Hi-Fi Audio DAC Buyer Guide

CANA DA HiFi
August/September 2011

FREE!

Home Theatre Apps for the iPad/iPhone/iPod Touch!

An Exclusive Sneak Peek at the Upcoming

TAVES
TORONTO AUDIO VIDEO ENTERTAINMENT SHOW

Plus We Test:
• Totem Acoustic Element Fire
  Compact Speakers
• Panasonic TC-P50ST30 3D Plasma TV
• Bryston BP-6 C Series Preamplifier
• Graham Slee Solo SRG II and Solo Ultra-
  Linear Headphone Amplifiers

Three Approaches To 3D TVs At Home Explained:
Active, Passive and Glasses-free
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Twenty-years ago Nordost’s revolutionary Flatline cables rewrote the rulebook, their unique combination of speed, detail, transparency and phase coherence completely redefining audio cable performance, challenging even the most highly rated and costly conventional designs. And they did it at a fraction of the price.

Well, we’ve gone and done it again. By combining the benefits of our proprietary, extruded FEP construction, superior materials and minimalist design philosophy, with the lessons learnt from the development of our game-changing Valhalla and Odin lines, we’ve just raised the bar once more. And not by just a bit: not just better cables but a better way to use them too.

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Leif by name,
Life by nature.

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Cut this coupon out and present it at the TAVES ticket booth between Sept. 30 and Oct. 2, 2011. This discount applies only to the $20 full-price tickets.
New Furutech Products for 2011!

The DeStat II is incredibly easy to use and removes dust and static charge from audio/video media with a 10 second treatment. High performance enthusiasts know that static charges on analog and optical media – LPs, CDs and DVDs – can lead to sudden and distracting noise that compromises the experience. Simply place your media on or hold it under the Destat II and press one button! The powerful fan removes dust while the Destat II’s improved ion flow generator with 4 poles simultaneously generates ion to eliminate static, as opposed to the previous alternating method. Almost every A/V system component benefits from eliminating its static charge. Use the Destat II on the audio/video equipment itself – best to turn them off during treatment – plus power cords, line-level interconnects, speaker cables, and even metal record clamps!

AC Power Can Make or Break Your System! The audio you hear from your home entertainment system is essentially the incoming electricity itself, and the typically violent storms riding the AC line and its ground is very detrimental to the performance of your components. The Flow-28 is a sophisticated, luxuriously made and finished inline power filtering unit that eliminates many common problems caused by contaminated electrical power lines. It protects against distortion caused by ground noise, voltage spikes and sags, high frequency power supply noise from other components in your own system, and finally high-frequency digital noise emanating from processors and digital interconnects. The Flow-28 Inline AC Filter lowers noise on every component on which it’s used resulting in very natural and extremely fine resolution down and through the utterly silent noise floor. It improves soundstaging and imaging while creating nuanced high frequencies, an attractive, engaging midrange, tight and controlled bass, with power and dynamics to spare.

Come see Furutech and other products at the Toronto Audio Video Entertainment Show (TAVES) in room 646.

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forward >>>

I would like to preface this issue by proudly announcing that Sarah Ferguson, a long time Copy Editor of this publication has been promoted to the main Editor position at CANADA HiFi. During the last couple of years Sarah has become an increasingly important part of the CANADA HiFi team, assisting with editorial planning, influencing the graphic direction and of course carefully editing the text of these pages. I am truly humbled by everything that Sarah has done for this publication and look forward to working closely with her for years to come!

As you might imagine with the Toronto Audio Video Entertainment Show (TAVES) coming up at the end of this September, my plate has been quite full lately. Luckily, when you love what you do it doesn’t always feel like work. In this very issue you will find an exclusive look at TAVES which reveals some of the show specifics in greater detail than ever before. This is by far the largest project I’ve ever been involved in and I am giving it everything I’ve got in order to make it as entertaining and engaging to our visitors as possible. I hope to see many CANADA HiFi readers at the show!

In this issue, we also explore the latest audio video topics including the different approaches to 3D at home and how iDevices are continuing to enhance our experience when listening to music and watching movies. Finally, we also provide a DAC buyer guide as an increasing number of people move toward digital music and look for a way to improve the quality of audio they are listening to.

Enjoy the rest of the summer!

Suave Kajko
Publisher / Editor in Chief

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Rega RP3 Turntable

Let the vinyl resurgence continue! Rega’s brand new RP3 turntable, which will replace the company’s popular P3-24 model, features a new tonearm and plinth, and can be fitted with the optional Elys 2 cartridge. The RP3 is fitted with a brand new hand assembled RB303 tonearm, precision main bearing and a low vibration low noise 24v motor assembly which is individually hand tuned to its circuit to further reduce vibration. The new RB303 tonearm builds on the advancements made with the RB300. The RB303 features a brand new tube with increased rigidity to the bearing housing, arm carrier and headshell coupled with intelligent redistribution of mass, to ensure that this arm will exhibit fewer points of possible resonance. Extreme stability with almost friction free movement from the high precision bearing assemblies will extract more sonic information from the vinyl that was achievable with previous arms. A super lightweight plinth combined with a phenolic resin double brace mounted, specifically where the increased rigidity is required, between the tonearm mounting and the main hub bearing, forms a structurally sound “stressed beam” assembly. This rigid plinth design prevents energy absorption and unwanted resonances which will add unnatural distortions to the music. The use of braces instead of the complete skin allows double thickness phenolic resin in these key areas while providing further weight reduction to the plinth, which avoids issues of mass absorption and unwanted energy transmission. There are three finishes to choose from: titanium, white and cool grey. Available this September. MSRP: $1,095 or $1,395 (with fitted Elys 2 cartridge). www.rega.co.uk. Distributed in Canada by Plurison: 1-866-271-5689, www.plurison.com

The Star Wars Saga is Coming to Blu-ray!

We rarely talk about new movie releases in the Product News because of space limitations but this is one we just couldn’t miss. This may just be the most anticipated Blu-ray release ever! To the delight of sci-fi fans around the world, George Lucas will finally be releasing all six Star Wars films on Blu-ray disc on September 16th. The Star Wars feature films will be available in three distinct sets, with the highest picture and audio quality, along with extensive special features. Star Wars: The Complete Saga ($179) will be a 9-disc set which includes all six films, with three additional discs that contain more than 30 hours of extensive special features including never-before-seen deleted and alternate scenes, an exploration of the exclusive Star Wars archives, and much more. Star Wars: Prequel Trilogy ($89) will be a 3-disc set which includes Episodes I-III, while Star Wars: Original Trilogy ($89) will contain a 3-disc set consisting of Episodes IV-VI. www.starwars.com
New Pioneer Elite AV Receivers

Pioneer’s new line of Elite receivers aims to meet the needs of connected consumers and their portable devices. The new models consist of the VSX-40, VSX-50, VSX-51, VSX-52 and VSX-53 and incorporate state-of-the-art performance and specifications based on Pioneer’s uncompromising standards of engineering and manufacturing. All five new receivers utilize the renowned Elite audio and video technology and the VSX-50 and up have advanced network features like Pioneer’s proprietary iPhone/iPod and iPad apps including iControlAV2 and Air Jam, as well as Apple’s AirPlay, DLNA Certified (1.5), Bluetooth Audio Streaming and Internet radio to become the hub of a consumer’s home network and entertainment system. The 2011 Elite receivers use proprietary enhancing technologies to maximize the user’s TV performance with video conversion and scaling, image enhancement, and video adjustment for detail, sharpness, brightness, contrast, chroma level and black level for individual video sources. To enhance the video performance from any source connected, Elite receivers convert analog signals to HDMI and scale both analog and digital signals to 1080i resolution. Additional technologies include Marvell Qdeo processing, Advanced Video Adjust and Stream Smoother to enhance the picture quality of any source. Available now. MSRP: VSX-40 - $549, VSX-50 - $799, VSX-51 - $899, VSX-52 - $1099 and VSX-53 - $1399. www.pioneerelectronics.ca

Focal Bird 2.1 Audio Systems

The new Bird systems from Focal are available in one of three configurations and offer an innovative concept for high-quality lifestyle audio in a compact, user-friendly format. Each Bird system consists of two-way satellites (of varying sizes) that are connected to the Power Bird, which serves as a unified amplifier, DAC and subwoofer solution. The units can be positioned horizontally, vertically or even mounted on a wall. The system excels in high definition audio for those seeking modern computer-centric wireless source inclusion, reproduced without compression or compromise. Supplied with a Focal Kleer Technology wireless dongle, the Bird 2.1 systems seamlessly interface with the Apple iPhone, iPod and iPad. An optional USB dongle expands wireless connectivity to include any computer with a USB output. The system includes a unified remote control and will accept a variety of analog and digital connections both hard-wired and wireless. Available this September. MSRP: $995 (Little Bird 2.1 system), $1,195 (Bird 2.1 system) and $1,395 (Super Bird 2.1 system). www.focal-fr.com. Distributed in Canada by Plurison: 1-866-271-5689, www.plurison.com

www.canadahifi.com
Marantz SR5006 and SR6006 AV Receivers

The latest Marantz AV receivers include a full palette of leading-edge features, with claimed improvements in performance. The SR6006 has a rated power output of 7 x 110 watts per channel and the SR5006 outputs 7 x 100 watts per channel. The new models incorporate HDMI 1.4a (3D/Audio Return Channel) repeating capability. Both provide upscaling of HDMI input signals to 1080p. The SR6006 includes seven HDMI v1.4a inputs (and dual outputs) with 3D support, as well as DLNA v1.5, while the SR5006 features six HDMI inputs. Both have front-panel USB inputs, which are compatible with i-devices and support MP3, WMA and WAV files, with playback control via remote, while showing music track information on the unit’s newly designed graphical user interface. The SR6006 allows for streaming of Pandora, Rhapsody, Napster and Flickr as well as audio and photos directly from PCs. Users have access to Internet radio stations and a variety of content providers such as the Rhapsody and Napster music services. The SR6006, which provides users with a three-zone audio networking solution and the SR5006, which offers two-zone audio networking, both feature advanced processing and sonic enhancement technologies. Both support audio bit-streams up to 320kbps, and feature the latest Dolby Pro Logic Ilz, Dolby TrueHD, and DTS-HD decoding. Both new models are also Bluetooth capable, designed to utilize the M-XPort (Marantz eXpansion Port) to provide access to the optional Marantz RX101 Bluetooth receiver. The RX101 allows users to listen to streaming audio from their Bluetooth-enabled cell phones, MP3 players, computers or other devices, including the iPhone and iPod Touch. MSRP: SR6006 ($1,199.99 US), SR5006 ($799.99 US). www.marantz.com

NAD T 757 AV Receiver and C 446 Digital Media Tuner

NAD’s new 7.1-channel, (120-watt x 7) T 757 AV receiver is one of the only receivers currently on the market to offer a proprietary Modular Design Construction (MDC) architecture. MDC offers the owner an easy upgrade path to future digital format technologies, protecting their investment from technology obsolescence and ensuring long term satisfaction. The T 757 supports all popular surround sound formats, including Dolby TrueHD and DTS Master Audio. Stereo source material can be converted to surround sound using the company’s exclusive EARS surround mode. On the video side, the T 757 supports 3D video at resolutions up to 1080p. Analog video sources are also supported via HDMI for simple ‘one wire’ connection to either a flat screen display or projector. iPod lovers can add the optional IPD 2 Dock, which shows song information on the T 757’s On Screen video display. Radio lovers will appreciate the T 757’s highly sensitive FM/AM tuner, 30 station presets and RDS support.

The NAD C 446 claims to be one of the most advanced and flexible digital tuners in the world. Beneath the classic NAD chassis lays a uniquely powerful digital media player with Internet radio, FM/AM and DAB/DAB+. Included in its uncommon bag of tricks is the ability to stream your music collection from multiple networked storage devices using DLNA and UPnP. Other great features include USB playback, Wi-Fi, an easy-to-use Internet radio portal and support for cloud music services, such as Last.fm. An audiophile-quality 24bit/192kHz DAC and high performance analogue audio circuitry extract every ounce of detail from your favourite music. The C 446 supports all the popular digital formats—MP3, FLAC, WMA, WAV, and AAC—and offers a great opportunity for music lovers who want the quality found in high-resolution audio files. MSRP: T 757 AV receiver ($1,600) and C 446 Digital Media Tuner ($800). Distributed in Canada by Lenbrook, 905-831-6555. www.nadelectronics.com
Please consider components from the following companies when making your next purchase.

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Audio Dream Distributions  
www.audio-dream.ca  
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www.leema-acoustics.com

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An Exclusive Sneak Peek at the Highly Anticipated Toronto Audio Video Entertainment Show (TAVES)!

Suave Kajko

Our beautiful country of Canada is home to a healthy, deeply rooted consumer audio video industry with an equally impressive consumer market. After all, some of the most successful brands in the business, particularly on the audio side, began their life right here in the Great White North. Today many leading companies continue to design and manufacture audio and video components in Canada, ranging from exclusive high-end companies to giants that export products all over the world. So doesn’t it make sense that Ontario, being Canada’s largest consumer market, be host to an annual audio video show? We sure thought so! Below, I share with you an overview of the show and some of the latest developments.

It’s a Hotel Show

The inaugural edition of TAVES will take place at the gorgeous Le Meridien King Edward Hotel in downtown Toronto, between September 30th and October 2nd, 2011. Unlike other shows which are held in a convention centre, TAVES will be hosted in a hotel. The TAVES show floor will span all of the large meeting rooms of the hotel as well as dozens of guestrooms. And there are some very good reasons for using individual rooms as opposed to a large convention centre for a show like this. The large meeting rooms at the King Edward hotel will enable exhibitors to demonstrate full scale home theatre systems and elaborate audio setups. The larger-than-average guestrooms are ideal for two-channel audio presentations since they perfectly simulate the environment of a typical room in your home.

TAVES – An Event for Everyone, Not Just Enthusiasts

Who is TAVES designed for? You might think that a show like TAVES would attract only audio video enthusiasts but you’d be wrong. TAVES is truly designed to appeal to a wide audience, ranging from
UCubes™
Now Available
@Apple™ Online!
and Other Fine Retailers

“At just three inches square…
You’re gonna love their small, sleek
footprint, iconic design and big
dynamic sound!”
Canada Hi-Fi.com

“...But what really got my audio soul
excited was the speakers
recreation of a good sound stage
and great focus on instruments
and voices.”
Inner Fidelity.com

« Pour une écoute rapprochée
et à volume normal, la paire
derenceintes se tire néanmoins
bien d’affaire. La précision est là
ainsi qu’une image surprenante
compte tenu du volume. »
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those who don’t know anything about audio video to seasoned hobbyists to home decorators and custom installers. Experts will be present in every demonstration room and will be glad to educate visitors about their products and technologies in as little or as much detail as you’d like. TAVES will be a fantastic place for anyone looking to set up a new music or home theatre system, upgrade an existing system, remodel a single room in their home or renovate and modernize their whole house. The opportunity to discover new brands, products, technologies and retailers will be tremendous.

The Ultimate TV Comparison

Did you know that you should never judge a TV’s picture quality when looking at it in a store? Most stores display TVs with out-of-the-box picture settings, which are designed to grab your attention and compete with other TVs on the brightly lit showroom floor. Unfortunately these settings result in a very inaccurate, unnatural picture, making it impossible to judge a TV’s picture quality in the store. To help potential TV buyers make an informed decision, TAVES will feature a special TV comparison room. For the first time ever at an audio video event, we will provide an opportunity for visitors to compare true picture performance between some 20 different TV models across multiple brands. The TV line-up will span plasma, LCD, LED and 3D TVs, each professionally calibrated. The brands will not be revealed to visitors until after the demonstration. This is a demonstration you will never see at a store!

Discover High Quality Audio

One of the greatest things about a show like TAVES is the opportunity to discover an amazing number of audio and video brands, many of which you are likely not aware of. Think of it this way – exploring the TAVES show floor is the equivalent of visiting a few dozen audio video stores all in one day! Whether you are looking to build a high quality two channel audio system that will faithfully reproduce your favorite tunes or a multi-channel home theatre system that will reproduce the movie theatre experience at home, TAVES has got you covered.

Home Theatre and Audio Seminars

Audio video technology advances rapidly but don’t worry – we’ll do our best to help you keep up. One of the key goals of TAVES is to educate visitors about consumer audio video products and the technology that surrounds them. That’s why the first edition of the show will offer numerous free seminars, some aimed at novice users and some for dedicated enthusiasts. While the list of topics was not finalized at the time this article was written, we expect to deliver seminars which cover the following topics:
- Choosing the best TV for Your Viewing Environment
- The Benefits of Calibrating a TV
- An Introduction to AirPlay and Accessing Media in the iCloud
- AV Receiver Shopping Advice
- Analogue versus Digital Amplification

Entertainment

The first edition of TAVES will proudly feature performances by Dean Peer, a wonderful solo bassist accompanied by a drummer. Peer is an exceptionally talented musician that takes the electric bass guitar sound to a new level, producing a distinct, engaging performance. The exact details about Peer’s performances will be posted on the TAVES website just before the show and will also be included in the show guide available at the event. In the meantime, I invite you to check out Peer’s website at www.deanpeer.com, where you can check out videos of his performances and purchase vinyl, CDs, digital downloads and other items. Even more videos can be found by doing a search for “Dean Peer Salon Son et Image” on YouTube.

Stuff to Buy

There will be no shortage of audio video brands to explore on the TAVES show floor but most visitors won’t be purchasing any big ticket items right at the show, these types of items can be purchased from local dealers after the event. You’ll learn exactly who the dealers carrying your choice of brands are at the show. TAVES will however offer tons of smaller ticket items which you’ll be able to purchase right on the spot including things like audio video accessories, cables, vinyl, CDs, Blu-ray discs and others. This way everyone can take home a souvenir from the show!

Explore TAVES With Us!

The amount of planning and effort that goes into organizing an event like TAVES is difficult to describe. I sincerely hope to see all the CANADA HiFi readers that live in the Toronto area attend the show – it would truly mean a lot to myself and the rest of the TAVES team. You have my word that you will be entertained and learn some very interesting things! Please help us make the first edition of TAVES a success so that we can continue...
to grow this wonderful industry in Canada for years to come. For more details about TAVES please visit www.taveshow.com. The “Visitors” section of the website now features a brand and exhibitor list which is updated nearly every day. A number of new show features will be added in the next few weeks, so please check out the TAVES website regularly.

### $5 Off Tickets Coupon

The regular price of admission to TAVES is $20, however you can save $5 with a very easily accessible coupon. The coupon is available in this very issue of the CANADA HiFi magazine (as part of the TAVES ad) and will be distributed in a postcard format at most independent audio video and music retailers in the Toronto area. A list of participating retailers will be posted on the TAVES website a little closer to the show date. If you can’t get your hands on an issue of the magazine or the postcard coupon, the ticket booths will gladly accept a low quality print out of the coupon from a digital edition of CANADA HiFi which you can find at www.canadahifi.com.

### 2011 TAVES Brands (so far)

| 1877Phono | Keith Monks |
| Acoustat | Kimber Cables |
| Anthem | Kudos Audio |
| Antique Sound Lab | Lennehan Audio |
| Apollo | LG Electronics |
| ASW Speakers | Living Voice Speakers |
| Atlas Cables | LSA Speakers |
| Atoll | Martin Logan |
| Audeos Speakers | Maitersound |
| Audio Exklusiv | Micromega |
| Audio Note Uk | Mimetism Audio |
| Audio Physic | Mobile Fidelity |
| Audio Sensibility | Modwright |
| Audio Space | Monarchy Audio |
| Audioprism | Monitor Audio |
| Blueberry Hill Audio | Music Hall |
| Brik Audio | Naim |
| Brinkmann Audio | Nerve Audio |
| Bryston | Nitty Gritty |
| Conrad Johnson | Nordost |
| Cambridge Audio | Nottingham Analogue |
| Capriccio Continuo (ATD) | Onda Systems |
| Chario Speakers | Onzow |
| Chord | Oracle |
| Clearaudio | ORB Audio |
| Coherent Speakers | Panasonic |
| Consonance | Paradigm |
| Copland | Pass Labs |
| Creaktiv | Pathos |
| Crystal Cable | Penaudio Speakers |
| Devialet | Power Company |
| Discwasher | Reev Designs |
| Dr. Feickert | Reference 3A |
| Euphoria Speaker Design | Rega |
| First Impression Music | Revolver Speakers |
| Focal | Roksan |
| Focus Audio | Samsung Electronics |
| Furutech | Scheu Analog |
| Grant Fidelity | Shanling |
| Gutwire Audio Cables | Sharp Electronics |
| Jungson | Shengya |
| Kanto AV System | Shuguang |
| Siltech | Simon Yorke Designs |
| Smarter Speaker Support | Solid Tech |
| Sonneteer | Stillpoints |
| Straight Wire | Toshiba |
| Target HiFi | Totem Acoustic |
| Tributaries | Tri-Art Manufacturing |
| Tri-Art Manufacturing | Trigon Audio |
| Trigon Audio | TTWeights Audio |
| Tube Magic Canada | Universal K2HD |
| Unison Research | Well Tempered Lab |
| Wattgate | YBA |
| YBA | Zu Audio |

**Music from the following labels will also be available at TAVES:**

- Analogue Productions
- Audio Fidelity
- Audio Quest
- Blue Note
- Chesky
- First Impression Music
- Groove Note
- Impex Records
- Mobile Fidelity
- Opus
- Original Recordings Group
- Premium Records
- Premonition Records
- Proprius
- Reference Recordings
- Sheffield Lab
- Sony K2HD
- Universal K2HD
- XRCD
Three Approaches To 3D At Home

Jeremy Phan

In-home 3D has been out for almost two years now and while it hasn’t made the in-roads that manufacturers had hoped, it is still a prominent part of most manufacturers’ offerings with additional models continuing to support the technology and constant improvements in picture quality. Most new home theatre receivers, Blu-ray players and other components, by default, include 3D support to ensure that if consumers do make the transition to 3D-capable content, they don’t have to upgrade, yet again.

3D content is also becoming more prolific with the release of numerous movies by major Hollywood studios such as the Green Hornet, TRON: Legacy and others. Two separate, dedicated 3D channels are also set to launch shortly, ensuring a steady stream of 3D content. For those that do not want to wait, a handful of consumer devices are now 3D-capable, allowing consumers to quickly and easily shoot their own images and video in 3D. These devices include everything from 3D-capable Android smartphones and tablets (by HTC and LG) to point-and-shoot cameras as well as camcorders from manufacturers such as Sony and Fuji. Fuji’s 3D point-and-shoot camera is even included with select LG 3D HDTVs to allow consumers to immediately create and enjoy 3D content out of the box.

3D continues to evolve and improve, giving consumers more options and even allowing certain sets to ditch the glasses altogether. The different technological approaches to 3D each have their pros and cons, which hopefully will narrow and/or be eliminated as technology improves, but currently, these differences force consumers to make a choice between them and subsequently lock themselves into one technology. The different technologies are explained and compared below.

Active 3D

The first 3D-capable HDTVs and projectors on the market employed “active shutter” technology to produce 3D. These sets create the 3D effect by simultaneously alternating the image shown while correspondingly alternately blacking out the lenses of the active shutter glasses worn by the viewer, allowing different images to be shown to each eye. The viewer’s brain then interprets the two slightly offset images shown to the left and right eyes as a 3D picture. The active shutter effect of the glasses happens very quickly and is imperceptible to the human eye. On a side note, approximately 10 percent of people cannot see 3D images produced by this artificial 3D technology.

Active Shutter Glasses

Image source: www.onlineschools.org/blog/how-3d-works
A sound refined for over 35 years. Designed and hand crafted by Italy’s largest speaker manufacturer. And now proudly available in Canada!

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www.tricell-ent.com
The advantage of this methodology is that each eye receives the full 1080p resolution image, ensuring that all picture details are preserved. The disadvantages are that the glasses slightly darken the image due to the active shutters (though this is constantly getting better); the glasses are larger and heavier than simple passive 3D glasses (covered in the next section); the glasses are relatively expensive, costing $50 to $200 per pair; and the glasses are battery-powered and require charging. The flickering effect of the active shutter glasses can also cause nausea in certain viewers and some viewers cannot use the glasses for extended periods of time. Active shutter glasses from one manufacturer also cannot be used with another manufacturer’s displays. Third-party manufacturers have however stepped in and created glasses that can be used across different brands.

On the display side, the biggest disadvantage of active 3D displays is that since they alternate between displaying images for each eye, the effective refresh rate is halved, with half the frames going to the left eye and the other half going to the right eye. A 120 Hz refresh rate would therefore be effectively reduced to 60 Hz for each eye. This can lead to ghosting effects, cross-talk and motion-related image artifacts and is the reason why active 3D systems typically have higher refresh rates like 240 Hz (120 Hz for each eye).

Active 3D displays are available from all the major manufacturers such as Panasonic, Samsung, LG, Sony, Toshiba, Philips, Sharp, Vizio and Mitsubishi. Active 3D projectors are also available from most projector manufacturers including those that manufacture HDTVs as well as JVC, Acer, InFocus, and Optoma.

Passive 3D
The second, commercially available 3D technology utilizes passive 3D glasses. Passive 3D technology works by simultaneously displaying images for both eyes. These images then pass through a polarizing filter on the display, which alters the images into vertically and horizontally polarized images. The passive, polarized glasses then filter the incoming images, sending one image to each eye.

These are the same type of inexpensive glasses used in movie theatres. The main advantage of this technology is that the simple, plastic, polarized 3D glasses typically cost less than $20 a pair, with some going for as little as $2, making 3D viewing a much more affordable proposition for those with numerous viewers. The glasses are also much lighter, don’t house any electronics and therefore don’t require batteries. Traditional eyewear manufacturers such as Oakley are also creating stylish eye-wear utilizing circularly polarized lenses, drawing from their experience with polarized sunglasses.

Another advantage of passive 3D technology is that because the glasses don’t use active shutters, there is no flickering which can cause some viewers headaches and nausea. The glasses also have less of an effect on brightness and colours of the image.

However, passive 3D is not without its disadvantages. The biggest one is that horizontal resolution is halved. This is because both images for the left and right are displayed simultaneously. Half the horizontal lines are used for the left eye and the other half are used for the right eye. This is why active 3D displays are touted as full HD while passive 3D displays are 540p (half of 1080p) or 360p (half of 720p). The second disadvantage is due to the polarization technology which limits the viewing angles of the image, both radially and vertically. The glasses (and therefore viewer) must maintain a level viewing angle with the display or else the vertical and horizontal polarization will not work. Deviation such as rotating the glasses will distort the image and disrupt the 3D picture.
This means that the viewer cannot tilt their head and must maintain a straight view of the display. The second part of this limitation affects the vertical viewing angles of the display, with some displays being limited to as narrow a band as plus/minus 5 degrees vertically from the horizontal centre of the image. These limitations are sure to diminish as passive 3D technology improves. Regular 2D displays with higher than 1080p resolution are already available and this should trickle down into passive 3D displays to address the halved resolution. Viewing angles should also improve as polarization filters become more refined.

Currently, passive 3D TVs are available from manufacturers such as LG, Philips and Toshiba. LG has also released a 3D LCD monitor for computing as well. These 3D displays are comparable in price to active 3D sets but with the advantage of lower-priced glasses. Only LG has a passive 3D projector (model CF3D) but at $10,999 USD, it is approximately 30% more expensive than similar active 3D projectors. It also requires a special silver projection screen to reflect the polarized images.

Glasses-free 3D
The latest type of 3D technology forgoes the need for glasses altogether. Similar to passive 3D displays, images for both eyes are displayed simultaneously but no polarization is used to separate the images. Instead, these displays use a physical vertical parallax barrier which directs the images to each eye. The barriers physically project two separate images with a slight separation, corresponding to each eye, allowing each eye to receive a unique image and thus creating the 3D effect.

These vertical parallax barriers are similar to the plastic rulers with vertical grooves which display a different image depending on the angle of the ruler but instead of changing the angle of the display, these barriers direct light to each eye.

Glasses-free 3D made its debut recently with the release of the Nintendo 3DS handheld gaming system. It uses a 3.5 inch 800 by 240 pixel screen to display 3D images. Similar to passive 3D, resolution is cut in half due to the simultaneous displaying of two images. In this case, vertical resolution is halved, producing an effective resolution of 400 by 240 pixel for each eye. Parallax barriers are also beginning to appear in dashboard displays in vehicles, allowing the driver to see the navigation and other driving information while allowing the passenger to watch a video or view other information.

The other disadvantage of glasses-free 3D is that due to the projection of the images by the parallax barrier, viewers must be in the projection area to view the 3D effect. The viewer cannot be outside the ideal projection area and must stay inside the “sweet spot”.

Currently, only LG and Vizio have released glasses-free 3D displays in North America while Toshiba has released them in Asia. These are the only three manufacturers creating displays for both types of technology (requiring 3D glasses and glasses-free 3D). There are currently no displays or projectors that combine these technologies.

LG has also released LCD computer monitors which try to deal with the limitation of the projection area by using the built-in webcam to track the user’s eyes to actively adjust the parallax barriers to optimally project the image to the viewer.

In Conclusion
Having viewed active displays from Samsung, Sony and Panasonic as well as passive displays from LG, I prefer active 3D displays due to the higher resolution and sharpness. The better viewing angles also allow for different seating and lying positions on the couch. The heavier active shutter glasses do make it more cumbersome and while I’ve never sat through more than a two-hour movie, they do start to feel more present after an extended period of time.

As 3D technology continues to improve and as more content becomes available, consumers will be more inclined to make the switch to 3D-capable HDTVs. The addition of 3D cameras/camcorders will help speed that along. As well, sports and gaming will continue to drive adoption and LG is actively promoting their passive 3D technology by providing it to sports bars and other venues. Watching a soccer, football or hockey game in 3D really does add another aspect to it and the cheap cost of passive glasses allows easy adoption. Even if consumers don’t purchase 3D displays strictly for watching 3D content, manufacturers are often putting the newest and best technologies into these displays, making them the best 2D-capable displays in their lineup (e.g. higher resolution, faster refresh rates). 3D is here to stay and hopefully will continue to make inroads into the consumer marketplace.
It was only a few short years ago that I recall a local group of audio enthusiasts who got together for cold beverage sampling and auditioning of hi-fi audio gear. As a new audio system was being swapped in for auditioning, the conversation turned to the components being installed – a new SACD player and a strange small to medium sized component with only a power button on the front and not much going on in the back. With delight Bill told us about his new toys – a new SACD player and an external companion DAC. The group reaction was mostly muted, yet they were all very interested. While most here were familiar with the basic role that a DAC plays in a CD player or a home theatre receiver, the concept of using an external DAC was brand new to most. It is rather amazing to recall how much has changed in recent memory with regards to audio media. Analog tapes have pretty much disappeared, yet analog records after reaching all time sales lows have reversed the trend and are slowly gaining popularity once again with each passing year. On the digital media side, the CD which can be largely credited with the declining sales slumps of analog media is now also seeing declining unit sales. What’s changed is that more and more of us are moving to computer based storage for our digital music media. This is an interesting time for audio enthusiasts as the growth of digital media formats means that the music of the world is now just a few clicks away and all from the comfort of your home. Better yet is that some of the musical selections are now offered in high-resolution and studio master quality formats. So if you have a basic understanding of the role that a DAC plays as part of a CD player, you can probably see how your computer or tiny hand held media player can benefit from a DAC. Don’t worry if this is all new to you. In this article I explain the basics of a DAC, how it works and what to look for when buying one. At the end of the article I share a list of some popular DAC units that are available on the market with a brief description of their features and limitations.

Let’s start right from the beginning – DAC is short for digital-to-analog converter. The operation of a DAC is just as simple as the name implies, a DAC converts a digital binary code into a line-level analog signal (voltage). This low-current voltage signal will then typically be fed into a preamplifier or an integrated amplifier and from there follow the remaining audio chain. For a detailed description regarding the operation of a DAC, see the online Wikipedia entry for digital-to-analog converter. When sizing up a DAC, the most important specifications that one should consider are the bit depth and sampling frequency limits. If the media you are attempting to play has a greater bit depth or sampling frequency than the digital input is rated for, you will not be able to play the music. 24-bits and 96 kHz will be sufficient for most digital music including most high-resolution media. However, if you are interested in the studio masters that are being offered by an increasing number audiophile recording labels, you should consider a DAC with 24-bit depth and 192 kHz sampling frequency. Many of the DACs that are on the market now offer upsampling which is not to be mistaken with oversampling.

When upsampling I have found the best results are achieved by upsampling in whole numbers (i.e. upsample a 44.1 kHz CD to 88.2 kHz or 176.4 kHz). If you will be using a S/PDIF signal as the primary source you will want to use a DAC that features a low-jitter clock for best performance, while a USB signal inherently has no jitter. As with all audio gear you will want to make sure the DAC comes with a good quality, quiet power supply. The inputs and outputs vary significantly from one DAC to another so be sure that the available connections are compatible with your system. Outside the main role of the DAC, which is to perform digital to analog conversion, there may be other additional features such as filters to alter sound, a headphone amp, and a phono and line-level preamplifier. The values of the additional features will depend on your intended uses.

The list below features a number of popular DACs that are currently available, ranging from $300 to $1300. The notes below give a brief overview of each DAC and list the various inputs and outputs, limitations of bit depth and sampling frequency and any extra features that the DAC model has to offer.
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✓ Yes, you can listen to Internet radio (MRX 500/MRX 700);

✓ Yes, you can use it with your iPod or iPhone – optional Anthem MDX 1 dock coming soon;

✓ Yes, it’s intuitive with user-friendly menus.

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Musical Fidelity V-DAC - $299 (approx.)
The small and plain looking Musical Fidelity V-DAC is a 24-bit/192kHz upsampling DAC. There are digital inputs for coaxial, optical and USB data streams at the rear and the analog output is via a set of RCA jacks at the front. The DAC is powered by a 12V DC external wall wart power supply and for improved performance an upgraded/improved power supply module is available from Musical Fidelity. Despite the bare bones look and lack of extra features the low cost and reports of good performance has made the Musical Fidelity V-DAC a popular choice amongst audio enthusiasts.

Cambridge Audio DacMagic - $499
The DacMagic is a 24-bit/192kHz upsampling DAC with an excellent layout and ergonomics. The DAC features two digital inputs which can be either coaxial or optical and there is a USB input which will allow you to connect a portable media device or a computer. Digital input depth and sampling frequency is up to 24-bits/96kHz however the USB input is limited to 16-bits and 44.1kHz or 48kHz. There are both XLR balanced and RCA unbalanced analog outputs. The DacMagic uses a large external wall-wart power supply.

Alpha Design Labs GT40 DAC (by Furutech) - $495
Don’t let the name fool you as the Alpha Design Labs GT40 DAC is a lot more than just a DAC. In addition to the 24-bit/96kHz DAC the GT40 also offers a built-in headphone amplifier with a front panel output and volume control as well as a selectable moving-magnet / moving-coil RIAA phono stage. What makes the GT40 even more unique is that the phono stage includes an analog-to-digital converter (ADC) that will allow you to digitally record your LPs at 24-bits/96kHz. The signal inputs of the DAC are limited to USB for digital and RCA for the phono input. Analog output is provided via a pair of RCA connectors located at the rear of the unit. See the December/January 2010/2011 issue of CANADA HiFi for a full review of the Alpha Design Labs GT40 DAC.

Music Hall DAC25.3 - $595 (approx.)
The Music Hall DAC25.3 is a 24-bit/192kHz upsampling DAC which also includes a headphone amplifier with volume control. The rear panel includes four digital inputs; coaxial, optical, balanced and USB. The USB input is however limited to a maximum 16-bit/48kHz datastream. The DAC features a choke regulated power supply which results in a very low noise floor.

Benchmark Media Systems DAC1, $995 (approx.) and DAC1 USB, $1295 (approx.)
The Benchmark DAC1 is a 24-bit/192kHz digital to analog converter that also includes an internal headphone amplifier with dual front-panel headphone jacks. There are three digital inputs on the rear for coaxial, optical and XLR. The DAC1 has both balanced and unbalanced analog outputs that can be switched between calibrated and variable which will also allow the DAC1 to function as a simple 2-channel preamplifier with the volume control on the front panel. The DAC1 USB model retails for $1295 and includes a USB 1.1 port which will accept audio data directly from a computer at bit depths of up to 24-bits, but the USB sampling rates are limited to 96kHz.

Rega Research DAC - $1095
The Rega DAC is a 16/20/24-bit at 32kHz to 192kHz digital to analogue converter. The DAC features two isolated coaxial inputs, two optical inputs and an isolated USB input. All the connections are at the rear and analog output is via a set of RCA jacks. The controls for the Rega DAC are at the front of the unit and there are 5 user selectable digital filters to alter the sound to your liking. High quality parts are used throughout the DAC. A full review of the Rega DAC is available in the April/May 2011 issue of CANADA HiFi.
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Home Theatre Apps for the iPad/iPhone/iPod Touch

Brad Copeland

If there has been one category of gadget that has been blowing up to the point of ubiquity these last few years it’s the mobile computing device. Smartphones, tablets, netbooks, it seems everyone is connected just about everywhere they go. Many of these diminutive devices are now able to do more, and oftentimes do it faster, than their full-sized computer brethren were able to just a few years ago. In addition to sometimes “standing in” for a full-fledged computer (there have been several novels released in the last few years that were written exclusively on the iPhone), mobile devices have allowed us to interact with other gadgets we own in revolutionary and unique ways. Large, bright, colourful touch screens and accelerometers (sensors in the device that sense how it is being held or moved) have given developers countless new opportunities to take control of lighting, AV gear, even the temperature in your home. Seeing as how you’re reading CANADA HiFi I’ll assume that the AV gear part of that sentence made your ears perk up, so without further ado, I present to you but a few selections from the growing world of home theatre control apps.

While much has already been written about the plusses and minuses of the various smartphone and tablet operating systems (OSes for short) and the multitude of different types of hardware they run on, for the purposes of this article I’ll be focusing on Apple’s iPad, iPhone and iPod Touch devices and their iOS operating system. In the interest of full disclosure, I should mention that I own and operate an Apple Authorized Service Provider and Reseller business in midtown Toronto, but at the time of this writing I don’t sell or service iPads, iPhones or iPods of any sort. Much like the merits of the many mobile OSes, there is a forest or two worth of articles out there about the Apple devices themselves, so I won’t be veering too deeply into a discussion about hardware. It does bear mentioning though that certain models of Apple hardware may not support certain apps and features, so before you run to the App Store and start downloading something expensive, please do your due diligence to make sure that the application you are interested in is compatible with your hardware.

Home theatre oriented apps run the full gamut in the app store, both in terms of what they allow you to do and how much you have to pay to do it. Starting on the affordable side, Apple’s Remote app (Apple, free, available natively for iPad, iPhone, iPod Touch) is a no-brainer and is something that should probably be pre-installed on every iOS device. Remote allows you to control either an iTunes library on a computer (Mac or Windows) or a current generation Apple TV. The combination of Remote on your device, your iTunes library on your computer and a few strategically placed Airport Extreme ($99) units with inexpensive powered speakers can produce a multi-room distributed wireless audio system for well under $500. Simply tell iTunes which Airport Express to point towards and then you can control track selection and volume, among other controls, all from the palm of your hand on your device. Changing rooms? Just tell iTunes to point towards the Airport Express in the room you are heading towards now. Remote is almost comically easy to set up. Simply make sure your computer, or Apple TV, and your mobile device are connected to the same network, hit the “add an iTunes Library” button on your device and enter the 4 digit code of the computer the device is trying to connect to. Now you have full control over your music, playlists, shuffle, repeat etc, all for free.

Media Remote for iPhone (Sony, free, iPhone & iPod touch native, but will run on iPad) is designed to allow you to put your Sony Blu-ray player, TV or AV receiver’s remote control away into a drawer and somewhat trim down the mess on your coffee table. When paired with compatible devices (there is a comprehensive list of what it works with on the app’s App Store page) the user has the option of a “simple remote” which allows them to use the touch screen to navigate around the user interface elements present onscreen or a “full remote”, which offers control over most features available on the device’s actual remote, including one-button control of transport, audio, subtitles, and menus. There is also a Disc Info section, which gives the user information about the Blu-ray disc currently in the player. Blurs about the director, producer and stars are all easily accessible, along with one-touch links to Youtube, Twitter and Wikipedia, so you can learn more about them while you watch the film.

Not to be outdone, Pioneer has also thrown its hat into the ring with not one, but two apps: the iControl AV2 app and the Air Jam app. The iControl AV2 app, in my opinion, is one of the sleeker looking, most intuitive and feature-rich apps out there at its price point (free, iPad, iPhone, iPod Touch). iControl AV2 is designed to control Pioneer’s AV receivers, and has features like a nine band EQ, a full status page showing input and output modes for sound (complete with nifty speaker diagrams that pulse to show which speakers are active for each listening mode) and video. There is also an amazing 3D model of your receiver’s MCACC (Pioneer’s automatic room calibration system)
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settings and a super slick “emphasis” section, which features a bass boost that you can engage by pinching apart on an animated subwoofer icon. As you increase the bass, simulated “cracks” form in the glass of your iPad until you reach the maximum boost, at which point an animation simulates the glass shattering. This is the iPad experience being used to its fullest for sure! Pioneer’s Air Jam app (free, iPad, iPhone, iPod Touch) is a unique app that lets users share music tracks directly through the AV receiver. This app can simultaneously connect up to four devices to the AV receiver via Bluetooth, giving users the ability to create a group playlist with each device’s music content. By the time you read this, Pioneer will offer several different Pioneer and Elite branded AV receivers which support these two apps.

Slightly more pricey than the last three, but still not breaking the bank by any stretch, is Movea’s Air Mouse app ($1.99, iPad, iPhone, iPod Touch). This inexpensive app runs as a client on your mobile device, and requires a small free server application which runs in the background on your computer (compatible with both Windows PCs and Macs). Air Mouse allows you to use your device as a touchscreen controller for your computer, rather than having a dedicated keyboard and mouse. This allows those of you with Home Theatre PCs (HTPCs for short) to control them and launch videos, music, photo slideshows and browse the web, all without an unsightly keyboard and mouse to add clutter to your home theatre. The accuracy and speed of the pointer and scrolling features can be tweaked to your liking, and Air Mouse even features a nifty little “gestures” feature that allows you to use your device’s accelerometer to control the pointer (think Minority Report and you’re sort of there).

A bigger jump in price takes us to a combination hardware/software solution called the Redeye Mini ($44.99, iPad, iPhone, iPod Touch), a little dongle which inserts into the headphone jack of your device and uses IR (infrared) signals to control the various pieces of gear in your home theatre. Redeye offers an online database of devices that can be controlled but fret not, even if yours isn’t present the device can learn codes from your existing remote. This essentially turns your iDevice into a touchscreen universal remote, with a feature set rivaling that of devices that cost exponentially more than the RedEye Mini. Sound and Vision magazine and Stuff magazine were both so enamored with the Mini they saw fit to bestow upon it Editor’s Choice and Gadget Award 2010 honours, respectively.

While Savant’s TrueControl app ($9.99 for iPad; $4.99 for iPhone/iPod Touch) is reasonably priced, chances are that the hardware system that goes along with it set you back a good chunk of change. Savant creates whole home automation, control and entertainment systems, allowing you to control AV gear, climate and lighting in every room in your house. As you can imagine the costs for such a system can get high fairly quickly, but that is a whole other discussion outside the scope of this article. The TrueControl app itself features professionally shot photos of the various rooms in your house, so turning on a lamp in your living room, for example, is as easy as reaching out and tapping its image on your iPad screen. The lamp’s icon even illuminates onscreen, casting light over the photo, to let you know it has been activated! You also have full control over the various TVs, cable boxes, Apple TVs and Blu-ray players in all the rooms in your home. The scope and level of control afforded to the user by this app is almost too large to properly put in writing, so I urge you to hit the App Store and download TrueImage Lite, which is a free “demo” version that will allow you to really get your head around the level of control that you can have over everything in your home, all from the screen of your iPad.

Lastly, in a slightly different, but still equally as cool of a category of app is the SlingPlayer Mobile for the iPad ($29.99). Have you ever been traveling and wanted to watch your favourite hockey team play but can’t find the game on any channel? The SlingPlayer Mobile works over either a WiFi or 3G connection to allow the user to connect to their Slingbox Solo ($169.99) or Slingbox PRO-HD ($279.99) devices back at home to watch live TV or anything recorded on their PVR right there on their iPad. The SlingPlayer Mobile allows the user full control of cable boxes, satellite receivers, basic cable, OTA (over the air) antenna signals, Apple TV and even home security cameras.

The apps I have highlighted above are but a small fraction of the home theatre-related apps in the App Store today, with new apps being added each and every week. A quick poke around the App Store also turns up apps from Naim, Micromega, Denon, Marantz, Panasonic, Yamaha and Samsung. Then there are also countless specialty-type apps, such as the SlingPlayer Mobile. I would encourage anyone with one of these “magic and revolutionary” Apple mobile devices to spend a few minutes searching around the App Store to see if there might be some way to simplify, or improve, the way that you interact with your home theatre and the various bits of gear in it.
There’s a real English gentleman I’d like you all to meet. Assisted by two talented engineers that build the products, he designs solid state headphone amplifiers and phono-preamps in small innocuous looking anodized aluminum boxes, and he’s gathered a following all over the world without much fuss or a big advertising budget. I’ve been a fan of Graham Slee for at least seven years and I should tell you why. In my experience, his products are absolutely reliable, very well priced and upgradeable, but more than this, they sound wonderful, fully competitive with much more expensive units. In 2004 I bought a Graham Slee Solo headphone amp and a Graham Slee Era Gold V phono-preamp and they’ve been my references ever since. Reviewing the Solo MC in 2005 I wrote “The strengths of the Solo are in the extra high frequency extension, a superb transient response and an unsurpassed dynamic range.”

Today I’m going to look at two current Solo models to see if anything has changed. Thanks to the strength of the Canadian dollar the price has dropped from $1299 to $999 for the Solo SRG II, the current equivalent, and even the upscale Solo Ultra-Linear lists for just $1199. The casework is slightly changed, a millimeter or so taller, with nice looking grooves added on the top panel and a ground connector at the rear, but otherwise no big visible changes were made. You still get a simple ALPS volume control (no remote) and a three way toggle switch (input 1, input 2 or mute) on the front panel, with an indicator light – once white but now a more discreet green. The back panel has two sets of RCA inputs and a DC24V input socket. Graham Slee believes it best to keep the power supply outside the cabinet to minimize stray fields that might induce hum or otherwise affect the low level signals involved, and he includes a PSU1 fully regulated power supply with the Solos. This too is unchanged over the years apart from the mains connector, once captive, now socketed to meet European regulations.

So what’s changed inside the box? Let’s start with the Solo SRGII. There have been numerous revisions over the years, all aimed at improving the sound quality and extending the range of headphones that can be well driven by the Solo. One particular innovation is line driver load sensing that enables the Solo to adapt to the impedance of the headphones in use.
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One consequence of this change is that the volume control is calibrated quite differently than on a conventional amp, where you would expect a setting in the 9 to 12 o’clock range, and large amounts of distortion if you go too far clockwise. Here the whole range is usable to adjust to headphones of very different sensitivities. There were times with very inefficient headphones and a low output source that I was in the three or even four o’clock position, with no noticeable stress to the sound.

Changes to the circuitry between the Solo MC and SRG II were particularly effective at improving the low frequency performance capabilities, while refinement of sound, separation and dynamic range have all steadily improved.

So today’s SRG II is a significantly better performer than the Solo MC, with the biggest improvements in the bass and the all-important midrange. Maximum sound pressure levels are higher while the clean treble and lightning reflexes have been maintained. Distortion and background noise are lower than before, making it easier to listen to the music, to enjoy the texture of the instruments and voices.

I have my own special way of testing headphones and head amps. I compare them directly with my reference Wilson Benesch Act 1 speakers, fed by a Parasound JC2 Preamp and the mighty Bryston 4B SST² power amp. By carefully adjusting the volume control on the headamp, I can pull the headphones on and off quickly to see how the headphone sound stacks up. With AKG K701s, I still hear a big difference. The AKG is much less complex musically, cooler, and more strident. They are still great phones, but they don’t stand up to this particular test. But when you substitute the far more expensive Sennheiser HD 800 with a Cardas Clear headphone cable, you’re getting into the same ballpark. The loudspeakers are still more relaxed and musical, sweeter and more three dimensional, but the differences are not great, while the balance across the frequency spectrum is quite similar.

Now let’s move on to the new top of the line Solo Ultra-Linear. The differences between this and the Solo SRGII are quite small, but also quite significant. The Ultra-Linear is the warmer, more natural sounding model, but the differences are less apparent on A/B switching than on extended listening. I found the more expensive Ultra-Linear allowed me to relax more into the music, and appreciate the texture of the instruments and voices. More significantly, the imaging felt more three dimensional and realistic. The frequency response seems pretty much the same, with a very wide extension at both ends, but the treble is sweeter and the bass end has more presence. That does not mean the Ultra-Linear is more accurate, indeed the bass performance of the SGRGII may be the more controlled, but the Ultra-Linear sounded more musical. This is a feeling many people have about tube amps as compared to transistor amps, although there are no tubes involved here. Instead Mr. Slee has emulated a tube design while still using transistors. I don’t understand how he’s done this, and he’s none too keen on spilling the beans lest other manufacturers copy his lead. I think he has been successful in bringing the extra warmth and musicality of a good tube design into the Solo Ultra-Linear but we have none of the usual problems with tube failure, excess heat production, high voltages and so on. There is one drawback in the slightly increased level of background noise, but even if it measures noisier, I didn’t experience any issue with either the AKG or Sennheiser phones.

My final test was with the far more sensitive Ultimate Ears UE10Pro custom fit canal earphones. The Solo MC does a good job with these superb phones, but the SGRGII is a much better match, since I’m not left struggling with the first 15 degrees of turn in the volume control anymore, and the frequency range seems more extended than before, while the level of detail is significantly higher. But switch to the Solo Ultra-Linear and there is a bigger jump in performance than I noticed with the full size headphones. The music is much warmer and more realistic, without losing any of the detail or extension. It just felt more full bodied and spacious in every direction – a marriage made in heaven. Not as detailed or as open topped as the Sennheiser, but fuller in the bass and with a strong dose of magic, this is the first head amp to draw so much out of these miniature marvels. There is one small caveat. Regardless of the volume setting, there is a constant low level of hiss with the Ultra-linear that is entirely absent with the SGRGII.
You may not notice it when the music is playing but it is apparent between tracks.

I pulled out all the phones I could find. The Sennheiser HD580 and Sony MDR-V150 showed no hiss at all, the Klipsch Image One had barely detectable hiss, while the Slick Audio CT6 and Sony MDR W25 showed a slightly higher level than the UE10Pros. Phones that are designed for MP3 players and iPhones may be problematic, while full size phones designed for serious listening will show no symptoms. If you are using exceptionally efficient phones you should try before you buy the Ultra-Linear or stick to the SRGII.

What if, like me, you own an older Graham Slee Solo? Should you pull your hair out over the major refinements available in the SRGII, or the additional but smaller benefits of the Ultra-Linear circuitry? This is where the story gets interesting. You can buy a do-it-yourself upgrade kit to bring your Solo right up to the Ultra-Linear specifications. No need to change anything in the chassis or power supply. Your job will be to remove the old circuit board and replace it with a new one. The upgrade is available for any Solo made since early 2004.

The upgrade kit will set you back just £175 (plus shipping and taxes if applicable), and the skill level required is not very demanding. There is no soldering required, but you will need:
- A small adjustable wrench
- 2mm AF Allen Key
- Small flat blade screwdriver
- M4/7mm AF open ended spanner or nut spinner
- No 1 Philips screwdriver
- No 2 pozi-driver or cranked pozi-driver


If this task looks too daunting for you, a factory upgrade is also available. This will involve packing just the main chassis and shipping it over to the UK and forking out £219 (plus shipping and taxes if applicable).

The fact that Graham Slee is constantly working to improve his products is of course a good thing. The fact that he offers you two different ways to upgrade your old model to current specs is particularly commendable. How many companies offer that level of service?

If the Solo SRGII ($999) and Solo Ultra-Linear ($1199) are beyond your budget, Graham Slee has three less expensive models that might interest you. An entry level Solo SRGII package is offered with a switched-mode power supply. The Novo Discrete headamp is available assembled ($499) or in kit form. A portable headamp, the Voyager ($349) rounds out the range.

If you can afford the best, remember you can spend a whole lot more and not find any significant improvement over these two Solo models. And yes, I think the extra $200 is well spent on the Solo Ultra-Linear, which is why Graham Slee no longer makes a kit to bring your old Solo up to SRGII specs. Whatever your taste in music, this formula holds: Sennheiser HD800 + Cardas headphone cable + Solo Ultra-Linear = A high level of musical enjoyment.

**quickinfo**

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It’s not everyday that Quebec’s Totem Acoustic introduces a new range of speakers. Totem models tend to stick around, to be incrementally improved as developing technology allows. Yet this year Totem is making a big splash with their new Element Series of radically designed speakers. Three models are available now, with two additional models to come:
- Element Fire – a compact stand-mounted speaker (the subject of today’s test)
- Element Earth – a floorstander with one active and one passive woofer
- Element Metal – a larger floorstander with twin active woofers
- Element Wood – a centre channel (coming soon)
- Element Water – a subwoofer (coming soon)

So what can be so radical about this new range of speakers? First let’s take a look at the cabinets. They taper towards the top and to the back, leaving no two sides parallel. This is great for avoiding standing waves and minimizing cabinet resonances, but also makes them look far more interesting than many earlier Totem designs which follow the traditional rectangular box principle. The finish, 4 coats of polyester, white (yes please) or black gloss, will turn many heads. The cabinet material is a graded mix of different densities of fibreboard, designed not to eliminate but to control and spread resonant frequencies. The drivers are so clean looking and elegant that Totem recommends you leave the magnetically attached covers off so you can enjoy showing them off as well as optimizing the sound quality. The speakers look more restrained and traditional with the grill covers in place. Even at the rear aesthetics are not forgotten. Totem specifies a custom machined aluminum terminal plate and bi-wirable platinum WBT connectors, topped by a tapered aluminum port.

So much for the visuals. The chief magic is on the inside. Following the lead of another highly respected Canadian speaker manufacturer, Reference 3A, designer Vince Bruzzese has developed a crossover-less speaker. Strictly speaking that doesn’t mean there’s no crossover inside. Rather, the amplifier makes direct connection with the midrange/woofer, with no intervening capacitors, inductors or resistors. There is still a simple crossover including two very exotic capacitors to mate the tweeter level and response curve to the main driver’s characteristics. This woofer maintains a significant output level up to around 5 kHz before smoothly rolling off, but its output is smooth and distortion free in this range, unlike conventional woofers.

So yes, these are special drivers, designed specifically to work in this application. Let’s take a look at them. The 7 inch Torrent woofer uses a thin polypropylene cone backed with three different damping materials and is powered through an unusually large 1 inch movement by a compound magnet system of unusual geometry and remarkably high magnetic flux. This driver is designed and manufactured in-house by Totem, and may be the most expensive single dynamic driver you’ll ever see. The magnetic material alone costs more than the entire woofer in most high end speakers. Even the wiring is unusual. Instead of round wire Totem uses a square cross-section to eliminate gaps between the conductors and to maximize flux density. The tweeter is another Totem design, which appeared first in the Tribe series, and is a very rugged, air cooled radiator with a titanium dome for very wide dispersion. Special attention has been paid to conducting heat away from the moving parts by way of a very thick aluminum 3/8 inch face plate and fins incorporated into
DIY JFET RIAA Phono Preamplifier Kit

Mark has put together the $79US JFET RIAA Phono Preamplifier Kit from Boozhound Laboratories. The RIAA phono preamplifier kit consists of a PCB, the circuit parts and detailed building instructions. The builder will need to provide a 24VDC power supply, a chassis and miscellaneous hardware like connectors and switches. The kit uses JFET transistors and comes with fabulous vintage Russian military paper-in-oil (PIO) capacitors. Mark reports that this is his best RIAA phono preamplifier build so far!

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Also check out the message forum where you can ask questions and discuss hi-fi audio or to find technical support with building your own hi-fi gear.
the aluminum alloy body rather than being attached later. Without the aid of any fluid cooling, this tweeter is pretty much unburstable. Both drivers are designed to give a very wide dispersion pattern.

This crossover-less architecture is a very tough trick to pull off, but if you can do it, the benefits are enormous. Not only are all the distortions and efficiency losses that a regular crossover may introduce a thing of the past, but also the amplifier can exert much greater control of the bass/midrange driver, improving response time and reducing overhang.

The Fire is not fussy as to the height or stability of the stands you choose, and will also work well on a table top or bookshelf. You should allow about 18 inches of free air behind the speakers to allow the port room to operate. Being reasonably efficient and having a benign impedance curve, the Fire will work well with most amplifiers, but given their high resolution and accuracy, you’ll want to pair them with some very good electronics and cabling. In fact switching out a pair of $1800 speaker cables and substituting the wonderful Nordost Valhalla bi-wire cables made an enormous difference. Right there, that’s a sign of a very good speaker – one that can easily show the difference between different components and wires feeding it.

I paired the Fire with a very high end system, comprising the EMM Labs XDS1 CD/SACD player, EMM Labs Pre 2 preamp, Bryston 4B-SST² amp and Nordost Valhalla cabling throughout. Having given the speakers time to run in, as recommended by the manufacturer, I was immediately struck by how realistic the string tone sounds were in some very well recorded symphonic works. Then, in came the horns, tubas, clarinets, flutes, followed by the percussion section, and it was immediately obvious that we have a winner. Enter the massed cellos and double basses and it beggars belief that we are listening to a compact monitor. The Fire has an excellent bass response, is pitch accurate and sprightly, down to frequencies normally associated with much bigger boxes. Turn the wick up and it all holds together. It’s a very easy speaker to listen to. I don’t mean it’s laid back or soft on transients. Rather the brain doesn’t have to work hard to reconstruct the sound of the symphony orchestra when the signal is so full range, accurate, low in distortion and located so well in space. The Fire’s specifications show a frequency response down to 40 Hz, but my own in-room measurements showed significant output well below 40 Hz. That’s the result of the rear port and the low resonant frequency (16-17 Hz) of the main driver. But you should not assume deep pedal organ music is this speaker’s strong point. Once the signal level increases at such low frequencies, the port introduces its own distortions. If that’s your poison, the answer is to switch to the Earth (rated down to 31 Hz) or the Metal (rated down to 30 Hz).

Now we’re not all here to listen to large scale orchestral works. I like to start there because if a speaker can handle that, it should do really well on less demanding music. Anyone who attended the recent Montreal show will know the Element series speakers just love rock’n’roll and heavy metal. Why? Because these are superbly linear speakers. All speakers compress as you turn up the volume. These just happen to compress a lot less than most others out there. The unburstable tweeter is one factor, the new magnet system in the woofer another, the absence of crossover a third. Linearity means you can hear the dynamics the same way the tracks were laid down, and while it’s always important, here it’s essential. The Fire aced any number of my favourite recordings, consistently placing instruments and singers clearly in their place in a wide and deep soundstage.

My own listening is focused more on smaller scale acoustic recordings, sixties folk, fifties jazz, classical chamber music and piano. To an extent, such music is often more impressive in a setup that adds a little richness. Joan Baez’s voice with a little extra warmth is a real treat. A string quartet with some added body may pull you further in. Well, you’re not going to get that here. Not unless you buy a tube amplifier or a Marantz SACD player, or use one of the warmer cables such as the Cardas Golden Cross. The Fire is about wide bandwidth, low distortion, accuracy and truth, and the same can be said for all the components and cables in the test system. If your CD is harsh or ragged, that’s how it will sound through the Fire. If your LP collection is scratched and full of static, each of these imperfections will be heard in their full glory. So buy these speakers only if you can handle the truth.

The fact that Totem can make the Fire available at $5,995 for a pair really defies belief. This is a glimpse of the real high end, and a magnificent follow up from the company’s earlier pocket reference “The One” speaker. It keeps all the musicality, accuracy and imaging of that wonder, and adds additional scale, bandwidth and a wider listening field. Nothing this small has ever sounded this good to me.

**Sidebar**

**Recommended Recordings used in this review:**

- **The Well** - Chava Alberstein and the Klezmatics – Rounder 11661 31852
- **Love** - The Beatles – Capitol 09463 7981023
- **The Well** - Jennifer Warnes – Cisco – SCD 2034
- **Kulanjan** - Taj Mahal and Toumani Diabate – Hannibal HNCD 1444
- **MA on SA** – MARC Recordings
- **Kind of Blue** - Miles Davis – Columbia – CS 69935
- **1910 – Les Doigts de l’Homme** – ALMA ACD61412
- **Shumann Fantasie** – Mitsuko Uchida – Decca 4782280
- **Beethoven Sonatas** – Alfred Brendel – Philips 446701-2
- **Brahms First Symphony** – Ivan Fischer – Channel Classics CCS SA 28309
- **Haydn Quartets Opus 20** – Quart-uor Mosaïques – Astree E8786
- **Nordost System Tuning and Setup Disc** – CD NOR-TD1

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Bryston BP-6 C Series Preamplifier

George de Sa

In the 1992 movie called “A Few Good Men”, there is a well known scene where a young lawyer played by Tom Cruise (Kaff ee) is cross-examining a Colonel played by Jack Nicholson (Colonel Jessup), in a court room. In the extremely intense scene the lawyer shouts at the Colonel, “I want the truth!” and the Colonel responds, “You can’t handle the truth!” I’m sure you’re wondering what all this has got to do with the review of an audio component – keep reading and you’ll see.

Bryston Ltd. is a Canadian company which has been designing and manufacturing electronics for both consumer and professional audio marketplaces for over 35 Years. The company stands by the reliability of its products with an industry leading full parts and labour 20 year transferable warranty, covering manufacturing defects on all its analog audio products. Bryston products are no strangers to the CANADA HiFi staff. In fact, CANADA HiFi has previously reviewed two Bryston amplifiers: the 4B-SST (May - July 2007) and the latest 4B-SST2 (June/July 2010), with positive impressions. Both reviews are now available on www.canadahifi.com. This time, I was able to get a hold of one of Bryston’s stereo preamplifier models to take through the paces, namely the BP-6 C-Series preamplifier, priced at $2,450.

Bryston offers a few dedicated stereo preamplifier models – the BP-26, the BP-16 and the BP-6. The Bryston BP-6 C-Series preamplifier is their simplest and lowest cost model. However, Bryston preamplifiers are all based on the same basic circuitry and gain stages, with the key difference between the models being features, rather than performance. Also, it’s worth noting that Bryston takes an evolutionary rather than revolutionary approach to new models. Bryston’s objective is to provide accuracy in the pre-amplification of the source signal, minimizing distortion and any signal colouration, in other words, to tell the truth.

Beginning with the internals, the BP-6 utilizes Bryston’s own proprietary Class A Discrete Operational Amplifiers. The circuitry in the signal path is fully discrete with the intention of maximizing performance. A torroidal transformer power supply is utilized and strategically placed to minimize interference with the internal circuitry and components. There is no internal wiring in the preamp circuitry, the components plug directly into the circuit boards via RCA connections so as to eliminate variations in signal travel as well as any potential wire interaction. Low output impedance and high current availability allow for long cables between the preamp and power amp(s) without any loss of frequency response, allowing for flexibility in placement.

In the world of high-end audio there are many exotic and elaborate products, which, without a sound, call attention to themselves. If you’re looking for extravagance in design, the BP-6 may not be for you. Rather, the BP-6 puts forth a simple and purposeful exterior that clearly reflects Bryston’s professional audio roots, while engendering favour with any who are partial to contemporary and minimalist design. The solid aluminum face plate of the BP-6 is just 2.25” high and comes in either a 17” or 19” width and it sits 11” deep, weighing in at 8.4 lbs. The most obvious features on its front panel are three flat faced conical shaped knobs centred on the faceplate. From left to right, the knobs are for source selection, balance and volume, with the volume knob being motorized for adjustments using the optional IR remote control ($375). On the left is a tasteful embossed Bryston logo, a studio-like toggle switch for the tape monitor and a 1/4" headphone jack for 50 to 600 ohm headphones. On the right side you’ll find the IR sensor for the optional remote, a power status LED and another toggle switch for power on/off. The faceplate comes in a brushed black or silver finish and the case is matt black. The solid chassis sits on four heavy duty puck-like rubberized feet. Personally, I found the BP-6 quite appealing to look at, with the gentle curved rake of the faceplate edges and simple controls exuding a modest handsomeness. The switches and controls have a solid feel and both fit and finish are superb.

Turning to the back-side of the BP-6 you will find an IEC power-cord inlet, great for those who like to try aftermarket cords, and eight pairs of RCA gold-plated jacks. There are 4 high level stereo RCA inputs, an in/out stereo RCA tape-loop and two
I’ve actually been using a Bryston 3B-ST amplifier in my reference system, paired with a Kenwood Basic Series C2 preamplifier, so swapping out the Kenwood preamp for the Bryston BP-6, had me thinking this might be a step in the right direction. For sources, I used my Rega Apollo CD player as well as my Goldring GR1.2 turntable, connected via my Project Phonobox II SE phono stage. The loudspeakers used for the review were my Epos ELS3 bookshelf monitors. The stereo RCA interconnect between the preamplifier and the amplifier was an AudioQuest Diamondback 1 metre cable.

The BP-6 is a relatively straightforward hook-up with no special settings to worry about. Power is turned on with a flip of the toggle switch on the right. Though I didn’t have the optional Bryston remote, I should note that power on/off can’t be remotely controlled - only the volume and mute functions can be controlled with the optional IR remote. With the power toggle flipped to on, the power LED indicator first glows red and then goes green expressing its readiness to go.

Before I began critically listening to the BP-6, I let it have a couple hundred hours of break-in time, though my understanding is that Bryston, as part of their quality control, burns-in their components for 100 hours. I should note that over this period I did not perceive any significant changes in the preamp’s presentation or sonic performance other than a slight extension at the frequency extremes.

I began my listening tests with redbook CDs, fed via my Rega Apollo. One CD that I’ve really been enjoying of late is from the English, progressive rock band, Elbow. Their latest album is called “Build A Rocket Boys!” Elbow uses a good mix of sonic elements, including a youth choir on this album, which makes for an interesting listen. The album came across as very relaxed and fluid sounding. In the opening of one of my favourite tracks on the album, Lippy Kids, I was amazed at the clarity of someone’s soft whistle deep in the soundstage. The whistle was clearly placed and surprisingly lifelike. Vocals were also very realistic and detailed. The texture in Guy Garvey’s voice was present in a compelling fashion and placement was just slightly behind the front plane of my speakers. The soundstage ran deep, going far beyond the back wall of my listening room and having substantial breadth. The piano and guitar sounded tonally correct. Skipping to Neat Little Rows, one of the faster paced tunes on the album, I was amazed at the placement of a drum. Even with my eyes open it sounded as if the drum was being struck way over to the left wall of my room and it pushed my relatively small ELS3 speakers to produce a deeper than typical note.

Next, I moved to an album that I’ve had a lot of time with. It was the CD album “To Love Again” (The Duets), by Chris Botti. Chris is a fantastic trumpet player and I find that his recordings are a wonderful test of upper frequency naturalness and stridency. Starting with What Are You Doing The Rest Of Your Life?, which features lead vocals by Sting, I was captivated by the holographic manner in which Sting’s voice was delivered. Sting has a very distinguishable voice but I’d never heard it until now with such detail and life – it sounded as though he was there, in my room. The whispering manner in which he sings was lifted to a new level of resolution with the BP-6 employed in my system. Chris Botti’s trumpet came across very clear with its pure brightness intact but never sounding overly strident or fattiguing to the ears, as it can when poorly portrayed. Cymbal strikes carried a stunning shimmer and effortless sustain. Softly ringing bells in the recording came across with their true metallic nature. The texture of the brushes on the drums was clearly present, without sounding like white noise or tape hiss. Again, the soundstage was very deep with good width. Overall, I perceived lovely depth and preciseness on the bass, a lifelike and natural midrange and an airy and extended top end.

Next, I changed sources, moving over to my Goldring GR1.2 turntable with its Elektra cartridge. I always enjoy the warmth and the pure organic sound of vinyl and in fact, am one of those that appreciate the nostalgia that a turntable can bring to the listening experience. I put on one of my 180 gram pressings, which is “A Fragile Balance”, by Ray Montford, a Canadian guitarist and composer. The LP is a high quality pressing, which provides a window into the instruments. The record came across with all its inherent warmth together with a high-level of detail. What was also apparent was the breathtaking three-dimensionality of the soundstage, with various layers of depth. The beautiful guitar phrasings carried with them the harmonic resonances of the strings and guitar body. The percussion also carried a realistic tautness, even revealing the characteristic reverberation of the drum skin. It was hard to keep from getting lost in the lushness of this album.

During the weeks that I listened to the BP-6, I concluded that it was providing me with a much clearer window into the recordings than my reference Kenwood preamp. It portrayed music in a layered and holographic fashion with great resolution, accurate tonality and linearity across the frequency spectrum. I would say that the BP-6 is very true to source, adding nothing and taking nothing away. If you’re currently using an older or low quality preamplifier or perhaps an AV receiver as a preamp, you may want to consider employing a high quality preamp, such as the Bryston BP-6 C Series preamplifier; you’ll be surprised at what you’ve been missing. To sum up, going back to the movie, A Few Good Men, if you’re someone who says, “I want the truth!” then the BP-6 will likely be a preamp on your shortlist but beware, with poor recordings, like MP3, you could find yourself saying, “You can’t handle the truth!”.

Let the truth be told.

quickinfo

Bryston Limited
www.bryston.ca
(705) 742-5325

Bryston BP-6 C Series Preamplifier
Price: $2,450 CAD
Panasonic TC-P50ST30 3D Plasma TV

Michael Osadciw

Panasonic is no newcomer to plasma television. Having developed panels for as long as I can remember, consistency seems to be the company’s mission. Solid. Elegant. Functional. These three words best describe how I’ve felt about Panasonic TVs from the moment I first laid my eyes, and my calibration meter, on one. Year after year, Panasonic never disappointed us as it delivered TVs with increasingly better performance. It was as if to tell us that its goal was to reach the pinnacle of the plasma technology and one day reach video nirvana. Well, this year Panasonic certainly managed to get closer again.

The ST series represents Panasonic’s line-up of entry-level 3D plasma TVs. The subject of this review is the 50-inch TC-P50ST30, priced at $1,499. Being an entry level 3D model, where price is a concern, I wasn’t expecting the TV to surprise me in many more ways than one. But it turned out I was wrong.

Not straying too far in design from previous designs, this ST series TV is elegantly fitted with a black bevelled bezel. The result is something less hard and jagged, as even the feel of the plastic surround is somewhat soft to the touch, yet very sturdy. Weighing in at 57 pounds, the panel feels much lighter than it looks. With a 5.4 cm thickness, the TV also feels much lighter than it looks. With a concern, I wasn’t expecting the TV to surprise me in many more ways than one. But it turned out I was wrong.

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The front of the TV is clean of controls fitting your television with your computer devices (connected to the TV) also via the Ethernet cable or Wi-Fi (Panasonic provides a wireless LAN adapter with the TV). The VIERA Connect feature is activated by clicking the VIERA Cast button on the remote, and seems to be a redesign of last year’s VIERA Cast feature. This service is Panasonic’s attempt to bridge the gap between computers and home televisions, and it does so with less enthusiasm compared to the Samsung TVs reviewed in the June/July 2011 issue of CANADA HiFi. When reading about VIERA Connect in the user manual and on the company’s website, the information about the technology is fairly vague and uninvolved, and didn’t exactly make me want to explore the feature. While Samsung’s information on its Smart TV technology was very intense and somewhat overwhelming, Panasonic’s seems to be the exact opposite. Like other IPTV services, VIERA Connect will allow you access to popular networking websites like Twitter, YouTube, Facebook, Skype, Picasa Web Albums, Cinemanow, Fox Sports, and many others. You might want to use a USB keyboard. So, if networking your television with your computer devices is a priority for you, you may want to explore this feature a bit further at your local retailer. As in previous generations, Panasonic offers the VIERA Link feature which enables the control of other Panasonic components with the TV remote, as well as the Image Viewer which enables access to content stored on SD and USB devices (connected to the TV) also via the TV remote.

Are there any improvements in image quality this year over last? The ST series TVs follow in the footsteps of last year’s G series TVs when it comes to black level. This TV has the Infinite Black 2 panel which uses a filter to keep black levels low. The black level does not measure as deep as the top-of-the-line VT-series, but it’s better than the comparable Samsung 6 series. The depth of black (darkness of video black) can be noticed in a dark room with all three panels displaying the same image, but is a bit more difficult to spot when on their own. To tune the picture, the TC-P50ST30 offers five image presets to select from, depending on the room environment in which you watch the television. All picture modes can be adjusted to a certain extent, with only two modes, Custom and Cinema, which can be calibrated for greater accuracy. The TC-P50ST30 also has true 3D capability with compatible Blu-ray and satellite/cable TV signals, although you will need to purchase the 3D glasses separately. This is one way to keep the pricing down of a 3D TV set.

To improve 3D picture quality by reducing crosstalk between images (crosstalk is the term used to describe seeing double images when wearing the glasses), Panasonic has created a crosstalk canceller to minimize the double images. Emission time and process of the phosphors have improved this year to minimize left eye - right eye frame interference. In addition to this, the new panels have fast switching phosphors to reduce what we call image decay or afterglow, which can result in images staying on the screen for a fraction of a second too long and thus blurring fine detail. Since each pixel on the screen is made up of three subpixels (red, green, and blue), the speed of their rise and de-
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cay time (getting brighter and darker) is very fast with Panasonic’s 600Hz subfield drive technology and will, with the other technologies listed above, improve the clarity of moving images.

Knowing that good quality video switchers have rapidly penetrated the A/V receiver market for connection of multiple sources, Panasonic has slimmed down its video input offerings and justifiably so. The TC-P50ST30 provides 3 HDMI, 1 component video and 1 composite video inputs, 2 USB, an SD cart slot, and an optical output to access 5.1 audio from over-the-air broadcast (I’m still one to use this last feature). There is also an Ethernet port for connecting to a home network. The selection on the panel is less cluttered and more practical for modern-day components.

I should also mention that Panasonic is trying to be environmentally responsible by offering mercury and lead-free panels so that when its time to retire the TV, the environment won’t take a beating like it has with CRT televisions. While plasma TVs tend to be a little more power hungry than their LCD rivals, Panasonic offers a variety of power saving features in its plasma TVs that can save on panel life and hydro bills. To give it power, the TV includes a large detachable power cable that could be replaced with a high-end cable for improved performance.

I spent most of my time evaluating this TV uncalibrated as most owners still don’t get their TVs professionally calibrated. So, out of the box how does it look? Panasonic TVs come out of the box set to the “Standard” image preset. The image is dark, dull, crushed, and displays massive amounts of dithering in dark areas of the picture (dithering is graininess in the picture due to a reduction in colour depth). Changing the picture mode to “Custom” or “Cinema” got rid of the problem quickly so I was off to watch some Blu-rays. Evaluating at a 7 foot distance to take full advantage of the 1080p resolution, the first title I watched was the most recent interpretation of Red Riding Hood by Twilight director Catherine Hardwicke. This is a title that I know has a solid video transfer; it’s very clean and the look of the film with all of its obviously fabricated sets has some visual appeal for what it is. While the TC-P50ST30 can’t improve the dreadful story itself, the Panasonic delivered the image strongly and impressively. Amanda Seyfried’s skin looked very polished in each scene as she plays Valerie, the Red Riding Hood. In the Cinema picture mode, colours are much closer to HDTV spec, and the image looked very smooth and pleasant when compared to the Custom picture mode (the latter has its colours a little bright and oversaturated as evidenced on Valerie’s red cloak).

To test the TV’s black level capability and interpretation of film grain, I switched to one of my favourite classic sci-fi horror films, Ridley Scott’s Alien. When the crew sets out to explore the alien spacecraft, the scenes are contrasted with dark interiors and bright hand lights. The Panasonic did not stumble when reproducing the low level detail along the intricately created walls, otherwise known as shadow detail. Much has gone into the set design of the film and it would be a shame to not see the alien environment we were intended to see. 20th Century Fox maintained the film grain for this transfer and I felt that the Panasonic reproduced it well, something that is typically a shortcoming of plasma displays. I then skipped ahead to the climax of the film when the ship’s strobe lights flicker during the self destruct sequence. No matter the intensity of the flickering light, the Panasonic was very stable in holding its black level and low light detail – a very important trait for any TV to make a good picture.

The last film I watched was The Assassination of Jesse James by the Coward Robert Ford, a transfer that I know has problems with frozen grain. The TV’s noise reduction feature can smooth out some unwanted artefacts such as what is on this film, although as a purist I don’t recommend NR features, and I don’t think ladies watching this film would want any video circuit obscuring any part of Brad Pitt who plays the villain James. The TV was no coward hiding the problems with this video transfer, so not only will you stay in suspense with the intense dialogue sequences in this film, the Panasonic will show the video as is, warts and all.

As there are upsides, there are downsides. The Motion Smoother feature is still dizzying to watch, so while it does reduce motion blurring, it still looks too much like a home video and destroys the feel of film. The dithering can be quite a nuisance especially when sitting at close distances. The Red Riding Hood transfer does have one drawback: a raised black level. The film’s deepest black is slightly higher than that of the TV, so the TV reproduces it as dark gray. Dithering tends to happen in the darker grays the most as there isn’t much colour detail there. There were times where I found it more offensive than I preferred, but not out of line when compared to other panels found at the same price point. As a result of Panasonic’s processing, some colour banding could be noticed as well, as I saw it several times on Amanda Seyfried’s cheekbone in the warm fire-lit environment, the scene when she first kisses the bad-boy of the village, Peter. The smooth shades between subtle colours just weren’t there and resulted in some posterization. For those interested in viewing the calibration data for this television and a further discussion on its gamma performance, please visit the CANADA HiFi forum at www.canadahifi.com/forum and click on the Plasma Flat Panel Displays forum. Unfortunately I could not evaluate 3D image quality as Panasonic did not provide 3D glasses with the review unit.

It seems likely that “stay the course” is Panasonic’s internal slogan when developing its 2011 panels. While the high amount of dithering can be forgiven at further viewing distances, I’m still impressed with the solid and well built displays when compared to the thin and fragile-feeling competitors. Offered in six different sizes from 42 up to 65 inch, the ST series televisions offer excellent value; full 3D compatibility, deeper black levels, accurate colours in Cinema picture mode, and a solid design. This is a TV you would be comfortable watching for a long time ahead.

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