RTS25U

REVERBERATION TEST SYSTEM

FOR SMALL DEVICES AND TIGHT SPACES

Bluetest, the global leader in reverberation chamber technology, introduces the RTS25U, the most compact test system in the RTS family. With the RTS25U, measuring small wireless devices over-the-air (OTA) has never been faster, easier, or more reliable. Engineered to reduce measurement time, the RTS25U delivers a controlled multipath environment that ensures accurate and repeatable results, so you can verify your wireless devices with confidence and efficiency. Building on the proven performance of the RTS25, the RTS25U expands your capabilities with frequency coverage from 1.7 to 8.0 GHz, all in a streamlined design that saves space without sacrificing power.

MULTIPATH ENVIRONMENT

The RTS25U consists of a shielded reverberation chamber with reflecting walls. The device under test (DUT) is placed on a turntable. The reflective walls and the turntable in combination with a rotating reflector (mode stirrers) create a Rayleigh faded rich isotropic multipath (RIMP) environment inside the chamber. This environment is well-suited for antenna and radio performance evaluation of modern multi-antenna (MIMO) devices. The multipath environment is enabled by default and does not require any additional external equipment.

Bluetest's years of experience in reverberation chamber technology development has resulted in a well proven, highly accurate and robust OTA test system.

RTS25U highlights

- **Fast verification of your device's wireless performance**
- **Shielded controlled OTA multipath environment**
- **Covers 1.7–8.0 GHz frequency range**
- **Supports multiple standards, including Bluetooth, WLAN, LTE, and 5G**
- **Compact and cost-effective test solution**
- **4x4 MIMO support in the base configuration**

1.7–8.0 GHz FREQUENCY RANGE

The dimensions of the RTS25U are 800 x 1472 x 1387 mm. This scaled-down reverberation chamber can be rolled through most doorways and will take less space in your lab or office while still offering a generous test volume.

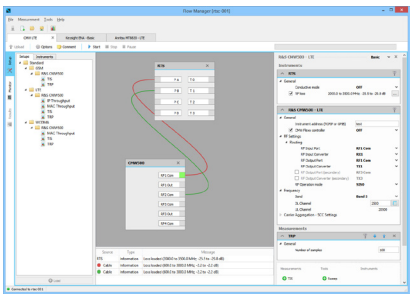
Based on the RTS25, the RTS25U supports measurements in the full frequency range from 1.7–8.0 GHz, enabling testing of some LTE and NR channels in addition to Bluetooth and WLAN. This expanded frequency range can also be used for antenna efficiency and spurious emission measurements.

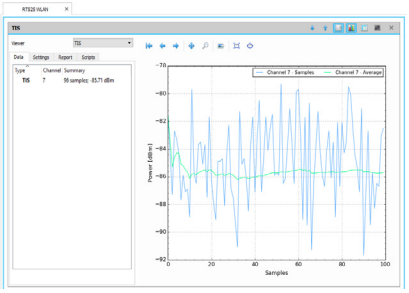
MULTIPLE ANTENNAS – EXPANDING APPLICATIONS

Bluetest's RTS25U, with its inherent multipath environment and four chamber antennas is ready for measurements on 4x4 MIMO devices. In addition, an upgrade to eight chamber antennas offers support for even higher MIMO-order or the flexibility to connect multiple test instruments at the same time. This allows for measurements such as interference/de-sense between WLAN and Bluetooth.

RTS25U MEASUREMENTS

The RTS25U is an essential tool in the development and verification process of

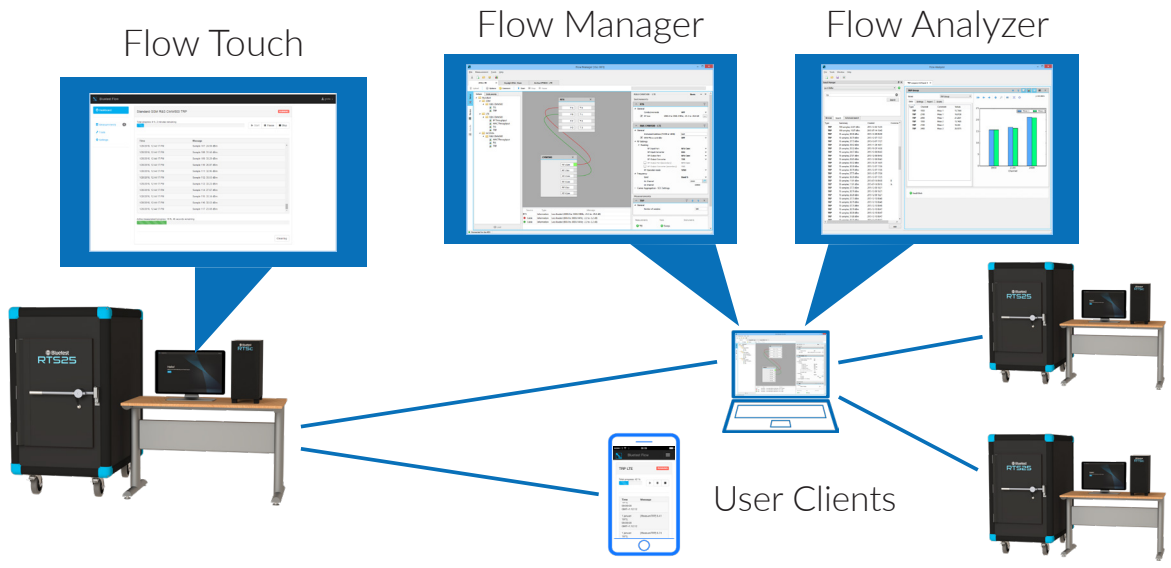


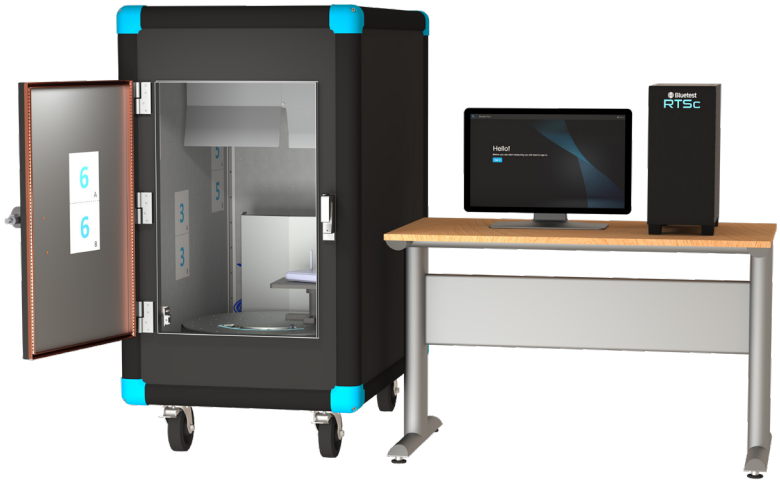


your wireless device's radio and antenna performance. The following measurements can be performed to quickly evaluate antenna, transmitter and receiver performance:

- **Throughput vs. power** verifies device throughput over a range of real world conditions,
- **Total Isotropic Sensitivity (TIS)** measurements let you verify how well your receiver performs, and
- **Total Radiated Power (TRP)** measures efficiency of your transmitter (radiated power).

Thanks to the multipath environment, your results will be representative of how your device will perform in reality.





BLUETEST FLOW SOFTWARE PLATFORM

The RTS25U comes with a measurement and analysis software platform: Bluetest Flow. This integrated test environment offers functionality for testing complex wireless solutions. It builds upon years of research and development expertise. Well proven measurement methods and algorithms are included in the Flow platform.

FLEXIBLE SYSTEM MANAGEMENT

All measurements are executed by the included RTSc measurement server running the Flow software. There is no need to be concerned about incompatible PCs or conflicting programs that cause time consuming troubleshooting. Measurement configuration is done remotely with Flow Manager installed on any regular office PC. It provides in-depth measurement configuration and setup while retaining direct chamber control. Flow Touch is available on the RTSc 22" high resolution touch screen or any mobile device with a web browser. It allows you to start, stop and monitor measurements from anywhere.

BASIC OR ADVANCED – IT IS UP TO YOU

Flow Manager combined with Flow Touch gives you all the functionality you need for your OTA measurements, whether they are basic or advanced. Get started fast with predefined settings according to standards or operator specifications. Intelligent parameters are implemented so that ranges and dependencies are corrected automatically. In Flow Manager, you visually set up the measurements by connecting the cables and instruments, just like you do in reality.

The user interface supports a simplified view for new users and an advanced view with access to more parameter settings for more experienced users.

BATCH MEASUREMENTS – THE TIME SAVER

For the engineer with a long list of mixed measurements it is possible to run all of them in one go. You can mix your measurements as you want. Combine measurement types, wireless standards and even instruments. Create batch measurements with TRP, TIS, and then TRP again with another communication tester.

ANALYSIS AND COMPARISON

The integrated result database collects all results in one place and enables intuitive and powerful search functions using Flow Analyzer. Organize your results by adding metadata to them in the form of tags or additional DUT information. You can combine results and make customized comparison plots. Export your data and create HTML reports from any kind of results. Multiple results can be combined from different devices, wireless standards, and measurement types and then exported into one single report. Your legacy files can also be imported to Flow Analyzer and the result database.

WIRELESS FORMATS

The RTS25U is optimized for MIMO OTA measurements and supports multiple standards, including Bluetooth, WLAN, LTE, and 5G. Flow Manager supports the most common 3rd party instruments as well as the Bluetest's own instruments such as the TTS3 WLAN Throughput Test System, and is continuously updated to track the wireless standards development.

CALIBRATION

You can calibrate your system by yourself in less than 15 minutes. It is a simple process carried out with your own VNA.

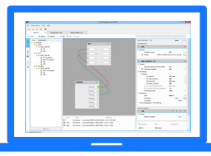
FLOW PLATFORM OVERVIEW

FLOW TOUCH

Flow Touch is a touch interface that can be used on any device with a web browser. Flow Touch allows you to control and monitor your measurements remotely. Starting, stopping and pausing the measurements are just a few examples of the possibilities. Flow touch comes with the touch screen included in your RTS.

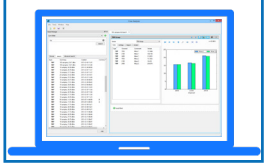
FLOW MANAGER

Flow Manager is the desktop client in which you configure your measurements. You set up your measurements, create batches and add multi parameter sweeps. Define your measurements as you want whether you are a new or experienced user. You are guided in Flow Manager by the built in manual.



FLOW ANALYZER

Flow Analyzer is the result and data processing tool that gives you endless opportunities to plot your data as you want. Search the built-in database and compare your measurements. Create your own design for plots and graphs, put them in a report format and export your results.



DUT INTERFACING

The chamber design supports multiple DUT power and communication interface options. If the device is not battery-operated, it can be powered with AC or DC power. 1, 2.5, 5 and 10 Gb Ethernet, USB and RS-232 interfaces enable wired communication with the device as well as support for the Bluetooth 4 and 5 HCI communication.

SUPPORTING ACCESSORIES

We have a wide range of accessories to assist you with your measurements. Accessories include reference antennas, low loss holders and other DUT fixtures as well as an absorber kit to allow for tuning the chamber delay spread. Every single accessory is designed to optimize the accuracy and repeatability of your measurements.

SERVICE & MAINTENANCE

We will not leave you after the installation of your RTS25U. System operation training is tailored to your level of experience as well as previous knowledge of our systems and software.

After-installation service offers include measurement customizations, upgrades, and software and hardware maintenance plans. Our support and service solutions provide an upgrade path for both hardware and software platforms to ensure that the capabilities of your RTS25U stay ahead of tomorrow's wireless technologies.

TECHNICAL SPECIFICATIONS

General	
Frequency Range	1.7–8.0 GHz
Shielding	Typ. >80 dB*
Power Consumption RTS25U	Typ. 25 W
Power Consumption RTSc	Typ. 40 - 70 W
Chamber Weight	240 kg (529.1 lb) (depending on installed options)
Chamber External Dimensions	Width: 800 mm (31.5") Height: 1472 mm (57.95") Depth: 1387 mm (54.6")
Max DUT Size	Width: 0.4 m (15.75") Height: 0.3 m (11.81") Depth: 0.3 m (11.81")
Max DUT Weight	12 kg (26.45 lb)
Delivery Format	Fully Mounted
Multiple Antenna Support	4 Active Antenna Ports (Default) 8 Active Antenna Ports (Option)
System Control	RTSc and Bluetest Flow Software Platform

*10GbE DUT interface may reduce shielding above 6 GHz

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