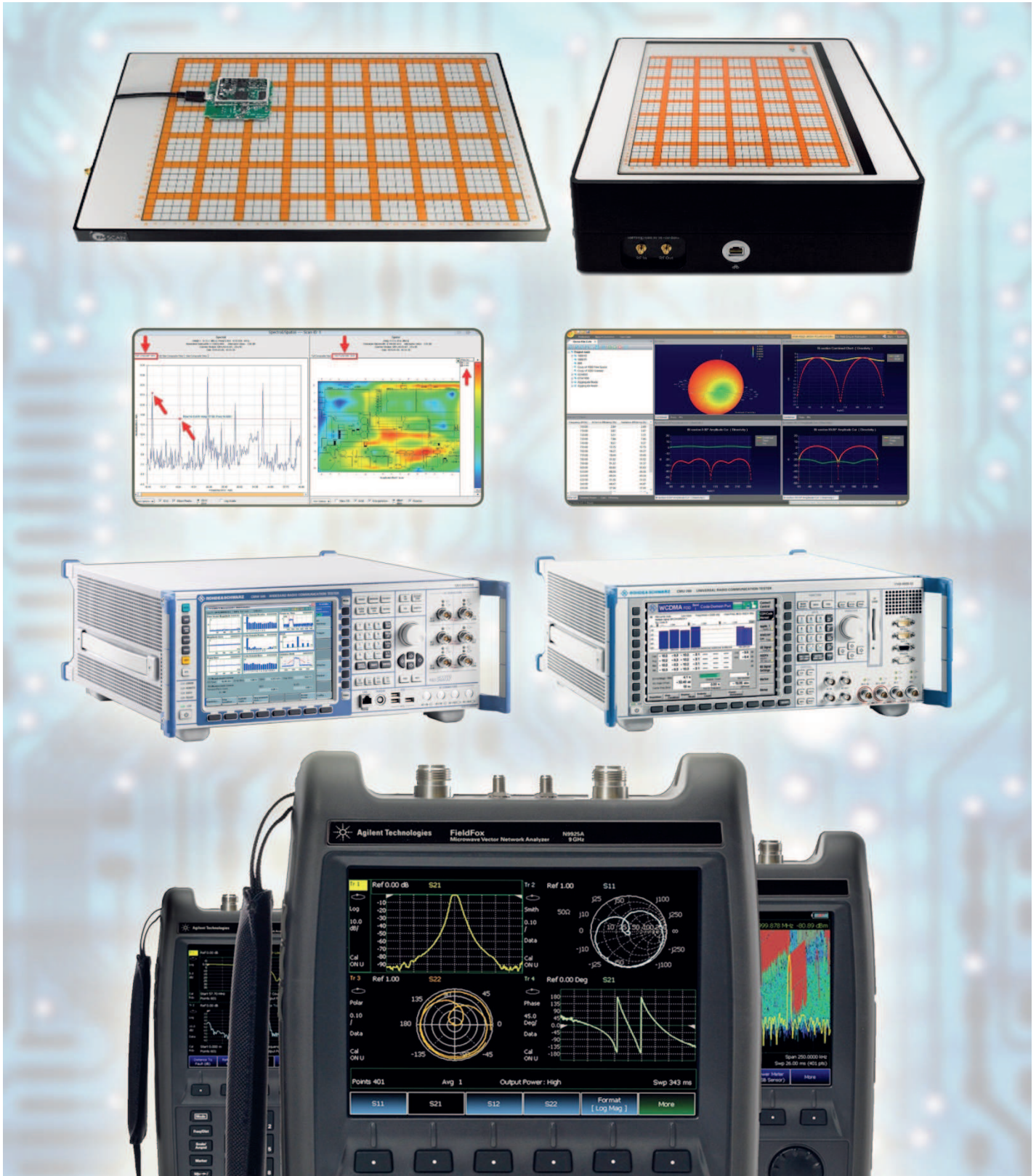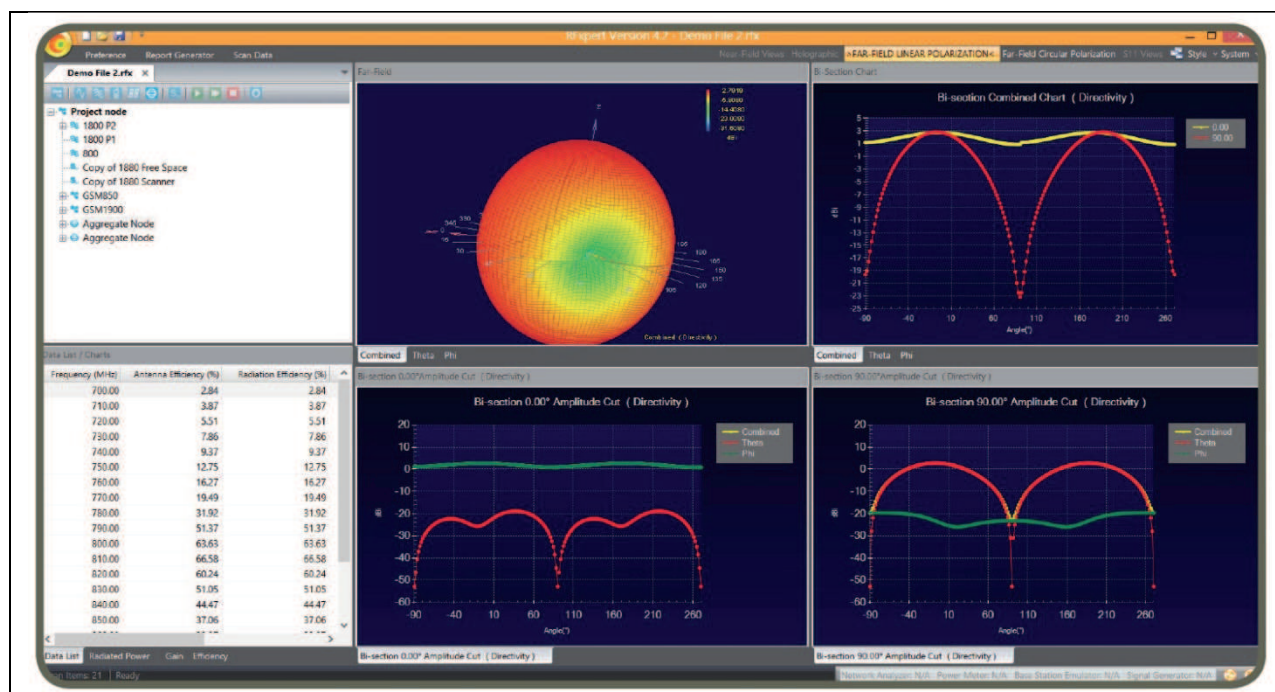# EMScan Lab Services

EMScan Lab Services

Fig. 1- Real Time Antenna Measurement

- Cellular, M2M
- CAT and NB1
- GSM,WCDMA,LTE
- RFID, GPS, Wi-Fi, BT
- CP Antenna Test
- Sample Lot Testing
- Stand Alone Antenna
- Base Station Antenna
- Phase Array Antenna

- OTA Production Testing
- Rapid OTA Phantom Kit
- Smart Antennas (MIMO)
- IoT Antenna Performance
- Embedded Antenna Design
- Antenna Design and Test Lab
- Antenna Pattern Measurement
- Anechoic Chamber Alternative

Features and Functions

- *300 MHz - 6 GHz*
- *1,600 H-field probes*
- *Far-field resolution: 1.8° for theta and 3.6° for phi*
- *Test CP (circularly polarized) antennas.*
- *Analyze your embedded Antenna and wireless device.*
- *Iteratively test and optimize embedded antenna design.*
- *Perform highly repeatable and rapid over-the air wireless device measurements.*
- *Get repeatable & reliable results that pinpoint the cause of a design failure*
- *Verify final product performance in real time.*
- *Gain immediate insight into the root causes of performance issues analyzing the near-field results.*
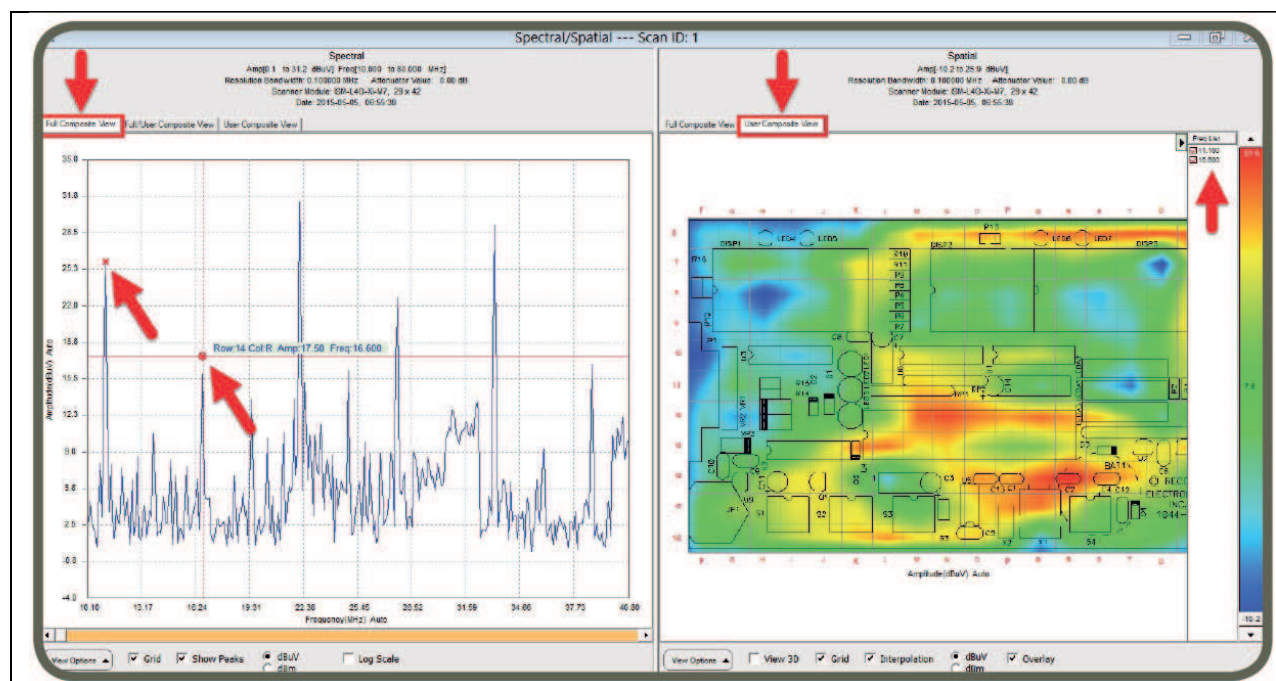
EMScan Lab Services

Fig. 2- Real Time EMC and EMI Testing

- Filtering
- Shielding
- Immunity
- Signal Integrity
- Common Mode
- Broadband Noise
- IC Level EMC Test
- NFC Antenna Testing

- Current Distribution
- Emissions Along Traces
- Good Board vs. Bad Board
- Material Properties Scanning
- Absorber effectiveness Testing
- High Resolution EMC Scanner
- Manufacturing Problem Solving
- Self-interference /desense problems

Features and Functions

- *150 kHz - 8 GHz*
- *1,218 H-field probes*
- *Analyze High Speed / High Power PCB Design*
- *Analyze High Speed / High Density PCB Design*
- *Visualize the root cause of Design Failure even when the problem is intermittent.*
- *Pinpoint the cause of design failure even when the problem*
- *Zoom into the problem area after locating the unintended radiators in seconds*
- *Get repeatable & reliable results that pinpoint the cause of a design failure*
- *Address EMC & signal integrity concerns in the design of ultra-high speed (>2 GHz) PCBs*

EMScan Lab Services

TRP measurement:
Top / Head side

Rotate turntable for next measurement

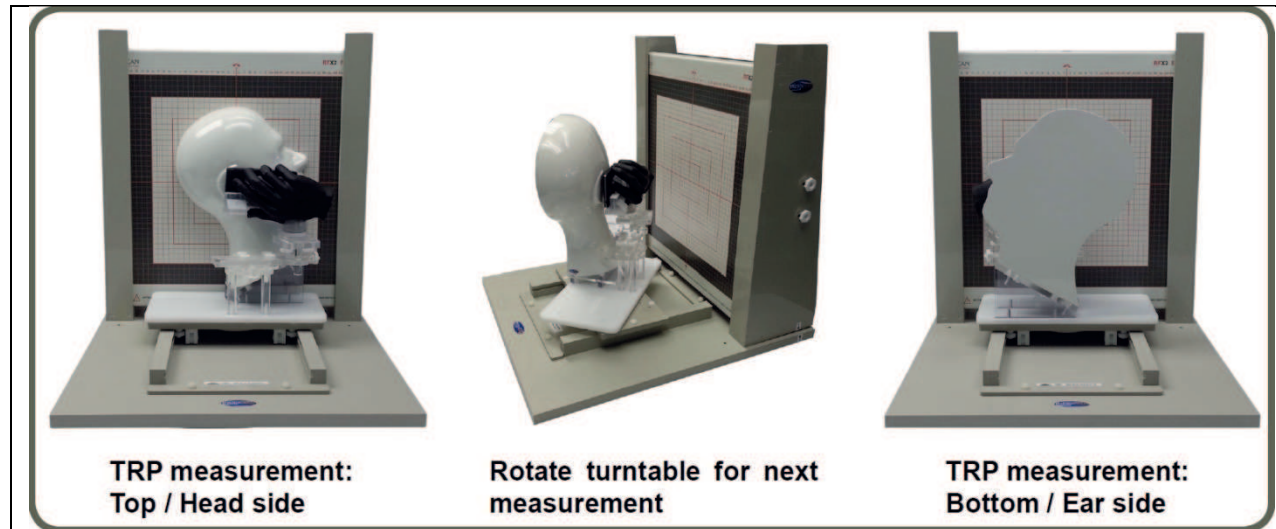**TRP measurement:**
Bottom / Ear side

Fig. 3 – TRP and OTA Measurement

- **TRP: Absolute radiated power measurement with a 2-sigma accuracy of +/- 1.6 dB or relative *PASS/FAIL* radiated power comparison with a +/- 0.5 dB accuracy.**

- **Pattern: Rapid *PASS/FAIL* pattern comparison; important for devices designed with beam forming or other adaptive capabilities.**

- **Dynamic effects: Detuning due to body parts can be evaluated in a production line with a phantom kit**

- **Tuneable Antennas: Very fast frequency by frequency measurement capabilities helps you verify the antennas are tuning to the frequency as expected.**

Features and Functions

- *Tests in compliant CTIA chambers have shown that results from a half + head and a full head show good correlation. A +/- 2 dB accuracy with two rotated half-head measurements compared to a CTIA chamber should be possible, given typical OTA measurement uncertainties.*

- *Far-Field Applications includes:*

    a. *Predict the Open Area Test Site (OATS) or Semi Anechoic Chamber (SAC) radiated EMI levels of a printed circuit board (PCB).*
    b. *Far-Field application supports 30 MHz - 1 GHz regulatory compliance limits Class A or Class B FCC, CISPR and Industry Canada, 10m, 3m and 1m test distances*

www.emscanlab.com

info@emscanlab.com   1-786-205-7022