

An aerial view of a city skyline at sunset, with a network overlay of white lines connecting various points across the scene. The sky is a mix of blue and orange, and the city buildings are silhouetted against the light. The water in the foreground is dark blue.

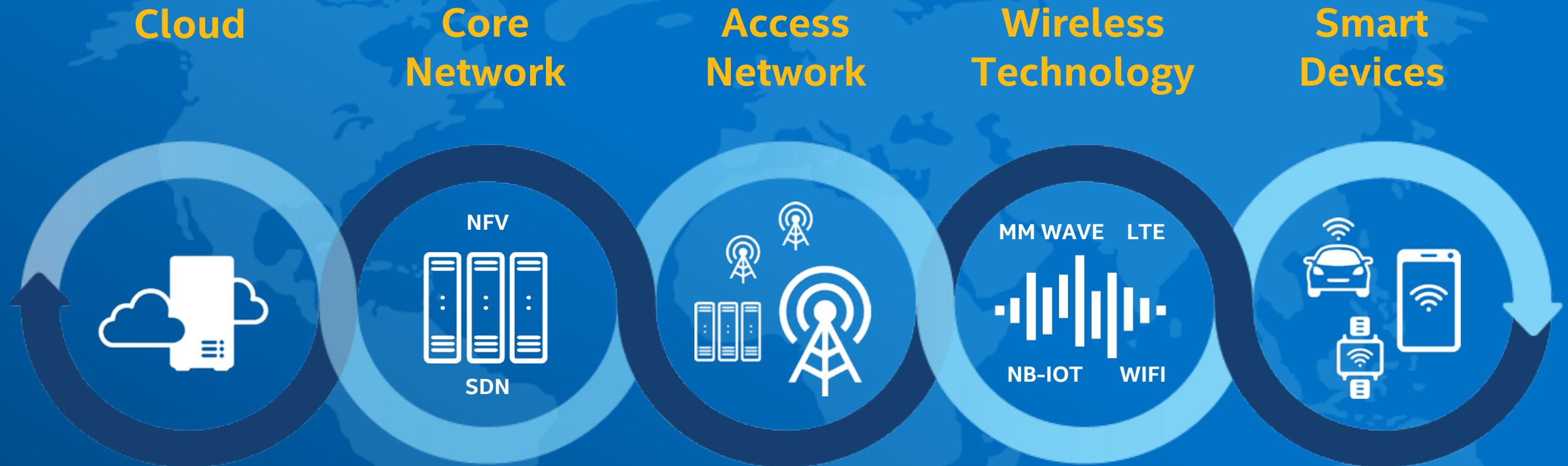
**Intel powers end-to-end of the smart, connected world, from the cloud to the network to the device. This makes us the**

**PARTNER OF CHOICE FOR 5G**



# INTEL POWERS 5G END-TO-END

*Intel's Scale Meets 5G Scope*



Intel Architecture, FPGAs, Software, Security



# PATH TO 2020 5G VERTICALS

- Outside-in approach to 5G development
- Use case driven methodology
- Expansive field trials and testing committed with ecosystem partners
- Prototypes in development for 5G Verticals, release in 2017

## Ultra Reliability and Low Latency



## Massive M2M Connectivity

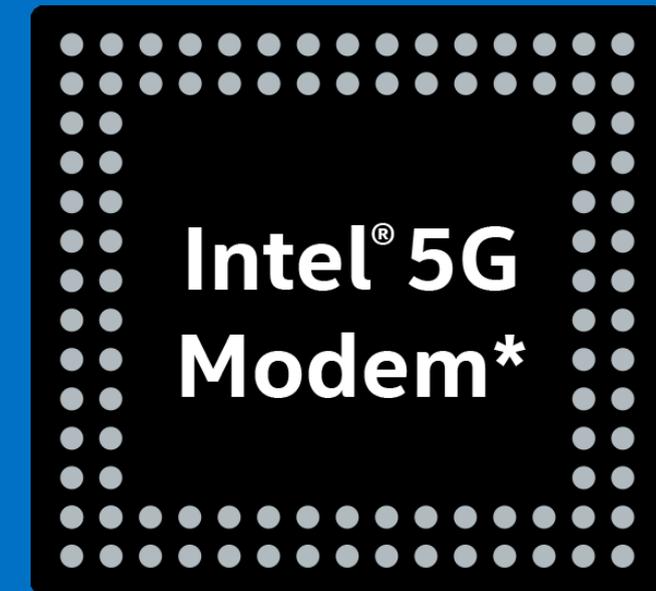


## Enhanced Mobile Broadband



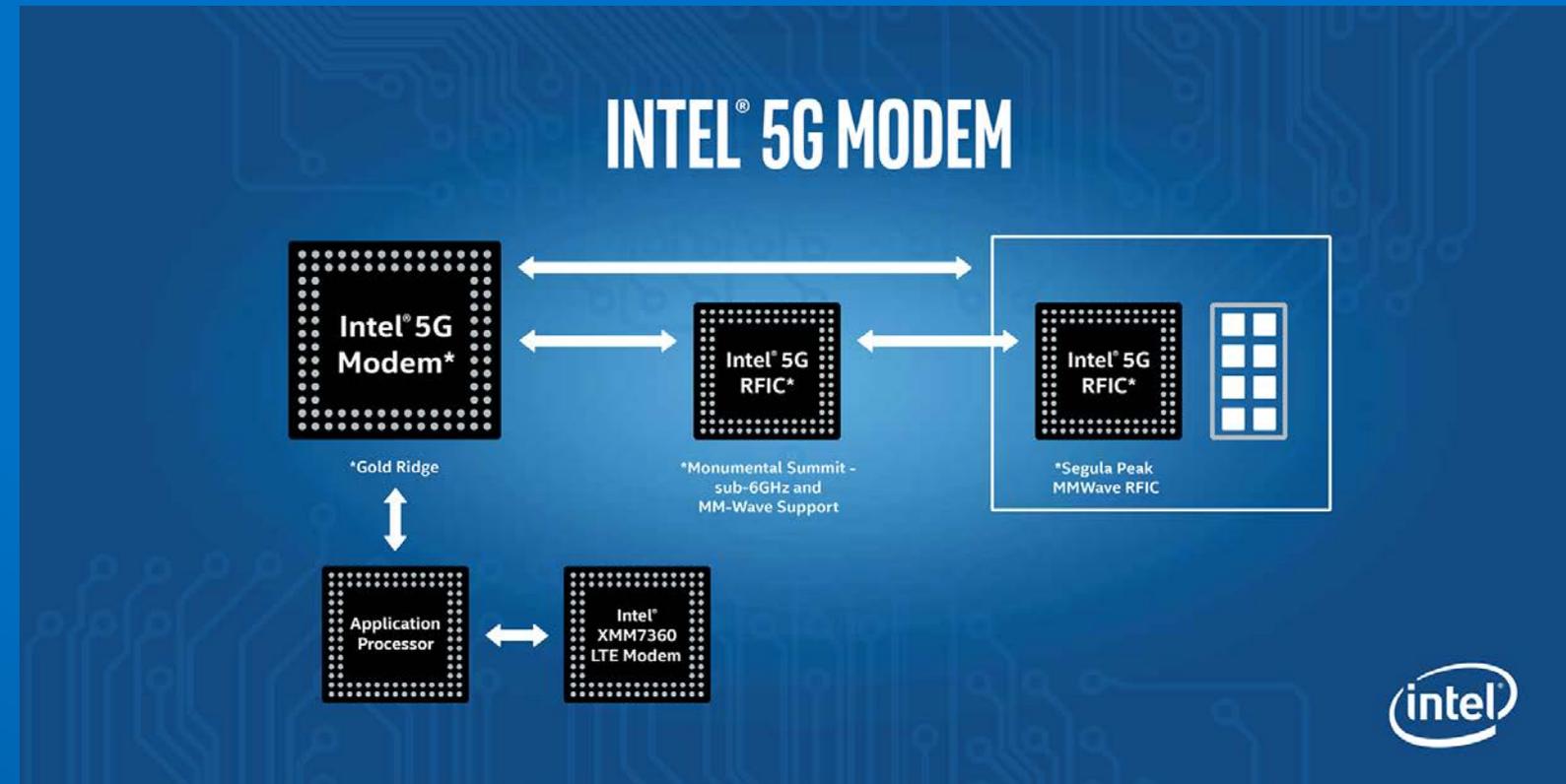
# INTEL® 5G MODEM (CODENAMED GOLDRIDGE) 5G STAND-ALONE AND DUAL-CONNECTIVITY

- World's first global 5G modem with ultra-high throughput wideband operation and low latency
- Pairs with Intel 28GHz and sub-6GHz RFICs
- Supports both sub-6GHz bands and mm-wave spectrum with compact chip kit
- Supports Key 3GPP 5G NR technology – low latency frame structure, advanced channel coding, massive MIMO, beamforming
- Pairs with Intel® XMM™ 7360 LTE modem for 4G/5G dual connectivity
- Chip and module samples – 2H '17



# INTEL® 5G RFIC – 5G TRANSCEIVER SUB-6GHZ AND MM-WAVE SUPPORT

- 1<sup>st</sup> 5G RFIC (codenamed Monumental Summit) to support both sub-6GHz and mm-wave 5G modes
- Flexible ultra-wideband operation up to 800MHz<sup>2</sup> operational bandwidth
- Supports Massive MIMO and dual-polarization
- Supports the 3.3-4.2GHz portion of the sub-6GHz bands enabling deployments and trials in China and Europe with flexible sub-channelization
- Supports 28GHz, enabling deployments and trials in the US, Korea, and Japan<sup>1</sup>
- Samples – Jan'17

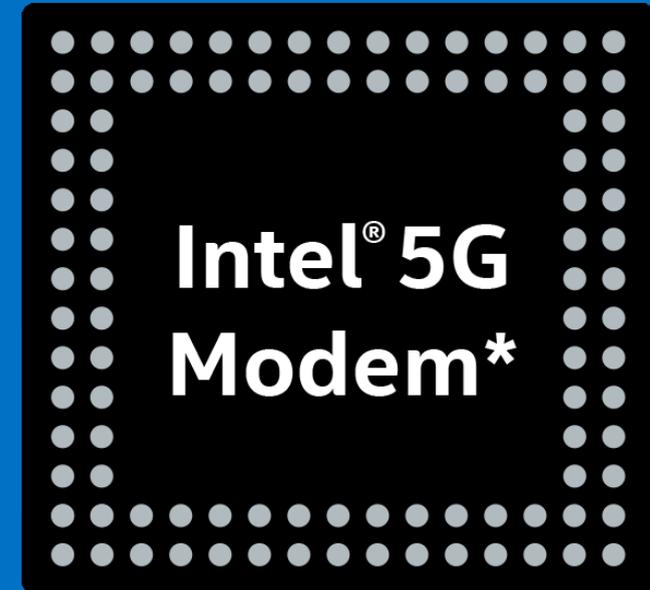


1. When deployed with Intel's 28GHz Segula Peak RFIC.

2. Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com

# 5G AND AUTO

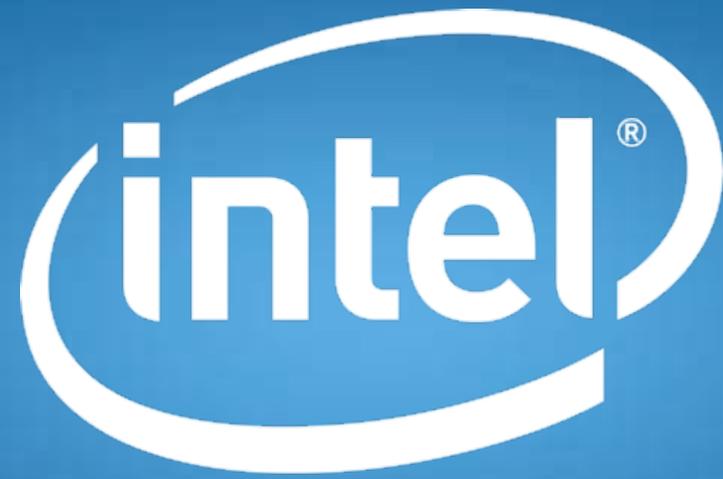
- **A 5G Future:**
  - 5G networks will enable autonomous vehicles through increased network speeds, broader connectivity, lower latency and greater energy efficiency
  - Intel has the ideal combination of connectivity, cloud, and computing to realize 5G's potential
- **Intel® 5G Modem<sup>1</sup> - Worlds First Global 5G Modem:**
  - Supports both sub-6GHz bands and mm-wave bands
  - Expected to bring fiber-like data rate performance to mobile devices, home access/gateway and fixed wireless broadband terminals, drones, and automotive products
- **Intel GO™ Automotive 5G Platform**
  - The Intel® GO™ Automotive 5G Platform is the industry's first 5G-ready test platform for the automotive industry
  - The platform allows automakers to develop and test a wide range of use cases and applications ahead of the expected rollout of 5G in 2020



<sup>1</sup> Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at [intel.com](https://www.intel.com)

\*code named Gold Ridge





experience  
what's inside™

# INTEL'S MOBILE TRIAL PLATFORM USED TO TEST 5G END-TO-END

- Delivered industry's **first** trial platform in February 2016 supporting sub 6GHz and mmWave
- A second Gen Platform with integrated 4x4 MIMO launched in August 2016
- Fully-capable, small form factor, mobile solution allows for fast field and interoperability testing
- Tier-1 service providers are already using it for 5G network testing today



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# INTEL IS ALREADY BUILDING 5G'S FUTURE

*Collaborating to Accelerate 5G Technology, Standards, and Spectrum*



**“BMW, Mobileye and Intel are building a full self-driving car for 2021.”**

*Tech Crunch 7/1/16*

**“Intel, GE Partner to make trains Mobile Data Centers”**

*eWeek 9/19/16*

\*Other names and brands may be claimed as the property of others.



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Tests document performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance. Consult other sources of information to evaluate performance as you consider your purchase. For more complete information about performance and benchmark results, visit <http://www.intel.com/performance>.

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