

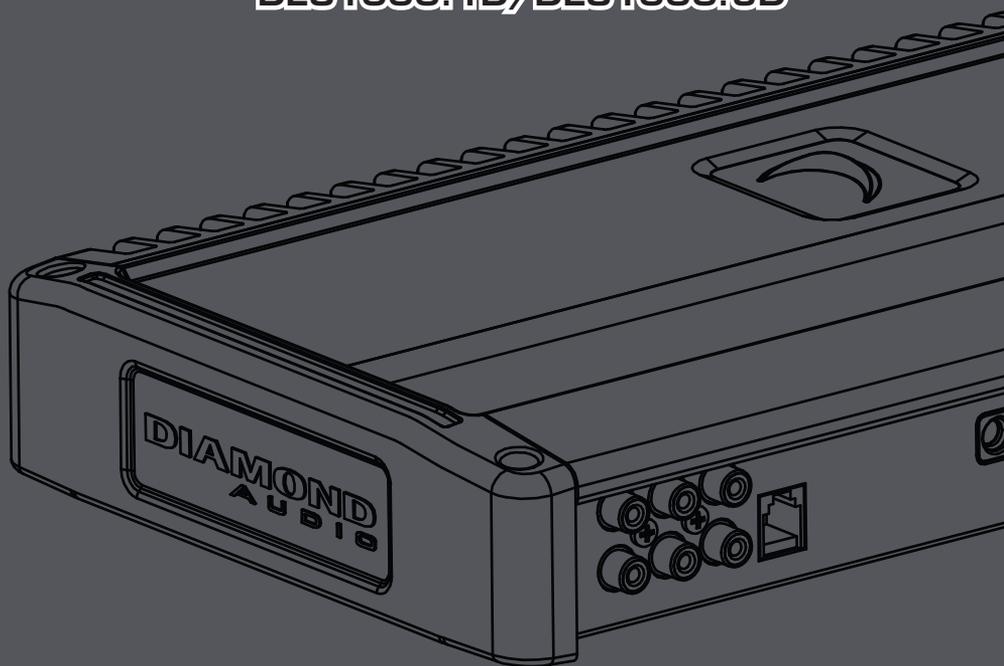


**DIAMOND**  
AUDIO

# DES Series

**DIGITAL AMPLIFIERS**  
**MULTI-CHANNEL AMPLIFIERS**

**DES400.2D/DES400.4D/DES500.1D**  
**DES1000.1D/DES1000.5D**



# Owners Manual

Congratulations, you have just purchased one of the finest mobile audio products on the market. Diamond Audio products represent the latest advances in acoustic technology in sound reproduction for your vehicle. Diamond Audio products are designed, developed, and engineered in the USA using the latest innovative materials and components to provide the finest sound reproduction possible. Every Diamond Audio product has been verified and tested to ensure the best sounding and most reliable product on the market, if installed properly. Diamond Audio products will provide many years of the ultimate listening experience.

Please note that prolonged exposure to sound pressure levels in excess of 100dB can cause permanent hearing loss. Using Diamond Audio products can exceed that level so please exercise restraint in its operation in order to preserve your ability to enjoy its high fidelity sound for many years to come.

Diamond Audio recommends our products be professionally installed by an authorized Diamond Audio dealer to achieve the best possible system recommendation and installation. This will ensure a true Diamond Audio listening experience and sound you would expect from Diamond Audio products. With proper validation, using a Diamond Audio Retailer for installation, your newly purchased amplifier, Diamond Audio will extend the product warranty from one year to Two Years!!

Go ahead, Hear the Music

## INSTALLATION - Pre Planning Section

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**WARNING:** Prolonged exposure to sound pressure levels in excess of 100dB can cause permanent hearing loss. Cerwin Vega Mobile amplifiers can exceed that level so please exercise restraint when listening and enjoying your new amplifier.

### GENERAL PRECAUTIONS

- This unit is designed for negative ground 12V DC operation only.
- Total system impedance must not be less than 2ohms, in a bridged OR stereo configuration
- Avoid installing the unit where:
  - It would be subject to high temperatures, such as from direct sunlight or hot air from the heater.
  - It would be exposed to rain or moisture.
  - It would be subject to dust or dirt.
- Do not cover the unit with carpet or wires.
- Do not use the unit with a weak auto battery. Optimum performance depends on a normal battery supply voltage.
- For safety reasons, keep the volume of your car audio system moderate while driving your vehicle so that you can still hear normal traffic sounds outside your car.
- There is NO speaker level input connector, you can cut RCA's and solder the wires and connect directly thru low level input(RCA)

### MOUNTING PRECAUTIONS

Although Cerwin Vega Mobile amplifiers incorporate heat sinks and protection circuits, mounting the amplifier in a tight space without any air movement can still damage internal circuitry over time. Choose a location that provides adequate ventilation around the amplifier. For easy system set-up, mount the amplifier so the side panel controls will be accessible after installation. To increase thermal run times on low impedance loads, an additional fan is recommended, remember any moving air across the amplifier will reduce heat.

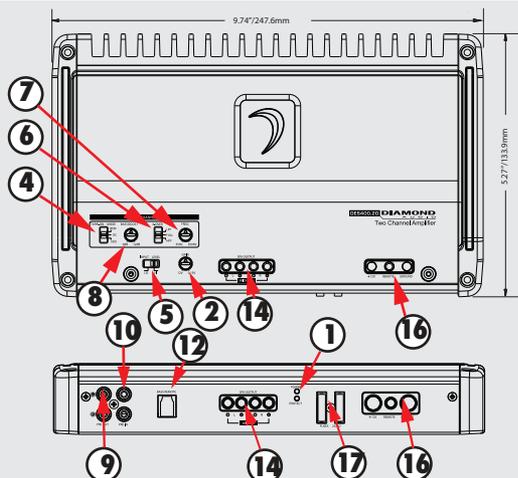
In addition, observe the following precautions:

1. Using a felt pen mark the mounting hole locations.
2. Mounting the amplifier on carpet will significantly reduce air flow, resulting in reduced thermal run times.
3. Mount the amplifier on a solid surface. Avoid mounting to sub woofer enclosures or areas prone to vibration. Do not install the amplifier on plastic or other combustible materials.
4. Prior to mounting the amplifier, make sure not to cut or drill into the fuel tank, fuel lines, brake lines (under chassis) or electrical wiring.

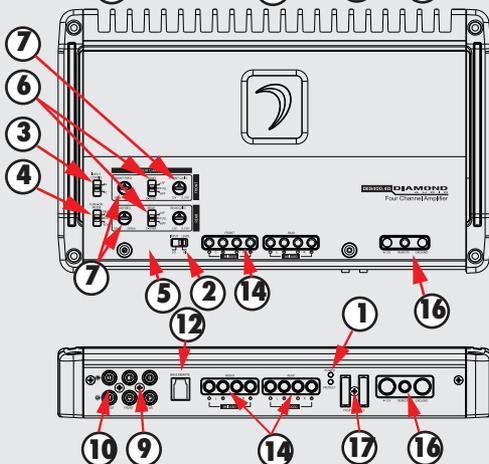
### WIRING PRECAUTIONS

1. Before installation, make sure the source unit power switch is in the OFF position.
2. Disconnect the negative (-) lead of the battery before making any power connections.
3. When making connections, be sure that each one is clean and secure. Insulate all of your connections. Failure to do so may damage your equipment.
4. A secure clean ground connection is critical to the performance of your amplifier. Connect the ground directly to the car chassis to minimize resistance and avoid any noise problems.
5. Add an external fuse on the amplifier's positive (+) power lead and connect it as close as possible to the vehicle's (+) battery terminal. Use a rating that equals the total current consumption at full output of all amplifiers in the system. This external fuse will protect the vehicle from short circuits that can cause a fire.

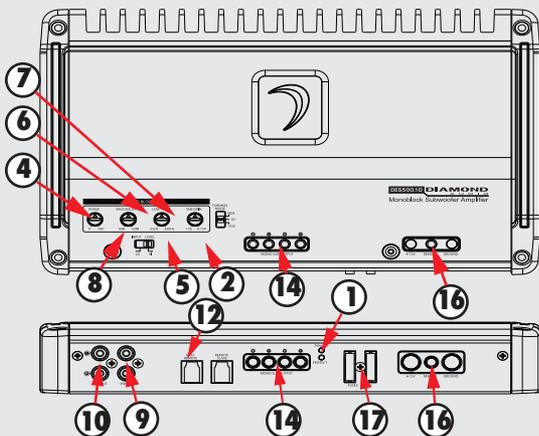
## DES400.2D



## DES400.4D



## DES500.1D

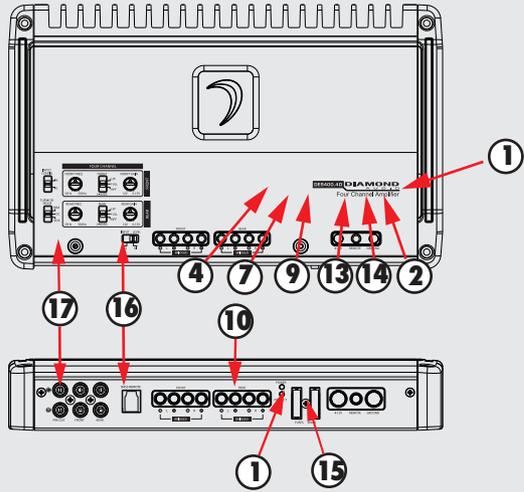


## FUNCTIONS

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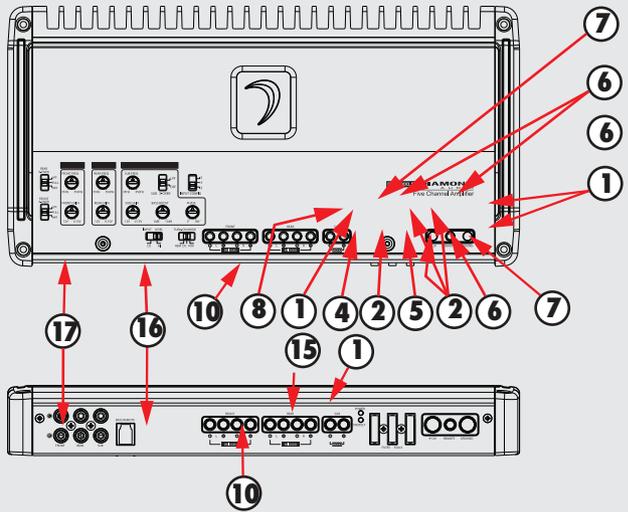
- 1 Status LED's** - These lights indicate when the amplifier is powered up normally and when there is a protection fault. The Protect LED is laminated when there is a problem with your amplifier. Please contact your authorize CVM dealer or call CVM's technical support.
- 2 Input Gain Adjustment** - This control matches the preamp stage of the Diamond Audio amplifier to your source unit. This is NOT a volume control. The range is between approx. 0.2mV and 12V. Use a speaker to RCA adapter (NOT an LOC!).
- 3 Input Configuration** - This switch parallels the input circuit if you are using a single stereo pair of outputs from your headunit or from an auxiliary device (like a Smartphone, etc.). The 5 channel model (DES1000.5D) is set up to accept 2/4/and 5 channels of input.
- 4 Turn-On Mode Switch** - This switch allow you to configure the "Turn-On Mode" switch for desired turn-on trigger. There are 3 modes available are REM, DC and VOX. 1 - (REM) is the standard 12V trigger wire, 2 - (DC) or DC offset, when connected high level in, will sense differences in ground in your wiring through the speaker leads and turn on amplifier, 3 - VOX (signal sensing) will sense any kind of signal input into the amplifier RCA turning on the amplifier.
- 5 Input Level Select** - This switch allow you to select HI or LOW depending on the signal used. HIGH is used when you use speaker level input LOW is when you use RCA input, or the output from a aftermarket headunit.
- 6 Crossover Selection Switch** - This switch allow you to select the crossover function. HPF (High Pass Filter) LPF (Low Pass Filter) or FLAT (no filter), HPF is for filtering out bass for midrange/mid bass drivers. LPF is for filtering out high frequencies for subwoofers.
- 7 Crossover Frequency Adjustment** - Use this adjustment to select the crossover point LPF/FLAT/ or HPF. Remember that you must select the crossover function FIRST to get any adjustment. The range of adjustment is limited between 35-350Hz @12dB per octave .
- 8 Bass Boost** - This control adds 0 to +12dB of Bass boost at whatever BASS frequency has been chosen (between 35-350Hz). Be cautious when adding boost to some subwoofer systems as they may not be able to handle the additional low frequency boost.
- 9 Input** - The RCA jacks allow for a normal Left and Right channel signal input. Both High (speaker level) or Low level (RCA's). Simply connect to the source unit using RCA type audio cables, or use speaker to RCA adapters, Make sure to keeping them away from power wiring wherever possible to reduce risk of noise.
- 10 RCA Output** - The RCA jacks allow for a normal Left and Right channel signal pass thru to a secondary amplifier. This is available on ALL DES amplifiers (DES400.2D/400.4D/1000.1D/1100.5D) It is NOT processed, and is full range Unity Gain.
- 11 Phase** - This control gives the installer a unique feature that allows the variable adjustment of phase 0-180 degrees to compensate for subwoofer placement. Allowing the subwoofer to sound like it's placed in the front of the vehicle instead of the trunk.
- 12 Remote Level Control** - All DES amplifiers have this port for the remote level control (included). The control is intended to allow the user to control the level of gain up to the maximum adjustment level set on the amplifier for the subwoofer output. The control does not add additional boost, it only attenuates the setting that is fixed at the amplifier's control panel.
- 13 Remote Level "Slave" Output** - This control allows you to control two (2) monoblock subwoofers amplifiers bass boost - with ONE (1) remote level control!
- 14 Speaker Output Terminals** - Connect your speakers to these terminals. Stereo connections are connected as labeled. Bridged connections use the LEFT + and RIGHT - as the two connections. The 2 and 4 channel amplifiers will perform into 2 Ohm stereo loads or 4 Ohm bridged loads. DO NOT run 2 Ohm bridged loads on these amplifiers! The mono blocks will run 1 ohm mono.
- 16 Power Input Connections** - These connections are for input power, chassis ground, and remote turn-on. Use a minimum of 8 gauge wiring for power and ground connections. 4 Gauge is recommended for the mono block. The terminals will handle up to 8 gauge wiring with no problem whatsoever(4 gauge on the mono block). Be sure any wiring that passes through metal has a grommet!
- 17 Fuses** - Fuses are installed on ALL DES amplifiers to protect ...the VEHICLE! They do NOT protect the amplifier. This is true of every amplifier built today. If you "blow" fuses, then check your electrical system. Also make sure you DO NOT use CCA wire power kits!!! VOIDS your warranty

DES1000.1D



DES1000.5D

5.77/13.9mm



# FUNCTIONS

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- ① Status LED's** - These lights indicate when the amplifier is powered up normally and when there is a protection fault. The Protect LED is laminated when there is a problem with your amplifier. Please contact your authorize DA dealer or call DA's technical support.
- ② Input Gain Adjustment (SENS)**- This control matches the preamp stage of the Diamond Audio amplifier to your source unit. This is NOT a volume control. The range is between aprox 0.2mV and 10V. Using a cut up RCA cable you can run speaker level in.
- ③ Input Configuration** - This switch parallels the input circuit if you are using a single stereo pair of outputs from your headunit or from an auxiliary device (like a Smartphone, etc). The 6 channel model (HXM1100.6D) is set up to accept 2/4/and 6 channels of input.
- ④ Turn-On Mode Switch** - This switch allow you to configure the "Turn-On Mode" switch for desired turn-on trigger. There are 3 modes available are REM, DC and VOX. 1 - (REM) is the standard 12V trigger wire, 2 - (DC) or DC offset, when connected high level in, will sense differences in ground in your wiring through the speaker leads and turn on amplifier, 3 - VOX (signal sensing) will sense any kind of signal input into the amplifier RCA turning on the amplifier. Select VOX when using any Diamond Audio Bluetooth Controller.
- ⑤ PreAmp Output Select** - This switch allow you to select from which input you will use to be the ouput signal to the next amplifier in the signal chain. For example for a 4 channel to a mono block to make a front/rear/sub system minimizing long RCA cables.
- ⑥ Crossover Selection Switch** - This switch allow you to select the crossover function. HPF (High Pass Filter) LPF (Low Pass Filter) or FLAT (no filter), HPF is for filtering out bass for midrange/mid bass drivers. LPF is for filtering out high frequencies for subwoofers The range of adjustment is limited between 40-400Hz @12dB per octave (SRPM750/1000/1100.5D is 30-300 Hz @12dB per octave).
- ⑦ Crossover Frequency Adjustment** - Use this adjustment to select the crossover point LPF/FLAT/ or HPF. Remember that you must select the crossover function FIRST to get any adjustment. The range of adjustment is limited between 40-400Hz (V1100.5D is 30-300 Hz ).
- ⑧ Output Clipping Indicator** - This light indicates that the output of the amplifier is clipping. Use this light to help set gains.
- ⑨ Bass EQ** - This control adds 0 to +18dB of Bass boost at whatever BASS frequency has been chosen. Be cautious when adding boost to some subwoofer systems as they may not be able to handle the additional low frequency boost.
- ⑩ RCA Input** - The RCA jacks allow for a normal Left and Right channel signal input. Simply connect to the source unit using RCA type audio cables, keeping them away from power wiring wherever possible to reduce risk of noise.
- ⑪ RCA Output** - The RCA jacks allow for a normal Left and Right channel signal pass thru to a secondary amplifier. This is ONLY on the HXM800.2Dand HXM800.4D
- ⑫ BTR Port** - (Bluetooth Receiver Port) This port is specifically to be used with any Diamond Audio Bluetooth controller. This will allow direct plug in to the amplifier and control simple functions of music playback through the BTR receiver.
- ⑬ Sub-Sonic Adjustment** - This control allows you to remove the unwanted sub-sonic frequencies below the tuning frequency of a ported enclosure. This helps to protect the woofer from over excursion.
- ⑭ Phase** - This control gives the installer a unique feature that allows the variable adjustment of phase 0-180 degrees to compensate for subwoofer placement. Allowing the subwoofer to sound like it's placed in the front of the vehicle instead of the trunk.
- ⑮ Remote Level Control** - All HXM amplifiers(except HXM800.4D) have this port for the remote level control (included). The control is intended to allow the user to control the level of gain up to the maximum adjustment level set on the amplifier for the subwoofer output. The control does not add additional boost, it only attenuates the setting that is fixed at the amplifier's control panel.
- ⑯ Speaker Output Terminals** - Connect your speakers to these terminals. Stereo connections are connected as labeled. Bridged connections use the LEFT + and RIGHT - as the two connections. The 2 and 4 channel amplifiers will perform into 2 Ohm stereo loads or 4 Ohm bridged loads. DO NOT run 2 Ohm bridged loads on these amplifiers! The mono blocks will run 1 ohm mono.
- ⑰ Power Input Connections** - These connections are for input power, chassis ground, and remote turn-on. Use a minimum of 8 gauge wiring for power and ground connections. 4 Gauge is recommended for the mono block. The terminals will handle up to 8 gauge wiring with no problem whatsoever(4 gauge on the mono block). Be sure any wiring that passes through metal has a grommet!

## VEHICLE ELECTRICAL SYSTEM

Amplifiers (regardless of brand name) will put an increased load on the vehicle's battery and charging system. Diamond Audio recommends checking your alternator and battery condition to ensure that the electrical system has enough capacity to handle the increased load of your stereo system. Original equipment electrical systems which are in good condition should be able to handle the extra load of any Diamond Audio amplifier without problems, although battery and alternator life can be reduced depending on your individual listening habits. To maximize the performance of your amplifier, we suggest the use of a reserve power "Stiffening" capacitor (1 Farad per 1000W).

### WARNING:

Avoid running power wires near the low level input cables, antenna, power leads, sensitive equipment or harnesses. The power wires carry substantial current and could radiate noise into the audio system through the audio cables.

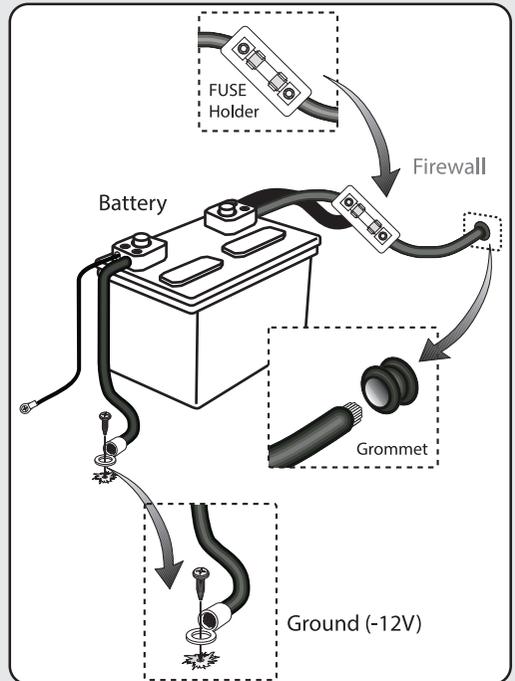
1. Plan the wire routing as described in the "Importance of Pre-Planning" section. Keep RCA cables close together but isolated from the amplifier's power cables and any high power auto accessories, especially electric motors. This is done to prevent coupling the noise from radiated electrical fields into the audio signal. When feeding the wires through the firewall or any metal barrier, protect them with plastic or rubber grommets to prevent short circuits. Leave the wires long at this point to adjust for a precise fit at a later time.
2. Prepare the power wire for attachment to the amplifier by stripping 5/8 inch (15.9mm) of insulation from the end of the wire. Insert the bare wire into the B+ terminal And tighten the set screw to secure the cable in place.

### WARNING:

The B+ cable **MUST** be fused 18" or less from the vehicle's positive battery post. Choose a location to install a waterproof fuseholder under the hood and ensure connections are water tight. If you do not use the appropriate fuseholder, the connection will eventually suffer corrosion from moisture and heat.

3. Trim the power cable within 18 inches (45.7mm) of the positive battery post and splice in a in-line fuse holder. **DO NOT** install the fuse at this time.
4. Strip 1/2 inch (12.7mm) from the battery end of the power cable. Crimp and solder a large ring terminal to the cable. Connect the ring terminal to the positive (+) battery post.

### FUSE WIRE DIAGRAM



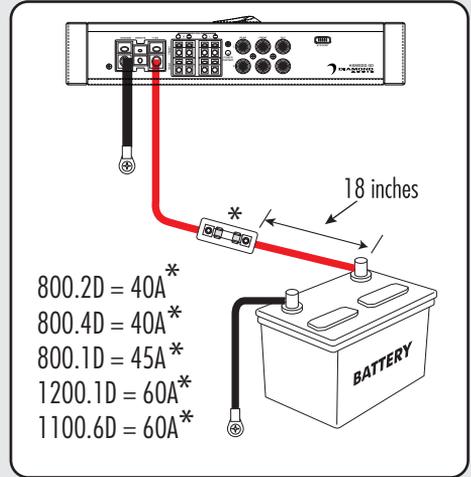
# INSTALLATION

5. Prepare the ground wire for attachment to the amplifier by stripping 5/8" of insulation from the end of the wire. Always use a wire of the same gauge as the power connection, never smaller. Insert the bare wire into the GND terminal and tighten the set screw to secure the cable in place. Prepare the chassis ground by scraping any paint from the metal surface and thoroughly clean the area of all dirt and grease. Strip the other end of the wire, crimp and solder a ring connector. Fasten the cable to the chassis using a non-anodized screw with a star washer and a nut.

**WARNING:** It is important to upgrade the ground connection between the negative (-) battery post and the vehicle body or chassis to achieve optimum electrical performance.

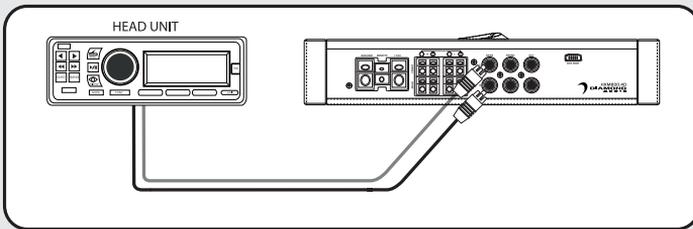
6. Prepare the REM turn-on wire for attachment to the amplifier by stripping 5/8 inch (15.9mm) of insulation from the end of the wire. Insert the bare wire into the REM terminal and tighten the set screw to secure the wire in place. Connect the other end of the REM wire to a switched 12 volt positive source. The switched voltage is usually taken from the source unit's remote amp turn on lead. If the source unit does not have this output available, the recommended solution is to wire to an accessory terminal in the car's fuse block using a relay to isolate the amplifier from the vehicles accessory circuit. This however will turn the amplifier on and off with the ignition key, regardless of whether the car stereo is on or off.

## FUSE CONNECTION DIAGRAM



7. Securely mount the amplifier to the vehicle or amp rack. Be careful not to mount the amplifier on cardboard or plastic panels. Doing so may enable the screws to pull out from the panel due to road vibration or sudden vehicle stops.
8. Connect from source signal by connecting the RCA audio cables to the input jacks at the amplifier.

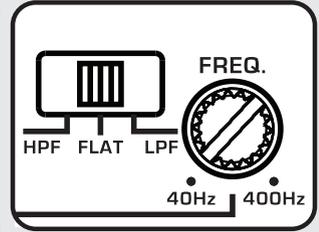
## RCA CONNECTION DIAGRAM



9. Connect the car speakers. Speakers impedance should never be less than 2 Ohms stereo, 4 Ohms bridged. For most applications 18 gauge wire is adequate for the speaker leads. For leads in excess of ten feet, 16 gauge wire is recommended. Strip the speaker wires 1/2" (12.7mm) and insert into the speaker terminal block then tighten the set screw to secure into place. When wiring the speakers, pay careful attention to the polarity of the terminals on the speakers and make certain they correspond to the polarity on the amplifier. DO NOT chassis ground any of the speaker leads as unstable operation or damage to the amplifier and/or speaker may result.

## SYSTEM SETUP

Placing the x-over switch in the FULL position sets the amplifier to Full Range. This setting allows ALL frequencies to pass to the speakers. With the placing the switch in the HPF or LPF position activates the 12dB crossover, adjustable from 40Hz - 400Hz. The 800.1D/1200.1D mono is dedicated for Low Pass (LPF) only with an adjustable frequency from 30Hz - 300Hz. The 1100.6D (6 channel) amplifier offers full range (FULL) high pass (HPF) or low pass (LPF) selector switch for channels 1-6. Channel



Placing the switch in the HPF position sets the amplifier to the High Pass Filter mode, enabling frequencies above the cutoff point to pass. Placing the switch in the LP position sets the amplifier to the Low Pass Filter mode, enabling frequencies below the cutoff point to pass. For system tuning begin with the frequency set at approximately 80Hz and fine tune up or down based on music choice and input level.

To adjust the gain setting, turn the amplifier gains all the way down (counterclockwise). If using a remote level control (ALL HXM amplifiers but 800.4D), plug the level control into the amplifier and turn it to about "HALF-WAY" (approx. the 12 O'clock position) this setups the bass boost so you can turn it UP ..OR...turn it DOWN when playing different music styles. Next turn the source unit volume up to almost full volume (usually about 2/3rds of the way up) or until the output starts to distort on an oscilloscope. This will be NEARLY full volume on most source units, perhaps one or two "clicks" down from maximum volume. Next, increase the amplifier gain setting until adequate volume is achieved, or until distortion is audible and then turn it down a bit until the distortion is inaudible.

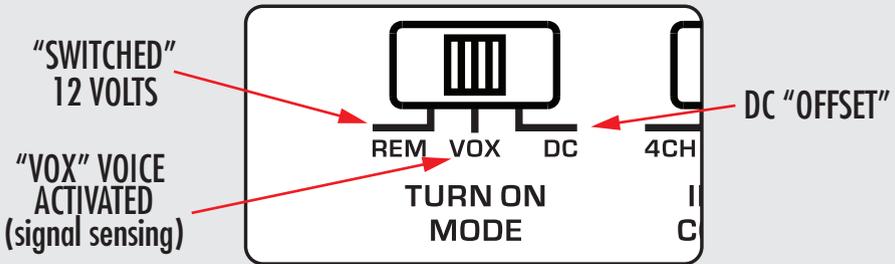
**NOTE: Ideal signal to noise and dynamic range are achieved with the gain at minimum. Most users find adequate gain and volume is achieved at less than halfway in the adjustment range. Avoid setting the amplifier gain very high as noise and distortion will increase significantly. For a more in depth level setting (gain adjustment) procedure, visit the Diamond Audio website.**

The HPF or LPF crossover adjustment can now be fine tuned. If you are using the amplifier in a HPF configuration and would like the system to be a little bit louder you can increase the HPF Filter frequency and reset the "Gain" of the amplifier. Raising the HPF frequency up to high however will cause a loss of mid range and bass. If you are using the amplifier in a HP filter configuration and you hear voice or vocals coming from your subwoofer system you can turn the LP Filter frequency down (lower). After setting the input gain adjustment and crossover, you may choose to add a small amount of "Bass Boost" in the low frequency region. There is both a Frequency selection (40-100Hz) AND how much boost (0-12dB). Remember that the Bass Boost feature will not fix a poorly designed subwoofer enclosure or subwoofers that didn't sound good to begin with.

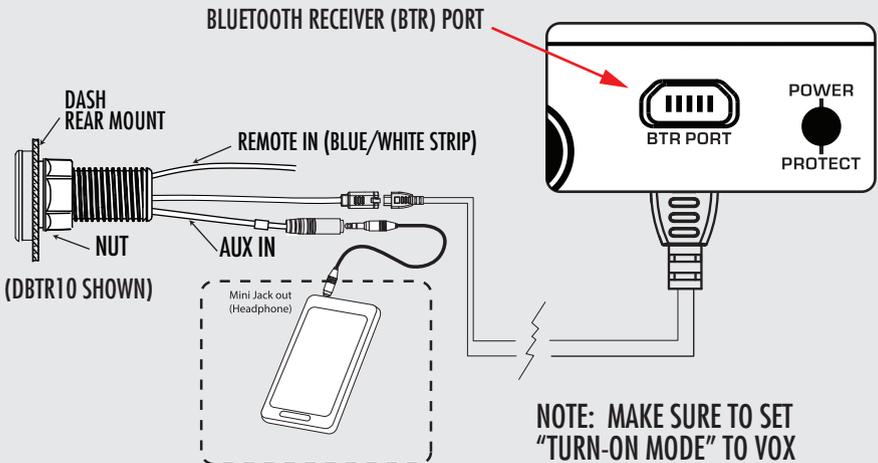
1. Make sure any bass EQ or low frequency equalization from the source unit is set to OFF or FLAT.
2. While playing the same musical selections used during the gain setting process, slowly increase the level of the Bass EQ. You should be able to notice a change between 0 and +12dB. At the same time adjust frequency slowly from 40 -100Hz. If you do not notice much difference, then it will not serve any benefit to increase the boost further.
3. If the boost has audible benefits without adding appreciable distortion, find a level that suits your taste. Remember: it's much easier to construct the right subwoofer enclosure for your listening preferences than relying on a bass boost control to do the job!

## SYSTEM SETUP

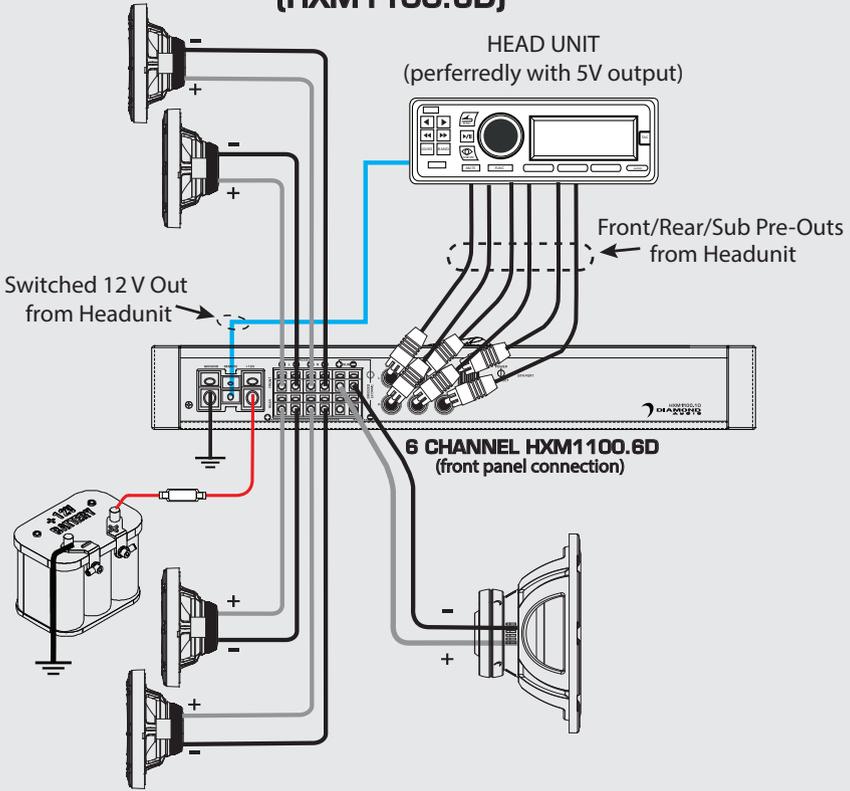
4. **TURN-ON OPTIONS** - configure the "Turn-On Mode" switch for desired turn-on trigger. There are 3 modes available on the HXM series amplifier, REM, DC and VOX. (REM) is the standard 12V trigger wire, (DC) or DC offset, when connected high level in, will sense differences in ground in your wiring through the speaker leads and turn on amplifier, VOX (signal sensing) will sense any kind of signal input into the amplifier RCA turning on the amplifier. Select VOX when using any DIAMOND AUDIO Bluetooth Controller. The most preferred and reliable method is using the REM setting with a 12V trigger wire connected to the vehicles ignition and will provide instant on and off for the amplifier. VOX and DC will provide turn on capabilities for the amplifier when a 12V trigger wire is not available. These methods will have some delay in turning the amplifier on and off.



5. **BTR Port** – (Bluetooth Receiver Port) This port is specifically to be used with any DIAMOND AUDIO Bluetooth controller. This will allow direct plug in to the amplifier and control simple functions of music playback through the BTR receiver. The supplied cable is the ONLY cable that can be used to plug into the BTR port on the amplifier. Connecting any other non-approved cable into the BTR port of the amplifier can cause damage to the amplifier and not be covered under warranty. The BTR will pair to your phone or selected Bluetooth device and will allow playback through the amplifier to speakers giving you unlimited install options. Play, Pause, Volume up/down, Track up/down, Pairing and Power on/off of Bluetooth audio through this one solution. Once paired, the BTR will auto pair the last person paired to the controller when it was powered down. The unit will remember up to 9 users and have memory without battery for up to 30 days. When connecting a DIAMOND AUDIO controller using the BTR port select the turn on option to VOX.



**5 CHANNEL -COMPLETE SYSTEM  
(HXM1100.6D)**



**Speaker level Input (Hi Level)**

This is for OEM radios with NO RCA outputs, only speaker outputs. For each speaker, or subwoofer, that you plan to drive with an amplifier channel, strip back a small part of your vehicle's color-coded left and right speaker wires, then splice in the wires that lead to your amplifier. (Solder or crimp, and secure the connection for optimum performance.)

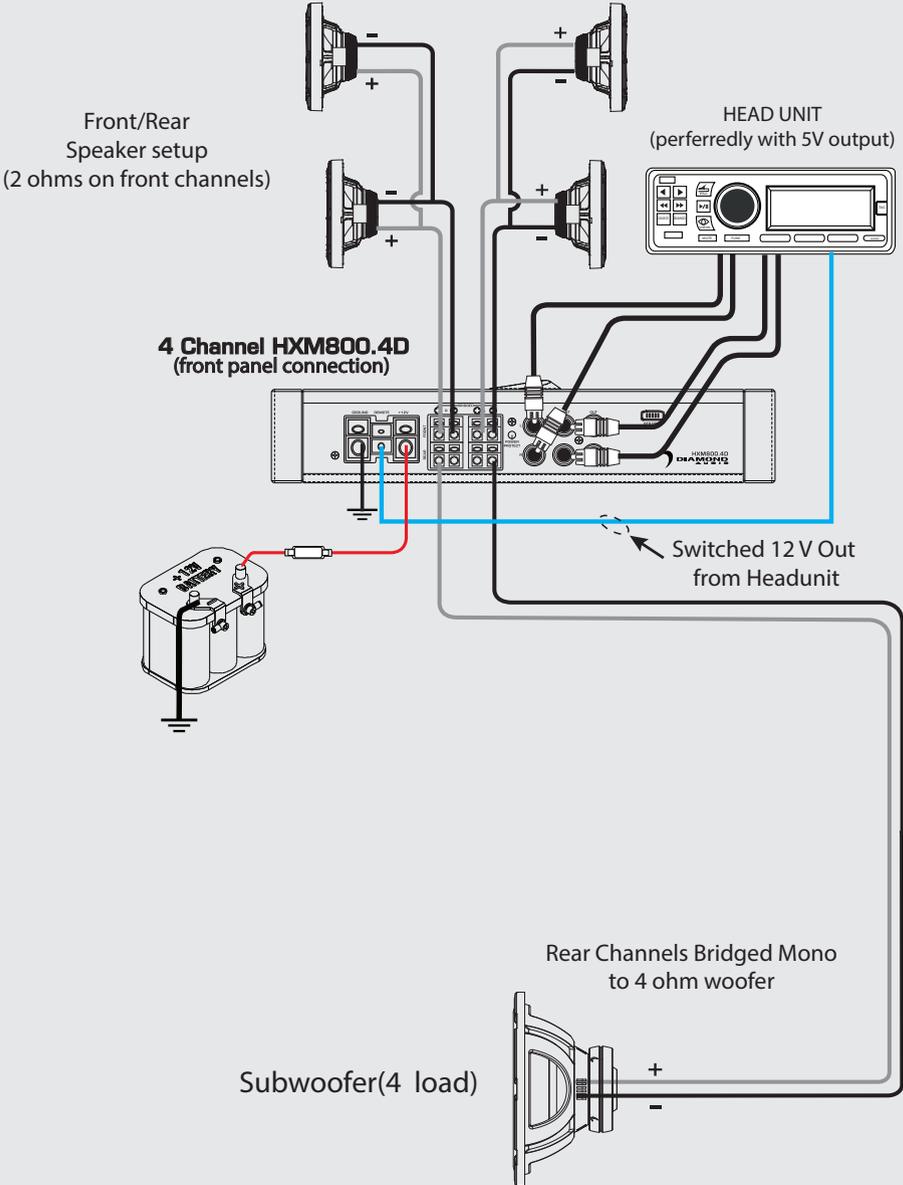
Driving front seat speakers will require you to run wiring under a door jamb or the floor carpeting to reach the speakers. Likewise, if your amp is under a front seat, the front speakers are more accessible than the rear ones. If your amp is in your trunk, it's a relatively short path to rear deck speakers or a subwoofer.

**SPEAKER LEVEL INPUT (OPTIONAL):**

Since the HXM series amplifiers can take speaker level in, here is the simplest way to use it. Get an in-expensive pair of RCA's. Cut the cable about 18 inches back. Strip the left and right wires to connect to the OEM amplifier/Headunits speaker outputs then plug directly into the HXM RCA input harness. Just switch how Turn-On works (REM/DC/VOX)

Once stripped as (shown to the right) solder the speaker leads from your OEM headunit

# 4 CHANNEL - HXM800.4D 3 CHANNEL MODE



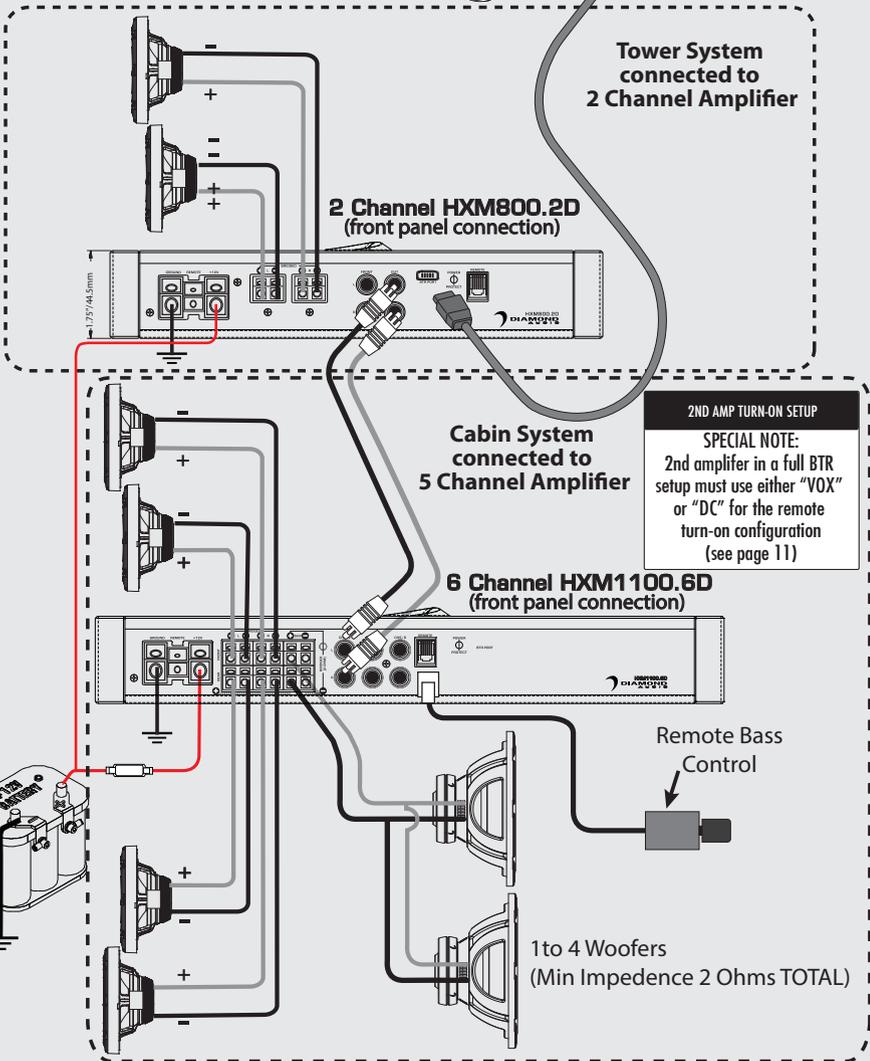
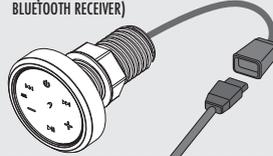
# SYSTEM CONFIGURATIONS

## HXM - 7CHANNEL/8 SPEAKER MARINE SYSTEM HXM800.2D - 2 OHM STEREO FRONT/REAR HXM1100.5D - 6 CHANNEL 4 OHM FRONT/REAR/4 OHM MONO SUB

SMARTPHONE  
(BLUETOOTH)

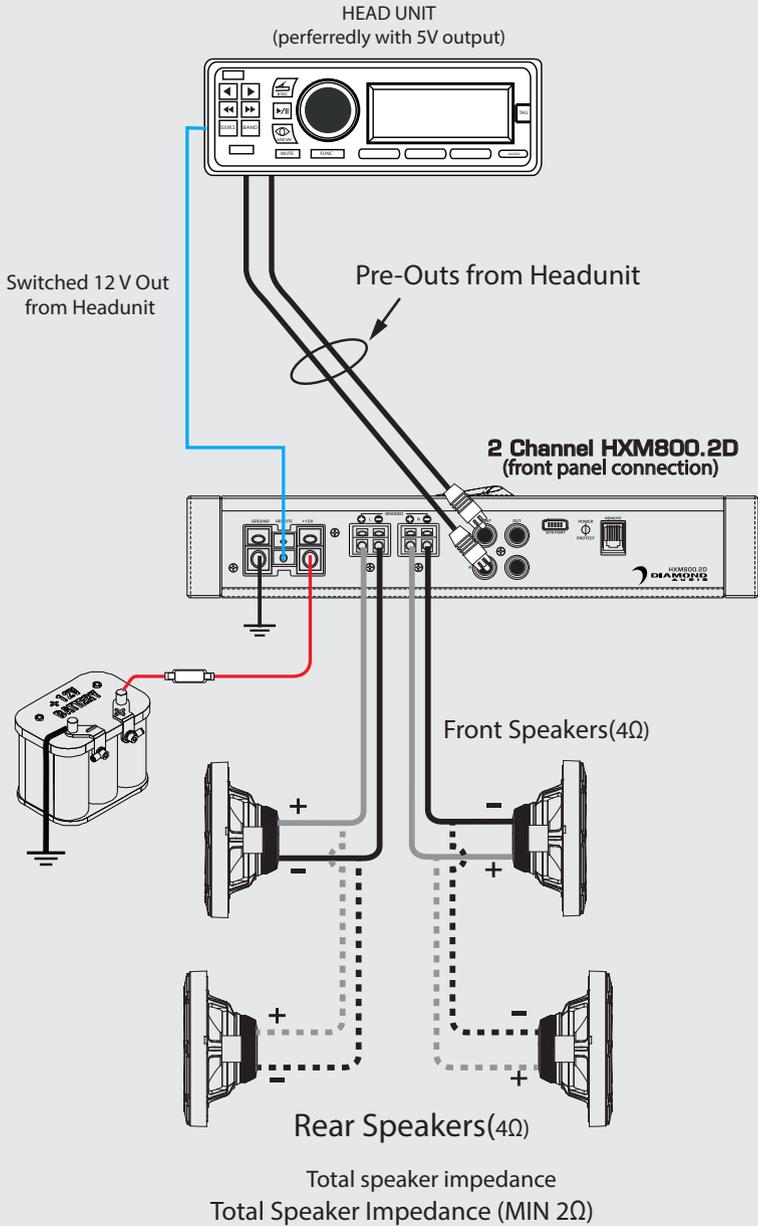


DABTR10  
(OR ANY DA  
BLUETOOTH RECEIVER)



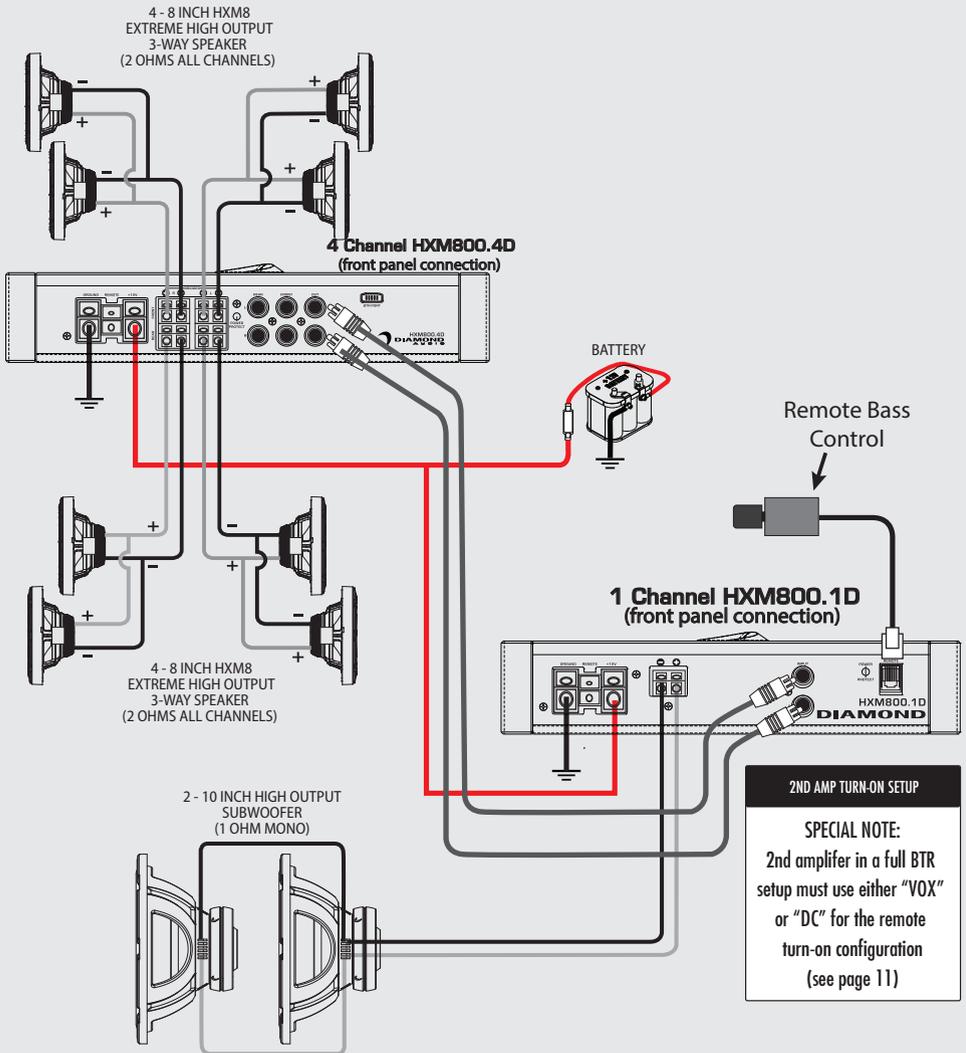
**2ND AMP TURN-ON SETUP**  
**SPECIAL NOTE:**  
 2nd amplifier in a full BTR setup must use either "VOX" or "DC" for the remote turn-on configuration (see page 11)

# HXM800.2D STEREO ( 1 AMP/4 SPEAKERS - 2 OHM LOAD)



# SYSTEM CONFIGURATIONS

## HXM - 5 CHANNEL/2 AMPLIFIER BOAT SYSTEM HXM800.4D STEREO 2 OHM (8 SPEAKERS - 2 OHM LOAD) HXM800.1D MONO 1 OHM (TO SUBWOOFER{S})



## PRODUCT SPECIFICATIONS

MODEL:	DES400.2D	DES400.4D	DES1000.5D
<b>Power Rating</b>			
RMS Power (2 Ω)	300 W X 2	170 W X 4	150 W X 4 /250 X 2
RMS Power (4 Ω)	200 W X 2	100 W X 4	90 W X 4 /150 X 2
Bridged (mono 1 Ω)	N/A	N/A	N/A
Bridged (mono 2 Ω)	N/A	N/A	N/A
Bridged (mono 4 Ω)	800 W X 1 (4 Ω ONLY)	400 W X 2 (4 Ω ONLY)	300 W X 2/500 W X 1 (Ch 5/6 bridged)
<b>Type</b>			
Topology	Full-Range Class D	Full-Range Class D	Full-Range Class D
<b>Power Supply</b>			
Power Supply	Full PWM	Full PWM	Full PWM
Power Supply Threshold	10.0VDC - 17.0VDC	10.0VDC - 17.0VDC	10.0VDC - 17.0VDC
Idle Current	(0.7A)	(0.7A)	(0.7A)
<b>Distortion</b>			
THD (1KHz @4Ω)	0.05%	0.07%	0.03%
S/N Ratio (A weighted @1W)	-77.2dBA	-77.4dBA	-76.7dBA
S/N Ratio (A weighted @ FP)	-98.9dBA	-97.4dBA	-96.7dBA
<b>Input Sensitivity</b>			
Low Input Level	0.2mV - 12.0V	0.2mV - 10.0V	0.2mV - 10.0V
High Input Level	YES - UP to 35 W RMS	YES - UP to 35 W RMS	YES - UP to 35 W RMS
<b>Input Impedance</b>			
Low Input Level	22 KΩ	22 KΩ	22 KΩ
High Input Level			
<b>Output Stage</b>			
Output Impedance	0.047Ω	0.047Ω	0.051 Ω
Damping Factor (50Hz @ 4Ω)	>250	>250	>70
Bandwidth (-3dB)	10Hz-35KHz	10Hz-35KHz	10Hz-350Hz
<b>Crossover (-12dB/Oct)</b>			
Variable High-Pass	35Hz - 350Hz	35Hz - 350Hz	35Hz - 350Hz
Variable Low-Pass	35Hz - 350Hz	35Hz - 350Hz	35Hz - 350Hz
Variable Sub-Sonic	N/A	N/A	N/A
<b>Fuse Ratings</b>			
ATC	N/A	2 X 30A	N/A
<b>Dimensions</b>			
Length x Width x Height (inches)	9.74 x 5.27 x 1.75	9.3 x 5.27 x 1.75	12.5 x 5.27 x 1.75
Length x Width x Height (mm)	247.6 x 133.9 x 44.5	237 x 133.9 x 44.5	317.6 x 133.9 x 44.5

## PRODUCT SPECIFICATIONS

MODEL:	DES500.1D	DES1000.1D
<b>Power Rating</b>		
RMS Power (1Ω)	500 W X 1 RMS	1000 W X 1 RMS
RMS Power (2 Ω)	350 W X 1 RMS	850 W X 1 RMS
RMS Power (4 Ω)	250 W X 1 RMS	650 W X 1 RMS
<b>Type</b>		
Topology	MonoBlock Class D	MonoBlock Class D
<b>Power Supply</b>		
Power Supply	Full PWM	Full PWM
Power Supply Threshold	10.0VDC - 17.0VDC	10.0VDC - 17.0VDC
Idle Current	(0.7A)	(0.7A)
<b>Distortion</b>		
THD (1KHz @4Ω)	0.05%	0.07%
S/N Ratio (A weighted @1W)	-77.2dBA	-77.4dBA
S/N Ratio (A weighted @ FP)	-98.9dBA	-97.4dBA
<b>Input Sensitivity</b>		
Low Input Level	0.2mV - 10.0V	0.2mV - 10.0V
High Input Level	YES - UP to 25 W RMS	YES - UP to 25 W RMS
<b>Input Impedance</b>		
Low Input Level	22 KΩ	22 KΩ
High Input Level	22 KΩ	22 KΩ
<b>Output Stage</b>		
Output Impedance	0.047Ω	0.047Ω
Damping Factor (50Hz @ 4Ω)	>250	>250
Bandwidth (-3dB)	10Hz-350Hz	10Hz-350Hz
<b>Crossover (-12dB/Oct)</b>		
Variable High-Pass	N/A	N/A
Variable Low-Pass	30Hz - 300Hz	30Hz - 300Hz
Variable Sub-Sonic	10Hz - 55Hz	10Hz - 55Hz
<b>Fuse Ratings</b>		
ATC	N/A	N/A
<b>Dimensions</b>		
Length x Width x Height (inches)	8.56 x 5.27 x 1.75	11.72 x 5.27 x 1.75
Length x Width x Height (mm)	217.6 x 133.9 x 44.5	297.6 x 133.9 x 44.5

# WARRANTY

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Diamond Audio Technologies (DAT), a division of CV & DA Holdings Incorporated, warrants this product to be free from defects in material and workmanship for a period of one (1) year from the original date of purchase, provided it was purchased from an authorized DAT retailer within the United States. Product warranty period starts at the date of purchase or one year past the manufacture date whichever is first. However, upon purchase and completion of the on-line registration and installation by an authorized DAT dealer your warranty period will be extended to two (2) years. This warranty extension offer will only be recognized upon completion of the on-line registration of your product within thirty (30) days of the date of purchase.

THIS WARRANTY IS NOT TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL PURCHASER OF THIS PRODUCT IN ITS ORIGINAL INSTALLATION. Original purchaser must reside in the United States and be able to provide proof of purchase and installation with the sales receipt and completion of online registration from the authorized DAT retailer that sold and installed the product.

Should a manufacturing defect occur during above said warranty period, DAT will replace or repair the defective product with a product of the same or equivalent value and performance, at DAT's discretion.

Damage or failure caused by any of the following is not covered under this warranty policy: negligence, improper use, abuse, product modification, unauthorized repair attempts, accident, acts of God, misrepresentations by DAT retailers, and improper/inadequate packaging during return shipping.

**Warranty is void if serial numbers have been removed, altered or defaced.**

## HOW TO OBTAIN WARRANTY SERVICE

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In the event a DAT product should require service, you should visit the authorized DAT retailer you purchased the product from and they can expedite your claim. All claims must fall into the guidelines listed above and be accompanied by a copy of the original sales and installation receipt from that authorized DAT retailer.

Product returned for warranty service must be freight-prepaid, properly packaged and clearly marked with the Return Authorization (RA) number issued by DAT. Any product returned to DAT that is improperly packaged, does not have a RA number clearly marked on the package, or never received a RA number may be refused upon delivery. DAT does not assume responsibility for lost or misdirected product.

Repair or replacement under this warranty is the exclusive remedy of the consumer. DAT shall not be liable for any incidental or consequential damages for breach of any expressed or implied warranty on this product. Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights that may vary from state to state.

Customers outside the United States should contact their local sales office to obtain information on pricing, exchange unit availability, instructions, service and warranty/non-warranty replacement or repair.

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