

Future-ready RF shielded boxes for development and mass production

With the best shielding in its class, the new R&S®TS7124 RF shielded box makes reliable and reproducible measurements possible. Available in a manual or automatic version, it ensures that measurement conditions are identical in development and production environments.

The new R&S®TS7124 RF shielded boxes (Fig. 1) can be used to test devices with radio interfaces meeting a variety of standards, such as mobile radio, RFID, Bluetooth®, ZigBee, WiMAX™, NFC, ISM, GPS and WLAN. In doing so, they cover every requirement and application. Whether used as diagnostic tools in product design or as RF test boxes in production scenarios, they are ideal when a shielded, reproducible test environment is needed.

Compact test setup with more volume

With its spacious interior, the R&S®TS7124 RF test box complements the product range, which previously comprised the smaller R&S®TS7121 and R&S®TS7123 RF test boxes. At 19" wide, the new boxes can be rackmounted, offering more space to accommodate DUTs while still retaining a compact test setup.

A key parameter of small RF test boxes is their coupling factor. This is optimal with the R&S®TS7124 RF test boxes, since there is sufficient space between the antenna couplers and the DUT.

Excellent shielding effectiveness

In terms of shielding effectiveness, the most important parameter of an RF test box, the R&S®TS7124 RF shielded boxes achieve the exceptionally high value of 80 dB in the 300 MHz to 6 GHz frequency range. They attain this outstanding characteristic thanks to the top-quality absorbers, which are also the reason for the extremely low reflection levels.

Fig. 1: Together with a generator and analyzer, the R&S®TS7124 RF shielded box forms a compact test setup for testing DUTs with radio interfaces meeting a variety of standards (the picture shows a manual test box, an R&S®SMBV100A signal generator and an R&S®FSV spectrum analyzer).



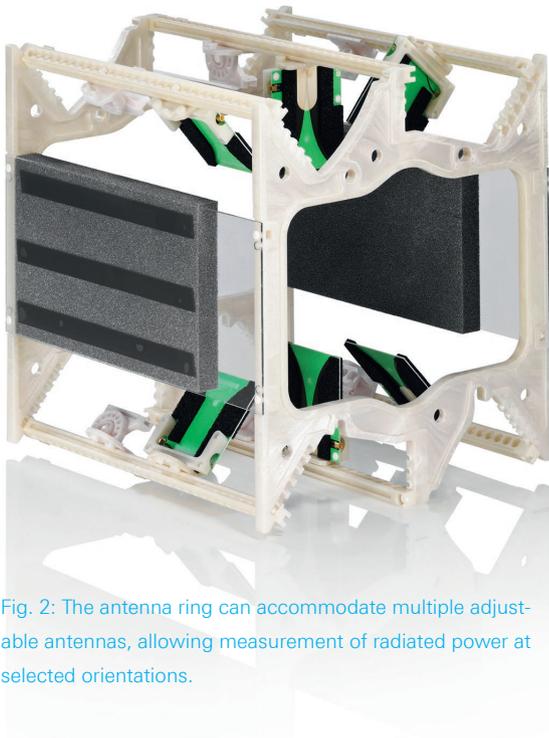


Fig. 2: The antenna ring can accommodate multiple adjustable antennas, allowing measurement of radiated power at selected orientations.

Antenna configurations for any application

Reproducible test results are essential for achieving comparable measurements. This is where the antennas play a key role. Different antenna configurations can be used with the R&S®TS7124 RF shielded box. Placing multiple antennas in the box allows customers to create their own radiation patterns and measure radiated power at selected orientations. A newly developed antenna ring to accommodate multiple antennas (Fig. 2) includes brackets that allow the antennas to be positioned as desired. In addition, its material properties have only a negligible impact on RF measurements. As an addition to the spiral broadband antenna, the new Vivaldi antennas (Fig. 3) ensure high gain and excellent repeatability.

Robust for mass production environments

Thanks to the RF test boxes' sturdy construction, they can withstand over a million opening and closing cycles without any noticeable impact on their shielding performance. This is why the automatic model with its high-performance closing-mechanism cylinders and its immunity to shocks performs reliably in mass production environments.

Flexible configuration for any application

The manual version for labs and the automatic version for production environments ensure that measurement conditions are comparable and identical measurement scenarios are used in both instances. Furthermore, the RF test boxes



Fig. 3: The RF test box antennas cover every requirement.

can be controlled remotely via Ethernet or RS-232-C interface. As each application poses different requirements, the RF test boxes have interface panels on the front and rear with shielded feedthroughs that can be configured in a wide variety of ways for Ethernet, USB, fiber-optic and pneumatic connections (Fig. 4).

The R&S®TS7124 RF shielded boxes offer high quality and reliability in lab and production environments at an affordable price. They will be available from the first quarter of 2015.

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Fig. 4: Configurable interface panels (here on the rear) make it possible to implement feedthroughs that meet any need.