



dbSAFE 5G



ARE YOU 5G READY?

The Race to 5G

The Internet of Things (IOT) is creating a huge demand for Big Data in industries from healthcare monitoring, to wearables, to home automation. The billions of devices that will enter in this space will require higher data rates and lower latency. Cell phone carriers, mobile chipset manufacturers, and major network equipment manufacturers are working on developing the 5G network technology for their customers. According to Ericsson, the future of 5G will have over 7 billion mobile broadband subscriptions in 2021, 11x growth in smartphone traffic between 2015 and 2021, and 14x growth in mobile video traffic between 2015 and 2021.^[1] Most existing cellular bands being used fall under 3 GHz and have limited bandwidth, which poses a need for new infrastructure.

The 5th generation of wireless communication technology will utilize higher frequency bands that support wider bandwidth. Presently in its early stages, 5G is expected to debut as early as 2017, much earlier than the originally anticipated 2020 timeline. There are many significant hurdles that the industry will need to clear before 5G devices will be ready. Although the allocation of network frequencies is on-going, they will start at 24 GHz, with many companies advancing to the 70 GHz range.

The FCC has suggested the below bands for 5G:

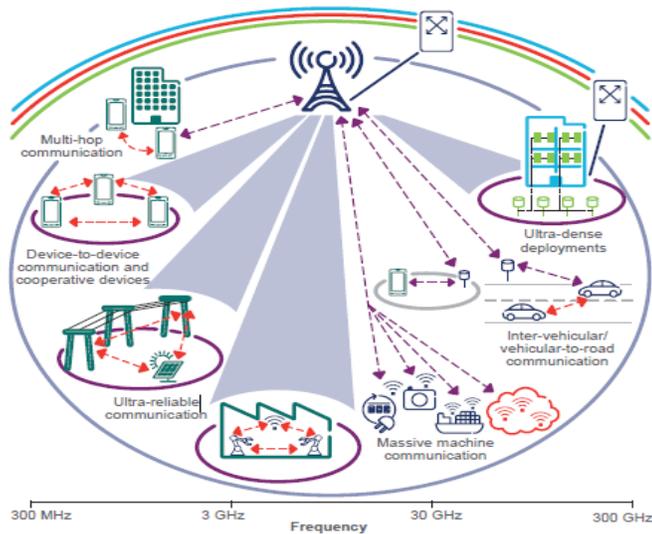
Band	Frequencies
24GHz Bands	24.24-24.45 GHz 25.05-25.25 GHz
LMDS Band	27.5-28.35 GHz 29.1-29.25 GHz 31-31.3 GHz
39 GHz Band	38.6-40 GHz
37/42 GHz Band	37-38.6 GHz 42-42.5 GHz
60GHz Bands	57-64 GHz 64-71 GHz
70/80GHz	71-76 GHz 81-86 GHz 92-95 GHz



Surpassing Today's Test Limitations

Higher 5G frequencies pose new challenges as these devices will be designed in the mmWave range using massive MIMO capability. The production environment is conducive to having portable RF enclosures that allow testing mmWave MIMO configurations over the air in a smaller space. When device speed and sensitivity increases, small and noise free RF test environments will be required. Bringing power and data in and out of smaller RF enclosures becomes impossible using traditional methods used under X-band applications. Additional challenges in the design of mmWave shielding include reducing interference, noise filtering and ventilation.

5G Smart City



1. Ericsson. Web: www.ericsson.com/5g (2016)

Testing 5G: The Solution

The dbSafe5G solves these challenges by providing an environment made for mmWave applications. MIMO testing in array configurations are also made possible in the dbSafe5G. The dbSafe5G is available in two versions for bands below 33 GHz and mmWave bands.

Enclosure	Application Region
dbSafe5G	33 GHz and below
dbSafe5G-mm	30 GHz – 71 GHz

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