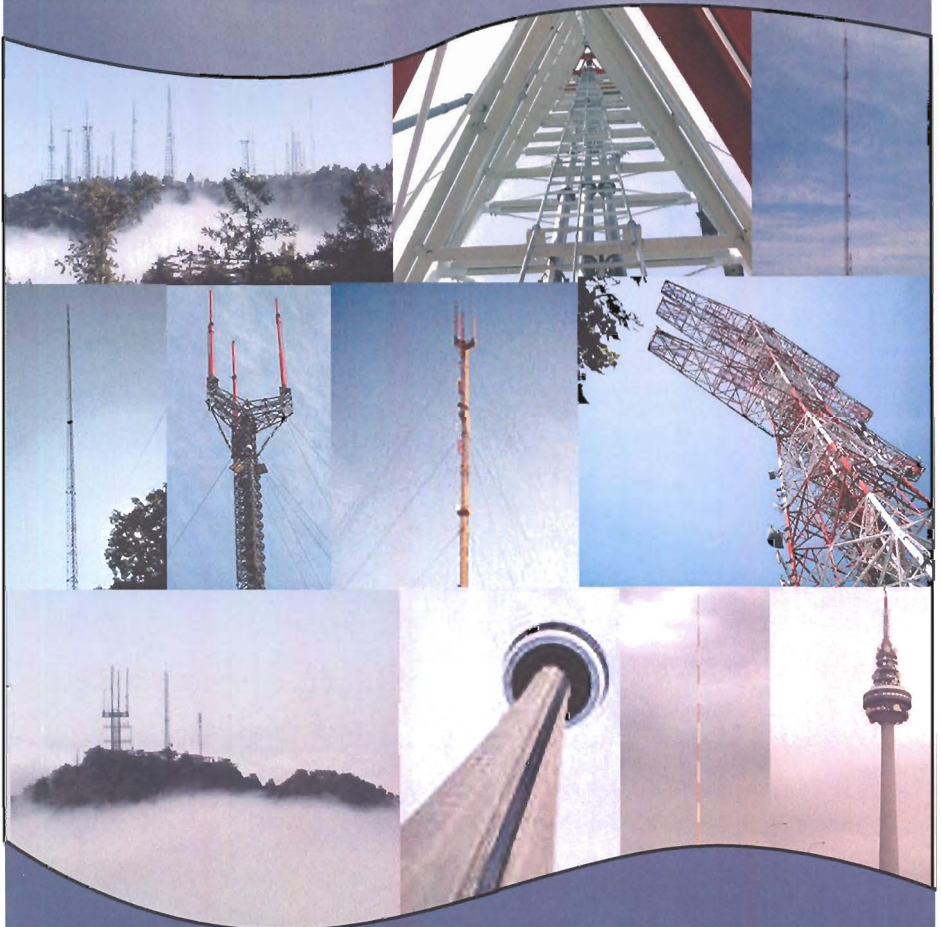




2008

SBE

# BROADCASTERS CLINIC AND SOCIETY OF BROADCAST ENGINEERS NATIONAL MEETING



October 14-16, 2008  
Madison Marriott West • Middleton, WI



# BROADCASTERS CLINIC 2008

## Program Agenda

SBE

### TUESDAY, OCTOBER 14

#### 7:00 am - Registration & Continental Breakfast

Location: Lobby  *Continental Electronics*  
Sponsored By:

#### 9:15 am - HD and 10db Power Increase

Location: Superior

Speaker: Richard Hinkle, Broadcast Electronics



*This paper will cover the proposed 10dB power increase in the HD signal, how it may effect implementation for the broadcaster, overview of benefits and issues, and impact on manufacturers equipment and new product offerings. Primary topic of discussion will be based on how the 10dB power*

*increase will affect the broadcaster when implementing an HD system both from a technical and financial standpoint. Input will also be given on new products and how they will address this technical issue.*

#### 10:00 am - HD on AM and Interference Issues

Location: Superior

Speaker: Jeff Welton, NAUTEL



*HD on AM and Interference Issues: with the advent last fall of HD Radio™ on AM being permitted at night, there have been some interference issues brought up. Although the complaints have not been extremely widespread at this point, the issues of antenna bandwidth and monitoring of "spectral*

*regrowth" or digital intermodulation products are becoming more apparent as items that need to be addressed in an AM facility. This session provides background on the requirements, discusses the problems that can arise and introduces solutions that are in place to reduce undesirable products as much as possible.*

#### 10:45 am - Break

#### 11:00 am - How to Make HD Radio Easy for Broadcasters

Location: Superior

Speaker: Dave Hershberger, Continental Electronics Corporation



*Generation of digital signals for broadcasting incurs a certain amount of user-hostility from software and hardware. This is not deliberate – it is simply an inevitable result of new technology. As the technology matures, we can do some things to take off the rough edges and make the implementation easier. Fortunately, many of the technologies for digital radio have already been developed for other appli-*

*cations. One such application familiar to broadcasters is digital television. Some of the approaches used in digital television can be adapted for use in digital radio. Some of the technologies used to ease the broadcast engineer's experience are: Embedded exporter, Operating system, GUI, and remote access, Computer-independent hardware subsystems, Adaptive equalization technology and Performance monitoring. Each of these major points will be discussed, along with some less significant niceties.*

#### 11:45 am - Lunch

Location: Mendota



Sponsored By: Ross Video *Live Production Technology™*

#### Afternoon - National Certification Committee Meeting

Location: Madison Board Room

#### 1:00 pm - How Much Are We Really Saving? New Radio Station Construction Paradigms Examined

Location: Superior

Speaker: Jim Armstrong, Axia



*Companies offering new technologies often claim increased efficiencies. The usual claims come in terms of capital cost savings, installation labor savings, and future savings on maintenance. But, who has actually measured these claims? What data justifies the ad-pitch and anecdotal stories*

*brought before us? And, can we quantify how a new approach may be just "more fun" than an old approach? Data will be presented from both typical and atypical radio facilities, examining and quantifying work-process data both before and after their infrastructure improvements. Enjoyment is analyzed, as well.*

#### 1:45 pm - Nuts and Bolts of WebRadio

Location: Superior

Speaker: Barry Hill, RCS NexGen's



*Technology is all around us. We now have the internet, MP3 players, mobile phones and many new digital platforms emerging around the world. Radio must keep step with the available technologies. How do you keep your station in front of the listener, no matter where they are or what they are doing - and no matter which digital platform they are using? Use today's latest technology to reach more listeners in more ways. Dazzle your audience with animated graphics and information from artist notes to RSS feeds. Add visuals synchronized to your audio stream. From CD covers and artist graphics to station photos and sponsor logos, the branding matches your station look. Let's get into the "Nuts and Bolts of WebRadio".*

#### 2:30 pm - Break



## 2:45 pm - Metadata Collection and Distribution for Radio

Location: Superior

Speaker: Patrick Campion, ENCO



*In the ever changing environment of metadata collection and distribution for terrestrial radio broadcasters, what types of data currently exist and what delivery methods are available? This presentation will delve into the past, present and possible future scenarios of how properly gathered and formatted*

*data can enhance traditional broadcasts and lead to alternate means of revenue generation. Included will be details on locally generated data, rebroadcasted data streams from internet and satellite sources and other scheduled data.*

## 3:30 pm - HD Radio (the Next Generation)

Location: Superior

Speaker: Bob Surette, Shively Labs



*This session will cover the effects of combining the digital and analog signals at the proposed higher HD power levels in respect to: antenna operation, pattern, mask emissions, interference concerns, and combiner designs. Time permitting; Bob will address NPR Lab interference measurements compared to Ibiquty experiments.*

## 4:15 pm - Broadcasters Clinic Exhibits Open Exhibitors Reception

Location: Wisconsin, Michigan

Sponsored In Part By:

Wave Communications



## 5:00 - 6:00 pm - SBE National Board of Directors Dinner (SBE Board of Directors Only)

Location: Green Bay

## 6:00 - 10:00 pm - SBE National Board of Directors Meeting

Location: Greenway

## 7:30 pm - Broadcasters Clinic Nuts & Bolts, Panel Discussion lead by Bob Surette Quiz Show: "Are You Smarter Than a 3rd Class Operator" - Jeff Nordstrom / Gary Mach

Location: Superior

# WEDNESDAY, OCTOBER 15

## 7:00 am - Registration & Continental Breakfast

Location: Lobby

## 8:00 am - SBE Fellows Breakfast (by invitation only)

Location: Salon C

## 8:00 am - TSI Trouble-Shooting Investigation

Location: Superior

Speaker: Gordon Carter, CPBE, CBNT



*A large part of any broadcast engineer's job is trouble-shooting. Whether you are working with hardware, software, or even complete systems, these systems fail or malfunction. The job of the engineer is to identify the problem and correct it. Through a process of searching and with enough, most people can find the problem.*

*However, this is often a very in-efficient process. Efficient trouble-shooting saves time, helps solve the problem, and helps make the engineer look good to his/her supervisor and co-workers. Efficient trouble-shooting requires a structured approach and disciplined techniques. This session will discuss techniques and a structured approach based on over 40 years of experience. These techniques are applicable to trouble-shooting hardware, systems, software, and even (to a limited extent) personal relationships.*

## 8:45 am - Fundamentals of AM, FM and TV Coverage and Interference Considerations

Location: Superior

Speaker: Jeremy Ruck, D.L. Markley & Associates, Inc.



*Fundamentals of AM, FM, and TV coverage and interference considerations based on FCC rules. - Explore the topics of coverage and interference bases on the FCC rules and international agreements. How we address, work with, comply, etc.*

## 9:20 am - TV White Space and How Spectrum Changes May Affect Wireless Microphones

Location: Superior

Speaker: Chris Lyons, Shure Incorporated



*The FCC is reorganizing the UHF TV band, which has long been home to wireless microphones, in-ear monitors, production intercoms, and other professional wireless gear. This session will examine the results of the recent spectrum auctions, the potential impact of new consumer devices operating in the 'White Spaces', and the interference protection approaches being considered.*

## 10:05 am - Special Announcement

## 10:15 am - Exclusive Exhibit Time

## 11:00 am - Lunch (Ticket required)

Sponsored By:

Location: Wisconsin, Michigan



## 1:30 pm - Bend Radius

Location: Superior

Speaker: Steve Lampen, Belden



*Sure, you've heard the standard rule "No tighter than ten times the diameter." For some data cables, you might hear "four times the diameter". But what actually happens when you bend a cable? This presentation would show exactly what changes inside a*



cable and, for specific coaxes and twisted pairs, what the effect is as you bend tighter and tighter.

### 2:15 pm - How Tower Design Relates to Antenna's Performance

Location: Superior

Speaker: David Davies, ERI



The tower design will affect the commercial broadcast antenna's performance by altering both the horizontal plane and the vertical plane (elevation pattern) relative field energy distribution. Electrical interaction between the tower and antenna will distort the antenna's horizontal plane energy distribution and create nulls in the pattern.

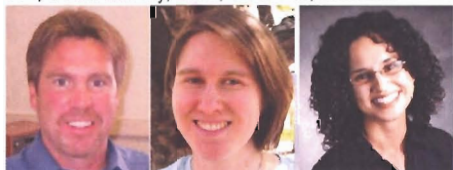
Also, this tower/antenna interaction can disrupt the phase relationship between individual antenna elements in a multiple element array which will reduce the stacking gain values of the system. Excessive antenna/tower movement will alter the orientation of the vertical plane (elevation) antenna pattern and can result in up to 20 dB signal attenuation. This paper will present the root causes for the signal strength and antenna gain degradation, provide case studies to illustrate extent of this problem and offer solutions to avoid both horizontal plane distortion and vertical plane attenuation scenarios.

### 3:00 pm - Break

### 3:15 pm - E Scrap

Location: Superior

Speakers: Jeff DeGarmo, CRT Processing Corporation, Sarah Murray, DNR, Toral Jha, Cascade



Learn about the general issues regarding e-scrap, the implications of the 2009 Digital switchover for television disposal /options as well as how to find a vendor for equipment generated by television and radio stations.

### 4:00 - 5:00 pm - SBE National Annual Membership Meeting

Location: Salon E

### 5:00 pm - SBE Awards Reception

Location: Atrium

### 6:00 pm - SBE National Annual Awards Dinner (Additional Registration Required)

Location: Salon D

## THURSDAY, OCTOBER 16

### 7:00 am - Registration & Continental Breakfast

Location: Lobby

### 8:00 am - DIGITAL PROceiver - IFB for Electronic News Gathering Enters the Digital Age

Location: Superior

Speaker: Eric Small, Modulation Sciences



Analog PRO channel, long the mainstay of reliable, infrastructure independent IFB, will go away when analog television shuts down in February. Cell phones, up until now the only post-analog option for most broadcasters, are plagued by random disconnects, long variable latency and preemption by emergency personnel. Using cell phones for IFB are a time bomb waiting to destroy your coverage of a major story. Digital PROceiver provides the solution to reliably deliver IFB to talent in the field today and after analog shutdown. Modulation Sciences pioneered PRO Channel IFB for analog. Now ModSci brings it's more than fifteen years of IFB experience to the digital era. This Session will cover the Digital PROceiver.

### 8:45 am - The Transition to IPTV

Location: Superior

Speakers:

John Brendle & Ken Christensen, Sencore



Internet Protocol Television (IPTV) combines traditional television with broadband Internet services. This session will answer these questions:

- How do IPTV delivery systems compare and differ from legacy systems?
- What are the technical issues of IPTV that broadcasters need to be concerned about?
- What is IP packet loss? What causes packet loss?
- How will broadcasters ensure the quality of the IPTV delivery?
- How can broadcasters implement monitoring and analysis solutions to ensure the delivery of the highest quality IPTV services?

### 9:30 am - Troubleshooting & Monitoring DTV

Location: Superior

Speaker: Shyamal Desai, Triveni Digital, Inc



In depth technical discussion of troubleshooting & monitoring DTV, with emphasis on what needs to be looked at, explanation of ATSC A/78 RP on monitoring, practical strategies for troubleshooting & monitoring.

### 10:15 am - Break



**10:30 am - DTV Audio**

Location: Superior

Speaker: Frank Foti, Telos Systems/Omina



February 17th, 2009 is closer than we think! This is the magic date where analog television channels must be switched off. In the world of DTV audio, there is a myth that must be busted, our viewer complaints will further escalate. At present, most DTV stations employ little, if any, audio processing. This is the myth that must be busted. To date,

DTV viewer complaints are exceedingly high and the reason is on account of DTV stations not employing signal processing in the audio chain. DTV audio for both stereo and surround must be processed in order to control L-O-U-D commercials, as well as providing a properly balanced audio environment that enhances the DTV and HDTV viewing experience. This presentation will demonstrate a system that ensures how all segments of DTV transmission will sound correctly 100% of the time...commercials included!!

**11:15 am - ATSC Update**

Location: Superior

Speaker: Jerry Whitaker, ATSC



The ATSC is currently involved in several important standards development efforts—not the least of which is a mobile/handheld broadcast standard that is backward-compatible with existing DTV transmissions. Also of top priority is a standard for non-real-time delivery of a wide variety of content. These projects,

and others currently underway within ATSC, will be outlined and discussed in this presentation.

**Noon - Lunch** Location: Monona

**1:15 pm - Mobile TV Transmission**

Location: Superior

Speaker: Wayne Luplow, Zenith Electronics



Based on the expressed desire of U.S. broadcasters for mobile and handheld reception of DTV using their in-band transmission facilities, the ATSC has undertaken an aggressive standards development activity to enable service rollout in 2009. Zenith, LG and Harris have responded to this desire with the introduction of their MPH™ transmission system, which

will be described with emphasis on what is required by the local broadcaster to implement MPH transmissions.

**2:00 pm - ATSC M/H synchronization based on GPS Time**

Location: Superior

Speaker: Mike Simon, Rohde & Schwarz



The new ATSC Mobile Handheld (M/H) Standard will soon give broadcasters an option to use a portion of their own BW (in-band) to explore new mobile services and reap incremental increases in revenue going forward. A new complementary technology is now under discussion in ATSC. This

emerging technology is called "ATSC System Time" and technically can enable the time aligned RF emissions from several M/H stations to an epoch based on GPS time. This synergistic technology can enable new modes of operation and services not possible heretofore. A brief overview of this technology and some potential use cases will be presented.

**2:45 pm - Is Circular Polarization Essential to the Success of Mobile TV**

Location: Superior

Speaker: Kerry Cozad, Dielectric



"Who isn't fired up about mobile connectivity and the ability to watch the boob tube at 100 mph? Broadcasters are breathing new life with the prospect of standardizing "In Band Mobile TV", but service reliability will be key to its success. Reliability of digital service is all about margin above threshold, not about signal strength and depends on the spatial immunity of the receiver in both

location and orientation as it moves through a fading environment. This presentation will compare horizontal, vertical and circular transmission polarization and present experimental results supporting circular polarization's superiority in mobile applications by providing significant margin improvement and ultimately reliable service."

Don and Leonard to Close.....

**The 2008 Broadcasters Clinic is dedicated to Don Borchert**

"Thank you for your many years of service and devotion to the Broadcasters Clinic"



**The 2008 Broadcasters Clinic Program and All Breaks Sponsored By: NAUTEL**



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**Tom Smith**, WHA-TV, Madison, WI  
**Linda Baun**, Vice President, WBA, Madison, WI

## EXHIBITORS

*The Broadcasters Clinic Committee and the Wisconsin Broadcasters Association wishes to extend our gratitude to: The Broadcast Clinic Exhibitors and The Prize Donors*

Alpha Video	Electronics Research, Inc.	Linear Industries, Inc.	Resonant Results
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*(List is inclusive. See Exhibitors Map in your Attendance Packet for complete listing.)*

## THANK YOU...

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Thanks to all of our Speakers for your expertise

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Broadcasters Clinic Program Committee

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# BROADCASTERS CLINIC 2008 REGISTRATION FORM

October 14-16, 2008

I will attend: (Please check) ☐ Tuesday ☐ Wednesday ☐ Thursday

Fees: \$130 (Any two days) \$150 (All three days)

PLEASE FILL OUT COMPLETELY

Name: \_\_\_\_\_

Organization/Station: \_\_\_\_\_

Business Address \_\_\_\_\_  
street city state/zip

Phone: \_\_\_\_\_ Email \_\_\_\_\_  
daytime number/evening number

Amount enclosed: \$ \_\_\_\_\_

Mail this form and your check by September 22, 2008 made payable to Broadcasters Clinic:

*To pay by credit card please complete the following:*

Name on Card: \_\_\_\_\_ Daytime Phone \_\_\_\_\_

Billing Address (Billing City, State, Zip): \_\_\_\_\_

Credit Card Number \_\_\_\_\_ Type of Card: ☐ VISA ☐ MasterCard Expires: \_\_\_\_\_

Signature Required: \_\_\_\_\_

**Linda Baun**  
**WBA**  
**44 E. Mifflin Street Ste. 900**  
**Madison, WI 53703**

To register by phone,  
please call 1-800-236-1922 or  
fax to 608-256-3986  
or register at [www.wi-broadcasters.org](http://www.wi-broadcasters.org)

## GENERAL INFORMATION

### DATES

Tuesday through Thursday, October 14-16, 2008

### LOCATION

All sessions of the Broadcasters Clinic 2008 are held at the Madison Marriott-West, located at 1313 John Q. Hammons Drive, Middleton, WI 608-831-2000.

### FEE

**\$130 - Any two days \$150 - All three days**

**\$14 - SBE National Awards Dinner**

Fee covers program materials, continental breakfasts and luncheons as indicated, refreshment breaks, and an evening reception with hot hors d'oeuvres (cash bar). Vegetarian meals can be requested by calling the WBA office at 1-800-236-1922, by **September 22, 2008**.

The WBA will need to guarantee meal counts with the hotel, therefore the WBA will NOT refund any cancellations made after **October 1, 2008**. The WBA will also invoice for all "no-shows."

### ACCOMMODATIONS

Please make your own room reservations with the Marriott-West. The hotel telephone number is 608-831-2000. We suggest that you make your reservations before September 11, 2008, while discounted rooms are being held for the seminar. Please specify that you are attending the Broadcasters Clinic 2008.

### INFORMATION

For further conference or exhibitor information, contact: Linda Baun, Phone: 800-236-1922, [lbaun@wi-broadcasters.org](mailto:lbaun@wi-broadcasters.org); or Don Borchert, 1955 Oakland Avenue, Sun Prairie, Wisconsin 53590, Phone: 608-837-3462

### REGISTRATION

To register by phone, please call 1-800-236-1922 or fax to 608-256-3986 or register at [www.wi-broadcasters.org](http://www.wi-broadcasters.org)