Van Gogh

VGA 400.2
VGA 600.2
VGA 800.2
VGA 1600.2
VGA 320.4
VGA 500.4
VGA 800.5
Power Amplifiers

Owner´s Manual and Installation Guide

SOUNDSTREAM®
TECHNOLOGIES

CONGRATULATTONS!

You now own the ***Limited Edition* VGA *Amplifier***, the product of an uncompromising design and engineering philosophy. Your Soundstream **VGA** will outperform any other amplifier in the world.

To maximize the performance of your system, we recommend that you thoroughly acquaint yourself with its capabilities and features.Please retain this manual and your sales receipt for future reference.

Soundstream amplifiers are the result of American innovation and the highest quality control standards. When properly installed, they will provide you with many years of listening pleasure.Should your amplifier ever need service or replacement due to theft, please record the following information which will help protect your investment.

Serial # _____

Dealer's Name _____

Date of Purchase _____

Installation Shop _____

Installation Date _____

C A U T I O N !

Prolonged listening at extremely high levels may result in hearing loss.Even though your new Soundstream **Limited Edition VGA Amplifer** sounds better than anything you've ever heard, exercise caution to prevent hearing damage.

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FEATURES

- **RUBI™** (**R**apid-Use **B**ranched **I**mpulse) proprietary power supply topology
  STACT™ (**ST**abilized **A**pex **C**urrent **T**opologe) Reduces power supply stress by 50%
  Trident™ amplifier protection topologe
  Ultra-Low ESR Capacitance Bank ensures rapid power delivery for dynamic peaks
  Hawkins Bass Control™ Proprietary bass equalization topology
  IDI™ (Intelligent Distress Indicator) gives visual indication of amplifier protection status
  Harmonic Bass Alignment™ Produces tighter, more accurate bass
  Fully regulated MOSFET power supply
  Triple Darlington Output Circuitry
  BIP™ Bias **I**nput **P**rotection
  Rail Stabilization Protection Circuitry
  Bi-Linear selectable two-way crossovers for amplifier and line output
  Continuously Variable High and Low Pass Crossovers
  Balanced line Inputs for Highest level of Noise Rejection
  Vortex Induction Fan Thermor Management
  Platinum RCA Inputs and Outputs
  Platinum 4-gauge Power Connectors
  Tri-mode operation

- **STACT™**(**ST**abilized **A**pex **C**urrent **T**opology) Reduces power supply stress by 50%. In The STACT design, inversion is done at the power amplifier drive stage. Since the fully symmetrical power amplifier produces no evenharmonic distortion itself and all preamplifier circuitry is run completely inphase,no even harmonic distortion phase reversal occurs and power is better distributed throughout the amplifier.

- Advanced **Trident™** Protection Topology Protects against potentially harmtul dmage in the following situations:
  1. Output Protection against short circuits or improper loads.
  2. Voltage Inconsistencies protects against ground fault (speaker shorts to vehicle chassis) and an under/over
  voltage condition on the battery input.
  3. Thermal Protection puts the amplifier into thermal rollback or shuts the amplifier down in extreme thermal
  conditions.

- Hawkins Bass Control-Fully adjustable subwoofer equalization ciruit providing frequency and bootst("Q")subwoofer for optimum subwoofer perfomance. Afrequency tracking subwoofer filter protects subwoofer from potentially harmful low frequency information and maximizes output i a usable range.

- Tone Sweep Calibration Routine Automatically configures and optimizes the power supply to the connected speaker load.

  Continuously Variable Crossover Network 12 dB/octave low pass cross-overs variable from 50 Hz to 5k Hz with a range selection switch

- RCA Line Output Provides a full range signal output to drive other amplifiers.

- Wire Connections Power and ground connections accept I\0 gauge cable, while the speaker connections utilize dual 8 gauge connections.

- ATT switch 'ON' for high voltage input(4V~12V) capability. This swich 'ON' must be used for peaker level input on common ground head-units or for high voltage line drivers.

SPECIFICATIONS

Power Bandwidth	**10 Hz - 50 kHz**
Total Harmonic Distortion	< 0.02 %
S/N Ratio	**115dB**
Input Sensitivity	0.15~12.0 Volts
Input Impedance	**10k Ohms**
Load Impedance (stereo)	2 - 8 Ohms
Load Impedance (bridged)	**4 - 8 Ohms**
Supply Voltage	11 - 15 Volts
Damping Factor	**>500**
Slew Rate	>50 V/µS
Hawkins Bass	**Up to +18dB Boost @ 30Hz~100Hz**
Crossovers	12dB/Octave
Crossover Frequency	**50Hz-5kHz**

POWER RATINGS

MODEL	*4ohm STEREO*	*2ohm STEREO*	*4ohm MONO*
VGA400.2	*100w X 2ch*	*200w X 2ch*	*400w X 1ch*
VGA600.2	150*w X 2ch*	*300w X 2ch*	*600w X 1ch*
VGA800.2	*200w X 2ch*	*400w X 2ch*	*800w X 1ch*
VGA1600.2	*400w X 2ch*	*800w X 1ch*	*1600w X 1ch*
VGA320.4	*80w X 4ch*	*160w X4ch*	*320w X 2ch*
VGA500.4	*125w X 4ch*	*250w X 4ch*	*500w X 2ch*
VGA800.5	*50w X 4ch* *200 w X 1ch (sub)*	*100w X 4ch* *400 w X 1ch (sub)*	*200w X 2ch* *400 w X 1ch (sub)*

DIMENSIONS

DIMENSIONS	*Length*	*Width*	*Height*
VGA400.2	2.6 *inch*	*11.8 inch*	*11.2 inch*
VGA600.2	2.6 *inch*	*12.6 inch*	*11.2 inch*
VGA800.2	2.6 *inch*	*15.8 inch*	*11.2 inch*
VGA1600.2	2.6 *inch*	*18.9 inch*	*11.2 inch*
VGA320.4	2.6 *inch*	*13.8 inch*	*11.2 inch*
VGA500.4	2.6 *inch*	*15.8 inch*	*11.2 inch*
VGA800.5	2.6 *inch*	*18.9 inch*	*11.2 inch*

TOOLS / PARTS FOR INSTALLATION

NOTE: TOOLS ARE NOT SUPPLIED

Small flat blade screwdriver Phillips screwdriver (#2 or medium sized) Wire cutters Wire strippers 7 - #6 round head screws, and 1 - #8 sheet metal screw (or nut, bolt,flat washer, star washer) [see detail] 2 - Ring connectors (large enough to accommodate your method of grounding) In-line fuse or circuit breaker - see fuse chart below Power and ground wire - see Power Wire Calculator on page 7 Speaker wire - 12-16 gauge Grommets (sized to work with the power wire you plan to use in your installation)
Tube of silicone sealant

FUSE REQUIREMENTS

You will need to install an in-line fuse or circuit breaker in the power wire within 18" of the battery. This fuse or circuit breaker is to protect your vehicle from fire in case the power wire shorts to the vehicle body.
If you are only using one amplifier, use the fuse rating indicated in this chart. If you are using more than one amplifier, add up the fuse ratings for all the amplifiers. This sum is the rating for your fuse or circuit breaker. You may also want to add a power distribution block near your amplifiers to distribute large gauge power cable to multiple amplifiers.

Amplifier	Maximum Fuse Rating
VGA400.2	**60 Amp**
VGA600.2	**80 Amp**
VGA800.2	**140 Amp**
VGA1600.2	**90 Amp**
VGA320.4	**100 Amp**
VGA500.4	**60 Amp**
VGA800.5	**40 Amp**

WIRING

The following is a basic formula to be used as a guide to determine current draw. A 50% amplifier efficiency rating is used as an average. Your new ***VGA*** amplifier is more efficient than most other amplifiers. This formula is to be used as a guideline. Using wire of a larger gauge can only improve the current transfer of your system. Do not use smaller gauge wire.

Total Amplifier RMS output x 2 = Total Input Wattage from car

Total Input Wattage = Current Draw (in Amps)
Supply Voltage

Example: A ***VGA*** amplifier has two channels at 175w per channel RMS rating into 4 Ohms (175 x 2 = 350).

You would use the formula in the following way:

350W x 2 = 700W

700W = 58.3 Amps Total current draw.
12V

If the same amplifier is driven into a 2 Ohm stereo or 4 Ohm mono load, double it's 4 Ohm RMS rating. All ***VGA*** amplifiers will effectively double their power at this load.

(160W x 2) x 2 = 640W

640W = 116.7 Amps Total current draw.
12V

If you are using more than one amplifier, add up the total current draw for all of them and choose the appropriate gauge based on the grand total.

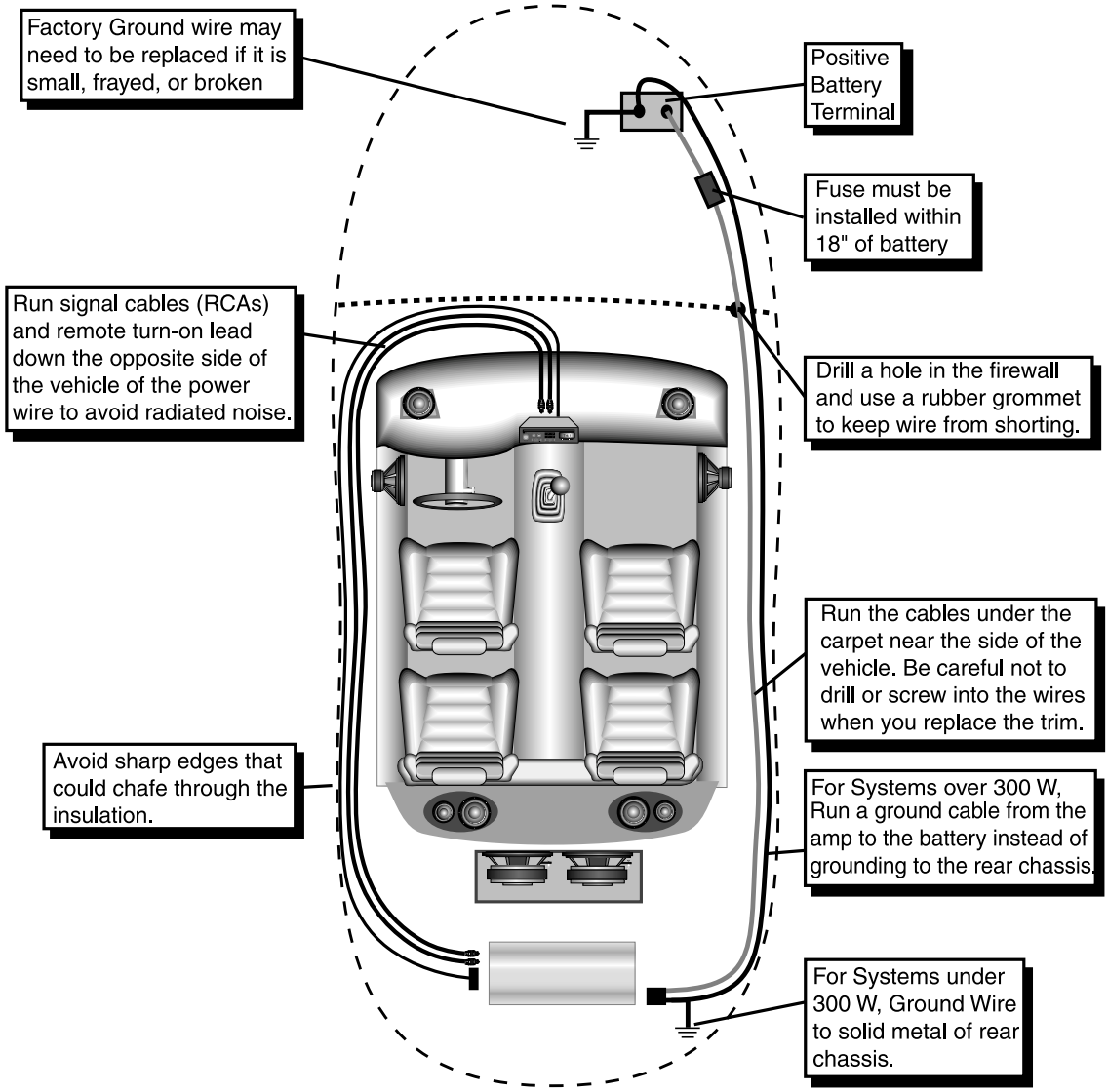
POWER WIRE CALCULATOR

Total Current Draw	*Length Of Wire To Be Run*							
(in amps)	Up to 4ft.	4 to 7ft.	7 to 10ft.	10 to 13ft.	13 to 16ft.	16 to 19ft.	19 to 22ft.	22 to 28ft.
25-50	10	10	8	8	6	6	4	4
50-65	8	8	6	4	4	4	4	2
65-85	6	6	4	4	2	2	2	0
85-105	6	6	4	2	2	2	2	0
105-125	4	4	4	2	2	0	0	0
125-150	2	2	2	2	0	0	0	00
150-200	0	0	0	0	00	00	00	000
200-250	00	00	00	000	000	000	000	0000

NOTE: The ground wire must be the same gauge or larger as the power wire.

WIRING

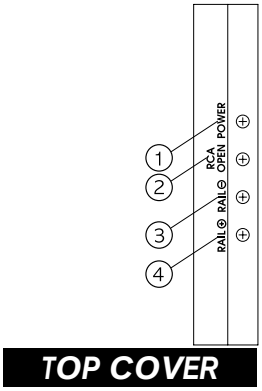
Before beginning, disconnect the negative (-) terminal of the battery prior to working on the positive (+) terminal to prevent a short to ground. This is important, unless you want to spend the rest of your life with a nickname like *"Sparky,"* or *"Smokey."* Reconnect the negative terminal only after all connections have been made.



Warning! A Main Fuse must be installed within 18" of battery!

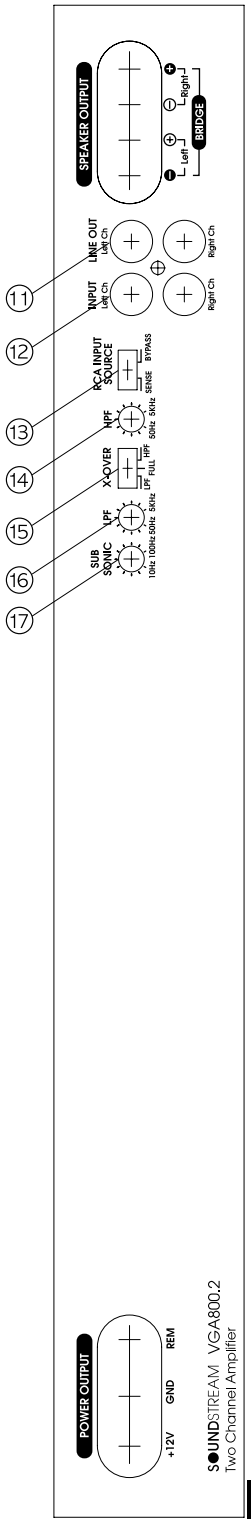
PANEL LAYOUT

VGA 400.2
VGA 600.2
VGA 800.2



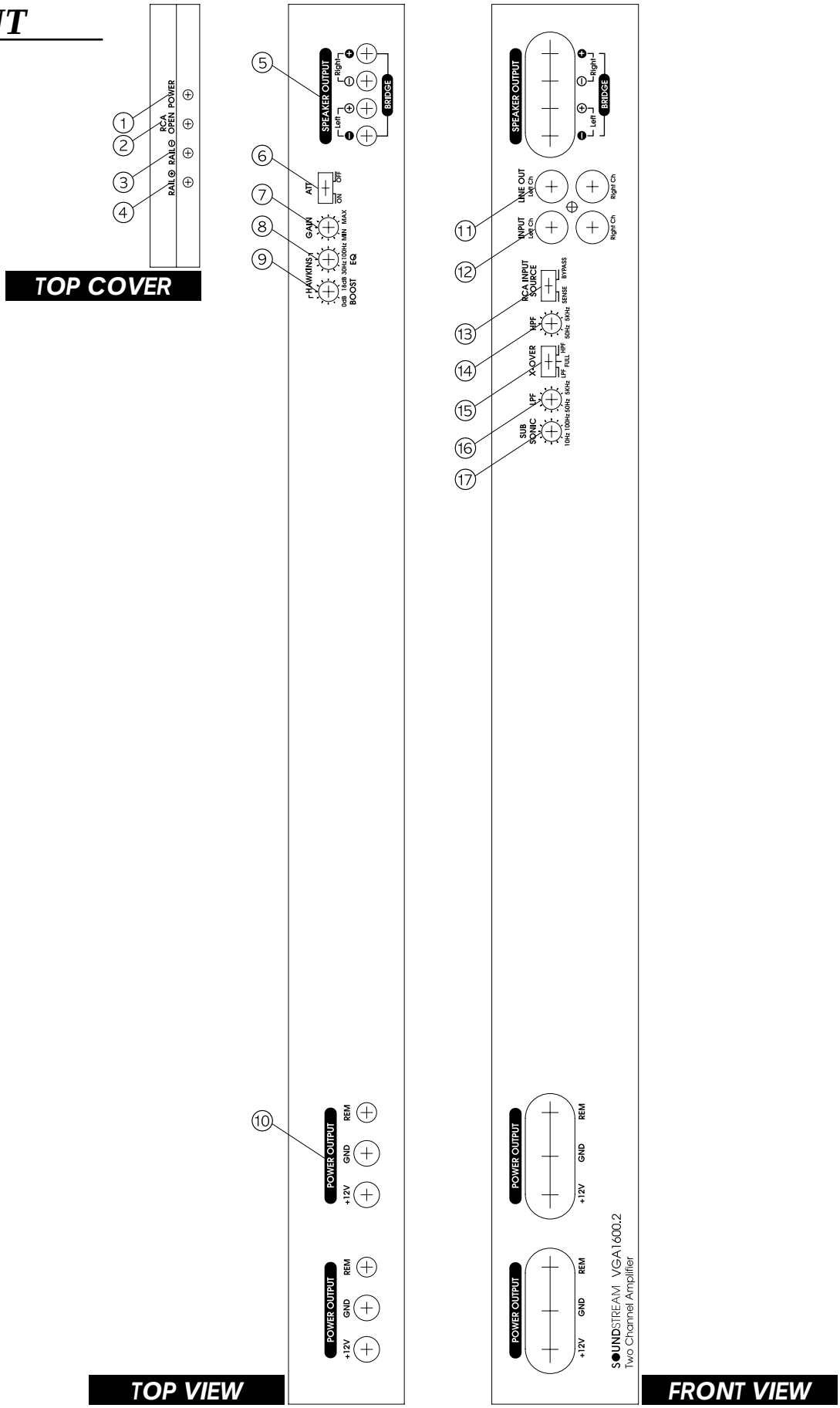
TOP COVER

TOP VIEW



FRONT VIEW

PANEL LAYOUT
VGA 1600.2



TOP COVER

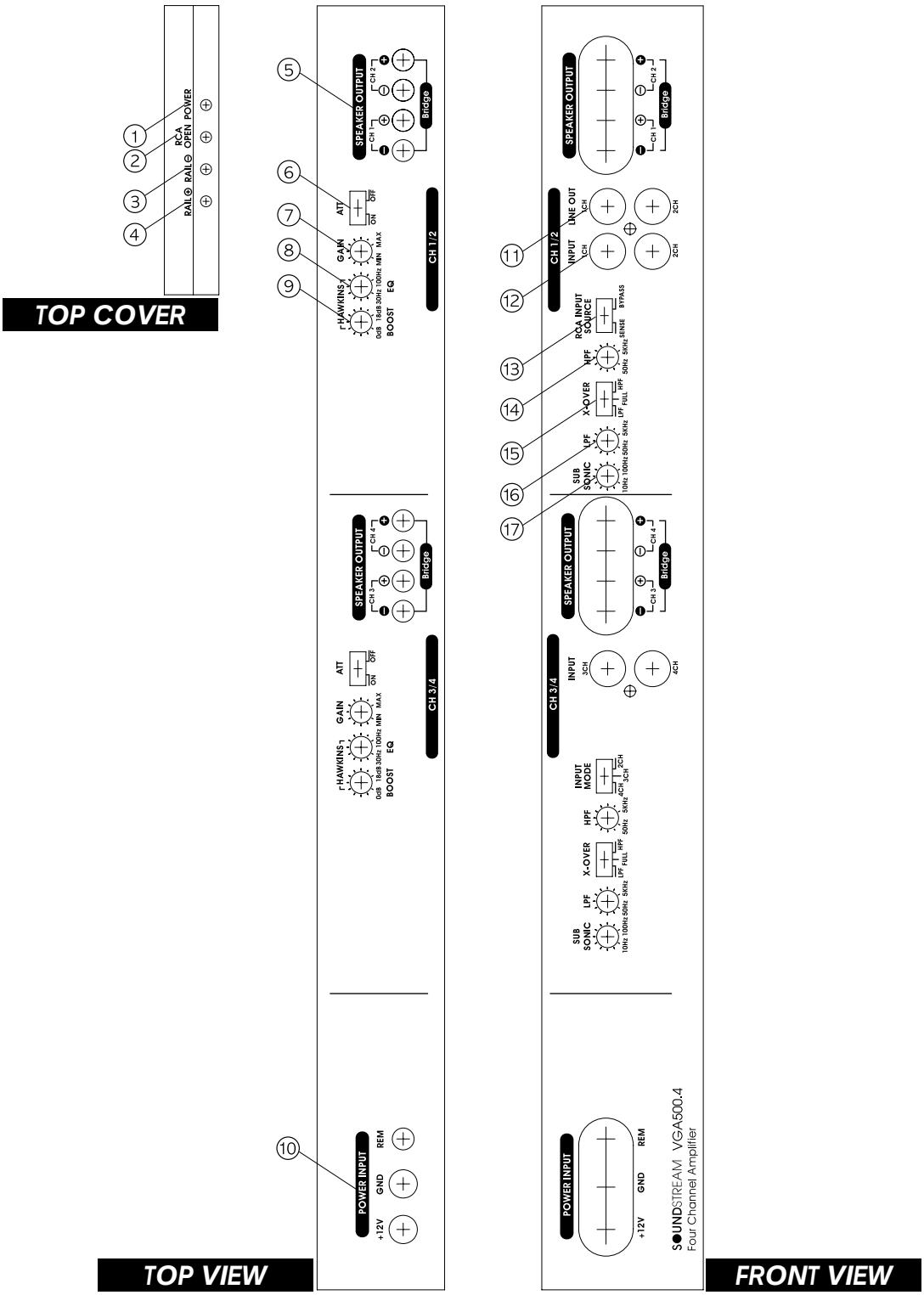
TOP VIEW

FRONT VIEW

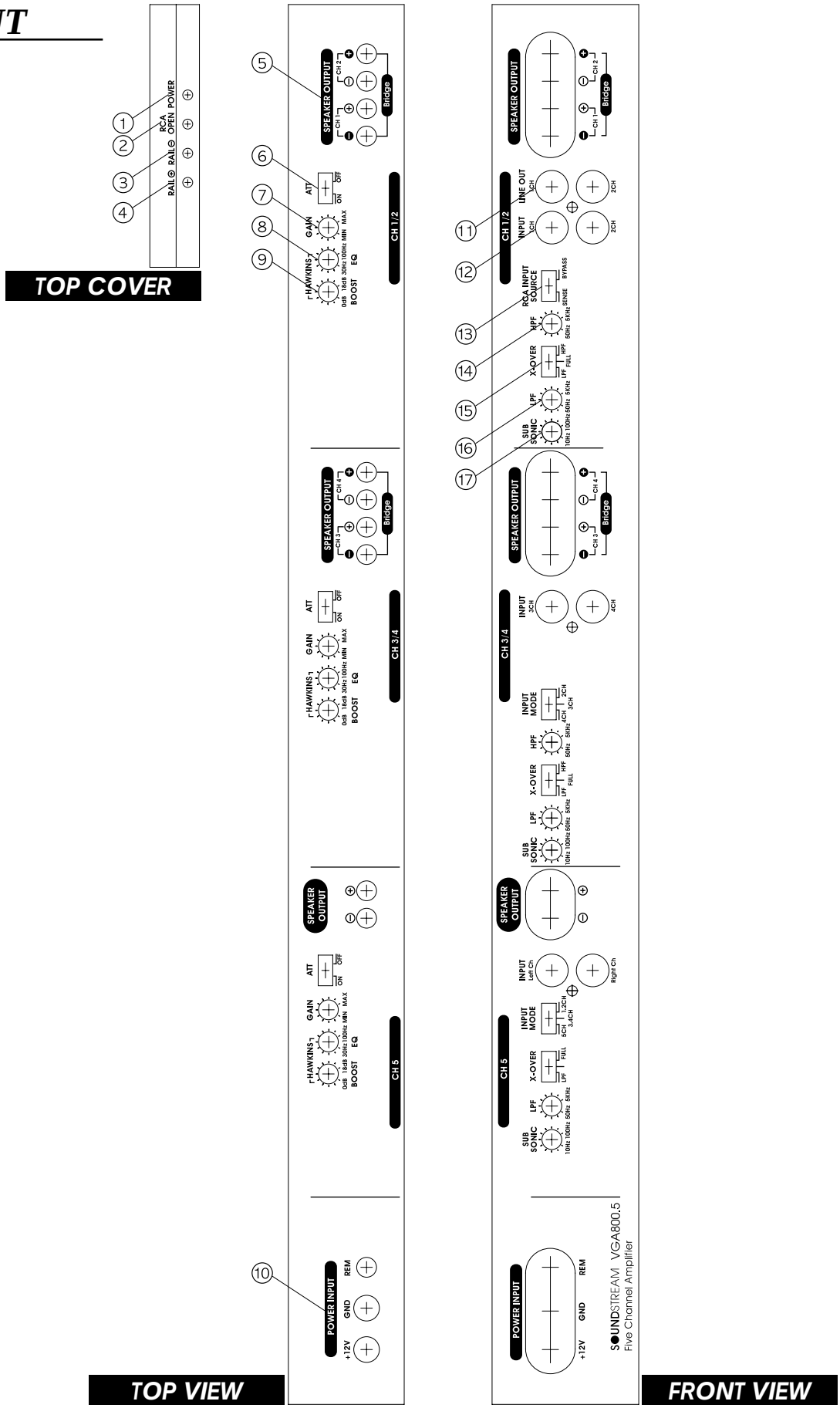
PANEL LAYOUT

VGA 320.4

VGA 500.4

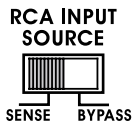
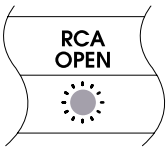
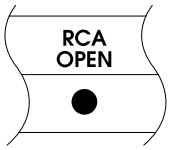
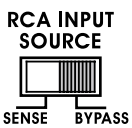
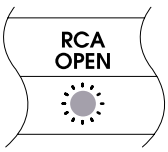
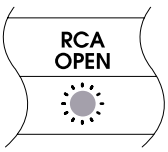


PANEL LAYOUT
VGA 800.5



KRY TO CALLIUTS

1. Power LED: Lights up when the amplifer is on.
2. RCA Open LED: Lights up when the RCA jack is opened.
3. RAIL⊖ LED: Lights up when valid voltage is decrease.
4. RAIL⊕LED: Lights up when valid voltage is decrease.
5. Speaker Output Connections: The speaker connector in here.
6. Input Attention: Switch 'ON' for high voltage input(4V~12V) capability. This switch 'ON' must be used for speaker level input on common ground headunits or gor high voltage line drivers.
7. Gain Control: Use this control to match the output level of the source-unit to the input of the amplifier.
8. Hawkins Bass Control Adjustmen: Frequency adjustment control for Hawkins Bass Control filter.
9. Hawkins Bass Control "Boost''Adjustmen: Varies from 0 to + 18 dB of boost when the Hawkins Bass Control circuit is engaged.
10. Power & Ground Connections: After connecting the power and ground r. Remote cables.
Remote: Remote turn- on input from the head unit.Accepts+12V **GND:** Main ground connection. Bolt to a clean chassis point in the vehicle. **+12V:** Connected to a fuse or ciricuit breaker, then to the batter's positive terminal
11. RCA Line lutputs: Left and right RCA outputs.
12. RCA lutputs: Connect the RCA cables from source unit, or line driver to these RCA connectors.
13. RCA In Put Source:

Seletion	In the case of RCA Jack from Source unit is connected with the input RCA Jack on amplifier.	In the case of RCA Jack from Source unit is disconnected with the input RCA Jack on amplifier.
		
		

14. High pass Filter Control Adjustment: Frequency adjustment control for the High Pass Filter for satelite CH1&2.
15. Crossover HP/LP/FULL Select Switch: Adjust this switch to select the HPF/LPF/FULL function for the speaker outputs.
16. Low pass Filter Control Adjustment: : Frequency adjustment control for the Low Pass Filter for satelite CH1&2 sum X-OVER.
17. Sub Sonic: Frequency adjustment control for the Sub sonic Filter for satelite CH1&2.

TROUBLE SHOOTING

NO SOUND — Is the LED lit?

YES

NO

Check Power and Remote turn-on wire for voltage. Make sure Ground wire is secure.

STILL NO SOUND

See your Authorized *Sound Stream* Dealer.

SOUND IN ONE CHANNEL ONLY

Reverse left and right speakers by unplugging the speaker connector, turning it over and plugging it back in.

SOUND IS NOW IN

OPPOSITE CHANNEL

Reverse RCA inputs

SAME CHANNEL

Problem is in the speaker or speaker wire of the silent channel

SOUND IS NOW IN

OPPOSITE CHANNEL

Reverse RCAs at head unit

SAME CHANNEL

Problem is in the Amplifier. See your local Authorized Dealer

SOUND IS NOW IN

OPPOSITE CHANNEL

Problem is in the head unit or before the amplifier

SAME CHANNEL

Problem is in the RCA cables

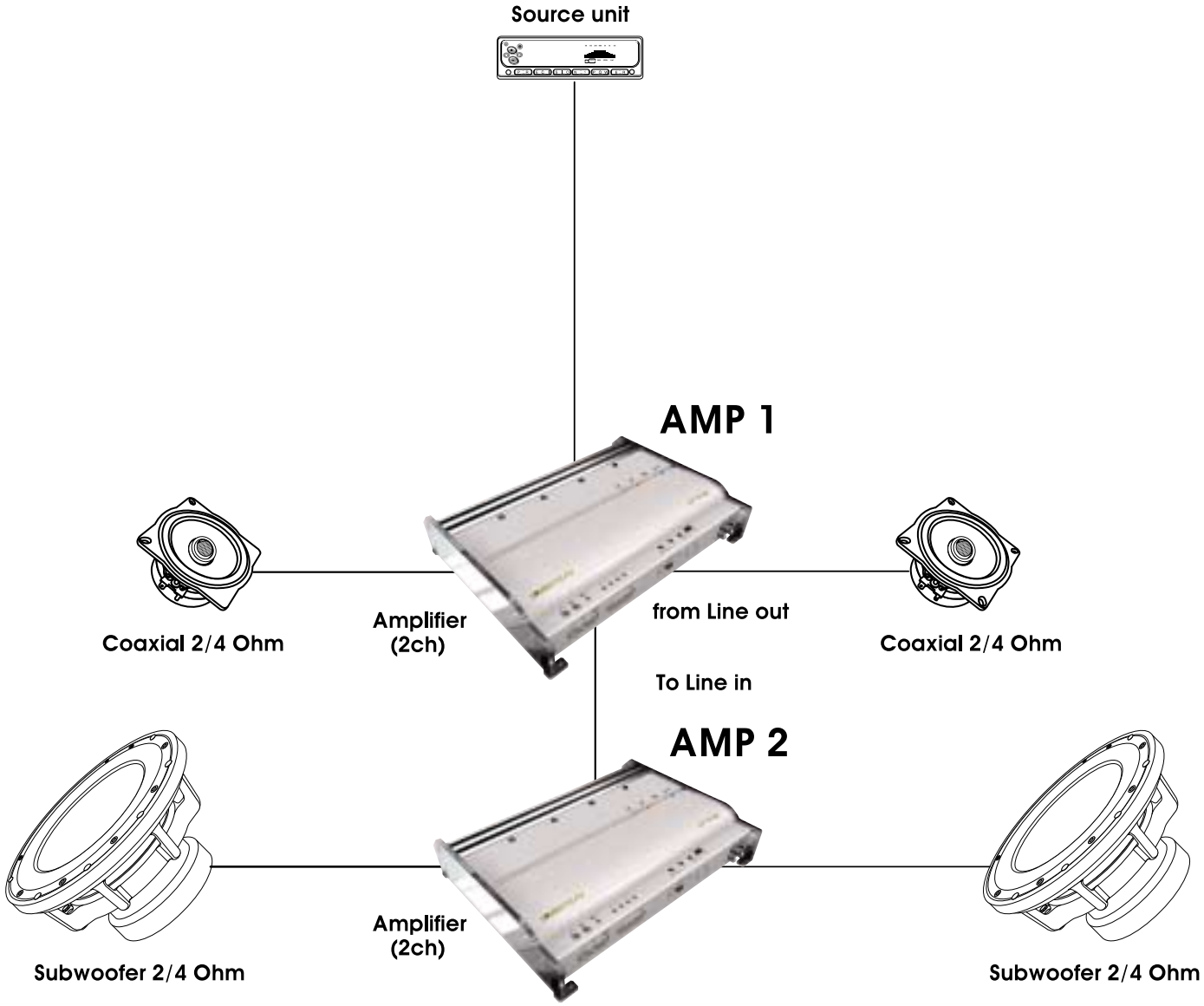
PROTECTION CIRCUIT

Short Circuit Protection engaged: The amplifier will turn off and try to come back on immediately. The amplifier will cycle like this indefinitely, with "blips" of sound each time. If this is the case, check your speakers and wiring for low impedance and short circuits.

Thermal Protection engaged: The amplifier will turn off and several minutes later will come back on. In this case, ensure that there is nothing blocking the normal convective airflow of the amplifier. No obstruction should be within 2" of the amplifier on all sides.

NOTE: Low battery voltage will cause the amplifier to run warmer and possibly damage the amplifier.

SYSTEM DESIGN #1



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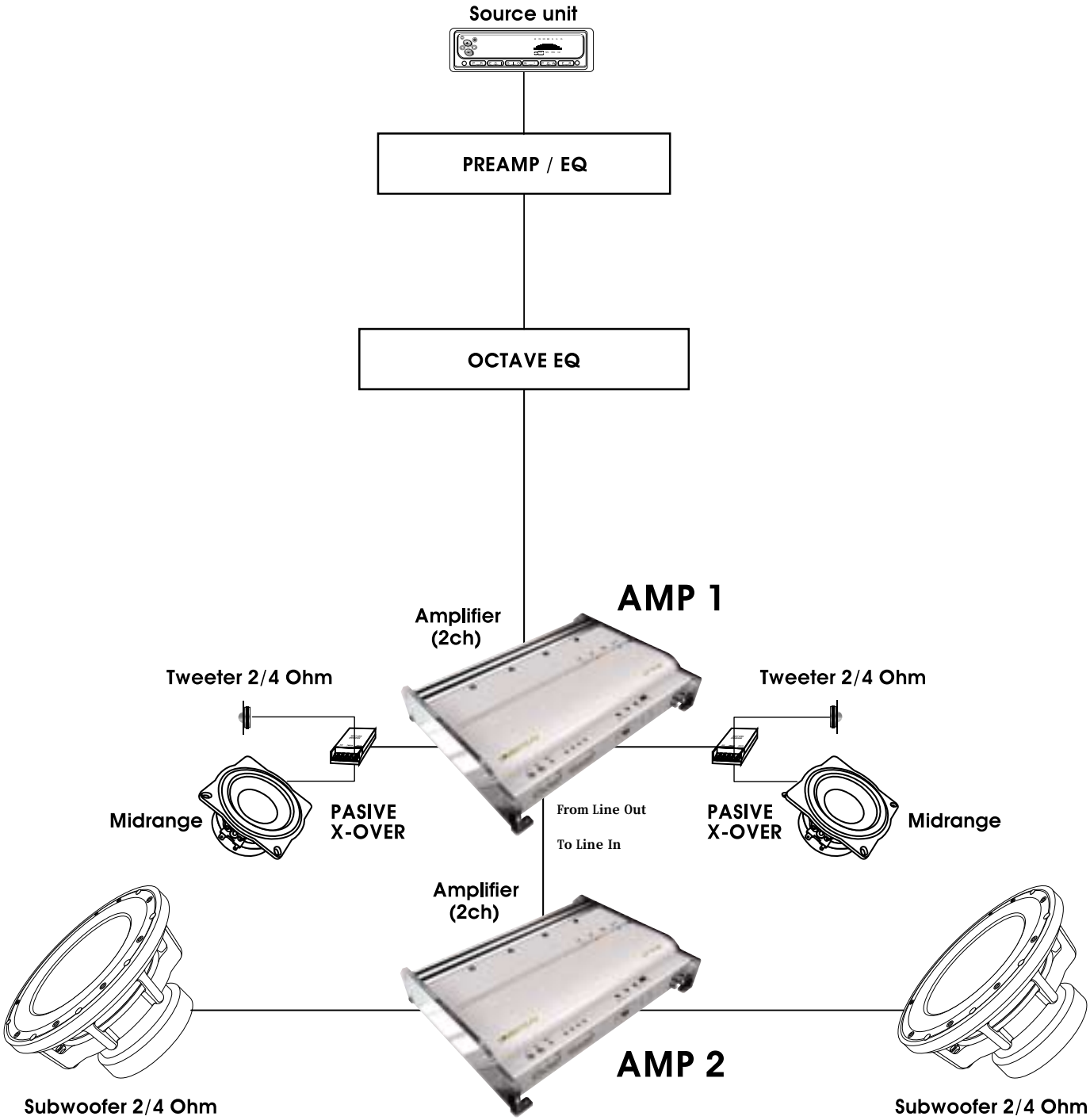
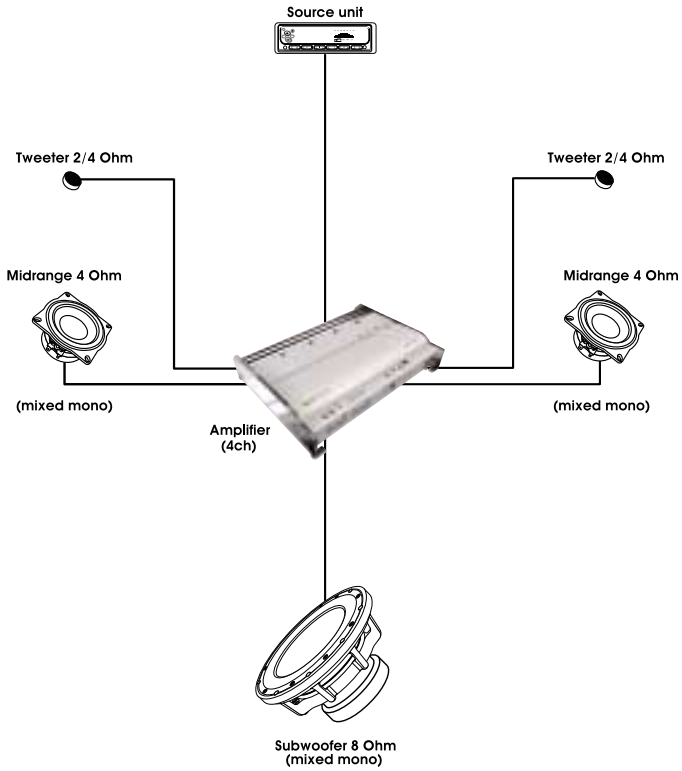
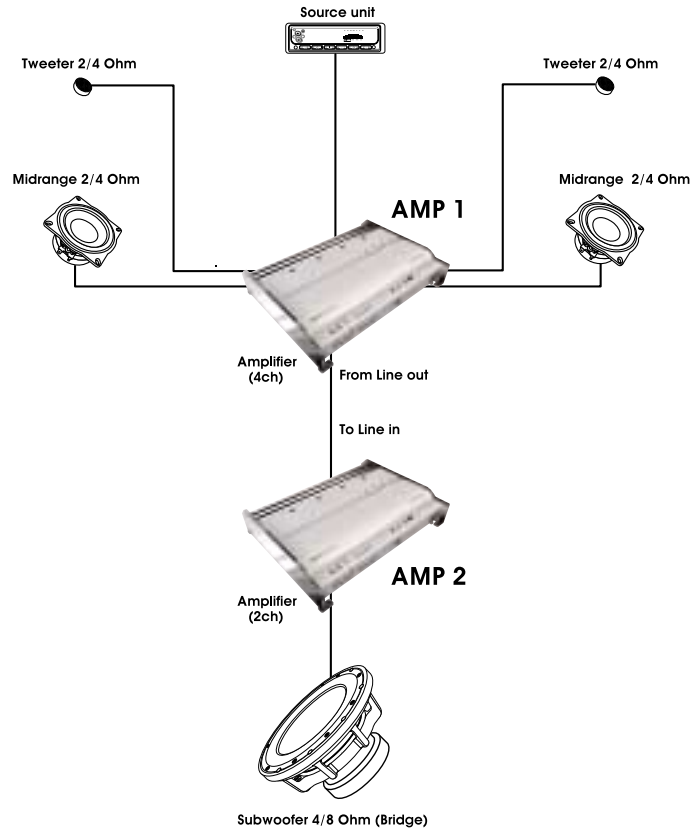


4CH SYSTEM DESIGN #1



4CH SYSTEM DESIGN #2



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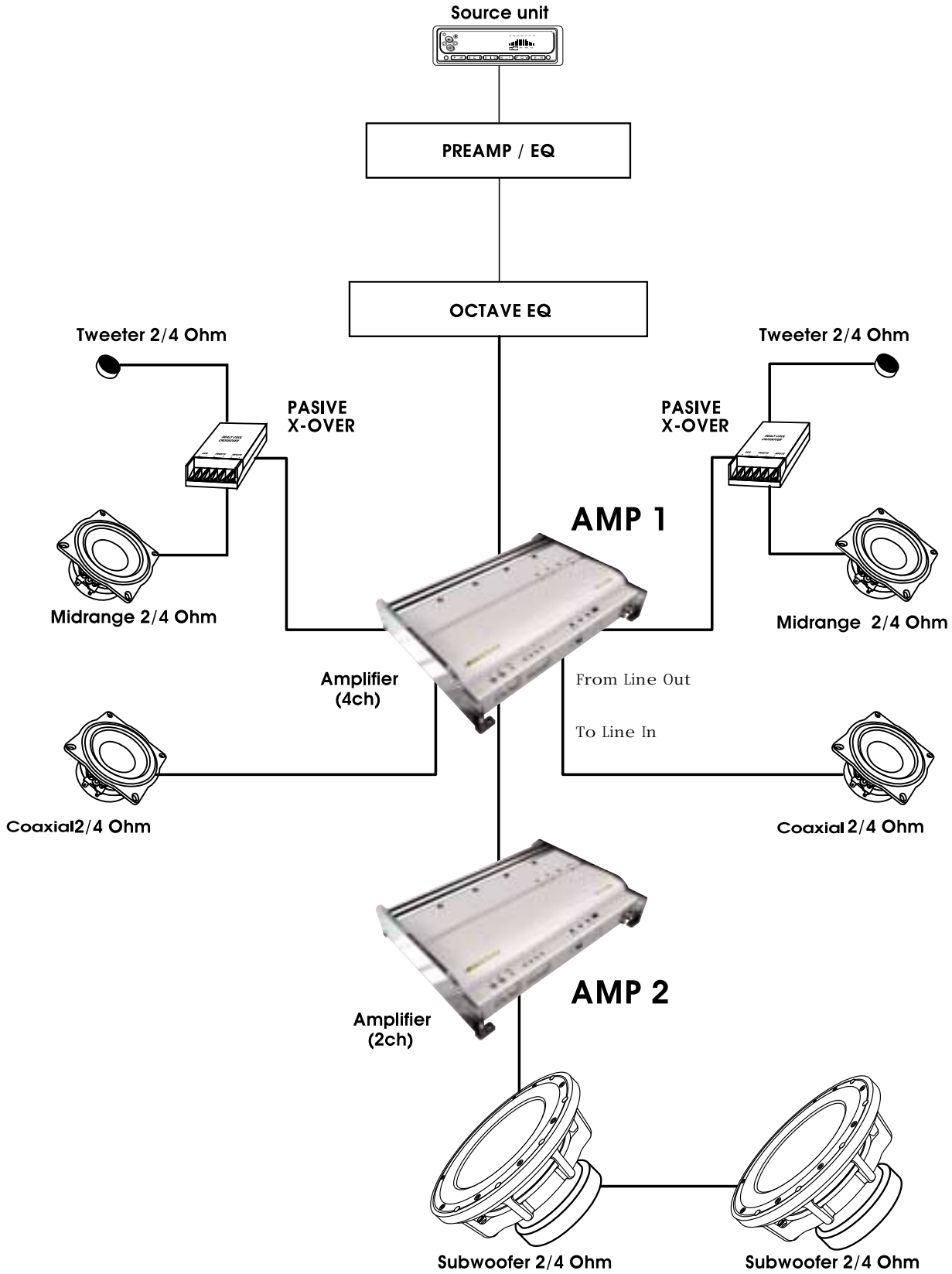

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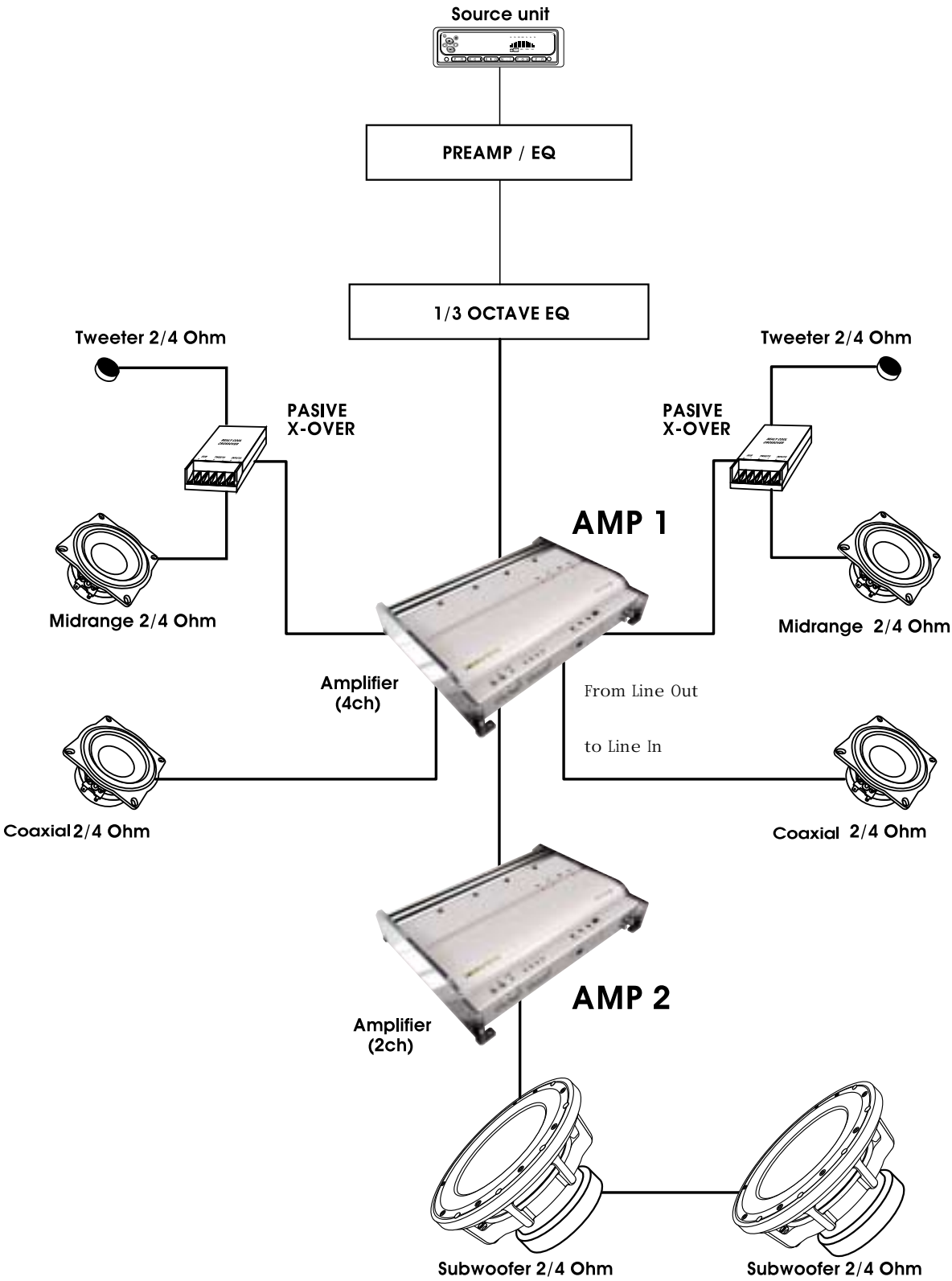

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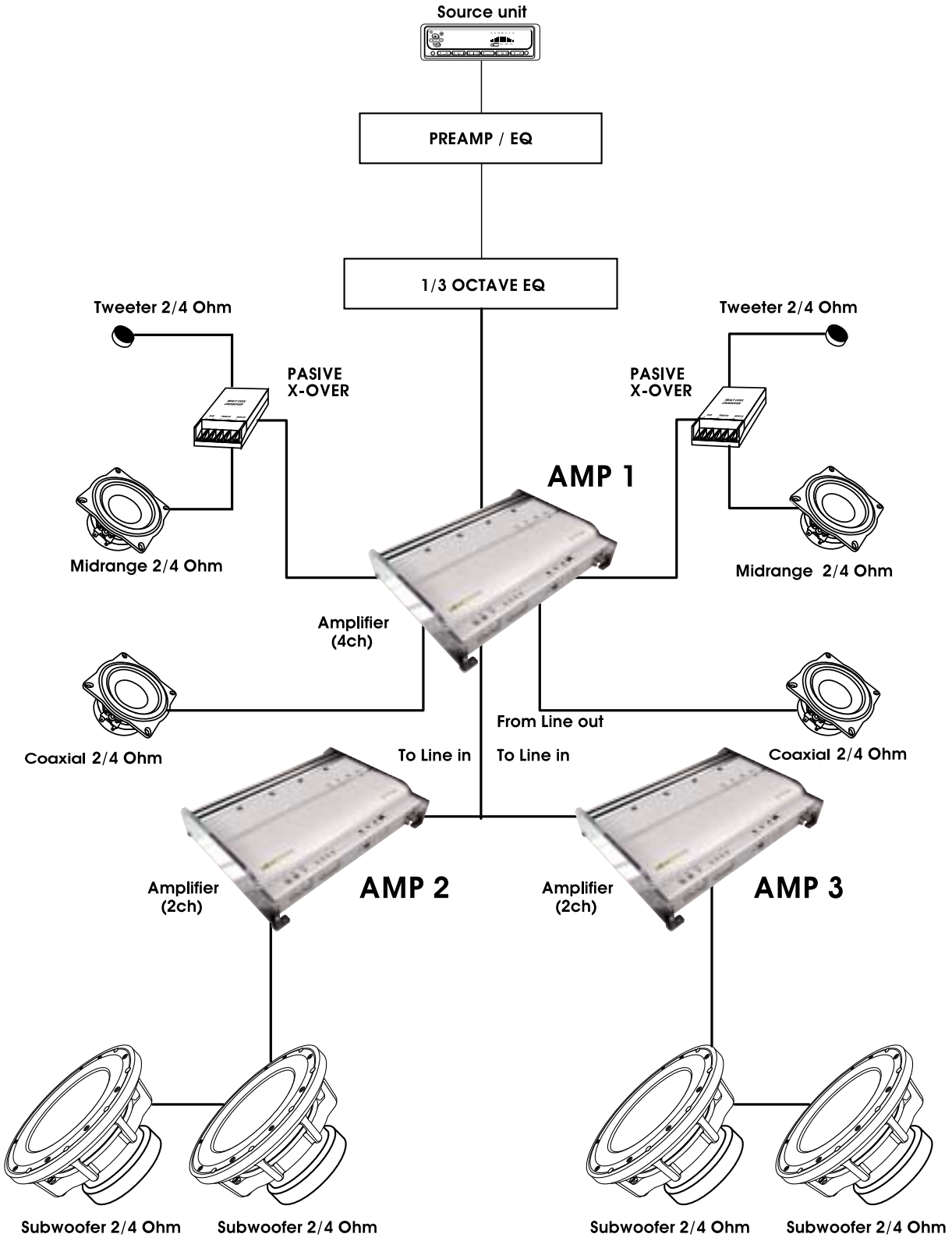
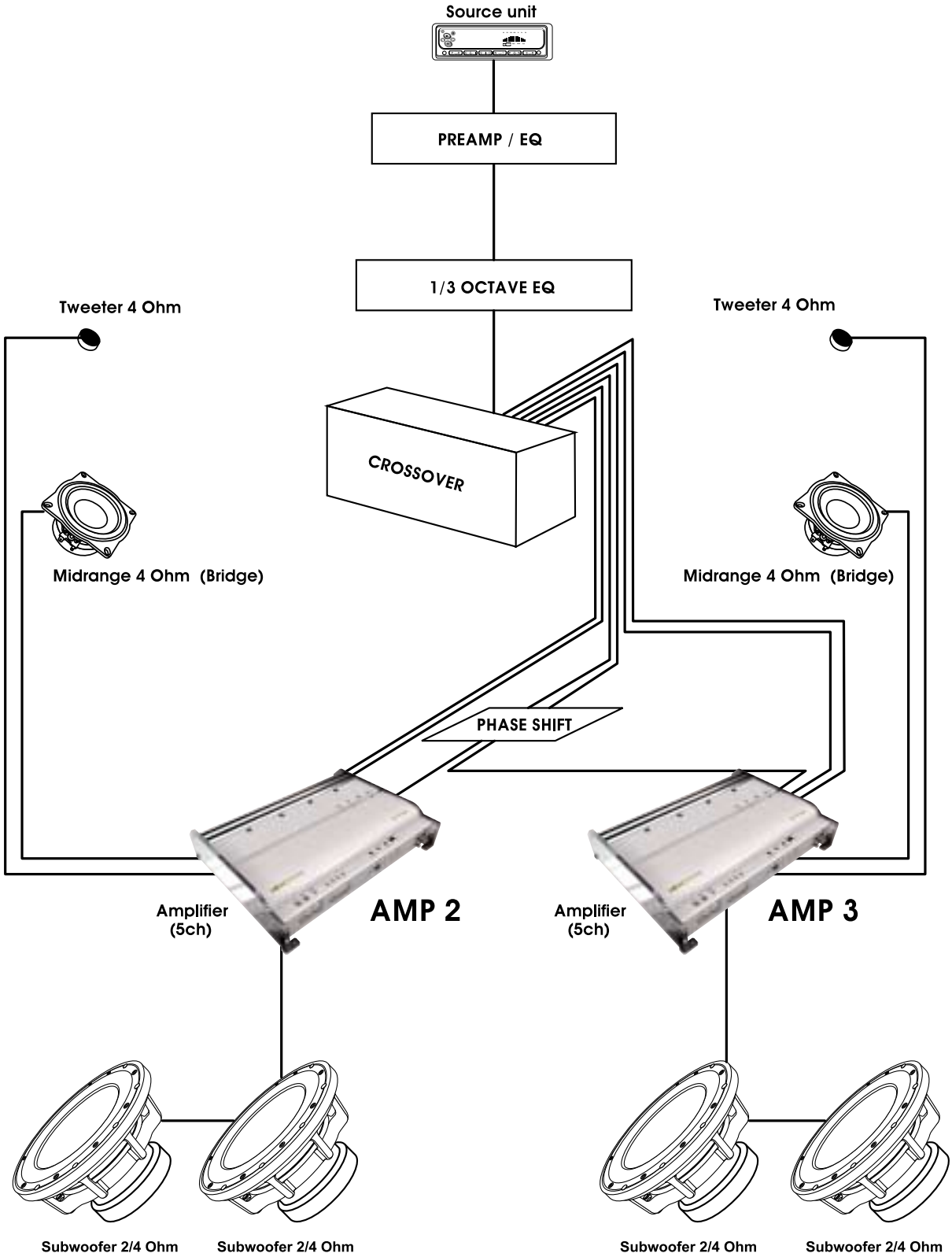


4CH SYSTEM DESIGN #6



SOUNDSTREAM®

TECHNOLOGIES

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