

MASSIVE[®]

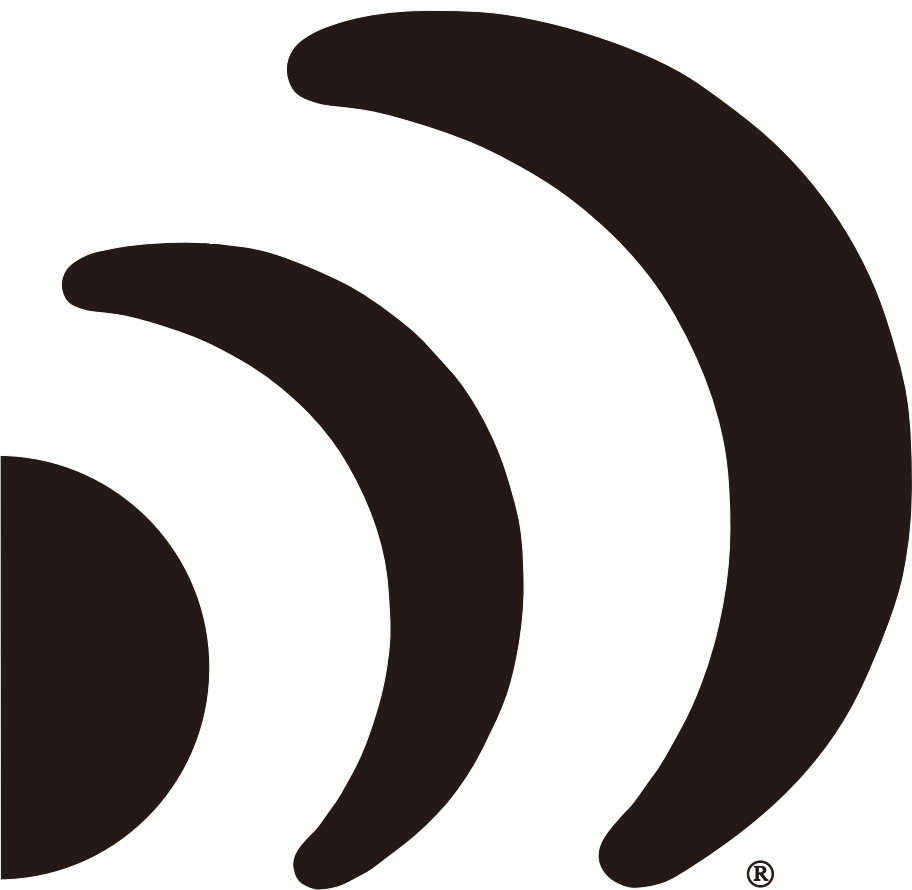
NANO EDGE AMPLIFIER

E2/E3/E4

E3F/E4F

EX2/EX5

EX44/EX4R



®

INTRODUCTION

Congratulations!

And thank you for purchasing a Massive Audio® Nano Edge amplifier for your car audio system. You now own an amplifier of uncompromising design and engineering incorporating the latest advances in micro topology. This handcrafted amplifier is designed to deliver the demands of serious sound competitors. You will soon discover that "Nano Edge" amplifiers display a fine balance between high quality, performance and reliability; all proven qualities of Massive Audio® products.

Massive Audio® amplifiers are the result of American Craftsmanship using only the highest quality components and quality control standards. In order to provide you with many years of listening pleasure, we recommend you to have your new amplifier installed by an Authorized Massive Audio®. This will ensure the proper installation of your product, and will also increase the length of your warranty to **ONE YEAR.**

(Please see the warranty section of this manual for more details.)

Please take a moment to thoroughly read this manual to ensure that you get the maximum benefit from this new addition to your car audio system. When installed properly, this unit will provide years of trouble-free performance.

Should your amplifier ever need service or replacement due to theft, please record the following information, which will help protect your investment.

Model #: _____

Dealer's Name: _____

Date of Purchase: _____

Installation Shop and Date: _____

DESIGN FEATURES

- ✓ EXTREME POWER IN A SMALL FOOTPRINT
- ✓ 1 OHM STABLE DESIGN (MONO AMPS)
- ✓ MIL SPEC DOUBLE SIDED & 4 LAYERS PCB DESIGN WITH SMD PARTS
- ✓ BUILT-IN NOISE REDUCTION CIRCUITRY
- ✓ FULL MOSFET WITH HIGH GRADE SWITCHING DEVICES
- ✓ BUILT-IN AUTO SENSING TURN ON FUNCTION (HI-INPUTS)
- ✓ 12V REMOTE OUTPUT FOR EXTERNAL DEVICES (HI-INPUTS)
- ✓ 0~12DB VARIABLE BASS BOOST (EXCEPT EX2)
- ✓ NEXT GENERATION ADVANCED 5 WAY PROTECTION CIRCUITRY
- ✓ WORLD WIDE STANDARDS COMPLIANT.
(ROHS, E-MARK, CEA-2006, CE)

NANO EDGE
NANO EDGE



AMPLIFIER FUNCTIONS

1. SPEAKERS

CONNECT SPEAKERS/SUBWOOFERS TO THESE TERMINALS. BE SURE TO CHECK WIRING FOR PROPER POLARITY. NEVER CONNECT THE SPEAKER CABLES TO CHASSIS GROUND.

2. +12 VOLT POWER

CONNECT THIS TERMINAL THROUGH A FUSE OR CIRCUIT BREAKER TO THE POSITIVE TERMINAL OF THE VEHICLE BATTERY OR THE POSITIVE TERMINAL OF AN ISOLATED AUDIO SYSTEM BATTERY.

3. AUTO SENSING TURN ON FUNCTION / REM OUT (HI- INPUTS)

WHEN USING HI-INPUT, THE AMP WILL DETECT THE DC OFFSET FROM THE HIGH LEVEL INPUT SIGNAL TO THE AUTO TURN ON/OFF. WHEN ATO IS USED, AND THE AMP IS TURNED ON, THE REMOTE TERMINAL WILL NOW BE A 12V DC OUTPUT THAT WILL POWER OTHER DEVICES VIA THEIR 12V INPUT.

REM IN: WHEN USE LOW LEVEL INPUT, THE AMP REM IN SHOULD BE CONNECTED TO THE REM OUT OF THE SOURCE UNIT. THE HEAD UNIT CONTROLS THE AMP TURN ON/OFF.

4. GND

CONNECT THIS CABLE DIRECTLY TO THE FRAME OF THE VEHICLE. MAKE SURE THE METAL FRAME HAS BEEN STRIPPED OF ALL PAINT DOWN TO THE BARE METAL. USE THE SHORTEST DISTANCE POSSIBLE. IT IS ALWAYS A GOOD IDEA TO REPLACE THE FACTORY GROUND AT THIS TIME WITH A LARGER CABLE EQUAL TO THE NEW DIRECTLY TO THE VEHICLE BATTERY GROUND TERMINAL OR ANY OTHER FACTORY GROUND POINTS.

5. RCA INPUT / AUTO HI-LOW LINE CONVERTOR

THESE RCA INPUT JACKS CONNECT WITH YOUR SOURCE UNIT RCA LOW LEVEL OUTPUTS OR VIA OPTIONAL ADAPTER WITH YOUR SOURCE UNIT SPEAKER HIGH LEVEL OUTPUTS. THE USE OF HIGH QUALITY TWISTED PAIR CAR AUDIO CABLES IS RECOMMENDED TO PREVENT POSSIBLE DISTURBANCE OF THE AUDIO SIGNAL.

6. REMOTE(MONO BLOCKS)

CONNECT THE REMOTE CONTROLLER TO CONTROL THE SUBWOOFER AMPLIFIER VOLUME FROM THE DRIVER SEAT LOCATION, FOR EASE OF ADJUSTMENT DURING PLAYING.

7. GAIN CONTROL

THE GAIN CONTROL WILL MATCH THE AMPLIFIERS SENSITIVITY TO THE SOURCE UNITS SIGNAL VOLTAGE. THE OPERATING RANGE IS 10V TO 400mV. THIS IS NOT A VOLUME CONTROL!

8. LOW PASS FILTER CONTROL(MONO BLOCK)

THIS CONTROL IS USED TO SELECT THE DESIRED LOW PASS X-OVER FREQUENCY. THE FREQUENCY CAN BE ADJUSTED FROM 60HZ TO 220HZ FOR ALL NON FULL RANGE AMPLIFIERS.

9. SUBSONIC FILTER CONTROL(MONO BLOCK)

THIS CONTROL CAN FILTER OUT UNWANTED LOW FREQUENCIES FROM 0HZ - 60HZ. THIS FUNCTION WILL INCREASE THE POWER HANDLING OF YOUR WOOFERS.

10. BASS BOOST LEVEL KNOB(MONO BLOCK)

THIS CONTROL ADJUSTS THE BASS BOOST LEVEL OF THE BASSBOOST CENTER FREQUENCY. IT CAN BE ADJUSTED FROM 0 TO 12DB. COMBINING THIS WITH THE BASSBOOST FREQUENCY YOU CAN ACCURATELY MATCH THE AMPLIFIERS PERFORMANCE TO THE WOOFER FREQUENCIES.

11. BASS BOOST FREQ KNOB(MONO BLOCK)

THIS CONTROLS THE BOOSTED CENTER FREQUENCY. THE FREQUENCY CAN BE ADJUSTED FROM 30HZ TO 120HZ ACCORDING TO THE CAR AUDIO SYSTEMS PERFORMANCE. (WHEN YOU ADJUST THIS KNOB TO 50HZ THE AMPLIFIER WILL BOOST THAT FREQUENCY) THIS FUNCTION SHOULD BE ADJUSTED IN COMBINATION WITH THE BASSBOOST CONTROL.

12. X-OVER MODE (FULL RANGE)

THIS SWITCH WORKS TOGETHER WITH THE FREQUENCY TO ADJUST THE OPERATING FREQUENCY RANGE OF THE AMP. WHEN SWITCHED TO LPF OR HPF THE CORRESPONDING FILTER CAN CONTROL THE OPERATING FREQUENCY RANGE BETWEEN 10HZ - 300HZ (OR 100HZ - 3KHZ). WHEN POWERING THE SUBWOOFER PLEASE SWITCH TO LPF MODE. WHEN POWERING SMALLER CALIBER FULL RANGE SPEAKERS, MIDRANGE AND HIGH FREQUENCY LOUDSPEAKERS, SWITCH TO HPF MODE.

WHEN POWERING LARGE CALIBER FULL RANGE SPEAKERS PLEASE SWITCH TO FULL MODE. WHEN SWITCHING TO FULL MODE THE FILTERS WILL NOT FUNCTION.

*FOR EX44 CHANNELS 3 & 4 THE CROSSOVER'S SETUP HPF SETTING AT 10HZ WOULD MAKE THE OUTPUT FULL RANGE AND THE "X1 / X10" SWITCH SHOULD BE SET AT "X1"
WARNING: USE THE BUTTONS AND HPF KNOBS CORRECTLY TO PREVENT LOW FREQ. DAMAGE TO THE TWEETERS!

13. FREQUENCY CONTROL (FULL RANGE)

IF THE BUTTON IS ON X10 IT SHOULD BE = 100HZ - 3KHZ
IF BUTTON ON X1 = 10HZ - 300HZ

14. EXTERNAL CAPACITOR INPUT

THIS INPUT IS FOR CONNECTING THE OPTIONAL (SOLD SEPARATELY) EXTERNAL HI-VOLTAGE RAIL CAPACITOR. THIS WILL HELP STABILIZE THE AMPLIFIERS' REQUIRED VOLTAGE DURING OPERATION WHILE IMPROVING FIDELITY AND MAXIMIZING HEAD ROOM.

15. WOOFER CHANNEL SIGNAL SELECTOR(EX5)

THIS BUTTON SELECTS THE SIGNAL SOURCE FOR THE AMPLIFIERS INPUT CHANNELS DEPENDING ON YOUR HEAD-UNITS OUTPUT CONFIGURATION. WHEN THE BUTTON IS IN THE UP POSITION, THE AMPLIFIER WILL ALLOW A SEPARATE SUBWOOFER INPUT SIGNAL. WHEN THE BUTTON IS DOWN POSITION, THE AMPLIFIER WILL ONLY ALLOW FOUR CHANNELS AND WILL AUTO DISTRIBUTE TO THE MONO SUBWOOFER CHANNEL.

16. POWER INDICATOR

THIS LED WILL LIGHT UP WHEN AMPLIFIER WORKS PROPERLY.

17. PROTECTION INDICATOR

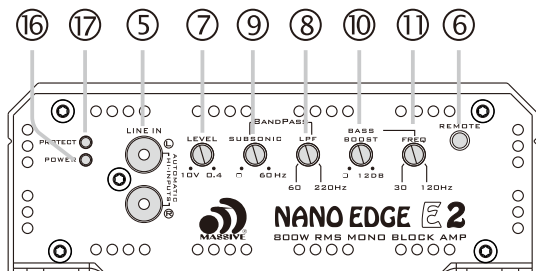
THIS RED LED WILL LIGHT UP AND WILL BE FLASHING IF THERE IS A FAULT PRESENTED TO THE AMPLIFIER. PLEASE DISCONNECT THE AMPLIFIER AND RESOLVE THE FAULT BEFORE RECONNECTING THE AMPLIFIER.

18. DIFFERENTIAL INPUT SWITCH

DEPENDING ON YOUR SETUP AND TYPE OF ELECTRICAL SYSTEM YOU MAY NEED TO USE THIS DIFFERENTIAL INPUT SWITCH TO ISOLATE UNWANTED GROUND NOISE. THIS TYPE OF SWITCH TYPICALITY IS ONLY AVAILABLE ON HIGH PERFORMANCE AMPLIFIERS ONLY.

PANEL LAYOUT

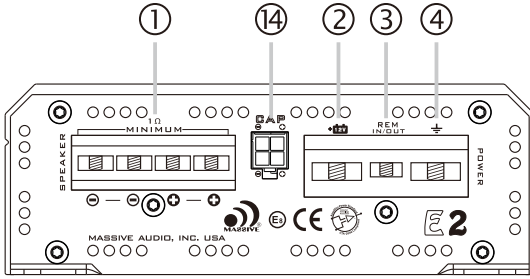
FIG 1. MONO AMPLIFIER PANEL LAYOUT



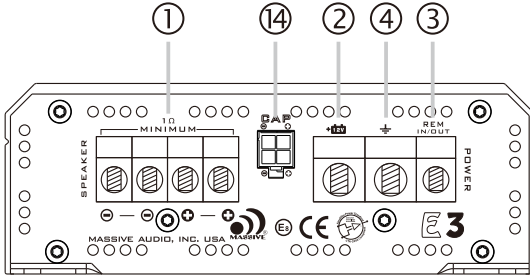
E2/E3/E4

PANEL LAYOUT

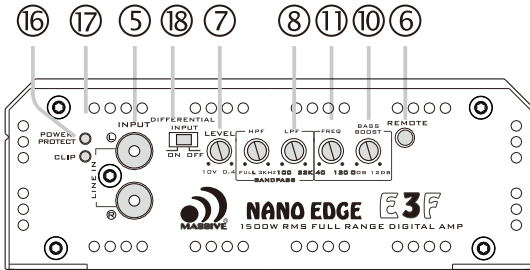
FIG 1. MONO AMPLIFIER PANEL LAYOUT



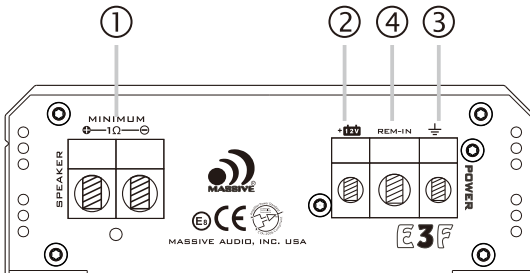
E2



E3/E4



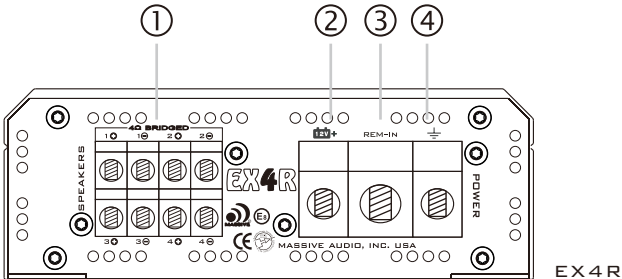
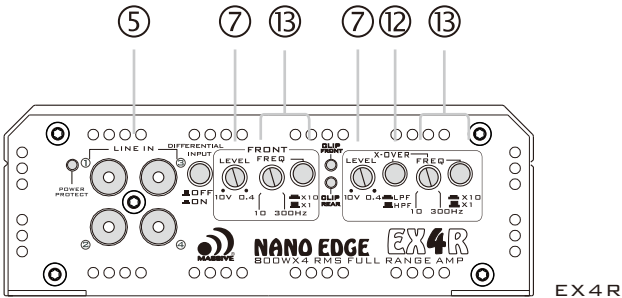
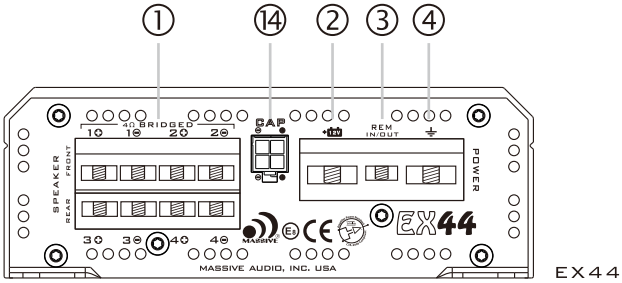
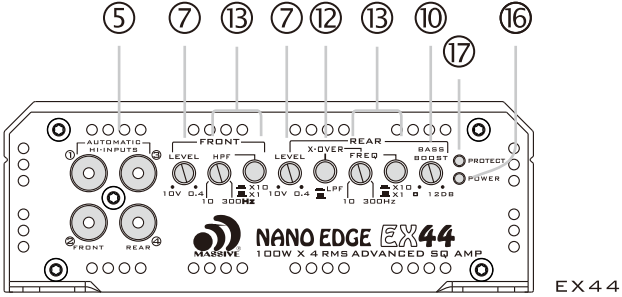
E3F/E4F



E3F/E4F

PANEL LAYOUT

FIG 2. 4-CH AMPLIFIER PANEL LAYOUT



PANEL LAYOUT

FIG 3. 2-CH AMPLIFIER PANEL LAYOUT

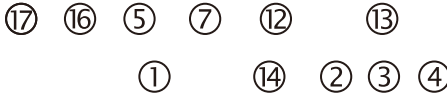
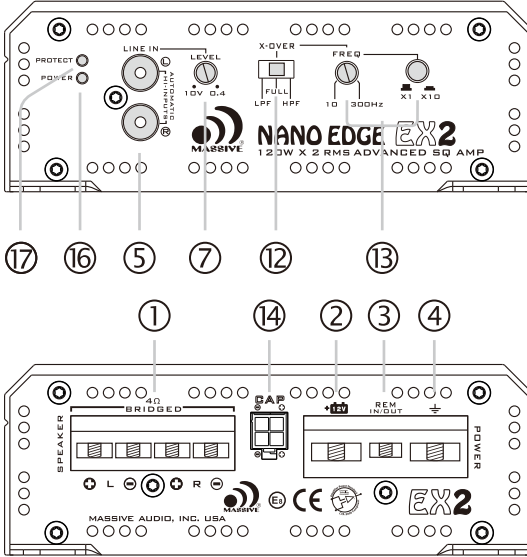
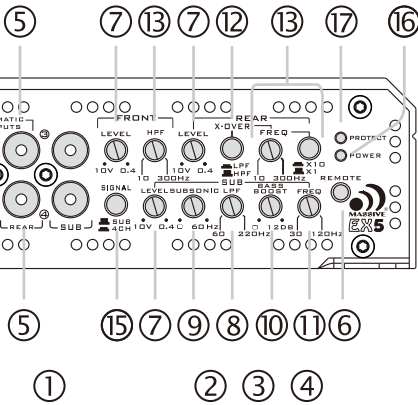
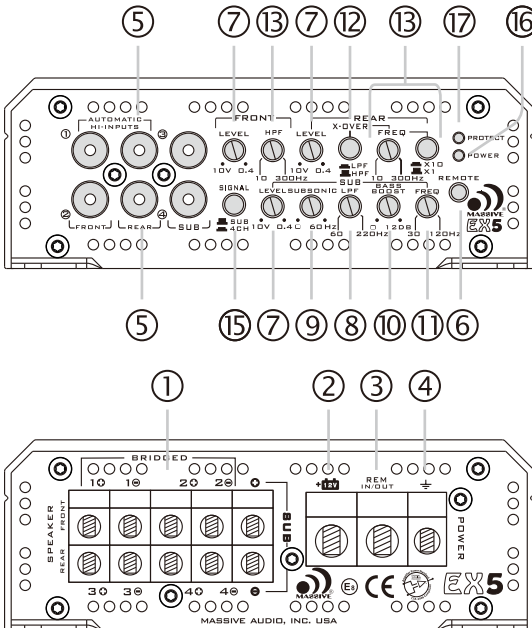
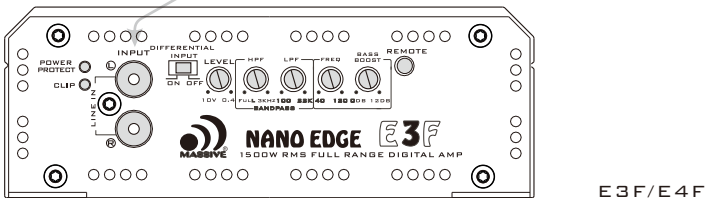
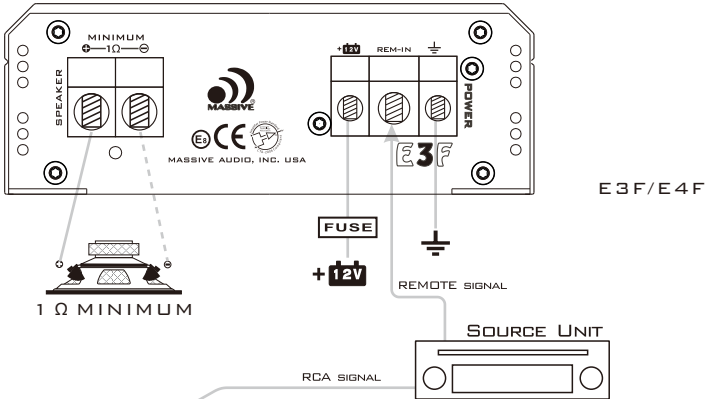
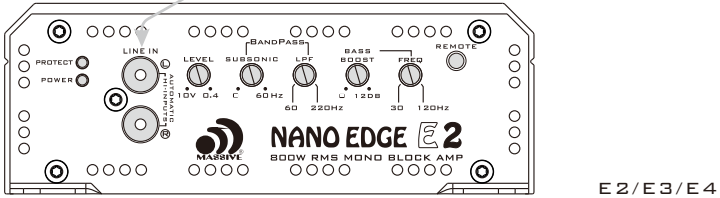
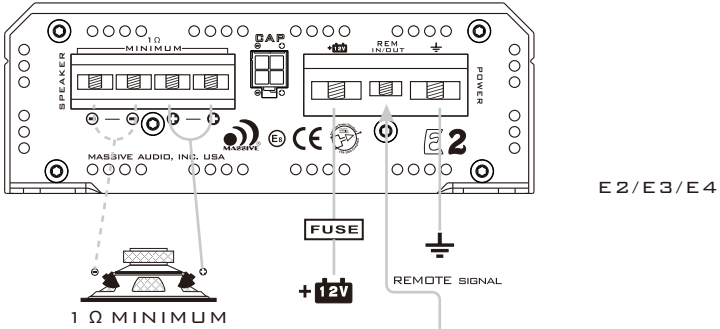


FIG 4. 5-CH AMPLIFIER PANEL LAYOUT



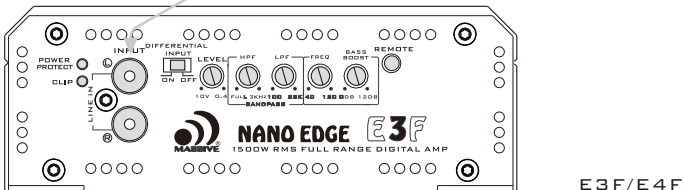
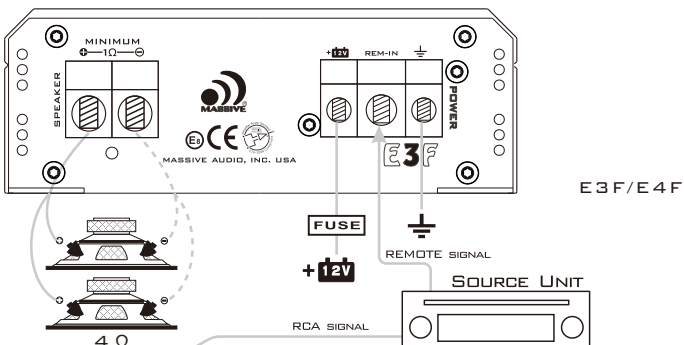
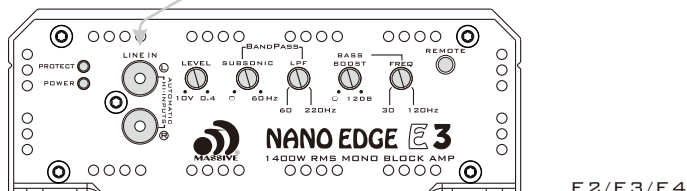
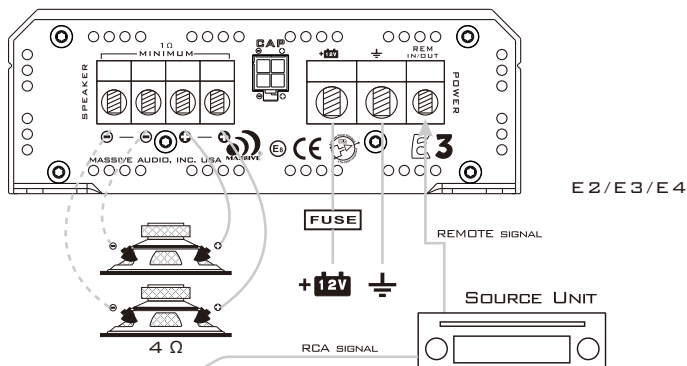
WIRING DIAGRAM

FIG 4. MONO AMPLIFIER WIRING
(SINGLE WOOFER LOAD)



WIRING DIAGRAM

FIG 5. MONO AMPLIFIER WIRING
(MULTI-WOOFER LOAD)



*EQUIVALENT PARALLEL WOOFER LOADS CANNOT BE LESS THAN THE MINIMUM STABLE LOAD RATED IN THIS MANUAL. THE TWO NEGATIVE AND TWO POSITIVE SPEAKER TERMINALS ARE WIRED INTERNALLY INSIDE EACH AMPLIFIER. ONLY ONE NEGATIVE AND ONE POSITIVE ARE NEEDED WHEN WIRING TO THE AMPLIFIER. THESE ARE MONO-BLOCK AMPLIFIERS AND NOT MULTI-CHANNEL AMPLIFIERS. THE MINIMUM LOAD FOR ALL "NANO EDGE" (MONOBLOCK) AMPLIFIERS ARE ONE OHM.

WIRING DIAGRAM

FIG 6. EX2 AMPLIFIER WIRING (1-CHANNEL MODE)

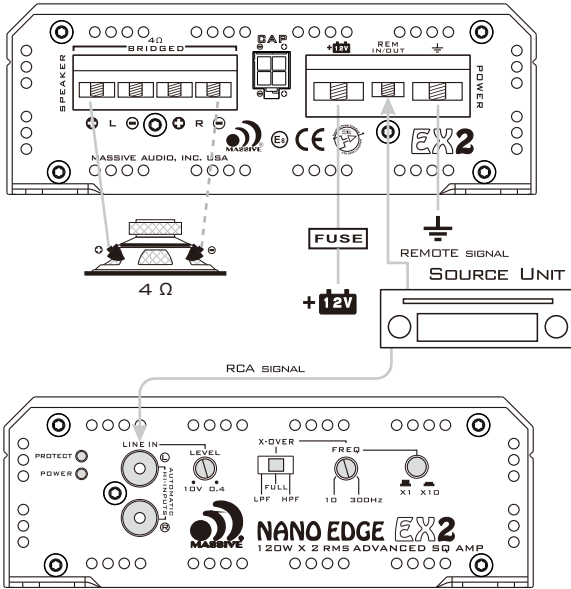
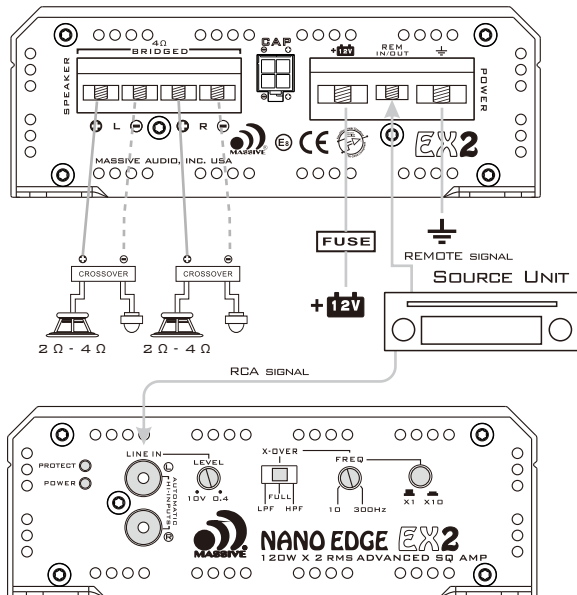
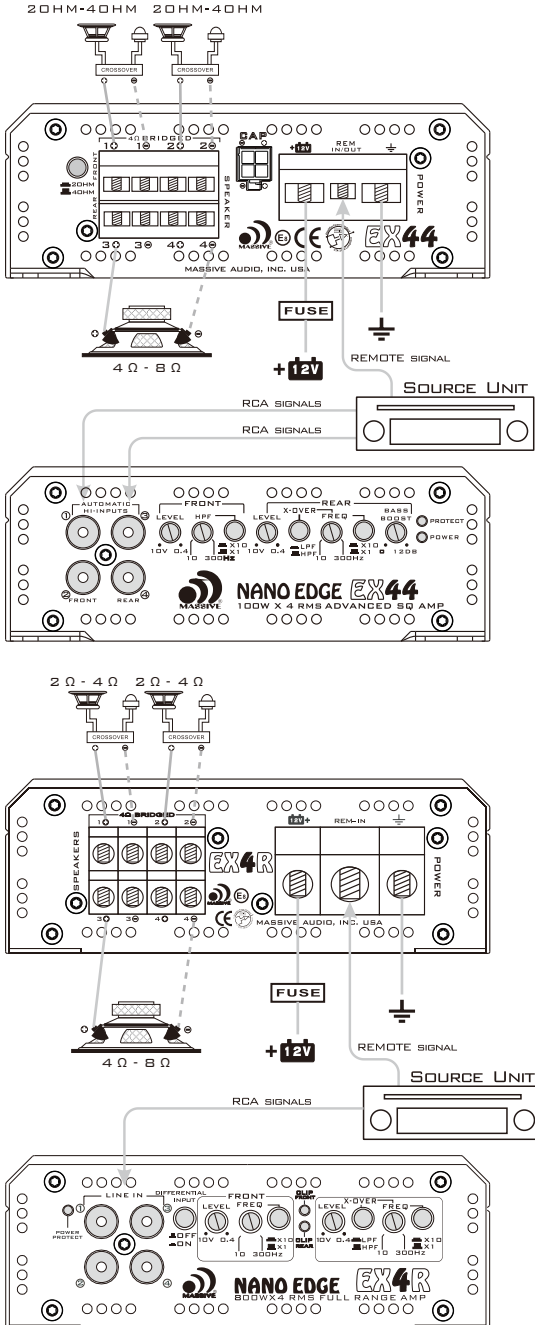


FIG 7. EX2 AMPLIFIER WIRING (2-CHANNEL MODE)



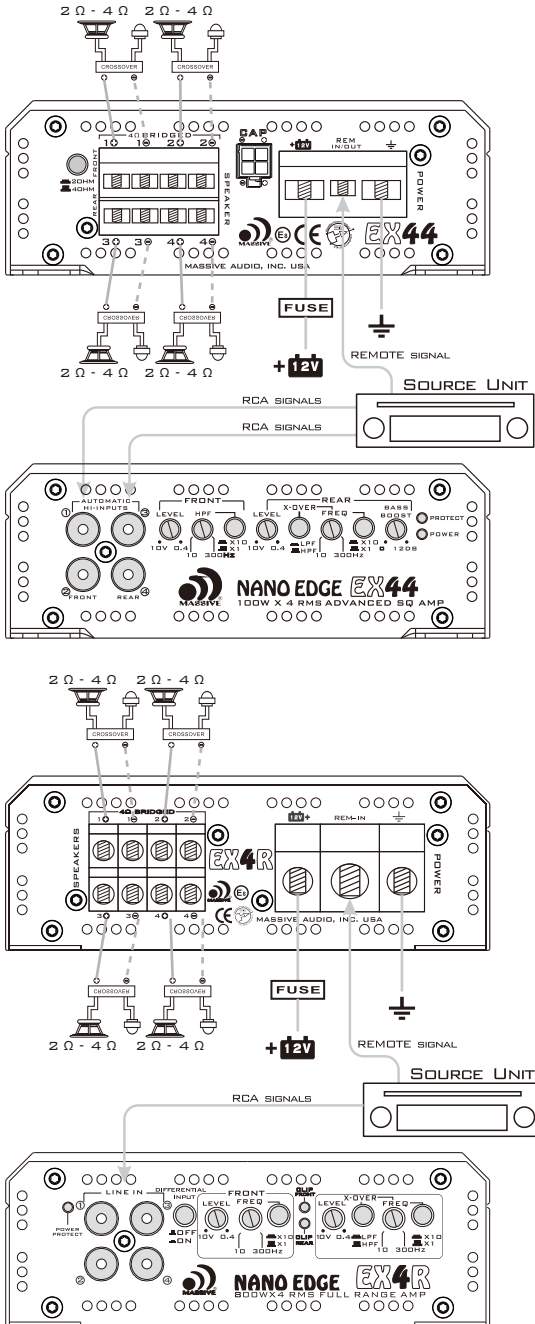
WIRING DIAGRAM

FIG 8. EX44/EX4R AMPLIFIER WIRING (3-CHANNEL MODE)



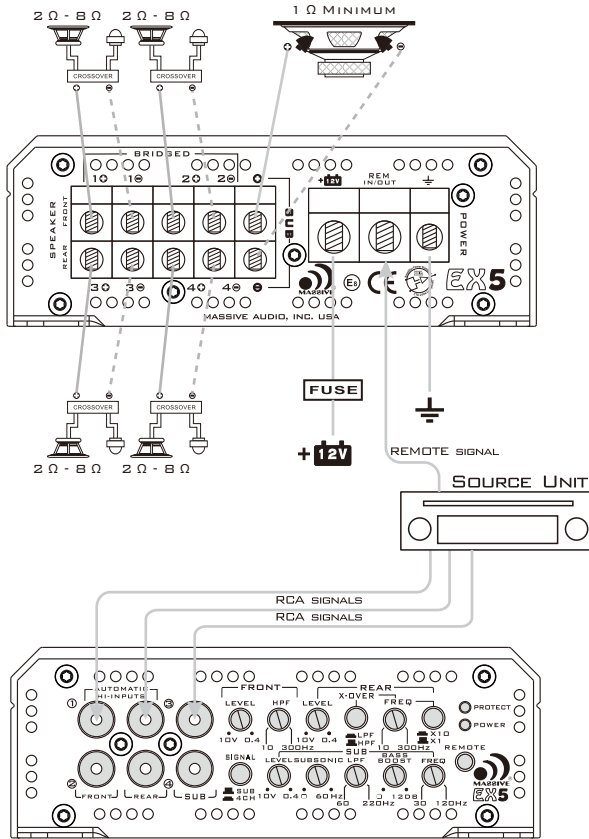
WIRING DIAGRAM

FIG 9. EX44/EX4R AMPLIFIER WIRING (4-CHANNEL MODE)



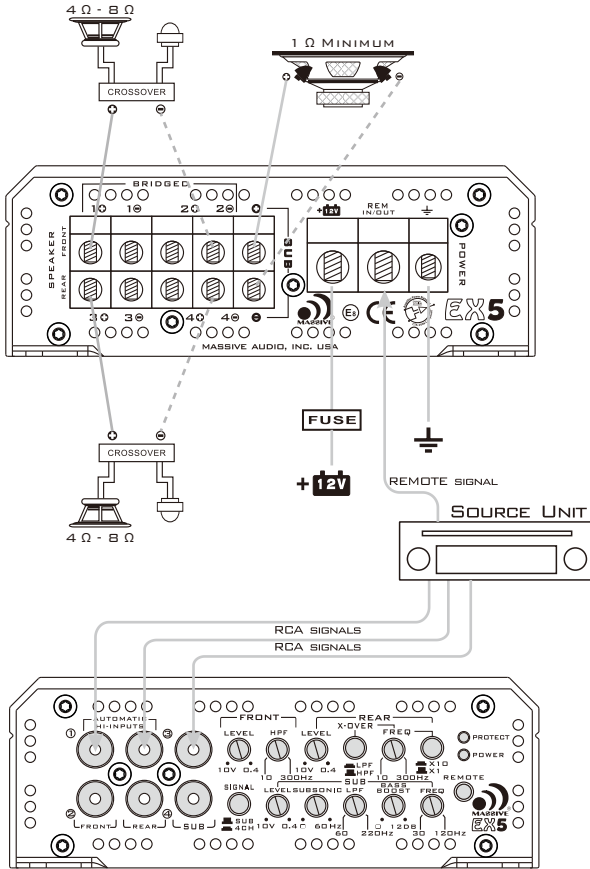
WIRING DIAGRAM

FIG 10. EX5 AMPLIFIER WIRING
(5-CHANNEL MODE)



WIRING DIAGRAM

FIG 11. EX5 AMPLIFIER WIRING
(3-CHANNEL MODE)



TROUBLE SHOOTING

Symptom	Possible Remedy
Amplifier will not power up	Check to make sure you have a good ground connection. Check that there is battery power on the (+)terminal . Check all fuses, replace if necessary . Make sure that the Protection LED is not illuminated.
Protection LED Comes on	Check for short circuits on speaker leads. Check that the speaker load is not beyond the minimum load. Remove speaker lead, and reset the amplifier. If the protection LED still comes on, then the amplifier is faulty and needs servicing .
No output	Check that the RCA audio cables are plugged into the proper inputs. Check all speakers wiring. Check the headunit output and the amplifier level setting.
Low output	Reset the level Control. Check the Crossover Control settings.
High hiss in The speakers	Check the RCA cable is not shorted to power ground at amplifier side. Check the amplifier grounding.
Distorted sound	Check that the Input level control is set to match the signal level of the head unit. Always try to set the Input level as low as possible. Check that all crossover frequencies are properly set. Check for short circuits on the speaker leads
Amplifier gets Very hot	Check that the minimum load impedance for the amplifier model is correct. Check that there is good air circulation around the amplifier. In some applications, It may be necessary to add an external cooling fan. Do not mount amplifier upside down.

SPECIFICATIONS

MODEL	E2	E3	E4	EX2	EX44	EX5	E3F	E4F	EX4R	
DESCRIPTION	1600W MAX MONO	2800W MAX MONO	4000W MAX MONO	1x480W MAX	2x400W MAX	2x480W +1600W MAX	3000W FULL RANGE	4000W FULL RANGE	1600Wx4 FULL RANGE	
RMS POWER AT 14.4V										
1OHM LOAD	800W	1400W	2000W	N/A	N/A	N/A+800W	1500Wx1	2000Wx1	N/A	
20HM LOAD	400W	700W	1000W	2x240W	4x200W	4x240W+400W	1000Wx1	1400Wx1	1200Wx4	
40HM LOAD	200W	450W	650W	4x120W	4x100W	4x120W+200W	370Wx1	500Wx1	800Wx4	
40HM BRIDGED	N/A	N/A	N/A	1x480W	2x400W	2x480W+200W	N/A	N/A	2400Wx2	
FEATURES										
0.4~10V (HI INPUTS OR LOW INPUTS)										
INPUT LEVEL										
FREQUENCY RESPONSE	10~220HZ			10HZ~25KHZ			20HZ~25KHZ 25HZ~18KHZ			25HZ~30KHZ
LPF	60~220HZ			10HZ~300HZ/100HZ~3KHZ			60HZ~220HZ 25HZ~18KHZ			25HZ~18KHZ 20HZ~250HZ/200HZ~2.5KHZ
SUBSONIC FILTER(HPF)	0~60HZ			10HZ~300HZ/100HZ~3KHZ			10HZ~60HZ 25HZ~9.1KHZ			20HZ~300HZ/200HZ~3KHZ
THD AT 40HM LOAD	<0.3%			<0.05%			<0.1%			<0.1%
30% RATED POWER	>80DB			>95DB			>95DB			>95DB
S/N RATIO	0 ~ 120B			0~120B (REAR CHANNEL)			0~120B (WOODER CHANNEL)			N/A
BASSBOOST LEVEL	30~120HZ			FIXED			30~120HZ 50HZ~110HZ			50HZ~110HZ
BEST EFFICIENCY @ 40HM	>80%			>80%			>63% 4CH/WOODER CHANNEL>82%			>85%
MINIMUM LOAD	10HM			20HM			1 OHM			2 OHM
OPTIONAL REMOTE	YES			N/A			YES			N/A
LOW TURN ON PROTECTION	YES(HI-INPUTS)			YES			YES			N/A
SHORT CIRCUIT TEST @ MAX POWER	PASS									
EXCESSIVE LOAD PROTECTION	PASS									
OVERHEAT PROTECTION	PASS									
TEMPERATURE COMPONENTS & PCB	PROTECT AT 80C / 176F									
DIENSIONS(INCHES)										
HEIGHT	2.1"									
WIDTH	5.9"									
LENGTH	8.0"	11.1"	14.3"	7.4"	9.5"	15"	5.82"	8.58"	14.09"	

WARRANTY

- Massive Audio, Inc. warrants all manufactured amplifier products to be free from defect in material and workmanship for a period not to exceed **ONE YEAR*** from the date of original purchase when installed by an authorized Massive Audio® dealer. Units that are not installed by an authorized Massive Audio® dealer maintain a warranty not to exceed 90 days from the original purchase date by the original purchaser.

Products that display abuse such as power deficiency, over driving the amplifier or clipping the input require purchase of a new PCB for replacement.

Massive Audio® obligations under this warranty are limited to repairing or replacing, at its own sole option, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in anyway. This warranty applies only to the original purchaser who must have properly registered the product within 30 days of purchase.

Except as provided herein, Massive Audio, Inc. makes no warranties or representations, express or implied, including any warranty implied by law, whether for merchantability or fitness for a particular purpose and shall be effective only for the period that this express warranty is effective. SEE THE WARRANTY REGISTRATION CARD TO ADDITIONAL INFORMATION.

*DUE TO CONSTANT IMPROVEMENT PRICES AND SPECS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTIFICATION.



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