Theta Digital Casablanca IVa
Immersive Sound Preamp/Processor

Doug Blackburn

Theta Digital was started as a high-end stereo audiophile-oriented company that bucked the analog bandwagon with the best-designed digital audio components money could buy. This has never been a company that did things like they’ve been done before. They have a very tight focus on a small number of highly refined pre/pro and amplification products. The Casablanca was originally introduced in 1996 as a device with expandable architecture and ever since has undergone continuous development designed to maintain its position at the forefront of the audiophile world. It is designed much like a desktop computer. Remove the access cover and there are “slots” inside with circuit boards plugged in. Those boards can be replaced or new features can be added by installing a new board in an unused slot. This Casablanca is Theta Digital’s flagship Music and Cinema Controller and was the processor in one of the Widescreen Review & Custom Home Theatre Design reference systems in southern California. It recently returned in full, upgraded Series IVa configuration with the ability to decode Immersive Sound formats and a new board with outputs for up to six Immersive Sound channels. Because the Casablanca can be configured in many different ways, don’t assume I will touch on all the options here, there’s just not going to be enough space or time to do that.

With the IVa configuration, the Casablanca now supports DTS:X and Dolby Atmos Immersive Sound format processing up to 12 discrete channels. Current Immersive Sound formats from Dolby and DTS for home use only support up to four height channels. For more than four height channels from Dolby, you’ll need a newer version of Dolby Atmos that has not yet been announced to my knowledge or DTS:X Pro, which has been announced, but so far only available on the Trinnov Audio processors. Dirac Live Room Correction software support for 12 channels is part of the Casablanca now and a measurement microphone with USB interface is included with the Casablanca, as is a multi-device learning IR remote control. Dirac Live Room Correction has been discussed in previous reviews and found to be one of the two best systems I’ve experienced for correcting room issues without causing the sound to be less natural. Dirac continues to perform at least as well as I’ve experienced with other products. As a refresher, Dirac runs on a PC and the measurement microphone is also connected to the PC. Measurements are made, calculations are done, and the final result is downloaded into the Casablanca. Multiple versions of Dirac can be saved on the computer and sent to the Casablanca as needed. You might have one filter focused on a single best seat. Another filter might be optimized for a few of the best seats. Another filter might cover all the seats—or any other configuration you might want. Just because I’m not going to spend a lot of time with Dirac Live in this review, don’t think it’s because it’s not something I use or recommend… far from it. I have been impressed with Dirac Live results every time I’ve used it, including this time. This version of Dirac Live has 96 kHz sampling and powerful tools including advanced bass management. Dirac Live is one of the keys to getting the best sonic performance from the Casablanca for everything that passes through as digital signals. For most owners, their dealer/installer/integrator will take
care of all the integration issues. Enthusiast owners will have years of set-it-and-forget-it performance or years of experimenting with every possible configuration and setting—just for the fun of doing it and learning.

The classic design of the Casablanca is timeless. The Casablanca performs as if it could be a completely brand new product. Since Theta Digital started life by jumping into the highly competitive audiophile market, they have been of a mind that high-quality digital design and high-quality parts will always sound good and will stave-off the desire to upgrade your pre/pro every three or four years. That gives Theta Digital time to fine tune the addition of new capabilities that come in the form of hardware and software updates. This particular Casablanca was updated at the Theta Digital factory in Southern California. When you decide to do an upgrade to get new capabilities that may not have existed three years ago, you can also add or remove other boards as needed to keep your Casablanca in just the configuration you need as video and audio capabilities evolve in the marketplace and in your system.

Because of the dogged focus on audio sound quality, the Casablanca doesn’t have any internal video processing. It passes video signals through, including 4K Ultra HD with full HDR compatibility, with no processing of any kind. Because the Casablanca doesn’t have on-board video, there are no on-screen displays for volume, mute, source, sound mode, etc. The Casablanca front panel display is bright and clear and is about average in regards to the size of the characters in the display. Beyond 7 feet or so, it gets difficult to read—but that’s inconsequential if you are using an integrated control system with a display of some sort. It wouldn’t have to be within reach necessarily, as you can use the IR remote control or integrate the Casablanca into a whole-house control system, but it does make life easier if you don’t have to get up to read the front panel. The Casablanca integrates completely into control systems via its RS-232 port. Currently supported are Crestron and Savant with Control4 support coming soon. Standard IR control and 12V triggers also are included. Using the front panel display will be unnecessary once integrated into the control system. Reading the display is only an issue if you are doing minimalist installation without an integrated control system. I don’t use an integrated control system here because components change so often, so I needed to see the Casablanca front panel display. I pointed a tiny Wi-Fi cam at the front of the Casablanca, opened that camera’s app on my phone, and there I had a nice clear picture of the front panel. If I ever own a system that isn’t constantly changing, a control system is right at the top of the list.

Let’s talk about jitter briefly… jitter is essentially uneven amounts of time between digital bits in digital audio signals. In an ideal world, jitter would not exist. In the real world, clocks and EMF from various operating frequencies are all over the place inside devices. These manage to influence digital signals by upsetting the time intervals between bits so each inter-bit timing interval is slightly off from where it should be, a little too early or a little too late. In the world of analog audio from digital sources, jitter measurements in the range of 100s to low 1,000s of picoseconds (1 picosecond is 1 trillionth of a second) have been proven mathematically to cause distortion in analog audio signals up to several percent (see the work of Malcolm Omar Hawsford, Ph.D and AES Gold Award Winner in the 1980s and 1990s on the topic of jitter). Theta Digital developed something they call Jitter Jail with the sole purpose of preventing and removing jitter before the analog audio...
1990s, digital design for analog output started improving and better components began appearing. If the sound quality of the Casablanca existed at the dawn of the CD, the LP would have died in days rather than coexisting for quite a long time before falling out of grace, and in the last five years experiencing something of a renaissance.

Because of Theta Digital’s heritage in the high-end audiophile market, where high-quality analog audio is much revered, the Casablanca has something that is missing from a fair number of processors in the $15,000+ range… a dedicated high-quality analog signal path for analog input signals. Meticulously produced new reel-to-reel tapes and new limited-production, ultra-high-quality LPs are being made new from some of the best stereo analog recordings ever made to satisfy dedicated analog audio fans who want the best regardless of cost. Most other processors in this price range digitize all incoming analog signals and don’t offer an all-analog signal path. Digital conversion is done very, very well in other processors today due to huge improvements in A-to-D converters available for music and home theatre components compared to early devices, but it’s still a conversion that creates anxiety that analog enthusiasts can have difficulty shaking.

As configured, this Casablanca has four HDMI 2.0 inputs with HDCP 2.2 and a single HDMI output with ARC compatibility. A comprehensive range of audio level adjustments is available with pure Class A analog preamplifier output stages, which achieve exceptionally low distortion and noise. There are also six analog audio inputs. Analog Direct mode is the mode to use when you want to keep your analog audio path as perfect as possible. When you use Analog Direct, you lose Dirac Live Room Correction, LFE/subwoofer support, and any audio processing options, including EQ and upmixing to more than two channels. For audiophiles who want the best analog sound and the best digital conversion. Jitter is inconsequential for video because even at 120p frame rates, pixels are turned on so long that jitter in the digital video signal before it is converted to the drive signal for the 2+ million, 8+ million or 32+ million pixels in your video display screen just doesn’t matter. Ditto for computer data, games, you name it. Only digital conversion to analog audio (or any other analog signal) can be influenced by jitter. And the higher the analog frequency, the more distortion is caused by jitter because of the severe “slopes” in the signal compared to a relatively gentle low-frequency 40 Hz sine wave, for example.

In any case, the Casablanca delivers exceptional, pristine audio from digital sources. This unit features 12 channels of the company’s new Xtreme D-3 DACs. Based on Theta Digital’s legendary Generation VIII $15,000 outboard DAC, the Xtreme D-3 uses the same fully balanced circuit topology to capture much of the magic of the Generation VIII.

When digital sources sound this good, your music listening will have an ease to it that’s quite noticeable. I liken it to reading glasses. After reading for a while with absolutely no complaints, you take them off, clean them, and put them back on, only to experience that momentary “whoa… what an improvement,” but you very quickly adapt to the clean glasses and you stop noticing that the text is easier to see. That’s a perfect description of digital sound with significant levels of jitter versus digital sound with minimal jitter. Except in music, the effect isn’t so much blurry as it is unsettling in a way that a noise at the threshold of hearing would be unsettling with the source of that not being obvious. Every digital product I remember from the 1980s sounded that way. By 1990s, digital design for analog output started improving and better components began appearing. If the sound quality of the Casablanca existed at the dawn of the CD, the LP would have died in days rather than coexisting for quite a long time before falling out of grace, and in the last five years experiencing something of a renaissance.
sound they can get in a single pre/pro, the Casablanca may be the best choice. My analog source was a high-end Roksan Xerxes turntable, a rewired SME V magnesium tone arm, any one of several Benz low-output moving coil cartridges, and what was once a very expensive outboard phono stage now so modified it’s no longer the same device (well over $15,000 altogether when new). The analog stereo listening I did was right up there with the best-sounding analog I’ve heard anywhere else. There is something to be said for avoiding unnecessary analog-digital-analog conversions when listening to analog audio. Some of it may be “mental,” meaning just knowing that the analog signal is never digitized relieves some residual anxiety that digitizing the analog signal might not be the best path to ultimate analog nirvana. Relief of that anxiety alone may make music seem to sound better to someone who is an analog stereo enthusiast. And the removal of that anxiety relaxes the listener, making the listening session better. But there seemed to be something else just beyond that the Casablanca reproduced—a precision of space, tone, and localization that is only present when using the best analog gear and the best analog stereo recordings.

Will you have the same reaction to the quality of the analog sound in your room? Unless your room doesn’t have slap echo or bass suckouts in the listening area, you may not be overly impressed with the analog audio sound. Why? When you select Analog Direct mode, you can no longer have the benefits of Dirac Live Room Correction applied to the stereo loudspeakers you are using. My room has a number of room-tuning devices and intentional items placed in specific locations to balance reflection and absorption and to break up first reflections so they don’t interfere with directly radiated sound from the loudspeakers. If your room is similarly “tuned” to sound good without room correction, you will likely experience the same thing I experienced… that the analog sound is superb. If there’s not much attention to acoustics in your room and Dirac Live is doing all the heavy lifting to make the sound really nice in your “un-treated” space, when you use Analog Direct mode and Dirac Live goes away, your room may influence the sound so much when Dirac Live is not correcting the problems, that you could very well think Analog Direct mode is not a benefit. It’s variables like these that can confuse results, and sometimes reviewers even get snagged by them...

While this review focuses on the “IVa” configuration, Theta Digital has announced a “V” version that will have new digital signal processors (DSPs) and more decoding capability needed to configure up to 18 discrete channels that can include up to eight Immersive Sound channels and/or up to five subwoofers. Price-wise, the Casablanca is right up there with other premium pre/pros. In IVa base configuration, it is $18,995, while the base “V” configuration is expected to have a $19,995 MSRP. As reviewed, this 12-channel IVa configuration with Theta Digital’s proprietary Xtreme D-3 DAC cards has an MSRP of $28,985. The Xtreme D-3 DAC cards are $4,995 for six channels and lower prices if you only need four or two channels.

There are a lot of setup options in the Casablanca, though, it is a little more limited than top models from Trinnov Audio or Datasat. In return, the Casablanca gives you what may well be the ultimate analog audio performance in a high-end processor. Digital performance is thoroughly competitive with any competition. Though there are no glaring configuration omissions, the Casablanca doesn’t support bi-amp or tri-amp configurations with crossovers and slopes, for example. The Casablanca supports all popular digital audio formats up to 24 bits and 192-kHz sample rate. The noise floor is completely unobtrusive, all sounds emanate from nicely silent backgrounds.

I didn’t detect any operational glitches, no lockups/hangs, no stray noises while switching sources or modes, no failure to do what you need, and no pops or other noises when you turn power on or off.

I was completely unsurprised by the Casablanca in any way. Yep, nothing about it surprised me at all. I’ve heard a few Theta Digital products back in the late 1990s and early 2000s. They were the bomb then and they still are if they are all like the Casablanca. There is no processor I’ve had here that outperforms the Casablanca with digital sources. This is another case where the sound of digital sources is reproduced at such a high level of quality that it’s difficult to imagine how it could sound better. I had massively high expectations for the sound quality of the Casablanca and I wasn’t disappointed. Analog stereo music from my turntable setup was absolutely captivating. Was it just the relaxation factor from knowing there was no digital conversion when I used Analog Direct mode? Or does unconverted analog sound better than analog that is digitized, manipulated (room correction and such), and converted back to analog? I have to go back to the tuned room without Dirac versus the untuned room without Dirac. Listening to LPs became a huge thing during this review, and I literally have not listened to any LPs in at least two years until the Casablanca arrived. Until the late 1990s when digital sound quality finally started living up to its potential, LPs were about the only form of music I really enjoyed.

Movie sound with the Casablanca was everything you want and nothing you don’t. When the soundtrack had interesting motion involving several channels, like much of Edge Of Tomorrow, the Casablanca did a fine job of flying those sounds around the room. Phantom images created by using two or more loudspeakers to place sounds in places no loudspeakers exist worked very well—scary-well. One scene in Edge Of Tomorrow involves troops being flown to a beach where a ferocious battle is in progress with aliens. These aircraft have troops with powerful exoskeletons tied to cables in the ceiling of the aircraft. When they get to the drop...
zone, the cables drop them at a controlled rate and they disconnect from the cable just before touchdown. But when aliens are shooting at them, there’s mayhem in the air with troops swinging around in mid-air still tethered to cables that won’t release them while their aircraft is in the process of being destroyed. As a result, the out-of-control aircraft spinning around are swinging these troops around in mid-air rather violently. The sounds you hear during that encounter are just amazing because of all the yelling and gunfire from those guys swinging around on the cables… and this isn’t even an Immersive Sound soundtrack.

For Immersive Sound experiences, I focused on newish releases and only the ones that have Widescreen Review disc review Immersive Sound ratings with “3” or more stars. And there aren’t many of those because studios haven’t been paying humans to create the Immersive Sound soundtracks. In some instances, it sounds as if they run the 5- or 7-channel soundtrack through Dolby Surround or DTS Neural:X to make “fake” Immersive Sound. Then that is encoded as Dolby Atmos or DTS:X, so the Dolby Atmos or DTS:X light on $400 receivers turns on (too snarky?). The result is very little sound in the height layer channels and low numbers from Editor Gary for Immersive Sound ratings. I find DTS Neural:X to be still a bit better-sounding as an upmixer than Dolby Surround. I was hoping we would see these two dominant formats get better at the upmixing thing over time, but it’s not happening so far. Fortunately, word must finally be getting out that people are noticing that the studios are cheating like crazy and making a lot of unimpressive Immersive Sound soundtracks. If you have been following Editor Gary’s 4K Ultra HD reviews, you know some of the Dolby Atmos and DTS:X discs these days are getting 4 and even more stars for the Immersive Sound aspect. That can only happen if one or more humans are creating the Immersive Sound soundtrack. But when you do have a chance to hear a disc with an actually good Immersive Sound soundtrack, it can be a magical thing. Like John Wick: Chapter 3 Parabellum. This got an Immersive Sound score of “4” from Editor Gary, and you can really hear how much more thought went into this Immersive Sound soundtrack than those rated 1.5 or 2. There were times music was high and upfront while all hell was breaking loose on-screen and in the rear height channels. At the same time, you hear things in the space to your sides and behind you as things are thrown around and as Wick shoots one guy to the right and another guy behind him, and you can hear both of them at the same time at different heights and in their proper positions. The height channels farthest to the rear carry quite a bit of ambient sound, and that is something you rarely hear in those botched Immersive Sound soundtracks. Here it brings you into the movie with a heightened sense of being an observer inside the movie… never seen on-screen but always seeing everything. There is some pretty brutal stuff in John Wick: Chapter 3 Parabellum—broken fingers, a ridiculous number of gunshot deaths, the gunshots themselves, and all the fighting that happens. During one of the fights, something is thrown or otherwise propelled roughly from center stage, to the middle-left side of the room, where it hits something else that hits a hanging fluorescent light fixture that flies farther back and up. This is an impressive surround effect that is a great example of how the things you are hearing can make you feel more like you are just off-screen when this is all happening. Turn the Immersive Sound off, and it feels like a movie again and not so much of an experience. Every movie was a similar experience. The Casablanca performed effortlessly and showed you exactly how much more you get from a properly engineered Immersive Sound soundtrack.

Soundtrack music quality is all over the map. The Casablanca reveals that with ease. You can tell when the violins are recorded with the wrong type of microphone. You can hear the flat uninspiring sound easily. The Casablanca doesn’t make it worse than it is, it just lets you hear precisely what was recorded without protecting you from lower-quality sound or annoying you by making lo-fi sound worse.

Music listening from digital sources produced clean, pristine sound that seemed to float in space free of any attachment to loudspeakers. It was freaky to look at a loudspeaker you knew was producing sound, but when you look right at it, there is no sense at all that the sound you are hearing comes from that specific loudspeaker. It’s almost as if the sound exists in the room independent of the loudspeakers. It’s a great achievement to create a product that can do that. It’s starting to hear that on loudspeakers that didn’t do that with a previous processor. The 50th Anniversary Edition of The Beatles’ White Album is much more than just a remaster that improves the clarity of everything. George Martin’s son, Giles, painstakingly remixed each track his father recorded to reveal details that were hidden or masked by other sounds or splices. As familiar as the music is after all these years, this new edition is pretty incredible. The Casablanca made every track a sonic treat revealing every wonderful detail with utter clarity. I used the 24-bit/96-kHz version that has a slight sonic advantage over the 16-bit 44.1-kHz version, with most of the advantage in the midrange and treble. I rarely listen to entire “double albums” in a single sitting, but that happened three times while the Casablanca was here because I wanted to commit this great-sounding recording to memory as best I could before the Casablanca goes back to work in a Widescreen Review reference system.

Editor Gary’s second production of The BBB Featuring Bernie Dresel, Bern Bern Bern is a studio recording of impressive quality. Listening to the uncompressed 5.1 LPCM and lossless DTS-HD

EQUIPMENT REVIEW

Theta Digital Casablanca IVa Immersive Sound Preamp/Processor
Master Audio tracks of “A Night In Tunisia,” a jazz classic arranged here by BBB trumpet player, Jeff Bunnell, was a great example of how realistic the side surround channels can be when they aren’t used in gimmicky ways. Here the orchestra is spread realistically wide across the front of the room, and the side surrounds help define front back dimensionality and bring the sense you are in the studio space while listening to the music. The tenor saxophone always gets my listening attention because I like how the different sorts of sounds the instrument makes come together to make the unique character of the sax... valve noises, reed sounds, the brass body, and the direct sound itself create the unique sax sound. The Casablanca delivers the individual sounds as you hear them live with the glow of the brass body, the air moving through valves and mouthpiece, the vibrating reed... the detail is natural and audible as a single instrument sound, or listen more closely and hear the different individual elements of the sax sound if you like.

Bernie’s drumming is a symphony of textures and dynamics, subtle at times, and all-out assaults at others. The Casablanca doesn’t blunt the transients in any way and is very adept at revealing details and similarities in the sound of different sizes of drums in the kit, so you can almost “see” the directions Bernie moves in to reach each drum. Most 5.1 music recordings are either too gimmicky to suit me or they just aren’t recorded well enough to enjoy. That’s certainly not the case with this recording. I can’t tell you how many versions of “A Night In Tunisia” I’ve heard over the years. It’s amazing to hear this classic sounding new and fresh. There are wisps of the familiar melody here and there intertwined with the band’s energy and unique interplay. The native 24-bit 96,000 Hz sample rate recording preserves subtle instrumental detail, like gentle decays and small tonal or texture differences that help create a natural sense of space within the recording in spite of the whole band playing their parts separately for the recording, then being mixed into proper spatial perspective.

**Conclusion**

I find amusing irony in the fact that Theta Digital makes a processor that produced the best analog stereo music listening experience I have had in a long time. Fortunately, it does everything else equally well. The Casablanca turned out to be among the best processors I’ve experienced in terms of reliable operation, lack of glitches, and stellar sound quality. I’ve talked about products good enough to be called SOTA (state of the art) before and how you could have several you might consider equals at the pinnacle of performance, yet they may not sound completely identical. The Casablanca fits that profile perfectly. It will do pretty, harsh, irritating, smooth, and pristine all at the same time if they are in the recording. I could always count on the Casablanca processor to make my day better, even if it was already a great day. There was something very attractive about the way the system invited me in for a good time while the Casablanca was running the show. There are some real street fighters in this price range, but the Casablanca brings its own beauty and light to movies and music and goes head to head with any competitor. Strongly recommended.