

MAGIC ACX Dante WAN Bridge

Configuration Guide

Version: 2.000 (09. September 2022)

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MAGIC ACX

Overview

- Hardware
- Interfaces
- Features

Front View



- Five Status-LEDs
 - POWER, SYNC, ALARM, INPUT 1, INPUT 2
- Illuminated graphic display with 160 x 32 pixels & front keypad
 - For configuration and status.

Rear view



- Two independent LAN interfaces for control and audio transmission.
- Word clock input/output
- Programmable GPIO interface
 - 8 x TTL input/output
 - 8 x Relays (8 x normally open contact)

- Redundant Power Supply (optional)
- Slot 1: unused
- Slot 2: Dante
 - 32 channels
 - 2 Ethernet interfaces

Features

- Standard

- 19" housing x 1 U
- Without fan for silent operation
- Low power consumption of typ. 15 W
- VLAN support
- QoS support
- 32 Dante channels
- Supports a Dante audio sampling rate of 48 kHz.
- Up to 5 Control-PCs can connect to the system simultaneously.
- Audio transmission codecs: PCM16, PCM24

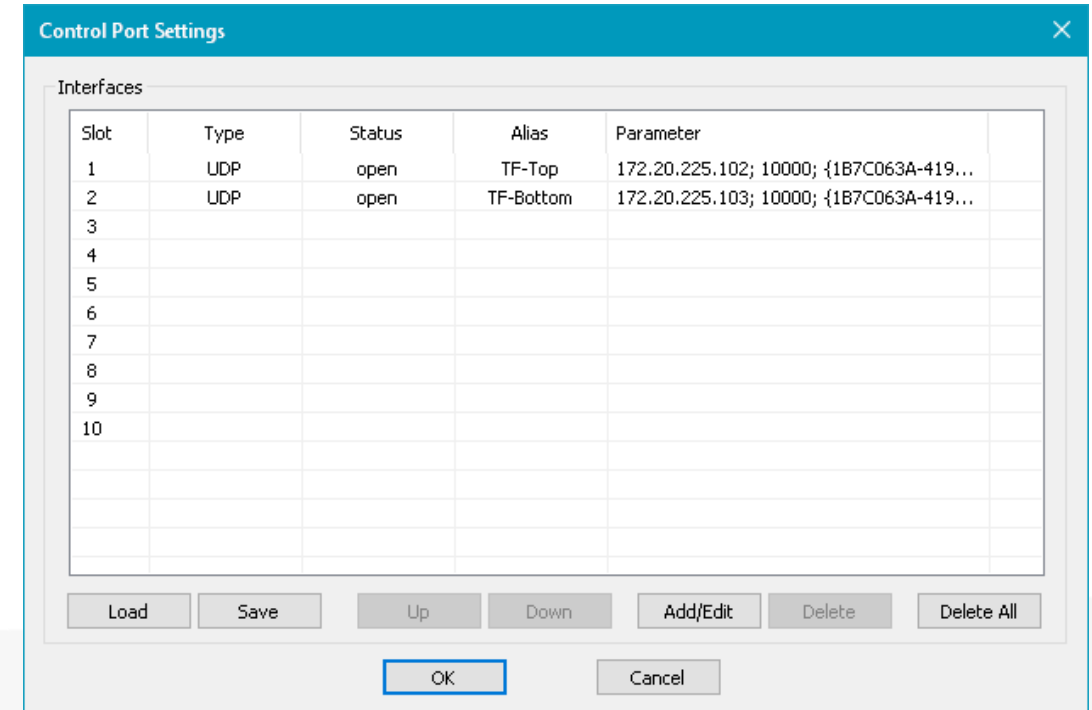
- Optional

- Redundant power supply
- Audio transmission codecs: G.722, MP2
- Leased Line Distribution to up to 20 receivers
- SIP Distribution to up to 20 receivers
- RX Stream Distribution (Redistribution of received streams)

MAGIC ACX

PC Software Operation

- Install the MAGIC ACX Software on your PC and then start the software with administrator rights.
 - From Windows 7 and higher via the context menu "Run as administrator", even if you are currently logged on as administrator.
- Under MENU → CONFIGURATION → CONTROL INTERFACE, enter the systems to be controlled.
- Add systems by double-clicking a line or use the ADD/EDIT button.
- Remove a system using DELETE.
- DELETE ALL removes all entries from the list.
- The order of the entries can be changed via UP and DOWN. The sequence determines the order of the systems in the main window.



- **INTERFACE:** The connection to the device is established via the LAN interface (UDP).
- **PARAMETERS:**
 - **INTERFACE:** If the PC has several network interfaces, specify here which of them is to be used.
 - **IP ADDRESS:** IP address of the MAGIC ACX.
 - **PORT:** UDP port of the control connection on the MAGIC ACX. The default value is 10 000.
- Press the HANG UP key (to the right of the OK key) on the device twice to display the currently assigned IP address of the system.
- The network settings may be configured on the device under MENU → SYSTEM SETTINGS → LAN SETTINGS.

Communication Interface Parameter

Name: TF-Top

Interface: UDP

Parameter

Interface: Intel(R) Gigabit CT Desktop Adapter #2 (Private) / 172.20.225

IP Address: 172.20.225.102

Port: 10000

OK Cancel

RX

TX

System: TF-Top

Alarms: 0 Dante Ethernet Link 0 WAN Ethernet Link 0 NTP Server: 172.16.30.1

Leased Line Connection

✓ RX from	Coding	Packet lost	Stream	TX to	Coding
1 Program	PCM24, 32 Ch.	64	1 Program	172.20.226.103:5502	PCM16, 6 Ch.
2				172.20.226.103:5503	PCM16, 2 Ch.
3				172.20.226.103:5504	PCM16, 2 Ch.
4				172.20.226.103:5505	PCM16, 2 Ch.
5				172.20.226.103:5506	MP2, 10 Ch.
6					

SIP Connection

✓ Partner	Coding	Packet lost	Stream	SIP Accounts
7 TF-Bottom		0	0	Provider 601

Selected Stream: 1: Program/Program

Stream to: 172.20.226.103:5501
Coding: PCM16, 6 Ch.
2 msec

Stream from: 172.20.226.103:5501
Coding: PCM24, 32 Ch.
0,3125 msec

SRA at 48 kHz: 0 ppm

Current Jitter: < 1 msec
Last Jitter: < 2 msec
Max Jitter: < 2 msec

RX

TX

System: TF-Bottom

Alarms: 0 Dante Ethernet Link 0 WAN Ethernet Link 0 NTP Server: 172.16.30.1

Leased Line Connection

✓ RX from	Coding	Packet lost	Stream	TX to	Coding
1 172.20.226.102:5501	PCM16, 6 Ch.	10	1 Program	172.20.226.102:5501	PCM24, 32 Ch.
2 172.20.226.102:5502	PCM16, 2 Ch.	3	0		
3 172.20.226.102:5503	PCM16, 2 Ch.	2	0		
4 172.20.226.102:5504	PCM16, 2 Ch.	29	0		
5 172.20.226.102:5505	PCM16, 2 Ch.	0	0		
6 172.20.226.102:5506	MP2, 10 Ch.	1	0		

SIP Connection

✓ Partner	Coding	Packet lost	Stream	SIP Accounts
7 601		0	0	Provider 701

Selected Stream: 1: Program

Stream to: 172.20.226.102:5501
Coding: PCM24, 32 Ch.
0,3125 msec

Stream from: 172.20.226.102:5501
Coding: PCM16, 6 Ch.
2 msec

SRA at 48 kHz: 0 ppm

Current Jitter: < 1 msec
Last Jitter: < 3 msec
Max Jitter: < 3 msec

AVT Audio Video Technologies

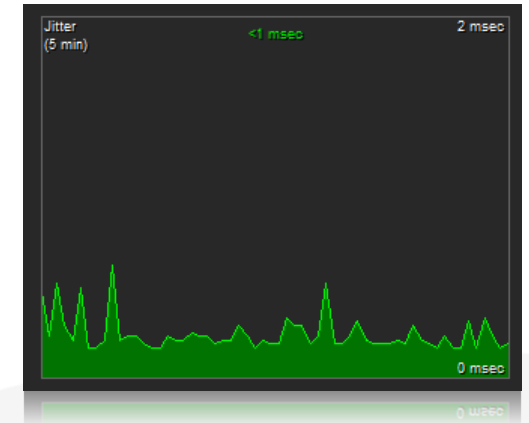
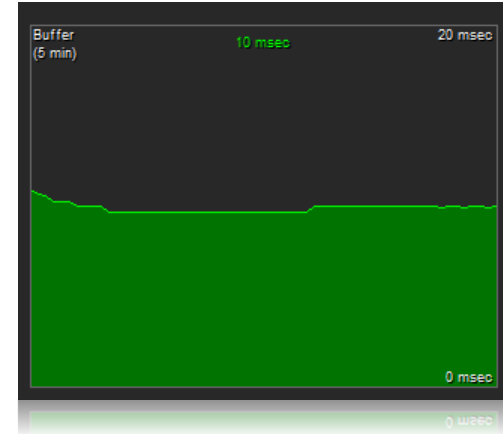
Main Window (1)

10

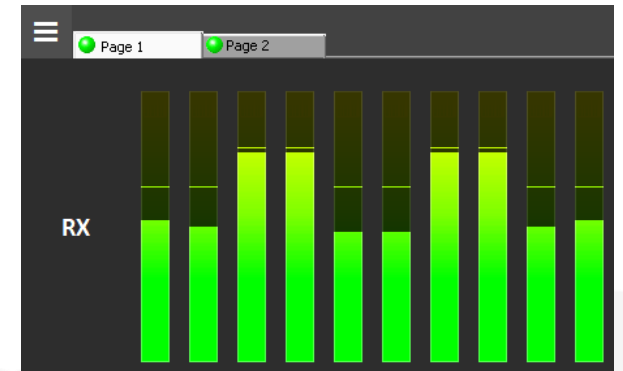
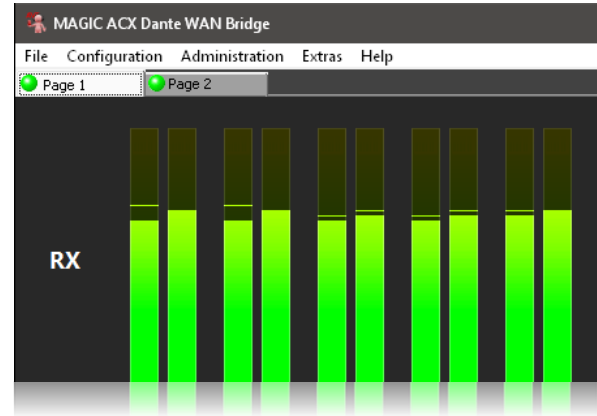
- The software can connect to up to 10 MAGIC ACX systems simultaneously.
- The MAGIC ACX systems can be distributed over up to 10 pages.
- The pages are selected via the tabs at the top.
- Depending on the screen resolution, up to 10 MAGIC ACX systems can be displayed simultaneously on one page.
- On the left:
 - The audio levels of the 32 RX and TX Dante audio channels are displayed.
 - Audio levels on channels which are connected to the stream selected in the streams overview in the centre are highlighted.
 - Audio levels on channel which are connected to not selected streams are dimmed.
 - Audio levels on channels which are not connected to any stream are displayed in grey.

- In the centre:
 - Alarms related to audio transmission are displayed at the top.
 - Below you find an overview of the configured RX and TX streams.
- On the right-hand side you will find information on the selected WAN stream:
 - STREAM FROM/TO: IP address and port of the remote MAGIC ACX sending/receiving the stream.
 - STREAM: Number of channels and sample rate of the transmitted audio stream.
 - SRA @ 48 kHz: Clock deviation between the local and remote Dante domains. BUFFER: WAN receive buffer level graph over time.
 - JITTER: WAN RX Jitter graph over time.
 - SHORT/LONG TERM STATISTICS: Click inside the graphs to switch the time interval of the graphs between 5 min and 1 day.

- The left graph shows the WAN RX BUFFER LEVEL.
 - The graph also signals the Buffer state using different colours:
 - GREEN: Buffer OK.
 - YELLOW: Buffer overrun / underrun.
 - RED: Stream Loss.
- The right graph shows the WAN RX JITTER.
 - The graph also signals the Jitter state using different colours:
 - GREEN: Jitter OK.
 - YELLOW: Packet Loss.
 - RED: Stream Loss.
- Legend:
 - The TIME PERIOD is shown in brackets.
 - The current value is shown in green in the middle.
 - The scale is displayed on the right



- The MAIN WINDOW is available in two styles:
 - CLASSIC: All functions are accessible from the menu bar.
 - BORDERLESS: Press the menu icon to open the sidebar with access to all functions.
 - Without the title bar, the window can no longer be moved with the mouse.
 - To temporarily show the title bar, press the SCROLL LOCK key on the keyboard.
- Switch between the styles via LOCAL SETTINGS – SHOW TITLE BAR.

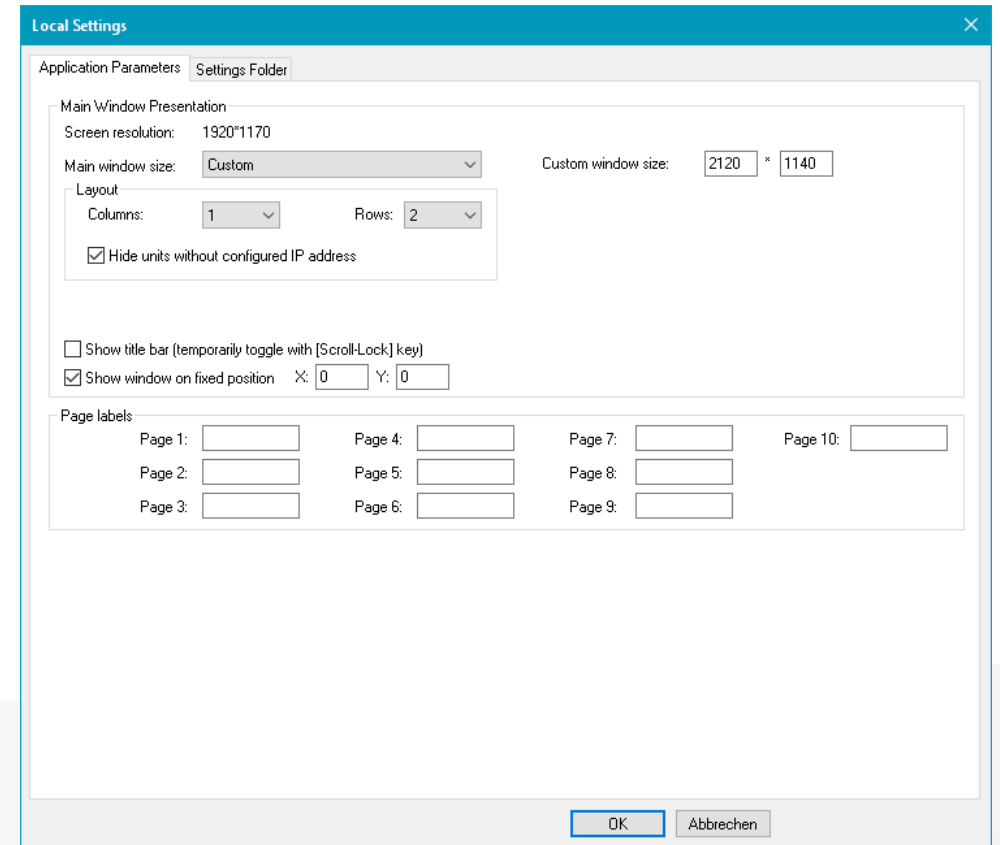


MAGIC ACX

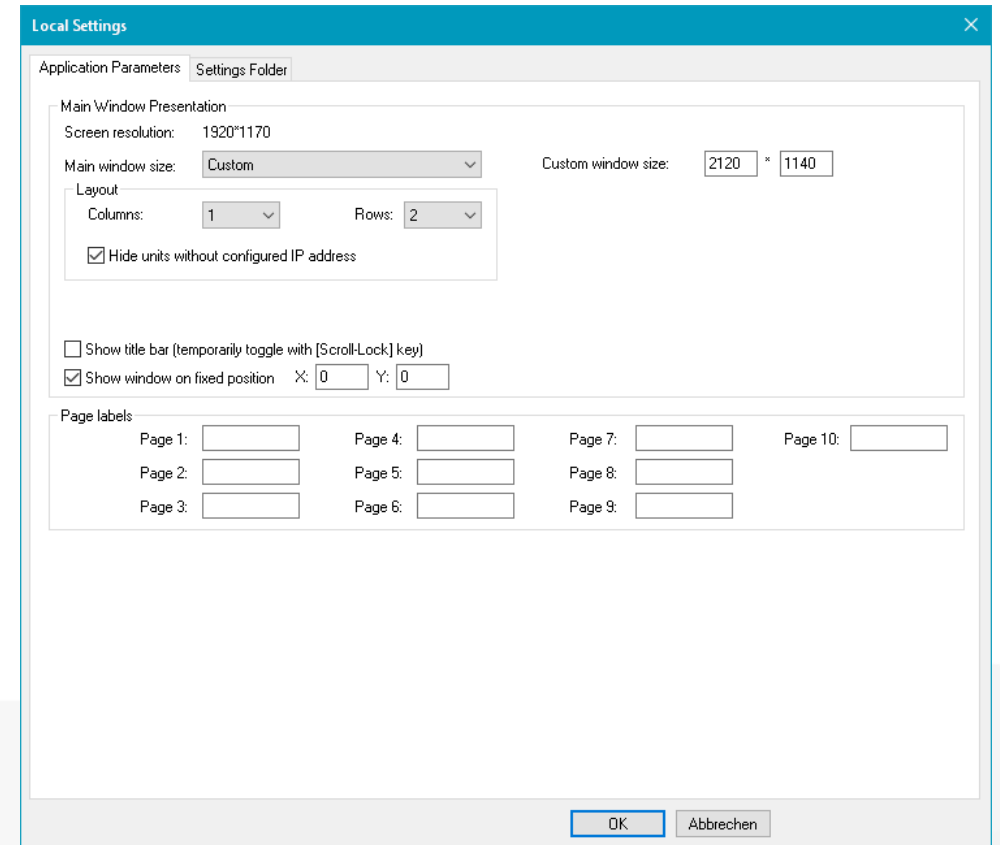
Local Settings

- These settings are stored on the PC. Each instance on each PC stores its own record. The storage location depends on the SETTINGS FOLDER setting in the LOCAL SETTINGS (see Tips & Tricks).

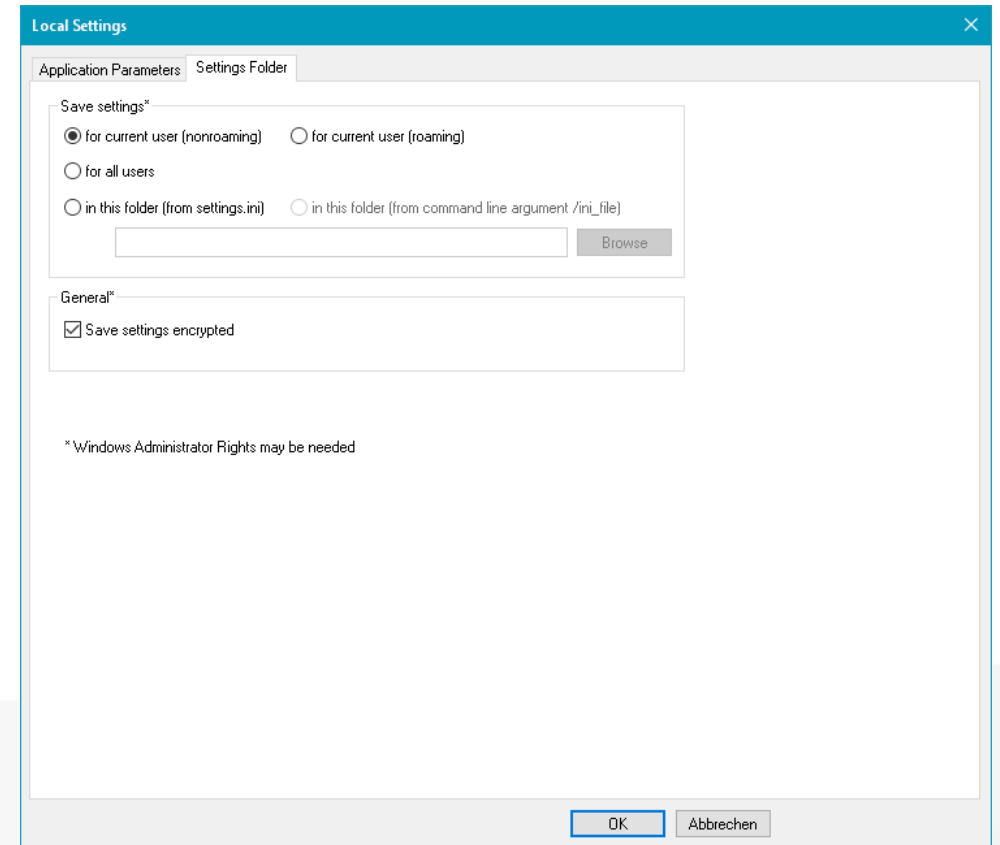
- All Settings under CONFIGURATION → LOCAL SETTINGS are stored on the PC.
- On page APPLICATION PARAMETER the appearance of the PC software is configured.
- MAIN WINDOW SIZE: The size of the program window in pixels.
 - AUTO: The window size is automatically set to full screen resolution at program start.
 - CUSTOM: The window size can be specified pixel by pixel under CUSTOM WINDOW SIZE.
 - Some frequently used window sizes can be selected directly.
- LAYOUT: Arrangement of the MAGIC ACX systems on the main window:
 - COLUMNS: Number of systems next to each other.
 - ROWS: Number of systems on top of each other.
 - HIDE UNITS WITHOUT CONFIGURED IP ADDRESS: Gaps in the list of systems under CONTROL INTERFACE are skipped.



- **SHOW TITLE BAR:** Displays the classic Windows title bar along with the menu bar. Otherwise, the title bar will disappear, and the menu will be offered in a sidebar that can be opened by pressing the menu button in the upper left corner.
- **SHOW WINDOW ON FIXED POSITION:** The window is displayed at the given position (in pixels) on the screen when the program starts.
- **PAGE LABELS:** Labelling of the tabs in the main window.



- Determine how the settings are stored on the local PC on page SETTINGS FOLDER:
 - FOR CURRENT USER: Each user has separate settings and can change them themselves.
 - FOR ALL USERS: All users of the PC use identical settings. Administrator rights are needed to change them.
 - IN THIS FOLDER: The settings are saved to a file in the specified location.
- SAVE SETTINGS ENCRYPTED: The local settings are stored encrypted.
- If you want to create a backup of the local settings, the command showprofilepath under ADMINISTRATION → SYSTEM PANEL shows where the file can be found.



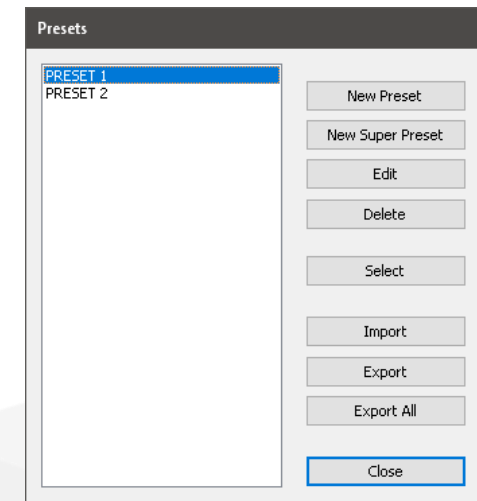
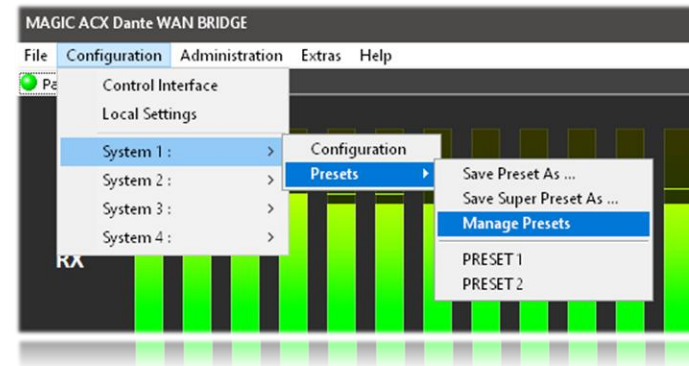
MAGIC ACX

Configuration Overview

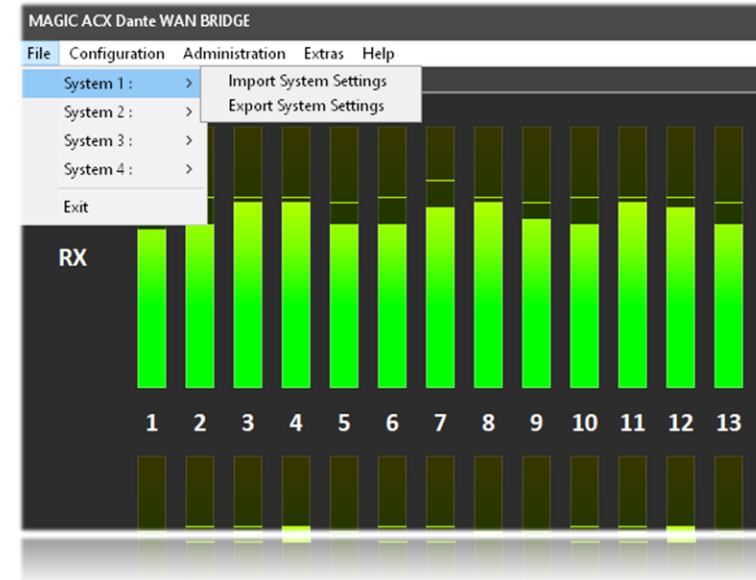
- The settings can be found in the CONFIGURATION menu. There is a submenu for each connected MAGIC ACX device. CONFIGURATION opens the settings of the respective system:
 - These settings are stored on the device.
 - All settings under OPERATION SETTINGS can be saved as PRESET.
 - A SUPER PRESET contains all settings under OPERATION SETTINGS and SYSTEM SETTINGS.
- PRESETS and SUPER PRESETS are stored on the device and can be managed and loaded via CONFIGURATION → SYSTEM X → PRESETS.

- Presets are managed via CONFIGURATION → SYSTEM X → PRESETS:

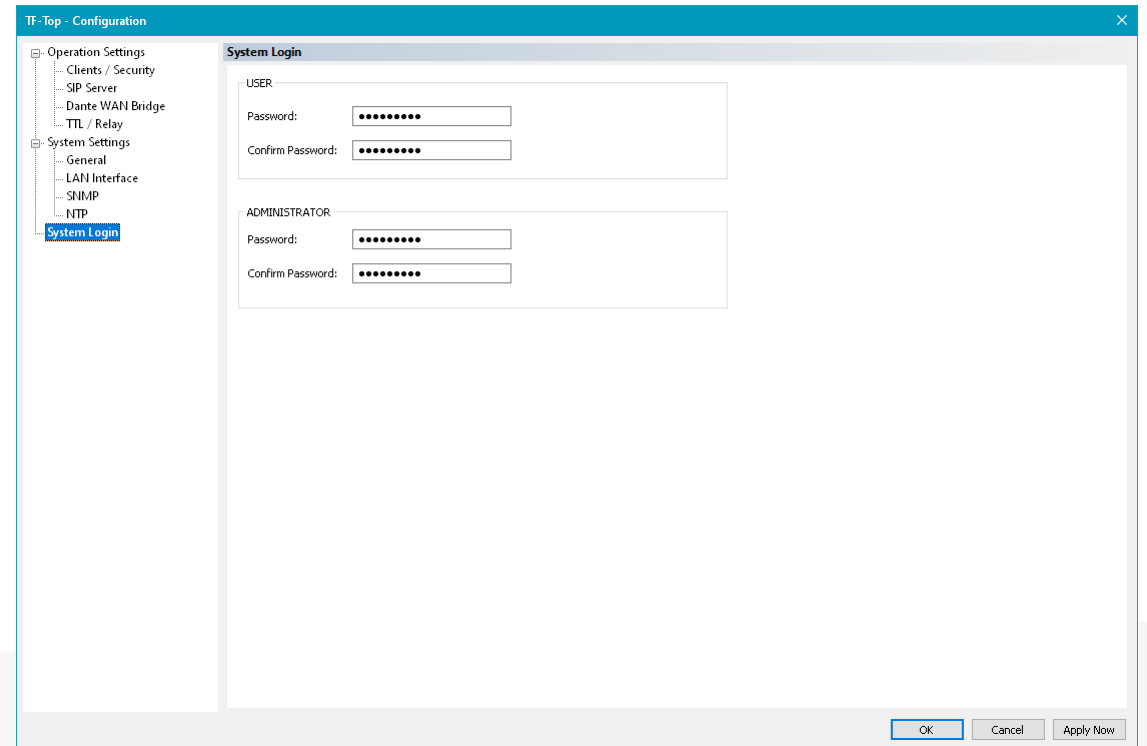
- **SAVE PRESET AS:** The current configuration of the OPERATION SETTINGS branch is saved as a Preset. The name is freely selectable (max. 16 characters).
- **SAVE SUPER PRESET AS:** The entire current system configuration is saved as a super Preset. The name is freely selectable (max. 16 characters).
- **MANAGE PRESETS:** Displays a list of all stored Presets and offers additional management functions:
 - **NEW PRESET:** Creates a new Preset based on the current configuration.
 - **NEW SUPER PRESET:** Creates a new super Preset based on the current configuration.
 - **EDIT:** Opens the selected Preset for editing.
 - **SELECT:** Activates the selected Preset.
 - **IMPORT:** Imports a Preset stored on the PC.
 - **EXPORT:** Saves a selected Preset to the PC.
 - **EXPORT ALL:** Saves all Presets to the PC.
- **List of Presets:** The menu also displays all available Presets. Click on a Preset to activate it.



- The system configuration can be stored in a file under FILE → SYSTEM X → EXPORT SYSTEM SETTINGS.
- To restore a backup, open the file using FILE → SYSTEM X → IMPORT SYSTEM SETTINGS.
- It is also recommended to recreate the backup file after a firmware update, as it cannot be guaranteed that old backups are compatible with the latest firmware.
 - In such a case, the device would first have to be downgraded to the software version with which the backup file was created.



- The local settings are automatically protected when working under a user account while FOR ALL USERS is selected under CONFIGURATION → LOCAL SETTINGS → SETTINGS LOCATION.
- To also protect the system settings, a password must be set under SYSTEM LOGIN.
- Two levels are available:
 - ADMINISTRATOR: Log in with this password to access all functions and settings.
 - USER: Log in with this password to load presets.
- Note: If you have forgotten the administrator password, the device can only be unlocked by resetting it to factory settings.

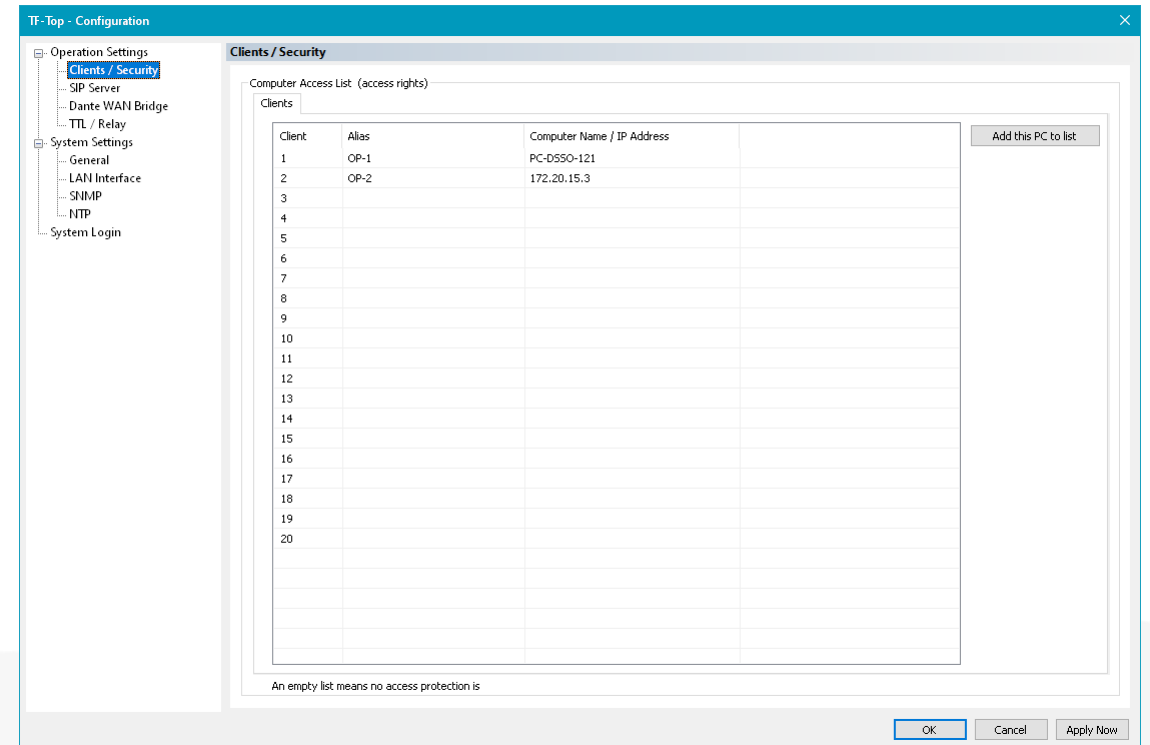


MAGIC ACX

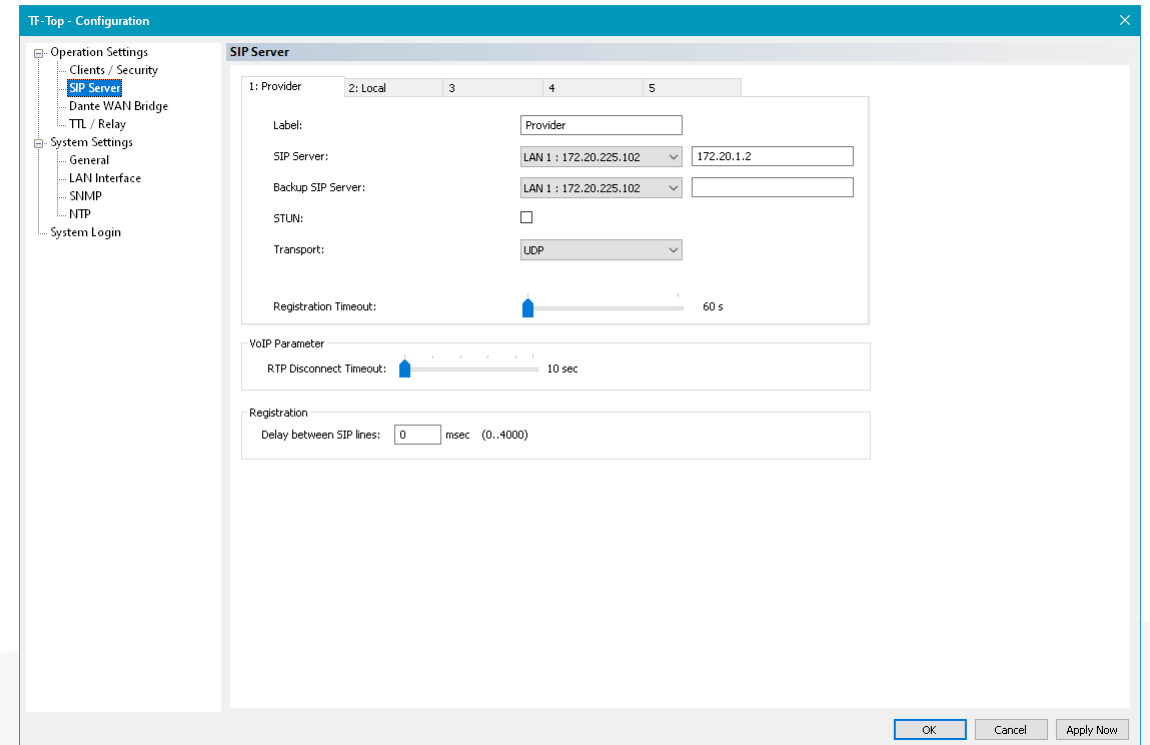
Operation Settings

- Settings that can be saved in a PRESET.

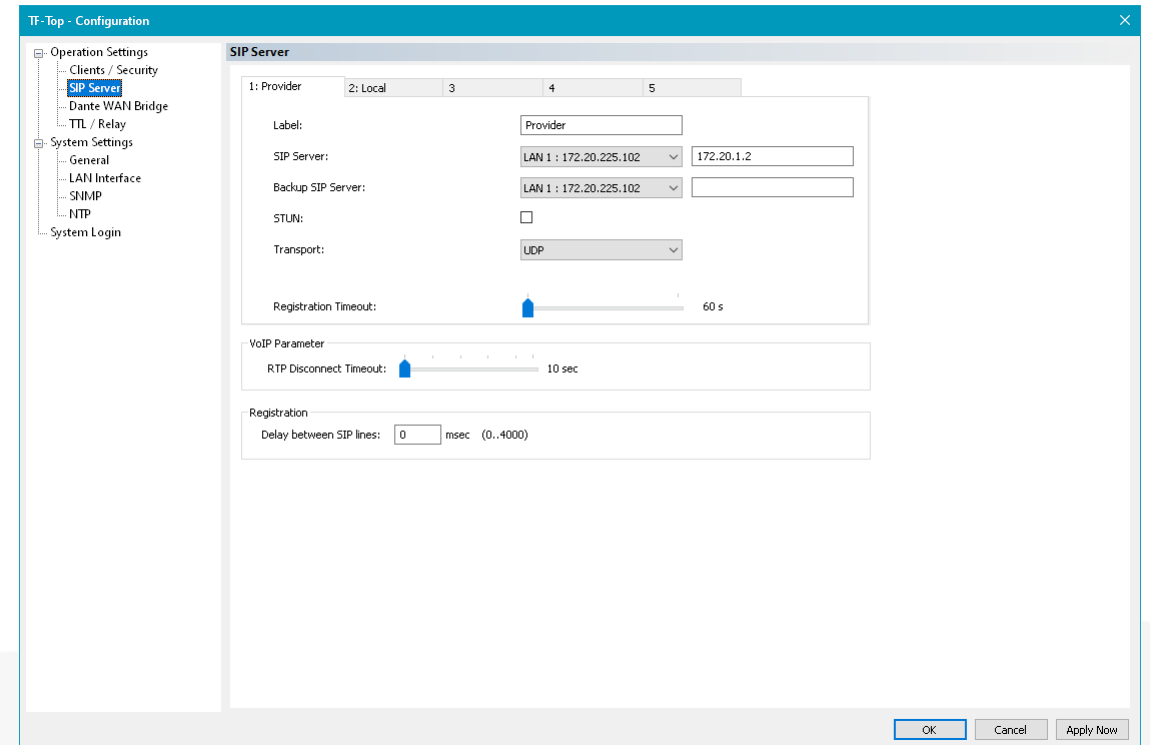
- 5 PCs can connect to a MAGIC ACX system simultaneously.
- If the CLIENTS list on the CLIENTS/SECURITY page is empty, any PC can connect to the system.
- If there is an entry in the CLIENTS list, access protection is active.
 - All PCs in the list can connect directly to the system
 - On all other PCs, the administrator password must be entered when establishing a connection.
 - Up to 20 PCs can be entered in the list. Any 5 of them can connect simultaneously to a device.



- Up to 5 SIP servers can be defined on the SIP SERVER page.
- There is one tab for each SIP server.
 - LABEL: Enter a text of your choice to identify the SIP server on the main panel of the ACX software.
 - SIP SERVER: Select the LAN interface of the MAGIC ACX which is used to connect to the SIP server and enter the hostname or IP address of the SIP server.
 - BACKUP SIP SERVER: The MAGIC ACX will automatically register at the backup SIP server as long as the main SIP server is unavailable. Select the LAN interface of the MAGIC ACX which is used to connect to the backup SIP server and enter the hostname or IP address of the backup SIP server.
 - STUN: Enable if a STUN server is required by the SIP server. The STUN server parameters must be entered on the LAN INTERFACE configuration page.
 - TRANSPORT: Select UDP or TCP as required by the SIP server.



- **REGISTRATION TIMEOUT:** The MAGIC ACX renews the SIP registration every 60 seconds by default to check if the SIP server is still available. Increase the interval if the SIP server rejects the registration telegrams as too soon.
- **VOIP PARAMETER**
 - **RTP DISCONNECT TIMEOUT:** The MAGIC ACX will automatically disconnect if no audio packets are received during this time.
- **REGISTRATION:**
 - **DELAY BETWEEN SIP LINES:** During start-up the MAGIC ACX simultaneously sends a SIP registration Telegram for each AoIP channel to the SIP server. If this is overwhelming the SIP server use this setting to introduce a delay between the AoIP channels.



- Operation Settings
 - Clients / Security
 - SIP Server
 - Dante WAN Bridge**
 - TTL / Relay
- System Settings
 - General
 - LAN Interface
 - SNMP
 - NTP
- System Login

Dante WAN Bridge

Send Streams (TX) Receive Streams (RX) SIP

Stream	Active	Line Mode	Alias	LAN	Stream to	Port	Reference	1st Channel	Number of Channels	Coding	Coding Mode	Encoder Rate	Packet Size
1	<input checked="" type="checkbox"/>	Leased Line	Program	2	172.20.226.103	5501	No	1	6	PCM16			2 msec
2	<input checked="" type="checkbox"/>	Leased Line		2	172.20.226.103	5502	No	7	2	PCM16			5 msec
3	<input checked="" type="checkbox"/>	Leased Line		2	172.20.226.103	5503	No	9	2	PCM16			5 msec
4	<input checked="" type="checkbox"/>	Leased Line		2	172.20.226.103	5504	No	11	2	PCM16			Minimum (0.3125 msec)
5	<input checked="" type="checkbox"/>	Leased Line		2	172.20.226.103	5505	No	13	2	PCM16			Minimum (0.3125 msec)
6	<input checked="" type="checkbox"/>	Leased Line		2	172.20.226.103	5506	No	15	10	MP2	Stereo	224 kBit/s	
7	<input checked="" type="checkbox"/>	SIP				5507	No	25	2	PCM16			Minimum (0.3125 msec)
8	<input type="checkbox"/>												
9	<input type="checkbox"/>												
10	<input type="checkbox"/>												
11	<input type="checkbox"/>												
12	<input type="checkbox"/>												
13	<input type="checkbox"/>												
14	<input type="checkbox"/>												
15	<input type="checkbox"/>												
16	<input type="checkbox"/>												
17	<input type="checkbox"/>												
18	<input type="checkbox"/>												
19	<input type="checkbox"/>												
20	<input type="checkbox"/>												

Empty Audio Detection

Enable TX Enable RX

Measuring Interval: sec (10..60)

RTP Ethernet Burst Datarate Limitation (TX)

LAN 1 kBit/s

LAN 2 kBit/s

Estimated System Load

Main Load: 63 %

LAN 1 Datarate: 3,0 MBit/s

LAN 2 Datarate: 14,4 MBit/s

OK Cancel Apply Now

- Transmission of the Dante audio signals over Ethernet is configured on the SEND STREAMS (TX) tab of the DANTE WAN BRIDGE page.
 - Up to 20 streams can be configured.
 - For each stream you can define:
 - ACTIVE: Enable that stream.
 - LINE MODE:
 - IP LEASED LINE: Directly stream to a given IP address.
 - SIP: Connect to a receiver using a SIP server.
 - ALIAS: Enter a name of your choice to identify the stream on the main panel.
 - LAN: Select the LAN interface of the MAGIC ACX which is used for audio transmission.
 - STREAM TO: Enter the destination IP address for the stream in IP leased line mode.
 - PORT: The UPD port for audio transmission via the RTP protocol.
 - REFERENCE:
 - NO: The Dante audio channels is defined by the parameters in the following columns.
- SEND RX STREAM SOURCE: This stream retransmits audio data received by the MAGIC ACX.
 - (SEND RX) STREAM N: The stream contains a copy of another already configured stream.
 - 1ST CHANNEL: Channel number of first Dante channel transmitted via this stream.
 - NUMBER OF CHANNELS: Number of subsequent Dante channels transmitted via this stream.
 - CODING: Select an algorithm for encoding the audio content of the stream.
 - PCM16: PCM with 16 bit/sample
 - PCM24: PCM with 24 bit/sample
 - G.722: 7 kHz audio bandwidth for low data rates.
 - MP2: MPEG 1 Layer 2 with configurable parameters.
 - CODING MODE: Set the mode for MP2 encoding:
 - STEREO, MONO, JOINT STEREO, DUAL CHANNEL
 - ENCODER RATE: Set the data rate of an MP2 coded signal (64 kbit/s – 384 kbit/s)
 - PACKET SIZE: Define the audio packet size. A low packet size minimizes the delay. A high packet size minimizes the required bandwidth.

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Dante WAN Bridge

Send Streams (TX) Receive Streams (RX) SIP

Stream	Active	Line Mode	Alias	LAN	Stream from	Port	Sample Rat...	1st Channel	Number of Channels	Jitter Buffer	Jitter Buffer Size
1	<input checked="" type="checkbox"/>	Leased Line	Program	2	172.20.226.103	5501	<input checked="" type="checkbox"/>	1	10	Fixed	10 msec
2	<input type="checkbox"/>										
3	<input type="checkbox"/>										
4	<input type="checkbox"/>										
5	<input type="checkbox"/>										
6	<input type="checkbox"/>										
7	<input checked="" type="checkbox"/>	SIP					<input type="checkbox"/>	11	2	Fixed	10 msec
8	<input type="checkbox"/>										
9	<input type="checkbox"/>										
10	<input type="checkbox"/>										
11	<input type="checkbox"/>										
12	<input type="checkbox"/>										
13	<input type="checkbox"/>										
14	<input type="checkbox"/>										
15	<input type="checkbox"/>										
16	<input type="checkbox"/>										
17	<input type="checkbox"/>										
18	<input type="checkbox"/>										
19	<input type="checkbox"/>										
20	<input type="checkbox"/>										

Empty Audio Detection

Enable TX Enable RX

Measuring Interval: sec (10..60)

RTP Ethernet Burst Datarate Limitation (TX)

LAN 1 kBit/s

LAN 2 kBit/s

Estimated System Load

Main Load: 67 %

LAN 1 Datarate: 3,0 MBit/s

LAN 2 Datarate: 11,5 MBit/s

- Reception of the audio signals over Ethernet and assignment of these signals to Dante channels is configured on the RECEIVE STREAMS (RX) tab of the DANTE WAN BRIDGE page.
- Up to 20 streams can be configured.
- For each stream you can define:
 - **ACTIVE:** Enable that stream.
 - **LINE MODE:**
 - **IP LEASED LINE:** Receive a stream from a given IP address.
 - **SIP:** Connect to a sender using a SIP server.
 - **ALIAS:** Enter a name of your choice to identify the stream on the main panel.
 - **LAN:** Select the LAN interface of the MAGIC ACX which is used for audio transmission.
 - **STREAM FROM:** Enter the source IP address of the stream in IP leased line mode.
 - **PORT:** The UPD port for audio reception via the RTP protocol.
 - **SAMPLE RATE ADAPTATION:** Local and remote Dante network may not run with synchronized

clock. This leads to recurrent crackle in the audio signal. Sample rate adaption prevents the noise but diminishes the audio quality slightly.

- **1ST CHANNEL:** Channel number of first Dante output channel used for this stream.
- **NUMBER OF CHANNELS:** Number of subsequent Dante output channels used by this stream.
- **JITTER BUFFER:**
 - **FIXED:** Set a fixed JITTER BUFFER SIZE.
 - **AUTOMATIC:** The system monitors the Jitter over time and adjusts the buffer for minimal delay while preventing dropouts.
- **JITTER BUFFER SIZE:** If the buffer is too small, short audio dropouts will occur. Big buffer sizes increase the transmission delay.

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Dante WAN Bridge

Send Streams (TX) Receive Streams (RX) SIP

Stream	Active	Line Mode	SIP Server	User Name	User Authentica...	Password	Displayed Name	Auto Answer
1	—	Leased Line						
2	—	Leased Line						
3	—	Leased Line						
4	—	Leased Line						
5	—	Leased Line						
6	—	Leased Line						
7	✓	SIP	1: Provider	601	✎	✎ ***	✎	✎
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Empty Audio Detection

Enable TX Enable RX

Measuring Interval: sec (10..60)

RTP Ethernet Burst Datarate Limitation (TX)

LAN 1 kBit/s

LAN 2 kBit/s

Estimated System Load

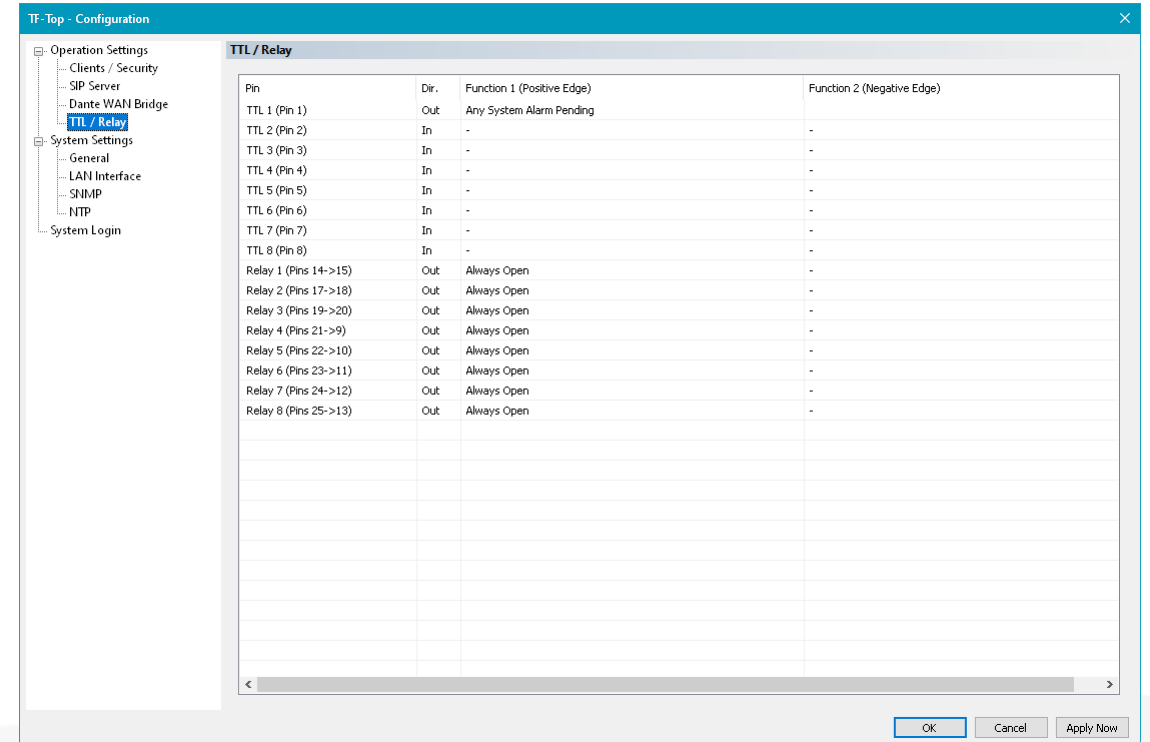
Main Load: 67 %
 LAN 1 Datarate: 3,0 MBit/s
 LAN 2 Datarate: 11,5 MBit/s

OK Cancel Apply Now

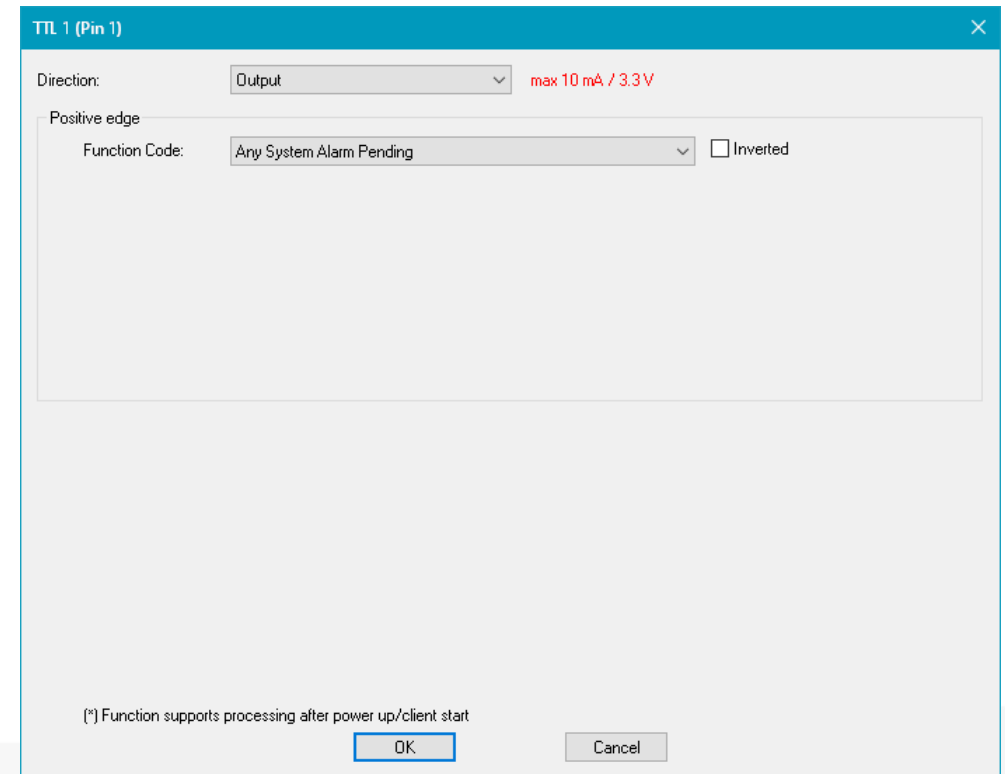
- Define the SIP accounts for SIP streams on the SIP tab of the DANTE WAN BRIDGE page.
 - For each SIP stream a separate SIP account must be entered.
 - SIP streams are always bidirectional. They occupy the same slot on the TX and the RX tab.
 - For each SIP stream you can define:
 - SIP SERVER: Select one of the SIP servers defined on the SIP SERVER configuration page.
 - USER NAME: Identifies the SIP account. Normally the user name is the phone number of the extension or the public phone number.
 - USER AUTHENTICATION: Identifies the user account if a password is needed to access a SIP server. When the user authentication field is left blank, the device will use the user name for authentication.
 - PASSWORD: The password for the SIP account.
 - DISPLAYED NAME: Text entered here will be displayed on the telephones of the callers. Note that PBXs or providers may override the displayed name.
- AUTO ANSWER: If enabled, the MAGIC ACX accepts incoming calls automatically.

- Find general settings and information at the bottom of the DANTE WAN BRIDGE configuration page.
 - EMPTY AUDIO DETECTION: The unit is monitoring all audio signals. If no audio signal is detected during the MEASURING INTERVAL the streams audio status on the main panel (🔊) changes to red.
 - RTP ETHERNET BURST DATA RATE LIMITATION (TX): Limit the bandwidth used by a LAN interface of the MAGIC ACX to prevent high data rate bursts. Audio packets are delayed if the limit is reached. Make sure to set the limit higher as the estimated data rate for that LAN interface.
- ESTIMATED SYSTEM LOAD: The software estimates the system load and the data rates on both LAN interfaces.
 - **Red** numbers indicate that the system limit has been exceeded.
 - **Yellow** means that the system limit might be exceeded. Check the System Monitor during operation for the actual system load.

- Under TTL/RELAY, functions for controlling the device and signals for displaying the system status can be configured.
- Functions and signals are available via TTL/Relay contacts.
- The list shows an overview of the configured functions and signals.
- Double-clicking a line opens the configuration of the GPIO.



- Double-clicking a line opens the configuration of the GPIO.
- A TTL Pin can be configured as INPUT or OUTPUT.
- A Relay supports only OUTPUT signals.
- INPUT signals:
 - LOAD PRESET.
- OUTPUT signals:
 - ANY SYSTEM ALARM PENDING
 - APPLICATION ALARM PENDING
 - Select all desired alarms in the list.

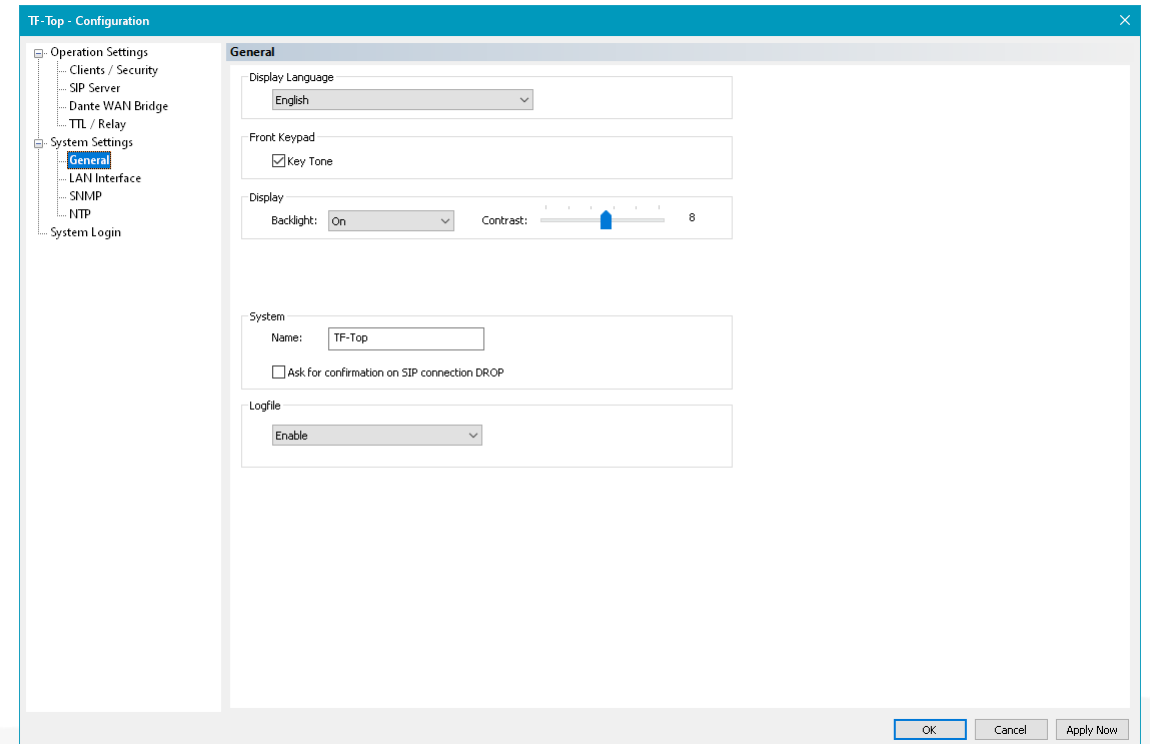


MAGIC ACX

System Settings

- Settings that cannot be saved in a PRESET.

- The language for the front display can be set under DISPLAY LANGUAGE.
- KEY TONE activates the key click on the front keypad.
- Backlight and contrast of the front display are set under DISPLAY.
- Under NAME you can enter a device name, which is displayed on the main window.
- REDUNDANT POWER SUPPLY → ENABLE ALARM activates the alarm if any of the two power supplies fails.
- LOGFILE: The system logs events in an internal logfile.
 - DISABLE: No logging.
 - ENABLE: The system writes a logfile. It can store about 35000 entries. Once the logfile is full, the system starts to overwrite the oldest entries.



TF-Top - Configuration

- Operation Settings
 - Clients / Security
 - SIP Server
 - Dante WAN Bridge
 - TTL / Relay
- System Settings
 - General
 - LAN Interface**
 - SNMP
 - NTP
 - System Login

LAN Interface

LAN 1 LAN 2

Primary IP Address

DHCP

IP Address: 172.20.225.102

Sub Net Mask: 255.255.0.0

Default: 172.20.1.1

DNS Server:

VLAN: none

Second IP Address

Third IP Address

Quality of Service (DiffServ)

Voice: 46 (EF) (0..63) DiffServ: 184dec

SIP: 26 (AF 31) (0..63) DiffServ: 104dec

Default Settings

Ethernet

Link Type: Auto

Speed_Duplex: Auto

Send cyclic Gratuitous ARP (every 5 minutes)

Disable Insufficient LAN Alarm

STUN Server Parameters

STUN Server:

NAT Keep Alive Interval: 20 sec (5..60)

Control

UDP Control Port: 10000 Set Default Port

Accessible from: LAN 1 : 172.20.225.102

OK Cancel Apply Now

- Configure the network interfaces on the LAN INTERFACE page. The Device has two LAN interfaces. Switch between the LAN interfaces via the tab at the top.
- When using VLANs, three logical LAN interfaces can be defined on each physical LAN interface.
- DHCP: Only available for the primary IP address. The unit retrieves its IP parameters from a DHCP server in the network.
- SIP is only supported using the Primary IP Address.
- IP Parameters:
 - IP ADDRESS: Enter a unique IP address.
 - SUBNET MASK: Enter the bitmask describing the subnet.
 - DEFAULT GATEWAY: Enter the IP address of the router in the local network.
 - DNS SERVER: Enter the IP address of a DNS server. Required to resolve host names of SIP servers and STUN servers.
- VLAN: Enable VLANs globally. This setting is also available on the front display of the MAGIC ACX in case the configuration is faulty.
- VLAN TPID:
 - NONE: VLAN not used for this IP address.
 - 802.1QTAG: VLAN enabled for this IP address.
- PRIORITY: Sets a quality-of-service classification for the VLAN ranging from 0 = lowest priority to 7 = highest priority.
- VID: Sets the VLAN identifier. Values between 1 and 4094 are allowed.
 - Note: Changing the VLAN configuration requires to reconfigure the network switches and routers accordingly. If not done correctly the PC software will lose connection to the unit.

- **QUALITY OF SERVICE (DIFFSERV):** End-to-end QoS is only possible when it is supported by all network elements.
 - RFC2474 defines Differentiated Services (DiffServ), a mechanism to classify network traffic.
 - The 8-bit Differentiated Services Field (DS-Field) is part of the IPv4 header. It contains:
 - DSCP: The 6-bit Differentiated Services Code Point is used to classify the payload of the IPv4 packet.
 - ECN: The remaining 2 Bits are reserved for flow control which is not supported by MAGIC ACX.
 - **VOICE:** Select a value from the list for audio packets.
 - **SIP:** Select a value from the list for SIP messages.
- **ETHERNET:**
 - **LINK TYPE:** Use AUTO unless AVT support suggests otherwise.
 - **SPEED DUPLEX:** Set to AUTO or select a fixed speed and duplex mode. (Auto is recommended)
- **SEND CYCLIC GRATUITOUS ARP (EVERY 5 MINUTES):** Updates the MAC address table of

connected switches via ARP. Prevents audio dropouts.

- **DISABLE INSUFFICIENT LAN ALARM:** Disable the alarm which is set when the Ethernet Link supports only 10 Mbit/s or is just half duplex.
- **STUN SERVER PARAMETERS:** Using a STUN server may be required by the SIP server. Only one STUN server is necessary per LAN interface even if the LAN interface is used to connect to multiple providers. Enable STUN for each SIP server individually on the SIP Server configuration page.
 - **STUN SERVER:** Enter the IP address or the host name of the STUN server.
 - **NAT KEEP ALIVE INTERVAL:** Set the time interval at which the MAGIC ACX sends periodic keep-alive packets to the SIP server. Keep-Alive packets are only sent if STUN is enabled for the respective SIP server. (default: 20 seconds)

- UDP CONTROL PORT: Used for PC communication.
- For safety reasons, the PC access to the system should be restricted to one interface under ACCESSIBLE FROM in the CONTROL section. It can be set on the front display under MENU → SYSTEM SETTINGS → LAN SETTINGS → CTRL LAN INTERFACE as well.

TF-Top - Configuration

- Operation Settings
 - Clients / Security
 - SIP Server
 - Dante WAN Bridge
 - TTL / Relay
- System Settings
 - General
 - LAN Interface
 - SNMP**
 - NTP
 - System Login

SNMP

SNMP

SNMP Version: v2c

Read/Trap Community: public public

SNMP Port: 161

NMS 1 (LAN/IP Adr./Port): LAN 1 : 172.20.225.102 172.5.214.3 162

NMS 2 (LAN/IP Adr./Port): LAN 1 : 172.20.225.102 162

NMS 3 (LAN/IP Adr./Port): LAN 1 : 172.20.225.102 162

NMS 4 (LAN/IP Adr./Port): LAN 1 : 172.20.225.102 162

System Description: MAGIC ACX

Contact: admin

System Location: TF

Send all traps at system startup

Send traps immediately after enabling

Category A Alias: System Alarms

Category B Alias:

Category C Alias:

Category D Alias:

[Click here to find the MIB files](#)

Alarm Traps	Category
System Alarms	
<input type="checkbox"/> LCA	Category A
<input type="checkbox"/> Time Keeper	Category A
<input type="checkbox"/> Temperature Sensor	Category A
<input type="checkbox"/> FLASH EPROM	Category A
<input type="checkbox"/> Overheated	-
<input type="checkbox"/> MAIN EEPROM	-
<input type="checkbox"/> Display Contrast DAC	-
<input type="checkbox"/> VCXO	-
<input type="checkbox"/> Ethernet MAC 1	-
<input type="checkbox"/> Ethernet MAC 2	-
<input type="checkbox"/> Ethernet MAC 3	-
<input type="checkbox"/> Ethernet MAC 4	-
<input type="checkbox"/> DSP 2 Boot	-
<input type="checkbox"/> DSP 2 Access	-
<input type="checkbox"/> Slot 1 Access	-
<input type="checkbox"/> Slot 2 Access	-
<input type="checkbox"/> Slot 3 Access	-
<input type="checkbox"/> Module Assembly	-
<input type="checkbox"/> Dante Module Comm.	-
<input type="checkbox"/> Redundant Power Supply	-
Application Alarms	
<input type="checkbox"/> RX Empty Audio Detection	-
<input type="checkbox"/> RX Stream	-
<input type="checkbox"/> RX Buffer Level	-
<input type="checkbox"/> TX Empty Audio Detection	-

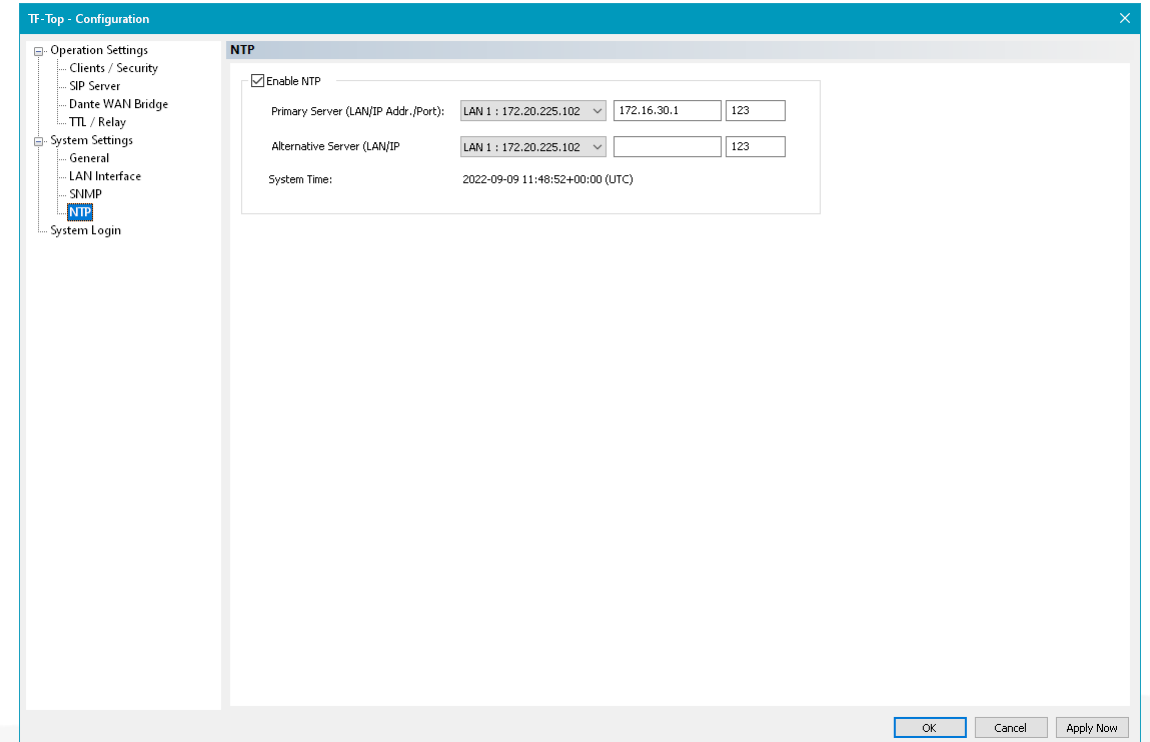
Set All Clear All

OK Cancel Apply Now

- Configure the parameters for connecting the MAGIC ACX to a network management system on the SNMP configuration page. MAGIC ACX parameters exposed through SNMP are read-only. The MAGIC ACX responds to Get-requests and sends traps.
- **SNMP VERSION:** Select the SNMP version. MAGIC ACX supports SNMPv1 and SNMPv2c.
- **READ / TRAP COMMUNITY:** Enter a string for the READ community and a string for the TRAP community. Communities are used to authenticate the device with the network management system.
- **SNMP PORT:** Specify the local UDP port for receiving SNMP requests and sending SNMP responses. The remote port is derived from received SNMP requests. (default: 161)
- **NMS 1-4:** Specify up to four network management stations to receive traps.
 - **LAN:** Select the LAN interface of the MAGIC ACX which is used to send SNMP traps.
 - **IP ADDR:** Specify the IP address of the network management station.
 - **PORT:** Specify the UDP port of the Trap receiver of the network management station. (default: 162)
- **SYSTEM DESCRIPTION:** Enter a string describing this particular MAGIC ACX. This string is part of the standard MIB.
- **CONTACT:** Enter a string with information about who is responsible for the MAGIC ACX. This string is part of the standard MIB.
- **SYSTEM LOCATION:** Enter a string describing where the MAGIC ACX is located. This string is part of the standard MIB.

- **SEND ALL TRAPS AT SYSTEM STARTUP:** Enable this option to send all traps when the MAGIC ACX finished booting.
 - **SEND TRAPS IMMEDIATELY AFTER ENABLING:** Enable to send a trap immediately after it was enabled in the configuration.
 - **CATEGORY A-D ALIAS:** Each Trap may be assigned to a category. Enter strings to describe the categories. The strings can be read by the network management station.
 - **ALARM TRAPS:** All available traps are listed in this table.
 - Select all traps which should be sent to the network management station.
 - Click into the CATEGORY column to assign a trap to a category.
 - There are four categories. To decrease the number of traps to send, assign several alarms to a category and select only the Category X Trap at the end of the list.
- Find more information on the alarms in the SYSTEM MONITOR section of this document.
 - **Additional Traps:**
 - **AUTHENTICATION FAILURE:** A request used an unknown community string.
 - **COLD START:** The SNMP agent is reinitialising.
 - **Note:** Find the MIB files in the MIB folder inside the installation directory of the MAGIC ACX PC software.

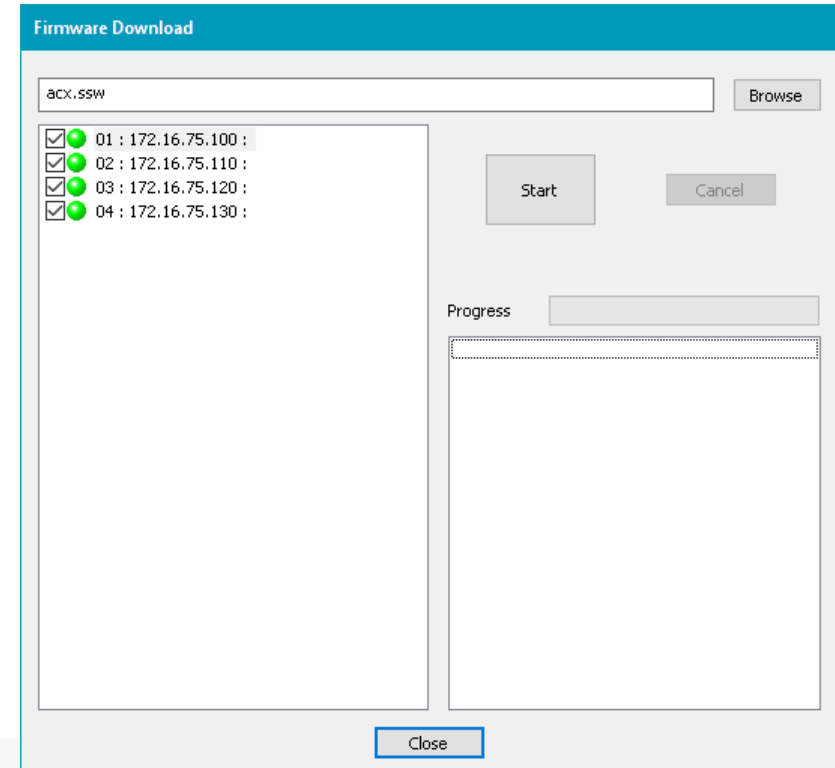
- Enable NTP to synchronize the built-in clock.
 - If NTP is deactivated, the PC software synchronizes the MAGIC ACX clock with the PC clock when the PC connection is established.
- The clock is used to create timestamps for the internal logfile.
- The PRIMARY SERVER provides the time information for the system.
- The ALTERNATIVE SERVER is used if the Primary Server is not available.
- Set the parameters for each server:
 - LAN: LAN interface of the MAGIC ACX.
 - IP ADDRESS: IP address of the NTP server.
 - PORT: Port of the NTP protocol on the server.



MAGIC ACX

Maintenance

- The appropriate firmware is supplied with each PC software version and is stored in the installation directory of the application during installation.
- If the firmware version of a device does not match the PC software, a request to update the firmware appears when establishing a connection with this device.
- Via ADMINISTRATION → SYSTEM X → FIRMWARE DOWNLOAD the appropriate firmware can be loaded onto the MAGIC ACX system.
- A list of all connected systems is displayed. Check all devices to be updated.
- These devices will be updated after pressing the START button without further user interaction.



- The detailed system status is displayed via EXTRAS → SYSTEM X → SYSTEM MONITOR:
 - Green LED: OK
 - Yellow LED: Warning
 - Red LED: Alarm
- For each alarm LED, an error counter provides information on the frequency of the error.
 - Use ALARM COUNTER RESET to reset the error counters.
- The SYSTEM STATE shows information on:
 - SYSTEM TEMPERATURE: If the temperature rises over 57°C the OVERHEATED alarm is triggered. Make sure to have 1U of air space above the MAGIC ACX for cooling.
 - DSP LOAD: Main DSP utilization in %.

The screenshot displays the 'System Monitor - TF-Top' window. It features a 'Keep window on top' checkbox and is divided into several sections:

- System alarms:** A list of 14 items, each with a green LED icon indicating an OK status. Items include LCA, Time Keeper, Temperature Sensor, FLASH EPROM, DSP 2 Boot, Slot 1 Access, Slot 3 Access, Ethernet MAC 1, Dante Module Comm., Overheated, MAIN EEPROM, Display Contrast DAC, VCXO, DSP 2 Access, Slot 2 Access, Module Assembly, and Ethernet MAC 2.
- Application alarms:** A list of 8 items, all with green LED icons. Items include System Resources, Dante Ethernet Link, RX Empty Audio Detection, RX Stream, NTP Server (172.16.30.1), SIP Registration, WAN Ethernet Link, and TX Empty Audio Detection.
- System State:** Shows 'System Temperatur 43 °C', 'Main Load: 59 %', and 'DSP 2 Load: 22 %'.
- Ethernet state:** Shows 'LAN 1' and 'LAN 2' both at '100 MBit/s, full' with their respective TX and RX data rates. 'Dante' is at '1 GBit/s, full'.
- Test Sinus Activation:** Includes checkboxes for 'All Dante' and 'All WAN', a 'Level' slider set to '-15 dBFs', and a 'Connected PCs' list with one entry: '1: 172.20.225.1:57669'.

At the bottom, there are four buttons: 'Alarm Counter Reset', 'Logfile Viewer', 'SIP State Viewer', and 'Close'.

- The ETHERNET STATE shows:
 - Link state, port bandwidth and current data rates of the MAGIC ACX's LAN interfaces.
 - Link state and port bandwidth of the Dante module's LAN interface.
- IP TRANSMISSION JITTER shows:
 - The current jitter of the WAN connection.
 - The maximum Jitter within the last 5 Minutes.
 - The maximum Jitter since the last MAX. JITTER RESET.
- IP TRANSMISSION QUALITY:
 - PACKET LOSS: Number of packets missing in the received WAN stream.
 - STREAM LOSS: If the system doesn't receive WAN data for more than 10 ms the stream is considered interrupted.
 - Click ALARM COUNTER RESET to reset the counters.

- TEST SINUS ACTIVATION
 - Enable RX to play a 1 kHz Sinus signal on all Dante audio channels.
 - Enable TX to play a 1 kHz Sinus signal on all WAN audio channels.
 - Use the slider to adjust the LEVEL of the sinus signal.
- Connected PCs shows IP address and port of all PCs connected to the MAGIC ACX.

- Open EXTRAS – SYSTEM X – LOGFILE VIEWER to download the MAGIC ACX’s internal logfile. It is converted to a human readable format by the PC software.
- Each entry consists of:
 - DATE / UTC: Timestamp of the entry in UTC format.
 - DURATION: Only for alarms. Time period since the alarm status changed last time.
 - The information is spread over the columns TYPE, SOURCE, STATUS, and DESCRIPTION.

Date	UTC	Duration [d] ...	Type	Source	Status	Description
13.12.2019	10:50:28,433		IP Rx stream lost			Counter: 0
13.12.2019	10:50:28,423		IP Rx packet lost			Counter: 28285
13.12.2019	10:49:18,698		Relay Status		Open	Relay 1
13.12.2019	10:49:18,603	00:01:32,585	App. Alarm		OK	RX Stream
13.12.2019	10:49:18,591		Start IP Rx			Counter: 1426
13.12.2019	10:47:46,110		Relay Status		Close	Relay 1
13.12.2019	10:47:46,018	00:13:22,900	App. Alarm		ERROR	RX Stream
13.12.2019	10:47:46,016		IP Rx stream lost			Counter: 0
13.12.2019	10:47:46,006		IP Rx packet lost			Counter: 14893
13.12.2019	10:34:23,131		Relay Status		Open	Relay 1
13.12.2019	10:34:23,118	00:00:29,421	App. Alarm		OK	RX Stream
13.12.2019	10:34:23,090		Start IP Rx			Counter: 1426
13.12.2019	10:33:53,745		Relay Status		Close	Relay 1
13.12.2019	10:33:53,697	01:10:37,973	App. Alarm		ERROR	RX Stream
13.12.2019	10:33:53,680		IP Rx stream lost			Counter: 0
13.12.2019	10:33:53,670		IP Rx packet lost			Counter: 62710
13.12.2019	09:24:47,118		Empty Audio Detection	TX		Channel Mask (1->32): 01 00 00 01 10 00 00 00 00 00 00 00 00 00 00 00 00
13.12.2019	09:24:47,118	17:37:37,755	App. Alarm		OK	TX Empty Audio Detection
13.12.2019	09:24:22,096	00:00:05,025	App. Alarm		OK	Dante Ethernet Link
13.12.2019	09:24:19,255	00:00:02,183	App. Alarm		OK	WAN Ethernet Link
13.12.2019	09:24:18,962		Eth. Physical State	LAN 1	100 MBt/s, full duplex	Speed Indication
13.12.2019	09:24:18,962		Eth. Physical State	LAN 1	SET	Negotiation done Flag
13.12.2019	09:24:18,962		Eth. Physical State	LAN 1	SET	Link status Flag
13.12.2019	09:24:17,511		Ethernet Overflow error	LAN 2		Rx packet(s) dropped (overflow)
13.12.2019	09:24:17,502		Rx stream info		32 Ch., 16 Bits, 15 Samples/Ch.	Counter: 10585
13.12.2019	09:24:17,502		IP Rx packet out of time			Counter: 10584
13.12.2019	09:24:17,501		Start IP Rx			Counter: 51377
13.12.2019	09:24:17,500		Eth. Physical State	LAN 2	100 MBt/s, full duplex	Speed Indication
13.12.2019	09:24:17,500		Eth. Physical State	LAN 2	SET	Link status Flag
13.12.2019	09:24:17,187		Ethernet Overflow error	LAN 2		Rx packet(s) dropped (overflow)
13.12.2019	09:24:17,176		Eth. Physical State	LAN 2	-	Speed Indication
13.12.2019	09:24:17,176		Eth. Physical State	LAN 2	CLEARED	Link status Flag
13.12.2019	09:24:17,072	17:36:02,910	App. Alarm		ERROR	WAN Ethernet Link
13.12.2019	09:24:17,071	17:35:59,838	App. Alarm		ERROR	Dante Ethernet Link
13.12.2019	09:24:17,021	17:37:07,658	App. Alarm		ERROR	TX Empty Audio Detection
13.12.2019	09:24:17,015		Eth. Physical State	LAN 1	-	Speed Indication
13.12.2019	09:24:17,015		Eth. Physical State	LAN 1	CLEARED	Negotiation done Flag
13.12.2019	09:24:17,015		Eth. Physical State	LAN 1	CLEARED	Link status Flag
13.12.2019	09:24:17,006		Power up/Reset			V1.000
13.12.2019	09:23:15,820		Relay Status		Open	Relay 1
13.12.2019	09:23:15,724	00:00:51,193	App. Alarm		OK	RX Stream
13.12.2019	09:23:15,688		Start IP Rx			Counter: 1427
13.12.2019	09:22:24,580		Relay Status		Close	Relay 1
13.12.2019	09:22:24,531	17:38:37,730	App. Alarm		ERROR	RX Stream
13.12.2019	09:22:24,516		IP Rx stream lost			Counter: 0
13.12.2019	09:22:24,506		IP Rx packet lost			Counter: 30365
13.12.2019	09:08:51,949		IP Rx packet out of time			Counter: 51628
13.12.2019	09:08:51,948		IP Rx packet lost			Counter: 51628

- Via ADMINISTRATION → SYSTEM X → REGISTRATION you can check which SOFTWARE OPTIONS are available in your system.
- To activate optional system functionality, your you will be provided with a password key.
 - This key is calculated on the basis of the device FACTORY-NUMBER, which you need to send us together with the order.
 - Click ENTER PASSWORD to enter the key.
 - The option will then be marked as available in the list.
 - Restart the system to make sure the new functionality is fully operative.
- CREATE TEST LICENCE KEY: If you like to test a feature before buying it, create a test licence key and send it to AVT along with the factory number of the unit.
 - The test licence will work for a limited time.
 - The timer only counts when the unit is running.
 - The test licence enables all available features.

Registration

Hardware: MAGIC ACX

Main | Dante

Subject Number: 450177

Factory Number: 22/25/1057

Year: 2022

Hardware Version: 3.00

MAC Address 1: 00-06-9B-02-00-00

MAC Address 2: 00-06-9B-02-00-01

Modules: free | Dante

free

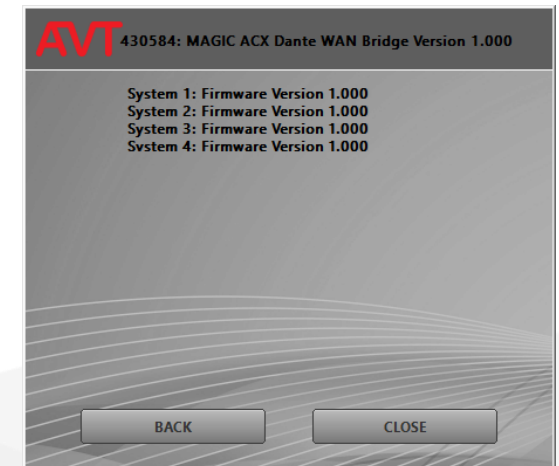
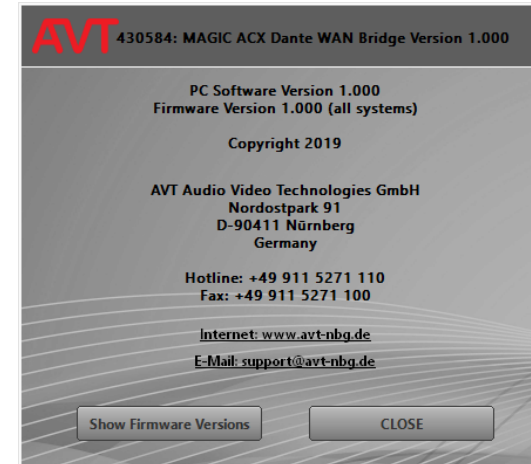
Features

Software Options	#	Expiry
<input checked="" type="checkbox"/> MAGIC ACX Dante WAN Bridge		
<input checked="" type="checkbox"/> G.722		
<input checked="" type="checkbox"/> MPEG Layer 2		
<input checked="" type="checkbox"/> Leased Line Distribution: Destinations	20	
<input checked="" type="checkbox"/> SIP Distribution: Destinations	20	
<input checked="" type="checkbox"/> RX Stream Distribution		

Create Test License Key | Enter password

Close

- HELP → About MAGIC ACX displays the versions of the PC software and the firmware versions of the devices.



MAGIC ACX

Front Display



(1) LEDs

- Power LED
- Sync LED (Audio stream transmission and reception OK)
- Alarm LED (System alarm or application alarm pending)
- INPUT 1 LED (Ethernet link status of the Dante module)
- INPUT 2 LED (Ethernet link status of the LAN interfaces used for transmission and reception.)

(2) TFT Screen

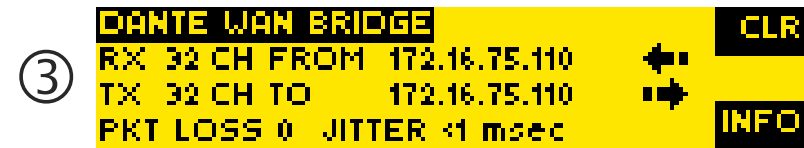
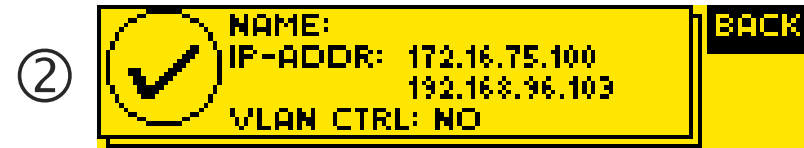
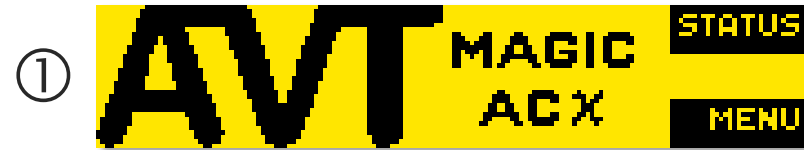
(3) Softkeys (The associated function is displayed next to the key in the Display.)

(4) Control Pad

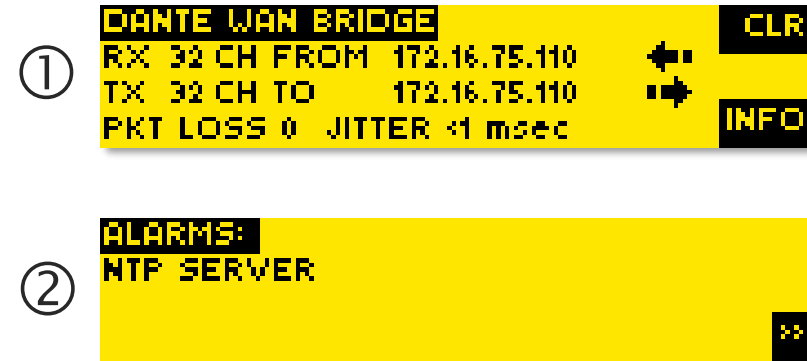
- Up
- Down
- OK
- Left (Dial)
- Right (Hang up)

(5) Number Pad

- When the system has booted it shows the AVT LOGO screen (①).
- Press the RIGHT key on the CONTROL PAD to display the BASIC INFORMATION screen (②).
- Press the MENU softkey to enter the configuration and system information screens.
- When the AVT LOGO screen (①) is displayed, the system will automatically switch to the MAIN OPERATION screen (③) after 10 seconds.
 - You may also press the STATUS softkey to enter the MAIN OPERATION screen (③).



- The first OPERATION screen (①) shows source and target IP addresses, number of channels in each direction as well as information on packet loss and current Jitter.
 - Press the CLR softkey to reset the packet loss counter.
- Press the INFO softkey to display the ALARMS screen (②). It lists all pending alarms of the system.



- Press the >> softkey on the ALARM screen (①) to display detailed information on the RX stream (②)::
 - JITTER CURRENT: Jitter in ms in the last measuring interval of 5 seconds.
 - JITTER 5 MINUTES: Maximum Jitter within the last 5 minutes.
 - JITTER MAXIMUM: Highest Jitter since resetting the statistics.
- Press the CLR softkey to reset the Jitter, Packet Loss and Stream Loss statistics.
- Press the DOWN key on the CONTROL PAD to scroll down for further information:
 - PACKET LOSS: Number of packets lost since resetting the statistics.
 - STREAM LOSS: Receiving no packets for more than 10 ms is considered a stream loss.
 - RATE ADAPTION: Current clock deviation between the Dante domains.
 - RECEIVE BUFFER size in ms.

- NUMBER OF AUDIO CH received.
- RESOLUTION: Bit depth of the audio samples.
- SAMPLES/PACKET. Audio Samples per Channel per RTP Packet. Each packet contains all channels simultaneously
- SUBNET used for reception.
- STREAM FROM: source IP address of the audio stream.
- UDP PORT of the audio stream.
- VLAN used for audio stream reception
 - OFF if VLAN is disabled
 - VLAN-ID and VLAN-PRIORITY if VLAN is enabled.



- Press the DOWN key on the CONTROL PAD to scroll down for further information:
 - PACKET LOSS: Number of packets lost since resetting the statistics.
 - STREAM LOSS: Receiving no packets for more than 10 ms is considered a stream loss.
 - RATE ADAPTION: Current clock deviation between the Dante domains.
 - RECEIVE BUFFER size in ms.
 - NUMBER OF AUDIO CH received.
 - RESOLUTION: Bit depth of the audio samples.
 - SAMPLES/PACKET. Audio Samples per Channel per RTP Packet. Each packet contains all channels simultaneously
 - SUBNET used for reception.
 - STREAM FROM: source IP address of the audio stream.
 - UDP PORT of the audio stream.
 - VLAN used for audio stream reception
 - OFF if VLAN is disabled
 - VLAN-ID and VLAN-PRIORITY if VLAN is enabled.

```

RX STREAM CLR
JITTER CURRENT: <1 msec
JITTER 5 MINUTES: <2 msec
JITTER MAXIMUM: <2 msec
  
```

```

PACKET LOSS: 0 CLR
STREAM LOSS: 0
RATE ADAPTION: -17 ppm
RECEIVE BUFFER: 9.6 msec
  
```

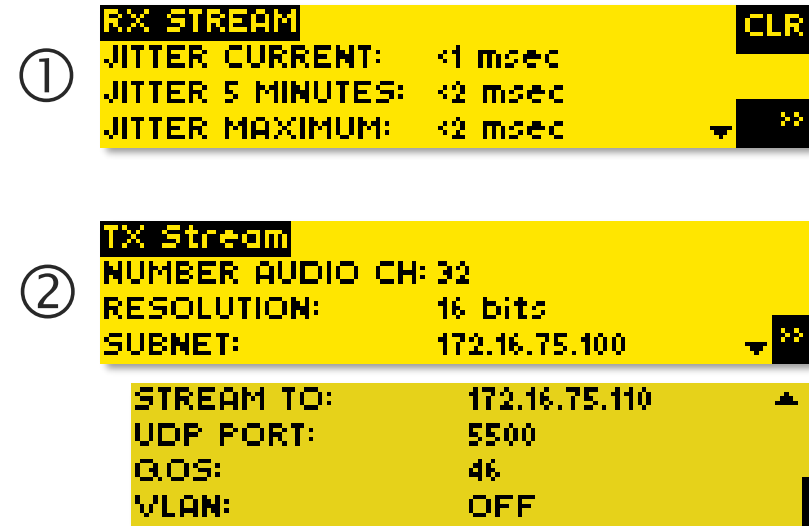
```

NUMBER AUDIO CH: 32 CLR
RESOLUTION: 16 bits
SAMPLES/PACKET: 15
SUBNET: 172.16.75.100
  
```

```

SUBNET: 172.16.75.100 CLR
STREAM FROM: 172.16.75.110
UDP PORT: 5500
VLAN: OFF
  
```

- Press the >> softkey on the RX STREAM screen (①) to display detailed information on the TX stream (②):
 - NUMBER OF AUDIO CH transmitted.
 - RESOLUTION: Bit depth of the audio samples.
 - SUBNET used for transmission.
 - STREAM TO: target IP address of the audio stream.
 - UDP PORT of the audio stream.
 - QOS: Quality of Service / DiffServ
 - VLAN used for audio stream reception
 - OFF if VLAN is disabled
 - VLAN-ID and VLAN-PRIORITY if VLAN is enabled.



- Press the >> softkey on the TX STREAM screen (①) to display detailed information on the LAN interfaces (②):
 - STATE: Ethernet Link, Speed and Duplex mode of the respective LAN interface.
 - TX / RX: Network throughput of the respective LAN interface in each direction.

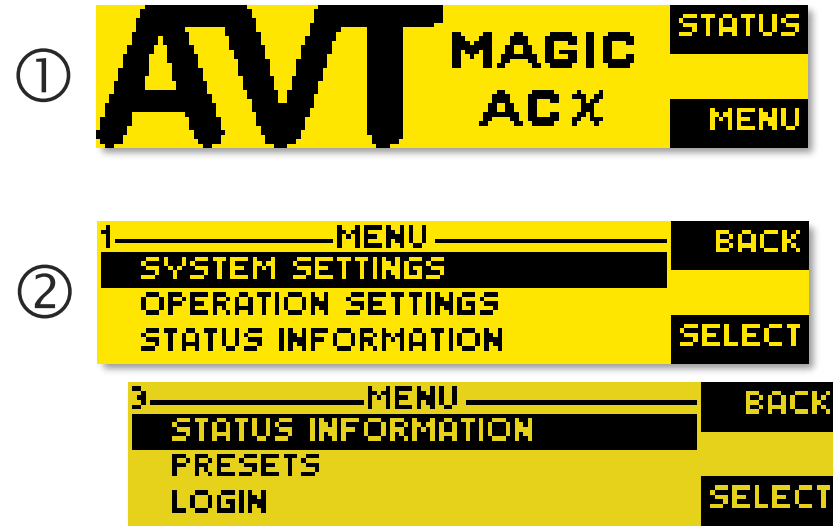
①

```
TX Stream
NUMBER AUDIO CH: 32
RESOLUTION:      24 bits
LOCAL IP ADDR:   172.16.75.100
```

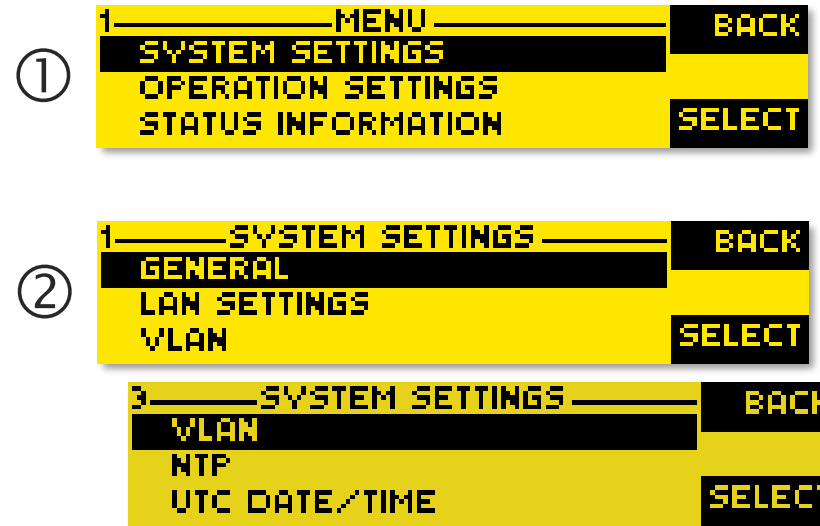
②

```
LAN STATE Tx Rx
1: 100 Full 38 Mbps 38 Mbps
2: 100 Full 0 kbps 4.8 kbps
```

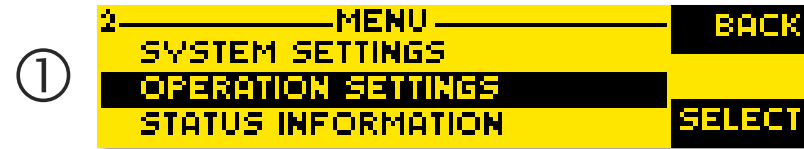
- Press the MENU softkey on the AVT LOGO screen (①) to display the MAIN MENU (②) which contains:
 - SYSTEM SETTINGS: Settings which cannot be stored in a Preset.
 - OPERATION SETTINGS: Settings which can be stored in a Preset.
 - STATUS INFORMATION: Shows Alarm Status, Version Information,, LAN Status, Software Options and System Temperature.
 - PRESETS: Load, save and delete Presets. Load Factory Settings.
 - LOGIN: Protect the configuration and presets with passwords.



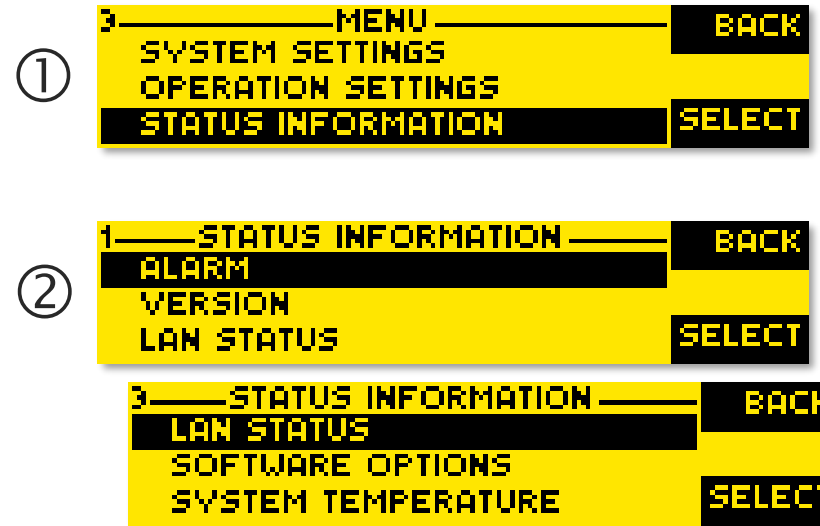
- On the MENU (①), navigate to the SYSTEM SETTINGS entry via the UP/DOWN keys and press the SELECT softkey to display the SYSTEM SETTINGS screen (②) which contains:
 - GENERAL: Language, Front Keypad, Display, System Name.
 - LAN SETTINGS: IP address, subnet mask, default gateway, DNS server and PC control settings.
 - NTP: Synchronize the internal clock to an NTP server.
 - VLAN
 - UTC DATE/TIME: Set the internal clock if no NTP server is available.



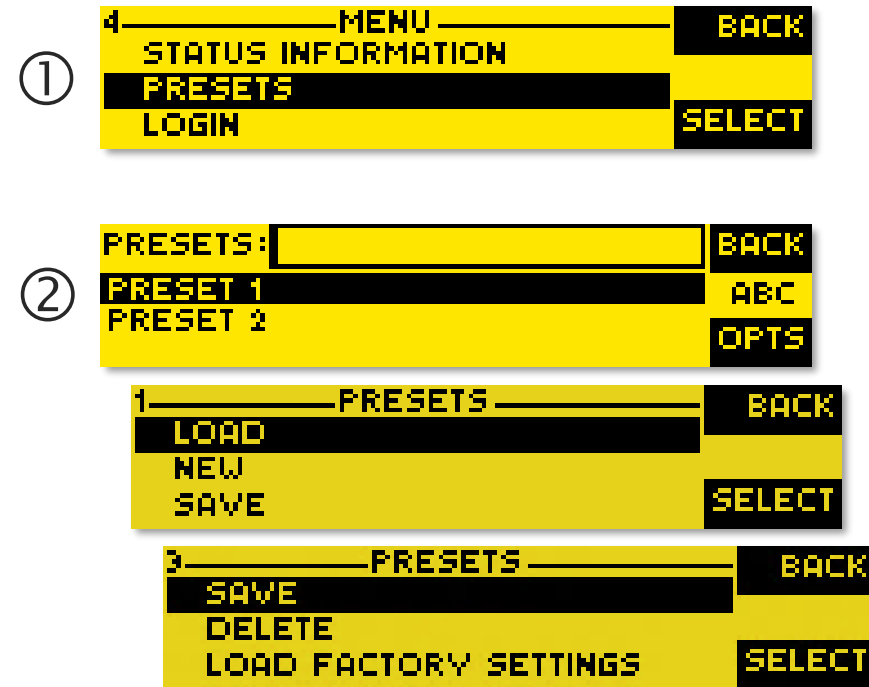
- On the MENU (①) , navigate to the OPERATION SETTINGS entry via the UP/DOWN keys and press the SELECT softkey to display the OPERATION SETTINGS screen (②) which contains:
 - TRANSMISSION: LAN Interface, Subnet, Target IP Address, UDP Port, Resolution, Number of Channels and Quality of Service.
 - RECEPTION:LAN Interface, Subnet, Source IP Address and UDP Port.



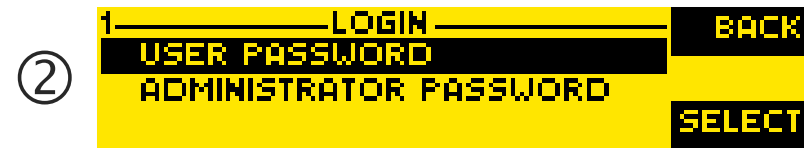
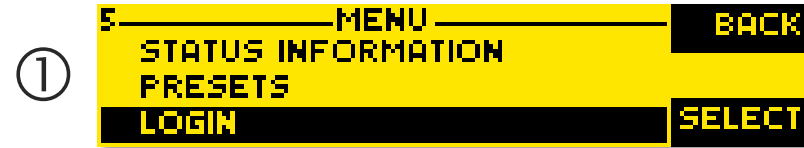
- On the MENU (①) screen, navigate to the STATUS INFORMATION entry via the UP/DOWN keys and press the SELECT softkey to display the STATUS INFORMATION screen (②) which contains:
 - ALARM: System and application alarms currently pending.
 - VERSION: Firmware version, Factory Number, MAC addresses.
 - LAN STATUS: Ethernet link, speed and duplex mode. IP addresses, connected PCs.
 - SOFTWARE OPTIONS: Available and enabled licences.
 - SYSTEM TEMPERATURE.



- On the MENU (①) screen, navigate to the PRESETS entry via the UP/DOWN keys and press the SELECT softkey to display the PRESETS screen (②):
 - Available Presets are displayed in a scrollable list which is sorted alphabetically.
 - Start typing on the keypad to search the list of Presets.
- Navigate to a Preset in the list via the UP/DOWN keys and press the OPTS softkey to:
 - LOAD the Preset.
 - NEW: Save the current configuration as a new Preset.
 - SAVE: Overwrite the Preset with the current configuration.
 - DELETE: Delete the Preset.
 - LOAD FACTORY SETTINGS: Resets the current configuration to factory settings. Presets and Logfiles remain unchanged.



- On the MENU (①) screen, navigate to the LOGIN entry via the UP/DOWN keys and press the SELECT softkey to display the LOGIN screen (②):
 - ADMINISTRATOR PASSWORD: Set up the administrator password. The password grants access to the configuration and presets.
 - USER PASSWORD: Set up the user password. The password only allows you to load presets.

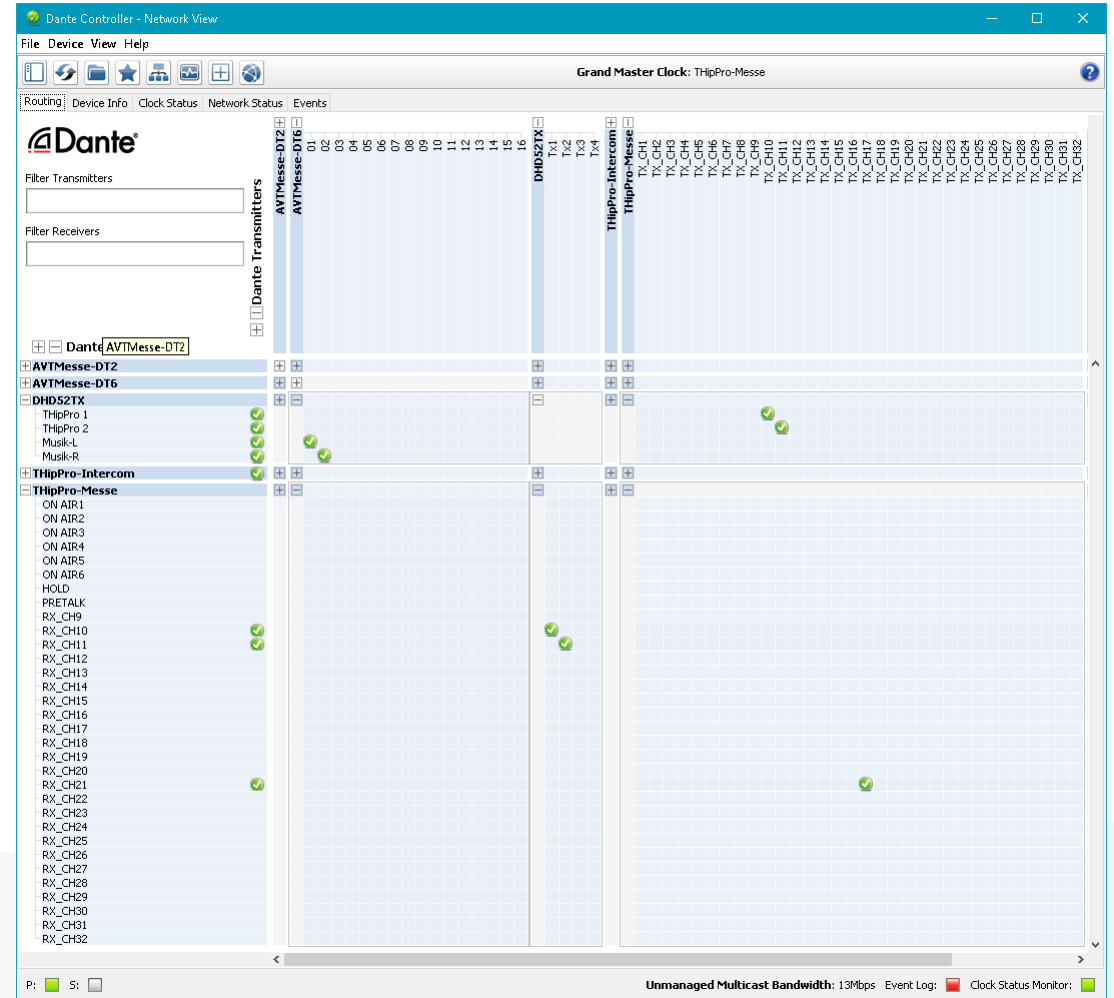


MAGIC ACX

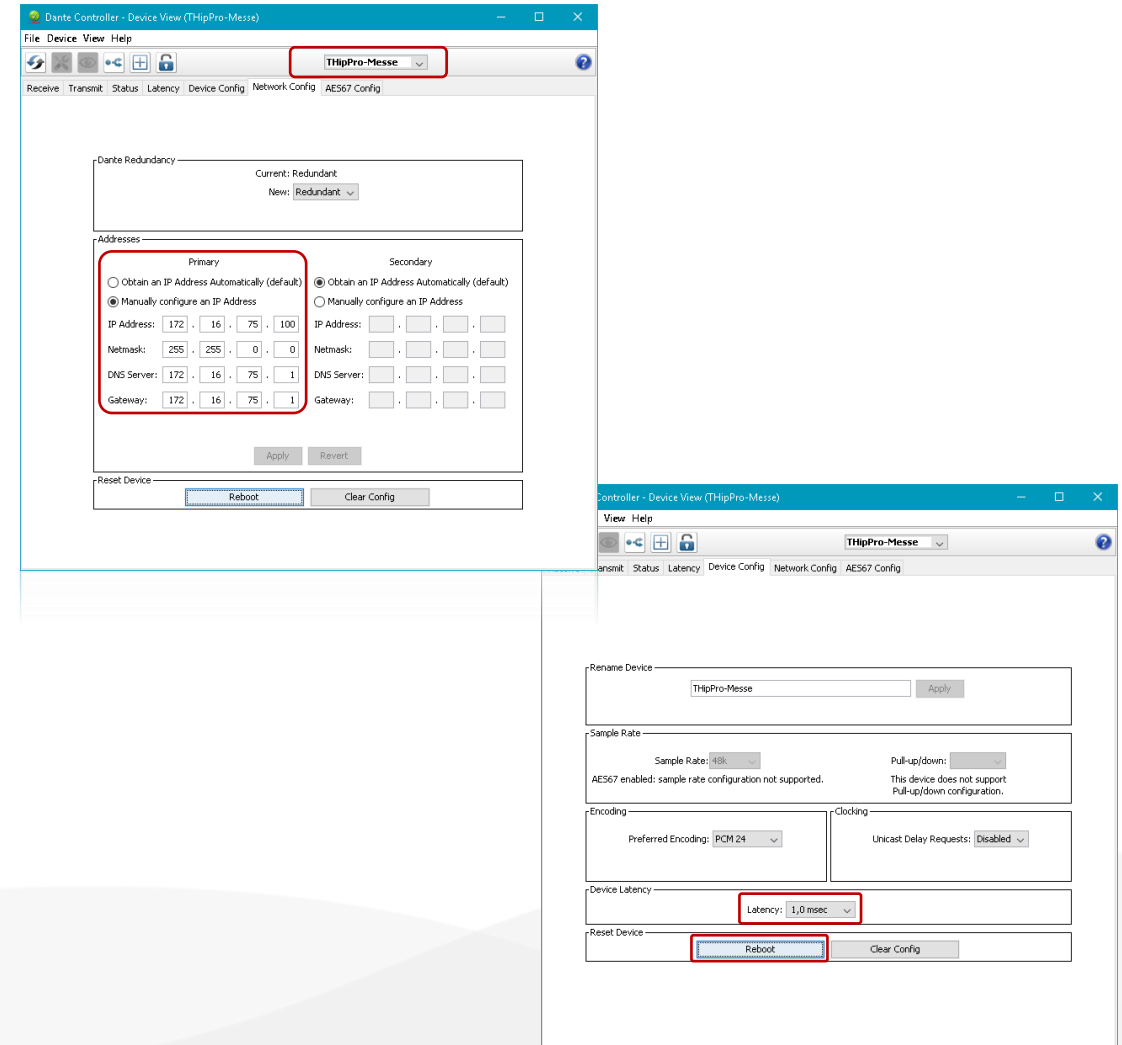
Annex

- Dante
- Support

- After starting the DANTE CONTROLLER software, NETWORK VIEW - ROUTING automatically displays all devices that support the Dante protocol.
- The inputs and outputs of the systems can be assigned to each other via the matrix.



- In the DANTE CONTROLLER software, the Ethernet interfaces can be configured in the DEVICE VIEW under NETWORK CONFIG, if necessary.
 - Assign IP address automatically (default setting)
 - Manual adjustment
- It is also essential to correctly configure the maximum expected latency in the network, which should be identical for all Dante devices.
- Attention: After a REBOOT MAGIC ACX may have to be switched off/on if a DSP alarm appears in the display.





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Support

The background of the slide is a close-up photograph of a mixing console, showing numerous faders and knobs. The left side of the image is overlaid with a semi-transparent red gradient. The AVT logo is positioned in the upper left corner, with the text 'Audio Video Technologies' to its right.

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