the t.bone
Phase Checker

EN

Quick Start Guide

This quick start guide contains important information on the safe operation of the device. Read and follow the safety advice and instructions given. Retain the manual for future reference. If you pass the device on to others please include this manual.

Safety instructions

Intended use

This device is meant to be used to check audio systems for correct phase response. 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.

Danger for children

Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard! Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke! Never let unattended children use electrical devices.

Risk of fire due to incorrect polarity

Incorrectly inserted batteries may destroy the device or the batteries.
Ensure that proper polarity is observed when inserting batteries.

Possible damage by leaking batteries

Leaking batteries can cause permanent damage to the device.
Take batteries out of the device if it is not going to be used for a longer period.

Where to use the product

Never use the product
- in direct sunlight
- in conditions of extreme temperature or humidity
- in extremely dusty or dirty areas
- at locations where the unit can become wet
- near magnetic fields

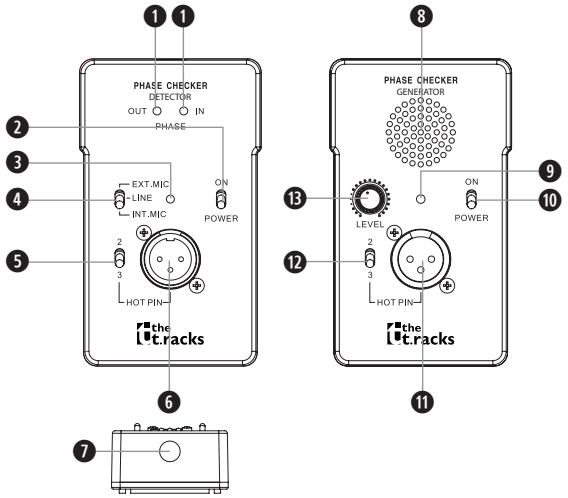
General handling

- To prevent damage, never use force when operating the switches and controls.
- Never immerse the appliance in water. Just wipe it with a clean dry cloth. Do not use liquid cleaners such as benzene, thinners or flammable cleaning agents.

Keep foreign substances from the unit!

Keep the device away from containers with liquids. Should any liquid get into the unit, this could lead to its destruction or fire. Be sure not to let any metal objects into the unit.

Operating elements



Detector:
1. Indicator LEDs for 'System in phase' (IN) and 'System out of phase' (OUT).
2. Switch in the device on and off.
3. Pilot light.
4. Input selector switch: EXT.MIC (microphone connected to socket ❻), LINE (line level source connected to socket ❹) or INT.MIC (internal microphone ❼).
5. Toggle switch to specify whether the positive signal is applied to pin 2 or 3 of the XLR input socket ❺.
6. XLR input to connect to MIC or LINE sources.
7. Built-in microphone.

Generator:
8. Speaker for generating the test pulse.
9. Pilot light.
10. Switch in the device on and off.
11. XLR output socket for outputting the test pulse via XLR cable.
12. Toggle switch to specify whether the positive signal is to be applied to pin 2 or 3 of the XLR output socket ⓫.
13. Controller for setting the test pulse level.

Using the device

1. Insert a 9 V battery into the battery compartment on the back of both devices.
2. The GENERATOR generates a special test pulse, which is fed into the audio system to be tested via the built-in speaker or a connected XLR cable. When using the speaker, hold a microphone connected to the input of the audio system directly over the speaker, turn on the unit with the POWER switch (⓾), and adjust the desired test level with the LEVEL control (⓭). Or you can connect the XLR output jack (⓫) to the input of the audio system via an XLR cable.
3. Depending on the wiring of the cable, use the 2/3 switch (⓬) to determine whether the positive signal component is to be transmitted via pin 2 or 3.
4. With the DETECTOR you can check whether the signal is output by the audio system in phase or phase-reversed. Either the built-in microphone (❼) is used for this, or an external microphone or XLR cable connected to the socket (❻) to transmit a line-level signal. Move the switch (❹) to the appropriate position, INT.MIC, EXT.MIC or LINE.
5. When testing via XLR cable, use the 2/3-way switch (❺) to determine whether the positive signal is applied to pin 2 or 3 of the XLR input jack (❻).
6. Turn on the DETECTOR with the POWER switch (❷).
7. If the DETECTOR receives the signal in-phase, the IN LED (❶) flashes at the rhythm of the test pulse.
8. If the received signal is out of phase, the OUT LED (❶) flashes. Then start the troubleshooting. In doing so, it can be very helpful to check the signal after each piece of equipment within the audio system.

Technical specifications

Detector:

LINE input impedance:	10 kΩ
Ext. MIC input impedance:	1 kΩ
Minimum microphone input voltage:	10 mV
Minimum LINE input voltage:	250 mV
Maximum LINE input voltage:	50 V

Generator:

Output level:	> 6 dBV
Minimum acoustic impedance:	< 10 Ω

For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling. Ensure that plastic bags, packaging, etc. are properly disposed of. Do not just dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the notes and markings on the packaging.

Batteries must not be disposed of as domestic waste or thrown into fire. Dispose of batteries according to national or local regulations regarding hazardous waste. Dispose of empty batteries at appropriate collection sites.

This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) in its currently valid version. Do not dispose of your old device with your normal household waste. Dispose of this product through an approved waste disposal firm or through your local waste facility. Comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.

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