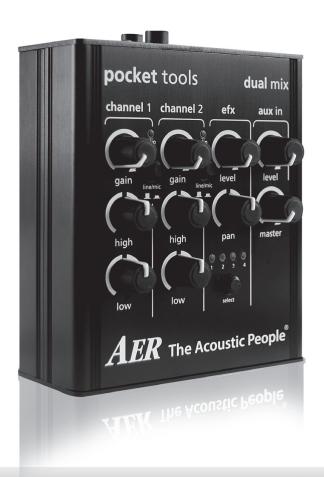
# pocket tools dual mix



**AER** The Acoustic People®

# pocket tools dual mix

## user manual

Contents	Page
1. Introduction	3
2. Safety Instructions	4
3. Controls and Connections	4
4. Operation Summary	5
4.1 Cabling and Starting-up	5
4.2 Level Adjustment	5
5. Functional Characteristics	5
5.1 Inputs Channel 1 and Channel 2	5
5.1.1 Signal sources and preamp selection	5
5.1.2 Dual-band Equalization	6
5.2 efx – Effects Section Muliteffect	6
5.3 aux in	6
5.4 master	6
5.5 DI-out	6
5.6 24V-Phantom-Power	6
6. Technical Specifications: pocket tools dual mix	7
7. Circuit Diagram: pocket tools dual mix	8



#### 1. Introduction

#### Welcome to AER!

Thank you for purchasing an AER **Pocket Tool**. You are now the owner of a professional audio preamp, designed and manufactured to the highest pro audio technical specifications; capable of shaping, maximizing and delivering the tonal character of your instrument. At AER our complete focus, some say obsession, is on the 'true' reproduction of natural acoustic sound. A lifetime spent listening to and working with acoustic instruments helps us to create and refine the very best devices available; to enable you to craft your own unique acoustic identity. Make your instrument the very best it can be ...

Please take a moment to read this brief manual. We want you to understand how our product works and what it can do for you. We want you to gain benefit from its many features but most of all we want you to ENJOY it!

The dual mix is a high-quality "two-channel" preamplifier for instrument/line or microphone signals. The unit offers simple, efficient features just like a small mixong console:

- two inputs, each for one microphone or instrument and line-level signal with switchable
   24V-phantom-power
- separate active two-band EQ networks for each input
- a 4-preset multi-effects-unit with two reverbs, one echo and one chorus
- a stereo aux-in
- line-out and DI-out
- plus a stereo-headphone-preamplifier

This makes the dual mix especially suited for the following applications:

- as **channel extension** in connection with AER-amplifiers (the line output of the dual mix is connected e.g. with an amp's effects return)
- as **instrument/microphone stage preamp** (the line out or DI-out of the dual mix is connected directly to the mixing-desk/stagebox)
- as headphone rehearsal amplifier in connection with a stereo headphone set

All **pocket tools** need energy for their high-grade circuits and are powered by **24V-power-supplies**. An appropriate supply is included in delivery.

Read on and have fun using your dual mix!

## 2. Safety Instructions

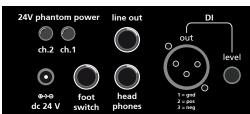
The following guidelines shall help minimize the risk of injury through fire or electric shock.

- 1. Carefully read these safety notes before you use the device!
- 2. Keep these safety notes in a safe place.
- 3. Pay attention to all warnings, instructions and additional texts on the unit.
- 4. Do not install or use your device in close proximity to water or if you are wet yourself.
- 5. Use your device in a safe place where nobody can step on cables or trip over and damage them.
- 6. Always pull the mains plug before cleaning your device. Use only a dry cloth for cleaning. Avoid the use of detergents and do not let any liquids seep into the unit.
- 7. Never install your device close to units with strong electromagnetic fields such as large mains transfor-

- mers, revolving machines, neon illumination etc. Do not lay signal cables parallel to power current cables.
- 8. There are no user-serviceable components inside the unit. To avoid the risk of an electric shock, the unit must not be opened. All maintenance, adjustment and repair works should be carried out by qualified staff only. Any unauthorized tampering will void the 2-year warranty.
- 9. In keeping with the EMV regulations screened cables with correctly fitted connectors must be used for all signal connections.
- 10. Always use an earthed power supply with the correct mains voltage. If you are in doubt about the power outlets ground, have it checked by a qualified technician.
- 11. Cable up your device only when it is powered off.

# 3. Controls and Connections







Top side	
gain	input level control
clip	overload indicator
line/mic	signal source selector switch (combo socket):
line	(only via 6.3 mm jackplug) for instruments
	(pickup) and other line level sources
mic	(only via XLR-connector) for microphones
high	treble control
low	bass control
efx	4-preset multi-effects unit
level	level control internal effect
pan	effect signal distribution control
select	effect select button with led-indicators
aux in	stereo-input for additional signal sources
level	stereo input level control
master	master level control
D	
Rear side	
dc 24 V	power supply connector socket (24 Volt DC)
dc 24 V	
dc 24 V 24V phantom p	power
dc 24 V 24V phantom p ch. 1	power  24V phantom power switch channel 1
dc 24 V 24V phantom p ch. 1 ch. 2	power  24V phantom power switch channel 1  24V phantom power switch channel 2
dc 24 V 24V phantom p ch. 1 ch. 2 line out	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket
dc 24 V 24V phantom p ch. 1 ch. 2 line out headphones	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket stereo-headphones socket
dc 24 V 24V phantom p ch. 1 ch. 2 line out headphones DI out	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket stereo-headphones socket signal output, symmetrical, XLR-socket
dc 24 V 24V phantom p ch. 1 ch. 2 line out headphones DI out DI level	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket stereo-headphones socket signal output, symmetrical, XLR-socket
dc 24 V 24V phantom p ch. 1 ch. 2 line out headphones DI out DI level Front side	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket stereo-headphones socket signal output, symmetrical, XLR-socket DI out signal level control
dc 24 V 24V phantom p ch. 1 ch. 2 line out headphones DI out DI level Front side	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket stereo-headphones socket signal output, symmetrical, XLR-socket DI out signal level control signal input – combo socket for 6.3 mm mono
dc 24 V 24V phantom p ch. 1 ch. 2 line out headphones DI out DI level Front side channel 1	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket stereo-headphones socket signal output, symmetrical, XLR-socket DI out signal level control  signal input – combo socket for 6.3 mm mono jackplug and XLR connector
dc 24 V 24V phantom p ch. 1 ch. 2 line out headphones DI out DI level Front side channel 1	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket stereo-headphones socket signal output, symmetrical, XLR-socket DI out signal level control  signal input – combo socket for 6.3 mm mono jackplug and XLR connector signal input – combo socket for 6.3 mm mono jackplug and XLR connector stereo input for additional signal sources
dc 24 V 24V phantom p ch. 1 ch. 2 line out headphones DI out DI level Front side channel 1 channel 2	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket stereo-headphones socket signal output, symmetrical, XLR-socket DI out signal level control  signal input – combo socket for 6.3 mm mono jackplug and XLR connector signal input – combo socket for 6.3 mm mono jackplug and XLR connector stereo input for additional signal sources (e.g. CD-player), RCA-sockets
dc 24 V 24V phantom p ch. 1 ch. 2 line out headphones DI out DI level Front side channel 1 channel 2	24V phantom power switch channel 1 24V phantom power switch channel 2 signal output, 6.3 mm mono jack socket stereo-headphones socket signal output, symmetrical, XLR-socket DI out signal level control  signal input – combo socket for 6.3 mm mono jackplug and XLR connector signal input – combo socket for 6.3 mm mono jackplug and XLR connector stereo input for additional signal sources

on/off-status indicator

power

#### 4. Operation Summary

#### 4.1 Cabling and Starting-up

Before connecting to the mains, please ensure that your local mains voltage (e.g. 230V in mainland Europe, 120V in the USA) is suitable for the voltage input range of the included power supply. The relevant specs and safety symbols are printed on the rear side of the unit.

#### Note: 24V power supply

The included 24VDC power supply is a certified widerange model, capable of handling input voltages between 100V and 240V. A substantial amount of research, effort and testing went into the selection of this power supply. It is critical to the function of the preamp – please use no other power supply!

Also please bear in mind that any device powered from a power supply (as opposed to battery operation), may suffer interference carried by the electricity supply itself. To avoid this, always try and keep signal cables as short as possible.

We have opted for a "non-earthed power supply" (class 2 with protective insulation) in order to avoid unwanted earth or ground loops that occur when using several earthed mains powered devices in a signal chain.

Please ensure that **gain**-, **level**- and **volume**-controls are turned all the way to the left and all other controls are in their middle position (centre detent). The pushbuttons should be off, i.e. not pushed.

Now select the appropriate preamp function (line/mic) and make all required cable connections:

- 1) Instruments (1/4" jack or XLR) or Microphones (only XLR) to input channel 1 and/or channel 2 of the dual mix
- 2) **line-out** of the **dual mix** e.g. to effects **return** of the effect loop of an AER amplifier or to the input of a downstream device

You may also want to connect:

- 1) the **DI-out** of the **dual mix** to a mixing-desk input or a stagebox (use balanced cables for this)
- 2) a CD/MP3 player to aux-in or
- 3) a stereo headphone set to the headphones output

#### 4.2 Level adjustment

#### Note: Level adjustment

By setting the level correctly we mean that the signal level in one or several devices in a signal chain is neither too high nor too low. This applies equally to all components of a unit (here **e.g. high** and **low**).

Consequently, care must be taken that no part of the circuit is overloaded, or that distortion is unintentionally added to the signal. We have carefully designed the circuit to achieve this objective whilst also providing potentiometers (gain, level, volume) for "manual" intervention.

The dual mix is equipped with two high-quality preamps which can handle line and microphone signals and have therefore a wide input sensitivity range.

Having selected the appropriate preamp function (mic or line) and with the gain controls set fully counter clockwise (minimum gain), turn up the gain whilst playing your instrument until the red clip indicator LED lights up occasionally with heavy strumming. Now turn down the gain control (or the volume control on the source) by a tiny amount to allow additional headroom for undistorted reproduction.

During play, the **clip** control LED should only flicker intermittently at most. With **line** (signal sources with a sufficient input signal level) the **gain** controls will probably sit between minimum gain and the 10 o'clock position. It's likely that in the **mic** position the setting will be significantly higher. Please keep in mind that the filter stages are partly active and thus have an influence on the overall adjustment of the dual mix.

#### 5. Functional Characteristics

#### 5.1 Inputs Channel 1 and Channel 2

#### 5.1.1 Signal Sources and Preamp Selection

Various signal sources may be connected to the XLR/ line combo sockets (channel 1 und 2). To Line (6.3 mm jack socket): all types of active and passive pickups for acoustic instruments, electromagnetic pickups, keyboards, samplers. To XLR socket: all dynamic and condenser (vocal or instrument) microphones. The corresponding preamp is selected by the line/mic-switch.

#### 5.1.2 Dual-band Equalization

The dual-band equalizer of your dual mix provides you with an active and high quality sound interaction tool that supports the natural tone of instruments and voice whilst simultaneously offering you the possibility of a controlled interaction.

With all controls in mid position the filters are set to produce a very pleasing and natural sound impression. The **high-**(treble) and **low-**(bass)controls allow you to modulate the sound as desired.

#### 5.2 efx - Effects Section Multieffect

The dual mix has an onboard digital effects unit with four presets: 1 = short reverb, 2 = long reverb, 3 = delay 320 ms and 4 = deep chorus, which are called up with the select effects selector switch. Each pressing of this switch will shift the preset selection by one setting.

With the pan control the effect is assigned to the channels. In its centre position both channels will receive the same amount of wet signal, turned fully counterclockwise only channel 1, turned fully clockwise only channel 2 will get a wet signal. The level control adjusts the effects loudness in the master signal.

#### 5.3 aux-in

The aux-in is a stereo signal input (RCA/3.5 mm stereo jack, frontside) e.g. for a CD- oder MP3-player or a drum computer. Using the level control, the signal which is present here is blended with the master signal.

#### 5.4 master

The **volume** control adjusts the loudness of **line-out** and **headphones** together.

#### 5.5 DI-out

The **DI-out** yields a balanced output signal whose level can be adjusted by the **level**-control.

#### 5.6 24V Phantom power

The **24V** phantom power switches are located on the rear side of the housing. These provide phantom power to the XLR inputs for devices that require it, e.g. condenser mics.

The 24V phantom power supply of your AER device complies with the DIN EN 61398 regulations in view of a 24V phantom power supply.

Please note the adjacent text.

#### **Supplement to article 5.6**

Information about the use of 48V or 24V phantom power (phantom power = remote supply, here: powering an audio device via the connected audio line)

Turn on the **phantom power** only if the unit connected to the XLR socket is designed to handle it! In general, suitable units are e.g. condenser microphones, active DI boxes and other special audio devices, whose power supply is drawn from the phantom power. Such devices are also labelled accordingly; please heed the permissible power consumption (max.10mA). High-quality dynamic microphones with a balanced signal need no phantom power, but can handle it anyway. Other devices which have not been designed explicitly for phantom power operation can suffer from considerable malfunctions, and damage may result as well.

Examples of devices that may be damaged by incorrect application of phantom power include:

Low-cost dynamic microphones with a mono jack plug (unbalanced signal) that were fitted afterwards with an XLR connector. Audio devices with a balanced XLR output (e.g. DI boxes, effects devices, instrument preamps with a DI output etc.) which are not protected against phantom power applied to their XLR output. (The DI connectors on AER products are protected against applied phantom power.)

Other audio devices (such as preamps, effects pedals etc.) whose unbalanced line output was replaced by an XLR socket.

If in doubt please consult the manufacturer of the device you are using.

Experiment and enjoy your new route to alternate soundscapes!

Any questions or suggestions? Please do contact us at: tachauch@aer-amps.com

Thanks for reading!



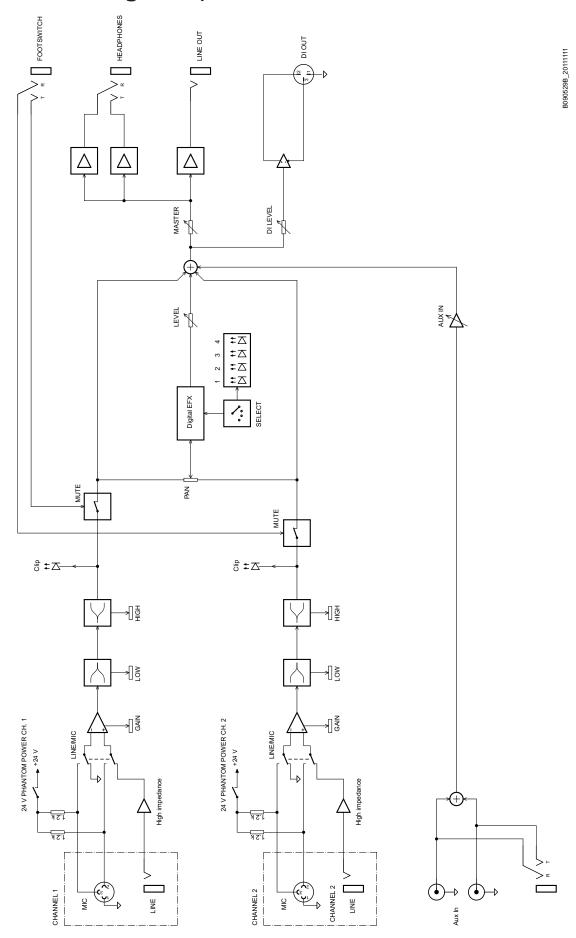
# 6. Technical Data: pocket tools dual mix

Channels 1 Switchable microphone or line input and 2 Combo sockets, Kik and War jack (a.35 mm) line mode (ack input) Unbalanced high impedance input for instrument pick-ups and line-level sources Gain adjustment range: +3 ±20 dB Min. input voltage: 30 (+10 dBv) Max. input voltage: 30 (+10 dBv) Input impedance: 2.2 MΩ   60 pF Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 98 dB Frequency response: 20 Hz20 kHz / ±1 dB THD × N(1 kHz) × 0.3% mic mode CVLR input) Balance diric prohone input 1 = ground, 2 = positive (√) Computed Min. gain: 108 dB Max. gain: 98 dB Max. gain: 93 dB Frequency response: 20 Hz20 kHz / ±1 dB THD × N(1 kHz) × 0.3% Max. input voltage: 31 (√10 dBV) Input impedance: 21 kΩ Unbalanced: 1.1 kΩ Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 39 dB Frequency response: 20 Hz20 kHz / ±1 dB THD × N(1 kHz) × 0.1% Phantom power 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).  Clip indicator Red LED Max. input voltage: 2 x 10 V (-20 dBV) Input impedance: 10 kΩ Min. input voltage: 2 x 10 V (-20 dBV) Input impedance: 2 kΩ Min. input voltage: 2 x 10 V (-20 dBV) Input impedance: 2 kΩ Min. input voltage: 2 x 10 V (-20 dBV) Input impedance: 2 kΩ Min. input voltage: 2 x 10 V (-20 dBV) Min. input voltage: 2 x 10 V (-20 dBV) Input impedance: 2 kΩ Min. input voltage: 2 x 10 V (-20 dBV) Input impedance: 2 kΩ Min. input voltage: 2 x 10 V (-20 dBV) Input impedance: 2 kΩ Min. Input voltage: 2 x 10 V (-20 dBV) Input impedance: 2 kΩ Min. Input voltage: 2 x 10 V (-20 dBV) Input impedance: 2 kΩ Min. Input voltage: 2 x 10 V (-20 dBV) Input impedance: 2 kΩ Min. Input voltage: 3 Min. Input voltage: 9 V (-14 dBV) Min. Input vo	Inputs				
Combo socket, XIR and V* jack (6.35 mm)   Ine mode (gick input)   Unbalanced high impedance input for instrument pick-ups and line-level sources Gain adjustment range: +3+20 dB   Min. input voltage: 30 mV (-20 dBV)   Max. input voltage: 30 v (+10 dBV)   Input impedance: 2.2 MΩ   160 pF   Signal-to-noise ratio, A-weighted   Min. gain: 108 dB   Max. gain: 98 dB   Frequency response: 20 Hz20 kHz /±1 dB   THD + N (1 kHz): <0.3%   mit mode QXIR input)   Balanced microphone input   1 = ground, 2 = positive (+), 3 = negative (-)   Gain adjustment range: +4+40 dB   Min. input voltage: 10 mV (-40 dBV)   Max. input voltage: 3 V (+10 dBV)   Input impedance: 2.7 kW   Unbalanced:1.1 kW   Unbalanced:1.1 kW   Signal-to-noise ratio, A-weighted   Min. gain: 108 dB   Max. gain: 98 dB   Frequency response: 20 Hz20 kHz /±1 dB   THO + N (1 kHz): <0.3%   Aveighted: 3.1 kW (-110 dBV)   Tome control   1 = ground, 2 = positive (+), 3 = negative (-)   Gain adjustment range: +4+40 dB   Min. japit voltage: 3 V (+10 dBV)   Max. input voltage: 2 X (+10 dBV)   Max. input voltage: 2 X (+10 dBV)   Max. gain: 108 dB   Max. g		Switchable microphone or line input	DI-out		
line mode (jack input)   Level control				1 = gro	und, $2 = positive (+)$ , $3 = negative (-)$
Unbalanced high impedance input for instrument pick-ups and line-level sources Gain adjustment range: +3+20 dB Min. input voltage: 100 mV (~20 dBV) Max. input voltage: 22 MΩ [160 pF Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 98 dB Frequency response: 20 Hz20 kHz / ± 1dB THD + N (1 kHz): <0.33% mit mode (XR Input) Balanced microphone input 1 1 = ground, 2 = positive (+), 3 = negative (-) Gain adjustment range: +4+40 dB Min. input voltage: 10 mV (~40 dBV) Max. input voltage: 10 mV (~40 dBV) Input impedance: 21 kΩ (10 dBV) Max. input voltage: 30 mV (~10 dBV) Max. input voltage: 30 mV (~10 dBV) Max. input voltage: 20 mV (~10 dBV) Max. input voltage: 10 v (~10 dBV) Max. input voltage: 20 mV (~10 dBV) Max. input voltage: 10 v (~10 dBV) Max. input voltage: 20 mV (~10 dBV) Max. input voltage: 10 mV (~10 dBV) Max. input voltage: 20 mV (~10 dBV) Max. input voltage: 10 mV (~10 dBV) Max. input voltage: 20 mV (~10 dBV) Max. inp					
instrument pick-ups and line-level sources Gain adjustment range: ±320 dB Min. input voltage: 30 (v+10 dBV) Max. input voltage: 37 (v+10 dBV) Input impedance: 2.2 MΩ   60 pF Signal-to-noise ratio, A-weighted Min. again: 108 dB Max. again: 98 dB Frequency response: 20 Hz20 kHz /±1 dB THD + N (1 kHz) ± 0.33% mic mode (XLR input) Balanced microphone input 1 = ground, 2 = positive (4), 3 = negative (-) Gain adjustment range: ±440 dB Min. input voltage: 10 mV (-40 dBV) Max. input voltage: 21 kΩ Unbalanced:11 kΩ Unbalanced:11 kΩ Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 39 dB Frequency response: 20 Hz20 kHz /±1 dB THD + N (1 kHz); 0.11% Phanton power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed). Clip indicator Red LED Headroom: 8 dB  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (seft / right) and 3.5 mm stereo jack, socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 10 kG dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 10 kG dBV) Max. input vol		• •			
Min. input voltage: 3 V (+10 dBV) Input impedance: 2.2 MG   Bo pr Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 98 dB Frequency response: 20 Hz20 kHz / ±1 dB ThD + N (1 kHz): <0.3% mic mode QKIR input) Balanced microphone input 1 = ground, 2 = positive (+), 3 = negative (-) Gain adjustment range: 4440 dBV) Max. input voltage: 10 mV (+0 dBV) Input impedance: 2.1 KC] Unbalanced: 1.1 kC] Signal-to-noise ratio, A-weighted Min. input voltage: 10 mV (+0 dBV) Input impedance: 2.1 kC] Unbalanced: 1.1 kC] Signal-to-noise ratio, A-weighted Min. input voltage: 10 mV (+0 dBV) Input impedance: 2.1 kC] Unbalanced: 1.1 kC] Signal-to-noise ratio, A-weighted Min. gain: 198 dB Frequency response: 20 Hz 20 kHz / ±1 dB ThD + N (1 kHz): <0.1% Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, short circuit protected Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed). Clip indicator Red LED Headroom: 8 dB  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kC) Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Notice the master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)					
Max. input voltage: 3 V (+10 dBV) Input impedance: 2.2 Mr    60 pf Signal-to-noise ratio, A-weighted Min. spain: 108 dB Max. gain: 98 dB Frequency response: 20 Hz20 kHz / ±1 dB THD + N (1 HzHz): < 0.3 %  Max. input voltage: 3 V (+10 dBV) Balanced microphone input 1 = ground, 2 = positive (+), 3 = negative (-) Gain adjustment range: 4-440 dB Min. input voltage: 3 V (+10 dBV) Max. input voltage: 3 V (+10 dBV) Input impedance: 2.1 kΩ Unbalanced: 1.1 kΩ Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 93 dB Frequency response: 20 Hz20 kHz / ±1 dB THD + N (1 KHz): < 0.1% Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected Warning: External equipment may be damaged by inappropriate use of phantom powers witch off (not pushed).  Clip indicator Red LED Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ Min. input voltage: 2 x 250 mV (-14 dBV) Max. output voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ Residual noise (both channels in line A-weighted: 3.3 μV (-110 dBV)  Min. load impedance (2 kΩ Residual noise (both channels in line in A-weighted: 3.3 μV (-110 dBV)  Min. load impedance: 2 kΩ Residual noise (both channels in line in A-weighted: 3.3 μV (-110 dBV)  Min. load impedance: 2 kΩ Residual noise (both channels in line in A-weighted: 3.3 μV (-110 dBV)  Min. load impedance: 2 kΩ Residual noise (both channels in line in A-weighted: 3.3 μV (-110 dBV)  Min. load impedance: 2 kΩ Residual noise (both channels in line in A-weighted: 3.3 μV (-110 dBV)  Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)		Gain adjustment range: +3+20 dB			
Input impedance: 2.2 MΩ    60 pF		Min. input voltage: 100 mV (–20 dBV)			
Signal-to-noise ratio, A-weighted Min., gain: 108 dB Max. gain: 98 dB Frequency response: 20 Hz20 kHz / ±1 dB THD + N (1 kHz): < 0.3% mic mode (XRR input) Balanced microphone input 1 = ground, 2 = positive (+), 3 = negative (-) Gain adjustment range: 4440 dB Min. input voltage: 3 V (+10 dBV) Max. input voltage: 4 Max. 20 kHz / ±1 dB THD + N (1 kHz): < 0.1% Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected Marining: 4 Max. 4		Max. input voltage: 3 V (+10 dBV)			
A-weighted: 3.3 μV (-110 dBV)  Min. gain: 108 dB  Max. gain: 98 dB  Frequency response: 20 Hz20 kHz/±1 dB  THD+N (1 kHz): <0.3% mic mode (Zlk input)  Balanced microphone input 1 = ground, 2 = positive (+), 3 = negative (-) Gain adjustment range: 4440 dB  Min. input voltage: 10 M/ (-40 dBV) Imput impedance: 2.1 kΩ Unbalanced: 1.1 kΩ Signal-to-noise ratio, A-weighted Min. gain: 108 dB  Max. gain: 98 dB  Frequency response: 20 Hz20 kHz/±1 dB THD+N (1 kHz): <0.1% Phantom power 24 V, R = 1.2 kΩ per terminal, switchable for each channel, short circuit protected  Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).  Clip indicator Red LED Headroom: 8 dB  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack, Sockets. Level control Min. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ Output impedance: 10 kΩ Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  A-weighted: 3.3 μV (-10 dBV)  A-weighted: 3.					
Tone controls		Signal-to-noise ratio, A-weighted			
Frequency response: 20 Hz20 kHz / ±1 dB   ThD + N (1 kHz) ≈ 0.3%   mic mode (XLR input)		•	T		ignted. 3.3 μν (–110 dbv)
THD + N \( 1 kHz) \( \cdot 2 \) ing Mic mode (XLR input)  Balanced microphone input  1 = ground, 2 = positive (+), 3 = negative (-) Gain adjustment range: +4+40 dB Min. input voltage: 3 V (+10 dBV) Max. input voltage: 3 V (+10 dBV) Input impedance: 2.1 kΩ Unbalanced: (1.1 kΩ Signal-to-noise ratio, A-weighted Min. gain: 180 dB Max. gain: 93 dB Frequency response: 20 Hz20 kHz /±1 dB THD + N (1 kHz): <0.1% Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected  Warning: External equipment may be damaged by inappropriate use of phantom power switch off (not pushed).  Clip indicator Red LED Headroom: 8 dB  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Clinch (RCA) sockets (left / right) and 3.5 mm stereo jack, ½" (6.35 mm) Auxiliary stereo input (mono-mixed), e.g. for CD player Clinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ  Output impedance: 4 Ω Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (-120 dBV) Cutput power, 1 kHz, THD = 1%: Typ. 2 x 40 mW/ 32 Ω Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV) A-w					
mic mode (XLR input)           Balanced microphone input         1 = ground, 2 = positive (+), 3 = negative (-)           Gain adjustment range: +4+40 dB         Min. input voltage: 10 mV (-40 dBV)           Min. input voltage: 3 V (+10 dBV)         Input impedance: 2.1 kΩ           Unbalanced: 1.1 kΩ         Signal-to-noise ratio, A-weighted           Min. gain: 108 dB         Max. gain: 93 dB           Frequency response: 20 Hz20 kHz / ±1 dB         THD + N (1 kHz): <0.1%           Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, short circuit protected         Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).         Supply 24 V= 0.5 A voltage: Use only supplied mains adapter.           Welght         Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack, secket.         Metal Aluminium housing           Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 4 D (M) Max. input voltage: 2 x 10 V (+20 dBV) Max. output voltage: 2 x 10 V (49 dBV) Output impedance: 2 kΩ         Definitions and conditions           Iine out         Unbalanced line output after master Mono jack, ½" (6.35 mm)         Definitions and conditions           Input and output voltages are RMS values for a sine and 1 kHz unless stated otherwise.         Tone controls ettings).           Outputs         Residual noise (ma					
Balanced microphone input  1 = ground, 2 = positive (+), 3 = negative (-) Gain adjustment range: +4+40 dBV) Max. input voltage: 3 V (+10 dBV) Max. input voltage: 3 V (+10 dBV) Max. input voltage: 3 V (+10 dBV) Input impedance: 2.1 kΩ Unbalanced: 1.1 kΩ Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 93 dB Frequency response: 20 Hz20 kHz /±1 dB THD + N (1 kHz): < 0.1% Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed). Clip indicator Red LED Headroom: 8 dB  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Clinch (RCA) sockets (left / right) and 3.5 mm stereo jack sockets. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 2 kΩ Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (-120 dBV) Typ. 2 x 40 mW/32 Ω Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV) Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV) A-weighted: 3.3 μV (-110 dBV) A-weighted: 3.3 μV (-110 dBV)				high	$\pm 13$ dB at 10 kHz (shelf type)
1 = ground, 2 = positive (+), 3 = negative (-) Gain adjustment range: +4,40 dB V) Min. input voltage: 10 mV (-40 dBV) Max. input voltage: 3 V (+10 dBV) Input impedance: 2.1 kΩ Unbalanced:1.1 kΩ Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 108 dB Frequency response: 20 Hz20 kHz / ±1 dB THD + N (1 kHz): <0.1 % Phentom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, short circuit protected Warning: External equipment may be damaged by inappropriate use of phantom power in case of doubt keep the 24 V phantom power switch off (not pushed).  Clip indicator Red LED Headroom: 8 dB  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-19 dBV) Output impedance: 4 ?Ω Min. load impedance: 2 kΩ Min. load impedance: 2 x CΩ Min. load impedance: 3 x W (-19 dBV) Output ungedance: 4 ?Ω Min. load impedance: 4					
Gain adjustment range: +4+40 dB   Min. input voltage: 10 mV (-40 dBV)   Max. input voltage: 3 V (+10 dBV)   Max. gain: 93 dB   Frequency response: 20 Hz20 kHz/±1 dB   THD + N (1 kHz): < 0.1%   Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, short circuit protected   Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).    Clip indicator Red LED   Headroom: 8 dB   Max. input voltage: 2 x 250 mV (-14 dBV)   Max. input voltage: 2 x 250 mV (-14 dBV)   Max. input voltage: 2 x 250 mV (-14 dBV)   Max. input voltage: 2 x 10 V (+20 dBV)   Input impedance: 10 kΩ   Min. input voltage: 2 x 10 V (+20 dBV)   Input impedance: 2 kΩ   Min. load impe					
Min. input voltage: 10 mV (–40 dBV) Max. input voltage: 2 V (+10 dBV) Input impedance: 2.1 kΩ Unbalanced::1.1 kΩ Signal-to-noise ratio, 6-weighted Min. gain: 108 dB Max. gain: 93 dB Frequency response: 20 Hz20 kHz / ±1 dB THD + N (1 kHz): < 0.1% Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, short circuit protected Warning: External equipment may be damaged by inappropriate use of phantom power switch off (not pushed).  Clip indicator Red LED Headroom: 8 dB  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (–14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted:: 1 μV (–120 dBV) Headphones Headphones Nominal output voltage: 2 x 40 mV /420 dBV) Headphones Headphones Headphones Level control Continue to the finance of the control of			effect		
Max. input voltage: 3 V (+10 dBV)   Input impedance: 2.1 kΩ   Unbalanced: 1.1 kΩ   Signal-to-noise ratio, A-weighted   Min. gain: 108 dB   Max. gain: 93 dB   Frequency response: 20 Hz20 kHz /±1 dB   THD + N (1 kHz): < 0.1%   Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected   Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).   Clip indicator   Red LED   Headroom: 8 dB   Auxiliary stereo input (mono-mixed), e.g. for CD player   Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control   Min. input voltage: 2 x 250 mV (-14 dBV)   Max. input voltage: 2 x 250 mV (-14 dBV)   Max. input voltage: 2 x 250 mV (-14 dBV)   Input impedance: 10 kΩ   Metal   Aluminium   Metal   Metal   Aluminium   Metal   Aluminium   Metal   Aluminium   Metal   Aluminiu					3.
Input impedance: 2.1 kΩ Unbalanced:1.1 kΩ Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 93 dB Frequency response: 20 Hz20 kHz / ±1 dB Frequency response: 20 Hz30 kHz / ±1 dB Frequency response: 20 Hz35 mm) Frequen		• • • • • • • • • • • • • • • • • • • •			
Unbalanced:1.1 kΩ   Signal-to-noise ratio, A-weighted   Min. gain: 108 dB   Max. gain: 93 dB   Frequency response: 20 Hz20 kHz / ±1 dB   THD + N (1 kHz): < 0.1%   Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected   Warning; External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).   Clip indicator   Red LED   Headroom: 8 dB   Aluminium   Mains woltage: 100-240 V-power consumption when used with lousing   Finish   Anodized black   Dimensions   65 mm (2.56°) high   105 mm (4.13") wide   105 mm (4.13")					
Signal-to-noise ratio, A-weighted Min. gain: 108 dB Max. gain: 93 dB Frequency response: 20 Hz20 kHz / ±1 dB ThO + N (1 kHz): < 0.1% Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, short circuit protected Warning; External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).  Clip indicator Red LED Headroom: 8 dB Max. input voltage: 10 kΩ  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ  Outputs  Iine out Unbalanced line output after master Mono jack, ¼" (6.35 mm)  Voltage Tootswitch for muting channel 1 Ring = footswitch for muting channel 1 Sleeve = ground (common) Function: Switch ON = channel muted Sleeve = ground (common) Function: Switch ON = channel muted Sleeve = ground (common) Function: Switch ON = channel muted Sleeve = ground (common) Function: Switch ON = channel muted Sleeve = ground (common) Function: Switch ON = channel muted Sleeve = ground (common) Function: Switch ON = channel muted Sleeve = ground (common) Function: Switch ON = channel muted Sleeve = ground (common) Function: Switch ON = channel muted Sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Switch ON = channel sleeve = ground (common) Function: Swi		• •			
Min. gain: 108 dB   Max. gain: 93 dB   Frequency response: 20 Hz20 kHz / ±1 dB   THD + N (1 kHz): < 0.1%   Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected   Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).   Clip indicator Red LED   Headroom: 8 dB   Maximation of the pushed of the phantom stereo jack socket.   Level control Min. input voltage: 2 x 250 mV (-14 dBV)   Max. input voltage: 2 x 250 mV (-14 dBV)   Max. input voltage: 2 x 250 mV (-14 dBV)   Max. input voltage: 2 x 10 V (+20 dBV)   Input impedance: 10 kΩ   Definitions and conditions   Definitions and conditions      Outputs   Ine out			footswitch		
Max. gain: 93 dB   Frequency response: 20 Hz20 kHz / ±1 dB   ThD + N (1 kHz): < 0.1%   Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected   Warning; External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).   Clip indicator   Red LED   Headroom: 8 dB   Min. input voltage: 100-240 V   Max. 10 W   General   Metal   Aluminium   Mix. max. 10 W   General   Metal   Aluminium   Mousing   Mains voltage: 100-240 V   Max. 10 W   General   Metal   Aluminium   Mousing   Min. input voltage: 100-240 V   Metal   Min. input voltage: 100-240 V   Metal   Mousing   Min. input voltage: 100-240 V   Metal   Mousing   Min. input voltage: 100-240 V   Metal   Mousing   Mousing   Mousing   Metal   Metal   Mousing   Metal   Metal   Mousing   Metal   Metal   Mousing   Me					
Sleeve = ground (common)  THD + N (1 kHz): < 0.1%  Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected  Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).  Clip indicator Red LED  Headroom: 8 dB  aux in  Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control  Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Input impedance: 10 kΩ  Outputs  line out  Unbalanced line output after master Mono jack, ¼" (6.35 mm) Nominal output voltage: 1 V (0 dBV) Max. output voltage: 1 V (0 dBV) Max. output voltage: 1 V (19 dBV) A-weighted: 1 μV (-120 dBV)  headphones  Headphones output  Sleeve = ground (common) Function: Switch ON = channel muted  Power  Supply 24 V=, 0.5 A Wains voltage: 100-240 V- Power consumption when used with in Mix: max. 10 W  General  Metal Aluminium housing Finish Anodized black  Dimensions 65 mm (2.56") high 105 mm (4.13") wide 135 mm (5.31") deep  Weight 480 g (1.06 lbs)  Definitions and conditions  Input and output voltages are RMS values for a sine and 1 kHz unless stated otherwise.  Tone controls in neutral position unless stated other Min. input voltage at line out with gain and master fully clock Max. input voltage at line out, at specified gain settir master fully clockwise, input voltage that dcause distortion more than the rated THD + N (ass suitable control settings).  Signal-to-noise ratio (SNR): Ratio of nominal output to noise voltage at line out, at specified gain settir master fully clockwise, input shorted, 20 Hz20 kf master fully anticlockwise):  A-weighted: 1 μV (-120 dBV)  A veighted: 1 μV		<u> </u>			
Phantom power: 24 V, R = 1.2 kΩ per terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected  Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).  Clip indicator Red LED Headroom: 8 dB  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-20 dBV) Input impedance: 10 kΩ  Output  Iine out Unbalanced line output after master Mono jack, ¼" (6.35 mm) Nominal output voltage: 9 V (+19 dBV) Output impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (-120 dBV)  headphones  Headphones output Stereo jack, ¼" (6.35 mm) Output power, 1 kHz, THD = 1%: Typ. 2 x 40 mW / 32 Ω Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  A-weighted: 3.3 μV (-110 dBV)  Function: Switch ON = channel muted voltage in suit and push supplied mains adapter.  Wains Mains voltage: 10-240 V~ adapter Power consumption when used with limins Mains voltage: 10-240 V~ adapter Power Consumption when used with limins Mains voltage: 10-24 V~ adapter Power Consumption when used with limins Mains voltage: 10-240 V~ adapter Power Consumption when used with limins Mains voltage: 10-240 V~ adapter Power Consumption when used with limins Mains voltage: 10-240 V~ adapter Power Consumption when used with limins Mains voltage: 10-240 V~ adapter Power Consumption when used with limins Mains voltage: 10-240 V~ adapter Power Consumption when used with limins Mains Mains voltage: 10-240 V~ adapter Power Consumption when used with limins Mains Mains voltage: 10-240 V~ adapter Power Consumption vhen used with limins Mains Mains voltage: 10-240 V~ adapter Power Consumption vade coused on supplication visitions Mains Mains voltage: 10-240 V~ adu		Frequency response: 20 Hz20 kHz / ±1 dB			
Fower  terminal, switchable for each channel, total current max. 10 mA per channel, short circuit protected  Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).  Clip indicator Red LED Headroom: 8 dB  aux in  Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket.  Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ  Outputs  Iine out  Unbalanced line output after master Mono jack, ¼" (6.35 mm) Nominal output voltage: 1 V (0 dBV) Max. output impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (-120 dBV)  headphones  Headphones output Stereo jack, ¼" (6.35 mm) Output power, 1 kHz, THD = 1%: Typ. 2 x 40 mW/ 32 Ω Residual noise (master fully anticlockwise): Typ. 2 x 40 mW/ 32 Ω Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  A-weighted: 3.3 μV (-110 dBV)  Power  Supply 24 V=, 0.5 A voltage Use only supplied mains adapter.  Mains Mains woltage: 100-240 V~ adapter Power consumption when used with lowise maker low voltage: 100-240		THD + N (1 kHz): < 0.1%			
total current max. 10 mA per channel, short circuit protected  Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).  Clip indicator Red LED Headroom: 8 dB  aux in Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (+20 dBV) Input impedance: 10 kΩ  Dutputs  Iine out Unbalanced line output after master Mono jack, ¼" (6.35 mm) Nominal output voltage: 1 V (0 dBV) Max. output voltage: 9 V (+19 dBV) Output impedance: 2 kΩ Min. load impedance: 2 kΩ Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (-120 dBV)  headphones Setulated in seture fully anticlockwise): Typ. 2 x 40 mW / 32 Ω Residual noise (master fully anticlockwise): Typ. 2 x 40 mW / 32 Ω Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 1 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)		Phantom power: 24 V, R = 1.2 k $\Omega$ per		Functio	n: Switch ON = channel muted
Short circuit protected   Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).		terminal, switchable for each channel,	Power		
Warning: External equipment may be damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).Clip indicator Red LED Headroom: 8 dBAuxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Input impedance: 10 kΩMains voltage: 100-240 V~ Power consumption when used with Mix: max. 10 WGoutputsIine outAuxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket.Anodized blackLevel control Min. input voltage: 2 x 10 V (-12 dBV) Input impedance: 10 kΩDefinitions and conditionsDefinitions and conditionsInput and output voltages are RMS values for a sine and 1 kHz unless stated otherwise.Iine outUnbalanced line output after master Mono jack, ¼" (6.35 mm) Nominal output voltage: 1 V (0 dBV) Max. output voltage: 1 V (0 dBV) Max. output voltage: 9 V (+19 dBV) Output impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (-120 dBV)Input and output voltage: Permissible input voltage that do cause distortion more than the rated THD + N (assistable control settings).Signal-to-noise ratio (SNR): Ratio of nominal output to noise voltage at line out, at specified gain settin master fully clockwise, input shorted, 20 Hz20 ki mast		total current max. 10 mA per channel,	Supply	24 V=, 0	0.5 A
damaged by inappropriate use of phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).   Clip indicator Red LED Headroom: 8 dB   Metal Aluminium housing   Finish Anodized black   Dimensions   65 mm (2.56") high   105 mm (4.13") wide   135 mm (5.31") deep   Weight   480 g (1.06 lbs)			voltage	Use onl	y supplied mains adapter.
Phantom power. In case of doubt keep the 24 V phantom power switch off (not pushed).  Clip indicator Red LED Headroom: 8 dB  aux in  Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ  Outputs  Iine out  Unbalanced line output after master Mono jack, ¼" (6.35 mm) Nominal output voltage: 9 V (+19 dBV) Output impedance: 47 Ω Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (-120 dBV)  headphones  Headphones  Headphones  Headphones  Headphones  Headphones output Stereo jack, ½" (6.35 mm) Output power, 1 kHz, THD = 1%: Typ. 2 x 40 mW / 32 Ω Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  A-weighted: 3.3 μV (-110 dBV)  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  A-weighted: 3.3 μV (-110 dBV)  And Aluminium housing  Finish Anodized black  Dimensions 65 mm (2.56") high 105 mm (4.13") wide 135 mm (5.31") deep  Weight 480 g (1.06 lbs)  Definitions and conditions  Input and output voltages are RMS values for a sine and 1 kHz unless stated otherwise.  Tone controls in neutral position unless stated otherwise.  Tone controls in neutral position unless stated otherwise.  Tone controls in neutral position unless stated otherwise.  Signal-to-noise ratio (SNR): Ratio of nominal output to noise voltage at line out, at specified gain settir master fully clockwise, input shorted, 20 Hz20 kH Note: The SNR found at line out may be less than the specified for the channels because both channels contribute to the output noise.  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)				Mains v	oltage: 100-240 V~
Aux in   Coutputs			adapter	Power o	consumption when used with Dual
pushed).  Clip indicator Red LED Headroom: 8 dB  Auxiin  Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 250 mV (-14 dBV) Input impedance: 10 kΩ  Outputs  Iline out  Unbalanced line output after master Mono jack, ¼" (6.35 mm) Nominal output voltage: 1 V (0 dBV) Max. output voltage: 9 V (+19 dBV) Output impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (-120 dBV)  headphones  Headphones  Headphones output Stereo jack, ¼" (6.35 mm) Output power, 1 kHz, THD = 1%: Typ. 2 x 40 mW / 32 Ω Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)				Mix: r	max. 10 W
Dutputs			General		
Clip indicator   Red LED   Headroom: 8 dB   Finish   Anodized black				Alumini	ium
Headroom: 8 dB  Auxiliary stereo input (mono-mixed), e.g. for CD player Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket. Level control Min. input voltage: 2 x 250 mV (–14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ  Outputs  Iine out  Unbalanced line output after master Mono jack, ¼" (6.35 mm) Nominal output voltage: 1 V (0 dBV) Max. output voltage: 9 V (+19 dBV) Output impedance: 47 Ω Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (–120 dBV)  headphones  Headphones output Stereo jack, ¼" (6.35 mm) Output power, 1 kHz, THD = 1%: Typ. 2 x 40 mW / 32 Ω Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (–110 dBV)  A-weighted: 3.3 μV (–110 dBV)  Max. output voltage: 10 kΩ  Definitions and conditions  Input and output voltages are RMS values for a sine and 1 kHz unless stated otherwise.  Tone controls in neutral position unless stated other Min. input voltage: linput voltage for nominal output voltage at line out with gain and master fully clockwise, input shorted, 20 Hz20 kNote: The SNR found at line out may be less than the specified for the channels because both channels contribute to the output noise.  Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (–110 dBV)			housing		
Aux in  Auxiliary stereo input (mono-mixed), e.g. for CD player  Cinch (RCA) sockets (left / right) and 3.5 mm stereo jack socket.  Level control  Min. input voltage: 2 x 250 mV (-14 dBV) Max. input voltage: 2 x 10 V (+20 dBV) Input impedance: 10 kΩ  Definitions and conditions  Input and output voltages are RMS values for a sine and 1 kHz unless stated otherwise.  Tone controls in neutral position unless stated otherwise.  Min. load impedance: 2 kΩ Min. load impedance: 2 kΩ Min. load impedance: 2 kΩ Residual noise (master fully anticlockwise): A-weighted: 1 μV (-120 dBV)  headphones  Headphones output Stereo jack, ¼" (6.35 mm) Output power, 1 kHz, THD = 1%: Typ. 2 x 40 mW / 32 Ω Residual noise (master fully anticlockwise): A-weighted: 3.3 μV (-110 dBV)  Aweighted: 3.3 μV (-110 dBV)			Finish	Anodize	ed black
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·		Warning: Suitable for headphones with			
stereo jack only. Do not connect any mono output voltage at line out			output vol	tage at lin	ne out
jacks		jacks.	c .c		10.00
Specifications and appearance subject to change wit notice.			•	s and app	earance subject to change without

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# 7. Circuit Diagram: pocket tools dual mix



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