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#### 1. INTRODUCTION

Coming directly from the know-how of the exceptional Thesis line, Voce components take the experience of listening in the car to a new level of excellence.

Project innovation, advanced design, benchmark performance; the synthesis of consolidated know-how applied to car audio systems. The Voce project was born to make Thesis sound quality available to a wider - but no less demanding - audience. The development of these components took advantage of the major innovations introduced while designing the Thesis line: analog and digital technologies combined using different classes of configuration for amplifiers, reduction of the main sources of non-linear distortion, linearization of acoustic and electric loads, control of cone and diaphragm resonance for speakers. To achieve these goals it was necessary to develop new circuit solutions, increase heat capacity, design new moulds for baskets and diaphragms and define new assembly procedures and quality control.

A delicate balance of analysis and refinement led us to results exceeding our expectations and set a new benchmark for the category.

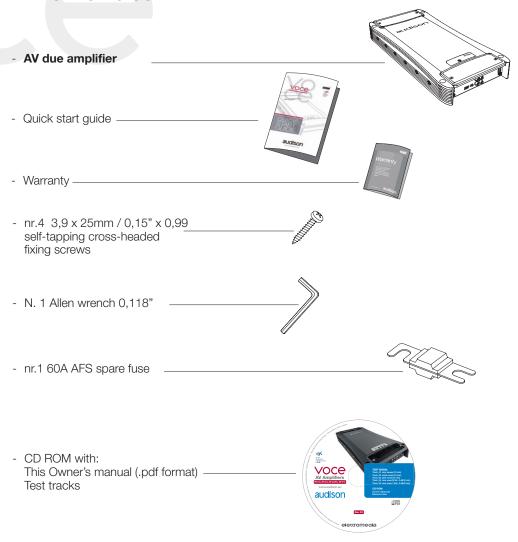
#### THE AV due AMPLIFIER PROJECT

AV due is a powerful stereo amplifier. The power supply section and final stage, designed to work also in mono and trimode, ensure very high output current, with powers up to 900 W (RMS). AMP constantly checks the operating status system and ART™ function allows automatic turn-on/off when a remote signal isn't available from the source. You can use VCRA volume remote control by connecting it to the special SUB VOL socket when you drive the subwoofer

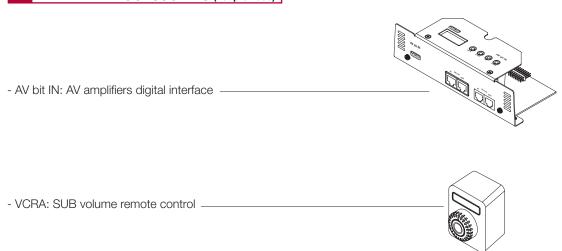
You can use VCRA volume remote control by connecting it to the special SUB VOL socket when you drive the subwoofer in mono. There are endless handling possibilities, for every type of installation. AV due also allows you to replace the analog input board with the digital one (AV bit IN).



# 2. PACKAGING CONTENT



# 2.1 AVAILABLE ACCESSORIES (not provided)





# 3. SAFE SOUND

AUDISON AMPLIFIERS CAN BE PART OF A HIGH POWER AUDIO SYSTEM THAT CAN GENERATE VERY HIGH UNDISTORTED SOUND PRESSURE HIGH SOUND PRESSURE LEVEL MAY DAMAGE YOUR HEARING; THEREFORE, SAFE SOUND PRESSURE LEVEL MAY DAMAGE YOUR HEARING; THEREFORE, PLEASE USE COMMON SENSE AND PRACTICE SAFE SOUND.



Safety must be at the forefront while driving. The listening volume should never obscure the noise coming from the outside of your vehicle; you should be able to hear the sounds generated by your vehicle in order to promptly face any emergency situation.

To achieve the best possible performance from your new components, we recommend you follow the instructions in this manual carefully. In order to design and create top level car hi-fi systems you need to understand automobile mechanical and electrical issues very well; if you think you lack the required knowledge or the proper tools, please consult with a specialized installer.

A professional installation will ensure your system delivers all the performance you have paid for, without affecting the safety and reliability of your vehicle.

This manual has been designed to provide you with the basic instructions required to install and use this product. However, the range of possible applications is very wide; to obtain further information, please contact your authorized Audison dealer or Audison service center.

You can also send an e-mail directly to the following addresses:

Italy - supporto.tecnico@elettromedia.it

Worldwide - support@elettromedia.it



#### 4. GENERAL PRECAUTIONS



- This symbol indicates that you have to pay attention to these instructions. Disregarding them might cause accidental harms or damage your amplifier.
- Before installing the amplifier, make sure you carefully read and understand all instructions.
- The vehicle electric system must have 12V DC voltage with negative to ground. Make sure your car has it in order to avoid any damages to your amplifier and to the vehicle.
- Pre-plan the configuration of your new amplifier and the best wiring routes to ease installation.
- Always wear protective eyewear when using tools that may generate splinters.
- During installation, keep the amplifier in its packing as long as possible; this will protect it from damages.
- Secure all auxiliary devices you built to install the components to the vehicle structure through brackets, screws, nuts and bolts; this insures stability and safety while driving.
- The amplifier detachment while driving can damage the people in the vehicle and other cars. Secure the amplifier at best, paying utmost attention if installation is inside the passenger's compartment. Do not carry out any installation inside the engine compartment.
- Before installing the amplifier, turn off the source and all other electronic devices in the audio system for preventing any damages.
- Make sure the location you chose for the components does not affect the correct functioning of the vehicle mechanic and electric devices
- Do not run the cables or install the amplifier next to electronic gearcases.
- Use extreme caution when cutting or drilling the car plate, checking there are no electrical wiring or structural element underneath.
- Before connecting the power cable to the amplifier, disconnect the negative lead ( ) from the car battery.
- Make sure power cable is not short circuited during installation and connection.
- Power cable must have mechanically resistant and self-extinguishing insulation. Its section have a size corresponding with what is suggested in this manual. Avoid to run it over or through sharp edges or close to moving mechanical devices. Make sure it is well fixed all along its length. Block positive and negative cables just close to the amplifier respective power supply terminal blocks through a clamping screw.
- Use rubber grommets to protect the wire if it runs in a hole of the plate or proper materials if it is close to heat-generating parts.
- To ground the device (-) in the right way, use a screw in the vehicle chassis; scrape all paint or grease from the metal if necessary, checking with a tester that there is continuity between the battery negative terminal (-) and the fixing point. If possible, connect all components to the same ground point; this solution rejects most noise.
- Route all signal cables away from power cables.
- Never run cables outside the vehicle; you would not be protected against wear and in case of accidents.
- When installing speakers and the cables that connect them, make sure that non-insulated parts never touch, even occasionally, the vehicle cutting parts. If they do, the amplifier protection is activated.
- To prevent all problems, use very good quality cables, connectors and accessories, choosing them in Connection catalogue.
- When installation is over, and before plugging the main power supply fuse, check the system wiring and make sure all connections were done in the right way.
- Power amplifiers put an increased load on the battery and on its charging system. We recommend checking your alternator and battery condition to ensure they can handle the increased consumption. Standard electrical systems which are in good condition should be able to stand this extra load without problems but we recommend the use of an energy storage capacitor and/or a battery for high level audio systems.
- Put a fuse and its insulated fuse holder 40 cm max. far from the battery positive terminal; connect one end of the power cable to it after connecting the other end to the amplifier. The fuse value must be 50% higher than the amplifier built-in one. In case the cable supplies several amplifiers, the fuse value will have to be 50% higher than the sum of the values of all other fuses in the amplifiers.
- There must be good air circulation where the amplifier is installed; this area must not be affected by humidity, rain, external deposits or parts coming from the vehicle mechanical devices. Do not hinder in any way the cooling of the amplifier side fins
- Install the amplifier in the vehicle parts where temperature is between 0°C (32°F) and 55°C (131°F).

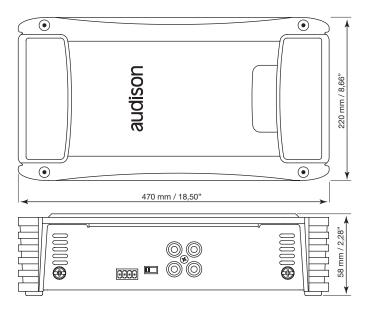
**WARNING.** When working in demanding conditions, the amplifier can reach temperatures of around 80 - 90°C (176 ÷ 194°F). Make sure it is not dangerously hot before touching it.

- Periodically clean the amplifier without using aggressive solvents that might damage it. Dampen a piece of cloth with water and soap, wring it and clean the amplifier. Then use a piece of cloth dampened with water only; eventually clean the amplifier with a dry piece of cloth.
- Remove dust and solid deposits from the heat sink side fins. Don't use compressed air on the amplifier since it would push
  solid parts in the amplifiers. If necessary, please contact a specialised service centre for internal cleaning. Cooling system
  obstruction makes the amplifier go in safety mode.

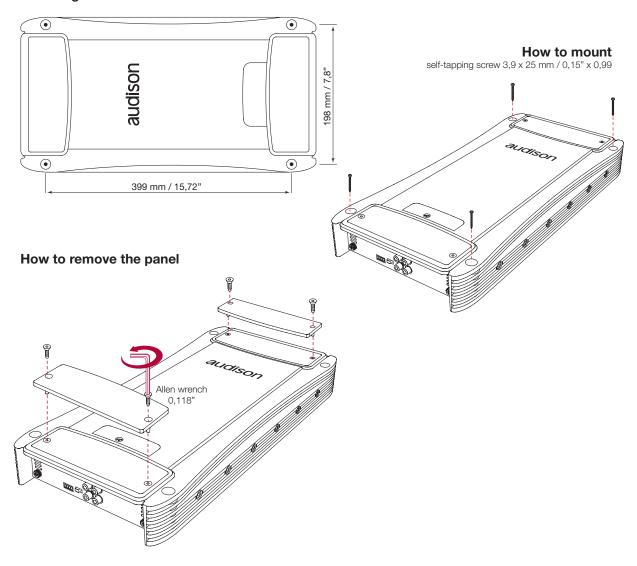


# **5. INSTALLATION**

#### **External size**

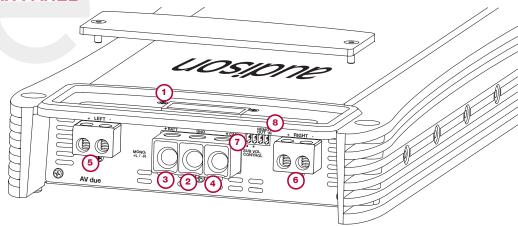


# Mounting size





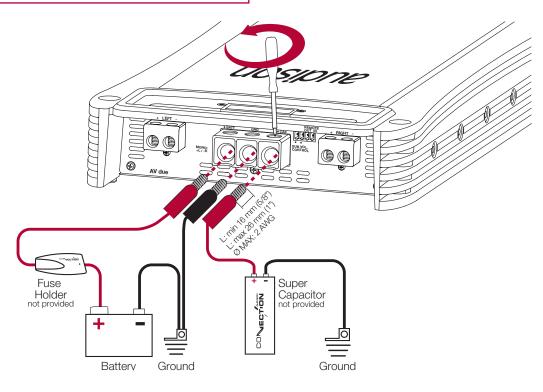
#### 6. REAR PANEL



- 1. Protection fuse: 60 A;
- 2. Power (Ground): Terminal block for the amplifier power supply negative pole connection. Insert here the battery negative cable or wire connected to the vehicle chassis. The plug accepts cables up to 2 A.W.G. For better current transfer it is recommended to use cables with the maximum cross-section possible and in any case of the same cross-section of the cable connected to the positive pole;
- **3.** Power (11-15V DC): Terminal block for the amplifier 11÷15V DC power supply positive pole connection. Insert here the battery positive cable. The plug accepts cables up to 2 A.W.G. For better current transfer it is recommended to use cables with the maximum cross-section possible and in any case of the same cross-section of the cable connected to the negative pole;
- 4. +CAP: Terminal for connecting the positive pole of an external capacitor.
- **5.** +/- Left Speaker Out:
- 6. +/- Right Speaker Out:
- 7. Remote Sub Control: inputs for remote control of the VCRA Sub volume control (optional).
- 8. Remote IN/OUT:

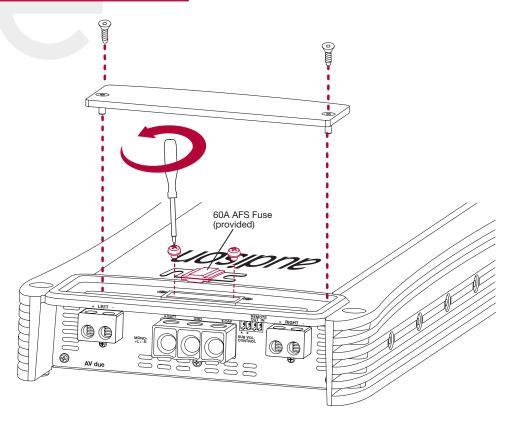
REMOTE IN: terminal for the remote cable coming from the device which turns on the amplifier. REMOTE OUT: terminal to launch the remote voltage to turn on other amplifier. The output voltage is 12V 50 mA. On this terminal the start-up control will be available for other devices even if Rem In is not in use and SPKs IN (see 7.2) are in use for starting-up.

#### 6.1 HOW TO CONNECT POWER CABLES

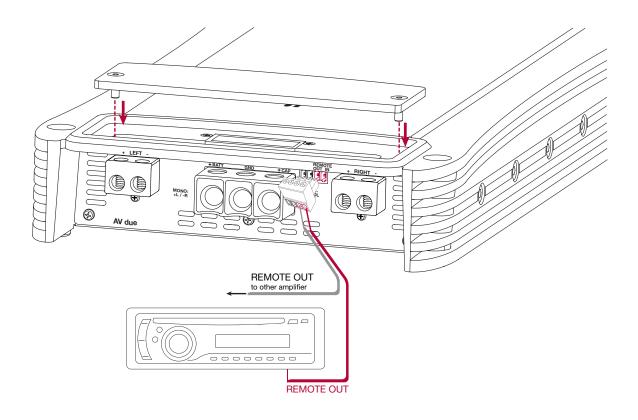




# 6.2 HOW TO REPLACE THE FUSE

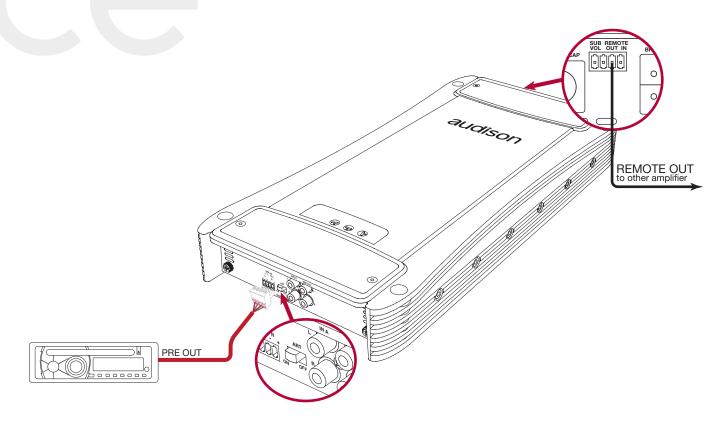


# 6.3 HOW TO CONNECT THE REMOTE SWITCH

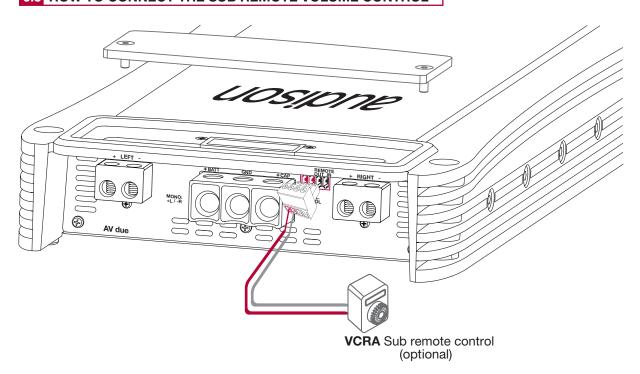




#### 6.4 REMOTE SWITCHING VIA SPK IN

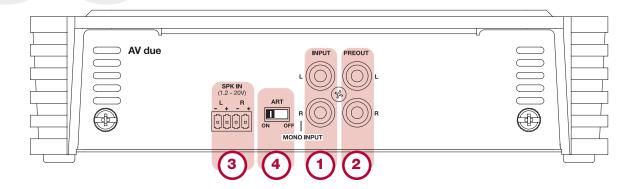


# 6.5 HOW TO CONNECT THE SUB REMOTE VOLUME CONTROL





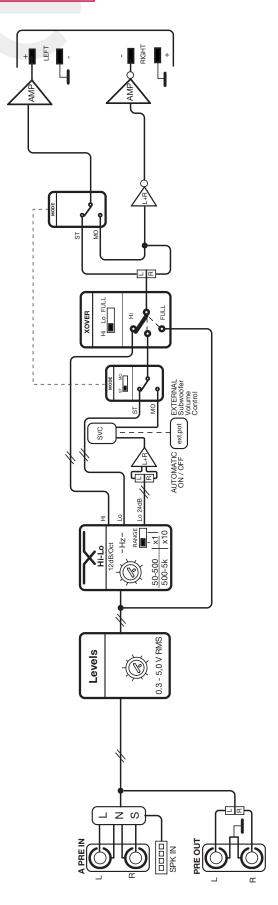
# 7. FRONT PANEL



- 1. INPUT (0.3 5V): Left and Right analog inputs.
- 2. PREOUT: Left and Right PREOUT output, corresponding to the Left and Right input signals.
- 3. SPK IN (1.2V 20V): High-level Left and Right analog inputs.
- 4. ART (ON -OFF): If the source does not feature a 12V DC REMOTE OUT, set the ART switch to ON to turn on the amplifier plugging the cables to the SPK IN signal inputs. If the source features a 12V DC REMOTE OUT, set the ART switch to OFF.



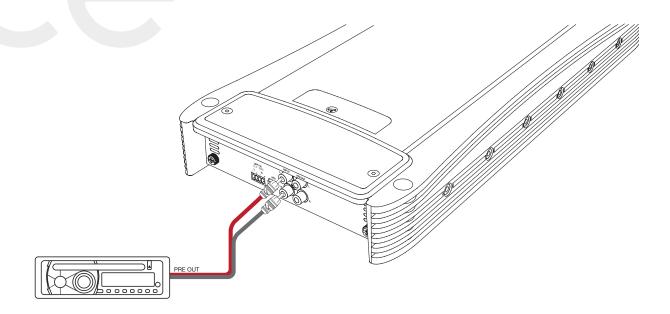
# 7.1 INPUT CONTROLS



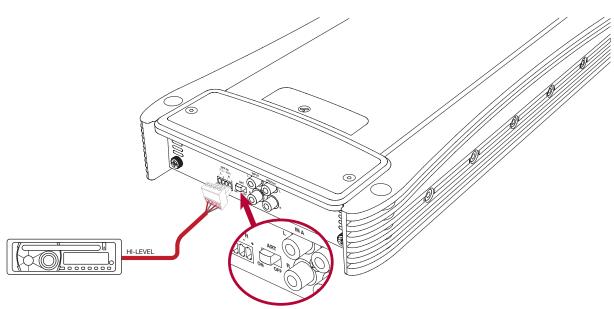
LNS= Line Noise Suppressor SPK IN= Speakers IN (Hi Level)



# 7.2 HOW TO CONNECT A SOURCE VIA PRE INPUTS



# 7.3 HOW TO CONNECT A SOURCE VIA THE SPEAKER IN HIGH-LEVEL INPUT

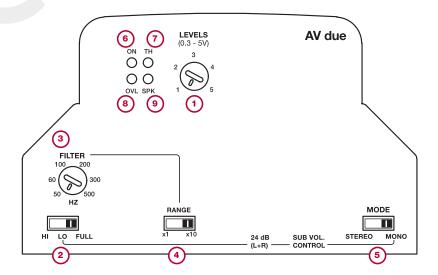


**SWITCH ON** enables turning the product on from the SPEAKER IN CH A inputs



#### 8. INPUT CONTROLS

#### 8.1 CONTROL PANEL: SWITCHES AND ADJUSTMENTS



- **1. LEVELS (0.3V 5V):** LEVELS (0.3V 5V): Input sensitivity of the Left and Right channel control. Set the knob on position 1. Use a CD as a source and increase the source volume until you hear distortion, then lower it slightly to eliminate distortion. Increase the amplifier LEVELS to optimize the output signal without distortion.
- **2.** PASS MODE (HI-LO-FULL): Switch for selecting Left and Right channel filter type. Select FULL to get a full range output signal. Select HI to get an output signal for driving a MIDRANGE/TWEETER. The output cutoff frequency should be set by adjusting the FILTER knob (see section 3). Select LO to get an output signal for driving a SUB/WOOFER. The output cutoff frequency should be set by adjusting the FILTER knob (see section 3).
- 3. FILTER (50 Hz-500 Hz): Adjustment of the Left and Right channel high-pass and low-pass filter cutoff frequency. By turning the knob it is possible to vary the cutoff frequency from 50 Hz to 500 Hz @ 12dB/oct. The operational range can be extended from 500 Hz to 5 kHz via the X10 X1 switch.
- **4. RANGE X1 X10:** Select **X1** for a filter frequency range of 50 Hz-500 Hz for the channel A crossover. Select **X10** for a filter frequency range of 500 Hz 5 kHz of the crossover.
- 5. STEREO MONO MODE: Select STEREO to set stereo outputs. Select MONO to configure bridge outputs. In this setting if you use the Right input, choosing Hi-Pass or Lo-Pass filters, the filter slope is 12 dB/oct. While if you use the Left and Right inputs for the Lo-Pass filter the slope is 24 dB/oct. L+ and R- are active outputs.
- **6. POWER ON:** The green LED indicates that the amplifier is on. If LEDs 6, 7, 8 and 9 are simultaneously lit, the amplifier will turn off and it will be necessary to contact technical support.
- 7. THERMAL: The red LED indicates the amplifier temperature. It flashes at 60°C and the output power is limited by 1.5 dB. The flashing frequency increases around 70°C where the output power is limited by 3 dB. The LED lights up without flashing at about 80°C when the amplifier thermal protection starts operating. The amplifier will restart at about 70°C.
- 8. OVERLOAD: The orange LED indicates an output overload. It flashes when the output load drops below the minimum permitted, allowing the amplifier to operate at a lower power. If the load drops below about 0.5 ohm impedance, the LED will turn on without flashing and activate the amplifier protection. If when listening to music the sound stops for a while, check if the orange LED flashes; it means there was an overload. Turn the amplifier off and check speakers and wiring.
- 9. SPEAKER: The yellow LED indicates a fault in the speaker connection. It turns on when a speaker terminal short-circuits with the vehicle chassis. If when listening to music the sound stops for a while, check if the yellow LED flashes; it means there was a short-circuit between a speaker terminal and the vehicle chassis. Turn the amplifier off and check speakers and wiring.



# 8.2 SETTING UP FILTERS

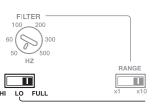
The AV due amplifier has a filter section versatile and completely independent between various sections. Once you choose a configuration you can easily adjust each pair of channels to your liking, allowing for a user-friendly set-up.

#### ■ Input Configuration

Config.	AMP	PRE OUT
1	Full	Full
2	Hi-Pass	Full
3	Lo-Pass	Full

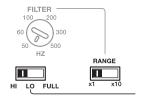
	MODE	INPUT	FILTER	PRE OUT	AMP
STEREO	MODE STEREO MONO	L&R	FULL Hi-PASS @12 dB Lo-PASS @12 dB	L&R BYPASS	STEREO
MONO	MODE STEREO MONO	L+R	Lo-PASS @24 dB	L&R BYPASS	MONO L+R
МО	MODE STEREO MONO	R	FULL Hi-PASS @12 dB	R BYPASS	MONO

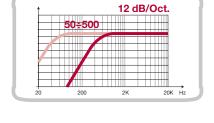
1. AMP FULL

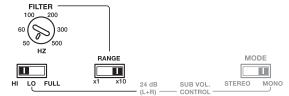


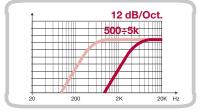


2. AMP HI-PASS @ 12dB

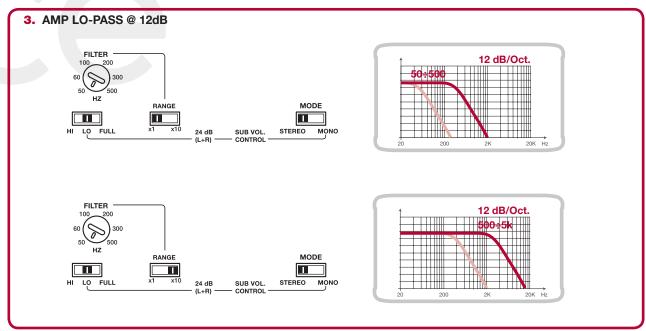


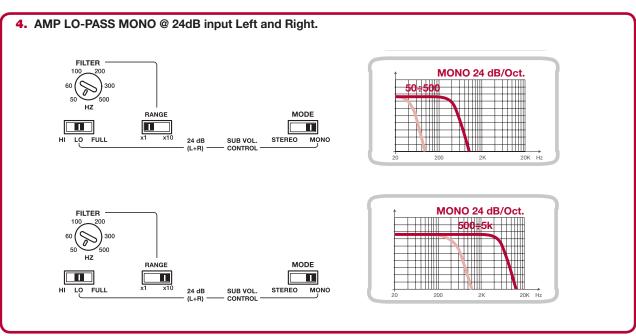






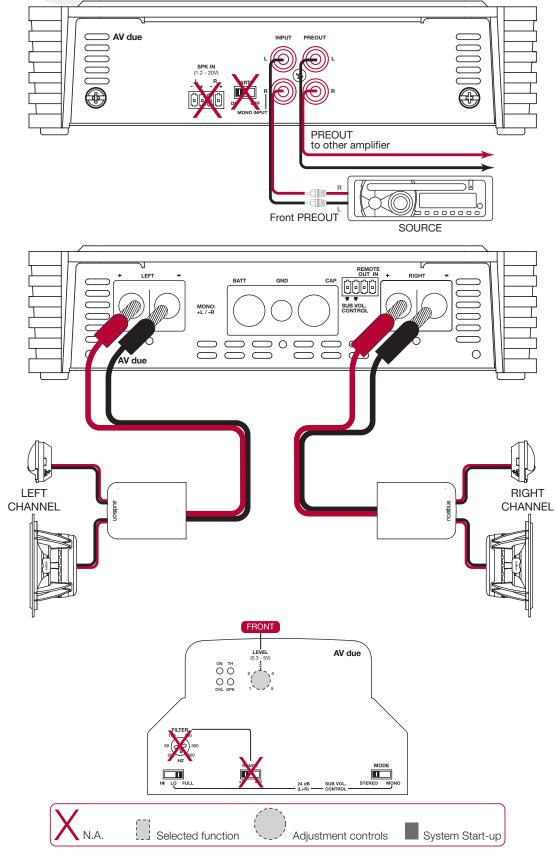






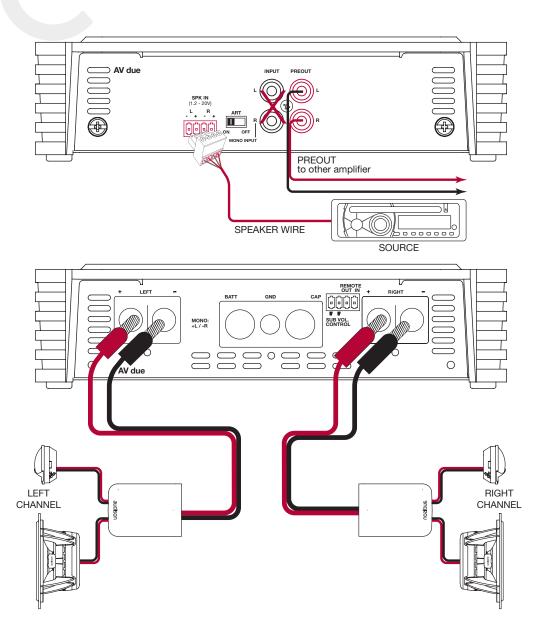


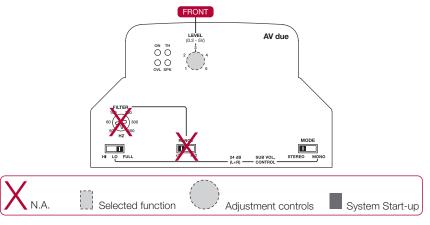
# 8.3 EXAMPLE: PRE INPUT / PRE OUTPUT / LEFT AND RIGHT SPEAKER





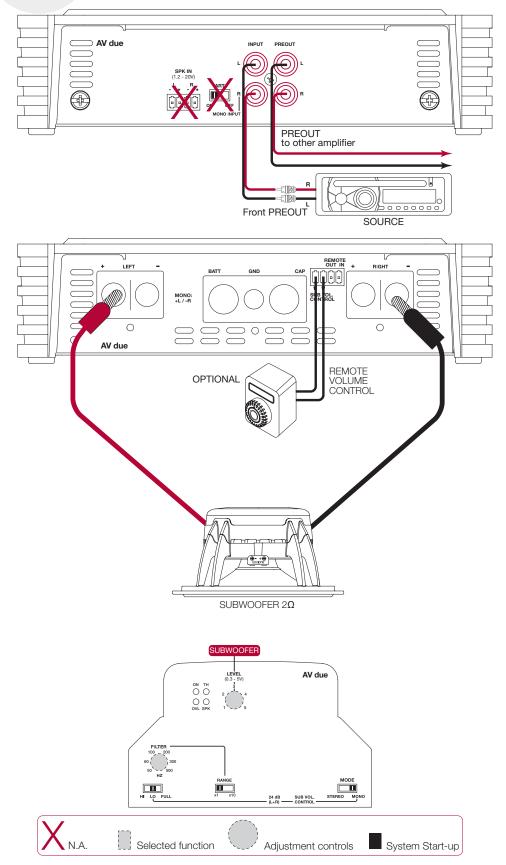
# 8.4 EXAMPLE: SPK INPUT / PRE OUTPUT / LEFT and RIGHT Speakers





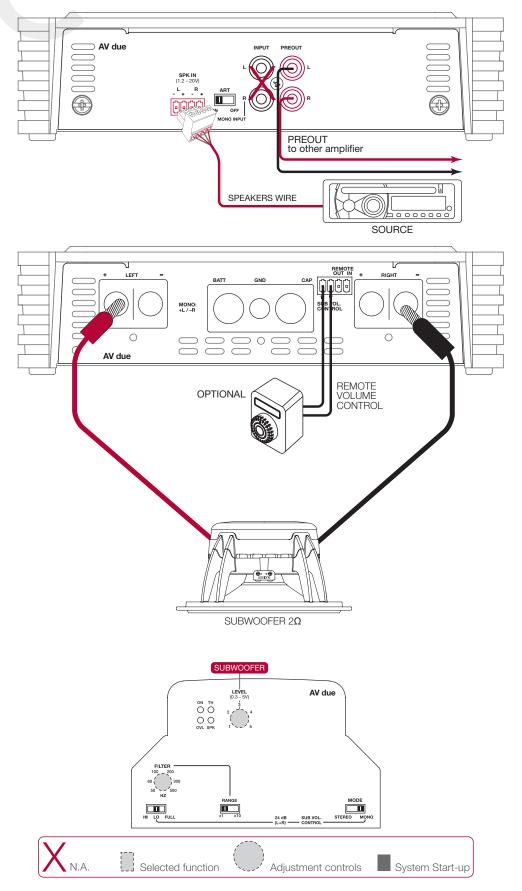


# 8.5 EXAMPLE: PRE IN / PRE OUT / SUBWOOFER SPEAKER



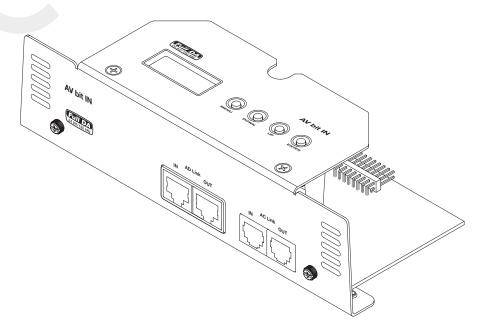


# 8.6 EXAMPLE: SPK IN / PRE OUT / SUBWOOFER SPEAKER





#### 9. ACCESSORIES: AV BIT IN



Digital interface for all AV amplifiers. It allows a seamless digital connection with bit One and bit Ten D processors via the AD Link/AC Link connection.

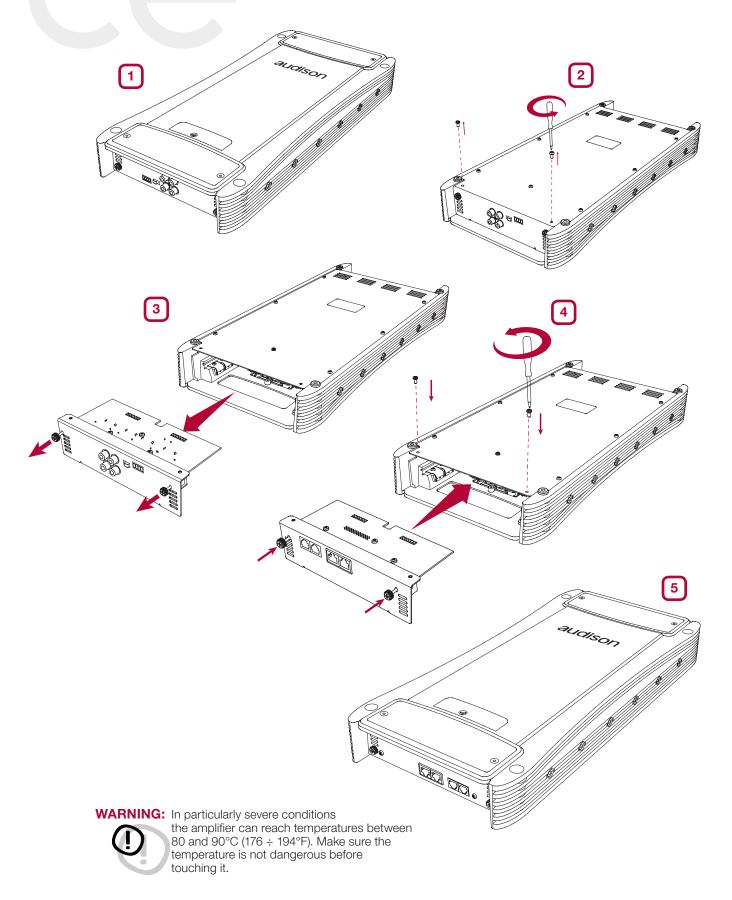
By inserting the AV bit IN "Digital Interface" into AV amplifiers, the digital signal in S/PDIF format, through the AD Link connection, leads directly to the high-quality internal D/A converters. After that, the signal becomes analog and is immediately amplified protecting it from deterioration over long distances. The result is high-quality music not reachable with any other analog system.

AV bit IN ASC is the management interface, programmed to control all amplifier functions. The user can interact with the microprocessor which, without interfering with the sound, will adjust all possible settings. This section is dedicated to all those who want to exploit the unique features of this product.

Some functions are automatic and transparent to the user, while others require intervention during installation and calibration or modification. Accessing ASC you will find a series of menus that will list all the specific entries on which you can intervene.

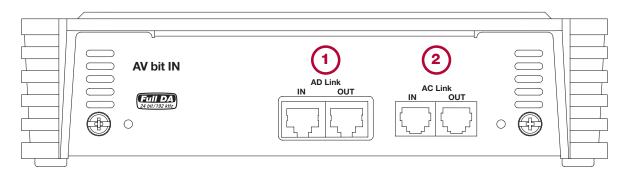


# 9.1 HOW TO INSERT AV BIT IN





9.2 FRONT PANEL



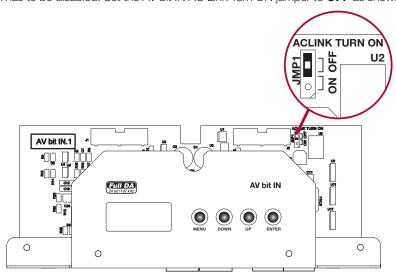
- **1. AD Link:** Digital audio bus that can transmit the signal of 8 channels. It exploits a Class 5 or 6 shielded cable for Ethernet networks normally used in computer networks.
  - **AD Link IN:** RJ-45 input terminal to connect a digital signal coming from other AV amplifiers or other external devices equipped with AD Link (bit One / bit Ten D).
  - **AD Link OUT:** RJ-45 terminal output for connection to external devices capable of receiving the AD Link digital signal (AV / TH amplifiers).
- 2. AC Link: It is composed of a digital bus and control signals for the management of the functions of the device to which it is connected. It provides the ability to build a digital network interacting with other devices provided with AC Link such as AV / TH amplifiers and digital audio processors. The RJ-12 terminated cable is a 6-pin cable, like the one normally used for digital telephone purposes, but it is not compatible with digital telephone technology.
  - **AC Link IN:** RJ-12 input terminal for connection to the processor or other devices located upstream of the system (see 9.4).
  - **AC Link OUT:** RJ-12 input terminal for connection to the processor or other devices located downstream of the system (see 9.4).

The AC Link connection is able to provide power to the external device.

**AC Link-Remote IN:** If an amplifier provided with AV bit IN is connected to bit Ten D processor, the amplifier can be turned on via the processor, without the use of the amplifier Remote-In.

If another processor is used (bit One) or if there is a Thesis TH amplifier in the AC Link chain, the Remote-In function on the AC Link won't be available.

If in the AC Link chain there is an amplifier different from the AVs (Thesis TH), the Remote-In function on the AC Link has to be disabled. Set the AV bit IN AC Link Turn ON jumper to **OFF** as shown in the image below.

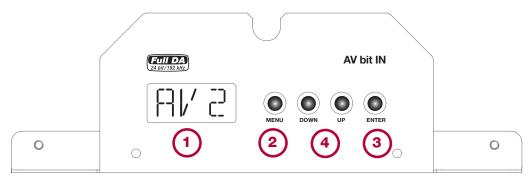


WARNING: for AC Link / AD Link connections, only use the cables supplied with the products.

Important: adjust the amplifier volumes to position 1 (5V RMS) when using the AV bit IN module.



#### 9.3 CONTROL PANEL DISPLAY



See 9.5: How to configure AV bit IN

- 1. AV bit IN STATUS DISPLAY: This is the visual element of the AV bit IN system with a 3-character backlit LCD. While operating it can display all configuration parameters stored in the amplifier during the installation. The following pages contain all the messages and statements that may appear on the display from time to time.
- 2. MENU: This button activates the AV bit IN and shows the first entry available. Each time you press this button while normally operating the amplifier, AV bit IN shows the first entry available and not the last entry on which you worked. At any point, if you press the MENU key you exit from AV bit IN management and automatically return to the home screen (default display) without saving your changes.

**Note:** At any point, if you do not touch the keys for 5 seconds, AV bit IN will automatically return to the home screen (default display) without saving your changes.

- 3. ENTER: This button is used to:
  - Confirm the selected entry,
  - Save it,
  - Go to the next menu entry.
- **4. UP DOWN:** These buttons allow navigation through the available entries of various menus. Depending on the function, you can change the selection and then confirm by pressing the ENTER key.



# 9.4 HOW TO CONNECT THE AMPLIFIER EQUIPPED WITH AV BIT IN TO THE SYSTEM amplifier to other to other AC Link N OUT AC Link N OUT AD Link IN OUT AD Link IN OUT AV bit IN AV bit IN FUII DA 24 DN/192 KHZ Full DA \*\* Don't connect the remote input signal to the amplifiers when using AV bit IN module. Remote Out to AV amplifier Remote IN ★ Use AC Link / AD Link cables supplied with the products. AD Link AC Link SUB ₩ ₩ audison 용 \_ audison E GHZ CH1 L FRON; DE-EQ SET bit Ten D Signal Interface Processor SPEAKER TURN ON OFF Full DA ■ Se OFF ON UPGRADE MODE 9 0 **■** 8 \*\*

25



#### 9.5 HOW TO CONFIGURE AV bit IN

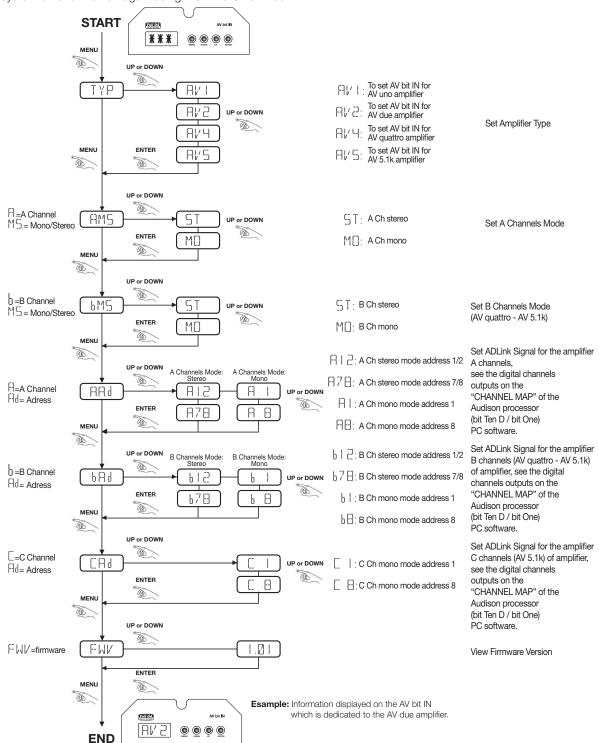
Before starting the configuration of the amplifier or amplifiers equipped with an AV bit IN digital input module, set and finalize the processor (bit Ten D / bit One) that will interface with the system.

The processor channels specialized in "Digital output / AC Link - AD Link" will interface with the amplifiers equipped with the AV bit IN input module, as shown in the following procedure.

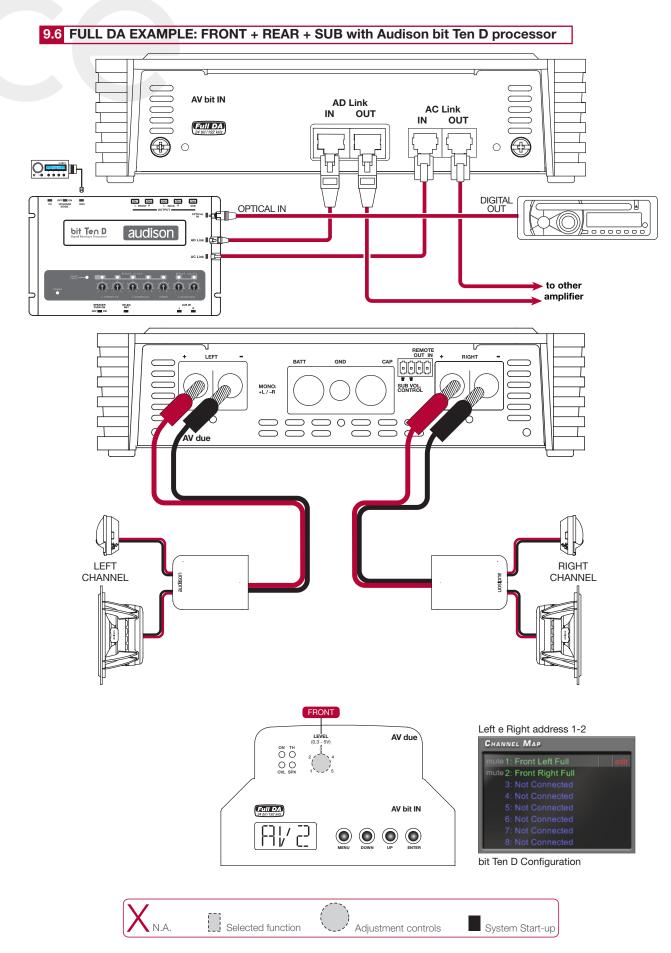
In the "CHANNEL MAP" of the bit Ten D PC software, the specialized channel with digital output are highlighted in green, while for the bit One it should be written down which output channels are assigned the digital format (AD Link - AC Link) during the "I/O Configuration Wizard".

Set the processor overall volume at a level of -45 dB, which does not endanger the system speakers during installation / adjustment.

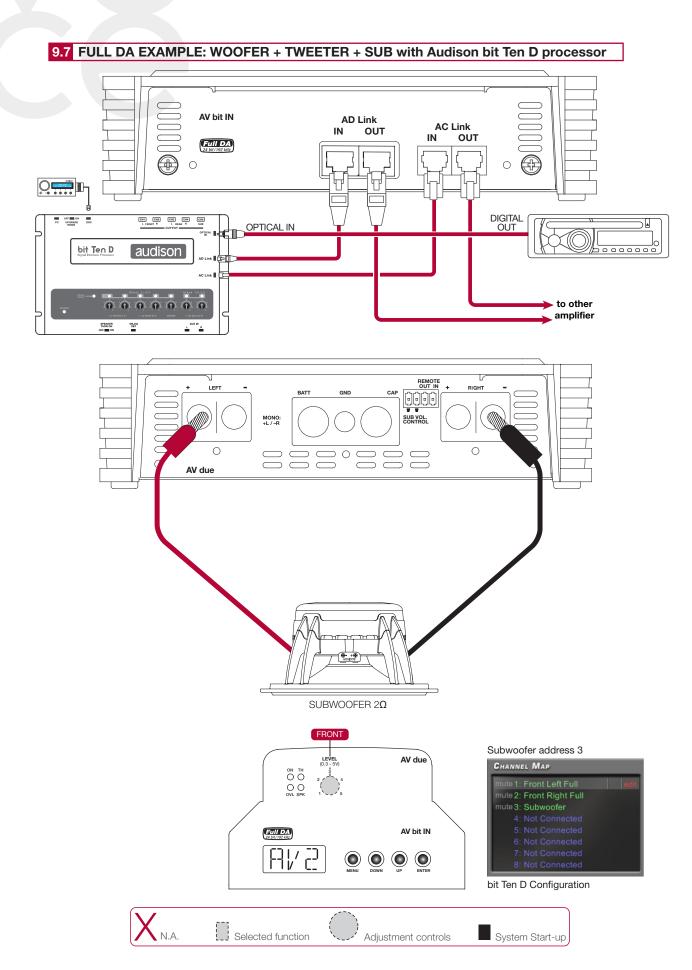
Before starting to configure the AV bit IN module and after setting the processor (bit Ten D / bit One), turn the sound system off and then on again using the DRC SRC knob.



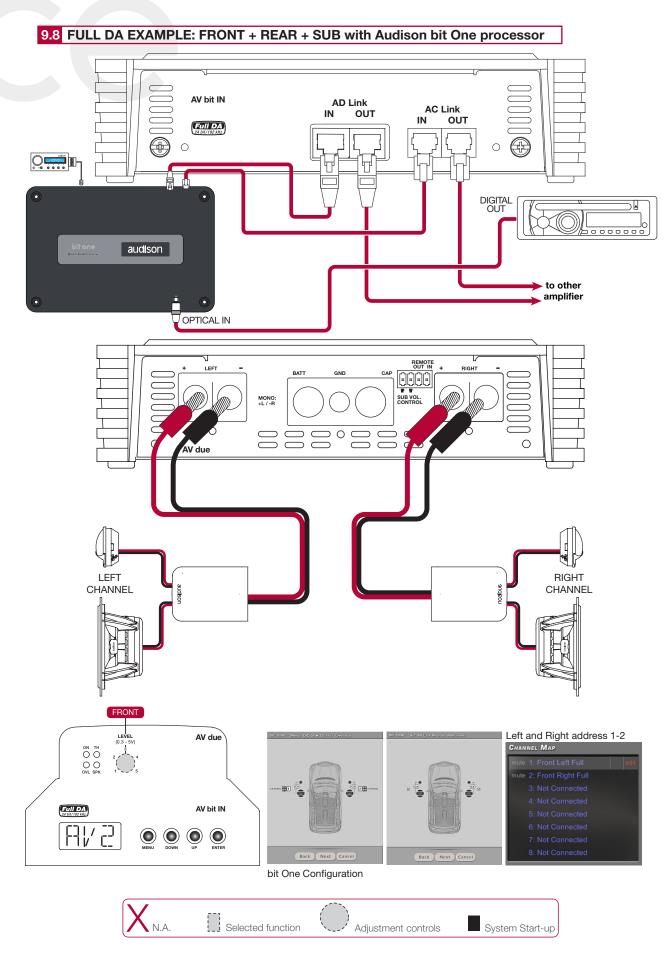




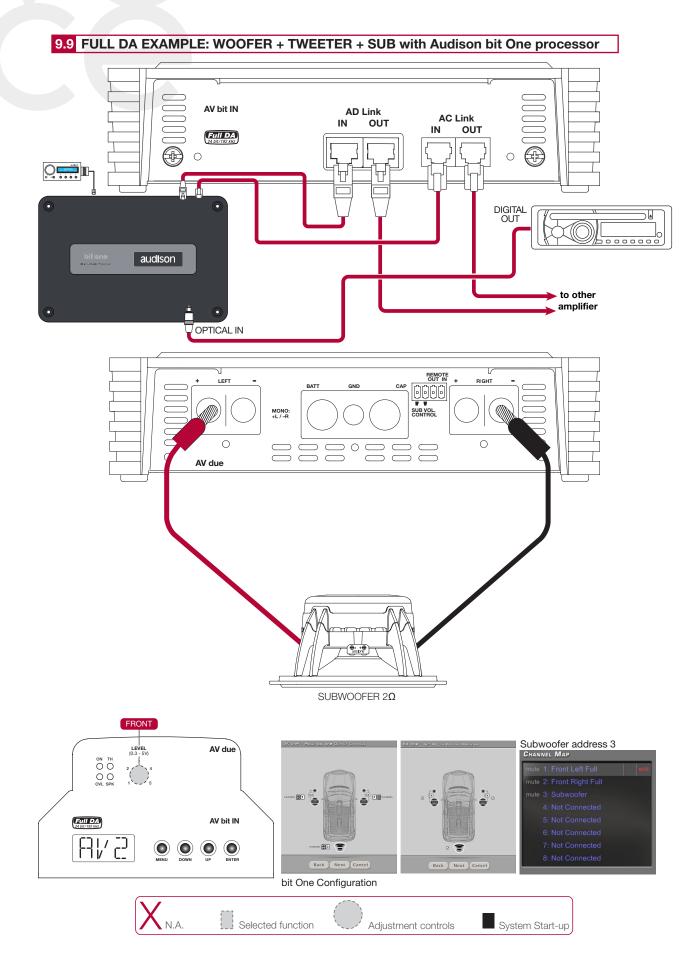














# 10. TECHNICAL SPECIFICATIONS

#### **POWER SUPPLY**

Power supply voltage:	11 ÷ 15 VDC
Idling current:	1.7 A
Idling current when off:	0.02 mA
Consumption @ 14.4 VDC (Max Musical Power):	65 A
AMPLIFIER STAGE	
Distortion - THD (1kHz @ 4Ω):	0.04 %
Bandwidth (-3 dB):	4 ÷ 60k Hz
S/N ratio (A weighted @ 1V):	100 dBA
Damping factor (1k Hz @ 4Ω):	120
Input sensitivity:	0.3 ÷ 5 V RMS
Input impedance:	15k Ω
Speaker-In sensitivity:	1.4 ÷ 24 V RMS
Speaker-In impedance:	5k Ω
Minimum load impedance:	2Ω
NOMINAL POWER (RMS) @ 12 VDC, THD 0.3%, 4Ω:	210 W x 2
OUTPUT POWER (RMS) @ 14.4 VDC,THD 1%:	
• 2 Ch:	260 W x 2 (4Ω)
• 2 Ch:	450 W x 2 (20)

#### **CEA SPECIFICATIONS**



• 1 Ch:

Output power @  $4\Omega$ , 1% THD+N, 14.4 V:

260 W x 2 Ch

900 W x 1 (4Ω)

SN ratio (ref. 1W output):

80 dBA

#### SIGNALS INPUTS / FILTERS

Inputs:	Pre IN / Speakers IN
Outputs:	Pre OUT Full Range
Filters (Full / Hi-Pass / Lo-Pass):	50 ÷ 5k Hz (2 range) @ 12 dB/Oct.
Filter (Lo-Pass 24 dB mono):	50 ÷ 500 Hz @ 24 dB/Oct.

#### OTHER FUNCTIONS

Remote IN:	7 ÷ 15 VDC - 1mA
Remote OUT:	12 VDC - 50mA
Fuse (strip type):	60 A
Remote SUB volume adj. (with Lo-Pass 24 dB):	(-50 ÷ 6) dB
Speakers IN Turn-on (ART):	Selectable

#### SIZE / WEIGHT

Max size (mm/inches):	220 x 470 x 58 / 8,66" x 18,50" x 2,28"
Weight (kg/lb):	7.2 / 15.87



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