



5G Extended Capabilities



5G Experts and Capabilities

Team of experts with experience in 5G standards, product testing, and patent infringement analysis.

- **Standards:**
 - 3GPP Releases 15, 16
 - IEEE 802.11 ac (WiFi5), 802.11ax (WiFi6)
 - Connected Vehicle (V2X) standards

5G Experts and Capabilities

- **3GPP Standards Essential Patents (SEPs)**
- **5G-compliant products: smartphones, base stations, modules, ICs**
- **5G mobile devices and network testing**
 - Live network testing in the field – devices and base stations
 - Base station emulator testing using Keysight UXM 5G equipment

RE and Testing Experience

- **5G-compliant** latest smartphones **capability reports** from multiple makers
 - Huawei, Lenovo/Motorola
 - Apple, Samsung, OnePlus
 - Oppo, TCL
- **5G mobile device** and **base station testing**
 - 3GPP Releases features
 - Dual connectivity (EN-DC, NR-DC)
 - Carrier Aggregation (CA)
 - LAA
 - VoLTE high speed coding

RE and Testing Experience

- **5G Radio Frequency (RF) RE and Analysis**
 - RF transceivers 2.4 GHz to mmWave
 - 5G Modems
 - Antenna arrays
 - WiFi/Bluetooth/Cellular coexistence solutions
- **Experience with Keysight UXM 5G testing**

Recent 5G Analysis Projects

- 5G smartphones capability reports
- Dual-Connectivity (EN-DC, NR-DC) testing
- Identification and live testing of 5G base stations to demonstrate LAA support
- Analysis of small cell base stations supporting mmWave NR
- Review of patents portfolios and identification of 5G SEPs

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Our technical professionals have opined on infringement issues across a wide range of technologies, including semiconductors, wireless, telecom, and software, among others. J.S. Held's team of industry-experienced technical and scientific experts supports our IP technical assessment. Subsidiaries of the firm include Ocean Tomo Investments Group, LLC, a registered broker-dealer.

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