



60

YEARS OF
DOIN' IT OUR WAY



2016 Broadcasters Clinic
Upper Midwest SBE Regional Meeting
October 11-13, 2016
Madison Marriott West



TUESDAY OCTOBER 11

All sessions and activities are in the Superior Room unless otherwise noted.

7:45 a.m.
REGISTRATION & CONTINENTAL BREAKFAST

8:50 a.m.
OPENING REMARKS

9:15 a.m.



BENEFITS OF LIQUID COOLING FOR HIGH POWER FM DIGITAL TRANSMITTERS

TIMOTHY ANDERSON, CPBE, GATESAIR

This session will discuss the advances in RF power systems and modern liquid cooling techniques being employed to reduce both operational cost and the carbon footprint of high-power FM digital transmitters.

10 a.m.



μMPX: NETWORK FM-STEREO COMPOSITE CONNECTIVITY

FRANK FOTI, TELOS ALLIANCE

This presentation will

offer an explanation of μMPX, an innovative method in which the MPX signal can be carried over a data link of 320KB/s.

10:45 a.m.
BREAK

11 a.m.



THE FCC'S AM REJUVENATION; CAN REDUCED PROTECTION BE A GOOD THING?

DOUG VERNIER, V-SOFT

Would the proposed reductions in protection result in greater flexibility for AM stations to improve their signals? Or would they merely increase inter-station interference? Would the net effect be beneficial or harmful to AM broadcasters and listeners?

11:45 a.m.-1 p.m.
LUNCH

1 p.m.



WHY 0.01% DISTORTION SOMETIMES MATTERS, AND 30% SOMETIMES DOESN'T

STEVE DOVE, WHEATSTONE

A lighthearted romp through why some things sound the way they do—deflating some conventional wisdoms, and highlighting some surprising insights.

1:45 p.m.



OPTIMIZING COMBINED AM ANTENNA SYSTEMS

KURT GORMAN, PHASETEK INC.

PHASETEK INC.

With the increase in AM radio stations sharing antenna sites, filtering circuitry can be used in conjunction with new/existing phasing circuitry to increase both pattern and impedance bandwidth. Older systems can also be improved with these techniques.

2:30 p.m.
BREAK

2:45 p.m.



ADAPTIVE MULTI-RATE AUDIO STREAMING

KIRK HARNACK, TELOS ALLIANCE

What problems does Adaptive Streaming solve for us and for listeners? How does Adaptive Streaming work? How does one configure an Adaptive Streaming encoder? What other infrastructure is needed to support Adaptive Streaming?

WEDNESDAY OCTOBER 12

3:30 p.m.



**BUILDING
THE
ULTIMATE IP
AUDIO NETWORK**
TONY PETERLE,

WORLDCAST SYSTEMS

Redundant Streaming for reliable transport of content, distributed Intelligence for monitoring, backup and on-demand connections, packet forwarding for backup audio sources and subnet distribution. The components can be used in combination or selected a la carte to create the audio cloud suited to the broadcast application, budget and IP network availability.

4:15 p.m.-7 p.m.
**EXHIBITS OPEN—EXHIBITORS
RECEPTION**

WISCONSIN/MICHIGAN ROOMS

7 p.m. **Beer & Brats**



**NUTS & BOLTS
SESSION: AN
EVENING WITH
SPARKS AND
WIRES**

RICHARD SPARKS

If you aren't laughing, check your pulse.



**NUTS & BOLTS
SESSION: FIFTY
YEARS IN AUDIO
AND VIDEO**
STEVE LAMPEN

What more can we say, it's Steve Lampen!

7 a.m.

**REGISTRATION & CONTINENTAL
BREAKFAST**
LOBBY

8:30 a.m.



**TELEVISION
SPECTRUM
REPACK—A RADIO
PERSPECTIVE**
RICHARD

REDMOND, GATESAIR

While much focus has been placed on what the spectrum repack means to TV broadcasters, there has been little discussion about the potential impact to the operations of potentially thousands of FM radio broadcasters who will also be affected. This session will look at that.

9:15 a.m.



**TODAY'S REMOTE
CONTROL AND
SNMP**
TOM BOSSCHER,
CORNERSTONE

UNIVERSITY RADIO WCGS

While "Simple Network Monitoring Protocol" has been around in the IT field for a long time,

it has just recently found its way into today's broadcast remote controls. This session is a case study of one broadcaster's implementation of SNMP for remote control.

10 a.m.

WISCONSIN/MICHIGAN ROOMS
EXCLUSIVE EXHIBIT TIME

11 a.m.

WISCONSIN/MICHIGAN ROOMS
LUNCH ON EXHIBIT FLOOR

1:30 p.m.



**ENGINEERING
MICROWAVE LINKS**
*JEREMY RUCK &
ASSOCIATES, INC.*

This presentation will delve into the last mile problem from an RF perspective. We will look at the engineering behind microwave links for television and radio. As part of this, we will also perform a review of the pertaining rules.

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[#WBABC16](https://twitter.com/WBABC16)



2:15 p.m.



TECHNICAL REGULATORY UPDATE AND CYBER SECURITY FOR BROADCASTERS

KELLY WILLIAMS, NAB

There's more than the Spectrum Auction to pay attention to. This session will look at recent and proposed changes in FCC regulations as well as explore the results of their Cyber Security effort.

3 p.m.
BREAK

3:15 p.m.



ADVANTAGES OF ALUMINUM TRANSMISSION LINE

MANUEL SONE, ELECTRONICS RESEARCH INC.

The performance of co-axial four inch aluminum transmission lines with an aluminum outer conductor and a copper inner conductor will be investigated. A comparison to an all copper transmission line will be presented as well as the historical use of aluminum RF components.

4 p.m.



ADVENTURES IN 4K
STEVE LAMPEN, BELDEN

Everyone knows 4K is coming, but how will you integrate it into your facility? Also, there is talk about coming technologies that would revolutionize not just broadcasting, but all communications. It's just that they don't exist yet and you can't buy them. Steve will explain.

5:30 p.m.
DINNER

6 p.m.



SBE ALL CHAPTER MEETING AND PROGRAM: HOW TO TAKE TIME OFF FROM A 24/7

CAREER
JEFF WELTON, NAUTEL

With today's engineering staffing levels it's difficult to break away and take a break. This session will explore that challenge and suggest ways to make it possible.

7:45 a.m.
REGISTRATION AND CONTINENTAL BREAKFAST

8:30 a.m.



ATSC 3.0 IN THE REAL WORLD
MICHAEL GUTHRIE, HARMONIC

ATSC 3.0 offers a new set of compelling features that bring TV broadcasting into the 21st century with an increase in bitrate and/or with the robustness for mobile and portable reception. HEVC encoding will support UHD, HDR, and/or higher program counts. Transition models from ATSC 1.0 will also be discussed.

GARY MACH, GEMCOM
THANK YOU FOR 32 YEARS OF SERVICE TO THE BROADCASTERS CLINIC



9:15 a.m.



**ATSC 3.0 AND
FUTURE ANTENNA
TECHNOLOGIES**

**JOHN SCHADLER,
DIELECTRIC**

As the ATSC 3.0 standard and SFNs are developed, it is important to keep in mind how the technical components of broadcasting could change. Each new system will require overlapping coverage areas within the original contour of a station. This paper will address the criteria and design techniques required to support ATSC 3.0 and SFNs as the next generation of the broadcast industry.

**10 a.m.
BREAK**



**10:15
a.m.**

**THE SPECTRUM
REPACK, IS THERE
A MOVE TO VHF IN**

YOUR FUTURE?

**WILLIAM
AMMONS, MICRONETIX
COMMUNICATIONS**

The spectrum repack may find many stations looking at the possibility of moving to high band VHF, or even low band VHF. This presentation will discuss what worked back in the analog days and what is needed to

succeed in the digital era, including with ATSC 3.0.

11 a.m.



**TELEVISION
SPECTRUM
AUCTION AND
REPACK UPDATE**

JAY ADRICK,

GATESAIR

This presentation will include a detailed review of the current auction and repacking timeline and look at the status of efforts to optimize the repacking process given the constrained resources and extremely short implementation time.

12 p.m.

LUNCH

MENDOTA ROOM

1 p.m.



**STATUS OF ATSC
3.0**

**JERRY WHITAKER,
ATSC COMMITTEE**

The next-generation digital television system promises to provide broadcasters with new features and services and consumers with robust mobile, immersive audio, UHD TV images, and personalized interactive services. This presentation will review the status of work within ATSC and provide some thoughts on implemen-

tation considerations for broadcasters.

1:45 p.m.



**HIGH EFFICIENCY
IN MODERN SOLID
STATE UHF/VHF
TV TRANSMITTERS**

WALT GUMBERT,

ROHDE & SCHWARZ

Solid State transmitters have historically been inefficient. This session will look at various methods of improving their efficiency with Doherty, including case studies showing the energy savings realized with the technology.

2:30 p.m.



**DEMYSTIFYING
VIDEO OVER IP**

**VALERI NZEYANG,
SENIOR**

APPLICATIONS

**ENGINEER FOR COMPRESSION
SYSTEMS AND IP TRANSPORT,
EVERTZ**

This session will compare SMPTE 2022-6, ASPEN, and TR-03 as well as highlight the benefits and challenges of each format. In addition, we will investigate how each format handles Ultra HD and the available tools to help maintain and manage your facility with each format.



COMMITTEE CHAIR LEONARD CHARLES
TELEVISION WISCONSIN



KENT ASCHENBRENNER
E.W. SCRIPPS COMPANY



STEVE BROWN
WOODWARD RADIO GROUP



DENNIS BALDRIDGE
BALDRIDGE COMMUNICATIONS



MARK BURG
WLAX-DT/WEUX-DT



GREG DAHL
SECOND OPINION COMMUNICATIONS



CLIF GROTH
NEW RADIO GROUP



BILL HUBBARD, *UW-GREEN BAY*



KEITH KINTNER, *UW-OSHKOSH*



GARY MACH, *GEMCOM*



KEVIN RUPPERT, *WISC-TV*



MATT SPERLING *WKBT-TV*



TOM SMITH



MICHELLE VETTERKIND
WBA PRESIDENT & CEO



LINDA BAUN
WBA VICE PRESIDENT & EMAIL QUEEN



LIZ BOYD
NCSA/PEP COORDINATOR



HOTEL INFORMATION

The 2016 Broadcasters Clinic sessions are being held in the Superior Room at the Madison Marriott West Hotel, which is located at 1313 John Q. Hammons Drive in Middleton. The hotel deadline is Sept. 19, 2016, and the discounted rate is \$119. Reservations can be made online at wi-broadcasters.org. To register by phone, call 888-745-2032 and mention WI Broadcasters group code BROBROA to receive the discounted rate.

REGISTRATION INFORMATION

Registration fee covers: program materials, continental breakfasts and luncheons as indicated, refreshment breaks and an evening reception with hot hors d'oeuvres (cash bar) and Beer and Brats at the Nuts and Bolts session.

Vegetarian meals can be requested by calling the WBA office at 1-800-236-1922, by Sept. 15, 2016. The WBA will need to guarantee meal counts with the hotel, therefore the WBA will NOT refund any cancellations made after Sept. 15, 2016. The WBA will also invoice for all "no-shows."

CONTACT

For further conference or exhibit information contact: Linda Baun
608-729-1480
lbaun@wi-broadcasters.org

**MARK YOUR
CALENDARS**

OCT. 10-12, 2017

EXHIBITORS

The Broadcasters Clinic Committee and the Wisconsin Broadcasters Association extend their gratitude to the Broadcast Clinic exhibitors and prize donors.

25-SEVEN
ALPHA VIDEO
AXIA AUDIO
BROADCASTERS GENERAL STORE
BSW
CANON
CLEAR-COM
COMREX
DAVICOM, A DIVISION OF COMLAB
DIELECTRIC
DOUBLERADIUS
ENCO
EVERTZ
FOR-A CORPORATION OF AMERICA
FULL COMPASS
GATESAIR
GORMAN-REDLICH MFG.
JAMPRO
JOSEPH ELECTRONICS
KATHREIN
LINEAR ACOUSTICS
LOGITEK
MINNETONKA AUDIO
NAUTEL
OMNIA AUDIO
RESONANT RESULTS
ROHDE & SCHWARZ
ROSS VIDEO
SHIVELY
SONY
TELESTREAM
TIELINE THE CODEC COMPANY
THE TELOS ALLIANCE
TELOS SYSTEMS
UTAH SCIENTIFIC
V-SOFT COMMUNICATIONS
WHEATSTONE CORPORATION

Exhibitor list is current as of Aug. 12, 2016. The most up-to-date list is in the attendee packet.

TUESDAY REGISTRATION



TUESDAY BREAKFAST



TUESDAY LUNCH



NUTS & BOLTS CO-SPONSOR



NUTS & BOLTS CO-SPONSOR



WEDNESDAY BREAK



WEDNESDAY BREAKFAST



WEDNESDAY LUNCH
CO-SPONSOR



WEDNESDAY EXHIBITOR COFFEE BREAK



WEDNESDAY LUNCH
CO-SPONSOR



TECHNICAL EQUIPMENT



MONITORS & SCREEN



STATE OF THE ART PROJECTOR



BROADCASTERS CLINIC
UNDERWRITER

