PENDING
Conforms To UL STD 2572
EN54 16
Mass Notification Systems

SNG-VM

PAVA Modular Processor

The SNG-VM is a PA/VA amplifier processor that offers 16 monitored speaker zones. Its 8 modular amplifier slots will provide either 125W, 250W, 350W or any mix thereof with a maximum of 16CH. One of the modular amplifiers can act as backup amplifier. In addition, an external amplifier can be connected to the SNG-VM for amplifier backup.

The Sinergia system offers a high level of full-redundancy and complete real-time monitoring for PA/VA installations including 2 redundant AC mains, 48VDC battery backup, redundant Ethernet network, our 3rd generation Ateis-Net real time audio network with less than 1 ms latency in redundant loop or star wired architecture, redundant paging console loops, A/B speaker lines for each zone, and redundant secondary micro-processor.

Each amplifier processor can be networked with up to 128 units via Ateis-Net in a redundant loop architecture. For star wired architectures the system can connect via LAN for up to 256 units. In Ateis-net architectures, the amplifier processors can be linked via CAT5 cable or higher with shielded RJ45 connector (max. length 100m between units), multi-mode fiber (2 km), or single-mode fiber (20 km or even longer upon request).

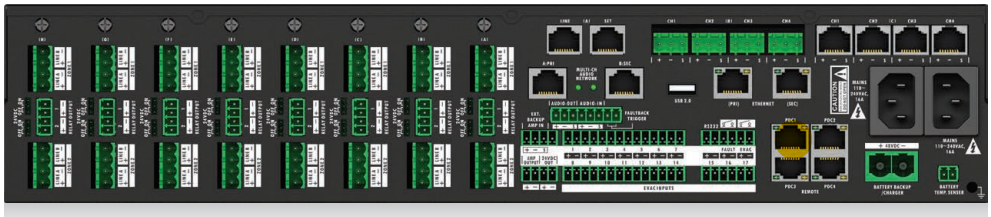
The SNG-VM has 17 monitored EVAC inputs which can be individually programmed for specific message or audio source routing to all or defined zones. The EVAC and Fault contact output is used for evacuation status and general fault status notification. Should the micro controller fail, the system will enter bypass mode, but still be able to do emergency paging for all zones.

Each amplifier processor has 4 monitored remote controller ports and each remote port can address up to 8 remote paging consoles in daisy-chain or up to 16 units in a redundant loop using 2 ports. The maximum cable length is 250M (820 ft.) between the SNG-VM and DPM-MAIN paging console via STP CAT5 cable or higher with shielded RJ45 connector.

The SNG-VM comes with 3 card slots for audio I/O expansion, slot A is used for analog telephone card or remote network paging card, and slot B/C are used for 4CH Mic/Line in, 4CH Line out, 2CH Mic/Line in and 2CH Line out, 4CH digital I/O, VoIP and AES/EBU.

The SNG-VM has pre-defined configurations for time-saving set-up, but also offers a full drag and drop DSP architecture for more complex applications. The amplifier processor has internal message storage for up to 120 minutes and a USB interface for configuration backup. The PC based software provides event scheduler, DSP parameter adjustment, preset control, logic control, message player, VoIP, recorder etc., making the entire system flexible and easy to program and integrate.

In accordance with EN54-16 and UL2572, the system including power, micro controller, amplifiers, paging microphones and loudspeaker lines is fully monitored and faults reported and logged. Multiple volume attenuators can be installed on monitored speaker lines without loopback cable. The amplifier processor is also an eco-friendly product with extremely low power consumption during standby mode (6.5W). The Sinergia system also allows integration with third party control via RS232/RS485 and Ethernet.



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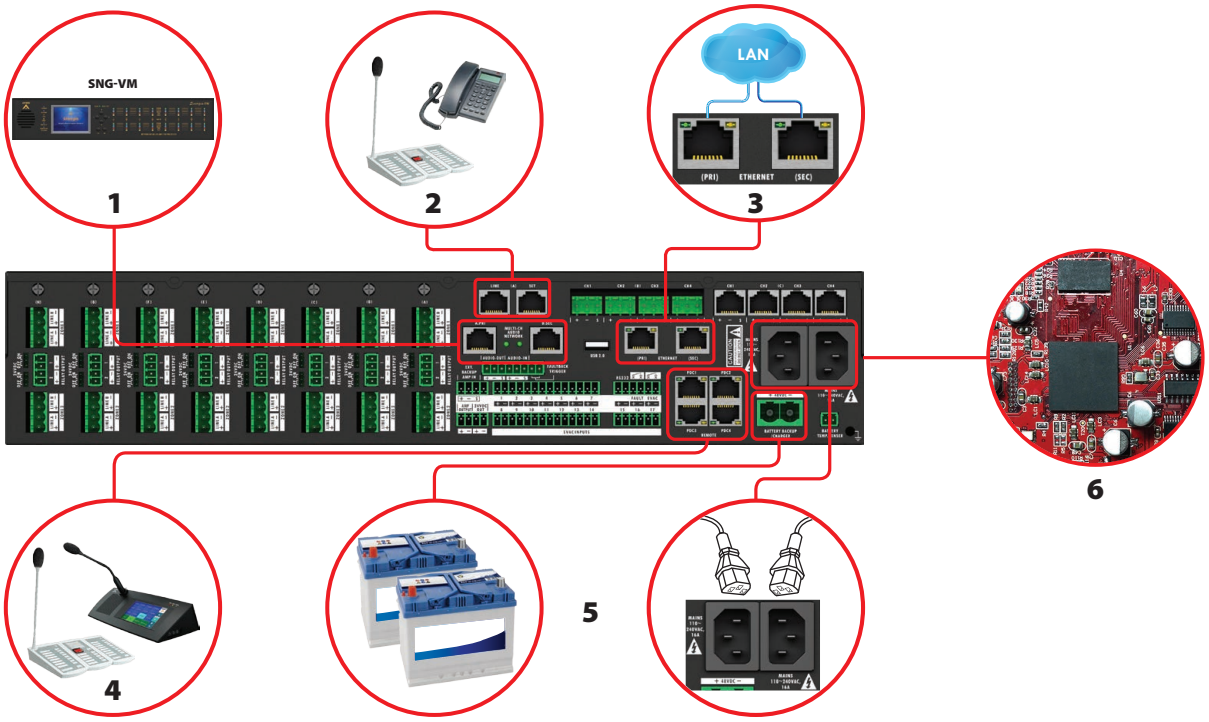
SYSTEM FEATURES

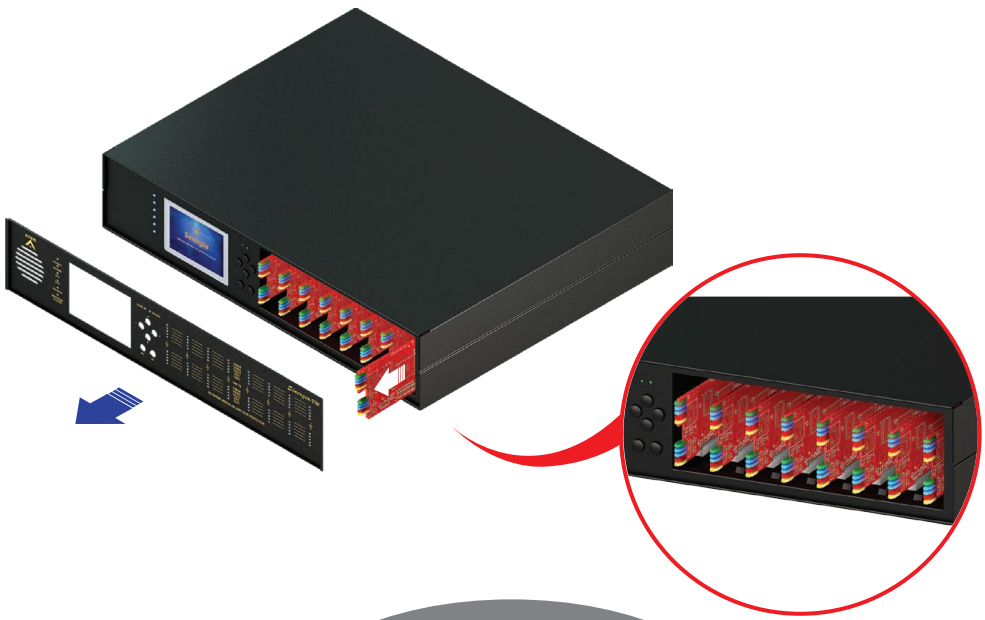
HIGH LEVEL OF FULL-REDUNDANCY ARCHITECTURE

1. Ateis-Net ports for real time audio network with less than 1 ms latency in redundant loop or dual star wired architecture.
2. The slot A is used for analog telephone card or redundant remote network paging card for paging console expansion.
3. Dual Ethernet ports with auto detection to switch to secondary network if the primary one fails or its cable is disconnected.
4. The 4 monitored remote controller ports can be wired in daisy-chain or in redundant loop using 2 ports.
5. Redundant power supply with 2 AC mains as well as monitored 48VDC battery backup power input.
6. Optional redundant micro processor for high security application in case the primary micro processor fails.



HOT-SWAP AMP BOARDS

- Sinergia supports hot-swap amp boards for configuration change or replacement from the front panel of SNG-VM amplifier processor.



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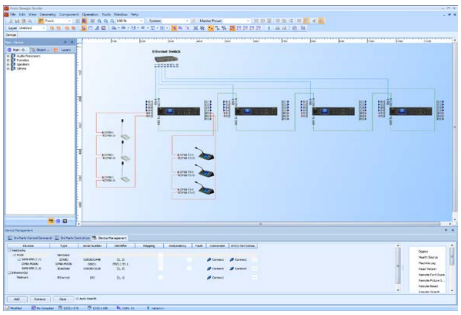
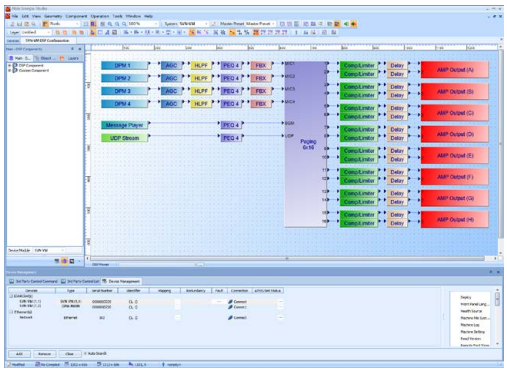
EXCELLENCE IN AUDIO QUALITY & DSP PROCESSING

To meet the various requirement of PA/VA projects, the Sinergia system is designed to have flexible and sophisticated software architecture including 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 environment.



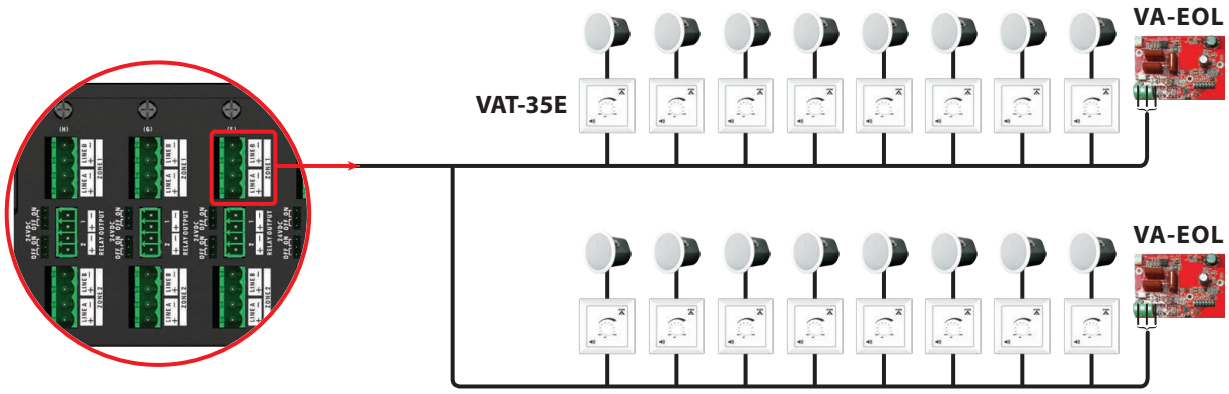


ECO-FRIENDLY PRODUCT

Sinergia is an eco-friendly product embedded amplifier processor, power amplifier and paging console that consumes as low as 6.5w in standby mode.

SPEAKER LINES MONITORING WITH VAT & VA-EOL/3 WIRE

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 (EN54-16 requirement) without loopback cable.



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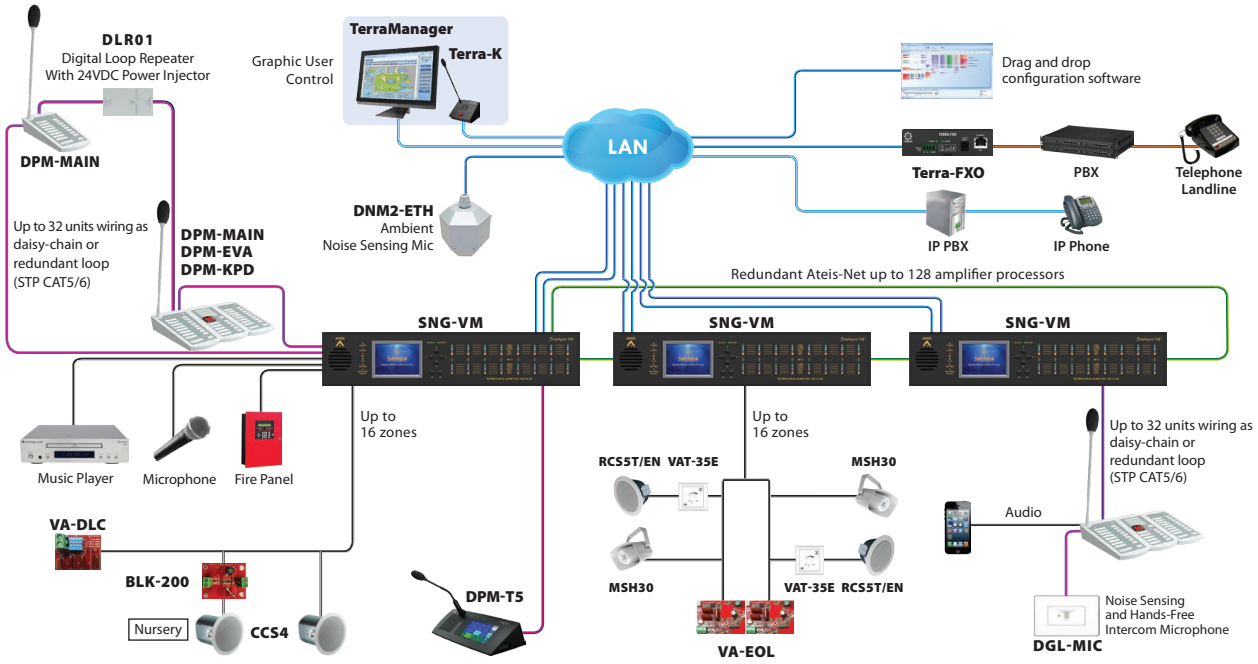
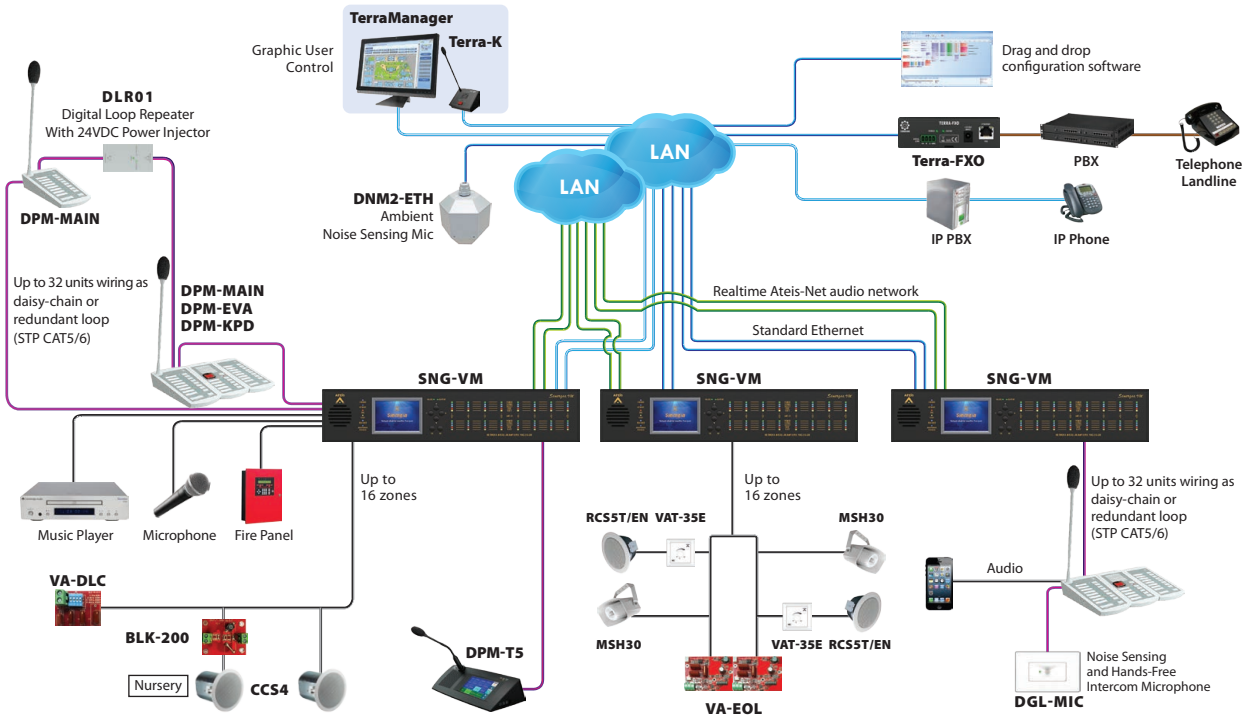
SYSTEM DIAGRAM

ATEIS-NET IN RUDUNDANT LOOP



ATEIS-NET IN STAR-WIRED ARCHITECTURE



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CERTIFICATIONS AND APPROVALS (PENDING)

Europe	Voice Alarm	EN54-16
Europe	CE/EMI	EN55032: 2015 AC: 2016 Class A
Europe	CE/EMC	EN61000-3-2:2014 EN61000-3-3:2013 EN55020:2007/A11:2011
Europe	CE/LVD	EN60065: 2014
USA	Mass Notification Systems	UL2572
USA	Safety	UL60065

CONTROLS AND INDICATORS

- **Front**
  - 3.5" full color touch screen LCD display
  - 6 LCD navigation buttons (+/-/▲/▼/OK/ESC)
  - Monitoring speaker
  - Mains LED
  - Battery LED
  - Amplifier board LEDs (Power/Signal/Select/EVAC/Fault)
  - Status LEDs (Ethernet/Network/EVAC/Fault/Fault Back/Monitoring Disabled)
- **Rear**
  - 2 redundant AC power cord sockets
  - 48 VDC battery backup power with charger built-in
  - 1 battery temperature sensor
  - 8 amplifier board slots (125W/250W/350W) with up to 16 speaker zones (A/B) outputs and 24VDC output for volume attenuator override
  - 1CH external amplifier backup interface
  - 24VDC output
  - 2 Ethernet ports (for network redundancy)
  - 2 Ateis-Net ports for realtime audio network in redundant loop or star wired architecture
  - Slot A: analog telephone card or remote network paging card
  - Slot B/C: 4CH Mic/Line input card/4CH Line/input card 4CH Line output card /2CH Mic/Line input and 2CH/Line output card/VoIP card/AES-EBU 4 port/Digital I/O card
  - 4 digital interfaces for paging console and remotes
  - 1 USB 2.0 for configuration backup and message and music file
  - 17 monitored EVAC inputs
  - 1 fault and 1 EVAC relay output
  - Faultback mode allows the emergency paging/messages to all zones when CPU failed
  - RS232/RS485 for third party control

ELECTRICAL

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

idle	1/2 full power	full power
24W	TBD	TBD

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	TBD	TBD	TBD

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 dBu @ 42 dB gain
- THD+N: < 0.04 % @ 0 dB gain, -24 dBu (1 kHz) in
- CMRR: > 80 dBu @ 0 dB gain (1 kHz) in
- Crosstalk: > 90 dB @ 0 dB gain (1 kHz) 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/350W (Class-D)
- Frequency response: 50 Hz ~ 20 kHz (±3 dB) @ 0 dBu
- THD+N: < 0.2 % @ 6 dB gain, 0 dBu (1 kHz) in
- SNR: > 90 dB

WATTAGE CAPACITY

- 700W per zone (max.), and entire unit 2800W (max.)

LOUDSPEAKER OUTPUTS

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

NETWORK

- Ateis-net redundant loop structure: 128 units (max.)
- Ateis-net star wired structure: 256 units in a local area network
- Max. distance between the units: 100m (RJ45 CAT5 or higher), 2 km (multi mode fiber optic) and 20 km (single mode fiber optic)
- Max. distance between remote units: 250m (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
    - Faulty-open circuit: > 2.7 VDC
    - Inactive voltage: 2 ~ 2.5 VDC
    - Active voltage: 1.35 ~ 1.7 VDC
    - Faulty-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: 11kg (24.2 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%
- Air pressure: 600 to 1100 hPa

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Ordering Information

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Description of Model
Model No.	Redundant Micro Processor	Number of 125W AMP Card	Number of 250W AMP Card	Number of 350W AMP Card	Slot A	Slot B	Slot C	Network Card	PAVA Modular Processor

Model No.									
SNG-VM									Rack Mount Type
SNG-VW									Wall Mount Type
Redundant Micro Processor									
									None
	R								Redundant Micro Processor
Number of 125W AMP Card									
		0							None
		1~8							Number of 125W AMP Card
Number of 250W AMP Card									
			0						None
			1~4						Number of 250W AMP Card
Number of 350W AMP Card									
				0					None
				1~4					Number of 350W AMP Card
Slot A									
									None
					T				Telephone Card
					P				Remote Network Paging Card
Slot B/C									
									None
						M	M		4 CH Mic/Line Audio Input Card
						I	I		4 CH Line Audio Input Card
						O	O		4 CH Line Audio Output Card
						H	H		2 CH Mic/Line Input and 2 CH Line Audio Output Card
						A	A		AES/EBU 4 port
						D	D		Digital I/O Card
						V	V		VoIP 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)