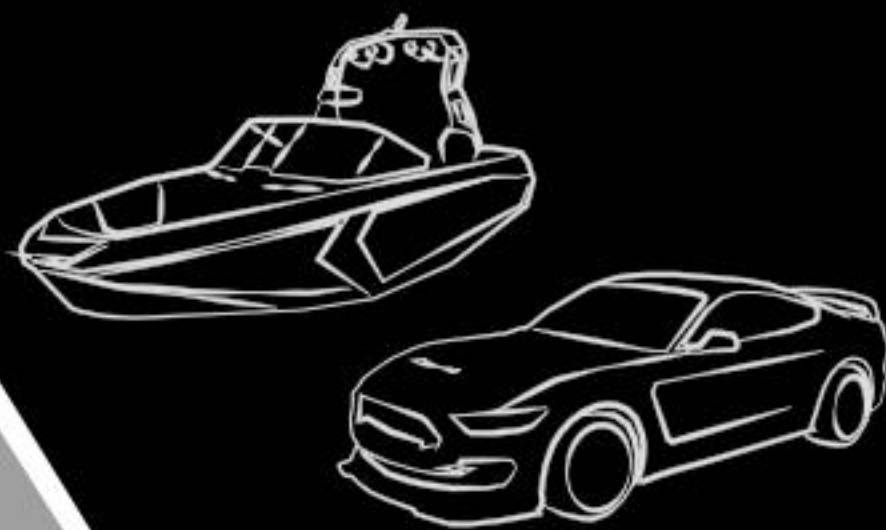




AUDIO DYNAMICS



SD Standard Definition Series **OWNER'S MANUAL**

Models:

ADSD1200.1x/ADSD2000.1x/ADSD1600.4x/ADSD2400.5x

General Features:

- INFINEON Class-D Drive Chipset Technology Offers Efficiency & Performance
- Designed Specifically for Marine and Car Applications
- Compact Size For Easy Installations
- Surface Mount Component Technology
- Audio Precision Quality Control Verification
- Stable & Reliable Four Layer PCB Layout
- Power, Protection, and Clipping Status LEDs
- Short circuit, Thermal , High/Low Voltage, and DC Offset Protection
- Excellent Signal to Noise and FM Noise Rejection

THANK YOU

Thank you for choosing AUDIO DYNAMICS SDx Series amplifiers! Your choice of an AUDIO DYNAMICS amplifier indicates a desire for high quality music reproduction. AUDIO DYNAMICS offers you products developed from over three decades of car audio expertise. So, whether you are a daily driving music lover, or a serious car audio competitor, AUDIO DYNAMICS has the product for you!

Please read and follow the instructions in this manual to take full advantage of the AUDIO DYNAMICS SDx amplifier. Professional installation by an authorized AUDIO DYNAMICS dealer is highly recommended for all of our products. Otherwise, the maximum performance of your new gear may be sacrificed. An authorized AUDIO DYNAMICS dealer will offer the installation services and expertise to get the most performance from your new amplifier.

You're headed in the right direction with an AUDIO DYNAMICS Sdx amplifier!

INTRODUCTION

The AUDIO DYNAMICS Sdx amplifiers offer high quality audio reproduction for the audiophile and the everyday listener.

Platinum finish on the connectors ensures solid electrical connections that will resist corrosion. Fully variable crossovers make installation easy and save the cost of outboard crossovers. Additionally, they may be used in conjunction with outboard passive or active crossovers, depending on the complexity required by the system. The click in place crossover potentiometers allow you to fine tune the sound to best fit the speakers and your listening preferences.

Overload, short circuit, thermal, low voltage, high voltage, and reverse polarity circuits are designed in to protect the amplifier from the common causes of amplifier failure and misuse.

INSTALLATION

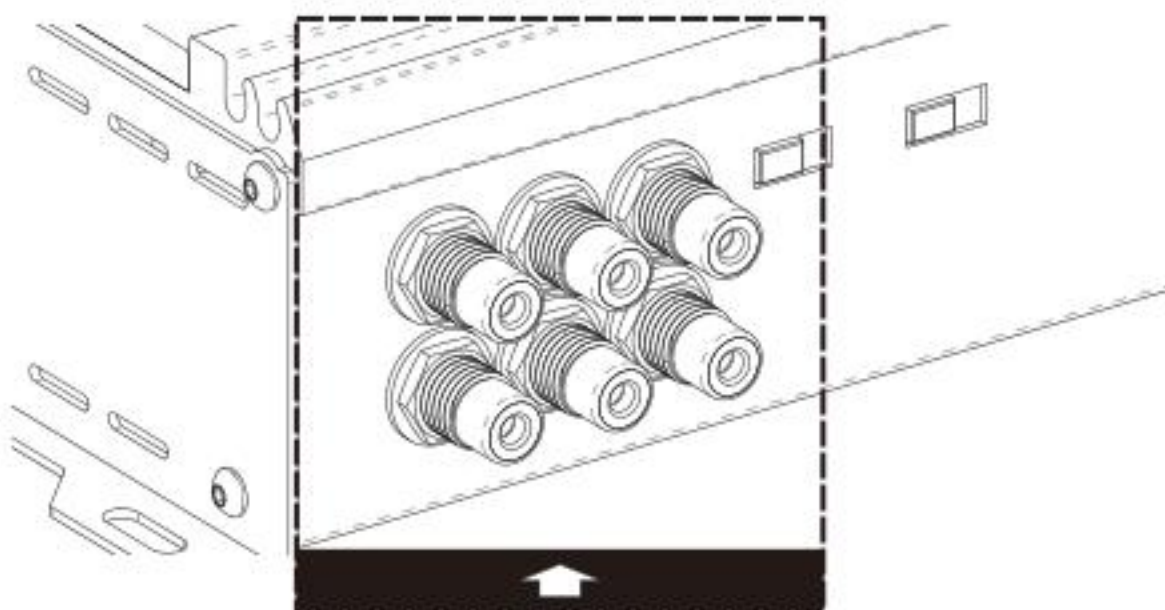
Professional installation by an authorized AUDIO DYNAMICS dealer is highly recommended. Otherwise, the performance of your new gear may not be satisfactory. In the event that you decide to do your own installation, please read and follow this manual very carefully. Failure to do so may compromise the integrity of this amplifier and possibly void the product warranty.

Amplifiers are generally mounted in the hatch/trunk area of a car, UTV, ATV, motorcycle or boat, and under or behind the seat of most trucks. Select a location that will provide adequate ventilation for the amplifier. Avoid mounting the amplifier with the fins facing down. The fins should be facing up, either vertically or horizontally. Before securing the amplifier, inspect the mounting location carefully to ensure that you do not drill into or damage any electrical, hydraulic fluid, or fuel lines. Secure the amplifier with the screws provided.

INPUT

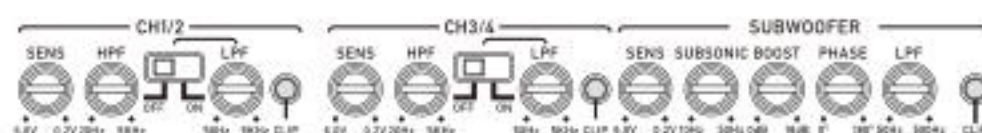
AUDIO DYNAMICS Sdx amps have an adjustable input sensitivity of "gain" to match the many different source unit output voltages. With the gain up, the amp will reach full output at a lower volume setting on the source unit. At higher gain settings, the amp also becomes more sensitive to noise from the vehicle's electrical system. Try to run the gain at the lowest setting possible for your system.

There is no correct gain setting because speakers require different power to achieve a well balanced, linear system response. We recommend using a 1 KHz and or a 40Hz tone into the amplifier, without a speaker connected, and set the input sensitivity whereas the clip indicator barely comes on. This will confirm that you will always be delivering clean power to your speakers. For example, if you have 5 volts coming from your source unit, most likely the amplifier gain will be set properly when it is barely up from the bottom. If you have 1 volt coming into the amplifier, your gain will most likely be $\frac{3}{4}$ the way up.



CROSSOVER CONTROLS

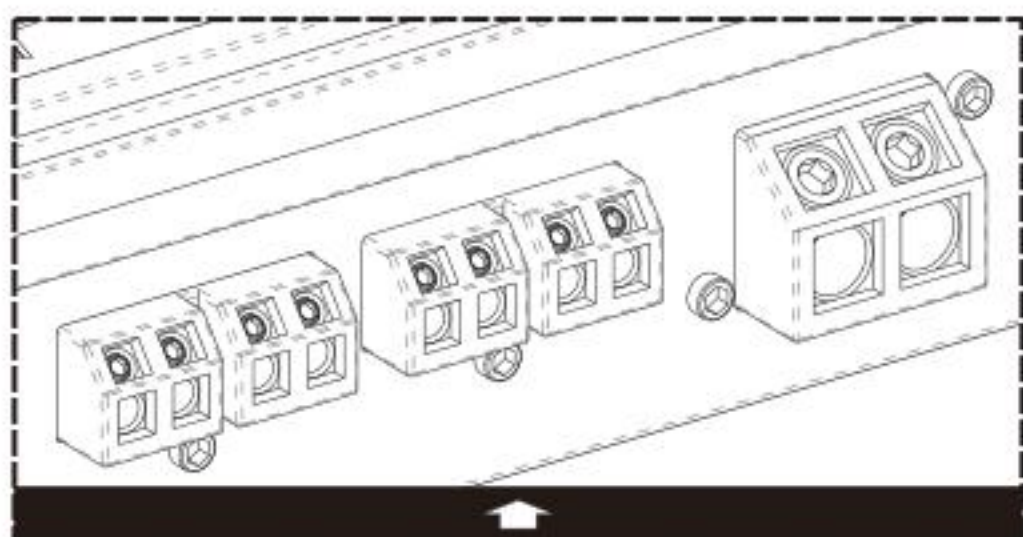
A crossover is a device that removes unwanted frequencies from a speaker or amplifier. A tweeter can easily be destroyed by bass notes if they are not filtered out. Likewise, a subwoofer will not sound natural if it is playing midrange notes. A crossover removes these notes from the speaker. Careful adjustment is needed to ensure that all of the speakers are playing the correct notes and that you are not left with low or high spots in the frequency response. You will need to know the frequency response range of your speakers to determine crossover points. Crossover points can be precisely set using the click charts within this manual.



ADSD2400.5x

SPEAKER OUTPUTS

This amplifier is a multi-channel amplifier design which means it has more than one channel of speaker output. It is equipped with a large block style terminal for speaker connections. Know your total ohm load before you make any connections. Make this connection carefully and neatly. Strip your wire back and twist the exposed leads and insert them into the block terminal. To avoid speaker wire shorts, be careful not to leave loose or frayed strands of wire outside of the terminal hole. Tighten the Allen head screws down on the terminal until the wire is tightly secured in place. The amplifier will go into protection if any wires come in contact with each other.



INSTALLATION INSTRUCTIONS

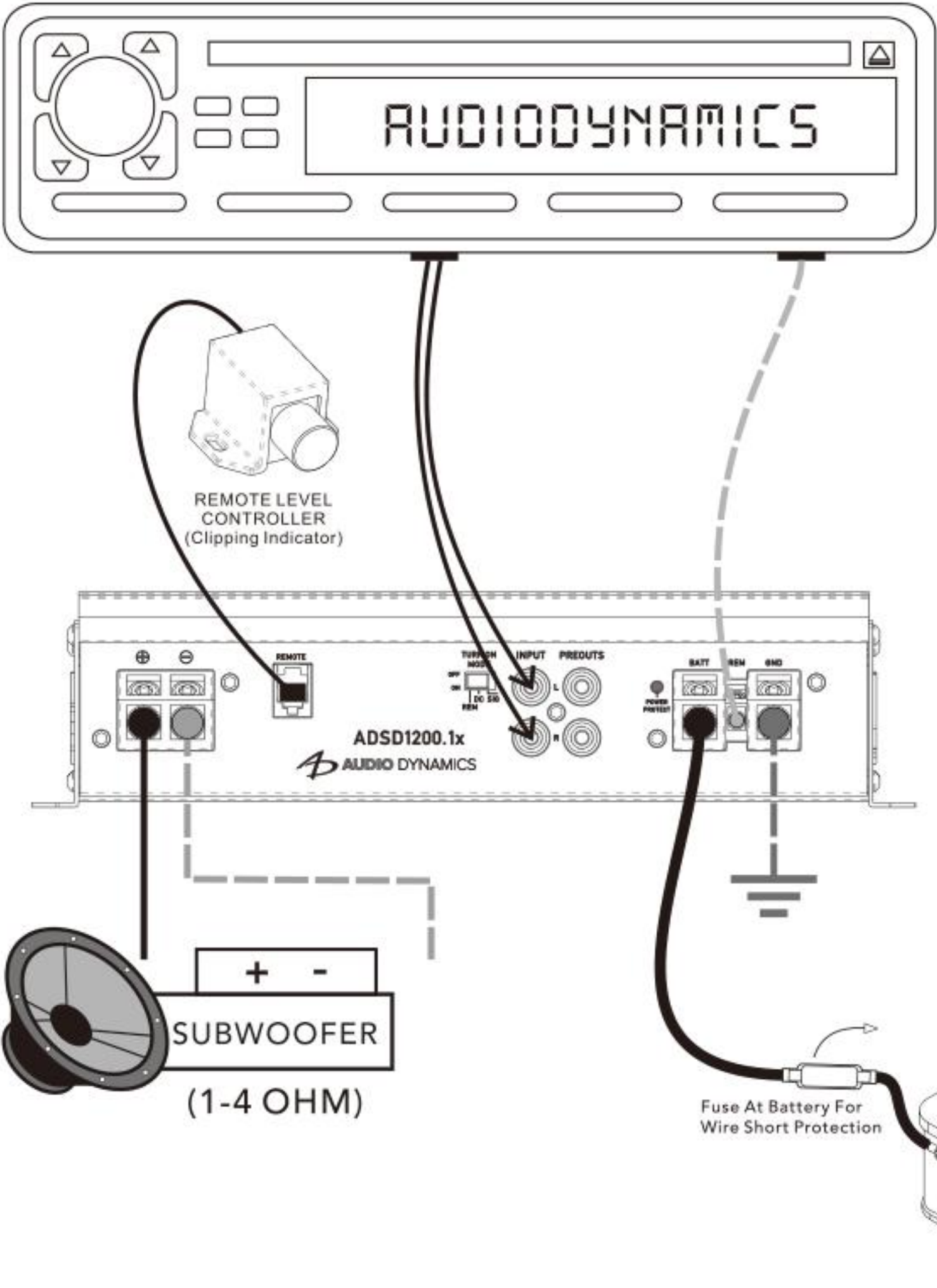
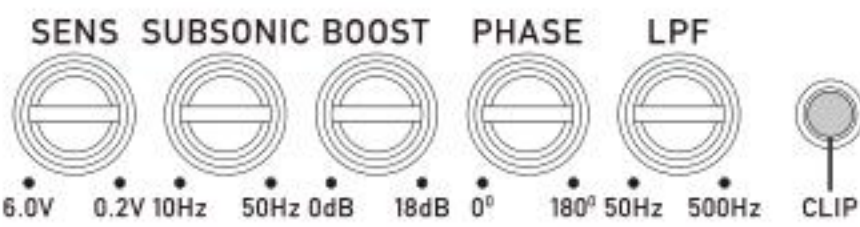
1. Before you start, disconnect the negative cable and keep it isolated from the battery.
2. Run an appropriate gauge wire from the battery to the amplifier. Plan this part of the installation carefully. This cable will carry a very high current. Use a grommet when going through metal and use a proper fuse. Otherwise, shorting an unprotected power wire to ground can cause a fire.
3. Connect an 18" piece of power wire to a fuse holder and connect it to the battery but do not install the fuse until the end of the installation process. Try your best to keep the fuse holder within 18" of the battery.
4. Find the closest clear metal area to the amp for a ground. Sand, grind, or scrape all paint and undercoating from the body and screw the ground securely in place. It is advisable to test the ground with an ohm meter between the ground cable and the negative battery cable to insure a good low resistance connection. Some alloys used in modern cars do not offer the best ground. Run a ground cable directly to your battery if you measure a high resistance.
5. Run the speaker wire to the speakers. Leave some extra wire at this time for easier installation. You can always "clean it up" later.
6. Mount the amplifier
7. Connect the power and ground to the amplifier
8. Connect the remote wire from the source unit to the amplifier
9. Install the fuse into the fuse holder that you installed close to the battery
10. Turn the amplifier on and make sure it does not go into protection
11. Adjust the crossovers with the HP all the way down and the LP all the way up
12. Now it is time to set the sensitivity levels. Play a 1 KHz test tone in your source unit and use a distortion meter or an oscilloscope to find the maximum clean output level of your source unit. Otherwise, turn your source unit ¾ of the way up if you do not have such a measuring tool. Now is the time to adjust all channels that will NOT be powering a subwoofer. Adjust each level one by one until the clip indicator is barely on. Play a 40Hz test tone in your source unit and adjust the subwoofer channel until the clip indicator is barely on.
13. Fine tune the crossovers using the click in place frequency chart for the amplifier you are tuning.
14. Connect the speaker wires
15. Now is the time to tune the system for maximum linearity. You will be turning down the sensitivity of any channel that is powering speakers that are too loud. This is best done while using an RTA. Otherwise, you will do this step by ear.

Now you are ready to experience music in its purest form. AUDIO DYNAMICS is engineered for great sound.

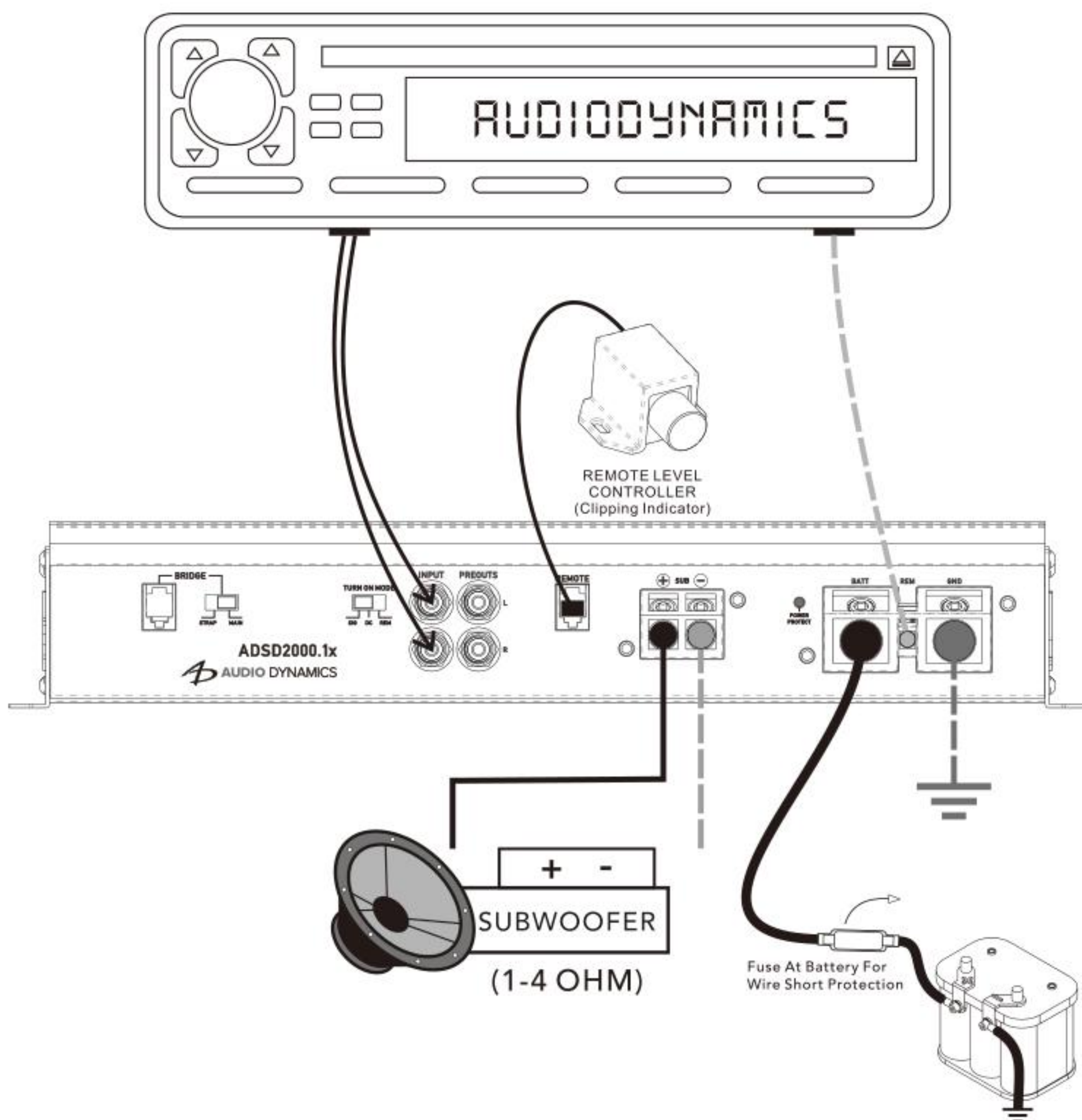
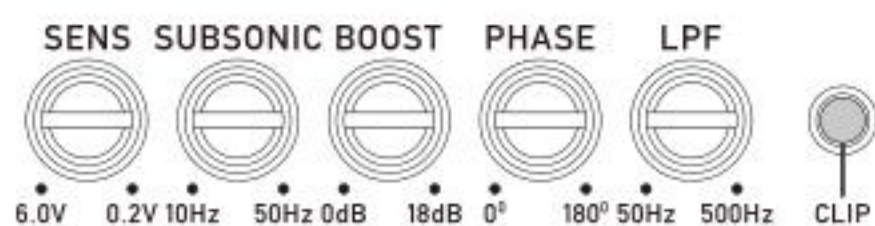
SPECIFICATIONS

MODEL NO.	ADSD1200.1x	ADSD2000.1x	ADSD1600.4x	ADSD2400.5x
Circuit Topology	Mono Digital	Mono Digital	Full Range Digital	Full Range Digital
RMS POWER OUTPUT @ 1 Ω	1270Wx1CH	2040Wx1CH	N/A	1510W (SUB)
RMS POWER OUTPUT @ 2 Ω	860Wx1CH	1240Wx1CH	460Wx4CH	255Wx4CH +1040Wx1CH
RMS POWER OUTPUT @ 4 Ω	520Wx1CH	720Wx1CH	275Wx4CH	155Wx4CH +630Wx1CH
RMS POWER OUTPUT @ 4 Ω BRIDGED	N/A	N/A	925Wx2CH	510Wx2CH (CH1/2 & 3/4)
TOTAL HARMONIC DISTORTION	<0.2%	<0.2%	<0.1%	<0.2%
S/N RATIO REF 1W @ 4Ω	>92dB	>92dB	>93dB	>92dB
GAIN RANGE	0.2-6V	0.2-6V	0.2-6V	0.2-6V
CROSSOVER RANGE	LPF:50-500Hz	LPF:50-500Hz	HPF:20-5KHz LPF:50-5KHz	CH1/2/3/4: HPF:20-5KHz LPF:50-5KHz SUB:LPF:50-500Hz
SUBSONIC	10-50Hz	10-50Hz	N/A	10-50Hz(SUB)
PER OCTAVE SLOPES	24dB	24dB	12dB	12dB
FREQUENCY RANGE	10-500Hz	10-500Hz	20-20KHz	20-20KHz
INDICATORS	POWER/PROTECT /CLIP	POWER/PROTECT /CLIP	POWER/PROTECT /CLIP	POWER/PROTECT /CLIP
TURN ON MODE	REM/DC/SIG	REM/DC/SIG	REM/DC/SIG	REM/DC/SIG
INPUT MODE	N/A	N/A	2CH/4CH	2CH/4CH/5CH
STRAP DUAL UNITS	N/A	RMS 4000W x 1CH at 2-ohm	N/A	N/A
REMOTE CONTROLLER	YES,Clipping	YES,Clipping	N/A	YES,Clipping
IP WATERPROOF RATING	N/A	N/A	N/A	N/A
CE / EMI / AUDIOPRECISION VERIFIED	YES	YES	YES	YES
RCA PREOUTS	YES	YES	YES	N/A
APPLICATIONS	CAR /MARINE	CAR /MARINE	CAR /MARINE	CAR /MARINE
DIMENSIONS (Mounting Feet Included)	244.0x185.5x59.5mm 9.6"x7.3"x2.34"inch	344.0x189.5x59.5mm 13.54"x7.46"x2.34"inch	294.0x189.5x59.5mm 11.57"x7.46"x2.34"inch	404.0x189.5x59.5mm 15.9"x7.46"x2.34"inch

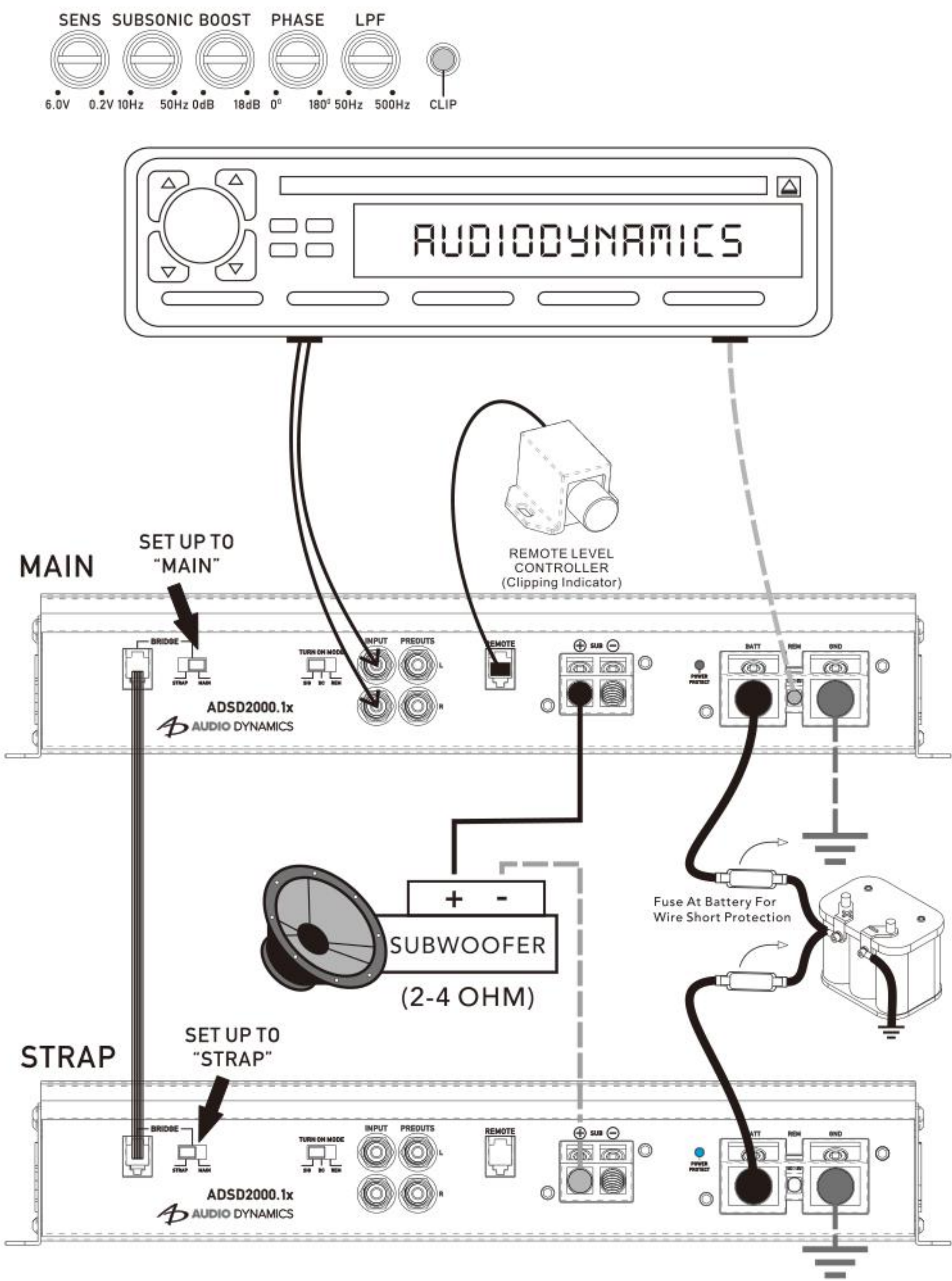
SD1200.1x



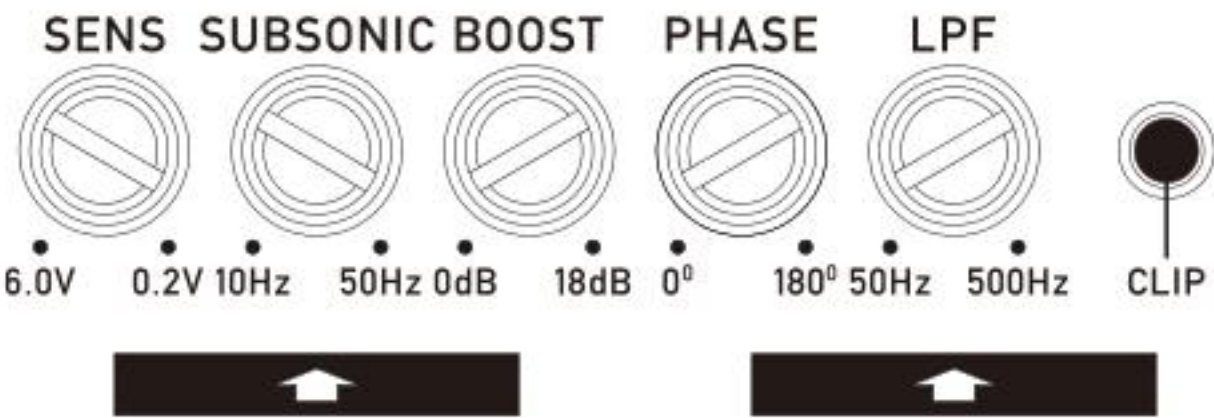
SD2000.1x (NORMAL MODE)



SD2000.1 x(STRAP MODE)



SD1200.1 x/ SD2000.1 x(CROSSOVER SETTINGS)

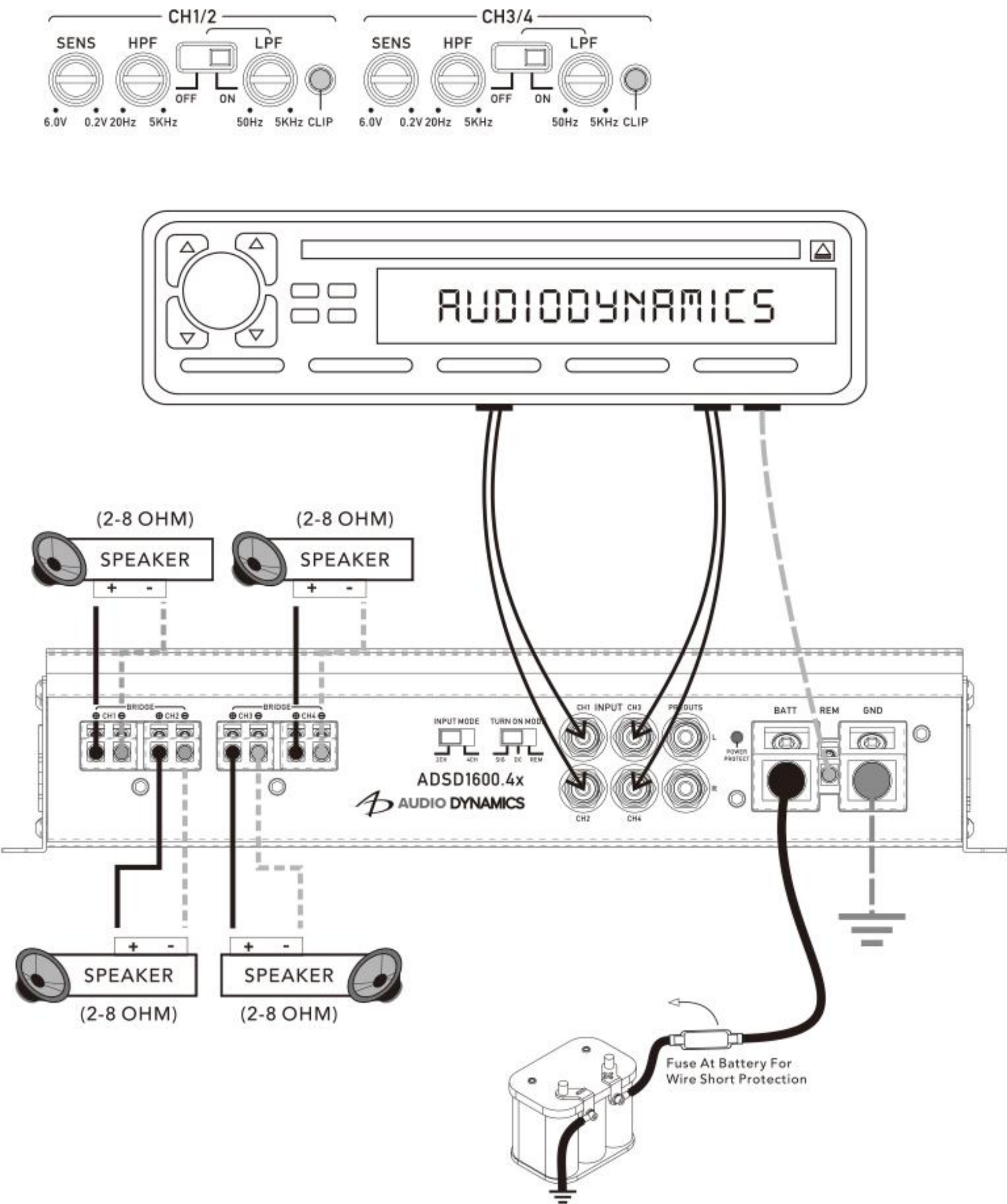


All crossover frequency potentiometers have 41 detents or “clicks” so the end user can set the exact crossover frequency desired.

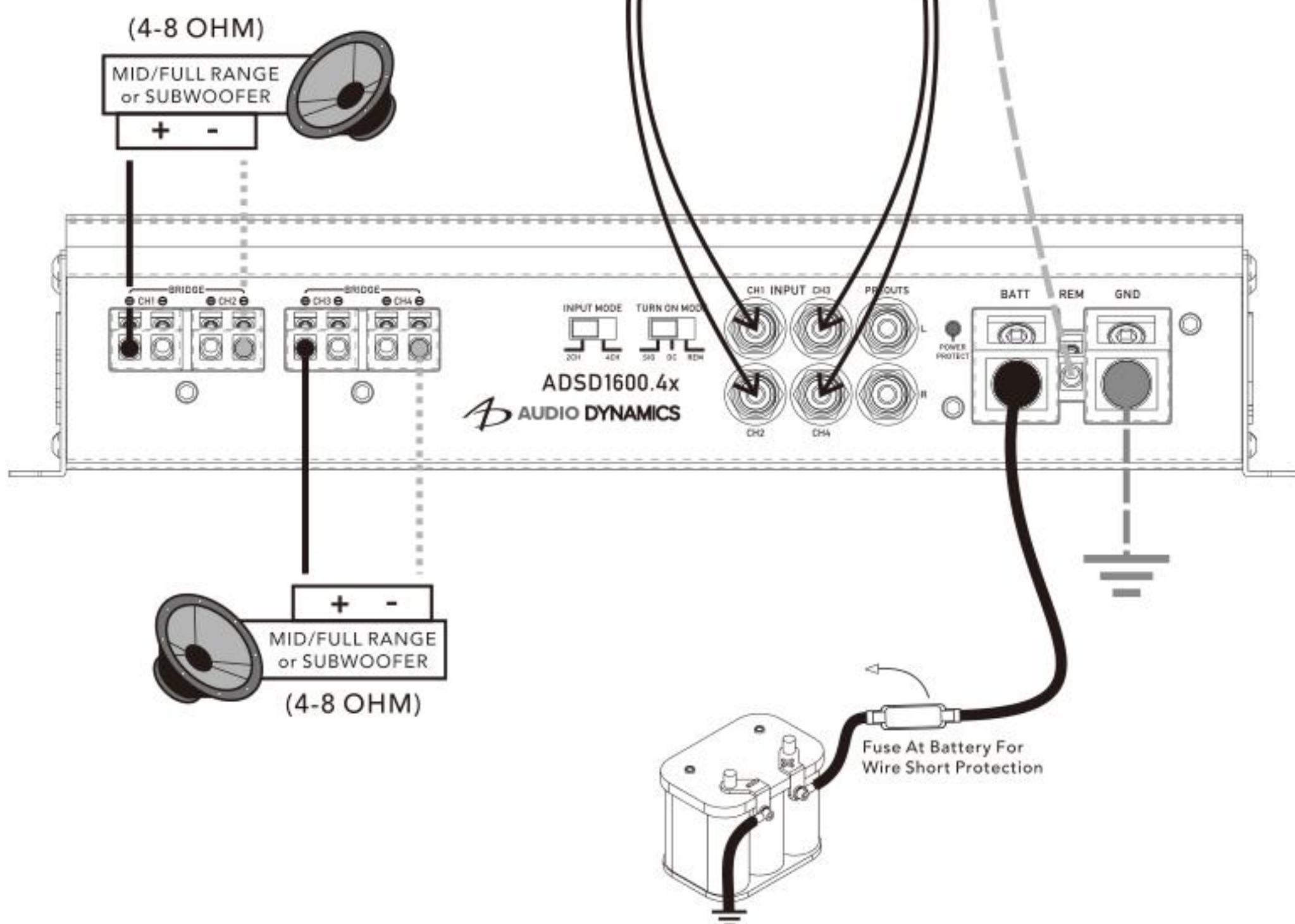
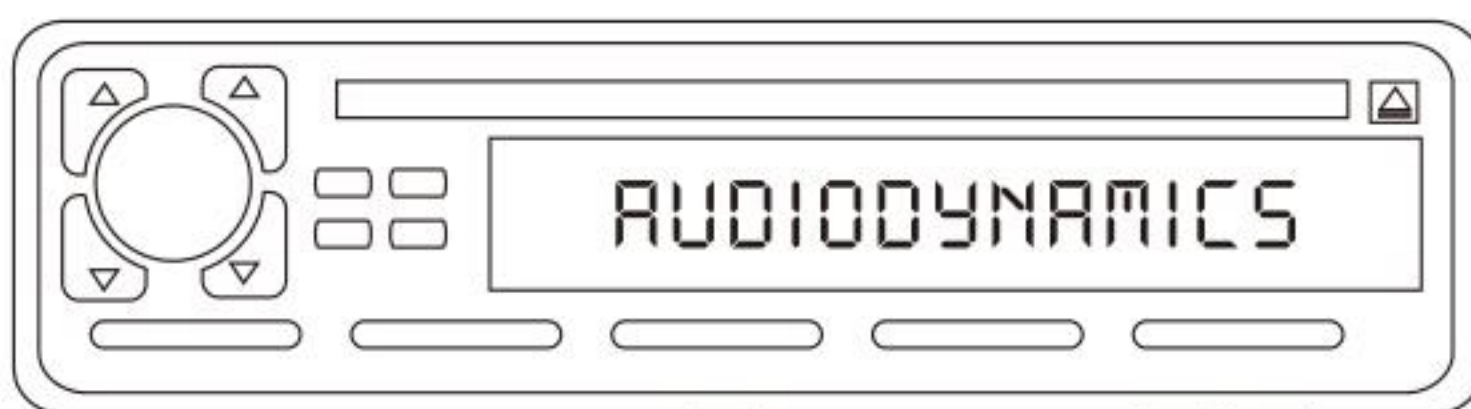
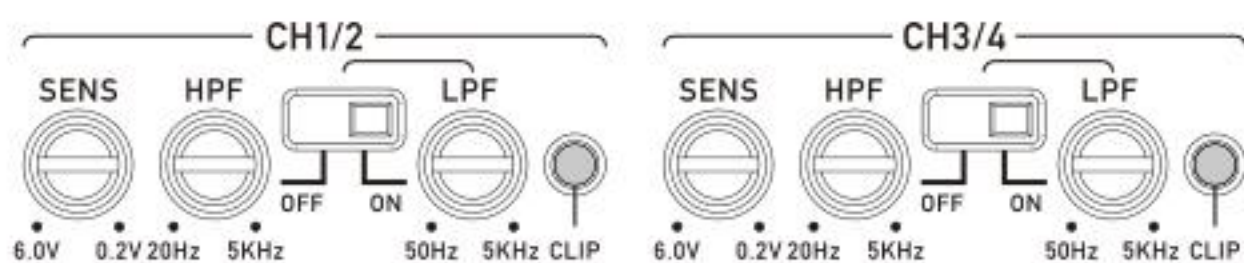
Clicks	SUBSONIC (10-50Hz)	LPF (50-500Hz)
1	13.7 Hz	46 Hz
2	13.7 Hz	46 Hz
3	13.8 Hz	46 Hz
4	13.8 Hz	46.5 Hz
5	13.8 Hz	46.8 Hz
6	13.9 Hz	47 Hz
7	14.2 Hz	49 Hz
8	14.7 Hz	52 Hz
9	15.4 Hz	55 Hz
10	16 Hz	58 Hz
11	16.9 Hz	63 Hz
12	17.1 Hz	68 Hz
13	17.6 Hz	72 Hz
14	18.8 Hz	80 Hz
15	20 Hz	89 Hz
16	21.7 Hz	97 Hz
17	23 Hz	112 Hz
18	25 Hz	121 Hz
19	28 Hz	152 Hz
20	31.8 Hz	180 Hz
21	34 Hz	219 Hz

Clicks	SUBSONIC (10-50Hz)	LPF (50-500Hz)
22	35 Hz	227 Hz
23	36.5 Hz	238 Hz
24	37 Hz	252 Hz
25	38.5 Hz	267 Hz
26	39.3 Hz	278 Hz
27	40.4 Hz	294 Hz
28	41.8 Hz	313 Hz
29	43 Hz	330 Hz
30	44.5 Hz	354 Hz
31	46 Hz	371 Hz
32	48 Hz	401 Hz
33	49.5 Hz	414 Hz
34	50 Hz	429 Hz
35	51 Hz	447 Hz
36	52 Hz	462 Hz
37	52.5 Hz	478 Hz
38	53.0 Hz	498 Hz
39	53.2 Hz	511 Hz
40	53.2 Hz	512 Hz
41	53.2 Hz	516 Hz

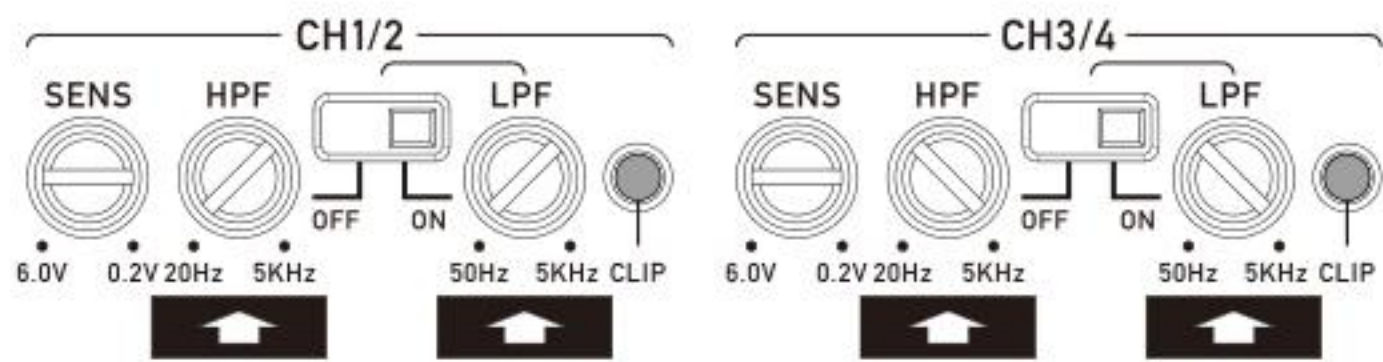
SD1600.4 x(4-CH MODE)



SD1600.4 x(2-CH MODE)



SD1600.4 x(CROSSOVER SETTINGS)

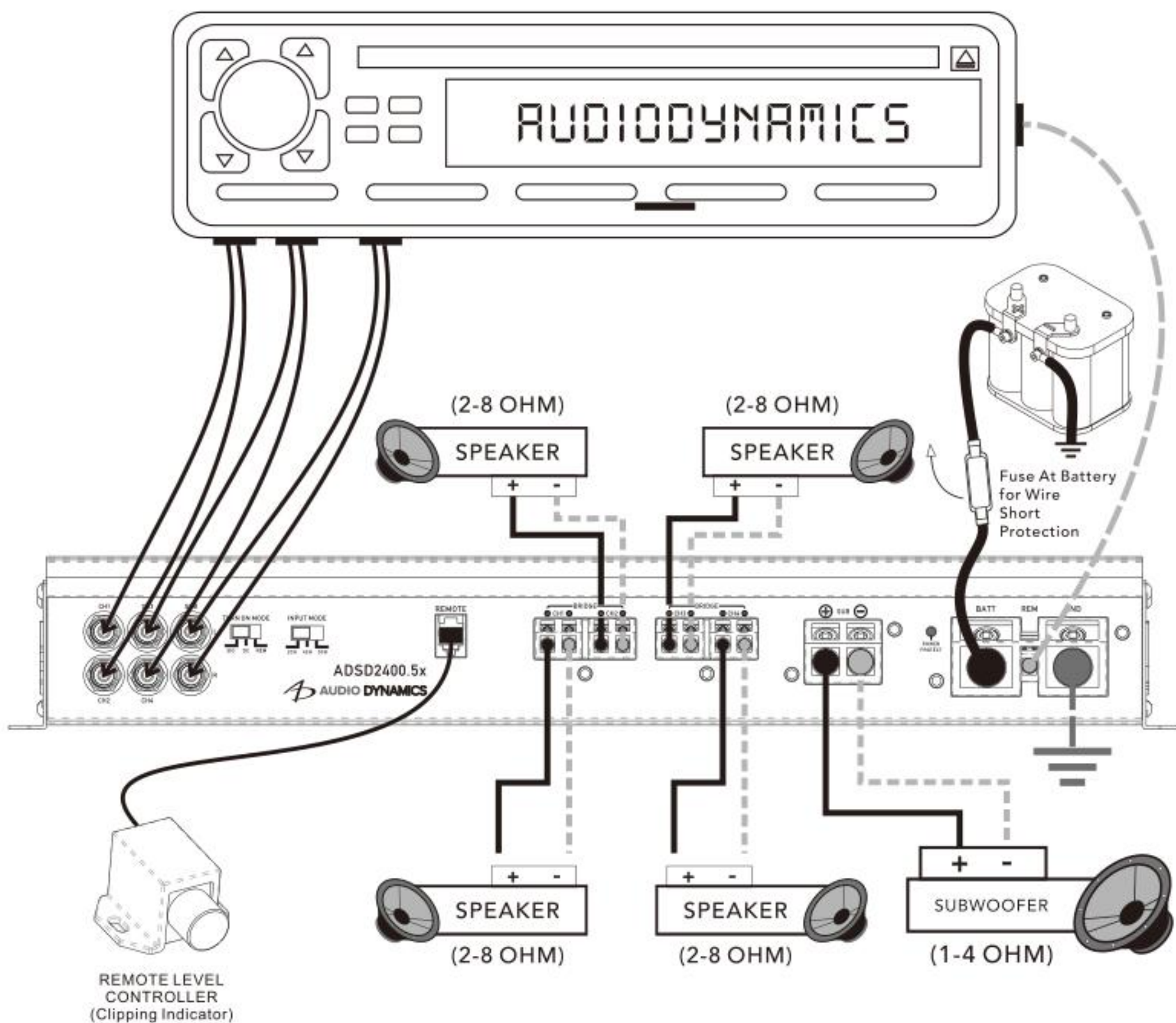
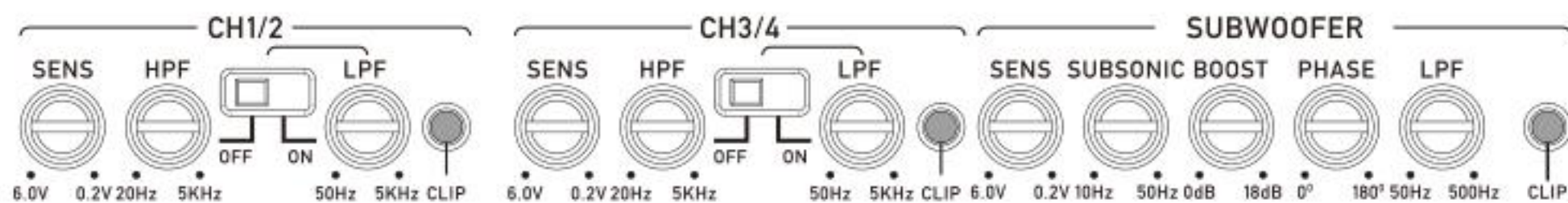


All crossover frequency potentiometers have 41 detents or "clicks" so the end user can set the exact crossover frequency desired.

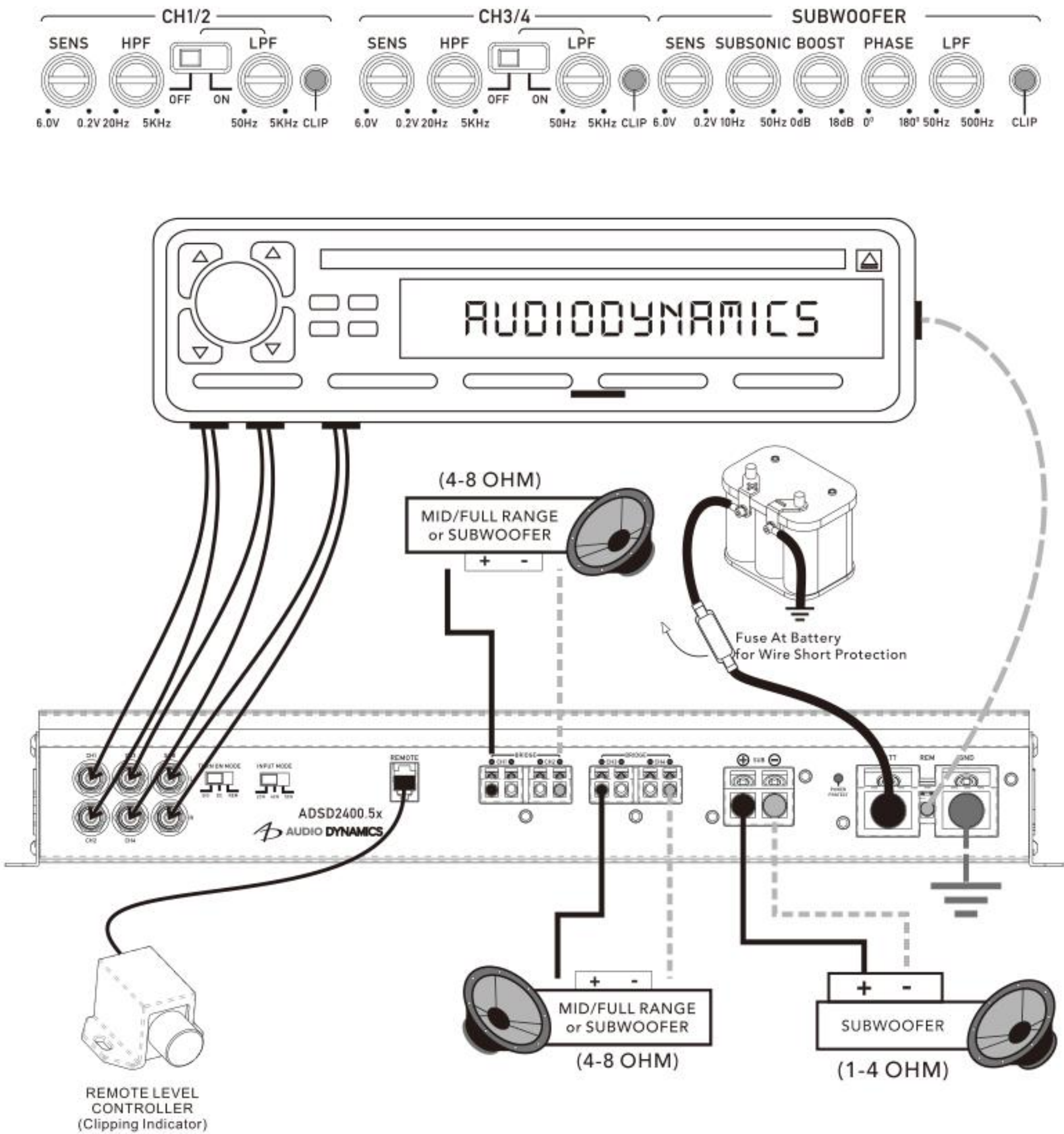
Clicks	CH1 & 2 & 3 & 4	
	HPF (20-5KHz)	LPF (50-5KHz)
1	14.7 Hz	48.5 Hz
2	15 Hz	49 Hz
3	16 Hz	49.7 Hz
4	17 Hz	50.5 Hz
5	17.5 Hz	50.8 Hz
6	17.9 Hz	51 Hz
7	18.4 Hz	51.5 Hz
8	18.8 Hz	51.9 Hz
9	19.3 Hz	52 Hz
10	19.8 Hz	53.5 Hz
11	20.7 Hz	54 Hz
12	21.2 Hz	56.5 Hz
13	22.9 Hz	60 Hz
14	23.5 Hz	63 Hz
15	25 Hz	69 Hz
16	27.5 Hz	71 Hz
17	39 Hz	75.5 Hz
18	31 Hz	81 Hz
19	34.5 Hz	85 Hz
20	36.8 Hz	93 Hz
21	41 Hz	99 Hz

Clicks	CH1 & 2 & 3 & 4	
	HPF (20-5KHz)	LPF (50-5KHz)
22	43.9 Hz	108 Hz
23	50 Hz	117 Hz
24	55.5 Hz	132 Hz
25	62 Hz	150 Hz
26	72 Hz	169 Hz
27	85 Hz	191 Hz
28	102.5 Hz	230 Hz
29	138 Hz	280 Hz
30	180 Hz	365 Hz
31	329 Hz	580 Hz
32	420 Hz	780 Hz
33	550 Hz	900 Hz
34	685 Hz	1.21 KHz
35	970 Hz	1.52 KHz
36	1.15 KHz	1.91 KHz
37	1.37 KHz	2.52 KHz
38	1.8 KHz	3.68 KHz
39	4.15 KHz	4.8 KHz
40	4.95 KHz	5.3 KHz
41	5.1 KHz	5.4 KHz

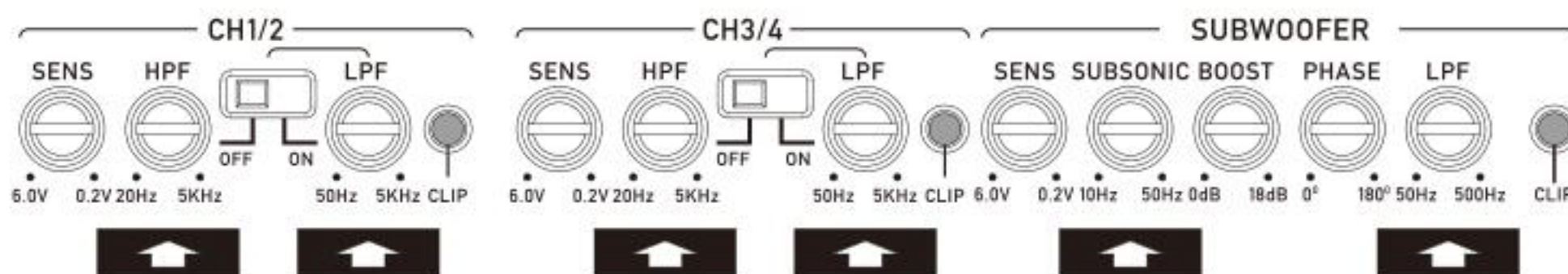
SD2400.5x (5-CH MODE)



SD2400.5x (3-CH MODE)



SD2400.5 x(CROSSOVER SETTINGS)



All crossover frequency potentiometers have 41 detents or “clicks” so the end user can set the exact crossover frequency desired.

CH1 & 2 & 3 & 4								SUB CH							
HPF (20-5KHz)				LPF (50-5KHz)				SUBSONIC(10-50Hz)				LPF(50-500Hz)			
Clicks	Reference Frequency	Clicks	Reference Frequency	Clicks	Reference Frequency	Clicks	Reference Frequency	Clicks	Reference Frequency	Clicks	Reference Frequency	Clicks	Reference Frequency	Clicks	Reference Frequency
1	14.7 Hz	22	43.9 Hz	1	48.5 Hz	22	108 Hz	1	13.7 Hz	22	35 Hz	1	46 Hz	22	227 Hz
2	15 Hz	23	50 Hz	2	49 Hz	23	117 Hz	2	13.7 Hz	23	36.5 Hz	2	46 Hz	23	238 Hz
3	16 Hz	24	55.5 Hz	3	49.7 Hz	24	132 Hz	3	13.8 Hz	24	37 Hz	3	46 Hz	24	252 Hz
4	17 Hz	25	62 Hz	4	50.5 Hz	25	150 Hz	4	13.8 Hz	25	38.5 Hz	4	46.5 Hz	25	267 Hz
5	17.5 Hz	26	72 Hz	5	50.8 Hz	26	169 Hz	5	13.8 Hz	26	39.3 Hz	5	46.8 Hz	26	278 Hz
6	17.9 Hz	27	85 Hz	6	51 Hz	27	191 Hz	6	13.9 Hz	27	40.4 Hz	6	47 Hz	27	294 Hz
7	18.4 Hz	28	102.5 Hz	7	51.5 Hz	28	230 Hz	7	14.2 Hz	28	41.8 Hz	7	49 Hz	28	313 Hz
8	18.8 Hz	29	138 Hz	8	51.9 Hz	29	280 Hz	8	14.7 Hz	29	43 Hz	8	52 Hz	29	330 Hz
9	19.3 Hz	30	180 Hz	9	52 Hz	30	365 Hz	9	15.4 Hz	30	44.5 Hz	9	55 Hz	30	354 Hz
10	19.8 Hz	31	329 Hz	10	53.5 Hz	31	580 Hz	10	16 Hz	31	46 Hz	10	58 Hz	31	371 Hz
11	20.7 Hz	32	420 Hz	11	54 Hz	32	780 Hz	11	16.9 Hz	32	48 Hz	11	63 Hz	32	401 Hz
12	21.2 Hz	33	550 Hz	12	56.5 Hz	33	900 Hz	12	17.1 Hz	33	49.5 Hz	12	68 Hz	33	414 Hz
13	22.9 Hz	34	685 Hz	13	60 Hz	34	1.21 KHz	13	17.6 Hz	34	50 Hz	13	72 Hz	34	429 Hz
14	23.5 Hz	35	970 Hz	14	63 Hz	35	1.52 KHz	14	18.8 Hz	35	51 Hz	14	80 Hz	35	447 Hz
15	25 Hz	36	1.15 KHz	15	69 Hz	36	1.91 KHz	15	20 Hz	36	52 Hz	15	89 Hz	36	462 Hz
16	27.5 Hz	37	1.37 KHz	16	71 Hz	37	2.52 KHz	16	21.7 Hz	37	52.5 Hz	16	97 Hz	37	478 Hz
17	39 Hz	38	1.8 KHz	17	75.5 Hz	38	3.68 KHz	17	23 Hz	38	53.0 Hz	17	112 Hz	38	498 Hz
18	31 Hz	39	4.15 KHz	18	81 Hz	39	4.8 KHz	18	25 Hz	39	53.2 Hz	18	121 Hz	39	511 Hz
19	34.5 Hz	40	4.95 KHz	19	85 Hz	40	5.3 KHz	19	28 Hz	40	53.2 Hz	19	152 Hz	40	512 Hz
20	36.8 Hz	41	5.1 KHz	20	93 Hz	41	5.4 KHz	20	31.8 Hz	41	53.2 Hz	20	180 Hz	41	516 Hz
21	41 Hz			21	99 Hz			21	34 Hz			21	219 Hz		

TROUBLE SHOOTING

NO POWER LED ON, NO OUTPUT

- Check +12V, GND and remote connection
- Check the external fuses or built-in.

POWER LED ON, NO OUTPUT

- Check source unit for output
- Check input gain control
- Check RCA cable quality and connection
- Check speaker and wiring for shorts
- Check for damaged speakers

NO SOUND ON ONE CHANNEL

- Swap left/right input to check source
 - ... If sound swaps, source or signal cable is bad
- Swap left/right speaker to check speakers
 - ... If sound does not swap, speaker or speaker wiring is bad
 - ... In any case, consult authorized dealer

AMPLIFIER GOES IN PROTECTION MODE AT HIGHER GAIN

- Check speaker impedance.
- Check working voltages (9.0V - 16.0Volts)
- Check speaker wiring for short circuit

ENGINE OR ALTERNATOR WHINE NOISE

- Check wiring make sure RCA cables are not run parallel on same side of vehicle as power cable.
- Check any processors in the signal path between source unit and amplifier
- Make sure ground pin (shield or outer barrel of RCA cables) have not lost connection and that source unit has a good reference ground.

WARRANTY

LIMITED WARRANTY - AMPLIFIERS (USA)

Audio Dynamics warrants this product to be free of defects in materials and workmanship for a period of two (2) years.

This warranty is not transferrable and applies only to the original purchaser from an authorized Audio Dynamics dealer. Should service be necessary under this warranty for any reason due to manufacturing defect or malfunction, Audio Dynamics will (at its discretion), repair or replace the defective product with new or remanufactured products at no charge. Damage caused by the following is not covered under warranty: accident, misuse, abuse, product modification or neglect, failure to follow installation instructions, unauthorized repair attempts, or misrepresentations by the seller. This warranty does not cover incidental or consequential damages and does not cover the cost of removing or reinstalling the unit(s). Cosmetic damage due to accident or normal wear and tear is not covered under warranty.

Warranty is void if the product's serial number has been removed or defaced.

Any applicable implied warranties are limited in duration to the period of the express warranty as provided herein beginning with the date of the original purchase at retail, and no warranties, whether express or implied, shall apply to this product thereafter. Some states do not allow limitations on implied warranties. Therefore, these exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

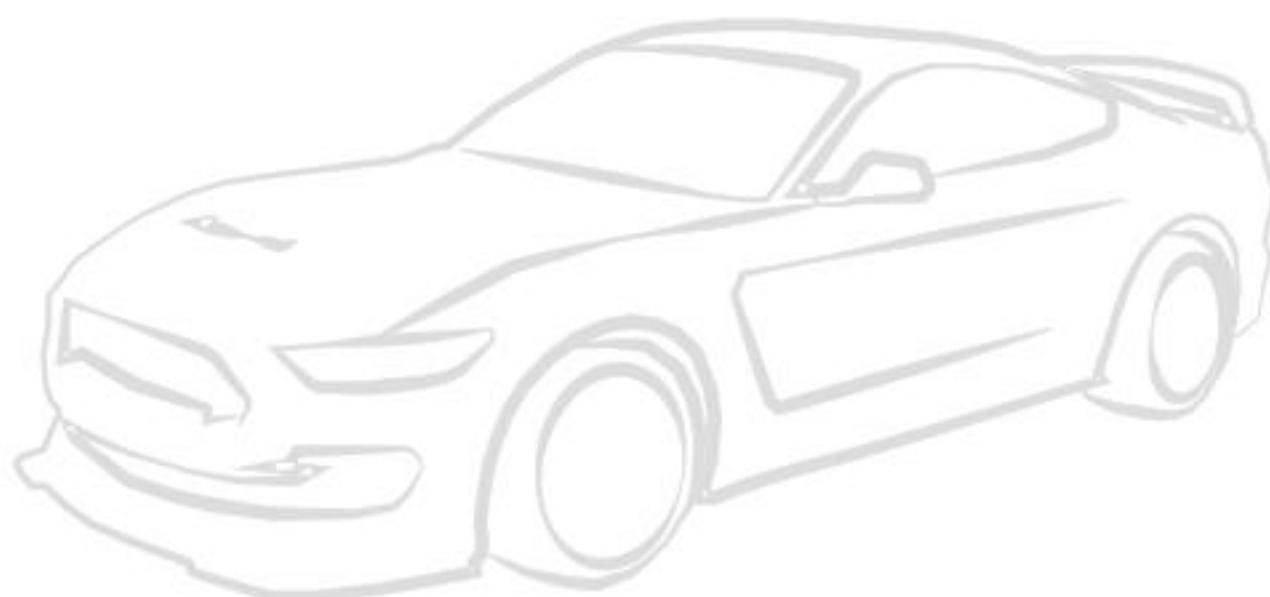
If you need service on your Audio Dynamics product:

All warranty returns should be sent to Audio Dynamics and must be accompanied by proof of purchase (a copy of the original sales receipt) with a written note describing the problem. Repaired or replaced product will be returned to the authorized dealer's address printed on the proof of purchase unless noted otherwise. A return authorization number is not necessary if proof of purchase is included with the returned product.

Warranty expiration on products returned without proof of purchase will be determined from the manufacturing date code. Coverage may be invalidated if this date is previous to purchase date. Non-defective items received will be returned freight-collect. Customer is responsible for shipping charges and insurance in sending the product to Audio Dynamics. Freight damage on returns is not covered under warranty.

AUDIO DYNAMICS
7574 Highway F
Farmington, MO 63640
(573) 756-2049
9:00 AM – 5:00 PM (Central Time Zone)

Visit our website for the full length version of the owner's manual:
www.adcaraudio.com



AUDIO DYNAMICS

