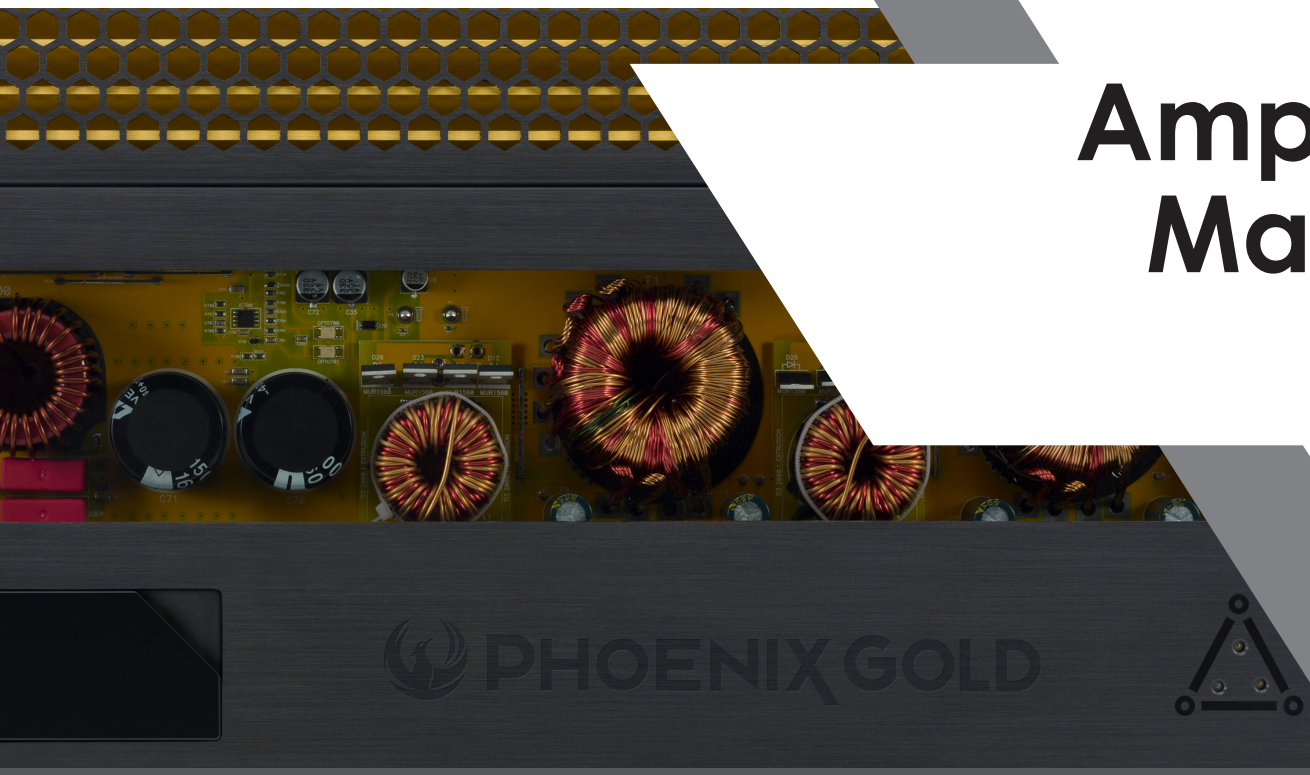
PHOENIX GOLD

Amplifier Manual



Models: Ti3 1600.6 Ti3 1200.4 Ti1300.1

Features

- Full range capable Class-D Topology
- POWER SHIFT® ability for partial power from front channels to be redirected to rear channels for active setups or system flexibility
- Double tier power supplies
- Remote bass and phase controller with BASS SHIFT® (RBPC)
- Switchable balanced or unbalanced inputs
- Auto-turn on circuit (defeatable)
- Tri-light LED amplifier status indicators
- Short circuit, thermal and voltage protection
- Front mount connections
- RMD ready – Remote monitoring display port (RMD sold separately)

POWER SHIFT

BASS SHIFT

A Power Brand of AAMP Global.
15500 Lightwave Drive, Suite 202
Clearwater, Florida 33760
P: 866-788-4237
info@phoenixgold.com
www.phoenixgold.com

Designed and Engineered in the USA
Made in China

Phoenix Gold Product Warranty

LIMITED WARRANTY ON AMPLIFIERS

Phoenix Gold warrants this product to be free of defects in materials and workmanship for a period of one (1) years from the original date of purchase. This warranty is not transferable and applies only to the original purchaser from an authorized Phoenix Gold dealer in the United States of America only. Should service be necessary under this warranty for any reason due to manufacturing defect or malfunction, Phoenix Gold will (at its discretion) repair or replace the defective product with new or remanufactured product at no charge. Damage caused by the following is not covered under warranty: accident, misuse, abuse, product modification or neglect, failure to follow installation instructions, unauthorized repair attempts, misrepresentations by the seller. This warranty does not cover incidental or consequential damages and does not cover the cost of removing or reinstalling the unit(s). Cosmetic damage due to accident or normal wear and tear is not covered under warranty.

INTERNATIONAL WARRANTIES:

Products purchased outside the United States of America are covered only by that country's Authorized Phoenix Gold reseller and not by Phoenix Gold. Consumers needing service or warranty information for these products must contact that country's reseller for information.

PHOENIX GOLD

SPECIFICATIONS

TI3 1600.6

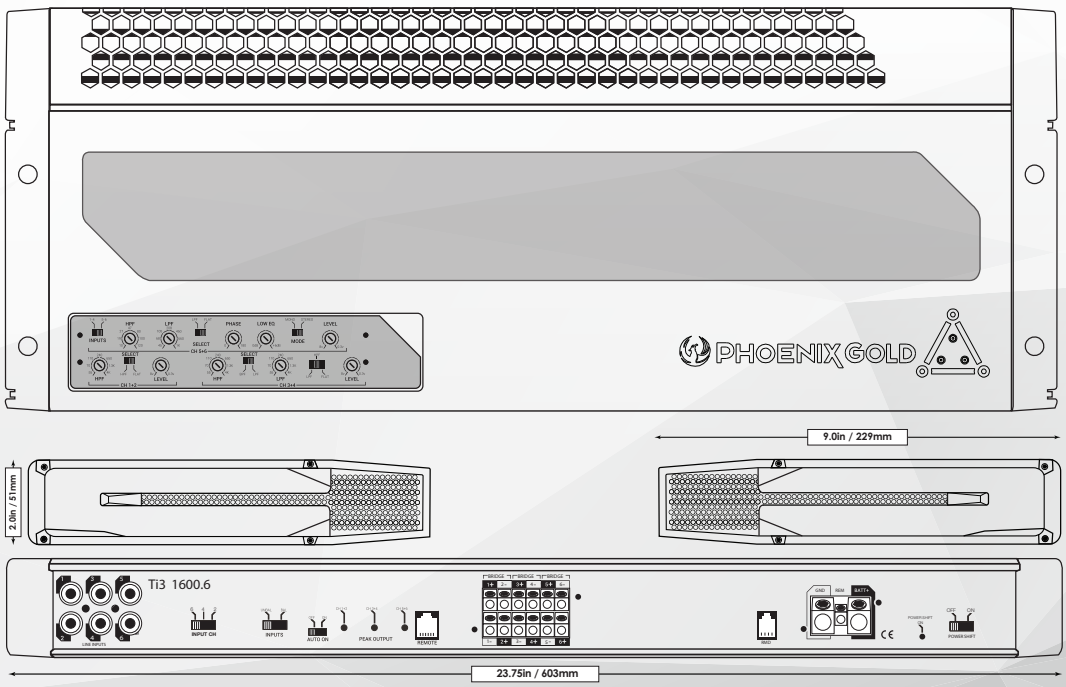
RMS Power Ratings listed at less than 1% THD @ 14.4v

Number of Channels:	6
1Ω:	N/A
2Ω:	175W x 4 + 350W x 2
4Ω:	125W x 4 + 250W x 2
Number of Channels:	5
1Ω:	N/A
2Ω:	175W x 4 + 700W x 1 @ 4Ω
4Ω:	125W x 4 + 700W x 1 @ 4Ω
POWER SHIFT® Active:	
Number of Channels:	6
2Ω:	125W x 2 + 225W x 2 + 350W x 2
4Ω:	75W x 2 + 175W x 2 + 250W x 2
Number of Channels:	5
2Ω (1-4) / 4Ω (5+6):	125W x 2 + 225W x 2 + 700W x 1
4Ω (1-6):	75W x 2 + 175W x 2 + 700W x 1
Bridgeable:	Yes
Crossover Control, Linkwitz-Riley:	FLAT/HPF/LPF/BPF 55Hz - 4kHz @ 12dB/Oct
Includes Remote Bass and Phase Control (RBPC) with BASS SHIFT®:	Yes
Low EQ 0-6dB boost:	Yes

Input Selection:	Balanced/ Unbalanced 300mV-8v Unbalanced 600mV-16v Balanced
Signal Output:	N/A
Signal to Noise (@ CEA Standard):	-84dB
Frequency Response:	10Hz- 30kHz @ +/-1.0dB
Efficiency (Average):	80%
Auto-Turn On:	Yes
Damping Factor:	Greater than 200
Topology Class:	Class D
Heatsink Type:	Extruded Aluminum
Cooling Type:	Radiation
Operating Voltage:	11.0V to 16.1V
Switchable Auto-Turn On:	Yes
Power Supply Type:	Double Tier with OTM Onboard Thermal Management
Power Terminal:	4 Gauge
Speaker Terminal:	10 Gauge
Recommended Fusing:	150A
Average Current Draw @ 14.4v Music:	58A at 4 ohm
Optional RMD Ready:	Yes
Tri-Light Indicators:	Blue - Standard Operation Green - Over Voltage Warning Amber - DC/Short Protection Red - Internal Fuse Blown
Dimensions (L x W x H):	23.75" x 9" x 2"

POWER SHIFT

BASS SHIFT



IMPORTANT: A power birth certificate is included for each amplifier. Ti3 amplifiers are conservatively rated and will exceed their RMS power rating shown here.
All RMS power ratings and measurements are at 14.4 volts with no more than 1% THD.

SPECIFICATIONS

Ti3 1200.4 SPECIFICATIONS

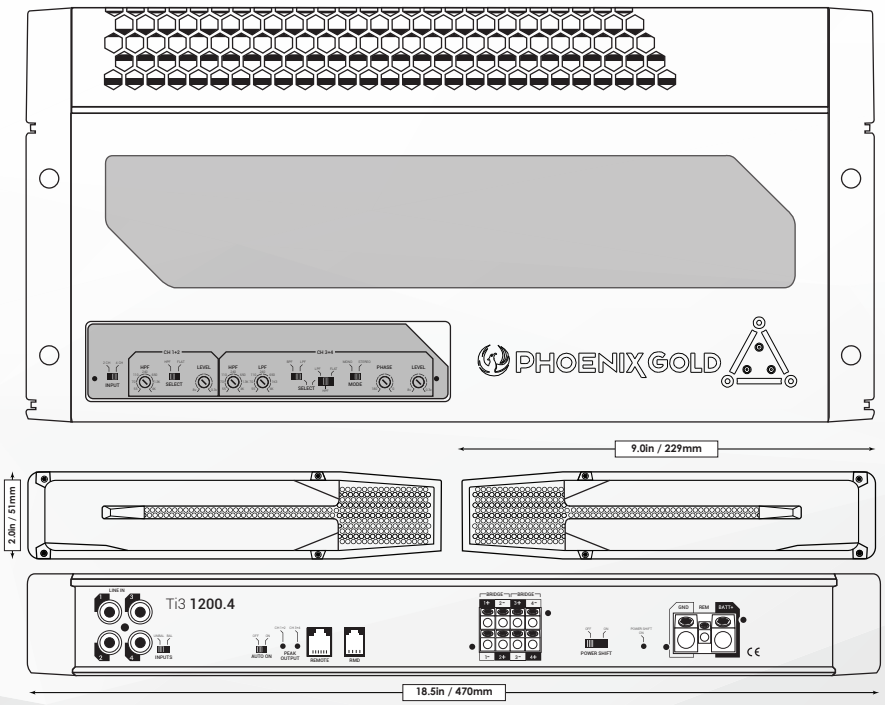
RMS Power Ratings listed at less than 1% THD @ 14.4v

Number of Channels:	4
1Ω:	N/A
2Ω:	300W x 4
4Ω:	225W x 4
4Ω: Bridged	600W x 2
POWER SHIFT® Active:	
1Ω:	N/A
2Ω:	200W x 2 (1&2) + 400W x 2 (3&4)
4Ω:	150W x 2 (1&2) + 300W x 2 (3&4)
4Ω: Bridged	400W x 1 (1+2) + (3+4) 800 x 1
Total RMS Power (Sum of rated power):	1200W
Bridgeable:	Yes
Crossover Control, Linkwitz-Riley:	FLAT/HPF/LPF/BPF 55Hz - 4kHz @ 12dB/Oct
Includes Remote Bass and Phase Control (RBPC) with BASS SHIFT®:	Yes
40Hz EQ 0-6dB boost @ 40Hz:	N/A
Input Selection:	Switchable Balanced/ Unbalanced 300mV-8v Unbalanced 600mV-16v Balanced
Signal Output:	N/A
Signal to Noise (@ CEA Standard):	-84dB
Frequency Response:	10Hz- 30kHz @ +/-1.0dB
Efficiency (Average):	80%
Auto-Turn On:	Yes
Damping Factor:	Greater than 200
Topology Class:	Class D
Heatsink Type:	Extruded Aluminum
Cooling Type:	Radiation
Operating Voltage:	11.0V to 16.1V
Switchable Auto-Turn On:	Yes
Power Supply Type:	Double Tier with OTM Onboard Thermal Management
Power Terminal:	4 Gauge
Speaker Terminal:	10 Gauge
Recommended Fusing:	100A
Average Current Draw @ 14.4v Music:	25A at 4 ohm
Optional RMD Ready:	Yes
Tri-Light Indicators:	Blue - Standard Operation Green - Over Voltage Warning Amber - DC/Short Protection Red - Internal Fuse Blown
Dimensions (L x W x H):	18.5" x 9" x 2"

IMPORTANT: A power birth certificate is included for each amplifier. Ti3 amplifiers are conservatively rated and will exceed their RMS power rating shown here.
All RMS power ratings and measurements are at 14.4 volts with no more than 1% THD.

POWER SHIFT

BASS SHIFT



SPECIFICATIONS

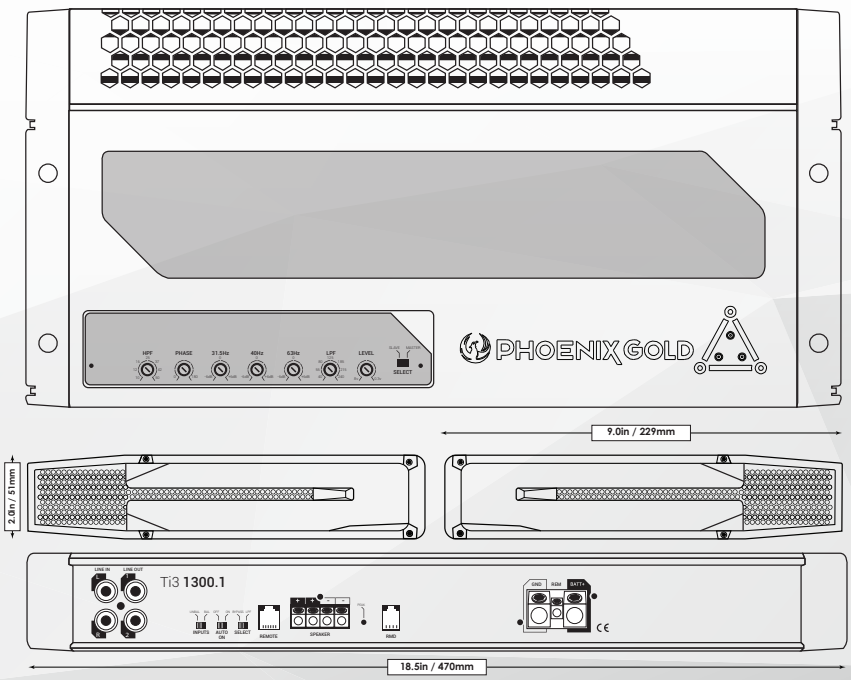
Ti3 1300.1 SPECIFICATIONS

RMS Power Ratings listed at less than 1% THD @ 14.4v

Number of Channels:	1
1Ω:	1300W x 1
2Ω:	1000W x 1
4Ω:	750W x 1
Total RMS Power (Sum of rated power):	1300W
Bridgeable:	N/A
Crossover Control, Linkwitz-Riley:	HPF 10Hz - 120Hz (subsonic) LPF 40Hz - 240Hz @ 24dB/Oct
Includes Remote Bass and Phase Control (RBPC) with BASS SHIFT®:	Yes
5 band EQ +/-6dB @ 40Hz:	Yes
Input Selection:	Switchable Balanced/ Unbalanced 300mV-8v Unbalanced 600mV-16v Balanced
Signal Output:	2 Channel RCA
Signal to Noise (@ CEA Standard):	85.9dB
Frequency Response:	10Hz - 250Hz @ +/-6.0dB 10Hz -39kHz -3dB LPF BYPASSED
Efficiency (Average):	85%
Auto-Turn On:	Yes
Damping Factor:	Greater than 200
MASTER/SLAVE capable:	Yes - 2600W x 1 @ 2Ω Strapped
Topology Class:	Class D
Heatsink Type:	Extruded Aluminum
Cooling Type:	Radiation
Operating Voltage:	11.0V to 16.1V
Switchable Auto-Turn On:	Yes
Power Supply Type:	Double Tier with OTM Onboard Thermal Management
Power Terminal:	4 Gauge
Speaker Terminal:	10 Gauge
Recommended Fusing:	100A
Average Current Draw @ 14.4v Music:	27A at 4 ohm
Optional RMD Ready:	Yes
Tri-Light Indicators:	Blue - Standard Operation Green - Over Voltage Warning Amber - DC/Short Protection Red - Internal Fuse Blown
Dimensions (L x W x H):	18.5" x 9" x 2"

IMPORTANT: A power birth certificate is included for each amplifier. Ti3 amplifiers are conservatively rated and will exceed their RMS power rating shown here.
All RMS power ratings and measurements are at 14.4 volts with no more than 1% THD.

BASS SHIFT



Ti3 1600.6
6 CHANNEL POWER AMPLIFIER

LINE INPUTS
Connect preamp signal cables from the source unit to these terminals. 2, 4 or 6 channels of input signal are selectable with **INPUT CH** switch.

INPUT CH
Input signal is selectable for 2, 4 or 6 channels. Set to match inputs being used. If only using 2 or 4 channels of input, signal will be internally split to channels 3+4 and 5+6

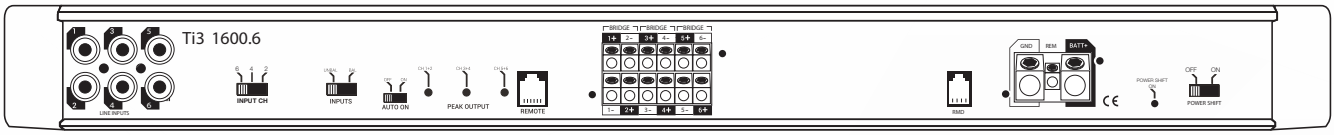
INPUTS
Select Balanced or Unbalanced inputs based on your input source's design for best S/N performance. *See Source Balanced/Unbalanced for High Level input wiring.*

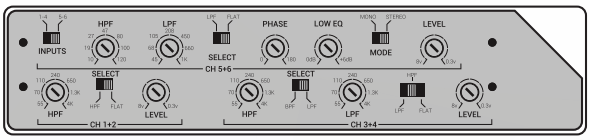
AUTO ON
Auto-on is useful when connecting to an OEM system that does not offer a Remote turn-on lead to activate the amplifier. When connecting directly to the amplifier using a high-level input signal, the circuit can detect the input voltage (BTL <1v DC) and activate the amplifier. If your system has a standard remote turn-on lead use the standard **REM** input. If it is an OEM system that stays active even with the radio off (voltage on signal wires) move the switch to the OFF position and locate an alternative circuit or PAC L.O.C. PRO device to activate the amplifier. *See Source Balanced/Unbalanced for High Level input wiring.*

PEAK OUTPUT
Peak output LED indicator for channels 1+2, 3+4 and 5+6. Helpful when used for level adjustment. Adjust LEVEL so PEAK LED flashes when driving amplifier hard, but not so much that the LED stays on continuously. Light will illuminate when rated output voltage is achieved.

REMOTE
Selecting LPF for channels 5+6 activates this port. To utilize the RBPC, set the Phase control on the amp to 180°. This port is for connecting the (RBPC) remote bass level and phase controller with BASS SHIFT®. The unique feature of the RBPC with BASS SHIFT® allows for perfect adjustment of not only the subwoofer level but also 0-180° of phase adjustment from the listening position. Properly adjusting phase will allow enhanced bass response, dynamics and impact at any volume. To adjust, play a test tone close to the crossover overlap you have the system adjusted to, typically in the 50-100Hz range. With all system speakers playing and at a moderate volume, slowly adjust the phase dial on the RBPC across the entire range. When the subwoofer is in phase with the other speakers in the system, you should be able to detect a rise in volume, "the sweet spot". Now return the control to the sweet spot and make small adjustments +/- until you maximize the output. You have now completed adjusting the phase and should not have to adjust this again. Use the level control to adjust the subwoofer output to your preference based on music program material.

TI3 1600.6





SPEAKER
Speaker connections can be configured in Stereo (1 and 2, 3 and 4 and/or 5 and 6.), Mono (1+2 or 3+4 or 5+6) and 5 channel (1 and 2 , 3 and 4 and 5+6). Minimum speaker impedance is 2Ω in Stereo or 4Ω Mono. When bridging the amplifier into a Mono load, use the 1+ and 2– , 3+ and 4-, and/or 5+ and 6- outputs on the bridged channels will be used. Accepts up to 10GA wire.

RMD
RMD port is for connecting an optional Remote Monitoring Display (RMD). The RMD allows real-time viewing of system voltage.

GND
This must be connected to the negative terminal of the car's battery or bolted to a clean, unpainted part of the vehicle's chassis.

REM
This must be connected to switched +12V, usually a trigger wire coming from the head unit or ignition. If the system does not have a standard remote turn-on, use of the **AUTO ON** feature maybe useful.

BATT+
This must be connected to the positive terminal (+12V) of the car's battery via a 100A fuse. The fuse must be located within 18 inches of the battery. Use of 4ga or larger OFC (oxygen-free) copper wire is recommended for best performance.

POWER SHIFT

PHOENIX GOLD

Ti3 1600.6
6 CHANNEL POWER AMPLIFIER

POWER SHIFT
Phoenix Gold's exclusive feature to allow you to direct power where it is needed. Active system design has never been easier. Why waste output power when it can be redirected to the channels that can better utilize it. Insane amplifier efficiencies and output are achieved with **POWER SHIFT.** With **POWER SHIFT** deactivated, the amplifier will produce equal power to all channels (with similar gain settings). To activate **POWER SHIFT** first power down the amplifier; then switch the front panel selector to ON. Power up the amplifier and the front panel indicator will verify **POWER SHIFT** is active. Output power from the front channels is redirected to the rear channels.

For an active 2-way front stage and a couple subwoofers, this is the perfect setup. The amplifier shifts from 125w per ch @4Ω to a more usable 75w per channel front and 175w rear channels. Bridge Channels 5+6 for 700w to the subwoofers. Since the front and rear gain controls will be set to similar levels as the amplifier is producing different output power instead of severely turning down the front gains to compensate, the power levels are extremely linear thru the full output range. Audiophiles rejoice!

INPUTS
Input signal is selectable for 1-4 or 5-6 channels. If only 2 or channels of input signal are available, select 1-4 to allow signal to split to CH 3+4 and CH 5+6.

HPF [CH 5+6]
Active when **SELECT** is set to LPF. HPF is variable high pass filter from 10Hz - 120Hz and can be used to filter out subsonic frequencies.

LPF [CH 5+6]
If LPF is selected, the low pass filter is variable from 45Hz-1kHz

SELECT [CH 5+6]
Select LPF for Low Pass Filter or FLAT for full range output for channels 5 and 6.

PHASE
Set this to 180° on the amplifier to allow adjustment from RBPC. This controls the Phase from 0-180° from the listening position. Properly adjusting phase will allow enhanced bass response, dynamics and impact at any volume. To utilize the RBPC with BASS SHIFT, set the Phase control on the amp to 180°. The unique features of the RBPC enable the proper adjustment of Phase and subwoofer level. *See RBPC instructions for proper adjustment.*

LOW EQ
Controls bass boost from 0 to +6dB

MODE
Select MONO or STEREO for channels 5 and 6

LEVEL [CH 5+6]
Input sensitivity for INPUTS 5 and 6, used to properly match input signal levels from signal source on and maximize amplifier output while eliminating noise. Level is not a volume control, level matching only. Adjust LEVEL to match source output voltage. For reference, a typical aftermarket radio ranges from 2v-4v of output. At minimum, use of a multi-meter and test program material is critical for this step. Independent level controls available for channels 1+2, 3+4 and 5+6.

OTM monitors amplifier internal temperatures and if abnormal temperatures are achieved, OTM will make minor adjustments to output power to allow the amplifier to return to normal operating temperatures without interruption.

HPF [CH 1+2]
Use in conjunction with **SELECT** switch. If HPF is selected, ired crossover point, variable from 55Hz - 4kHz @ 12dB per octave.

SELECT [CH 1+2]
Set this to 180° on the amplifier to allow adjustment from RBPC. This controls the Phase from 0-180° from the listening position. Properly adjusting phase will allow enhanced bass response, dynamics and impact at any volume. To utilize the RBPC with BASS SHIFT, set the Phase control on the amp to 180°. The unique features of the RBPC enable the proper adjustment of Phase and subwoofer level. *See RBPC instructions for proper adjustment.*

LEVEL [CH 1+2]
Input sensitivity for INPUTS 1 and 2, used to properly match input signal levels from signal source on and maximize amplifier output while eliminating noise. Level is not a volume control, level matching only. Adjust LEVEL to match source output voltage. At minimum, use of a multi-meter and test program material is critical for this step. Independent level controls available for channels 1+2, 3+4 and 5+6.

HPF [CH 3+4]
Use in conjunction with **MODE** switch. Selectable disabled (FLAT) or Highpass (HPF). If HPF is selected, then adjust dial to desired crossover point, variable from 55Hz - 4kHz @ 12dB per octave.

SELECT [CH 3+4]
Set this to 180° on the amplifier to allow adjustment from RBPC. This controls the Phase from 0-180° from the listening position. Properly adjusting phase will allow enhanced bass response, dynamics and impact at any volume. To utilize the RBPC with BASS SHIFT, set the Phase control on the amp to 180°. The unique features of the RBPC enable the proper adjustment of Phase and subwoofer level. *See RBPC instructions for proper adjustment.*

LPF [CH 3+4]
Use in conjunction with **MODE** switch. Selectable disabled (FLAT) or Highpass (HPF). If HPF is selected, then adjust dial to desired crossover point, variable from 55Hz - 4kHz @ 12dB per octave.

LPF-HPF-FLAT[CH 3+4]
Use in conjunction with **MODE** switch. Selectable disabled (FLAT) or Highpass (HPF). If HPF is selected, then adjust dial to desired crossover point, variable from 55Hz - 4kHz @ 12dB per octave.

LEVEL [CH 3+4]
Input sensitivity for INPUTS 3 and 4, used to properly match input signal levels from signal source on and maximize amplifier output while eliminating noise. Level is not a volume control, level matching only. Adjust LEVEL to match source output voltage. At minimum, use of a multi-meter and test program material is critical for this step. Independent level controls available for channels 1+2, 3+4 and 5+6.

TRI-LIGHT
Tri-light LED amplifier status indicators will change colors according to an array of system variables.
Blue - Standard Operation
Green - Over Voltage Warning
Amber - DC/Short Protection
Red - Internal Fuse Blown

Ti3 1200.4
4 CHANNEL POWER AMPLIFIER

LINE IN
Connect preamp signal cables from the source unit to these terminals. Use of 2 OR 4 channels of input signal selectable with **INPUT MODE** switch.

INPUTS
Select Balanced or Unbalanced inputs based on your input source's design for best S/N performance.

AUTO ON
Auto-on is useful when connecting to an OEM system that does not offer a Remote turn-on lead to activate the amplifier. When connecting directly to the amplifier using a high-level input signal the circuit can detect the input voltage (BTL <1v DC) and activate the amplifier. If your system has a standard remote turn-on lead use the standard **REM** input. If it is an OEM system that stays active even with the radio off (voltage on signal wires) move the switch to the OFF position and locate an alternative circuit or PAC L.O.C. PRO device to activate the amplifier. See Source Balanced/Unbalanced for High Level input wiring.

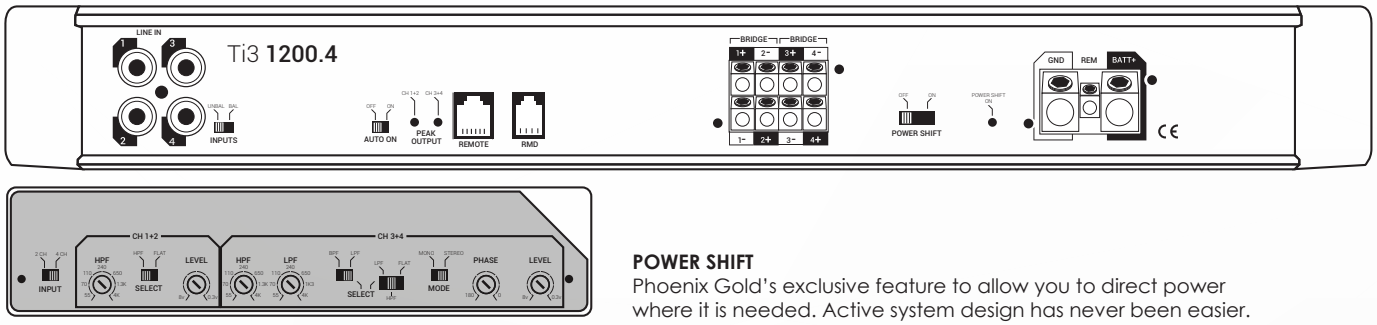
INPUT MODE
Input signal is selectable for 2 or 4 channels. If only 2 channels of input signal are available, select 2CH to allow signal to split to CH 3+4.

HPF 1+2
Use in conjunction with **MODE** switch. Selectable disabled (FLAT) or Highpass (HPF). If HPF is selected, then adjust dial to desired crossover point, variable from 55Hz - 4kHz @ 12dB per octave.

LEVEL
Input sensitivity, used to properly match input signal levels from signal source and maximize amplifier output while eliminating noise. Level is not a volume control, level matching only. Adjust LEVEL to match source output voltage. For reference, a typical aftermarket radio ranges from 2v-4v of output. At minimum, use of a multi-meter and test program material is critical for this step. Independent level controls available for channels 1+2 and 3+4.

PHASE
Set this to 180° on the amplifier to allow adjustment from RBPC. This controls the Phase from 0-180° from the listening position. Properly adjusting phase will allow enhanced bass response, dynamics and impact at any volume. To utilize the RBPC with BASS SHIFT, set the Phase control on the amp to 180°. The unique features of the RBPC enable the proper adjustment of Phase and subwoofer level. *See RBPC instructions for proper adjustment.*

TI3 1200.4



POWER SHIFT
Phoenix Gold's exclusive feature to allow you to direct power where it is needed. Active system design has never been easier. Why waste output power when it can be redirected to the channels that can better utilize it.
Insane amplifier efficiencies and output are achieved with **POWER SHIFT.** With **POWER SHIFT** deactivated, the amplifier will produce equal power to all channels (with similar gain settings). To activate **POWER SHIFT** first power down the amplifier; then switch the front panel selector to ON. Power up the amplifier and the front panel indicator will verify **POWER SHIFT** is active. Output power from the front channels is redirected to the rear channels.

For an active 2-way front stage, this is the perfect setup, the amplifier shifts from 225w per ch @4Ω to a more usable 150w front ch 300w rear ch setup, into 2Ω the amp produces 200w per channel on 1&2 plus 400 per channel on 3&4. Since the gain controls will be set to similar levels as the amplifier is producing different output power instead of severely turning down the front gains to compensate, the power levels are extremely linear thru the full output range. Audiophiles rejoice!

Another option is a powerful passive front stage and bridge the rear channels to a subwoofer. In this configuration, the front channels would get a respectable 150w per ch @ 4Ω plus a whopping 800w @ 4Ω mono for a subwoofer; Yes please.

PHOENIX GOLD

Ti3 1200.4
4 CHANNEL POWER AMPLIFIER

CH 3+4 Controls
Use in conjunction with **MODE** switches.
Selectable as:
Disabled (**FLAT**), Highpass (**HPF**) or Bandpass (**BPF**)/Lowpass (**LPF**).
Select FLAT/HPF/LPF/BPF then adjust to desired crossover point, variable from 55Hz - 4kHz @ 12dB per octave. If LPF or BPF is desired, move both switches to LPF+LPF or BPF+BPF. If Flat or HPF is selected, secondary LPF/BPF switch is disabled. Stereo (**ST**) or Mono can also be selected for channels 3+4 depending on application.

3+4 PEAK
Peak output LED indicator for channels 3+4. Helpful when used for subwoofer level adjustment. Adjust LEVEL so PEAK LED flashes when driving amplifier hard, but not so much that the LED stays on continuously. Light will illuminate when rated output voltage is achieved.

REMOTE
Selecting LPF for channels 3+4 activates this port. This port is for connecting the (RBPC) remote bass level and phase controller with BASS SHIFT®. The unique feature of the RBPC with BASS SHIFT® allows for perfect adjustment of not only the subwoofer level but also 0-180° of phase adjustment from the listening position. Properly adjusting phase will allow enhanced bass response, dynamics and impact at any volume. To adjust, play a test tone close to the crossover overlap you have the system adjusted to, typically in the 50-100Hz range. With all system speakers playing and at a moderate volume, slowly adjust the phase dial on the RBPC across the entire range. When the subwoofer is in phase with the other speakers in the system, you should be able to detect a rise in volume, "the sweet spot". Now return the control to the sweet spot and make small adjustments +/- until you maximize the output. You have now completed adjusting the phase and should not have to adjust this again. Use the level control to adjust the subwoofer output to your preference based on music program material.

SPEAKER
Speaker connections can be configured in Stereo (1 and 2 or 3 and 4), Mono (1+2 or 3+4) and 3 channel (1 and 2 , 3+4). Minimum speaker impedance is 2Ω in Stereo or 4Ω Mono. When bridging the amplifier into a Mono load, only the 1 + and 2 – or 3 + and 4 - outputs on the bridged channels will be used. Accepts up to 10GA wire.

RMD
RMD port is for connecting an optional Remote Monitoring Display (RMD). The RMD allows real-time viewing of system voltage.

GND
This must be connected to the negative terminal of the car's battery or bolted to a clean, unpainted part of the vehicle's chassis.

REM
This must be connected to switched +12V, usually a trigger wire coming from the head unit or ignition.
If the system does not have a standard remote turn-on, use of the **AUTO ON** feature maybe useful

BATT+
This must be connected to the positive terminal (+12V) of the car's battery via a 100A fuse. The fuse must be located within 18 inches of the battery. Use of 4ga or larger OFC (oxygen-free) copper wire is recommended for best performance.

TRI-LIGHT
Tri-light LED amplifier status indicators will change colors according to an array of system variables.

Blue - Standard Operation	Green - Over Voltage Warning
Amber - DC/Short Protection	Red - Internal Fuse Blown

OTM monitors amplifier internal temperatures and if abnormal temperatures are achieved, OTM will make minor adjustments to output power to allow the amplifier to return to normal operating temperatures without interruption.

Ti3 1300.1
MONOBLOCK POWER AMPLIFIER

LINE IN
Connect preamp signal cables from the source unit to these terminals.

LINE OUT
Used to connect multiple amplifiers without degrading signal strength via internal line driver. Also utilized when connecting amplifiers together in a Master/Slave configuration (See Master/Slave).

BAL / UNBAL
Select Balanced or Unbalanced inputs based on your input source's design for best S/N performance. *See Source Balanced/Unbalanced for High Level input wiring.*

AUTO ON
Auto-on is useful when connecting to an OEM system that does not offer a Remote turn-on lead to activate the amplifier. When connecting directly to the amplifier using a high-level input signal the circuit can detect the input voltage (BTL <1v DC) and activate the amplifier. If your system has a standard remote turn-on lead use the standard **REM** input. If it is an OEM system that stays active even with the radio off (voltage on signal wires) move the switch to the OFF position and locate an alternative circuit or PAC L.O.C. PRO device to activate the amplifier. *See Source Balanced/Unbalanced for High Level input wiring.*

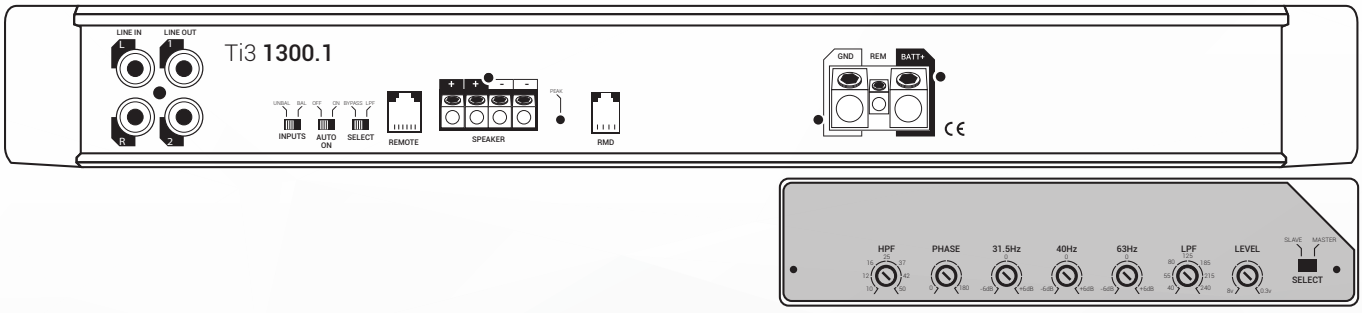
MASTER / SLAVE
Select Master if single amplifier or not connecting multiple amplifiers in either Strapped or Linked mode. Strapped mode will allow two Ti3 1300.1 amplifiers to be combined together as a single amp and drive a 2Ω load in excess of 2600 watts. Linked mode will allow any number of Ti3 1300.1 amplifiers to be connected to a Master Ti3 1300.1. Allowing all connected amplifier adjustments to be made via the Master amplifier. See diagrams for correct wiring configurations.

LPF/ Bypass
Select **LPF** for subwoofer applications, this will also activate REMOTE input. Select **Bypass** for use with external processor or for full range applications or full range operation.

HPF
HPF adjusts a highpass crossover that can be used as a subsonic filter. Use in conjunction with **LPF/ Bypass** switch. If **LPF** is selected, then adjust HPF dial to desired crossover point, variable from 10Hz - 50Hz @ 24dB per octave. This set up is typically used for vented subwoofer systems and is adjusted to the port tuning frequency to prevent over driving of the subwoofer.

PHASE
Set this to 180° on the amplifier to allow adjustment from RBPC. This controls the Phase from 0-180° from the listening position. Properly adjusting phase will allow enhanced bass response, dynamics and impact at any volume. To utilize the RBPC with BASS SHIFT, set the Phase control on the amp to 180°. The unique features of the RBPC enable the proper adjustment of Phase and subwoofer level. *See RBPC instructions for proper adjustment.*

TI3 1300.1



3 Band EQ
Up to 6dB of boost/cut @ 31.5Hz, 40Hz and 63Hz. Adjust this with the mind-set of less is more as usually only minor adjustments (if any) are needed for most modern systems. Most systems will benefit from proper Phase adjustment without having to use too much boost. Having on board equalization allows for precise fine tuning based on the vehicle's cabin and speaker enclosure interactions.

REMOTE
Selecting **LPF** activates this port. This port is for connecting the (RBPC) remote bass level and phase controller with BASS SHIFT®. The unique feature of the RBPC with BASS SHIFT® allows for perfect adjustment of not only the subwoofer level but also 0-180° of phase adjustment from the listening position. Properly adjusting phase will allow enhanced bass response, dynamics and impact at any volume. To adjust, play a test tone close to the crossover overlap you have the system adjusted to, typically in the 50-100Hz range. With all system speakers playing and at a moderate volume, slowly adjust the phase dial on the RBPC across the entire range. When the subwoofer is in phase with the other speakers in the system, you should be able to detect a rise in volume, "the sweet spot". Now return the control to the sweet spot and make small adjustments +/- until you maximize the output. You have now completed adjusting the phase and should not have to adjust this again. Use the level control to adjust the subwoofer output to your preference based on music program material. NOTE: To allow adjustment from the RBPC controller, the phase adjustment must be set to the 180° position on the amplifier.

LPF
Variable lowpass crossover frequency adjustment from 40Hz - 240Hz @ 24dB per octave.

PHOENIX GOLD

Ti3 1300.1
MONOBLOCK POWER AMPLIFIER

PEAK
Peak output LED indicator. Helpful when used for subwoofer level adjustment. Adjust LEVEL so PEAK LED flashes when driving amplifier hard, but not so much that the LED stays on continuously. Light will illuminate when rated output voltage is achieved.

FULL RANGE USE
Ti3 Monoblocks are full range capable. Unlike traditional monoblocks that are only used in bass applications, the Ti3 1300.1 can be configured for use as a powerful mono amplifier or used in pairs to create an incredibly powerful stereo output. Applications such as driving a large number of full range speakers with 1300 watts per channel or a strong component set having unlimited channel separation with independent left and right amplifiers.

LEVEL
Input sensitivity, used to properly match input signal levels from signal source and maximize amplifier output while eliminating noise. Level is not a volume control, level matching only. Adjust LEVEL to match source output voltage. For reference, a typical aftermarket radio ranges from 2v-4v of output. At minimum, use of a multi-meter and test program material is critical for this step.

SPEAKER
Speaker connections are labeled +/- and will accept up to 10GA wire. Minimum speaker impedance is 1Ω.

RMD
RMD port is for connecting an optional Remote Monitoring Display (RMD). The RMD allows real-time viewing of system voltage.

MASTER / SLAVE
Linked mode is used when utilizing multiple amplifiers and speakers with the desire to have them act in concert. The Master amplifier will control all Slave amplifiers in this configuration. Setting the Master amplifier will allow the Slave amplifiers to become exact duplicates of the Master, therefore making setup easy while having predictable results.

GND
This must be connected to the negative terminal of the car's battery or bolted to a clean, unpainted part of the vehicle's chassis.

REM
This must be connected to switched +12V, usually a trigger wire coming from the head unit or ignition. If the system does not have a standard remote turn-on, use of the **AUTO ON** feature maybe useful.

BATT+
This must be connected to the positive terminal (+12V) of the car's battery via a 100A fuse. The fuse must be located within 18 inches of the battery. Use of 4GA or larger OFC (oxygen-free) copper wire is recommended for best performance.

TRI-LIGHT
Tri-light LED amplifier status indicators will change colors according to an array of system variables.

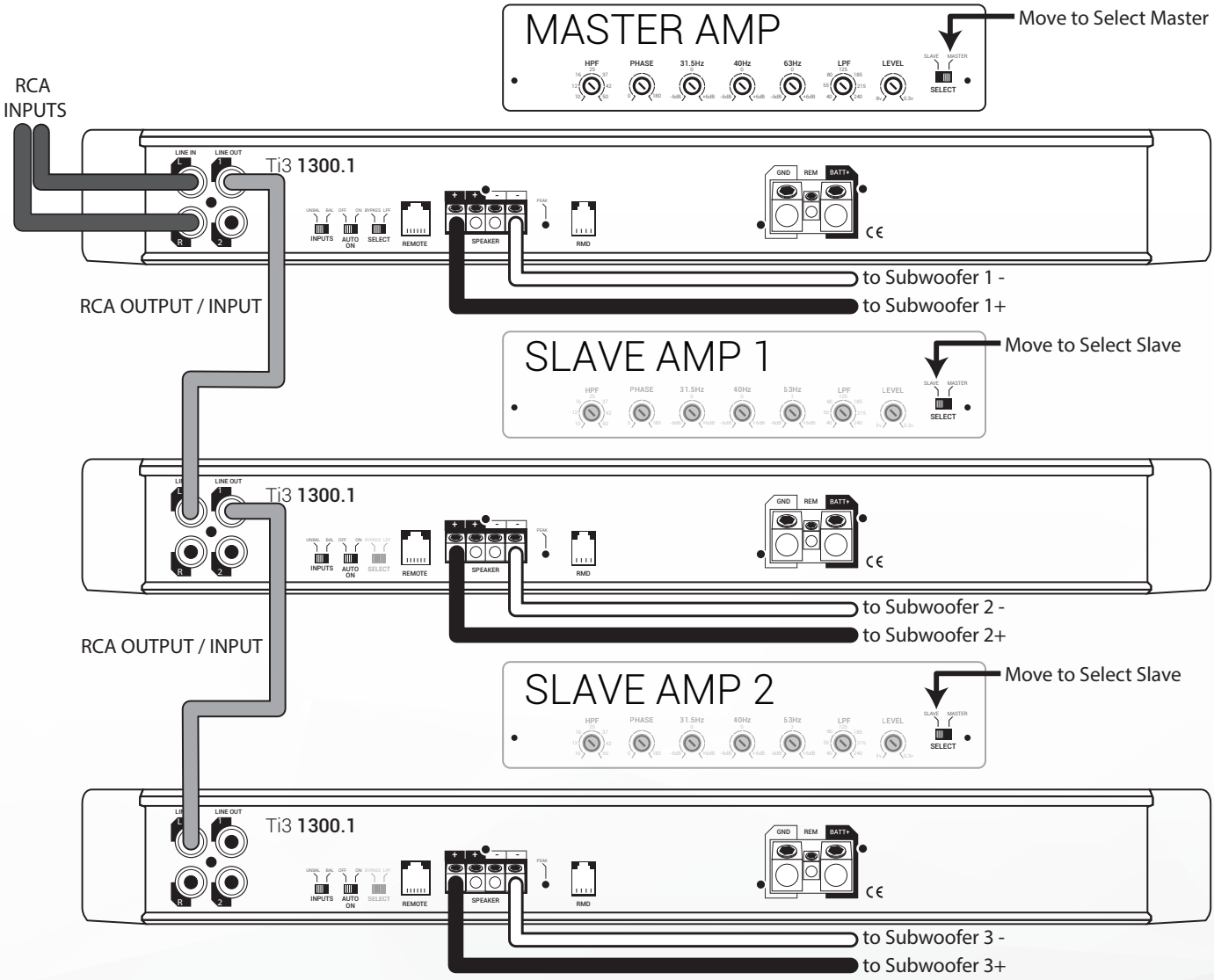
Blue - Standard Operation
Green - Over Voltage Warning
Red - Internal Fuse Blown
Amber - DC/Short Protection

OTM monitors amplifier internal temperatures and if abnormal temperatures are achieved, OTM will make minor adjustments to output power to allow the amplifier to return to normal operating temperatures without interruption.

BASS SHIFT

Ti3 1300.1
MONOBLOCK POWER AMPLIFIER

Linked Mode (multiple subwoofers/amplifiers)



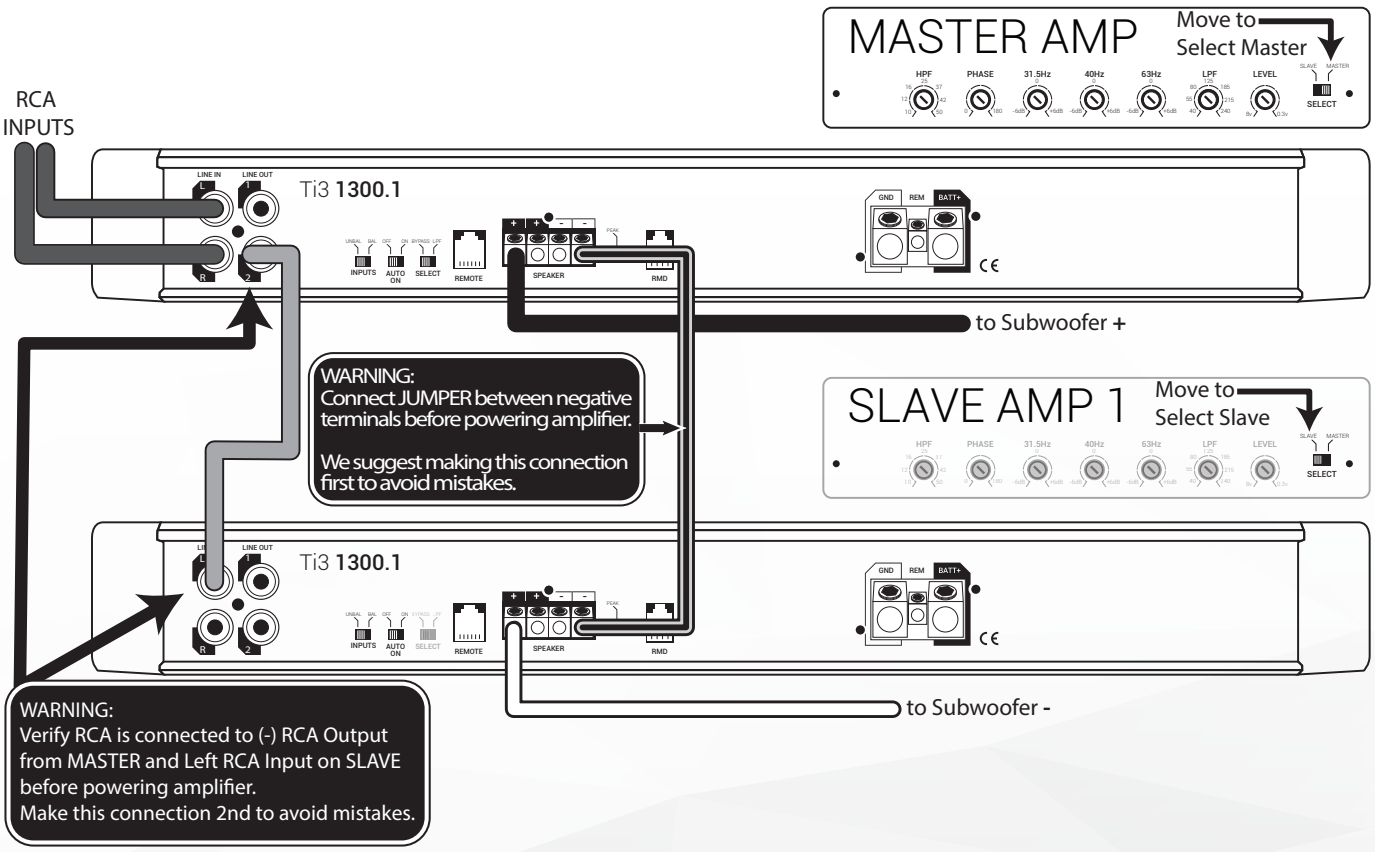
Repeat process for as many Slave amplifiers needed
Adjustments for gain, crossover, EQ, and phase are only needed on Master amplifiers, slave amp controls are disabled in Slave mode

PHOENIX GOLD

Ti3 1300.1
MONOBLOCK POWER AMPLIFIER

Master / Slave Strapped
Do you have a monster subwoofer that you want to power? No problem! You can strap two Ti3 1300.1's together to form a single output for 2600 watts at 2 ohm.

Strapped Mode (multiple amplifiers / single subwoofer 2Ω minimum)



Proper Slave amplifier wiring:

Utilizing this configuration will result in a very powerful amplifier; but with that power comes responsibility. Proper wiring is paramount so please read and understand these steps before proceeding.

Slave amplifier effectively becomes negative channel in this system. The Slave amplifier Positive output terminal is now the Negative speaker output in this system configuration. A jumper between the Master negative (marked -) terminal and the Slave negative (marked -) terminal must be connected before powering amplifier. RCA connection between Master and Slave amplifier must be correctly connected before powering amplifier.

Warning: ***Failure to correctly follow these steps can damage to both amplifiers and is not covered under warranty.***

Adjustments for gain, crossover, EQ, and phase are only needed on Master amplifier, slave amp controls are disabled in Slave mode

SYSTEM TUNING - BASIC

1. Install all system fuses.
2. Set the amplifier's input sensitivity (LEVEL) controls to their minimum positions (full counterclockwise).
3. Set all amplifier crossovers according to your system's design.
4. Make preliminary adjustments to the crossover frequency, usually 80Hz is a good starting point for high and low pass. It may be necessary to fine tune the crossover frequency later for the best overall sound quality.
5. If using a RBPC, set it to maximum (full clockwise).
6. Turn the head unit on with the volume set to minimum.
7. Visually check the amplifier has turned on by the power LED.
8. Check the condition of all other components to make sure they are powered up.
9. Set the head unit's tone controls, balance, and fader to the center (flat) position. Turn off any loudness or other signal processing features.
10. Set the volume control of the head unit to maximum volume. Play music you typically listen to through the system.
11. Turn up the sensitivity or input level control on the amplifier until the speakers reach maximum undistorted output.
12. Repeat sensitivity level adjustments for all other amplifiers.
13. Reduce the head unit's volume to a comfortable level.
14. Listen to various musical selections to check overall system balance. Compare front to rear, midbass to midrange, etc. If one speaker set is too loud compared to another, then its level must be lowered to blend correctly with the other speakers.

    Note: For subwoofers controlled by the Remote level control, keep the level setting from step 11 or 12. Use the control to blend subwoofers with the rest of the system. The correct subwoofer volume will change depending on road noise and differences in recordings.
15. Fine tune crossover frequencies to achieve the smoothest possible blending of each speaker set.
16. Adjust the Bass Equalization Controls on the amplifier, head unit or processor upstream if necessary to increase output.

    Note: Use these controls sparingly. Every 3d B of boost requires double the power at 45Hz. If your subwoofer system requires a lot of boost to sound good, there may be a problem. Look for out-of-phase woofers, a leaking subwoofer box, or incorrect box size or port calculations.
17. With all levels set correctly, the system will reach overall maximum undistorted output at the volume level set in step 10.

SYSTEM TUNING - ADVANCED

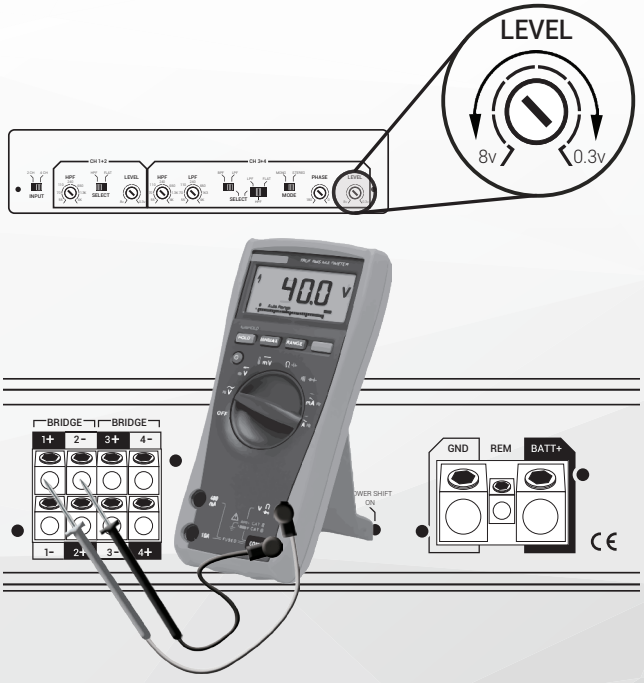
Advanced Tuning (Recommended Method)

1. Disconnect all speaker wires from amplifier.
2. Disconnect RCA's from any other system amplifiers.
3. If using RBPC, turn LEVEL fully clockwise. (Full output)
4. Select a test tone within the range of the output you are going to connect the amplifier. Highpass (5kHz), Midrange (1kHz), Bass 80Hz.
5. Adjust source unit to 85% full output and play selected test tone.
6. With the DMM set to AC voltage, measure output of amplifier (only one channel per level control is needed).
7. With test tone playing, slowly turn level control clockwise until target voltage is displayed on DMM. (see diagram below)
8. Repeat for all amplifiers/pairs of channels in system.
9. You have now set your amplifier(s) to perform at maximum output. Do not adjust the level higher from this point forward. Reconnect speakers.
10. Adjust all crossovers and listen to the system.

Level Matching:

If output levels do not match, determine which speakers are too loud in comparison to the others. Select the level control to these "louder" speakers and lower it to match the others. Listen again and readjust if needed. Do not increase levels higher than the set point that was determined in step 7. This method will provide the best dynamic range, exhibit no distortion and have an ultra-low noise floor.

Turn LEVEL slowly clockwise until DMM reads target voltage



MODEL	4 Ω	2 Ω	1 Ω	NOTES
TARGET VOLTAGES				
Ti3 1300.1	56.5v	48.5v	38.3v	
Ti3 1200.4	33.6v	30.6v	N/A	
POWER SHIFT ACTIVE				
Ti3 1200.4 CH 1&2	26.9v	26v	N/A	Bridged Mode use target voltage for setup test 1ch for bridged (not bridged)
Ti3 1200.4 CH 2&4	37v	35v	N/A	

PHOENIX GOLD

SOURCE - BALANCED OR UNBALANCED

How to determine if your source (last component sending signal to amplifier) is a balanced or unbalanced signal:

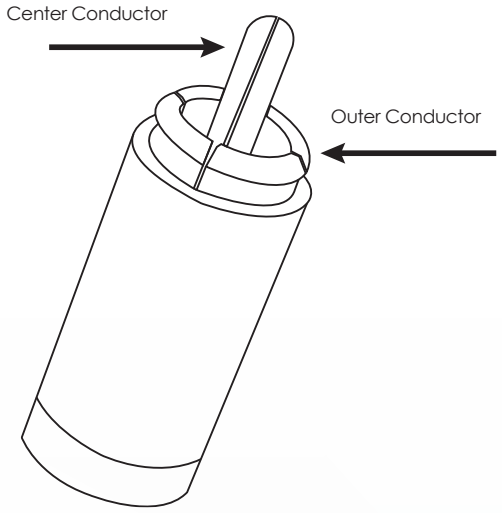
For car audio, we use standard RCA connectors with 2 main connection points, the center pin and the outer connector. RCA connectors can be used in both Balanced and Unbalanced systems.

Unbalanced benefit from the use of Coaxial constructed cables, and in contrast Balanced systems benefit from Twisted Pair construction. These are not to be confused with XLR Pro Audio Balanced connectors that have 3 conductors and are a different type of balanced connection.

This is a simplified explanation, but suitable enough to determine the type of system you are working with. In an Unbalanced system, the outer part of the RCA will reference to ground.

To test, use your DMM set to continuity and hold one lead to chassis ground and the other to the outer RCA connection on your source. If you read continuity, then your system is Unbalanced and you can adjust your settings and RCA construction type to suit this style. If there is no continuity then the system is Balanced and again you can adjust for this system.

High Level Inputs:
If utilizing high level inputs select Balanced as the input type. Then use a standard RCA cable with one sided cut off to connect source output wires. Then connect the RCA side to the input of the amplifier. The input is capable of accepting up to 16V of input signal.

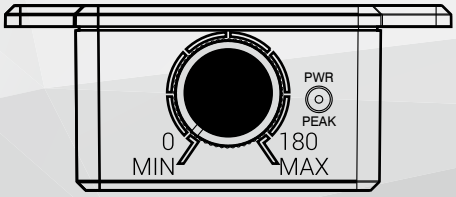


RBPC
REMOTE BASS AND PHASE CONTROL WITH BASS SHIFT®

RBPC
The first step if utilizing the RBPC and planning on using the Phase adjustment feature is to set the Phase on the connected amplifier to 180°.

FEATURES
The unique feature of the RBPC with BASS SHIFT® allows for perfect adjustment of not only the subwoofer level but also 0-180° of phase adjustment from the listening position. Properly adjusting phase will allow enhanced bass response, dynamics and impact at any volume.
If not utilizing the RBPC at all or not the phase adjustment, adjust phase directly from amplifier.
Along with the tuning of bass level and phase, the RBPC also offers amplifier status for power and peak with the onboard LED. If adjusting level, you can easily detect if you are driving the amplifier via the peak indication changing from flashing to solid.

INSTALLATION
Connect the RBPC to the amplifier via the included connection cable. Find a suitable location that allows easy access to the controls and mount the RBPC.



TUNING
To adjust, play a test tone close to the crossover overlap you have the system adjusted to, typically in the 50-100Hz range. With all system speakers playing and at a moderate volume, slowly adjust the phase dial on the RBPC across the entire range. When the subwoofer is in phase with the other speakers in the system, you should be able to detect a rise in volume, "the sweet spot". Now return the control to the sweet spot and make small adjustments +/- until you maximize the output. You have now completed adjusting the phase and should not have to adjust this again. Use the level control to adjust the subwoofer output to your preference based on music program material.

TROUBLESHOOTING

TRI-LIGHT
Troubleshooting is made easy thanks to the Tri-Light status indicators. If amplifier is not working, reference these first to access current status and address as needed.

Tri-light LED amplifier status indicators will change colors according to an array of system variables.

No Illumination - No Power
Blue - Standard Operation
Green - Over Voltage Warning
Red - Internal Fuse Blown
Amber - DC/Short Protection

NO POWER:
Check voltage at the amplifier with a DMM (volt meter), test +12v and Remote with head unit on. The voltage should register between 11.5V and 16.1V when testing across the ground lead of the amplifier. If no voltage, check that the amplifier's ground is good and has a solid connection. If secure, check the 100A fuse at the battery. Use a meter to verify connection from one end of the fuse to the other (use continuity setting on DMM), breaks may not always be visible. If the 100A fuse is blown, check the power wire and also the amplifier for a short on the speaker wires. If no short is present, replace the fuse. If all connections are testing correctly, it is possible that the internal fail-safe has activated. Please contact your Phoenix Gold Dealer for instructions and troubleshooting before attempting to make further repairs.

GREEN LED ILLUMINATED:
Check charging system for cause of high voltage. Measure with DM M and verify voltage is not exceeding 16.1V

BLUE LED ILLUMINATED, NO SOUND:
Turn the amplifier off and check all input and output signal cables and power connections. Check the speakers for shorts with a DMM (volt meter) or by connecting them to another audio source. After making sure everything is correct, turn the amplifier on again.

RED LED ILLUMINATED:
Internal Fuse Blown, visit an authorized dealer for service and troubleshooting. The advanced design of the Ti3 amplifiers should protect the amplifier in almost every circumstance, a blown internal fuse is a red flag meaning that something out of the ordinary is happening and should be investigated before replacing fuse. Example would be external fuse used is higher than recommended value.

AMBER LED ILLUMINATED:
DC/Short Protection. Check all connections. Disconnect all speaker wires and restart amplifier. If status returns to Blue, then meter speaker leads and verify not shorted to one another or to ground. Reconnect speaker leads and retest.

BLUE LED ILLUMINATED, NO SOUND FROM ONE OR MORE CHANNELS:
Check the balance control in the head unit. Check speaker connections. Check signal input connection. Very low output: Check your head unit's fader control or the amplifier's input sensitivity level. Make sure subsonic frequency control is not set too high and LPF frequency control is not set too low at the same time.

FREQUENT AMPLIFIER SHUTDOWN WITH AUTOMATIC RECOVERY:
This indicates chronic amplifier thermal shutdown because of operation at consistently high internal temperatures. High operating temperature can be caused by inadequate ventilation. Make sure you are not running a lower than recommend impedance. Also check for damaged speakers or passive crossover systems. Finally, chronic thermal shutdown may result from otherwise normal operation of the amplifier at elevated output power levels, which can be resolved by providing additional amplifier cooling, installing a higher-power amplifier, or reducing amplifier output level.

POWER CYCLES ON/OFF QUICKLY:
If the power indicator if going off repeatedly when the audio system is on, check all ground connections. Check the amplifier's connection to the battery. Check battery voltage. If low, recharge or replace the battery.