HIF-NICS Thor Series 6-Channel Amplifier with DSP Processor TRX6006 Owner's Manual

HIFONICS

Thor SERIES

VERS 1.4

HYBRID CLASS A/B & D
5-CHANNEL AMPLIFIER
WITH DSP PROCESSOR
TRX5005 DSP

Contents

GENERAL NOTES

Due to the ongoing development of this device, it is possible that the information in this manual is incomplete or is not matching to the delivery status.

SCOPE OF DELIVERY

1 x TRX5005 DSP Amplifier

1 x Remote Controller with LED Display, incl. Connection Cable
1 x USB Cable, A- to Mini-B Connector, 5 m
1 x CD-ROM with M-CONTROL Software
1 x Owner‘s Manual (German/English)
1 x Spare Fuse

 **NOTE**

This symbol shows you important notes on the following pages. Follow these notes necessarily, otherwise, damages of the device and on the vehicle as well as serious injuries may be caused.

PLEASE KEEP THIS MANUAL FOR LATER PURPOSES!

SAFETY INSTRUCTIONS

PLEASE NOTE THE FOLLOWING ADVICE BEFORE THE FIRST OPERATION!

THE PURCHASED DEVICE IS ONLY SUITABLE FOR AN OPERATION WITH A 12V ONBOARD ELECTRICAL SYSTEM OF A VEHICLE. Otherwise, fire hazards, risk of injury, and electric shock consist.
PLEASE DO NOT MAKE ANY OPERATION OF THE SOUND SYSTEM, WHICH DISTRACT YOU FROM A SAFE DRIVING. Do not make any procedures, which demand longer attention. Perform these operations not until you have stopped the vehicle in a safe place. Otherwise, the risk of accident consists.
ADJUST THE SOUND VOLUME TO AN APPROPRIATE LEVEL, THAT YOU ARE STILL ABLE TO HEAR EXTERIOR NOISES WHILE DRIVING. High-performance sound systems in vehicles may generate the acoustic pressure of a live concert. The permanent listening to extremely loud music may cause the loss of your hearing abilities. The hearing of extremely loud music while driving may derogate your cognition of warning signals in the traffic. In the interests of common safeness, we suggest driving with a lower sound volume. Otherwise, the risk of accident consists.
DO NOT COVER COOLING VENTS AND HEAT SINKS. Otherwise, this may cause heat accumulation in the device and fire hazards consists.
DO NOT OPEN THE DEVICE. Otherwise, fire hazards, risk of injury, and electric shock consist. Also, this may cause a loss of the warranty.
REPLACE FUSES ONLY WITH FUSES WITH THE SAME RATING. Otherwise fire hazards and risk of electric shock
consist.

DO NOT USE THE DEVICE ANY LONGER, IF A MALFUNCTION, WHICH REMAINS UNREMEDIED. Refer in this case to the chapter **TROUBLESHOOTING.** Otherwise risk of injury and the damage of the device consists. Commit the device to an authorized retailer.
THE INSTALLATION OF A POWER CAPACITOR WITH SUFFICIENT CAPACITY IS RECOMMENDED. High-performance amplifiers cause high potential voltage drops and need a high power consumption at a high volume level. To relieve the vehicle’s on-board system, it is recommended to install a power capacitor between the battery and the device which works as a buffer. Consult your car audio retailer for the appropriate capacity.
INTERCONNECTION AND INSTALLATION SHOULD BE ACCOMPLISHED BY SKILLED STAFF ONLY. The interconnection and installation of this device demand technical aptitude and experience. For your own safeness, commit the interconnection and installation to your car audio retailer, where you have purchased the device.
DISCONNECT THE GROUND CONNECTION FROM THE VEHICLE’S BATTERY BEFORE INSTALLATION. Before you start with the installation of the sound system, disconnect by any means the ground supply wire from the battery, to avoid any risk of electric shock and short circuits.
CHOOSE AN APPROPRIATE LOCATION FOR THE INSTALLATION OF THE DEVICE. Look for an appropriate location for the device, which ensures sufficient air circulation. The best places are spare wheel cavities and open spaces in the trunk area. Less suitable is storage spaces behind the side coverings or under the car seats.

DO NOT INSTALL THE DEVICE AT LOCATIONS, WHERE IT WILL BE EXPOSED TO HIGH HUMIDITY AND DUST. Install the device at a location, where it will be protected from high humidity and dust. If humidity and dust

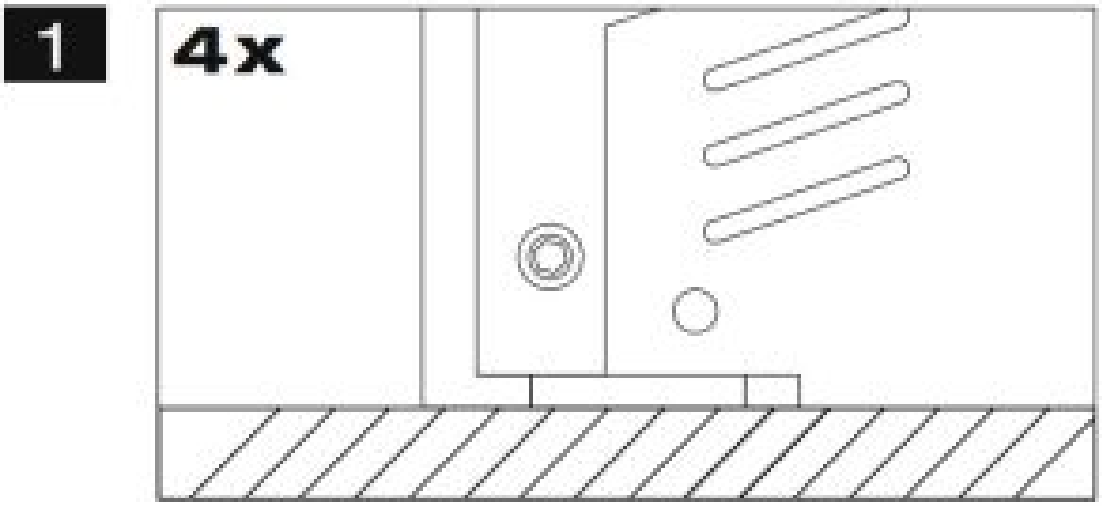
attain inside the device, malfunctions may be caused.
MOUNT THE DEVICE AND OTHER COMPONENTS OF THE SOUND SYSTEM SUFFICIENTLY. Otherwise, the device and components may get loose and act as dangerous objects, which could cause serious harm and damages in the passenger room.

ENSURE NOT TO DAMAGE COMPONENTS, WIRES, AND CABLES OF THE VEHICLE WHEN YOU DRILL THE MOUNTING HOLES. If you drill the mounting holes for the installation into the vehicle's chassis, ensure by any means, not to damage, block, or tangent the fuel pipe, the gas tank, other wires, or electrical cables.
ENSURE CORRECT CONNECTION OF ALL TERMINALS. Faulty connections may cause fire hazards and lead to damages to the device.
DO NOT INSTALL AUDIO CABLES AND POWER SUPPLY WIRES TOGETHER. Ensure while installation not to lead the audio cables between the head unit and the amplifier together with the power supply wires on the same side of the vehicle. The best is an areal separated installation in the left and right able channel of the vehicle. Therewith an overlap of interferences on the audio signal will be avoided. This stands also for the quipped bass remote wire, which should be installed not together with the power supply wires, but rather with the audio signal cables.
ENSURE THAT CABLES MAY NOT CAUGHT UP IN CLOSE-BY OBJECTS. Install all the wires and cables as described on the following pages, therewith these may not hinder the driver. Cables and wires which are installed close by the steering wheel, gear lever, or brake pedal, maybe catch up and cause highly dangerous situations.
DO NOT SPLICE ELECTRICAL WIRES. The electrical wires should not be ared, to provide power supply to other devices. Otherwise, the load capacity of the wire may get overloaded. Use therefore an appropriate distribution block. Otherwise, fire hazards and risk of electric shock consist.
DO NOT USE BOLTS AND SCREW NUTS OF THE BRAKE SYSTEM AS GROUND POINTS . Never use for the installation or the ground point bolts and screw-nuts of the brake system, steering system, or other security-relevant components. Otherwise, fire hazards consist or the driving safety will be derogated.
ENSURE NOT TO BEND OR SQUEEZE CABLES AND WIRES WITH SHARP OBJECTS. Do not install cables and wires not close-by movable objects like the seat rail or may be bent or harmed by sharp and barbed edges. If you lead a wire or cable through the hole in a metal sheet, protect the insulation with a rubber grommet.
KEEP AWAY SMALL PARTS AND JACKS FROM CHILDREN . If objects like these will be swallowed, the risk of serious injuries consists. Consult promptly a medical doctor, if a child swallowed a small object.

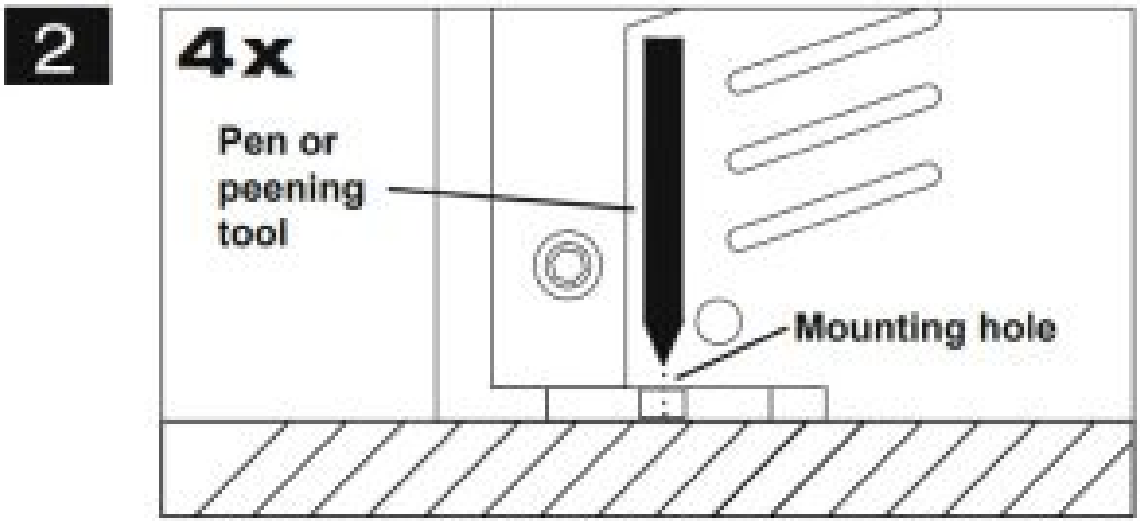

NOTE
Before you start with the installation of the sound system, disconnect necessarily the GROUND connection wire from the battery to avoid any risk of electric shocks and short circuits.

MECHANICAL INSTALLATION

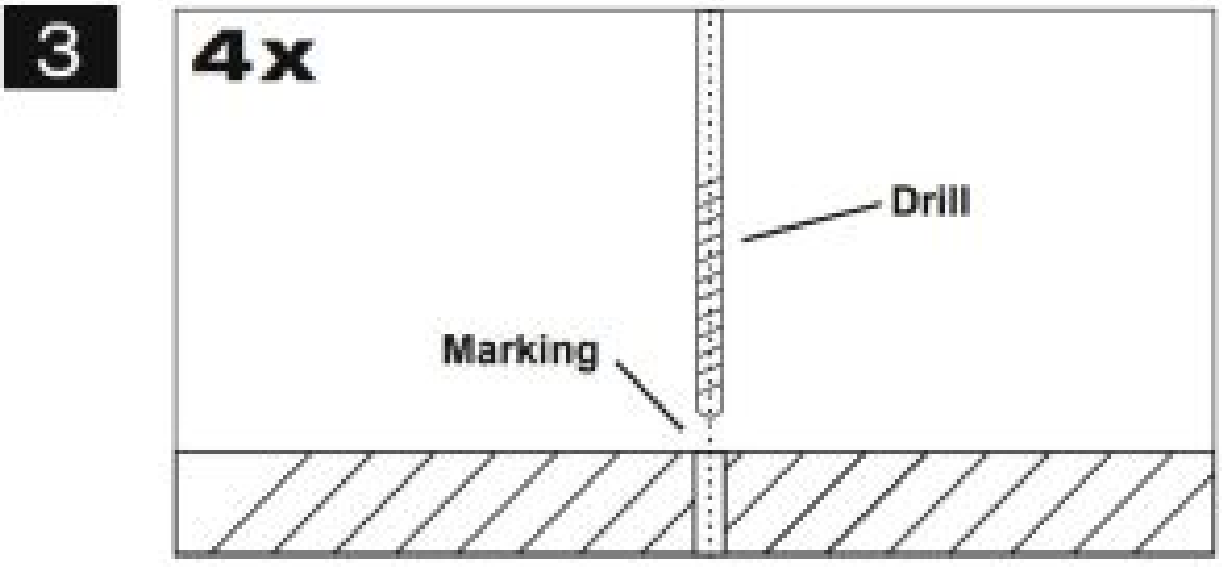
Avoid any damages to the components of the vehicle like airbags, cables, board computers, seat belts, gas tanks,s or the like. Ensure that the chosen location provides sufficient air circulation for the amplifier. Do not mount the device into small or sealed spaces without air circulation nearby heat dispersing parts or electrical parts of the vehicle. Do not mount the amplifier on top of a subwoofer box or any other vibrating parts, whereby parts could loosen inside. The wires and cables of the power supply and the audio signal must be as short as possible to avoid any losses and interferences.



At first, you need to find a suitable installation location for the amplifier. Ensure that enough space for the installation of the cables remains and that they will not be bent and have sufficient pull relief.

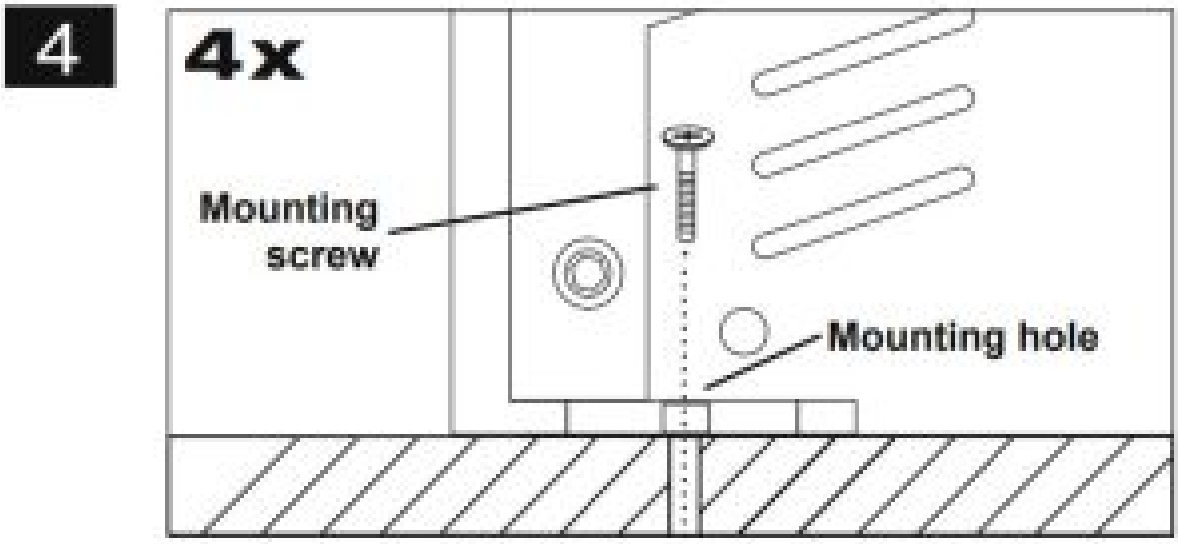


Keep the amplifier at the chosen mounting location in the vehicle. Then mark the four drill holes with an appropriate pen or peening tool through the designated mounting holes at the amplifier.



Lay the amplifier aside and then drill the holes for the mounting screws at the marked locations. Please ensure not

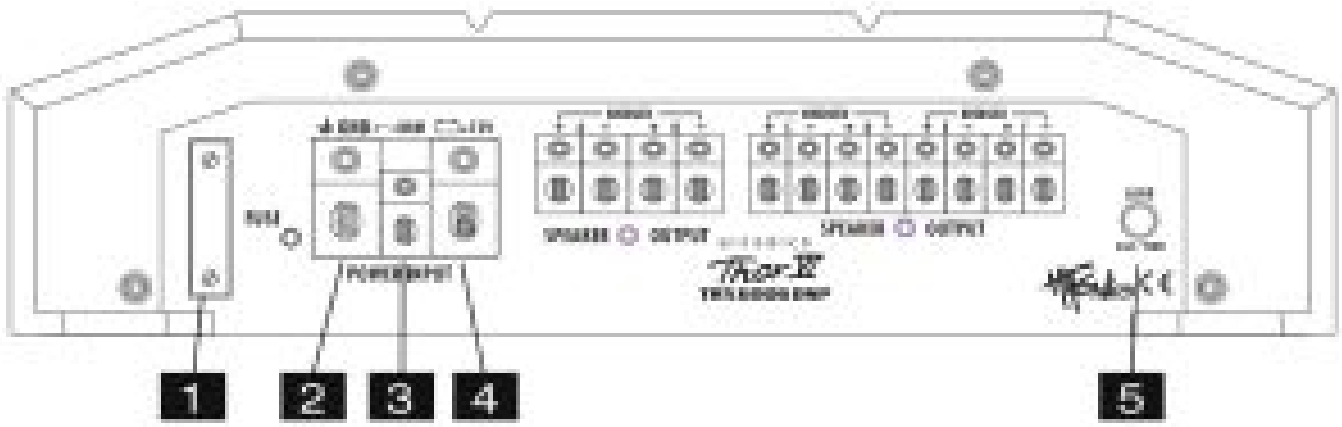
to damage any components of the vehicle while you drilling the holes. Alternatively(depending on the material of the surface) you can also use self-tapping screws.



Then uphold the amplifier to the chosen position and fix the screws through the mounting holes into the drilled screwholes. Ensure that the mounted amplifier is tightly fixed and can not come loose while driving.

ELECTRICAL INTERCONNECTION

ELECTRICAL INTERCONNECTION



BEFORE CONNECTING

For the professional installation of a sound system, car audio retail stores offer appropriate wire kits. Ensure a sufficient profile section (at least 25 mm 2), a suitable fuse rating, and the conductivity of the cables when you purchase your wiring kit. Clean and remove rust-streaked and oxidized areas on the contact points of the battery and the ground connection. Make sure that all screws are fixed tight after the installation because loose connections cause malfunctions, insufficient power supply, or interferences.

1. **FUSE**

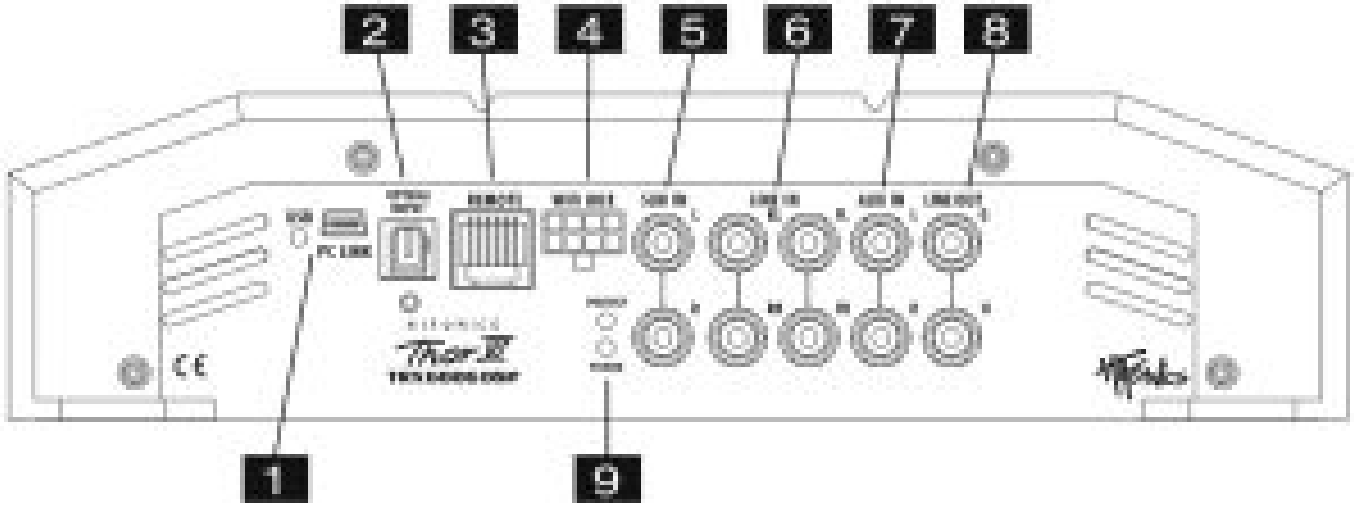
   The inserted fuses protect the amplifier from shorts and capacity overload.

2. **GND** Connect this GROUND terminal with a suitable contact ground point on the vehicle's chassis. The ground wire must be as short as possible and must be connected to a blank metallic point at the vehicle's chassis. Ensure that this ground point has a stable and safe electrical connection to the negative "–" pole of the battery. Check this ground wire from the battery to the ground point if possible and enforce it, if required. Use a ground wire with a sufficient cross-section (at least 25 mm 2) and the same size as the plus (+12V) power

supply wire.

3. **REM** Connect the turn-on signal (e.g. automatic antenna) or the turn-on remote signal of your head unit with the REM-terminal of the amplifier. Use therefor a suitable cable with a sufficient cross-section (0,5 mm 2). Hereby the amplifier turns on or off with your head unit.
4. **BATT+12V** Connect the BATT+12V-terminal with the +12V pole of the vehicle's battery. Use a suitable cable with a sufficient cross-section (at least 25 mm 2) and install an additional in-line fuse. For safety reasons the distance between the fuse block and the battery should be shorter than 30 cm. Do not set in the fuse into the fuse block until the installation is accomplished.
5. **LOGO**
   This push button switches the logo illumination on the upper side from blue to white.

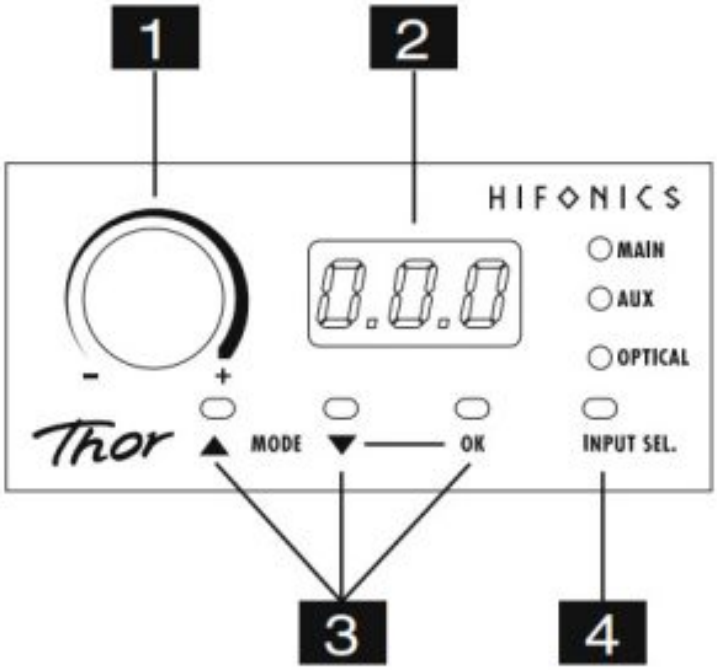
AMPLIFIER FEATURES AND OPERATIONAL CONTROLS



1. If necessary, connect the mini-USB port by using the enclosed USB cable to the computer on which the **M-CONTROL** software is installed. The connection can be released after using the DSP software. Do not extend the cable in any way with a passive USB extension because otherwise a flawless communication between the DSP amplifier and the PC can not be ensured. If you have to bridge longer distances, use an active USB extension with the integrated repeater. The LED next to the USB port lights up blue when a connection between the DSP device and computer is made via the USB cable.
2. The **OPTICAL** input is suited for a Toslink cable connection with an external audio source that provides a SPDIF signal (stereo PCM).
3. The **REMOTE CONTROLLER** port is for the enclosed remote controller. Please refer to the information on the next page.
4. The **WiFi-Box** is currently not supported.
5. The **SUB IN** RCA jacks must be connected with the RCA output jacks of the head unit (Subwoofer Output).
6. The **LINE IN** RCA jacks must be connected with the RCA output jacks of the head unit (2 x Stereo Output Front/Rear).
7. Connect the AUX IN RCA jacks with external audio sources like MP3 players, smartphones, navigation systems, and like by using suitable RCA cables.
8. The **LINE OUT** RCA jacks provides a linear full-range signal for additional amplifiers, which can be modified with the DSP software.
9. **POWER/PROTECT** If the **POWER LED** lights up, the amplifier is ready for operation. If the **PROTECT LED**

lights up, a malfunction is indicated. In this case, refer to the chapter **TROUBLESHOOTING**.

REMOTE FEATURES AND OPERATIONAL CONTROLS



1. With this knob, the overall volume of the sound system can be controlled. If you press and hold the knob for 3 seconds, the bass level of output **SUB OUT** (G / H) can also be controlled.
2. The **LED** display shows the values when turning the knob (# 1) or the number of the selected settings.
3. With the two **MODE** buttons, you can choose between the settings, which are stored in the **DSP.** Use the buttons ▲▼ to select the desired setting and confirm with **OK** (# 3).
4. With the **INPUT SEL**., button you are able to switch between the signal inputs of the audio sources **MAIN, AUX-IN,** and **OPTICAL. MAIN** is the input **LINE IN** (Page 6, #6) some **SUB IN** (Page 6, #5). The WiFi- Box is currently not supported.

Important note: If the remote control is not connected, the amplifier works with setting 1 and no settings can be saved.

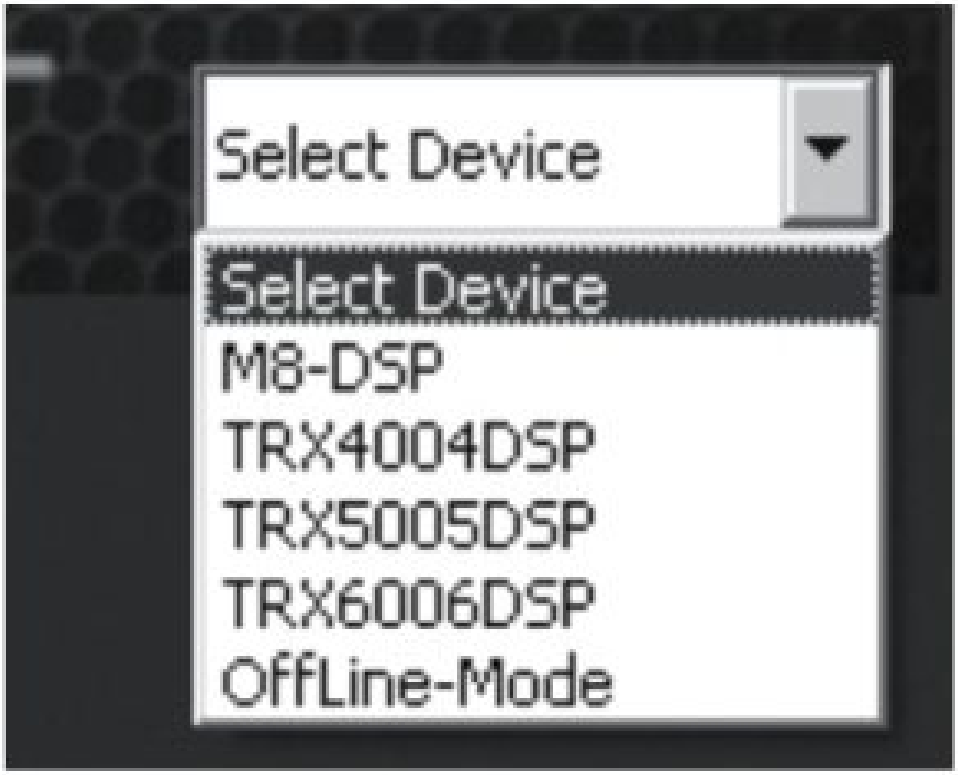
INSTALLATION OF THE DSP SOFTWARE

1. The DSP software **M-CONTROL** 2 is suitable for all computers with a Windows™ operating system newer than XP and a USB port. The installation requires approximately 25 MB of free space. Due to the principle, it should be used with a portable laptop computer.
2. After downloading the **M-CONTROL 2** software at **http://www.audiodesign.de/dsp**, unpack the downloaded ".rar" file with suitable software such as WinRAR on your PC.
3. **Important Note:** First, run an "MCU Upgrade" on your DSP device to run **M-CONTROL** 2 with it. Connect your DSP device via USB cable to the PC on which you have installed **M-CONTROL** 2. Then, start the "McuUpgrade.exe" file in the "MCU Upgrade" folder of the previously unzipped file. After the start, you do not have to do anything until the update in the terminal window is finished. Then you can close the window.
4. Now you can install **M-CONTROL** 2 on your PC. To do this, start the "setup.exe" of the previously unzipped file.

The installer will guide you through the usual steps. It is recommended to create a desktop shortcut (Create a desktop icon). After the installation, the computer should be restarted.

Important note for 64 bit operating systems: For the 64-bit operating system, you may need to install the 64-bit device drivers manually. You can find the drivers in the unzipped folder too. For 32-bit operating systems, the driver will be installed automatically during the program installation.

PROCESSOR CONFIGURATION WITH THE SOFTWARE



Connect the computer on which you have installed the **M-CONTROL** 2 software with the DSP processor via the enclosed USB cable. After connecting the devices, start the program on the computer.
After starting the program the start screen appears. Select on the bottom right under Select Device your device TRX4004 DSP with the mouse. Demo Mode (OffLine-Mode)
You can start **M-CONTROL** 2 even without connecting to the DSP processor in an offline mode and become familiar with the features of the software.

Enable the connection with the DSP in the **RS232 Setting.** The **COM** interface should be automatically detected and selected, it varies from system to system. lick then Connect. The program starts then automatically the connection. If you cannot continue after selecting Connect, follow the instructions in the chapter troubleshooting section on page 29.

Note: The COM port is automatically assigned by the Windows operating system. Please ensure that the port must be between **COM1** and COM9.

FUNCTIONAL INSTRUCTIONS

Click on Click here to test to check the connection with the DSP device.

If the test was performed successfully 4 checkmarks in the checkboxes appear. Then press **„[OK] Click here to start**“ to continue.
Should one of the checkmarks not appear, a problem occurred that can lead to a malfunction. Please refer to the following instructions.

Error:
„ERROR“ message in the connection between DSP device and your computer
Reason 1:The DSP device is in PROTECT mode (protection circuit) or turned off.
Note: The POWER LED and the USB LED must light up blue.

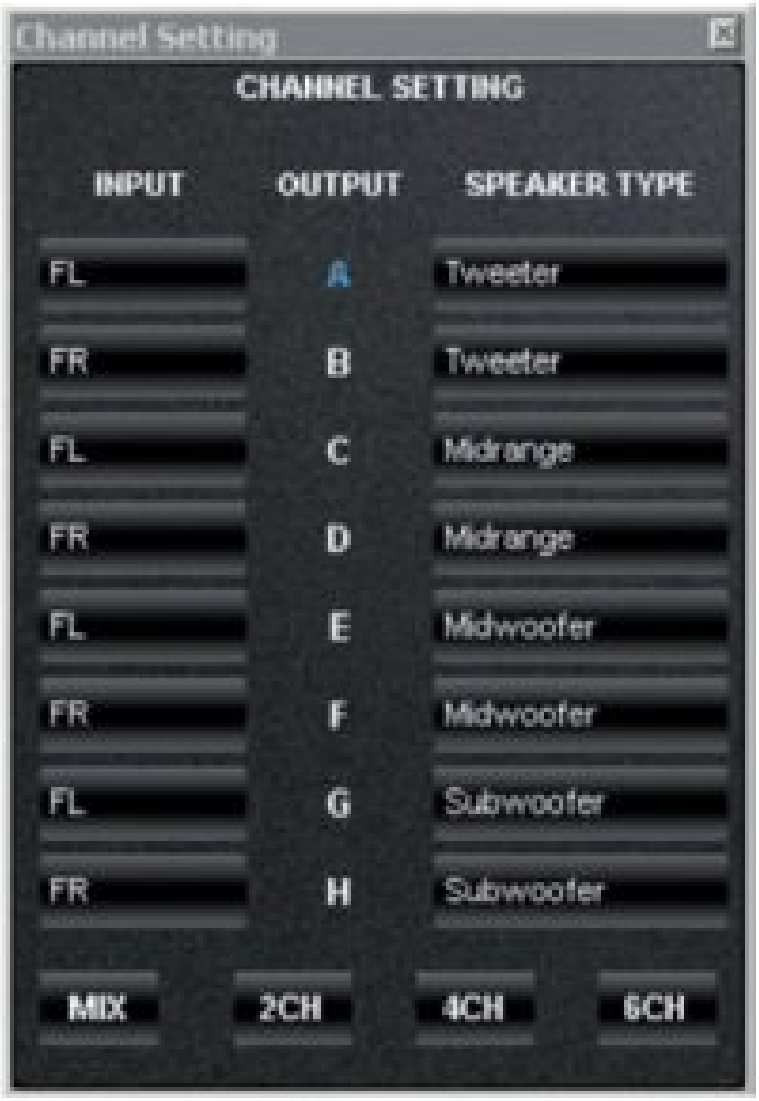
Remedy:
Correct the cause
Reason
2: The „MCU Upgrade“ on the DSP device (see the previous page), was not performed correctly or not.

Remedy:
Run the „MCU Upgrade“ again.
Error:
„The COM port could not open…“ message in the connection between the DSP device and your computer
Reason:
In the connection window after the software start the wrong **COM** port has been selected or defined.
Remedy:
Select the correct port. Check if necessary the port in the Device Manager of Windows un- der „Ports (COM & LPT) „USB-Serial CH340“.The entry can be found at: Settings > Control Panel > Administrative Tools > Computer Management > Device Manager > Ports (COM & LPT)

USER INTERFACE OF THE SOFTWARE

Here you can make countless settings and adapt them to your sound system, which can be heard immediately in real-time via the **DSP** device. As soon as you are finished configuring a setting, it can be transferred to one memory location in the DSP device. You can store up to 10 different settings and select the remote control at any time during operation. The following section explains the various functions of the **M-CONTROL 2** user interface.

1. LINK TO DEVICE: Connects the PC via USB to the DSP device. Channel Setting“: Opens a dialog box where you can select the configurations for your desired sound system.
2. There you can freely define the assignment of the inputs (INPUT) and outputs (OUTPUT) per channel on the DSP device. In „SPEAKER TYPE“, you can select the desired speaker for each channel. This means that the appropriate parameters are already present at the respective channel, and you only have to perform the fine adjustment. „MIX“ must be selected when using the high-level inputs on the DSP device. The audio signal is summed. Under „2CH“, „4CH“ or „6CH“ (input assignment), you can select an already preset sound system variant, which you can set beforehand. All you have to do is make the fine adjustment.



3. Open: Opens a previously saved setting on the PC.
4. Save: Saves a setting in a file on the PC with the current filename used. If no filename has been selected before, you can specify any filename in the following dialog.
5. SaveAs: Saves the setting under a different filename, which you can specify in the following dialog.
6. Factory Setting: Resets all settings to the factory default.
7. Under „**PRESETS ON THE DEVICE**“, you can read, delete or assign the memory locations (**POS1 – POS10**) for the individual settings on the DSP unit. First select the memory location ((**POS1 – POS10**), because you want to edit or readout. FUNKTIONSHINWEISE WRITE*: Saves the currently created setting in the DSP device to the previously selected memory location. **READ*:** Reads the previously selected memory location from the memory of the DSP device. **DELETE*:** Deletes the previously selected memory location from the memory of the DSP device. **Note:** Always store the settings numerically (POS 1, POS 2, POS 3, …) so that they can be accessed with the remote control. There should be no memory location left unoccupied, otherwise, the following settings can not be called up. ***Important:** The enclosed remote control must be connected to the DSP device.
8. Under **„SOURCE“,** you can select between the input sources SPDIF (optical input), MAIN (RCA/Cinch audio inputs), AUX (RCA /RCA stereo input), and WiFi (optional).
9. Under „**CHANNEL SETTING“** you can link the respective channel pairs for L and R with the lock symbol in the middle to synchronize the settings for both channels. With **„L > R COPY“** you can also copy the setting of the currently selected left channel to the right channel.
10. **„SLOPE“** allows you to specify the slope of the highpass (HP) or lowpass filter (LP) on the currently selected

channel, which can be selected from 6dB per octave (very flat) to 48dB per octave (very steep) in 6dB steps. 10 Note: The HP or LP control panel is inactive (gray) when under CROSSOVER HP, LP, or BP is not selected accordingly.

11. Under „**CROSSOVER“** you can define the desired filter type (**OFF, HP, BP or LP)** on the currently selected channel. The frequent- 11 cy of the filters can be adjusted with the controllers next to HP and LP. The controllers are only active when the filter is activated. Once a filter type has been selected, the filter is displayed graphically in the frequency band preview. **Note:** When the filter is selected, the cut-off frequency can also be changed directly in the frequency band preview with the mouse. Click and hold the point on the dividing line and move the mouse to the desired location on the frequency band. **Hint:** Instead of the slider, you can also enter the cut-off frequency directly by double-clicking on the values next to it with the keyboard. Press **ENTER** to confirm.
12. Under **„MAIN“** at **„GAIN“,** you can set the output volume (-40dB to + 12dB) of the DSP device. **Caution:** Use this knob carefully. Too loud a level could damage your speakers. 12 With **„MUTE“,** you can switch the mute function on and off.
13. Under channel sections A to H, you can make the following settings for the selected channel:
    • With **„GAIN“** you can reduce the level from 0dB to -40dB.
    • Use the **„MUTE“** button to mute the channel.
    • With **„PHASE“** you can switch the phase from 0° to 180°.
    • With **„DELAY“** you can set a delay time correction of the signal. See „ **TIME ALIGNMENT“** on the next page.
    • By clicking on the **„CM“** box, the **„DELAY“** unit can be switched from centimeter (cm) to millisecond (ms). With the **„PHASE“** and **„DELAY“** parameters, you can adjust the sound system optimally to your vehicle's acoustics and make a perfectly fine adjustment of the acoustic stage.
14. The frequency band preview shows graphically the envelope of the 31-band equalizer as well as the settings currently selected under **“CROSSOVER”** of the respective selected channel. There, you can also change the respective values as you like by moving the breakpoints of the respective parameters displayed.
15. In the parametric **31-band equalizer** (channel A – F) the desired dB value can be set in the currently selected channel (-18 to +12) between 20 Hz and 20000 Hz with the faders. For subwoofer channels (channel G & H), the 11-band equalizer can be set between 20 Hz – 200 Hz. 15 Below the individual controls, the **EQ** quality can be entered under **“Q”** by numerical value (0.5 for very flat – to 9 for very steep). The desired numerical value for the parametric equalizer can be entered in the input boxes F(Hz). **“BYPASS”** switches the equalizer function on or off. With **“RESET”** you reset all settings of the equalizer (all other parameters are not affected). With **“COPY EQ”** you can copy the entire settings of the equalizer and paste it with **“PASTE EQ”** to another channel.

16. In the „**TIME ALIGNMENT**“ section you have the possibility to calculate the run-time correction of the individual channels by **M-CONTROL 2**, to optimally align the sound system and the DSP device to the acoustic stage center. To do this, follow these steps:

    • First measure the distance of all loudspeakers of the sound system to the acoustic stage center (for example, the driver's seat at the ear level of the driver). • Then enter the measured distance values under „**TIME ALIGNMENT**“ for each channel in the corresponding input field in centimeters **(CM).**

    • When you have entered all the distance values, press “DelayCalc”. **M-CONTROL 2** then calculates the appropriate parameters and transfers them automatically to the respective channel from A to H. Then you can fine-tune the channel sections with the **“Delay”** slider.

    • With “Reset” you can reset all values.

    • With the loudspeaker symbol in each channel you can mute the respective channel.

17. Under „R**EMOTE SETTING“** you are able to select, which channel pair (EF Channel or GH Channel) you want to control the bass level with the connected remote controller. Therefore, always select the channel pair, on which you have connected the subwoofer.

SPECIFICATIONS

MODELL	TRX6006DSP
CHANNELS CIRCUIT OUTPUTPOWER RMS 13,8 V Watts @ 4 / 2 Ohms Watts @ 4 Ohms bridged OUTPUT POWER MAX. 13,8 V Watts @ 4 / 2 Ohms Watts @ 4 Ohms bridged Frequency Range –3dB Damping Factor Signal-to-Noise Ratio Channel Separation THD&N Input Sensitivity Input Impedance DSP Processor Signal Output stereo CH G/H (7/8) Optional Inputs M-CONTROL DSP-Software Remote Controller with LED-Display Fuse Rating Dimensions Width & Height Length (Length total)	6 CLASS A/B Analog 6 x 100 / 150 3 x 300 6 x 200 / 300 3 x 600 5 Hz – 20 kHz > 200 > 90 dB > 60 dB 0,05% 5 – 0,3 V > 47 kOhms Cirrus Logic Single Core 32 bit, 8 channel, 192 kHz RCA TOSLINK (optical 12 ~ 96 kHz, stereo) AUX (RCA ,stereo) for Microsoft Windows™ XP SP3, Vista, 7, 8, 8.1 10 Presets, Gain -40 ~ +12dB 6 x 31-Band Equalizer, 2 x 11-Band Equalizer, -18 ~ 12 dB, Q 0,5 ~ 9 Setting range 20 ~ 20.000 Hz (Outputs A-F), 20 ~ 200 Hz (Outputs G-H) 6 ~ 48 db/Oct. HP/BP/LP Time Delay 0~15 ms/0~510 cm Phase Shift 0°/180° for Master Volume, Subwoofer Volume, Input Selection, Mode Selection 1 x 100 A 255 x 62 mm 395 / 435 mm

Malfunction: no signal on loudspeakers, but power LED lights up

Reason:	**Remedy:**
1. The connections of the speakers or the RCA audio cables are not corr ect	Recheck
2. The speaker cables or the RCA audio cables are defective	Replace cables
3. The loudspeakers are defective	Replace speakers
4. HP controller in LP/BP operation is adjusted to high	Turn down controller
5. No signal from the head unit	Check head unit settings
6. A wrong input source under INPUT SOURCE is selected, which is not connected (e.g. AUX IN)	Check selection
7. For example, on one or more channels „Mute“ is activated in the DSP software.	Check settings
8. The volume level on the remote controller is adjusted too low	Turn up the volume level on the remote

Malfunction: one or more channels or controllers are without function / faulty stereo stage

Reason:	**Remedy:**
1. The balance or fader controller of the head unit is not in the cente r-position	Turn to center-position
2. The connections of the speakers are not correct	Recheck
3. The loudspeakers are defective	Replace speakers
4. HP controller in LP/BP operation is adjusted too high	Turn down controller
5. For example, on one or more channels „Delay“ or „Phase“ is inco rrectly set in the DSP software.	Check settings

Malfunction: distortions on the loudspeakers

Reason:	**Remedy:**
1. The loudspeakers are overloaded	Turn down the level Turn down the level on the head unit Switch off loudness on the head unit Reset bass EQ on the head unit

Malfunction: no bass or stereo sound

Reason:	Remedy:
1. Interchange of loudspeaker cable polarity 2. The RCA audio cables are loose or defective 3. For example, on one or more channels „Delay“ or „Phase“ is incorrec tly set in the DSP software.	Reconnect Reconnect or replace the cables Check settings

Malfunction: amplifier runs into protection mode (red protection LED lights up)

Reason:	Remedy:
1. Short circuit on the loudspeakers or cables 2. Overheated by too low speaker impedance 3. Insufficient air circulation by an inappropriate mounting positi on of the amplifier 4. Overloaded by an insufficient power supply (too small profile section on the power cables)	Reconnect Choose a higher impedance Use a new speaker setup Change the mounting position Ensure air circulation Use a bigger profile section

Malfunction: hiss or white noise on the loudspeakers

Reason:	Remedy:
1. The level controllers in the DSP software are turned up too loud 2. The treble controller on the head unit is turned up 3. The speaker cables or the RCA audio cables are defective 4. The hissing is caused by the head unit	Turn down the level Turn down the level on the head unit Replacing the cables Check the head unit

Malfunction: no subwoofer sound

Reason:	Remedy:
1. The volume of the subwoofer output (channel G / H and SUB OUT) is set too low on the remote control.	Press the remote controller and hold. Tu (Refer to page 25).

Malfunction: „ERROR“ message in the connection between DSP device and your computer

Reason: 1. The DSP amplifier is in PROTECT mode (protection circuit) or turned off. **Note:** The POWER LED and the USB LED must light up blue.	**Remedy:** Remedy the cause

Malfunction: „The COM port could not open…“ message in the connection between DSP device and your computer

Reason: 1. In the connection window after the software start the wrong COM port has been selected or defined.	**Remedy:** Select the correct port. Check if necessary the port in the Devic rts (COM & LPT) „USB-Serial CH340“.

Malfunction: The stored settings can not be called upon the remote control via the mode button

Reason: 1. The settings must be saved numerological (POS1, POS2, PO S3, …)	Save the settings always numerologica (Refer to page 28).

ELECTRICAL INTERFERENCES

The reason for interferences is mostly the routed cables and wires. Especially the power and audio cables (RCA) of your sound system
are vulnerable. Often these interferences are caused by electric generators or other electrical units (fuel pump, AC, etc.) of the car. Most of these problems can be prevented by correct and careful wiring.
Here are some courtesy notes:

1. Use only double or triple shielded audio RCA cables for the connection between the amplifier and head unit. A useful alternative are represented by anti-noise devices or additional ancillary equipment like Balanced Line Transmitters, which you can purchase at your car audio retailer. If possible do not use anti-noise filters, which are splicing the ground of the RCA audio cables.
2. Do not lead the audio cables between the head unit and the amplifier together with the power supply wires on the same side of the vehicle. The best is a real separated installation on the left and right cable channel of the vehicle. Then the overlapping of interferences on the audio signal will be avoided. This stands also for the enclosed bass-remo te wire, which should not be installed together with the power supply wires.
3. Avoid ground loops by connecting all ground connections in a starlike arrangement. The suitable ground center point is ascertainable by measuring the voltage directly on the vehicle’s battery by a multi-meter. You should measure the voltage with turned-on ignition (acc.) and with other turned-on power consumers (e.g. headlights, rear window defroster, etc,). Compare the measured value with the voltage of the ground point you have chosen for the installation and the positive pole (+12V) of the amplifier. If the voltage has just a little difference, you have found a suitable ground point. Otherwise, you need to choose another ground point.
4. Use if possible only cables with added or soldered cable sockets or the like. Gold plated or high value nickel-

plated cable sockets are corrosion-free and own a very low contact resistance.

PROTECTION CIRCUIT

This amplifier owns a 3-way protection circuit. On overloading, overheating, shorted loudspeakers, too low impedance, or insufficient power supply, the protection circuit turns off the amplifier to prevent serious damage. If one of this dysfunction is detected, the red PROTECT LED lights up.
In this case, check all connections to detect short-circuits, faulty connections, or overheating. Refer to the notes on the next page.
If the reason for the dysfunction is eliminated, the amplifier is ready for operation again.
If the red PROTECT LED does not stop to light up, the amplifier is damaged. In this case, return the amplifier to your car audio retailer with a detailed malfunction description and a copy of the proof of purchase.
WARNING: Never open the amplifier and try to repair it by yourself. This causes a loss of warranty. The repairing service should be made only by skilled technicians.

INSTALLATION AND OPERATION IN NEWER VEHICLES!

In vehicles with a newer year of manufacturing (since approx. 2002), normally computer-controlled diagnosis- and controlling systems are applied – like CAN-BUS or MOST-BUS interfaces. With the installation of a car audio amplifier, a new appliance will be added to the 12V on-board electrical system, which may cause under several circumstances error messages or may interrupt the factory-made diagnosis system, as a result of high-stress peaks and higher power consumption. Thus, depending on the model and manufacturer, the driving safety or important security systems like airbags, ESC or others could be interrupted.
If you plan to operate the amplifier in a vehicle like described above, please follow these instructions:
• Let the installation be made only by a skilled specialist or a service station, which is specialized for the maintenance of your vehicle.
• After the installation, we suggest making a computer diagnosis of the onboard system, to detect possible malfunctions or errors.
• If the onboard system is interfered with by the installation of the amplifier, and additionally installed power capacitor can stabilize the electrical onboard system to ensure a proper and stable operation.
• The best solution is the integration of an own additional 12 V electrical system for the sound system, which can be operated independently with its own battery supply.
CONSULT YOUR CAR SPECIALIZED SERVICE STATION!

HIFONICS

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Documents / Resources

HIF-NICS Thor Series 6-Channel Amplifier with DSP Processor TRX6006 [pdf] Owner's Manual

HIF-NICS, Thor Series, 6-Channel, Amplifier, with, DSP, Processor, TRX6006