AUDICO AVEC G2

ADA 8x8 G2 System Unit

DIGITAL SOUND REPRODUCTION AND VOICE EVACUATION SYSTEM

TEHTY SUOMESSA MADE IN FINLAND

EN 54 –16 VOICE ALARM CONTROL AND INDICATING EQUIPMENT

EN 60945 MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS

BUREAU VERITAS

DNV·GL

SGS FI

CE

Ada 8x8 G2 System Unit is a scalable system unit for innovative Audico AVEC G2 Sound Reproduction and Voice Evacuation System. Audico AVEC G2 fulfills all kinds of sound reproduction needs for public premises starting from a simple Public Address system all the way to the complex voice evacuation system connected to the fire detection system as a part of the building's safety system. Typical public premises for the system are schools, shops, shopping malls, hospitals, public transportation, the industry, and the maritime cargo, special purpose, ferry and cruiser ships.

Thanks to being digital, the sound quality, efficiency and flexibility of the system are excellent. Audico AVEC is certified to fulfill harmonized standard's EN 54-16:2008 voice alarm and control and indicating equipment requirements. For maritime projects Audico Avec has Type Approval certificate issued by Det Norske Veritas (DNV) and Bureu Veritas (BV). One ADA 8x8 G2 System Unit contains all features needed for a small/mid-size PA system. The system is scalable and up to 64 pcs. of ADA 8x8 G2 System Units can be configured to the same system.

Main features
- Linux operation system
- 8 channel digital power amplifier, a' 150W@8 ohm
- 2 independent AC/DC power supplies
- 48VDC power input for redundant power
- 7x8 Digital Matrix for signal routing
- Efficient DSP for all audio inputs and outputs
- 7 balanced analogue audio inputs, mic/line
- Built-in message/ad. player (up to 128 messages)
- Info and Alarm Messages stored to a USB-memory stick
- Calendar and timer functions for automatic functions
- 48 VDC Phantom voltages for microphones
- 8 freely programmable control inputs
- 8 freely programmable control outputs
- System Bus connections, Bus 1 and Bus 2
- Open Application Program Interface (API)
- RS-232 port for service operations
- Aveclizer PC-software for system conf. and management
- Volume and source controls on user's panel

Audico Avec is configured using intuitive and easy-to-use Avec software, the file is downloaded to the ADA 8x8 G2.

The versatile paging/control consoles of the Avec family are used for making announcements, playing messages, giving on-screen information on the equipments' status and are used for selecting programme sources and adjusting volume. The con soles are stylish and the user interface is logical and easy to use.

ADA 8x8 G2 System Unit

POWER CONNECTIONS AND FUSES

ADA is connected to 230V operation voltage using standard plug (IEC). ADA contains two separate parallel low voltage power units. Both power supplies have dedicated fuse at the rear panel. Fuse size T3, 15A. ADA has two 48VDC inlets for backup power supply. The system can be equipped with an EN 54-4 certified secondary power supply. The power supply is connected to the 48VDC connectors in the rear panel.

SPEAKER OUTPUTS

ADA contains 8 pcs of 150W digital power amplifiers. 8 Ohms loudspeakers may be connected directly to the speaker outputs. When 70-100V speakers are used ADA must be equipped with ALT 8x8 line transfer unit. It converts the 8 Ohms outputs to desired line voltage. ALT also provides priority voltage outputs, individually for each line (24VDC).

DEVICE ADDRESS DIP-SWITCH

Each ADA must have its own individual device address in the same order as they appear on the configuration software. The system can consist of up to 64 ADA central units (512 speaker lines).

24VDC OPERATION VOLTAGE OUTPUT

The 24DC power output is used to supply power to the ALT 8x8 line transfer unit. The same voltage is used for priority voltage, to bypass possible attenuators in rooms during paging or alarm to ensure the message is heard everywhere in the building.

FAN

The ADA is equipped with a fan. The rotation of the fan is variable and internally monitored.

FRONT USB-B JACK

The USB socket at the front panel of ADA is used for down-loading the configuration file to the memory of ADA. It is also used to control system information like log and surveillance files.

BUS 1 & BUS 2 OVERRIDE AUDIO OUT

Both paging and alarm signals can be configured to these outputs. The outputs are mainly intended to feed paging audio to external amplifers or other systems.

USB-MEMORY STICK CONNECTOR

The alarm and other messages are stored in wav format on a USB-memory stick. The stored sound files can be played to selected zones as chime, alarm or information messages triggered by a timer, paging, control input or a fault in the system etc. The port can be simultanously also used as a intelligent interface to external control systems like ao. Espa 4.4.4.

CTRL ALT 8x8 CONTROL DATA TO ALT 8x8

The ALT 8x8 delivers priority voltage to attentuators' relays according the data from ADA 8x8. The ALT is connected with a RJ45 cable.

CONTROL OUTPUTS

The control outputs may be configured to activate on diverse situations, like paging, alarm, fault-indication, firebell muting etc. The output is open-collector type. The ADC 200 relay module is available if a dry contact is needed or the control output is used to control auxiliary alarm devices.
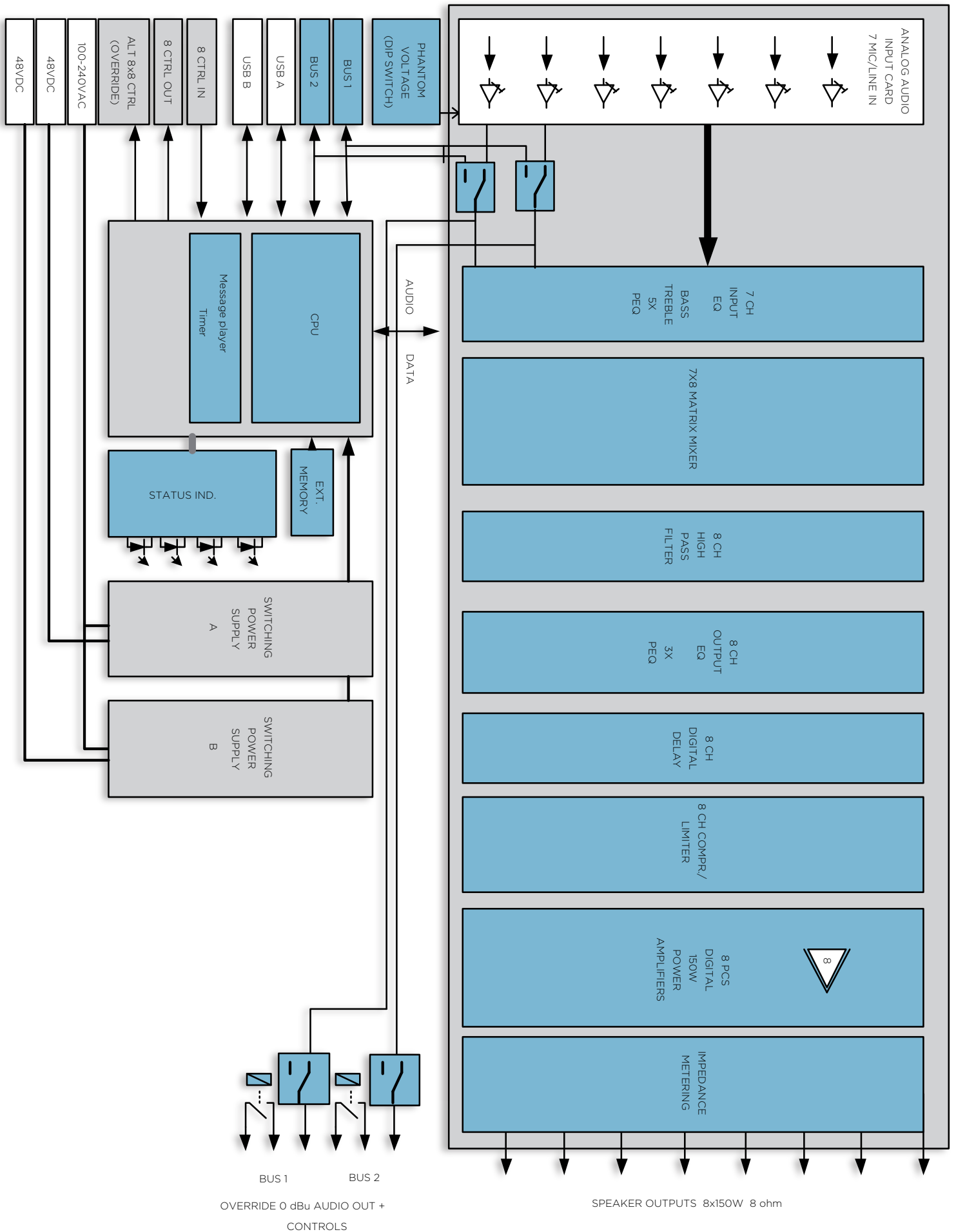
CONTROL INPUTS

The control inputs may be used to active different ADA actions like activate a paging, change the preset, play message, alarm etc. If a monitored control line to fire alarm system is required an ASI 200 supervision line module is required. The transmitting end of the line must be equipped with an ADC 200 relay module.

AUDIO INPUTS (MIC/LINE INPUTS)

7 pcs microphone/line inputs. The connector is removable 3-pin plug. Each input has own input sensitivity trimmer. The mic/line selection is done using the configuration software. The Phantom voltage is selected with DIP-switches.

SYSTEM BUS

Audico Avec devices are connected together using either Bus 1 or Bus 2. The devices connected to the Bus 1 can be used to control all ADA's in a single installation. Maximum number of devices in a single bus is 32. The system can be made redundant.

ANALOG AUDIO INPUT CARD
7 MIC/LINE IN

48VDC
48VDC
100-240VAC
ALT 8x8 CTRL (OVERRIDE)
8 CTRL OUT
8 CTRL IN
USB B
USB A
BUS 2
BUS 1
PHANTOM VOLTAGE (DIP SWITCH)

7 CH INPUT EQ
BASS TREBLE 5X PEQ

Message player
Timer
CPU

AUDIO
DATA

7X8 MATRIX MIXER

STATUS IND.
EXT. MEMORY

8 CH HIGH PASS FILTER

SWITCHING POWER SUPPLY A

8 CH OUTPUT EQ 3X PEQ

SWITCHING POWER SUPPLY B

8 CH DIGITAL DELAY

8 CH COMPR/ LIMITER

8 PCS DIGITAL 150W POWER AMPLIFIERS

8

IMPEDANCE METERING

BUS 1
BUS 2

OVERRIDE 0 dBu AUDIO OUT +
CONTROLS

SPEAKER OUTPUTS 8x150W 8 ohm

ADA 8x8 G2 System Unit

Signal processing and routing characteristics:

8 digital power 150W @ 8 Ohms amplifiers
7 analog audio inputs, configurable either to
mic or line level
Phantom-voltage for electret microphones

Internal message player (max 128 messages), security
messages in internal memory, unlimited number of
messages on USB memory stick (wav)

Input channels digital signal processing (DSP),
7 channels
      Parametric equalizer, 3 band
      Digital routing
      Level control
Output channels digital signal processing (DSP),
8 channels
      Tone control
      Parametric equalizer, 5 band
      High pass filter, frequency freely selectable
      12 or 24 dB/octave
      High or low pass filter 6 or12 dB/octave, 4 pcs.
      Delay max 4ms
      Compressor /limiter
      Volume control

Connection buses and I/O's:
Bus 1 ja Bus 2 (CAT5/6/7) for paging and control
  devices.
Bus 1 link connector for chaining to next ADA 8x8.
Front panel USB connector for configuration file
  down/upload and system maintance.
Rear panel and internal USB jacks for message memory
8 control contact inputs, operation configurable
8 control contact outputs, operation configurable
Priority data for controlling the ALT 8x8 line
  transfer unit.

Intelligent interfaces to external control systems like:
- Open Application Programming Interface (API)
- RS-232 port for service operations.

System operation:
System is scalable by adding required number of ADA
units. Up to 512 amplifiers / speaker lines / paging
zones. Possibility to use local programme sources in
any ADA 8x8.

System surveillance:
Device and system monitoring according to EN 54-16
standard. Automatic switch-over to another ADA 8x8 if
master ADA fails. Power supply voltage and tempera-
ture monitoring. Fan rotation monitoring.

TECHNICAL FEATURES

Analogue input 1…7, sensitivity	-45 dBu … + 6 dBu
Analogue input impedance (balanced)	20 kohm
Bus 1 & 2 audio (balanced) + 6dBu	
Digital message signal format (WAV)	16bit, 16… 48 kHz sample rate
Frequency response -1 dB	20Hz - 20kHz
S/N level	96 dBA
THD+N @1W/1 kHz	< 0,05%
Dynamic Power @8 Ω	8 x 150W max.
Output power for 70/100V	
8 outputs (ALT 8x8)	640W, 120W RMS max. /channel
Continuous power @8 Ω/70/100V	
all ch. driven < 1 %THD	8 x 80W RMS
Peak wattage capability	150W @8Ω, 180W @6Ω, 260W @4Ω
Dynamic range	105 dB
Mains operating voltage	100-240VAC, 47-63Hz
Mains type connector	Class I
Power consumption at VAC	40W-990W
Power factor at full load	0,95
Main fuses 5x20mm	2 x T3,15A
Backup DC Power Inlet	48VDC, 2x7A max.
Backup Power fuses	2xT10A (inside)
Operation temperature	-5 …+50 ºC
Operation humidity (non-condensing)	20 …90% RH
Measurements W x H x D	485mm x 88mm x 380mm
Weight	8,5 kg netto

Standards and requirements

The product is Rohs-compliant, it is tested and approved
by SGS Fimko for all relevant safety and electromagnetic
compatibility standards (EMC). The ADA 8x8 is certified
and compliant to EN 54-16 as a part of the Audico Avec
family product range. Product recycling according to
WEEE regulations.

Standards also set guidelines for the users of the
installed systems. The main user must take care of regu-
lar system maintenance, testing, keep a logbook and
ensure all other users are well trained to use the system.
We have prepared a booklet guiding the user as well
installation and service parties to set-up and run a voice
evacuation system according to the standards.