RTX2300
## SMART ATE
DATA SHEET

The RTX2300 Smart ATE is a flexible, compact & cost-effective test solution for functional test of wireless devices. It can be used for test of printed circuit boards as well as for final product testing. With its combination of embedded instrumentation & optional add-on instrumentation modules, the RTX2300 reduces the complexity, size & cost of an ATE system.

RTX2300 SMART ATE

The RTX2300 Smart ATE is a lot more than just a shielded box. It includes as standard embedded instrumentation, which reduces the complexity, size and cost of an ATE system. Included are a digital voltmeter, tone generator, signal multiplexer and general purpose inlet/outlet.

Controller		Customization area	Shielded fixture area
	Digital voltmeter		
	Tone generator		
	Signal multiplexer		
	GPIO		
	Add-on modules		
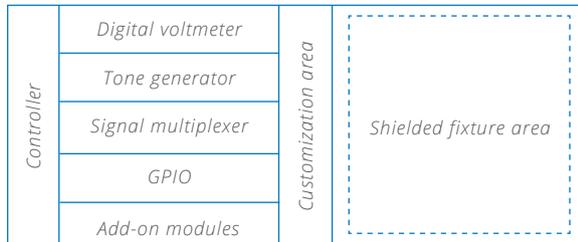
Optional add-on instrumentation modules are available, which can reduce or eliminate the need for additional external equipment. Add-on modules include a programmable power supply unit and frequency counter, which allow for the calibration and test of the baseband circuitry of the DUT. A Bluetooth Low-Energy RF tester module is also available for test of key parameters in BLE devices.

The RF-shielded compartment of the RTX2300 can be customized with modular, device-specific test fixtures. RTX supplies standard test fixture kits which can include pneumatic slide tables to automatically hold the DUT in place during test. Optional quick-swap kits enable users to physically reconfigure the ATE to accommodate different fixtures for different DUTs and test types in a matter of seconds.

The RTX2300 also features a customization area that enables interconnection between internal and external measurement functionality and the device under test (DUT) reducing both space requirements and complexity for the total test system.

The RTX2300's flexibility simplifies the customization of the test platform and enables economical replication. A production test system can be implemented by using an RTX Smart ATE in combination with an RF communication tester and a PC for executing the test application.

The RTX2300 is supplied with test application programming guidance in the form of a PC software package, which includes the necessary drivers, supporting Windows applications, DLL dynamic link libraries, source code (for demo applications only) and API.
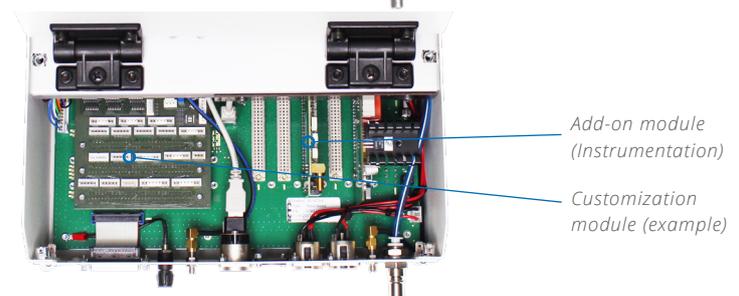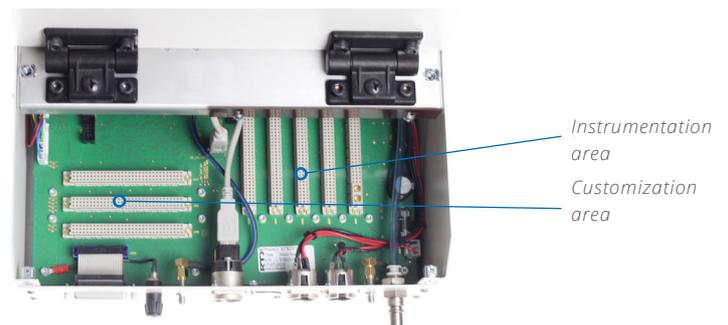
The RTX2300 can decrease overall test time due to the support of multi-threaded test applications. This enables several units to be setup in parallel, enabling optimal use of RF, baseband, and acoustic test resources, thus effectively reducing the handling time of the DUTs.

Quick-swap connectors

Standard connectors
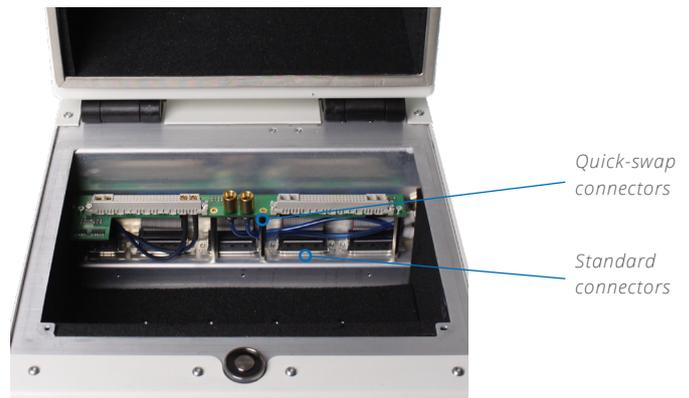
The RTX2300 Smart ATE's fixture bay is prepared with the interfaces to the Smart ATE functionalities and external RF equipment. The signal lines are filtered and can be accessed either via the standard connectors in the bottom part of the fixture bay or via the optional quick-swap connectors.

Pneumatic slide

Snap locks
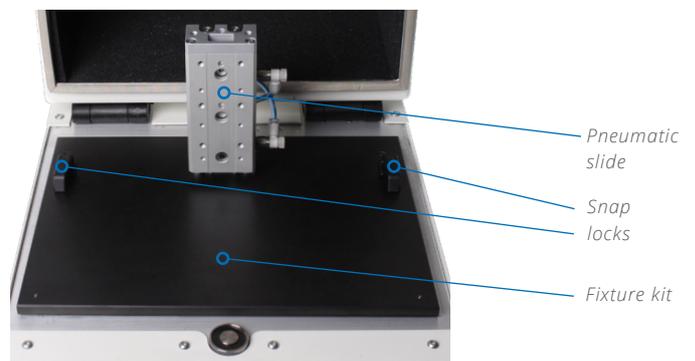
Fixture kit

Modular fixture kits with pneumatic slide tables are available for building device-specific test fixtures, which can be quickly installed and removed from the fixture bay.

Instrumentation area

Customization area

Add-on module (Instrumentation)

Customization module (example)

The rear compartment of the RTX2300 Smart ATE is the instrumation & customization area where optional add-on instrumentation modules as well as a customization module can be installed.

FEATURES

- *Standard embedded instrumentation: digital voltmeter, tone generator, signal multiplexer & GPIO*
- *Optional add-on instrumentation modules such as PSU, frequency counters, bluetooth low-energy RF testers, etc.*
- *Customization area for interconnection between internal and external measurement functionality and the device under test.*

- *RF-shielded compartment and test fixture bay prepared for device-specific test fixtures, which can be swapped quickly*
- *Optional range of test fixture kits with pneumatic slide tables*
- *Test application programming guidance in the form of PC software with the necessary drivers, supporting windows applications, DLL & API*

TECHNICAL SPECIFICATIONS

INSTRUMENTATION (BASIC UNIT)	SPECIFICATIONS
DVM	+/- 10 VDC, 16 bit resolution, 8 channels, +/- 5 VAC p-p
TONE GENERATOR	50 Hz - 14 KHz, 1 output: 3,5 V RMS, 2 outputs: 1 V RMS
SIGNAL MULTIPLEXER	8 Channels
GPIO	16 GPO, 8 GPI, 2 DAC

INSTRUMENT. (ADD-ON MODULES)	SPECIFICATIONS
PSU WITH SENSE	0-15 V 2A (10 mV step), cur. meas.: 2A DC, res.: 1 mA, peak cur. limiter: 0-2 A
PSU WITH SENSE, LOW-CURRENT	0-15 V 1A (10 mV step), cur. meas.: 1A DC, res.: 1 uA, peak cur. limiter: 0-1 A
FREQUENCY COUNTER	50 MHz 1 ppm (internal reference), imp.: 50 Ω / high
FREQUENCY COUNTER, HIGH-STABILITY	50 MHz 0,1 ppm (internal reference), imp.: 50 Ω / high
BLUETOOTH LOW-ENERGY RF TESTER	Bluetooth low-energy RF tester for test of key parameters in BLE devices

CONNECTIONS (REAR PANEL)	SPECIFICATIONS
RTX2300 CONTROL INTERFACE	USB 2.0
CLOCK IN/OUT	10 MHz 50 Ω (requires frequency counter module)
RF IN/OUT	50 Ω, 10 MHz – 6.0 GHz
RTX2300 SUPPLY	+12 V
EXTERNAL DUT SUPPLY	2 source + 2 sense
PNEUMATIC	SMC KK4-series quick-coupling

GENERAL DATA (BASIC UNIT)	SPECIFICATIONS
ISOLATION	60 dB (typically) < 6 GHz
MAX DUT SIZE	200 x 150 mm (approx. 8 x 6 in)
PNEUMATIC	6 bar
OPERATING TEMP. RANGE	15-35°C
STORAGE TEMP. RANGE	-20°C to 60°C (15°F - 95°F)
OPERATING HUMIDITY	Up to 95% relative humidity at 40°C (140°F) - non-condensing
POWER SUPPLY	200-250 / 100-120 VAC, 50-60 Hz
POWER CONSUMPTION	Typically: 5–10 W, Max. 60 W
DIMENSIONS (WXHXD)	300 x 315 x 516 mm (approx. 12 x 12½ x 20½ in)
WEIGHT	12.5 kg (approx. 27 lbs 9 oz)

ORDERING DETAILS

RTX NO.	BASIC UNIT	DESCRIPTION	STD/OPT
95102300	RTX2300 basic unit	Basic RTX2300 unit w/ USB control interface, standard instrumentation modules, fixture bay & shielded lid	Standard

RTX NO.	FIXTURE KITS	DESCRIPTION	STD/OPT
95203202	Standard fixture kit w/ pneu. slide table - 6 mm	Standard fixture kit w/ all base materials for making a test fixture. Including pneumatic slide table w/ 6 mm dia. connection.	Optional
95203203	Standard fixture kit w/ pneu. slide table - 8 mm	Standard fixture kit w/ all base materials for making a test fixture. Including pneumatic slide table w/ 8 mm dia. connection.	Optional
95203204	Standard fixture kit w/ pneu. slide table - 12 mm	Standard fixture kit w/ all base materials for making a test fixture. Including pneumatic slide table w/ 12 mm dia. connection.	Optional
95203205	Standard fixture kit w/o pneu. slide table	Standard fixture kit w/ all base materials for making a test fixture. Excluding pneumatic slide table.	Optional

RTX NO.	QUICK-SWAP KITS	DESCRIPTION	STD/OPT
95203206	Quick-swap kit (SC+CC) for test fixture	Quick-swap kit for "standard connector block" and "custom connector block" for test fixture	Optional
95203201	Quick-swap kit (SC+CC) for test fixture bay	Quick-swap kit for "standard connector block" and "custom connector block" for test fixture bay	Optional
60050856	RF cable	RF cable for QSK to fixture probing point	Optional

RTX NO.	ADD-ON MODULES	DESCRIPTION	STD/OPT
95203194	PSU module	Programmable PSU module w/ external sense for powering the DUT. Capable of supplying 0-10 V 2 A or 10-15 V 1 A	Optional
95203193	Low-current PSU module	Low-current, programmable PSU module w/ external sense for powering the DUT. Capable of supplying 0-15 V 1 A	Optional
95203195	Frequency counter module 50 MHz / 1 ppm	Frequency counter module for DUT freq. measurements. Capable of measuring frequency up to 50 MHz. Includes reference clock In/Output.	Optional
95203196	High-stability frequency counter module 50 MHz / 0.1 ppm	High-stability frequency counter module for DUT freq. measurements. Capable of measuring frequency up to 50 MHz. Includes reference clock In/Output and high-stability reference oscillator.	Optional
95203211	Bluetooth low-energy RF tester module	Bluetooth low-energy RF tester module for test of key parameters in BLE devices (4.0, 4.1, 4.2 & 5.0)	Optional
95203198	RF Switch 4	RF switch with 4 channels	Optional
95203199	RF Switch 8	RF switch with 8 channels	Optional

RTX NO.	DUT INTERFACE	DESCRIPTION	STD/OPT
95203207	SPI	SPI interface to DUT	Optional
95203208	I2C	I2C interface to DUT	Optional

RTX NO.	ACCESSORIES	DESCRIPTION	STD/OPT
95200848	RTX2300 Design Lab Tool	Design Lab Tool for establishing a swift ATE solution for R&D and ATE development	Optional