

NXDN™ Forum: Product Showcase

This is a brief introduction and overview to the current products and services provided by various members of the NXDN™ Forum. The NXDN™ Forum is a group of leading companies from a diverse range of backgrounds in the Land Mobile Radio industry.

The products and services outlined here are done so with the permission of the member companies of the NXDN™ Forum. We encourage you to visit the websites or directly contact the member company to obtain more details about the content explained here.



Member Company	Core Competence	Product/Services
Alinco, Inc.	Manufacturer	Terminals
Avtec Incorporated	Dispatch Solutions	Consoles
CML Microsystems Plc	Semiconductor Solutions	Baseband IC
CSS Mindshare, LLC	Dispatch Solutions	Consoles
CTI Products Inc.	Applications	Dispatch Apps
Etherstack Ltd.	Software Solutions	Protocol Stacks
Eventide Incorporated	Recording Solutions	Logging Recorder
EXACOM Incorporated	Recording Solutions	Logging Recorder
Forest Industries Telecommunications	Frequency Coordinator	Frequency Coordination
Freedom Communication Technologies Inc.	Test Equipment	Test Sets
Hytera Communications Corp.	Manufacturer	Terminals/Infrastructure
Icom Incorporated	Manufacturer	Terminals/Infrastructure
InterTalk Systems, Inc.	Dispatch Solutions	Consoles
JVCKENWOOD Corporation	Manufacturer	Terminals/Infrastructure
Numonix	Logging Solutions	Logging Recorder
Raven Electronics Corporation	Hardware/Software	VoIP/RoIP Telephony
REMOTATEC	Dispatch Solutions	Consoles
RFnetworks Corporation	Test Equipment	Test Sets
Ritron Incorporated	Manufacturer	Terminals
Rockwell Collins (ARINC)	Test House	Systems Integration
Telex Radio Dispatch Group	Dispatch Solutions	Consoles
UltraTech Labs	Test House	IOP Testing
Viavi Solutions Inc.	Test Equipment	Test Sets
Zetron, Inc.	Dispatch Solutions	Consoles

Alinco, Inc.
Radio Manufacturer

NXDN™ Product/Service: NXDN™ Handheld Radio

The new DJ-NX40 is a rugged simple-to-operate NXDN digital or conventional SCPC transceiver employing FDMA 4-level FSK modulation and the NXDN protocol, featuring true 6.25kHz spectrum efficiency, higher security and superior audio clarity.

DJ-NX40 features include professional grade specs such as 0.7W audio output, 1.5ppm frequency stability, selectable TX output of 1W or 5W; keep in touch for retail, construction, factory, warehouse, in a theme-park, shopping mall, exhibition hall, hotel... offering instant, reliable and secure business communications, the DJ-NX40 is a cost-effective way to migrate smoothly from legacy analog to cutting-edge digital technology!



Additional Information:

DJ-NX40T : <http://www.alinco.com/Products/nxdn/DJ-NX40/DJ-NX40T.pdf>

Avtec Incorporated Dispatch Consoles and Applications

NXDN™ Product/Service: Scout VoIP System

Service Description:

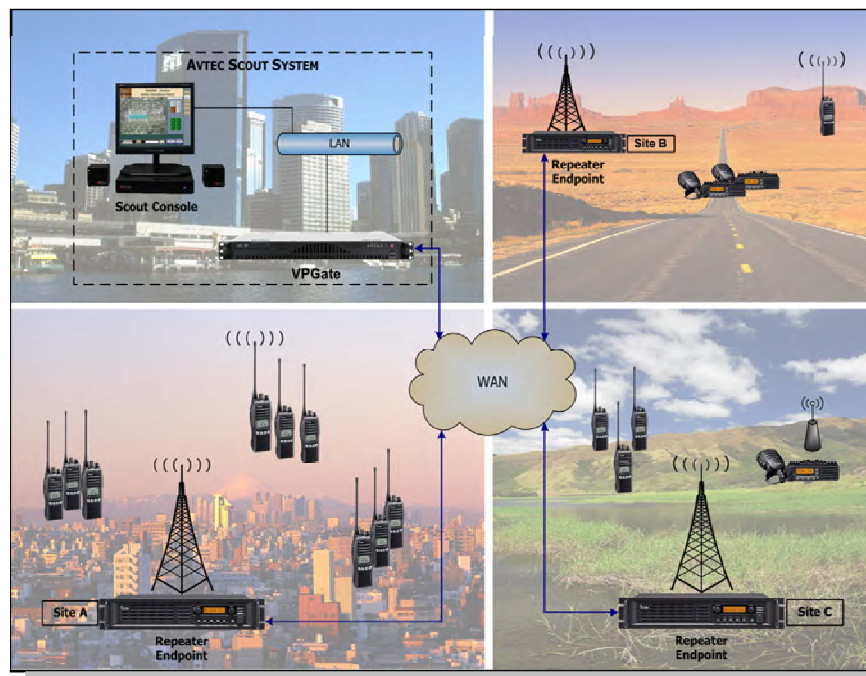
Scout is a true VoIP console system; all its components may be distributed over a LAN/WAN infrastructure using standard Ethernet. There is no backroom TDM switch. Users said they want a console that does every-thing a traditional console does, yet operates on a network. Scout delivers this functionality today, and through active product development and customer feedback, new enhancements are continually incorporated into the feature set.

Scout is Avtec's 4th Generation console product, and was designed for a 10+ year lifecycle in mission-critical environments. Scout provides a dedicated media workstation with its own Ethernet connection and rugged peripherals. This allows customers the option to operate on standard PCs and benefit from reduced life-cycle support costs.

Avtec's Scout console supports radios from NXDN™ manufacturers, offering access to advanced radio features such as ANI, Paging, and Emergency call.

Basic Scout System

With VPGate, Scout supports a wide variety of connections, including conventional analog and digital radios, analog and IP technology, logging recorders, and much more.



Further Details:

<http://www.avtecinc.com/products/scout/>

CML Microsystems Plc Semiconductor Solutions

NXDN™ Product/Service: CMX7131 and CMX7141 multi-mode digital LMR processor chip

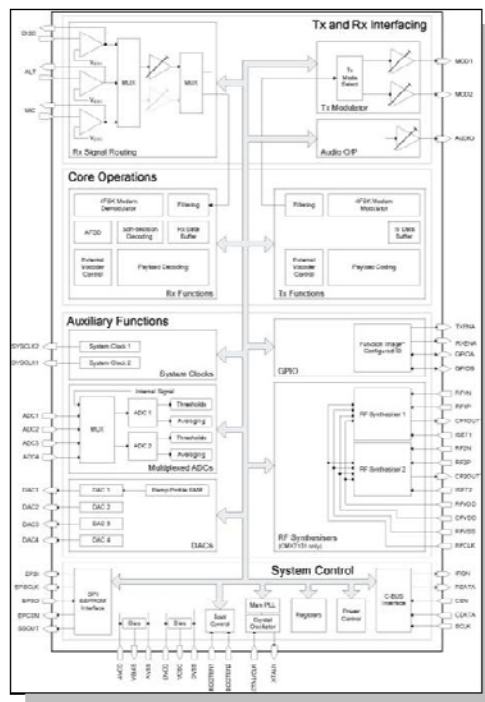
Product Description:

The CMX7131 and CMX7141 are half-duplex processor IC platforms built on FirmASIC® technology and are suitable for use in digital radio and dual-mode (analogue/digital) systems, including NXDN™, dPMR™ and DCR (Japan) radio designs.

Alternatively, these ICs, with the correct Function Image™, can be configured to operate as an Analogue Two-way Radio Processor.

Using CML's proprietary FirmASIC® component technology, on-chip sub-systems are configured by a Function Image(FI): this is a data file that is uploaded during device initialisation that defines the device's function and feature set.

7131/7141FI-3.x implements a half-duplex 4FSK modem with NXDN protocol support functions. In conjunction with a suitable host, vocoder and RF section, a compact, low cost, low power digital PMR radio conforming to the NXDN™ standard can be realised.



Further Details:

http://www.cmlmicro.com/products/CMX7131_CMX7141_Digital_PMR_Processors/?q=NXDN&curr=109

CSS Mindshare, LLC Dispatch Consoles and Applications

NXDN™ Product/Service: Consoles

Product Description:

Mindshare NXIP Gateways provide direct digital IP communication between Mindshare Console Systems and Kenwood NEXEDGE® Radio Systems. These gateways implement Kenwood's NEXEDGE® IP Console Interface (NXIP) specifications for direct communication with NEXEDGE® systems. An IP interface provides secure and cohesive system integration allowing console users full access to radio system features.

Mindshare NXIP Gateways handle all NXIP specifics, including voice compression and decompression (vocoding), for the console system allowing console positions to function as part of the console system in a regular fashion without requiring special modifications to communicate with the NEXEDGE® Radio Systems.



Further Details:

<http://www.css-mindshare.com/wp-content/uploads/NXDN-1.pdf>

<http://www.css-mindshare.com/nxdn-2/>

<http://www.css-mindshare.com/wp-content/uploads/standard-view-new.pdf>

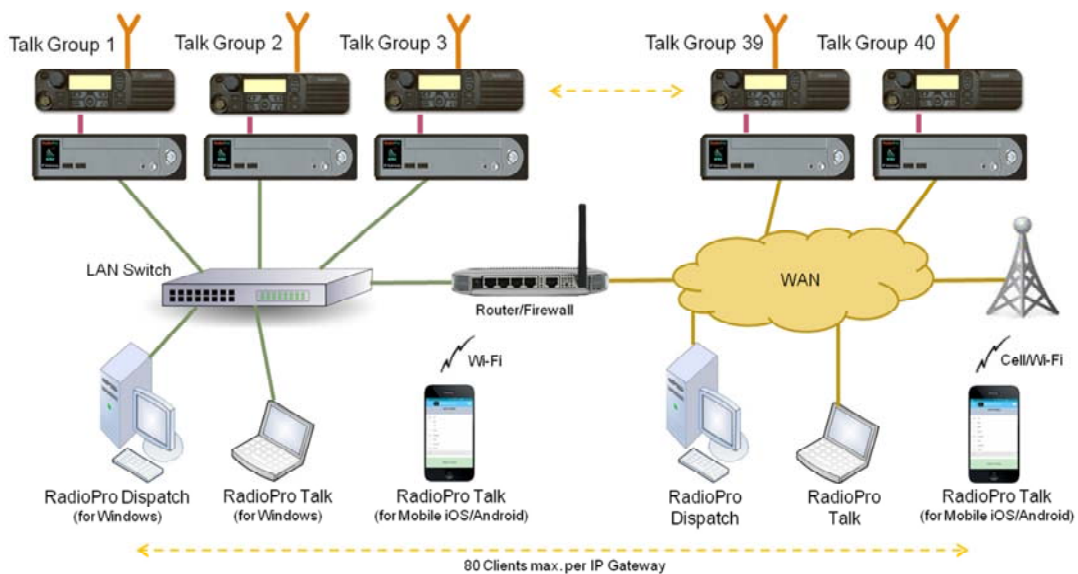
CTI Products Incorporated Applications provider

NXDN™ Product/Service: Dispatch Applications

Product Description:

CTI Products, Inc. develops solutions and manufactures connectivity hardware for connecting networks over a wide variety of media, from telephone networks to LANs, WANs, Intranets, VPNs, and the Internet. We are dedicated to developing and manufacturing connectivity solutions and devices to meet the needs of our customers. Our solutions provide effective control, operation and monitoring on a local, national or global level.

RadioPro provides remote access to Kenwood NEXEDGE radios via IP Networks. PC-based client software presents a user with either a console for dispatching simultaneous radio channels (RadioPro Dispatch), a low-cost user interface for PC users (RadioPro Talk), or a mobile app (RadioPro Mobile) that runs on iPhone/iPad and Android devices. As shown in the diagram, a system may have a mixture of Dispatch, Talk, and Mobile Clients. The IP Gateways interface the radio system to an IP network, ensuring easy wide-area deployment without purchasing and configuring server PCs.



Further Details:

<http://ctiproducts.com/radiopro.html>

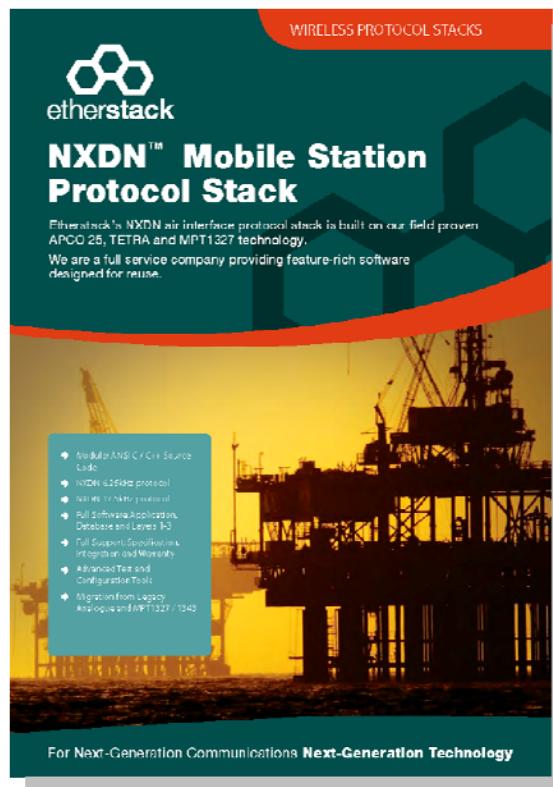
Etherstack Ltd. Protocol Stacks

NXDN™ Product/Service: Mobile/Base Station Waveforms

Product Description:

This highly portable stack is available in two variants, Mobile Stack (MS) and Basestation Stack (BS). Written in highly portable ANSI C, the stack can be readily hosted on a wide range of popular microprocessors and DSPs. The NXDN stack provides a complete implementation including the PHY (physical layer) in software.

The stack is available with Etherstack's ELITE automated test suite tools - to assist the manufacturer with integration, testing and maintenance of the implementation during the lifecycle of the product.



Further Details:

<http://www.etherstack.com/>

Eventide Logging Recording Products

NXDN™ Product/Service: NexLog IP-Based Logging Recorders

Product Description:

Eventide's NexLog series of communications logging recorders provide archival and instant recall voice recording for NXDN™ radio systems. IP-audio and call-related metadata (PTT ID, Group ID) for each transmission are reliably captured, recorded and archived. The resulting recordings are instantly available for replay, research, incident reconstruction, burn to DVD/Blu-ray, and export via email.

The same Eventide communications logging recorder can also record the customer's VoIP telephones, digital PBX telephones, analog telephones, other LMR systems, 9-1-1 calls, and PC screen video. Eventide communications loggers reliably meet the mission-critical needs of thousands of government and industry customers worldwide.



Further Details:

<http://eventide.com/CommunicationsDivision/Products/NexLogRecorders/NexLog740.aspx>

EXACOM Incorporated Logging Recording Products

NXDN™ Product/Service: Multi-media Logging Recorder

Product Description:

EXACOM is well positioned to offer industry leading Next Generation recording technology with the new Hindsight-G2™ platform. Advanced functionality is standard in all EXACOM recording solutions to meet the demanding environments found in today's 911, Defense, Homeland Security, Utilities and Transportation Communications Centers. With integrations for P25 IP radio systems, conventional radio systems, analog, digital and VoIP phone systems, Hindsight-G2™ offers power and flexibility at your fingertips. EXACOM designed the multi-faceted Hindsight-G2™ platform with not only the communications center administrators in mind, but the everyday user as well. The Hindsight-G2™ places the focus on increasing production by decreasing stress while searching for calls. No database expertise is required to search, find and recreate entire incidents. EXACOM solutions offer a choice of non-proprietary, industry standard hardware.

EXACOM, Inc., based in Concord, New Hampshire, is a leading manufacturer of communications recording solutions for public safety, government and DoD applications since 1986. EXACOM provides audio, video, data and text to 9-1-1 recording solutions for communications and dispatch centers in many countries, including some of the largest centers in the U.S. and Canada.



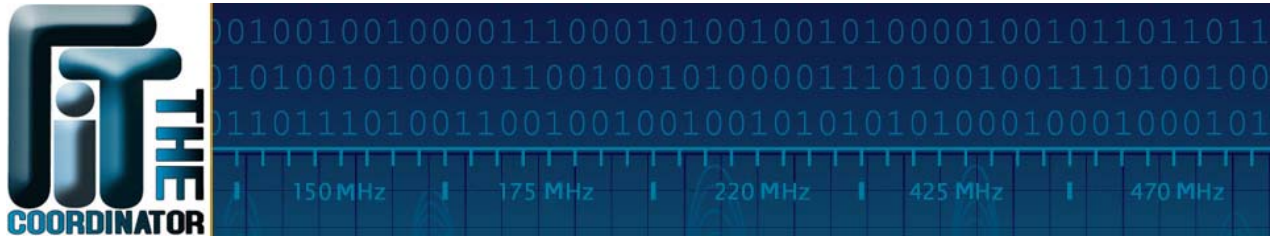
Further Details: <http://exacom.com/featured-products/>

Forest Industries Telecommunications Frequency Coordinator

NXDN™ Product/Service: Frequency Coordination

Product Description:

FIT is a trade association of the Land Mobile radio industry and is an FCC Certified Frequency Coordinator. We have been assisting two-way radio applicants and licensees since 1947. As one of the first established frequency coordinators, FIT has been in the forefront of frequency coordination and radio system design. FIT was one of the first to develop a computer database for the efficient and effective management of land mobile radio frequencies. Many of the engineering and assistance services now offered by frequency coordinators and spectrum managers are modeled after the services initiated by FIT 70 years ago.



Further Details:

<https://fcclicense.org/fit/>

Freedom Communication Technologies Inc. Radio Test Sets

NXDN™ Product/Service: Radio Test Sets

Product Description:

The R8100 is the premium, ultra-portable member of our product family. It has all the functionality and test capabilities of our industry-standard R8000 communications system analyzer, but also features an internal battery, premier ergonomics and suite of advanced features that are optional on the R8000. With the R8100, there's absolutely no trade-off between bench top power and total portability and the unit's Class 3 Mil-Spec shock and vibration rating at test to its suitability for nearly any LMR test environment. Designed for portability, the 6.4kg R8100 supports the NXDN™ protocol and NXDN "Type C" Trunking, and is compliant with the Conformance Test procedures of the NXDN standard.

The software-defined R8100 possesses an exceptional range of features and capabilities, including:

- Optional "AutoTune" Automated Test and Alignment for Kenwood "NX Series" radios
- High performance spectrum analyzer with full-band display and noise floor <-140dBm
- Accepts up to 150 watts of RF power without need for an external attenuator
- Expandable and upgradable to more advanced feature sets
- "Super-bright" 8.4-inch LCD display for easy viewing in all lighting conditions
- Ultra-wide frequency coverage from 1MHz up to 3GHz
- Support for every major LMR format, including NXDN, P25, P25 trunking, TETRA, DMR & dPMR



Further Details: <http://freedomcte.com/r8100/>

**Icom Incorporated
Radio Manufacturer**

NXDN™ Product/Service: A full range of NXDN™ equipment

Product Description:

IDAS™ is Icom's digital land mobile radio system using the NXDN™ common air interface. IDAS™ offers a complete system of handheld radios, mobile radios, repeaters, network interface/trunking controller, remote communicator (dispatch application) and various accessories. IDAS™ is a complete digital solution that system owners and managers can grow into as their own time and budgets allow, and is continually updated with new products like the IC-F52D/F62D series, huge audio, compact IC-F1100D series and OTAP, OTAR functions to name a few.

The IDAS™ system product suite supports conventional, multi-conventional (IP linked conventional networks) and Type-D trunking, and much more.



Further Details:

<http://www.icom.co.jp/world/idas/idas/>

InterTalk Systems, Inc. Dispatch Consoles and Applications

NXDN™ Product/Service: Consoles

Product Description:

The InterTalk Integrated Dispatch and Control Console sits at the core of your dispatch operation and easily directs all facets of your control, communications and intelligence infrastructure at a single point of contact. Whether it is police, fire, ambulance, transportation, electric utility or others, InterTalk allows effortless communication across diverse networks, including analog and digital radio, telephone, paging, and more.

InterTalk's proven track record for mission-critical communications control operations with standards-based architecture makes it the choice for agencies that require a highly cost-effective method of integrating different voice and data communications.

InterTalk's commitment to open standards and our philosophy of developing flexible, exact-fit, off-the-shelf platform solutions gives us the ability to stay ahead of rapidly changing communications control needs, so your agency can focus on the critical tasks at hand.



Further Details:

<https://intertalksystems.com/>

JVCKENWOOD Corporation
Radio manufacturer

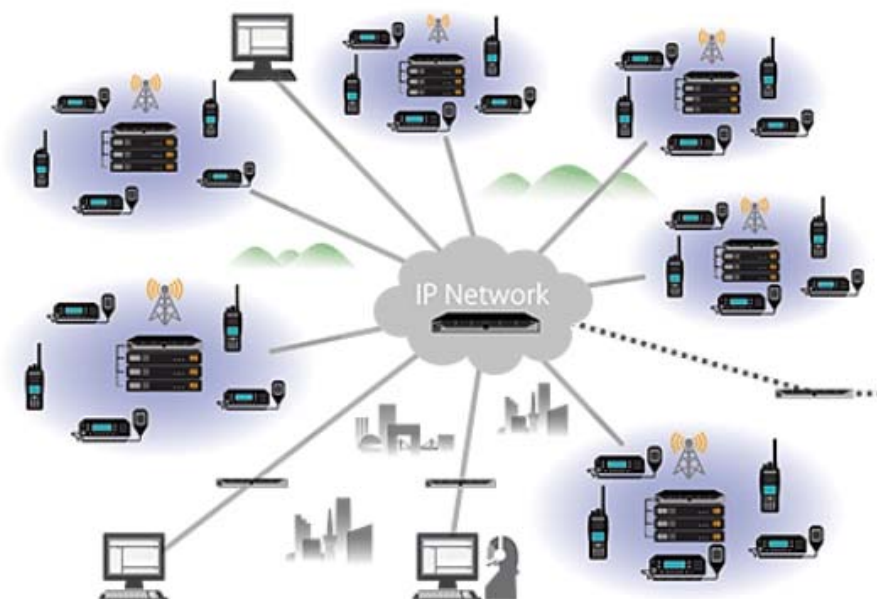
NXDN™ Product/Service: A full range of NXDN™ equipment

Product Description:

All NEXEDGE™ products use advanced DSP-driven digital voice technologies and support both FM analog and new digital fleets. System type conversion or expansion only requires software options and/or additional base station units, i.e., no “major” upgrading. JVCKENWOOD offers NEXEDGE™ conventional, conventional IP network, trunked and wide area trunked IP networked Type-C and Type-D trunking solutions with secure digital voice and an array of advanced digital feature sets for business and government sectors.



JVCKENWOOD has now developed NEXEDGE® Generation 2 (Gen2). Gen2 offers a quantum leap in network size: the maximum number of sites that can be connected has increased from 48 to 1,000, representing virtually unlimited scalability. At the same time, it provides full compatibility with current equipment. For customers looking to create large-scale digital trunked networks, NEXEDGE® Gen2 has the features, capabilities and performance to satisfy all their requirements.



Further Details:

<http://nexedge.kenwood.com/index.html>

Raven Electronics Corporation DSP Based Communication Solutions

NXDN™ Product/Service: Voice and Data Switching Equipment

Product Description:

Mobile users are deploying digital technologies from major radio manufactures in order to capitalize on the voice quality and features they offer. In doing so, some hardware and software vendors are being faced with the choice of implementing expensive VOCODER technologies within their own platforms or being left behind. Raven can bridge this gap.

Customers want over-the-air transmissions and console initiated calls to utilize NXDN™ digital voice capabilities using direct IP Telephony solutions. Should an existing recording solution, for example, not currently support decoding NXDN™ digital voice frames and call metadata then Raven can provide a single, centralized solution to overcome this problem.

- Decode IP-based NXDN™ voice frames from receivers and console-initiated calls
- Copy digital call headers (talk group ID, caller SUID, etc) and form new G.711 RTP streams
- Forward to a TCP port on a recording device, smartphone application or console system.



Further Details:

<http://www.ravencomm.com/products/catalog/2/36/m4x-nexedge-recording-gateway/>

REMOTATEC Dispatch Consoles

NXDN™ Product/Service: Interoperability Gateway TXRoIP GTW02

Product Description:

The integration of radio communication systems is increasingly needed in interagency actions in task forces, to ensure clear communication for a successful mission.

Remotatec has the Gateway TXRoIP GTW02 with interoperability with multiple radio protocols including NXDN.



Further Details:

<http://remotatec.com.br/>

Ritron Incorporated Radio Manufacturer

NXDN™ Product/Service:

Product Description:

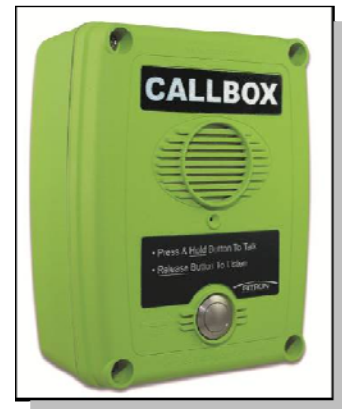
The Ritron Clean Cab Radio (RCCR) is designed with state of the art RF technology to provide onboard voice communication for freight and transit railroad operations.

The radio is available in both 1 piece or 2 piece remote head models and is fully compliant with the January 1, 2013 FCC mandate for narrow band operation. It supports 25kHz (wide) and 12.5kHz (narrow) operation and can be easily upgraded via a plug-in board to support digital communication using the NXDN™ digital standard at 6.25kHz.



XD Series Digital Callbox:

A new, compact, dual-mode, XD-Series NXDN™ digital capable callbox. The callbox allows customers to conveniently position wireless communication right where it's needed – eliminating costly trenching and construction associated with wired solutions. The callbox has an internal antenna, is weather-proof and can operate on stand-alone D-cell batteries. It is capable of either 12.5KHz analog mode or in NXDN digital 12.5KHz or 6.25KHz. A built-in relay is used for access-control applications i.e. gates, doors or for activating an emergency strobe light. The callbox is available in Hi-Viz Green or Diminishing Black color.



Other Ritron Callboxes:

All OutPost Series Callboxes are available in Light Duty and Heavy Duty XT models. The Heavy Duty XT features a weather-resistant fiberglass enclosure, a stainless steel faceplate with tamper-resistant fasteners and a concealed antenna making it perfect to withstand any element.



Further Details:

<http://www.ritron.com>

**Rockwell Collins
Radio Systems Integration and Test House**

NXDN™ Product/Service: Comprehensive Testing Services and Facilities

Service Description:

Rockwell Collins recently purchased ARINC which operates two interoperability test labs. Our NXDN™ lab is used to evaluate performance, interoperability, data communications, and GPS reporting capabilities of equipment from different suppliers to determine compliance with the NXDN™ technical standard for LMR and public safety radio systems.

The Interoperability Test and Demonstration Center (ITDC) will provide customers, partners, and technology vendors a platform to assess the capability, reliability, and interoperability of existing and new equipment. It is equipped with a variety of Public Safety and Homeland Security voice, video, and data technologies, including trunked and conventional LMR systems, broadband wireless, video surveillance, and physical security platforms.



Further Details:

<http://www.arinc.com/> or www.rockwellcollins.com

Telex Radio Dispatch Group

Dispatch Consoles and Applications

Telex Radio Dispatch is a leading manufacturer of IP control for two-way radio communications. Based on a distributive architecture, Telex Radio Dispatch console systems have flexibility, scalability and redundant capability based on the network. For more than 12 years Telex has supplied systems for Public Safety, Utilities, Manufacturing and Education.

NXDN™ Product/Service: Radio Dispatch Interfaces

Product Description:

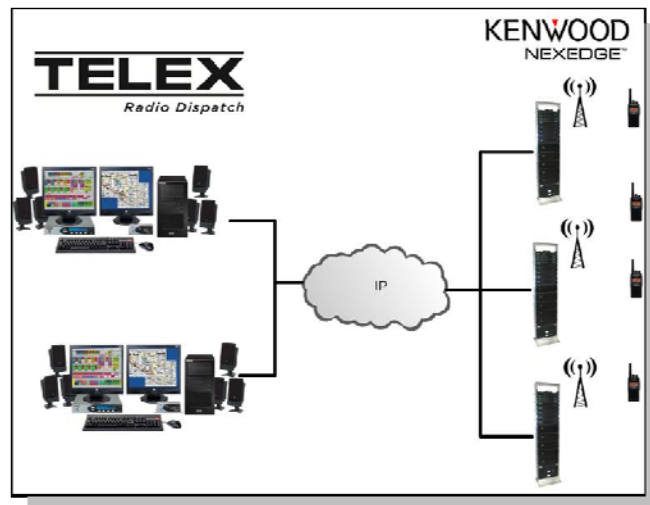
Now shipping is a C-Soft NEXEDGE IP interface. The interface is designed to connect directly to JVCKENWOOD NEXEDGE® trunking repeaters without using any radio gateway or additional hardware. The C-Soft NEXEDGE IP interface provides flexibility in deployment and offers advanced radio control features. NEXEDGE IP interface is an optional feature on C-Soft Dispatch Console and available in 2, 6, 12 and 24 lines.

In addition we have an NXDN™ over-the-air control station option for our IP-224 Radio over IP (RoIP) interface that enhances our existing JVCKENWOOD NEXEDGE® interface and also adds Icom IDAS™ capability.

Example of JVCKENWOOD NEXEDGE™ Direct IP Interface:

Features

- Group Call/Individual Call/Broadcast Call/Alert Call
- Selectable Talk Group
- Emergency Call Decode with Acknowledgement Capabilities
- Text Messaging to/from a Talk Group or to/from an Individual
- Status encode/decode to/from a Talk Group or to/from an Individual
- Status Request/Status Decode/Status Encode
- Radio Stun, and revive
- Radio Remote Monitor with Supervisor Password Protection
- Remote Regrouping
- GPS decoding with IP Interface Capabilities
- Supports Multi-sites operations
- Over-The-Air-Aliasing
- Supports up to 24 Talk Paths per Console.
- Supports both Narrow band (12.5Khz) and Very Narrow band (6.25Khz) Channel Spacing



Further Details: <http://www.telexradiodispatch.com>

Ultra Tech Group of Labs Compliance Testing house

NXDN™ Product/Service: NXDN™ Interoperability Testing

Product Description:

UltraTech Group of Labs has more than 24 years of experience in the test and measurement for radio and telecommunications equipment and is Canada's largest and most successful EMC & Radio Test house. As Canada's only FCC and Industry Canada Telecommunication Certification Body, Ultratech has the expertise and experience necessary to qualify radio and telecommunications devices for industry and regulatory requirements.

Ultratech can also provide testing services for NXDN™, specifically testing for compliance with the NXDN™ Conformance test procedures.



Further Details:

<http://www.ultratech-labs.com/>

Viavi Solutions Inc. Test and measurement equipment

NXDN™ Product / Service: Digital Radio Test Sets

With its hybrid portable design, the industry's largest color touch-screen display, a measurement range from -140 dBm to 500 Watts, and unmatched analog and digital test features, the 8800S offers RF professionals a whole new experience in radio test.

Weighing only 17 lbs (7.71 kg), with a 2.5+ hour internal battery, and 30 G shock rating, now test professionals will no longer compromise portability for critical test features; and vice versa. Advanced features ranging from Auto-Test to digital modulation analysis plots to even an internal 500 W (4% accuracy) in-line power meter are all available within a one-box solution!



The 3920B Digital Radio Test Set

The 3920B continues to expand its digital PMR test capabilities, making it the most comprehensive and versatile instrument in the market. New enhancements include a low noise RF generator with -110 dBc/Hz performance, providing ultimate accuracy for radio test and alignment. Speech test patterns are also available for testing receivers using actual human voice.



The 3550R Digital Radio Test System

The 3550R is the industry's lightest, most rugged and first truly Portable touch-screen analog and digital radio test system. The 3550R takes radio and repeater site testing to the next level with a quantum leap in an easy to use, integrated test system for complete radio receiver and transmitter performance testing, cable fault and antenna system analysis.



Additional Information:

8800S : <https://www.viavisolutions.com/en-us/products/8800sx-digital-radio-test-set>

3920B : <https://www.viavisolutions.com/en-us/products/3920b-series-analog-and-digital-radio-test-platform>

3550R : <https://www.viavisolutions.com/en-us/products/3550r-touch-screen-radio-test-system>

Zetron, Inc.
Dispatch Consoles and Applications

NXDN™ Product/Service: MAX Dispatch System

Product Description:

Zetron's MAX Dispatch system is a pure, end-to-end, IP-based telecommunications console system designed for mission-critical dispatch applications. Because MAX Dispatch employs the latest, standards-based IP protocols and IT best practices, it offers the highest levels of interoperability, scalability and usability. It is designed to streamline the console operator's job and help them focus on the incident or task at hand. It is also designed to meet the needs of the full range of other personnel who interact with the system, including administrators, supervisors, and radio and IT technicians



Further Details:

<https://www.zetron.com/mission-critical-solutions/max/max-dispatch/>

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