

RTS25

REVERBERATION TEST SYSTEM



FOR WLAN, BLUETOOTH & INTERNET of THINGS

Bluetest's world-leading reverberation chamber expertise now offers the RTS25, the most compact test system in the RTS family of wireless test chambers. It has never been so convenient to measure small wireless devices over-the-air (OTA) with such ease, speed and reliability. The Bluetest RTS25 is designed to reduce the time you spend on measurements and it gives you a controlled multipath environment for fast and easy verification of your wireless device. The design has been optimized for measurements of WLAN, Bluetooth and other IoT devices.

MULTIPATH ENVIRONMENT

The RTS25 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 stirrer) create a Rayleigh faded rich isotropic multipath environment (RIMP) inside the chamber. This environment is very 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 expensive equipment.

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

RTS25 highlights

- Fast verification of your device's wireless performance
- Shielded controlled OTA multipath environment
- Optimized for WLAN, Bluetooth and IoT standards
- Compact and cost effective test solution
- 4x4 MIMO support in base configuration

OPTIMIZED FOR 2.4 AND 5 GHz ISM BANDS

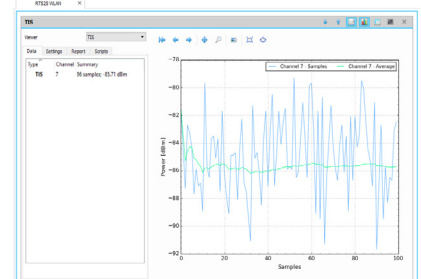
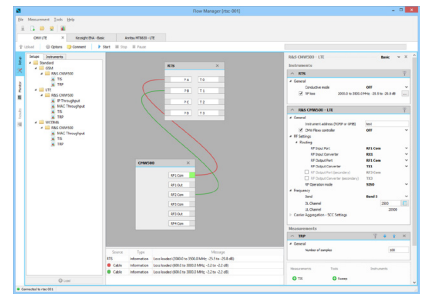
The dimensions of the RTS25 are 800 x 1472 x 1387 mm. This scaled-down reverberation chamber will take less space in your lab or office and it can be rolled through most doorways while still offering a generous test volume. RTS25 is optimized to make OTA measurements on the 2.4 and 5 GHz ISM bands. Wireless standards like WLAN and Bluetooth are ideal to measure in this system. IoT (Internet of Things) solutions operating on these bands are other applications suitable to measure in the RTS25.

MULTIPLE ANTENNAS – EXPANDING APPLICATIONS

Bluetest's RTS25 is with its inherent multipath environment and four measurement antennas out of the box ready for measurements on 4x4 MIMO devices. In addition an upgrade to 8 measurement antennas offer support for even higher MIMO-order or the flexibility to connect multiple test instruments at the same time allowing for example interference/de-sense measurements between WLAN and Bluetooth.

RTS25 MEASUREMENTS

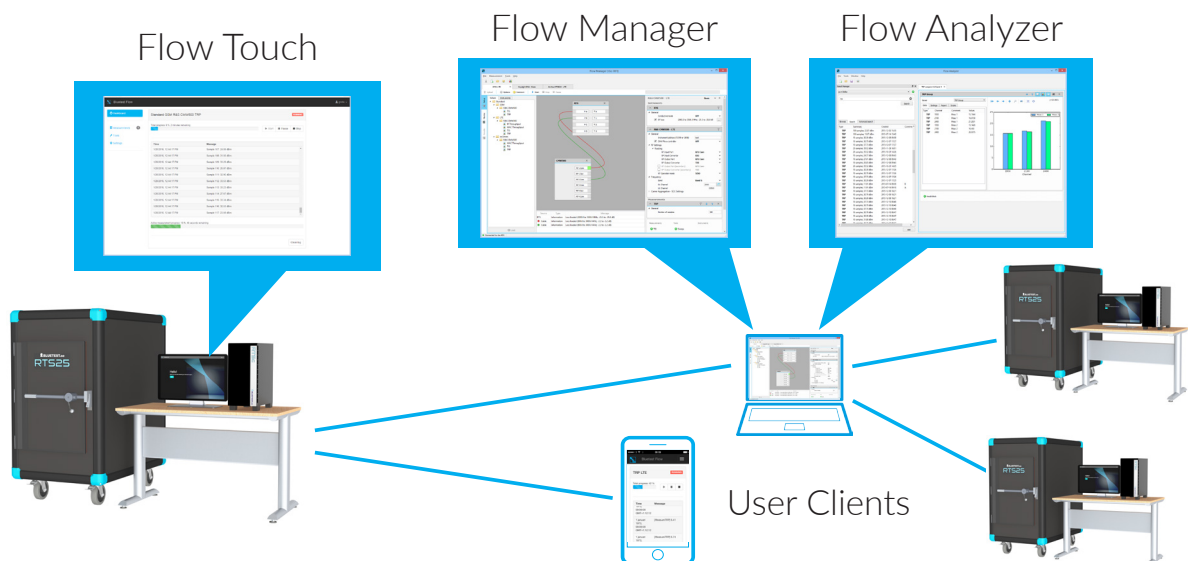
The RTS25 is an essential tool in the development and verification process of your wireless device radio and antenna



performance. Antenna as well as transmitter and receiver performance are quickly measured using the following measurements: Throughput vs. power verifies device throughput over a range of real world conditions. TIS measurements let you verify how well your receiver performs. 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 RTS25 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. Already 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 Bluetest 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.

EASY 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 it is basic or advanced. Get started fast with predefined setup settings according to standard bodies or operator specifications. Intelligent parameters are implemented so that ranges and dependencies are corrected automatically. In Flow Manager, you visually setup the meas-

urements by connecting the cables and instruments, just like you do it in reality.

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

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 easy and powerful search functions using Bluetest Flow Analyzer. Organize your results by adding metadata to them in 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, measurements types and then exported into one single report. Your legacy files can also be imported to Flow Analyzer and the result database.


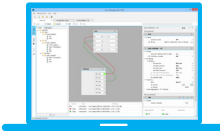
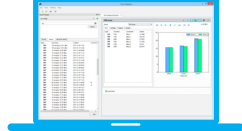
WIRELESS FORMATS

The RTS25 is optimized for 2.4 and 5 GHz MIMO OTA measurements for WLAN, Bluetooth, and other IoT specific standards. Flow Manager supports the most common 3rd party instruments as well as the Bluetest TRU1 WLAN throughput tester.

CALIBRATION

You can calibrate your system by yourself in less than 15 minutes. It is a simple process carried out with your own VNA. An alternative to investing in a VNA is to use the off-site calibration service giving you a predefined set of calibration files.

FLOW PLATFORM OVERVIEW

FLOW TOUCH	FLOW MANAGER	FLOW ANALYZER
<p>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. Start, stop and pause the measurements are just a few examples of the possibilities. Flow touch comes with the touch screen included in your RTS.</p> 	<p>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 advanced user. You are guided in Flow Manager by the built in manual.</p> 	<p>Flow Analyzer is the result and data processing tool that gives you endless opportunities to plot your data as you want. Search in 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.</p> 

DUT INTERFACING

The chamber design supports multiple DUT power and communication interface options. The device can, if not operated on battery, be powered with AC power or DC power. Gb Ethernet, USB and RS-232 interfaces enables 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 improve the work with your measurements. Accessories include reference antennas, low loss holders and other DUT fixtures as well as an absorber kit to allow for tuning of the chamber delay spread. Every single accessory is designed to optimize the accuracy and repeatability of the measurements.

SERVICE & MAINTENANCE

We will not leave you after the installation of your RTS25. System operation training is tailored to your level of experience as well as previous knowledge of our systems and software. After-installation service offers includes for example





measurement customizations, upgrades, or 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 RTS25 stay ahead of tomorrow's wireless technologies.



TECHNICAL SPECIFICATIONS

Model	RTS25
Frequency ranges	2.4-2.5 GHz 5.0-6.0 GHz
Shielding	90 dB
Power consumption RTS25	Typical 25 W
Power consumption RTSc	Typical 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	12kg (26.45 lb)
Delivery format	Fully mounted
Accuracy TRP & TIS	0.5 dB (STD) when chamber loaded to 50ns delay spread
Repeatability	0.1 dB (STD)
Multiple antenna support	4 active antenna ports (default) 8 active antenna ports (option)
System control	RTSc and Bluetest Flow software platform

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