



CLOSING THE GAP

A Newsletter Dedicated to Cutting Edge Solutions for the Next Generation







technologies.





2021 In-Building Wireless Report



Wireless connectivity has never been as crucial to as many people as it is today. In a new world shaped by social distancing, wireless capabilities have transcended convenience and become the primary fabric of human interaction.

As recently as 2016, ABI Research reported that more than 80 percent of mobile data traffic occurs inside buildings. Buildings, by their nature, provide a physical barrier to wireless communication. Dropped calls, poor signals, and slow downloads all result when RF signals are obstructed by building materials like concrete walls and low emission windows. In the worst case scenario, parts of a building may become wireless dead zones. There is also the question of capacity—buildings may be home to many more users than can be supported by a given cell tower.

In-building wireless (IBW) solutions serve to address these concerns. IBW solutions can ensure that networks deliver on Quality of Service (QoS) agreements and that Quality of Experience (QoE) expectations are met by building occupants. These solutions range from minimal passive signal routing that ensures coverage to sophisticated digital distributed antenna systems that add additional

cellular capacity. There is no one-size-fits-all IBW solution—the correct approach is dependant on the nature of the building and the scope of wireless services required.

In this report, we'll examine different IBW solutions available today, the challenges that come with them, and the emerging technologies that are changing the landscape of IBW.

Download the 2021 In-Building Wireless Report Today

Download Now

Gap Wireless Releases New Videos

Short Videos that highlight some of the markets we serve and products we distribute.



About Gap Wireless

Gap Wireless is a leading distributor of products and services for the mobile broadband and wireless markets, serving carriers and contractors throughout North America.

We work with industry-recognized vendors to stock and distribute thousands of wireless infrastructure and Test & Measurement products.



Solutions for the Defence Industry

Gap Wireless distributes Test & Measurement equipment, RF Coaxial Cable and Components, ICT Solutions, and Counter-Unmanned Aircraft Systems for the Canadian Military and Covernment

Proudly supporting our troops with cutting edge solutions for the next generation.



Solutions for the Education Industry

Gap Wireless offers comprehensive training tools for the education market segment featuring turn-key labs complete with everything from test hardware to software-defined radios. Respectful of budget limitations in the education field, Gap Wireless works with vendor partners to ensure the best use of education funds.

WATCH NOW

WATCH NOW

WATCH NOW



TDK RF Solutions Now Available



TDK RF Solutions is a world leader in the design, development, and manufacture of technical solutions for the electromagnetic compatibility testing and antenna measurement industries. They offer a complete range of solutions including automated test systems, TDK anechoic chambers, RF absorbers, antennas, software, and a wide range of test products.

Seeking, deepening, and accumulating the qualities of radio wave anechoic chambers that can respond to the demands of today's latest demands.

Ever since the development of the world's first ferrite electromagnetic wave anechoic chambers in 1969, the genealogy of TDK electromagnetic wave anechoic chamber technologies have responded to high expectations and demands of countless organizations and corporations that strive for next-generation technologies.

TDK RF SOLUTIONS AT GAP WIRELESS

- Integrated Test Systems
- Electromagnetic Wave Anechoic Chambers
- Electromagnetic Wave Absorbers
- EMC Measurement and Evaluation System



LEARN MORE

EA Elektro-Automatik Now Available



Elektro-Automatik is Germany's leading manufacturer of laboratory power supplies. EA emphasizes Research, development and manufacturing of power electronics, with a focus on laboratory power supplies (AC and DC), electronic loads (DC), battery chargers and DC emergency power supplies. EA has been at the forefront of production and manufacturing since 1974. Products include programmable DC power supplies from 320W to 15kW, regenerative power supplies, bidirectional power supplies, and electronic DC loads.

Power Supplies for Research, Development, and Industry

Elektro-Automatik equipment is used in research and development and industrial applications in the following industries: Automotive and electric mobility, Electrochemistry, Process Technology, Alternative Energies, and Telecommunications.

ELEKTRO-AUTOMATIK SOLUTIONS AT GAP WIRELESS

- EA Bidirectional DC Programmable Power Supplies
- EA Programmable DC Power Supplies
- EA Programmable DC Electronic Loads
- EA Turnkey DC Power Rack & Cabinet Systems





Next-Generation Solutions for Higher Education



How Gap Wireless is Helping Colleges and Universities

We believe a close working relationship between industry and post-secondary training is important to make sure that program graduates are prepared with the right skills and knowledge to hit the ground running. This is beneficial for grads, schools, and the industry. Providing students with access to state-of-the-art equipment will help foster state-of-the-art engineers, technologists, and technicians.

Gap Wireless offers comprehensive training tools for the education market featuring turn-key lab equipment complete with everything from test hardware to software-defined radios. Respectful of budget challenges in the education field, we work with our world-class vendor partners to ensure the best value for your investment of educational funds.

Most recently we have worked closely with Niagara College, Georgian College and Humber College to bring industry representatives and companies to their Colleges through technical seminars. As well as supplying cutting edge equipment for their labs and and helping graduates find jobs via networking opportunities and referrals.

Niagara College

Gap Wireless has supplied Niagara College's labs and programs with leading-edge Keysight equipment and assisted in identifying the skills and knowledge the next generation of graduates need upon entering the industry. We have also aided Niagara College by partnering with them to develop and deploy educational webinars increasing Niagara's profile by connecting Niagara to a range of industry partners and assisting in fostering a growing relationship between all parties.

Georgian College

A selection of Keysight instruments purchased from Gap Wireless are now used in several courses, including communications, networking, and RF/microwave systems. Several industry/research collaborations were introduced to the college by the Gap Wireless team, including Bell Canada and STAC Council, and we are partnering with Keysight to deliver an upcoming technology seminar.

Humber College

The Humber College Wireless Telecommunications program has been working with GAP Wireless since 2014. We started our relationship by hosting hands-on learning seminars for the Telecommunications industry. In our first seminar, we attracted 60 different people from over 20 companies. As part of the seminar, we gave tours of our impressive lab facilities. The seminar gave the Telecommunications program and students wide exposure to the industry at large and many industry contacts for us to develop relationships with. Together, we have hosted more than five of these seminars to great success. A strong by-product of our

interactions have been the benefits the students receive from improved curriculum and employers that are looking specifically for them.

What's on the Horizon?

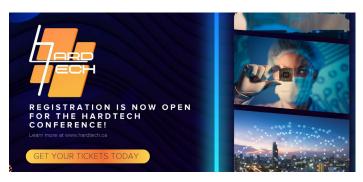
Niagara College is currently engaged in a project funded by the Province of Ontario via the eCampus Virtual Learning Strategy. As part of this project, Niagara College is creating a lab curriculum and videos for post-secondary technology students that will be made freely available to teachers and students across Ontario. Gap Wireless and Keysight Technologies have partnered to sponsor the project by donating a complete Keysight Technologies Smart Bench Essentials Test Instrument set to the project as well as a Handheld DMMs.

Gap Wireless is helping the Humber Wireless Telecommunications program look for company sponsors to help supervise student projects that could help their company. Students have a four-month project needed for graduation. You can define the project and students can help you implement it with your supervision. For an information package, please contact kevin.ramdas@humber.ca.

Learn More About
Our Education
Solutions



Supercharge Canadian Innovation at ventureLAB's HardTech Conference, hosted on June 22 & 23, 2021!



HardTech is Canada's premiere hardware technology-focused conference, featuring prominent thought leaders in the tech ecosystem that are creating transformative experiences for those around the world. Hosted by ventureLAB in partnership with the Regional Municipality of York, our mission is to emphasize the importance of hardware technology and the impact it has on our globe, while making it an enjoyable and immersive experience.

We believe that a connected tech ecosystem will lead to more inspiration, innovation and opportunities in the hardware and semiconductor industry. Registered attendees will have the opportunity to connect with ventureLAB's vast innovation ecosystem, including industry leaders, innovators, investors, media, mentors and startup enthusiasts.

Why Attend HardTech?

Premium Content: HardTech brings together industry leaders in hardware technology to discuss the latest developments in the field and share their insights. This year, thought leaders will discuss how the demand for advanced and smart technologies have led to the global chip shortage, showcase groundbreaking products built through ventureLAB's Hardware Catalyst Initiative, and inspire the next generation of tech titans.

Build Connections: Connect with 500+ attendees across Canada in various ways; participate in an attendee matchmaking session, join a group lounge or simply connect one-to-one on the platform! The opportunities are endless, and you never know where these connections will take you.

Expand Your Knowledge: Pick from three simultaneous breakout sessions and join the conversation. These breakout sessions will have you engaging in discussions around the role hardware plays in the future of electric vehicles, medical technologies and agritech.

HardTech Pitch Competition: Watch the dynamic HardTech Pitch Competition, bringing together 8 Canadian finalists who are developing product-level and chip innovations in electronic hardware.

Click here to get your complimentary, all-access pass \$189 Value
REGISTER NOW FOR THIS FREE EVENT

Value-Added Re-Reeling Services at Gap Wireless

Gap Wireless offers a fast turnaround on re-reeling (cable cutting) services. We can re-reel cable onto any size reel down to and including hand spools. We offer flexible and convenient service with most cuts done the same day. This will save you considerable costs. To be able to have exactly what you need with no waste, when you need it is the cornerstone of our service. The typical cables we handle are $\frac{1}{4}$ ", $\frac{1}{2}$ ", $\frac{7}{8}$ ", $\frac{1}{1}$, $\frac{1}{4}$ ", $\frac{1}{5}$, as well as power cable, and hybrid fiber cable offering myriad choices of DC and fiber bundles. A small selection of the vast array of our cable products include:

- Corrugated Cables in Standard, Fire Rated, and Plenum
- LMR ® High Performance cables
- Radiating
- Bulk Fiber
- · Bulk Hybrid Fiber





As part of our cable handling, we also offer custom reel preparation connectorization, and test. For instance, we can provide cables re-reeled on specific sized reels with connectors pre-installed on both ends and tested for PIM, Insertion Loss, and VSWR. We can include test reports and custom sealing with shrink wrap. Our connectorizations will ensure low loss terminations that meet all required specifications, and all customer orders are:

- Assembled by trained technicians.
- Terminated using manufacturer recommended methods and tooling.
- Subjected to our rigorous first article approval process.
- Required to pass all in-process and final inspection requirements.
- 100% testing for PIM, Insertion Loss, and VSWR available

We use a Keysight Technologies FieldFox RF Analyzer for all RF tests as well as CCI PIMPRO units to test Passive Intermodulation Distortion results. We can do RF tests up to 54 GHz such as insertion loss, return loss and VSWR.

Whether your cable requires custom or standard terminations, cable type, lengths, shielding, labels or other unique characteristic Gap Wireless has the experience, production capabilities and technical expertise to meet your performance and delivery expectations.



Scavenger Hunt Contest in Winners!



A big thank you to everyone who participated in our Online Scavenger Hunt that ended on June 1st.

We had a great turnout with hundreds and hundreds of people submitting their Scavenger Hunt forms.

Only 158 people got the correct answer.

We then held random prize draws for those individuals with the correct answer.

Here is how the prize draw turned out.

Swag Bag - Matthew Falkiner Swag Bag - Stavros Stavrou Swaq Baq - Jason Mills \$25 Visa Gift Card - Adam Lawrence \$50 Visa Gift Card - Alex Gervais \$100 Visa Gift Card - Andy Vanstokkom Keysight U1282A DMM - Shawn Halpin Keysight DSOX1202A Scope - Nathanael Sieb

We hope everyone had fun with the Scavenger Hunt and learned a little more about Gap Wireless!







Gap Wireless is excited to announce that Jerry Bezner has joined us as Director of Infrastructure Solutions.

Jerry brings many years of expertise in towers, hardware solutions, steel accessories and cable infrastructure.

Jerry has many years of experience in prior roles managing multiple product lines including towers, steel accessories and cable accessory sales while supporting sales teams in Canada and the United States. He has worked in the Wireless Industry for over 40 years. He started his career as a Professional Engineer for General **Electric Mobile Radio Communications** and subsequently worked for Ericsson and then 14 years with Trylon Manufacturing.

Jerry is a member of the Ontario Association of Profession Engineers and is a Life Member of the IEEE. He is a strong supporter of STAC and a member of the STAC Workplace Health and Safety Committee. In addition he is very active in NATE. The Communications Infrastructure Contractors Association as a member of the Trade Show Committee and as an Ambassador for the NATE WIN Program.

A family man with 4 grown daughters and many grandchildren, Jerry occasionally finds time for a game of golf and enjoys fine wines, especially those from California.

Have a hardware need? Reach out to Jerry today. Jerry.Bezner@gapwireless.com



RFOCS CATALOG NOW ONLINE

RFOCS (Radio Frequency and Optical Components and Systems) is a world-class vendor of test grade RF components and microwave components. RFOCS offers a wide range of low PIM RF components that are often used on cellular towers, on in-building DAS systems, and in wireless research and development labs.

The RFOCS Catalogue 2021 now has direct purchase links.

RFOCS products available at Gap Wireless include:

- Grounding Kits
- Weather Enclosures
- **Hoisting Grips**
- **Butterfly Hangers**
- Angle Adapters and Stand-Off Adapters
- Hose Clamps and much more







FLUKE NETWORKS NOW AVAILABLE



DSX CableAnalyzerTM Series

The DSX CableAnalyzer Series copper cable certifiers enables testing and certification of twisted pair cabling for up to 40 Gigabit Ethernet deployments and will handle any cabling system whether it is a Cat 5e, 6, 6A, 8 or Class FA and I/ II. Certifying a cable is one part of a process that starts with system design and ends with system acceptance. The faster that process goes, the more profitable you'II be. Unfortunately, there are a lot of things that slow the process down – setting up the tester incorrectly, testing to the wrong limits, waiting for skilled technicians to analyze and troubleshoot failures, misinterpretation of results, and producing test reports that customers cannot understand.

As part of the Versiv cabling certification product family, the DSX CableAnalyzer Series copper cable certifiers provides accurate, error-free certification. In the installation business there are multiple teams, varying media types and multiple testing requirements. The difference between being profitable or not is just a few percentage points. The DSX certifies copper cabling, complies with all standards including Level VI/2G accuracy, making jobs easier to manage, and getting to system acceptance faster. It's not just for the expert technicians and Project Managers. Individuals of various skill levels can improve the set-up, operation, test reporting, and simultaneously manage diverse projects.

What is Unique about Versiv?

Versiv enables users to accomplish more than ever before with a cable tester, by accelerating every step of the testing process.

LinkWare Live cloud service lets the Project Manager remotely set up the testers, monitor job progress and even location from any smart device.

ProjXTM management system eases tasks from initial set-up of a job to system acceptance. It eliminates redundant steps, and ensures that all tests are completed correctly the first time, and every time.

TaptiveTM user interface puts advanced data analysis and easy set-up and operation at the fingertips of technicians of all skill levels

LinkWare PC management software provides unmatched analysis of test results and professional test reports.

The DSX reduces the time required to fix cabling faults with dedicated diagnostics, a simple test that locates the problem.

Product Highlights

- VersivTM modular design supports copper certification, fiber optic loss, OTDR testing and fiber endface inspection
- Unmatched speed for Cat 6A, 8, Class FA, I/II and all current standards
- ProjXTM system manages job requirements and progress from set-up to systems acceptance, making sure all tests are completed correctly
- TaptiveTM user interface simplifies set-up, and eliminates errors
- Analyze test results and create professional test reports using LinkWare™ management software
- Graphically displays the source of failures including crosstalk, return loss and shield faults for faster troubleshooting
- Intertek Verified to TIA Level 2G the most stringent accuracy requirement
- Copper cable certifiers endorsed by cabling vendors worldwide
- Built in Alien Crosstalk testing
- Compatible with Linkware™ Live. Linkware Live enables to easily track job progress, get real-time access to test results to quickly fix problems in the field, and easily transfer and consolidate test results from the tester to LinkWare™ PC Cable Test Management Software



Featured Products

DSX2-5000

Includes: 1 Versiv Mainframe & Remote, (2) DSX-5000 CableAnalyzer Modules, Set of Cat 6A/Class EA Permanent Link Adapters, Set of Cat 6A/Class EA Channel Adapters, (2) Headsets, (2) HandStrap, (2) Shoulder Straps, Carry Case, USB Interface Cable, (2) AC Chargers, (2) Universal Couplers, Integrated Wi-Fi, Statement of Calibration and Getting Started Guide, and 3 Yr Gold Support.

DSX2-8000

Includes: 1 Versiv Mainframe & Remote, (2)
DSX-8000 CableAnalyzer Modules, Set of Cat 8/
Class I Permanent Link Adapters, Set of Cat 8/Class
I Channel Adapters, (2) Headsets, (2) HandStrap,
(2) Shoulder Straps, Carry Case, USB Interface
Cable, (2) AC Chargers, (2) Universal Couplers, (2)
AxTalk Terminators, Integrated Wi-Fi, Statement of
Calibration and Getting Started Guide, and 3 Yr Gold
Support.

Contact Gap Wireless Today to Purchase DSX CableAnalyzer™ Series



Arriving July: 2021 In-Tunnel Wireless Report



We're two decades into the new millennium, and the wireless communication pioneered in the previous century has become the foundation of every aspect of our lives. Wireless infrastructure is all but a utility, expected both indoors and out, from street level all the way to the top floor of the highest skyscraper. However, certain environments remain a challenge when it comes to wireless solutions. Tunnels are one such setting.

You don't have to be a miner deep underground to have a need for in-tunnel wireless connectivity. Millions of urban commuters pass through thousands of kilometers of rail and road tunnels every day, and for many, these tunnels represent wireless dead zones in which they're isolated from loved ones and locked out of their work.

But tunnels don't have to be wireless wastelands. Though there are unique challenges in implementing in-tunnel wireless systems, there are emerging solutions that combat these challenges in an effective and affordable way. In this report, we will examine these challenges and solutions to understand the best approach to in-tunnel wireless.

Stay tuned. The report will be released in late July.



Gap Wireless Web Store



Browse the extensive Gap Wireless Web Store to discover the latest solutions from our network of more than 60 world-class manufacturers. You'll find a wide variety of test and measurement equipment, ICT equipment, and telecom infrastructure equipment.

Visit Web Store Now

Gap Wireless

Gap Wireless is a leading provider of products and services for wireless network operators and contractors, as well as electronic labs in the Government, OEM, and Education markets. Gap Wireless works with industry-recognized vendors to stock and distribute thousands of wireless infrastructure, public safety, and test & measurement products across North America. Gap Wireless also provides value-added technical/engineering services.

Contact Us Toll Free

info@gapwireless.com

8&9 - 2880 Argentia Road Mississauga, Ontario L5N 7X8



Fax: E-mail: 1.855.826.3781 1.855.830.0315 Subscriber to this Newsletter