

# Vertex Channel Emulation Solutions for Defense and Aerospace

Testing Critical and Highly Complex RF and mmWave Cellular Communication Scenarios for LTE and 5G





## VIAVI Vertex channel emulation solutions include the following portfolio of instruments and software components:

**VIAVI Vertex Channel Emulator** provides the modularity, flexibility and high density needed for a myriad of test configurations for SISO and MIMO beamforming, mesh networks, advanced MIMO OTA, carrier aggregation, and massive MIMO applications. With up to 256 digital radio links in a single instrument, an inherent frequency range from 30 MHz to 5925 MHz, bandwidths up to 200 MHz (combine channels for 1GHz+ bandwidths), and the ability to handle supersonic Doppler speeds, Vertex accurately simulates the complex effects of signal fading on wireless propagation in any scenario.



Vertex channel emulator combines modularity, scalability and ease-of-use into a powerful test and measurement solution

**VIAVI Vertex High Frequency Converter** takes the Vertex channel emulator a step closer to 5G by converting RF ranges between 0.75 GHz and 6 GHz to mmWave ranges between 5.9 GHz and 40.5 GHz and vice versa, allowing the channel characteristic simulation in millimeter band scenarios required for 5G applications. It can also be customized to support other mmW frequencies. The Vertex HFC can be used in various scenarios, such as injecting RF channel emulation between a mmWave band base station and mmWave band device, or upconverting from an RF band network emulator or eNodeB to a mmWave band device.



Vertex HFC converts between RF and mmWave frequencies and is available in a 4-channel or 20-channel capacity instrument

**VIAVI Advanced Channel Modeling Software** simplifies the creation of 3D propagation scenarios required for 5G, LTE and mesh network applications, in accordance with the latest 3GPP standards. Combine with the **VIAVI IQ Playback** fading engine installed on the Vertex system to provide hundreds of sinusoidal runs per cluster of channel model, which ensures better accuracy and repeatability over other modeling methods.



Advanced Channel Modeling software allows the creation of downloadable 3D channel models



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