



AT THE CENTER FREQUENCY

An e-Newsletter from Anatech Electronics

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What's News...

Sigfox down but not out

The French low-power wide area network (LPWAN) company Sigfox has filed for receivership due to what the company calls slower than expected adoption worsened by the pandemic. The company has been in turmoil for many years as executives have come and gone and financial targets have been missed. According to French law, because it can continue to operate for six months while it figures out how to either restructure itself or be sold. At the moment, Sigfox reportedly supports only 20 million connections worldwide, a tiny share of a market in which 2.1 billion IoT connections are already in operation.



FCC mandates nutrition labels for broadband

The broadband and cable business has long been criticized for many of its policies, perhaps the most onerous of which is trying to understand the monthly bill. To solve this, the FCC has come up with what the media is calling "nutrition labels". It would require carriers such as AT&T, Comcast, and Verizon to provide labels similar to those found on

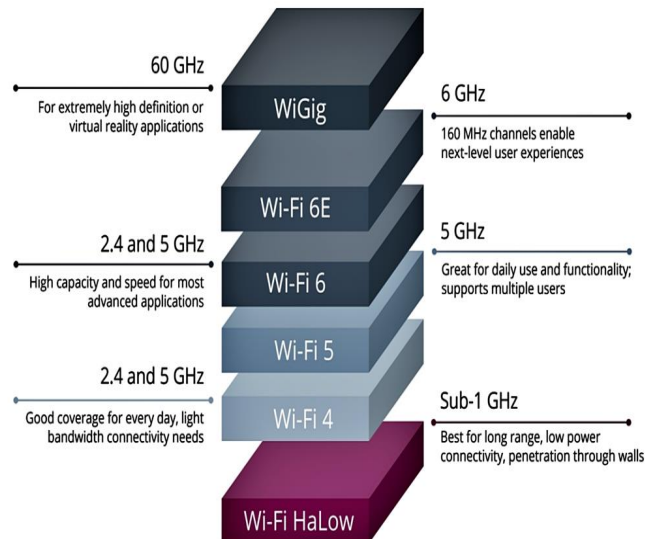
A Word from Sam Benzacar

Wi-Fi HaLow takes aim at long-range IoT

By Sam Benzacar



The proliferation of Wi-Fi standards continues with IEEE 802.11ah (Wi-Fi HaLow) standard certified last November by the Wi-Fi Alliance, and unlike all but one other Wi-Fi standard, this one operates in spectrum below 1 GHz. That makes it nicely suited for IoT and a variety of other applications that previous variants cannot serve because of their limited range. In contrast, Wi-Fi HaLow can cover distances of at least 1 km, can penetrate through walls and other obstacles, and consumes about the same amount of DC power as Bluetooth. Its maximum data rate is 347 Mb/s, which is more than adequate for nearly every industrial IoT device.



food products at the point of sale. They will include the price of the plan, its speed, data allowances, any introductory rates that might lead to later price hikes, and practices such as data throttling.

Broadband Facts	
Fixed broadband consumer disclosure	
Choose Your Service Data Plan for 50Mbps Service Tier	
Monthly charge for month-to-month plan	\$60.00
Monthly charge for 2 year contract plan	\$55.00
Click here for other pricing options including promotions and options bundled with other services, like cable television and wireless services.	
Other Charges and Terms	
Data included with monthly charge	300GB
Charges for additional data usage – each additional 50GB	\$10.00
Optional modem or gateway lease – Customers may use their own modem or gateway; click here for our policy	\$10.00/month
Other monthly fees	Not Applicable
One-time fees	
Activation fee	\$50.00
Deposit	\$50.00
Installation fee	\$25.00
Early termination fee	\$240.00
Government Taxes and Other Government-Related Fees May Apply: Varies by location	
Other services on network	

FirstNet deployments surge

FirstNet added more than 1 million connections in 2021, adding 3 million connections to more than 19,500 public-safety agencies, according to a report from AT&T that is responsible for building and maintaining the nationwide public-safety broadband network. The uptake is due in part because the FirstNet market has grown to include not just state and local fire, police, and EMS, the “primary” but federal users such as military personnel and 911 telecommunicators. FirstNet also serves “extended primary” users that often support emergency responders, such as workers in the healthcare, utility, and government sectors. In October, AT&T announced that it has completed more than 95% of the contracted Band 14 deployment for the FirstNet system, surpassing the milestone about 6 months ahead of schedule.

750K+ FirstNet connections	~9,000 Public safety agencies subscribed	75+ FirstNet Ready™ devices
~650 Markets ¹ with Band 14 spectrum	FASTER than any commercial network ²	~65% Band 14 coverage completion; well ahead of schedule
50+ Unique apps in the FirstNet App Catalog		
75 Dedicated deployable network assets, including 3 Flying COWs™	175+ Asset deployments for planned and emergency events this year	

For anyone following Wi-Fi, it's easy to confuse Wi-Fi HaLow with IEEE 802.11af (White-Fi, Super Wi-Fi) that was developed earlier and operates on a licensed basis in the VHF and UHF spectrum between 54 and 790 MHz uses cognitive radio technology. It's cognitive because it uses a level of intelligence to mitigate interference between various nearby services such as analog and digital TV and wireless microphones. Wi-Fi Halo was designed specifically for the use with sensors and operates in traditional unlicensed Industrial Scientific and Medical (ISM) bands. It offers a sleep mode to conserve battery charge, and short data packets minimize transmit time and power usage.

Another big benefit for IoT is that it can support up to 8191 nodes, and an antenna-sectorization feature partitions the coverage area so stations can pass messages over longer distances at low power. It has native IP support as well as the latest levels of Wi-Fi security and as an open standard doesn't need proprietary hubs or gateways. The standard is also backward compatible with older Wi-Fi protocols.

What all this means is that there is finally a Wi-Fi standard that can accommodate an enormous number of applications and sensor nodes via a single access point over long distances, and as the devices it communicates with can operate at very low power, they can optimize the operating lifetime of a coin cell battery. Realistically, its only drawback at the moment is its comparatively low data transfer rates compared with the current Wi-Fi 6 and eventually Wi-Fi 7, but the Wi-Fi Alliance is working to increase them over time. When that occurs, it might just be the only Wi-Fi standard that matters.

We can always find a solution!

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[Standard Low Pass Filters Library](#)

[Standard High Pass Filters Library](#)

[Standard Band Stop/Notch Filters Library](#)

OR

[send us your specification](#)



Anatech Electronics core business is RF and

Millimeter-wave shoe screening for airports

Liberty Defense Holdings's Hexwave millimeter-wave shoe screening technology that was initially developed at Pacific Northwest National Laboratory (PNNL) has been awarded the 2022 Interagency Partnership Award from the Federal Laboratory Consortium for Technology Transfer (FLC). The technology, when combined with a high-definition advanced body scanner that the company is also licensed for, can potentially eliminate the need for passengers to remove their shoes during the check-in process. It can detect objects in footwear that should reduce the time and annoyance of the screening process. Hexwave can be integrated into the floor of existing airport body scanning portals or be used as a standalone unit.



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