Society of Broadcast Engineers Chapter 24 Newsletter

February 2009

Madison, Wisconsin

Next Meeting

Thurs., February 19

Tour of the new WSUM Facilities

Dave Black, the General Manager of UW-Madison student radio station WSUM- 91.7 FM, will give us a tour of the new state-of-the-art, digital studios. Thanks to Matt Rockwell for helping to organize this tour which will show us how far student radio has come from the days of dorm room carrier current radio broadcasting!

We will also take nominations for Chapter Chair, Vice Chair, Secretary & Treasurer. Please consider running for one of these offices. Remember, serving as an officer is another way to gain re-certification points!

Dutch Treat Dinner 5:30 PM
Nitty Gritty
223 N. Francis Street
Madison, WI

Meeting and Program at 7:00PM
WSUM Studios
333 East Campus Mall
(across the pedestrian mall from Vilas Hall, UW-Madison campus)

Enter through the glass doors under the "SP" sign; take the elevator to the fourth floor.
Call (608) 262-1864 if you get lost.

New WSUM Studio Technical Summary

>>> by Matt Rockwell
WSUM Technical Director
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January 2009, WSUM 91.7FM, a University of Wisconsin Registered Student Organization, vacated it's previous studio's home at 602 State St. (above Urban Outfitters) to take up permenant residence on campus on the fourth floor the new University Square building. This move, with the generous support of the Chancellor, provides WSUM with the opportunity to expand our lab space and re-equip with modern broadcast equipment.

The new facility contains a main studio with a wonderful view to the north and south over the new East Campus Mall. The main studio is flanked by a news studio, a producer's studio, and a live performance room which doubles as a conference room. Additionally, there will be a production studio and three listening rooms, along with space for a lobby, newsroom, music library, student management office, staff offices and technical shop.

The chancellor's grant has allowed WSUM to upgrade from the current analog broadcast consoles to modern digital audio mixing consoles. While researching the various brands of digital studio equipment, it became apparent that there was one particular broadcast

WSUM >>> continued on page 3

Having an "Analog Moment"

>>> by Kevin Ruppert

We have all had them. Analog moments. In the beginning, it was relatively simple. The air moved, and the needle moved. Take a microscope and look closely at the record. It is not hard to understand what is going on here. The vibrations of the sound make the vibrations of the groove. Spin the disc, put down the needle, and you have sound.

With the DTV transition under way, I have been taking note of my analog moments more and more lately. One of them was with the old Victrola. One of the most analog devices you can find. Here is my "analog moment."

While listening to some old jazz recordings, I got lazy and did not wind the spring before dropping the needle on the record. The song started out okay, but then got to a loud sax solo. The turntable slowed down just enough to drag down the beat and the pitch of the record. It made it through the solo and went on to a quiet, sweet section. The turntable returned to almost normal speed. This made me think about what exactly was going on. The louder passages of the record required more energy from the spring driving the turntable.

After years of playing around with

Analog >>> continued on page 4

In this Issue

From The Chair.....2
Amateur Radio News.....3
Meeting Minutes.....5
CES 2009.....6
FCC Rulemakings.....7
Microphone Minefield.....9

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From the Chair

Dennis Baldridge

Chapter 24 needs you!

Our 2009 elections are just around the corner; nominations will be accepted at this next meeting. You are needed to take a position of leadership and help continue the excellent reputation our local chapter as established in the SBE.

Reflecting over the past, it seems, at least at times, that only a handful of people do a majority of the work in any organization. This has been the lament of volunteer organizations for years. Yes, time is at a premium for us all, but when we make the effort to help others, we benefit as well. You have the opportunity to make our SBE Chapter more productive and encourage our fellow members. Thomas Jefferson said "May I never get too busy in my own affairs that I fail to respond to the needs of others."

Don't think that you are not qualified to fill a certain position or that you won't succeed. Our chapter works as a team and helps each other succeed. All it takes is willingness: a desire to help others. For success, attitude is as equally important as ability.

There are many ways to serve the chapter. Some jobs are higher profile and require a bit more commitment while others are less demanding and supplement another's input. The important thing to remember is that "There are no menial jobs, only menial attitudes. (William Bennett)." When everyone gives a little, much is accomplished.

For SBE Chapter 24 to continue to be one of the most progressive and best chapters in the nation, we need our members to attend, attendees to participate and participants to lead. Martin Luther King Jr. once said "Life's most persistent and urgent question is: What are you doing for others?"

Consider stepping up to bat: some role of leadership or participation in which <u>you</u> can become an active part of SBE Chapter 24. Our Chapter's future depends on it.

If you are willing to serve, contact one of the following members of the nomination committee:

Steve Paugh, Chair
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Leonard Charles, member
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Mike Kulis, member
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The greatest service to yourself is service to others!

WSUM >>> continued from page 1

technology which takes advantage of the very technologies which are the core of DoIT's 21st Century Network initiative. Axia Audio Livewire protocol will allow WSUM to build a decentralized network of streaming digital audio for all audio sources and destinations. Additionally, Livewire contains an XML based protocol for metadata and General Purpose Input Output [GPIO]. The GPIO is important for such features as activating "OnAir" lights and player control.

In addition to being IP based, the Livewire protocol will elimintate the need for any hardware distribution amplifiers as the network handles the replication of the streams for multiple sources. The process of getting audio on to the network is via a system of "nodes" which are 19-inch rack mount units containing either digital, analog, or microphone inputs and an Ethernet jack. Each node has a set of 8 stereo inputs and outputs and does the job of putting the actual audio into Livewire's RTP/IP protocol. Patching and routing are handled by server software packages (Windows based).

The actual mixer consoles are remote interfaces controlling a "mix engine." The mix engines are rack mount CPU's which run a custom version of Linux and are installed one per console. These mix engines can be located anywhere on the network, and in the case of WSUM, are located in the "blinkenlights" rack room at the rear of the station.

Accessing audio is also be possible beyond the installed nodes. Workstations in the studio can interract with any of the audio on the network by means of software or hardware interfaces. WSUM uses a Windows software driver on all desktop computers which add virtual audio devices to the Windows environment which can be patched into the master Livewire system. Audio workstations use a hardware interface that has the same functionality of 8in/8out stereo pairs on a PCI card. The ASI PCI interface has both Windows and Linux ALSA drivers available.

WSUM >>> continued on page 5

Amateur Radio News

compiled by Tom Weeden, WJ9H

• As much as 2 inches of crippling ice accumulated over parts of Oklahoma, Arkansas, Missouri, Kentucky and West Virginia and as much as 6 inches of sleet in Missouri and Indiana last week. Many area residents are still without power. The storm that began on Tuesday, January 27 not only brought up to 16 inches of snow in some regions, it also brought hams to local Emergency Operations Centers, shelters and area nets as they were activated to service by their served agencies.

According to American Radio Relay League Kentucky Section Manager Jim Brooks, KY4Z, his state was hard hit by the ice storm, with the western portion taking the brunt of the storm. "Communications by landline and cell phone has been non-existent or spotty at best. I'm hearing reports that Amateurs are using local VHF repeaters to assist in their communities."

• The Amateur Radio station at McMurdo Station on Ross Island in Antarctica, KC4USV, is now on the air. According to Bill Erhardt, K7MT, who is stationed at McMurdo, the station boasts a new transceiver, amplifier and antenna. "We set up the equipment on January 19, tested it and went on the air," Erhardt said. "The station will be in operation on Sundays on 14.243 MHz, starting at 0001 UTC. We had a nice pile up last Sunday with US hams on the East Coast and in the Midwest." Erhardt leaves McMurdo on February 18 and is unsure if the station will be on the air over the Antarctic winter.

• Laura L. Smith of Pennsylvania has been named by the FCC to fill the vacancy created when Riley Hollingsworth, K4ZDH, retired in 2008 as Special Counsel for the Spectrum Enforcement Division of the FCC's Enforcement Bureau. Hollingsworth served in that position for more than 10 years as the FCC's enforcement watchdog over the Amateur Radio Service.ÿ A 1990 graduate of the Pepperdine University School of Law, Smith began her legal career with the FCC, working in the Mass Media Bureau and Wireless Telecommunications Bureau. She also served as Deputy Division Chief of the Public Safety and Private Wireless Division. Smith is currently licensed to practice in the Commonwealth of Virginia. In an October 2008 letter to then-FCC Chairman Kevin Martin, ARRL President Joel Harrison, W5ZN, urged Martin to name a successor to Hollingsworth: "The appointment of a replacement Special Counsel in this position is of critical importance to the Amateur Radio Service, as the delay in finalizing the appointment stands to undermine in very short order an exceptionally successful and low-cost program of enforcement in the Amateur Service."

Calling the FCC's Amateur Radio enforcement program "spectacularly successful," Harrison reminded Martin of the "long period in the late 1980s and 1990s during which the Commission was essentially uninvolved in enforcement in the Amateur Service. The Amateur Service, consisting of some 680,000 licensees of the Commission, is in essence a self-regulating service; however, due to the shared frequency allocations in the Service and the long distance propagation of amateur communications, a very few rule violators can cause severe disruption in the Service. On the other hand, even a minimal Commission presence has a very strong deterrent value."

(Excerpts from the American Radio Relay League's <arrl.org> web site)

Analog >>> continued from page 1

consumer electronics, I fully understood where the energy came from to run a record player. You have to plug it in the wall. If you don't have a plug, you could use batteries. (Anyone old enough to remember battery powered record players?) But what about the Victrola? Where does its energy come from?

I realized that the sound energy had come from my arm. Obviously, I had to crank the machine to make it work. That morning, I had my bowl of Cheerios, so you could say that the energy to play the record came from General Mills.

In the classic Victrola there is really no amplification going on, only the magnification of the needle movement through the pickup arm diaphragm and the cabinet horn. All of the sound energy originates in the spring. (Electric turntable motors were available in Victrolas and other early record players, but this just eliminates the spring and the winding. The principle remains the same.)

Backing up to the sax solo, if I was playing the record on an electronic phonograph (I have those too) were would the extra energy come from to play the loud part? Well, first of all, the motor on an electronic phonograph usually comes from a different supply then the one used for the audio amplifiers, but not always. The motor of the turntable either runs off of 110 VAC (synchronous motor) or from a DC supply in the base of the turntable (direct drive or DC belt drive.) Returning to the case of the battery powered record player, the speed of the turntable does indeed slow down (and ruin your dance party) when the battery wears down. There is usually only one battery supply on these inexpensive devices.

If you scoped the power supply voltage, you might see it drop slightly during the sax solo. Hopefully, your phonograph audio amp power supply would have enough headroom, to track the demand, so that you would not have distortion. I bet, however, that most of us have experienced clipping when you have turned up the phonograph just a little too much. This type of distortion is a strictly analog experience!

As a side track, there was an attempt to provide amplification to the Victrola before electronic systems were generally available for this purpose. According to the Mulholland Press web site, the Victor Talking Machine Company introduced the Victor Auxetophone in 1906, which was about the same time that the famous Victrola was introduced. The principle of the Auxetophone was developed in England by Sir Charles Parsons, who coined the name for the instrument. The Auxetophone was the first talking machine to use an external power source to amplify the sound of the phonograph record. Rather then an electronic power supply, Parsons used an air compressor to create a pressurized sound box. The pressurized air acted upon a set of reeds within the sound box, and caused them to vibrate with an amplitude greater than could a standard sound box diaphragm. The result was a much greater volume of sound coming through the horn. The instruments worked well, but were very fussy and easily got out of adjustment. Because of the complexity, the Auxetophone was an expensive instrument best suited primarily to use in public areas where the cost could be recovered through increased business to the Auxetophone owner. No one bought these things, but it is an interesting variation on analog amplification.

All of this is analog. The grooves are analogous to the sound waves captured while making the record. A power supply (spring, battery or electrical power supply in our examples) provide the energy to recreate the sound waves of the performance. The transition from power supply to sound is an analog process.

We hardly ever think about it when we are having an analog moment. Until the journey to digital media began, we just had "moments" and did not think that they were analog moments. Our entire world was analog and we were just used to it. For instance, analog TV, NTSC, had a sort of built in analog test mode that we used for troubleshooting. If you saw a ghost in the picture, you knew that there was a reflected signal. By measuring the length of the distance between the main image and the ghost, you could even calculate the length of the reflection. (One useful line of NTSC = 52 microseconds. Measure the width of the picture, divide by the distance of the ghost, and divide by 52 microseconds and you have the reflection in microseconds.)

Here's another example. Most of us can identify clipping, either in audio or video, even though it is hard to describe to someone. And we don't have to be one of the "golden ears" that can hear the difference between oxygen free copper and lamp cord on the speakers either. We are using our analog experiences of the past to identify a problem.

How do you test for a signal problem in the digital world? Not quite as easy. You might get your scope out and look at the eye pattern, or maybe use a stream analyzer of some kind to see where there might be a problem. But you generally can't rely on just your eyes or ears.

Anyone have any other "analog experiences" that they would like to share with us? If so, send an email to kruppert@wisctv.com and we will share it with the newsletter readers.

For more information about the Victrola or Auxetophone, see… http://www.mulhollandpress.com/

March '09 Chapter 24 newsletter Copy deadline: Sunday, March 1 paul.stoffel@wpt.org

Meeting Minutes

from the January 2009 business meeting

Chapter 24 of the Society of Broadcast Engineers meet at Full Compass in Middleton on January 13, 2009. There were 10 members present of which 9 were certified. There were two guests present. Vice-chair Clif Groth called the meeting to order.

Minutes for the December meeting were accepted on a motion by Paul Stoffel and seconded by Leslie Franzen. Clif reported that the January Newsletter would be the last paper newsletter and that the newsletter would be now delivered electronically via the Chapter web site with an e-mail reminder for both the publication of the newsletter and the meeting notice. Treasurer Leslie Franzen reported on the current balance in the chapter's checking account and Mike Norton relayed an update from sustaining membership chair Fred Sperry on recent renewals. They included WMSN-TV, Belden Wire and Cable, Heartland Video, WISC-TV, Clark Wire and Cable, and Scharch, LLC. Chapter 24 has a current total of 22 sustaining members.

Leonard Charles gave the report on the National SBE office stating that they were now offering three courses as part of the SBE University. They are on AM directional modeling, FM transmission, and transmission line matching. The 7th edition of the SBE TV Operators Guide is now out. Chuck also reported on the Consumer Electronic Show. He said there was interest in the ATSC mobile standard with stations in Milwaukee and Chicago planning to participate in the rollout of the service. He also talked about the developments in OLED screens for TV's and monitors, and 3-D TV.

Frequency Coordinator Tom Smith reported on the current status of wireless rules, which lead to a discussion on what stations should consider about their possible need to replace or update them. Program Chair Steve Paugh reported that next month's meeting would be at the new studios of WSUM Radio and that the first call for nominations for chapter officers would be made.

Mike Norton reported on problems with DTV PSIP clocks caused by the leap second added to reference clocks on New Year's Day. Newsletter editor Paul Stoffel announced that the deadline for articles would now be the first day of the month. E-mail notices will be sent out when the newsletter is posted on the chapter's website by Leonard Charles. There was a discussion on the possible mailing of a postcard meeting notice, but that was tabled for the now. The meeting was adjourned with a motion from Mike Kulis with it being seconded by Steve Paugh.

The evening's program was presented by Kevin Peckham from Full Compass and was on the history, design and use of microphones.

Respectfully submitted by Tom Smith, Secretary

WSUM >>> continued from page 3

WSUM also has access to space on the roof to mount antennas, which currently includes a studio–to-transmitter link (900mhz) for transmitting our signal southwest to our transmitter tower in Montrose. Also, this roof space houses antennas for receiving Emergency Broadcasts and off-air monitoring of our own broadcast. WSUM is also planning a T1 dedicated link to the transmitter for program delivery redundancy.

This new facility will be an innovative learning lab for the UW students. The digital nature of the facility will put WSUM in a position to embrace emerging technologies for many years to come. Being IP based, adaptation and expansion of the facility will be much easier than a traditional analog facility. No more running huge trunks of wires through the wall. The new WSUM studio shall be a facility which all at the University of Wisconsin can be proud.

Copied with permission from https://mywebspace.wisc.edu/mcrockwell/wsum/

Thanks to Leonard Charles for maintaining the Chapter 24 web site and to Steve Paugh for mailing the meeting reminder postcards.

Las Vegas January 2009

>>> by Leonard Charles

Besides the warmer weather, the Consumer Electronics Show is a good reason to visit Las Vegas in January. This year, most likely affected by the declining economy, the attendance seemed appreciably less than recent years. The exhibit floor, however, was well stocked.

As a broadcaster it's easy to migrate to and spend time in the Sony and Panasonic booths to nurture that warm-fuzzy feeling developed at years of NAB conferences. However even those companies differentiate between January and April in Vegas. The HD cameras, for instance, are palm sized consumer models (and tons of them) rather than the shoulder supported behemoths broadcasters lust for. In the Sony area there was a full sized sound stage for taping the show Jeopardy complete with studio audience. Of course the show is a "Sony Pictures" production.

The highlight of the show for broadcasters was the press conference announcing ATSC Mobile DTV (formerly called Harris M/H). The press room was beyond capacity with many good questions from the press and good answers from the abnormally large panel of experts. To date 63 stations have signed on to provide Mobile DTV transmissions covering just under 40% of the nation's population. Further supporting the announcement was a variety of consumer gear on the floor capable of receiving the transmissions. Handheld cell phone devices, laptop dongles, and automobile radios with video screens were available to touch and feel. Most of them even worked! Two Las Vegas Sinclair TV stations were broadcasting 9 different programs in the Mobile DTV format ranging from video programs to tourist and navigational aids in the form of datacasting. No roaming demo buses this year however.

The next most interesting technology to a broadcaster is 3D TV! Although this technology has been dabbled over the past number of years, this year it seemed to take center stage. Virtually every display manufacturer and gamer booth had a display with their version of the technology. To put it mildly, this isn't your Grandfather's 3D anymore. It amazing to see ranging in content from animated to a U2 concert. In fact viewing the U2 concert was not only like being there, it was more like you were floating over the crowd at the arena to the extent it came close to sensory overload. And to the concert fan that threw the cup of beer back at the 3D camera, yes I did instinctively try to wipe it off my shirt. As far as the technology, engineering questions often went unanswered. At this show if you ask too many questions it's assumed you are the competition trying to steal secrets. The closest I could get to an answer was that the scan rate and format converter of the display had to be altered. I suppose to display a continual double image, that makes sense. 3D content was server or BluRay based, there's too many bits needed for DTV broadcast at this point. By the way, although there was one display that did not require glasses, it paled by comparison to those that did. Some glasses were active and some passive but none were made of cardboard with a blue and a red lens.

The largest display winner this year was a 150 inch Plasma in the Panasonic theatre. While the general theme of the show was "Green", this baby was not. Heat radiated from it which was felt intimately in a walk by. It did look really good. Given the "3x picture height" rule, there isn't a room in my house that would accommodate it. Darn! The next largest display was a 108 inch LCD by Sharp.

Speaking of Green, most LCD displays on the floor boasted of remarkable energy savings over last year's models. Last year 700 watt units were the norm, this year that number hovered near 200 watts on most units boasting themselves as "Green" in the 40 to 50 inch size.

For the third year the Sony OLED display was of high interest. The thickness of the actual display is in the millimeter range. The actual thickness of the TV is dictated by the frame which keeps the screen from folding over or rolling up. The image on this screen is absolutely stunning. So far the largest OLED TV that is being marketed is an 11 inch for $2500. Although there was a 27 inch prototype on display it is not sure if it will ever be mass produced.

LCD refresh rates continue to rise. This year 240 hertz was common and one model reached 480 hertz. Image lag is no longer an issue with LCD TV. Also redesigned back lighting schemes have increased the contrast ratios to incredible numbers and the blacks are now actually black. Go figure!

Home networking and home entertainment systems continue to converge this year. The idea of a central entertainment "receive and store" unit in the home is picking up steam. Multiple displays around the home receive HD content from the "mother ship" over Wifi, Cat5, or even the home's AC power wiring. The central units have terabytes of storage and contain satellite

Las Vegas >>> continued on page 8

FCC Rulemakings

compiled by Tom Smith

FINAL RULEMAKING

MB Docket No. 08-255

Implementation of Short-term Analog Flash and Emergency Readiness Act; Establishment of DTV Transition "Analog Nightlight" Program

On January 15th, the Commission adopted rules that would allow some TV stations to operate their analog transmitters for 30 days after the February 17th DTV transitions. Stations would be restricted to carry only information concerning the transition and emergency information shall it be warranted.

In this ruling the FCC increased the number of stations that were eligible to participate. In the original notice of rulemaking about 75 of the 210 markets did not have a nightlight station. In the final rules the FCC used a list supplied by the NAB and MSTV using less conservative spacing's between stations. This allowed all by 8 markets to have at least on analog nightlight station. Originally in Wisconsin the stations that were eligible were WBJR-TV (6) Superior, Duluth; WBAY-TV (2) and WIBW-TV (14) in Green Bay; WISC-TV (3) in Madison; WVCY-TV (30) in Milwaukee; and WBIJ-TV (4) in Crandon. The new list includes the original group of stations and the following stations: in Green Bay: WGBA-TV (26), WACY-TV (32) and WPNE-TV (38); in La Crosse-Eau Claire: WXOW-TV (19), WLAX-TV (25) WHLA-TV (31), WQOW-TV (18) and WEUX-TV (48); in Madison: WHA-TV (21), WKOW-TV (27), and WMSN-TV (47); in Milwaukee: WTMJ-TV (4), WITI-TV (6), WMVS-TV (10); and in the Wausau market: WHRM-TV (20) and WYOW-TV (34). Other stations are may apply if they meet certain interference requirements. To participate, stations can reduce power to decrease interference. Some of the stations are also short-spaced and, to continue to operate, they may need to reduce power if interference occurs.

Stations on the list need to file for a legal STA using the FCC's electronic filing system or do no more then notify the FCC by e-mail. The e-mail will need to include name, title and the phone number of the person filing the request and e-mail address and cell phone number if available, as well as the same information for any contact person from the station if different then the person filing. The FCC will also need the licensee's name, call letters, tower and facility numbers, city and state the station is located in, and analog and digital channel number of the station. Information on power reductions, planned service and length of time service needs to be provided also. Stations not on the list will have to file an engineering request. These filings have to be submitted by February 10th. Any station participating will have their analog license extended until March 19th at midnight.

Permissible nightlight programming will include emergency programming as broadcast by your digital station, information on the transition in both English and Spanish including information that the transition has taken place, and what the viewers have to do to continue to receive TV service, including emergency information. The information should include phone numbers and Internet addresses where the public can find information in both English and Spanish. Stations are encouraged to include information in other languages. Besides slides with transition information, stations can include videos telling how to install or adjust equipment to receive digital signals, information on the coupon program and other pertinent information. Any videos must by either open or closed-captioned. Station must air ID's and may air sponsorship messages, but may not air continuous sponsorship information such as bugs.

Stations are required to air emergency information, including EAS messages. They may air emergency information in the form of crawls, or text or live or taped reports. Live reports can be simulcasts of the material on the DTV station, including other news and commercial information that is mixed into the report.

Stations should check the Report and Order or with their attorney before proceeding. The Report and Order is at the FCC website: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-09-2A1.pdf with the appendix which lists the stations at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-09-2A2.pdf or in the January 27th issue of the Federal Register at http://edocket.access.gpo.gov/2009/pdf/E9-1543.pdf. The full list of stations eligible is in both publications. Finally stations should check for any changes is the DTV transition is delayed.

Disclaimer: Author filed comments in this preceding and some of those comments were referred to in the notice.
From FCC Release (www.fcc.gov)

Las Vegas >>> continued from page 6

and terrestrial ATSC tuners along with internet connections to download content, all sorts of USB and firewire connections for transferring content, and of course an Ipod port. The issue is how many bits can be successfully transferred from unit to display, but those highways are getting wider every year.

Xtreme HD is a subscription service for which you'll need another little satellite dish on your roof. Along with more HD content than you can digest, the DVR has three ATSC tuners in it so when you are gone you can simultaneously record all three networks' prime time schedules and select what you want to watch from the full schedule when you return home. Guess that's for those who can't decide in advance what to record. Just record everything. They were taking subscriptions but can't offer the service until 3rd quarter. I got a tee shirt from this booth.

As is tradition at this show there were lots of head scratching ideas that may never make it to market. How about a USB planting stick? Just stick it into your potting soil overnight, then connect it to your computer. It will use the internet to return suggestions of what best to grow in the soil or how to treat it for a specific crop.

Lots of solar powered cellphone chargers. Hopefully you're outside when your phone goes dead. Speaking of cell phones, it's amazing what they are packaging into those small frames. Video of course is now normal. But how about turn by turn navigation and high capacity MP3 players over your blue tooth stereo head phones? Want one that will start your car in the winter, no problem. Humans are just going to have to grow more arms and hands to take advantage of all this multitasking, or at least more pockets. Need a custom case for those cell phones and Ipods? Well how about vinyl, plastic, leather, paper, feathered, jeweled and even Elvis velvet! If I had a nickel for every Ipod case I saw, well I'd need more pockets.

Of course there were the obligatory robots; this year they balanced themselves on only two wheels. They didn't really do anything other than annoy the crowd but if you have an idea that needs a two wheeled robot, your covered. Of course there were the robot vacuum cleaners that move in random patterns in your living room until the entire floor has been passed over at least once. There now is a big brother to the robot vacuum, it's the robot lawn mower. Looks a lot like the vacuum robot but has a blade instead of brushes underneath and solar panels on top. For the guy who has everything, and doesn't like to cut the lawn.

Then there is the keyboard and mouse that work under water. In fact they're dish washer safe and only $24! So, if you ever find yourself stuck in your dishwasher, you can still email a friend.

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Certification Exam Session Dates

For more information about SBE Certification, contact Jim Hermanson, Chapter 24 Certification Chair, or contact Megan Clappe, Certification Director at the SBE National Office at (317) 846-9000, or mclappe@sbe.org.

Exam Dates	Location Application	Application Deadline
April 21, 2009	NAB	April 1, 2009
June 5-15, 2009	Local Chapters	April 17, 2009

THE WIRELESS MIKE MINEFIELD

>>> by Tom Smith

As the DTV transition has proceeded, users of wireless microphones have been affected in a number of ways. The biggest is loss of available spectrum. Wireless microphones are authorized to operate in the three TV bands, low band channels 2-6, high band channels 7-13 and UHF channel 14-69. The first issue that wireless microphones users have to confront is the loss of channels 52-69 to wireless and public safety services. Last fall the FCC issued rules that prohibited manufacturers for receiving FCC-type acceptance of any new wireless microphones, nor would the FCC license any wireless microphones systems on channels 52-69. The FCC asked for comments on prohibiting the use of wireless microphones on those channels after February 17th. The comment period ended on October 20th and the FCC has not released a ruling. Wireless mike users are now in limbo on when or if they will be required to replace their units.

The wireless communications industry would like it to be illegal to use the microphones after February 17th; with the microphone users asking for a transition period. As of now, all users of mikes should be planning on replacing them. Budgets should be consider replacement timelines, from now to possibly two years, before the FCC will not allow the use of these wireless microphones. Any microphones on channels 55 and 56 should be replaced now, as MediaFlo is ready to use those channels as soon as the band is cleared of broadcast TV. Most wireless microphone manufacturers are offering retuning programs for their wireless microphones or have rebate or trade-in programs for owners of units in the channel 52-69 band. Check the website of your favorite manufacturer for details on their program.

Another thing wireless mike users need to consider is stations that are changing DTV channels and how they will affect where in the band a wireless microphone can be tuned to. Hopefully your microphone is agile enough to be retuned to a nearby open channel.

And then there is the final and maybe the biggest issue confronting wireless microphone users: TV broadband devices or unlicensed white space users. The FCC adopted the rules on November 4th and has not published them in the Federal Register, which will make them official. How it will affect wireless microphones won't be known completely until the devices are in the marketplace and in use. The rules do provide for protections for wireless microphone users, even though it is not know how well they will work. Parties eligible under Part 74 of the rules get the most protection. Eligible parties include broadcaster; cablecasters including program providers such as cable access programmers; the networks, both broadcast and cable; and film and TV producers. The NFL and college football are also eligible to license their wireless coaching intercoms. Any eligible Part 74 user should get their units licensed to get the maximum protection when TVBD's become available. As part of the fallout of the white space ruling, users such as theaters, churches, bands and other users of wireless microphones were legalized to an extent. To receive protection from TVBD's, these users need to register the location and frequency of their units in not-yet created online database. Besides licensing their units, Part 74 users should also register their units to get full protection. This registration should start before TVBD's become available.

Wireless microphone users will need to keep tabs on FCC rulings in order to make any necessary or timely changes to avoid interference to their systems and disruption to a production.

CHAPTER 24 SUSTAINING MEMBERS

Recent Renewals:

Clark Wire and Cable

Scharch Electronics

Sound Devices, LLC

Thanks to all our Sustaining Members

Alpha Video

Belden-Electronics Division

Belden- Networking Division

Broadcast Richardson

Entercom Madison

Full Compass Systems

Heartland Video Systems

Madison Video Repair

maney-logic

Midwest Media Group

Resonant Results, Ltd.

Roscor Wisconsin

Ross Video

Token Creek Productions

WISC-DT 3

WKOW-DT 27

WMSN-DT 47

WMTV-DT 15

Wisconsin Public Television