

# COLOSSUS

# AMPLIFIER SERIES

#### **COLOSSUS HIGH PERFORMANCE AMPLIFIER SERIES**

The Hifonics Colossus has been designed to a very high level of performance, with features unavailable in any other product.

The Colossus has variable crossovers built in, with added touches such as Subsonic Filter, Parametric Bass Equalization, Phase Shift, Balanced Line Input and a Remote Level Control Module that allows bass control from reach of the drivers seat.

To insure years of listening pleasure, all amplifiers have a built in diagnostic mode that will detect shorted speaker leads, low impedance, dangerous high temperatures, DC shorts and will shut down the amp to help prevent serious damage. A new feature for this series is the Clipping LED indicator. This indicator is located on the amplifier end panel and Bass Remote Control Module. This LED alerts the user when the amp reaches soft clipping and allows the user to correct the settings prior to reaching hard clipping and shutting the amp down.

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### Check out our videos of new products, events and technical tutorials at www.youtube.com/maxxsonicsusainc

#### System Design

#### The success of any car stereo system relies on several factors, such as the system design, execution of the installation, and system setup. Please remember that any system is only as good as its weakest link.

Please remember that higher power systems are not necessarily useful purely for high sound pressure levels, but also to establish a headroom capability, to reproduce musical peaks cleanly without distortion. Lower power amplifiers will clip earlier than their more powerful cousins, and cause loudspeaker failure when overdriven, due to the harmonics generated by a clipped signal, thus overheating voice coils.

Amplifiers should be mounted with the fins running horizontally for best convection cooling, to minimize overheating. Purchase the best quality RCA cables you can afford, for reliability and less engine noise interference in the audio system.

#### Installation





It is highly recommended that the amplifier be mounted to a board of MDF or other solid structure using the 4 mounting screws provided. Avoid mounting the amplifier to metal as this can introduce noise and other unwanted issues. When mounting the amplifier, ensure that it is mounted HORIZONTALLY, as shown in the diagram above, for optimal heat dissipation. Mounting amplifiers to speaker enclosures is not recommended as this can cause damage to the amplifier components. When choosing a location for mounting the amplifier, ensure that you check for clearance from wires, gas tank, electrical devices and brake lines etc.



#### General:

Run the wiring so that RCA cables are at least 18" away from power and speaker cables. Keep RCA cables away from electrical devices in the vehicle that can cause electrical noise, such as electric fuel pumps, emission control modules and other on-board electronic modules.

#### Power and ground connections (see the features matrix on page 6 for proper gauge cables per amplifier):

Use a sufficient gauge power cable and ground cable using the chart below as reference to what size wire you require. Colossus amplifiers require at least 2 gauge power wire. In a multi amplifier system, add the total value of the manufacture recommended fusing to get your total system amperage. Some applications may require multiple runs of power wire to meet the system requirements. In multi amplifier systems it is advisable to mount a large enough fuse right at the battery, and run one or multiple +12 volt power cables to a fused distribution block near the amplifiers. It is then a simple matter to connect the +12 volt terminal of each amplifier to the distribution block. During this process, please ensure that the main power fuse is removed to avoid shorting the electrical system. The main fuse must be within 12" of the vehicles battery.

Ground each amplifier with as short a ground lead as possible directly to the vehicle chassis using at least 4 gauge wire or equivalent to the size of the amplifiers' power wire. Use a ground distribution block, if you wish, but it is extremely important to keep the main ground lead from this distribution block to the chassis as short as possible, not more than 12". The ground connection integrity to the chassis is very important, and the best way to achieve a good, solid electrical and mechanical contact is to use a large round crimp lug, crimped and soldered to the ground cable. The next step is to scrape the paint off the vehicle chassis, slightly larger than the ground lug, at the connection point. Drill a clearance hole in the chassis, the same size as the lug hole, and use a bolt, spring washer and nut to securely fasten the ground lug. Use petroleum jelly to coat the bolt/lug connection, to prevent oxidization with time.

TIP: Use the same approach when installing head units, equalizers or any audio equipment for that matter - run short individual grounds from each piece directly to the vehicle chassis, to minimize ground loops and system noise. All power, ground and speaker connections should be crimped and soldered for reliability. Make sure that none of the cable insulation can chafe against exposed metal in the vehicle, causing short circuits to the chassis.

WIRE LENGTH							
SYSTEM AMPERAGE	7-10 ft.	10-13 ft.	13-16 ft.	16-19 ft.	19-22 ft.	22-28 ft.	
35-50	8	6	4	4	4	4	<
50-65	6	4	4	4	4	2	WIRE
68-85	4	4	2	2	2	0	GAUGE
85-105	4	2	2	2	2	0	ନି
105-125	4	2	0	0	0	0	
125-150	2	0	0	0	0	0	i i

NOTE: This Matrix is a general rule of thumb. Please refer to the manufacturers specific requirements. Colossus specifications can be found on page 6.

#### Safe connection sequence:

After all cables are run, connect speaker wires to the speakers and amplifiers, then run and plug in RCA cables. Next, connect all power, ground, and remote turn on leads. Now connect all +12 volt cables to the amplifier/s and distribution blocks and fuse holders. Finally, connect the main +12 volt cable to the battery, with the main fuse removed, and we are almost ready to power up the system.

#### Your Electrical System:

The Hifonics Colossus is a 3200wrms amplifier. Your stock electrical system is not capable of providing the required Voltage and Amperage to this amplifier. You should contact a reputable battery and alternator store or manufacturer for the proper upgrades to successfully power this model amplifier. Ignoring this warning and attempting to run the Colossus on your stock electrical system without the necessary upgrades can cause damage to your amplifier and may void your Warranty. For more information on upgrading your electrical system, please review the Car Audio 101 Tutorials located on our YouTube page at www.youtube.com/maxsonicsusainc. The Hifonics Colossus is capable of 4, 2 & 1 Ohms stereo per channel, or 4 & 2 Ohms mono bridged operation.

The input sensitivities for rated output powers are variable from 0.2 volt to 9 volts.

All crossovers are fully variable in their respective ranges. Crossover filter slopes are 24 dB/octave for mono filters. A**POWER** LED indicates the powered up and turned on condition. All HiFonics amplifiers feature a comprehensive diagnostic system, with speaker lead short circuit, thermal over load and amplifier DC faults indicated by the **PROTECT** LED's. The Colossus features a new clipping led indicator that changes colors as the severity of the clipped signal increases.

#### **CONTROL FEATURE DESCRIPTIONS**

**SUBSONIC:** The variable Subsonic filter is fully adjustable from 15Hz to 35Hz.

LOW PASS FILTER: The low pass filter is fully adjustable from 35Hz to 250Hz.

#### PARAMETRIC BASS EQ:

BOOST: The bass boost is fully adjustable from 0dB to 10db.

BANDWIDTH: The bandwidth is fully adjustable from narrow to wide.

FREQUENCY: The frequency is fully adjustable from 30Hz to 100Hz.

BALANCED INPUT: Accepts balanced line inputs from 0.2 volts to 18 volts for an optional balanced line driver.

LINE INPUT: Accepts unbalanced RCA inputs from 0.2 volts to 9 volts.

LINE OUTPUT: The unbalanced RCA outputs are identical to the signal supplied to the amplifier.

**LEVEL:** The input level control allows you to match the amplifier input sensitivity to the output level of the RADIO/CD source from 0.2 Volts to 9 volts when using unbalanced (RCA) and 0.2 volts to 18 volts with the balanced input.

**PHASE SHIFT:** The Phase Shift is fully adjustable from 0 to 180 degrees.

SYSTEM DIAGNOSTICS: The amplifier has built-in monitoring devices and protection circuits that monitor all vital functions of the amplifier.

The diagnostics light do not come on to indicate there is a failure, they come on when they detect an improper operation.

**THERMAL:** The amp has an internal temperature sensor that will automatically shut off the amp if it reaches dangerous temperature levels and the LED will be Amber in color.

DC PROTECT (Short Circuit): In the unlikely event the amp should internally fail, the amp will shut down to prevent a DC voltage output to the speakers or sub and the LED will be Red in color.

*Clipping:* While adjusting the amplifier the LED may light up Green indicating Pre-Clip, Amber indicating Soft-Clip or Red indicating Clip. These indicators give the user a chance to identify incorrect settings or high distortion before it is damaging to the equipment allowing them to correct the volume or settings.

REMOTE: The Colossus has a DIN cable remote level jacks labeled INPUT. The Remote Module plugs

into the INPUT jack and allows you to adjust the Level Control.





#### COLOSSUS DUAL MONO BLOCK AMPLIFIER APPLICATIONS

#### BASIC APPLICATION

FULL RANGE STEREO LINE INPUT

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The Colossus Dual Mono Block amplifiers are capable of 4, 2 & 1 Ohm stereo and 4 & 2 bridged loads.

This will allow you to operate separate subs independently (on each channel L or R) at 4, 2 or 1 Ohm at up to 1600 watts or bridged across L & R to operate a single sub up to 3200 watts at 4 or 2 Ohms.

Note: The amp is not capable of 1 Ohm when bridged across L & R. The crossovers and HFR-G1 Remote Module will operate both L & R channels simultaneously.

#### SINGLE AMP INSTALLATION PROCEDURE:

1. Connect the amp LINE INPUTS to the Radio/CD player full range or mono line out puts with good quality RCA interconnect cables.

2. Plug in the HFR-G1 bass remote module into the amp REMOTE INPUT jack.

3. Route a 0 gauge power cable directly to the vehicle battery with an in-line 300 amp fuse.

**Y-ADAPTOR** 

- 4. Connect a 0 gauge ground cable directly to chassis ground with in 36" of the amp.
- Be sure to remove any paint or primer from the ground point.
- Use a nut, bolt and lock washer to secure the ground cable to the chassis ground.
  Connect the subwoofer(s) in accordance to the diagrams below.



#### **USING CHANNELS L & R BRIDGED**

Note: You can use the Radio/CD designated mono line output or a full range stereo line output. For full range stereo line output, you will need an optional "Y-Adaptor" as shown

Note: The amplifier is capable of 4 & 2 Ohms in this configuration. It is not capable of 1 Ohm.



#### General:

At this point you are ready to get more specific on the settings for your amplifier. Please follow the settings in the order they are presented to reduce the risk of damage to your audio equipment.

#### Phase:

The variable Phase adjustment allows you to change the relative time that the waveform meets your ear. With standard subwoofer installations where the subwoofer is behind you, the Phase should generally be at 0. When subwoofers or woofers are in the kick panels or door panels, the Phase adjustment is useful in delaying the timing of the wave meeting your ear by adjusting the potentiometer to 180 degrees.

#### Subsonic:

This setting acts as a low frequency cut off for your system bass reproduction. The point that you set it at cuts off any frequencies from reproduction beyond this point. The 12 o'clock position is a great starting point. EXAMPLE: If you adjust the Subsonic to 25Hz, the amplifier will not play frequencies below 25Hz but will play frequencies from 25Hz to the chosen Low Pass frequency.

#### Low Pass:

The Low Pass control acts as a ceiling and doesn't allow frequencies to the right of the desired setting to be reproduced. The 12 o'clock position is a great starting point. EXAMPLE: If you adjust the Low Pass to 80Hz, the amplifier will not play frequencies above 80Hz but will play frequencies from 80Hz to the chosen Subsonic frequency.

#### **Parametric Bass EQ:**

This feature allows for selection of frequency enhancement, width of enhancement and value of enhancement. This feature provides impact to your bass, but if not adjusted correctly, it can be over used and cause damage to your subwoofers and amplifiers.

FREQ: The Frequency adjustment for centralized enhancement is selectable from 30Hz to 100Hz.

BANDWIDTH: Setting this adjustment all the way to the left will limit the focus of your enhancement to only the closest frequencies to your FREQ setting. As you turn further clockwise you will begin to enhance more frequencies above and below your centralized FREQ setting.

**BOOST:** This setting adjusts the amount of enhancement for the desired FREQ setting and BANDWIDTH and is variable from 0dB to 10dB. In most cases an enhancement from 9 o'clock to 12 o'clock is ideal paying close attention not to enhance past the 12 o'clock position at high volume. *WARNING:* This is the most dangerous setting and can increase the risk of clipping and distortion which can damage your amplifier and subwoofer(s) if set too high. Monitor the clipping indicators on the amplifier and/or HFR-G1 Remote Module.

#### Level (GAIN) Control Setup:

Ensure that the Level is turned completely to the left prior to turning the system on. Next you should insert a CD or cassette that you are familiar with to use as a reference, and turn the head unit volume control to about 80% of its full setting. The system sound level will of course be very low, and the following procedures will help you to match the amplifier input sensitivities properly to the head unit output signal level. Turn the level control up slowly, till you hear distortion, then back off a few degrees on the control. If at any point your amplifier goes into protection, you will need to turn the Level to the left a bit and then try again. If you reach a point where the output does not increase, stop turning the Level control to the right as the amplifier/subwoofer combo has reached its maxx output in this application. Your Clipping Indicators on the end panel of the amp and on the HFR-G1 Remote Module should be monitored closely during this process as they will indicate clipping and distortion that your ear may not hear. It is common to see the LED light up GREEN for pre-clip and is not a concern. But, when the LED color changes to AMBER you will want to reduce the LEVEL or BOOST a bit until this condition is no longer experienced.

#### Sit back and enjoy the music!

The key to finding the problem in a misbehaving sound system is to isolate parts of that system in a logical fashion to track down the fault.

#### Description of the Diagnostic system built into all HIFONICS amplifiers

The diagnostic system will shut down the amplifier, until reset by turning the head unit off, and back on. This state of affairs will be indicated by the front panel PROTECT LED lighting up under the following conditions:

1 - A sort circuit on the loudspeaker leads.

2 - An internal amplifier fault that causes a DC offset on the loudspeaker output.

Should the amplifier go into diagnostic mode, simply disconnect all RCA and speaker leads, while keeping +12 volt, power ground and remote leads connected. 1. Now turn the amplifier back on, and if the diagnostic LED lights, the amplifier has an internal fault.

2. If not, plug the RCA cables back, and reset the amplifier. If it goes into diagnostic now, the fault lies in the input, either with bad cables or source unit.

3. If the amplifier seems ok with RCA cables plugged in, connect the speakers, one at a time, and if one of speaker or its wiring is faulty, it will activate the diagnostic system.

4. If the amplifier is still in Protection mode after the above steps, remove all RCA's and wires from the amplifier. Take a 12" length of speaker wire, trim the plastic off of each end exposing the wire. Now connect one end of the wire to the12V+ on the amplifier and connect the other to the Ground on the amplifier. You will have a brief spark indicating that the Capacitors have been discharged and the drivercard has been reset. Remove the jumper wire and reconnect your Power, Ground and Remote wires. Attempt to power the amplifier up like normal. In some cases this can Reset the amplifier if permanent damage has not previously been done.

#### Amplifier heatsink overheating

The amplifiers will shut down when the heatsink temperature reaches 80 degrees centigrade, and turn back on once the unit has cooled down below that point. *Causes of overheating:* 

1 - Inadequate cooling - relocate or remount to provide better natural airflow over the fins.

2 - Driving high power levels into low impedances - back off on the volume control, and/or make sure you are not loading the amplifier with less than the

recommended loudspeaker impedance.

3 - Excessive voltage drop can also cause overheating.

#### Low output power

1 - Check that level controls have been set up properly.

2 - Make sure that the battery voltage, as measured at the amplifier's +12 volt and ground terminals, is 11 volts or more.

3 - Check all +12 volt and ground connections.

#### **Fuses blowing**

1 - The use of loudspeaker impedances below the recommended minimums will draw more current - check.

- 2 A short on the main +12 volt cable from the battery to the vehicle chassis will cause the main fuse to blow.
- 3 If an amplifier fuse blows continually, with only +12 volt, ground and remote leads connected, the amplifier may be faulty.

#### System does not turn on

1 - Check all fuses.

2 - Check all connections.

3 - Measure the +12 volt and remote turn on voltages at the amplifier terminals. If these are non existent or low, take voltage measurements at fuse holders,

distribution blocks, the head unit's +12 volt and remote leads to localize the problem.

4 - If the HIFONICS lettering is illuminated but you do not have Power or Protection illuminated, simply remove your remote wire and use a jumper wire from 12V+ on the amplifier to the Remote connection on the amplifier. If the amplifier powers on like normal then you do not have adequate voltage/amperage from your Remote source to turn your amplifier on. You will need to seek out a certified installer to install a relay for your amplifier. If the jumper does not power your amplifier on, you may have internal damage and should contact Hifonics Customer Service to locate an Authorized Repair Center.

#### **Noise problems**

System noise can be divided into two categories, hiss, and electrical interference.

#### Hiss, or white noise:

1 - High levels of white noise usually occurs when amplifier level controls are turned up too high - readjust according to the procedures in section "Setting up systems after installation for best performance"

2 - Another major problem that can cause excessive hiss, is a noisy head unit - unplug the amplifier input RCA cables, and if the hiss level reduces, the source unit is at fault.

#### **Electrical interference:**

The inside of an automobile is a very hostile electrical environment. The multitude of electrical systems, such as the ignition system, alternator, fuel pumps, air conditioners, to mention just a few, create radiated electrical fields, as well as noise on the +12 volt supply and ground. Remember to isolate the problem - first unplug amplifier input RCA cables, if the noise is still present, check the speaker leads, if not, plug the RCA's back, and investigate the source driving the amplifier, one component at a time.

#### A ticking or whine that changes with engine RPM:

- 1 This problem could be caused by radiation pickup of RCA cables too near to a fuel pump or a distributor, for instance, relocate cables.
- 2 Check that the head unit ground is connected straight to the vehicle chassis, and does not use factory wiring for ground.
- 3 Try to supply the head unit with a clean +12 volt supply directly from the battery +, instead of using a supply from the in dash wiring/fusebox.

#### A constant whine:

This type of noise can be more difficult to pinpoint, but is usually caused by some kind of instability, causing oscillations in the system.

1 - Check all connections, especially for good grounds.

- 2 Make sure that no speaker leads are shorting to exposed metal on the vehicle chassis.
- 3 -RCA cables are notorious for their problematic nature, so check that these are good, in particular the shield connections.

#### HIFONICS COLOSSUS DUAL-MONO AMPLIFIER FEATURES

- FEATURES	COLOSSUS		
OUTPUT POWER RATING (TRUE RMS @ 14	1.4V)		
4-Ohms	600 x 2		
2-Ohms	1100 x 2		
1-Ohm	1600 x 2		
4-Ohms Bridged	2200 x 1		
2-Ohms Bridged	3200 x 1		
ELECTRICAL SPECIFICATIONS	122		
Slow Un-Mute Turn-On (Soft Start)	YES		
Dampening Factor	>350		
Signal To Noise Ratio (A-Weighted)	>95dB		
THD & Noise	<1.0		
Variable Input Level Control (Unbalanced)	0.2V - 9V		
Input Impedance (Unbalanced)	47K-Ohm		
Power / Protect L.E.D	YES		
Pre Clip - Green / Soft Clip - Amber / Hard Clip	- Red		
PROTECTION	55 State of 55		
DC, Speaker Short, Thermal, Overload	YES		
MOSFET Power Supply	YES		
MOSFET Audio Ouput	YES		
CROSSOVER			
Variable Low Pass Filter / 24dB	35Hz - 250Hz		
Variable Subsonic Filter / 24dB	15Hz - 35Hz		
Phase Shift (0-180 degrees)	YES		
PARAMETRIC BASS EQ	3		
Frequency	30Hz - 100Hz		
Bandwidth	Narrow - Wide		
Boost	0dB - 10dB		
CONNECTOR TYPE	22		
Unbalanced Inputs (RCA)	YES		
Balanced Inputs (DIN)	YES		
Line Ouput (RCA)	YES		
Speaker Terminals (Molded)	10 ga.		
Power / Ground (Molded)	0 ga.		
Remote Level Module	HFR-G1		
FUSING	300-350 Amps		
HEAT SINK DIMENSIONS			
LENGTH X WIDTH X HEIGHT (INCHES)	23.78 x 10.83 x 2.66		
Note: Features subject to change with out n	otice		

# HIF & NIC \$ COLOSSUS

#### **Maxxsonics Limited Warranty**

As the manufacturer of Maxxsonics, MB Quart, Autotek, Crunch and Hifonics car audio products, Maxxsonics USA Inc. Warrants to the original consumer purchaser the amplifier to be free from defects in material and workmanship for one (1) Year from date of purchase.

All other parts and accessories of the system are warrantied to be free from defects in material and workmanship for one (1) year from date of purchase. Maxxsonics will repair or replace at it's option and free of charge during the warranty period, any system component that proves defective in materials and workmanship under normal installation, use and service provided that the product is returned to the authorized Maxxsonics dealer from where it was purchased. A photo copy of the original receipt must accompany the product being returned.

Valid purchase receipts will contain the name and address of the authorized reseller.

Any damage to the product as a result of misuse, abuse, accident, incorrect wiring, improper installation, alteration of date code or bar code labels, revolution, natural disaster, or any sneaky stuff because someone messed up, repair or alteration out side of our factory or authorized service centers and any thing else you have done that you should not have done is not covered.

This warranty is limited to defective parts and specifically excludes any incidental or consequential damages connected therewith. This warranty is not to be construed as an insurance policy.

Warranty on installation labor, removal, re-installation and freight charges are not the responsibility of Maxxsonics USA Inc.

Warranty products damaged as a result of insufficient or improper packing materials are not covered by this limited warranty and such damaged product will be returned "as is" at the expense of the owner.



### MAXXSONICS® OEM Integration Accessories

#### MX-1 Premium High To Low Level Converter



- \* Converts High Level OEM speaker wires to Ultra Clean RCA Low Level Outputs
- \* High Level Inputs: Accepts all types of High level Inputs including floating ground and high voltages up to 30 volts.
- \* Audio Signal Sense / Hardwire Turn-On: Audio sense detects music signals from the OEM wires and activates the MX-1. As an option, the module also offers a remote turn-on wire.
- \* Parametric Bass EQ: Features Bass Boost, adjustable Band Width (wide & narrow), Low Pass and Subsonic Filter.
- \* Clipping Indicators: Visually indicates audio signals Pre-Clip, Soft Clip and Hard Clip
- \* Balanced Line Output: Ultra clean DIN variable high voltage output for driving mono amps.
- \* Remote Output: Driver circuit to turn on amplifier when module activates.
- \* Bass Remote: Features for subwoofer Level control with builtin clipping indicators.
- \* Input & Output Level Control: Allows for gain matching both radio and amplifier audio signals.



**MX-3 Bass Controller** 

- \* Parametric Bass EQ: Provides a wide array of subwoofer output signal shaping controls to enhance bass response and sound quality including Bass Boost, adjustable Bandwidth (wide and narrow), Low Pass and Subsonic Filter.
- \* Accepts a wide range of incoming music signal levels while accommodating all types of head units and signal processors and controlling the output level to the amp to maximize a signal strength up to 9 volts.
- \* Clipping Indicators: Visual clipping indicators provide indication of damaging clipped signals to help protect the subwoofer(s) and amplifier. Includes pre-clip, soft-clip and full-clip indications.
- \* Music Shaping: Shapes the music signal to achieve deep bass notes as low as 15Hz.
- \* Bass Remote: Included bas Remote features built-in clipping indicators allows direct bass control from in-dask or under-dash.



MX-2 Deluxe High To Low Level Converter

#### \* Converts High Level OEM speaker wires to Ultra Clean RCA \* Conve Low Level Outputs Output

- \* High Level Inputs: Accepts all types of High level Inputs including floating ground and high voltages up to 30 volts.
   \* Audio Signal Sense / Hardwire Turn-On: Audio sense detects music signals from the OEM wires and activates the MX-2. As
- an option, the module also offers a remote turn-on wire.
  \* Remote Output: Driver circuit to turn on amplifier when module activates.

#### MX-4 Add A Sub High To Low Level Converter



- \* Converts High Level OEM speaker wires to Ultra Clean RCA Low Level Outputs
- \* High Level Inputs: Accepts all types of High level Inputs including floating ground and high voltages up to 30 volts.
- \* Audio Signal Sense / Hardwire Turn-On: Audio sense detects music signals from the OEM wires and activates the MX-4. As an option, the module also offers a remote turn-on wire.
- \* Remote Output: Driver circuit to turn on amplifier when module activates.





The Maxx-Link allows you to Link or Strap two matching mono amps that do not already have the "Master / Slave" feature built in.

This allows you to use two amps on one subwoofer, use two amps to power multiple subwoofers or connect as many amplifiers as you want to power as many subwoofers as you want and have only one Pre-Amp to control all of the amplifiers.

The benefits are that you do not have to try to get all of the amps pre-amp features such as Low Pass, Subsonic Filter, Bass EQ and phase control matched identical by ear.

- \* Link up to five amplifier pairs (10 amps) on one Maxx-Link and more with Y-Adaptors
- \* Clipping Indicators: Visual clipping indicators provide indication of damaging clipped signals to help protect the subwoofer(s) and amplifier. Includes pre-clip, soft-clip and full-clip indications.
- \* Bass Remote: Included bas Remote features built-in clipping indicators allows direct bass control from in-dask or under-dash.
- \* Tone Generator: Built-in 65Hz test tone for gain matching
- \* Low Pass: 24db Lop Passvaraiable from 35Hz to 250Hz
- \* Subsonic Filter: 24dB Subsonic filter variable from 15Hz to 35Hz
- \* Parametric Bass Eq:
- \* Variable Wide and Narrow Bandwidth control
- \* Line Driver: Variable output from 1 volt to 9 volts
- \* Phase Shift: variable from 1 to 180 degrees
- \* 2 channel pass through



## MAXXSONICS® MBQUARTI® HIF \$ NICS® CRUNCH®

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