

ACUO 908 Serie



AEV On Air broadcast console

Guarantee

The equipment is warranted for a period of 2 years from the date of invoice (ex-works). The warranty does not cover faults provoked by carelessness, natural causes and parts subject to wear. In addition, the cost of shipment is not covered. The warranty will be voided if the equipment is mishandled.

Technical Support

If you require technical support, contact AEV SERVICE giving a clear and concise account of your speciic problem. Quote the serial number of your equipment by referring to the AEV nameplate attached to the equipment itself as this is the most important piece of information to be provided.

Telephone: +39 051 6630904 Fax: +39 051 893605

Factory Service and Repairs

If problems arise while the equipment is being installed, consult this manual and check that the installation is being carried out properly. If the problems still cannot be solved, call the AEV SERVICE Department for further information. If the problem is a minor one we can a telephone call will probably sufice. If, on the other hand, the equipment is to be shipped to AEV for service or repairs.

Shipping Instruction

When shipping the equipment to AEV, use the original package in order to be certain that it will be fully protected during handling. If you need the original package, call us for a new one. If you ship the equipment in a different packing container, take care to provide a double package by interposing padding material between the two containers in order to fully protect the equipment during shipment. The package should be marked "FRAGILE" in red. Remember that the RMA number must be clearly visible on the package. If it is not, the equipment will not be accepted.

IMPORTANT: Carefully read this paragraph as it contains important instructions concerning operator safety and directions regarding the installation, operation and maintenance of the equipment.

Failure to observe the safety instructions and information given in this manual **constitutes an** infringement of the safety rules and design specifications provided for this piece of equipment.

AEV Broadcast Srl declines all responsibility if any one of the safety rules given here in is not observed.

AEV Broadcast Srl declines all responsibility if the end-user resells the product.

The equipment is to be used by people capable of operating it in a trouble-free manner and it is assumed that they are aware of the following safety rules.

- Keep this manual with the utmost care and close at hand so that it can be consulted whenever needed
- After unpacking the equipment, check it for condition.
- Avoid banging the equipment.
- The packing material (plastic bags, polystyrene, nails, etc.) must never be left within the reach of the children, as **these items are potential sources of danger**.
- Do not use the equipment in places where the temperature is not within the recommended range, as specified by the manufacturer.
- Before connecting the equipment, make sure the nameplate specifications correspond to the mains electricity supply (the nameplate is located on the equipment enclosure).
- Do not remove the sticker from the equipment as it contains important specifications and the relevant serial number.
- To join the equipment to the mains supply, use the power cord purchased with the equipment.
- The equipment must be used only for the purpose it was designed for.

- Abuse or misuse of the equipment is **extremely dangerous** for people, pets and property. The manufacturer declines all responsibility for damage and injury resulting from **improper use** and **mishandling**.
- Certain basic safety rules must be observed when using electrical equipment, in particular: Never touch the equipment with wet and/or damp hands or other parts of the body.
- Keep the equipment away from drops of water or sprinkling systems.
- Never use the equipment near high heat sources or explosive material.
- Do not introduce any extraneous matter into the equipment.
- Do not allow children or untrained people to use the equipment.
- Before cleaning or servicing the equipment outside, disconnect it from the supply and wait at least 2 seconds before working on it, as recommended by current safety regulations.
- In the event of faults and/or improper operation, turn off the equipment, shut off the electrical power and call your dealer.
- Do not attempt to make repairs and/or adjustments when covers/guards or circuit boards are to be removed.
- Blown fuses inside the power supply indicate that there may be a fault in the power supply itself. The fuses must be replaced by qualified and authorised persons. It is advisable to call your nearest dealer.
- Call your dealer for any repairs and be certain original spare parts are used.

Failure to observe this rule may adversely affect the safety level of your equipment.

- The equipment is to be connected to the mains supply and provided with adequate and efficient earth conductors.
- The electrical wiring must be done in compliance with current electrical codes CEI 64-8 "Electrical specification for domestic buildings".
- When installing, leave a clearance of at least 1 cm around the equipment to allow air to pass freely.

NOTE. This piece of equipment has been manufactured to the highest standards of workmanship. It must be used properly and serviced as recommended to ensure long-term dependable operation.

The installation must be done in order to be able to guarantee an easy access to the cable of feeding.

The device of dissection of the equipment is the cable of feeding, so it must be unconnected from the equipment every time it is necessary to do any type of maintenance.



Contents

| Guarantee |
|---------------------------------------|
| Technical Support 2 |
| Factory Service and Repairs 2 |
| Shipping Instruction 2 |
| Precautions 3 |
| Contents4 |
| Features 5 |
| Input functions and channels5 |
| Input channel configuration5 |
| Outputs6 |
| External controls 5 |
| Monitoring 5 |
| Input configuration 5 |
| Input setting 5 |
| Master outputs6 |
| External control6 |
| Monitoring 6 |
| Micro - Line channel 7 |
| Digital - Line Module 8 |
| USB - Line Module 9 |
| Monitoring section 10 |
| Telephone hybrid section 10 |
| Control Room & Control Studio section |
| Master setupu section 11 |
| Rear Panel - Connections 12 |
| RJ connectors pin out14 |
| Logic GPI/O port 14 |
| Telephone hybrids - operation |
| Technical specifications 17 |

Features

audio inputs:

8 double-channels

balanced Micro and line inputs, digital AES/EBU, USB audio I/O interface

Faders:

Faders (100 mm) with A/B input selector, 3 bands tones control on each input.

Input functions and channels

Four Microphone inputs (MIC1,...,MIC4)
 Eitgh stereo line inputs (LIN1,.....LIN8)
 Two digital AES/EBU input (DIG1, DIG2)
 Two USB audio inputs (USB1, USB2)

Input channels configuration:

Channel 1: MIC1 / LINE1 Channel 2: MIC2 / LINE2 Channel 3: MIC3 / LINE3 Channel 4: MIC4 / LINE4 Channel 5: DIG1 / LINE5 Channel 6: DIG2 / LINE6 Channel 7: USB1 / LINE7 Channel 8: USB2 / LINE8

Input setting

All settings are independent for each input, via encoder.

Channel setting:

- Gain / Level adjustment -12÷+12 dB - Input balance -12÷+12 dB - tone equalizer High, Medium , Low -14÷+14 dB - Private tel OFF/ON - Control Studio OFF/ON - PGM assignement SPEECH/MUSIC - C. Room Mute OFF/ON - ST MU OFF/ON - Tally OFF/ON - Talk back on C.Studio OFF/ON

- Phantom Power (only for Micro inputs) OFF/ON

Also you can to select the Bus assignment pushing the following buttons:

- PGM
- UTL
- AUX
- CUE

Master Outputs

PGM: Analog balanced stereo with XLR connectors **UTL**: Analog balanced stereo with XLR connectors **AUX**: Analog balanced stereo with RJ45 connector **PGM Dig:** digital AES/EBU stereo with RJ45 connector **UTL Dig:** digital AES/EBU stereo with RJ45 connector

Auxiliary outputs

Control Room: Analog balanced stereo with RJ45 connector **Control Studio:** Analog balanced stereo with RJ45 connector **Mute C. Studio:** Analog balanced stereo with RJ45 connector **Headphone:** Analog stereo with Jack 6,3 mm connector

Auxiliary input

External: Analog balanced stereo with RJ45 connector

External controls

- Remote Fader with logic controls, (START/STOP) with RJ45 connector
- GPI Opto-isolated logic inputs
- GPO Opto-isolated logic outputs

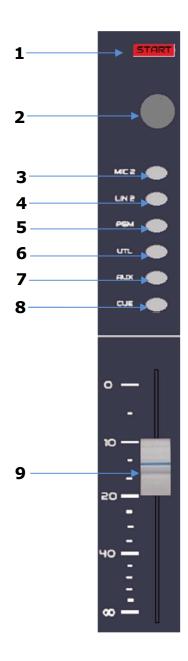
Monitoring

- Level control for headphone, Control Room, Control Studio mutable
- External inputs for Monitor
- Headphone with integrated amplifier
- double stereo digital VU-Meter on the TFT display PGM (fixed) SEL (EXT, UTL, AUX)



Micro - Line channel (channels 1 - 4)

All controls on the Micro-Line input channel are described below.



- **1** START lamp, it lights when the channel fader is active
- **2** knob jog ; directly it select the Gain input level the range is $-12 \div +12$ dB;

in sequence, the following commands:

1th push-buttom Balance adjust (-12 \div +12 dB)

2th push-buttom Treble band adjust (-14 \div +14 dB)

3th push-buttom Middle band adjust (-14 \div +14 dB)

4th push-buttom Bass band adjust (-14 \div +14 dB)

5th push-buttom Private Tel active (OFF/ON)

6th push-buttom TB Studio to C.Room active (OFF/ON)

7th push-buttom PGM bus selection (Speech/ Music)

8th push-buttom Control Room Mute active (OFF/ON)

9th push-buttom Mute C.Studio active (OFF/ON)

10th push-buttom Tally active (OFF/ON)

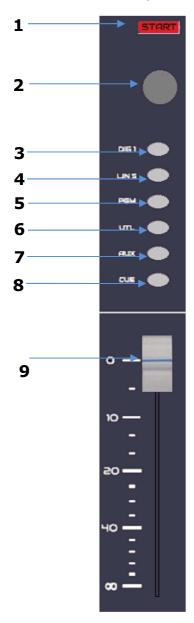
11th push-buttom TB Regia to C. Studio active (OFF/ON)

12th push-buttom Phantom power for the condenser microphone active (OFF/ON)

- **3** MIC to activate the microphone source (only with the channel in STOP) microphones.
- **4** LINE to activate the line source (only with the channel in STOP)
- **5** PGM Button for routing the channel to the PGM bus.
- **6** UTL Button for routing the channel to the UTL bus.
- **7** AUX Button for routing the channel to the AUX bus.
- **8** Button enabling the preview CUE.
- 9 Fader.

Dig - Line Module (channels 5 - 6)

All controls on the Dig-Line input channel are described below.



- **1** START lamp, it lights when the channel fader is active
- 2 knob jog; directly it select the Gain input level the range is -12 ÷ +12 dB;

in sequence, the following commands:

1th push-buttom Balance adjust (-12 \div +12 dB)

2th push-buttom Treble band adjust (-14 \div +14 dB)

3th push-buttom Middle band adjust (-14 \div +14 dB)

4th push-buttom Bass band adjust (-14 \div +14 dB)

5th push-buttom Private Tel active (OFF/ON)

6th push-buttom TB Studio to C.Room active (OFF/ON)

7th push-buttom PGM bus selection (Speech/ Music)

8th push-buttom Control Room Mute active (OFF/ON)

9th push-buttom Mute C.Studio active (OFF/ON)

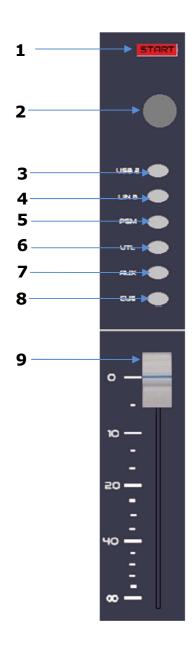
10th push-buttom Tally active (OFF/ON)

11th push-buttom TB Regia to C. Studio active (OFF/ON)

- **3** DIG to activate the digital AES/EBU source (only with the channel in STOP)
- **4** LINE to activate the line source (only with the channel in STOP)
- **5** PGM Button for routing the channel to the PGM bus.
- **6** UTL Button for routing the channel to the UTL bus
- **7** AUX Button for routing the channel to the AUX bus.
- 8 Button enabling the preview CUE.
- **9** Fader.

USB - Line Module (channels 7 – 8)

All controls on the USB-Line input channel are described below.



- **1** START lamp, it lights when the channel fader is active
- **2** knob jog ; directly it select the Gain input level the range is $-12 \div +12$ dB;

in sequence, the following commands:

1th push-buttom Balance adjust (-12 \div +12 dB)

2th push-buttom Treble band adjust (-14 \div +14 dB)

3th push-buttom Middle band adjust (-14 \div +14 dB)

4th push-buttom Bass band adjust (-14 \div +14 dB)

5th push-buttom Private Tel active (OFF/ON)

6th push-buttom TB Studio to C.Room active (OFF/ON)

7th push-buttom PGM bus selection (Speech/Music)

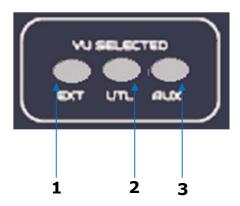
8th push-buttom Control Room Mute active (OFF/ON)

9th push-buttom Mute C.Studio active (OFF/ON)

10th push-buttom Tally active (OFF/ON)

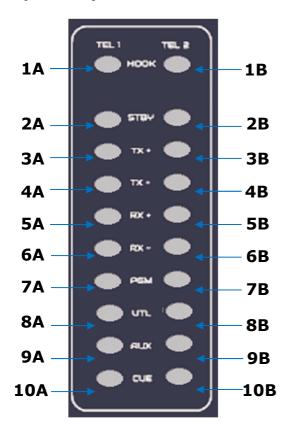
- 11th push-buttom TB Regia to C. Studio active (OFF/ON)
- **3** USB to activate the digital usb source (only with the channel in STOP)
- **4** LINE to activate the line source (only with the channel in STOP)
- **5** PGM Button for routing the channel to the PGM bus.
- **6** UTL Button for routing the channel to the UTL bus.
- **7** AUX Button for routing the channel to the AUX bus.
- 8 Button enabling the preview CUE.
- **9** Fader.

Monitoring section



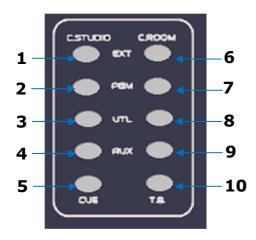
- **1** Button for selecting the EXT input on Switched digital VUMeters.
- **2** Button for selecting the Master UTL output on Switched digital VU-Meters.
- **3** Button for selecting the Master AUX output on Switched digital VU-Meters.

Telephone hybrids section



- **1A** HOOK button for telephone line 1 hook-up.
- **1B** HOOK button for telephone line 2 hook-up.
- **2A** Button for Stanby state for telephone line 1.
- **2B** Button for Stanby state for telephone line 2.
- **3A** Button for TX+ adjust for telephone line 1.
- **3B** Button for TX+ adjust for telephone line 2.
- **4A** Button for TX- adjust for telephone line 1.
- 4B Button for TX- adjust for telephone line 2.
- **5A** Button for RX+ adjust for telephone line 1.
- **5B** Button for RX+ adjust for telephone line 2.
- **6A** Button for RX- adjust for telephone line 1.
- **6B** Button for RX- adjust for telephone line 2.
- **7A** Button for assigning the tel1 to the PGM bus.
- **7B** Button for assigning the tel2 to the PGM bus.
- **8A** Button for assigning the tel1 to the UTL bus.
- **8B** Button for assigning the tel2 to the UTL bus.
- **9A** Button for assigning the tel2 to the AUX bus.
- **9B** Button for assigning the tel2 to the AUX bus.
- **10A** -Button for assigning the tel2 to the CUE bus.
- **10B** -Button for assigning the tel2 to the CUE bus.

Room & Studio section



Control Studio selection

- **1** Button for selecting the EXT input for routing it to the Control Studio output.
- **2** Button for selecting the master PGM output for routing it to the Control Studio output.
- **3** Button for selecting the master UTL output for routing it to the Control Studio output.
- **4** Button for selecting the master AUX output for routing it to the Control Studio output.
- **5** Button for selecting the CUE bus for routing it to the Control Studio output.

Control Room selection

- **6** Button for selecting the EXT input for routing it to the Control Room outputs.
- **7** Button for selecting the master PGM output for routing it to the Control Room outputs.
- **8** Button for selecting the master UTL output for routing it to the Control Room outputs.
- **9** Button for selecting the master AUX output for routing it to the Control Room outputs.

Talk Back

10 - Button to active the Talkback function to the Control Studio outputs.

Talk back Regia to Studio:

When the TB (talk back) button is pressed, the signal of the enabled microphone is sent to the Control Studio output.

- Channel with function talkback to studio (TBST: ON)
- Channel in STOP

What happens:

- the Talk back button of the remote fader lights up
- the previous selection of the Control Studio flashes
- the audio signal present in the Control studio is replaced by the channel selected in TB

Talk back Studio to Regia:

(need the Remote Fader)

- Channel connected to the Remote Fader unit with talkback function activated (STCR: ON)
- Channel in STOP

What happens when the remote TB (talk back) button is pressed:

- the Talk back button of ACUO flashes
- the previous selection of the Control Room flashes
- the audio signal present in the Control Room is replaced by the channel connected to the Remote Fader unit
- the signal of the enabled microphone is sent to the Control Room output.

Master setup

Master knob jog ; directly it select the Gain headphone level, the range is $-\infty \div +8$ dB; in sequence, the following commands:

in sequence, the following commands.

1th push-buttom Control Room level (-∞ ÷ +8 dB)

2th push-buttom Control Studio level ($-\infty \div +8 \text{ dB}$)

3th push-buttom PGM output level (-12 \div +12 dB)

4th push-buttom External input level (-12 \div +12 dB)

5th push-buttom CUE interlock (OFF/ON)

6th push-buttom PGM Digital sample rate (32, 44.1, 48, 96 KHz)

7th push-buttom UTL Digital sample rate (32, 44.1, 48, 96 KHz)

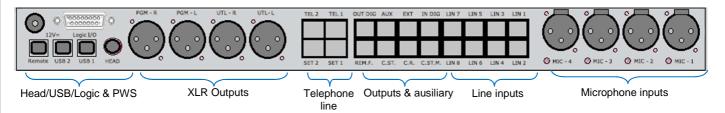
8th channel selection to associate the command I / O Start/Stop A (GPIO 1)

9th channel selection to associate the command I / O Start/Stop B (GPIO 2)

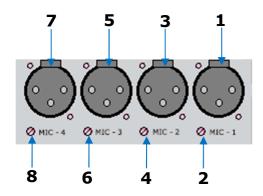
10th channel selection to associate the command Out Start/Stop C

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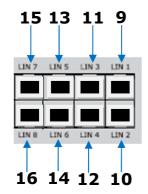
Rear panel - connections



Microphone inputs connection

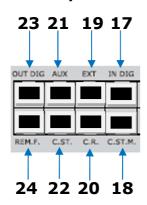


Line inputs connection



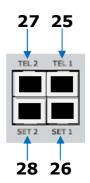
- 1 Microphone 1 input XLR F connector.
- **2** Trimmer adjusting the MIC 1 input level from $0 \div to +30$ dB for very low volume microphones.
- **3** Microphone 2 input XLR F connector.
- **4** Trimmer adjusting the MIC 2 input level from $0 \div to +30$ dB for very low volume microphones.
- **5** Microphone 3 input XLR F connector.
- **6** Trimmer adjusting the MIC 3 input level from $0 \div to +30$ dB for very low volume microphones.
- **7** Microphone 4 input XLR F connector.
- $\boldsymbol{8}$ Trimmer adjusting the MIC 4 input level from 0 \div to +30 dB for very low volume microphones
- **9** Line 1 input RJ45 connector.
- **10** Line 2 input RJ45 connector.
- 11 Line 3 input RJ45 connector.
- 12 Line 4 input RJ45 connector.
- **13** Line 5 input RJ45 connector.
- **14** Line 6 input RJ45 connector.
- **15** Line 7 input RJ45 connector.
- **16** Line 8 input RJ45 connector.

Outputs & Ausiliary connection



- 17 Dig1 & Dig2 input RG45 connector.
- **18** Control Studio Mutable output RJ45 connector
- 19 External input RG45 connector.
- **20** Control Room output RJ45 connector.
- 21 AUX output RJ45 connector
- **22** Control Studio output RJ45 connector.
- 23 PGM Dig & UTLDig input RG45 connector.
- 24 Remote Fader RG45 connector.

Telephone connection



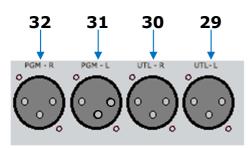
25 - Connector RJ45 for telephone line 1.

- Connector RJ45 for telephone service 1.

27 - Connector RJ45 for telephone line 2.

– Connector RJ45 for telephone service 2.

Outputs XLR connection



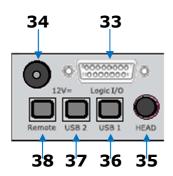
- UTL left channel XLR connector.

- UTL right channel XLR connector.

- PGM left channel XLR connector.

- PGM right channel XLR connector.

Head/USB/Logic & PWS connections



– Logic I/O DB15 connector.

– PWS connector.

– Headphone jack 6,3 mm connector.

– USB 1 connector.

– USB 2 connector.

– USB serial connection.

Line in /AUX/C.Room/C.Studio/Ext RJ45 pin out



1e - left channel +

2e - left channel -

3e - right channel +

4e - GND

5e - N.C.

6e - right channel -

7e - N.C.

8e - N.C

Digital Outputs RJ45 pin out



10 - UTL dig +

2o - UTL dig -

3o - PGM dig +

40 - GND

50 - N.C.

6o - PGM dig +

70 - N.C.

80 - N.C.

Remote fader RJ45 pin out



1p - +5v

2p - IN

3p - Start/Stop L

4p - Start/Stop S

5p - Talk Back L

6p - Talk Back S

7p - GND

8p - GND

Tel line/ tel set RJ45 pin out



1t - N.C.

2t - N.C.

3t - N.C.

4t – tel set

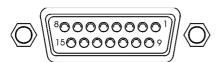
5t - tel line

6t – N.C.

7t - N.C.

8t - N.C.

Logic I/O pin out



1-9 - GPO1 Start/Stop A; Start=close,

Stop=open

2–10 –GPO2 Start/Stop B; Start=close,

Stop=open

3-11 - GPO Tally; (Start)+(Tally ON)

4–12 – GPO3 ; (Start) with selected channel

5-13 - GPI1 Start/Stop IN A; Toggle

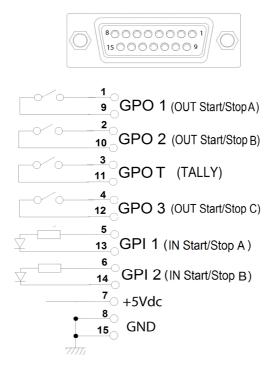
6-14 - GPI2 Start/Stop IN B; Toggle

7 +5V

8 GND

15 GND

Logic GPI/O port



- **GPO 1 Out (Start / Stop A)** through the encoder master to the voice GPIO1 (Start / Stop A) select the channel assignment, so when the channel will in Start, the contact between 1 and 9 will close, with the channel in Stop the contact is open .
- **GPO 2 Out (Start / Stop B)** through the Master encoder select GPIO2 (Start / Stop B) and select the channel assignment, so when the channel will put in Start, the contact between 2 and 10 will close , with the channel put in Stop the contact is open.
- GPO Tally: Endcoder in each channel, through the Encoder, to the item TALLY set
 ON, so closes the contact between pins 3 and 11 will close when the channel is put
 in Start
- **GPO 3**: Endcoder by the Master, under GPO3 select the channel assignment, so, the contact between pins 4 and 12 will close when the channel will put in Start in, the contact will open when you put in Stop the channel.
- **GPI 1 (In Start/Stop A)**: through the Master encoder select **GPIO1 (Start/Stop A)** and select the channel assignment, in which way , from the outside, through a circuit to activate the photo coupler placed between the pins 5 and 13, states Start and Stop will alternate in the channel , the status of which will be remote using the control **Out Start/Stop A**
- GPI 2 (In Start/Stop B) through the Master encoder select GPIO2 (Start/Stop B) and select the channel assignment, in which way, from the outside, through a circuit to activate the photo coupler place between pins 5:13 states will alternate start and stop of the channel, the status of which will be using the remote control Out Start/Stop A

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Telephone hybrids - operations

- Incoming Phone Call: **HOOK** button flashes
- Attach incoming call, press the HOOK key (it remains lit)
- Telephone call on hold:
 - o buttom **HOOK** in ON
 - o **CUE** (ON) of the bar phone selected
 - o **PRIV TEL** (ON) of the microphone channel
 - o Regia Microphone in STOP

Meeting function:

- (STBY OFF) enabled on the same bus hybrids TEL1, TEL2 and possibly a channel with microphone
- to listen to audio on your phone to activate the corresponding bus C. Room (Regia) and / or C.Studio (studio).
- o **PRIV TEL** (ON) of the microphone channel



TECHNICAL SPECIFICATIONS

Microphone Inputs

Input configuration Electronically balanced

Input Impedance 200 Ω

Sensitivity Level Range Adjustable from -70 ÷-40 dBu (Trimmer adj.)

Input Level Range ±12 dBu (Digital adj. step 0,5 dB)

Maximum Input Level - 30 dBu

Phantom Supply 48 Vdc selectable 100 mm Fader VCA Digital controlled

Connector XLR Female

Line Inputs

Input configuration Electronically balanced Input Impedance 10 K Ω (600 Ω wired)

Input Level Range ±12 dBu (Digital adj. step 1,0 dB)

Headroom + 18 dBu

100 mm Fader control VCA Digital controlled

Connector RJ-45

Digital inputs

Input configuration AES/EBU, IEC958,S/PDIF & EIAJ CP340/1201 Sample Rate Automatic 32, 44.1, 48, 96 KHz converter

100 mm Fader control VCA Digital controlled

Connector RJ-45

Telephone Hybrid

Input configuration Opto-coupled Input impedance 600 Ω Bal

Line Compensation Automatically (max 5 Km)

Tx Level ± 12 dBu (Digital adj. step 0,5 dB) Rx Level Range ± 12 dBu (Digital adj. step 0,5 dB)

Frequency response 300 Hz \div 3400 Hz (-2 dB) ; 300 Hz \div 3400 Hz (-1.5 dB)

 $\begin{array}{ll} \mbox{Distortion} & < 1.5 \ \% \\ \mbox{Noise} & -60 \ \mbox{dB}. \end{array}$

Analog Outputs

Output configuration Electronically balanced

Output Impedance 100 Ω
PGM Output Level Range -12 ÷

PGM Output Level Range -12 ÷ +12 dBu
Connector XLR male
UTL/AUX Output Level Range 0 dBu fixed
Connector RJ-45

C Room Mut.Output Lev. - 12÷ +12 dBu

Connector RJ-45

Digital Outputs

Output configuration AES/EBU, IEC958,S/PDIF & EIAJ CP340/1201 Sample Rate Automatic 32, 44.1, 48, 96 KHz converter

Connector RJ-45

Headphones

configuration Type Stereo unbalanced (C.Room no Muted)

Output Impedance 50Ω

Connector JACK 6,3 mm

Logic I/O

Configuration Optic solid state relay

Max Voltage 50 Vdc/ac Max Current 100 mA

Connector DSUB 15 pole female USB Port 2 x USB 2.0 interface

Dimensions $460 \times 360 \times 44 \text{ mm} (L \times D \times H)$

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17