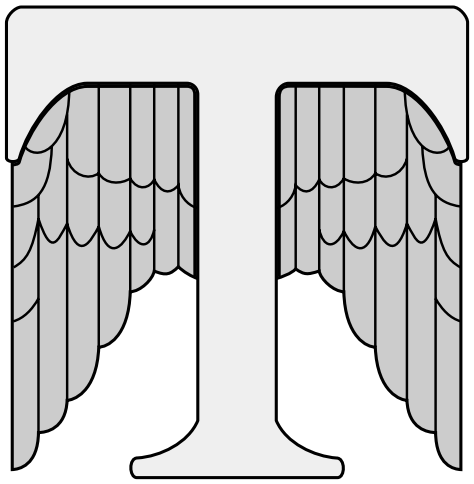
THETA DIGITAL

C O R P O R A T I O N



Casablanca II

Owner's Manual

V 2.01

Digital Done Right ™

PREFACE

CONGRATULATIONS

You have just acquired the most advanced component for the control and processing of audio and video ever to have been developed.

IMPORTANT

Save all packaging in a dry place away from fire hazards. Your Casablanca II is a precision electronic instrument and should be properly packaged any time shipment is made. In the unlikely event that you have to return your Casablanca II to the factory for service, or if you send it to us for updating, the original packaging will best protect the unit from shipping damage.

In order to achieve the fullest flexibility and enjoyment from your Casablanca II, we at Theta recommend that you read this manual in full before connecting the unit to your audio/video system.

WARNING

United Stated law prohibits disposition of these commodities to Libya, Laos, North Korea, Cambodia or Cuba unless otherwise authorized by the United States.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* Reorient or relocate the receiving antenna.
* Increase the separation between equipment and receiver.
* Connect the receiver into an outlet on a circuit different from that which the Casablanca II is connected to.

Acknowledgments

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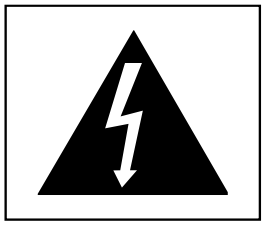
Casablanca II is manufactured under license from Digital Theater Systems. Inc. US Pat. No 5,451,942 and other worldwide patents issues pending. “DTS” and “DTS Digital Surround” are trademarks of Digital Theater Systems, Inc. ©1996 Digital Theater Systems, Inc. All rights reserved.

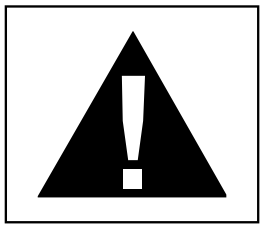
Casablanca II is manufactured under license from SRS Labs, Inc. US Pat No 5,319,713, 5,333,201 and 7,771,295. “Circle Surround™” and the Circle Surround Logo are trademarks of SRS Labs, Inc. 1994-1998.

Written and illustrated by Glenn Buckley.

This manual is also available for download as a PDF file at Theta Digital’s website. http://www.thetadigital.com



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of significant magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THE (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

Casablanca II Identification Record

This information is for your records and for future identification of the Casablanca II. Please take a moment to fill out all pertinent data now, and as upgrades and/or options are installed. **Whenever upgrades, inquiries and/or changes are requested, the serial number will be required.**

SERIAL NUMBER _____

DATE PURCHASED _____

DEALER'S NAME _____

DEALER'S ADDRESS/PHONE _____

INSTALLED CARDS/OPTIONS _____
(Date of installation)

_____
(Date of installation)

_____
(Date of installation)

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(Date of installation)

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(Date of installation)

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(Date of installation)

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(Date of installation)

SAFETY PRECAUTIONS

Please carefully read each item of the operating instructions and safety precautions before using this product. Use extra care to follow the warnings written on the product itself and/or in the operating instructions. Keep the operating instructions and safety precautions for future reference.

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE ANY OF THE COVER PANELS.

NO USER-SERVICEABLE PARTS INSIDE. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT ALLOW LIQUIDS TO SPILL OR OBJECTS TO FALL INTO ANY OPENINGS OF THE PRODUCT.

THIS UNIT IS SUPPLIED WITH A 3 PIN GROUNDED AC PLUG. ALWAYS INSERT THE AC PLUG INTO A GROUNDED OUTLET. DO NOT REMOVE THE GROUND PIN OR DISABLE THE GROUND FOR ANY PURPOSE.

BEFORE MAKING ANY CONNECTIONS TO THE CASABLANCA II, FIRST TURN OFF THE POWER AND THEN DISCONNECT THE AC POWER CORD.

WHEN INSTALLING THE CASABLANCA II IN YOUR SYSTEM, MAKE CERTAIN TO ALLOW A MINIMUM OF 3 INCHS OF VENTILATION ON EACH SIDE OF THE UNIT. ALSO ALLOW AT LEAST 3½ INCHS OF VENTILATION SPACE ABOVE THE UNIT. IMPROPER VENTILATION OF THE UNIT MAY CAUSE OVERHEATING, WHICH MAY DAMAGE THE UNIT AND CAUSE A FIRE. PLACE THE UNIT ON A SOLID SURFACE ONLY. I.E. NOT ON CARPET, ETC.

DO NOT PLACE THE CASABLANCA II NEAR HEAT SOURCES SUCH AS DIRECT SUNLIGHT, STOVES, HEAT REGISTERS, RADIATORS OR OTHER HEAT PRODUCING EQUIPMENT.

TO PREVENT DAMAGE TO THE ANALOG OUTPUT CIRCUITRY, BE CERTAIN NOT TO SHORT THE OUTPUT SIGNAL PIN(S) TO GROUND. ENSURE THAT YOUR AUDIO OUTPUT CABLES DO NOT HAVE ANY INTERNAL SHORTS BEFORE CONNECTING THEM TO THE CASABLANCA II.

IF REPLACEMENT OF THE AC LINE FUSE BECOMES NECESSARY, REPLACE ONLY WITH SAME VALUE AND TYPE OF FUSE. NEVER BYPASS THE FUSE.

IF THE AC CORD BECOMES DAMAGED, DO NOT USE IT. IMMEDIATELY REPLACE IT WITH A NEW ONE OF THE SAME OR BETTER RATING.

AFTER MARKET and THIRD PARTY MODIFICATIONS

Please note that any after market and/or third party modifications will void the warranty. In the case of changing the feet on a unit, in order to prevent any damage (which will also not be covered under warranty), please verify that the screws being used to secure non Casablanca II feet do not screw any deeper into the chassis than the original ones. The original screw is 10-32 by 3/8 and goes into the chassis 1/5 inch.

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INTRODUCTION

Welcome to a new world of possibilities. Casablanca II is by far the most advanced surround sound processor/home theater controller available today. It offers the advantages of Theta's legendary mastery in digital signal processing and sound quality unapproachable by any other equipment.

Getting to know your Casablanca II

Despite Casablanca II's great technical sophistication, we believe in making it as easy as possible for you to use. We think you'll enjoy the intuitive way the Casablanca II works. Rather than offer a frustrating bewilderment of little used functions in constant view, vying for your attention, Casablanca II is structured systematically by function.

The "user interface" is based on simple logic. For example, when a function button is pressed, you can make changes within its menu(s) and press the same function button again to exit that function. (The same button that got you in gets you back out).

This Casablanca II has been put through a rigorous and unique testing procedure that insures that it will last for many years with minimal service requirements. This procedure includes the following:

- All assembled circuit boards are given a thorough visual inspection and are then tested in a bench-reference Casablanca II.
- The tested assembled circuit boards are then installed in a new Casablanca II and the whole unit is tested for every function and parameter.
- The unit is put on a burn-in torture rack for 100 hours to test for any possible component failures.
- The Casablanca II is tested on an audio analyzer for all pertinent parameters.
- The Casablanca II is put through a final bench test wherein every possible feature, mode and parameter is checked.
- The unit has all remaining chassis components installed and then undergoes a complete visual inspection, which assures that all Casablanca II's meet visual specifications.
- The unit is then put through a critical listening test.

Burn In Time

This unit has a break in period of about 1 week during which continuous improvement in sound quality will be observed. It is recommended that music be played continuously through the unit during this time to expedite the break in period.

IMPORTANT NOTICE

I. Due to the computer-based circuitry used in Theta products, it is imperative that the Casablanca II be connected to a ground via its three wire AC power cord. It is important that the AC power outlet, which the Casablanca II is plugged into, is actually grounded. Failure to do so will severely compromise the performance, reliability and safety of use of the Casablanca II.

II. It is also important to prevent contact with static electricity when connecting other components and cables to the Casablanca II. When connecting cables, simply place one hand on top of the Casablanca II and then grasp the metal "barrel" of the cable with the other hand and plug (unplug) the cable into (from) the appropriate jack on the Casablanca II.

III. The Casablanca II, as with all electronic equipment, is susceptible to static discharges. Resetting the unit may be required if anomalies occur after receiving a static discharge. In this case, put the unit in standby and turn off the rear panel power switch for 2 minutes, and then turn it on again.

IV. Ventilation is an important issue when placing the Casablanca II in a system. Make certain that the Casablanca II is placed in a well-ventilated area or rack unit.

V. Please take note that some powerline conditioners defeat the AC power ground on their outlets. If the intention is to plug the Casablanca II into a line conditioner, check with your dealer to make certain that the particular conditioner that is intended for use DOES NOT DEFEAT THE AC GROUND on its AC outlets.

VI. DO NOT remove any cover panels from the Casablanca II, as there are no user serviceable components inside. Refer servicing and updating to qualified service personnel only.

VII. Should the Casablanca II need to be reset, it must be put in standby first via the front panel power button. Then the rear panel power switch is to be turned off for at least 2 minutes.

VIII. The Casablanca II can be susceptible to excessive RF. End caps in all unused inputs will improve the sound quality and may reduce the susceptibility to RF induced anomalies.

Reference Manual Conventions

For clarity purposes, references to buttons, LED's and display parameters will be shown in bold capital letters.

All functions to be performed from, and in reference to the front panel of the Casablanca II will be found in the front section of this manual, whereas all functions to be performed using the hand held remote and/or viewed on a video monitor will be found in the back, or last part of this manual.

Glossary of Terms and Abbreviations

TERM	DEFINITION
AES/EBU (Audio Engineering Society) / (European Broadcasters Union)	A three wire balanced digital audio standard. This interface uses a 3-pin XLR type connector and allows for data communication between digital audio equipment.
Analog-to-Digital Converter	A device that converts analog signals into a digital format. Once encoded, all audio is stored or processed as a series of numbers rather than as the audio itself.
Balanced Audio Signals	Signals that are carried on three-conductor cables, with two of the conductors carrying the same signal 180° out of phase and the third as ground. Balanced connections usually cost more than unbalanced connections, but are less susceptible to picking up hum and prevent interference with low-level signals.
Center Spread	A proprietary Theta Digital process whereby the front center speaker signal can be incrementally spread evenly between the front left and right speakers.
dB	Decibel, a relative unit of loudness.
Dolby 3 Stereo	The Dolby 3 Stereo mode reproduces sound using only the 3 front channels, and is intended to be used either before surround speakers are installed, or for programs that might benefit from deriving a center channel output, but where the quality of the surround output is unsatisfactory.
Digital-to-Analog Converter	A device that converts digital signals into an analog format.
Hz (Hertz)	A unit of frequency.
IR	Infrared. A method of wireless transmission of data.
LFE	Low Frequency Effect. Commonly a discrete audio track designated for a sub woofer.
mS	Millisecond, or 1\1000 of a second.
Oversampling	The process of taking more samples than is required in order to more accurately reconstruct a digitized signal for playback in the analog domain.
Phantom Center Mode	The Phantom setting for the center speaker redirects the center channel signal equally to the front left and right outputs, thus creating an illusion of a center speaker. This mode is intended to be used when no center speaker is present.
Phantom Surround Mode	The Phantom setting for the surround speakers is intended to be used when no surround speakers are present in the system. With this setting active, the surround information is added to the front channels. If the current mode is Dolby Pro Logic, the Casablanca II will automatically decode in Dolby 3 Stereo.
Sampling Rate	The rate at which an analog (real world) signal is converted into digital numeric values.
S/PDIF Interface (Sony/Phillips Digital Interface format)	A digital audio interconnection standard, developed jointly by Sony and Phillips.
TRS	Tip, Ring, Sleeve. Names of the 3 connecting elements of a stereo phono jack or plug.
Unbalanced Audio Signals (AKA single-ended)	Signals that are carried on two-conductor cables, one “hot”, or signal, and one ground.
Xover	Abbreviation for the word ‘Crossover’.

Table 1 - Glossary of Terms and Abbreviations

Casablanca II Block Diagram - Input Processing Sections

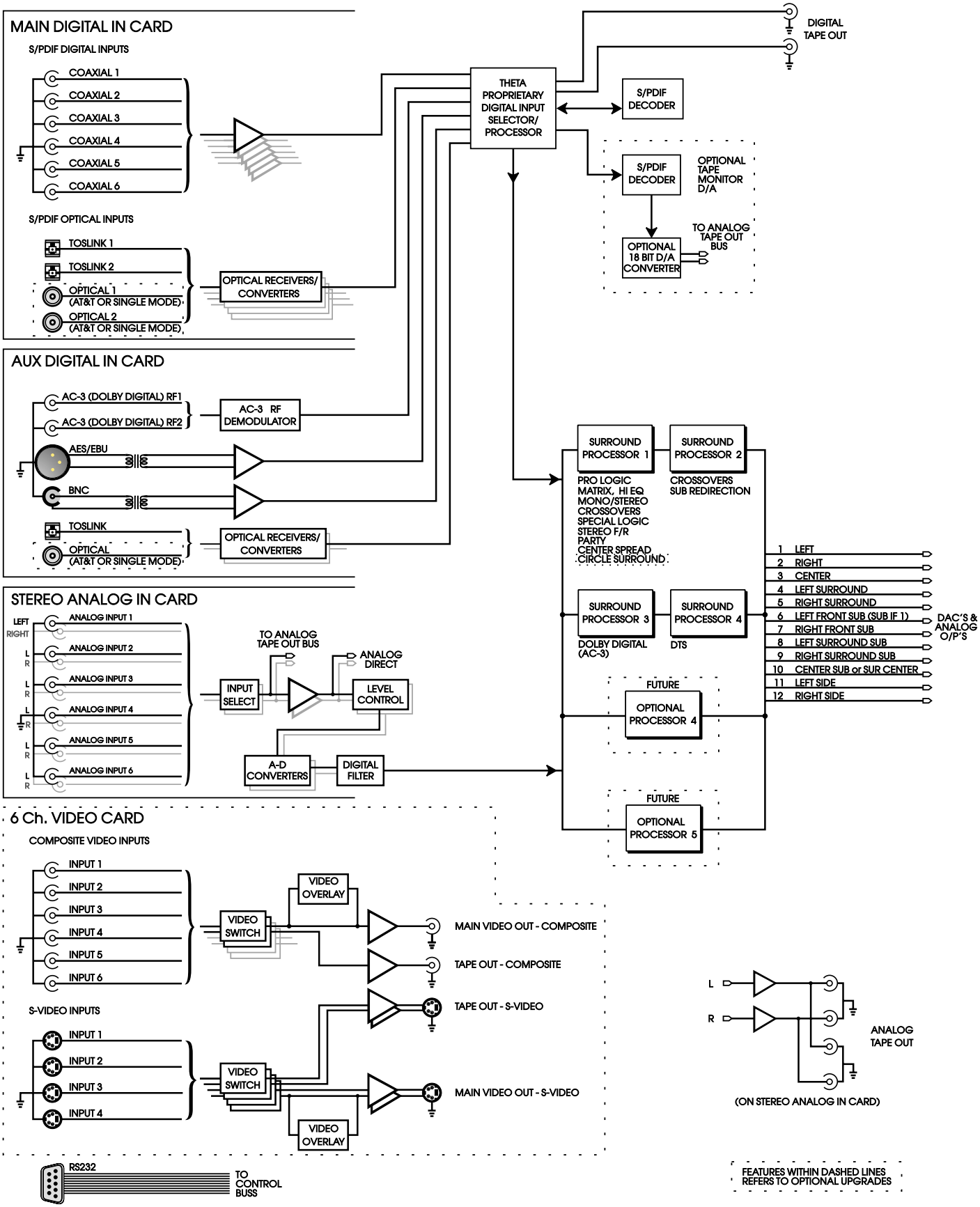


Figure 1 - Block Diagram of Input Processing Sections

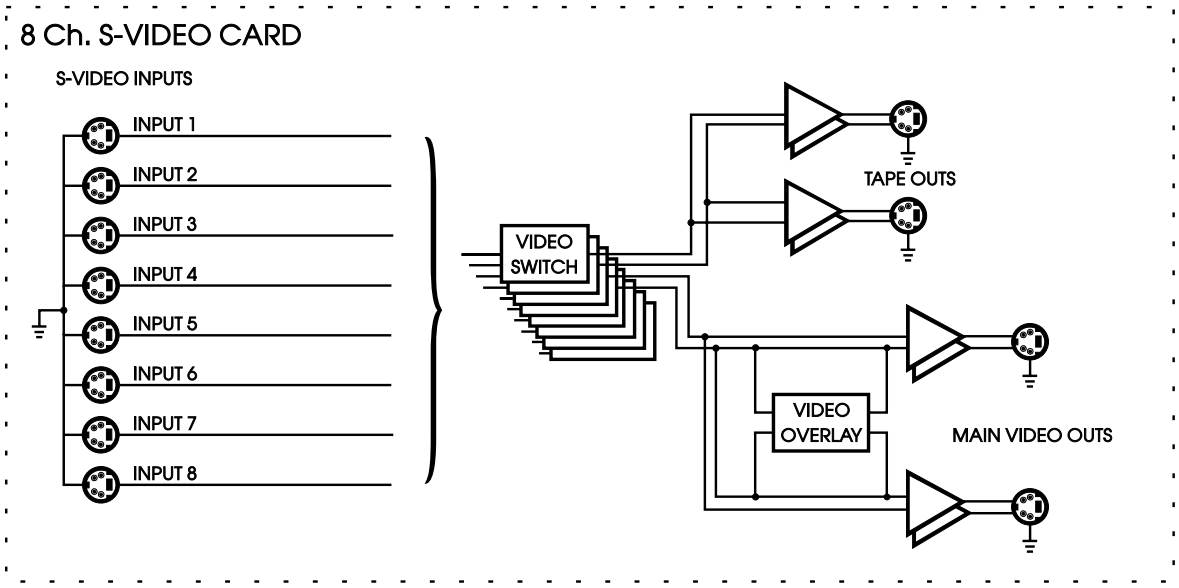


Figure 2a - Block Diagram of 8 S-Video Switching Card

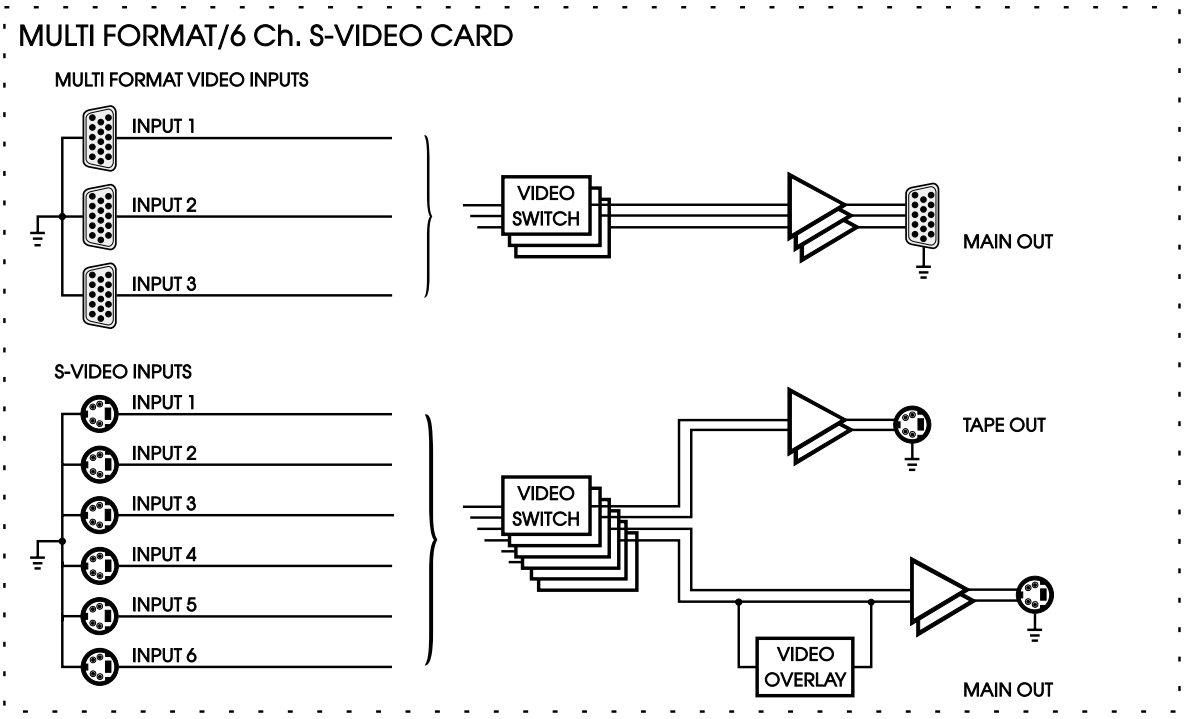


Figure 2b - Block Diagram of Multi Format/6 S-Video Switching Card

Casablanca II Block Diagram - DAC and Analog Out Sections

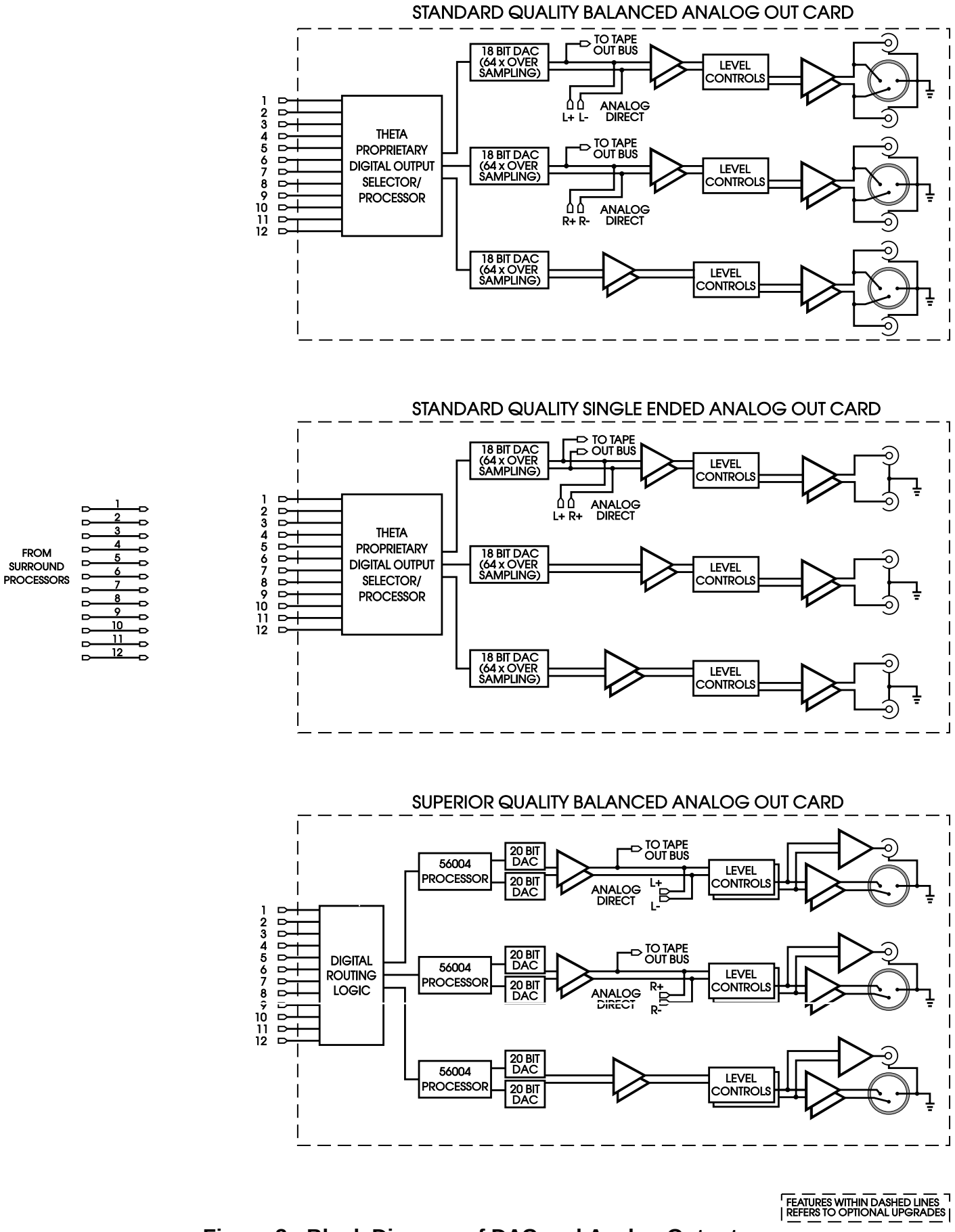


Figure 3 - Block Diagram of DAC and Analog Outputs

Casablanca II Block Diagram - DAC and Analog Out Sections – Con't

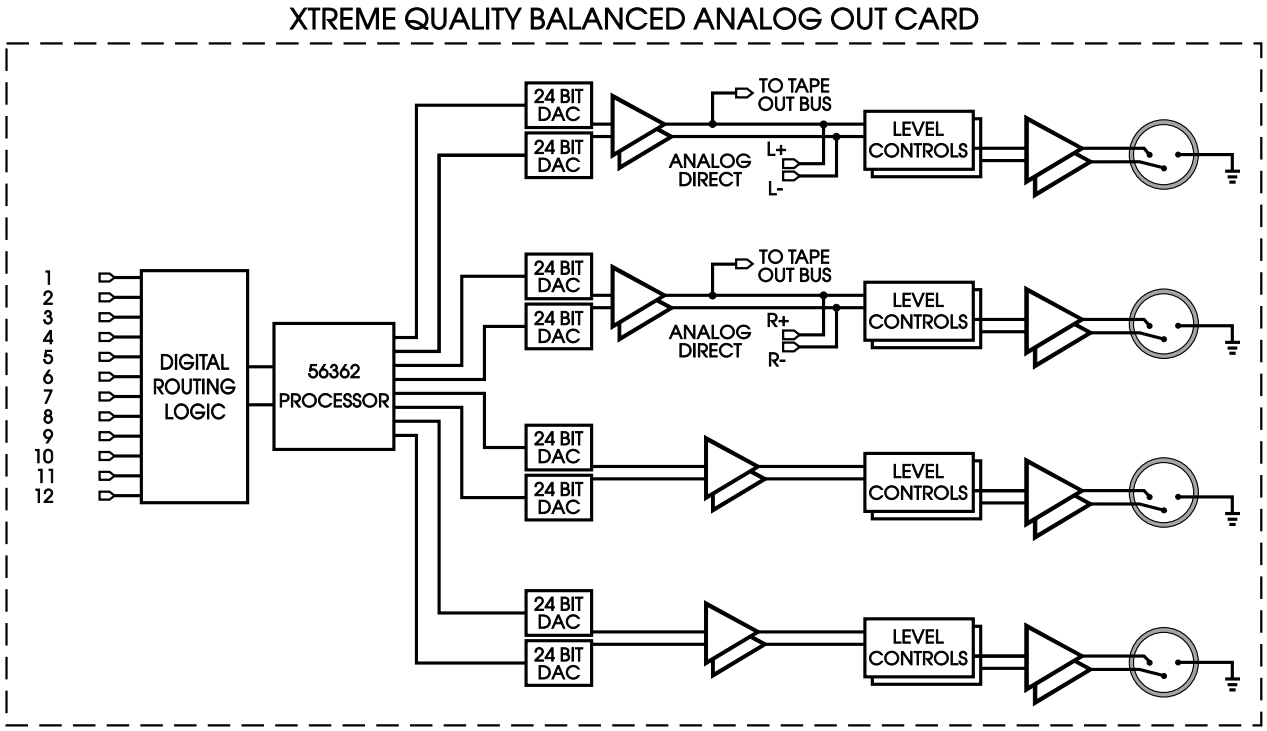


Figure 4 - Block Diagram of Xtreme 4 Channel DAC board

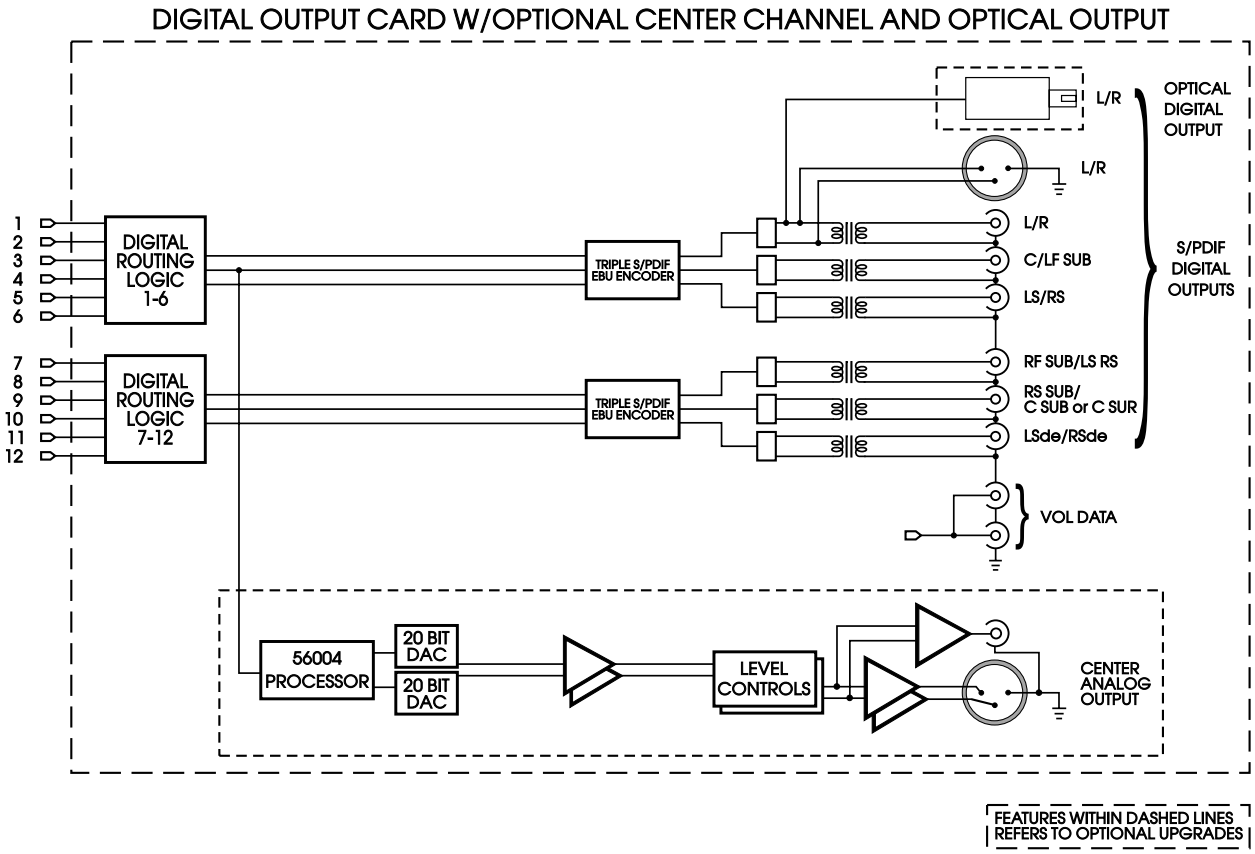


Figure 5 - Block Diagram of Digital Output board, showing all options

Front Panel Layout

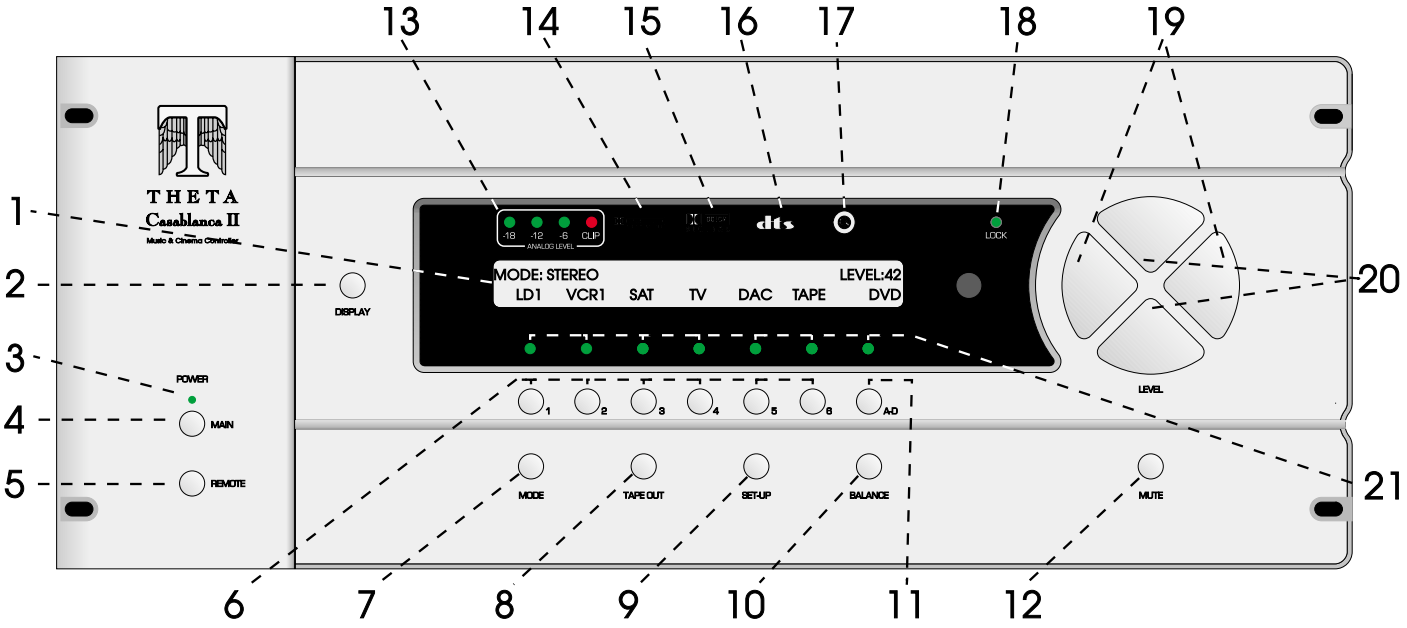


Figure 6 - Front Panel Layout

1. 40 character by 2 row amber back lit liquid crystal display (**LCD) or blue vacuum tube display (VFD).**
2. **DISPLAY** button. Temporarily overrides the LCD brightness display setting in the **SETUP/INP** page 1 submenu.
3. **POWER** LED. Lights when the Casablanca is in standby mode.
4. **MAIN POWER** button. After the rear panel **MAIN POWER** switch is turned on press the front panel **POWER** button to exit the standby mode. The LCD will display the last selected **INPUT SELECT** menu. Pressing this button again will place the Casablanca into standby mode and the LED above the front panel **POWER** button will light.
5. **REMOTE POWER** button. Activates/deactivates the **REMOTE POWER** jack on the rear panel.
6. Buttons **1** through **6.** Used to select a desired input on **INPUT SELECT** pages, or parameter to change when in a sub menu. The LED over the button lights when the button is pressed. These buttons are referred to as the **INPUT SELECT** buttons.
7. **MODE** button. Activates the **MODE** select menus for the currently selected input.
8. **TAPE OUT** button. Used for routing audio and video **INPUT** signals to the **TAPE OUT** jacks.
9. **SET-UP** button. Used for setting speaker configurations/levels/delays, analog input levels, naming inputs, setting the display & remote power jack time-out delays, selecting between NTSC and PAL video sources and accessing additional surround parameters, and all other **SETUP** functions.
10. **BALANCE** button. Sets temporary speaker balance configurations, shelf EQ, and analog input levels to compensate for different program characteristics.
11. **A-D** button. Sequences through input jacks mapped (assigned) to the active **INPUT SELECT** button.
12. **MUTE** button. Mutes/unmutes all audio outputs with the exception of the **TAPE OUT** jacks.
13. **ANALOG LEVEL** display. Shows input level, in **dB**, of currently selected analog input.
14. **Dolby Pro Logic** indicator. Lights when the Dolby Pro Logic feature is installed only. If Dolby Digital (AC-3) is also installed, The **Dolby Pro Logic** indicator will never be lit. It will go out when the display is turned off.
15. **Dolby Digital** indicator. Lights when Dolby Digital is installed. It will go out when the display is turned off.
16. **DTS** indicator. Lights when the DTS feature is installed. It will go out when the display is turned off.
17. **Circle Surround** Indicator. Lights when the Circle Surround feature is installed. It will go out when the display is turned off.
18. **LOCK** light. Lights when a valid digital signal is detected on the selected input.
19. **LEVEL LEFT** and **RIGHT** buttons. Shifts audio balance to the left and right when the **BALANCE** function is selected, adjusts the master volume within submenus when the **LEVEL UP/DOWN** buttons are to be used for parameter value editing, used to toggle between the 2 input select pages, shifts to the next character when editing names.
20. **LEVEL UP** and **DOWN** buttons. Increases/decreases master volume. Also used to increment/decrement values in most edit modes, and shifts **FRONT/REAR** audio balance in **BALANCE** submenu.
21. **1** through **6** LED indicators. Light when buttons **1** through **6** are selected.

Rear Panel Layout

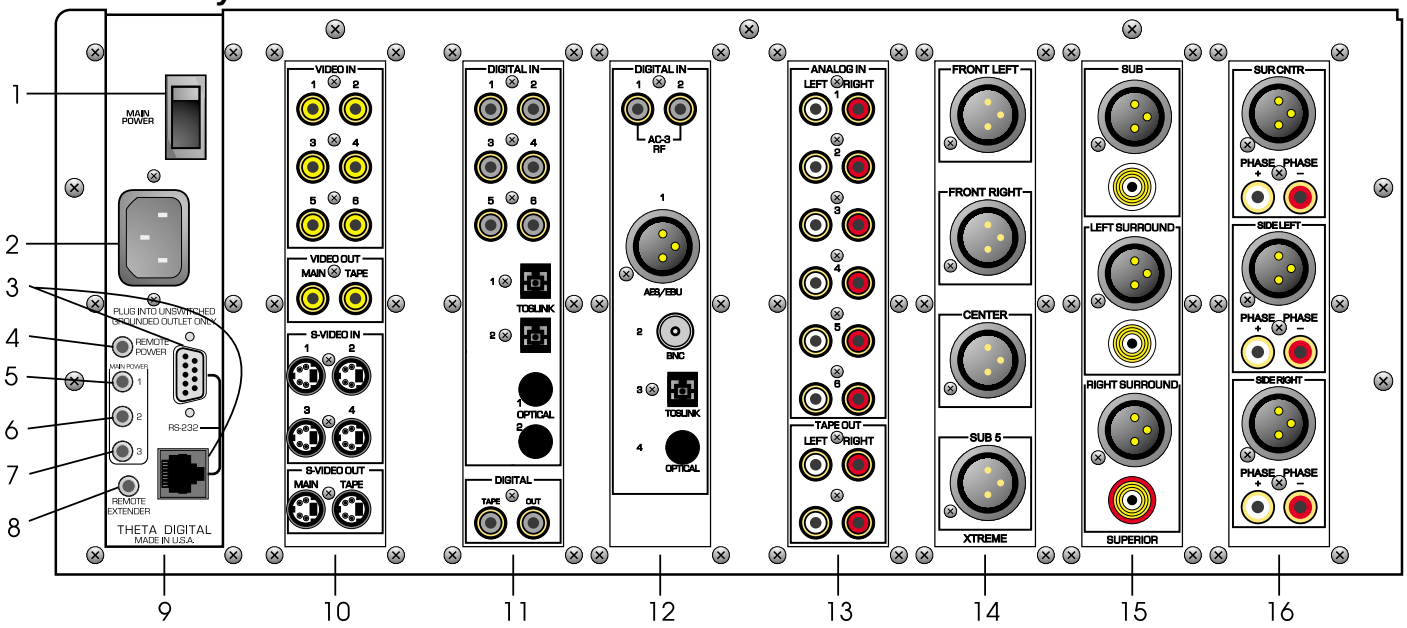


Figure 7 - Rear Panel Layout

1. **Main Power Switch.** Master power switch. Disconnects AC to all circuits. It is recommended that this be left ON at all times during regular use with the exception of whenever cables are connected/disconnected or when the unit is not going to be used for an extended period of time.
2. **AC Power** connector: 3 wire, IEC 320 connector with an EMI filter.
3. **RS232** DB9 and RJ45 connectors. A Casablanca upgraded to a Casablanca II has only the DB9 connector, on the Main Digital Input board.
4. **Remote Power** jack. Activated/deactivated when associated front panel or remote button is pressed/pressed again.
5. **Main Power 1** jack. Activated/deactivated when front panel **POWER** button is pressed/pressed again. All Main Power jacks can output a 12V pulse (variable duration) or 12VDC.
6. **Main Power 2** jack. Activated when front panel **POWER** button is pressed once, plus x seconds. *X* represents the time value that is stored in the **SET-UP/GLOBAL/REM PWR/MTIM** parameter. This jack is deactivated when the front panel **POWER** button is pressed again (putting the Casablanca in Standby mode).
7. **Main Power 3** jack. Activated when front panel **POWER** button is pressed once, plus two times *x* seconds. *X* represents the time value that is stored in the **SET-UP/GLOBAL/REM PWR/MTIM** parameter. This jack is deactivated when the front panel **POWER** button is pressed again (putting the Casablanca in Standby mode).
8. **Remote Extender** jack. An externally mounted (remote) Infrared (IR) receiver plugs into this miniature stereo phone jack. (its signal must be demodulated). Please refer to Appendix C on page 108 for additional information.
9. **Power Supply Module**.
10. **Video Card**. This optional card, necessary for on-screen display, provides six composite RCA and four S-Video inputs, all assignable to any input select button. Video inputs are routed to the video tape output jack using the **TAPE OUT** button. Only S-Video input signals can be present at the S-Video **Main** and/or **Tape** outputs. Another option for this slot is a video card containing 8 S-Video inputs with 2 main and 2 tape outs. There are no composite video jacks on this alternate optional card.
11. **Main Digital Input** card. Six Coaxial (RCA) and two TosLink inputs are provided for digital audio signals in the S/PDIF format at 32K, 44.1K 48K or 96KHz sampling rates. There are two open spaces provided for optional AT&T and/or Theta Single Mode Laserlinque optical input modules. There are two RCA digital Tape Out connectors on this card whose digital source can be selected in the **TAPE OUT** menu.
12. **Auxiliary Digital Input** card. This card provides two RCA Dolby Digital (AC-3) RF inputs, one AES/EBU (balanced XLR) input, one BNC and one TosLink input. Additionally there is one space provided for an optional AT&T or Theta Single Mode optical input.
13. **Analog Input** card. Six stereo RCA inputs are provided for any line level analog output devices such as VCR's, laserdisc, CD and DAT players, phono preamplifiers, external D/A converters, tape decks, AM/FM tuners, etc. There are two pairs of analog tape outs for recording purposes, whose source can be selected in the **TAPE OUT** menu.

14. First **Analog Output** card. Configured as a 2 channel D/A converter/preamp there would be a 2 channel (L & R) superior quality balanced card loaded in this slot. Configured as a surround processor, this slot could contain one of the following: A four channel Xtreme quality DAC (pictured), a six channel standard quality single ended D/A card (left, right, center, sub, left surround and right surround) or a three channel balanced card (left, right and center). A balanced card can be either standard or superior quality. All 3 channel balanced cards also have single ended outputs; the standard card has a plus and minus single ended output for each channel whereas the superior quality balanced card is equipped with one gold plated single ended output jack on each channel. The Xtreme card does not have single-ended outputs. The channel sets that can be routed to an Xtreme card (in any DAC slot) are listed in the specifications section of this manual.

15. Second **Analog Output** card. This slot could contain one of the following options: A four channel Xtreme quality DAC card; a three channel standard quality balanced card, a three channel superior quality balanced card (pictured) or a six channel single-ended standard quality card. If only two 3 channel balanced analog output cards are installed, this slot would typically contain outputs for sub, left surround and right surround channels.

16. Third **Analog Output** card. This slot could contain either a four channel balanced Xtreme quality card; a three channel standard quality balanced card (pictured), a three channel superior quality balanced card, or a six channel single-ended standard quality card. If it is a balanced card containing additional Sub channels, it must be the same quality as the second card.

* * *

A Digital Output card can be installed in any available slot. This card can have 6 or 12 digital output channels and comes with or without a center analog output channel. Additionally it can have an optional optical output installed on it for the front left and right channels. This output can be either an AT&T or Theta Single Mode module.

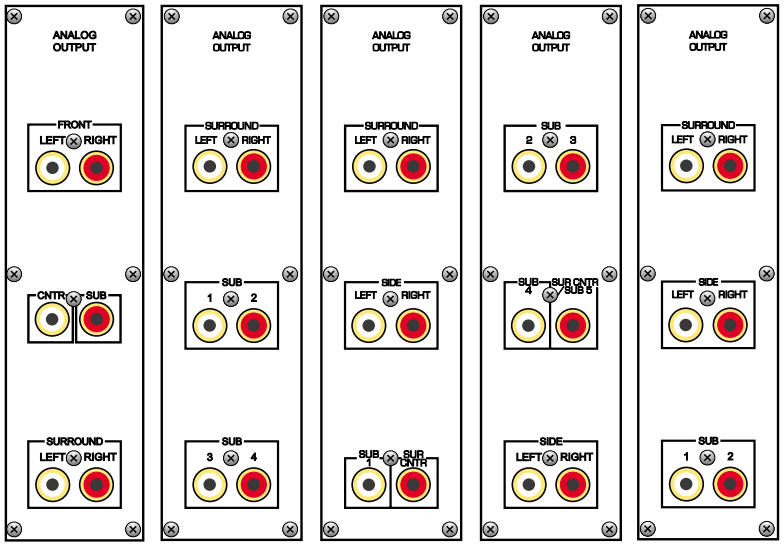


Figure 8 - All optional Single-Ended D/A Cards

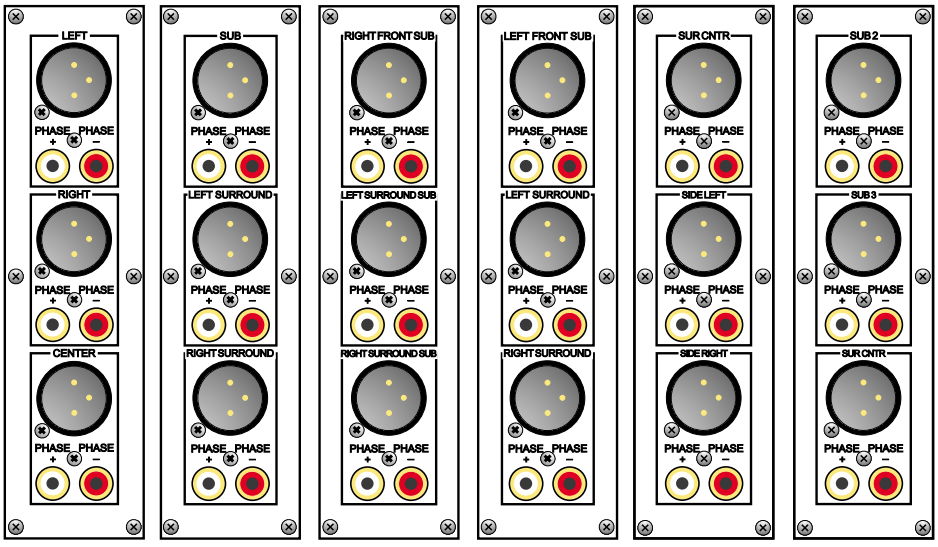


Figure 9 - All optional Standard Balanced D/A Cards

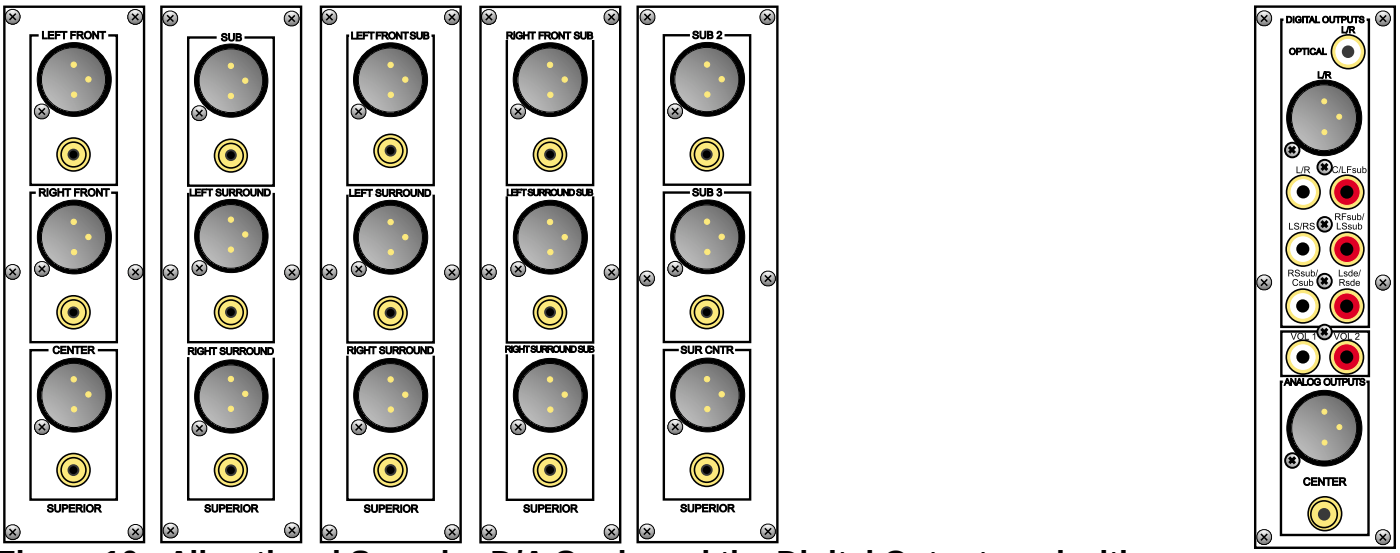


Figure 10 - All optional Superior D/A Cards and the Digital Output card with Center Channel

Each Xtreme DAC card can have one of the following speaker sets (channels) assigned to them, regardless of which DAC slot it (they) are installed to:

Front Left, Right, Center, Surround Center or Sub 5
Front Left, Right, Side Left, Right
Sub 1, Sub 2, Sub 3, Sub 4
Side Left, Right, Sub 3, Sub 4
Front Left, Right, Sub 1, Sub 2
Surround Left, Right, Sub 1, Sub 2
Surround Left, Right, Sub 2, Sub 3
Front Center, Sub 1, Sub 2, Sub 3
Front Center, Sub 1, Surround Left, Right
Front Left, Right, Surround Left, Right
Surround Left, Right, Side Left, Right
Front Left, Right, Center, Sub 1
Sub 1, Sub 2, Sub 3, Surround Center or Sub 5
Surround Left, Right, Center or Sub 5, Sub 1
Surround Left, Right, Center or Sub 5, Sub 2
Front Center, Surround Center or Sub 5, Surround Left, Right
Front Center, Surround Center or Sub 5, Side Left, Right
Sub 2, Sub 3, Sub 4, Surround Center or Sub 5

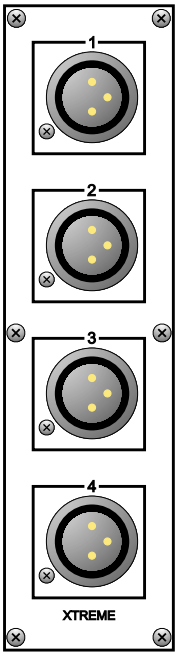
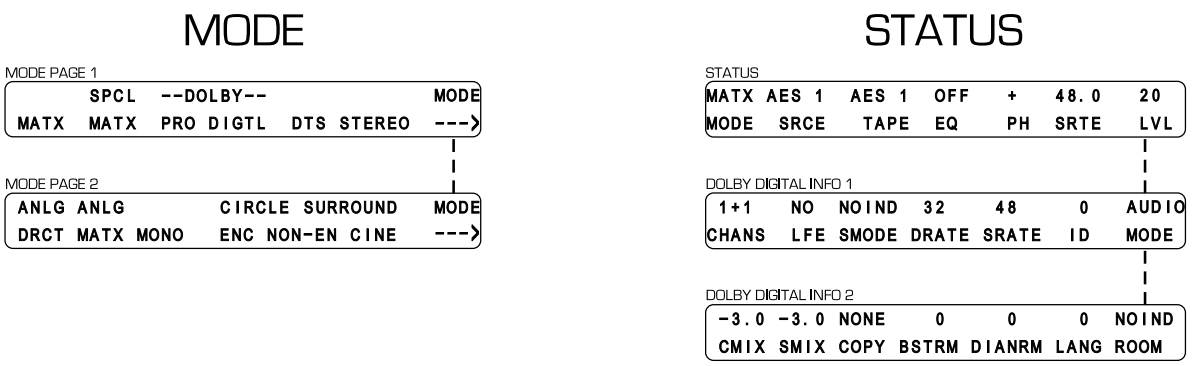


Figure 11 - Xtreme DAC

Note: In figure 11, each output is shown with a number 1-4. Channel labels are available to better identify each output.

Menu Maps

Function Menus and Pages



Input Select Pages

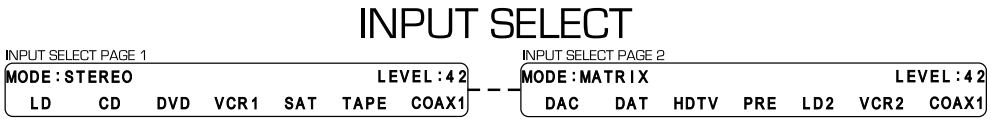


Figure 12 - Mode, Status, Balance, Tape Out Menus and Input Select Pages

Setup Menus and Pages

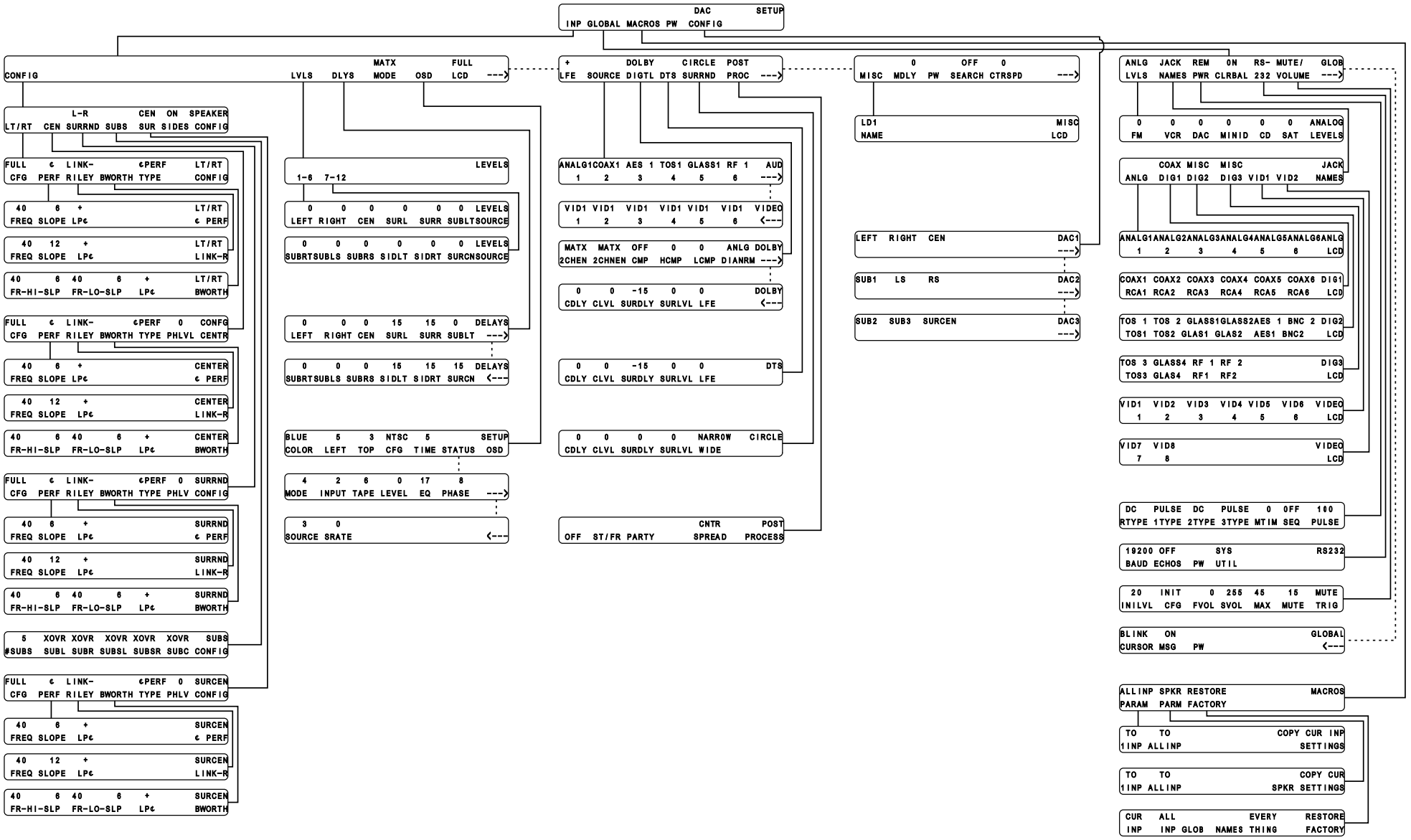


Figure 13 - Setup Menus and Pages

Introduction to the User interface

WARNING !! : PLEASE READ FIRST!

In the **SETUP** menu, the **PW** button allows the user to password protect the entire **SET-UP** function. In the **SETUP/INPUT *page 3*** sub menu, the **PW** button allows the user to password protect the currently selected input. The entire **GLOBAL** menu can be password protected via the **PW** button on the second **GLOBAL** page and the **RS232** sub menu can be password protected via the **PW** button in the **SETUP**/**GLOBAL**/**RS232** sub menu. When any **PW** button is selected, a prompt will be displayed asking the user if they are sure they want to change the current password (**YES** or **NO**). If **YES** is selected, the current password will be displayed with the cursor blinking on the first character, prompting the end-user to change the current password. The password does not have to be changed at this point, the same numbers that are currently displayed can be entered, using buttons **1**-**6** and/or **A-D**. Pressing **A-D** enters a zero. A password containing at least one zero is null, meaning no password. Therefore, to remove a password, press **A-D** at least once.

Please note that there are no passwords programmed into the Casablanca II when it is initially shipped.

PLEASE REMEMBER and/or WRITE DOWN YOUR PASSWORDS! If it/they are forgotten, all access to password protected areas will be denied!

The menu system within the Casablanca II consists of 1 to 3 layers, with the exception of the **SETUP** menu. Some menus have multiple pages, which can be accessed simply by pressing the **A/D** button, with the exception of the **INPUT SELECT** menu, which uses the **LEFT**/**RIGHT** buttons. When a menu has additional pages associated with it, a right or left arrow will be displayed in the bottom right corner of the LCD. Please refer to figures 1 and 1 for an overall view of all menus, sub menus and menu pages.

The **SETUP** menu contains a number of sub menus, organized by setup function. Since many configuration parameters can be stored for each **INPUT SELECT** button (by input), they are accessed in one of the 3 **SETUP**/**INPUT** sub menus. Setup parameters that are not stored individually for each **INPUT SELECT** button are accessed in the two **SETUP**/**GLOBAL** sub menus. All macros can be executed via the **SETUP**/**MACROS** sub menu.

Once a parameter is selected for editing, pressing the **LEVEL UP**/**DOWN** buttons edits the parameter value, storing it at the same time. On any page, if the **LEVEL UP**/**DOWN** buttons are not used for editing a parameter value, they will adjust the master volume. Where the **LEVEL UP**/**DOWN** buttons are used for editing a parameter value, the **LEVEL LEFT**/**RIGHT** buttons will adjust the master volume, with the exception of the first **BALANCE** page and the pages where input select buttons and input jacks are named. In a few cases, such as the **MODE** and **POST PROCESS** menus, simply pressing the **1**-**6** buttons makes a selection.

The function buttons are defined as the **MODE**, **TAPE OUT**, **SET-UP**, and **BALANCE** buttons. To exit a function the same function button can be pressed multiple times to exit, or another function button can be pressed at any time.

Before you begin

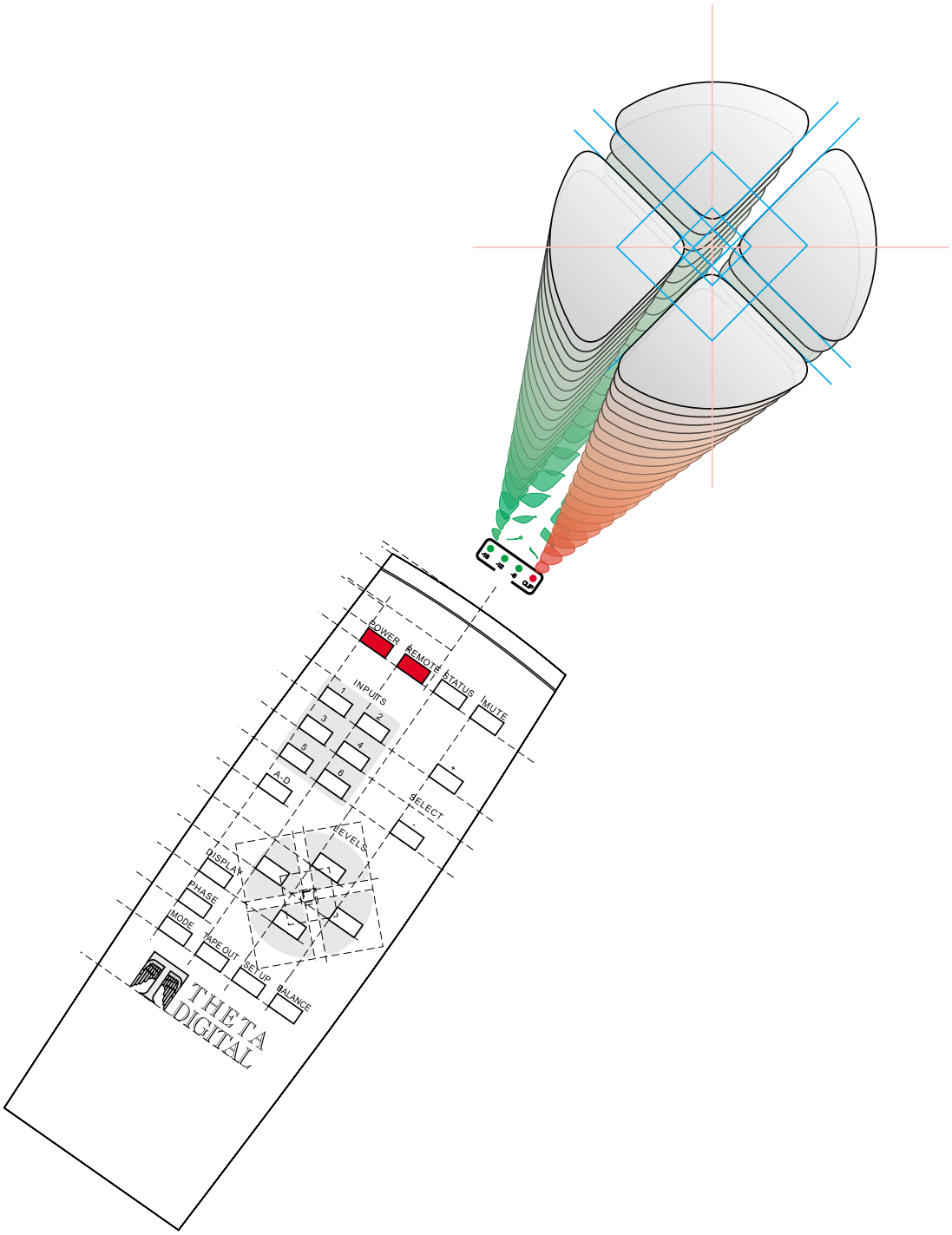
With all input options installed in a Casablanca II, there are 32 input jacks: 6 pairs of stereo analog audio, 14 digital audio, 2 AC-3 RF, 6 composite video and 4 S-video. If the optional 8 S-Video input card is installed, then there will be 8 S-Video inputs and no composite video inputs. If the optional Multi Format/6 S-Video board in installed, then there will be 3 Multi format video inputs and 6 S-video inputs. Each jack can be named. It is recommended to first name each input jack that is to be used. (**SETUP**/**GLOBAL/JACK NAMES**). No OSD, or on screen menus will exist when using the 15 pin multi format video output.

Each **INPUT SELECT** button can have up to 6 audio, 6 composite and 6 S-video jacks mapped, or assigned to it. Input jacks should be mapped to **INPUT SELECT** buttons after the applicable jacks are named. The **INPUT SELECT** button should also be named. There are a total of 12 **INPUT SELECT**s on two pages. Pressing the **LEVEL LEFT**/**RIGHT** buttons will toggle between these two pages of 6 inputs each.

When editing parameters for a given **INPUT SELECT** button, the user must first press the applicable **INPUT SELECT** button in the **INPUT SELECT** page, then press **SET-UP** and **INPUT**, then navigate to the menu containing the desired parameter to change.

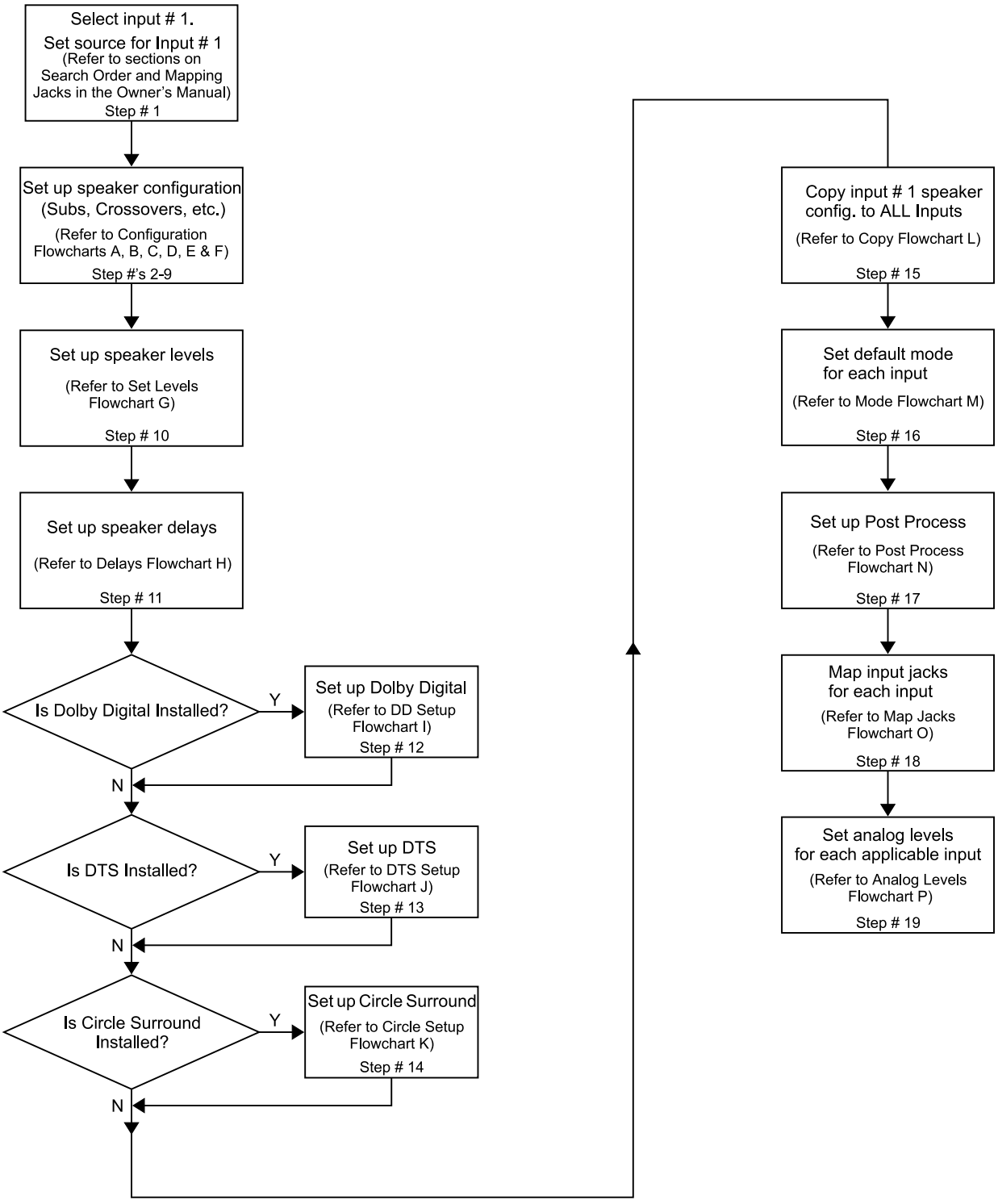
Note: The order in which input jacks are assigned to an **INPUT SELECT** button determines the search order. Please refer to page 42 for additional information on source assignment (search order). When more than one input jack is assigned to a single **INPUT SELECT** button, toggling the **A-D** button [when the **INPUT SELECT** page is active in the front panel display] will select the next assigned input jack – both audio and video.

STEP-BY-STEP SETUP GUIDE



Casablanca II Overall Setup Procedure Flowchart

This single flowchart shows the user all steps required to set up the Casablanca II, to achieve the best sonic results possible. Instructions and detailed flowcharts for each step are contained on the following pages.



Step by Step Speaker Configuration

Casablanca II contains a comprehensive set of speaker configuration settings. These settings are believed to be the most complete ever offered in a home theater component and should allow any speaker to perform optimally regardless of speaker type. It is important to bear in mind that the following procedure is merely a guideline and that room acoustics, speaker design/quality, music/film type, and personal preferences all have a part in these settings.

Please note that the menu and parameter names described herein are the ones shown on the front panel LCD and not the OSD (On Screen Display). Using the Setup menu map diagram on page 13 in this manual, is recommended.

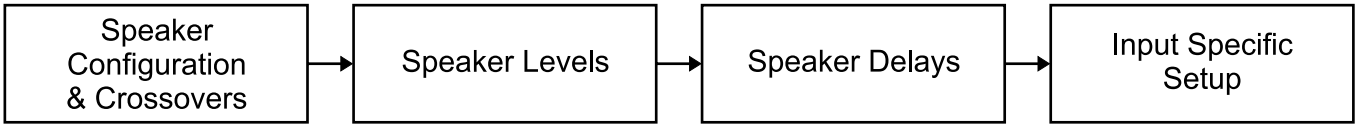
There are four major steps to be taken in setting up your Casablanca II. In recommended sequence, they are:

Speaker Configuration & Crossovers: permits proper signal routing internally in the Casablanca II and proper blending of main and subwoofer signals. Enables all speakers present in the system.

Individual speaker levels: compensate for different speaker and amplifier efficiencies.

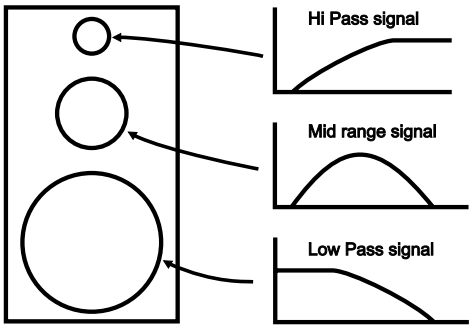
Delays: compensates for different speaker distances from the listening position.

Input Specific Setup: All parameters that are specific to an individual input select button are then programmed.



Each step plays a pivotal role in the overall sonic result and should receive equal attention and care in adjustment.

Speaker Configuration & Crossovers



Crossovers are most commonly located in a speaker cabinet. Their purpose is to keep energy at certain frequencies from reaching specific speaker elements (drivers), [e.g. keeping unwanted bass energy from the tweeters (see diagram at right).] Home theater applications use a crossover in the surround processor to send low pass information to a subwoofer and limit the low pass information sent to the main speakers. The purpose of this section, **SPEAKER CONFIGURATION**, is to properly set up the Casablanca II's internal crossovers for optimal sound as well as enable all speakers in the system.

In this manual, a Speaker Set is defined as one or more speakers that are manipulated via a common parameter. For example, the crossover parameters for both the front left and right speakers are manipulated in the front left/right configuration submenu since the desired effect for the left speaker is also appropriate for the right. The other speaker 'sets' in the Casablanca II are the [surround left and right], the [side left and right], the [center] and the [center surround]. The speaker sets will be delimited by [ ].

The full speaker configuration is stored separately for each of the 12 input select buttons. This procedure will guide the user to set all configuration parameters for input # 1, and then copy these parameters to all other input select buttons.

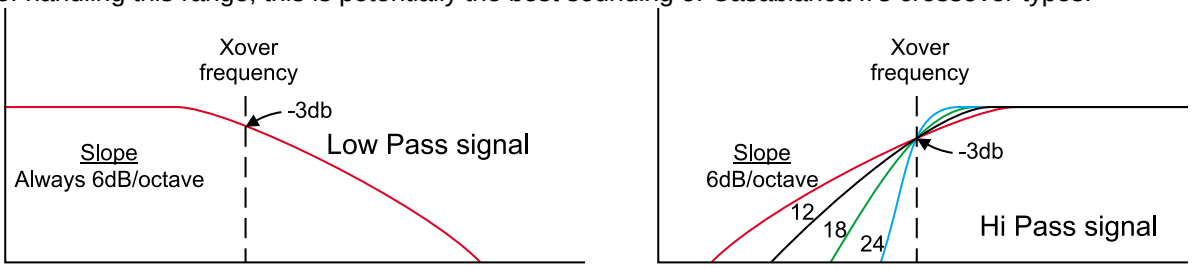
In the Speaker configuration submenu, buttons **1**-**5** will access additional menus to setup a particular speaker or set of speakers. Button **6** will turn on the side speakers, if configured in the system. In each speaker set's configuration sub menu, pressing button # **5** will allow a change of the crossover type for that speaker set. There are three settings for the crossover type. They are: "Phase Perfect"; "Butterworth"; and "Linkwitz-Riley". Each crossover type requires different settings that are applicable to that type only. The Front [Left/Right], [Center], [L-R Surround] and [Center Surround] speaker configuration submenus contain a separate setup submenu for each of the three crossover types. It is recommended that each of the three crossover submenus be set up similarly for each speaker. The user can then audition each crossover type to determine which sounds best for their system.

The following crossover type descriptions will help the user to better understand the sonic consequences and advantages of each:

Phase Perfect

This is a term coined for a type of crossover wherein the low pass portion is derived from the high pass. First, a high pass Butterworth crossover is performed. This gives two resulting signals: the high pass and the original, unaltered signal. Then, the high pass signal is subtracted from the original input signal, resulting in the low pass signal, which is usually routed to the subwoofer. A positive attribute of this type of crossover is that if the high and low pass signals are added together, an exact replica of the original input signal results, thus the term "phase perfect". A potentially negative attribute of this type of crossover is that, due to phase relationships and vector mathematics, higher order filters (12, 18, 24 dB/octave) always produce 6dB/octave low pass slopes, in terms of electrical energy sent to the subwoofer. The high pass portion will have the expected 6, 12, 18 or 24 dB /octave slope. Due to this phenomenon, this type of crossover is best suited for subwoofers that can operate linearly up to the 500 Hz range. Please consult

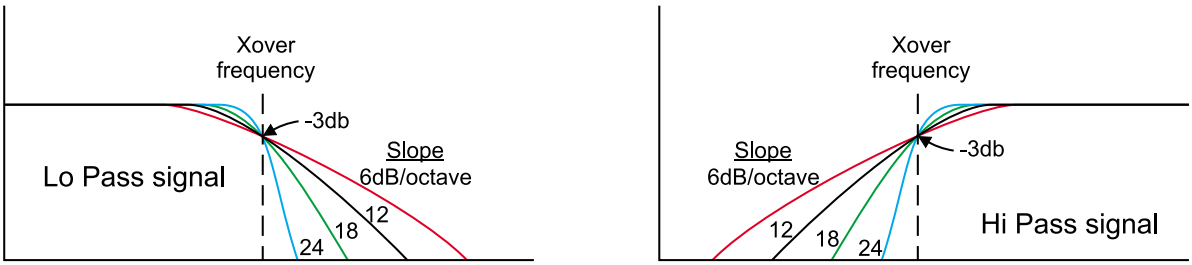
your dealer or subwoofer manufacturer to determine if this is suitable for your particular subwoofer. If the subwoofer is capable of handling this range, this is potentially the best sounding of Casablanca II's crossover types.



Phase Perfect Crossover Diagram

Butterworth

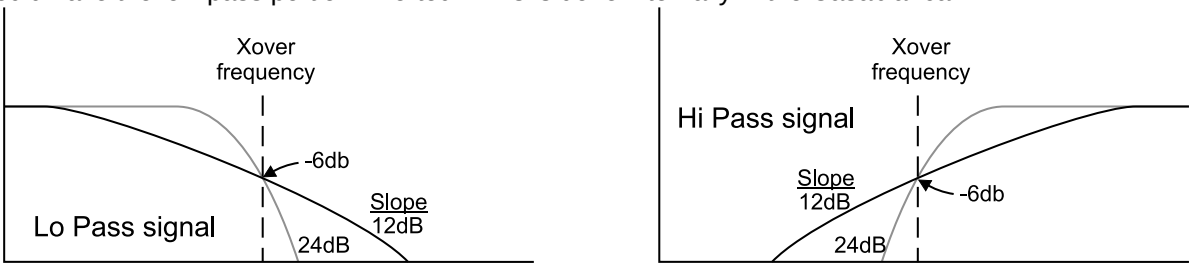
This is the most common type of crossover used in home theater, speakers and outboard electronic crossovers. Separate high and low pass slopes and crossover frequencies may be set for speaker sets [Left/Right], [Center], [Surround Left / Surround Right] and [Center Surround]. (The [Sides] are derived from the L/R Surround channels and therefore the configuration and crossover parameters for the sides are set in the L/R Surround sub menu). As with Phase Perfect and Linkwitz-Riley crossovers, it is possible to invert the phase of the low pass for each of these speaker sets. This allows precise tailoring of the subwoofer response to the main speaker's response. A negative attribute of this crossover type is that the high and low pass signals have different phase shifts from each other.



Butterworth Crossover Diagram

Linkwitz-Riley

This type of crossover, developed in 1976 by Siegfried Linkwitz and Russ Riley, eliminates some of the inherent problems of Butterworth filters. Specifically, a Butterworth filter of 12, 18 or 24 dB/octave (or higher) slope exhibits different phase shifts between the high and low pass outputs. A Linkwitz-Riley alignment solves this problem, as it exhibits zero phase difference between outputs at all frequencies. Acoustically, this means that if the sound sources are in proper time-alignment, a smoother frequency response will be realized at the listening position. The Linkwitz-Riley crossover is only applicable to slopes of 12 and 24 dB/octave. A proper Linkwitz-Riley crossover with a 12dB slope should have the low pass portion inverted. This is done internally in the Casablanca II.



Linkwitz-Riley Crossover Diagram

A note on crossovers

Casablanca II's complement of crossover options can at first appear daunting. Most surround sound processors offer a simple selection to set their crossovers: Speaker Small or Speaker Large. When set to small, normally a 12dB/octave Butterworth crossover is performed at 80Hz. Occasionally, it is a 24 dB/octave slope. This simple setting does not take into account the huge variations in speaker design and room acoustics and more often than not results in non-optimum performance. We have endeavored to offer this rich set of options with the aim of superior performance. With this in mind, following are a few simple suggestions to make this process easier.

A note on home theater

There are a few common misconceptions about home theater and bass reproduction. Chief among them is that the ".1" or "LFE" channel normally contains most or all of the bass information. This is unequivocally false. The LFE channel contains sound effects such as explosions, rumbling and the like. All other channels (left, center, right, left surround, right surround) may contain an equal amount of bass, and often do. Their bass, however, tends to be more

related to the soundtrack, vocal material or localized sources such as a drum beating behind the listener. This is important to understand when setting up crossovers in the coming section.

Another misconception is that the center channel is "fill" and is minor in importance. Again, this is false. The center channel contains the lion's share of important information (particularly dialog) in the cinematic experience. It is therefore critical that the center speaker be of the highest quality possible and special attention be given to its mounting and positioning.

* * *

Speaker Configuration & Crossovers – Con't.

1) Select Input # 1.

Connect a digital source to Coaxial Input 1 jack and verify that the input jack mapping is correct, i.e if the digital source is connected to the coax input jack # **1**, press the **A-D** button until **COAX 1** appears in the LCD above it.

2) With Input button # 1 selected:
   a) Go to the **SUB CONFIG** submenu.
   b) Set **#SUBS** to the number of sub woofers that are configured into the system.
   c) If no subwoofer is present, set **#SUBS** to **0**. The subwoofer Full Range/Crossover setting has no effect in this case.

Note: You will now be directed to set up crossovers as if a sub is present. There are some general rules that the Casablanca II follows in the special case of no subwoofers:

Case 1 - The front left/right speaker configuration is set to **FULL**:

If the center speaker is set to "crossover" its low pass signal will be sent to the left/right channels.

If the surround left/right speaker configuration is set to "crossover" its low pass signal will be sent to the front left/right speakers only if the mode is Dolby Digital or DTS.

Case 2 – The surround left/right speaker configuration is set to **FULL**:

If the center surround speaker is set to "crossover" its low pass signal will be sent to the left/right surround channels.

Case 3 - The front left/right configuration setting is **XOVER** or **FUL/LP**:

Any speaker that is set to crossover will lose its low pass signal unless it is the front center and its low pass signal is routed to the front left/right speakers. (Center configuration setting is **XOVERLR**).

3) Determine if the subwoofer needs to be sent a crossed over signal or a full range signal:
   a) Defeat the subwoofer's internal crossover and set **SUB** to **XOVER**. The crossovers in the Casablanca II have been engineered to be superior to any analog crossover, regardless of quality.
   b) If the sub woofers internal crossover cannot be defeated set the **SUB** to **FULL**. Again, it is preferable that the subwoofer's crossover be defeated and that the Casablanca II control all crossovers. It is recommended that the subwoofer manufacturer be contacted to see if there is a possible modification to the subwoofer to defeat its crossover.
   c) If the sub woofer is to be sent a full range signal, set the crossover frequency on the sub woofer's internal crossover to match that of the speaker set that is crossed over in the Casablanca II. Example:
      i) If the front left/right speaker set is crossed over to 60Hz, begin by setting the sub woofer's internal crossover frequency at 60Hz and in the Casablanca II, set the slope to match that of the sub woofer's slope when performing step # 9g. (Refer to the sub woofer's documentation to determine its slope).
      ii) If multiple speaker sets are crossed over at different frequencies some experimentation will be required with the crossover frequency of the sub woofer. The same applies if the slopes are set differently for each speaker set. Begin by setting the subwoofer's frequency and slope to match the front [left/right] values. Experiment with the subwoofer's crossover frequency by moving it towards the crossover frequency of the [center], if installed.

4) Determine which speaker sets (Front [left/right], [Center], [left/right Surrounds], [center surround]) need crossovers.
   a) If no speaker set is present, the **CFG** setting should be "**PHANTOM**". If there are no side speakers, the sides should be set to **OFF**.
   b) When a speaker set is set to **PHANTOM**, its signal is not lost. For example, if the front center speaker is set this way, any signal from the center channel will be routed to the front left/right speakers; if the surround center speaker is set to **PHANTOM**, any signal routed there will be re-routed to the surround left/right speakers. These re-routed signals can be adjusted in volume using the Phantom Level (**PHLV**) parameter. Begin with the phantom level parameter at **0** and make fine adjustments after the setup is complete.

It is preferable that none of the speakers need a crossover at all but is rarely practical. Keep in mind that, in a 5.1 system (Dolby Digital or DTS), any speaker can be confronted with a full amplitude signal at any frequency. Generally speaking, the smaller the speaker the more limited its bass capabilities. If a speaker set doesn't need to be crossed over, that speaker set's configuration (**CFG**) setting should be **FULL**. Another possible option is Full range with low pass (**FUL/LP**). With this setting, the speaker will be sent the full range signal and a duplicate low

pass signal is sent to the subwoofer to augment its low bass performance. If all speaker sets are set to "**FULL RANGE**" or "**PHANTOM**", the following section on setting crossovers may be skipped. (Steps 5-9).

5) Determine whether or not the subwoofer can handle frequencies as high as 500Hz. Most literature included with subwoofers does not state this specification, so a call to your dealer or subwoofer manufacturer may be in order. Commonly only top-of-the-line subwoofers meet this requirement.

6) If the subwoofer does meet the above requirement, first try the "**PHASE PERFECT**" crossover type.

7) If the subwoofer cannot handle frequencies as high as 500Hz, first try the "**LINKWITZ-RILEY**" crossover type.

8) Using a 2 channel CD, do the following for each of the three speaker sets (**LT/RT**, **CEN**, **SURRND**):

   a) Go to that speaker set's configuration menu.
   b) Determine if this speaker set can handle a full range signal.
   c) If the speaker set's specification is -3dB at higher than 50 Hz, set the **CFG** to **XOVER**.
   d) If the speaker set's specification is -3dB at 35-50Hz, set the **CFG** setting to **FUL/LP**.
   e) If the speaker set's specification is -3dB at 20 Hz, set the **CFG** setting to **FULL**.
   f) Set the crossover frequency in the Phase Perfect submenu. If a suck-out appears (lack of bass energy), then try increasing the setting. If the transition to the sub becomes obvious, a lower frequency is recommended.
   g) Set the crossover slope in the Phase Perfect submenu. Generally, the smaller the bass driver or the fewer the bass drive units, the steeper the required slope. A gentler slope (6dB, 12 dB / octave) is normally less intrusive and provides better blending of the main speakers into the sub. Some sub woofers can sound “tubby” with too shallow of a slope. A steeper slope (18dB, 24dB / octave) can provide greater dynamic range and clearer dialog.
   h) Try both settings of low pass phase. The correct setting is the one that produces the clearest, most solid bass.
   i) Repeat steps f, g and h for the Linkwitz-Riley and Butterworth crossovers, for each speaker set. In the Butterworth crossover submenu, it is recommended that the high crossover frequency and slope be set to the same values as the low crossover frequency and slope.
   j) Set the crossover type for each speaker set.

9) In the [Center] submenu, the center channel's low pass signal may be routed to the front [left/right] channels instead of the usual subwoofer routing. This is useful for center channels that have extremely limited low frequency response, i.e –3dB cutoff point around 120 Hz.

Speaker Levels

Setting up the speaker levels is best accomplished using the Casablanca II’s internal noise generator and an SPL meter. If the meter has ‘weighting’ options, “C” is preferable.

10) With Input # 1 selected, go to the speaker levels submenu.

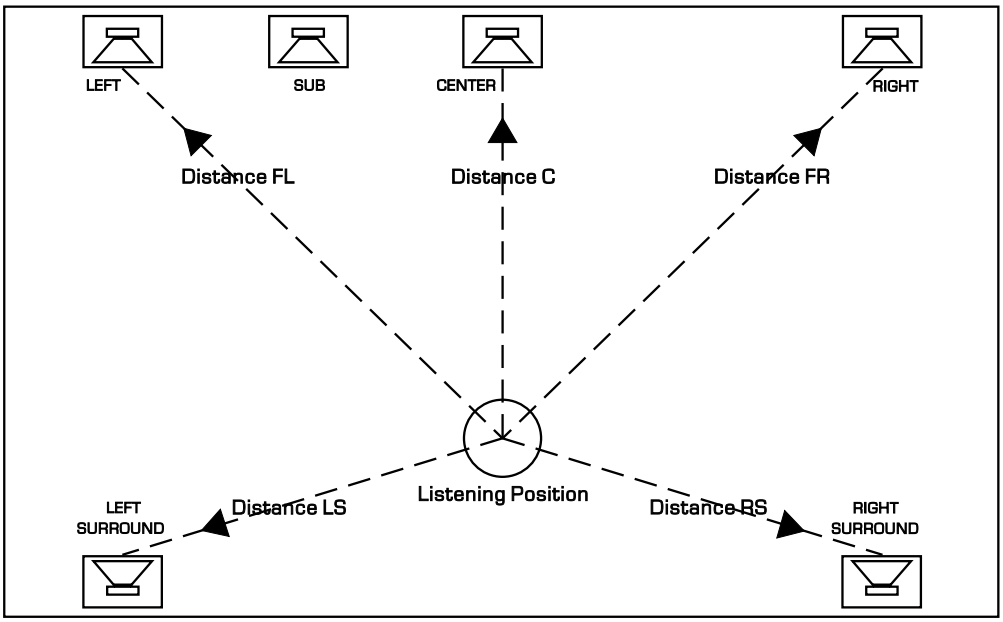
   a) Activate the noise in the front left speaker. All speaker levels should be referenced to the front left and right speaker levels, whose reference levels should start at **0**.
   b) Holding the SPL meter close in front of the user’s face, bring up the master volume until the SPL meter reads 75dB. This is done using the **LEFT**/**RIGHT** buttons.
   c) Activate the noise in the front right speaker and, holding the SPL meter in the same position as for the front left speaker, adjust the speaker level until the SPL meter reads 75dB.
   d) Repeat this procedure for the center speaker.
   e) Activate noise in the left surround speaker. Hold the SPL meter close to the left ear, point it towards the left surround speaker, and adjust the level until the SPL meter reads 75dB.
   f) Activate noise in the right surround speaker. Holding the SPL meter close to the right ear, repeat this procedure for the right surround speaker.
   g) Activate noise in the left side speaker, if present. Holding the SPL meter close to the left ear, repeat this procedure for the left side speaker.
   h) Activate noise in the right side speaker, if present. Holding the SPL meter close to the right ear, repeat this procedure for the right side speaker.
   i) Activate noise in the center surround speaker, if present. Holding the SPL meter close to the left, then right ear, adjust surround center speaker level until the SPL meter reads 75dB.
   j) Activate noise in the sub woofer, or Sub1 if there are more than one configured into the system, and point the SPL meter toward the sub woofer, if present in the system. Adjust the **SUB** level until the SPL meter reads 75dB. Note that there is greater margin for error due to the low frequency output of the sub woofer. Listening to a familiar passage and fine tuning the sub level(s) by ear later in the final adjustments will be required.
   k) Activate noise in Sub 2, if configured into the system, and point the SPL meter toward the sub woofer, if present in the system. Adjust the **SUB** level until the SPL meter reads 75dB.
   l) Activate noise in Sub 3, if configured into the system, and point the SPL meter toward the sub woofer, if present in the system. Adjust the **SUB** level until the SPL meter reads 75dB.

m) Activate noise in Sub 4, if configured into the system, and point the SPL meter toward the sub woofer, if present in the system. Adjust the **SUB** level until the SPL meter reads 75dB.
n) Activate noise in Sub 5, if configured into the system, and point the SPL meter toward the sub woofer, if present in the system. Adjust the **SUB** level until the SPL meter reads 75dB.
o) Deactivate the noise generator with the **A-D** button.

Speaker Delays

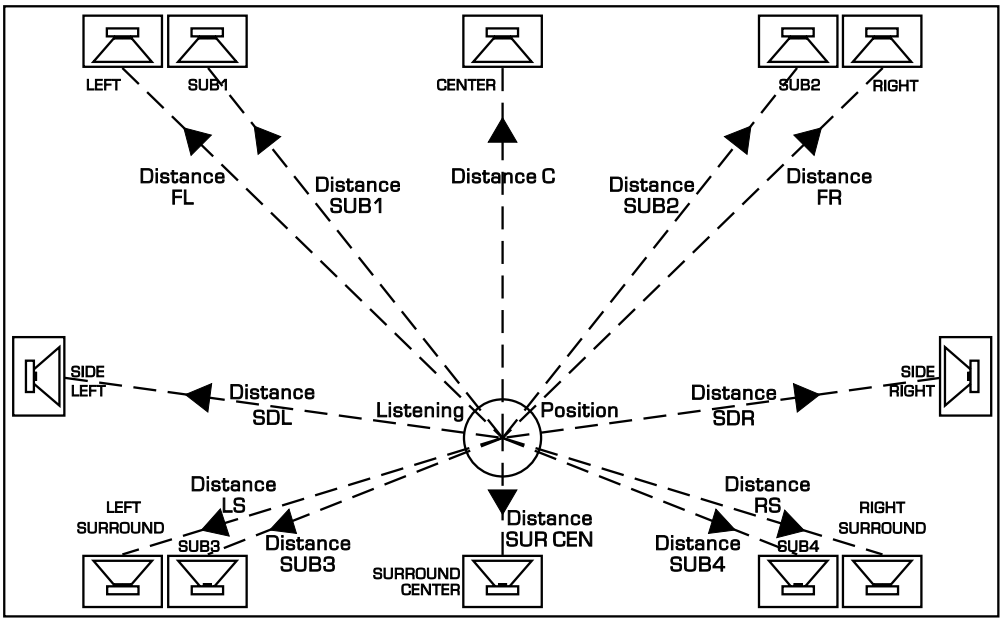
11) With Input # 1 selected, go to the **DELAYS** submenu.
a) If the center speaker is closer to the listening position than the front left and right speakers and cannot be brought to within the same distance of them, leave the front left and right delays at **0** and adjust the **CEN** (center) delay so that its sound arrives at the listener at the same time as the front left and right speakers. The delay value should be 1mS for each foot difference.
b) If the center speaker is farther in distance from the listening position than the front left and right speaker, then set the **CEN** (center) delay to **0** and adjust the front left and right speaker delays so that their sound arrives at the listeners at the same time as the center speaker. The delay value should be 1mS for each foot difference. Please refer to the *Delays* section in the Owner's manual for additional details regarding the speaker delay feature and methods of calculating required speaker delay times.
c) If the center speaker is equal distance from the listening position as the front left and right speaker, set the front left and right speaker and center speaker delays at **0**.
d) Using the chart and method contained in the *Delays* section of the Owner's manual, calculate the delay times for the left and right surround speakers.

The center and surround delays in this submenu will affect the center and surround speakers only when the **MODE** is <u>not</u> Dolby Digital, DTS or Circle Surround. The center and surround delays must be set up separately if the **MODE** is either Dolby Digital, DTS or Circle Surround.



Speakers in a typical 5.1 system

e) Typically the center surround speaker is closer to the listening position than the surround left/right speakers. In this case, it must be delayed so that the sound from all of the surround speakers reaches the listener at the same time. Calculate the difference (distance in feet) between the center surround and one of the left/right surround speakers, to the listening position. Add this difference to the value already set for the left/right surround speakers and use this sum to set the delay value for the center surround speaker. (1 mS per foot of difference).
f) Calculate the difference (distance in feet) between the left side and left front speakers. Add the difference to the default value already set for the left side to give this speaker its new value.
g) Calculate the difference (distance in feet) between the right side and right front speakers. Add the difference to the default value already set for the right side to give this speaker its new value.
h) Because of their low frequency properties, typically a delay in the subwoofer(s) is virtually undetectable. This being the case, it may be appropriate to leave the subwoofer delay values set at 0. However, if any subwoofer is closer to the listening position than the front left/right speakers, a delay value can be set for these subs. The delay value will be the difference (in feet) between the sub itself and the front left or right speaker, to the listening position.



Speakers in a typical 12 channel system

Dolby Digital, DTS and Circle Surround Setup

The center and left/right surround speaker levels and delays will most likely differ for Dolby Digital and DTS sources, as well as when the Mode is Circle Surround. There are separate **SETUP** submenus designed just for these modes. When the mode is Dolby Digital, DTS, or Circle Surround, the center and surround delays will work together with changes made in the above **DLYS** submenu. Likewise, the values of the levels set in the Dolby Digital, DTS and Circle Surround setup submenus will be added to (or subtracted from) the level values in the **SETUP**/**INP**/**LVLS** submenu.

12) a) Play a Dolby Digital movie.
b) Go to the Dolby Digital setup submenu – page 2.
c) Set the center speaker delay to the same value as in the **SETUP**/**INP**/**DLYS** submenu.
d) Set the surround delay 15mS less that those set in the **SETUP**/**INP**/**DLYS** submenu.
e) Set the center speaker level and the surround speaker level to 0. Please refer to the *SETUP/Dolby Digital* section of the Owner's Manual for additional information regarding setting the Dolby Digital center and surround levels.
f) The **LFE** setting should NOT be turned **OFF** if no sub woofer exists in the system. A setting of **0** turns on the **LFE** and sets its level in proper proportion to the remaining 5 channels. Setting the **LFE** at **–10** [dB] may be desired for late night viewing or if source material may overpower the sub woofer. Setting the **LFE** to **OFF** may be useful for late night viewing, however, please note that any information in the .1 channel will be lost.

Remember that these values will be in effect only when the **MODE** is Dolby Digital.

13) a) Play a DTS encoded CD or movie.
b) Go to the DTS setup submenu.
c) Set the center speaker delay to the same value as in the **SETUP**/**INP**/**DLYS** submenu.
d) Set the surround delays 15mS less that those set in the **SETUP**/**INP**/**DLYS** submenu.
e) Set the center speaker level to **0**.
f) Set each surround speaker level to **0**.
g) Set the **LFE** level at **0** for DTS movies, or **-10** for DTS music. (The user can choose to use two separate input select buttons, one for DTS movies and one for DTS music, all parameter values being the same except for the LFE setting).

These parameter values apply only when the **MODE** is **DTS**.

14) a) Play a 2 channel CD.
b) Go to the Circle Surround setup submenu.
c) Set the center and surround speaker delays to the same value as in the **SETUP**/**INP**/**DLYS** submenu.
d) Set the center speaker level and each surround speaker level to 0.
e) Set the imaging to **NARROW** or **WIDE**, applicable only when the mode is Circle Non-Encoded. **WIDE** widens the speaker imaging in the front [left/right] speakers.

These parameter values apply only when the **MODE** is any one of the three Circle Surround modes.

Remaining Setup

15) Now that the speaker configuration, crossovers, levels and delays have been set up for input select button #1, they should be copied to all input select buttons as a good starting point. Do this in the **MACROS** submenu when input

select # **1** is the current input.

16) Each input select button has a default mode assigned to it. The default mode for a given input select button is set and stored in the first **SETUP/INPUT** page. As the user scrolls through the list of modes, there are 2 positions in this list that are not currently used. In these positions, the word **SKIP** will be displayed.
    a) Press input select button #1.
    b) Go to the **SETUP/INP** – page 1 submenu.
    c) Set the applicable default **MODE**.
    d) Repeat steps b and c for each input select button.

17) An input signal is "processed" a certain way depending on which **MODE** is currently selected. It is possible to further process this signal for specific applications. (For details, refer to the Post Process section of the Owner's Manual"). If it is desired to further process the signal, continue with this step.

    a) With Input # 1 selected, go to the Post Process submenu.
    b) Select a Post Process.
    c) Select Input # 2.
    d) Go to the Post Process submenu.
    e) Select a Post process.
    f) Repeat steps c and d for each input select that it is desired to have a Post Process.

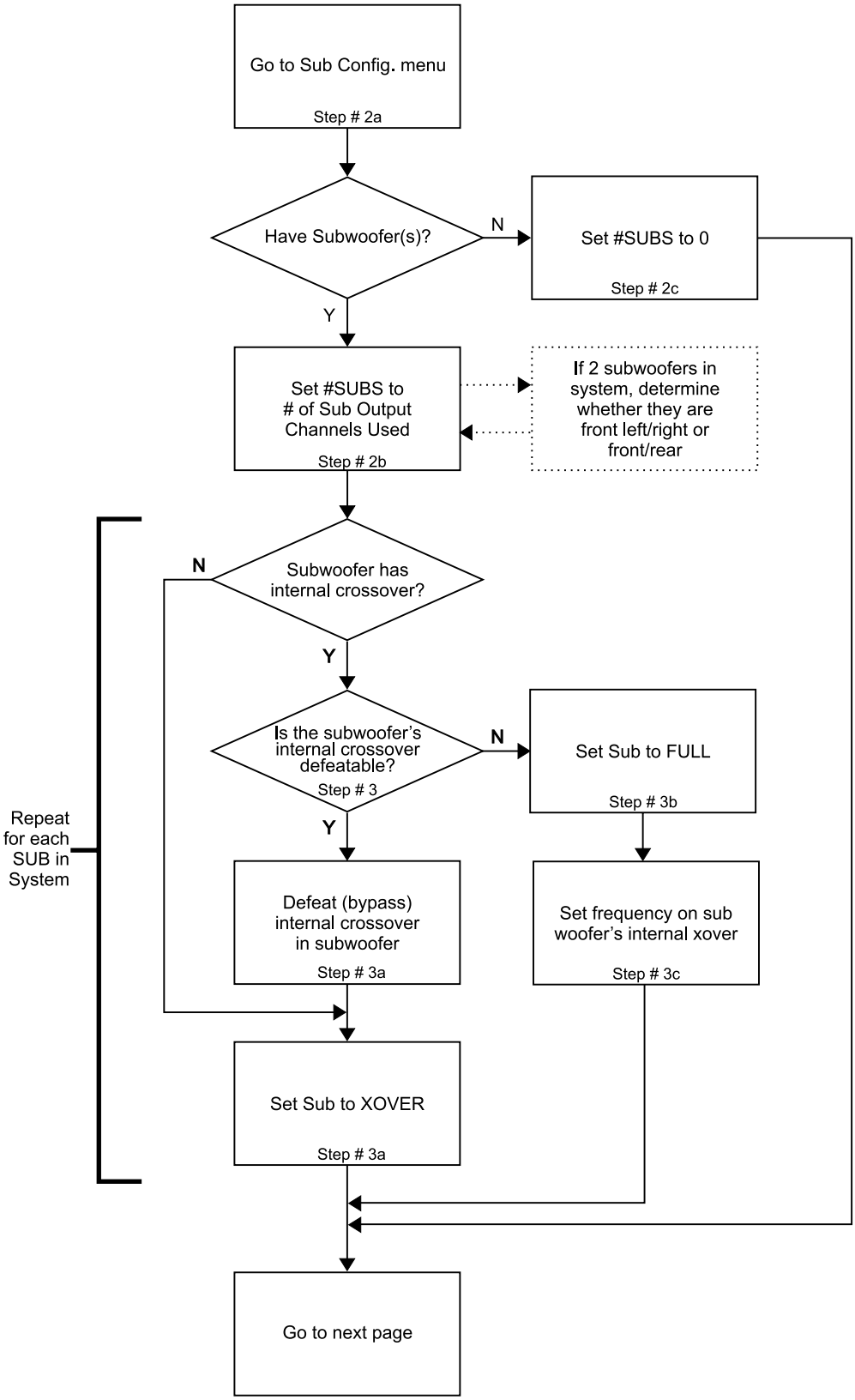
18) The audio and video SOURCE pages allow the user to map up to six audio input and 6 video input jacks to the currently selected input. It is recommended that all other displayed jacks in this submenu be cleared if they are not to be used. Please refer the *Mapping Jacks* and *Search Order* sections of the Owner's Manual for additional details about mapping input jacks to a given Input Select button.

    Verify that the desired rear panel audio and video input jacks are properly mapped to each Input Select button that is to be used.
    a) Select input # 1.
    b) Go to the AUDIO SOURCE submenu.
    c) Map all appropriate rear panel audio input jacks.
    d) Go to the VIDEO SOURCE submenu.
    e) Map all appropriate video input jacks.
    f) Select input # 2.
    g) Repeat steps b through e for all used input select buttons.

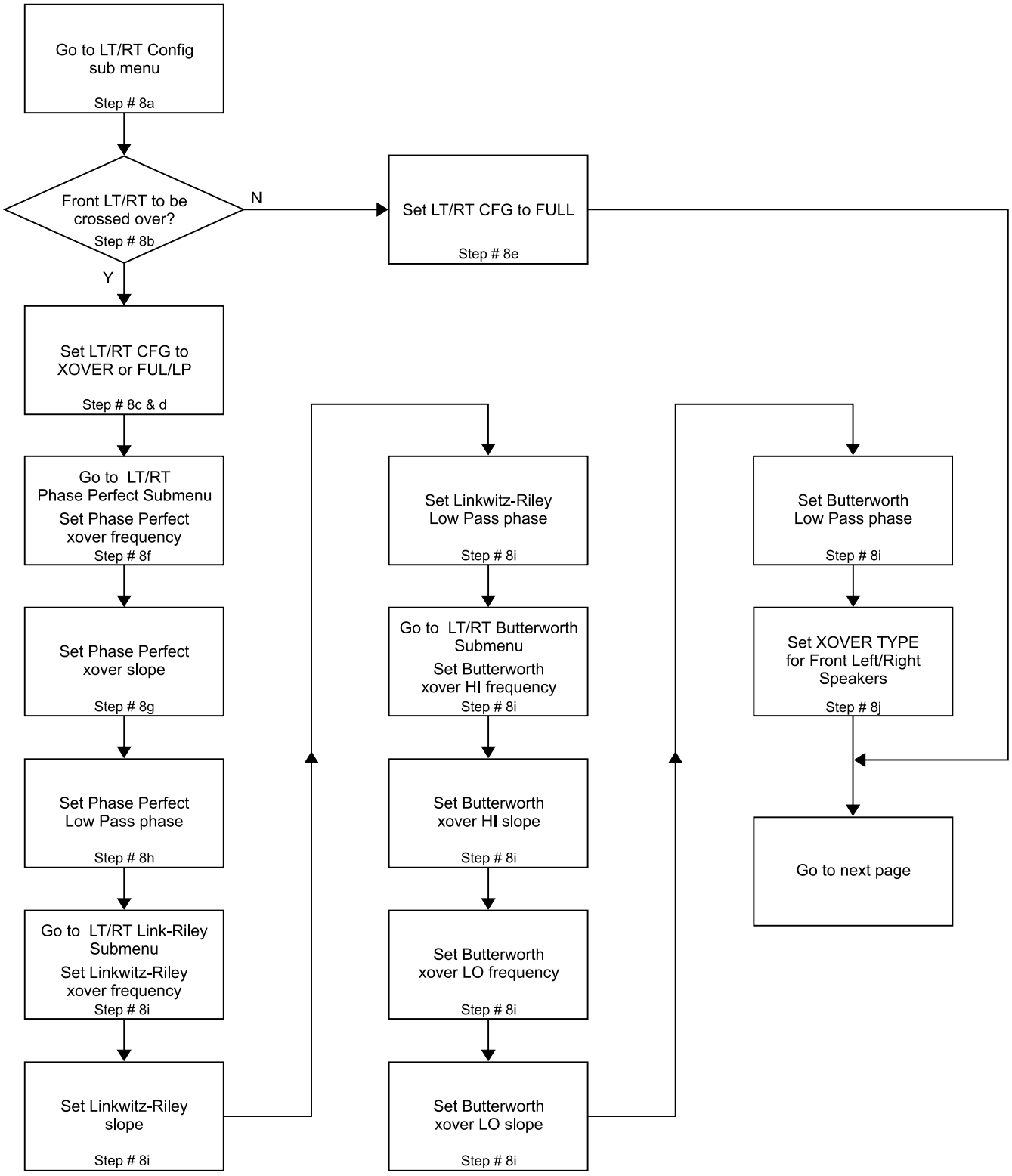
19) All analog sources must have their input levels set in order to obtain the best signal to noise ratio as well as to ensure that no clipping occurs.
    a) Go to the **ANALOG LEVELS** submenu.
    b) Select the first set of jacks with an analog input jack assigned to it.
    c) Adjust the analog input level.
    d) Repeat steps b and c for each analog source.

    Make adjustments so that during the most aggressive passages, the red clip light never comes on, but the –6 or –12 lights are on.

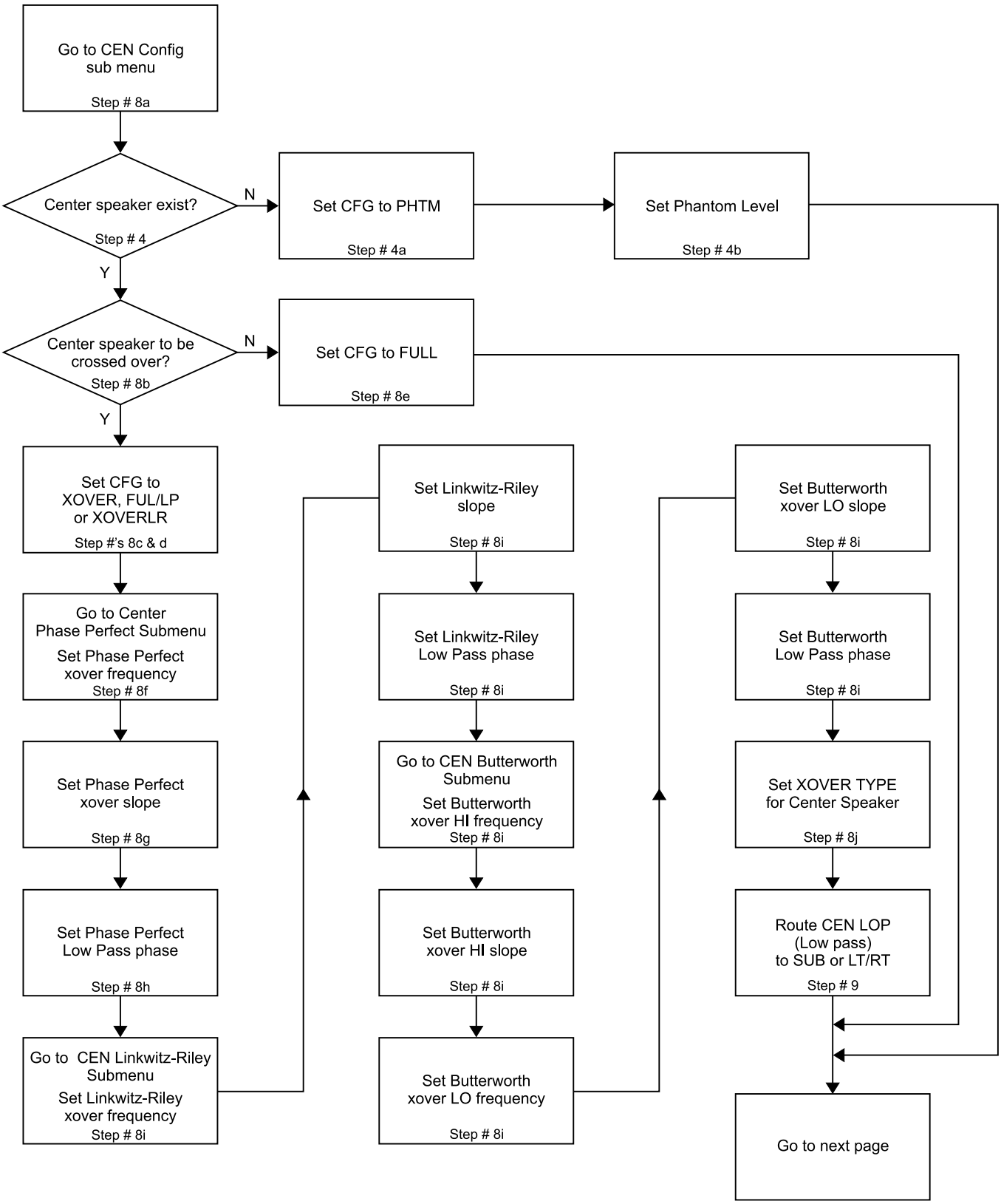
Flowchart A – Setup Subwoofer(s)



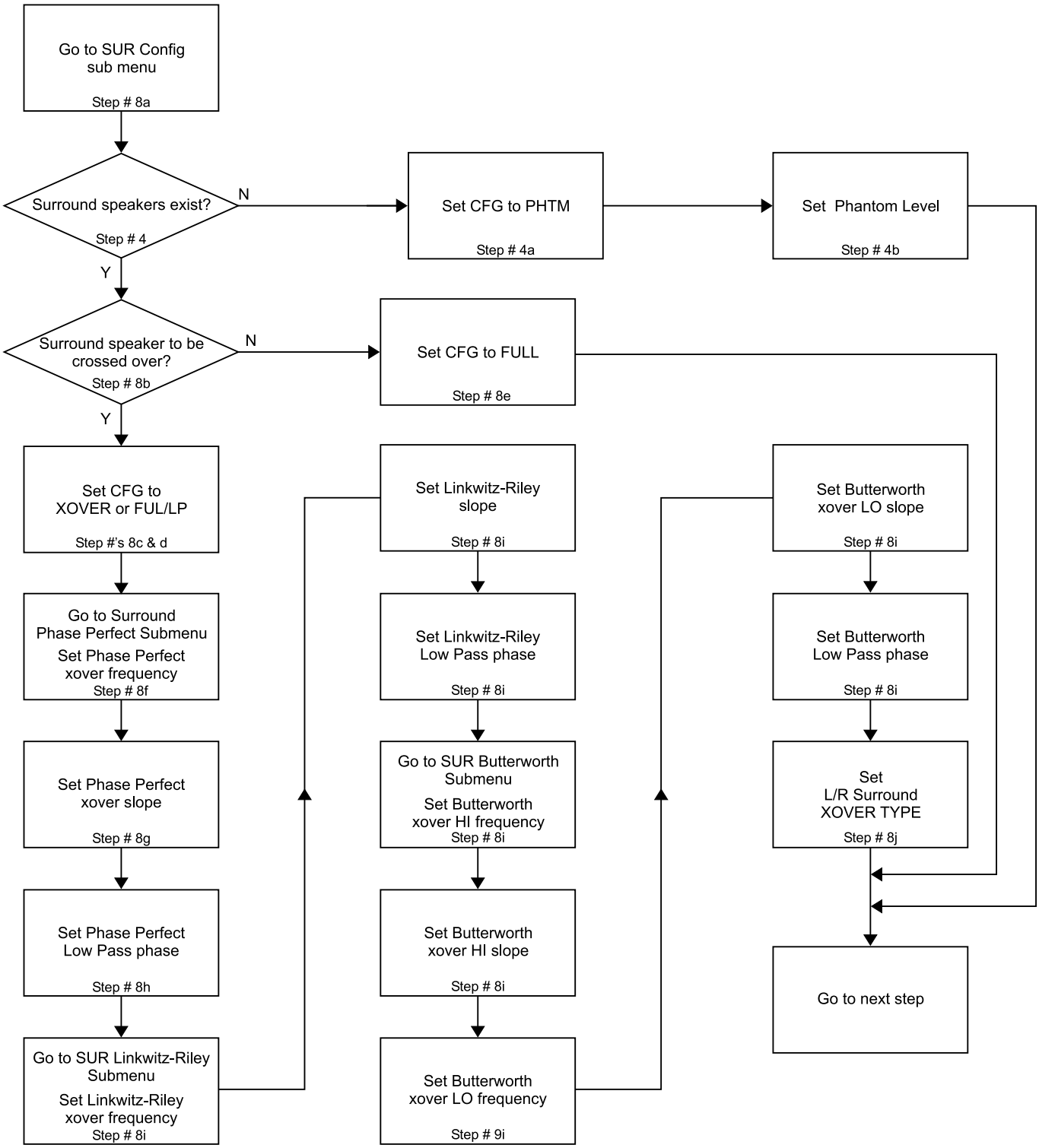
Flowchart B – Front Left/Right Configuration



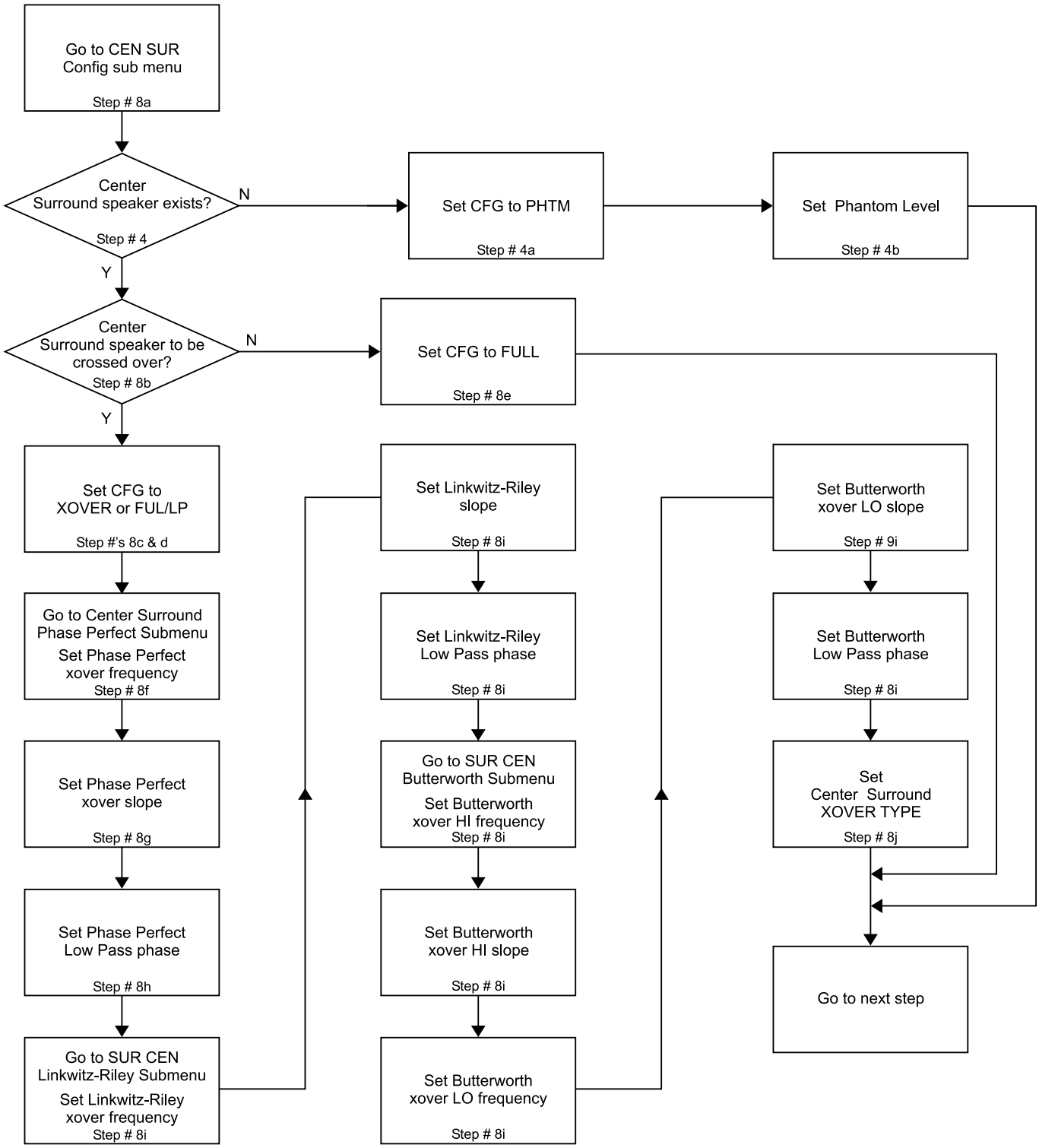
Flowchart C – Front Center Configuration



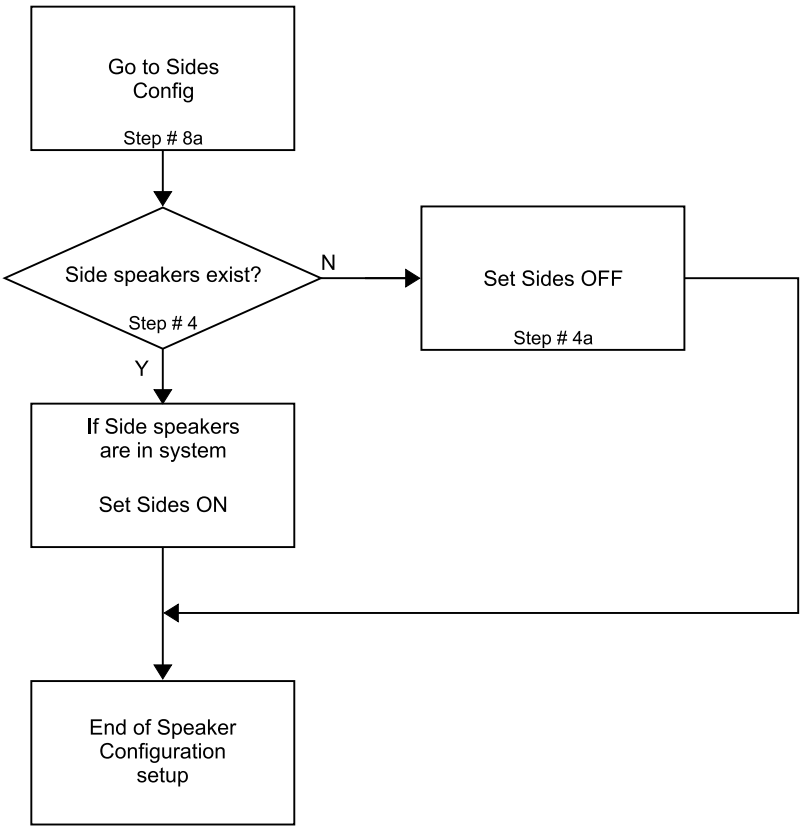
Flowchart D – Left/Right Surround Configuration.



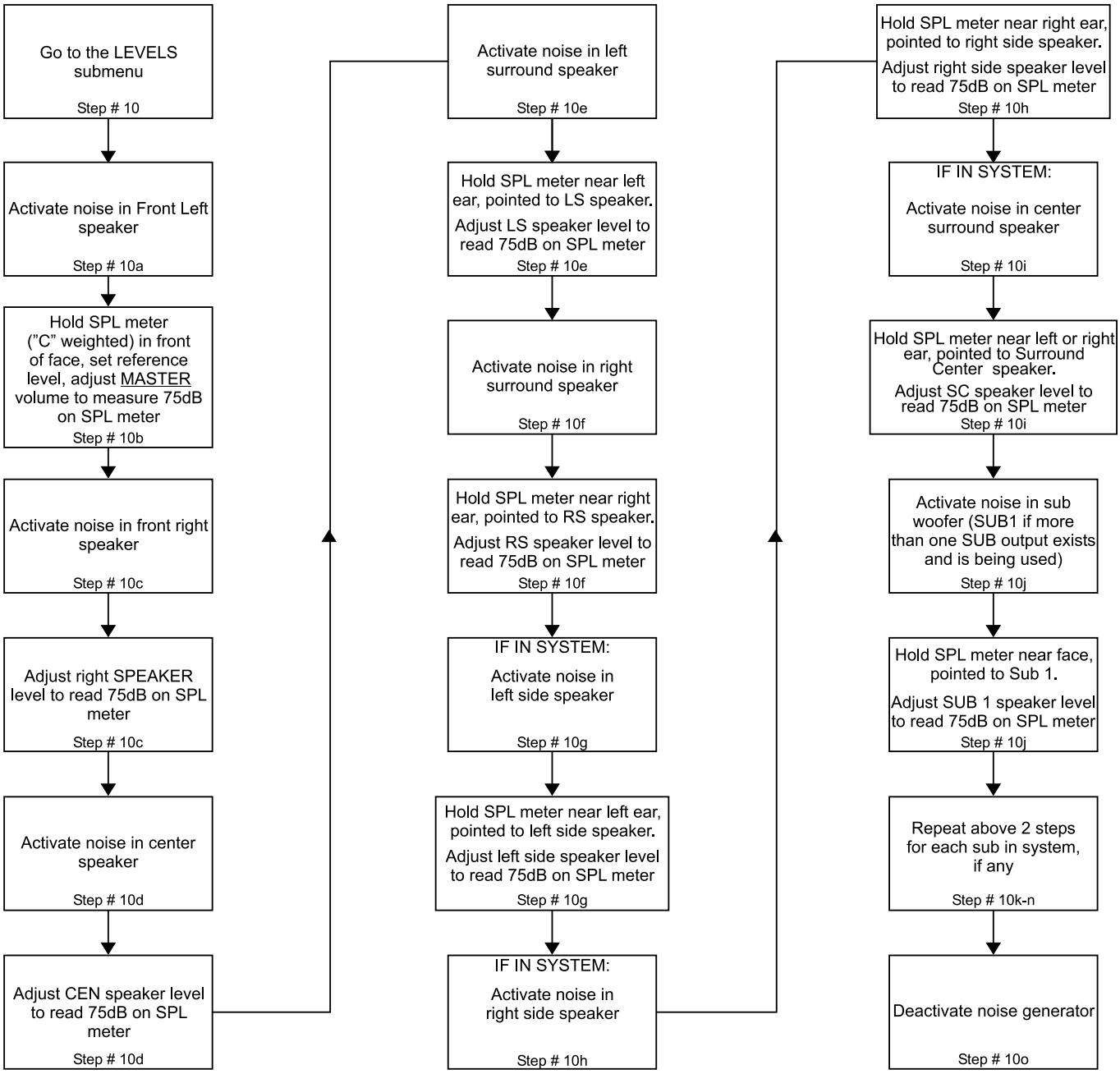
Flowchart E – Surround Center Configuration



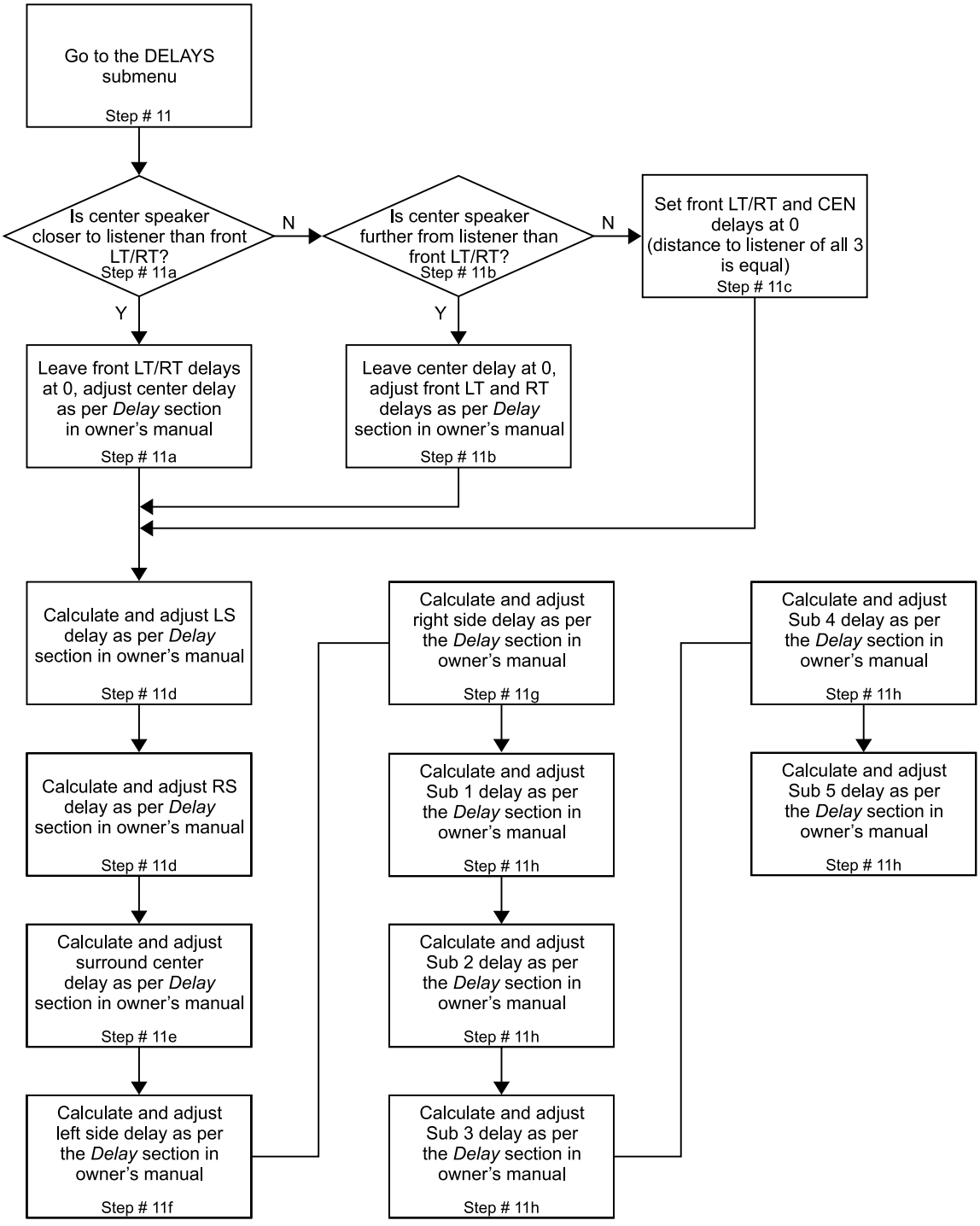
Flowchart F – Sides Configuration



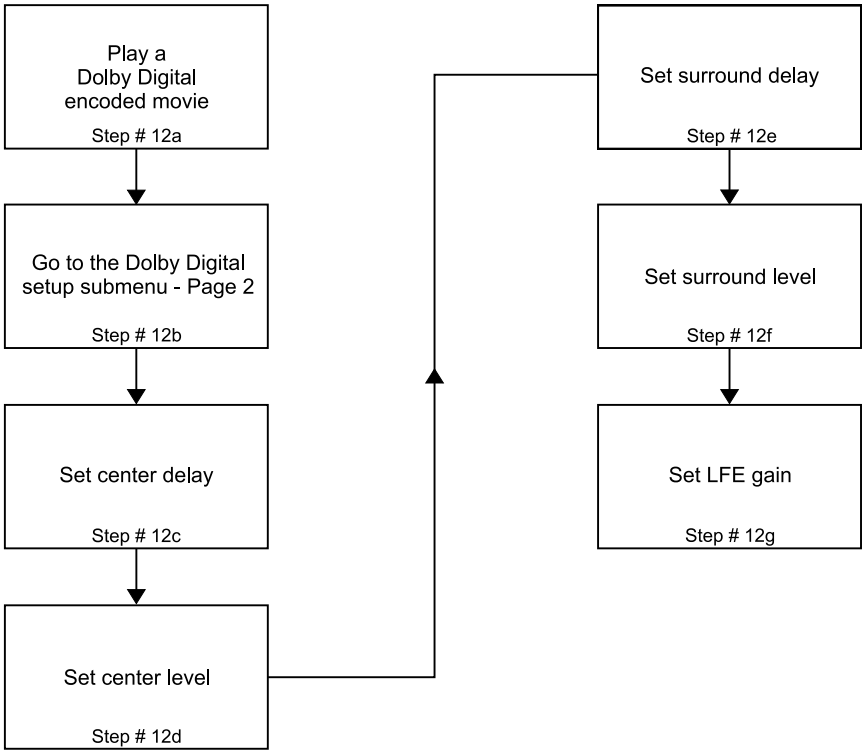
Flowchart G – Setup Speaker Levels



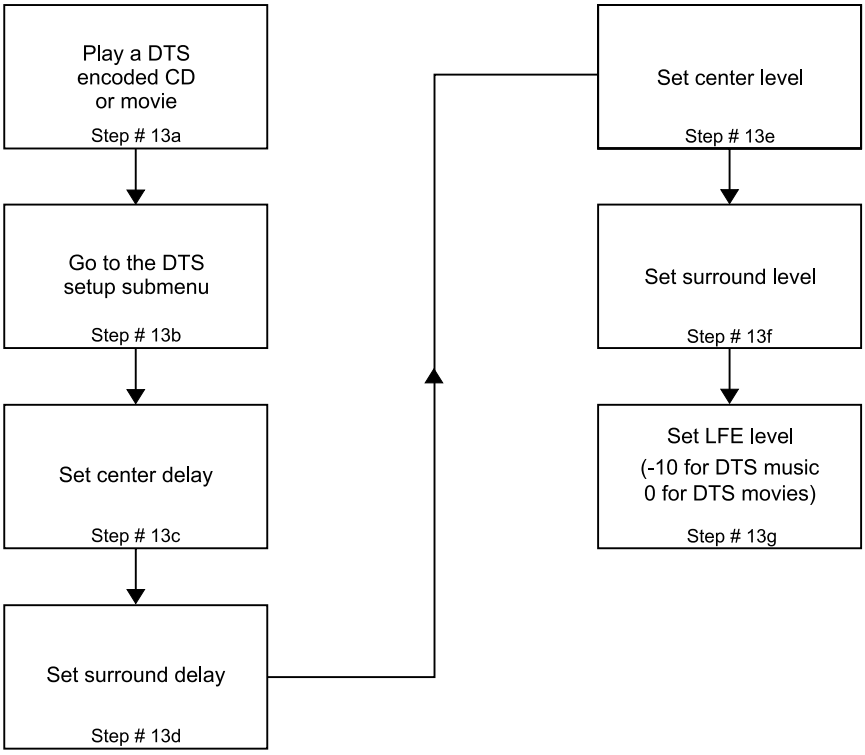
Flowchart H – Setup Speaker Delays



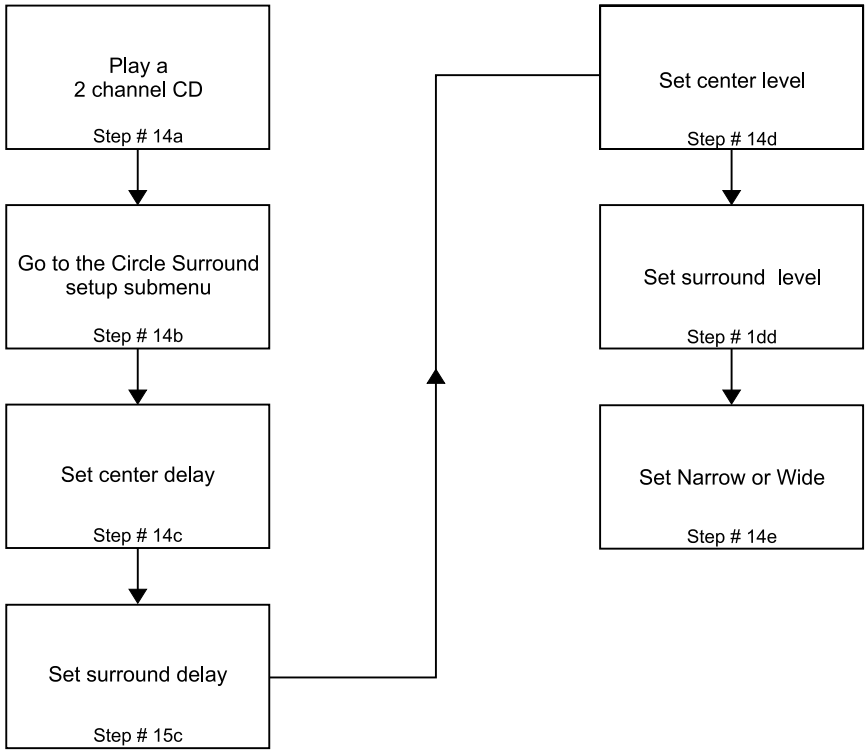
Flowchart I – Setup Dolby Digital



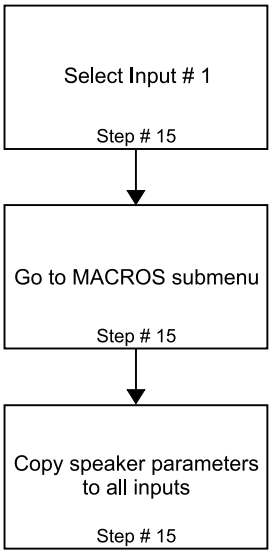
Flowchart J – Setup DTS



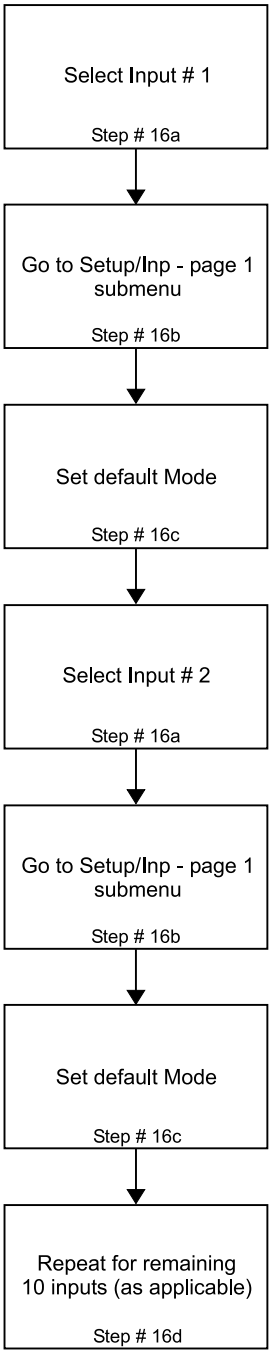
Flowchart K – Setup Circle Surround



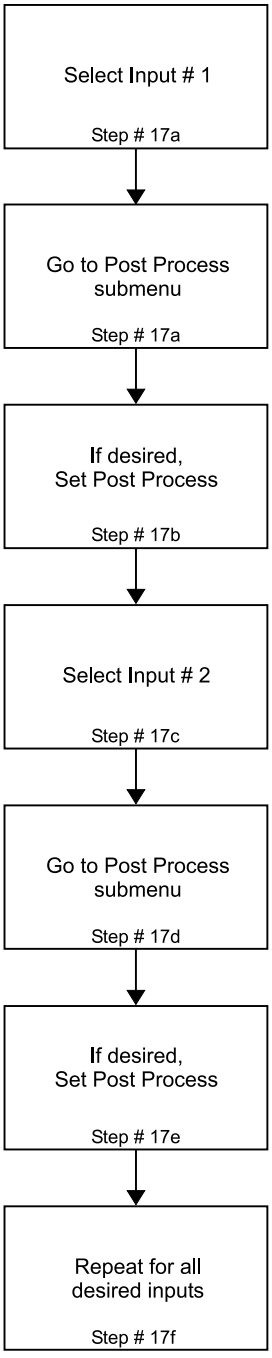
Flowchart L – Copy Input/Speaker Parameters



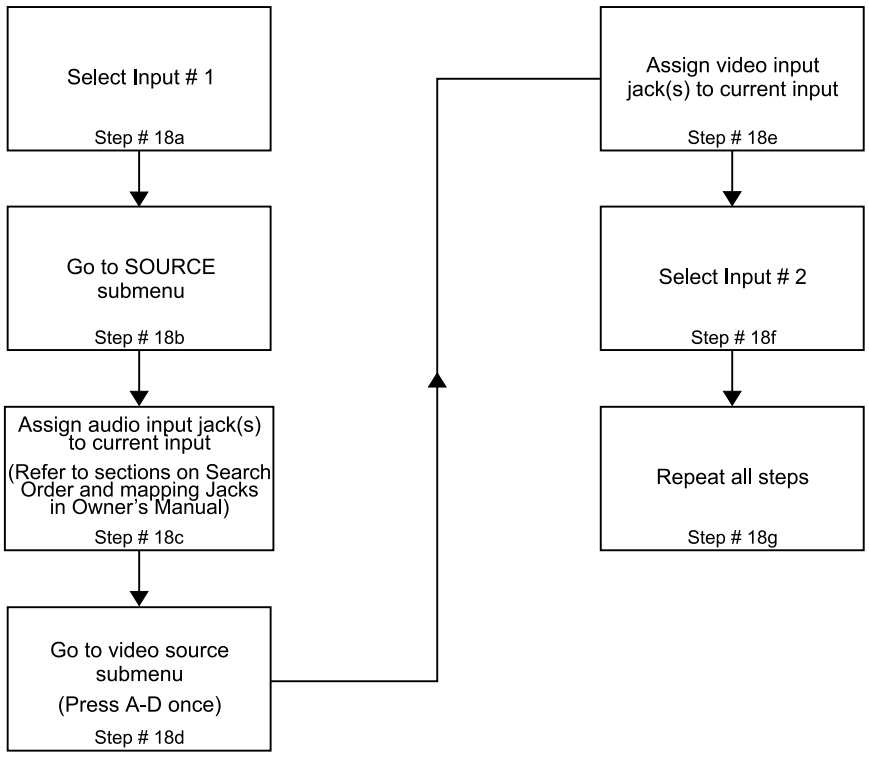
Flowchart M – Setup Default Mode



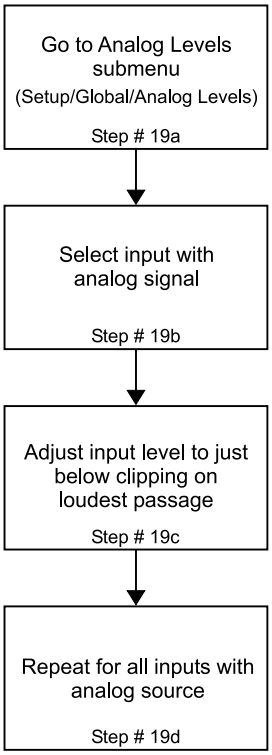
Flowchart N – Setup Post Process



Flowchart O – Map Input Jacks



Flowchart P – Setup Analog Input Levels



FRONT PANEL OPERATIONS

This section describes the functionality of each button on the Casablanca II's front panel display only. For remote functionality descriptions, please refer to the section entitled *REMOTE CONTROL OPERATIONS* later in this manual. Descriptions for front panel buttons/functionality not covered in this section can be found in the preceding *FRONT PANEL LAYOUT* section.

Input Select Menus

When the Casablanca II is first powered up via the **MAIN POWER** switch on the back panel, it will check all software and hardware and then it will be in the default standby mode as soon as the front panel **MAIN POWER** LED is lit. Pressing the **MAIN** button on the front panel will result in the front panel display showing the start-up routine and then the current **INPUT SELECT** page, shown in figure 14 below. As this menu appears, the **MAIN** LED turns off. This display will be on all of the time during normal operation and will change only when one of the function buttons or the **STATUS** button is pressed.

Changing Inputs and Input Select Pages

The **INPUT NAMES** shown in this figure are for example only and will most likely differ from the user's set up. There are two **INPUT SELECT** pages, giving the user a total of 12 inputs. Buttons **1** through **6** are used to select a desired input, or audio/video source. The LED above the selected button will illuminate when pressed. When the Casablanca II exits standby mode, the last active **INPUT SELECT** will be selected. Pressing the **LEVEL LEFT** or **RIGHT** buttons toggles between the two **INPUT SELECT** pages.

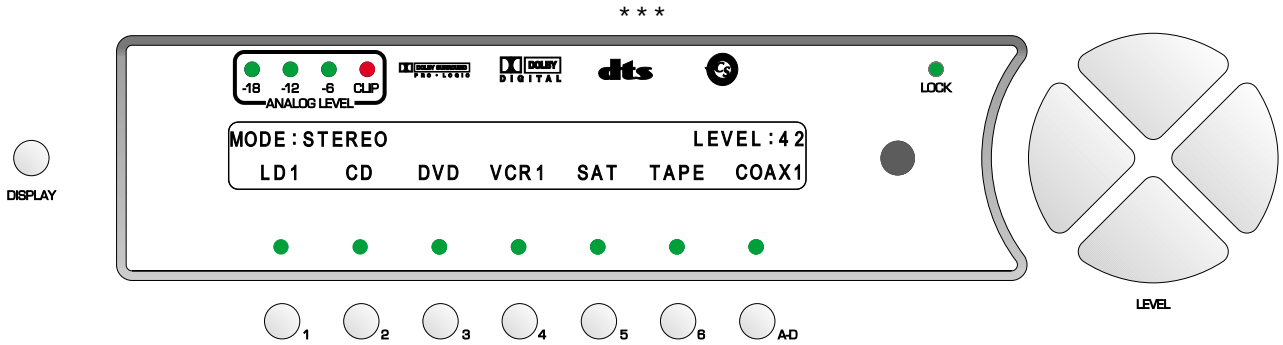


Figure 14 - Front Panel Display of the current INPUT SELECT page

Pressing the **LEVEL UP/DOWN** buttons will adjust the master volume for all speakers. A temporary bar graph appears on the LCD and OSD as the master volume is being adjusted. This value ranges from **0** to **73**, relative maximum.

Auto-Search

The Casablanca II can automatically search for a signal on all rear panel input jacks that are assigned to the currently selected input button. When this feature is enabled, the Casablanca II will search each input jack assigned to the currently selected input and stop at the first signal that it finds. To enable Auto-Search, press the **1**-**6** button of the currently selected input. A message will appear indicating that Auto-Search is on. To disable auto-search, press the **A-D** button once. A message will appear on the display indicating that Auto-Search has been turned off. The Auto-Search feature can be disabled – by input – in the **SETUP/INPUT/*page 3*** submenu.

Note: If the Casablanca II is not locked and is auto-searching for a signal, then any button is pressed...if pressed quickly the Casablanca may not see that button press as it is busy auto-searching. In this unique case, press and hold the button for 1-2 seconds. The Casablanca will then stop auto-searching and wait for additional button presses. If no other button presses are made within 4-5 seconds, the Casablanca II will start auto-searching again.

Selecting Mapped Input Jacks for the Currently Selected Input

Pressing the **A-D** button will toggle between the input jacks that are mapped to this **INPUT SELECT** button. Please refer to page 42 (*Search Order*) for important, detailed information regarding using the **A-D** button.

* * *

The **MUTE** button will toggle the audio between the master volume level and **MUTE** level* in all speakers each time it is pressed. When the mute feature is enabled, the word **LEVEL** in the LCD will be replaced with the word **MUTED**, which will remain displayed until the mute is disabled. The **MUTE** feature is active in all menus.

*__Note__: The factory default value for **MUTE** is **0**, which is to say that when the **MUTE** button is pressed, the output level of all channels will be completely muted (master volume = **0**). The Casablanca II offers a feature in the **SETUP/GLOBAL/MUTE/VOLUME** sub menu whereby when the **MUTE** button is pressed, the Casablanca II will mute to a user defined master volume level. Please refer to page 70 for additional information regarding this feature.

The **DISPLAY** button will toggle the front panel VFD brightness between off, ¼, ½, ¾ and full brightness. This feature will have no effect on the video display. When the LCD/VFD is turned off, the red logo LEDs also turn off.

Search Order

The Casablanca II's inputs can support virtually every popular analog and digital and video format used in today's technology. Up to 6 audio input jacks can be mapped to one **INPUT SELECT** button. These 6 input jacks can be all digital, all analog or any combination of both. In the **SETUP/INP *Page 2*/SOURCE/AUD** page, the order in which they are mapped to a given **INPUT SELECT** button determines the order each is displayed when the **A-D** button is pressed when in the **INPUT SELECT** menu. This is called *Input Search Order*. Figure 15 below shows **INPUT SELECT 1** having the CD and DVD input jacks mapped to it, with the CD jack having the highest priority (being in the first position). In this example, there are no other physical input jacks required to be mapped to **INPUT SELECT 1**, therefore the jack names of 3-6 are blank. Pressing the **A-D** button while in the **INPUT SELECT** page, selects either the CD input jack, or the DVD input jack. Pressing the **A-D** button in the **SETUP/INP *Page 2*/SOURCE/AUD** sub menu will access the video search order page. In this page, pressing buttons **1**-**6** will allow the user to assign a video input jack (1-6) to correspond to the respective audio search order. In the above example, one would not assign a video jack to search order # 1 since the audio search order # 1 is assigned to CD, which is not a video source. If one wanted an unrelated video source to be viewable when listening to CD's, simply map a video source to video search order # 1. Also in the above example, one would normally assign the DVD video input to video search order # 2. This will select the correct video jack to correspond to the desired audio jack.

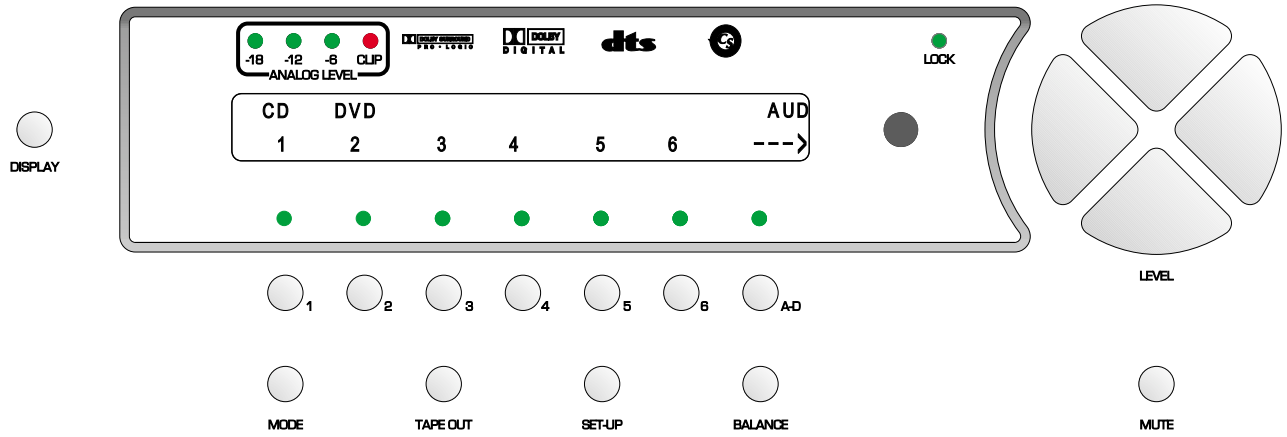


Figure 15 - Front Panel Display of the SETUP/INP *page 2*/SOURCE/AUD page

Caution: Please take special care to insert only a digital signal into a digital input jack and an analog signal only into an analog input jack. Damage, not covered under warranty, can occur if an analog signal is applied to a digital input. Additionally, please ensure that a video plug is not inadvertently inserted into a digital audio jack and visa versa, otherwise, the Casablanca II will cease to respond.

MODE Function

Pressing the **MODE** button (shaded in figures 16 and 17) once displays the first page of the **MODE** menu. This first page consists of 6 different signal 'processing' modes, one of which can be selected and temporarily applied to the currently selected input. A *right* arrow is displayed in the lower right corner of the LCD indicating that there is an additional **MODE** page. Pressing the **A-D** button once will reveal this second page, consisting of additional modes. Figure 16 shows the first **MODE** page and, figure 17 shows the second.

Note: This entire menu allows the user to audition different modes when possible. It does not store the changed mode. Therefore when a different **INPUT SELECT** button is pressed, or the Casablanca II is powered down, a **MODE** that is changed using this function will revert to its default. Since each **INPUT SELECT** button can have its own **MODE**, the default mode for that **INPUT SELECT** is stored/edited in the **SETUP/ INPUT** menu. Please refer to page 59 (Default Mode) for information on changing and storing the **MODE** for a given **INPUT SELECT** button.

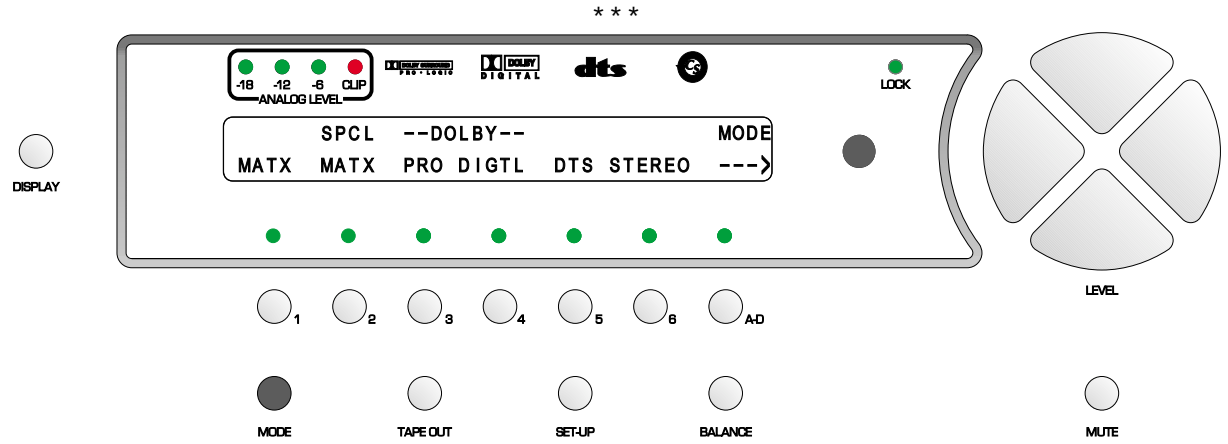


Figure 16 - Front Panel Display of the MODE *Page 1* Menu

Press button **1** - **6** to select the desired mode. The corresponding LED above buttons **1** through **6** will illuminate.

Note: If a specific feature such as Dolby Digital, DTS or Circle Surround is not installed in the Casablanca II, selecting it in the **MODE** menu will result in the LCD displaying the following message: **OPTION NOT INSTALLED**.

The first 6 modes shown in figure 16 are described below.

Matrix (**MATX**): The signal routed to the center speaker is equal to the left plus right input signals and the mono signal routed to the surround speakers is equal to left minus right signals. Crossing over any speaker(s) produces a sub channel.

Special Matrix (**SPCL MATX**): A mode similar to Dolby Pro Logic with more ambience retrieval in the surround speakers. Crossing over any speaker(s) produces a sub channel.

Dolby Pro Logic (**PRO**): When **PRO** is selected, Dolby Pro Logic decoding is implemented. Crossing over any speaker(s) produces a sub channel.

Dolby Digital (**DIGTL**): (Optional). When this mode is selected, Dolby Digital (AC-3 5.1) decoding is implemented. Please refer to page 62 for additional Dolby Digital setup options, selectable in the second page of the **SETUP/INPUT** submenu. If any speakers are crossed over, their low pass signal will be routed to the applicable sub channel(s) and be mixed with the LFE signal , if present.

If the Casablanca II detects a Dolby Digital 5.1 signal on the selected input jack, and the **MODE** is *not* set to **DOLBY DIGITAL**, the Casablanca II will display the following message on both the LCD and video monitor**:

****RECEIVING DOLBY DIGITAL SIGNAL****
CHANGING MODE TO DOLBY DIGITAL

and display **DOLBY DIGITAL** as the current mode. However, this is not stored and therefore approximately 5 seconds after the Casablanca II ceases to receive this signal, the **MODE** will revert back to the default mode for that Input Select button. If the detected signal's format is Dolby Digital 2.0, the same auto detecting

message will appear for a few seconds and the display will show **DOLBY DIGITAL PRO LOGIC** as the mode. Please refer to page 70 to turn on or off the Mode Change message.

DTS: (Optional) Selecting **DTS** will decode a Digital Theater Systems encoded signal according to the **DTS** specification which consists of up to 5 plus 1 discrete channels of digital data for a total of 6 separate audio channels. If any speakers are crossed over, their low pass signal will be routed to the applicable sub channel(s) and be mixed with the LFE signal, if present.

If the Casablanca II detects a DTS signal on the selected input jack, and the **MODE** is *not* set to **DTS**, the Casablanca II will display the following message on both the LCD and video monitor**:

****RECEIVING DTS SIGNAL****
CHANGING MODE TO DTS

and display **DTS** as the current mode. However, this is not stored and therefore approximately 15 seconds after the Casablanca II ceases to receive this signal, the **MODE** will revert back to the previous mode before detecting the DTS signal. Please refer to page 63 for additional DTS setup options, selectable in the second page of the **SETUP/INPUT** submenu.

****Note**: The "auto-detecting" messages for Dolby Digital and DTS will not show, by default. There is a parameter in the **SETUP/GLOBAL *page 2*** submenu (page 70) that turns this feature on and off.

STEREO: Left and Right input signals are sent to the Left and Right front speakers, which if crossed over, will produce a **SUB** channel.

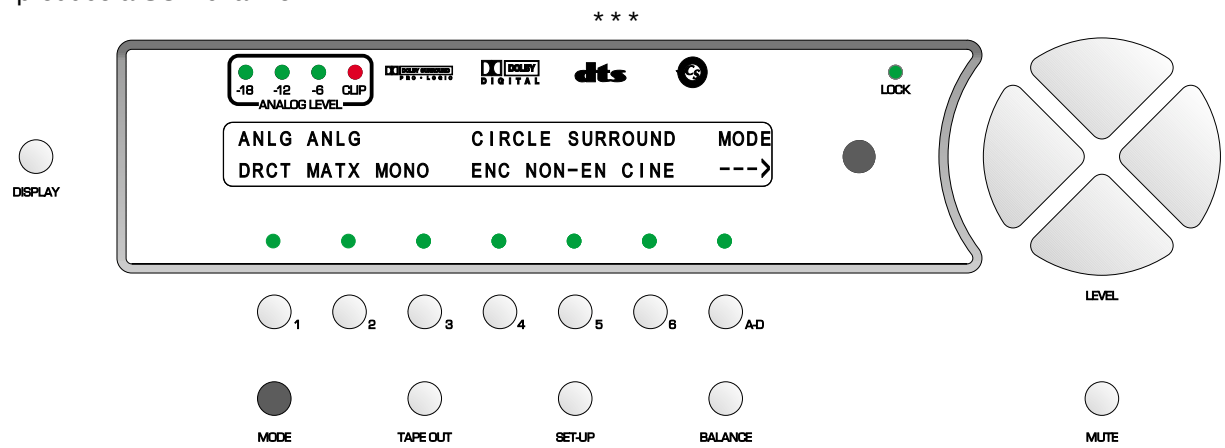


Figure 17 - Front Panel Display of the MODE *Page 2* Menu

Each of the 6 modes shown in figure 17 are described below.

Analog Direct (**ANLG DRCT**): This mode takes the selected analog input and routes it directly to the main Left/Right outputs via the volume controls. Since there is no surround processing in Analog Direct, the sub woofer, EQ, phantom center channel, and crossover effects are not available. Note: If these effects are desired, use the **STEREO** mode. The Analog Direct mode will route only an analog signal to the outputs.

Analog Matrix (**ANLG MATX**): The signal routing in this mode is the same as Analog Direct (**ANLG DRCT**), (left & right analog input signals routed directly to the main outputs via the volume controls), and at the same time, the input left and right signals are routed through an analog to digital converter in order to derive the other channels, which include left & right surround, sides, center and center surround. These other channels can have **EQ** and be crossed over (creating a **SUB** channel), but the front left and right channels may not have **EQ**, be crossed over (routed to the sub woofer(s)), or perform phantom center speaker. The Analog Matrix mode processes an analog input signal only.

MONO: This mode routes the input signal to the center channel only, however, if the center channel is crossed over, a sub channel will be produced. If the center channel is set to **OFF** or **PHANTM** in the **SETUP/ INPUT/CONFIG** sub menu, the input signal will be routed to the front left and right speakers.

CIRCLE SURROUND: The **ENC** (Encoded) and **NON-EN** (Non Encoded) Circle Surround modes are

intended for music playback, whereas the **CINE** mode is intended for Cinematic use. In all 3 Circle Surround modes, the center channel operates dynamically in order to avoid collapsing any stereo imaging that may be present toward the center channel. This works to maintain a wide left/right sound field in the front channels. All Circle Surround modes provide multi-band left/right steering in the surround channels.

When the source music is Circle encoded, the intended mode is Circle **ENC**, leaving the **NON-EN** mode for non Circle encoded music. **CINE** is a non-encoded mode that is intended to be used for mono, stereo or matrixed film sources.

Circle Surround operates effectively with both encoded and non-encoded material, and allows the processing of the front left/right and center channels as well as full bandwidth of the left and right surrounds. Please refer to page 64 for additional Circle Surround setup options, selectable in the second page of the **SETUP/INPUT** submenu.

* * *

After selecting a temporary mode for the current input channel, pressing the **MODE** button once more returns the Casablanca II to the **INPUT SELECT** menu. While in the **MODE** menu, the **MASTER VOLUME** can be controlled using the **LEVEL UP/DOWN** buttons.

TAPE OUT Function

This feature simultaneously controls the routing of signals to the analog and digital audio, as well as the video tape out jacks.

Pressing the **TAPE OUT** button once changes the LCD display to the **TAPE OUT** menu shown in figure 18.

Note: The **INPUT NAMES** shown in this figure are for example only and will most likely differ from the user's set up.

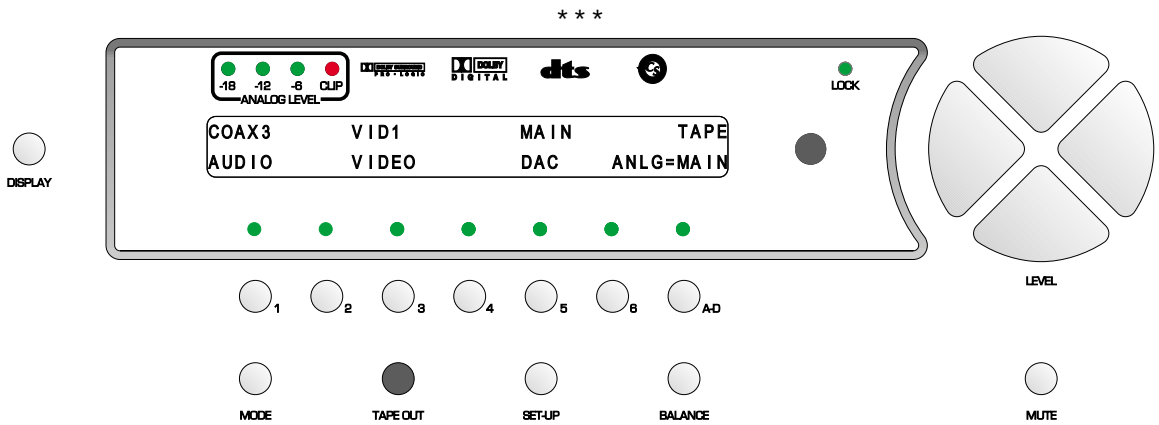


Figure 18 - Front Panel Display of the TAPE OUT Menu

In this menu, pressing button # **1** allows the user to route any audio input jack - analog or digital - to the analog **TAPE OUT** jacks. This setting will also route digital input sources to the Digital Tape Out jacks. Analog sources will be routed only to the Analog Tape Out jacks, disabling the Digital Tape outs. This is confirmed in the lower right corner of the LCD by the indication "DIGI OFF" when an analog source is selected.

Note/Exception: If RF is selected for tape out, it comes out of the analog tape out jacks only.

This menu is completely dynamic. When the audio source is from an analog jack, the digital tape out jacks are disabled. This is indicated in both the OSD and LCD. When a digital input jack is selected as the source, it is routed to both the analog and digital tape out jacks. When the main DACs are selected (default), this is indicated in both the LCD and OSD. If the optional tape out DAC is not installed, the option to select it (via button # **5**) is not shown. If the optional video board is not installed, the user's ability to route a video source to the video tape out jacks is not shown (button # **3**).

Button # **3** allows the user to select a video source to route to the video **TAPE OUT** jacks.

Note: A composite video source will only be routed to the composite video **TAPE OUT** jack and an S-video source can only be routed to the S-video **TAPE OUT** jack.

Button # **5** allows the user to select whether the signal at the analog **TAPE OUT** jacks will be derived from the main output DACs or the optional tape out DAC, (if installed), by displaying **MAIN** or **TAPE** in the display. The **TAPE** setting is only relevant if the analog tape out source is set to a digital input jack. All analog inputs are routed directly to the **TAPE OUT** jacks, without A/D to D/A conversion.

Either or both the **ANALOG** or **DIGITAL** sources can be set to **INPUT**. With this setting, the tape out sources will 'follow' whichever input jack the user has currently selected. When the user changes inputs, the tape out source changes to the currently active input jack simultaneously.

The control circuitry to the video tape out jacks is common to both composite and s-video. Example: when the user routes the composite video signal from a composite input # 1 jack to the composite video tape out jack, the s-video # 1 input simultaneously gets routed to the s-video tape out jack. If composite video # 2 input jack is routed to the composite video tape out jack, then s-video input # 2 jack gets routed to the s-video tape out jack, and so on.

When the routing is completed, press **TAPE OUT** again to clear the video display. The **MASTER VOLUME** can be controlled in this menu via the **LEVEL LEFT**/**RIGHT** buttons.

CAUTION: It is not advisable to route a 5.1 source (DTS/AC-3) to the optional tape out DAC as this section does not contain Dolby Digital or DTS decoding capabilities. Full scale and potentially damaging noise will be output!

Standard Tape Out Configuration

The following guidelines apply when the tape out circuitry is in its standard configuration, i.e. the optional tape out D/A converter has not been installed.

A source to be recorded (via the analog **TAPE OUT** jacks) can be selected independently of the source currently being viewed or listened to provided that the input for the source to be recorded is **ANALOG**.

It is possible to record a digital source in analog only if the source is the same as the input being watched or listened to. If the desired source is 5.1 (DTS/AC-3), it is recommended that both the surrounds and center speakers be set to phantom (**PHTM**). This mixes those channel's information into the front left/right channels, thus eliminating lost information from an analog copy.

Optional Upgrade Tape Out Configuration

When the optional D/A converter has been installed onto the Digital Input board, a digital source can be recorded, i.e. sent to the analog **TAPE OUT** jacks at the same time as a different digital source is being watched or listened to.

SETUP Function

This function provides access to a series of sub menus that will allow the configuration of the entire system. In this section, each feature of the **SETUP** menu is discussed in detail along with a diagram of each LCD display.

Note: A complete step-by-step speaker configuration setup guide is located on page 15.

Pressing the **SET-UP** button once changes the front panel display to the first page of the **SETUP** menu, shown in figure 19.

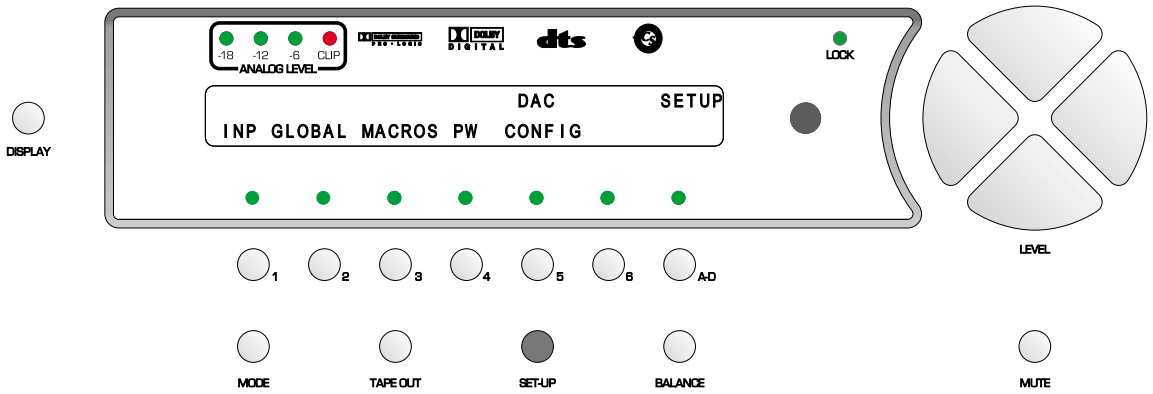


Figure 19 - Front Panel Display of the SETUP Menu

As indicated in figure 19, button **1** is assigned to features that are stored by input and leads to a series of categorized sub menus via 3 pages. Button # **2** accesses all submenus and parameters that are not programmable by input select button, or in other words, global features. Button # **3** accesses the **MACROS** sub menu and button # **4** allows the user to password protect all **SETUP** features. Button # **5** displays the configuration of the installed DAC cards.

Setup Button Password

It is possible to password protect the entire **SETUP** function, or have no password at all. If a password is set here, the user will be asked to enter the 5 digit password whenever the **SETUP** function is accessed. Setting a password for the **SETUP** button is accessed by pressing button # **4**, where the user will be asked "**ARE YOU SURE?**" Answering "**YES**" by pressing button # **2** will display the following page:

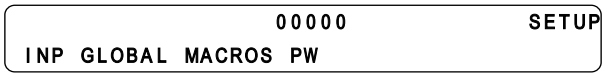


Figure 20 - Front Panel Display of the SETUP/Assign Password Display

Use buttons **1**-**6** to assign a password. After each digit is entered, the cursor (flashing in the Onscreen Display (OSD) only, not the LCD) moves one character to the right. If no password is to be used (factory default), press the **A-D** button five times, which enters all zeros. All zeros, or a zero anywhere in the password translates to no password.

CAUTION: It is imperative that your new password be written down. If it is forgotten, ALL access to the **SETUP** menu will be permanently denied. Please see the **WARNING** on page 14.

DAC Configuration

Pressing button # **5** allows the user to view the channels assigned to each DAC card. This is an information page only and not an editable menu. As an example, the first page will say "**LEFT FRONT CEN**" if a three channel balanced DAC card is in DAC slot # 1. Press the **A-D** button to view which channels are assigned to the second DAC card, and **A-D** once more for the third DAC card, if any. Press **SET-UP** once to exit this menu.

The following section will discuss all menus and parameters under the **INPUT** button.

SETUP INPUT (Setting up each of the 12 Input Select Buttons)

Setup Input Page 1

All parameters accessed within the **SETUP/INP** menu are programmable for each of the 12 **INPUT SELECT** buttons. The first of 3 pages of the **SETUP/INP** sub menu is shown below, in figure 21.

From the **SETUP** menu, press button # **1** (**INP**) to enter into a series of sub menus that allow the user to configure all parameters that are programmable by **INPUT SELECT** button. The first page of the **SETUP/INPUT** submenus will appear, as shown in figure 21.

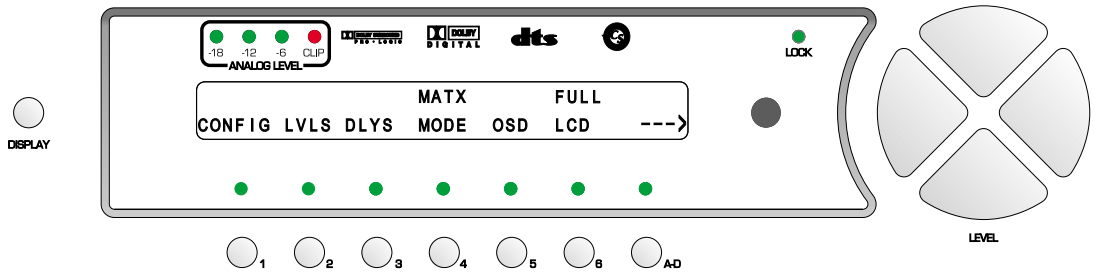


Figure 21 - Front Panel Display of the SETUP/INPUT page 1 Submenu

Pressing button # **1** takes the user into a series of sub menus that allow the configuration of all speakers. Button # **2** allows the user to set all speaker levels and button # **3** does the same for speaker delays.

Press button # **4** and use the **LEVEL UP/DOWN** buttons to set the default **MODE** for the currently selected **INPUT SELECT** button.

Pressing button # **5** provides a submenu that allows the user to customize the on screen display (OSD) as well as set up other **OSD** features, including the customization of the **STATUS** displays.

Button # **6** provides a means of setting the LCD brightness for the currently selected **INPUT SELECT** button.

Pressing the **A-D** button takes the user to page 2 of **SETUP/INP**, which will be discussed after all page 1 features.

Setup Speaker Configuration

The Speaker Configuration section utilizes the menus shown in figure 22.

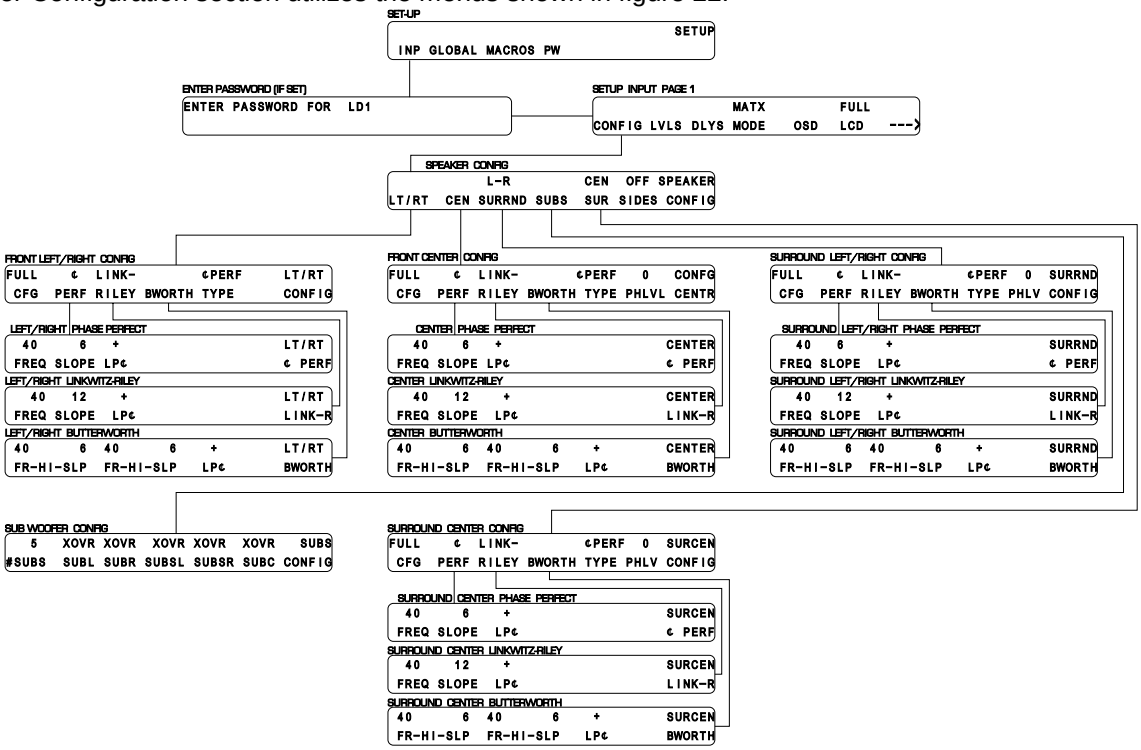


Figure 22 - Menu Map of SETUP/INP *Page 1*/CONFIG

The configuration sub menus (**CONFIG)** allow the user to configure speakers to reflect the audio system configuration or the listener's preference, for the available speakers and their respective frequency responses.

All of the speaker configuration parameters are accessed by pressing button # **1** (**CONFIG**). This leads to a series of sub menus shown that are described next. The first sub menu, **SPEAKER CONFIG** is shown below, in figure 23.

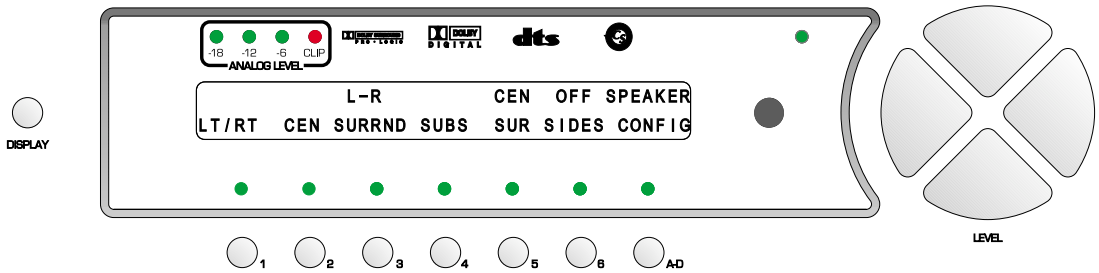


Figure 23 - Front Panel Display of the Speaker Configuration Submenu

As indicated in figure 23 above, the front left/right speaker configuration is accessed by pressing button # **1**, the center via button # **2**, the left/right surrounds with button # **3,** # **4** is for the sub woofer(s), # **5** for the center surround and # **6** allows the user to turn the side speakers, if any, on or off. Before configuring any speakers in the system, it is important to configure the sub woofer, then the crossovers for each speaker set. First, determine whether or not a sub or subs are required or desired. Press button # **4** to go to the **SUB CONFIG** sub menu, shown in figure 24, and set up the sub(s). If no sub(s) is present, or is not desired, set the number of subs (**#SUBS**) to **0** and disregard any crossover types (in the other speaker set's configuration submenus) at this time. Lastly, configure the other speakers in the system via buttons **1**-**3** and **5**-**6**.

Note: Information for the side channels is derived from the surrounds. Therefore, whatever the configuration setting is for the surrounds also applies to the sides. However, level and delay settings can be applied separately for the sides via the Levels and Delays submenus, respectively.

SUB Configuration

Note: If the source does not contain a discrete sub woofer or LFE channel, no signal will be routed to the **SUB** output(s) unless one or more speakers are crossed over. If the source contains a discrete LFE channel and the **#SUBS** is turned off (set to **0**), the LFE signal will be routed equally to all other channels whose **CFG** is set to **FULL**.

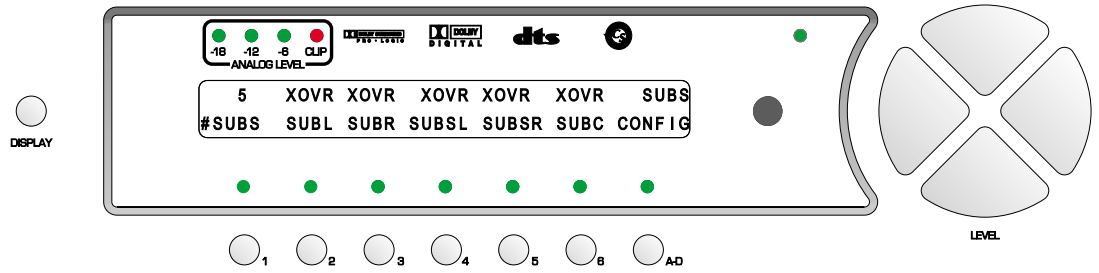


Figure 24 - Front Panel Display of the Subs Configuration Submenu

Unlike most configuration submenus in the Casablanca II, this one is not dynamic. In other words, if there are 1-5 DAC channels installed that are configured as sub woofers, this submenu will show, and allow configuration editing for all 5, except for the **#SUBS** parameter. In this case, should a Casablanca II be installed with only one sub channel, this menu will allow only one, etc.

If the number of Subs (**#SUBS**) is set to **1**, all of the low-pass portion of all crossed over speakers and the full **LFE** are routed to the **SUB 1** output. (Labeled **SUB** if there is only one sub output, or **LEFT FRONT SUB** or **SUB1** if there is more than one sub output). If the number of **SUBS** is set to more than 1, any low pass signals and LFE will be routed as follows:

If the **#SUBS** is set to 2, which would be **L-R** or **F-R**, in the case of it being set to **L-R** (Front Left/Right), any **LFE** and the low pass portion of any front speakers that are crossed over will be routed to the front left/right sub woofers. (The **LFE** is divided by 2, added to any LFE and distributed evenly between them). If the **#SUBS** is set to **F-R** (2 subs – 1 front and 1 rear), any **LFE** will still be divided by 2 and evenly distributed between them. The low pass portion of any front speakers that are crossed over will be routed to the front sub whereas the low pass portion of any surround speakers will be routed to the rear sub woofer.

If the **#SUBS** is set to **3**, the low pass portion of any front speakers that are crossed over will be routed to the front subs and the low pass portion of any surround speakers that are crossed over will be routed to the rear sub. Any **LFE** will be divided by 3 and routed equally between the 3 subs, adding to any low pass signal. If there are more than 3 DAC

channels assigned to subs yet the **#SUBS** is set to **3**, the third, or rear sub will be output from the channel marked **SUB 3** or **LEFT SURROUND SUB**. When the **#SUBS** is set to **3**, the first 2 will always be the **FRONT LEFT** and **FRONT RIGHT** subs and the third will always be used for low pass signals from the surround speakers, plus some LFE.

If the **#SUBS** is set to **4**, any **LFE** will be divided by 4 and sent equally to each sub output. Additionally, the low pass signal from any front speakers that are crossed over will be routed to the front subs (**SUB 1** and **SUB 2**) and the low pass signal from any surround speakers that are crossed over will be routed to the surround subs (**SUB 3** and **SUB 4**).

If the **#SUBS** is set to **5**, any **LFE** will be divided by 5 and sent equally to all sub woofers. The low pass signal from the front left/right speakers, if crossed over, will be routed to the front left and right subs. If the center speaker is crossed over, its low pass signal will be routed to the **SUB5** output. The low pass signal from any surround speakers that are crossed over will be routed to the surround subs.

If any subs are present in the system, verify that the **#SUBS** is set to equal that number (button # **1** in figure 24), and then determine if each one needs to be sent a crossed over signal or a full range signal. (**FULL** or **XOVER** in the LCD, **FULL RANGE** or **CROSSOVER** on the OSD). The only situation that would require a full range signal is if the subwoofer contains its own crossover that cannot be defeated. If it appears that this is the case, it is recommended that the subwoofer manufacturer be contacted to see if there is a possible modification to the subwoofer to defeat its crossover. The crossovers in the Casablanca II have been engineered to be superior to any analog crossover, regardless of quality.

Left/Right Speaker Configuration

The left/right configuration section contains the sub menus shown in figure 25.

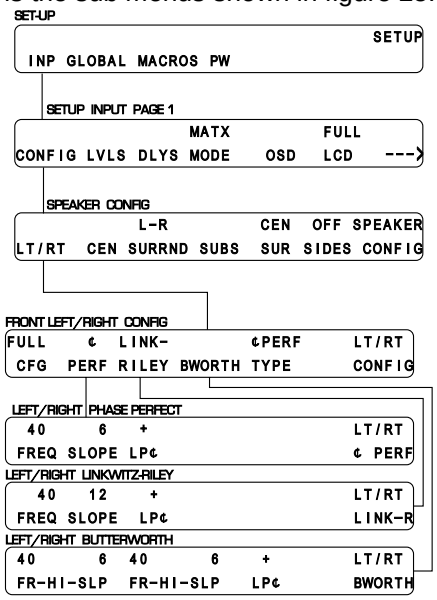


Figure 25 - Menu Map of SETUP/INP *Page 1*/CONFIG/LT/RT

Before proceeding to configure and cross over any speakers, it is important to better understand the 3 types of crossovers in order to select the most appropriate one and the respective speaker crossover points and slopes. A discussion about crossovers follows.

Crossovers

The Casablanca II contains a comprehensive set of speaker configuration settings. These settings are believed to be the most complete ever offered in a home theater component and should allow any speaker to perform optimally regardless of speaker type. It is important to bear in mind that the below procedure is merely a guideline and that room acoustics, speaker design / quality, music / movie type, and personal preference all play a part in these settings.

Each full speaker configuration is stored separately for each input. In **SETUP**/**INP** *Page 1*, press button # **1** (labeled **CONFIG** on the LCD, **SPEAKER CONFIGURATION** on the OSD) to access the speaker configuration menu.

In the speaker configuration submenu, pressing buttons **1**-**5** will access additional menus to setup a particular speaker or set of speakers. In these specific speaker configuration submenus, there are three settings for the crossover type. They are "Phase Perfect", "Butterworth", and "Linkwitz-Riley". It is possible to select one crossover type for the front left/right speakers, a different one for the center and a third type for the surrounds. It is recommended that in the beginning, the same type be used for all until it is time to fine tune. To help the user better understand the sonic consequences and individual advantages, a brief description of each crossover type will follow:

Phase Perfect

This is a term coined for a type of crossover wherein the low pass portion is derived from the high pass. First, a high pass Butterworth crossover is performed. This gives two resulting signals: the high pass and the original, unaltered signal. Then, the high pass signal is subtracted from the original input signal, resulting in the low pass signal, which is usually routed to the subwoofer. A positive attribute of this type of crossover is that if the high and low pass signals are added together, an exact replica of the original input signal results, thus the term "phase perfect". A potentially negative attribute of this type of crossover is that, due to phase relationships and vector mathematics, higher order filters (12, 18, 24 dB/octave) always produce 6dB/octave low pass slopes, in terms of electrical energy sent to the subwoofer. The high pass portion will have the expected 6, 12, 18 or 24 dB /octave slope. Due to this phenomenon, this type of crossover is best suited for subwoofers that can operate linearly up to the 500 Hz range. Please consult your dealer or subwoofer manufacturer to determine if this is suitable for your particular subwoofer. If the subwoofer is capable of handling this range, this is potentially the best sounding of Casablanca II's crossover types.

Butterworth

This is the most common type of crossover used in home theater, speakers and outboard electronic crossovers. Separate high and low pass slopes and crossover frequencies may be set for speaker sets [Left/Right], [Center], [Surround Left / Surround Right] and [Center Surround]. As with Phase Perfect and Linkwitz-Riley crossovers, it is possible to invert the phase of the low pass for each of these speaker sets. This allows precise tailoring of the subwoofer response to the main speaker's response. A negative attribute of this crossover type is that the high and low pass signals have different phase shifts from each other.

Linkwitz-Riley

This type of crossover, developed in 1976 by Siegfried Linkwitz and Russ Riley, eliminates some of the inherent problems of Butterworth filters. Specifically, a Butterworth filter of 12, 18 or 24 dB/octave (or higher) slope exhibits different phase shifts between the high and low pass outputs. A Linkwitz-Riley alignment solves this problem, as it exhibits zero phase difference between outputs at all frequencies. Acoustically, this means that if the sound sources are in proper time-alignment, a smoother frequency response will be realized at the listening position. The Linkwitz-Riley crossover is only applicable to slopes of 12 and 24 dB/octave. A proper Linkwitz-Riley crossover with a 12dB slope should have the low pass portion inverted. This is done internally in the Casablanca II.

A note on crossovers

Casablanca II's complement of crossover options can at first appear daunting. Most surround sound processors offer a simple selection to set their crossovers: Speaker Small or Speaker Large. When set to small, normally a 12dB/octave Butterworth crossover is performed at 80Hz. Occasionally, it is a 24 dB/octave slope. This simple setting does not take into account the huge variations in speaker design and room acoustics and more often than not results in non-optimum performance. We have endeavored to offer this rich set of options with the aim of superior performance. With this in mind, following are a few simple suggestions to make this process easier.

Please refer to page 17 for additional information on crossovers.

A note on home theater

There are a few common misconceptions about home theater and bass reproduction. Chief among them is that the ".1" or "LFE" channel normally contains most or all of the bass information. This is unequivocally false. The LFE channel contains sound effects such as explosions, rumbling and the like. All other channels (left, center, right, left surround, right surround, center surround and sides) may contain an equal amount of bass, and often do. Their bass, however, tends to be more related to the soundtrack, vocal material or localized sources such as a drum beating behind the listener. This is important information to understand when setting up crossovers in the coming section.

Another misconception is that the center channel is "fill" and is minor in importance. Again, this is false. The center channel contains the lion's share of important information (particularly dialog) in the cinematic experience. It is therefore critical that the center speaker be of the highest quality possible and special attention be given to its mounting and positioning.

* * *

Press button # **1** to set up the front left/right speakers. This configuration sub menu is shown in figure 26.

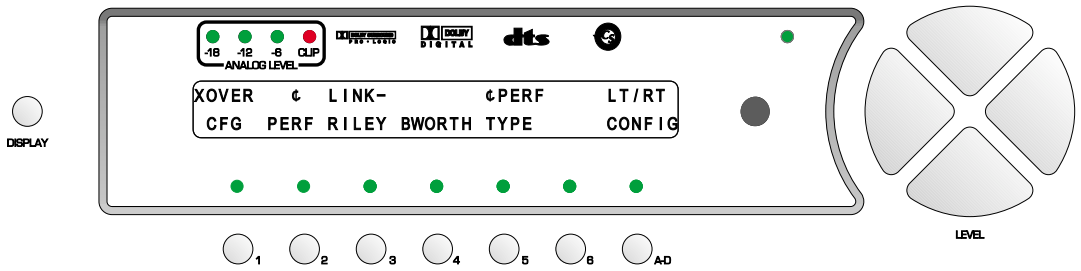


Figure 26 - Front Panel Display of the Front left/Right Speaker Configuration Submenu

Pressing button # **1** allows the configuration of the front left/right speakers. If these speakers are not to be crossed over, nor any of their signal sent to the **SUB** output(s), then this should be set to **FULL**. There is an option where the full range signal can be routed to the left/right speakers and a low pass part of it routed to the sub. If this is desired, the setting should be **FUL/LP**. (A crossover type must be selected (button # **5**), and the appropriate crossover frequencies and slopes set up.) The front left/right speakers can also be set to **OFF**.

Note: If the crossover type is Phase Perfect (**ϕPERF**) and the **CFG** type is set to **FUL/LP**, no low pass signal will be created.

Should it be desired to fully crossover the front left/right speakers, the **CFG** setting (button # **1**) should be set to **XOVER** and the crossover frequencies and slopes in either the Phase Perfect (**ϕPERF**), Linkwitz-Riley (**LINK-RILEY**) or Butterworth (**BWORTH**) sub menus be set using buttons **2**, **3** and/or **4** respectively.

Note: It is advisable to select the same crossover frequencies and slopes in all 3 crossover type sub menus (buttons **2**-**4**), and then select the crossover **TYPE** (button # **5**) and audition each crossover. Initially, this should be done with all other speakers turned off. This procedure should be applied when configuring each speaker set.

Set up the crossovers as follows. Press button # **2** (**ϕPERF**). This submenu is shown in figure 27.

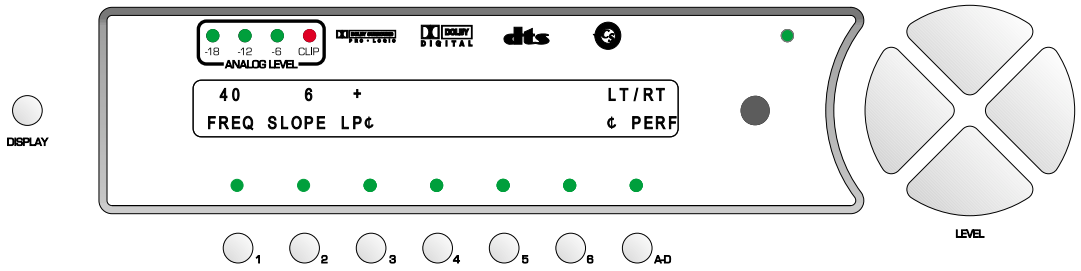


Figure 27 - Front Panel Display of the SETUP/INP/CONFIG/LT/RT/ϕPERF Sub Menu

Press button # **1** and select a Phase Perfect crossover frequency for the front left/right speakers, then button # **2** to set the high pass slope.

Button # **3** allows the user to invert the low pass phase from 0 (**+**) to 180 degrees out of phase .

		AVAILABLE SETTINGS						
BUTTON	**PARAMETER**							
1	FREQ	40	50	63	80	100	125	160
2	SLOPE	6	12	18	24	-	-	-
3	LPϕ	-	+					

Table 2 - Available configuration settings for front L/R speaker Phase Perfect crossover.

Press **SETUP** once to return to the front left/right configuration sub menu, then press button # **3** (**LINK-RILEY**) to set up the Linkwitz-Riley crossovers. This submenu is shown in figure 28.

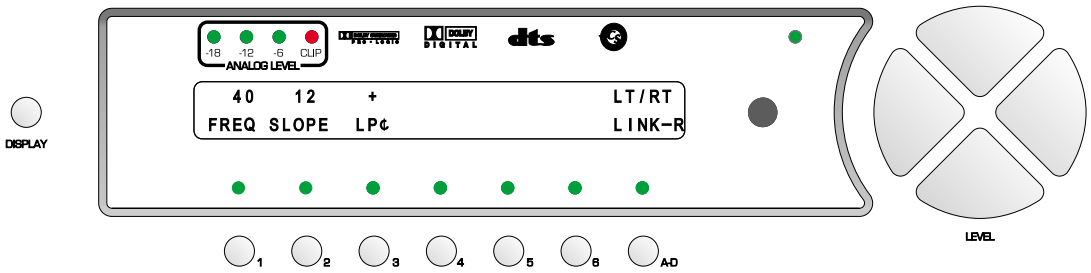


Figure 28 - Front Panel Display of the SETUP/INP/CONFIG/LT/RT/Link-R Sub Menu

Press button # **1** and select a Linkwitz-Riley crossover frequency for the front left/right speakers, then button # **2** to set the high and low pass slope. Button # **3** allows the user to invert the low pass phase from 0 (**+**) to 180 degrees out of phase.

		AVAILABLE SETTINGS						
BUTTON	**PARAMETER**							
1	FREQ	40	50	63	80	100	125	160
2	SLOPE	12	24					
3	LPϕ	-	+					

Table 3 - Available configuration settings for front L/R speaker Linkwitz-Riley crossover.

Press **SETUP** once to return to the front left/right configuration sub menu, then press button # **4** (**BWORTH**) to set up the Butterworth crossovers. This submenu is shown in figure 29.

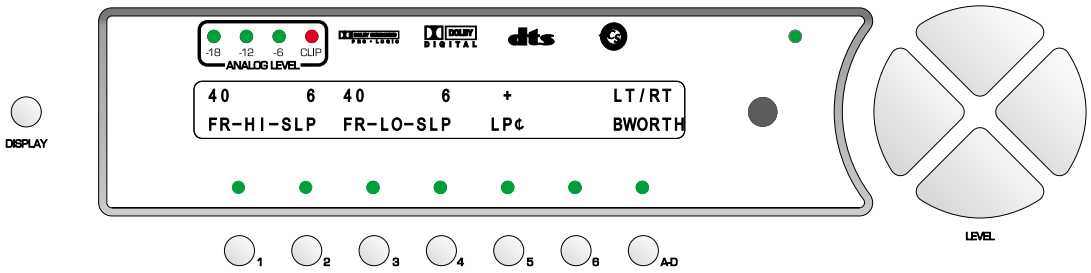


Figure 29 - Front Panel Display of the SETUP/INP/CONFIG/LT/RT/BWORTH Sub Menu

Press button # **1** and select a Butterworth high pass crossover frequency, then button # **2** to set the high pass slope. Press button # **3** to set the low pass crossover frequency, then button # **4** to set the low pass slope. Generally speaking, the high and low pass crossover frequencies should be the same unless compensating for unique room or speaker characteristics. Button # **5** allows the user to invert the low pass phase from 0 (**+**) to 180 (**-**) degrees out of phase.

		AVAILABLE SETTINGS						
BUTTON	**PARAMETER**							
1	FR-HI	40	50	63	80	100	125	160
2	FR-HI-SLP	6	12	18	24			
3	FR-LO	40	50	63	80	100	125	160
4	FR-LO-SLP	6	12	18	24			
5	LPϕ	-	+					

Table 4 - Available configuration settings for front L/R speaker Butterworth crossover.

Press **SETUP** twice to return to the speaker configuration sub menu, then press button # **2** (**CEN**) to set up the center speaker. This submenu is shown in figure 30.

Center Speaker Configuration

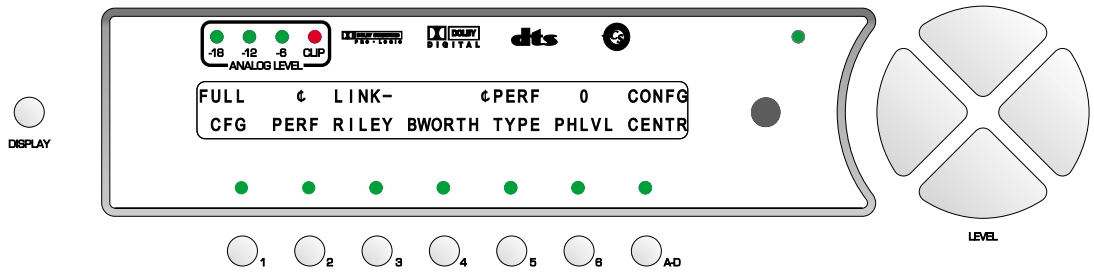


Figure 30 - Front Panel Display of the SETUP/INP/CONFIG/CENTER Sub Menu

This submenu of settings is virtually the same as the one for the front left/right speakers, but applies only for the center speaker. All of the same guidelines and procedures apply except for the case where no center speaker is present and the destination to where the low pass signal (if the center speaker is crossed over) can be routed. In this case, the low pass signal from the crossed over center will be routed to the sub, if one sub exists or front subs if there are 2 in the front, when the **CFG** setting is set to **XOVER** or **FUL/LP**. This same low pass signal can alternately be routed to the front left/right speakers if the **CFG** setting is **XOVRLR**. If the center low pass signal is routed to the front left/right speakers, and these front speakers are crossed over, the low pass signal from the center stays routed to the front left/right speakers and the low pass signal from the front left/right will still be routed to the subs. If the **#SUBS** is set to **0** and the front left/right **CFG** is set to **XOVER**, the low pass signal of the front left/right will be lost since it has no where to go. This can be advantageous if the user wants to roll off the low pass signal to the front left/right speakers at a very low frequency.

Routing the center low pass to the front left/right speakers can be useful with center speakers that have a very limited bass response (-3dB @ 100Hz). In this case, the recommended crossover frequency should be set to 160Hz.

If no center speaker is present in the system, the **CFG** parameter should be set to **PHANTM** (phantom). With this setting, the signal for the center channel is routed to the front left/right speakers. When the center **CFG** is set to **PHANTM**, the user has the ability to adjust the phantom center level in the front left/right speakers. This can be accomplished via button # **6** – **PHLVL**, or phantom level.

Note: The phantom (**PHTM**) setting for the center speaker creates the illusion of having a center speaker when the listener is positioned equidistant from the front left and right speakers. There is, however, no substitute for a real center speaker as it creates a solid center image even when the listener is positioned off-axis. The phantom setting is most useful on video sources where a more prominent center image is desirable and no center speaker is present. On music sources, **OFF** may be the preferred setting as it maintains the original source's imaging properties.

Pressing button # **1** allows the configuration of the center speaker. If this speaker is not to be crossed over, or any of its signal sent to the **SUB** output, then the **CFG** should be set to **FULL**. There is an option where the full range signal can be routed to the center speaker with the low pass part of it also routed to the sub (**FUL/LP**) or the high pass signal going to the center and its crossed over low pass portion being routed to the front left/right speakers as discussed above (**XOVRLR**). Whenever any speaker is crossed over, a crossover type must be selected, and the appropriate crossover frequencies and slopes set up.

The center speaker can also be set to **XOVER** or **OFF**. In the case of **OFF**, any center channel information will be lost.

Press button # **2**, **3** and **4** to set up the crossover settings for the center speaker in the same manner as with the front left/right. The crossover sub menus are the same with the exception of the speaker name in the upper right corner of the LCD.

Pressing button # **5** allows the user to select the crossover type that will be applicable for the center speaker only.

Button # **6** allows the user to adjust the level of center channel information that is mixed with the front left/right channels, if the **CONFIG** parameter is set to **PHANTOM**.

Press **SETUP** to return to the speaker configuration sub menu, then press button # **3** (**L-R SURRND**) to set up the surround speakers. This submenu is shown in figure 31.

Left/Right Surround Speaker Configuration

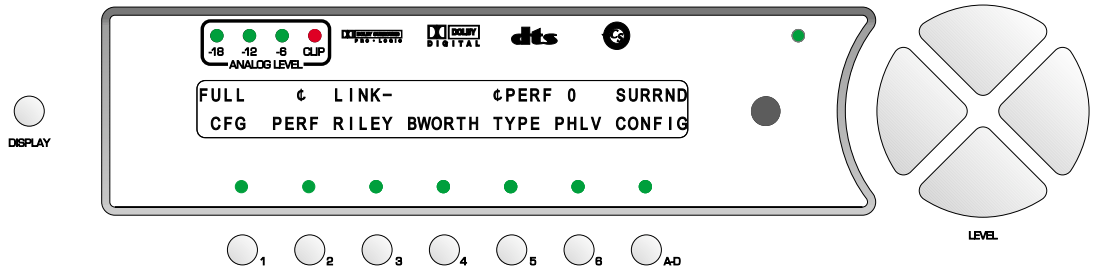


Figure 31 - Front Panel Display of the SETUP/INP/CONFIG/L-R SURRND Sub Menu

Set the speaker configuration and crossovers, if necessary, in the same manner as the center speaker. Any surround low pass cannot be routed to the front left/right speakers as with the center speaker.

Note: The phantom (**PHANTM**) setting for the surround speakers should be utilized when no surround speakers are present in the system. In this case, with 5.1 sources, the surround information is added to the front left/right channels. In Dolby Pro Logic mode, the Casablanca II will automatically decode in Dolby 3 stereo.

Center Surround Speaker Configuration

Set the center surround speaker configuration and crossovers, if necessary, in the same manner as the left/right surround speakers. The submenu options are all exactly the same except for the fact that if the center surround **CFG** is set to **PHANTM**, its information is routed to the surround left/right speakers.

Side Speaker Configuration

The side speaker information is an exact replica of the left/right surround channels. Therefore there are no applicable configuration parameter for the side channels. In the speaker configuration menu, they can be turned on and off. Their levels and delays can be individually adjusted in the levels and delays submenus.

Speaker Levels

This sub menu allows the user to set the relative level of each speaker in order to reflect the audio system speaker configuration, room characteristics, or the listener's preference. The allowable relative range is -15dB to +15dB. The **BALANCE** function (discussed later) allows the user to temporarily adjust the Left/Right and Front/Rear balances, and the Center & Sub channel levels to compensate for differences in program material or source.

The level sub menu(s) are completely interactive with the DAC channels that are installed into the Casablanca II. An example of this is: If there are 6 DAC channels installed, the names of these channels will be displayed on one page of the levels sub menu. If more than 6 DAC channels are installed, first a menu will appear asking the user which set of speakers are to have their levels adjusted: **1-6** or **7-12**, as shown in figure 32. In both of these sub menus, the installed DAC channel, or speaker names will be displayed.

Figure 32 - Front Panel Display of the SETUP/INP/LVLS/Channel Choice Sub Menu

From an Input Select menu, press **SETUP**, input (**INP**) then levels (**LVLS**) to access the speaker levels setup sub menu shown in figure 33. Again, if more than 6 DAC channels are installed, the user must press either button # **1** (**1-6**) or # **2** (**7-12**) first.

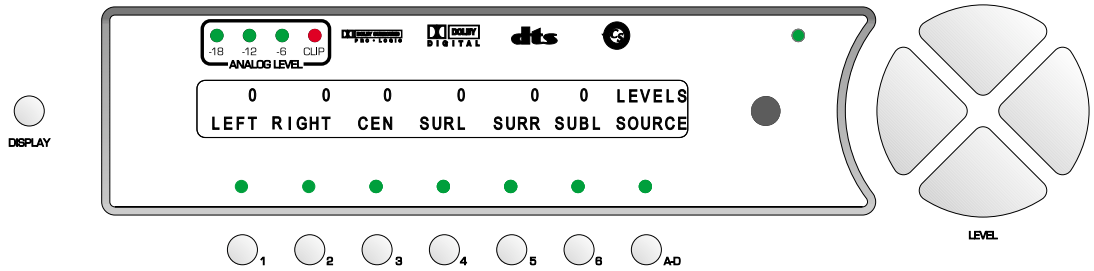


Figure 33 - Front Panel Display of the SETUP/INP/LVLS 1-6 Sub Menu

If there are more than 6 DAC channels installed, pressing button # **2** on the Levels channel choice submenu will produce a second levels sub menu as shown in figure 34. The speaker names in this sub menu may not match the

user's Casablanca II if the same DAC channels are not installed and configured.

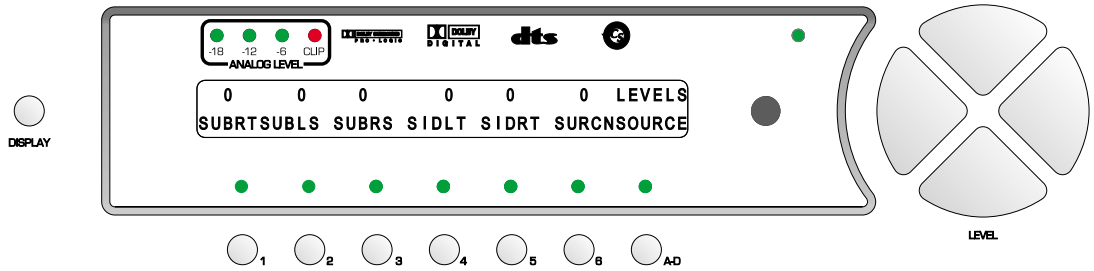


Figure 34 - Front Panel Display of the SETUP/INP/LVLS 7-12 Sub Menu

In these submenus, press button(s) **1**-**6** to select a speaker to edit. Use the **LEVEL UP/DOWN** buttons to adjust each speaker's output level. If there is a level control on the sub itself, adjust that first and then fine tune with the Casablanca II.

Internal Noise Generator

To aid in establishing a desired system speaker level balance, the Casablanca II provides the user with the option of either routing the currently selected audio signal to the outputs, or routing an internally generated noise signal to either the currently selected speaker or to all speakers simultaneously.

This function is accessed via the **A-D** button in the **SETUP/INP/LVLS** sub menu(s). Press buttons **1**-**6** to select a speaker. Pressing the **A-D** button repeatedly toggles through these sources. Table 5 shows the 3 possible routings. When the **A-D** button is pressed, the source name or noise type will appear in the LCD below the sub menu title.

Press A-D Button	***MODE***	***SOURCE USED***
-	Selected Input	AUDIO INPUT
Once	Noise - all speakers	NOISE A
Twice	Noise - one (selected) speaker	NOISE 1

Table 5 - Source to Output Routing for Speaker Level Configuration.

When use of the noise generator is complete, press **A-D** to once again re-route the **SOURCE** to the outputs.

Note: It is recommended that levels be set relative to the front Left and Right speakers. The first step would be to adjust the front Left and Right level value(s) to zero dB, then with the noise generator set to output to the left front speaker, adjust the master volume. Then adjust all other individual speaker levels. The remaining speakers can be adjusted accordingly by pressing buttons **2-6** one at a time, then pressing **LEVEL UP** or **LEVEL DOWN** to increase or decrease each speaker's relative level using an SPL meter, until the desired system balance is established. Please refer to the detailed *Step-by-Step Setup Guide* on page 15.

Speaker Delays

Like the Levels sub menu(s), the Delays submenu(s) are interactive. Depending on what DAC channels are installed in the Casablanca II determines what speaker channels are shown in the Delays sub menu, and whether or not there are one or two Delays sub menus. Unlike the Levels sub menus, if there are two Delays sub menus, navigating between them is accomplished via the **A-D** button.

The Delays sub menu allows the user to set a time delay for each speaker to reflect the audio system configuration, room characteristics, or the listener's preference. Another way to look at it is that the sound from all speakers should reach the listening position at the same time and this sub menu provides a means for achieving just that. The allowable range for the front left/right, center and sub speaker(s) is **0** to **10** milliseconds (mS) and **15** to **31** mS for the side and surround speakers. Since discrete sources are often recorded with surround delays, it is recommended that the surround delay setting for 5.1 sources be 15 mS less than non 5.1 sources.

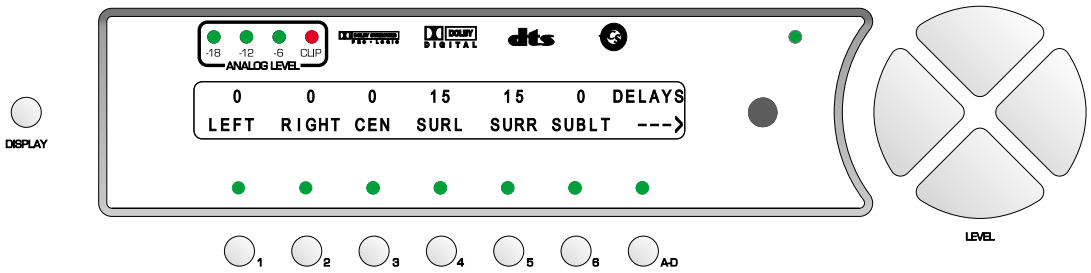


Figure 35 - Front Panel Display of the SETUP/INP/DELAYS 1 Sub Menu

Press **SETUP**, input (**INP**) then delays (**DLYS**) to access the speaker delays setup sub menu shown in figure 35. The current delay settings will be displayed on the top row of the LCD. Additionally, the sub menu title "**DELAYS**" will be displayed in the upper right corner. All delay settings apply to all **MODES**, however, they can be further manipulated when the current **MODE** is either Dolby Digital, DTS or Circle Surround, via additional Setup submenus for these **MODES**. These additional Setup features and respective sub menus are discussed further in this section.

The first time a multi channel audio system is set up in a room, calibration of time delay [and speaker levels] is required in order to have the sound from each individual speaker reach the listener at the correct time.

If more than six DAC channels are installed in the Casablanca II, there will be a right arrow above the **A-D** button, indicating that by pressing this button, a second Delay page will be presented as shown in figure 36.

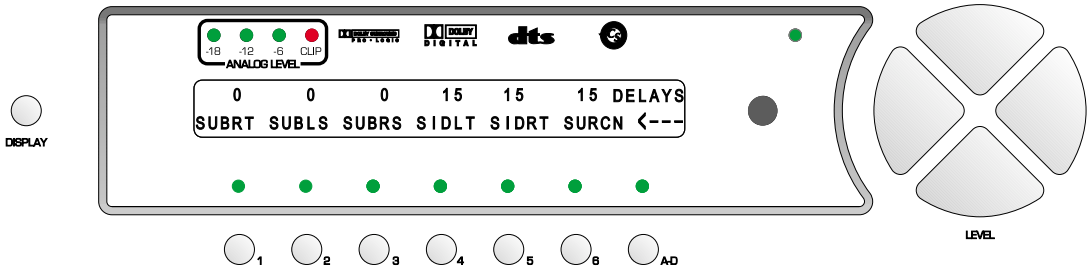
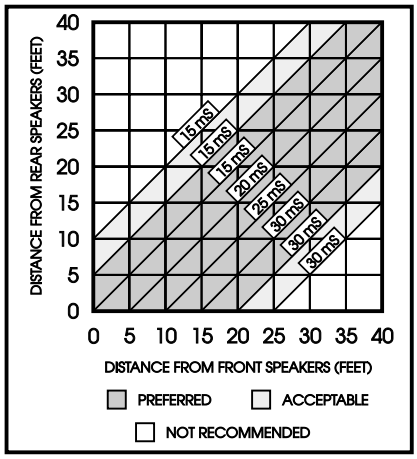


Figure 36 - Front Panel Display of the SETUP/INP/DELAYS 2 Sub Menu

Center speaker delay is required if the center speaker is closer to the listening position than the front left and right. When this is the case, the center delay time should be 1mS for each foot closer.



The same rule applies for all other speakers that are a different distance from the listening position than the front left/right speakers and the same rule of thumb applies: their delay time should be 1mS for each foot closer than the front left/right speakers. This is assuming that the front left speaker is the same distance from the listening position than the front right.

Begin by measuring the distance (in feet) from each speaker to the listening position. Write down all of these values. Ideally, the front left/right and center speakers will all be the same distance to the listening position. In this case, set the front left/right and center speaker delays to 0mS. If the center speaker is closer, then delay it. The delay value should be 1mS for each foot of difference between the center and front left/right, to the listening position. If the front left/right speakers are closer than the center, then set the center delay at 0 and delay the front left/right speakers, again, 1mS for each foot of difference from the listening position.

Figure 37 - Rear Delay Settings

To determine a delay time for the surround left/right speakers, measure the distance (in feet) from the listening position to the front left/right, then from the listening position to the surround left right. Subtract the two numbers and use this value to add to the existing delay value of the surround left/right speakers. (1 mS/foot). The chart in figure 37 can also be used to calculate the surround left/right delay values.

For the surround center delay, take the difference (in feet) between the center surround speaker and the listening position and the surround left or right to the listening position. With this value, add it to the existing [default] surround center delay value (1ms per foot of difference).

To set the side speaker delays, calculate the difference (distance in feet) between the left side and left front speakers. Add the difference to the default value already set for the left side to give this speaker its new value.

Calculate the difference (distance in feet) between the right side and right front speakers. Add the difference to the default value already set for the right side to give this speaker its new value.

Because of their low frequency properties, typically a delay in the subwoofer(s) is virtually undetectable. This being the case, it may be appropriate to leave the subwoofer delay values set at 0. However, if any subwoofer is closer to the listening position than the front left/right speakers, a delay value can be set for these subs. The delay value will be the difference (in feet) between the sub itself and the front left or right speaker, to the listening position.

Default Mode

Each **INPUT SELECT** button can have a different default **MODE** assigned to it. To assign a default **MODE** for a given **INPUT SELECT** button, first press the applicable **INPUT SELECT** button, **SETUP/INP** (input) then button # **4** in figure 21 on page 49 (**MODE**). Edit this parameter to select the desired default **MODE**, then press **SETUP** twice to exit. Repeat this procedure for each **INPUT SELECT** button.

Note: Pressing the front panel **MODE** function button allows the user to audition different modes for a given source, when applicable, however changing modes via the **MODE** button does not store a mode selection.

Onscreen Display (OSD) Setup

The OSD setup feature allows the user to customize the on screen displays and the **STATUS** display.

Pressing **SETUP**, **INP** then **OSD** (button # **5** in figure 21) activates the OSD set up menu, shown in figure 38.

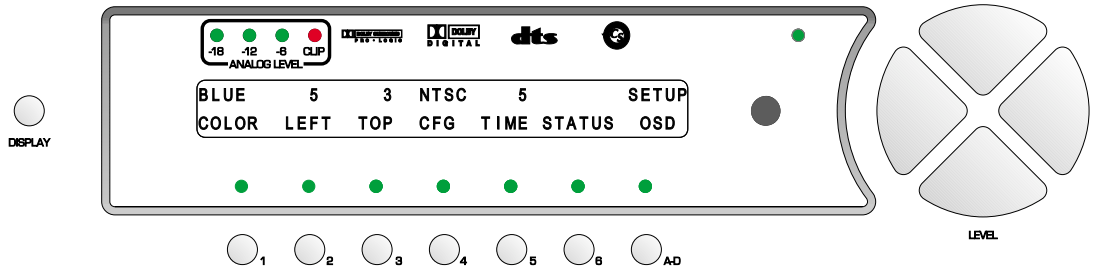


Figure 38 - Front Panel Display of the SETUP/INP/OSD Sub Menu

Button # **1** (**COLOR**) allows the user to select up to 7 different OSD background colors.

The entire OSD can be offset from the left and top edges of the screen (button #s **2** and **3** respectively) to accommodate differences in monitors.

The configuration (**CFG**) feature can switch the Casablanca II's OSD to accommodate either an **NTSC** or **PAL** monitor.

When a function button is pressed, its OSD will remain on the screen until the user is no longer in any function menu. The display **TIME** (in seconds) setting allows the user to set the amount of time (delay) that the video monitor displays the **INPUT SELECT** menu, when changing inputs. If the LCD is turned off (in the **SETUP/INP** ***Page 1*** sub menu (button # **6** in figure 21– page 49) and any button is pressed, the LCD will revert to full brightness for the amount of seconds in the **TIME** parameter. Setting the **TIME** value to **0** turns off the OSD for the currently selected input.

Status Setup

STATUS (button # **6**) displays a 2 page sub menu, which allows the user to change the position of the Status screen text on the video monitor only. This sub menu is shown in figure 39.

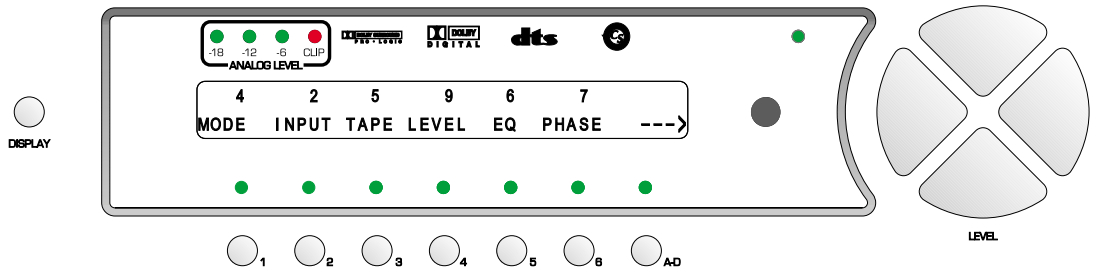


Figure 39 - Front Panel Display of the SETUP/INP/OSD/STATUS 1 Sub Menu

The items in the two **STATUS** sub menus are the only ones displayed in the OSD when the **STATUS** button on the hand held remote is pressed. Changing any value to **0** will disable that item from being displayed in the OSD. The

value range is **0** through **10**. A value of **1** will display at the highest position vertically and **10** at the lowest.

Press the **A-D** button to go to the second **STATUS** setup page and change the OSD positions of **SOURCE** and **SRATE** (sample rate).

Note: It is possible to have conflicting results if more than one item is displayed on the same line.

LCD Brightness

Each **INPUT SELECT** button can have a different LCD brightness assigned to it. Pressing button # **6** in figure 21 (page 49) allows the user to change the default brightness from **OFF** to **FULL** (brightest) in four steps. Any changes made to this parameter are reflected the next time that **INPUT SELECT** button is pressed. If this value is set to **OFF**, and the LCD is off, pressing any button except **DISPLAY** will automatically brighten the LCD to the maximum level. If the button pressed is not another **INPUT SELECT** or function button, then the LCD will revert back to its default brightness in *X* seconds. *X* represents the **TIME** parameter value in the **SETUP/INP *Page 1*/OSD** sub menu. If the LCD is on but not set to **FULL**, pressing any button other than another **INPUT SELECT** button will allow the LCD to remain at its default brightness, with the exception of pressing the **DISPLAY** button which will always override the default LCD brightness setting.

Setup Input Page 2

The **SETUP/INP *Page 2*** section contains the sub menus shown in figure 40.

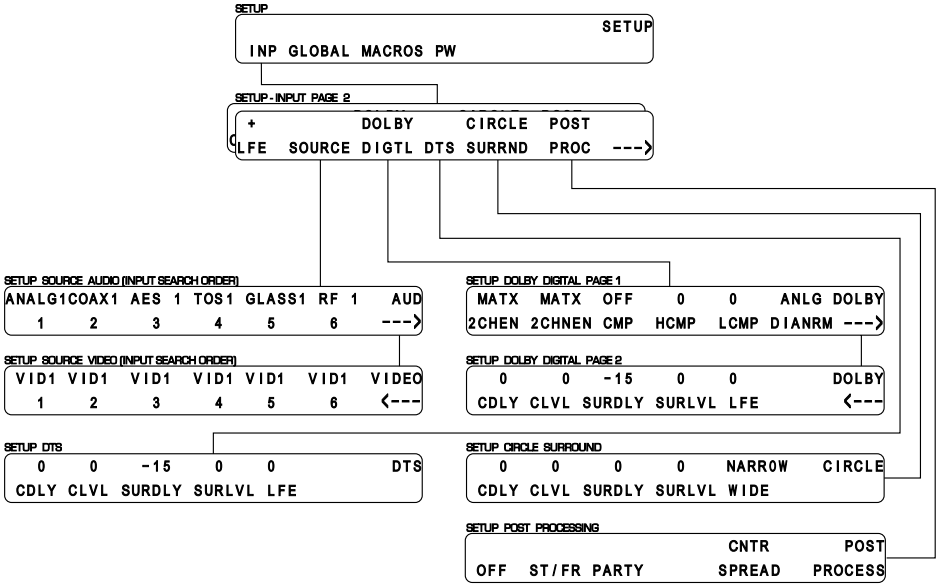


Figure 40 - Menu Map of SETUP/INP *Page 2*

To access this page, from either **INPUT SELECT** page or any other function menu, press **SETUP** then **INP** (input), then the **A-D** button once. Page 2 of the **SETUP/INP** menu is shown in figure 41.

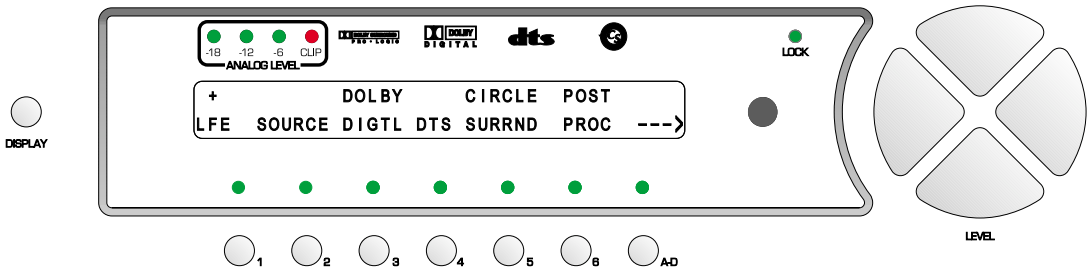


Figure 41 - Front Panel Display of the SETUP/INP *Page 2* Sub Menu

LFE Phase

The **LFE** phase can be changed from **+** (in phase) to **–** (180 degrees out of phase). This can be edited via button # **1** and is applicable for the currently selected input.

Mapping an Audio and Video Source (Input Jack to INPUT SELECT button)

Pressing button # **2** accesses 2 sub menus that allow the user to assign which input jacks will be mapped to any given **INPUT SELECT** button, both audio and video. There is one page for audio jack mapping and one for the combined composite, S and multi format video jack mapping. Up to six audio and six video input jacks can be mapped to any one **INPUT SELECT** button, and the order that they are mapped determines the search order when pressing the **A-D** button.

Press the **SOURCE** button (button # **2**) once and the 'setup audio source' submenu, shown in figure 42, will be displayed.

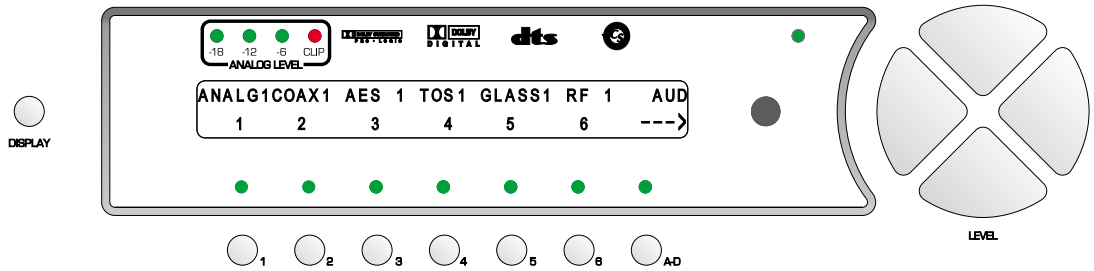


Figure 42 - Front Panel Display of the SETUP/INP *Page 2*/SOURCE/AUD Sub Menu

The default jack names are descriptive of the rear panel input jacks themselves. It is advisable to name all applicable audio and video input jacks before mapping them to a given **INPUT SELECT** button.

The **INPUT SELECT** buttons can be set up with 2 theories in mind. The first and most commonly used is that each **INPUT SELECT** button will be assigned to one source device. Figure 14 on page 40 depicts this setup. The other is that each person in a household can use one or two **INPUT SELECT** button(s) for himself or herself, and have up to 6 source devices mapped to "their" **INPUT SELECT** button(s). Figure 42 depicts this setup. This manual is written with the first theory in mind since that is the most commonly practiced.

To map input jacks, first press the **INPUT SELECT** button that the input jacks are to be mapped to. Then press **SETUP**, **INP**, **A-D**, then **SOURCE**. To map the first audio input jack, press button # **1** and use the **LEVEL UP/DOWN** buttons to select the appropriate jack. If another input jack is to be assigned to the same **INPUT SELECT** button, press button # **2** and select the desired rear panel input jack. Continue with this method for up to 6 input jacks per Input Select button.

An example of this use is for a Laserdisc/DVD/CD transport where the first jack to be assigned could be the **RF-1** jack, the second could be the **COAXIAL 1** input jack. In this example, when an LD is being played, the user would press the **INPUT SELECT** button that is 'assigned' to this transport. If **RF-1** (or the name assigned to this input jack) is not displayed in the lower right hand corner of the LCD, press the **A-D** button until it is displayed. When a CD is to be played in this transport, press the **A-D** button once to display **COAXIAL 1** (or the name assigned to this input jack) in the lower right hand corner of the LCD. The default **MODE** for this **INPUT SELECT** jack should be that which is desired for the playback of CD's, as when the Casablanca II detects either a Dolby Digital AC-3 RF or 5.1 data stream, it will detect this signal and automatically change the **MODE** to Dolby Digital or DTS.

It is important to note that when the Casablanca II auto detects a Dolby Digital or DTS signal and auto switches the mode, this mode is temporary and not stored. If the Casablanca II ceases to detect this signal, it will revert back to the previous (default) mode for the currently selected **INPUT SELECT** button, in approximately 5 seconds.

Press **SETUP** 3 times then repeatedly press the **A-D** button to toggle between the input jacks for the currently selected **INPUT SELECT** button. It is advisable to only map input jacks that will be used, to the currently selected **INPUT SELECT** button. This will eliminate needless pressing of the **A-D** button to cycle through unused jacks.

Note: When input jacks are re-assigned and the user exits **SETUP**, the new input jack mappings will not be active until either the **A-D** button is pressed or another **INPUT SELECT** button is pressed.

Next, map the appropriate video input jacks, if applicable, to the same **INPUT SELECT** button. In the case of the above example where the **RF-1** jack is the first audio jack mapped to the currently selected **INPUT SELECT** button, the input jack must be mapped first in the video search order. Since the LD's audio jack is second in the audio search order, it must also be mapped second in the video search order.

Continuing this example, if a source device has both an audio and a video signal associated with it, and the audio signal is third in the audio search order, then its video signal must be third in the video search order.

To map a video signal to an **INPUT SELECT** button, first press the desired **INPUT SELECT** button, then press **SETUP**, **INP**, **A-D**, **SOURCE** and **A-D** once again. Press the appropriate button (**1**-**6**) which corresponds to the same position in the audio search order menu for this source device and press the **LEVEL UP/DOWN** button to select the desired video

input jack.

Press the **SETUP** button 3 times to return to the **INPUT SELECT** page.

Setup Dolby Digital

In figure 41, button # **3** provides a two-page sub menu which allows the user to set up preferences pertaining to Dolby Digital (AC-3), by **INPUT SELECT** button. The first page of this sub menu is shown in figure 43. These settings are pertinent only when the **MODE** is Dolby Digital.

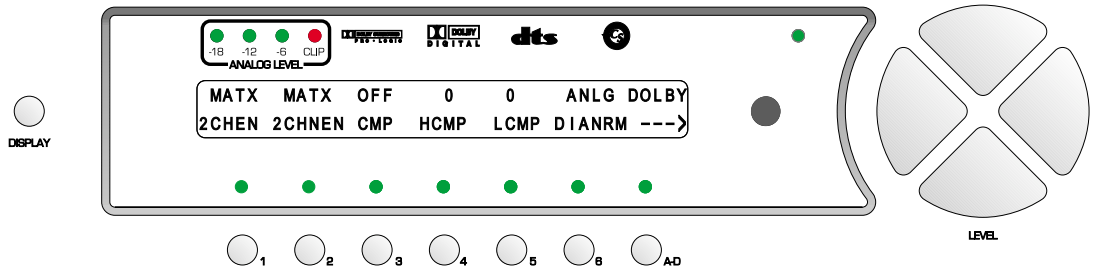


Figure 43 - Front Panel Display of the SETUP/INP *Page 2*/DOLBY DIGITAL *Page 1* Sub Menu

2 Channel Mode

Some Dolby Digital sources contain only two of the possible five main channels. This is usually noted on the material's cover, in the form of " Dolby Digital 2.0" or “Dolby Surround” as opposed to "Dolby Digital 5.1".

Embedded in every two-channel Dolby Digital data stream is an indication of whether or not the material is Dolby Surround encoded. There are three possibilities for this indication: Dolby Surround encoded; Not Dolby Surround Encoded; or No Indication.

Regardless of the indication value, the user can instruct the Casablanca II to further process this decoded signal in virtually any **MODE**. For Dolby Surround encoded signals, use button # **1** (**2CHEN** – or 2 channel encoded) to indicate which **MODE** should be used to further process the incoming signal. If the signal is non-encoded, use button # **2** (**2CHNEN** – or 2 channel non-encoded) to indicate which **MODE** is desired for further processing. When a mode is applied to a two channel Dolby Digital signal, first the signal must be Dolby Digital decoded, then this decoded signal is further manipulated by the selected mode that is set in the **2CHEN** or **2CHNEN** parameters. When this is the case and the additional selected mode is **MATRIX**, the **MODE** displayed in the LCD when in the **INPUT SELECT MENU** will say “**DOLBY DIGITAL + MATX**”

If the indication is that the signal is not Dolby Surround encoded, or there is no indication, and the **2CHNEN MODE** is set to Dolby Digital, no additional surround processing will occur, thus producing a two-channel (stereo) output.

Compression

Dolby Digital contains provisions for reducing the dynamic range of a Dolby Digital source. This means reducing the loudness of the loud passages and increasing the loudness of the quiet passages. Possible reasons for reducing the dynamic range of a source include late night listening wherein loud moments may disturb others, and making tapes for automotive / portable use wherein quiet passages may not be heard.

Casablanca II contains three parameters to control Dolby Digital compression. Button # **3** (**CMP**) simply turns the compression **ON** or **OFF**. Button # **4** (**HCMP**, or High Compression) controls the amount that loud passages will be reduced. Button # **5** (**LCMP**, or Low Compression) controls the amount that quiet passages will be increased. A larger number indicates a greater amount of increase or decrease.

Note: Some Dolby Digital sources do not allow for compression, in which case altering these settings will not result in an audible change.

Dialog Normalization

Press button # **6** to set the dialog normalization value. Dolby Digital contains the useful provision for making all Dolby Digital sources have the same perceived loudness even though they may have been recorded or mixed at very different levels. This is done by embedding in the data stream a value that the program material will need to be adjusted by to conform to an average dialog level established by Dolby Laboratories. It should be noted that all channels are adjusted, not just the center channel. Casablanca II contains two options for this setting: **ANLG** (analog) or **DIGI** (digital).

> **ANLG**: Dialog normalization will be applied in the analog domain. This means that the level adjustment number is read into Casablanca II’s main computer and the Casablanca II’s analog volume controls are properly adjusted. This is the best-sounding and preferred setting.

DIGI: Dialog normalization will be performed in the digital domain. Digital reduction of volume results in a loss of resolution i.e. a 16 bit source can effectively be reduced to 15 bits or worse.

Press the **A-D** button to access Page 2 of the Dolby Digital set up submenu, which is shown in figure 44.

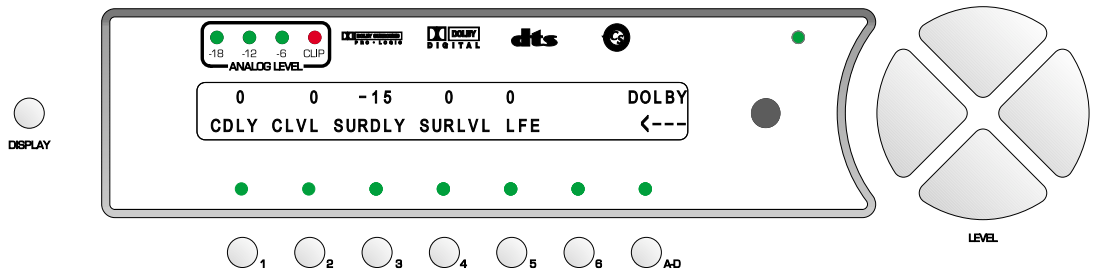


Figure 44 - Front Panel Display of the SETUP/INP *Page 2*/DOLBY DIGITAL *Page 2* Sub Menu

This submenu allows the user to adjust the center, individual surround speaker delays and levels and **LFE** when the **MODE** is Dolby Digital only. When the Mode is anything other than Dolby Digital, all settings in this sub menu will have no effect.

It is important to note that the level and delay settings in this sub menu are interactive, or relative to those in the main **SETUP/INP/LEVELS** and **SETUP/INP/DELAYS** submenus. In other words values in this sub menu are added to, or subtracted from those values in the **SETUP/INP/LEVELS** and **SETUP/INP/DELAYS** submenus. For example: if the center level (**CLVL**) in this sub menu is set to **–2** and the center level in the **SETUP/INP/LEVELS** submenu were set to **+3**, the overall center level, when the **MODE** for the currently selected input is Dolby Digital, would be **+1**. This same process applies to the delays. However, the Casablanca II does not support negative delays based on the theory that even we at Theta cannot make time go backwards. Therefore, as an example, if the center delay in the **SETUP/INP/DELAYS** submenu were set at **0** and in this Dolby Digital setup submenu, set at **–1**, the overall center delay would be **0**.

Note: If the incoming signal is Dolby 2.0 with a surround indication bit set at surround, and the **2CHEN** mode set to Circle the delay settings in the **DELAYS** sub menu are interactive with the ones in the **CIRCLE SURROUND** setup submenu and not with those in the **DOLBY DIGITAL** setup submenu.

In this submenu, button # **1** offsets the center speaker's delay [from the **SETUP/INP/DELAYS**] when the **MODE** is set to Dolby Digital, button # **2** offsets the center level, button # **3** offsets the surround left/right, sides and center surround delay and button # **4** offsets the surround left/right, sides and center surround level.

Button # **5** controls the **LFE** gain setting for Dolby Digital sources. Dolby Digital sources usually contain an LFE (low frequency effects) channel. This channel commonly contains sound effects such as explosions, but may also contain soundtrack information. Casablanca II offers the user an **LFE** range of between **0** and **-30** for this setting, as well as **OFF**. **OFF** may be useful for late night viewing or if there isn't a subwoofer / speaker capable of handling the low frequencies contained in the LFE channel. **0** dB, the preferred setting, maintains the **LFE** setting in proper proportion to the remaining five discrete channels. Any other setting lowers the normal **LFE** level, in dB, by the value set. A setting other than **0** or **OFF** may be useful for late night viewing or if there isn't a subwoofer / speaker capable of handling the full volume contained in the LFE channel.

When all settings are made, press the **SETUP** button 3 times returns the user to the **INPUT SELECT** menu.

Setup DTS

To access the DTS Setup sub menu shown in figure 45, press **SETUP/INP/A-D/DTS**.

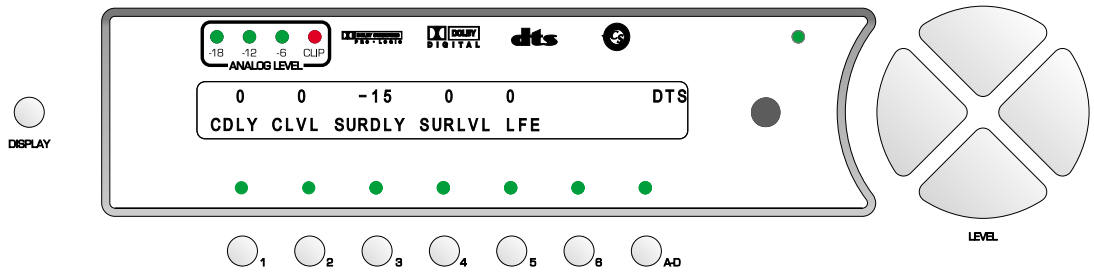


Figure 45 - Front Panel Display of the SETUP/INP *Page 2*/DTS Sub Menu

This submenu allows the user to adjust the center, side and surround speaker delays and levels as well as the **LFE**, only when the **MODE** is DTS and for the currently selected input. When the Mode is anything other than DTS, all settings in this sub menu will have no effect. As with the settings in the Dolby Digital Setup sub menus, these DTS settings are interactive with those in the **SETUP/INPUT/LEVELS** and **SETUP/INPUT/DELAYS** sub menus.

The levels and delays function exactly the same as the Dolby Digital ones above and on the previous page of this manual, as does the LFE gain setting (button # **5**) for DTS sources only. (The range is different for DTS LFE).

When all settings are made, press **SETUP** 3 times to return to the **INPUT SELECT** menu.

Setup Circle Surround

To access the Circle Surround Setup sub menu shown in figure 46, press **SETUP/INP/A-D/CIRCLE SURROUND**.

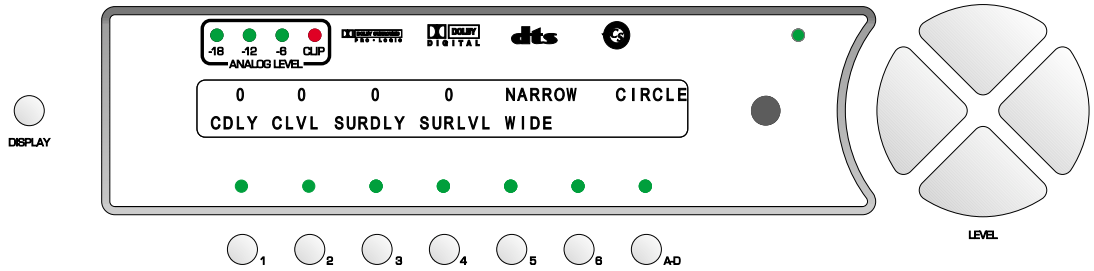


Figure 46 - Front Panel Display of the SETUP/INP *Page 2*/CIRCLE SURRND Sub Menu

This submenu allows the user to adjust the center, sides and surround speaker delays and levels when the **MODE** is Circle Encoded, Non-encoded or Cinema, only. When the Mode is anything other than one of these three, the settings in this sub menu will have no effect.

As with the settings in the Dolby Digital Setup sub menus, these Circle Surround settings are interactive with those in the **SETUP/INPUT/LEVELS** and **SETUP/INPUT/DELAYS** sub menus.

The levels and delays function exactly the same as the Dolby Digital ones on the previous 2 pages of this manual, for Circle modes only. With Circle Surround, the user also has the option to make the front left/right imaging narrow or wide. This is accessed via button # **5**.

When all settings are made, press **SETUP** 3 times to return to the **INPUT SELECT** menu.

Post Process

To access the Post Process submenu shown in figure 47, press **SETUP/INP/A-D/POST PROC**.

This sub menu allows the user to select an additional process to add to the incoming signal once it has already been processed/decoded via the selected **MODE**. Only one post process can be selected per input.

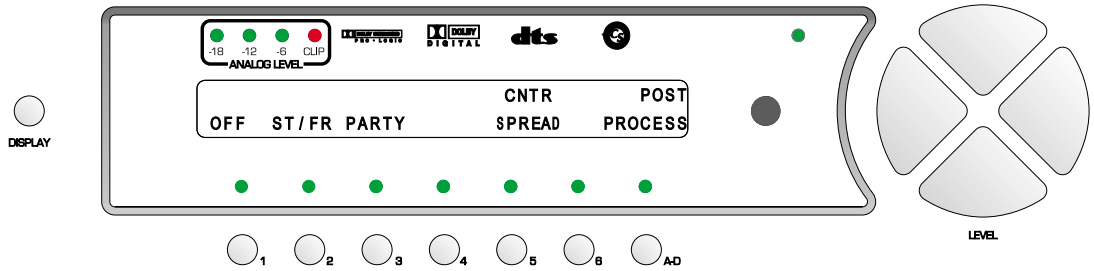


Figure 47 - Front Panel Display of the SETUP/INP *Page 2*/POST PROCESS Sub Menu

The available post processing consists of:

OFF. Which applies no further processing;

Stereo Front/Rear (**ST/FR**), which takes signals from the front and surround lefts, adds them together and outputs this sum equally to the front left and surround left speakers. The same applies for the right front and surround speakers. The process varies slightly, depending on whether the **MODE** is matrix, stereo or mono.

Party, which takes parts of each original channels signal, blends them with al others and outputs this mix to all speakers. In this way, each speaker will have a blend of all speakers.

Center Spread (**CNTR SPREAD**) is a process in which the center speaker level is reduced and added to the front left/right speakers. It is enabled in this Post Process sub menu, and altered in the **SETUP/INP/*page 3*** sub menu, under the **CTRSPD** parameter.

Setup Input Page 3

The **SETUP/INP *page 3*** section contains the sub menus shown in figure 48.

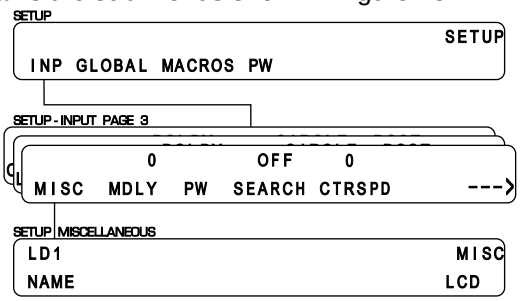


Figure 48 - Menu Map of SETUP/INP *Page 3*

Press **SETUP**, **INP** and **A-D** twice to enter the **SETUP/INP** *page 3* sub menu shown in figure 49.

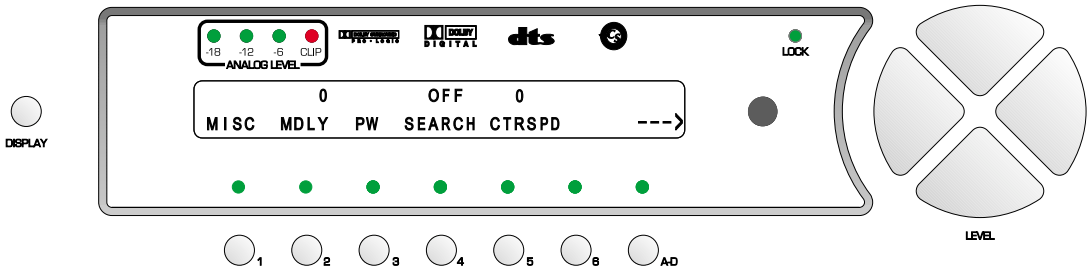


Figure 49 - Front Panel Display of the SETUP/INP *Page 3* Sub Menu

Setup Miscellaneous

Press button # **1** to enter the **MISC** sub menu, shown in figure 50.

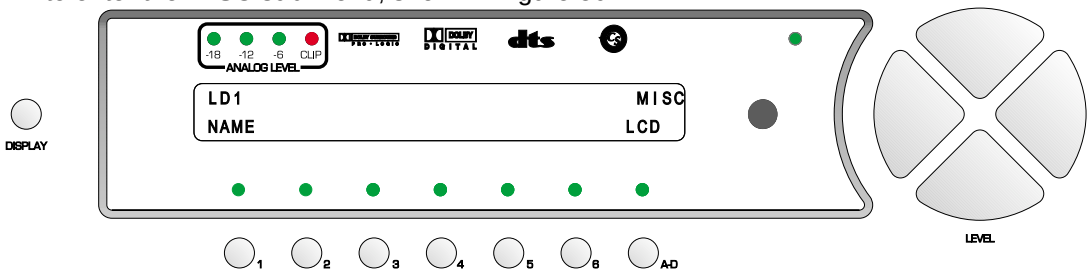


Figure 50 - Front Panel Display of the SETUP/INP *page 3*/MISC Sub Menu

Naming the Current Input Select button

Select the input to rename. Then press **SETUP**, **INP**, **A-D** twice, **MISC** and button # **1** to name the currently selected input. The letters **LCD** will be displayed in the lower right above the **A-D** button, indicating that the name in the LCD is to be edited. LCD names are limited to 4 characters. Press the **LEVEL UP/DOWN** button to change characters and the **LEVEL LEFT/RIGHT** to change character positions. Pressing the **DISPLAY** button once will clear the current **INPUT SELECT** name. Press the **A-D** button to edit the OSD name. **OSD** will appear in the lower right corner of the LCD. This name can be up to 15 characters and the current character to be edited will blink on screen.

Press **SETUP** once to return to the **SETUP/INP *page 3*** submenu.

Master Delay

When video processing occurs, there can sometimes be a delay in the output of the video signal. Each process or device, including the source disc, itself may be only 1-2 frames out of sync, however, each can add up to a significant enough of an amount to where the audio and video are not in sync. If this happens, the Casablanca II allows the user to set an overall, or master audio delay on all outputs simultaneously in order to re-sync the audio with the video signal. In the **SETUP/INP *page 3*** submenu, press button # **2** and use the **LEVEL UP/DOWN** buttons to adjust the audio delay time until the video appears to be in sync with the audio. The range is **0** to **110** mS at 48KHz.

When complete, press **SETUP** twice to return to the **INPUT SELECT** menu.

Password for Each INPUT SELECT Button

Press **SETUP**/**INP**/**A-D**/**A-D** and button # **3** to set a password for the currently selected input. Entering a password here will prompt the user to type in the password each time he/she wishes to change configuration settings for this **INPUT SELECT**.

When the **PW** button is pressed, an "**ARE YOU SURE YOU WANT TO ENTER A PASSWORD FOR THIS MENU?**" message appears on the LCD. Pressing **NO** (button # **6**) reverts back to the **SETUP/INP *Page 3*** submenu. Pressing **YES** (**A-D** button) will display a menu allowing the user to enter a password. Use buttons **1**-**6** to enter a password, or elect to have no password for this **INPUT SELECT** button by pressing the **A-D** button 5 times, which will display all zeros, indicating no password.

Note: If a zero appears in any position of the password, it will be seen as all zeros, or no password. **PLEASE REMEMBER and/or WRITE DOWN YOUR PASSWORD!** If it is forgotten, all access to password protected areas will be denied! There is no other over ride to this feature. Please refer to page 14 for additional information on using passwords.

Auto-Search Master Control

Pressing button # **4** will enable/disable the Auto-Search feature for the currently selected input only. Please refer to page 40 for details of the Auto-Search feature.

Center Spread

This effect is a post process to all other digital signal processing and is therefore activated in the **POST PROCESS** sub menu. The range (**0**-**15**) is set in this **SETUP/INP** page 3 submenu. This parameter adjusts the mix between the center speaker and the front left/right speakers. The higher the value, the more center level is reduced in the center speaker and added into the front left/right speakers. If the value were at its highest, all of the center speaker information would be routed to the front left/right speakers. In this case, it would be the same as phantoming the center speaker.

Setup Global

This function provides access to a series of sub menus that will allow the configuration of the entire system globally, or not by input.

Press **SETUP**, then **GLOBAL** (button # **2**). The first page of the Global sub menu is displayed, as shown in figure 51.

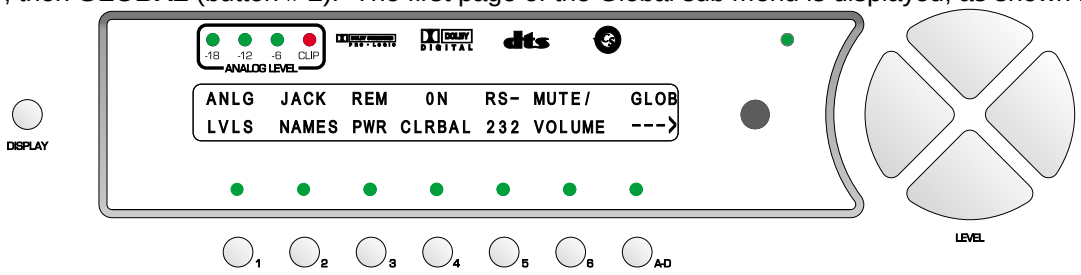


Figure 51 - Front Panel Display of the SETUP/GLOBAL *page 1*/ Sub Menu

Analog Input Levels

From the **SETUP**/**GLOBAL *page* 1** menu, press button # **1** to bring up a submenu that allows adjustment of the analog input levels. This sub menu is shown in figure 52.

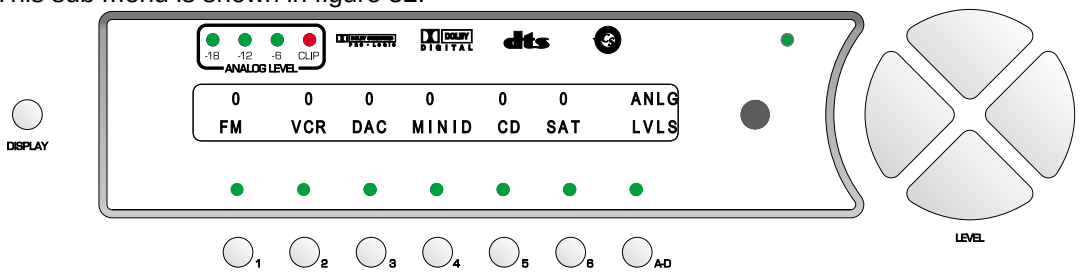


Figure 52 - Front Panel Display of the SETUP/GLOBAL/ANLG LVLS Sub Menu

This function allows the user to adjust the relative **ANALOG** input **LEVEL** for each input source for those modes which require analog to digital conversion. This function does not affect source levels when a digital audio input is selected. The allowable relative range is +19 to -14dB, then steps to -16, -18 and -22dB.

Note: To obtain the best performance from the analog to digital conversion process, levels should be set so that the loudest passages from the source material cause the **-18**, **-12** and **-6** dB **ANALOG** input **LEVEL** LEDs on the front panel to light. Setting the input level too high will cause all four LEDs to light, thus clipping the input signal and causing distortion.

Analog output levels may vary considerably for different input sources. Program material from a given input source should not vary as greatly. Therefore the **ANALOG** input **LEVEL** for a given source should not have to be adjusted very often. If, however, the input **ANALOG LEVEL** LEDs are not lit during the loudest passages from an analog source, the user should increase the **ANALOG** input **LEVEL** for that source in order to ensure a good signal to noise ratio.

Select the analog input to be adjusted by pressing buttons **1**-**6** once. Adjust the relative input level using the **LEVEL UP**/**DOWN** buttons, then press the **SETUP** button three times to return to the current **INPUT SELECT** page.

Jack Names

From the first **GLOBAL** page, button # **2** accesses a series of sub menus, which allow the user to name all of the Casablanca II's input jacks, both audio and video. The **JACK NAMES** sub menu is shown in figure 53.

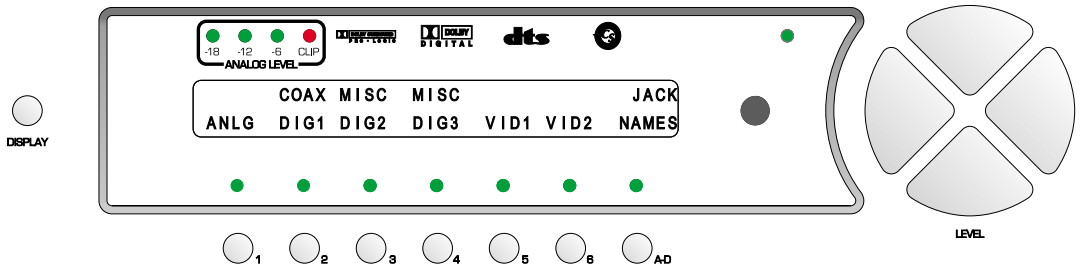


Figure 53 - Front Panel Display of the SETUP/GLOBAL/JACK NAMES Sub Menu

Pressing button # **1** accesses a sub menu that allows the analog audio input jacks to be named. Button # **2** does the same for the coaxial digital audio input jacks, whereas buttons # **3** and **4** allow the user to name all non-coaxial digital audio input jacks. Buttons # **5** and **6** lead to sub menus that allow the naming of the video jacks. The composite, S and multi format video jacks are internally tied together when it comes to mapping them, and subsequently switching and naming them. In other words, where **COMPOSITE 1** video jack is mapped, so is the **S-VIDEO 1** and **Multi Format 1** jack, where **COMPOSITE 2** video jack is mapped, so is the **S-VIDEO 2** and **Multi Format 2** input jack, and so on. Since the **COMPOSITE 1** input jack cannot be mapped differently than the **S-VIDEO 1** or **Multi Format 1** input jacks, they also share the same jack name.

Example of editing a jack name:

To edit the name of analog input jack 1, press button # **1** from the menu shown above. This displays the **NAME ANALOG** sub menu. Then press button # **1** (first analog input jack name). Press the **LEVEL UP**/**DOWN** buttons to select the desired LCD character and the **LEVEL LEFT**/**RIGHT** to change character positions. Once selected, pressing the **DISPLAY** button once will clear the current jack name. The character to be edited will blink. The LCD name for all audio input jacks can be up to 6 characters and the video jack names up to 5. Press the **A-D** button to edit the OSD name. **OSD** will be displayed above the **A-D** button in the LCD. ALL OSD names can be up to 15 characters and the current character to be edited will blink.

Remote Power Jacks

The **REMOTE POWER** jack and three **MAIN POWER** jacks on the rear panel can be programmed to output 12V, either straight **DC** or as a **PULSE**. This feature is used to automatically turn on other system components such as power amplifiers, etc, when the Casablanca is taken out of Standby. From the first **SETUP**/**GLOBAL** page, press button # **3** to access the **REMPWR** sub menu shown in figure 54.

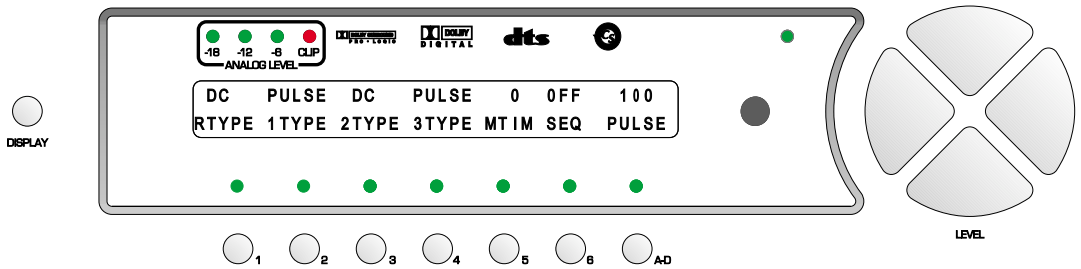


Figure 54 - Front Panel Display of the SETUP/GLOBAL/REMPWR Sub Menu

The first four 3.5 mm jacks on the rear panel (remote power and main power 1 through 3) are +12V pulse or DC current limiting* outputs (tip = hot, sleeve = ground) and are intended to be connected to devices which feature 12V control voltage inputs.

Toggling the hand held remote or front panel **REMOTE** button will activate/deactivate the **REMOTE** power jack output. It will turn off when the Casablanca II is put into standby mode.

Use button # **1** to indicate whether the output of the remote power jack should be 12VDC (**DC**) or a 12V pulse (**PULSE**). The specification sheet for the device connected to the remote power jack should contain information as to which type of signal it requires, and if it is a pulse, the minimum pulse duration.

The output signal of the remote power jack does not need to be delayed since it's activation is by the user via either the hand held remote or front panel **REMOTE** button.

Buttons **2**, **3** and **4** have exactly the same functionality as button **1**, except that they apply for the three **MAIN POWER** jacks on the rear panel.

The **MAIN POWER 1** jack is activated immediately upon exiting the standby mode (pressing the front panel or the hand held remote **POWER** button), the **MAIN POWER 2** jack is activated *X* seconds after exiting standby and the **MAIN POWER 3** jack is activated *X* times 2 seconds after exiting standby. *X* represents the time, in seconds, that is set by pressing button # **5** – **MTIM**, or Main [Delay] Time. This is useful for sequencing the turn on of high power components such as amplifiers. Further to this, when the Casablanca II is put into standby, it can be set that all of the **MAIN POWER** jacks turn off simultaneously or sequenced off in the opposite order as they were activated. This is accomplished by setting **SEQ** (button # **6**) to **ON** or **OFF**. By setting the **SEQ** parameter to **ON**, the user is activating the power down sequencer.

If the type of output for any of the rear panel power jacks is set to **PULSE**, the duration (in milliseconds) of this pulse can be set by the user, using the **A-D** button.

*Current limiting resistor is 33Ω 0. 5W. This means that the more current a device to be triggered draws, the more the output voltage gets reduced. The formula is : Output voltage =12 – (I x 33), where I = the current draw from the triggered device, in Amperes. Refer to the device's manual for this information. The Casablanca II's maximum output current is 100mA, which, by using the above formula, means that with a 100mA draw, the output voltage will be 8.7 volts, although most triggered circuits have virtually no current draw.

Clear Balance (Temporary Settings Control)

Any changes in the **BALANCE** menus are, by default, temporary. That is to say that when an **INPUT SELECT** button is pressed or the Casablanca II is powered down/put into standby, any changes will be reset to zero. This feature has an override, which is set by pressing button # **4** in the first **SETUP/GLOBAL** page (figure 51 on page 66) and set to **OFF**. When this parameter is set to **OFF**, changing inputs or powering down/going into standby will maintain all **BALANCE** menu settings.

RS232

In the first **SETUP/GLOBAL** page, press button # **5** to access the **RS232** sub menu shown in figure 55.

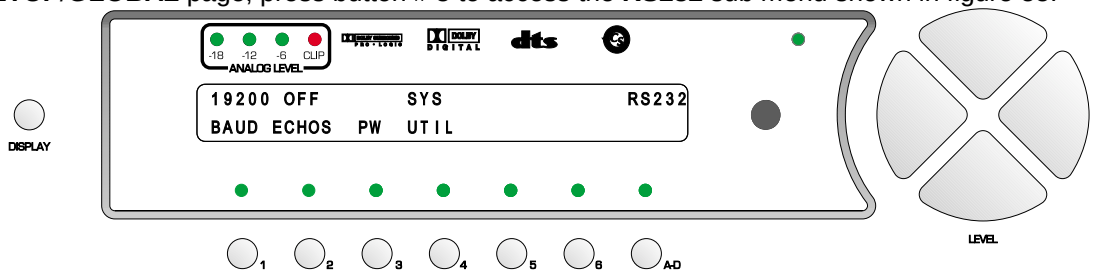


Figure 55 - Front Panel Display of the SETUP/GLOBAL/RS232 Sub Menu

Press button # **1** (**BAUD**) and use the **LEVEL UP/DOWN** buttons to select the Baud rate that matches that of the RS232 controller.

The Casablanca II can be set to automatically send changes to the RS232 port. This can be done by selecting a "Status Level", which means if any Casablanca II parameter changes, that level's bytes will be sent to the port. This is useful for monitoring master level, input and the like when the user has access to both the Casablanca II and the touch-panel controller, to keep them synchronized.

Button # **2** (**ECHOS**) [Echo Status] allows the user to enable or disable the output of data to the RS232 port and, if enabled, determine which level, or pre-determined group of bytes it outputs. Setting this value to **OFF** disables any parameter change information from being output to the RS232 port. If RS232 is installed in a Casablanca II, an

addendum will be included with this manual which describes all pertinent RS232 information, including values contained within each Status Level.

If the RS232 option is installed but not being used, ensure that the Echo Status (**ECHOS**) parameter is set to **OFF**. Other settings can slow the operation of the Casablanca II.

The RS232 protocol is available by request from Theta Digital, the dealer or from Theta's website at www.thetadigital.com.

RS232 Menu Password

If desired, access to the RS232 menus can be password protected. To set a password, press button # **3** and enter a new password using the **1**-**6** buttons. As with all other passwords in the Casablanca II, using a **0** (**A-D** button) will void the password, making it as if there were none. Please refer to page 14 for additional information regarding setting passwords.

When all settings are complete in this sub menu, press **SETUP** twice to return to the **INPUT SELECT** menu.

System Utilities

There are two ways to update the flash software in a Casablanca II. This menu provides access to updating the Casablanca II's flash software from the front panel only. For further information about updating the Casablanca II software, please refer to Appendix D on page 109.

Note: This utility is not available on the OSD since it is a function of a sub-operating system.

Pressing the **SETUP** button three times returns the LCD to the current **INPUT SELECT** page.

Mute/Volume

This sub menu provides the user with a method of setting parameters with regards to volume and mute control. Press **SETUP**, **GLOBAL**, then button # **6** (**MUTE/VOLUME**). This sub menu is shown in figure 56.

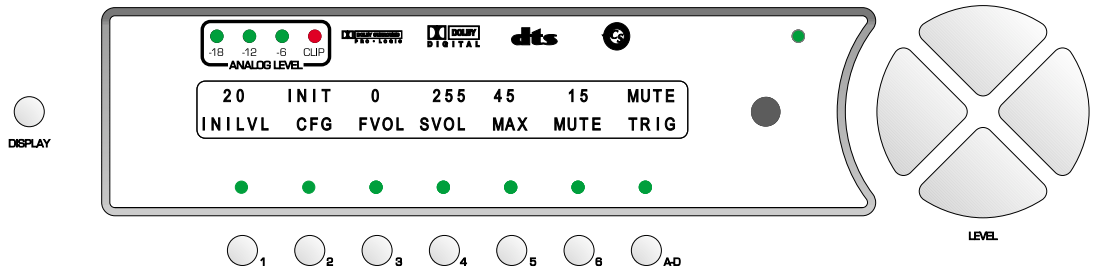


Figure 56 - Front Panel Display of the SETUP/GLOBAL/MUTE-VOLUME Sub Menu

Initial Power-On Master Volume

Button # **1** (**INILVL**, or Initial Level) allows the user to store an initial master volume setting that the Casablanca II will default to when it comes out of standby.

Button # **2** allows for an override of button # **1**. If this parameter is set to **INIT**, the Casablanca II's volume, when coming out of standby, will be that which is set using button # **1**. If this parameter is set to **LAST**, the Casablanca II's master volume when coming out of standby will be the same as what it was when it was last put into standby.

FVOL and SVOL

When certain parameters are edited or the master volume changed, holding the **LEVEL UP**/**DOWN** button for more than 5 steps will, by default, speed up the rate in which the value changes. This is referred to as *Fast Mode*. It is possible to delay the speed of the fast mode in order to slow it down to the users preference. In **FVOL** (Fast Volume) a delay of **0** will allow the Fast Mode to be its quickest (no delay), and a delay of **255** allows it to be its slowest.

The rate that the **LEVEL UP**/**DOWN** buttons respond during the first 5 steps is referred to as *Slow Mode*. **SVOL** allows the user to slow down the increment changes during these first 5 steps (a higher delay time) or increase their speed with a lower delay time setting. In **SVOL** (Slow Volume) a delay of **0** will allow the Slow Mode to be its quickest, and a delay of **255** allows it to be its slowest.

Maximum Overall Level

Button # **5** (**MAX**) allows the user to set a maximum master level of the Casablanca II. This is especially useful in a household where young relentless children and smart pets are accessible to the system.

Changing the Default MUTE Level

When the front panel or hand held remote **MUTE** button is pressed, the user can set the master volume level to mute to a specific level. Editing this parameter is accessed by pressing button # **6**.

MUTE Off Trigger

The Casablanca II can be un-muted in 2 ways: pressing the **MUTE** button or the **LEVEL UP/DOWN** buttons. The user has the option of overriding the use of the **LEVEL UP/DOWN** buttons so that only the **MUTE** button un-mutes the Casablanca II. Setting the parameter (accessed via the **A-D** button) to **MUTE** allows only the **MUTE** button to un-mute the Casablanca II whereas setting this parameter to **M+V** (**MUTE** and **VOLUME**) allows both the **MUTE** and **LEVEL UP/DOWN** buttons to un-mute.

Press the **SETUP** button once to return to the **SETUP/GLOBAL** *page 1* sub menu. Press the **A-D** button once to go to the second **GLOBAL** page, shown in figure 57.

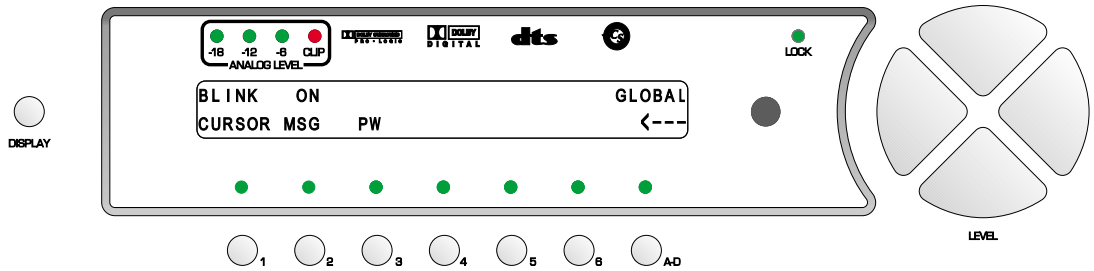


Figure 57 - Front Panel Display of the SETUP/GLOBAL *page 2* Sub Menu

Cursor Type

When editing jack or input select names, the character being edited can be indicated by blinking, a flashing cursor below it, both, or no indication. This preference is set in the **SETUP/GLOBAL** *page 2* sub menu, button # **1**.

Displaying Mode Change Messages

As discussed in the **MODE** section of this manual, when the Casablanca II receives a Dolby Digital or DTS signal on the currently selected input and the **MODE** is not the one required to process these signal formats, a message will briefly occur on the LCD and OSD stating that the Casablanca II has received a certain format and is temporarily changing the **MODE**. This message does NOT come up by default but can be turned on by pressing button # **2** and changing the value to **ON**.

Global Menu Password

If desired, access to the Global menus can be password protected. To set a password, press button # **3** and enter a new password using the **1**-**6** buttons. As with all other passwords in the Casablanca II, using a **0** (**A-D** button) will void the password, making it as if there were none. Please refer to page 14 for additional information regarding setting passwords.

When all settings are complete in this sub menu, press **SETUP** twice to return to the **INPUT SELECT** menu.

Setup Macros

The Casablanca II contains several macros that allow the user to perform multiple tasks at the press of a button. To enter the Macros sub menu, press **SETUP**, then **MACROS** (button # **3**). The Macros sub menu appears, as shown in figure 58.

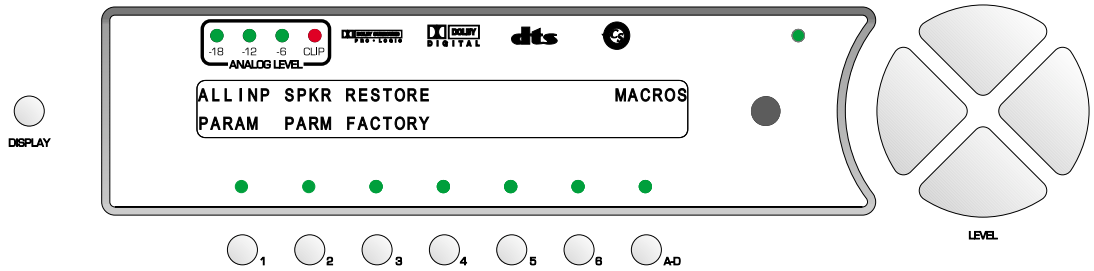


Figure 58 - Front Panel Display of the SETUP/MACROS Sub Menu

Copy Macros

Buttons **1** and **2** are "copy" macros. **ALLINP** (button # **1**) will give the user the option of coping all **INPUT SELECT** parameters of the currently selected input to one or all other 11 input select buttons. If the user chooses to copy to one other input select button, they will then be asked to choose which one, by input select name. If the currently selected **INPUT** parameters are to be copied to input select buttons **7**-**12**, press the **A-D** button when given the choice of the destination **INPUT SELECT** button to be copied to.

Note: When copying all **INPUT** parameters to other **INPUT SELECT** buttons, the **SOURCE** (audio and video) settings will not be copied. The reason for this is that in virtually all cases known, the jacks mapped to a given **INPUT SELECT** button will not be desired to be mapped to other **INPUT SELECT** buttons. If they are, they can be individually assigned after the copy macro has been executed.

Copying only the speaker parameters from one **INPUT SELECT** button to another, or all others is a very useful feature when first setting up the Casablanca II, or after speaker components have been added or changed in the system. Typically when first setting up the Casablanca II in the system for the first time, once the speaker configuration settings have been established for the first **INPUT SELECT** button, they will be virtually the same for all other **INPUT SELECT** buttons. This macro allows only the speaker configuration, levels and delays to be copied to one or all **INPUT SELECT** buttons.

Restore Macros

Button # **3** allows the user to restore the factory settings in a variety of ways. The Restore menu is shown in figure 59.

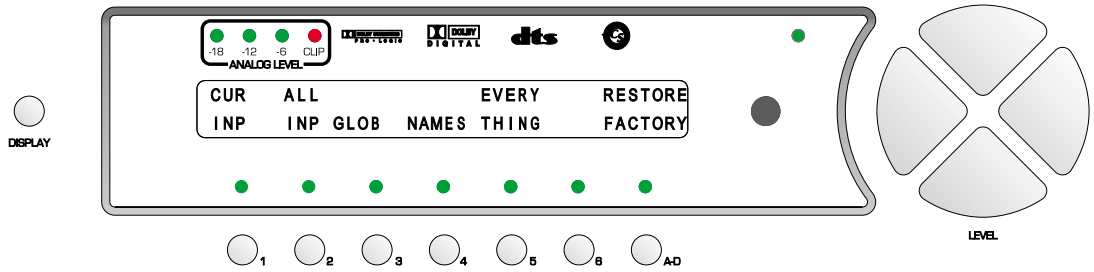


Figure 59 - Front Panel Display of the SETUP/MACROS/RESTORE FACTORY Sub Menu

In this sub menu, button # **1** allows the user to restore all factory **INPUT** parameters to the currently selected input button, except for the Input name.

Using button # **2** will restore all factory **INPUT** parameters to all 12 **INPUT SELECT** buttons, except for the names.

Pressing button # **3** will restore all factory **GLOBAL** menu settings.

Button # **4** will restore all factory **NAMES**. This includes all jack names as well as **INPUT SELECT** button names.

Button # **5** will restore all factory settings, **INPUT**, **GLOBAL** and **NAMES** to the Casablanca II.

Before any macro is executed the user will be asked if they are sure they want to perform this macro. When complete, press **OK** (**A-D** button).

Note: When restoring factory settings for an **INPUT SELECT** button that is password protected, it will ask for the password by input name.

If there is a password on the Global Menu itself, and the user is restoring any global parameter, when the macro gets to a password protected parameter, it will say "Enter Password" (i.e. it will not state which parameter, menu or button the password is protecting).

Press **SETUP** twice to return to the first page of the **SETUP** menu.

BALANCE Function

This function allows the user to temporarily* set the **FRONT**/**REAR** and **LEFT**/**RIGHT** balances as well as the **CEN**ter and **SUB** woofer speaker levels, the shelf **EQ**, and a relative adjustment of the analog input level (**ANLVL**), in order to compensate for distinct program material characteristics.

The first page of the balance menu is shown in figure 60 and the second in figure 61.

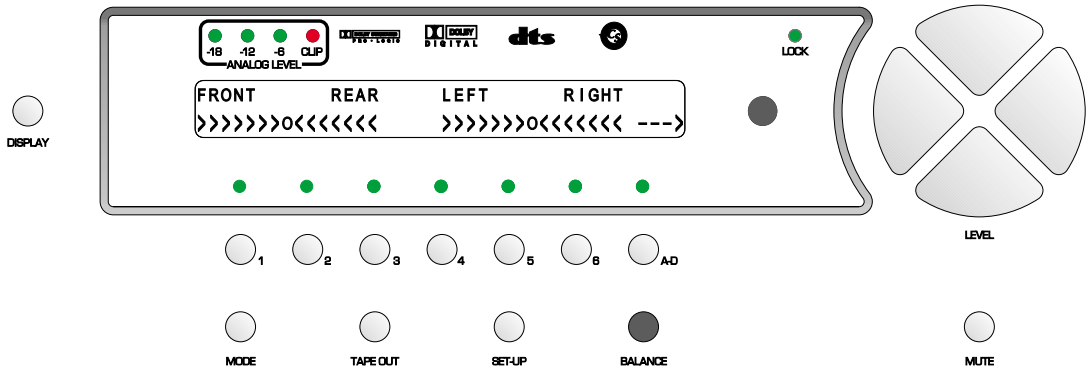


Figure 60 - Front Panel Display of the BALANCE *Page 1* Menu

Front/Rear and Left/Right Balance

The **BALANCE** adjustments are made with reference to the relative speaker trim levels that are stored in the **SETUP**/**INP**/**LVLS** sub menu. **LEVEL LEFT**/**RIGHT** adjusts the Left/Right balance and **LEVEL UP**/**DOWN** adjusts the Front/Rear balance.

*The parameter values in the two **BALANCE** pages are, by default, temporary. This is to say that under certain conditions such as pressing a different **INPUT SELECT** button, the changes made will revert to **0**. This feature has an override, (**CLRBAL**), which is accessed via the **SETUP/GLOBAL** sub menu, button # **4**.

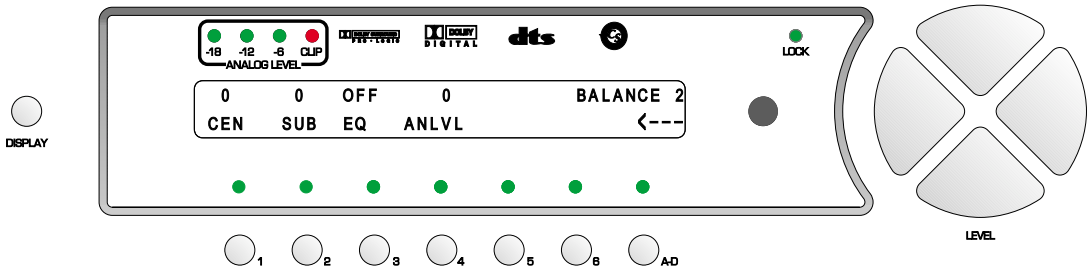


Figure 61 - Front Panel Display of the BALANCE *Page 2* Menu

Pressing the **A-D** button once will reveal the second **BALANCE** page, consisting of temporary level settings for the center (**CEN**) speaker, sub woofer (**SUB**), **EQ** and analog input level (**ANLVL**) for the currently selected input.

Center and Sub Balance

Press button # **1** to adjust the **CEN**ter level and button # **2** to adjust the **SUB** woofer level.

Shelf EQ

Pressing button # **3** will allow the user to adjust the **EQ** setting between **OFF**, **1**, **2**, **3** and **4**. This is a low pass shelf EQ that, at 2KHz, drops by 1.5dB when the parameter value is set at **1**, 3dB when set at **2**, 6dB when set at **3**, and 9dB when set at **4**. Being a shelf EQ, the rolloff amplitude never drops significantly below the specified dB value. The **EQ** is active in all modes and is designed to roll off excess brightness in different program material.

Analog Input Level Override

Button # **4** lets the user adjust the analog input level of the currently selected input, relative to the stored value in the **SETUP**/**GLOBAL**/**ANLG LVLS** (analog levels) menu.

Press the **BALANCE** button twice to return to the current **INPUT SELECT** menu.

STATUS Function

This feature, accessible from the hand held remote only, provides the user with a 'quick view' of the most pertinent current settings of the Casablanca II. It is available from any menu or sub menu simply by pressing the **STATUS** button.

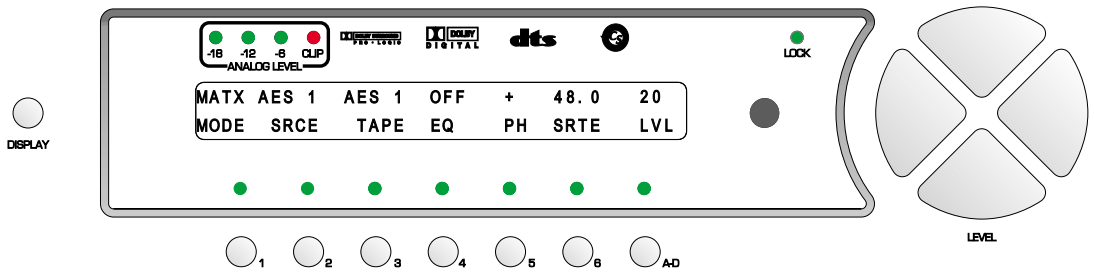


Figure 62 - Front Panel Display of the STATUS Display

When the **STATUS** display is activated, the following appears in the LCD regardless of what settings are stored in the **SETUP/INPUT *page 1/OSD/* STATUS** setup sub menu:

- The current **MODE** (Stored or temporary).
- The currently selected input jack name (**SRCE**, or Source).
- The analog **TAPE OUT** audio source to be recorded by Input jack name.
- The **EQ** parameter value of **OFF**, **1**, **2**, **3**, or **4**. (Stored or temporary).
- The **PHASE** parameter value of **+** (0°) or **-** (180°).
- The Sample Rate (**SRTE**) of the signal currently being received.
- The Master Volume (**LVL**) setting.

The **INPUT SELECT** buttons (**1** - **6**) are inactive. Pressing a function button will clear the **STATUS** display and show the current function menu. Press the **A-D** button once to display the first page of the Dolby Digital Information [Status] page, an example of which is shown in figure 63.

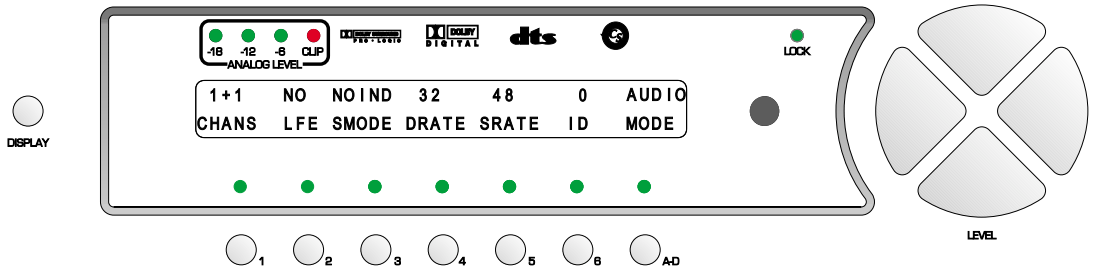


Figure 63 - Front Panel Display of the STATUS/Dolby Digital *Page 1* Display

The Dolby Digital status displays contain information embedded in the Dolby Digital datastream. Each parameter on the first page is described below:

Channels (**CHANS**): Displays the number of main channels in the source signal.
LFE: Displays whether an LFE track is present or not.
Surround Mode (**SMODE**): Displays the surround mode. See **SETUP/INP *Page 2*/DOLBY DIGTL *Page 1***, parameter value of **2CHEN** and **2CHNEN** for Casablanca II's use of this parameter. This can be found on page 62.

Datarate (**DRATE**): Displays the datarate of the source. This is a measure of the amount of compression used.

Sample Rate (**SRATE**): Displays the sample rate.

Bitstrm ID (**ID**): The bitstream identification number.

MODE: The intended use of this bitstream.

Press the **A-D** button once more to display the second page of the Dolby Digital Information page, an example of which is shown in figure 64.

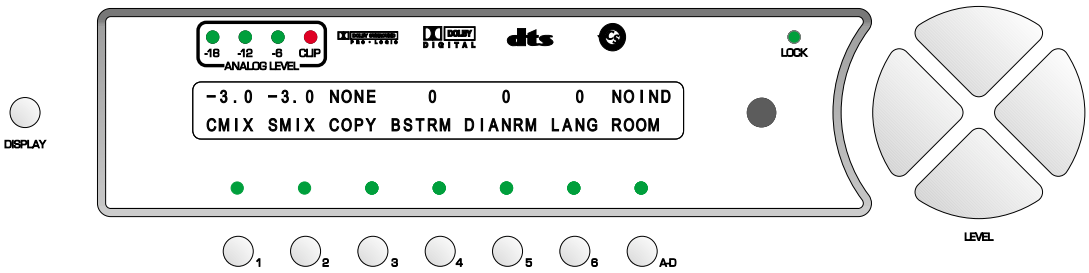


Figure 64 - Front Panel Display of the STATUS/Dolby Digital *Page 2* Display

Each parameter on the second Dolby Digital information page is described below:

Center Mix (**CMIX**): Center mix level.

Sur Mix (**SMIX**): Surround mix level.

Copyright (**COPY**): Copyright status (protected or not protected).

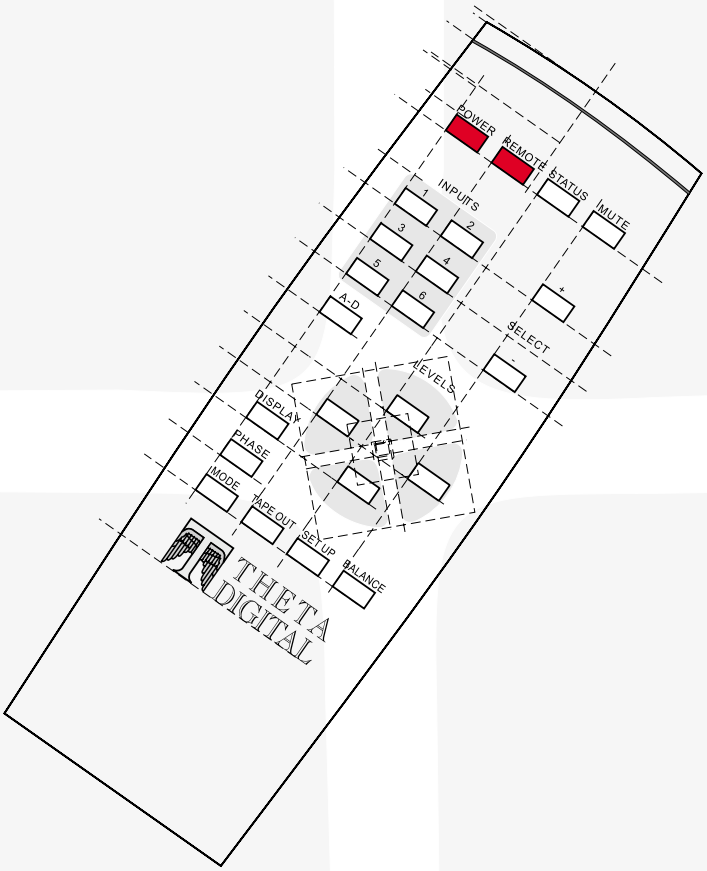
Bitstream (**BSTRM**): Copy or original bitstream.

Dialog Norm (**DIANRM**): Dialog normalization value. See Setup Dolby Digital Dialog Normalization on page 62 for Casablanca II's use of this parameter.

Language (**LANG**): The language code.

Room Type (**ROOM**): Type of room used for mixing.

REMOTE CONTROL



Remote Control Layout

1. **POWER.** After the rear panel **MAIN POWER** switch is turned on, press this button to exit the standby mode. Pressing **POWER** again will place the Casablanca II into standby mode, thereby turning off the VFD (or LCD) and muting all outputs.

2. **REMOTE.** Activates/deactivates the **REMOTE POWER** jack(s) on the rear panel that are assigned to this button.

3. **MUTE.** Mutes all analog audio outputs except the **TAPE OUT** jacks. Press again to disable muting.

4. **STATUS.** Displays the current status of the Casablanca II in the VFD (or LCD) and on the video monitor if optional video card is installed and video display is enabled.

5. **INPUTS.** Individual buttons which select the desired input channel. Within a function's sub menu page(s), these buttons select sub functions to edit. When pressed, they activate a corresponding LED on the front panel and an arrow or sub menu on the video monitor.

6. **A-D.** Sequences through input jacks assigned (mapped) to the active **INPUT SELECT** button. Also toggles between some menu pages.

7. **SELECT +** and **-.** Incrementally changes the **INPUT** channel, thereby taking the place of buttons **1** to **6**.

8. **LEVELS UP** and **DOWN.** Adjusts master volume for all speaker outputs. Also increments/decrements parameter values in most edit modes and shifts **FRONT**/**REAR** audio in the first **BALANCE** menu.

9. **LEVELS LEFT** and **RIGHT.** Shifts the audio balance to the left or right in the first **BALANCE** page. Also used to adjust the **MASTER** volume level when in most sub menus.

10. **DISPLAY.** Temporarily overrides the VFD (or LCD) brightness display setting in the **SETUP**/**INPUT** *page 1* submenu.

11. **PHASE.** Inverts the phase (180°) of all speaker outputs.

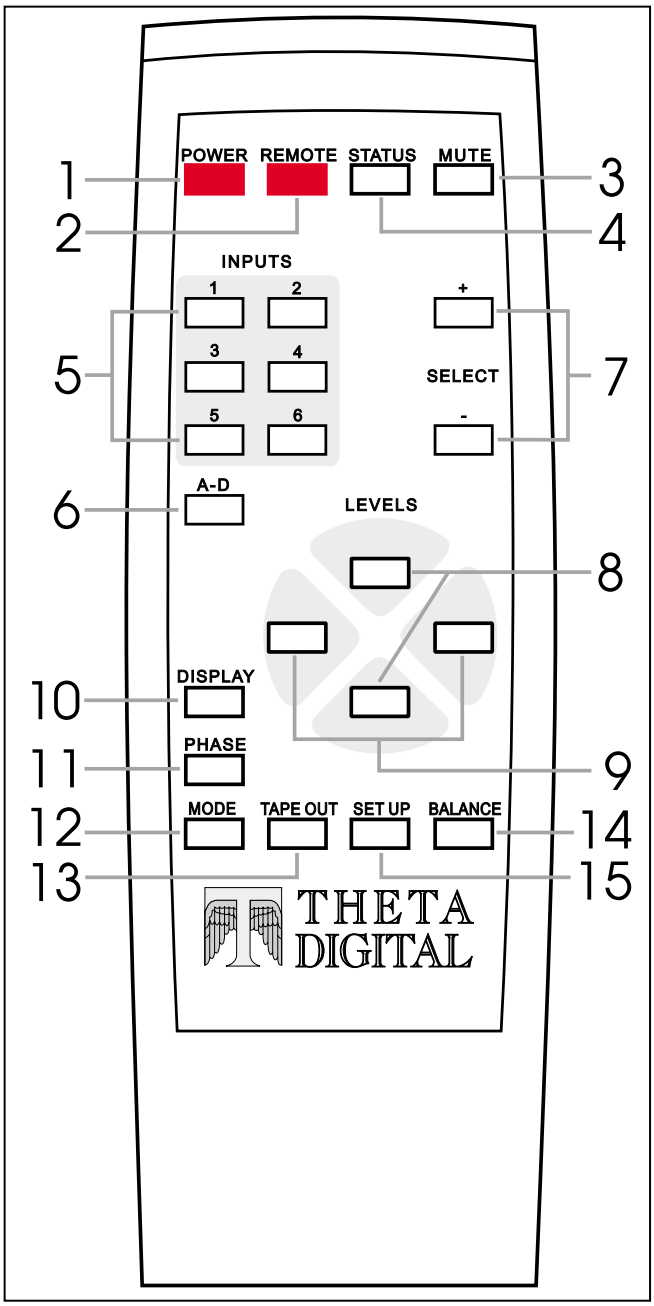


Figure 65 - Remote Control Layout

12. **MODE.** Activates/deactivates the **MODE** select pages for currently selected input.

13. **TAPE OUT.** Used for routing both audio and video signals to their respective **TAPE OUT** jacks.

14. **BALANCE.** Activates the **BALANCE** menus in order to set a temporary balance configuration to adjust for different program characteristics.

15. **SETUP.** Displays multiple pages of sub menus which provides access for setting speaker configurations/levels/delays, analog input levels, naming inputs, setting the display & remote features, selecting the video type, setting options for incoming Dolby Digital, DTS and Circle Surround signals and much more.

Note: When operating the hand held remote control, point it at the remote sensor on the Casablanca II's front panel. The remote control can be used from 3 to 20 feet from the Casablanca II and within a 30° angle from each side of the sensor. Exposing the the remote sensor to direct sunlight or strong light may cause faulty operation.

REMOTE CONTROL OPERATIONS

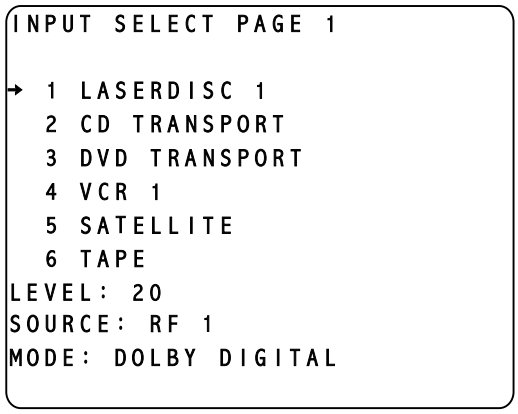
This section describes the functionality of the Casablanca II using the hand held remote only. For front panel functionality descriptions, please refer to the section entitled *FRONT PANEL OPERATIONS* on page 40. Be sure to read the *Introduction to the User Interface* section on page 14. Descriptions for remote buttons/functionality not covered in this section can be found in the preceding *REMOTE CONTROL LAYOUT* section. Features and functional descriptions, which are common to both front panel and remote operations, are covered in the *FRONT PANEL* section only and therefore not repeated in this section.

Important Note: There is no OSD (On-Screen Display) when using the 15 pin Multi Format video output jack. Therefore none of the on-screen menus shown in this section will be available. They will be shown when using the Composite and/or S-Video outputs only.

Input Select Menus

When the rear panel **MAIN POWER** switch is turned on, the Casablanca II identifies internal hardware and software, then enters standby mode (The **POWER** LED turns on). Pressing the **POWER** button once will result in the video monitor displaying a start-up routine and then the last accessed **INPUT SELECT** menu for *x* seconds, where *x* represents the time parameter value that is stored in the **SETUP**/**INPUT** *page 1*/**OSD** sub menu, **TIME** parameter. Figure 66 shows an example of this menu.

Changing Inputs and Input Select Pages



Pressing buttons **1** through **6** or **SELECT UP/DOWN** will select a desired input, or audio source. An arrow will point to the currently selected input. The input names shown in this figure are for example only and will most likely differ from the user's set up. There are two **INPUT SELECT** pages, giving the user a total of 12 inputs to select from. Pressing the **LEVEL LEFT/RIGHT** buttons will toggle between the two **INPUT SELECT** menus.

Pressing the **LEVEL UP/DOWN** buttons will adjust the master volume for all speakers. This value ranges from **0** to **73** (relative maximum) and will be shown as a horizontal bar graph on the video monitor for approximately 1 second after the button is released.

Figure 66 - Video Display of the INPUT SELECT *Page 1* Menu

Auto-Search

The Casablanca II can automatically search for a signal on all rear panel input jacks that are assigned to the currently selected input button. When this feature is enabled, the Casablanca II will search each input jack assigned to the currently selected input and stop at the first digital signal that it finds. To enable Auto-Search, press the **1**-**6** button of the currently selected input. (example – if Input Select 2 is the currently selected input, press 2). A message will appear indicating that Auto-Search is on. To disable auto-search, press the **A-D** button once. A message will appear on the display indicating that Auto-Search has been turned off. The Auto-Search feature can be disabled – by input – in the **SETUP**/**INPUT**/***page 3*** submenu.

Note: If the Casablanca II is not locked and is auto-searching for a signal, then any button is pressed, if pressed quickly the Casablanca may not see that button press as it is busy auto-searching. In this unique case, press and hold the button for 1-2 seconds. The Casablanca will then stop auto-searching and wait for additional button presses. If no other button presses are made within 4-5 seconds, the Casablanca II will start auto-searching again.

Selecting Mapped Input Jacks for the Currently Selected Input

Pressing the **A-D** button will toggle between the input jacks that are mapped to this **INPUT SELECT** button. Please refer to page 42 (*Search Order*) for important, detailed information regarding using the **A-D** button.

* * *

The **MUTE** button will toggle the audio between the master volume level and **MUTE** level in all speakers each time it is pressed. Please refer to pages 41 and 70 (Default mute level/mute off trigger) for additional information on the **MUTE** feature. The **MUTE** feature is active in all menus.

The **DISPLAY** button will toggle the front panel VFD (or LCD) brightness between off, ¼, ½, ¾ and full brightness. This feature will have no effect on the video display. When the VFD is turned off, the red logo LEDs also turn off.

Global Phase

Repeatedly pressing the **PHASE** button simultaneously toggles all of the main audio output's phase between **0** and **180** degrees, and displays this on the monitor for approximately 1 second after being released. The **PHASE** parameter is only adjustable from the remote since its effect can be best detected from the listening position.

STATUS Display

This display, accessible from the hand held remote and viewed on both the video monitor display and VFD (or LCD), provides the user with a 'quick view' of the most pertinent current settings of the Casablanca II as well as information about a Dolby Digital source. The status page is available from any menu or sub menu simply by pressing the **STATUS** button.

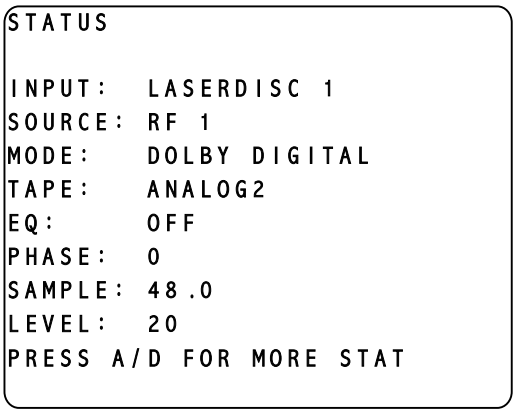


Figure 67 - Video Display of the STATUS Display

When the **STATUS** display is activated, its title is displayed in the upper left corner along with the following:

- The current **INPUT NAME**.
- The current **INPUT SOURCE JACK**.
- The **MODE**.
- The **TAPE OUT** source.
- The shelf **EQ** parameter value of **OFF**, **1**, **2**, **3**, or **4**.
- The **PHASE** parameter value of **0**° or **180**°
- The sample rate of the currently selected source.
- The **MASTER VOLUME** level.

Press the **A-D** button once to display the first of two pages of information (status) about the current Dolby Digital source. Press **A-D** once more to display the second page. Both of these pages are shown in figures 68A and B.

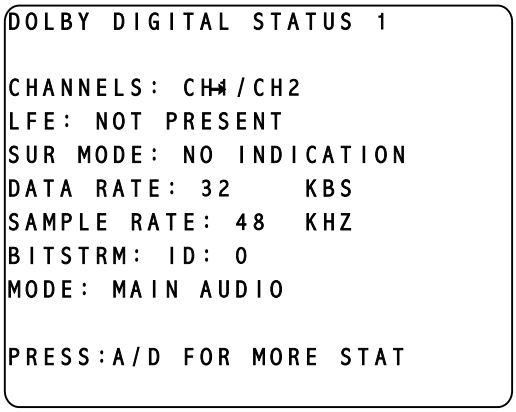


Figure 68A - Video Display of the First Dolby Digital Status Page

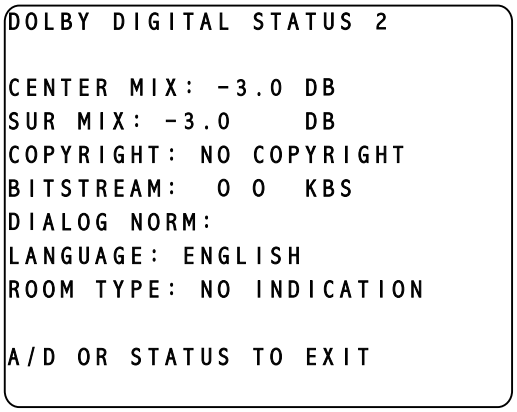


Figure 68B - Video Display of the Second Dolby Digital Status Page

Pressing the **STATUS** button once, will clear the status display. Pressing a function button will clear the status display and show the current function menu.

MODE Function

This function allows the user to audition **MODE**s for the currently selected input. Storing a default **MODE** is done in the **SETUP/INPUT** *page 1* sub menu.

Pressing the **MODE** button once displays the first "page" of the **MODE** menu. This page consists of 6 different signal 'processing' modes, one of which can be selected and temporarily applied to the current input.

An arrow will point to the currently active mode. As indicated by the on screen instructions at the bottom of the monitor, pressing the **A-D** button once will reveal a second page consisting of 6 additional modes.

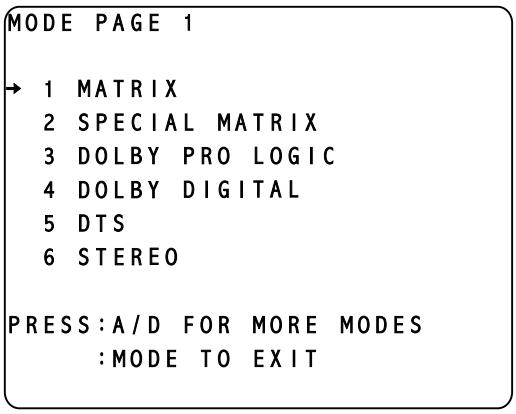


Figure 69A - Video Display of the MODE *Page 1* Menu

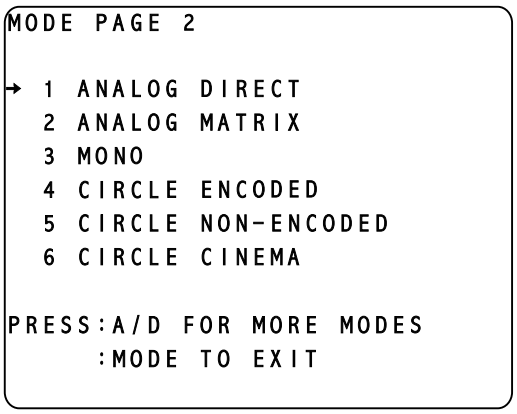


Figure 69B - Video Display of the MODE *Page 2* Menu

If necessary, press the **A-D** button to select the page with the desired **MODE**, then press button **1** - **6** or **SELECT UP/DOWN** to select the mode. An arrow will point to the mode selected. Additional information/instructions regarding this function and the modes shown in figures 69A and B are described on pages 43 - 44.

Please refer to page 62 for additional information regarding Dolby Digital options, and page 63 for additional information regarding DTS and Circle Surround options.

* * *

After selecting a temporary mode for the current input channel, press the **MODE** button once more to clear the video monitor of this menu. The **MASTER VOLUME** can be controlled using the **LEVEL UP/DOWN** buttons in these 2 menus.

TAPE OUT Function

This feature simultaneously controls the routing of signals to the analog and digital audio, and video tape out jacks.

Pressing the **TAPE OUT** button once displays the **TAPE OUT** menu, shown in figure 70A, on the video monitor display. The menu title "**TAPE OUT**" is displayed in the upper left. The **INPUT NAMES** shown in this figure are for example only and will most likely differ from the users set up.

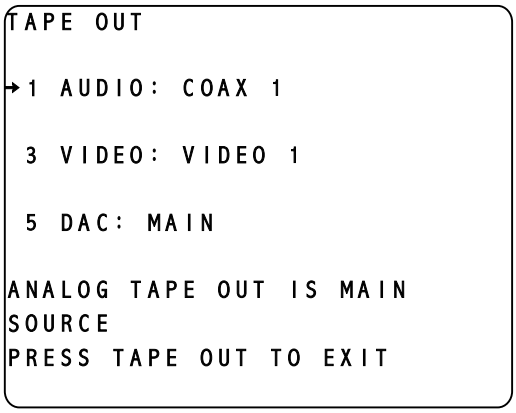


Figure 70A - Video Display of the TAPE OUT Menu with Optional Tape Out DAC installed and set to MAIN

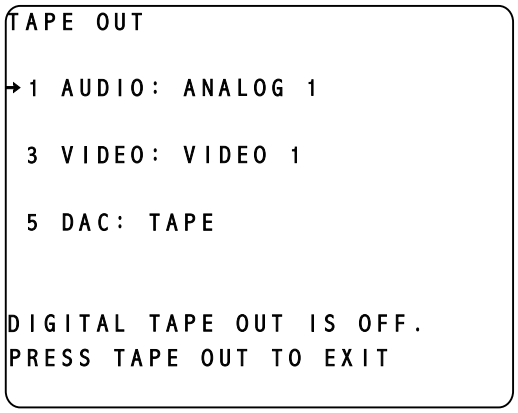


Figure 70B - Video Display of the TAPE OUT Menu with Optional Tape Out DAC installed and set to TAPE

To route a signal to the appropriate **TAPE OUT** jack(s), press the **TAPE OUT** button and press button # **1** to assign an audio source to the audio **TAPE OUT** jacks and button # **3** to assign a video input jack to the video **TAPE OUT** jacks.

Note: The composite/multi format and s-video circuits are completely independent as far as video signals go. This is to say that a composite video input signal can be output only through the composite video outputs, s-video input signals can be output only through the s-video outputs and multi format input video signals can only be output via the multi format video output.

This menu is completely dynamic. When the audio source is from an analog jack, the digital tape out jacks are disabled. This is indicated in both the OSD and LCD. When a digital input jack is selected as the source, it is routed to both the analog and digital tape out jacks. When the main DACs are selected (default), this is indicated in both the LCD and OSD. If the optional tape out DAC is not installed, the option to select it (via button # **5**) is not shown.

Note/Exception: An RF input signal will be routed to the analog audio tape out jacks only.

The control circuitry to the video tape out jacks is common to both composite and s-video. Example: when the user routes the composite video signal from a composite input # 1 jack to the composite video tape out jack, the s-video # 1 input simultaneously gets routed to the s-video tape out jack. If composite video # 2 input jack is routed to the composite video tape out jack, then s-video input # 2 jack gets routed to the s-video tape out jack, and so on. There is no multi format video tape out jack so these input signals cannot be recorded.

Button # **5** allows the user to select whether the signal at the analog **TAPE OUT** jack will be derived from the main output DACs or the optional tape out DAC (if installed), by displaying **MAIN** or **TAPE** on the display. If the optional tape out DAC has not been installed, there will be no option to edit above button # 5. This setting is only relevant if the analog tape out source is set to a digital input jack. All analog inputs are routed directly to the **TAPE OUT** jacks, without A/D to D/A conversion.

Now the routing is completed, press **TAPE OUT** again to clear the video display. The **MASTER VOLUME** can be controlled in this menu via the **LEVEL LEFT**/**RIGHT** buttons.

Please refer to page 46 for additional **TAPE OUT** features and options information.

CAUTION: It is not advisable to route a 5.1 source (DTS/AC-3) to the optional tape out DAC as this section does not contain Dolby Digital or DTS decoding capabilities. Full scale noise will be output!

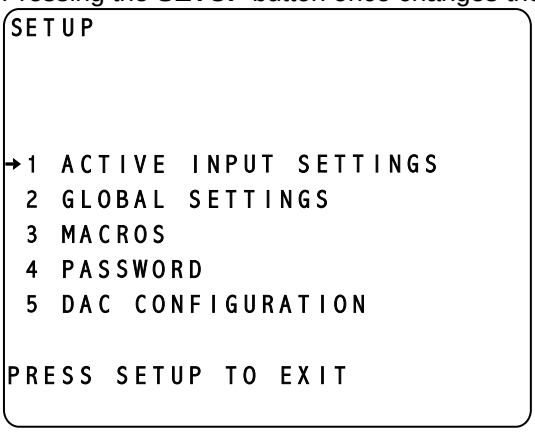
SETUP Function

This function provides access to a series of sub menus that will allow the configuration of the entire system.

Note: A complete step-by-step speaker configuration set up guide is located on page 15.

In this section, all features of the **SETUP** menu are discussed along with a diagram of most video monitor displays.

Pressing the **SETUP** button once changes the video display to the first page of the **SETUP** menu shown in figure 71.



The menu title is displayed in the upper left corner with the menu page number.

Pressing button # **1** leads to a series of submenus that allow the user to edit parameter values that are stored by input.

Button # **2** allows the user to edit parameter values that are global to the entire Casablanca II. In other words, these are parameters that are not stored by input select.

Button # **3** leads to all of the macro features.

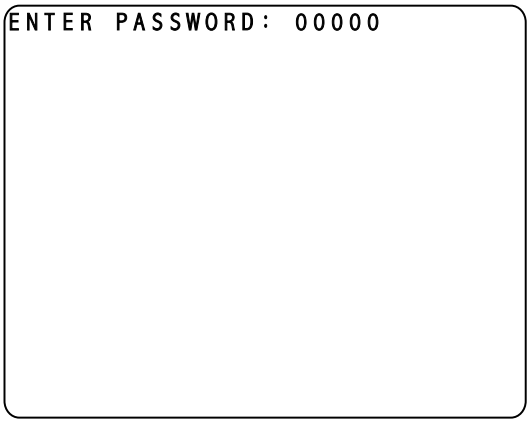
Button # **4** allows the user to set a password on the **SET-UP** button itself.

Button # 5 displays channel assignment information about the DACs.

Figure 71 - Video Display of the SETUP Menu

As indicated in figure 71, button # **1** is assigned to features that are stored by input and leads to a series of categorized sub menus via 3 pages. Most pages, menus and all features are discussed in minor detail in this section, and more in depth in their respective pages in the prior section of this manual, *FRONT PANEL OPERATIONS*.

Setup Button Password



It is possible to password protect the entire **SETUP** function, or have no password at all. Setting a password for the **SETUP** button is accessed by pressing button # **4**, where the user will be asked "**ARE YOU SURE YOU WANT TO ENTER A PASSWORD FOR THIS MENU?**" Answering "**YES**" by pressing the **A-D** button will display the message shown in figure 72.

Use buttons **1**-**6** to enter a password. After each digit is entered, the flashing digit moves one character to the right. If no password is to be used (factory default), press the **A-D** button five times, which enters all zeros. All zeros, or a zero anywhere in the password translates to no password.

Figure 72 - Video Display of the SETUP Password Page

CAUTION: It is imperative that your new password be written down. If it is forgotten, ALL access to the **SETUP** menu will be permanently denied. Please see the **WARNING** on page 14.

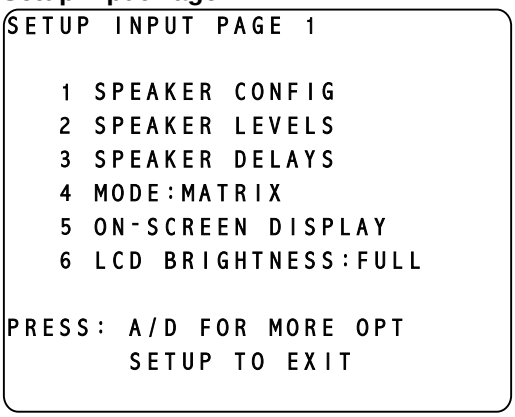
DAC Configuration

Pressing button # **5** in the **SETUP** menu allows the user to view the channels assigned to each DAC card. This is an information page only and not an editable menu. As an example, the first page will say "**LEFT FRONT CEN**" if a three channel balanced DAC card is in position # 1. Press the **A-D** button to view which channels are assigned to the second DAC card, and **A-D** once more for the third DAC card. Press **SET-UP** once to exit this menu.

The following section will discuss all menus and parameters under the **INPUT** button.

SETUP INPUT (Setting up each of the 12 Input Select Buttons)

Setup Input Page 1

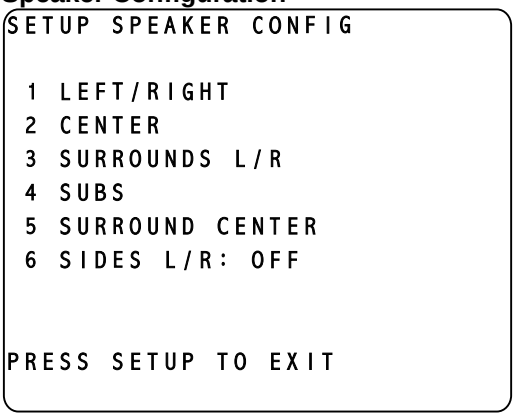


All parameters accessed within the **SETUP/INPUT** menu are programmable for each **INPUT SELECT** button. The first of 3 pages of the **SETUP/INPUT** sub menu is shown in figure 73

All of the speaker configuration parameters are accessed by pressing button # **1** (**SPEAKER CONFIG**). This leads to a series of sub menus that are described next. The first sub menu, **SPEAKER CONFIG** is shown below, in figure 74

Figure 73 - Video Display of the SETUP/INPUT *Page 1* Sub Menu

Speaker Configuration



This sub menu (**SPEAKER CONFIG**) shown in figure 74, allows the user to configure speakers to reflect the audio system configuration or the listener's preference, for the available speakers and their respective frequency responses.

Figure 74 - Video Display of the SETUP/INPUT *Page 1*/SPEAKER CONFIGURATION Sub Menu

Left/Right Speaker Configuration

Pressing button # **1** (**LEFT/RIGHT**) in the Speaker Configuration menu, allows the user to configure the front left/right speakers via the left/right sub menu shown in figure 75.

In this sub menu, button # **1** allows the user to set the configuration for the front left/right speakers. The options are: **FULL RANGE**, **CROSSOVER**, **FULL W/LOP** (low pass) and **OFF**.

Please refer to page 49 for additional details/instructions on configuring speakers and page 51 for a discussion of crossovers.

Button #'s **2**, **3** and **4** give access to sub menus which allow the configuration for the three types of crossovers in the Casablanca II: **PHASE PERFECT**, **LINKWITZ-RILEY**, and **BUTTERWORTH**.

Button # **5** allows the user to select the crossover type that will be applicable for the front left/right speakers only.

Figure 75 - Video Display of the SETUP/ INPUT *Page 1*/CONFIG/LEFT/RIGHT Configuration Sub Menu

If the front left/right speakers are to be crossed over, set the front left/right crossover frequencies and slopes for all 3 crossover types (buttons **2**, **3** and **4**) all to the same values. Please refer to page 51 for details.

After the front left/right speakers have been configured, press **SETUP** once to return to the **SETUP**/**INPUT**/**SPEAKER CONFIGURATION** sub menu, and press button # **2** (**CENTER**) to configure the center speaker. The **CENTER CONFIGURATION** sub menu is shown in figure 76.

Center Speaker Configuration

This submenu of settings is exactly the same as the one for the front left/right speakers, but applies only for the center speaker. All of the same guidelines and procedures apply except for the case where no center speaker is present, and where the low pass signal (if the center speaker is crossed over) can be routed to. If no center speaker is present in the system, the **CONFIG** parameter should be set to **PHANTOM**. With this setting, the signal for the center channel is routed to the front left/right speakers.

```
CENTER CONFIGURATION


→1 CONFIG: FULL RANGE
 2 PHASE PERFECT
 3 LINKWITZ-RILEY
 4 BUTTERWORTH
 5 TYPE: PHASE PERFECT
 6 PHANTOM LEVEL:  0

PRESS SETUP TO EXIT
```

Pressing button # **1** allows the configuration of the center speaker. If this speaker is not to be crossed over, nor any of its signal sent to the **SUB** output, then this should be set to **FULL RANGE**. There is an option where the full range signal can be routed to the center speaker and a low pass part of it routed to the sub as discussed above. If this is desired, the **CONFIG** setting should be **FULL W/LOP**. (A crossover type must be selected, and the appropriate crossover frequencies and slopes set up). The center speaker can be crossed over and instead of its low pass portion going to the SUB output, it can be routed to the front left/right speakers. In this case, the **CONFIG** parameter would be set to **XOVER L/R**. The center speaker can also be set to **OFF** or **CROSSOVER**.

Figure 76 - Video Display of the SETUP/INPUT *page 1*/SPEAKER CONFIG/ CENTER Sub Menu

If a fifth **SUB** DAC channel is installed and enabled in the Casablanca II, the low pass portion of the center signal will be routed to this output unless the **CONFIG** parameter is set to **XOVER L/R**. Otherwise the low pass portion of the center channel will be routed to the front **SUB** output(s), or **SUB** output if there is only one **SUB** enabled.

Press button # **2**, **3** and **4** to set up the crossover settings for the center speaker in the same manner as with the front left/right. The crossover sub menus are the same with the exception of the speaker name in the upper right corner of the LCD.

Pressing button # **5** allows the user to select the crossover type that will be applicable for the center speaker only.

Button # **6** allows the user to adjust the level of center channel information that is mixed with the front left/right channels, if the **CONFIG** parameter is set to **PHANTOM**.

Press **SETUP** twice to return to the speaker configuration sub menu, then press button # **3** (**SURROUNDS**) to set up the surround speakers. This submenu is shown in figure 77.

Surround Speaker Configuration

```
SURROUNDS CONFIGURATION


→1 CONFIG: FULL RANGE
 2 PHASE PERFECT
 3 LINKWITZ-RILEY
 4 BUTTERWORTH
 5 TYPE: PHASE PERFECT
 6 PHANTOM LEVEL:  0

PRESS SETUP TO EXIT
```

Set the speaker configuration and crossovers, if necessary, in the same manner as the center speaker. The surrounds do not have an option of routing the low pass signal to the sub woofer or front left/right, as the center speaker does.

When the surround configuration and crossover setup are complete, press **SETUP** to return to the **SPEAKER CONFIGURATION** sub menu, then press button # **4** to set up the sub woofer.

Figure 77 - Video Display of the SETUP/INPUT *page 1*/CONFIG/SURROUND CONFIGURATION Sub Menu

Sub Woofer Configuration

The **SUB CONFIGURATION** sub menu is shown in figure 78. If no sub is present, or is not desired, set the **NUM** of **SUBS** to **0**. If there is one or more subwoofers present, set the number of subs (**NUM SUBS)** to the number that will be used, and are available. As to the number of subs available, this first depends on the number of sub woofer DAC channels that are both installed and enabled in the Casablanca II. There may be 4 sub outputs on the rear panel however the user may only have 3 sub woofers. In this case, and example, if the user has 3 sub outputs and wishes to use 3 subwoofers, set this value to **3**. If the number of subs is to be set to 2, note that the user has the choice of setting these 2 subs to [front] **L-R** or **F-R** (front-rear).

```
SETUP SUB CONFIGURATION

→1 NUM SUBS: 1
 2 SUB1: CROSSOVER
 3 SUB2: CROSSOVER
 4 SUB3: CROSSOVER
 5 SUB4: CROSSOVER
 6 SUB5: CROSSOVER


PRESS SETUP TO EXIT
```

Next, set the **SUB** [#] to either **FULL RANGE** or **CROSSOVER**. For most sub woofers, it is recommended that this parameter be set to **CROSSOVER**. Please refer to page 50 for additional information regarding sub woofer configuration and redirection.

Figure 78 - Video Display of the SETUP/INPUT *Page 1*/CONFIG/SUB CONFIGURATION Sub Menu

Note that this menu is not dynamic. Therefore parameters 2 through 6 will always be displayed regardless of the number of sub outputs there are in the Casablanca II as well as how many are enabled.

Press **SET-UP** once to return to the **SPEAKER CONFIG** menu. If a Center Surround DAC is installed and enabled in the Casablanca II, press button # **5** in the **SPEAKER CONFIG** menu to set up this speaker. The **SURROUND CENTER** configuration menu is shown in figure 79.

Surround Center Configuration

Set the center surround speaker configuration and crossovers, if necessary in the same manner as the left/right surround speakers. The menu options are exactly the same except for the fact that if the **CONFIG** parameter is set to **PHANTOM**, its information will be routed to the surround left/right speakers.

```
SUR CENTER CONFIGURATION


→1 CONFIG: FULL RANGE
 2 PHASE PERFECT
 3 LINKWITZ-RILEY
 4 BUTTERWORTH
 5 TYPE: PHASE PERFECT
 6 PHANTOM LEVEL:  0

PRESS SETUP TO EXIT
```

Figure 79 - Video Display of the SETUP/INPUT *page 1*/CONFIG/SURROUND CENTER Sub Menu

Side Speaker Configuration

The side speaker information is an exact replica of the left/right surround channels. Therefore there are no applicable configuration parameters for the side channels.

Once all of the speaker sets have been configured, press **SET-UP** twice to return to the **SETUP/INPUT *page 1*** sub menu. When a system is being set up for the first time, the next step is to set up the speaker levels. To enter the **LEVELS** menu(s), press button # **2**. If returning to the main **INPUT SELECT** menu, press **SET-UP** two more times.

Speaker Levels

This sub menu allows the user to set the relative level of each speaker in order to reflect the audio system speaker configuration, room characteristics, or the listener's preference. The relative range is -15dB to +15dB. The **BALANCE** function (discussed later) allows the user to temporarily adjust the Left/Right and Front/Rear balances, and the Center & Sub channel levels to compensate for differences in program material or source.

The level sub menu(s) are completely interactive with the DAC channels that are installed into the Casablanca II. An example of this is: If there are 6 DAC channels installed, the names of these channels will be displayed on one page of the levels sub menu. If more than 6 DAC channels are installed, first a menu will appear asking the user which set of speakers are to have their levels adjusted: **1-6** or **7-12**. In both of these sub menus, the installed DAC channel, or speaker names will be displayed.

From an Input Select menu, press **SETUP**, **ACTIVE INPUT SETTINGS** then **SPEAKER LEVELS** to access the speaker levels setup sub menu shown in figure 80. Again, if more than 6 DAC channels are installed, the user must press either button # **1** (**1-6**) or # **2** (**7-12**) first.

```
LEVELS   SOURCE:SOURCE

→1 FRONT LEFT:        0
 2 FRONT RIGHT:       0
 3 FRONT CENTER:      0
 4 SUR LEFT:          0
 5 SUR RIGHT:         0
 6 SUB LEFT:          0


PRESS SETUP TO EXIT
```

Figure 80 - Video Display of the SETUP/ INPUT/LEVELS 1-6 Sub Menu

```
LEVELS   SOURCE:SOURCE

→1 SUB RIGHT:         0
 2 SUB SUR LEFT:      0
 3 SUB SUR RT:        0
 4 SIDE LEFT:         0
 5 SIDE RIGHT:        0
 6 SUR CENTER:        0


PRESS SETUP TO EXIT
```

If there are more than 6 DAC channels installed, pressing button # **2** on the Levels channel choice submenu will produce a second levels sub menu as shown in figure 81. The speaker names in this sub menu may not match the user's Casablanca II if the same DAC channels are not installed and configured.

To aid in establishing a desired system speaker level balance, the Casablanca II provides the user with the option of either routing the currently selected audio signal to the outputs, or routing an internally generated noise signal to either the currently selected speaker or to all speakers simultaneously. Please refer to page 57 for additional information regarding the noise generator

Figure 81 - Video Display of the SETUP/INPUT/LEVELS 7-12 Sub Menu

Speaker Delays

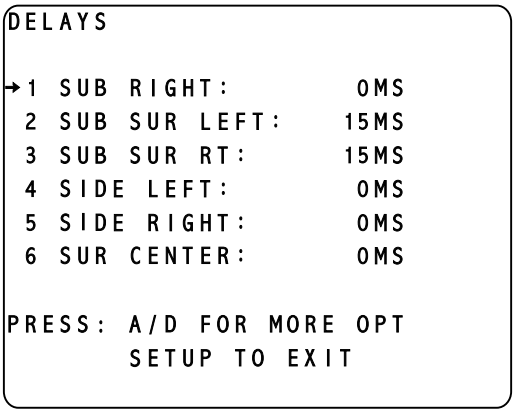
This sub menu allows the user to set a time delay for each speaker to reflect the audio system configuration, room characteristics or the listener's preference. The allowable range for the front left/right, center and sub speakers is **0** to **10** milliseconds (mS) and **15** to **31** mS for the surround speakers. Since discrete sources are often recorded with surround delays, it is recommended that the delay setting for 5.1 sources be 15 mS less than non 5.1 sources.

```
DELAYS

→1 FRONT LEFT:        0MS
 2 FRONT RIGHT:       0MS
 3 FRONT CENTER:      0MS
 4 SUR LEFT:          0MS
 5 SUR RIGHT:         0MS
 6 SUB LEFT:          0MS

PRESS: A/D FOR MORE OPT
       SETUP TO EXIT
```

Like the Levels sub menu(s) the Delays sub menu(s) are interactive. If there are up to six DAC channels installed, one Delays sub menu will be shown, and two if there are more than 6 channels installed and enabled. Unlike the Levels menus, if there are two Delays sub menus, navigating between them is accomplished using the **A-D** button.

Figure 82 - Video Display of the SETUP/INPUT/DELAYS 1 Sub Menu

Press **SETUP**, **INPUT** then **SPEAKER DELAYS** to access the delays setup sub menu shown in figure 82.



The current delay settings will be displayed on the video monitor. All delay settings apply to all **MODE**s, however they can be further manipulated when the current **MODE** is either Dolby Digital, DTS or Circle Surround, via additional Setup sub menus for these **MODE**s. Select each speaker one at a time and adjust the individual delay according to the detailed information and graph on page 58.

The speakers in these menus may vary from the user's, depending on which DAC channels are installed as well as which ones are set to be active. (If a speaker set is turned **OFF** via the **SPEAKER CONFIG** sub menu, it will not be displayed in these sub menus).

Figure 83 - Video Display of the SETUP/INPUT/DELAYS 2 Sub Menu

When all speaker delays have been set, press **SET-UP** once to return to the **SETUP/INPUT** page 1 sub menu, or **SET-UP** three times to return to the main **INPUT SELECT** menu.

Default Mode

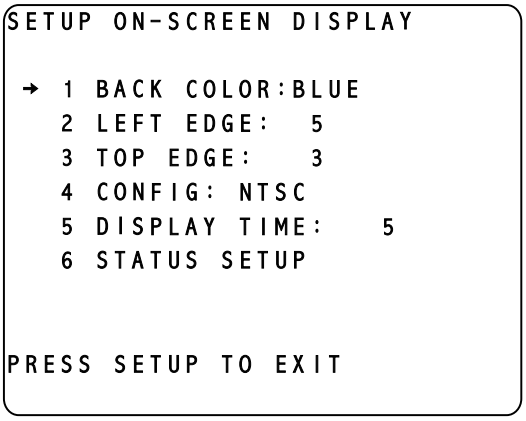
Each **INPUT SELECT** button can have a different default **MODE** assigned to it. To assign a default **MODE** for a given **INPUT SELECT** button, first press the applicable **INPUT SELECT** button, **SETUP**, **INPUT** then button # **4** (**MODE**). Edit this parameter to select the desired default **MODE**, then press **SETUP** twice to exit. Repeat this procedure for each **INPUT SELECT** button.

Note: Pressing the front panel **MODE** function button allows the user to audition different modes for a given source, when applicable, however changing modes via the **MODE** button does not store a mode selection.

Onscreen Display (OSD) Setup

Pressing **SETUP**, **ACTIVE INPUT SETTINGS**, then **ON-SCREEN DISPLAY** button # **5** activates the On-Screen (OSD) set up menu, shown in figure 84.

In this display, button # **1** (**BACK COLOR**) allows the user to select up to 7 different OSD background colors. The entire OSD can be offset from the left and top edges of the screen (button #'s **2** and **3** respectively) to accommodate differences in monitors.
The configuration (**CONFIG**) feature (button # **4**) can switch the Casablanca II's OSD to accommodate either an **NTSC** or **PAL** monitor.



The configuration (**CONFIG**) feature (button # **4**) can switch the Casablanca II's OSD to accommodate either an **NTSC** or **PAL** monitor.

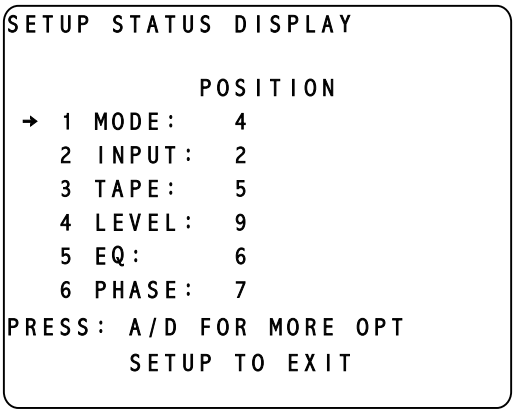
When a function button is pressed, its OSD will remain on the screen until the user is no longer in any function menu. The **DISPLAY TIME** (in seconds) setting (button # **5**) allows the user to set the amount of time (delay) that the video monitor displays the **INPUT SELECT** menu, when changing inputs.

Button # **6** allows the user to decide which parameters will show on the **STATUS** page as well as their placement on the screen. This feature is discussed next.

Figure 84 - Video Display of the SETUP/INPUT *Page 3*/ON-SCREEN DISPLAY Sub Menu

Status Setup

STATUS SETUP (button # **6**) displays a sub menu, which allows the user to change the position of the Status screen text on the video monitor only. The first Status Setup sub menu is shown in figure 85.



The items in the two Status sub menus show the only ones displayed in the OSD when the **STATUS** button on the hand held remote is pressed. Each item has a value range between 0 and 10. Setting any value to **0** will disable that item from being displayed in the OSD. **1** is the highest position vertically and **10** is the lowest.

Press the **A-D** button to go to the second Status Setup sub menu, and set the values for **SOURCE** and **SAMPLE RATE**.

Figure 85 - Video Display of the SETUP/INPUT/OSD/STATUS page 1 Setup Sub Menu

Note: It is possible to have conflicting results if more than one item is displayed on the same line.

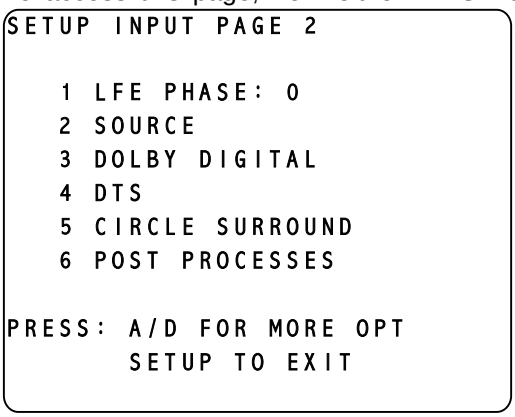
Press the **SETUP** button twice to return to the **SETUP/INPUT *page 1*** sub menu, or 4 times to return to the main **INPUT SELECT** menu.

LCD Brightness

Each **INPUT SELECT** button can have a different LCD brightness assigned to it. From the Input Select menu, press **SETUP**, **ACTIVE INPUT SETTINGS**, then **LCD BRIGHTNESS** (button # **6**). This allows the user to change the default brightness value. The range is from OFF to FULL (brightest), in four steps. Any changes made to this parameter are reflected the next time that **INPUT SELECT** button is pressed. If this value is set to **OFF**, pressing any button except **DISPLAY** will automatically brighten the LCD to its maximum level. If the next button pressed is not another **INPUT SELECT** or function button then the LCD will revert back to its default brightness in *X* seconds. *X* represents the **TIME** parameter value in the **SETUP/ACTIVE INPUT SETTINGS *page 1*/OSD** sub menu. If the LCD is on but not set to **FULL**, pressing any button other than another **INPUT SELECT** button will allow the LCD to remain at its default brightness, with the exception of pressing the **DISPLAY** button which will always override the default LCD brightness setting.

Setup Input Page 2

To access this page, from either **INPUT SELECT** page or any other function menu, press **SETUP** then **ACTIVE INPUT SETTINGS**, then the **A-D** button once. Page 2 of the **SETUP/ACTIVE INPUT SETTINGS** menu is shown in figure 86.



LFE Phase

The **LFE PHASE** can be changed from **+** (in phase) to **–** (180 degrees out of phase). This can be edited via button # **1**.

Figure 86 - Video Display of the SETUP/INPUT *Page 2* Sub Menu

Mapping a Source (Input Jack to INPUT SELECT button)

Pressing button # **2** accesses 2 sub menus that allow the user to assign which input jacks will be mapped to any given **INPUT SELECT** button, both audio and video. There is one page for audio jack mapping and one for the combined composite/multi format and S-video. Up to six audio and six video input jacks can be mapped to any one

INPUT SELECT button, and the order that they are mapped determines the search order when pressing the **A-D** button in either **INPUT SELECT** menu.

Please refer to page 61 for additional information and examples of mapping input jacks to **INPUT SELECT** buttons.

Setup Dolby Digital

Button # **3** provides a two page sub menu which allows the user to set up preferences pertaining to Dolby Digital (AC-3), by **INPUT SELECT** button. The first page of this sub menu is shown in figure 87.

```
SETUP DOLBY DIGITAL 1

 1 2CH ENC: PRO
 2 2CH NEN: MATX
 3 COMPRESSION: OFF
 4 HI COMPRESSION:  1
 5 LO COMPRESSION:  4
 6 DIALOG NORM: ANALOG

PRESS: A/D FOR MORE OPT
       SETUP TO EXIT
```

Figure 87 - Video Display of the SETUP/INPUT *Page 2*/DOLBY DIGITAL *Page 1* Sub Menu

2 Channel Mode

Some Dolby Digital sources contain only two of the possible five main channels. This is usually noted on the material's cover, in the form of " Dolby Digital 2.0" or “Dolby Surround” as opposed to "Dolby Digital 5.1".

Embedded in every two-channel Dolby Digital data stream is an indication of whether or not the material is Dolby Surround encoded. There are three possibilities for this indication: Dolby Surround encoded; Not Dolby Surround Encoded; or No Indication.

Regardless of the indication value, the user can instruct the Casablanca II to further process this decoded signal in virtually any **MODE**. For Dolby Surround encoded signals, use button # **1** (**2CHEN** – or 2 channel encoded) to indicate which **MODE** should be used to further process the incoming signal. Use button # **2** (**2CHNEN** – or 2 channel non-encoded) to indicate which **MODE** is desired for further processing, if the signal is non-encoded. When a mode is applied to a two channel Dolby Digital signal, first the signal must be Dolby Digital decoded, then this decoded signal is manipulated by the selected mode that is selected in the **2CHEN** or **2CHNEN** parameters. When this is the case and the additional selected mode is **MATRIX**, the **MODE** displayed in the LCD when in the **INPUT SELECT MENU** will say “**DOLBY DIGITAL + MATX**”

If the indication is that the signal is not Dolby Surround encoded, or there is no indication, and the **2CHNEN MODE** is set to Dolby Digital, no additional surround processing will occur, thus producing a two-channel (stereo) output.

Compression

Dolby Digital contains provisions for reducing the dynamic range of a Dolby Digital source. This means reducing the loudness of the loud passages and increasing the loudness of the quiet passages. Possible reasons for reducing the dynamic range of a source include late night listening wherein loud moments may disturb others, and making tapes for automotive / portable use wherein quiet passages may not be heard.

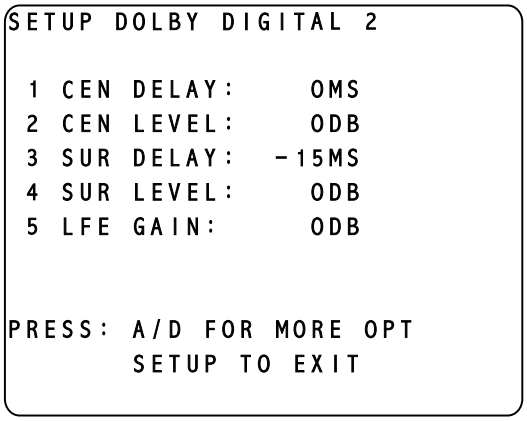
Casablanca II contains three parameters to control Dolby Digital compression. Button # **3** (**COMPRESSION**) simply turns the compression **ON** or **OFF**. Button # **4** (**HI COMPRESSION**) controls the amount of volume that loud passages will be reduced. Button # **5** (**LOW COMPRESSION**,) controls the amount of loudness that quiet passages will be increased. A larger number indicates a greater amount of increase or decrease.

Note: Some Dolby Digital sources do not allow for compression, in which case altering these settings will not result in an audible change.

Dialog Normalization

In the first Dolby Digital setup page, press button # **6** to set the dialog normalization value. Dolby Digital contains the useful provision for making all Dolby Digital sources have the same perceived loudness even though they may have been recorded or mixed at very different levels. This is done by embedding in the datastream a value that the program material will need to be adjusted by to conform to an average dialog level established by Dolby Laboratories. It should be noted that all channels are adjusted, not just the center channel. Casablanca II contains two options for this setting: **ANLG** (analog) or **DIGI** (digital). Please refer to page 62 for additional information pertaining to Dialog Normalization.

From the **SETUP/ACTIVE INPUT SETTINGS *Page 2*/DOLBY DIGITAL** sub menu, press the **A-D** button once to access page 2 of the Dolby Digital set up submenu, which is shown in figure 88.



This submenu allows the user to adjust the center and individual surround speaker delays and levels as well as control the LFE gain when the current mode is Dolby Digital.

The center and surround levels are relative to the level values set in the **SETUP/INPUT/LEVELS** sub menu. As an example, if the center speaker level in the **SETUP/INPUT/LEVELS** sub menu is set to **+5**, and in this sub menu it is set to **+3**, then the total center level when the **MODE** for the currently selected input is Dolby Digital, will be +8.

The Dolby Digital center and surround delays interact with the **SETUP/INPUT/DELAYS** submenu in the same fashion that the two levels menus do, explained above. Again, this applies ONLY when the current mode is Dolby Digital.

Figure 88 - Video Display of the SETUP/INPUT *Page 2*/DOLBY DIGITAL *Page 2* Sub Menu

Button # **5** controls the **LFE** gain setting for Dolby Digital sources. Dolby Digital sources usually contain an LFE (low frequency effects) channel. This channel commonly contains sound effects such as explosions but may also contain soundtrack information. Casablanca II offers the user an **LFE** range of between **0** and **-30** for this setting, as well as **OFF**. Please refer to page 63 for more detailed information about using this parameter.

Press the **SETUP** button three times returns to the main **INPUT SELECT** page.

Setup DTS

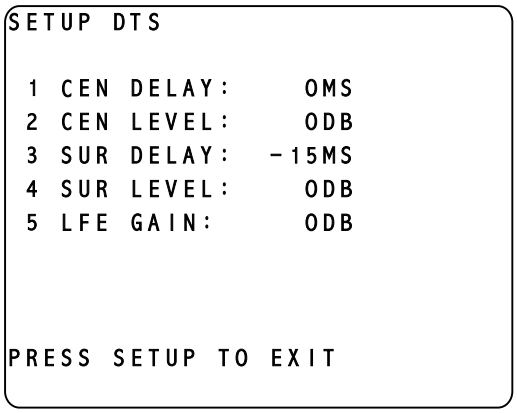


Figure 89 - Video Display of the SETUP/INPUT *Page 2*/DTS Sub Menu

The center and surround delays function exactly the same as the Dolby Digital ones [previous page], as does the **LFE** gain setting (**A-D** button) for DTS sources only. (DTS LFE range is slightly different).

Press **SETUP** once to return to the **SETUP/ACTIVE INPUT SETTINGS *page 2*** menu, or three times to return to the main **INPUT SELECT** page.

Setup Circle Surround

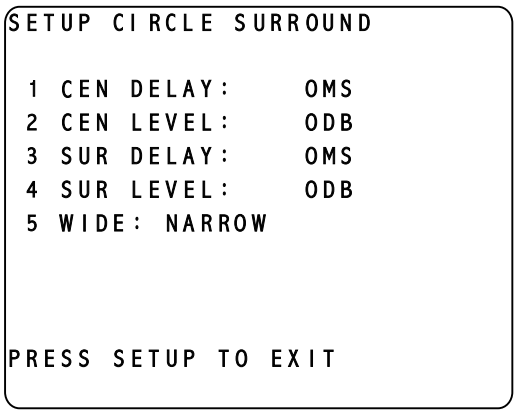


Figure 90 - Video Display of the SETUP/INPUT *Page 2*/CIRCLE SURROUND Sub Menu

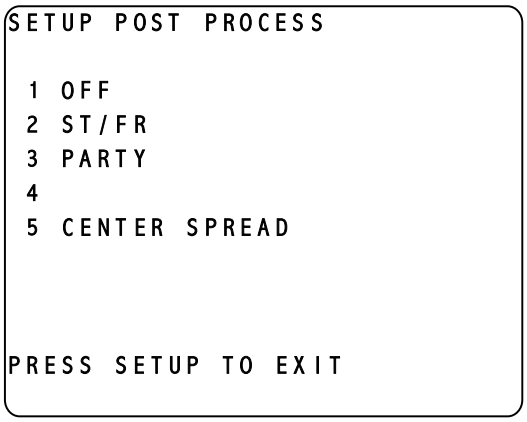
Press **SETUP**, **ACTIVE INPUT SETTINGS**, **A-D** then **CIRCLE SURROUND** to enter the Circle Surround setup menu, as shown in figure 90.

The center and surround delays function exactly the same as the Dolby Digital ones [previous page], when the **MODE** is set to Circle Surround. With Circle Surround, the user also has the option to make the front left/right imaging narrow or wide. This is accessed via button # **5**.

Press **SETUP** once to return to the **SETUP**/**ACTIVE INPUT SETTINGS** *page 2* menu, or three times to return to the main **INPUT SELECT** page.

Post Process

This sub menu, shown in figure 91, allows the user to select an additional process to add to the incoming signal once it has already been processed/decoded via the selected **MODE**. Only one post process can be selected per input.



The available post processing consists of:

OFF. Which applies no further processing;

Stereo Front/Rear (**ST/FR**), which takes signals from the front and surround lefts, adds them together and outputs this sum equally to the front left and surround left speakers. The same applies for the right front and surround speakers. The process varies slightly, depending on whether the **MODE** is a matrix one, stereo or mono.

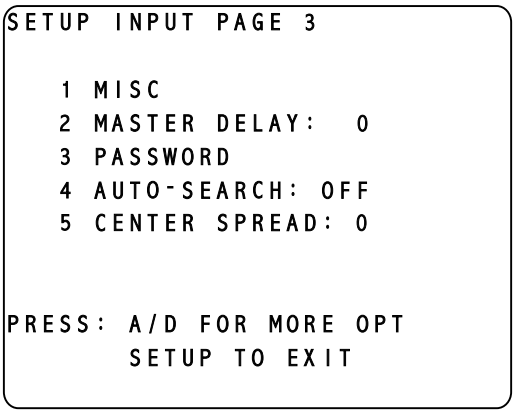
Figure 91 - Video Display of the SETUP/INPUT *Page 2*/POST PROCESS Sub Menu

Party, which takes parts of each original channel's signal, blends them with all others and outputs this mix to all speakers. In this way, each speaker will have a blend of all speakers.

Center Spread is a process in which the center speaker level is reduced and added to the front left/right speakers. It is enabled in this Post Process sub menu, and altered in the **SETUP**/**ACTIVE INPUT SETTINGS**/***page 3*** sub menu, under the **CENTER SPREAD** parameter.

Press **SETUP** once to return to the **SETUP**/**ACTIVE INPUT SETTINGS** *page 2* menu, or three times to return to the main **INPUT SELECT** page.

Setup Input Page 3



This is the third page of the **SETUP**/**ACTIVE INPUT SETTINGS** menu. It allows editing of the active input name via the **MISC** menu, setting a master audio delay, setting a password for each **INPUT SELECT** button, enabling/disabling Auto-Search and setting the Center Spread parameter. All of these features are discussed below.

Figure 92 - Video Display of the SETUP/INPUT *Page 3* Sub Menu

Setup Miscellaneous

Press button # **1** to enter the **MISC** sub menu.

Naming the Current Input Select button

Select the input to rename. Then press **SETUP**, **ACTIVE INPUT SETTINGS**, **A-D** twice, **MISC** and button # **1** to name the currently selected input. The letters **LCD** or **OSD** will be displayed in the lower portion of the display. LCD indicates that the name in the LCD is to be edited. LCD names are limited to 4 characters. Press the **LEVEL UP**/**DOWN** button to change characters and the **LEVEL LEFT**/**RIGHT** to change character positions. Pressing the **DISPLAY** button once will clear the current **INPUT SELECT** name. Press the **A-D** button to edit the OSD name. **OSD** will appear in the lower portion of the display. This name can be up to 15 characters and the current character to be edited will blink on screen.

Press **SETUP** once to return to the **SETUP/INP *page 3*** submenu.

Master Delay

When video processing occurs, there can sometimes be a delay in the output of the video signal. Each process may be only 1 to 2 frames out of sync, however, each can add up to a significant enough amount to where the audio and video are not in sync. If this happens, the Casablanca II allows the user to set an overall, or master delay on all outputs simultaneously in order to re-sync the audio with the video signal. In the **SETUP**/**ACTIVE INPUT SETTINGS *page 3*** submenu, press button # **2** and use the **LEVEL UP**/**DOWN** buttons to adjust the audio delay time until the video appears to be in sync with the audio. The range is **0** to **110** mS at 48KHz.

When complete, press **SETUP** twice to return to the **INPUT SELECT** menu.

Password for Each INPUT SELECT Button

Press button # **3** to set a password for the currently selected input. Entering a password here will prompt the user to type in the password each time he/she wishes to change configuration settings for this **INPUT SELECT**.

When the **PW** button is pressed, an "**ARE YOU SURE YOU WANT TO ENTER A PASSWORD FOR THIS MENU?**" message appears on the screen. Pressing **NO** (button # **6**) reverts back to the **SETUP/INP *Page 3*** submenu. Pressing **YES** (**A-D** button) will display a screen that allows a password to be entered, with the first character blinking. The user can use buttons **1**-**6** to enter a password, or elect to have no password for this **INPUT SELECT** button by pressing the **A-D** button 5 times, which will display all zeros, indicating no password.

Note: If a zero appears in any position of the password, it will be seen as all zeros, or no password. **PLEASE REMEMBER and/or WRITE DOWN YOUR PASSWORD!** If it is forgotten, all access to password protected areas will be denied! There is no other over ride to this feature. Please refer to page 14 for additional information on using passwords.

Auto-Search Master Control

Pressing button # **4** will enable/disable the Auto-Search feature for the currently selected input only. Please refer to page 40 for details of the Auto-Search feature.

Center Spread

This parameter adjusts the mix between the center speaker and the front left/right speakers. This effect is a post process to all other digital signal processing and is therefore activated in the **POST PROCESS** sub menu. The higher

the value, set in **SETUP/ACTIVE INPUT SETTINGS/*page 3***, the more center level is reduced in the center speaker and added into the front left/right speakers. If the value were at its highest, all of the center speaker information would be routed to the front left/right speakers. In this case, it would be the same as phantoming the center speaker.

Setup Global

```
SETUP GLOBAL

  1 ANALOG LEVELS
  2 JACK NAMES
  3 REMOTE POWER
→ 4 CLEAR BALANCE:ON
  5 RS232
  6 MUTE/VOLUME SETUP

PRESS: A/D FOR MORE OPT
       SETUP TO EXIT
```

This function provides access to a series of sub menus that will allow the configuration of the entire system globally, or not by input select button.

Press **SETUP**, then **GLOBAL** (button # **2**). The first page of the Global sub menu is displayed, as shown in figure 93.

Figure 93 - Video Display of the SETUP/GLOBAL *Page 1* Sub Menu

Analog Input Levels

Press button # **1** to bring up a submenu that allows adjustment of the analog input levels. This sub menu is shown in figure 94.

```
SETUP ANALOG INPUT LEVEL

  1 ANALOG 1      :0
  2 ANALOG 2      :0
  3 ANALOG 3      :0
→ 4 ANALOG 4      :0
  5 ANALOG 5      :0
  6 ANALOG 6      :0


PRESS SETUP TO EXIT
```

From the first Global menu, pressing button # **1** accesses the **ANALOG INPUT LEVELS** submenu, shown in figure 94.

This function allows the user to adjust the relative **ANALOG** input **LEVEL** for each analog input. This function does not affect source levels when a digital audio input is selected. The allowable relative range is -22 dB to +19 dB, in 1dB increments.

Select the analog input to be adjusted by pressing buttons **1**-**6** once. Adjust the relative input level using the **LEVEL UP**/**DOWN** buttons.

Please refer to page 66 for additional information regarding setting the analog input levels.

Figure 94 - Video Display of the SETUP/ANALOG INPUT LEVELS Sub Menu

Jack Names

In the Global *page 1* menu, pressing button # **2** accesses a series of sub menus, which allow the user to name all of the Casablanca II's input jacks, both audio and video. The **JACK NAMES** sub menu is shown in figure 95.

```
SETUP INPUT JACK NAMES


 1 ANALOG
 2 DIGITAL 1 -COAXIAL
 3 DIGITAL 2 -MISC
→4 DIGITAL 3 -MISC
 5 VIDEO 1
 6 VIDEO 2

PRESS SETUP TO EXIT
```

Pressing button # **1** accesses a sub menu that allows the analog audio input jacks to be named. Button # **2** does the same for the coaxial digital audio input jacks, whereas button # **3 and 4** allow the user to name all non-coaxial digital audio input jacks. Buttons # **5** and # **6** lead to sub menus that allow the naming of the video jacks.

On some versions of video cards, a capitol "O" is not present in the character set. In this case, use the zero.

Please refer to page 67 for additional details and an example of editing an input jack name.

Figure 95 - Video Display of the SETUP/ INPUT/JACK NAMES Sub Menu

Remote Power Jacks

The **REMOTE POWER** jack and three **MAIN POWER** jacks on the rear panel can be programmed to output 12V, either straight **DC** or as a **PULSE**. This feature is used to automatically turn on other system components such as power amplifiers, etc, when the Casablanca is taken out of Standby. From the first **SETUP/GLOBAL** page, press button # **3** to access the **REMOTE POWER** sub menu shown in figure 96.

```
SETUP REMOTE POWER

→1 REMOTE TYPE: DC
 2 MAIN 1 TYPE: PULSE
 3 MAIN 2 TYPE: PULSE
 4 MAIN 3 TYPE: PULSE
 5 MAIN TIME:    0
 6 SEQUENCE OFF: OFF
AD PULSE DURATI:ON 100

PRESS SETUP TO EXIT
```

Use button # **1** to indicate whether the output of the remote power jack should be 12VDC (**DC**) or a 12V pulse (**PULSE**). The specification sheet for the device connected to the remote power jack should contain information as to which type of signal it requires, and if it is a pulse, the minimum pulse duration.

Buttons **2**, **3** and **4** have exactly the same functionality as button **1**, except that they apply for the three **MAIN POWER** jacks on the rear panel.

Figure 96 - Video Display of the SETUP/GLOBAL/REMOTE POWER Sub Menu

The **MAIN POWER 1** jack is activated immediately upon exiting the standby mode (pressing the front panel or the hand held remote **POWER** button), the **MAIN POWER 2** jack is activated *X* seconds after exiting standby and the **MAIN POWER 3** jack is activated *X* times 2 seconds after exiting standby. *X* represents the time, in seconds, that is set by pressing button # **5** – **MTIM**, or Main [Delay] Time. This is useful for sequencing the turn on of high power components such as amplifiers. Further to this, when the Casablanca II is put into standby, it can be set that all of the **MAIN POWER** jacks turn off simultaneously or sequenced off in the opposite order as they were activated. This is accomplished by setting **SEQ** (button # **6**) to **ON** or **OFF**. By setting the **SEQ** parameter to **ON**, the user is activating the power down sequencer.

If the type of output for any of the rear panel power jacks is set to **PULSE**, the duration (in milliseconds) of this pulse can be set by the user, using the **A-D** button.

Please refer to page 67 for more detailed descriptions/instructions of the remote power jacks.

Press **SETUP** once to return to the first page of the **SETUP/GLOBAL** menu, or three times to return to the main **INPUT SELECT** page.

Clear Balance (Temporary Settings Control)

Any changes in the **BALANCE** menus are, by default, temporary. That is to say that when an **INPUT SELECT** button is pressed or the Casablanca II is powered down/put into standby, any changes will be reset to zero. This feature has an override, which is set by pressing button # **4** in the first **SETUP/GLOBAL** page (figure 93 on page 94) and set to **OFF**. When this parameter is set to **OFF**, changing inputs or powering down/going into standby will maintain all **BALANCE** menu settings.

RS232

In the first **SETUP/GLOBAL** page, press button # **5** to access the **RS232** sub menu shown in figure 97.

```
SETUP RS232

→1 BAUD RATE: 19200
 2 ECHO STATUS: OFF
 3 PASSWORD




PRESS SETUP TO EXIT
```

Press button # **1** (**BAUD**) and use the **LEVEL UP/DOWN** buttons to select the Baud rate that matches that of the RS232 controller.

The Casablanca II can be set to automatically send changes to the RS232 port. This can be done by selecting a "Status Level", which means if any Casablanca II parameter changes, that level's bytes will be sent to the port. This is useful for monitoring master level, input and the like when the user has access to both the Casablanca II and the touch-panel controller, to keep them synchronized.

The RS232 protocol is available by request to Theta Digital, the dealer or from Theta's website at www.thetadigital.com.

Figure 97 - Video Display of the SETUP/GLOBAL/RS232 Sub Menu

Button # **2** (**ECHOS**) [Echo Status] allows the user to enable or disable the output of data to the RS232 port and, if enabled, determine which level, or pre-determined group of bytes it outputs. Setting this value to **OFF** disables any parameter change information from being output to the RS232 port. If RS232 is installed in a Casablanca II, an addendum will be included with this manual which describes all pertinent RS232 information, including values contained within each Status Level.

If the RS232 option is installed but not being used, ensure that the Echo Status (**ECHOS**) parameter is set to **OFF**. Other settings can slow the operation of the Casablanca II.

RS232 Menu Password

If desired, access to the RS232 menus can be password protected. To set a password, press button # **3** and enter a new password using the **1**-**6** buttons. As with all other passwords in the Casablanca II, using a **0** (**A-D** button) will void the password, making it as if there were none. Please refer to page 14 for additional information regarding setting passwords.

Note: The System Utilities feature is seen in this sub menu only on the LCD. This is because when using this feature, the OSD is inactive.

When all settings are complete in this sub menu, press **SETUP** three times to return to the **INPUT SELECT** menu.

Mute/Volume

This sub menu provides the user with a method of setting parameters with regards to volume and mute control. Press **SETUP**, **GLOBAL**, then button # **6** (**MUTE/VOLUME**). This sub menu is shown in figure 98.

Initial Power-On Master Volume

```
SETUP MUTE/VOLUME

→1 INITIAL LEVEL: 20
 2 INI LEVEL CFG:INIT
 3 FAST VOLUME:   0
 4 SLOW VOLUME: 255
 5 MAX LEVEL:  0
 6 MUTE LEVEL:  0
AD UNMUTE TRIG: MUTE

PRESS SETUP TO EXIT
```

Button # **1** (**INITIAL LEVEL**) allows the user to store an initial master volume setting that the Casablanca II will default to when it comes out of standby.

Button # **2** allows for an override of button # **1**. If this parameter is set to **INIT**, the Casablanca II's volume, when coming out of standby, will be that which is set using button # **1**. If this parameter is set to **LAST**, the Casablanca II's master volume when coming out of standby will be the same as what it was when it was last put into standby.

Figure 98 - Video Display of the SETUP/GLOBAL/MUTE-VOLUME Sub Menu

FVOL and SVOL

When certain parameters are edited or the master volume changed, holding the **LEVEL UP/DOWN** button for more than 5 steps will, by default, speed up the rate in which the value changes. This is referred to as *Fast Mode*. It is possible to delay the speed of the fast mode in order to slow it down to the users preference. In **FVOL** (Fast Volume) a delay of **0** will allow the Fast Mode to be its quickest (no delay), and a delay of **255** allows it to be its slowest.

The rate that the **LEVEL UP/DOWN** buttons respond during the first 5 steps is referred to as *Slow Mode*. **SVOL** allows the user to slow down the increment changes during these first 5 steps (a higher delay time) or increase their speed with a lower delay time setting. In **SVOL** (Slow Volume) a delay of **0** will allow the Slow Mode to be its quickest, and a delay of **255** allows it to be its slowest.

Maximum Overall Level

Button # **5** (**MAX**) allows the user to set a maximum master level of the Casablanca II. This is especially useful in a household where young relentless children and smart pets are accessible to the system.

Changing the Default MUTE Level

When the front panel or hand held remote **MUTE** button is pressed, the user can set the master volume level to mute to a specific level. Pressing button # **6** accesses editing this parameter.

MUTE Off Trigger

The Casablanca II can be un-muted in 2 ways: pressing the **MUTE** button or the **LEVEL UP/DOWN** buttons. The

user has the option of overriding the use of the **LEVEL UP/DOWN** buttons so that only the **MUTE** button un-mutes the Casablanca II. Setting the parameter (accessed via the **A-D** button) to **MUTE** allows only the **MUTE** button to un-mute the Casablanca II whereas setting this parameter to **M+V** (**MUTE** and **VOLUME**) allows both the **MUTE** and **LEVEL UP/DOWN** buttons to un-mute.

Press the **SETUP** button once to return to the **SETUP/GLOBAL** *page 1* sub menu. Press the **A-D** button once to go to the second **GLOBAL** page, shown in figure 99.

Cursor Type

When editing jack or input select names, blinking, a flashing cursor below it, both, or no indication can indicate the character being edited. This preference is set in the **SETUP/GLOBAL** *page 2* sub menu, button # **1**.

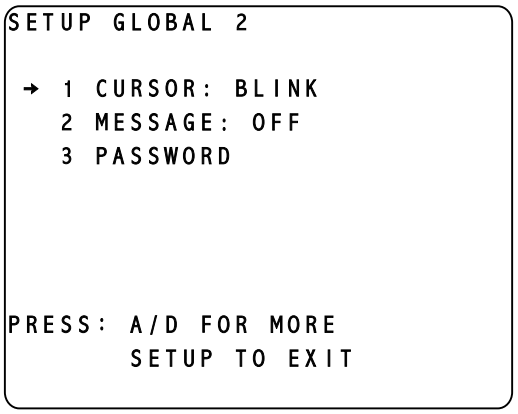


Figure 99 - Video Display of the SETUP/GLOBAL *Page 2* Sub Menu

Displaying Mode Change Messages

As discussed in the **MODE** section of this manual, when the Casablanca II receives a Dolby Digital or DTS signal on the currently selected input and the **MODE** is not the one required to process these signal formats, a message will briefly occur on the LCD and OSD stating that the Casablanca II has received a certain format and is temporarily changing the **MODE**. This message comes up by default but can be turned off. Pressing button # **2** and changing the value to **OFF** achieves this.

Global Menu Password

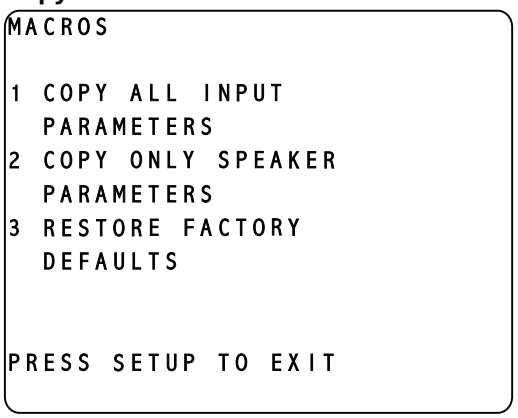
If desired, access to the Global menus can be password protected. To set a password, press button # **3** and enter a new password using the **1**-**6** buttons. As with all other passwords in the Casablanca II, using a **0** (**A-D** button) will void the password, making it as if there were none. Please refer to page 14 for additional information regarding setting passwords.

When all settings are complete in this sub menu, press **SETUP** twice to return to the **INPUT SELECT** menu.

Setup Macros

The Casablanca II contains several macros that allow the user to perform multiple tasks at the press of a button. To enter the Macros sub menu, press **SETUP**, then **MACROS** (button # **3**). The Macros sub menu appears, as shown in figure 100.

Copy Macros



Buttons **1** and **2** are "copy" macros. **COPY ALL INPUT PARAMETERS** (button # **1**) will give the user the option of copying all **INPUT SELECT** parameters of the currently selected input to one (**ANOTHER INPUT**) or all other 11 input select buttons (**ALL INPUTS**). If the user chooses to copy to one other input select button, they will then be asked to choose which one, by input select name. If the currently selected **INPUT** parameters are to be copied to input select buttons **7**-**12**, press the **A-D** button when given the choice of the destination **INPUT SELECT** button to be copied to.

Button **2** allows the user to copy only the input parameters that are focused on the speaker setups such as levels, delays, etc.

See Note and additional information on the next page.

Figure 100 - Video Display of the SETUP/MACROS Sub Menu

Note: When copying all **INPUT** parameters to other **INPUT SELECT** buttons, the **SOURCE** (audio and video) settings will not be copied. The reason for this is that in virtually all cases known, the jacks mapped to a given **INPUT SELECT** button will not be desired to be mapped to other **INPUT SELECT** buttons. If they are, they can be individually assigned after the copy macro has been executed.

Please refer to page 71 for additional details regarding the Copy Macros feature.

Button # **3** allows the user to restore the factory settings in a variety of ways. The Restore menu is shown in figure 101.

Restore Macros

```
RESTORE FACTORY SETTINGS
TO:

1 CURRENT INPUT
2 ALL INPUTS
3 GLOBAL SETTINGS
4 NAMES
5 ALL OF ABOVE


PRESS SETUP TO EXIT
```

In this sub menu, button # **1** allows the user to restore all factory **INPUT** parameters to the currently selected input button, except for the Input name.

Using button # **2** will restore all factory **INPUT** parameters to all 12 **INPUT SELECT** buttons, except for the Input names.

Pressing button # **3** will restore all factory **GLOBAL** menu settings.

Button # **4** will restore all factory **NAMES**. This includes all jack names as well as **INPUT SELECT** button names.

Figure 101 - Video Display of the SETUP/MACROS/RESTORE FACTORY Sub Menu

Button # **5** will restore all factory settings, **INPUT**, **GLOBAL** and **NAMES** to the Casablanca II.

Before any macro is executed the user will be asked if they are sure they want to perform this macro. When complete, press **OK** (**A-D** button).

Note: When restoring factory settings for an **INPUT SELECT** button that is password protected, it will ask for the password by input name.

If there is a password on the Global Menu itself, and the user is restoring any global parameter, when the macro gets to a password-protected parameter, it will say "Enter Password" (i.e. it will not state which parameter, menu or button the password is protecting).

Press **SETUP** twice to return to the first page of the **SETUP** menu, or three times to return to the main **INPUT SELECT** page.

BALANCE Function

This function allows the user to temporarily* set the **FRONT**/**REAR** and **LEFT**/**RIGHT** balances as well as the **CEN**ter and **SUB** woofer speaker levels, the shelf **EQ**, and a relative adjustment of the analog input level, in order to compensate for distinct program material characteristics.

The first page of the balance menu is shown in figure 102A and the second in figure 102B.

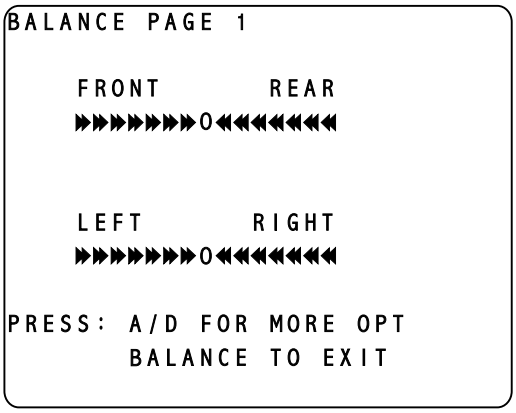


Figure 102A - Video Display of the BALANCE *Page 1* Menu

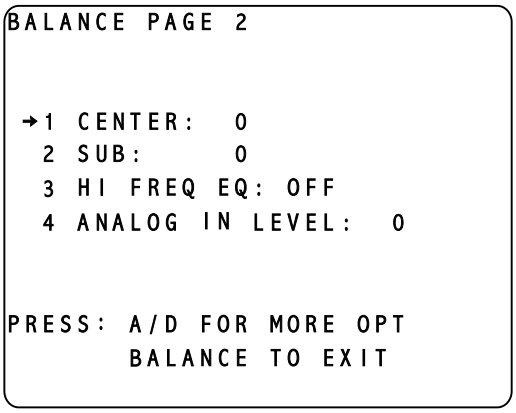


Figure 102B - Video Display of the BALANCE *Page 2* Menu

Front/Rear and Left/Right Balance

The **BALANCE** adjustments are made with reference to the relative speaker trim levels that are stored in the **SETUP**/**ACTIVE INPUT SETTINGS**/**LEVELS** sub menu. **LEVEL LEFT**/**RIGHT** adjusts the Left/Right balance and **LEVEL UP**/**DOWN** adjusts the Front/Rear balance.

*The parameter values in the two **BALANCE** pages are, by default, temporary. This is to say that under certain conditions such as pressing a different **INPUT SELECT** button, the changes made will revert to **0**. This feature has an override, (**CLEAR BALANCE**), which is accessed via the **SETUP/GLOBAL** sub menu, button # **4**.

Pressing the **A-D** button once will reveal the second **BALANCE** page, consisting of temporary level settings for the **CENTER** speaker, sub woofer (**SUB**), **HI FREQ**uency **EQ** and **ANALOG IN**put **LEVEL** for the currently selected input.

Center and Sub Balance

Press button # **1** to adjust the **CEN**ter level and button # **2** to adjust the **SUB** woofer level.

Shelf EQ

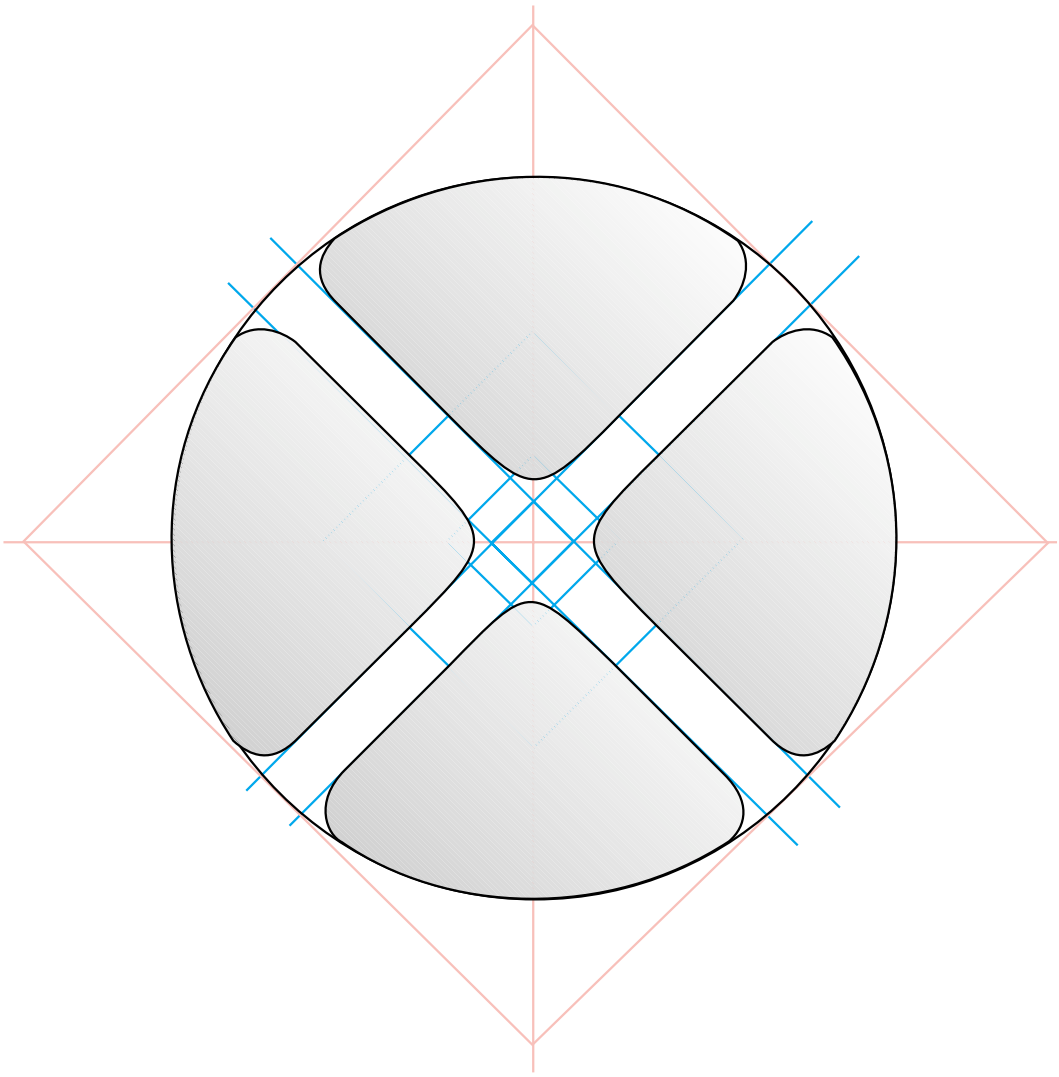
Pressing button # **3** will allow the user to adjust the **EQ** setting between **OFF**, **1**, **2**, **3** and **4**. This is a low pass shelf EQ that, at 2KHz, drops by 1.5dB when the parameter value is set at **1**, 3dB when set at **2**, 6dB when set at **3**, and 9dB when set at **4**. Being a shelf EQ, the rolloff amplitude never drops significantly below the specified dB value. The **EQ** is active in all modes and is designed to roll off excess brightness in different program material.

Analog Input Level Override

Button # **4** lets the user adjust the analog input level of the currently selected input, relative to the stored value in the **SETUP**/**GLOBAL**/**ANALOG LEVELS** menu.

Press the **BALANCE** button once to return to the current **INPUT SELECT** menu.

APPENDIXES



Appendix A Troubleshooting Guide

If the Casablanca II should function abnormally during operation, please review the items in the following checklist. Please be sure to thoroughly check all other connected components such as speakers, amplifiers, input devices (CD/LD transport, VCR, TV, etc.) as well as cables.

Symptom	Possible Cause(s)	Remedy
Mute on permanently.	No Lock LED.	Verify valid data at selected digital input.
	No digital source connected.	Verify that source is connected to current channel input.
No power or front panel lights and no sound.	Power cable is not inserted 100% into IEC connector.	Ensure that the AC cord is inserted all the way into the Casablanca II and that the wall outlet is active.
	Circuit breaker is open (AC outlet or Casablanca II).	Check the AC outlet circuit breaker and reset, if necessary or contact your dealer.
No “LOCK” light.	Defective or intermittent cable.	Verify that the digital cable is not defective by checking the continuity, that both ends are firmly connected. If possible, try a different cable.
	Digital source is not selected in the search order.	Toggle the A-D button until the jack name for the desired source is displayed.
	Defective source component.	Verify that the source component is functioning correctly and outputting valid digital data.
	Source component improperly connected.	Ensure that the output cable from the source component is connected to its active digital output.
No audio output.	No Lock LED.	Verify valid data at selected input.
	NOISE SEL activated with no speakers selected.	In the **SETUP**/**INPUT**/**LEVELS** sub menu, verify that the **SOURCE** parameter is set to **SOURCE** (**A-D** button).
Distortion from analog input.	Clipping.	Adjust analog input level until the red clip LED goes off.
No output from a speaker.	Speaker set to **OFF** or **PHTM** (Phantom).	In the **SETUP**/**INPUT**/**CONFIG** sub menu, set the speaker to an appropriate parameter for your system.
Low output from an analog source.	Analog input level set too low.	Increase analog input level as high as possible without clipping.
No Sub Woofer.	**SUB** is set to **0**.	Set the number of **SUB**s to reflect the current speaker configuration in the **SETUP**/**INPUT**/ **CONFIG** sub menu.
	The currently selected **MODE** does not support sub woofers.	Review the **MODE Function** section, detailed on pages **43** & **44** to select a **MODE** that functions for both the current input signal format as well as the desired configuration effects.
	No speakers are crossed over.	Ensure that one or more speakers are crossed over in the **SETUP**/**INPUT**/**CONFIG** sub menu.
	The current program material does not contain an LFE track.	N/A.

Appendix B Wiring Diagrams and Speaker Placement Guides

This section provides example illustrations of various input and output wiring schemes as well as examples of speaker placement in a typical room. Before making any connections, please turn off ALL audio and video devices. Unplug those that do not have a main power switch. To avoid audible distortion and/or overall signal degradation, do not use standard audio cables for digital audio or video signals. It is recommended that all cables, including speaker cables be kept as short as possible for best sound quality.

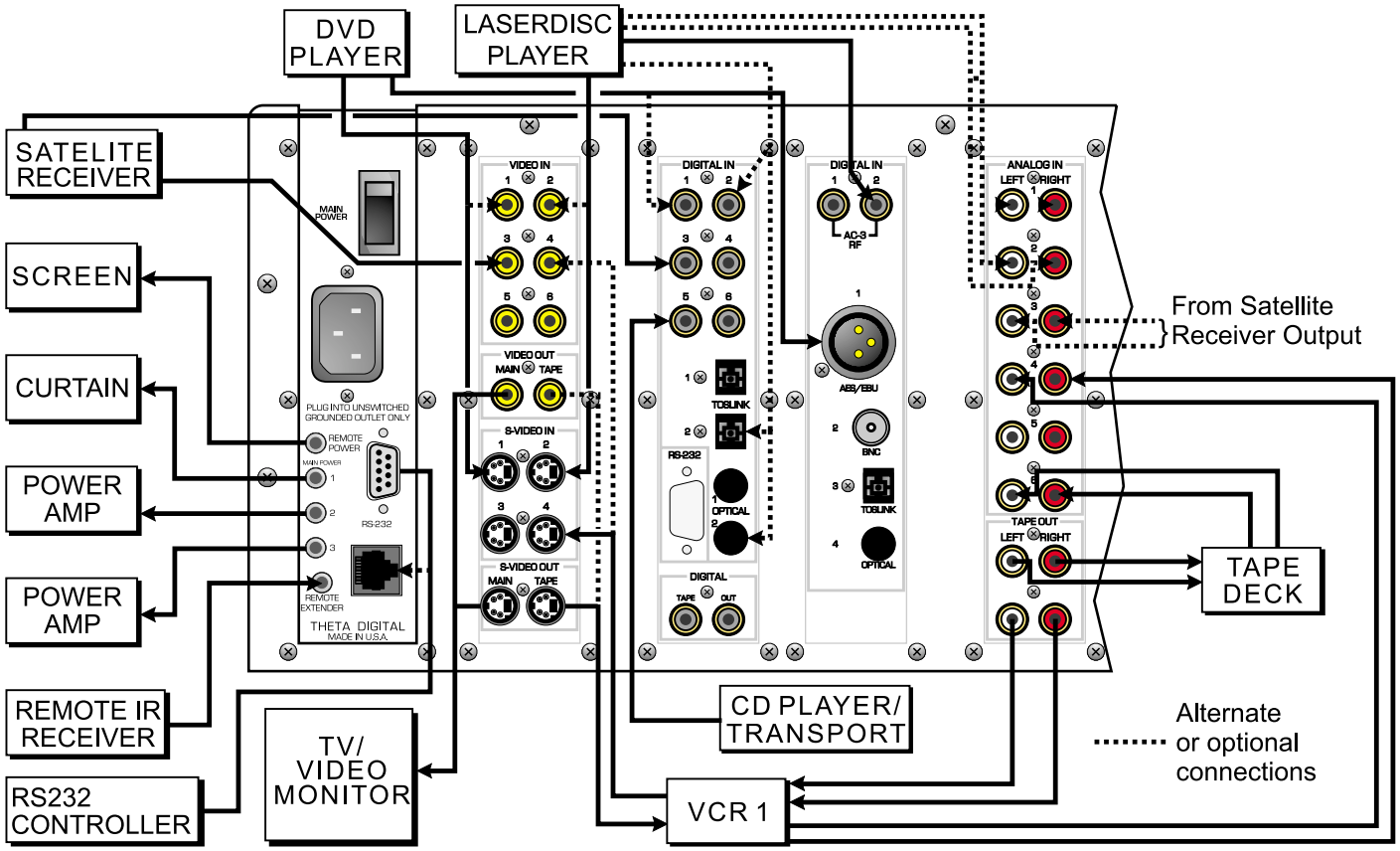


Figure 103 - Examples of Typical Input and Tape Out Connections

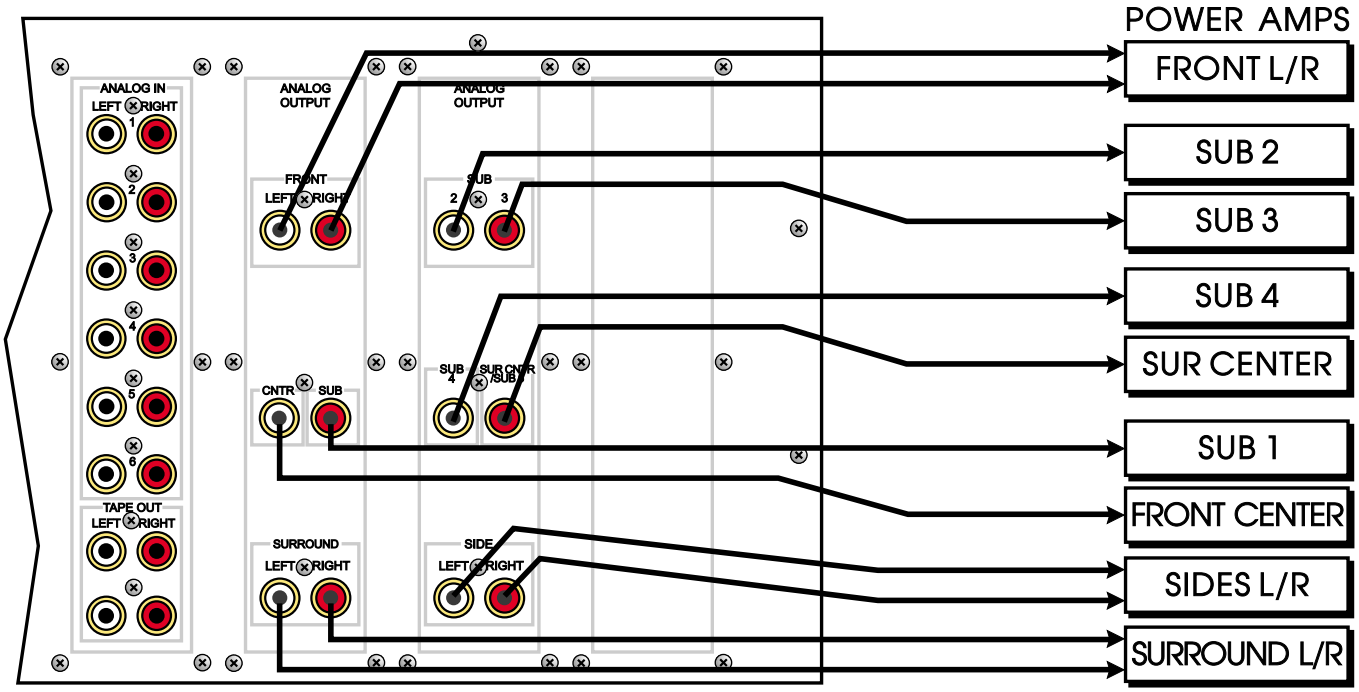


Figure 104 - Recommended Output Wiring Diagram Using 12 Single-Ended channels

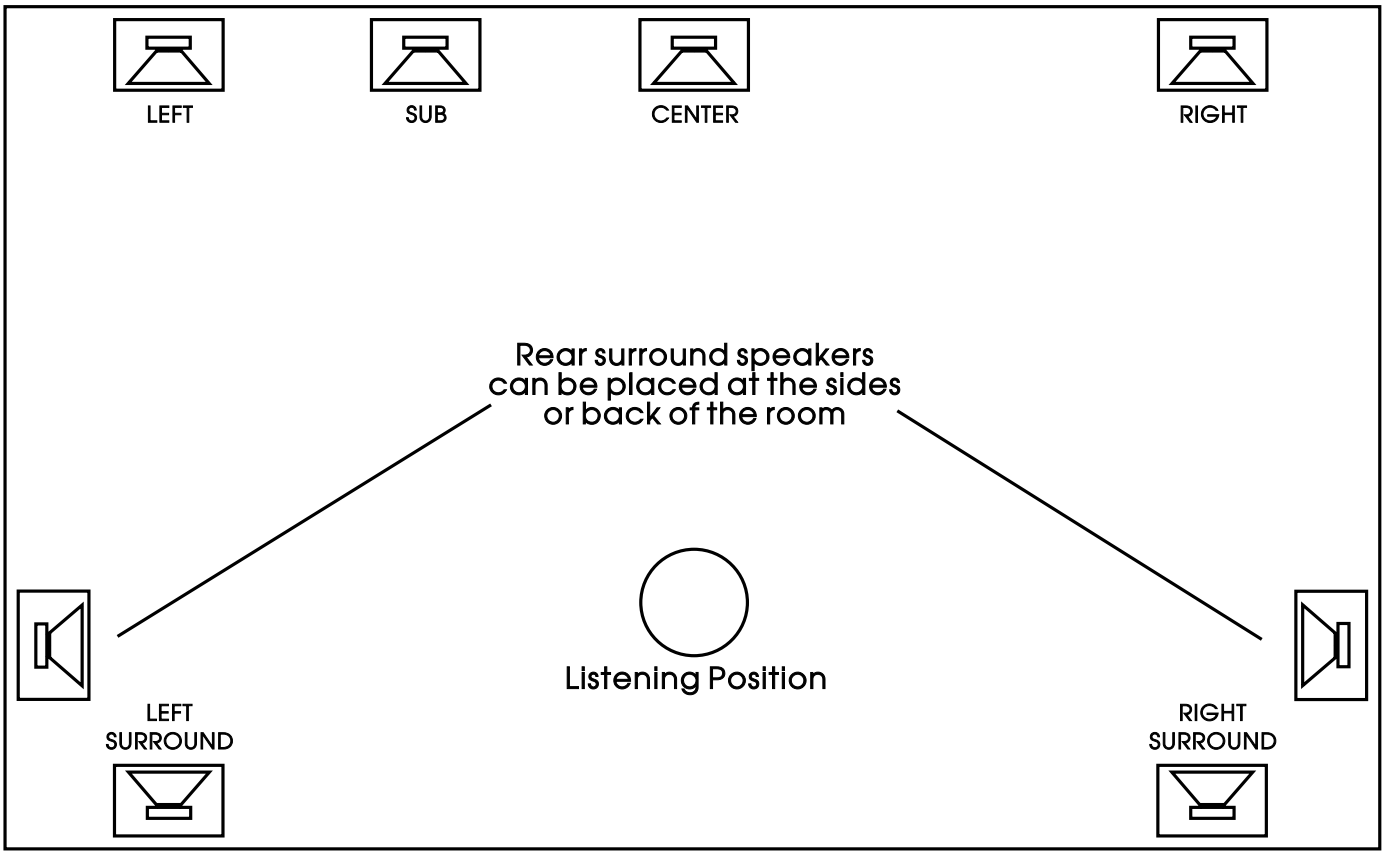


Figure 105 - Recommended Speaker Placement for Six Channel Configuration

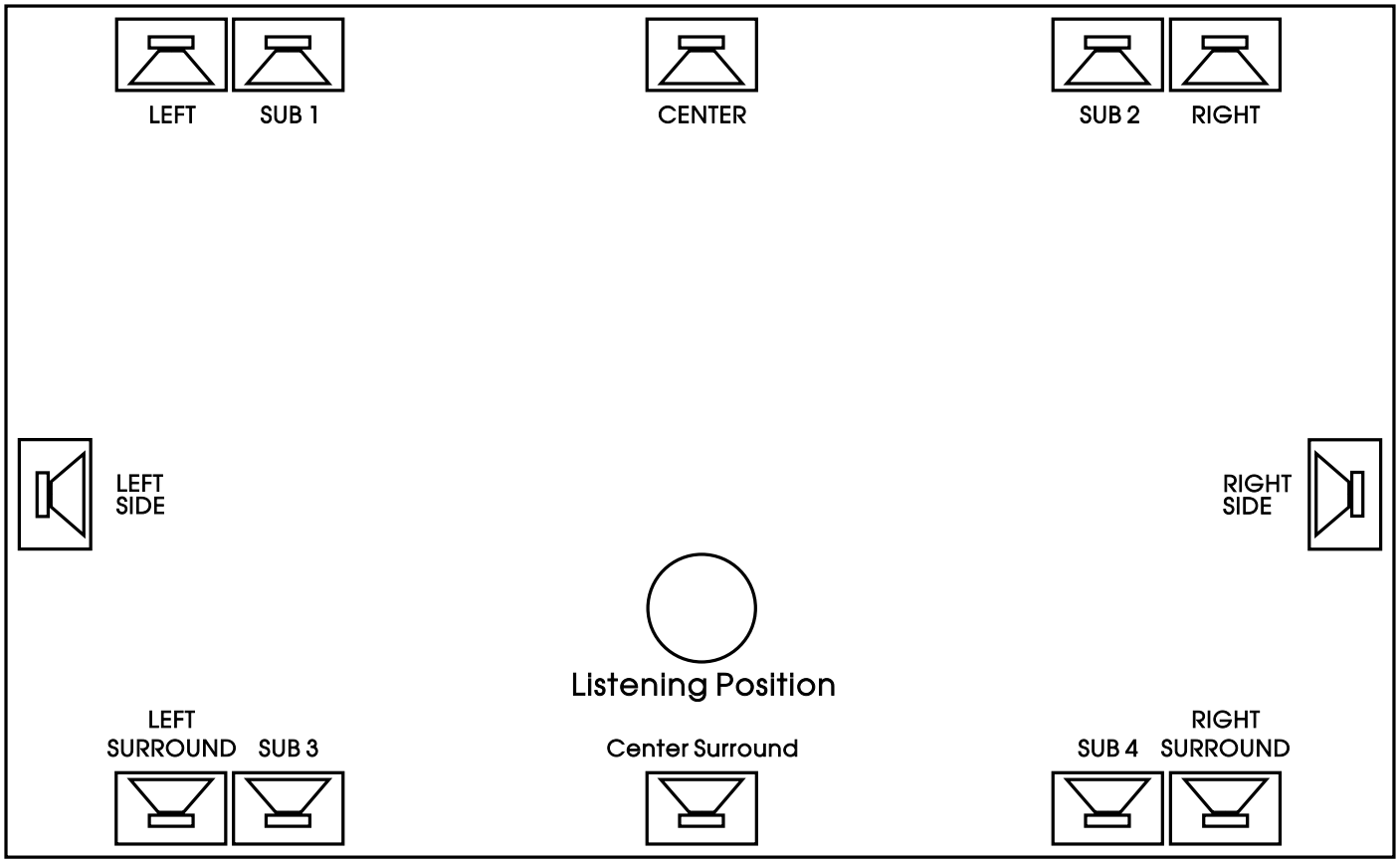


Figure 106 - Recommended Speaker Placement for Twelve Channel Configuration

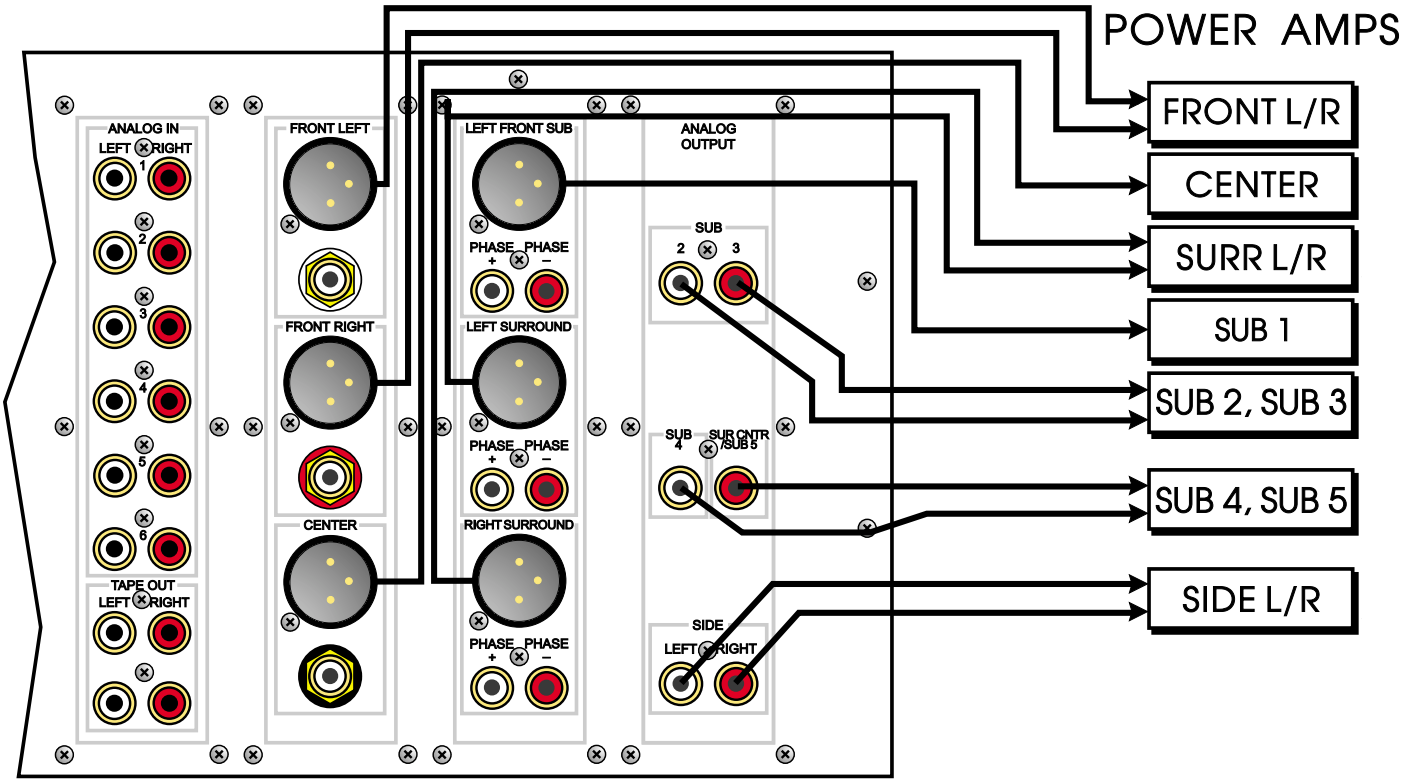


Figure 107 - Recommended Output Wiring Diagram Using 12 channels (Six Balanced and Six Single-Ended)

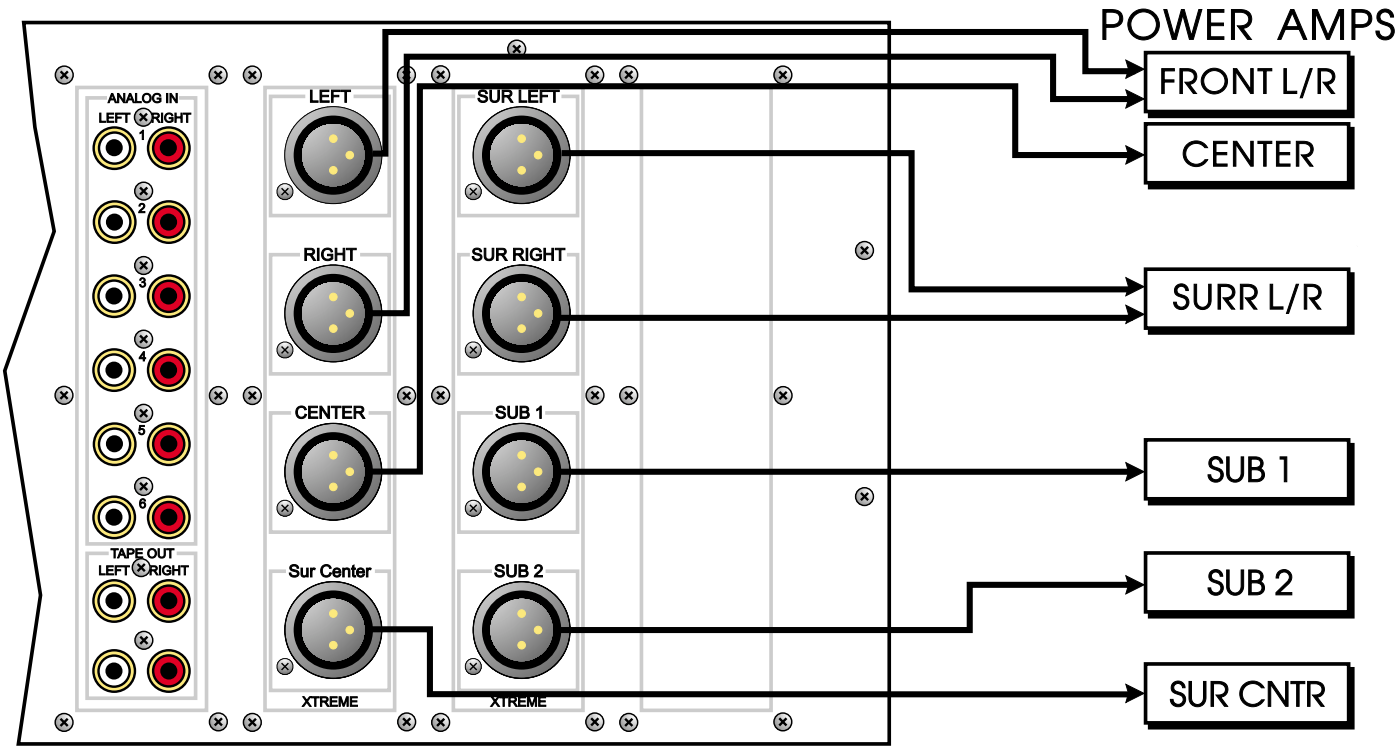


Figure 108 - Recommended Output Wiring Diagram Using 8 balanced Xtreme channels

Digital Out/External Volume Control Wiring Diagrams

With the optional Digital Output Card installed, there are no additional menu features to select from. The card can be installed in any Analog Out slot in the Casablanca II. However, if it is installed in conjunction with another D/A card that has front left and right analog outputs on it, the Digital Out card must be positioned in the Analog Out 2 or 3 slot in order for the Analog Direct and Analog Matrix modes to function.

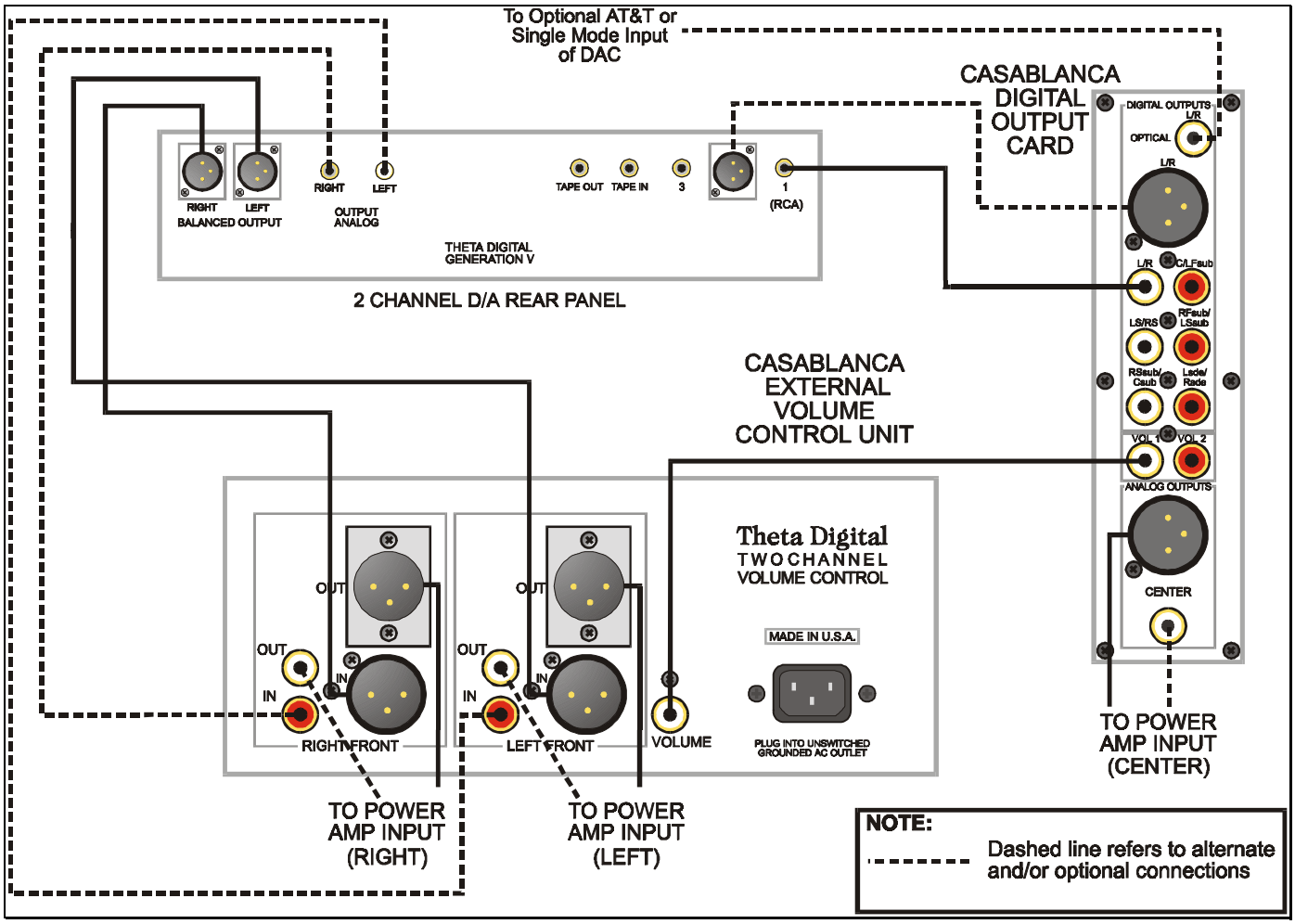


Figure 109 - Wiring diagram for the Casablanca II Digital Output board and a 2 Channel External Volume Control unit.

Connect one of the 3 **L**eft**/R**ight digital outputs to the input of a two channel external Digital to Analog converter (DAC). If a two channel External Volume Control (EVC) unit is being utilized, connect the left/right outputs of the DAC to the corresponding left/right inputs of the two channel EVC. Then connect the left/right outputs of the EVC to the left/right inputs of the front [left/right] power amp inputs.

Lastly, connect the **VOL1** on the Digital output card to the **VOLUME** jack on the EVC. This allows the master volume parameter from the Casablanca II to be transmitted to the EVC, thereby controlling the volume from the DAC. All connections are shown in Figure 109, above.

Figure 110 shows the wiring diagram using one 6 channel EVC. If two EVC's are being used, connect the VOL2 on the digital output card to the VOLUME jack on the second EVC. The second EVC must be configured to respond to channels 7-12. This will be done at the factory. Connect the second EVC to the appropriate channels (Surround Center/Side Left/Side Right/Sub 1-4) of the digital out card as was done with the first EVC.

In the case where the Digital Output card has the optional analog center channel output installed, connect this output directly into the center channel power amp input.

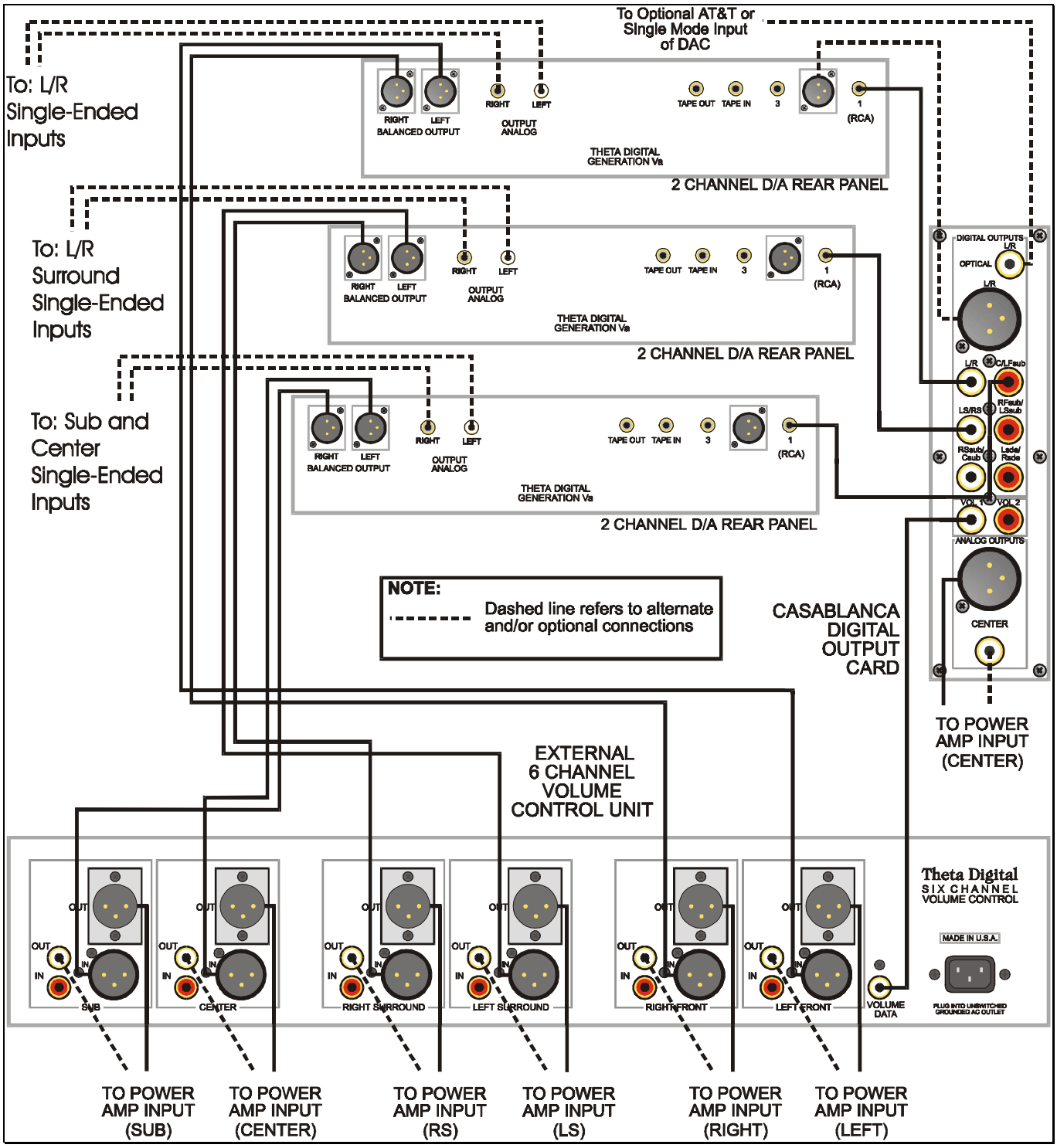


Figure 110 - Wiring diagram for the Casablanca II Digital Output board and a 6 Channel External Volume Control unit.

Appendix C Remote Extender Jack Technical Description and Protocol

The remote extender jack on the Casablanca rear panel serves as a direct electrical pathway to the input section of the main microcontroller. Using this jack eliminates the need to attach an IR transmitting device to the front panel IR receiver. This input requires a demodulated signal. **

Remote system: Phillips RC5
System address: 10 hex (00010000 binary) (5 bit system address)

6 bit button code:

Button	Code (hex)	Code (binary)
1	01	00000001
2	02	00000010
3	03	00000011
4	04	00000100
5	05	00000101
6	06	00000110
A/D	07	00000111
MUTE	08	00001000
MODE	09	00001001
TAPE OUT	0A	00001010
SET-UP	0B	00001011
BALANCE	0C	00001100
DISP	0D	00001101
PWR	0E	00001110
UP	0F	00001111
DOWN	10	00010000
REM PWR	11	00010001
STAT	12	00010010
LEFT	13	00010011
RIGHT	14	00010100
PHASE	15	00010101
SEL UP	16	00010110
SEL DOWN	17	00010111
EQ	18	00011000
Discrete OFF	19	00011001
Discrete ON	1A	00011010

Electrical Requirements:

Jack: 3.5mm stereo mini-phone
Tip: 12v current limited dc supply from Casablanca II (for phantom power)
Ring: Signal, 0-5 v peak-to-peak. (Is pulled high in Casablanca II)
Sleeve: Ground

* * *

**There are companies who manufacture units that strip the IR carrier from a signal. One such company is Xantech, who makes the model 794-10. If this unit is used, a series of dipswitches need to be set on it. These settings are as follows:

(from switch 1 to 10)

0 1 1 1 0 0 0 1 0 1

where 1 = ON and 0 = OFF

Appendix D Upgrading/Installing Casablanca II Software

The most dynamic parts of Casablanca II's internal operating system and supporting files are easily updateable via an IBM compatible PC.

To install new software into the Casablanca II, first the "Downloader" software must be installed on a local PC. Instructions for this installation are included with the CD ROM. This software is referred to as CBA X.xx, where x.xx is the version number. The Flash files themselves are available from Theta Digital or through a Theta Digital authorized dealer. Flash files can be serial number specific so it is necessary to have the unit serial number readily available.

CBA 4 has a feature called "Auto-Update" which, when activated, will take over control of the Casablanca II by reading/storing the internal hardware configuration and serial number, look at the software version of each flash file and update any or all of them if necessary. It will then restore the hardware configuration parameters that were set at the factory. If selected, CBA will store the user settings before updating any flash files, then restore them after the update.

CBA can also save all user settings to the hard drive of a PC. This is a highly recommended procedure to do, immediately after setting up the Casablanca II for the first time.

Flash files can be installed individually, which is necessary for activating Circle Surround or if diagnosing the Casablanca II.

When CBA is installed onto the PC, a PDF file entitled "Guide to Using CBA" is copied to the hard drive. This document covers the detailed information required to use CBA in all of its modes. It is recommended that this document be read through in its entirety before using CBA.

Appendix E Specifications

Digital Input Section (32KHz, 44.1KHz, 48KHz, 88.2KHz, 96KHz compatible):

Main digital input board:

Inputs: 10:6 coaxial (RCA), 4 optical (2 TosLink, 2 open for optional AT&T or Theta Digital proprietary Single Mode.

Outputs: 2 digital tape out coaxial on RCA jacks.

Auxiliary Digital Input board:

Inputs: 6: 2 AC-3 RF (RCA) for laserdisc Dolby Digital, 1 AES/EBU (XLR), 1 BNC, 2 optical (1 TosLink, 1 open for optional AT&T or Theta Digital proprietary Single Mode).

Outputs: None.

Analog Input Section:

Inputs: 6 stereo pair on RCA jacks.
Input Level: 200 mV rms minimum, 22v rms maximum.
Input Impedance: 10 KΩ.
Outputs: 2 stereo pair on RCA jacks for analog tape out.
Tape Output Impedance: 36.5 ohms
A/D Conversion: 20-bit Delta-Sigma at 48KHz; separate delta-sigma modulator and high performance decimating digital filter.
Frequency response: +-.2dB 20Hz - 20KHz
THD+Noise: 0.0025%
Dynamic Range: 104dB
Signal to Noise Ratio: 104dB
Input volume control: Theta proprietary switched resistor network in the analog domain.
Automatic DC canceling circuit.

Processing (DSP) Section:

All DSP processing is 24bit with 56 bit accumulator. Some processes, such as low pass crossovers, are 48bit with 56 bit results.

Channels Supported: Left, Right, Center, Left Surround, Right Surround, Center Surround, Left Front Sub, Right Front Sub, Left Surround Sub, Right surround Sub, Center Sub, Left Side, Right Side.

Modes: Matrix, Special Matrix, Dolby Pro Logic, Dolby Digital, DTS, Stereo, Mono, Analog Direct, Analog Matrix, Circle Surround (optional).

Post Processes (applied in addition to selected mode): Stereo Front/Rear, Party, Center Spread.

EQ: Four levels of high frequency roll-off (shelf-type) to compensate for overly bright sources.

Crossovers: Separate crossovers for each of the following: Front Left/Right, Front Center, Surround Left/Right, Surround Center. Three types supported: Linkwitz-Riley, Butterworth, Phase Perfect. Crossover frequencies: 40Hz, 50Hz, 63Hz, 80Hz, 125Hz, 160Hz. Crossover slopes: 6dB, 12dB, 18dB, 24dB per octave. Butterworth crossovers have separate adjustments for high and low pass.

Subwoofers: Up to five subwoofers supported. 1- single subwoofer, 2- left/right subwoofers, 2- front/rear subwoofers, 3- left/right/surround subwoofers, 4- left/right/surround left/surround right subwoofers, 5- left/center/right/surround left/surround right subwoofers. Each subwoofer can be set to receive a full range signal in case the sub has an internal crossover that cannot be defeated.

LFE: Phase adjustment (0, 180 degrees), level adjustment (0dB to -30dB, off)

Delays: Master (applies to all channels) delay for syncing with video processors, comprehensive separate delay settings for all speakers including subwoofers.

Analog Audio Outputs: See additional pages.

Control Section:

RS232: Complete ability to control and read status of every operational parameter of unit.
IR Receiver: 3.5mm stereo phone jack (rear panel), unmodulated.
IR Receiver: Front panel IR window for hand-held remote control.
Remote Power: 4 rear panel 3.5mm mono phone jacks: +12VDC triggered (Can be set to Pulse or ContinuousDC), pulse time variable from 0 to 255 mSec.

Video Section (three options available):

6 composite / 4 S-Video option:

Composite Inputs: 6 (RCA jacks).
Composite Outputs: 1 main and 1 tape (RCA jacks).
S-Video Inputs: 4.
S-Video Outputs: 1 main and 1 tape.

On-screen display on main outputs (composite and S-video). On-screen display character generator completely bypassed when not in use for maximum fidelity.

8 S-Video option:

S-Video Inputs: 8.
S-Video Outputs: 2 main and 2 tape.

On-screen display on main outputs. On-screen display character generator completely bypassed when not in use for maximum fidelity.

3 Multi Format / 6 S-Video option:

High Resolution Multi Format Inputs: 3 (15 pin D type connectors).
High Resolution Multi Format Outputs: 1 Main (on 15 pin D type connector).
S-Video Inputs: 6.
S-Video Outputs: 1 main and 1 tape.

On-screen display on S-Video main output only. On-screen display character generator completely bypassed when not in use for maximum fidelity.

Multi Format I/O:

-Any 3, 4, or 5 Wire Component (480i or 480p).
-HDTV (Y, Pb, Pr) (for 720p or 1080i).
- Any 3, 4, or 5 Wire RGB Output from a Video Processor / Scaler or Computer RGsB, RGB/S, RGB/H&V.
- Input Signal Types Can Be Mixed, as Long as the Display or Processor Will Accept Mixed Formats from the Switched Output, on 1 Input.
-NO On Screen Display.
-Connectors are High Density 15 Pin D Sub (HD15) Connectors (like VGA Monitor/ Computer Connectors).
-Cables should have a bandwidth capacity of 400MHz or greater for the highest resolution.

* * *

Power Requirements: 117 VAC, 50-60 Hz, 120 watts with all options installed.

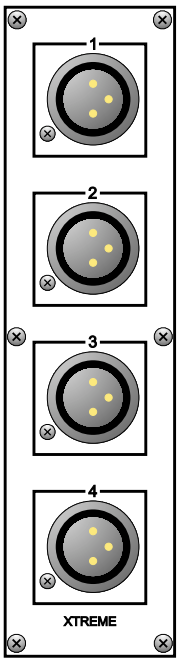
Dimensions: 19”W x 16”D x 7.5”H (483 x 406 x 191 mm)

Weight: 43 Lbs (19.5 Kg) Stand alone, 50 Lbs (22.7 Kg) Boxed with accessories

Environment:
Operating Temperature: 32 to 95 F (0 to 35 C)
Storage Temperature: -22 to 167 F (-30 to 75 C)
Relative Humidity: 95% maximum without condensation

Remote Control: 1 hand-held, battery powered control unit uses 2 AAA batteries

Xtreme Quality Balanced D/A Output Card



Output Options:

Slot 1-3: (One of the following, each):

Front Left, Right, Center, Surround Center or Sub 5.
Front Left, Right, Side Left, Right
Sub 1, Sub 2, Sub 3, Sub 4
Side Left, Right, Sub 3, Sub 4
Front Left, Right, Sub 1, Sub 2
Surround Left, Right, Sub 1, Sub 2
Surround Left, Right, Sub 2, Sub 3
Front Center, Sub 1, Sub 2, Sub 3
Front Center, Sub 1, Surround Left, Right
Front Left, Right, Surround Left, Right
Surround Left, Right, Side Left, Right
Front Left, Right, Center, Sub 1
Sub 1, Sub 2, Sub 3, Surround Center or Sub 5
Surround Left, Right, Center or Sub 5, Sub 1
Surround Left, Right, Center or Sub 5, Sub 2
Front Center, Surround Center or Sub 5, Surround Left, Right
Front Center, Surround Center or Sub 5, Side Left, Right
Sub 2, Sub 3, Sub 4, Surround Center or Sub 5

Each output channel has a balanced (XLR) output connector only.

D/A Conversion: 24-bit Ladder (8x oversampling – 4x @96K). Two DACs per channel (8 per board) for true differential operation.

Volume Control: Theta proprietary switched resistor network in the analog domain.

Digital Filter: 8x oversampling (4x @ 96K) Theta proprietary FIR filter running on Motorola 56362 DSP.

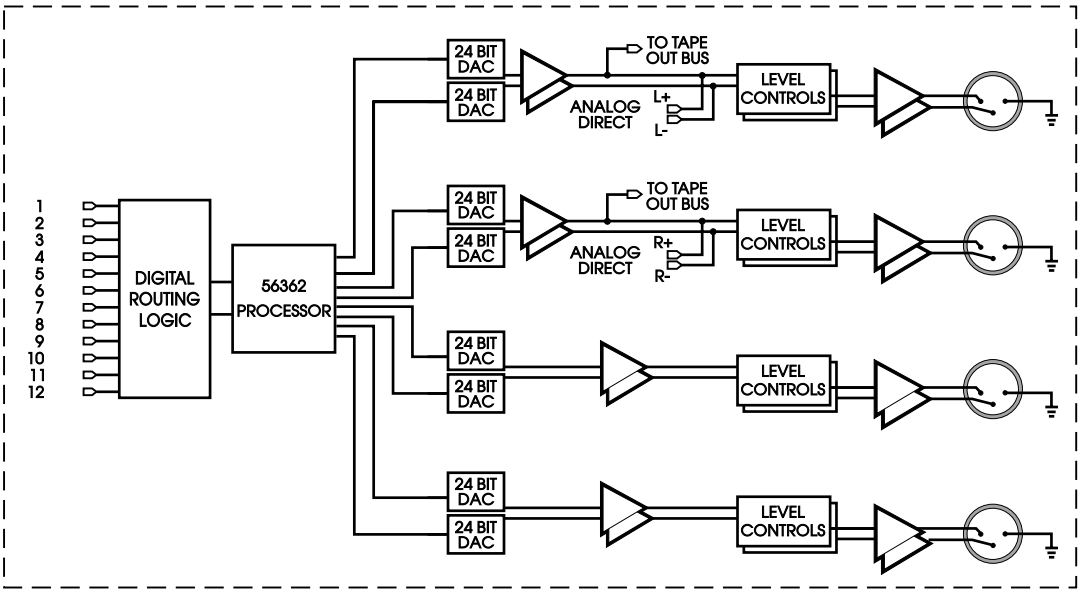
Single-Ended Output: None

Sample Rates Supported: 32KHz, 44.1 KHz, 48 KHz, 88.1 KHz, 96 KHz.

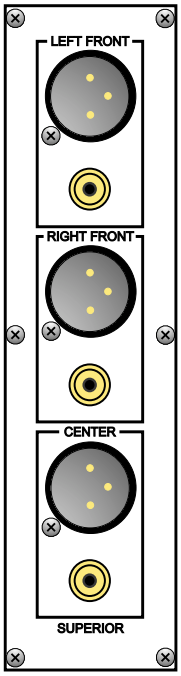
Balanced Output Specifications:

Output Impedance:	20 Ohms.
Maximum Output Level:	20 Vrms balanced.
Frequency Response:	20 Hz-20 kHz, ± 0.025 dB, Ref. 1KHz.
THD+Noise:	Less than 0.0015% @ 1KHz, maximum output level.
Dynamic Range:	105dB minimum, 20KHz bandwidth, Ref. 1KHZ, A-weighted.
Signal to Noise Ratio:	105dB typical, idle channel, A-weighted.
Crosstalk:	-105dB Right - Left, >-120dB Center-Left @ 20KHz.

Block Diagram:



Superior Quality Balanced D/A Output Card



Output Options:

Slot 1: Front Left, Front Right, Center.
Slot 1: Front Left, Front Right, Sub 1.
Slot 2: Surround Left, Surround Right, Sub 1.
Slot 3: Sub 2, Sub 3, Sub 4.
Slot 3: Sub 2, Sub 3, Surround Center.

Each output channel has a balanced (XLR) and a single-ended (RCA) output connector.

D/A Conversion: 20-bit Ladder (8X oversampling). Two DACs per channel (6 per board) for true differential operation.

Volume Control: Theta proprietary switched resistor network in the analog domain.

Digital Filter: 8x oversampling Theta proprietary FIR filter running on Motorola 56004 DSP (1 per channel, 3 per board). 4x oversampling for 96KHz sources.

Single-Ended Output: Summed from balanced signals, retains many of the advantages of the balanced output.

Sample Rates Supported: 32KHz, 44.1 KHz, 48 KHz, 88.1 KHz, 96 KHz.

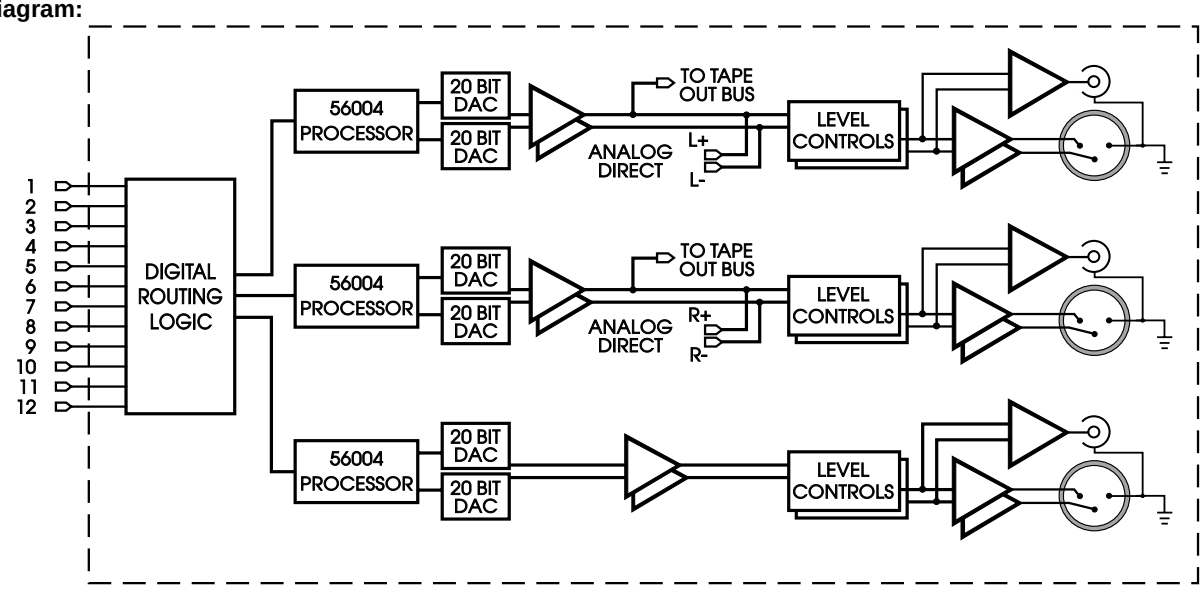
Balanced Output Specifications:

Output Impedance:	20 Ohms.
Maximum Output Level:	20 Vrms.
Frequency Response:	20 Hz-20 kHz, ± 0.01 dB, Ref. 1KHz.
THD+Noise:	Less than 0.0016% @ 1KHz, maximum output level.
Dynamic Range:	105dB minimum, 20KHz bandwidth, Ref. 1KHZ, A-weighted.
Signal to Noise Ratio:	105dB typical, idle channel, A-weighted.
Crosstalk:	-90dB Right - Left, -120dB Center-Left @ 20KHz.

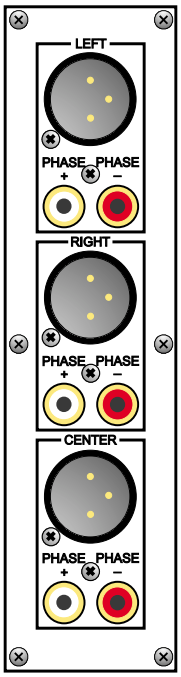
Single-Ended Output Specifications:

Output Impedance:	10 Ohms
Maximum Output Level:	10 Vrms
Frequency Response:	20 Hz-20 kHz, ± 0.01 dB, Ref. 1KHz.
THD+Noise:	Less than 0.0016% @ 1KHz, maximum output level.
Dynamic Range:	105dB minimum, 20KHz bandwidth, Ref. 1KHZ, A-weighted.
Signal to Noise Ratio:	105 typical, idle channel, A-weighted.
Crosstalk:	-90dB Right - Left, -120dB Center-Left @ 20KHz

Block Diagram:



Standard Quality Balanced D/A Output Card



Output Options:

Slot 1: Front Left, Front Right, Center.
Slot 2: Surround Left, Surround Right, Sub 1
Slot 3: Sub 2, Sub 3, Sub 4.
Slot 3: Surround Center, Sub 2, Sub 3.
Slot 3: Surround Center, Side Left, Side Right.

Each output channel has a balanced output as well as 2 single-ended (RCA) output connectors. (+ and -)

D/A Conversion: 18 bit Delta-Sigma, one stereo DAC per channel producing plus and minus phases. There are 3 stereo DACs per board.

Digital Filter: 8x digital interpolation filter followed by a 64x delta-sigma modulator.

Volume Control: I.C. based, in the analog domain.

Single-Ended Outputs: One phase of balanced outputs, not summed.

Sample Rates Supported: 32KHz, 44.1 KHz, 48 KHz.

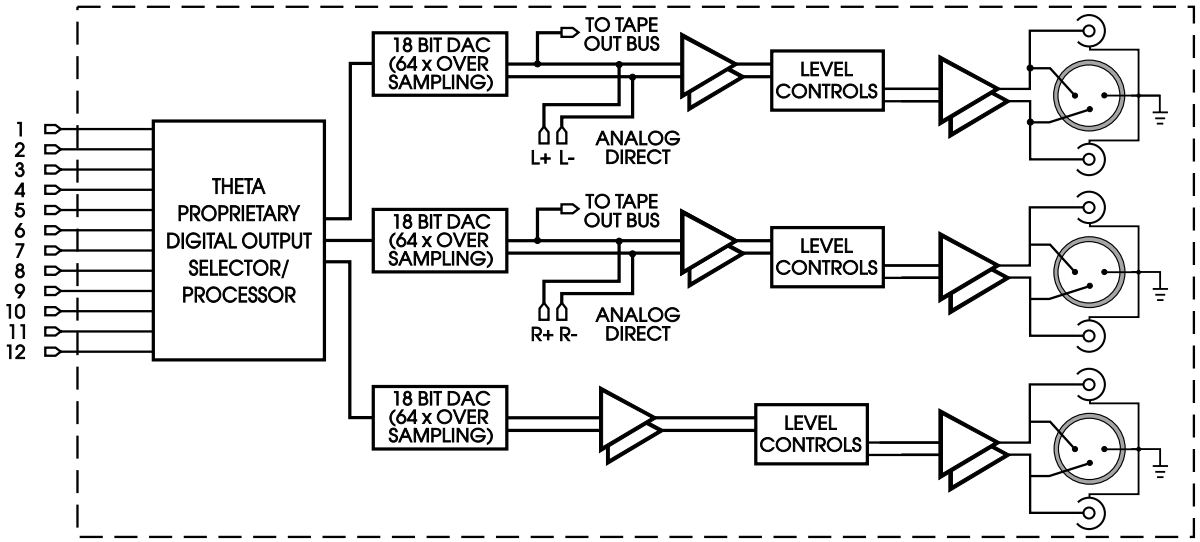
Balanced Output Specifications:

Output Impedance:	73 Ohms
Maximum Output Level:	20 Vrms
Frequency Response:	20 Hz-20 kHz, ± 0.2 dB, Ref. 1KHz.
THD+Noise:	Less than 0.0032% @ 1KHz, maximum output level.
Dynamic Range:	98dB minimum, 20KHz bandwidth, Ref. 1KHZ, A-weighted.
Signal to Noise Ratio:	98dB typical, idle channel, A-weighted.
Crosstalk:	-110dB Right - Left, -120dB Center-Left @ 20KHz

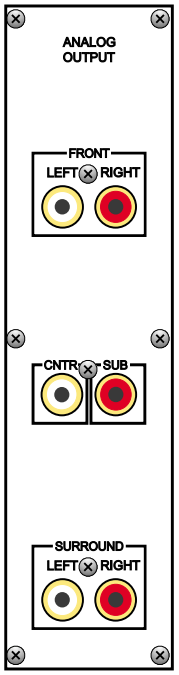
Single-Ended Output Specifications:

Output Impedance:	36.5 Ohms
Maximum Output Level:	10 Vrms
Frequency Response:	20 Hz-20 kHz, ± 0.2 dB, Ref. 1KHz.
THD+Noise:	Less than 0.0040% @ 1KHz, maximum output level.
Dynamic Range:	95dB minimum, 20KHz bandwidth, Ref. 1KHZ, A-weighted.
Signal to Noise Ratio:	95dB typical, idle channel, A-weighted.
Crosstalk:	-110dB Right - Left, -120dB Center-Left @ 20KHz

Block Diagram:



Standard Quality 6 Channel Single-Ended D/A Output Card



Outputs:

Each single-ended DAC card can be assigned one of the following output configurations:

-Front Left, Front Right, Front Center, Surround Left, Surround Right, Sub 1.
-Side Left, Side Right, Sub 2, Sub 3, Sub 4, Sub 5.
-Side Left, Side Right, Surround Center, Sub 2, Sub 3, Sub 4.
-Surround Left, Surround Right, Sub 1, Sub 2, Sub 3, Sub 4.
-Surround Left, Surround Right, Surround Center, Side Left, Side Right, Sub 1.
-Surround left, Surround right, Side left, Side right, Sub 1, Sub 2.

D/A Conversion: 18 bit Delta-Sigma, one stereo DAC per channel producing plus and minus phases. There are 3 stereo DACs per board.

Digital Filter: 8x digital interpolation filter followed by a 64x delta-sigma modulator.

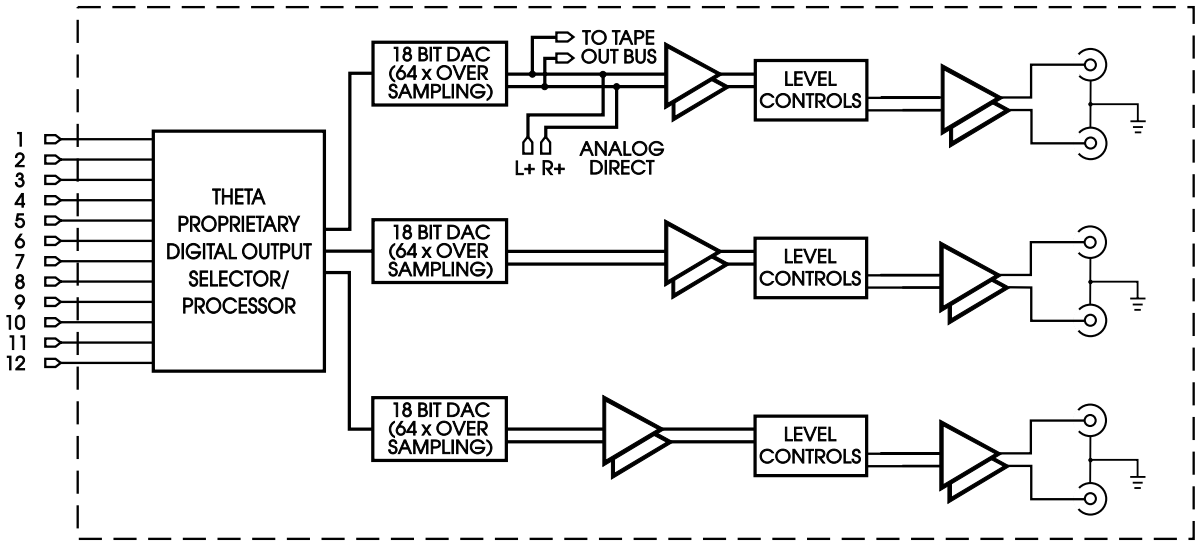
Volume Control: I.C. based, in the analog domain.

Single-Ended Outputs: One phase of balanced outputs, not summed.

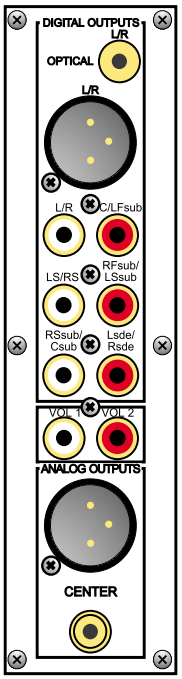
Sample Rates Supported: 32KHz, 44.1 KHz, 48 KHz.

Output Specifications:

Output Impedance:	36.5 Ohms
Maximum Output Level:	10 Vrms
Frequency Response:	20 Hz-20 kHz, ± 0.2 dB, Ref. 1KHz.
THD+Noise:	Less than 0.0060% @ 1KHz, maximum output level.
Dynamic Range:	95dB minimum, 20KHz bandwidth, Ref. 1KHZ, A-weighted.
Signal to Noise Ratio:	95 typical, idle channel, A-weighted.
Crosstalk:	-90dB Right - Left, -120dB Center-Left @ 20KHz



Superior Quality 6 or 12 Channel Digital Output Card



Outputs:

Digital Outputs: (Can be installed in any one of the 3 slots).

8: 1 AES/EBU (Balanced XLR), 1 Single-Ended (RCA), 1 Optional AT&T or Theta Proprietary Single-Mode for Front Left/Right, and coaxial for all other channel pairs (Center/Left Front Sub, Left/Right Surround, Right Front Sub/Left Surround Sub, Right Surround Sub/Center Sub or Surround Center, Left Side/Right Side). 96K compatible.

This Card can also have an analog Center Channel output. This is useful when digital outputs are required for the front left/right channels and DAC cards used for all other outputs. The center channel option is available only in Superior quality and has both a Balanced and Single-Ended (RCA) output connector.

Analog Output (Optional):

Output channel has a balanced (XLR) and a single-ended (RCA) output connector.

D/A Conversion: 20-bit Ladder (8X oversampling). Two DACs per channel (6 per board) for true differential operation.

Volume Control: Theta proprietary switched resistor network in the analog domain.

Digital Filter: 8x oversampling Theta proprietary FIR filter running on Motorola 56004 DSP. 4x oversampling for 96KHz sources.

Single-Ended Output: Summed from balanced signals, retains many of the advantages of the balanced output.

Sample Rates Supported: 32KHz, 44.1 KHz, 48 KHz, 88.1 KHz, 96 KHz.

Balanced Output Specifications:

Output Impedance:	20 Ohms
Maximum Output Level:	20 Vrms
Frequency Response:	20 Hz-20 kHz, ± 0.01 dB, Ref. 1KHz.
THD+Noise:	Less than 0.0016% @ 1KHz, maximum output level.
Dynamic Range:	105dB minimum, 20KHz bandwidth, Ref. 1KHZ, A-weighted.
Signal to Noise Ratio:	105dB typical, idle channel, A-weighted.
Crosstalk:	-90dB Right - Left, -120dB Center-Left @ 20KHz

Single-Ended Output Specifications:

Output Impedance:	10 Ohms
Maximum Output Level:	10 Vrms
Frequency Response:	20 Hz-20 kHz, ± 0.01 dB, Ref. 1KHz.
THD+Noise:	Less than 0.0016% @ 1KHz, maximum output level.
Dynamic Range:	105dB minimum, 20KHz bandwidth, Ref. 1KHZ, A-weighted.
Signal to Noise Ratio:	105dB typical, idle channel, A-weighted.
Crosstalk:	-90dB Right - Left, -120dB Center-Left @ 20KHz

Control: 2 serial digital volume control data for use with external volume control.

Block Diagram:

Please see page 7.

90 DAY LIMITED WARRANTY TERMS AND CONDITIONS
(5 Year optional extended service contract)

1. Theta Digital Corporation, henceforth referred to as Theta, warrants the product designated herein to be free of manufacturing defects in material and workmanship, subject to the conditions set forth herein, for a period of 90 days from the date of purchase by the original purchaser, henceforth referred to as purchaser. If the purchaser registers the unit with Theta by mailing in the warranty card, together with a copy of the bill of sale, within 14 days of the date of purchase, said purchaser will be registered for an extended service contract. The extended service contract extends the 90 days to a period of 5 years from the date of purchase by the original purchaser or no later than 7 years from the date of shipment to the authorized Theta dealer, whichever comes first.

2. CONDITIONS
   This warranty is subject to the following conditions and limitations. The warranty is void and inapplicable if the product has been used or handled other than in accordance with the instructions in the owner's manual, abused or misused, damaged by accident or neglect or in being transported, or if the defect is due to the product being repaired or tampered with or modified by anyone other than Theta or an authorized Theta repair center. In the unlikely event that the unit requires service, contact Theta for an RA (Return Authorization) number. The product must be packed and returned to Theta or an authorized Theta repair center by the customer at his or her sole expense. Theta will pay return freight of its choice. A returned product must be accompanied by a written description of the defect, a photocopy of the original purchase receipt, and a daytime phone number where the owner can be reached. The unaltered receipt must clearly list model and serial number, the date of purchase, the name and address of the purchaser and authorized dealer and the purchase price. Theta reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the prices or specifications of any product without notice or obligation to any person. The warranty is valid only in the country in which the unit was purchased.

3. REMEDY
   In the event the above product fails to meet the warranty, and the above conditions have been met, the purchaser's sole remedy under the limited warranty shall be to obtain an RA number and return the product to Theta or an authorized Theta repair center where the defect will be rectified without charge for parts or labor.

4. LIMITED TO ORIGINAL PURCHASER
   This warranty is for the sole benefit of the original purchaser of the covered product and shall not be transferred to a subsequent purchaser of the product.

5. DURATION OF WARRANTY
   This warranty expires 90 days after the date of original purchase. If Theta receives the completed warranty registration card within 14 days of original purchase, this period is extended to the fifth anniversary of the original date of purchase or no later that the seventh anniversary of the shipment to the authorized Theta dealer, whichever comes first.

6. MISCELLANEOUS
   ANY IMPLIED WARRANTIES RELATING TO THE ABOVE PRODUCT SHALL BE LIMITED TO THE DURATION OF THIS WARRANTY. THE WARRANTY DOES NOT EXTEND TO ANY INCIDENTAL OR CONSEQUENTIAL COSTS OR DAMAGES TO THE PURCHASER. Some states do not allow limitations on how long an implied warranty lasts or an exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

7. WARRANTOR
   Inquiries regarding the above limited warranty may be sent to the following address:

   THETA DIGITAL CORPORATION
   5330 DERRY AVENUE, SUITE "R"
   AGOURA HILLS, CA 91301

   WARRANTY OUTSIDE THE USA
   Theta has formal distribution in many of the countries of the free world, in each country the Theta Importer has contractually accepted the responsibility for product warranty. Warranty service should normally be obtained from the importing dealer or distributor from whom you obtained your product.

WARNINGS

1. To prevent fire or shock hazard, do not expose your Theta product to rain or moisture.
2. This unit contains voltages which can cause serious injury or death. Do not operate with covers removed. Refer all servicing to your authorized Theta dealer.
3. For continued protection against fire hazard, replace fuses only with the same type and rating of fuses as specified.