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Bryston SP3 Preamplifier/Processor

by David McCallum

My interest in Bryston's new **SP3 pre-amp/processor** began over a decade ago, when Bryston first announced its original predecessor, the SP1.7. You see, I've known James Tanner from Bryston for almost twenty years. James is aware of my background in film and television sound, and we've shared a common interest and many conversations about the state of digital audio and developments in multi-channel sound. So back in 2001 when Bryston first released the SP1.7, my interest in where Bryston would go with its multi-channel, home theater products began. Before I look closely at Bryston's new SP3, however, it's worth briefly considering the timeline of new product development at Bryston that's come since that time. It's my feeling that one could see the SP3 as the fruit of a broader history of transition and evolution at Bryston.



During the first decade of the 21st century, Bryston went through a fairly serious transition. For the first twenty to thirty years of the company's existence, Bryston had been known for their incredibly robust amplifiers. They made a name for themselves in both studio (I can't even count how many Bryston amps we have in my studio, or in the three studios across the street) and home electronics circles as the most reliable amplifier manufacturer around. Including their now famous twenty-year warranty with each and every amplifier helped solidify that image. However, as the 20th century came to a close, Bryston realized that they couldn't live on the sales of their amplifiers forever, and that innovative and dynamic change was needed.

And so Bryston began a slow, calculated transition into digital audio, producing three products in succession that have each come to define their class, both in terms of price and performance. First, the BCD1 CD player was released to rave reviews. Next came the BDA1 D/A converter ([see my review here](#)), and finally the shockingly good BDP1 digital player (I'm proud to say I wrote the [first ever published review of the BDP1](#) here).

With these three products Bryston's identity shifted. While they still have a stranglehold on the pro-audio industry, Bryston is now also viewed as a slick, consumer electronics manufacturer who build some of the best digital gear around. And along with that identity shift came some significant know-how. The R&D required to produce these products was immense, and the knowledge gained through those years of development meant they were finally ready to offer substantial improvements over both the SP1.7 and the SP2.

When the SP3 first went into development, there were some major obstacles to overcome. The first such obstacle was the implementation of the HDMI video transmission signal. The SP 1.7 (released in 2001) hit the consumer market prior to the launch of the HDMI format. However, with Bryston's subsequent SP 2 (released in 2004), Bryston was reluctant to embrace HDMI. According to James Tanner, they were not only skeptical about the transmission format's technical performance, but also worried about their own ability to keep pace with the fickle, ever changing video standards that the consumer electronics industry were introducing. Video transmission, after all, was the primary focus of the HDMI format, and even though the SP2 was quite successful and was an outstanding pre-amp processor, pressure started to mount for Bryston to involve video and HDMI in its surround sound products.

By the turn of the decade, Bryston started to get close. At that point they had figured out how to finally incorporate HDMI without getting stuck in a video format war they could never win, a war that had the potential to orphan any new high-end product, a fate that had befallen many of Bryston's competitors.

Bryston's solution was a simple one: video pass-through. The SP3 would not include a video-processing chip, but would simply allow the video signal to pass through the unit to the video monitor. The SP3 would, however, strip out the audio signal from the transmission as the video signal passed through. Such an idea may seem incredibly simple, but when your competitors are universally touting the newest video processor as a key selling feature, the decision to ignore video processing entirely was not so obvious.

Solving HDMI wasn't sufficient, however. James and the engineering team at Bryston knew that simply releasing an updated SP2 with HDMI and video pass-through would both disappoint their customers and fail to justify the years of R&D the company had put into their flagship digital product. Ironically, the major differences between the SP3 and each of its predecessors weren't in the digital field. The major improvements were to come in the area of good, old-fashioned analogue audio.

Technology

Bryston's SP3 is a 7.1 multi-channel surround sound pre-amplifier processor that Bryston describes, first and foremost, as an audio product. It possesses seven fully discrete analogue channels, and allows for 2, 5.1 or 7.1 channels (or any combination in between) of pure analogue audio. The analogue by-pass feature completely avoids any interaction with the digital circuitry within the SP3. Such sophisticated engineering allows the unit to function as a pure analogue multi-channel pre-amplifier. Based on my experience with the Bryston's BDA D/A converter and now the SP3 pre-amp processor, it's my belief that it's the improved design circuitry within the analogue pre-amplifier that really sets the SP3 apart from both its predecessors the SP1.7 & SP2, and its competition.

On the digital side there is a built in 24bit/192kHz D/A converter that automatically detects the digital input signal, routes it through the DSP module and adjusts it to the selected mode. Digital decoding options include Dolby True HD and DTS-HD Master Audio, Dolby Digital and DTS, and listening modes such as Pro-Logic II Music, Pro Logic II Movie, Pro Logic II Natural, Neo6, Club, etc.

Connection options are listed in the sidebar, however it's worth pointing out the SP3 can be connected via fully balanced XLR connectors and single ended RCA simultaneously, giving the user an increased array of connection options. Digital connections allow for XLR AES-EBU, RCA SPDIF, optical and HDMI signals.

As you can see, the SP3 can do everything a major multi-channel home theater component should do, with the exception of one: room correction equalization. Bryston left it out.

The lack of what seems like a key component may surprise some, but when James first mentioned that they would not be including room correction on the SP3 my reaction was 'of course you aren't.' If there is one topic of conversation I've had with James more frequently than HDMI, it's the merits (or demerits) of EQ.

NO ROOM CORRECTION YOU SAY?

James has always maintained that purity of signal is a key objective for Bryston. They strive to produce a clean, uncluttered signal with as minimal a signal path as possible. And, as mentioned previously, Bryston's R&D work over the last decade has brought about a break-through in some key performance areas, in particular its mastery of discrete analogue pre-amplifier circuitry.



When the final developments of the SP3 were underway, it was the improvements in the analogue circuitry developed during the design of the BCD1 CD player followed by the BDA1 D/A converter that brought about the major performance advancements James and the design team at Bryston were looking for. With the implementation of the new analogue circuits the overall performance and measurements of the SP3 shot to a whole new level. The result was (and is) an exceptionally pure analogue signal path.

So when Bryston went to look at additional features that might be of interest to their customers, a room correction module actually presented as much of a problem as it might solve. Coincidentally, prior to writing this review I had asked James to explain Bryston's thoughts on room correction, and he forwarded a press release that he had drafted addressing the topic head on.

Bryston feels that electronics designers and speaker designers spend years attempting to produce flat, accurate audio signals. When those audio signals leave the speaker the original signal begins to interact with all of the reflected sound in the room, and that's what you hear. When there is an altering of the original signal via EQ, the relationship between the direct and reflected sound is also altered. This process can never be perfect because no two places in the room in which you are listening will have the same measure response. So when a decision is made to engage with room correction EQ, that correction can either be for a single listening position or for a broad, room averaged response. Neither of these scenarios is ideal, and both perform the unwanted effect of disrupting the purity of the original signal path.

My experience in studio work and design supports this notion. When choosing an environment for sound work, the first objective is the physical space – you want an acoustically transparent room that isn't too controlled (for fear of creating a 'dead' sound), that has some life, but that reflects, deflects, absorbs and manages the sound, creating an accurate, lifelike and honest sonic presentation. There are many tools to do this kind of acoustic work, and I would strongly encourage real audio enthusiasts to look at their rooms before they look at a \$10,000 pre-amp, speaker or cartridge up-grade. The very last thing an engineer or technician does is equalize the original signal.

My impression is that for Bryston it boiled down to a choice to stick to their principles and their dedication to the pure linearity of the audio signal. I also think the inclusion of room correction at the performance level that Bryston strives for would likely be cost-prohibitive for many of their customers, and the reality is, for anyone who wants proper room EQ, very good units exist that can be slotted into the system.

Now I would certainly understand if someone completely disagreed with Bryston's decision. I would also understand if that same person disagreed with my support of their decision. In all three of the sound mixing rooms at my studio, we use modest room correction in conjunction with very elaborate, very expensive acoustic room design. However, in my own environment at home – which is not an acoustically transparent space – I use a Pioneer SC37 Receiver as my main home theater unit. The SC37 has excellent EQ and bass management features. However I run the system with both room correction features completely disengaged. Why? Because I want a clean and pure signal. I have set the system up with EQ many times, and for me it sounds better with it disengaged.

Set-up and Connectivity

As I mentioned above, the SP3 comes with numerous options for set-up and connection, and for my listening tests I made a point of trying as many as I could. For connections into the SP3 I used both singled-ended RCA and balanced XLR analogue connections, while digital input connections were made via AES/EBU XLR and HDMI.



For the output to the power amplifiers, I ran three separate configurations: all RCA; a mixture of RCA and XLR; and in fully balanced XLR 7.1. Digital output to the television was via HDMI.

Once slotted into my system, the SP3 replaced three individual components: a Bryston BDA1 D/A converter, a Pioneer Elite SC37 surround sound receiver and a Modwright LS 36.5 valve pre-amplifier. From a rack and set-up point of view, that was a nice exchange.

Overall, physically setting up the system with the SP3 at the core took about 30 minutes before I was listening to audio. However once the connections are made and the unit powers up, there are still a few adjustments to be made before you are fully ready to go.

Programming the SP3

Giving the programming of the SP3 a whole section may make it seem like it's a big deal, but I can assure you the internal setup is quite simple – especially if you are replacing an elaborate home theater receiver as I was. There are two basic configuration options that are accessed via front panel buttons and alphanumeric display. The manual is simple and clear in explaining what and how these adjustments are made.

On the first page there are two options: System setup & Source setup. Toggling through these options is easy and obvious. Before the setup I'd advise that you properly measure all speaker distances and choose whether you want the speakers to be engaged as LARGE or SMALL. Once you've set the main parameters, a TEST function on the remote control allows for the running of PINK NOISE tests for final level adjustment.

One additional note: after I'd had the SP3 for a few weeks James emailed me with updated FIRMWARE. The process for updating the FIRMWARE took about ten minutes and required connecting the SP3 to my home network via ETHERNET. After the update I did need to go through the main system set up again, but there were a few changes that were beneficial – the new FIRMWARE included the ability to adjust the speaker settings for each input source individually. That came in handy when setting up alternate parameters for my TV, Blu-Ray and digital player systems.

Performance Analysis

My listening sessions with the SP3 involved analysis in four key areas: 5.1 & 7.1 film and television content; multi-channel digital music; stereo digital audio in both high-resolution and standard resolution formats; and finally, pure analogue audio.

I made the decision to begin the analysis with some intimately familiar material, so I started with some film and television shows for which I either performed the sound editing work, or that were completed at my studio in Toronto. For this period of time, I listened closely to films including Blindness, The Bang Bang Club, Splice, Mr. Nobody (a truly brilliant film that very few people have heard of), Away From Her and Silent Hill. Television programming included The Borgias, Camelot, The Tudors and a little known Canadian show called Michael: Tuesdays and Thursdays, which is another little gem.

With this material a positive impression of the SP3 began to take shape. There were audible nuances in dialogue reverb, surround detail and spatial movement that are often lost in a home theater or even a good movie theater. The balance of information between the three front speakers was also quite strong. Often I choose to run film and TV programming without a center speaker as I've found that in a mid-to-small room, the sound from the front often collapses into the center, causing the presentation to lose width and overall impact. However with the SP3 I was very happy with the performance of the center channel, and felt it was easily the best front-three speaker performance I've had at home.

I then moved through a list of current movies, classic films and multi-channel music Blu-Ray discs. The list of material included Moneyball (a great sounding film), War Horse, A Dangerous Method, Contact, The Nightmare Before Christmas, 2L's Souvenir Part I & Divertimenti, Norah Jones' Come Away With Me, Ray Charles' Genius Loves Company and John Mayer's Where The Light Is (there were others too, but these selections stood out). With this collection of surround sound movies and music, I found no flaws. Each program revealed the same key attributes from the SP3 – it produced a rich, full and accurate sound that greatly enhances the home movie experience. The SP3 pre-amp processor with the two Bryston power amps produced the best sounding multi-channel sound I have heard in a non-studio environment.

While I did come away from the multi-channel audio analysis very impressed, foremost in my mind was the level of performance that could be achieved with stereo audio. I have been spending time listening to high-resolution digital music these days, as I've fallen in love with all the newly mastered 24bit/96khz albums recently available on HDTracks.com. If you are not familiar with HDTracks I highly recommend you visit their website and see what they've got going on.

In stereo mode the SP3 performed beautifully, and feeding my 24bit/96khz files from Bryston's BDP1 into the SP3 via a XLR AES/EBU digital connection produced exceptional sounding audio. As in multi-channel mode, the sound was rich and full, with nuance and texture. I was thrilled when Beck's "The Golden Age" from the album Sea Change came on, and on each subsequent pop/rock tune I played, the performance level remained consistent. Highlights

included "Thirteen" from Big Star's #1 Record, "Harder Now That It's Over" from Ryan Adam's album Gold and one of my current favorite tracks, the epic "One Sunday Morning (Song For Jane Smiley's Boyfriend)" from Wilco's album The Whole Love.

Switching genres, I moved onto a jazz/blues session and was equally impressed. Some new 24bit 96khz remastered albums that I sourced from HDTracks sounded absolutely mesmerizing – "Corcovado" from the album Getz/Gilberto takes on a completely different feel compared to the original CD release, and heard through the SP3 the improvements were outstanding. Herbie Hancock's album Maiden Voyage and Kenny Burrell's Midnight Blue provided top notch performance while Booker T and the MG's Green Onions [Stax Remasters] was a whole lot of fun.

With some classical music, however, results proved a bit less successful. While many of the pieces I chose to play sounded lovely (Jacqueline Du Pre's performance of Elgar's Cello Concerto in E Minor) I found that a new level of dynamic range on both the Berlin Philharmonic Orchestra's version of Dvorak's Symphony No 9, From The New World and Andre Cluytens with the Orchestre De La Societe Des Concerts Du Conservatoire performing Ravel's Bolero actually ended up pushing the ancillary equipment outside of its comfort zone. Both of these recordings are newly remastered in high-resolution 24bit/96khz (also available at 192khz) and the dynamic range available was extraordinary, perhaps a bit too much for my small room. I certainly can't blame or criticize the SP3 for helping produce a new level of dynamic range for my space, but it was something worth noting for the review. At this point I'm not inclined to change any of my other equipment, so if I go and listen to these pieces (or others like them) I'll have to make a note to turn the system down.

Finally, at the very end of my time with the SP3 I ran some vinyl records. By this time my mind was pretty much made up and with the vinyl I simply sat back and enjoyed the music. If I could offer any words on a critical analysis from this time I would, however, it really was just a last bit of pure listening pleasure.

Conclusion

In the world of no-holds-barred multi-channel audio, the Bryston SP3 is the pre-amp / processor to beat. In essence, the SP3 is three great products in one. It offers the best multi-channel audio I've ever heard outside of a top sound mixing studio; it includes 7 outstanding D/A converter channels for multi-channel or stereo digital audio; and it provides outstanding 2-channel stereo performance, essential to any truly great sound product.

As the culmination of the progression Bryston has undergone as a company, the SP3 tops their list of exemplary consumer electronics products. Unlike the amplifiers Bryston produces, it's not likely the SP3 will find its way into very many sound studios (some, but not as many). However, given the performance level attained, it is capable of bringing the highest studio caliber sound into your home. I understand that the next step in Bryston's progression will be the development of its first ever loudspeaker. The Model T speaker system should be announced very soon, and if the performance level of the SP3 is any indication of where Bryston's ambitions lie, it will be a product well worth looking for. The SP3, after all, is the best home theatre product I've had the pleasure of reviewing.

Connections	Test Material Links:
<p>Analog Inputs: 2x XLR Balanced Pairs, 4x RCA Single Ended Pairs, RCA Single Ended (7.1 Surround), 4x RCA Single Ended Pairs (Tape Loop, Digital Video Recorder) Digital Inputs: 8x HDMI, 2x AES/EBU (XLR), 3x Optical (TOSLINK), 4x SPDIF (RCA), USB 2.0</p> <p>Analog Outputs: XLR Balanced (7.1 Surround), RCA Single Ended (7.1 Surround, Zone 2), ¼" Headphone Jack</p> <p>Digital Outputs: 2x HDMI, Optical (TOSLINK) Control Inputs: RS-232 (DB9), Ethernet (RJ-45), AUX IR</p> <p>SP3 Main Internal Set up System setup includes the following adjustment parameters:</p> <ul style="list-style-type: none"> -Speaker system -Digital sources -Miscellaneous -Test. <p>Source setup includes the following adjustment parameters:</p> <ul style="list-style-type: none"> -Speaker size -Speaker level -Crossover -Subwoofer -Triggers -DTS -Dolby -Other <p>Equipment used during the review included:</p> <ul style="list-style-type: none"> 1 x Bryston 9Bsst2 5-channel amplifier used to drive the 4-surround speakers as well as the center channel. 1 x Bryston 4Bsst2 2-channel amplifier was used for the main L & R speakers. 2 x ATC SCM40's tower speakers 1 x xATC SCM C3C center channel. 2 x Axiom surround speakers for L & R surround channels 2 x Energy surround speakers for L & R Back channels 1 x Axiom EP500 subwoofer, courtesy of Axiom Audio. 1 x Bell Fibe high speed fibre television 1 x Bryston BDP1 Bryston digital player 1 x Sony PS3 Blu-Ray player 1 x Pioneer DV58 SACD/DVD Audio player 1 x Garrard 401/SME/Koetsu/Tom Evans analogue vinyl system <p>Cabling consisted of 75% Kimber and 25% custom-build wiring that are unique to my system.</p>	<p>Films & Television</p> <ul style="list-style-type: none"> Blindness < http://www.imdb.com/title/tt0861689/combined> The Bang Bang Club (http://www.imdb.com/title/tt1173687/combined) Splice < http://www.imdb.com/title/tt1017460/combined> Mr. Nobody < http://www.imdb.com/title/tt0485947/combined> Away From Her < http://www.imdb.com/title/tt0491747/combined> Silent Hill < http://www.imdb.com/title/tt0384537/combined> The Borgias < http://www.imdb.com/title/tt1582457/combined> Camelot < http://www.imdb.com/title/tt1672189/combined> The Tudors < http://www.imdb.com/title/tt0758790/combined> Michael: Tuesdays and Thursdays <http://www.imdb.com/title/tt1757812/combined> Moneyball <http://www.imdb.com/title/tt1210166/combined> War Horse < http://www.imdb.com/title/tt1568911/combined> A Dangerous Method < http://www.imdb.com/title/tt1571222/combined> Contact < http://www.imdb.com/title/tt0118884/combined> The Nightmare Before Christmas < http://www.imdb.com/title/tt0107688/combined> <p>Digital Surround, High Resolution and Standard Resolution Music</p> <ul style="list-style-type: none"> Souvenir Part I < http://www.2l.no/pages/album/090.html> Divertimenti < http://www.2l.no/pages/album/050.html> Come Away With Me < http://www.sa-cd.net/showreviews/915> Genius Loves Company < http://www.sa-cd.net/showtitle/2358> Where The Light Is < http://www.blu-ray.com/movies/John-Mayer-Where-the-Light-Is-Blu-ray/853/> #1 Record < http://en.wikipedia.org/wiki/Number_1_Record> Gold (http://en.wikipedia.org/wiki/Gold_%28Ryan_Adams_album%29) The Whole Love < https://www.hdtracks.com/index.php?file=catalogdetail&valbum_code=HD045778715657> Getz/Gilberto < https://www.hdtracks.com/index.php?file=catalogdetail&valbum_code=HD00602517679221> Maiden Voyage < https://www.hdtracks.com/index.php?file=catalogdetail&valbum_code=HD5099963651553> Green Onions [Stax Remasters] < https://www.hdtracks.com/index.php?file=catalogdetail&valbum_code=HD00888072339613> Elgar Cello Concerto in E Minor < https://www.hdtracks.com/index.php?file=catalogdetail&valbum_code=HD5099970461459> Dvorak Symphony No 9, From The New World < https://www.hdtracks.com/index.php?file=catalogdetail&valbum_code=HD5099970558753> Ravel Bolero < https://www.hdtracks.com/index.php?file=catalogdetail&valbum_code=HD5099970471854>

MODELS

Bryston SP3 Preamplifier/Processor

RATING



PRICE

\$9,500.00

Dimensions

MANUFACTURER

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