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# StormAudio ISP MK2

## Immersive Sound Preamp/Processor

**Doug Blackburn**

French firm, StormAudio arose at the beginning of the Immersive Sound revolution in home theatre. The company, at one point, was part of Auro Technologies group, but StormAudio is now a fully independent company. They are manufacturing products focused on multi-channel Immersive Sound for all applications. Their current product line includes the ISP MK2 and an 8-channel amplifier and 16-channel amplifier. The ISP MK1 is also listed as a current product. But for now that is their total focus. The results of their focus are products that are well designed, modular, and upgradeable with lots of flexibility and long term reliability.

The ISP MK2 is an update of the ISP MK1 with features that add all the latest capabilities. StormAudio uses DIRAC Live Room Correction software with the new Bass Control module that allows any number of subwoofers to be supported, a feature that can't be overstated since multiple subwoofers can have surprising cancellations and peaks from room modes. As usual, you run DIRAC Live on a computer with the measurement microphone connected to the computer and the computer communicating with the ISP MK2 over a local network. When the measurements are complete, the computer generates the data for the ISP MK2 and downloads that to the ISP MK2. Multiple DIRAC Live measurements can be saved and used in different setups. For example, there could be a setup that is optimum for a single person in the favored seat. Another setup could produce the best sound for three people sitting together. And another could be saved to provide the best sound possible over all seats. And don't forget up to 20 parametric EQ settings per channel are available in case DIRAC Live needs a lit-

tle help or in case EQ-only or no-correction modes are desired.

Audio processors at this level are complex enough to install that the majority of ISP MK2s will likely be installed as part of a custom installation, and the owner won't be involved in setup other than discussing preferences with the installer. But there's nothing so complicated that any intermediate to advanced home theatre enthusiast can't manage if they choose to do so.

The front panel is black glass. There is one button for power and three buttons and a knob for navigating menus on the central display of the ISP MK2. However, controlling the ISP MK2 is much easier with the IP control interface. The HDMI board supports seven inputs and two outputs. Ports are HDMI 2.0b with HDCP 2.2. There is also support for eARC on one of the HDMI outputs. eArc is usually an HDMI 2.1 feature, but StormAudio got it working with the HDMI 2.0b circuit board. All nine HDMI ports support 4K UHD up to 18 GHz. The ISP MK2 can support multiple theatres in multiple rooms with support for multi-way loudspeakers and multiple subwoofers. There are as many as 20 parametric EQ adjustments per channel. There is an REW (Room EQ Wizard) software plugin for making use of this free room measurement software, popular with many intermediate and advanced enthusiasts. IP control is available from any browser, and there is an iOS control app. The ISP MK2 is compatible with popular control systems from Control4, Crestron, RTI, Savant, and ELAN. There are a number of configurations of the ISP MK2 available. There is a useful table on the StormAudio Web site showing all available (four shown) hardware configurations. Additionally, there are optional boards that add

functions not normally needed for conventional home theatre, where sources will be all consumer video formats, from discs to streaming. These options give the ISP MK2 interfaces commonality with Pro Cinema gear including: 32 digital AES/EBU channel outputs; 32 digital AVB outputs; and 16 DCI AES/EBU inputs. Your StormAudio rep can provide details and prices. The hardware versions include models with 16, 24, and 32 channels. There are four pairs of analog RCA jacks that can be used for four analog stereo sources, or they can be configured as one stereo input and a 5.1 analog input, or they can be configured as a single 7.1 analog input. There is a single stereo XLR input. Digital audio outputs include three digital coax and three optical outputs. There is a small cooling fan in the ISP MK2 but I never heard it operating, so it either never came on or it is very quiet in operation. The ISP MK2 is compatible with a number of important newer standards for audio and video including: DTS:X Pro (32 channel support); Dolby Vision, HDR10, HLG, and 18 GHz HDMI. Support for IMAX Enhanced will be added later this year.

The ISP MK1 would decode 12 channels and render up to 16 discrete channels. The upgrades to the ISP MK2 allow it to natively support decoding up to 24 channels and rendering to up to 32 channels. Another major addition is support for Roon. Roon is an exceptionally highly regarded music player that consolidates all of your music sources, software and hardware, into a single ecosystem with a user interface designed to bring back the added experience of music "packaging" to the digital world where lists of files turn into artist photos, liner notes, album art, and other content to help you find similar artists or specific albums or tracks. The ISP MK2 is officially Roon Ready so it will automatically become part of your Roon ecosystem if you already have one established. Roon will unify collections of music files on different devices and from different sources, including streaming services like Tidal or Qobuz (both offer lossless and high-res streamed music), and play back everything with no loss of audio quality. You run Roon on a computer running Windows, Mac OS, or Linux, and any device on your network that is Roon Ready becomes part of your Roon ecosystem. Roon says 800+ compatible devices from 200 manufacturers already exist. Because Roon is not hardware, it is sold on a subscription basis for \$9.99 a month (just under \$120 billed annually). You can get lifetime service from Roon for \$699 (assuming Roon exists for your lifetime). Roon says they have more than 100,000 current subscribers. You can integrate multiple playback devices and direct playback to the desired device. Those devices can be network media players, AirPlay devices, Bluetooth loudspeakers, USB DACs, headphone amplifiers, and more. The ISP MK2 is already Roon Ready, so if you have Roon now or will have it as part of your system, the ISP MK2 will be fully supported. I have only interacted with Roon one time at a show. It is the best music playback interface I've encountered. More at roonlabs.com.

Another interesting feature in the ISP MK2 is SphereAudio that uses "Auro-Headphones" to produce an Immersive Sound headphone listening experience. I did not have a suitable standalone headphone amplifier to test this feature for this review, but I have heard this one time in the past. For me, it provides much less of an "inside your head" listening experience. For some reason, I find that sound that only exists in the middle of my head is unrealistic and distracting. Sphere-Audio removes a fair bit of that and works with all standard headphones, buds, and earphones. There is no headphone jack on the ISP MK2, so you need a headphone amplifier connected to the ISP MK2 stereo downmix XLR outputs or to a

### Features

- Supports multiple theatres and audio zones
- 16 channels decoding / upmixing, expandable to 24 or 32 channels
- Supports all current Immersive Sound formats: Auro-3D; Dolby Atmos; and DTS:X
- DTS:X Pro support later this year
- Models available with 16, 24, or 32 analog output channels or optionally, 32 digital AES channels
- Up to 32 channels of post-processing with arraying, multi-way, multi-subwoofer
- Up to 20 bands Parametric EQ per channel
- Up to 32 channels Dirac Live Room Calibration with Bass Control
- Unlimited presets for combinations of settings
- SphereAudio binaural Immersive Sound headphone technology
- HDMI: 7 inputs; 2 outputs; all channels support HDMI 2.0b / HDCP 2.2 up to 18 GHz
- Outputs: 16 channels expandable to 24 or 32 channels plus stereo downmix
- Roon Ready
- Slots available for optional expansion modules
- Web and IP based configuration and control (web interface, control systems, mobile devices)
- Remote support, control, and monitoring for entire StormAudio system
- Support for Control4, Crestron, ELAN, Savant, RTI
- IEC power cord socket
- Proprietary hybrid analog/digital volume control
- Optional DIRAC Live calibration kit (if needed by calibrator)

### Specifications

- Dimensions: 19.29 W x 7.52 H x 18.86 D (inches)
- Weight: 28.8 (pounds)
- Power requirement: 100-240 VAC; 50/60 Hz
- Power consumption: 240W
- Frequency response: 6 Hz to 24,000 Hz
- Max. THD: 0.007% (21dBu)
- Signal to Noise: 112 dB (21dBu)
- Designed In: France
- Manufactured In: France
- Warranty: 3 years parts and labor
- MSRP: \$15,000 for ISP.16 Analog (16 channels without optional boards), \$20,000 for ISP.32 Analog (32 channels without optional boards)

### Manufactured By:

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Headphone Zone created specifically for headphones from the available 16, 24, or 32 channels.

The ISP MK2 supports all Immersive Sound formats from Dolby, DTS, and Auro Technologies. DTS:X Pro support is coming this summer and will provide support for immersive arrays up to 24 loudspeakers. All of these formats, less DTS:X Pro, were thorough-



ly exercised during the review and within the context of my 7.1.4 system. I was not able to set up my single overhead top channel or “Voice of God” channel that’s part of your immersive options for Auro-3D. The ISP MK2 had support for two, four, five or six top (ceiling) loudspeakers but somehow missed the single loudspeaker Auro-3D top channel, which should be easy enough to add in the next firmware update. This limited me to 7.1.4 channels rather than the 7.1.5, or in Auro-speak, 7.1.4.1 channels (ear level, subwoofers, height channels, top/ceiling channels).

Listening to the ISP MK2 was every bit as enjoyable as the MK1. I always start processor reviews with stereo music to get a measure of how the processor does what it does. Once I have an idea of what’s going on, all the other stuff is explored, from upmixing to room correction, and of course, movie sound. The ISP MK2 is one of those components that just disappears once the music starts. The noise floor of the ISP MK2 is undetectable, so music emanates from a very silent background. Sounds float in the air, and good symphony recordings have the same magic you hear at live performances. The first clarinet notes from *An American In Paris* (Gershwin) float into the room like doves awakened by the dawn. When this is well performed and well recorded, it still makes the hairs on my neck stand up for the sheer brilliance of those simple notes, as long as the equipment is up to the job, and the ISP MK2 did very well with this. A test I’ve used a number of times is playing back the best remasters of 78 rpm recordings. I find that with some equipment, I lose interest 30 seconds into the first song. With the ISP MK2, I spent an entire (covid-isolation) afternoon listening to Peety Wheatstraw, Kid Ory’s Creole Jazz Band, Louis Armstrong, Cab Calloway, Robert Johnson, Glenn Miller, Benny Goodman, Jimmie Lunceford, and Bix Beiderbecke. If a component makes these recordings a chore to listen to rather than a joy—and that does happen from time to time—I find that leads to other things about the sound that aren’t as good as possible. But there’s no way I would spend that much time with that great old music if it was presented in such a way that the limitations of those recordings overwhelmed the music. That did not happen with the ISP MK2. The music came through clearly and highlighted just how great much of the music from that era can be in spite of the limits of recording technology.

High-quality modern recordings were equally enjoyable, carrying so much more detail and nuance of sound, thanks to decades

of progress in recording technology. Transient speed is excellent without overdoing it. That avoids any tendency for the sound to get zingy when it’s not supposed to be zingy. The acoustic guitar, vocals, and dynamics on Cat Stevens’ *Tea For The Tillerman* were excellent, producing a great sense of drama in the music and keeping you connected with the melody and lyrics. Stevens (now Yusuf) uses all the colors in his music box to make his songs. There are quiet moments, slow buildups, and explosive dynamics everywhere with instruments, percussion, and voices rising to interesting crescendos. The ISP MK2 followed it all and kept the music natural and exciting.

The choices of movies in the U.S. market with really good Immersive Sound soundtracks are exceedingly limited. I ordered one blockbuster movie from Amazon in the U.K. in order to get the Auro-3D soundtrack that was far better than the Dolby Atmos track on the U.S. disc because there was actual content in the Immersive Sound height layer channels that enhanced the movie throughout—while the Dolby Atmos version sounded like it was created by an automated process with no oversight at all. The 7.1 TrueHD audio sounded quite good, but Dolby Atmos decoding did little to enhance the movie sound. DTS:X soundtracks have a bit more content in the Immersive Sound height layer channels on average but still lack human control of what goes where in most movies. But every once in a while, a disc comes out with a great Immersive Sound soundtrack. How do you find them? Editor Gary’s movie disc reviews are the only place I have seen where the quality of the Immersive Sound track is evaluated separately from the overall sound quality. I always listen to the upmixers that come with the Immersive Sound soundtrack decoding. Dolby Surround, DTS Neural:X and AuroMatic will all upmix any number of source channels to fill all the loudspeakers in your system. But from the beginning Dolby Surround has sounded dead, dull, dehydrated, and flat, and I don’t hear a change here. Neural:X is maybe 30 percent better sounding, but it still makes great stereo music sound worse in 12 channels than in two channels. AuroMatic is the only upmixer that makes stereo music, 5.1 and 7.1 sound consistently more immersive than the other formats. We are circa five years into Immersive Sound, and Dolby and DTS have done nothing to address the boring sound from their upmixers. Fixing the Dolby Atmos and DTS:X soundtracks will require putting humans at the controls rather than some automation that

# “All The Usual Soundtrack Torture Tests Equaled The Best Sound I’ve Heard In My Room.”

guesses at what might be good to put in the height channels. A typical (i.e. not produced by human intelligence) Dolby Atmos soundtrack places almost nothing in the height channels. And an alert reader even noticed that only half a gunshot was in the height channel on one movie... the sound stopped abruptly before the gunshot sound should have stopped. No human would have allowed that, yet the disc got released that way. So the content creators still don't care much about anything but being able to put the Dolby Atmos or DTS:X logo on the box and disc.

Nevertheless, the ISP MK2 always had AuroMatic to come to the rescue of bad-quality Dolby Atmos and DTS:X soundtracks. And when there was a good Immersive Sound soundtrack on a disc, turning off AuroMatic gets you right back to great sound from the native track. All the usual soundtrack torture tests equaled the best sound I've heard in my room. The sound isn't identical to every great processor I've had in this room because of differences in room-correction capabilities. But when you turn off correction and EQ, the sound you get from the best processors—all at \$9,000 or more so far—is impressively dynamic and detailed. In fact, the sound can be so detailed that symphony recordings made in the 1960s using vacuum tube equipment have “vacuum tube sound” that is a bit more liquid and lyrical than recordings made with solid-state equipment that, in those early days, had more of a matter-of-fact sound that wasn't as flattering as the higher-distortion vacuum tube sound. Music in movie soundtracks was just great. The expression of emotion, tension, and motion in the soundtrack music comes through very clearly, giving movies a very compelling presence in the room. If you have Immersive Sound and you don't have pretty regular experiences with thinking something in a movie actually came from inside your home, something in your system is not up to par. I often heard moments in Immersive Sound that I swore were in the house and not in the movie.

The DTS:X track on *Jumanji: The Next Level* has very little aside from music in the height layer channels, but AuroMatic fixes that handily, creating a convincing sonic environment with as much ambient sound in the height layer as the ambient sound from other channels. This movie and its predecessor make strong cases for more human intelligence when creating Immersive Sound soundtracks. Without AuroMatic, it was quite an unconvincing Immersive Sound soundtrack. With AuroMatic, it feels like you get thrown back into the game with the players. These movies scream out for intelligence in the creation of the soundtrack... there is so much they could do. AuroMatic makes a big improvement, but there are so many weird things that go on in the movie, proper mapping of sounds would make these two latter-day *Jumanji* updates far more entertaining. There are a lot of sight gags in these movies and many rely on sound to enhance the gag and to draw your attention

to it. But you just don't get it with the DTS:X track because there was nobody at the controls. I can't blame Dolby or DTS for this. It's the studios creating these worthless Immersive Sound soundtracks because they won't pay for a sound engineer or two to get it done right. Boo. Boo.

*Star Wars: The Rise Of Skywalker* has a Dolby Atmos soundtrack that seemed down in level a bit compared to most movie discs. But getting the volume to the right level doesn't help the poor Immersive Sound quality. There is a little bit of stuff in the height layer channels and some music, but it's a very weak effort. Again, AuroMatic to the much more satisfying rescue! The Dolby Atmos height channels are used so little to enhance the soundtrack; when there is something up there, it's distracting. With AuroMatic, there is nearly constant ambient sound in the height-layer channels, so when some other sound appears in the immersive layer, it is *not* distracting because it seems natural. In places, the only sound in the Immersive layer is music, and there is zero music in the bed layer. This is extremely unnatural sounding. Nobody wants to listen to a movie orchestra that sounds like it is above your head. It's weird and distracting. But AuroMatic doesn't make that mistake. They put ambient music sound in the Immersive layer and keep much of the original music in the bed layer. That makes the orchestral parts of the soundtrack seem properly placed and not stuck up on the ceiling somewhere.

## Conclusion

The ISP MK2 keeps StormAudio in the running with other top-performing audio processors. This update brings additional functionality and capability. For music lovers, the ISP MK2 is bliss. It produces wonderful-sounding music that retains all of the original character without making the limitations of the recording so obvious you can't enjoy listening. Movie sound is done as well as possible given the quality of each soundtrack. And when there isn't a good soundtrack to choose from on the disc, the ISP MK2 had great upmixing sound quality to get your sound into all the loudspeakers. With standard features worthy of a high-end home theatre and options for pro-cinema inputs and outputs, I wonder... is there a theatre operator out there somewhere with an ISP MK2 using AuroMatic on the TrueHD soundtrack rather than using Dolby Atmos decoding because AuroMatic sounds better? Highly recommended. **WSR**