

The challenge of testing 5G antenna performance

Rohde & Schwarz presents the R&S®ATS1000 antenna test system, a highly accurate solution for testing 5G antennas up to mmWave frequencies in a mobile shielded chamber.

Your task

What is different when testing 5G antennas? The wide frequency range, the greater number of antenna elements and the lack of conventional external RF connectors make



The R&S®ATS1000 antenna test system.

5G antenna characterization challenging. To assess the complete performance of 5G over-the-air (OTA), e.g. beam characteristics, coexistence testing and near-field and far-field measurements, fast and accurate pattern measurements are essential.

Rohde & Schwarz solution

The R&S®ATS1000 antenna test system is a mobile shielded chamber solution that addresses the diversified antenna testing market. Antenna measurements are all about data, speed and reliability no matter what the device under test, e.g. base station antenna, 5G end user devices, IoT wearable devices or radar modules.

Testing existing and upcoming technologies

Some of the 5G challenges are massive MIMO and beam-forming testing at cmWave and mmWave frequencies since the frequency bands and the harmonic and spurious emission tests being considered for 5G range from 24 GHz to 90 GHz. Existing technologies such as LTE, GSM, WLAN, Bluetooth®, NB-IoT, Lora, Zigbee, and their evolutions, e.g. LTE-A, IEEE802.11ad, will continue to play an important role in 5G. The R&S®ATS1000 provides a highly shielded environment over a very wide frequency range from 18 GHz to 87 GHz.

Far field scanner and 3D radiation pattern

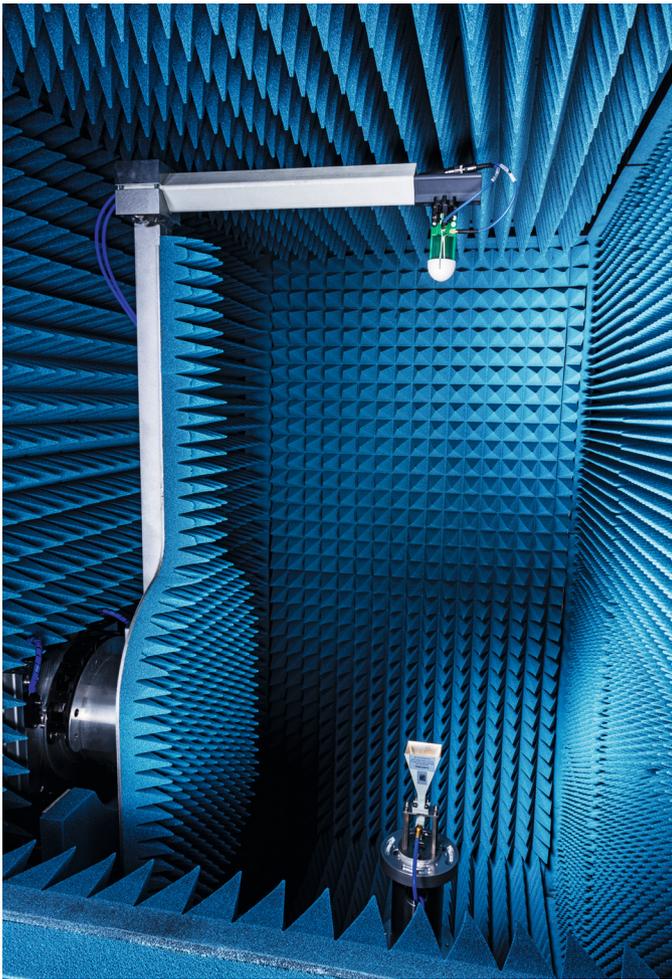
The flexibility of the R&S®ATS1000 makes a customizable range length possible, even allowing far field measurements in a compact setup that can be moved from lab to production environments.

NF to FF transformation

When size matters and measurements need to be performed in the near field, the R&S®ATS1000 offers extremely well correlated results in a short measurement time – thanks to the highly accurate precision positioner together with the new R&S®AMS32 software options for near field to far field transformation.

Addressed applications

Wireless and automotive market operators, manufacturers and certification entities need a viable solution for diagnostics, type approval and production. The R&S®ATS1000 is the perfect combination throughout the entire process.

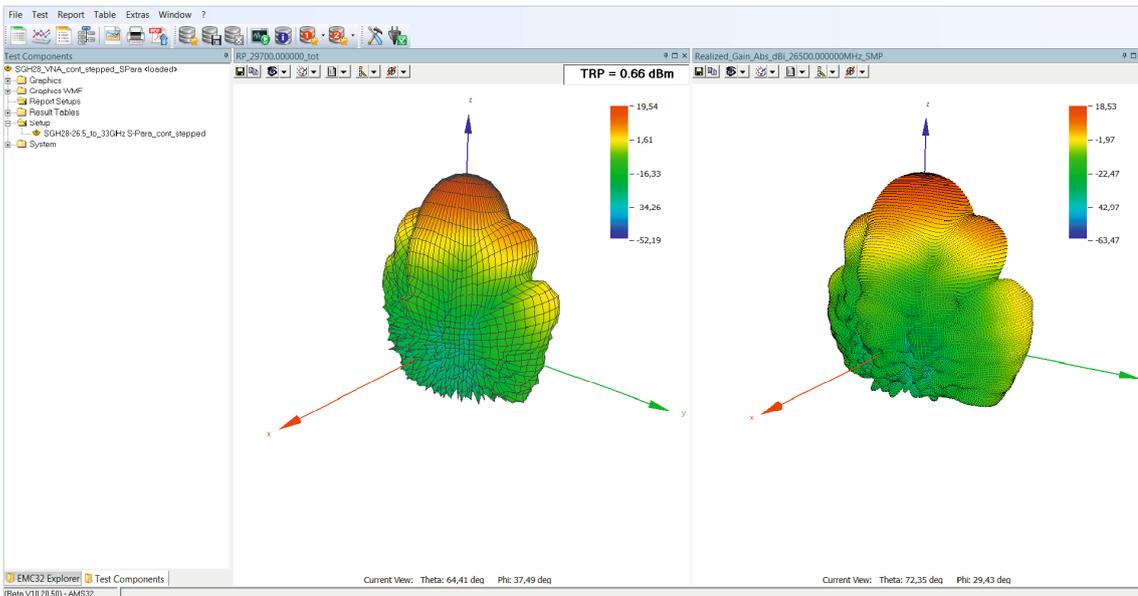


Benefits and key features

- ▮ Designed for mobility: includes wheels and easily fits next to a 19" rack
- ▮ Frequency range: 18 GHz to 87 GHz
- ▮ > 50 dB shielding effectiveness across the entire frequency range
- ▮ Broadband measurement antenna from 4 GHz to 87 GHz with very low radar cross section
- ▮ Flexible test scenarios: integrated high-precision conical cut positioner or multiple measurement antennas
- ▮ Fast and accurate antenna characterization
- ▮ Passive (magnitude and phase) and active (TRP, EIRP, TIS, EiS, EVM) antenna measurements
- ▮ NF to FF transformation with the R&S[®]AMS32 test measurement and control software
- ▮ Extremely fast measurements with spiral scan (dual axis rotation)
- ▮ One stop shop for antenna measurements: R&S[®]ATS1000 chamber, R&S[®]AMS32 software, test instruments

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R&S[®]ATS1000 with an integrated high-precision positioner.



R&S[®]AMS32 OTA performance measurement software: NF to FF transformation.

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