

RCRWireless

INTELLIGENCE ON ALL THINGS WIRELESS

BONUS SUPPLIER GUIDE

23 WIRELESS INFRASTRUCTURE COMPANIES

SERVICE, TRAINING, STAFFING,
HARDWARE, COMPONENT AND
ACCESSORY COMPANIES

DAS and Small Cell Update Fall 2015

By Martha DeGrasse

OCTOBER 2015

Report Sponsors:



ixia

COMMSCOPE®



Introduction

Distributed antenna systems and small cells hold tremendous promise and tremendous uncertainty for the U.S. wireless industry. Mobile operators know they need to add capacity to their networks as LTE unleashes demand for mobile data, especially mobile video. But operators also need to stay profitable, and the cost of DAS and small cells has kept many potential projects in the planning phase.

The good news for operators is that businesses and municipalities are learning that they need to be proactive if they want to offer reliable access to high-speed mobile data. In-building deployments are finding new sources of financing from the companies that will use the services, and outdoor deployments are taking place in an improved regulatory environment.

This report will review trends in network densification both indoors and outdoors. Key focus areas include cost control through new network architectures and intelligent optimization, small cells as a service, and new business models for small cells and DAS.

Definitions

A **distributed antenna system** (DAS) consists of antennas, base stations, and a transport medium to connect them, typically fiber or cable. A DAS remote unit may be an antenna/amplifier or it may be a remote radio head that includes digital processing capabilities.

Passive distributed antenna systems

are usually antennas linked by cable to a base station or head-end. Active DAS systems get an extra boost from fiber, antenna amplifiers, remote access hubs and expansion hubs. Passive DAS and cellular signal boosters are good solutions for many buildings, but larger venues like stadiums or hotels will usually need an active DAS.

Small cells is a term that is used broadly in the wireless industry to refer to a variety of solutions. According to The Small Cell Forum, 'small cells' is an umbrella term for operator-controlled, low-powered radio access nodes, including those that operate in licensed spectrum and unlicensed carrier-grade Wi-Fi. They typically have a range from 10 meters to several hundred meters.

The words "small cell" may be used to describe equipment that includes a baseband unit and functions as a miniature version of a cell tower, as well as equipment that is simply used to access the radio network. DAS remotes may at times be called small cells, and indoor access points that connect to controllers via fiber or cable may also be called small cells at times.

"Everyone's got such a different definition of what a small cell is," said analyst Earl Lum of EJM Wireless Research. "I would consider a small cell to have both the modem and the radio integrated into one unit, so it's self-sufficient and all it needs is backhaul."

Small cells are starting to look more like distributed antenna systems as operators



"I would consider a small cell to have both the modem and the radio integrated into one unit, so it's self-sufficient and all it needs is backhaul."

Earl Lum, EJM Wireless Research

and vendors explore architectures that separate the baseband equipment from the access equipment in order to save space and money. By centralizing the baseband equipment and connecting it to the small cells via fiber or cable, operators can deploy smaller, less expensive access nodes.

The word "small" is also a relative term, as small cells come in several sizes. Femtocells are small cells that are used in homes or small businesses. They usually have a range of less than 100 meters. Picocells, or metrocells, have a range of up to several hundred meters, and microcells can cover more than a thousand meters.



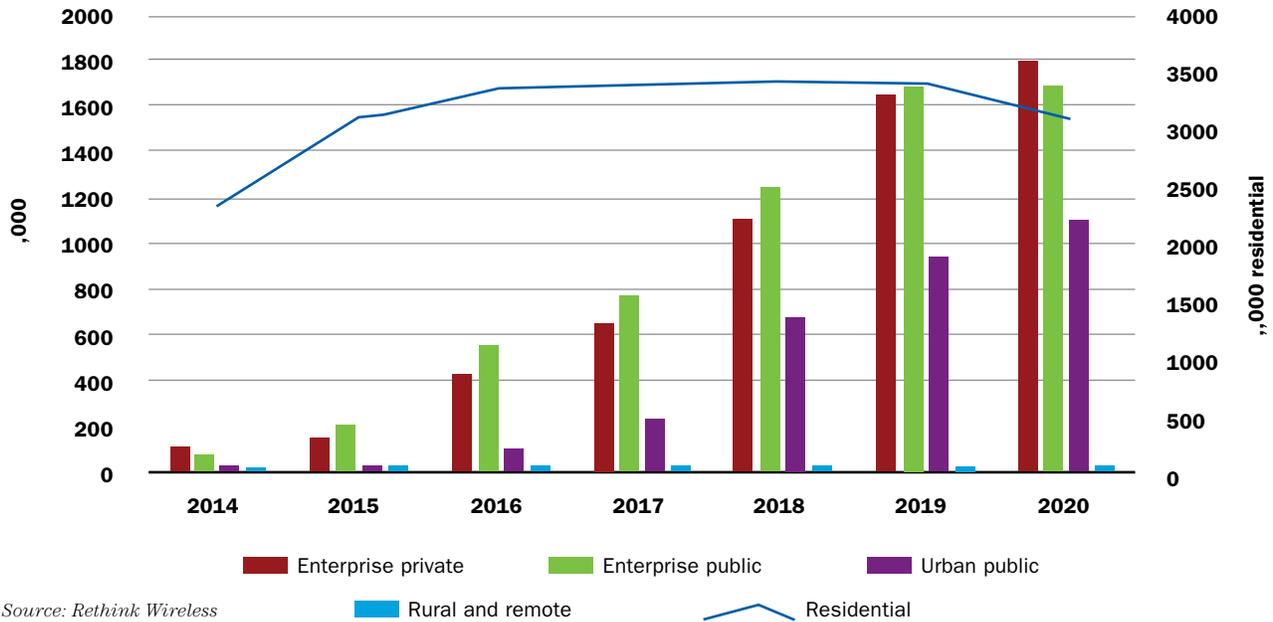
The End-to-End Network Performance Experts

Visit
Accedian.com/perform
to learn more



ACCEDIAN
Experience • Performance

New deployments of small cells, by environment



Source: Rethink Wireless

According to the analysts at Rethink Wireless, purchases of residential small cells will peak within the next couple of years. Urban small cells are expected to grow exponentially, and enterprise small cells are forecast to become the biggest part of the market. The vast majority of enterprise small cells are indoors.

Indoor small cells

Most mobile data usage occurs indoors, and most of it happens on Wi-Fi. Cell service providers can't support all the activity that takes place on smartphones and tablets, but they want to keep as much of the traffic as they can handle. To do that, they need to provide reliable indoor

coverage, even in crowded buildings that are not near a tower. The larger buildings may be candidates for an in-building DAS, but the hundreds of thousands of smaller buildings that operators want to serve are candidates for indoor small cells.

"Only about 2% of enterprise buildings actually have mobility in the building," said Philip Sorrells, VP of strategic marketing at CommScope.

But a much higher percentage of the buildings that carriers will pay to cover have already gotten a system. The addressable market for carrier-funded indoor small cells is limited. Bringing better connectivity to the millions of people in office buildings who would love to see more bars on their



"Only about 2% of enterprise buildings actually have mobility in the building"

Philip Sorrells, CommScope

phones will require carriers to convert corporate customers into partners in the small cell investment process. Building owners and their enterprise tenants are getting a crash course in cellular, and one of the lessons they are learning is that technology is still evolving.

“They are very hesitant to invest in something that they may have to rip and replace in two years,” said Sorrells. “So the operators are approaching them in ... a tentative way ... trying to help the building owners understand the value of the investment and to bring them in at entry points that make sense for that size of building.” Sorrells expects to see significant traction in the enterprise segment during 2016.

Driving down the cost of indoor small cells

Mobile operators and enterprises can reduce the cost of indoor small cell deployments by streamlining the equipment and the installation processes, and by properly testing small cells to avoid high maintenance costs.

Vendors are working hard to deliver simple, scalable solutions that can be deployed by IT technicians who may have limited radio frequency experience. Centralizing control of the small cells is one way to keep the cost of each individual access point down. Standard Ethernet cable is used to connect indoor small cells to a central controller in the solutions developed by SpiderCloud Wireless and by Airvana, which is in the process of being acquired by CommScope.

Ericsson, Huawei and ZTE have all developed indoor small cells that function as antennas and amplifiers but do not include baseband processors. LAN cabling is typically used to connect the small cells to a remote base station.

Alcatel-Lucent, Ericsson and Nokia all offer small cells that are compatible with their macro base station equipment and include baseband processing units. These solutions require less interoperability testing than those from small cell specialists like SpiderCloud, Airvana, ip.access and Airspan, but they are also less flexible because operators can only deploy them with macro equipment from the same vendor.

Small cells as a service

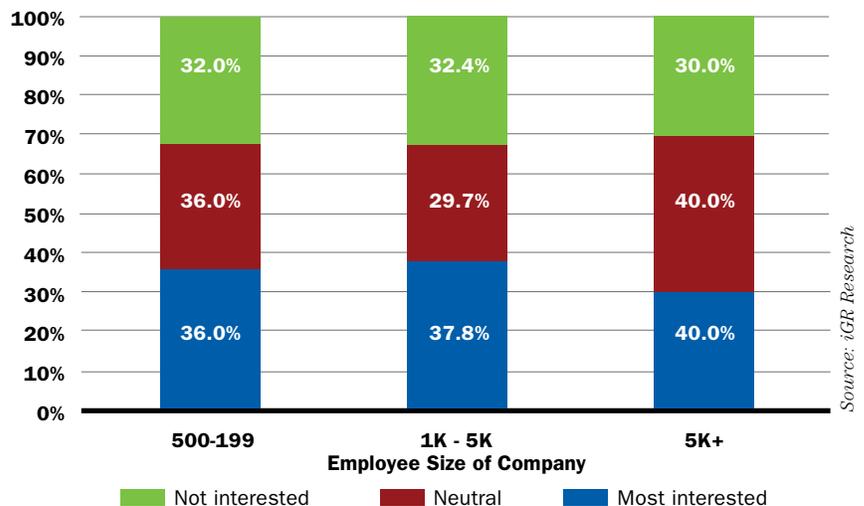
Small cells as a service is a term that can have several different meanings. Ericsson uses the term to refer to a small cell

network that can be shared by multiple operators and can integrate carrier-grade Wi-Fi. Other small cell vendors may use the term to describe a carrier offering that companies could pay for as an operating expense. Or, the word “service” can describe offerings like unified communications and mobile device management that are enabled by a small cell network.

iGR Research founder Iain Gillott said that many IT managers are uneasy with the concept of small cells that are remotely controlled by a mobile operator.

“IT managers do not want to lose direct control of the small cell environment,” said Gillott. “To an IT manager, the phrase ‘managed solution’ means that they retain some control and have a secure environment, while benefiting from a solution that reduces IT overhead and capital expense.”

Interest in enterprise small cell solutions as a managed service by employee size of firm



*I keep the devil
out of the
details.*

At NB+C, we are truly obsessed with keeping promises. We're consumed by getting every little detail absolutely right, every step of the way. We are in this business to make things happen, totally committed to the needs of our clients.

NB+CTM

TOTALLY COMMITTED.

SITE DEVELOPMENT + ENGINEERING + CONSTRUCTION

Mary Devlin, Site Acquisition Specialist, Site Development



“IT managers do not want to lose direct control of the small cell environment.”

Iain Gillott, iGR Research



“Virtualization for small cells, as defined for macro, doesn’t really make sense economically.”

Pierre Lynch, Ixia.



“We’ve found clear benefits and drivers towards centralization and virtualization of the small cell network.”

Alan Law, Chairman, Small Cell Forum.

Virtualization

Small cell vendors are exploring network function virtualization (NFV) as a way to potentially bring down the cost of small cells, but this movement is in its infancy.

“Virtualization for small cells, as defined for macro, doesn’t really make sense economically,” explained Pierre Lynch, lead technologist of Ixia’s product management team. Currently, virtualization of the radio access network is defined by ETSI, the European Telecommunications Standards Institute.

“Their definition requires very high-throughput fronthaul to be able to get accomplished because of where they selected to do the virtualization,” said Lynch. “For a macro network that makes economic sense, but [not] for a small cell network.”

“It is typical to link the data center to the radio unit with fiber, for instance, but that’s expensive and so folks are looking at other ways of partitioning the baseband,” explained analyst Nick Marshall of ABI Research. “There are multiple approaches. ... The Small Cell Forum recently published its work on virtualization of the RAN and came up with multiple partitioning approaches for the baseband which would be suitable for small cells.”

“We’ve found clear benefits and drivers towards centralization and virtualization of the small cell network,” said Small Cell Forum Chairman Alan Law. “These facilitate the scalability of small cells and enable functions to be moved around depending on loading conditions or availability of compute and transport resources.”

Testing techniques

Just as virtualization techniques that make sense for the macro network may not work for small cells, testing techniques also need to be adjusted for small cell environments.

“You want to have the same level of performance as a macro cell, but using the tools that would normally be deployed ... for a macro cell to monitor and assure its performance are cost-prohibitive,” said Scott Sumner, VP of solutions development

and marketing Accedian Networks. “So the size, the power of your testing solutions, the operational expense, has to be sized right.” Sumner said that virtualized versions of the probes and field tests used to test macro sites can be appropriate for small cells.

“When you look at the evolution towards SDN, towards self-organizing networks, towards the dynamic pathing of traffic as networks move toward more full fabric instead of RAN and core, this optimization that will be done automatically in many cases needs to have a feed of real-time metrics coming in from all parts of the network so that you can [not only] detect issues but also fix them right away,” he said.

Sumner said that optimizing small cells can be more challenging than optimizing macro sites because often capacity can shift within a small cell network to meet user demand, and because handoffs happen very quickly. The complexity will increase significantly if operators start to deploy LTE small cells in the 5 GHz spectrum that is used for Wi-Fi.

Wi-Fi and indoor small cells

Nokia, Alcatel-Lucent and Ericsson all offer indoor small cells that include Wi-Fi connectivity chipsets. These vendors would like to see carriers bring their small cells to customers as all-in-one solutions, but they are learning that sometimes it is Wi-Fi, not cellular, that enterprises care about the most. Therefore, vendors are partnering with Wi-Fi access point makers.



“This optimization that will be done automatically in many cases needs to have a feed of real-time metrics coming in from all parts of the network.”

Scott Sumner, Accedian Networks

Ericsson recently announced an alliance with HP, which owns Wi-Fi access point maker Aruba Networks. Ericsson plans to use Aruba’s Wi-Fi technology in future versions of its indoor small cell, and it will sell Aruba’s Wi-Fi networking gear along with its small cell portfolio. Likewise, enterprises that are buying servers or Wi-Fi access points from HP will be able to also purchase Ericsson’s small cells.

Other vendors are also partnering with Wi-Fi access point makers who can add

small cells to their portfolio of solutions. SpiderCloud Wireless has partnered with Cisco and Alcatel-Lucent has partnered with Ruckus Wireless.

The Alcatel-Lucent/Ruckus partnership includes significant technical collaboration as well as co-marketing. The companies are using LTE Wi-Fi link aggregation (LWA), which aggregates both Wi-Fi and cellular on the downlink and uses cellular for the uplink. Alcatel-Lucent said that LWA can more than double download speeds relative to standalone network capabilities.

LWA is seen as a competitive technology to LAA or license-assisted access, which uses the 5 GHz spectrum for LTE transmissions. The 5 GHz spectrum is currently used for Wi-Fi, so Wi-Fi equipment vendors are concerned about interference from cell signals that could result from carrier deployments of LAA.

Indoor DAS

Some of us have had the experience of sitting at a ball game staring at a phone with no bars, while our friends chatted away happily on their phones. In highly congested areas, each carrier network may perform differently, and often the difference is a DAS.

Indoor DAS is a tried and true solution for airports, hotels and sports arenas. But even though operators, equipment makers and installers have worked on hundreds of distributed antenna systems, each DAS is a bespoke solution.

“Each build is unique and each building

EXTENT™ P-GTx2003-D2-XR

20°/60° Narrow Beam Antenna for High Capacity Venues

» VSWR <1.5:1 » PIM Certified <-153dBc

The new EXTENT™ P-GTx2003-D2-XR antenna is a broadband, directional, single-sector MIMO antenna designed for use in stadiums, campuses or similar venues that have very high capacity needs for wireless connectivity met by distributed antenna systems. Galtronics engineers have designed this antenna with a precise, consistent footprint, low interference and very small physical dimensions. The radome is specifically engineered to be unobtrusive in a large-venue environment.

The EXTENT™ P-GTx2003-D2-XR completes Galtronics' advanced antenna portfolio for large venues, which also includes its EXTENT™ 30°/60°, 30°/30° degrees, and 60°/60° degrees antennas and provides a broad range of options for flexible design to meet high-capacity venues network needs. This enables RF engineers to design optimized DAS installations with high sectorization to support modern wireless networks.

” *“With this 20°/60° high capacity ‘Galtronics technology inside’ antenna product we complete our high capacity venue product portfolio for DAS market.”*

The EXTENT™ P-GTx2003-D2-XR 20°/60° MIMO features:

- » MIMO support across the frequency range of 698 MHz-2700 MHz
- » Low VSWR of <1.5:1
- » Height: 13.3" (340 mm)
- » Antenna depth: 5.6" (143 mm)
- » Antenna width: 13.3" (340 mm)
- » PIM certification guaranteed: < -153 dBc @ 2×43 dbm,

has its own particular characteristics,” said Ray Hild, Galtronics’ VP for infrastructure in North America. “One size does not fit all.”

A single operator DAS will boost network performance for that service provider, while a multi-operator or neutral host DAS will improve service for several service providers, although the first provider on the DAS will often have the best service.

According to ABI Research, CommScope is the world’s leading vendor of DAS equipment. The company recently solidified its leading position with the purchase of TE Connectivity’s wireless



“Each build is unique and each building has its own particular characteristics.”

Ray Hild, Galtronics

business. CommScope expects capacity adds to be the biggest part of the its DAS business in the year ahead.

“What will be happening in 2016 is adding more capacity,” said CommScope’s Philip Sorrells. “Stadiums and airports have a very solid foundation now.” Demand for new indoor DAS systems has declined during the past year, as carriers have focused their capital expenditures elsewhere.

“The slowdown in DAS deployments in the US over the last year reflects the broader slowdown in the wireless industry over that time,” said CommScope’s Matt Melester, head of the company’s DAS/small cells team. “DAS remains a very attractive solution for high-capacity venues where multi-operator, multi-technology support is needed.”

“The last 12 months have seen a significant recession in the US market, starting in the 4th quarter of 2014,” said Mike O’Day, VP wireless networks at Corning. “A lot of new DAS builds were either put on hold or funding that was originally planned to support those new builds was no longer available. ... Over the last 12 months most of the spending in the U.S. DAS market specifically has been for upgrades.”

O’Day said that carriers were pre-occupied with other investment priorities, and that they are also taking a second look at the traditional DAS

funding models. Normally the carrier pays for the DAS and perhaps leases space to subsequent carriers who join the DAS, or leases space on the DAS from a neutral host provider who has taken the investment risk. Now carriers are looking for venues to help shoulder the cost of some potential DAS builds or upgrades.

“The venue will play the lead role in funding and owning the network. That means the venue owner must be able to negotiate with the carriers to plug into the network,” said Mike Collado, VP of marketing at SOLiD Technologies.



“Over the last 12 months most of the spending in the U.S. DAS market specifically has been for upgrades.”

Mike O’Day, Corning

“Solutions within the ‘middleprise’ need to empower the venue to help themselves. This potentially looks like a carrier-approved / carrier-certified radio that the venue can purchase, but that the carrier needs to turn on.”

Collado sees this next tier of enterprise customers as a major opportunity for DAS vendors now that the largest venues already have systems. But these customers look at cellular connectivity as just one piece in the IT puzzle.

“Ideally, the infrastructure is converged, where a single backbone serves multiple services including commercial cellular, public-safety and IP (Wi-Fi),” said Collado. “This approach enables the infrastructure to stay in place while the end pieces get swapped out to avoid expensive rip and replace.”

DAS vendors and operators agree that building owners and their enterprise tenants will need to help finance DAS for many of the venues that want them. But that does not mean that carriers and neutral host providers will stop building DAS.

“A variety of DAS funding models exist, and we expect that to continue,” said CommScope’s Mike Melester. “Of course, each application is different and can dictate the use of different solutions. That is why CommScope continues to develop and invest in a variety of solutions to meet customer needs—whether it’s sector-splitting antennas, DAS or other



“The venue will play the lead role in funding and owning the network.”

Mike Collado, SOLiD Technologies

small cell solutions for adding capacity.”

CommScope and Corning are examples of DAS vendors that are adapting to the changing demand for in-building solutions. CommScope has acquired TE Connectivity’s wireless business, which includes a digital DAS solution that can save money and space by connecting remote nodes directly to Alcatel-Lucent base stations without the need for head-end equipment. CommScope is also buying small cell vendor Airvana, which has developed a small cell solution that is a direct competitor to DAS. Airvana recently outfitted Gross Coliseum in Kansas (shown on the cover of this report)

with a small cell system for Nextech Wireless. The carrier said the system was less than half the cost of a DAS.

Corning has leveraged its background in fiber optics to create an in-building solution that combines fiber backhaul for cellular, Wi-Fi and Ethernet. The company appears well-positioned as enterprises take a more active role in financing in-building cellular systems, because it offers a solution that also supports other enterprise connectivity requirements.

Passive DAS and signal boosters

An active DAS may be beyond reach for many companies, even though they may need more coverage than they can get from a small cell. Analyst Earl Lum of EJL Wireless Research sees a significant opportunity to connect enterprises that are too large to be supported by a small cell but not large enough to attract carrier investment in a DAS.

“You have still a huge opportunity for passive DAS,” he said. “You’re using a repeater source to borrow capacity from a sector of a cell site and just light up the inside of a building and you’re not worried about capacity or anything – you’re just trying to get some signal inside the building. The building owner has to pay for it; it’s not being paid for by the operator. There’s not a signaling source that the building owner has to buy or the operator has to buy, so the cost per square foot is substantially



Optimize your network with a world-class base station antenna.

Meet current capacity demands with a simple future-ready base station antennas (BSAs). CommScope makes it easy with innovative, customizable base station antenna solutions. Each BSA:

- Enhances speed and performance
- Minimizes PIM
- Deploys quickly
- Customization enables you to select the appropriate requirements

Learn more: www.commscope.com

Feature Rich

Our BSAs have the right combination of features you need:

- Remote electrical tilt - for interference mitigation
- MIMO - for high data throughput
- Multi-band/Multi-port - to minimize antenna count
- Internal GPS - for time synchronization

YOUR NETWORK RUNS ON COMMSCOPE™

less than a full-on DAS or even an Ericsson Radio Dot, etc.”

For buildings that are less than 100,000 square feet, cell signal boosters may be effective and cost even less than a passive DAS. Cell signal boosters, also called cellular repeaters, perform three functions. They receive, amplify and then rebroadcast existing cell signals. A cell signal booster will not be a good solution if the signal outside a building is already weak. But if signal deterioration occurs indoors, a cell signal booster can be a very good alternative to a distributed antenna system. Boosters use on-premise power, and they typically cover the bands of all the leading U.S. wireless carriers. In essence, they can perform like a multi-operator passive DAS.

“A signal booster system set up in a building of whatever type is a passive DAS system in itself,” said Curtis Burkhardt, director of sales and marketing at Surecall. “So it’s cable, antennas, amplifier without any other need for a fiber connection to a tower or carrier-specific connectivity of any type, or backhaul. I think a lot of purists out there would say that we don’t qualify as a true passive DAS or as a DAS system at all. But as they say, the proof is in the pudding. ... Installers are deploying literally hundreds of the Force 5s across the country every month now.” The Force 5 is a 5-band amplifier that supports 3G and 4G.

Some cell signal boosters can also be integrated with small cell networks. A small cell could be used to increase



“A signal booster system set up in a building of whatever type is a passive DAS system in itself.”

Curtis Burkhardt, director of sales and marketing at Surecall

capacity and the cell signal booster can provide the increased coverage.

DAS and small cells come together indoors

Indoor small cells are expected to grow more quickly than indoor DAS, as operators and building owners look for less expensive ways to boost indoor capacity.

Analyst Joe Madden of Mobile Experts said that even when operators choose to deploy a DAS, they may use small cells as signaling sources.

“The new trend now is, instead of doing one of those big macro base station cabinets as a signal source, they can use a small cell ... with a low power output

to feed into that DAS system and support one sector of the DAS. So now instead of a big rack, you’ve got a little box.”

Madden said that six or seven small cells might fit into the same space previously occupied by a rack of DAS head-end equipment. He added that the small cells do not need to come from a single vendor, and that this can make it easier for a DAS to support multiple operators.

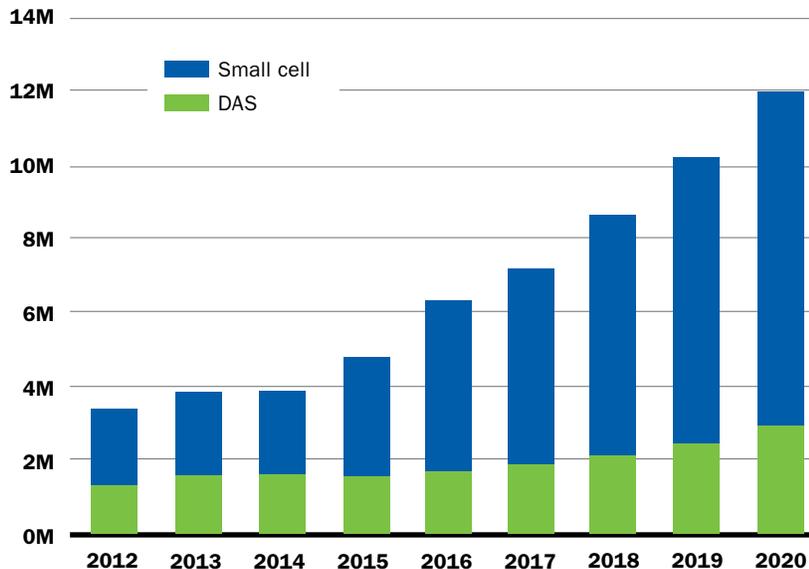
Eliminating large DAS head-ends in high-end buildings is one way to cut the cost of in-building systems. Analyst Earl Lum of EJL Wireless sees remote headend architectures as a convergence of DAS and small cells.

“Today in DAS, the majority of the DAS has to have a head-end room inside the building, which takes up a lot of room and it’s really expensive if the building is in a dense metro area like Manhattan or Chicago downtown or wherever,” he said. “If you can move the head-end room away to some cheaper part of the city and run fiber back to each of the buildings that you want to connect, and have all of the signaling equipment from the operators in that one building, that’s essentially a baseband hotel or a form of C-RAN.” Lum said that Verizon Wireless will use a remote head-end architecture like this to cover the Super Bowl in 2017.

In-building networks and the wireless workforce

As data usage and network deployments move indoors, infrastructure service

In-building radio node shipments



Source: Mobile Experts

providers need new skill sets from the wireless workforce.

“It’s not the guy who’s climbing the towers outside ... it’s more the IT-type competencies basically that are coming into play,” said Greg Rogers, head of Ericsson’s mobile broadband engagement practice. “I need a person who can interconnect the networks, someone who can connect the indoor network to the outdoor network.”

Ericsson hopes to get ahead of the curve by developing skill sets internally, but the company also expects to work with new subcontractors on small cell and DAS deployments.

“What we’ll see is a new set of vendors starting to come in because it is a new set of competencies,” said Rogers. He added that

RF engineers are well-advised to develop an understanding of in-building RF coverage and Wi-Fi, as emerging small cell solutions like Ericsson’s RBS 6402 support both and are expected to work with an enterprise’s existing Wi-Fi plans when deployed.

IT professionals might also be well-advised to learn about RF, but an operator cannot assume that an installer will have RF expertise in-house. Vendors recognize this, and are trying to design solutions with the IT professional in mind.

“What we’re doing is trying to drive toward a platform of solutions that look like and feel like IT-type technologies,” said CommScope’s Philip Sorrells. “An IT technician who is used to doing Wi-Fi or used to setting up computer networks or platforms

– they’ll look at this technology and say, ‘Hey, I get this, and I can install it and run it seamlessly.’” Sorrells added that CommScope’s access points can recognize the required frequency band, meaning that the IT technician does not need to know which access point is for which band.

Outdoor small cells

Outdoor small cells have been slow to take off, and it is clear that not all operators and infrastructure providers agree on the potential here. Within the last year, AT&T has backed off a commitment to deploy 40,000 small cells and SBA Communications has sold its stake in ExteNet Systems, saying that small cells and DAS represent a “lower margin, capital-intensive business” and that the company saw “10, 20, 30 reasons why we simply prefer the macro site business.”

ExteNet was purchased by another tower company, Vertical Bridge, which clearly has a more optimistic view of outdoor small cells and DAS. Tower giants Crown Castle and American Tower also remain bullish on outdoor deployments, and carriers are definitely testing the waters.

Sprint has encouraged vendors with news that it plans to deploy 70,000 strategically located small cells. Verizon is deploying 4,000 small cells in San Francisco. The nation’s largest carrier has earmarked half a billion dollars for small cell deployments this year, and is expected to target Cincinnati, New York and Boston.



Force5

The Ultimate Boost

SureCall's Force5 – A Proven Solution for Large Area Cellular Signal Enhancement

Universities, Hospitals, Hotels and Corporations are just some of the places where SureCall's Force5 has been successfully installed, bringing with it clear and consistent cellular reception. FCC approved for use with all carriers, each Force5 covers up to 25,000 square feet and 100+ simultaneous users, additional systems can be added to cover larger areas. Sold as a kit with booster, antennas and cable.

To learn more please go to surecall.com or call 888.365.6283 to speak with one of our service representatives.





Verizon Wireless is deploying small cells on wooden utility poles in San Francisco.

Fiber is one reason that outdoor small cells are beginning to make economic sense to operators. As more dark fiber becomes available for backhaul, operators are able to plan deployments without trenching streets.

“With the growth of fiber, we are doing a tremendous amount of both outside plant and inside plant fiber work,” said Jeff Ebihara, national director of business development at NB+C. NB+C serves operators primarily on the East Coast, and Ebihara said he sees a lot of outdoor small cell and DAS activity tied to fiber backhaul.

In San Francisco, Verizon was able to leverage dark fiber and utility poles that belong to the public utility. The baseband equipment is housed in an undisclosed remote location, and fiber will connect each small cell to the baseband.

C-RAN architectures like the one Verizon is deploying may be able to significantly reduce the cost of outdoor small cells. Vendors have been working hard to deliver solutions like these in order to jumpstart the small cell market.

“For three years we’ve been chasing technology,” said Surya Bommakanti of Ericsson, Verizon’s small cell vendor for the San Francisco project. “We don’t need to chase technology anymore, we’ve got the technology. What we really need to be figuring out is the most effective deployment model both in terms of the business model as well as just the logistics of creating small cell deployments in the right places. The bottlenecks truly are: sites, backhaul,

Source:



“With the growth of fiber, we are doing a tremendous amount of both outside plant and inside plant fiber work.”

Jeff Ebihara, NB+C

and getting power to those sites.”

Site acquisition costs, power and backhaul are usually cited as the three main constraints that can delay or even derail a small cell project. CommScope’s Philip Sorrells points out that the box has a fourth corner: the potential small cell needs to be carefully evaluated in the context of the overall network before a commitment is made.

“Ultimately at the end of the day, the performance from that small cell ... needs to have a high enough quality level that it really impacts the overall performance of the network without creating interference,” said Sorrells. Rigorous testing is the process that insures that performance.

“Now that we’re adding small cells into

the mix ... we’re adding additional elements into the chain of the backhaul itself, so adding an additional step, adding additional processing, latency, and all this can make achieving the same kind of performance over a small cell more challenging than the macro itself,” said Accedian’s Scott Sumner. Outdoor small cells also face more potential interference from the macro network than do indoor small cells, and this adds another important element to the testing process.

“You won’t necessarily have the same vendor for your small cell coverage as the macro, so you have an interop challenge there, far more than with indoor small cells,” said Ixia’s Pierre Lynch.

Before small cells even hit the streets, they undergo extensive testing in the lab. Engineers need to test small cell interactions with user equipment and with the operator’s core network.

“We ... test a small cell from both sides,” said Lynch. “We’ll simulate the subscribers over the radio interface ... and then conversely we’ll sandwich that test and replace the EPC and everything behind it to make the test easier and more manageable and repeatable.”

Vendors agree that small cell technology is ready for prime time outdoors. Now the challenge is finding affordable ways to get the show on the road. Operators can identify the network hot spots that could benefit from a small cell, but getting that site deployed can be an arduous process.

“A lot of that is going to hinge on



“It’s probably going to go through several iterations of trial and error.”

Steve Kemp, CommScope

whether there is actual real estate there to put something,” explained Steve Kemp, CommScope’s manager of small cell site solutions. “It’s going to have to fit in with the environment. There is going to be a permitting process. It’s probably going to go through several iterations of trial and error vis-à-vis the photo simulations that have to be done to see if everybody’s going to be happy with the look and feel.”

Kemp said that site acquisition and development costs are among the expenses that may be underestimated when a small cell project is first evaluated. He said operators are finding that the cost of equipment, installation and site development are all comparable.

RCR Editorial Webinar: DAS and Small Cell Update



Featuring *Pierre Lynch, Lead Technologist of Ixia's Product Management Team*

With traffic from mobile devices growing faster than the Earth's population, operators worldwide face massive opportunity. Small cells and distributed antenna systems (DAS) are an efficient and economical solution for enhancing the customer experience, improving retention, slashing cost, and unlocking new revenues.

“ Small cells will carry nearly half of all mobile network data traffic by 2016, and . . . offload more than 200 exabytes of data per year by 2017¹

By 2020, SNS Research predicts HetNets will account for more than \$350 billion in mobile data service revenues² ”

Watch Ixia's Pierre Lynch discuss small cell testing strategies and ramifications

RCR Editorial has supported this report by running a webinar with industry experts on the DAS and small cell market. In this webinar:

- Learn about current metro cell deployments
- Learn how to determine the cost of small cells
- Learn about integrating cellular and Wi-Fi in-building
- Learn about driving down the cost of DAS



WHO SHOULD ATTEND:

Carrier network planning professionals
Wireless infrastructure services professionals
Human resources professionals serving wireless
Wireless equipment manufacturing professionals
Systems integrators and equipment installers
Commercial real estate and building owners

WATCH NOW

http://content.rcrwireless.com/das_small_cell_update_webinar

Panelist:

- **Martha DeGrasse**, Editor, RCR Wireless News
- **Alan Law**, Vodafone, Chair of Small Cell Forum
- **Scott Sumner**, VP Solutions Development and Marketing, Accedian
- **Earl Lum**, President, EJM Wireless Research.
- **Pierre Lynch**, Lead Technologist of Product Management Team, Ixia
- **Raymond Hild**, Vice President, North America, Galtronics

¹ Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2012–2017

² Signals and Systems Market Intelligence and Consultancy Solutions, The HetNet Bible (Small Cells and Carrier WiFi) – Opportunities, Challenges, Strategies and Forecasts: 2013 – 2020 © 2013 SNS Research

“Proportionately it’s probably a third equipment, a third installation and then probably a third everything else, like three times through the permitting cycle at \$3,000 a throw,” he said. “So there’s quite a bit of money that is everything else.”

“Everything else” can be managed best by upfront planning. Vendors are working hard to help operators with this process. Nokia and Alcatel-Lucent (which are planning to merge) have both developed databases that using mapping technology to help carriers cross network hot spots with locations that could support small cells. The databases catalog supporting structures like utility poles, as well as the availability of power, backhaul, and potential problem structures like gas lines.

Outdoor DAS

Some industry veterans say that outdoor DAS was conceived by an executive who was frustrated because he could not get a signal on his drive home from work through Topanga Canyon in Los Angeles. For years, outdoor DAS has been a steady part of the wireless landscape without ever seeing breakout growth. Nor is outdoor DAS expected to take off in the years ahead.

Roughly 30,000 outdoor radio nodes are shipped each year, according to analyst Joe Madden of Mobile Experts. Madden estimates that more than half the nodes currently deployed are remote radio heads made by equipment vendors like Ericsson and Alcatel-Lucent.

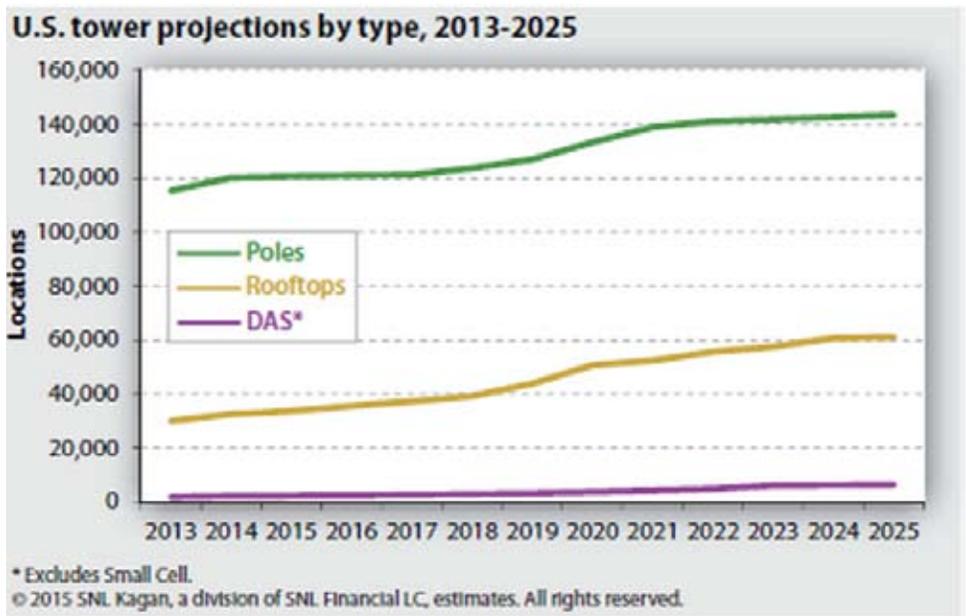
“Over the past few years, the architecture has migrated from DAS nodes (which can be seen as a higher power version of the amplifier in an indoor DAS node) to remote radio heads,” said Madden. “A remote radio head includes the digital processing for up/down conversion, as well as CPRI-based operational/maintenance features which help the major OEMs and operators to manage and maintain the system. Remote radio head units generally work more seamlessly with the macro network.”

Even when a radio equipment maker supplies the DAS node, traditional DAS vendors will supply antennas and cable for a typical outdoor deployment. Antenna vendor Galtronics said that these equipment makers can expedite

the zoning and permitting processes by creating form factors that can accommodate several RF configurations. If a zoning entity approves a form factor, it can be used repeatedly for different deployments within the approved area.

Some urban DAS deployments call for non-traditional antennas, or for concealment solutions that can disguise antennas as part of the landscape.

“We were approached by a major tower company to come up with a whip-type antenna, a 2-inch and 4-inch whip,” said Ray Hild of Galtronics. “Because at some point in time in this massive urban jungle you run out of places to put things, zoning or otherwise. It’s important that the OEM be receptive and creative.”



Backhaul for outdoor DAS and small cells: Operators focus on fiber

Outdoor small cell and DAS backhaul solutions include point-to-point fiber, point-to-multipoint fiber, microwave and Ethernet over copper (DSL). The most cost effective deployments are often those that leverage existing fiber.

Even the wireless carriers that are deploying fiber-to-the-home may turn to other providers for dark fiber.

“Getting dark fiber out there, getting the small cells in there, that’s the direction we’re headed,” said Verizon Wireless’s Brian Mecum, VP-Network for the western United States. “That’s what’s going to give us our ability to deliver to our customers on the promise of reliability.”

Dark fiber is fiber that is not currently in use (lit). Infrastructure providers often lay more fiber than a given project requires in order to avoid the expense of trenching twice. The extra fiber becomes an asset that they hope to “light up” for customers in the future.

Major owners of dark fiber in the United States include Zayo, American Fiber Systems, Lighttower Fiber Networks, Level 3 Communications, Allied Fiber, and CenturyLink. Regional fiber owners include Alpheus Communications, Birch Communications, PEG Bandwidth, Lumos Networks, FirstLight Fiber, and Unite Private Network.

Several other companies are quickly becoming major owners of fiber. Verizon and AT&T are both deploying fiber to support

their high-speed Internet offerings. Google Fiber is currently live in Austin, Kansas City and Provo, with Charlotte, Raleigh-Durham, Atlanta, Nashville, Salt Lake City and San Antonio next on the list. Tower giant Crown Castle has recently become a significant fiber owner through its acquisitions of Sunesys, Access Fiber Group and 24/7 Mid-Atlantic Network.

“Fiber is the horizontal tower,” said Crown Castle CEO Ben Moreland. “Small cells are fed by fiber. So we are typically building fiber-based systems that are brought back to a hub site where they have all the ... base stations. On occasion though, we have found it to be more attractive, more economically efficient, to actually acquire some fiber instead of building.”

Conclusion

The distinction between DAS and small cells is blurring as operators deploy indoor small cells that include antennas but not modems, and DAS remotes outdoors that are actually remote radio heads. Mobile operators, municipalities and enterprise customers are all less focused on categorizing solutions than they are on solving specific problems, and throughout the ecosystem there is agreement that each connectivity issue is unique. Vendors are learning that individual problems require customized solutions, and that it helps to have a variety of tools in the toolkit. To that end, savvy vendors are acquiring new skill sets and even acquiring competitors to broaden their offerings.

Vendors see tremendous opportunities in-building, but growth hinges on the development of new business models. In short, building owners and enterprises need to help fund wireless equipment if they want more cellular capacity in their buildings. These customers are already investing in cell signal boosters and Wi-Fi access points, but DAS and small cell vendors hope to see this extend to their equipment as well. Fortunately, new network architectures such as the centralized radio access network have the potential to make solutions more affordable for building owners.

Outdoor DAS and small cells will continue to be funded primarily by the wireless carriers. Verizon Wireless and Sprint have both made commitments to new outdoor small cell deployments this year. Again, the centralized radio access network is emerging as a cost-effective architecture, with Verizon Wireless choosing this approach in San Francisco.

Analysts and operators remain split on the long-term outlook for small cells and DAS. Some see these deployments rivaling macro sites within a few years, while others are convinced that DAS and small cells will both remain niche markets, and that operators will only deploy strategically to address discrete network problems. Even if the second scenario plays out, the demand for mobile data could create enough “network problems” to necessitate widespread deployments of small cells and DAS. ((☺))

RCRWireless

INTELLIGENCE ON ALL THINGS WIRELESS

2015 Wireless Infrastructure Supplier Guide

OVER 500 COMPANIES

SERVICE COMPANIES, STAFFING COMPANIES, TRAINING COMPANIES,
HARDWARE, COMPONENT AND ACCESSORY COMPANIES



KATHREIN

api 
technologies corp.



Accedian

Accedian delivers exceptional end-to-end network performance visibility, for control over the best possible user experience. Accedian enables providers to maximize quality of service (QoS), overcome network complexities, and ensure unparalleled quality of experience (QoE). Accedian has been turning performance into a key competitive differentiator since 2005. Accedian.com. Twitter: @Accedian



Ixia

Ixia provides application performance and security resilience solutions to validate, secure, and optimize physical and virtual networks. Enterprises, service providers, network equipment manufacturers, and governments worldwide rely on Ixia's solutions to deploy technologies and achieve efficient, secure, ongoing operation of their networks. Visit www.ixiacom.com for more information.



Galtronics

Galtronics is a market leader in antenna solutions of the highest quality and design. Markets served include mobile phones, broadband (home networking, M2M, LMP) and wireless infrastructure.



NB+C

Founded in 1984, NB+C is a leading wireless site development firm specializing in Site Development, Engineering and Construction + Technical Services. Our 300+ professional team members are totally committed to client service and project results. For more info visit www.networkbuilding.com



SureCall

SureCall® specializes in the design and manufacture of cell phone signal boosters and accessories. Our boosters dramatically improve cellular reception for businesses, homes and vehicles.



NATE

National Association of Tower Erectors (NATE) is a not-for-profit trade association in the wireless infrastructure industry providing a unified voice for tower erection, service and maintenance companies. Today the Association boasts over 815 member companies. Visit www.NATEHome.com for more info.



CommScope

CommScope (NASDAQ: COMM) helps companies around the world design, build and manage their wired and wireless networks. Our vast portfolio of network infrastructure includes some of the world's most robust and innovative wireless and fiber optic solutions. Our talented and experienced global team is driven to help customers increase bandwidth; maximize existing capacity; improve network performance and availability; increase energy efficiency; and simplify technology migration. You will find our solutions in the largest buildings, venues and outdoor spaces; in data centers and buildings of all shapes, sizes and complexity; at wireless cell sites; in telecom central offices and cable headends; in FTTx deployments; and in airports, trains, and tunnels. Vital networks around the world run on CommScope solutions.



API Technologies

API Technologies has a long and successful heritage in the development and manufacturing of standard, configurable, and custom RF, microwave, and millimeter wave solutions for military, commercial, and space applications. Contact: microwavesales@apitech.com or 1-888-553-7531 or visit <http://micro.apitech.com> for more info



Kathrein

Kathrein is an innovation and technology leader in today's connected world. Kathrein solutions enable people to globally communicate, access information, and use media at home or on the road. From mobile communications, signal processing systems and optimized data transmission in buildings; to fiber optic and cable networks and satellite reception technology; to radio and TV transmission and data reception in cars; Kathrein is a hidden champion and family-owned enterprise that has been working on the technologies of tomorrow since 1919. For more information visit: www.kathrein.com



FDH Velocitel

FDH Velocitel provides all the services necessary to acquire, design, implement, optimize, and upgrade wireless infrastructure. We help you build and maintain a better network. Contact us: salesinquiries@fdhvelocitel.com

SERVICE COMPANIES

101 Telco Solutions Inc.

Service Company

2646 Palma Dr., Ste. 305
Ventura, CA 93003
805-477-0101

E-mail: sales@101telco.com

www.101telco.com

101 Telco is a legacy equipment specialist that helps companies stretch their capital dollars, and maximize the life of their network. We provide component-level repairs and refurbished spares for network equipment that are out-of-warranty or MFG-discontinued. We were founded on the principle that helping the Veteran community and starting, and running, a profitable company could be simultaneous goals.

3S Network

Service Company

www.3snetwork.com

We offer expert design, service analysis and solutions for a wide range of technologies including GSM/GPRS/EDGE, UMTS/HSPA, EVDO, and LTE/WiMAX. Whether a small scale project, turnkey solution or large scale work, 3S Network Inc. is known to deliver the highest industry standard.

4G Unwired

Service Company

551 S. Apollo Blvd., Ste. 207
Melbourne, FL 32901
321-726-4183
sales@4gunwired.com
www.4gunwired.com

Aarcher

Service Company

910 Commerce Road
Annapolis, MD 21401
817-431-1593

cboswell@aarcherinc.com

www.aarcherinc.com

Aarcher provides Phase I environmental due diligence, NEPA screening, and cultural and natural resource services for antenna and tower installations. Since 1997, its team of environmental and conservation specialists and architectural historians has supported thousands of installations from offices in Colorado, Maryland and Texas.

Abrams Wireless

Service Company

117 Kelekent Ln.
Cary, NC 27518
206-661-8429
ted@abramswireless.com
www.theabrams.net

Technology is a significant part of today's business decisions. AWI consultancy delivers profitable insight to clients who want better understanding of probable outcomes.

Accenture

Service Company

1345 Avenue of the Americas
New York, NY 10105
Contact: Barbara Burgess
877-889-9009
www.accenture.com

Accenture is a global management consulting, technology services and outsourcing company, with more than 293,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments.

Accruent

Service Company

10801-2 N. Mo Pac Expy, Ste. 400
Austin, TX 78759
512-861-0726
ctutino@accruent.com
www.Accruent.com

Accruent delivers long term, best in class, operational and financial performance to leaders in the Wireless industry with Siterra solution, the industry-leading software for site, lease, asset, and project management. Our solutions are used by the top five national wireless carriers to manage more than one million projects and 400,000 sites globally.

Acquest International L.P.

Service Company

909 Third Avenue
New York, NY 10022
Contact: Pauli Overdorff
212-719-1500
pauli@acquestinternational.com
www.acquestinternational.com

Acquest International, an investment bank, serving companies in the communications sector with Merger & Acquisition and Capital Formation Services. Completed more than 100 transactions since 1993.

Action Capital Corporation

Service Company

230 Peachtree Street, Ste. 1910
Atlanta, GA 30303
Contact: Patrick Thom
404-524-3181
patrick@actioncapital.com
www.actioncapital.com

ADB Wireless

Service Company

8205 Hickman Mills Drive
Kansas City, MO 64132
636-583-8448
elust@adb-us.com
www.adb-us.com

Advanced Frequency Engineering

Service Company

10482 Almond Street
Rancho Cucamonga, CA 91737
Contact: Dana Dulabone
813-495-0038
dana@rfawareness.com
www.rfawareness.com

RF Engineering Consultant Firm. Competitive site analysis, RF system design, FirstNet Public Safety, IBWAVE DAS certified, tower site analysis, RF exposure, consultant for zoning hearings

Advantage Engineers

Service Company

7070 Samuel Morse Drive, Ste. 150
Columbia, ME 21046
Contact: John McGrath, COO
443-367-0003
advantage@advantageengineers.com
www.advantageengineers.com

Advantage Engineers provides comprehensive engineering and consulting solutions in support of communications network development for government and commercial clients.

Aero Solutions

Service Company

5500 Flatiron Parkway, Ste. 100
Boulder, CO 80301
720-304-6882
rtailon@aerosolutionsllc.com
www.aerosolutionsllc.com

Since 2002, Aero Solutions LLC (AERO), has been a proven leader in the wireless industry. We provide custom and pre-engineered monopole, self support and guyed tower infrastructure products and services. Our innovative solutions increase the towers load carrying capacity and revenue potential for our customers.

Aero-Telco Services LLC

Service Company

**10180 NW 21st Court
Pembroke Pines, FL 33026
954-483-0874**

james.raines@aero-telco.com

www.aero-telco.com

We are a certified MBE full service maintenance cell tower company that specializes in LTE upgrades and installations.

AFL

Service Company

**170 Ridgeview Center Drive
Duncan, SC 29334
678-772-6627**

Brian.Wheeler@AFLglobal.com

www.AFLglobal.com

AFL provides construction, installation, engineering and maintenance for wireless/wireline service providers, in various IT/Communications markets, maintaining satisfied customers by offering network (MTSO), cell site, government and enterprise solutions. With AFL you get a team with engineering expertise, a proven history of successful deployments and the know-how to turn up your customers faster! Come see how We connect.™

Aicent, Inc.

Service Company

**181 Metro Drive, Ste. 450
San Jose, CA 95110
+1 408 324 1830**

info@aicent.com

www.aicent.com

Aicent's innovative mobile data services build a bridge between the IP world and the wireless world, delivering powerful wireless communications services to mobile operators.

AirHop Communications Inc.

Service Company

**6150 Lusk Blvd Suite B204 & B205
San Diego, CA 92121**

Contact: Yan Hui

858-848-6188

info@airhopcomm.com

airhopcomm-web.com

Founded in 2007, AirHop is a privately held startup that develops advanced RAN intelligence software critical to the next wave of the mobile Internet. AirHop's eSON products are the first to completely address the installation, operation, performance, and multi-vendor support challenges of multi-layer, small cell and HetNet deployments.

AJ Telecom Group

Service Company

**147 W. 35th St., Ste. 404
New York, NY 10001
212-643-1310**

contact@ajtelecomgroup.com

www.ajtelecomgroup.com

Alcatel-Lucent

Service Company

**1960 Lucent Lane
Naperville, IL 60563**

Contact: Rupail Sikka

630-224-0192

rupy.sikka@alcatel-lucent.com

www.alcatel-lucent.com

Alcatel-Lucent provides products and innovations in IP and cloud networking, as well as ultra-broadband fixed and wireless access.

Allcom Global Services

Service Company

www.allcomgs.com/

AllCom builds infrastructure that enables

today's technology.

Allcomm Wireless

Service Company

**4116 First Ave.
North Birmingham, AL 35222**

205-591-8804

tower@allcomm.com

www.allcomm.com

Allot Communications, Ltd.

Service Company

**300 TradeCenter, Ste. 4680
Woburn, MA 01801**

Contact: John Priest

781-939-9300

jpriest@allot.com

www.allot.com

Allot Communications is a leading global provider of intelligent broadband solutions that put mobile, fixed and enterprise networks at the center of the digital lifestyle. Allot's DPI-based solutions identify and leverage the business intelligence in data networks, empowering operators to shape digital lifestyle experiences and to capitalize on the network traffic they generate.

Allstate Tower

Service Company

**P.O. Box 25
Henderson, KY 42419**

270-830-8512

Kroth@allstatetower.com

www.allstatetower.com

Alpha Technologies Ltd.

Service Company

**7700 Riverfront Gate
Burnaby, MB
V5J 5M4**

604-436-5900

sales@alpha.ca

www.alpha.ca

For over 35 years, Alpha Technologies has been an industry pioneer and global leader in the design and manufacture of AC, DC and Renewable power.

Alta Telecom

Service Company

www.altagroupofcompanies.com

ALTA is a well established International Telecom Diversified Services Provider, is certified to ISO 9001: 2008 and TL 9000 in two business units and is in the process of becoming certified in its remaining business units. ALTA is also a member of the QuEST Forum.

Altus Group Limited

Service Company

**33 Yonge Street, Ste. 500
Toronto, Ontario M5E 1G4**

Contact: Robin Comfort

416-227-7039

robin.comfort@altusgroup.com

www.altusgroup.com

AM Coordination Services

Service Company

P.O. Box 6065

Martinsburg, WV 25402

304-264-5941

amcoordination@aol.com

www.amcoordination.com

American Tower

Service Company

10 Presidential Way

Woburn, MA 01801

877-409-6966

leasing@americantower.com

www.americantower.com

American Tower is a leading independent owner, operator and developer of wireless and broadcast communications infrastructure and provides access to over 36,000 communications sites across the United States. Our solutions include wireless and broadcast towers, managed rooftops, in-building and outdoor distributed antenna system networks and other right-of-way options, small-cell and Wi-Fi networks and services that speed network deployment. For information on how our solutions can help you grow your business, visit www.americantower.com.

AMF Electrical Contractors, Inc

Service Company

1627 Sublette

St Louis, MO 63110

Contact: Charlie Garthe

314-647-4066

charlie@amfelectric.com

www.amfelectric.com

Full service infrastructure installation contractor.

Amirit Technologies

Amirit Technologies

Service Company

271 US HWY 46 West, Ste. C-103

Fairfield, NJ

973-652-2811

Hassan.Azhar@amirit.com

www.amirit.com

Highly experienced & dedicated professionals in the telecom & IT industry; provide innovative, powerful & strategic methodologies.

Amphenol

Service Company

2100 Western Court, Ste. 300

Lisle, Illinois 60532

630-960-1010

sales@amphenol-fiberoptics.com

www.amphenol.com

ANS Advanced Network Services, LLC

Service Company

12 Elmwood Rd.

Albany, NY 12204

Contact: Brendan Delaney

518-292-6555

website@anscorporate.com

www.anscorporate.com

ANS provides end-to-end services to the wireless carriers. Services include Tower & Construction Services, DAS Design & Implementation, Network Infrastructure and DC Power Services.

Antenna ID Products

Service Company

22 Bryan Wynd, Ste. 2

Glenmoore, PA 19343

610-458-8418

antennaid@msn.com

www.antennaid.com

Antenna Rooftop Management

Service Company

185 Santiago Ave.

Rutherford, NJ 7070

Contact: Gerard Amatucci

gerardama@comcast.net

Manangement / Consulting.

ATEC Wireless

Service Company

4 Gatehall Drive

Parsippany, NJ 07054

Contact: Ahsan Ali Khan

678-871-2129

inquiries@atecwireless.com

www.atecwireless.com

An independent diversity RF Engineering and Consulting firm dedicated to wireless communications services, ATEC provides systems engineering, network services and technical staffing to wireless carriers, managed service providers, tower operators and equipment vendors.

Atlantic Communication Services Inc.

Service Company

21 Pinehurst Circle

Monroe, NY 10950

845-782-5114

pjm67@msn.com

Full service wireless telecommunications company specializing in construction, site acquisition, legal & regulatory and project staffing.

Atlantic Tower Services, Inc

Service Company

2544 E Landstreet Dr., Ste. 600

Orlando, FL 32824

Contact: Brittany Lawler

407-423-9071

info@accessats.com

accessats.com

It takes an experienced team to distinguish what is safe, what is the appropriate use of technology, as well as what is the most economical and expedient for your intended goal. And, to do it all with the attitude that your uptime and customers are paramount is what makes ATS so successful. We really understand the industry and that you need a go-to supplier you can depend on for fast, turnkey service, long-term support and above all, partnership.

Avion Systems

Service Company

www.avionsystems.com

Avion leverages our partnership with Mobile Network Operators and Original Equipment Manufacturers to provide network engineering services to ensure superior voice, data and content services to the end-user while maximizing ROI for carriers.

AW Solutions

Service Company

300 Crown Oak Centre Drive

Longwood, FL 32750

407-260-0231

keith.hayter@awsolutionsinc.com

www.awsolutionsinc.com

Full Service Turnkey Wireless, DAS, Fiber and Wireline Infrastructure Development Company. Licensed engineers throughout the US, Canada, Hawaii, Puerto Rico and USVI.

Axiom Wireless

Service Company

3323 Magnolia Rd.

Magnolia, OH 44643

Contact: Steve Weston

330-863-4410

steve@ax-wi.com

www.axiomwireless.net

Our services range from LTE upgrades, tower maintenance, small cell construction, building new towers from the ground up, to electrical work, civil work, and fencing. If it involves cellular towers and networks, our skilled and professional team can complete the task.

Axis Teknologies, LLC

Service Company

8800 Roswell Rd, Bldg A, Ste. 265

Sandy Springs, GA 30350

Contact: Kevin Calhoun

678-441-0260

kcalhoun@axisteknologies.com

www.axisteknologies.com

Axis Teknologies guides high-level strategies of wireless infrastructure upgrades through the real world implementation challenges of Small Cells, DAS, Data Centers, Core and Transport.

B+T Group

Service Company

1717 S. Boulder Ave, Ste. 300

Tulsa, OK 74119

Contact: David Reuter

918-587-4630

info@gtgrp.com

www.btgrp.com

Baker Donelson

Service Company

420 20th Street North, Ste. 1400

Birmingham, AL 35203

Contact: Andy Rotenstreich

205-250-8304

nar@bakerdonelson.com

www.bakerdonelson.com

Bank Street Group LLC

Service Company

**Four Landmark Square, 3rd Floor
Stamford, CT 06901**

Contact: Richard Lukaj

203-252-2800

info@bankstreet.com

www.bankstreet.com

Bank Street is an investment bank serving companies in the communications sector with Merger & Acquisition Advisory, Private Placements of Debt and Restructuring services.

BB&T - Atlantic Risk Management

Service Company

5850 Waterloo Road, Ste. #240

Columbia, MD 21045

410-480-4413

DSaul@bbandt.com

insurance.bbt.com

BB&T's Atlantic Risk Management is a large, independent insurance agency and an expert in protecting tower owners from unexpected risks. We offer complete, competitive priced programs endorsed by PCIA and tailored to suit your specific exposures, including: self-supporting, guyed or monopole towers; support equipment; shelters and fencing; plus general liability, business auto, workers' compensation, umbrella, and more.

Beacon Management Inc.

Service Company

6025 Scott Way

Commerce, CA 90040

323-722-5587

shari@bmionline.us

www.bmionline.us

BMI is a national electronics recycling firm also focused on de-installation and disposition services. We are R2 certified and carry both OSHAS 18001 and ISO 14001 Certification.

Beacon Towers

Service Company

3001 Salterbeck St., Ste. 200

Mount Pleasant, SC 29466

843-324-9731

martind@vitessewireless.com

Bell Tower

Service Company

6037 S. Industrial Road

Chelsea, OK 74016

918-789-9020

rose-btc@sbcglobal.net

www.belltowercorp.com

For 22 years, Bell Tower has been designing, manufacturing and installing towers throughout the United States, from 100-foot self-supporting towers to 2000-foot broadcast towers. The company's experienced staff offers customers the finest safety record in the industry and fair pricing on challenging projects.

Black & Veatch

Service Company

10950 Grandview

Overland Park, KS 66210

913-458-7967

bukatyk@bv.com

www.bv.com

B&V network infrastructure deployment and upgrade solutions include program and project management, site acquisition, architectural and engineering drawings, zoning and permitting, tower structural analysis and modification, procurement, logistics, construction and construction management, small cells and distributed antenna system (DAS) networks, and decommissioning service.

Black Box Network Services

Service Company

1155 Kas Drive, Ste. 200

Richardson, TX 75081

214-242-7718

kevin.swank@blackbox.com

www.blackbox.com/innerwireless

In wireless, Black Box Network Services enables mission-critical, in-building wireless for enterprise organizations in healthcare and hospitality, as well as government and Fortune 500. Mission-critical wireless delivers all key wireless services, including 3G/4G, fire/life/safety, 802.11 and medical telemetry, with engineered coverage and capacity to ensure all wireless devices stay connected with optimal service levels.

Black Dot Wireless

Service Company

27271 Las Ramblas

Mission Viejo, CA 92691

packerman@blackdotwireless.com

www.blackdotwireless.com

Full service consultancy providing specialized real estate development and lease optimization services to the wireless industry.

BlueSky 101, LLC

Service Company

4100 N. Powerline Road, #W-2

Pompano Beach, FL 33073

www.bluesky101.com

BlueStream Professional Services

Service Company

3305 Hwy 60 West

Faribault, MN 55021

800-755-1950

contactkgp@kgptel.com

www.bluestreampro.com

BlueStream Professional Services provides planning, implementation and maintenance services for wireless, wire line, broadband cable, utilities, and data centers networks. With unique capabilities, including wireless cell tower installation and maintenance crews, BlueStream Professional Services has the capabilities with key technology skills and certifications to offer complete, turn-key solutions.

BMS Communications

Service Company

4133 Guardian St.

Simi Valley, CA 93063

805-526-1141

jennifera@bmseng.com

www.bmseng.com

Boingo Wireless

Service Company

10960 Wilshire Blvd., Ste. 800

Los Angeles, CA 90024

310-586-5180

dlodder@boingo.com

www.boingo.com

Boingo Wireless, Inc. (NASDAQ: WIFI) helps the world stay connected. Boingo's vast footprint of small cell networks covers more than a million DAS and Wi-Fi locations and reaches more than 1 billion consumers annually – in places as varied as airports, stadiums, shopping malls, restaurants, universities, and military bases. The Boingo platform is the only monetization engine of its kind, driving revenue through carrier offload, advertising, location-based data analytics, and consumer products like IPTV, high-speed broadband, and Wi-Fi.

Bracnet Ltd.

Service Company

House: 26, Road: 28, Block: K, Banani
Dhaka 1213
arahimbd@yahoo.com
www.bracnet.net
ISP & Nationwide Data Connectivity.

Bradley Arant Boulton Cummings

Legal Services

Roundabout Plaza 1600 Division St., Ste. 700
Nashville, TN 37203
Contact: James L. Murphy III
615-252-2303
jmurphy@babbc.com
www.babbc.com

Bradley Arant Boulton Cummings LLP is a law firm with seven offices throughout the Southeast. Our wireless team has extensive experience representing all segments of the wireless industry throughout the Southeast and Midwest. Whether your issue involves understanding how to obtain zoning or other regulatory approvals, lobbying the legislature, or negotiating site leases, our wireless team will assist you in managing the many legal issues encountered by members of the industry – carriers, tower companies, and service providers.

Branch Communications

Service Company

1516 South Boston, Ste. 215
Tulsa, OK 74119
Contact: Johnnie Johnson
918-949-4551
jj@branchcomm.net
www.branchcomm.net

Branch Communications is a leading independent owner, operator and marketer of wireless communications infrastructure in the United States. Currently, Branch manages a portfolio of over 400 cell sites across the country. Branch Communications is a full service solutions provider for the wireless industry.

Brivo Systems

Service Company

10776 Brewer House Road
Rockville, MD 20852
Contact: Jonathan Polon
240-428-3304
jonathan.polon@brivo.com
www.brivo.com

Broadband T Corporation

Service Company

1720 Jet Stream Drive, Ste. 212
Colorado Springs, CO 80921
www.broadband-t.com

BTM Engineering

Service Company

3001 Taylor Springs Drive
Louisville, KY 40220
502-459-8402
wmarcum@btmeng.com
www.btmeng.com

Buell Consulting, Inc.

Service Company

1360 Energy Park Drive, Ste. 210
St. Paul, MN 55108
Contact: Bill Buell
651-225-0793
bbuell@buelconsulting.com
www.buelconsulting.com

Building Technology Solutions

Service Company

273 Grawtown Road
Jackson, NJ 08527
Contact: David Williams
848-223-5240
d.w@btsus.net
www.btsus.net

1 to 100 Gbps wireless links with mobile self-contained outdoor/indoor data storage/carrier switch micro-modular units along with providing network infrastructure engineering expertise.

BuzB

Service Company

129 W. Official Road
Addison, IL 60101
630-543-5560
info@buzbcorp.com
www.buzbcorp.com

BuzB offers detailed field mapping service for all tower structures of any make and model, including guyed tower, self-supporting towers, monopoles and water tanks. BuzB covers the Midwest and Mid-South, from Minnesota to Arkansas and from Kansas to Ohio.

Byers Engineering Company

Service Company

www.byers.com/about.html

Byers provides outside and inside plant design, planning, project management, inspection, and right of way acquisition services, both wireline and wireless, for RBOCs, ILECs, CLECs, IXCs, utilities, cable television companies, and commercial organizations throughout the United States.

C Squared Systems, LLC

Service Company

65 Dartmouth, Unit A3
Auburn, NH 03032
603-644-2800
siteportal.sales@csquaredsystems.com
www.c2siteportal.com

C Squared Systems, LLC (C. Systems) is an RF engineering and consulting company specializing in providing services for complete wireless coverage from RF analysis to design and implementation to monitoring support. SitePortal., a customizable web-based software, was engineered by C. Systems to remotely monitor and manage complex multi-vendor environments. More than just alarming, SitePortal. delivers a complete management solution to view notifications, system parameters, and reports with the ability to troubleshoot devices directly from your laptop.

Caldwell Compliance

Consulting Company

925-365-1160
www.caldwellcompliance.com

Caldwell Compliance brings unparalleled expertise managing FCC/FAA regulatory compliance for wireless site construction. We ensure compliance is taken care of 100%, so our clients can focus on developing a competitive network of audit-proof sites.

Caltrop

Service Company

9337 Milliken Ave.
Rancho Cucamonga, CA 91730
480-241-6363
mdostal@caltrop.com
www.caltrop.com

Caltrop's workforce has a solid reputation for completing large, complex wireless network projects throughout the country. Their multi-disciplinary team of professionals applies a broad range of experience to provide a streamlined approach to workflow management that generates significant cost savings through reduced deployment time and cost. With Caltrop as your single source for turnkey services, you can count on true value-added services.

CamTelcom Inc.

Service Company

8101 Ellis Rd
Ravenna, MI 49451
231-557-4383
camwea@msn.com

Fiber Optics Splicing and Testing, FTTH, FTTP, FTTH, Long Haul Fiber, Emergency Fiber Restoration, Hot Cuts, Fiber Verification, Audits, New Projects

Capital Tower & Communications

Service Company

13330 Amberly Road
Waverly, NE 68462
402-786-3333
tonym@capitaltower.com
www.capitaltower.com

Carpenter Consulting Group

Service Company

17 Industrial Street
Rochester, NY 14614
Contact: Don Carpenter
585-370-9516
info@carpentercg.com
www.carpentercg.com

Wireless Site Development company, providing site acquisition, A&E & construction management services.

CBM of America Inc.,

Service Company

www.cbmusa.com

CBM of America, Inc., has been an innovator and niche provider of Network Solutions and Custom Network Products for the Telecom Industry for over 20 years. We specialize in networking products and solutions that provide seamless IP migration of legacy protocol interfaces, such as BX25 & X25.

Celerity Integrated Services

Service Company

2083 Quaker Pointe Drive
Quakertown, PA 18951
215-538-1600
demma@cistele.com
www.cistele.com

Cell Blocks

Service Company

277 Sumption Drive
Columbus, OH 43230
614-800-0534
philcolflesh@cellblocksinc.com
www.cellblocksinc.com

Cell Tower Attorney

Legal Services

16001 Waterleaf Lane
Fort Myers, FL 33908
813-335-4766
ken@celltowerattorney.com
www.celltowerattorney.com

CellTex Site Services, Ltd.

Service Company

PO Box 700452
San Antonio, TX 78270
210-219-5529
cghuber@celltextowers.com
www.celltextowers.com

Build-to-Suit towers and site acquisition.

Cellular Specialties

Service Company

670 N. Commercial St.
Manchester, NH 03101
603-626-6677
csisales@cellularspecialties.com
www.cellularspecialties.com

Cellular Specialties (CSI) delivers products and services enabling anytime, anywhere wireless connectivity for 3G and 4G cellular, Wi-Fi and public safety coverage. Visit www.cellularspecialties.com.

Centerline Solutions

Service Company

16360 Table Mountain Parkway
Golden, CO 80403
303-993-3293
blittle@centerlinesolutions.com
www.centerlinesolutions.com

Centerline Solutions is a full turn key wireless services company. We help design, build, modify and maintain wireless networks.

CES Network Services, Inc.

Service Company

13904 Josey Lane
P.O. Box 810256
Dallas, TX 75381
Contact: Chester Manfred
972 241 3683 EXT 125
cesnet@cesnetser.com
www.cesnetser.com

Voice, Data & Video MAN / LAN / WAN System Integrator Consultant. CES provides professional consulting, planning, design, and construction phase services for multi-user facilities nationwide.

CIC

Service Company

cicusa.com

The CIC team has over 1,000 years of collective microwave radio experience in applications for wireless backhaul, ultra low latency HFT, oil & gas, rural broadband, mobility, and wireless point to point communication links.

Circle Point Technology

Service Company

1530 Nandina Ave.
Perris, CA 92571
949-690-5057
lturner@circlepointinc.com
www.circlepointinc.com

Circlepoint Technology specializes in the development and implementation of network infrastructure for wireless carriers and large wireless infrastructure providers. Circlepoint offers its customers fully integrated network solutions specializing in site acquisition, architectural and engineering design, construction, equipment installation, testing and commissioning services. We promise to evaluate your individual needs to bring the most value to your wireless communication requirements.

CIS Communications

Service Company

749 Old Ballas Road
Creve Coeur, MO 63141
314-569-2275
julie@ciscomm.com
www.ciscomm.com

CIS Communications is based in St. Louis and provides site development (site selection, lease space and purchase negotiation, architectural and engineering drawings, due diligence, zoning approval and permit coordination including UMTS and LTE upgrade coordination) construction management and rooftop management services.

Civil & Environmental Consultants

Service Company

405 Duke Drive, Ste. 270
Franklin, TN 37067
615-333-7797
lparker@cecinc.com
www.cecinc.com

Civil Solutions Incorporated

Service Company

www.csicommunications.com

Civil Solutions Incorporated is a full turnkey company established in 2001 providing comprehensive single source solutions to identify, lease, permit, design, construct, implement, and maintain wireless networks Nationwide.

CLC Lodging

[Service Company](#)

8111 E. 32nd Street North, Ste 300

Wichita, KS 67226

800-835-4045

cfarr@clclodging.com

www.clclodging.com

CLC Lodging, a division of FleetCor, reduces what you pay for workforce lodging while cutting staff time spent finding hotels, negotiating rates, auditing bills, reviewing expense reports and tracking costs. CLC's buying power of more than 10 million room nights annually provides clients with deeply discounted hotel rates. CLC has more than 30 years' experience as a leading provider of lodging management programs to businesses, serving thousands of clients in North America.

Clearfield

[Service Company](#)

5480 Nathan Lane

Plymouth, MN 55442

800-422-2537

sales@clfd.net

www.ClearfieldConnection.com

Varying cell site deployment scenarios and network architectures pose challenges for network operators to standardize on a single solution. By offering a scalable single building block solution, Clearfield provides a flexible and cost-effective solution for standardization of passive equipment across multiple wireless carriers and the variety of equipment housings encountered. Standardization improves efficiency and service turn-up time as learning curves are reduced.

ClearShot Communications

[Service Company](#)

5 Great Valley Parkway, Ste. 333

Malvern, PA 19355

610-648-3895

dul@clearshotcom.com

www.clearshotcom.com

Concordia Wireless

[Service Company](#)

361 Randy Road, Ste. 101

Carol Stream, IL 60188

Contact: GM Sadat

847-708-7500

gmsadat@concordiawireless.com

www.condordiawireless.com

Dali Wireless

[Service Company](#)

535 Middlefield Road, Ste. 280

Menlo Park, CA 94025

Contact: Wendy Har

855-250-5082

info@daliwireless.com

www.daliwireless.com

Dewberry

[Service Company](#)

600 Parsippany Rd, Ste. 310

Parsippany, NJ 07054

Contact: Greg Nawrotzki

973-576-9653

gnawrotzki@dewberry.com

www.dewberry.com

Doty Moore Tower Services

[Service Company](#)

1140 Welsh Road, Ste. 250

North Wales, PA 19454

215-631-1323

ed.deetscreek@stainlessllc.com

www.stainlessllc.com

Downs Rachlin Martin

[Service Company](#)

PO Box 190

Burlington, VT 05402

Contact: Elizabeth L. Kohler

802-846-8382

ekohler@drm.com

www.drm.com

Dynamic Environmental Associates, Inc

[Service Company](#)

PO Box 7058

Lake Worth, FL 33466

877-968-4787

DJermakian@DynamicEnvironmental.com

www.DynamicEnvironmental.com

Dynamic Environmental Associates, Inc. provides full-service, results oriented, environmental consulting to our clients with complete solutions for their environmental issues. By following our core principles: Experience, Commitment, Quality and Innovation, DEA has achieved recognition from both the tower industry and competitors alike as being leading experts in environmental assessment and compliance. For twenty years Dynamic Environmental Associates has been providing the tower and telecommunications industry with thorough and efficient professional environmental services.

Dynis LLC

[Service Company](#)

www.dynis.com

Founded in 1992, DYNIS is a world-class provider of a comprehensive Ste. of communication and data network implementation services through our impressive team of dedicated industry professionals.

Earthcom, Inc.

[Service Company](#)

3424 Corwin Rd.

Williamston, MI 48895

517-482-1750

info@earthcom.us

www.earthcominc.com

Earthcom is a full-service provider of wireless services including OSP, DAS/ODAS and cell site construction & maintenance.

Eastpointe Industries, Inc

[Service Company](#)

4020 Tull Ave.

Muskogee, OK 74403

Contact: Marty Halliday

918-683-2169

www.ep-ind.com

Eastpointe Industries is a Tower and Structural Components Manufacturer. Located in Muskogee Oklahoma supplying Self Support, Guyed Towers. Manufacturing a wide range of tower modification materials.

EDX Wireless

[Service Company](#)

1400 Executive Parkway, Ste. 430

Eugene, OR 97401

541-345-0019

sales@edx.com

www.edx.com



New Orleans 2016

FEBRUARY 22-25

NATE UNITE

Ernest N. Morial Convention Center • Hilton New Orleans Riverside



Take advantage of **Early Bird Registration!**

Visit

www.natehome.com

to register by **November 30, 2015** and save over

\$100

Ehresmann Engineering, Inc.

[Service Company](#)

4400 W 31st Street

Yankton, SD 57078

Contact: Eric Taylor

605-665-7532

e.taylor@ehresmannengineering.com

www.ehresmannengineering.com

Ehresmann Engineering, Inc. is a tower engineering and manufacturing company. We have been in the Telecommunication Industry since 1983, have engineering staff with over 100 total years of tower engineering experience. We have performed thousands of analysis on numerous types, and heights of towers with various manufacturers. We offer a full line of towers: guyed and self-supporting towers, 3 and 4 legged towers, monopoles, flagpoles, monopines, cross poles, and other concealment solutions. Our 77,000 sq. ft. facility is conveniently located in the center of the US which enables us to provide short shipping times to both coasts. We have provided services in all 50 states, Puerto Rico, and in countries around the world.

EMF Telecom, Inc.

[Service Company](#)

328 Hill Avenue

Nashville, TN 37210

615-291-6279

info@emftelecom.com

www.emftelecom.com

EMF Telecom, Inc. is a veteran owned and run business founded in 2005. We specialize in tower, property and site acquisition services with offices in Nashville, TN, Columbus, OH and Orlando, FL.

Engineering Associates

[Service Company](#)

1220 Old Alpharetta Road, Ste. 390

Alpharetta, GA 30005

678-455-7266

lcobb@engineeringassociates.com

www.engineeringassociates.com

Engineering Specialties Group

[Service Company](#)

8501 Turnpike Drive, Ste. 106

Westminster, CO 80031

303-482-3186

joeld@engineeringspecialtiesgroup.com

www.engineeringspecialtiesgroup.com

Environmental Corporation of America

[Service Company](#)

1375 Union Hill Industrial Court

Alpharetta, GA 30004

770-667-2040

marvin.webster@eca-usa.com

www.eca-usa.com

ECA is an environmental, geotechnical, and NEPA/SHPO regulatory consultant specializing in wireless telecommunications. Its staff of engineers, scientists, historians and archaeologists has processed thousands of wireless facilities throughout the United States under the FCC NEPA rules and the EPA Phase I AAI and ASTM standard.

Environmentex

[Service Company](#)

6060 N. Central Expressway, Ste. 560

Dallas, TX 75206

214-793-7317

brian@environmentex.com

www.environmentex.com

Ericsson

[Service Company](#)

6300 Legacy Dr

Plano, TX 75024

Contact: Desiree Ruiz

972-583-6339

desiree.ruiz@ericsson.com

www.ericsson.com

At Ericsson we use innovation to empower people, business and society. We envisage a Networked Society that is sustainable, and where everything that can benefit from a connection will have one. Our mobile and fixed networks, multimedia solutions and telecom services make a real difference to people's lives, and the world we live in.

ETA International

[Service Company](#)

5 Depot St.

Greencastle, IN 46135

800-288-3824

eta@eta-i.org

www.eta-i.org

ETA International, a not-for-profit, professional association, certifies today's technicians in tomorrow's technologies. ETA certifications are accredited through ICAC and align with ISO-17024 standards.

ETNB Communications

[Service Company](#)

3030-1/2 9th Ave

Los Angeles, CA 90018

213-915-7014

nboseman@etnbcommunications.com

www.etnbcommunications.com

Network Support & Training

Eupen Cable USA

[Service Company](#)

5181 110th Ave N, Unit D

Clearwater, FL 3760

www.eupen.us

Evans Engineering Solutions

[Service Company](#)

www.evansengsolutions.com

216 Green Bay Road, Suite 105

Thiensville, WI 53092

Contact: Ben Evans

262-518-0002

ben@evansengsolutions.com

Providing services to the wireless industry including microwave planning and licensing, coverage maps, intermodulation studies and RF exposure assessments.

Expert Construction Managers

[Service Company](#)

815 S. Kings Ave.

Brandon, FL 33511

813-335-4765

bill@brown.org

www.expertconstructionmanagersinc.com

Express Technologies

[Service Company](#)

1127 International Parkway, Ste. 293

Fredericksburg, VA 22406

540-752-6691

mnorris@express-tek.com

www.express-tek.com

ExteNet Systems

Service Company

3030 Warrenville Road, Ste. 340

Lisle, IL 60532

Contact: Manish Matta

630-505-3800

mmatta@extenetsystems.com

www.extenetsystems.com

ExteNet Systems designs, builds, owns and operates distributed networks for use by wireless carriers and venue owners in key strategic markets. Using distributed antenna systems (DAS), small cells, Wi-Fi and other technologies, ExteNet deploys networks to enhance coverage and capacity and enable superior wireless service in both outdoor and indoor environments.

Fairview Telecom

Service Company

11450 Leyden Way

Thornton, CO 80233

570-766-1370

pscar@ptd.net

Faulk & Foster

Service Company

1811 Auburn Avenue

Monroe, LA 71201

Contact: Joe Derry

800-779-0495

joe.derry@faulkandfoster.com

www.faulkandfoster.com

Faulk & Foster provides real estate solutions for wireless and wireline network development, renewable utility infrastructure, and commercial mortgage lending.

FDH

Service Company

222 S. Central Ave., Ste. 1110

St. Louis, MO 63105

Contact: Amy Jokerst

314-773-4000

ajokerst@fdh-inc.com

www.fdh-inc.com

FDH is a multi-disciplinary firm that provides a combination of engineering investigation and construction management services to customers in the telecommunications market. FDH employs more than 200+ people with offices in Raleigh, NC; St. Louis, MO; Irvine, CA; and Baton Rouge, LA. Our principals have completed a broad range of projects throughout the United States and have dedicated themselves to becoming a leading authority in engineering design, project management, and investigations.

FDH Velocitel

Service Company

1033 Skokie Blvd, Ste. 320

Northbrook, IL 60062

Ken Czosnowski

847-778-0879

kenneth.czosnowski@fdhvelocitel.com

www.fdhvelocitel.com

FIBREBOND

Service Company

1300 Davenport Drive

Minden, LA 71055

Contact: Lindsey McElhatten

318-371-6376

lindsey.mcelhatten@fibrebond.com

www.fibrebond.com

Fidelity National Title Insurance, Co.

Service Company

7130 Glen Forest Drive

Richmond, Va. 23226

Contact: Eileen Hastings

804-267-2086

Eileen.Hastings@fnf.com

class.fntg.com

Fidelity National Title Insurance Co. provides the wireless industry title, closing, recording services nationwide. Title reports for due diligence; Title insurance for leasehold & fee interest, easement estates; Recording services to record MOLs, amendments, deeds, assignments. Full Closing services for acquisition transactions.

Fiorio Communications Consulting

Service Company

12700 Chapel Chase Drive

Clarksville, MD 21029

240-793-2110

pf@fiorio.com

FirstCarbon Solutions

Service Company

FirstCarbon Solutions

Irvine, CA 92602

Contact: Jeffrey Shamas

714-508-4100

jshamas@firstcarbonsolutions.com

www.firstcarbonsolutions.com

In addition to providing comprehensive environmental resource management & regulatory compliance services, FCS provides NEPA, SHPO, NAHC compliance with extensive experience on projects involving, but not limited to: Tower, DAS, Small Cell, and other non-tower structure construction and collocation.

Fred Hopengarten

Legal Services

6 Willarch Road

Lincoln, MA 01773

781-259-0088

hopengarten@post.harvard.edu

www.antennazoning.com

Fujitsu

Service Company

2801 Telecom Parkway

Richardson, TX 75082

Contact: David Oberholzer

972-479-2415

david.oberholzer@us.fujitsu.com

us.fujitsu.com/telecom

Fujitsu Network Communications Inc. is a market-leading provider of communications network equipment and services. The company also offers multivendor solutions for the design, implementation, migration, support, and management of wireless and optical networks.

Fullerton Engineering

Service Company

300 N. Martingale Road, Ste 500

Schaumburg, IL 60173

Contact: Jeff Latzko

224-585-4430

startshere@fullertonengineering.com

www.fullertonengineering.com

Telecom A&E and Structural Engineering Firm, DAS, Small Cell, OSP.

Further LLC

Service Company

www.furtherllc.com

Founded in 2002 by wireless industry veterans, FES has rapidly grown to become a leading provider of innovative solutions to leading telecommunications providers and equipment manufacturers.

GCB Services

Service Company

www.gcbservices.com

GCB headquartered in Virginia is one of the premier independent providers of engineering & Information Technology services to the wireless telecom and IT industry.

GE Critical Power

Service Company

601 Shiloh Road

Plano, TX 75074

Contact: Asha Devasia

877-546-3243

info.criticalpower@ge.com

www.gecriticalpower.com

GlenMartin Holding Co, LLC

Service Company

11910 Shiloh Rd., Ste. 186

Dallas TX 75228

Contact: Marie Velazquez

469-475-6243

marie.velazquez@glenmartin.com

www.glenmartin.com

GlenMartin is a Global leader in the telecommunications industry. Specializing in infrastructure development of support structures and network connectivity for a wide variety of telecommunications and utility solutions. GlenMartin designs, installs, upgrades, services (L&A) and provides maintenance to new or existing telecom sites. Financing options including built-to-suit lease options and full ownership. Our products and services provide end to end solutions for our customers most difficult challenges.

Global Technical Solutions, LLC.

Service Company

2701 Ridgelake Dr.

Metairie, LA 70002

Contact: Charles Farrell

504-875-9633

Charles@GlobalTechnicalSolutionsLLC.com

www.globaltechnicalsolutionsllc.com

Licensed Electrical Contractor operating in 18 States, LTE, UMTS, Small Cell, Civil work. Fast response times.

GME Supply

Service Company

1801 Westfall Drive

Columbia, MO 65202

Contact: Caleb Messer

718-210-3913

info@gmesupply.com

www.gmesupply.com

Goodman Networks

Service Company

6400 International Pkwy, Ste. 1000

Plano, TX 75093

Contact: Scott Pickett

942-406-9692

spickett@goodmannetworks.com

www.goodmannetworks.com

Goodman Networks is a leader in the design, engineering and deployment of fixed and mobile networks. With a track record of success working with the largest service providers in North America, Goodman Networks is leading the industry in the deployment of new technologies such as LTE, Small Cell and DAS solutions.

Granger Telecom

Service Company

5722 Kenwick

San Antonio, TX 78238

Contact: Paul Tomerlin

210-521-8088

paul.tomerlin@grangertelecom.com

grangertelecom.com

Grapevine Solutions

Service Company

Grapevine Solutions

Lenoir City, TN 37772

Robert Hadigian

sales@grapevinesolutions.com

grapevinesolutions.com

Grapevine Solutions provides technology consulting, vendor evaluation, tower service, construction management and NOC services. Our philosophy is you don't need to be a tier 1 service provider to be treated like one and our experience is from the top of the tower to the boardroom.

Graybar

Service Company

34 N. Meramec

St Louis, MO 63105

Contact: Heather Delz

407-835-4521

heather.delz@graybar.com

www.graybar.com

Green Mountain

Service Company

702 Riverwood Drive

Pembroke, NH 3275

603-717-7117

w.solutions@greenmtncomm.com

www.greenmountaincommunications.com/

Green Mountain is equipped to engineer, install, and furnish wired/wireless systems in the northeast covering site acquisition, indoor/outdoor DAS, Wi-Fi, small cells, wired/wireless backhaul, tower services and optical networking.

Green Mountain

Service Company

702 Riverwood Drive

Pembroke, NH 03275

Contact: Catherine Drouin

603-717-7117

w.solutions@greenmtncomm.com

www.greenmountaincommunications.com/

Green Mountain is the source for integrated wired/wireless communication solutions for businesses in the northeast. Our end-to-end solutions are customized to meet your entire portfolio of

communication needs. Whether you're a government entity, utility company, service provider, educational or healthcare institution, or enterprise business, our experienced team will assess your infrastructure goals and deliver an integrated, comprehensive solution that integrates the most advanced technologies.

GSS

Service Company

3311 109th St.

Urbandale, IA 50322

515-331-2103

sjblazenko@gssmidwest.com

www.gssmidwest.com

GTL (USA) INC.

Service Company

5200 Tennyson Pkwy., Ste. 200

Plano, TX 75024

Contact: Raj Kunwar Singh Chhabra

info@gtlamericas.com

www.gtlamericas.com

GTL is a leading network services provider. Our services include Network Design & Optimization, Site Acquisition Services, Micro Network Solutions, Professional (Staffing) Services, Network Operations & Maintenance Services and Customer Experience Management Solutions.

GTS

Service Company

230 Mountain Brook Ct

Canton, GA 30115

Contact: Adam Biesecker

770-345-1670

abiesecker@gts-yes.com

www.gts-yes.com

GTS has been providing communications and infrastructure services since 1988. We offer turnkey engineering and construction services for DAS, Tower, Wireless, Broadband, Fiber, Cabling, Networking, and many other forms of communications infrastructure deployment. GTS is a DEBT FREE, Engineering driven, operation serving the entire country. Proven, Principled, Professional service is the heartbeat of GTS.

Guisys

Service Company

40W320 Lafox Road

Campton Hills, IL 60175

630-762-8540

steve@guisys.com

www.guisys.com

Heartland Networks

Service Company

1023 15th Street, NW, Ste 1100

Washington, DC 20005

Contact: Tim Haley

thaley@heartlandnetworks.com

www.HeartlandNetworks.com

Wireless Network / Infrastructure Development & Services; site acq, zoning, A&E, construction, upgrades, DAS, BTS / Leaseback, turnkey GC services.

Henkels & McCoy

Service Company

985 Jolly Road

Blue Bell, PA 19422

Contact: Bob Dundon

215-283-7764

bdundon@henkels.com

www.henkels.com

Henkels & McCoy has helped customers deal with their changing communications infrastructure needs from source to end user since 1923. We perform work for telephone companies, carriers, wireless providers, government agencies, utilities, educational institutions, and the private sector on projects of every scale. With wireless capabilities that span 4G rollouts and complex DAS installations to structural analysis and tower modifications, our wireless network solutions incorporate safety, quality, on-time performance, and effective program and cost management.

HetNets Tower Corp/Towerstream

Service Company

88 Silva Lane

Middletown, RI 02842

Contact: Brad Gannon

401-952-4756

bgannon@hetnets.com

www.hetnets.com

Huawei

Service Company

www.huawei.com/us

Huawei is a leading global ICT solutions provider. We are committed to creating maximum value for telecom operators, enterprises and consumers by providing competitive solutions and services. Our products and solutions have been deployed in over 140 countries, serving more than one-third of the world's population.

HUBER+SUHNER, Inc.

Service Company

8530 Steele Creek Place Dr, Ste. H

Charlotte, NC 28273

Contact: Bill Burress

704-790-7300

info.na@hubersuhner.com

www.hubersuhner.com

Hutton Communications

Service Company

2520 Marsh Lane

Carrollton, TX 75006

www.huttononline.com

ID Construction Services LLC

Service Company

www.idconstruction.com

Infotech Enterprises America LLC

Service Company

www.infotech-enterprises.com

Services provider for major tier-1 and tier-2 telcos worldwide, Global footprint with long-standing relationships with major telecoms, Over 2,500 dedicated telecom professionals with a deep knowledge of advanced technologies, End-to-end network solutions from implementing network inventory systems to optimizing operational costs, and integration of network inventory with B/OSS and ERP to enable seamless service provisioning and assurance.

Ingeuity Industries, Inc.

Service Company

Ingeuity Industries, inc.

Marysville, CA 95901

Contact: Matthew Younce

530-933-1522

matthew@bondwasher.com

www.bondwasher.com

We provide specialized Washers for Bonding & Grounding with PIM reduction at the Ground Bar. We meet DAFARS Specifications and are an all USA Product.

INOC

Service Company

500 Skokie Blvd.

Northbrook, IL 60062

hbaylor@inoc.com

www.inoc.com

INOC provides outsourced 24x7 NOC support for wireless networks for Neutral Host Providers, Integrators and Carriers. INOC can help improve network availability and reliability. As a seasoned NOC services provider INOC brings 14 years of continuous NOC support experience to bear on and help to improve client's operational workflow.

InSite Wireless Group

Service Company

1199 North Fairfax St, Ste. 700

Alexandria, VA 22314

703-535-3009

www.insitewireless.com

Ira Wiesenfeld & Associates

Service Company

7711 Scotia Drive

Dallas, TX 75248

Contact: Ira Wiesenfeld, P.E.

214-707-7711

iwiesenfel@aol.com

www.IWA-RADIO.com

Consulting firm that is involved with the design, installation, maintenance and training on radio, paging, and other communications systems.

Isotrope

Service Company

503 Main St.

Medfield, MA 02052

508-359-8833

riggs@isotrope.im

www.isotrope.im

Isotrope offers municipalities and industries total support in design, specification, evaluation and construction of wireless facilities. The company provides expert testimony, zoning assistance, coverage mapping, project management, RF design.

IVI Telecom Services

Service Company

55 W. Red Oak Lane

White Plains, NY 10604

(914) 694-9600

telecom@ivi-intl.com

www.ivi-intl.com

IVI Telecom Services offers a wide spectrum of environmental services for nationwide telecommunications infrastructure development ranging from environmental site assessments to FCC and NEPA screenings and Section 106 consultations. At IVI, specialists understand your program and schedule constraints and use their expertise to help you realize your goals in a cost-effective and timely manner.

JTS

[Service Company](#)

**5310 S. Cockrell Hill Road
Dallas, TX 75236
972-620-1435 x.140
sales@jts.net
www.jts.net**

JTS is a systems integrator, specializing in wireless infrastructure. We perform turn-key design, installation, and maintenance of microwave backhaul, Wi-Fi, and WiMAX networks.

Kathrein USA

[Service Company](#)

**Greenway Plaza II
2400 Lakeside Blvd., Ste. 650
Richardson, TX 75082
Contact: Capriccio Martin
214-238-8800
sales@kathrein.com
www.kathrein.com**

KCS

[Service Company](#)

**1125 Remington Road
Schaumburg, IL 60173
847-490-8200
m.sethi@kcscorp.com
www.kcscorp.com**

Kenwood Telecom

[Service Company](#)

**3431 Novis Pointe
Acworth, GA 30101
888-439-0500
sales@kenwoodtelecom.com
www.kenwoodtelecom.com**

Manufacturer of tower site infrastructure steel and accessories such as sector frames, ice bridge kits and cable support accessories. Product engineering, development and improvement.

KGI

[Service Company](#)

**Building Three, Ste. 370,
805 Las Cimas Parkway
Austin, Texas 78746
Contact: Mike Kampen
512-345-9595 Ext 210
www.KGIWireless.com**

KGI offers over 16 years of specialized wireless real estate experience, expanding our Inbound Collocation Services operations to a national workforce of 45 employees and contractors. Our site portfolio now includes 20,000 wireless sites (towers, and prime retail sites) in 9,000

cities/50 states. In 2011, KGI initiated our Site Acquisition Group, which has successfully supported 1,000+ projects including UMTS and LTE upgrades, new sites, DAS installations, antenna modifications and regulatory compliance.

KGP Companies

[Service Company](#)

**3305 Hwy 60 West
Faribault, MN 55021
800-755-1950
contactkgp@kgpte.com
www.kgpcompanies.com**

KGP Companies, including both KGP Logistics and BlueStream Professional Services, is a value-added supplier of supply chain services, communications equipment and integrated solutions to the telecommunications industry. With a national logistics network and a complete portfolio of manufacturer partnerships, KGP Companies is uniquely positioned as the solutions provider of choice.

KGP Logistics

[Service Company](#)

**3305 Hwy 60 West
Faribault, MN 55021
800-755-1950
contactkgp@kgptel.com
www.kgplogistics.com**

KGP Logistics is one of the country's largest single-source; value-added suppliers of supply chain services, communications equipment and integrated solutions to the telecommunications industry. With a diverse and valued customer base, a national logistics network, and a portfolio of manufacturer partnerships that is second to none, KGP Logistics is well positioned to provide unique products and services to solve critical deployment needs.

KMB Design Group

[Service Company](#)

**1800 Rt 34, Ste. 209
Wall, NJ, 07719
Contact: Stephen Banks
732-674-2989
sbanks@kmbdg.com
www.kmbdg.com**

KMB Design Group, LLC is a provider of turnkey engineering, construction and project management services. KMB specializes in the design and deployment of complex projects for telecommunication providers across the nation covering terrestrial wireless, satellite, public safety, microwave backhaul and DAS. KMB has offices in New York, Boston, Chicago, San Francisco and Dallas.

KMM

[Service Company](#)

**9 Law Drive, Ste. 13
Fairfield, NJ 07004
Contact: Sarah McNab
973-244-1262
info@kmmcorp.net
www.kmmcorp.net**

KMM specializes in providing best-in-class supply chain and logistics services to the U.S. telecommunications industry. Founded in 1991, KMM is a Woman Owned Business Enterprise.

Kohler Power Systems

[Service Company](#)

**6640 Northwest
Kansas City, MO 64151
Contact: Gene Wanger
816-591-6760
gene.wagner@kohler.com
www.kohlerpower.com**

LandSource

[Service Company](#)

**6730 Exchequer Drive
Baton Rouge, LA 70809
225-752-0995
patterson@landsource.com
www.landsource.com**

Lansdowne

[Service Company](#)

**St. Anna Platz 2
50538 Munich
Germany
Contact: Lothar Hessel
lothar.hessel@lansdowneconsulting.com
www.lansdowneconsulting.com**

Law Office of Ronald Tucceri

[Service Company](#)

**6300 Creedmoor Road, Ste. 170-105
Raleigh, NC 27612
Contact: Ronald Tucceri
919-795-2437
ron@rtlaw.net
www.rtlaw.net**

Experienced attorney providing advice in the areas of towers, DAS, small cells and rooftops, including purchases and sales, network deployments, vendors, collocations and securing properties for installations.

Lawrence Behr Associates, Inc.

Service Company

**3400 Tupper Drive
Greenville, NC 27834
Contact: Mike Britner
252-757-0279
lbagrp@lbagroup.com
www.lawrencebehassociates.com**

Provides consulting, test, project management & design services in communication system coverage, RF interference & compatibility matters, electromagnetic shielding, radio frequency safety & collocation of diverse communications facilities. We have broad expertise in regulatory & allocation matters, & radio system coverage & path prediction.

LCC

Service Company

**7900 Westpark Dr. Ste. A300
McLean, VA 22102
703-873-2000
info@lcc.com
www.lcc.com**

LCC, the largest independent telecom services company in the world with local presence in over 50 countries, is a recognized leader in providing consulting and network services to the telecommunications industry. Proudly providing wireless expertise since 1983, we continue to be the thought leader in advanced engineering services and remain committed to offering innovative solutions, insight into cutting-edge developments and delivering advanced networking services to our clients.

Legacy Telecommunications, Inc.

Service Company

**PO Box 360
Burley, WA 98322
Contact: Robert Irving
253-858-0214
bobi@legacytowers.com
www.legacytowers.com**

Diversified Communication Infrastructure Service firm doing construction, maintenance, optimization, microwave, generators, fiber, remote access and multi disciplined diagnostics. Serving the Pacific NW and Rockies.

Lyle

Service Company

**3140 Gold Camp Drive, Ste. 30
Rancho Cordova, CA 95670
Contact: Matt Johnson
916-266-7019
mjohnson@lyleco.com
www.lyleco.com**

Lyle is a leading solutions partner in the wireless industry, and we're focused on creating value by exceeding our clients expectations. Our expertise includes Lease Management & Optimization, Renewable Energy Solutions, Site Development, Collocation Management, Field & File Audits, and Professional Services.

M-Tel

Service Company

**2370 Nash Road
Bowmanville, ON L1C 3K4
www.mtelinc.ca**

Mainline Communications Inc.

Service Company

www.mainlinecomm.com
Mainline Communications Inc. is a leading provider of telecommunication contractual supplier services, through time & expense (T&E) and/or fixed bid contracts, to leading RBOC and CLEC companies nationwide.

Malouf Engineering

Service Company

**17950 Preston Road, Ste. 720
Dallas, TX 75252
972-783-2578
info@maloufengineering.com
www.maloufengineering.com**

MALOUF ENGINEERING INTERNATIONAL, INC. (MEI) was established in 1992 as a consulting structural engineering firm specializing in telecommunication and utility structures and related facility buildings with the goal of providing high level of technical services with personal involvement and attention to our clients' requirements.

Martin Environmental Solutions

Service Company

**8823 San Jose, Ste. 103
Jacksonville, FL 32217
Contact: Heather M. Cucci
904-737-1034
www.martinviro.com**

MasTec Network Solutions

Service Company

**4401 Northside Parkway, Ste. 600
Atlanta, GA 30327
Contact: Shauncey Mashia
678-925-8301
shauncey.mashia@mastec.com
www.mastecnetworksolutions.com**

Over the course of the last 80 years, MasTec Network Solutions companies have been involved in some of the largest and most complex telecom infrastructure projects across the country. Our experience has given us a deep and comprehensive understanding of the markets we serve, as well as the ability to effectively manage people, projects and equipment. It allows us to proactively identify challenges, avoid pitfalls, and overcome obstacles, and to accurately set and meet expectations for schedule and budget. With offices across the country, a workforce of nearly 2,000 skilled professionals, and an extensive wholly owned fleet of specialized construction equipment, MasTec Network Solutions has the resources needed to reliably deliver quality work for even the most complicated jobs. Our geographic reach, scalability, and overall financial stability enable us to meet each of our customers changing needs on a daily basis. Our core services are the engineering, building, installing, maintaining and upgrading of infrastructure for communications customers, through self-performed work and project management.

Media Venture Partners

Service Company

**244 Jackson St., 4th Floor
San Francisco, CA 94111
415-391-4877
info@mediaventurepartners.com
www.mediaventurepartners.com**

Providing strategic counsel and financial services, mergers and acquisitions, private equity and debt raises, valuations and appraisals, Media Venture Partners has completed over \$14 billion in transactions and focuses on clients in the media, telecom, datacenter, renewables and technology industries. Founded in 1987, Media Venture Partners has offices in San Francisco; Kansas City, MO; Boston and Boulder, Colo.

Mejia Telecommunications Company

Service Company

P.O. Box 8504

Coral Springs, FL 33075

Contact: Diego Mejia

787-409-6024

dmejia@mejiatelecom.com

www.mejiatelecom.com

With more than 20 years of experience, we specialized in tower and equipment installation, technology installation (GSM, 4g, LTE, etc.), RF installation, PIM and Sweep Test, AC/DC Equipment auditing, Turnkey projects and Project Management, steel structures supplies.

Message Center Management, Inc.

Service Company

40 Woodland Street

Hartford, CT 06105

Contact: Chris Gelinias

888-973-SITE (7483)

cgelinas@mcmgmt.com

www.mcmgmt.com

MCM is a wireless tower owner, developer, and rooftop site operator throughout the country. Wireless carriers count on MCM, Inc. to deliver premier site locations, including BTS opportunities where and when they need them. Speed, efficiency, and creativity are critical for carrier network development either in new markets or enhancing existing. Look to MCM, Inc. as your site provider to deliver on those critical needs.

Metaswitch Networks

Service Company

201 Potrero Ave

San Francisco, CA 94103

415.513.1500

contact@metaswitch.com

www.metaswitch.com

Metaswitch is powering the transition of communication networks into a cloud-based, software-centric future.

Metro Network Services

Service Company

90 White Street

New York, NY 10013

212-981-0700

sales@metrons.com

www.metrons.com

Metro|NS is managed and operated by the same team who built and sold the Lextel Metro Connect dark fiber optic network in Manhattan and New Jersey. Leveraging our experience constructing a proprietary network and our acute

knowledge of the New York Metro construction and political fields, Metro|NS consults with clients to ensure their networks are optimized and efficient.

Mikab

Service Company

21 Omaha St., P.O. Box 36

Dumont, NJ 07628

201-387-7700

Davidhauck@mikabcorp.com

www.mikabcorp.com

Milestone Media, LLC

Service Company

848 N Rainbow Blvd #680

Las Vegas, NV 89107

303-335-9843

info@milestonemediallc.com

www.milestonemediallc.com

Acquisitions, divestitures, valuations, appraisals, strategic planning - sites, DAS, broadcast, spectrum, cable television, fiber, and publishing.

Millennium Wireless Services

Service Company

3543 Dreher Shoals Road

Irmo, SC 29063

803-661-7282

sales@mws.us.com

www.mws.us.com

Millennium Wireless Services is a southeastern U.S. telecom contractor specializing in cell-site equipment installation and integration devices. Established in 1998, Millennium Wireless Services is a licensed general and electrical contractor and its employees often travel extensively for selected projects. Millennium Wireless Services takes great pride in each and every completed site.

Mosaik Solutions

Service Company

6423 Shelby View Dr., Ste 101

Memphis, TN 38134

901-377-8585

sales@mosaik.com

www.mosaik.com

Mosaik Solutions builds world-class applications backed by comprehensive wireless network intelligence. Make better decisions and attract more customers with accurate datasets and tailored marketing solutions.

Multiwave Sensors

Service Company

8510 Torbram Road, Unit 67

Brampton, Ontario L6T 5C7

Contact: Bruce Clifford

905-458-9060

sales@multiwavesensors.com

www.multiwavesensors.com

MYCOM

Service Company

1080 Holcomb Bridge Rd, Bldg 200, Ste. 350

Roswell, GA 30076

Contact: Virginie Daniel

770-776-0000

virginie.daniel@mycom-usa.com

www.mycom.com

MYCOM is a leading independent provider of carrier-grade Network and Services Performance Management and Advance Engineering Services to the world's largest Communications Service Providers (CSPs). Its products, services and 700 staff are focused on delivering advanced network performance intelligence that enables CSPs to optimize networks, govern suppliers, rapidly launch new technology and services, and deliver high quality customer experiences.

Narda Safety Test Solutions

Service Company

435 Moreland Road

Hauppauge, NY 11788

www.narda-sts.us

National Wireless Ventures LLC

Service Company

1900 West Acre Rd.

Joliet, IL 60435

Contact: Robert Stapleton

847-833-5448

rstapleton@nvw.me

www.nvw.me

Site acquisition services including leasing, zoning, permitting, government relations, special events facility placement (cows/colts) point to point microwave, project management.

NATE

Service Company

8 Second Street SE

Watertown, SD 57201

Contact: Todd Schlekeway

605-882-5865

nate@natehome.com

www.natehome.com

NetNearU

Service Company

6155 El Camino Real
Carlsbad, CA 92009
Contact: Robert Brown
619-955-8128
robert@nnu.com
www.nnu.com

Complete turn-key managed services for WiFi network delivery. From design to ongoing operations and maintenance, NNU can manage the complete network lifecycle.

Network Building + Consulting

Service Company

6095 Marshalee Drive, Ste. 300
Elkridge, MD 21075
Contact: Jeff Ebihara
616-218-9444
jebihara@nbcllc.com
www.networkbuilding.com

Founded in 1984, NB+C is a leading wireless site development firm comprised of three business units: Site Development, Engineering Services and Construction + Technical Services. We are staffed with over 300 professionals who are totally committed to client service and project results.

NexGen Utility Solutions LLC

Service Company

2050 Marconi Drive Ste. 300
Alpharetta, GA 30005
404-403-8149
cwood@nexgenusa.com
www.nexgenusa.com

NexGen Utility Solutions is a provider of device installation solutions and technical resources to leading energy utilities, communications companies and OEM device manufacturers throughout the United States. Our company implements, builds and supports America's infrastructure.

Nexius

Service Company

www.nexius.com

Nexius delivers end-to-end wireless services to leading carriers, and business intelligence solutions to data-driven industries. With over a thousand dedicated professionals, Nexius provides a full range of services in Network Deployment, Network Engineering, Technology Services, Network and Business Intelligence Solutions. Founded in 2001, Nexius has become one of the fastest growing telecom solutions providers by delivering innovative solutions and project success.

Noble Engineering Consultants

Service Company

123 E. Railroad St.
Flora, IL 62839
618-662-5800
eseals@nbleng.com
www.nbleng.com

Nokia Solutions and Networks

Service Company

6000 Connection Drive
Irving, TX 75039
Contact: Pepe Lastres
pepe.lastres@nsn.com
www.nsn.com

Nokia Solutions and Networks (NSN) provides the world's most efficient mobile networks, the intelligence to maximize network value, and the services to make it all work seamlessly.

OMNI-WiFi, LLC

Service Company

70 Sullivan Street
Berwick, MD 3901
800-610-6711
sales@OMNI-WiFi.com
www.OMNI-WiFi.com

OMNI-WiFi manufactures wireless equipment -- transmitters, repeaters, and client-premises equipment that delivers among the most powerful, longest range, and highest quality 802.11 signals available today.

One Source Freight Solutions

Service Company

One Source Freight Solutions
Tempe, AZ 85281
Contact: Dena Riley
480-525-9055
dena@onesrc.com
www.onesrc.com

We work with clients to create a fully integrated, custom solutions across a broad spectrum of project needs, handling everything from route planning and scheduling through communications and construction. We offer the benefit of true turnkey service, covering materials-ordering to delivery and installation/dismantling.

OptiMoS International

Service Company

6290 Abbotts Bridge Rd. #103
Johns Creek, GA 30097
Contact: Craig Rosenblum
info@OptiMoSInternational.com
www.optimosinternational.com

Provide RF Wireless services for Operator's networks; Macro and In-building (DAS, Small Cells).

Parallel Infrastructure LLC

Service Company

4601 Touchton Rd E, Bldg 300, Ste 3200
Jacksonville, FL 32246
Contact: Ed Myers
904-565-4129
ed@parallelinfrastructure.com
www.parallelinfrastructure.com

Parallel Infrastructure LLC is a national Right-of-Way (ROW) management and infrastructure development company. Parallel Infrastructure invests in and manages rights-of-way, creating significant value for both public and private owners. Headquartered in Jacksonville, Fla., Parallel Infrastructure is a wholly owned subsidiary of Florida East Coast Industries, Inc.

Partner Engineering and Science, Inc.

Service Company

2154 Torrance Blvd, Ste 200
Torrance, CA 90501
Contact: Dan Entler
800-419-4923
dentler@partneresi.com
www.partneresi.com

Partner Engineering and Science, Inc. (Partner) is a full-service environmental and engineering consulting firm completing projects nationwide. We specialize in evaluating properties in connection with real estate transactions, financing, development or management.

Patriot Towers Inc.

Service Company

9332 N 95th Way, Ste. B203
Scottsdale, AZ 85258
480-421-0234
dgray@patriot-tower.com
www.patriot-tower.com

Patriot Tower provides communication infrastructure deployment for Federal, State and Local government agencies. Our services include site acquisition, engineering, procurement and construction. Our wireless team also provides sales and service of radio systems.

Paul J. Ford and Company

Service Company

250 E. Broad St., Ste. 1500
Columbus, OH 43215
Contact: Dave Hawkins
614-221-6679
contact_request@pjfweb.com
www.pjfweb.com

Paul J. Ford and Company is a nationally recognized leader in the design and analysis of lattice towers, monopoles, and design of tower reinforcing systems.

PCTEL Inc, RF Solutions

[Service Company](#)

20410 Observation Dr., Ste. 200

Germantown, ME 20876

Contact: Chintan Fafadia

rfs.sales@pctel.com

rfsolutions.pctel.com

PCTEL RF Solutions specializes in the design, optimization and testing of today's wireless communication networks. We develop and build innovative scanning receivers, drive test software, and interference management solutions that help wireless cellular operators get the most out of their wireless spectrum. Our highly-trained engineering services team uses state-of-the-art test, measurement, and design tools to provide engineering services for in-building and outdoor networks. Our commitment to quality, value, and customer service has made PCTEL RF Solutions a trusted vendor for operators worldwide.

Peak Power Services, Inc.

[Service Company](#)

www.peakpowerservices.com

Through the years Peak Power employees have held to the belief that its customers deserve more than they expect, as a result, we are currently the primary provider of DC Power, Battery, Tower & RF service and Generator installation and maintenance for AT&T Mobility in the Florida market.

PEG Bandwidth

[Service Company](#)

Three Bala Plaza East, Ste. 502

Bala Cynwyd, PA 19004

Contact: Greg Ortyl

610-660-4910

gortyl@pegbandwidth.com

www.pegbandwidth.com

PEG Bandwidth is a provider of customized cell site backhaul and wireless infrastructure solutions for the wireless industry. Whether the challenge is improving network reach and quality, increasing capacity or maintaining cost certainty for the future, PEG Bandwidth's team of wireless experts can deliver a custom-designed, technology- and access-agnostic solution. With a fiber-rich network that provides ackhaul services to 3,000 cell sites across 13,000 fiber route miles, PEG Bandwidth is able to provide its solutions wherever challenging problems exist.

Penn-Tech

[Service Company](#)

3 S. Bacon Hill Road, Unit 2

Frazer, PA 19355

484-395-0145

pti@ptii.net

www.ptii.net

Peppertree Capital

[Capital Firm](#)

86 West Street

Chagrin Falls, Ohio 44022

Contact: F. Howard Mandel

440-893-0330

hmandel@peppertreecapital.com

www.peppertreecapital.com

Peppertree Capital is a private equity firm focused on wireless telecom infrastructure. Its partners have founded or invested in 17 tower companies dating back to 1997.

Phillips Lytle LLP

[Legal Services](#)

3400 HSBC Center

Buffalo, NY 14203

Contact: Douglas W. Dimitroff

716-847-5408

ddimitroff@phillipslytle.com

www.phillipslytle.com

Phillips Lytle is a corporate and commercial law firm with a dedicated Telecommunications Industry Team. This multi-disciplinary team of attorneys handles representation on a full range of transactional, operational, regulatory and litigation matters including asset purchases and sales; site leasing work; zoning and land use; service, interconnection and right of way contracts. In addition, the Team is involved with acquisitions, IPOs, lender financings and venture capital funding. We represent some of the world's largest telecommunications companies, regional providers, site owners, as well as lenders and investors across the United States.

Phillips Lytle LLP

[Legal Services](#)

One Canalside, 125 Main Street

Buffalo, NY 14203

Contact: Douglas W. Dimitroff

716-847-5408

ddimitroff@phillipslytle.com

www.phillipslytle.com

Phillips Lytle is a corporate and commercial law firm with a dedicated Telecommunications Industry Team. This multi-disciplinary team of attorneys handles representation on a full range of transactional, operational, regulatory and litigation matters including asset purchases

and sales; site leasing work; zoning and land use; service, interconnection and right of way contracts. In addition, the Team is involved with acquisitions, IPOs, lender financings, and venture capital funding. We represent some of the world's largest telecommunications companies, regional providers, site owners, as well as lenders and investors across the United States.

PierCon Solutions

[Service Company](#)

63 Beaver Brook Road, Ste. 201

Lincoln Park, NJ 07035

973-628-9330

jennifer.hagin@piercon.net

www.piercon.net

Phoenix Telecom Solutions

[Service Company](#)

3200 El Camino, Ste. 200

Irvine, CA 92602

Contact: Michael Johnson

714-602-3370

mjohnson@phoenix-ts.com

www.phoenix-ys.com

PORTER Site Concealment

[Service Company](#)

164 Malbert St Building B

Perris, CA 92570

951-940-9090

porter@porterrf.com

porterrf.com

Custom fabrication of RF transparent concealment products including architectural structures, specialty towers and radomes. We ship our products anywhere in North America. Design and Engineering or build to specification.

Powder River Development Services, LLC

[Service Company](#)

219 S Wooddale Avenue

Eagle, Idaho 83616

Contact: Andrew Dewhirst

208-938-8844

drew.dewhirst@powderriverdev.com

www.powderriverdev.com

Powder River Development Services, LLC was formed in 2003 by owners Patrick Campbell and Andrew Dewhirst. We provide the wireless industry our expert services for site acquisition, zoning, permitting, project management, architectural & engineering, structural services, and construction management. We employ knowledgeable team members who perform their tasks in a timely manner, at a competitive price and to the satisfaction of our clientele.

Power & Tel

Service Company

2673 Yale Avenue
Memphis, TN 38112

Contact: Keith Cress
800-238-7514

marketing@ptsupply.com
www.ptsupply.com

Professional Teleconcepts, Inc.

Service Company

P.O. Box 311
Norwich, NY 13815

Contact: Stephen T. Marshall
www.pro-tel.com

Professional Teleconcepts, Inc. (Pro-Tel) is a wholly owned subsidiary of Dycorn Industries, Inc. (NYSE: DY). Pro-Tel specializes in turnkey ISP infrastructure services to carriers, OEMs, and enterprise clients throughout the United States. Projects may encompass design, procurement, installation, and testing/commissioning services.

ProMobility Inc.

Service Company

40 East Pearce Street
Richmond Hill, ON

L4B 1B7
289-695-9595

pvan@promobility.com
www.promobility.com

Wireless Device Lifecycle Management
Services Provider

Qualcomm

Service Company

5775 Morehouse Dr
San Diego, CA 92121

Contact: Vaidehi Puntambekar
858-651-9300

vaidehip@qti.qualcomm.com
www.qualcomm.com

Quantum Group, LLC

Service Company

15130 Broadmoor Street
Overland Park, KS 66223

Contact: Philip S. Brown
913-239-9303

pbrown@qmerge.com
www.qmerge.com

Quantum Group is an independent, privately-owned mergers and acquisition firm that provides sell-side advisory services for tower and cellular rooftop owners. Quantum has successfully completed over 600 tower/rooftop/spectrum transactions in the last 16 years, making us

#1 in the industry. Philip S. Brown is the President and CEO of Quantum which is based out of Overland Park, KS, with a satellite offices in Los Angeles, CA.

RAI Wireless LLC

Service Company

5 International Drive
Deptford Township, NJ 08080

Contact: Mike Foss
856-228-5566

mfoss@raiservices.com
www.rayangelini.com

Team of professionals providing full suite of scalable solutions and services for communications networks, including construction and technical services, tower upgrades, project management, RF Engineering.

Raymond James Financial

Capital Firm

880 Carillon Parkway
Saint Petersburg, FL 33716

Contact: Justin Cadman
727-567-5102

Justin.Cadman@raymondjames.com
www.rjcapitalmarkets.com

Raymond James Financial is a financial services holding company with subsidiaries engaged primarily in investment and financial planning, capital markets, and asset management. Since 2009, Raymond James has participated in raising nearly \$400 billion in capital for our corporate clients. During this same time, we completed more than 170 advisory assignments, including over 140 M&A buy-side or sell-side advisory assignments with transaction values totaling over \$14 billion. More than 6,200 financial advisors serve more than 2.4 million accounts in more than 2,600 locations throughout the United States and internationally.

RBC Capital Markets

Capital Firm

3 World Financial Center
200 Vesey Street, 8th Fl.
New York, NY 10281

Contact: Nick Stevenson
212-428-6405

nick.stevenson@rbccm.com
www.rbccm.com/communications

RBC Capital Markets is a premier investment bank which provides comprehensive equity and debt financing products and M&A advisory to the tower and telecom infrastructure industry. According to Bloomberg and Dealogic, we ranked among the top 10 global investment banks for 2012. We

are part of Royal Bank of Canada (RBC). Operating since 1869, RBC is among the top 15 largest banks in the world and the fifth largest in North America, by market capitalization.

Red Wing Enterprises

Service Company

15 Daniel Road East
Fairfield, NJ 07004

Contact: Maria Morris
973-276-0056

mmorris@redwingelectric.com
www.rwellc.com

Red Wing Enterprises is a licensed electrical contractor and a full service provider of telecom infrastructure services to carriers, OEMs, tower owners, etc. RWE offers site audits, RF engineering, site acquisition and self-performed construction services in addition to being an emergency and disaster recovery provider.

RETEL Services

Service Company

Contact: Theresa Sharp
423-596-4444

theresa.sharp@retelservices.com
www.retelservices.com

RETEL Services is a full turnkey solution, including our exclusive RevG certified composite pole, providing quality and care to every endeavor to ensure success.

RF Consulting Services

Service Company

P.O. Box 72350
Marietta, GA 30007
770-310-7557

ted@rfconsulting.com
www.rfconsulting.com

RF Consulting, PSC

Service Company

PMB 299, 220 Plz Western Auto Ste. 101
Trujillo Alto, PR 976

rfc@rfconsultingpr.com
www.rfconsultingpr.com

RF Consulting is the leader in radio frequency safety compliance, interference hunting and in building design.

RJE Telecom, LLC

Service Company

rjetelecom.com

We increase our customers' operating flexibility by providing service personnel in the areas where they lack the capacity or forces to meet both their day to day and peak demands. We will positively impact your bottom-line by providing professionally-managed personnel for all of your telecommunications needs.

RJR Wireless

Service Company

23501 Park Sorrento, Ste. 218

Calabasas, CA 91302-1381

Contact: Rich Reichler

818-222-7483

rjrwireles@aol.com

Since 1998, RJR Wireless has been providing consulting and special-project services for antenna-site managers, owners and users. Contact Rich Reichler at RJRWireles@aol.com. RJR Wireless is a member of PCIA and EWA, and Rich Reichler is a member of the Radio Club of America.

RKC Site Solutions

Service Company

520 W Lake Mary Blvd, Ste. 100

Sanford, FL 32773

Contact: Ken Cox

407-732-7710

nfo@rkcsitesolutions.com

www.rkcsitesolutions.com

ROHN Products

Service Company

1 Fairholm Ave.

Peoria, IL 61603

Contact: Mark Allen

309-566-3000

sales@rohnnet.com

www.rohnnet.com

Global designer and manufacturer of tower, poles and structures since 1948.

RSI (Radiofrequency Safety International) Corp

Service Company

543 Main Street

Kiowa, KS 67070

Contact: Miranda Allen

620-825-4600

info@rsicorp.com

www.rsicorp.com

Environmental safety services company specializing in RF (radiofrequency radiation) site safety survey and assessments. Site safety plans. In-house, public seminar, and web based RF safety training.

S&R Resources, Inc

Service Company

6950 Portwest Drive #190

Houston, TX 77024

713-663-7020

srresources@srresources.com

www.srresources.com

Component Level repair of all types of Communications related Infrastructure: Microwave, Wired, Wireless & Broadcast Encoders for 24 years.

Sabre Industries

Service Company

7101 Southbridge Dr.

Sioux City, IA 51111

Contact: Mike Coghlan

712-258-6690

towerinfo@sabreindustries.com

www.sabreindustries.com

Sabre Turnkey Solutions

Service Company

555 Enterprise Drive

Edmond, OK 73013

405-216-0555

lburns@sabreindustries.com

www.sabreturnkeysolutions.com

Safety One Training

Service Company

8181 W. Brandon Drive

Littleton, CO 80125

Contact: Kevin Carter

303-734-0772

info@safetyoneinc.com

www.safetyoneinc.com

Tower Climbing Safety & Rescue training for climbing safety, rescue, and fall protection, including Train-the-Trainer, Advanced, Rigging & Hoisting, Rope Access and Confined Space.

Saul Ewing LLP

Legal Services

500 E. Pratt Street, Ste. 800

Baltimore, MD 21202

Contact: Gregory E. Rapisarda

410-332-8963

grapisarda@saul.com

www.saul.com

Saul Ewing LLP is a 250-lawyer firm with 11 offices in Maryland, Massachusetts, Pennsylvania, New Jersey, Delaware, New York, and Washington, DC. Our Telecommunications Group represents providers and purchasers of voice, video, data, and related services, provides counsel on telecommunications systems acquisitions and dispositions; co-venture, vendor and customer

contracts; finance; litigation/zoning strategy and implementation, including zoning and municipal approvals; federal/state permits, regulatory filings and compliance; environmental permitting and litigation; and government relations.

SBA Communications Corporation

Service Company

5900 Broken Sound Parkway NW

Boca Raton, FL 33487-2797

Contact: Lynne Hopkins

800-487-SITE

information@sbsite.com

www.sbsite.com

SBA Communications Corporation is a first choice provider and leading owner and operator of wireless communications infrastructure in North, Central America and South America. By "Building Better Wireless," SBA generates revenue from two primary businesses - site leasing and site development services. The primary focus of the Company is the leasing of antenna space on its multitenant towers to a variety of wireless service providers under long-term lease contracts.

Schwaninger & Associates

Legal Services

6715 Little River Turnpike, Ste. 204

Annandale, VA 22003

703-256-0637

rschwaninger@sa-lawyers.net

www.sa-lawyers.net

Schwaninger & Associates provides all legal services required of tower and rooftop operators, with over 20 years' experience negotiating site leases, fulfilling regulatory requirements, representing buyers and sellers, assuring tenant compliance, and providing valuation of tower properties for sale or commercial financing. Robert Schwaninger, co-author of the "Fryer's Market Report" for over five years, is also available to provide expert witness testimony in a variety of site leasing areas. The firm can help whether it's one tower or a thousand. Call today. Schwaninger & Associates makes the difference in the deal.

Seidel Planning & Design

Service Company

1240 E. Schuykill Road

Pottstown, PA 19465

610-323-8752

bseidel@seidelplanning.com

www.seidelplanning.com

SG Services Inc

Service Company

**1 Dover Place
Holland, PA 18966**

**Contact: Serge Gofman
816-974-7474**

**info@SGServicesInc.com
www.SGServicesInc.com**

We are a staffing and consulting company dedicated to providing our clients with the highest quality products and services at the most competitive rates.

Shenandoah Tower Service

Service Company

**P.O. Box 956
Staunton, VA 24402-0956
www.shenandoahtower.com**

Shenandoah Tower Service, formed in 1983, is dedicated to setting the standard in the wireless communications industry by providing exceptional construction, maintenance and management services.

Shireen, Inc

Service Company

**12910 Cloverleaf Center Drive
Germantown, ME 20874**

**Contact: Greg Alberti
301-838-4380**

**Greg@ShireenInc.com
www.shireen.com**

Shireen, Inc. has been providing Global enhancement of wireless infrastructure for over 10 years. Our leading edge technology provides complementary advantages to WiFi, Cellular, Whitespace, SCADA, m2m, UAV, Robotics, Security, and a host of other vertical markets utilizing a wireless platform.

Shive-Hattery/GSS

Service Company

**3025 Highland Parkway, Ste. 140
Downers Grove, IL 60515**

**Contact: James Downey, Shive-Hattery;
Steve Blazenko, GSS
888-282-8039**

**jdowney@shive-hattery.com;
sjblazenko@gssmidwest.com
www.shive-hattery.com; www.gssmidwest.com**

Shive-Hattery provides engineering and architecture services for switch sites, fiber optic networks, personal communication systems (PCS) and communication towers. GSS provides comprehensive environmental management including Phase 1 ESAs, NEPA studies, SHPO consultation and all related services.

Shulman Rogers

Legal Services

**12505 Park Potomac Ave., 6th Floor
Potomac, MD 20854**

**301-230-5200
info@shulmanrogers.com**

www.shulmanrogers.com

Shulman Rogers is a full-service telecommunications and business law firm. It provides brokerage services, contract negotiations, regulatory filings, dispute resolution and more for tower owners, lessors and lessees. Shulman Rogers is also pleased to announce that Michael Higgs, counsel to numerous tower owners, has joined the firm.

Shulman Rogers

Service Company

**12505 Park Potomac Ave., 6th Floor
Potomac, MD 20854**

**301-230-5200
info@shulmanrogers.com**

www.shulmanrogers.com

Site Acquisition Services

Service Company

**37 N. Valley Road
Paoli, PA 19301**

**610-644-5467
hstinger@sasidelivers.com**

www.siteacquisitionsservicesinc.com

Site ID, Inc.

Service Company

**103 Carnegie Center, Ste. 300
Princeton, NJ 08540**

**Contact: Michael Shine
973-454-0302**

**info@siteidinc.com
www.siteidinc.com**

Providing acquisition and services to the wireless industry; including build to suit!

Site Management Services

Service Company

**P.O. Box 24377
Knoxville, TN 37933**

**Contact: Charles Burton
865-659-7001**

**cburton@siteacqservices.com
www.wirelessitesolutions.net**

Site Acquisition: New Builds; Collocations; Small Cell-Commercial Properties.

SiteMaster

Service Company

**6914 South Yorktown, Ste. 210
Tulsa, OK 74136**

**Contact: Jim Hopkins
918-269-5094**

**jhopkins@sitemaster.com
www.sitemaster.com**

Inspect. Build. Maintain. SiteMaster's experienced management team brings over 200 years of combined industry experience to your project. For 16 years we've delivered wireless infrastructure services ranging from audits to new site builds to overlays to decom's with quality and integrity, and our team continues to grow and evolve with the industry embracing new technologies and standards, including experience/certifications on PIM testing, FTTC, Hybrid Cable (Fiber/Power), RRR/U's, MW (IP), DAS, PMP, and more. And always remember - safety first!

Solutelia

Service Company

**3033 S. Parker Road, Ste. 460
Aurora, CO 80014**

**Contact: Keith Sach
720-748-3004**

**contact@solutelia.com
www.solutelia.com**

Solutelia provides RF engineering and DAS services and solutions. Solutelia has recently introduced the WINd software platform that addresses some of the wireless industry's most pressing concerns by providing real-time reporting, testing and analysis of network performance using the latest commercially available Android smartphones.

SouthShore Communications, LLC

Service Company

**575 NW Mercantile Pl., Ste. 104
Port Saint Lucie, FL 34986**

**Contact: Bryan Besade
772-336-2594**

**info@southshorecom.cc
www.southshorecom.cc**

SouthShore Communications, LLC is a fully licensed and insured wireless infrastructure solutions provider. We specialize in the deployment, maintenance, and upgrade of wireless networks. Contact us today. From project management, certified towers crews, to electrical crews, we have you covered.

Speed Wire Inc.

Service Company

393 Jericho Turnpike, Ste. 106

Mineola, NY 11501

Contact: Eddie Carlucci

1-877-97-SPEED

ecarlucchi@speedwireinc.com

www.speedwireinc.com

Founded in 1996, Speed Wire Inc. clients have come to rely on us for quick, efficient and cost effective deployment services in areas such as Broadband, Security, IT, Connected Home, Smart Energy, Kiosks, TeleMedicine and Enterprise Solutions.

SQUAN

Service Company

329 Harold Avenue

Englewood, NJ 07631

201-408-5111

drundella@squan.com

www.squan.com

Squan specializes in turnkey macro, DAS, and small cell site development for telecommunication carriers, tower companies, neutral host providers, commercial landlords, government entities, universities, health care institutions, and other visionary organizations seeking increased coverage and capacity.

Square Cubed

Service Company

8877 Wellston Ct.

Jonesboro, GA 30238

404-919-7133

Info@thesquarecubed.com

www.thesquarecubed.com

A Telecommunication Integration company providing a large array of telecom services, including but not limited to structured cabling, in-building DAS systems, and internal LAN & WIFI. We provide all around telecommunication needs for our clients. Our highly trained engineers and technicians are here to take on any task no matter how big or small.

SSC

Service Company

8500 W. 110th St., Ste. 300

Overland Park, KS 66210

913-438-7700

info@ssc.us.com

www.ssc.us.com

SSC is a leading provider of services to the telecommunications, development and construction industries. Its full range of in-house

services and abilities makes it uniquely capable of handling all aspects of the most challenging projects. SSC strives hard to serve its clients, solve their problems and communicate effectively.

STC Statmon Tech, Inc.

Service Company

5318 E 2nd Street

Long Beach, CA 90803

847-604-5368

gtalbot@statmon.com

www.statmon.com

Remote Control and Monitoring software and hardware, RFID solutions.

Stout & Company, LLC

Service Company

415 South Commerce Street

Natchez, MS 39120

Contact: Guy Stout

601-445-0504

guy@stoutandcompany.com

www.stoutandco.com

Tower Developer.

Sunny Communications Inc.

Service Company

3568 Peoria Street #608

Aurora, CO 80010

Contact: John Sapuppo

720-870-5056

John@SunnyCommunications.com

www.sunnycommunications.com

Buy and Sell USED two way radio and related equipment including two way radios, backbone infrastructure such as repeaters, combiners, controllers etc.

Sunshine Electric & Wireless, LLC

Service Company

124 Spring Street

McMurray, PA 15317

Contact: Norm Purkey

888-977-8096

info@sunshineandw.com

www.sunshineandw.com

Electrical consulting and inspection firm performing site power, hvac, and construct-ability audits, plan review, estimating, and maintenance services.

SureSite Consulting Group, LLC

Service Company

3659 Green Road, Ste. 214

Beachwood, OH 44122

Contact: Courtney Schmidt

216-593-0400

info@sure-site.com

www.sure-site.com

SureSite is a national provider of site development and staffing services to the wireless and telecommunication industries. With offices in Cleveland, Chicago, Denver and Los Angeles and field locations throughout the country including the east, southeast and central regions, we pair our distributed workforce and professional practices with an extensive network of local experts to provide hands-on service at every phase.

Syniverse

Service Company

8125 Highwoods Palm Way

Tampa, FL 33647

Contact: David Wasserman

david.wasserman@syniverse.com

www.syniverse.com

Syniverse is the leading global transaction processor that connects more than 1,500 mobile service providers, enterprises, ISPs and OTTs in nearly 200 countries and territories, enabling seamless mobile communications across disparate and rapidly evolving networks, devices and applications. We deliver innovative cloud-based solutions that facilitate superior end-user experiences through always-on services and real-time engagement.

Syterra Networks

Service Company

495 Hartman Road

Winston Salem, NC 27127

336-414-3120

syterra@gmail.com

www.syterranelworks.com

Provider of Site Acquisition including Small Cell Deployments. EF&I services for P to P and P to MP microwave systems.

Tectonic Telecommunications

Service Company

70 Pleasant Hill Road
Mountainville, NY 10953
Contact: Richard P. Kummerle
800-829-6531
RPKummerle@tectonicengineering.com
www.tectonicengineering.com

Tectonic provides turnkey program management and site acquisition, engineering and construction management from our strategically located offices nationwide. Tectonic, now ranked in the Top 15 by ENR in Telecommunications Tower and Antennae site development, has been providing these services to the telecommunications industry for over 25 years. Tectonic holds Professional Engineering Licenses in 48 states. Our Engineers are supported by our in-house staff of approximately 500; which performs; site audits, leasing/zoning, site design, structural and geotechnical engineering, tower analysis, environmental studies, photo simulations and surveying. Tectonic has provided these services to all of the major carriers, the foremost tower companies and program managers on more than 50,000 new builds and site modifications nationwide. Tectonic's unique model of providing turnkey services with our in house resources permits us to costeffectively respond to both our client's technical and scheduling goals nationally.

Telecom Capital Group

Service Company

6150 Sheridan Point Road
Prince Frederick, ME 20678
Contact: Manish Dureja
443-532-8889
manny@telecomcapital.com
www.telecomcapital.com

Wireless communications tower owner and operator throughout the mid-Atlantic with clients including all of the major wireless operators and local service providers.

Tempest Telecom Solutions

Service Company

136 W. Canon Perdido, Ste. 100
Santa Barbara, CA 93101
Contact: Elda Rudd
805-879-4800
sales@tempesttelecom.com
www.tempesttelecom.com

Tempest Telecom Solutions, LLC is a leading provider of telecom infrastructure equipment and repair services, helping service providers and network operators build, expand, and maintain their networks faster and more cost-effectively.

Terracon Consultants, Inc.

Service Company

10625 W I-70 Frontage Road N. Ste. 3
Wheat Ridge, CO 80033
Contact: Craig Pruett
303-423-3300
cspruett@terracon.com
www.terracon.com

Terracon is a 100-percent employee-owned consulting engineering firm that has provided quality engineering services to clients since 1965. From its roots in geotechnical engineering, Terracon has evolved into a successful multi-discipline firm specializing in environmental, facilities, geotechnical, and materials services for private and public sector clients. Terracon currently operates more than 140 offices nationwide with more than 3,000 employees and ranks 38th on Engineering News-Record's list of Top 500 Design Firms in the nation.

TestEquity LLC

Service Company

5256 Choctaw Ave
Pensacola FL, 32507
Contact: Mary Dobson
805-498-9933 x 258
Mary.Dobson@TestEquity.com
www.TestEquity.com

TestEquity specializes in rental/leasing and sales of new and refurbished test equipment from Agilent, Tektronix, Rohde & Schwarz, Fluke, Anritsu, Sorensen, Extech, Flir, B&K Precision, Chroma, Advanced Fiber Solutions and Precision Rated Optics, Instek, Topward, USBee, Hioki, and Amprobe. TestEquity will buy your excess equipment and we have a full line of Environmental Chambers. Please check out our GSA Schedules: Test Equipment held by TestEquity is Contract #GS-07F-0224Y and Environmental Chambers held by TestEquity is Contract#GS-07F-0223Y.

Texas Exchange Bank

Capital Firm

301 Commerce Street Ste. 2901
Fort Worth, TX 76102
Contact: Beau Chron
682-224-8751
bchron@txexbank.com
www.txexbank.com

Texas Exchange Bank is a well-capitalized Texas bank with a focus in the wireless infrastructure sector. The bank has been locally owned and operated since it first opened for business in 1970 in Crowley, Texas. We take great pride in providing highly personalized financial services to our business and individual clients. We are actively funding \$2-to-\$5 million commercial loans.

The Law Offices of Keith R. Betensky

Legal Services

75 S. Broadway, 4th Floor
White Plains, NY 10601
914-338-8050
keith@betenskylaw.com
www.betenskylaw.com

Thin Air Construction, Inc.

Service Company

3500 Cannon Street
Hastings, MN 55033
651-319-0152
jules.fisher@thinairconstruction.net
www.thinairconstruction.net

Thin Air Construction is a general contractor dedicated to constructing, installing, and maintaining wireless networks. We have built a reputation in the wireless industry for our commitment to quality of work. Thin Air delivers professional results safely and efficiently.

Toler Telecom, Inc.

Service Company

6834 Cantrell Road Ste. 182
Little Rock, AR 72207
Contact: Ron Toler
tolerr@tolertelecom.com
www.tolertelecom.com
Site Acquisition and Build to Suit Services.

Tower 16, Inc.

Service Company

Tower 16, Inc.
Joppa, ME 21085
Contact: Phyllis Hackett
410-679-9916
www.tower16.com

Tower 16 Inc. offers wireless network expansion services. The company also provides (In house) wireless infrastructure design, project management, site acquisition, third party management, and construction services. Tower 16 Inc. was founded in 1999 and is based in Joppa, Maryland.

Tower Innovations

Service Company

107 Dunbar Ave. Ste. E
Oldsmar, FL 34677
813-818-8766
bruce@towerinnovationsinc.com
www.towerinnovationsinc.com

YOUR PARTNER THROUGH EVERY STAGE OF THE WIRELESS NETWORK LIFECYCLE...

WE HELP YOU BUILD AND MAINTAIN A BETTER NETWORK.



FDH VELOCITEL DELIVERS THE COMPLETE SUITE OF PROFESSIONAL SERVICES NECESSARY TO ACQUIRE, DESIGN, ENGINEER, IMPLEMENT, UPGRADE, AND MAINTAIN WIRELESS AND BROADCAST SITES. WE STRIVE EVERY DAY TO ACHIEVE THE BEST RESULTS FOR OUR CLIENTS AND FOR THE INFRASTRUCTURE THAT KEEPS THE BUSINESS OF THE WORLD MOVING FORWARD.

SITE DEVELOPMENT

- » A&E Services
- » Acquisition & Zoning Support
- » Project Management
- » Program Management

ENGINEERING SERVICES

- » Civil/Site Engineering
- » Geotechnical Engineering
- » Structural Engineering
- » Mapping & Inspections
- » Forensic Services

CONSTRUCTION SERVICES

- » Installations & Upgrades
- » Maintenance & Repair
- » Structural Modifications
- » Backhaul Optimization
- » Construction Management

REGULATORY COMPLIANCE

- » RF/Rooftop Compliance
- » AM Detuning
- » FCC/FAA Filings
- » RF Health & Safety Training
- » Site Remediation

SALESINQUIRIES@FDHVELOCITEL.COM

WWW.FDHVELOCITEL.COM



ENGINEERING INNOVATION

Tower Systems, Inc.

Service Company

Contact: Lynette Cotton
605-886-0930
lcotten@towersystems.com
www.towersystems.com

As a worldwide tower construction and maintenance company, we cover a broad range of services including Turnkey Civil Site Development, Tower Installation & Maintenance, Antenna & Line and Microwave

TowerCom

Service Company

12276 San Jose Blvd., Ste. 122
Jacksonville, FL 32223
904-880-8887
gdavis@towercomenterprises.com
www.towercomenterprises.com

Trileaf Corporation

Service Company

10845 Olive Blvd. Ste. 260
St. Louis, MO 63141
Contact: Scott Muschany
314-997-6111
s.muschany@trileaf.com
www.trileaf.com

Trileaf Corporation specializes in Environmental and A&E design services for the wireless industry. Trileaf has expertise in all 50 states as well as Mexico, Puerto Rico and Canada. Environmental services include NEPA, SHPO, Phase I and II Environmental Assessment, Biological Assessments, Asbestos/Lead Based Paint Testing and Migratory Bird Evaluations. Trileaf also has 15 years of award winning experience providing A&E services including Site Audits, Lease Exhibits, New Construction Drawings, Antenna and Equipment Modifications, Generator Audits and Installation Drawings, Rooftop Installations, and Stealth Design.

TRM

Service Company

16 Chestnut St., Ste. 220
Foxboro, MA 2035
Contact: Justin Leland
jleland@trmcom.com
www.trmcom.com

Turnkey Infrastructure Development - Program Management, Site Acquisition, A&E, Self-perform Construction, Electrical, Fiber, DAS, FTTx, ETTc, Tiger Teams

TrueNet Communications

Service Company

www.truenetcommunications.com

TrueNet Communications is a national infrastructure engineering and specialty contractor serving the telecommunications, broadband, energy, wireless, and enterprise markets. We plan, design, build and support communications and energy infrastructure for our clients across the United States, Canada, Mexico and the Caribbean.

UCI Construction Services, LLC

Service Company

6375 Harney Rd
Tampa, FL 33610
Contact: Todd Schlemmer
813-386-6202
info@ucics.net
www.ucics.net

UCI specializes in the construction and installation of communication infrastructure for cellular, PCS, CLEC and fixed/mobile broadband based networks. UCI Construction Services offers turnkey solutions by providing network to transport needs. Providing network and microwave design, implementation and maintenance of customer owned back-haul infrastructures.

UNDC

Service Company

www.undc.com

Universal Network Development Corporation, a telecommunications engineering and consulting company, was incorporated under the laws of the State of California on May 15, 1980. This company is owned and operated by Cinthia Kazee. UNDC is a certified Minority and Woman-owned small business enterprise. We are 8(a) certified by the Small Business Administration.

Unlimited Lynx, Inc.

Service Company

11 Rosemarie Ln.
Mahopac, NY 10541
Contact: Sunil Schneider
917-399-4757
sunils@unlimitedlynx.com
www.unlimitedlynx.com

Services: Site Acquisition, Wireless Facilities Construction and Maintenance, Closeout Package Specialists, Construction Management, Staffing.

Urban Mining2

Service Company

5750 DTC Parkway, #160
Greenwood Village, CO 80111
Contact: Tracy Donley
303-741-4042 x222
tdonley@urbanminingsquared.com
www.urbanminingsquared.com

Urban Mining2, an R2/ISO 14001 certified, 17 year old asset management and eScrap recycling company using eScrap Resource Recovery 2.0TM methodologies enabling up to 30% more commodity recovery for clients. Our vast database of buyers enables us to pay top-dollar for reuse materials. Our one-of-a-kind, 30,000 square foot resource recovery facility is outfitted with HEPA-filter air scrubbing technology that protects our employees from lead exposure and other toxins - no other facility like it in the world.

Utility Service Communications

Service Company

535 Courtney Hodges Blvd.
Perry, GA 31069
800-679-7819
sitemanagement@utilityservice.com
www.utilityservice.com

Utility Service Communications specializes in site marketing and management for wireless facilities on water tank sites. The company provides tech services including tank mapping, structural analysis, and architectural and engineering drawings.

V-COMM, L.L.C

Service Company

2540 U.S. Highway 130, Ste. 101
Cranbury, NJ 08512
Contact: Gina Villecco
609-655-1200
gina.villecco@vcomm-eng.com
www.vcomm-eng.com

A leading provider of integrated network engineering, radio frequency engineering and business services. We deliver the needed expertise and cost-effective solutions to governmental agencies and wireless operators.

Vasu Communications

Service Company

2432 Ridgeland Drive
Avon, OH 44011
440-934-5268
donnnav@vasucom.com

Versatile Wireless

Service Company

**1440 Jason Way #108
Santa Maria, CA 93455**

**Contact: Eric DaVersa
858-245-6702**

**eric@versatilewireless.com
www.versatilewireless.com**

General Contractor for wireless telecommunications - microwave, 4G, and wireless broadband.

Vertical Solutions Inc

Service Company

**2002 Production Drive
Apex, NC 27539**

919-321-6167

**sales@verticalsolutions-inc.com
www.verticalsolutions-inc.com**

Structural Engineering, Tower Modification Analysis & Design, Tower & Foundation Mapping, Tower & Foundation Inspection, A & E Services, Review & Seal, Turnkey, Project Management, Document Managing.

VERTICOM

Service Company

**7901 Ambassador Row
Dallas, TX 75247**

**Contact: Jeff Lewis
214-741-6898**

**jeff.lewis@verticom.net
www.verticom.net**

VERTICOM partners with wireless carriers, tower owners, outsourcing firms, and equipment manufacturers to design, develop, maintain and support wireless networks.

Verveba Telecom

Service Company

214-613-5351

www.verveba.com

Verveba is an end-to-end Telecom and Software company specializing in Survey, Design, Build, and Optimization services. We deliver Small Cells, WiFi and LTE network roll-out services for our customers Nationwide.

Vision Technologies, Inc.

Service Company

**Vision Technologies, Inc.
Glen Burnie, ME 21061**

**Contact: Al Saxon
866-746-1122**

**asaxon@visiontech.biz
www.visiontech.biz**

Vision Technologies, a national and global systems integrator, provides IT services and solutions for Network Infrastructures (including DAS and PON), help desk, onsite support, network management, voice/data, wireless systems, security, audio-visual, VTC, and telephony.

Vision Tower

Service Company

**505 Madrid Drive
St. Petersburg, FL 33715**

**Contact: Scott MacMath
smacmath@visiontower.net**

www.visiontower.net

Vision Tower is a wireless services company providing line, antenna and civil crew services. Vision Tower's primary focus is quality of work and safety. We offer our services to the majority of the Southeast US.

W-T Communication Design Group

Service Company

**2675 Pratum Avenue
Hoffman Estates, IL 60192**

224-293-6333

**info@wtengineering.com
www.wtengineering.com**

W-T Communication Design Group is a full service site engineering company focused on the needs of cellular carriers, OEMs, Tower Companies and Tier One Service providers. Structural engineering, architectural design, construction management, site acquisition and environmental services.

Waterford Consultants

Service Company

**P.O. Box 2090
Ashburn, VA 20146-2090**

703-596-1022

**sales@waterfordconsultants.com
www.waterfordconsultants.com**

Waterford Consultants offers a wide array of professional and regulatory consulting services with expertise in AM detuning, RF emissions analysis (EME), intermodulation studies, FAA certification and filing, site audit and third-party inspection,

and tower structural and appurtenance mapping. Waterford's nationwide team of highly respected and reputable experts is committed to providing superior, timely and budget sensitive customer service. Let Waterford alleviate the burden and frustration of FCC compliance for you. Waterford will beat the competition every time.

WAVSYS LLC

Service Company

**101 Broadway, Suite 406
Brooklyn, NY 11249**

**Contact: Joshua Mangerson
917-609-0284**

**jmangerson@wavsyst.com
www.wavsyst.com**

Wavsyst provides professional project management and implementation services for mobile telecom network projects in the United States, Canada and the European Union. Our deep wireless industry expertise and extensive resources enable solutions that maximize cost-effectiveness, without sacrificing quality, safety or service.

Westower Communications

Service Company

**2460 San Lake Rd
Orlando, FL 32809**

321-209-8800

**info@westower.com
www.westower.com**

Westower is a well established organization with full service solutions to support all your network projects. As the largest self-perform service company in North America, our team of exceptional professionals are ready to assist you in the management, design, construction, reinforcement, maintenance and service of communication towers and related equipment.

WFI

Service Company

**7900 Westpark Drive
McLean, VA 22102**

703-873-2000

**info@wfinet.com
www.wfinet.com**

WFI brings the best in program management, quality assurance and technical expertise to network infrastructure design, deployment and maintenance. Since 1994, we have engineered and deployed more than \$2 billion in telecom infrastructure successfully, rapidly and cost-effectively.

White Buffalo Environmental

Service Company

6321 E. 102nd St., Ste. C

Tulsa, OK 74137

Contact: Steve McFarlin

918-660-0999

steve.mcfarlin@whitebuffalo.com

www.whitebuffalo.com

White Buffalo Environmental offers Phase I, NEPA, environmental assessments, tribal and agency consults. Count on the company to meet your timelines and budget. White Buffalo Environmental has experienced telecommunications environmental professionals. Since 1998, the company has provided expert services to major and independent companies from single projects.

Wigdahl Electric

Service Company

625 Pratt Blvd.

Elk Grove Village, IL 60007

847-439-8200

chat@wigdahlelectric.com

www.wigdahlelectric.com

Wilkinson Barker Knauer, LLP

Legal Services

2300 N Street, NW, Ste. 700

Washington, DC 20037

Contact: Bryan N. Tramont

202-783-4141

Btramont@wbklaw.com

www.wbklaw.com

Wilkinson Barker Knauer, LLP is one of the nation's largest communications and technology law firms. The firm is ranked as a top tier communications law firm by Chambers USA, Legal 500, and U.S. News and World Report - Best Lawyers. Firm practice areas include tower siting and infrastructure, as well as wireless and wireline communications, broadcast, cable and other media, privacy, broadband and IP-based services, international and satellite communications, and energy regulation.

Wireless Coverage Inc.

Service Company

526 S Commerce St Ste. 101

Hurricane, UT 84737

888-342-6109

info@wirelesscoverageinc.com

www.wirelesscoverageinc.com

Equipment Installation and Maintenance Services.

Wireless Edge

Service Company

270 North Ave., Ste. 809

New Rochelle, NY 10801

914-712-0000

arthur@wirelessedge.org

www.wirelessedge.org

Wireless Edge is a premier provider of network implementation services and strategic tower sites. Nationwide services include tower development, site management, development of cell sites and satellite terrestrial repeaters and special projects. Wireless Edge specializes in development and permitting of antenna sites on landmark and historic properties.

Wireless Site Services

Service Company

4121 Taliesin Drive

Lincoln, NE 68520

402-817-4135

info@wssinet.com

www.wssinet.com

WirelessWerks

Service Company

8060 165th Avenue NE Ste. 210

Redmond, WA 98052

Contact: Gord Breese

877-760-2565

sales@wirelesswerks.com

www.wirelesswerks.com

WirelessWerks is a leader in network build quality assurance and audit programs, and construction services. We serve all major wireless carriers and their construction partners.

STAFFING COMPANIES

ADEX Telecom

Staffing Company

adextelecom.com

ADEX Corporation is an international service organization that provides turnkey services and project staffing solutions exclusively to the telecommunications industry.

Aditi Consulting

Staffing Company

www.aditistaffing.com

Aditi Staffing is a certified diversity IT staffing firm headquartered in Bellevue, WA, with loca-

tions across the US and operations centers in Bangalore and Coimbatore, India. Aditi Staffing is the flagship IT staffing unit of Aditi Technologies, a leading software development firm founded in 1994.

AIM Technical Consultants, Inc

Staffing Company

aimtechinc.net

At AIM Technical Consultants, we've been recruiting top IT and telecom professionals since 1999. These individuals combine their long-standing expertise with the latest technologies to identify problems, analyze and implement solutions, and provide ongoing expertise when you need it.

Alamon Telecom

Staffing Company

www.alamon.com

Alamon was incorporated in 1975 to provide contract labor to the telecommunications industry. We are a Woman-Owned Business Enterprise providing workforce solutions to industry leading equipment manufacturers, operating telecommunication companies, and utility companies nationwide. Alamon provides a variety of services.

Alternate Communications International L

Staffing Company

alternatecommunications.com

Alternate Communications International has over 15 years of expertise providing successful, long and short term placements. Our commitment to responsible and ethical recruiting and placement has enabled us to build strong, loyal relationships with our clients and personnel.

Axis Teknology, LLC

Staffing Company

www.axisteknologies.com

Axis provides people and technology solutions for UMTS/GSM to LTE projects including: core network infrastructure design engineering, transport and data center implementation and testing, E911 solutions, microwave LOS, path and site surveys, DAS and small cell network design and installation, macro network carrier adds and equipment upgrades, deployment and decommission, and project management based on Project Management Institute best practices.

Becon

Staffing Company

Blue Signal

Staffing Company

40 N Central Ave., Ste. 1400

Phoenix, AZ 85283

Contact: Matthe Walsh

847-227-8287

mwalsh@bluesignal.com

www.bluesignal.com

3rd party search firm for the wireless industry.

Brius Telecom Solutions

Staffing Company

www.briustelecom.com

In an industry that is about connecting people, BRIUS Telecom Solutions operates on trust, value and unparalleled professionalism. We provide staffing services to all leading carriers, vendors and suppliers in the fixed line and wireless communications markets. Our combined 30 years of telecom staffing industry experience drive the operations of a proven structure for business, provide motivating leadership to an extraordinary team of experienced recruiters and support staff, and produce outstanding consulting solutions to our existing and growing client base.

CEG Partners

Staffing Company

17200 Chenal Pkwy

Little Rock, AR 72223

Contact: Mike Stafford

501-255-7751

mike@cegparkers.com

www.cegparkers.com

CEG Partners has extensive experience in all aspects of telecommunications and IT staffing and recruiting. Contractors available now to build Mobile Apps, Dashboards, Wireless Networks, and other critical design areas.

DMN Global Services

Staffing Company

www.dmnglobal.com

DMN Global Services has been providing telecommunications network engineering and support services in North America and in over 70 countries since 1989. Our portfolio includes a comprehensive suite of project management, site survey, network design, documentation, logistics, installation, testing, integration, optimization, maintenance, fault management maintenance 24/7 and network management services. DMN Global Services is an ISO 9001:2008 certified company and a NIC EIC approved contractor. With offices based in Fox River Grove IL, DMN Global Services expanded its business in 2000 through the acquisition of GT&K Network Solutions, a network solutions provider.

First Point Group Inc.

Staffing Company

www.firstpointgroup.com

At First Point Group we've made the global telecoms industry our business. For clients such as Ericsson, Huawei and Nokia Siemens Networks, the strategic contribution of FPG, a trusted global partner who knows their industry inside out, is an invaluable business asset.

Fusion Solutions Inc

Staffing Company

www.fusionsolutionsinc.com

Fusion Solutions is a leading provider of telecom technical consulting and staffing services for Fortune 1000 companies. We're knowledgeable of and have worked with virtually all types of telecom infrastructure technologies in Wireless and Wireline.

Genesis10

Staffing Company

www.genesis10.com

Genesis10 is proud to present American businesses with a new opportunity to call on the strengths of our retired service men and women. Our multi-point process enables Genesis10 to proactively prepare veterans for success in business and IT roles, while eliminating traditional hiring risks for our clients. Dedicated selection, training, mentoring and right-to-hire programs work together under the leadership of our Veterans Program Director, Captain Nick Swaggert, USMC Reserve.

Global Recruiters of Blackhawk

Staffing Company

2430 Camino Ramon Ste. # 104

San Ramon, CA 94583

Contact: Paul Harris

925-804-6211

pharris@grnblackhawk.com

www.grnblackhawk.com

Global Recruiters of Blackhawk is an Executive Search Firm specializing in the Telecom sector with the particular niche of Wireless Infrastructure.

Glotel Inc

Staffing Company

www.glotel.com

Glotel is a global professional staffing and managed projects solutions company, specializing in the placement of contract and permanent personnel within all areas of technology.

HarTek Solutions, LLC

Staffing Company

www.harteksolutions.com

At HarTek Solutions, we believe successful placements are the result of a committed partnership with our clients. We help our business clients analyze costs, identify needs, define corporate culture and increase employee retention. HarTek works closely with career seekers to maximize their professional potential in positions compatible with their own skills, goals and interests.

Hepeco Inc

Staffing Company

www.hepecoinc.com

We are an Engineering, IT, Telecommunications and Payrolling staffing company that works on both contract and permanent assignments with our corporate office in Saddle Brook, NJ. Whether you are a talented professional who would like to explore new opportunities, or a manager in need of additional support, you can count on HEPCO to provide you with world class customer service. HEPCO is committed to building long term relationships with both our clients and the professionals we place on specific client assignments.

ITC Service Group, Inc

Staffing Company

www.callitc.com/StaffingSolutions

Just as our industry changes, so do your staffing requirements. That's where ITC fits in. We enable you to staff your organization quickly and reduce your recruiting time and costs while maximizing your ability to focus on your client's needs, neatly keeping the door in full swing.

Kenton Group

Staffing Company

www.kentongroup.com

Kenton Group is an industry leader in the telecommunications industry. Since 1993 we have provided Engineering, Professional Staffing and Business Development Consulting Services to firms serving the communications, utilities and information technology industries from coast to coast.

Kineticom

Staffing Company

701 B Street, Suite 1350

San Diego, CA 92101

Contact: Blair Bode

209-482-2030

blair.bode@kineticom.com

www.kineticom.com

Kineticom is an ISO certified, award-winning technical talent firm with a 13-year history in technology recruitment and service delivery in the Information and Communication Technology (ICT) market. We provide on-site talent across 42 states in the U.S. on contract or permanent basis and deliver Professional Services & Solutions governed by Statements of Work. Kineticom aspires to create growth opportunities for our technical professionals and delivers measurable results that set our clients apart in the industry.

Mountain LTD.

Staffing Company

www.mountainltd.com

Welcome to MOUNTAIN, LTD. – a proven leader in engineering solutions. As a trusted source of communications professionals with over 30 years of on-time delivery, we understand your business.

Nextgen Global Resources

Staffing Company

nextgenr.com

NextGen Global Resources represents a revolutionary step forward in telecom recruiting and consulting. Formed by industry veterans who have been changing the global technology recruiting paradigm for decades, NextGen strips away the bureaucratic processes and non-core functions to focus exclusively on placing the best talent at the world's best companies.

Novalink Solutions LLC

Staffing Company

www.novalink-solutions.com

Novalink Solutions is a proven leader delivering managed engineering and staff augmentation services for governments and industries worldwide. Novalink's professionals specialize in software and wireless engineering. The Atlanta-based company has resources and operations located across the U.S. and worldwide.

Onit Management Consulting

Staffing Company

4040 26th Ave SW #635

Seattle, WA 98106

Contact: Edward Byers

206-257-2233

edward.byers@onitmc.com

www.onitmc.com

Project Management consulting in the technology space, with extensive experience in wireless.

Outsource Inc.

Staffing Company

www.linkedin.com/company/outsource-inc.

Outsource, Inc. is an off-site human resources consulting firm which assists employers in developing and maintaining standardized policies and procedures, flexible compensation programs, management training and development, performance evaluations and employee relations.

Pinnacle Technical Resource

Staffing Company

www.pinnacle1.com

Pinnacle Technical Resources is a leader in providing workforce solutions to Fortune 500 companies in the United States and Canada. Since 1996, we continue to be ranked at the top of the staffing industry as one of the fastest growing firms in the industry. In 2010, we were named Supplier of the Year by The National Minority Supplier Development Councils (NMSDC).

Protingent Staffing

Staffing Company

3650 131st Ave. SE

Bellevue, WA 98006

Contact: Chris Zerbo

425-628-9725

czerbo@protingent.com

www.protingent.com/telecom

Please visit our web site for additional information. We are presently working for (both directly and indirectly through other consultants) AT&T Wireless, Verizon Wireless, Sprint, and others.

Skyhawk

Staffing Company

23421 South Pointe Dr., Suite 140

Laguna Hills, CA 92653

Contact: Chris Hubbard

949-468-0118

Chris@skyhawk.net

www.skyhawk.net

Skyhawk provides Tower Climbers, Wireless Technicians and Carrier Technicians on a temporary or contract labor basis. We are a national firm and can provide staff to site projects anywhere in the United States, even remote sites. We maintain a deep bench of skilled workers, ensuring you get top quality, reliable technicians. Skyhawk is certified by the Women's Business Enterprise National Council (WBENC), allowing our clients to benefit from contracting with a more diverse vendor base.

Smartlink

Staffing Company

www.smartlinkllc.com

At Smartlink, we build relationships. We draw on the strength of those relationships, and our rich talent database, to find the best matches for clients who need staffing and/or site development support in the Wireless Telecommunications industry.

SureSite

Staffing Company

3659 Green Road, Ste. 214

Cleveland, OH 44122

Contact: Courtney Schmidt

216-593-0400

c.schmidt@sure-site.com

www.sure-site.com

SureSite is a national provider of site development and staffing services to the wireless and telecommunication industries. With offices in Cleveland, Chicago, Denver and Los Angeles and field locations throughout the country, we pair our distributed workforce and professional practices with an extensive network of local experts to provide hands-on service at every phase. SureSite is a market leader which is proven by our lasting relationships and repeat business since 1999.

SureSite Consulting Group, LLC

Staffing Company

3659 Green Road, Ste. 214

Beachwood, OH 44122

Contact: Courtney Schmidt

info@sure-site.com

www.sure-site.com

SureSite is a national provider of site development and staffing services to the wireless and telecommunication industries. With offices in Cleveland, Chicago, Denver and Los Angeles and field locations throughout the country, we pair our distributed workforce and professional practices with an extensive network of local experts to provide hands-on service at every phase.

T-Staff

Staffing Company

www.t-staff.com

T-Staff was founded in 1998 by an ownership/management team with over 50 years of combined telecommunications industry and technical staffing experience. Their vision was to create a contract staffing service company that specialized in technical placements and the telecom industry sector.

TelForce Group

Staffing Company

4751 Trousdale Drive, Suite 105

Nashville, TN 37220

615-915-3119

info@telforcegroup.com

www.telforcegroup.com

TelForce Group is a provider of professional services, human capital to the communications industry. Our services are integrated directly into our clients' business operations. TelForce identifies talent that stands out among their peers' people with a proven track record of creating value with every placement or assignment. For over 30 years Ron Deese of TelForce has provided professional (staffing) services to the Telecom Industry. TelForce can provide a single technician or a crew of tower climbers. We consistently deliver on small and large complex projects. Our experience in finding mission critical engineers and technicians and industry talent is what sets us apart. TelForce Group LLP is a Native American MBE certified by the NMSCD and the CA Public Utility Commission (CPUC). We ask that you please consider us to become an approved vendor to provide our services to you.

TSRI

Staffing Company

tsrisolutions.com

The leader in technical staff augmentation, consulting, and training for telecommunications and energy.

Verigent

Staffing Company

www.verigent.com

We currently offer our staffing augmentation services in over 45 different states. This year, we are excited to celebrate 10 years in business and are proud to announce that we've deployed over 10,000 employees over to our clients during that time. We specialize in providing Nationwide Support with Local Personnel, providing rapid response to our clients' and employees' requirements.

WFI/LCC

Staffing Company

Wise Connect

Staffing Company

wisconnectinc.com

WiseConnect is greater than the sum of its parts, having positioned itself to understand the integration between each technological component and address emerging technologies as they arise. Not only does our company provide staffing and managed services for a full range of telecom projects, Wiseconnect adds distinct value through true experience and dependability.

TRAINING COMPANIES

Advanced Safety

Training Company

111 Exchange Place

Lafayette, LA 70503

337-231-1323

www.advancedsafetytraining.com

Advanced Safety offers classes in General Industry and Construction Industry to help employees meet OSHA requirements for a safe and healthy workplace that is free of occupational hazards.

Aiken Technical College

Training Company

PO Drawer 696

Aiken, SC 29802

Contact: Dr. Gemma K. Frock

803-508-7278

frock@atc.edu

www.atc.edu

AccessRescue

Training Company

20 Orchid Lane

Ringgold, GA 30736

207-620-6169

info@accessrescue.com

www.accessrescue.com

AccessRescue provides industrial safety, rescue, confined space, work at height, and rope access training to those who want to solve operational issues effectively and efficiently with simple rigging solutions in order to perform work or rescue those in need.

Capital Safety USA

Training Company

800-328-6146

info@capitalsafety.com

www.capitalsafety.us

Capital Safety is one of the world's leading manufacturers of fall protection, confined space and rescue equipment, with a passionate commitment to quality, innovation and safety.

CITCA LLC

Training Company

727 Larry Power Road

Bourbonnais, IL 60914

800-313-5159

www.citca4training.com

CITCA is a nationally recognized training academy, developed by a group of industry specialists, offering a complete line of college accredited tower erection and safety training programs directly related to the communications and wind turbine industries.

COM-TECH CONSTRUCTION

Training Company

**17827 Commerce Dr
Westfield, IN 46074
317-867-4486
www.comtechservices.net**

“Expedite, Turn Up, Target Date.” Understanding these terms is what separates Com-Tech Services from the rest of the implementation groups in the communication industry. Some of the largest bottlenecks in the development of next generation communication networks will be site acquisition, permitting, engineering, construction and installation phases. Com-Tech Services, founded in 1991 and incorporated in 1992, understands our customer’s unique needs and presents sophisticated engineering solutions to avoid these roadblocks to business development.

COMTRAIN

Training Company

**3409 Executive Center Dr., Suite 202
Austin, TX 78731
512-275-6600
comtrain@comtrainusa.com
www.comtrainusa.com**

ComTrain is an authorized training provider for American Tower, Black and Veatch, Bechtel, General Dynamics, Mastec, Union Pacific Railroad, CSX Railroad and many other global companies. Comtrain is named as the preferred training provider for the major carriers and infrastructure providers around the globe. Comtrain is recognized as a N.A.T.E. Member Training Company that meets or exceeds the requirements of the N.A.T.E. Tower Climber Fall Protection Training Standard (N.A.T.E. CTS)

Corporate College

Training Company

**4647 Stone Avenue
PO Box 5199
Sioux City, IA 51102
866-528-4024
CorpCollege@witcc.edu
www.corporatecollege.biz**

The Corporate College offers employers custom-designed training and consulting solutions that can help them reach their goals. Today’s organizations face increasing challenges to remain competitive. We can help you by designing training to meet these demands. The Corporate College will partner with you to find solutions to your unique and specific needs for increased workplace skills, productivity, profitability and efficiency. We will help you focus on both management and worker skills to attain the competitive advantage you are looking to achieve.

DSI Distributing

Training Company

**10425 Plano Rd
Dallas, TX 75238
Contact: RJ Price
720-545-9754
ricky.price@dsisysteminc.com
www.dsisysteminc.com**

ENSA North America

Training Company

**5510 E Marginal Way S
Seattle, WA 98134
Sherry Sandness - Training Coordinator
206-762-8500 ext: 290
www.ensa-northamerica.com**

Utilizing effective management systems, ENSA will support and guide the organization by consistently providing services at a level that meets or exceeds customer expectations. In particular, ENSA strives to meet the needs of company health and safety executives and program managers faced with an evolving compliance environment, operation deadlines, program limitations and the requirement for skilled personnel.

ETA International

Training Company

**5 Depot St.
Greencastle, IN 46135
Contact: Michele Altman
800-288-3824
eta@eta-i.org
www.eta-i.org**

ETA International represents electronics professionals with over 80 industry recognized certifications. ETA certifications align with international standards and confirm both technical knowledge and skills.

Global Safety Consultants

Training Company

**106 Rolls Royce Drive
Broussard, LA 70518
337-330-2642
www.safetygsc.com**

GSC was founded in 2004 and has developed an unique training experience. GSC focuses on client, state, and federal regulatory compliance. GSC allows your company to benefit from our highly trained and experienced staff. Our goal is simple: provide unparalleled service in a cost effective manner. GSC is committed to meeting all the needs of your company. Allow us to help assist you with all your HSE requirements.

Grand Rapids Community College

Training Company

**143 Bostwick Avenue NE
Grand Rapids MI 49503-3295
616-234-4000
www.grcc.edu**

GRCC offers flexible course formats including weekday, weekends, summer Saturdays, on-line/ distance learning and 7-week accelerated classes.

Gravitec Systems, Inc.

Training Company

**21291 Urdahl Road NW
Poulsbo, WA 98370
800-755-8455
solutions@gravitec.com
www.gravitec.com**

Do you need fall protection training? Peek into our modern classrooms. There you’ll find uniformed instructors, unparalleled training aids and the best fall protection equipment on the market. At Gravitec’s Fall Protection Campus, our indoor training facility devoted to hands-on fall protection instruction, you’ll gain practical experience on a variety of climbing structures, representing nearly every industry working at height.

Lakeshore Technical College

Training Company

**1290 North Avenue
Cleveland, Wisconsin 53015
888-GO-TO-LTC
info@gotoltc.edu
www.gotoltc.edu**

Lakeshore Technical College is a leading provider of technical education offering over 100 career programs, customized training for business and industry, continuing education for personal and professional enrichment, and basic skills education.

LBA University

Training Company

**3400 Tupper Drive
Greenville, NC 27834
252-757-0279
lbau@lbagroup.com
www.lbauniversity.org**

On site & online safety training with courses in RF safety, outdoor safety, GHS HazCom, OSHA 10/30 & more. OSHA certified instructors, 1,000s trained.

Miller Fall Protection by Honeywell

Training Company

1345 15th Street

P.O. Box 271

Franklin, PA 16323

800-873-5242

millertechexpert@sperianprotection.com

www.millerfallprotection.com

The Miller Collective Systems concept incorporates a wide range of product solutions, technical support, research and development projects, component testing, training, installation and consultancy services. Through Miller Collective Systems, Honeywell can support the needs of a project at any stage, however, early involvement will permit the greatest solution flexibility, and will always produce improved results practically, commercially and safely.

Pacific Safety Solution LLC

Training Company

Contact: Corey Messer

760-504-1180

corey@pacsafety.net

www.pacsafety.com

Pacific Safety Solutions provides a myriad of solutions based on the specific needs of our clients. We believe that safe and healthy employees are a vital asset to any successful business. Providing a safe and healthy work environment improves productivity, reduces operating costs, and allows our clients to maximize profits.

Parsons Infrastructure & Technology Group

Training Company

100 W Walnut St

Pasadena, CA, 91124

626-440-2000

www.parsons.com

Founded in 1944, Parsons, an engineering, construction, technical, and management services firm with revenues of \$3 billion in 2012, is 100% owned by the Employee Stock Ownership Trust. Parsons is a leader in many diversified markets with a focus on transportation, environmental/infrastructure, defense/security, and resources. We conquer the toughest logistical challenges and deliver design/design-build, program/construction management, and other professional services packaged in innovative alternative delivery methods to federal, regional, and local government agencies, as well as to private industrial customers worldwide.

Peak Career Services / Pinnacle Career Institute

Training Company

1601 W 23rd St, Ste 200, Lawrence, KS 66046

877-241-3097

www.pctraining.edu

When it comes to practical training in today's career fields, Pinnacle Career Institute can offer you a variety of program options. For more than 50 years, we have been helping qualified students find direction in life with relevant career training in the medical, health & fitness, trades & technical, and alternative energy fields. Our instructors bring relevant experience to the classroom and can help you gain applicable skills that today's employers are looking for.

Pigeon Mountain Industries, Inc.

Training Company

PO Box 803

LaFayette, GA 30728-0803

800-282-ROPE

custserv@pmirope.com

www.pmirope.com

PMI's Vertical Specialist program exists to establish a group of excellent, experienced athletes in various rope related sports and rope access skills across the USA.

Radiofrequency Safety International (RSI)

Training Company

Safety Connection, Inc.

Training Company

6032 Fieldstone Ave, Ste. H

Baton Rouge, LA 70809

800-480-3521

sales@safetyconnection.com

www.safetyconnection.com

We have certified professional trainers that conduct various classes for Fall Protection and Rescue at our in-door training facilities in Baton Rouge, LA and Houston, TX; or at your location. We conduct hands on training with real life scenarios to ensure you have the best understanding and knowledge available.

Safety LMSystems LLC

Training Company

210-861-3140

www.safetylms.net

Our courses are continuously evolving. This allows us to ensure that the most current regulations, standards and equipment changes are covered. We are also committed to an effective and efficient curriculum. That is evidenced by our combination of online, classroom and on-site training. We can design a total training solution for your company that will make the most of your time and training dollars.

Safety One, Inc.

Training Company

8181 W. Brandon Dr.

Littleton, CO 80125

800-485-7669

www.safetyoneinc.com

We specialize in training programs for employees whose work involves special hazards in areas beyond easy access and rapid emergency aid. We focus on workers who must negotiate terrain which presents unique hazards in any line of work or industry.

Selling Solutions

Training Company

28591 Craig Ave.

Menifee, CA 92584

Contact: Phil Cook

951-301-5769

cook278@verizon.net

aglmediagroup.com

Sales and Marketing Consulting.

SpanSet USA

Training Company

3125 Industrial Dr

Sanford, NC 2733

800-334-7505

ssales@spanset-usa.com

www.spanset-usa.com

For us, safety takes top priority when it concerns the protection of a person's life, the lifting of heavy loads or the transportation of goods. We can offer you professional and fully developed solutions for safe lifting, material handling and working at heights through high-quality products, our expertise and services.

Spectracom

Training Company

Tech Safety Lines, Inc.

Training Company

3204 Skylane Drive, Carrollton, Texas 75006

Contact: Brandon Waghorne

214-987-4680

brandon@techsafetylines.com

www.techsafetylines.com

Tech Safety Lines, Inc. (TSL) is dedicated to providing a culture of safety and protecting workers at height with proprietary training and patented safety equipment. TSL goes above and beyond by providing our clients with a program of safety ensuring a safe work environment.

Technical Rescue Systems

Training Company

1612 West Laporte Avenue

Fort Collins, CO 80521

Contact: Steve Fleming

877-561-1291

steve@technicalrescuesystems.net

www.technicalrescuesystems.net

TRS offers a service that teaches departments and industrial safety/rescue organizations throughout the world in Emergency Services Rope Rescue, Confined Space Entry & Rescue, Rescuer Safety & Scene Evaluation, Industrial Fall Protection, Communication Tower Climbing and Rescue and Teaching Techniques to adults. These courses have been developed and taught to the industrial sector, fire and emergency services, military, construction industry, including, but not limited to: wind power, electrical power, mining operations and rescue, communication towers and inspection engineers.

TES, Inc.

Training Company

10909 Murdock Dr.

Knoxville, TN 37932

800-327-4036

training@towergear.com

www.towergear.com

TES Inc. is your "Go To" expert for fall protection, rescue and access for work at height, confined space and technical rescue. We offer our customers the opportunity to communicate, train and find the resources to accomplish the task at hand.

Tower Safety Inc.

Training Company

8363 NW 26th Court

Cooper City, FL, 33024

305-345-2470

towersafetyconsulting@gmail.com

www.towersafety.net

Tower Safety Consulting (formerly Tower Safety International) has been training individuals, Fortune 500 companies, major defense contractors, the United States Military as well as many other Government agencies for the last 15 years. We specialize in offering OSHA mandated safety training for construction workers, maintenance personnel, telecom engineers and design personnel regardless of their hands on involvement in working on elevated structures.

Vertical Systems International Inc.

Training Company

611 Main Street, Box 868

Frisco, Colorado 80443

303-907-1891

info@vsimountainsafety.com

www.vsimountainsafety.com

Vertical Systems International Inc. (VSI) is dedicated to providing safe solutions for industries that have workers exposed to fall hazards and extreme conditions, whether in the mountains or on industrial structures. VSI is the expert in consulting and training for Fall Protection, Tower Climbing, Confined Space, Rope Access, Wilderness Mountain Safety and Technical Rescue throughout the world.

HARDWARE, COMPONENT, AND ACCESSORY COMPANIES

3Z Telecom

Hardware

3361 Executive Way

Miramar, FL 33025

Contact: Joey Villamil

954-581-6565 ext. 302

jvillamil@3ztelecom.com

www.3ztelecom.com

Based in South Florida, USA, 3Z Telecom was founded in 2005 with a simple business philosophy in mind: offering the best quality products in the Telecom Solutions Industry at the best prices with the best service. 3Z

offers In-Building DAS, RF Engineering, RF EME Compliance, Interference Hunting, Tower Services & Drive Testing. Along with these services, 3Z also offers the World Leader Antenna Alignment Tool: The 3Z RF Aligner for both Panel Antennas and point to Point Microwave Systems and the Antenna WASP, the World's First Wireless Antenna Monitoring Sensor, which monitors the antenna alignment and reports any undesired changes occurred. 3Z Telecom's RF Aligner and 3Z Antenna WASP will maximize and sustain your antenna's performance from initial installation throughout its usable life.

A.G. Franz

Hardware

5 Stanton Court

Plainsboro, NJ 08536

609-936-1919

sales@agfranz.com

www.agfranz.com/narda-df

A.G. Franz is the North American master distributor for RF test-equipment for interference and direction finding measurements and remote spectrum analyzers from Narda Test Solutions

Advanced RF Technologies

Hardware

3116 W Vanowen

Burbank, CA 91505

Contact: Arnold Kim

818-840-8131

sales@adrfttech.com

www.adrfttech.com

AdvanceTec Industries, Inc

Hardware

1150 NW 163rd Drive

Miami, FL 33169

305-623-3939

sales@advancetec.com

www.advancetec.com

Wireless communications manufacturing and distributing company

Aero Solutions

Hardware

5500 Flatiron Parkway

Boulder, CO 80301

Contact: Ryan Spalding

720-304-6882

rspalding@aerosolutionsllc.com

www.aerosolutions.com

AFD Industrial Filters

Hardware

865-525-8697, 888-251-8668

AFD Industrial Filters is a source of all types of air conditioning filters for cell tower equipment. These filters are now available to the industry, and are shipped directly from the factory to you at huge savings. AFD Industrial Filters has provided filters to many wireless companies, including Nortel Networks and AT&T Mobility, since January, 2000. Replacement filters available for older Nortel BTS-S8000 and BTS-S12000 outdoor units.

AirHop Communications Inc.

Component

6150 Lusk Blvd., Ste. B204 & B205

San Diego, CA 92121

858-848-6188

info@airhopcomm.com

airhopcomm-web.com

Founded in 2007, AirHop is a privately held startup that develops advanced RAN intelligence software critical to the next wave of the mobile Internet. AirHop's eSON products are the first to completely address the installation, operation, performance, and multi-vendor support challenges of multi-layer, small cell and HetNet deployments.

Airvana

Hardware

250 Apollo Drive

Chelmsford, MA 01824

Contact: Josh Adelson

978-250-3000

info@airvana.com

www.airvana.com

Airvana provides 4G LTE small cell solutions for residential, small/medium business, enterprises and public spaces.

Alcatel-Lucent

Hardware

Allfasteners USA

Hardware

15401 Commerce Park Dr.

Brook Park, OH 44142

Contact: Bruce Carmichael

440-232-6060

sales@allfasteners.com

www.allfasteners.com

Fasteners to the tower industry, Ajax Oneside, A490, A325, V bolts, U bolts, steel for tower modifications.

Alliance Corporation

Hardware

2 Frassetto Way

Lincoln Park, NJ 07035

888-821-4797

sales@alliancecomm.com

www.alliancecomm.com

Alliance Corporation is a full-service value-added distributor of products and solutions for the Wireless industry. We help build thousands of new cell sites every year.

Allied Fiber

Hardware

845 Third Avenue, 16th Fl.

New York, NY 10022

Contact: Lauren Sauer

212-920-8300

lauren.sauer@alliedfiber.com

www.alliedfiber.com

ALLTEC LLC

Hardware

64 Catalyst Drive

Canton, NC 28716

800-646-9290

online-info@alltecglobal.com

www.alltecglobal.com

ALLTEC is an international, full-service company specializing in engineered grounding/earthing and bonding, surge/transient protection and lightning protection systems.

ALT Fabrication

Component

Altery Systems

Hardware

140 Blue Ravine Road

Folsom, CA 95630

Contact: Vito J. Coletto

480-772-8224

vito.coletto@altery.com

www.altery.com

Ambor Structures Inc.

Hardware

PO Box 3763

St. Paul, MN 55101

Contact: Andrew Murray

651-414-1276

andrew.murray@amborstructures.com

www.amborstructures.com

AN Structures

Hardware

3850 Hendricks Road

Austintown, OH 44515

Contact: James Tinsley

319-327-3438

jt@anstructures.com

www.anstructures.com

AN Structures provides pre-engineered and custom designed communication tower packages, especially well suited to international Broadband Deployments and Two-way applications. These tower ship very economically internationally.

Antenna Products Corporation

Accessory

ARE Telecom and Wind

Hardware

1043 Grand Avenue #213

St. Paul, MN 55101

Contact: Dion Johnson

651-330-1263

djohnson@aretelecom.com

www.aretelecom.com

Athena Wireless Communications

Hardware

12425 W. Bell Rd, Ste. 144

Surprise, AZ 85378

623-242-7224

sales@athenawave.com

www.athenawave.com

Athena designs and manufactures SiGe-based millimeter-band wireless Gigabit backhaul links and SoC-based LTE small cells for wireless telecommunication operators, governments and private enterprises around the globe.

Attochron, LLC

Hardware

P.O. Box 1036

Lexington, VA 24450

310-670-1777

tc@attochron.com

www.attochron.com

Free Space Optics

Avlite

Component

Bracnet Ltd.

Hardware

House:26,Road:28,Block: K,Banani

Dhaka

arahimbd@yahoo.com

www.bracnet.net

ISP & Nationwide Data Connectivity Company.

Buckingham Mfg. Co., Inc.

Accessory

BTI Wireless

Hardware

6185 Phyllis Drive, Unit D

Cypress, CA 90630

Contact: Ron Poulin

714-856-9604

ronp@btewireless.com

www.btiwireless.com

Cablcon

Hardware

379 Executive Drive

Troy, Michigan 480083

Contact: Dan Tomica

248-703-6493

dtomica@cablcon.com

www.cablcon.com

Carrier iQ

Component

640 W. California Avenue, Ste. 100

Sunnyvale, CA 94086

650-625-5400

bbergeret@carrieriq.com

www.carrieriq.com

As market leader in mobile intelligence, Carrier iQ provides mobile operators and device vendors with actionable analytics and insights into the real mobile customer experience.

Carwell Specialty Coatings

Component

Cavium Inc.

Component

2315 N. First Street

San Jose, CA 95131

408-943-7100

info@cavium.com

www.cavium.com

OCTEON Fusion Family, the industry's most powerful, small cell Base Station-on-a-chip family are specifically designed for LTE & 3G multi-mode small cell base stations, including picocell and micro base stations.

CBNL

Hardware

Cambridge Business Park

Cambridge, UK

CB4 0WZ

Contact: Chris Wright

info@cbnl.com

www.cbnl.com

CBNL is the market-leader in licensed point-to-multipoint backhaul and enterprise access solutions. CBNL's wireless technology offers transformational capacity, carrier-grade services and cost-savings over alternative solutions.

Cell Blocks Inc.

Hardware

PO Box 1167

Jackson, CA 95642

Contact: James Fey

510-418-4322

philcolflesh@cellblocksinc.com

www.cellblocksinc.com

Cellsite Solutions

Hardware

1720 I Ave NE

Cedar Rapids, IA 52402

Contact: Amber Kramer

319-826-3404

amber@cellsitesolutionsllc.com

cellsitesolutions.com

CITCA LLC

Component

Comarcom

Hardware

7 HaEmek

Tivon, Israel 36011

+972 (0)4 9531638

gary@comarcom.biz

www.comarcom.biz

Comarcom designs, manufactures and markets VEGA, very high gain antenna, the most cost effective solutions to meet Radio Access Network coverage challenges.

Comba Telecom

Hardware

235 Charcot Ave

San Jose, CA 95131

Contact: Kevin Geary

866-802-7961

sales.nam@comba-telecom.com

www.combausa.com

CommScope

Hardware

4 Westbrook Corporate Center, Ste. 400

Westchester, IL 60154

708-236-6634

bill.walter@commscope.com

www.commscope.com

CommScope has played a role in virtually all the world's best communication networks. We create the infrastructure that connects people and technologies through every evolution. Our portfolio of end-to-end solutions includes critical infrastructure our customers need to build high-performing wired and wireless networks.

COMTRAIN

Accessory

Corporate College

Component

CUE DEE AB

Component

Custom Cable Connection

Accessory

13375 N Stemmons Frwy. Ste. 110

Farmers Branch, TX 75234

866-770-3207

www.customcableconnection.com

sales@customcableconnection.com

Cable Assembly House.

Dali Wireless, Inc.

Hardware

535 Middlefield Road, Ste 280

Menlo Park, CA 94025

Contact: Johnny Truong

916-934-2583

information@daliwireless.com

www.daliwireless.com

Dali Wireless is the global provider of an all-digital RF ROUTER® platform. This revolutionary platform transcends the capabilities typically associated with traditional Distributed Antenna Systems (DAS) to deliver more data throughput and value at the lowest Total Cost of Ownership.

Dantel Inc.

Hardware

2991 North Argyle Avenue

Fresno, CA 93727

559-292-1111

info@dantel.com

www.dantel.com

For more than 40 years Dantel Inc continues to provide alarm monitoring, control and mediation for a variety of network alarm applications worldwide.

Dantherm, Inc.

Hardware

110 Corporate Road, Suite K
Spartenburg, SC 29303
www.dantherm.com/us/

DeltaNode

Hardware

30303 Aurora Road
Solon, OH 44139
Contact: Tom Boyle
866-695-4569
sales@birdrf.com
www.birdrf.com

DEUS Rescue

Component

Dialight Corporation

Component

Dillon/Quality Plus, Inc.

Component

Eagle Comtronics

Component

7665 Henry Clay Blvd.
Liverpool, NY 13088
800-448-7474
sales@eaglecomtronics.com
www.eaglecomtronics.com

Eagle Comtronics has been a recognized leader in RF (Radio Frequency) communication and filter manufacturing since 1975. Known for industry changing innovations in Filter technology.

Eagle Comtronics

Component

7665 Henry Clay Blvd.
Liverpool, NY 13088
800-448-7474
sales@eaglecomtronics.com
www.eaglecomtronics.com

Eagle Comtronics has been a recognized leader in RF (Radio Frequency) communication and filter manufacturing since 1975. Known for industry changing innovations in Filter technology.

Eastpointe Industries, Inc.

Component

Electro Wire

Hardware

933 East Remington Rd
Schaumburg, IL 60173

Elk River, Inc.

Accessory

EnerSphere Communications, LLC

Accessory

2950 Mt. Wilkinson Pkwy. SE
Atlanta, GA 30339
404-448-4729
info@enersphere.com
www.enersphere.com

EnerSphere develops, sells and leases modular composite pole technology with integrated outdoor Small Cell infrastructure that serves the mobile communications, electric utility and municipal markets.

ERICO, Inc.

Component

Ericsson

Hardware

Essentia

Hardware

One Mallard Pointe,
11020 David Taylor Drive, Ste. 103
Charlotte, NC 282262
Contact: Caroline Dalpiaz
704-360-3647
caroline.dalpiaz@essentia-inc.com
www.essentia-inc.com

Ethertronics Inc.

Hardware

5501 Oberlin Drive, Ste. 100
San Diego, CA 85259
619-847-9855
amccray@ethertronics.com
www.ethertronics.com

Ethertronics develops antenna and RF Front End system solutions for 3G and 4G (LTE and LTE-Advanced) mobile devices, as well as solutions for M2M, IoT and Distributed Antenna Systems (DAS).

Exalt Communications, Inc.

Hardware

254 E Hacienda Avenue
Campbell, CA 95008
408-688-0200
info@exaltcom.com
www.exaltcom.com

Exalt Communications the leading innovator of next-generation point-to-point and point-to-multipoint systems for private networks and Internet infrastructures.

Fairview Microwave

Component

1130 Junction Dr. Suite 100
Allen, TX 75013
972-649-6678
shaun@fairviewmicrowave.com
www.fairviewmicrowave.com

Fairview Microwave offers immediate delivery of RF components including attenuators, adapters, coaxial cable assemblies, connectors, terminations and much more.

FASMETRICS S.A.

Hardware

Perikleous 17

Athens 15344

302103000000

info@fasmetrics.com

www.fasmetrics.com

FASMETRICS S.A. offers a revolutionary robotic antenna platform that dramatically changes how an antenna network operates and behaves. It increases the capacity and quality of broadband services, sharply reduces costs and keeps your customers loyal

Fiber Instrument Sales

Hardware

161 Clear Road
Oriskany, NY 13424
Contact: Kirk Donley
315-736-2206
www.fiberinstrumentsales.com

Fibrolan

Hardware

2 Hacarmel St.
Yokneam 20692
97249591717

info@fibrolan.com

www.fibrolan.com

Fibrolan is an experienced vendor of Optical Access Equipment, for the Telecom (fixed and mobile) and Government markets.

fieldSENSE RF Safety

Accessory

1801 Westfall Dr.
Columbia, MO 65202
Contact: Beau Aero
312-260-6055
info@fieldsense.com
www.fieldsense.com

FIMO USA

Component

Fiplex Communications, Inc.

Hardware

7331 N.W. 54th Street

Miami, FL 33166

305-884-8991

info@fiplex.com

www.fiplex.com

Fiplex develops, designs and manufactures a wide line of passive and active products for the Telecommunications Industry, which includes standard and customized wireless coverage solutions.

First Element Energy

Hardware

9972 Lakeview Ave.

Lenexa, KS 66219

775-450-3028

squai@firstelementenergy.com

www.FirstElementEnergy.com

Small business manufacturer of hydrogen and methanol fuel cells for tower backup power and off-grid locations requiring weeks/ months of run time.

Flash Technology

Component

332 Nicol Lane

Franklin, TN 37122

www.spx.com/en/flash-technology

Fujitsu

Hardware

2801 Telecom Parkway

Richardson, TX 75082

888-362-7763

fncinsidesales@fnc.fujitsu.com

www.fujitsu.com

With our long history of cutting-edge technology in the field of telecommunications, Fujitsu is well positioned to supply and support end-to-end solutions for wireless networks.

FWT, LLC

Component

Galtronics

Hardware

Liron Ramot

www.galtronics.com

liron.ramot@galtronics.com

Galtronics is a market leader in antenna solutions of the highest quality and design. Markets served include mobile phones, broadband (home networking, M2M, LMP) and wireless infrastructure.

GME Supply Co

Component

GPS Networking Inc.

Hardware

373 E. Industrial Blvd.

Pueblo West, CO 81007

Contact: Steve Vasquez

719-595-9880

salestech@gpsnetworking.com

www.gpsnetworking.com

GPS Networking, Inc. is the only company which specializes in providing global positioning products and solutions to enable you to effectively distribute the GPS signal throughout your site or facility. We have developed a line of GPS products which allow you to design your own GPS network to meet your individual needs. For over 20 years, GPS Networking has been the number one provider of GPS Antenna Splitters, GPS Amplifiers, and GPS Re-radiating Kits in the world.

Graybar

Component

H & H Industries

Component

Harger Lightning & Grounding

Component

Hometryst CCTV South Florida

Component

2925 NW 130th Avenue

Sunrise, FL 33323

954-609-4096

dennisneftleberg@gmail.com

www.cctvsouthflorida.com

Security Camera DVR Hardware and accessories.

Hughey & Phillips Obstruction Lighting

Hardware

240 W. Twain Avenue

Urbana, OH 43078

937-652-3500

oblighting@hugheyandphillips.com

www.hugheyandphillips.com

Obstruction Lighting: Broadcast / Telecommunications / Wind Turbines / Tall Structures / Utilities / Airport Towers

Hutton Communications, Inc.

Component

Innovative Systems

Hardware

1000 Innovative Drive

Mitchell, SD 57301

605-995-6120

sales@innovsys.com

www.innovsys.com

Innovative Systems provides voice, video and OSS/BSS telecommunications services to wireless and wireline companies with over 1200 systems in service. The APMAX delivers voice services including Unified Messaging, Mass Notification, Conference Calling, Web Portal Customer Care and many other enhanced voice services.

International Treescapes, LLC

Accessory

2580 Progress Street

Vista, CA 92081

760-631-6789

www.treescapes.com

www.treescapes.com

Manufacturer of cellular, surveillance and sound system concealment products, including replica tree wraps for rooftop and hillside sites.

International Tower Lighting, LLC

Hardware

PO Box 41875

Nashville, TN 37204

Contact: Katie Taylor

615-256-6030

ktaylor@itc-llc.com

www.itl-llc.com

Interop Technologies

Hardware

Iron City Telecom, Inc.

Hardware

12 Pulaski Street

Brooklyn, NY 11206

347-742-0610

vbarlow@ironcitytelecom.net

ISCO International

Hardware

444 E. State Parkway, Suite 123

Schaumburg, IL 60173

888-472-3458

sales@isointl.com

www.isointl.com

Solutions maximizing performance of the RF uplink through spectrum conditioning to mitigate interference, manageability to react to spectrum dynamics, and spectral awareness tools.

ITL, LLC

Component

iTrinegy

Hardware

**Bulse Grange
Saffron Walden
CB11 4JT
+44 01799 252200**

debra.wilkins@itrinegy.com

www.itrinegy.com

iTrinegy provides network profiling and network emulation for de-risking application performance out in the field for Satellite, Virtual, WAN/LAN, Mobile, Radio over IP etc

JDSU

Hardware

**430 N McCarthy Blvd.
Milpitas, CA 95035
408-546-5000
info@jdsu.com**

www.jdsu.com

JDSU serves markets that are at the heart of what's important, making virtually every network in the world faster and more reliable. JDSU leads the fastest-growing segments of the optical-networking market: tunable XFPs, transport blades, and reconfigurable optical add/drop multiplexers (ROADMs).

JMA Wireless

Hardware

**7645 Henry Clay Blvd
Liverpool, NY 13088
Contact: David Lawrence
315-431-7126
dlawrence@jmawireless.com
www.jmawireless.com**

Kaipac

Hardware

**724 Canyon Drive
Coppell, TX 75019
www.haipac.com**

Kimberly Steel Solutions

Accessory

**9138 County Road 65
Foley, AL 36535
Contact: Jeff Osborne
866-320-2197
josborne@kimberlysteelsolutions.com
www.protectivecages.com**

Protective steel cages and enclosures for cell towers, switch gear, etc

L-Com

Component

Laird

Hardware

**1751 Wilkening Ct.
Schaumburg, IL 60173
Contact: Gus Basualdo
954-240-2036
gus.basualdo@lairdtech.com
www.lairdtech.com**

Lattice Communications

Component

Launch 3

Hardware

**134 Myer Street
Hackensack, NJ 07601
877-878-9134
sales@launch3.net
www.launch3telecom.com**

Launch 3 Telecom is an international distributor of new, used, and refurbished telecom equipment. Launch 3 carries all major manufacturers such as Andrew, Cisco, Alcatel-Lucent, Tyco, Kathrein Scala Division, Powerwave, and many more.

LBA Technology

Hardware

**3400 Tupper Drive
Greenville, NC 27834
252-757-0279
lbagrp@lbagroup.com
lbatechnology.com**

Fabricates lightning mast protection systems, sophisticated radio antenna tuning & coupling systems, provides transmission & shielding system design-build integration & markets test equipment for the RF sector.

LNA Solutions, Inc.

Component

LOCO International

Hardware

**2 Countryside Dr
Pelham, NH 03076
888-509-3669
sales@locointl.com
www.locointl.com**

LOCO International is the leading global provider of new and refurbished networking equipment, computer systems, computer parts, and test and measurement equipment. We buy and sell electronic hardware, test equipment, networking and computer parts at reduced prices.

Lyncole XIT Grounding

Component

Matsing

Hardware

**12 Mauchly, Unit 0
Irvine, CA 92618
Contact: Tony DeMarco
714-504-5964
www.matsing.com**

Maximum Signal LLC

Hardware

**3843 Union Road, Suite 15 , #139
Cheektowaga, NY 14225
716-818-5896
maximumsignal@aol.com
www.maximumsignal.com
Manufacturer and Distributor of Cellular Amplifiers**

Melody Wireless Infrastructure

Hardware

**60 Arch Street
Greenwich, CT 06830
Contact: David Bacino
203-302-1790
dbacino@melodypartners.com
www.melodywireless.com**

Midsun Specialty Products, Inc.

Component

Midwest Unlimited LLC

Accessory

Miller Fall Protection By Honeywell

Accessory

MPS Civil Products (MacLean Dixie)

Component

MSETCL

Hardware

**Parakash Ganga, BKC, Bandra(E)
Mumbai India 400062
singhbp64@yahoo.com
mahatransco.in**

Multiwave Sensors Inc.

Component

Narda Safety Test Solutions

Component

National Strand Products, Inc.

Component

Nello

Hardware

211 W. Washington St, Ste. 2000
South Bend, IN 46601
Contact: Todd Kneller
574-288-3632
tkneller@nelloinc.com
www.nelloinc.com

Neptuno - NAAP

Hardware

401 E Las Olas Blvd, Ste. 1520
Fort Lauderdale, FL 33301
Contact: Nelsy Arellano
954-525-1906
narellano@neptunousa.com
www.naapsolution.com

Nextivity

Hardware

12230 World Trade Drive
San Diego, CA 92128
Contact: Joe Schmelzer
858-485-9442
jschmelzer@nextivityinc.com
www.cel-fi.com

Nextivity Inc. is a leading developer of indoor cellular coverage technology which optimizes the experience of wireless subscribers and increases Radio Frequency (RF) network capacity for mobile operators.

Northstar Battery Company

Hardware

4000 Continental Way
Springfield, MO 65803
Contact: Al Aflague
530-503-5053
al.aflague@northstarbattery.com
www.northstarbattery.com

Omitron

Component

Optica Network Technologies, LLC

Accessory

Optical Zonu Corporation

Hardware

15028 Delano Street
Van Nuys, CA 91411
818-780-9701
info@opticalzonu.com
www.opticalzonu.com

Manufacturers of carrier-grade RF-over-Fiber interconnect links for small cell and DAS deployments.

OTL Solutions

Hardware

4920 Louis-B. Mayer
Laval, QC H7P 0H7
Contact: Michel Lavallee
800-647-9110
info@otlsolution.com
www.otlsolution.com

Phoenix Contact

Component

586 Fulling Mill Road
Middletown, PA 17057
717-944-1300
info@phoenixcon.com
www.phoenixcontact.com

Phoenix Contact develops and manufactures industrial electrical and electronic technology products that power, protect, connect and automate systems and equipment for many industries.

Pigeon Mountain Industries, Inc.

Accessory

Precision Tower Products

Hardware

PO Box 129
Ostrander, OH 43061
www.precisiontowerproducts.com

Preformed Line Products

Accessory

Primus

Hardware

4180 E Sand Ridge Rd
Morris, IL 60450
800-435-1636
gabe@primuselectronics.com
www.primuselectronics.com

Primus Electronics

Component

PRINOTH

Component

Pro-Tec Mobile Communications

Hardware

1641 North Pinal Ave.
Casa Grande, AZ 85122
520-836-4681
protecmobile@aol.com
www.protecmobile.com
Motorola, Kenwood Dealers

Prysmian Group

Hardware

PO Box 39
Claremont, NC 28610
Contact: John Lavalette
800-879-9862
john.lavalette@prysmiangroup.com
na.prysiangroup.com

Pulse Electronics

Hardware

3611 NE 112th Ave
Vancouver, WA 98682
Contact: Denise Kegley
360-859-5016
dkegley@pulseelectronics.com
www.pulseelectronics.com

Quest Controls

Hardware

208 9th Street Drive West
Palmetto, FL 34221
Contact: Robert Vachris
941-224-1005
rvachris@questcontrols.com
www.questcontrols.com

Quintel USA Inc.

Hardware

1200 Ridgeway Ave.
Rochester, NY 14615
Contact: Joseph Veni
408-687-1093
joe.veni@quintelsolutions.com
www.quintelsolutions.com

RAD Data Communications

Hardware

900 Corporate Drive
Mahwah, NJ 07430
201-529-1100
chris_f@rad.com
www.rad.com

RAD addresses communications service providers with Service Assured Access and packet migration solutions that reduce operational cost and complexity and improve service agility.

Radio Frequency Systems (RFS)

Component

200 Pondview Drive
Meriden, CT 06450
800-437-3045
paula.mennone@rfsworld.com
www.rfsworld.com

Radio Frequency Systems (RFS) is a global designer and manufacturer of cable, antenna and tower systems, as well as active and passive RF conditioning modules, providing total-package solutions for outdoor and indoor wireless infrastructure. RFS serves OEMs, distributors, system integrators, operators and installers. Its customers currently include the four largest wireless carriers, the majority of tier 2 and 3 wireless carriers in North America and many of the top wireless and microwave OEMs worldwide.

Radisys

Hardware

5435 NE Dawson Creek Road
Hillsboro, OR 97124
503-615-1100
info@radisys.com
www.radisys.com

Radisys' T-Series platforms are pre-configured to meet mobile operator's high-performance requirements and optimized for Deep Packet Inspection (DPI), Policy Management, SDN/NFV and Load Balancing.

Rakon

Component

8 Sylvia Park Rd
Auckland, New Zeland 1060
649-573-5554
sales@rakon.com
www.rakon.com

Rakon is a global high technology company that designs and manufactures world leading timing and frequency control solutions using advanced crystal and oscillator technology.

Raycap

Hardware

806 S. Clearwater Loop
Post Falls, ID 83854
Contact: Lisa Duckett
lduckett@raycap.com
www.raycap.com

RedSky Technologies

Hardware

925 W. Chicago Avenue, Ste. 300
Chicago, IL 60642
312-432-4300
info@redskytech.com
www.redskyE911.com

RedSky Technologies is the leader in E911 solutions, providing premise and cloud-based location determination solutions to the enterprise, including location support for any type of device.

RF Industries

Hardware

7610 Miramar Road
San Diego, CA 92126
Contact: Manny Gutsche
800-233-1723
mgutsche@rfindustries.com
www.rfindustries.com

Richard Tell Associates, Inc.

Component

350 Falcon Ridge Parkway, Ste. 103
Mesquite, NV 89027
919-900-8412
sales@radhaz.com
www.radhaz.com

Richard Tell Associates, Inc. is a scientific consulting business focused on electromagnetic field exposure assessment, compliance with applicable standards and regulations on radiofrequency (RF) and power frequency fields and training related to the measurement, analysis and interpretation of electromagnetic fields.

ROHN Products, LLC

Component

Rope and Rescue

Accessory

Rosenberger Site Solutions, LLC

Component

Rosewood Communications Supply

Hardware

6634 Gateway Drive, Ste. B
Alpharetta, GA 30004
678-395-6634
rachel@rosewoodcom.com
www.rosewoodcom.com

Customer-Focused distributor of consumables for the telecommunications industry

Sabre Industries, Inc.

Component

SAF Tehnika

Hardware

3250 Quentin Street, Unit 128
Aurora, CO 80011
Contact: Daniel White
712-258-6690
daniel.white@saftehnika.com
www.saftehnika.com

Shireen, Inc.

Accessory

12910 Cloverleaf Center Dr.
Germantown, ME 20874
301-838-4380
greg@shireeninc.com
www.shireen.com

Shireen, Inc. has a full line of Outdoor Cables and Connectors Ste.d for the Wireless, Wired and Fiber telecom market. Our Cable Products Division, maintains over 30+ SKUs of Bulk RF Coaxial and both Indoor and Outdoor Category Products for Cat5e, Cat6 and Siamese Fiber.

Signum Wireless Cprporation Inc

Hardware

7-8362 Woodbine Ave., Ste. 360
Unionville, ON
L3R 2M6
416-910-1804
robert.lane@signumwireless.com
www.signumwireless.com

A Canadian supplier of In-building wireless solutions- DAS (design+ hardware) as well as cell towers across Canada.

Siklu

Hardware

43 HaSivim St.
Petach Tikva, Israel 49517
+972 3 9214015
shahar.peleg@siklu.com
www.siklu.com

Siklu, the market leader in E-band backhaul systems, delivers Gigabit capacity millimeter wave wireless backhaul solutions operating in the 60, 70 and 80 GHz bands.

SKYLOTEC North America, LP

Accessory

Slatercom - WCD

Component

SpanSet USA

Accessory

Specialty Tower Lighting, Ltd., Div. of TWR Family of Cos.

Component

Spinner Atlanta, Inc.

Component

Star Solutions International Inc.

Hardware

4600 Jacombs Road, Ste. 120

Richmond, MB

V6V3B1

604-276-0055

contact-sales@starsolutions.com

www.starsolutions.com

Star Solutions supplies innovative mobile network infrastructure to carriers and wireless network operators worldwide. Our 3G/4G systems target rural, enterprise, public safety applications worldwide.

Syniverse Technologies

Hardware

Talley, Inc.

Component

TE Connectivity

Hardware

541 E. Trimble Road

San Jose, CA 95131

408-952-2400

seri.yoon@te.com

www.te.com/WirelessSolutions

TE Connectivity is a \$13 billion world leader in connectivity with nearly 90,000 employees in over 50 countries. A leader in distributed antenna systems (DAS) for in-building and microcellular networks, TE's solutions transform the way mobile service delivery networks are created, deployed and used for new mobile applications.

Tech Safety Lines, Inc.

Accessory

Tecore Networks

Hardware

7030 Hi Tech Drive

Hanover, ME 21076

410-872-6500

sales@tecore.com

www.tecore.com

Tecore Networks is a pioneer supplier of multi-technology 3G and 4G LTE network infrastructure. From millions of subscribers, to small private networks, Tecore Networks has serviced the commercial and government sectors for over 20 years. Offering cutting-edge voice and data technologies, and setting the standard for all-IP based architecture; Tecore Networks has exponentially increased performance while minimizing cost and space requirements.

Tektronix Communications

Hardware

3033 West President George Bush

Plano, TX 75075

469-330-4000

info@tekcomms.com

www.tekcomms.com

Tektronix Communications offers service providers and equipment manufacturers around the world an unparalleled suite of network diagnostics and service assurance solutions for mobile, fixed, IP and converged multi-service networks.

TeleCommunication Systems, Inc.

Hardware

Tempest Telecom Solutions

Hardware

136 W. Canon Perdido, Ste. 100

Santa Barbara, CA 93101

805-879-4800

sales@tempesttelecom.com

www.tempesttelecom.com

Tempest is a leading provider of legacy telecom infrastructure and repair services so operators can build, expand and maintain their networks faster and more cost-effectively.

TES Inc.

Accessory

TESSCO Technologies Incorporated

Hardware

11126 McCormick Road

Hunt Valley, ME 21031

800-472-7373

www.tessco.com

TESSCO Technologies is Your Total Source for making wireless work delivering everything needed to build/use/maintain wireless broadband voice/data/video systems.

thermOweld

Component

Times Microwave Systems

Component

Tractel Ltd. Fallstop

Accessory

Tucker Sno-Cat Corporation

Component

TWR LIGHTING, INC

Hardware

4300 Windfern Rd, #100

Houston, TX 77041

713-973-6905

sales@twrlighting.com

www.twrlighting.com

FAA approved & ETL Certified manufacturer of Aviation Obstruction Lighting for towers including: Our L-550 All LED Systems, LED Beacons and Obstruction Lights, High Intensity Lighting and Monitoring Systems.

UNIMAR, INC.

Component

US Rack Distributors

Hardware

2805 E. Plano Parkway #200

Plano, TX 75074

877-840-5530

info@usrackdistributors.com

www.usrackdistributors.com

US Rack Distributors is the Premier Value Added Distributor bringing Soundproof of Energy Efficient Enclosures to the IT market in the USA and Canada.

Valmont Site Pro 1

Component

Valmont Structures

Component

Westell Technologies

Hardware

750 N. Commons Drive

Aurora, IL 60504

630-898-2500

info@westell.com

www.westell.com

Westell Technologies is a global leader of intelligent site and outside plant solutions focused on the critical edge and access networks.

Western Towers

Component

Wilson Electronics

Accessory

3301 East Deseret Drive

St. George, UT 84790

435-673-5021

info@wilsonelectronics.com

www.WilsonElectronics.com

Wilson Electronics, LLC, a leader in the wireless communications industry for more than 40 years, designs and manufactures the industry's broadest product portfolio of cellular signal boosters, antennas and related components that significantly improve fixed and mobile cellular communication for use in consumer, enterprise and industrial applications worldwide.

Zoom Telehronics

Hardware

207 South Street

Boston, MA 02111

617-535-9383

sales@zoomtel.com

www.zoomtel.com

Zoom manufactures HSPA-compatible, PTCRB-approved modem/routers with wireless-N, and also 900 MHz premise monitoring and controls with industry leading price and performance.

ZTE USA INC.

Hardware

333 Perry St, Ste. 301

Castle Rock, CO 80104

720-282-9628

mike@zteusa.com

www.zteusa.com

ZTE provides customized, future-proof and affordable solutions to our customers and consumers. ZTE is committed to continuous improvement and reinvesting R&D into innovative products.

Need guaranteed leads? Thought leadership? Incremental content marketing opportunities?

Sponsor an RCR Wireless News' multi-platform, editorial program and receive the following benefits:

Editorial Webinar – sponsorship includes 200 guaranteed leads, participation as sponsored guest and recognition as sponsor in all promotional materials. Sponsors will receive webinar registration and attendee list, responses to pre and post surveys and polling responses gathered during webinar.

Editorial Feature Report – in addition to recognition as sponsor in program promotion, sponsorship includes 200 guaranteed leads, distinct from webinar leads, 2-page ad spread or advertorial in feature report, and responses to lead capture survey questions.

For information contact
sales@rcrwireless.com

25% discount
When you sponsor 2 or more programs

Fast facts about RCR Wireless News digital network (November 2014)

- ▶ 200,000+ monthly page views
- ▶ 97,000+ unique monthly visitors to websites
- ▶ 60,000+ opt in newsletter subscribers
- ▶ 100,000+ monthly video minutes viewed on RCR Wireless News Youtube channel
- ▶ 37,000+ monthly videos viewed on RCR Wireless News Youtube channel
- ▶ Industry leading demand generation programs and results



<http://www.rcrwireless.com/category/free-reports>

UPCOMING 2015 EDITORIAL PROGRAMS INCLUDE:

OCTOBER

Connected Car Series:

Simulation, Testing and Interference Issues or the Connected Car

NOVEMBER

Telecom Software Series:

Diameter signaling impact, benefits and challenges in a NFV, SDN, Cloud world

Analyst Angle Series:

RAN Optimization

DECEMBER

2016 Predictions: VoLTE, 5G, Connected Cars IoT, Wearables and more

Each program is limited to three (3) sponsors