

Technology - Art-Sound
Manufactured by
elettromedia



SPL/Show

SP 4.500

USER'S MANUAL

rev 1.0

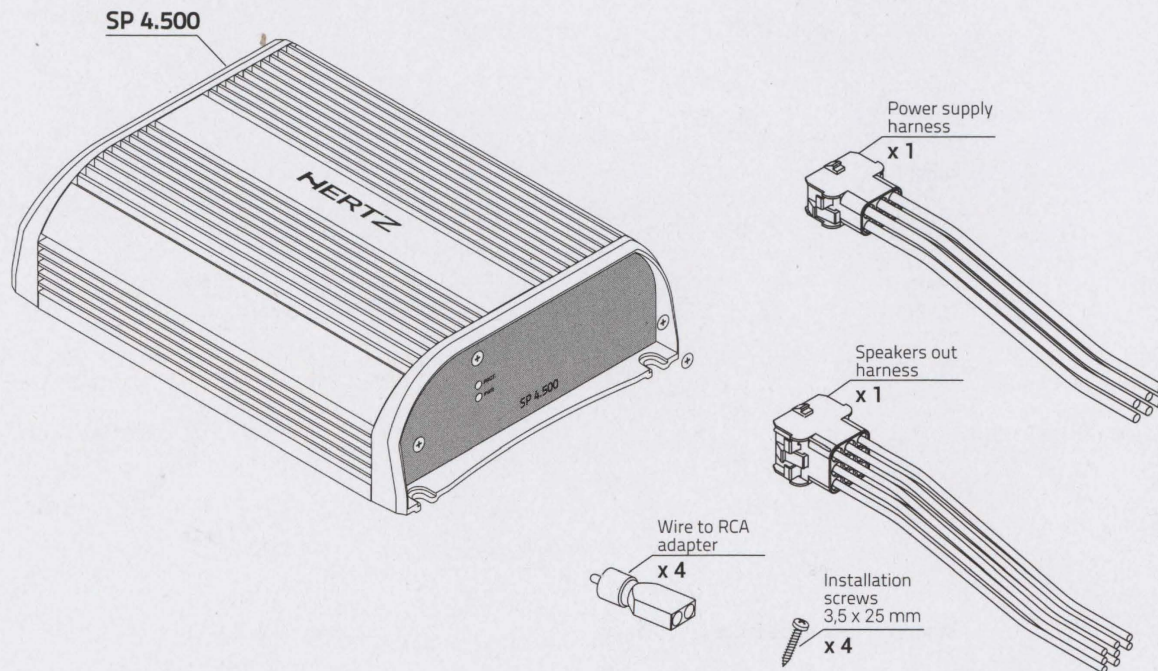
Il Manuale Utente è disponibile
anche sul nostro sito
www.hertz-audio.com

The User's Manual is also
available on our web site
www.hertz-audio.com

hertz-audio.com

HERTZ
The Sound Experience

PACKAGING CONTENTS



Index

1. PRECAUTIONS	08
2. INSTALLATION AND SIZES	42
3. CABLE SIZE CALCULATION TABLES. 1: POWER SUPPLY / 2: SPEAKERS	42
4. POWER SUPPLY and REMOTE IN CONNECTION	43
5. INPUT/OUTPUT CONNECTION	44
6. PRE IN / SPEAKER IN / DC REM	45
7. INSTALLATION EXAMPLES:	
4 CH OUT (2Ch IN): Coaxials	47
4 CH OUT (4Ch IN): Coaxials	48
3 CH OUT (2Ch IN): Passive 2 way + SUB	49
3 CH OUT (4Ch IN): Passive 2 way + SUB	50
4 CH OUT (2Ch IN): Active 2 way TW + WF	51
4 CH OUT (2Ch IN): Passive MID/HI + WOOFER	52
2 CH OUT (2Ch IN): Two SUBWOOFER	53
8. BLOCK DIAGRAMS	
SP 4.500:	54
9 TECHNICAL SPECIFICATIONS	
SP 4.500:	55

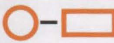
İÇİNDEKİLER

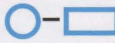
TÜRKÇE

1. ÖNLEMLER.
2. BOYUTLAR.
3. KABLO BOYUT HESAPLAMA TABLOLARI
 - 1: GÜÇ KAYNAĞI 2: HOPARLÖRLER.
4. GÜÇ KAYNAĞI VE UZAKTAN KUMANDA GİRİŞ BAĞLANTISI.
5. GİRİŞ / ÇIKIŞ BAĞLANTISI.
6. PRE GİRİŞ / HOPARLÖR GİRİŞ / HOPARLÖR GİRİŞ İLE OTOMATİK AÇILMA (DC REM).
7. KURULUM ÖRNEKLERİ.
8. BLOK ŞEMALAR.
9. TEKNİK ÖZELLİKLER.

 Not AVAILABLE	 Set-up CONTROLS	 Adjustment CONTROLS
---	---	--

X غير متاح / He e наличен / 無法使用 / 不提供 / Nije dostupno / Není dostupný / Ikke tilgængelig / Niet beschikbaar / Ei ole saataval / Ei saatavilla / Indisponible / Nicht verfügbar / Μη διαθεσιμο / לא זמין / Nem elérhető / Tidak disediakan / Non disponibile / なし / 사용할 수 없음 / Nav pieejams / Néra / Ikke tilgjengelig / ناموجود / Niedostępny / Não disponível / Indisponibil / Недоступно / Nie je k dispozícii / Ni na voljo / No disponible / Ej tilgænglig / **تنبأ** / Kullanılmıyor

 عناصر التحكم في الإعداد / Контролни елементи на монтажа / 設定控制 / 設置控制器 / Kontrolle postavlanja / Nastavení ovládacích prvků / Opsætning af styreknapper / Controles instellen / Seadistamisnupud / Asetussäätimet / Controles de configuration / Einrichtungssteuerung / Στοιχεία ελέγχου / פקדי הגדרה / Beállító kezelőszervek / Kontrol pengaturan / Controlli di configurazione / 設定用コントロール / 설정 제어 / Lestatijumu taustīni / Sarankos valdikliai / Oppsettcontroller / كترل های تنظیم اولیه / Regulatory nastavcze / Controlos de configuração / Comenzi configurare / Управление настройками / Kontrolky nastavenia / Gumbi za nastavljanje / Controles de configuración / Inställningsreglage / โปรแกรมควบคุมการตั้งค่า / Kurulum kontrolleri

 عناصر التحكم في التعديل / Контролни бутони за настройване / 調整控制 / 调节控制器 / Kontrolle podešavanja / Ovládací prvky / Reguleerimisnupud / Aanpassing controle / Reguleerimise juhtnupud / Säädön ohjaukset / Contrôles d'ajustement / Einstellungssteuerung / Στοιχεία ρυθμίσης / בקרת כוונון / Szabályozó kezelőszervek / Kontrol penyesuaian / Controlli di settaggio / 調整用コントロール / 조정 제어 / Regulēšanas taustīni / Reguliavimo valdikliai / Justeringskontroller / كترل های تنظیمات / Pokręta regulacyjne / Controlos de regulação / Comenzi reglare / Управление регулировками / Kontrolky úpravy / Gumbi za prilagoditev / Controles de ajuste / Justeringsreglage / โปรแกรมควบคุมการปรับเพี้ยนค่า / Ayar kontrolleri

1 PRECAUTIONS

English / English

Before installing the components, please carefully read all of the instructions contained in this manual. It is advisable to carefully follow the highlighted instructions. Failure to comply with these instructions may cause unintentional harm or damage to the components

SAFETY CONSIDERATIONS

1. Make sure your vehicle/vessel has 12 VDC voltage negative ground electric system.
2. Check your alternator and battery condition to ensure they can handle the increased consumption.
3. Do not carry out any installation inside the engine compartment or in areas exposed to water, excessive humidity, dust or dirt.
4. Never run cables outside the vehicle/vessel or install the amplifier next to electronic gearcases.
5. Install the amplifier in the vehicle/vessel sections where temperature is between 0°C (32°F) and 55°C (131°F). Leave at least 5 cm (2 ") of space around the amplifier. There must be good air circulation where the amplifier is installed. If you cover the heat sink, the amplifier goes into protection mode.
6. The amplifier can reach temperatures of around 80°C (176°F). Make sure it is not dangerously hot before touching it.
7. Make sure the location you chose for the components does not affect the correct functioning of the vehicle/vessel mechanical and electrical devices.
8. Make sure the power cable is not short circuited during installation and connection with the battery.
9. Make sure all the cables are properly secured along their entire length. Also, make sure their outer protective jacket is flame resistant and self extinguishing. Secure the connected cables close to the terminal blocks with wire ties or clamps.
10. When positioning the power supply cable, avoid to run the wire over or through sharp edges or close to moving mechanical devices. 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.
11. Make sure all the cables are properly secured all along their length. Also, make sure their outer protective jacket is flame resistant and self extinguishing. Use a clamping screw to secure positive and negative cables just close to the amplifier respective power supply terminal blocks.
12. Choose the cable gauge according to the amplifier power and to the suggestions you can find here. Use high quality cables, connectors and accessories, as you can find in the Connection catalogue.
13. Pre-plan the configuration of your new amplifier and the best wiring routes to ease installation.
14. In order to avoid incidental damage, keep the product in the original packaging until you are ready for the final installation.
15. Always wear protective eyewear when using tools, as splints or product residue may become airborne.

TYPICAL INSTALLATION SEQUENCE

If you have any questions please refer to the User's Manual you can find available on www.hertz-audio.com or contact your HERTZ dealer or Hertz authorized service for assistance.

1. Before installing the amplifier turn off the source and all other electronic devices in the audio system to prevent any damages.
2. Using a cable with adequate AWG (see chart: Power Supply Cable), run the power wire from the battery location to the amplifier mounting location.
3. Connect the power supply with the correct polarity. Connect (+) terminal to the cable coming from the battery and (-) terminal to the vehicle/vessel chassis. In other applications, like a motorcycle, it is recommended to connect both (-) and (+) terminals cables directly to the battery
4. Put an insulated fuse holder 40 cm max far from the battery positive terminal; connect one end of the power cable to it after the other end to the amplifier. Do not mount the fuse.
5. To ground the device (-) in the right way, use a screw in the vehicle/vessel 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 which can be generated during the audio reproduction.
6. Route all signal cables close together and away from power cables.
7. Connect the RCA input cables, the applied signal must be between 0.6 VRMS and 6 VRMS.
8. Connect the high level inputs using the proper plug. Applied signal must be between 2.2 VRMS and 22 VRMS.
9. Connect the speaker output using 12 AWG max speaker cable.
10. Don't connect (-) Ch1 and (-) Ch2, (-) Ch3 and (-) Ch4 speaker outputs together. If you use an external stereo crossover, make sure that its negative poles are not connected together.
11. The amplifier turns on by connecting the remote turn on terminal (REMOTE IN) to the source specific output. The amplifier turns on automatically, without remote signal, connecting a source loudspeakers' outputs (BTL) to the inputs by setting the "DC REM" switch to ON position.
12. The LED on the front panel lights up green indicating that the product is on. The LED lights up red if the outputs go on overload, if the thermal protection is triggered, if the speaker cables short circuits with the vehicle/vessel chassis and if the amplifier is malfunctioning
13. Secure all auxiliary devices you built to install the components to the vehicle/vessel structure; this ensures stability and safety while driving. The amplifier detachment while driving may cause serious damage to the passengers, as well as to other vehicles/vessels.
14. When installation is over, check the system's wiring and make sure all connections were done properly.
15. Put the fuse into the fuse holder. The fuse value must be 30A
16. Listening level calibration is made by adjusting the source volume up to 3/4 of its maximum level; then, adjust the amplifier levels until you hear distortion.
17. Warranty Certificate: please check out the HERTZ website for further information.

SAFE SOUND

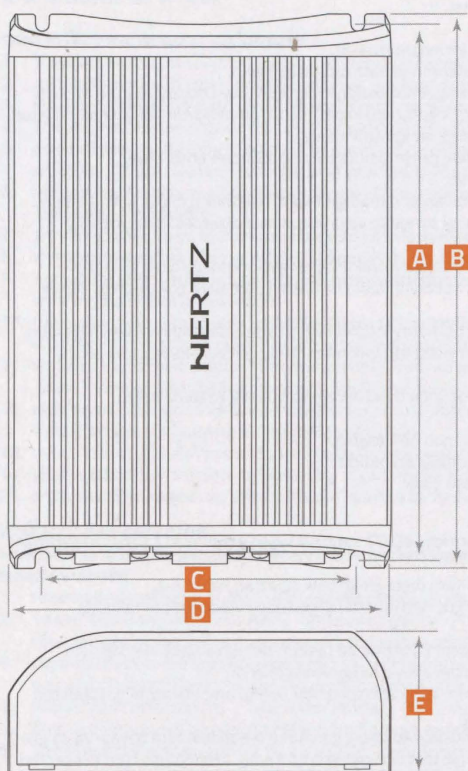
USE COMMON SENSE AND PRACTICE SAFE SOUND. PLEASE REMEMBER THAT LONG EXPOSURE TO EXCESSIVELY HIGH SOUND PRESSURE LEVELS MAY DAMAGE YOUR HEARING. SAFETY MUST BE AT THE FOREFRONT WHILE DRIVING



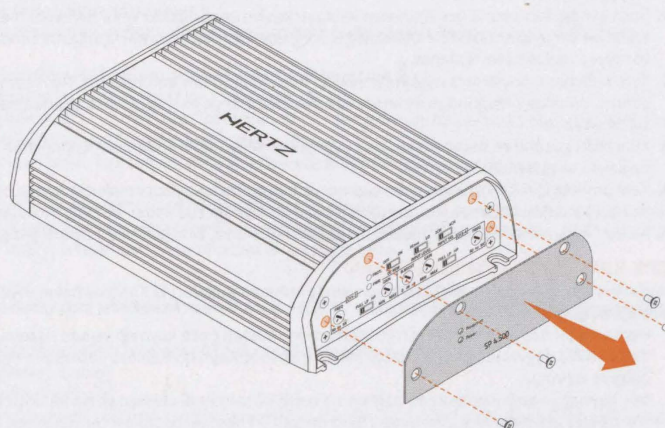
Information on electrical and electronic equipment waste (for those European countries which organize the separate collection of waste)

Products which are marked with a wheeled bin with an X through it can not be disposed of together with ordinary domestic waste. These electrical and electronic products must be recycled in proper facilities, capable of managing the disposal of these products and components. In order to know where and how to deliver these products to the nearest recycling/disposal site please contact your local municipal office. Recycling and disposing of waste in a proper way contributes to the protection of the environment and to prevent harmful effects on health.

2 INSTALLATION AND SIZES



	A	B	C	D	E	
SP 4.500	185.7	192.7	107	130	49	mm
	7.31	7.58	4.212	5.118	1.929	in.

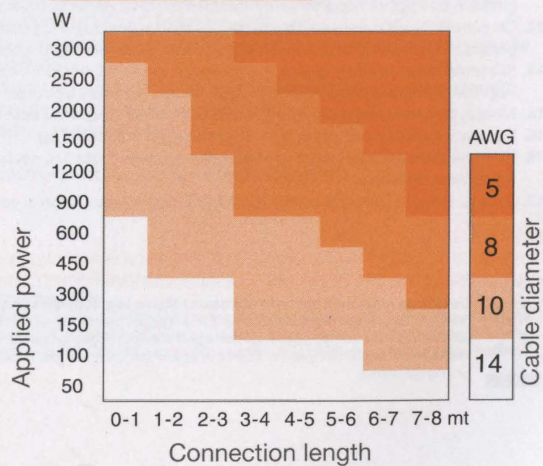


3 CABLE SIZE CALCULATION TABLES: 1: Power supply cable / 2: Speakers cable.

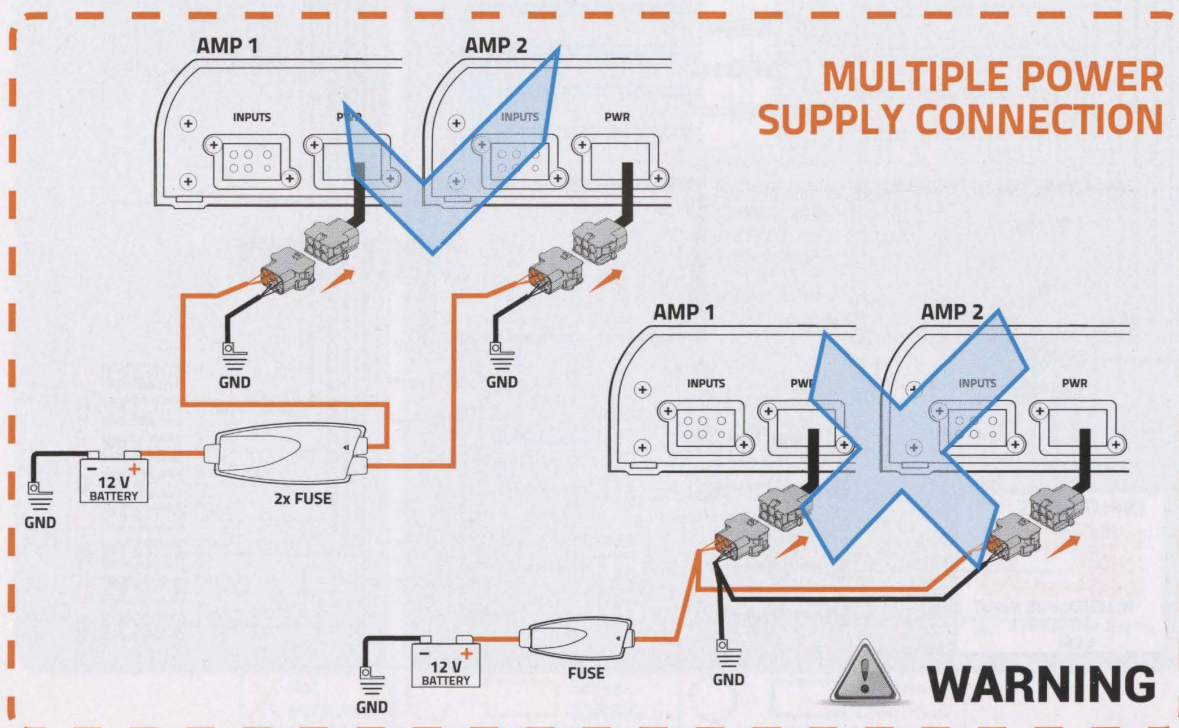
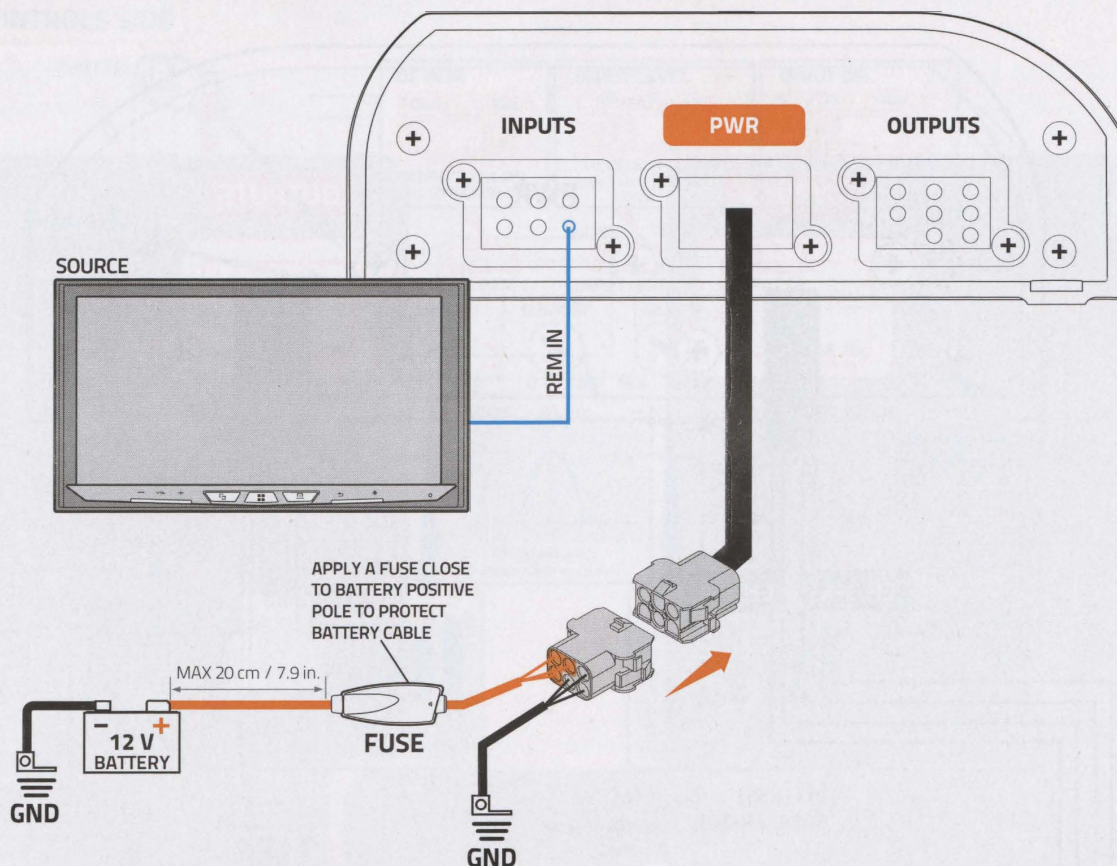
1: Power supply cable

Power & Ground cable calculation table										Cable Size							
Minimum gauge size recommended for MAINPOWER & POWER FLOW cables. MAINPOWER cables ensure higher istantaneous current transfer.																	
*Current Draw I (A)	240-350									1/0	53,5						
	180-240									2	33,6						
	150-180									4	21,2						
	120-150									8	8,4						
	100-120									10	5,3						
	80-100									12	3,3						
	60-80									14	2,1						
	40-60									16	1,3						
	20-40									18	0,8						
	8-20																
	0-8																
										Cable Length (m)							
										0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8

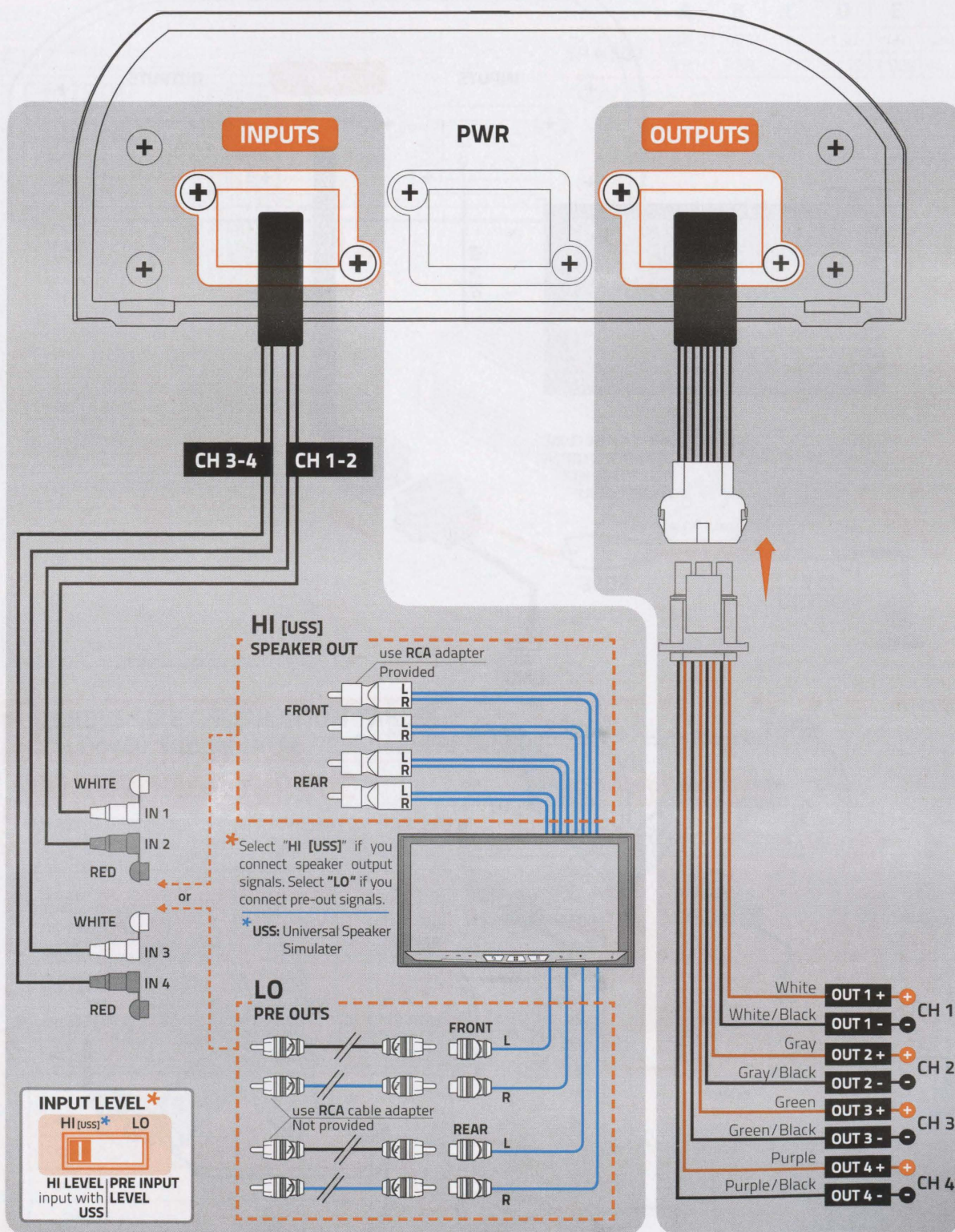
2: Speakers cable



4 POWER SUPPLY and REMOTE IN CONNECTION

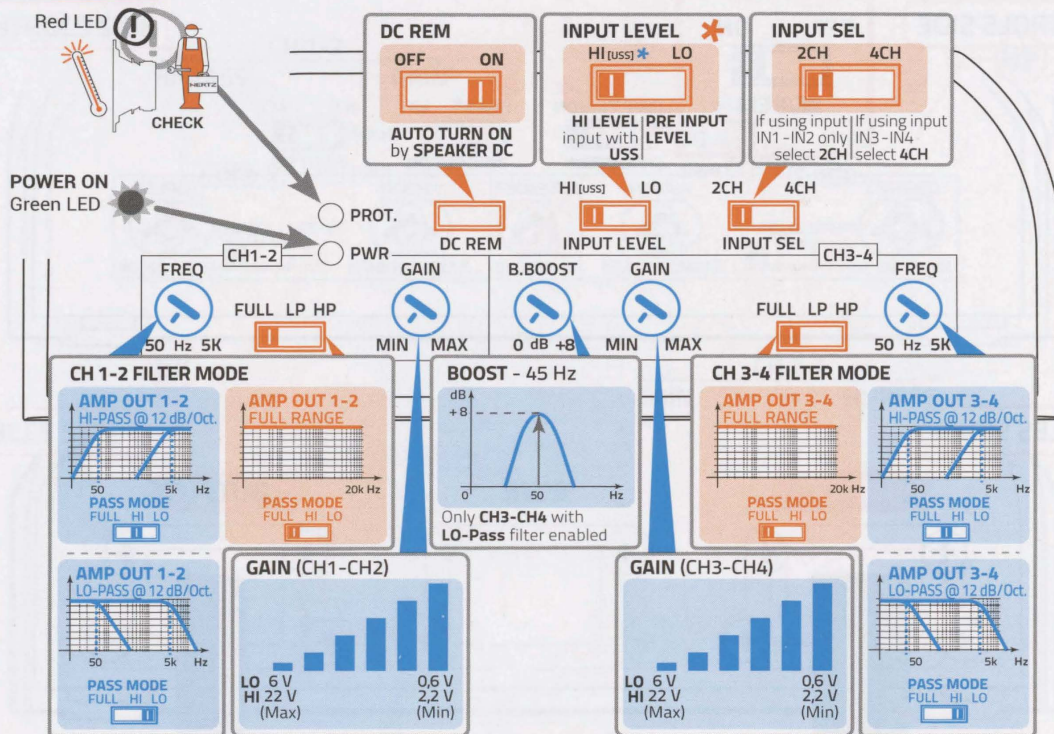


5 INPUT / OUTPUT CONNECTIONS

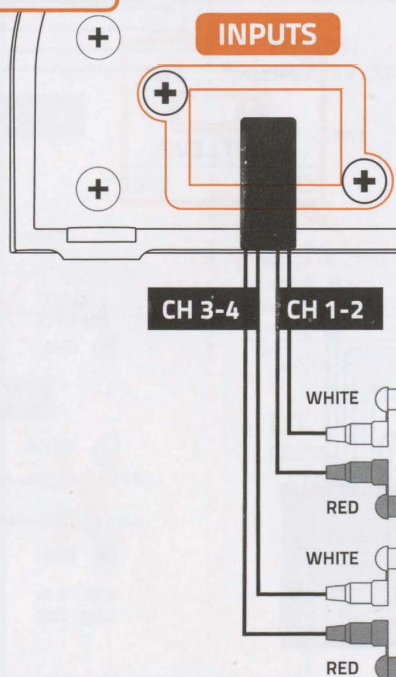


6 PRE IN / SPEAKER IN / DC REM

CONTROLS SIDE

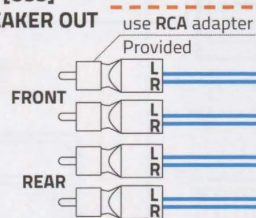


CABLES SIDE



HI [USS]

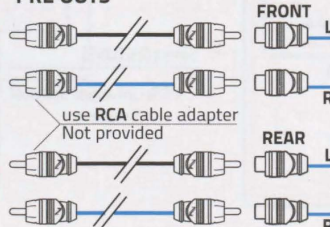
SPEAKER OUT



* Select "HI [USS]" if you connect speaker output signals. Select "LO" if you connect pre-out signals.

* USS: Universal Speaker Simulator

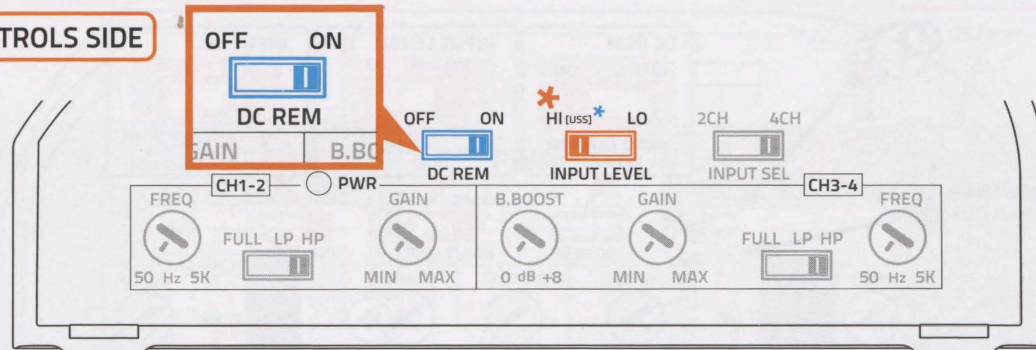
LO PRE OUTS



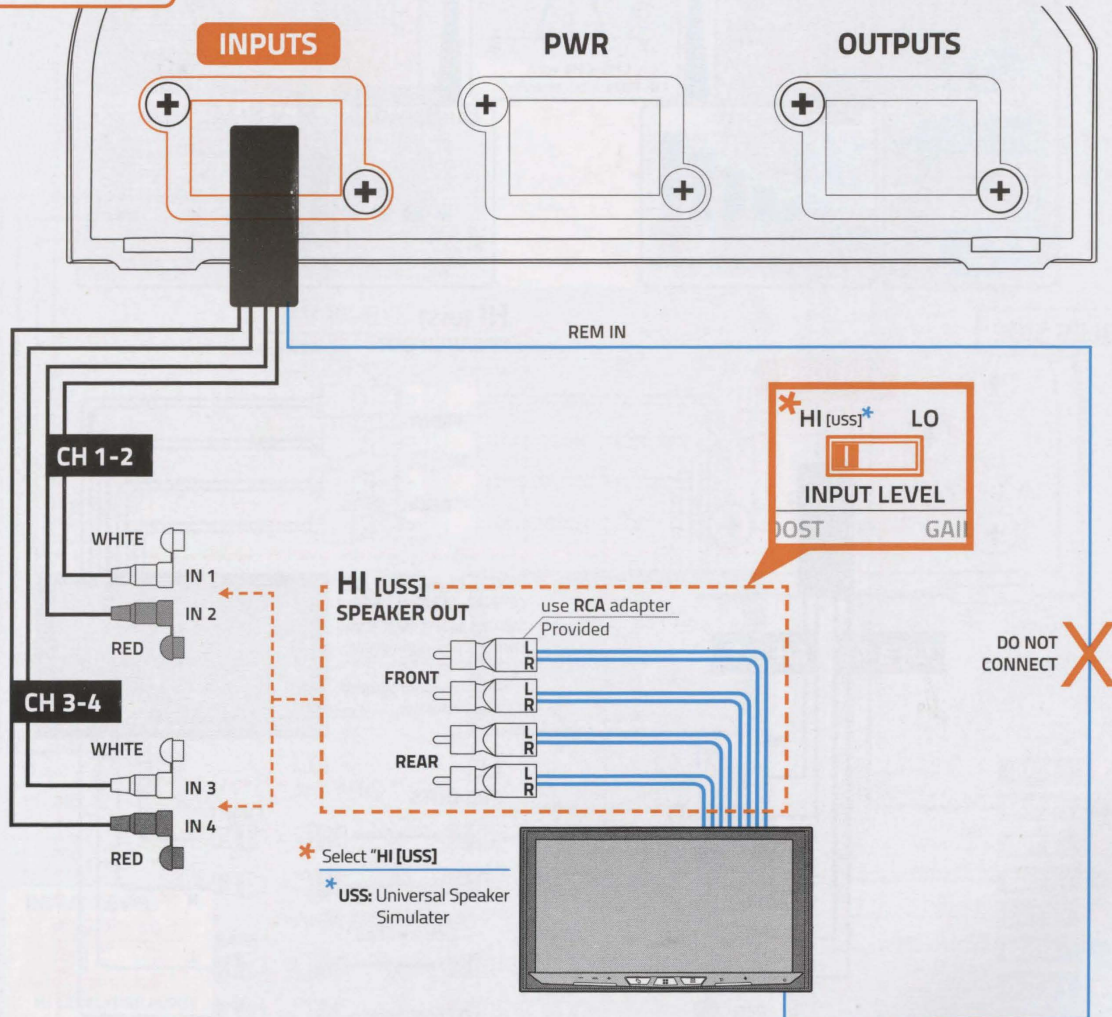
Not AVAILABLE	- Set-up CONTROLS	- Adjustment CONTROLS
---------------	--------------------	------------------------

DC REM: Auto Turn On by Speaker DC (without using the "REM IN" wire)

CONTROLS SIDE



CABLES SIDE

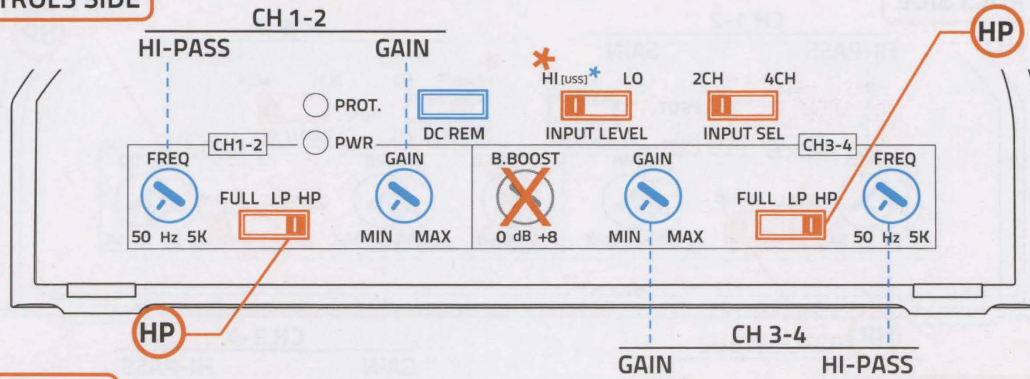


X Not AVAILABLE	O - □ Set-up CONTROLS	○ - □ Adjustment CONTROLS
------------------------	-------------------------------------	---

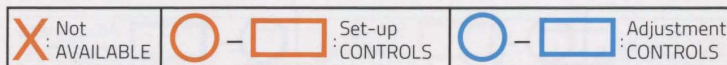
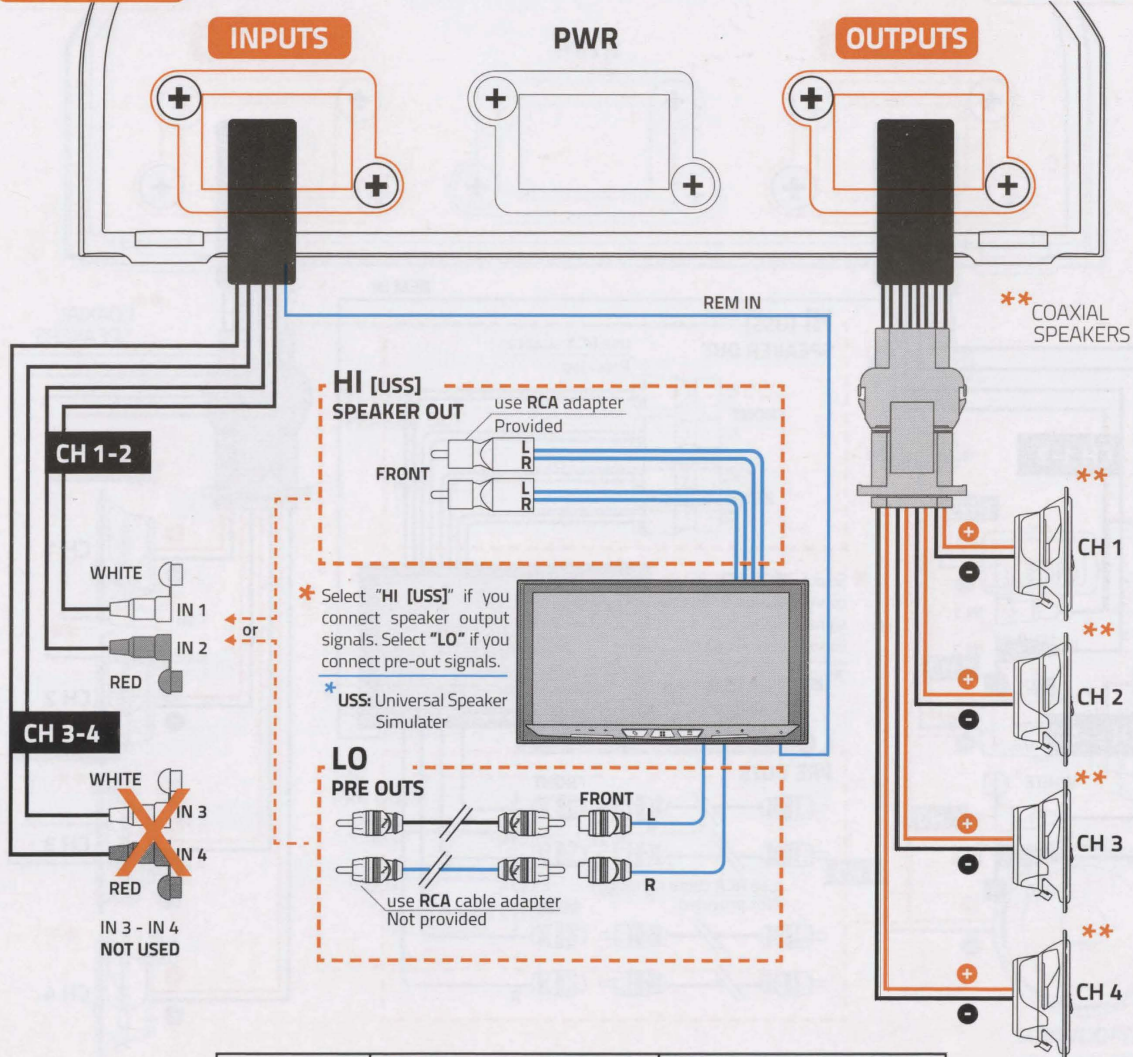
7 INSTALLATION EXAMPLES

4 Ch OUT (2Ch IN): Coaxials

CONTROLS SIDE

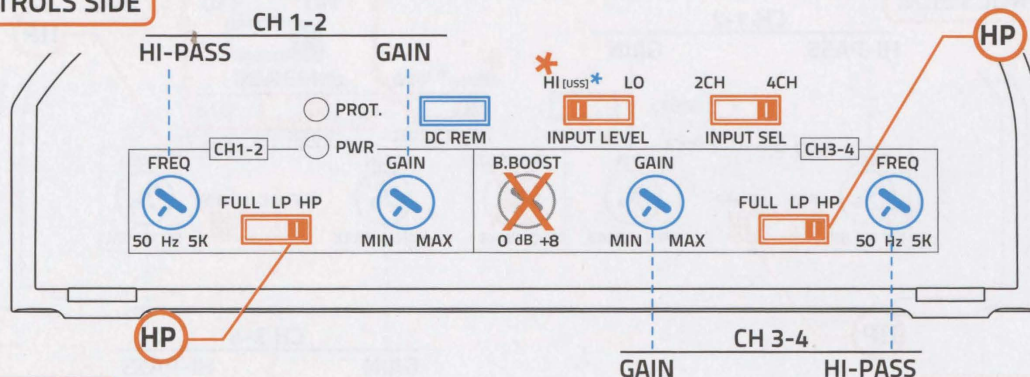


CABLES SIDE

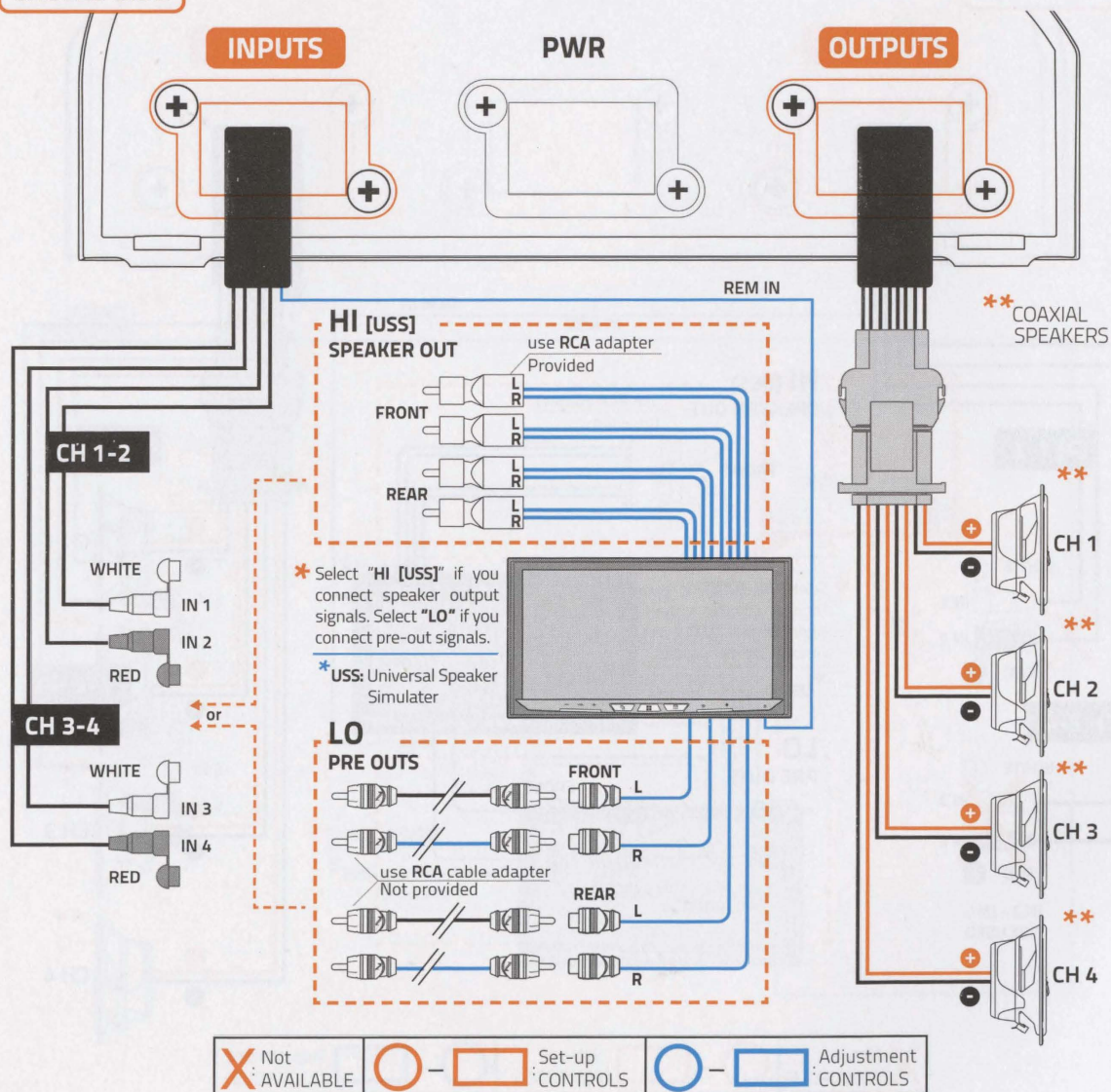


4 Ch OUT (4Ch IN): Coaxials

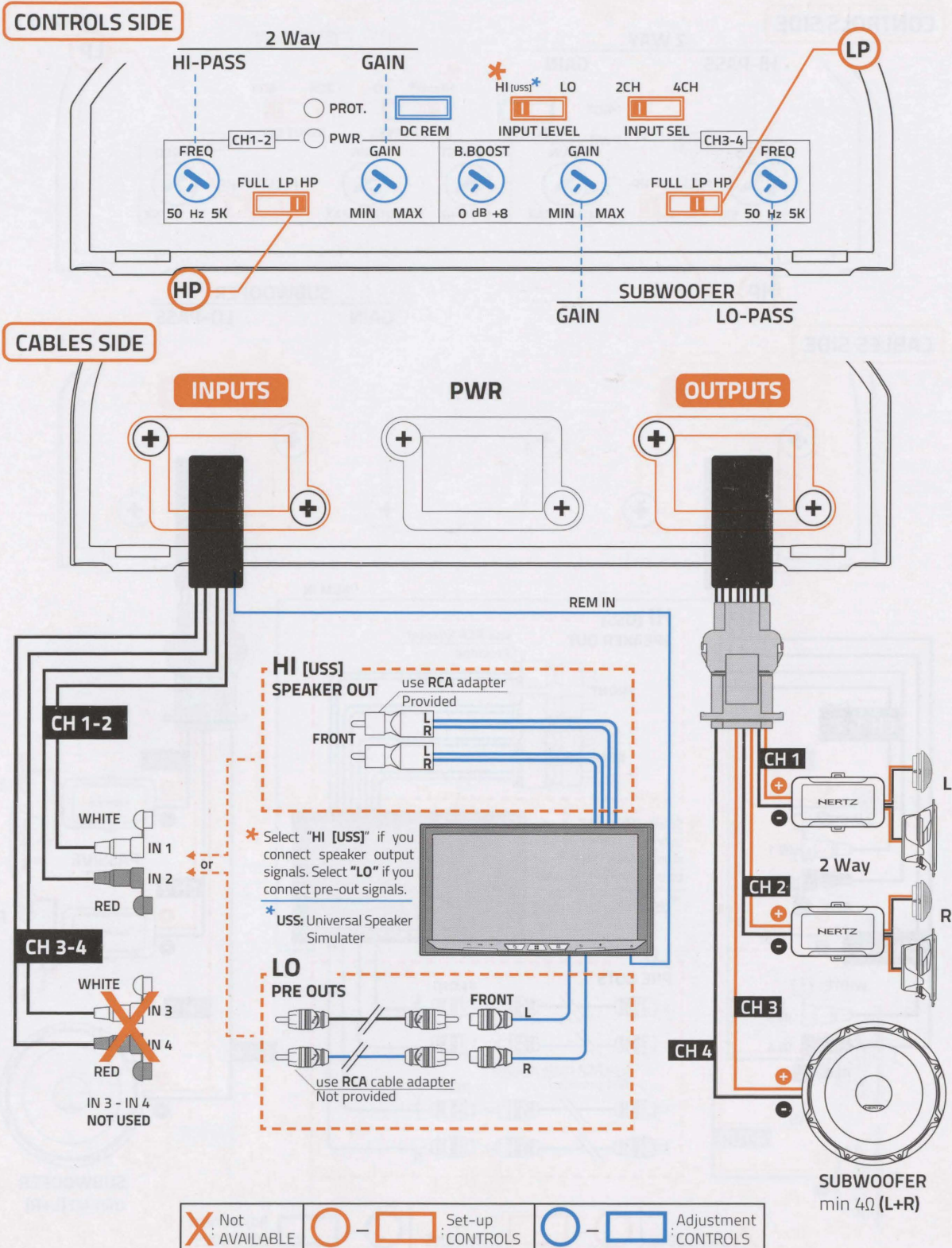
CONTROLS SIDE



CABLES SIDE



3 Ch OUT (2Ch IN): Passive 2 Way + Sub

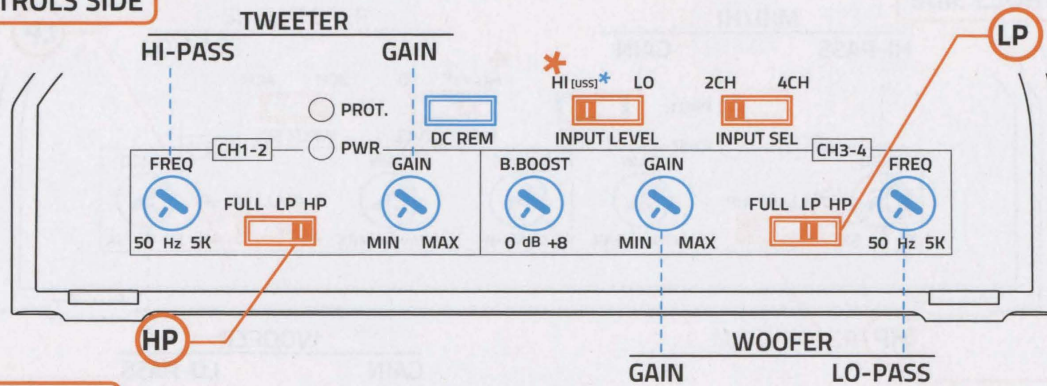


CONTROLS SIDE

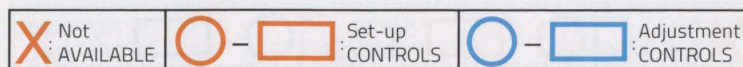
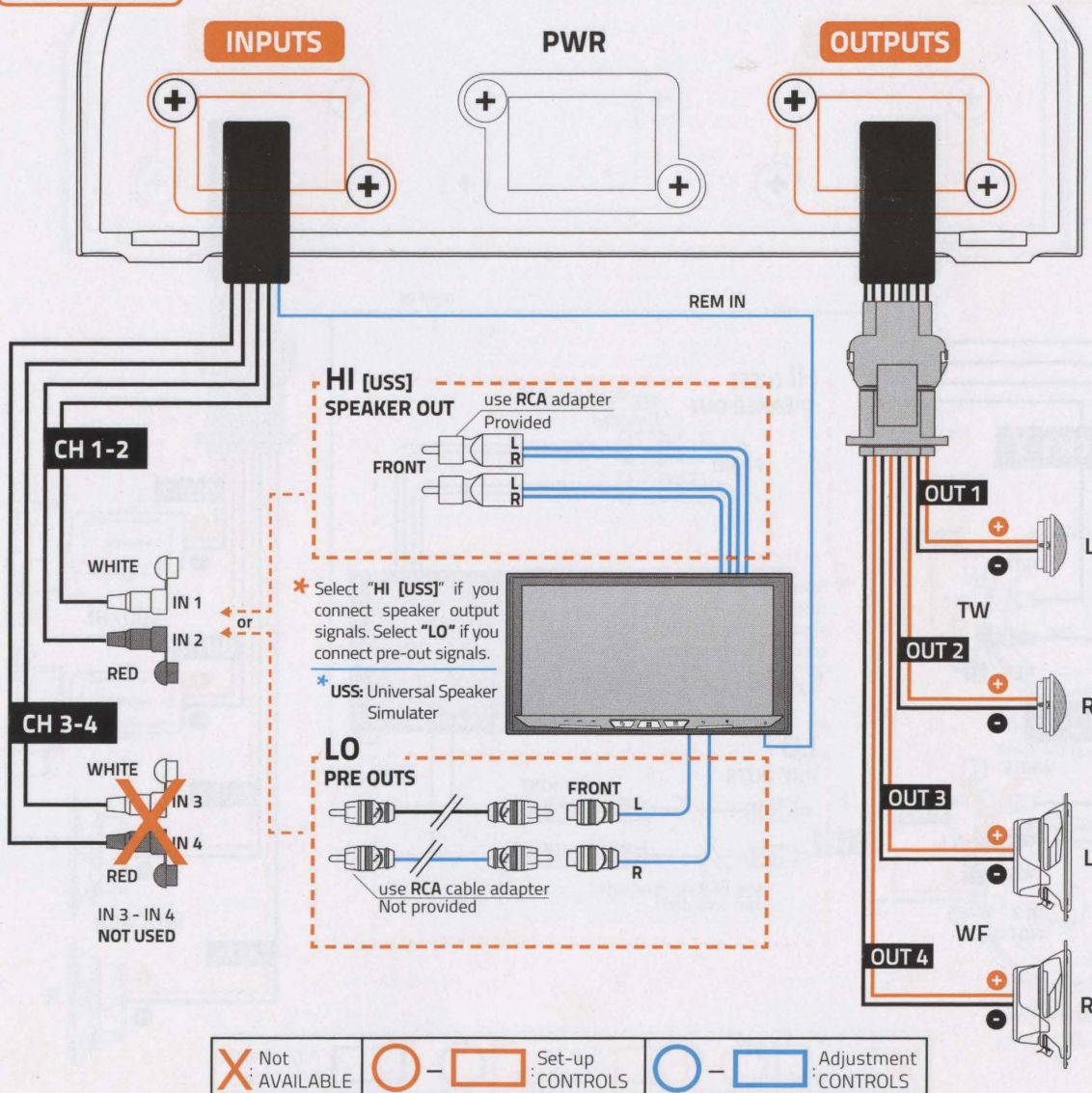


4 Ch OUT (2Ch IN): Active 2 way TW + WF

CONTROLS SIDE

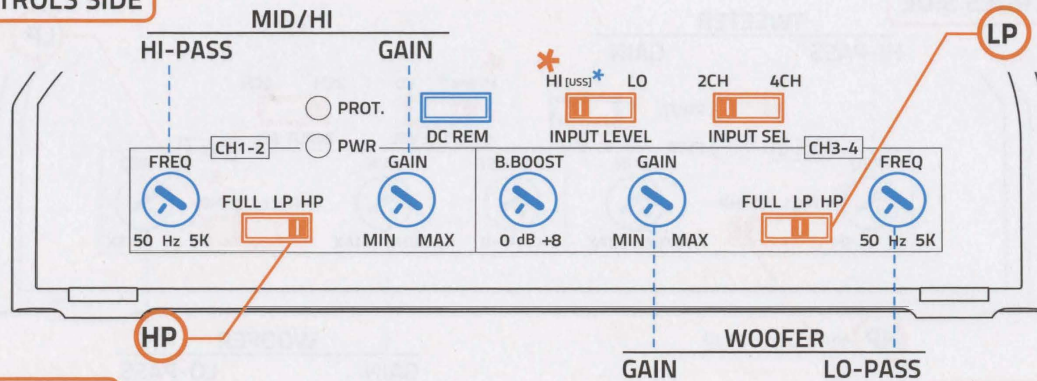


CABLES SIDE

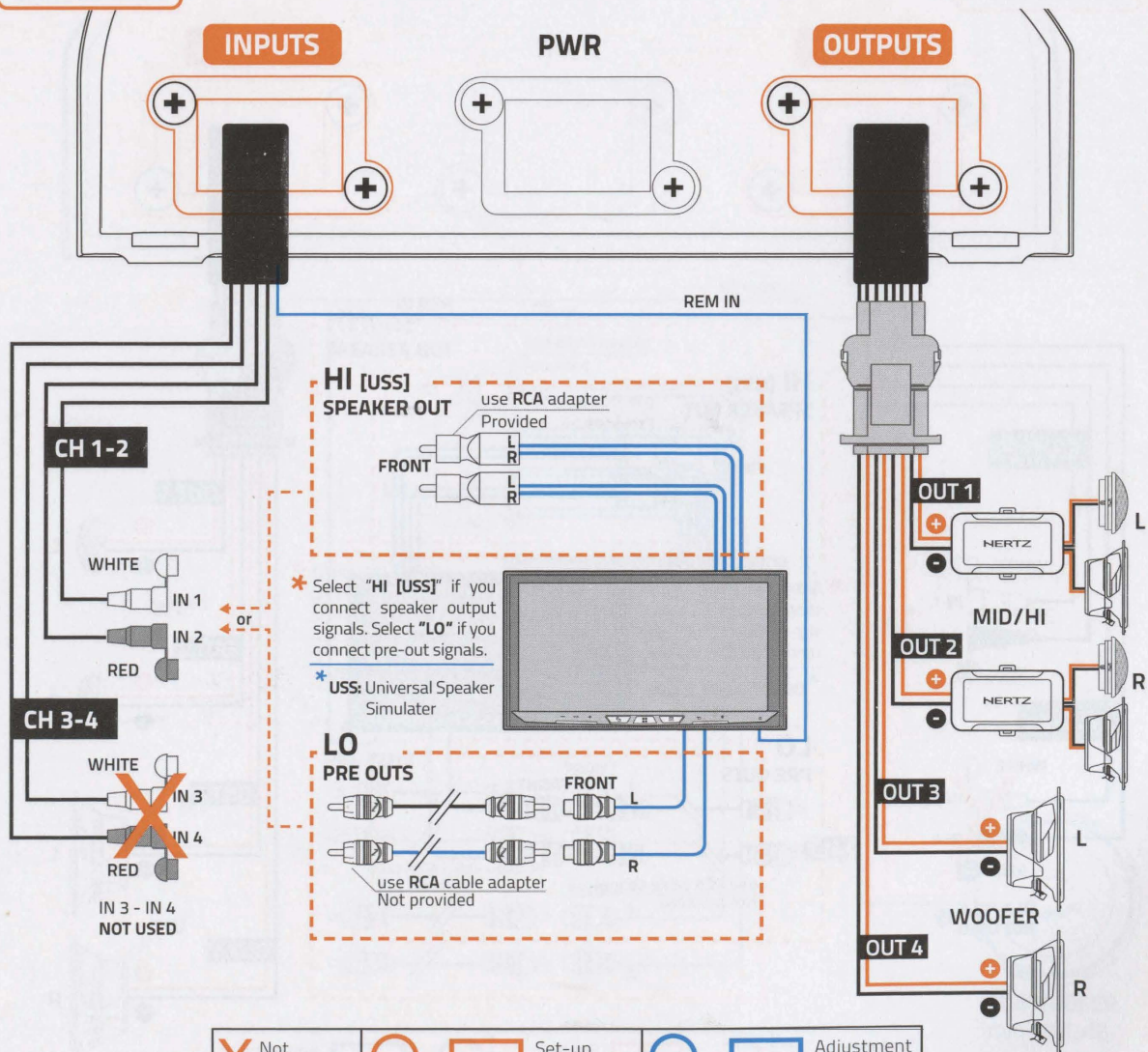


4 Ch OUT (2Ch IN): Passive MID/HI + Woofer

CONTROLS SIDE

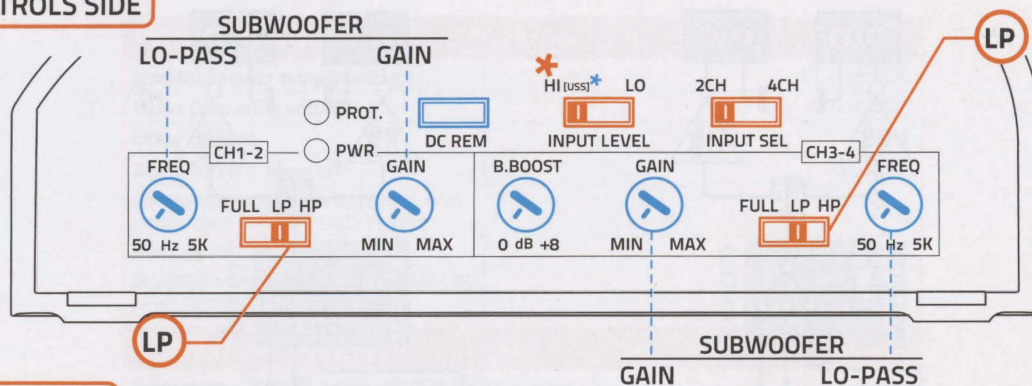


CABLES SIDE

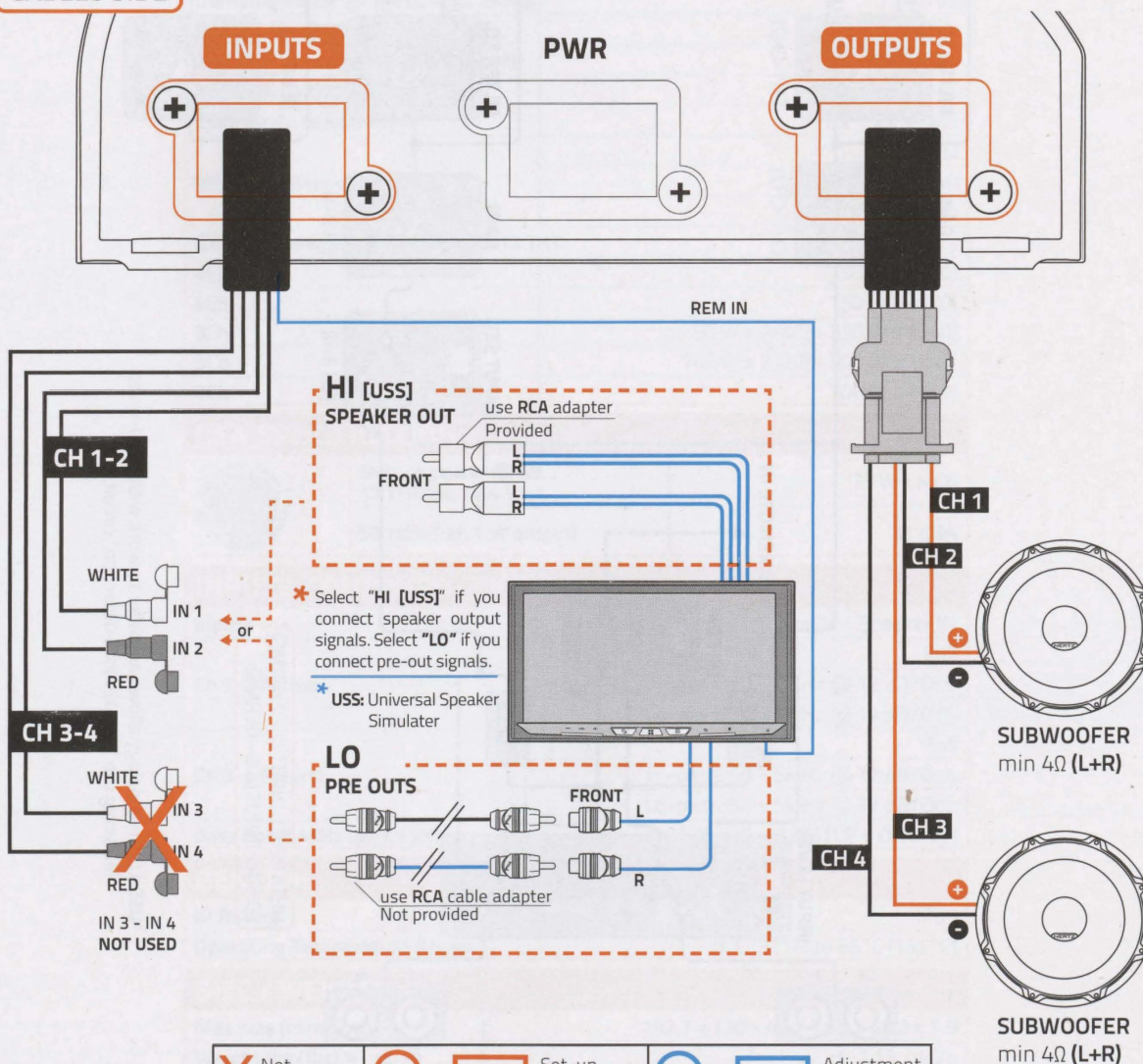


2 Ch OUT (2Ch IN): Two Subwoofer

CONTROLS SIDE

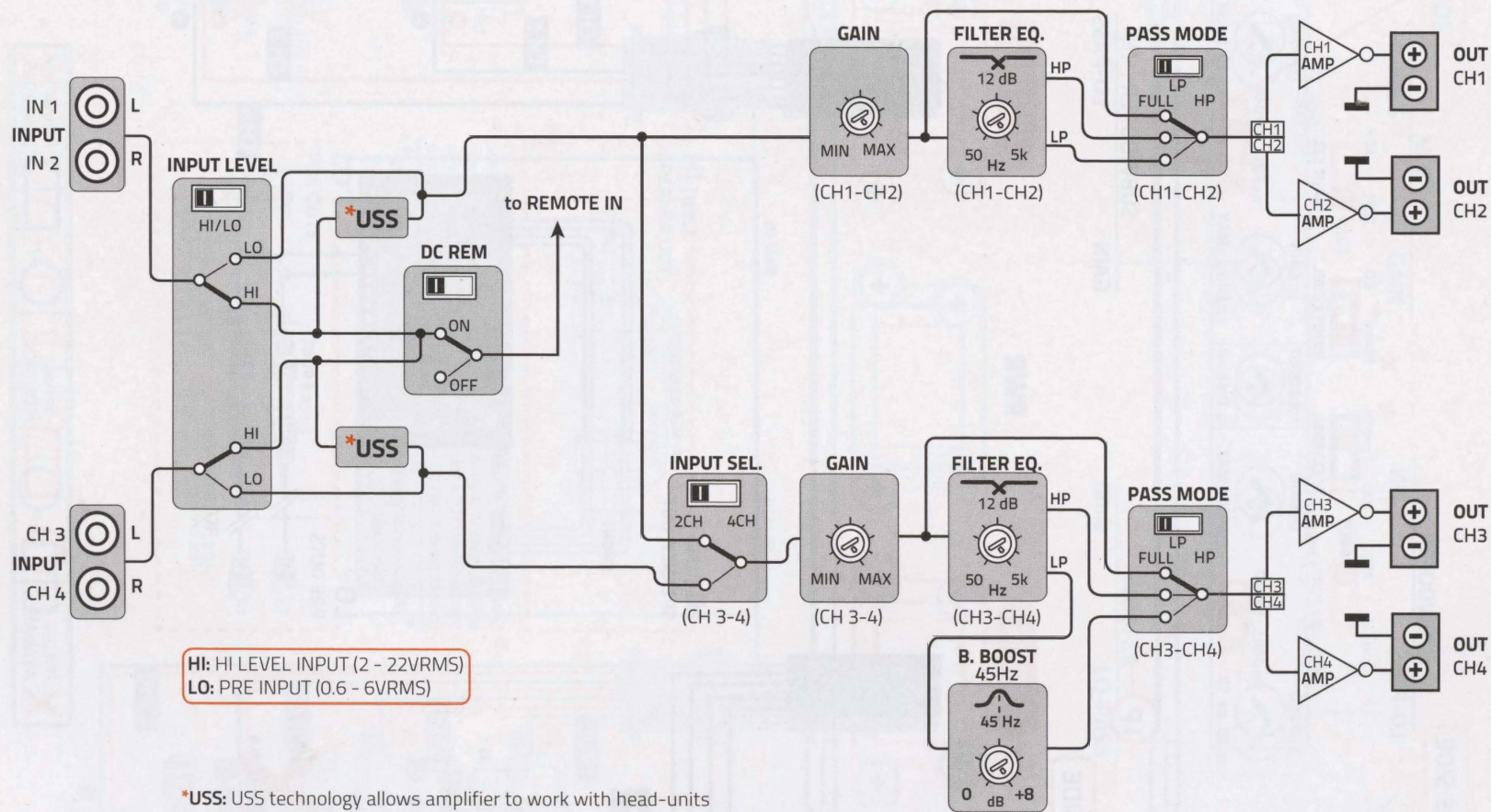


CABLES SIDE



Not AVAILABLE	- Set-up CONTROLS	- Adjustment CONTROLS
---------------	--------------------	------------------------

8 BLOCK DIAGRAMS



9 TECHNICAL SPECIFICATIONS

SP 4.500

POWER SUPPLY

Nominal power supply voltage	11 ÷ 15 VDC
Pulse Operating voltage	6 ÷ 16 VDC
Idling current	0.9 A
Idling current when off	0.03 mA
Consumption @ 14.4 VDC, MIN load impedance (Max Musical Power)	27 A
Remote IN	6 ÷ 15 VDC (9 mA)
DC-REM - Remote Turn on by SPK DC from OUTPUT BTL speakers	3.5 ÷ 7 VDC

AMPLIFIER STAGE

Distortion - THD @ 1 kHz, 4Ω, 70% Rated Power	<0,02%
Damping factor @ 1 kHz, 4Ω, 2 VRMS	>150
Bandwidth @ -3 dB	10 Hz ÷ 35 kHz
S/N ratio (A weighted @ 1 V Input)	100 dBA
Pre-In sensitivity	0.6 ÷ 6 VRMS
Speaker-In sensitivity	2.2 ÷ 22 VRMS
Minimum load impedance	@ 4Ch: 2Ω
	@ 3Ch: 2Ω + 2Ω + 4Ω
	@ 2Ch: 4Ω
Output power (RMS) @14.4 VDC, 1% THD:	
4Ch	90 W x 4 (4Ω)
4Ch	150 W x 4 (2Ω)
3Ch	80 W x 2 (4Ω) + 330 W x 1 (4Ω)
3Ch	145 W x 2 (2Ω) + 300 W x 1 (4Ω)
2Ch	300 W x 2 (4Ω)

CEA SPECIFICATION

	Output power @ 4Ω 1% THD+N, 14.4 V	75 W x 4 Ch
	SN ratio (ref. 1 W output)	81 dBA

INPUTS / OUTPUTS / FILTERS

Inputs	Pre IN / Speaker IN
Ch 1-2 Filters:	Full
	Hi-pass: 50 ÷ 5k Hz @ 12 dB/Oct.
	Lo-pass: 50 ÷ 5k Hz @ 12 dB/Oct.
Ch 3-4 Filters:	Full
	Hi-pass: 50 ÷ 5k Hz @ 12 dB/Oct.
	Lo-pass: 50 ÷ 5k Hz @ 12 dB/Oct.
Bass Boost 45Hz (adjustable)	OUT 3 -4 (0 ÷ 8 dB) [LP = ON only]

GENERAL

IP Rating	IP55
Operating Temperature Range	0°C (32°F) to 55°C (131°F)

SIZE / WEIGHT

Max size (mm/inch)	192.7 x 130 x 49 / 7.58 x 4.18 x 1.9
Weight (kg/lbs)	2.15 / 4.74

hertz-audio.com

HERTZ

PART OF **ELETTROMEDIA**

Strada Regina Km 3,500 - Marignano

62018 Potenza Picena (MC) Italy

T +39 0733 870 870 - F +39 0733 870 880

www.elettromedia.it

All specifications subject to change without notice

FFL145A_23 REV.A

SP 4.500

D-CLASS MONO AMPLIFIER

600 W



POWER SUPPLY	
Nominal power supply voltage	11 ÷ 15 VDC
Pulse Operating voltage	6 ÷ 16 VDC
Idling current	1.1 A
Idling current when off	0.03 mA
Consumption @ 14.4 VDC, MIN load impedance (Max Musical Power)	27 A
Remote IN	6 ÷ 15 VDC (9 mA)
DC-REM - Remote Turn on by SPK DC from BTL speakers outputs	3.5 ÷ 7 VDC

AMPLIFIER STAGE	
Distortion - THD @ 1 kHz, 4Ω, 70% Rated Power	<0.02%
Damping factor @ 1 kHz, 4Ω, 2 VRMS	>150
Bandwidth @ -3 dB	10 Hz ÷ 35 kHz
S/N ratio (A weighted @ 1 V Input)	100 dBA
Pre-In sensitivity	0.6 ÷ 6 VRMS
Speaker-In sensitivity	2.2 ÷ 22 VRMS
Minimum load impedance	@ 4Ch: 2Ω
	@ 3Ch: 2Ω + 2Ω + 4Ω
	@ 2Ch: 4Ω
Output power (RMS) @14.4 VDC, 1% THD:	
4Ch	90 W x 4 (4Ω)
4Ch	150 W x 4 (2Ω)
3Ch	80 W x 2 (4Ω) + 330 W x 1 (4Ω)
3Ch	145 W x 2 (2Ω) + 300 W x 1 (4Ω)
2Ch	300 W x 2 (4Ω)

CEA SPECIFICATION	
	Output power @ 4Ω 1% THD+N, 14.4 V
	75 W x 4 Ch
	SN ratio (ref. 1 W output)
	81 dBA

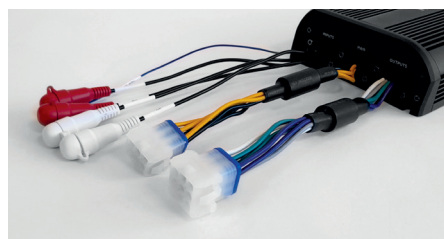
INPUTS / OUTPUTS / FILTERS	
Inputs	Pre IN / Speaker IN
Filters:	Full
	Hi-pass: 50 ÷ 5k Hz @ 12 dB/Oct.
	Lo-pass: 50 ÷ 5k Hz @ 12 dB/Oct.
Filters:	Full
	Hi-pass: 50 ÷ 5k Hz @ 12 dB/Oct.
	Lo-pass: 50 ÷ 5k Hz @ 12 dB/Oct.
Bass Boost 45Hz (adjustable)	OUT 3 - 4 (0 ÷ 8 dB) [LP = ON only]

GENERAL	
IP Rating	IP55
Operating Temperature Range	0°C (32°F) to 55°C (131°F)

SIZE / WEIGHT	
Max size (mm/inch)	192.7 x 130 x 49 / 7.59 x 5.12 x 1.93
Weight (kg/lbs)	1.9 / 4.18



1. Up to 87% efficiency thanks to ADC (Advanced D-Class) output stage.
2. USS (Universal Speakers Simulators) allows SP 4.500 to work with head units featuring the "speaker load detection" circuit.
3. 90 W RMS x 4 (4Ω) with ultra-compact size: 192.7 x 130 x 49 / 7.59 x 5.12 x 1.93 (mm/inch)
4. IP55 aluminium chassis for maximum protection against humidity and external agents.
5. No cooling fan to prevent internal accumulation of dirt.
6. Sealed power cord, line inputs and speaker outputs to prevent oxidation.
7. Crossovers filters and controls on a single side to facilitate calibration when the product is installed.
8. Balanced fully-differential high-noise rejection inputs.
9. ART (Automatic Remote Turn-On/Off) automatically turns on/off the amplifier when the OEM head-unit turns on/off (can be enabled/disabled).



Sealed connectors



Maximum versatility

