RADIO**WORLD**

2019
Source Book
& Directory

FUTURE

Annual Reference Guide and Supplement to Radio World

RADIOWORLD

A Resource to Keep on Your Desktop

Here's your 2019 Radio World Source Book & Directory, a resource for professionals working in the U.S. radio broadcasting industry.

What companies are listed here? Any industry supplier that responded to our solicitation emails toward the end of 2018.

You'll find the respondents listed alphabetically in the Vendor & Product Directory section starting on page 14.

Companies also tell us the type of hardware or service they offer; find those categories in the Supplier Cross Index starting on page 10.

On pages 4–9, sponsors highlight key products in the Profiles in Excellence section. Starting on page 29 are sponsored reprints of product stories that originally appeared in Radio World in recent months

We are grateful to the manufacturers and service providers who help build this industry and keep it on the air. We particularly hope you'll support our advertisers, who make this publication and every issue of Radio World throughout the year possible.

How may we serve you better?
Email me at radioworld@futurenet.com.

— Paul McLane
Editor in Chief

Inside

Cover image: Thinkstock/Ali Kerem Yücel

Comrex Releases 3 New Products For 2019

Comrex has drawn upon their expertise in IP technology to release 3 new products in 2019 — ACCESS NX, ACCESS MultiRack, and EarShot IFB.

MultiRack

ACCESS NX Rack

Since it was released in 2005, the Comrex ACCESS Rackmount has become an industry standard. Now, it's been updated to incorporate the technical advances from the last decade. ACCESS NX Rack features completely new hardware, allowing for

NX Rack

AES67, AES3 or analog audio I/O. NX Rack can connect to Wi-fi and 4G modems, and supports a wide arrange of connection protocols and audio encoders. It's driven via a new HTML5-based web user interface. ACCESS NX Rack is backward-compatible with all Comrex IP audio codecs and the Comrex FieldTap smartphone app.

ACCESS MultiRack

For users who need to run multiple IP codecs at once, Comrex has created ACCESS MultiRack. ACCESS MultiRack is equivalent to 5 ACCESS codecs, contained within a sleek 1RU chassis. MultiRack allows for all the features contained in ACCESS

codecs, and is compatible with NX Portable and BRIC-Link codecs, plus the Comrex FieldTap smartphone app. MultiRack features AES67 compatibility on all 5 codecs, along with AES 3 and Analog compatibility in the first codec.

Both of these new codecs will feature HotSwap, a new function included with the latest version of ACCESS firmware. HotSwap allows users to designate one network as a backup that will only engage when the primary network has failed. Fall-over to backup happens in a matter of seconds, and fallback is usually seamless. This feature is part of ACCESS firmware 4.0 p18, and so it's also available for current ACCESS codecs. Users just need to install the latest (free) firmware version using Device Manager.

EarShot IFB

EarShot IFB is a hardware-based VoIP (Voice-over-IP) autocoupler solution that replaces Plain Old Telephone Service (POTS) couplers. VoIP technology makes it possible to replace up to 30 telephone couplers with one Ethernet connection, reducing costs and making it easier to supply audio feeds to more listeners.

For more information, contact us at *info@comrex.com*.

EarShot IFB

COMREX
BROADCAST RELIABLE

www.comrex.com | info@comrex.com | 978-784-1776

World Radio History

Optimizing the Potential of HD Radio

Using HD2 or HD3 Channels for FM Translators

With stations increasingly taking advantage of multiple broadcast channels available in HD Radio, broadcasters have found new uses for HD2 and HD3 channels. One of those uses is to feed terrestrial FM translators.

For years now, broadcasters have used specialized HD Radio receivers to pick up and rebroadcast an HD2 or HD3 channel at an FM translator site. The need for a 'specialized' receiver is that, if the HD channel goes away or drops for any reason, the broadcaster does not want the receiver to blend back to the station's primary analog FM broadcast. Inovonics has for years made these specialized receivers and many engineers have used them to pick up the

HD2 or HD3 and send the demodulated audio through a standard FM processor and into their translator's exciter.

The Missing Link:
The missing piece in this system has been that there was no way for the HD2 / HD3 PAD data to be converted into RDS data on the translator. No manufacturer made an RDS encoder that could use an HD Receiver's data as a source.

Listening to Broadcasters:
Inovonics heard from a number of broadcasters that there was a need for an all-in-one box that could receive the off air HD2 / HD3 broadcast, process the audio, peak limit the MPX output and convert the PAD data into RDS.

Proof of Concept:
We started working on the AARON 655 with the idea of something 'simple' that would do the basics. After floating the

concept around the lab and the industry, we received feedback that more features and functions were needed.

Adding the Secret Sauce:
We listened and added-in features such as Analog and AES inputs, in addition to being able to use a stream as a source! When using a stream, the AARON 655 converts the metadata from the stream and formats it to RDS. Additional features include remote web streaming and monitoring, SNMP control, email alarms and of course a terminal block with alarm closures and command inputs on the back panel.

Processing Four Unique Audio Sources:
As the AARON 655 evolved, it took on more of the architecture of an audio processor with a Stereo Generator, and an RDS Encoder all built into one box. The twist is that this 'audio processor' now has a number of different 'inputs': an HD Radio, AES, Analog, and Stream. All the inputs can be monitored simultaneously for

audio loss, and other parameters like signal quality and signal strength. You can choose up to 4 sources and pick which order they will fail-over, with the ultimate goal of keeping your station on the air!

A Happy Ending:
The AARON 655 is an extremely flexible and versatile box that makes intelligent decisions and keeps you on the air and your listeners happy. What's not to love about that…?

INOVONICS
BROADCAST
Better Radio Since 1972

www.inovonicsbroadcast.com | sales@inovonicsbroadcast.com | 831-458-0552

World Radio History

PROFILES IN EXCELLENCE

Join the Sports Remote Revolution with ViA

When you compare ViA with competing remote codecs, the choice is clear. Tieline's revolutionary ViA codec delivers more options for sports remotes.

Record Coach and Player Interviews

Before the big game use ViA to record coach and player interviews. Then add them to a playlist with sponsor announcements to broadcast your entire show while on the road!

Create Podcasts Effortlessly

With ViA you can play audio files from a playlist and at the same time record the entire sports broadcast. After the game simply remove the SD card and upload the game or highlights as a podcast in a snap!

6 IP Interfaces Available

Stream bidirectional stereo program audio and full-duplex IFB communications from sports remotes using:
- Built-in dual band Wi-Fi: no Wi-Fi modem required!
- Dual USB ports for cellular air cards.
- Internal LTE hardware module.
- Dual Ethernet ports.
- Plus, connect over ISDN or POTS using optional hardware modules.

Fuse-IP Bonding and SmartStream PLUS

ViA supports a variety of pre-tested USB air cards out of the box. Bond data from multiple air cards with Fuse-IP, or use two air cards with SmartStream PLUS for dual redundant streaming. Example of SmartStream PLUS using 2 air cards with separate IFB over Wi-Fi

USB 1 Transmits Primary Mono or Stereo Program Audio

USB 2 Transmits Backup SmartStream PLUS Program Audio

ViA Codec at the OB Site

Bidirectional IFB Audio over Wi-Fi

Example of SmartStream PLUS using 2 air cards with separate IFB over Wi-Fi

Telco / Internet

Studio Merlin IP codec
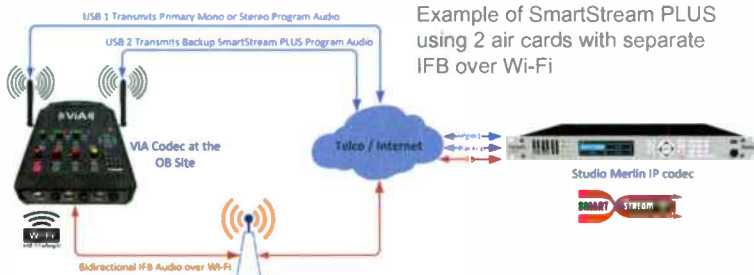
Testimonials

"The performance of the ViA is great and has simplified the way Cumulus does remotes. The ease of setup for the announcers means a lot fewer calls to the engineer! In addition, clients have commented to me about how good the audio quality has been on our sports broadcasts, and that's always nice to hear."

Mark Wittkoski, Contract Engineer

"The ViA is a high-end codec that met all of our quality expectations."

Rob Brown, Sports Information Director at Roncalli High School

"Tieline's ViA incorporates flexibility, top notch design, and most importantly, high-end quality and performance."

Tim Dench, Station Manager and Radio and TV Instructor at Jeffersonville High School
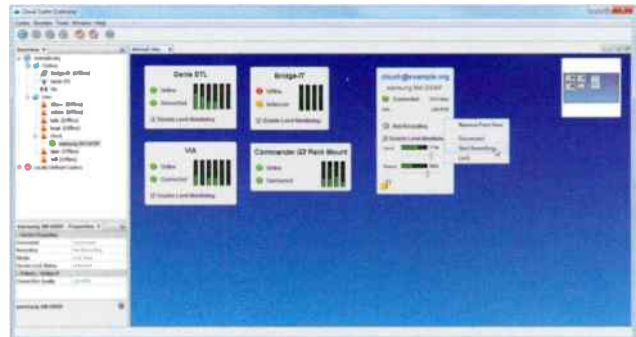
Full Remote Control via the Cloud

The Cloud Codec Controller provides remote control of live sports broadcasts from anywhere with internet connectivity. It delivers:
- Discoverability and real-time online and offline status.
- Remote adjustment of audio levels and codec settings
- Dial and hang-up the remote codec from the studio and monitor connection status, link quality and audio levels.

Tieline®
The Codec Company

www.tieline.com | sales@tieline.com | 317-845-8000

SUPPLIER CROSS INDEX

This section helps you locate suppliers of types of equipment and service. Find contact information for these companies in the Vendor & Product Directory section. This list is based on information provided by the companies; suppliers are listed only if they checked a given category.

ACOUSTIC AND BUILDING MATERIALS
Clyde Broadcast Technology
DM Broadcast Engineering Srl
Expert Broadcast Electronics
ProAudio.Com
RadioTVDeals.com
RAM Systems
SCMS Inc.
Transmitters 'R' Us
WhisperRoom

ANTENNAS, FEEDLINE AND WAVEGUIDE
Alan Dick Broadcast Ltd.
Aldena Telecomunicazioni Srl
Altronic Research Inc.
Bext Corp.
Broadcast Warehouse Ltd.
Communications Technologies
DB Elettronica
   Telecomunicazioni S.p.A.
Dielectric LLC
DM Broadcast Engineering Srl
DoubleRadius Inc.
Elber Srl
Electronics Research Inc.
Expert Broadcast Electronics
Hatfield & Dawson Consulting
   Engineers LLC
High Sound
Jampro Antennas Inc.
Kintronic Laboratories
LBA Technology Inc.
Micronetixx Communications
Myat Inc.
Nova Electronics
OMB America
OnAir Medya Ltd.
ProAudio.Com
Propagation Systems Inc.
RadioTVDeals.com
RFE Broadcast Srl
SCMS Inc.
Shively Labs
Transmitters 'R' Us
Tunwall Radio LLC
WaveArt
WorldCast Systems

ASSOCIATIONS AND ORGANIZATIONS
Association of Minnesota
   Public Educational Radio
   Stations (Ampers)
Expert Broadcast Electronics
RadioTVDeals.com

AUDIO ACCESSORIES
AEQ Broadcast International
Angry Audio
AudioScience Inc.
Barix Technology
Broadcast Tools Inc.
Broadcast Warehouse Ltd.
Calrec Audio
Clyde Broadcast Technology
DM Broadcast Engineering Srl
DM Engineering
DoubleRadius Inc.
Elber Srl
Energy Transformation Systems
Expert Broadcast Electronics
Glensound
Henry Engineering
Inovonics Inc.
JK Audio
Lynx Studio Technology
Neutrik USA Inc.
O.C. White Co.
Paravel Systems
ProAudio.Com
Progressive Concepts
Radio Systems
RadioTVDeals.com
RAM Systems
SCMS Inc.
Sierra Automated Systems
Sonifex Ltd.
The Telos Alliance
Transmitters 'R' Us

AUDIO DELAYS – PROFANITY AND DIVERSITY
Broadcast Warehouse Ltd.
DM Broadcast Engineering Srl
Eventide
Expert Broadcast Electronics
Logitek Electronic Systems

Orban Labs Inc.
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Sonifex Ltd.
The Telos Alliance
Transmitters 'R' Us

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2wcom Systems GmbH
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AETA Audio Systems
Arrakis Systems
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Barix Technology
Broadcast Warehouse Ltd.
Calrec Audio
Clyde Broadcast Technology
Comrex
DM Broadcast Engineering Srl
DoubleRadius Inc.
Elber Srl
Expert Broadcast Electronics
GeoBroadcast Solutions
Henry Engineering
Logitek Electronic Systems
Modulation Index LLC
Moseley Associates Inc.
Netia
OnAir Medya Ltd.
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Sierra Automated Systems
Sonifex Ltd.
The Telos Alliance
Tieline
Transmitters 'R' Us
Wheatstone Corp.
WorldCast Systems
Yellowtec

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Eventide
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ProAudio.Com
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SCMS Inc.
Sonifex Ltd.
Summit Technology Group
win-OMT Software Inc.

AUDIO PROCESSING, ON-AIR
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AEQ Broadcast International
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Broadcast Bionics
Broadcast Warehouse Ltd.
BW Broadcast Ltd.
Calrec Audio
DaySequerra
DEVA Broadcast
DM Broadcast Engineering Srl
Elber Srl
Eventide
Expert Broadcast Electronics
High Sound
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Logitek Electronic Systems
Modulation Index LLC
Netia
OMB America
Omnia Audio
On-Hertz
Orban Europe GMBH
Orban Labs Inc.
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Sierra Wave Media
Sonifex Ltd.
The Telos Alliance
Transmitters 'R' Us
win-OMT Software Inc.
Wheatstone Corp.
WorldCast Systems

AUDIO PROCESSING, PRODUCTION
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Calrec Audio
DEVA Broadcast
DM Broadcast Engineering Srl
ESE
Eventide
Inovonics Inc.
Modulation Index LLC
Netia
On-Hertz
Orban Europe GMBH
Orban Labs Inc.
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Sonifex Ltd.
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DM Engineering
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Expert Broadcast Electronics
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Henry Engineering
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Tieline
Transmitters 'R' Us
Wheatstone Corp.

win-OMT Software Inc.

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Broadcast Electronics
Broadcast Software Intl
Broadcast Warehouse Ltd.
Clyde Broadcast Technology
dcsTools.com
DJB Radio
Desktop Technologies
DM Broadcast Engineering Srl
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Lynx Studio Technology
Modulation Index LLC
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Netia
Paravel Systems
Pristine Systems Inc.
Radio Station Solutions
Radiohost
RadioTVDeals.com
RCS
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Summit Technology Group
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WideOrbit
win-OMT Software Inc.

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Netia
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Orban Labs Inc.
RadioTVDeals.com
Securenet Systems / Cirrus
   Streaming
The Telos Alliance

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AETA Audio Systems
AudioScience Inc.
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Broadcast Bionics
Broadcast Warehouse Ltd.
Comrex
DM Broadcast Engineering Srl
DoubleRadius Inc.
Glensound
Henry Engineering
JK Audio
Logitek Electronic Systems
Modulation Index LLC
On-Hertz
Orban Europe GMBH
ProAudio.Com
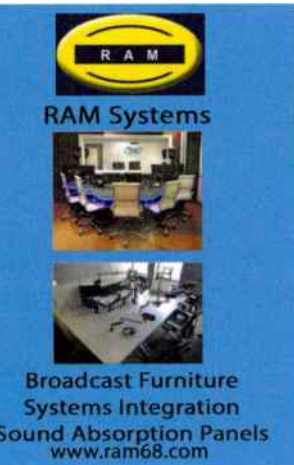RadioTVDeals.com
SCMS Inc.
The Telos Alliance

SUPPLIER CROSS INDEX

Tieline
Transmitters 'R' Us
WorldCast Systems

CONSOLES, MIXERS, CONTROL SERVICES
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Comrex
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DoubleRadius Inc.
Henry Engineering
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Logitek Electronic Systems
Modulation Index LLC
Mooretronix
On-Hertz
Orban Europe GMBH
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DoubleRadius Inc.
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GeoBroadcast Solutions
Hatfield & Dawson Consulting
   Engineers LLC
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LBA Technology Inc.
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Nova Electronics
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Summit Technology Group
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V-Soft Communications
ZYDigital

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Music 1 Inc.
RadioTVDeals.com
Stewart Media Solutions
Talk Shows USA
Tieline

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Bay Country Broadcast
   Equipment Inc.
Broadcast Warehouse Ltd.

BSW
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DM Broadcast Engineering Srl
DoubleRadius Inc.
Expert Broadcast Electronics
Nova Electronics
OMB America
Progressive Concepts
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Transmitters 'R' Us

DIGITAL AUDIO EDITING AND PRODUCTION
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Burli Software Inc.
Desktop Technologies
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Expert Broadcast Electronics
KING FM - Production Director
Netia
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Transmitters 'R' Us
Wheatstone Corp.
Yellowtec

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Transmitters 'R' Us

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Energy Transformation Systems
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Nova Electronics
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Transmitters 'R' Us
US Technologies Inc.

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Barix Technology
Digital Alert Systems
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DM Engineering
Expert Broadcast Electronics
Gorman Redlich Mfg. Co.
GSSNet/Alert FM
Henry Engineering
Nova Electronics
ProAudio.Com
RadioTVDeals.com
Sage Alerting Systems Inc.
SCMS Inc.

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Nova Electronics
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Expert Broadcast Electronics
Heil Sound Ltd.
Henry Engineering
JK Audio
MXL Microphones/Marshall
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ProAudio.Com
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Elber Srl
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JK Audio
Nova Electronics
OMB America
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RadioTVDeals.com
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Transmitters 'R' Us
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WorldCast Systems

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Stewart Media Solutions
UncompressedMusic.com

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DoubleRadius Inc.
Expert Broadcast Electronics
Henry Engineering
Nova Electronics

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Sprite Media, Inc.
Stewart Media Solutions

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Broadcast Warehouse Ltd.
Clyde Broadcast Technology
DM Broadcast Engineering Srl
Expert Broadcast Electronics
Graham Studios
Omnirax Furniture Company
ProAudio.Com
RadioTVDeals.com
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Elber Srl
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ProAudio.Com
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Transmitters 'R' Us
WaveArt

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Broadcast Devices Inc.
Broadcast Tools Inc.
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Davicom, a division of Comlab
DM Broadcast Engineering Srl
Expert Broadcast Electronics
Henry Engineering
Nova Electronics
Novus Power Products LLC
ProAudio.Com
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Sine Systems
Transmitters 'R' Us
WorldCast Systems

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Coaxial Dynamics
CPI
DM Broadcast Engineering Srl
DoubleRadius Inc.
Econco
Electronics Research Inc.
Expert Broadcast Electronics
Kintronic Laboratories
LBA Technology Inc.
Micronetixx Communications
Myat Inc.
Nova Electronics
OMB America
RadioTVDeals.com
SCMS Inc.
Surcom Associates Inc.
Transmitters 'R' Us
Tunwall Radio LLC

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Alan Dick Broadcast Ltd.
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Bext Corp.
Broadcast Warehouse Ltd.
Coaxial Dynamics
DM Broadcast Engineering Srl
DoubleRadius Inc.
Econco
Electronics Research Inc.
Expert Broadcast Electronics
High Sound
Jampro Antennas Inc.
Kintronic Laboratories
LBA Technology Inc.
meduci LLC
Micronetixx Communications
Myat Inc.
Nova Electronics
Novus Power Products LLC
OMB America
P-Cube Inc.
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Shively Labs
Surcom Associates Inc.
Transmitters 'R' Us
Tunwall Radio LLC

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Belar Electronics
Broadcast Warehouse Ltd.
BW Broadcast Ltd.
Davicom, a division of Comlab
DaySequerra
DEVA Broadcast
DM Broadcast Engineering Srl
DoubleRadius Inc.
Expert Broadcast Electronics
Inovonics Inc.

Jampro Antennas Inc.
meduci LLC
Nova Electronics
ProAudio.Com
RadioTVDeals.com
RFmondial GmbH
Rohde & Schwarz GmbH
SCMS Inc.
Transmitters 'R' Us
WorldCast Systems

SALES DEPARTMENT SOLUTIONS
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Kozacko Media Services
Grace Broadcast Sales
Marketron Broadcast Solutions
NeoGroupe
RadioTVDeals.com
Sprite Media, Inc.
Stewart Media Solutions
Talk Shows USA
WideOrbit

SATELLITE INTERNET DISTRIBUTIION
2wcom Systems GmbH
Dawnco
Elber Srl
Expert Broadcast Electronics
LifeTalk Radio Network
Novus Power Products LLC
NPR Satellite Services
Orbital Media Networks Inc.
ProAudio.Com
RadioTVDeals.com
Tieline

SCHEDULING, TRAFFIC AND BILLING
AEQ Broadcast International
Arrakis Systems
Barix Technology
Clyde Broadcast Technology
DM Broadcast Engineering Srl
Music 1 Inc.
MusicMaster
Power-Link Software Systems
RadioTVDeals.com
RCS
Sierra Wave Media
Summit Software Systems Inc.
Summit Technology Group
Transmitters 'R' Us
WideOrbit

SOCIAL MEDIA TOOLS
Broadcast Bionics
DM Broadcast Engineering Srl
Expert Broadcast Electronics
Futuri Media
Kozacko Media Services
NeoGroupe
RadioTVDeals.com
Sprite Media, Inc.
Stewart Media Solutions

SOFTWARE FOR ENGINEERING AND MAPPING
Au Contraire Software Ltd.
Expert Broadcast Electronics
RadioTVDeals.com
Summit Technology Group
V-soft Communications
WorldCast Systems

SUPPLIER CROSS INDEX

SPEAKERS, HEADPHONES AND MONITORING
AEQ Broadcast International
Broadcast Warehouse Ltd.
Clyde Broadcast Technology
DM Broadcast Engineering Srl
DM Engineering
Expert Broadcast Electronics
Henry Engineering
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Sierra Automated Systems
Sonifex Ltd.
Transmitters 'R' Us

STREAMING, MOBILE APPS, PODCASTS
Arrakis Systems
Barix Technology
DEVA Broadcast
DM Broadcast Engineering Srl
Expert Broadcast Electronics
Modulation Index LLC
OC Talk Radio
On-Hertz
Orban Labs Inc.
Radio Station Solutions
RadioTVDeals.com
SCMS Inc.
Securenet Systems / Cirrus Streaming
The Telos Alliance

Tieline
WideOrbit
Yellowtec
ZYDigital

STUDIO SUPPORT AND SIGNALING
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Angry Audio
Clyde Broadcast Technology
Davicom, a division of Comlab
DM Broadcast Engineering Srl
DM Engineering
Energy Transformation Systems
Expert Broadcast Electronics
Glensound
Henry Engineering
Lynx Studio Technology
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Sierra Automated Systems
Sonifex Ltd.
Sprite Media Inc.
Titus Technological Labs
Wheatstone Corp.
Yellowtec

SUBCARRIER AND DATACASTING
Expert Broadcast Electronics
GSSNet/Alert FM
ProAudio.Com
RadioTVDeals.com

SYSTEM INTEGRATORS
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DM Broadcast Engineering Srl
DoubleRadius Inc.
Elber Srl
Expert Broadcast Electronics
Kintronic Laboratories
Lightner Electronics Inc.
Nova Electronics
RadioTVDeals.com
Summit Technology Group
Transmitters 'R' Us

TELCO INTERFACES
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Broadcast Bionics
Broadcast Tools Inc.
Broadcast Warehouse Ltd.
Comrex
DM Broadcast Engineering Srl
DM Engineering
Elber Srl
Expert Broadcast Electronics
Glensound
JK Audio
NeoGroupe
ProAudio.Com
RadioTVDeals.com
SCMS Inc.
Sonifex Ltd.
The Telos Alliance
Transmitters 'R' Us
Yellowtec

TEST AND MEASUREMENT EQUIPMENT
Broadcast Warehouse Ltd.
Communications Technologies
Davicom, a division of Comlab
DEVA Broadcast
DM Broadcast Engineering Srl
ESE
Expert Broadcast Electronics
Glensound
Novus Power Products LLC
NTI Americas Inc.
Orban Labs Inc.
Pro-Comm Inc.
ProAudio.Com
RadioTVDeals.com
RFmondial GmbH
Rohde & Schwarz GmbH
SCMS Inc.
Titus Technological Labs
Transmitters 'R' Us
WorldCast Systems

TOWERS AND TOWER SERVICES HARDWARE
Alan Dick Broadcast Ltd.
Austin Insulators Inc.
Dielectric LLC
DoubleRadius Inc.
Electronics Research Inc.
Expert Broadcast Electronics
FM Services
Ice Krackers Inc.
Jampro Antennas Inc.

Nova Electronics
RadioTVDeals.com
Sabre Industries Inc.
SCMS Inc.
Transmitters 'R' Us

TRANSMITTERS, TRANSLATORS AND EXCITERS
Armstrong Transmitter Corp.
Bext Corp.
Broadcast Electronics
Broadcast Warehouse Ltd.
BW Broadcast Ltd.
Clyde Broadcast Technology
DB Elettronica Telecomunicazioni S.p.A.
DM Broadcast Engineering
Expert Broadcast Electronics
GatesAir
Meduci LLC
Nova Electronics
OMB America
OnAir Medya Ltd.
ONEtastic
Nautel
Pro-Comm Inc.
ProAudio.Com
RadioTVDeals.com
RFE Broadcast Srl
RFmondial GmbH
Rohde & Schwarz GmbH
SCMS Inc.
Transcom Corp.

Transmitters 'R' Us
Tunwall Radio LLC
US Technologies Inc.
V-soft Communications
WaveArt
WorldCast Systems

VIDEO FOR RADIO
AEQ Broadcast International
Broadcast Bionics
Comrex
DM Broadcast Engineering Srl
Elber Srl
Expert Broadcat Electronics
INSOFT LLC
Netia
RadioTVDeals.com
SCMS Inc.
Sprite Media Inc
Summit Technology Group
Yellowtec

WIRE, CABLES, CONNECTORS AND CABLE MANAGEMENT
AEQ Broadcast International
DM Broadcast Engineering Srl
DoubleRadius
Expert Broadcast Electronics
Neutrik USA Inc.
ProAudio.Com
Radio Systems
RadioTVDeals.com
SCMS Inc.

VENDOR & PRODUCT DIRECTORY

25-SEVEN SYSTEMS, A TELOS ALLIANCE CO.
See The Telos Alliance

2WCOM SYSTEMS GMBH
Am Sophienhof 8
Flensburg 24941 Germany
Werner Drews
+49-461-6628300
Email: sales@2wcom.com
Website: https://www.2wcom.com
Products/Services: Working as a manufacturer, supplier and system integrator since the early '90s, we provide versatile, reliable solutions and first-class customer support. All products for AoIP, FM/RDS, SAT and DAB+ can be integrated into existing systems. The portfolio includes high-quality encoders, decoders, codecs, modulators, demodulators and remote control servers.

305 BROADCAST
2561 NW 74th Ave. #16
Miami, Fla. 33122 United States
Anthony Gervasi, Sales Manager
+1-855-305-3058
Email: info@305Broadcast.com
Website: http://www.305Broadcast.com

ACOUSTICS FIRST
2247 Tomlyn St.
Richmond, Va. 23230 United States
+1-888-765-2900
Email: info@acousticsfirst.com
Website: http://www.acousticsfirst.com
Products/Services: Acoustic treatment products and services.

AEQ BROADCAST INTERNATIONAL INC.
6355 NW 99th Ave.
Doral, Fla. 33178-2719 United States
Peter Howarth, Management and Business Coordination
+1-800-728-0536
Email: sales@aeqbroadcast.com
Website: http://www.aeqbroadcast.com/
Products/Services: For more than 38 years, AEQ has developed solutions for the broadcasting industry: audio mixers, routing matrices, codecs, automation systems, intercom systems, etc. AEQ is a familiar equipment and service provider at international sports events. AEQ has a distributor network with offices in the USA, Mexico, Portugal and Spain.

AETA AUDIO SYSTEMS
Immeuble Kepler 4
18–22 Ave. Edouard Herriot
Le Plessis Robinson 92350 France
+33-1-41-36-12-00
Email: info@aeta-audio.com
Website: http://www.aeta-audio.com
Products/Services: Developer of portable sound recorders, mixers and audio codecs.

ALAN DICK BROADCAST LTD.
Unit 1 Bay 2, Andoversford Industrial Estate
Cheltenham, Glos
GL54 4LB United Kingdom
Chris Randall
+44-1242-820976
Email: chris.randall@alandickbroadcast.com
Website: https://www.alandickbroadcast.com

Products/Services: Your partner for FM HD Radio DAB solutions. True pioneer in the worldwide broadcast industry providing communication infrastructure solutions for over 40 years. Global leader in the manufacture of antennas, combiners, filters, towers and broadcast infrastructure services for digital and analog video and audio systems.

ALDENA TELECOMUNICAZIONI SRL
Via per Vighignolo, 6/8
Settimo Milanese MI 20019 Italy
Carlo Perotta, Sales
+39-02-9039-0461
Email: aldena@aldena.it
Website: https://www.aldena.it
Products/Services: Radio and TV antennas, tower spines and mechanical structures, patch panels, filters and combiners, RF accessories and EMLab antenna design software. Services include in-factory antenna pattern certification/tests, antenna design, network planning, on-site support and commissioning.

ALTRONIC RESEARCH INC.
621 Hwy 202 W
Yellville, Ark. 72687 United States
Doug Starkey
+1-870-449-4093
+1-800-482-5623
Email: dstarkey@altronic.com
Website: http://altronic.com/wordpress/
Products/Services: RF coaxial dummy loads from 1 kW to 1500 kW in water-, air- and oil-cooled and self-contained heat exchangers. Resistors available for most other dummy loads.

AM-BROADCAST GMBH
Mertensstr. 65-115
Berlin 13587 Germany
Matthias Stoll, Chief Operating Officer
+49-30-33978-0
Email: info@am-broadcast.com
Website: http://www.am-broadcast.com
Products/Services: The new AM-Broadcast GmbH, a restart of Transradio SenderSysteme Berlin, provides manufacturing, installation and the complete scope of services and after sales support concerning all AM and scientific products introduced by Transradio SenderSysteme Berlin AG.

AMPEGON AG
Spinnereistrasse 5
Turgi AG 5300 Switzerland
Josef Troxler, CEO
+41-58-7104-400
Email: info@ampegon.com
Website: http://www.ampegon.com
Products/Services: Ampegon is a specialized company with more than 75 years of activity and experience in high-power RF engineering. The core business is the design and development of high-power digital AM/DRM broadcasting transmitters and antenna systems.

AMPEGON ANTENNA SYSTEMS GMBH
Rheinallee 1a
Ludwigshafen am Rhein, 67061 Germany
Gunter Weidlich, Chief Operating Officer
+49-621-63595-0
Email: antennas@ampegon.com
Website: http://www.ampegon.com
Products/Services: See above

ANGRY AUDIO
2000 Mallory Lane, Ste. 130-42
Franklin, Tenn. 37067 United States
+1-615-763-3033
Email: answers@angryaudio.com
Website: https://angryaudio.com
Products/Services: Angry Audio builds the gadgets that solve common problems found in broadcast audio. Our line includes ground-loop eliminating audio balancers, distribution amplifiers, silence detectors, switchers, monitor controllers, headphone amplifiers, on/off/cough/talk control panels for studio guests, logic interfaces for on air signs and more.

APT
See WorldCast Systems Inc.

ARMSTRONG TRANSMITTER CORP.
4835 N. St. Rd.
Marcellus, N.Y. 13108 United States
Kevin Smith
+1-315-673-1269
Email: kevin@armstrongtx.com
Website: http://armstrongtx.com
Products/Services: Armstrong Transmitter produces AM transmitters up to 1000 W, and FM exciters and FM transmitters up to 25 kW and 950 MHz STL transmitters and receivers.

ARRAKIS SYSTEMS
6604 Powell St.
Loveland, Colo. 80538 United States
Ben Palmer
+1-970-461-0730
Email: sales@arrakis-systems.com
Website: http://www.arrakis-systems.com
Products/Services: Arrakis Systems designs and manufactures broadcast radio consoles, automation, AoIP and furniture.

ASSOCIATION OF MINNESOTA PUBLIC EDUCATIONAL RADIO STATIONS (AMPERS)
1881 Munster Ave.
St. Paul, Minn. 55116 United States
Joel Glaser
+1-651-587-5550
Email: jglaser@ampers.org
Website: http://ampers.org/
Products/Services: Ampers is an association that represents 18 independent community radio stations throughout Minnesota that primarily serve communities of color, Native American and rural communities not reached through traditional media. Ampers is the largest association of its kind.

AU CONTRAIRE SOFTWARE LTD.
18121-C E. Hampden Ave. #216
Aurora, Colo. 80013 United States
Cris Alexander, Managing Partner
+1-303-489-3454
Email: info@aucont.com
Website: http://www.aucont.com
Products/Services: Au Contraire Software strives to pro-

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vide engineers and others in the broadcast, wireless and land mobile industry with the information and tools they need for accurate allocation, design and construction.

AUDEMAT
See WorldCast Systems

See Product Story on Page 30

AUDINATE
1732 NW Quimby St. Ste. 215
Portland, Ore. 97209 United States
Ervin Grinberg, Director of Marketing
+1-503-224-2998
Email: ervin.grinberg@audinate.com
Website: https://www.audinate.com
Products/Services: Audinate's Dante media networking technology has been adopted by OEM manufacturers and is a dominant networking technology in the professional audio/visual industry. Dante is used for live events, commercial installation, broadcast and communications systems.

AUDIO-TECHNICA U.S. INC.
1221 Commerce Dr.
Stow, Ohio 44224 United States
+1-330-686-2600
Email: mediaproduction@atus.com
Website: https://www.audio-technica.com
Products/Services: Manufacturer of wired microphones and wireless microphone systems, headphones and turntables.

AUDIOARTS ENGINEERING
See Wheatstone Corp.

AUDIOSCIENCE INC.
42 Reads Way
New Castle, Del. 19720 United States
Nicole Santiago
+1-302-324-5333
Email: nsantiago@audioscience.com
Website: http://www.audioscience.com
Products/Services: AudioScience designs and manufactures advanced DSP-based digital audio peripherals for the OEM, broadcast, installed sound and entertainment markets. We support industry standards such as PCI, PCI Express, MPEG audio compression, CobraNet, Livewire and AVnu AVB audio networking, and Windows and Linux operating systems.

AUSTIN INSULATORS INC.
7510 Airport Rd.
Mississauga, Ontario L4T 2H5 Canada
Patrick Warr, President
+1-905-405-1144
Email: sales@austin-insulators.com
Website: http://www.austin-insulators.com
Products/Services: Austin Insulators designs and manufactures base insulators for guyed/self-supporting towers, safety core/failsafe guy insulators, static drain devices, bushing insulators tower lighting transformers and red LED lighting systems for medium-wave, longwave (LF) and very low frequency (VLF) antennas. Users worldwide include radio, naval, navigation and timing broadcasters.

AXIA AUDIO, A TELOS ALLIANCE CO.
See The Telos Alliance

BARIX TECHNOLOGY
1324 Helmo Ave N.
Oakdale, Minn. 55128 United States
Julie Eder
+1-866-815-0866
Email: sales@barixusa.com
Website: http://www.barix.com
Products/Services: Barix moves audio and provides building blocks to address a variety of audio applications. Music on hold; background; live encoding and audio streaming; broadcast; paging and intercom; audio surveillance; SIP/VoIP paging; automation and control.

BAY COUNTRY BROADCAST EQUIPMENT INC.
7117 Olivia Rd.
Baltimore, Md. 21220 United States
Steve Scarborough, Owner
+1-877-722-1031
Email: sales@baycountry.com
Website: http://www.baycountry.com
Products/Services: Sales of quality used radio broadcast equipment.

BELAR ELECTRONICS
1140 McDermott Dr. Ste. 105
West Chester, Pa. 19380 United States
Mark Grant, CEO
+1-610-687-5550
Email: sales@belar.com
Website: http://www.belar.com
Products/Services: Founded in 1964, Belar Electronics Laboratory manufactures modulation monitors. Used by radio

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and TV stations globally to monitor broadcast signals, Belar products are known for accuracy and reliability.

BENZTOWN
100 W Broadway #200
Glendale, Calif. United States
Masa Patterson
+1-818-842-4600
Email: mp@benztown.com
Website: https://benztown.com
Products/Services: Benztown is an international radio imaging, production library, programming, jingles and voiceover services company with 2,300 affiliations on six continents. Benztown offers the highest quality imaging workparts for 23 libraries across 14 formats, including AC, hot AC, CHR, country, urban, rhythmic, classic hits, rock, news/talk, sports and Jack-FM.

BEXT CORP.
1045 Tenth Ave.
San Diego, Calif. 92101 United States
Tino Romagnoli, Andrea Hill
+1-619-239-8462
+1-888-239-8462
Email: bext@bext.com
Website: http://www.bext.com
Products/Services: Bext Corp., founded in 1985, supplies and services RF broadcast equipment including radio transmitters, RF amplifiers, exciters, translators, boosters, off-the-shelf and custom broadcast antennas, RF combiners, RF filters, radio STLs, stereo generators and RDS encoders, RF accessories, RF connectors, RF adapters and equipment for custom or special projects.

BROADCAST BIONICS
The Barn, Hurstwood Grange, Hurstwood Lane
Haywards Heath, West Sussex
RH17 7QX United Kingdom
Sales Team
+44-1444-473999
+1-888-363-4844
Email: sales@bionics.co.uk
Website: http://bionic.radio
Products/Services: Developers of Bionic Talkshow, Bionic Social and Bionic Director — the industry standard in exceptional audience engagement and communication for radio and TV. Global leaders in software development, Bionics innovates products which have transformed our industry, continually delivering some of the world's most compelling broadcast content.

BROADCAST DEVICES INC.
3199 Albany Post Rd. Ste. 122
Buchanan, N.Y. 10511 United States
Bob Tarsio, President
+1-914-737-5032
Email: bob@broadcast-devices.com
Website: https://broadcast-devices.com
Products/Services: BDI offers RF power measurement, RF switch controllers, antenna protection systems, remote control systems in addition to a variety of digital and analog audio switching and distribution equipment. AES3 and analog audio solutions available for broadcasters and sound contractors.

BROADCAST ELECTRONICS
4100 N. 24th St.
Quincy, Ill. 62305 United States
+1-217-224-9600
Email: bdcast@bdcast.com
Website: http://www.bdcast.com
Products/Services: Broadcast Electronics, a member of The

Elenos Group (Elenos, BE, Itelco), offers studio automation and complete RF systems for radio. BE manufactures AM, FM and HD Radio transmitters and studio systems for managing audio programming and automating radio text. BE has been a global company since 1959.

BROADCAST SOFTWARE INTERNATIONAL
909 International Way
Springfield, Ore. 97477 United States
Marie Summers, Sales Manager
+1-888-274-8721
Email: sales@bsiusa.com
Website: https://www.bsiusa.com
Products/Services: Radio automation software, playout and multichannel logging/skimming solutions. Developed and supported in the United States by a dedicated team of broadcast professionals, our software has helped BSI become one of the leading suppliers of radio automation with distributors on every continent.

BROADCAST TOOLS INC.
131 State St.
Sedro-Woolley, Wash. 98284 United States
+1-360-854-9559
Email: support@broadcasttools.com
Website: http://broadcasttools.com
Products/Services: Design and manufacture of innovative and affordable problem-solving tools for the broadcast industry including high-quality analog and AES audio switchers and routers, dial-up, serial and web-based remote controls, DAs, mixers, silence monitors and program schedulers.

BROADCAST WAREHOUSE LTD.
Unit 27, IO Centre, 57 Croydon Rd.
Croydon CR0 4WQ United Kingdom
Brendan Lofty
+44-20-8253-0280
+1-888-866-1671
Email: info@broadcastwarehouse.com
Website: https://www.broadcastwarehouse.com
Products/Services: With 21 years' experience, we are the global supplier of FM broadcast equipment. From transmission to studio products, thousands of stations trust us to supply their needs.

BSW
2237 South 19th St.
Tacoma, Wash. 98405 United States
Shannon Nichols, Sales Manager
+1-800-426-8434
Email: sales@bswusa.com
Website: https://www.bswusa.com
Products/Services: As a broadcast equipment supplier, Broadcast Supply Worldwide offers thousands of products. For over four decades, broadcast and audio professionals trust BSW for all their equipment needs — radio, podcast, video, lighting and more.

BURK TECHNOLOGY
7 Beaver Brook Rd.
Littleton, Mass. 01460 United States
Matt Leland
+1-978-486-0086
Email: sales@burk.com
Website: https://www.burk.com
Products/Services: Burk Technology designs and manufactures high-quality transmitter facility control systems for the broadcast industry, with thousands of radio and TV installations across the U.S. and around the world. Burk brings over 30 years of innovation to transmitter remote control, setting the standards for reliability, flexibility and ease of operation.

BURLI SOFTWARE INC.
4664 Lougheed Hwy, Ste. 264
Burnaby V5C 5T5 Canada
+1-604-684-3140
Email: sales@burli.com
Website: https://www.burli.com
Products/Services: Burli is a newsroom system built by journalists, for journalists. Capture, edit and publish your news, anywhere!

BW BROADCAST LTD.
Unit 27 IO Centre, 57 Croydon Rd.
Croydon CR0 4WQ United Kingdom
Brendan Lofty
+1-208-253-0290
+1-888-233-1663
Email: info@bwbroadcast.com
Website: https://www.bwbroadcast.com
Products/Services: Innovative, award-winning and industry-leading FM transmitters, audio processors, FM receivers, amplifiers. BW Broadcast products can be found in all corners of the globe. With emphasis on efficiency, innovation and reliability. You can trust BW Broadcast to make your station #1 in the market.

CALREC AUDIO
Nutclough Mill
Hebden Bridge, West Yorkshire
HX7 8EZ United Kingdom
Dave Letson
+44-1422 842159
+44-1422 845244
Email: enquiries@calrec.com
Website: https://www.calrec.com
Products/Services: Calrec is a leading designer and supplier of audio broadcast mixing equipment, relied on by the world's most successful broadcasters. Calrec's dedicated Type R radio console is the most configurable radio console available, adaptable to any workflow and with soft panels which can be configured on the fly.

CAVELL MERTZ & ASSOCIATES INC.
7724 Donegan Dr.
Manassas, Va. 20109 United States
+1 703-392-9090
Lucinda Cavell
Email: ccavell@cavellmertz.com
Website: https://www.cavellmertz.com
Products/Services: Experienced and innovative professionals who have spent much of their careers as broadcast chief engineers, technical project managers, technicians, licensed Professional Engineers and integration specialists. FCC licensing; repacking planning and assistance; microwave long-haul and backhaul system planning, licensing and installation; broadcast station and technical facility prepurchase due diligence; technical facility rebuild, upgrade and new site build support; technical project management; and frequency channel searches for broadcast and microwave.

CENTRAL COAST ELECTRONICS
Lincoln City, Ore. 97367 United States
James K. Thorusen
+1-541-992-3416

VENDOR & PRODUCT DIRECTORY

Email: jthorusen@centcoast.com
Website: http://www.centcoast.com
Products/Services: Broadcast engineering support — specializing in transmitters and RF. Please see our website for details.

CENTRE MEDIA PRODUCTIONS
466 82nd St., Ste. 2
Brooklyn, N.Y. 11209 United States
Tony Peiffer
+1-814-808-0049
Email: contact@centremediaproductions.com
Website: http://www.centremediaproductions.com
Products/Services: Radio and television broadcast engineering, production and consultation. Specializing in audio processing, studio/control room equipment and transmission facility installations. FCC compliance assistance.

CLYDE BROADCAST TECHNOLOGY LTD.
15 South Elgin St.
Glasgow G81 1PL United Kingdom
Brian Rowan
+44-141-387-3519
Email: sales@clydebroadcast.com
Website: http://www.clydebroadcast.com
Products/Services: CBT design, manufacture and install audio equipment and systems for the radio broadcast sector. Our focus is on integrated solutions — radio studios, radio stations and radio networks. We offer a one-stop shop approach with a high proportion of equipment manufactured in-house.

COAXIAL DYNAMICS
6800 Lake Abram Dr.
Middleburg Hts., Ohio 44130 United States
Sales Dept.
+1-440-243-1100
Email: sales@coaxial.com
Website: http://www.coaxial.com
Products/Services: Leading manufacturer of precision equipment for the measurement and termination of RF power since 1969. Products include RF loads, filters, wattmeters, line sections and plug-in elements for analog and digital applications.

COMMUNICATIONS TECHNOLOGIES INC.
P.O. Box 1130
Marlton, N.J. 8053 United States
Laura Mizrahi
+1-609-451-5296
Email: lmizrahi@commtechrf.com
Website: http://commtechrf.com
Products/Services: Broadcast engineering and telecommunications design services are provided by the firm for AM, FM and TV broadcast stations. Includes allocation studies to assess potential for new or improved, facilities; site selection assistance; antenna system design and preparation of the engineering portion of FCC applications for construction permit and licenses.

COMMUNITY RADIO INC.
P.O. Box 30
Mena, Ark. 71953 United States
Chris Daniel
+1-479-234-5428
Email: communityradio@live.com
Website: http://kawx.org
Products/Services: Community Radio Inc. provides technical and regulatory consulting for noncommercial and LPFM stations.

COMREX
19 Pine Rd.
Devens, Mass. 01434 United States

Grace Thomas
+1-978-784-1776
Email: grace@comrex.com
Website: https://www.comrex.com
Products/Services: Comrex designs and manufactures cutting-edge hardware for live point-to-point audio and video over IP. With a foundation in IP audio codecs for remote or STL use, Comrex also builds VoIP guest interview solutions, VoIP hybrids, VoIP IFB solutions for television stations and IP video codecs for ENG and sports coverage.

CPI
811 Hansen Way
Palo Alto, Calif. 94304 United States
Linda Di Lorenzo
+1-650-846-3580
+1-800-414-8823
Email: linda.dilorenzo@cpii.com
Website: https://www.cpii.com
Products/Services: CPI Eimac offers tubes for AM, FM and shortwave radio applications as well as UHF and VHF television, providing broadcasters with good value and reliable, efficient products for over 80 years.

DAVICOM, A DIVISION OF COMLAB INC.
2272 Leon-Harmel St.
Quebec City, Quebec G1N 4L2 Canada
Louis-Charles Cuierrier
+1-418-682-3380
+1-877-282-3380
Email: dvsales@davicom.com
Website: http://www.davicom.com
Products/Services: Davicom designs, manufactures and sells robust, intelligent remote site management systems.

DAWNCO
7111 Dixie Hwy., Ste. 118
Clarkston, Mich. 48346 United States
John Joslin, Director Sales & Marketing
+1-248-391-9200
Email: sales@DAWNco.com
Website: http://www.dawnco.com

DAYSEQUERRA
7209 Browning Rd.
Pennsauken, N.J. 08109 United States

Mike Pappas, Vice President Business Development
+1-856-719-9900
Email: sales@daysequerra.com
Website: http://www.daysequerra.com
Products/Services: DaySequerra provides high-performance audio solutions for live performances, radio, TV and internet broadcasters and content creators worldwide. Technology applications include audio processing, loudness measurement and control, multichannel surround audio, and digital radio processing and monitoring.

DB ELETTRONICA TELECOMUNICAZIONI S.P.A.
Riviera Maestri del Lavoro 20/1
Padova, ID 35127 Italy
+39-049-870-0588
Email: info@dbbroadcast.com
Website: http://www.dbbroadcast.com
Products/Services: DB Group, founded in 1975, is the flagship company of a corporate group specializing in broadcasting and scientific applications. Thanks to its 40 years of experience, DB Group is a world leader providing FM transmitter and TV transmitter, broadcasting products, systems and services for government and private customers.

DCSTOOLS.COM
8494 Saratoga Ln.
Eden Prairie, Minn. 55347 United States
Rich Habedank, Owner
+1-952-949-9450
Email: rich@c-rmedia.com
Website: http://www.dcsTools.com
Products/Services: XStudio radio automation system supports live, local automation, satellite and a unique emergency mode of operation. Software tools for legacy DCS and Maestro automation systems, including voice-tracking, log editing, web billboard, RDS and merging of music and traffic logs.

DESKTOP TECHNOLOGIES
P.O. Box 277
Lindfield 2070 New South Wales Australia
Kurt Lass
+61-2-9580-6643
Email: sales@newsboss.com
Website: https://www.newsboss.com
Products/Services: NewsBoss is powerful user-friendly software designed for broadcast professionals by broadcast professionals. It is a fast, flexible, configurable yet easy-to-use radio news system. With more than 500 installations in 30+ countries, NewsBoss is the system of choice for radio news broadcasters.

DEVA BROADCAST LLC
7782 NW 46th St.
Miami, Fla. 33166 United States
Todor Ivanov, President
+1-305-767-1207
Email: sales@devabroadcast.com
Website: http://www.devabroadcast.com
Products/Services: DEVA Broadcast was established in 1997 and is nowadays a market leader and an international provider of user-friendly, cost-effective and innovative broadcast products. DEVA Broadcast has been developing and producing a wide range of modulation monitors, remote controls, off-air monitoring receivers, RDS/RBDS encoders and decoders and other systems.

DIELECTRIC LLC
22 Tower Rd.
Raymond, Maine 04071 United States
Cory Edwards, Global Sales
+1-800-341-9678

VENDOR & PRODUCT DIRECTORY

Email: cory.edwards@dielectric.com
Website: http://www.dielectric.com
Products/Services: Dielectric is an innovative, customer-centric organization with a long history of engineering excellence in designing and manufacturing high-quality broadcast solutions.

DIGIGRAM
82-84 allée Galilée Inovallée
Montbonnot 38330 France
Xavier Allanic Sales Manager, EMEA & Americas
+33-4-76-52-47-47
Email: sales@digigram.com
Website: http://www.digigram.com
Products/Services: Digigram pioneers in audio innovations. We design, develop and manufacture products that allow broadcasters focus on what really matters — delivering quality audio content. With over 30 years of experience, Digigram offers a complete range of soundcards, powerful AoIP codecs and secure cloud applications for broadcast, AV and industrial applications across the world.

DIGITAL ALERT SYSTEMS
100 Housel Ave.
Lyndonville, N.Y. 14098 United States
Bill Robertson, Vice President Business Development
+1-585-765-1155
Email: sales@digitalalertsystems.com
Website: http://www.digitalalertsystems.com
Products/Services: Single-box EAS/CAP solutions for broadcasters with the FCC/FEMA-compliant DASDEC family

DJB RADIO
3651 Lindell Rd., D466
Las Vegas, Nev. 89103 United States
Ron Paley, President and Sales Manager
+1-702-487-3336 x 1
Email: sales@djbradio.com
Website: http://www.djbradio.com
Products/Services: Since 1995, DJB Radio has developed and installed affordable radio automation supported by industry professionals.

OM BROADCAST ENGINEERING SRL
Via degli Orti 1
Funo di Argelato 40050 Italy
Chiara Massarenti
+39-051-817657
Email: sales@dmbroadcast.it
Website: http://www.dmbroadcast.it
Products/Services: Broadcast solutions for turnkey radio and TV systems. A tailor-made service that includes research & development; production; installation & training; assistance; and DM Academy.

DM ENGINEERING
2174 Chandler St.
Camarillo, Calif. 93010 United States
Dave Mandelbaum
+1-805-987-7881
+1-800-249-0487
Email: dave@dmengineering.com
Website: http://www.dmengineering.com
Products/Services: Manufacturers of multi-station relay adapters; single- and multiline phone flashers; various silence sense devices; Audio-Pod series of mic on-off controllers with headphone amplifiers; slave and solid-state relay packs; remote controls for Sage EAS; and other products for the broadcaster.

DOUBLERADIUS INC.
2022 Van Buren Ave.

Indian Trail, N.C. 28079 United States
Jeff Holdenrid
+1-704-927-6085
+1-866-891-3602
Email: jeffh@doubleradius.com
Website: https://www.doubleradius.com
Products/Services: DoubleRadius is an IP STL and wireless broadcast solution provider. Founded in 2001, our team's purpose is to serve as your trusted partner, helping your station succeed in today's high-tech content marketplace. Beyond supplying your cutting-edge IP STL and wireless equipment, we also offer consultation, integration, support and financing.

OTS AUDIO
3025 Orchard Parkway
San Jose, Calif. 95134 United States
+1-408-321-6000
Website: https://dts.com/
Products/Services: Since 1993, DTS has been dedicated to making the world sound better. Through its pioneering audio solutions for mobile devices, home theater systems, cinema and beyond, DTS provides incredibly high-quality, immersive and engaging audio experiences to listeners everywhere. DTS technology is integrated into several billion devices globally, and the world's leading video and music streaming services are increasingly choosing DTS to deliver premium sound to their listeners' network-connected devices. DTS is a wholly owned subsidiary of Xperi Corp.

ECONCO
1318 Commerce Ave.
Woodland, Calif. 95776-5908 United States
800-532-6626
Email: econco-sales@cpii.com
Website: http://www.econco.com
Products/Services: Power tube refurbisher.

ECRESO
See WorldCast Systems

ELBER SRL
Via Pontevecchio 42W
Carasco (GE) 16042 Italy
Christian Olcese
+39-0185-351333
Email: exhibitions@elber.it
Website: https://www.elber.com
Products/Services: Elber is an Italian company with European roots and a worldwide dimension. The company supplies TV/radio microwave links with satellite equipment; point-to-point links for telco and IP applications; monitoring equipment for TV and radio signals; HD and UHD video compression contribution solutions and other audio devices, systems and solutions.

ELECTRONICS RESEARCH INC.
7777 Gardner Rd.
Chandler, Ind. 47610 United States
Bill Harland
+1-812-925-6000
+1-877-375-5463
Email: bharland@eriinc.com
Website: https://www.eriinc.com
Products/Services: Television and FM transmitting antennas; RF filters and combiners; towers; grounding and lightning protection products; installation, structural analysis, inspection services; rigid transmission line and UHF waveguide systems. ERI is also the broadcast master distributor for CommScope HELIAX, accessories, pressurization products, and terrestrial microwave products.

ENCO SYSTEMS INC.
29444 Northwestern Hwy.
Southfield, Mich. 48034 United States
Ken Frommert, President
+1-248-827-4440
Email: sales@enco.com
Website: http://www.enco.com
Products/Services: ENCO is a premier global provider of automated broadcast solutions. The award-winning DAD is the most flexible, powerful and reliable radio automation system available, with recent innovations in cloud-based production and visual radio. Thousands of radio stations rely on ENCO for their automation, playout, scheduling and distribution needs.

ENERGY TRANSFORMATION SYSTEMS (ETS)
43353 Osgood Rd.
Fremont, Calif. 94539 United States
+1-510-656-2012
Sylvia Presley, Sales Account Executive
Email: sylvia@etslan.com
Website: http://www.etslan.com/
Products/Services: Manufacturer of audio, data and video interconnects and networking equipment such as converters, baluns, splitters, snakes, patch panels, etc.

ESE
142 Sierra St.
El Segundo, Calif. 90245 United States
+1-310-322-2136
Email: ese@ese-web.com
Website: http://www.ese-web.com
Products/Services: Master clock systems, digital and analog displays. GPS, NTP, modem, crystal or line frequency-based units. Standalone clocks and timers. Audio level interfaces and indicators.

EVENTIOE
One Alsan Way
Little Ferry, N.J. 7450 United States
Ray Maxwell
+1-201-641-1200
Email: rmaxwell@eventide.com
Website: https://www.eventideaudio.com
Products/Services: Eventide offers the industry-standard 80-second profanity delay, the BD600+. The BD600W+ integrates seamlessly into a WheatNet network, and the BD600E+ features extended remote capability for easy integration into automation systems. Eventide also offers the Anthology XI bundle of 23 software plug-ins for production.

EXPERT BROADCAST ELECTRONICS
1749 Conrad Circle
Carrollton, Texas 75007 United States
Steve Benzer
+1-214-542-3388
Email: rfsparks@verizon.net
Website: https://www.facebook.com/steve.benzer
Products/Services: Complete technical services, from IT software and infrastructure, analog audio and video, studio and transmitter site design, installation and repairs, to component-level electronic repairs. Based in North Texas and serving the U.S. coast to coast.

FM SERVICES
Wilkesboro, N.C. United States
+1-336-667-7091
Email: info@towermonitor.com
Website: http://www.towermonitor.com
Products/Services: Manufacturer of TLM-1 tower light monitor.

VENDOR & PRODUCT DIRECTORY

FUTURE

FUTURE PLC
5285 Shawnee Rd., Suite 525
Alexandria, Va. 22312 United States
Paul McLane, Editorial Director, Broadcast/Video
+1-703-852-4628
Email: radioworld@futurenet.com
Website: https://www.futureplc.com/

Products/Services: Parent of Radio World and Radio World International. Our mission is to connect audiences to authoritative, informative and compelling content in print, digitally and in person, along with offering unsurpassed value and innovation to our advertisers, sponsors and business partners. Brands also include TV Technology, Government Video, Broadcasting & Cable, TWICE and many other leading professional titles.

FUTURI MEDIA
4141 Rockside Road, Suite 300
Seven Hills, Ohio 44131 United States
+1-877-221-7979
Email: VIPsupport@futurimedia.com
Website: http://futurimedia.com

Products/Services: Futuri Media is at the forefront of developing social and mobile audience engagement technology for broadcasters. We pride ourselves on providing turnkey solutions for your busy team that won't blow your budget. And our 24/7 support team is the best in the business.

GATESAIR
5300 Kings Island Dr., Ste. 101
Mason, Ohio 45040 United States
Keith Adams, Marketing Communications Manager
+1-513-459-3447
Email: americas@gatesair.com
Website: http://www.gatesair.com

Products/Services: GatesAir Inc. provides complete solutions for over-the-air radio and television broadcasting, leveraging wireless spectrum to maximize performance for multichannel, mission-critical services. Powering over-the-air networks worldwide with unparalleled reliability for nearly 100 years, GatesAir leads the industry in innovation and design breakthroughs, improving efficiency and reducing total cost of ownership.

See Product Story on Page 32

GEOBROADCAST SOLUTIONS
875 North Michigan Ave., Ste. 3708
Chicago, Ill. 60611 United States
Hal Keller, VP Global Sales & Business Development
+1-941-347-8415
Email: hal@geobroadcastsolutions.com
Website: http://www.geobroadcastsolutions.com

Products/Services: Proprietary products and solutions to enhance radio station coverage areas to maximize both coverage and revenue, as well as the ability to zone audio (pending FCC approval) and RBDS/RDS.

GLENSOUND
6 Brooks Place
Maidstone, Kent ME14 1HE United Kingdom
Gavin Davis, Managing Director
+44-1622-753662
Email: sales@glensound.co.uk
Website: http://www.glensound.co.uk

Products/Services: Designing and building the highest quality audio systems for the broadcast and commercial audio market.

GORMAN REDLICH MFG. CO.
257 W. Union St.
Athens, Ohio 45701 United States
James Gorman
+1-740-593-3150
Email: jimg@gorman-redlich.com
Website: http://www.gorman-redlich.com

Products/Services: EAS encoder-decoders for radio and TV; NOAA weather receivers with SAME decoding and digital antenna monitors (Model CMR) for directional AM antenna arrays.

GRACE BROADCAST SALES
225 SW Skyline Dr.
Pullman, Wash. 99163 United States
Rod Schwartz, Owner
+1-509-332-8423
Email: rod@gracebroadcast.com
Website: http://gracebroadcast.com

Products/Services: GBS has been helping radio stations sell more advertising for over 25 years. The company provides :30/:60-second audio features ("sales boosters") for holidays, special events, retailers and professionals. Free demos and sales materials at https://gracebroadcast.com/sales-boosters.

GRAHAM STUDIOS
1805 E Lincoln Ave.
Ft. Collins, Colo. 80524 United States
Rod Graham, Founder
+1-970-225-1956
Email: rod@graham-studios.com
Website: http://www.graham-studios.com
Products/Services: Manufacturer of studio furniture.

GSSNET/ALERT FM
600 Jefferson St., Ste. 1102
Lafayette, La. 70501 United States
Matthew Straeb, Executive Vice President
+1-601-709-4240
Email: mstraeb@gssnet.us
Website: http://www.alertfm.com

Products/Services: GSS provides EAS and FM RDS technology to radio stations as part of its emergency notification systems available to states, counties, cities, tribal nations and colleges/ universities.

HATFIELD & DAWSON CONSULTING ENGINEERS LLC
9500 Greenwood Ave. North
Seattle, Wash. 98103 United States
+1-206-783-9151
Stephen Lockwood, P.E
Email: hatdaw@hatdaw.com
Website: http://www.hatdaw.com

Products/Services: H&D is an engineering consultancy specializing in radio communications and applied electromagnetic physics. The firm performs work in broadcasting, public safety, industrial, transportation and military communications; frequency allocation; medium- and low-frequency antenna design; RadHaz; and multiuser site problem solving are among the firm's specialties.
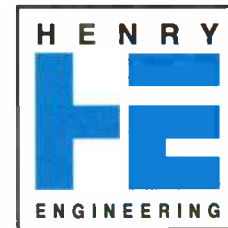
HEIL SOUND LTD.
5800 N. Illinois St.
Fairview Heights, Ill. 62208 United States
Sarah Heil, President
+1-618-257-3000
Email: info@heilsound.com
Website: http://www.heilsound.com
Products/Services: Manufacturer of microphones and booms.

HENRY ENGINEERING
P.O. Box 3796
Seal Beach, Calif. 90740 United States
Hank Landsberg
+1-562-493-3589
Email: henryeng562@gmail.com
Website: https://www.henryeng.com

Products/Services: "We Build Solutions" is our motto because our products solve problems. For 37 years, Henry Engineering's products have solved problems of audio interface, distribution, mixing, logic and system control. Our new SportsCaster solves the myriad of audio issues of doing live play-by-play sports event TV and radio broadcasts.

HD RADIO
See Xperi and DTS Audio

HIGH SOUND
Paroissien 2236 2 Floor, Office B
CABA Buenos Aires C1429CXH Argentina
Humberto Savoca
+54-11-4703-3199
Email: hsavoca@yahoo.com
Website: http://highsoundbroadcast.com

Products/Services: The company is dedicated to the manufacture of analog digital audio processors for broadcasting; antenna systems for AM; ATUs; antenna diplexer systems; static dampers; directional antenna design; technical advice; and engineering projects.

ICE KRACKERS INC.
273 Circle Dr.
Springfield, Ill. 62703 United States
Jim Newbanks
+1-217-529-8921
+1-800-747-8921
Email: icekrackers@comcast.net
Website: http://icekrackers.com

Products/Services: Production and sales of guy wire ice protective device.

INOVONICS INC.
5805 Highway 9
Felton, Calif. 95018 United States
Gary Luhrman
+1-831-458-0552
+1-800-733-0552
Email: sales@inovonicsbroadcast.com
Website: http://www.inovonicsbroadcast.com

Products/Services: For over 46 years Inovonics has maintained its position as a market leader of cost effective and innovative radio broadcast products. Inovonics specializes in high-quality audio processors, RDS encoders, AM/FM modulation monitors, and off-air monitoring equipment for AM/FM/HD/RDS/internet radio.

See Profile in Excellence on Page 6

VENDOR & PRODUCT DIRECTORY

INSOFT LLC
20725 NE 16th Ave, A17
North Miami, Fla. 33179 United States
Alex Bonello
+1-786-292-2811
Email: info@insoftus.com
Website: insoftus.com
Products/Services: INSOFT LLC is a U.S.-based company that specializes in radio solutions. As a pioneer in visual radio, our company has been helping hundreds of broadcasters from all over the world enter the era of visual radio, allowing them to increase their market share, while making extra revenue from visual advertising, VOD contents and social media monetization.

JAMPRO ANTENNAS INC.
6340 Sky Creek Dr.
Sacramento, Calif. 95828-1025 United States
Sonia Del Castillo
+1-916-383-1177
+1-866-452-6770
Email: sonia@jampro.com
Website: http://www.jampro.com
Products/Services: A complete broadcast solution partner for FM HD Radio DAB solutions and broadcast antenna company, with over 65 years of experience. A global leader in the broadcast industry offering integrated RF broadcast systems; broadband FM antennas, combiners, filters, rigid transmission line, towers and field services.

JK AUDIO
1311 E 6th St.
Sandwich, Ill. 60548 United States
+1-815-786-2929
+1-800-552-8346
Email: info@jkaudio.com
Website: http://www.jkaudio.com
Products/Services: Audio interfaces for broadcast professionals — phone hybrids for interviews and talk shows; field mixers for remote broadcasts; wired and wireless interface tools for mobile communications.

KING FM — PRODUCTION DIRECTOR
10 Harrison St., Ste. 100
Seattle, Wash. 98109 United States
Mike Brooks, CBRE/SBE – AES
+1-206-691-2976
Email: michaelb@king.org
Website: https://www.king.org
Products/Services: Talent available for commercial narration, video voice over, audio editing, audio restoration.

KINTRONIC LABS
P.O. Box 845
Bristol, Tenn. 37621 United States
Tom King, CEO/President
+1-423-878-3141
Email: ktl@kintronic.com
Website: http://www.kintronic.com
Products/Services: Kintronic Labs is a world leader in design/manufacture/installation of analog and HD/DRM-capable AM/MW broadcast transmission systems for 1 kW to 1.5+ MW. KTL also offers FM combiners, outdoor racks, isocouplers, isocoils and patch panels for FM translators.

KOZACKO MEDIA SERVICES
6890 E. Sunrise Dr. #120-40
Tucson, Ariz. 85750 United States
George Kimble
+1-520-299-4869
Email: georgewkimble@aol.com

Website: http://www.radiotv4sale.com
Products/Services: Whether owning your first station has been a life-long dream, or you're growing your existing group, Radio For Sale is your first step to finding the radio station that matches your needs and budget. Contact George Kimble, Dick Kozacko or Pat Anderson and put us to work for you.

LAWO INC.
99 Hudson St., Fifth Floor
New York, NY 10013 United States
+1-416-292-0078
+1-888-810-4468
Email: info@lawo.com
Website: https://www.lawo.com
Products/Services: Lawo designs and manufactures pioneering network, control, audio and video technology for broadcast, developed and manufactured in Germany to highest quality standards. Lawo radio products include digital mixing consoles, virtual radio applications, and both traditional and AoIP routing systems, all designed to provide more capability for less cost.

LBA TECHNOLOGY INC.
3400 Tupper Dr.
Greenville, N.C. 27834 United States
Mike Britner, VP Sales
+1-252-757-0279
Email: LBAT@lbagroup.com
Website: http://www.lbagroup.com
Products/Services: LBA Technology supplies and fabricates RF and antenna equipment for AM medium-wave stations worldwide. Our systems include ATUs, diplexers, folded unipoles, mobile towers, FM/TV isocouplers, ground systems and more. LBA makes AM radio towers and masts

VENDOR & PRODUCT DIRECTORY

more effective and efficient to "Reach further, sound better!"

LIFETALK RADIO NETWORK
P.O. Box 7150
Riverside, Calif. 92513 United States
John Geli
+1-805-955-7630
+1-800-775-4673
Email: office@lifetalk.net
Website: https://lifetalk.net
Products/Services: LifeTalk Radio is broadcasting God's message of love and redemption 24 hours a day. Programming designed to strengthen spiritual life and family values. If you are looking for Christian programming for your station, give us a call.

LIGHTNER ELECTRONICS INC.
1771 Beaver Dam Rd.
Claysburg, Pa. 16625 United States
Matthew Lightner, President
+1-814-239-8323
Email: sales@lightnerelectronics.com
Website: http://www.lightnerelectronics.com
Products/Services: Lightner Electronics Inc. is a full-service broadcast engineering, audio/visual integration and equipment supply firm providing design, repair, fabrication, sales and installation. We offer professional bench repair of all types of broadcast equipment. We also offer an online store that specializes in refurbished broadcast equipment.

LOGITEK ELECTRONIC SYSTEMS
5622 Edgemoor Dr.
Houston, Texas 77081 United States
Frank Grundstein
+1-713-664-4470
+1-800-231-5870
Email: northamericansales@logitekaudio.com
Website: https://www.logitekaudio.com
Products/Services: Since 1979, Logitek has been an innovator in broadcast audio. A North American pioneer in offering a router-based digital audio console, Logitek today makes networked audio consoles that run on audio over IP technologies, and offers JetLink, an IP-based audio transportation service.

LYNX STUDIO TECHNOLOGY
190 McCormick Ave.
Costa Mesa, Calif. 92626-3307 United States
+1-714-545-4700
Email: sales@lynxstudio.com
Website: http://www.lynxstudio.com
Products/Services: Manufacturer of digital audio interfaces and computer audio cards.

MARKETRON BROADCAST SOLUTIONS INC.
101 Empty Saddle Trail
Hailey, Idaho 83333 United States
Website: http://www.marketron.com

MEDUCI LLC
P.O. Box 2
Boyertown, Pa. 19512-0002 United States
Jeff Deck
+1-407-879-0002
Email: amstereo@meduci.com
Website: http://meduci.com
Products/Services: An international manufacturer, meduci LLC is the largest producer of AM stereo tuners and C-QUAM decoder boards. We are an entrepreneurial and innovative organization. We produce in prototype quantities up to large scale manufacturing.
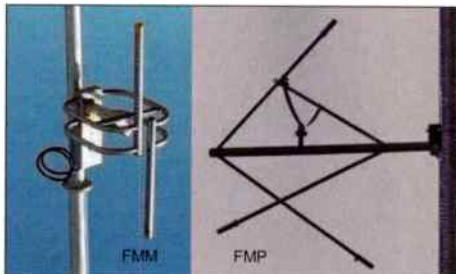
MICRONETIXX COMMUNICATIONS
70 Commercial St.
Lewiston, Maine 04240 United States
William Ammons
+1-207-786-2000
Email: info@micronetixx.com
Website: http://www.micronetixxantennas.com
Products/Services: Full line of FM antennas from low- to high-power, including LPFM antennas, and TV. Rugged stainless steel design. Wideband FM models available. Log periodic antenna — choice of aluminum or stainless steel. FM combiners.

MODULATION INDEX LLC
1249 S. Diamond Bar Blvd. #314
Diamond Bar, Calif. 91765 United States
John F. Schaab
+1-940-206-7702
Email: john@streamindex.com
Website: https://www.streamindex.com
Products/Services: Dedicated to enterprise-level and high-quality audio streaming with the latest Fhg codecs for the entire AAC family including xHE-AAC with HLSdirect and world class audio processing from Bob Orban and Greg Ogonowski.

MOORETRONIX
5311 S. Green Ave.
Fremont, Mich. 49412 United States
Bob Moore
+1-231-924-7818
Email: rrmoorejr@aol.com
Website: http://www.mooretronix.com/
Products/Services: Mooretronix specializes in the sale and service of Pacific Recorders & Engineering consoles, modules and accessories for the broadcast community.

MOSELEY ASSOCIATES INC.
82 Coromar Dr.
Santa Barbara, Calif. 93117 United States
Bill Gould, Broadcast Sales Manager
+1-805-968-9621
Email: sales@moseleysb.com
Website: http://www.moseleysb.com
Products/Services: Moseley is a pioneer and a leading manufacturer of digital audio and video microwave links. The first to bring a totally transparent studio-to-transmitter link to the

crowded, hostile RF environment, Moseley has over 15,000 microwave systems in service around the world.

MUSIC 1 INC.
210 W. Sierra Circle
San Marcos, Texas 78666 United States
Steve Warren
+1-512-392-2415
Email: steve@gomusic1.com
Website: https://gomusic1.com

MUSICMASTER
8330 LBJ Freeway, Ste. B1050
Dallas, Texas 75243 United States
+1-469-717-0100
Jerry Butler
Email: sales@musicmaster.com
Website: http://www.musicmaster.com
Products/Services: MusicMaster is the most flexible music scheduling software for radio and music-television stations, fitting any format or platform from an enterprise to a personal level. MusicMaster features dedicated support and unparalleled customizability, including a user-defined database and open API that delivers enhanced real-time integration between MusicMaster and third-party systems.

MXL MICROPHONES/MARSHALL ELECTRONICS
20608 Madrona Ave.
Torrance, Calif. 90503
+1-310-333-0606
Email: inquiries@mxlmics.com
Website: http://www.mxlmics.com

MYAT INC.
360 Franklin Tpk.
Mahwah, N.J. 07430 United States
Dennis Heymans
+1-201-684-0100
Email: dheymans@myat.com
Website: http://www.myat.com
Products/Services: RF products for radio and TV. Myat's products include rigid coax transmission line and components from 7/8 to 9 3/16, motorized coax switches and N+1 switching matrix, patch panels, directional couplers, adapters and reducers to N and DIN.

NAUTEL
10089 Peggy's Cove Rd.
Hackett's Cove, N. S. B3Z 3J4 Canada
+1-902-823-5131
Email: sales@nautel.com
Website: http://nautel.com
Products/Services: Nautel offers a broad portfolio of digital/analog solid-state radio transmitters: 1–2000 kW AM/MW and 300 W–88 kW FM transmitters; VS300LP for LPFM and solutions for HD Radio. Nautel transmitters offer comprehensive monitoring and control instrumentation via touchscreen or web, outstanding reliability, compact footprints, high efficiency, easy maintenance and 24/7 support.

NEOGROUPE
14 rue des selliers
Marolles-en-Brie 94440 France
Philippe Halin, CEO
+33-972-23-62-00
Email: philippe.halin@neogroupe.com
Website: https://www.neogroupe.com
Products/Services: Software solutions for radio and television broadcasters. Applications include call screening, promotions management, budgets/purchases and assets inventory

VENDOR & PRODUCT DIRECTORY

solutions dedicated to customers ranging from high-profile talk shows to major public organizations. New functions focus on VoIP, social media and smartphone applications.

NETIA
120 Allée John Napier
Montpellier 34980 France
+33-4-67-59-08-07
Email: sales@netia.com
Website: https://www.netia.com
Products/Services: Netia is a leading enterprise software editor of radio automation and playout systems to enable efficient management, production and delivery of audiovisual content to today's full array of media platforms.

NEUTRIK USA INC.
4115 Taggart Creek Rd.
Charlotte, N.C. 28208 United States
+1-704-972-3050
Email: info@neutrikusa.com
Website: http://www.neutrik.com

NOVA ELECTRONICS
Box 740482
Dallas, Texas 75374 United States
Mike Vanhooser
+1-214-725-5621
Email: sales@novaelectronics.net
Website: http://www.novaelectronics.net
Products/Services: We design, build and repair station facilities. Specialists in AM and directionals, elevated counterpoise, tower erections and service, generators and green energy. From microphone to tower lights and everything in between, including all aspects of construction, we are a one-stop shop.

NOVUS POWER PRODUCTS LLC
201 N. Forest Ave.
Independence, Mo. 64050 United States
Bill Kurple
+1-866-313-9401
Email: bkurple@novuspower.com
Website: http://www.novuspower.com
Products/Services: Novus is a manufacturer of precision frequency and timing reference products and related equipment. 10 MHz references are the most popular with products that are OCXO, TCXO and Rubidium based can be configured to be GNSS locked. Local and remote monitoring with SNMP. Low phase noise and stabilized PPS platforms.

NPR SATELLITE SERVICES
1111 North Capitol St. NE
Washington, D.C. 20002 United States
Dan Riley, Sales Representative
+1-202-513-2624
Email: driley@npr.org
Website: http://www.nprss.org
Products/Services: Satellite content uplink services, systems and equipment dealer.

NTI AMERICAS INC.
PO Box 231027
Portland, Ore. 97281 United States
Brian MacMillan
+1-503-684-7050
Email: ntisales@ntiam.com
Website: http://www.nti-audio.com
Products/Services: NTI manufactures and distributes the full line of Exel and Minstruments handheld audio test tools and Flexus modular engineering and lab audio analyzers.

Our Exel line includes the XL2 audio/acoustics analyzer, the DR2 digital audio generator and the DL1 digital audio analyzer; MR2 & MR-PRO analog generators.

O.C. WHITE CO.
4226 Church St.
Thorndike, Mass. 01079 United States
Richard May Jr., Industrial Sales Manager
+1-413-289-1751
Email: info@ocwhite.com
Website: http://www.ocwhite.com
Products/Services: A standard bearer in mic booms since the 1960s.

OC TALK RADIO
3420 Bristol, 6th Floor
Costa Mesa, Calif. 92626 United States
Paul Roberts
+1-949-330-7760
Email: paul.roberts@octalkradio.net
Website: https://www.octalkradio.biz
Products/Services: Community based, online talk radio station serving Orange County, Calif. Streaming … not screaming.

OMB AMERICA
3100 NW 72 Ave., Unit 112
Miami, Fla. 33122 United States
Rafael Arreaza
+1-305-477-0974
Email: arreaza@omb.com
Website: http://omb.com
Products/Services: Manufacturer of FM radio transmitters, STL links, antennas and related transmission equipment.

OMNIA AUDIO
See The Telos Alliance

OMNIRAX FURNITURE CO.
P.O. Box 1792
Sausalito, Conn. 94966 United States
Philip Zittell
+1-415-332-3392
+1-800-332-3393
Email: philip@omnirax.com
Website: https://omnirax.com
Products/Services: What differentiates Omnirax from other furniture manufacturers is our balanced blend of style, functionality and ergonomics, our Dynamic Interactive Design process and fanatical attention to detail. Intuitive custom solutions at near-production prices. Trust us with your next project and become a customer for life!

ONAIR MEDYA LTD.
Yukari Dudullu Mah. Necip Fazil Blv.Keyap Sitesi D1
Blok No: 44/56 Umraniye
Istanbul 34775 Turkey
Lüfti Aysan, CEO
+90-216-5407045
Email: info@onair.com.tr
Website: http://onair.com.tr
Products/Services: Design and manufacturing of FM and TV transmitters, microwave links, FM-VHF–UHF pallet amplifiers, antenna systems and professional radio studio products.

ON-HERTZ
Ave. Saint Pancrace 18
Kraainem 1950 Belgium
Benjamin Lardinoit
+32-493-81-03-75

Email: intercom@on-hertz.com
Website: https://www.on-hertz.com
Products/Services: We increase radio audience engagement by bringing radio presenters closer to their audience. To do so, we dematerialize professional live radio studios by transforming them into an integrated versatile web app running on COTS devices or in the cloud for extreme mobility, better operations and at a fraction of the cost.

ONETASTIC
Via G. Di Vittorio 17
Brescia 25125 Italy
+39-030-353-9080
Email: info@onetastic.com
Website: http://www.onetastic.com
Products/Services: ONEtastic has extensive experience in over-the-air broadcasting and telecommunications. The technical know-how and knowledge of the market allow ONEtastic to propose highly innovative and constantly updated solutions: DAB/DAB+/T-DMB, DVB-T/H/T2, ISDB-T/Tb, PAL/NTSC air and liquid cooled transmitters, gap-fillers, multi-channel transmitters.

OPTELATOR-STORMIN PROTECTION PRODUCTS INC.
243 21st Ave. N.
St. Petersburg, Fla. 33704 United States
John Pecore, President
+1-727-823-6100
Email: jpecore@earthlink.net
Website: http://www.opticshield.com
Products/Services: Power quality engineering company. Fiber optic remote modem isolation (Optelator) used on Gentner, Burk and other remote monitoring Line interactive AVR UPS 2200VA rack mount and floor models -handle backup generators w/wide freq. bandwidth issue. Industrial 100BASET surge suppression and low-voltage protection devices.

ORBAN LABS INC.
7209 Browning Rd.
Pennsauken, N.J. 08109-4602 United States
+1-856-719-9900
Email: sales@orban.com
Website: https://www.orban.com
Products/Services: For over 45 years, Orban has been the benchmark for audio processing worldwide and continues today to provide absolute state-of-the-art audio solutions for live performance venues and content creators, as well as radio, TV and internet broadcasters. Technology applications include audio processing, loudness measurement and control and multichannel surround audio.

ORBAN EUROPE GMBH
Moneposstrasse 55
Ludwigsburg 71634 Germany
Peter Lee
+49-7141-22660
Peter Lee
Email: pjlee@orban-europe.com
Website: https://www.orban.com
Products/Services: For over 45 years, Orban Optimod has been the benchmark for professional audio processing worldwide and continues today to provide absolute state-of-the-art audio for radio, TV and internet broadcasters.

ORBITAL MEDIA NETWORKS INC.
76 Inverness Dr. E, Ste. C
Englewood, Colo. 80112 United States
Jonathon Hagans, Sales
+1-303-925-1708
Email: sales@orbitalmedianetworks.com

VENDOR & PRODUCT DIRECTORY

Website: http://www.orbitalmedianetworks.com
Products/Services: Satellite program distribution network.

PARAVEL SYSTEMS
41 W. Lee Hwy., Ste. 59, #124
Warrenton, Va. 20186 United States
Fred Gleason, President
+1-877-447-2728
Email: sales@paravelsystems.com
Website: http://www.paravelsystems.com
Products/Services: Paravel Systems is a leading provider of innovative broadcast solutions, like the Radio World and Radio Magazine Best of Show-winning WallTime NTP Clock and Notification System and the open source Rivendell Radio Automation System.

P-CUBE INC.
2 Karen Dr.
Westbrook, Maine 04092 United States
Spencer J. Smith
+1 207-318-3349
Email: spencer@pcube207.com
Website: http://www.pcube207.com
Products/Services: P-Cube Inc. supplies RF components from 100 W to 100 kW for both radio and TV. Our products include filters, patch panels, couplers, combiners, power dividers, up to complete output systems form the output of the transmitter to the input to the antenna. Contact us for all your high-power RF technical needs.

POWER-LINK SOFTWARE SYSTEMS INC.
P.O. Box 504
Clarkesville, Ga. 30523 United States
Rick Rowland
+1-888-754-9337
Email: Rick@power-link.com
Website: http://power-link.com
Products/Services: Software for commercial reconciliation, media readiness and automation playout system playlist logistics.

PR&E
See Wheatstone Corp.

PRISTINE SYSTEMS INC.
P.O. Box 6489
San Pedro, Calif. 90734 United States
Kevin Loper
+1-310-831-2234
Email: kevin@pristinesys.com
Website: http://www.pristinesys.com
Products/Services: Established in 1983, Pristine Systems Corp. offers live assist, satellite automation and music-on-hard-drive solutions. Each designed to be user-friendly, yet powerful enough to handle the most demanding tasks. Advanced metadata capabilities, easy operation, cutting-edge features, unsurpassed tech support and affordable pricing.

PRO-COMM INC.
1105 Industrial Pkwy.
Brick, N.J. 8724 United States
Frank Visone
+1-732-206-0660
Email: procomm222@aol.com
Website: http://www.procomm222.com

PROAUDIO.COM
PO Box 155999
Ft. Worth, Texas 76155-0999 United States
Mark Bradford
+1-972-343-9231
+1 800-433-2105
Email: sales@proaudio.com
Website: http://proaudio.com
Products/Services: We are a company devoted to broadcaster equipment needs. Our broadcast roots go back to the 1940s, and we provide the best is pricing and service to our customers. Whatever you need, contact us. We love to help!

PROGRESSIVE CONCEPTS
305 South Bartlett Rd.
Streamwood, Ill. 60107 United States
Eric Hoppe, Owner
+1-630-736-9822
Email: sales@progressive-concepts.com
Website: http://www.progressive-concepts.com
Products/Services: FM radio broadcast and LPFM radio broadcast transmitters, coaxial cables, antennas, towers, microphones, mixing consoles, audio processors, accessories and more. Also distributes D&R radio broadcast consoles.

PROPAGATION SYSTEMS INC. — PSI
719 Pensacola Rd., PO Box 113
Ebensburg, Pa. 15931 United States
Doug Ross, President
+1-814-472-5540
Email: sales@psibroadcast.com
Website: http://www.psibroadcast.com
Products/Services: FM and TV broadcast antennas, combiners, filters and transmission lines. Also available are antenna designs available for all power levels, directional or nondirectional, pattern optimization, customization and multistation requirements. In addition FM and TV turnkey transmission systems are available.

RADIO STATION SOLUTIONS
United States
Dave Brierley-Jones
+1-415-980-3530
Email: info@radiostationsolutions.com
Website: http://radiostationsolutions.com
Products/Services: Providing automation software (PlayoutONE) and streaming services to broadcasters worldwide.

RADIO SYSTEMS
601 Heron Dr.
Logan Township, N.J. 08085 United States
+1-856-467-8000
Email: sales@radiosystems.com
Website: http://www.radiosystems.com
Products/Services: Manufacturer of hybrid and digital consoles, distribution amplifiers, clocks and timers, telephone interfaces and StudioHub+ Cat-5 complete studio wiring systems.

RADIOWORLD

RADIO WORLD
5285 Shawnee Rd., Suite 525
Alexandria, Va. 22312-2334 United States
+1-703-852-4600
Email: radioworld@futurenet.com
Website: www.radioworld.com
Products/Services: Radio World is the leading news analysis and career resource for radio technologists, managers and engineers, serving the global broadcast and new media marketplace. Visual radio, digital media, streaming, IP audio, new transmission standards, tech tips, newsmaker profiles and more. We are now part of Future plc, the global platform for specialist media and market leader in consumer tech, gaming, music and knowledge, which is now ranked number one for technology news within the U.S. and U.K. marketplaces.

RADIODNS
96a Curtain Rd.
London EC2A 3AA United Kingdom
+44-1600-888-335
Email: feedback@radiodns.org
Website: https://radiodns.org
Products/Services: Hybrid radio combines broadcast radio and the internet. A broadcast signal (FM, HD Radio, DAB, DAB+) continues to carry audio (and some data), but a radio with an internet connection (Wi-Fi, 3G, 4G, LTE) can seamlessly connect back to a station for multimedia and interactivity. It's an app-like experience for broadcast radio. RadioDNS creates and maintains the open technical standards for hybrid radio. We're a not-for-profit organization that promotes and supports the growth of hybrid radio.

RADIOHOST
Belgium
+32-495-38-39-39
Email: support@radiohost.com
Website: http://www.radiohost.com
Products/Services: Radiohost is a rock-solid radio automation system.

RADIOTVDEALS.COM
United States
Sandi Bergman
+1-575-356-3644
Email: sales@radiotvdeals.com
Website: https://www.radiotvdeals.com
Products/Services: RadioTVDeals is the "Nation's Largest Marketplace for Radio and Television Stations for Sale/LMA" featuring station listings posted by numerous nationwide media brokers and direct sellers. New in 2019 — RadioTVDeals will feature new listing categories for New/Used Broadcast Equipment for Sale, Industry Experts and Radio/TV On-Air Programming Listings.

RAM SYSTEMS
27992 West Route 120, Ste. 138
Lakemoor, Ill. 60051 United States
Ron Mitchell, President
+1-815-679-6574
Email: sales@ram68.com
Website: http://www.ram68.com
Products/Services: Manufacturer of studio furniture, acoustic treatment products. Also distributor of Dixon System mixers; Studio Items booms and accessories; and Torpey Time clocks and displays.

RCS
445 Hamilton Ave
White Plains, N.Y. 10601 United States
Diana Stokey
+1-914-428-4600
Email: dstokey@rcsworks.com
Website: https://www.rcsworks.com
Products/Services: RCS continues to lead the way with multiple award-winning products such as Zetta radio automation, GSelector music scheduling, the groundbreaking 2GO series of mobile solutions and The Selector Cloud. The most respected names in the industry choose RCS as their software provider because the best use the best.

RFE BROADCAST
Via Marevitano 26
Falerna CZ 88042 Italy
Elena Ditadi
+39-0968-1945299

VENDOR & PRODUCT DIRECTORY

Email: elena@rfebroadcast.com
Website: http://rfebroadcast.com
Products/Services: RFE Broadcast is an Italian company founded in 2015, holding the secrets of 40 years of experience in the broadcast industry. Winner of the Radio World Best of Show Award at IBC in 2017 and 2018 for the best FM transmitter, RFE produces FM, TV transmitters as well as antennas, STL, AOIP links and amplifiers for scientific applications.

RFMONDIAL GMBH
Appelstr. 9a
Hannover 30167 Germany
Dr. Jens Schroeder
+49-511-76219704
Email: info@rfmondial.de
Website: https://www.rfmondial.com
Products/Services: RFmondial offers professional products and services for the digital broadcasting industry as well as other industries with the need for innovative hardware and software. Research, development and prototype implementation for transmitter, receiver, and monitoring technology as well as design services for various industries are part of the core business.

ROHDE & SCHWARZ GMBH & CO. KG
Muehldorfstr. 15
Munich 81671 Germany
+49-89-4129-0
Email: customersupport@rohde-schwarz.com
Website: https://www.rohde-schwarz.com
Products/Services: Rohde & Schwarz has been an innovator in broadcast and media for over 70 years. The product portfolio covers the entire signal processing chain for digital video and audio content from ingest and playout to encoding/

multiplexing, from contribution to satellite and IP networks to terrestrial transmission.

ROHDE & SCHWARZ USA INC.
6821 Benjamin Franklin Dr.
Columbia, Md. 21046 United States
+1-410-910-7800
Email: info@rsa.rohde-schwarz.com
Website: http://www.rohde-schwarz.com/USA
Products/Services: See above

See Product Story on Page 36

SABRE INDUSTRIES INC.
7101 Southbridge Dr.
Sioux City, Iowa 51111 United States
+1-800-369-6690
Email: towerinfo@sabreindustries.com
Website: http://www.sabreindustries.com
Products/Services: Manufacturer of broadcast towers.

SAGE ALERTING SYSTEMS INC.
800 Westchester Ave, Suite 641 North
Rye Brook, N.Y. 10573 United States
+1-914-872-4069
Email: info@sagealertingsystems.com
Website: http://www.sagealertingsystems.com
Products/Services: Emergency Alert System and Common Alerting Protocol hardware and software for the international broadcast industry. Our flagship product, the Sage Digital ENDEC, provides combined EAS and CAP support in a fully certified solution. Sage has provided EAS solutions since 1996.

SAVE DIFFUSION
23 Rue de la Talaudiere

Saint-Etienne 42000 France
Paul Guibouret, Director
+33-4-77-79-46-79
Email: contact@savediffusion.fr
Website: https://www.savediffusion.fr
Products/Services: Since 1988, Save Diffusion has maintained its position as a market leader for the distribution and integration of broadcast solutions. Providing turnkey solutions, Save Diffusion is more than just a systems integrator: The firm's team offers advanced knowledge of broadcast technologies and associated products.

SCMS INC.
10201 Rodney St.
Pineville, N.C. 28134 United States
Bob Cauthen
+1-704-889-4508
+1-800-438-6040
Email: bobc@scmsinc.com
Website: https://scmsinc.com
Products/Services: SCMS has been your broadcast/av equipment solutions provider for 42 years. There are 16 sales reps and 10 field offices throughout the U.S. and Latin America, plus the N.C. corporate office. Customers from professional radio, audio/visual, and television broadcast call SCMS for skilled, knowledgeable solutions and great broadcast gear.

SECURENET SYSTEMS/CIRRUS STREAMING
356 SW 12th Ave
Deerfield Beach, Fla. 33442 United States
Diego Baeza
+1-954-481-9402
Email: info@cir.st

VENDOR & PRODUCT DIRECTORY

Website: http://cir.st

Products/Services: All-in-one streaming and podcasting solution for stations and broadcasters all over the world. Offering several player options for live streaming and podcasting/on-demand that are equipped with full control ad serving, a programmatic ad network to earn additional revenue, and free mobile streaming apps.

SHIVELY LABS
188 Harrison Rd.
Bridgton, Maine 04009 United States
Angela Gillespie
+1-207-647-3327
Email: agillespie@shively.com
Website: https://www.shively.com

Products/Services: For 50+ years Shively has developed FM products that set us above and beyond. We have a full line of FM antennas that will meet demanding needs in both pattern and environment challenges, as well as custom filter and combining to make the best-performing units for your site.

SIERRA AUTOMATED SYSTEMS
2821 Burton Ave.
Burbank, Calif. 91504 United States
Emilio Gomez
+1-818-840-6749
+1-800-840-6749
Email: emilio@sasaudio.com
Website: https://sasaudio.com

Products/Services: SAS manufactures IP, digital and analog audio network routers, consoles, studio control panels, intercoms and loudness meters. SAS uses Dante and AES67 for IP networking and provides solutions for remote audio. SAS also markets on air phone systems utilizing VoIP and/or POTS.

SIERRA WAVE MEDIA
1280 N Main St. Ste. J
Bishop, Conn. 93514 United States
Bill LeFever
+1-760-873-5329
Email: blefever@sierrawave.net
Website: http://www.sierrawave.net

Products/Services: Radio, television, online broadcaster and steaming professionals.

![POWERCLAMP logo]

SINE CONTROL TECHNOLOGY INC.
P.O. Box 3796
Seal Beach, Calif. 90740 United States
Hank Landsberg
+1-562-493-3589
Email: hank@sinecontrol.com
Website: http://www.sinecontrol.com

Products/Services: PowerClamp by Sine Control Technology Inc. provides the best protection against power line spikes and surges. PowerClamp Surge Protective Devices (also called TVSS) clamps most transients to within a few volts of the AC waveform, preventing serious damage to transmitters and other electronic equipment.

SINE SYSTEMS
4835 N. St. Rd.
Marcellus, N.Y. 13108 United States
Kevin Smith
+1-315-673-1269
Email: kevin@armstrongtx.com
Website: http://sinesystems.com

Products/Services: Sine Systems produces the popular RFC-1/B remote control and the RAK-2 web interface remote control, temperature sensors and AC current monitors for transmitter sites.

SKYWAVES CONSULTING LLC
P.O. Box 4
Millbury, Mass. 1527 United States
Dave Doherty
+1-401-354-2400
Email: consultants@skywaves.com
Website: http://sb.skywaves.com

Products/Services: Skywaves provides technical services including FCC technical interface, pre-purchase inspections, troubleshooting, station improvement studies and temporary fill-in chief engineer services.

SMARTS BROADCAST SYSTEMS
2508 Main St.
Emmetsburg, Iowa 50536 United States
Johnny Schad
+1-800-747-6278
Email: johnnyschad@smartsbroadcast.com
Website: http://www.smartsbroadcast.com

SONIFEX LTD.
61 Station Rd.
Irthlingborough NN9 5QE United Kingdom
Richard Butlin
+44-1933-650700
Email: sales@sonifex.co.uk
Website: http://www.sonifex.co.uk

Products/Services: Sonifex is a U.K. manufacturer of high-quality audio equipment for AV integration/installed sound and broadcast/radio/TV. Focusing on Dante and AES67 AoIP network audio products, solutions exist for talkback/intercoms, commentary, audio mixing/routing/monitoring: Dante commentary units, talkback/listening/paging intercoms, 24-channel AES67 mix-monitor, multichannel audio interfaces.

SPRITE MEDIA INC.
71-15 Loubet St.
Forest Hills, N.Y. 11375 United States
Jeff Schick
+1-646-893-8040
Email: info@sprite-media.com
Website: https://www.sprite-media.com

Products/Services: Sprite Media offers state-of-the-art video displays (digital signage) for the radio industry as well as industry web design. We provide digital signage for lobbies, studios, newsrooms, sales departments and staff. The content for each display is custom designed using each station unique colors, logs and presentations.

STEWART MEDIA SOLUTIONS
3833 Beaumont Lane
Plano, Texas 75023 United States
Peter Stewart
+1-214-675-1272
Email: peter@stewartmediasolutions.com
Website: http://stewartmediasolutions.com

Products/Services: Knowledge and support for today's media, market and brand.

STIRLITZ MEDIA
Belgijska 11/11
Warsaw 02-511 Poland
Cesco van Gool, International Sales Director
+48-223897642
Email: cesco@stirlitzmedia.com
Website: https://www.stirlitzmedia.com

Products/Services: Solutions for TV and radio monitoring, compliance recording and content identification native, IP audio/video and metadata logging; timeline based player for Windows, OS X, iOS and Android. The company also provides systems for the automated detection of advertisements and songs in audio, automated and scripted exports based on playout system metadata. Stirlitz Media software is used by broadcasters and monitoring companies worldwide.

STREAMGUYS
2212 Jacoby Creek Rd.
Bayside, Calif. 95524 United States
Jonathan Speaker, COO
+1-707-667-9479
Email: info@streamguys.com
Website: http://www.streamguys.com

Products/Services: Live and on-demand streaming, podcasting delivery and software-as-a-service (SaaS) toolsets for enterprise-level broadcast media organizations.

See Product Story on Page 35

STREAMS-MODULATION INDEX LLC
1249 S. Diamond Bar Blvd. #314
Diamond Bar, Calif. 91765-4122 United States
Greg Ogonowski, President
+1-940-206-7702
Email: info@streamindex.com
Website: https://www.streamindex.com

Products/Services: Audio streaming encoders both in software-only and systems for both Legacy ICY and new StreamS HLSdirect, eliminating the need for costly media servers. PAD:Bridge PAD distribution software, IODigi2 AES to USB interface, AoIP audio master clocks, RadioDJ playout automation, and Free HLS HTML5 players.

STUDER
8500 Balboa Blvd.
Northridge, Calif. 91329 United States
Rob Lewis, U.S. Sales Director
+1-415-867-9550
Email: studer-usa@harman.com
Website: http://www.studer.ch

Products/Services: Studer by Harman designs and manufactures IP, HD and SD audio mixing systems for radio and TV.

STUDER
Riedthofstrasse 214
Regensdorf 8105 Switzerland
Mark Hosking, Director, Global Sales
+44-1707-668017
Email: studer@harman.com
Website: https://www.studer.ch

Products/Services: See above.

STUDIO TECHNOLOGY
529 Rosedale Rd. #103
Kennett Square, Pa. 19348 United States
Vince Fiola
+1-610-925-2785
Email: vfiola@studiotechnology.com
Website: http://www.studiotechnology.com

Products/Services: Studio Technology designs, constructs, delivers and installs technical furniture for radio and television stations. We provide true custom-built furniture, not a cookie-cutter solution that is customized. Our goal is to develop a design and provide furniture that fits your budget and operational needs.

SUMMIT SOFTWARE SYSTEMS INC.
1891 N Gaffey St., Ste. 203
San Pedro, Calif. 90731 United States

Kevin Loper
+1-310-831-2234
+1-800-771-1827
Email: sales@summitsoftware.com
Website: http://www.summitsoftware.com
Products/Services: Formed in 1983, Summit Software Systems Inc. has been working continuously with the broadcast and cable industries to create traffic, billing and ad sales management systems that surpass the capability of other systems available in the market.

SUMMIT TECHNOLOGY GROUP
3261 Orchard Lake Rd.
Keego Harbor, Mich. 48320 United States
Paul Stewart
+1-248-706-6963
Email: info@summittechgroup.com
Website: https://www.summittechgroup.com
Products/Services: Summit Technology Group is the broadcast and communication industry's foremost regulatory compliance provider, with software products for compliance logging and recording to compliance inspections and filing services. Let our team of knowledgeable consultants help you to maintain compliance without compromise.

SURCOM ASSOCIATES INC.
5674 El Camino Real, Suite K
Carlsbad, Calif. 92008 United States
+1-760-438-4420
Email: link@surcom.com
Website: http://www.surcom.com

Products/Services: A stocking distributor of vacuum, ceramic and mica RF transmitting capacitors.

TALK SHOWS USA
30 Mobray Ct.
Colorado Springs, Colo. 80906 United States
Skip Joeckel
+1-719-579-6676
Email: skip@talkshowsusa.com
Website: http://www.talkshowsusa.com
Products/Services: Syndicates programming for talk radio stations.

THE TELOS ALLIANCE
1241 Superior Ave.
Cleveland, Ohio 44114 United States
Cam Eicher
+1-216-241-7225
Email: info@telosalliance.com
Website: https://www.telosalliance.com
Products/Services: For three decades, the brands of the Telos Alliance — Telos Systems, Omnia Audio, Axia Audio, Linear Acoustic, 25-Seven Systems and Minnetonka Audio — have revolutionized broadcast audio by pioneering disruptive, cutting-edge technology to enable better programming, improve audience engagement and bolster ratings. The Telos Alliance is shaping the future of audio.

TIELINE
7202 East 87th St., Ste. #116
Indianapolis, Ind. 46256 United States

Dawn Shewmaker, VP U.S. Operations
+1-317-845-8000
+1-888-211-6989
Email: sales@tieline.com
Website: http://www.tieline.com
Products/Services: Digital audio codecs for remotes, STLs and multipoint audio distribution. Delivering broadcast-quality FM audio over cellular networks, wired IP, SIP, Wi-Fi, ISDN, POTS and satellite. Codecs include the revolutionary ViA with built-in Wi-Fi and record and playback, the Genie and Merlin families, Bridge-IT, Bridge-IT XTRA and Report-IT apps.

TITUS TECHNOLOGICAL LABORATORIES
77 Kreiger Ln.
Glastonbury, Conn. 06033 United States
Lawrence Titus, Owner
+1-800-806-8851
Email: sales2@tituslabs.com
Website: http://www.tituslabs.com
Products/Services: Manufacturer of analog and digital switching equipment, warning light fixtures and custom electronic equipment for radio, television and network stations/facilities

TRANSCOM CORP.
2655 Philmont Ave., Ste. 200
Huntingdon Valley, Pa. 19006 United States
Martin Cooper, President
+1-215-938-7304

VENDOR & PRODUCT DIRECTORY

Email: transcom@fmamtv.com
Website: http://www.fmamtv.com
Products/Services: Transcom has been providing used transmitters to the radio and TV broadcast industry since 1978. In addition, we offer new antenna, cable, STL/MW and other RF equipment.

TRANSMITTERS 'R' US
35, Brompton Square
London SW3 2AE United Kingdom
David Shapiro
+44-303-290-8399
Email: sales@transmittersrus.com
Website: https://www.transmittersrus.com
Products/Services: With offices in London, U.K. & Limassol, Cyprus, Transmitters 'R' Us can supply you with all your studio and transmission equipment including AM, FM, shortwave and TV transmitters from all the major brands. We also offer engineering services in most countries.

TUNWALL RADIO LLC
15250 NW 50th Ave
Trenton, Fla. 32693 United States
Steve Tunwall
+1-330-995-9642
Email: info@tunwallradio.com
Website: https://www.tunwallradio.com
Products/Services: Manufacturer of switch and transmitter controllers since 2004. The TRC Series offers single- and multi-switch designs compatible with all switch types. Custom designs and AM directional systems are also available.

UNCOMPRESSEDMUSIC.COM
307 Brown
Waxahachie, Texas 75165 United States
Dave Scott
+1-972-937-6040
+1-844-726-8878
Email: orders@uncompressedmusic.com
Website: http://uncompressedmusic.com
Products/Services: Music libraries for radio, highest-quality uncompressed WAV files, automation-ready with metadata and Excel table of contents.

US TECHNOLOGIES INC.
17-01 Pollitt Dr.
Fair Lawn, N.J. 7410 United States
Christine Harris
+1-201-475-8700
+1-800-234-0862
Email: christineh@ustechnologies.com
Website: http://www.ustechnologies.com
Products/Services: United States Technologies (UST) is a state-of the-art design, manufacturing and service company specializing in complex, critical electronic components and sub-assemblies. We are a trusted partner to leading aerospace, defense, medical, nuclear power, broadcasting industry, semi-conductor and industrial companies throughout the world.

V-SOFT COMMUNICATIONS
128S. Chestnut
Olathe, Kan. 66061 United States
Doug Vernier
+1-319-266-8402
+1-800-743-3684
Email: info@v-soft.com
Website: https://www.v-soft.com
Products/Services: V-Soft Communications provides computer software and support for AM, FM and TV propagation programs. Included among our programs is Probe 4 for FM and TV analysis, AM-Pro 2 for AM day and nighttime skywave analysis and FMCommander for full-service FM stations, translators, LPFM and boosters.

VOXPRO
See Wheatstone Corp.

WAVEART
Via Leonardo da Vinci, 222
Caravaggio 24043 Italy
Federico Forlani
+39-0363-192-5242
Email: info@waveart.it
Website: https://www.waveart.it
Products/Services: Design and manufacture of innovative FM transmitters that provide outstanding performances for cutting-edge radio stations. We are fascinated by smart technology and by solutions able to improve people's life. Our focus is on people, their business and their radio experience.

WHEATSTONE CORP.
600 Industrial Dr.
New Bern, N.C. 28562 United States
Jay Tyler, Director of Sales
+1-252-638-7000
Email: jay@wheatstone.com
Website: http://wheatstone.com
Products/Services: Wheatstone Corp. designs and manufactures professional broadcast audio equipment under the Wheatstone, Audioarts Engineering, PR&E and VoxPro brand names. Products include digital audio consoles and control surfaces, analog audio consoles, networked digital audio systems, audio-over-IP, digital audio editing hardware, software and signal processing for on-air and studio applications.

WHISPERROOM
109 S Northshore Dr., Ste. 303
Knoxville, Tenn. 37919-4925 United States
Debbie Sweany, Sales Manager
+1-865-558-5364
Email: info@whisperroom.com
Website: http://www.whisperroom.com

WIDEORBIT
1160 Battery St. #300
San Francisco, Calif. 94111 United States
Susie Hedrick
+1-415-675-6700
Email: sales@wideorbit.com
Website: http://www.wideorbit.com
Products/Services: WideOrbit is the technology platform for media companies to connect audiences and ads, everywhere. More than 2,000 radio stations worldwide use our software to simplify ad transactions, manage and monetize their digital content and create great radio experiences with our station automation solution.

WIN-OMT SOFTWARE INC.
280-1630 Ness Ave.
Winnipeg, MA R3J 3X1 Canada
Gary Kristiansen Sales Manager
+1-204-975-0794
+1-888-665-0501
Email: gkristiansen@imediatouch.com
Website: www.imediatouch.com
Products/Services: win-OMT Software is a solutions provider to the broadcast industry worldwide. Core products include iMediaTouch Radio Automation System and radio's number-one-selling digital logger, iMediaLogger. By leveraging the latest in technology advancements and feedback from our clients we continually strive to provide broadcasters with leading-edge software.

WORLDCAST SYSTEMS INC.
19595 NE 10th Avenue Suite A
Miami, Fla. 33179 United States
Tony Peterle, U.S. Manager
+1-305-249-3110
Email: ussales@worldcastsystems.com
Website: https://www.worldcastsystems.com
Products/Services: Advanced and innovative systems for broadcasters worldwide. Encompassing leading brands APT, Ecreso and Audemat, WorldCast offers everything from audio codecs and mobile network access for remotes and OBs, RDS encoders, audio processors, FM transmitters, monitoring, test and measurement solutions through to a unified NMS/OSS software solution.

WORLDCAST SYSTEMS
20 av Neil Armstrong
Mérignac 33700 France
+33-5-57-92-89-28
Email: c.fourgeaud@worldcastsystems.com
Website: https://www.worldcastsystems.com
Products/Services: See U.S. listing above.

XPERI
5220 Las Virgenes Rd.
Calabasas, Calif. 91302 United States
818-436-1000
Website: http://www.xperi.com
Products/Services: Xperi Corp. (Nasdaq: XPER) and its brands, DTS, FotoNation, HD Radio, Invensas and Tessera, are dedicated to creating innovative technology solutions that enable extraordinary experiences for people around the world.

XYTECH SYSTEMS
9410 Topanga Canyon Blvd., Ste. 200
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Products/Services: As an innovator in product development, Yellowtec is committed to transforming complexity into usability. Continuously striving for a higher standard of engineering and design, Yellowtec manufactures intuitive broadcast solutions. For various fields of applications Yellowtec sets new standards in terms of technology, usability and esthetics.

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Products/Services: Media engineering and apps for radio.

KISL Sings Praises for Arrakis

MARC-15 eases transition to new studio

▶USER**REPORT**

BY BRUCE KNOPPER
Station Engineer
KISL

AVALON, CALIF. — KISL(FM) is a unique radio station — located on the beautiful island of Catalina, in the city of Avalon, 23 miles off the southern California coast. This is an island that is completely independent as far as physical connections to the mainland. It has its own power plant, water supply, sewer system, phone via microwave etc.

KISL was licensed in the early '90s on 88.7 FM with a power of 200 W.

It is a community radio station staffed and operated by volunteers. The programming is mostly automated but 30 percent of it is live. When DJs come into the studio they push the "big red" button and go live. The format is very loose, as long as the content is not offensive. The station is also used when we have special events such as a blues and jazz festival, the air show and July 4th parade (a big deal). Organizers use the station to simulcast the announcer.

And when we have local elections, the candidates come to the station to pitch their cases. We have also done many live concerts.

The station had an old (very old) PR&E console that came from KMET in Los Angeles. It was showing its age. Plus, the studio was worn down, with dirty carpets and more.

Since we are a community nonprofit station with a limited budget, most of the equipment was donated or found. "If you are going to throw that away, can I have it?"

About a year ago, we received a very generous donation from the owner of ACE Clearwater Enterprises. He also lives on the island part time, and was very excited that we had our own radio station.

We ended up replacing almost every-

thing. The choice for the console was to keep it analog but flexible. The Arrakis MARC-15 was one of the few that could be configured for our needs with the right line, plus USB digital inputs, telco, etc. It had to be durable, able to withstand inexperienced operators and high humidity, because we are located in the harbor.

In addition, it had to be very easy to operate and similar to the old one we had. That is important for the operators since they are not "professional" DJs and this way they would feel comfortable with the new setup.

Of course it was very exciting to get all new equipment. And since we use PCs a lot, having USB input on the console was great. I had to do some modification to make easier for the DJs. Arrakis was very helpful in providing additional documentation to help me. Also, I bought a few matching blank panels for additional controls and functions.

I understand that the RJ-45 connector is the new standard, but not the best to work with for our analog-dominant application. With audio and control on the same connector, the installation was not as "clean" as I hoped at first. However, after I found a Cat-6 patch panel, the installation came together much better — RJ-45 from the console to the patch panel and there was a standard 66 punch block that would accept 22-gauge wire. That way I can run Belden 8451 shielded cable to the different points in the system.

In addition, if I need to troubleshoot or check levels, I have found it is easy to do with an RJ-45 adapter.

So far, everything sounds clean and the operators are happy!

For information, contact Ben Palmer at Arrakis Systems in Colorado at +1-970-461-0730 or visit www.arrakis-systems.com.

PRODUCT STORIES

Sentech Relies on Audemat FM MC5

All-in-one measurement solution meets requirements in rugged terrain

❯USERREPORT

BY CHANTAL FOURGEAUD
Director of Marketing
Communications
WorldCast Systems

GEORGE, SOUTH AFRICA — Sentech, a South Africa-based company, offers signal distribution services to most of the country's licensed broadcasters, which include the public broadcaster, commercial and community broadcasters.

As an owner of 25 Audemat FM MC5 systems with 16 purchased in 2016 and nine more purchased in 2017, Sentech says it is a satisfied customer of WorldCast Systems with its Audemat FM MC5. According to Danie Liebenberg, team leader in operations at Sentech, its team makes use of all the Audemat FM MC5 functions when doing commissioning, development and testing of new FM equipment, fault-finding, alignment and measurements when repairing existing equipment and when doing automated test sequences through script functionalities.

The FM MC5 also helps Sentech carry out its support maintenance which include full mast, cable and antenna inspections as well as drive-by measurements to confirm correct FM antenna radiation patterns

and reporting on lack of coverage in new developing areas. The drive-by tests' full reports go straight to the planners, which helps Sentech in their decision-making process when considering possible new sites.

SIMPLIFIED PROCESS

"One of Sentech's key operational imperatives and actually one of our strategic pillars is to operate more efficiently. The FM MC5 provides this in more ways than one and in our opinion, its best features are its all-in-one versatility and drive-by test capability which has massively simplified things for us," said Liebenberg.

"In the past we had to carry multiple instruments of which some were heavy and bulky to transport. We also needed to conduct static measurements using a five-element FM antenna and telescopic

pole that we would transport with us when doing our field tests. The size of the antenna in particular complicated our task during windy conditions. The amount of measure points was extremely limited due to this tedious process. Today, all we need to do is attach a small GPS and FM omnidirectional magnetic base antenna onto the roof of the vehicle, quickly configure the FM MC5 for the drive-by measurement, and we're ready to go."

He adds, "Multiple measurements at a magnitude of measuring points get done while driving at normal driving speed. By the click of a button, a professional report gets generated that can immediately be represented to customers."

The Audemat FM MC5 is a lightweight, all-in-one system, and it comes with a durable transport case. With most of Sentech's work taking place in rugged, mountainous landscapes, sometimes taking one hour to travel 6 miles to reach a site, Sentech says the transport case was a key factor when deciding to purchase the Audemat FM MC5.

During its two years as a WorldCast Systems' customer, Sentech has also benefited from expert customer support. "We received their team's support from time of purchase and system deployment, continuing up until now. I would definitely recommend the Audemat FM MC5 as a measurement solution for the FM broadcasting environment," Liebenberg concluded.

For information, contact Tony Peterle at WorldCast Systems in Florida at +1-305-249-3110 or visit www.worldcastsystems.com.

Pictured from left are Guillaume Boutin and Olivier Soulié of WorldCast Systems, Danie Liebenberg of Sentech and David Houzé of WorldCast Systems.

Q Radio Embraces the Bionic Studio

Broadcast Bionics software works with Axia hardware and Livewire network for visual radio studio

▶ SPECIAL**REPORT**

BY KIRSTEN SMITH
Business Development Manager
Broadcast Bionics

BELFAST, NORTHERN IRELAND — In today's content-hungry world, modern radio needs to provide more than just great content to engage, maintain and grow audiences. Radio in Northern Ireland, particularly Belfast, is already highly competitive. So when independent broadcaster Q Radio was moving its Belfast Studios, it presented the ideal opportunity for them to start

fresh and bring their unique brand to the forefront of Northern Irish Radio. Q Radio seized the opportunity to get ahead by enhancing live content through video and live streaming — making this engaging content instantly available and shareable on social channels, like Facebook, Twitter, YouTube and Facebook Live.

MULTIPLATFORM

While many large corporate radio bands do multiplatform very well with generous budgets, radio generally demands more for less. That's why technology was key for Q Radio to meet its goals within an affordable budget. This is where sophisticated software coupled with the right hardware makes all the difference. Richard Lawley of Radio Studio Services was enlisted to help solve problems, execute design and deliver Q Radio's dream. Q Radio chose Axia consoles: Fusions for their main on-

air studios, and iQs for production and news booths.

"The Axia AoIP audio platform enables us to provide powerful, flexible control of client stations' audio in a far more economic format than ever could be achieved with traditional analog equipment, and the user interfaces are all attractive and ergonomically pleasing, enabling us to design studios that enhance the creative process for presenters and production staff," said Lawley.

With the AoIP Audio network in place, integration between console and Broadcast Bionics' PhoneBOX, Oasis, Virtual Director, and playout system is seamless. Broadcast Bionics PhoneBOX talkshow software is a real game-changer, a multitool for the studio that incorporates a feature-rich phone in system, multifaceted Social Media System, and Virtual Director visualization system. All on one screen, this was a simple choice for Q's state-of-the-art studios, he said.

"We knew Virtual Director was the perfect solution for us as soon as we saw it. It's unobtrusive yet powerful. It allows us to quickly produce quality video clips to share on social media, increasing our presence and strengthening our brand with minimal effort. The system also livestreams so our online listeners can also be viewers

of 'QTV,' giving them a live view of the presenters at work in the studio, with nice switching and branded graphics detailing now- and next-playing tracks. We're the only station in Northern Ireland to do radio like this, and it's paying off. Our listeners and advertisers love it," says Jonathan Gold, program manager for Q Network.

Indeed, Facebook share figures quickly soared, hitting 7.3K for an entertaining drive-time link about Siri. There is no doubt that Q Radio studios were designed to be seen. The branding is clear, thought has been given to camera positions, the lighting is right, and the ambience inspires the best in the presenters. It's the epitome of the modern studio.

The Bionic Studio enables not just new listener experiences, but provides actionable data and creation/reuse of content to effectively monetize these new platforms. Using the power of Livewire's IP infrastructure, Axia and Broadcast Bionics have reinvented radio again, making possible the real-time nonlinear content of the future to create more dynamic, responsive, intuitive and engaging programming.

For information, contact Duncan Smith at Broadcast Bionics in England at +44-1444-473999 or visit www.phonebox. com, or Cam Eicher at the Telos Alliance in Ohio at +1-216-241-7225 or visit www.telosalliance.com.

AoIP Evolution With GatesAir at Washington's WAMU

Intraplex IP Link codecs and Dynamic Stream Splicing technology solidify signal chain

▶USERREPORT

BY MIKE BENONIS
Assistant Director of Engineering
WAMU(FM)

WASHINGTON — The American University-owned WAMU(FM) has been the primary NPR member station for the Washington area since the birth of NPR, broadcasting a mix of a national content, hourly NPR news and locally-produced public affairs programs.

In recent years, WAMU has transitioned almost exclusively to IP for audio production, contribution, and distribution. This includes our AoIP studio plant, studio-to-transmitter links, and backup links to NPR's Network Operations Centers. We rely heavily on GatesAir's Intraplex IP Link codecs to ensure uninterrupted audio delivery.

Intraplex IP Link codecs provide audio connectivity to all of our transmitter facilities. Our IP Link codecs are the primary STL paths to our auxiliary transmitter site, collocated with WETA(FM) in Arlington, Va., as well as to our satellite station WRAU(FM) located in Ocean City, Md. Both sites are fed via diverse public internet links. Dropped packets are inevitable even with the most stable internet connections, but Intraplex IP Link codecs have a feature called Dynamic Stream Splicing, which virtually eliminates audio dropouts.

Dynamic Stream Splicing works by combining packets from multiple streams to reconstruct any missed audio frames. This can be done over separate internet connections, or even a single internet connection by delaying one stream by 50-100 ms and adding forward error correction

(another built-in feature of the Intraplex IP Link codecs). We also use Dynamic Stream Splicing on the return path from WRAU so we know that what we hear at the station is what listeners hear over the air 150 miles away. We've been blown away at how well this feature works, and it's extremely rare that the Intraplex IP Link cannot deliver flawless audio.

FAILOVER

Another great feature of the Intraplex IP Link is the ability to set up multiple failover audio sources. These can be additional RTP streams (from a different source Intraplex IP Link device), AAC or MP3 web streams from a CDN, or even a USB drive preloaded with audio. This flexibility enables us to deliver continuous audio to listeners even in the event of audio or total primary stream loss.

Audio from our Intraplex IP codecs is delivered to AES switching networks and ultimately the audio processors located at each transmitter site. For our main site,

which maintains a native Livewire path as its primary connection, the Intraplex IP provides a redundant backup via diverse links in case of interruption to the leased fiber link that conveys our Livewire connection. It's a very robust setup.

We also convey our nationally distributed program, "1A," to NPR's primary NOC in Washington and backup NOC in Saint Paul, Minn. While we still rely on legacy T1 technology to get us across town to NPR, we are working to transition to a new standard that would utilize the Intraplex IP Link over the public internet at 256 kbps AAC to reach both the primary and backup NPR NOCs, which makes the Dynamic Stream Splicing application that much more valuable. At each NOC, IP Link codecs receive the signal and provide the same stream reconstruction service as we use at our transmitter sites.

This is a fairly straightforward operation, though once again the reliability and stability of the IP Link has proven exceptionally valuable. If the main NOC in Washington were to go down, the backup NOC in Minnesota picks up the stream to ensure an uninterrupted national broadcast. Once decoded, the signals are then re-encoded in IP Link devices for national satellite delivery.

Our most recent use of the IP Link codecs involves reimagining our main program channel streaming service. We've begun experimenting with the IP Link hardware to eventually replace Microsoft Windows-based stream encoders to deliver the audio to StreamGuys, our CDN and streaming media service provider. Like many stations, we were often faced with the typical performance glitches that come with computer misbehavior.

We believe that moving to dedicated hardware for audio encoding with the IP Link 100 will eliminate the shortcomings of a computer-based encoder. We plan to utilize the IP Links in a true redundant configuration so that our web stream remains on the air if either of our wide-area network connections is lost, or if we need

Ecreso Takes Processing Inside

Onboard five-band processor delivers natural and
powerful soundvisual radio studio

▶USER**REPORT**

BY SYLVAIN CAVET
Broadcast Sound Engineer
COLORS

BOULOGNE-BILLANCOURT, FRANCE
— "Imagine offering our listeners a
sophisticated listening experience which
delivers quality, space and transparency
without listener fatigue; sound which is
simply a joy to listen to."

I regularly test new equipment and I
have been very pleasantly surprised by
the sound quality delivered by the new
five-band sound processing
option that is built into the
new Ecreso FM transmitter
range.

INTERFACE

I found the user inter-
face clear and easy to use,
offering several simplified
features so a user can create
their own signature sound.
The presets compliment var-
ious contemporary formats such as classi-
cal, jazz, acoustic, talk and more.

I was particularly struck by the quality
offered by the sound processor itself; the

fidelity of the timbre, the spectral balance,
maintenance of stereo image, the outstand-
ing treble, the perfect drum transients for
jazz music and the transparency of the
filtering for FM broadcasting all made a
very positive impression.

The wideband AGC, a very important
stage for program stability, reacts well and
keeps the program content dynamic. The
five-band processor provides smooth, clear
sound that users can customize.

The enhancers play their part perfectly
adding nice little touches; the bass and
the clipper particularly deliver excellent
broadcast-quality audio within a reason-
able MPX power range.

Overall this is an exciting new proces-
sor enhanced further by the fact it is based
on a digital modulator platform with the
option of future software updates. For the
price range, it offers a very high quality
of sound processing and an excellent inte-
grated solution.

**For information, contact Tony Peterle
at WorldCast Systems in Florida at 1-305-
249-3110 or visit www.worldcastsys-
tems.com.**

GATESAIR

to perform updates on the Intraplex IP Link hardware.

A common benefit across all of these applications is ease of
setup and use. GatesAir has made the process very simple to
understand, and easy to replicate across any application. It is
consistently the same process regardless of the network charac-
teristics or type of connection.

As T1 and ISDN become more difficult to maintain and IP
solutions continue to evolve, there is no question that broad-
casters should aggressively complete the transition to IP. Hav-
ing redundant connections will provide excellent protection,
while advanced error correction and mitigation techniques
in products like IP Link will ensure the best possible quality
and performance for any audio contribution and distribution
needs.

**For information, contact Keith Adams at GatesAir in Ohio at
+1-513-459-3447 or visit www.gatesair.com.**

Nautel Brings FM Translators to AM Stations

Quality and features of VS Series please Twin Cities broadcaster

▶USERREPORT

BY GREG BORGEN
President
WDGY/WREY

ST. PAUL, MINN. — WDGY(AM), "The Original Rock n Roll station," or "Wee Gee," is an institution in Minneapolis-St. Paul, and serves the Twin Cities area with "All the Hits of the '60s and '70s." Our AM 740 station is daytime-only but we keep the rock and roll going through the night thanks to some well-placed FM translators on 103.7 and 92.1 MHz. Also in our group is WREY(AM), a Spanish-language station with 3 kW daytime and 2.4 kW nighttime operation. WREY is also served by an FM translator on 94.9 MHz.

In 2009, the FCC issued a Report and Order formally allowing AM stations to run FM translators. However, they only allowed use of existing translators and were subject to the rules at the time regarding moving translators. In Market No. 16, this meant that there was nothing to be had within the budget of an AM-only group. However, in October 2015, when the move-in rules were released, we saw the opportunity to bring some additional energy to our stations with the January 2016 filing

not better than — the big corporate facilities in our market. We've even had "audio geeks" call us to rave about the great sound. Setting up the processing was easy, thanks to some presets that we were able to select.

Control is easy, too. We use the Advanced User Interface — AUI — to monitor all three of the translators, but so far we haven't encountered any deviations that we need to adjust. In the event that there is a situation at the transmitter

site, due to ice or AC power, usually logging into one of the transmitters and looking at the stored logs is enough to give us an idea as to what most likely happened.

This report concerns the translators, purchased and placed on the air in 2016. All three came from one of my favorite companies, Nautel. I've been doing business with them since the early 1990s, and with only one exception (I'm calling that exception a mistake) I have only purchased Nautel equipment during that time.

window. Applications were submitted and we got our opportunity to match FM translators with our AM stations.

We elected to use the Nautel VS Series FM transmitters for our translator sites. For WDGY, we put a Nautel VS1 (1 kW) on 103.7 FM and a VS300 (300 W) on 92.1 FM; and we installed a VS1 on 94.9 FM for WREY. These VS Series transmitters have some great capabilities including IP audio, USB backup audio, SNMP support and so on. We aren't using all of the features, but it's nice to know they are there.

One feature that is outstanding is built-in Orban Optimod audio processing, which allows us to achieve the perfect sound for our audiences on these transmitters. We sound every bit as good as — if

Nautel transmitters are bulletproof. Set them and forget them. They operate without a glitch or hitch. Maintenance is simple too, with easily accessed, washable air filters. It is also nice to have the ability to update software — frequently Nautel will release an update that adds features. Their continuous improvement philosophy and attention to their customers' input serves all of us well.

If you're looking to expand your listening area with translators, my advice to you is "Don't cut corners: Buy the highest quality equipment that you can." You know it will work and serve you well.

For information, contact Wendell Lonergan at Nautel in Nova Scotia at +1-902-823-5131 or visit www.nautel. com.

StreamGuys Makes Podcasts Dynamic

DNR recreates live broadcast flavor for podcasts

▶ USERREPORT

**BY DEREK HARTLEY AND
  ROMAINE PATTERSON
Co-Owners
DNR Events**

NEW YORK — DNR Events provides one-of-a-kind entertainment and travel experiences while fostering diversity and equality. Our mission is to offer a flexible platform for dynamic expression that engages, entertains and informs. The cornerstone of this endeavor is DNR 2.0, a live streaming digital channel and audio archive featuring "Derek and Romaine," a two-hour daily broadcast that the two of us host.

We got started as a duo in satellite radio back in 2003 and after more than 12 years, our show ended its run there in the summer of 2015. We had an established following and an audience of commuters and truckers that depended on us for entertainment every day. We just needed to find a way to keep doing our show, our way.

We explored doing a podcast, but after so many years in the dynamic world of live radio, it didn't feel like a fit for us. Our audience expects to hear us every day on their way to or from work, and the off-the-cuff nature of our show and the ability to take live phone calls are really important to us. We met with lots of great people who are creating terrific content in the world of podcasts, but none of them had the technology or business structure to help us deliver the kind of show we wanted to do. That's when we knew we needed to strike out on our own.

Our research led us to StreamGuys' content delivery and podcasting network and their cloud-based SGrecast live stream recording and repurposing platform. StreamGuys' technology fit the bill perfectly, letting us recreate the experience of our previous show as much as possible while giving us the flexibility to rebroadcast our shows 24/7 and do additional programming

like standard podcasts.

Even small broadcasters who start streaming usually have broadcast engineers and audio professionals on staff, but we're a mom-and-pop shop – just the two of us, and

most of our experience is just being hosts. Romaine had a recording engineering background, which was essential in building a world-class studio to broadcast from, but every aspect of streaming technology was brand new to us.

STREAMING

StreamGuys was perfect for us — their solution was turnkey enough that we were able to make it work for us really effectively, and StreamGuys' staff walked us through every step. We had no idea what we were doing and very little time to learn it, but they were very patient and kind with us. We know we aren't their biggest client, but from Day One, they have always made us feel like our business is important to them.

Our show is streamed as a live broadcast each weekday. A Barix Exstreamer encoder sends our live audio to the StreamGuys network, where SGrecast also records it. As soon as the show is over, SGrecast rebroadcasts the recording in a loop until the next day's live broadcast. We also post the

recording in our online archive and podcast feeds. Our listeners love the looping replay, as they can tune to the show any time they want.

We absolutely love the immediacy that SGrecast gives us. On satellite, our show was limited to our broadcast time slot and when it ended, another show would play. For our listeners who wanted to hear the show after our time slot ended, it took a while for the recording to become available within their app. Now, the second the show is over, it's immediately available to listeners anytime, anywhere through streaming on a dedicated channel and more quickly as a download than was possible before.

As a recording engineer, Romaine really loves the quality of the sound. We often get listener feedback that the sound quality we provide now is as good or better than when we were on satellite radio. That's super-important to us, and a huge complement to how we've built our company and to StreamGuys' services.

We are integrating additional StreamGuys services as we grow and expand. We recently launched an Alexa Skill, and we're about to start using the blu Live cloud-based contribution service that StreamGuys offers in partnership with Digigram to allow ourselves and others to virtually host high-quality shows from outside our main studio.

StreamGuys' technology has also given us the flexibility to help other radio hosts recreate their shows on the Internet the way they want. Through our DNR Studios brand, we offer additional programming ranging from live streams to on-demand podcasts and hybrid models like ours — helping others relaunch their shows the way we wish someone had been there for us. For hosts wanting to bring their broadcasts to podcasts or displaced radio professionals who want to continue to do radio their own way, StreamGuys' technology is the right way to go.

For information, contact Jonathan Speaker at StreamGuys in California at +1-707-667-9479 or visit www.streamguys.com.

R&S THR9 Is CatCountry's Transmitter of Choice

Pensacola station chooses Rohde & Schwarz for its new HD Radio installation

▶USERREPORT

BY NATHAN "BRITON" SMITH, CBT
Chief Engineer
WYCT(FM)/ADX Communications

PENSACOLA, FLA. — It took over 10 years but HD Radio is now on CatCountry 98.7 in Pensacola, Fla., at full power.

Some history. In 2003 WYCT (Cat-Country 98.7) acquired an Armstrong tube-based test rig directly from iBiquity and drove it with Broadcast Electronics' FSi-10/FXi-250 exciter. This was connected to a new Shively IAD 8/3 interleaved antenna, and so WYCT became the first Florida FM to broadcast in HD Radio.

With northwest Florida being basically flat, the –20 dB injection covered our area well for vehicles and station staff was impressed. However, management decided that HD Radio receiver penetration was not yet high enough, so we returned to analog-only broadcast.

The times and technology have changed. Going to NAB Shows over the past few years made it easy to see that FM transmitter technology is providing higher value and more reliability. HD Radio is a standard option in more vehicles, which made a full-power HD transmitter a must-buy.

So when I received the budget for a new transmitter, I got excited and started talking. I talked with manufacturers, with other broadcasters and with Xperi.

GEN 4

Our priorities: The system had to be running the latest Generation 4 HD software, have asymmetrical sideband implementation, utilize low-level combining, have a high level of built-in redundancy and require no air conditioning.

Rohde & Schwarz is committed to the HD Radio roadmap and it shows in their hardware, so the R&S THR9 became the transmitter of choice for us. The importer, exporter and Exgine are all running Generation 4 software on an embedded platform, providing a highly reliable system. This configuration allows use of the extended partition for a fourth audio channel and for the importer and exporter to reside on the same hardware, which reduces cost and complexity.

Other important features of the R&S THR9 are its ability to broadcast asymmetrical sidebands, and its liquid-cooled RF amps and power supplies. In fact, the R&S THR9 is nearly silent while operating as it "sends the heat out the hose" to a heat exchanger.
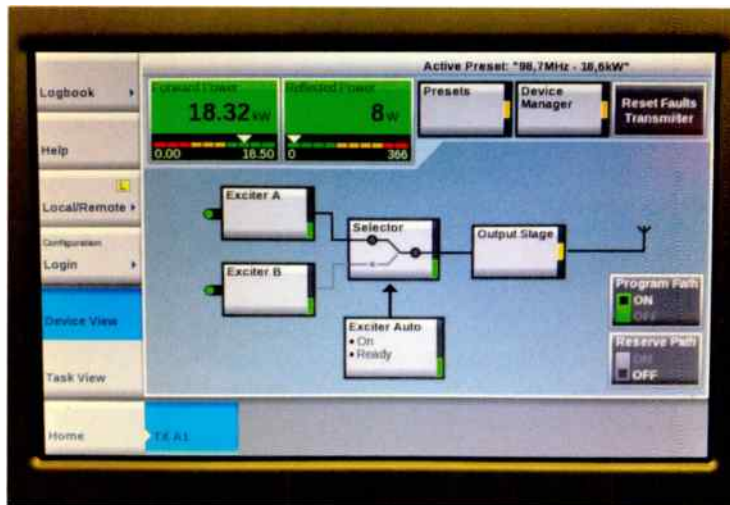
For those renting by the square foot, the R&S THR9 fits in the space of a single deep rack, even when fully populated at 40 kW.

Moving away from WYCT's old Collins 831-G2 transmitter meant we no longer had to use air conditioning to cool the transmitter. Air-cooled transmitters typically require significant added air conditioning to be installed, a big expense for a block building in Florida with little insulation. Calculations showed that using a liquid-

cooled Rohde & Schwarz transmitter had a lower overall system cost than installing and running an external air-cooled system. And for those wondering: No leaks!

The physical installation is simple and should be fine for those knowledgeable in installing large transmitters.

The built-in redundancy is great. We have dual exciters (so no downtime for software updates), dual Exgines, dual pumps for the cooling system, dual fans in the heat exchanger and even dual breaker switches. Electric feeds were run from separate breakers; this allows for the exciter, Exgine, and half the RF amps to stay on if one breaker trips. The exciters and Exgines can be set to automatically fail-over on alarm. I also opted for a 1U built-in UPS that the R&S THR9 controller communicates with.

Our biggest fear buying a new design transmitter was ready support and parts availability. While virtually 100 percent of the spare parts are now stocked at the Rohde & Schwarz headquarters in Columbia, Md. (near Baltimore-Washington International airport), the station bought a bunch of spare parts to keep on hand. Rohde & Schwarz radio field support is

Newcap Radio Rocks With Tieline Genie

Low latency and Music Plus codec top feature list

▶USER**REPORT**

BY PETER QUINN
Director of Engineering
Newcap Radio Halifax

HALIFAX, Nova Scotia — I have worked in broadcasting with Newcap Radio since 2009, starting out as an engineer in Ottawa. My current responsibilities are to oversee network maintenance and the technical budget for three markets in Nova Scotia.

Newcap Radio broadcast to 72 sites and 29 repeaters throughout Canada, including Halifax and Kentville, Nova Scotia, and Saint John and Moncton, New Brunswick. Most programming is local; however we also simulcast a classic/active/local rock show called "Rock of the Atlantic," from 7 p.m. to midnight across the network.

As we all know, distributing programming over satellite is expensive. I was interested in any solution that delivered flexibility and high quality to replace these expensive links. Newcap Engineering Director Chris Maclaurin told me about a Tieline Genie codec solution that was working well in Newfoundland, so we decided to implement this in Nova Scotia.

Newcap owns roughly 120 Tieline codecs and most markets have one Tieline Commander G3 field unit and rack unit codec per call sign for remotes. We now also use Tieline Genie Distribution codecs for Halifax's network program distribution.

We installed a Genie Distribution codec in Halifax and it transmits "Rock of the Atlantic" to the Genie Distribution codecs at Saint John, Moncton and Kentville. Our ISP is Eastlink and they have delivered a fiber WAN for transmission paths across our provinces. Our Genies reside on a private subnet and the IT guys have configured QoS priority over the WAN to our audio packet traffic. Our WAN is extremely reliable and I attribute that to the high quality of the ISP.

I like the sound of Tieline's Music Plus codec and connect in stereo at 48 kHz/256 kbps. Using the auto jitter buffer settings in Tieline's codecs, we are able to obtain exceptional low latency of between 40–80 ms.

GPIOs are also very useful and I believe Music Plus encoding delivers the most reliable GPIO functionality. Our automation system creates a pulse and sends it to our audio server, which produces a closure which is routed to a physical relay. The pulses tell the affiliates to switch to local audio and begin a local stopset. When complete. the local market switches back to the main show feed.

The Genie Distribution ranks well for configurability and its distribution feature set, which includes multi-unicasting, multicasting and multiple bidirectional peer-to-peer connection options. The network is impeccable and Tieline's browser-based HTML5 Toolbox web-GUI makes it simple for one person to manage connections throughout our entire affiliate network.

Broadcasting over IP has definitely lifted the overall audio quality of our transmissions and significantly reduced satellite transmission costs. Overall the Tielines work well for our broadcast application and will continue to be our company standard for IP codecs.

For information, contact Dawn Shewmaker at Tieline USA in Indiana at +1-317-845-8000 or visit www.tieline.com.

R&S

growing and is responsive. When I had issues with a new configuration the team was prompt in addressing it. If you aren't utilizing the R&S team for the install, the configuration of initial settings may be a little confusing, but the documentation is very good.

The R&S THR9 is fully remote control-capable through a web GUI, can be remotely monitored through SNMP, and an optional GPIO unit can be added. While the importer/exporter is running on a Linux platform, at this time an external Windows computer is needed to run the JMSAC software for Artist Experience. The cooling system is monitored and controlled via the same integrated GUI.

Overall the R&S THR9 is a functional, compact and extremely efficient transmitter that should be considered for any system upgrade. Especially for those wanting to broadcast in HD at –10 dB. We love our R&S THR9.

For information, contact Don Backus at Rohde & Schwarz in Maryland at +1-616-206-0301 or visit www.rohde-schwarz.com.

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