

Wireless pre-compliance testing moves from RF chamber onto the bench

ECN Europe

[Rohde & Schwarz](#) [1] has added three new options for its compact R&S DST200 RF diagnostic chamber: the R&S DST-B160 automated 3D positioner, the R&S DST-B210 cross-polarised test antenna and the R&S DST-B270 communications antenna. The new options speed up pre-compliance testing of wireless devices, allowing automated test sequences to be performed on the lab bench so that developers no longer require constant access to large RF test chambers.

The R&S DST200 RF diagnostic chamber together with the R&S CMW500 wideband communication tester from Rohde & Schwarz now enables fast, reproducible over-the-air (OTA) testing in accordance with the Cellular Telecommunications Industry Association (CTIA) test specification. In conjunction with an R&S ESU EMI test receiver from Rohde & Schwarz, the new options make it possible to carry out radiated spurious emission (RSE) measurements quickly and easily with the R&S DST200. These test setups are ideal for wireless device design optimisation. Developers can compare the results generated with the R&S DST200 with the results obtained with larger RF test chambers, since similar test sequences are used in these chambers. The results generated with the different types of chambers exhibit a high level of correlation, differing from each other by no more than a few decibels. Using this solution, network operators can now perform conclusive qualification measurements on smartphones, for example, without the need to access large RF test chambers.

The new R&S DST-B160 automated 3D positioner uses servomotors to position the EUT in any orientation required for OTA measurements, eliminating the need for time-consuming manual positioning. The R&S AMS32 OTA performance measurement software supports all cellular standards, including LTE MIMO, as well as WLAN and Bluetooth, plus it enables assisted GPS (A-GPS) performance measurements. In RSE measurements, the system automatically determines the EUT position with the highest RF emission, and then uses the R&S EMC32 software to perform EMC measurements in accordance with ETSI EN 301 908 (for W-CDMA) or a similar standard.

The R&S DST-B160 automated 3D positioner is made of a special, low relative permittivity material for RF applications so as to minimise its effect on the measurements. The servomotors are accommodated in an RF shielded compartment at the bottom of the R&S DST200. The user attaches the EUT to a removable holder, which is snapped into a bracket so that the EUT is positioned at the centre of the R&S DST-B160. The EUT can be rotated independently about two axes into any desired position relative to the test antenna.

The new R&S DST-B210 cross-polarised test antenna is designed for testing wireless

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devices and chipsets with the R&S DST200. The antenna has a wide frequency range of 300 MHz to 12 GHz, ensuring that all harmonics will be covered when performing RSE measurements. The R&S DST-B270 linear-polarised communications antenna has a frequency range of 700 MHz to 18 GHz and provides a stable connection between the EUT and the test receiver while the EUT is being rotated.

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[1] <http://www.rohde-schwarz.co.uk/>