Deutscher Akkreditierungs Rat

**No. DAT-P-114/01-01**

# TEST REPORT

## No. 2008TAR002

| | |
|---|---|
| **Product** | OT-V770A |
| **Model** | LAVA A |
| **Client** | T&A Mobile Phones |

**Telecommunication Metrology Center**

**of Ministry of Information Industry**

# Notice

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| | | | |
|---|---|---|---|
| **Product** | OT-V770A | **Model** | LAVA A |
| | | **Trade mark** | |
| **Client** | T&A Mobile Phones | | |
| **Manufacturer** | T&A Mobile Phones | | |
| **Arrival Date of sample** | Dec 25th, 2007 | **Carrier of the samples** | Qiang Wang |
| **Quantity of the samples** | 1 | **Date of product** | / |
| **Series number** | EUT1: 011432000000903 | | |
| **Standard(s)** | FCC Part 15 (10-1-06 Edition) | | |
| **Conclusion** | **Final Judgment: Pass**<br><br>Date of issue: 2008-01-08 | | |
| **Comment** | The test result relates only to the tested samples. | | |

**Approved by** (Lu Bingsong) **Reviewed by** (Sun Xiangqian) **Tested by** (Zi Xiaogang)

(Lu Bingsong - **Deputy Director of the laboratory**)

# 1. COMPETENCE AND WARRANTIES

**Telecommunication Metrology Center of Ministry of Information Industry(hereinafter TMC)** is a test laboratory accredited by DAR (DATech) – Deutschen Akkreditierungs Rat (Deutsche Akkreditierungsstelle Technik), for the tests indicated in the Certificate No. **DAT-P-114/01-01**.

**TMC** is a test laboratory accredited by CNAS–China national Accreditation Service for Conformity Assessment, for the tests indicated in the Certificate No. **L0442**.

**TMC** is FCC listed lab. FCC listed number is **733176**.

The test site in **TMC** is registered in Industry Canada. The IC registration number is **6629.**

**TMC** is a testing laboratory competent to carry out the tests described in this report.

**TMC** guarantees the reliability of the data presented in this report, which is the result of measurements and tests performed to the item under test on the date and under the conditions stated on the report and is based on the knowledge and technical facilities available at TMC at the time of execution of the test.

**TMC** is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the item under test and the results of the test.

# 2. Testing Laboratory

## 2.1 Testing Location

| | |
|---|---|
| Company Name: | Telecommunication Metrology Center of Ministry of Information Industry |
| Address: | No 52, Huayuan beilu, Haidian District, Beijing,P.R.China |
| Postal Code: | 100083 |
| Telephone: | 00861062303288 |
| Fax: | 00861062304793 |

## 2.2 Testing Environment

**Semi-anechoic chamber** (23 meters×17meters×10meters) did not exceed following limits along the EMC testing:

| | |
|---|---|
| Temperature | Min. = 15 ℃, Max. = 30 ℃ |
| Relative humidity | Min. = 30 %, Max. = 60 % |
| Shielding effectiveness | > 110 dB |
| Electrical insulation | > 10 kΩ |
| Ground system resistance | < 0.5 Ω |
| Normalised site attenuation (NSA) | < ±3.2 dB, 10 m distance, from 30 to 1000 MHz |
| Uniformity of field strength | Between 0 and 6 dB, from 26 to 1000 MHz |

**Control room** did not exceed following limits along the EMC testing:

| | |
|---|---|
| Temperature | Min. = 15 ℃, Max. = 35 ℃ |
| Relative humidity | Min. =30 %, Max. = 60 % |
| Shielding effectiveness | > 110 dB |
| Electrical insulation | > 10 kΩ |
| Ground system resistance | < 0.5 Ω |

**Conducted chamber** did not exceed following limits along the EMC testing:

| | |
|---|---|
| Temperature | Min. = 15 ℃, Max. = 30 ℃ |
| Relative humidity | Min. = 30 %, Max. = 60 % |
| Shielding effectiveness | > 110 dB |
| Electrical insulation | > 10 kΩ |
| Ground system resistance | < 0.5 Ω |

**Fully-anechoic chamber** (6.8 meters×3.08 meters×3.53 meters) did not exceed following limits along the EMC testing:

| | |
|---|---|
| Temperature | Min. = 15 ℃, Max. = 30 ℃ |
| Relative humidity | Min. = 30 %, Max. = 60 % |
| Shielding effectiveness | > 110 dB |
| Electrical insulation | > 10 kΩ |
| Ground system resistance | < 0.5 Ω |
| Uniformity of field strength | Between 0 and 6 dB, from 26 to 1000 MHz |

### 2.3 Testing Period

| | |
|---|---|
| Testing Start Date: | Jan 4,2008 |
| Testing End Date: | Jan 7,2008 |

## 3. Applicant Information

### 3.1 Client Information

| | |
|---|---|
| Name or Company | T&A Mobile Phones |
| Address/Post | 4F, South Building, No.2966, JinKe Road, Zhangjiang High-Tech Park Shanghai 201203, P.R.China |
| City | Shanghai |
| Postal Code | 201203 |
| Country | China |
| Telephone | 0086-21-61460885 |
| Fax | 0086-21-61460602 |

### 3.2 Manufacture Information

| | |
|---|---|
| Name or Company | T&A Mobile Phones |
| Address/Post | 4F, South Building, No.2966, JinKe Road, Zhangjiang High-Tech Park Shanghai 201203, P.R.China |
| City | Shanghai |
| Postal Code | 201203 |
| Country | China |
| Telephone | 0086-21-61460885 |
| Fax | 0086-21-61460602 |

## 4. Equipment under Test (EUT) and Ancillary Equipment (AE)

### 4.1 About EUT

| | |
|---|---|
| Model | LAVA A |
| Description | OT-V770A |
| FCC ID | RAD068 |
| Hardware status | PIO2 |
| Software status | V225 |
| Power supply | Battery or Charger (AC Adaptor) |

### 4.2 Internal Identification of EUT used during the test

| EUT ID | SN or IMEI | HW Version | SW Version |
|---|---|---|---|
| EUT1 | 011432000000903 | PIO2 | V225 |

### 4.3 Photographs of EUT

Photographs of MS Hand Telephone Set and Charger are respectively shown in ANNEX B of this test report.

## 5. SUMMARY OF TEST RESULTS

| **Abbreviations used in this clause:** | |
|---|---|
| P | Pass |
| NA | Not applicable |
| F | Fail |

| Clause | List | Clause in FCC rules | Verdict |
|---|---|---|---|
| 1 | Radiated Emission | 15.109(a) | P |
| 2 | Conducted Emission | 15.107(a) | P |

## 6. MAIN TEST INSTRUMENTS

| NO. | Description | TYPE | SERIES NUMBER | MANUFACTURE | CAL DUE DATE |
|---|---|---|---|---|---|
| 1 | Test Receiver | ESS | 847151/015 | R&S | 2008-10-30 |
| 2 | Test Receiver | ESI40 | 831564/002 | R&S | 2008-2-11 |
| 3 | BiLog Antenna | 3142B | 9908-1403 | EMCO | 2008-1-16 |
| 4 | BiLog Antenna | VUL9163 | 9163 175 | Schwarzbeck | 2009-9-19 |
| 5 | Signal Generator | SMT06 | 831285/005 | R&S | 2008-12-26 |
| 6 | Signal Generator | SMP04 | 100070 | R&S | 2008-4-20 |
| 7 | LISN | ESH2-Z5 | 829991/012 | R&S | 2008-8-13 |
| 8 | Spectrum Analyzer | E4440A | MY41000262 | Agilent | 2008-4-18 |
| 9 | Universal Radio Communication Tester | CMU200 | 100680 | R&S | 2008-8-23 |
| 10 | Dual-Ridge Waveguide Horn Antenna | 3115 | 9906-5827 | EMCO | 2008-3 |
| 11 | Dual-Ridge Waveguide Horn Antenna | 3116 | 2663 | EMCO | 2008-3 |
| 12 | Dual-Ridge Waveguide Horn Antenna | 3116 | 2661 | EMCO | 2008-3 |
| 13 | Climatic chamber | SH-241 | 92003546 | ESPEC | 2008-5-15 |
| 14 | Spectrum Analyzer | FSU26 | 200030 | R&S | 2008-6-19 |
| 15 | Bluetooth Tester | MT8852A | 6K0002698 | Anritsu | 2009-3-19 |

# ANNEX A MEASUREMENT RESULTS

## A.1 Radiated Emission (§15.109(a))

### A.1.1 Method of measurement

The field strength of radiated emissions from the unintentional radiator (USB mode of MS) at a distance of 3 meters is tested. The test set-up please refers to Annex C.1.

### A.1.2 EUT Operating Mode:

The MS is operating in the USB mode. During the test MS is connected to a laptop via a USB cable. The model of the laptop is IBM T42 2373-M6C, and the serial number of the laptop is 99-FV6P2. The software is used to let the laptop keep on copying data to MS, reading and erasing the data after copy action was finished.

### A.1.3 Measurement Limit

| Frequency of emission (MHz) | Field strength (microvolts/meter) |
|---|---|
| 30-88 | 100 |
| 88-216 | 150 |
| 216-960 | 200 |
| Above 960 | 500 |

### A.1.4 Measurement Results

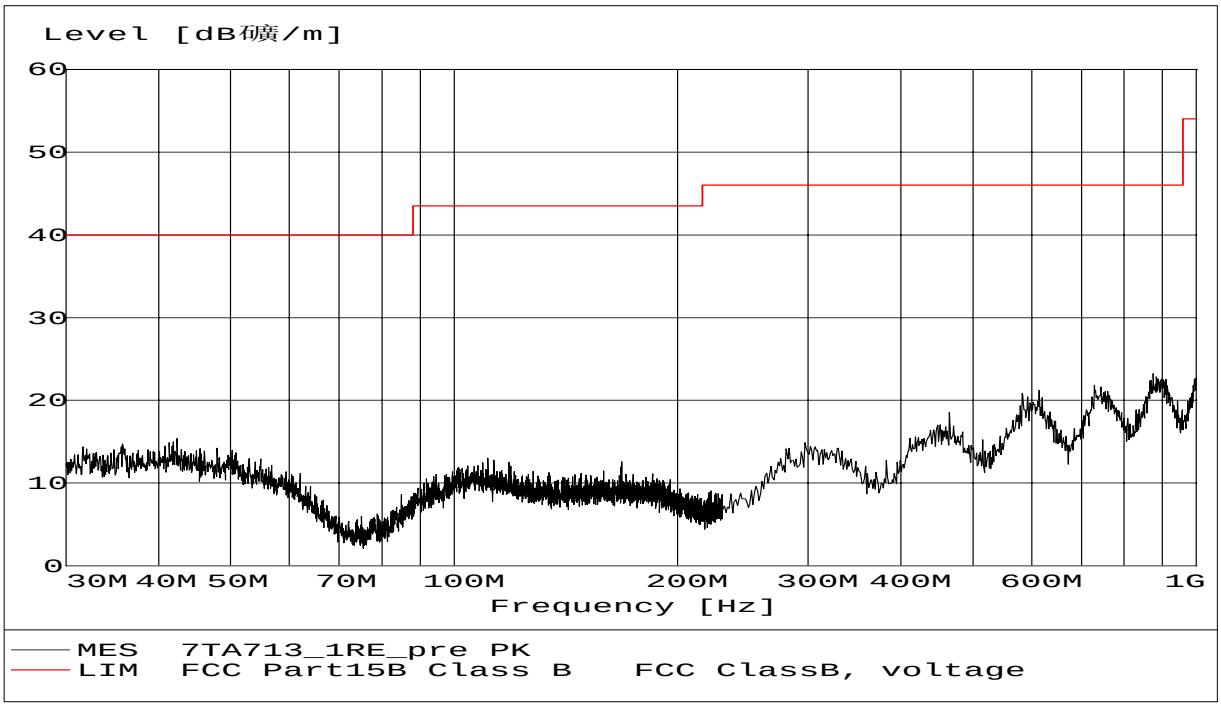



**Figure A.1 Radiated Emission from 30MHz to 1GHz**

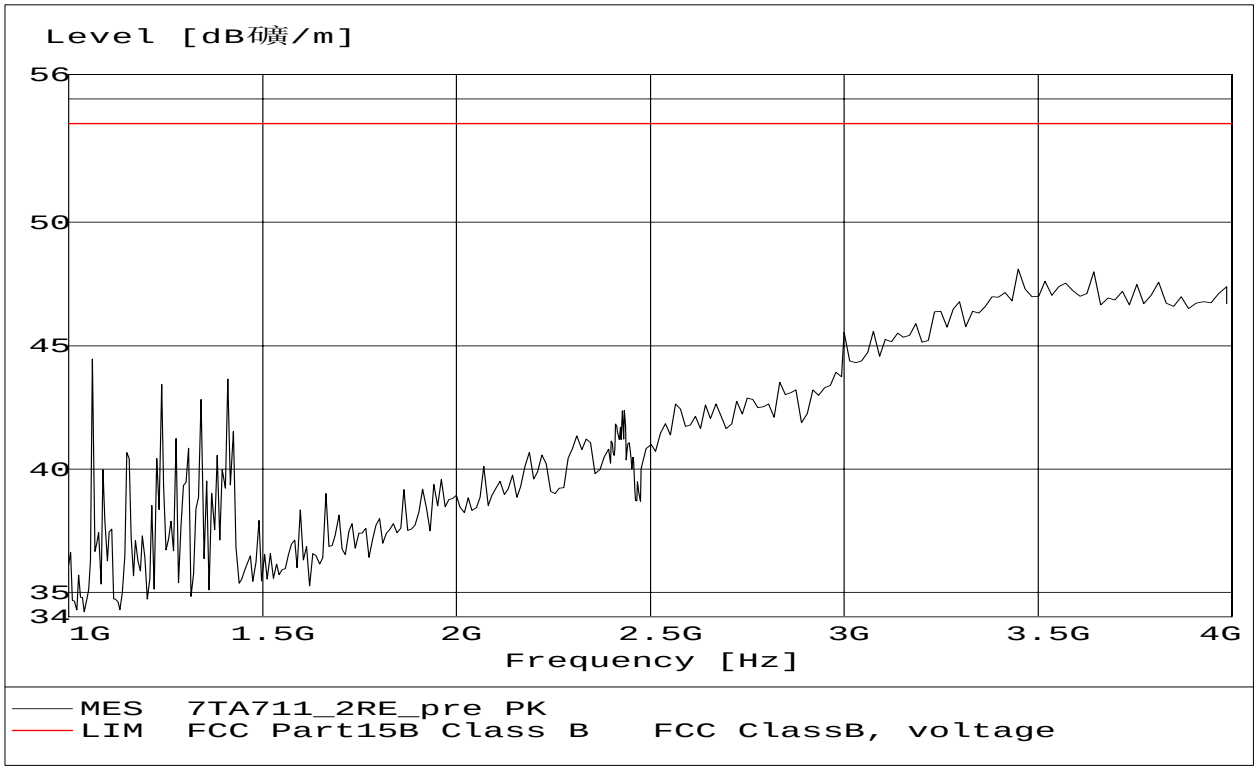



**Figure A.2 Radiated Emission from 1GHz to 4GHz**

## A.2 Conducted Emission (§15.107(a))

### A.2.1 Method of measurement

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30MHz shall not exceed the limits. The test set-up please refers to Annex C.2.

### A.2.2 EUT Operating Mode:

The MS is operating in the USB mode. During the test MS is connected to a laptop via a USB cable. The model of the laptop is IBM T42 2373-M6C, and the serial number of the laptop is 99-FV6P2. The software is used to let the laptop keep on copying data to MS, reading and erasing the data after copy action was finished.

### A.2.3 Measurement Limit

| Frequency of emission (MHz) | Conducted limit (dBμV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |
| *Decreases with the logarithm of the frequency | | |

### A.2.4 Measurement Results

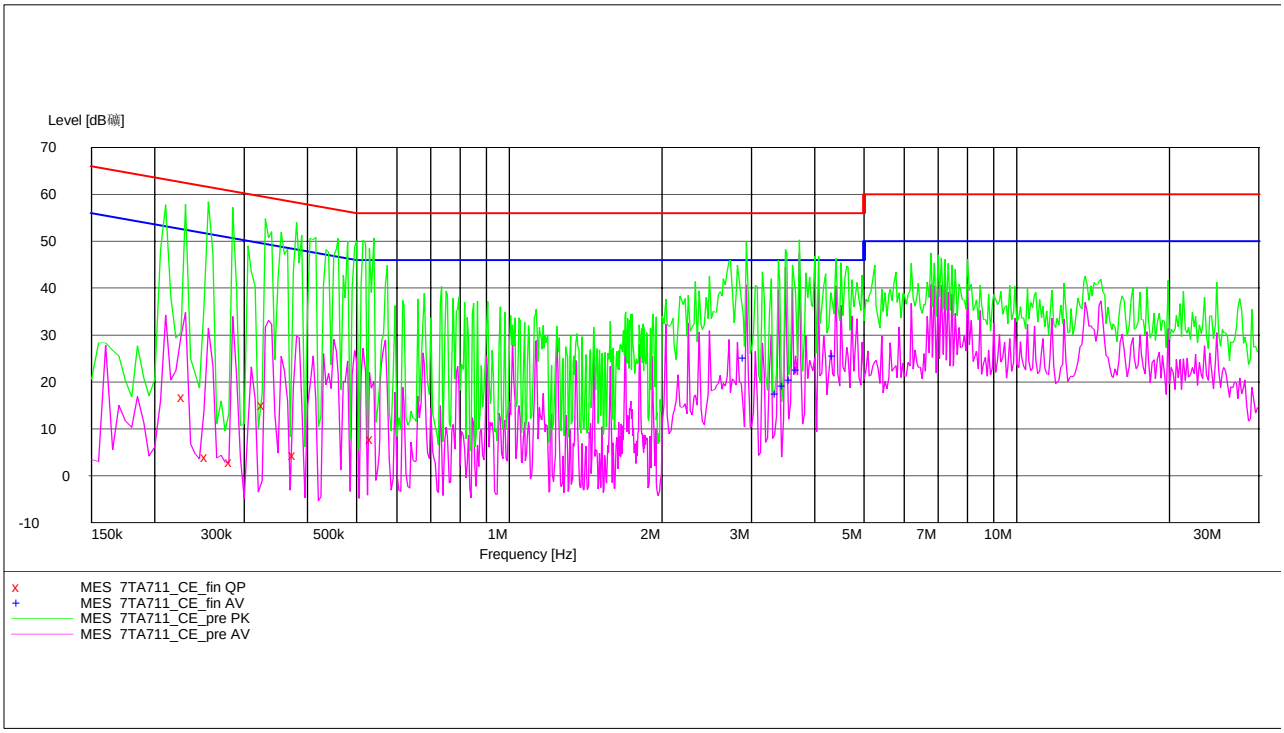



**Figure A.3 Conducted Emission**

**MEASUREMENT RESULT: "7TA711_DC_fin QP"**

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Line | PE |
|---|---|---|---|---|---|---|
| 0.230000 | 16.80 | 10.1 | 62 | 45.7 | L1 | GND |
| 0.255000 | 4.10 | 10.1 | 62 | 57.5 | L1 | FLO |
| 0.285000 | 3.00 | 10.1 | 61 | 57.7 | L1 | GND |
| 0.330000 | 15.00 | 10.1 | 60 | 44.4 | L1 | GND |
| 0.380000 | 4.50 | 10.1 | 58 | 53.8 | L1 | GND |
| 0.540000 | 7.90 | 10.1 | 56 | 48.1 | L1 | GND |

**MEASUREMENT RESULT: "7TA711_DC_fin AV"**

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Line | PE |
|---|---|---|---|---|---|---|
| 2.931808 | 25.20 | 10.1 | 46 | 20.8 | L1 | GND |
| 3.383959 | 17.50 | 10.1 | 46 | 28.5 | L1 | GND |
| 3.493552 | 19.10 | 10.1 | 46 | 26.9 | L1 | GND |
| 3.606695 | 20.40 | 10.1 | 46 | 25.6 | N | GND |
| 3.723501 | 22.50 | 10.2 | 46 | 23.5 | N | GND |
| 4.401723 | 25.50 | 10.2 | 46 | 20.5 | L1 | GND |

# ANNEX B PHOTOGRAPH OF EUT

**External Photo**


**Mobile Phone**


**Mobile Phone**

**Charger (AC/DC Adapter)**

**Data Line**


**Label of Charger (AC/DC Adapter)**


**Battery**


**Battery**

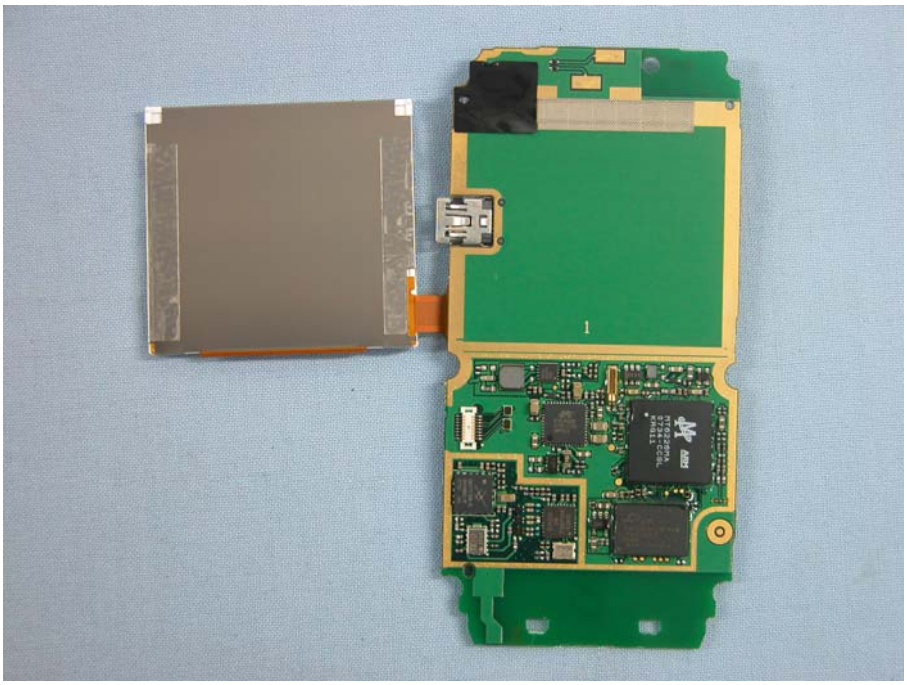
**Internal Photo**


**Mobile phone Disassembly**

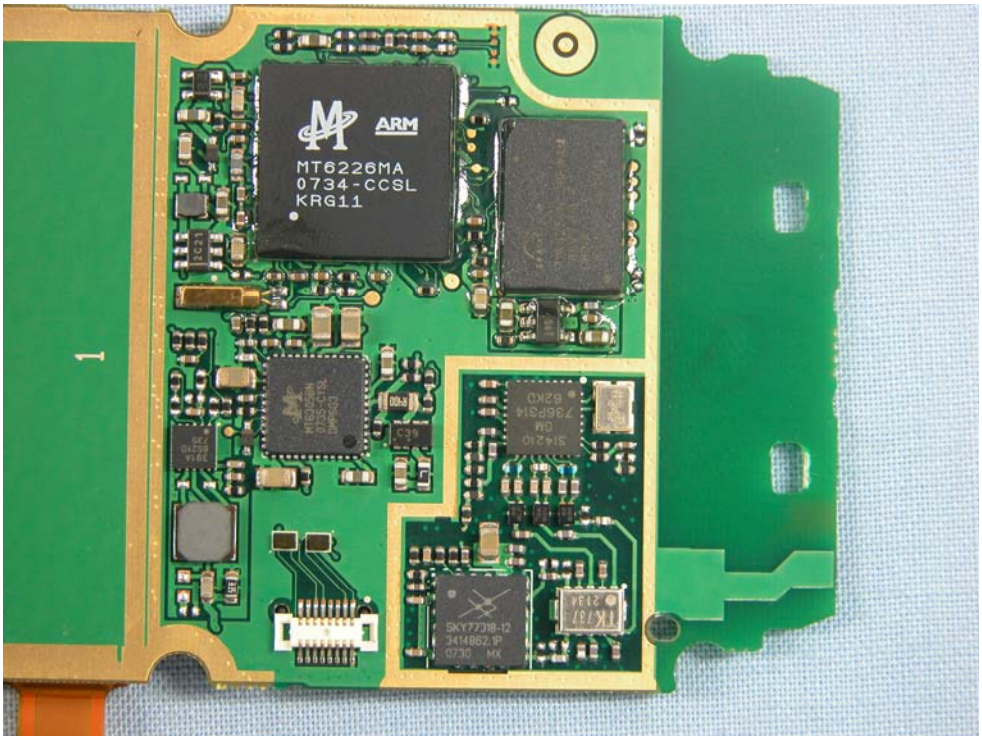

**Mobile phone Disassembly**


**Mobile phone Disassembly**


**Mobile phone Disassembly**

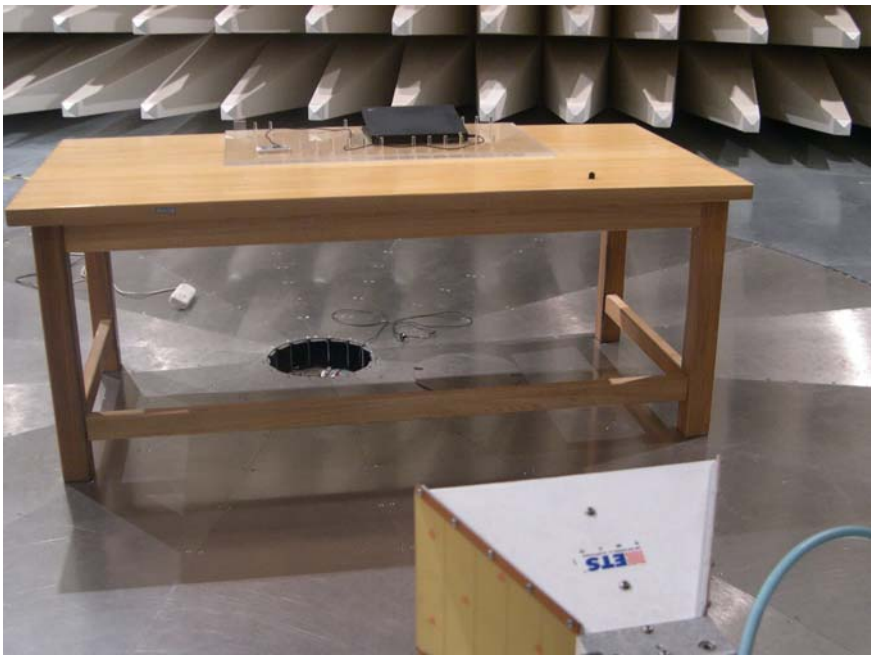


**Mobile phone Disassembly**

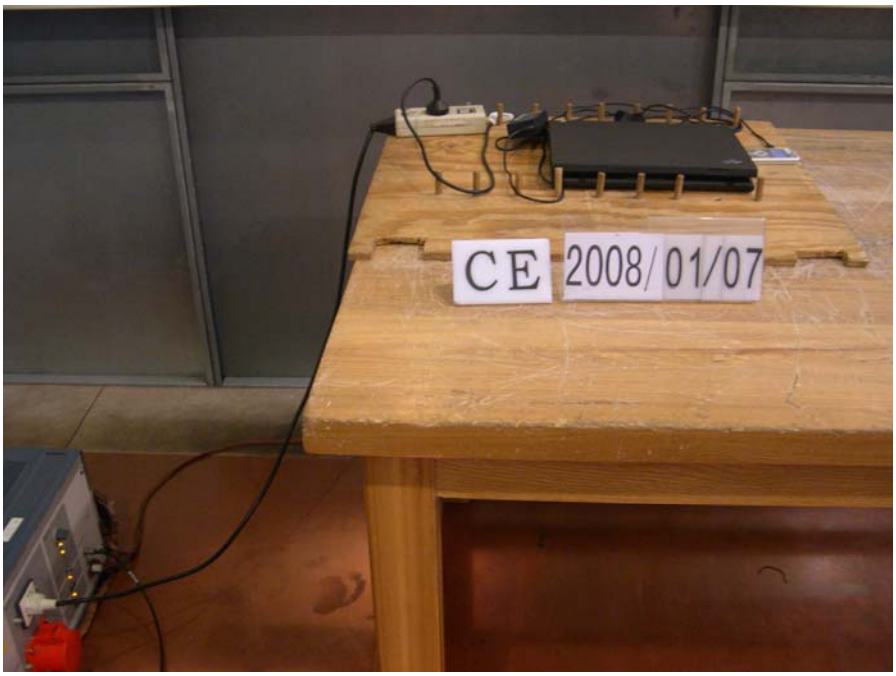



**Mobile phone Disassembly**

## ANNEX C TEST LAYOUT



**Pic C.1 Radiated Emission**




**Pic C.2 Conducted Emission**

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