Specifications

OCTANE-R SERIES
R5.1 Mobile Theater
6 CHANNEL AMPLIFIER WITH DOLBY DIGITAL PROCESSING

R5.1MT

FRONT, REAR AND CENTER CHANNELS::
CANAUX AVANT, ARRIÈRE ET CENTRAL:

INTO 4 OHM STEREO AT 14.4 VDC (MAX POWER) ..... 100 X 5
STÉRÉO SUR 4 OHMS À 14,4 V C.C. (PUISSANCE MAX)

INTO 4 OHM STEREO AT 14.4 VDC (RMS) ..... 50 X 5
STÉRÉO SUR 4 OHMS À 14,4 V C.C. (RMS)

INTO 4 OHM STEREO AT 12.5 VDC (IASCA) ..... 18 X 5
STÉRÉO SUR 4 OHMS À 12,5 V C.C. (IASCA)

SUBWOOFER CHANNEL
CANAL TRÈS BASSES FRÉQUENCES

INTO 4 OHM AT 14.4 VDC (MAX POWER) ..... 200 X 1
SUR 4 OHM À 14,4 V C.C. (PUISSANCE MAX)

INTO 4 OHM AT 14.4 VDC (RMS) ..... 100 X 1
SUR 4 OHM À 14,4 V C.C. (RMS)

INTO 4 OHM AT 12.5 VDC (IASCA) ..... 36 X 1
SUR 4 OHM À 12,5 V C.C. (IASCA)

***NOTE:** In order to achieve the extraordinarily small footprint this product features, this amplifier is stable only into 4 ohm loads.*
Please consult your Authorized Phoenix Gold dealer for assistance if you are uncertain of the impedance of your speakers.

REMARQUE: Afin d'obtenir l'exceptionnelle petite empreinte qu'offre ce produit, cet amplificateur est stable uniquement en charges de 4 ohm.
Veuillez contacter votre revendeur Phoenix Gold agréé pour obtenir de l'aide si vous n'êtes pas sûr de l'impédance de vos haut-parleurs.

RECOMMENDED FUSE SIZE ..... 30 AMP
TAILLE DE FUSIBLE RECOMMANDÉE

OVERALL DIMENSIONS ..... 10.8L X 6.2W X 1.8H
DIMENSIONS TOTALES

TOTAL HARMONIC DISTORTION ..... > 0.15% AT RATED POWER
DISTORSION HARMONIQUE TOTALE ..... > 0,15 % À UNE PUISSANCE NOMINALE

FREQUENCY RESPONSE ..... 20Hz TO 20kHz
RÉPONSE EN FRÉQUENCE ..... DE 20 HZ À 20 KHZ

SIGNAL TO NOISE RATIO ..... >100dB
RAPPORT SIGNAL/BRUIT

SIGNAL INPUT SENSITIVITY ..... 200 MILLIVOLTS TO 4 VOLTS
SENSIBILITÉ D'ENTRÉE DU SIGNAL ..... DE 200 MV À 4 V

DC INPUT VOLTAGE RANGE ..... 10 VDC TO 15.5 VDC
PLAGE DE TENSION D'ENTRÉE C.C. ..... DE 10 V C.C. À 15,5 V C.C.

TYPICAL CURRENT DRAW AT IDLE ..... <1.5 AMPS
APPEL DE COURANT TYPE EN VEILLE

HIGH PASS CROSSOVER SLOPE ..... 12dB PER OCTAVE
PENTE DE CROISEMENT HIGH PASS ..... 12 DB PAR OCTAVE

SUBWOOFER CROSSOVER SLOPE ..... 24dB PER OCTAVE
PENTE DE CROISEMENT DU CAISSON D'EXTRÊMES GRAVES ..... 24 DB PAR OCTAVE

CROSSOVER RANGE ..... 60 TO 220Hz
PLAGE DE CROISEMENT ..... DE 60 À 220 HZ

MINIMUM LOAD STABILITY FOR ALL CHANNELS ..... 4 OHM
STABILITÉ DE CHARGE MINIMUM POUR TOUS LES CANAUX

DUE TO ONGOING PRODUCT DEVELOPMENT AND REFINEMENT, FEATURES SPECIFICATIONS, AND AVAILABILITY ARE ALL SUBJECT TO CHANGE.
EN RAISON DU DÉVELOPPEMENT ET DE L'AMÉLIORATION CONTINUS DU PRODUIT, LES CARACTÉRISTIQUES ET DISPONIBILITÉS SONT TOUTES SOUS RÉSERVE DE MODIFICATIONS.

LIMITED WARRANTY

Phoenix Gold International, Inc. (or "Phoenix Gold") warrants its products against defects in materials and workmanship for a limited period of time. For a period of one (1) year from date of original purchase, we will repair or replace the electronic product, at our option, without charge for parts and labor. Customer must pay all parts, labor and shipping charges after the limited warranty period expires. The limited warranty period for factory refurbished products expires after ninety (90) days from date of original purchase. This limited warranty applies only to purchases from authorized Phoenix Gold Electronics/Speaker retailers.

This limited warranty is extended only to the original purchaser and is valid only to consumers in the United States. Consumers are required to provide a copy of the original sales invoice from an authorized Phoenix Gold dealer when making a claim against this limited warranty. This limited warranty only covers failures due to defects in materials or workmanship that occur during normal use. It does not cover failures resulting from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, modification, service by anyone other than Phoenix Gold, or damage that is attributable to Acts of God. It does not cover costs of transportation to Phoenix Gold or damage in transit.

This warranty will become void if the serial number identification has been wholly or partially removed, altered or erased. Repair or replacement under the terms of this warranty does not extend the terms of this warranty. Should a product prove to be defective in workmanship or material, the consumer's sole remedies will be repair or replacement as provided under the terms of this warranty. Under no circumstances shall Phoenix Gold be liable for loss or damage, direct, consequential or incidental, arising out of the use of or inability to use the product. There are no express warranties other than described above.

GARANTIE LIMITÉ

Phoenix Gold International, Inc. (ou "Phoenix Gold) garantit ses produits contre tous défauts matériels et de fabrication pour une période de temps limitée. Pour une période d'un (1) an, comptée à partir de la date d'achat original, nous réparerons ou remplacerons le produit électronique, à notre choix, sans frais de pièce ou de main-d'œuvre. Le client doit payer pour toutes pièces, main-d'œuvre et frais d'expédition une fois la période de garantie limitée expirée. La période de garantie limitée pour des produits remis à neuf en usine expire après quatre-vingt-dix (90) jours comptés à partir de la date d'achat original.

Cette garantie limitée s'applique seulement aux achats provenant de détaillants PG d'Électronique/Haut-parleurs autorisés. Cette garantie limitée ne couvre que l'achat original. Au moment de faire une demande pour faire valoir cette garantie limitée, il peut être exigé des consommateurs de fournir une copie de la facture de vente originale provenant d'un concessionnaire PG autorisé. Cette garantie limitée ne couvre que les défaillances dues aux défauts matériels ou de fabrication qui surviennent lors d'usage normal. Elle ne couvre pas les défaillances survenant par accident, mauvais emploi, abus, négligence, fausse manœuvre, démontage, altération, installation défectueuse, modification, entretien par personne autre que PG, ou dégâts attribuables à une catastrophe naturelle. Elle ne couvre pas les frais d'expédition à PG ou les dégâts survenus en transit.

Cette garantie sera annulée si l'identification du numéro de série a été complètement ou partiellement enlevée, changée ou effacée. La réparation ou le remplacement selon les termes de cette garantie ne prolonge pas les termes de cette garantie. S'il était prouvé qu'un produit a un défaut matériel ou de fabrication, les seuls recours offerts au consommateur seront la réparation ou le remplacement selon les termes de cette garantie. En aucune circonstance PG ne sera responsable pour la perte ou de dégâts directs, indirects ou accidentels, survenant par l'utilisation ou par l'impossibilité d'utilisation du produit. Il n'y a pas de garantie expresse autre que celle décrite ci-dessus.

PHOENIX GOLD
10/03 REV A

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Octane R

6 Channel Amplifier
with Dolby Digital Processing

PHOENIX GOLD
Product Manual

DOLBY DIGITAL 5.1 CHANNEL DECODING
DÉCODAGE DOLBY DIGITAL 5.1

PRO LOGIC DECODING
DÉCODAGE DOLBY PRO-LOGIC

PHANTOM 4.1 LISTENING MODE
MARCHE/ARRÊT HAUT-PARLEUR CENTRAL UTILISANT LA TECHNOLOGIE PHANTOM 4.1

OPTICAL TOSLINK INPUT
1 ENTRÉE OPTIQUE

COAXIAL DIGITAL INPUT
1 ENTRÉE COAXIALE

2 ANALOG LINE LEVEL INPUTS
2 ENTRÉES ANALOGIQUES SÉLECTIONNABLES

HIGH QUALITY 24 BIT AD/DA CONVERTERS
TRAITEMENT AN/NA 24 BITS

6-CH LEVEL CONTROL: 20dB IN 1dB STEPS
CONTRÔLE DU NIVEAU INDIVIDUEL DES 6 CANAUX

24dB/OCTAVE LOW PASS CROSSOVER 60–220 Hz
FILTRE DE CROISEMENT VARIABLE LOW PASS 24 DB (60 HZ À 220 HZ PAR INCRÉMENT DE 10 HZ)

24dB/OCTAVE HIGH PASS CROSSOVER 60–220 Hz
FILTRE DE CROISEMENT VARIABLE HIGH PASS 12 DB (60 HZ À 220 HZ PAR INCRÉMENT DE 10 HZ)

FUNCTION CONTROL THROUGH OSD (ON SCREEN DISPLAY)
AFFICHAGE DU MENU COMPLET PAR PAGE-ÉCRAN

IR REMOTE CONTROL
PORT INFRAROUGE CÂBLÉ À UTILISER AVEC UNE TÉLÉCOMMANDE

FOR COMPLETE MANUALS, TECHNICAL TIPS, FAQ'S, SYSTEM DIAGRAMS & NEW PRODUCT INFORMATION, VISIT US ON-LINE
www.phoenixgold.com

Operational Details

Power Connections In order for the Octane R 5.1 to function, the following connections must be made to the vehicle's electrical system:

Digital Inputs The Octane R 5.1 can receive either digital PCM or bitstream data via optical or coaxial line. In most applications, one of these two lines is connected to the digital output of a DVD or CD player. Switching inputs must be done by pressing the input select button on the remote control.

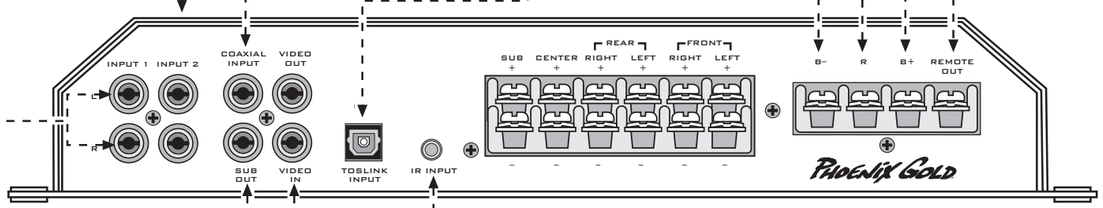
LED The SuperBrite® Blue LED on the top panel of the Octane R 5.1amplifier indicates the system is powered on or off.

REMOTE OUT This can turn on other amplifiers or processors in the system.

B+ This must be connected to the positive terminal (+12V) of the car's battery.

B- This must be connected to the negative terminal (-12V) of the car's battery.

REMOTE This must be connected to switched +12V, usually a trigger wire coming from the head unit or ignition.



IR Remote Input To control the system using the included remote control, you must first connect the wired IR sensor to the IR input of the system. To control the system, there should be no obstacle between the remote control and the IR sensor. For best results, the remote control should point directly at the front window of the wired IR sensor.

Analog Inputs The Octane R 5.1 can receive up to two separate analog line level inputs through its stereo RCA inputs. In most applications, one of these two lines are connected to the analog output of a DVD or CD player. The second input can be used for an auxiliary source such as an MP3 player. Line input can be from 0.2V to 6V RMS. All functions provided by the decoder can be used with the analog inputs. The two channels of line input can be extended to 5.1 channels using Pro Logic by selecting the 'Surround' or 'Phantom' modes.

Video Input/Output The Octane R 5.1 provides function selection and display exclusively by OSD (On-Screen Display). For this purpose, the video output from a DVD or other video source is connected into the video input of the Octane R 5.1. The video output should then be connected to the input of the monitor, LCD, or TV. The Octane-R 5.1 system supports NTSC and PAL standards. When video input into the system is absent, the display color is blue and display position may be altered. This allows selection and display of functions even when no video sources are playing.

Line Input Level Setting The Octane R 5.1 has a line input sensitivity of 0.2V to 6V RMS. The line input level value in the setup menu in the On-Screen Display indicates the maximum allowable level. As an example, if the output level of the head unit is 3V RMS and the head unit is connected to the first pair of RCA inputs (INPUT1) of the Octane-R 5.1, then it is best to set INPUT1 level to 3V. For optimal operation and best audio quality, it is recommended that the input level of the line input be set to the maximum level of the output source. Please note most head units use peak voltage ratings. Be sure to set the level to the RMS or Continuous value. Check your DVD or head unit manual for details.

SUB OUT Sends a subwoofer pre-amp signal to a larger subwoofer amplifier if necessary.

System Control and Remote Buttons

1. Mute On/Off
When the Octane R5.1 is powered on, the MUTE button on the remote control is used for instantaneous lowering of the volume to zero. Eliminating MUTE can be done by pressing MUTE again, or volume up or down.

2. Input Selection
The INPUT SELECT button on the remote control provides manual switching of the input coming into the system. The first press of the INPUT button displays the current input source. The selection switches in order from Optical -> Coaxial-> Input1 -> Input2 and then back to Optical again. Input switching is possible while the source is displayed on the screen. If there is an error in optical or coaxial input, the display will blink continuously. In this circumstance, all controls are available while blinking. The Octane R 5.1 has source memory: when you power the unit off and then on again, it will remember the last source selected, and return automatically to that source.

3. Test Tone
The Octane R5.1 features a test tone to check if speakers are connected properly. When this button is selected (on the remote control), white noise of a fairly low volume is output to each of the 5 main speakers in order from Front Left -> Center -> Front Right -> Rear Right -> Rear Left every 2 seconds until the button is pressed once more. There is no test tone for the SUB output.

4. Set-Up
This button causes the On Screen Display to open the menu for setting up the Octane R 5.1. In this window, the selection, function, and control of the selected function can be accomplished. The Set-Up menu allows control of:

- Pro Logic Selection
- Dynamic Range Compresion Selection for Dolby 5.1 material
- Crossover Filter selection for LPF and HPF used in Bass Management
- INPUT1 Level
- INPUT2 Level
- Channel Level (Trim) Control

By pressing the Set-Up button on the remote when the menu is on-screen will cause the menu to hide. This button is also used to return to the main Set-Up menu from the channel level control menu.

5. Menu Up/Down
When the menu is displayed on the OSD (On-Screen Display) the function to be controlled can be selected by these buttons. The buttons are set up in a circular pattern for ease of use.

6. Selection Left/Right
After the selection of function using the Menu Up/Down button, function-dependant values can be changed using the Left/Right buttons on the Remote Control. As soon as the value is changed, the new value is displayed without requirement of confirmation. For value changes, the left button is used for decreasing values, and the right button is used for increasing values.

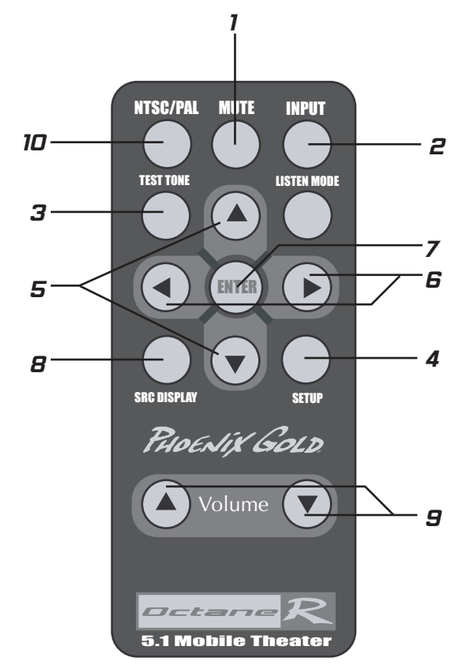
7. Enter
This button is used to enter the channel level control in the Set-Up menu.

8. Source Display
By pushing this button, you can display the decoding mode or Pro Logic mode on the monitor or TV. The following is an explanation of the modes:

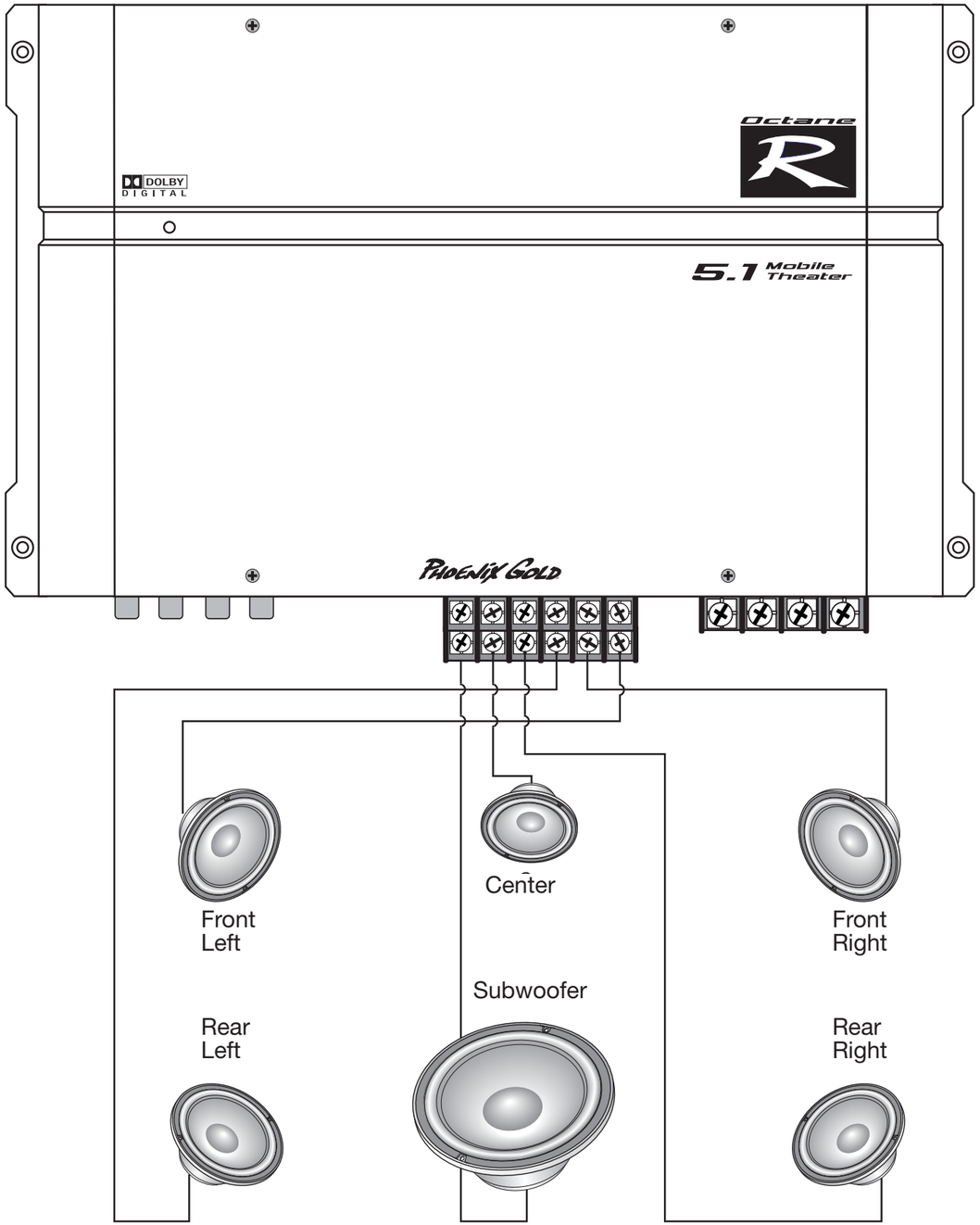
- **Dolby Digital –** Input source is Dolby Digital bitstream for all listening modes
- **Pro Logic –** Input source is PCM and Pro Logic is on for phantom or surround modes.
- **Dolby Surround –** Input source is Dolby Digital 2.0 Stereo and Pro Logic is on for phantom and surround modes.
- **PCM –** Input source is PCM and Pro Logic is off for all listening modes or input source is PCM and Pro Logic is on for stereo mode.

9. Volume Up/Down
These buttons control the master volume of the system. These buttons are only for master volume control. When channel level menu is invoked, these buttons cannot be used for control of channel levels. Channel levels can be changed using left or right button.

10. NTSC/PAL
This button is used to change between U.S. and foreign standards. Press the button for three seconds to change between NTSC and PAL. The unit ships in NTSC mode.

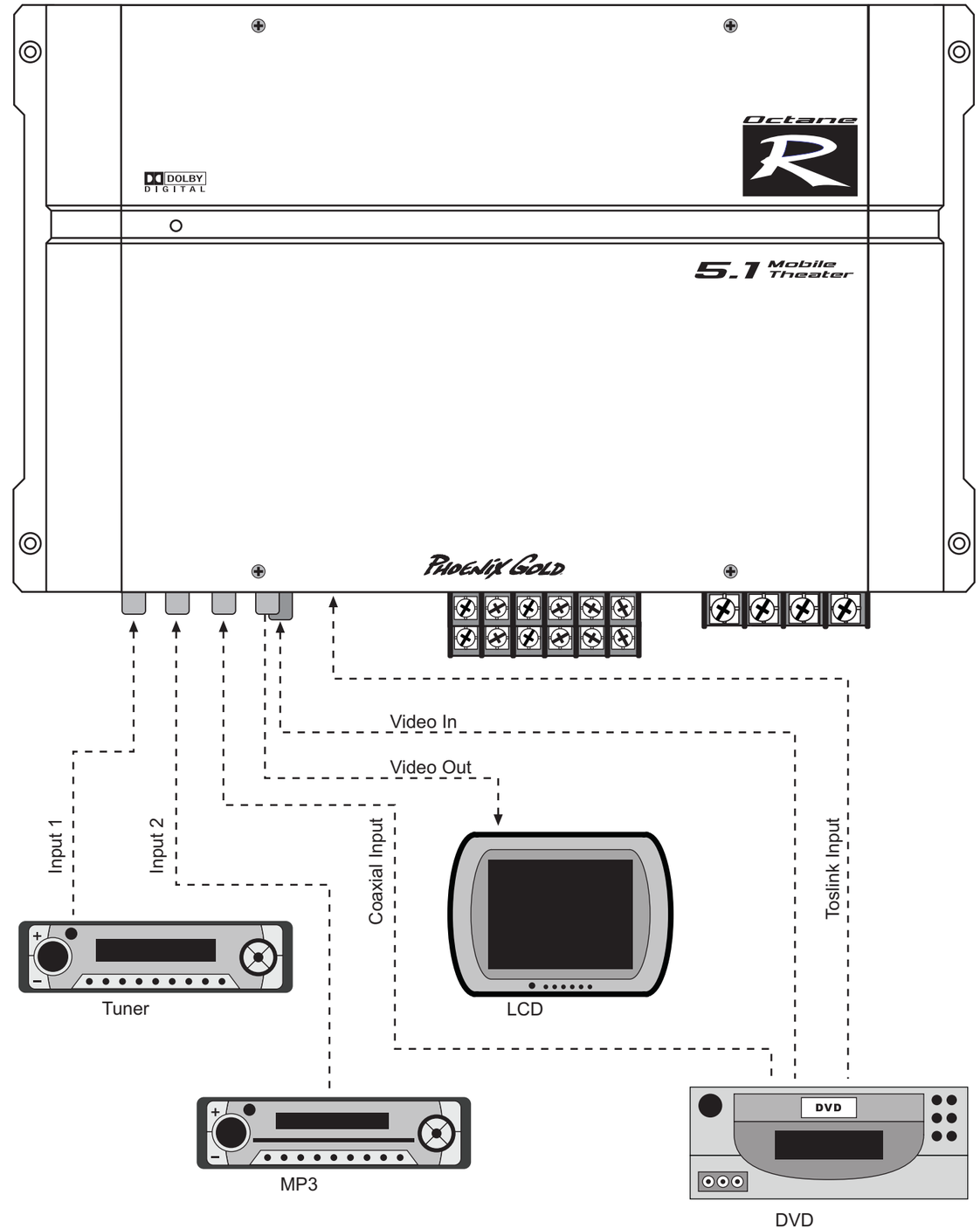


Speaker Diagram



** Please note: Do not attempt to bridge any channels on the speaker outputs*

A/V Diagram



Operation Guide

1. Input Source Selection

To select the input source for the system, the system should be turned on, then:

1) Push "INPUT" selection button on remote controller.
2) Continuing to push the "INPUT" selection button while the input is displayed on the monitor or TV makes a change in the input source as follows: OPTICAL -> COAXIAL -> INPUT1 -> INPUT2 -> OPTICAL (in circular order).

If there is an error in the data received via the optical or coaxial line the display will blink continuously. For more details, please see section 14. Digital Error Detect.

2. Listening Mode Selection

The system provides three kinds of listening modes:

Surround Listening Mode

This mode is selected with a full set of 5.1 speakers connected . This mode is recommended for use while Dolby Digital or Pro Logic is working.

Phantom 4.1 Listening Mode

This mode is selected when a center speaker is absent. This mode is recommended for use with Dolby Digital or Pro Logic when working without a center channel speaker.

2-Channel Stereo Listening Mode

When this mode is selected, the rear channels are identical to the front channels. That is, the front left and right channels are copied to rear left and right channels respectively. In this mode, center signal is not produced, but SUB signal is produced. Pro Logic is automatically deactivated in this mode.

To select a listening mode described above, the system should be turned on and

1) Push "LISTEN MODE" selection button on remote controller.
2) Continuing to push "LISTEN SELECTION" button while it is displayed in monitor or TV makes a change in the listening mode as follows: SURROUND -> PHANTOM 4.1 -> 2-STEREO (in circular order). While Pro Logic is off for a PCM source (CD or line input), if the listening mode is "SURROUND" or "PHANTOM 4.1" there is no surround and center sound. For surround sound, Pro Logic should be on in setup menu or alternatively, you can use "2-STEREO" listening mode.

3. DRC (Dynamic Range Compression) On/Off

This function currently supports only Dolby Digital 5.1 sources. For other programs and non-surround listening modes, this function is not effective. When this function is on, high level signal (e.g., explosions, bombing, jet takeoff) is compressed or attenuated while having no influence on low level signal. When this function is off, the output is of full dynamic range as programmed.

This function can be selected using DRC on/off switch in setup menu.

1) Push "SETUP" button.
2) Move blinking arrow to "DRC" using "MENU UP" or "MENU DOWN" button.
3) Select On or Off using "MENU LEFT" or "MENU RIGHT" button.
4) After finished, push "SETUP" button again to escape setup window.

When DRC is on the high level of sound is suppressed with no effects on low level sound.

For normal listening, set DRC to off.

4. Pro Logic On/Off

This function makes stereo programs able to be reproduced by multiple channels. When this function is not selected, the original stereo source is bypassed to front speakers. This function is automatically bypassed for stereo listening mode regardless of its selection in setup menu.

To enable or disable Pro Logic, the system should be turned on and:

1) Push "SETUP" button.
2) Move blinking arrow to "PRO LOGIC" using "MENU UP" or "MENU DOWN" button.
3) Select On or Off using "MENU LEFT" or "MENU RIGHT" button.
4) After you are finished, push the "SETUP" button again to escape setup window.

5. Crossover Filter Selection

The SUB channel is low-pass filtered and other channels are high-pass filtered. The cutoff frequency of those low pass and high pass filters is changed simultaneously in this selection. This selection provides 60Hz to 220Hz of cutoff frequency in 10 Hz step.

To select suitable crossover filter to match one's own speaker system,

1) Push "SETUP" button.
2) Using "MENU LEFT" and "MENU RIGHT" buttons on the remote control, select cutoff frequency in decreasing and increasing order respectively. One push of the left or right button makes one step movement in frequency. The frequency which is selected (displayed) is promptly reflected.
3) After you are finished, push "SETUP" button again to escape setup window.

6. Channel Level Control

The system provides the ability to control each channel level from -10dB to +10dB with 1dB step. This trim control can be used for matching levels of different types of speakers or used when more power is required.

To enable channel level menu and to control values,

1) Push "SETUP" button.
2) Move blinking arrow to "CHANNEL LEVEL" using "MENU UP" or "MENU DOWN" button.
3) Push the “Enter" button on the remote controller. The window for channel level control will open.
4) Move the blinking arrow to the channel to be controlled using the "MENU UP" or "MENU DOWN" button
5) For level increasing, use the "MENU RIGHT" button, and the "MENU LEFT" button for level decreasing.
6) After finished, push the "SETUP" button to escape channel window and push the "SETUP" button again to completely escape setup menu.

Operation Guide cont'd.

7. Test Tone On/Off

To use test tone, master volume must be at a relatively high level because the level output when the test tone is playing is relatively lower than that of normal audio output at the same master volume level.

To enable or disable the test tone output,

1) Push the "TEST TONE" button on the remote control. The test tone will be output to one channel at a time in the order of "FRONT LEFT -> CENTER -> FRONT RIGHT -> REAR RIGHT -> REAR LEFT" continuously. While the test tone is playing, pressing any other function button does not work.
2) To output normal sound, push "TEST TONE" button again. The test tone mode is then disabled to produce normal audio output.

Note: Test tone does not include a tone for the SUB channel. Checking the connection of SUB speaker is only possible with real audio sound through the SUB speaker.

8. Master Volume Up/Down

This controls the output level of all channels simultaneously. It is designed to control in 1dB step for high volume levels, in 2dB step for middle levels and in 3~5dB for low levels. When volume level meets the minimum the level goes to mute. A short duration push of the "VOLUME UP" or "VOLUME DOWN" button makes one step change and long duration push makes multiple step changes.

9. Mute On/Off

This function is to enable or disable muting of decoder output. When mute is enabled, this is indicated on the screen until disabled. To disable mute, use "MUTE" button again or master "VOLUME UP" or master "VOLUME DOWN" button.

10. Setup Menu Display

Controlling DRC, Pro Logic, crossover, line input levels and each channel level is only possible in setup menu. For more information, refer to the previous pages of this section. When setup menu is invoked the following display is shown.

-> PRO LOGIC ON/OFF

-> DRC ON/OFF

-> CROSSOVER XXXHz*

-> INPUT1 LEVEL X V**

-> INPUT2 LEVEL X V

-> CHANNEL LEVEL

** XXXHz of Crossover is 60Hz to 220Hz in 10Hz step*

*** X V has the range of 0.2 ~ 6*

Movement of arrows in the left column is achieved by pressing the "MENU UP" or "MENU DOWN" button. When a function is selected, the arrow corresponding to the function is blinking. The on or off status is controlled by "MENU RIGHT" or "MENU LEFT" button. In this case, both buttons act identically. The change of cutoff frequency for the crossover filter is also made by "MENU RIGHT" or "MENU LEFT" button. However, the left button is used for decreasing frequency and right button for increasing in this case. The "SETUP" button is used to enable and disable setup menu.

11. Channel Level Control Menu Display

As the sub-menu of setup menu, the following menu for channel level control is provided. To view this sub-menu, move to "CHANNEL LEVEL" in setup menu using "MENU UP" or "MENU DOWN" button. Then, push the "ENTER" button on remote controller.

-> FRONT LEFT	XX dB*
-> FRONT RIGHT	XX dB
-> CENTER	XX dB
-> REAR LEFT	XX dB
-> REAR RIGHT	XX dB
-> WOOFER	XX dB

** XXdB is -10 to 10dB in 1dB step*

The selection of channels is identical to the selection of functions in the setup menu. The level change is made by "MENU LEFT" and "MENU RIGHT" buttons. The left button is used for value decreasing and the right button for increasing as with the crossover filter. To escape the channel sub-menu, pushing the button twice is required. The first push is to return to setup menu from this sub-menu and the second pushing is to escape setup menu.

12. Volume Fade In and Out

Volume fading is involved in the following cases.

1) Listening Mode Change
2) Input Source Change
3) Return From Test Tone

While volume fading, the display is blinking and the controller does not accept any command from remote controller. When the blinking is finished user can control the system using remote controller. Since this fading is related to current volume level, if the volume level is higher, more fading time is required than lower volume level.

13. Digital Error Detect

The system provides two digital inputs; optical and coaxial. The coaxial input should be used with a true 75 ohm cable. When one (or two) digital inputs is not connected or connected inappropriately (or source unit is not powered on) the system can detect this situation. When pushing input button in remote controller the selected input source is displayed for about 7 sec. If digital data has no problem, then the display changes from blinking to not blinking after about 2 sec due to the volume fading. If the digital data has a problem, it remains blinking. When this situation occurs, connections or output of source unit should be checked. Note that the system does not provide error detection or zero-bit input detection on analog input such as line input1 and line input2.

14. Amplifier Shutdown and Message Display

The system can detect the following trouble modes of the amplifier.

1) Short Circuit and Over Current
2) Under Voltage
3) Over Temperature

When the system is in an under-voltage situation (2) (less than 9.5V) the overall system is shut down. The system will not give any message for under voltage situation. When the system is first put into protection for situations (1) or (3) it will self-test for 10 milliseconds. (While the system is self-testing, the sound may be discontinued.) If the same situation is detected after time is elapsed, the system causes the amplifier to shut down by disconnecting the amplifier section from the power supply, and will display "AMP PROTECT" on the OSD for about 110 sec (~2 minutes). In this situation, no command can be effected. After the stated time has elapsed, the system automatically recovers to normal operation with volume two steps down from the level prior to shutoff.