MAGIC ACip3 Quick Start Guide

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Audio Video Technologies

AVT MAGIC ACip3

- Line Interface
 - 3x Ethernet 100 Mbit/s
 - E1 balanced (optional)
- Control Interface
 - 3x Ethernet 100 Mbit/s
 - 6x Relay
 - 6x TTL IO
- Audio
 - 1x Analog Stereo
 - 2x Digital Stereo (optional switchable to 1x additional Analog Stereo)
- Data
 - 2x RS232
- Redundant power supply
 - 100 V 230 V AC
 - 12 V DC

Interfaces

Signalling

- Audio over IP (AoIP/SIP)
- IP leased line
- E1 (optional)

• Codecs

- Standard
 - G.711
 - G.722
 - OPUS
 - PCM 16/20/24 Bit
 - ISO/MPEG-2 Layer 2
- Optional:
 - ISO/MPEG-2 Layer 3
 - Enhanced apt-X 16/24 Bit
 - AAC-LD, AAC-ELD
 - AAC-LC
 - HE-AAC v1/v2

Features

- Run the "MAGIC ACip3" application as Administrator.
- Click the menu button in the top left corner.
- Open "Configuration → Control Interface".



First Start

Enter the IP address
of the MAGIC ACip3.
(Default: 192.168.96.102)

| Interface: <default></default> | |
|--------------------------------|--|
| Interface: <default></default> | |
| | |
| IP Address: 192.168.96.102 | |
| Port: 10000 | |

Control Interface



- Connection to the MAGIC ACip3 is fully established when "PC ONLINE" shows up in the top right corner.
- Codec channels offer high quality audio transmission.
- AUX channels offer HD Voice audio transmission.
- AC2 and AUX2 are optional (2-Channel Software Option).



Main Panel

- Click the menu button in the top left corner.
- Open "Configuration → System".



Configuration

- Select page "LAN Interface".
- SIP registration needs valid entries for:
 - IP Address
 - Sub Net Mask
 - Default Gateway
 - DNS Server
- Services (SIP, DHD, Ember+, SNMP, ...) can be assigned to any LAN interface individually on their respective settings page.
- PC control works on all LAN interfaces simultaneously.

| Operation Settings LAN Interface Clients / Security Line Interface AoIP (LAN/SIP) DHCP: Audio Assignment Backup Backup DHCP: Auto Answer Sub Net Mask: Autor Answer Sub Net Mask: Autor Answer Sub Net Mask: Default Gateway: 172 20.1.1 TTL / Relay Default Gateway: Transmission Modes DNS Server: General Quality of Service (DiffServ) Audio Interface SIP: Diff Unit Viewer Parameters SIUN Server: STUN Server: I104 MTP NAT Keep Alve Message Time ACconnect DHO DHO Ember+ Provider Login Control UDP Pot Address | | Configuration | |
|---|--|---|--|
| Clentry Security Line Interface AarD (LAN/SIP) Audio Assignment Backup Backup Auto Answer Sub Net Mask: Z55 255 0.0 Atarm Signalling Default Gateway: T12 20.1.1 T17 Rensmission Modes DNS Server: T17 20.1.2 General Gualty of Service (DiffServ) Buser Defined Audio: 184 General General General General Gualty of Service (DiffServ) Buser Defined Audio: 184 General Audio: 184 General Audio: 104 General Sille: STUN Server: Data Interface Data Interface STUN Server: NAT Keep Alive Message Time 20 sec ACconnect DHD Ember- Provider Control UDP Pot Address | - Operation Settings | LAN Interface | |
| Control UDP Port Address 10000 Set Default Port | Clients / Security Line Interface AolP (LAN/SIP) Audio Assignment Backup Auto Answer Alarm Signalling TTL / Relay TTL / Relay TTL / Relay Seneral System Settings General Audio Interface Data Interface Data Interface NTP SNMP Acconnect DHD Ember+ Provider | LAN 1 LAN 2 LAN 3 DHCP: | |
| | – Login | Control UDP Port Address 10000 Set Default Port | |

Configuration LAN Interfaces

- Select page "Audio Interface".
- Select a "Mode":
 - 2x Analogue
 - 1x Analogue + 2x AES/EBU
- "Analogue 1": Setting the input and output levels
- "Analogue 2": Only available in "2 x Analogue" mode
 - The second analogue audio interface is available with hardware version 3.0 and higher.
- "AES/EBU Interface": Selection of the clock source for the digital output

| □- Operation Settings | Audio Interface |
|--|---|
| - Clients / Security - Line Interface - AoIP (LAN/SIP) - Audio Assignment - Audio Distribution - Backup - Auto Answer | Mode: Mode: 1x Analogue + 2x AES/EBU ~ Analogue 1 Analogue 2 |
| → Alarm Signalling → TTL / Relay → Transmission Modes → General → 15 kH2 Default | Main Nominal Level of XLR Analogue 1 and 2 Level In Left: 6 dBu Level In Right: 6 dBu Level In Right: 6 dBu |
| | Headroom: |
| Data Interface LAN Interface NTP SNMP | Gain Out: |
| - DHD - Ember+ Provider - Login | AES/EBU Interface Clock Source of Digital Output: Internal V |
| | Default Settings |
| | OK Abbrechen Apply Now |

Configuration Audio Interface

- Select page "Audio Assignment".
- Assign an audio interface to each channel.
- If "AES/EBU and Analogue" is selected under Audio Interface > Mode, 3 x Audio stereo interfaces are available for selection.
- If "2 x Analogue" is selected under Audio Interface > Mode, only 2 analogue stereo interfaces can be assigned to the codecs.
- This example shows the following configuration:
 - AC 1: AES 1
 - AC 2: AES 2
 - AUX 1: Analogue left
 - AUX 2: Analogue right

| | | | Configuration | |
|--|------------------------|----------------------------------|----------------------------|------------------------|
| - Operation Settings | Audio Ass | ignment | | |
| Clients / Security Line Interface AoIP (LAN/SIP) Auto Answer Backup Auto Answer Alarm Signalling TTL / Relay Transmission Modes General 15 kHz Default User Defined System Settings General Audio Interface Data Interface ANMP ACconnect DHD Ember+ Provider | AC 1: AC 2: AUX: | AES 1 V AES 2 V Analogue V | left = AUX1 / right = AUX2 | |
| | | | | OK Abbrechen Apply Now |

Configuration Audio Assignment

- The MAGIC ACip3 is optionally available with a balanced E1 interface.
- It can be operated unidirectional as encoder or decoder and bidirectional as codec.
- The encoder is configured in detail with codec algorithm and parameters and E1 timeslots.
- The encoder configuration is transmitted to the decoder in the "Signalling Timeslot".
- On the decoder, enter the number of the signalling timeslot in the "Decoder Control Timeslot" configuration.
- On connection build-up, the decoder receives the encoder configuration and configures itself automatically.



- Select page "Line Interface".
- Choose Line Mode "E1".
- Select an Operation Mode:
 - Encoder
 - Decoder
 - Codec
- Enter the number of the "Signalling Timeslot" of the Encoder on the other end in "Decoder Control Timeslot".

| Configuration | | | | × |
|---|--|--|-----------|-----------|
| Operation Settings Clients / Security Line Interface Timeslot Assignment Alarm Signalling TIL / Relay DHD Set Logic System Settings General Audio Interface Data Interface LAN Interface NIMP ACconnect DHD Ember+ Provider Login | Line Interface Line Mode: E1 E1 Parameters Format: Clock Source: Operation Mode: Decoder Control Timeslot: Auto Connect after Power Up | Double Frame Recovered Codec 1 (131) : | | |
| | | | OK Cancel | Apply Now |
| | | | | |

Configuration E1

- Select page "Timeslot Assignment".
- Enter a Program Name.
- Select a "Coding Algorithm" and set the parameters.
- Assign the timeslots.
 - Click "Signalling", "AC1" or "AC2"
 - Click the numbered boxes to add or remove timeslots.
 - Check the braces for the number of assigned / required timeslots.
- Use the button "Auto" to assign the timeslots automatically in ascending order.
- The buttons "OK" and "Apply Now" are disabled as long as the timeslot assignment is insufficient.

| Operation Settings | Timeslot Assignment | | | | |
|--|---------------------------------|--|---|--|--|
| Clients / Security Line Interface | | Audio Encoder 1 | | Audio Encoder 2 | |
| <mark>Timeslot Assignment</mark> Audio Assignment | Program Name: | Program 1 | Program Name: | Program 2 | |
| ···· Alarm Signalling ···· TTL / Relay | Audio Coding: | MPEG \sim | Audio Coding: | PCM \sim | |
| BHD Set Logic | Algorithm: | MPEG Layer 2 \sim | Algorithm: | Uncompressed ~ | |
| General | Mode: | Stereo 🗸 | Mode: | Stereo 🗸 | |
| Data Interface | Sampling Rate: | $48kHz$ \sim | Sampling Rate: | 48 kHz \vee | |
| LAN Interface | Data Rate: | 320 k Bit/s \checkmark | Data Rate: | 1536 kbit/s (16 Bit) $~~\vee~$ | |
| NTP SNMP | | Ancillary Data (PAD) | | | |
| ACconnect DHD Ember+ Provider | | | | | |
| ember movider | | | | | |
| Login | - Timeslot Assignmer | nt | | | |
| Login | Timeslot Assignmen | Signalling (1/1) | AC1 (5/5) | AC2 (24/24) | |
| Login | Timeslot Assignmen | it Signalling (1/1) | AC1 (5/5) | AC2 (24/24) | |
| - Login | Timeslot Assignmer | * 1 2 3 4 5 | AC1 (5/5) | AC2 (24/24) | |
| Login | Timeslot Assignmer Auto 0 | t Signalling (1/1) * 1 2 3 4 5 6 17 18 19 20 21 2 | AC1 (5/5) 7 8 9 10 1 2 23 24 25 26 | AC2 (24/24) 11 12 13 14 15 27 28 29 30 31 | |
| - Login | Timeslot Assignmer Auto 0 | t Signalling (1/1) 1 2 3 4 5 6 17 18 19 20 21 2 Timeslot 0 is | AC1 (5/5) 7 8 9 10 7 2 23 24 25 26 reserved for the G.704 fram | AC2 (24/24) 11 12 13 14 15 28 29 30 31 ning | |
| Login | Timeslot Assignmer Auto 0 | t Signalling (1/1) Signalling (1/1) 2 3 4 5 6 17 18 19 20 21 2 *Timeslot 0 is | AC1 (5/5) 7 8 9 10 3 2 23 24 25 26 3 reserved for the G.704 fram | AC2 (24/24) 11 12 13 14 15 28 29 30 31 ning | |
| Login | Timeslot Assignmer Auto 0 | t Signalling (1/1) I 2 3 4 5 I 7 18 19 20 21 2 *Timeslot 0 is | AC1 (5/5) | AC2 (24/24) 11 12 13 14 15 27 28 29 30 31 ning | |
| Login | Timeslot Assignmer Auto 0 | t Signalling (1/1) • 1 2 3 4 5 6 17 18 19 20 21 2 • Timeslot 0 is | AC1 (5/5) | AC2 (24/24) 11 12 13 14 15 27 28 29 30 31 aing | |

Configuration Timeslot Assignment

- All three ethernet interfaces of the MAGIC ACip3 are suitable for AoIP.
- The MAGIC ACip3 can handle up to five SIP servers.
- Every channel can register with five different SIP accounts. These accounts are active simultaneously. Any incoming call on any of the accounts can be accepted.
- Choose one of the five SIP accounts of a channel when dialling out.
- At connection build-up, the calling party announces the desired codec for the connection.
- Additionally it announces G.711 (telephone quality) and G.722 (HD-Voice) as fallback options if the called party doesn't support the desired codec.
- The called party selects the codec for the connection.
- Both directions use identical algorithms and codec parameters.

AoIP (LAN/SIP)



- Select page "Line Interface".
- Choose Line Mode "AoIP/SIP".
- Enter up to 5 SIP Servers.
- Choose TCP or UDP for SIP transport protocol.
- Assign the SIP server to a LAN interface.

| | | | Confi | guration | | | | | |
|---|-----------------------|----------------------|--------------------|---------------------|----------|----------------|-------|--|--|
| • Operation Settings | Line Interface | | | | | | | | |
| Clients / Security <mark>Line Interface</mark> | Line Mode: | AoIP/SIP | v |] | | | | | |
| - Audio Assignment Backup | 1: AoIP | 2: Internal | 3: Telecom | 4: Project | 5: Breke | ke | | | |
| | Label: | | | AoIP | | | | | |
| TTL / Relay | SIP Server: | | | sip.provider.com | | | | | |
| - I ransmission Modes General | Backup SIP | Server: | | sip2.provider.com | | | | | |
| 15 kHz Default ⊕ User Defined | STUN: | | | | | | | | |
| System Settings | Transport: | | | TCP | ~ | | | | |
| - Audio Interface | LAN Interfac | e: | | LAN 1: 172.20.40.25 | ~ | | | | |
| Data Interface LAN Interface | A-Law/µ-Law | / Signalling on inc | oming G.722 calls: | | | | | | |
| NTP | Registration | Timeout: | | <u> </u> | 1 | 60 s | | | |
| ACconnect | PBX/Exchange | line configuration | | | | | | | |
| DHD Ember+ Provider | Length of ext | ension: | | 3 | * | | | | |
| Login | Outgoing line prefix: | | | 0 | | | | | |
| | Skip outgoin | g line prefix on inc | oming calls: | | | | | | |
| | International | prefix: | | 00 | | (Default value | : 00) | | |
| | | | | | | | | | |

Configuration SIP Servers

- Select page "AoIP (LAN/SIP)".
- Enter up to 5
 Numbers per Channel.
- Click on a SIP server to select one of the five SIP servers configured on page "Line Interface".

| tion Settings ents / Security e Interface | AoIP (LAN/SIP) | | | | | | |
|---|--|---|---------------------|---------------------------------------|----------------|--------------|--|
| ents / Security e Interface | 101 | | | | | | |
| dio Assignment | AC 1 AC 2 | AUX 1 AUX 2 | | | | | |
| ckup to Answer | SIP Server | User Name | User Authentication | Password | Audio UDP Port | Display Name | |
| n Signalling | 1: AoIP | 55590411 | | | 5004 | | |
| Relay trion Modes | 2: Internal | 401 | | | 5024 | Production | |
| ral | 3: Telecom | 5271160 | | | 5044 | | |
| iz Default Defined | 4: Project | 1337 | | | 5064 | | |
| ettings | SIP Server 5 | | | | 5084 | | |
| ral Interface | | | | | | | |
| Interface P onnect er+ Provider | Encoder Packet Siz G.711, G.722, f Decoder Parameter Buffer Mode: Buffer Size: Registration delay b | ze (Payload Time) PCM, aptX: s Auti vetween SIP lines | matic | , , , , , , , , , , , , , , , , , , , | rec rsec | | |

Configuration AoIP Numbers

- A transmission mode is made up of an algorithm and its parameters.
- There are three default transmission modes for 3.1 kHz, 7 kHz and 15 kHz calls.
- Configure up to 30 user defined modes.
- Select one of the transmission modes when dialling a number.
- AoIP calls always allow G.711 and G.722 in addition to the chosen transmission mode. This way the connection will be established even if the remote station doesn't support the desired high quality audio codec.

Audio Codecs

- Select page
 "General" from the
 "Transmission
 Modes" branch.
- Set the default Mono Mode.

| C | Configuration | |
|--|---------------------|------------------------|
| peration Settings General | | |
| - Clients / Security - Line Interface - AoIP (LAN/SIP) | AC1 | AC2 |
| Audio Assignment Audio Mode after Disconnect: | Do nothing V | Do nothing 🗸 🗸 |
| - Auto Answer Audio Mode after Power Up: | Do nothing 🗸 🗸 | Do nothing 🗸 🗸 |
| - TTL / Relay Default Mono Mode (Telephone, 7 kHz, 15 kH | iz): Mono (L+R)/2 🗸 | Mono (L+R)/2 v |
| Embler+ Remote GPIO Mode | Off 🗸 🗸 | Off 🗸 |
| Output Output Secure Streaming Mode: ansmission Modes | Off V | Off 🗸 |
| General Secure Streaming Delay: | 0 ms | 0 ms |
| item Settings General Audio Interface Data Interface LAN Interface NTP SINMP ACconnect DHD Ember+ Provider gin | | |
| | | OK Abbrechen Apply Nov |

Transmission Modes (General)



- Select page "15 kHz Default" from the "Transmission Modes" branch.
- Select a "Coding Algorithm" and set the parameters.

| | | Configura | ation | | |
|--|--|---|--|---|-----|
| Operation Settings Operation Settings Operation Settings Operation Settings Operation Security Line Interface AolP (LAN/SIP) Audio Assignment Backup Auto Answer Alarm Signalling TTL / Relay OHD Set Logic Dember+ Transmission Modes General Operation System Settings General Audio Interface Data Interface LAN Interface NTP SNMP ACconnect | 15 kHz Default Coding Algorithm: Algorithm: Mode: Sampling Rate: Data Rate: | AC 1 MPEG v Ancillary Data (PAD) MPEG Layer 2 v Mono v 48 kHz v 192 kBt/s v | Ation Coding Agorithm: Algorithm: Mode: Sampling Rate: Data Rate: | AC2 MPEG Ancillary Data (PAD) HE-AAC v2 Stereo 48 kHz 24 kBit/s | |
| Login | | | | OK Abbrechen Apply N | low |

Default 15 kHz Transmission Mode

- Select page "User Defined" from the "Transmission Modes" branch.
- Manage up to 30 transmission modes.
- Check "Show" to present the transmission mode on the front display.

| Operation Settings Clients / Security Line Interface AolP (LAN/SIP) Audio Assignment Backup Auto Answer Alarm Signalling TTL / Relay DHD Set Logic Ember+ Transmission Modes General TS kHz Default | Ser Defined User Transmission Modes Show Name AAC-ELD AAC-LC AAC-LC AAC-LD AC-L | L L L L L L L L L L L L L L L L L L L | Add Edit Polete | |
|---|--|---------------------------------------|-----------------------|--|
| System Settings System Settings -General -Audio Interface Data Interface LAN Interface -LAN Interface -NTP SNMP -ACconnect DHD Ember+ Provider Login | MHEG L3 OPUS OPUS LD OPUS LD PCM SECURE-L2 | | | |
| | | | | |
| | | | | |

User Defined Transmission Modes (1)

- Use "Add" to define a new transmission mode.
- First enter a name for the new transmission mode.
- Click "OK" and select an algorithm and set up its parameters.
- Secure streaming transmits a parallel audio stream with adjustable delay. Works with AVT codecs only.

| | | - Clients / Security | User Transmission Modes |
|--|---------------------------------|---|---|
| | | - And Uterstein - And Uterstein - And Uterstein - And Uterstein - Alar Anger - Alar Signiling - TT, Keisy - Franze - Franzen - Transison Modes - General - Stable - Stable - Stable - Data Interface - Data In | Show Name AAC-ELD EM AAC-LC EM AAC-LC EM BEAC-211 Datase BEAC-211 Beace Correst Fitter Name Correst Fitter Name Correst Conce |
| Configuration Operation Settings - Line Interface - Audio Assimment | HE-AAC-V2 Transmission Mode: | MPEG | OK Rébrechen Apply Now |
| Backup Auto Answer Alarm Signalling TTI / Relay | | Ancillary Data (PAD) | |
| Ember+ | Algorithm | HE.660 v2 | |
| Transmission Modes General | Mode: | Stereo ~ | |
| 15 kHz Default | Sampling Rate: | 48 kHz ~ | |
| Vser Defined AAC-ELD AAC-LC AAC-LD HE-AAC-V1 | Data Rate: | 40 kBt/s \checkmark | |
| L2 L3 MPEG L2 | Remote GPIO Mode: | Off ~ | |
| MPEG L3 | Secure Streaming Mode: | Off ~ | |
| - OPUS | Secure Streaming Delay: | 0 ms | |
| - PCM | | | |

User Defined Transmission Modes (2)

- Select page "TTL/Relay".
- Double-click any entry to chose one of the predefined functions.

| | | | Configuration | |
|----------------------------|--------------------------|------|--------------------------------|----------------------------|
| n Settings | TTL / Relay | | | |
| ts / Security Interface | Pin | Dir. | Function 1 (Positive Edge) | Function 2 (Negative Edge) |
| (LAN/SIP) | TTL 1 (Pin 2) | In | Accept Incoming Call:AC 1 | Disconnect:AC 1 |
| Assignment | TTL 2 (Pin 3) | In | Accept Incoming Call:AC 2 | Disconnect:AC 2 |
|) | TTL 3 (Pin 4) | In | | |
| Signalling | TTL 4 (Pin 14) | In | | - |
| elav | TTL 5 (Pin 15) | In | | |
| et Logic | TTL 6 (Pin 16) | In | | |
| + | Relay 1 (Pins 5->17+18) | Out | Connection State:AC 1::Connect | - |
| ion Modes | Relay 2 (Pins 19->6+7) | Out | Connection State:AC 2::Connect | |
| al | Relay 3 (Pins 8->20+21) | Out | Always Open | |
| Default | Relay 4 (Pins 22->9+10) | Out | Always Open | - |
| efined | Relay 5 (Pins 11->23+24) | Out | Always Open | |
| ttings | Relay 6 (Pins 25->12+13) | Out | Always Open | - |
| Interface | | | | |
| iterface | | | | |
| terface | | | | |
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Configuration TTL/Relay

- Select page "DHD" from the "System Settings" branch.
- Activate DHD Set Logic.
- Enter the IP address of the DHD core.

| | Configuration | |
|---|--|--|
| Operation Settings Operation Settings Operation Settings Operation Settings Operation Settings Operation Settings Audio Assignment Backup Audio Assignalling TTL / Relay DHD Set Logic Dember+ Transmission Modes General System Settings General Audio Interface Data Interface NTP SIMP ACconnect DHD Ember+ Provider Login | DHD Connection Parameters: LAN Interface: LAN 1: 172 20.40 25 ▼ TCP/IP Address: 172 20.10 128 Pot: 2008 TCP/IP Reconnect Time 10 seconds (1255) | |
| | | |

Configuration DHD (1)



- Select page "DHD Set Logic" from the "Operation Settings" branch.
- Double-click any entry to change the function.

| eration Settings Clients / Security Line Interface AoIP (LAN/SIP) Audio Assignment Backup Auto Answer Alarm Signalling TTL / Relay DHD Set Logic | DHD Set Logic ## Alias 1 Call Out 2 Disc AC1 3 | ID 15 22 | Dir. | Function 1 (Positive Edge) | |
|---|--|----------------|------|----------------------------------|----------------------------|
| Line Interface AoIP (LAN/SIP) Audio Assignment Backup Auto Answer Alarm Signalling TTL / Relay DHD Set Logic | ##Alias1Call Out2Disc AC13 | ID 15 22 | Dir. | Function 1 (Positive Edge) | |
| AolP (LAN/SIP) Audio Assignment Backup Auto Answer Alarm Signalling TTL / Relay DHD Set Logic | 1 Call Out 2 Disc AC1 3 | 15 22 | In | ranoach r (recare zago) | Function 2 (Negative Edge) |
| Audio Assignment Backup Auto Answer Alarm Signalling TTL / Relay DHD Set Logic | 2 Disc AC1 3 | 22 | | Connect:AC 1:15 kHz Call:5551831 | |
| Jackup Auto Answer Alarm Signalling ITL / Relay DHD Set Logic | 3 | | In | Disconnect:AC 1 | |
| uto Answer Iarm Signalling TL / Relay HD Set Logic | 4 | 0 | In | | |
| TL / Relay HD Set Logic | 4 | 0 | In | - | |
| HD Set Logic | 5 | 0 | In | | |
| | 6 | 0 | In | | |
| nber+ | 7 | 0 | In | | |
| mission Modes | 8 | 0 | In | | |
| eneral | 9 | 0 | In | | |
| i kHz Default | 10 | 0 | In | | · |
| ser Defined | 11 | 0 | In | | |
| m Settings | 12 | 0 | In | - | |
| eneral | 13 | 0 | In | | |
| Idio Interrace | 14 | 0 | In | | |
| N Interface | 15 | 0 | In | | |
| TP | 16 | 0 | In | | |
| IMP | 17 | 0 | In | | |
| Connect | 18 | 0 | In | | · · |
| HD | 19 | 0 | In | | |
| nber+ Provider | 20 | 0 | In | - | |
| | 21 | 0 | In | | |
| | 22 | 0 | In | | |
| | 23 | 0 | In | | |
| | | | | | |
| | • | | | | |

Configuration DHD (2)

- Select page "Ember+ Provider" from the "System Settings" branch.
- Activate Ember+ Provider.
- Up to 6 Ember+ Consumer can connect to the MAGIC ACip3.
- Enter a Port number to start the server. (Recommended: Ports 9000-9005)

| Configuration × Operation Settings Ember+ Provider - Leinst / Security Activate Ember+ Provider - Ault (ANX/SP) Activate Ember+ Provider - Ault Answer Ministrate - Alarn Signiling Pot 1 (Consumer 1): - Finamission Modes 0 - General - State Defined - System Settings - General - Main Interface - Audio Interface - Audio Interface - Audio Interface - Audio Interface - Optioned - General - System Settings - General - General - System Settings - General - System Setings - General | | | |
|---|---|---|---|
| Operation Settings Clemst / Security - Inclust / Security - Audio Assignment - Audio Assignment - Audio Assignment - Auto Answer - OH S t Logic - Fort 3 (Consumer 3): D Fort 6 (Consumer 6): D - Port 6 (Consumer 6): D - Port 3 (Consumer 3): D Fort 6 (Consumer 6): D - Port 6 (Consumer 6): </th <th></th> <th>Configuration</th> <th>×</th> | | Configuration | × |
| OK Abbrechen Anniv Now | Operation Settings Clients / Security Line Interface AolP (LAN/SIP) Auto Answer Ato Answer Ato Answer Atarm Signalling TTL / Relay DHD Set Logic Ember+ Transmission Modes General System Settings General Auto Interface Data Interface LAN Interface NTP SNMP Acconnect DHD Ember+ Provider Login | Configuration Ember + Provider Ember + Connection Parameters: LAN Interface: LAN 1: 172.20.40.25 • Pot 1 (Consumer 1): 9000 Pot 4 (Consumer 4): 0 Pot 2 (Consumer 2): 0 Pot 5 (Consumer 5): 0 Pot 3 (Consumer 3): 0 Pot 6 (Consumer 6): 0 | × |
| / ppy non | | OK Abbrechen Apply Now | |

Configuration Ember+ (1)

- Select page "Ember+" from the "Operation Settings" branch.
- Enter distinct identifiers for
 - Dial Pad
 - GPIO 1...32
 - GPIO 33...64
- Enter these identifiers

 in Ember+ consumers
 connected to the
 MAGIC ACip3.

| | | Configuration | × |
|--|---|---------------------------------|------------------------|
| Operation Settings | Ember+ | | |
| Chensy Jeconny Chensy Jeconny Audio Assignment Backup Auto Answer Alarm Signalling TTL / Relay DHD Set Logic Ember+ Input Output Transmission Modes General Ts kHz Default User Defined System Settings General Audio Interface LAN Interface NTP SNMP Acconnect DHD Ember+ Provider Login | Identifier Dial Pad GPIO Identifier: GPIO Identifier: | (Predefined) (132) (3364) | |
| | | | OK Abbrechen Apply Now |

Configuration Ember+ (2)

- Select page "Input" from the "Ember+" branch.
- Double-click any entry to change the function.

| | | Configuration | | |
|---------------|--------------|----------------------------------|----------------------------|---|
| Settings Inpu | ıt | | | |
| nterface ## | t Identifier | Function 1 (Positive Edge) | Function 2 (Negative Edge) | ^ |
| AN/SIP) 1 | Call_Out | Connect:AC 1:15 kHz Call:5551831 | - | |
| ssignment 2 | | - | · | |
| 3 | | - | - | |
| analling 4 | | - | · | |
| lay 5 | | - | · | |
| Logic 6 | | - | · | |
| 7 | | - | • | |
| 8 | | - | · | |
| ut 9 | | - | · | |
| n Modes 10 |) | - | • | |
| 11 | | • | | |
| ined 12 | 1 | - | · | |
| ngs 13 | 1 | - | · | |
| 14 | 4 | - | · | |
| terface 15 | i l | - | · | |
| rface 16 | ; | - | • | |
| rface 17 | 1 | - | | |
| 18 | 4 | - | - | |
| . 19 | 1 | - | • | |
| ect 20 |) | - | - | |
| Provider 21 | | - | - | |
| 22 | 1 | - | • | |
| 23 | 4 | - | - | ~ |
| < | | | > | |
| | | | | |

Configuration Ember+ Inputs

- Select page "Output" from the "Ember+" branch.
- Double-click any entry to change the function.

| | | Configuration |
|--------------|---------------|------------------------|
| n Settings | Output | |
| s / Security | | E-res A |
| AN/SIP) | ## Identifier | |
| ssignment | I No_Alam | No System Alam Pending |
| | 2 | Fixed Low |
| swer | 3 | Fixed Low |
| gnalling | 5 | Fixed Low |
| lay | 6 | Fixed Low |
| Logic | 7 | Eved Low |
| t | 8 | Eved Low |
| out | 9 | Fixed Low |
| n Modes | 10 | Exed Low |
| | 11 | Fixed Low |
| efault | 12 | Exed Low |
| ined | 13 | Fixed Low |
| ings | 14 | Fixed Low |
| terface | 15 | Fixed Low |
| erface | 16 | Fixed Low |
| erface | 17 | Fixed Low |
| | 18 | Fixed Low |
| | 19 | Fixed Low |
| ect | 20 | Fixed Low |
| Provider | 21 | Fixed Low |
| Provider | 22 | Fixed Low |
| | 23 | Fixed Low |
| | < | > |
| | | |

Configuration Ember+ Outputs

- Select page "SNMP".
- MIBs are located in the MAGIC ACip3 program folder.

| | Configuration | |
|--|--|--|
| ion Settings SNMP | | |
| Image Structury Image Structury Image Structury Image Structury P (LAN/SIP) SNMP dio Assignment Read/Trap Community: skup SNMP Port: structury SNMP Port: structury SNMP Port: structury SNMP Port: NMS 1 (LAN/IP Adr./Port): NMS 2 (LAN/IP Adr./Port): structury System Description: contact: System Description: rb Eral Contact: system Location: Settings meral Send all traps at system dio Interface Send traps immediately at p Category A Alias: connect Category C Alias: D ber+ Provider | v2c 161 LAN 1 v 152 LAN 1 v 162 LAN | Y Alam Traps Category System Alams - □ LCA - □ Temperature Sensor - □ Overheated - □ Overheated - □ Overheated - □ Display Contrast DAC - □ VCX0 1 - □ VCX0 2 - □ Ethemet MAC 1 - □ Ethemet MAC 3 - □ Coprocessor 1 Boot - □ Coprocessor 2 nuning - □ Coprocessor 1 nuning - □ AES/EBU Framing Input 2 - □ AES/EBU Format/Clk Input 1 - □ AES/EBU Format/Clk Input 2 - □ DID Audio Matrix - <tr< th=""></tr<> |

Configuration SNMP

- Check SIP registration status of every line:
 - invalid: No account is registered.
 - registered: Some accounts are not registered.
 - registered: Every account is registered.
- Click on register status to check which accounts are registered as seen on channel AC1.
- For detailed registration status information open
 "Menu → System Monitor → SIP Monitor".



Main Panel

- Click the "CALL" button on the main panel.
- 1: Choose a SIP server.
- 2: Enter a phone number or choose one from the redial list (¹).
- 3: Choose a transmission mode.
- 4: Type a phone number.
- 5: Call out.
- 6: Manage the phonebook stored on the MAGIC ACip3.



Dial a Number

- Connection to "502" established.
- Own SIP server and number is shown above the called number.
- Quality indicator:
 HQ
 HQ
 HD
 T kHz
 SD
 3.1 kHz
- Click the quality indicator to get detailed codec information.



Connection Status

- Click the Menu
 button and open
 "Administration→
 Firmware Download".
- Click "Start" to download the firmware file which is placed in the MAGIC ACip3 program folder during installation.

| Firmware | Download |
|-----------|----------|
| acip3.ssw | Browse |
| Start | Cancel |
| Progress: | |
| | |
| | |
| | |
| | se |

Firmware update

- Click the menu button and open "Administration→ Registration".
- The registration window shows hardware version, serial number, MAC addresses and analogue audio interface calibration values.
- The "Features" list shows available and activated software options.

| Hardware MAGIC AClp3 Main Subject Number: 450119 Factory Number: 14/35/0907 Year: 2014 Hardware Version: G1.00 MAC Address: 00-06-98-02-0F-2A MAC Address 2: 00-06-98-02-0F-2B | |
|--|------------------|
| Main Subject Number: 450119 Factory Number: 14/35/0907 Year: 2014 Hardware Version: G1.00 MAC Address: 00-06-98-02-0F-2A MAC Address 2: 00-06-98-02-0F-28 | |
| Subject Number: 450119 Factory Number: 14/35/0907 Year: 2014 Hardware Version: G1.00 MAC Address: 00-06-98-02-0F-2A MAC Address 2: 00-06-98-02-0F-2B | |
| Factory Number: 14/35/0907 Year: 2014 Hardware Version: G1.00 MAC Address: 00-06-9B-02-0F-2A MAC Address 2: 00-06-9B-02-0F-2B | |
| Year: 2014 Hardware Version: G1.00 MAC Address: 00-06-98-02-0F-2A MAC Address 2: 00-06-98-02-0F-28 | |
| Hardware Version: G1.00 MAC Address: 00-06-98-02-0F-2A MAC Address 2: 00-06-98-02-0F-2B | |
| MAC Address: 00-06-98-02-0F-2A MAC Address 2: 00-06-98-02-0F-2B | |
| MAC Address 2: 00-06-9B-02-0F-2B | |
| | |
| MAC Address 3: 00-06-9B-02-0F-2C | |
| Analogue Audio 1 In: -0,22 dB (left) -0, | 23 dB (right |
| Apalogue Audio 1 Out: 0.06 dB (left) 0.0 | 3 dB (right) |
| Macto Acia Pasia | |
| Software Options | |
| MAGIC ACip3 Basic | |
| V Number of PC licenses | 10 |
| Backup | |
| Distribution (up to 50 channels) | |
| 2-Channel | |
| I MPEG Laver 2 Codec | 2 |
| MPEG Laver 3 Codec | - |
| MPEG Layer 3 Codec AAC LD Codec (Low Delay) | 2 |
| MPEG Layer 3 Codec AAC LD Codec (Low Delay) AAC ELD Codec (Enhanced Low Delay) | 2 2 |
| MPEG Layer 3 Codec AAC LD Codec (Low Delay) AAC ELD Codec (Enhanced Low Delay) AAC ELD Codec (Low Complexity) | 2 2 2 |
| ✓ MPEG Layer 3 Codec ✓ AAC LD Codec (Low Delay) ✓ AAC ELD Codec (Enhanced Low Delay) ✓ AAC LC Codec (Low Complexity) ✓ HE-AAC v1 Codec (High Efficiency v1) | 2 2 2 2 |
| Backup Distribution (up to 50 channels) 2-Channel MPEG Laver 2 Codec | |

Registration and Software Options

- Click the menu button in the top left corner.
- Open "System Monitor".
- System alarms turn red when there is an internal hardware problem.
- Application alarms turn red when there is a problem with data processing.

| | | | System | m Monitor | | | | | |
|--------|----------------------|-----|--------------------------|--|------------|--------|--------------|---------|-------------|
| System | alarms | | | System State | | | | | |
| 9 | 0 LCA | • | 0 Overheated | System Temperatur 48 °C | | DSP | Load: | 22 % | |
| • | 0 MAIN EEPROM | • | 0 FLASH EPROM | Data Interface state | | Abs. | data rates | | |
| • | 0 Temperature Sensor | • | 0 Display Contrast DAC | R5232 1 9600 Baud, 8N1 | | TX: | 0 Bit/s | RX: | 0 Bit |
| • | 0 LED Driver | 0 | 0 Redundant Power Supply | R5232 2 9600 Baud, 8N1 | | TX: | 0 Bit/s | RX: | 0 Bi |
| • | 0 VCXO 1 | • | 0 VCXO 2 | Till and shales | | | | | |
| • | 0 Coprocessor 1 Boot | • | 0 Coprocessor 1 running | Ethernet State | | ADS. | 100 4 hBib/s | DV. | 112.1 608 |
| • | 0 Coprocessor 2 Boot | | 0 Coprocessor 2 running | LAN 2 CINK 100 MBit/s, T | ull duplex | TX: | 133,4 KDIU/S | RA: | 113,1 KDR |
| • | 0 Ethernet MAC 1 | • | 0 Ethernet MAC 2 | LAN 2 CINK 100 MDH/s, I | ull duplex | TX: | 110,9 KDIU/S | RA: | 252 PH |
| • | 0 Ethernet MAC 3 | | | LAN 3 🔮 LINK 100 MBIT/S, T | uii dupiex | IX: | U BIT/S | RX: | 253 BI |
| pplica | ition alarms | | | IP Transmission Jitter | | | Current | Maximur | n last 60 s |
| 0 | 0 AES/EBU Input 1 | | | OFF 🗸 | | | | | |
| õ. | 0 AES/EBU Input 2 | | | | | | | | |
| õ. | 0 SIP Registration | | | TD De aliant Lana Courstan | | | | | |
| õ. | 0 DHD Audio Matrix | | | IP Packet Loss Counter | 0 | | Deceder 2 | | 0 |
| õ. | 0 Decoder 1 Sync | • | 0 Decoder 2 Sync | Decoder 1 | | - | Decoder 2 | | U |
| - | | - T | | | Counter | r Rese | t | | |
| | | | | | | | | | |
| | | | | Remote GPIO Reception | | | | | |
| | | | | Remote GPIO Reception AC1 | OFF | | AC2 | | OFF |
| | | | | Remote GPIO Reception AC1 Connected Ember+ Consum | OFF Ier | | AC2 | | OFF |
| | | | | Remote GPIO Reception AC1 Connected Ember+ Consum Connected PCs | OFF Ier | | AC2 | | OFF |

System Monitor

- Click the "SIP Monitor" button in System Monitor.
- Get a detailed registration status of every SIP account.
- Click "Test" to start registration.

| | SIP Monitor | |
|----------------------|---|------------------------------|
| SIP User | Main SIP Server | Backup SIP Server |
| AC1-AoIP: 55590411 | Test Registration successful. | Test No IP address available |
| AC1-Internal: 401 | Test Registration successful. | Test No IP address available |
| AC1-Telecom: 5271160 | Test Registration rejected by SIP server. User not found. | Test No IP address available |
| AC1-Project: 1337 | Test Registration successful. | Test No IP address available |
| AC1: | Test No IP address available | Test No IP address available |
| AC2-Internal: 402 | Test Registration successful. | Test No IP address available |
| AC2-AoIP: | Test Registration successful. | Test No IP address available |
| AC2-AoIP: | Test Not executed. | Test No IP address available |
| AC2-AoIP: | Test Not executed. | Test No IP address available |
| AC2-AoIP: | Test Not executed. | Test No IP address available |
| AUX1-Internal: 403 | Test Registration successful. | Test No IP address available |
| AUX1-AoIP: | Test Not executed. | Test No IP address available |
| AUX1-AoIP: | Test Not executed. | Test No IP address available |
| AUX1-AoIP: | Test Not executed. | Test No IP address available |
| AUX1-AoIP: | Test Not executed. | Test No IP address available |
| AUX2-Internal: 404 | Test Registration successful. | Test No IP address available |
| AUX2-AoIP: | Test Not executed. | Test No IP address available |
| AUX2-AoIP: | Test Not executed. | Test No IP address available |
| AUX2-AoIP: | Test Not executed. | Test No IP address available |
| AUX2-AoIP: | Test Not executed. | Test No IP address available |

SIP Monitor

- Run the "MAGIC ACip3 Multi Control" application as Administrator.
- Open "Menu → Configuration → Control Interface" to enter up to 99 MAGIC ACip3 Codecs.
- Click on a MAGIC ACip3 codec to open a detailed View.
- Click the configuration icon () of a MAGIC ACip3 codec to enter its configuration.



Multi Control Software

- 1: Soft key
 - Function is shown next to it on the display.
- 2: Call
- 3: OK
 - Switch between channels.
 - Press for more than one second to switch to AUX channels.
- 4: Arrows
 - Navigate menus and lists.
 - Change audio levels.
- 5: Hang up
 - Disconnect.
 - Go back to start screen.
- 6: Status
 - Get detailed status if channel is connected.

• 7: '#'

- Select SIP server in start screen or two channel screen.
- 8: Alphanumeric pad
 - Dial numbers
 - Enter text.



Front key pad

- The start screen shows channel AC1.
- First line shows Line Mode and selected SIP server. Change SIP server with '#'-Key.
- Second line shows current transmission mode. Change it with UP and DOWN arrow keys.
- Press "OK" to switch to second channel.
- Press "OK" for more than one second to switch to AUX channels.
- Press "Names" to access the internal phonebook.
- Press "Menu" to access the configuration.
- Type a number to enter the "DIAL screen".



Front Display - Start Screen

- The two channel screen shows channels AC1 and AC2.
- First line shows the selected SIP server.
 Change it with '#'-Key.
- Press "Nam" to access the internal phonebook.
- Press "OK" to switch between channels.
- Press "OK" for more than one second to switch to AUX channels.
- Type a number to enter the DIAL screen.





Front Display - 2 Channels in DISC

- The phonebook screen shows an alphabetically sorted list of all entries.
- Start typing to filter the list.
- Press "Opts" to view, add, edit and delete entries.
- Press the Call-button to initiate the call.

| ACK | SEARCH: |
|-----|----------------------|
| ABC | Jane Do |
| PTS | John Dov John Dov |
| ľ | John Dov |

Front Display – Phone Book



- When in "start screen" or "two channel screen" select a SIP server using the '#'key.
- Start typing the phone number to enter the "dial screen".
- Use the arrow keys to change the transmission mode.
- Press the Call-button to initiate the call.

| TYPE NUMBER | DELETE |
|--------------------|--------|
| 502 | 123 |
| 🗘 15 kHz (LAYER 2) | |

Front Display – Dial a Number



- During a connection the front display shows RX and TX audio levels.
- Press the "1/Status" button to see
 - Status codec 1
- Press the bottom soft key for information on:
 - Status codec 2
 - PAD TX / RX
 - IP statistic decoder 1
 - IP statistic decoder 2
 - LAN state



| AUDIO CODEC 1: Tx I Rx | | |
|------------------------|-------------------|------|
| MPEG L2 | IMPEG L2 | |
| 48 kHzl256 kBit/s | 48 kHz1256 kBit/s | |
| JOINT STEREO | JOINT STEREO | - 22 |

Front Display - CONNECT

• Audio adapter cable

| Digital interface | Analogue interface |
|-------------------|--------------------|
| AES 1 IN | Analog 2 right IN |
| AES 1 OUT | Analog 2 right OUT |
| AES 2 IN | Analog 2 left IN |
| AES 2 OUT | Analog 2 left OUT |

 Pin assignment digital AES audio interface

| Pin | Signal digital | Signal analogue |
|-------|----------------|-----------------|
| 1 | AES 1 IN + | Right IN + |
| 2 | AES 1 IN - | Right IN - |
| 3 | AES 2 IN + | Left IN + |
| 4 | AES 2 IN - | Left IN - |
| 5 | AES 1 IN + | Right OUT + |
| 6 | AES 1 IN - | Right OUT - |
| 7 | AES 2 IN + | Left OUT + |
| 8 | AES 2 IN - | Left OUT - |
| 9 | GND | GND |
| 10 | CLOCK IN/OUT | CLOCK IN/OUT |
| 11-15 | GND | GND |

Audio Interface Assignment