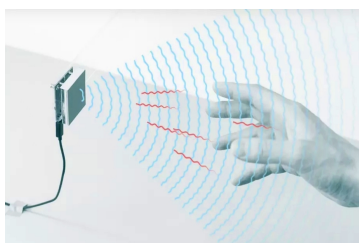


What's News....

Higher-Power Google Radar Gets FCC OK

The FCC has approved Google's request to increase the output power of its Project Soli high-resolution millimeter-wave radar that designed to capture motion in 3D to enable touchless control of device functions. It could benefit users with mobility, speech and tactile impairments, and potentially have other uses as well. Researchers at the University of St. Andrews in Scotland have demonstrated its ability to count sheets of paper, playing cards, poker chips, and recognizing the orientation of Lego blocks stacked on top of the sensor.



5G Phones Emerge at CES

Sprint says a 5G smartphone from Samsung will be available this summer that supports some of its spectrum including 2.5 GHz, 1.9 GHz, and 800 MHz, and Verizon is taking advantage of the "bolt-on" function capabilities of Lenovo's Motorola Moto 3 to allow it to be 5G enabled with availability in the first half of the year. Samsung also showed another 5G-capable phone that will initially be exclusive to Verizon. Other manufacturers are likely to join this small group in the coming months.



Ford Reaffirms Plans for C-V2X

Ford has announced its commitment to deploy cellular vehicle-to-everything (C-V2X) technology in all new Ford U.S. vehicles in 2022 and will enable conventional cellular connectivity by the end of this year. C-V2X is an LTE variant that will presumably replace the DSRC approach long expected to become the standard for vehicle connectivity but has effectively been superseded by cellular technology. C-V2X allows direct communication between connected devices without the need for an intermediary trip to a base station, which simplifies the connection path and reduces latency.



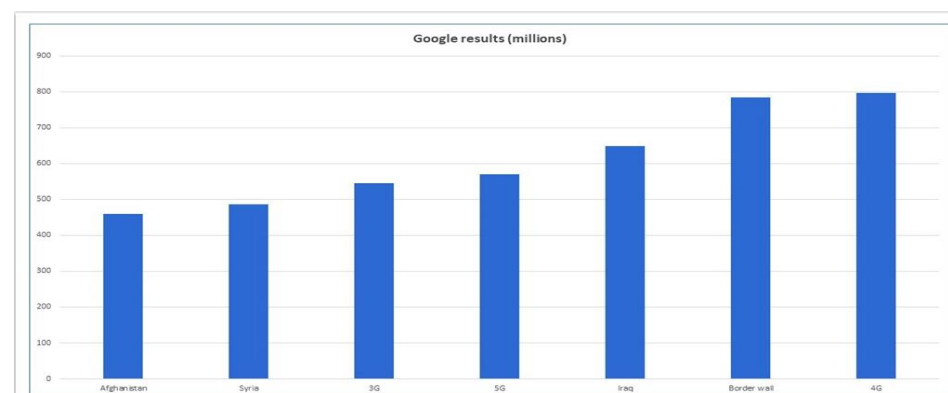
A Word from Sam Benzacar

5G Fact and Fiction

With the enormous amount of hype surrounding 5G, one fact cannot be disputed: marketing works. The claims may be dubious, like AT&T's placing a "5G E" icon on the of some smartphone displays for its "5G Evolution" product that isn't 5G, "real" 5G coming to smartphones early this year, and an assortment of other claims in the last few years. But the marketing has worked, and if you don't believe me, look at the chart below, which represent the results of my basic Google search for various topics.



The search delivered 570 million results for 5G, higher than those for some entire countries, and "only" 227 million fewer than for 4G that has been around for years and was promoted for years before that. And 5G isn't even here yet. So yes, marketing works and for 5G its results are truly stupendous, and now that 5G is actually very close to fruition, it's making an already complex topic even more confusing.



So where are we, really, with 5G? We're edging our way into it in stages, first of which arrived as fixed wireless access (FWA) when Verizon rolled out its 5G Home offering in Sacramento and three other cities in October, making it the first actual 5G deployment. It's essentially a limited version of its Fios fiber-to-the-home offering delivered wirelessly at 28 GHz – except faster. Downstream speeds are guaranteed to be at least 300 Mb/s and up to 1 Gb/s in the best conditions, and the company says it will double them in 6 months.

So far, AT&T is on the fence concerning its own FWA deployment instead focusing on what its 5G Evolution strategy, which is what the rest of the industry calls LTE-Advanced. 5G Evolution is really LTE with 4x4 MIMO, three-way carrier aggregation, 256 QAM, and the used of LTE Licensed Assisted Access (LAA) frequencies at 5 GHz. Speeds "can" be high, up to 400 Mb/s downstream, which is impressive. However, it requires a new smartphone, of which there is currently one: the Motorola Z3 and its required (and bulky) "Moto Mod" attachment and 5G power pack.



In AT&T's case, their marketing has backfired, making it a target for Verizon and T-Mobile, which are having a field day refuting 5G Evolution. To be fair, AT&T released a statement last April "Setting the Record Straight on 5G Evolution", noting that it is "evolving" to 5G rather than providing it now. Will customers get that message? Probably not.

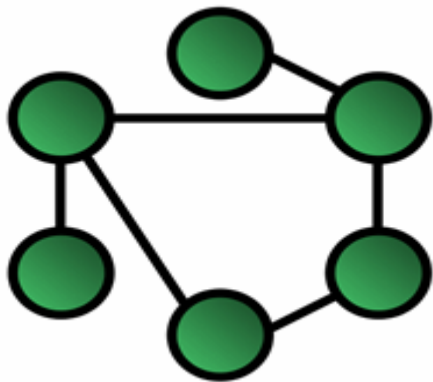
As for 5G smartphones, it's likely that the first devices that could reasonably be called 5G-capable will be available later this year with big announcements at CES this month and at Mobile World Congress next month. All will be Android phones as Apple always until the technology is fully cooked before offering it, so don't expect a 5G iPhone until 2020.

5GE caption:

A smartphone showing 5G Evolution as the service, which it is – but it's not 5G.

Bluetooth SIG Pushing Hard for IoT

Bluetooth Special Interest Group (SIG) is working hard to make Bluetooth mesh the key protocol for the smart home, after becoming the last short-range standard to include mesh capability. The SIG has created a new Smart Home Subgroup to speed up adoption of Bluetooth mesh networking with new mesh specifications for “smart” homes. The models define device behavior such as how a Bluetooth mesh switch will control a light.



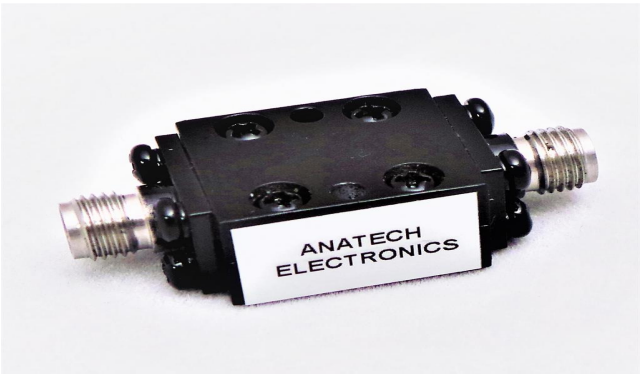
Anatech Electronics introduces a new line of Suspended Stripline, and Waveguide type RF filters

Waveguide Filters



LINKS: [Waveguide bandstop](#) & [Waveguide Bandpass](#)

Suspended Stripline Filters



LINKS: [Suspended stripline Highpass](#) & [Suspended Stripline Lowpass](#)

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