The Society of Broadcast Engineers

Fox Valley Wisconsin SBE Chapter 80
PO Box 1519
Appleton, WI 54912-1519

June 2011

The next meeting of SBE Chapter 80 will be the WBA/SBE Summer Engineering Clinic at Grand Geneva Resort & Spa in Lake Geneva on Wednesday, June 22

Chairman's Corner

Welcome to our eNewsletter!

Our June meeting of Chapter 80 will be on Wednesday, June 22, 2011 with the WBA/SBE Summer Engineering Clinic at Grand Geneva Resort & Spa in Lake Geneva, WI**.** – Mark your calendars and plan to attend! Register and make your hotel reservations now. For information: http://www.wi-broadcasters.org

Our last meeting of Chapter 80 was held on Tuesday, May 17th, 2011 noon at **Titletown Brewery** 200 Dousman St. Green Bay. Our meeting included a presentation by Larry Edwards of Belden. Larry will told us about the new HD Brilliance line of connectivity products now available from Belden. Larry was in town to represent Belden at the Camera Corner Technology Expo. A special thank you to Larry for taking time away from the expo to join us at the meeting and for an interesting and informative program.

The Newsletter is posted on our website http://www.sbe80.org , and archive copies, as well as other Chapter 80 and SBE information are available as well.

Upcoming events:

Tuesday, July 19, 2011 – SBE Chapter 80 – Summer Picnic WGBW Transmitter Facility
Tuesday, August 16, 2011 – SBE Chapter 80 – TBA
Tuesday, September 20, 2011 – SBE Chapter 80 – TBA
Regards,

Timothy J. Laes

Still need to renew your SBE membership? Renew now using our easy automated SBE renewal system.

WISCONSIN BROADCASTERS ASSOCIATION

2011 Summer Engineering Workshop
Save the date! The WBA-SBE Summer Engineering Workshop is scheduled for June 22nd at the Grand Geneva Resort and Spa in Lake Geneva, Wisconsin. The session schedule is being finalized now and will feature The EAS-CAP Mandate, The Alternative FCC Inspection, Interference Situations and Studies, and Disaster Planning. There will also be a panel discussing actual recent disasters, their impact, short-term recovery, and long-term path back to normalcy.

National EAS Test Set for November 9
Rear Admiral James Barnett, Jr., Chief, Public Safety and Homeland Security Bureau, Federal Communications Commission, announced that the National Emergency Alert System (EAS) Test will take place November 9, 2011 at 2pm EST. The announcement was made during today's regularly scheduled FCC Meeting.

"With the date of the National EAS Test now set, broadcast stations will now be able to make their plans to participate. SBE will continue to provide information to our members to assist in their preparation," said SBE President, Vinny Lopez, CEV, CBNT.
Watch the EAS pages on the SBE website for updates to the SBE's FAQ section that reflect this and other EAS announcements. (sbe.org)

Web site of the month. The Marconi Society was established in 1974 through an endowment set up by Gioia Marconi Braga, daughter of Guglielmo Marconi, the Nobel laureate who invented radio (wireless telegraphy). It is best known for the Marconi Prize, awarded annually to an outstanding individual/s whose scope of work and influence emulate the principle of “creativity in service to humanity” that inspired Marconi. Through symposia, conferences, forums and publications, the Marconi Society promotes awareness of major innovations in communication theory, technology and applications with particular attention to understanding how they change and benefit society. www.marconisociety.org

CHAPTER 80 ELECTED AND APPOINTED OFFICERS 2010-2011

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Past Chairman	Keith Kintner	UWO	920-424-7357	kintner@uwosh.edu
Board of Dirs/SBE Liaison	Keith Kintner	UWO	920-424-7357	kintner@uwosh.edu

Public Safety And Homeland Security Bureau announces that first ever nationwide diagnostic test of the emergency alert system will occur on November 9, 2011 at 2 pm EST

On February 2, 2011, the FCC amended its Part 11 rules governing the Emergency Alert System (EAS) to provide for national testing of the EAS and the collection of data from such tests. The Commission hereby provides notice to all EAS participants that the first nationwide test of the EAS will occur on November 9, 2011, at 2 PM EST. The purpose of the test is to assess the reliability and effectiveness of the EAS as a mechanism to alert the public of emergencies. Although EAS Participants currently participate in state-level monthly tests and local-level weekly tests, there has never been a nationwide test of the system. The Commission, along with the Federal Emergency Management Agency, will use the results of this test to assess what works within the EAS and what does not and working together with EAS stakeholders will make improvements to the system as appropriate. The Bureau will continue to provide additional information concerning the first nationwide test of the EAS, through the release of further public notices. Please also visit the Bureau's web page (http://www.fcc.gov/pshs/), which will continue to post announcements of all significant developments affecting nationwide EAS testing for both EAS Participants and the general public.

The Bureau encourages EAS Participants to take steps, in coordination with their State Emergency Coordination Councils, in preparation for this test, such as:

· Reviewing and, if necessary, updating your state's EAS plans;

· Reviewing the manner in which you deploy EAS assets – particularly EAS Participant encoder/decoder equipment – to ensure end-to-end connections and the required redundancies to minimize any single points of failure within your state's EAS architecture;

· Ensuring that your EAS equipment operates in compliance with FCC rules.

The SBE Chapter 80 Newsletter is published monthly. Members are welcome to contribute articles or ideas. Please have your submissions in by the 4th of the month to Dave Driessen or Bill Tessman

First Nationwide Test of the EAS continued
In the bureaus blog James A. Barnett, Jr., Chief, Public Safety and Homeland Security Bureau writes:
For the test, FEMA will trigger the EAS "cascade" architecture by transmitting the EAS code used for national level emergencies to the first level of broadcast stations in the national-level of the EAS, which in turn will rebroadcast the alert to the general public, as well as to the next level of EAS Participants monitoring them. This should continue through all levels of the system until the alert has been distributed throughout the entire county.
All EAS participants must report back on the results of this test. FEMA and the FCC will study these results carefully to assess problems and, in coordination with EAS stakeholders, devise remedies. We will likely conduct the test periodically to ensure that the EAS is, and remains, functional. I am very proud of the work that our Alerting Team at the FCC and our counterparts at our federal partners have done to make this possible, and I appreciate the work that our EAS Participants in the broadcast, cable and satellite industries have done and will do to make our nation safer and more secure.(fcc.gov)

SBE 2011 EXAM
DATES LOCATION
APPLICATION DEADLINE

June 3-13, 2011 local chapters
April 15, 2011
August 5-15, 2011 local chapters
June 3, 2011
November 4-14, 2011 local chapters
September 16, 2011

If you have any questions, please contact the Certification Director, Megan Clappe or our Chapter 80 certification chairman Jim Sams
Help your professional society "Raise the Bar" by recruiting a new member

FCC releases Notice of proposed Rule making for CALM Act. We propose rules to implement the Commercial Advertisement Loudness Mitigation ("CALM") Act.1 Among other things, the CALM Act directs the Commission to incorporate into its rules by reference and make mandatory a technical standard developed by an industry standard-setting body that is designed to prevent television commercial advertisements from being transmitted at louder volumes than the program material they accompany.2 As mandated by the statute, the proposed rules will apply to TV broadcasters, cable operators and other multichannel video programming distributors ("MVPDs").3 The new law requires the Commission to adopt the required regulation on or before December 15, 2011,4 and it will take effect one year after adoption.5 We seek comment below on proposals regarding compliance, waivers, and other implementation issues.
The new rule among other things would Amend §73.682 by adding paragraph (e) to read as follows:
§ 73.682 TV transmission standards.

(e)(1) Transmission of commercial advertisements by television broadcast station. Effective [one year after date of FCC adoption], television broadcast stations must comply with the ATSC A/85: "ATSC Recommended Practice: Techniques for Establishing and Maintaining Audio Loudness for Digital Television," (May 25, 2011) ("ATSC A/85 RP"), and any successor thereto, approved by the ATSC (incorporated by reference, see §73.8000), insofar as it concerns the transmission of commercial advertisements. ATSC A/85 RP is available from Advanced Television Systems Committee (ATSC), 1750 K Street, NW., Suite 1200, Washington, DC 20006, or at the ATSC Web site:
http://www.atsc.org/standards.html.

(2) A television broadcast station that installs, utilizes, and maintains in a commercially reasonable manner the equipment and associated software to comply with ATSC A/85 shall be deemed in compliance with this section.
(fcc.gov)

First Graphene Integrated Circuit By Neil Savage
IBM researchers have built the first integrated circuit (IC) based on a graphene transistor—another step toward overcoming the limits of silicon and a potential path to flexible electronics.
The circuit, built on a wafer of silicon carbide, consists of field-effect transistors (FETs) made of graphene, a highly conductive chicken-wire-like arrangement of carbon that's a single atomic layer thick. The IC also includes metallic structures, such as on-chip inductors and the transistors' sources and drains. The work is described in this week's issue of *Science*. Researchers say that graphene, which has the potential to make transistors that operate at terahertz speeds, could one day supplant silicon as the basis for computer chips. Several groups have built transistors out of graphene; the IBM team, led by Phaedon Avouris at

the Thomas J. Watson Research Center, demonstrated one last year that operated at 100 gigahertz—more than twice as fast as a silicon transistor of comparable dimensions. But as Keith Jenkins, one of the scientists involved in the new research, points out, "a transistor by itself is no good unless you connect it to something."

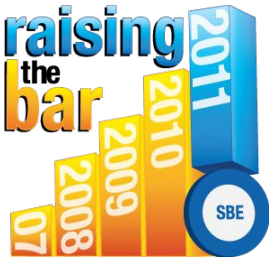
The circuit the team built is a broadband radio-frequency mixer, a fundamental component of radios that processes signals by finding the difference between two high-frequency wavelengths. "It's a completely ubiquitous circuit," Jenkins says. The device, which is a proof-of-concept and not designed to be an optimal commercial component, handles frequencies up to 10 GHz. "Ultimately, we should be able to go a lot faster," Jenkins says. "This is not a limit at all."

The tricky part was integrating the graphene FET with other components—"a pretty difficult engineering challenge" that took about a year, Jenkins says. There are two main difficulties: One is that the metals used to make other parts of the circuit—aluminum, gold, and palladium in this instance—don't adhere very well to the graphene. The other is the fact that graphene, being only a single atom thick, is easily damaged by standard semiconductor etching processes. One way the team addressed the damage problem was to grow the graphene on a silicon-carbide wafer, then coat it with a common polymer, PMMA, and a resist that was sensitive to jets of electrons used in electron beam lithography. That allowed them to protect the graphene they needed during processing but also remove it where it wasn't wanted.

One remarkable feature is that the performance of the device didn't change very much when its temperature went from 300 to 400 kelvins (about 27 °C to 127 °C). That means a graphene circuit won't have to be overdesigned to compensate for temperature changes, potentially leading to a less-complex and less-expensive circuit.

It will be several years before graphene devices are ready to displace conventional silicon circuits, which are expected to start hitting their limits later this decade. But Jenkins says progress has been remarkably fast with graphene, which was isolated only in 2004. Beyond surpassing the performance of silicon, the material, which is strong, transparent, and bendable, could lead to flexible printed electronics. Applications could include cellphones stitched into clothing or GPS receivers on soldiers' uniforms. Says Palacios: "I think that the exciting opportunity of graphene is to be able to integrate these devices/circuits into arbitrary substrates, from plastics to silicon and glass. This integration will allow us to have graphene-based electronics everywhere. It is what I call 'ubiquitous electronics.' "(http://spectrum.ieee.org/)

SBE Welcomes 202 New Members



The SBE annual Membership Drive concluded May 31 with a total of 202 new members. This is an increase of 34 percent compared to the 2010 Membership Drive.

Fifty-five members were directly responsible for recruiting 72 new members during the three-month period. Of the 72 new members, three were Sustaining Members; companies that provide products and services to the broadcasting industry. An additional 130 members joined the SBE during the Membership Drive without indicating a sponsor's name.

Each member who recruited a new member was entered into a drawing to win prizes donated by SBE Sustaining Members and the SBE. The Grand Prize winner, who will receive an expense-paid trip to the SBE National Meeting in Columbus, Ohio this September, was Eddie Durham of Chapter 72, the Blue Ridge Chapter, in southwestern Virginia.

Other Prize Winners include:

Logo Polo Shirt courtesy of Broadcast Electronics
Robert Dickinson, CBTE, Virgin Islands
Roger Lundeen, CSRE, Central Ill.

Kathrein AON 65 UHF-TV Antenna courtesy of Kathrein Inc., Scala Division
Mark Heller, CSRE, CTO, Fox Valley, Wis.
Ronald Sweatte, Spokane, Wash.

Trifield Meter courtesy of Middle Atlantic Products
Michael Keller, Boston, Mass.

Logo Polo Shirt courtesy of Middle Atlantic Products
Richard Pogson, CPBE, Fairview, Pa.
Mark Heller, CSRE, CTO, Fox Valley, Wis.

(sbe.org)

2011 ENGINEERING DAY AGENDA

Wednesday, June 22

The 2011 WBA-SBE Summer Engineering Workshop is set for June 22nd at the Grand Geneva Resort & Spa in Lake Geneva, WI. The day's sessions are loaded with current and relevant topics in the career of today's Broadcast Engineer.

8:00 AM – 6:30 PM: Registration *Location: Grand Geneva Lobby Hallway*
(OUTSIDE OF HILLCROFT'S GIFT SHOP IN MAIN HALL AND ONE DOWN NEAR THE EXHIBIT AREA)

8:40 AM – 4:30 PM: Engineering Sessions *Location: Linwood A*

8:40 AM: Opening Remarks – Michelle Vetterkind, WBA President & CEO

8:45 AM: All Things "G" We'll hear from a wireless carrier on just what 3G, 4G, and the new IPv6 is all about and how extensive their deployment.

9:30 AM: Network Security We will continue our theme over the last couple of years in exploring all things bad that can happen on your computer network and how you can prepare for and avoid them.

10:15 AM: Break

10:30 AM: The Alternative FCC Inspection What are the common issues that arise out of the Inspection and how you can prepare your station for a passing grade.

11:15 AM: Techniques for Long Haul Audio and Video Transmission over TCP/IP We'll explore various Audio and Video compression schemes and the results of side by side evaluation

12:00 PM: Lunch *Location: BRISSAGO Restaurant*

1:15 PM: Wisconsin EAS-CAP Update September 30th is the FCC mandate for stations to deploy CAP enabled EAS equipment. We'll explore the latest State of Wisconsin Plan for CAP.

2:00 PM: Windmill Interference to Broadcast Signal Reception We'll look at an extensive consultant study of the Fond du Lac area Wind Farms and their affect on off air reception in the area.

2:45 PM: Break

3:00 PM: Disaster Recovery We'll hear from an equipment manufacturer on how to prepare your station for a disaster. We'll also hear how this manufacturer has helped stations recover from actual disasters.

3:45 PM: Disaster Recovery Panel We'll convene a panel of recent disaster victims and hear firsthand what happened and how their station recovered.

4:30 PM: End of Sessions

5:00 PM: Exhibits and Reception

"Thank You to Summer Conference Engineering Program Committee"

Kent Aschenbrenner, Milwaukee Public Television
Mark Burg, WLAX-TV
Gordon Carter
Leonard Charles, Television Wisconsin, Inc.
Greg Dahl, Second Opinion Communications, Inc.
Clif Groth
Bill Hubbard, UW-Green Bay
Vern Killion
Keith Kintner, UW-Oshkosh
Gary Mach
Jason Mielke, WCLO/WJVL
Kevin Ruppert, WISC-TV
Tom Smith, WHA-TV
Linda Baun, WBA Liaison

5:00 PM – 7:30 PM: Exhibit Reception *Location: Maple Lawn Ballroom*

7:30 PM – 10:00 PM: Dinner & Entertainment *Location: Geneva Chophouse and Embers Terrace*

Please click to register: Registration

MARK YOUR CALENDARS FOR THE 2011 BROADCASTERS CLINIC
OCTOBER 11-13, 2011, MARRIOTT MADISON WEST HOTEL

Webinars by SBE - On-Demand

KREX - The Real World of Disaster Recovery - *FREE, thanks to* Harris Corporation

Networking Technology, 2 part
Mathematics of Reliability
Event Frequency Coordination
Leadership Development Webinar Series - for a limited time, this series of 3 webinars for only $45 *(normally $117)*
Maximizing HD and 1080p/60 Cable Performance
Human Factors in Broadcasting
EAS Update *(recorded Aug 19)*
ATSC Mobile DTV
FCC Self-Inspection Checklist

Upcoming Live Webinars

Creative Strategies for Translators and Boosters; with Doug Vernier, CPBE
June 16 - 2:00 p.m. ET
SBE Members - $49; Non-Members - $69
Referencing real life examples of creative translators and boosters now on the air, attendees will hear about how AM day stations can be programmed at night by using fill-in translator, translator location hopping move-ins to larger populations and translators with HD2 or HD3 primary signal inputs. **More Info**

SBE RF Safety Course; with Richard Strickland of RF Safety Solutions; June 21 - 2:30 p.m. ET
SBE Members - $85; Non-Members - $125
The SBE RF Safety Course provides an overview of RF radiation issues and practices for broadcasters, including transmitter sites, SNG and ENG trucks, remote operations, biological effects of RF radiation and the distinct differences between RF radiation and ionizing radiation, FCC and OSHA regulations and more. **More Info**

Managing a Project and Outside Contractors for Success; with John Luff; July 20 - 2:00 p.m. ET
SBE Members - $59; Non-Members - $79
This webinar will assist managers, design engineers, chief engineers and staff members planning and executing upgraded or new facilities plan effectively, and manage without undue conflict. **More Info**

Networking Technology for the Broadcast Engineer - The Next Level: Routing and Switching; with Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNT; August 18 - 2:00 p.m. ET
SBE Members - $59; Non-Members - $79
The goal of this webinar is to provide the Broadcast Engineer with a better understanding of IP routing and switching so that the technology may be implemented within his or her own network. Design examples will utilize typical industry network equipment with configuration implementation details. Detailed configuration and implementation notes will be provided for each design example. **More Info**

SBE certifications 5-year and 10-year certifications

Keep in mind that you may apply for the following certifications when you qualify for them. You do not need to do one level before going onto the other.

If you have five years of broadcast engineering or related technology then you may want to look into taking the following exams: Certified Broadcast Radio Engineer, Certified Broadcast Television Engineer, Certified Audio Engineer or Certified Video Engineer. These exams consist of 50 multiple-choice questions and are open book with an allotted 3 hours of exam time. Passing score for the CBRE, CBTE, CEA and CEV is 70%. For more information on the CBRE and CBTE and suitable substitutions for experience and applications click here **http://www.sbe.org/sections/CBRE_and_CBTE.php**. For CEA and CEV inquiries click here **http://www.sbe.org/sections/CEA_and_CEV.php** .

If you currently have 10 years of broadcast engineering or related technology experience, consider applying for the Certified Senior Radio Engineer or Certified Senior Television Engineer. These exams also consist of 50 multiple-choice questions and are open book but they also contain an essay question. The essay question is closed book, but the multiple-choice portion is open book. Passing score for the CSRE and CSTE is a combined score of 84%. For more information on the CSRE and CSTE certifications and suitable substitutions for experience and applications click here **http://www.sbe.org/sections/CSRE_and_CSTE.php**.

If you are interested in any of the other SBE certifications not mentioned here, please go to **http://www.sbe.org/sections/cert_classif.php** for more information.

Please visit the SBE website or contact the Certification Director, **Megan Clappe**, for more information.

H.R.2102 Introduced by Rep. Stearns

A substantial step toward the SBE's objective of adding engineering expertise to the staffs of the FCC Commissioners has been realized. Yesterday, Representative Cliff Stearns (R-FL) introduced House Bill 2102, a companion bill to Senate Bill 611, introduced earlier this year by Senator Olympia Snow (R-ME).

In March, representatives of SBE's national leadership met with Representative Stearns' Washington staff and requested that the Congressman consider sponsoring the legislation in the House.

With bills now introduced in both Houses of Congress, SBE will be working to gain co-sponsors for each bill and continue to push to see this legislation eventually approved by Congress and signed by the President.

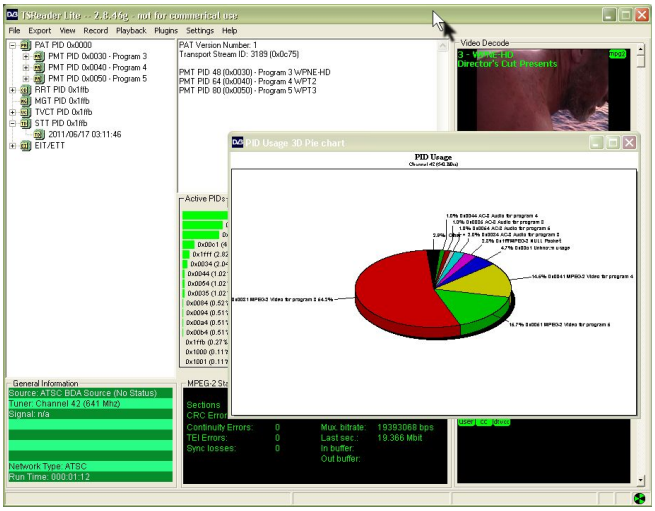
"This is another positive step in the Society's quest to bring technical expertise to the FCC Commissioner's offices, "said Vinny Lopez, CEV, CBNT, SBE president. Lopez went on to say, "I encourage all members of the SBE to write their senators and representative and ask them to support S.611 and H.R.2102."

If passed, both the Senate and House Bills would authorize each of the five FCC Commissioners to appoint a fourth staff assistant who is an engineer or computer scientist. This will provide first hand competent input to each of the Commissioners tasked with making often highly technical decisions in docket proceedings and adjudicatory matters, and a mechanism for bringing the competency of the Commission's staff engineers directly to the Commissioners.

(sbe.org)

User report: AverMedia Hybrid Volar MAX TV and FM tuner

- Around $70
- USB connection
- F connector for the antenna
- RCA input connectors for Composite Video and stereo audio recording
- SVHS input
- Included software has basic functionality for viewing and recording. It can read some of the EPG guide data.
- Connected it to my unamplified outdoor antenna with amplified splitter
- TV Autoscan found all the Green Bay DTV stations
- FM Autoscan found 42 radio stations
- No luck with the undocumented digital radio scan.
- My single core Pentium 4 at 3GHZ had 50% processor utilization while viewing and recording DTV signals. Processor use was lower while viewing lower bit rate digital subchannels
- I was able to record and play transport streams (as long as I didn't try to do anything else on the computer)
- Works with TSReader Lite. I was able to inspect data about the transport stream as well at the EPG information



- I didn't test the composite video record feature or the cable QAM tuner. Analog video recording may take more CPU time as the MPEG encoding is done in software

(Dave D)