2009 Wireless Technology Report

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FOREWORD: Looking at the Past, Present, and Future of Wireless Technology

By John Watson and Jerry Denham

Welcome to Today’s Wireless World’s first annual Wireless Technology Report. As you begin leafing through the pages of this extraordinary publication, you’ll quickly realize that we have divided it into three sections, providing you with three different perspectives of wireless technology: its history, its current state, and its future.

Writing about the history of wireless technology may have been the easiest component of this report. And yet, giving due credit to all of the technologists and inventors that came before us is an inherently impossible task. So we want to reinforce from the beginning that this is not an exhaustive treatise, but only our best assessment.

Examining the current state of wireless technology is a far more arduous task. How do you capture all the companies and products that are shaping the way wireless technology is being used in a commercial setting? You don’t. So what we have tried to do is subjectively focus on those organizations that we believe are having a substantial impact by virtue of their products. These are companies like Motorola, Icom, Sprint Neetel, Research In Motion, and many, many others. This section is divided by type of product and solution to give you a snapshot of the plethora of equipment that’s available in the marketplace.

The future of wireless technology is a bit of a challenge as well. This is best illustrated by a projection that was made several years ago that free wireless Internet access in America’s cities would become ubiquitous. That projection never became a reality.

Similarly, there is no guarantee that any of the trends highlighted in our future of wireless technology section will become woven into the fabric of today’s wireless world, either. One aspect of the future that you can be sure of, however, is that the aforementioned companies will do everything they can to adapt products and solutions around the needs of industries and the companies that reside therein.

To some degree, providing guidance for these organizations regarding the needs of businesses and other types of enterprises is the publisher of this report—BearCom. As the largest channel of wireless technology products and solutions to such companies, BearCom is on the front lines when it comes to receiving feedback, both negative and positive. So it is with great pride that we can present our partners and their innovative products and solutions for your review.

Welcome to Today’s Wireless World’s first annual Wireless Technology Report, a close look at the past, present, and future of wireless technology.”
YESTERDAY’S WIRELESS WORLD

“The individuals who embraced the concept of wireless technology over the last century have been largely responsible for today’s business climate, which has come to depend on that technology as a powerful facilitator.”

MARK KROH
Vice President, Sales & Service
Motorola

YESTERDAY’S WIRELESS WORLD: Visionaries Laid the Foundation for Wireless

The history of wireless technology is dotted with amazing individuals who were determined to create solutions that would help future generations. The common thread through all these men and women has been a willingness to think outside the box.

For example, Nathan Stubblefield, widely believed to be the inventor of the wireless telephone device more than a century ago, was an eccentric melon farmer who worked in isolation from his barn in the foothills of Kentucky. He described himself as a “practical farmer, fruit grower, and electrician.” His friends described him as plain and unassuming in his manner, yet secretive. The only individual he trusted was his 14-year-old son and assistant, Bernard.

On March 9, 1902, The Atlanta Constitution newspaper provided a glimpse of Stubblefield by offering the following characterization of the man and his device: “The nature of the apparatus used by the inventor is not known. He positively declines at this time to give out either technical descriptions or diagrams of the vital part of his apparatus. All that is exposed to view while his apparatus is in working order is the ordinary commercial telephone transmitter and receiver.”

Stubblefield’s initial objective, born out in a patent application, was that his device would be useful for “securing telephonic communications between moving vehicles and way stations.” In fact, the diagrams attached to the patent application suggested that the transmissions would take place to and from trains, boats, and even horse-drawn wagons.

His technological approach, however, was far different from what is in use today—voice-modulated, continuous, high-frequency waves. Stubblefield’s device reportedly worked by audio frequency induction. It was composed of a system of wires suspended between metal rods, with the transmitter placed on a train carriage or boat. When a vehicle or vessel neared, a signal was sent through the air to the telephone using magnetic fields. It could be heard at the other end of the wire through another phone.

The Constitution later reported on Stubblefield’s new creation with the following account: “Through wood, brick, mortar and solid stone; through blocks of business houses, over long distance, through city streets, uninterrupted by the noise of traffic, Nathan Stubblefield, an inventor of Murray, Kentucky, has transmitted the sound of human voice without wires.”

Stubblefield’s accomplishments and those of others laid a foundation that would lead to major developments, such as the first radio band wave communication of human speech on December 24, 1906. On that date, Reginald Fessenden successfully initiated a conversation from Brant Rock, Massachusetts, to ships in the Atlantic Ocean, a span of 11 miles. This meant that radio was no longer limited to just telegraph codes.

The Impact on Public Safety

While there were a myriad of developments along the way, one of the next major milestones was reached 15 years later when William Rutledge, the Commissioner of the Detroit Police Department in Michigan, impulsed his department to carry out pioneering experiments to broadcast radio messages to receivers in police cars. The department installed the first land mobile radio telephones for police car dispatch in 1921. The system, according to a story in the Detroit News, was similar to present-day paging systems. It was one-way transmission only, and the patrolmen had to stop at a wire-line telephone station to call back in. “Although the system was still one-way, its effectiveness was immediate and dramatic,” according to the newspaper.

Next on the horizon of developments associated with wireless technology was the creation of the Federal Communications Commission (FCC) in 1934. The FCC was tasked with not only regulating the landline telephone business, but also managing the radio spectrum. The FCC was supposed to grant licenses that were in the “public interest, convenience, and necessity.” Critics maintained that the FCC had the power to spark the development of wireless technology solutions for the private sector by unleashing spectrum, but it chose instead to apply its energy only to the public safety sector. It soon became a moot point, as World War II would provide the necessary launching pad for commercial interests.

“The war effort developed portable radios, units no longer restricted to a car, truck, or tank,” according to Tom Farley, a recognized authority on
The Mobile Phone is Born

On a parallel course, Motorola was exploring opportunities in the car radio telephone field. Beginning in 1946, when radio telephone service began in the U.S., the company began producing mobile telephones in cars, or “car phones” as they came to be known. Radio telephones essentially were two-way radios connected to the landline telephone system. However, problems with car radio telephone systems emerged as their popularity grew. Due to the limited number of available frequencies, car phone systems allowed only a few calls at a time. Frustrated callers often experienced long waits.

In 1968, the FCC proposed to allocate frequencies in the 800-900 MHz range for a new technology to solve these problems. Cellular technology, conceptualized by Bell Laboratories (AT&T) years earlier, was a possible solution. Geographical areas would be broken into small adjacent cells, and many car phones could be used at one time. A network of cell sites would be supported by a call-switching infrastructure that tracked users as they moved through the network and automatically switched their calls as their locations changed. By the early 1970s, AT&T and Motorola both announced plans for high-capacity mobile telephone systems based on cellular technology.

While AT&T developed a system based on mobile (car) phones, Motorola decided to apply its decades of radio phone history. “Unlike in previous wars, the foot soldier could now carry a radio with him, communicating with headquarters, squad leaders, or other soldiers while moving about. The personal radio had arrived, and it has never left.”

Farley described radio transmitters and receivers, pre-World War II, as being “big, bulky, and extremely heavy. Each piece could weigh 15 kilograms or more. They were so heavy that equipment collectors often call these old radios ‘boat anchors.’”

Responding to the needs of the military, manufacturers took steps to make such devices truly portable, reducing their size and weight. Leading the way was the Galvin Manufacturing Company, which would later become the modern-day Motorola. It combined a receiver and transmitter into a single handheld unit and called it the Handie-Talkie. At the modest weight of 2.3 kilograms, the device also had a range of 1.6 to 4.8 kilometers. Farley notes that the Handie-Talkie used five small vacuum tubes and put out one third of a watt.

Motorola made 130,000 handheld units between 1941 and 1945, according to Farley. “The SCR-536 was typical. Pulling out the antenna turned the radio on, putting the antenna back in turned it off. While the 1943 Handie-Talkie somewhat resembles a large radio telephone of today, it was Motorola’s back-up model, the Walkie-Talkie, that heralded a new era in personal, portable communications. Known as the SCR-300, it weighed almost 16 kilograms and had an average range of 16 to 32 kilometers. It used 18 fragile glass tubes. Motorola Chief Scientist Daniel Noble designed it for the U.S. Army Signal Corps, which in turn deployed it to the different divisions of the armed forces.”

Given the success of the technology in the battlefield, the federal government began to rethink the idea of personal, non-licensed use of radio frequencies. Specifically, the FCC introduced a plan in 1945 called the Citizens’ Band (CB) radio service, which was designed to permit citizens a short-distance radio band for personal communication (e.g., radio-controlled models, family communications, and individual businesses). There were delays, however, when it came to certifying equipment. Seven years later, only 1,401 people had CB operating licenses, most using converted military Handie-Talkies, according to Farley. Today, there are more cellular phone subscribers than wireline phone subscribers in the world, an achievement that should be credited to visionary technologists from Stubblefield to Cooper. The ubiquitous presence of handheld wireless technologies has spread to countless other types of wireless systems and solutions, from automated license plate recognition systems and video surveillance cameras to mesh broadband networks and remote call boxes.

Debut of the DynaTAC

The DynaTAC cellular telephone, named for its unique features, created a complete system tailored to the needs of both car and portable phones. While Motorola worked with U.S. government agencies to receive regulatory approval, the team continued to test and refine the technology. Meanwhile, the cellular concept was spreading through other parts of the world, and Motorola began supplying systems and phones to other countries. On September 21, 1983, the FCC approved the DynaTAC 8000X phone, the world’s first commercial portable cell phone. After more than 10 years and $1 billion investment, Motorola’s commitment produced an innovative portable technology that has since revolutionized the entire communications industry and how it operates.
TODAY’S WIRELESS WORLD

“From push-to-talk devices to EV-DO cards, purveyors of wireless technology today understand the necessity for creating products and solutions that can not only make businesses more efficient, but open new channels that will sustain them well into the future.”

BILL WHITE
Senior Vice President, Corporate Communications
Sprint Nextel

TODAY’S WIRELESS WORLD:
Relying on Wireless to Improve Performance

From a wind-swept ranch in West Texas to the frenetic floor of the New York Stock Exchange, wireless technology is changing—and ultimately improving—the way business is being done.

A wide range of companies are driving this trend, from major corporations with vast resources like Motorola and Sprint Nextel to nimble newcomers like Firetide and OnSSI. The question isn’t so much whether these organizations will develop new technology and the hardware that will harness it, but rather when this will happen.

One needs to look no further for evidence of this than what many perceive as the most basic, rudimentary wireless device and corresponding technology—the two-way radio. Two-way radios continue to flourish as a cost-effective solution for a wide variety of applications, especially in industries where reliable, instantaneous communication is a necessity. The construction industry is a good example. “Even when cell phones came out in the mid-1980s, those on the job sites continued to use portable radios,” said Hugh Johnston, Purchasing Manager at BearCom. “These devices remain rugged and durable, and they’re ideally suited for the job site.”

The retail industry also joined this trend by embracing wireless technologies, such as super-compact two-way radios that enable sales associates to communicate with one another and improve their customer service. “Overhead paging systems and employees yelling across the room were standard business practices in the retail industry for many years,” said Mike Tracy, National Account Manager for BearCom. “Then two-way radios came on the scene.”

The acceptance of two-way radios has gained momentum in various industries with the introduction of the MOTOTRBO digital two-way radio from Motorola. Viewed as a platform rather than a product, MOTOTRBO combines the best of the two-way radio with digital technology and delivers integrated data applications and voice communications. It’s a platform that Motorola will continue to build upon for years to come.

Many businesses are currently relying on a variety of devices to meet their communications needs, including combinations of various licensed and unlicensed analog radios and push-to-talk cellular products. The problem is that these current communication tools are reaching their functional limits for this market. But MOTOTRBO provides voice and data capability in one device without compromising quality, reliability, or mobility.

The affordability of this platform and its products is enhancing its popularity. MOTOTRBO lowers acquisition and operating costs, particularly when compared to the alternative technologies that require monthly fees. Since MOTOTRBO can operate in both analog and digital modes, it offers a lower total cost of ownership, and it is easily integrated with legacy communication infrastructures.

Customers can improve basic functionality, add new features, and increase capacity at their own pace, while leveraging their prior wireless system investments.

Enter the Smartphone

Even in industries where two-way radios are a staple, managers and supervisors are starting to embrace smartphones and their accompanying applications in order to introduce new efficiencies around deadlines and budgeting issues. This has been most evident in the construction industry, where project management is one of its most important business processes, according to Kevin Burden, an analyst with the research group IDC. “To optimize it, commercial construction companies are using BlackBerry devices to enable project managers to update project data at the work site, thus keeping clients up to date on project details,” wrote Burden. “Real-time access to project data also enables project managers to solve problems onsite, thus reducing costly delays. Moreover, given the rigors of large-scale construction sites, the ability to employ a more compact device—instead of a notebook—provides the project manager with more flexibility. Mobile application access has also been important in the residential construction market, where mass production makes quality control and assurance critical functions.”

Derek Keroton, an analyst and founder of The Keroton Group, notes that the impetus for smartphone acceptance has been the declining cost of such devices. “You no longer have to be a large corporation to afford them,” he said. Another factor, he suggested, was the availability of applications that support

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Quality Service and Repair are integral to Success

BearCom’s Technical Services Group takes great pride in its designation as a Certified Service Center (CSC),” said Ian Torok, Director of Technical Services for BearCom. To obtain CSC status, each designated

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the exchange of e-mail on the devices. Finally, Kerton said that faster data speeds have hastened their adoption. Digital two-way radios, cell phones, and smartphones are far from being the only handheld devices available today. Another unique device is iCom’s IC-F50V. By combining a two-way radio with a patient.com has provided the public safety sector and other industries with the best of both worlds. It meets military standards for durability and is fully submersible. At the same time, it draws from some of the most sophisticated bar code technology in the industry, delivering up to 190 hours of battery life. In addition, it is rugged and reliable. Handhelds aren’t the only devices being ruggedized. Notebook computers from Motorola, Panasonic, and Dell are being introduced to various industries. But these computers have minimal value in the field without the use of Sprint’s mobile broadband EV-DO card, which provides mobile connectivity to the Internet. This can be a major benefit in far-flung locations, such as outdoor music festivals, or places where a more traditional wireless network is overloaded, such as college campuses.

Video Surveillance Comes on Strong

While flexibility of these devices is very important, security is another concern. With this in mind, one particular wireless technology—video surveillance—has begun to cut across almost every industry, such as:

- Construction: to secure job sites from would-be thieves
- Education: to alert security staff about violent situations
- Healthcare: to protect employees and patients in parking areas
- Event management: to secure trade shows so exhibitors can feel comfortable leaving inventory on the show floor overnight
- Public safety: to protect citizens from criminals as they walk public streets
- Retail: to prevent theft in the stockroom and on the sales floor

There are several crucial components to these video surveillance systems, all of which have to be brought together by a solutions integrator such as BearCom. The power of such systems is that not only can they be used to capture criminal activity after the fact, but they are also an effective deterrent. In fact, studies show that the mere presence of a surveillance camera acts to prevent crime.

This has been especially true in the retail industry, according to BearCom’s Tracy. “These cameras can be placed virtually anywhere and moved easily when required,” he said. “This flexibility and scalability has introduced wireless video surveillance solutions to areas where a traditional wired system would have been cost prohibitive.”

Remote call boxes have also become heavily utilized in today’s world, especially those that integrate wireless technology to help promote a safe environment. Hospitals, for example, recognize that by installing multiple call boxes in parking lots, they can help ensure the safety of employees and patients. Simple to operate, call boxes typically feature push-to-talk/release-to-listen buttons on the exterior, while others are used by opening the box and speaking into a small telephone handset.

The safety of the public is also being impacted by wireless technologies in other ways. BearCom recently signed an agreement with PIPS Technology, which provides BearCom’s customers with the PIPS’ complete line of automated license plate recognition (ALPR) equipment for the public safety market. ALPR technology provides many benefits to the law enforcement community, such as enabling a single officer to automatically read and check thousands of license plates against numerous databases, within a standard patrol shift. And leveraging ALPR as a force multiplier results in superior enforcement capabilities, improved resource utilization, officer safety, and ultimately, reduced crime in the community.

Accessories Take Center Stage

Those users working in the public safety sector or have implemented other wireless telecommunications that protect their own safety, while helping them to do a better job. For instance, take EMIs and those who await the helicopters carrying critically ill. For these professionals, having the latest wireless headsets made by Peltor, a world leader in the field of communications equipment, has become a necessity. Peltor’s communications solutions for noisy environments make it possible for users of hearing protectors to communicate effectively in their immediate environment, as well as with people further away.

Similarly, OTTO has been a leader in developing its wireless technology products, such as the Pro Series speaker-microphone, a device that attaches to a two-way radio, providing extraordinary clarity and flexibility. Featuring a field-replaceable, heavy-duty cable assembly and quick-connect RC45 connector, the speaker-microphone is designed for users with multiple radio platforms.

Whether accessory or device, wireless technology also has a meaningful impact where challenges associated with nature arise. For example, when Hurricane Katrina hit the New Orleans area and the Gulf Coast in 2005, QuickSite, a mobile emergency communications solution was developed by BearCom. Since that time, demand for QuickSite units has continued to surge, perhaps due to the realization that man-made or natural disasters can occur virtually anywhere and at any time.

While he may not have to worry about hurricanes, rancher David Stafford knows all about the challenge of being physically isolated at a time of crisis, and how wireless technology can emerge as the unseen hero. Stafford, a bear of a man, was sipping coffee at Billy Dean’s in Matador, Texas, when he got the news that no west Texas rancher wants to hear—a fire was racing across the rolling plains, threatening a 5,000-acre piece of property called the Wild Hog Ranch, which he was responsible for maintaining. When he reached the Wild Hog in the northeast corner of Motley County, Stafford’s worst fears were realized. The fire was out of control, threatening not only the land, but also the 100 head of cattle.

There was only one solution. Stafford would have to build a road across the ranch down to the south fork of the Pease River to break the fire—but he couldn’t do it himself. So he pulled out his cell phone and started furiously calling neighbors and other residents throughout the county. Within minutes, a leader had made the road and hundreds of volunteers. “In that moment, the people told you everything you needed to know about west Texas,” Stafford said, remembering about that fateful day. “There’s a very powerful sense of community here that has been made even stronger by the use of wireless technology.”

Renting Preserves Budgets

“BearCom recognizes that today’s business environment is fast-paced and ever-changing, and that buying wireless equipment is not always the best solution,” said Brent Bisnar, Executive Vice President and head of rentals for BearCom. Thus, the company’s experienced rental Group provides short-term rentals and long-term leases for a wide range of

BearCom location had to adhere to the application and fee process, as well as ten requirements covering professional facility service ability, adherence to code of conduct, industry approved test equipment and tools, quality customer service, service warranty policies, management ability, licensing, insurance, professional appearance, and various other criteria. BearCom’s Technical Services Group assists its customers with everything from two-way radio repair and troubleshooting to equipment installation and program/project management.


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Today’s Wireless World

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Through the years, two-way radios have been a remarkably efficient tool for public safety, enabling police officers and other such personnel to communicate immediately when time can mean the difference in life or death. This technology has also been warmly embraced in other industries, where the cost savings—there is no monthly fee—is an attractive benefit.

There were plenty of naysayers at the start of the 21st century who questioned whether two-way radios were going to go the way of the pay phone. But these devices not only have survived, they have flourished. Why? Because the quality of the devices has improved, while their prices have dropped.

“Two-way radios have gotten more popular as they have become more affordable,” said Hugh Johnston, Purchasing Manager at BearCom, a nationwide provider of wireless communications equipment and solutions. “At the same time, the manufacturers of these radios are employing modern designs that take advantage of robotics, printed circuit boards, and microprocessors to create devices that cost only a fraction of what they would have cost just a few years ago.”

For a good example of what Johnston describes, take a close look at Motorola’s innovative, new BC130 portable two-way radio. The BC130, which is sold exclusively through BearCom, is a durable and robust upgrade from those devices that are currently at similar price points in the marketplace. For example, the BC130 has a cast aluminum chassis, which makes it far more durable than similarly priced radios, which typically have a plastic frame.

At another end of the spectrum is Motorola’s introduction of devices that leverage the MOTOTRBO digital two-way radio platform. MOTOTRBO makes it possible for companies that remain wedded to analog technology to take small, cost-efficient steps toward an inevitable transition to digital. The platform also delivers increased capacity and spectral efficiency, integrated data applications, and enhanced voice communications. “A major leap in two-way communications such as this typically comes around only every couple of decades,” said Mike Butler, Project Manager at BearCom.

New technology is being embraced in other ways in the two-way radio arena, most notably with Icom’s IC-F50V. This device offers the functionality of both a two-way radio and a pager. This means companies and organizations that might ordinarily have to buy two devices or choose one over the other can now enjoy the best of both worlds. Like many other Icom devices, the IC-F50V is rugged, meeting military standards for durability, and it is fully submersible. At the same time, it draws from some of the most sophisticated battery technology in the industry and can deliver up to 190 hours of battery life.

The attractiveness of these new radios recently has been enhanced with the introduction of a robust menu of quality accessories, such as OTTO’s line of speaker-microphones, headsets, and surveillance kits. Additionally, IMPACT Radio’s universal chargers and other radio accessories offer OEM quality at aftermarket prices. And finally, Honeywell Batteries continues to be recognized as a leader in the design, development, and manufacture of high-quality battery packs, chargers, and power management technology for a wide range of portable wireless devices.

No matter what particular device or accessory is selected, today’s business user has a genuine appreciation for two-way radios that is unlikely to wane anytime soon.
Cellular phones have become ubiquitous devices, owned by more than 80 percent of Americans. Interestingly, users are actually minimizing the amount of voice contact they establish. For example, industry research firm Nielsen IAG disclosed that in the second quarter of 2008, Americans sent and received more text messages than calls on their cell phones.

Today's Wireless World:
Cellular Phones and Accessories

Although Sprint and Nextel merged a few years ago to form one of the world's leading telecommunications companies, the combined product and service offerings of Sprint Nextel are now widening the breadth of choices for small and medium-sized businesses, as well as for large corporations and organizations of virtually every type.

Take, for example, the Motorola Renegade V950, a push-to-talk (PTT) handheld that operates in both the Sprint mobile broadband and Sprint cellular networks. This ruggedized PTT phone "has been designed specifically to appeal to those users who want one phone to stay connected with various forms of messaging," a Sprint Nextel spokesperson recently told the media. Most companies have embraced PTT technology as a way to keep in constant communication with the touch of a button. The spokesperson added, "The V950 is the first Nextel Direct Connect device to combine PTT with the larger capabilities of the Sprint mobile broadband network."

While the V950 is a QChat-capable phone, which allows for push-to-talk interoperability between CDMA and iDEN networks, it also is the first Nextel Direct Connect phone to support Sprint's various multimedia services. Additional highlights include Bluetooth with A2DP support, a two megapixel camera with video recording, Sprint Navigation support, mobile e-mail, and instant messaging. Finally, the V950 also is certified to military specifications for dust, shock, vibration, and blowing rain, offering the kind of durability that has become a necessity for more demanding wireless technology users.

The Motorola i365 possesses a lot of the same features as the V950, its flashier cousin. It also is certified to military standards for humidity, blowing rain, dust, shock, and vibration. In addition, the iDEN handset comes equipped with a speakerphone that has double the volume of regular cell phones, allowing the user to communicate better in noisy environments. Other features include Bluetooth and GPS.

Both devices offer the Nextel Direct Connect feature called Group Connect, which lets users communicate and coordinate simultaneously with up to 20 other subscribers, or TeamDC, which enables users to communicate with up to 34 subscribers.

Companies that need to outfit their employees with a high-performing, high-value device that runs on the blazing-fast nationwide Sprint mobile broadband network should look no further than the Motorola MOTORAZR VE20. Among other things, this cell phone provides for one-touch access to its text inbox and menu controls from its vivid, full-color external display.

Not to be outdone is Samsung and its M320 clamshell cell phone, which runs on Sprint's CDMA network. The M320 provides a VGA-resolution camera, as well as Bluetooth for the use of wireless hands-free headsets. The M320 includes a built-in speakerphone, paired with speaker-independent voice dialing for convenient calling. Factor in its portable nature—it weighs in at only 3.1 ounces—and it is easy to see why the M320 is gaining in popularity.

A myriad of accessories are offered for today's cell phones. One example is AdvanceTec Industries, which provides a wide variety of hands-free car kits for Nextel push-to-talk phones that are designed to improve sound quality, reception, and driver safety.

Motorola Two-Way Radio Batteries

ONLY MOTOROLA BATTERIES ARE PROVEN TOUGH.
BECAUSE “AS GOOD AS” NEVER IS.

When staying productive means staying in touch, you need batteries you can depend on day in and day out. Fortunately, Motorola Two-Way Radio Batteries are proven to be twice as tough as other brands when dropped—and that’s just for starters. Whether they’re zapped, shaken, frozen, or exposed to heat, you can trust Motorola Two-Way Radio Batteries to work better and last longer than ordinary replacement batteries — increasing your productivity and keeping your people in touch. It’s rugged, reliable proof that you get what you pay for. And it’s just another way Motorola puts Seamless Mobility in the palm of your hand. HELLOMOTO™

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To learn more about how Motorola batteries can make you more productive, call BearCom at 800.527.1670 or visit www.BearCom.com/products.
In an increasingly global marketplace, businesses and organizations alike are constantly looking for new efficiencies that will allow them to be more competitive. They need look no further than the smartphone. Its ability to check e-mail and access the Web while on the go has the effect of un-tethering the user from the desktop, freeing up him or her to pursue more critical tasks.

Research In Motion (RIM) and Palm knew this full well a decade ago when they entered the market with the first smartphones. Other manufacturers have since followed, providing users with a wide array of options. Nevertheless, RIM and Palm remain the industry leaders.

For example, RIM’s BlackBerry Curve 8330 from Sprint has become the preferred smartphone in multiple industries. Operating on the Sprint mobile broadband network, the BlackBerry Curve 8330 is the smallest BlackBerry smartphone available that still offers a full QWERTY keyboard. Striking an attractive balance between functionality, design, and usability, the BlackBerry Curve 8330 features navigation, enhanced Web browsing, and other capabilities. Users also can avail themselves of exclusive Sprint services, such as Sprint Navigation. This service delivers voice-guided and on-screen, turn-by-turn, GPS-enabled driving directions, 3-D moving maps similar to an in-car navigation system or personal navigation device, as well as more than 10 million local listings and real-time intelligent traffic alerts with one-click rerouting, anywhere on the Sprint network.

The latest addition to the expanding Sprint smartphone family is the innovative BlackBerry Curve 8330i. This new device is loaded with goodies for roadwarriors and other professionals, including push-to-talk capability, a two megapixel camera, Wi-Fi, GPS, and Bluetooth. It also includes Sprint’s Group Connect feature that allows users to instantly launch a wireless group conversation with up to 20 other participants with the push of a button.

Palm’s Treo Pro also is emerging as a device of choice. Start with the fact that the Treo Pro runs on Microsoft’s Windows Mobile 6.1 Professional Edition operating system, giving it mobile versions of Microsoft Office programs such as Outlook, Word, Excel, and PowerPoint. The Treo Pro offers both a slick new touchscreen and full QWERTY keyboard, and it features a nifty Wi-Fi button on the side of the device, which allows the user to conserve power by turning that feature off when the user doesn’t need to connect to the Internet.

As mentioned above, RIM and Palm are attracting their share of competitors. Take the HTC Touch Diamond from Sprint. Like the Treo, the Touch Diamond runs on the latest Windows operating system and also provides Bluetooth, Wi-Fi, and EV-DO support as well as a 3.2 megapixel camera. The Touch Diamond embraces the idea of one-handed operation, providing a power button, a Communication Manager for launching wireless connections, a camera activation key, and a stylus holder—all on the right side of the device. The left side, meanwhile, includes a thumbwheel for faster scrolling and a voice recorder key.

“With sophisticated offerings such as these, it is clear that smartphone manufacturers are introducing more and more functionality, enabling today’s users to more effectively reach their full potential,” said John Czapko, Vice President of Sales at BearCom.

The widespread adoption of smartphones is being driven primarily by new applications, making smartphones more versatile in the field.

**TODAY’S WIRELESS WORLD:**

**Smartphones and Accessories**

Analyst firm Canalsys revealed recently that global shipments of smartphones peaked at just less than 40 million units for the third quarter of 2008, or 13 percent of the total mobile phone market, up from 11 percent from the previous quarter. The widespread adoption is being driven primarily by new applications, making smartphones more versatile in the field.
Sprint and its EV-DO mobile broadband cards are being warmly embraced across a multitude of industries. In higher education, for example, the cards are used by students and professors to bypass increasingly crowded campus wireless networks and download high-quality video or synchronize large amounts of data between mobile devices and central systems.

**TODAY’S WIRELESS WORLD:**

**Mobile Broadband Cards**

The days of having to frantically search for a hot spot for your notebook computer are becoming a distant memory, thanks to the latest Sprint EVDO mobile broadband cards from BearCom.

Sprint is single handedly leading the charge with this wireless technology, proactively making improvements to its network while offering a wide selection of products designed to satisfy the needs of the user. Sprint recently began upgrading its wireless broadband network—the largest in the country—with its faster EV-DO Revision A technology. This network and the accompanying Sprint products not only provide an immediate connection to the Internet, but they facilitate increased use of applications, such as all-IP video telephony, high-performance push-to-talk (walkie-talkie) service, and multi-user video conferencing.

Mobile broadband cards also help when synchronizing large amounts of data between mobile devices and central systems, a capability that is not lost upon the specific users. What they all have in common are some extraordinary benefits, including the ability to:

- Stay in touch via your notebook computer or handheld device
- Go wherever you want and get online whenever you need to
- Connect to the Internet up to 10 times faster using EV-DO technology
- Increase productivity and efficiency
- Extend current and new applications to your mobile workforce
- Ensure security with authorized-only access
- Empower yourself and your staff with true wireless mobility

The good news is that the technology behind Sprint’s EV-DO cards is here to stay, giving people the speed and flexibility they need to use their fixed Internet applications on the move, according to Sara Harris, an industry analyst at Strategy Analytics. In a report entitled “Beyond 3G: Looking for True Mobile Broadband,” she notes that enhancements to existing technologies, such as EV-DO Revision A, “will dominate the mobile broadband arena in the short term. We’re not likely to see technologies like mobile WiMax, or indeed anything else, really take off until the next decade,” Harris said. “However, HSPA and EV-DO will be more than acceptable for most users, giving them the speed and flexibility they need to use their fixed Internet applications on the move.”

Sprint and its EV-DO mobile broadband cards are being warmly embraced across a multitude of industries. In higher education, for example, the cards are used by students and professors to bypass increasingly crowded campus wireless networks and download high-quality video or synchronize large amounts of data between mobile devices and central systems.

Your productivity can now match your mobility.
There are a host of accessories for Motorola/Symbol handheld mobile computers, such as rugged holders that are designed for mounting on forklifts and other mobile warehouse machinery. These accessories, along with a growing list of sophisticated software applications, make these devices the ideal choice for a warehouse or distribution center.

Motorola knew exactly what its business customers in the manufacturing, warehouse, and distribution industries wanted when it completed its acquisition of Symbol Technologies in 2007—rugged scanners and accompanying devices that would promote supply chain efficiency.

Users who operate in harsh, dirty, and extreme environments know that Symbol’s rugged scanners will keep on performing. Each one meets IP53, IP54, or IP65 standards—some of the highest in the industry—minimizing the chances of damage occurring should the scanner be sprayed with liquids or covered with dirt and dust. Furthermore, these devices are designed for industrial environments, which are often noisy, coming equipped with beepers and bright LED indicators.

The LS3578-ER, for example, can endure being repeatedly dropped on concrete. While its ruggedness is a unique attribute, the scanner has also been universally praised for its performance characteristics. With the LS3578-ER in hand, a worker can scan bar codes from practically anywhere with onboard Bluetooth capability, reading labels as far away as 45 feet and as close as .25 inches. The LS3578-ER offers superior scanning performance, allowing the user to capture and decode one-dimensional or two-dimensional symbologies or even images. This device also reads electronic records of signatures and documents to comply with regulations such as HIPAA in the U.S.

“This scanner is becoming extremely popular with our customers, especially in the manufacturing, warehouse, and distribution space,” said John Czapko, Vice President of Sales at BearCom. “Fortunately, Motorola has recognized its value and maintains a sufficient inventory. Otherwise, we would have had a lot of disappointed customers.”

The scanner mentioned above is a very important part of the overall productivity solution, but there are other pieces. For instance, there’s the Motorola/Symbol MC9090-G handheld mobile computer. Designed for workers on the floor, the MC9090-G offers advanced data capture options and integrated wireless LAN/PAN plus a comfortable ergonomic pistol grip to enable real-time data collection in scan-intensive environments. These environments might typically be in the warehouse, on the loading dock, out in the yard, or on the sales floor.

Next, there’s the Motorola/Symbol MC75 worldwide enterprise digital assistant. Bringing the power of a cell phone, PDA, computer, scanner, and imager to the mobile worker, the MC75 is the first rugged enterprise digital assistant. This compact device, which is designed to withstand all-day use in nearly any environment, delivers true anywhere, anytime wireless WAN/LAN/PAN voice and data communications.

And finally, there’s the Motorola/Symbol AP300 wireless access port. It delivers rich 802.11a/b/g connectivity, working in conjunction with Motorola’s wireless switches as the point of connection between mobile devices and wireless LANs. This thin, next-generation access port is a low-cost device that is centrally and remotely managed through a Motorola wireless switch.

Working together as a wireless technology solution, these products deliver heretofore unheard of productivity to the workplace.

To learn more about how Motorola handheld mobile computers can keep you operating efficiently, call BearCom at 800.527.1670 or visit www.BearCom.com/products.
In addition to obvious public safety applications, the ability to quickly scan a license plate and determine the owner of the vehicle and his or her status has become a customer service boon at high-end resorts and country clubs. For example, employees can relay that data to their teammates in the lobby, who can then greet guests by name as they enter the facility.

From California to New Jersey, police departments all across the country are experiencing the benefits of automated license plate recognition technology, or ALPR as it is more commonly known. Created by PIPS Technology of Knoxville, Tennessee, ALPR provides many benefits to the law enforcement community, such as enabling a single officer to automatically read and check thousands of license plates against numerous databases within a standard patrol shift. This capability has, not surprisingly, allowed ALPR to put a huge dent in the nation’s auto theft problem. It also has helped save the lives of police officers by giving them the ability to determine, in real time, if a vehicle is connected to a violent criminal before approaching that vehicle.

PIPS is continually developing ways to enhance its solution, such as the recently introduced portable camera mount option, which allows for easy and rapid deployment of an ALPR system to any vehicle, enabling public safety agencies to operate in covert operations using various unmarked vehicles. This commitment to constantly improving its technology has attracted legions of fans in the public safety sector. “It used to be that you would stop at any suspicious vehicle, type the plate number into your computer, and get a response from the station,” said Police Chief James O’Connor of the Lyndhurst Police Department in New Jersey. “Now (with ALPR technology), we see every car and get a notification in real time that the vehicle is wanted for some wrongdoing.”

Police departments that have been using the system for years can now quantify the results. For example, Long Beach Police Department Sergeant Chris Morgan noted that since deploying ALPR in 2005, the department has recovered more than 1,000 stolen vehicles and made almost 200 arrests. In addition, Morgan said, “The system has helped us to improve the parking situation within the city by enabling us to better enforce the rules—people are less likely to break the law when they know they will get caught.”

“In the past twelve months, we have begun using the system to enforce our parking regulations downtown. More than 700 vehicles with almost $350,000 in outstanding parking citations have been identified and towed using the PIPS solution. This revenue helps us to justify purchasing additional equipment to improve the safety of our city.”

BearCom Chairman John Watson noted recently that his company is proud to be associated with the distribution and installation of PIPS solution. “This is a powerful example of how wireless technology can make a difference in people’s lives,” said Watson. “Not only does ALPR technology protect victims by removing criminals from the street, but it also enhances the safety of officers in the field by helping them identify dangerous situations before they result in a confrontation.”

The bottom line is that utilizing ALPR as a force multiplier has resulted in superior enforcement capabilities, improved resource utilization, better officer safety, and ultimately, reduced crime rates throughout the community.

“Integrated Fixed and Mobile
PIPS offers both fixed location and mobile camera deployments, all integrated by a PIPS Back Office System Software (BOSS) providing data management, data mining, reporting and interoperability, fixed location monitoring of high-throughput areas and mobile deployments for rapid deployment and patrolling of selected locations.

Improved Efficiency
Check “tens of thousands” of plates instead of “tens”, providing for improved surveillance and results while also freeing up the officer for other duties.

Eliminate Profiling
By looking at every vehicle, without regard to its condition or its driver, all claims of profiling may be eliminated.

Completely Automated
The system runs autonomously, requiring intervention only upon “hit”.

Learn more about PIPS today.

PIPS TECHNOLOGY
A Federal Signal Company
800.527.1670 toll free
www.bearcom.com/partners/pips-technology
Since the devastating terrorist attacks of September 11, 2001, the federal Department of Homeland Security has advocated increasing interoperability, or the ability of first responders to communicate seamlessly with one another. Thousands of leading public safety departments around the country have embraced this directive, creating a safer environment for all Americans.

The tragedy of 9/11 had a tremendous impact on the public safety sector and other mission-critical industries, forcing many departments within these industries to embrace new technologies. One of the newer technologies has been the interoperability gateway, a solution that offers cross compatibility for two-way radios and various other wireless devices, thus enhancing the nation’s security by providing a common technology platform for wireless communications.

Raytheon JPS, a company previously known for its stellar work in the defense industry building missiles and other systems for the U.S. military, has become a leader in this arena with the NXU-2A, ACU-M, and ACU 2000 IP.

The ACU-2000 IP, in particular, has surged in popularity. It offers a full suite of network capabilities, including linking of radios over an IP network, control of large interoperability systems via IP, remote channel change over IP, and the ability to interface radios via SIP, or the standards-based open protocol used to create, manage, and terminate sessions in an IP-based network.

Raytheon JPS provides customers with the ability to employ the new SIP communication capabilities in either of two versions, based on their requirements, for both local and wide-area networks. “Now you can bring all of the advantages of the open-standards SIP protocol to your radio systems and add radio functionality to your network,” said Keith McDonald, Vice President of Sales and Marketing for Raytheon JPS. “The ACU-2000 IP bridges the field-proven ACU technology with innovative, comprehensive SIP capabilities.”

As previously mentioned, the public safety sector has an acute need for the gateways. Take fire departments as an example. It’s not enough that all of the municipality’s stations be linked, but what about the volunteer fire departments, whose telecommunications capability frequently lags behind that of the departments affiliated with larger, better-funded municipalities?

Another leading provider of interoperability networks is Telex, whose proven solution allows the user to control the incident, as he or she can listen only to the channels necessary and more closely manage the situation. This was a popular feature for the City of Galt, California, which installed a Telex system with the help of BearCom. Another feature of the system that the city embraced was the ability to digitally record all the activity on the radios. If there is an incident that involves multiple departments and agencies, the Telex system provides the city with a “hard record” of the incident.

BearCom also helped Telex install an integrated, IP-based system for combined satellite, radio, and networked communications for Jefferson Parish, Louisiana. The complete package, a new million-dollar mobile command vehicle, was the first of its kind in the suburban New Orleans district.

When the situation is critical, your team needs integrated voice, data, and multimedia communications in conjunction with seamless interoperability. Only the new ACU-2000 IP from JPS provides a single SIP-based gateway to digitally converge existing radio systems with SIP telephones, networks, and devices. Now you can bring all of the advantages of the open-standards SIP protocol to your radio systems and add radio functionality to your network. Visit our website to learn how the ACU-2000 IP from JPS can integrate your communications.
Solutions by Zetron and Positron deliver everything you would want from a dispatch or paging system. Positron’s flagship product, called VIPER, is scalable, allowing users to move easily and efficiently onto a single physical network. Zetron, meanwhile, offers industry-specific solutions that satisfy the communications needs within particular segments.

At the heart of any modern public safety department is its dispatch center. It serves as the communications nerve center of the typical law enforcement or emergency services agency. It is an intrepid point for vital information from residents in trouble, as well as a relay point to send officers in to the field to assist.

This is where today’s radio dispatch solutions from Positron and Zetron can have a meaningful, positive impact on safety and security in our society.

Positron, a leader in fully integrated, safety and security for that officer searching for a suspect at night.

The map also can show the dispatcher an aerial view of an entire city, all the way down to a specific house, including outbuildings and trees. The dispatcher can then advise an officer of possible hiding places, providing additional security for that officer searching for a suspect at night.

Others, such as the City of Grandview Heights near Columbus, Ohio, have been equally pleased. In the late 1990s, the Grandview Heights Police Department couldn’t afford to upgrade its emergency dispatch console. Soon after the 9/11 disaster, they had no choice if they were to meet interoperability standards. The city turned to BearCom, which installed the Positron solution. “For a very reasonable amount of money, we received a high-quality console that works well,” said Police Chief Rollin Keiser.

Another leader in the manufacture of consoles, switches, and communication controllers used in mission-critical applications is Zetron. From a customized, complex system to the simplest off-the-shelf product, the company offers more than 100 communications solutions.

Although Zetron products have universal applications, the company’s strategy of specializing in several distinct wireless market segments has allowed it to develop a unique and complete range of products that satisfy the communications needs within particular segments. One example of this was a recent installation for the Department of Veteran’s Affairs Integrated Services Networks, a project where BearCom designed, configured, and installed the equipment for this system. In all, BearCom installed several dozen Zetron model 284 desktop radios and more than two dozen model 4010 radio dispatch consoles at 30 different sites over a one-year period.

Your productivity can now match your mobility.
As integral components of a converged infrastructure, Avaya servers and media gateways provide highly flexible, scalable building blocks, which can be mixed and matched to create customized solutions. They enable the centralized management efficiency of a single, streamlined network, while delivering best-in-class call-processing quality and availability.

Communication is a vital lifeline for any government organization—especially those providing critical services that impact public health and safety. Constantly on the move, employees at these agencies must be able to communicate anytime, anywhere to avoid sometimes tragic consequences. Thanks to IP media servers and gateways, like those engineered and manufactured by Avaya, their job is getting easier.

Avaya, a leading global provider of business communications applications, systems, and services, offers full-featured voice and data capabilities. Avaya’s media servers and gateways support analog, digital, and Internet protocol (IP) communication devices and provide seamless connectivity over phone lines, data networks, cellular systems, satellites, radios, and/or the Internet.

One of Avaya’s portable communications systems was recently put to use by the Florida Department of Children and Families (DCF), a high-profile, state-level agency. The DCF made the Avaya system a critical component for its Florida Family Abuse Hotline. The 24-hour hotline fields calls from citizens, case workers, and law enforcement officers, who are reporting the suspected abuse or neglect of children and elderly adults. On a typical day, nearly 300 contact center agents handle between 1,000 and 1,500 contacts at the Tallahassee-based service center. Tallahassee is in the central part of the Florida Panhandle, a region plagued by hurricanes. That makes disaster recovery a critical component of the agency’s information technology plan.

“We deliver a critical public service. If the offices need to close due to hurricane damage or even a bomb threat, it is imperative that we can continue to take calls,” said Cindy Kirkland, Information Technology Manager for the Florida Abuse Hotline.

In the past, backup phone lines installed in a remote office building were used for disaster recovery. But without the sophisticated software needed to route and manage calls, service levels suffered. “With the Avaya system, we have a full-featured contact center on wheels,” Kirkland said. “All we have to do is power up and we’re ready to go. Our callers would never know the difference.”

The Avaya system mirrors the capabilities of the primary contact center, with computer/telephony integration; the same announcements, user names, and logins; and even the same statistical reports. It also provides the department with greatly expanded recovery capabilities.

“The system also can be installed in emergency vehicles, with more than two dozen Avaya-based mobile command centers already on the road serving communities and organizations across the U.S.,” said Mike Butler, Project Manager at BearCom. That capability was enough to attract the Maryland State Police as a customer. The department is using the Avaya system in two of its vehicles, one of which serves as the largest mobile command center in the nation.

TOday’s WIReless WORld: IP Media Servers and Gateways

COMMUNICATIONS ARE CRITICAL FOR THE FLORIDA DEPARTMENT OF CHILDREN AND FAMILIES (DCF), A HIGH-PROFILE, STATE-LEVEL AGENCY. THE DCF MADE THE AVAYA SYSTEM A CRITICAL COMPONENT FOR ITS FLORIDA FAMILY ABUSE HOTLINE. THE 24-HOUR HOTLINE FIELDS CALLS FROM CITIZENS, CASE WORKERS, AND LAW ENFORCEMENT OFFICERS, WHO ARE REPORTING THE SUSPECTED ABUSE OR NEGLECT OF CHILDREN AND ELDERLY ADULTS. ON A TYPICAL DAY, NEARLY 300 CONTACT CENTER AGENTS HANDLE BETWEEN 1,000 AND 1,500 CONTACTS AT THE TALLAHASSEE-BASED SERVICE CENTER.

IN THE PAST, BACKUP PHONE LINES INSTALLED IN A REMOTE OFFICE BUILDING WERE USED FOR DISASTER RECOVERY. BUT WITHOUT THE SOPHISTICATED SOFTWARE NEEDED TO ROUTE AND MANAGE CALLS, SERVICE LEVELS SUFFERED.

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TODAY’S WIRELESS WORLD:
IP Video Surveillance Cameras

As more and more entities in the public and private sectors recognize the value of IP video surveillance, the demand for such systems is predictably soaring. Credit BearCom and partners like Sony, Firetide, and On-Net Surveillance Systems (OnSSI) for this trend.

BearCom, an integrator of such solutions, recently installed a comprehensive video surveillance system for the Dallas Police Department (DPD), which has produced impressive results. One ingredient in BearCom’s successful deployment was the selection of companies that could offer best-of-breed components for such a system. Among those partners and their attendant solutions are:

- Sony, a provider of quality IP video surveillance cameras
- Firetide, a developer of wireless, multi-service mesh networking technologies
- BridgeWave Communications, a manufacturer of wireless solutions that facilitate the high-speed, point-to-point transfer of data
- OnSSI, a developer of intelligent IP-based video surveillance software

For the DPD, BearCom turned to partner Sony for the network video cameras. “Sony has set the industry standard for IP video surveillance,” said Mike Butler, Project Manager at BearCom. “Sony’s expertise in imaging technology has been long established, and its success in advancing Sony devices with IP-based connectivity is helping speed the transition from CCTV to IP video security virtually everywhere.”

OnSSI also has been instrumental in this success. Its video analytic technology means event managers need fewer resources to more effectively monitor the environments that are deemed a priority.

Mulli Diamant, Vice President of Sales for OnSSI, recently noted that demand continues to surge for such systems, especially in education. “We have seen a dramatic and continuing increase in the use of video surveillance technology in education,” Diamant said. “Unfortunately, as we know, several recent tragedies have served to accelerate this demand on many educational environments that are deemed a priority. Paul Lindenberger, who serves as Director of DOWNTOWNDallas, an association of businesses, revealed in 2008 that crime in downtown Dallas dropped 28 percent after BearCom installed a wireless video surveillance system for the Dallas Police Department. The cameras are placed on utility poles and traffic lights throughout the downtown business and historical districts.

The DEPA system is powered by Sony’s network surveillance recorders, which support both MPEG-4 and JPEG files, control pan/tilt/zoom and offer intelligent alerts with the Sony DEPA™ system. Sony’s DEPA system. The smartest way ever invented to draw the line.

Intelligent alerts with the Sony DEPA™ system.

The DEPA system is powered by Sony’s network surveillance recorders, which support both MPEG-4 and JPEG files, control pan/tilt/zoom and offer up to three Gigabit Ethernet ports. Even captures up to 650 frames per second with the NSR-10S. And all recorders leverage the intelligence of Sony’s SNC-RX550N, RZ50N, CS50N, DF80N and DF50N network cameras.

Sony’s DEPA system. The smartest way ever invented to draw the line.

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Mesh broadband networks, like those produced by Firetide and Motorola, have emerged in recent years as a powerful solution for college campuses to securely extend wireless connectivity to their students, faculty, and staff. These networks also are increasingly being deployed for temporary applications, such as on the grounds of large sporting events and concerts.

Relying on the belief that you focus on one thing and do it very well, Firetide’s wireless mesh broadband network technology has become a solution of choice in the wireless technology space. Whether it is a school campus, a city’s downtown district, or some other geographic area, the public and private sectors are turning to Firetide as an extremely cost-effective alternative to installing a wired network, which can be both exceedingly difficult and expensive, falling outside the typical budget.

With a Firetide wireless mesh network from BearCom, you can:

• Install security cameras to monitor access to buildings, storage areas, and the property perimeter
• Instantly set up temporary surveillance networks for special events, remodeling jobs, and construction sites, and quickly remove them when no longer needed
• Extend 24/7 video surveillance to remote areas and outdoor sites that are beyond the range of network cabling
• Choose from a wide variety of enterprise-grade IP cameras to accommodate any budget, security needs, or environmental considerations

Versatility and reliability are benchmarks of a Firetide multi-service wireless mesh broadband network. The Firetide mesh provides standard Ethernet ports on every wireless node, so virtually any enterprise-grade IP camera can connect to the mesh network. This capability means many more camera choices are available, and it also allows the seamless extension of networks that may already be in place.

In addition to IP cameras, the Ethernet ports of a Firetide HotPort mesh node enable many other network devices such as sensors, printers, and computers to be connected to the wireless mesh for operation virtually anywhere—indoors and outdoors—without the need for backbone wiring. The entire mesh network can be managed remotely using Firetide’s HotView software, so a single staff member can easily monitor and manage every node from one location.

“Reliable connectivity anywhere”
High-speed wireless point-to-point bridges, like those manufactured by BridgeWave and Motorola, can offer 10 times or more the bandwidth of comparably priced 100 Mbps Ethernet wireless links. In addition, these products provide superior interference immunity and enhanced data security, arising primarily from their extremely narrow antenna beam widths.

When the Midlothian Independent School District (MISD) in Texas discovered it could cost as much as $1 million to use fiber-optic technology for a project it was about to undertake, it began considering other solutions.

Wireless technology quickly rose to the top of the list. The MISD then held a competitive request for proposal process, eventually selecting solution designer and integrator BearCom to deploy a wireless WAN radio link.

For BearCom, the selection of its technology provider was easy. It enlisted BridgeWave Communications, the leading supplier of gigabit wireless solutions, to be its partner on the project. BearCom and BridgeWave were ultimately selected after Midlothian ISD concluded that their solution would provide the speed, reliability, connectivity, and dependability it sought.

“Our close relationship with our partner, BridgeWave, enabled us to devise a solution that fit every need described by the MISD,” said Jerry Denham, President and CEO of BearCom. “The point-to-point system we installed for the district met or exceeded every requirement.”

Denham expected no less. BearCom’s experience with BridgeWave when it deployed a video surveillance system for the Dallas Police Department (DPD) and other projects had been enormously positive. With the DPD project, BearCom deployed seven of BridgeWave’s high-capacity, Gigabit Ethernet and 100 Mbps backbone links.

In fact, BridgeWave’s compact 60 GHz wireless links are ideally suited for a wide range of municipal and public safety applications where network throughput and compact, small form factors are top selection criteria. “Our Gigabit wireless links offer a future-proof solution, since ample bandwidth is available to meet both existing and growing networking needs,” said Gregg Levin, Vice President of Infrastructure Solutions at BridgeWave. “For the Dallas Police Department, we provided a scalable, expandable backbone to support the plan to more than triple the number of video surveillance cameras over time, while ultra-low latency performance ensured real-time pan-tilt-zoom camera control.”

Using BridgeWave’s 60 GHz and 80 GHz links for the backhaul also conserved the low-frequency spectrum for other public safety access applications. These high-speed wireless bridges offer 10 times the bandwidth of comparably priced 100 Mbps Ethernet wireless links. In addition, the BridgeWave products provided superior interference immunity and enhanced data security resulting primarily from their extremely narrow antenna beam widths.

Another strong player in the point-to-point bridge space is Motorola and its innovative and cost-effective wireless Ethernet bridge portfolio. Among the more popular entries from that group are the Motorola PTP 400/600 series bridges, along with the Motorola Canopy PTP 100 series bridges.

The Canopy series in particular has been acclaimed by many as the ideal wireless technology for developing, enhancing, and extending advanced broadband networks and services. It makes delivery of high-demand technologies like Internet access, voice over IP, video services, and security surveillance much quicker and substantially less expensive.
TODAY’S WIRELESS WORLD:
Remote Call Boxes

It could be a jogging trail, a parking lot, a golf course, or a desolate highway. There are plenty of potentially dangerous areas that can’t support a wired call box to be used in case of an emergency. Fortunately, wireless technology is responding to this challenge and helping to make the world safer.

Leading the charge on this front is BearCom, the industry’s foremost provider of wireless technology solutions. Since BearCom added call boxes to its product line, it has seen a dramatic spike in demand for these wireless stations, which offer a swift, reliable way for people to communicate with each other from isolated locations.

The beauty of these stations is that they are very simple to operate. Some feature push-to-talk/release-to-listen buttons on the exterior of the call box, while others are used by opening a door on the box and speaking into a telephone handset. Other important benefits of remote call boxes include:

• Easy, one-button operation
• Two-way voice communication over a broad area
• Improved response time
• Rapid access to and from remote personnel
• Integration with current two-way radio system
• Reduced need for additional personnel

Getting power to these devices is becoming easier, too, thanks to the use of alternative energy sources, such as solar panels. This power can translate into an arsenal of features that contribute to safety. The use of some call boxes, for example, will trigger flashing lights, drawing attention to the area around the call box and scaring away a would-be criminal. Having such power also enables features like automatic location identification or mapping, which allows the authorities to quickly find and make their way to dangerous situations.

Call box locations should be chosen carefully. At one university, for example, the campus police chief, head of residence life, dean of students, and head of facilities management worked together to determine the proper locations of the devices. The police chief said, “We put an aerial view of the university on the table and marked where the best placement of the remote call boxes would be, based on all of our discussions regarding where things could happen.”

In addition, they worked with BearCom to confirm that the devices would be able to communicate from each preferred location. This is no small concern, since tree foliage can absorb radio frequency signals and reduce the range. When making such a determination, municipalities, colleges, or private entities should conduct their site surveys in the spring when trees are in full bloom and at their greatest potential for blocking wireless radio signals.

In 2008, AdvanceTec Industries, a new BearCom partner, began offering specially designed wireless call boxes for corporate and school campus applications. These new devices can be mounted on the walls of conference rooms, classrooms, hallways, and other commonly used areas and incorporate Nextel push-to-talk phones to enable instant communications in case of an emergency.

Corporations and non-profit organizations are increasingly embracing solutions—such as those provided by BearCom’s remote call boxes—as a way to protect their employees and customers from danger. The use of some call boxes, in fact, will trigger flashing lights, drawing attention to the area around the call box and scaring away would-be criminals.

In addition to various emergency applications, the QuickSite 1000 is also ideal for construction sites. Its portable nature makes it ideal for deploying at one site and then moving to another when the job is completed.

TODAY’S WIRELESS WORLD:
Emergency Communications Solutions

When Hurricane Katrina hit Louisiana in 2005, Mike Butler, Project Manager at BearCom, was glued to the television watching the disaster unfold when he got a call from the National Guard. The Guard wanted a quote for 50 two-way radios, two base stations, and a repeater to help them deal with the aftermath of Katrina.

The conversation quickly turned to the challenges involved in rescuing the hundreds of thousands of people who were left homeless in New Orleans. One thing led to another, and Butler was soon describing a product that hadn’t even been built yet—a trailer that could serve as a portable emergency communications solution and would be smaller, faster, and much less expensive than what the industry had been using.

Orders were placed, and Butler soon found himself delivering the product that he would call QuickSite to Louisiana. QuickSite earned universal praise for its performance there.

In the intervening years, demand for QuickSite has surged, perhaps due to the realization that man-made or natural disasters can occur virtually anywhere and at any time. The QuickSite 1000 is now a lightweight system that can easily be towed behind a pickup truck or airlifted by helicopter to a remote location. The unit deploys up to 50 feet in height and is durable enough to support the weight of multiple towers. Its portable qualities make the QuickSite 1000 ideal for deploying at one site and then moving to another when necessary. It can be set up and operational within just 30 minutes.

A wide variety of wireless communications equipment can be integrated into each QuickSite 1000, such as VHF, UHF, and 800 MHz two-way radio Repeaters (conventional or P-25 operation), IP servers and gateways, IP video surveillance cameras, and mesh networks, to name just a few. The interoperability capabilities of the QuickSite 1000 are controlled by a console, which can be operated by a notebook computer. An onboard gasoline or diesel generator and battery backup system provide more than adequate power for whatever equipment has been installed in the unit.

Alternatively, the QuickSite 750 delivers comparable functionality in a highly portable, suitcase-based solution. The QuickSite 750 can re-establish communication from the convenience of a command center or wherever a power source is available.

Both QuickSite configurations are reasonably priced—far below that of bulkier systems, which usually require heavy-duty cargo trailers or modified RVs for transporting. And because of its attractive price and flexibility, the QuickSite 1000 and 750 are ideal for not only the public safety industry but private entities as well, such as commercial and residential construction companies.
"If you want to know about the future of wireless technology, all you have to do is look at some of the products of today. Icom’s IC-F50V exemplifies how devices will become more versatile in the future, offering the functionality of both a two-way radio and a pager."

**TOMORROW’S WIRELESS WORLD**

“Manufacturers and service providers recognized that voice revenues are declining, and the amount you can charge is very competitive.”

**Innovations Bolster the Future of Wireless**

Credit Research In Motion (RIM) for the path we are on. If the Canadian-based maker of the BlackBerry hadn’t knocked it out of the park with the first smartphone more than a decade ago, there’s no telling what the business consumer would now be using as a mobile device.

As it stands, analysts see a future in wireless technology where the overriding trend is the rapid creation and utilization of the smartphone, which will virtually replace the traditional cell phone over the next 10 years. “Smartphones should start replacing traditional cell phones in the future,” said industry analyst Derek Kerton. “Manufacturers and service providers recognize that voice revenues are declining, and the amount you can charge is very competitive.”

In view of this prognostication, the two-way radio will maintain its popularity in a number of markets as the wireless device of choice due to its unique value proposition. The ability to have immediate communication within a group—while maintaining a low-cost infrastructure—is too attractive for many industries to give up. The rest, however, will likely embrace smartphones.

Kerton notes that, while the driver of smartphone adoption in the past was the ability to retrieve e-mail, the future impetus for the adoption of such devices will be applications. “The applications of the future will become very vertical,” he said. “For example, a carpenter doesn’t need e-mail as much as the ability to order lumber. Similarly, a taxi driver needs a map to get to those hard-to-find locations.”

This trend toward specificity will apply to overall wireless solutions as well. There are many examples where the foundation for this trend is being laid.

For instance, take the video surveillance project that was recently deployed by the Dallas Police Department. This project was customized to satisfy the specifications of the department, which needed high-quality footage and a monitoring system that would allow it to respond in a prompt fashion. By meeting those specific needs, solution integrator BearCom received an additional order in late 2008 to substantially expand the department’s footprint, making it one of the largest such networks in the country.

Two other examples of this emerging trend include QuickSite—a portable radio tower that can be deployed to ensure connectivity in the event of a disaster—and automated license plate recognition technology—which enables a single officer to automatically read and check thousands of license plates against numerous databases during a standard patrol shift.

Adding fuel to the future development of wireless technology solutions are developments like those recently reported by MIT’s Technology Review.

This venerable institution quoted some radio researchers and engineers, who in the fall of 2008 suggested that high-bandwidth, far-reaching wireless Internet signals will soon blanket the nation. It pointed specifically to a decision by the FCC that megahertz frequency bands that were previously allocated to television broadcasters will be opened to other devices.

“The frequency liberation means that future wireless gadgets will be able to blast tens of megabits per second of data over hundreds of kilometers,” wrote the author of the article. “They will cover previously unreachable parts of the country with Internet signals, enable faster Web browsing on mobile devices, and even make in-car Internet and car-to-car wireless communication more realistic. The FCC announcement essentially lets wireless take advantage of unused frequencies in between channels used by broadcast television, the so-called white spaces. ‘The announcement that the FCC will allow white-space devices has a lot of people feeling like this is a beginning of a wireless revolution,’ said Anant Sahai, a professor of electrical engineering and computer science at the University of California, Berkeley.”

Technology Review went on to credit Motorola as being “one of the first companies to have developed a white-space radio device that meets the basic requirements of the FCC. The device is smart enough to find and operate on free frequencies in its vicinity while controlling the strength of signals to keep them from interfering with those from other wireless devices that are using nearby frequencies.”

UC Berkeley’s Sahai predicted that economies of scale will lead to affordable devices within the next couple of years. That would appear to be on a parallel course with some

Continues on page 40...
of Motorola’s other plans involving smartphones. Motorola CEO Greg Brown confirmed as much last year when he said, “We expect to have more smartphones and QWERTY devices...” and “...strengthen the overall product portfolio in different geographical and tiers to make the overall spectrum of products more robust.”

Increased Demand for Mobility Motorola almost certainly embraced this future with its 2007 purchase of Good Technology, a provider of mobility platforms that enhance the management of e-mail from mobile devices. Acting on that purchase, Motorola recently introduced the Good Mobility Suite 6.0, which extends mobile VPN connectivity to all TCP-based applications behind corporate firewalls and beefs up its mobility management capabilities. Among other things, the suite gives smartphone users secure access to internal applications.

Motorola’s progress on this front endorses a necessary requirement trend, according to industry analyst Jack Gold, President of J. Gold Associates, LLC. “We expect the majority of enterprise users to have access to corporate applications from their mobile devices within the next two to three years,” said Gold. “However, one of the limiting factors to providing such capability has been the inability to secure the connection and manage it seamlessly across multiple networks as users cross network boundaries. End user requirements for managed security has led to expanding the footprint of enterprise applications to more mobile devices.”

Creating technology that can utilize such applications is half the battle. The remaining piece is to entice application developers into the marketplace, which is something the industry has been working hard to do. Microsoft claims to have 1,462 applications built for Windows Mobile by independent software vendors (ISVs). In addition, RIM decided to open up a development environment for ISVs back in 1999 because it saw “a line of business applications as the next wave,” said Kitty Weldon, Principal Analyst for Enterprise Mobility at Current Analysis.

While there may be a convergence of application developers, use of the word convergence, or the meshing of resources, also applies in other areas when discussing the future of wireless technology. IDC’s Sean Ryan said recently that “converged mobile devices will become highly integrated with enterprise voice and data networks. This will necessitate the greater insegregation from IT departments but will bring productivity gains to the subset of mobile workers within the enterprise who conduct business out of the office and require access to corporate data.” Many organizations will also likely grant limited access to corporate e-mail on approved device platforms in situations where employees purchase their own converged mobile devices.

And if recent statistics are any indication, there will be continued growth in the smartphone sector. OS-based phones will grow at more than a 30 percent compound annual rate for the next five years, taking an increasing share of the overall phone market that is otherwise growing in single digits, reported industry researcher In-Stat. In fact, the unit volume of smartphones already exceeds the unit sales for notebook computers on a global basis.

In-Stat added that users are experiencing significant value from their smartphones. As a result, they are downloading more applications, generating more revenue as measured by average revenue per user (ARPU) for wireless carriers. “Because of the value users are finding, organizations are also taking ownership of smartphones and data applications used for business purposes,” said Bill Hughes, In-Stat analyst. “Rather than having overcomplicated reimbursement plans, more organizations are finding it to be more expedient and economical to treat wireless voice and data services as a business expense when they are using smartphones.”

Dr. Rami Khasawneh, Dean and Professor of Lewis College of Business and Graduate School of Management, echoes that sentiment. “The impact of wireless technology on the business community is, I don’t think there is an area that there will be others who will see a line of business applications as the next wave,” said Kitty Weldon, Principal Analyst for Enterprise Mobility at Current Analysis.

The research also revealed that:

• All smartphone operating systems (other than the Palm OS) will grow at double digits over the next five years.

• A smartphone user who travels twice a year will save the ARPU of a typical feature phone user.

• Smartphone use will grow mostly from use as a notebook replacement and as a tool to help manufacturers develop feature phones.

The latter is an area that Kerton finds particularly interesting. “They are making notebooks smaller and smaller. They are becoming more like a notebook, in their cars, on the train, etc. As a result, we should see increased productivity gains for the mobile worker, increasing sales, and the Winner is...”

And who will be the winner? “The real opportunity is in smartphones,” said Kerton. “Studies show that if someone has a smartphone that is easy to use, they will use it, and they will use it to do more products and services. What’s more, I think you’ll continue to see a decline in the cost of such devices, encouraging their adoption.”

While smartphones work for both businesses, which should contribute to increasing productivity gains for the mobile worker, increasing sales, and the Winner is...”

And while the smartphone may be one of the most popular wireless technology solutions, other solutions are on the horizon, according to Steve Largent, President and CEO of the industry’s wireless association—CTIA. At a recent conference entitled “The Wireless World: Untherted Opportunities,” Largent told the audience that all wireless technology companies have one thing in common: “They share a passion for how wireless is impacting customers. Wireless gives every one of us instant access to any information we could possibly want,” Largent said. “And it’s changing and evolving every day. The only constant in wireless is, in fact, change. We are a competitive industry, and we have no choice but to say ‘OK’ to customers and competitors alike. When someone asks for something, we have to provide it.”

Smartphones vs. EV-DO

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These cards not only provide a connection to the Internet, but they also facilitate increased use of applications, such as high-performance push-to-talk service and multi-user video conferencing. Sara Harris, an industry analyst at Strategy Analytics, noted recently that “EV-DO will be more than acceptable for most users, giving them the speed and flexibility they need to use their fixed Internet applications on the move.”
Q&A:  
Ask Wireless Woman

Question:
I’ve heard that video surveillance networks are being used by federal, state, and local governments to prevent criminal activity and aid in the prosecution of criminals when such activity occurs. Are there other applications? Also, what factors are influencing their future adoption?

Answer:
Yes, it seems like a new application for video surveillance emerges with each passing week. Customer interest is being driven by rapid improvements in technology and hardware—especially Sony IP cameras, which have become the standard for such networks.

In addition to the government sector, here are just a few of the industries that are embracing this wireless technology:

- **Education**: Providing a safe, secure environment for students and staff. Video surveillance networks increase student safety, primarily through their effectiveness as a deterrent.
- **Transportation**: Video surveillance networks have been used very effectively in airports, train stations, bus stops, and taxi stands. Such networks also have been used to monitor traffic, which in turn helps emergency services staff view a situation before arriving at the scene.
- **Retail**: Everything from small family-owned stores to large nationwide retail chains rely on video surveillance networks for additional security.
- **Banking and Finance**: Using a video surveillance network, financial institutions can easily and effectively manage multiple locations. It is also beneficial for viewing areas such as ATMs and drive-up windows, given the high-quality video of an incident that Sony IP cameras can provide.
- **Manufacturing/Industrial**: Quality control, safety, and production efficiency are common challenges faced by this industry. Video surveillance networks are used to focus on critical points of the production line to help increase productivity, avoid problems, and pinpoint potential trouble spots before an incident occurs. Addressing issues proactively aids in preventing injury and avoiding additional costs.
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To answer your second question, one of the primary drivers in the adoption of such networks is the rapid improvement in technology, such as in Sony’s IPELA cameras. Police Captain William Zbacnik of the city of Pittsburg, California, recently elaborated on the use of such cameras, noting that his department has captured more than 100 incidents with Sony cameras “from vandalism to stranger kidnappings.” They allow us to verify timelines for events, a key element in investigations. I’ve been in police work for 28 years and know the issues of working with eyewitnesses and police reports. With Sony IPELA cameras, we’re able to accurately document incidents in ways not possible before.

For Zbacnik, the advances incorporated into the newer Sony cameras—like the RX550’s--enhance imaging, especially in low-light situations. Also, the viewing angles are expanded and bandwidth use optimized. “We were so impressed by the Sony RX550’s ability to deliver quality images over the wireless network that we could have hardly hoped for better.” The arrival of the RX550 has really been a significant improvement, and we are very pleased with how quickly Sony is continuing to advance the technology.

Question:
I hear a lot about how the use of wireless technology can benefit the public and even save lives. But is there really any evidence of this?

Answer:
Definitely. A good example is automated license plate recognition (ALPR), which is a product of PIPS Technology, a Federal Signal company. There are dozens of examples of how ALPR is being utilized in the field to ensure public safety. One of the most striking involves the Los Angeles County Sheriff’s Department (LASD). PIPS Technology began deploying this wireless technology for the LASD in May 2007. Since the initial deployment of the system, the department has scanned about 15 million license plates, resulting in about 18,000 “hits,” or vehicles of interest. Based on these results, the LASD has significantly expanded use of the system, making it a staple of the Advanced Surveillance and Protection (ASAP) unit.

The investment seems to have paid off. The ALPR network recently assisted LASD in solving two key cases. A serial rapist in south Los Angeles approached female pedestrians and forced them into his vehicle at gunpoint. One of the victims was able to obtain a license plate number and provided police with a description of the vehicle. However, the address for the registered owner of the vehicle was no longer correct. With the help of PIPS’ ALPR Back Office System Software (BOSS), investigators pinpointed prior vehicle sightings, which led them to the suspect’s workplace. The employer provided a cell phone number for the suspect, enabling police to locate him and make an arrest.

In another case, a shooting left one victim dead. Witnesses provided police with a partial license plate and vehicle description. A query of this data in the BOSS system provided investigators with a full license plate number, which helped them to identify the suspect. Surveillance was established at the suspect’s address, and he was in custody less than 24 hours after the shooting. He was also wanted in connection with three other homicides. Sgt. John Gaw of the Department’s ASAP unit has gone public with praise for the system, noting that it gives the unit “a second set of eyes for our officers in the field and has enabled them to identify vehicles wanted...
in connection with gang activities, homicides, assaults, robberies, narcotics, and much more. In many of these cases, our deputies have reported that they would not have noticed these vehicles were it not for the ALPR network. The data-sharing feature of PIPS’ BOSS system enables the department to share data with other local law enforcement agencies in southern California, impacting millions of people in ways that were unimaginable just a few years ago.

Question: What is narrowbanding, and which companies are at the forefront of leveraging this capability?

Answer: Narrowbanding is a technical term that describes, in essence, the act of dividing the radio spectrum on which many of us operate. The rationale behind narrowbanding is to create more frequency capacity—in effect, multiplying behind narrowbanding is to create more dividing the radio spectrum on which companies are at the forefront of leveraging this capability?

Question: I've been very pleased with the Motorola Enterprise Mobility batteries I have been using in my handheld computers and scanners. What are any best practices I should be employing to maintain their productivity and extend their life?

Answer: Don't underestimate the importance of proper battery care when it comes to reaping the full benefits of any wireless device. Depleted batteries are often a hidden but common cause of product failure at customer sites. What can appear to be a malfunctioning product may in fact be poor performance caused by a weak or worn-down battery. Also, products are frequently sent in for unneeded repair without first checking the battery's condition. This can result in lost productivity and decreased satisfaction.

Batteries are a consumable item, and their age and condition can significantly impact the operation of the products they power. To increase your satisfaction and improve product performance, Motorola Enterprise Mobility Services recommends that a number of simple, straightforward practices be adopted throughout your organization to help you manage and maintain optimal battery usage.

Be sure to discontinue using any outdated batteries, as older batteries may not hold a charge as well as newer ones. You can check the battery's date of manufacture, which typically appears on the face of a battery. Using an outdated battery can lead to erratic operation, a shorter lifespan, and impaired product performance. In short, discontinue usage when a battery is more than two years old, has been utilized for 18 months in a typical retail application, or used for 12 months in a two or three-shift industrial or warehouse application.

As a precaution, you should remove any non-Motorola or non-Symbol-approved batteries from your device. Motorola Enterprise Mobility batteries are designed to work with all of the features of your wireless device and will help maximize its performance.

When prompted, be sure and change the battery right away. If you use the device wireless battery has been completely drained, it may lock up and appear to be “dead.”

You should always maintain two or three spare batteries per device. Keeping batteries from your device. Motorola Enterprise Mobility Services recommends that a number of simple, straightforward practices be adopted throughout your organization to help you manage and maintain optimal battery usage.

It's also a good idea to assign a specific terminal to each user. Locating charging stations throughout the floor is a common practice. However, as a battery becomes discharged, the user may pick up a battery from another station—though this practice is discouraged—because it may only last for as little as 15 minutes. Designating a single person to be responsible for a central location can help reduce device failure and confusion. In other words, tie the batteries to the unit whenever it's possible to do so.

It's important to keep battery contact surfaces clean. Dirty contact points are a main source of charging problems, and regular cleaning is required for optimal performance. To clean dirt and residues, you should gently clean the contacts soft cloth. Pure alcohol may be used to remove grease and other contaminants.

As a reminder, always check the battery first before sending your unit in for repair. Just remember that if you want to maximize the full benefits from your Motorola and Symbol batteries, be sure and give them the proper care.

Question: I've got 50 people stranded on a rooftop. I've called for help, but DSM-TAC can't hear me over the wind noise.

Later, Wireless Woman

I've got 50 people stranded on a rooftop! I've called for help, but DSM-TAC can't hear me over the wind noise!

I'll send a text message on my Motorola MOTOTRBO Digital Two-Way Radio! Tell them this helps on the way.

Throughout the storm, wireless technology from Beacom helps to keep people safe.

Do you folks need a hand?

LATER.

Wireless Man

Sure, we've got reports of massive destruction all across the Gulf Coast!

That was some storm.

Rescue and cleanup are going smoothly but I'm sure we can find something for you to do!

The Myrtheon J9-G Interoperable System from Beacom provides cross-communication between all emergency and government services, allowing coordination of relief and rescue efforts.

But...thanks to a great team of first responders and wireless technology from Beacom and its partners, we were prepared, and hundreds of lives were saved!
The wireless technology industry has never been more relevant than it is today. This is not surprising, given the extraordinary progress the industry has experienced in delivering cost efficiencies to users and facilitators.

Wireless technology has enabled American companies to more effectively compete on the global stage. And it doesn’t end there. It has given hard-charging employees—executives, salespeople, and managers—the opportunity to get their personal lives back by enabling them to work when it is convenient to them, whether during traditional work hours or away from the office.

As President and CEO of the Enterprise Wireless Alliance, my focus and that of my organization is to assist enterprise business users, dealers, service providers, and technology manufacturers in the deployment of wireless communications solutions that promote corporate productivity and business results in the enterprise wireless space.

Given the rapid advances in wireless technology, it is easy to see why I am excited about the future of the EWA, its members, and the corporate community as a whole.

The companies responsible for advances in wireless technology will maintain their momentum, creating solutions that offer both more functionality and affordability. This is just the approach we need right now, given today’s difficult economic environment.

We think that Motorola, Icom, Sprint Nextel, RIM, BearCom, and other wireless industry leaders are effectively employing this strategy, making a compelling case to business users why they should either acquire the latest solution or upgrade from an existing one. This will especially be true in the two-way radio segment, which typically retains its attractiveness to corporate users in tough economic times.

And finally, a word about spectrum. It is our belief that the FCC will see fit to release more spectrum in 2009 and beyond, creating virtually unlimited opportunities for technology and communications companies to create even more attractive wireless solutions to carry the industry well into the next decade.

The well-known phrase “it is always darkest before the dawn” has never been more true than it is right now in the wireless technology industry.  

MARK CROSBY
President & CEO
Enterprise Wireless Alliance

“A Smart Value
Icom’s fused VHF public safety radio. The result one small, super-durable package called Icom’s new F50V. Now carry one device instead of two, all for about the same price as for just one of the others.

Loud, Crisp Audio
A “BT1” amplifier provides clear, low noise communications that cut through most any in-the-field noise.

Compact Size
Compact and lightweight, with a 10-hour*1700 mAh Li-ion battery. Go all day without a recharge!

Auto Call Recording & On-Demand Voice Record
As long as the F50V is within system range, you won’t miss any calls – even if you’re away from the radio. When a pre-programmed 2-tone or 5-tone code or a SelCall (MDC mode only) is received, the incoming call voice recorder automatically starts recording. Your messages will be waiting for you! Additionally, up to 8 minutes of manual voice recording is also available.

Lone Worker Setting
Stay safe when working alone! Set the F50V so if the emergency button is not pushed within a pre-programmed time, an emergency signal automatically transmits back to base.

Submersible
Built to IP-67 standards, the F50V is not just waterproof, it’s submer-ready! MIL-STD rugged construction for long life and to meet those tough bid specs, too.

IC-F50V
A Smart Fusion of Radio & Paging
Try one and see for yourself. Contact BearCom today.

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*Output power: 3W/1W, 3W/0.5W, 3W/0.1W.
Nothing keeps your employees running at full speed better than a digital two-way radio system from Motorola. The durable MOTOTRBO system delivers enhanced voice quality and a 40% longer battery life, to ensure clearer communication across shifts, even in the loudest parts of your coverage area. And with no per-call or monthly fees, MOTOTRBO is a great fit for your staff as well as your bottom line. It’s just another way Motorola puts seamless mobility in the palm of your hand. HELLOMOTO™

To learn more about how Motorola MOTOTRBO digital two-way radios can help keep you communicating clearly, call BearCom at 800.527.1670 or visit www.BearCom.com/products.