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CLOSING THE GAP

A Newsletter Dedicated to Cutting Edge Solutions for the Next Generation

JANUARY 2022

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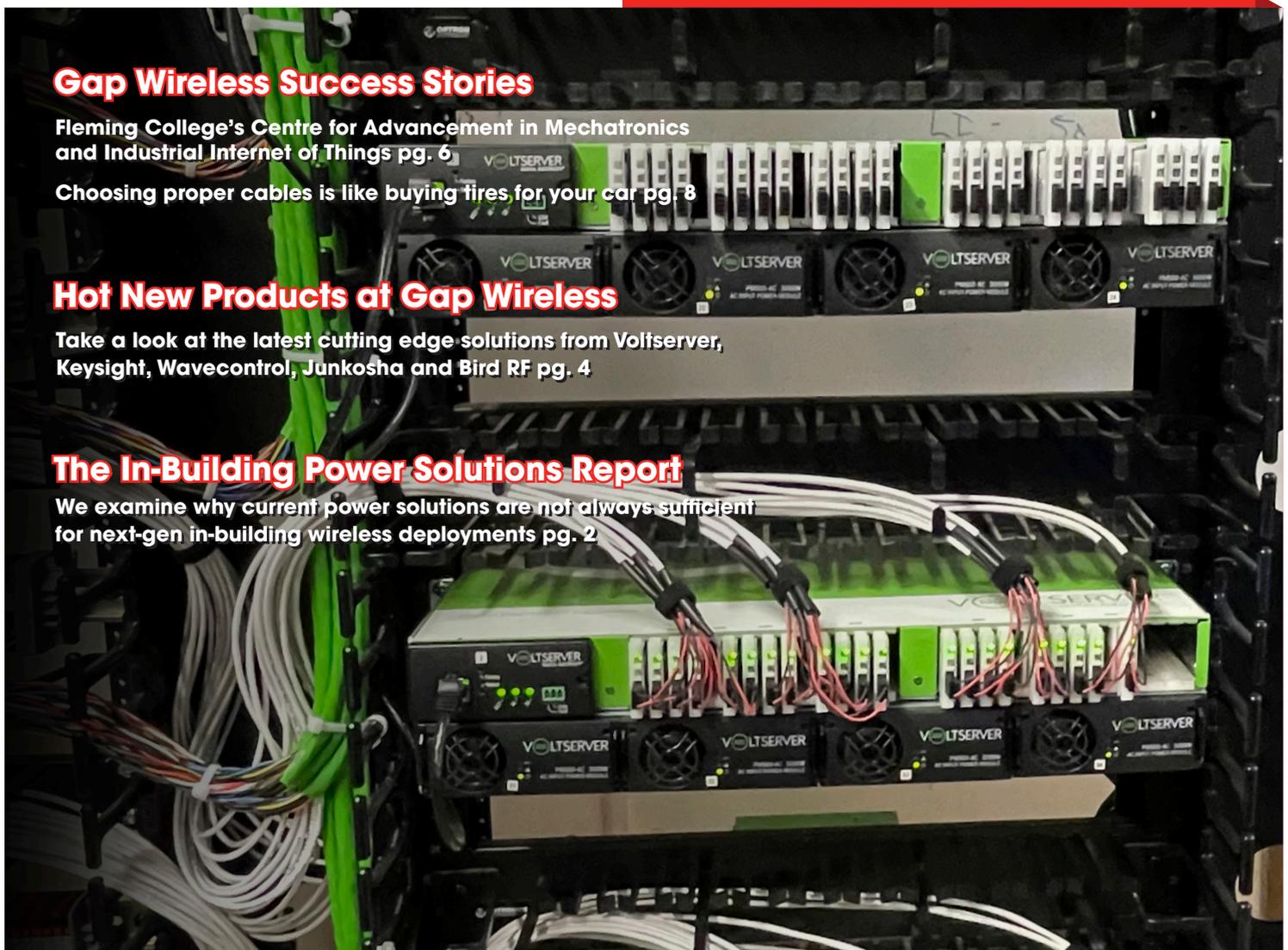
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Huawei Power Now Available at Gap Wireless



HUAWEI

Huawei Digital Power strives to help carriers improve efficiency and smarten up facilities. Their solutions help both telecom and tower carriers simplify facility deployment, improve power reliability and increase energy efficiency.

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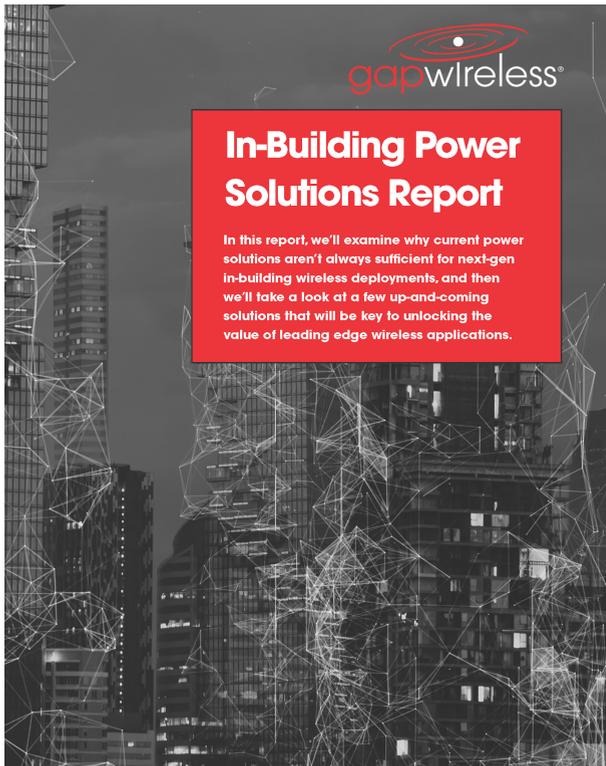
Aaronia USA Now Available



Aaronia offers affordable and portable RF and EMC spectrum analyzers and antennas as well as RF shielding products designed for RF applications.

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The In-Building Power Solutions Report



In-Building Power Solutions Report

In this report, we'll examine why current power solutions aren't always sufficient for next-gen in-building wireless deployments, and then we'll take a look at a few up-and-coming solutions that will be key to unlocking the value of leading edge wireless applications.

There are as many in-building wireless systems as there are buildings, and each must be carefully planned. There are many factors to consider when designing such systems. Examples include the architecture of a distributed antenna system, whether passive, active, or hybrid; the types, numbers, and locations of radio units and antennas; the types of interference that must be guarded against; and the wireless standards and frequencies that must be supported, to name a few. But no matter the size or environment of an in-building wireless deployment, there is one aspect of wireless infrastructure that is so fundamental it can't be ignored: power.

For active in-building wireless deployments striving for next-gen capabilities, power is the Achilles' heel of the system. The goal of more data and faster speeds over longer distances means more power is essential, but delivering this power properly can be difficult. The conduits used for current in-building wireless systems are meant for data, power, or both, but none of the conventional cables are optimized for the latest generation of wireless standards, let alone future generations. Furthermore, it's important to ensure that the source of that power is reliable, safe, and efficient.

In this report, we'll examine why current power solutions are not always sufficient for next-gen in-building wireless deployments, and then we'll take a look at a few up-and-coming solutions that will be key to unlocking the value of leading-edge wireless applications.



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Wirewerks solutions at Gap Wireless

Wirewerks develops and manufactures advanced optical fiber and copper structured cabling systems that provide the crucial physical layer foundation for our customers' mission-critical ICT networks. Wirewerks solutions are engineered to satisfy our customers' ever-increasing needs for more network bandwidth, greater throughput, faster data rates, and greater reliability.

VoltServer Digital Electricity at Gap Wireless

VoltServer is the first company to commercialize the distribution of electricity in a natively digital format. VoltServer is a venture-backed technology leader reinventing how electrical energy is distributed. Patented and proven Digital Electricity™ is an innovative method for distributing power with the high power aspects of AC and the safety and simplicity of Power over Ethernet (PoE).



UNIPOWER at Gap Wireless

UNIPOWER provides reliable power electronics, energy conversion systems, and power supplies, including a complete line of high-efficiency rectifiers, inverters, and DC power systems for mission-critical applications. UNIPOWER has over 25 years of experience designing and manufacturing power solutions for applications in telecom, cable, power utilities, energy, and municipal markets.

Huawei Power Solutions Now Available at Gap Wireless



Leading power digitalization for a smart and sustainable world, Huawei Digital Power strives to help carriers improve efficiency and smarten up facilities. Their solutions help both telecom and tower carriers simplify facility deployment, improve power reliability, increase energy efficiency and make O&M smart, enable ICT networks to evolve to 5G and cloud smoothly.

iTelecomPower

Based on the successful practice in the industry, combined with leading basic material science, Huawei integrates key technologies such as power, electronics, thermodynamics, IoT, AI, etc. from components to network, putting forward the idea of "simple, intelligent, green" telecom energy target network.

The new generation of iTelecomPower Power site energy solution and CO-MIMO equipment room solution help achieve 5G with 0 increased OPEX and optimal CAPEX. Meanwhile, from communication site to social site, maximizing site value.



[LEARN MORE](#)

Need a Grounding Kit? **RFOCS** Look no further.

Gap Wireless has what you need. From a Universal Mini Grounding Kit that cover from 1/4" ~ 1/2" Cables to a Universal Grounding Kit that covers from 1/2" to 3" Cables, we cover it all.

In addition, we have a large selection of Click-on Grounding Kits that features a pre-formed copper clamp and associated hardware that facilitates a proper attachment to the defined size of the coaxial cable and reduces the installation time.

All Grounding Kits use a 6-gauge ground lead and are fully warranted.

Contact Gap Wireless today for a quick quote.



RFX-GKS-0.875-0.8M



RFX-UGK-Mini1412-1.2M



RFX-UGK-1.0M

[SHOP NOW](#)

Upcoming Scavenger Hunt for BIG prizes!

We are excited to launch another Gap Wireless online scavenger hunt with BIG prizes in March 2022. **Stay tuned to our LinkedIn page for the start date announcement.**

HOW TO PLAY

1. Find the scavenger keywords hidden across the Gap Wireless website and web store.
2. Organize the keywords in the CORRECT ORDER and submit your entry form and correct sentence before the announced deadline.
3. We will do a blind draw for all the correct entries and the winners will be announced on LinkedIn.

Below are the top prize winners from the last Scavenger Hunt.

Stay tuned for the start date and deadline announcement.



Follow us on LinkedIn to find out when the Scavenger Hunt begins!

Fleming College's Centre for Advancement in Mechatronics and Industrial Internet of Things



Over the last year, Gap Wireless has been in partnership with Fleming College to help them acquire cutting edge solutions to meet their customer's needs.

Fleming College's Centre for Advancement in Mechatronics and Industrial Internet of Things (CAMIIT) is a research centre located in Peterborough, Ontario, Canada. Established in 2020, CAMIIT is a multipurpose research centre for both applied and fundamental research projects. The CAMIIT research facility is designed to meet the needs of industry-focused Scientific Research and Experimental Development (SR&ED) projects. CAMIIT is equipped with an array of tools and equipment for prototyping, electronics development, measurements, tests, and validations. CAMIIT provides a variety of engineering and research services to its partners including Engineering Consultation, Product Development, Testing and Validation, Prototyping and Feasibility Analysis.

Design of Power Management System (PMS) and optimization of power consumption of IoT devices are important, especially for the industrial applications and devices that will be installed on hard-to-access areas. A Power Analyzer is an essential tool for CAMIIT to perform power

analysis and optimization of the IIoT devices developed for its industrial partners. Recently, with the help of Keysight's N6705C DC Power Analyzer and N6781A Quadrant Source / Measure Unit for Functional Test, CAMIIT's researchers were able to dramatically improve the battery lifetime of one of their products from 3 months to more than 14 months. The detailed information and technical insight that Keysight's N6705C provided was a key factor for this optimization.

Understanding the battery behaviour in IoT applications is another area that CAMIIT is exploring. Keysight's N6705C DC Power Analyzer N6785A 3 Source/Measure Unit for Battery Drain Analysis is a strong instrument that enables CAMIIT to perform detailed analysis on battery behaviour under different loading and working conditions of the IoT devices.

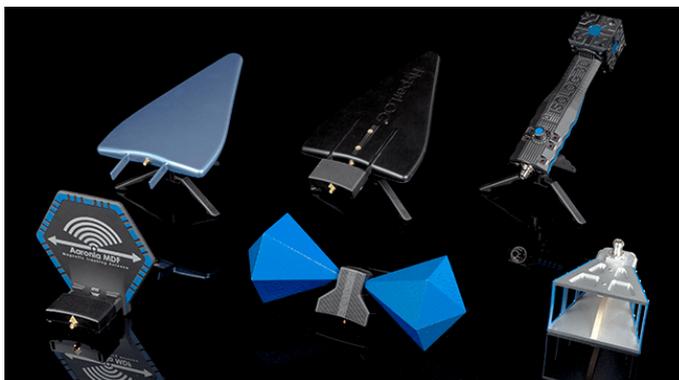
Another part of our partnership is helping The CAMIIT research facility get in front of Industries they may not have easy access to. We look forward to helping Fleming reach their 2022 goals and beyond.

For more info about CAMIIT please visit <https://flemingcollege.ca/camiit>

Aaronia USA Now Available at Gap Wireless

Aaronia offers affordable and portable RF and EMC spectrum analyzers and antennas as well as RF shielding products designed for RF applications dealing with:

- Frequency and channel selection
- Pre-compliance testing
- RF site surveys and studies
- RF electronic design
- Wireless product specification
- Interference abatement
- Frequency and general testing and measurement applications



Best in class, the Aaronia series broadband antennas offer unprecedented quality in design and performance, at a fraction of the cost of most competitors.

The Aaronia line of precision broadband antenna upholds the highest industry standards, with added durability and lightweight portability for any test and measurement applications.

Their full line of broadband antennas includes six variations: log periodic (LPDA) antennas, biconical radial isotropic antennas, radial isotropic Omni-directional antennas, magnetic field tracking antennas, broadband horn antennas, and 3D RF tracking antennas.

With over 40 models of RF- and EMF-optimized antennas to choose from, they are the ideal answer for precise broad frequency range applications, including laboratory test and measurement, data linking, compliance testing, mobile measurements, directional signal tracking, and more.

[LEARN MORE](#)



The Gap Wireless Social Committee has done it again. Another AMAZING Christmas party in the books that lasted from 12pm to 12am!

Staff from across Canada re-united on December 9th for a delicious catered lunch at our Mississauga head office, after we took a party bus to Go Karting at K1 Speed Toronto where everyone had a qualifying race, followed by a championship race.

Everyone then made it to GameTime in Mississauga for dinner, drinks, axe throwing, sports games and arcade games

Just when you think it is over, whoever had energy left, went to Fregata for dancing and drinks.

After missing out on a Christmas Party in 2020, we definitely made up for it in 2021. Thank you very much to the Social Committee for putting this special day together.

*Masks were worn at all times, except for some photos



VoltServer Digital Electricity™

Digital Electricity™ is a line powering system. Line powering is a means of energizing remote equipment, from a centralized location, over structured copper cable.



Digital Electricity™ offers the convenience and safety of low-voltage, like Power over Ethernet (PoE), with the power and distance capabilities of AC.

The technology leverages patented packet energy transfer to deliver significant power over significant distances. The technology splits energy and into packets and transfers hundreds of packets each second from a Transmitter unit to a Receiver unit. Safety is continuously monitored after every packet and if there is a fault such as improper wiring, a short circuit, or a person is touching the transmission lines, the transmitter recognizes the condition in milliseconds and halts the transmission of packets. The result is safe electrical transmission at high power levels and an inherent ability to digitally control a host of modern electronic devices connected to the distribution system.

Digital Electricity™ is a proven line-powering technology listed to IEC 62368-1 as a Limited Power Source which allows installation using standard multi-conductor cabling, typically without conduit, while conforming to the NEC and CEC Code standards for building installation.

Digital Electricity™ qualifies to use Class 2 wiring methods but has significant power capacity to directly energize high-power devices. Digital Electricity™ cabling can run alongside or together with fiber in both vertical and horizontal spaces to deliver power to remote devices.

[Learn More](#)

Keysight P937xB/P938xB Streamline Series VNA

The freedom of portable network analysis doesn't have to mean a compromise in performance. The B-models of the Keysight Streamline Series VNAs unlock the full performance of the network analyzer hardware with fast measurements over Thunderbolt 3 connections to your host PC.



Gain confidence in your measurements with best-in-class performance offering fast, reliable, and repeatable results. Explore the complete characterization of your devices with a rich portfolio of software applications that transform the compact network analyzer into a complete RF measurement solution.

The P50xxB series offers the performance required for testing passive components, amplifiers, mixers or frequency converters. The vector network analyzer (VNA) provides best-in-class key specifications such as dynamic range, measurement speed, trace noise and temperature stability. Choose from 2- or 4-port models up to 53 GHz, or 6-port models up to 20 GHz.

The P93xxB series provides excellent performance in general-purpose network analysis for passive components. With software applications like enhanced time-domain analysis with TDR and automatic fixture removal, you can easily characterize passive

components with the same performance of a benchtop setup. Choose from 2-port models up to 44 GHz or 4-port models up to 20 GHz.

[Learn More](#)

Junkosha Microwave/mmWave VNA Test Cable Assembly

Junkosha has launched a new metrology grade Microwave/mmWave VNA Test Cable Assembly. This new assembly is being showcased alongside the company's innovative service options including the quickest lead times.



Accuracy is crucial in any test setting, but particularly so for metrology grade cabling, which offers ultimate precision and therefore demands the highest reliability for testing and calibration purposes. Utilizing Junkosha's precision engineered-PTFE tape wrapping technology, the new cable exhibits excellent phase (within $\pm 4.5^\circ$ at 50 GHz) and amplitude (within ± 0.08 dB at 50 GHz) stability in flexure alongside strong phase stability in temperature. The cable is flexible and can maintain this level of performance when bent 180° on a 2.25" radius mandrel, with no spring back. Able to reach 50 GHz and available with 2.4 mm connectors, the assembly also displays impressive performance durability – 50,000 tick-tock cycles is typical. The ruggedized port side NMD connector is also available to ensure reliable connections to the Vector Network Analyser (VNA).

[Learn More](#)

Wavecontrol Wavemon RF-60

Personal safety and the creation of safe working conditions are Wavecontrol's priorities. With that aim, they have developed the WaveMon personal monitor to be always at your side, to ensure that you do not find yourself in situations of overexposure to electromagnetic fields.



Wavemon will warn you visually, acoustically and by vibration, and will keep track of your history of exposure for later evaluation. So that you do not have to be concerned and you can concentrate on your work.

Exposimeter Main Features

- According to the international standards on EMF safety.
- E-field up to 60 GHz
- Isotropic sensors.
- RMS detection.
- Weighted response to FCC, SC6, and more

[Learn More](#)

Bird RF SignalHawk™ Handheld RF Spectrum Analyzers

The SignalHawk™ family of handheld spectrum analyzers combine best in class functionality in a compact, affordable package. Highly portable, the SignalHawk™ family of analyzers easily fit in one hand and boast an intuitive touchscreen user interface.



RF Spectrum Analysis at Your Fingertips

SH-60S-TC, RF Analyzer is the latest offering in the SignalHawk™ family of handheld RF spectrum analyzers, allowing users to view RF signals between 9 kHz and 6 GHz.

SH-60S-AOA, RF Analyzer extends the capability of the SH-60S-TC by adding the ability to triangulate the location of an interferer on a map for signals between 9 kHz and 6 GHz

Leveraging multi-touch technology, users will find a high-resolution touchscreen with familiar, easy to use, methods for setting up and using the SignalHawk™ RF spectrum analyzer.

[Learn More](#)

Choosing proper cables is like buying tires for your car

When making advanced measurements for today’s challenging environments such as 5G, IoT, Amplifier, and Semiconductor Design, it is imperative to pick the right cables. Vector network analyzers (VNAs) are used to provide most of the measurements for these applications. And using poor quality or defective test port cables significantly degrades the measurement accuracy and is one of the leading causes of VNA measurement problems.



Like choosing the proper tires for your car, if you use poor quality tires on a sports car, it limits the performance. Likewise, if you put together a sound system, sound quality is diminished using poor speakers with a high-end receiver.

High-performance cables from Junkosha are trusted for the most accurate measurements for various applications by companies like ventureLAB, among many others.

“For our Semiconductor Characterization requirements, using Junkosha cables provides us with the confidence the measurements we are making are accurate, especially in the 5G area,” said Frank Spagnuolo, Director, Hardware Engineering Lab at ventureLAB. Frank keeps a dedicated set of cables for the VNA measurements critical for startup companies. VNA users often grab whatever RF cable is lying around with no knowledge of the quality of the cable, or they use semi-rigid or conformable coax cables because they are cheap and readily available. However, using just any cable can hurt downstream design issues.

So instead, the concerned Engineers use Phase Matched cables with metrology-grade connectors to ensure equal electrical length.

Focus Microwave and Semiprobe, who also trust Junkosha cables, and concur that having the right set of quality cables is critical to Semiconductor or Amplifier design. In particular, they often face challenges with sophisticated test systems such as:

- DUT magnitude and phase errors in both reflection and transmission measurements due to phase drift of a cable are most often seen as a ripple in the reflection and transmission magnitude.
- Unstable or non-repeatable measurements.
- Mechanical damage to DUT or VNA port from damaged or worn-out cable connectors.

With Junkosha’s Cable Designer, you can key in on the specs required like Phase, connector, frequency, ruggedness etc., to help solve your challenging applications.

[Learn More](#)

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.

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