

USB Converter 590

User manual





Dear client

We are proud that you decided yourself for a solution product. You have acquired a product with outstanding sonic performance which you will enjoy for many years.

We understand your eagerness to get started but even though please study this manual step by step before you integrate the 590 USB-Converter in your High Fidelity system. This manual contains also useful tips for the optimisation of your overall HiFi-system.

If there are any questions regarding the start-up or operation of your 590 USB-Converter please do not hesitate to contact your dealer.

Have fun!

your solution Team



CE-Declaration of Conformity

Spemot AG declares that this product is in conformance with the following directives and standards:

Low Voltage Directive 2006/95/EG (EN/IEC 60065:2002)

Electromagnetic Compatibility 2004/108/EG (EN 55013:2001, EN 55020:2002, EN 61000-3-2:2006, EN61000-3-3:1995)

FCC-Notice

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- adjust or relocate the receiving antenna
- increase the separation between the equipment and the receiver
- connect the equipment into a mains outlet on a circuit different from that to which the receiver is connected
- consult the dealer or an experienced radio/TV technician for help

Disposal

According to the Directive 2002/96/EG of the European Parliament used consumer-electro technical appliances have to be disposed separately and have to be indicated with the following symbol.



In the case of disposal of this component please do so in conformity with legal and environmental regulations.






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1 Quick start

Unpacking	<p>Unpack the 590 USB-Converter and store the packing for future transportations.</p> <p> Your 590 USB-Converter has a top class surface. Please take care during installation.</p>
Driver-Software	<p><u>Windows:</u> Install the driver software and follow the instructions of the setup manager.</p> <p><u>Mac:</u> No driver software required.</p> <p> Connect the 590 USB-Converter only once the installation manager requests for the connection.</p>
Positioning	<p>Position the 590 USB-Converter on a stable base.</p>
Cabling	<p>Connect the 590 USB-Converter</p> <ul style="list-style-type: none"> - with the USB output of your computer - with the digital input of your D/A-Converter - ev. with clock-input of your D/A-Converter <p> While manipulating with cables the Digital-Player 540 has to remain disconnected from the mains supply.</p>
Switch-on	<p>Switch-on your (pre) amplifier and turn down the volume of your (pre)amplifier. Switch on your D/A-Converter and select the correct input.</p>



2 Important security advices:

User manual:

Read this user manual carefully before you start-up the 590 USB-Converter and follow all installation and security advices.

Please keep this user manual.

Mains supply:

Exclusively use 3 phase power cords with ground conductor. They may not be crushed by objects.

Unplug your 590 USB-Converter from the mains connection in the following cases:

- before you manipulate with cables
- before cleaning
- during thunder storms or
- before you leave for longer periods

Cabling:

While manipulating with cables the 590 USB-Converter has to remain disconnected from the mains. Before you disconnect the mains the 590 USB-Converter has to be in operating condition OFF. Wrong cabling may cause damages to your 590 USB-Converter, your (pre)amplifier or to your loudspeakers. Excessive volumes due to inappropriate handling may cause hearing damages.

Transport:

Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving cart/apparatus combination to avoid injury or tip over.



Packing:

Please keep the original packing for future transports. The original packing is optimal protection against potential damages.

Operation:

Never run your 590 USB-Converter

- with opened housing
- with closed cooling-slots
- with high ambient temperatures ($>40^{\circ}\text{C}$)
- close to heat sources like radiators, heatings, ovens or similar appliances dissipating heat
- with extremely high humidity for example in humid cellars or rooms similar humidity
- close to water (Sink, bathtub, or similar equipment)

Cleaning:

Use a soft and dry towel. We suggest using a non abrasive micro fibre towel. Please do not use any solvents or liquidities.

Service:

Do not try to repair your 590 USB-Converter by yourself. It needs a service check by a qualified person in the following cases:

- foreign substances or liquidity has entered the 590 USB-Converter
- the 590 USB-Converter has seen rain
- the 590 USB-Converter seems to malfunction
- the 590 USB-Converter has fallen to the floor or the housing is damaged



3 Technical Highlights

3.1 DSP Converter

The data transfer with the computer is handled by a powerful DSP. The received data is buffered in a RAM.

The 590 USB-Converter can play files in PCM format up until a sampling rate of 192kHz and a word length of 24Bit.

3.2 Reference Clock

For best sound reproduction the 590 USB-Converter uses a highly precise clock circuit. We use a technology based on the reference designs of the 745 and 540 SACD-Players. Other components may be synchronised to the word clock signal of the 590 USB-Converter.

3.3 Power supply

The 590 USB-Converter is supplied by your computer through the USB connection. Powerful filtering and ensures optimal separation from the noisy power environment of your computer.

The quality of the clock signal depends significantly on the precision of the supply voltages. High frequency noise may cause considerable downgrading of the sonic performance. Additionally these noise signals could be transmitted to the D/A-Converter through the connecting cables. Depending on the D/A converters design they will deteriorate the sound.



4 Start of operation and handling of the 590 USB-Converter

Please take care while installing the Digital-Player 540. Follow all safety advices!

4.1 Scope of delivery and packing

Please check the scope of delivery:

- 590 USB-Converter
- USB-Stick (Driver-Software, User manual)

Please store the packing of the 590 USB-Converter for future transports. Check your 590 USB-Controller for transport damages. In the case of damage, please contact your solution dealer.



If the 590 USB-Controller is still very cold from the transport please let it warm up within the packing, in order to omit condensation of water inside the unit.

4.2 Installation of the driver software

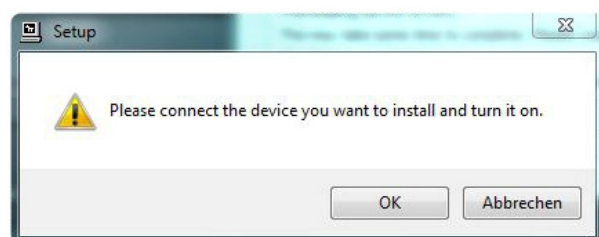
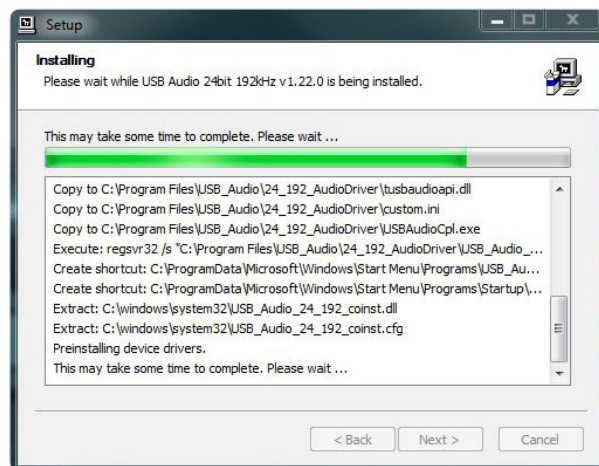
Mac OS:

Computers running a Mac OS system do not require any additional driver software.

Windows:

Remove the connecting cable between the USB-Converter and your computer before you start with the installation.

Save the driver software from the USB stick or download it from www.soulution-audio.com to your computer. Unpack the zip-file, start the setup.exe program and follow the instructions of the installer.



Connect the 590 USB-Converter only once the installer is asking you to do so. After the installation has been finished successfully the 590 USB-Converter is ready for use.



4.3 Settings for Player-Software

There are many media players available on the market. For best results we suggest using a player that conveys the data without any alteration (bit perfect). Please follow the specific instruction for the installation of the player software.

Select the 590 USB-Converter as Audio-Output- Device. Please follow the instruction of your player software. The 590 USB-Converter will be seen as "soulution USB Audio".

4.4 Optimal positioning

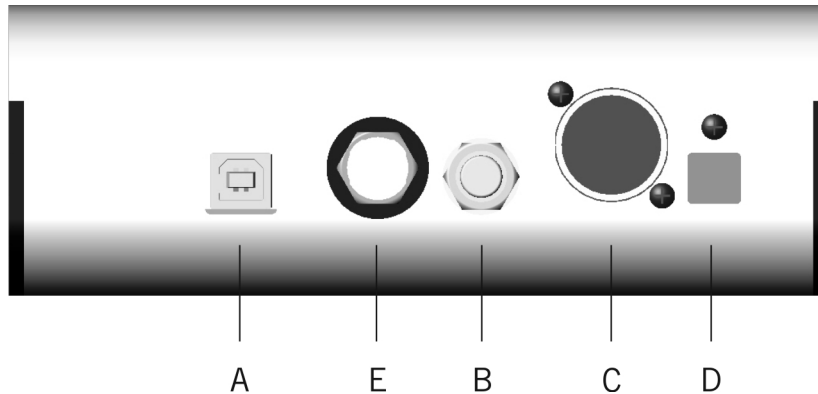
There are no limitations on where to position your 590 USB-Converter. We suggest positioning it so that the connecting cables to the computer and the D/A-Converter remain short.



The 590 USB-Converter has a high quality surface. Please be careful while transporting so that the surface does not get scratched.



4.5 Rear panel of the 590 USB-Converter



Rear panel of the 590 USB-Converter

4.5.1 USB-Input (A)

Connect the 590 USB-Converter with your computer. We suggest using a high quality USB cable (type A-B).

4.5.2 SPDIF-Output (B)

Connect the 590 USB-Converter with your D/A-Converter. We suggest using high quality cables.

4.5.3 AES/EBU-Outout (C)

Connect the 590 USB-Converter with your D/A-Converter. We suggest using high quality cables.

4.5.4 Optical – Toslink (D)

Connect the 590 USB-Converter with your D/A-Converter. We suggest using high quality cables.



4.5.5 Word-Clock Output (E)

The clock frequency of the 590 USB-Converter is automatically switched to the sampling rate of the music file. This allows synchronising your D/A converter accordingly.

5 Trouble shooting

Error	Action
No music	<p>Please check</p> <ul style="list-style-type: none"> - the cabling to your computer - the cabling to your D/A-Converter - the settings of your player software - the settings of your computer - the cabling from your D/A-Converter to your preamplifier - if the preamplifier is in mute condition - if the correct input of your D/A-Converter is active - if the correct input of your preamplifier is active

5.1 Actions after the appearance of an error

If you can not identify the error please disconnect the 590 USB-Converter from your setup and contact your solution dealer.



6 Service

If your soulution 590 USB-Converter needs service please contact your soulution dealer. For further information see www.soulution-audio.com

7 Warranty

All soulution products are guaranteed against defects in material and workmanship for five years from the date of production

The guarantee is void if the 590 USB-Converter has been subject to misuse or negligence or has been modified, repaired or opened by a non authorised person without written authorisation of Spemot AG.

For the return transport to our premises please use exclusively the original packaging. Transport damages are not subject to this guarantee, repairs will be charged. We recommend effecting transport insurance.

If you do not possess the original packaging no more please contact your soulution dealer.

Basic repairs may be completed by your soulution dealer. Please clarify whether he is able to do the work before you send the 590 USB-Converter back to us.

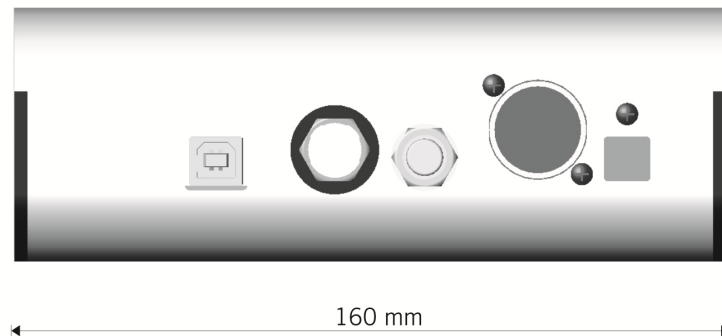
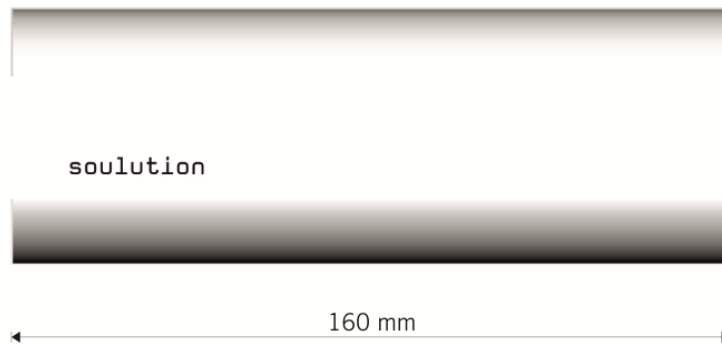
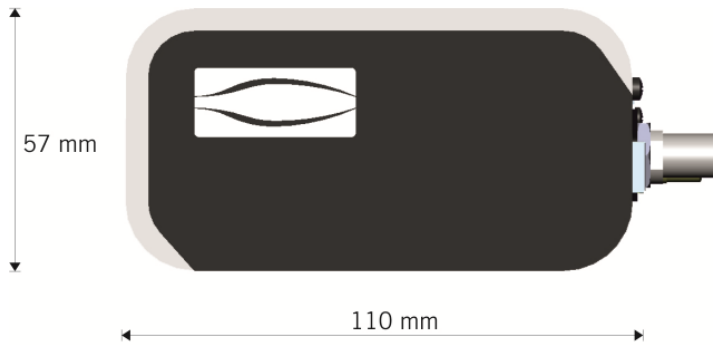


8 Specifications

Specification	Data
USB - Input	
Sampling Rate max.	192 kHz
Word length max.	24 Bit
SPDIF-Ausgang	
Impedance	75 Ω
Output voltage	500 mV p-p
AESEBU-Ausgang	
Impedance	110 Ω
Output voltage	5 V p-p
Word-Clock	
Impedance	75 Ω
Output voltage	5 V
Dimensions	
Masse weight	160 x 110 x 57 mm approx. 2 kg



9 Dimensions



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