5G UPGRADES

FOR RTS65

IMPROVE THE WIRELESS OF TOMORROW

The wireless industry is once again taking a large step forward with the introduction of 5G and initial specifications for the standard have been released. Much work remains before 5G reaches a larger audience but already now we see initial trials and deployments. Bluetest is introducing new upgrade options to the worldwide used reverberation chamber RTS65 to enable your first 5G application OTA measurements.

THE 5G EXTENSION PACKAGE

The 5G upgrade offer for RTS65 includes two new features to address the new needs introduced by 5G.

The frequency range of the RTS65 is extended from 6 GHz up to 40 GHz to cover the new 5G mmWave bands (28 GHz and 39 GHz). This option includes antennas to enable 2x2 MIMO measurements.

Secondly we add even more measurement antennas for the sub-6 GHz frequency range. With the 5G upgrade we now have the possibility to measure up to 16 individual sub-6 GHz MIMO streams. The 16 ports can be used to support higher order MIMO as well as carrier aggregation and dual connectivity. Dual connectivity is for example used for 5G in Non-Stand-Alone (NSA) mode where control signaling is handled by a LTE carrier and the 5G carrier in sub-6 GHz or mmWave is used to provide larger bandwidth and higher data rates.

The ability to simulataneously support many carriers in multiple frequency bands remains one of the unique features and strong points of Bluetest's reverberation test systems.

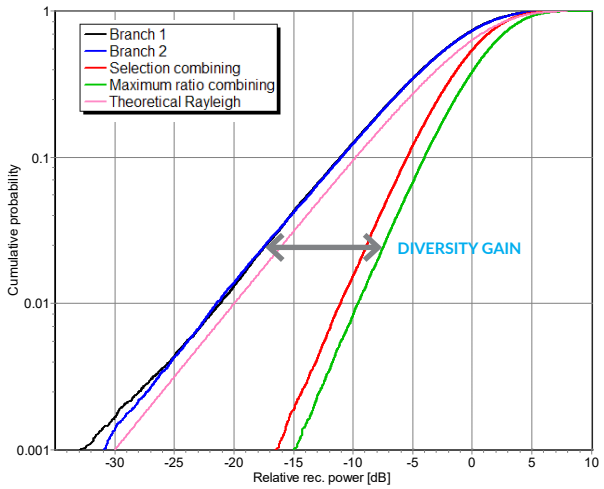
Together these new RTS65 options give you the capability to evaluate the radio performance of your new 5G devices regardless of whether the target 5G frequency is in the sub-6 GHz domain or the new 28 GHz or 39 GHz bands.

5G OTA MEASUREMENTS

Passive MIMO and Diversity gain measurements

Passive antenna measurements such as efficiency and antenna correlation all the way up to 40 GHz are performed with a vector network analyzer (VNA)

Diversity and MIMO gain have been measured in the RTS for many years. Diversity gain can be viewed as a shift of a distribution or a throughput curve where the shift corresponds to the achieved gain. MIMO gain can be analyzed as an increase in spectral efficiency or as an actual improvement in data throughput.



Active measurements

Bluetest cooperate with the leading manufacturers of signaling communication testers to bring you the measurement functionality you are used to in 4G/LTE also to 5G. TRP, TIS and Data throughput measurements are the target for the first release.

Other measurement possibilities include performing transmitter measurements such as output power, ACLR and spurious emissions using a signal analyzer. This enables performance and conformance testing of both UEs (user equipment) and base stations to be moved into the OTA domain. Moving the conformance testing from the traditional conducted testing to OTA becomes essential when the antenna gets more integrated with the transceiver and the number of antenna elements increase. Another OTA test alternative is to connect real base stations and devices through RTS65 to support testing of the complete system in a controlled and repeatable environment.

OTHER

RTS65 supports measurements of both UEs and smaller base stations. Maximum device size is up to 0.5m x 0.4m x 0.3m. You get all the advantages of the RTS65 and Flow software platform and with the 5G upgrade, you extend your system capabilities even further. Accessories such as the low loss holders and absorber kit have been verified for operation also in the mmWave band. More information about RTS65 and Flow can be found in the RTS65 data sheet.

TECHNICAL SPECIFICATIONS

Upgrade available for	RTS65
Measurement antennas 650 MHz - 6 GHz 6 GHz - 40 GHz	 Up to 16 ports (SMA - female) 2 ports (2.92mm - female)
Reference antenna port 650 MHz - 40 GHz	 1 port (2.92mm - female)
Passive antenna ports 650 MHz - 40 GHz	 Up to 3 ports (2.92mm - female)
Shielding 650 MHz - 6 GHz 6 GHz - 40 GHz	 100 dB 80 dB
Reference antennas	650MHz - 3.5 GHz 2 - 6 GHz 6 - 40 GHz
Typical chamber loss at 28 GHz	-48 dB

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