

5G AND THE FUTURE OF CONNECTED CARS



Capable device req'd; coverage not available in some areas. Some uses may require certain plan or feature; see T-Mobile.com.

Over the next three to five years, cars will increasingly become Internet of Things (IoT) devices, with massive onboard computing power devoted to **Telematics** – such as diagnostics, vehicle location, driver behavior, and vehicle activity – as well as V2N Communication and Infotainment. All of these systems will rely on cellular technology. **Gartner forecasts that by 2023**, the automotive sector would be the largest market opportunity for 5G IoT solutions, taking up more than half of the entire 5G IoT market.

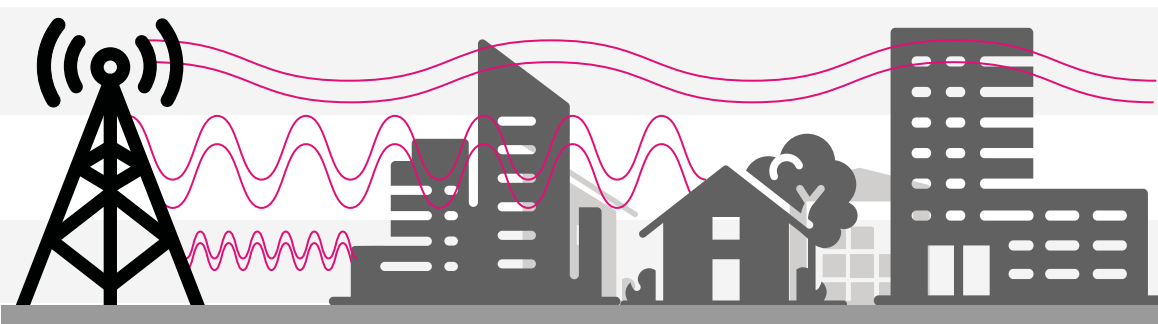
Thoughts immediately flow to autonomous cars, and 5G will play a significant role as those cars come closer. But 5G represents a massive opportunity **today**, thanks to the huge advantages presented by low- and mid-band 5G technology.

5G: One Technology, Three Very Different Signals

LOW BAND

MID BAND

HIGH BAND

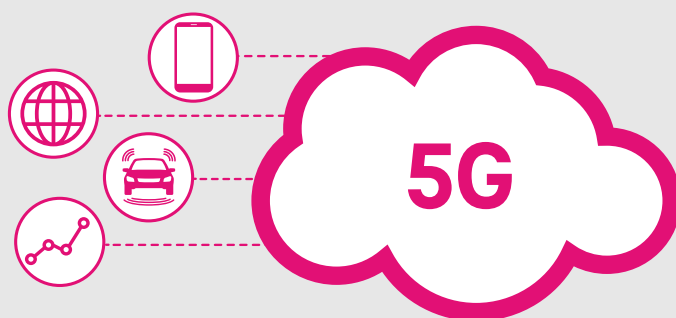


Not All 5G Is Created Equal

5G: Futureproof Technology

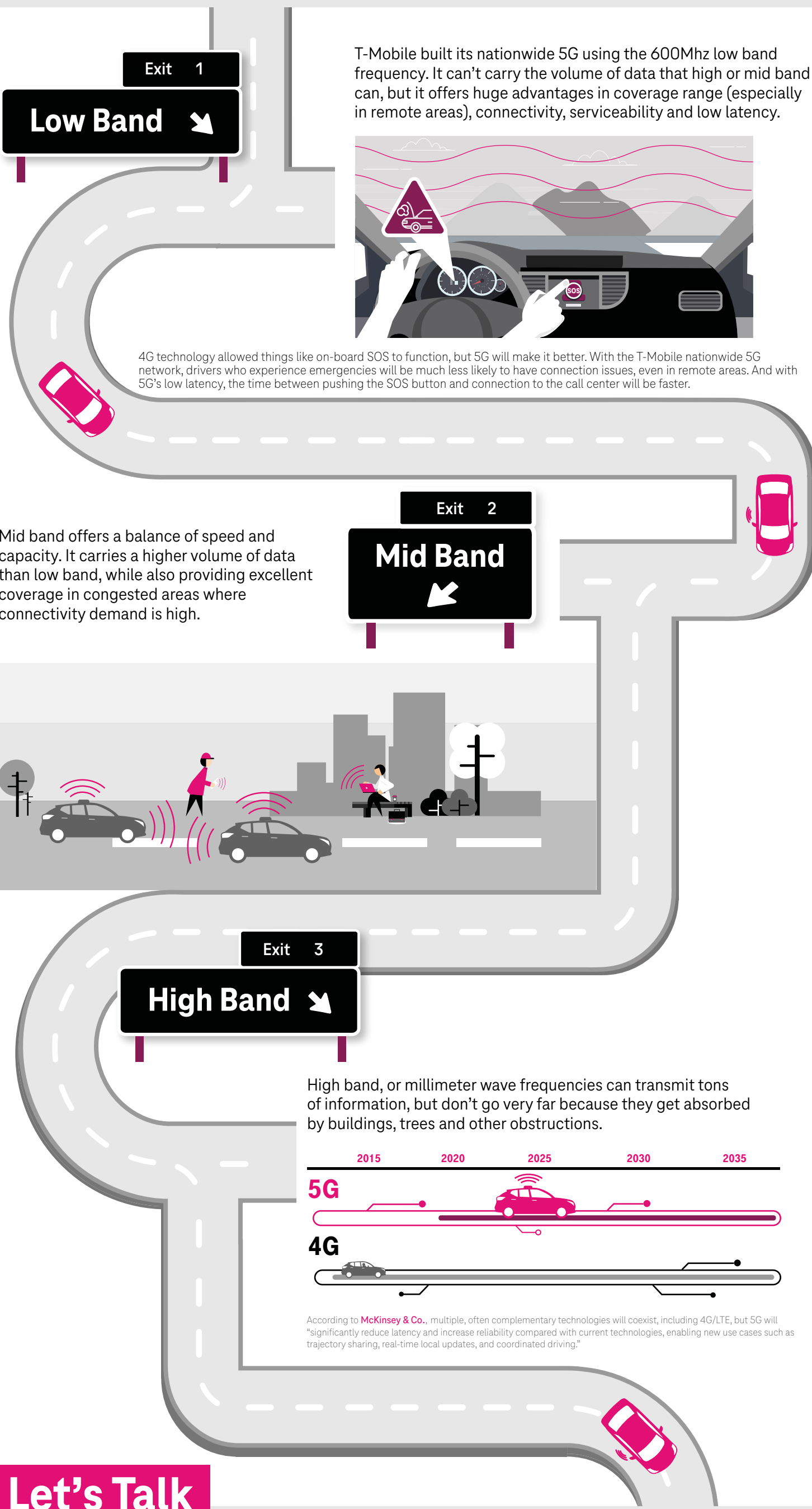
As we begin to build IoT technologies into our vehicles, it's important that the technology it relies upon has a long lifecycle.

- 3G networks are sunsetting, requiring alternative solutions.
- 4G LTE isn't expected to sunset until sometime in the 2030s, so 4G and 5G networks will coexist for a long period of time. The T-Mobile 4G LTE network already connects 99% of Americans!
- That's critical for automotive technologies, since the average automobile is at an all-time high of 12.1 years.
- Vehicles built with 5G modules today will be on a spectrum that may stretch out for decades.



5G technology also allows for such advanced networking techniques as **network slicing** to divide single network connections into multiple distinct virtual connections that provide different service levels and performance characteristics for different types of network traffic.

For instance, imagine one "slice" of the signal used for downloading media and another slice for telematics.



Let's Talk



T-Mobile's Extended Range 5G covers 300 million people across 1.6 million square miles.



And the Un-carrier's super-fast Ultra Capacity 5G already covers 150 million people with plans to extend deployment nationwide with a goal of covering 200 million people by the end of 2021.

Extended Range 5G includes low-band 5G signals. Ultra Capacity 5G includes dedicated mid- and/or high-band 5G signals & covers hundreds of cities and millions of people, with more added all the time.

5G: Capable device required; coverage not available in some areas. While 5G access won't require a certain plan or feature, some uses/services might. See Coverage details, Terms and Conditions, and Open Internet information for network management details (like video optimization) at T-Mobile.com.

T-Mobile has the nation's largest 5G network, including more low- and mid-band than any other network. This is critical for nationwide coverage, and essential to the automotive industry that will need connectivity to provide safety, security, and basic functionality wherever a driver may be at any given moment.

To learn more about T-Mobile for Business automotive solutions, visit our website or chat with us at 833-784-1609.



T-Mobile and the magenta color are registered trademarks of Deutsche Telekom AG © T-Mobile USA, Inc.