface with a 5" LCD capacitive touch screen on the front panel.
- Multi-platform setup, management and control via web page (thin client) depending on the access level.
- Additional network security implemented using AES-256-bit encryption, with real-time authentication and audio over IP encryption against malicious attacks.
- Internal real-time clock for event scheduler; support for Network Time Protocol (NTP) with automatic daylight saving time (DST).
- Internal fault and event log.
- Integrated web server for configuration, parameterization and client use depending on the access level.
- The EVAMATRIX system integrates the SNMP V2c protocol (Simple Network Management Protocol) which allows a management and monitoring software to report any type of defect and status of the sound equipment.
- The EVAMATRIX system integrates seamless security (HTTPS, TLS1.2, SHA256, SSL, AES256 encryption and elliptic curve cryptography)

## FRONT PANEL



- 1 Status and fault LEDs
- 2 SD card slot (PA)
- 3 5" capacitive touch screen
- 4 Monitor speaker

## REAR PANEL



- 1 220 V AC power outlet
- 2 Fuse 220 V AC (T 0.5 A/250 V AC)
- 3 24V DC power supply input (EAE backup)
- 4 PA audio outputs (1 ~ 8 & MONITOR)
- 5 PA audio inputs (1 ~ 8)
- 6 PTT microphone input on the front panel
- 7 UGA inputs (1 ~ 5) monitored Dry
- 8 contact inputs (1 ~ 8) monitored
- 9 Trigger REMOTE MESSAGE (1 ~ 8) Fault
- 10 Synthesis outputs (1 ~ 5)
- 11 Dry contact outputs (1 ~ 16)
- 12 Monitored memory cards (security)
- 13 RJ-45 network ports - Dante® (Primary & Secondary)
- 14 RJ45 network ports RM-VA1000 VA/PA Microphone Console (Dante® Primary)

## EMERGENCY MICROPHONE PTT (PUSH TO TALK)



- 1 Microphone capsule 600 Ω
- 2 Push button
- 3 Cable with 5-pin DIN connector

**TECHNICAL CHARACTERISTICS**

MODEL	EVAMATRIX	
Power supply	220 - 240VAC, 50/60Hz, 24VDC	
Consumption	Less than 38W	
Frequency response	20Hz - 20kHz (relative level @ 1kHz ±3 dB)	
Signal to Noise Ratio	> 80dB	
Harmonic distortion rate (THD)	< 0,02%	
Gain adjustment per channel	-75dB ~ -0dB, about 0.4dB per 1 step	
DSP audio processing	48 kHz, 32-bit CAN/CNA converters - DSP (294 MIPS)	
Virtual MATRIX	640 x 1024	
Audio inputs	MIC / PHANTOM MIC / LINE (1 ~ 8, Euroblock 3pins) Switchable 0 dBV 10 kΩ (LINE) / -60 dBV 600 Ω balanced (MIC) (with 24 VDC Phantom power supply)	
Audio outputs	AUDIO OUT (1 ~ 8) +10dBV (balanced) Monitor 0dBV (balanced)	
Ethernet (LAN)	RJ45, TCP/IP protocol 10/100/1000 Base-T	
Extension (LAN)	Output to EVAMATRIX on RJ45 (Dante®) - Input from EVAMATRIX on RJ45 (Dante®) CAT5 cable Maximum distance: 100m	
PTT microphone	Supervised, 5-pin DIN connector	
UGA inputs	Inputs UGA 1 ~ 5: Triggering on a voltage Min/Max trigger voltage ALARM/ALERT: 21VDC to 60VDC UGA supervision: -3VDC + 3VDC	
Dry contact inputs	Inputs 1 ~ 8 10 kΩ : in triggering 20 kΩ : in supervision Open or short-circuited: connection fault	REMOTE MESSAGE: 1 ~ 8 short-circuit triggerable
Dry contact outputs	Outputs 1 ~ 16 : relay outputs	
Synthesis output	Dry contact outputs 1 ~ 5 : relay output	
Protections	Current protection, temperature protection, voltage protection...	
MTTF availability	Average failure time greater than 100,000 hours	
MTTR availability	Average repair time less than 20 minutes	
DC input power supply	24VDC	
Touch screen	5"LCD	
Operating temperature	-10°C ~ +40°C - Humidity: 5 ~ 95%	
Weight	4.5kg	
Dimensions (WxHxD)	482 x 88 x 280 mm (2U 19")	
Accessories	2x Micro SD / 1x SD Card / Euroblock Connectors / AC Power Cord / Micro PTT Cable / Screws / User Manual	
Protocol and security encryption	TCP/IP, Http, Https, SNMP V2c, IPv4, TLS1.2, SHA256, SSL, AES-256, Elliptic curve cryptography	

### FEATURES

- The DPN series offers a wide choice of single or multi-channel power ratings, in line 70V/100V with galvanic isolation.
- The amplifiers are EN54-16 certified and designed to work with the EVAMATRIX security PA system.
- All system components are fully IP networked (audio & control) using Dante® technology.
- Dual primary and secondary network connection for total redundancy.
- Low power consumption, low heat dissipation for energy savings and gains in battery capacity and backup power.
- Complete supervision of the operation of the amplifiers and all connections. Faults are reported locally on the EVAMATRIX and archived.
- Control and supervision of the loudspeaker lines WITHOUT audio interruption with the EOL-20 end of line element
- Control and supervision of the network link with audible and visual indication on the amplifier unit and EVAMATRIX.
- Integrated backup amplifier channel dynamically assignable from the EVAMATRIX web interface with automatic switchover
- 2 A/B outputs on each amp channel. The 2 outputs are supervised and individually disabled in case of failure.
- Audio over IP, Dante® and AES67 compatible; audio sample rate is of 48 kHz with a sample size of 24 bits.
- High signal to noise ratio, wide audio bandwidth, very low distortion and cross-talk.
- DSP, digital signal processing on all amp channels from the EVAMATRIX control unit web server, including equalization, levels to optimize and customize the sound in each speaker zone.



DPN-240S / 480S



DPN-240D / 480D



DPN-240Q

### SEVERAL POWERS FROM SINGLE TO QUADRUPLE CHANNE

**1 x 240W : DPN-240S    2 x 240W : DPN-240D    4 x 240W : DPN-240Q**  
**1 x 480W : DPN-480S    2 x 480W : DPN-480D**

- Local UGA and dry contact inputs monitored for triggering of alarm conditions, alarms... Ideal for decentralized systems.
- Dry contact inputs for local feedback of third party faults (CMSI, EAE, GTC...) in case of decentralized use.
- Local fault outputs customizable as desired and by alarm zone.
- An additional local analog audio input on each DPN amplifier that will be converted and made available to the entire EVAMATRIX system.
- The system integrates the SNMP V2c protocol (Simple Network Management Protocol) which allows a management and monitoring software to report any type of fault and status of the sound equipment.
- The system incorporates seamless security (HTTPS, TLS1.2, SHA256, SSL, AES256 encryption and elliptic curve cryptography).



## FRONT FACE



- 1 Status LEDs: system, power, network LEDs
- 2 Audio signal level and protection
- 3 Status LEDs: amplifier fault, speaker line fault, zone out of order
- 4 OLED information display and control wheel

## REAR FACE



- 1 220 V AC power outlet
- 2 24 V DC power supply input (EAE backup)
- 3 AMP OUTPUT: A&B speaker line output terminal
- 4 100V input emergency amplifier
- 5 Fault IN : monitored and programmable drycontact inputs (e.g. EAE fault)
- 6 DRY CONTACT IN: monitored dry contact inputs and Programmable (e.g.: Alarm/Alerts...)
- 7 DRY CONTACT OUT: programmable dry contact outputs (e.g.: defect carry-over...)
- 8 UGA IN: monitored UGA input for alarm/alert triggering
- 9 Dante® Primary & Secondary Ethernet Ports
- 10 AUDIO IN: line level audio input
- 11 Air exhaust vent



## TECHNICAL CHARACTERISTICS

MODEL		DPN-240S	DPN-240D	DPN-240Q	DPN-480S	DPN-480D
Power supply		220 - 240VAC, 50/60Hz, 24VDC				
Power		1 x 240W RMS @ 70V/100V Class D Load Min 41.6Ω, Capacity Min 0.01uF	2 x 240W RMS @ 70V/100V Class D Load Min 41.6Ω, Capacity Min 0.01uF	4 x 240W RMS @ 70V/100V Class D Load Min 41.6Ω, Capacity Min 0.01uF	1 x 480W RMS @ 70V/100V Class D Load Min 41.6Ω, Capacity Min 0.01uF	2 x 480W RMS @ 70V/100V Class D Load Min 41.6Ω, Capacity Min 0.01uF
Consumption	Max	313W	595W	1 254W	583W	1 191W
	1/8 power	135W	140W	280W	135W	240W
	Standby	58W	75W	89W	59W	82W
Frequency response		20Hz - 20kHz à (±3dB @ 1W)				
Signal / Noise		> 91dB (20kHz LPF, A-WTD)				
T.H.D		< 0.45% at 1kHz Power rating				
Audio input		Type: Balanced Euro terminal / Input sensitivity: 5 dBV (1.78 Vrms)				
Ethernet (LAN)		RJ45, TCP/IP protocol 100/1000 Base-T				
Extension		Output to EVAMATRIX on RJ45 (Dante®) - Input from EVAMATRIX on RJ45 (Dante®) CAT5 cable Maximum distance: 100m				
UGA inputs		UGA inputs 1 ~ 4 : triggerable on a voltage (22V ~ 60V)				
Dry contact inputs		Dry contact inputs from (1 ~ 4) : triggerable on dry contact NO/NF				
Dry contact outputs		Dry contact outputs from (1 ~ 4) : Relay output				
Speaker line outputs		4-pin connector, (1ch) for channels A+B				
Backup amplifier input		1 input per channel, for amplifier with equal power				
Protection		Current protection, temperature protection, DC voltage output protection, overload				
MTTF availability		Average failure time greater than 100,000 hours				
MTTR availability		Average repair time less than 20 minutes				
AES/EAE emergency power input		24VDC				
FAULT-IN input		Supervised fault input for remote fault reporting (e.g. AES/EAE)				
Screen		1.3" OLED screen				
Operating temperature		-10°C ~ +40°C / Humidity: 5 ~ 95%				
Weight		8,59kg	9,1kg	10,1kg	8,56kg	9,7kg
Dimensions (WxHxD)		482 x 88 x 450mm				
Accessories		AC power cord, Euroblock connectors, Rack mount screws, User manual				
Protocol and encryption		TCP/IP, Http, Https, SNMP V2c, IPv4, TLS1.2, SHA256, SSL, AES-256, Elliptic curve cryptography				

EVAMATRIX System

**SM-600**

**Fireman PTT Microphone**

EN 54 16



- Push To Talk emergency microphone with microphone capsule monitoring
- Omnidirectional directionality

MODEL	SM-600
Microphone	Dynamic capsule
Impedance	Omnidirectional
Sensitivity	-74dB @ 1kHz
Frequency response	300 to 5 000Hz
Dimensions (WxHxD)	50 x 90 x 45mm
Connector	DIN 6-pole lockable
Weight	210g
Sustainability	100.000 cycles
Standard	EN 54-16



RM-VA 1000  
VA



RM-VA 1000  
PA

The RM-VA1000 call station is intended for use with EVAMATRIX VA or PA sound systems.

It can be configured in security mode (VA) via the supplied kit (sticker and rear cable protection cover) or in public address mode (PA).

It is easy to install and simple to use with its LCD screen that provides clear feedback on the configuration of a call.

The RM-VA 1000 only requires a connection to an IP network with a power supply via Ethernet 24VDC from EAE for use in or a simple 230VAC/24VDC adapter supplied for use in comfort mode.

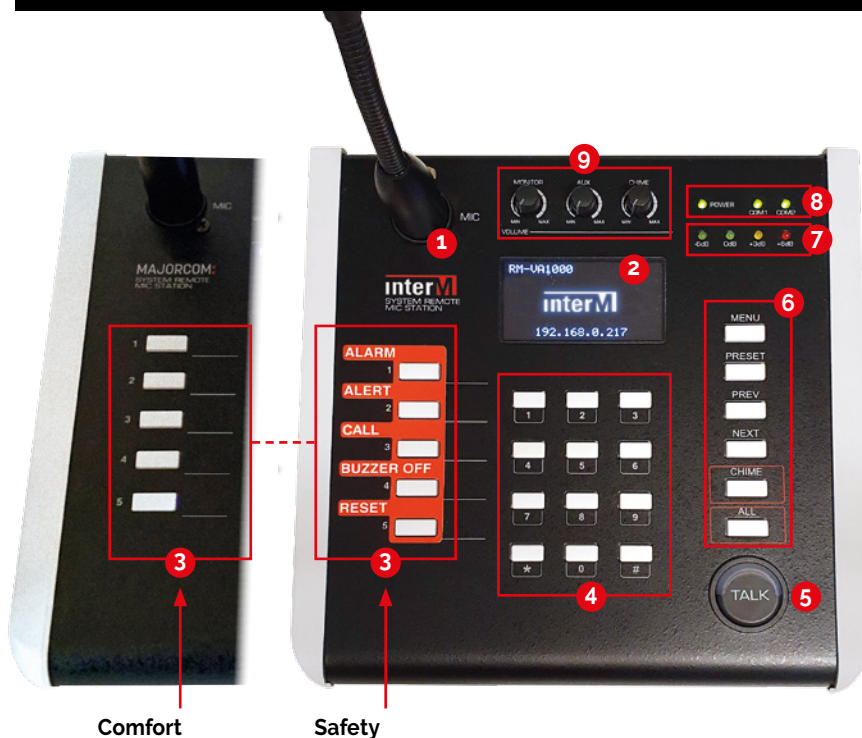
En mode sécurité le pupitre d'appel est totalement supervisé et permet de lancer un appel d'urgence, ALARME, ALERTE. L'écran LCD confère à l'opérateur un contrôle optimal et un retour d'informations permanent.

## FEATURES

- The RM-VA1000 call station can be configured for VA or PA.
- Connection to the IP network via a shielded Cat5e cable
- The 2.3" LCD display (with function menu navigation key) provides instructions and comments during the emergency call process, pre-recorded messages (ALARM/ALERTE).
- Built-in monitor speaker with volume control.
- Local audio line input (mono) for connecting an external audio source in comfort mode only. The audio channel is available on the network and can be assigned to any speaker zone.
- Up to 128 microphone consoles can be connected to the EVAMATRIX system, of which up to 4 are VA consoles.
- The call station is fully compliant with EN54-16 standards for evacuation applications.
- All critical alarm functions are accessible according to access levels. The 2.3" display provides information on the system status.
- Control of all critical functions; signal and audio assignment is controlled, as well as communication with the network.
- The EVAMATRIX system integrates the SNMP V2c protocol (Simple Network Management Protocol) which allows a management and monitoring software to report any type of fault and status of the sound equipment.
- The EVAMATRIX system integrates seamless security (HTTPS, TLS1.2, SHA256, SSL, AES256 encryption and elliptic curve cryptography).



## FRONT FACE



- 1 Microphone input on XLR socket
- 2 OLED display
- 3 Emergency buttons in safety mode (VA) and PRESET buttons in comfort mode (PA)
- 4 12-key keypad Talk
- 5 Button (call) Menu
- 6 Button Vumeter
- 7 (LED)
- 8 Microphone status LED Volume
- 9 Potentiometer

## REAR FACE



- 1 24V DC power connectors
- 2 Reset switch
- 3 RJ-45 network port
- 4 AUX audio input jack (only in comfort mode)
- 5 Mic input volume potentiometer
- 6 Safety mode cover (VA)

EVAMATRIX system

**RM-VA 1000**

**Micro Call Station for VA & PA**



EN 54 16

## TECHNICAL CHARACTERISTICS

MODEL	RM-VA 1000
Power supply	24VDC
Consumption	Max. 10W
Frequency response	100Hz - 18kHz à -3dB @ 1kHz
Signal to Noise Ratio	> 65dB
Harmonic distortion rate (THD)	< 0,1 %
MIC	
AUX input sensitivity	-50dBV
Output sensitivity	0dBV
Signal-to-noise ratio (< 20 kHz LPF, A-WT.)	70dB or more
T.H.D (< 22 kHz LPF)	0,1 % or less
Frequency response 100Hz ~ 18kHz Input: -50 dBV, 1kHz based)	0dB ± 3dB
AUX	
AUX input sensitivity	-10dBV
Output sensitivity	0dBV
Signal-to-noise ratio (< 20 kHz LPF, A-WT.)	80 dB or more
T.H.D (< 22 kHz LPF)	0,1 % or less
Frequency response 100Hz ~ 18kHz Input: -10 dBV, 1kHz based)	0dB ± 3dB
General	
Ethernet (LAN)	RJ45, TCP/IP protocol 100/1000 Base-T
LAN Extension	Output to EVAMATRIX on RJ45 (Dante®) - Input from EVAMATRIX on RJ45 (Dante®) CAT5 cable Maximum distance: 100m
MTTF availability	Average failure time greater than 100,000 hours
MTTR availability	Average repair time less than 20 minutes
AES/EAE emergency power input	24VDC
OLED screen	2,42"
Operating temperature	-10°C ~ +40°C - Humidity: 5 ~ 95%
Weight	1,29kg
Dimensions (WxHxD)	200 x 73 x 206 mm
Accessories	AC power cord, Adapter, Gooseneck microphone, Euroblock termina
Protocol and encryption	TCP/IP, Http, Https, SNMP V2c, IPv4, TLS1.2, SHA256, SSL, AES-256, Elliptic curve cryptography



This module is a reliable solution for checking the integrity of the loudspeaker line, which is mandatory for VA sound systems.

The EOL-20 is connected at the end of the line after the last speaker.

It communicates with the DPN amplifier channel that drives the speaker line to confirm the integrity of the speaker line.

Where impedance measurements may not detect a disconnected loudspeaker (depending on the number of loudspeakers and the type of cable), the EOL-20 provides a highly reliable solution to always report the correct status of the loudspeaker lines.

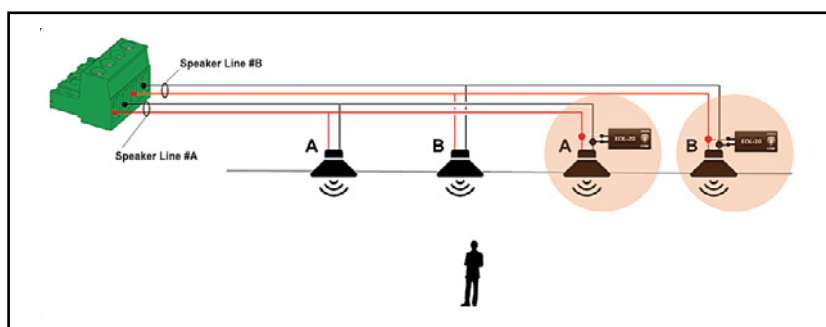
The EOL-20 housing is IP30 and fits most cable junction boxes.

## FEATURES

- The operation is based on the detection of the amplifier's pilot signal with feedback to the amplifier via the same speaker line.
- No additional wiring is required for fault or status reporting.
- The end of line element must be connected at the end of the line and on each speaker line.
- The two wires have no polarity and can be connected in either direction.
- The A/B outputs of a DPN amplifier channel are individually supervised with separate end-of-line units.
- The switch allows a more accurate measurement of the loudspeaker line depending on its load:
  - HIGH: speaker line load greater than 150 W
  - LOW: speaker line load less than 150 W
- To reduce power consumption, the DPN amplifier channels use pilot signal modulation.
- The audibility of the pilot signal is practically zero due to the low amplitude of the pilot signal (20 kHz frequency) which is far beyond the range of human hearing, even in young children.

**TECHNICAL CHARACTERISTICS**

MODEL	EOL 20
Operating temperatures	-10°C ~ +40°C - Humidity : 5 ~ 95%
LOW position	Speaker line load less than or equal to 150 W
HIGH position	Loudspeaker line load greater than 150W
Weight	150g
Dimensions (WxHxD)	100 x 35 x 30mm
Accessories	no

**WIRING OF THE EOL-20 ON AND SP LINE**

The EOL-20 must be connected at the end of the line and on each speaker line. The two wires have no polarity and can therefore be connected in either direction.