MAGIC AE4 DAB/DAB+

Quick Guide

Version V1.0 (25.10.2018)

AVT
Audio
Video
Technologies

- DAB/DAB+ Audio Encoder
  - DSP-based DAB/DAB+ Audio Encoder
  - Up to four DAB/DAB+ Audio Encoder
  - Full 19" 1U housing with integrated AC power supply
  - 19" mounting angels
  - Without fan, noiseless operation

Front View

- Integrated wide range power supply 90V – 250VAC/ 30W

- 2 x LAN interfaces
  - Coded Audio
  - Control interface (Webbrowser)
  - PAD interface: Dynamic Label and Slide Show via FTP
  - NTP

- Support PTy and Traffic Announcement via UECP

- TTL/Relay (programmable GPIO interface)
  - 8 x TTL Inputs or Outputs
  - 8 x Relay outputs

- Analogue stereo Audio input/output
  - IN AUDIO 1 and 2
  - OUT AUDIO 1 and 2

- 4 x Digital AES/EBU Audio input/output
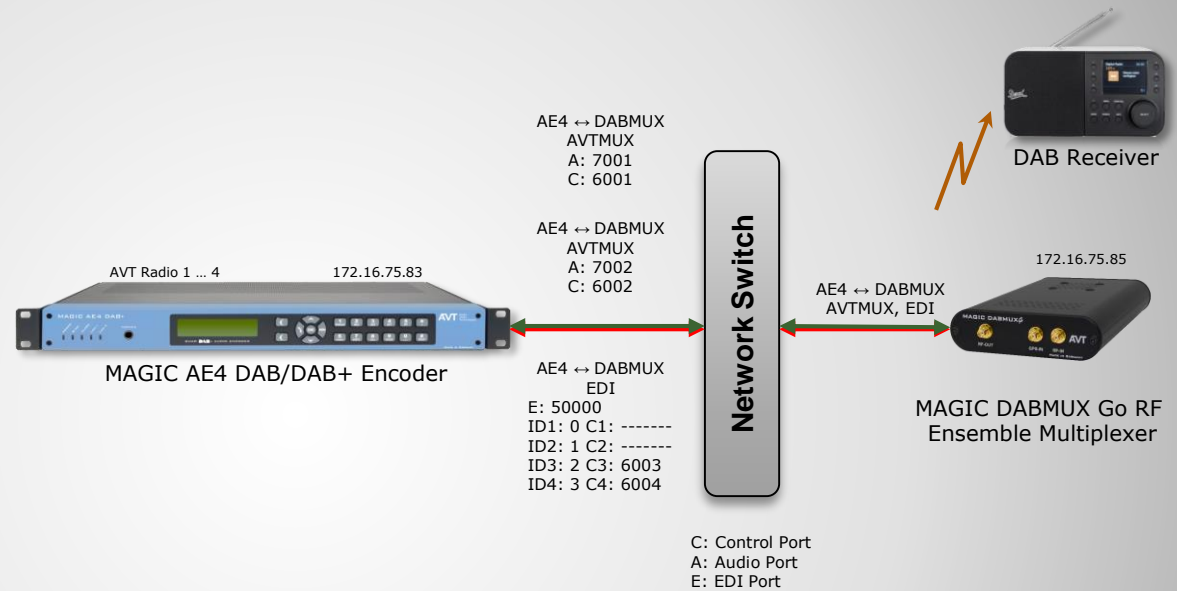 - DIGITAL AES 1-2 and DIGITAL AES 3-4

- No fan

Rear View

- Fully compatible to
  - ETSI TS 102 563 (DAB+)
  - ETSI EN 304 001 (DAB)

- DAB/DAB+ Audio Encoder
  - Up to 4 x DAB/DAB+ Audio Encoders

- DAB/DAB+ Monitoring Audio Decoder
  - Monitoring Decoder for one of the four Encoder signals

- Audio interfaces
  - 1 x Analogue Stereo Audio input
  - 1 x Analogue Stereo Audio output
  - 4 x AES/EBU Audio input
  - 4 x AES/EBU Audio output
  - Monitoring Stereo Headphone interface

- Special functions
  - Integrated Audio router
  - No fan
  - Power consumption typically 17 W
  - Synchronisation via NTP

- Data services
  - Dynamic Label/DL+ (UECP/FTP)
  - MOT Slide Show/Categorised Slide Show (FTP)

- Service Information
  - TA triggering (UECP, TTL input)
  - PTy (UECP)

- 2 x LAN interfaces
  - IPv4

- Output protocols
  - AVTMUX   with Secure Streaming
  - EDI   with Secure Streaming
  - MUXENC   with Secure Streaming

- Alarm signalling & monitoring
  - SNMP v1c, v2c

- Configuration & Control
  - Configuration & Control via HTML5 Webbrowser

Functions

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- Configuration example:
  - IP leased line connection using AVTMUX protocol with Secure Streaming for program 1 and 2
  - IP leased line connection using EDI for program 3 and 4

- Analogue and digital AES/EBU Audio interfaces for uncompressed Audio

- Dynamic Label and Slide Show via FTP Transfer to the Encoder

- TA activation through GPI contact (TTL input) of the Encoders.

- Remote configuration of the Encoder data rate and data service from MAGIC DABMUX Go RF.

AVT Radio 1 ... 4   172.16.75.83

MAGIC AE4 DAB/DAB+ Encoder

AE4 ↔ DABMUX
AVTMUX
A: 7001
C: 6001

AE4 ↔ DABMUX
AVTMUX
A: 7002
C: 6002

AE4 ↔ DABMUX
EDI
E: 50000
ID1: 0 C1: -------
ID2: 1 C2: -------
ID3: 2 C3: 6003
ID4: 3 C4: 6004

Network Switch

AE4 ↔ DABMUX
AVTMUX, EDI

DAB Receiver

172.16.75.85

MAGIC DABMUX Go RF
Ensemble Multiplexer

C: Control Port
A: Audio Port
E: EDI Port

Interconnection Encoder/Multiplexer

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MAGIC AE4 DAB/DAB+

Configuration

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- Webbrowser
  - White hook on green field indicates PC is connected to the unit

- Monitoring Decoder
  - Displays the Audio and PAD parameters of the selected Encoder
  - Displays PAD History and Audio Level
  - Selection (green colour) of coded or original Audio
  - Selection of the Audio level of the Headphone
  - Selection of the Encoder via buttons "1 to 4" or direct in the Encoder field via "Monitor"

- Indication of Encoder details
  - Mode
  - Bitrate: Total data rate (Audio + PAD)
  - Sampling frequency
  - PAD Bitrate
  - Audio level L and R

- Via the button "Configure" all parameters of the encoder can be configured

Main Panel

7
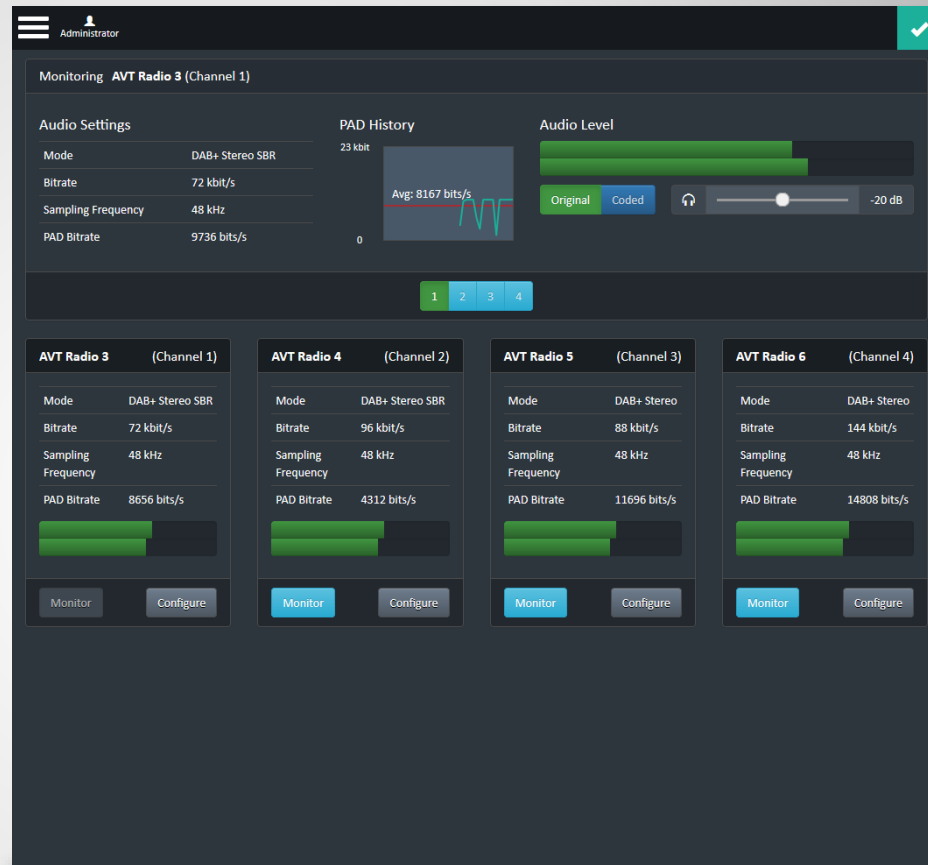
- Settings
  - General settings:
    - Time for synchronisation
    - LAN parameters
    - Audio interfaces
    - PAD (FTP)
  - Individual settings of the Encoders
    - Channel 1 to Channel 4
  - Interface settings
    - EDI Output
    - VLAN
    - SNMP

- Administration
  - Product related details
  - Reset
  - Basic settings (Factory setting)
  - Display of all Alarms and traffic

- Extras
  - System Monitor

- About
  - Software Version
  - IP addresses
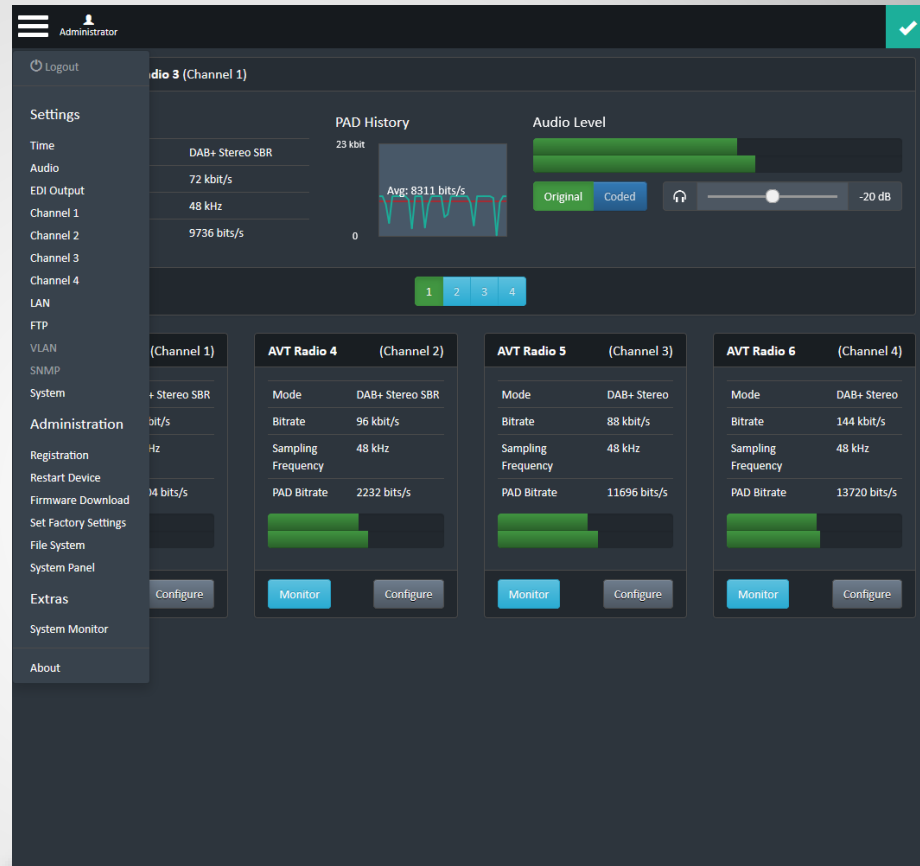
Menu Structure

- Configuration of the Encoder

  - Can be selected in the Main Panel via the buttons 1 to 4.

  - Can be selected via Select of the dedicated Encoder

- Audio Settings

  - Selection of Streaming mode, Input interface, QoS and Audio Level Amplification

- IP Settings

  - Entering of the Multiplexer Control Port and for the UDP Outputs 1 and 2 the IP addresses and Port addresses

- Coding Settings

  - Selection of DAB or DAB+, Data Rate, Coding Mode and Sampling Rate

Channel 1			✕
Audio			
Channel Name	AVT Radio 3		
Streaming Mode	AVTMUX	▼	
Audio Level Amplification (dB)	———●———	0	
Input Interface	Analogue	▼	
QoS (DiffServ) (0..255 Def:184)	184		
Multiplexer Control Port	LAN 1: 172.16.75.83 ▼	6003	
UDP Output 1 LAN/IP/Port	LAN 1: 172.16.75.83 ▼	172.16.75.85	7003
UDP Output 2 LAN/IP/Port	LAN 1: 172.16.75.83 ▼		0
Codec	DAB+	▼	
DAB+ SubChannel Data Rate	72 kBit/s	▼	
DAB+ Audio Mode	AAC Stereo SBR	▼	
DAB+ Sampling Rate	48 kHz (24 with SBR)	▼	
DAB+ Bandwidth Extension	■		
PAD			

Cancel Apply OK

Encoder Configuration – Audio

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- General PAD Settings

  - Selection of Inserter Mode, Local generation or via AVTMUX or via AVTMUX redundancy

  - Entering of Alarm Timeout and maximum Data rate

- Dynamic Label Settings

  - Entering of the display time in seconds

  - In Output Format selection of the charset (character set). The characters are displayed on the DAB+ receiver

  - Via button "Open File Manager" the files can be defined

- Slide Show Settings

  - Entering of the display time in seconds

  - Via button "Open File Manager" the files can be defined

- Direct FTP

  - Direct FTP can be configured in a separate page

Channel 1

Audio

PAD

Inserter Mode	Local generation	
Alarm Timeout	10	s
Datarate	8800	Bit/s	Auto (10%)

Dynamic Labels

Display Time	5	s
Output Format	Complete EBU Latin based	
Manage Static Dynamic Label Content	Open File Manager

SlideShow

| Minimum Display Time | 10 | s |
| Manage Static SlideShow Content | Open File Manager |

**DirectFTP**

| Enable | ■ |

Cancel   Apply   OK

Encoder Configuration – PAD

- Time Settings
  - If NTP is enabled two NTP server can be configured.
  - Entering of IP addresses and ports
  - Configuration of NTP as clock source
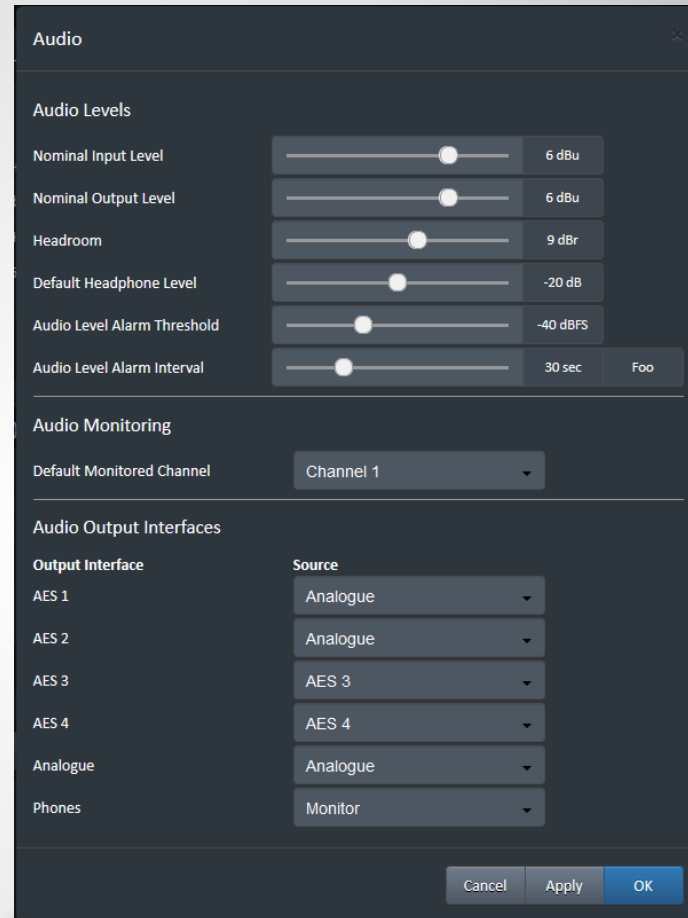 - Selection of local time in UTC Offset box

- System Settings
  - Selection of front display language
  - Activation of Key Tone for front keypad
  - Configuration of backlight and Display contrast
  - System Name can be entered
  - Administrator password can be entered
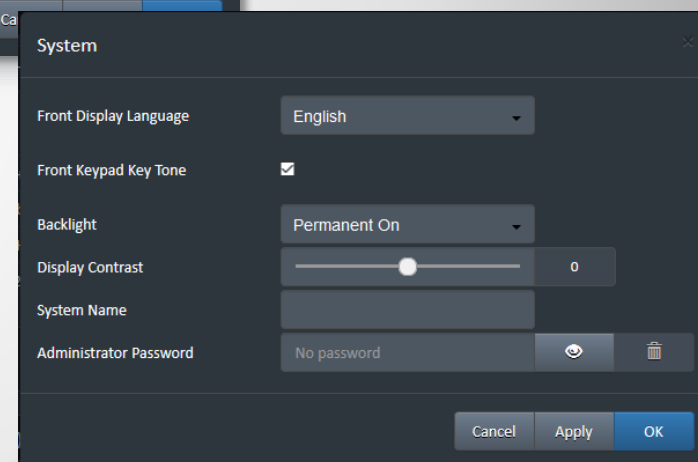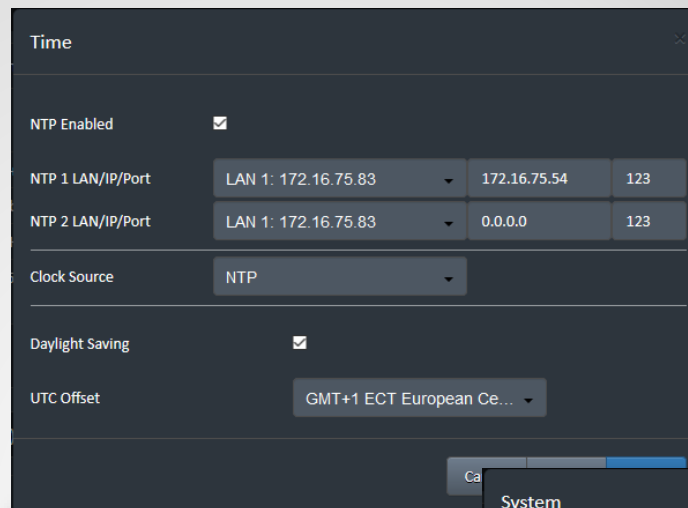
Configuration Time & System

- Audio Level Settings
  - Nominal Input and Output Levels can be set.
  - Headroom and default Headroom (value after booting) level can be set
  - The threshold for the Audio level alarm and Audio Level Alarm interval can be set

- Audio Monitoring Settings
  - Selection of the default Monitoring channel. It is the channel after booting

- Audio Output Interfaces Settings
  - An internal Audio matrix allows the configuration of the Audio outputs
  - The source for the outputs can be each input (analogue or digital AES/EBU 1 to 4) and the monitoring decoder output
  - Each output can be configured individually

Audio

Audio Levels

Nominal Input Level		6 dBu
Nominal Output Level		6 dBu
Headroom		9 dBr
Default Headphone Level		-20 dB
Audio Level Alarm Threshold		-40 dBFS
Audio Level Alarm Interval		30 sec	Foo

Audio Monitoring

Default Monitored Channel	Channel 1

Audio Output Interfaces

Output Interface	Source
AES 1	Analogue
AES 2	Analogue
AES 3	AES 3
AES 4	AES 4
Analogue	Analogue
Phones	Monitor

Cancel   Apply   OK

Configuration Audio

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- LAN1 & LAN 2 Settings
  - Entering of 3 different IP addresses per LAN interface

- FTP Settings
  - Selection of FTP Enable
  - Entering FTP Server IP address and Port address
  - Entering First Passive Port and Number of Passive Ports

LAN

LAN 1

IP Address 1	172.16.75.83
Subnet Mask 1	255.255.0.0
Default Gateway 1	172.16.1.1
IP Address 2	
Subnet Mask 2	
Default Gateway 2	
IP Address 3	
Subnet Mask 3	
Default Gateway 3	

LAN 2

Cancel

FTP

FTP Enable	☑
Server LAN/Port	LAN 1: 172.16.75.83 21
First Passive Port	60000
Number of Passive Ports	30

Cancel   Apply   OK

Configuration LAN & FTP

- Firmware Download

  - Via "choose file" the firmware download file can be selected

  - After selecting the Start button the download will be started and the download status will be indicated in percentage.

 - When the download has finished a reset of the unit will be executed after confirmation.

- Restart Device

  - After selecting the "OK" button a reset will be executed

  - The configuration will not be changed

Firmware Download

Firmware Download

ae4.ssw   📁Choose file

File Information: Save as:
  • 3.9 MB (4124355 bytes)   • C:AE4.SSW (3.0 MB)
  • 14/05/2018, 08:42:19   • C:AE41.SSX (1004.4 kB)

[21%]

Download In Progress [1/2]

Abort ✖   Start ⬇   Close

Do you really want to restart the device?   ✕

Cancel   OK

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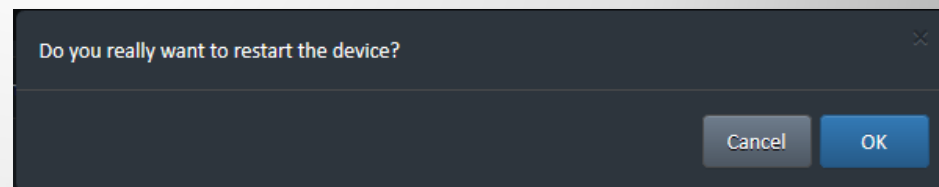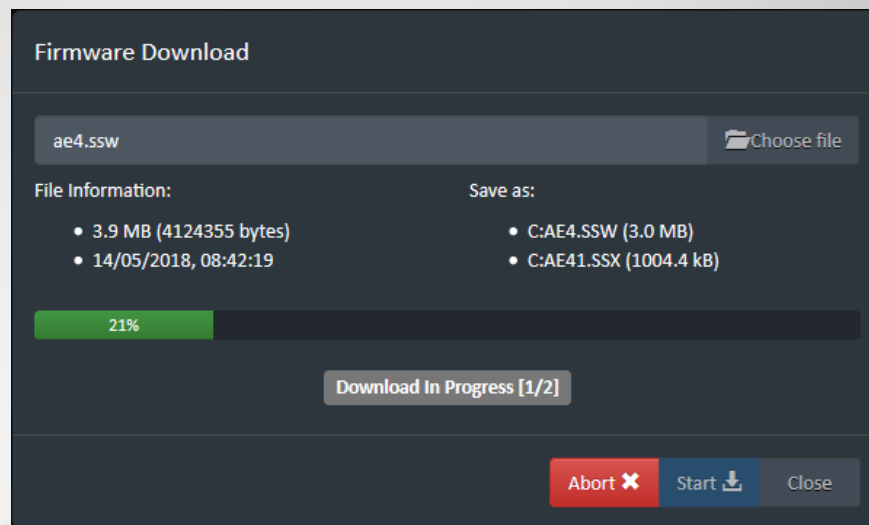
- Factory Reset
  - Only first IP is configured for LAN1 and LAN2
    - IP1 LAN1: 192.168.96.102
    - IP1 LAN2: 192.168.96.103
    - Gateway: 255.255.255.0
    - Subnet Mask: 192.168.96.1
  - VLAN is disabled
  - Timer
    - NTP is active
    - IP addresses not entered
  - EDI is switched off
  - FTP is switched off
  - Audio
    - 0 dB for input and output level
    - Audio inputs are switched to Audio outputs (analogue and digital AES/EBU)
    - Level alarms are active
    - Monitoring interface is switched to headphone
  - Encoder 1 to 4
    - Data Rate: 128kbit/s
    - Sampling Rate: 48kHz
    - Mode: Stereo
    - Audio Enc.1: AES1
  - Monitoring Decoder shows status of Encoder 1

Factory Reset

Factory Reset ✕

Do you really want to load factory settings?

Cancel OK
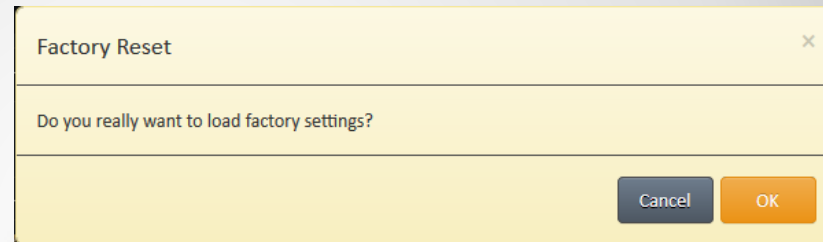
Audio
Video
Technologies

- System Alarm
  - Hardware related alarms, such as Main Eprom, Flash Eprom etc.

- Channel1 Alarm to Channel 4 Alarm
  - Encoder related alarms such as Audio level alarm, PAD alarm etc.

- Application Alarm
  - AES/EBU input alarms
  - NTP Server alarm
  - Monitoring Dec. Sync alarm

- System State
  - Indication of Temperature, Time, DSP Load and Uptime

- Network connections
  - Details of LAN1 and LAN2
  - NTP Server IP address
  - IP addresses of Connected Clients

System Monitor

- Indication of the Firmware Version

- AVT`s Post address

- Internet: AVT`s home page

- Support addresses
  - Phone number
  - Email address

MAGIC AE4 Version 0.800 (Build 1524)

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Close

About