



Report No.: SZ11060134H02

# HAC TEST REPORT

Issued to

**Teleepoch Limited**

For

**Mobile phone**

Model Name : VM2090PDKIT180; Wi921;  
Trade Name : PCD  
Brand Name : Sienna  
FCC ID : U46-WI921  
Standard : ANSI C 63.19:2007

HAC Level : T-Coil: T3

Test date : 2011-08-23

Issue date : 2011-08-23

Shenzhen MORLAB Communication Technology Co., Ltd.



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2011.08.23

CTIA Authorized Test Lab  
LAB CODE 20081223-00  
IEEE 1725

OTA

OFTA  
電訊管理局



GCF  
Official Observer of  
Global Certification Forum

Bluetooth  
BQTF

FCC  
Reg. No.  
741109

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### 1.1. Identification of the Responsible Testing Laboratory

Company Name: Shenzhen Morlab Communications Technology Co., Ltd.  
Department: Morlab Laboratory  
Address: 3/F, Electronic Testing Building, Shahe Road, Nanshan District, Shenzhen, 518055 P. R. China  
Responsible Test Lab Manager: Mr. Shu Luan  
Telephone: +86 755 86130268  
Facsimile: +86 755 86130218

### 1.2. Identification of the Responsible Testing Location

Name: Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory  
Address: 3/F, Electronic Testing Building, Shahe Road, Nanshan District, Shenzhen, 518055 P. R. China

### 1.3. Accreditation Certificate

Accredited Testing Laboratory: No. CNAS L3572

### 1.4. List of Test Equipments

| No. | Instrument       | Type                                   |
|-----|------------------|----------------------------------------|
| 1   | PC               | Dell (Pentium IV 2.4GHz, SN:X10-23533) |
| 2   | Network Emulator | Rohde&Schwarz (CMU200, SN:105894)      |
| 3   | Voltmeter        | Keithley (2000, SN:1000572)            |
| 4   | Synthesizer      | Rohde&Schwarz (SML_03, SN:101868)      |
| 5   | Amplifier        | Nucl udes (ALB216, SN:10800)           |
| 6   | Power Meter      | Rohde&Schwarz (NRVD, SN:101066)        |
| 7   | Audio DAQ        | NI (MonDAQ, SN:MonNumero)              |
| 8   | Probe            | Antennessa (SN:SN_4108_EPH17)          |
| 9   | HAC holder       | SN02_EPH02 (SN:SN_3608_SUPH16)         |

## 2. Technical Information

Note: the following data is based on the information by the applicant.

### 2.1. Identification of Applicant

Company Name: Teleepoch Limited  
Address: 5A, B1 Building, Digital Tech Zone, High-Tech Park(south), Nanshan district, Shenzhen, Guangdong Province, China

### 2.2. Identification of Manufacturer

Company Name: Teleepoch Limited  
Address: 5A, B1 Building, Digital Tech Zone, High-Tech Park(south), Nanshan district, Shenzhen, Guangdong Province, China

### 2.3. Equipment Under Test (EUT)

Brand Name: Sienna  
Type Name: PCD  
Marking Name: VM2090PDKIT180; Wi921;  
Hardware Version: WI921\_V1.21  
Software Version: N/A  
Frequency Bands: CDMA 800MHz /CDMA 1900MHz  
WIFI: 2412MHz-2462MHz  
BT: 2402MHz-2480MHz  
Modulation Mode: CDMA : CDMA  
WIFI 802.11B : DSSS  
WIFI 802.11G: OFDM  
BT: GFSK  
Antenna type: Fixed Internal Antenna  
Development Stage: Identical prototype  
Battery Model: BTR209  
Battery specification: 1450mAh 3.7V  
HAC Test: CDMA 800; channel 1013, 384, 777, BT OFF, Wifi OFF  
Configurations: CDMA 1900; channel 25, 600, 1175, BT OFF, Wifif OFF

#### 2.3.1. Photographs of the EUT

Please see for photographs of the EUT.

### 2.3.2. Identification of all used EUTs

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

| EUT Identity | Hardware Version | Software Version |
|--------------|------------------|------------------|
| 1#           | WI921_V1.21      | N/A              |

### 2.4. Applied Reference Documents

Leading reference documents for testing:

| No. | Identity                 | Document Title                                                                                                              |
|-----|--------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1   | <b>ANSI C 63.19:2007</b> | American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids |

**Note:** Test report, reference KDB 285076 documents.

## 2.5. Test Environment/Conditions

|                             |                           |         |
|-----------------------------|---------------------------|---------|
| Normal Temperature (NT):    | 20 ... 25 °C              |         |
| Relative Humidity:          | 30 ... 75 %               |         |
| Air Pressure:               | 980 ... 1020 hPa          |         |
| Extreme Voltage of the EUT: | Normal Voltage (NV)       | = 3.70V |
|                             | Low Voltage (LV)          | = 3.60V |
|                             | High Voltage (HV)         | = 4.20V |
| Test frequency:             | CDMA 800MHz/CDMA 1900MHz  |         |
| Operation mode:             | Call established          |         |
| Power Level:                | CDMA Maximum output power |         |

During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established.

The Absolute Radio Frequency Channel Number (ARFCN) is 1013, 384 and 777 respectively in the case of CDMA 800MHz or is allocated to 25, 600 and 1175 respectively in the case of CDMA 1900MHz, The EUT is commanded to operate at maximum transmitting power.

The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset.

The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the handset by at least 35 dB.

## 2.6. Operational Conditions During Test

### 2.6.1. INTRODUCTION

On July 10, 2003, the Federal Communications Commission (FCC) adopted new rules requiring wireless manufacturers and service providers to provide digital wireless phones that are compatible with hearing aids. The FCC has modified the exemption for wireless phones under the Hearing Aid Compatibility Act of 1998 (HAC Act) in WT Docket 01-309 RM-8658 to extend the benefits of wireless telecommunications to individuals with hearing disabilities. These benefits encompass business, social and emergency communications, which increase the value of the wireless network for everyone. An estimated more than 10% of the population in the United States show signs of hearing impairment and of that fraction, almost 80% use hearing aids. Approximately 500 million people worldwide suffer from hearing loss.

Compatibility Tests involved:

The standard calls for wireless communications devices to be measured for:

- RF Electric-field emissions.
- RF Magnetic- field emissions.
- T-coil mode, magnetic-signal strength in the audio band.
- T-coil mode, magnetic-signal frequency response through the audio band.
- T-coil mode, magnetic-signal and noise articulation index.

The hearing aid must be measured for:

- RF immunity in microphone mode
- RF immunity in T-coil mode

In the following tests and results, this report includes the evaluation for a wireless communications device

## 2.6.2. ANSI/IEEE PC 63.19 PERFORMANCE CATEGORIES

### 4.3.2.1. T-coil

The table below provides the signal quality requirement for the intended audio magnetic signal from a wireless device. Only the RF immunity of the hearing aid is measured in T-coil mode. It is assumed that a hearing aid can have no immunity to an interference signal in the audio band, which is the intended reception band for this mode. The only criterion that can be measured is the RF immunity in T-coil mode. This is measured using the same procedure as the audio coupling mode at the same levels.

The signal quality of the axial and radial components of the magnetic field was used to determine the T-coil mode category.

| Category                     | Telephone RF Parameter                                                  |
|------------------------------|-------------------------------------------------------------------------|
|                              | Wireless Device Signal Quality<br>(Signal + Noise-to-noise ratio in dB) |
| T1                           | 0 to 10 dB                                                              |
| T2                           | 10 to 20 dB                                                             |
| T3                           | 20 to 30 dB                                                             |
| T4                           | > 30 dB                                                                 |
| Magnetic Coupling Parameters |                                                                         |

### 4.3.2.2. Articulation Weighing Factor (AWF)

| Standard                                                                                                                                                           | Technology      | AWF |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----|
| T1/T1P1/3GPP                                                                                                                                                       | UMTS(WCDMA)     | 0   |
| IS-95                                                                                                                                                              | CDMA            | 0   |
| iden                                                                                                                                                               | GSM(22and 11Hz) | 0   |
| J-STD-007                                                                                                                                                          | GSM(217Hz)      | -5  |
| AWF has been developed from information presented to the committee regarding the interference potential of the various modulation types according to ANSI PC 63.19 |                 |     |



## 2.6.3. Description of Test System

### 4.3.3.1. COMO HAC E-FIELD PROBE



|                                                     |                                                                         |
|-----------------------------------------------------|-------------------------------------------------------------------------|
| Serial Number:                                      | SN 41/08 EPH17                                                          |
| Frequency:                                          | 100MHz – 3GHz                                                           |
| Probe length:                                       | 330mm                                                                   |
| Length of one dipole:                               | 3.3mm                                                                   |
| Maximum external diameter:                          | 8mm                                                                     |
| Probe extremity diameter:                           | 6mm                                                                     |
| Distance between dipoles/probe extremity:           | 3mm                                                                     |
| Resistance of the three dipole (at the connector ): | Dipole 1:R1=2.1807 MΩ<br>Dipole 2:R1=2.0612 MΩ<br>Dipole 3:R3=2.1892 MΩ |
| Connector (HIROSE series SR30)                      | 6 wire male (Hirose SR30series)                                         |

## CALIBRATION TEST EQUIPMENT

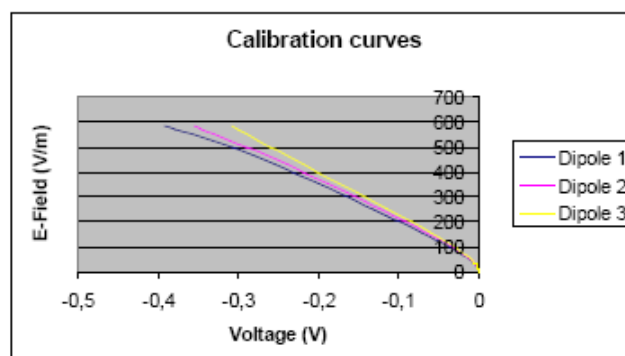
| TYPE              | IDENTIFICATION                  |
|-------------------|---------------------------------|
| Calibration bench | SATIMO AIR CALIBRATION SOFTWARE |
| Multimeter        | Keithley 2000                   |

## MEASUREMENT PROCEDURE

Probe calibration is realized by using the waveguide method. The probe was inserted in a waveguide loading by a 50 load. By controlling the input power in the waveguide, we are able to create a know EField value in the waveguide. ,

Keithley configuration:

Rate = Medium; Filter =ON; RDGS=10; FILTER TYPE =MOVING AVERAGE; RANGE AUTO



The following tables represent the calibration curves linearization by curve segment in CW signal.

### 4.3.3.2. COMO HAC H-FIELD PROBE



|                                                     |                                                                         |
|-----------------------------------------------------|-------------------------------------------------------------------------|
| Serial Number:                                      | SN 41/08 HPH18                                                          |
| Frequency:                                          | 100MHz – 3GHz                                                           |
| Probe length:                                       | 330mm                                                                   |
| Length of one dipole:                               | 3.3mm                                                                   |
| Maximum external diameter:                          | 8mm                                                                     |
| Probe extremity diameter:                           | 6mm                                                                     |
| Distance between dipoles/probe extremity:           | 3mm                                                                     |
| Resistance of the three dipole (at the connector ): | Dipole 1:R1=2.1650 MΩ<br>Dipole 2:R1=2.2176 MΩ<br>Dipole 3:R3=2.4084 MΩ |
| Connector (HIROSE series SR30)                      | 6 wire male (Hirose SR30series)                                         |

### CALIBRATION TEST EQUIPMENT

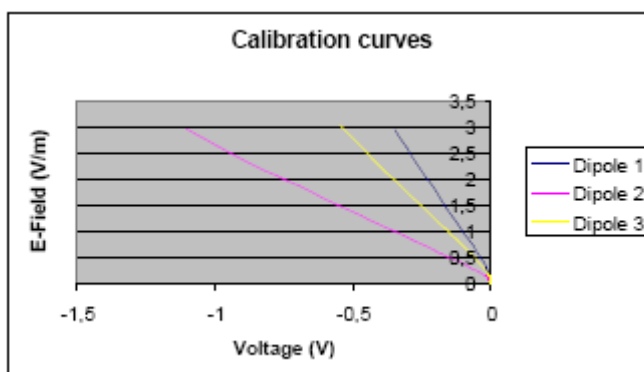
| TYPE              | IDENTIFICATION                  |
|-------------------|---------------------------------|
| Calibration bench | SATIMO AIR CALIBRATION SOFTWARE |
| Multimeter        | Keithley 2000                   |

### MEASUREMENT PROCEDURE

Probe calibration is realized by using the waveguide method. The probe was inserted in a waveguide loading by a 50 load. By controlling the input power in the waveguide, we are able to create a know HField value in the waveguide.

Keithley configuration:

Rate = Medium; Filter =ON; RDGS=10; FILTER TYPE =MOVING AVERAGE; RANGE AUTO



The following tables represent the calibration curves linearization by curve segment in CW signal.

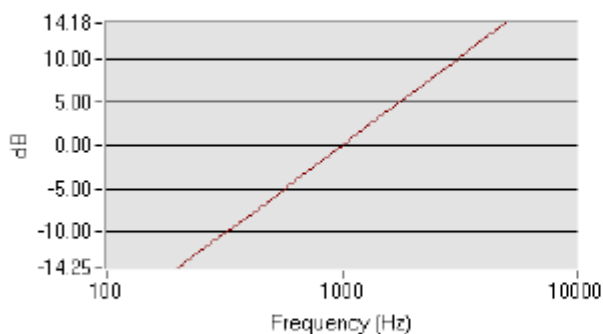
### 4.3.3.3. COMO HAC T-COIL PROBE



|                |                               |
|----------------|-------------------------------|
| Serial Number: | SN 39/08 TCP11                |
| Dimensions:    | 6.55mm length*2.29mm diameter |
| DC resistance: | 860.6Ω                        |
| Wire size:     | 51 AWG                        |
| Inductance:    | 132.1 mH at 1kHz              |
| Sensitivity:   | -60.22 dB (V/A/m) at 1kHz     |

### SENSITIVITY

Probe coil sensitivity relative to sensitivity at 1000 Hz



T-Coil probe sensitivity (dB V/(A/m)) -60.22

| Frequency (Hz) | H (dB (V/(A/m))) |
|----------------|------------------|
| 200            | -73.92940009     |
| 250            | -72.01119983     |
| 315            | -70.06378892     |
| 400            | -67.88880017     |
| 500            | -66.00059991     |
| 630            | -64.07318901     |
| 800            | -62.00820026     |
| 1000           | -60.22           |
| 1250           | -58.29179974     |
| 1600           | -56.20760035     |
| 2000           | -54.31940009     |
| 2500           | -52.36119983     |
| 3150           | -50.38378892     |
| 4000           | -48.50880017     |
| 5000           | -46.44059991     |

### LINEARITY

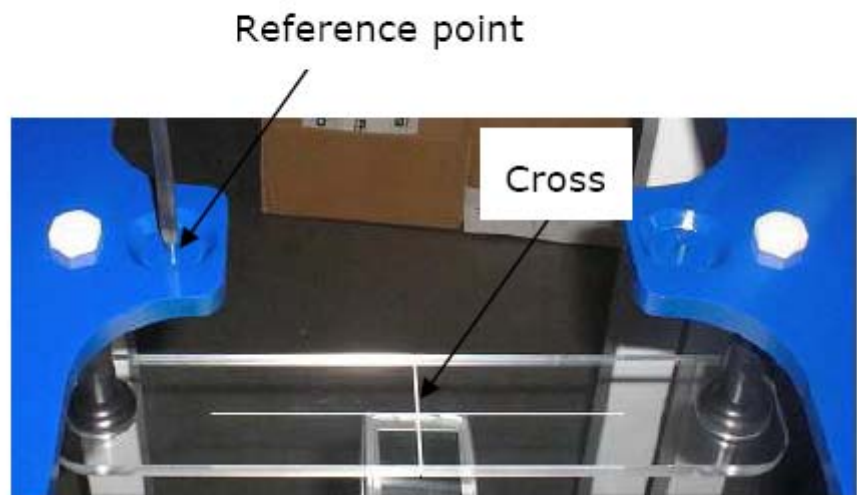
Linearity = 0.27 dB

|                                 |   |       |        |     |       |        |
|---------------------------------|---|-------|--------|-----|-------|--------|
| Power (dB)<br>relative to 1 A/m | 0 | -10   | -20    | -30 | -40   | -50    |
| H (dB (V/(A/m)))                | 0 | -9.95 | -19.95 | -30 | -39.9 | -49.73 |

#### 4.3.3.4. System Hardware

The HAC positioning ruler is used to position the phone properly with the regard to the position of the probe during a measurement. The positioning system is made of a dedicated frame that can be fixed on the table. The tip of the probe is positioned on a reference point located on the top of the positioning ruler. The distance between this reference point and the cross located on the ruler being known, the speaker of the phone is positioned on this cross in order to make sure both probe and phone are positioned properly.

During the measurement, the HAC ruler has to be removed so that it does not interfere with the measurement.

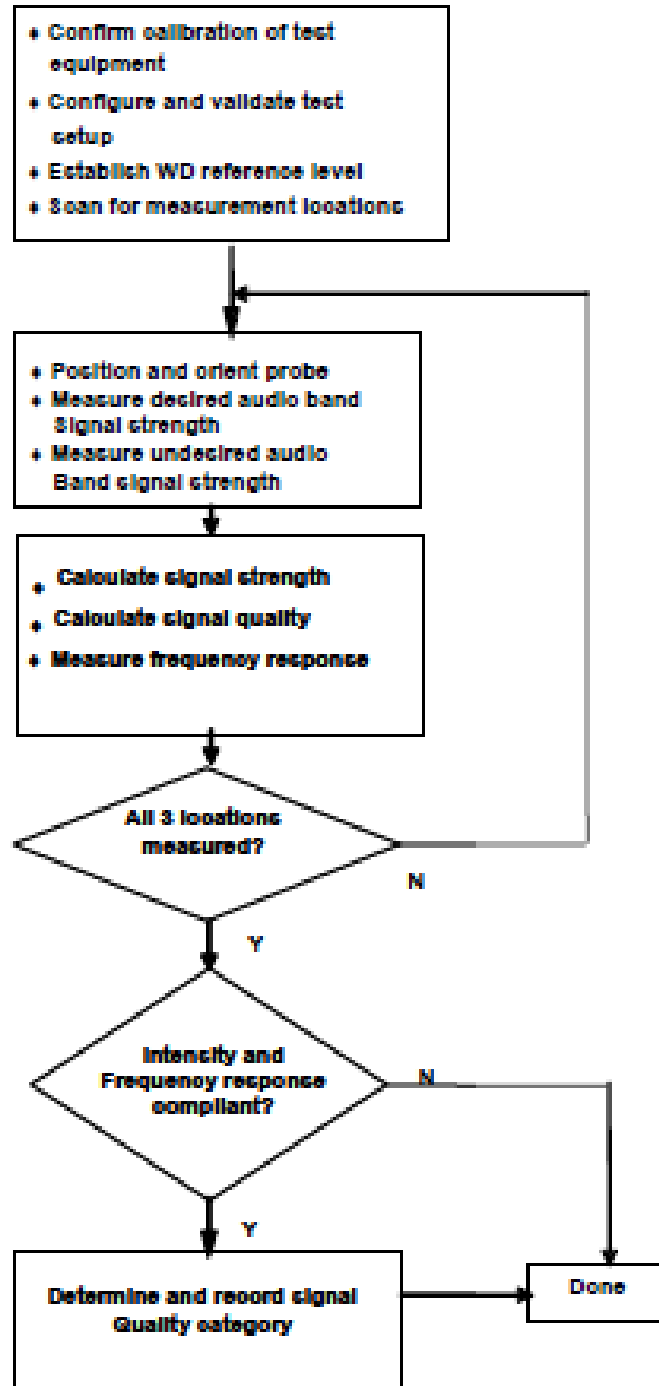


HAC positioning ruler

## 2.6.4. TEST PROCEDURE

### 4.3.4.1. T-coil Test Flow

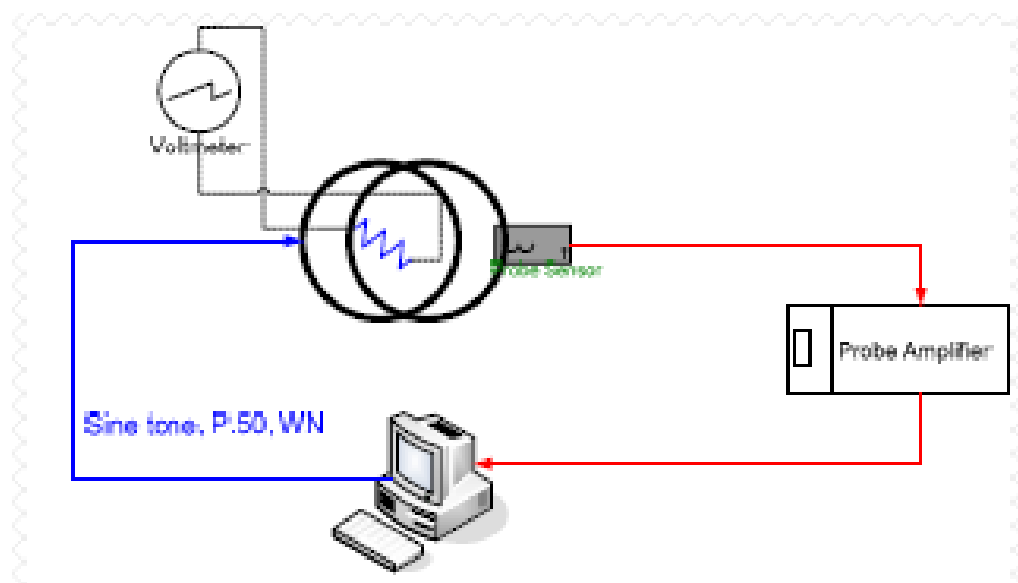
The flow diagram below was followed (From C63.19):



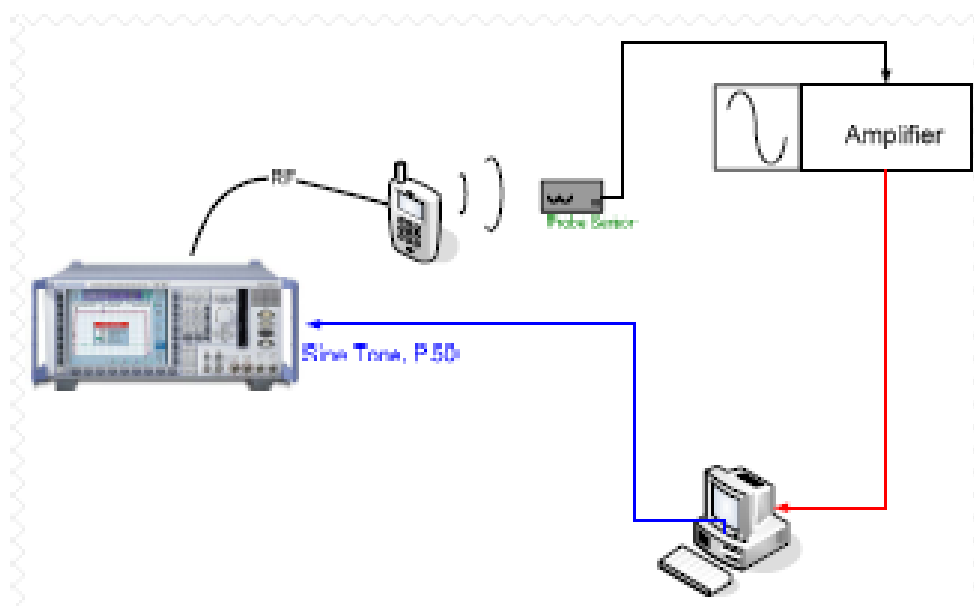
C63.19 T-Coil Signal Test Process

#### 4.3.4.2. TEST Setup

The equipment was connected as shown in an acoustic/RF hemi-anechoic chamber:



Validation Setup with Helmholtz Coil



T-Coil Test Setup

## Frequency Response Validation

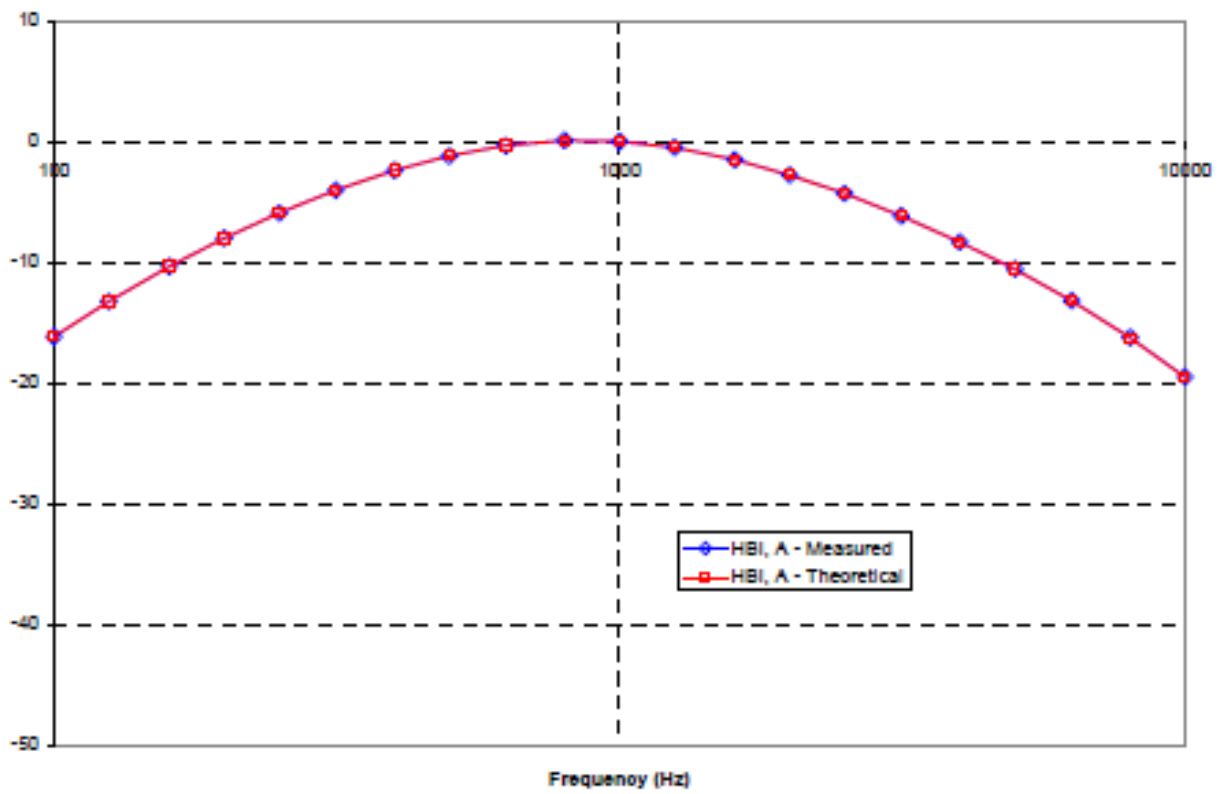
```

graph LR
    P50[P.50 stimulus] --> HC[Helmholtz Coil]
    HC --> G40[40 dB]
    G40 --> PS[Probe Sensitivity  
1000 dB/Hz]
    PS --> PGF[40-dB pre-gain factor]
    PGF --> FBC[Full-Band Integrator curve]
    FBC --> FR[Frequency Response of Helmholtz Coil]
  
```

## Frequency Response Validation

WD noise measurements are filtered with A-weighting and Half-Band Integration over a frequency range of 100Hz – 10kHz to process ABM2 measurements. Below is the verification of the system processing A-weighting and Half-Band integration between system input to output within 0.5 dB of the theoretical result:

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Frequency Response Validation



## 2.6.5. Uncertainty Estimation Table

| a                                                                               | b       | c            | d              | e= f(d,k)  | f       | g           | h=<br>c*f/e    | i=<br>c*g/e     | k           |
|---------------------------------------------------------------------------------|---------|--------------|----------------|------------|---------|-------------|----------------|-----------------|-------------|
| Uncertainty Component                                                           | Sec.    | Tol<br>(+-%) | Prob.<br>Dist. | Div.       | Ci (1g) | Ci<br>(10g) | 1g Ui<br>(+-%) | 10g Ui<br>(+-%) | V<br>i      |
| <b>Measurement System</b>                                                       |         |              |                |            |         |             |                |                 |             |
| Probe calibration                                                               | E.2.1   | 7.0          | N              | 1          | 1       | 1           | 7.00           | 7.00            |             |
| Axial Isotropy                                                                  | E.2.2   | 2.5          | R              | $\sqrt{3}$ |         |             | 1.02           | 1.02            |             |
| Hemispherical Isotropy                                                          | E.2.2   | 4.0          | R              | $\sqrt{3}$ |         |             | 1.63           | 1.63            |             |
| Boundary effect                                                                 | E.2.3   | 1.0          | R              | $\sqrt{3}$ | 1       | 1           | 0.58           | 0.58            |             |
| Linearity                                                                       | E.2.4   | 5.0          | R              | $\sqrt{3}$ | 1       | 1           | 2.89           | 2.89            |             |
| System detection limits                                                         | E.2.5   | 1.0          | R              | $\sqrt{3}$ | 1       | 1           | 0.58           | 0.58            |             |
| Readout Electronics                                                             | E.2.6   | 0.02         | N              | 1          | 1       | 1           | 0.02           | 0.02            |             |
| Reponse Time                                                                    | E.2.7   | 3.0          | R              | $\sqrt{3}$ | 1       | 1           | 1.73           | 1.73            |             |
| Integration Time                                                                | E.2.8   | 2.0          | R              | $\sqrt{3}$ | 1       | 1           | 1.15           | 1.15            |             |
| RF ambient Conditions                                                           | E.6.1   | 3.0          | R              | $\sqrt{3}$ | 1       | 1           | 1.73           | 1.73            |             |
| Probe positioner Mechanical Tolerance                                           | E.6.2   | 2.0          | R              | $\sqrt{3}$ | 1       | 1           | 1.15           | 1.15            |             |
| Probe positioning with respect to Phantom Shell                                 | E.6.3   | 0.05         | R              | $\sqrt{3}$ | 1       | 1           | 0.03           | 0.03            |             |
| Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation | E.5.2   | 5.0          | R              | $\sqrt{3}$ | 1       | 1           | 2.89           | 2.89            |             |
| <b>Test sample Related</b>                                                      |         |              |                |            |         |             |                |                 |             |
| Test sample positioning                                                         | E.4.2.1 | 0.03         | N              | 1          | 1       | 1           | 0.03           | 0.03            | N<br>-<br>1 |
| Device Holder Uncertainty                                                       | E.4.1.1 | 5.00         | N              | 1          | 1       | 1           | 5.00           | 5.00            |             |
| Output power Variation - drift measurement                                      | 6.6.2   | 5.78         | R              |            | 1       | 1           | 3.34           | 3.34            |             |

## 2.6.6. OVERALL MEASUREMENT SUMMARY

### 4.3.7.1 T-coil

| Mode     | Channel | Antenna | T ESULT | Output power<br>(dBm) |
|----------|---------|---------|---------|-----------------------|
| T-coil   |         |         |         |                       |
| CDMA800  | 1013    | Fixed   | T3      | 27.75                 |
| CDMA800  | 384     | Fixed   | T3      | 27.76                 |
| CDMA800  | 777     | Fixed   | T3      | 27.62                 |
| CDMA1900 | 25      | Fixed   | T3      | 25.64                 |
| CDMA1900 | 600     | Fixed   | T3      | 26.17                 |
| CDMA1900 | 1175    | Fixed   | T3      | 26.16                 |

**2.6.7. TEST DATA**

| <b><u>FREQUENCY</u></b> | <b><u>PARAMETERS</u></b>                          |
|-------------------------|---------------------------------------------------|
| <b><u>CDMA 800</u></b>  | <u>Measurement 1:</u> T-coil    on Low Channel    |
|                         | <u>Measurement 2:</u> T-coil    on Middle Channel |
|                         | <u>Measurement 3:</u> T-coil    on High Channel   |
| <b><u>CDMA 1900</u></b> | <u>Measurement 4:</u> T-coil    on Low Channel    |
|                         | <u>Measurement 5:</u> T-coil    on Middle Channel |
|                         | <u>Measurement 6:</u> T-coil    on High Channel   |

## MEASUREMENT 1

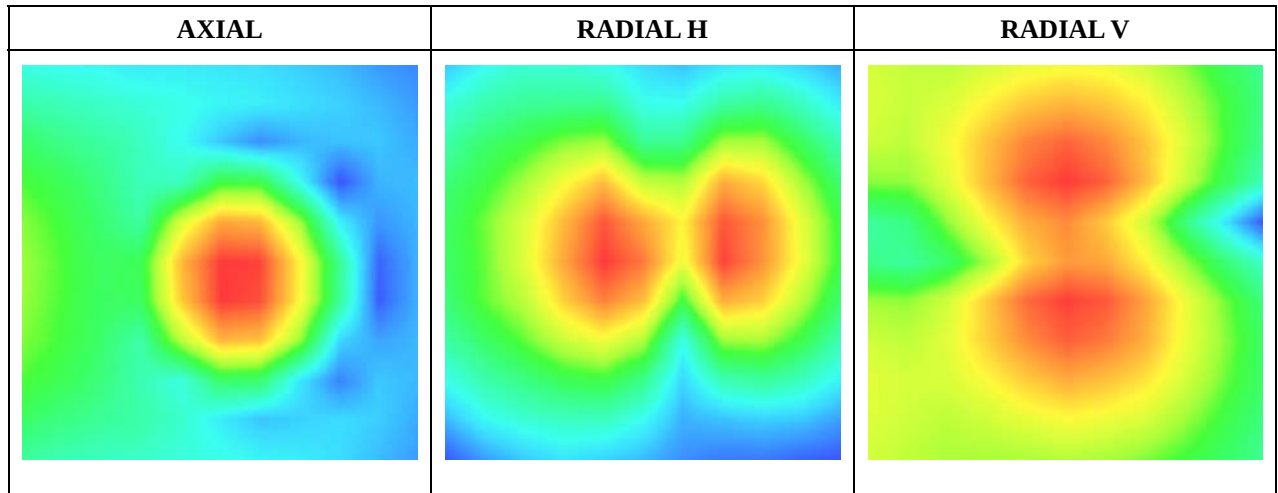
### A. Experimental conditions.

|                      |            |
|----------------------|------------|
| Grid size (mm x mm)  | 50.0, 50.0 |
| Step (mm)            | 5          |
| Scanning Height (mm) | 10.0       |
| Band                 | CDMA 800   |
| Date of measurement  | 23/8/2011  |

### B. HAC Measurement Results

Frequency (MHz): 824.700000

| C63.19  | Mode      | Band    | Test Description               | Minimum Limit | Location | Measured | Category | Verdict   |
|---------|-----------|---------|--------------------------------|---------------|----------|----------|----------|-----------|
|         |           |         |                                | dBA/m         | -        | dBA/m    | -        | Pass/Fail |
| 7.3.1.1 | CDMA<br>A | CDMA800 | Intensity, Axial               | -18           | Max      | 3.11     | -        | PASS      |
| 7.3.1.2 |           |         | Intensity, RadialH             | -18           | Max      | -4.54    | -        | PASS      |
|         |           |         |                                | -             | -        | -        | -        | -         |
| 7.3.1.2 |           |         | Intensity, RadialV             | -18           | Max      | -5.31    | -        | PASS      |
|         |           |         |                                | -             | -        | -        | -        | -         |
| 7.3.3   |           |         | Signal to noise/noise, Axial   | 5             | Max      | 35.59    | T4       | PASS      |
| 7.3.3   |           |         | Signal to noise/noise, RadialH | 5             | Max      | 27.33    | T3       | PASS      |
|         |           |         |                                | -             | -        | -        | -        | -         |
| 7.3.3   |           |         | Signal to noise/noise, RadialV | 5             | Max      | 34.47    | T4       | PASS      |
|         |           |         |                                | -             | -        | -        | -        | -         |
| 7.3.2   |           |         | Frequency response, Axial      | -             | -        | -        | -        | -         |

**T.Coil Scan Overlay Magnetic Field Distributions**

## MEASUREMENT 2

### A. Experimental conditions.

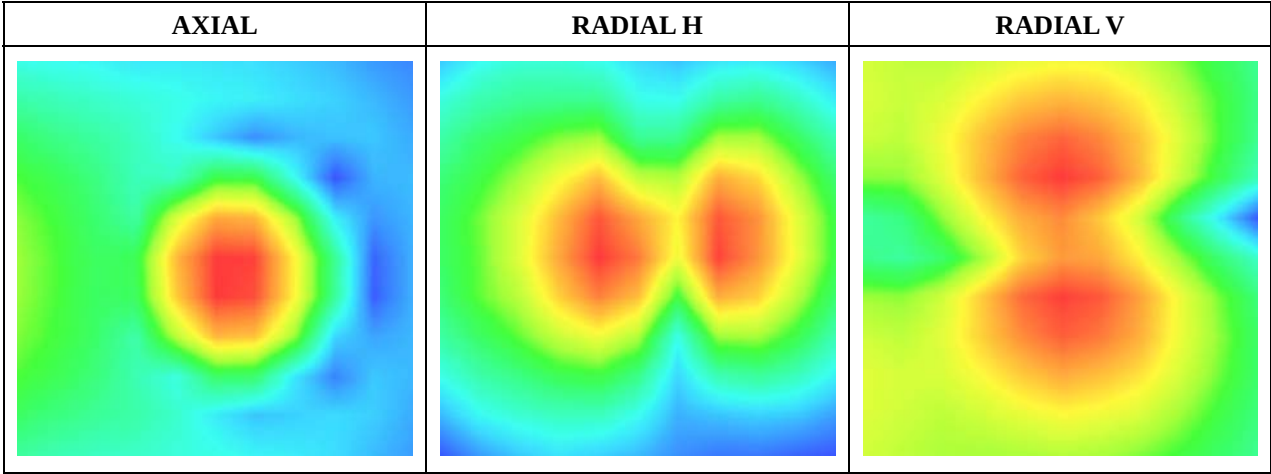
|                      |            |
|----------------------|------------|
| Grid size (mm x mm)  | 50.0, 50.0 |
| Step (mm)            | 5          |
| Scanning Height (mm) | 10.0       |
| Band                 | CDMA800    |
| Date of measurement  | 23/8/2011  |

### B. HAC Measurement Results

Frequency (MHz): 836.520000

| C63.19  | Mode | Band    | Test Description               | Minimum Limit | Location | Measured | Category | Verdict   |
|---------|------|---------|--------------------------------|---------------|----------|----------|----------|-----------|
|         |      |         |                                | dBa/m         | -        | dBa/m    | -        | Pass/Fail |
| 7.3.1.1 | CDMA | CDMA800 | Intensity, Axial               | -18           | Max      | 3.26     | -        | PASS      |
| 7.3.1.2 |      |         | Intensity, RadialH             | -18           | Max      | -4.59    | -        | PASS      |
|         |      |         |                                | -             | -        | -        | -        | -         |
| 7.3.1.2 |      |         | Intensity, RadialV             | -18           | Max      | -5.36    | -        | PASS      |
|         |      |         |                                | -             | -        | -        | -        | -         |
| 7.3.3   |      |         | Signal to noise/noise, Axial   | 5             | Max      | 35.62    | T4       | PASS      |
| 7.3.3   |      |         | Signal to noise/noise, RadialH | 5             | Max      | 27.80    | T3       | PASS      |
|         |      |         |                                | -             | -        | -        | -        | -         |
| 7.3.3   |      |         | Signal to noise/noise, RadialV | 5             | Max      | 34.45    | T4       | PASS      |
|         |      |         |                                | -             | -        | -        | -        | -         |
| 7.3.2   |      |         | Frequency response, Axial      | -             | -        | -        | -        | -         |

**T.Coil Scan Overlay Magnetic Field Distributions**



## MEASUREMENT 3

### A. Experimental conditions.

|                      |            |
|----------------------|------------|
| Grid size (mm x mm)  | 50.0, 50.0 |
| Step (mm)            | 5          |
| Scanning Height (mm) | 10.0       |
| Band                 | CDMA800    |
| Date of measurement  | 23/8/2011  |

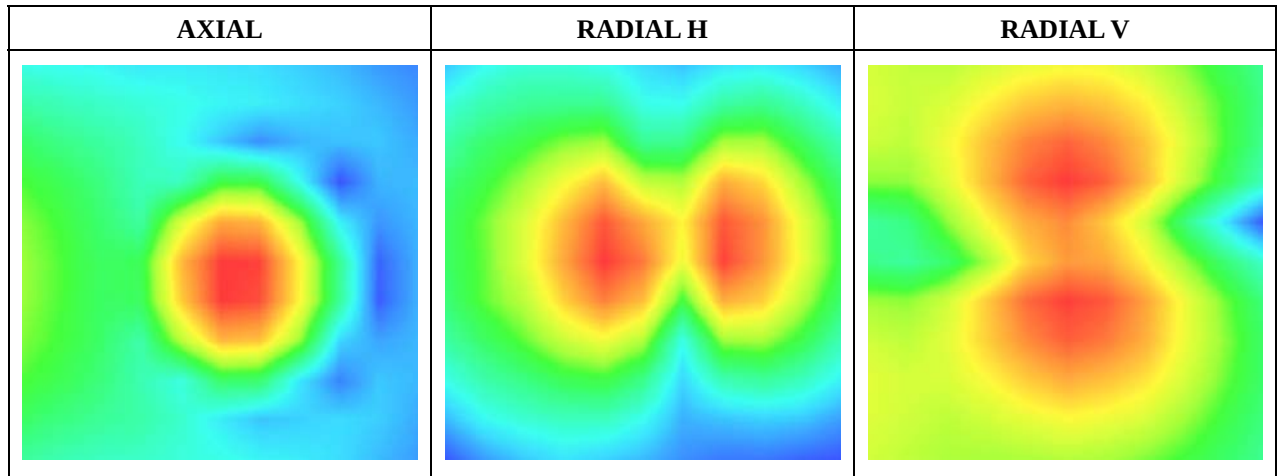
### B. HAC Measurement Results

Frequency (MHz): 848.310000

| C63.19  | Mode | Band    | Test Description               | Minimum Limit | Location | Measured | Category | Verdict   |
|---------|------|---------|--------------------------------|---------------|----------|----------|----------|-----------|
|         |      |         |                                | dBa/m         | -        | dBa/m    | -        | Pass/Fail |
| 7.3.1.1 | CDMA | CDMA800 | Intensity, Axial               | -18           | Max      | 3.16     | -        | PASS      |
| 7.3.1.2 |      |         | Intensity, RadialH             | -18           | Max      | -4.51    | -        | PASS      |
|         |      |         |                                | -             | -        | -        | -        | -         |
| 7.3.1.2 |      |         | Intensity, RadialV             | -18           | Max      | -5.53    | -        | PASS      |
|         |      |         |                                | -             | -        | -        | -        | -         |
| 7.3.3   |      |         | Signal to noise/noise, Axial   | 5             | Max      | 35.56    | T4       | PASS      |
| 7.3.3   |      |         | Signal to noise/noise, RadialH | 5             | Max      | 27.37    | T3       | PASS      |
|         |      |         |                                | -             | -        | -        | -        | -         |
| 7.3.3   |      |         | Signal to noise/noise, RadialV | 5             | Max      | 34.75    | T4       | PASS      |
|         |      |         |                                | -             | -        | -        | -        | -         |
| 7.3.2   |      |         | Frequency response, Axial      | -             | -        | -        | -        | -         |



### T.Coil Scan Overlay Magnetic Field Distributions



## MEASUREMENT 4

### A. Experimental conditions.

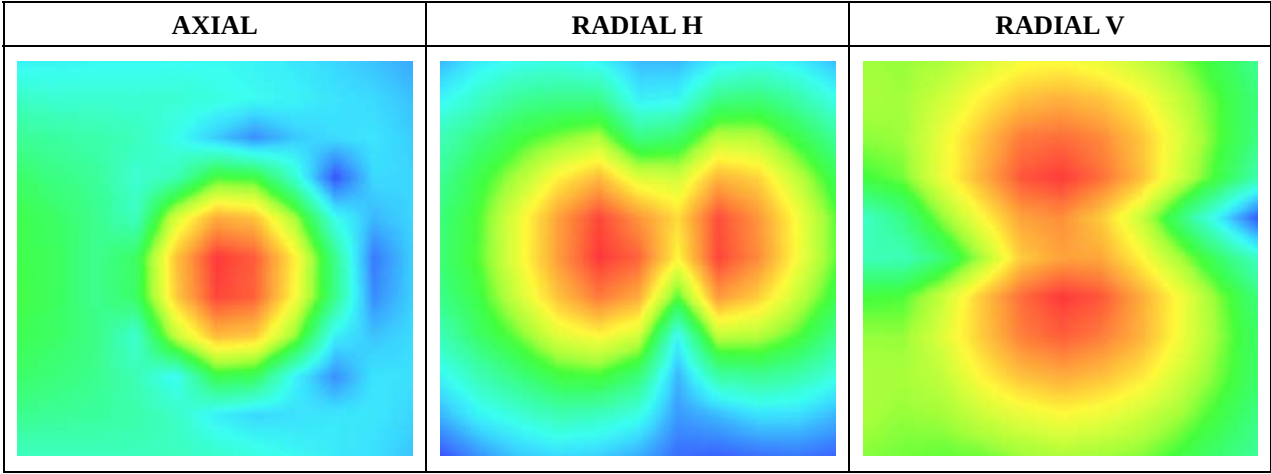
|                      |            |
|----------------------|------------|
| Grid size (mm x mm)  | 50.0, 50.0 |
| Step (mm)            | 5          |
| Scanning Height (mm) | 10.0       |
| Band                 | CDMA1800   |
| Date of measurement  | 23/82011   |

### B. HAC Measurement Results

Frequency (MHz): 1851.250000

| C63.19  | Mode   | Band     | Test Description               | Minimum Limit | Location | Measured | Category | Verdict   |
|---------|--------|----------|--------------------------------|---------------|----------|----------|----------|-----------|
|         |        |          |                                | dBA/m         | -        | dBA/m    | -        | Pass/Fail |
| 7.3.1.1 | CDMA A | CDMA1900 | Intensity, Axial               | -18           | Max      | 4.29     | -        | PASS      |
| 7.3.1.2 |        |          | Intensity, RadialH             | -18           | Max      | -5.15    | -        | PASS      |
|         |        |          |                                | -             | -        | -        | -        | -         |
| 7.3.1.2 |        |          | Intensity, RadialV             | -18           | Max      | -5.77    | -        | PASS      |
|         |        |          |                                | -             | -        | -        | -        | -         |
| 7.3.3   |        |          | Signal to noise/noise, Axial   | 5             | Max      | 35.64    | T4       | PASS      |
| 7.3.3   |        |          | Signal to noise/noise, RadialH | 5             | Max      | 22.39    | T3       | PASS      |
|         |        |          |                                | -             | -        | -        | -        | -         |
| 7.3.3   |        |          | Signal to noise/noise, RadialV | 5             | Max      | 35.74    | T4       | PASS      |
|         |        |          |                                | -             | -        | -        | -        | -         |
| 7.3.2   |        |          | Frequency response, Axial      | -             | -        | -        | -        | -         |

**T.Coil Scan Overlay Magnetic Field Distributions**



## MEASUREMENT 5

### A. Experimental conditions.

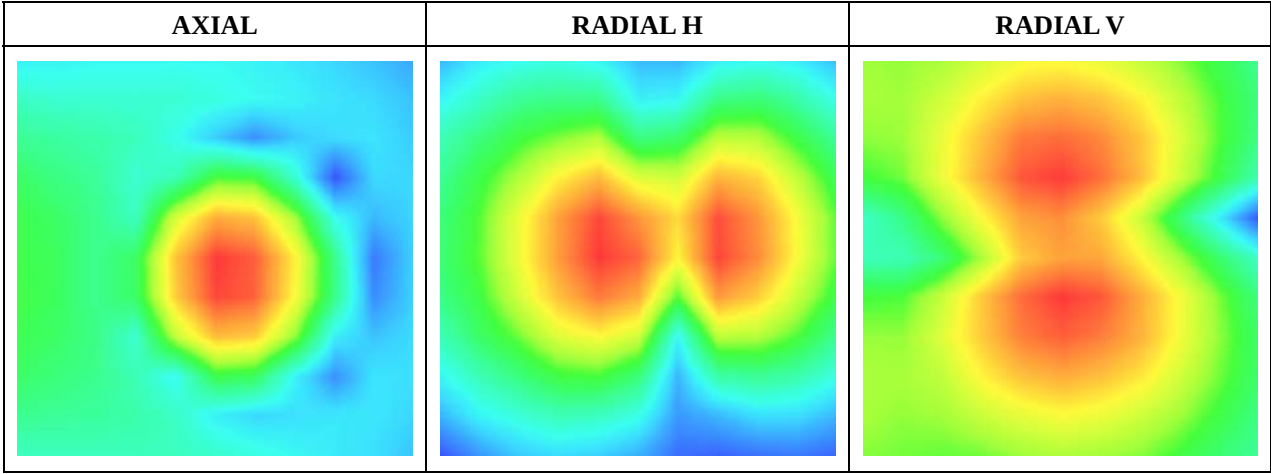
|                      |            |
|----------------------|------------|
| Grid size (mm x mm)  | 50.0, 50.0 |
| Step (mm)            | 5          |
| Scanning Height (mm) | 10.0       |
| Band                 | CDMA1900   |
| Date of measurement  | 23/8/2011  |

### B. HAC Measurement Results

Frequency (MHz): 1880.000000

| C63.19  | Mode      | Band     | Test Description               | Minimum Limit | Location | Measured | Category | Verdict   |
|---------|-----------|----------|--------------------------------|---------------|----------|----------|----------|-----------|
|         |           |          |                                | dBa/m         | -        | dBa/m    | -        | Pass/Fail |
| 7.3.1.1 | CDMA<br>A | CDMA1900 | Intensity, Axial               | -18           | Max      | 4.33     | -        | PASS      |
| 7.3.1.2 |           |          | Intensity, RadialH             | -18           | Max      | -5.22    | -        | PASS      |
|         |           |          |                                | -             | -        | -        | -        | -         |
| 7.3.1.2 |           |          | Intensity, RadialV             | -18           | Max      | -5.54    | -        | PASS      |
|         |           |          |                                | -             | -        | -        | -        | -         |
| 7.3.3   |           |          | Signal to noise/noise, Axial   | 5             | Max      | 34.72    | T4       | PASS      |
| 7.3.3   |           |          | Signal to noise/noise, RadialH | 5             | Max      | 22.35    | T3       | PASS      |
|         |           |          |                                | -             | -        | -        | -        | -         |
| 7.3.3   |           |          | Signal to noise/noise, RadialV | 5             | Max      | 35.81    | T4       | PASS      |
|         |           |          |                                | -             | -        | -        | -        | -         |
| 7.3.2   |           |          | Frequency response, Axial      | -             | -        | -        | -        | -         |

**T.Coil Scan Overlay Magnetic Field Distributions**



## MEASUREMENT 6

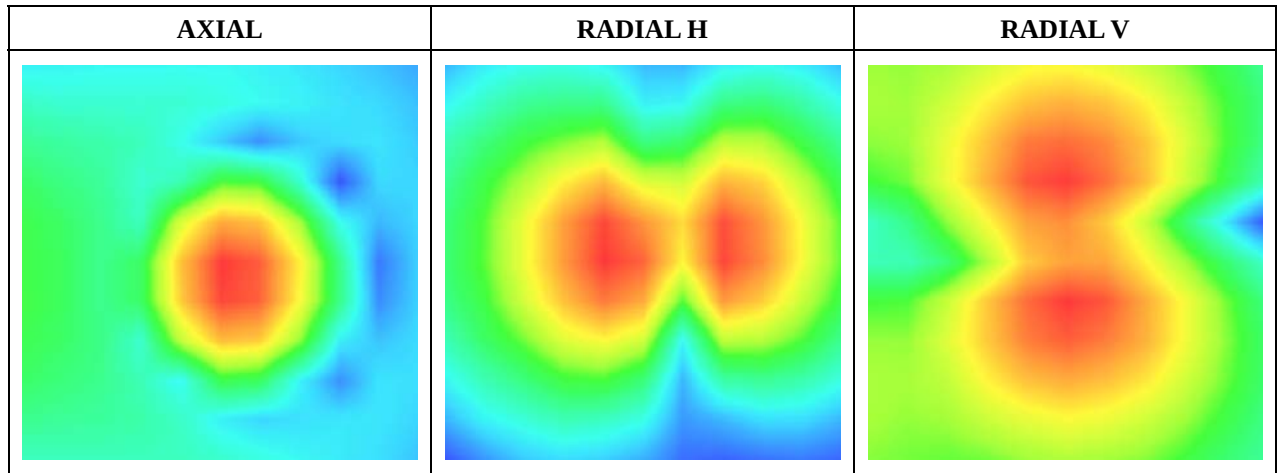
### A. Experimental conditions.

|                      |            |
|----------------------|------------|
| Grid size (mm x mm)  | 50.0, 50.0 |
| Step (mm)            | 5          |
| Scanning Height (mm) | 10.0       |
| Band                 | CDMA1900   |
| Date of measurement  | 23/8/2011  |

### B. HAC Measurement Results

Frequency (MHz): 1908.750000

| C63.19  | Mode      | Band     | Test Description               | Minimum Limit | Location | Measured | Category | Verdict   |
|---------|-----------|----------|--------------------------------|---------------|----------|----------|----------|-----------|
|         |           |          |                                | dBA/m         | -        | dBA/m    | -        | Pass/Fail |
| 7.3.1.1 | CDMA<br>A | CDMA1900 | Intensity, Axial               | -18           | Max      | 4.32     | -        | PASS      |
| 7.3.1.2 |           |          | Intensity, RadialH             | -18           | Max      | -5.21    | -        | PASS      |
|         |           |          |                                | -             | -        | -        | -        | -         |
| 7.3.1.2 |           |          | Intensity, RadialV             | -18           | Max      | -5.53    | -        | PASS      |
|         |           |          |                                | -             | -        | -        | -        | -         |
| 7.3.3   |           |          | Signal to noise/noise, Axial   | 5             | Max      | 34.73    | T4       | PASS      |
| 7.3.3   |           |          | Signal to noise/noise, RadialH | 5             | Max      | 22.55    | T3       | PASS      |
|         |           |          |                                | -             | -        | -        | -        | -         |
| 7.3.3   |           |          | Signal to noise/noise, RadialV | 5             | Max      | 35.47    | T4       | PASS      |
|         |           |          |                                | -             | -        | -        | -        | -         |
| 7.3.2   |           |          | Frequency response, Axial      | -             | -        | -        | -        | -         |

**T.Coil Scan Overlay Magnetic Field Distributions**

## Annex A Photographs of the EUT





## Annex B EUT Setup photo

