ANATECH ELECTRONICS INC

AT THE CENTER FREQUENCY

An e-Newsletter from Anatech Electronics

May 2022

What's News...

The Altimeter/C-band "Debate" Continues

The FAA recently held a meeting with about 40 representatives from the aviation industry and wireless carriers in the hope of finding a way to solve the continuing issue of potential interference to radio altimeters from the rollout of 5G at C-band frequencies, according to Simply Flying. The FAA has proposed that airlines replace affected aircraft radio altimeters, which would obviously be extremely expensive, and the major carriers have agreed to create low-intensity buffer zones near airports and runways where the C-Band signals possibly pose a problem, but this agreement ends on July 5. The carriers say their networks do not pose a problem and the FCC agrees but the aviation industry strongly takes issue with this position, and there has been little compromise by either party in the dispute.

A Word from Sam Benzacar

This will be the year that Matter, matters

By Sam Benzacar

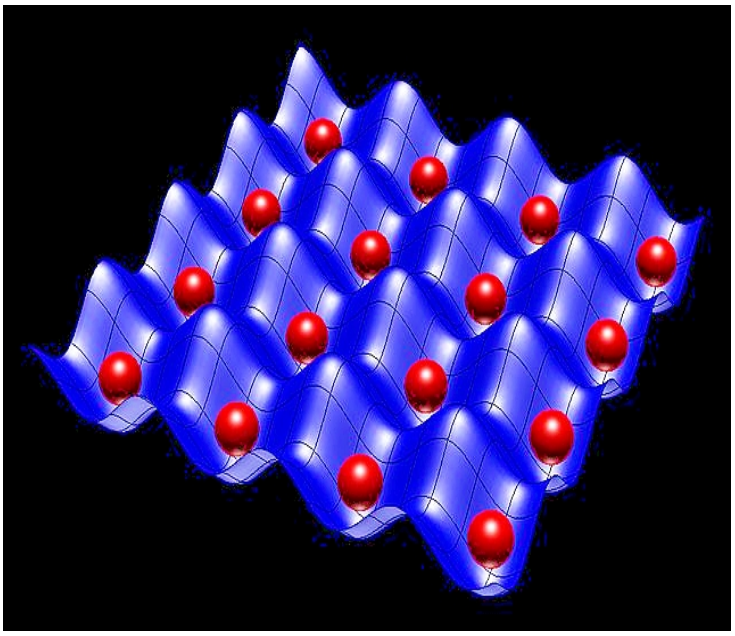
The most obvious problem with home automation since it emerged is compatibility between devices from various manufacturers and the connectivity standards they use. While smart home devices can interoperate through Alexa, Google Assistant, and solutions from other manufacturers, most users still require several apps to modify settings, and even then, not every product will cooperate. That is, Alexa doesn't speak Google Assistant or Siri so it can't control devices from Google or Apple devices, and vice versa.

Finally, a solution is at hand, called Matter, and in a few years is likely to be integrated in every home automation device. As a unifying connectivity certification, Matter will provide a flat playing field for smart home devices from different manufacturers in a single ecosystem. Although it was supposed to be rolled out already, it was recently postponed but will likely appear in new Matter-certified devices later this year.

Formerly called Project CHIP (Connected Home over IP) and now the Connectivity Standards Alliance (CSA), the Matter project was announced in December 2019 with the goal of reducing fragmentation and eliminate interoperability issues. It

Quantum Receiver Promises 10X Sensitivity Improvement

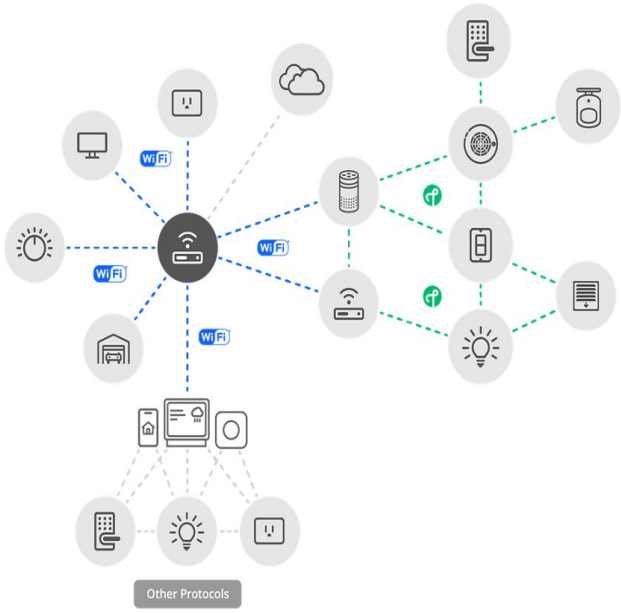
BT (formerly British Telecom) is conducting trials of quantum Atomic Radio Frequency (ARF) receivers for 5G and IoT that boasts 100-times higher sensitivity than traditional receivers, according to the company. Its quantum antenna technology uses ‘excited atoms’ in an effect called electromagnetically-induced transparency to form a field detector. It could also potentially reduce energy consumption of a network, which would be help IoT devices become more cost efficient and longer lasting. The receiver can be placed in hard-to-reach locations, potentially bringing mobile networks closer to achieving national coverage. BT researchers are also eyeing the ARF’s receiver’s potential for use in very low power passive mobile networks.



Report: "Smart" Agriculture to Reach $20 Billion by 2026

A report from Global Market Estimates projects that the global smart agriculture market will grow from its current $13.1 billion to $20.6 billion by 2026 with an annual growth rate of 9.7%. The growth is driven by driven by rising demand for sustainable farming techniques and innovations that are useful to minimize the use of non-renewable energy resources and embrace sustainable agronomic practices. The other factors supporting the growth of the market are continuing advances in artificial intelligence and IoT and rising pressure on the food supply system resulting from population growth.

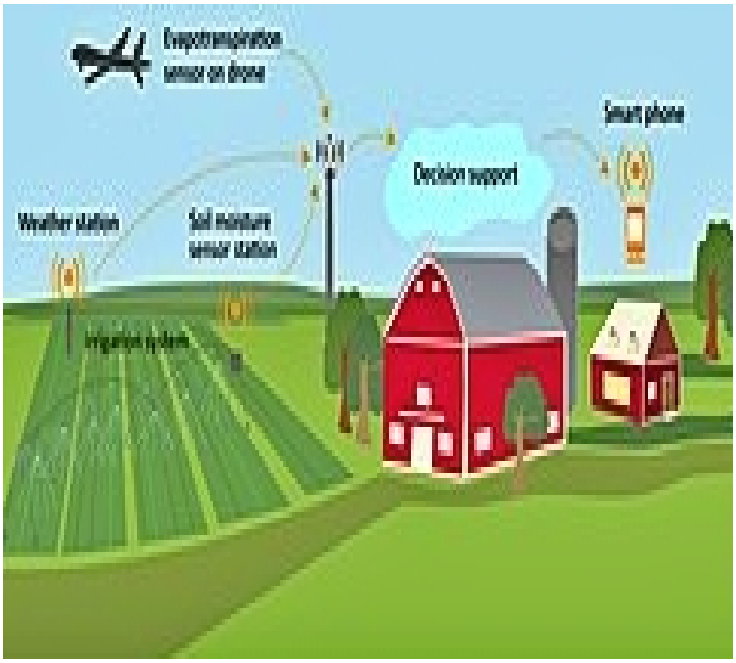
was spearheaded by Amazon, Apple, Google, Comcast, and the Zigbee Alliance, and currently has several hundred industry participants. Matter products must be certified by the CSA.



Based on the Internet Protocol, Matter allows IP-based networking between smart home devices and smartphone apps or cloud services. Initially, devices with Matter support will connect via Bluetooth Low Energy (BLE) to Thread and Wi-Fi networks. Products from Google and Amazon will all work natively with Matter's protocol while others will follow.

The question that remains is what will happen to the hundreds of millions of existing smart home devices don’t have Matter support. Unfortunately, there is no universal answer to this question because not every device can be upgraded in place to support the new standard, and some manufacturers may decide not to upgrade older products at all. Fairly new devices from nearly every manufacturer are likely to be upgradable, but as IPv6, latest Internet protocol, is very software intensive, it’s likely that many devices may not be able to accommodate it.

This being said, Matter is a long-overdue standard and unquestionably welcome in an industry that has frustrated customers for years. This is not only great news for consumers but for every IoT deployment in industrial and dozens of other applications. So, while it was a long time in coming, Matter will eliminate some of the most annoying aspects of IoT that have slowed its deployment worldwide.



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Researchers Create Rectenna for RF Energy Harvesting

U.S. Army-funded research has developed an RF switch that is more than 50 times more energy-efficient than current technology. The Army Combat Capabilities Development Command's Army Research Laboratory, researchers at The University of Texas at Austin, and the University of Lille in France, were involved in the research. Its characteristics would benefit smartphones and other battery-powered devices because unlike typical RF switches it draws no current when not operational. The technology can transmit an HDTV stream at 100 GHz and is the first that can function at terahertz frequencies. The switch is based on the nanomaterial hexagonal boron nitride within the graphene family. The structure has a single layer of boron and nitrogen atoms in a honeycomb pattern sandwiched between a pair of gold electrodes.

Anatech Electronics

Anatech Microwave Company is a subsidiary of Anatech Electronics manufacturing and offering RF products, such as Directional couplers, Power Dividers, Circulators, Isolators and More.

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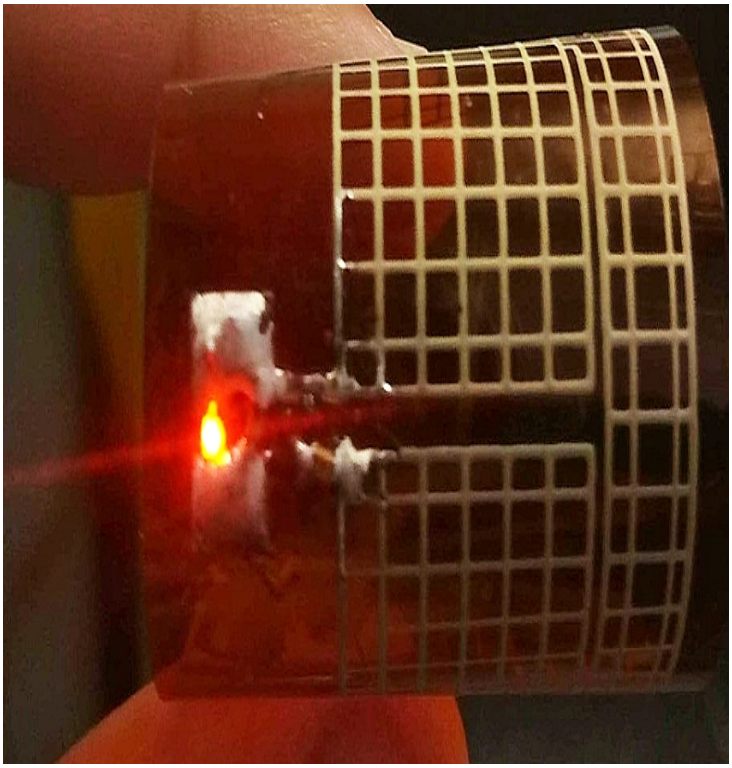

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