FSW Signal and Spectrum Analyzer Offers Options for Analyzing IEEE 802.11ac WLAN Signals

The new IEEE 802.11ac WLAN standard will provide an unprecedented high data throughput of 1 Gbit/s and higher. It is still being defined, but developers who want to design chipsets and modules in line with IEEE 802.11ac today can now use the R&S FSW to analyze WLAN signals over the full bandwidth – with unparalleled accuracy. Rohde & Schwarz also offers the T&M equipment needed to generate standard compliant WLAN signals in the lab.

Rohde & Schwarz equips today's development labs with T&M equipment for tomorrow's WLAN standards: the 20/40/80/160 MHz bandwidths defined in the IEEE 802.11ac standard based on the proven orthogonal frequency division multiplying process. With the 256QAM modulation process, up to 8 MIMO data streams and bandwidths four times higher than that of previous standards such as IEEE 802.11n, it supports data rates up to 6.9 Gbit/s. Wireless video transmissions in HD quality will soon be a reality.

The new R&S FSW-K91ac option provides an integrated demodulation bandwidth of 160 MHz, enabling the R&S FSW signal and spectrum analyzer to record and

demodulate the full bandwidth of a WLAN signal in line with IEEE 802.11ac. The error vector magnitude (EVM) is an important measure of the modulation quality. The IEEE 802.11ac standard requires an EVM of –32 dB for 256QAM modulation. To accurately measure this parameter, the T&M equipment itself must have a very low EVM, such as the R&S FSW with an EVM of less than –45 dB.

Developers of components and modules for IEEE 802.11ac will also appreciate the high measurement speed of less than 100 ms per measurement. The R&S FSW high-end analyzer allows them to quickly and accurately measure the spectrum and analyze the modulation. Another advantageous feature is the 12.1" touchscreen with MultiView, which permits users to simultaneously view multiple measurements and applications. The analyzer's intuitive operation and simple configuration make it easy to measure IEEE 802.11ac signals.

Rohde & Schwarz has also extended the functionality of its vector and baseband signal generators to include the IEEE 802.11ac standard. Equipped with the R&S SMx-K86 option, these instruments can generate signals in the defined 20 MHz , 40 MHz and 80 MHz bandwidths. The R&S WinIQSIM2™ simulation software, together with the R&S SMx-K286 option, can also be used to generate signals. The combination of the R&S AFQ100B baseband generator and the R&S SGS RF signal source is an ideal solution for signals with contiguous and non-contiguous 80 MHz + 80 MHz or 160 MHz bandwidths.

Manufacturers and developers can use these generators to test individual chipsets, receivers and wireless devices. The Rohde & Schwarz solution is very advantageous for manufacturers of smartphone components, especially when testing interoperability and hand-over scenarios with other wireless standards. The signal generators simultaneously cover WLAN and all other standards such as GSM/EDGE, 3GPP WCDMA, HSPA, LTE, WiMAXTM and Bluetooth®.

The R&S FSW-K91/K91ac options for analyzing WLAN signals in line with IEEE 802.11ac and the R&S FSW B160 bandwidth extension option are now available from Rohde & Schwarz. The R&S SMx-K86 and R&S SMx-K286 options for generating WLAN signals in line with IEEE 802.11ac are available from Rohde & Schwarz for the R&S SMU200A, R&S SMJ100A, R&S SMATE200A, R&S SMBV100A signal generators and the R&S AMU200A and R&S AFQ100A/B baseband generators.

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