

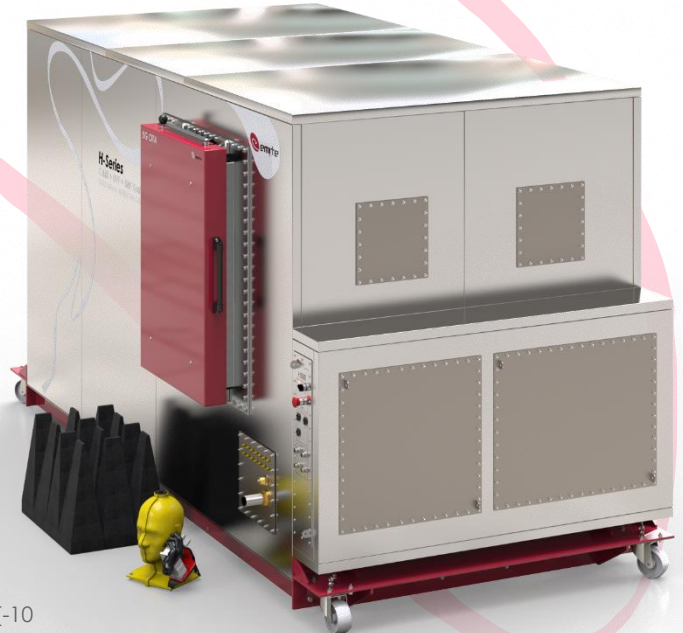
H300 – Medium-size Anechoic Chamber

Sub-6GHz and mm-Wave 5G OTA testing - 3GPP/CTIA/PTCRB-ready

0.6/3 GHz to 40/67/110 GHz

Main Features

- Dimensions: 3.45 m (L) x 1.70 m (W) x 1.99 m (H)
- CATR (up to 2x2), DFF (up to 4x4) and SNF configurations
- Mains power: 100-240 VAC 50-60 Hz
- **5G (EN-DC, NR-DC, SA, SA CA, RedCap) FR1+FR2** OTA testing
- 3GPP TR38.810 ready for 5G OTA Testing
- **Bluetooth, WLAN, 2G, 3G, 4G, GPS** OTA testing
- Listed in PTCRB
- MIMO Graphic User Interface (GUI) for Windows OS
- **Fully automated measurements** and test instrument control
- 36 cm quiet zone and 8 Kg DUT weight (extensions up to 60 cm and 50 Kg)
- Serrated reflector, lateral feed
- Smartphone, tablet and laptop holders
- Phantom holders (head, hands, forearm, chest)
- **Passive and Active SISO/MIMO measurements**
- Selected by leading US carrier
- RF isolation (shielding): > 80 dB
- 5G OTA KPIs with <0.5 dB STD repeatability
- MIMO Analysis software (MIMO Studio) for Windows OS
- Windows, Android, iOS, Mac OS, Linux, UWP and Tizen UE apps
- GigE/DB9/FO/USB(USB-PD 3.1) Waveguide penetrations (optional)
- AC/DC filters for DUT power supply (optional)
- **Climatic chamber for temperature and humidity** test set and control [-10 to 70°C with $\pm 0.5^\circ\text{C}$ & 10% to 90% RH with $\pm 0.5\%$ to $\pm 3\%$]

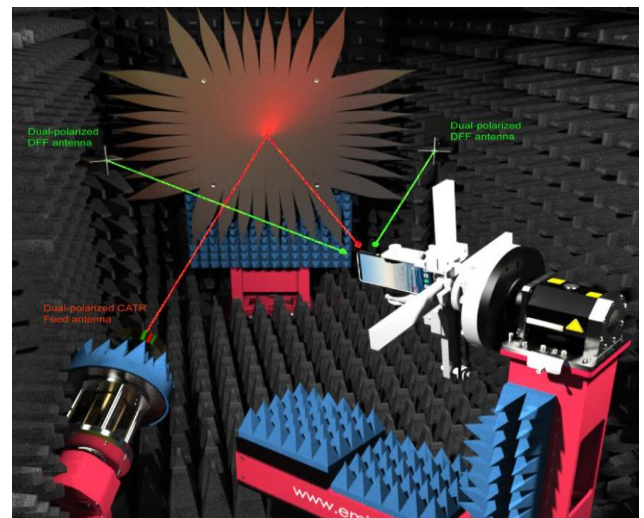


Measurement system

The EMITE H300 5G OTA Test System comprises a medium-size anechoic chamber, with default Compact Antenna Test Range (CATR) with a precision reflector, a lateral-positioned tower and feed antenna system for the frequency range 7.25 to 110 GHz, a 3D AuT/DuT fully-automated 0.03°-accurate positioning system for up to 8kg DUTs with a 36cm quiet zone (can be extended to 60cm and 50Kg) and an additional direct far field feed antenna for the range 600 MHz to 7.25 GHz. Capable of testing beamforming and 5G signaling Key Performance Indicators including Total Radiated Power (AC TRP), Effective Isotropic Radiated Power (EIRP), Error Vector Magnitude (EVM), Effective Isotropic Sensitivity (EIS), Frequency Error, Occupied Bandwidth (OBW, Adjacent Channel Leakage Power Ratio (ACLR) and Spectrum Emission Mask (SEM), among others. The H300 is the only OTA test system in the market capable of testing FR1+FR2 bands combinations in a simultaneous manner. With unheard-off reflector-manufacturing accuracies, which results into extremely good phase accuracies, the H300 can be connected to a gNodeB emulator for active OTA measurements of 5G devices. With a variety of Operating Systems at the 5G UE, uplink and downlink FTP/TCP/UDP Throughput and latency measurements are also readily available.

The H300 OTA CATR + DFF + SNF Test Range provides complete 3D performance assessment for 5G devices and antennas from 0.6 up to 110 GHz, capable of supporting 5G Sub-6 GHz (from 410 MHz to 7.125 GHz) and mmWave (24.25 to 52.6 GHz) standardized OTA testing in accordance to 3GPP TR38.810, TR37.842 and TR38.101, VzW OTA Test Plan and PTCRB.

Aerospace-used technology is built into our H300 test range. With serrated reflectors providing unique 15 μm peak-to-peak roughness and high accuracy 0.03° positioners, with both roll over azimuth and roll over elevation. The H300 is undoubtedly a best-in-its-type chamber, and the only one in the market capable of testing FR1 Sub-6 GHz and FR2 mmWave frequencies in a simultaneous manner. Additionally, an optional climatic enclosure allows for 5G OTA testing under controlled temperature (from -10 to 70°C) and humidity (from 10% to 90% RH) conditions.



IFF-CATR, DFF and NTF-SNF permitted OTA Test Methods as per 3GPP TR 38.810 allow for a unique combination of features over the widest frequency range in the market

www.emite-ing.com

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0.6/3 GHz to 40/67/110 GHz

Unique Features – only with EMITE

- Excellent 15 μ m peak-to-peak reflector roughness for high quiet zone phase accuracy
- 36cm QZ with $<0.5\text{dB}/\pm 5^\circ$ amplitude/phase ripple
- Carbon-loaded polystyrene absorbers, extreme durability
- Roll over azimuth and elevation over azimuth
 - Max load 8 kg
- 600 mm x 900 mm door with double-pivoting hinges
- Dual-polarized feed antenna, unique bandwidth
- Typical Accuracies 0.03°
- Standard Backlash 1 to 6 arc min
- Climatic chamber for temperature and humidity control
- UE automated flipping module

Key Performance Indicators

Passive measurements:

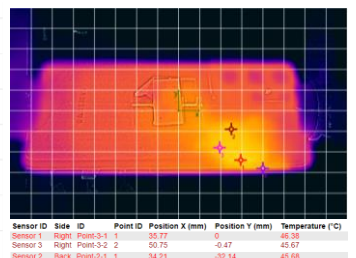
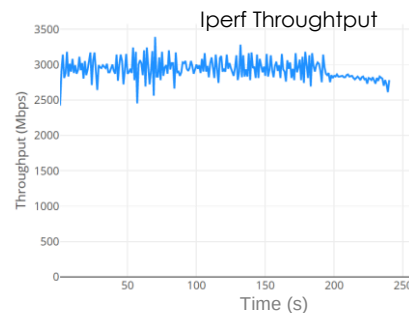
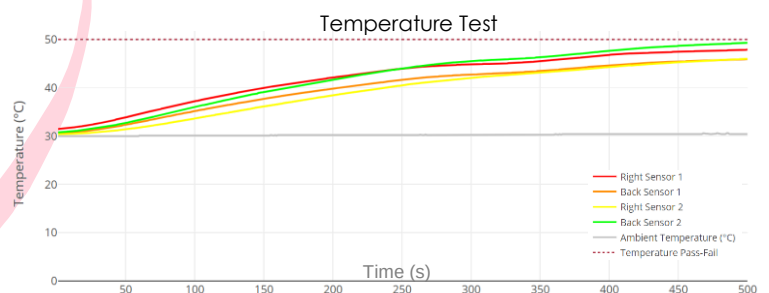
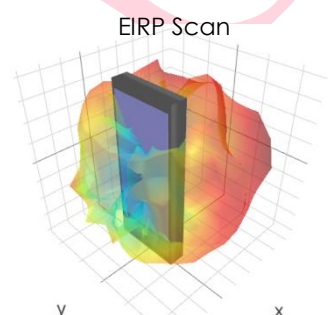
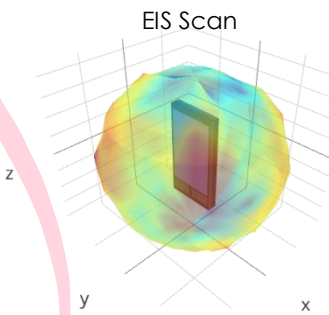
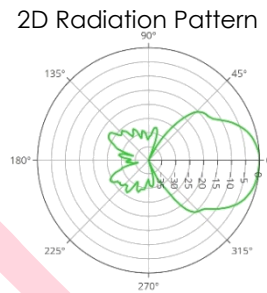
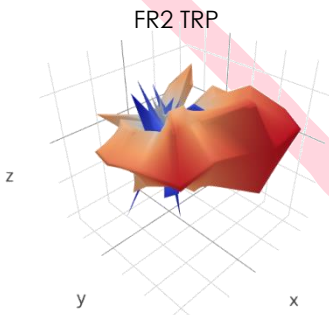
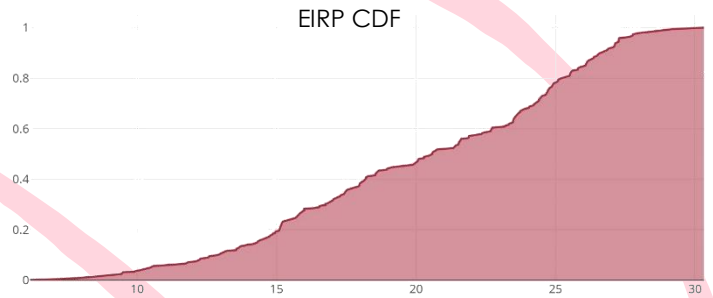
- 2D&3D radiation pattern
- Directivity, Gain, Efficiency, Beamwidth
- Cross Polarization Ratio (XPR)
- Axial Ratio (AR)
- Front to Back Ratio (FBR)

Active measurements:

- EIS @ RX Beam Peak Direction
- EIRP @ TX Beam Peak Direction
- TX / RX Beam Peak Search
- Modulation analysis (EVM, Freq. Error)
- Spectrum Emission Mask (SEM)
- Occupied Bandwidth (OBW)
- Adjacent Channel Leakage Ratio (ACLR)
- In-Band Blocking (IBB) @ RX Beam Peak Direction
- Full Spherical Coverage / CDF of EIRP & EIS
- Total Radiated Power (AC TRP)
- Total Isotropic Sensitivity (AC TIS)
- DL/UL MAC/IP(TCP/UDP/FTP) Throughput
- Coexistence and Interference testing
- Others (E2E latency, RF latency, etc)

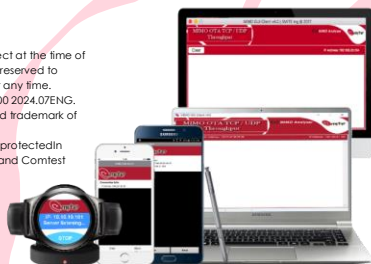
Thermal measurements:

- DUT hot-spot identification
- MAC/IP(TCP/UDP/FTP) Throughput vs Time
- Downlink, Uplink and bi-directional data traffic
- Real-time temperature monitoring



Sensor ID	Side	ID	Point ID	Position X (mm)	Position Y (mm)	Temperature (°C)
Sensor 1	Right	Point-3-1	1	35.77	0	46.36
Sensor 3	Right	Point-3-2	2	50.75	-2.47	45.67
Sensor 2	Back	Point-2-1	1	34.21	-32.14	45.68
Sensor 4	Back	Point-2-2	2	29	-12.06	44.14

This data sheet was correct at the time of going to print. The right is reserved to change specifications at any time.
Data Sheet EMITE Ing H300 2024.07ENG.
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