THETA DIGITAL
training manual

THETA DIGITAL SOUND "BYTES"

On Our Mission and History:

1. It is Theta Digital's mission to bring a sense of immersion realism to our products.
2. Theta Digital was formed in 1987, and launched a new product category: the self-contained digital to analog converter, or DAC.
3. Theta Digital has repeatedly established benchmarks of performance in both the digital and analog domains.
4. Theta Digital has successfully evolved from two channel audio to home theater.

On Our Product Designs:

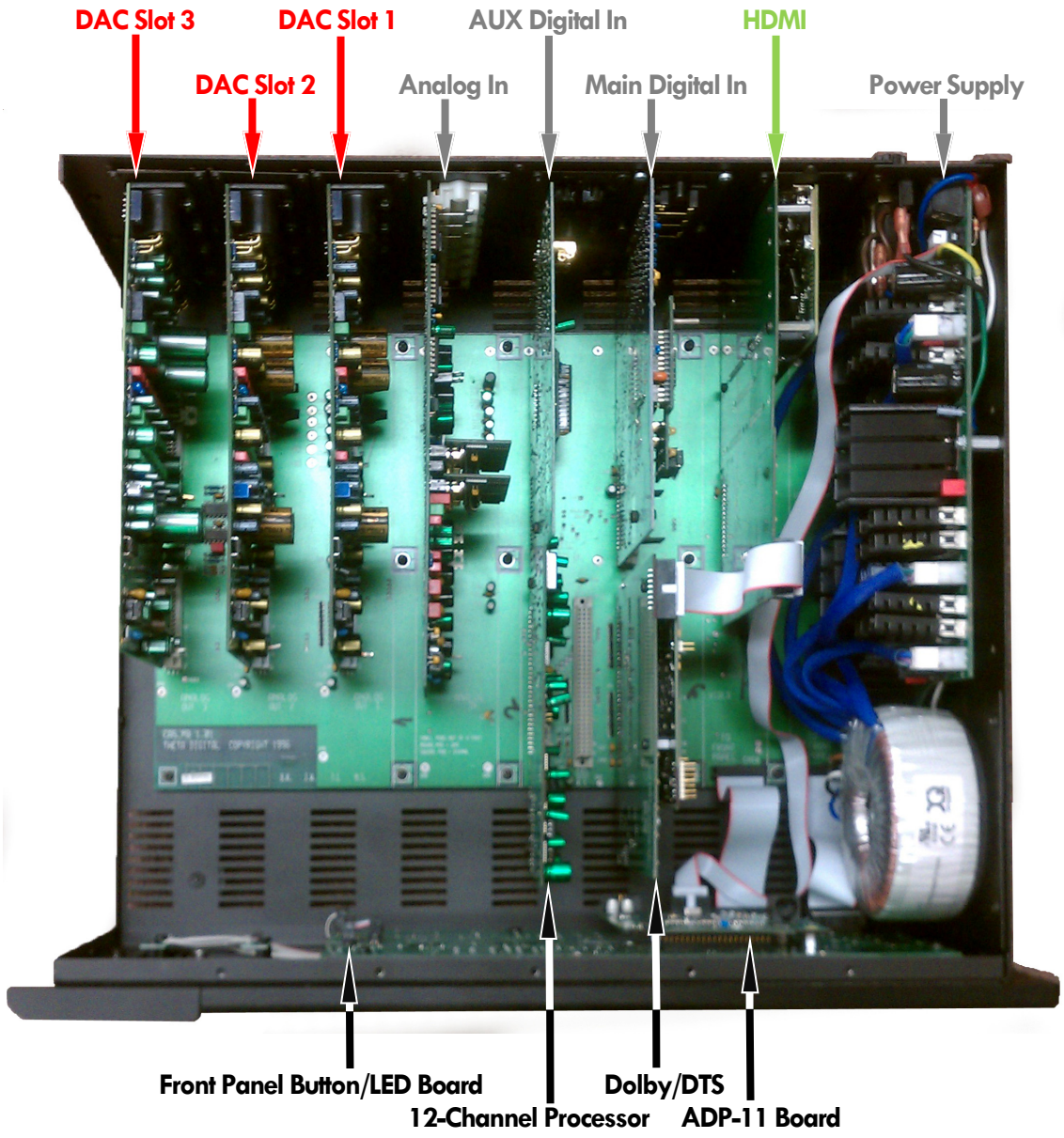
1. The Casablanca III is designed with multiple daughter boards interconnected by one motherboard, and supports up to three DAC cards available in many combinations.
2. The Casablanca platform continues to be a critically acclaimed benchmark of surround controller performance, and has been in continuous production since the mid 1990s, due to its open architecture and upgradeability.
3. Theta Digital is now recognized by dealers, reviewers and end users alike not only for our digital products, but for our amplifiers.
4. Our amplifiers have key elements in common: they are all fully balanced, true dual-differential circuitry, zero feedback, high current designs.

On Our Rigorous Quality Control Processes:

1. There are three equal aspects of Theta Digital's testing processes: physical, functional and quality.
2. Just because a unit measures fine does not mean it will sound right.
3. Our components are complex products and are tested in their natural environment: hooked up to multiple digital and analog sources, amplifiers, speakers and a monitor.
4. Theta Digital's quality control lab also functions as an important component in research and development for future technology.

CASABLANCA III HD Design

Photo of Casablanca III HD interior showing board locations and the flexibility of its card-based design.



Note that the card descriptions above are color coded in reference to the Rear Panel Overview pages that follow.

CASABLANCA III HD REAR PANEL OVERVIEW

Casablanca III Foundation Cards *(All of these are included in base model)*

F1. Power supply panel w/ RS-232 & triggers

F2. HDMI Card (4 HDMI 1.4 Inputs, 1 HDMI Output)

F3. Main Digital Input Card (6 Coax Inputs, 2 Toslink Inputs and 2 Coax Outputs)

F4. Aux. Digital Input Card (2 RF Inputs, 1 XLR Input, 1 BNC Input, 1 Toslink Input & 1 Data Out)

F5. Analog Input Card (6 RCA Inputs and 2 RCA Tape Outputs)

Audio Output Cards *(Must choose at least one from A1, A2, A3 or D1. May have up to 3 total.)*

A1. Premium Four Channel Balanced (twenty-five variations: A2P-a through A2P-y)

A2. Superior II Three Channel Balanced (ten variations: A3-a through A3-j)

A3. Xtreme D-2 Four Channel Balanced (twenty-five variations: A4-a through A4-y)

Video Cards

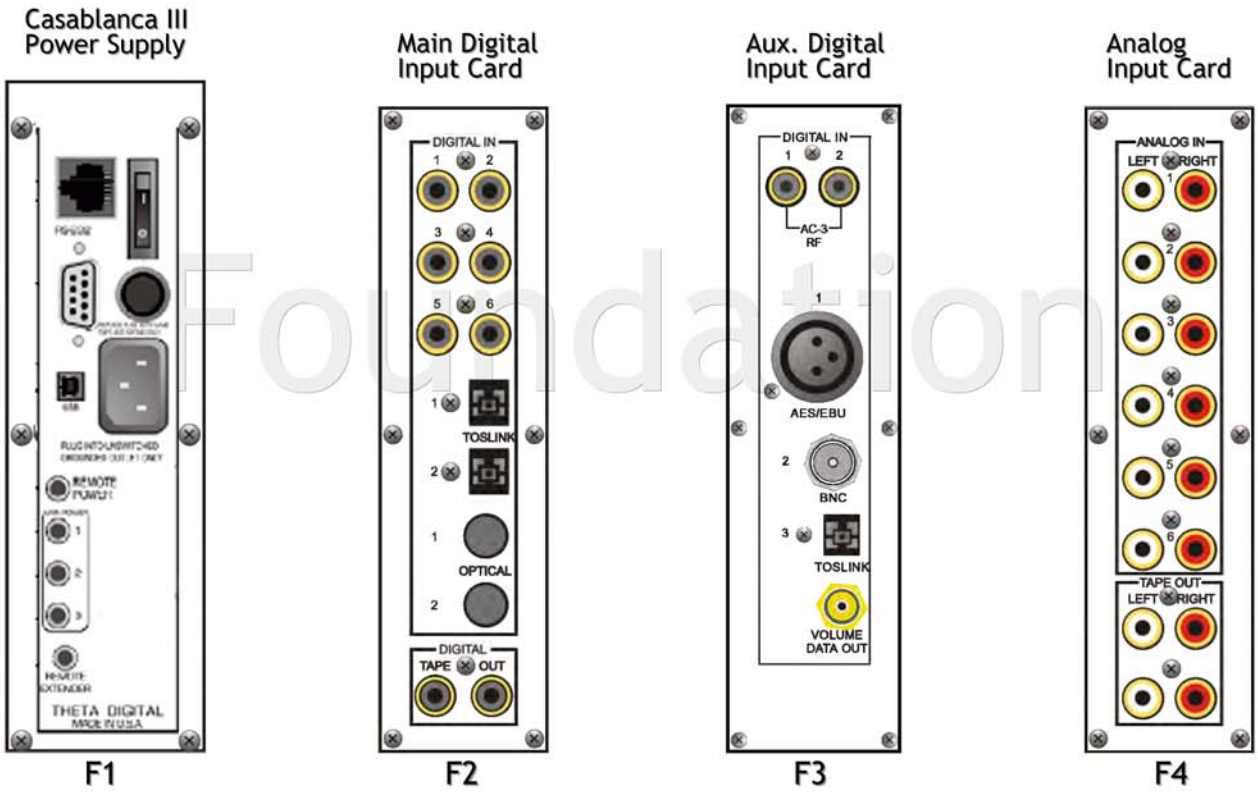
V1/F2. HDMI Card (4 HDMI 1.4 Inputs, 1 HDMI Output)

Digital Audio Output Cards *(Optional)*

D1. 12-Channel AES/EBU Balanced Digital Output Card

CASABLANCA III REAR PANEL OVERVIEW

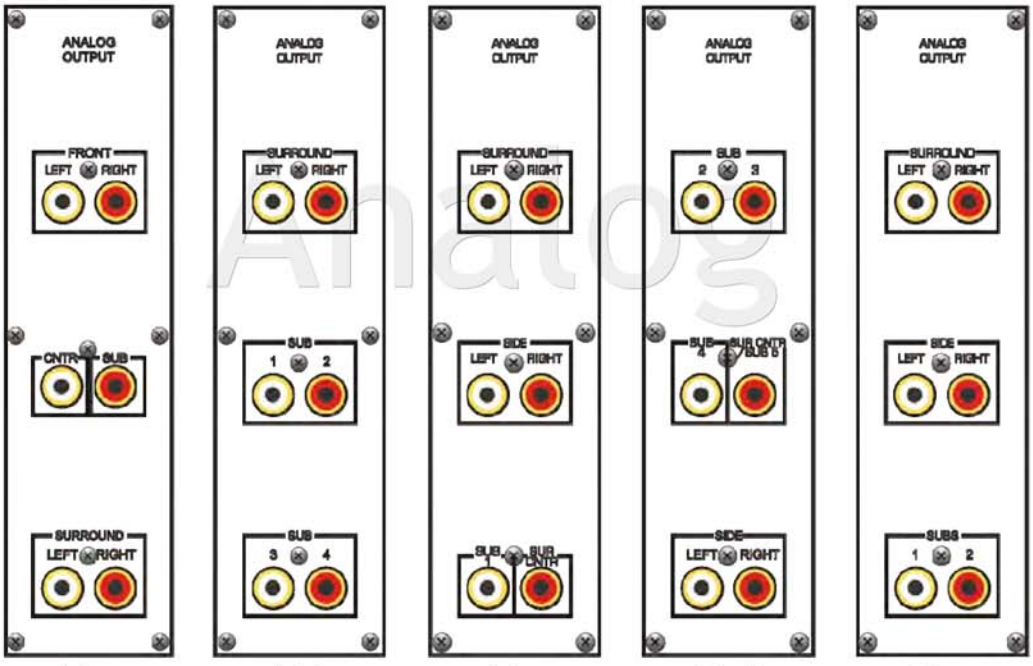
Casablanca III Foundation Cards



Analog Audio Output Cards

Standard Six Channel Single-Ended Options (Discontinued)

(Any of these single-ended cards can be installed into any of the three DAC slots in a Casablanca III)

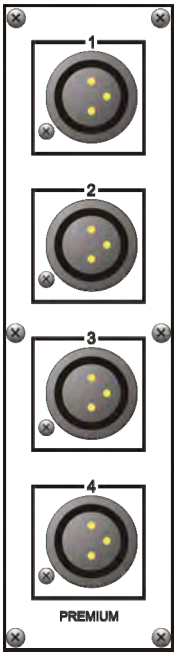


CASABLANCA III REAR PANEL OVERVIEW

Analog Audio Output Cards continued

Premium Four Channel Balanced Options

(Any of these Premium cards can be installed into any of the three DAC slots in a Casablanca III)
Note: Name labels are provided for channel outputs 1,2,3 & 4 on each Premium Card



1	1: Front Left 2: Front Right 3: Front Center 4: Sur Center or Sub 5 A2P-a	1: Front Left 2: Front Right 3: Sur Left 4: Sur Right A2P-b	1: Front Left 2: Front Right 3: Front Center 4: Sub 4 A2P-c
2	1: Front Left 2: Front Right 3: Side Left 4: Side Right A2P-d	1: Sur Left 2: Sur Right 3: Side Left 4: Side Right A2P-e	1: Front Left 2: Front Right 3: Front Center 4: Sub 3 A2P-f
3			
4	1: Sub 1 2: Sub 2 3: Sub 3 4: Sub 4 A2P-g	1: Front Left 2: Front Right 3: Front Center 4: Sub 1 A2P-h	1: Front Left 2: Front Right 3: Front Center 4: Sub 2 A2P-i

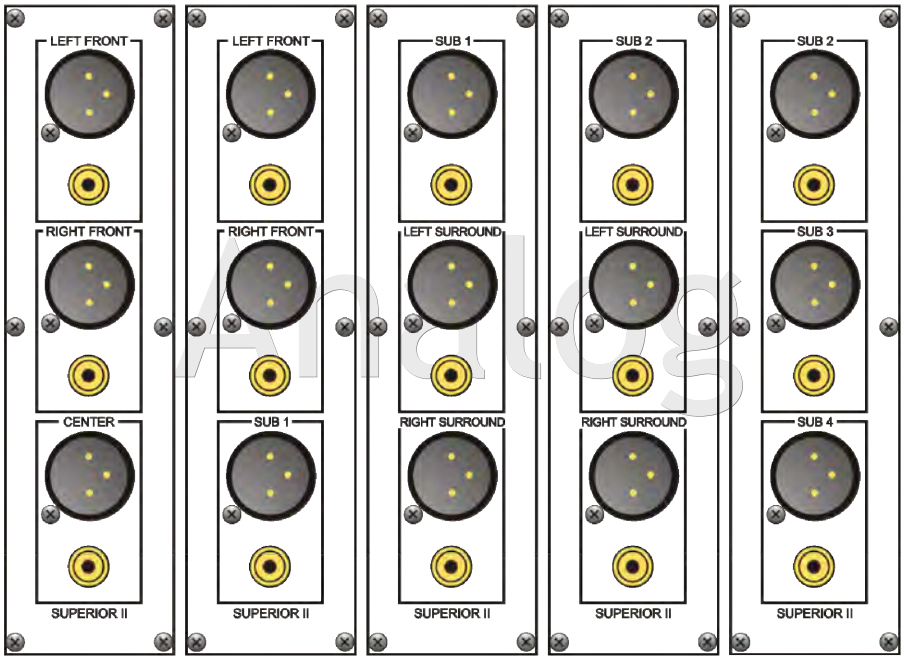
1: Side Left 2: Side Right 3: Sub 3 4: Sub 4 A2P-j	1: Sub 1 2: Sub 2 3: Sub 3 4: Sur Center or Sub 5 A2P-k	1: Sub 2 2: Sub 3 3: Side Left 4: Side Right A2P-l	1: Front Left 2: Front Right 3: Sub 1 4: Sub 2 A2P-m
1: Sur Left 2: Sur Right 3: Sur Center or Sub 5 4: Sub 1 A2P-n	1: Sub 2 2: Sur Center or Sub 5 3: Side Left 4: Side Right A2P-o	1: Sur Left 2: Sur Right 3: Sub 1 4: Sub 2 A2P-p	1: Sur Left 2: Sur Right 3: Sur Center or Sub 5 4: Sub 2 A2P-q
1: Front Center 2: Sur Left 3: Sur Right 4: Sub 2 A2P-r	1: Sur Left 2: Sur Right 3: Sub 2 4: Sub 3 A2P-s	1: Front Center 2: Sur Center or Sub 5 3: Sur Left 4: Sur Right A2P-t	1: Front Center 2: Side Left 3: Side Right 4: Sub 2 A2P-u
1: Front Center 2: Sub 1 3: Sub 2 4: Sub 3 A2P-v	1: Front Center 2: Sur Center or Sub 5 3: Side Left 4: Side Right A2P-w	1: Front Center 2: Sub 1 3: Sur Left 4: Sur Right A2P-x	1: Sub 2 2: Sub 3 3: Sub 4 4: Sur Center or Sub 5 A2P-y

CASABLANCA III REAR PANEL OVERVIEW

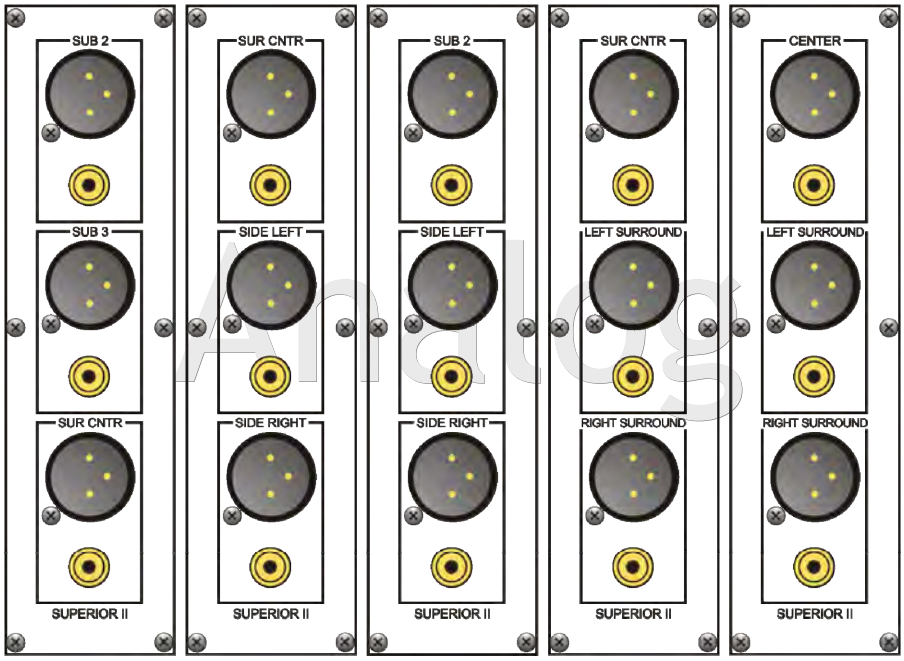
Analog Audio Output Cards continued

Superior II Three Channel Balanced Options

(Any of these Superior II cards can be installed into any of the three DAC slots in a Casablanca III)



A3-a A3-b A3-c A3-d A3-e



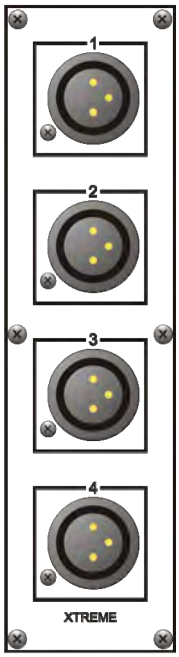
A3-f A3-g A3-h A3-i A3-j

CASABLANCA III REAR PANEL OVERVIEW

Analog Audio Output Cards continued

Xtreme D-2 Four Channel Balanced Options

(Any of these Xtreme D-2 cards can be installed into any of the three DAC slots in a Casablanca III)
Note: Name labels are provided for channel outputs 1,2,3 & 4 on each Xtreme D-2 Card

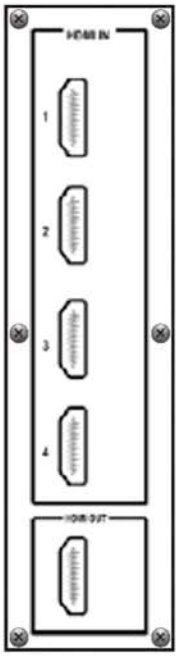


1
2
3
4

1: Front Left 2: Front Right 3: Front Center 4: Sur Center or Sub 5 A4-a	1: Front Left 2: Front Right 3: Sur Left 4: Sur Right A4-b	1: Front Left 2: Front Right 3: Front Center 4: Sub 4 A4-c	
1: Front Left 2: Front Right 3: Side Left 4: Side Right A4-d	1: Sur Left 2: Sur Right 3: Side Left 4: Side Right A4-e	1: Front Left 2: Front Right 3: Front Center 4: Sub 3 A4-f	
1: Sub 1 2: Sub 2 3: Sub 3 4: Sub 4 A4-g	1: Front Left 2: Front Right 3: Front Center 4: Sub 1 A4-h	1: Front Left 2: Front Right 3: Front Center 4: Sub 2 A4-i	
1: Side Left 2: Side Right 3: Sub 3 4: Sub 4 A4-j	1: Sub 1 2: Sub 2 3: Sub 3 4: Sur Center or Sub 5 A4-k	1: Sub 2 2: Sub 3 3: Side Left 4: Side Right A4-l	1: Front Left 2: Front Right 3: Sub 1 4: Sub 2 A4-m
1: Sur Left 2: Sur Right 3: Sur Center or Sub 5 4: Sub 1 A4-n	1: Sub 2 2: Sur Center or Sub 5 3: Side Left 4: Side Right A4-o	1: Sur Left 2: Sur Right 3: Sub 1 4: Sub 2 A4-p	1: Sur Left 2: Sur Right 3: Sur Center or Sub 5 4: Sub 2 A4-q
1: Front Center 2: Sur Left 3: Sur Right 4: Sub 2 A4-r	1: Sur Left 2: Sur Right 3: Sub 2 4: Sub 3 A4-s	1: Front Center 2: Sur Center or Sub 5 3: Sur Left 4: Sur Right A4-t	1: Front Center 2: Side Left 3: Side Right 4: Sub 2 A4-u
1: Front Center 2: Sub 1 3: Sub 2 4: Sub 3 A4-v	1: Front Center 2: Sur Center or Sub 5 3: Side Left 4: Side Right A4-w	1: Front Center 2: Sub 1 3: Sur Left 4: Sur Right A4-x	1: Sub 2 2: Sub 3 3: Sub 4 4: Sur Center or Sub 5 A4-y

CASABLANCA III HD REAR PANEL OVERVIEW

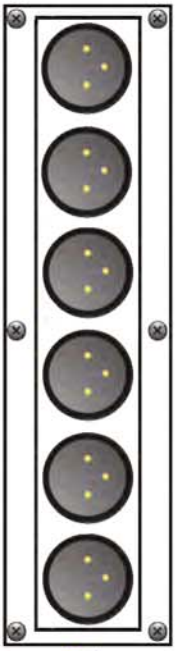
HDMI/VIDEO CARD



V1/F2

Digital Audio Output Cards

(Optional)



D1

THETA DIGITAL DESIGN NOTES

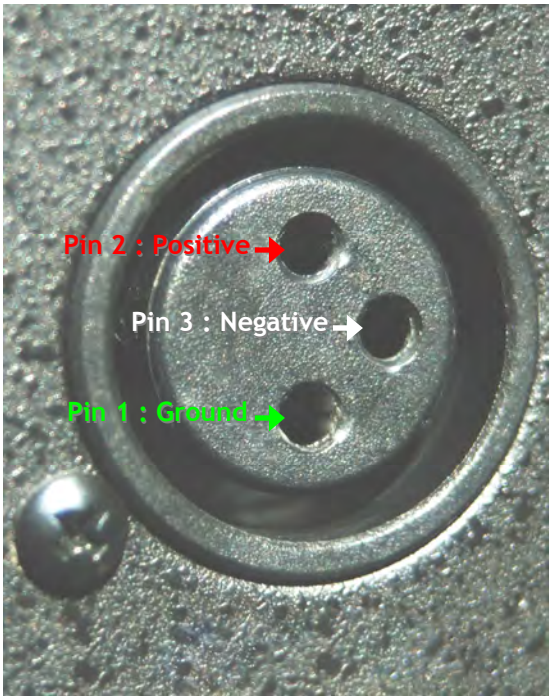
True Balanced Audio, Dual Differential XLR Output Jacks

Positive, Negative and Ground Pin Orientation

Note that ALL Theta Digital products with XLR jacks have been designed using true balanced, zero-feedback dual differential circuits to provide the highest levels of signal precision and sound quality.

It is important to note the orientation and signal flow of the three pins inside the XLR jack, particularly when using any adaptors to convert the XLR jack to a single-ended RCA jack.

Below are photos of an XLR output jack and an XLR input jack, showing the pin assignments:



Analog

Failure to note these pin assignments will result in severe damage to the circuits inside the unit, as well as to connected components in the system!

CASABLANCA III HD QUICKSTART GUIDE

Step by Step Guide to Naming Inputs

The Casablanca III HD can show up to four letters for input names on the front panel VFD (Vacuum Fluorescent Display).

1. From the main / input page, push the SET-UP button once.
2. Push the 1 button to select INP (Input).
3. Push the A-D button twice.
4. Push the 1 button to select **MISC**.
5. Push the 1 button to select **NAME.**
6. Push the A-D button once to highlight the first letter of the input name to be used for the front panel VFD (Vacuum Fluorescent Display).
7. Push "LEVEL UP" or "LEVEL DOWN" buttons to select the first letter of the input name.
8. Push the "LEVEL RIGHT" button to proceed to the next letter, then repeat step #7 as necessary for the remaining letters.
9. Push the SET-UP button three times to return to the main / input page.

CASABLANCA III HD QUICKSTART GUIDE

Step by Step Guide to Mapping Audio & Video Jacks by Input

1. From the main / input page, push the SET-UP button once.
2. Push the 1 button to select INP (Input).
3. Push the 4 button to select SOURCE.
4. Push the 1 button to begin prioritizing audio jacks and routing them to this input.
5. Push the "LEVEL UP" button to select desired audio jack (i.e. COAX 1) to receive signal from the audio source (i.e. Digital Output from DVD).
6. Push button 2 then push the "LEVEL UP" button to select the desired audio jack.
7. Push button 3 then push the "LEVEL UP" button to select the desired audio jack.
8. Press SETUP to exit.

CASABLANCA III HD QUICKSTART GUIDE

Step by Step Guide to Dolby Digital and DTS Configuration

The following steps are necessary to follow if the Casablanca III HD is being used in any system greater than 5.1, such as in a 6.1 or 7.1 channel system. If the Casablanca III HD will only be used in a 5.1 configuration or less, these steps are not required.

1. From the main / input page, push the SET-UP button once.
2. Push the 1 button to select **INP** (Input).
3. Push the A-D button once.
4. Push the 2 button to select **DOLBYDIGTL** (Dolby Digital settings).
5. Push the 6 button to select **+SPKR** (Additional surround speaker settings).
6. Push the **"LEVEL UP"** or "LEVEL DOWN" buttons to select a speaker mode (i.e.THETA). This setting will be used to send sound to additional surround speakers (if present) when playing a 5.1 channel signal.
7. Push the SETUP button once.
8. Push the 3 button to again select **DTS.**
9. Repeat Steps 6 and 7.
10. Push the SET-UP button to return to the main / input page.

For additional information, please refer to pages 17-18 and pages 66-71 in the owner's manual.

CASABLANCA III HD QUICKSTART GUIDE

Step by Step Guide to Speaker Setup with examples of crossover and slope adjustments

1. From the main / input page, push the SET-UP button once.
2. Push button 1 to select **INP** (Input).
3. Push button 1 once for **CONFIG** (Configuration).
4. Push button 1 once for **LT/RT** (Left & Right Speakers).
5. Push button 1 once for **CFG** (Speaker Configuration).
6. Push the **"LEVEL UP"** button to select the desired configuration. The options are **FULL** (Full Range), **XOVER** (Crossover), **FUL/LP** (Full Range with Low Pass) and **OFF** (No Output).* Normally, we recommend **XOVER**, as used in this example.
7. Push button 5 for **TYPE** of crossover that you want to use.
8. Push the "LEVEL UP" button to select the desired crossover type. The options are: ¢**PERF** (Phase Perfect). **BWRTH** (Butterworth) or **LINKR** (Linkwitz-Riley).**
9. Push the 2,3 or 4 button to fine tune the chosen crossover type (i.e. button 3 for LINK-RILEY in this example).
10. Push button 1 for **FREQ** (crossover frequency adjustment).
11. Push the "LEVEL UP" button to select the desired crossover frequency (i.e. 80 Hz).
12. Push button 2 for **SLOPE** to adjust the crossover slope.
13. Push the "LEVEL UP" to change to desired crossover slope (i.e. 24 dB).
14. Push the SET-UP button twice to return to the speaker selection page to continue setup for the other speakers.
15. Repeat steps 5 through 14 for the remaining speakers.
16. Push the SET-UP button three times to return to the main / input page.

*Certain channels have additional crossover options. Refer to the Casablanca III HD owner's manual pages 22-25 for more details.

**Refer to the Casablanca III HD owner's manual pages 22-23 for an explanation of crossover types.

CASABLANCA III HD QUICKSTART GUIDE

Step by Step Guide to Level Adjustment with example

Use of an SPL meter in the "C Weighted" position is required to properly calibrate levels. If possible mount the meter at ear level in the prime listening position. Point the microphone straight up at the ceiling.

1. From the main / input page, push the SET-UP button once.
2. Push button 1 once for **INP** (Input).
3. Push button 2 once for **LVLS** (Levels).
4. If **1-6** and **7-12** appear in the display, push button 1 for **1-6** to adjust the first six channel levels. If not, skip to step #5.
5. Push the A-D button twice so that the front panel display reads LEVELS NOISE1 above the A-D button.*
6. Push button 1 to select the left front channel.
7. While listening to the left channel's output, push the "LEVEL LEFT" or "LEVEL RIGHT" buttons to adjust the master volume level to 75 dB output at the listening position to ensure adequate output for calibrating the remaining channel levels.
8. Push buttons 2 through 6 to select the other speaker channels.
9. Push the "LEVEL UP" or "LEVEL DOWN" buttons to adjust the channel levels.
10. Push the A-D button so that the display reads LEVELS SOURCE above the A-D button.
11. Push the SET-UP button once. If **1-6** and **7-12** appear, push button 2 for **7-12** to adjust the remaining channel levels using steps 5 through 10 above. If not, push the SET-UP button two more times to return to the main / input page.
12. Push the "LEVEL UP" button to select the desired crossover frequency (i.e. 80 Hz).

It is essential that there is enough volume from the speakers to hear these adjustments. In particular, without adequate subwoofer volume, it may seem that the subwoofer is not working.

LEVELSNOISEA (Levels Noise All) outputs the test tone to all the channels simultaneously, which can aid in system burn-in once configuration is complete. Be sure to bring master volume to a save level before engaging this option to avoid any damage to speakers or amplifiers!

*If an external source playing test tones is to be used to calibrate these levels, select LEVELSOURCE in step #5, above.

CASABLANCA III HD QUICKSTART GUIDE

Step by Step Guide to Speaker Delay Setup with example

1. From the main / input page, push the SET-UP button once.
2. Push button 1 once for **INP** (Input).
3. Push button 3 once for **DLYS** (Delays).
4. In this example, push button 5 for **SURLT** (Surround Left)
5. Push "LEVEL UP" or "LEVEL DOWN" buttons to adjust the amount of additional delay.
6. Continue using buttons 1 through 6 and the "LEVEL UP" or "LEVEL DOWN" buttons to adjust the other speaker delays as necessary.
7. If an arrow appears above the A-D button, push the A-D button once to set the delays for the additional channels using the steps above. If not, skip to step #8.
8. Push the SET-UP button three times to return to the main / input page.

Step by Step Guide to Setting a Default Mode

The Casablanca III HD provides for a choice of the default mode (i.e. "Stereo") for each input. The factory default mode for each input has been set to "Matrix." If a mode other than "Matrix" is desired, follow the steps below. It should be noted that when a specific signal such as Dolby Digital 5.1 or DTS-ES is received, the Casablanca III HD will automatically switch into the correct mode for that signal.

1. From the main / input page, push the SET-UP button once.
2. Push button 1 once for **INP** (Input).
3. Push button 5 once for **MODE** (Default Mode).
4. Push "LEVEL UP" or "LEVEL DOWN" buttons to select a default mode (i.e. "Stereo").
5. Push the SET-UP button twice to return to the main / input page.
6. Push the A-D button to proceed with these changes for additional inputs.

Step by Step Guide to Center Channel Spread Adjustment

A Theta Digital Exclusive, this post process re-allocates the center channel signal to the front left and right channels incrementally, thereby expanding the "collapsed" image present in some source material. The left and right speakers, often the best in the system, then share the burden of the center channel. The resulting sound can be smoother and more articulate—even at low volume with less glare on louder passages.

1. From the main / input page, push the **BALANCE** button once.
2. Push the **A-D** button once.
3. Above Button 5 it will read **CTRSPD.**
4. Push button **5** to turn on **CTRSPD** (Center Spread).
5. Push the "**LEVEL UP**" button to provide the desired amount of Center Spread to the front left and right channels.
6. Push the **SET-UP** button twice to return to the main / input page.

Step by Step Guide to Macro for Copying Speaker Settings

The Macro function is a time-saving set up feature of the Casablanca III HD. The steps below provide a short-cut by copying the speaker parameters from one input to the remaining inputs. These speaker settings can then be modified as necessary to ensure proper calibration for each source with minimal effort.

1. From the main / input page, push the SET-UP button once.
2. Push button 3 once for **MACROS**.
3. Push button 2 once for **SPKR PARM** (Speaker Parameters).
4. Push button 2 for **TO ALLINP** (To All Inputs).
5. Push the A-D button for **YES** at the prompt to copy Input 1 speaker settings to all of the other inputs.
6. Push the SET-UP button three times after the display reads **MACRO COMPLETE OK** to return to the main / input page.

Step by Step Guide to Serial Number Retrieval

1. From the main / input page, push the SET-UP button once.
2. Push button 2 once under **GLOBAL**.
3. Push the A-D button once.
4. Push button 5 under **SER NUM** (Serial Number)
5. Push the SET-UP button three times to return to the main / input page.

SIX SHOOTER QUICKSTART GUIDE

Step by Step Guide to configuring a Six Shooter for use with a Casablanca III and a multi-channel analog source

The following instructions assume that the multi-channel analog source (i.e. DVD-Audio or SACD player) is plugged into Input #1 on the Six Shooter. Please refer to the Six Shooter wiring diagram on the following page.

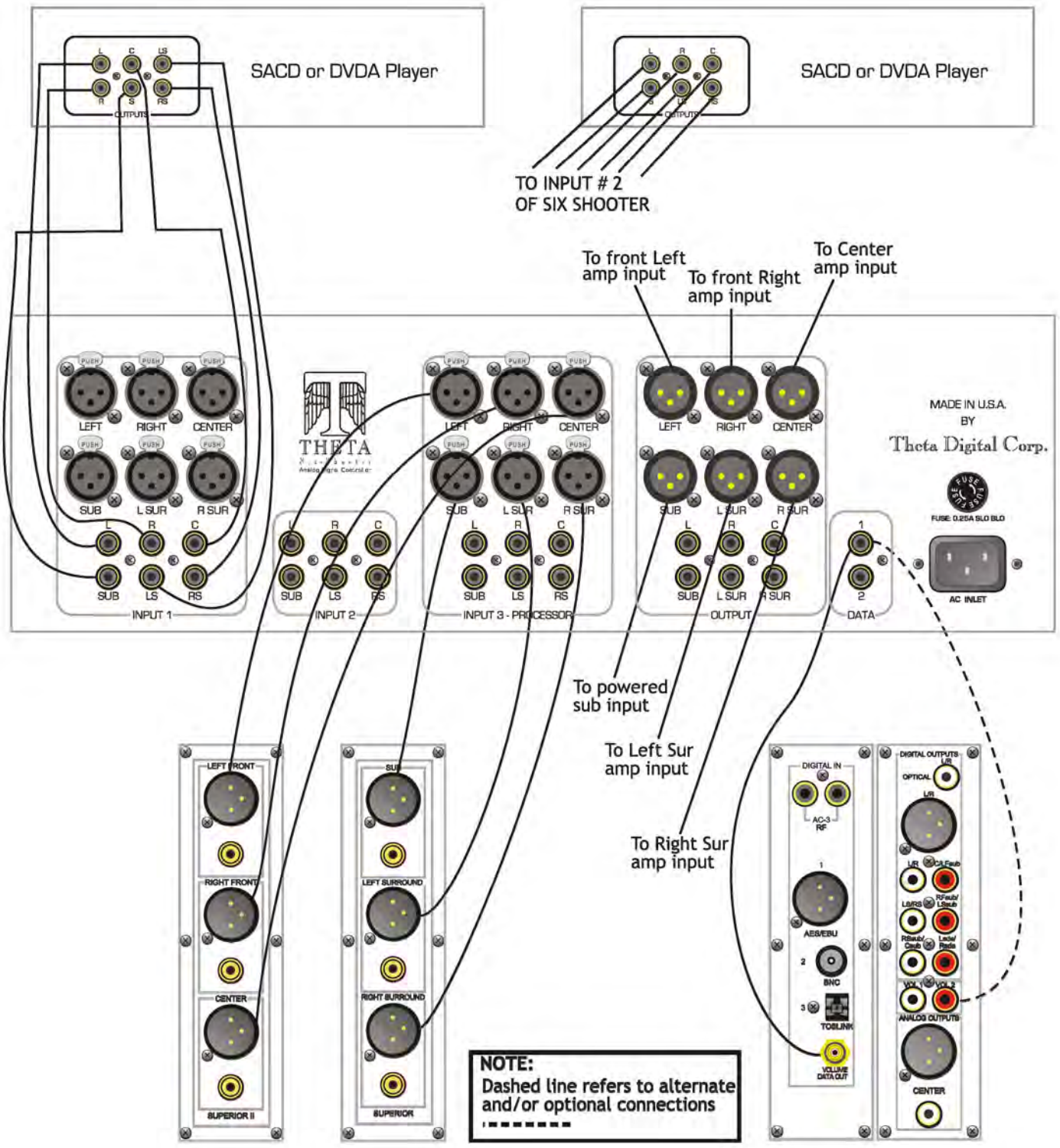
1. From the main / input page, push the **1** button for DVD.
2. Push the **SET-UP** button once.
3. Push the **1** button to select **INP** (Input).
4. Push the **A-D** button twice.
5. Push the **6** button for **6SHOT** (Six Shooter).
6. Push the "**LEVEL UP**" button to select **1** for Six Shooter input #1.
7. Push **SET-UP** button once.
8. Push the **1** button for **INP**.
9. Push the **A-D** button once.
10. Push the **2** button for **SOURCE**.
11. Push the **2** button again, then push the "**LEVEL UP**" button to select **6SHOT**.
12. Push the **SET-UP** button three times to return to the main / input page.
13. Push the **A-D** button once to proceed with these changes to this input.

Note that when using a Six Shooter with a Casablanca III, each source **must** have a value in the Casablanca III's input setup menu (refer to step 6 above) of either 1 for Input #1 of the Six Shooter, 2 for Input #2 of the Six Shooter, or 3 for Pass-through of all other signals processed directly by the Casablanca III.

Also, the Six Shooter can be controlled via RS-232, but must be set up first using the above steps.

SIX SHOOTER WIRING DIAGRAM

The Six Shooter allows the Casablanca to control volume and source selection of two separate multi-channel analog inputs (such as SACD and DVD Audio players). It also provides a throughput from the Casablanca's outputs to the amplifier's inputs, for complete surround system integration.



PERSONAL COMPUTER QUICKSTART GUIDE

Step by Step Guide to basic computer maintenance and preparation for use with Theta Digital products

The following steps will prepare and clean a Microsoft Windows-based computer of various temporary files that may corrupt its ability to interface with Theta Digital products. (Third party software products such as Webroot's Window Washer can clean out many of the PC's temporary files automatically.)

Please refer to the specific instructions included with our products which provide additional details on their connection to a computer.

1. Clean out all entries in Windows temporary file folders for each user.
2. Clean out all entries in temporary internet file folders for Internet Explorer and /or Mozilla Firefox browsers for each user.
3. Delete all cookies.
4. Clean out all entries in history file folders.
5. Empty the Recycle Bin.
6. Update, then run any anti-virus and anti-spyware programs to ensure that no viruses or spyware are present in the computer.
7. Defragment the computer's hard drive(s).
8. When connecting a Theta Digital product to the PC via RS-232, do not connect through a USB hub if using a USB to serial port adaptor. Instead, make a direct connection from the computer's USB port.
9. Restart the computer before initiating any connection with a Theta Digital product.
10. Temporarily disable any anti-virus and anti-spyware programs while the PC is connected to a Theta Digital product, as they may prevent proper communication. Be sure to re-enable these programs once you are finished!

CASABLANCA III HD QUICKSTART GUIDE

Step by Step Guide to using TDD to update Casablanca III HD software

TDD is a Windows compatible program from Theta Digital that can, among other things, update the software that controls the Casablanca III HD.

Note that the new v414 software is only for use in the Casablanca III HD. Older units such as the Casablanca I, Casablanca II or Casablanca III (non-HD) are NOT compatible.

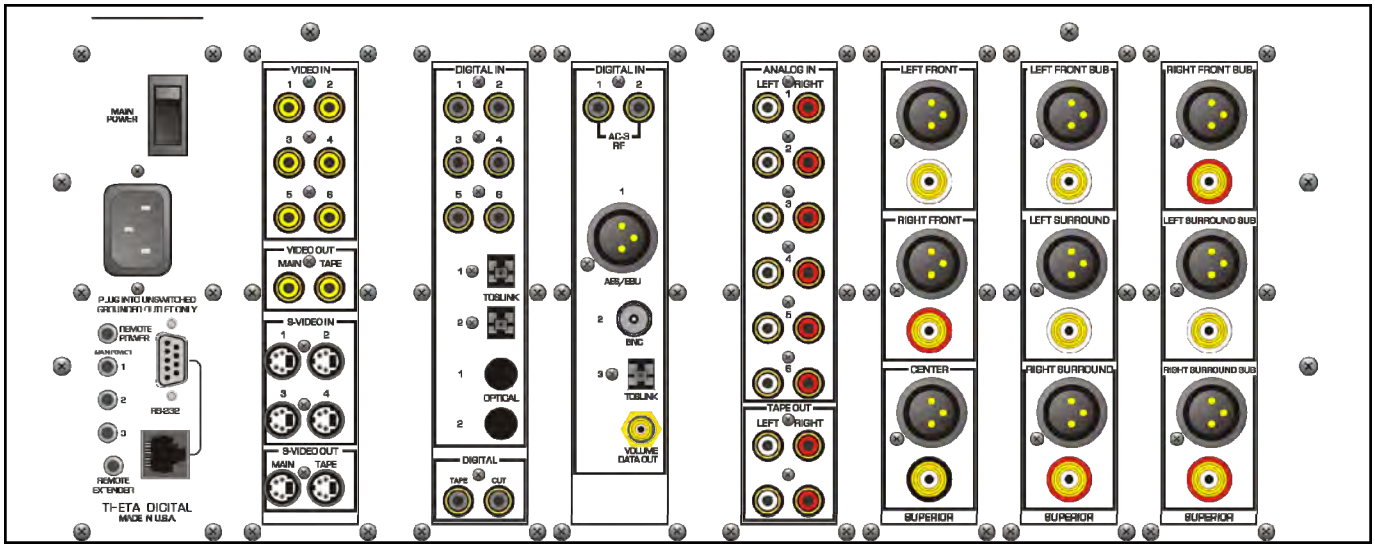
The following steps assume a moderate understanding of personal computer usage. Refer to your personal computer user's guide, or consult with an IT expert if the steps below use language that is unclear to you. See also the "Step by Step guide to basic computer maintenance and preparation for use with Theta Digital Products" in the Theta Digital QuickStart Guide.

1. Establish a serial connection between the Casablanca III HD and the PC using a suitable serial data cable, or use a USB to serial adaptor if the PC doesn't have a serial port. Note that the TDD2.01 program can use any COM port on the computer between COM 1 and COM 12. Be sure to note which COM port you are using in the Device Manager of the PC, then select that same COM port in TDD when connecting.
2. Put both the TDD2.01 and the CB3 HD v414 ZIP folders on the PC's desktop
3. Unzip the TDD2.01 file to the PC's desktop and double click on the TDD201.exe to open the program.
4. Select the desired Baud Rate and the correct COM port noted when checking the PC's Device Manager in Step #1. (The factory default Baud Rate for both the Casablanca III HD and the TDD program is 115200.)
5. Click on CONNECT, then wait a few moments for the connection to be established. You may need to click on CONNECT more than once before seeing the message "Connected" in the TDD program window on your PC's monitor.
6. Click on UPGRADE.
7. Navigate to the CBIIIHD-v414.ZIP folder on the PC's desktop. (Note that you must select the CB3HD-v414 folder using TDD. Simply opening that CB3HD-v414 ZIP file using Windows Explorer will only reveal Hex code files.) It will take around 20 to 25 minutes to completely flash a Casablanca III HD with this software.

Refer to the "Step by Step Guide to Digital Lock Adjustment" in the Theta Digital QuickStart Guide to configure and take advantage of that new option in the Casablanca III HD setup menu (in units with v414 software and later.)

CASABLANCA III

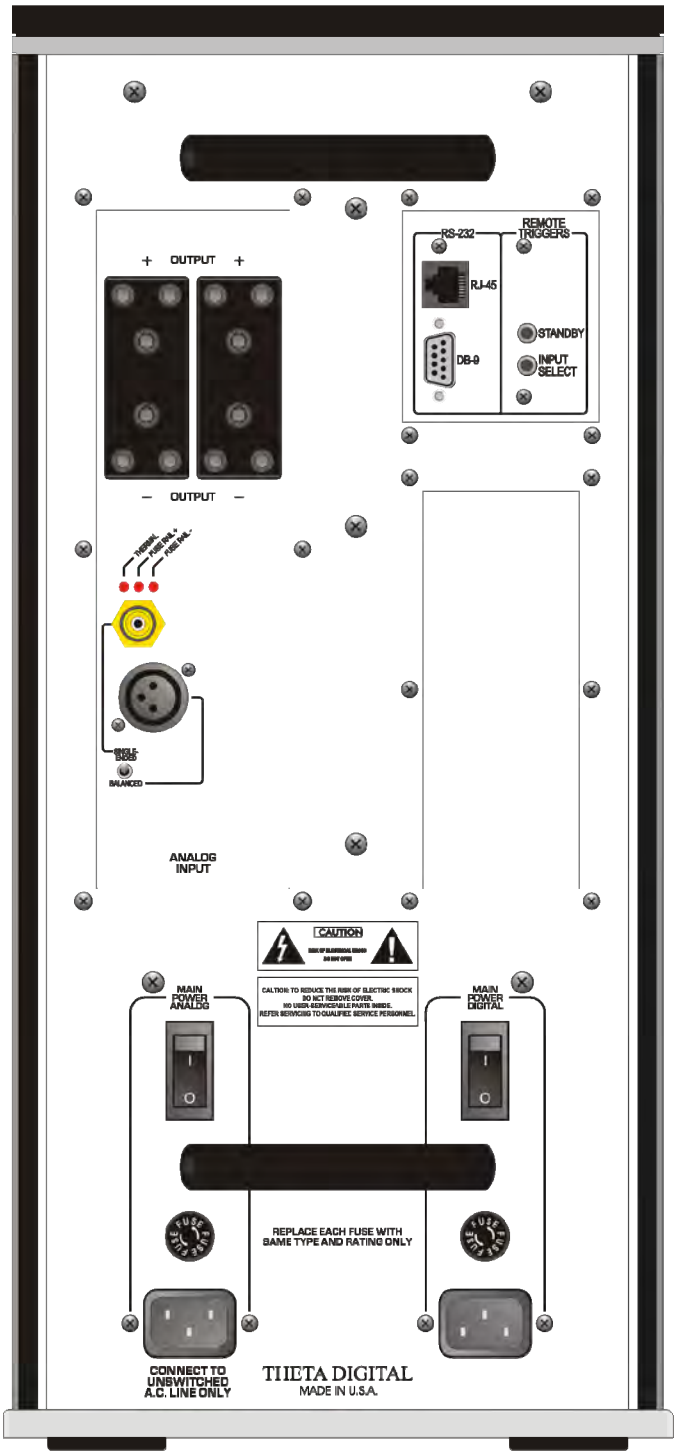
Twelve Channel Music & Cinema Controller



Note that the rear panel above shows one of many possible card configurations.

CITADEL 1.5

True Balanced Zero Feedback High Current Mono Block Amplifiers



COMPLI BLU

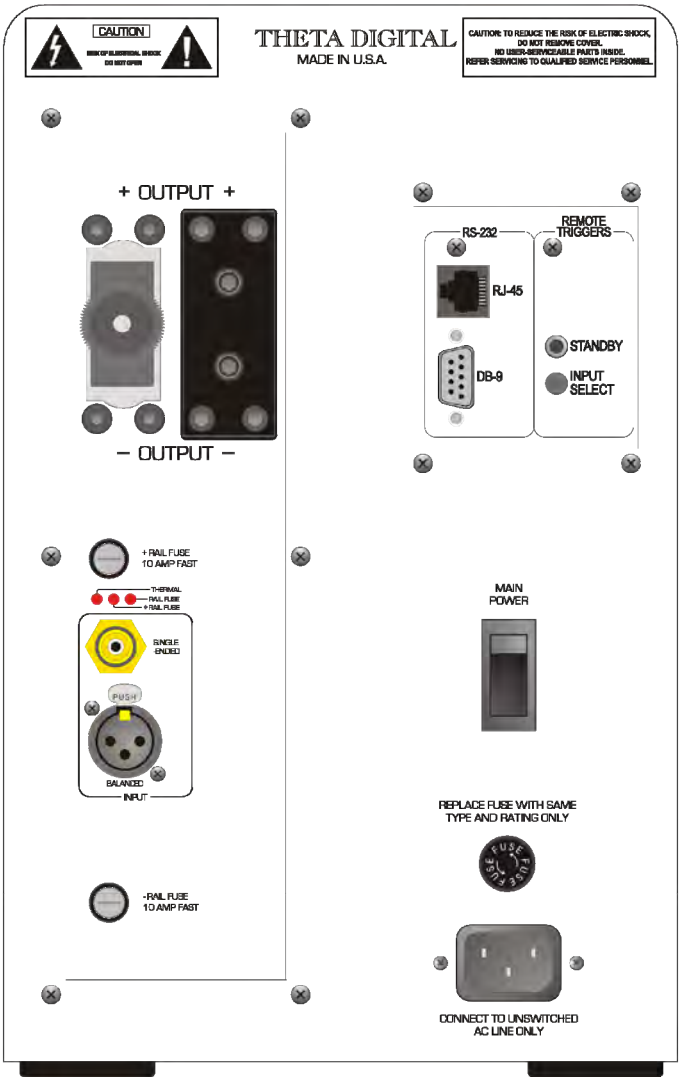
Blu-ray / SACD / DVD-Video / DVD-Audio / CD Transport

DREADNAUGHT III

True Balanced Zero Feedback Modular Amplifier

ENTERPRISE

True Balanced Zero Feedback High Current Mono Block Amplifiers



GENERATION VIII SERIES 2

Two Channel Digital / Analog Converter and Preamplifier