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June/July 2013

**World's First JL Audio CR-1 Crossover Review
Along with Dual JL Audio Fathom f112 Subwoofers!**

**Unlock the Full Potential of the
Music and Video Stored in Your
Portable Devices**

**AirPlay, Bluetooth, DLNA and WiFi Direct
Streaming Protocols Explained**

Power Struggle

**Understanding the Importance of the Power
Delivery System to Your Components and the
Benefits It Can Bring To Your Listening Experience**



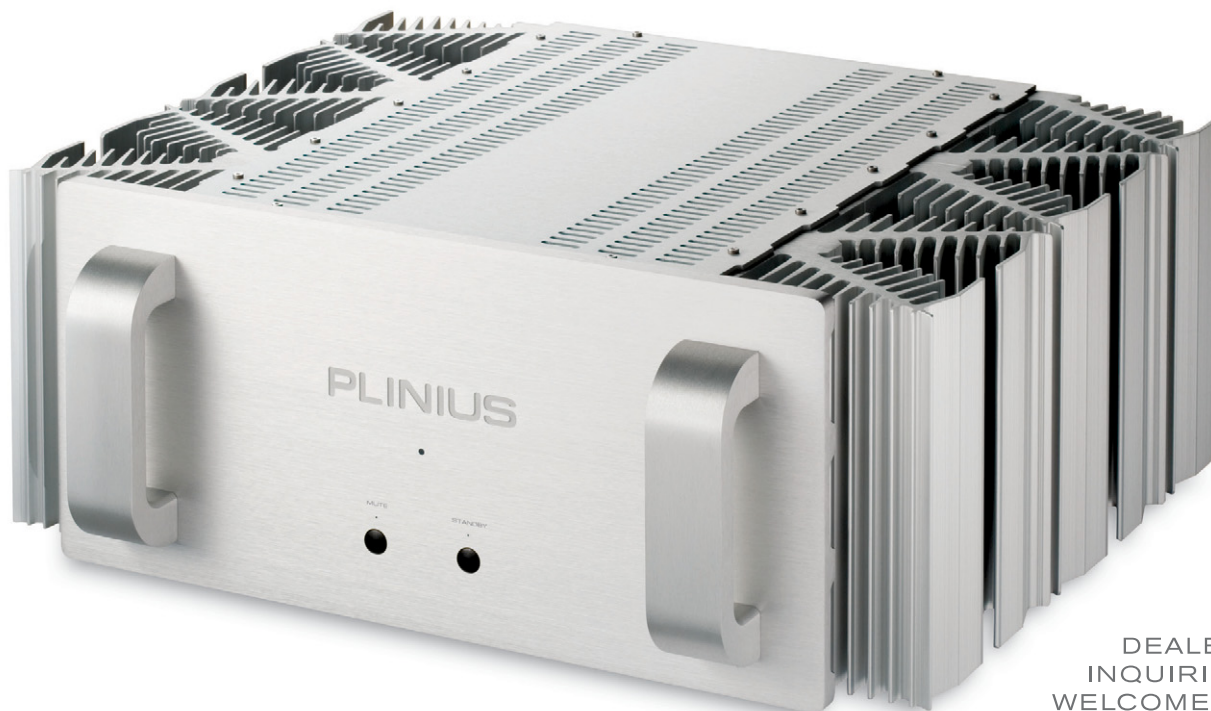
Also Reviewed Inside:

- Alpha Design Labs ADL-H118 Headphones
(With ADL iHP-35X Upgrade Cable)
- SHURE SE535 Sound Isolating Earphones
- Samsung 8500 Series 64-inch Plasma TV (PN64F8500)

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**Nordost Blue Heaven
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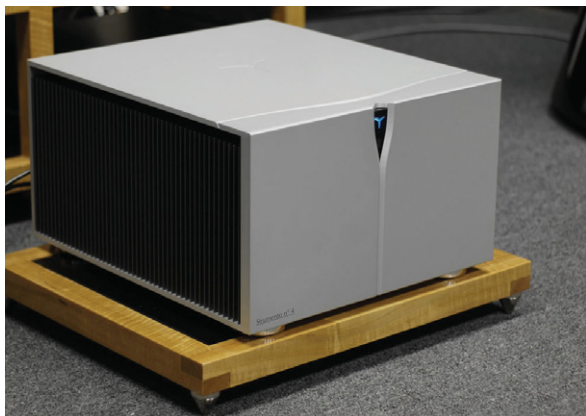
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CANADA HiFi

june/july 2013

forward >>>

Now that the mercury has reached the mid-twenties in the thermometer, it's time to get outside and enjoy all the things we love so much about the summertime. For us music fans this often means spending a little less time listening to our home music systems, but it certainly doesn't mean that we'll be listening to less music. I tend to enjoy a lot more live music during the summer, and spend a good amount of time on my patio listening to outdoor speakers. I've even got a little stereo system set up in my garage. I'm sure that a lot of readers like yourself, will spend plenty of time listening to music through headphones/earphones this summer. And on that note, perhaps it's time to upgrade your listening experience with one of the two pairs of earphones/headphones reviewed in this issue.

Summer is also a great time to share some of the music and video trapped inside your smart phone or tablet with your friends and family, and there is no shortage of components that will let you do just that – from speaker systems to AV receivers to HDTVs. Check out Jeremy Phan's feature on page 12 that explains the various wireless streaming protocols out there today, which will help you choose the components that are best suited for your needs.

On a different topic, Malcolm Gomes explains the importance of clean power delivery to your music system and what sonic benefits you can expect when you use a good quality power distribution box and high quality power cables – read his feature on page 16.

We're also very excited to present you with two exclusive reviews in this issue – the world's first review of the JL Audio CR-1 Crossover and the first Canadian review of the Alpha Design Labs ADL-H118 Headphone.

Wishing you a great summer!

Suave Kajko
Publisher / Editor in Chief

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Introducing the Adsum Audio Detonator

Adsum Audio is a homegrown Alberta-based company exploding onto the Canadian audio market scene with its first product, the Detonator. The word "Adsum" is Latin for "I Am Present". It is the mission of Adsum Audio to ensure each one of its customers feel as though they were present at the original audio event when they listen to their products. The Detonator is a compact bookshelf speaker that is small enough to fit onto any desktop, but high powered enough to fill your living room. The Detonator uses a unique ring dome tweeter design which brings a lifelike clarity to the sound produced. The Detonator is housed in a MDF cabinet with a high gloss piano finish. It is available in a variety of colour combinations in order to suit any room or personality. MSRP: \$799+/pair. www.adsumaudio.com



Cambridge Audio Minx Air 100 and 200 Wireless Speaker Systems

These two new systems are designed to play music wirelessly, via AirPlay or Bluetooth, from smart phones, tablets or computers in superb, Hi-Fi quality. Both also stream music from Internet Radio stations via a downloadable app. Their BMR (Balanced Mode Radiator) drivers offer a large sweet spot and create a rich sound that's more room-filling than other similar-sized speakers. Meanwhile, a custom digital amplifier and DSP (by Waves Audio) promises heart-thumping performance, even at top volumes. Their design not only allows these systems to get the biggest sound possible from the compact enclosure, but delivers an experience that's louder, crisper and fuller than other portable systems. The Minx Air app offers volume adjustment, bass control and access to a range of EQ settings to tailor Minx Air's sound for any room. MSRP: Minx Air 100 (\$449) and Minx Air 200 (\$599). www.cambridgeaudio.com. Distributed in Canada by Plurison, 1-866-271-5689 or www.plurison.com

Devialet 110, 170 and 240 Amplifiers

Devialet, the company behind the magnificent sounding D-Premier amplifier, has just added three new amplifier/DAC models to its line-up, two of which now allow music listeners with smaller budgets to experience the magical Devialet sound. All three models combine pure analogue sound with smart digital power delivery, and utilize an advanced electronic circuit board with 2500 surface-mounted components made entirely in France, without any soldered wires. Highlights of the board include USB and Ethernet inputs, ultra low jitter digital inputs, a phono stage, the ultimate DSP for room correction and digital active crossover, as well as a dynamic and ultra efficient power supply. All three models are driven by upgradable software, which can be configured to your needs using a new online configurator. The Devialet 240 is equipped with a Wi-Fi streamer which provides access to digital and online content. The streamer is offered as a free upgrade for the 110 and 170 models until Sept. 30th, after which it will cost an additional \$1,395. MSRP: 110 (\$6,495), 170 (\$9,495), 240 (\$17,495). www.devialet.com. Distributed in Canada by Plurison, 1-866-271-5689 or www.plurison.com



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Sony PlayStation 4 and Microsoft Xbox One Details and Comparison

Suave Kajko

Both Sony and Microsoft recently announced that they will be releasing their next generation video gaming consoles by the end of this year and millions of video gamers around the world are curious to see just how the next generation games are going to look. Sony's new console will be called the PlayStation 4, while Microsoft is calling its console the Xbox One. Both consoles aim to be the central hubs for home entertainment rather than just gaming machines, and as you might imagine both offer much faster processors, powerful graphics and innovative new functionality and features.

Sony PlayStation 4

Although Sony was the first out of the gate to announce most of the details of its new system, the company has so far only released images of the PS4 controller and the camera module which attaches to your TV. Sony is expected to reveal the final details and product pictures at the E3 show on June 10th, which will have taken place by the time you read this. The PS4 system architecture is centered around a powerful custom chip that contains eight x86-64 cores and a Graphics Processing Unit (GPU) that has been enhanced in a number of ways, principally to allow for easier use of the GPU for general purpose computing. The GPU contains a unified array of 18 compute units, which collectively generate 1.84 Teraflops of processing power that can freely be applied to graphics, simulation tasks, or some mixture of the two. The PS4 is outfitted with 8 GB of unified system memory (GDDR5), giving the system 176 GB/second of bandwidth and providing a further boost to graphics performance.

As you might expect the PS4 will offer a number of new features, allowing gamers to interact with their games and friends in new ways.



The PS4 will let gamers share images and videos of their epic gameplay moments on social networking services such as Facebook with a press of a button on the controller - the images/videos upload as the gamer plays. Gamers will also be able to share their live gameplay in real-time using Ustream, letting friends make live comments. The PS4 will integrate other devices such as the PlayStation Vita, smart phones and tablets into the gaming experience. The PS Vita for example, will let gamers seamlessly pull PS4 titles from their living room TVs and play them on the PS Vita's display. Apple and Android devices on the other hand will let users, for example, see maps on their second screens when playing an adventure game, purchase PS4 games while away from home and download it directly to the console at home, or remotely watch other gamers playing on their devices. The PS4 promises to be lightning quick at letting you access your games thanks to its "suspend mode" which keeps the system in a low power state while preserving the game session - thus eliminating the time it takes boot the console and load the game as in the past. Just hit the power button and you'll be right back at playing the game where you left off the last time. Finally the new console promises that in the future when a gamer sees a title of interest in the

PlayStation Store, they'll be able to immediately start playing a portion of the actual game.

Along with the announcement of the new console, Sony revealed a number of PS4 game titles that will be available around launch time. The major titles will include first-person shooter *Destiny* from Bungie (the guys who created *Halo*), *Killzone Shadow Fall*, *Diablo III* and a new *Final Fantasy*. These games will be joined by creative efforts such as *Knack*, a game directed by the PlayStation 4's lead architect, Mark Cerny, *Watch Dogs* from Ubisoft, and *Driveclub*, which aims to bring team-based racing to new levels. PS4 owners can also expect exclusives such as *InFamous: Second Son* and *The Witness*.

Microsoft Xbox One

Microsoft's Xbox One is an all-in-one gaming and entertainment system designed to deliver a new generation of blockbuster games, television and entertainment. Rather than taking the teaser approach like Sony, Microsoft revealed the details and photos of its new console all at once. The Xbox One will offer a Blu-ray disc player for the first time, a completely redesigned 1080p Kinect camera/voice sensor and a new Xbox controller that's refreshed with more than 40 technical and design innovations. Under the hood, the Xbox One will offer an eight-core x86 processor with

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more than 5 billion transistors, which will help to make lag and load times a thing of the past. You'll be able to jump instantly between a game and your entertainment at lightning speed or run a host of apps right alongside your game with no loss in performance.

Thanks to this computing power the next

generation games promise to push the boundaries of realism, with the most advanced graphics to date. Microsoft will also enable owners of the Xbox One to interact with the console in a whole new way. Owners will be able to control the Xbox One using voice commands. For example, you'll be able to say "Xbox On" to launch your personalized Xbox One Home screen, discover what is popular on TV or see friends' latest gaming achievements - all using your voice. The more you interact with Xbox One, the more it gets to know you and learns what you like. Microsoft would also like you to navigate and watch live TV from your cable or

satellite box through your Xbox One, to simplify the operation of your home entertainment. Using the "Snap" feature you'll be able to jump into a multiplayer battle while watching your favorite movie, talk with friends on Skype while watching live TV, or track your fantasy team on TV as you watch the big game. Other Xbox One features include Trending which lets you discover entertainment that's popular among your friends, and see what is trending within the Xbox community; and OneGuide which allows you to find your favorite entertainment easily, searching by network or name, all with the sound of your voice. Xbox One owners will be able to take advantage of the all-new generation of Xbox Live that is more powerful, more personal and more intelligent. Unleashing the power of the cloud makes everything more convenient and accessible, from allowing games to be installed in segments so that gameplay can start quickly to updates downloading in the background. Xbox Live will let you save and store your personalized profile, games and entertainment in the cloud to access them anytime, from any Xbox One console. A dedicated Game DVR will allow you to capture and accesses your magic moments, all saved to the cloud. Finally, the Xbox SmartGlass feature will turn your smartphone or tablet into a second screen that can be used to control various play console features, and enable access to additional content to enhance the Xbox One entertainment experience.

The blockbuster Xbox One gaming titles revealed so far for the new console include Forza Motorsport 5, Call of Duty: Ghosts, Quantum Break, FIFA 14, Madden NFL 25, NBA LIVE 14, and EA SPORTS UFC. In addition to these games, Microsoft also announced that Steven Spielberg will executive-produce an original "Halo" live-action television series with exclusive interactive Xbox One content.

Features aside, for gaming fans it's all about the games. What will truly determine the success of both new consoles are their abilities to deliver games with better-than-ever graphics, game physics and an overall immersive experience. For more info about both gaming systems and videos of some of the upcoming games, please visit www.canadahifi.com.

Feature	PlayStation 4	Xbox One
CPU	Custom x86 AMD Jaguar 8 core processor	Microsoft custom 8 core processor
RAM	8GB GDDR5	8GB DDR3
Optical Drive	Blu-ray/DVD	Blu-ray/DVD
Game DVR	Yes	Yes
On-board Storage	TBA	500 GB
Expandable External Storage	TBA	Yes via USB
Cloud Storage	Yes	Yes
Required Internet Connection	No	Yes
Motion Control	DualShock 4, PlayStation 4 Eye, PlayStation Move	Kinect 2
Second Screen	PlayStation Vita, Apple and Android devices	Apple, Android and Windows 8/RT devices
Voice Control	TBA	Yes
Live Streaming	Yes	TBA
Used Game Fee	TBA	Yes
Backwards Compatibility	None	None
Cross Game Chat	Yes	Yes
Web Connection	Ethernet, IEEE 802.11 b/g/n	Gigabit Ethernet, IEEE 802.11 b/g/n
Bluetooth	Bluetooth 2.1	No
USB	USB 3.0	USB 3.0
A/V Connections	HDMI (4K Support), Component, RCA, Optical output	HDMI input and output (4K support), Optical output

Unlock the Full Potential of the Music and Video Stored in Your Portable Device

AirPlay, Bluetooth, DLNA and WiFi Direct Streaming Protocols Explained



Jeremy Phan

In today's connected world, most users own smart phones and tablets that function as media storage and playback devices, for both music and video. These devices range from pocket-sized iPod Touches and iPhones, to the latest Android smartphones with WiFi Direct, to second-screen tablets in a variety of sizes. Storing audio and video content on your portable device that you can take everywhere is convenient, but many users love the ability to stream music to a full-sized stereo or multi-zone audio system; or to stream video to a big screen HDTV. This functionality offers a far more immersive experience, both sonically and visually.

Advances in wireless protocols, both open (such as the Digital Living Network Alliance or DLNA)

and closed (Apple's proprietary AirPlay), now allow practically every device to wirelessly share its content to a compatible receiver. Below, I detail today's common wireless protocols and explore the different media and devices supported by each, to help you take advantage of the technology that may already be built into some of your devices. And if your current components don't support these protocols, perhaps you'll be inspired by this article to upgrade parts of our audio or video system, once you discover just what streaming options are possible today.

Apple's AirPlay

AirPlay is Apple's proprietary, closed protocol that allows compatible devices running iOS v4.2 or later to stream their audio and video content to other devices. Apple li-



censes the protocol to manufacturers to include in their devices, which range from boom boxes to AV receivers to network media devices.

To stream content, the iOS device needs to be connected via WiFi to the same local area network as the AirPlay-capable receiver. On the iOS device, accessing the AirPlay icon will list all available receivers. There are also third-party apps that support AirPlay, which allow their



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content to be streamed wirelessly. One thing to note though is that AirPlay streaming directly from an iOS device is limited to a single receiver and audio only. The exception to this is the 2nd generation of Apple TVs (and beyond) which support video and screen mirroring, in addition to audio streaming. Screen mirroring is a function that lets you see the screen of your iPhone or iPad on your HDTV, exactly as it appears on your portable device. AirPlay video streaming is also only compatible with the iPhone 4S and above, iPad 2 and above, iPad mini, and iPod touch 5th generation and above, all running iOS v5 or later. Audio and video content is limited to formats supported by AirPlay-enabled applications on the iOS device. This means users cannot use VLC, for example, to stream an HD MKV file to their Apple TV.

If a user uses the iTunes desktop software, AirPlay is capable of streaming a single audio stream to multiple AirPlay receivers simultaneously. Video streaming is limited to a single Apple TV receiver at a

time. When AirPlay receivers are streaming content, both the iOS device and the receiving device can control playback and volume. Additionally, metadata is also displayed (song title, artist, time, etc.) on compatible devices.



Bluetooth

Bluetooth is a short-range protocol typically used by hands-free headsets and wireless keyboards but it is also capable of streaming audio to compatible receivers using the Advanced Audio Distribution Profile (A2DP). While it uses the same frequency as some types of WiFi (2.4 Ghz, 802.11 b/g/n), it is lower power and therefore has very limited range (typically 10 m/33 ft. max, line of sight), and bandwidth (3 Mbps). However, since it is a protocol developed by a not-for-profit group, it is available to be implemented by anyone adhering

to the protocol.

Similar to AirPlay, there are a variety of Bluetooth-equipped devices – with the most popular being portable, battery-powered speakers. These Bluetooth speakers often also double as speakerphones when used with smartphones. The process to stream audio to Bluetooth-equipped devices is a little more involved than with AirPlay. If you've ever connected a hands-free headset to your smartphone, the process is identical. Before two Bluetooth devices can be connected, they must be paired. The Bluetooth pairing procedure typically involves one device broadcasting its Bluetooth availability while another device searches for nearby Bluetooth devices. Once the broadcasting device shows up in the list of available devices, the pairing procedure is subsequently initiated with the broadcasting device prompting for a multi-digit numerical PIN to secure the connection. Once the correct PIN is entered, the connection is encrypted, preventing other Bluetooth devices from eavesdropping on the data being

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transferred between the two paired devices. Many Bluetooth devices are also capable of remembering their pairing connection with multiple devices (called multi-point) but are limited to one active link at a time. Bluetooth-equipped docks and speakers are typically less expensive than their AirPlay counterparts. iOS devices equipped with Bluetooth are also able to utilize Bluetooth audio streaming when AirPlay is not available. The latest version of Bluetooth (v4.x) supports lower power-consumption, higher bandwidth (25 Mbps), and farther range (up to 60 m/200 ft).

A new addition to Bluetooth devices is near-field communication (NFC), a passive, even shorter-range communication protocol. NFC is available in many new Android, Windows Phone, and BlackBerry devices (Apple has yet to implement NFC) and allows devices to share information when they're brought in close physical proximity with each other. The most common uses of NFC that most users are familiar with are contactless credit cards or membership/ID cards (such as quick-pay gas fobs) which transmit their embedded (and usually encrypted) information to an NFC reader when brought in contact. For multimedia-related applications, NFC allows users to complete the multi-step Bluetooth pairing procedure by simply bringing their NFC-equipped streaming device into contact with the NFC-equipped playback device. Sony has also implemented NFC into the remote control of its newest HDTVs, allowing compatible devices to activate video streaming to the big screen simply by tapping their NFC-equipped smartphone with the remote control. It should be noted however that video streaming is more bandwidth intensive and therefore handled by a WiFi-based streaming protocol, discussed later in this article. NFC is just used to pair the devices and activate the connection.

DLNA

The Digital Living Network Alliance is another non-profit trade group that establishes interoperability guidelines. Devices adhering to the DLNA specification are capable of communicating with each other and determining what each is capable of doing: storing/streaming me-

dia, playback (audio and/or video, plus supported codecs), playback control, etc.

DLNA is widely supported by a multitude of manufacturers such as Cisco, Google, Dolby Laboratories, Panasonic, Samsung, Sony, Microsoft, and many others minus Apple, of course. There are, however, iOS apps that allow streaming to DLNA devices but there is no native support from Apple devices.



The procedure to pair DLNA devices is less cumbersome than Bluetooth and similar to AirPlay. Once connected to the same network, DLNA-certified devices will automatically show up when devices scan the network. A pairing connection is then either granted on a recurring per-use basis or permanently for the requesting device (the recipient device remembers the initiating device's unique ID).

Since DLNA is a more comprehensive guideline than Bluetooth, it is typically found in more advanced devices such as video game consoles, AV receivers, and HDTVs (as opposed to simpler devices such as speaker docks). An example of a DLNA connection is between a DLNA-certified AV receiver and a DLNA-certified external hard drive, both connected to the same network. This would allow the receiver to directly access and playback the audio files stored on the hard drive without the need for an intermediate device such as a smartphone or computer.

WiFi Direct

This new protocol utilizes the same technology that existing wireless networks use but instead of a router or access point handling communication between client devices, this protocol allows devices to connect directly with one another (peer-to-peer). Those familiar with "ad-hoc" WiFi networks will be familiar with the concept but unlike ad-hoc networks, setup is much easier with a variety of ways to quickly establish a

secure (256-bit AES encrypted WPA2) device-to-device connection (Bluetooth PIN, NFC pairing, physical button push, and others). The best part is that only one device has to support WiFi Direct to establish the connection. The source device in essence becomes an access point that the receiving device connects to.



Since WiFi Direct offers higher bandwidth than Bluetooth, it is typically used for video streaming from smartphones to compatible HDTVs or set-top boxes. Since it uses WiFi technology, it can also theoretically support a maximum distance of over 600 feet between the two devices. However, with higher bandwidth comes higher power consumption which is why it isn't used for simpler streaming applications such as audio. Other uses of WiFi Direct are file transfers and direct printing.

As WiFi Direct is the newest streaming protocol, it isn't as widespread as the others. However, given users' eagerness to share their high-def video content and disconnect as many wires as possible, it is already quickly being adopted. You'll find it in receivers, HDTVs, media players, and many other devices.

I encourage you to explore the great wealth of devices and components out there that allow you to stream content from your smart phone or tablet to a home stereo system or HDTV set. Streaming your content will not only allow you to unlock its full audio and video potential, it will also let you share it comfortably with family members and friends. You can find most of these streaming devices and components on www.canadahifi.com. With all of these technologies, playing back, sharing, and streaming your content (wirelessly) from one device to another has never been easier.

Power Struggle

Understanding the Importance of the Power Delivery System to Your Components and the Benefits It Can Bring To Your Listening Experience



Malcolm J. Gomes

In the world of high-end audio, the focus is usually on choosing the right source components, the right amplification, the right speakers and sadly, to a lesser extent, the right cables, interconnects and power cords. What is usually missed out is the quality of the power that we feed into our audio systems. You can acquire the best automobile in the world, but if you feed it with polluted fuel, you are not going to realize its full potential performance. It's not that different with audio components. The general perception is that power is power and as long as it is flowing to our audio systems, all is well. Nothing could be further from the truth.

A clean and stable supply of electrical current is paramount to getting the most out of your audio system. Unfortunately in today's world we use a myriad of electrical devices that pollute the electricity that we receive. Also, the ever-increasing demand for electrical power puts ever-greater pressure on an already overtaxed system of power generation plants and distribution grids.

In a perfect scenario, the electricity generated by your local power plant should, ideally, be a precise and steady 60 Hertz 110 Volt sine wave with no noise whatsoever.

The best-case scenario is having voltage that remains at constant 110 Volts irrespective of load demands. Unfortunately, this is not what we usually get and in most places in North America, we will experience a significant amount of voltage variation.

As the electricity travels from the generation plants through transmission lines to our homes, it is very likely to experience voltage fluctuation and almost certainly going to pick up radio frequency interference, electro magnetic interference and other forms of noise, especially during peak usage hours.

Over the years I've received numerous emails asking me to explain why audio systems sound so much better late in the night. The reason is that electrical consumption falls during late hours thereby reducing the noise levels in the electricity and with the cleaner power, your audio system is capable of reproducing your favourite tunes with much better fidelity.

In contrast, during peak usage hours, the voltage drops, thereby robbing your audio equipment of the voltage necessary for optimum performance. During really severe voltage drops, you can actually see its effects on light bulbs that dim temporarily in response to the lower voltage.

The pollution of the electricity does not stop once it reaches the main junction box in our homes. Anything that you plug into your home's electrical outlets has the potential to affect the amount of noise on the line and reduce the peak current available. Some of the biggest culprits are common appliances like refrigerators, vacuum cleaners, washers/dryers, dishwashers and air conditioners. As these appliances are switched on and off, they degrade the quality of the AC line by adding noise or momentarily producing a voltage spike or dip.

When you play your favourite CDs, I bet you think that what is driving the speakers is the signal read from the CD. That is not technically true. What most people don't realize is that the force that drives the speakers is the electricity from the outlets in your home. The signal read from the CD only serves to modulate the electrical power in a way that when it is fed to the speaker it makes the speaker cones vibrate in a way that generates the sound you hear. Speakers are just another form of a motor, only, instead of using power to generate a rotary motion like most motors do, speakers generate a push/pull or piston-like motion to move the speaker cones.

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to sculpt the electricity in a certain way. A good analogy is to compare the electricity to a block of marble and the signal from the CD player and amplifiers as the sculptor. A good CD player/amplifier combination is like a good sculptor, but if you have a block of marble that is full of holes, fissures and other flaws, even the best sculptor will not be able to turn it into a flawless statue.

That is exactly what happens when you feed your audio system with electricity that is corrupted. Low level of noise in the electricity, usually manifest themselves in the form of clicks and pops. Higher levels of noise result in subtle distortions that veil the music. They add a kind of sonic grunge to the sound.

When there are dips in the voltage of your electrical supply, they rob your amplifier of the 'juice' it needs to perform at its optimum level. Your amplifier's output is inexorably linked to the line voltage. If the voltage drops below a certain point, the available output drops off, resulting in very audible distortion.

Although power amplifiers are very susceptible to pollution in the electricity, other components like the preamplifier, CD player, turntable and other signal source components or processors are even more susceptible to this pollution because they are usually equipped with smaller power supply circuits than power amplifiers and so they are less capable of filtering out the pollutants that distort the sound.

In most cases, the penalty you pay for pollution in the power supply is distortion in the sound reproduction. However in extreme cases, poor power can result in component failure with expensive repair bills to follow. It is therefore prudent to take measures to not just allow your audio system to perform at its best, but also to prevent component failure. On the flip side, if you take measures to give your audio system a steady diet of clean electricity, it will reward you with performance that it was designed to deliver.

Getting back to the difference in sonic performance of your audio system between peak-hour listening and late-night listening, if you detect an improvement factor of around 10%, then by taking measures to clean up your power supply before feeding it to your gear could actually reward you with an improvement

of around 20%. This may sound quite weird, but most music lovers are not aware of the distortion caused by polluted power because the ear has a high degree of tolerance for it, but it unconsciously increases the listening fatigue factor. The degradation caused by polluted power almost never manifests itself in obvious ways, such as hum or noise. Rather, it is far more insidious. It hides in the background, applying a subtle haze, grain or glare. It is not uncommon for many people to blame other audio components for this when the real culprit is pollution in the power supply.

Once you get rid of this pollution, it almost always breathes new life into the audio system, it uncovers a wealth of hidden detail in the music and the music sounds much cleaner. It's only after you remove the pollution that you begin hearing what you've been missing and begin appreciating how much less fatiguing it is once the grunge is banished. It's like the lyrics of a Joni Mitchell song which goes: "You don't know what you've got 'til it's gone."

What will become quite evident are the silences between the notes and the impression that each music note has been scrubbed clean. You should be able to listen to your favourite tunes for hours with much less fatigue. You will realize that although you were not aware of the awful grunge that existed before, it did add to the fatigue factor, making you feel like you have had enough after just 30 minutes of listening.

So how do you go about minimizing power pollution and cleaning up the electricity before supplying it to your audio components? There are many ways of achieving this and the first item that needs your attention is the power distribution box, commonly referred to as a power bar. The ones that are offered by hardware and mass merchandise stores rarely do a good job in ensuring that the power from your wall sockets gets to your power cords in good shape.

You need to look for a power distribution box that is solidly built and where



you can feel an almost vice-like grip when you connect or disconnect a power cord, regardless of how many times you plug and unplug the cord. Most of the better power distribution boxes that I have encountered carry obscenely high prices. One of the few exceptions is the Audio Sensibility Testament. For its relatively reasonable price of \$299, it has materials, build quality and design that can be found on models that sell for two to three times its price.

The case is made of heavy duty extruded aluminum, the internal wiring is cryogenically treated solid-core Ohno Continuous Copper with Teflon insulation that is star-wired for live and neutral so as to provide an independent electrical path for each of the three receptacles. This prevents any noise generated by a component plugged into one receptacle from polluting neighbouring receptacles. The input is a Furutech FI-10 (G) IEC inlet with a solder-less connection. It also comes with solid brass endplates to provide additional receptacle support and to reduce mechanical vibrations. It minimizes EMI and RFI noise by employing green carborundum

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encased in epoxy. The two level brass spikes with companion floor protectors help this unit perform well on carpet or on hardwood floors.

The Testament did make a subtle but quite discernable difference in my system by getting rid of some of the grunge in the reproduced sound. It achieves this mainly by eliminating the ill effects of the less-than-ideal power pathway between the box's input and the output receptacles as well as by improving the connection, and therefore the power transfer between the box receptacles and your power cords.

The next item you need to address is the power cord you use. But, I hear you say, what difference will just a few feet of the humble power cord do? As a matter of fact, it does quite a bit, if it is the right power cord. The first order of business of a good power cord is to deliver power from your wall socket to your component, without allowing any radio frequency interference (RFI) or electromagnetic interference (EMI) get into the electricity as it courses through the cable.

This is particularly important because most of your audio components emit these forms of interference and since your power cord runs very close to your audio components, it can absorb RFI and EMI in the same way as your TV antenna receives the signal from a television station. Unfortunately most generic power cords that are provided with your audio components do not have adequate shielding to protect the electricity flowing through it, from the RFI and EMI that abounds around your audio components.

The good news is that most mid-priced aftermarket power cords do have the right amount of shielding to guard against RFI

and EMI. However what happens to all the pollution that is already in the electricity as it enters the power cord at your wall socket? Better shielding is no help at all in this regard.

That's where the best power cords come in. Thanks to advances in power cord technology, we now have access to power cords that can actually filter out a lot of the pollution that accumulates in the electricity as it travels from the power generating station to your home.

Although power lines pick up higher frequencies like EMI and RFI along the way, this is mainly a problem with the lower frequencies. The higher frequencies are automatically attenuated and suppressed as the power travels to our homes. This is why long distance data signal transmission, needs receivers and re-amplifiers to compensate for this phenomena. The good news here is that a lot of the high frequency pollution that enters the line, along the miles of wire from the power station to your home, is automatically attenuated before it is fed into your power cord.

Manufacturers use different methods to improve power cord performance. Some are successful, but many are just peddling snake oil. Many manufacturers even offer power cords that are as thick as garden hoses and look very impressive. The problem with these is that they make the cords so stiff and inflexible, I've actually had some of my audio components lifted off their racks when using these power cords because they are so rigid. Also, just increasing the gauge of the power cord does not automatically make them better and in some cases they actually add problems of their own.

For the longest time I was skeptical of high-end power cords and I even scoffed at their obscenely high prices. For many years, most of the 'premium' power cords sent to me for review were so ineffective; I had to strain to hear any difference they made. I finally found a power cord that made a discernable difference and that became my reference. However it carried such a high price tag, I could not in good conscience recommend it as good value

for your money. Thankfully, over the past few years, the price of power cords that make a significant difference have dropped to more reasonable levels.

Today, we have access to power cords in the \$250 to \$450 price bracket that will deliver enough of a performance improvement to your audio system to make them good value for your money. Beyond this price bracket the law of diminishing returns kicks in. The trick is to find a dealer that allows you to try out the power cord in your system before you pull the trigger. Most of the better dealers will be more than happy to oblige.

You should try to avoid listening to slick sales spiel before you listen to the power cord as this could brainwash you into thinking you are hearing a positive difference where, in fact, there is little to none. When I accept products for review I first listen to the products without allowing myself to be brainwashed by sales talk or literature containing a whole lot of technobabble engineering methodology behind the product, which could play tricks on my mind as I listen to the product.

Many conventionally designed power filters use coils and capacitors to filter out the pollution. Most of these designs are not very effective in blocking pollution in the multi-Gigahertz range because electromagnetic wave behaviour at this range is unpredictable. I prefer power cords that utilize the known electromagnetic property called the skin effect. It is known that the higher the frequency, the closer to the outer surface of the conductor this frequency will propagate. The electricity you receive has a power frequency of 60Hz, which is low on the audible frequency spectrum and so it does not travel close to the outer surface of the conductor.

The power cords I use, utilize a relatively large diameter of wire so that the desired low frequency of the electricity can travel at its core, well away from the outer surface. Proprietary materials can then be used on the surface of the conductor to filter out the undesirable high frequencies. This is a simple and elegant solution that I find surprisingly effective.

I urge you to use a quality power distribution box, along with good power cables, in your audio system so that you can realize the full potential of your music.



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JL Audio CR-1 Crossover with Dual Fathom f112 Subwoofers



Malcolm J. Gomes

Subwoofers have been around for ages and have become a common fixture in most home theatre systems but many purist two-channel audiophiles have shunned them because they have a reputation for making the overall two-channel sound woolly, turgid and boomy while degrading the focus of the sonic image and soundstage. Besides, they have hitherto been notoriously difficult to seamlessly integrate with the main speakers. Performance expectations of a sub in a two-channel system are generally exponentially higher than in a home theatre setting because in the former, your whole attention via your aural senses is on the sonic performance in contrast to the latter where your attention is divided between your visual and aural senses thus rendering the sonic performance less critical.

The bass content of music that is in many instances dominated by the kick drum, bass guitar, cello, timpani, double bass, bassoon, tuba and the lowest pipe organ and piano notes, serves to lay the foundation that underpins the music that you hear, in the same way that the foundation of a building anchors and provides stability to the building. The best full range speakers are great at laying down this foundation, but they are usually as large as small fridges, making them suitable only for large listening rooms and giving them a very low wife acceptance

factor. This is what makes the option of a good subwoofer so attractive. Since the sub 80 Hz output of a subwoofer consist of relatively long sound waves it makes them non-directional, and difficult for the human ear to localize. This allows you to place the subwoofer almost anywhere in the listening room, although there are specific locations that could enhance a sub's performance, which we will get to later.

A subwoofer offers many advantages. If it is well built, utilizes the right driver unit and is driven by a well designed amplifier with ample clean power, it relieves your main speakers and amplifier from the task of processing signals below 80 Hz which gobbles up much of a speaker's and amplifier's resources. Once liberated from this task, your amplifier and main speakers are free to focus on frequencies above 80 Hz, which they can then deliver with a lot more ease, accuracy and finesse.

Staying with the 'foundation' metaphor, it is vital for any reproduced music to have a strong bass foundation or else it will sound relatively thin and anaemic. However, as in the case of a building, it is also important for any foundation to be not just strong but also firmly and seamlessly bonded to the main structure it supports. With true full range speakers, the manufacturer can ensure seamless integration. However when you add a sub to your current two-channel speaker system, the onus on getting the sub to work seamlessly with your main speakers now falls squarely on

you. And therein lies the subwoofer conundrum at the consumer level.

Outboard crossover networks that help subs work seamlessly with main speakers are few and far between so I am always delighted to find one of these rare jewels that help subwoofers dance with the main speakers, without putting a foot wrong. Moreover, I have a pair of main speakers where the woofer and tweeter work so incredibly seamlessly and deliver such an amazingly harmonious top to bottom (35Hz) continualness, it whets my appetite to find crossovers that allow me to enjoy similar harmony between a subwoofer and my main speakers.

I am glad to report that I have found another of these rare jewels: an outboard crossover network that truly satisfies. Since it is made by JL Audio, I thought it fitting that I review it with a pair of subwoofers also made by the same manufacturer. I feel flattered that JL Audio bestowed on me the honour of doing the world's first review of their brand spanking new CR-1 crossover (expected to retail for \$2,500).

My initial choice of subwoofer to review was the JL Audio Fathom f113 but Manville Smith at JL Audio suggested that I try out two of the smaller Fathom f112 instead (\$3,200). He opined that the f112 would integrate better with my main speakers in a two-channel setup and deliver more even bass in the listening room.

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This made sense as, based on the laws of physics, the f112's smaller cone would be faster and therefore better able to keep up with the incredibly fast 6.5 inch Scan-Speak woofers in my main speakers.

Dave Singh of Gemsen, JL Audio's Canadian distributor, delivered the f112 subs. This was just as well because despite its compact dimensions, these subs weigh a backbreaking 115 pounds each not counting the heavy packaging. We got such a thorough workout carrying the two subs from his car to my underground listening room; we both decided to skip the gym that day.

design features

Unpacking the f112 was made easier by the clever configuration where the subs are factory packed upside down in the carton. You therefore open the top, flip the carton and lift it off the sub rather than lift the sub out of the carton, which could be an hernia inducing act of folly, especially if you attempt it on your own. JL Audio provides a pair of white nylon knit gloves with urethane palm coat to handle the subs. They also cloak the sub in a protective soft cloth bag during shipment. Classy!

The gloss finish of the subs is as good as any I have seen in the audio world. It is also hard to miss the incredible build quality, which was very evident as Dave and I grunted and groaned while moving the subs around before placing them in their final locations.

The final locations of the subs were determined by the "crawl test" which requires you to place the sub in the listening position as close to where your ears would be when you sit in the sweet spot. You then have to run some deep, bass-heavy music as you crawl on your hands and knees around the perimeter of your listening room with a few post-it notes. You will find spots where the bass is unnaturally heavy and boomy, other spots where the bass is very thin and a few spots where the bass is just right and uniformly so. Each time you hit the latter, you place a post-it note on the floor. You can then choose from the marked locations to place your subwoofer(s). If you have a choice place the subs in the front of the listening room.

The process of integrating a sub

with your main speaker system is as important as the quality of the sub you use. This process begins with the use of a well-designed, high quality crossover. It is a pity that most subwoofer owners rely only on the low pass and perhaps a high pass filter built into the sub to divide up the frequencies between the sub and the main speakers, as these do not do the same bang-up job as a first class outboard crossover unit like the CR-1.

The first thing that struck me about the CR-1 was its size and weight. This is easily the biggest and heaviest crossover I have encountered. I guess this is in keeping with JL Audio's penchant for bulletproof build quality. The in-depth planning that went into the CR-1 shows on the silver façade, which has a set of rotary frequency and damping knobs for the subwoofers and for the satellite/main speakers. Between those controls is a rotary control to level match the subs with the main speakers. These options offer enough control and fine-tuning while limiting the number of controls. This also cleverly minimizes the damage that overzealous neophytes can do to the signal. The rear of the CR-1 has a plethora of connection options including balanced and single ended inputs for the main stereo and managed bass signals as well as balanced, single ended and 1/4 inch TRS jacks for satellite and subwoofer outputs.

Rather than having overlapping frequencies, I prefer to have a clean cut-off point where the sub gets everything below that point and the rest is fed to the main speakers. Since I used the CR-1, for the purpose of this review all the signal processing options on the front panel of the f112 were defeated. After a lot of experimentation I set the cut-off point on the CR-1 to 50 Hz, which is its lowest cut-off frequency. A more common cut-off frequency is 80Hz, but my Merlin VSM speakers are so good at everything down to 35Hz, if the CR-1 had offered a 30Hz or 40Hz cut-off, I suspect that one of those would have deliv-

ered even better performance.

Manipulating the controls on the CR-1 while playing test tones from 20Hz to 100Hz and monitoring the subwoofers output with my trusty Pyle SPL meter, allowed me to arrive at a relatively flat response across these frequencies. I then used my ears to fine-tune the system for optimum performance. With this modus operandi I was able to get the subs to harmonize with my main speakers and my listening room so satisfactorily, I found myself gleefully dancing an impromptu happy jig.

Before I get to the sonic performance let me quickly list a few f112 specifications for technically inclined readers. The driver is a 12 inch long-throw unit (offering an amazing 3-inch excursion), backed by a 1,500 watt RMS switching amplifier encased in a sealed gloss black enclosure measuring 15 x 18.5 x 17.63 inches (WxHxD). The signal processing options include a variable low-pass filter, a variable phase control, switchable polarity, an ultra low frequency (25 Hz) trim and an Automatic Room Optimization (ARO) system. The ARO utilizes a calibrated microphone that is placed at the listening position and connected to the sub as it generates a series of test tones to create a single band equalization to help the sub adapt to the room acoustics.

A switch is provided to compare the sub's performance with and without the ARO-created filter in the loop. The sub can be designated as a master or a slave unit and the ARO automatically calibrates the slaves when the procedure is run with the microphone connected only to the master. The power switch has three positions - on, off and auto. Phase can be adjusted from zero to 280 degrees and the polarity can be switched between zero and 180 degrees. The green light can be dimmed or switched off. Having all these controls on the front of the sub makes them easily accessible and yet hidden when you put



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on the grill. The rear of the unit mostly comprises a heat sink for the amplifier and offers single ended and balanced inputs, as well as a slave output to another subwoofer. The back also has master/slave and grounded/isolated switches. The anechoic frequency response is 21 Hz to 119 Hz (1.5 dB), the effective piston area is 84 square inches while the effective displacement is an impressive 287 cubic inches.

One aspect of JL Audio subs is the proprietary cone material that they utilize, called the W-Cone. It is a unibody assembly that is claimed to achieve an unparalleled combination of stiffness and minimal mass. Is it also said to have a shape that provides superior torsional rigidity for better voice coil alignment at the suspension limits. JL Audio eschewed materials like Kevlar, fiberglass, aluminum, magnesium and titanium alloys that are used by some competing brands. Instead they use two lightweight mineral-filled polypropylene skins bonded together at the perimeter and at the center of the assembly. The lower skin's cross section is 'W' shaped so that it acts like the trusses of a bridge or the unibody construction of the chassis of an automobile to provide superior rigidity. JL Audio claims that their unique cone material has less weight per square inch of piston area than a typical aluminum-alloy or titanium-alloy cone.

performance

So how do all these clearly superior (on paper) technical specifications translate to real world sound performance? To begin the audition, I played only the subs. This exercise revealed that the f112s have significant visceral impact and tautness at the lower octaves and they were totally non-localizable which is a clear indication of a superior subwoofer.

I played a wide genre of music from rock, heavy metal, pipe organ based classical, jazz, country western and Gregorian chants. My five favourite bass torture tracks that can make most speakers scream with pain are Sade's Soldier of Love, Mussorgsky's Pictures at an Exhibition, Cowboy Junkies Way Down Deep, Gerhard Oppelt's Lindenkirche Berlin and Yim Hok-Man's Poem of Chinese Drum. In every case, the f112 delivered all the advantages that a good sub would with hardly any of the downsides asso-

ciated with this category of transducers. They blended seamlessly with my main speakers, dare I say, almost as well as the Scanspeak 8545 woofers blended with the Dynaudio Esotar tweeters in my main speakers. The role of the CR-1 was paramount in how well the f112s harmonized with my main speakers and my listening room.

Freed from the burden of processing and reproducing the frequencies below 50Hz, both my amplifier and my main speakers were able to produce prodigiously more dynamic range and they performed in a more effortless and relaxed manner than I have heard them do before. I was able to listen to my favourite tunes at a much louder level without the distortion and compression that I had experience at the same volume level before. The soundstage grew exponentially larger especially in depth, thus proving that a lot of spatial cues lie in the deepest bass portion of the music.

The f112s rendered the sub 50Hz bass with the accuracy, speed, coherence, pitch definition and tunefulness that I have heard in some obscenely priced full range speaker systems. I could easily decipher the difference between the bass guitar and the kick drum and also appreciate how well they complement each other. This was achieved authoritatively and without obscuring the delicate, nuanced and subtle details in the midrange and high frequencies. In addition they added fullness, roundness, weight and robustness even to the notes in the lower mid range. Voices had incredible presence and palpability. Metal music instruments like cymbals and triangles as well as drums sounded eerily real. Guitar strums sounded fuller and violins were sweeter and smoother. Wind instruments were distinctively more expressive.

I could not find any major downsides but if I were to nitpick, on the f112s, I'd prefer that the low pass control had the 80 Hz rather than the 75 Hz mark labeled because the former is by far, the most widely used frequency cut-off point. At \$3,200, I would expect a remote control for the convenience of making adjustments from the listening position. I would also like to see a parametric equalizer and a variable high pass filter with an adjustable delay built into the unit. Subs far more affordable

than the f112 offer many of these features so it makes these reasonable items for my wish list. Not every 2-channel system owner can afford a top-notch outboard crossover unit like the CR-1 so these additional features would help squeeze better performance from the JL Audio subs, sans an outboard crossover.

As for the CR-1 crossover, at its price, I would like to see a built-in high pass filter with a delay control option to slow down the signal to the main speakers by 1 to 18 ms to compensate for the typical group/time delay of the sound radiated by the subwoofers vis-a-vis the main speakers. Such a control will help compensate if the subs are placed further from the listening position than the main speakers. I would have also preferred to have the cut-off frequency option to go down to 30Hz rather than 50Hz to enable it to harmonize with speakers that do very well down to 30Hz.

I have reviewed many fine subwoofers and although I enjoyed my time with many of them, I felt no tinge of regret when returning them. The f112s are different. They are not going anywhere as they have now become part of my reference system, until something better (which I can afford) comes along, which I suspect will not be for quite some time. Kudos JL Audio, your f112 combined with your CR-1 gives music lovers a means to integrate superior subs with main speakers in a way that delivers deep, visceral, accurate and distinctively tuneful bass performance in a manner that will give anyone with a heartbeat, many goose bump inducing musical moments.

quickinfo

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Furutech is an audio-video product company based out of Japan that was founded in 1988 and is best known for their high-quality cables, connectors and audio accessories. Alpha Design Labs (ADL) is Furutech's entry-level line of products that is focused on implementing Furutech technologies within affordable, yet innovative products, with broad customer appeal. Within the ADL stable there are four different product lines: headphones; headphone amplifiers; USB-DACs and of course, cables. ADL's newest product is the ADL-H118 headphone (\$269), the company's first headphone. Not only is the ADL-H118 new but it came to us hot off the production line for this first-time Canadian review. ADL's marketing slogan says "Discover Your Inner Sound" and that's exactly what I set out to do.

design features

The ADL-H118 is a closed-back, over-the-ear folding design that is largely constructed of sturdy plastic with uniquely designed and shaped earcups. Furutech has trademarked these earcups as their Alpha Triform Contour Earcups. Why trademark? Well, along with being a futuristic expression of design (I could see these in a sci-fi or anime movie) the Triform earcups were engineered to provide an improved seal around the ears, while reducing standing waves – meaning improved sound. Planted in these earcups are cryo-treated neodymium drivers that incorporate a ring between the voice-coil and diaphragm that serves to keep ultra-high-frequencies in phase. An interesting feature of the ADL-H118 is its removable cable. What's so interesting? Well on the headphone end, it uses a non-





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magnetic rhodium-plated stereo α (Alpha) mini XLR socket that locks in place with a push-button release. The cable is also nice and long at 3 metres and is gold-plated with a 1/8" (3.5mm) connector on the other end.

Inside the box was a semi-hard vinyl case, ovoid in shape and black in colour. Zipping open the case revealed the headphones folded compactly and armadillo-like, accompanied by a very functional netted pouch containing the 3 meter headphone cable and 1/4" adapter. Though obviously made of plastic, the ADL-H118 Headphones felt remarkably sturdy and pro-like, the hinges opened smoothly without a sound giving me the overall impression of understated quality. Their appearance embraced a youthful and playful aesthetic with the unique Triform earcups clearly being their distinguishing feature. Each earcup sported a large black and silver medallion bearing only the α symbol. Putting them on, I welcomed the comfort and good seal they provided and liked the solid, yet easily adjustable slider arms, which were thoughtfully inscribed with numbered position markings.

This brings me to the serious business of outlining the specs. Along with the aforementioned 40mm neodymium dynamic drivers, the ADL-H118 has a sensitivity of 98dB / 1mW / 1Khz. Frequency response

is 20Hz to 20,000Hz, with a maximum power handling of 200mW. Nominal impedance is a little higher than the norm for portable headphones, sitting at 68 ohm @ 1KHz. Finally, the ADL-H118 weighs in at 245g / 8.16oz, without the cable attached.

performance

With the formalities out of the way, let's move to my listening experiences. Since I still had the multi-purpose ADL Esprit DAC and Preamplifier in my possession, I thought it would be the perfect headphone amplifier to evaluate the ADL-H118 headphones with. In fact, this pairing turned out to be a match made in heaven and I'd recommend that anyone giving consideration to either the ADL Esprit DAC or ADL-H118 headphone, consider auditioning the two together. For comparison purposes, I used the Focal Spirit One headphone (reviewed a couple issues back), which is also a closed-back folding design of similar pricing.

I should mention that along with the ADL-H118 headphones, I was supplied with an ADL upgrade headphone cable iHP-35X (3 metre, \$124) which offers a mini-XLR connector. The ADL iHP-35 cable series are engineered with Furutech's Pure Transmission technology and incorporate silver-plated OCC con-

ductors. They were sturdy, with exquisite connectors and lovely to see and touch... but what about to hear? I decided to start with evaluating the cables – the standard versus this upgrade. It didn't take long to recognize that the standard cable sounded noticeably brighter and thinner. The soundstage served up was confined, staying within the realms of my head rather than reaching beyond the bounds of the headphones themselves. On tracks such as *Short & Sweet* from Esperanza Spalding's *Chamber Music Society* album, the standard cable delivered the strings with more tension, sounding more staccato. The midrange was smooth but in direct comparison to the iHP-35X, evoked a touch of glare at higher volumes yet on the positive side, the standard cables did portray more brilliance in high tones. On upright bass, still using the standard cable, I found resonance was more distinct versus the upgrade cable, with the tautness of the wood panels coming across more audibly and bass notes sounded comparatively less full but a touch more defined. In short, the iHP-35x cable did provide benefits over the standard cable most noticeably in tonal colour, texture, naturalness, focus and soundstaging. The iHP-35x delivered a comparatively fuller and more complete palate of tonal colours, textures were more evident in strings and

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there was a very natural composition to all elements in the music. Thought clearly quieter, there was also less ambient sound retrieval but this resulted in a welcome perception of greater focus on the main music constituents. When it came to soundstaging, the iHP-35X was undeniably the master. It pushed the soundstage beyond the confines of my head, able to layer the various instruments and elements in the music in a defined and captivating manner. To my senses, once heard, I could not give up the iHP-35x and used them for the duration of the review.

I've gone to a fair amount of detail in describing the iHP-35X cable not only to make explicit its own virtues over that of the standard cable but also to shed light on the sonic attributes of the ADL-H118 that was key to uncovering and delivering these impressions. On listening to a beautiful track, *So Long*, from Melody Gardot's latest album, *The Absence*, the ADL-H118 delivered a wonderfully layered soundstage that reached beyond the confines of my head and did a great job of separating the various instruments in space. Snapping, clicking and popping elements within this track were brought across in a convincing manner, relaying detail and texture. The xylophone notes came across with their characteristic woody timbre intact. And, Melody's voice took on a smooth and rich persona, a little fuller than I'm typically used to hearing but making for a very pleasant and seductive listen. If you have this track at home, you might want to listen to the first few seconds carefully. On the opening of this track (first couple seconds), you hear to the left, someone take a breath through their nostrils - it's very faint but it's there. Listening a few more seconds into the track (8 to 9 seconds in), there to the left a breath once again, laying rest any doubts. This breath, though faint, was very realistic using the ADL-H118 - the air moving through one's nasal cavity captured. In comparison, using the Focal Spirit One, this sound could be heard but it took on a more wispy character, more difficult to hear against the background ambient noises and would most likely go unnoticed. What does this say about the sound of the ADL-H118? The ADL-H118 has an uncanny ability to bring realism to sounds and music by way of its naturalness and

realistic tones and textures, making the listening experience more believable.

Staying with the Melody Gardot album and moving to the track *Lisboa*, the ADL-H118 made the opening church bells eerily authentic and put them off in the distance. It gave the impression of standing within an interior space that was open to the outside - with spatial cues seeming to emerge from around, not only in front or inside my head. The bass drum had a very solid thump and the overall tonal signature was that of warmth and richness - I found myself easily getting lost in the music. In comparison, through the Focal Spirit One, sonics were thinner and less warm but presented the sounds with a more open and airy character. Chimes were detailed and fragile with greater brilliance than the ADL-H118 delivered. The bass had good depth and detail but was tamer, some might say more controlled but regardless, not having the same level of impact that I heard with the ADL-H118. In both cases Melody's voice was beautiful but took on a slightly different character. With the Focal, she was farther off, her voice lighter and more open, with the ADL-H118 she was seemingly closer, more present and with the warm undertones of her chest more evident.

I moved to an indie-pop/alternative rock band - Hey Ocean! This Vancouver band, came to my attention when I saw them perform live at a free lunch-time concert held in downtown Toronto. The band has a fun beach bum, funky pop sound that makes for a good listen. They also use a fair bit of sound processing, which brings out characteristics you don't hear in purer recordings. Listening to their album *IS* and the song *Big Blue Wave*, the guitar was clearly electric but was full with a rich sound, vocals were warm and quite realistic sounding and the bass drum was amazingly concussive. The high hat crashes were distinct and controlled. In contrast, the Spirit One, delivered the electric guitar with more of what I would call inherent distortion, kick drum was solid with an added electronic-like echo being more evident. The haze of pro-tools on the voices was more obvious and the high-hat crashes less defined. The back-up vocals had a lighter and more buoyant nature using the Spirit One and overall the track sounded more airy versus the warmer and

more intimate feel cast by the ADL-H118. Essentially, two quite different takes on the music, with the ADL-H118 definitely producing a sound that was more beautiful and also more convincingly real.

In all my listening with the ADL-H118, I found myself being drawn into the musical experience, captivated by the sound and awed at the embodiment of singers and instruments within a generous soundstage. The headphone is capable of admirable detail retrieval given its affordable price and provides a warm and full take on recordings that makes weaker recordings sound more palatable and better recordings that much more succulent. The ADL-H118 is not a champion with delivering air or openness - seek others if that's what turns your dial. Rather, the ADL-H118 has a more fleshy character and has its strength in making recordings sound believable. Yes, they do supply a more than neutral amount of bass but it's well integrated into the whole. I should note that the ADL-H118 doesn't shine with portable music devices such as an iPhone - there just isn't enough power to get great sound from them. Give them a good headphone amplifier like the ADL Esprit DAC or perhaps the ADL Cruise or Stride portable amplifiers and they will sing. They also work well with the standard cable but if you want to get the full experience of imaging and soundstage, the iHP-35X cable works wonders. Are you disenchanted with over analyzing recordings and want to get closer to the music? Then audition the ADL-H118, I'm sure you'll be wiser from the experience.

quickinfo

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SHURE SE535 Sound Isolating Earphones

George de Sa

Shure Incorporated had its humble start in Chicago, founded by Sidney N. Shure back in 1925. The company in those days was simply a radio parts company. Fast forward 88 years and the company has grown considerably in size and diversity; now a manufacturer of both consumer and professional audio-electronics. Though Shure has had over half-a-century in manufacturing microphones and pro-gear, it wasn't until 2006 that Shure made their mark on the consumer earphone/headphone market, specifically with their triple-driver E500 Sound Isolating Earphones. Since then, there has been no looking back, with Shure continuing to expand on its consumer earphone/headphone products.

I've heard many great things about Shure products over the years, so when offered the chance to try their flagship SE535 Sound Isolating Earphones, I was quick to say, "Sure!" or in this case "Shure!" The SE535 earphone (\$500) has been Shure's flagship universal-fit consumer earphone product since January 2010 until now. Just as I began writing this review, I got wind of some breaking-news that Shure will be introducing a new earphone this June – the SE846 (a quad-driver in-ear universal-fit model costing about twice the price of the SE535), which will supplant the SE535 as their flagship consumer earphone. Great news but let's get back to the SE535.

design features

The SE535 comes in typical cardboard packaging but I was delighted to find an impressive brushed black metal tin inside – military like in form and feel. Slipping off the lid revealed an internal box together with a black semi-hard zip-case. The box contained the earphones nestled in a foam block and the oval zip-case hosted a plethora of accessories. The zip-case in-





cluded a 1/4" plug adapter, airline adapter, inline volume control and an assortment of different ear-tips (9 pairs plus the pre-fitted set) - enough choice for virtually anyone, I expect. There was also a handy little cleaning tool for the earphone nozzle, just perfect for those of us with less than immaculate ears.

The SE535 earphones, in their standard Metallic Bronze finish (Clear, a transparent version, is also available) had a definite pro-like, no-nonsense look and feel - plastic but of high quality. The detachable and durable Kevlar-reinforced 64" cables use gold-plated MMCX connectors that swivel 360 degrees and incorporate wire-form on the last few inches that allows them to be formed around the ears. Once I got accustomed to fitting the SE535, I found them very comfortable and superb at isolation - the memory foam tips were my choice given that they served as form-fitted ear-plugs. It took me - well, let's just say a few days, to get proficient at inserting them. The procedure goes like this: unravel the cables, pinch the ear-tips, decipher left from right, swing out the cable-loops, tuck and hold in place as the tips expand and seat, while concurrently wrapping and forming the cable loops over and around the ears and hope you got them seated deep enough - okay, now exhale. The truth is that I got some very strange looks from people on the morning train, as I practiced this routine the first week. At least once, I blundered to the point of conceding failure and nonchalantly tucked them away in my pocket. I did eventually get good at it but I'd never describe the SE535 as tuck-and-go earphones. All that said, once in, the SE535 is the best fit-

ting and quietest in-ear-monitor (IEM) that has graced these humble ears, to date; worth the effort.

The design of the Shure SE535 is a far cry from ordinary. Rather than the typical single-driver earphones you commonly find, the SE535 actually uses three separate micro-drivers, with in each earphone capsule. The tri-

driver complement is not a three-way arrangement but rather a two-way design with a dedicated tweeter paired to dual woofers. The combined sound of these three micro-drivers is channeled out via a unique earphone nozzle (see Figure 1 on the next page). All this innovative engineering comes in thanks to Shure's experience in the professional personal monitor arena. The SE535 has a listed sensitivity of 119 dB SPL/mW; a frequency range of 18 Hz - 19,000 Hz and a very impressive noise isolation of up to 37 dB - beating a number of earplugs out there.

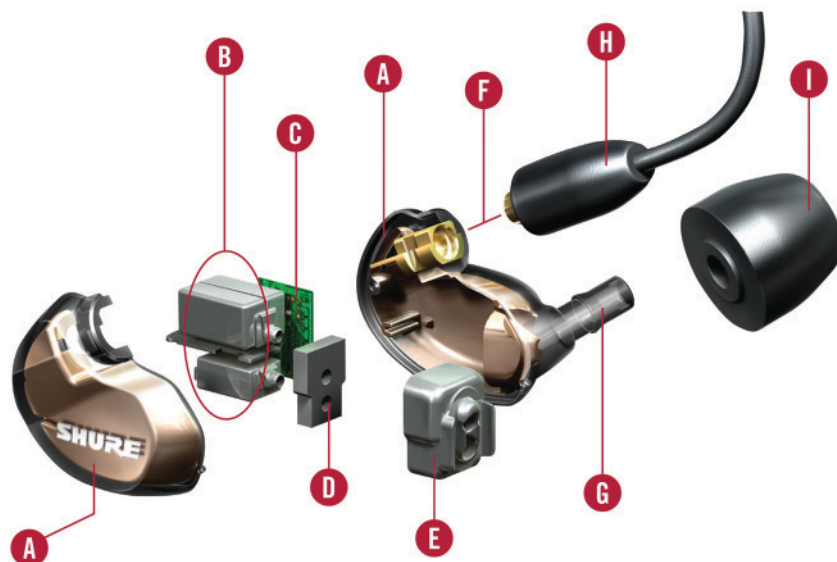
performance

I've never used an IEM at the price-level of the SE535, in fact, the nearest priced references I had on hand were my Paradigm Shift e3m (\$129) and B&W C5 (\$179) IEM's. Given the higher price of the C5 and its incisive nature, I decided to use it as my primary reference for evaluating the Shure SE535 against. One of the albums I used in my evaluation was Mumford & Sons very popular album, *Sigh No More*. Listening to the title track, I was smitten by the level of string detail, every twang and squawk of the strings against the frets came across vividly. Very interesting was the way in which the SE535 managed to distinctly separate the echo of the venue from that of the natural reverb generated by the body of the guitar, while maintaining cohesion between these elements. Main and back-up vocals were layered to a level that I haven't heard from earphones before - with the main singer clearly upfront of the back-up vocalists but this was not just a play on volume but

rather an impressive rendering of space and position within the soundstage. The echo of these voices against the surrounding walls was obvious. Bass notes were natural in fullness and depth with the vibration of the strings coming through insightfully. The midrange had pleasant sweetness and warmth and was well integrated with both the higher and lower frequencies. With some more energetic strumming on guitar strings, precision in reproduction remained solid, while dynamics provided a real feel to the music. I was pretty enamoured by the level of texture and harmonics that the SE535 was capable of delivering. On this point, guitar strings were identifiable as being nylon or metal - so revealed were the harmonics and tonal colours. At the climax of this song there is a lively combination of guitar, banjo, percussion and horns that can sound busy and congested on less than capable transducers. Not the case with the SE535 - as it surfed its way through the veritable haze of instruments, providing clear separation between them and allowing individual details to be easily focused on. The dynamic rendition and contrast between low and high elements was just superb.

In comparison, the B&W C5 provided a noticeably leaner midrange that was less forward. Layering between main and backup vocals was not apparent, as had been the case with the SE535; rather the C5 placed them within the same plane. Bass through the C5 was noticeably heavier and perceivably deeper but in an exaggerated manner, losing some realism and giving up some detail. Guitar strumming through the C5 sounded thinner and less textured, with the peak of the plucks highlighted and short on sustain. Variations in nylon and metallic string tones were much less evident with the C5 than with the Shure, to the point of going unnoticed, and there was less brilliance to string notes. That said the B&W did an admirable job of sorting out individual instruments within the busy climax and conclusion of this track.

Another recording worth noting is Companion, a Patricia Barber album that has had much praise. The track *Black Magic Woman* is a superbly transparent recording that is great for evaluation. Being a live recording, it carries natural ambient



SE535 COMPONENTS

- A Rugged Ergonomic Housing**
Ergonomic and stylish design features durable, sweat-resistant construction; built to withstand the extremes of on-stage or everyday wear.
- B Triple High-Definition MicroDrivers**
Dedicated dual woofers and a single tweeter per channel for spacious soundstage and rich bass.
- C Internal Crossover**
Routes higher frequencies to a dedicated tweeter and lower frequencies to dual woofers, providing clarity across the audio spectrum.
- D Acoustic Seal**
Efficiently directs audio signal to nozzle.
- E Shock Isolator**
Shock protector that guards the driver against sudden impact.
- F MMCX Micro-Miniature Coaxial Connector**
Gold-plated connector has a lock-snap mechanism allowing 360 degree rotation for comfortable fit.
- G Nozzle**
Specially angled tube ensures efficient audio delivery and ergonomic fit.
- H Detachable Cable**
Wire-form fit ensures secure placement, detachability for easy replacement or customization, and Kevlar™ reinforced for durability. Worn over the ear.
- I Sound Isolating™ Sleeve**
Selection of foam and flex sleeves create a customized fit and comfortable seal that blocks background noise.

Figure 1: Taking a closer look at the internal components of the Shure SE535 earphones.

sounds, which, when paired with a high performance playback chain, can provide an intoxicating “you are there” experience. With the Shure SE535 in my ears, the opening clapping came across in an impressively realistic manner with the echo of the venue providing a real sense of space – in this case the Green Mill Jazz Club in Chicago. The shakers were palpable with incisive detail paired with convincing micro-dynamics. Not only could the granules be heard moving within the shakers but the impact of these granules striking inside the shakers themselves was felt as much as heard. With the Hammond organ, tones were clear, warm and harmonically complete, with each note being a complex blend of sub-tones. Wind chimes were detailed, fragile and natural with chime, sparkle and sustain. The strikes of the bongos were dynamic with the sound of skins and of the body apparent and accompanied with realistic reverberation and sustain. Moving to the upright bass, string plucks were well controlled - their pulsating nature and sinewy texture preserved in good measure. Amazingly, the midrange was not only

wonderfully transparent but also smooth with a natural measure of warmth, if a touch forward, more noticeable at high volumes.

Listening to this same track with the B&W C5 was very enjoyable but clearly short of the performance provided by the Shure SE535. The fundamentals of notes and details were there and pleasant in their own right but much more simplistically portrayed. For instance, the opening claps were thinner, less complete and therefore, less realistic. The wind chimes carried delicacy and sparkle but were missing the complexity in their ring as heard with the SE535 and the same went for the organ tones and the bongo strikes. Sustain was reduced, textures curtailed and the tonal palette simplified. The C5 delivered bass and kick drum with impressive weight and extension but in an exaggerated manner, compromising realism.

Listening to the Shure SE535 was a revelatory experience. In comparison to a high performing earphone such as the B&W C5, the Shure SE535 showed there was more to be heard and more enjoyment to be had in the music. If I had to provide

criticism, I'd say they could do with just a touch more bottom-end weight and a little extra air but these are truly nit-picks and likely a matter of personal preference. Overall, the Shure SE535 has given me a new performance bar for earphones – able to produce incredible detail, dynamics, speed, texture and tonal colour. At their \$500 price, these earphones have a fair bit of competition but given their quality and performance, I believe they are a formidable competitor and well worth the price of admission - highly recommended.

quickinfo

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Samsung 8500 Series 64-inch Plasma TV (PN64F8500)



Michael Osadciw

News of new video technologies is dominating consumer electronics media. With all of the hype surrounding OLED and 4K TVs, it's very hard not to get excited about the future of video. But let's not be too eager to open our wallets for these untried technologies, especially since one of them hasn't even hit the market yet. What will be the video quality? Will the technology live up to the marketing hype? How good or compatible will first-generation products be a year or two from now as the technology matures and next-generation software becomes available? These are great questions that early adopters rarely ask when paying premium prices to be the first on the block to own the new technology. For the rest of us, we want to know the

answers to these questions and feel confident with our purchase. We want to be sure that before we spend a few thousand dollars on a reference video display, that the technology is mature and performs at its best. I strongly feel this way about Samsung's newest reference plasma TV, the PN64F8500 (\$3,499). After years of delivering great televisions, this one takes the cake.

design features

This TV is very attractive. My eyes first landed on the base of the TV. Rather than resting on a pedestal, it has a very modern ramp-style base that curves out from the TV's outer edges. It's symmetrical in the front and back, and has a dark titan metal look matching that of the TV's outer frame. When the TV is off, the screen is jet

black. At under 80lbs with the stand, this must be one of the lightest 64-inch plasma TVs I've come across. The packaging is well thought out and all small items are contained in a master box to ensure the user doesn't lose anything during the unpacking process.

Samsung has shifted the majority of connections to the digital realm - there are 4 HDMI and 3 USB, with one USB dedicated for a hard disk drive. The ATSC RF connection with optical audio out is for viewing over-the-air HD, and there is one composite and one component video input available with a mini-plug. A print manual provides 32 pages of information essential for setting up the TV for Smart TV applications and operating the remote control. The remaining information can be found on the TV's on-screen e-manual



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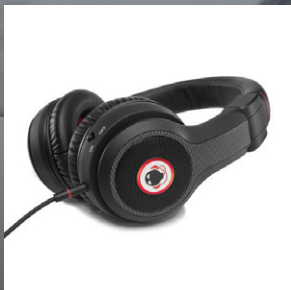


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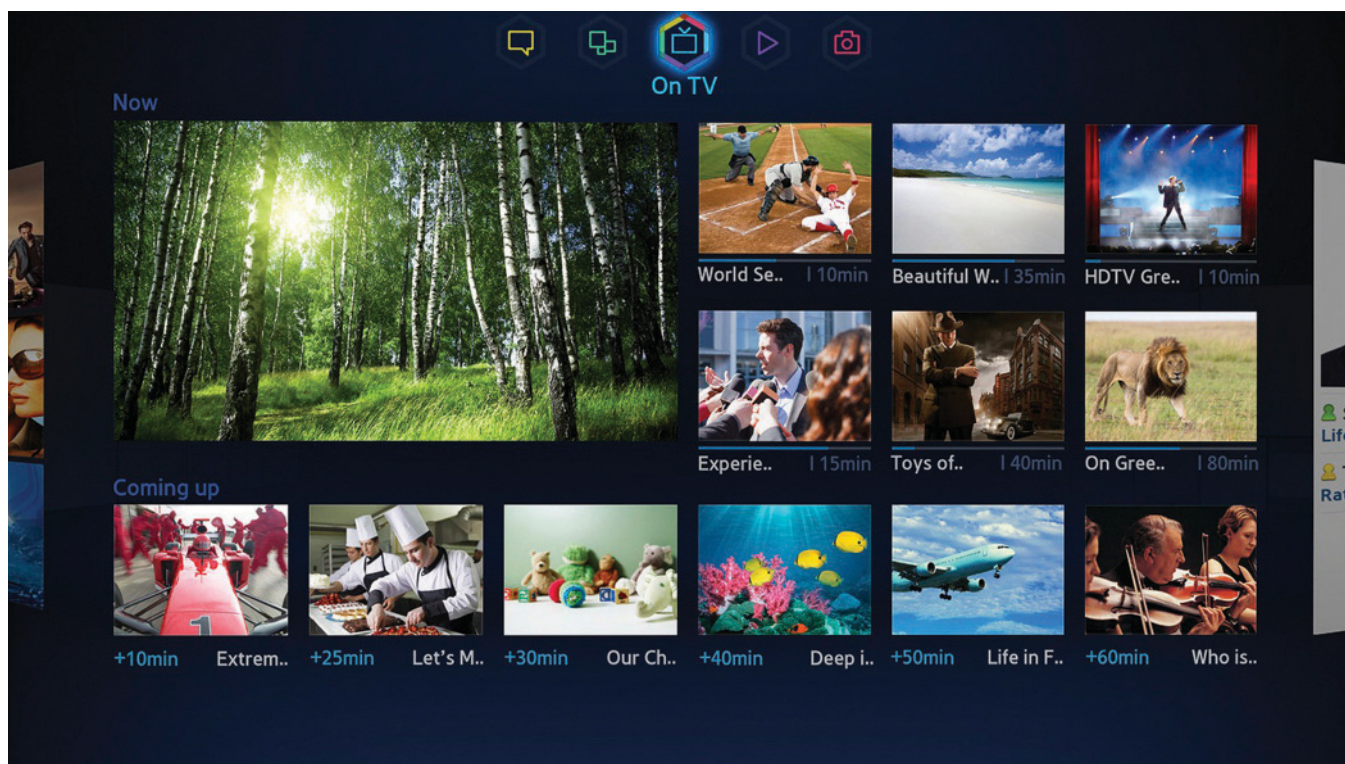
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which can be updated automatically along with the TV's firmware.

The TV comes with one, small, nearly buttonless remote. This is in contrast to last year's 8-series TV that came with two remotes. Samsung has ditched the second traditional remote this year and is braving it with a Smart Touch Control Unit only. It's relatively small and fits in the hand nicely. The most important buttons are on it (power, source, volume, channel, and menu) and all are backlit. The remaining buttons are designed around the Smart capabilities of this TV and the central swipe pad. At first I was nervous about the response of the touch pad. There seems to be an improvement with sensitivity when compared to the previous remote, and the swipes (dragging and tapping) seem to be much better. After getting used to it, it's easy to use. So why the touchpad? Given the rise in touchpads on consumer devices (eg. smartphones, tablets), it's no surprise that Samsung is attempting to bring TVs into the 21st century. Clicking on the "More" button, the Smart Touch remote opens a virtual remote on screen that includes a numeric keypad, channel history, hot keys to specific TV controls (eg. aspect ratio) or accounts (eg. Netflix), and the Playback Control Panel for file/media

playback. While a virtual remote may sound a little strange, it was easy to use and didn't make me miss any of the extra buttons normally found on the remote. The touchpad, while not perfect with every swipe, made remote navigation easy to use especially when navigating Samsung's newest Smart Hub screen.

To take advantage of everything that this TV has to offer, you'll definitely want to connect it to the internet, which can be done both through a wired or wireless connection. Last year I wasn't so hot on the idea of my TV being connected and thought it was better to have a small computer such as a mac mini connected to the TV instead. With a redesigned Smart Hub centered on video streaming, I've changed my mind. The Smart Hub home page offers access to popular video streaming apps including Netflix, CinemaNow, YouTube, Skype and the Cinplex Store. There's also plenty of room on the main page for viewers to place up to 30 of their favourite apps on a single page. The Smart Hub looks much like a tablet screen, and the swipe pad on the remote used to navigate this interface feels similar to using a tablet – I enjoyed its look and feel. The Apps area is one of four groups in the Smart Hub, with the others

containing Photos/Videos/Music, Movies & TV Shows (with a Samsung account) and Social for connecting with friends and watching user-created content. The PN64F8500 has a built-in internet browser – if you're into that kind of thing – and I strongly recommend connecting the TV to your home network with a wired connection for the best experience. I found my wireless connection choking when running iTunes radio wirelessly through Apple TV in the same room while trying to start up VIMEO through Samsung's Smart Hub.

Features carrying over from last year are voice and gesture recognition. I'm still not a big fan of either because I often found myself repeating the same voice or gesture control multiple times, to get it to work. With gesture recognition, the lighting needs to be at the right level and the camera on the top of the TV needs to aim at the seating position. In my room, I sit fairly close to the TV and the camera pointed over my head and hence didn't capture my gestures properly. The PN64F8500 does not allow you to tilt the camera, which would be very functional. Mounting the camera on the bottom of the TV would also solve this issue. Samsung's voice recognition has improved

from last year thanks to a microphone being built into the remote control. This allows the system to hear your voice better, but if there's any noise in the room, even from the TV speakers, I found it getting confused once in a while. Overall, I think that controlling the TV with voice commands is gimmicky and takes more effort than just pressing a button on the remote. For example to lower the TV volume with a voice command, you have to press a button on the remote to start voice recognition and say "Hi TV, Volume Down", which lowers the volume down just one notch. It's much more efficient just to use the volume down button on the remote.

I mentioned earlier that this TV's screen looks very black when it's turned off – the same can be said when the TV is turned on. Samsung touts a new super contrast panel, described on the website in a contradicting manner and not really explaining anything about the panel at all. In plain English, the TV makes bright whites and dark blacks thus increasing contrast ratio even in rooms with ambient light from windows or lamps.

Samsung recognizes that Smart TV functionality is evolving rapidly and hence gives owners the option to install a Smart Evolution Kit (a hardware/software upgrade) to prevent the TV from some level of obsolescence in the near future.

What hasn't changed on this TV from last year's model is the 3D capability. It comes with four sets of lightweight active 3D glasses that are powered by a CR2032 battery, so there is no need to recharge with USB cables. Just remember to turn the glasses off when done or else you will find your battery nearly depleted the next time you watch 3D. The look of the on-screen menu is the same and calibrated image modes can be copied over to the Smart Hub control for all media types.

performance

So how does the picture look? I performed a full calibration of the PN64F8500 prior to my viewing session. For full calibration results and measurements, please visit the CANADA HiFi forum at www.canadahifi.com/forum. Watching the TV after the calibration proved that Samsung's plasma TV technology has once again bested its previous efforts. I was astounded by the television's deep black

level. I purchased and viewed two Star Trek film Blu-ray collections for this review (the Original and Next Generation Motion Picture Collections). I'll be honest, I've never seen any of these movies before, but given the hype of the newest film in theatres, I felt obliged to sit through the good and cheesy films of the past (I was an original Star Wars guy back then). After calibration, the Samsung was excellent at conveying the finest of details in the source material. The first two Star Trek films had excellent transfers and they looked brilliant on this TV. Details were incredible, colour fidelity excellent, and image contrast fantastic. Any Star Trek fan would be happy to watch these films on this TV because it could deliver the deep black of outer space, with only some dithering noticeable in shades slightly higher than black. Dithering is an artefact of all plasma displays, but how much and at what light intensities tends to differ from one manufacturer to another. This effect looks like film grain from afar so most people tend not to notice it at far viewing distances. I also watched a handful of newer films as well: Cloud Atlas looked brilliant with deep blacks and well-saturated colours; Gangster Squad conveyed a gritty, old and worn-out look from days long gone sporting brownish overtones and crushed blacks; and The Hobbit delivered the "you are there" experience that the film has been praised for. Shot on Red Epic cameras, Peter Jackson's revision of the novel was delivered with precision by the PN64F8500. I haven't enjoyed this movie as much on my personal TV as I did on this Samsung. Perhaps it's time to consider a new reference video display.

On the flip side, this TV is so precise at delivering Blu-ray content, it also shows how bad Blu-ray mastering can be. Watching the Star Trek films (parts 3 to 6) wasn't as pleasant as the first two, and the same criticism goes to the original Star Wars trilogy for their horribly outdated transfers. Compression artefacts blur the image and cause movement in the image that isn't there in the source. When watching a reference TV like this Samsung, it's disappointing to see that not every Blu-ray is created equally. I've been intentionally sitting closer to this TV than most people do for two reasons: 1) my room is small, 2) to take up a greater field of view as

if watching a bigger screen. This is no fault of Samsung, in fact, you want a TV that can reproduce the best image. The best images will look outstanding on the PN64F8500, while the not-so good ones, well there's no saving those.

Watching Life of Pi in 3D was good, but not the greatest I've seen. The effects of 3D are still outstanding, and when calibrated for 3D, the PN64F8500's image looked just as stunning as it does in 2D. My only complaint is that this TV's light level seemed to fluctuate between bright and dark by a small amount. At first I thought it was the glasses I was wearing or the angle of my head, but I tried the other sets of glasses and the same thing happened consistently throughout the film. Most viewers may not notice this, but once seen it was tough to ignore.

I would feel very confident purchasing this TV. It looks great in the room, it offers an excellent image quality, a slick menu, it's got useful Smart TV features, and its remote control is uncluttered, functional, and cool. It's simple to use and has many options to help you out if you unsure how to get things working, including remote support from a live technician. The Samsung PN64F8500 is a mature plasma TV and provides the best of what plasma technology can deliver today. It knows what it wants to do and it does it very well. If you're looking for a top-notch picture quality, without investing thousands of dollars into a 4K or OLED TV, this is one TV that you should definitely look at. At \$3,499 this TV is worth every penny.

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