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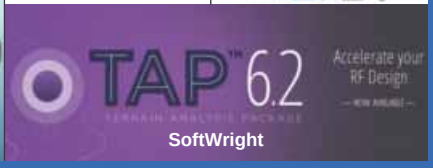

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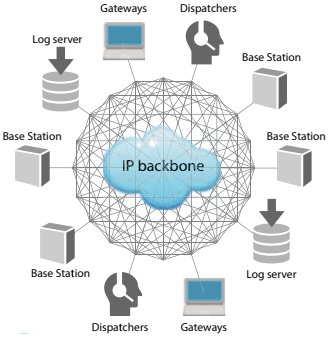

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Worldwide Buyers Guide 2015

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2015: Opportunities and Predictions

Before we put together the first issue of *RadioResource International* magazine in 2015, we conducted a reader survey to get a pulse on our readers' needs and plans for the year. Nearly half of our readers plan to upgrade their communications networks during 2015, and nearly 17 percent of respondents plan a complete network replacement.

As the industry's only global vendor resource, this Worldwide Buyers Guide issue will be a year-long asset to professional mobile radio (PMR) users looking for new equipment for mobile radio networks. The "Product Category Index" on Page 32 will help you find the companies that provide the specific equipment you are looking for. Then you can find the website for each company that you are interested in beginning on Page 24 in the "Suppliers Index."

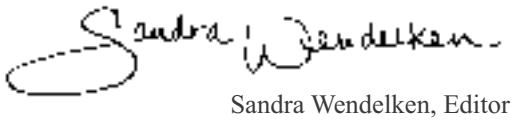
Our editorial and research departments spend a great deal of time throughout the year keeping the information in this issue up to date, so take advantage of the data to boost your communications network. And if you have suggestions for improvements, please let us know.

The majority of our readers will have 2015 communications budgets that are larger than their 2014 budgets, which bodes well for our industry. Along with new fiscal responsibility, the new year brings challenges and promise.

Here are the topics that I predict will continue to develop during 2015. Emergency number evolution from voice only to multimedia will occur in more countries, as we've witnessed in Australia, some European nations, and the United States and Canada. The digital radio transition will continue and will affect more vertical markets from utilities to transit agencies to public safety. Spectrum allocation and standards for public-safety broadband will make huge headway this year leading up to and during the World Radio Conference (WRC) in November. Countries will continue to define their disaster response best practices, and communications will become an even larger part of their plans.

We value your opinions! Please email your feedback to me at swendelken@RRMediaGroup.com.

We welcome your predictions as well. Best wishes for 2015!



Sandra Wendelken, Editor
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RadioResource INTERNATIONAL

RadioResource International delivers wireless voice and data information for mobile and remote mission-critical operations for professionals who reside or do business outside the United States and Canada. The magazine covers private and trunked mobile radio, wireless data, location technologies, public safety communications, microwave radio, satellite, paging/messaging, remote monitoring, and other wireless applications. Editorial content is international in scope and encompasses emerging technologies, industry reports and trends, innovative applications, product information and comparisons, news, standards, and troubleshooting tips.

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ASIA

South Korea Selects 700 MHz Band 28 for Nationwide Public-Safety LTE Network

The South Korean government confirmed its pubic-safety Long Term Evolution (PS-LTE) public protection and disaster recovery (PPDR) network frequency band as 718 – 728 MHz uplink and 773 – 783 MHz downlink. This is band 28, the standard frequency for the Asia-Pacific Telecommunity (APT) band plan known as APT-700.

In July, the South Korean government adopted plans to build a broadband network dedicated to public safety using LTE technology to be deployed nationwide by 2017. The plan calls for 20 megahertz of dedicated spectrum

in the 700 MHz band. The specific frequencies were not defined until November.

Following a request for proposals (RFP) process, the government selected LG CNS to create the information strategy plan (ISP). Three companies, including Korea Telecom, SK C&C and LG CNS, submitted bids for the ISP contract.

The ISP draft result was expected to be announced in December, said Dujeong Choi, Telecommunications Technology Association (TTA) of South Korea. At press time, the announcement had not been made. The ISP will address many questions, including expected cost, network site specifics and vendor involvement.

HONG KONG — The Dynamic Spectrum Alliance (DSA) is working to promote Asian regulatory policies that will pave the way for innovative new wireless technologies, addressing increasing wireless data challenges.

The Chinese government made advancements regarding management of its spectrum resources as it continues a public consultation period on revising its radio spectrum management policies. In Singapore, the Infocomm Development Authority (IDA) developed a regulatory framework for unlicensed access to 180 megahertz of unused radio spectrum in the broadcast TV frequency bands, which went into effect in November.

The Taiwan Dynamic Spectrum Access Pilot Group is working to create and develop a dynamic spectrum access ecosystem in Taiwan. This will leverage Taiwan's capabilities in semiconductor design and fabrication, component and device manufacturing, and systems integration and solutions.

Separately, the IEEE Standards Association (IEEE-SA) announced the availability of the IEEE 802.19.1 "Standard for TV White Space (TVWS) Coexistence Methods."

"The IEEE 802.19.1 standard enables the line of IEEE 802 wireless standards to effectively utilize the TV white space," said Steve Shellhammer, chair of the IEEE 802.19 Wireless Coexistence Working Group. "This is accomplished by providing standardized coexistence methods among dissimilar or independently operated TVWS networks. The TVWS is made up of vacant frequencies made available for unlicensed use and provides good RF propagation characteristics for unlicensed wireless communications. The IEEE 802.19.1 standard is intended to help achieve fair and efficient spectrum sharing."

In addition, **AirTies**, **Aruba Networks**, **ATDI**, **Broadcom** and **Saankhya Labs** are the latest members to join the Dynamic Spectrum Alliance, with Broadcom and Aruba Networks being elected to its board of directors.

EUROPE

LONDON — A new service developed by **British Telecom** (BT), **EE** and **HTC** can pinpoint the source of 9-9-9 emergency calls from mobile phones 4,000 times more accurately than the current system — to a radius of 30 meters or less — cutting the handling time for emergency services.

The new geographical location system, called Advanced Mobile Location (AML), can identify the source of a mobile phone emergency call to within 0.003 square kilometers.

About 60 percent of 9-9-9 and 1-1-2 calls in the U.K. are made from mobile phones, all of which are handled by BT call centers. Emergency services are only able to identify approximate locations of callers to within a few square kilometers.

When an emergency call is made with an AML-enabled smartphone, the phone automatically activates its location service and sends its position by text message to the 9-9-9 service — on average within 18 seconds. This text message is not visible on the handset and is free. The text is automatically matched to the voice call and compared with the network's cell-based information to ensure it is valid. The location is then sent to the appropriate emergency service, supplementing the cell-based information.

"I'm delighted to see this development," said Sue Lampard, president of British Association of Public Safety Communications Officials (BAPCO). "The 9-9-9 service has remained

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Australia Undertakes Review of Emergency Number System

Nearly 40 responses to the Australian government's review of the national triple zero emergency number were received and will be reviewed and incorporated into a report to the Minister for Communications by March 2015.

Triple zero (0-0-0) is Australia's primary emergency service number to obtain assistance from the police, fire or ambulance service in a time-critical or life-threatening situation. Australia has two secondary emergency service numbers that work only with particular technologies: 1-1-2 is the international standard emergency number that can be called from a GSM mobile, and 1-0-6 is the text-based emergency number for people who are deaf or have a hearing or speech impairment and can be called from a teletypewriter (TTY).

The government released a discussion paper on the review of the national triple zero number in July, and comments were due in August. The review is considering how the number can adapt to the changing telecommunications environment so it can continue to support emergency communications into the future.

Sydney, Australia

Telstra is the triple zero operator but is subject to a competitive tender scheduled for June 2016. Future public expectations for the voice-only service include that it be available easily and quickly anywhere at anytime for free. Australia's review includes a list of eight questions to determine how the service can best move forward.

The University of Melbourne's Centre for Disaster Management and Public Safety, Association of Public-Safety Communications Officials (APCO) Australasia and the Victorian Spatial Council submitted joint responses. The groups said triple zero service in the future should comprise both voice and data components and needs to be built on an open standards roadmap. The response raises about 20 key points about the future triple zero service for further discussion regarding what the tender and the contract for the service will need to address to contribute to the future security and well-being of all Australians. Numerous governmental, private entities and citizens also submitted responses.

Similar initiatives are underway in Europe for its 1-1-2 service and in the United States for next-generation 9-1-1 (NG 9-1-1).

voice-centric since 1937 — whilst multimedia technology has developed around it. In the 21st century it is hard to believe that the U.K. emergency services are unable to receive good location data; they are reliant on the caller to tell them. Invariably during a 9-9-9 call, the caller will be distressed, so trying to pinpoint their location adds unnecessary time before resources can be deployed."

AML is available for emergency calls made on the EE network on all new HTC phones. The companies are working with the other U.K. mobile networks to offer the same approach by all networks and manufacturers free. It is expected that it will be available on HTC handsets on other networks shortly, and a number of other handset manufacturers have started to develop it for future models.

GENEVA — The **International Telecommunication Union** (ITU) membership meeting in Busan, South Korea, for the Plenipotentiary Conference passed a resolution to improve global flight tracking for civil aviation. The new resolution instructs the forthcoming World Radiocommunication Conference in 2015 (WRC-15) to consider global flight tracking in its agenda and instructs the director of ITU's Radiocommunication Bureau to submit a specific report on the matter to WRC-15.

This report will include the results of studies, which have been carried out in the ITU Radiocommunication Sector (ITU-R) for the past two years and are being accelerated as a result of this resolution.

This follows the March 2014 disappearance and loss of Flight MH370 with 239 people on board, which spurred worldwide discussions on global flight tracking and the need for coordinated action by ITU and other relevant organizations.

In June, ITU also established a focus group under the umbrella of the Telecommunication Standardization Sector (ITU-T) on aviation applications of cloud computing for flight data monitoring. This group will study the requirements for telecommunications standards to enable an "aviation cloud" for real-time monitoring of flight data, including those for the protection, security and ownership of flight data and the technical mechanisms and policies to govern access to these data.

LONDON — The global professional mobile radio (PMR) systems market is expected to grow at a modest pace and post a compound annual growth rate of 9.42 percent between 2014 and 2018, according to a report from research firm TechNavio.

The report identified the increasing number of devices supporting Long Term Evolution (LTE) and PMR networks as a major trend set to impact the overall market.

"The industry is expected to gain more traction in terms of demand for devices that support LTE and PMR networks. These types of devices will lend a competitive

Continued on Page 14

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European PMR Operator Expands to U.K. with DMR Network

Entropia Digital, a European commercial professional mobile radio (PMR) operator, announced its expansion into the Greater London area with a new Digital Mobile Radio (DMR) Tier 3 network for business users. This DMR network brings the number of Entropia networks to three, joining TETRA networks in Belgium and the Netherlands.

Tait Communications signed a long-term agreement to provide the DMR network, including terminals and technical support. Entropia will deploy a minimum of 200 sites with Tait infrastructure to provide

coverage across the U.K. for thousands of portable and mobile users, said Philip Vercruysse, Entropia founder and CEO.

The network rollout will begin in London before expanding to the southeast and other key metropolitan areas, including Birmingham, Manchester and north to Scotland.

The TETRA network in Belgium is supplied by Rohde & Schwarz, while the TETRA network in the Netherlands is a Motorola Solutions network. The Netherlands' network is the largest commercial TETRA network in the country and had a full upgrade in August. In addition, the network is equipped with double high redundant IP TETRA network switches that are geographically separated. The network is supported via TetraNed.

Entropia's networks are designed for business users and provide all the equipment and services needed, including mobile radios. The PMR voice communications for all three systems include group conversation, multiple groups, individual call, selective call, emergency call and telephone connection. Data communications include status service, short data service and package data communications. The company also offers paging in the Netherlands.

Additionally, the company offers control room software to aid communications between groups of mobile workers and a central control room or dispatch center. Entropia offers customers a digital gateway between the Entropia network and conventional networks.

The PMR operator features an extensive business partner channel to serve its markets, said Vercruysse. The business partners act as a service point, connecting end customers and providing accessories and maintenance.

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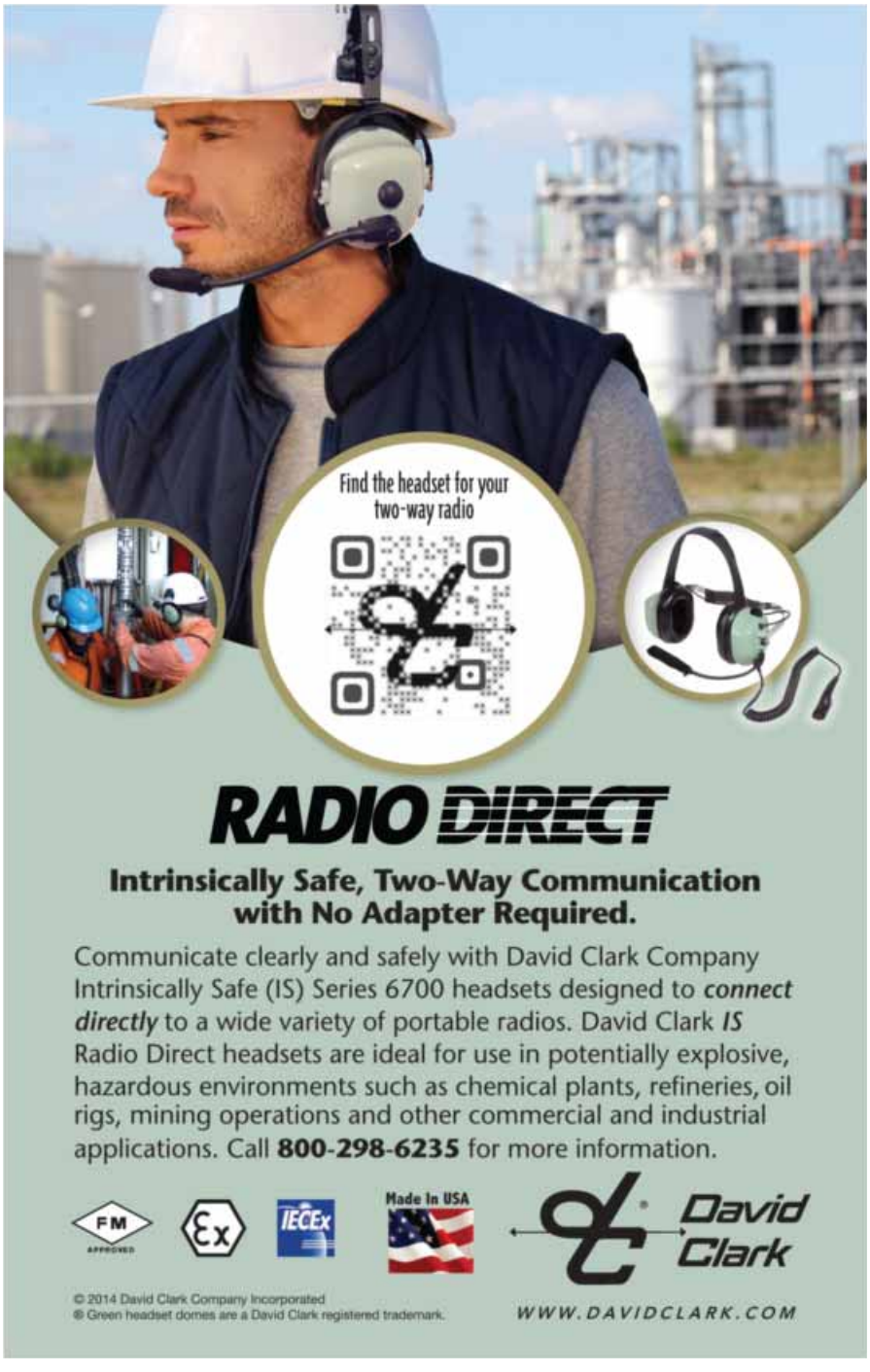
World News

Continued from Page 10

edge to organizations choosing to capitalize on them, as they can switch easily between both the technologies based on the requirement at hand," said Faisal Ghaus, vice president of TechNavio.

SUWANEE, Georgia, USA — Four new companies joined the NXDN Forum. The new member companies are **Alinco**, **Cimarron Technologies**, **Data Over Radio** and **Numonix**.

The new members comprise two-way radio application providers and radio manufacturers and will add to the support of the NXDN standard. There are more than 1.5 million NXDN terminals and infrastructure in the market.



Antarctica Winter Expedition Uses Codan HF Radios

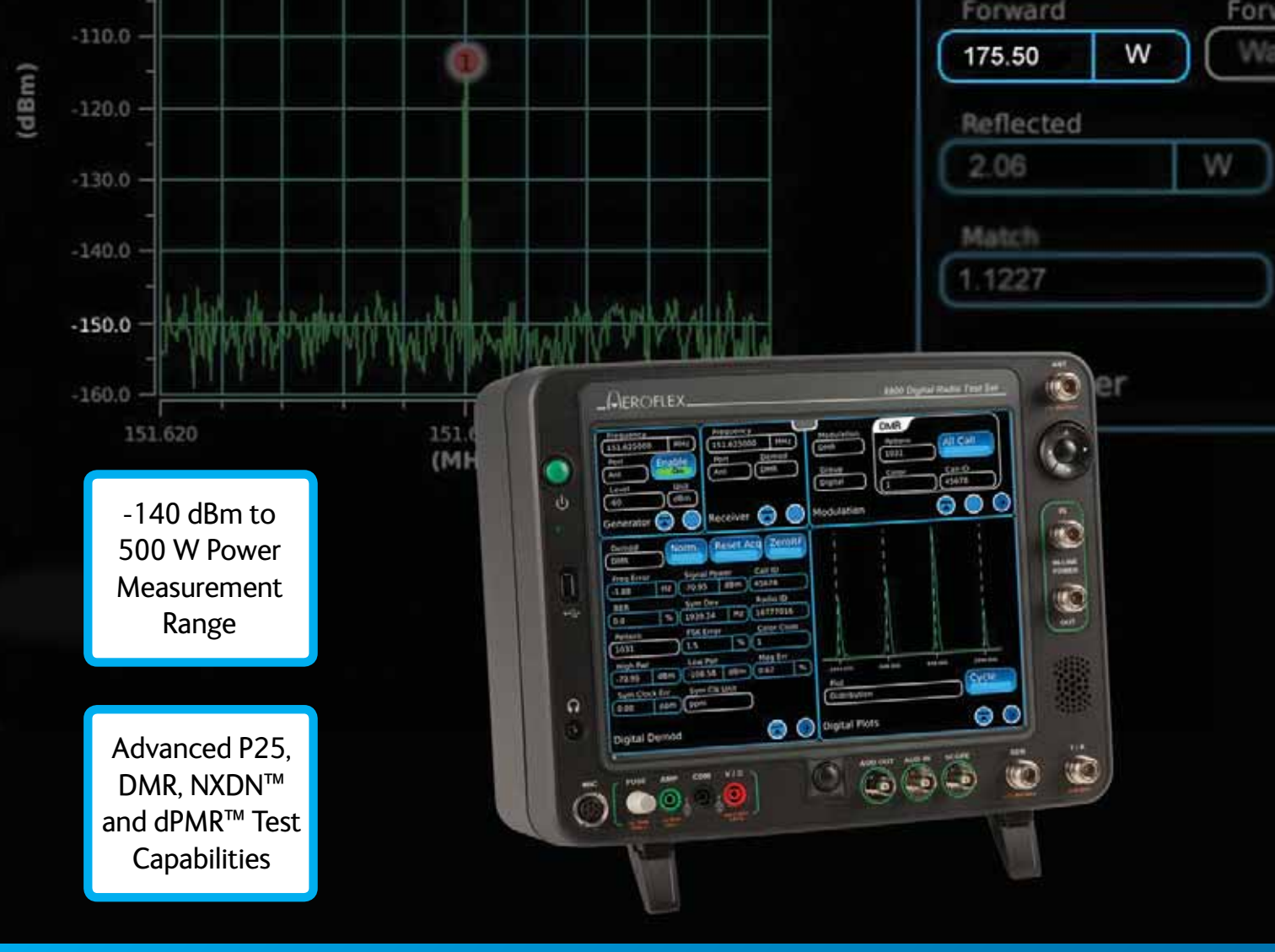
Codan Radio Communications was selected to provide the HF radios for Sir Ranulph Fiennes and his Ice Team for The Coldest Journey to cross Antarctica in winter.

Paul McCarter, the communications adviser for the expedition, worked with Sir Ranulph for more than a year to gain support from global companies to use the best equipment for the communications challenge. The final array of equipment included HF radios, satellite base stations, navigation equipment, and short-range marine and land handheld radios.

When the expedition was complete, the communications equipment was handed over to the International Polar Foundation.

"To provide communications from one of the remotest and coldest places in the world, you need extraordinary radio equipment that can withstand the rigors of the journey and perform in the extremes," said Fiennes, co-leader of The Coldest Journey and one of the world's leading explorers. "We selected Codan as we knew their HF radios would guarantee communications, and they did not let us down."

The Coldest Journey was tasked with ensuring that Fiennes and his six-man team could traverse the South Pole in polar winter, a feat so dangerous that it has never before been attempted. It required the best equipment just to keep the team alive throughout the six-month expedition. In the end, Fiennes was extracted because of frostbite in the early stages of the expedition. The remaining team continued the attempt but had to abandon the traverse because of extremely difficult crevassing.



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The Data Benefits of Digital Radio

Photo courtesy Airbus Defence and Space

With digital radio standards, it is feasible to use the same technologies for both voice and data communications in the same network.

By Klaus Bender

Digital voice land mobile communications systems are becoming more common as the standards mature and the market becomes more familiar with the technologies. These systems also offer data communications capabilities, and this article examines the feasibility of using the same technologies for both voice and data communications in the same system.

Digital Challenges and Opportunities

Wireless communications continues to serve a critical role in our society, as technologies advance at an astounding rate. Wireless devices possess more computing power than their laptop computer ancestors of a decade ago. Society depends on being connected and often requires broadband connections for life's necessities. This expectation of always being connected has influenced the design of everything from cellular phones to automobiles to appliances such as water heaters and refrigerators. Critical service industries such as electric, gas and water systems are not immune to the expectation of connectivity.

The organizations that provide electricity, water, gas and petroleum to the public are under pressure to upgrade their infrastructure, some of which is more than 40 years old. The electric industry has envisioned a "smart grid" where devices are connected and assigned IP addresses. Utilities are under regulatory scrutiny to provide higher reliability and higher quality power, while preventing terrorists and adversarial nation states from accessing their networks. The water, gas and petroleum businesses are under similar pressure. The only way to increase reliability and quality for these resources is to give the operators more insight into their own operations. This is accomplished with sensors, switches, regulators and other hardware that automate network restoration and operation. The only effective way to provide connectivity to these devices is with wireless communications.

Wireless communications relies on radio spectrum, and access to suitable radio spectrum has been an issue for mission-critical communications firms for decades. Spectrum options for utilities are often limited, especially in urban areas. North American utilities often use the same unlicensed spectrum as wireless routers and baby monitors for meter reading and other

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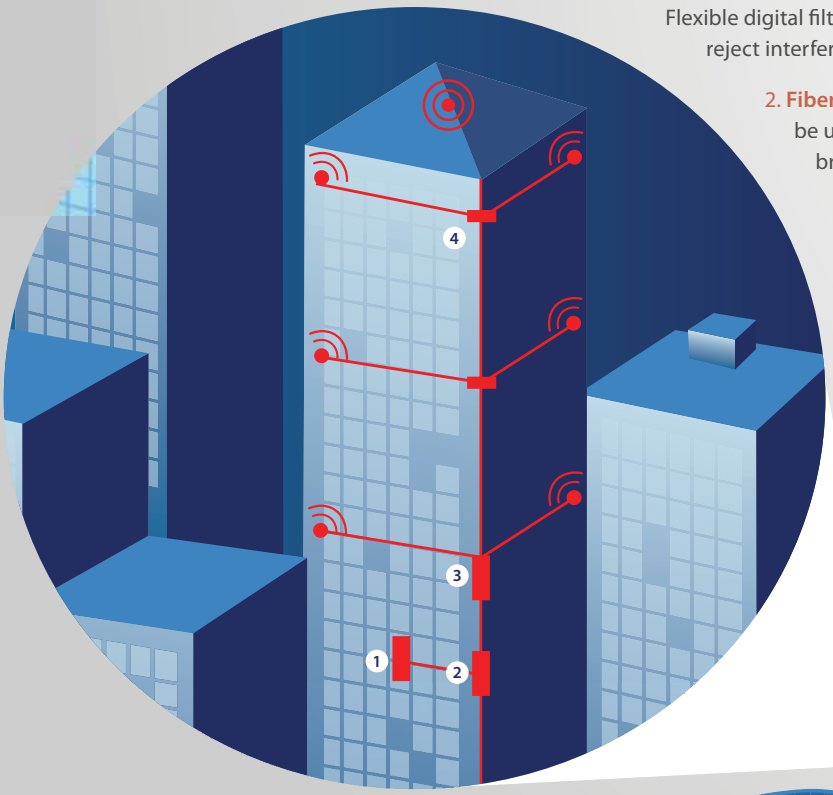

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noncritical applications. However, the possibility of harmful interference on these frequencies makes their use for critical communications problematic. Similarly, relying on wireless carriers to provide connectivity is equally problematic, because wireless carriers do not construct their networks to the reliability standards needed by mission-critical communications companies, especially in rural areas. Critical infrastructure providers are forced to build their own networks and often struggle to find spectrum for these networks.

Voice Communications

Another important part of improving the quality and reliability of critical resources relies on voice communications with field employees. Utility workers often arrive at accidents and other emergencies before other first responders, and reliable voice communications is vital. While some critical communications firms use commercial mobile operators for field force communications, a majority of the industry uses professional mobile radio (PMR) systems for voice communications. Many firms have upgraded their PMR systems to use digital modulation. Other companies face the end of life of their systems and are looking at replacements. These utilities must convince their management that it makes more sense to buy a system costing millions of dollars than to buy the service from a wireless carrier.

PMR systems are designed to provide consistent coverage across the entire service territory, not just urban areas. PMR systems are often more reliable than commercial carriers, as mission-critical communications firms use battery and diesel generator backup more readily than commercial networks. Critical infrastructure providers have control over the cost and features of their systems, tailoring the technology to their current and future needs. As land mobile communications moves to digital technologies, operators can examine if the network used to deliver PMR voice communications may also be used to support the increasing need to provide data capability to thousands of control devices.

Technology	Frequencies	Bandwidth	Data Rate
DMR	VHF, UHF, 800 MHz, 900 MHz	6.25 kHz 12.5 kHz	9,600 bps
dPMR	VHF, UHF	6.25 kHz	4,800 bps
NXDN	VHF, UHF, 800 MHz	6.25 kHz 12.25 kHz	4,800 bps 9,600 bps
Project 25	VHF, UHF, 700 MHz, 800 MHz, 900 MHz	6.25 kHz 12.5 kHz	9,600 bps
TETRA	VHF, UHF, 800 MHz	25 kHz	28,000 bps

M2M Communications

Several terms describe the type of communications needed to maintain critical resources such as electricity, water and gas. Supervisory control and data acquisition (SCADA) is often used in the utility industry, as well as telemetry. Machine to machine (M2M) has been used recently to broadly describe the class of communications in which devices are remotely connected to interact with each other, taking action based on environmental factors and the operations of other devices, often with no human intervention. The devices include capacity banks, line switches, circuit breakers and reclosers. The water industry has pumping stations, sensors and meters, as do the gas and petroleum industries.

It is common practice to break down the communications requirements of common maintenance and emergency restoration procedures into "use cases." Each use case describes essential communications parameters of the specific applications. Communications parameters often considered are bandwidth, end-to-end latency, reliability and security.

Without analyzing the specifics of each application or use case, M2M communications for critical infrastructure management and control systems can be divided into several categories categorized by bandwidth and end-to-end latency. End-to-end latency is the amount of time it takes for a sensor to transmit information to a remote device and receive either confirmation or instructions. Some traffic, such as the data from smart meters, requires significant bandwidth to transmit information from millions of meters to billing centers, but latency is not an issue, so the data can be transported by mobile operators in most instances. Using the smart grid as an example, components such as circuit breakers and reclosers in the electric network require near instantaneous response from remote devices, demanding a latency that commercial systems cannot provide. However, the amount of data to be transmitted, and therefore the required bandwidth, is relatively small. Transmissions are often infrequent. If voice communications in the same operating area is also infrequent, it is possible for a voice and data network to share the same technology.

Digital PMR Systems

There was a time when communications networks were designed to meet a specific goal, servicing one type of application, often with a single-vendor, proprietary solution. This was true for voice and data communications. Many industries are now embracing open standards for the communications

EXPERIENCE IN DIGITAL SOLUTIONS

ConnecTel is an authorized Motorola distributor with over 23 years of know-how in the design, distribution, installation and service of analogue and digital radio communication systems. Ranging from basic analog to digital trunking systems, ConnecTel provides solutions for customers throughout Central and Eastern Europe, the Baltics, Russia, Africa and the Middle East.

Facing challenges like time table compliance, service interruptions and operational control, Public Transport companies rely more and more on modern radio communication systems. One example is the TETRA system of the Prague Public Transportation Department, where nearly 2000 trams and buses transported more than 1.2 bn passengers last year. Motorola Dimetra IP system supplied by ConnecTel for City of Prague in 2013 and customized applications developed by ConnecTel like onboard information systems on trams and buses provide further benefit to the passengers.

In order to minimize disruption of services both in terms of extent and time, Utility companies require reliable radio communication systems which are independent from any public system. ConnecTel's experience with the Utility industry is proven by the award of a large radio communication system for CEZ, the power distribution company in the Czech Republic. The system consists of 130 IP connected MOTOTRBO™ repeaters, over 1500 subscriber radios and SCADA System.

With large infrastructures to manage and maintain, radio communication networks are essential to improve team work, increase the safety of the employees and improve productivity. Data communication for remote wellhead, reservoir and pipeline monitoring as well as people and vehicle location tracking can be achieved by the same radio network, thereby adding additional value to the radio network. Over the past several years CONNECTEL has implemented a number of TETRA and P25 radio communication systems worldwide achieving full satisfaction of customers in the upstream, midstream and downstream segment of the oil & gas industry.

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Using open-standard equipment allows customers to take advantage of a larger market to reduce costs.

that carry both their voice and data traffic. Open standards give customers the ability to mix components from different vendors to meet their communications needs. Using open-standard equipment allows customers to take advantage of a larger market to reduce costs. There are several common open standards for digital land mobile radio. A short summary is provided below.

DMR. Digital Mobile Radio (DMR) is a European standard available in 6.25- and 12.5-kilohertz channels. The technology is viewed as a low-cost digital solution. Nonetheless, the technology offers a 9,600 bits per second (bps) data rate in both the 6.25- and 12.5-kilohertz channels. DMR systems are available in the VHF, UHF, 800 MHz and 900 MHz bands.

dPMR. digital Private Mobile Radio (dPMR) is a European narrowband 6.25-kilohertz FDMA technology that offers many forms of voice and/or data applications. dPMR exists in a range of functional levels: dPMR446 is the license-free product for peer-to-peer operations without base stations or repeaters in the 446 MHz band. dPMR Mode 1 is the general purpose peer-to-peer application for all forms of licensed PMR use. dPMR Mode 2 is the licensed version that includes all base station and repeater functionality and allows interfaces via gateways. Mode 3 is fully functional and can be offered by managed access multisite complex systems including the same interfaces and gateways as Mode 2.

NXDN. NXDN is a standard introduced in 2006 for mission-critical applications for medium- to large-sized systems. The standard is being deployed for data, telemetry and remote monitoring/command operation by freight railroads and other users. The technology offers 4,800 bps for 6.25-kilohertz channels and 9,600 bps for 12.5-kilohertz channels. NXDN radio systems are offered in the VHF, UHF and 800 MHz bands.

Project 25 (P25). P25 is an IP-based standard for an integrated voice and data (IV&D) PMR network designed to meet mission-critical communications needs. Developed in North America under local, state and federal representatives and Telecommunications Industry Association (TIA) governance, P25 uses a 12.5-kilohertz radio channel. Phase 1 carries one voice conversation per 12.5-kilohertz channel, and Phase 2 has the capability of two voice conversations per channel. Both Phase 1 and 2 have a channel data capacity of 9,600 bits per second. P25 systems are available at VHF, UHF, 700, 800 and 900 MHz.

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TETRA. TETRA is a digital trunked mobile radio standard developed to meet the needs of traditional PMR user organizations. TETRA uses a 25-kilohertz channel and divides that channel into four slots. In Tier 1, each slot has the data capability of 7,200 bits per second. In Tier 2, higher bandwidths are available, and the data rate of a dedicated 25-kilohertz channel is 28,000 bits per second. TETRA equipment is available in the VHF, UHF, 800 MHz and 900 MHz bands.

While open standards play an important role in the life of a communications network, a proprietary system may be the best solution, as long as the buyer understands the limitations of relying on one vendor. A clear understanding of the communications requirements for voice and data applications could reveal solutions initially ruled out. For the data network, a key parameter is duty cycle and device population. A small number of devices that transmit short bursts of information during non-peak hours could share that channel as a voice system. Several vendors have found success for metering products in the VHF and UHF bands because the duty cycle of their devices is so short that co-channel voice systems never hear them.

Frequency band selection makes a huge difference in PMR system design. Some rugged terrain areas make using higher frequencies prohibitively expensive because of the number of base stations required.

Practical Considerations

There are regulatory considerations involved in using PMR channels for data communications. When a licensee has exclusive use of the channel on a site-by-site basis, implementation becomes easier but the licensee still can't always dedicate channels entirely for data communications and meet regulatory rules.

While the need of the moment often drives companies to construct voice and data networks in the same territory, it may not be necessary. Imagine the cost savings if only one antenna system, including combiners, filters and antennas, could service both voice and data traffic. Dedicated, broadband spectrum for critical infrastructure is still needed. The spectrum allocation process takes time, and leveraging existing assets, including a PMR system, may provide necessary relief for narrowband data operations until a spectrum allocation is realized. ■

Editor's Note: An upcoming white paper by the Utilities Telecom Council (UTC) and Motorola Solutions provides additional details for readers seeking more information.

Klaus Bender, PE, is principal engineer with Site Safe, a division of Velocitel, where he provides subject matter expertise on RF safety, land mobile and microwave systems licensing and smart grid communications. Bender previously was senior director of engineering for the Utilities Telecom Council (UTC). Email comments to editor@RRMediaGroup.com.

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TH9 Power on Hand

Airbus Defence and Space releases a new TETRA handheld with powerful, robust features.

The TH9 is a ruggedized TETRA radio with IP65 protection class. Its high 1.8W output power provides extended coverage. Excellent usability for mission-critical voice and data makes TH9 a powerful communication tool for heavy duty users.

The new audio design of TH9 offers clear sound and excellent audibility for voice calls. A large QVGA display shows all critical information and visual icons clearly and sharply. User-friendly Night vision mode optimises the display for dark conditions.

The easy-to-use and intuitive user interface with the unique voice feedback provides extra user comfort. Java™ support enables usage of customer specific applications.

Bluetooth® wireless technology integrated in TH9 enables users to free themselves from wires when using accessories.

Additionally TH9 has two robust connectors: side connector for audio and data accessories and bottom connector for charging, data and programming.

The advanced Work alone and Lifeguard solution (man down) are for better user safety. When Lifeguard is activated and the radio stops moving or remains horizontal for too long, it triggers a local alert. If the user does not respond, the radio automatically activates an alarm and sends its coordinates to a predefined destination .

Global Navigation Satellite System (GNSS) positioning chip inside TH9 brings extra benefits for the users. These include faster time-to-fix, more accurate and more reliable location information. This is achieved by increased sensitivity and simultaneous usage of two satellite systems (GPS, Glonass, BeiDou or Galileo).

In critical situations it is important to know if additional resources are nearby. The 'Where are you?' feature shows on the radio display during a call how far your team members are. When you press the PTT, they will also see where you are. During emergency call the radio sends its coordinates.

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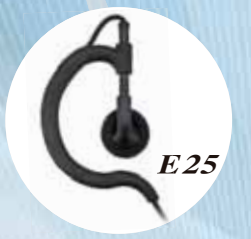

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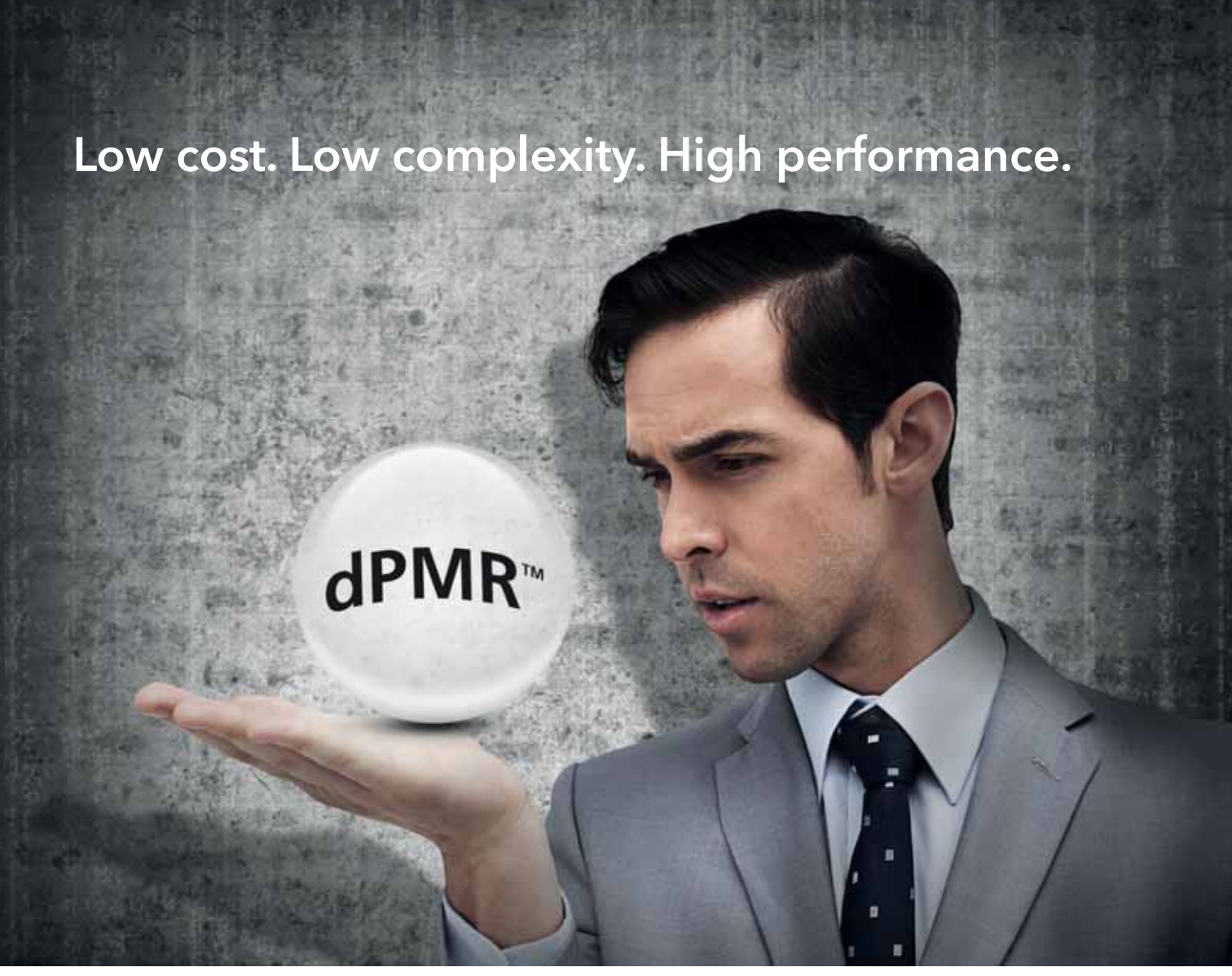

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Webb Industries (RF, T)
Westell Technologies (B, S)
Wilson Electronics (B, RF, S)

ANTENNAS

(B=base station, D=DAS, E=embedded, G=GPS, I=in-building, MW=microwave, M=mobile, MB=multiband portable, P=portable, S=satellite, SA=smart/adaptive, W=wireless and mobile data)

2J Antenna (B, E, G, I, M, SA, W)
4RF (MW)
Air802 (B, G, I, MW, M, SA, W)
Alcatel-Lucent (I, MW, W)
Alpha Technical Services (B)
Aluma Tower (M, P, SA, W)
Amphenol Antenna Solutions (B, E, I, M, P, SA, W)
Antcom (B, E, G, I, MW, M, P, S, SA, W)
Antenna Plus (G, I, M, W)
Antennentechnik Bad Blankenburg (B, E, G, I, MW, M, MB, P, S, SA, W)
Arrowmax.com – Maxtop Technology (P)
ATEL-CAB (B, E, G, I, MW, M, MB, P, S, SA, W)
Barrett Communications (B, M, P)
Berkeley Varitronics Systems (MW)
Bird Technologies (B)
Broadcast Microwave Services (MW)
CalAmp (B, G, W)
Calearo Group (B, E, G, I, M, S, SA, W)
Cambium Networks (G, MW)
Carlson Wireless Technologies (CWT) (B, MW, W)
Ceragon Networks (W)
Cobalt AV Comtronics (B, G, I, M, W)
Cobham Antenna Systems, Microwave Antennas (B, E, G, I, MW, M, P, S, SA, W)
Cobham SATCOM Land Systems (S)
Codan (M, P)
CommScope (B, I, MW, SA, W)
Comprod Communications (B, G, I, MW, M, S, W)
Comsystems (B, M, P, W)
Comtelco (B, E, G, I, MW, M, P, S, W)
Covert Systems (MW)
Cubic Defense Systems (M)
Data Comm for Business (MW)
dbSpectra (B, I, W)
DragonWave (MW)
Eastcom (B, G, P)
EF Johnson Technologies (M, MB, P, W)
El Paso Communications Systems (B, E, G, M, MB, P, W)
EMR (B, E, I, M, P)
Entel UK (P)
ESE (G, S)
Exalt Communications (MW)
Fairview Microwave (MW)
Fiplex Communications (I)
FreeWave Technologies (B, E, G, I, W)
Galtronics (B, D, E, G, I, M, MB, W)
GE MDS (B, E, G, MW, M, W)
General Dynamics C4 Systems (MW, S, W)
Genesis Technical Systems (B, W)
GME (M)
GPS Networking (G)
G-Wave Solutions (B, I)
Harris Public Safety and Professional Communications (PSPC) (B, M, MB, P)
I.D. Systems (G, W)
Imark Communications (B, M, P)
Kaltman Creations (B, I, MW, W)
Kathrein Werke (B, E, G, I, MW, S, SA)
Kendoo Technology (M, P)
Kirmuss & Associates/ Infinity Advanced Technologies (B, G, M, MB, P)
Kyocera Solar (B, S, W)
Laird Technologies (M, MB)
Lea Antenne & Progetti (B, G, I, M, P, W)
Linecom Technology (G)
Linx Technologies (E, G, P, W)
Midland Radio (M, P)
MiMOMax Wireless (B, SA, W)
Mobile Mark (B, E, G, I, MW, M, P, S, W)
Mobility Sound Technology (G)
Motorola Solutions (B, E, G, M, P, S)
MP Antenna (B, E, I, MW, M, SA, W)
Narda Safety Test Solutions (S)
Pacific Crest (B, M, W)
Panorama Antennas (E, G, I, M, MB, P, W)
PCTEL (B, D, E, G, I, MW, M, P, S, SA, W)
Pinyon Technologies (B, E, I, MW, M, P, SA, W)
PJ & RHS (M)
Procom (B, E, G, I, MW, M, P, S, SA, W)
Prostar Batteries (P)
Pulse Electronics/ Larsen Antennas (B, E, G, I, MW, M, P, W)
Pyramid Communications (G)
RAD Data Communications (B, MW, W)
Radial Firm (B, I, W)
Radio Frequency Systems (RFS) (B, I, MW)
RadioMobile (G, W)
Raytheon JPS Communications (W)
RFI (B, E, G, I, M, MB, W)
RFI EMEA (B, E, G, I, M, W)
Roger GPS (G)
Rojone (B, E, G, I, MW, M, P, S, SA, W)
Royal Communications International (B)
Rugged Radios (M, MB, P)
Scan Antenna (B, E, G, I, MW, M, MB, P, S, SA, W)
Sigma Antennas (B, G, I, M, P, W)
Sinclair Technologies (B, E, G, I, MW, M, P, S, SA, W)
Skymasts Antennas (B, G, I, MW, M, W)
Smooth Talker (Mobile Communications) (I, W)
SOLiD (D, W)
Spectracom (MW, W)
STI-CO Industries (B, E, M, P, W)
Swissphone Telecom (B)
Tallysman Wireless (E, G, S)
TE Connectivity (D)
TEDAP (B, G, M, MB, P, W)
Tekk International (P)
TeleCommunication Systems (TCS) (D, G, I, S)
Telewave (B, I, W)
Telsate Telecomunicações (B, G, I, MW, M, P, W)
Thales Defense & Security (P)
Trilithic RF & Microwave (I)
Trylon TSF (MW)
TX RX Systems Bird Technologies (B)
Unimo Technology (P)
Wade Antenna/ Taco Antennas (B, I, W)
Webb Industries (B, G, I, MW, M, P, W)
Westell Technologies (B, D, I)
Westica Communications (MW)
Wilson Electronics (D, I, W)

BASE STATIONS/ REPEATERS

(I=in-building, M=mobile radio, P=paging)

Advanced Digital Systems (M)
Airbus Defence and Space (Cassidian) (M)
Alcatel-Lucent (I, M)
Alligator Communications (M)
Aluma Tower (M)
Amphenol Antenna Solutions (I, M)
AW2S (I)
Axell Wireless (I, M)
Barrett Communications (M)
BHE Bonn Hungary Electronics (I, M, P)
Bird Technologies (M)
BridgeCom Systems (I, M)
CalAmp (M)
Clear-Com (M)
Cobalt AV Comtronics (M)
Cobham Antenna Systems, Microwave Antennas (I)
Codan (M, P)
CommScope (I, M)
Comsystems (I, M)
CPI Communications (M)
Damm Cellular Systems (I, M)
Daniels Electronics (M, P)
dbSpectra (I)
Deltanode Solutions (I)
Eastcom (I, M)
EF Johnson Technologies (M, P)
El Paso Communications Systems (I, M)
EMR (I, P)
Etherstack (I, M)
European Telecommunications S.A. (ETSA) (I, M)
Fiplex Communications (I)
Futurecom Systems Group ULC (I, M)
Galtronics (I)
GE MDS (M)
G-Wave Solutions (I, M, P)
Harris Public Safety and Professional Communications (PSPC) (M)
Hytera Communications (I, M)
Hytera Mobilfunk (I, M)
Icom (I, M)
I.D. Systems (M)
IHM (M, P)
Imark Communications (M)
Infacom (I, M)
Innovative Circuit Technology (ICT) (M)
IPMobileNet (M)
Kenwood (M)
Kenwood USA – Communications Sector (I, M)
Kirisun Communications (M)
Kirmuss & Associates/ Infinity Advanced Technologies (M)
Laird Technologies (I, M)
LMR Systems (M, P)
Maxon (M)
Midian Electronics (M, P)
Midland Radio (I, M)
Motorola Solutions (M)
Pacific Crest (M)
Peiker Acustic (M)
Prism – IPX Systems (P)
Prostar Batteries (M)
Radio Activity (M)
Radio Frequency Systems (RFS) (M)
RadioMobile (I, M)
Raveon Technologies (M, P)
Relm Wireless (I, M)
RFI (I, M, P)
RFI EMEA (I, M, P)
RF Technology (M, P)
Ritron (I, M)
Rohill Engineering (M)
Rojone (I, M, P)
Royal Communications International (M)
Sage Instruments (I)
Schnoor Industrieelektronik (M)
Simoco (I, M)
Sinclair Technologies (I, M, P)
SkySweep Technologies (I, M)
Smooth Talker (Mobile Communications) (I)
SOLiD (I, M, P)
Sonetics (M)
Sonik Messaging Systems (M, P)
Spectra Engineering (I, M, P)
Spok (P)
Swissphone Telecom (P)
Tait Communications (I, M, P)
TecNet International (M)
Tekk International (M, P)
Telsate Telecomunicações (I, M)
Teltronic S.A. Unipersonal (M)
Temwell (I, M)
Trilithic RF & Microwave (I, M, P)
TX RX Systems Bird Technologies (I)
Vertex Standard (M)
Westel Wireless Systems (M)
Westell Technologies (M)
WiPath Communications (M, P)
Wireless Pacific (M)
ZTE Trunking Technology (I, M)

BATTERY EQUIPMENT

(Portable Radio)

Analyzers/Conditioners

Advanced Charger Technology
AdvanceTec Industries
Alexander Technologies
Antcom
Asentria
BatteryJack
BatteryZone
Cadex Electronics
CanCom Radio Accessories
Eagle Eye Power Solutions
Global Technology Systems
Kendoo Technology
Kirmuss & Associates/ Infinity Advanced Technologies
Maha Energy
Motorola Solutions
Power Products
Simoco
Ultralife
Valesco Battery Charger Systems
W&W Manufacturing

Batteries

Alexander Technologies
Aria Industrial
Arrowmax.com – Maxtop Technology
BatteryJack
BatteryZone
Cadex Electronics
CanCom Radio Accessories
Cape Products USA
Eastcom
EF Johnson Technologies
El Paso Communications Systems
Emerging Power
Entel UK
Global Technology Systems
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Imark Communications
Kendoo Technology
Kenwood
Kenwood USA – Communications Sector
Kirmuss & Associates/ Infinity Advanced Technologies
Laird Technologies
Maha Energy
Maxon
Midland Radio
Motorola Solutions
Oy Stop Noise Finland
Pierian Communication Solutions

Product Category Index

PJ & RHS
Power Products
Prostar Batteries
Relm Wireless
Rugged Radios
Samhoo Science & Technology
Shenzhen Power-Time Technology
Simoco
Sonic Communications International
Tait Communications
TecNet International
Telsate Telecomunicações
Thales Defense & Security
Trans-Canada Energies
Ultralife
Unimo Technology
United Communications
Valesco Battery Charger Systems
W&W Manufacturing
Wireless Pacific

Battery Chargers
Advanced Charger Technology
AdvanceTec Industries
Alexander Technologies
Analytic Systems
Aria Industrial
Arrowmax.com – Maxtop Technology
Astron
Ballard Power Systems
BatteryJack
BatteryZone
Cadex Electronics
CanCom Radio Accessories
Cape Products USA
Eagle Eye Power Solutions
EF Johnson Technologies
El Paso Communications Systems
Global Technology Systems
Harris Public Safety and Professional Communications (PSPC)
Imark Communications
Impact Radio Accessories
Infocom
Innovative Circuit Technology (ICT)
Kendoo Technology
Kenwood
Kirmuss & Associates/ Infinity Advanced Technologies
Klein Electronics
Lind Electronics
Maha Energy
Maxon
Midland Radio
Motorola Solutions
Oy Stop Noise Finland
Pierian Communication Solutions
PJ & RHS
Power Products
ProClip USA
Prostar Batteries
Rugged Radios
Samlex America
Shenzhen Power-Time Technology
Simoco
Tait Communications
TecNet International
Telsate Telecomunicações
Thales Defense & Security
Threat 4
Trans-Canada Energies
Ultralife
Unimo Technology
Valesco Battery Charger Systems
W&W Manufacturing
Wireless Pacific
Xantrex Technology

BROADBAND DEVICES
MDTs
CalAmp
Cleartone Telecoms
Comm-Net 2000 Manufacturing
Critical Response Systems
Handheld US
IDA
I.D. Systems
Kenwood USA – Communications Sector
LMR Systems
Logistic Systems
Motorola Solutions
NeoTerra Systems
Pyramid Communications
RadioMobile
Tait Communications
TETRAtab
WiPath Communications

Modems
Advanced Digital Systems
Alligator Communications
CalAmp
CML Microcircuits
Cobalt AV Comtronics
Codan
Data Comm for Business
DataSoft
DragonWave
ESTeem Wireless Modems
GE MDS
General Dynamics C4 Systems
HAL Communications
HV Sistemas
IPMobileNet
Kantronics
Keysight Technologies
Maxon
Midian Electronics
Mobile Mark
Motorola Solutions
PDA Safe
Radiocrafts
Radio IP Software
RadioMobile
Raveon Technologies
Raytheon JPS Communications
RF Neulink
Ritron
Rojone
Sentor Control Systems
Sierra Wireless
SkySweep Technologies
Smooth Talker (Mobile Communications)
Tait Communications
TecNet International
Telsate Telecomunicações
TETRAtab
TS Mobile

PDAs
BatteryJack
Cleartone Telecoms
CML Microcircuits
Critical Response Systems
Elektrobit
El Paso Communications Systems
General Dynamics C4 Systems
Handheld US
Juniper Systems
Kirmuss & Associates/ Infinity Advanced Technologies
Logistic Systems
Motorola Solutions
Teltronic S.A. Unipersonal
TETRAtab
Thales Defense & Security
Zetron

Routers
Cisco Systems
Dragontech Systems
Harris Public Safety and Professional Communications (PSPC)
In Motion Technology
Motorola Solutions
Sentor Control Systems
Sierra Wireless
SkySweep Technologies
TeleCommunication Systems (TCS)
ZTE Trunking Technology

Ruggedized Laptops
Barrett Communications
Cleartone Telecoms
Comsystems
Elektrobit
General Dynamics C4 Systems
Handheld US
JEI Communication Recorders
Kirmuss & Associates/ Infinity Advanced Technologies
Motorola Solutions
RadioMobile
Raytheon JPS Communications
Sigma Wireless
Solacom Technologies
TETRAtab

Smartphones
General Dynamics C4 Systems
Harris Public Safety and Professional Communications (PSPC)
Motorola Solutions
ZTE Trunking Technology

Tablets
BatteryJack
Comsystems
Eastcom
Elektrobit
General Dynamics C4 Systems
Handheld US
IHM
Kirmuss & Associates/ Infinity Advanced Technologies
Motorola Solutions
Peiker Acustic
RadioMobile
Smooth Talker (Mobile Communications)
TETRAtab
ZTE Trunking Technology

USBs and Dongles
General Dynamics C4 Systems
Motorola Solutions
ZTE Trunking Technology

Wireless Access Points
Cisco Systems
Dragontech Systems
Firetide
Motorola Solutions
Sierra Wireless
SkySweep Technologies
Trango Systems
ZTE Trunking Technology

BROADBAND INFRASTRUCTURE
LTE eNodeBs
Alcatel-Lucent
Cisco Systems
Etelm
General Dynamics C4 Systems
Harris Public Safety and Professional Communications (PSPC)
Motorola Solutions
Rohill Engineering
Temwell
Thales Defense & Security
ZTE Trunking Technology

LTE Evolved Packet Core
Alcatel-Lucent
Cisco Systems
Etelm
General Dynamics C4 Systems
Harris Public Safety and Professional Communications (PSPC)
Motorola Solutions
Rohill Engineering
Thales Defense & Security
ZTE Trunking Technology

LTE Home Subscriber Server
Alcatel-Lucent
Cisco Systems
Harris Public Safety and Professional Communications (PSPC)
Motorola Solutions
Rohill Engineering
Thales Defense & Security
ZTE Trunking Technology

LTE Small Cell Technology
Etelm
Galtronics
Rohill Engineering
SOLiD
ZTE Trunking Technology

Mesh Networks
Air802
Alcatel-Lucent
Cisco Systems
Cobalt AV Comtronics
Cobham SATCOM Land Systems
CommScope
Covert Systems
DataSoft
Dragontech Systems
Elektrobit
El Paso Communications Systems
Exelis
Firetide
FreeWave Technologies
GE MDS
General Dynamics C4 Systems
Hytera Mobilfunk
I.D. Systems
IPMobileNet
Metric Systems
Mobile Pro Systems
Motorola Solutions
PDA Safe
Radiocrafts
Radio IP Software
Raytheon JPS Communications
RFI EMEA
Temwell
Westica Communications

Microwave Backhaul
4RF
Alcatel-Lucent
Antcom
Artevea Digital
Aviat Networks
BHE Bonn Hungary Electronics
Broadcast Microwave Services
Cambium Networks
Carlson Wireless Technologies (CWT)
Ceragon Networks
CommScope
DragonWave
Exalt Communications
Fairview Microwave
GE MDS
Infocom
Praxsym
Procom
RAD Data Communications
Raytheon JPS Communications
RFI
Rojone
Sentor Control Systems
SOLiD
Spectracom
Trak Microwave
Trango Systems
Trilithic RF & Microwave
Westica Communications

Repeaters/Bridges
Advanced Digital Systems
Air802
Alligator Communications
BridgeCom Systems
CalAmp
Cobalt AV Comtronics
Codan
Comm-Net 2000 Manufacturing
Damm Cellular Systems
Etelm
Etherstack
Firetide
Futurecom Systems Group
GE MDS
General Dynamics C4 Systems
GPS Networking
Harris Public Safety and Professional Communications (PSPC)
HV Sistemas
Infocom
LMR Systems
Midian Electronics
Motorola Solutions
Omnitronics
Penta
RAD Data Communications
RadioMobile
Raytheon JPS Communications
RF Neulink
RF Technology
Rojone
SkySweep Technologies
Smooth Talker (Mobile Communications)
SOLiD
Spectra Engineering
Tait Communications
TEDAP
Telsate Telecomunicações
Teltronic S.A. Unipersonal
Temwell

CRYSTALS/CHANNEL ELEMENTS
Fiplex Communications
United Communications

DISPATCH EQUIPMENT
Automatic Call Distributor (ACD)
AW Communications Systems Ltd. (AWCSL)
Clear-Com
Elektro-Arola
Motorola Solutions
Schnoor Industrieelektronik
Zetron
ZTE Trunking Technology

Dispatch Furniture
AFC Industries
Airbus Defence and Space (Cassidian)
Clear-Com
Eaton
E Technology Systems
Motorola Solutions
Prescom
Schnoor Industrieelektronik
Winsted
Zetron

Graphics-Imaging Equipment
Exelis
Tech Global
ZTE Trunking Technology

Interconnect
Artevea Digital
AW Communications Systems Ltd. (AWCSL)
Catalyst Communications Technologies
Clear-Com
Communications-Applied Technology
Connect Systems
Cyfas Systems
Data Comm for Business
EF Johnson Technologies
Elcomplus
Exelis
GAI-Tronics
Hoag Electronics
Kolibri Systems
LMR Systems
Midian Electronics
Motorola Solutions
Mutualink
NHRC Repeater Controllers
Omnitronics
Pantel International
Penta
Prescom
Raytheon JPS Communications
Sentor Control Systems
Simoco
Tait Communications
VoiceInterop
Zetron

Radio Consoles
Artevea Digital
Avtec

AW Communications Systems Ltd. (AWCSL)
Bosch Security Systems , dba Telex Radio Dispatch
BridgeCom Systems
Cambium Networks
Catalyst Communications Technologies
Cimarron Technologies
Collcomm, dba NCS
CPI Communications
Cyfas Systems
EF Johnson Technologies
Elcomplus
Etelm
Etherstack
Exelis
GAI-Tronics
Harris Public Safety and Professional Communications (PSPC)
IDA
IHM
Midian Electronics
Motorola Solutions
Omnitronics
Pantel International
Penta
Prescom
Raveon Technologies
Raytheon JPS Communications
Schnoor Industrieelektronik
Sepura
Simoco
Telsate Telecomunicações
Zetron
ZTE Trunking Technology

Turnkey Systems (business/industry)
Airbus Defence and Space (Cassidian)
Aksel Electronics and Communication
Artevea Digital
AW Communications Systems Ltd. (AWCSL)
Bosch Security Systems, dba Telex Radio Dispatch
BridgeCom Systems
Clear-Com
Cyfas Systems
Cyrun
EF Johnson Technologies
Elcomplus
Etelm
Etherstack
Exelis
Frequentis
GE MDS
Hytera Communications
Hytera Mobilfunk
IHM
Infacom
InterAct
Intergraph
Motorola Solutions
Pantel International
Penta
Prescom
RadioMobile
Raveon Technologies
Raytheon JPS Communications
Rohill Engineering
Sabre Building Systems by Cellxion, div. of Sabre Industries
Sentor Control Systems
Simoco
Solacom Technologies
Special Electronics and Designs
Swissphone Telecom
Tait Communications
VoiceInterop
Zetron

Voice Logging Recorders
(See Page 43)

DISTRIBUTORS/REPS
(See Distributors/Reps Index, Page 30)

ENCRYPTION/SCRAMBLING
Aviat Networks
AW Communications Systems Ltd. (AWCSL)
Cimarron Technologies
Codan
Comsystems
Data Comm for Business
Engage Communication
Funkwerk Security Communications
General Dynamics C4 Systems
Harris Public Safety and Professional Communications (PSPC)
HV Sistemas
Imark Communications
Kantronics
Kavit Electronics Industries
LMR Systems
Maxon
Midian Electronics
Midland Radio
Radio IP Software
Raveon Technologies
Simoco
Tait Communications
Tekk International
Teletec
Telsate Telecomunicações
Teltronic S.A. Unipersonal
Thales Defense & Security
Titan Communication Systems
Westel Wireless Systems

LOCATION SYSTEMS EQUIPMENT
ANI/ALI
AW Communications Systems Ltd. (AWCSL)
Cimarron Technologies
El Paso Communications Systems
Exacom
Hoag Electronics
HV Sistemas
InterAct
Intergraph
Midian Electronics
Motorola Solutions
Penta
Raveon Technologies
Rohill Engineering
Tait Communications
TeleCommunication Systems (TCS)
Telsate Telecomunicações
TruePosition
Zetron

Asset Tracking/RFID
Barrett Communications
BluFi Wireless
Comm-Net 2000 Manufacturing
Cubic Defense Systems
Dragontech Systems
Etelm
I.D. Systems
In Motion Technology
InSight Mobile Data
Laird Technologies
LMR Systems
Mobile Mark
Motorola Solutions
NeoTerra Systems
Panorama Antennas
Raveon Technologies
Rojone
Sentor Control Systems
Skymasts Antennas
Smooth Talker (Mobile Communications)
Tallysman Wireless
Trident Micro Systems

AVL/GPS
(A=AVL, G=GPS)
Aksel Electronics and Communication (A, G)
Antcom (G)
Antenna Plus (A, G)
Artevea Digital (A)
Asentria (G)
AW Communications Systems Ltd. (AWCSL) (A, G)
BluFi Wireless (G)
CalAmp (A, G)
Cambium Networks (G)
CML Microcircuits (G)
Cobham Antenna Systems, Microwave Antennas (G)
Codan (A)
Codea (A, G)
Comm-Net 2000 Manufacturing (A, G)
CommScope (A, G)
Cyfas Systems (A)
Cyrun (A, G)
Damm Cellular Systems (A)
Dragontech Systems (A, G)
Elcomplus (A, G)
Elektro-Arola (A, G)
El Paso Communications Systems (G)
Etherstack (A, G)
FATPOT Technologies (A, G)
Funkwerk Security Communications (G)
GE MDS (A, G)
GPS Networking (G)
Harris Public Safety and Professional Communications (PSPC) (A, G)
Hoag Electronics (A, G)
HV Sistemas (A, G)
Hytera Communications (A)
Hytera Mobilfunk (A)
IDA (A, G)
I.D. Systems (G)
IHM (A, G)
Imark Communications (A)
In Motion Technology (A, G)
InSight Mobile Data (A, G)
Integrated Tracking Solutions (A, G)
InterAct (G)
Intergraph (A)
IPMobileNet (G)
Iveda (G)
Juniper Systems (G)
Kantronics (A, G)
Kenwood (A, G)
Kenwood USA – Communications Sector (A, G)
Kirmuss & Associates/ Infinity Advanced Technologies (G)
Kolibri Systems (A)
Lea Antenne & Progetti (A, G)
LMR Systems (A)
Locus Diagnostics (A, G)
Logistic Systems (A, G)
Maxon (A, G)
Midian Electronics (G)
Midland Radio (A)
Mobile Mark (A, G)
Mobility Sound Technology (G)
Motorola Solutions (A, G)
NeoTerra Systems (A, G)
Panorama Antennas (G)
Pantel International (A)
PCTEL (G)
Peiker Acustic (G)
Pryme Radio Products (A, G)
Pyramid Communications (A, G)
Radio IP Software (G)
RadioMobile (A, G)
Raveon Technologies (A, G)
Raytheon JPS Communications (A, G)
RFI EMEA (A, G)
Roger GPS (A, G)
Rohill Engineering (A, G)
Rojone (A, G)
Sentor Control Systems (A, G)
Sierra Wireless (A, G)
Signal Intelligence (G)
Simoco (A, G)
Skymasts Antennas (A, G)
SkySweep Technologies (A, G)
Smooth Talker (Mobile Communications) (G)
Spectracom (G)
Tait Communications (A)
Tallysman Wireless (A, G)
TecNet International (A, G)
TEDAP (A, G)
TeleCommunication Systems (TCS) (G)
Telsate Telecomunicações (G)
Teltronic S.A. Unipersonal (A, G)
Thales Defense & Security (G)
Trident Micro Systems (A)
TriTech Software Systems (A, G)
TruePosition (A, G)
TS Mobile (G)
Vecima Networks (G)
Verint Systems (A)
Webb Industries (G)
WiPath Communications (A, G)
Zetron (A, G)

Mobile Resource Management
AW Communications Systems Ltd. (AWCSL)
CalAmp
Elektro-Arola
GE MDS
I.D. Systems
In Motion Technology
InSight Mobile Data
Intergraph
Iveda
Juniper Systems
Locus Diagnostics
NeoTerra Systems
PCTEL
Raveon Technologies
Raytheon JPS Communications
Rojone
Sentor Control Systems
Smooth Talker (Mobile Communications)
Syntech Systems
WiPath Communications

Modems/Transmitters
Antenna Plus
CalAmp
CML Microcircuits
Comm-Net 2000 Manufacturing
Elektro-Arola
El Paso Communications Systems
FreeWave Technologies
GE MDS
HAL Communications
HV Sistemas
IDA
I.D. Systems
Impact Radio Accessories
Infacom
In Motion Technology
Kantronics
Kenwood
Linx Technologies
Maxon
Midian Electronics
Midland Radio
Pyramid Communications
Radiocrafts
RadioMobile
Raveon Technologies
Raytheon JPS Communications
Sentor Control Systems
Sierra Wireless
Smooth Talker (Mobile Communications)
Spectra Engineering
TecNet International
Tekk International
Telsate Telecomunicações
Teltronic S.A. Unipersonal
Trident Micro Systems
TS Mobile
Vecima Networks

MOBILE MOUNTS
Comprod Communications
Comsystems
Gamber-Johnson
Precision Mounting Technologies
ProClip USA
RadioMobile
Sinclair Technologies
TETRAtab
Wade Antenna/ Taco Antennas

PAGING/MESSAGING EQUIPMENT
Pager Receivers
BluFi Wireless
CML Microcircuits
Critical Response Systems
Cyfas Systems
Digital Paging, Golden Sab
Funkwerk Security Communications
LMR Systems
Motorola Solutions
Prism – IPX Systems
Pyramid Communications
Raveon Technologies
SCA
Sinclair Technologies
Sonik Messaging Systems
Spok
Swissphone Telecom
Unimo Technology
United Communications
Veetronix
WiPath Communications

Terminals
Critical Response Systems
Cyfas Systems
Daniels Electronics
Funkwerk Security Communications
Prism – IPX Systems
Raveon Technologies
Sonik Messaging Systems
Spok
Zetron

Transmitters/RF Controllers
Berkeley Varitronics Systems
CeoTronics
CML Microcircuits
Connect Systems
Critical Response Systems
Cyfas Systems
Daniels Electronics
Digital Paging, Golden Sab
Elektro-Arola
Funkwerk Security Communications
IHM
Infacom
Linx Technologies
Midian Electronics
Motorola Solutions
NHRC Repeater Controllers
Penta
Prism – IPX Systems
Radiocrafts
Raveon Technologies
RFI EMEA
RF Technology
Ritron
Sinclair Technologies
Sonik Messaging Systems
Spectra Engineering
Spok
Swissphone Telecom
Tait Communications
Tekk International
Temwell
TS Mobile
WiPath Communications
Zetron

Two-Way Messaging Devices
Airbus Defence and Space (Cassidian)
Artevea Digital
CeoTronics
Cimarron Technologies
Clear-Com
CML Microcircuits
Critical Response Systems
I.D. Systems
Infacom
Motorola Solutions
Mutualink
NHRC Repeater Controllers
Prism – IPX Systems
Radiocrafts
RadioMobile
Sentor Control Systems
SkySweep Technologies
Sonik Messaging Systems
Spok
Swissphone Telecom
Temwell
WiPath Communications

Voice Storage/ Retrieval Systems
Artevea Digital
CML Microcircuits
CVDS

Product Category Index

Exacom
Midian Electronics
Motorola Solutions
NHRC Repeater Controllers
Omnicron Electronics
Prism – IPX Systems
Pyramid Communications
Record Play Tek (RPT)
Rohill Engineering
Sentor Control Systems
Sonik Messaging Systems
Spok
Stancil

POWER SUPPLIES/ EQUIPMENT

Backup Systems
Alfatronix
Alpha Industrial Power
Ballard Power Systems
CommScope
DuraComm
Imark Communications
Infacom
Innovative Circuit Technology (ICT)
Kyocera Solar
Mobile Pro Systems
Motorola Solutions
Newmar
Pioneer Energy Products (PEPRO)
ReliOn
Samlex America
Sentor Control Systems
Solarcraft
Spectra Engineering
SunWize Technologies
Telsate Telecomunicações
Trans-Canada Energies
Trylon TSF
Ultralife
VFP
Winco
Xantrex Technology

Converters/Inverters (C=converters, I=inverters)
Absopulse Electronics (C, I)
Air802 (C)
Alfatronix (C)
Alpha Industrial Power (C, I)
Analytic Systems (C, I)
Astron (C, I)
DuraComm (C, I)
El Paso Communications Systems (I)
Imark Communications (C, I)
Innovative Circuit Technology (ICT) (C)
Kyocera Solar (I)
Lind Electronics (C, I)
Motorola Solutions (C)
Newmar (C, I)
Pioneer Energy Products (PEPRO) (C, I)
RFI EMEA (I)
Samlex America (C, I)
Solarcraft (C, I)
SunWize Technologies (I)
Telsate Telecomunicações (C, I)
Trans-Canada Energies (C, I)
Tripp Lite (I)
Ultralife (C, I)
Wilmore Electronics (C, I)
Xantrex Technology (C, I)

Generators
Alpha Industrial Power
Aluma Tower
Ballard Power Systems
Dupont Building
Imark Communications
Mobile Pro Systems
Trans-Canada Energies
VFP
Winco

Load-Management Equipment
Alpha Industrial Power
Comm-Net 2000 Manufacturing
Lind Electronics
PDA Safe
Sentor Control Systems
Tripp Lite
Ultralife

Power Supplies
Absopulse Electronics
Air802
Alfatronix
Alpha Industrial Power
Analytic Systems
Arrowmax.com – Maxtop Technology
Astron
DuraComm
Eaton
El Paso Communications Systems
EMR
GE MDS
Hytera Communications
Hytera Mobilfunk
Imark Communications
Innovative Circuit Technology (ICT)
Kyocera Solar
Lind Electronics
Mobile Pro Systems
Newmar
PDA Safe
Precision Mounting Technologies
RFI EMEA
RF Technology
Samlex America
Spectra Engineering
Trans-Canada Energies
Tripp Lite
Ultralife
Winco

Solar Power Equipment
Alpha Industrial Power
Analytic Systems
Ballard Power Systems
BatteryJack
Carlson Wireless Technologies (CWT)
DuraComm
El Paso Communications Systems
Funk-Electronic Piciorgros
Imark Communications
Innovative Circuit Technology (ICT)
Kyocera Solar
Lind Electronics
Mobile Pro Systems
RFI
Ritron
Solarcraft
SunWize Technologies
Trans-Canada Energies
Ultralife
Unimar
Winco
Xantrex Technology

Uninterruptible Power Supplies
Absopulse Electronics
Alfatronix
Alpha Industrial Power
Ballard Power Systems
Comm-Net 2000 Manufacturing
DuraComm
Eaton
Hytera Communications
Hytera Mobilfunk
Innovative Circuit Technology (ICT)
Mobile Pro Systems
Newmar
PDA Safe
Solarcraft
SunWize Technologies
Trans-Canada Energies
Tripp Lite
Trylon TSF
Ultralife
VFP

UPS Batteries
Alpha Industrial Power
BatteryJack
Global Technology Systems
Innovative Circuit Technology (ICT)
Laird Technologies
Lind Electronics
Mobile Pro Systems
Motorola Solutions
Newmar
Solarcraft
Sonic Communications International
Telsate Telecomunicações
Trans-Canada Energies
Tripp Lite
Ultralife
VFP

Wind Power Equipment
Sentor Control Systems
Trans-Canada Energies
Ultralife

PSAP/E9-1-1 EQUIPMENT

CAD Software/Systems
AGENT511
Aksel Electronics and Communication
Antcom
Artevea Digital
Avtec
Beta 80 International
Cyrun
Elcomplus
Frequentis
Genesis Group
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Hytera Mobilfunk
IDA
IHM
Infor Enroute
InterAct
Intergraph
Logistic Systems
Midian Electronics
Motorola Solutions
Pantel International
RadioMobile
Stratus Technologies
Teltronic S.A. Unipersonal
TriTech Software Systems
Zetron

E9-1-1 Location Equipment
AGENT511
Cisco Systems
CommScope
HigherGround
Locus Diagnostics
Motorola Solutions
Sage Instruments
Solacom Technologies
Tech Global
TeleCommunication Systems (TCS)
Teltronic S.A. Unipersonal
TruePosition
Westell Technologies
Zetron

In-Building
Bird Technologies
CommScope
Communications-Applied Technology
EDX Wireless
Fiber-Span
Funkwerk Security Communications
Hytera Communications
Hytera Mobilfunk
Laird Technologies
RCC Consultants
RFI EMEA
Roger GPS
Rojone
Sage Instruments
Solacom Technologies
Survey Technologies Inc. (STI)
TeleCommunication Systems (TCS)
TX RX Systems
Bird Technologies
Westell Technologies

9-1-1 Call Answering
AGENT511
Airbus Defence and Space (Cassidian)
AW Communications Systems Ltd. (AWCSL)
Frequentis
Pantel International
Penta
Plantronics
PowerPhone
Solacom Technologies
Spok
TeleCommunication Systems (TCS)
Zetron

TDD
AGENT511
CVDS
Intergraph
Motorola Solutions
Penta
SkySweep Technologies
Zetron

Time Stamp/ Synchronization
Artevea Digital
ESE
FEI-Zyfer
Locus Diagnostics
Motorola Solutions
Pantel International
RadioMobile
Rojone
Spectracom

PUBLIC-SAFETY EQUIPMENT

Alarm Systems
Advanced Digital Systems
Artevea Digital
AW Communications Systems Ltd. (AWCSL)
Bosch Security Systems
Cimarron Technologies
CML Microcircuits
Connect Systems
Elektro-Arola
El Paso Communications Systems
Exelis
IHM
Infacom
Intergraph
Midian Electronics
Mobile Pro Systems
Motorola Solutions
NeoTerra Systems
Pantel International
Ritron
Schnoor Industrieelektronik
Sentor Control Systems
Signal Intelligence
SkySweep Technologies
Special Electronics and Designs
Temwell
Veetronix
WiPath Communications
Zetron
ZTE Trunking Technology

Automated Person Location
AGENT511
El Paso Communications Systems
Etelm
Funkwerk Security Communications
Intergraph
Locus Diagnostics
Mobility Sound Technology
Motorola Solutions
NeoTerra Systems
Raveon Technologies
Roger GPS
Rojone
Schnoor Industrieelektronik
Sentor Control Systems
Swissphone Telecom
ZTE Trunking Technology

Automatic Notification Systems
Bosch Security Systems
Cimarron Technologies
CML Microcircuits
Etherstack
Exacom
Exelis
Funkwerk Security Communications
I.D. Systems
IHM
Infacom
Midian Electronics
Mobility Sound Technology
Motorola Solutions
NeoTerra Systems
Pantel International
Racom Products
Rojone
Sentor Control Systems
Solacom Technologies
Syntech Systems
VoiceInterop
Zetron

Biometrics/Fingerprinting
Afix Technologies
El Paso Communications Systems
I.D. Systems
Infor Enroute
Motorola Solutions
Realtime North America
Sentor Control Systems

CAD Add-Ons/ Enhancements
AW Communications Systems Ltd. (AWCSL)
Carlson Wireless Technologies (CWT)
Codea
Cyrun
Elektro-Arola
Exelis
FATPOT Technologies
Funkwerk Security Communications
General Dynamics C4 Systems
Intergraph
Logistic Systems
PowerPhone
Priority Dispatch
RadioMobile
Stratus Technologies
TriTech Software Systems
Zetron

Call Boxes
CanCom Radio Accessories
Clear-Com
Exelis
GAI-Tronics
IHM
Ritron
Sentor Control Systems
Special Electronics and Designs
Tekk International

Early Warning Systems
Alcatel-Lucent
AW Communications Systems Ltd. (AWCSL)
CML Microcircuits
Cubic Defense Systems
Eagle Eye Power Solutions
Elektro-Arola
GAI-Tronics
Kyocera Solar
Mobile Pro Systems
NeoTerra Systems
Pantel International
Racom Products
Ritron
Sentor Control Systems
SkySweep Technologies
Solacom Technologies
VoiceInterop
Whelen Engineering
ZTE Trunking Technology

Field Reporting
Codan
Cyrun
FATPOT Technologies
Funkwerk Security Communications
General Dynamics C4 Systems
Infor Enroute
InterAct
Intergraph
Motorola Solutions
NeoTerra Systems
Sentor Control Systems
Syntech Systems
TETRAtab
Trident Micro Systems
TriTech Software Systems
TX RX Systems
Bird Technologies
ZTE Trunking Technology

Intelligent Traffic Systems
Alcatel-Lucent

Cleartone Telecoms
CML Microcircuits
Engage Communication
Etelm
Firetide
Frequentis
GE MDS
Kyocera Solar
Mobile Mark
Motorola Solutions
PCTEL
Trident Micro Systems

Interoperability Equipment/Systems
AGENT511
Alcatel-Lucent
Avtec
AW Communications Systems Ltd. (AWCSL)
Bosch Security Systems, dba Telex Radio Dispatch
BridgeCom Systems
CalAmp
Catalyst Communications Technologies
Cobham (formerly Aeroflex)
Cobham SATCOM Land Systems
Codan
Collcomm, dba NCS
CommScope
Communications-Applied Technology
Connect Systems
CPI Communications
Daniels Electronics
EF Johnson Technologies
Elektro-Arola
Etelm
Etherstack
Exelis
FATPOT Technologies
FieldSoft
Fiplex Communications
Frequentis
Futurecom Systems Group
General Dynamics C4 Systems
General Dynamics Satcom
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Hytera Mobilfunk
In Motion Technology
Intergraph
Iveda
Kenwood USA – Communications Sector
Locus Diagnostics
Midian Electronics
Midland Radio
Motorola Solutions
Mutualink
NeoTerra Systems
Nodcom
Omnitronics
Pantel International
Penta
Prescom
Quintron Systems
Radio IP Software
Raven Electronics
Raytheon JPS Communications
Relm Wireless
Rohill Engineering
Sentor Control Systems
Signal Intelligence
Sinclair Technologies
SkySweep Technologies
Special Electronics and Designs
Tait Communications
TeleCommunication Systems (TCS)
Telewave
Thales Defense & Security
Trident Micro Systems
Trilithic RF & Microwave
Twisted Pair Solutions
TX RX Systems
Bird Technologies
Vertex Standard
VoiceInterop
Westel Wireless Systems
Wireless Pacific
Zetron
ZTE Trunking Technology

Mobile Communications Vehicles
Aluma Tower
AW Communications Systems Ltd. (AWCSL)
Broadcast Microwave Services
CalAmp
Catalyst Communications Technologies
Cleartone Telecoms
CML Microcircuits
Codan
Collcomm, dba NCS
Connect Systems
Critical Response Systems
Damm Cellular Systems
Dragontech Systems
Elektro-Arola
ESTeem Wireless Modems
Etherstack
Exelis
FATPOT Technologies
Firetide
Frequentis
Gamber-Johnson
GE MDS
Harris Public Safety and Professional Communications (PSPC)
I.D. Systems
IHM
In Motion Technology
Iveda
Kantronics
Kenwood USA – Communications Sector
Mobile Specialty Vehicles
Motorola Solutions
PCTEL
Peiker Acustic
Pioneer Energy Products (PEPRO)
Precision Mounting Technologies
Radio IP Software
RadioMobile
Raveon Technologies
Raytheon JPS Communications
Sepura
Setcom
Shelter One
Sierra Wireless
Simoco
Sinclair Technologies
Solacom Technologies
Sonic Communications International
Special Electronics and Designs
Tait Communications
Tallysman Wireless
Teltronic S.A. Unipersonal
TETRAtab
Titan Communication Systems
WiPath Communications
ZTE Trunking Technology

P25 Software
Catalyst Communications Technologies
Cimarron Technologies
Cisco Systems
Codan
Cyrun
Digital Voice Systems Inc. (DVSI)
EDX Wireless
EF Johnson Technologies
Etherstack
Exelis
FATPOT Technologies
Genesis Group
Harris Public Safety and Professional Communications (PSPC)
Locus Diagnostics
Midland Radio
Motorola Solutions
Raytheon JPS Communications
Simoco
SkySweep Technologies
Thales Defense & Security
Twisted Pair Solutions
Zetron

Rapidly Deployable Systems
Alcatel-Lucent
Aluma Tower
AW Communications Systems Ltd. (AWCSL)
BridgeCom Systems
Broadcast Microwave Services
Carlson Wireless Technologies (CWT)
Ceragon Networks
Cisco Systems
Codan
Damm Cellular Systems
Daniels Electronics
Etelm
Etherstack
Exelis
Firetide
General Dynamics C4 Systems
Harris Public Safety and Professional Communications (PSPC)
Iveda
Pioneer Energy Products (PEPRO)
Pyramid Communications
Raveon Technologies
Rohill Engineering
Sentor Control Systems
Simoco
SkySweep Technologies
Sonic Communications International
TeleCommunication Systems (TCS)
TX RX Systems
Bird Technologies
VoiceInterop
Wireless Pacific
ZTE Trunking Technology

Records Management Systems
Artevea Digital
ASC Telecom
Cleartone Telecoms
Cyrun
FATPOT Technologies
Frequentis
I.D. Systems
Infor Enroute
InterAct
Intergraph
Logistic Systems
Mida Solutions
Motorola Solutions
NeoTerra Systems
PowerPhone
Priority Dispatch
Syntech Systems
TriTech Software Systems
ZTE Trunking Technology

Station Alerting
AW Communications Systems Ltd. (AWCSL)
Cimarron Technologies
Critical Response Systems
Elektro-Arola
Exacom
Exelis
Funkwerk Security Communications
Midian Electronics
Motorola Solutions
Sentor Control Systems
Sonik Messaging Systems
WiPath Communications
Zetron

Surveillance Equipment
Arrowmax.com – Maxtop Technology
Astra Radio Communications (ARC)
Broadcast Microwave Services
Cambium Networks
CanCom Radio Accessories
CeoTronics
Cisco Systems
Cleartone Telecoms
Cobalt AV Comtronics
Cobham Antenna Systems, Microwave Antennas
Comprod Communications
Comsystems
Covert Systems
Cubic Defense Systems
Digital Ally
El Paso Communications Systems
Firetide
GE MDS
Harris Public Safety and Professional Communications (PSPC)
Iveda
JEI Communication Recorders
Jing Deng Industrial (JDI)
Kirmuss & Associates/ Infinity Advanced Technologies
Klein Electronics
Kyocera Solar
Mobile Pro Systems
Motorola Solutions
NICE Systems
Omnicron Electronics
Optoelectronics
Phonak Communications
Racom Products
Roger GPS
Savox Communications
Sentor Control Systems
Sepura
Signal Hound
Signal Intelligence
Sinclair Technologies
SkySweep Technologies
Sonic Communications International
Special Electronics and Designs
Stone Mountain
Technotrend
Telsate Telecomunicações
Threat 4
TwitCo Distributing (ParMarLow)
Verint Systems
ZTE Trunking Technology

Turnkey Emergency Systems
Activu
Alcatel-Lucent
Aluma Tower
Artevea Digital
AW Communications Systems Ltd. (AWCSL)
Ceragon Networks
Clear-Com
Critical Response Systems
Cyrun
Etelm
Etherstack
Exacom
Exelis
Fiplex Communications
Frequentis
Funkwerk Security Communications
Hytera Communications
Hytera Mobilfunk
IHM
Infacom
InterAct
Intergraph
Mobile Pro Systems
Motorola Solutions
Pantel International
Raytheon JPS Communications
Sentor Control Systems
Sonik Messaging Systems
Swissphone Telecom
Zetron

Video Surveillance
Alcatel-Lucent
Arrowmax.com – Maxtop Technology
Bosch Security Systems
Bosch Security Systems, dba Telex Radio Dispatch
Broadcast Microwave Services
Calearo Group
Cambium Networks
CeoTronics
Cleartone Telecoms
Cobalt AV Comtronics
Cobham Antenna Systems, Microwave Antennas
Covert Systems
Cyrun
Digital Ally
Dragontech Systems
El Paso Communications Systems
Firetide
Frequentis
GE MDS
General Dynamics C4 Systems
Harris Public Safety and Professional Communications (PSPC)
Intergraph
Iveda
Maxon
Mobile Mark
Mobile Pro Systems
Motorola Solutions
NICE Systems
Quintron Systems
Raytheon JPS Communications
Sentor Control Systems
SkySweep Technologies
Sonic Communications International
Special Electronics and Designs
Tech Global
Telsate Telecomunicações
Verint Systems
ZTE Trunking Technology

RADIO ACCESSORIES

Carrying Cases
A.W. Enterprises
BatteryJack
Bee Electronics
CanCom Radio Accessories
Cape Products USA
CeoTronics
EF Johnson Technologies
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Imark Communications
Kendoo Technology
Kenwood USA – Communications Sector
Klein Electronics
Maxon
Midland Radio
Motorola Solutions
Oy Stop Noise Finland
Peter Jones (ILG)
PJ & RHS
Relm Wireless
Rugged Radios
Smooth Talker (Mobile Communications)
TecNet International
Tekk International
Thales Defense & Security
Unimo Technology
Vertex Standard
ZTE Trunking Technology

Hands-Free Equipment
3M Peltor
AdvanceTec Industries
Astra Radio Communications (ARC)
BatteryJack
CanCom Radio Accessories
Cape Products USA
CeoTronics
Cleartone Telecoms
Cobalt AV Comtronics
Communications-Applied Technology
Comsystems
Con-Space Communications
David Clark
Eartec
EF Johnson Technologies
Exelis
FreeLinc
Guardian Safety Systems
Hytera Communications
Imark Communications
Imtradex
Invisio Communications
JCK Jean Couk Enterprise
Juma Communications
Kendoo Technology
Klein Electronics
Maxon
Midland Radio
Mobility Sound Technology
Motorola Solutions
Oy Stop Noise Finland
Peiker Acustic

Product Category Index

pei tel Communications
Phonak Communications
Pierian Communication Solutions
PJ & RHS
Pryme Radio Products
Pyramid Communications
Rugged Radios
Samhoo Science & Technology
Savox Communications
Setcom
Smooth Talker (Mobile Communications)
Sonetics
Sonic Communications International
Special Electronics and Designs
Technotrend
TecNet International
Tekk International
Telsate Telecomunicações
Threat 4
Titan Communication Systems
TwitCo Distributing (ParMarLow)
Voxtech
ZTE Trunking Technology

Headsets
3M Peltor
Astra Radio Communications (ARC)
BatteryJack
BluFi Wireless
Bosch Security Systems, dba Telex Radio Dispatch
CanCom Radio Accessories
Cape Products USA
CeoTronics
Clear-Com
Cleartone Telecoms
CML Microcircuits
Cobalt AV Comtronics
Collcomm, dba NCS
Communications-Applied Technology
Con-Space Communications
David Clark
Eartec
EF Johnson Technologies
El Paso Communications Systems
Exelis
FreeLinc
Guardian Safety Systems
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Hytera Mobilfunk
Imark Communications
Impact Radio Accessories
Imtradex
Invisio Communications
JCK Jean Couk Enterprise
Jing Deng Industrial (JDI)
Juma Communications
Kendoo Technology
Kenwood USA – Communications Sector
Klein Electronics
Maxon
Midland Radio
Mobility Sound Technology
Motorola Solutions
OTTO
Oy Stop Noise Finland
pei tel Communications
Phonak Communications
Pierian Communication Solutions
PJ & RHS
Plantronics
Procom
Prostar Batteries
Pryme Radio Products
Relm Wireless
Rugged Radios
Samhoo Science & Technology
Savox Communications
Setcom
Shenzhen Power-Time Technology
Sonetics
Sonic Communications International
Special Electronics and Designs
Stone Mountain
TecNet International
Tekk International
Telsate Telecomunicações
Thales Defense & Security
Threat 4
Titan Communication Systems
TwitCo Distributing (ParMarLow)
Unimo Technology
Voxtech
Wireless Pacific
ZTE Trunking Technology

Labels
BatteryJack
Hytera Communications
JCK Jean Couk Enterprise
Label Graphics
Maxon
Motorola Solutions
TecNet International
Telsate Telecomunicações
ZTE Trunking Technology

Microphones
Aria Industrial
Astra Radio Communications (ARC)
BatteryJack
Bosch Security Systems, dba Telex Radio Dispatch
CanCom Radio Accessories
Cape Products USA
CeoTronics
Cleartone Telecoms
Cobalt AV Comtronics
Communications-Applied Technology
Comsystems
Con-Space Communications
Covert Systems
David Clark
EF Johnson Technologies
El Paso Communications Systems
FreeLinc
Guardian Safety Systems
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Hytera Mobilfunk
Imark Communications
Impact Radio Accessories
Imtradex
Invisio Communications
JCK Jean Couk Enterprise
Jing Deng Industrial (JDI)
Juma Communications
Kendoo Technology
Kenwood
Kenwood USA – Communications Sector
Kirmuss & Associates/ Infinity Advanced Technologies
Klein Electronics
Maxon
Midian Electronics
Midland Radio
Mobility Sound Technology
Motorola Solutions
OTTO
Oy Stop Noise Finland
Peiker Acustic
pei tel Communications
Phonak Communications
Pierian Communication Solutions
PJ & RHS
Procom
Prostar Batteries
Pryme Radio Products
Pyramid Communications
Relm Wireless
Rugged Radios
Savox Communications
Setcom
Shenzhen Power-Time Technology
Smooth Talker (Mobile Communications)
Sonic Communications International
Special Electronics and Designs
Spectra Engineering
Stone Mountain
Technotrend
TecNet International
Tekk International
Telsate Telecomunicações
Threat 4
Titan Communication Systems
TwitCo Distributing (ParMarLow)
Unimo Technology
Wireless Pacific
ZTE Trunking Technology

RADIOS

Mobiles/Portables
(MA=mobiles analog, MD=mobiles digital, M6.25=mobiles 6.25 kHz, MB=multiband, PA=portables analog, PD=portables digital, P6.25=portables 6.25 kHz)
3M Peltor (PA, PD)
Advanced Digital Systems (MA, MD)
Barrett Communications (MA, PA)
BatteryJack (PA, PD)
BluFi Wireless (PA, PD)
Cape Products USA (PA)
Ceragon Networks (MD)
Clear-Com (MD, PD)
Cleartone Telecoms (MA, MD)
Codan (MA, MD, PA, PD)
Communications-Applied Technology (PA, PD)
Comsystems (MA, MD, PA, PD)
Connect Systems (MA, M6.25, PA, PD)
Cyrun (MD, PD)
Eartec (PA, PD)
EF Johnson Technologies (MA, MD, M6.25, MB, PA, PD, P6.25)
El Paso Communications Systems (MA, MD, MB, M6.25, PA, PD, P6.25)
Entel UK (PA)
Etelm (MD, PD)
Etherstack (MA, MD, M6.25, MB, PA, PD, P6.25)
Exelis (MA, MD, PA, PD)
General Dynamics C4 Systems (MD)
Giant International (MA, PA)
GME (MA, MD, M6.25, PA, PD)
Harris Public Safety and Professional Communications (PSPC) (MA, MD, M6.25, MB, PA, PD, P6.25)
Holzberg Communications (PA, PD)
Hytera Communications (MA, MD, M6.25, PA, PD, P6.25)
Hytera Mobilfunk (MA, MD, PA, PD)
Icom (MA, MD, M6.25, PA, PD, P6.25)
IHM (MA, MD, PA, PD)
Imark Communications (MA, PA)
Kenwood (MA, MD, M6.25, PA, PD, P6.25)
Kenwood USA – Communications Sector (MA, MD, M6.25, PA, PD, P6.25)
Kirisun Communications (MA, MD, PA, PD)
Kirmuss & Associates/ Infinity Advanced Technologies (MA, MD, M6.25, MB, PA, PD, P6.25)
Klein Electronics (MA, PA, PD)
Maxon (MA, MD, PA, PD)
Midland Radio (MA, MD, PA, PD)
Motorola Solutions (MA, MD, M6.25, PA, PD, P6.25)
Phonak Communications (PA, PD)
Pyramid Communications (PD)
Quanzhou Risen Electronics (MA, MD, M6.25, MB, PA, PD, P6.25)
Raveon Technologies (MD, PD)
Relm Wireless (MA, MD, PA, PD)
Ritron (MA, M6.25, PA)
Roger GPS (MD)
Royal Communications International (PA)
Rugged Radios (MA, MD, PA, PD)
Saab (MA, MD, PA, PD)
Samhoo Science & Technology (MD, M6.25, PD, P6.25)
Schnoor Industrieelektronik (MA, MD, PA, PD)
Sepura (MD, PD)
Sigtech Wireless Technologies (MD, PD)
Simoco (MA, MD, M6.25, PA, PD, P6.25)
SkySweep Technologies (MD, MB)
Special Electronics and Designs (MA, MD, PA, PD)
Stone Mountain (PD)
Tait Communications (MA, MD, PA, PD)
TecNet International (MA, PA)
Tekk International (MA, MD, PA, PD)
Telsate Telecomunicações (MA, MD, PA, PD)
Teltronic S.A. Unipersonal (MA, MD, PA, PD)
Temwell (MA, PA)
Thales Defense & Security (PA, PD)
Trilithic RF & Microwave (MA, MD, MB, PD, P6.25)
Unimo Technology (MA, PA)
Vertex Standard (MA, MD, PA, PD)
Wireless Pacific (PA, PD, P6.25)
ZTE Trunking Technology (MD, M6.25, MB, PD, P6.25)

P25 Radios
Airbus Defence and Space (Cassidian)
EF Johnson Technologies
Etherstack
Exelis
GME
Harris Public Safety and Professional Communications (PSPC)
Icom
Kenwood
Kenwood USA – Communications Sector
Kirmuss & Associates/ Infinity Advanced Technologies
Midland Radio
Motorola Solutions
Phonak Communications
Relm Wireless
Simoco
Tait Communications
Temwell
Thales Defense & Security
Vertex Standard
Wireless Pacific

TETRA
Airbus Defence and Space (Cassidian)
Artevea Digital
Cleartone Telecoms
Comsystems
Etelm
Etherstack
Funk-Electronic Piciorgros
Funkwerk Security Communications
Hytera Communications
Hytera Mobilfunk
IHM
Kenwood USA – Communications Sector
Linecom Technology
Motorola Solutions
Phonak Communications
Roger GPS
Samhoo Science & Technology
Sepura
Sigtech Wireless Technologies
Simoco
Syntech Systems
Teltronic S.A. Unipersonal
Temwell
Unimo Technology

RADIO SYSTEMS

ACSB
Motorola Solutions

Conventional/Trunked
(CA=conventional analog, CD=conventional digital, TA=trunked analog, TD=trunked digital)
4RF (TA, TD)
Advanced Digital Systems (CA, CD)
Airbus Defence and Space (Cassidian) (TD)
Aksel Electronics and Communication (TA, TD)
Alligator Communications (TA, TD)
Anritsu (CA, CD)
Artevea Digital (TD)
Aviat Networks (TD)
Avtec (CA, CD, TA, TD)
AW2S (CA, CD, TA, TD)
AW Communications Systems Ltd. (AWCSL) (CA, CD, TA, TD)
Axell Wireless (TA, TD)
Barrett Communications (CA)
BridgeCom Systems (CA, TA)
CalAmp (CA, TA)
Catalyst Communications Technologies (CA, CD, TA, TD)
CeoTronics (CA, CD, TA, TD)
Ceragon Networks (CD, TD)
Cleartone Telecoms (CA, CD, TD)
CML Microcircuits (CA, CD, TA, TD)
Cobalt AV Comtronics (CA, CD)
Codan (CA, CD, TA, TD)
CommScope (TA, TD)
Comsystems (CA, CD, TA, TD)
Connect Systems (CA, CD, TA)
Cubic Defense Systems (CA)
Damm Cellular Systems (TD)
Daniels Electronics (CA, CD, TA, TD)
dbSpectra (TA, TD)
Eastcom (CD)
EF Johnson Technologies (CA, CD, TA, TD)
Elcomplus (CA, CD, TA, TD)
Elektro-Arola (CA, CD, TD)
El Paso Communications Systems (CA, CD, TA, TD)
Etelm (TD)
Etherstack (CA, CD, TA, TD)
Exelis (CA, CD)
Fiplex Communications (TA, TD)
Frequentis (TA, TD)
GE MDS (CA, CD)
General Dynamics C4 Systems (CD)
Harris Public Safety and Professional Communications (PSPC) (CA, CD, TA, TD)
Hoag Electronics (TA, TD)
Hytera Communications (CA, CD, TA, TD)
Hytera Mobilfunk (CA, TA, TD)
Icom (CA, CD, TA, TD)
IHM (CA, CD, TA, TD)
Imark Communications (CA, TA)
Infacom (CA, CD, TA, TD)
IPMobileNet (CD)
JRD Communications (CA, CD, TA, TD)

Kenwood (CA, TA, TD)
Kenwood USA – Communications Sector (CA, CD, TA, TD)
Kirisun Communications (CA, CD, TA, TD)
Maxon (CA, TA)
Midland Radio (CA, CD, TA, TD)
MiMOMax Wireless (CA, CD, TA, TD)
Motorola Solutions (CA, TA, TD)
Nodcom (TA, TD)
Pacific Crest (CD)
Pantel International (CA, TA, TD)
Penta (CA, CD, TA, TD)
Radial Firm (TA)
Radio Activity (CA, CD, TD)
Radiocrafts (TA, TD)
Radio IP Software (CD, TD)
RadioMobile (CA)
Raven Electronics (TA, TD)
Raveon Technologies (CD, TD)
Relm Wireless (CA, CD, TA, TD)
RF Technology (CA, CD, TA)
Ritron (CA)
Roger GPS (TD)
Rohill Engineering (TA, TD)
Rugged Radios (CA, CD)
Schnoor Industrieelektronik (CA, CD, TA, TD)
Simoco (CA, CD, TA, TD)
Sinclair Technologies (CA, CD, TA, TD)
SkySweep Technologies (CD)
Sonik Messaging Systems (CA)
Spectra Engineering (CA, CD, TA)
Survey Technologies Inc. (STI) (CA, CD, TA, TD)
Tait Communications (CA, CD, TA, TD)
TecNet International (CA, TA)
Tekk International (CA, CD)
Telsate Telecomunicações (CA, TA)
Teltronic S.A. Unipersonal (CA, TA, TD)
Temwell (TA)
Thales Defense & Security (CA)
Trident Micro Systems (CA, CD, TA, TD)
Vertex Standard (CA, CD)
Westel Wireless Systems (CA, CD, TD)
Wireless Pacific (CA, CD)
Zetron (CA, TA, TD)
ZTE Trunking Technology (CD, TA, TD)

Microwave

4RF
Alcatel-Lucent
Alligator Communications
Anritsu
Aviat Networks
AW2S
Broadcast Microwave Services
Cambium Networks
Carlson Wireless Technologies (CWT)
Ceragon Networks
Cobham Antenna Systems, Microwave Antennas
CommScope
Covert Systems
DragonWave
Exalt Communications
Fairview Microwave
GE MDS
General Dynamics C4 Systems
Hytera Communications
Hytera Mobilfunk
Pantel International
RAD Data Communications
Rojone
Sinclair Technologies
Telsate Telecomunicações
Temwell
Vecima Networks
Westica Communications

Narrowband (6.25 kHz)

Advanced Digital Systems
Anritsu
AW2S
AW Communications Systems Ltd. (AWCSL)
CommScope
Connect Systems
Daniels Electronics
Etherstack
GE MDS
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Icom
JRD Communications
Kenwood
Kenwood USA – Communications Sector
MiMOMax Wireless
Motorola Solutions
RadioMobile
Raveon Technologies
Ritron
Simoco
Survey Technologies Inc. (STI)
ZTE Trunking Technology

P25 Systems Equipment

Airbus Defence and Space (Cassidian)
Anritsu
AW2S
Axell Wireless
CalAmp
Catalyst Communications Technologies
Cimarron Technologies
CML Microcircuits
Cobham (formerly Aeroflex)
Codan
Cyrun
Daniels Electronics
EF Johnson Technologies
Etherstack
Exelis
Fiplex Communications
Futurecom Systems Group
Harris Public Safety and Professional Communications (PSPC)
Icom
IPMobileNet
JRD Communications
Kenwood USA – Communications Sector
Metric Systems
Midland Radio
MiMOMax Wireless
Motorola Solutions
Panorama Antennas
Pantel International
Penta
Relm Wireless
RF Technology
Roger GPS
Simoco
Sinclair Technologies
Spectra Engineering
Survey Technologies Inc. (STI)
Tait Communications
Temwell
Thales Defense & Security
Trident Micro Systems
Vertex Standard
Westel Wireless Systems
Zetron

Repeater Controllers

AD Telecom
Advanced Digital Systems
AW Communications Systems Ltd. (AWCSL)
BHE Bonn Hungary Electronics
BridgeCom Systems
CeoTronics
Codan
Collcomm, dba NCS
Communications Specialists
Comsystems
Connect Systems
EF Johnson Technologies
El Paso Communications Systems
Etherstack
Exelis
Hytera Communications
Hytera Mobilfunk
I.D. Systems
Infacom
JRD Communications
Kirmuss & Associates/ Infinity Advanced Technologies
Midian Electronics
Midland Radio
NHRC Repeater Controllers
Raveon Technologies
Rojone
Samhoo Science & Technology
See Telecom
SkySweep Technologies
Telsate Telecomunicações
Trident Micro Systems
Wireless Pacific
ZTE Trunking Technology

Simulcast

AW Communications Systems Ltd. (AWCSL)
Carlson Wireless Technologies (CWT)
Codan
Comsystems
Daniels Electronics
EF Johnson Technologies
Etherstack
Harris Public Safety and Professional Communications (PSPC)
IHM
JRD Communications
Midian Electronics
MiMOMax Wireless
Motorola Solutions
Pantel International
Penta
Racom Products
Radio Activity
RF Technology
Samhoo Science & Technology
Schnoor Industrieelektronik
Simoco
Sonik Messaging Systems
Spectra Engineering
Survey Technologies Inc. (STI)
Tait Communications
ZTE Trunking Technology

Software-Defined Radio

Alligator Communications
AW2S
Axell Wireless
BHE Bonn Hungary Electronics
CalAmp
Cambium Networks
Carlson Wireless Technologies (CWT)
CML Microcircuits
Codan
Communications Research Centre (CRC)
Comsystems
Cubic Defense Systems
DataSoft
DragonWave
Etherstack
GE MDS
General Dynamics C4 Systems
Harris Public Safety and Professional Communications (PSPC)
Motorola Solutions
Multiple Access Communications (MAC)
Pantel International
Radio Activity
SkySweep Technologies
Thales Defense & Security
Vecima Networks
Westel Wireless Systems
ZTE Trunking Technology

Spread-Spectrum Radio

Air802
Alligator Communications
Aviat Networks
AW2S
BHE Bonn Hungary Electronics
Broadcast Microwave Services
CalAmp
Clear-Com
Communications-Applied Technology
Data Comm for Business
Eartec
Etherstack
FreeWave Technologies
GE MDS
General Dynamics C4 Systems
Metric Systems
Pantel International
Radio IP Software
Raveon Technologies
Schneider Electric, Telemetry and Remote SCADA Solutions
Schweitzer Engineering Laboratories
Solarcraft
Telsate Telecomunicações
Wireless Pacific

TETRA

Airbus Defence and Space (Cassidian)
Anritsu
Artevea Digital
AW2S
AW Communications Systems Ltd. (AWCSL)
Axell Wireless
BHE Bonn Hungary Electronics
CeoTronics
Cleartone Telecoms
CML Microcircuits
Cobham (formerly Aeroflex)
CommScope
Comsystems
Damm Cellular Systems
Elektro-Arola
Etelm
Etherstack
European Telecommunications S.A. (ETSA)
Exelis
Fiplex Communications
Funk-Electronic Piciorgros
Funkwerk Security Communications
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Hytera Mobilfunk
IHM
Infacom
Kenwood USA – Communications Sector
MiMOMax Wireless
Motorola Solutions
Panorama Antennas
Radial Firm
Radio IP Software
Roger GPS
Rohill Engineering
Schnoor Industrieelektronik
See Telecom
Sepura
Simoco
Sinclair Technologies
Spinner
Syntech Systems
Teltronic S.A. Unipersonal

VoIP/RoIP

4RF
Avtec
AW Communications Systems Ltd. (AWCSL)
BridgeCom Systems
Catalyst Communications Technologies
CeoTronics
Cobalt AV Comtronics
Cobham SATCOM Land Systems
Communications-Applied Technology
Connect Systems
Cubic Defense Systems
Cyfas Systems
Daniels Electronics
EF Johnson Technologies
Elcomplus
Elektro-Arola
El Paso Communications Systems
EMR
Etelm
Etherstack
Exelis
Firetide
Frequentis
GE MDS
General Dynamics C4 Systems
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Icom
IHM
JRD Communications
Kirmuss & Associates/ Infinity Advanced Technologies
Kolibri Systems
Midian Electronics
MiMOMax Wireless
Motorola Solutions
Mutualink
Nodcom
Omnitronics
Pantel International
Penta
Radio Activity
Raven Electronics
Ritron
Rohill Engineering
Sepura
SkySweep Technologies
Spectra Engineering
Syntech Systems
Twisted Pair Solutions
Unimo Technology
VoiceInterop
Westel Wireless Systems
Wireless Pacific
Zetron
ZTE Trunking Technology

REMOTE SITE MONITORING

Modems

Advanced Digital Systems
Alcatel-Lucent
Asentria
Barnett Engineering
CalAmp
Cleartone Telecoms
CML Microcircuits
Data Comm for Business
Elektro-Arola
Etelm
GE MDS
HV Sistemas
Maxon
Midian Electronics
Motorola Solutions
RAD Data Communications
Radiocrafts
Radio IP Software
RadioMobile
Raveon Technologies
RF Neulink
Ritron
Rojone
Schneider Electric, Telemetry and Remote SCADA Solutions
Sentor Control Systems
Sierra Wireless
SkySweep Technologies
Slatercom-WCD
Tait Communications
TC Communications
TecNet International
Trident Micro Systems
TS Mobile
Unimo Technology
Vecima Networks
VoiceInterop

Remote Transmitter Units

4RF
Alligator Communications
Asentria
Barnett Engineering
Berkeley Varitronics Systems
Broadcast Microwave Services
CalAmp
CeoTronics
Cleartone Telecoms
CML Microcircuits

Product Category Index

Davicom, div. of Comlab
Etelm
Etherstack
Exelis
Fiplex Communications
Funk-Electronic Piciorgros
GE MDS
HV Sistemas
Kyocera Solar
Linx Technologies
Maxon
Metric Systems
Midian Electronics
Midland Radio
MiMOMax Wireless
Mobility Sound Technology
Motorola Solutions
Pacific Crest
PageTek
Radiocrafts
Raveon Technologies
RF Neulink
Rojone
Sage Instruments
Sentor Control Systems
Simoco
SkySweep Technologies
Slatercom-WCD
Solarcraft
Spectra Engineering
Tait Communications
Tekk International
Telsate Telecomunicações
Temwell
Trident Micro Systems
Vecima Networks
Zetron

SCADA
4RF
Advanced Digital Systems
Alligator Communications
Asentria
CalAmp
Cambium Networks
Carlson Wireless Technologies (CWT)
CML Microcircuits
Critical Response Systems
Data Comm for Business
Davicom, div. of Comlab
Elektro-Arola
Etelm
Etherstack
FreeWave Technologies
Funk-Electronic Piciorgros
GE MDS
HV Sistemas
Hytera Communications
Hytera Mobilfunk
Kantronics
Kyocera Solar
Maxon
Metric Systems
MiMOMax Wireless
Motorola Solutions
PageTek
Pantel International
RAD Data Communications
Raveon Technologies
RF Neulink
Schneider Electric, Telemetry and Remote SCADA Solutions
Schweitzer Engineering Laboratories
Sentor Control Systems
Sierra Wireless
Sinclair Technologies
SkySweep Technologies
Spectra Engineering
Tallysman Wireless
TecNet International
Tekk International
Trident Micro Systems
TS Mobile
Unimo Technology
Vecima Networks
Zetron
ZTE Trunking Technology

Software
Activu
AD Telecom
Advanced Digital Systems
Anritsu
Asentria
Aviat Networks
BHE Bonn Hungary Electronics
CommScope
Critical Response Systems
Davicom, div. of Comlab
Elcomplus
Elektro-Arola
Funk-Electronic Piciorgros
General Dynamics C4 Systems
HV Sistemas
Hytera Communications
I.D. Systems
Infacom
In Motion Technology
Integrated Tracking Solutions
Intergraph
Kantronics
Mentura Group
MiMOMax Wireless
Motorola Solutions
NeoTerra Systems
PageTek
Radio IP Software
Raveon Technologies
RF Neulink
Schneider Electric, Telemetry and Remote SCADA Solutions
Sentor Control Systems
Sierra Wireless
Signal Intelligence
Simoco
SkySweep Technologies
Solarcraft
Spectra Engineering
Tallysman Wireless
Vecima Networks
VoiceInterop
Zetron

Telemetry
4RF
Advanced Digital Systems
Aksel Electronics and Communication
Alcatel-Lucent
Alligator Communications
Asentria
BHE Bonn Hungary Electronics
CalAmp
Cambium Networks
Carlson Wireless Technologies (CWT)
Cleartone Telecoms
CML Microcircuits
Critical Response Systems
Davicom, div. of Comlab
Digital Paging, Golden Sab
Elcomplus
Elektro-Arola
Etherstack
FreeWave Technologies
Funk-Electronic Piciorgros
Galtronics
GE MDS
GME
Harris Public Safety and Professional Communications (PSPC)
HV Sistemas
Hytera Communications
Hytera Mobilfunk
IDA
I.D. Systems
Infacom
In Motion Technology
InSight Mobile Data
Kantronics
Kyocera Solar
Maxon
Metric Systems
Midland Radio
MiMOMax Wireless
Mobile Mark
Motorola Solutions
NeoTerra Systems
PageTek
Panorama Antennas
Pyramid Communications
Radiocrafts
Raveon Technologies
RF Neulink
Ritron
Rojone
Schneider Electric, Telemetry and Remote SCADA Solutions
Schweitzer Engineering Laboratories
Sentor Control Systems
SkySweep Technologies
Solarcraft
Sonic Communications International
Sonik Messaging Systems
Spectra Engineering
Tallysman Wireless
TecNet International
Tekk International
Telsate Telecomunicações
Trident Micro Systems
TS Mobile
Unimo Technology
Vecima Networks
WiPath Communications
Zetron

Transmitters
4RF
Alligator Communications
Anritsu
Asentria
Berkeley Varitronics Systems
BHE Bonn Hungary Electronics
Broadcast Microwave Services
CalAmp
Cambium Networks
Carlson Wireless Technologies (CWT)
CeoTronics
CML Microcircuits
Cubic Defense Systems
DataSoft
Davicom, div. of Comlab
Etherstack
Firetide
GE MDS
HV Sistemas
I.D. Systems
Infacom
Linx Technologies
Maxon
Metric Systems
Midland Radio
MiMOMax Wireless
Motorola Solutions
Radiocrafts
Raveon Technologies
RF Neulink
RF Technology
Ritron
Schneider Electric, Telemetry and Remote SCADA Solutions
Sentor Control Systems
Simoco
Sinclair Technologies
Spectra Engineering
Spok
Tait Communications
TecNet International
Tekk International
Telsate Telecomunicações
Temwell
TS Mobile
Vecima Networks

Vendor-Specific Protocols
Advanced Digital Systems
Carlson Wireless Technologies (CWT)
CommScope
Daniels Electronics
Eagle Eye Power Solutions
Funk-Electronic Piciorgros
HV Sistemas
I.D. Systems
Lea Antenne & Progetti
Metric Systems
MiMOMax Wireless
Motorola Solutions
Radiocrafts
Radio IP Software
Raveon Technologies
Schweitzer Engineering Laboratories
Sentor Control Systems

Video Surveillance
4RF
Alcatel-Lucent
Asentria
Bosch Security Systems
Bosch Security Systems, dba Telex Radio Dispatch
Broadcast Microwave Services
Cambium Networks
Carlson Wireless Technologies (CWT)
CeoTronics
Cleartone Telecoms
Covert Systems
El Paso Communications Systems
Etelm
Firetide
GE MDS
Harris Public Safety and Professional Communications (PSPC)
Intergraph
Iveda
Metric Systems
Mobile Pro Systems
Motorola Solutions
NICE Systems
RAD Data Communications
Raytheon JPS Communications
Schweitzer Engineering Laboratories
Sentor Control Systems
SkySweep Technologies
Solarcraft
Technotrend
Telsate Telecomunicações
Trango Systems
Vecima Networks
Verint Systems
ZTE Trunking Technology

SATELLITE SYSTEMS EQUIPMENT

Mobile Data/Voice (MD=mobile data, MV=mobile voice)
CML Microcircuits (MD)
Cobham SATCOM Land Systems (MD, MV)
Codan (MD, MV)
CPI Communications (MV)
Elektrobit (MD, MV)
Engage Communication (MV)
General Dynamics C4 Systems (MD, MV)
Motorola Solutions (MD, MV)
Pyramid Communications (MV)
Radio IP Software (MD)
RadioMobile (MD, MV)
Sentor Control Systems (MD, MV)
Tallysman Wireless (MD)
TeleCommunication Systems (TCS) (MD, MV)
Trident Micro Systems (MD)
TS Mobile (MD)
WiPath Communications (MD)
Wireless Pacific (MV)

VSAT
Cobham SATCOM Land Systems
Engage Communication
General Dynamics C4 Systems
Infacom
Kyocera Solar
Radio IP Software
Raytheon JPS Communications
Sentor Control Systems
Swissphone Telecom
TeleCommunication Systems (TCS)

SERVICE PROVIDERS
(See Suppliers, Pages 24 – 29)

SITE/TOWER EQUIPMENT

Alarms/Access Devices
Asentria
Bosch Security Systems
CML Microcircuits
Davicom, div. of Comlab
El Paso Communications Systems
EMR
Midian Electronics
Mobile Pro Systems
Motorola Solutions
PageTek
Quintron Systems
Racom Products
RFI
Rojone
Sentor Control Systems
Slatercom-WCD
Telewave

Beacons
Citel
CML Microcircuits
Dialight
Funkwerk Security Communications
Nello
Rohn Products
Sabre Site Solutions, div. of Sabre Industries
Slatercom-WCD
Specialty Tower Lighting
Unimar
Westell Technologies

Cabinets
Aluma Tower
CommScope
Comsystems
dbSpectra
Dupont Building
El Paso Communications Systems
Imark Communications
Infacom
Midland Radio
PCTEL
PDA Safe
Pioneer Energy Products (PEPRO)
Sabre Building Systems by Cellxion, div. of Sabre Industries
Shelter One
Solarcraft
Telewave
Tripp Lite
VFP
Warehouse Cables
Winsted

Cable
4RF
Air802
Anritsu
Antcom
BroadWave Technologies
Calearo Group
CommScope
Comprod Communications
Comtelco
El Paso Communications Systems
Fairview Microwave
GE MDS
GPS Networking
Harger Lightning and Grounding
Hytera Communications
Infacom
Mobile Mark
Motorola Solutions
PCTEL
Pulse Electronics/ Larsen Antennas
Radio Frequency Systems (RFS)
RF Connectors, div. of RF Industries
RFI
RFI EMEA
Rojone
Skymasts Antennas
Slatercom-WCD
Smooth Talker (Mobile Communications)
Spinner
Telewave
Times Microwave Systems
Trilogy Communications
Tripp Lite
Warehouse Cables
Webb Industries

Cable Fault Locators
Anritsu
BHE Bonn Hungary Electronics
Bird Technologies
Motorola Solutions
TX RX Systems
Bird Technologies

Combiners/Diplexers/ Duplexers/Filters/Isolators/ Multicouplers/Multiplexers (C=combiners, DI=diplexers, DU=duplexers, F=filters, I=isolators, MC=multicouplers, MP=multiplexers)
4RF (C)
Alcatel-Lucent (MP)
Aluma Tower (I)
Antcom (C, F, I)
Axell Wireless (C, DI, DU, F, I, MC, MP)
BHE Bonn Hungary Electronics (C, DI, DU, F, MP)
Bird Technologies (C, DI, DU, F, I, MC)
BroadWave Technologies (C)
Cambium Networks (MP)
Cobham Antenna Systems, Microwave Antennas (C)
CommScope (C, DI, DU, F, MC)
Comprod Communications (C, DI, DU, F, I, MC, MP)
Comtelco (DI, DU, MC)
Data Comm for Business (MP)
dbSpectra (C, DI, DU, F, I, MC, MP)
El Paso Communications Systems (DU, MP)
EMR (C, DI, DU, F, I, MC, MP)
European Telecommunications S.A. (ETSA) (DI, DU, F, MC)
Exalt Communications (C, DI)
Fairview Microwave (DU, F, I)
Fiplex Communications (C, DI, DU, F, I, MC, MP)
GE MDS (F, MP)
Genesis Technical Systems (MP)
GPS Networking (C, F)
G-Wave Solutions (C, DI, DU, F, MC, MP)
Hytera Communications (C)
Imark Communications (DU, MC)
Infacom (C, DI, DU, F, MC, MP)
Innovative Circuit Technology (ICT) (F)
JFW Industries (C)
Kathrein Werke (MC, MP)
Lea Antenne & Progetti (DI, DU, F, MC, MP)
Midland Radio (DU)
MiMOMax Wireless (DU)
Motorola Solutions (C, DU, F)
Narda Microwave West (L-3 Communications) (C, DI, DU, F, I, MP)
PCTEL (C)
Procom (C, DI, DU, F, I, MC, MP)
Quintron Systems (MP)
RAD Data Communications (MP)
Radial Firm (C, DI, DU, F, I, MC)
Radio Frequency Systems (RFS) (C, DI, DU, F, I, MC)
RFI (C, DI, DU, F, I, MC, MP)
RFI EMEA (C, DI, DU, F, I, MC)
Rojone (C, DI, DU, F, I, MC, MP)
Sigma Antennas (C, DI, DU)
Sinclair Technologies (C, DI, DU, F, I, MC, MP)
Skymasts Antennas (C, DI, DU, F)
SOLiD (MP)
Spectra Engineering (DI, DU)
Spinner (C, DI, DU, F, MP)
STI-CO Industries (F, MC)
TC Communications (MP)
TEDAP (C, DI, DU, F, MC, MP)
Telewave (C, DU, F, I, MC)
Telsate Telecomunicações (C, DI, DU, F)
Temwell (C, DI, DU, F, I, MP)
Trak Microwave (C, DI, DU, F, I, MC, MP)
Trango Systems (C)
Trilithic RF & Microwave (C, DI, DU, F, I, MC, MP)
TX RX Systems
Bird Technologies (C, DU, F, I, MC)
Webb Industries (C, DU, F, I, MC, MP)
Westell Technologies (C, DI, DU, F)

Connectors
Air802
Anritsu
Antcom
Bird Technologies
Bomar Interconnect Products
BroadWave Technologies
CommScope
Comprod Communications
Comtelco
D.W. Electrochemicals
El Paso Communications Systems
EMR
European Telecommunications S.A. (ETSA)
GE MDS
GPS Networking
G-Wave Solutions
Harger Lightning and Grounding
Huada Connectors
Infacom
Peiker Acustic
Procom
Pulse Electronics/ Larsen Antennas
Radio Frequency Systems (RFS)
RF Connectors, div. of RF Industries
RFI EMEA
Rojone
Sabre Site Solutions, div. of Sabre Industries
Sinclair Technologies
Skymasts Antennas
Spinner
Telewave
Times Microwave Systems
Trilithic RF & Microwave
Trilogy Communications
Tripp Lite
TX RX Systems
Bird Technologies
Webb Industries

HVAC Control Systems
Aksel Electronics and Communication
Bard Manufacturing
Marvair
Pioneer Energy Products (PEPRO)
Sentor Control Systems
VFP

Ice Bridges
CommScope
Fred A. Nudd
Nello
Rohn Products
Sabre Site Solutions, div. of Sabre Industries
Slatercom-WCD
Specialty Tower Lighting
Valmont Structures
VFP

Lightning-Protection Equipment
4RF
Air802
Aluma Tower
Citel
CommScope
Comprod Communications
Exalt Communications
Fairview Microwave
GE MDS
G-Wave Solutions
Harger Lightning and Grounding
Imark Communications
PCTEL
Pioneer Energy Products (PEPRO)
PolyPhaser
Radio Frequency Systems (RFS)
RFI EMEA
Rojone
Sabre Site Solutions, div. of Sabre Industries
Skymasts Antennas
Slatercom-WCD
Specialty Tower Lighting
Tripp Lite
VFP
Webb Industries

Microwave/ MUX Equipment
4RF
Alcatel-Lucent
Antcom
Artevea Digital
Athena Wireless Communications
Aviat Networks
BHE Bonn Hungary Electronics
Broadcast Microwave Services
Cambium Networks
Carlson Wireless Technologies (CWT)
Ceragon Networks
CommScope
DragonWave
Exalt Communications
GE MDS
Infacom
JFW Industries
Praxsym
Procom
RAD Data Communications
RFI
Rojone
Sinclair Technologies
SOLiD
Spectracom
Trak Microwave
Trango Systems
Trilithic RF & Microwave
Westica Communications

Preamplifiers
AW2S
Axell Wireless
BHE Bonn Hungary Electronics
Bird Technologies
Comprod Communications
dbSpectra
EMR
Fiplex Communications
GPS Networking
G-Wave Solutions
Infacom
Kathrein Werke
Motorola Solutions
Praxsym
Procom
Radial Firm
Radio Frequency Systems (RFS)
RFI
Rojone
Sinclair Technologies
Telewave
Telsate Telecomunicações
Trilithic RF & Microwave
TX RX Systems
Bird Technologies

Racks
Aluma Tower
Comprod Communications
Comsystems
dbSpectra
EMR
GE MDS
Infacom
Kyocera Solar
PCTEL
Pioneer Energy Products (PEPRO)
Procom
Radio Frequency Systems (RFS)
Sinclair Technologies
Solarcraft
Spinner
TEDAP
Telewave
Tripp Lite
VFP
Winsted

Shelters
Aluma Tower
Dupont Building
Enviro Buildings
Imark Communications
PDA Safe
Pioneer Energy Products (PEPRO)
Sabre Building Systems by Cellxion, div. of Sabre Industries
Shelter One
Sinclair Technologies
Trachte
VFP
Webb Industries

Site-Management Software
Advanced Digital Systems
Anritsu
Asentria
Aviat Networks
Cambium Networks
Codan
CommScope
Comsystems
Eagle Eye Power Solutions
Elcomplus
Hytera Communications
Hytera Mobilfunk
Kathrein Werke
LS telcom
Midian Electronics
Motorola Solutions
PageTek
Radio Frequency Systems (RFS)
Sentor Control Systems
Signal Intelligence
Simoco
SoftWright
Survey Technologies Inc. (STI)
Tait Communications
Trylon TSF

Surge Protectors
Citel
CommScope
GE MDS
GPS Networking
Harger Lightning and Grounding
Innovative Circuit Technology (ICT)
PCTEL
PDA Safe
Radio Frequency Systems (RFS)
RFI EMEA
Rojone
Sinclair Technologies
Skymasts Antennas
Slatercom-WCD
Solarcraft
Spinner
Telsate Telecomunicações
Tripp Lite
VFP
Webb Industries

Switches
Alcatel-Lucent
Cisco Systems
El Paso Communications Systems
Fairview Microwave
Frequentis
GE MDS
Hytera Communications
Hytera Mobilfunk
IHM
Infacom
JFW Industries
Motorola Solutions
Omnitronics
Quintron Systems
RAD Data Communications
Rojone
Sentor Control Systems
Simoco
Solacom Technologies
Spinner
Technotrend
Trak Microwave
Trilithic RF & Microwave
VFP

Tower Obstruction
Kyocera Solar
Rohn Products
Sentor Control Systems
Sinclair Technologies
Slatercom-WCD
Valmont Structures
Webb Industries

Towers, Fixed/Mobile (F=fixed towers, M=mobile towers)
Aluma Tower (F, M)
Barrett Communications (F, M)
Cambium Networks (F)
CommScope (F)
Comsystems (F, M)
Fred A. Nudd (F)
General Dynamics C4 Systems (F)
GeoStrut (M)
Imark Communications (F)
Nello (F, M)
PCTEL (M)
Pioneer Energy Products (PEPRO) (F, M)
Rohn Products (F)
Sabre Building Systems by Cellxion, div. of Sabre Industries (M)
Sabre Site Solutions, div. of Sabre Industries (F)
Sabre Towers and Poles, div. of Sabre Industries (F, M)
Sinclair Technologies (F, M)
Skymasts Antennas (F, M)
Slatercom-WCD (F)
Specialty Tower Lighting (F)
Tower Solutions (M)
Trylon TSF (F)
Valmont Structures (F)
Wade Antenna/ Taco Antennas (F)
Webb Industries (F, M)
Winco (M)

Voting Products
GeoStrut
Midian Electronics
Motorola Solutions
RF Technology
Simoco
Spectra Engineering
Tait Communications

Waveguide
Antcom
CommScope
Fairview Microwave
Infacom
Nello
PCTEL
Pioneer Energy Products (PEPRO)
Radio Frequency Systems (RFS)
RFI EMEA
Rojone
Sabre Site Solutions, div. of Sabre Industries
Spinner
Temwell
Trak Microwave
Trylon TSF
Valmont Structures
VFP

SOFTWARE

CAD Software/Systems
(See PSAP/E9-1-1 Equipment, Page 36)

Custom
Activu
Advanced Digital Systems
AGENT511
Antcom
BridgeCom Systems
Cadex Electronics
Catalyst Communications Technologies
Cleartone Telecoms
Cobalt AV Comtronics
CommScope
Comsystems

Product Category Index

DataSoft
Digital Voice Systems Inc. (DVSI)
Dragontech Systems
EDX Wireless
Etelm
Exelis
FATPOT Technologies
General Dynamics C4 Systems
Genesis Group
Hoag Electronics
HV Sistemas
I.D. Systems
IHM
Infacom
Infor Enroute
Integrated Tracking Solutions
InterAct
Iveda
Linecom Technology
Locus Diagnostics
Logistic Systems
Maxon
Mentura Group
MiMOMax Wireless
Multiple Access Communications (MAC)
NeoTerra Systems
Nodcom
PageTek
Penta
RadioMobile
RadioSoft
Raveon Technologies
Raytheon JPS Communications
Realtime North America
Schnoor Industrieelektronik
Sentor Control Systems
Signal Intelligence
Simoco
SkySweep Technologies
SoftWright
TeleCommunication Systems (TCS)
Telesoft International
Valid8.com
Ventyx, an ABB co.
VoiceInterop
Winsted
Zetron

Dispatch (business/industry)
AGENT511
Aksel Electronics and Communication
Artevea Digital
Avtec
AW Communications Systems Ltd. (AWCSL)
Beta 80 International
Bosch Security Systems, dba Telex Radio Dispatch
Catalyst Communications Technologies
Cisco Systems
Critical Response Systems
Cyfas Systems
Cyrun
Damm Cellular Systems
EF Johnson Technologies
Elcomplus
Etelm
Exelis
FATPOT Technologies
Harris Public Safety and Professional Communications (PSPC)
HigherGround
Hytera Communications
Hytera Mobilfunk
IDA
IHM
Infor Enroute
InSight Mobile Data
InterAct
Intergraph
Kolibri Systems
Linecom Technology
Mentura Group
Midian Electronics
Motorola Solutions
NeoTerra Systems
NetMotion Wireless
Nodcom
Omnitronics
Pantel International
Penta
PowerPhone
Pyramid Communications
RadioMobile
Rohill Engineering
Schnoor Industrieelektronik
Signal Intelligence
Simoco
Spok
Swissphone Telecom
Tallysman Wireless
Teltronic S.A. Unipersonal
TETRAsim
TriTech Software Systems
VoiceInterop
Voice Print International (VPI)
WiPath Communications
Zetron

Engineering
Advanced Topographic Development and Images (ATDI)
AGENT511
AW Communications Systems Ltd. (AWCSL)
Berkeley Varitronics Systems
BridgeCom Systems
Cleartone Telecoms
CommScope
Comsearch
Comsystems
Cyfas Systems
DataSoft
EDX Wireless
El Paso Communications Systems
Etherstack
Exelis
Forsk
Hoag Electronics
LS telcom
Mentum
Mentura Group
Motorola Solutions
Radio Activity
RadioSoft
Raytheon JPS Communications
RCC Consultants
Signal Intelligence
SoftWright
Survey Technologies Inc. (STI)
Telesoft International
Teltronic S.A. Unipersonal
VoiceInterop

Field Reporting (business/industry)
Anritsu
Cyrun
FATPOT Technologies
General Dynamics C4 Systems
Hytera Communications
Infor Enroute
InSight Mobile Data
Integrated Tracking Solutions
InterAct
Intergraph
Locus Diagnostics
Mentura Group
NeoTerra Systems
NetMotion Wireless
RadioMobile
Syntech Systems
Trident Micro Systems
Ventyx, an ABB co.
Zetron

GIS Mapping
Advanced Topographic Development and Images (ATDI)
AW Communications Systems Ltd. (AWCSL)
Beta 80 International
BluFi Wireless
Cisco Systems
Codea
Comsearch
Cyfas Systems
Damm Cellular Systems
Etelm
Etherstack
FATPOT Technologies
Forsk
General Dynamics C4 Systems
Infor Enroute
Integrated Tracking Solutions
InterAct
Intergraph
Kirmuss & Associates/ Infinity Advanced Technologies
Locus Diagnostics
Logistic Systems
LS telcom
Maxon
Mentum
Mentura Group
Mobility Sound Technology
NeoTerra Systems
RadioMobile
Raveon Technologies
Raytheon JPS Communications
SoftWright
Survey Technologies Inc. (STI)
Swissphone Telecom
TeleCommunication Systems (TCS)
Trident Micro Systems
TriTech Software Systems
Ventyx, an ABB co.
Wrap International
Zetron

Middleware
AGENT511
BluFi Wireless
CalAmp
Columbitech
DataSoft
Dragontech Systems
Exelis
FATPOT Technologies
GE MDS
General Dynamics C4 Systems
Integrated Tracking Solutions
Locus Diagnostics
Motorola Solutions
NeoTerra Systems
NetMotion Wireless
Portalify
Prism – IPX Systems
Quintron Systems
Radio IP Software
RadioMobile
Sierra Wireless
Spok
Tallysman Wireless
Trident Micro Systems
Ventyx, an ABB co.
VoiceInterop

Mobile-Data Systems
Advanced Digital Systems
AW Communications Systems Ltd. (AWCSL)
Beta 80 International
CalAmp
Cleartone Telecoms
Critical Response Systems
Cyrun
Damm Cellular Systems
Dragontech Systems
Elektro-Arola
Etelm
FATPOT Technologies
Goodmill Systems
HAL Communications
Harris Public Safety and Professional Communications (PSPC)
HV Sistemas
IDA
I.D. Systems
Infor Enroute
InSight Mobile Data
InterAct
Intergraph
IPMobileNet
Kantronics
Kolibri Systems
LMR Systems
Logistic Systems
Motorola Solutions
NeoTerra Systems
NetMotion Wireless
Portalify
Pyramid Communications
Radio IP Software
RadioMobile
Raveon Technologies
Raytheon JPS Communications
Sentor Control Systems
SkySweep Technologies
Smith Micro Software
SoftWright
Solarcraft
SoundBite Communications
Tait Communications
Tallysman Wireless
TeleCommunication Systems (TCS)
Telesoft International
Trident Micro Systems
TriTech Software Systems
Ventyx, an ABB co.
WiPath Communications

Network Management
Alcatel-Lucent
Anritsu
Artevea Digital
Asentria
Aviat Networks
Axell Wireless
CalAmp
Cambium Networks
CommScope
Comsearch
Damm Cellular Systems
Data Comm for Business
DataSoft
DragonWave
EF Johnson Technologies
El Paso Communications Systems
Etelm
Etherstack
Exelis
Fiplex Communications
Firetide
Forsk
FreeWave Technologies
GE MDS
General Dynamics C4 Systems
Genesis Group
Harris Public Safety and Professional Communications (PSPC)
Hytera Communications
Hytera Mobilfunk
In Motion Technology
Intergraph
Locus Diagnostics
LS telcom
Mentum
Mentura Group
MiMOMax Wireless
Motorola Solutions
NetMotion Wireless
Omnitronics
PageTek
RAD Data Communications
Radio IP Software
RadioMobile
RCC Consultants
Rohill Engineering
Schweitzer Engineering Laboratories
Sentor Control Systems
Sierra Wireless
Signal Intelligence
Simoco
Smith Micro Software
Survey Technologies Inc. (STI)
Tait Communications
Telesoft International
Teltronic S.A. Unipersonal
Trango Systems
Tripp Lite
Vecima Networks
Wrap International

Operations
Activu
Artevea Digital
AW Communications Systems Ltd. (AWCSL)
Catalyst Communications Technologies
Exelis
FATPOT Technologies
General Dynamics C4 Systems
Hytera Communications
Hytera Mobilfunk
Infor Enroute
Mentura Group
Motorola Solutions
NeoTerra Systems
NetMotion Wireless
Raytheon JPS Communications
RCC Consultants
Sentor Control Systems
Ventyx, an ABB co.
Verint Systems

Paging
BluFi Wireless
Critical Response Systems
Cyfas Systems
Digital Paging, Golden Sab
EF Johnson Technologies
Elektro-Arola
Exelis
I.D. Systems
IHM
Infor Enroute
Intergraph
Midian Electronics
Motorola Solutions
NeoTerra Systems
Penta
Prism – IPX Systems
Raveon Technologies
Sentor Control Systems
Sonik Messaging Systems
Spok
Swissphone Telecom
WiPath Communications
Zetron

Records Management Systems (business/industry)
Anritsu
Cadex Electronics
Cleartone Telecoms
Cyrun
FATPOT Technologies
Infor Enroute
InterAct
Intergraph
Mida Solutions
Motorola Solutions
NetMotion Wireless
RadioMobile
Sentor Control Systems
Signal Intelligence
SoftWright
Syntech Systems
TriTech Software Systems

RF Safety
Cobalt AV Comtronics
FieldSense USA
Linx Technologies
Locus Diagnostics
Narda Safety Test Solutions
RCC Consultants

Terrain Propagation
Advanced Topographic Development and Images (ATDI)
Cambium Networks
Comsearch
EDX Wireless
Etelm
Forsk
Harris Public Safety and Professional Communications (PSPC)
LS telcom
Mentum
Motorola Solutions
Multiple Access Communications (MAC)
NeoTerra Systems
RadioSoft
RCC Consultants
SoftWright
Survey Technologies Inc. (STI)
Wrap International

Voice Recognition
ASC Telecom
Cisco Systems
Infor Enroute
Motorola Solutions
NeoTerra Systems
Voice Print International (VPI)

Wireless Internet Applications
AW Communications Systems Ltd. (AWCSL)
Carlson Wireless Technologies (CWT)
Catalyst Communications Technologies
Ceragon Networks
Cisco Systems
Cobalt AV Comtronics
Digital Voice Systems Inc. (DVSI)
Dragontech Systems
El Paso Communications Systems
General Dynamics C4 Systems
HV Sistemas
I.D. Systems
Infor Enroute
InSight Mobile Data
Intergraph
Motorola Solutions
NetMotion Wireless
Radio IP Software
Raveon Technologies
Smith Micro Software
SoundBite Communications
TeleCommunication Systems (TCS)
Telesoft International
TriTech Software Systems
Twisted Pair Solutions
Vecima Networks
VoiceInterop

TELEMATICS/ITS EQUIPMENT
Bluetest
Dragontech Systems
Harris Public Safety and Professional Communications (PSPC)
InSight Mobile Data
Laird Technologies
Mobile Mark
NeoTerra Systems
OnStar
Peiker Acustic
Radio IP Software
Rojone
Tallysman Wireless
WiPath Communications

TEST EQUIPMENT
(D=direction finders, FS=field strength meters, FC=frequency counters, P=power monitors, RF=RF monitors, SM=service monitors, SA=spectrum analyzers, V=voltmeters/wattmeters)
AEA Technology (FS, SA)
Anritsu (D, FS, FC, P, RF, SM, SA, V)
Berkeley Varitronics Systems (D, P, SA)
Bird Technologies (FS, P, RF, SM, SA, V)
Cobham (formerly Aeroflex) (FC, P, RF, SM, SA)
Communications Research Centre (CRC) (SA)
Comprod Communications (P, RF)
Cubic Defense Systems (D)
Davicom, div. of Comlab (P)
dbSpectra (P)
Doppler Systems (D)
El Paso Communications Systems (SM, SA)
EMR (P)
Etherstack (RF)
FieldSense USA (RF)
fjord-e-design Sales (P, RF, SA)
General Dynamics C4 Systems (RF, SM, SA, V)
General Dynamics Satcom (P, SM, SA, V)
Hytera Communications (D, FS, FC, P, RF, SM, SA, V)
Hytera Mobilfunk (D, FS, FC, P, RF, SM, SA, V)
Kaltman Creations (D, FS, FC, RF, SA)
Keysight Technologies (FC, SA, V)
Locus Diagnostics (RF)
Mobile Pulse (SM)
Motorola Solutions (SM, SA)
Multiple Access Communications (MAC) (FS, P, RF, SA)
Narda Safety Test Solutions (D, P, RF, SA)
Optoelectronics (FC)
PCTEL (RF)
Praxsym (FS, P, RF, SM, V)
RadioMobile (RF, SA)
RFI (P)
Rojone (RF)
Sage Instruments (D, FS, FC, P, SA)
Sentor Control Systems (FS, P, RF)
Signal Hound (SA)
Sinclair Technologies (FC, P, RF)
Spectracom (FC, RF)
Sunsight Instruments (D)
Survey Technologies Inc. (STI) (FS, P, RF, SM, SA)
Telewave (P, V)
Telsate Telecomunicações (D, FS, RF)
Temwell (RF)
Times Microwave Systems (RF, SM, SA)
TX RX Systems
Bird Technologies (P, RF, SA, V)

TONE SIGNALING EQUIPMENT
Aksel Electronics and Communication
Avtec
AW Communications Systems Ltd. (AWCSL)
Bosch Security Systems
Cimarron Technologies
Communications Specialists
Connect Systems
Critical Response Systems
EF Johnson Technologies
GAI-Tronics
Hoag Electronics
HV Sistemas
IDA
Linx Technologies
Maxon
Midian Electronics
Motorola Solutions
NHRC Repeater Controllers
Optoelectronics
Pantel International
Penta
Racom Products
RF Technology
Spectra Engineering
Tait Communications
Thales Defense & Security
Veetronix

VOICE LOGGING RECORDERS
ASC Telecom
Atis Uher
AW Communications Systems Ltd. (AWCSL)
Bosch Security Systems, dba Telex Radio Dispatch
Catalyst Communications Technologies
CVDS
Damm Cellular Systems
Etherstack
Eventide
Exacom
Exelis
Frequentis
HigherGround
Hytera Communications
Hytera Mobilfunk
JEI Communication Recorders
Kolibri Systems
Mida Solutions
Motorola Solutions
NICE Systems
Omnicron Electronics
Pantel International
Record Play Tek (RPT)
Red Box Recorders
Rohill Engineering
Schnoor Industrieelektronik
Sentor Control Systems
Sepura
Signal Intelligence
Simoco
Spok
Stancil
Stancil Solutions
Storacall Voice Systems
Telsate Telecomunicações
Total Recall VR
Verint Systems
Versadial Solutions
Voice Print International (VPI)
Zetron
ZTE Trunking Technology

WIRELESS LOCAL LOOP/RURAL SYSTEMS
4RF
Aviat Networks
Berkeley Varitronics Systems
Carlson Wireless Technologies (CWT)
Ceragon Networks
Connect Systems
El Paso Communications Systems
Exalt Communications
Hoag Electronics
Hytera Communications
Hytera Mobilfunk
Kyocera Solar
MiMOMax Wireless
Mobile Mark
Motorola Solutions
RF Technology
Rojone
Sage Instruments
SOLiD
Westica Communications

Find the Products and Services You Need Today

Looking for:

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- Radios
- Base Stations
- Site Equipment
- Headsets
- Test Equipment
- Power Supplies
- Broadband + more

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RadioResource INTERNATIONAL
RRMediaGroup.com
RadioResource MissionCritical COMMUNICATIONS

New Products

DMR Radios

Hytera Mobilfunk expanded its Digital Mobile Radio (DMR) product line. The PD3 series radios are compact and light and feature an LCD. Other features include

selectable transmitting power of either 1.5 or 3 watts (W); CTCSS or CDCSS signaling; military standard shock and vibration resistance; DMR text messages with up to 64 characters; four programmable keys; charging and programming via micro-USB interface; scan function for digital and analog channels; voice calling options including individual, group and broadcast in digital channels; and protection against dust and water. The PD6 series — including the PD665 and PD685 — are designed for professional use and include a lightweight aluminum frame, a display and a complete keyboard. The radios include GPS functionality, secure DMR encryption, expansion interface for applications, optional man-down function, leasing function and several voice-calling options.

www.hytera-mobilfunk.com

TETRA Portable Radio

The TH9 from **Airbus Defence and Space** is a TETRA hand-portable radio designed for use in harsh and demanding

conditions. The radio supports direct mode operation (DMO) in the 406 – 410 MHz band and transmits at 1.8 watts (W). The radio is equipped with integrated GPS for positioning services and operations, embedded Bluetooth for hands-free access to standard accessories, a large color display, a metallic chassis and front cover to protect it against shocks, and IP65 class protection for dust and water resistance.

www.airbusdefenceandspace.com

Digital Portable

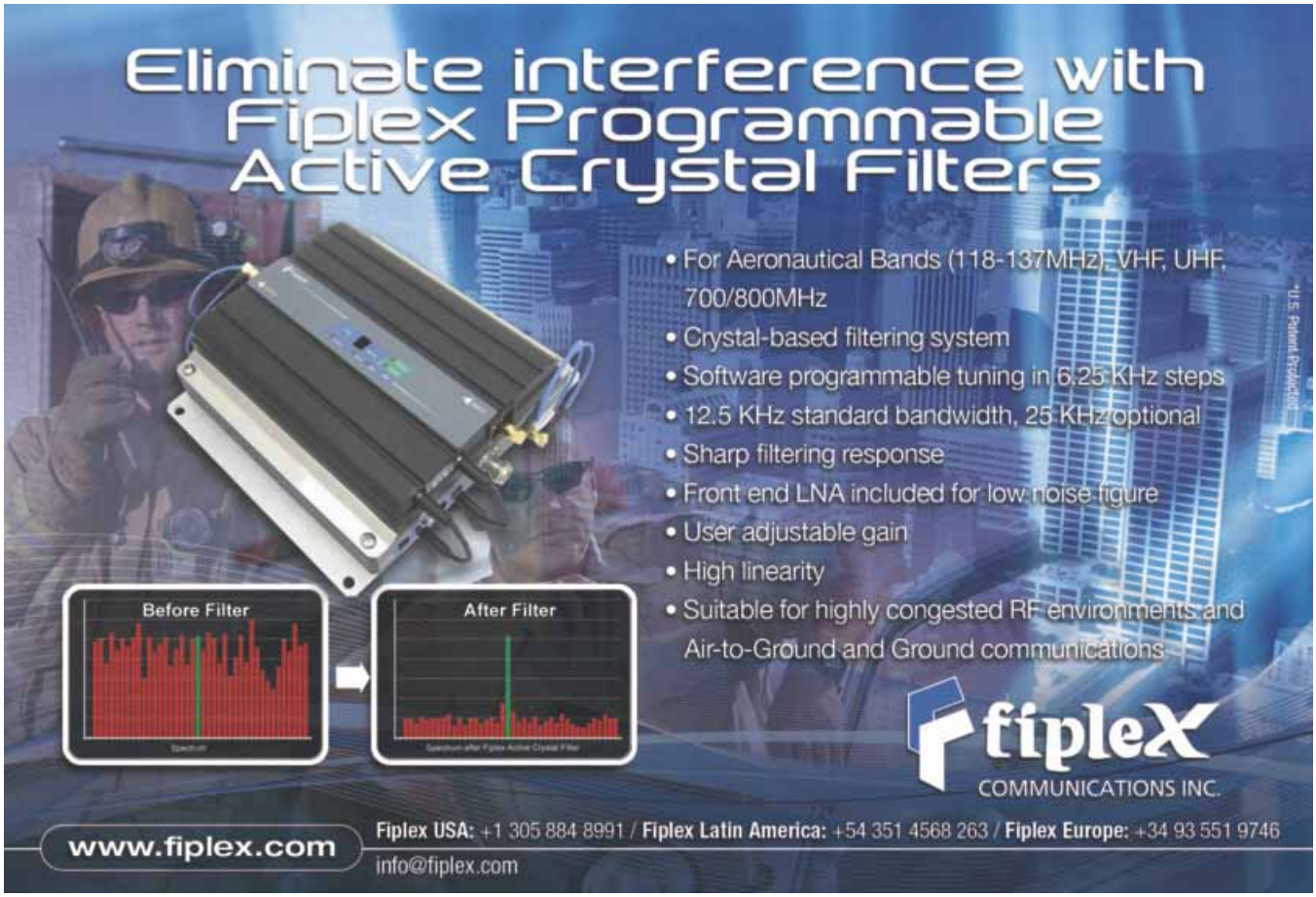
Motorola Solutions presented the MOTOTRBO SL1600 digital portable, a

two-way radio intended for use in industries such as retail, hospitality, event management and private security. The radio's ergonomic design is slim, lightweight and allows for one-handed use. It features a shatter-proof display, shielding to minimize dust and particles, several easy-to-reach buttons for one-handed operation, Range Max technology for delivering enhanced range and the ability to seamlessly work with existing communications systems through digital and analog technology.

www.motorolasolutions.com

NEXEDGE/P25 Portable

JVCKenwood announced a portable radio that operates on the NEXEDGE protocol, as well as the Project 25 (P25) standard.



The radio offers multiprotocol operation in P25 Phase 1 and Phase 2, NXDN and analog protocols. The radio is the first on the market to include two digital standards in one unit, according to industry insiders. The NX 5200, 5300 and 5400 model portable radios can operate in VHF, UHF, and the 700 MHz and 800 MHz bands. Mixed digital and FM analog operation allows intelligent migration in mixed sites and easy migration with digital radios in other sites. In P25 mode, the radio provides talk group and individual ID lists, caller ID display, remote monitor and check, and radio inhibit.

www.jvckenwood.co.jp/en/

DMR Tier 3 Products

Sepura announced the availability of its Digital Mobile Radio (DMR) Tier 3 product line to the global market. Sepura's DMR product offering was accelerated by the acquisition of Fylde Micro in May. The Sepura DMR Tier 3 system provides a cost-effective, scalable, trunking solution

that is available as an upgrade to existing Sepura Tier 2 deployments or as a variety of preconfigured systems. DMR Tier 3 is the latest addition to Sepura's product portfolio of TETRA and DMR systems, terminals and applications. The line includes rugged hand portables, fully featured mobiles and a multifunctional system incorporating the Sepura Controller developed in collaboration with Fylde Micro, a company spokesperson said.

www.sepura.com

IP/WLAN System

Icom UK announced an IP advanced radio system that provides full hands-free duplex two-way radio communications with an optional headset. The IP/WLAN system offers a scalable, license-free system using standard wireless networking. The system offers seamless roaming where the IP100H handset uses the nearest access point if two or more wireless actions points are deployed on an IP network, and it can roam between the available access points.

Icom also introduced the IC-F29SR professional-grade, license-free walkie-talkie

device. The slim, compact radio includes a transmit button, volume control and rotary channel selector. A simple interface makes it ideal for high-turnover environments and shift work where the radio is frequently passed from person to person. A BC-279 Li-ion battery provides up to 21 hours of operating time. Other features include a smart ring function that checks whether the radio is in communications

The complete **DMR** Solution

including DMR Tier III

With over one million digital radios shipped globally, Sepura is a market leader in critical communications in over 30 countries. Our robust and rugged DMR product family has been developed for professional and industrial users by experts in digital radio communications.

- **New DMR Tier III – in combination with trunking solutions leaders, Fylde Micro (a Sepura company)**
- **Analogue to digital migration operational continuity – low risk, minimal disruption**
- **Committed to open standards – future-proofing customers' communications requirements**

sepura

Going further in critical communications

www.sepura.com/dmr

range with a ringer sound. A built-in inversion voice scrambler ensures privacy.
www.icomuk.co.uk

Speaker Mic and Dynamic Controller

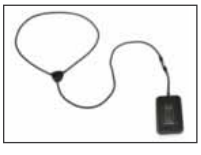
The ULTRA CSM from **Sepura** is a controller speaker microphone that offers all-weather performance and good audio quality for use in challenging conditions.

An ergonomic design makes it easy to use with gloved hands or in poor light, and the device is compatible with the company's STP8000 and STP9000 series radios. The accessory can work at very high temperatures thanks to a casing constructed of a durable self-extinguishing material. Key radio functions are included on the speaker mic itself.

The company also announced the Sepura Dynamic Controller (SDC), which connects GSM and TETRA devices to the company's line of covert accessories. The controller features noise-eliminating technology, wireless control and secure Bluetooth and allows users to switch between devices with one press of a discreet remote control unit. The product supports all standard induction covert earpieces and off-the-shelf headphones. It also operates in GSM-only mode and supports all of Sepura's existing wired and wireless accessories.
www.sepura.com

Bluetooth Tool

Imtradex upgraded its OnGuard BlueTalk Bluetooth tool that allows concealed



observations in conjunction with Bluetooth-enabled mobile phones. The device now includes a Li-poly battery, increasing operating time to eight hours. The tool also has an optional wireless push-to-talk (PTT) button with up to four silent keys and a wireless transmit button that is secured against accidental operation. Calls can be answered or ended with one button. The tool is compatible with many Bluetooth-enabled mobile phones, including the iPhone.

Imtradex also expanded the FireTalk series with the FireTalk S model helmet set. Designed with fire department needs in mind, the set provides smooth communications even in extreme heat. A waterproof electret gooseneck microphone is included, and the housing and PTT buttons are splashproof and shockproof. The universal communications unit can be adapted to all standard fire helmets.

www.imtradex.com

Broadband Antennas

Procom added two broadband base station antennas to its portfolio of antenna products. The CXL 108-185C works in the 108 – 185 MHz range and is designed to be used on supporting tubes with outer diameters between 27 and 65 millimeters. The radiating element is enclosed in a glass fiber tube. The CXL 380-470C is a vertically polarized, omnidirectional antenna that works in the 380 – 470 MHz range. The antenna comes with the company's C mast bracket, which is epoxy coated and made of noncorrosive materials. The accompanying U-bolts and fittings are made of stainless steel. The antenna can be mounted on 27- and 65-millimeter diameter mast tube. The antenna element is completely enclosed in a glass-fiber shroud. All metal parts are direct current (DC) grounded.
www.procom-uk.com

Digital PMR Analyzer

The RF AirAnalyzer from **fjord-e-design Sales** is a digital protocol analyzer for assessing different professional mobile radio (PMR) systems. The compact device

provides real-time analysis as well as simultaneous uplink and downlink analysis. Functions include quality analysis of the air interface and services, analysis of voice communications quality, interoperability checks, resource monitoring, interference detection, mobile radio coverage measurements, detecting problems associated with new installations and verifying security features. The product works with a notebook computer connected via an Ethernet connection.
www.fjord-e-design.com

Remote Analyzers

Narda Safety Test Solutions introduced the NRA RX series of remote analyzers. The devices can analyze signals up to 6 GHz in the frequency and time domains and exhibit receiver characteristics at the same time. An RF module in the devices

was specifically developed to allow for low phase noise and low intrinsic interference. When used with software, the analyzers allow users to define up to 500 channels or frequency ranges to monitor, and a demodulation function allows users to listen to FM, AM, upper sideband (USB), lower sideband (LSB) and continuous wave (CW) signals with external headphones. The devices are intended for use in automated and remote-controlled measuring systems and have a 10-megahertz reference input to synchronize to system frequency. The devices can also be operated on a standalone basis with a PC.
www.narda-sts.com

Mobile Air Traffic Control

Selex ES introduced the Aerodrome Flight Information System (AFIS), a mobile control tower for ground-to-air-to-ground air traffic control (ATC) communications.

The system is transportable on a C-130J aircraft and is rapidly deployable for remote operation. Ideal for emergency situations where timely aeronautical communications is needed, the product is effective for managing critical phases of a flight including take-off, approach and landing. Mechanical arms

deploy the system into a fully operational ATC tower. The product consists of four radios for marine and aeronautical communications in the VHF and UHF bands, a TETRA radio system for land communications in the UHF band, a meteorological system and a GPS. The radio communications are managed through two operator workstations that connect via VoIP EUROCAE ED137B. Technical management of systems is handled by the company's network management suite, which also allows remote network management.
www.selex-es.com

Radio-Planning Software

Ranplan introduced the newest version of its BuildNet Tablet software, which helps with quoting, planning, deploying and optimizing both indoor and outdoor radio networks. The software is an all-in-one tool for deploying small cell and heterogeneous networks (HetNets). It features predefined templates for costs and regulatory requirements, access to a comprehensive product database, and empirical models to manage network design and performance calculations. The product allows a tablet's camera and input data to create and annotate complex 3D buildings, along with installation diagrams and reports. The software operates on any tablet running Microsoft Windows 8.0 or 8.1.

www.ranplan.co.uk

Terrain Analysis

SoftWright released the accelerated Okumura Propagation Module for its Terrain Analysis Package (TAP) version 6.2. The new version features a calculation engine that improves execution speed, especially when paired with solid state drive data storage. Okumura is predominantly used for predicting field strength in urban areas. Corrections for suburban and open terrain are included. The explicit frequency range is 150 MHz to 1.92 GHz. The Okumura curves directly apply to propagation distances of 1 – 100 kilometers.
www.softwright.com

Medical Video Conferencing

DigiGone Remote Communication Solutions introduced remote telemedicine kits for marine, aviation and land-based applications. Based on the company's SecureChat video encryption and compression software, the DigiMed kids provide real-time teleconferencing with emergency medical service professionals using satellite or terrestrial wireless links, enabling face-to-face consultations between patients and doctors. Three versions are available. DigiMed Mini includes a Windows tablet with built-in camera, Bluetooth headset with microphone, Wi-Fi macro camera and power adapter in a small case. DigiMed Vital includes the same components as well as an electrocardiogram (EKG) sensor and DigiMed Access dashboard software to stream the device information. DigiMed Plus adds Bluetooth sensors for a digital thermometer, blood pressure cuff, blood glucose meter and other medical devices and is contained in a larger case.

www.digigone.com

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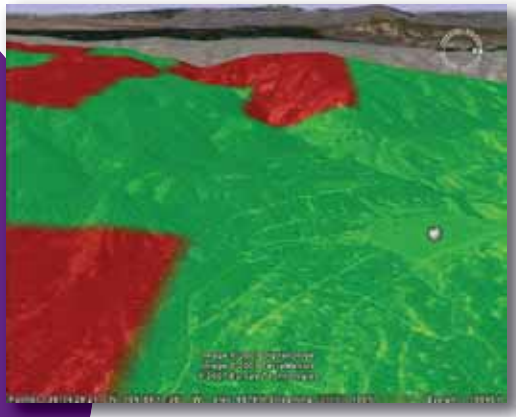

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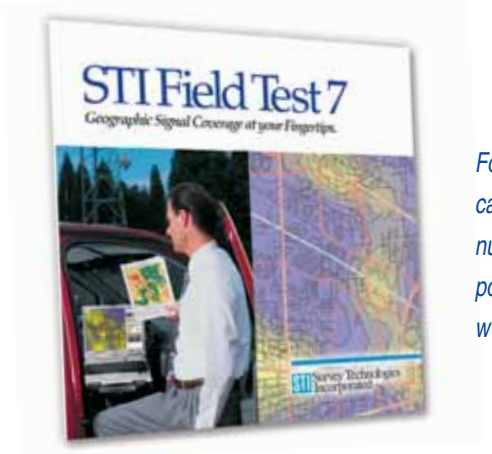

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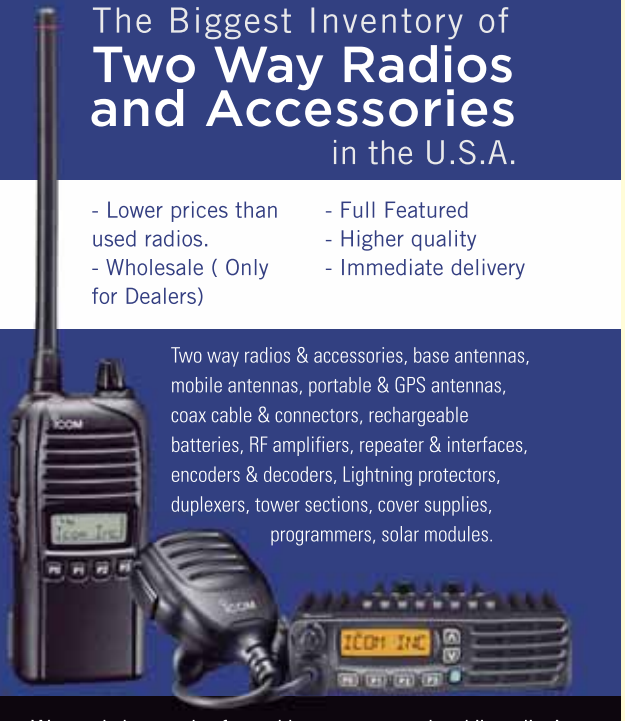

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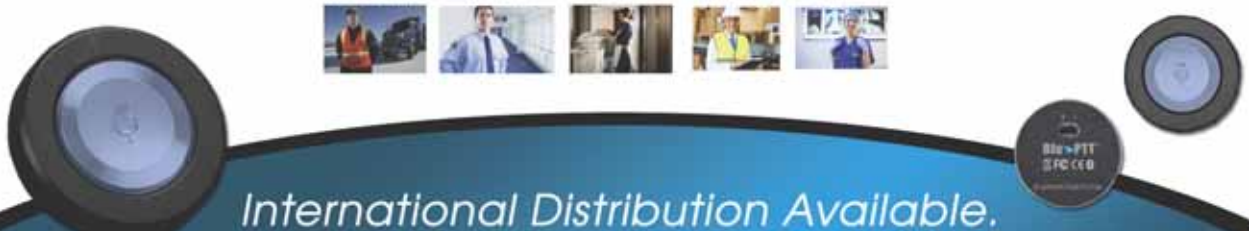

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2. Which of the following best describes your organization?
❑ A Mobile Communications Dealer/Reseller
❑ B Distributor, Agent, Importer, Exporter, Rep
❑ C Commercial Trunked Radio and Other Wireless Service Providers
❑ D Government/Public Safety/Military
❑ E Business/Industrial/Transportation User
❑ F Communications Manufacturer/OEM/Software Developer
❑ G Engineering and Consulting Firm
❑ Z Other—please specify _____

3. What is your function?
❑ A Corporate/Senior Management
❑ B Operations/Administration Management
❑ C Technical/Engineering Management
❑ D Sales/Marketing
❑ Z Others Allied to the Field—please specify _____

4. Do you recommend, specify or purchase mobile communications equipment or services?
❑ A Yes ❑ B No

5. Is there any servicing of mobile communications equipment at your location?
❑ A Yes ❑ B No

6. In what areas of the world do you do business? (mark all that apply)
❑ A Western Europe
❑ B Eastern Europe
❑ C Middle East
❑ D Asia
❑ E Australia/New Zealand
❑ F Africa
❑ G Mexico/Central and South America
❑ H United States/Canada

7. What wireless technologies does your organization plan to use/buy over the next 2 years? (check all that apply)
❑ A Conventional Two-Way
❑ B Cellular/Personal Communications
❑ C Paging/Messaging
❑ D Mobile Data
❑ E SCADA/Telemetry
❑ F Microwave radio
❑ G Trunking
❑ H Location Technologies
❑ I Tone Signaling (ANI, Encryption, etc.)
❑ J Interconnect
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By David Lum

Asia: A Promising and Challenging Market

The Asia Pacific and Middle East regions are among the most dynamic areas for the wireless two-way radio market. The regions comprise some of the most progressive and some of the poorest countries in the world. Economic forecasts are improving, and the need for two-way radio to support economic growth and public security needs is increasing, but challenges remain for the regions.

Many governments have upgraded their communications systems to improve emergency response to terrorist acts and natural disasters. Political, economic, sporting and tragic events provided opportunities for governments to upgrade or enhance their communications capabilities and improve services to protect the public.

The challenge for many governments is allocating sufficient budgets for communications solutions that provide the required reliability, performance and security for major events and public-safety use. Some cities, such as Hong Kong and Singapore, have justified citywide TETRA systems for public security. Many other cities in Australia, India and Indonesia are buying Project 25 (P25)-based solutions to provide similar communications needs.

Regulators in each country face pressure to find new spectrum to address the increasing needs of economically advancing countries. The traditional professional mobile radio (PMR) bands of VHF, UHF and 800 MHz continue to exist in all countries. Digital Mobile Radio (DMR) and P25 technologies continue to fit into those traditional bands. Several Asian countries have allowed TETRA to coexist with non-TETRA technology in the UHF band, which opens more technology choices for end users. Many Asian countries have narrowbanded the VHF/UHF spectrum from 25 to 12.5 kilohertz. Narrowbanding allows countries to double the channels available for reallocation to new users. Regulators also are encouraging TDMA-based technologies to gain some spectrum efficiency by loading more users onto the existing channels, a viable alternative technique.

However, finding new spectrum or loading more users onto existing spectrum is only part of the answer. Other methods, such as migrating to a site-based frequency allocation system that allows for reuse of frequencies in different parts of the country, must also still be developed. This will aid in more efficient use of spectrum.

Enforcement of licensed spectrum will also aid in efficient use. Most Asian countries still do not have good enforcement techniques to discourage interferers or regulations that impose civil penalties on interferers. This results in existing users asking for more spectrum to get away from the interferers. Finally, regulators also need to recover unused or underutilized spectrum from licensees. Government officials and legislators should allocate more funding to regulatory functions so that they can better manage the entire wireless environment.

PMR remains the reliable technology of choice for workgroup communications for public safety and heavy industries. Both TETRA and P25 technologies have been deployed in the Asia Pacific and Middle East regions and will continue to be adopted in the regions for many years to come. Many companies offer TETRA. A few more manufacturers have entered the P25 marketplace, and this open standard remains vibrant. The fast adoption of DMR shows the world's insatiable demand for two-way radio that is cost effective and feature rich. Many new DMR manufacturers have entered the marketplace, making it one of the most dynamic markets for future growth.

Analog radio remains a viable choice for many countries seeking cost effectiveness, but the number of analog products is on the decline as end users are seeing the benefits of digital. The competitive environment in the Asia Pacific and Middle East regions will remain robust for customers seeking both analog and digital technologies.

More recently, 4G Long Term Evolution (LTE) technology has created interest and business activity in the region. Mobile video and broadband have been the Holy Grail for public safety for years, and they are finally within reach. Spectrum must be in place first before deployment can happen. Many Asian and Middle Eastern countries are clearing TV broadcasters, and are close to assigning broadband channels. All countries have agreed to standardize on LTE technology.

However, some vendors are overselling the promise of what LTE can do for public safety. There are business consequences to deploying LTE, a cellular-based technology. Many public-safety organizations understand the complexities of LTE deployment and are adopting a two-layer approach, where traditional PMR is deployed everywhere for voice, and LTE will be deployed in strategic areas for mobile broadband only. A looming issue is the disparate mobile broadband spectrum plan for some Asian countries. ■

David Lum is director of product operations and regulatory support for the Asia Pacific and Middle East region with Motorola Solutions, based in Singapore. He can be contacted at david.lum@motorolasolutions.com.

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