

E600 – Medium-size Reverberation Chamber

Passive, Active and Time-Domain MIMO OTA Testing

400 MHz to 60 GHz

Main Features

- Dimensions: 2750 mm (L) x 1555 mm (W) x 2000 mm (H)
 - With footprint reduction 2342 mm (L) x 1555 mm (W) x 2058 mm (H)
 - Can be served in pieces and re-assembled in-situ (optional)
- Frequency range: 600MHz to 6000MHz
- Frequency extensions: down to 400MHz, up to 60GHz
- Customized turntable interfaces: RF, USB, Ethernet, AC/DC power
- Customized penetration filters: Optical Fiber, Waveguide, DB9, USB, Ethernet
- RF isolation (shielding): ~ 100 dB
- MIMO extension up to 16x16 x 10DLCC
- MIMO Graphic User Interface (GUI) for Windows
- Fully automated measurements and test instrument control
- Passive, Active and Time Domain MIMO OTA measurements
- Conducted measurements
- Coexistence WLAN/Bluetooth/Cellular (LTE or NR) measurements
- Signaling / Non-Signaling OTA measurements
- Technologies:
 - Cellular: 2G, 3G, 4G, 5G (NR/NSA)
 - WLAN (up to 802.11ax 6GHz band)
 - Bluetooth (BR, EDR, LE up to 5.1)
 - Global Navigation Satellite System (GNSS)
 - Others: ZigBee, ZWave, LoRa, Sigfox, LTE-M, NB-IoT
- 5G OTA FR1, FR2 and FR1+FR2
- AuTs/DUTs of up to 50cm and 50kg
- Selected by leading Korean UE manufacturer among others
- Windows, Android, iOS, MacX, Linux, UWP and Tizen UE apps
- Testing with phantoms (head, hands, forearm, etc.)
- 17025-Accredited calibration (optional)

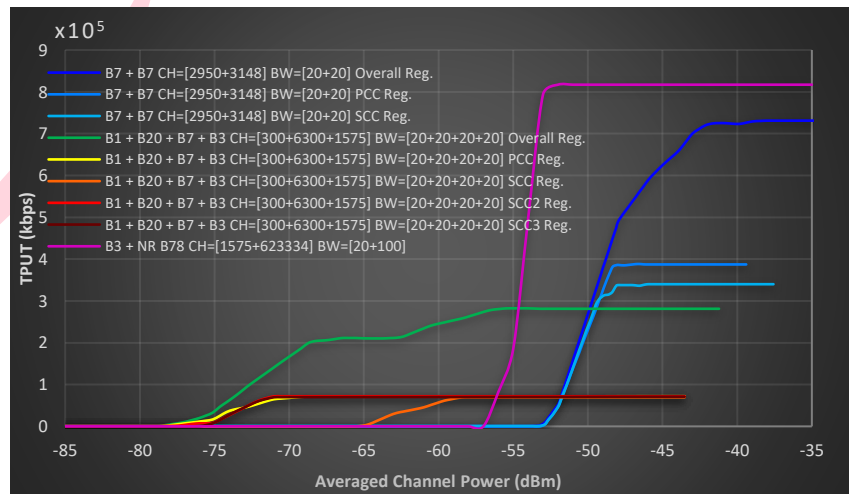


Measurement system

The E600 is a multicavity mode-stirred source-stirred reverberation chamber that represents state-of-the-art in reverberation chamber technology. E600 provides a unique environment to perform passive, active and time-domain measurements in repeatable and accurate manner with the shortest testing time. The internal RF switching called "turnkey" makes testing easier avoiding cabling reconections making the system fully automated and reducing possible human errors. E600 is a modular system with a wide variety of upgrades available such as frequency extension, MIMO upgrade, number of carriers upgrade, turntable, Maximum TPUT Scenario for WLAN, sound acoustic module (Mute %), turntable upgrade or penetration filters among others. EMITE external modules are also compatible with the E600 such as EIS (EMITE Instrument Switch), EMIAP (EMITE controlled Access Point), EMIBT (EMITE Bluetooth module), EMITE Packet Capture, etc. making the system versatile and allowing an easy growing with the technology. The EMITE E600 test system is complemented with diverse Support and Maintenance packages intended to suit a tailored set of customer requirements. There is no RC in the market more advanced than the E600 from our E-Series.

Unique Features – only with EMITE

- Capable of testing 5G NR SA/NSA FR1, FR2 and FR1+FR2
- Capable of testing coexistence WLAN/BT/Cellular (LTE or NR)
- Capable of testing Bluetooth IP TPUT vs Path loss
- Bands around 400 and 600 MHz
- Capable of testing LTE-A up to 8x8 x 8DLCC and 2x2 x 2ULCC
- Capable of testing NR up to 4x4 x 4DLCC and 2x2 x 2ULCC
- Capable of testing WLAN 802.11ax up to 8x8 on 6GHz band
- Capable of testing Mute (%) for sound acoustic evaluation of wireless headsets and devices
- E600 can be served in 4 pieces of 1m (W) max and re-assembled on-site
- Packet capture module up to 802.11ax 6GHz band



NR NSA 2x2, LTE-A 4x4 x 2DL CC and LTE-A 2x2 x 4DLCC MIMO OTA TPUT tests using a smartphone and E600 RC, exhibiting 100% total Throughput, in excess of 817 Mbps absolute value for 2x2 in NR NSA.

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Key Performance Indicators

Passive measurements:

- Efficiency (Total & Radiated)
- Correlation (Pearson & Blanch)
- Mutual Coupling
- Diversity Gain (IDG, ADG, EDG)
- MIMO Capacity
- Diversity Gain Loss
- MIMO Capacity Loss
- Mean Effective Gain (MEG)
- Branch Power Ratio
- Cumulative density function (CDF)
- Others: Scatterplot, K-factor, etc.

Active measurements:

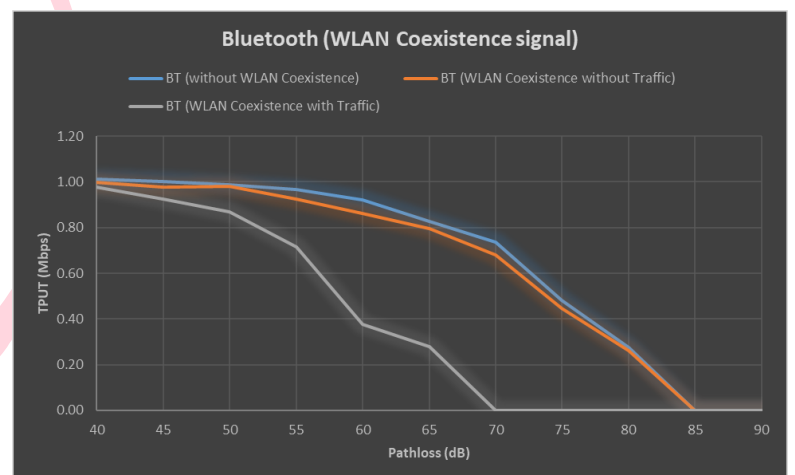
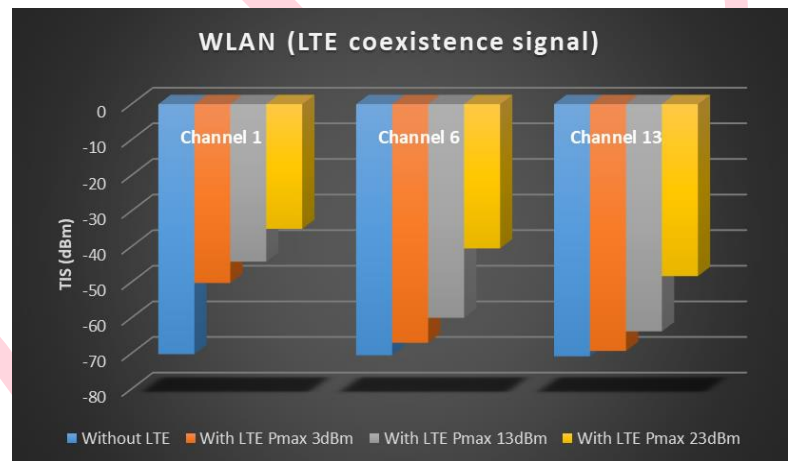
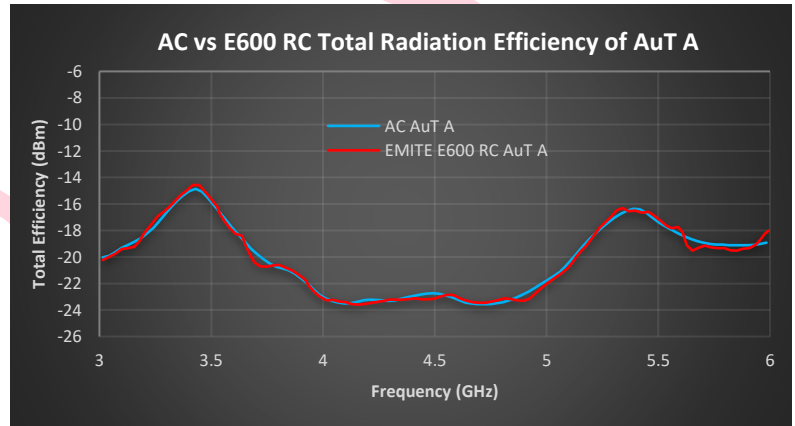
- Total Radiated Power (TRP)
- Total Isotropic Sensitivity (TIS)
- MAC DL/UL Throughput
- IP (TCP/UDP/FTP) DL/UL Throughput
- NIST/Urban-Macro(UMa)/Urban-Micro(UMi) Throughput
- MIMO Throughput Sensitivity (MTS)
- MIMO to Transmit Diversity Threshold (M2TxD)
- Modulation analysis (EVM, Freq. Error, Phase Error)
- Channel Quality Indicator (CQI)
- Reference Signal Received Power (RSRP)
- Coexistence WLAN with Bluetooth
- Coexistence WLAN with Cellular (LTE/NR)
- Coexistence Cellular (LTE/NR) with WLAN
- Coexistence Cellular (LTE/NR) with Bluetooth
- Packet Error Rate (PER)
- Conducted Sensitivity and Output power
- Others: SEM, ACLR, OBW, etc.

Time-Domain measurements:

- WLAN IP (TCP/UDP/FTP) DL/UL Throughput vs Time
- WLAN IP (TCP/UDP/FTP) DL/UL Throughput vs Path Loss
- Bluetooth IP (TCP/UDP/FTP) DL/UL Throughput vs Time
- Bluetooth IP (TCP/UDP/FTP) DL/UL Throughput vs Path Loss
- WLAN DL HAS (HTTP Adaptive video Streaming)
- Conducted and OTA Throughput
- MIMO Throughput Sensitivity (MTS)
- DUT monitoring (battery level, temperature)
- Physical Throughput
- Received Signal Strength Indicator (RSSI)
- Coexistence WLAN with Bluetooth
- Coexistence WLAN with Cellular (LTE/NR)
- Coexistence Bluetooth with WLAN
- 802.11ax packet capture

Other measurements:

- Mute % sound acoustic
- Virtual Drive Test OTA (VDI-OTA)
- Channel parameters (PDF CDF, Scatterplot, K-factor, etc.)
- RMS Delay Spread (RMS DS)
- Power Delay Profile (PDP)
- Coherence Bandwidth (CBW)
- Standard Deviation (SD)
- Path Loss (PL)



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