SNG-AM

Modular Amplifier

The SNG-AM is a PA/VA modular amplifier that offers 16 monitored speaker zones. Its 8 modular amplifier slots can accommodate either 250W x 2CH or 500W x 2CH (power dissipation with burst-mode operation), any combination up to16 CH. Any channel amplifier can act as back up amplifier[1*] of the amplifier module can act as backup amplifier.

Thanks to ATEÏS-NET network architecture, all audio processing is performed in the digital domain, can start with a single unit in the initial stage and expand the system later simply by adding the required SNG-PR processor or SNG-AM amplifier to the existing network. Each SNG-AM amplifier can be networked with up to 256 units via ATEÏS-NET in a redundant loop architecture. For star wired architectures the system can also connect via LAN for up to 256 units. The SNG-AM amplifiers can be linked via RJ45 plug, STP CAT5 or higher (max. length 100m between units), multi-mode fiber (2 km), or single-mode fiber (20 km or even longer upon request).

Each SNG-AM amplifier has 2 monitored remote controller ports and each remote port can connect up to 16 remote paging consoles in daisy-chain or up to 32 units in a redundant loop using 2 ports. The cable length can be up to 250M[2*] maximum (820 ft.) between the SNG-AM and DPM-MAIN paging console via STP CAT5 cable or higher with metal shielded RJ45 connector.

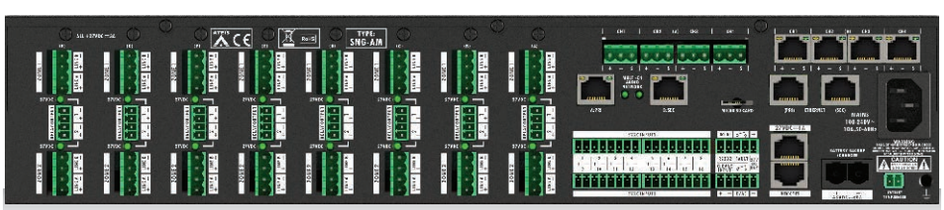
Sinergia system is a fully digital public address and voice alarm system that meets all the high level of full-redundancy and real-time monitoring for PA/VA installations. Including processor redundancy if the primary fails, auto switching to backup processor, 2 redundant AC mains[3*], 48VDC battery backup, our 3rd generation ATEÏS-NET real time audio network with less than 1 ms latency in redundant loop or star wired architecture within 7 nodes.

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 RS232 and Ethernet.

[1*] In SNG-AMA, only the amplifier of Slot H can be used as backup amplifier.
[2*] The distance of cable length will directly affect the quantity and power requirement of remote unit. The longer the cable is or the more the remote units has cascaded in daisy-chain/redundant loop, the less power the SNG-AM can supply to the remote units. For example, if the cable length between the SNG-AM and DPM-MAIN is within 250m, the DPM-MAIN can be powered by SNG-AM. If the cable length is beyond 250m, please connect the DLR01 digital loop repeater and PSU65-27 27VDC power adapter, ensuring the control signal and power supply of DPM-MAIN. Please refer Sinergia user manual for details.
[3*] Only SNG-AMA models support 2 AC mains and one AC mains with one 48 VDC battery backup power.

SYSTEM FEATURES

- Up to 256 SNG-PR processor/SNG-AM amplifier can be cascaded via ATEÏS-NET real time audio network in redundant loop or 256 SNG-PR/SNG-AM units in star wiring.
- Up to 256 SNG-AM 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.
- Embedded dual AC power units, 48VDC battery backup power and the charger.
- The 2 monitored remote controller ports can be wired in daisy-chain or in redundant loop using 2 ports
- Support hot-swap amp boards for configuration change or replacement from the front panel of SNG-AM amplifier.
- By installing the VA-EOL end of SP-line module for multi-branch speaker line or 3 wired volume control attenuator, the system can indicate which speaker line/branch is open/short circuit within 90 seconds (EN 54-16 requirement) without the need for a loopback cable.



*The SNG-AMA model exclude battery backup charger, battery sensor; only embedded Slot A and one AC power unit.

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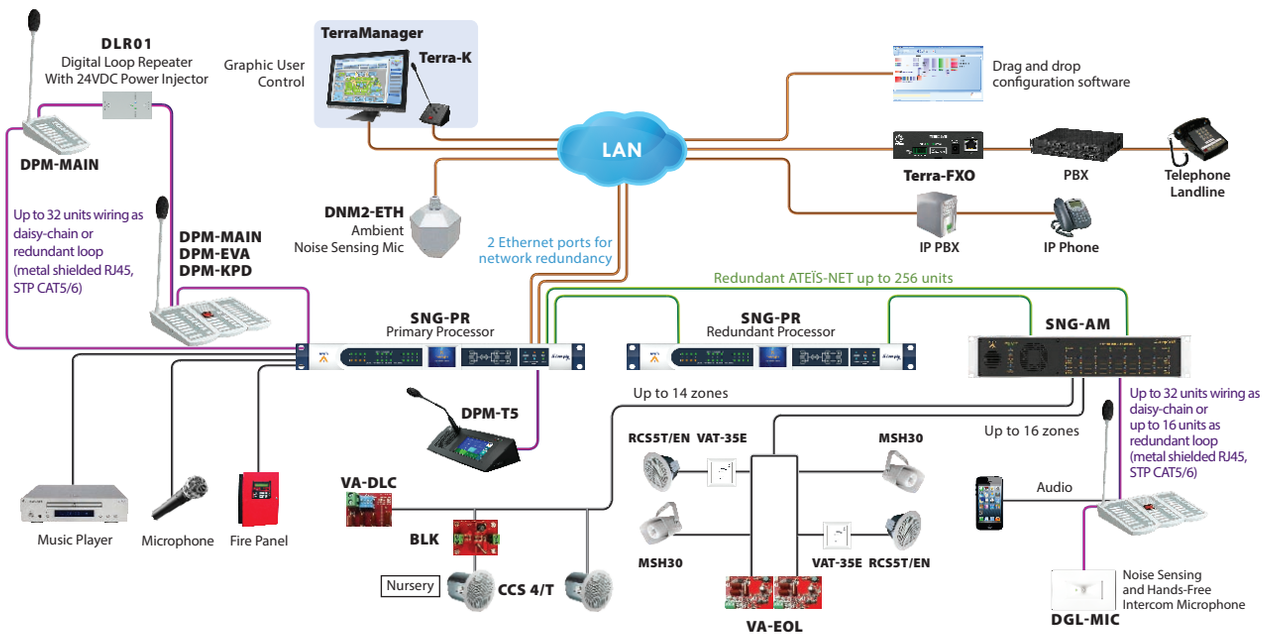
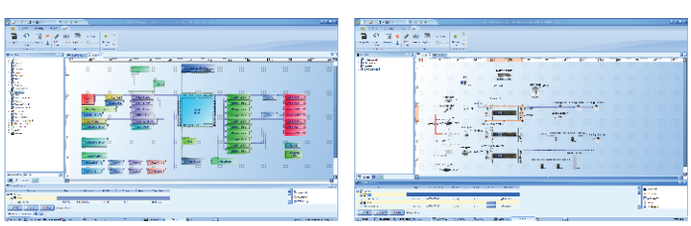
Modular Amplifier

SYSTEM DIAGRAM



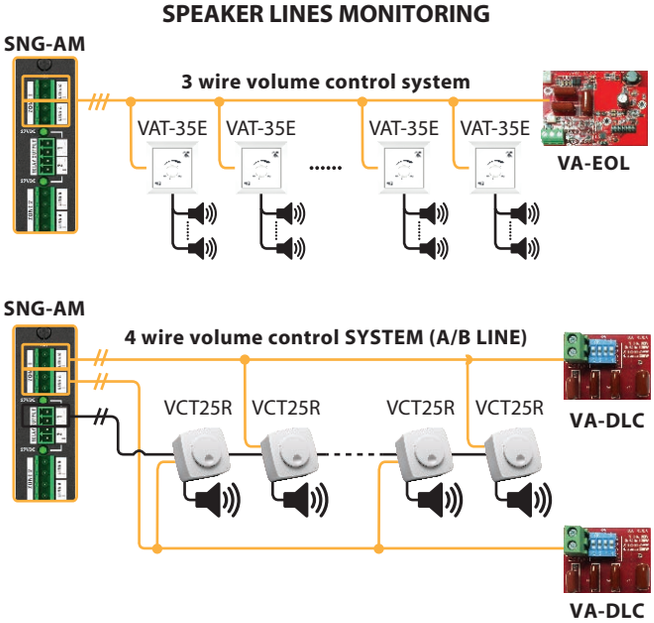
EXCELLENCE IN AUDIO QUALITY & DSP PROCESSING

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.

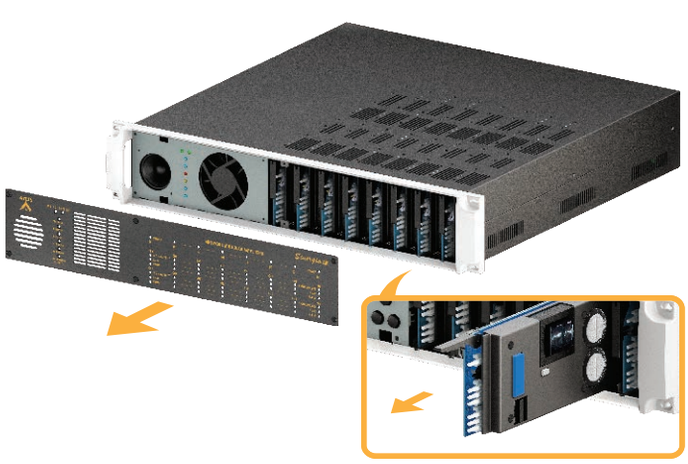


ATEÏS Designer Suite

SPEAKER LINES MONITORING



HOT-SWAP AMP BOARDS



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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 61000-6-2 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**
  - Monitoring speaker
  - Mains LED
  - Battery LED
  - Amplifier board LEDs (Power/Signal/Select/EVAC/Fault)
  - Status LEDs (Network/EVAC/Fault/Monitoring Disabled)
- **Rear**
  - 2 redundant AC power cord sockets
  - 48 VDC battery backup power with charger built-in
  - 8 amplifier board slots (500W/1000W) with up to 16 speaker zones (A/B) outputs and 24VDC output for volume attenuator override
  - 2 ATEÏS-NET ports for realtime audio network in redundant loop or star wired architecture
  - 2 digital interfaces for paging console and remotes

ELECTRICAL

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

idle	1/2 full power	full power
24W	1800W	3300W

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

- DC power input: 43 VDC ~ 56 VDC
- Power consumption (DC)

standby mode	idle	1/8 full power	1/2 full power	full power
6.5W	22W	510W	1800W	3300W

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

AUDIO CHARACTERISTICS

- A/D-D/A bit resolution: 24 bit
- Sampling rate: 48 kHz
- Frequency response: 20 Hz ~ 20 kHz (±1 dB) @ 0 dBu
- EIN: < -123 dBrA @ 42 dB gain
- THD+N: < 0.04 % @ 0 dB gain, -24 dBu (1k Hz) in
- CMRR: > 80 dBu @ 0 dB gain (1k Hz) in
- Crosstalk: > 90 dB @ 0 dB gain (1k Hz) in
- Input gain range: 0 ~ 66 dB (6 dB steps)
- Phantom power: 48 VDC, 15 mA
- Maximum input level: 17 dBu
- Maximum output level: 17 dBu
- Input impedance: 8k ohm
- Output impedance: 32 ohm

AUDIO CHARACTERISTICS (AMPLIFIER MODULE)

- Rated output power: 125W/250W (Class-D)
- Frequency response: 20 Hz ~ 20k Hz (±3 dB) @ 0 dBu
- THD+N: < 0.2 % @ 6 dB gain, 0 dBu (1k Hz) in
- SNR: > 90 dB

WATTAGE CAPACITY

- Burst mode power: 500W per zone (max.), and 6000W per unit (max.).
- Rated output power: 250W per zone (max.), and 3000W per unit (max.).

LOUDSPEAKER OUTPUTS

- Maximum number of speaker zones: 16 with redundant A/B lines

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-AM 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)

RELAY OUTPUTS

- Maximum voltage: 100 VDC
- Maximum current: 0.5A

EVAC INPUTS

- Voltage mode
  - Maximum voltage: 72 VDC
  - Active voltage: 18 VDC ~ 72 VDC
  - Inactive voltage: < 0.8 VDC
- Contact mode
  - Non-isolated analogue interfaces with internal pull-up to +5V by 10k ohm
  - Monitored analogue contact thresholds
    - Open circuit: > 2.7 VDC
    - Inactive voltage: 2 ~ 2.5 VDC
    - Active voltage: 1.35 ~ 1.7 VDC
    - Short circuit: < 0.6 VDC

MECHANICAL

- Dimensions (W x H x D): 436 x 88 x 347 mm (17.2 x 3.5 x 15 inch)
- Frame weight: 8 kg (17.6 lbs) excl. amplifier and optional cards
- Mounting: 19" 2U rack
- Colour: RAL 7016

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: 1025 BTU/hr

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Ordering Information									
Model No.	**Step 1**	**Step 2**	**Step 3**	**Step 4**	**Step 5**	**Step 6**	**Step 7**	**Step 8**	**Description of Model**
SNG-AM	Backup Power	Number of 500W AMP Card	Number of 1000W AMP Card	Number of Isolator Driver	N/A	Slot A	Slot B	Network Card	PA/VA Modular AMP Processor
SNG-AMA	N/A					Slot A	N/A		PA/VA Modular AMP Processor (Dual AC Power Supply)
SNG-AMS						Slot A	N/A		PA/VA Modular AMP Processor (Dual AC Power Socket)
Choose Backup Power									
									No Backup Power
	D								DC Backup Power with Battery Charger
	A								Dual AC Power Supply
	S								Dual AC Power Socket
Number of 500W AMP Card									
		0							None
		1~8							Number of 500W AMP Card
Number of 1000W AMP Card									
			0						None
			1~8						Number of 1000W AMP Card
Number of Isolator Driver									
				0					None
				1~8					Number of Isolator Driver
Slot Type1									
					T				Telephone Card
					P				Remote Paging Console Expansion Netcard
Slot Type2 (choose 2 in order)									
						M	M		4CH Mic/Line Audio Input Card
						L	L		4CH Line Audio Input Card
						O	O		4CH Line Audio Output Card
						H	H		2CH Mic/Line Input & 2CH Line Audio Output Card
						A	A		4CH Mic/Line Input card with AEC
						E	E		Stereo AES-EBU I/O Card, 4 Port
						K	K		OCTOLINK Card
						V	V		4CH Duplex VoIP Card
						F	F		Analog TEL Card with 4 Line
						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 two cards for B/C slots in order when make an order:**

- M → L → O → H → A → E → K → V → F → T

Zone Board/Isolator Driver	
SNG-ABZN	SNG A/B Zone Board
SNG-ID	SNG Isolator Driver

Amplifier Module	
AMP500D	Amplifier Module 250W x2CH, Burst
AMP1000D	Amplifier Module 500W x2CH, Burst
AMP500DZ	Amplifier Module 250W x2CH, Burst & Zone Board
AMP1000DZ	Amplifier Module 500W x2CH, Burst & Zone Board
AMP500DI	Amplifier Module 250W x2CH, Burst & ISO Driver
AMP1000DI	Amplifier Module 500W x2CH, Burst & ISO Driver

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