



the SIGNAL

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SBE National Meeting Highlights

The 2010 SBE National Meeting was a success. At the Madison Marriott West Hotel (Middleton, Wis.) on October 26-27, the SBE National Meeting was held in conjunction with the Wisconsin Broadcasters Clinic by the SBE Chapter 24 and the Wisconsin Broadcasters Association. Meeting highlights included an

SBE-focused Clinic session, the SBE Membership Meeting, which was streamed live online (view the recorded meeting at www.sbe.org) and the SBE Annual Awards Dinner, which recognized Chapter and Individual Awards and the two newest SBE Fellows.

See **MEETING** on page **2**



Sterling Davis (left photo) and Robert Locke, CPBE, CBNT (right photo) were recognized with the highest membership rank of SBE Fellow during the 2010 SBE National Awards Dinner, presented by President Vinny Lopez, CEV, CBNT.

SBE announces National Meeting locations through 2013

The SBE has announced the locations for its next three national meetings. Each will be co-located with a broadcast industry-related event which has never hosted the SBE National Meeting before.

The three events and locations include: the Ohio Broadcast Engineering Conference in Columbus, in 2011, sponsored by the Ohio Association of Broadcasters; the annual

“Vid-Expo” in Denver, Colo. in 2012, jointly sponsored by Vid-Expo, SBE Chapter 48 and the Rocky Mountain Section of SMPTE; and in 2013, the Indiana Broadcast Engineering Conference, sponsored by the Indiana Broadcasters Association. SBE chapters in Ohio and Indiana will be local hosts for the events held in those states.

By moving the SBE National Meeting to

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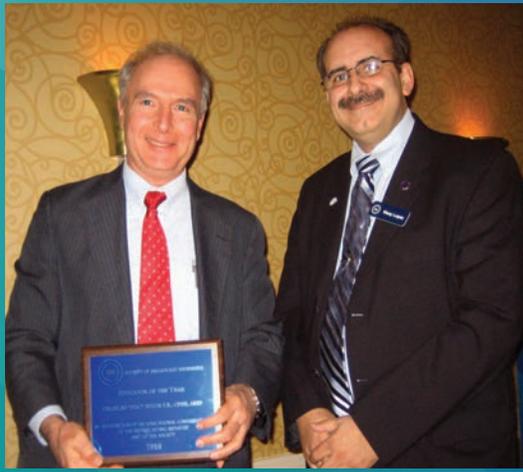
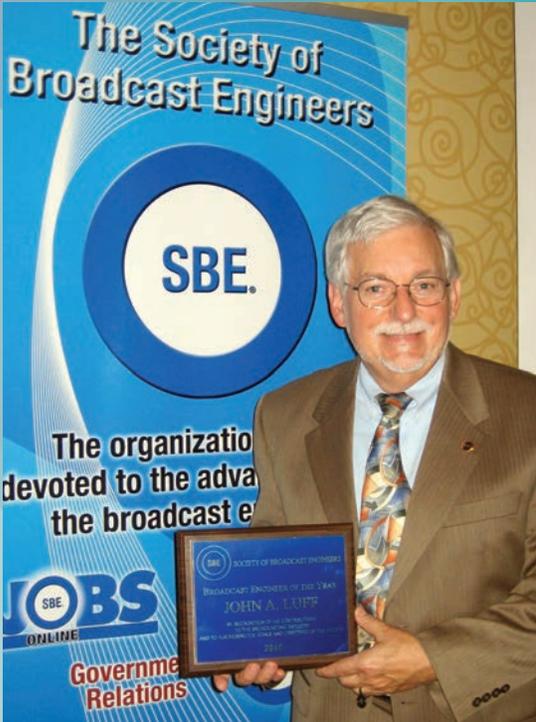
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2010 SBE NATIONAL MEETING

October 26-27 • Madison, Wis.



Left: John Luff was recognized for being named SBE's 2010 Broadcast Engineer of the Year during the 2010 SBE National Awards Dinner. **Above:** Charles 'Buc' Fitch was recognized for being named SBE's 2010 Educator of the Year, presented by SBE President Vinny Lopez, CEV, CBNT during the 2010 National Awards Dinner.



Two door prizes were given during the 2010 National Awards Dinner. **Top:** Andrea Cummis, CBT, CTO won an Amazon Kindle provided by Vislink News and Entertainment awarded by SBE President Vinny Lopez, CEV, CBNT. **Bottom:** Paul Stoffel, CPBE won a Tascam DR-100 Portable Digital Recorder provided by The Durst Organization awarded by SBE President Vinny Lopez, CEV, CBNT.



Above: Certification Chairman Jim Bernier, CPBE, CBNT was recognized for his outstanding service as a member of the Board of Directors from 1994-1997 and 2004-2010 and was presented a plaque during the Annual Membership Meeting by President Vinny Lopez, CEV, CBNT.

Leonard Charles, CPBE (Right) introduced the SBE Panel during the session "Discover how SBE Can Help Take Your Career to the Next Level" that was part of the Wisconsin Broadcasters Clinic. (L-R) Certification Director Megan E. Clappe, Executive Director John Poray, CAE, President Vinny Lopez, CEV, CBNT, Certification Committee Chairman Jim Bernier, CPBE, CBNT, Education Committee Chairman David Priester, CPBE and Education Director Kimberly Kissel.



Right: SBE Chapter 24 Madison and the Wisconsin Broadcasters Association were recognized in appreciation for hosting the 2010 SBE National Meeting. (L-R) Chapter 24 Convention Chairman Leonard Charles, CPBE; Chapter 24 Chairman Fred Sperry, CPBE and SBE President Vinny Lopez, CEV, CBNT. Chapter 24 was also recognized for winning the Chapter Award for Best Regional Conference and Best Chapter Newsletter.



Above: The band "Sticks and Bones" reunited for the second time since 2008 to play during the SBE Awards Reception. "Sticks and Bones" consisted of SBE Members (L-R) Chriss Scherer, CPBE, CBNT; Dennis Baldrige, CPBE, 8-VSB, AMD, DRB, CBNT; Kevin Ruppert, CPBE, CBNT; Executive Director John Poray, CAE and Jim Klas.

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By-law change clarifies voting rights for SBE Fellow members

On October 26, 2010, the SBE By-Laws Committee proposed and the Board of Directors passed, changes to the By-Laws that clarify voting rights for Fellow members of the SBE, as well as effect other minor house-keeping text changes to the same By-Law section. The SBE By-Laws Committee was chaired at the time of the vote by board member, Gary Liebisch, CPBE. Liebisch has since been appointed by SBE president, Vinny Lopez, CEV, CBNT, to serve as chairman of the SBE Chapter Liaison Committee.

The primary change to the By-Laws was to make it clear that Fellow members of the SBE have the right to vote in national Society elections. The changes to the By-laws were approved unanimously by the Board.

The original text of the By-law section, followed by the text with approved changes in italics and underlined for emphasis, follows.

Article II. MEMBERSHIP, Section 2. (b)

Original:

Fellow: A member who has rendered conspicuous service, or is recognized as having made valuable contribution to the advancement of broadcast engineering or its allied professions, dissemination of knowledge thereof, the promotion of its application in practice, may be elected a fellow of the Society.

Candidates for election to Fellowship shall be proposed in writing by a voting member. Such proposal shall include a biography of the candidate and the endorsement of 5 voting members and shall be submitted to the Board of Directors for consideration. If elected, the candidate shall be notified by the Secretary. The Board of Directors shall confer the

Fellowship in such a manner as they deem appropriate.

Newly Adopted:

Fellow: A member in good standing who has rendered conspicuous service, or is recognized as having made valuable contributions to the advancement of broadcast engineering or its allied professions, dissemination of knowledge thereof, the promotion of its application in practice, may be elected a Fellow of the Society.

Candidates for election to Fellowship shall be proposed in writing by a voting member. Such proposal shall include a biography of the candidate and the endorsement of 5 voting members and shall be submitted to the Board of Directors for consideration. If elected, the candidate shall be notified by the Secretary. The Board of Directors shall confer the Fellowship in such a manner as they deem appropriate. *A Fellow of the Society is entitled to all the rights and privileges of the Society, including the right to vote.*

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vlopez@sbe.org

Did you check with the Captain of the Flying Monkeys?

by **Vinny Lopez, CEV®, CBNT®**

SBE President

No, it's not time for another contest...yet. I want to thank everyone who entered my last *Signal* article contest. I am thinking about new ways for fun things with these articles, and will have more for you in the next issue.

It was just over a year ago when I took over the reins as president of the Society of Broadcast Engineers. Past president Barry Thomas, CPBE, CBNT tried to prepare me for what was to come and did his best. Let me tell you, it is indeed a busy job being the SBE President, requiring a commitment to do the right thing for the members.

Shortly after the SBE National Meeting last year, executive director, John Poray, CAE, general counsel, Chris Imlay and I traveled to Washington to talk to the FCC about two topics, Clarity Media, also known as "trucker TV," and TV white spaces. We spent two days meeting with staffs of each commissioner's office and got some mixed responses. We knew the white spaces issue was going to be a long shot and indeed a ruling has come down on that. Clarity Media is still out there, with its fate unknown at this point. Try as I might, I can't avoid the feeling that we have not heard the last on this issue.

In early 2010, we were contacted by a staff member in Senator Olympia Snowe's (R-ME) office requesting support of a bill that the Senator was authoring, S.2881 titled, "The FCC Commissioners' Technical Resource Enhancement Act". The bill would authorize each FCC commissioner to add an engineer or computer scientist to their staffs. Since this has been an SBE legislative agenda item for 20 or so years, we quickly agreed to support it and help out by garnering further Congressional support. Chris Imlay and SBE Government Relations Committee chair, Barry Thomas, CPBE, CBNT, traveled to Washington and visited Capitol Hill, trying to drum up a sponsor of a companion bill on the House side.

Barry and Chris visited the offices of several

representatives and met with their staff members. We received news shortly there after that a companion bill, HR.4809 was introduced in the House of Representatives by Jerry McNerney (D-CA). The Society began a campaign with our members asking them to contact their representatives and senators to encourage their support for the bills.

I do feel that our members did not do their best in supporting this, as our letter writing campaigns could have been more productive. Unfortunately, the House bill stalled, due exclusively to unfortunate partisan in-fighting between Democrats and the Republicans on the House Energy and Commerce Committee. Even though neither party has any apparent problems with the provisions of the Bill, the delay will probably doom it for this term. If the bills do not get to a floor vote, we plan on working with Senator Snowe and Representative McNerney to get them re-introduced in the next session of Congress.

In mid-June, we learned that the FCC was convening a Broadcast Engineering Forum to discuss broadcast engineering issues related to the Commission's Broadband Plan. We were dismayed to find that the SBE had not been included on the invitation list to the forum. We submitted an open letter to Julius Genachowski, FCC Chairman, expressing our concern that the FCC would convene a "broadcast engineering forum" and not invite the singular organization that represents broadcast engineers with more than 5,500 members and a long and positive history of working with the FCC. The day after receiving our letter, we were contacted by the FCC which invited our participation in the forum. SBE Vice President, Ralph Hogan, CPBE, DRB, CBNT and member of the Board, Joe Snelson, CPBE, 8-VSB, participated in the forum as representatives of the SBE.

Besides being involved in legislative matters, SBE has renewed its focus on educating our members and also has increased its educa-

SBE Committee Chairs 2010-2011

SBE President Vinny Lopez, CEV, CBNT, has named the national committee chairs for 2010-2011 as listed below. The committees are responsible for developing SBE policies and programs at the national level. All committees report to the Board of Directors.

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Student Chapter Subcommittee...Jeff Smith, CSRE, CBNT
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Sustaining MembershipMark Heller, CBRE, CTO
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see **MONKEYS** on page 9

What are the other radio guys up to?

by **Chris Imlay, CBT®**
SBE General Counsel



I have often noticed that people who are experts in broadcast law and regulation are not always particularly savvy about land mobile radio regulation. The reverse is true even more often. There are many exceptions of course, but even in the Federal Communications Bar, there are those whose expertise is particularly thorough in the area of broadcast law

and regulation, or the regulations regarding Part 90 land mobile radio, or, especially these days, in the area of Part 15 unlicensed devices and spectrum allocations, but not all those things at once. Some folks are generalists, and I know of a good number of broadcast engineers who are extremely knowledgeable about land mobile radio. But broadcast engineers have enough to do without having to know the details of Part 90 regulations as well as Parts 73 and 74.

I have been a student of land mobile regulation for almost as long as I have been involved in broadcast law and regulation, but I still am in awe of a number of folks I work with who have an apparently complete knowledge of the intricacies of Part 90 radio. I am also aware that many broadcast stations have Part 90 licenses, typically in the VHF and UHF bands, as well as Part 73 and Part 74 licenses. So, while there are plenty of broadcast legal issues to write about, I thought I would run through some of the things a Part 90 land mobile licensee should know right away. I hope this is helpful to more than a few broadcast engineers. If you are ahead of me on this subject, and many of you are, then that is a good thing, so please bear with me this time.

Starting in 1995, FCC embarked on a plan to encourage the transition of the land mobile industry to more efficient technologies, due to the crowding of the bands and the unavailability in most markets of licenses at VHF and UHF, even though licensees in those bands are, in general, not granted exclusivity in channel use. Initially, there were no deadlines set for migration from 25 kHz channel bandwidths. The theory was that there would be those using 25 kHz and 12.5 kHz channels, and that users, when replacing radios, would choose multi-mode radios and use narrowband emissions to avoid adjacent-channel interference from narrowband channel users (Unlike Part 74, Part 90 has very easy to understand tables of channel centers for both the Business/Industrial and Public Safety pools). However, the FCC later decided that the land mobile community was not embracing narrowband technologies fast enough, and that the normal 25 kHz channel bandwidths used in the allocations at 150-174 MHz and 450-512 MHz were wasteful of scarce spectrum. So, the Commission decided to impose a focused track toward narrowband migration; first to 12.5 kHz channel bandwidths and then, ultimately, to 6.25 kHz channel bandwidths. Chances are that if your broadcast station uses VHF or UHF Part 90 radios, trunked or conventional, for various purposes in the Business/Industrial service, and you haven't replaced the equipment or modified the license anytime recently, you are probably still using 25 kHz channels, probably with a radio using a 16 kHz emission designator. Perhaps you have multi-mode

equipment at the station that permits use of either 12.5 kHz or 25 kHz channel bandwidths, but your license shows 25 kHz channels. If so, there are changes about to happen very soon, so heads up.

While the FCC's effort has been often postponed and the process of narrowbanding has not proceeded very quickly (due for the most part to the fact that both Business/Industrial licensees and Public Safety licensees must narrow their channels, and they should be able to use their existing equipment for a reasonable period before having to replace it) the FCC has finally created some apparently firm deadlines for narrowband conversion by both manufacturers and licensee, at least to 12.5 kHz. Basically, here are the deadlines and what they mean for Part 90 licensees:

- January 1, 2011: No applications can be filed for new 25 kHz channel bandwidth licenses in Part 90 for the VHF and UHF bands. This is to say that applications that specify one voice path per 25 kHz of spectrum cannot be filed. Also, you cannot modify a license for a 25 kHz wideband facility which expands the authorized interference contour (i.e. the 19 dBu for VHF and the 21 dBu contour for UHF).
- January 1, 2011: No applications for certification for new radios that require use of a 25 kHz channel bandwidth can be filed. However, radios that were certified by the FCC prior to this date that incorporate a 25 kHz channel bandwidth can still be imported, manufactured and sold until January 1, 2013.
- January 1, 2013: Business/Industrial and Public Safety licensees at VHF and UHF must operate on 12.5 kHz (i.e. 11.25 kHz occupied bandwidth) or narrower channels, or alternatively use a technology that achieves the narrowband equivalent of one channel per 12.5 kHz of bandwidth (voice) or 4800 bits per second per 6.25 kHz (data).
- January 1, 2013: No radios that include a 25 kHz voice channel bandwidth can be imported, manufactured or sold. All radios certified for use in the Part 90 VHF and UHF bands must include a 6.25 kHz channel bandwidth mode.

Note that there is no deadline for licensee conversion to 6.25 kHz voice channel bandwidth or equivalent efficiency (i.e. one voice channel per 6.25 kHz of channel bandwidth, and for data transmitters that operate at power levels over 500 mW, a minimum data rate of 4800 bits per second per 6.25 kHz of channel bandwidth). However, the Business/Industrial and Public Safety Pools have 6.25 kHz channels now, and you can get licenses for them, and Motorola's MotoTRBO TDMA system and Kenwood and ICOM's FDMA NXDN systems are all 6.25 kHz or equivalent efficiency compliant, so you can go direct to ultra-narrowband if you want to.

Note also that we are ONLY talking here about Part 90 equipment. NONE of these requirements, of course, apply to Part 74 equipment or licenses.

So, what do I have to do with respect to my broadcast station's Part 90 license and equipment other than replace hardware by these deadlines? Well, that depends. If your station's Part 90 license shows only 25 kHz channel bandwidth (i.e. 16 or 16.2 kHz emission designator or greater) then you have to modify the license to show an 11

see **RADIO GUYS** on page **6**

Senior Certification Essays

by **Ralph Hogan, CPBE, DRB, CBNT**

SBE Vice President, SBE National Certification Committee member



The SBE national certification committee and chapter certification chairs often hear from members that some are afraid to take the senior-level exams

because of the closed-book essay question. Not to fear – the government is here to help you. Each senior exam has 50 multiple-choice questions (which are open book) and three closed-book essay questions selected by a member of the National Certification Committee based upon the experience that is included in the application. Of the three questions presented, the examinee selects one for completion. It is to the benefit of the individual taking the test to incorporate information on the application in only those areas in which he or she is experienced. This enables the national committee to assign essays the applicant should be able to answer successfully. When no or very little information is given, essays can be randomly assigned by the nature of the applicant's job listed on the application such as radio or TV. This means the

questions may cover areas in which the applicant is not familiar.

Most senior essays require several paragraphs to complete, while others may only require a diagram or two with labels and some explanation of the configuration of the diagram. Very few questions require much more than this. The more complete and detailed the answer the easier it is for the certification committee reviewers to grade the essay and give full or partial credit. Remember, the applicant answers the essay of his or her own choosing.

With the industry transition in the United States from analog TV to digital, a number of the analog television essays were recently retired from use. The xam question below was actually used in the exam pool until recently.

Question: NTSC TV Transmitter Maintenance *(answer on page 7)*

A television transmitter has excessive chroma and a very crisp picture. Make a simple drawing of how the response would look if you made a sweep of the transmitter. Write a short paragraph explaining the drawing.

John C. Breckenridge Jr.

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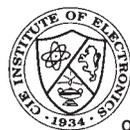
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RADIO GUYS *from page 4*

or 11.2 kHz emission designator before January 1, 2013. This does not by itself trigger a new construction notification after your Part 90 license is modified, but you have to get a Part 90 frequency coordinator to coordinate that application.

If you have a license that shows both 25 and 12.5 kHz channel bandwidths, or emission designators indicating both channel bandwidths, you do not have to modify the Part 90 license to delete the wideband emission designator. The FCC will presume that you are using multimode equipment and that after January 1, 2013 that you will be operating in the narrowband mode only. Check your multimode equipment, however, to make sure it is operating in the narrowband mode only after January 1, 2013 at the latest. Also, at some point, the FCC will require a certification that you are operating in the narrowband mode only.

FCC will begin shortly, if they have not already, placing notifications on new, modified and renewed Part 90 licenses about these deadlines. But you may not get one, since the license terms of these licenses are so long. So, again, heads up!



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Michael Kramer, Brownsburg, IN
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David McClintock, Wichita, KS – Chapter 3
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AUGUST EXAMS

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Robert Zegarelli, Montreal, Quebec Canada

DIGITAL RADIO BROADCAST SPECIALIST™ (DRB™)

Kenneth Colwell, Davenport, IA – Chapter 65
Arthur Reis, New Lenox, IL – Chapter 26

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Nathaniel Cantu, Edinburg, TX – Chapter 136
Andrew Rode, Mississauga, Ontario Canada

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INDIANA BROADCASTERS ASSOCIATION CBNT TUTORIAL

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Roger Bishop, Indianapolis, IN
Frederick Brunell, Fort Wayne, IN
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Vernon Egli, Yucaipa, CA
Mark Flesner, Indianapolis, IN
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Keith Dayer, Schenectady, NY – Chapter 58
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RECERTIFICATION

The following applicants completed the recertification process either by re-examination, point verification through the local chapters and national Certification Committee approval and/or met the service requirement.

CERTIFIED PROFESSIONAL BROADCAST ENGINEER® (CPBE®)

Mansur Abdullhussain, Houston, TX – Chapter 105
David Davis, Arlington, TX – Chapter 67
David Fort, Indianapolis, IN – Chapter 25
Dale Harry, Rocklin, CA – Chapter 43
Michael Scott, Puyallup, WA – Chapter 16

CERTIFIED SENIOR RADIO ENGINEER™ (CSRE®)

Michael Brown, Portland, OR – Chapter 124
Don Hackler, Sunnyvale, CA – Chapter 40

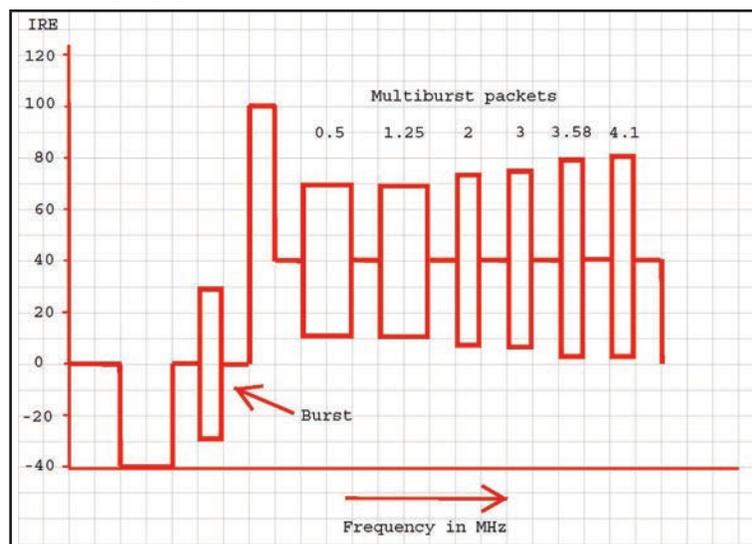
CERTIFIED SENIOR TELEVISION ENGINEER™ (CSTE®)

Perry Kuhns, Pearland, TX – Chapter 105
John Peterson, Fargo, ND

CERTIFIED BROADCAST RADIO/TELEVISION ENGINEER™ (CBRT™)

Brian Goodman, Eau Claire, WI – Chapter 112

Answer (from page 6):



For this question, a multiburst test signal is used to sweep the transmitter and viewed as a demodulated video signal from a high quality RF demodulator on a properly calibrated and terminated waveform monitor. For a perfect system response, the multiburst display would show all packets as having the same peak-to-peak amplitude and the burst signal would be ± 20 IRE. As the displayed response in the drawing shows, the higher frequencies of the test signal are larger and since this is where the chroma and detail information of the NTSC signal is carried the resultant picture displayed would have excessive chroma and possibly sparkles and overly emphasized edges.

As you can see, if you are familiar with the subject, the answer should come easily. In most cases, the applicant can draw from practical experience and compose a response to the question. It cannot be overly stressed that legibility and the use of a straight edge to construct "clean" drawing is important. Use of good penmanship is encouraged as it reflects the communications capability that a good broadcast engineer should possess.

Fear of the unknown does not set well with most people, so having seen an example of a senior-level essay question will hopefully put your mind at rest. If you have been in the industry for the requisite 10 years and have been working in your area of expertise, there should be nothing to fear in taking the senior-level exams.

CERTIFIED BROADCAST RADIO ENGINEER™ (CBRE®) AM DIRECTIONAL SPECIALIST™ (AMD™)

Lloyd Roach, West Chester, PA – Chapter 18

CERTIFIED BROADCAST RADIO ENGINEER™ (CBRE®)

Frank Grundstein, Wynnewood, PA – Chapter 18
Paul Shulins, Andover, MA – Chapter 11

CERTIFIED BROADCAST TELEVISION ENGINEER™ (CBTE®)

Eric Reinert, Emmaus, PA – Chapter 120

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)

Mansur Abdullhussain, Houston, TX – Chapter 105
James Alexander, Wildomar, CA – Chapter 131
Jessie Balos, Moreno Valley, CA – Chapter 131
David Desrochers, Rochester, MA – Chapter 11

Frank Grundstein, Wynnewood, PA – Chapter 18
Don Hackler, Sunnyvale, CA – Chapter 40
Thomas Lowther, Twin Falls, ID – Chapter 145
Jose Punsalan, Homeland, CA – Chapter 131
Steve Scott, Las Vegas, NV – Chapter 128

CERTIFIED BROADCAST TECHNOLOGIST® (CBT™)

Richard Feinberg, Norman, OK – Chapter 85
James Sherred, Columbia, NC – Chapter 93
Bryan Waterbly, Sacramento, CA – Chapter 43

CERTIFIED TELEVISION OPERATOR® (CTO®)

Stephen Brown, Virginia Beach, VA – Chapter 54
Debra Carroll, Knoxville, TN – Chapter 113
Thomas Haynie, Virginia Beach, VA – Chapter 54
Eva Hern, Kemah, TX – Chapter 105
Marshall Nute, Virginia Beach, VA – Chapter 54
Saul Ramirez, El Paso, TX
Richard Reyes, Las Vegas, NV – Chapter 128

NAB 2011 Ennes program ...

"Infrastructure - Keeping it Going in Challenging Times"

The Society of Broadcast Engineers (SBE) will be the organizing partner with the National Association of Broadcasters (NAB) for the NAB Broadcast Engineering Conference (BEC) at the 2011 NAB Show.

This will be the 16th consecutive year that the SBE has served in this capacity for the BEC, which in 2011 will be held from April 9-14 in Las Vegas. SBE will present the annual Ennes Workshop on Saturday, April 9 which kicks off the BEC. As in the past several years, those attending the PBS and NPR technical conferences leading up to the NAB Show will be able to attend the Ennes Workshop.

The Ennes Workshop will begin at 8:00 am and conclude by 5:00 pm and will be held at the Las Vegas Convention Center. SBE member and Ennes Trustee, Fred Baumgartner, CPBE, CBNT, has put together a fine lineup of topics and speakers on this year's topic, "Infrastructure - Keeping it Going in Challenging Times."

Here are just some of the topics and speakers confirmed for the program:

Morning Moderator - Fred Baumgartner, CPBE, CBNT, Director of Broadcast Operations, Harris Corp., member of the SBE Education Committee and Trustee of the Ennes Educational Foundation Trust

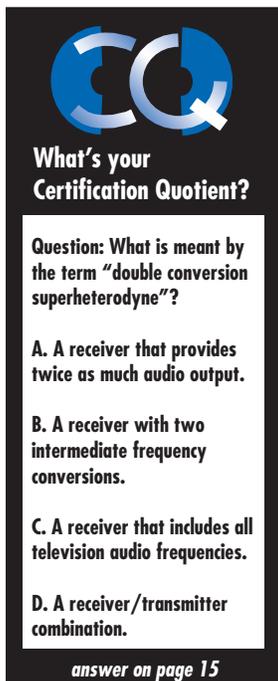
8:00 - 10:00 Tutorial: Infrastructure 101

Stuart Reynolds (Video Engineering), **Ron Eligator** (Acoustician), **Arthur Metzler** (MEP), **Neil Tucker** (Architect) Diversified Systems

9:00 - 9:10 Opening Welcome

John Poray, CAE, SBE Executive Director

8:00 - 10:00 Tutorial: Infrastructure 101 Continued



What's your Certification Quotient?

Question: What is meant by the term "double conversion superheterodyne"?

A. A receiver that provides twice as much audio output.

B. A receiver with two intermediate frequency conversions.

C. A receiver that includes all television audio frequencies.

D. A receiver/transmitter combination.

answer on page 15

10:00 - 10:45 Engineering though Financial Reorganization

Chris Imlay, Esq., Booth, Freret, Imlay & Tepper, P.C.

10:45 -11:30 Keeping it going in the Real World.

John Bisset, Business Development Executive, Americas, Tieline Technology

12:15 -1:30 LUNCH

Afternoon Moderator - Tom Mikkelsen, Broadcast Industry Consultant

1:30 - 2:15 IT Infrastructure & the Accidental Administrator

Brad Gilmer, President, Gilmer & Associates

2:15 - 3:00 Improved Tower Management by Understanding the Three C's of Structural Failure: Causes, Cost, & Cures

David K. Davies, Director, Structural Engineering Products and Services, ERI - Electronics Research, Inc.

3:00 - 3:45 KREX - The Real World of Disaster Recovery

Skip Erickson, Manager of Systems Engineering and Applications, Harris Professional Services

3:45 - 4:30 Maintaining Power for Broadcast Facilities

William T. Havrilla, Director Product Support and Service Operations and **Steve Agan** - Director of Business Development, Bay City Electric Works

4:30 - 5:15 Practical Management of Engineering Resources in Trying Times

Gary Kline, CBT, CBNT, Vice President of Engineering & IT, Cumulus Media

Since 1989, the Ennes Educational Foundation Trust, in cooperation with the SBE, has presented more than 75 educational workshops and tutorials across the United States. The annual NAB Las Vegas Ennes Workshop is always well attended and one of the highlights of the NAB BEC.

To attend the Ennes Workshop during the NAB BEC, you must be registered through NAB for the full Broadcast Engineering Conference. Registration for the BEC can only be done through the NAB at their website, www.nab.org.

Watch for a complete program description of the Ennes Workshop in the February issue of The SBE Signal and in December, on the SBE website, www.sbe.org.

A ten-member committee, chaired by SBE member, Dom Bordonaro of Cox Radio, along with NAB staff and SBE/Ennes representatives, are responsible for planning the six-day BEC. Other members of the committee include: Jeff Andrew, WTTG-TV; Greg DePriest, NBC Universal; Steve Fluker, Cox Media Group; Ardell Hill, Media General; Brett Jenkins, ION Media Networks; Jim Kutzner, PBS; Martin Stabbert, Citadel Communications; Jim Stagnitto, WNYC/WQXR Radio and E. Glynn Walden of CBS Radio.

Working with the committee in addition to SBE/Ennes representative Fred Baumgartner, CPBE are John Marino of NAB and John Poray, CAE of SBE.

Papers for the conference were recently selected by the committee. The complete program line-up will be available on the NAB website, www.nab.org, in January. Registration and hotel information can also be found at the NAB website.

SBE Fellow nominations now open

by Troy Pennington, CSRE, CBNT

SBE Fellowship Committee Chair

Among the members in your chapter, there may be someone who has made a real difference in the chapter over a long period of time; someone who has exhibited a dedication to the advancement of the broadcast engineer, the field of broadcast engineering and the SBE itself. If you have such a person in your chapter, consider nominating him or her for the SBE Fellow rank of membership. The Fellow designation is the highest level of membership and recognition presented to members by the Society of Broadcast Engineers. Members of SBE may earn the Fellow rank through several paths of achievement including conspicuous service, valuable contributions to the advancement of broadcast engineering or its allied professions, or by disseminating their broadcasting knowledge and promoting its application in practice.

To nominate a member, candidates must be proposed in writing by a voting member to the Fellowship Committee. The nomination must include a comprehensive professional history of the nominee and the reasons you feel the candidate is deserving of this honor. The nomination must also include the written endorsements of at least five other voting SBE members. All nominations are to

be kept confidential. No others besides the nominators and the SBE Fellowship Committee members should be aware of the nomination. Moreover, the nominee should not be made aware that he or she has been nominated.

Nominations for 2011 must be received no later than March 25, 2011 for consideration. The Fellowship Committee will bring the names of nominees to the SBE Board of Directors for consideration and election at their April 2011 meeting. The SBE secretary will notify those elected. They will receive their award at the SBE National Awards Dinner next fall during the 2011 SBE National Meeting to be held in Columbus, Ohio.

Seventy four members have been recognized with the Fellow honor in SBE's 46-plus years of existence. If there is a member in your chapter who has provided distinguished service in the field of broadcast engineering or to the chapter or at the national level, this is an opportunity for your chapter members to prepare a nomination for that person. Nominations for Fellow are to be submitted to Fellowship Committee Chair: Troy Pennington, CSRE CBNT, 6156 Hampton Hall Way, Hermitage, TN 37076 or to troy.pennington@cumulus.com.

MONKEYS from page 4

tional activities and programs in the past year. More than 200 people registered and took at least one on-line, SBE University course. We added the course, "Computer Networking for Broadcast Engineers," which has been very successful with 83 enrolled thus far.

Ennes Workshops were held in South Florida, Las Vegas, El Paso, Nashville, Dallas, and San Diego with cumulative attendance of over 400. At this writing, one more workshop was scheduled for 2010, in Worcester, MA, on November 10. Another big plus for this year occurred on August 3-5, when the SBE Leadership Development Course was presented in Atlanta, Ga. New instructor, Rodney Vandevor of Purdue University led a class of 25 participants, the largest class since SBE began presenting the program in 1997.

SBE also presented many online webinars, including the Leadership Development Webinar Series, Event Frequency Coordination, Human Factors in Broadcasting, Maximizing HD and 1080p /60 Cable Performance, EAS Update for Broadcasters and ATSC Mobile DTV. Over 275 people participated in the EAS webinar, which was free to attend.

With the broadcast engineers' continued thirst for knowledge, the SBE Board of Directors at its recent meeting in Madison voted to abolish the SBE EAS Committee and replace it with the SBE EAS Education Committee. This new committee will be tasked with developing educational initiatives and training for members about the new EAS that is coming in the not too distant future. Chairing this committee will be SBE director, Ralph Beaver, CBT.

In retrospect, we at SBE have had a very busy and productive year. The SBE staff, board of directors and officers have really gone above and beyond in service to our members. It is our passion, our dedication to broadcast engineering and our spirit that drives us. So, how can the SBE help you in the future?

SBE Leadership Development Course ***making engineers better managers and team players***

Get approval now to attend the 2011 SBE Leadership Development Course. Next year's course takes place August 2-4 in Atlanta, Ga. The cost is \$580 per person. See for yourself how this is "a class every manager should attend!"

This intense, highly interactive course will be challenging and rewarding. Subjects include understanding the dynamics of leadership, a leadership style assessment, motivation techniques, building winning teams, managing conflict and more. The course instructor is Rodney Vandevor, Professor of Organizational Leadership and Supervision at Purdue University and a professional leadership and management trainer with over 30 years of industrial and business experience. Of Rodney's teaching style, one student said, "Rodney is a master at encouragement and has great command of all aspects of this subject."

Visit our website to learn more about Rodney and the course, as well as read up on ideas on how to get approval from your company for continuing education.

*"I found this program to be very important for me, for my job and my life. Many thanks."
- 2010 Course Attendee*

SBE's Education Efforts



by **David Priester, CPBE**
SBE Education Committee Chair

The holiday seasons are rapidly approaching and some thoughts come to mind surrounding the Education Committee's efforts over the past year. We are very close to making available a new SBE University course

on audio processing. This course will cover the basic premises behind human hearing and perception and how processing equipment in our broadcast audio chains affects how we hear our product. There will be information on the various technologies employed and procedures to set up the equipment. This course is expected to be available within the month. I urge you to check it out when it is released.

This year has been a very active year for the Harold Ennes Educational Foundation Trust workshop series held at various locations around the country. The series for 2010 finished up in Worcester, Mass. on November 10. The Education Committee is now talking with various SBE chapters around the country about sponsoring Ennes Workshops during 2011. If your chapter is interested in hosting one of these exciting events please contact SBE Education Director, Kimberly Kissel at the National Office and she will fill you in on what this involves for you at the local level. It is a terrific opportunity to generate interest and activity at the grass roots local level.

The Education Committee has a number of projects we are working on, but there is always room for more. I would like to make yet another appeal to the membership for help in our

programs. One of our biggest challenges is finding the right individuals to write new SBE University courses and write and do presentations in our series of Webinars. Initially we are searching for content experts who are willing to take the time to share their knowledge in the form of a course for SBEU or in a webinar. This does represent a significant amount of time and energy which we recognize and are deeply appreciative of. In addition we are always looking for those people with similar knowledge to peer review the SBEU courses before posting and to take the courses themselves as beta testers. If you know of anyone who we might contact, or are interested yourself in being involved in these efforts, please contact me or Kimberly. We look to the membership to point out opportunities we should pursue.

Finally, I want to extend my appreciation, and that of the SBE Board of Directors, to the various individuals who make our significant educational opportunities come to fruition; the authors and reviewers, the committee members, and a huge shout out goes to Kimberly who when it comes down to it does most of the real work for the Education Committee. The Board of Directors made a commitment to make member educational opportunities a priority nearly two years ago with the adoption of a three year plan, and that support continues strong. And with the help of the membership we will continue to enhance and grow our educational opportunities.

Accredited SBE Frequency Coordinators

The Society of Broadcast Engineers began the Accreditation program to provide volunteer SBE coordinators the opportunity to be recognized as part of a standards-based, nationally recognized program of local voluntary broadcast-auxiliary frequency coordinators. The program also makes it possible for SBE to demonstrate to the broadcasting industry the widespread acceptance of a voluntary set of standards guiding local coordination.

Richard Ranson	Northport, AL	University of AL
Chuck Freeman	Shawnee, KS	Chapter 59
Daryl Doss	Lexington, KY	University of KY
Henry Cohen	White Plains, NY	Private Production Co.

2011 SBE Certification Exam Schedule

Dates	Location	Application Deadline
February 4-14, 2011	Local Chapters	December 31, 2010
April 12, 2011	NAB Convention	March 25, 2011
June 3-13, 2011	Local Chapters	April 15, 2011
August 5-15, 2011	Local Chapters	June 3, 2011

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Board states Society's EAS mission, Legislative Goals

by **John L. Poray, CAE**
SBE Executive Director

The SBE Board of Directors met in Madison, Wisc. on October 26 for its regular fall meeting and I'd like to bring you up to date on several actions the Board

took during the meeting. On an annual basis, the Board considers and votes on legislative/regulatory goals for the Society. At the meeting, chairman of the SBE Government Relations Committee, Barry Thomas, CPBE CBNT, presented a list of four goals for the Board to consider for the coming 12 month period. These were discussed at some length and the Board passed them with a unanimous vote.

The four goals and the rationale for each include:

1) To protect the designation and capabilities of "broadcast engineers" from encroachment or abridgment by state and local governments.

Our objective is to resist state and local government restrictions for use of the term, "broadcast engineer" and the practice of "broadcast engineers". To also resist local and state infringement of broadcast engineers' authority to perform the work necessary to operate and maintain federally licensed broadcast facilities.

2) To protect the integrity of broadcaster access to frequencies designated as Broadcast Service spectrum.

The principle is that the FCC's role in spectrum allocations is to make technically sound judgments that maximize spectrum use while offering protection for incumbent radio services against harmful interference. The unfettered access to information provided by broadcasters that the public expects and to which the public is entitled necessitates protection of broadcast spectrum for the transmission of images, audio and data. The SBE opposes the reallocation of broadcast service and broadcast auxiliary service spectrum to, and encroachment by, incompatible licensed or unlicensed spectrum uses.

3) To promote the maintenance or increase of technical expertise within the FCC to ensure that decision making by the FCC is based on technical investigation, studies and evaluation rather than political expenditures.

During times of extensive and creative new technology development, the FCC must have impartial and exceptionally trained engineering and RF experts on staff to ensure applicant claims are reasonable and substantiated based on sound technical principals and commonly accepted good practices of experimentation and engineering. As opposed to typical legal issues, the reliance simply upon the adversarial process while ignor-

ing technical facts is an insufficient and inefficient method of determining in an unbiased way the veracity and accuracy of new technical concepts and complex physics. The Society's effort to support and promote the passage of S.2881 and the companion House Resolution, HR.4809, falls under this legislative goal...

4) To pursue such other matters that are brought to the attention of the Government Relations Committee by members, the board, or partners SBE is working with on its legislative agenda.

This leaves the opportunity open for members to bring issues to the attention of the Board or the Committee for consideration throughout the year that may have an impact on our members.

Establishing legislative/regulatory goals for the Society provides a guideline to the Government Relations Committee on how it is to devote the Society's limited resources. Each goal was established with the underlying premise that, if successful, would have a positive impact on a large percentage, if not all, members of the SBE.

The Board also approved the creation of a new committee, the EAS Education Committee, and reaffirmed the Society's role in EAS; to provide education about EAS to our members and to serve as a technical resource to the industry and regulators. President Lopez appointed Ralph Beaver, CBT to chair the new committee. Ralph chaired the previous SBE committee related to EAS this past year.

The new committee will communicate and provide some interpretation when possible about EAS policies and procedures as they are released. An EAS Q&A is already posted on the SBE website, [sbe.org/Regulatory/Government Relations/EAS](http://sbe.org/Regulatory/Government%20Relations/EAS).

The Board approved an operating budget for 2011 that included a dues increase for the first time in four years. The \$5 increase will be for Member, Senior, Fellow and Associate membership categories and will be effective on January 1, 2011. The Society's annual revenue is split roughly 50/50 between dues and non-dues sources. The increase is in response to increasing operational costs and is to ensure that the current level of services and programs will be maintained.

The close of this Board meeting was also the end of the current terms of two Board members, Mark Simpson of Tucson and Jim Bernier of Atlanta. We will miss their participation. A special thanks to Jim, who ends nine years of Board service over two periods. He served for several years in the mid-90's and then again for the past six years. We are pleased to say that Jim will continue on as chairman of the SBE National Certification Committee, which he has led so capably for the last five years.

Chapter rebate deadline nears

SBE Chapters which meet at least five times during the 2010 calendar year and submit reports about those meetings to the National Office will be eligible to receive a cash rebate on June 1, 2011.

The meeting reports consist of a short description of what the program meeting was about, along with a copy of the sign-in sheet used by the chapter indicating who attended. Forms for these purposes are available for download at the SBE website, Chapter Information/Administration section.

Chapters have until January 15, 2011 to submit reports to qualify for a 2010 cash rebate. The rebate is computed by multiplying 15% of the total dues amount paid by each Member, Senior, Associate and Fellow member of a chapter. Chapters also receive \$5.00 for each new member that joined during the

calendar year and who was affiliated with the chapter.

Example:

25 members x \$63 = \$1,575	x 15%	= \$236.25
3 new members x \$5.00		= \$15.00
Total rebate		= \$251.25

Student and Youth members are not used to figure a chapter's rebate. Rebates are paid via check on June 1 each year and mailed to the chapter chairman. An e-mail notification that the rebate check was mailed is sent to the chapter's treasurer.

If you have any questions about how many meeting reports your chapter has submitted to National for 2010, please contact Scott Jones (kjones@sbe.org), SBE's database manager or executive director, John Poray (jporay@sbe.org) at (317) 846-9000.

NATIONAL from page 1

different parts of the country, the SBE seeks to provide an opportunity for members in those areas to participate, as well as spotlight the local broadcast engineering event. Each of the three events SBE will be locating with will include technical presentations and a trade show. The National Meeting events will include the fall meeting of the national Board of Directors, the SBE Fellows Breakfast, Annual SBE Membership Meeting and Annual SBE National Awards Reception and Dinner. The National Meeting events are held over a day and a half.

The dates for the Ohio event in 2011 are being finalized as of this writing. The dates for the 2012 and 2013 events will be announced later, but all three will events will be held in either September or October of their respective years.

The SBE has held a National Meeting since 1997, usually with a SBE-sponsored regional event. Prior to 1997, the SBE held a national convention, usually lasting several days, either on its own or in conjunction with other national broadcast-related

organizations. The National Meeting concept allows members the opportunity to attend a national SBE function without a large expenditure of time or money.

Watch in the coming months for more information in the SBE Signal and at the SBE website, sbe.org, about the 2011 SBE National Meeting in Columbus, Ohio.



~ In Memoriam ~

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In the Circle ... *a snapshot of an SBE Member*



Ron Bartlebaugh, CBNT Director of Broadcast Engineering, WKSU-FM/Kent State University, Kent, Ohio
 Joined SBE in 1982, Chapter 70 - Northeast Ohio

Job Satisfaction: I am fortunate to work for an organization that has both vision and financial ability. Because of that, I have been able to implement many projects and see them through to completion.

When I'm not working I ... enjoy writing, reading, ham radio (W8JPG), and collecting antique radios and code keys
You may not know ... My hometown is Indiana, PA. That's where actor Jimmy Stewart is from and also famous (now deceased) CKLW engineer Ed Buterbaugh. Doesn't that make me famous in some way?

Also known as: Mr. Redundancy. I'm big on redundancy and my staff frequently reminds me of such.

Favorite Gadget: My i-Phone. I went from wondering, "what I would ever do with that thing" to now not being able to live without it.

Chapter 70 Spotlight Northeast Ohio



Recognizing Chapter Leaders

"I am no stranger to the "behind-the-scenes" activities involved with running an active SBE chapter. Recently re-elected as Chapter 70 Chairman, I am serving a return visit to the Chapter. I also served as chairman in 1987-1989. So it's déjà vu all over again!

I can recall the countless hours of detail work involved with conducting monthly programs, writing newsletter articles, financial accounting and all duties necessary to make a chapter run smoothly. To recognize this unselfish contribution to the chapter and to the Society, I arranged to award Certificates of Appreciation to those most deserving. (Left to right) Past Chairman Joe Mate, CSRE, CSTE, CBNT; Secretary Bob Kruppenbacher, CBRE; myself, Ed Miller, CPBE; Certification Chairman Bill Koziel, CSRTAVE, CBNT and Program Chairman Blake Thompson, CBNT. Past Vice-Chairman Ron Bartlebaugh, CBNT and Past Treasurer Bill Weisinger, CBRT (not pictured) also received awards.

It's really a great honor to be recognized by your fellow engineers and professional engineering society. All too often the "real" work goes unrewarded. I wanted to make sure the efforts of my fellow engineers didn't go unnoticed.

- Ed Miller, CPBE

Dues increase approved for 2011

At its meeting on October 26, the SBE Board of Directors approved a \$5 increase in membership dues, to \$68, for the Member, Senior, Associate and Fellow membership categories, effective January 1, 2011. The increase will be the first in four years. SBE president, Vinny Lopez, at the Annual Membership Meeting held the following day, cited normal increased costs of operating the Society as the reason for the increase.

SBE Members on the Move

John Bisset has joined the sales staff at Tieline Technology in Indianapolis, Ind. as their Business Development Executive. Previously John was a Sales Manager with Nautel, Ltd..

Gary Stigall, CPBE has joined TV Magic as their Chief Technical Officer in San Diego, Calif. Previously, Gary was the Director of Engineering at Bay City Television.



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Silver Members, those with at least 25 years of membership, are highlighted with a silver box, New Members are listed in blue

ADC Telecommunications Inc. • 1998

Anne-Marie Gunderson (952) 917-3072
End to End Connectivity Solutions

Advanced Broadcast Solutions • 2008

Mark Siegel (206) 870-0244
Systems Integrator

American Tower Corporation • 2000

Peter A. Starke (781) 461-6780
Broadcast Tower Development/
Construction/Management

Anton/Bauer Inc. • 2004

Sol Comerchero (203) 929-1100
Battery Solutions for ENG

Audemat-Worldcast Systems Inc. • 2000

Christophe Poulain (305) 249-3110
Audio Signal Processing

Audionamix • 2009

Olivier Attia (800) 787-4134
RDS Generator, Metering, Monitoring, Remote
Control Manufacturer

AVCOM of Virginia, Inc. • 2010

Warren "Buck" McElfresh
(804) 794-2500 - Spectrum Analyzers

AXCERA • 1983

Mike Rosso (800) 215-2614 ext. 101
Television Transmitters & Exciters

Belden Electronic Division • 1991

Kip Coates (765) 983-5200
Cable and Connectivity

Beveridge Consulting, Inc. • 2006

Gregory J. Beveridge (720) 810-3464
Broadcast Engineering Technical Consulting

Bexel • 2009

Garrick Lewis (818) 565-4314; Calrec
Broadcast and Audio Consoles

Broadcast Electronics, Inc. • 1978

Ray Miklius - Studio Products
Tim Bealar - RF (217) 224-9600
Radio Equipment Manufacturer

Broadcast Engineering Magazine • 1984

Bradley L. Dick (913) 341-1300
Journal of the Broadcast Industry

Broadcast Microwave Services, Inc. • 1997

Tim Noonan (319) 277-4767 - EAST
Jim Kubit (805) 581-4566 - WEST
Manufacturer, Transmitters, Receivers, Antenna
Systems

Broadcast Supply Worldwide • 1986

Shannon Nichols (800) 426-8434
Audio Broadcast Equipment Supplier

Broadcasters General Store • 2004

Buck Waters (352) 622-7700
One Stop Broadcast Store

Canon USA, Inc. • 1985

Larry Thorpe (201) 807-3300, (800) 321-4388
Broadcast Lenses & Transmission Equipment

Communications Laboratories • 2008

Jared Maynard (321) 409-9898
Emergency Management Network

Comrex Corporation • 1997

Chris Crump (978) 784-1776
Remote Audio Broadcast Equipment

Comsearch • 2004

Tim Hardy (703) 726-5651
Frequency Coordination Services

Continental Electronics Corporation • 1976

Michael Troje (800) 733-5011
AM & FM IBOC Transmitters

Dataworld • 1998

Ed Czarniecki (800) 368-5754
Coverage Maps and Services

Dejero Labs • 2009

Bogdan Frusina, CTO (519) 886-8070
Complete Cellular ENG Platform

Dialight Corporation • 2006

US Headquarters (732) 919-3119
Obstruction Lighting, L.E.D. Based

Dielectric Communications • 1995

John George (207) 655-4555
or Matt Leland (803) 951-7443
TV & FM Broadcast Products

Digital Alert Systems, LLC • 2005

Bill Robertson (585) 765-1155
Emergency Alert Systems

DigiTenna, LLC • 2009

Brad Eckwielen (920) 564-6248
Television Reception Antenna Manufacturing

DSC Laboratories • 2002

Michael Wiegand (905) 673-3211
Test Charts & Illuminators

DSI RF Systems, Inc. • 2010

Judy Mueller (732) 563-1144
RF Service/Installations/Products

DTS • 2009

Mark Seigle (425) 814-3200
Surround Sound Technologies

du Treil, Lundin & Rackley, Inc. • 1985

Jeff Reynolds (941) 329-6000
Consulting Engineers

e2v • 1997

Mark Strohecker (914) 593-6831
Klystrons, MSDC IOTs, IOTs, Satcom Amps, TWTs

Econco • 1980

Debbie Storz (800) 532-6626 or (530) 662-7553
New & Rebuilt Transmitting Tubes

Electronika America Inc. • 2010

Maria Quintero (305) 592-4506
Television Transmitter & Exciters

ENCO Systems Inc. • 2003

Don Backus (800) 362-6797
Digital Audio Automation & Delivery

ERI - Electronics Research • 1990

David White (812) 925-6000
FM & TV Antennas, Transmission Line, Filters,
Combiners and Towers

Floral Systems • 2008

Jim Berry (352) 372-8326
Television Broadcast Automation

Frontline Communications Corp. • 2000

Stephen Williamson (727) 573-0400, ext. 160
Broadcast/Command/HLS Vehicles

Fujinon, Inc. • 1986

Thom Calabro (973) 633-5600
Broadcast & Communications Products

Geppo International • 1995

Dave Chapa (847) 795-9555
Audio, Video Cable Products

Grass Valley • 2000

Andy Jackson (404) 929-5000
TV/Film Production & Broadcast Professionals

Harris Corporation, Broadcast Communications Division • 1977

Dave Hopson (TV) (513) 445-5243
Mark Goins (Radio) (513) 899-9124
Bob Duncan (Software) (719) 439-0130
Broadcast Equipment & Services

HD World • 2006

Michael Driscoll (203) 371-6322
HD World Conference & Exposition

Image Video • 1997

Zach Wilkie (416) 750-8872 ext. 228
Under Monitor Tally Display Systems, Monitor
Walls, Signal Alarm Systems

Jay S. Gerber, CBT • 1999

(205) 491-6904 Manager,
NFL Frequency Organization Group

Joseph Electronics Inc. • 2003

Yohay Hahamy (847) 501-1584
Broadcasters One-Stop Supplier

Kathrein Inc., Scala Division • 1985

Michael W. Bach (541) 779-6500
Antennas for Broadcasting & Communications

Kintronic Labs, Inc. • 2010

Eric Miramontes (423) 878-3141
AM HD Antenna Systems

KPFF Consulting Engineers • 2004

Madison Batt (206) 926-0508
Tower Engineering, Inspections Design

L-3 Communications Electron Devices • 2003

Steve Bliet (570) 326-3561, ext. 229
Tubes, Power

LBA Technology, Inc. • 2002

Jerry Brown (252) 757-0279
AM/MW Antenna Equipment & Systems

Lincoln Financial Media • 2007

Barry Thomas (404) 261-2970
Media, Communications

LYNX Technik • 2007

Steve Russel (661) 251-8600
Broadcast Terminal Equip

Markertek Video Supply • 2002

Andrew Barth (845) 246-3036
Audio, Video, A/V Broadcast Supply

Maxell Corporation of America • 1991

Patricia Byrne (201) 794-5900
Data/Broadcast Video Media

MAYAH Communications • 2010

Daniel Loeffler (360) 618-1474
Audio CODECS: Mobile/ 1/21 RUrack

Micronet Communications, Inc. • 2005

Jerry Armes (972) 422-7200
Coordination Services / Frequency Planning

Microwave Radio Communications • 1991

Nadine Frechette (978) 671-5700
Video Microwave Systems

Middle Atlantic Products • 2005

David Amoscato (973) 839-1011 x1192
Enclosures, Power, Accessories, Furniture

MoreCom, Inc. • 2009

Kyle Moorehead (763) 533-5535
Networking & AV Construction

Moseley Associates, Inc. • 1977

Dave Chancey (805) 968-9621
RF & T1 STLs

National Association of Broadcasters • 1981

(202) 429-5340
Industry Trade Association

National Football League • 1999

Jay Gerber
Game Day Coordination Operations

Nautil, Inc. • 2002

Gary Manteuffel (877) 662-8835
Radio Broadcast Transmitter Manufacturer

NSOEM • 2010

Robert Sorbet (281) 500-8940
Power Quality

NuComm/RF Central • 2009

Don Hoeler (908) 852-3700 ext. 3110
Digital and Analog Video Microwave Systems

OTL • 2010

Martin Rochon (574) 318-5810
Tower Lights (Lighting)

Panasonic Solutions Company • 1985

Joe Fracchini (201) 392-6183
Professional Broadcast Equipment

Pasternack Enterprises • 2001

Christine Hammond (949) 261-1920
Coax & Fiber Products

Polyphaser/Transector Systems • 2005

Carol Rassier (208) 762-6121
Power Quality Products & Services

Preferred Tank & Tower, Inc • 2010

Vie Majors (270) 826-7950 ext. 227
Communication Tower Maintenance/repair

Prime Image, Inc. • 1997

Rodney Hampton (408) 867-6519
Digital Audio/Video Equipment

ProAudio.com - A Crouse-Kimzey Co. • 2008

Mark Bradford (800) 433-1205 ext. 560
Broadcast Equipment Sales

Propagation Systems Inc. - PSI • 2010

Doug Ross (814) 472-5540
Quality Broadcast Antenna Systems

Pulsecom • 2003

Dave Corp (703) 471-2908
AM, FM and HD STLs, Copper & Optical

Quintech Electronics and Communications Inc. • 2002

Paul Campagna (724) 349-1412
RF Signal Management

Radian Communication Services Inc. • 1986

John McKay (866) 4-RADIAN
Towers, Antennas, TV Transmitter Installation

RCS • 2003

John Gager (308) 284-3007
Audio and Video Content Management

RDL • 2004

Chuck Smith (928) 778-9678, ext. 142
Audio, Video, Control & Test Equipment
Manufacturer

RF Specialties Group • 2008

www.rfspecialties.com
Transmitters, Antennas and More

Richland Towers • 2001

David Denton (813) 286-4140, ext. 4235
Tower Owner/Management

Rio Steel & Tower • 2010

Keith Cendrick (817) 225-0890
Turn-key Tower/Antenna Services

Rohde & Schwarz • 2003

Eddy Vanderkerken (469) 713-5322
Broadcast Transmitters, Test & Measurement

ROSCOR Corporation • 1998

Tom Voigts (847) 299-8080
DTV System Integration

Ross Video Ltd. • 2000

Kyle Luther (613) 652-4886
Manufacturer, Television Broadcast Equipment

Sage Alerting Systems, Inc. • 2010

Gerald LeBow (914) 872-4069
Emergency Alert Systems Products

Salzbrenner Stagetek Media Group • 2009

Vinnie Marci (888) 782-4391
Professional Audio Solutions

SCMS, Inc. • 2000

Bob Cauthen (800) 438-6040
Broadcast Equipment- New/Used

Screen Service America • 2010

Graziano Casale (212) 695-8341
Broadcast Transmitter & ATSC Mobile

Seacomm Erectors, Inc. • 1997

John Breckenridge (360) 793-6564
Tower/Antenna Erections

Score, Inc. • 2005

Garrett Carter (800) 736-2673
MPEG Operation and Test Equipment

Shively Labs • 1996

David Allen 888-SHIVELY
FM Antennas & Combiners

Sigmet • 2008

Ed Portko (610) 783-6666
Broadcast Equipment Support Sales

Snell Inc. • 1995

John Shike (818) 556-2616
Video Equipment Manufacturer

Staco Energy Products Co. • 2010

Paul Heiligenberg (937) 253-1191 ext 128
Manufacturer Voltage Regulators, UPS

Stainless LLC/Doty-Moore • 2004

Ed Deetscreek (215) 631-1323
Towers - Engineering - Services - mods

Superior Electric • 1995

Michael J. Miga (860) 507-2052
Power Protection Equipment

Sutro Tower, Inc. • 1989

Eric Dausman (415) 681-8850
Broadcast Tower Leasing

TC Electronic • 2008

Ed Simeone (818) 665-4902
DTV Audio Level Processing

Technostrobe • 2009

Francis Lacombe (877) 578-7623
FAA lights - High Intensity

Tektronix, Inc. • 1977

James Lang (503) 627-3203
TV Test, Measurement Equipment

Telos Systems/Omnia/Axia • 2003

Denny Sanders (216) 241-7225
Telos Systems - Talk-Show Systems

Terrestrial RF Licensing Company • 2003

Steven Slocum (888) 373-4832
FCC Broadcast Auxiliary Licensing Services

The Durst Organization - 4 Times Square • 2004

John M. Lyons, CPBE (212) 997-5508
TV/FM/Microwave Tower Site

The Whitlock Group • 2000

Kevin Thompson (800) 726-9843
Broadcast and Presentation Solutions

Tieline Technology • 2003

Mary Ann Seidler (317) 845-8000
POTS, ISDN, Codecs & A/V Products

TV Magic • 2008

Benito Behar (858) 650-3155
Broadcast Systems Integrator

Unimar, Inc. • 2001

Thad Fink (813) 643-6791 or (813) 943-4322
Tower Obstruction Lighting Designer,
Manufacturer, Distributor

VALCOM • 1996

Bill Burtenshaw (519) 824-3220
AM/FM Broadcasting Antennas

Ward-Beck Systems Ltd. • 2004

Michael Jordan (416) 335-5999
Metering, Monitoring, Distribution,
Conversion

Warning Systems, Inc. • 2008

Elysa Jones (256) 880-8702
CAP, Warning, Emergency Alert

Wheatstone • 2010

Jay Tyler (252) 638-7000
IP Consoles, Routers & Processors

Wireless Infrastructure Services • 2006

Travis Donahue (9

SBE would like to welcome its newest members:

New Members

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Albert Gordon - Del Mar, CA
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Moshe M. Wasserman - Torrance, CA
Ryan H. Steward - Phoenix, AZ
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Gillchrist A. Rudolph - Fishers, IN
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Craig M. Clayton - San Diego, CA
Ernest J. Kain - Kenner, LA
Tom Laffan - Montpelier, VT

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Bill Schully - Castle Rock, CO
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James C. Kelly - Chicago, IL
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Megan R. Foreman - Mitchell, SD
Izaak R. Chavez - Canyon, TX
Jay P. Gurley - Canyon, TX
Danielle M. Morton - Canyon, TX
Darnell B. Forde - San Diego, CA
James Heasley - Kailua, HI
Ka Hong Chan - Hong Kong
Chun Yin Chan - Hong Kong
Chi Hin Chan - Hong Kong
Pak Him Chan - Hong Kong
Wai Hung Chan - Hong Kong
Wing Hong Chan - Hong Kong
Wing Yiu Chan - Hong Kong
Cheung Cheng - Hong Kong
Chin Kin Cheung - Hong Kong
Sai Hong Cheung - Hong Kong
Chun Yin Cheung - Hong Kong
Wing Ming Cheung - Hong Kong
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Wing Sze Yau - Hong Kong
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Chung Him Yeung - Hong Kong
Tin Yau Yu - Hong Kong
Wai Ming Yue - Hong Kong
Kwok On Yuen - Hong Kong

New Associate Members

James V. Salvo - Upton, MA
Thaddeus Wojick, III - Litchfield, CT

New Youth Members

Nicholas J. Alexander - North Richland Hills, TX



Answer:
(B) A Receiver with two intermediate frequency conversions.
question on page 8

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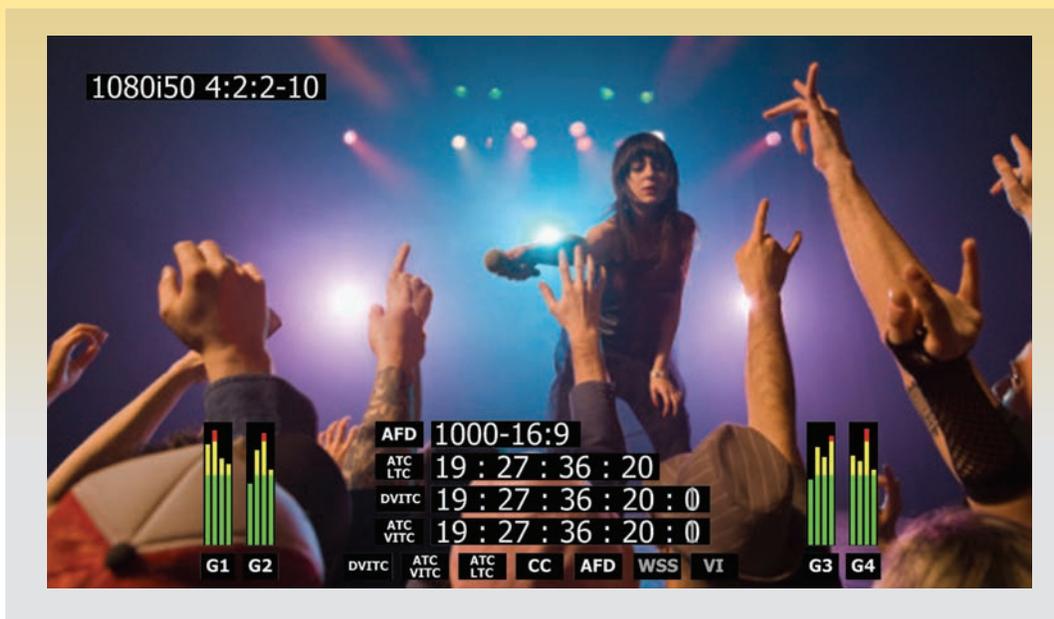
simply amazing...

Converting 3G/HD/SD - SDI signals to HDMI with 16 channel audio de-embedding, 2 analog outputs and an AES output is impressive. Factor in the availability of the SDI fiber I/O option, and the **CDH 1811 yellobrik** is outstanding...

Now, add the unique on-screen overlay mode with Metadata display, Timecode burn-in, and 16 channels of dynamic on-screen audio metering, and you have something simply amazing...

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- 12v Power Supply
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Selectable on-screen overlay:

- SDI input format and bit depth
- 16 channel audio level meters
- DVITC, VITC and LTC Timecode burn-in
- AFD presence and code burn-in
- Closed caption presence indication
- WSS presence and code burn-in
- VI presence and code burn-in