

User Manual



mix 502, mix 802

Mixer

Thomann GmbH

Hans-Thomann-Straße 1

96138 Burgebrach

Germany

Telephone: +49 (0) 9546 9223-0

Internet: www.thomann.de

19.02.2024, ID: 370662, 370664 (V4)

Table of contents

1	General information.....	5
1.1	Symbols and signal words.....	5
2	Safety instructions.....	7
3	Features.....	10
4	Installation and starting up.....	12
5	Connections and controls.....	13
6	Technical specifications.....	26
7	Plug and connection assignment.....	30
8	Protecting the environment.....	33





1 General information

This document contains important instructions for the safe operation of the product. Read and follow the safety instructions and all other instructions. Keep the document for future reference. Make sure that it is available to all those using the product. If you sell the product to another user, be sure that they also receive this document.

Our products and documentation are subject to a process of continuous development. They are therefore subject to change. Please refer to the latest version of the documentation, which is ready for download under www.thomann.de.

1.1 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this document.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
WARNING!	This combination of symbol and signal word indicates a possible dangerous situation that can result in death or serious injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.
Warning signs	Type of danger
	Warning – high-voltage.
	Warning – danger zone.

2 Safety instructions

Intended use

This device is intended to be used for amplification, mixing and playback of signals from musical instruments and microphones. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Safety



DANGER!

Risk of injury and choking hazard for children!

Children can suffocate on packaging material and small parts. Children can injure themselves when handling the device. Never allow children to play with the packaging material and the device. Always store packaging material out of the reach of babies and small children. Always dispose of packaging material properly when it is not in use. Never allow children to use the device without supervision. Keep small parts away from children and make sure that the device does not shed any small parts (such knobs) that children could play with.



DANGER!

Danger to life due to electric current!

Within the device there are areas where high voltages may be present. Never remove any covers. There are no user-serviceable parts inside. Do not use the device when covers, safety equipment or optical components are missing or damaged.



WARNING!

Possible hearing damage due to high volumes on speakers or headphones!

With speakers or headphones connected, the device can produce volume levels that may cause temporary or permanent hearing impairment. Over an extended period of time, even levels that seem to be uncritical can cause hearing damage. Do not operate the device permanently at a high volume level. Decrease the volume level immediately if you experience ringing in your ears or hearing impairment.



NOTICE!

Risk of fire due to covered vents and neighbouring heat sources!

If the vents of the device are covered or the device is operated in the immediate vicinity of other heat sources, the device can over-heat and burst into flames. Never cover the device or the vents. Do not install the device in the immediate vicinity of other heat sources. Never operate the device in the immediate vicinity of naked flames.



NOTICE!

Damage to the device if operated in unsuitable ambient conditions!

The device can be damaged if it is operated in unsuitable ambient conditions. Only operate the device indoors within the ambient conditions specified in the "Technical specifications" chapter of this user manual. Avoid operating it in environments with direct sunlight, heavy dirt and strong vibrations. Avoid operating it in environments with strong temperature fluctuations. If temperature fluctuations cannot be avoided (for example after transport in low outside temperatures), do not switch on the device immediately. Never subject the device to liquids or moisture. Never move the device to another location while it is in operation. In environments with increased dirt levels (for example due to dust, smoke, nicotine or mist): Have the device cleaned by qualified specialists at regular intervals to prevent damage due to overheating and other malfunctions.

**NOTICE!****Damage to the external power supply due to high voltages!**

The device is powered by an external power supply. The external power supply can be damaged if it is operated with the incorrect voltage or if high voltage peaks occur. In the worst case, excess voltages can also cause a risk of injury and fires. Make sure that the voltage specification on the external power supply matches the local power grid before plugging in the power supply. Only operate the external power supply from professionally installed mains sockets that are protected by a residual current circuit breaker (FI). As a precaution, disconnect the power supply from the power grid when storms are approaching or if the device will not be used for a longer period.

**NOTICE!****Danger of short circuit due to use of unbalanced XLR cables!**

The device has a phantom voltage input. Using unbalanced cables with the phantom power may damage the device. Use only balanced cables. Before switching on phantom power, always make sure that no unbalanced wired cables are connected.

3 Features

mix 502

- 5-channel mixer
- 1 × mono input (MIC, line)
- 2 × stereo input (line)
- 1 × master output (stereo)
- 1 × stereo RCA audio input
- 1 × stereo RCA audio output
- 2-band equalizer (mono channel)
- Pan control
- 48 V phantom power
- Headphone output separately adjustable
- Suitable power supply included

mix 802

- 8-channel mixer
- 4 × mono input (MIC, line)
- 2 × stereo input (line)
- 1 × master output (stereo)
- 1 × control room output
- 1 × stereo RCA audio input
- 1 × stereo RCA audio output
- 3-band equalizer
- Pan control
- 48 V phantom power
- Headphone output separately adjustable
- Suitable power supply included

4 Installation and starting up

Unpack and check carefully there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the product against vibration, dust and moisture during transportation or storage use the original packaging or your own packaging material suitable for transport or storage, respectively.

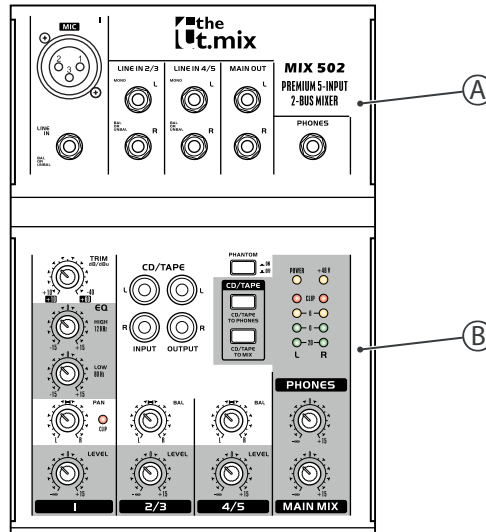
Only use the supplied power adapter. The connector for the power supply is located on the rear panel.

The device has no main switch. Supply voltage is available as soon as you connect the device to the power grid via the power supply.

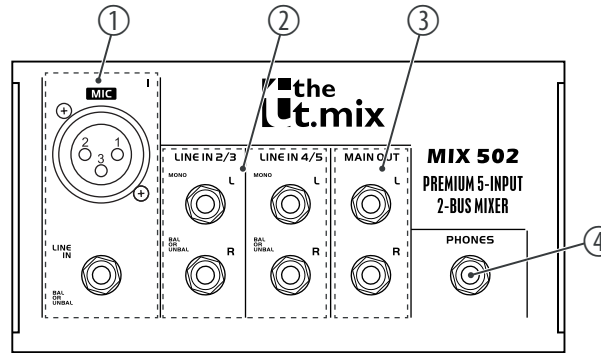
Before connecting the supply voltage and before connecting or disconnecting audio cables, set all volume controls of the unit to zero to avoid damage to the connected speakers and devices.

5 Connections and controls

mix 502 – overview

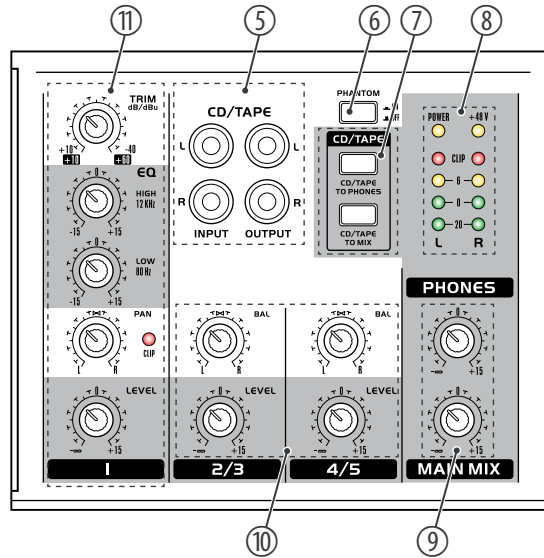


mix 502 – view A



- 1 *[MIC]/[LINE IN]* | Mono input channel with *[MIC]* XLR input socket and 6.3-mm *[LINE IN]* jack socket.
- 2 *[LINE IN X/X]* | Stereo input channels, each with 2 × 6.3-mm jack sockets (L/R) for connecting a stereo source (keyboard, drum module, etc.) or an instrument (guitar, bass). Always use input L (mono jack) for mono operation on these channels.
- 3 *[MAIN OUT]* | Stereo output with 2 × 6.3-mm jack sockets (unbalanced) for connecting a PA system, a PC or powered speakers. The main signal is present on this output with 0 dBu, and the volume is controlled by the *[MAIN MIX]* rotary control.
- 4 *[PHONES]* | Headphone output, designed as 6.3-mm jack socket.

mix 502 – view B



5	<p><i>[CD/TAPE INPUT]</i> Stereo input for feeding the signal from a CD or MP3 player, designed as cinch socket pair.</p> <p><i>[CD/TAPE OUTPUT]</i> Stereo output for connecting an external recording device, designed as cinch socket pair.</p>
6	<p><i>[PHANTOM]</i> Switch to enable 48 V phantom power for condenser microphones connected to the XLR input of a mono input channel. When it is pressed, phantom power is present and the LED <i>[+48V]</i> lights up yellow. Disable 48 V phantom power before connecting a microphone. Set all volume controls of the device to zero before enabling 48 V phantom power.</p>
7	<p><i>[CD/TAPE TO PHONES]</i> Press <i>[CD/TAPE TO PHONES]</i> to route the <i>[CD/TAPE INPUT]</i> input signal to the headphone output.</p> <p><i>[CD/TAPE TO MIX]</i> Press <i>[CD/TAPE TO MIX]</i> to route the <i>[CD/TAPE INPUT]</i> input signal to the main mix. The volume is then controlled via the <i>[MAIN MIX]</i> rotary control.</p>
8	<p>Indicator LEDs</p> <p><i>[POWER]</i> Lights up blue as soon as mains voltage is applied.</p> <p><i>[+48V]</i> Lights up red as soon as the 48-V phantom power for microphones is applied.</p> <p><i>[CLIP]</i> Lights up red as soon as the output signal starts clipping. The associated LED chain shows the output signal level.</p>
9	<p><i>[PHONES]</i> <i>[MAIN MIX]</i> Rotary controls for adjusting the volume of the <i>[PHONES]</i> headphone output and the <i>[MAIN MIX]</i> output signal of the device. The headphone output and <i>[MAIN MIX]</i> can only be adjusted together.</p>
10	<p>Stereo channels 5 ... 8</p> <p><i>[BAL]</i> Rotary control for regulating the stereo balance.</p> <p><i>[LEVEL]</i> Rotary control for setting the output signal volume.</p>
11	<p>Mono channel 1</p>

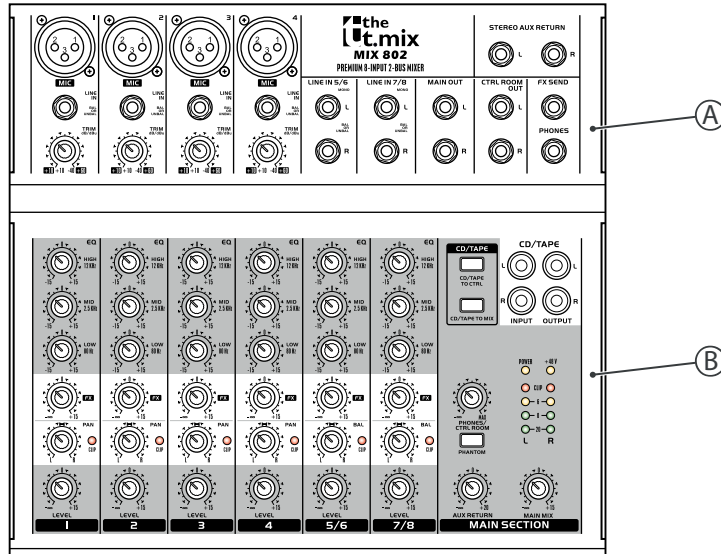
[TRIM] | Rotary control for adjusting the gain.

[EQ] | Rotary controls for adjusting treble and bass frequencies.

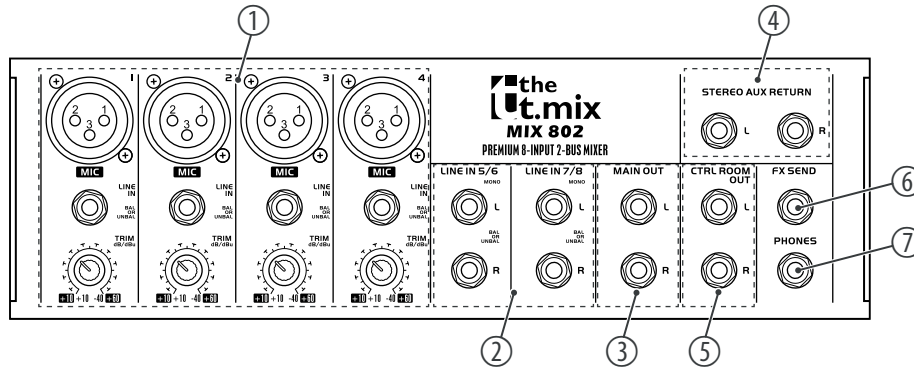
[PAN] | Rotary control for adjusting the right/left balance in the stereo signal.

[LEVEL] | Rotary control for adjusting the output signal volume.

mix 802 – overview



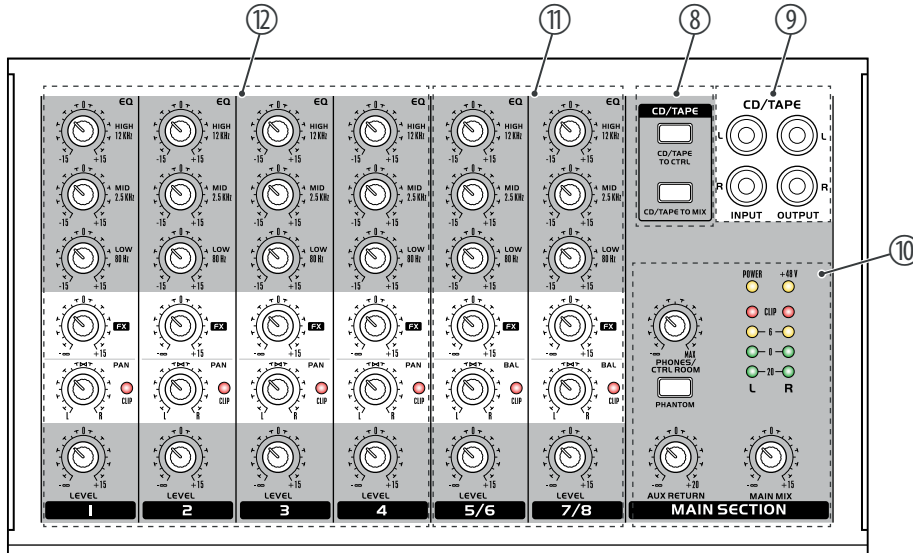
mix 802 – view A



- 1 *[MIC]/[LINE IN]* | Mono input channels with *[MIC]* XLR input socket and 6.3-mm *[LINE IN]* jack socket, with rotary control for *[TRIM]* channel-specific gain.
- 2 *[LINE IN X/X]* | Stereo input channels, each with 2 × 6.3-mm jack sockets (L/R) for connecting a stereo source (keyboard, drum module, etc.) or an instrument (guitar, bass). Always use input L (mono jack) for mono operation on these channels.

- 3 *[MAIN OUT]* | Stereo output with 2 × 6.3-mm jack sockets (unbalanced) for connecting a PA system, a PC or powered speakers. The main signal is present on this output with 0 dBu, and the volume is controlled by the *[MAIN MIX]* rotary control.
- 4 *[STEREO AUX RETURN]* | Input sockets for the signal from a looped-in effects device, designed as 6.3-mm jack sockets.
- 5 *[CTRL ROOM OUT]* | Output sockets for connecting stage or near-field monitors, designed as 6.3-mm jack sockets.
- 6 *[FX SEND]* | Output socket to looping in an effects device, designed as 6.3-mm jack socket.
- 7 *[PHONES]* | Headphone output, designed as 6.3-mm jack socket.

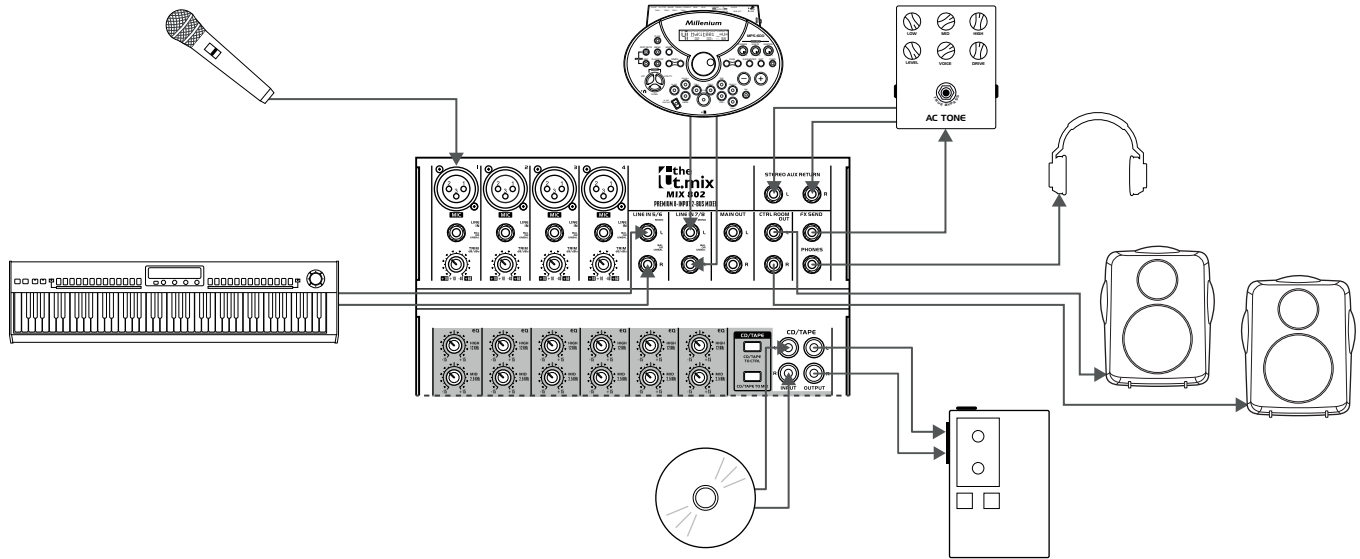
mix 802 – view B



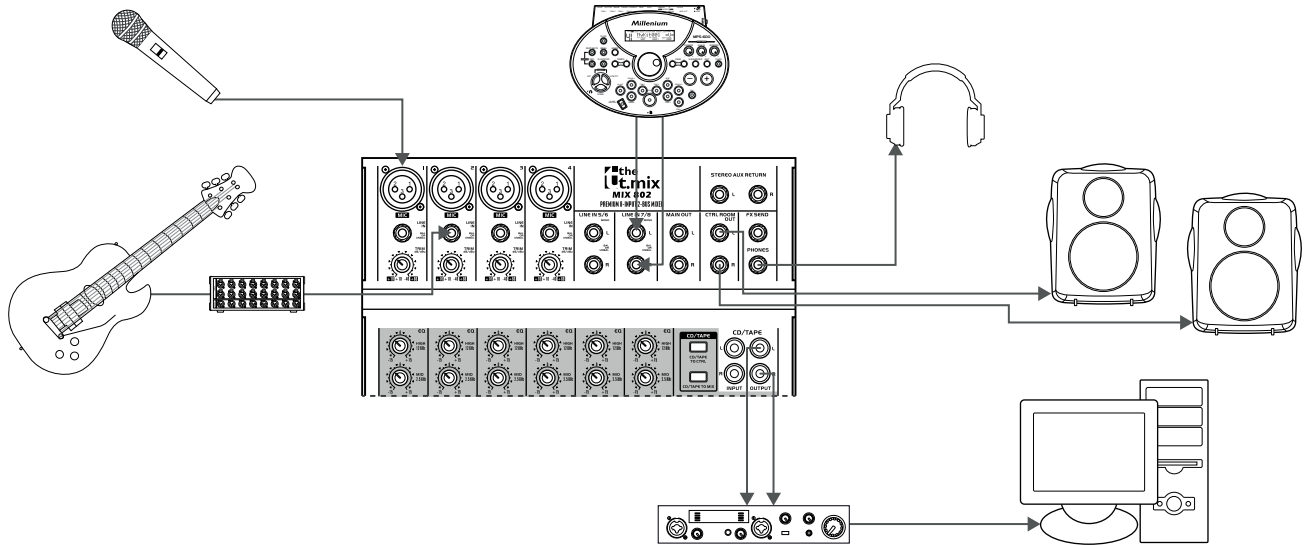
- 8 *[CD/TAPE TO PHONES]* | Press *[CD/TAPE TO PHONES]* to route the *[CD/TAPE INPUT]* input signal to the headphone output. Then the signal is not present on the main output.
- [CD/TAPE TO MIX]* | Press *[CD/TAPE TO MIX]* to route the *[CD/TAPE INPUT]* input signal to the main mix. The volume is then controlled via the *[MAIN MIX]* rotary control.
- 9 *[CD/TAPE INPUT]* | Stereo input for feeding the signal from a CD or MP3 player, designed as cinch socket pair.
- [CD/TAPE OUTPUT]* | Stereo output for connecting an external recording device, designed as cinch socket pair.
- 10 *[MAIN SECTION]*
- Indicator LEDs
- [POWER]* | Lights up yellow as soon as mains voltage is applied.
- [+48V]* | Lights up yellow as soon as the 48-V phantom power for microphones is applied.
- [CLIP]* | Lights up red as soon as the output signal starts clipping. The associated LED chain shows the output signal level.
- [MAIN MIX]* | Rotary control for adjusting the volume of the output signal.
- [PHONES/CTRL ROOM]* | Rotary control for adjusting the volume of the headphone output or the connected stage or near-field monitors.
- [PHANTOM]* | Switch for enabling the 48-V phantom power for condenser microphones connected to the XLR input of a mono input channel. When it is pressed, phantom power is present and the LED *[+48V]* lights up yellow. Disable 48 V phantom power before connecting a microphone. Set all volume controls of the device to zero before enabling 48 V phantom power.
- [AUX FX RETURN]* | Rotary control for adjusting the effect share of the overall volume.

11	Mono channels 1 ... 4
	[EQ] Rotary controls for adjusting treble, mids and bass
	[FX] Rotary control for adjusting the channel effects share of the overall volume.
	[PAN] Rotary control for adjusting the right/left balance in the stereo signal.
	[LEVEL] Rotary control for adjusting the output signal volume.
12	Stereo channels 5 ... 8
	[EQ] Rotary controls for adjusting treble, mids and bass
	[FX] Rotary control for adjusting the channel effects share of the overall volume.
	[PAN] Rotary control for adjusting the right/left balance in the stereo signal.
	[LEVEL] Rotary control for adjusting the output signal volume.

Connection example – club gig



Connection example – PC home recording



6 Technical specifications

Input connections	Microphone input	Type	1 ... 4 × XLR panel socket, 3-pin, balanced
		Level	max. +12 dBu @ +10 dB gain
		Impedance	2.6 kΩ
		Signal gain	+10 ... +60 dB
	Line input	Type	1 ... 4 × 6.3-mm jack socket, balanced or unbalanced
		Level	max. +22 dBu @ +0 dB gain
		Impedance	20 kΩ, balanced 10 kΩ, unbalanced
		Signal gain	-10 ... +40 dB
	Stereo input	Type	2 × cinch sockets
		Level	max. +22 dBu
		Impedance	20 kΩ
	Stereo input (line)	Type	4 × 6.3-mm jack socket
Output connections	Master output	Type	6.3-mm jack socket, unbalanced

	Stereo output (main)	Type	2 × 6.3-mm jack socket, unbalanced
		Level	max. +28 dBu
		Impedance	120 Ω
	Stereo output (line)	Type	2 × cinch sockets
	Stereo aux (t.mix 802)	Type	2 × 6.3-mm jack socket
		Level	max. +22 dBu
		Impedance	20 kΩ
	Control room output (t.mix 802)	Type	2 × 6.3-mm jack socket
		Level	max. +22 dBu
		Impedance	120 Ω
	Stereo headphone output	Type	6.3-mm jack socket
		Level	max. +25 dBu
Frequency range	Microphone	<10 Hz ... 150 kHz (−1 dB)	
		<10 Hz ... 200 kHz (−3 dB)	
	Line	<10 Hz ... 90 kHz (0 dB / −1 dB)	
		<10 Hz ... 160 kHz (0 dB / −3 dB)	
	Stereo	<10 Hz ... 90 kHz (0 dB / −1 dB)	

Technical specifications

		<10 Hz ... 160 kHz (0 dB / -3 dB)
Signal-to-noise ratio		110 dB / 112 dB, A-weighted
Total harmonic distortion (THD)		0.005% / 0.004%, A-weighted
Phantom power		48 V
Equalizer	HIGH range	12 kHz /15 dB
	MID range	2.5 kHz /15 dB
	LOW range	80 Hz /15 dB
Power consumption	t.mix 502	13 W
	t.mix 802	17 W
Supply voltage		240 V ~, 50 Hz
Dimensions (W × H × D)	t.mix 502	125 mm × 50 mm × 195 mm
	t.mix 802	245 mm × 60 mm × 240 mm
Weight	t.mix 502	0.7 kg
	t.mix 802	1.5 kg
Ambient conditions	Temperature range	0 °C...40 °C
	Relative humidity	20%...80%, non-condensing

Further information

	t.mix mix 502	t.mix mix 802
Built-in effects unit	No	No
19-inch rack-mountable	No	No
Microphone channels	1	4
Number of stereo inputs	2	2
Number of buses	0	1 (post)
Phantom power	Yes	Yes
Built-in power supply	No	No
Parametric	No	No
Digital interface	No	No

7 Plug and connection assignment

Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment in such a way that a perfect sound experience is ensured.

Please note these advices, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into the socket, an incorrect connection may result in a destroyed power amp, a short circuit or 'just' in poor transmission quality!

Balanced and unbalanced transmission

Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

Unbalanced transmission is susceptible to electromagnetic interference, especially at low levels, such as microphone signals and when using long cables.

In a professional environment, therefore, the balanced transmission is preferred, because this enables an undisturbed transmission of signals over long distances. In addition to the conductors 'Ground' and 'Signal', in a balanced transmission a second core is added. This also transfers the signal, but phase-shifted by 180°.

Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

1/4" TS phone plug (mono, unbalanced)



1	Signal
2	Ground, shielding

1/4" TRS phone plug (mono, balanced)



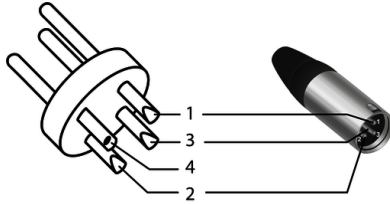
1	Signal (in phase, +)
2	Signal (out of phase, -)
3	Ground

1/4" TRS phone plug (stereo, unbalanced)



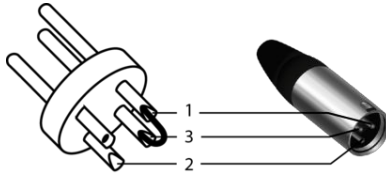
1	Signal (left)
2	Signal (right)
3	Ground

XLR plug (balanced)



1	Ground, shielding
2	Signal (in phase, +)
3	Signal (out of phase, -)
4	Shielding on plug housing (option)

XLR plug (unbalanced)



1	Ground, shielding
2	Signal
3	Bridged to pin 1

RCA connection

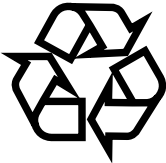


Drawing and table indicate the pin assignment of an RCA plug.

1	Signal
2	Ground, shielding

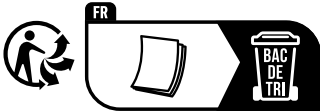
8 Protecting the environment

Disposal of the packing material



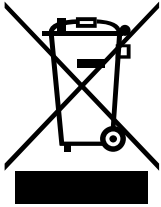
Environmentally friendly materials have been chosen for the packaging. These materials can be sent for normal recycling. Ensure that plastic bags, packaging, etc. are disposed of in the proper manner.

Do not dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the instructions and markings on the packaging.



Observe the disposal note regarding documentation in France.

Disposal of your old device



This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) as amended.

Do not dispose of your old device with your normal household waste; instead, deliver it for controlled disposal by an approved waste disposal firm or through your local waste facility. When disposing of the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste management facility. Proper disposal protects the environment as well as the health of your fellow human beings.

Also note that waste avoidance is a valuable contribution to environmental protection. Repairing a device or passing it on to another user is an ecologically valuable alternative to disposal.

You can return your old device to Thomann GmbH at no charge. Check the current conditions on www.thomann.de.

If your old device contains personal data, delete those data before disposing of it.

