

Is Digital Ready For Prime Time?



photo by Joe Pimmman

February 10th Meeting Recap by Gary Koh

After we had finished setting up the equipment for the January meeting, the EXCO and the Equipment Committee were chatting about this, that, and the other related to our love for music and audio. This was just after CES, and I was extolling the virtues of the

Burmester Ph100 phono stage I used. It had a built-in analog-to-digital converter for archiving vinyl to a music server, and I was telling everybody that it was so good that I might just convert all my LPs to digital.

As usual, there was the debate that, “Nah! Digital will never replace ana-

log,” and “Whadoyoumean?? Digital is perfect!” We decided then that since I thought that the digital conversion was so good, to let the members hear for and decide for themselves. So, the next meeting was decided – was digital good (transparent) enough that we would use it to archive our LPs.



Gary Koh explains the process for the comparisons.

I agreed to do it, not knowing the amount of work I was subjecting myself to!! I had to build a system that was equally optimized for analog and digital. We all know that there are trade-offs in any system building, but I thought that if the system was transparent enough, it would show both systems equally, and hence, we could then decide if an LP converted to digital and then back to analog for playback could be distinguished from the playback of the original LP.

Furthermore, the system had to be sufficiently transparent that any changes can be heard – so that no one could complain that the system was masking the differences between analog and digital.

For this reason, I ruled out using the club's Genesis I60 because even as transparent as it is, the tube-based I60 could conceivably be accused of mak-

ing the digital “*sound analog*”. The club's Rega turntable was also another possible weak point, so I decided to assemble a system based on what I had available, and used for my own reference.

First up was the turntable – I had my old, trusty Roksan Xerses 10 with Naim Aro and Magic Diamond cartridge. However, the turntable was a 10-year old design although I had kept it continuously updated (much like Jerry's Linn). While I loved the Naim Aro/Magic Diamond combination on the Xerses, they did not have the ultimate in tracking ability or transparency. I would characterize that combination towards the euphonic, pleasant camp.

I had available a Transrotor “Fat Bob” Reference, but I am not a fan of the massive turntable, and besides, I was not looking forward to lugging over 100lbs of turntable to the club's venue.

I much prefer the Linn/Roksan camp with their light-weight, nimble and “fast” sound. So, I based the system around the latest Roksan Xerses 20+ with all the mods done by the designer. I loved the neutrality and tracking ability of the new Roksan Artimiz arm so used that instead of the simpler Naim ARO. I also ended up using the Micro-Magic Virus cartridge with ruby cantilever and optimized contour stylus by SoundSmith – again because it was more transparent and had better tracking than my Magic Diamond.

Next up the chain, I tried the supplied Roksan tonearm cable, a couple of Van den Huls and one supplied by Burmester with the phono stage, but ended up “rolling” my own. This was done to achieve a flat frequency response. The FM Acoustics phono stage I usually use has both resistive and ca-

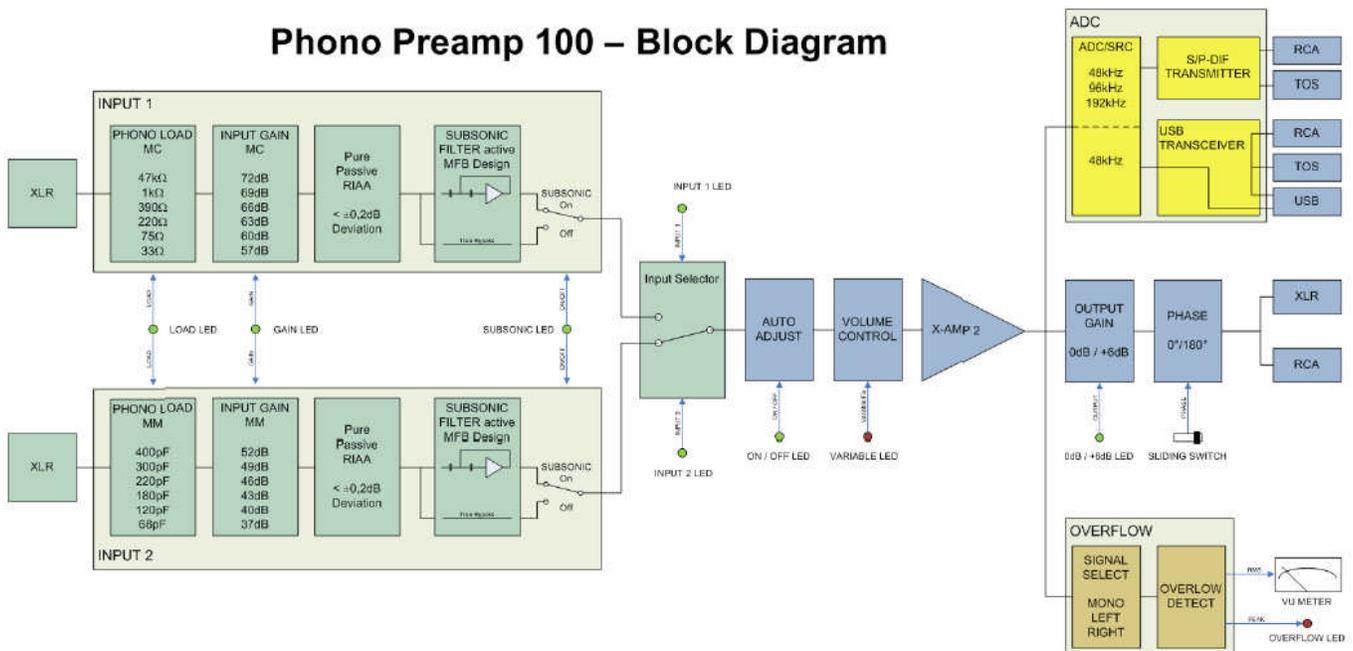
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The System

- ◆ Roksan Xerses 20+ record player
- ◆ Roksan Artemiz arm
- ◆ MicroMagic Virus cartridge (with SoundSmith ruby cantilever and optimized contour stylus)
- ◆ Burmester Top Line Ph100 phono stage with built-in 24bit/192hz ADC
- ◆ Weiss Minerva DAC
- ◆ Genesis SMC-1 Preamp
- ◆ Genesis GR360+ amplifier
- ◆ Genesis 7.1f loudspeakers
- ◆ All cables by Absolute Fidelity

Phono Preamp 100 – Block Diagram



(Continued from page 2)

capacitive loading, but the Burmester had only resistive loading for MC cartridges and capacitive loading for MM cartridges. Developing a tonearm cable with the right capacitance for the arm/cartridge/phono stage combination resulted in a little more transparency at the top end for vibes, muted trumpet, cymbals, etc.

Then, there was the preamp to choose. Many members of the club still fondly remember an event over a year ago when Steve McCormack visited with his SMcAudio VRE-1 preamp. They still talk about the magical evening of music we had. So, it was a no-brainer to bring the Steve McCormack-designed Genesis SMc-1 prototype preamp. We have been tweaking this for over a year already, and while it isn't as transparent as a VRE-1, or an FM Acoustics 255 (my other reference), the convenience of having a remote control ruled! And so to match, the rest of the

system was the Genesis Reference Amplifier 360 with the Maximum Dynamic Headroom Reservoir for the most transparent electronics chain I could muster.

All cables – interconnects, power cables, speaker cables were the Absolute Fidelity Interfaces. The alternative was Nordost Valhalla, but I felt that as wonderful as the Valhalla was, it imposed the Nordost signature sound on the system which I did not want for the purposes of this comparison.

Finally, there was the DAC which would achieve “ultimate transparency”. The key comparison was between an interconnect cable, and the loop comprising an analog-to-digital-converter built into the phono stage, plus a S/PDIF RCA cable, plus a digital-to-analog-converter, plus an interconnect cable. So, the analog-to-digital-to-analog (A/D/A) loop would have to equate to absolutely nothing, since the two interconnect cables were identical.

The results have been published

and circulated already, but the conclusion is that except for trained listeners, the A/D/A loop was transparent. Of the 171 attempts at identifying the insertion of the A/D/A loop, 87 were correct, and 84 were wrong. A success rate of 50.88% - essentially as good as a guess.... which is good enough for me! I'm starting to archive my LP collection to my music server, but I'm not selling my LPs yet as I can still pick out the difference if I listen critically enough. But for everyday enjoyment, I like the convenience of having every one of my songs on the same server, and not have to cue up an LP when I want to listen to something that I didn't have on CD.

Nevertheless, I have many, many LPs which I much prefer over the CD or even high-rez digital version. Digitizing those LPs, I get the best of both worlds. So, it is not the technology, but the mastering or the recording that we prefer..... but that might be the topic of another meeting!!

President's Message by John Stone

Our March meeting will showcase a new DAC design topology by Ted Smith. See the March Meeting Notice.

The March meeting will also include election of club officers. The president, vice president, and treasurer positions are on the docket. The president's position facilitates and enables the executive committee, which itself

includes special interest committee members and other functions such as the newsletter. The VP position supports the president and acts as an alternate in case he is not available. The treasurer coordinates the financial interests of the club and is the focal for collection of membership dues and club banking activities. All officers and committee members contribute to club

events and execution.

We are looking for people to self-nominate for all of these positions. If you can spend a couple of hours a month on club activities, and you like to interact with people who share your love of good music, you will enjoy doing one of these jobs. Please volunteer for one of the club officer or committee positions.

March Meeting Notice by John Stone

Our March meeting will showcase a new DAC design topology by Ted Smith. Ted's design utilizes DSD processing to convert digital to analog, as opposed to the standard PCM processing. The simplicity of a DSD signal path brings many theoretical advantages, and the realization... well, come to the meeting and you be the judge. Even if you don't care about circuits, or ones and zeros, come and listen, it's a great sounding DAC. Ted will also be playing some interesting music from his server. See Joe's writeup and photos of Ted's system elsewhere in this issue.



Ted Smith's new DAC

An Evening With The Seattle Symphony by John Stone



In another note, my wife and I recently enjoyed an evening with the Seattle Symphony at Benaroya Hall. One of the pieces on this evening's program was the Brahms Serenade No. 2 in A major, Op. 16, conducted by Gerard Schwarz, in his last season here.

This five-movement selection was intriguing as Brahms chose to omit violins, augment the modest-sized orchestra with additional violas, and feature the woodwinds. With my audiophile hat firmly in place, it struck me that this combination gave the orchestra a classically tubey (as in tube amp and preamp) sound. Rich, full midrange, with rolled off top end. Of course the top end was actually all there when called upon by flutes and piccolos, but, while interest-

ing from a compositional standpoint, I was left wanting more (treble). Dear Mr. Brahms, next time, the extra violas are ok, but please include some violins and lose the fourth movement altogether. Just my opinion.

The program featured the renowned violinist, violist and conductor Pinchas Zukerman. Mr. Zukerman was technically excellent performing and conducting the Telemann viola concerto in G, but as my tastes favor later classical music, I was uninspired by this selection. The evening's finale was Berlioz' *Harold in Italy*, where Zukerman as performer and Schwarz as conductor were spectacular.

Also on the program was a short piece by Robert Beaser (b. 1954) *Ground O* a world premiere, which also called for a smaller orchestra, dominated by horns and woodwind. While I

dislike much of ultra-modern classical, this piece was amazing and a nice surprise. It is hard to describe other than to say we both enjoyed it a lot while still evoking the emotions we feel when we remember 9/11. Live music is truly wonderful.

Speaking of live music, if any of you have or will attend a live concert, we welcome your reviews and would like to include them in the monthly newsletter. If you recently heard Clapton at Key Arena or plan to hear McCoy Tyner at Jazz Alley, what the hey, if your daughter plays a mean flute in the high school band, write down one or two paragraphs telling what you liked or disliked about the show and send it to Joe Pittman (joe@kosmic.us).

PCM and DSD Comparison by Joe Pittman

The graphs illustrate a simple sine wave which represents a music signal. The PCM example for 16 bit word length and 44.1 kHz sampling rate or "Red Book" specification, shows a sample of the waveform taken every 1/44100 of a second at 16 bit word depth. Each sample or quanta is an approximated integer value from 1 to 65,536; this is called quantization or signal processing.

Quantization distinct values for binary system

$$1 \text{ Bit} = 2^1 = 2$$

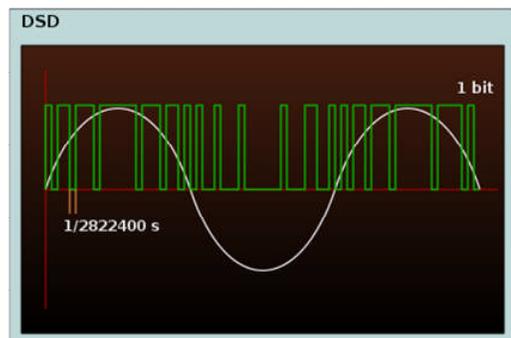
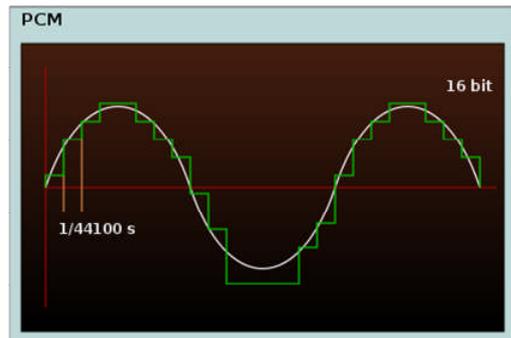
$$8 \text{ Bit} = 2^8 = 256$$

$$16 \text{ Bit} = 2^{16} = 65,536 \text{ (Redbook Resolution)}$$

$$24 \text{ Bit} = 2^{24} = 16,777,216 \text{ (256x Redbook)}$$

$$32 \text{ Bit} = 2^{32} = 4,294,967,296 \text{ (65,536x Redbook)}$$

The DSD (Direct Stream Digital) example for 1 bit word length and 2.8 MHz sampling rate or DSD specification, shows a sample of the waveform taken every 1/2822400 of a second at 1 bit quantization. Each sample or quanta is a value either 0 or 1.



Graphs from Wikipedia

Ted Smith's Multi-Channel System by Joe Pittman



John Stone and I dropped by Ted Smith's place to listen to his new DSD DAC and to plan for his demonstration for the March meeting. I thought that the members would be interested in what Ted's system consists of.

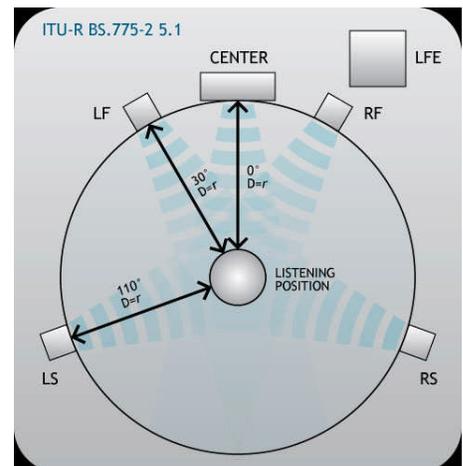
JM Lab (now Focal) Nova Utopia Beryllium loudspeakers are used for the front two channels and augmented with a JM Lab Utopia subwoofer. Not shown are a pair of JM Lab Alto Utopia Beryllium for the rear channels. Ted has the only true ITU multi-channel set-up that I know of. The front speakers are at 30 degrees from center and the rear speakers are 110 degrees from center and all speakers are equidistant from the center listening position on his Zero Gravity chair.

Ted uses the ultra high quality EMM Labs Switchman Multi-channel

preamplifier to drive Sim Audio Moon monoblock amplifiers.

Ted has an extensive collection of CD's and especially multi-channel SACD's. Many of which are available on his array of Jukeboxes.

Definitely a music lovers paradise!



Coming Attractions

March 5 Head-Fi Meet

At Bottleheadquarters at Bainbridge Island from 3-8pm. Check <http://www.head-fi.org/forum/thread/523530/seattle-meet-at-bottlehead-march-5-2011> for details.

March 10 PNWAS Meeting

Elections and Ted Smith's amazing new DAC design.

April 14 PNWAS Meeting

Guest speaker Jules Bloomenthal will talk about Telarc's early digital recordings with the Soundstream recorder.

May 12 PNWAS Meeting

Dan Schmale (aka Doc Bottlehead) is the guest speaker and will dem-

onstrate his gear and Tape Project source.

June 9 PNWAS Meeting

Guest Speaker.

July 14 PNWAS Meeting

The Equipment Committee report and High Efficiency Loudspeakers.

August 11 PNWAS Meeting

Road Trip to Mike Lavigne's.

August 27 DIY MEET

Our semi-annual DIY meet on Saturday. Everyone is welcome!

September 8 PNWAS Meeting

TBD

October 13 PNWAS Meeting

It's dark outside, time for Jerry's

annual HD Concert Video Fest.



October 14-16 RMAF 2011

Hi Ho Hi Ho it's off to Denver we go!

November 10 PNWAS Meeting

TBD

December 15 PNWAS Meeting

Annual Christmas music competition.

Local Music



Tuesday March 8th 2011 7.30pm Sherman Clay - Swinging Pianist and Vocalist **Ariel Pock** and her Trio with Steve Korn percussion and Forrest Giberson on Bass.

Bring your CD's for exchange, or buy from the box @\$5. Enquiries 425 828 9104, Tickets \$13 Adults, Students 18 and under \$8. For more information, contact **Cooksie Kramer** 425 828 9104

www.eastsidejazzclub.com

Please tell your friends "For the Love of Jazz".



Classified Ads

For sale - bits and pieces from my secondary home theater. This system was built before I started Genesis, and hence I had used it as a benchmark in my design. Now, I don't need them any more, so selling the speakers and amplifiers to other club members cheap:

1. Revel C30 center channel in Black - \$500
2. Proceed HPA 2 stereo amp - \$600

I have some of original boxes but prefer local pick-up (especially for the heavier stuff). Contact Gary Koh email:

gary@genesisloudspeakers.com or call 206-762-8383

Visitors Welcome!

Meetings are held on the second Thursday of every month at 7:30pm at 4545 Island Crest Way, Mercer Island, WA 98040.

PNWAS Mission Statement

- ◆ To bring people with a common interest in music reproduced at its best, for their mutual edification and pleasure.
- ◆ To facilitate the exchange and dissemination of accurate data concerning audio equipment and musical recordings.
- ◆ To promote, sponsor, and cultivate the highest quality reproduction of music in the home.
- ◆ To encourage maintenance of high standards in the performance, recording and transmission of music.

PNWAS Objectives

1. Provide a forum for meeting other audio-philes and exchanging information on musical recordings and audio equipment.
2. Demonstrate and compare equipment and recordings.
3. Give members opportunities to become familiar with the techniques of audio manufacturing, testing, repair, recording, broadcasting, etc.
4. Explore related avenues as the member-

ship deems appropriate.

Club Website

www.audiosociety.org

E-mail

info@audiosociety.org

US Mail

Pacific Northwest Audio Society, PO Box 435, Mercer Island, WA 98040

Annual Dues

\$60 due each January. New members pay a prorated \$5 per month for remainder of year.

Executive Committee

President: John Stone

John.W.Stone4@boeing.com

Vice-President: Darin Forkenbrock

forkenbrock@gmail.com

Secretary/Treasurer: Willy Chang

chang98@comcast.net

Editor: Joe Pittman

joe@kosmic.us

Committee Chairs

Equipment: Terry Olson

CornyGuy@aol.com

Music: Vacant– Volunteers?

Refreshment: Vacant– Volunteers?

Editorial

Editorial submissions are welcome.

Content must be audio-related or of general interest to the club in plain text or Word document format without automation (macros and scripts). We reserve the right to edit for style, content, and length.

Editorial Deadline: two weeks before meeting date.

Publishing any editorial material is contingent upon the approval of the Executive Committee.

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