



UFBX

O W N E R ' S M A N U A L



C O N T E N T S

Congratulations

on your selection of a **US Acoustics** USX Series Amplifier. We take pride in manufacturing our products, and you can expect your new amplifier to give you years of trouble-free service.

To make your installation as easy and reliable as possible, **please read this manual carefully before beginning.** If you need more information, your USAcoustics Dealer will be glad to help.

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USX

US/Acoustics

FEATURES

POWER SUPPLIES

all models

- High-current MOSFET devices
- MMT Regulated Power Supplies
- 35 nanosecond switching diode
- High capacity power transformer
- Multiple bypass capacitors on incoming 12v supply
- Time delay turn-on with opto-coupled muting circuits
- Power supplies use pulse-width modulation
- Thermal and reverse polarity protection

AMPLIFIERS

USX2050 USX2150
USX2080 USX4065
USX2100 USX4085

- Output stages utilize high-current MOSFET devices
- High speed, audio-grade components in all low-level stages
- Active constant current bias tracking circuit
- Gold-plated RCA inputs and connectors
- Wide range of sensitivity accepts signal from any head unit
- High-level speaker inputs (2 channel models only)
- 24 dB/octave lowpass crossover
- True Line Output (USX2050/2080/2100)
- AutoBridge feature
- Short circuit protection

AMPLIFIERS

USX600F • USX800F • USX1000F

- Utilizes high-current bipolar Toshiba output transistors in output stages
- High speed, audio-grade op amps in all low-level stages
- Active constant current bias tracking circuit with zero temperature coefficient drift
- Fully-complementary power amplifier design using low negative feedback
- Gold-plated RCA Inputs
- Gold plated custom connectors for power and speakers (power connector accepts up to #4 gauge wire)
- Wide range of input sensitivity accepts signal from any head unit
- 24 dB/octave low pass crossover
- Short circuit protection
- DC Protection
- AutoBridge feature
- Thermostatically-controlled cooling fan assures low temperature operation

S P E C I F I C A T I O N S

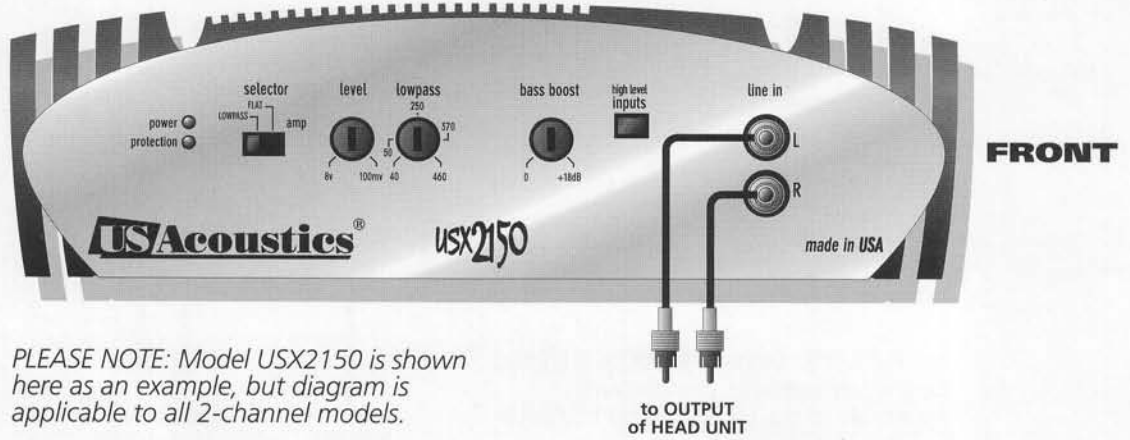
		USX2050	USX2080	USX2100	USA2150	USX600F	USX800F	USX1000F	USX4065	USX4085
OUTPUT POWER										
RMS, per channel @ 4 Ohms @ 12.9v input		50Wx2CH	80Wx2CH	100Wx2CH	150Wx2CH	200Wx2CH	300Wx2CH	400Wx2CH	65Wx4CH	85Wx4CH
RMS, per channel @ 2 Ohms @ 12.9v input		80Wx2CH	140Wx2CH	150Wx2CH	225Wx2CH	300Wx2CH	400Wx2CH	500Wx2CH	80Wx4CH	120Wx4CH
RMS, Bridged Mono @ 4 Ohms @ 12.9v input		160Wx1CH	280Wx1CH	300Wx1CH	450Wx1CH	600Wx1CH	800Wx1CH	1000Wx1CH	160Wx2CH	240Wx2CH
INPUT SENSITIVITY, HI LEVEL		220mV-17.6V	220mV-17.6V	220mV-17.6V	220mV-17.6V	•	•	•	•	•
INPUT SENSITIVITY, LOW LEVEL				110mV-8.8V	••••••••••••••••••••					
FREQUENCY RESPONSE				10Hz-30KHz, -0.5 dB	••••••••••••••••••••					
TOTAL HARMONIC DISTORTION				LESS THAN 0.01%	••••••••••~					
S/N RATIO		100 dB	101 dB	103 dB	105 dB	106 dB	108 dB	110 dB	100 dB	101 dB
CHANNEL SEPARATION		85 dB	86 dB	90 dB	93 dB	93 dB	93 dB	94 dB	80 dB	81 dB
DAMPING FACTOR @ 20Hz		90	95	110	150	200	200	200	90	95
CROSSOVER RANGE										
High Pass		65Hz-4.5KHz	65Hz-4.5KHz	65Hz-4.5KHz	•	•	•	•	12Hz-200Hz	12Hz-200Hz
Low Pass, 24 dB/Octave		40-460Hz	40-460Hz	40-460Hz	40-460Hz	40-460Hz	40-460Hz	40-460Hz	40Hz-200Hz	40Hz-200Hz
BASS BOOST, +18dB		•	•	Yes	Yes	Yes	Yes	Yes	•	•
HIGH LEVEL INPUT		Yes	Yes	Yes	Yes	•	•	•	•	•
REMOTE LEVEL PORT		•	•	•	•	Yes	Yes	Yes	•	•
THERMOSTATICALLY CONTROLLED FAN		•	•	•	•	Yes	Yes	Yes	•	•
PROTECTION										
Reverse Polarity		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thermal		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Short Circuit		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
D.C.		•	•	•	•	Yes	Yes	Yes	•	•
FUSE RATING		15A	15A	25A	35A	40A	40A	60A	35A	35A
SIZE										
inches (mm)	Length	6.3 (160)	7.9 (200)	11.0 (280)	14.6 (370)	15.7 (400)	17.7 (450)	19.7 (500)	11.0 (280)	14.6 (370)
	Width	9.6 (244)	9.6 (244)	9.6 (244)	9.6 (244)	10.6 (270)	10.6 (270)	10.6 (270)	9.6 (244)	9.6 (244)
	Height	2.5 (63.5)	2.5 (63.5)	2.5 (63.5)	2.5 (63.5)	2.5 (64)	2.5 (64)	2.5 (64)	2.5 (63.5))	2.5 (63.5)

I N S T A L L A T I O N

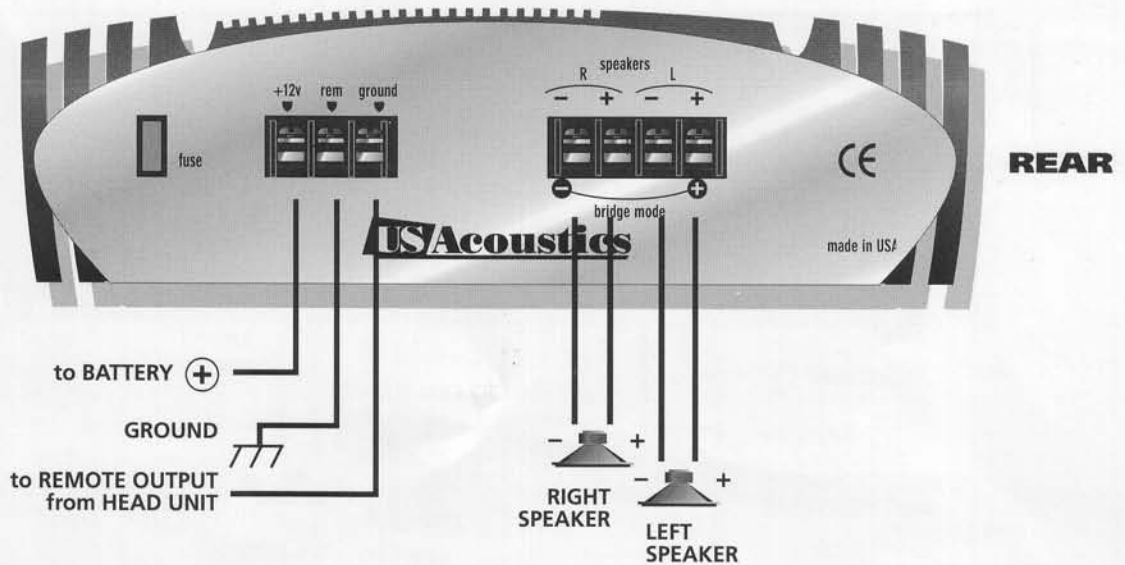
1. Use at least #8 wire for power and ground connections.
 2. Use at least #12 wire for speaker connections.
 3. Use at least #16 wire for remote connection.
 4. Mount the amplifier so it can receive the best ventilation.
 5. Use the shortest ground connection to the chassis of the vehicle and make sure that the paint is removed at the connection point; also, use a star washer.
 6. Connect the remote input to the remote/antenna output of the head unit.
 7. Mount a fuse holder within 200 mm (8") of the vehicle's battery. Use a fuse equal to that specified for your amplifier. If a large gauge, single +12v line is run which feeds more than one amplifier, add up all required fuse ratings and use the total rating for this fuse.
 8. Connect the speaker to the amplifier, observing the correct phasing. Make sure that none of the speaker connections can touch the vehicle chassis.
 9. Connect the RCA inputs to the appropriate signal source, using only the highest quality RCA cables.
 10. Make sure that the RCA and speaker cables do not run parallel to the +12v wiring.
-

CONNECTIONS

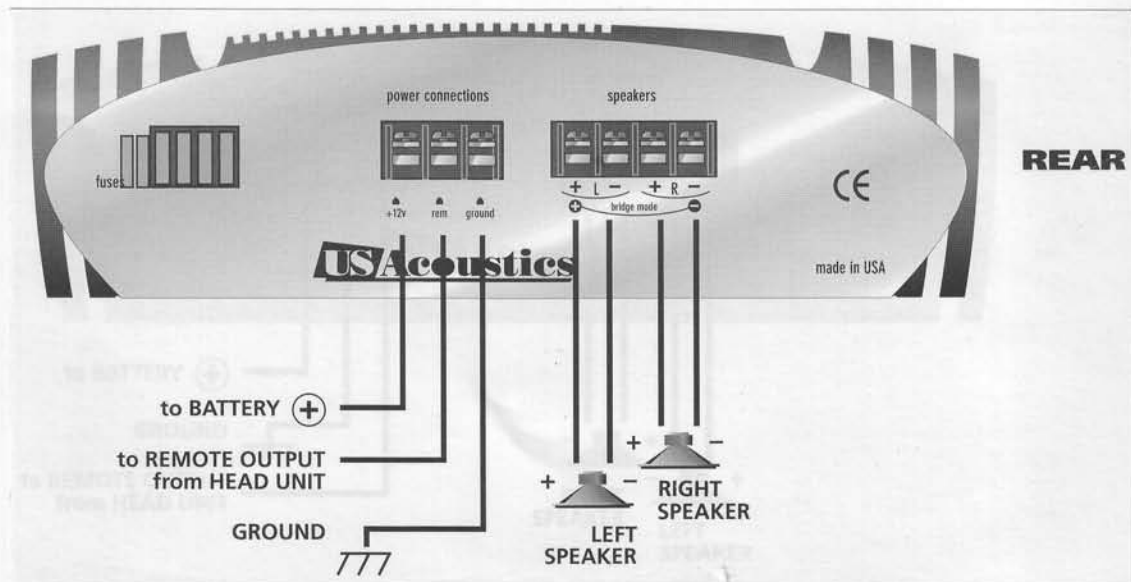
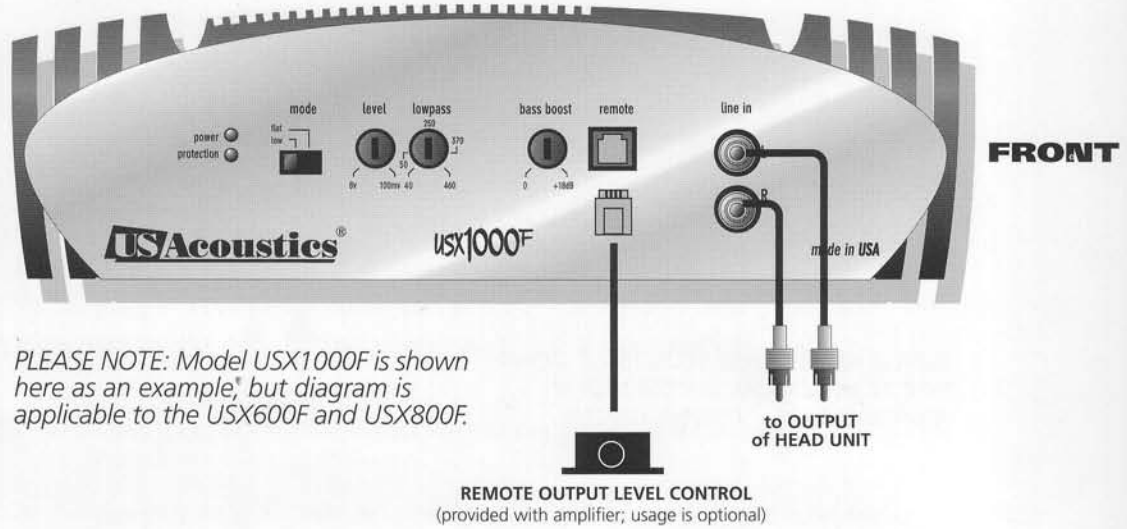
2 CHANNEL AMPLIFIERS • BASIC SYSTEM WIRING
USX2050 • USX2080 • USX2100 • USX2150



PLEASE NOTE: Model USX2150 is shown here as an example, but diagram is applicable to all 2-channel models.



C O N N E C T I O N S
2 CHANNEL AMPLIFIERS • BASIC SYSTEM WIRING
USX600F • USX800F • USX1000F



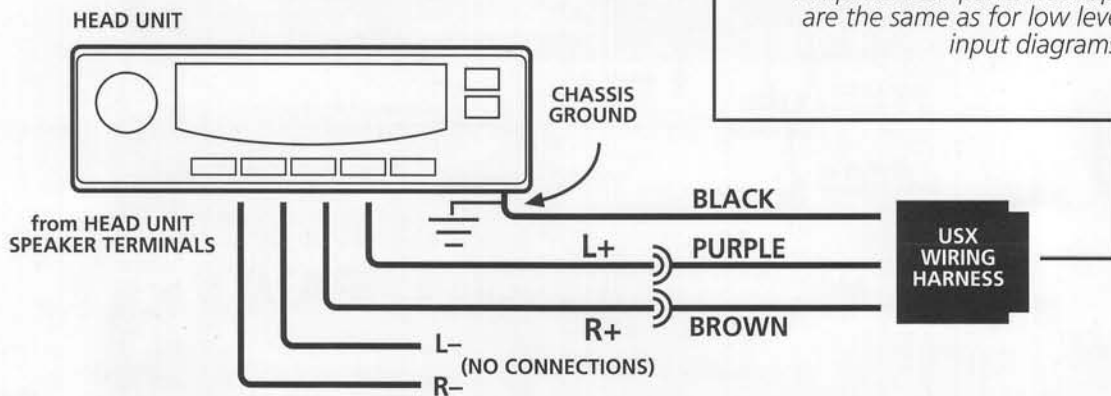
CONNECTIONS

2 CHANNEL AMPLIFIERS • HIGH LEVEL INPUT WIRING USX2050 • USX2080 • USX2100 • USX2150



PLEASE NOTE: Model USX2150 is shown here as an example, but diagram is applicable to all 2-channel models with high level inputs.

Amplifier rear panel hookups are the same as for low level input diagrams.



High Level Inputs

If the HIGH LEVEL INPUTS are used, do not use the LINE LEVEL RCA inputs at the same time. The USX 2-Channel amplifiers use ONE High Level input for both channels.

Connecting the High Level Inputs

Low Power Head Units with common ground speaker outputs:

Please refer to the diagram below. Connect the purple wire of the USX wiring harness to the speaker terminals of the head unit as follows:

- PURPLE WIRE of USX harness to LEFT + (positive) speaker terminal of head unit
- BROWN WIRE of USX harness to RIGHT + (positive) speaker terminal of head unit
- BLACK WIRE of USX harness to the CHASSIS GROUND of the head unit.
- NOTE: Do not connect anything to the R - (negative) or L - (negative) terminals of the head unit!

High Power Head Units with floating speaker outputs:

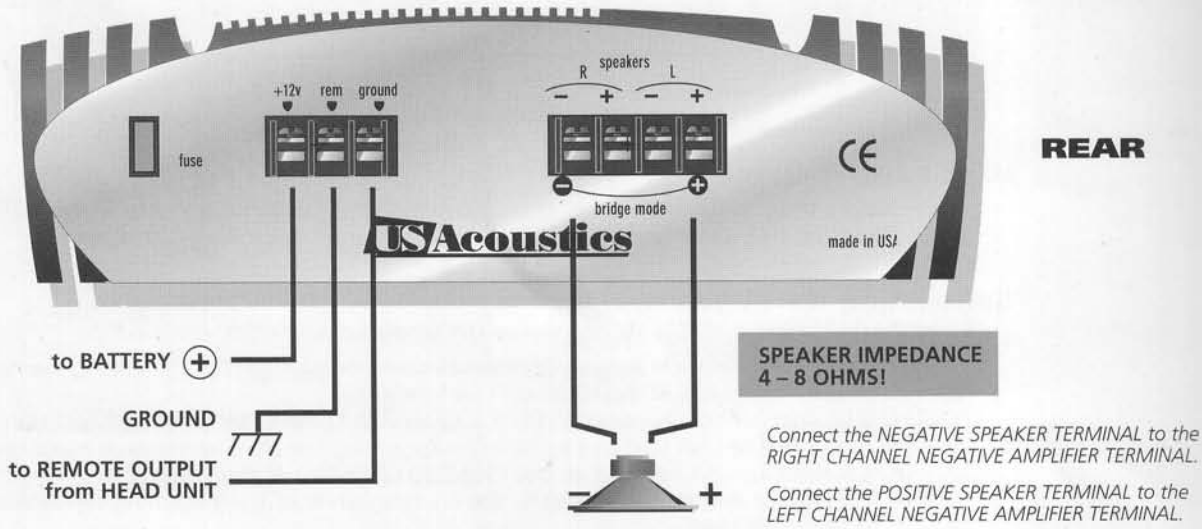
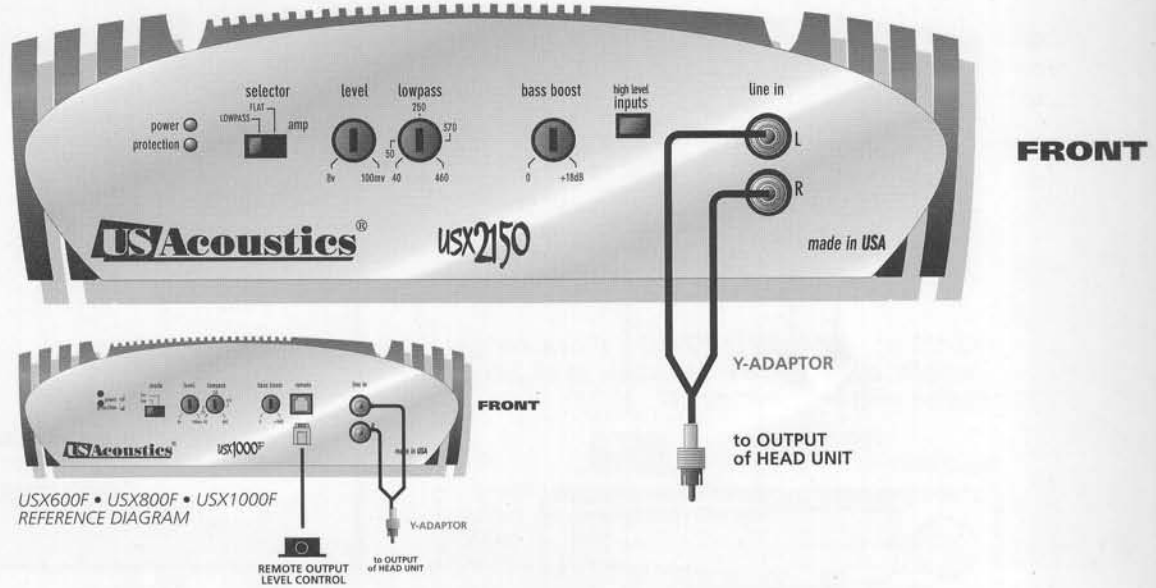
Please refer to the diagram below. Connect the purple wire of the USX wiring harness to the speaker terminals of the head unit as follows:

- PURPLE WIRE of USX harness to LEFT + (positive) speaker terminal of head unit
- BROWN WIRE of USX harness to RIGHT + (positive) speaker terminal of head unit
- BLACK WIRE of USX harness to the CHASSIS of the head unit.
- NOTE: Do not connect anything to the R - (negative) or L - (negative) terminals of the head unit!

CONNECTIONS

2 CHANNEL AMPLIFIERS • BRIDGED SPEAKER WIRING

PLEASE NOTE: Model USX2150 is shown here as an example, but diagram is applicable to all 2-channel models.



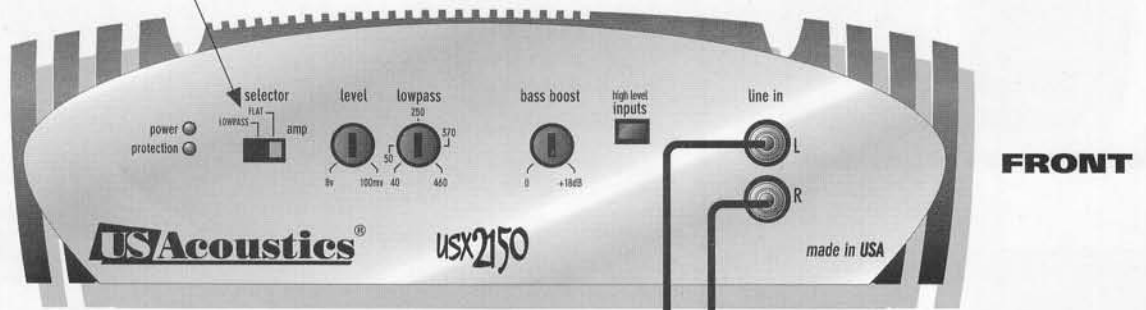
CONNECTIONS

2 CHANNEL AMPLIFIERS • TRI-MODE SPEAKER WIRING

Tri-Mode Operational Output is a unique feature which allows a Crossover (Subwoofer) to be operated in MONO mode, while the main speakers are playing in STEREO.

To engage the amplifier in this mode, place the Crossover Selector switch in the "FLAT" position. Use a high pass passive crossover network for each of the right and left speakers, and a 15.9 mH low pass wire coil filter inductor to block high frequencies from the subwoofer as shown in the figure below.

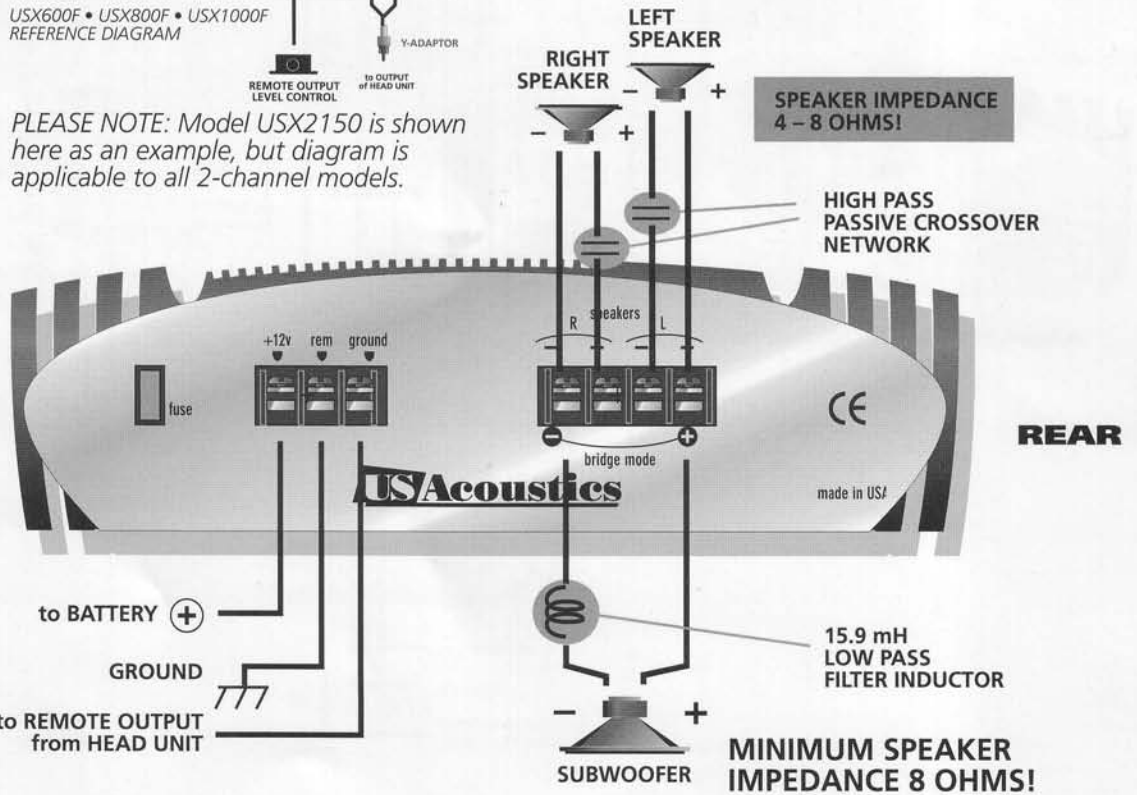
Selector switch in FLAT position



USX600F • USX800F • USX1000F
REFERENCE DIAGRAM

REMOTE OUTPUT LEVEL CONTROL
to OUTPUT of HEAD UNIT

PLEASE NOTE: Model USX2150 is shown here as an example, but diagram is applicable to all 2-channel models.

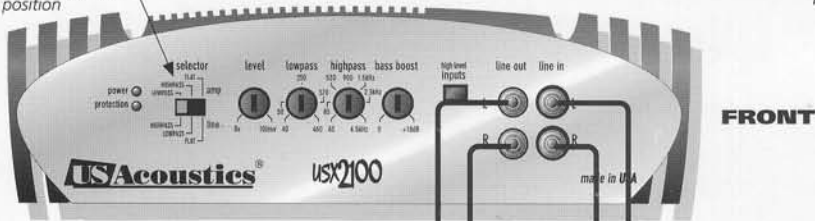


CONNECTIONS

2 CHANNEL AMPLIFIERS • BIAMP SYSTEM WIRING USX2050 • USX2080 • USX2100

These amplifiers have both Highpass and Lowpass crossovers. The Line Output is able to send either FLAT, LOWPASS or HIGHPASS signals to a second amplifier. The Selector Switch to LOWPASS (for "amp") sends a HIGHPASS (for "line") signal to Amplifier #2; this system example is shown below.

"AMP" Selector switch in LOWPASS position



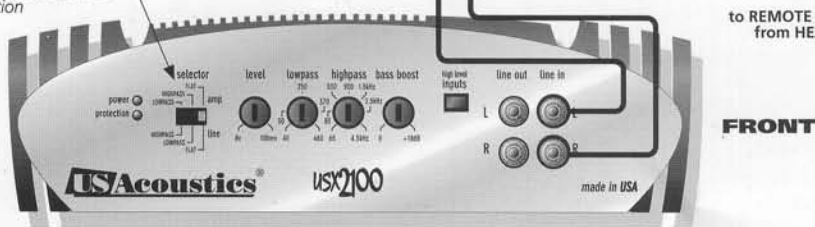
AMPLIFIER #1 (SUBWOOFER)

PLEASE NOTE: Model USX2100 is shown here as an example, but diagram is applicable to all the above models.

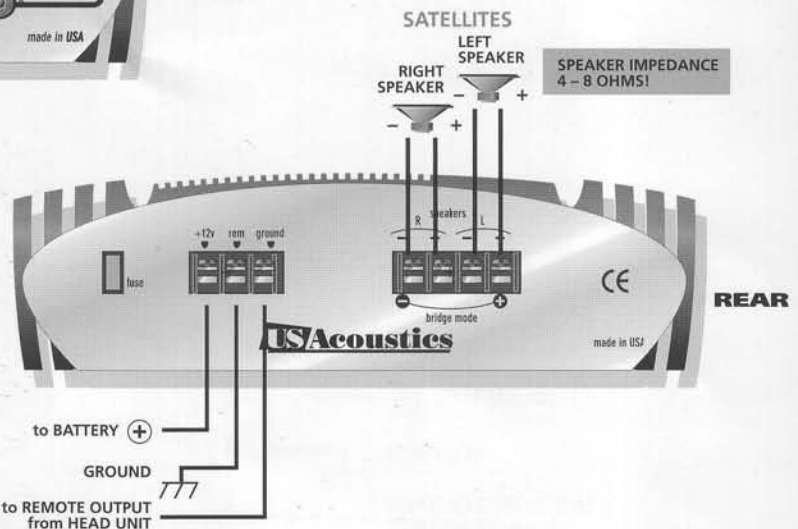
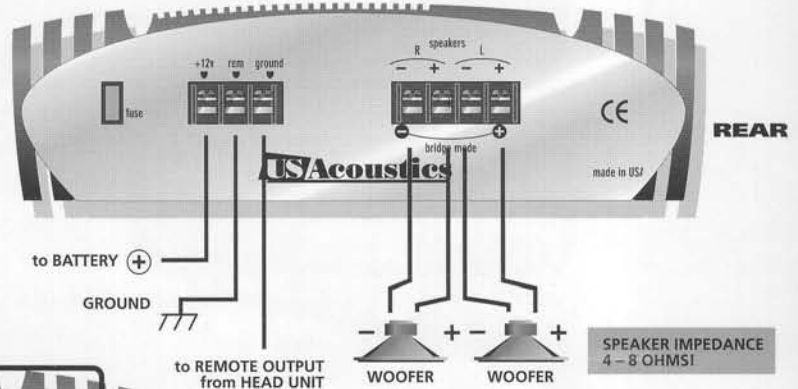
SWITCH SETTINGS:

- **AMPLIFIER #1 SELECTOR SET TO "LOWPASS"**
Amplifier #1 Lowpass crossover sets the crossover frequency for the woofers
Amplifier #1 Highpass crossover sets the crossover frequency for the satellites
- **AMPLIFIER #2 SELECTOR SET TO "FLAT"**

"AMP" Selector switch in FLAT position

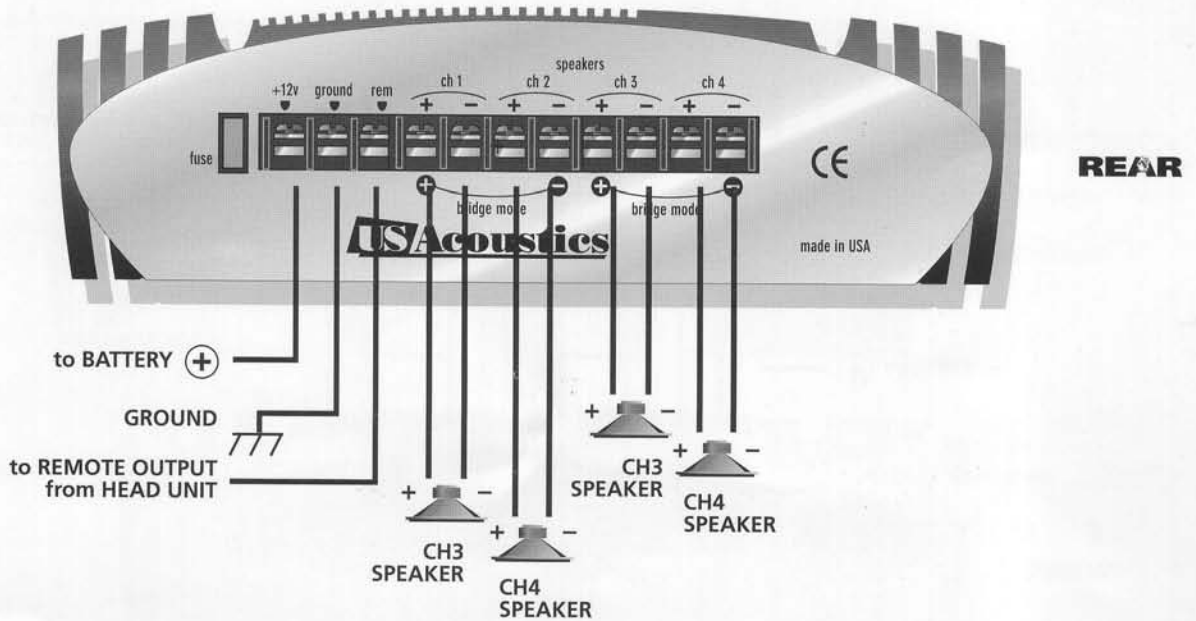
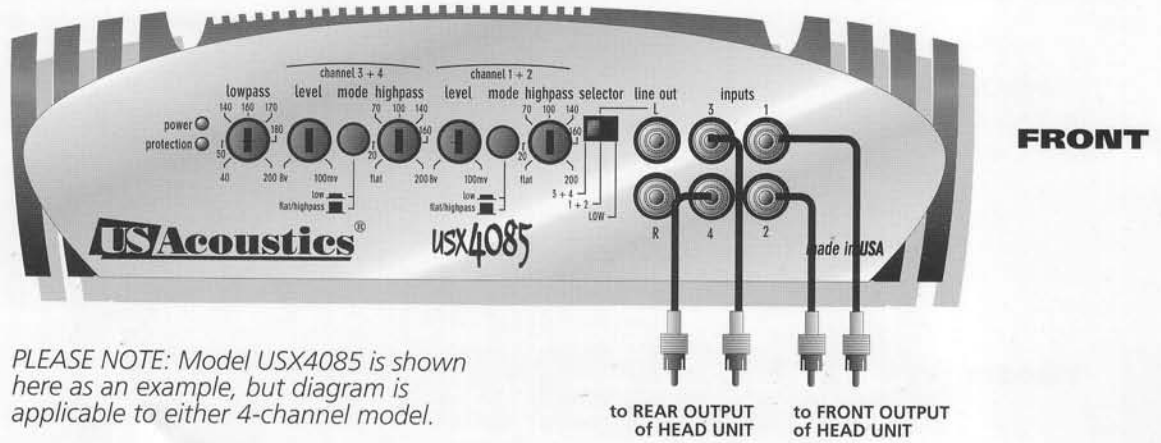


AMPLIFIER #2 (MIDS/HIGHS)



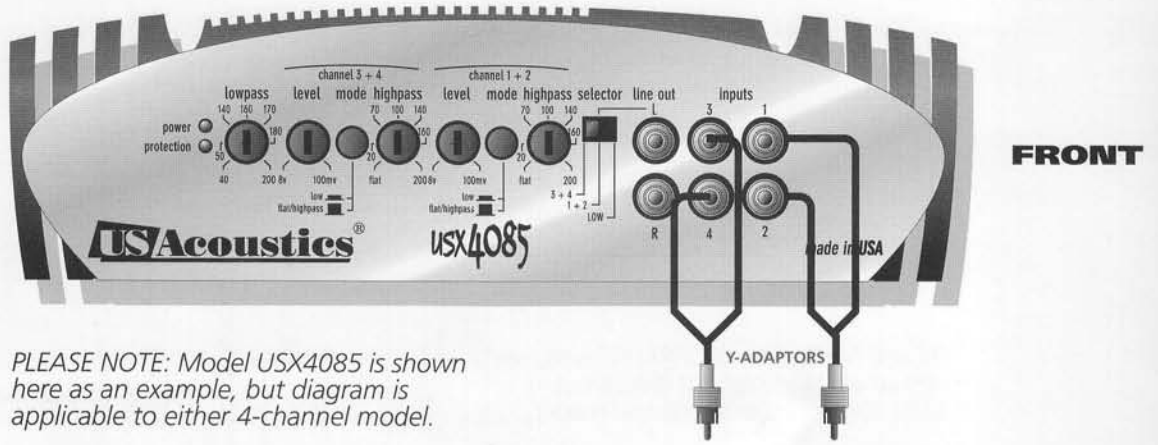
CONNECTIONS

4 CHANNEL AMPLIFIERS • BASIC SYSTEM WIRING



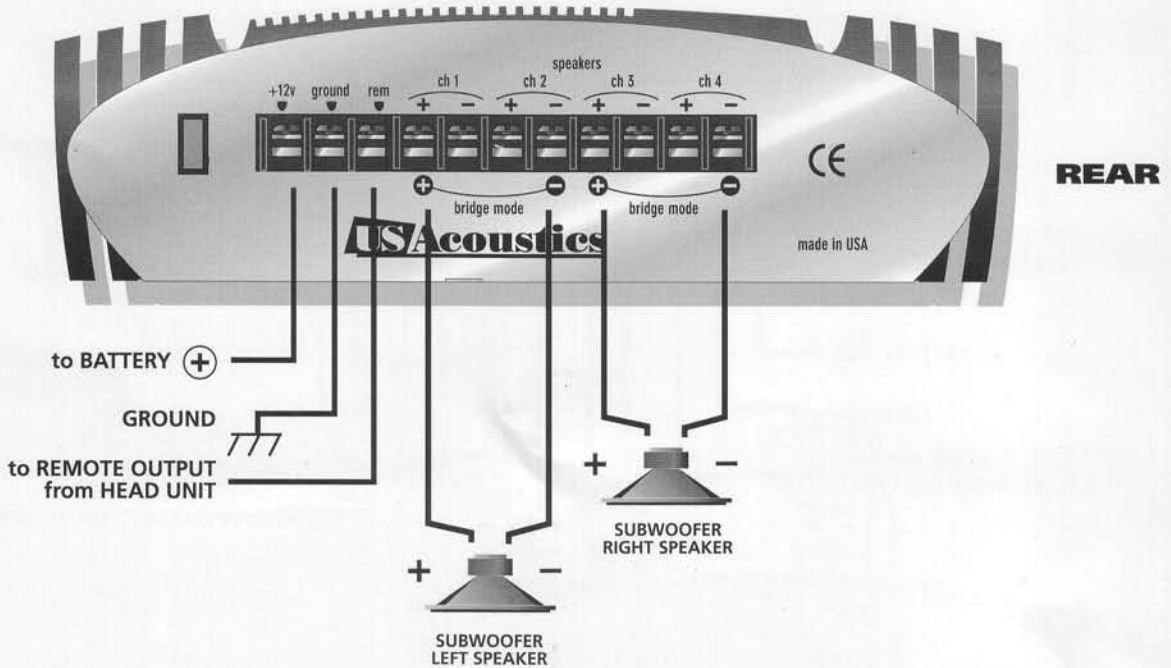
CONNECTIONS

4 CHANNEL AMPLIFIERS • BRIDGED WIRING



PLEASE NOTE: Model USX4085 is shown here as an example, but diagram is applicable to either 4-channel model.

to REAR OUTPUT of HEAD UNIT
to FRONT OUTPUT of HEAD UNIT



to BATTERY (+)
GROUND
to REMOTE OUTPUT from HEAD UNIT

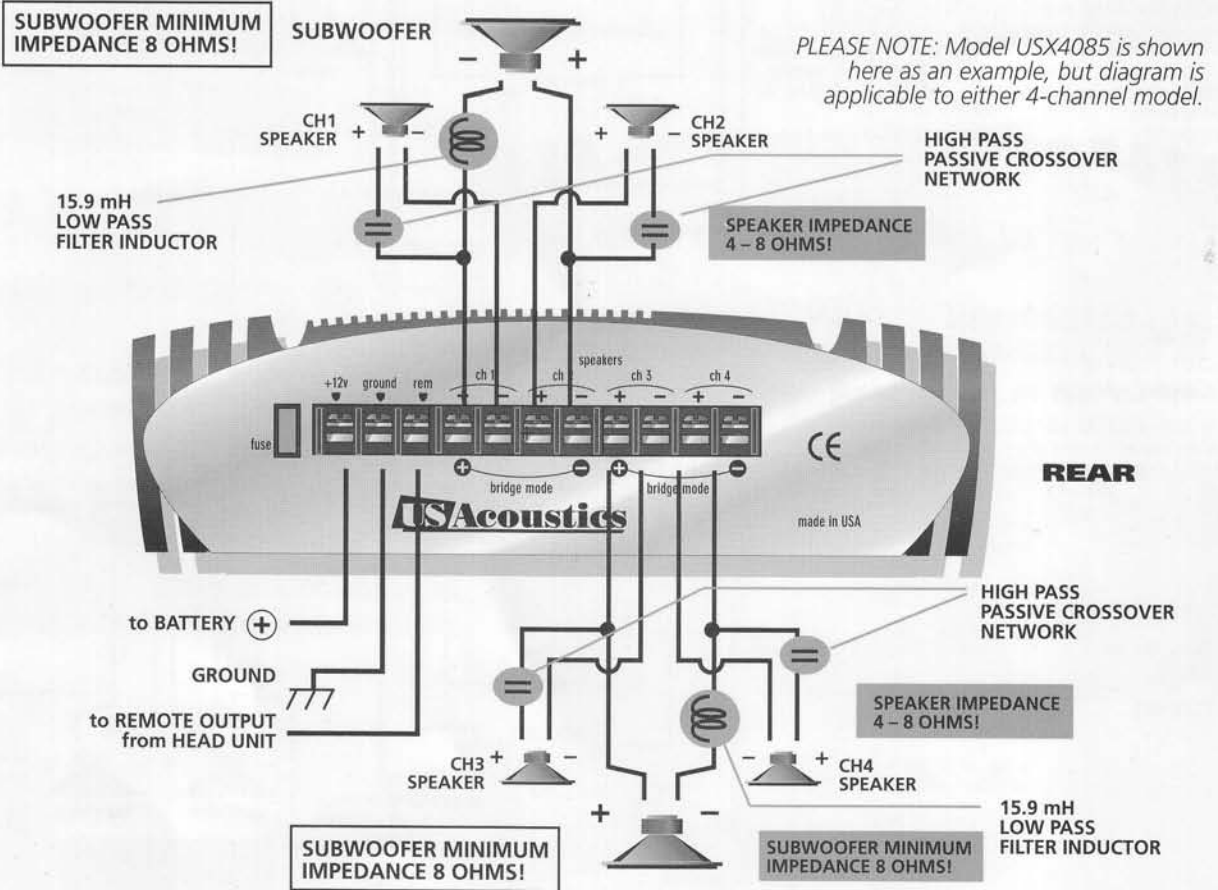
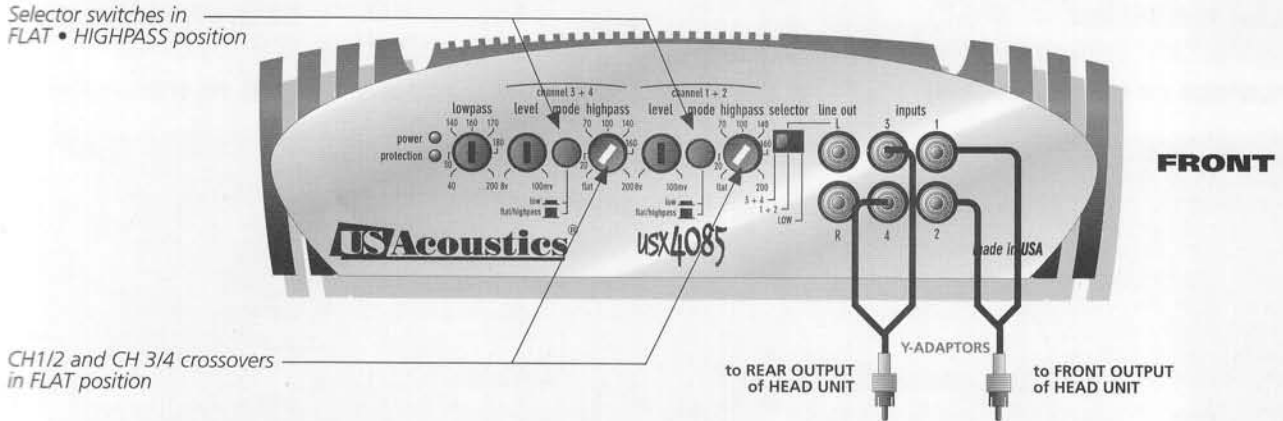
SUBWOOFER LEFT SPEAKER
SUBWOOFER RIGHT SPEAKER

CONNECTIONS

4 CHANNEL AMPLIFIERS • DUAL TRI-MODE WIRING

Tri-Mode Operational Output is a unique feature which allows a Crossover (Subwoofer) to be operated in MONO mode, while the main speakers are playing in STEREO.

To engage the amplifier in this mode, place the CH1/2 and CH3/4 mode switches in the "FLAT/HIGHPASS" position, and set the CH1/2 and CH3/4 highpass crossovers to "FLAT." Use a highpass passive crossover network for each of the mid/high speakers for Channels 1-4, and a 15.9 mH low pass wire coil filter inductor to block high frequencies from each of the subwoofers as shown in the figure below.



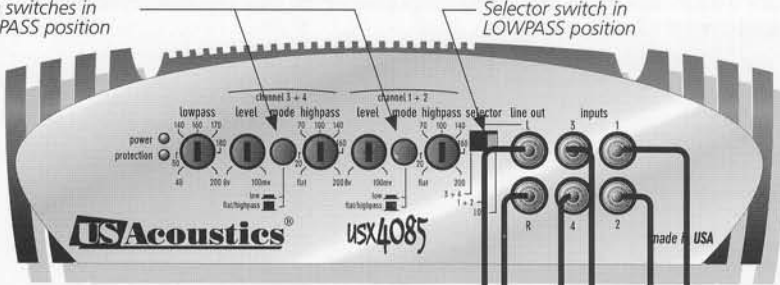
CONNECTIONS

4 CHANNEL AMPLIFIERS • BIAMP SYSTEM #1 WITH 2 AMPLIFIERS

Pushbutton switches in FLAT•HIGHPASS position

Selector switch in LOWPASS position

PLEASE NOTE: Model USX4085 is shown here as an example, but diagram is applicable to either 4-channel model.



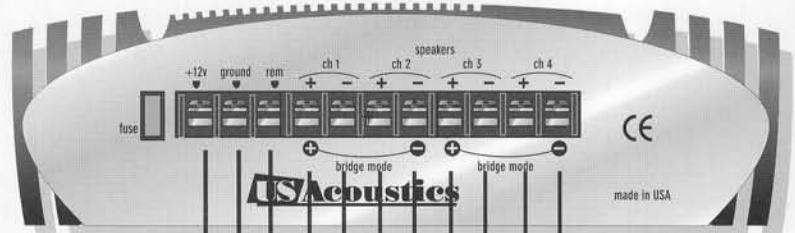
FRONT

AMPLIFIER #1 (MIDS/HIGHS)

SWITCH/CONTROL SETTINGS:

- **AMPLIFIER #1 PUSHBUTTON SWITCHES SET TO "FLAT•HIGHPASS"**
Highpass crossovers set the crossover frequency for the front and rear satellites
- **AMPLIFIER #1 SELECTOR SET TO "LOW"**
Lowpass crossover sets the crossover frequency for the subwoofers
- **AMPLIFIER #1 LEVEL CONTROLS**
Set levels for front and rear satellites
- **AMPLIFIER #2 SELECTOR SET TO "FLAT"**
- **AMPLIFIER #2 LEVEL CONTROL**
Sets level for subwoofer(s)

to REAR OUTPUT of HEAD UNIT
to FRONT OUTPUT of HEAD UNIT



REAR

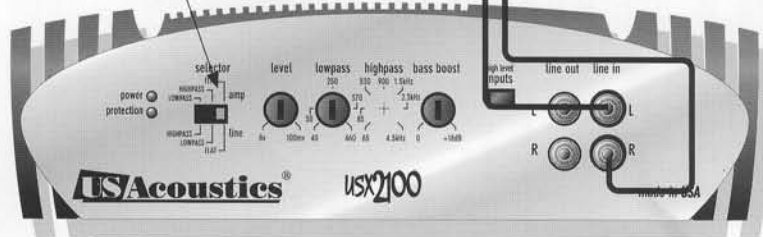
to BATTERY +
GROUND

SPEAKER IMPEDANCE 4 - 8 OHMS!

FRONT SATELLITES

to REMOTE OUTPUT from HEAD UNIT

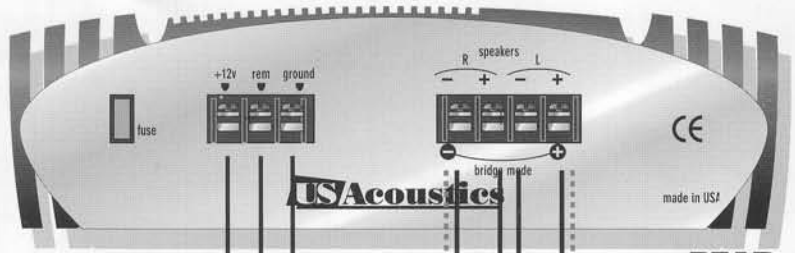
Selector switch in FLAT position



FRONT

AMPLIFIER #2 (WOOFERS)

PLEASE NOTE: Model USX2100 is shown here as an example, but diagram is applicable to any 2 channel model.



REAR

to BATTERY +
GROUND

to REMOTE OUTPUT from HEAD UNIT

WOOFER WOOFER

ALTERNATIVE: MAY ALSO BE BRIDGED BY CONNECTING AS SHOWN.

SPEAKER IMPEDANCE 4 - 8 OHMS!



WOOFER

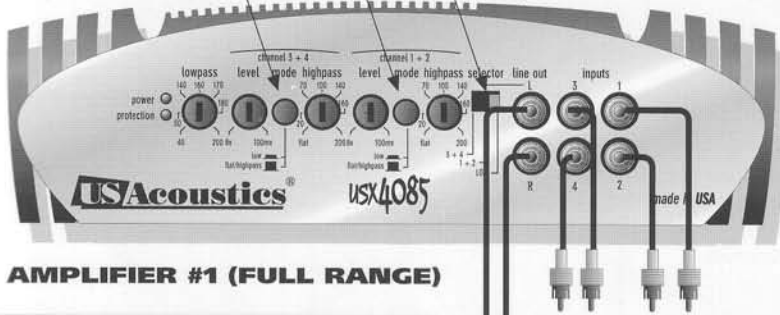
MINIMUM SPEAKER IMPEDANCE 4 OHMS!

CONNECTIONS

4 CHANNEL AMPLIFIERS • BIAMP SYSTEM #2 WITH 2 AMPLIFIERS

Pushbutton switches in FLAT•HIGHPASS position

Selector switch in 3+4 position

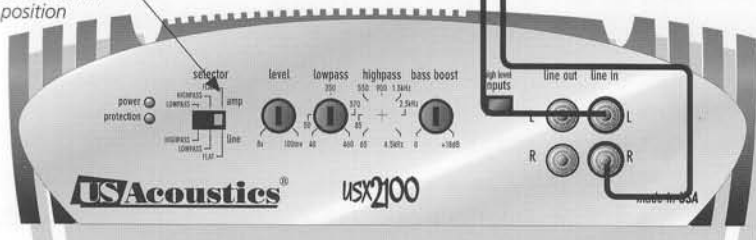


AMPLIFIER #1 (FULL RANGE)

SWITCH/CONTROL SETTINGS:

- **AMPLIFIER #1 CH1/2 PUSHBUTTON SWITCHES SET TO "FLAT•HIGHPASS"**
CH1/2 Highpass crossover sets the crossover frequency for the front satellites
- **AMPLIFIER SELECTOR SWITCH SET TO "3+4"**
CH3/4 Highpass crossover sets the crossover frequency for the rear satellites
- **AMPLIFIER #1 CH3/4 PUSHBUTTON SWITCHES SET TO "LOW"**
Lowpass crossover sets the crossover frequency for the front woofers
- **AMPLIFIER #1 CH1/2 LEVEL CONTROL**
Sets levels for front satellites
- **AMPLIFIER #1 CH3/4 LEVEL CONTROL**
Sets levels for woofers
- **AMPLIFIER #2 SELECTOR SET TO "FLAT"**
- **AMPLIFIER #2 LEVEL CONTROL**
Sets level for rear satellites

Selector switch in FLAT position



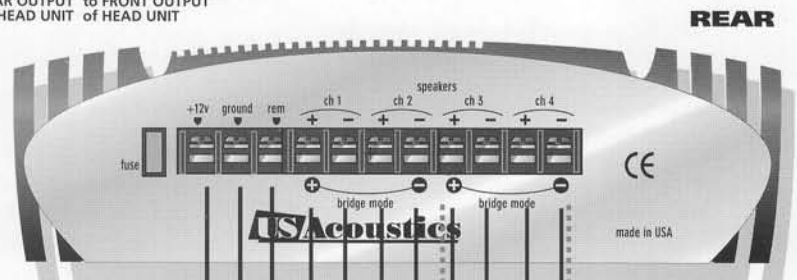
AMPLIFIER #2 (REAR SATELLITES)

PLEASE NOTE: Model USX2100 is shown here as an example, but diagram is applicable to any 2 channel model.

PLEASE NOTE: Model USX4085 is shown here as an example, but diagram is applicable to either 4-channel model.

NOTE: The Highpass crossover on Amplifier #1 CH 3/4 may be set to "FLAT." This allows the LINE OUT to deliver a full range signal (from 15Hz and up). Amplifier #2 crossover can then be used to set the crossover frequency for the rear satellites.

to REAR OUTPUT of HEAD UNIT
to FRONT OUTPUT of HEAD UNIT



REAR

to BATTERY +
GROUND

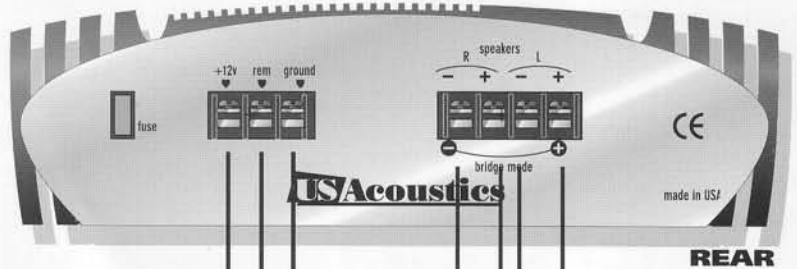
FRONT SATELLITES
WOOFERS
SPEAKER IMPEDANCE 4 - 8 OHMS!

ALTERNATIVE: MAY ALSO BE BRIDGED BY CONNECTING AS SHOWN.



MINIMUM SPEAKER IMPEDANCE 4 OHMS!

FRONT



REAR

to BATTERY +
GROUND

to REMOTE OUTPUT from HEAD UNIT

REAR MIDRANGE/HIGH SATELLITES

T R O U B L E S H O O T I N G

Before removing your amplifier, refer to the list below and follow the suggested procedures. Always test the speakers and their wires first.

No Output

Confirm that all terminal strip connections are secure and tight.

Check both in-line and built-in fuses. Both the "+12v" and the "REMOTE" terminals must have +12v referenced to chassis ground.

Confirm that the audio signal source (car radio, equalizer, etc.) is connected and is supplying output signal. To check if the amplifier is supplying signal, unplug the RCA cables from the signal source (but leave them plugged into the amp). Briefly tap the center pin of each of the disconnected RCA plugs with your finger. This should produce a noise (feedback) in your speakers.

Only one channel works

Confirm that all speaker strip connections are secure and tight.

Check the "BALANCE" control on the head unit (or other source) to verify that it is set to its midpoint.

If you are using the Low Level RCA input, reverse the input plugs at the amplifier (switch the R with the L). If the channel which is silent switches to the other side, the problem is either in the head unit/other source or the connecting cables.

Weak output

Readjust the Input Level Control to better suit the input signal.

Noise in the Audio

If the noise is a "whine" whose pitch follows the engine speed, confirm that the amplifier and any other signal sources (head unit, etc.) are properly grounded.

If the noise is a "clicking" or "popping" noise whose rate follows the engine speed, this usually means that the vehicle is equipped with resistor spark plugs and wires, or that the ignition is in need of service.

Check the routing of the speaker and input wires to make sure they are not adjacent to wires which interconnect lights and other accessories.

If the above steps fail to improve or clear noise interference, the system should be checked by a professional mobile audio installer.

C A U T I O N !

Jump starting your vehicle can cause large voltage spikes within your automobile's electrical system. To prevent damage to your stereo system, make sure the entire system is shut down until full battery charge has been reached and jumper cables have been removed from the battery.

We want you listening for a lifetime!

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud sound is often undetectable until it is too late, USAcoustics and the Electronic Industry Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive loud sound.

dB level	example
30	Quiet library, soft whispers
40	Living room, refrigerator, away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at 2 feet

The following noises can be dangerous under constant exposure

90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.



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US BOX



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