PENDING
Conforms To
UL STD 2572
EN54 16
ETL LISTED US
Mass Notification Systems

SNG-PR

PAVA I/O Expansion Processor

The SNG-PR is PA/VA networked processor which comes with 6 modular card slots for flexible audio I/O expansion, including cards of 4CH Mic/Line in, 4CH Line in, 4CH Line out, 2CH Mic/Line in and 2CH Line out, 4 port digital I/O (8 in/8 out), 4CH VoIP, analog telephone with 4 Line, analog telephone with 2 Line and 2 Set and 8CH Stereo AES-EBU I/O.

The Sinergia system offers a high level of redundancy for PA/VA installations. Including redundant paging console network, redundant Ethernet, and 3rd generation ATEÏS-Net real time audio network in redundant loop or star wired with less than 1 ms[*1] latency architecture.

The ATEÏS-Net is a highly secured and professional-grade audio network protocol, and had been proven in many world famous project installations more than two decades. 3rd generation ATEÏS-Net provides most secured performance and greater scalability than any other IP architectures. Each SNG-PR processor can be networked up to 256 units via ATEÏS-Net in a redundant loop or star wired architecture. It can be linked via STP CAT5/6 cable or higher with RJ45 connector (max. length 100m between units), multi-mode fiber (2 km), single-mode fiber (20 km) or even longer upon request. In addition, the system can be networked in star wired architecture support AES67 and AES70 audio network protocol 48k sampling with AES128, TLS high security encryption. The SNG-PR processor is designed to provide the reliability of full-redundancy and offer a complete real-time monitoring. Should the primary SNG-PR processor fails, there is an automatic switchover to the redundant SNG-PR processor, maintain system operates continuously.

Each processor can use optional 4 monitored remote ports and each remote port can connect up to 16 paging consoles, and max. 32 paging consoles per SNG-PR. The remote ports can be wired in daisy-chain or in redundant loop. The maximum cable length is 250M (820 ft)[*2] between the SNG-PR processor and DPM-MAIN paging console via STP CAT5/6 cable or higher with metal shielded RJ45 connector.

The SNG-PR not only provides pre-defined configurations for time-saving set-up, but also offers a full drag and drop DSP architecture for more complex and/or particular professional applications. The processor has internal message storage for up to 120 minutes and a Micro SD card interface for configuration backup with all security message storage. The PC based software provides event scheduler, DSP parameter adjustment, preset control, logic control, message player, VoIP, recorder etc., making the entire system flexible but easy to integrate and setup. In accordance with EN 54-16 and UL 2572, the system is fully supervised with faults reported and logged. The Sinergia system also allows integration with third party control via RS485 and Ethernet.
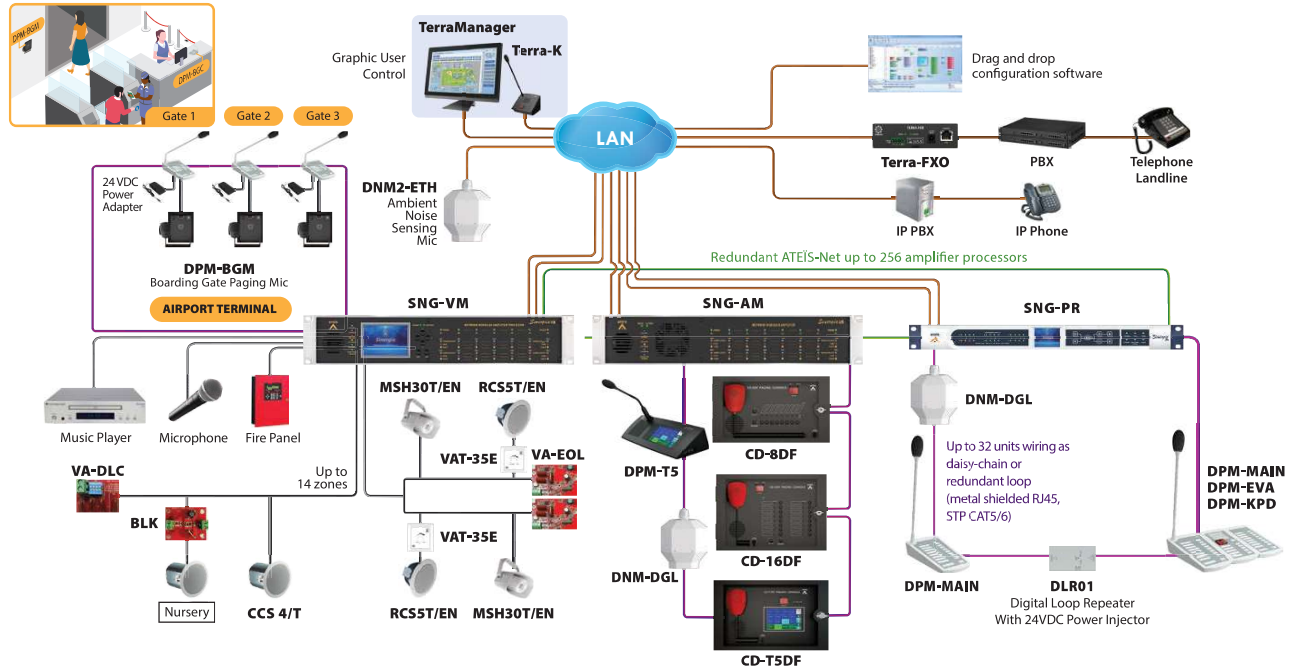
*1: In star wiring mode, less than 1 ms within 7 hubs or switches. In redundant loop mode 1 ms within 12 nodes, and then 83.3 µs more per node.
*2: If more remotes, the cable length will be shorter. It may required DLR01 digital loop repeater for distance extension.
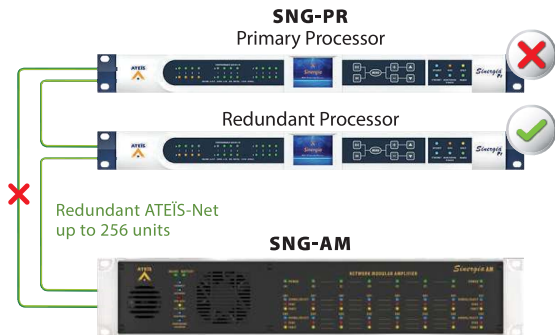
SNG-PR

PAVA I/O Expansion Processor

## SYSTEM DIAGRAM

FULL REDUNDANCY

The SNG-PR processor is designed to provide the reliable and high level of full-redundancy, offers a real-time complete monitoring. Should the primary processor fail, automatically switch to the redundant processor, maintain system operates continuously.

EXCELLENCE IN AUDIO QUALITY & DSP PROCESSING

To meet the various requirement of PA/VA projects, the Sinergia system is programmed and controlled via a flexible and sophisticated PC-based software.

Full-featured drag-n-drop functions, including event scheduler, preset control, logic control, message player (G.711, G.722, G.726, G.727, MP3, WAV and HE-AAC v2), recorder, AGC, A.N.G (Auto Noise Gain), PEQ, Hi/Lo Pass Filter, In/Out streaming, Delay, Ducker, Mixer, paging control, level control, etc.

SNG-PR
Primary Processor

Redundant Processor

Redundant ATEÏS-Net
up to 256 units

SNG-AM
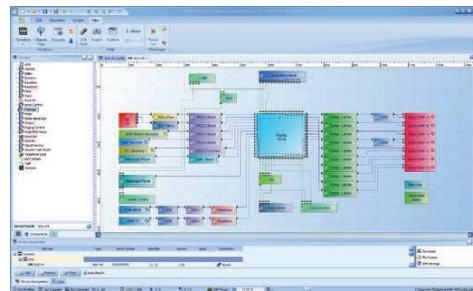
ATEÏS Designer Suite

SNG-PR

CERTIFICATIONS AND APPROVALS (PENDING)

Europe/UK	Voice Alarm	EN 54-16
Europe	CE/EMI	EN 55032
Europe	CE/EMC	EN 61000-3-2 EN 61000-6-2 EN 61000-3-3 EN 61000-6-4 EN 55035
Europe	CE/LVD	EN 62368-1
USA	Mass Notification Systems	UL 2572
USA	Safety	UL 62368-1

CONTROLS AND INDICATORS

■ **Front**
- IR receiver
- 24 configurable audio I/O LEDs
- 2.2" LCD panel for system control and information display
- 1 power button and 7 LCD navigation buttons (+/-/▲/▼/OK/ESC/MENU)
- Status LEDs (EVAC LED, Fault LED, Monitoring Disabled LED, Network LED, Power LED, Ethernet LED)

■ **Rear**
- AC power socket with fuse
- 2 ATEÏS-Net ports for realtime audio network in redundant loop or star wired architecture
- 6 configurable card slots (4CH Mic/Line in, 4CH Line in, 4CH Line out, 2CH Mic/Line in and 2CH Line out, 4 port digital I/O (8 in/8 out), 4CH VoIP and 8CH Stereo AES-EBU I/O)
- 2 redundant Ethernet ports
- 1 Micro SD card for configuration backup with all security message storage
- 24VDC power output (0.2A)
- 16CH control inputs
- 8CH contact outputs
- 2 EVAC contact
- 2 Fault contact
- RS485 for 3rd party control

ELECTRICAL
■ AC power input: 100 ~ 240 VAC, 50/60 Hz
■ Power consumption (AC)

idle	full power
22W	110W

Idle: pilot tone -36 dB, 1/2 full power: alarm tone

■ DC power input: 21 ~ 28 VDC
■ Power consumption (DC)

standby mode	full power
20W	100W

Idle: pilot tone -36 dB, 1/8 full power: speech, 1/2 full power: alarm tone

AUDIO CHARACTERISTICS (GENERAL)
■ A/D-D/A bit resolution: 24 bit
■ Sampling rate: 48k Hz or 96k Hz
■ Frequency response: 20 Hz ~ 20k Hz (±3 dB) @ 0 dBu
■ EIN: < -125 dBrA @ 60 dB gain
■ THD+N: < 0.006 % @ 4 dB in, 0 dBu (1k Hz) gain

AUDIO CHARACTERISTICS (MIC IN)
■ Phantom power: 48VDC, 15 mA
■ Input gain range: 0 ~ 66 dB (6 dB steps)
■ Maximum input level: 17 dBu
■ Input impedance (balanced): 8k ohm
■ EIN: < -125 dBrA @ 60 dB gain
■ CMRR: < 93 dBu @ 36 dB gain (1k Hz)
■ Crosstalk: > 70 dB @ 42 dB gain, -36 dBu (10k Hz) in

AUDIO CHARACTERISTICS (LINE IN & LINE OUT)
■ Maximum input level: 17 dBu
■ Output impedance: 17 dBu
■ Input impedance: 8k ohm
■ Output impedance: 32 ohm
■ EIN: < -86 dBrA @ 0 dB gain
■ CMRR: < 75 dBu @ 0 dB gain (1k Hz)
■ Crosstalk: > 70 dB @ 0 dB gain, 6 dBu (10k Hz) in

AUDIO CHARACTERISTICS (AUDIO I/O)
■ Maximum input/output: 16 dBu
■ Maximum gain: 66 dBu
■ Input impedance: 8k ohm
■ Output impedance: 77 ohm
■ EIN: < -86 dBrA @ 0 dB gain
■ Phantom power: 48VDC, 7 mA
■ Input gain range: 0 ~ 66 dB (6 dB steps)

NETWORK
■ ATEÏS-Net star wired or redundant loop structure: 256 units (max.)
■ Max. distance between the units: 100m (RJ45 CAT5/6 or higher), 2 km (multi mode fiber optic) and 20 km (single mode fiber optic) longer distance upon request
■ Max. number of remotes/per processor: 32
■ Max. distance between remote units: 250m, longer distance upon request (metal shielded RJ45 connector, STP CAT5/6)

MECHANICAL
■ Dimensions (W x H x D): 312 x 44 x 482 mm (12.3 x 1.7 x 19 inch)
■ Weight: 6.6 lbs (3 kg)
■ Mounting: 1U rack
■ Colour
  - Front panel: Silver-painted plastic & PANTONE 432C
  - Metal case: PANTONE 7546C

ENVIRONMENTAL
■ Operating temperature: -5 ºC ~ +55 ºC (+23 ºF ~ +131 ºF)
■ Storage temperature: -40 ºC ~ +70 ºC (-40 ºF ~ +158 ºF)
■ Relative humidity: 20% to 95%
■ Heat dissipation: 100 BTU/hr

Ordering Information								
Model No.	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Description of Model
SNG-PR	Slot A	Slot B	Slot C	Slot D	Slot E	Slot F	Network Card	PAVA I/O Expansion Processor

* Slot A/B/C/D/E/F								
	M	M	M	M	M	M		4CH Mic/Line Audio Input Card
	L	L	L	L	L	L		4CH Line Audio Input Card
	O	O	O	O	O	O		4CH Line Audio Output Card
	H	H	H	H	H	H		2CH Mic/Line Input & 2CH Line Audio Output Card
	A	A	A	A	A	A		4CH Mic/Line Input card with AEC
	E	E	E	E	E	E		Stereo AES-EBU I/O Card, 4 Port
	K	K	K	K	K	K		OCTOLINK Card
	V	V	V	V	V	V		4CH Duplex VoIP Card
	F	F	F	F	F	F		Analog TEL Card with 4 Line
	T	T	T	T	T	T		Analog TEL Card with 2 Line and 2 Set
Loop/Star Network Card (100M/1G) Dynamic								
								None
							RR/JJ	RJ45(A)-(B)
							MR/TJ	Fiber Multi Mode(A)-RJ45(B)
							SR/GJ	Fiber Single Mode(A)-RJ45(B)
							RM/JT	RJ45(A)-Fiber Multi Mode(B)
							RS/JG	RJ45(A)-Fiber Single Mode(B)
							MM/TT	Fiber Multi Mode(A)-(B)
							SS/GG	Fiber Single Mode(A)-(B)

*Please selects six cards for A to F slots in order when make an order:
• M → L → O → H → A → E → K → V → F → T

Copper Pillar	
CP-PILLAR 15	Copper pillar 15 mm x 50
CP-PILLAR 37	Copper pillar 37 mm x 50

* Note
When purchasing the network card, please note the copper pillar is not shipped with the network card, please order copper pillar if necessary.
• To assemble the netcard to SNG-VM/SNG-AM, the copper pillar 37 mm x 2pcs are needed.
• To assemble the netcard to SNG-PR, the copper pillar 15 mm x 2pcs are needed.