







PAVA Redundant Processor

The SNG-PR is the heart of the Sinergia system, the unit is a PA/VA networked processor which comes with 6 modular card slots for flexible audio I/O expansion, including analog telephone card, remote network paging card, 4CH Mic/Line in, 4CH Line out, 2CH Mic/Line in and 2CH Line out, 4CH digital I/O, VoIP and AES/EBU.

Thanks to ATEÏS-Net network architecture, all audio processing is performed in the digital domain. You can start with a small system in the initial stage and expand the system later simply by adding the required SNG-PR processor or SNG-AM modular amplifier units to the existing network (max. 256 SNG-PR/SNG-AM units in redundant loop cabling). In addition, 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's an automatic switchover to the redundant SNG-PR processor to ensure uninterrupted operation.

Digital signal processing allows significant improvements in audio quality to be achieved. Communication between the units is via 100m (RJ45 plug, STP CAT5 or higher), 2 km (multi mode fiber optic) and 20 km (single mode fiber optic). The system cabling is a closed loop, which allows redundancy to be achieved.

The PC based software provides pre-defined configurations for time-saving setup, and offers a full drag n' drop powerful DSP, including AGC, Ducker, various kinds of Mixer, Delay, A.N.G (Auto Noise Gain), ANR (Acoustic Noise Reduction), PEQ, Feedback, Hi/Lo Pass, message player, event scheduler for element adjustment, logic control, preset changes and event control, In/Out streaming, network paging, VoIP and SIP client, level control, recorder etc., making the entire system flexible and easy to program and integrate.

Sinergia system is a fully digital public address system that meets all the high level of full-redundancy and complete real-time monitoring for PA/VA installations including auto switching to redundant processor if the primary one fails, 2 redundant AC mains, 48VDC battery backup, our 3rd generation ATEÏS-Net real time audio network with less than 1 ms latency in redundant loop or star wired architecture, redundant paging console loops and A/B speaker lines for each zone.

In accordance with EN 54-16 and UL 2572, the system, including power, amplifiers, paging microphones and loudspeaker lines is fully monitored with all faults reported and logged. Multiple volume attenuators can be installed on monitored speaker lines without the need for a loopback cable. The Sinergia system also allows integration with third party control via RS485 and Ethernet.





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SNG-PR

SYSTEM DIAGRAM



SYSTEM FEATURES

- Up to 256 SNG-PR processor/SNG-AM modular amplifier can be cascaded via ATEÏS-Net real time audio network in redundant loop or 256 units in star wiring
- Up to 256 SNG-AM modular amplifier can be daisy-chained to SNG-PR processor via ATEÏS-Net using STP CAT5/6/7 or fiber optic, making the system cabling and installation very quick, simple and easy
- SNG-PR is capable of routing up to 640CH simultaneous audio channels over dedicated ATEÏS-Net network
- Dual Ethernet ports with auto detection to switch to secondary network if the primary one fails or its cable is disconnected
- 6 card slots for flexible audio I/O expansion including Mic/Line in, Line out, digital I/O, VoIP, AES/EBU, analog telephone card and redundant remote network paging card
- Network paging, telephone paging, recording, BGM playing, parameter adjustment can be operated via touch screen LCD panel of SNG-PR processor

FULL REDUNDANCY

The SNG-PR processor is designed to provide the reliability of high level of full-redundancy and offer a complete real-time monitoring. Should the primary processor fails, there's an automatic switchover to the redundant processor to ensure uninterrupted operation.



EXCELLENCE IN AUDIO QUALITY & DSP PROCESSING

To meet the various requirement of PA/VA projects, the Sinergia system is designed with flexible and sophisticated software architecture which includes DSP control, event scheduler, preset control, logic control, message player (G.711, G.722, G.726, G.727, MP3, WAV and HE-AAC v2), VoIP recorder, AGC, A.N.G (Auto Noise Gain), PEQ, Feedback, Hi/Lo Pass, In/Out streaming via VoIP, level control, etc. All in a drag-n-drop graphical user interface.



ATEÏS Designer Suite



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CERTIFICATIONS AND APPROVALS

Europe	Voice Alarm	EN 54-4 EN 54-16		
Europe	CE/EMI	EN 55032		
Europe	CE/EMC	EN 61000-3-2 EN 61000-3-3 EN 61000-6-4 EN 55035		
Europe	CE/LVD	EN 62368-1		
USA	Mass Notification Systems	UL 2572		
USA	Safety	EN 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 (STP CAT5/6/7 or fiber optic)
- 6 configurable card slots (Mic/Line in, Line out, digital I/O, VoIP, AES/EBU, analog telephone card, redundant remote network paging card)
- 2 Ethernet ports for network redundancy (STP CAT5/6 cable, RJ45 plug)
- Micro SD interface for music and message file storage
- 24VDC power output (0.6A)
- 16CH control inputs
- 8CH contact outputs
- EVAC contact
- Fault contact
- RS485 for 3rd party control

ELECTRICAL

- AC power input: 100 ~ 240 VAC, 47 ~ 63 Hz
- Power consumption: 130W

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: 48 VDC, 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</p>
- CMRR: < 75 dBu @ 0 dB gain (1k Hz)</p>
- 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: 48 VDC, 7 mA
 Input gain range: 0 ~ 66 dB (6 dB steps)
- Input gain range: 0 ~ 66 dB (6 dB step

NETWORK

- ATEÏS-Net redundant loop structure: 256 units (max.)
- ATEÏS-Net star wired structure: 256 units in a local area network
- Max. distance between SNG-PR/SNG-VM units: 100m (RJ45, STP CAT5 or higher), 2 km (multi mode fiber optic) and 20 km (single mode fiber optic)
- Max. remote unit/per processor: 32
- Max. distance between remote units: 250m (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 °C ~ +55 °C (+23 °F ~ +131 °F)
- Storage temperature: -40 °C ~ +70 °C (-40 °F ~ +158 °F)
- Relative humidity: 20% to 95%
- Heat dissipation: 100 BTU/hr

Tel

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SNG-PR

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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	Redundant Processor		
* Slot A/B/C/D/E/F										
	М	М	М	М	М	М		4CH Mic/Line Audio Input Card		
	L	L	L	L	L	L		4CH Line Audio Input Card		
	0	0	0	0	0	0		4CH Line Audio Output Card		
	Н	Н	Н	Н	Н	Н		2CH Mic/Line Input & 2CH Line Audio Output Card		
	А	А	А	А	А	А		4CH Mic/Line Input card with AEC		
	E	E	E	E	E	E		Stereo AES-EBU I/O Card, 4 Port		
	К	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		
	Т	Т	Т	Т	Т	Т		Analog TEL Card with 2 Line and 2 Set		
	S	S	S	S	S	S		2CH Mic/Line In & Analog TEL 1 Line & 1 Set Card		
Network Card										
								None		
							RR	RJ45(A)-(B)		
							MR	Fiber Multi Mode(A)-RJ45(B)		
							SR	Fiber Single Mode(A)-RJ45(B)		
							RM	RJ45(A)-Fiber Multi Mode(B)		
							RS	RJ45(A)-Fiber Single Mode(B)		
							MM	Fiber Multi Mode(A)-(B)		
							SS	Fiber Single Mode(A)-(B)		

* Please selects six cards for A to F slots in order when make an order:

 $\bullet \ \mathsf{M} \to \mathsf{L} \to \mathsf{O} \to \mathsf{H} \to \mathsf{A} \to \mathsf{E} \to \mathsf{K} \to \mathsf{V} \to \mathsf{F} \to \mathsf{T} \to \mathsf{S}$



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