

# RESEARCH, DEVELOPMENT AND TESTING NATIONAL INSTITUTE FOR ELECTRICAL ENGINEERING

## Laboratory for SAR Evaluation and Certification at Mobile Phone Terminals

### Main Equipment

- ◇ SAR dosimetry equipment - Satimo.
- ◇ Data acquisition and processing software
- ◇ System for calibration and validation of local E&H field measurements and temperature - Satimo.
- ◇ Measurement kit for complex dielectric permittivity of simulation liquid - Satimo
- ◇ Simulator/wireless network for standards in force(GSM, CDMA, UMTS, DECT, WLAN etc.) - CMU200 Rohde&Schwarz
- ◇ Measurement kit for mobile phone operation autonomy, consisting in:
  - DC/AC programmable power supply - SW1750A-2 Xantrex
  - Operation autonomy measuring apparatus - GS610Yokogawa
- ◇ Portable SAR measurement device - Maschek.
- ◇ Dosimeter for mobile terminals - Maschek.
- ◇ Wideband amplifier - Parzich.
- ◇ Digital oscilloscope - Lecroy.
- ◇ Digital simulation software for electromagnetic field penetration into human body - CST Studio Suite



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**Achievement of the first Romanian laboratory for SAR (Specific Absorption Rate) evaluation at mobile phone terminals (2007 - 2009) in the frame of PNCDI II, Capacities Programme, no. 79/2007, financed by ANCS (Romanian Agency for Scientific Research)**

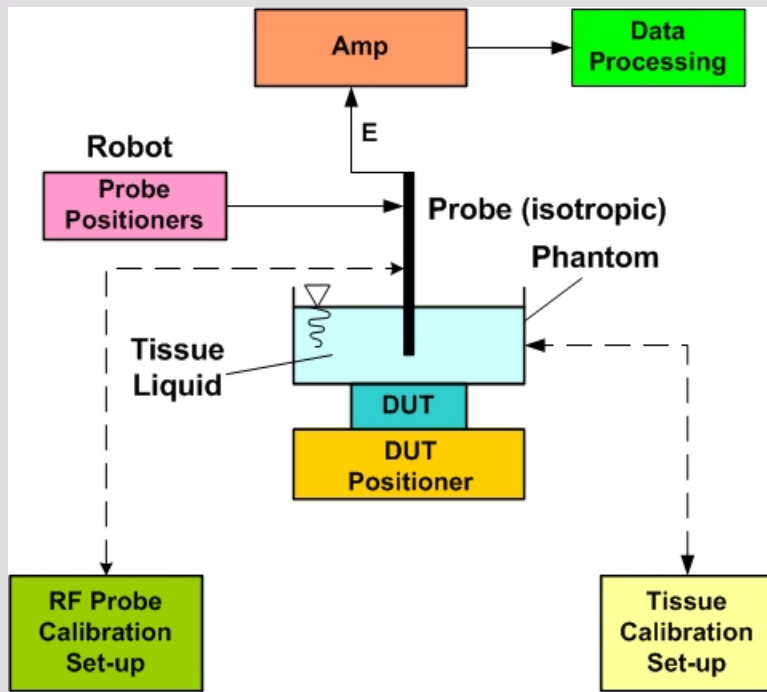
**The laboratory provides tests compliant with the international regulations in force, taking into account the development and rapid innovation of the wireless technology, aiming at people protection in relation with harmful influence of electromagnetic radiation.**

### European/International EMF standards

- ▶ **EN 50360: Products standard mobile phone handsets**
- ▶ **EN 50361: Basic standard mobile phone handsets**
- ▶ **IEC 62209-1(up to 3GHz): Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices**

### Main Technical characteristics

- ▶ Complete Measurement Scan  $\leq 10$  minutes
- ▶ Generate Reports Automatically 2D/3D
- ▶ Fully Integrated System
- ▶ Total Measurement Uncertainty  $\leq 3$  dB, typically 1,5 dB



Block Diagram of SAR Dosimetry Lab

### The laboratory is able to carry on the following activities:

- ▶ Experimental dosimetry and numerical simulation for mobile phones;
- ▶ Testing technologies for small dimension mobile terminals (WLAN, Bluetooth, ZigBee etc);
- ▶ Bioelectromagnetism matters;
- ▶ Pacemaker implants behaviour;
- ▶ Risk evaluation of mobile phones use in conformity with the safety standards;
- ▶ Interlaboratory comparisons;
- ▶ Market surveillance.

