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B-CON II - User manual

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1. PRODUCT DESCRIPTION

The Audison B-CON II is the only **Bluetooth 5.0® receiver** designed for automotive use that has obtained the "**Hi-Res audio wireless**" certification from JAS (Japan Audio Society).

B-CON II is the ideal choice for streaming audio from a Hi-Res player (Fiio, Sony Walkman...) and from the latest generation Android/Apple mobile devices, and it fully support the car's Hands-Free Bluetooth profile. B-CON II is compatible with all audio formats and achieves maximum performance with uncompressed BT streaming (max 96 kHz/24 bit, only with Android LDAC devices), both playing local files and with Apps that provide Hi-Res streaming (Tidal, Qobuz...).

As per Audison tradition, during the design phase particular attention was paid to volume management, a fundamental aspect for the search for maximum audio quality. The Audison R&D team's study focused on the audiophile use of the "**Absolute Volume**" function. In the B-CON II this manages the Master Volume of the DSP*, avoiding the loss of resolution that occurs when acting on the volume of the mobile device (mode: Absolute Volume Off), thus ensuring full dynamic range. In the event of a voice call, the DSP automatically switches to the processor's Master input (pairing the mobile device with the B-CON II and the car). At the end of the call, it returns to the execution of the previously paused song, managing the hands-free of the car without limitations.

The Audison B-CON II has a **pass-through digital optical input (max 192 kHz/24 bit)** that provides a second auxiliary input to the active DSP when BT streaming is not present. The digital output (max 96 kHz/24 bit) and analog output (max 2 VRMS, S/N RATIO 100 dBA) allow you to connect the B-CON II to any audio device.

Note: B-CON II cannot be used for streaming from aftermarket Android headunit, since these headunits do not support to send the audio signal via Bluetooth to an external device. They just support handsfree calls and streaming to the OEM headunit.

*available on the Audison AF line or bit One HD Virtuoso by connecting the ADC port.

2. PACKAGE CONTENTS

- B-CON II



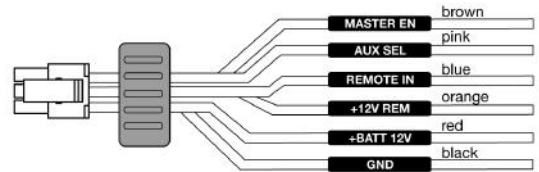
- SCREWS (2.9x16 mm)



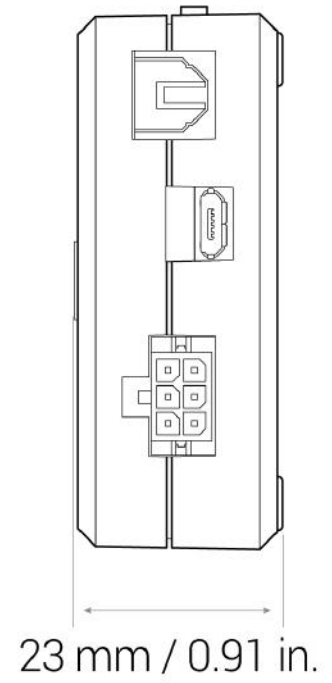
- Cavo ADC to ADC:



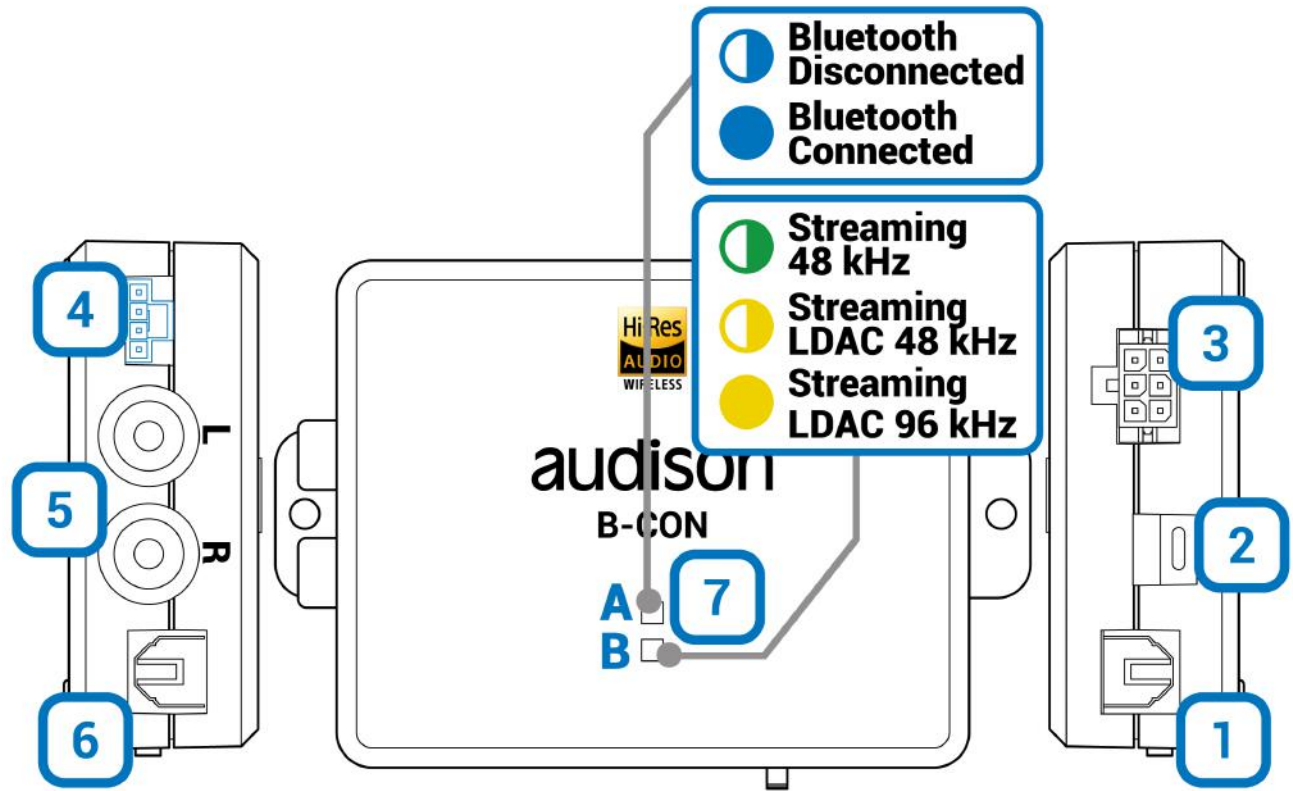
- Cavo multipolare Alimentazione/Remote:



3. DIMENSIONS



4. DESCRIPTION OF THE CONNECTION PANEL



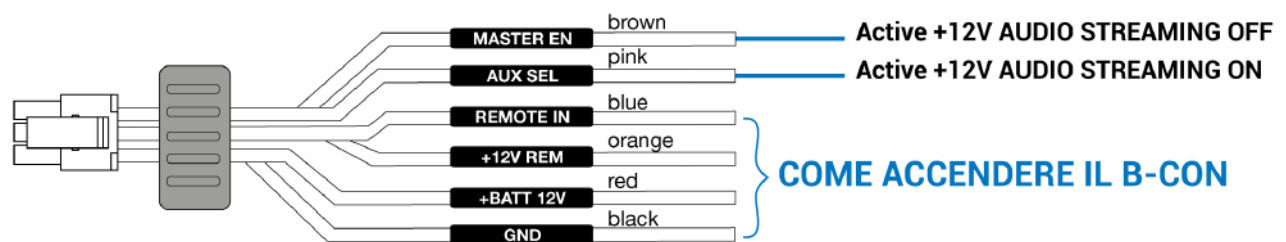
1. OPTICAL DIGITAL S/PDIF INPUT

The B-CON II accepts input PCM signals with sampling frequency up to 192kHz/24bit. This port can be connected to an external audio player with an optical fiber cable equipped with a Toslink connector. This is a “pass-through” input, therefore the signal is sent straight to optical digital S/PDIF output without any D/A and A/D conversion.

2. MICRO USB PORT

Input for the alternative device supply if this is used on bench or at home.

3. SUPPLY/REMOTE PORT



See Cap. 5

- **+BATT 12V cable(red):** positive supply pole.

GND cable (black): negative supply pole.

MASTER EN cable (brown): generates +12V when the streaming is disabled (the paired player is not playing music).

AUX SEL cable (pink): generates +12V when the streaming is enabled (the paired player is playing music).

REMOTE IN cable (blue): cable to turn on the B-CON II from a remote out signal at 12 V generated by an external device.

+12V REM cable (orange): cable to turn on and supply the B-CON II from a remote out signal at 12 V generated by an external device with at least 70 mA. In this case it is not needed to connect the +BATT 12V cable.

4. ADC PORT

Input for ADC to SDC cable (included in the box) if the B-CON II is connected to a bit One HD Virtuoso with hardware release R01/R02/R03, or a ADC to ADC cable (included in the box) if the B-CON II is connected to an AF bit amplifier or a bit One HD Virtuoso with hardware release R04/R05.

This port allows to manage the Absolute volume function and the automatic switch from Optical to Master input and viceversa to play a voice call in the Handsfree system (see sect. 7. "ABSOLUTE VOLUME" FUNCTION)

5. RCA LEFT&RIGHT OUTPUTS

Outputs available only with active streaming bluetooth. Not available is the passthrough mode is active.

6. OPTICAL DIGITAL S/PDIF OUTPUT

Output for signal PCM with sampling frequency up to 96kHz/24bit. This port can be connected to an AF bit amplifier, a Prima amplifier, a bit One HD Virtuoso processor or to any other device with S/PDIF input by using an optical fiber cable with Toslink connector.

7. LED STATUS

A:LED for BT pairing

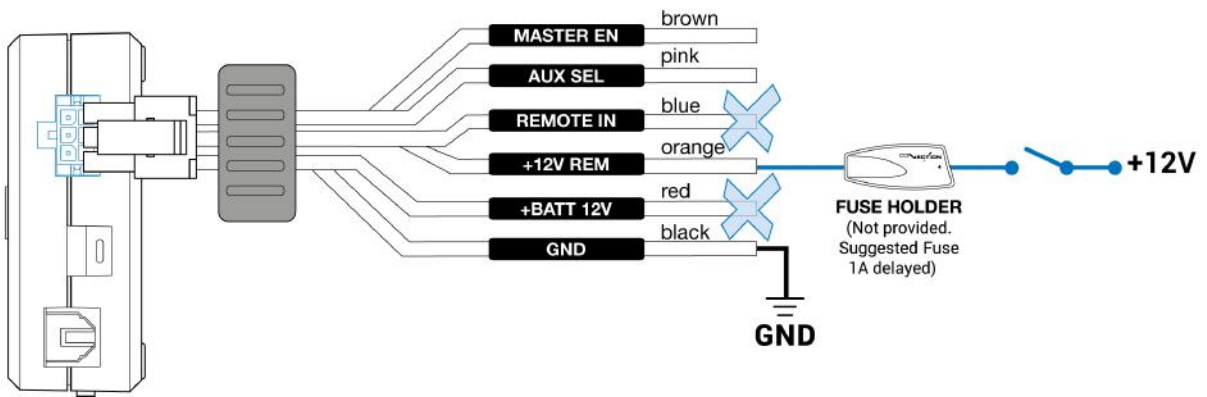
blue blinking when the B-CON II is not paired in BT. Blue when the B-CON II is paired in BT to a device.

B:LED for audio resolution

green blinking in case of streaming at 48 kHz, yellow blinking in case of streaming at 48 kHz with codec LDAC, yellow in case of streaming at 96 kHz with codec LDAC (Hi-Res streaming).

5. HOW TO TURN ON THE DEVICE

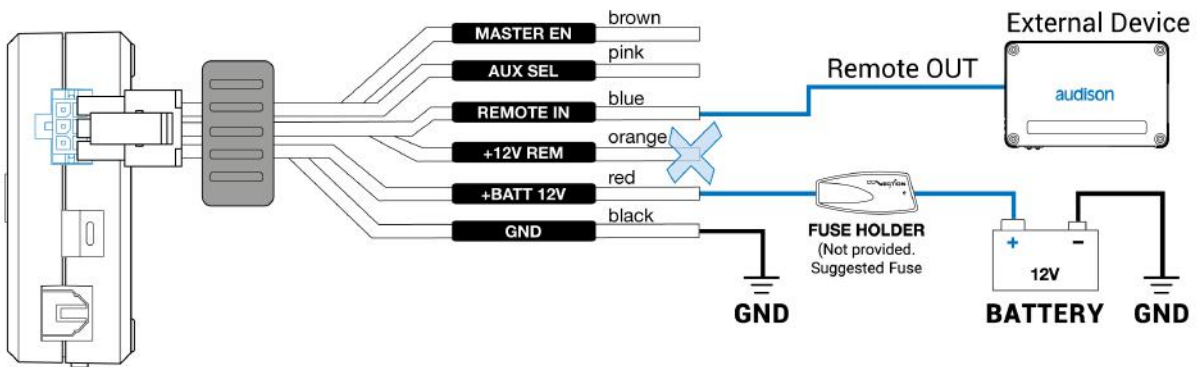
5.1 TURN ON BY REM IN



TURN ON BY +12V REM WIRE



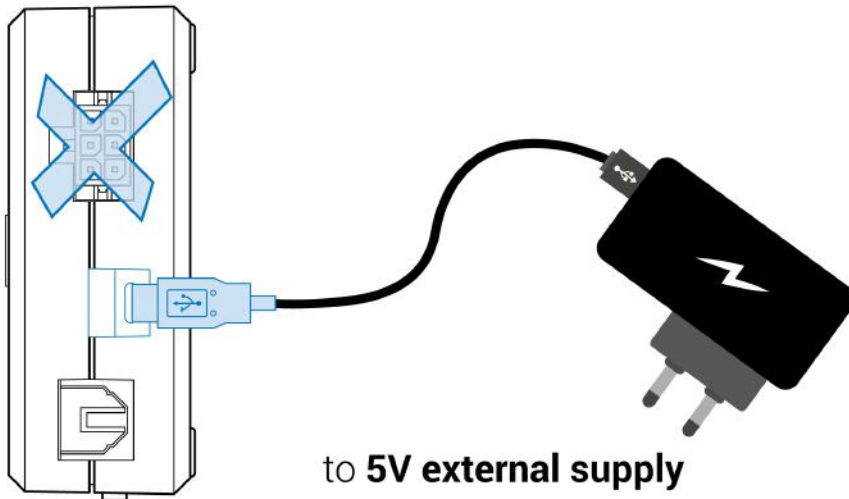
5.2 TURN ON BY +12V KEY SWITCH (min 70 mA on +12V REM wire)



TURN ON BY REMOTE IN



5.3 HOME INSTALLATION WITH SUPPLY 5V. (min. 500mA)



WARNING:



- The Multipolar cable in this case must not be connected.
- The ADC port in this case will be inactive.
- USB-C is for power supply only, no data transfer.

TURN ON BY **POWER SUPPLY** (Min. 500mA)



WARNING:

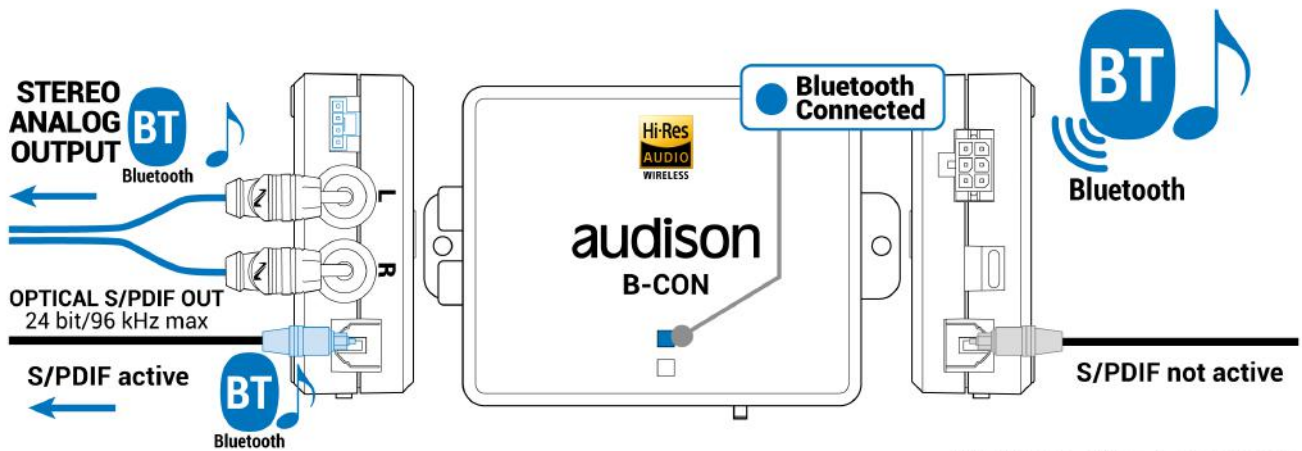
- The cables of the 6 poles SUPPLY/REMOTE PORT in this case must not be connected.
- When the il B-CON II is supplied by the USB adapter, also the ADC port will be inactive.

6. STREAMING AND PASSTHROUGH MODES

6.1 STREAMING BT MODE

During the use in BT streaming it is possible to use both the RCA stereo outputs and the digital optical SPDIF output.

STREAMING ON



L'ingresso ottico è disattivato quando lo streaming Bluetooth è attivo.

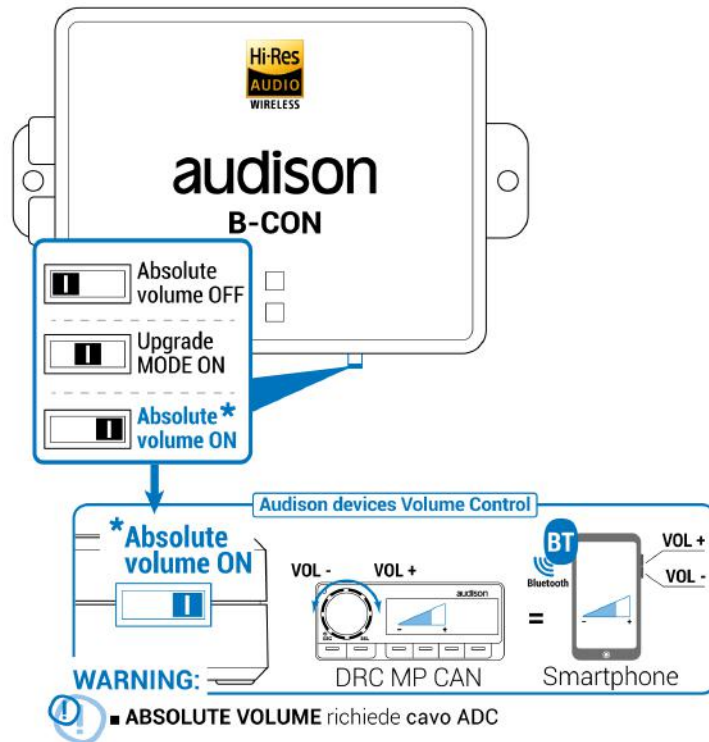
- Use with Audison Virtuoso or AF bit: in this case the source switch (from Master to Optical when the streaming starts and from Optical to Master when the streaming stops) is managed automatically by the ADC port through the integrated serial protocol. Therefore it is not needed to connect the MASTER EN and AUX SEL cables.
- Use with any device not compatible with the ADC: in this case the the source switch (from Master to Optical when the streaming starts, and from Optical to Master when the streaming stops) can be managed by connecting the MASTER EN and AUX SEL wires of the B-CON II and by programming properly the device

ABSOLUTE VOLUME

The Absolute Volume mode is available only when the B-CON II is connected to an Audison bit One HD Virtuoso or AF bit through the ADC port.

To switch between Absolute Volume ON/OFF and viceversa, follow this procedure:

1. Unpair the B-CON II from the mobile device.
2. Turn off the B-CON II.
3. Move the dedicated Switch in position Absolute Volume ON or OFF.
4. Turn on the B-CON II.
5. Pair the B-CON II to the mobile device



6.2 OPTICAL PASSTHROUGH MODE

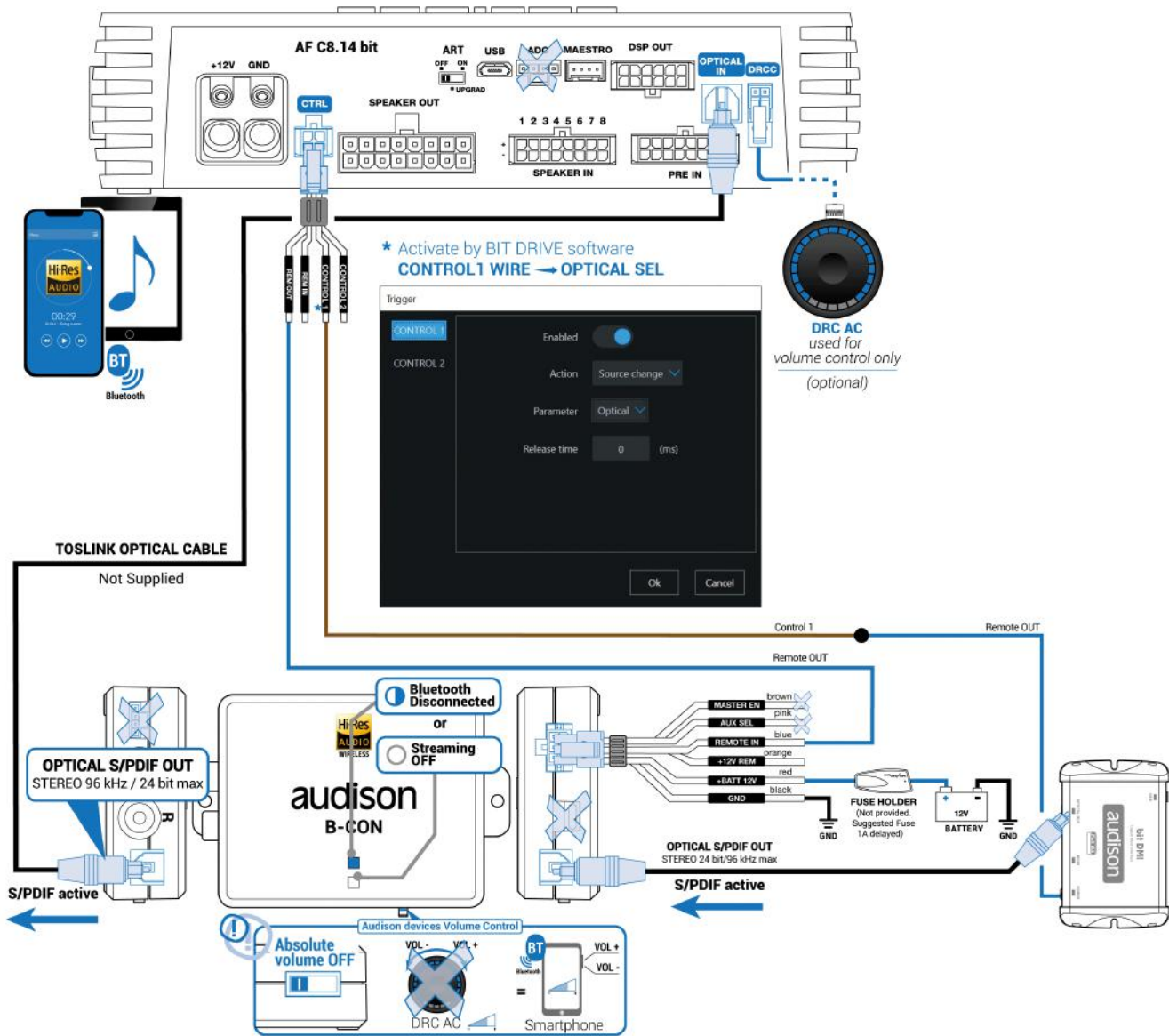
This mode allows to play music files from an external player connected to the B-CON II optical input with an optical fiber cable. In this case the B-CON II will reproduce exactly the same input signal without any D/A and A/D internal conversion.

Note: in Passthrough mode the RCA stereo output of the B-CON II is disabled.

Passthrough is active when:

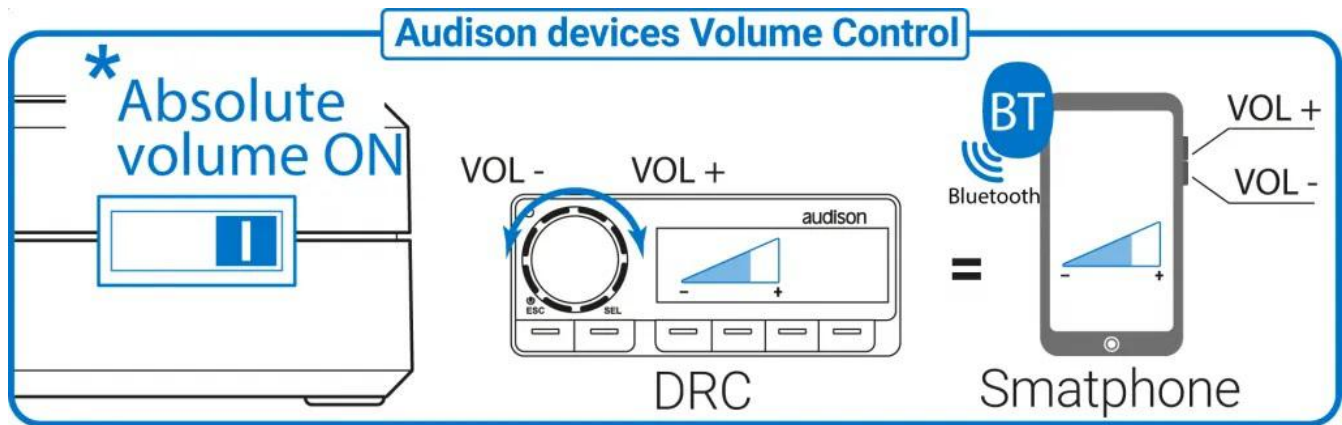
- The B CON is not paired in Bluetooth to any other device.
- The BCON is paired in Bluetooth with a mobile device, but the streaming is not active (the device is not playing any music file).

Example of Passthrough mode with B-CON II connected to an Audison bitDMI and to an AF bit amplifier:



7. ABSOLUTE VOLUME FUNCTION

In keeping with Audison tradition, during the design phase, particular attention was paid to volume management, a fundamental aspect for the search for the highest audio quality. Most Bluetooth devices apply the volume controls to the audio stream, but this compromises the potential dynamic range significantly - often below the expected performance from digital audio!



The function **Absolute Volume** allows to manage through mobile device the Master Volume of the connected DSP, keeping the digital signal at the maximum dynamic range. This avoids the loss of resolution which is typical when using the volume buttons of the mobile device.

To enable the function it is sufficient to:

connect the ADC port of the B-CON II with the ADC port of the amplifier or processor in use (port available in the line of AF bit amplifiers and in the processor bit One HD Virtuoso).

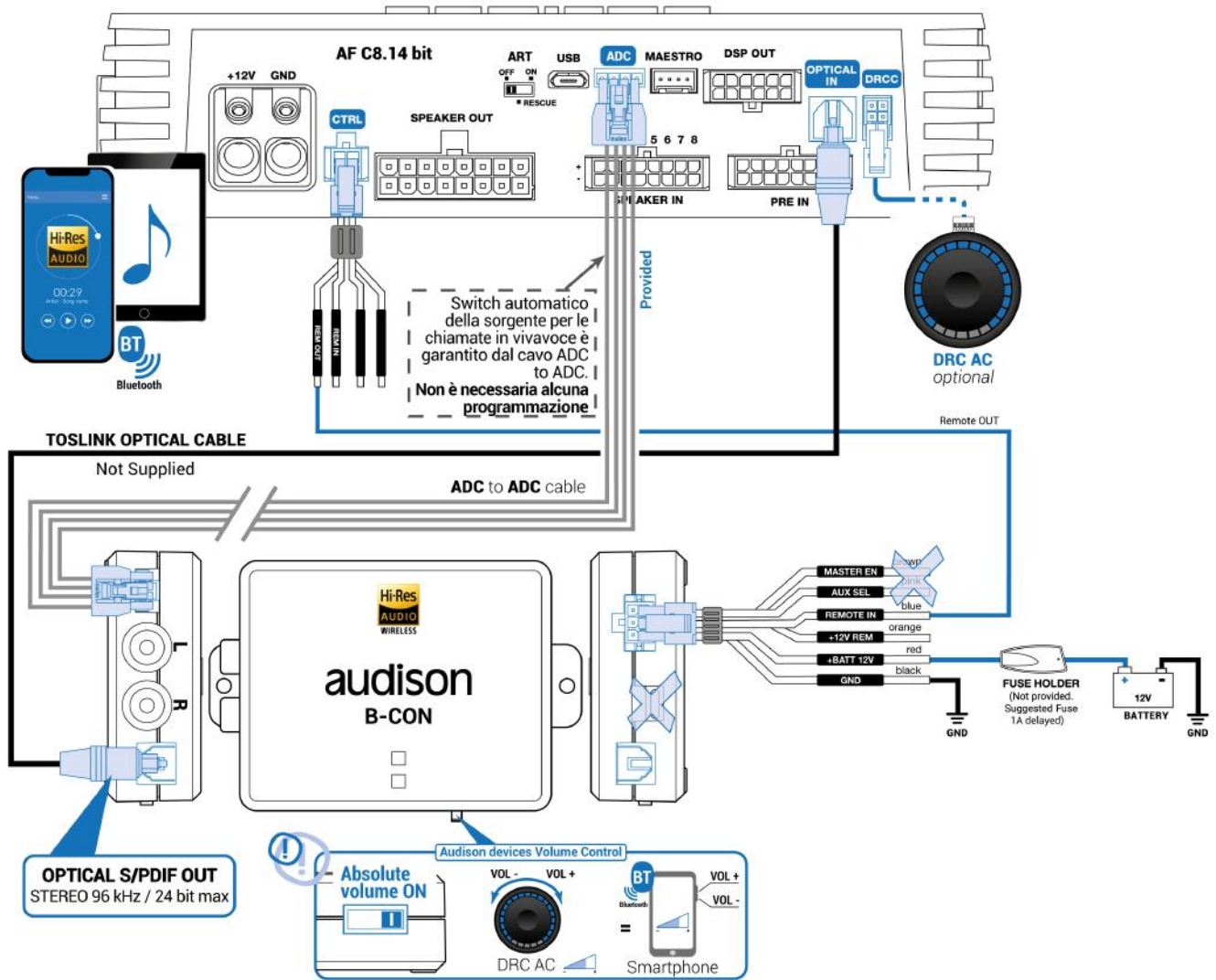
put the switch in position ON as per picture.

IMPORTANT: Once it is enabled, the user will be able to manage independently the volumes from the same mobile device for either Master Source e per Optical Source!

IMPORTANT: when B-CON II is in Absolute Volume mode, the volume is controlled by the phone, with its own resolution. If you have a remote controller like DRC-MP CAN or DRC AC, it can only adapt to that resolution, therefore when the user selects a non-representable level in either DRC AC or DRC MP CAN, it will be adjusted to the nearest level available from the phone.

Note: the Absolute Volume function is available only in Streaming mode. It cannot be used for Passthrough mode.

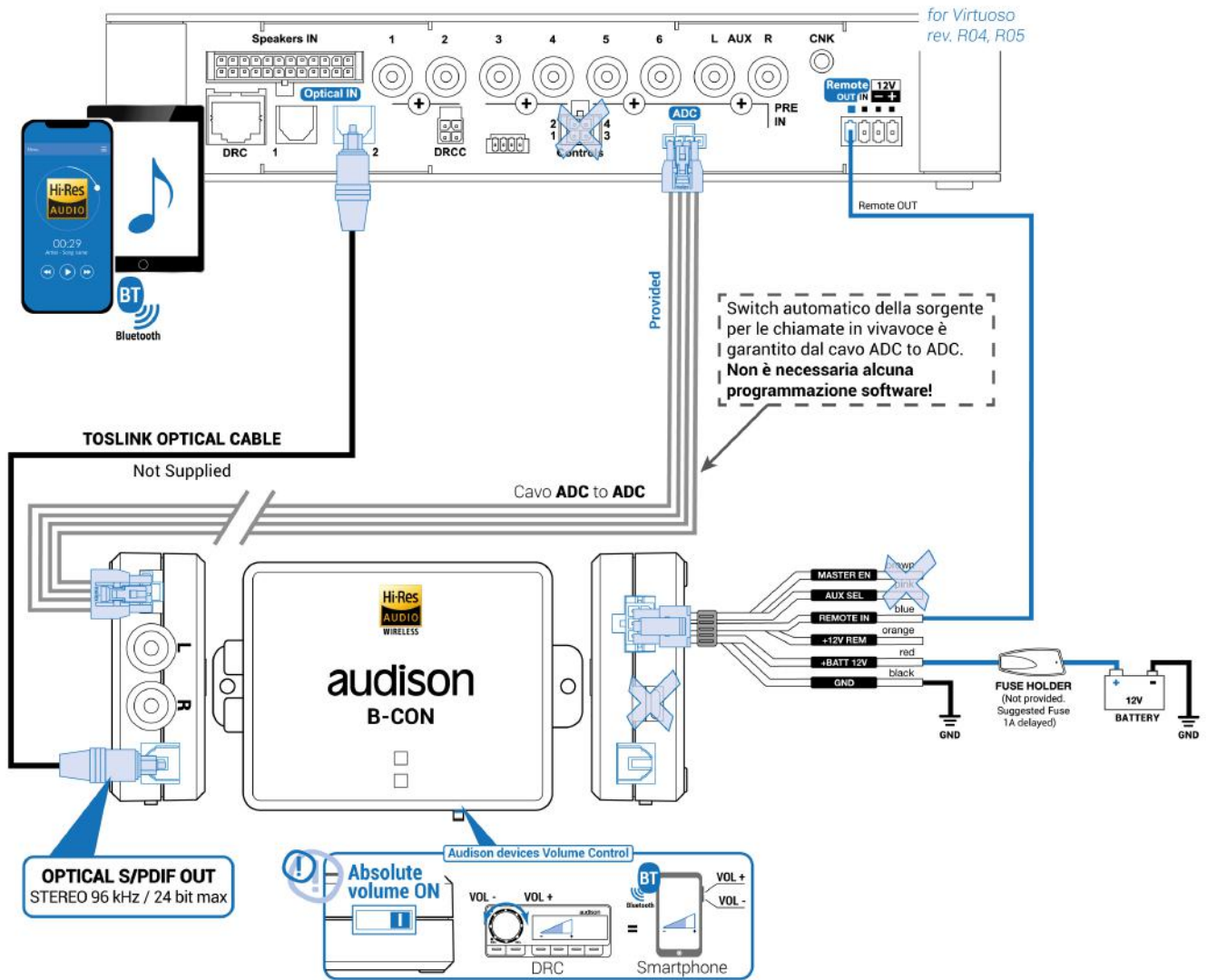
Example of connection



8. CONNECTION WITH AMP/PROCESSOR - EXAMPLES

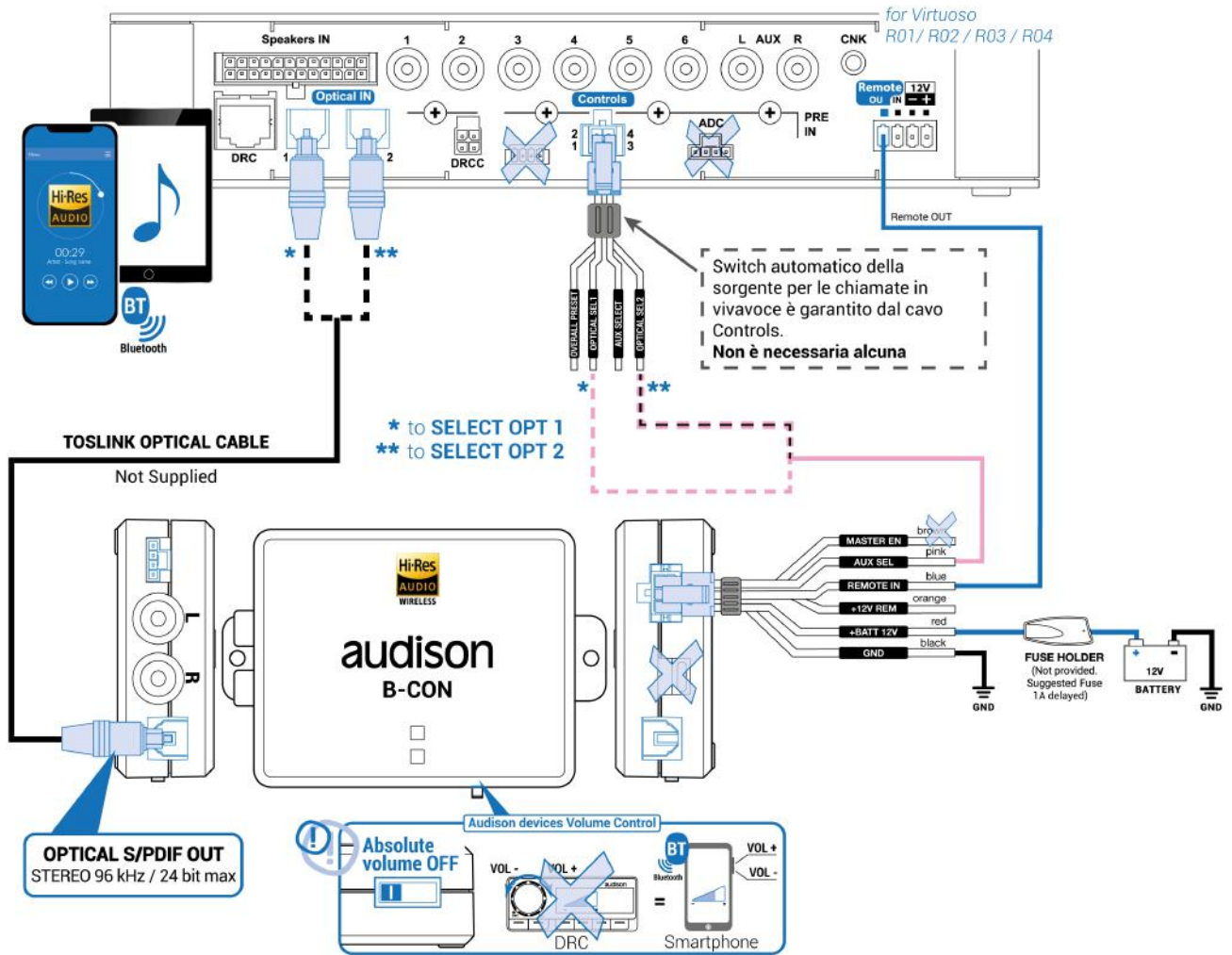
8.1 Bit One HD Virtuoso / Bit One HD

8.1.1 bit One HD Virtuoso rev. R04, R05 / B-CON II Absolute Volume ON / Automatic source switch through ADC to ADC cable.



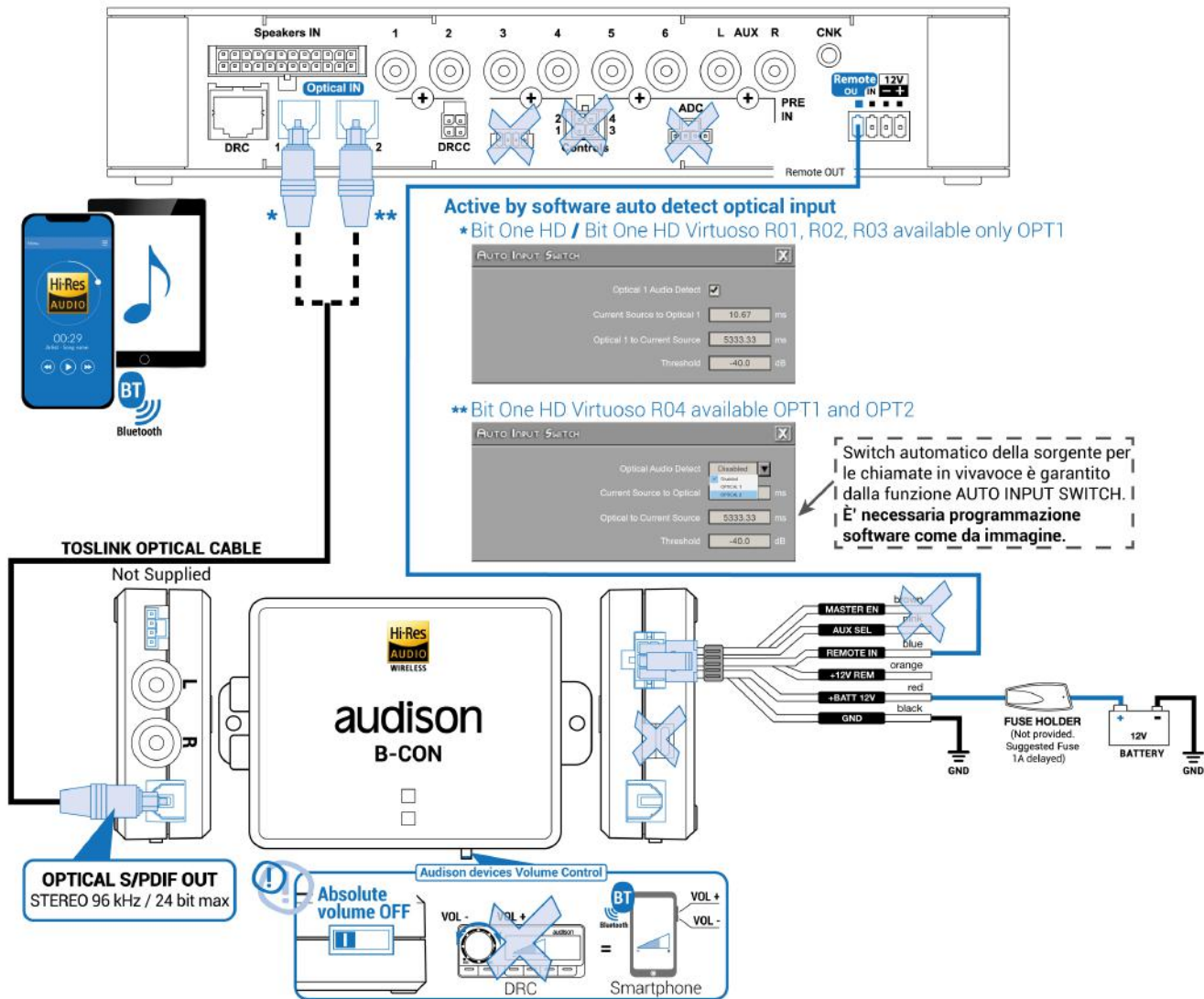
Nota: nel caso di connessione ad un bit One HD Virtuoso tramite cavo ADC to ADC, il B-CON II forza sempre lo switch automatico della sorgente a Optical IN #2.

8.1.2. bit One HD Virtuoso rev. R01,R02,R03,R04 or BIT ONE HD / B-CON II Absolute Volume OFF / Automatic source switch through CONTROL cable.



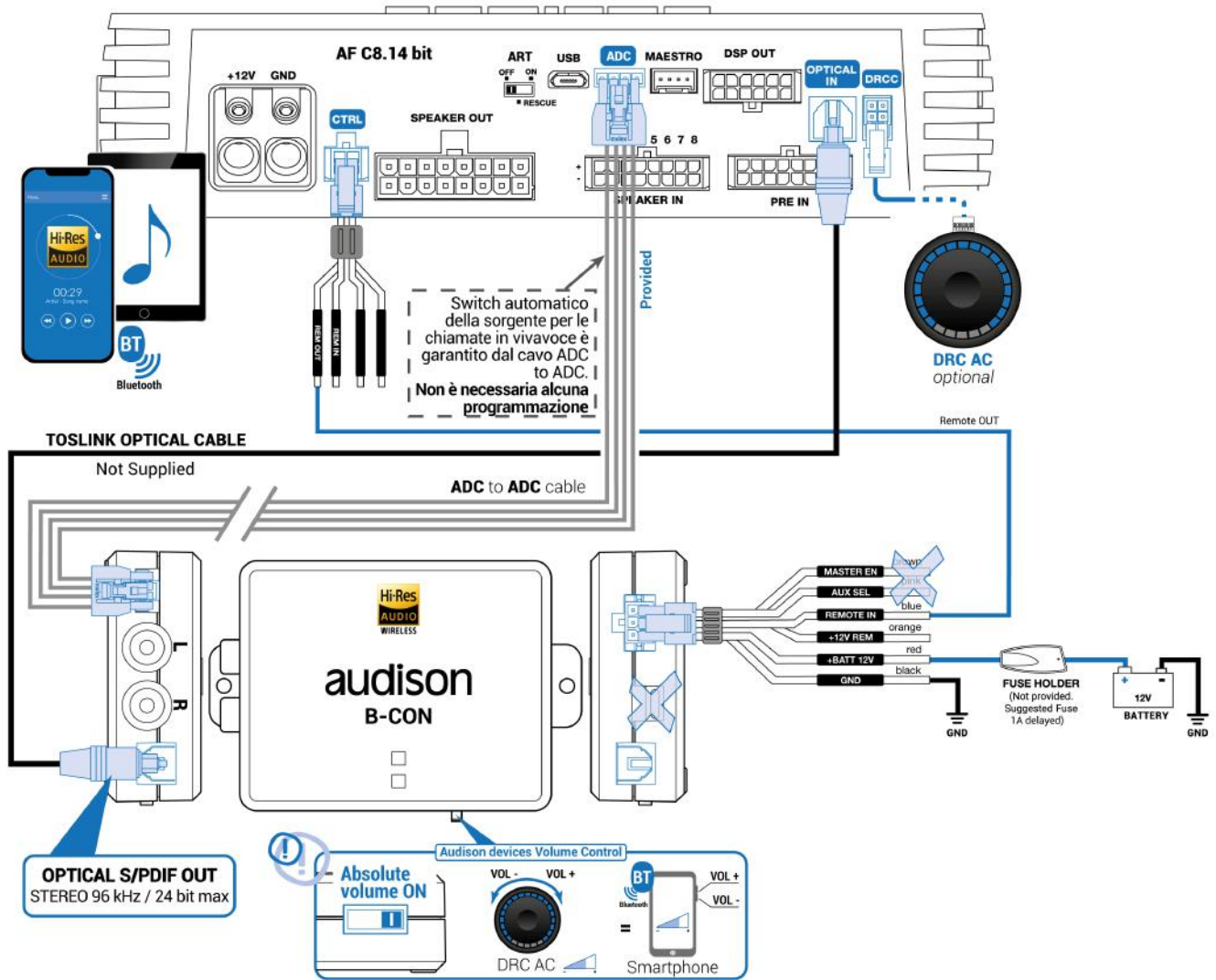
Nota: in case of connection with a bit One HD Virtuoso without ADC to ADC, the B-CON II can force the automatic switch to source Optical IN #1 or #2 depending on how the AUX SEL wire is connected (pink color).

8.1.3. bit One HD Virtuoso rev. R01,R02,R03,R04,R05 / B-CON II Absolute Volume OFF / Automatic source switch through software function AUTO INPUT SWITCH.

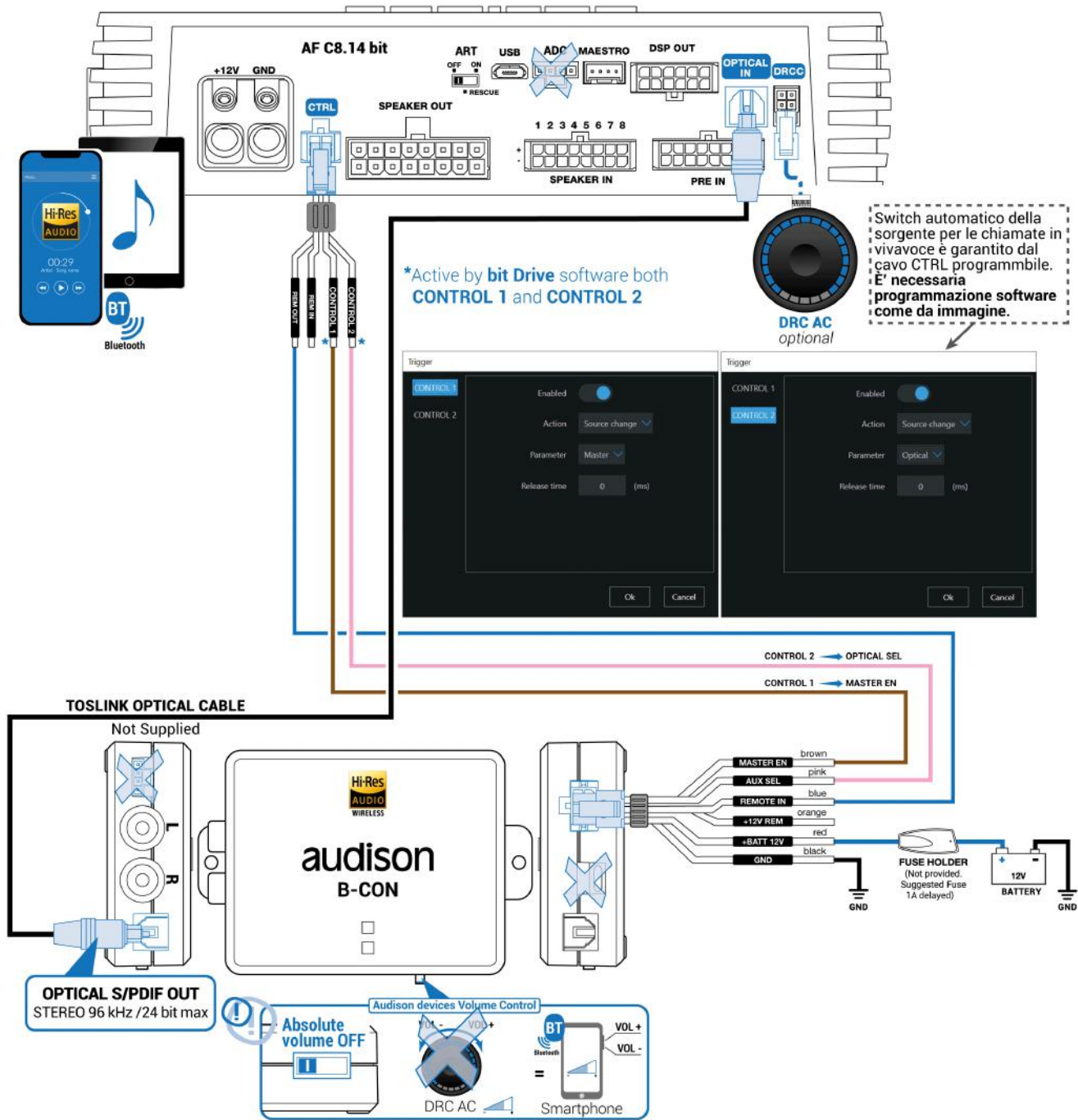


8.2 AF bit

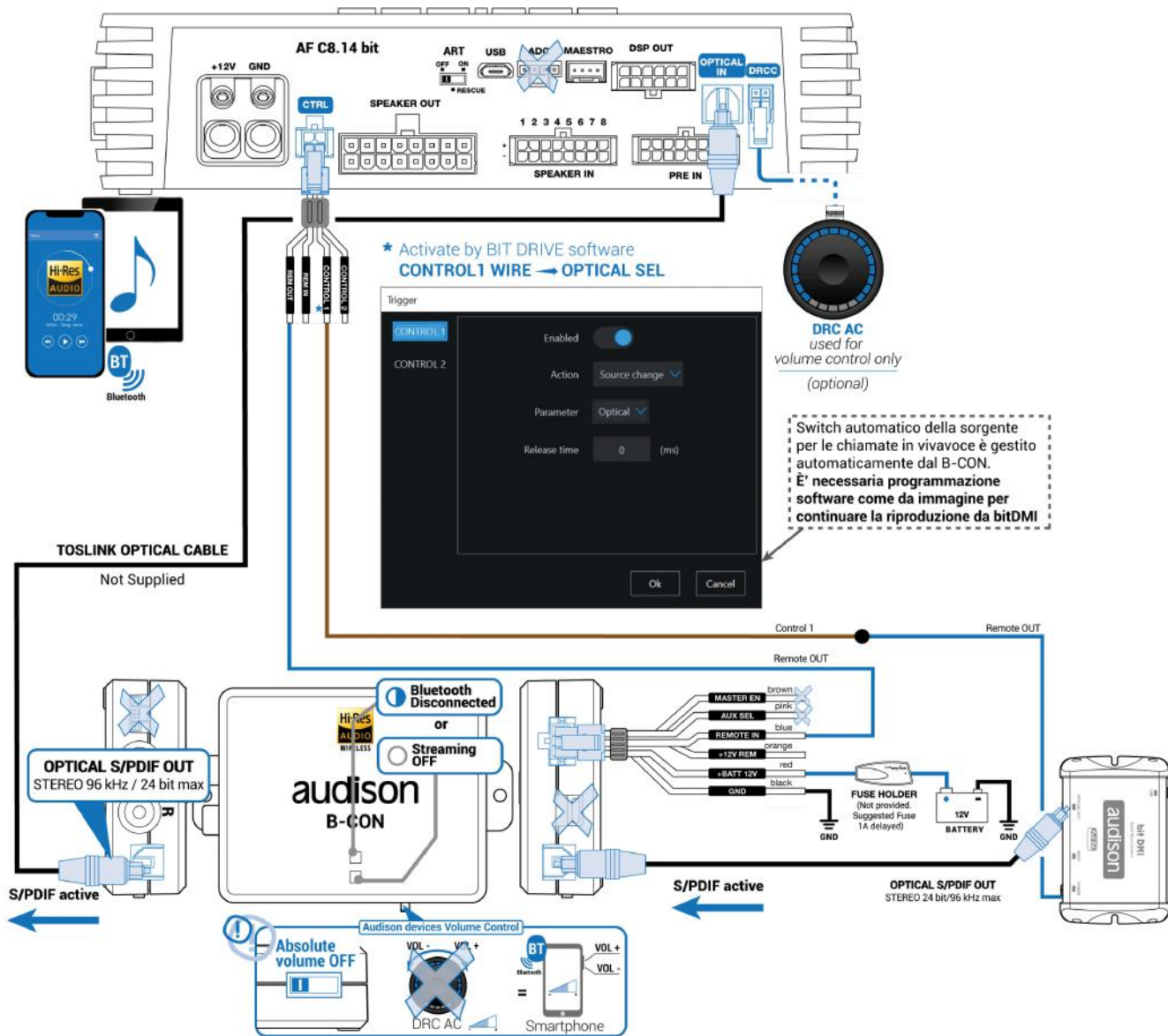
8.2.1. AF bit / B-CON II Absolute Volume ON / Automatic source switch through ADC to ADC cable.



8.2.2. AF bit / B-CON II Absolute Volume OFF / Automatic source switch through programmable CTRL cable.

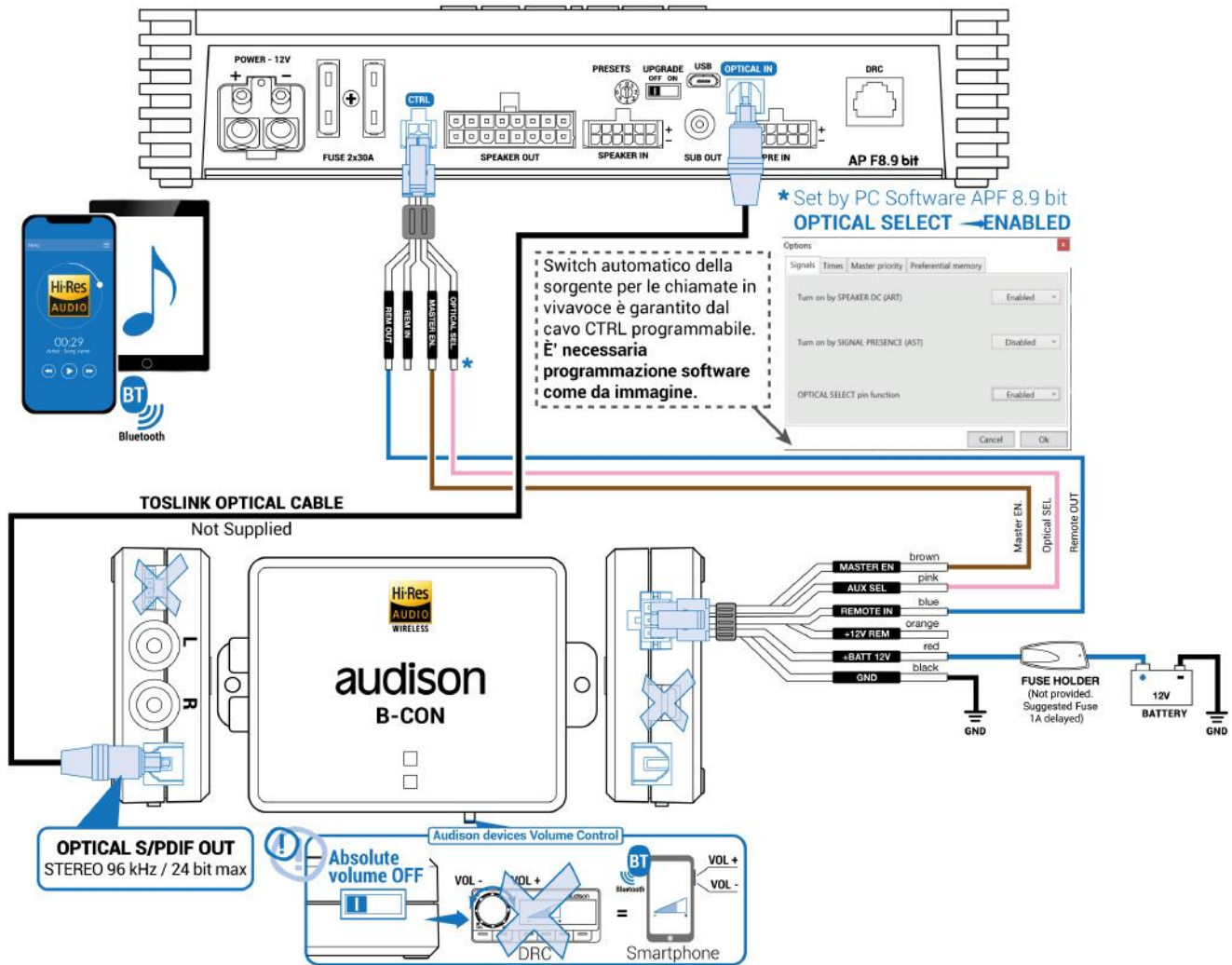


8.2.3. AF bit / B-CON II Absolute Volume OFF / bit DMI in Passthrough mode / Automatic source switch through programmable CTRL cable.

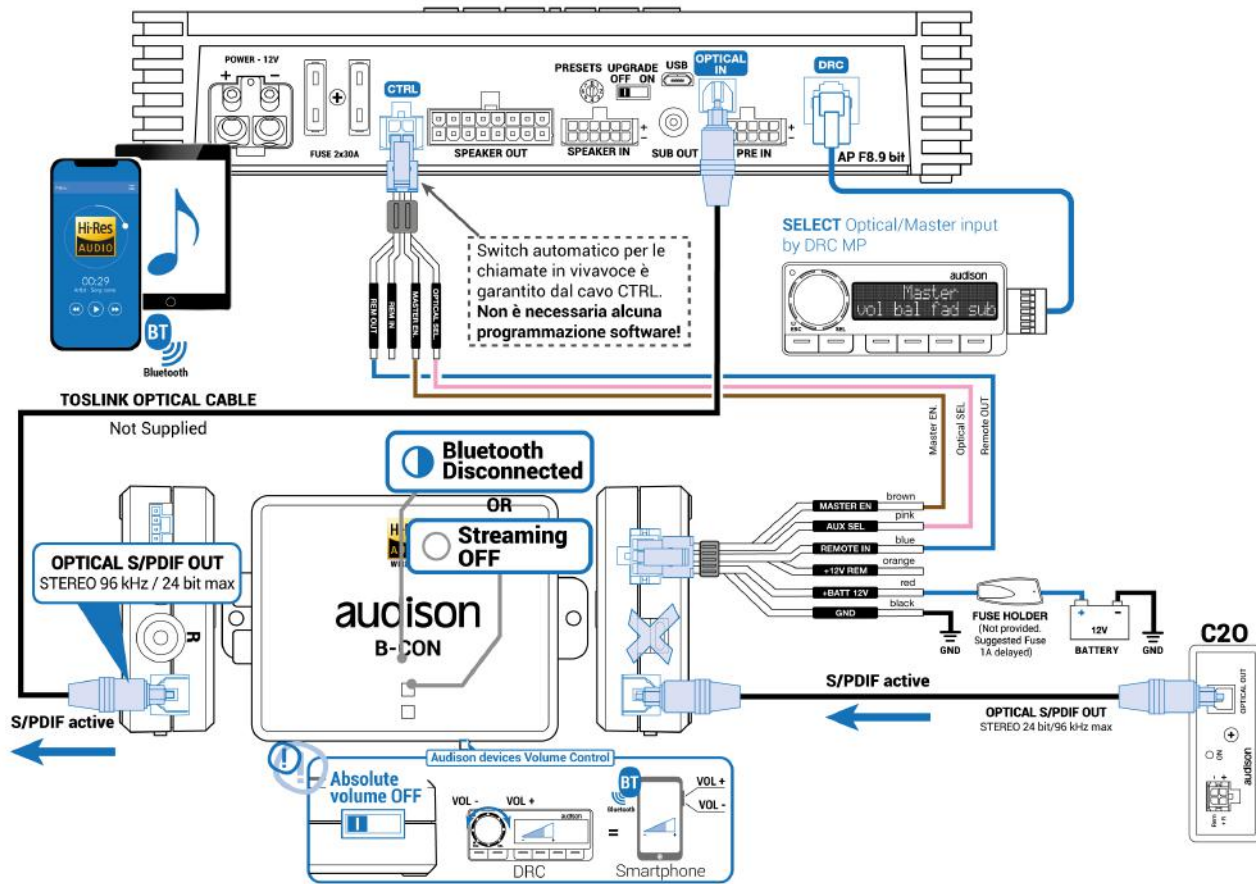


8.3 AP F8.9 bit

8.3.1. AP F8.9 bit / B-CON II Absolute Volume OFF / cambio automatico di sorgente tramite cavo CTRL programmabile.

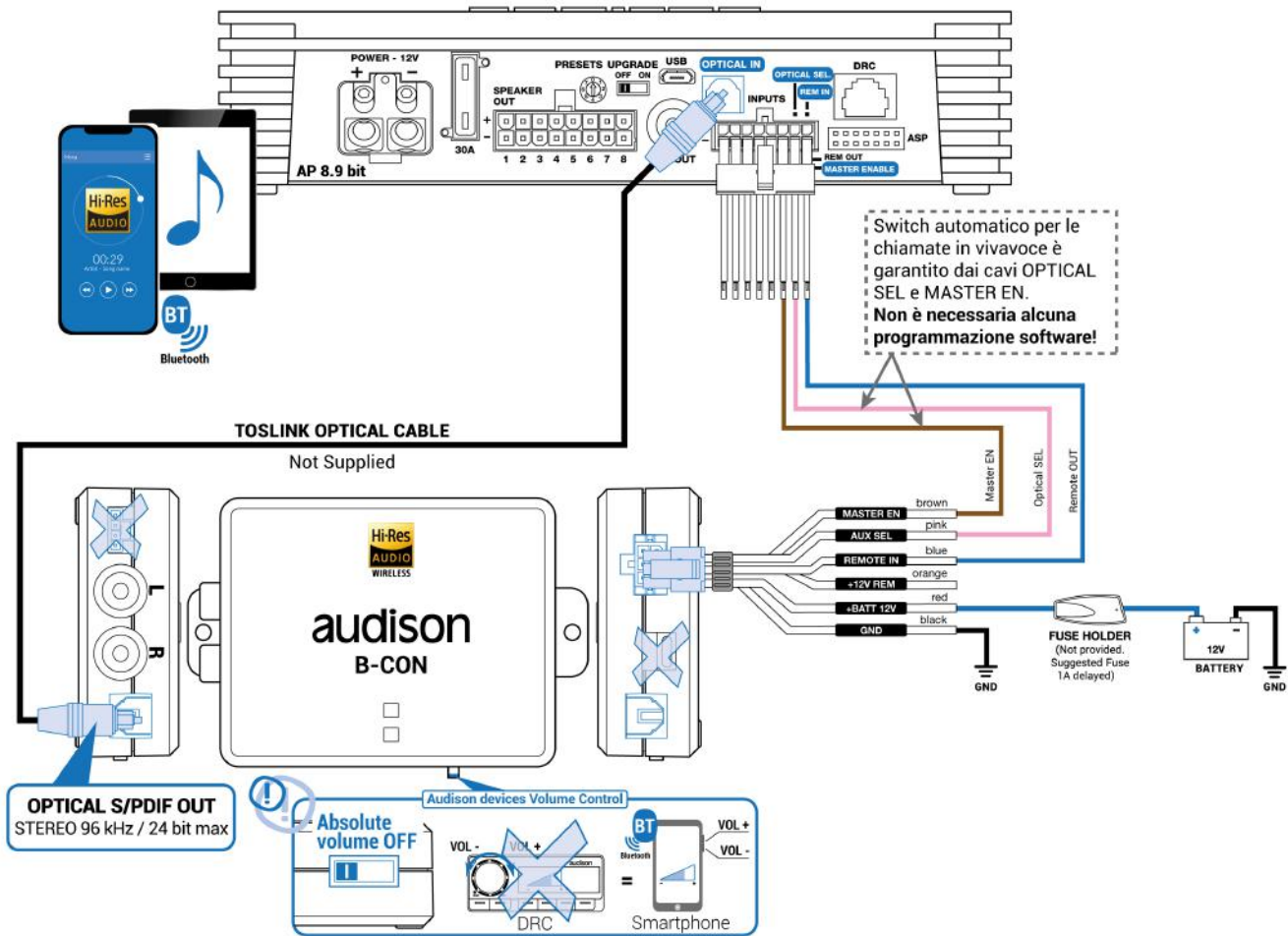


8.3.2. AP F8.9 bit / B-CON II Absolute Volume OFF / C2O in passthrough mode / Automatic source switch through programmable CTRL cable.



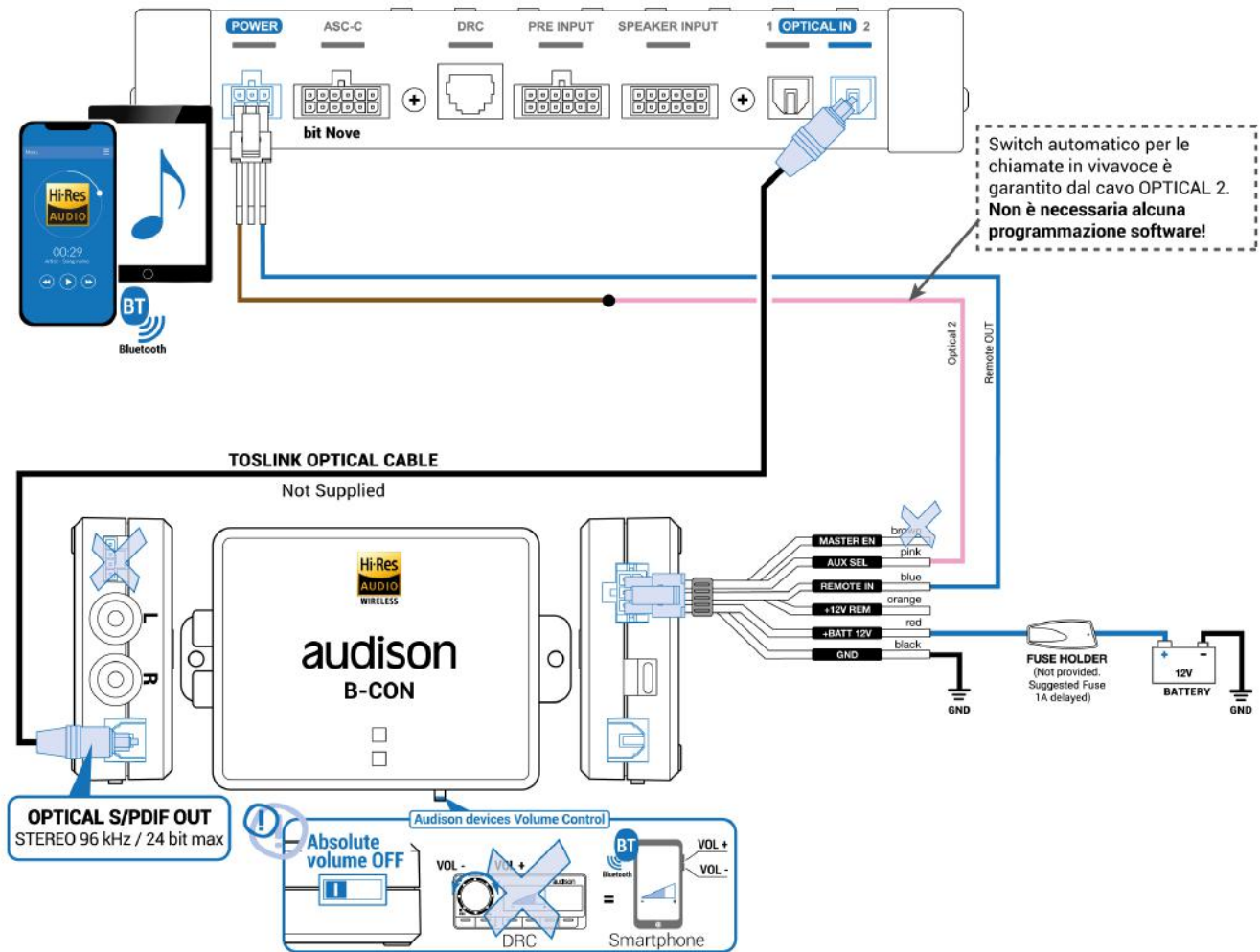
8.4 AP bit

8.4.1. AP bit / B-CON II Absolute Volume OFF / Automatic source switch through OPTICAL SEL and MASTER EN cables.



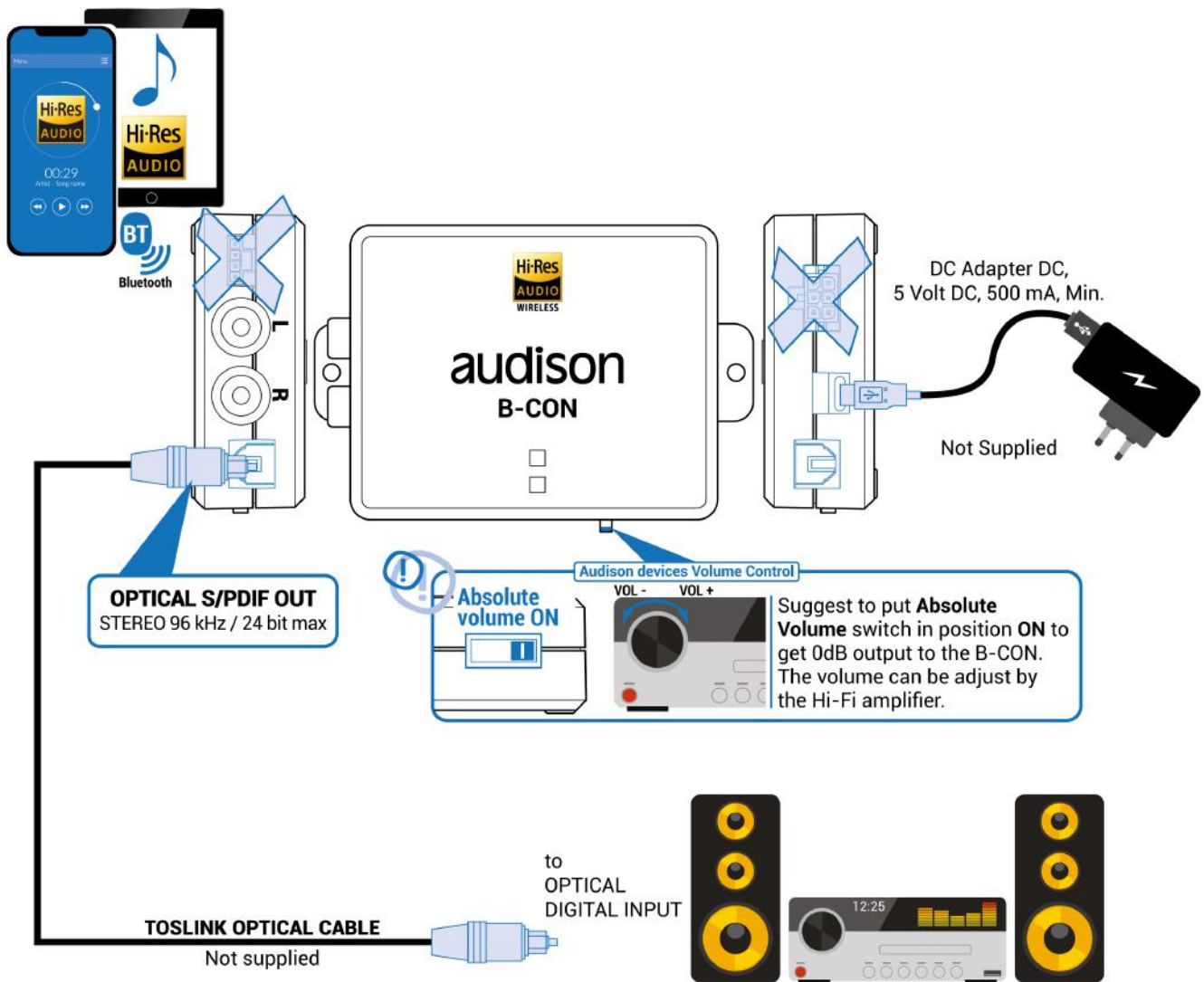
8.5 bit NOVE

8.5.1. bit NOVE / B-CON II Absolute Volume OFF / Automatic source switch through OPTICAL 2 cable.



8.6 Hi-Fi Home amplifier

8.6.1. Hi-Fi digital input / B-CON II Absolute Volume ON



9. PRIORITY MANAGE FOR STREAMING AND HANDS-FREE CALLS

The B-CON II allows a perfect integration with the OEM bluetooth system to manage the hands-free calls. When the mobile device receives a call, the B-CON II stops the music streaming and forces the automatical switch of the amplifier/processor from Optical input to Master input. The Hands-free call will be reproduced by the OEM bluetooth system. At the end of the call, the B-CON II resumes the music streaming, by forcing automatically the amplifier/processor switch from Master input to Optical input.

This automatic switch capability is available when the B-CON II is connected to and Audison bit One HD Virtuoso or an AF bit amplifier through the ADC port. The ADC port does not require any software programming.

As alternative, if a different device is connected to the B-CON II, you can still use the MASTER EN (brown) and AUX SEL (pink) cables on the SUPPLY/REMOTE cable and program them accordingly on the device to manage the automatic switch Master/Optical and viceversa. Please, read chapter [4. DESCRIPTION OF THE CONNECTION PANEL](#) for more informations.

Important: in order to ensure a proper compatibility of the B-CON II with the OEM bluetooth system, please make sure to follow these steps.

1. Unpair the mobile device from the vehicle OEM bluetooth;

2. Pair the mobile device to the B-CON II (it is suggested to change the B-CON II name in the mobile device settings in order to distinguish it from other eventual B-CON II devices paired to the same mobile device);
3. Pair again the mobile device to the vehicle OEM bluetooth.



WARNING: if the mobile device was unpaired and paired again to the B-CON II, the audio streaming with B-CON II may not work properly because of a change in the mobile device settings for the bluetooth connections.

In this case, to restore correctly the streaming with B-CON II please follow these steps:

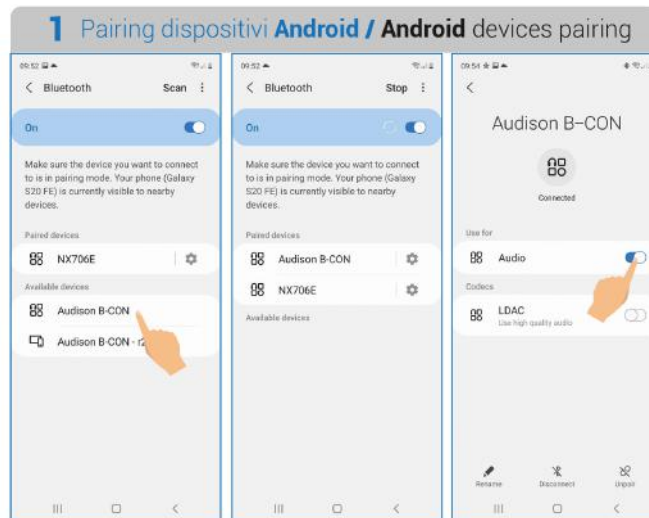
- Unpair the mobile device from the vehicle OEM bluetooth.
- Pair the B-CON II to the mobile device.
- Pair the mobile device to the vehicle OEM bluetooth.

WARNING: Compatibility with CarPlay and Android Auto systems.



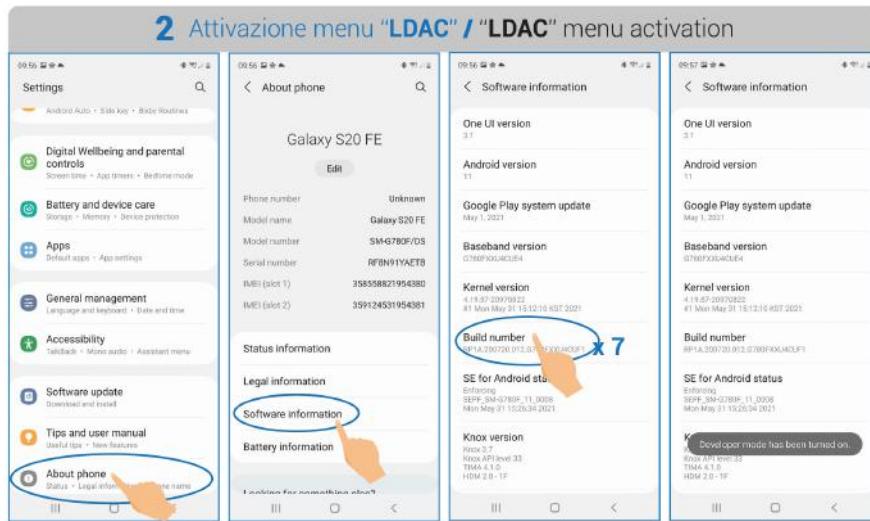
The B-CON II can be installed in vehicles equipped with CarPlay and Android Auto systems. Please, note that the full compatibility depends both on phone model, vehicle model and CarPlay/Android Auto systems (it can be wireless or wired). In some cases the CarPlay/Android Auto system takes priority and does not allow to manage automatically the Source switch of the processor/amplifier connected to the B-CON II.

10. ACTIVATE THE LDAC (AVAILABLE ONLY FOR ANDROID MOBILE DEVICES)

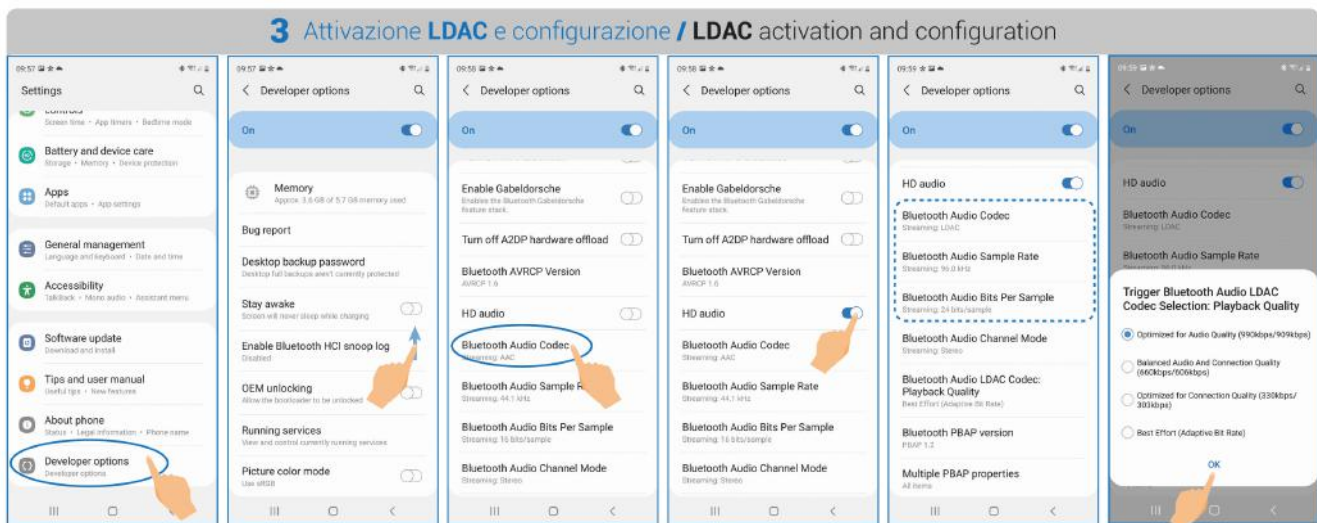


Activate the mobile device Bluetooth, so it will search for all available BT device to pair.

Select **Audison B-CON II**. Once the pairing is completed, **clickover the text Audison B-CON** highlighted to open the device settings, and activate the option **Audio**.



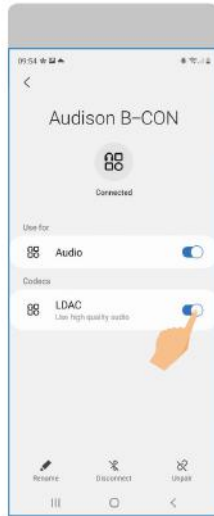
Open the main menu and select “**Settings**”. Scroll down and select “**About phone**”, select “**Software information**”. Scroll down and click rapidly for seven times “**Build number**”. The menu “**Developer options**” will be activated.



Enter the menu “Developer options” and scroll down until the menu “**Bluetooth Audio Codec**” appears.

Select the **LDAC** codec, and then optimize the audio settings.

The Android device is not ready for the streaming Audio Hi-Res.

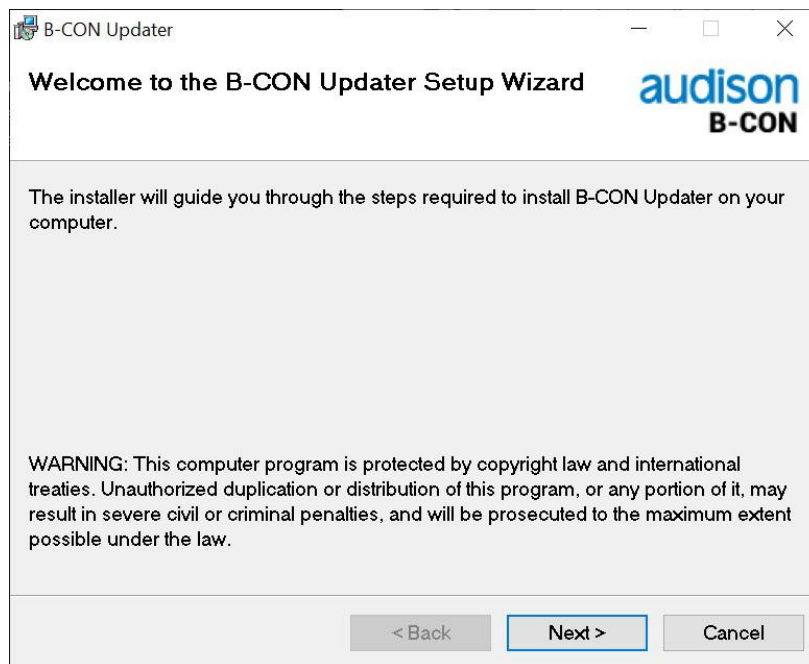


11. FIRMWARE/BLUETOOTH UPGRADE OF THE B-CON II

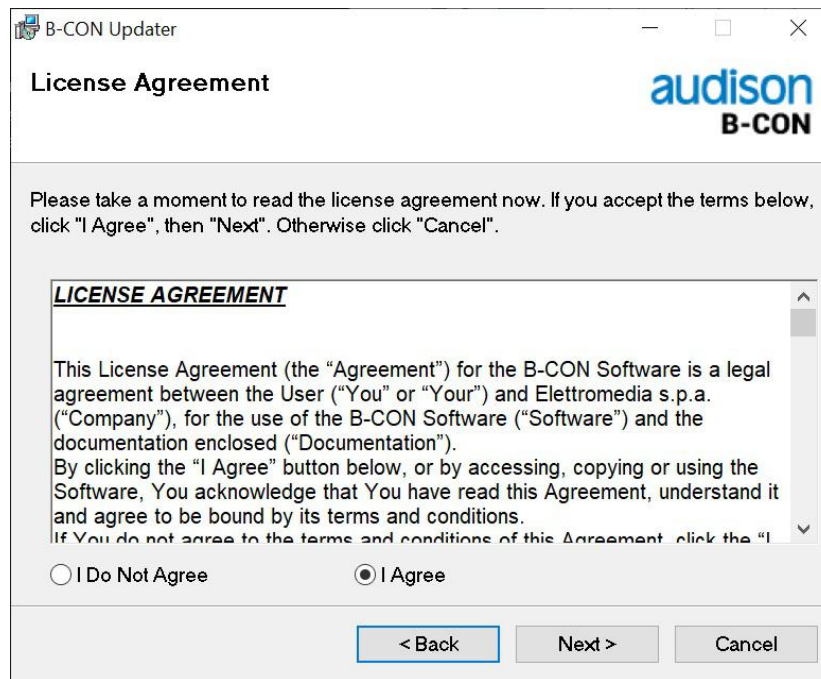
11.1 INSTALLATION OF THE B-CON II UPDATER

The firmware upgrade of a B-CON II requires the installation on the PC of the B-CON II Updater vxx tool, available for download in the product [webpage](#) at the Support window and compatible with any PC equipped with Windows 10 or 11 operating system. To install the program it is recommended to follow these steps:

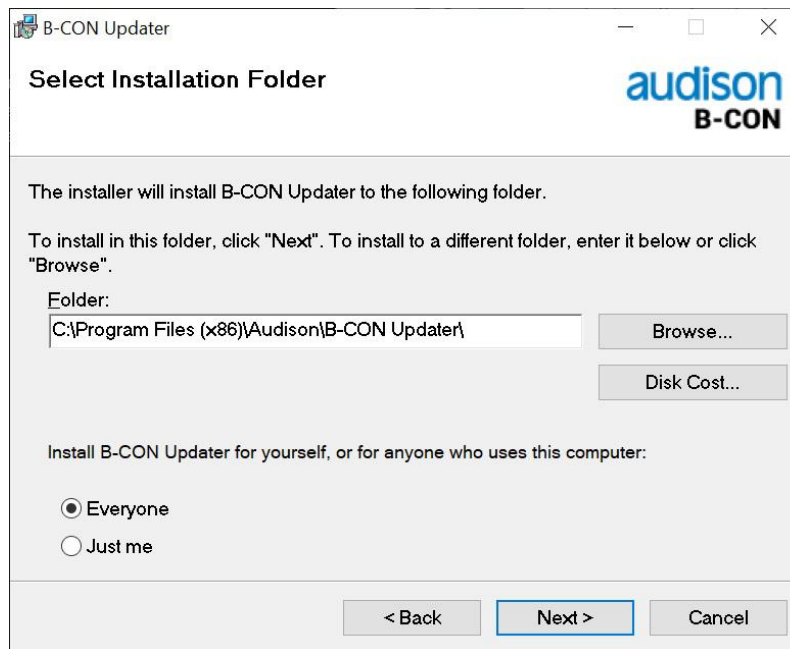
- Download the .zip file, extract its content in the PC and open the folder B-CON II Updater vxx;
- Right-click on setup.exe and select *Run as administrator*. The following window will appear;



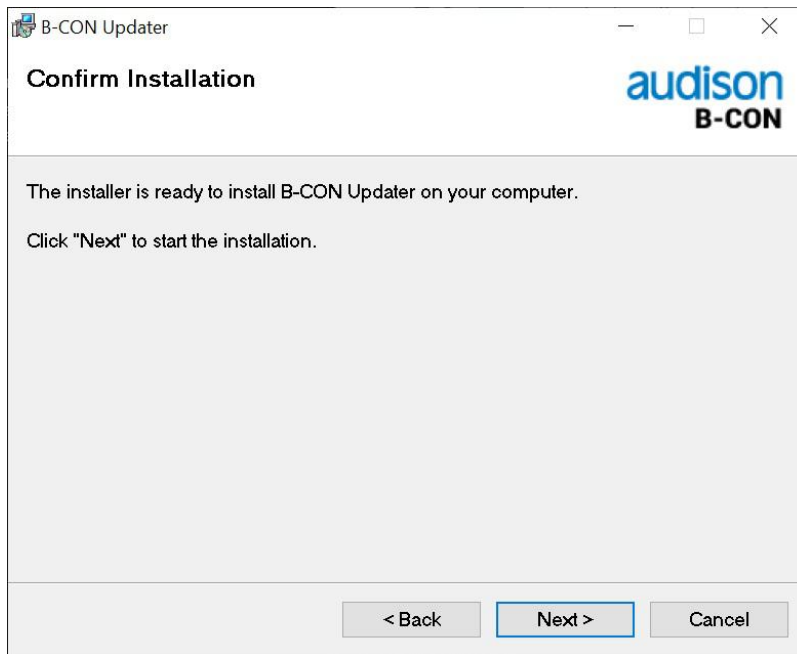
- Press **Next** to proceed.



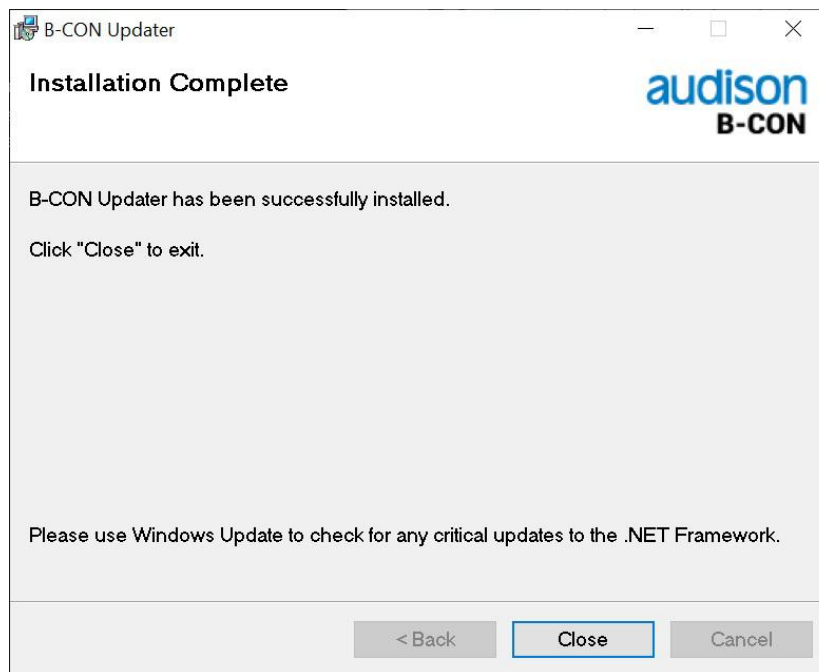
- Press **I Agree** to proceed;



- Press **Browse** if you want to change the installation folder in the PC, otherwise press **Next** to proceed;



- Press **Next** to proceed and wait until the installation is completed;



- Press **Close** to conclude.

The B-CON II Updater and all the software folders will be available at the following path *C:\Program Files (x86)\Audison\B-CON II Updater*. The program can be used any time there is a new firmware release on the website..

[11.2 FIRMWARE/BLUETOOTH UPGRADE BY WIRED CONNECTION](#)

Audison B-CON, Firmware upgrade tutorial



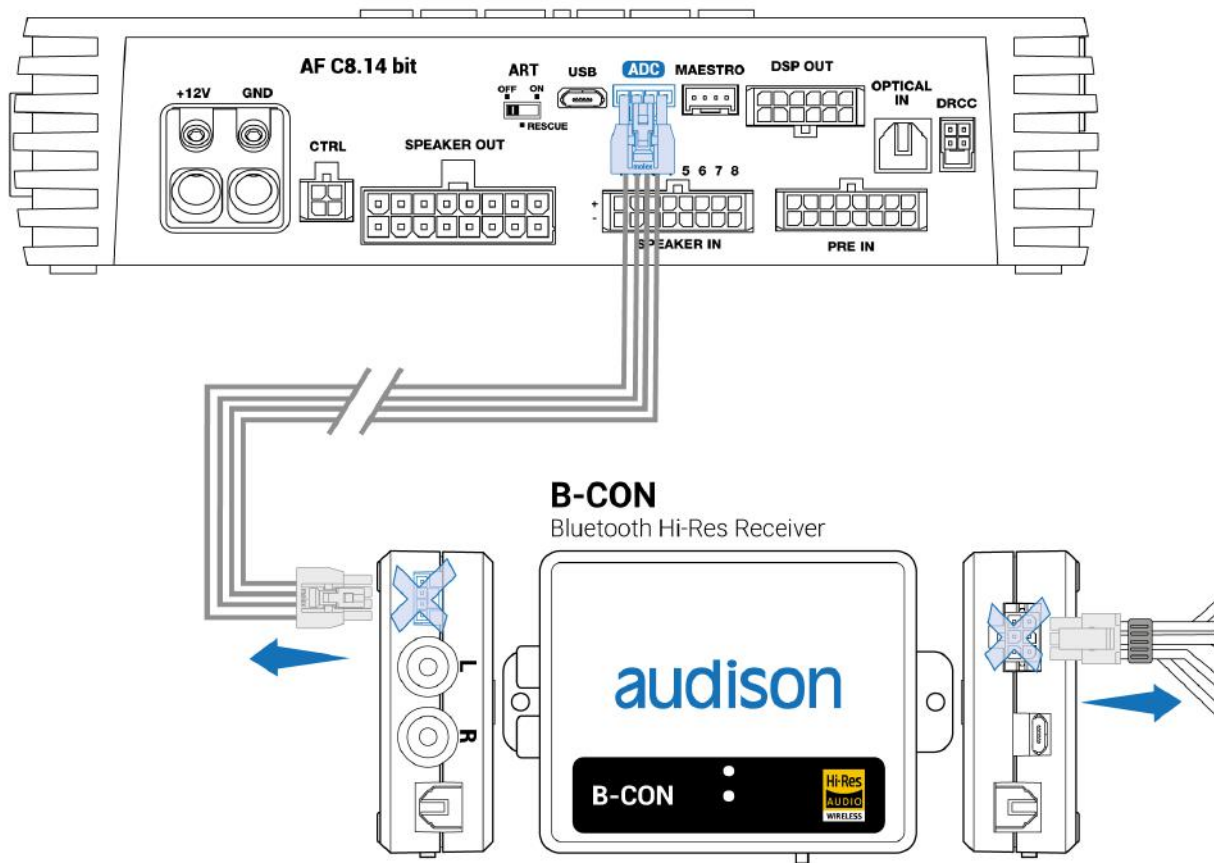
Audison B-CON FW Bluetooth upgrade



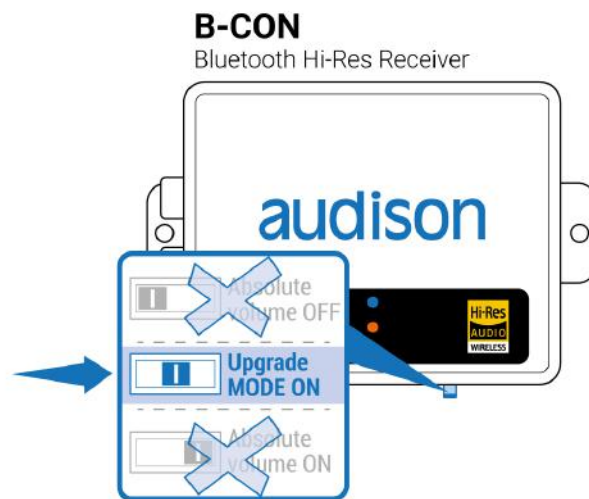
When a new B-CON II firmware or a new bluetooth firmware release is available on the Audison portal, please download the file in .zip format on your PC and extract its content. The firmware/bluetooth upgrade can be executed in three different ways:

11.2.1. Upgrade with the B-CON II connected to an Audison AF bit amplifier.

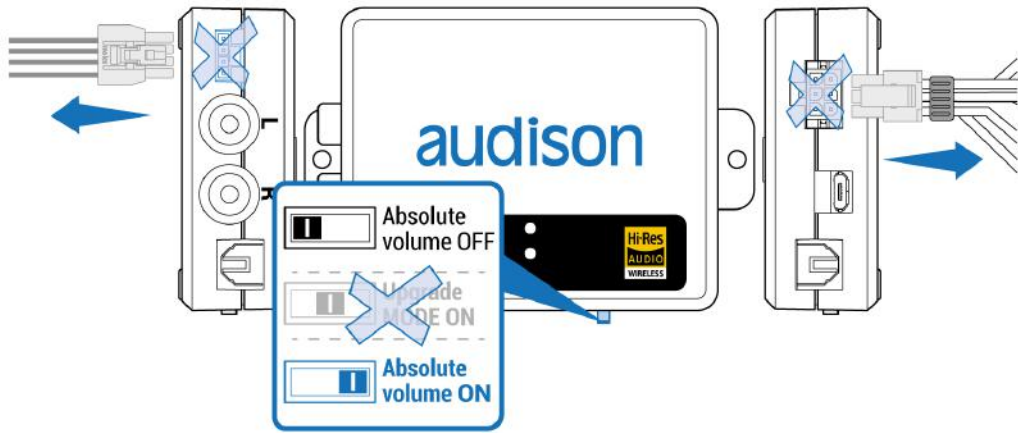
- Disconnect the ADC to ADC cable and the supply cable.



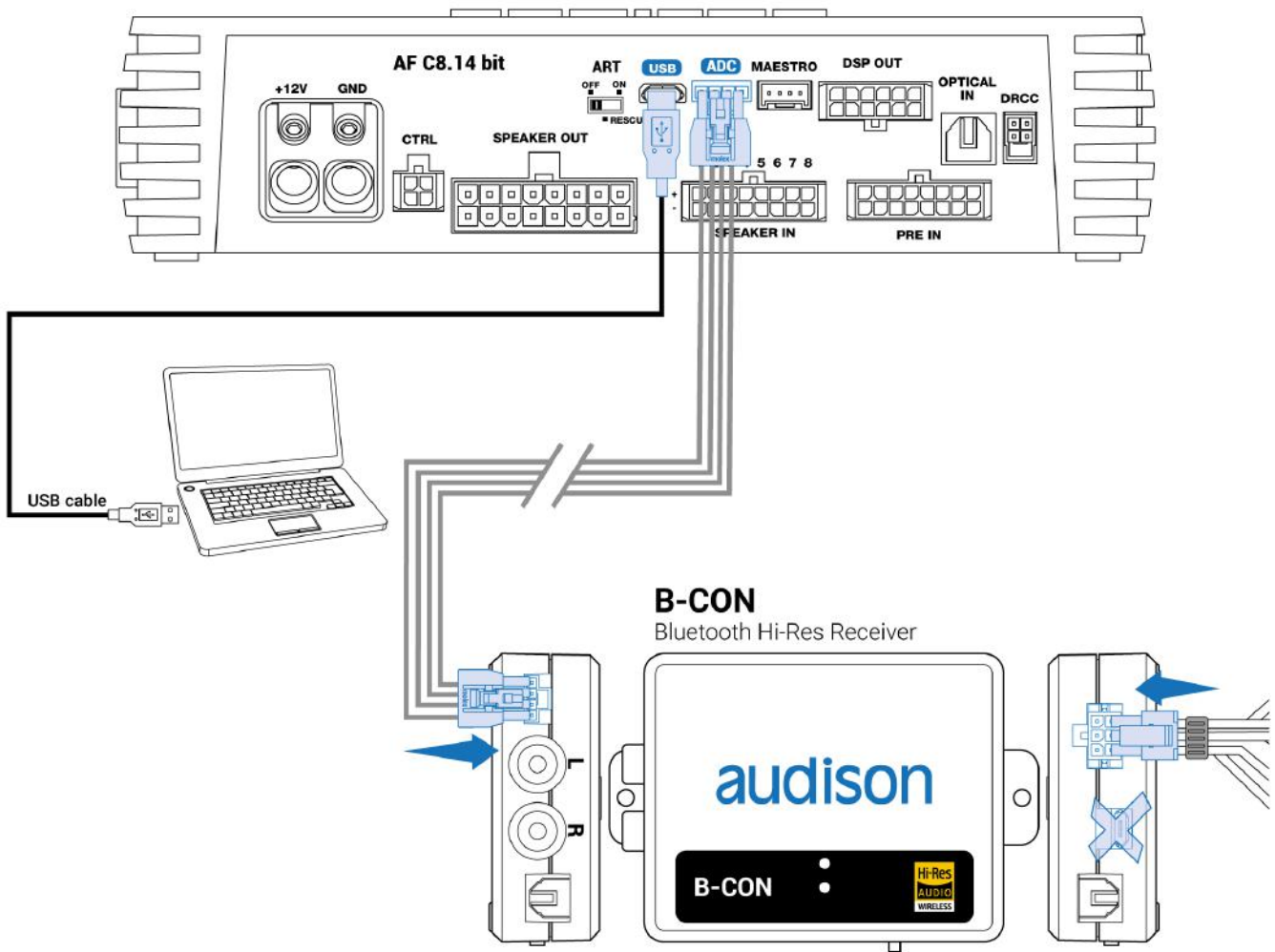
- Move the switch in the proper position according to upgrade type:
 - "Upgrade MODE" if you are doing a firmware upgrade.



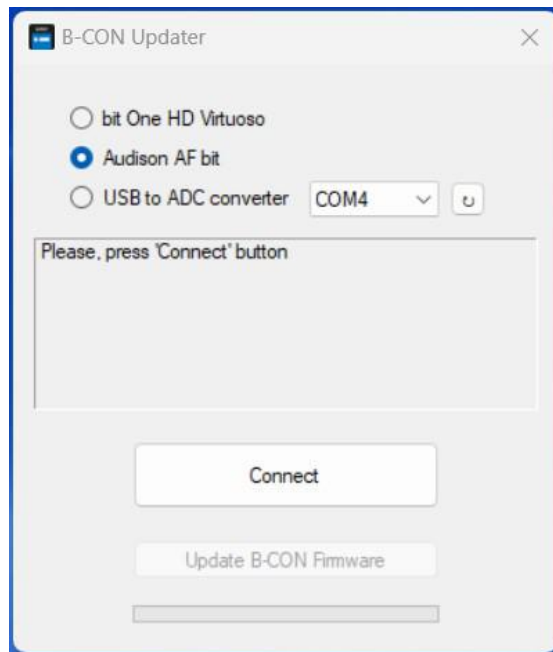
- Absolute volume ON or OFF" if you are doing a bluetooth firmware upgrade



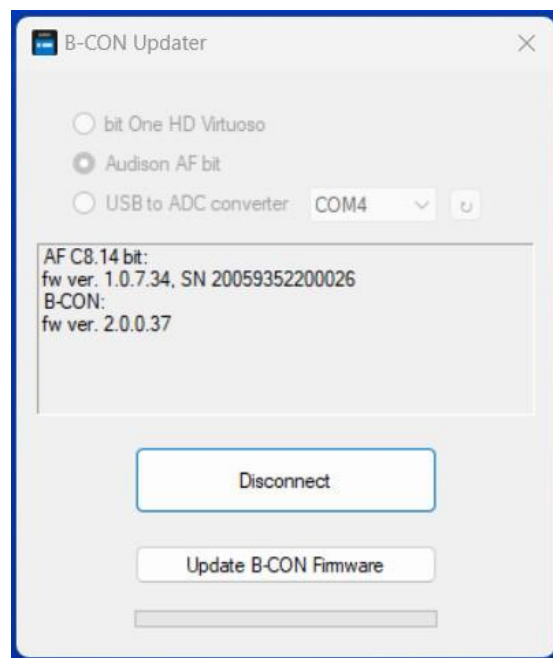
- Connect the B-CON II supply cable and ADC cable. The leds of the BCON will light up together to show that the device is ready to be upgraded. Then, connect the PC to the AF bit through the USB cable and turn on the processor.



- Run the B-CON II Updater tool.
- The following window will appear. Select "**Audison AF bit**", and then press "**Connect**"..



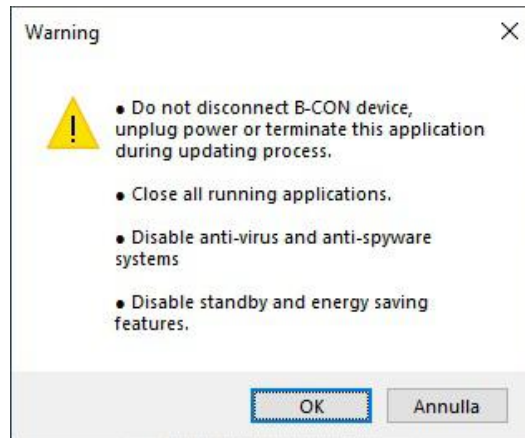
- The following window will appear to show the current firmware release of AF bit and B-CON II.



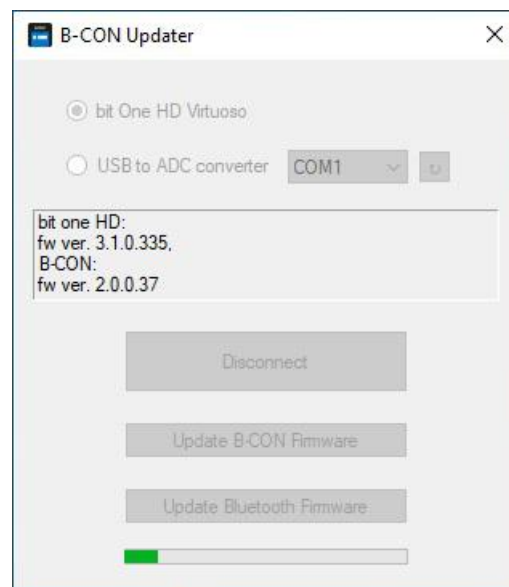
- Choose the upgrade to perform:
 - press "Update B-CON II firmware" if you are doing a firmware upgrade.
 - press "Update Bluetooth firmware" if you are doing a bluetooth firmware upgrade.
- Select the file .bin downloaded from the Audison website

Name	Date modified	Type	Size
Last week B-CON_Micro_FW 2_1_0_72.bin	26/01/2024 12:33	BIN File	183 KB

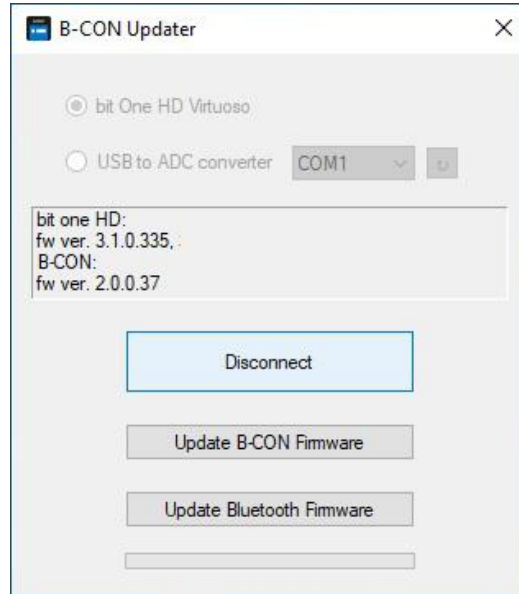
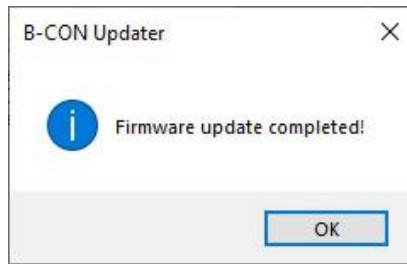
- Read the safety instructions in the Warning window and press "OK".



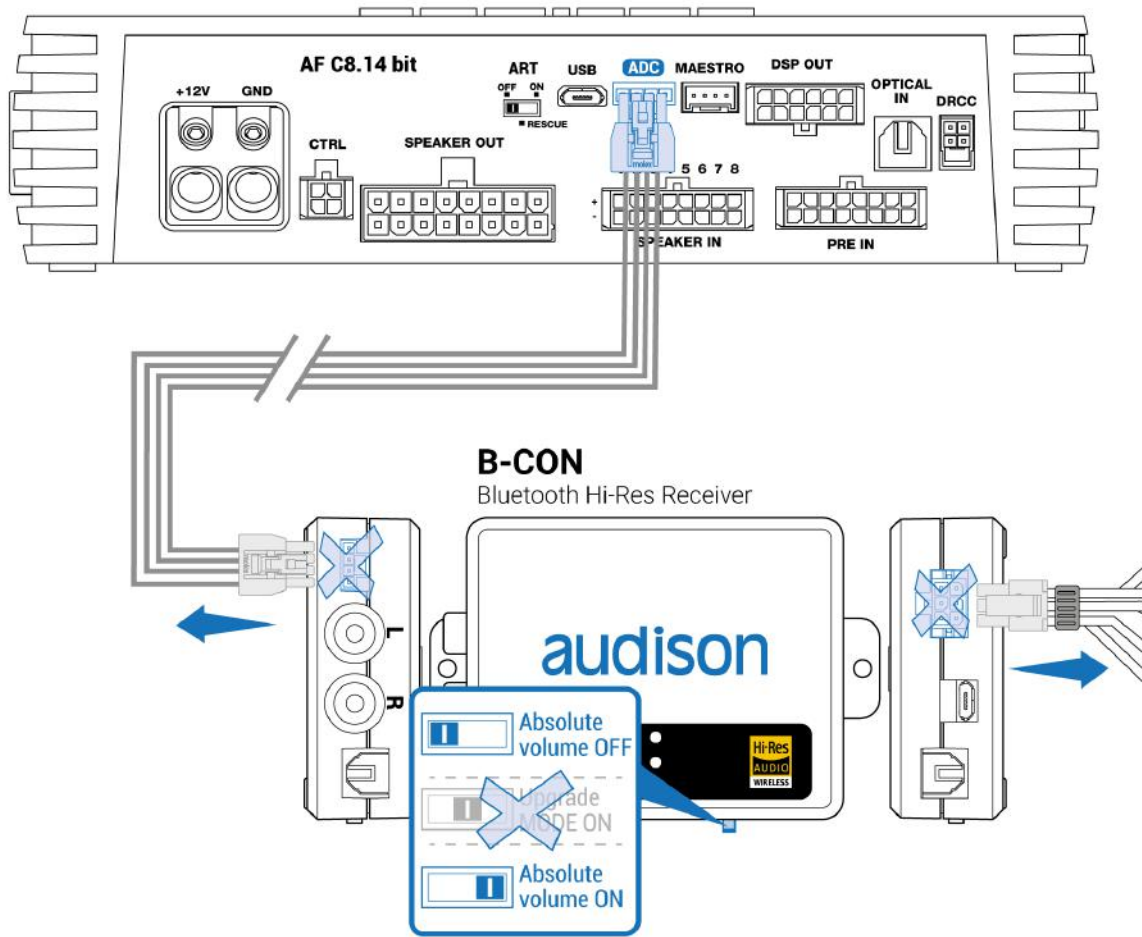
- Wait until the firmware upgrade is completed.



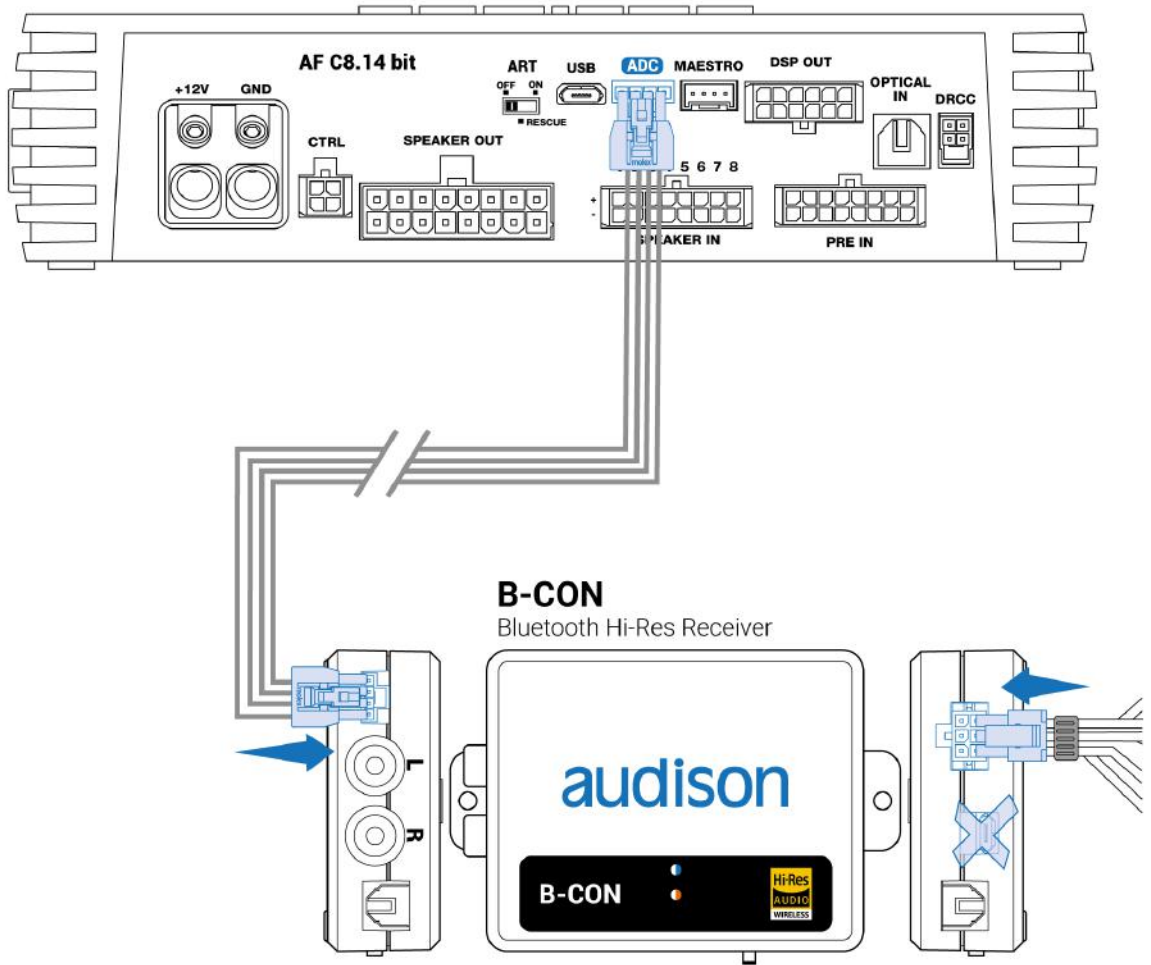
- At the end of the upgrade press "OK" and then "Disconnect".



- Remove the supply cable and the ADC cable from the B-CON II, move the switch to the desired Absolute volume setting (Absolute Volume ON or OFF).

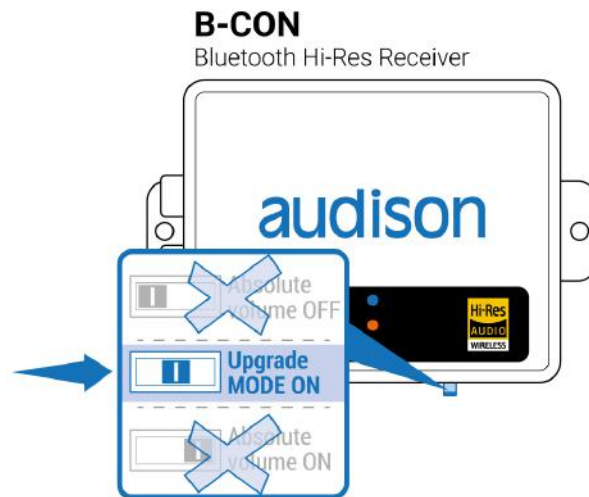


- Reconnect the B-CON II to the audio system, and if needed connect the ADC cable. Proceed with a new Pairing to the mobile device.

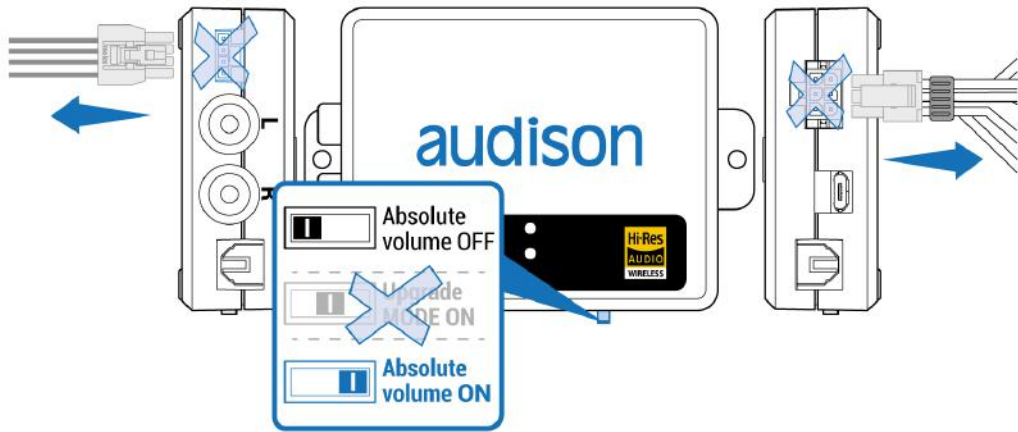


11.2.2. Upgrade with B-CON II connected to the PC through USB to ADC converter

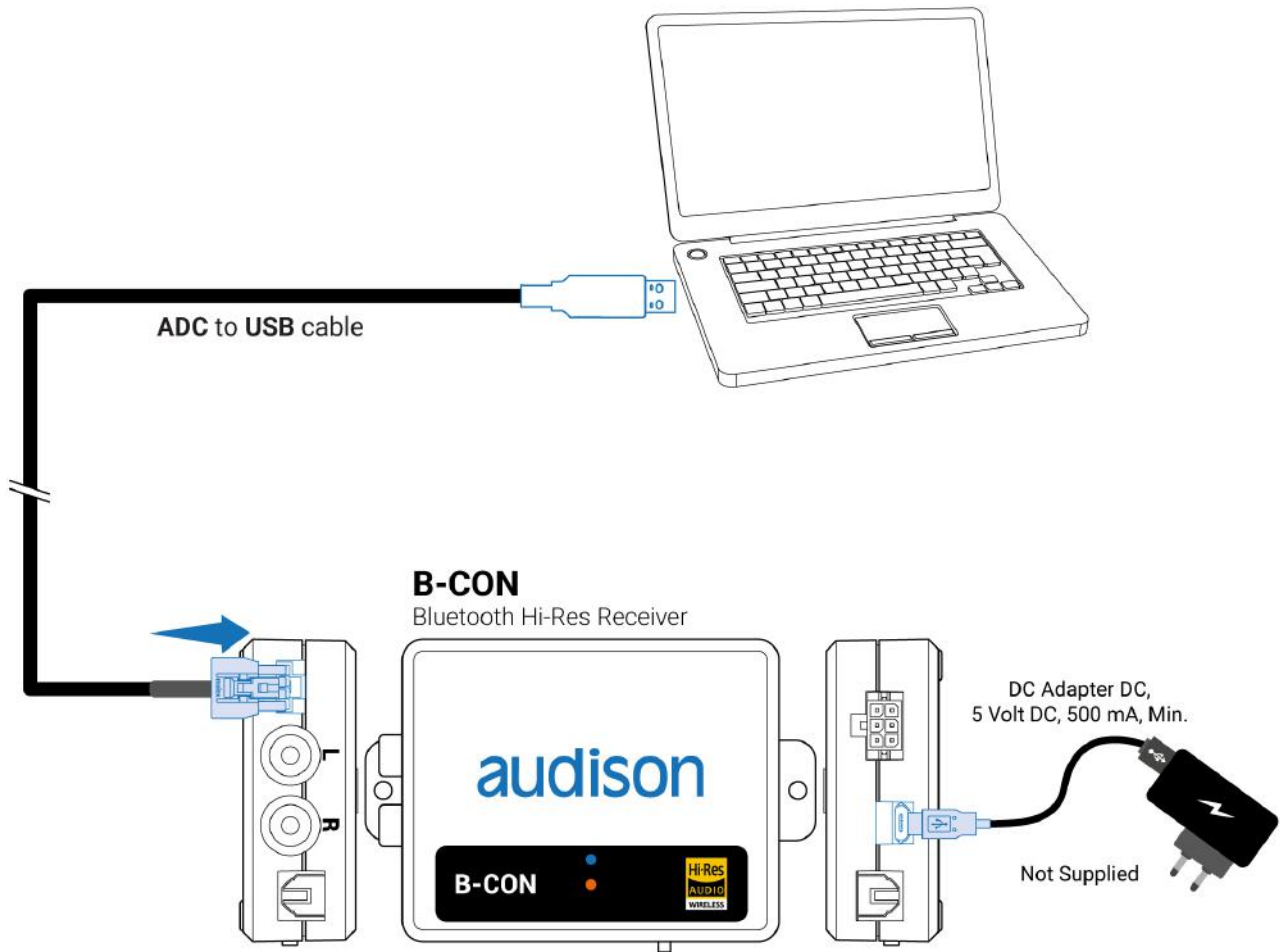
- Disconnect the ADC to ADC cable and the supply cable
- Move the switch in the proper position according to upgrade type:
 - "Upgrade MODE" if you are doing a firmware upgrade.



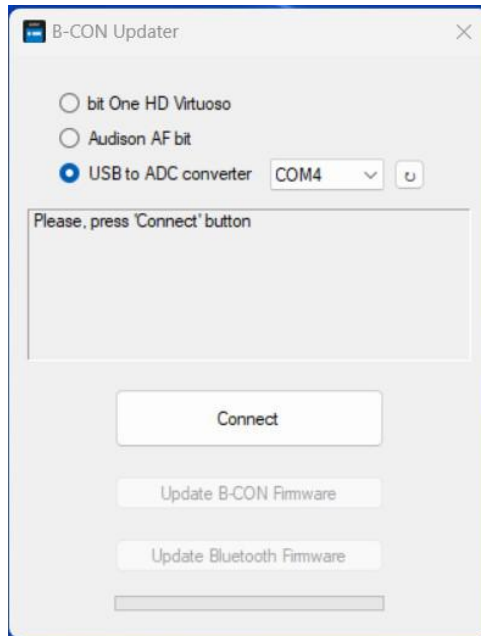
- "Absolute volume ON or OFF" if you are doing a bluetooth firmware upgrade




- Connect the B-CON II to the micro-USB cable to turn it on (or use the supply cable as alternative) and to the ADC-to-USB cable of the programming kit as per picture below. The leds of the B-CON II will light up together to show that the device is ready to be upgraded.



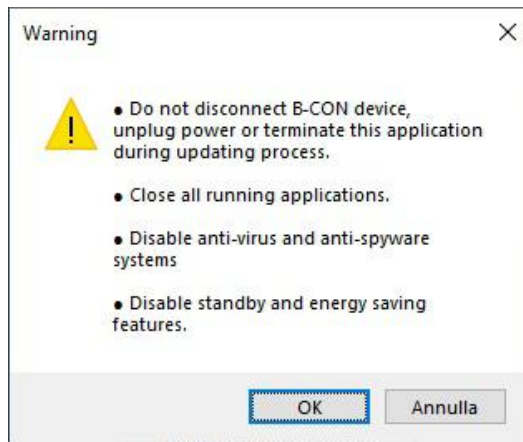
- Run the B-CON II Updater tool. Select "USB to ADC Converter", select one serial port and press "Connect". If the device does not connect successfully, select another serial port and press "Connect".



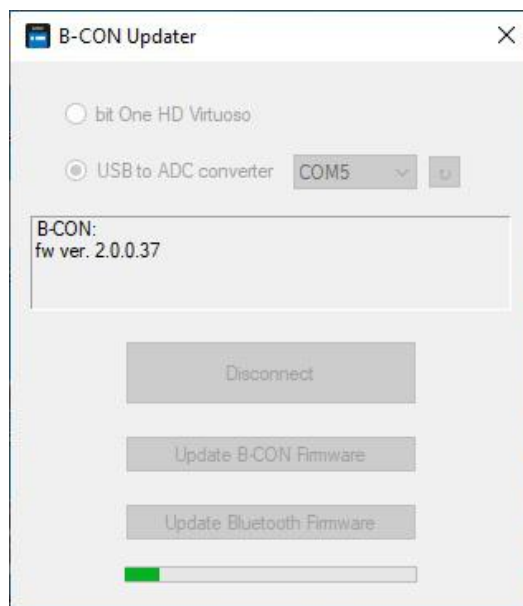
- Choose the upgrade to perform:
 - press "Update B-CON II firmware" if you are doing a firmware upgrade
 - press "Update Bluetooth firmware" if you are doing a bluetooth firmware upgrade
- Select the file .bin downloaded from the Audison website

Name	Date modified	Type	Size
▼ Last week			
 B-CON_Micro_FW 2_1_0_72.bin	26/01/2024 12:33	BIN File	183 KB

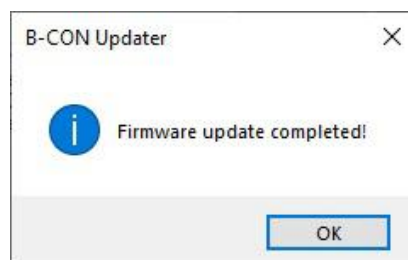
- Read the safety instructions in the Warning window and press "OK".

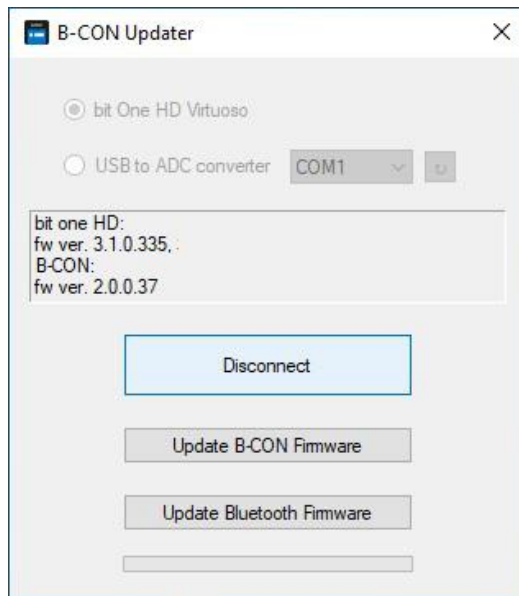


- Wait until the firmware upgrade is completed

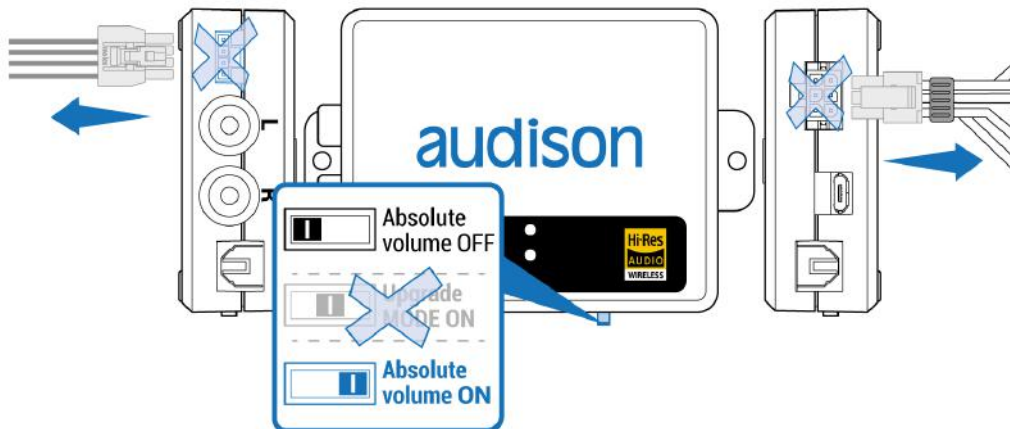


- Wait until the firmware upgrade is completed. At the end of the procedure press "OK" and then press "Disconnect"





- Disconnect the supply cable and the ADC cable from the B-CON II, put the switch back to the original position (Absolute Volume ON or OFF).



- Reconnect the B-CON II to the audio system and the ADC cable if needed. Proceed with a new pairing of the B-CON II to the mobile device.

[11.3 FIRMWARE/BLUETOOTH UPGRADE BY B-CON GO MOBILE APP](#)

16:18

70

B-CON go



The app is disabled because the amplifier is connected to the PC software, or the ADC cable connection is unavailable

No A2DP Connection

SBC
44.1 kHz



B-CON

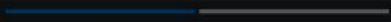
Firmware Update available

Settings

Cancel



SUB VOLUME



16:18

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SETTINGS

INFO

Update Firmware

B-CON

FW ver. 2.1.4



B-CON

FW ver. 0.0.0



Bluetooth

BT FW ver. 64



SECURITY

Security control



PAGES MANAGEMENT

Create page

Delete page

THEMES



LANGUAGES



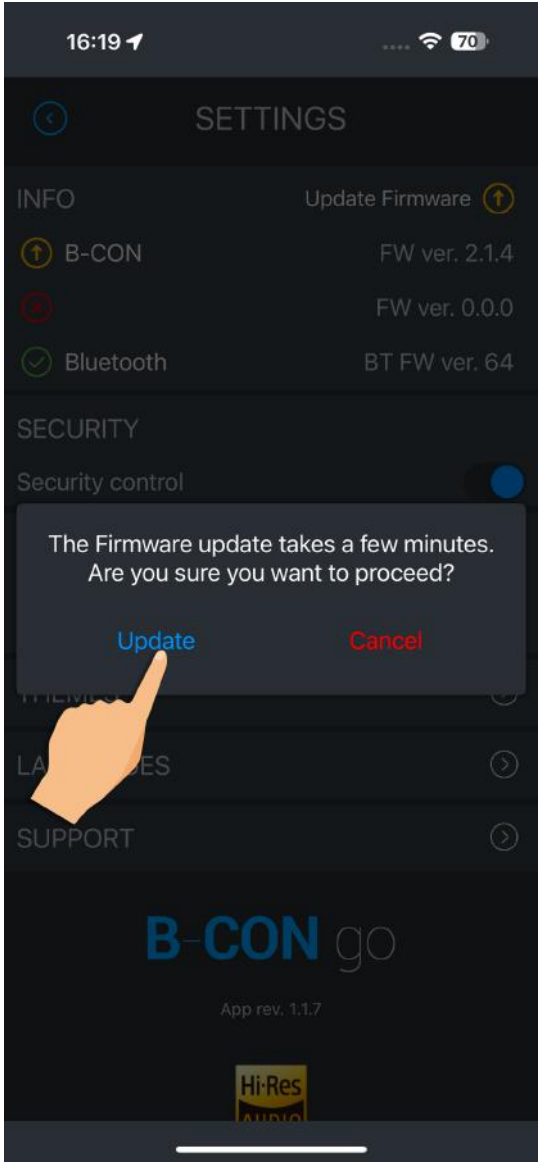
SUPPORT



B-CON go

App rev. 1.1.7





16:19

70

SETTINGS

INFO

Update Firmware ↑

↑ B-CON

FW ver. 2.1.4

⊗

FW ver. 0.0.0

✓ Bluetooth

BT FW ver. 64

SECURITY

Security control



The Firmware update takes a few minutes.
Are you sure you want to proceed?

Update

Cancel

THEME

LAUNCHER

SUPPORT

B-CON go

App rev. 1.1.7



16:20

70



SETTINGS

INFO

Update Firmware

B-CON

FW ver. 2.1.4



FW ver. 0.0.0

Bluetooth

BT FW ver. 64

SECURITY

Security control



Update Firmware B-CON

Updating... 22.2%

THEMES



LANGUAGES



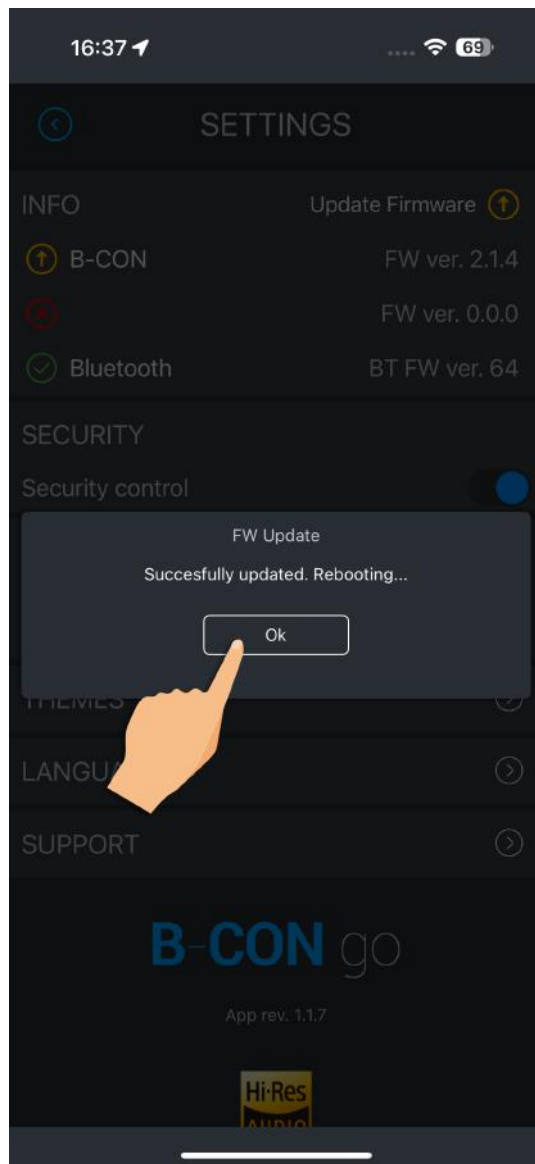
SUPPORT



B-CON go

App rev. 1.1.7





IMPORTANT: after pressing OK the B-CON II will reboot and reconnect to B-CON go app automatically.

[12. FAQ](#)

[12.1 B-CON II – FAQ](#)



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Audison

English (GB) [∨]

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