



ANSI C63.19

TEST REPORT

| | |
|---------------------|---|
| Product Name | HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; |
| Model Name | HUAWEI U8651T, U8651T, U8651, Astro |
| FCC ID | QISU8651T |
| Client | Huawei Technologies Co., Ltd. |

TA Technology (Shanghai) Co., Ltd.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 2 of 119

GENERAL SUMMARY

| | | | |
|------------------------------|---|---------------|-------------------------------------|
| Product Name | HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; | Model | HUAWEI U8651T, U8651T, U8651, Astro |
| Report No. | RZA1201-0064HAC01R2 | FCC ID | QISU8651T |
| Client | Huawei Technologies Co., Ltd. | | |
| Manufacturer | Huawei Technologies Co., Ltd. | | |
| Reference Standard(s) | ANSI C63.19-2007: American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids. | | |
| Conclusion | <p>This portable wireless equipment has been measured in all cases requested by the relevant standards.</p> <p>General Judgment: M3 (RF Emission)</p> <div style="text-align: right;">  <p>(Stamp) Date of issue: March 2nd, 2012</p> </div> | | |
| Comment | The test result only responds to the measured sample. | | |

Approved by 杨伟中
Director

Revised by 凌敏宝
SAR Manager

Performed by 秦川
SAR Engineer

TABLE OF CONTENT

| | |
|--|-----|
| 1. General Information | 4 |
| 1.1. Notes of the Test Report..... | 4 |
| 1.2. Testing Laboratory | 4 |
| 1.3. Applicant Information | 5 |
| 1.4. Manufacturer Information..... | 5 |
| 1.5. Information of EUT | 6 |
| 1.6. The Ambient Conditions during Test..... | 8 |
| 1.7. The Total M-rating of each tested band | 8 |
| 1.8. Test Date | 8 |
| 2. Test Information | 9 |
| 2.1. Operational Conditions during Test..... | 9 |
| 2.1.1. General Description of Test Procedures | 9 |
| 2.1.2. GSM/WCDMA Test Configuration | 9 |
| 2.2. HAC RF Measurements System Configuration..... | 10 |
| 2.2.1. HAC Measurement Set-up..... | 10 |
| 2.2.2. Probe System | 11 |
| 2.2.3. Test Arch Phantom & Phone Positioner | 12 |
| 2.3. RF Test Procedures..... | 13 |
| 2.4. System Check..... | 15 |
| 2.5. Probe Modulation Factor..... | 17 |
| 2.6. Conducted Output Power Measurement..... | 19 |
| 3. Test Results | 21 |
| 3.1. ANSI C63.19-2007 Limits | 21 |
| 3.2. Summary Test Results..... | 22 |
| 4. Measurement Uncertainty | 26 |
| 5. Main Test Instruments | 28 |
| ANNEX A: System Check Results..... | 29 |
| ANNEX B: Graph Results..... | 33 |
| ANNEX C: E-Probe Calibration Certificate..... | 81 |
| ANNEX D: H-Probe Calibration Certificate..... | 91 |
| ANNEX E: CD835V3 Dipole Calibration Certificate..... | 101 |
| ANNEX F: CD1880V3 Dipole Calibration Certificate..... | 107 |
| ANNEX G: DAE4 Calibration Certificate..... | 113 |
| ANNEX H: The EUT Appearances and Test Configuration..... | 118 |

1. General Information

1.1. Notes of the Test Report

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone dose not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

If the electrical report is inconsistent with the printed one, it should be subject to the latter.

1.2. Testing Laboratory

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Yang Weizhong
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: yangweizhong@ta-shanghai.com

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No. RZA1201-0064HAC01R2

Page 5 of 119

1.3. Applicant Information

Company: Huawei Technologies Co., Ltd.
Address: Bantian, Longgang District
City: Shenzhen
Postal Code: 518129
Country: P.R. China
Contact: Zhao Guiying
Telephone: 0755-28780808
Fax: 0755-28780808

1.4. Manufacturer Information

Company: Huawei Technologies Co., Ltd.
Address: Bantian, Longgang District
City: Shenzhen
Postal Code: 518129
Country: P.R. China
Telephone: 0755-28780808
Fax: 0755-28780808

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No. RZA1201-0064HAC01R2

Page 6 of 119

1.5. Information of EUT

General Information

| | | | |
|--|---|--------------------------|-----------------|
| Device Type: | Portable Device | | |
| Product Name: | HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; | | |
| IMEI: | 004401720342068 | | |
| Hardware Version: | HD4U865M | | |
| Software Version: | U8651V100R001USAC85B865SP01 | | |
| Antenna Type: | Internal Antenna | | |
| Device Operating Configurations: | | | |
| Supporting Mode(s): | GSM 850/ GSM 1900; (tested) | | |
| | WCDMA Band II/ WCDMA Band IV/WCDMA Band V; (tested) | | |
| | GSM900/GSM1800; (untested) | | |
| | WiFi (802.11b/g/n); (untested) | | |
| | Bluetooth; (untested) | | |
| Test Modulation: | (GSM)GMSK; (WCDMA) QPSK | | |
| Device Class: | B | | |
| HSDPA UE Category: | 8 | | |
| GPRS Multislot Class(10): | Max Number of Timeslots in Uplink | 2 | |
| | Max Number of Timeslots in Downlink | 4 | |
| | Max Total Timeslot | 5 | |
| EGPRS Multislot Class(10): | Max Number of Timeslots in Uplink | 2 | |
| | Max Number of Timeslots in Downlink | 4 | |
| | Max Total Timeslot | 5 | |
| Operating Frequency Range(s): | Mode | Tx (MHz) | Rx (MHz) |
| | GSM 850 | 824.2 ~ 848.8 | 869.2 ~ 893.8 |
| | GSM 1900 | 1850.2 ~ 1909.8 | 1930.2 ~ 1989.8 |
| | WCDMA Band II | 1852.4 ~ 1907.6 | 1932.4 ~ 1987.6 |
| | WCDMA Band IV | 1712.4 ~ 1752.6 | 2112.4 ~ 2152.2 |
| | WCDMA Band V | 826.4 ~ 846.6 | 871.4 ~ 891.6 |
| Test Channel: (Low - Middle - High) | 128-190-251 | (GSM 850) (tested) | |
| | 512-661-810 | (GSM 1900) (tested) | |
| | 9262 - 9400 - 9538 | (WCDMA Band II) (tested) | |
| | 1312-1413-1513 | (WCDMA Band IV) (tested) | |
| | 4132 - 4183 - 4233 | (WCDMA Band V) (tested) | |
| Power Class: | GSM 850: 4, tested with power level 5 | | |
| | GSM 1900: 1, tested with power level 0 | | |
| | WCDMA Band II: 3, tested with power control all up bits | | |
| | WCDMA Band IV: 3, tested with power control all up bits | | |
| | WCDMA Band V: 3, tested with power control all up bits | | |

TA Technology (Shanghai) Co., Ltd.

Test Report

Auxiliary Equipment Details

AE:Battery

Model: HB5K1H
 Manufacturer: Huawei Technologies Co., Ltd.
 S/N: WHCB912HI36J7417

Equipment Under Test (EUT) is a model of HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth;. The detail about Mobile phone and Lithium Battery is in chapter 1.5 in this report. It has Personal Wireless Routers (hot spots) function, WIFI calling function and Proximity Sensor function. HAC is tested for GSM 850, GSM 1900, WCDMA Band II, WCDMA Band IV and WCDMA Band V. The device has an internal antenna for GSM/WCDMA Tx/Rx, and the other is BT/WIFI antenna that is used for Tx/Rx.

The sample under test was selected by the Client.
 Components list please refer to documents of the manufacturer.

| Air-Interface | Band (MHz) | Type | C63.19/ tested | Simultaneous Transmissions Note: Not to be tested | Concurrent single transmission | Reduced power 20.19(c)(1) | Voice Over Digital Transport (Data) |
|----------------|---------------|------|----------------|--|---|---------------------------|-------------------------------------|
| GSM | 850 | VO | Yes | Yes WIFI or BT | Yes: GPRS/ EDGE,WIFI, BT Not rated | NO | NA |
| | 1900 | VO | Yes | | | NO | NA |
| | GPRS/ EDGE | DT | NA | Yes BT | Yes: *see note | NA | NA |
| WCDMA | 850 | VO | Yes | Yes WIFI or BT | Yes: WIFI,HSDP A,BT Not rated | NA | NA |
| | 1700 | VO | Yes | | | | |
| | 1900 | VO | Yes | | | | |
| | HSDPA | DT | NA | Yes BT | Yes: *see note | NA | NA |
| WIFI | 2400 | DT | NA | Yes GSM or BT or WCDMA | NA | NA | Yes |
| Bluetooth (BT) | 2400 | DT | NA | Yes GSM or WIFI or WCDMA | NA | NA | NA |

VO Voice CMRS/PSTN Service only
 V/D Voice CMRS/PSTN and Data Service
 DT Digital Transport

*HAC Rating was based on concurrent voice and data modes, Non current mode was found to represent worst case rating for both M and T rating

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 8 of 119

1.6. The Ambient Conditions during Test

| | |
|---|---------------------------|
| Temperature | Min. = 18°C, Max. = 28 °C |
| Relative humidity | Min. = 0%, Max. = 80% |
| Ground system resistance | < 0.5 Ω |
| Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards. | |

1.7. The Total M-rating of each tested band

| Mode | Rating |
|---------------|-----------|
| GSM 850 | M3 |
| GSM 1900 | M3 |
| WCDMA Band II | M4 |
| WCDMA Band IV | M4 |
| WCDMA Band V | M4 |

1.8. Test Date

The test is performed on January 16, 2012.

2. Test Information

2.1. Operational Conditions during Test

2.1.1. General Description of Test Procedures

The phone was tested in all normal configurations for the ear use. The EUT is mounted in the device holder equivalent as for classic dosimeter measurements. The acoustic output of the EUT shall coincide with the center point of the area formed by the dielectric wire and the middle bar of the arch's top frame. The EUT shall be moved vertically upwards until it touches the frame. The fine adjustment is possible by sliding the complete. The EUT holder is on the yellow base plate of the Test Arch phantom. These test configurations are tested at the high, middle and low frequency channels of each applicable operating mode; for example, GSM, WCDMA (UMTS), CDMA and TDMA.

2.1.2. GSM/WCDMA Test Configuration

A communication link is set up with a System Simulator (SS) by air link, and a call is established. The Absolute Radiofrequency Channel Number (ARFCN) is allocated to 128, 190 and 251 in the case of GSM 850, to 512, 661 and 810 in the case of GSM 1900, to 9262, 9400 and 9538 in the case of WCDMA Band II, to 1312, 1413 and 1513 in the case of WCDMA Band IV, to 4132, 4183 and 4233 in the case of WCDMA Band V. The EUT is commanded to operate at maximum transmitting power. Using E5515C the power lever is set to "5" in SAR of GSM 850, set to "0" in SAR of GSM 1900. Set to all up bits for WCDMA. The test in the bands of GSM 850/GSM 1900 and WCDMA Band II/WCDMA Band IV/WCDMA Band V are performed in the mode of speech transfer function.

2.2. HAC RF Measurements System Configuration

2.2.1. HAC Measurement Set-up

These measurements are performed using the DASY4 automated dosimetric assessment system. It is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland. It consists of high precision robotics system (Stäubli), robot controller, Intel Core2 computer, near-field probe, probe alignment sensor. The robot is a six-axis industrial robot performing precise movements. Cell controller systems contain the power supply, robot controller, teach pendant (Joystick) and remote control, and are used to drive the robot motors. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification; signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

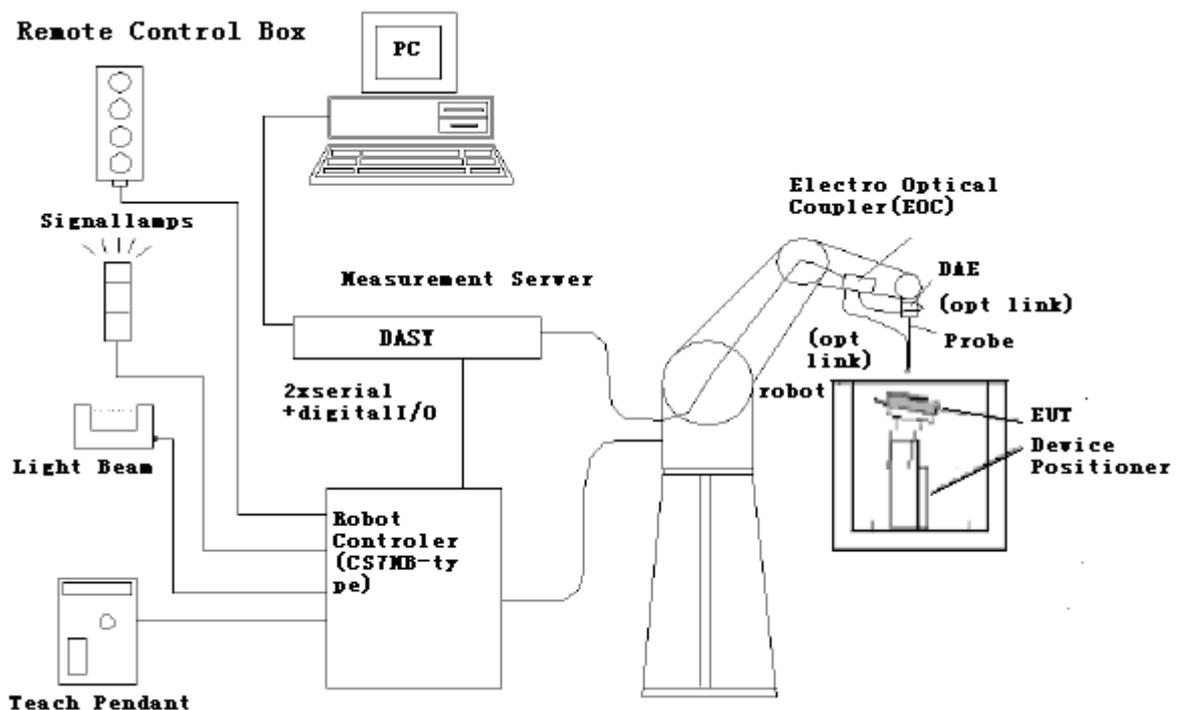


Figure 1 HAC Test Measurement Set-up

The DAE4 consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

2.2.2. Probe System

The HAC measurements were conducted with the E-Field Probe ER3DV6 and the H-Field Probe H3DV6 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

E-Field Probe Description

| | |
|---------------|---|
| Construction | One dipole parallel, two dipoles normal to probe axis Built-in shielding against static charges PEEK enclosure material |
| Calibration | In air from 100 MHz to 3.0 GHz (absolute accuracy $\pm 6.0\%$, $k=2$) |
| Frequency | 40 MHz to > 6 GHz (can be extended to < 20 MHz) Linearity: ± 0.2 dB (100 MHz to 3 GHz) |
| Directivity | ± 0.2 dB in air (rotation around probe axis) ± 0.4 dB in air (rotation normal to probe axis) |
| Dynamic Range | 2 V/m to > 1000 V/m; Linearity: ± 0.2 dB |
| Dimensions | Overall length: 330 mm (Tip: 16 mm) Tip diameter: 8 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.5 mm |
| Application | General near-field measurements up to 6 GHz Field component measurements Fast automatic scanning in phantoms |



Figure 2 ER3DV6 E-field Probe

H-Field Probe Description

| | |
|----------------------|---|
| Construction | Three concentric loop sensors with 3.8 mm loop diameters Resistively loaded detector diodes for linear response Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether) |
| Frequency | 200 MHz to 3 GHz (absolute accuracy $\pm 6.0\%$, $k=2$); Output linearized |
| Directivity | ± 0.2 dB (spherical isotropy error) |
| Dynamic Range | 10 mA/m to 2 A/m at 1 GHz |
| E-Field Interference | < 10% at 3 GHz (for plane wave) |
| Dimensions | Overall length: 330 mm (Tip: 40 mm) Tip diameter: 6 mm (Body: 12 mm) Distance from probe tip to dipole centers: 3 mm |



Figure 3 H3DV6 H-field Probe

Application General magnetic near-field measurements up to 3
 GHz (in air or liquids)
 Field component measurements
 Surface current measurements
 Low interaction with the measured field

2.2.3. Test Arch Phantom & Phone Positioner

The Test Arch phantom should be positioned horizontally on a stable surface. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot. It enables easy and well defined positioning of the phone and validation dipoles as well as simple teaching of the robot (Dimensions: 370 x 370 x 370 mm).

The Device reference point is set for the EUT at 6.3 mm, the Grid reference point is on the upper surface at the origin of the coordinates, and the “user point \Height Check 0.5 mm” is 0.5mm above the center, allowing verification of the gap of 0.5mm while the probe is positioned there.

The Phone Positioner supports accurate and reliable positioning of any phone with effect on near field $<\pm 0.5$ dB.

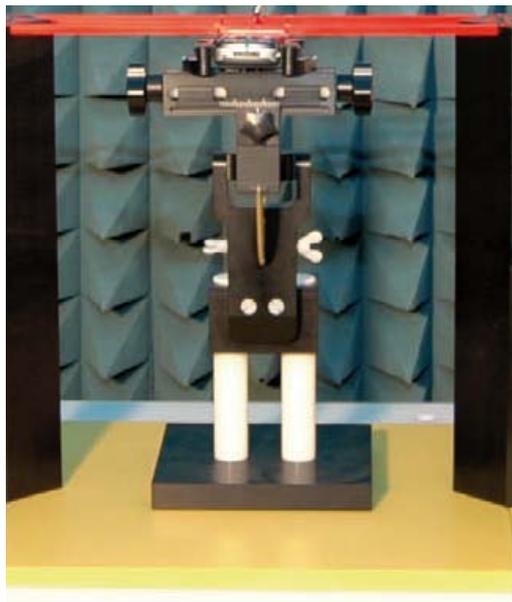


Figure 4 HAC Phantom & Device Holder

2.3. RF Test Procedures

The evaluation was performed with the following procedure:

1. Confirm proper operation of the field probe, probe measurement system and other instrumentation and the positioning system.
2. Position the WD in its intended test position. The gauge block can simplify this positioning. Note that a separate E-field and H-field gauge block will be needed if the center of the probe sensor elements is at different distances from the tip of the probe.
3. Configure the WD normal operation for maximum rated RF output power, at the desired channel and other operating parameters (e.g., test mode), as intended for the test.
4. The center sub-grid shall center on the center of the axial measurement point or the acoustic output, as appropriate. Locate the field probe at the initial test position in the 50 mm by 50 mm grid, which is contained in the measurement plane. If the field alignment method is used, align the probe for maximum field reception.
5. Record the reading.
6. Scan the entire 50 mm by 50 mm region in equally spaced increments and record the reading at each measurement point. The grid is 5 cm by 5 cm area that is divided into 9 evenly sized blocks or sub-grids. The distance between measurement points shall be sufficient to assure the identification of the maximum reading.
7. Identify the five contiguous sub-grids around the center sub-grid with the lowest maximum field strength readings. Thus the six areas to be used to determine the WD's highest emissions are identified and outlined for the final manual scan. Please note that a maximum of five blocks can be excluded for both E-field and H-field measurements for the WD output being measured. Stated another way, the center sub-grid and three others must be common to both the E-field and H-field measurements.
8. Identify the maximum field reading within the non-excluded sub-grids identified in Step 7.
9. Convert the maximum field strength reading identified in Step 8 to V/m or A/m, as appropriate. For probes which require a probe modulation factor, this conversion shall be done using the appropriate probe modulation factor and the calibration.
10. Repeat Step 1 through Step 10 for both the E-field and H-field measurements.
11. Compare this reading to the categories in ANSI C63.19 Clause 7 and record the resulting category. The lowest category number listed in 7.2, Table 7.4, or Table 7.5 obtained in Step 10 for either E- or H-field determines the M category for the audio coupling mode assessment. Record the WD category rating.



Figure 5 WD reference and plane for RF emission measurements

2.4. System Check

Validation Procedure

Place a dipole antenna meeting the requirements given in ANSI C63.19 D.5 in the position normally occupied by the WD. The dipole antenna serves as a known source for an electrical and magnetic output. Position the E-field and H-field probes so that:

The probes and their cables are parallel to the coaxial feed of the dipole antenna.

The probe cables and the coaxial feed of the dipole antenna approach the measurement area from opposite directions.

The center point of the probe element(s) are 10 mm from the closest surface of the dipole elements. Validation was performed to verify that measured E-field and H-field values are within +/-25% from the target reference values provided by the manufacturer. "Values within +/-25% are acceptable. Of which 12% is deviation and 13% is measurement uncertainty."

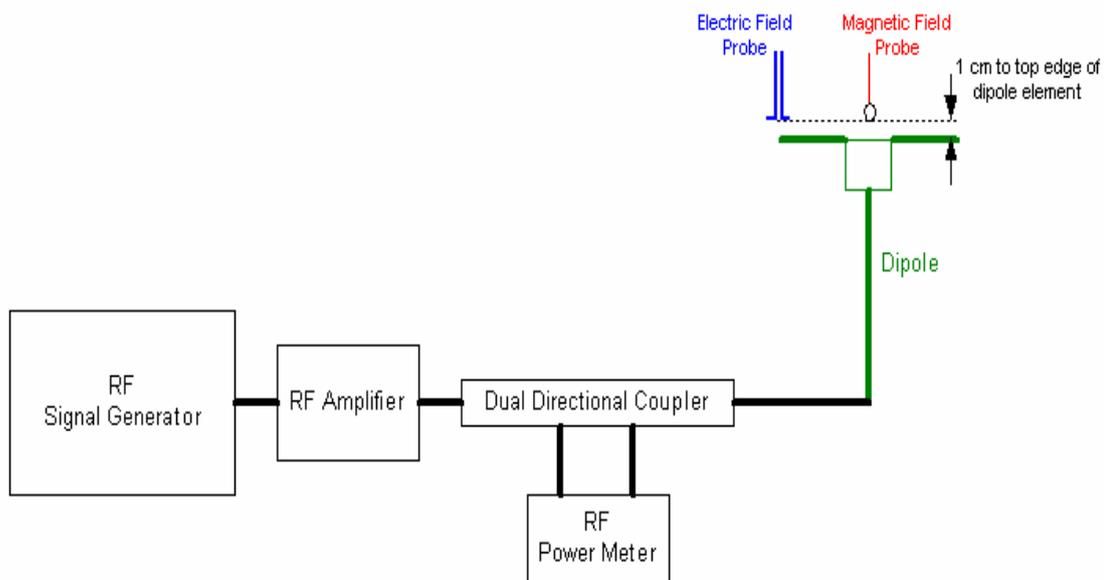


Figure 6 Dipole Validation Setup

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 16 of 119

Dipole Measurement Summary

| E-Field Scan | | | | | |
|--|------------------------|-------------------------|----------------------------------|-------|------------------|
| Mode | Frequency (MHz) | Input Power (mW) | Value | | Test Date |
| CW | 835 | 100 | Target ¹ Value(V/m) | 158.2 | / |
| | | | Measured ² Value(V/m) | 159.0 | January 16, 2012 |
| | | | Deviation ³ (%) | -0.51 | / |
| CW | 1880 | 100 | Target ¹ Value(V/m) | 140.5 | / |
| | | | Measured ² Value(V/m) | 138.1 | January 16, 2012 |
| | | | Deviation ³ (%) | 1.71 | / |
| H-Field Scan | | | | | |
| Mode | Frequency (MHz) | Input Power (mW) | Value | | Test Date |
| CW | 835 | 100 | Target ¹ Value(V/m) | 0.446 | / |
| | | | Measured ² Value(V/m) | 0.455 | January 16, 2012 |
| | | | Deviation ³ (%) | -2.02 | / |
| CW | 1880 | 100 | Target ¹ Value(V/m) | 0.468 | / |
| | | | Measured ² Value(V/m) | 0.462 | January 16, 2012 |
| | | | Deviation ³ (%) | 1.28 | / |
| <p>Notes: 1. Target value is provided by SPEAD in the calibration certificate of specific dipoles. 2. Please refer to the attachment for detailed measurement data and plot. 3. Deviation (%) = 100 * (Target value minus Measured value) divided by Target value.</p> | | | | | |

2.5. Probe Modulation Factor

The Probe Modulation Factor (PMF) is defined as the ratio of the field readings for a CW and a modulated signal with the equivalent Field Envelope Peak as defined in ANSI C63.19 (Chapter C.3.1). Calibration shall be made of the modulation response of the probe and its instrumentation chain. This Calibration shall be performed with the field probe, attached to the instrumentation that is to be used with it during the measurement. The response of the probe system to a CW field at the frequency(s) of interest is compared to its response to a modulated signal with equal peak amplitude. The field level of the test signals shall be more than 10dB above the ambient level and the noise floor of the instrumentation being used. The ratio of the CW reading to that taken with a modulated field shall be applied to the readings taken of modulated fields of the specified type.

Modulation Factor Test Procedure

This may be done using the following procedure:

1. Fix the field probe in a set location relative to a field generating device, such as the reference dipole antenna.
2. Illuminate the probe using the wireless device connected to the reference dipole with a test signal at the intended measurement frequency, Ensure there is sufficient field coupling between the probe and the antenna so the resulting reading is greater than 10 dB above the probe system noise floor but within the systems operating range.
3. Record the amplitude applied to the antenna during transmission and the field strength measured by the E-field probe located near the tip of the dipole antenna
4. Replace the wireless device with an RF signal generator producing an unmodulated CW signal and set to the wireless device operating frequency.
5. Set the amplitude of the unmodulated signal to equal that recorded from the wireless device.
6. Record the reading of the probe measurement system of the unmodulated signal.
7. The ratio, in linear units, of the probe reading in Step 6 to the reading in Step 3 is the E-field modulation factor. $PMF_E = E_{CW} / E_{mod}$ ($PMF_H = H_{CW} / H_{mod}$)
8. Repeat the previous steps using the H-field probe, except locate the probe at the center of the dipole.

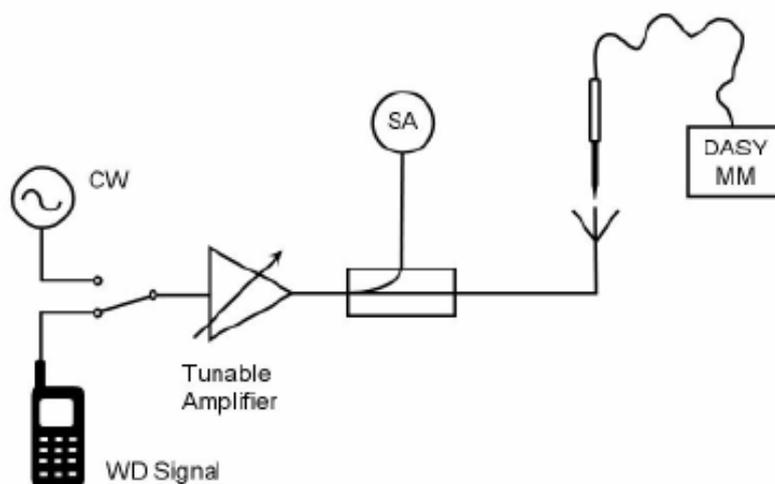


Figure 7 Probe Modulation Factor Test Setup

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 18 of 119

PMF

| Band | E-Field Probe Modulation Factor | H-Field Probe Modulation Factor |
|---------------|--|--|
| GSM 850 | 2.81 | 2.75 |
| GSM 1900 | 2.84 | 2.84 |
| WCDMA Band II | 1.02 | 1.01 |
| WCDMA Band IV | 1.02 | 1.01 |
| WCDMA Band V | 1.03 | 1.01 |

TA Technology (Shanghai) Co., Ltd.
Test Report

2.6. Conducted Output Power Measurement

Summary

The DUT is tested using an E5515C communications tester as controller unit to set test channels and maximum output power to the DUT, as well as for measuring the conducted power. Conducted output power was measured using an integrated RF connector and attached RF cable. This result contains conducted output power for the EUT.

Conducted Power Results

| GSM 850 | Conducted Power(dBm) | | |
|--------------------------------|-----------------------------|--------------|--------------|
| | Channel 128 | Channel 190 | Channel 251 |
| Test Results | 31.51 | 31.61 | 31.63 |
| GSM 1900 | Conducted Power(dBm) | | |
| | Channel 512 | Channel 661 | Channel 810 |
| Test Results | 30.11 | 29.88 | 29.78 |
| WCDMA Band II | Conducted Power(dBm) | | |
| | Channel 9262 | Channel 9400 | Channel 9538 |
| 12.2kbps RMC | 22.57 | 23.05 | 22.62 |
| 64kbps RMC | 22.51 | 23.04 | 22.65 |
| 144kbps RMC | 22.48 | 23.06 | 22.6 |
| 384kbps RMC | 22.51 | 23.04 | 22.6 |
| WCDMA Band II HSDPA | Conducted Power(dBm) | | |
| | Channel 9262 | Channel 9400 | Channel 9538 |
| Sub - Test 1 | 22.45 | 23.02 | 22.58 |
| Sub - Test 2 | 22.15 | 22.73 | 22.32 |
| Sub - Test 3 | 21.93 | 22.52 | 22.15 |
| Sub - Test 4 | 21.57 | 22.06 | 22.18 |
| WCDMA Band IV | Conducted Power(dBm) | | |
| | Channel 1312 | Channel 1413 | Channel 1513 |
| 12.2kbps RMC | 23.15 | 23.25 | 23.24 |
| 64kbps RMC | 23.26 | 23.3 | 23.21 |
| 144kbps RMC | 23.18 | 23.33 | 23.3 |

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 20 of 119

| | | | |
|--------------------------------|-----------------------------|--------------|--------------|
| 384kbps RMC | 23.26 | 23.27 | 23.24 |
| WCDMA Band IV HSDPA | Conducted Power(dBm) | | |
| | Channel 1312 | Channel 1413 | Channel 1513 |
| Sub - Test 1 | 23 | 23.11 | 23.12 |
| Sub - Test 2 | 22.62 | 22.82 | 22.77 |
| Sub - Test 3 | 22.11 | 22.3 | 22.35 |
| Sub - Test 4 | 22.08 | 22.18 | 22.01 |
| WCDMA Band V | Conducted Power(dBm) | | |
| | Channel 4132 | Channel 4183 | Channel 4233 |
| 12.2kbps RMC | 22.17 | 22.06 | 22.26 |
| 64kbps RMC | 22.18 | 22.03 | 22.21 |
| 144kbps RMC | 22.16 | 22.03 | 22.16 |
| 384kbps RMC | 22.2 | 22.04 | 22.23 |
| WCDMA Band V HSDPA | Conducted Power(dBm) | | |
| | Channel 4132 | Channel 4183 | Channel 4233 |
| Sub - Test 1 | 22.14 | 21.96 | 22.11 |
| Sub - Test 2 | 21.94 | 21.79 | 21.95 |
| Sub - Test 3 | 21.43 | 21.27 | 21.47 |
| Sub - Test 4 | 21.5 | 21.48 | 21.44 |

TA Technology (Shanghai) Co., Ltd.
Test Report

3. Test Results

3.1. ANSI C63.19-2007 Limits

| Category | | Telephone RF parameters < 960 MHz | | | |
|----------------|-----|-----------------------------------|-----|-------------------|-----|
| Near field | AWF | E-field emissions | | H-field emissions | |
| Category M1/T1 | 0 | 631.0 to 1122.0 | V/m | 1.91 to 3.39 | A/m |
| | -5 | 473.2 to 841.4 | V/m | 1.43 to 2.54 | A/m |
| Category M2/T2 | 0 | 354.8 to 631.0 | V/m | 1.07 to 1.91 | A/m |
| | -5 | 266.1 to 473.2 | V/m | 0.80 to 1.43 | A/m |
| Category M3/T3 | 0 | 199.5 to 354.8 | V/m | 0.60 to 1.07 | A/m |
| | -5 | 149.6 to 266.1 | V/m | 0.45 to 0.80 | A/m |
| Category M4/T4 | 0 | < 199.5 | V/m | < 0.60 | A/m |
| | -5 | < 149.6 | V/m | < 0.45 | A/m |
| Category | | Telephone RF parameters > 960 MHz | | | |
| Near field | AWF | E-field emissions | | H-field emissions | |
| Category M1/T1 | 0 | 199.5 to 354.8 | V/m | 0.60 to 1.07 | A/m |
| | -5 | 149.6 to 266.1 | V/m | 0.45 to 0.80 | A/m |
| Category M2/T2 | 0 | 112.2 to 199.5 | V/m | 0.34 to 0.60 | A/m |
| | -5 | 84.1 to 149.6 | V/m | 0.25 to 0.45 | A/m |
| Category M3/T3 | 0 | 63.1 to 112.2 | V/m | 0.19 to 0.34 | A/m |
| | -5 | 47.3 to 84.1 | V/m | 0.14 to 0.25 | A/m |
| Category M4/T4 | 0 | < 63.1 | V/m | < 0.19 | A/m |
| | -5 | < 47.3 | V/m | < 0.14 | A/m |

TA Technology (Shanghai) Co., Ltd.
Test Report

3.2. Summary Test Results

GSM 850 Results

| E-Field | | | | | |
|----------------|------------------------|-------------------------|-------------------------|---------------|----------------------|
| Channel | Frequency (MHz) | Peak Field (V/m) | Power Drift (dB) | Rating | Graph Results |
| High/251 | 848.8 | 187.7 | 0.055 | M3 | Figure 12 |
| Middle/190 | 836.6 | 183.0 | -0.032 | M3 | Figure 13 |
| Low/128 | 824.2 | 145.0 | -0.115 | M4 | Figure 14 |
| H-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (A/m) | Power Drift (dB) | Rating | Graph Results |
| High/251 | 848.8 | 0.251 | 0.030 | M4 | Figure 15 |
| Middle/190 | 836.6 | 0.209 | 0.136 | M4 | Figure 16 |
| Low/128 | 824.2 | 0.157 | 0.169 | M4 | Figure 17 |

GSM 1900 Results

| E-Field | | | | | |
|----------------|------------------------|-------------------------|-------------------------|---------------|----------------------|
| Channel | Frequency (MHz) | Peak Field (V/m) | Power Drift (dB) | Rating | Graph Results |
| High/810 | 1909.8 | 69.2 | -0.080 | M3 | Figure 18 |
| Middle/661 | 1880 | 66.0 | -0.040 | M3 | Figure 19 |
| Low/512 | 1850.2 | 66.2 | 0.057 | M3 | Figure 20 |
| H-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (A/m) | Power Drift (dB) | Rating | Graph Results |
| High/810 | 1909.8 | 0.208 | -0.012 | M3 | Figure 21 |
| Middle/661 | 1880 | 0.192 | 0.035 | M3 | Figure 22 |
| Low/512 | 1850.2 | 0.201 | 0.038 | M3 | Figure 23 |

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 23 of 119

WCDMA Band II Results

| WCDMA Band II E-Field | | | | | |
|-------------------------------------|------------------------|-------------------------|-------------------------|---------------|----------------------|
| Channel | Frequency (MHz) | Peak Field (V/m) | Power Drift (dB) | Rating | Graph Results |
| High/9538 | 1907.6 | 32.3 | -0.007 | M4 | Figure 24 |
| Middle/9400 | 1880 | 33.5 | -0.005 | M4 | Figure 25 |
| Low/9262 | 1852.4 | 34.6 | 0.033 | M4 | Figure 26 |
| WCDMA Band II +HSDPA E-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (V/m) | Power Drift (dB) | Rating | Graph Results |
| High/9538 | 1907.6 | 33.6 | 0.099 | M4 | Figure 27 |
| Middle/9400 | 1880 | 35.6 | -0.065 | M4 | Figure 28 |
| Low/9262 | 1852.4 | 36.8 | -0.027 | M4 | Figure 29 |
| WCDMA Band II H-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (A/m) | Power Drift (dB) | Rating | Graph Results |
| High/9538 | 1907.6 | 0.097 | -0.046 | M4 | Figure 30 |
| Middle/9400 | 1880 | 0.098 | 0.007 | M4 | Figure 31 |
| Low/9262 | 1852.4 | 0.110 | 0.040 | M4 | Figure 32 |
| WCDMA Band II +HSDPA H-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (A/m) | Power Drift (dB) | Rating | Graph Results |
| High/9538 | 1907.6 | 0.096 | 0.042 | M4 | Figure 33 |
| Middle/9400 | 1880 | 0.097 | 0.160 | M4 | Figure 34 |
| Low/9262 | 1852.4 | 0.109 | 0.032 | M4 | Figure 35 |

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 24 of 119

WCDMA Band IV Results

| WCDMA Band IV E-Field | | | | | |
|-------------------------------------|------------------------|-------------------------|-------------------------|---------------|----------------------|
| Channel | Frequency (MHz) | Peak Field (V/m) | Power Drift (dB) | Rating | Graph Results |
| High/1513 | 1752.6 | 40.9 | 0.027 | M4 | Figure 36 |
| Middle/1413 | 1732.6 | 37.7 | 0.014 | M4 | Figure 37 |
| Low/1312 | 1712.4 | 40.3 | 0.016 | M4 | Figure 38 |
| WCDMA Band IV +HSDPA E-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (V/m) | Power Drift (dB) | Rating | Graph Results |
| High/1513 | 1752.6 | 41.3 | 0.038 | M4 | Figure 39 |
| Middle/1413 | 1732.6 | 38.0 | 0.059 | M4 | Figure 40 |
| Low/1312 | 1712.4 | 40.4 | -0.021 | M4 | Figure 41 |
| WCDMA Band IV H-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (A/m) | Power Drift (dB) | Rating | Graph Results |
| High/1513 | 1752.6 | 0.114 | 0.087 | M4 | Figure 42 |
| Middle/1413 | 1732.6 | 0.105 | 0.009 | M4 | Figure 43 |
| Low/1312 | 1712.4 | 0.110 | 0.088 | M4 | Figure 44 |
| WCDMA Band IV +HSDPA H-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (A/m) | Power Drift (dB) | Rating | Graph Results |
| High/1513 | 1752.6 | 0.113 | 0.052 | M4 | Figure 45 |
| Middle/1413 | 1732.6 | 0.104 | 0.033 | M4 | Figure 46 |
| Low/1312 | 1712.4 | 0.109 | 0.052 | M4 | Figure 47 |

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 25 of 119

WCDMA Band V Results

| WCDMA Band V E-Field | | | | | |
|------------------------------------|------------------------|-------------------------|-------------------------|---------------|----------------------|
| Channel | Frequency (MHz) | Peak Field (V/m) | Power Drift (dB) | Rating | Graph Results |
| High/4233 | 846.6 | 65.3 | -0.078 | M4 | Figure 48 |
| Middle/4183 | 836.6 | 58.3 | 0.074 | M4 | Figure 49 |
| Low/4132 | 826.4 | 59.4 | -0.033 | M4 | Figure 50 |
| WCDMA Band V +HSDPA E-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (V/m) | Power Drift (dB) | Rating | Graph Results |
| High/4233 | 846.6 | 64.7 | -0.060 | M4 | Figure 51 |
| Middle/4183 | 836.6 | 58.3 | -0.056 | M4 | Figure 52 |
| Low/4132 | 826.4 | 61.2 | -0.007 | M4 | Figure 53 |
| WCDMA Band V H-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (A/m) | Power Drift (dB) | Rating | Graph Results |
| High/4233 | 846.6 | 0.086 | 0.156 | M4 | Figure 54 |
| Middle/4183 | 836.6 | 0.070 | 0.026 | M4 | Figure 55 |
| Low/4132 | 826.4 | 0.073 | 0.158 | M4 | Figure 56 |
| WCDMA Band V +HSDPA H-Field | | | | | |
| Channel | Frequency (MHz) | Peak Field (A/m) | Power Drift (dB) | Rating | Graph Results |
| High/4233 | 846.6 | 0.085 | 0.016 | M4 | Figure 57 |
| Middle/4183 | 836.6 | 0.070 | 0.038 | M4 | Figure 58 |
| Low/4132 | 826.4 | 0.072 | 0.064 | M4 | Figure 59 |

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 26 of 119

4. Measurement Uncertainty

| No. | Error source | Type | Uncertainty Value (%) | Prob. Dist. | k | c_{iE} | c_{iH} | Standard Uncertainty (%) u_i (%) E | Standard Uncertainty (%) u_i (%) H | Degree of freedom V_{eff} or v_i |
|----------------------------|--------------------------------|------|-----------------------|-------------|------------|----------|----------|---|---|---|
| Measurement System | | | | | | | | | | |
| 1 | Probe Calibration | B | 5.1 | N | 1 | 1 | 1 | 5.1 | 5.1 | ∞ |
| 2 | Axial Isotropy | B | 4.7 | R | $\sqrt{3}$ | 1 | 1 | 2.7 | 2.7 | ∞ |
| 3 | Sensor Displacement | B | 16.5 | R | $\sqrt{3}$ | 1 | 0.145 | 9.5 | 1.4 | ∞ |
| 4 | Boundary Effects | B | 2.4 | R | $\sqrt{3}$ | 1 | 1 | 1.4 | 1.4 | ∞ |
| 5 | Linearity | B | 4.7 | R | $\sqrt{3}$ | 1 | 1 | 2.7 | 2.7 | ∞ |
| 6 | Scaling to Peak Envelope Power | B | 2.0 | R | $\sqrt{3}$ | 1 | 1 | 1.2 | 1.2 | ∞ |
| 7 | System Detection Limit | B | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.6 | 0.6 | ∞ |
| 8 | Readout Electronics | B | 0.3 | N | 1 | 1 | 1 | 0.3 | 0.3 | ∞ |
| 9 | Response Time | B | 0.8 | R | $\sqrt{3}$ | 1 | 1 | 0.5 | 0.5 | ∞ |
| 10 | Integration Time | B | 2.6 | R | $\sqrt{3}$ | 1 | 1 | 1.5 | 1.5 | ∞ |
| 11 | RF Ambient Conditions | B | 3.0 | R | $\sqrt{3}$ | 1 | 1 | 1.7 | 1.7 | ∞ |
| 12 | RF Reflections | B | 12.0 | R | $\sqrt{3}$ | 1 | 1 | 6.9 | 6.9 | ∞ |
| 13 | Probe Positioner | B | 1.2 | R | $\sqrt{3}$ | 1 | 0.67 | 0.7 | 0.5 | ∞ |
| 14 | Probe Positioning | A | 4.7 | R | $\sqrt{3}$ | 1 | 0.67 | 2.7 | 1.8 | ∞ |
| 15 | Extra. And Interpolation | B | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.6 | 0.6 | ∞ |
| Test Sample Related | | | | | | | | | | |
| 16 | Device Positioning Vertical | B | 4.7 | R | $\sqrt{3}$ | 1 | 0.67 | 2.7 | 1.8 | ∞ |
| 17 | Device Positioning Lateral | B | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.6 | 0.6 | ∞ |
| 18 | Device Holder and Phantom | B | 2.4 | R | $\sqrt{3}$ | 1 | 1 | 1.4 | 1.4 | ∞ |

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 27 of 119

| | | | | | | | | | | |
|--|-------------------|---|-----|---|------------|---|------|------|------|----------|
| 19 | Power Drift | B | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.9 | 2.9 | ∞ |
| Phantom and Setup related | | | | | | | | | | |
| 20s | Phantom Thickness | B | 2.4 | R | $\sqrt{3}$ | 1 | 0.67 | 1.4 | 0.9 | ∞ |
| Combined standard uncertainty(%) | | | | | | | | 14.7 | 10.9 | |
| Expanded Std. uncertainty on power (K=2) | | | | | | | | 29.4 | 21.8 | |
| Expanded Std. uncertainty on field (K=2) | | | | | | | | 14.7 | 10.9 | |

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 28 of 119

5. Main Test Instruments

| No. | Name | Type | Serial Number | Calibration Date | Valid Period |
|-----|------------------------|----------------|---------------|--------------------------|--------------|
| 01 | Power meter | Agilent E4417A | GB41291714 | March 12, 2011 | One year |
| 02 | Power sensor | Agilent N8481H | MY50350004 | September 25, 2011 | One year |
| 03 | Signal Generator | HP 8341B | 2730A00804 | September 12, 2011 | One year |
| 04 | Amplifier | IXA-020 | 0401 | No Calibration Requested | |
| 05 | BTS | E5515C | MY48360988 | December 2, 2011 | One year |
| 06 | E-Field Probe | ER3DV6 | 2302 | June 15, 2011 | One year |
| 07 | H-Field Probe | H3DV6 | 6187 | June 17, 2011 | One year |
| 08 | DAE | DAE4 | 871 | November 22, 2011 | One year |
| 09 | Validation Kit 835MHz | CD835V3 | 1133 | April 22, 2009 | Three years |
| 10 | Validation Kit 1880MHz | CD1880V3 | 1115 | April 22, 2009 | Three years |

*****END OF REPORT BODY*****

TA Technology (Shanghai) Co., Ltd. Test Report

ANNEX A: System Check Results

HAC_System Performance Check at 835MHz_E

DUT: Dipole 835 MHz; Type: CD835V3; SN:1133

Date/Time: 1/16/2012 2:13:32 PM

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 159.0 V/m

Probe Modulation Factor = 1.00

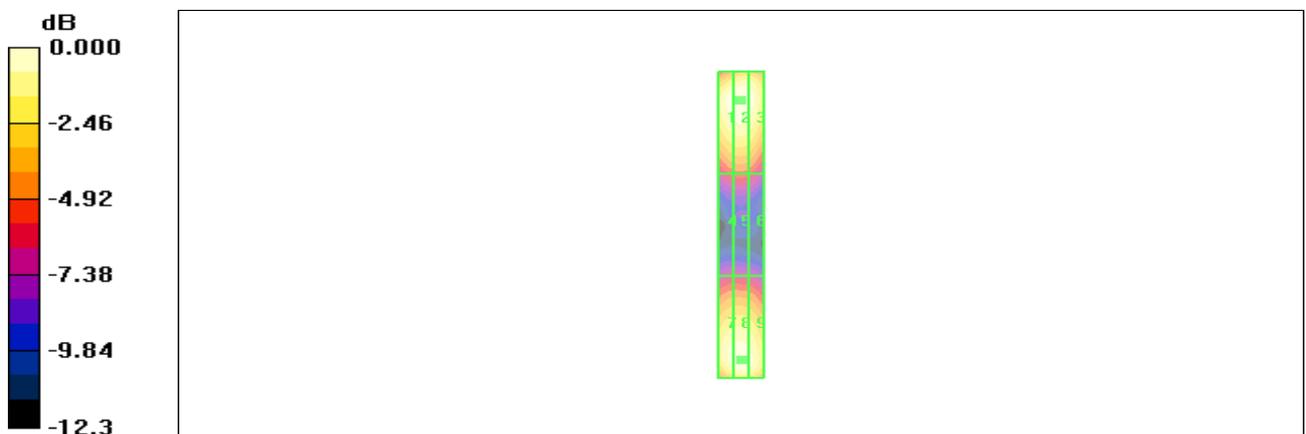
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 105.5 V/m; Power Drift = -0.026 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|-----------------|-----------------|-----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 158.1 M4 | 161.0 M4 | 156.3 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 86.9 M4 | 89.2 M4 | 85.8 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 155.0 M4 | 159.0 M4 | 154.2 M4 |



0 dB = 161.0V/m

Figure 8 System Performance Check 835MHz_E

TA Technology (Shanghai) Co., Ltd. Test Report

Report No. RZA1201-0064HAC01R2

Page 30 of 119

HAC_System Performance Check at 835MHz_H

DUT: Dipole 835 MHz; Type: CD835V3; SN: 1133

Date/Time: 1/16/2012 11:32:58 AM

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.455 A/m

Probe Modulation Factor = 1.00

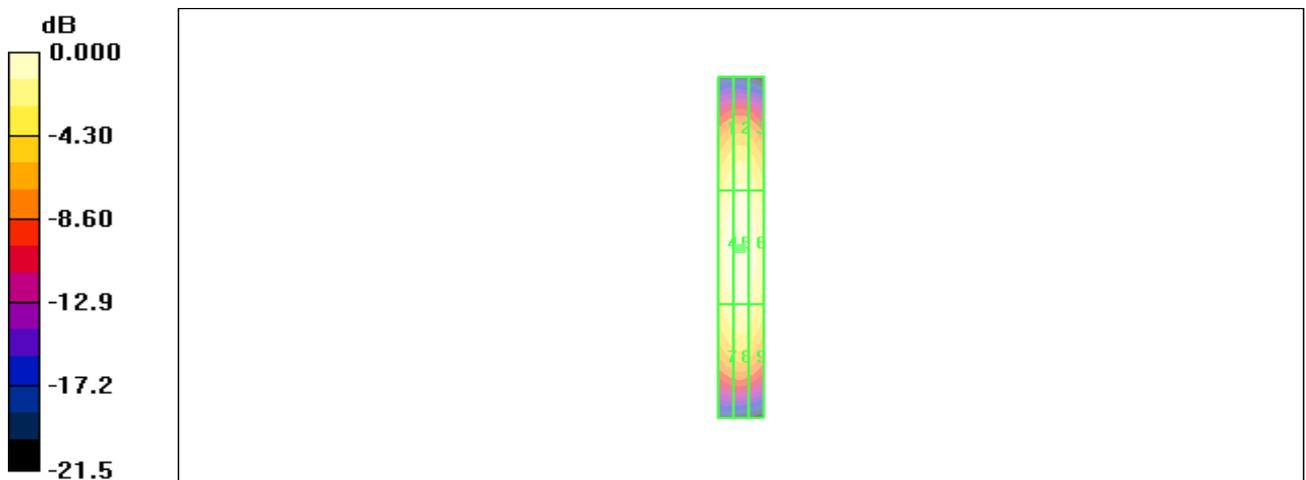
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.485 A/m; Power Drift = -0.005 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.383 M4 | Grid 2 0.401 M4 | Grid 3 0.376 M4 |
| Grid 4 0.437 M4 | Grid 5 0.455 M4 | Grid 6 0.429 M4 |
| Grid 7 0.386 M4 | Grid 8 0.401 M4 | Grid 9 0.377 M4 |



0 dB = 0.455A/m

Figure 9 System Performance Check 835MHz_H

TA Technology (Shanghai) Co., Ltd. Test Report

Report No. RZA1201-0064HAC01R2

Page 31 of 119

HAC_System Performance Check at 1880MHz_E

DUT: Dipole 1880 MHz; Type: CD1880V3; SN: 1115

Date/Time: 1/16/2012 12:50:34 PM

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 138.1 V/m

Probe Modulation Factor = 1.00

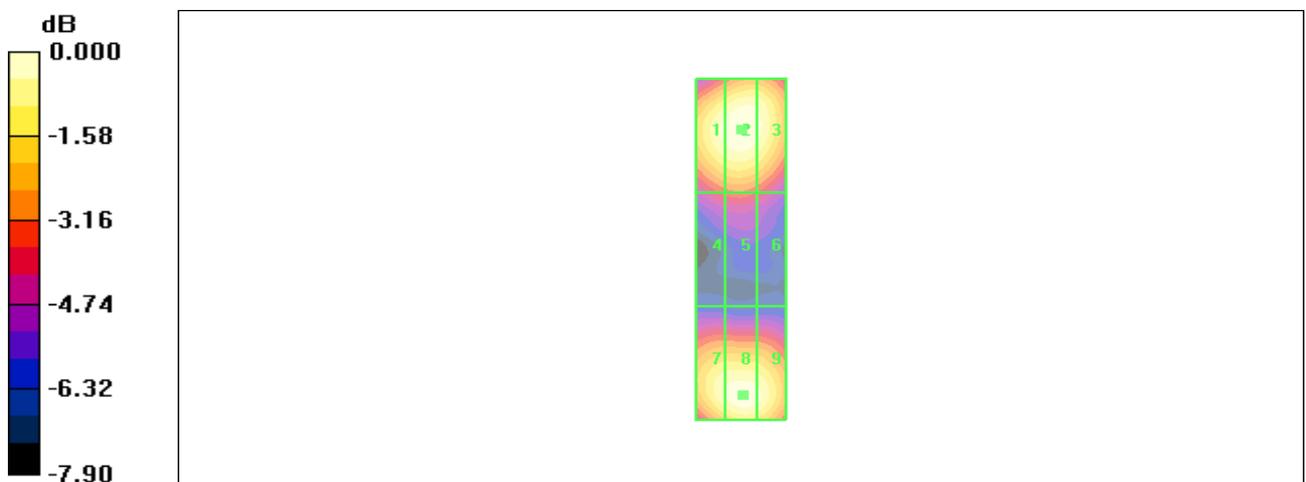
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 156.5 V/m; Power Drift = -0.007 dB

Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak E-field in V/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 134.9 M2 | Grid 2 139.3 M2 | Grid 3 135.0 M2 |
| Grid 4 93.7 M3 | Grid 5 96.0 M3 | Grid 6 91.5 M3 |
| Grid 7 132.3 M2 | Grid 8 138.1 M2 | Grid 9 134.6 M2 |



0 dB = 139.3V/m

Figure 10 System Performance Check 1880MHz_E

TA Technology (Shanghai) Co., Ltd. Test Report

HAC_System Performance Check at 1880MHz_H

DUT: Dipole 1880 MHz; Type: CD1880V3; SN: 1115

Date/Time: 1/16/2012 10:08:22 AM

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to Dipole = 10mm/Hearing Aid

Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.462 A/m

Probe Modulation Factor = 1.00

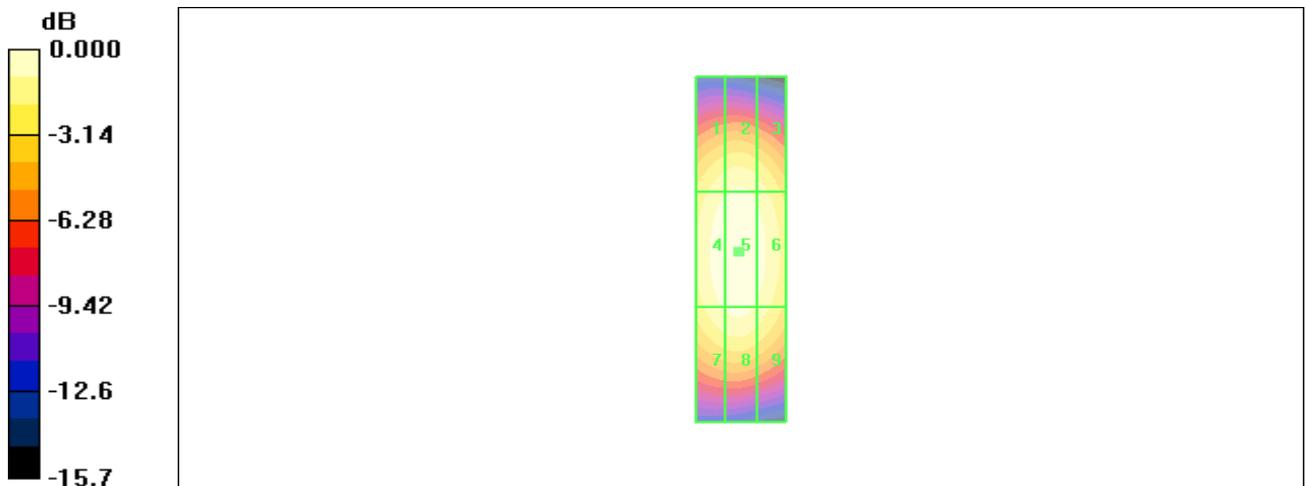
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.489 A/m; Power Drift = 0.040 dB

Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.405 M2 | Grid 2 0.419 M2 | Grid 3 0.394 M2 |
| Grid 4 0.448 M2 | Grid 5 0.462 M2 | Grid 6 0.435 M2 |
| Grid 7 0.414 M2 | Grid 8 0.427 M2 | Grid 9 0.400 M2 |



0 dB = 0.462A/m

Figure 11 System Performance Check 1880MHz_H

ANNEX B: Graph Results

HAC RF E-Field GSM 850 High

Date/Time: 1/16/2012 3:34:18 PM

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device High/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 187.7 V/m

Probe Modulation Factor = 2.81

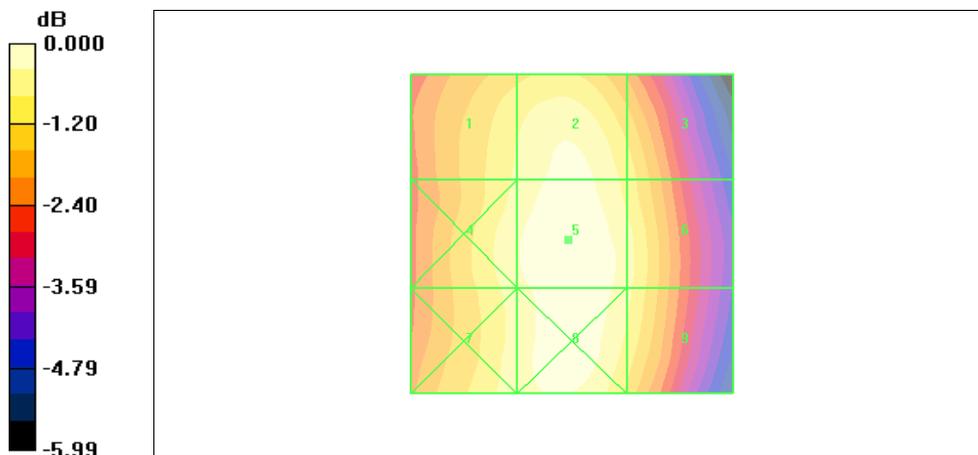
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 86.5 V/m; Power Drift = 0.055 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 172.9 M3 | Grid 2 182.7 M3 | Grid 3 168.5 M3 |
| Grid 4 178.6 M3 | Grid 5 187.7 M3 | Grid 6 175.1 M3 |
| Grid 7 176.0 M3 | Grid 8 186.0 M3 | Grid 9 173.8 M3 |



0 dB = 187.7V/m

Figure 12 HAC RF E-Field GSM 850 Channel 251

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field GSM 850 Middle

Date/Time: 1/16/2012 3:28:58 PM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 183.0 V/m

Probe Modulation Factor = 2.81

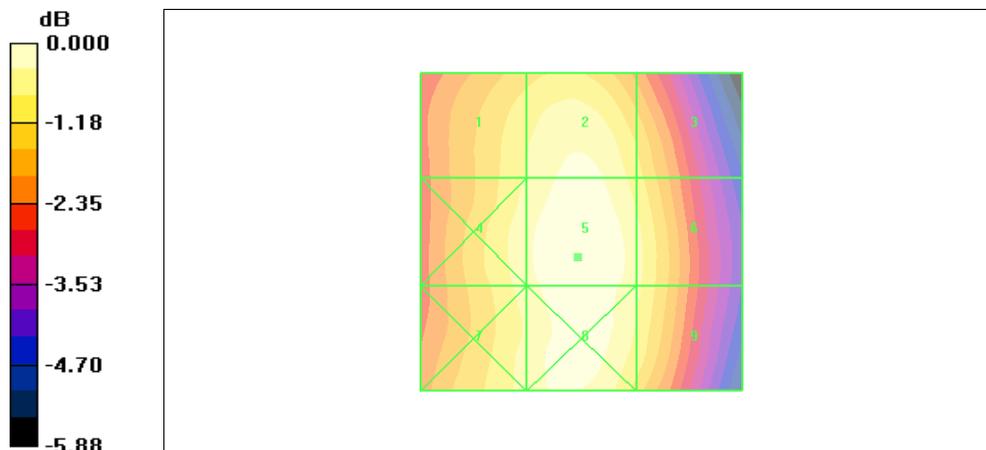
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 84.4 V/m; Power Drift = -0.032 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 168.1 M3 | Grid 2 177.6 M3 | Grid 3 163.4 M3 |
| Grid 4 173.2 M3 | Grid 5 183.0 M3 | Grid 6 170.5 M3 |
| Grid 7 171.2 M3 | Grid 8 181.3 M3 | Grid 9 169.3 M3 |



0 dB = 183.0V/m

Figure 13 HAC RF E-Field GSM 850 Channel 190

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field GSM 850 Low

Date/Time: 1/16/2012 3:39:28 PM

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 145.0 V/m

Probe Modulation Factor = 2.81

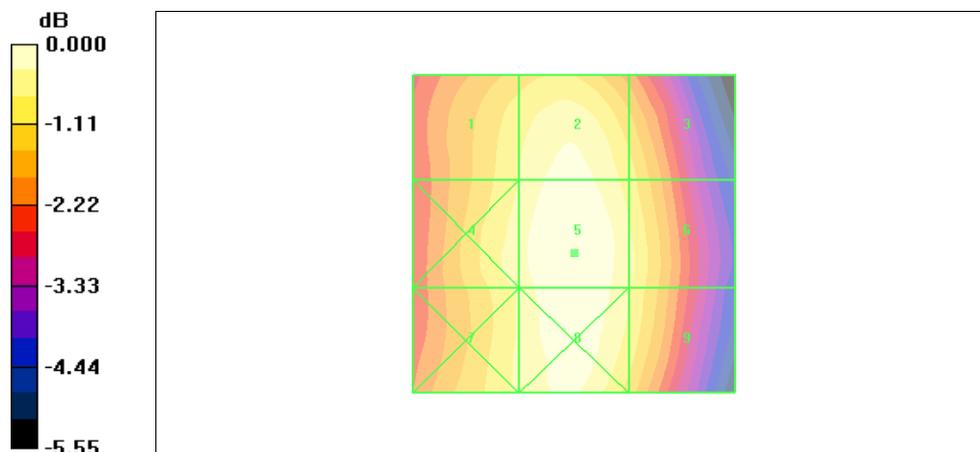
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 67.2 V/m; Power Drift = -0.115 dB

Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak E-field in V/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 133.7 M4 | Grid 2 141.1 M4 | Grid 3 130.6 M4 |
| Grid 4 137.4 M4 | Grid 5 145.0 M4 | Grid 6 135.2 M4 |
| Grid 7 134.9 M4 | Grid 8 142.9 M4 | Grid 9 134.0 M4 |



0 dB = 145.0V/m

Figure 14 HAC RF E-Field GSM 850 Channel 128

HAC RF H-Field GSM 850 High

Date/Time: 1/16/2012 7:36:40 PM

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device High/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.251 A/m

Probe Modulation Factor = 2.75

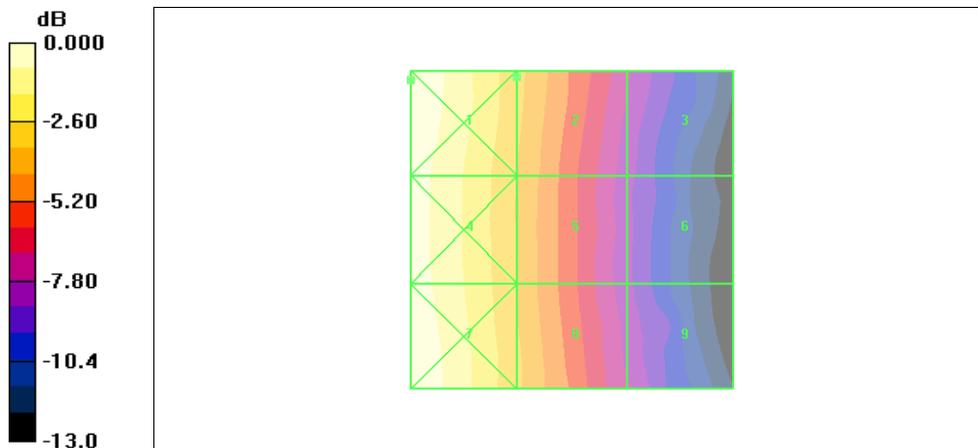
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.068 A/m; Power Drift = 0.030 dB

Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.363 M4 | Grid 2 0.251 M4 | Grid 3 0.151 M4 |
| Grid 4 0.348 M4 | Grid 5 0.243 M4 | Grid 6 0.140 M4 |
| Grid 7 0.360 M4 | Grid 8 0.249 M4 | Grid 9 0.152 M4 |



0 dB = 0.363A/m

Figure 15 HAC RF H-Field GSM 850Channel 251

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field GSM 850 Middle

Date/Time: 1/16/2012 7:31:45 PM

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.209 A/m

Probe Modulation Factor = 2.75

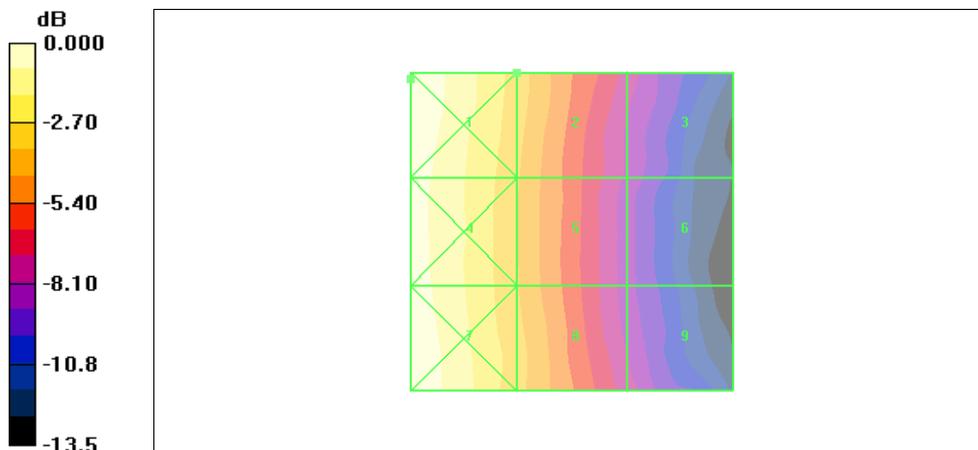
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.056 A/m; Power Drift = 0.136 dB

Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.300 M4 | Grid 2 0.209 M4 | Grid 3 0.126 M4 |
| Grid 4 0.286 M4 | Grid 5 0.201 M4 | Grid 6 0.116 M4 |
| Grid 7 0.297 M4 | Grid 8 0.207 M4 | Grid 9 0.125 M4 |



0 dB = 0.300A/m

Figure 16 HAC RF H-Field GSM 850 Channel 190

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field GSM 850 Low

Date/Time: 1/16/2012 7:41:42 PM

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.157 A/m

Probe Modulation Factor = 2.75

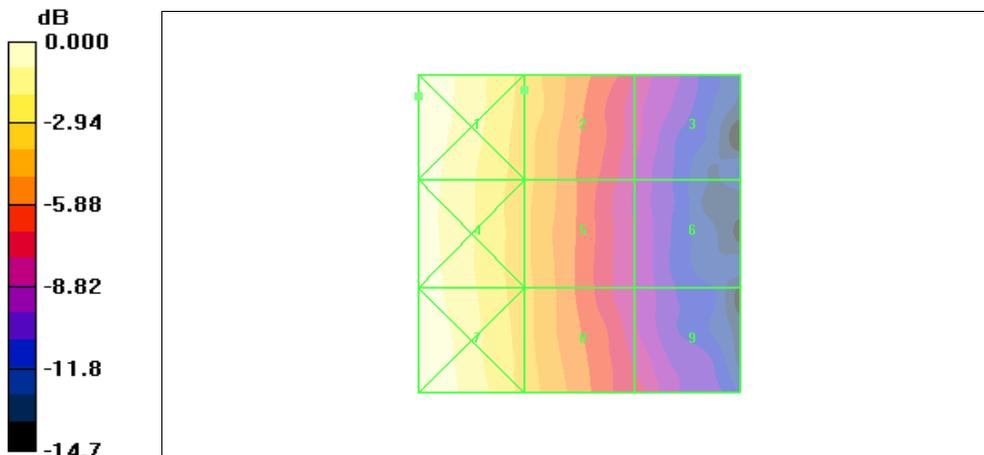
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.041 A/m; Power Drift = 0.169 dB

Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.228 M4 | Grid 2 0.157 M4 | Grid 3 0.091 M4 |
| Grid 4 0.218 M4 | Grid 5 0.151 M4 | Grid 6 0.083 M4 |
| Grid 7 0.228 M4 | Grid 8 0.156 M4 | Grid 9 0.098 M4 |



0 dB = 0.228A/m

Figure 17 HAC RF H-Field GSM 850 Channel 128

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field GSM 1900 High

Date/Time: 1/16/2012 3:49:35 PM

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device High/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 69.2 V/m

Probe Modulation Factor = 2.84

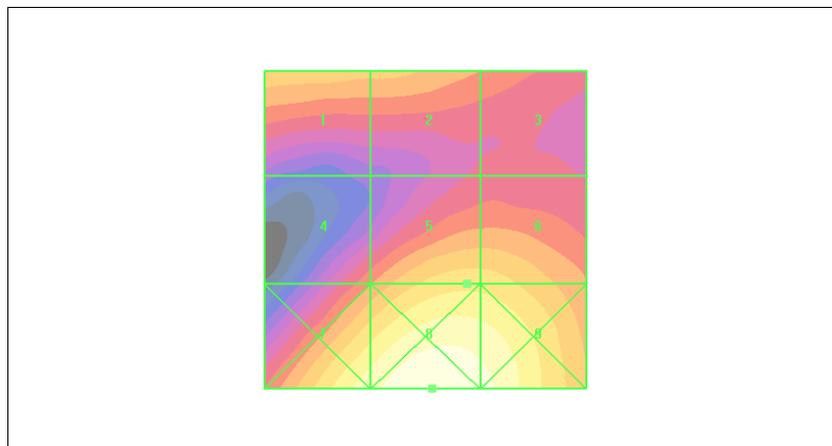
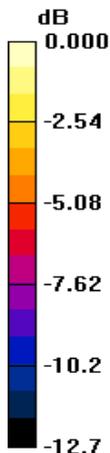
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 20.1 V/m; Power Drift = -0.080 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 62.9 M3 | Grid 2 61.0 M3 | Grid 3 53.4 M3 |
| Grid 4 53.1 M3 | Grid 5 69.2 M3 | Grid 6 68.9 M3 |
| Grid 7 84.1 M2 | Grid 8 95.4 M2 | Grid 9 90.0 M2 |



0 dB = 95.4V/m

Figure 18 HAC RF E-Field GSM 1900 Channel 810

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field GSM 1900 Middle

Date/Time: 1/16/2012 3:44:23 PM

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 66.0 V/m

Probe Modulation Factor = 2.84

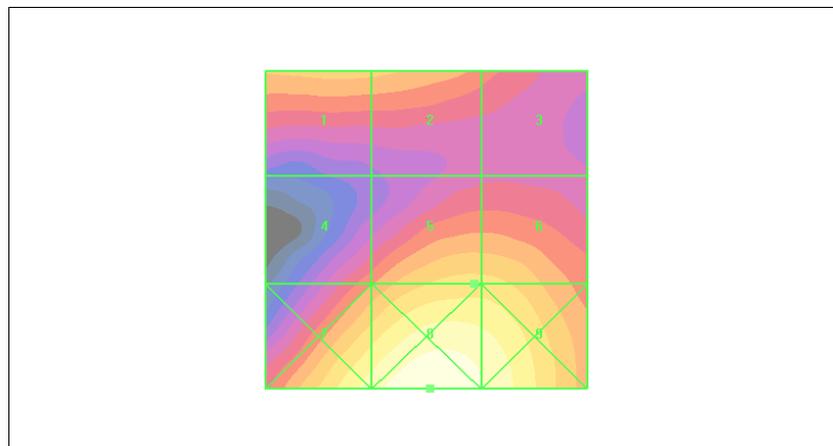
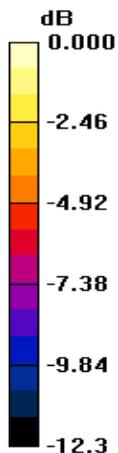
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 19.5 V/m; Power Drift = -0.040 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 60.3 M3 | Grid 2 59.7 M3 | Grid 3 50.2 M3 |
| Grid 4 52.2 M3 | Grid 5 66.0 M3 | Grid 6 66.0 M3 |
| Grid 7 81.0 M3 | Grid 8 92.4 M2 | Grid 9 85.2 M2 |



0 dB = 92.4V/m

Figure 19 HAC RF E-Field GSM 1900 Channel 661

HAC RF E-Field GSM 1900 Low

Date/Time: 1/16/2012 3:54:44 PM

Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 66.2 V/m

Probe Modulation Factor = 2.84

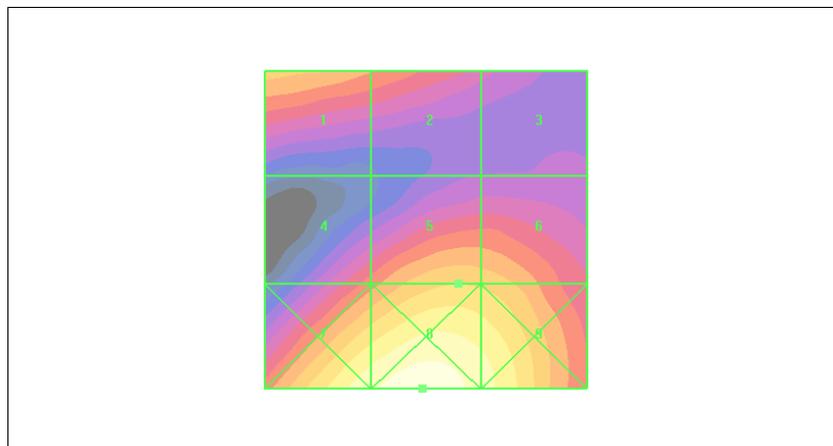
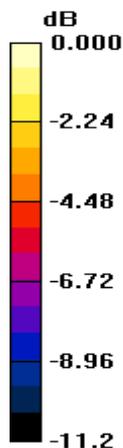
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 19.9 V/m; Power Drift = 0.057 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 63.3 M3 | Grid 2 56.5 M3 | Grid 3 45.1 M4 |
| Grid 4 54.0 M3 | Grid 5 66.2 M3 | Grid 6 65.3 M3 |
| Grid 7 85.1 M2 | Grid 8 93.5 M2 | Grid 9 82.6 M3 |



0 dB = 93.5V/m

Figure 20 HAC RF E-Field GSM 1900 Channel 512

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field GSM 1900 High

Date/Time: 1/16/2012 7:18:27 PM

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device High/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.208 A/m

Probe Modulation Factor = 2.84

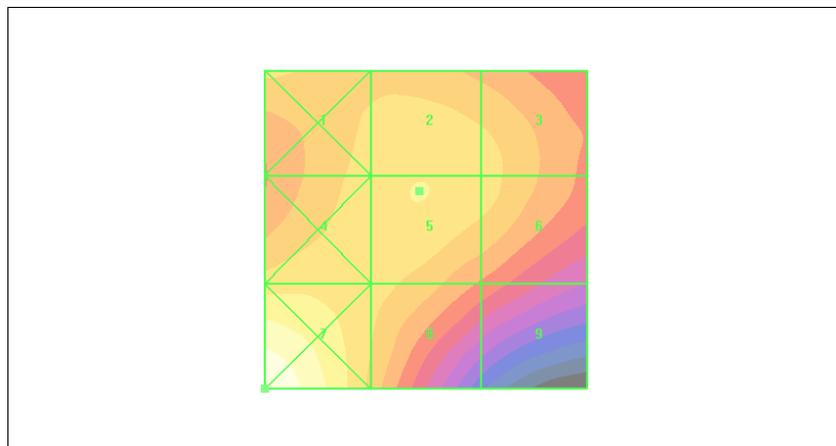
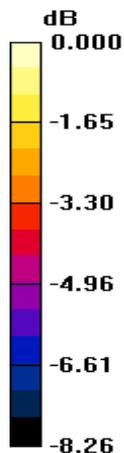
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.081 A/m; Power Drift = -0.012 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.201 M3 | Grid 2 0.207 M3 | Grid 3 0.201 M3 |
| Grid 4 0.204 M3 | Grid 5 0.208 M3 | Grid 6 0.201 M3 |
| Grid 7 0.251 M2 | Grid 8 0.199 M3 | Grid 9 0.170 M3 |



0 dB = 0.251A/m

Figure 21 HAC RF H-Field GSM 1900 Channel 810

HAC RF H-Field GSM 1900 Middle

Date/Time: 1/16/2012 7:13:09 PM

Communication System: PCS 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.192 A/m

Probe Modulation Factor = 2.84

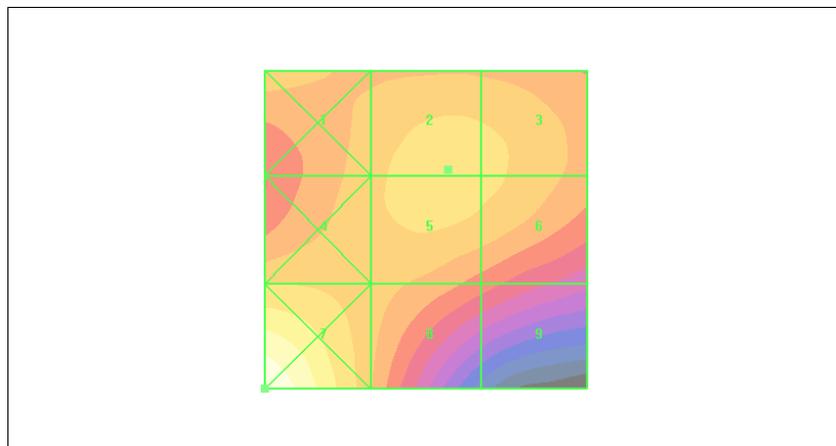
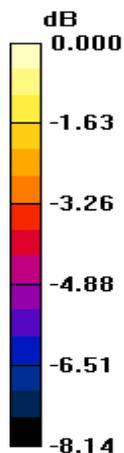
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.074 A/m; Power Drift = 0.035 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.183 M3 | Grid 2 0.192 M3 | Grid 3 0.189 M3 |
| Grid 4 0.184 M3 | Grid 5 0.192 M3 | Grid 6 0.189 M3 |
| Grid 7 0.237 M3 | Grid 8 0.179 M3 | Grid 9 0.158 M3 |



0 dB = 0.237A/m

Figure 22 HAC RF H-Field GSM 1900 Channel 661

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field GSM 1900 Low

Date/Time: 1/16/2012 7:23:32 PM

Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.201 A/m

Probe Modulation Factor = 2.84

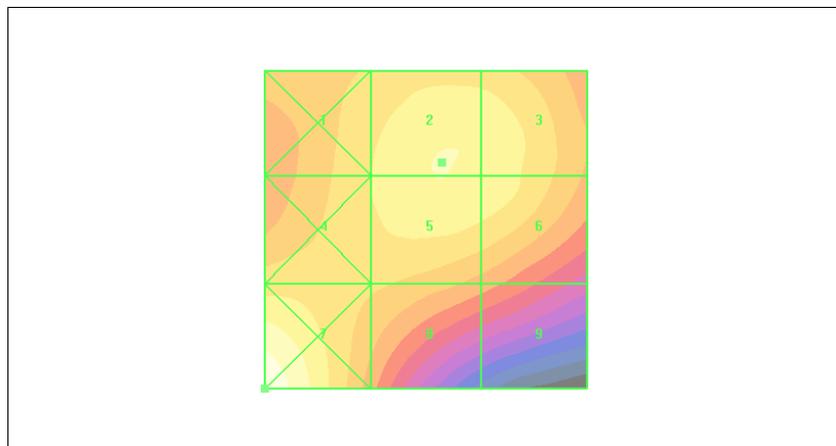
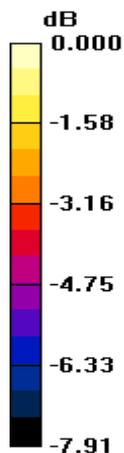
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.077 A/m; Power Drift = 0.038 dB

Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.188 M3 | Grid 2 0.201 M3 | Grid 3 0.200 M3 |
| Grid 4 0.189 M3 | Grid 5 0.200 M3 | Grid 6 0.199 M3 |
| Grid 7 0.226 M3 | Grid 8 0.179 M3 | Grid 9 0.162 M3 |



0 dB = 0.226A/m

Figure 23 HAC RF H-Field GSM 1900 Channel 512

HAC RF E-Field WCDMA Band II High

Date/Time: 1/16/2012 4:32:38 PM

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device High/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 32.3 V/m

Probe Modulation Factor = 1.02

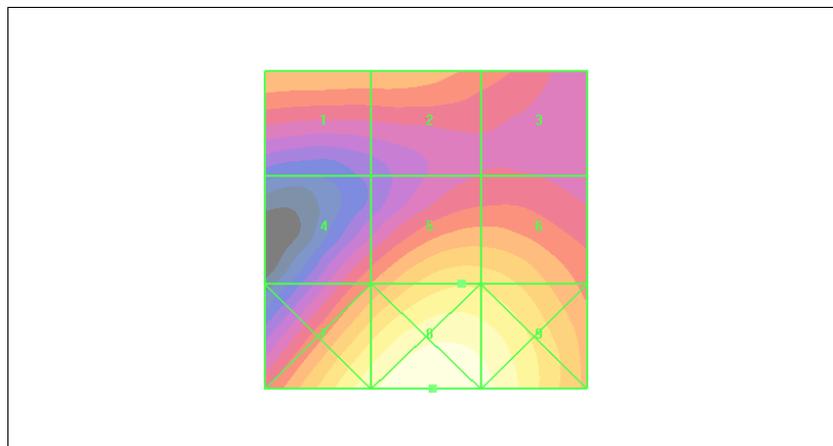
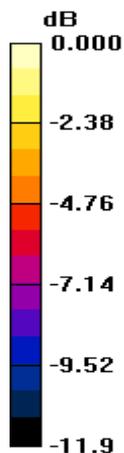
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 27.1 V/m; Power Drift = -0.007 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 27.4 M4 | Grid 2 27.1 M4 | Grid 3 24.1 M4 |
| Grid 4 24.9 M4 | Grid 5 32.3 M4 | Grid 6 31.9 M4 |
| Grid 7 38.3 M4 | Grid 8 42.9 M4 | Grid 9 40.4 M4 |



0 dB = 42.9V/m

Figure 24 HAC RF E-Field WCDMA Band II Channel 9538

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field WCDMA Band II Middle

Date/Time: 1/16/2012 4:27:31 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 33.5 V/m

Probe Modulation Factor = 1.02

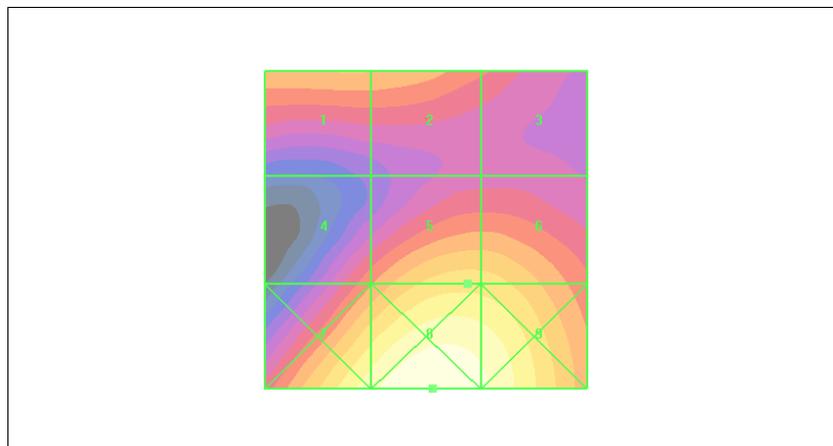
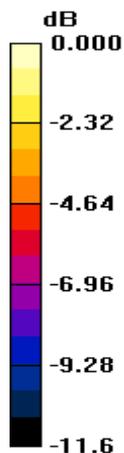
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 28.2 V/m; Power Drift = -0.005 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 29.3 M4 | Grid 2 29.1 M4 | Grid 3 24.8 M4 |
| Grid 4 26.3 M4 | Grid 5 33.5 M4 | Grid 6 33.2 M4 |
| Grid 7 40.1 M4 | Grid 8 45.1 M4 | Grid 9 42.2 M4 |



0 dB = 45.1V/m

Figure 25 HAC RF E-Field WCDMA Band II Channel 9400

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field WCDMA Band II Low

Date/Time: 1/16/2012 4:37:53 PM

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 34.6 V/m

Probe Modulation Factor = 1.02

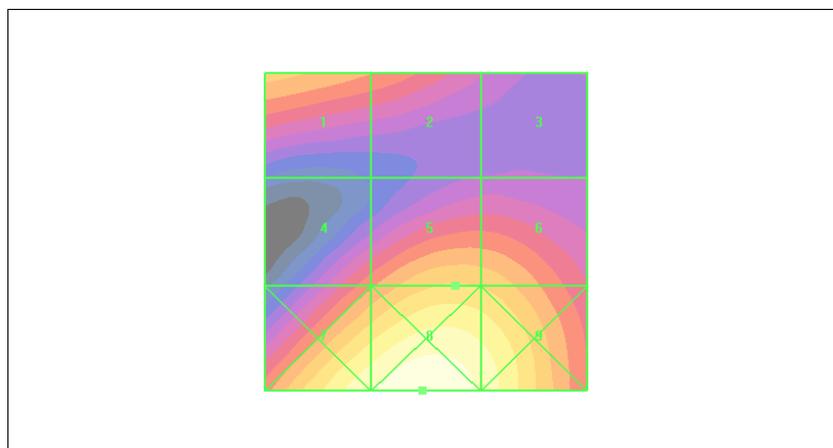
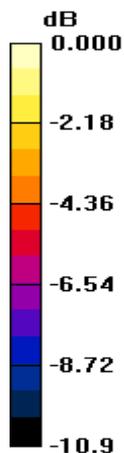
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 29.4 V/m; Power Drift = 0.033 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 32.7 M4 | Grid 2 29.2 M4 | Grid 3 22.8 M4 |
| Grid 4 28.6 M4 | Grid 5 34.6 M4 | Grid 6 34.1 M4 |
| Grid 7 44.2 M4 | Grid 8 47.8 M4 | Grid 9 43.2 M4 |



0 dB = 47.8V/m

Figure 26 HAC RF E-Field WCDMA Band II Channel 9262

HAC RF E-Field WCDMA Band II HSDPA High

Date/Time: 1/16/2012 6:12:14 PM

Communication System: WCDMA Band II + HSDPA(8); Frequency: 1907.6 MHz;Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature:22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device High/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 33.6 V/m

Probe Modulation Factor = 1.02

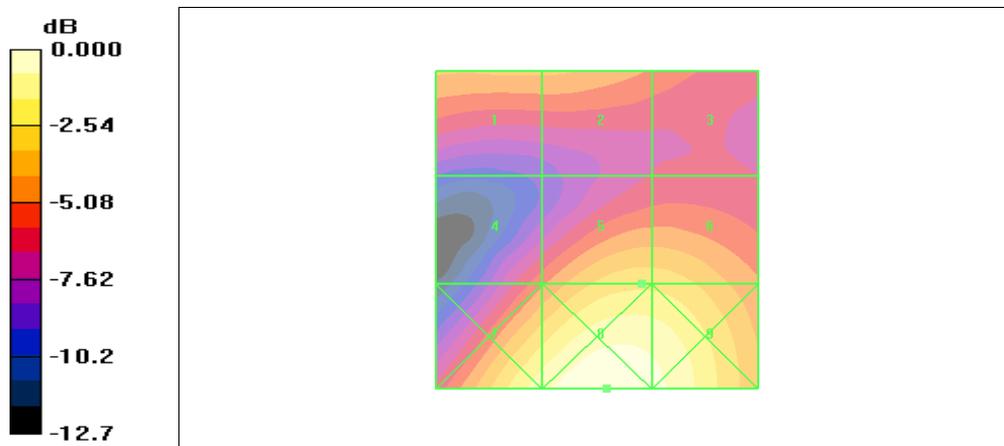
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 27.0 V/m; Power Drift = 0.099 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 29.0 M4 | Grid 2 29.0 M4 | Grid 3 25.5 M4 |
| Grid 4 25.3 M4 | Grid 5 33.6 M4 | Grid 6 33.5 M4 |
| Grid 7 40.5 M4 | Grid 8 46.1 M4 | Grid 9 43.4 M4 |



0 dB = 46.1V/m

Figure 27 HAC RF E-Field WCDMA Band II HSDPA Channel 9538

HAC RF E-Field WCDMA Band II HSDPA Middle

Date/Time: 1/16/2012 6:07:03 PM

Communication System: WCDMA Band II + HSDPA(8); Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature:22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 35.6 V/m

Probe Modulation Factor = 1.02

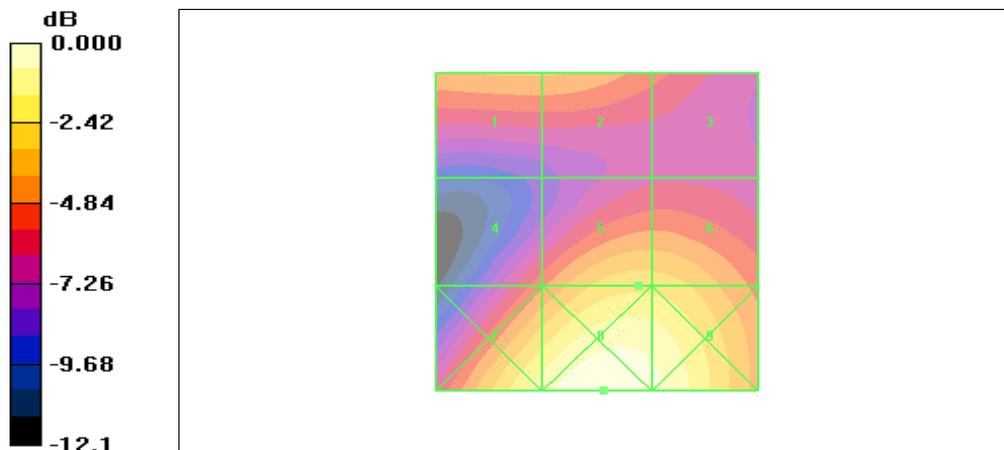
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 29.4 V/m; Power Drift = -0.065 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 30.9 M4 | Grid 2 30.8 M4 | Grid 3 26.4 M4 |
| Grid 4 27.2 M4 | Grid 5 35.6 M4 | Grid 6 35.4 M4 |
| Grid 7 42.6 M4 | Grid 8 48.2 M4 | Grid 9 45.3 M4 |



0 dB = 48.2V/m

Figure 28 HAC RF E-Field WCDMA Band II HSDPA Channel 9400

HAC RF E-Field WCDMA Band II HSDPA Low

Date/Time: 1/16/2012 6:17:16 PM

Communication System: WCDMA Band II + HSDPA(8); Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 36.8 V/m

Probe Modulation Factor = 1.02

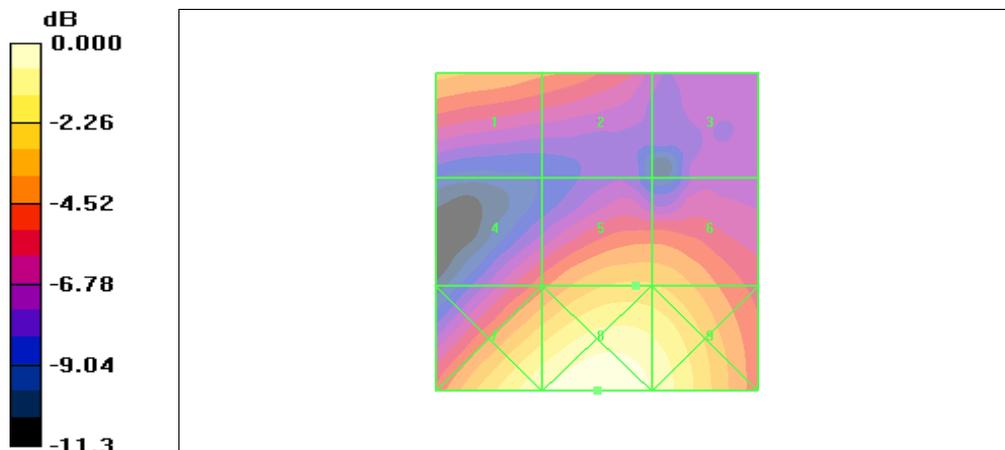
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 30.9 V/m; Power Drift = -0.027 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------|----------------|----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 34.1 M4 | 31.0 M4 | 22.7 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 29.6 M4 | 36.8 M4 | 36.4 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 46.6 M4 | 51.0 M4 | 46.6 M4 |



0 dB = 51.0V/m

Figure 29 HAC RF E-Field WCDMA Band II HSDPA Channel 9262

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band II High

Date/Time: 1/16/2012 8:10:49 PM

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device High/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.097 A/m

Probe Modulation Factor = 1.01

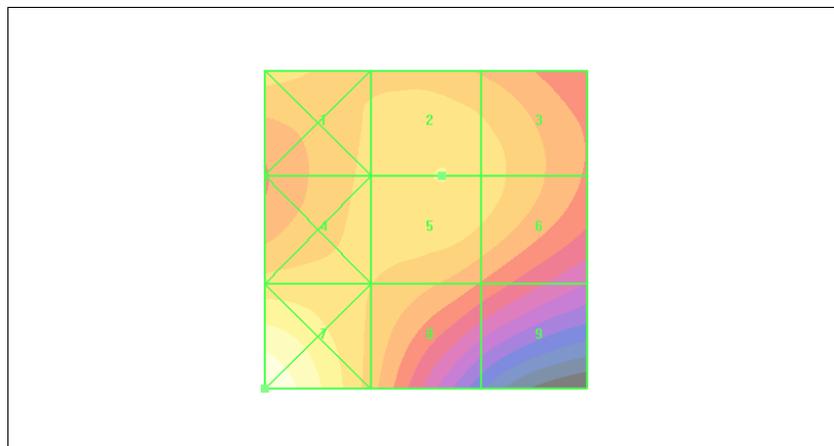
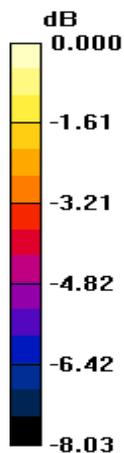
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.105 A/m; Power Drift = -0.046 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.094 M4 | Grid 2 0.097 M4 | Grid 3 0.094 M4 |
| Grid 4 0.093 M4 | Grid 5 0.097 M4 | Grid 6 0.094 M4 |
| Grid 7 0.116 M4 | Grid 8 0.091 M4 | Grid 9 0.080 M4 |



0 dB = 0.116A/m

Figure 30 HAC RF H-Field WCDMA Band II Channel 9538

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band II Middle

Date/Time: 1/16/2012 8:05:56 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.098 A/m

Probe Modulation Factor = 1.01

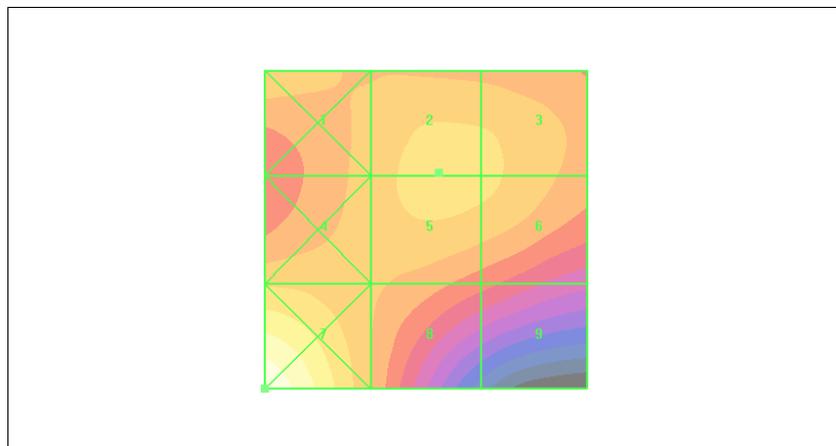
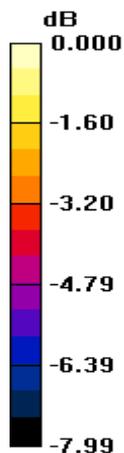
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.107 A/m; Power Drift = 0.007 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.095 M4 | Grid 2 0.098 M4 | Grid 3 0.097 M4 |
| Grid 4 0.095 M4 | Grid 5 0.098 M4 | Grid 6 0.097 M4 |
| Grid 7 0.122 M4 | Grid 8 0.091 M4 | Grid 9 0.081 M4 |



0 dB = 0.122A/m

Figure 31 HAC RF H-Field WCDMA Band II Channel 9400

TA Technology (Shanghai) Co., Ltd.

Test Report

HAC RF H-Field WCDMA Band II Low

Date/Time: 1/16/2012 8:15:38 PM

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.110 A/m

Probe Modulation Factor = 1.01

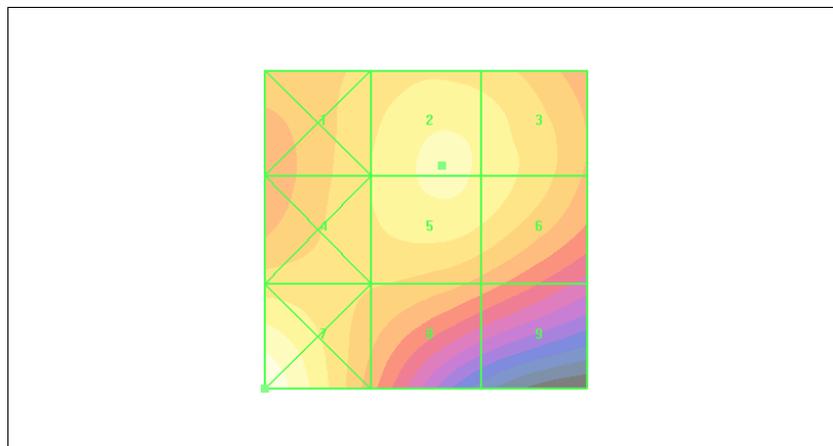
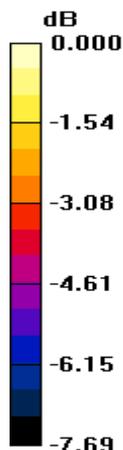
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.117 A/m; Power Drift = 0.040 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.102 M4 | Grid 2 0.110 M4 | Grid 3 0.108 M4 |
| Grid 4 0.102 M4 | Grid 5 0.110 M4 | Grid 6 0.107 M4 |
| Grid 7 0.122 M4 | Grid 8 0.097 M4 | Grid 9 0.089 M4 |



0 dB = 0.122A/m

Figure 32 HAC RF H-Field WCDMA Band II Channel 9262

TA Technology (Shanghai) Co., Ltd.

Test Report

HAC RF H-Field WCDMA Band II HSDPA High

Date/Time: 1/16/2012 10:04:42 PM

Communication System: WCDMA Band II + HSDPA(8); Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device High/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.096 A/m

Probe Modulation Factor = 1.01

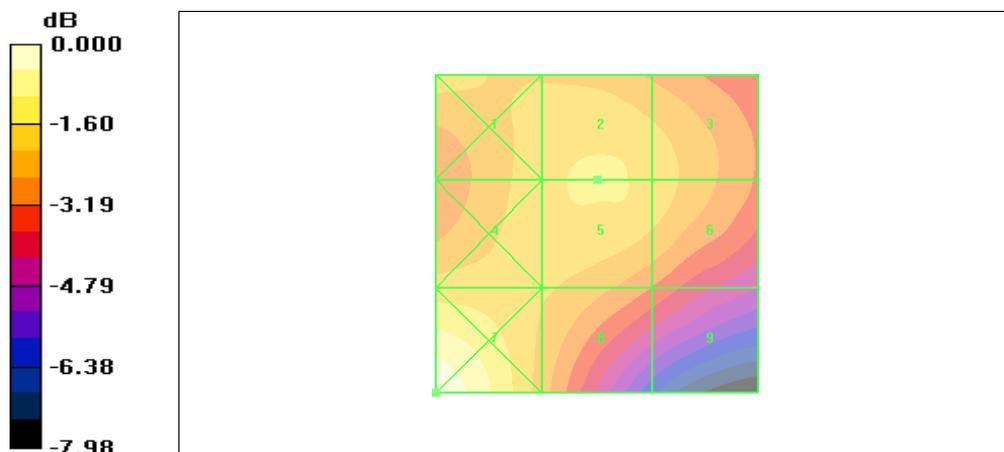
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.105 A/m; Power Drift = 0.042 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.093 M4 | Grid 2 0.096 M4 | Grid 3 0.094 M4 |
| Grid 4 0.094 M4 | Grid 5 0.096 M4 | Grid 6 0.094 M4 |
| Grid 7 0.115 M4 | Grid 8 0.091 M4 | Grid 9 0.080 M4 |



0 dB = 0.115A/m

Figure 33 HAC RF H-Field WCDMA Band II HSDPA Channel 9538

HAC RF H-Field WCDMA Band II HSDPA Middle

Date/Time: 1/16/2012 9:59:55 PM

Communication System: WCDMA Band II + HSDPA(8); Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature:22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.097 A/m

Probe Modulation Factor = 1.01

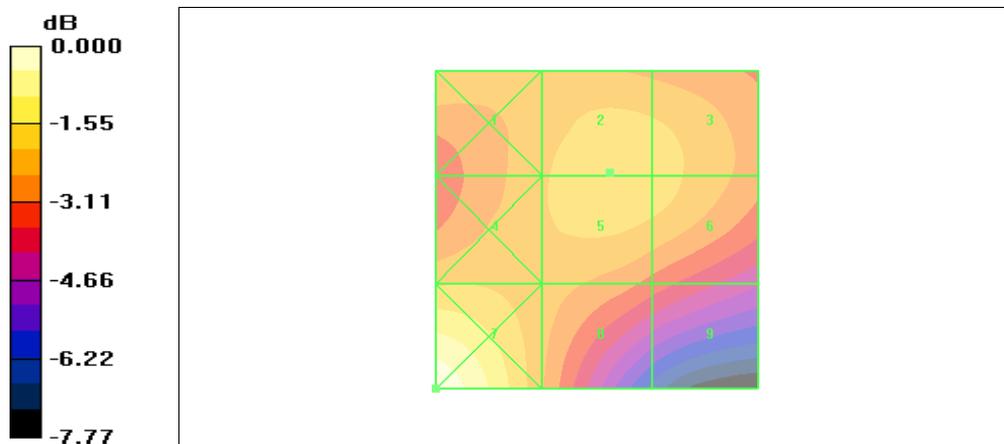
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.104 A/m; Power Drift = 0.160 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.094 M4 | Grid 2 0.097 M4 | Grid 3 0.096 M4 |
| Grid 4 0.093 M4 | Grid 5 0.097 M4 | Grid 6 0.096 M4 |
| Grid 7 0.118 M4 | Grid 8 0.090 M4 | Grid 9 0.081 M4 |



0 dB = 0.118A/m

Figure 34 HAC RF H-Field WCDMA Band II HSDPA Channel 9400

HAC RF H-Field WCDMA Band II HSDPA Low

Date/Time: 1/16/2012 10:09:33 PM

Communication System: WCDMA Band II + HSDPA(8); Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.109 A/m

Probe Modulation Factor = 1.01

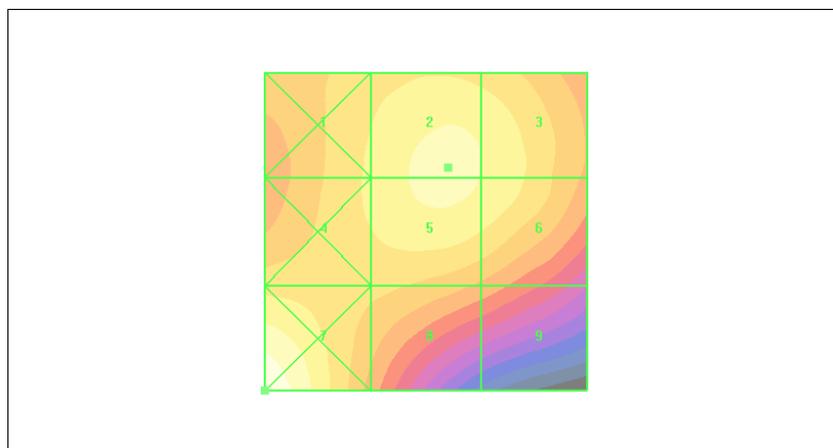
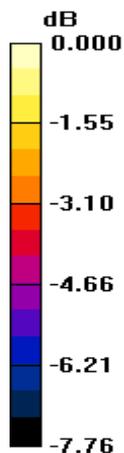
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.117 A/m; Power Drift = 0.032 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.103 M4 | Grid 2 0.109 M4 | Grid 3 0.107 M4 |
| Grid 4 0.103 M4 | Grid 5 0.109 M4 | Grid 6 0.107 M4 |
| Grid 7 0.121 M4 | Grid 8 0.097 M4 | Grid 9 0.089 M4 |



0 dB = 0.121A/m

Figure 35 HAC RF H-Field WCDMA Band II HSDPA Channel 9262

HAC RF E-Field WCDMA Band IV High

Date/Time: 1/16/2012 5:00:35 PM

Communication System: WCDMA Band IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device High/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 40.9 V/m

Probe Modulation Factor = 1.02

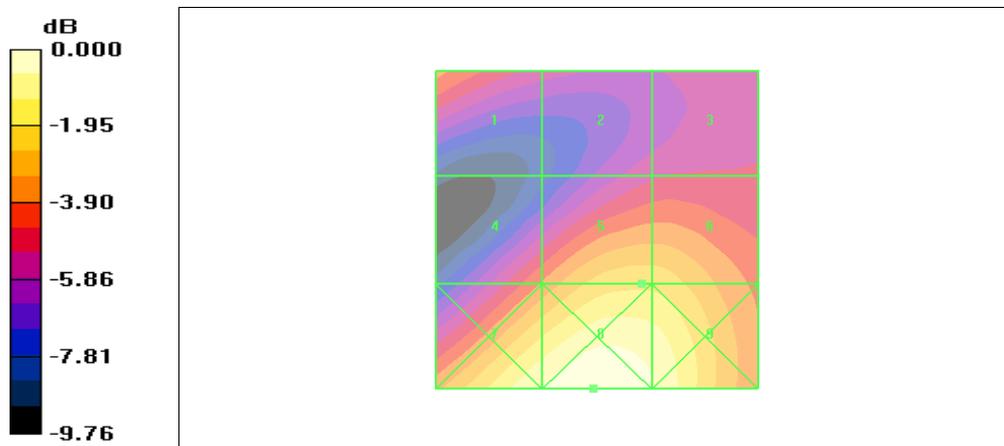
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 37.6 V/m; Power Drift = 0.027 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 34.2 M4 | Grid 2 28.2 M4 | Grid 3 28.9 M4 |
| Grid 4 33.6 M4 | Grid 5 40.9 M4 | Grid 6 40.7 M4 |
| Grid 7 48.6 M4 | Grid 8 52.0 M4 | Grid 9 48.6 M4 |



0 dB = 52.0V/m

Figure 36 HAC RF E-Field WCDMA Band IV Channel 1513

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field WCDMA Band IV Middle

Date/Time: 1/16/2012 4:55:33 PM

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 37.7 V/m

Probe Modulation Factor = 1.02

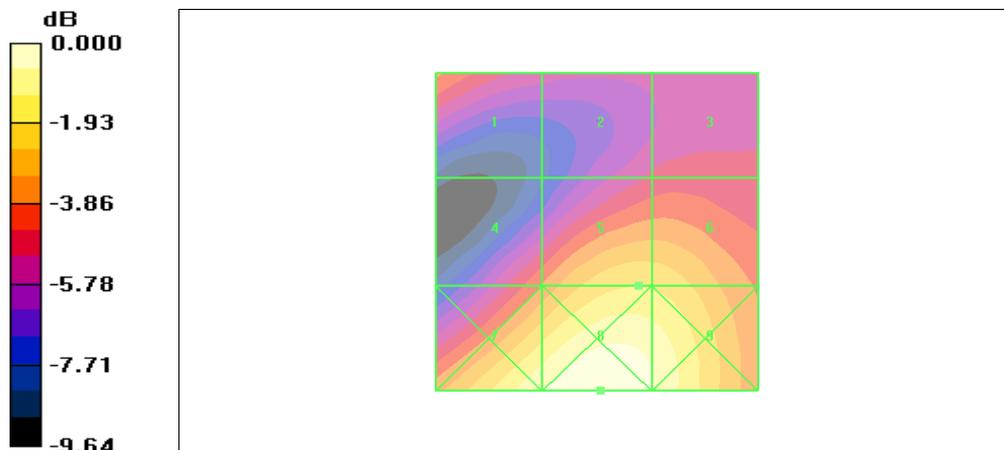
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 35.2 V/m; Power Drift = 0.014 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------|----------------|----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 30.9 M4 | 26.5 M4 | 27.2 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 30.5 M4 | 37.7 M4 | 37.5 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 43.8 M4 | 47.1 M4 | 44.0 M4 |



0 dB = 47.1V/m

Figure 37 HAC RF E-Field WCDMA Band IV Channel 1413

HAC RF E-Field WCDMA Band IV Low

Date/Time: 1/16/2012 5:07:14 PM

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 40.3 V/m

Probe Modulation Factor = 1.02

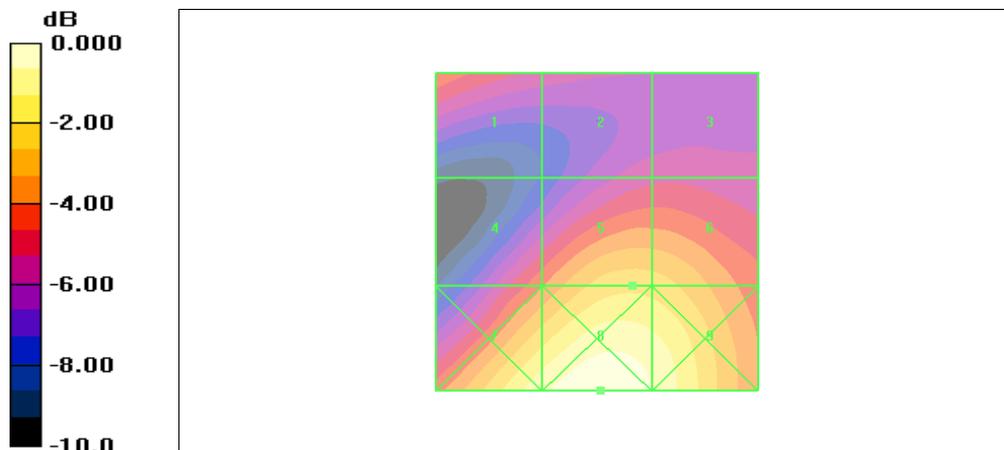
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 37.4 V/m; Power Drift = 0.016 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------|----------------|----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 32.4 M4 | 27.6 M4 | 27.7 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 32.6 M4 | 40.3 M4 | 39.8 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 47.2 M4 | 51.8 M4 | 48.0 M4 |



0 dB = 51.8V/m

Figure 38 HAC RF E-Field WCDMA Band IV Channel 1312

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field WCDMA Band IV HSDPA High

Date/Time: 1/16/2012 5:56:03 PM

Communication System: WCDMA Band IV + HSDPA(8); Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device High/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 41.3 V/m

Probe Modulation Factor = 1.02

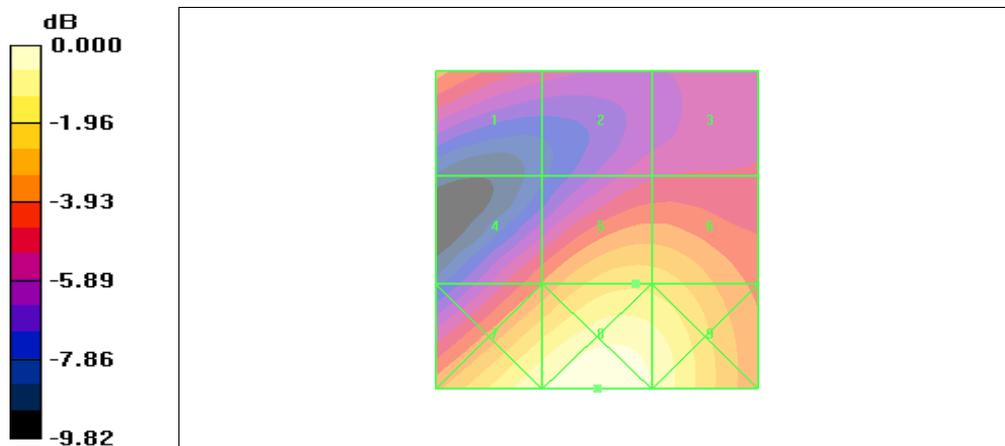
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 37.8 V/m; Power Drift = 0.038 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------|----------------|----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 34.6 M4 | 28.4 M4 | 29.1 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 33.7 M4 | 41.3 M4 | 40.9 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 49.0 M4 | 52.6 M4 | 48.7 M4 |



0 dB = 52.6V/m

Figure 39 HAC RF E-Field WCDMA Band IV HSDPA Channel 1513

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field WCDMA Band IV HSDPA Middle

Date/Time: 1/16/2012 5:50:59 PM

Communication System: WCDMA Band IV + HSDPA(8); Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 38.0 V/m

Probe Modulation Factor = 1.02

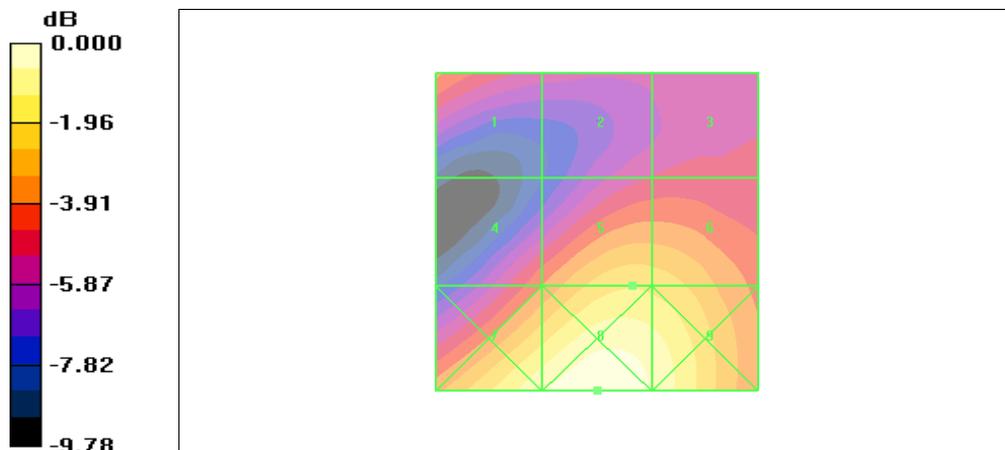
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 35.1 V/m; Power Drift = 0.059 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 31.3 M4 | Grid 2 26.5 M4 | Grid 3 27.2 M4 |
| Grid 4 30.6 M4 | Grid 5 38.0 M4 | Grid 6 37.5 M4 |
| Grid 7 44.2 M4 | Grid 8 47.9 M4 | Grid 9 44.2 M4 |



0 dB = 47.9V/m

Figure 40 HAC RF E-Field WCDMA Band IV HSDPA Channel 1413

HAC RF E-Field WCDMA Band IV HSDPA Low

Date/Time: 1/16/2012 6:01:24 PM

Communication System: WCDMA Band IV + HSDPA(8); Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 40.4 V/m

Probe Modulation Factor = 1.02

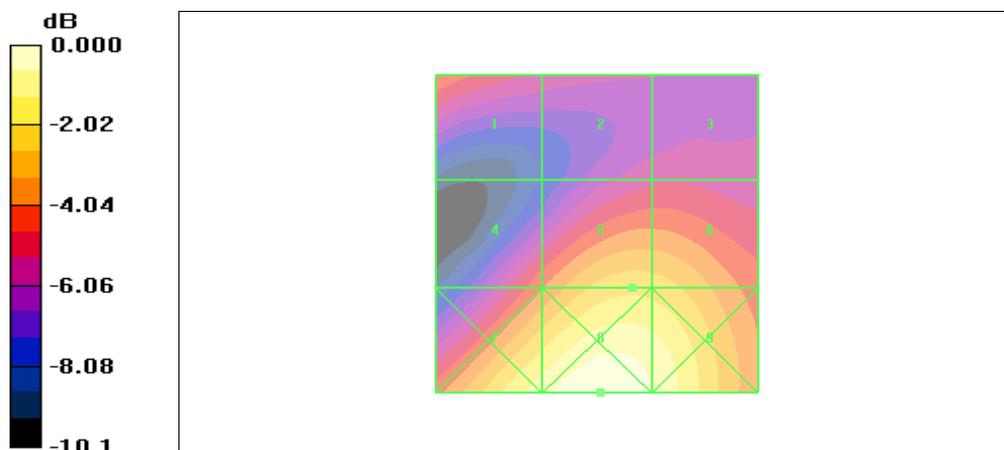
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 37.4 V/m; Power Drift = -0.021 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------|----------------|----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 32.5 M4 | 27.7 M4 | 27.9 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 32.6 M4 | 40.4 M4 | 40.0 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 47.2 M4 | 52.1 M4 | 48.2 M4 |



0 dB = 52.1V/m

Figure 41 HAC RF E-Field WCDMA Band IV HSDPA Channel 1312

HAC RF H-Field WCDMA Band IV High

Date/Time: 1/16/2012 8:26:18 PM

Communication System: WCDMA Band IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device High/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.114 A/m

Probe Modulation Factor = 1.01

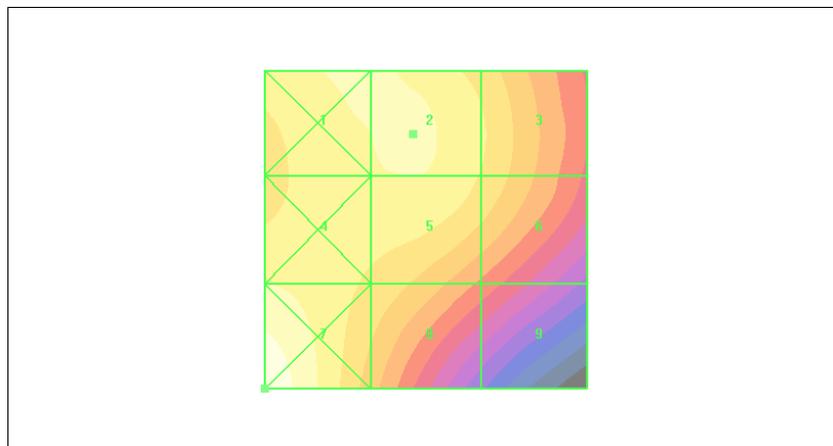
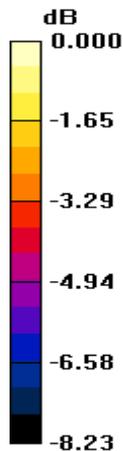
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.115 A/m; Power Drift = 0.087 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.114 M4 | Grid 2 0.114 M4 | Grid 3 0.107 M4 |
| Grid 4 0.113 M4 | Grid 5 0.113 M4 | Grid 6 0.106 M4 |
| Grid 7 0.128 M4 | Grid 8 0.104 M4 | Grid 9 0.087 M4 |



0 dB = 0.128A/m

Figure 42 HAC RF H-Field WCDMA Band IV Channel 1513

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band IV Middle

Date/Time: 1/16/2012 8:21:11 PM

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.105 A/m

Probe Modulation Factor = 1.01

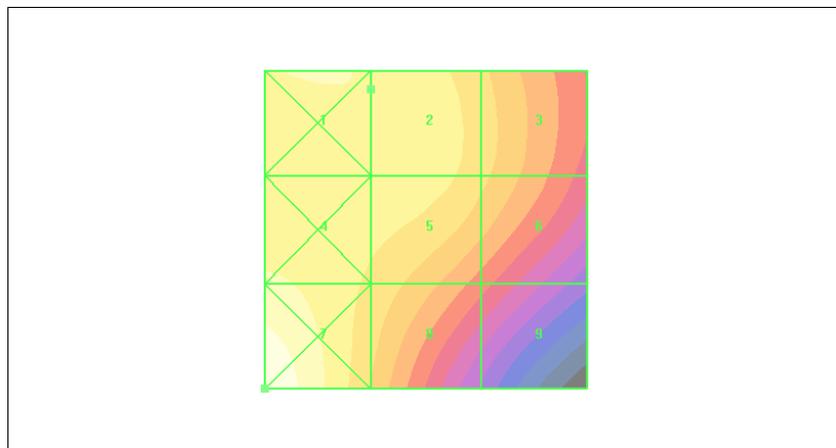
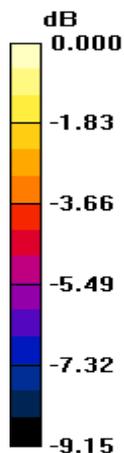
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.104 A/m; Power Drift = 0.009 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.106 M4 | Grid 2 0.105 M4 | Grid 3 0.095 M4 |
| Grid 4 0.107 M4 | Grid 5 0.102 M4 | Grid 6 0.093 M4 |
| Grid 7 0.121 M4 | Grid 8 0.097 M4 | Grid 9 0.077 M4 |



0 dB = 0.121A/m

Figure 43 HAC RF H-Field WCDMA Band IV Channel 1413

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band IV Low

Date/Time: 1/16/2012 8:31:20 PM

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.110 A/m

Probe Modulation Factor = 1.01

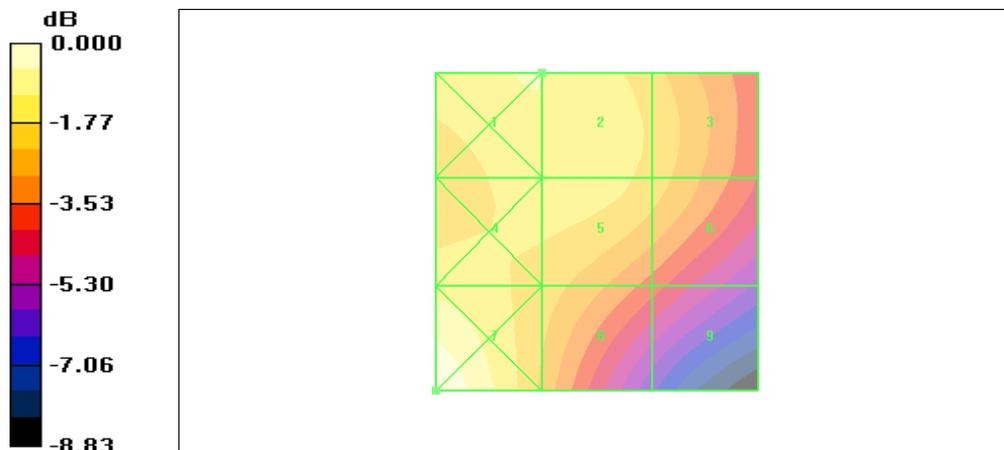
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.108 A/m; Power Drift = 0.088 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.111 M4 | Grid 2 0.110 M4 | Grid 3 0.102 M4 |
| Grid 4 0.108 M4 | Grid 5 0.107 M4 | Grid 6 0.100 M4 |
| Grid 7 0.126 M4 | Grid 8 0.100 M4 | Grid 9 0.081 M4 |



0 dB = 0.126A/m

Figure 44 HAC RF H-Field WCDMA Band IV Channel 1312

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band IV HSDPA High

Date/Time: 1/16/2012 10:19:32 PM

Communication System: WCDMA Band IV + HSDPA(8); Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device High/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.113 A/m

Probe Modulation Factor = 1.01

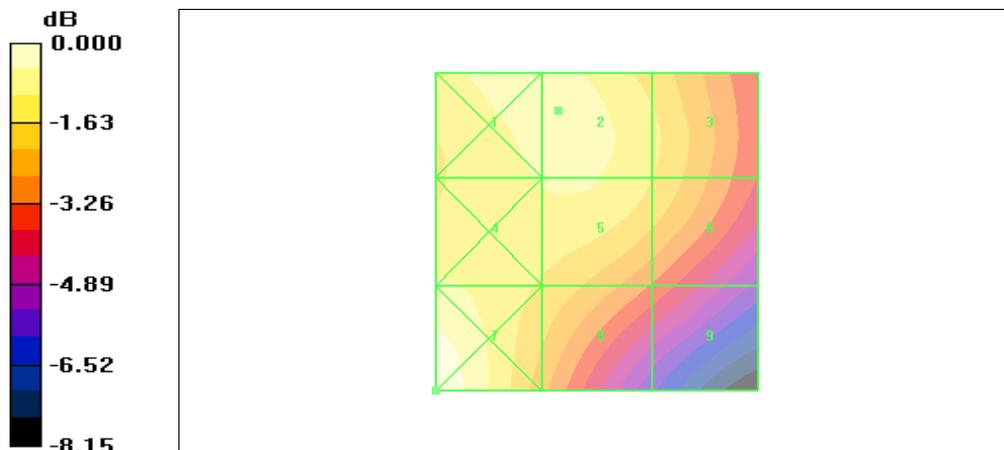
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.115 A/m; Power Drift = 0.052 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.113 M4 | Grid 2 0.113 M4 | Grid 3 0.105 M4 |
| Grid 4 0.112 M4 | Grid 5 0.111 M4 | Grid 6 0.104 M4 |
| Grid 7 0.125 M4 | Grid 8 0.103 M4 | Grid 9 0.085 M4 |



0 dB = 0.125A/m

Figure 45 HAC RF H-Field WCDMA Band IV HSDPA Channel 1513

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band IV HSDPA Middle

Date/Time: 1/16/2012 10:14:46 PM

Communication System: WCDMA Band IV + HSDPA(8); Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.104 A/m

Probe Modulation Factor = 1.01

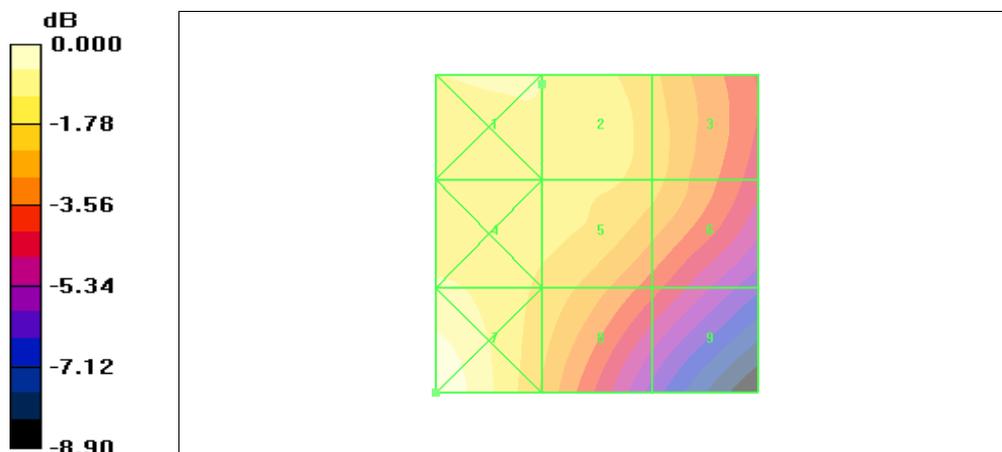
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.104 A/m; Power Drift = 0.033 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.105 M4 | Grid 2 0.104 M4 | Grid 3 0.094 M4 |
| Grid 4 0.105 M4 | Grid 5 0.102 M4 | Grid 6 0.093 M4 |
| Grid 7 0.119 M4 | Grid 8 0.096 M4 | Grid 9 0.076 M4 |



0 dB = 0.119A/m

Figure 46 HAC RF H-Field WCDMA Band IV HSDPA Channel 1413

HAC RF H-Field WCDMA Band IV HSDPA Low

Date/Time: 1/16/2012 10:24:28 PM

Communication System: WCDMA Band IV + HSDPA(8); Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.109 A/m

Probe Modulation Factor = 1.01

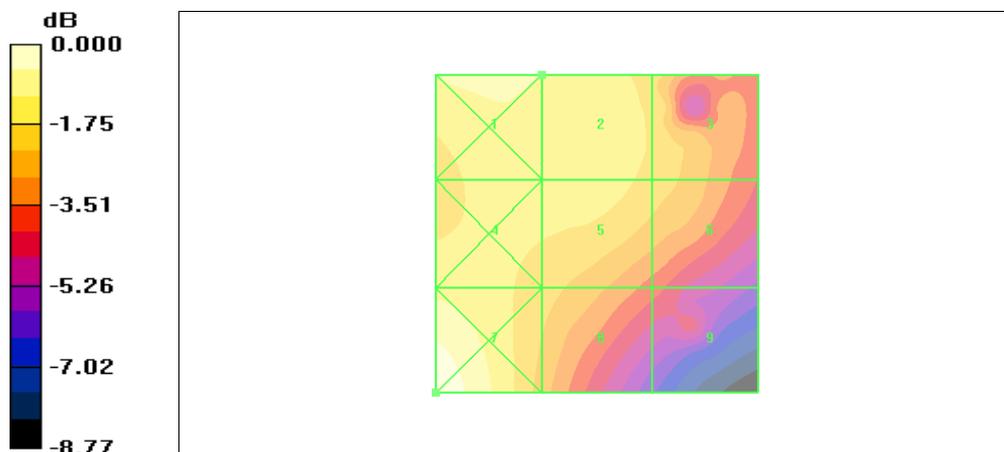
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.109 A/m; Power Drift = 0.052 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.111 M4 | Grid 2 0.109 M4 | Grid 3 0.101 M4 |
| Grid 4 0.108 M4 | Grid 5 0.107 M4 | Grid 6 0.100 M4 |
| Grid 7 0.125 M4 | Grid 8 0.099 M4 | Grid 9 0.081 M4 |



0 dB = 0.125A/m

Figure 47 HAC RF H-Field WCDMA Band IV HSDPA Channel 1312

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field WCDMA Band V High

Date/Time: 1/16/2012 4:10:14 PM

Communication System: WCDMA Band V; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device High/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 65.3 V/m

Probe Modulation Factor = 1.03

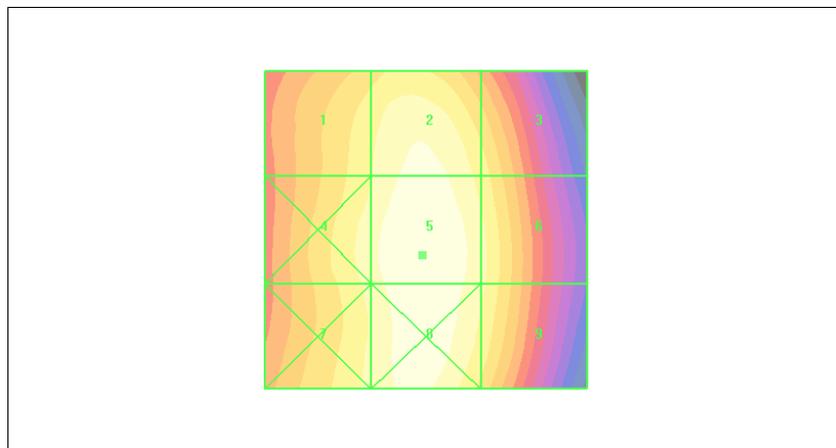
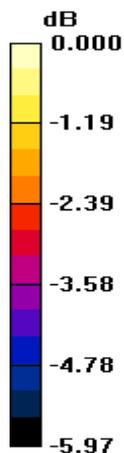
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 82.0 V/m; Power Drift = -0.078 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------|----------------|----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 59.6 M4 | 63.3 M4 | 58.5 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 61.5 M4 | 65.3 M4 | 60.6 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 60.7 M4 | 64.7 M4 | 60.2 M4 |



0 dB = 65.3V/m

Figure 48 HAC RF E-Field WCDMA Band V Channel 4233

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field WCDMA Band V Middle

Date/Time: 1/16/2012 4:05:05 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 58.3 V/m

Probe Modulation Factor = 1.03

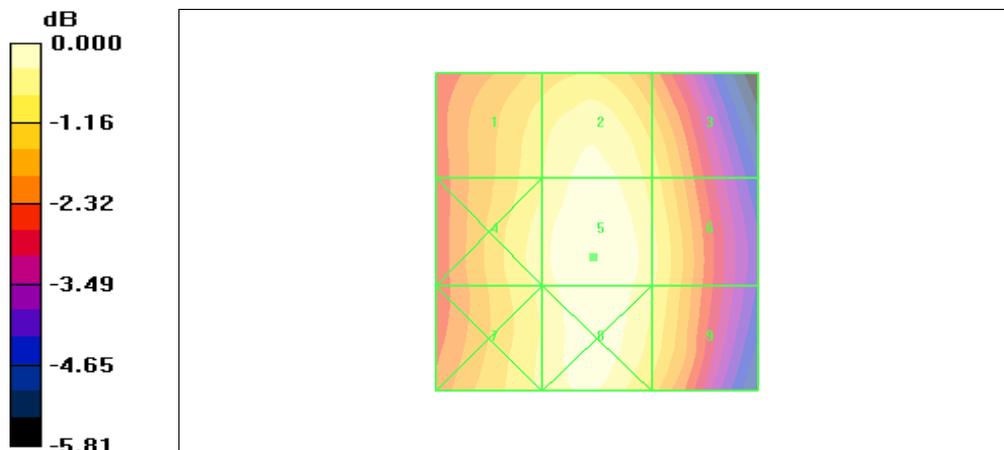
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 72.6 V/m; Power Drift = 0.074 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 53.3 M4 | Grid 2 56.4 M4 | Grid 3 52.3 M4 |
| Grid 4 55.0 M4 | Grid 5 58.3 M4 | Grid 6 54.2 M4 |
| Grid 7 54.3 M4 | Grid 8 57.8 M4 | Grid 9 53.7 M4 |



0 dB = 58.3V/m

Figure 49 HAC RF E-Field WCDMA Band V Channel 4183

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field WCDMA Band V Low

Date/Time: 1/16/2012 4:20:09 PM

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 59.4 V/m

Probe Modulation Factor = 1.03

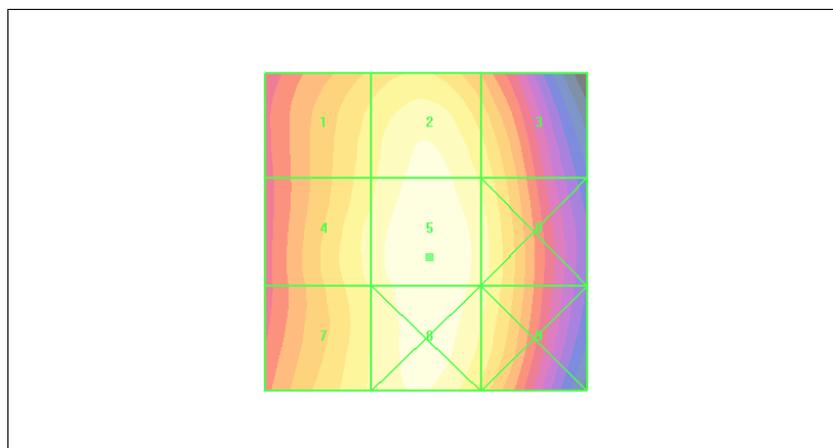
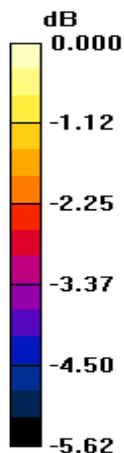
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 75.1 V/m; Power Drift = -0.033 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------|----------------|----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 53.9 M4 | 57.8 M4 | 54.1 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 55.6 M4 | 59.4 M4 | 55.8 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 54.9 M4 | 58.8 M4 | 55.5 M4 |



0 dB = 59.4V/m

Figure 50 HAC RF E-Field WCDMA Band V Channel 4132

HAC RF E-Field WCDMA Band V HSDPA High

Date/Time: 1/16/2012 6:27:40 PM

Communication System: WCDMA Band V + HSDPA(8); Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device High/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 64.7 V/m

Probe Modulation Factor = 1.03

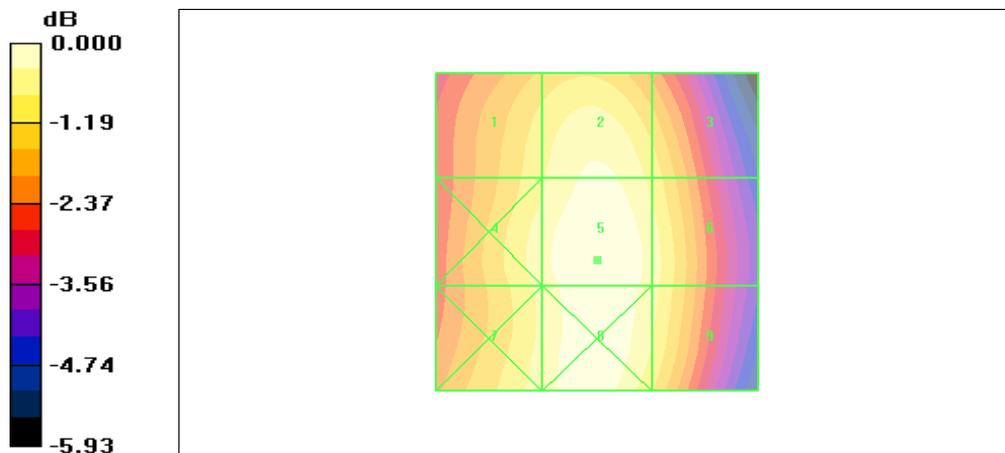
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 81.6 V/m; Power Drift = -0.060 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------|----------------|----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 58.8 M4 | 62.4 M4 | 58.3 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 60.9 M4 | 64.7 M4 | 60.7 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 60.6 M4 | 64.2 M4 | 60.3 M4 |



0 dB = 64.7V/m

Figure 51 HAC RF E-Field WCDMA Band V HSDPA Channel 4233

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF E-Field WCDMA Band V HSDPA Middle

Date/Time: 1/16/2012 6:22:44 PM

Communication System: WCDMA Band V + HSDPA(8); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 58.3 V/m

Probe Modulation Factor = 1.03

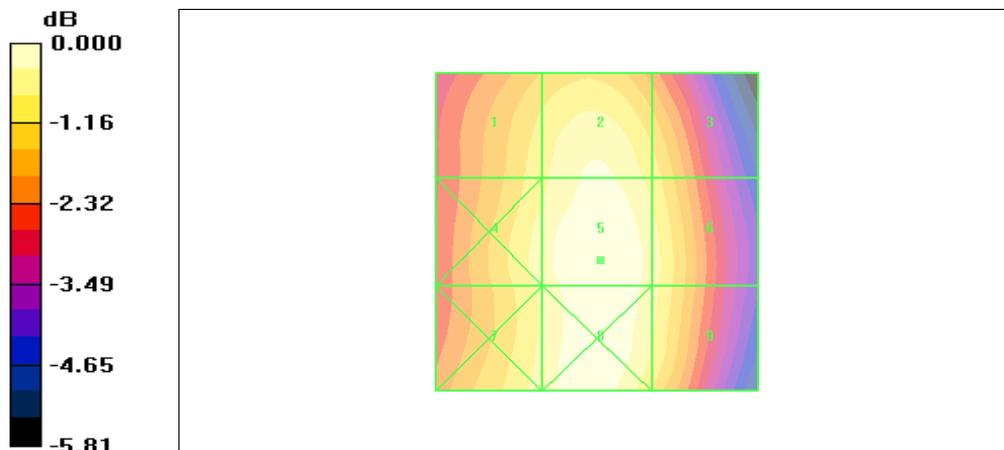
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 73.5 V/m; Power Drift = -0.056 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|--------------------------|--------------------------|--------------------------|
| Grid 1 52.8 M4 | Grid 2 56.3 M4 | Grid 3 52.4 M4 |
| Grid 4 54.7 M4 | Grid 5 58.3 M4 | Grid 6 54.6 M4 |
| Grid 7 54.6 M4 | Grid 8 57.9 M4 | Grid 9 54.4 M4 |



0 dB = 58.3V/m

Figure 52 HAC RF E-Field WCDMA Band V HSDPA Channel 4183

HAC RF E-Field WCDMA Band V HSDPA Low

Date/Time: 1/16/2012 6:32:39 PM

Communication System: WCDMA Band V + HSDPA(8); Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: ER3DV6 - SN2302; ConvF (1, 1, 1); Calibrated: 06/15/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 61.2 V/m

Probe Modulation Factor = 1.03

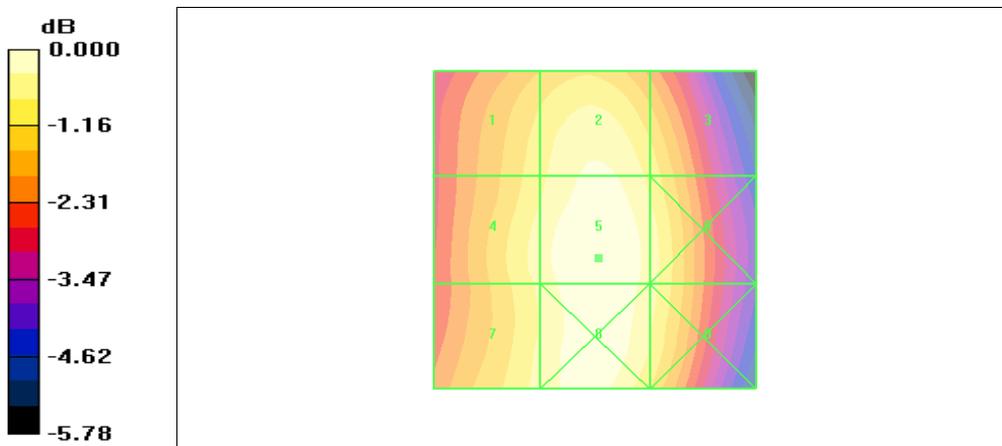
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 76.9 V/m; Power Drift = -0.007 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------------|----------------|----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 55.4 M4 | 59.1 M4 | 55.3 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 57.4 M4 | 61.2 M4 | 57.5 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 57.0 M4 | 60.7 M4 | 57.3 M4 |



0 dB = 61.2V/m

Figure 53 HAC RF E-Field WCDMA Band V HSDPA Channel 4132

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band V High

Date/Time: 1/16/2012 8:42:07 PM

Communication System: WCDMA Band V; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device High/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.086 A/m

Probe Modulation Factor = 1.01

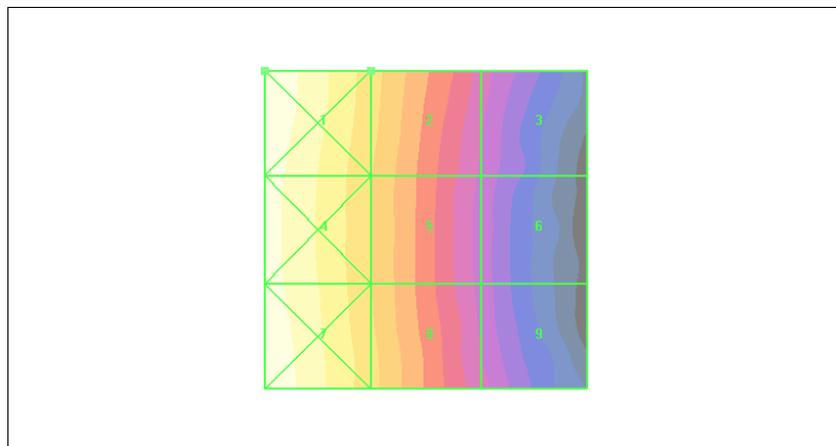
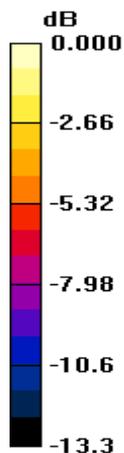
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.063 A/m; Power Drift = 0.156 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.124 M4 | Grid 2 0.086 M4 | Grid 3 0.053 M4 |
| Grid 4 0.118 M4 | Grid 5 0.083 M4 | Grid 6 0.049 M4 |
| Grid 7 0.123 M4 | Grid 8 0.085 M4 | Grid 9 0.052 M4 |



0 dB = 0.124A/m

Figure 54 HAC RF H-Field WCDMA Band V Channel 4233

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band V Middle

Date/Time: 1/16/2012 8:37:07 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.070 A/m

Probe Modulation Factor = 1.01

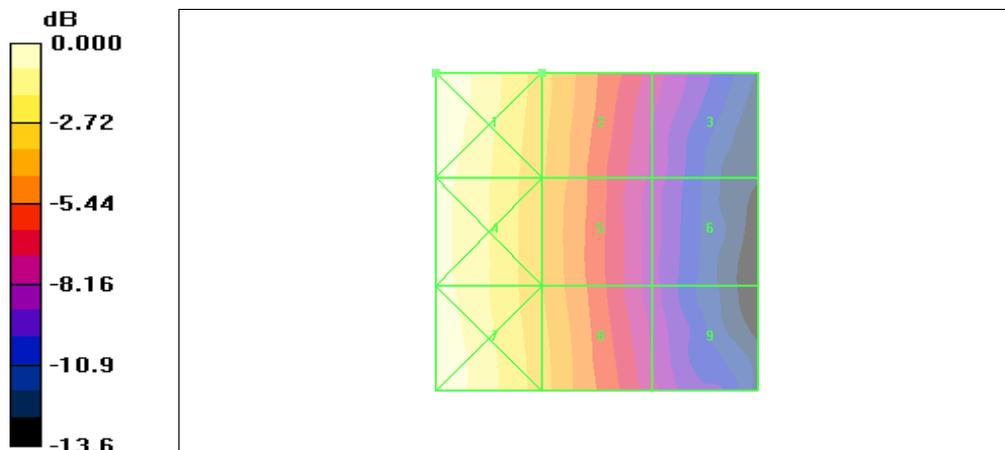
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.052 A/m; Power Drift = 0.026 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.102 M4 | Grid 2 0.070 M4 | Grid 3 0.043 M4 |
| Grid 4 0.097 M4 | Grid 5 0.068 M4 | Grid 6 0.039 M4 |
| Grid 7 0.101 M4 | Grid 8 0.070 M4 | Grid 9 0.042 M4 |



0 dB = 0.102A/m

Figure 55 HAC RF H-Field WCDMA Band V Channel 4183

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band V Low

Date/Time: 1/16/2012 8:47:30 PM

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.073 A/m

Probe Modulation Factor = 1.01

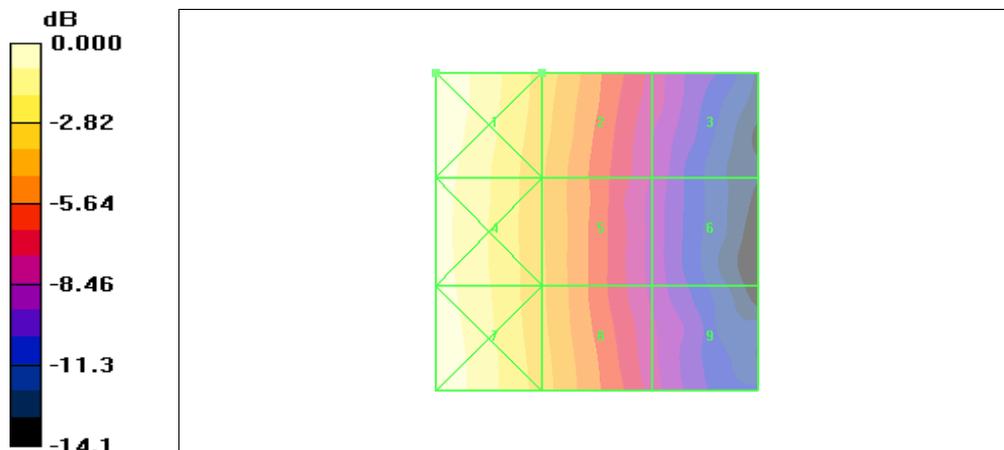
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.052 A/m; Power Drift = 0.158 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.105 M4 | Grid 2 0.073 M4 | Grid 3 0.043 M4 |
| Grid 4 0.100 M4 | Grid 5 0.069 M4 | Grid 6 0.039 M4 |
| Grid 7 0.104 M4 | Grid 8 0.072 M4 | Grid 9 0.042 M4 |



0 dB = 0.105A/m

Figure 56 HAC RF H-Field WCDMA Band V Channel 4132

HAC RF H-Field WCDMA Band V HSDPA High

Date/Time: 1/16/2012 10:34:34 PM

Communication System: WCDMA Band V + HSDPA(8); Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device High/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.085 A/m

Probe Modulation Factor = 1.01

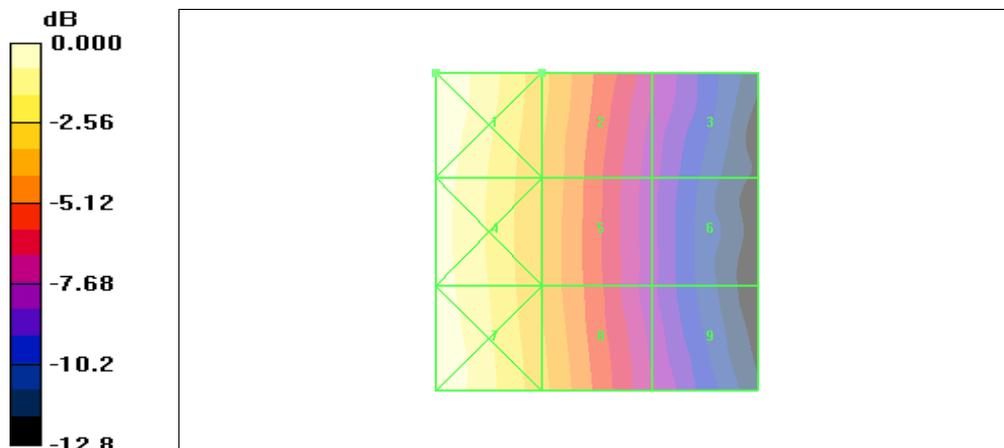
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.062 A/m; Power Drift = 0.016 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.122 M4 | Grid 2 0.085 M4 | Grid 3 0.052 M4 |
| Grid 4 0.116 M4 | Grid 5 0.082 M4 | Grid 6 0.048 M4 |
| Grid 7 0.121 M4 | Grid 8 0.085 M4 | Grid 9 0.052 M4 |



0 dB = 0.122A/m

Figure 57 HAC RF H-Field WCDMA Band V HSDPA Channel 4233

TA Technology (Shanghai) Co., Ltd. Test Report

HAC RF H-Field WCDMA Band V HSDPA Middle

Date/Time: 1/16/2012 10:29:44 PM

Communication System: WCDMA Band V + HSDPA(8); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Middle/Hearing Aid

Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.070 A/m

Probe Modulation Factor = 1.01

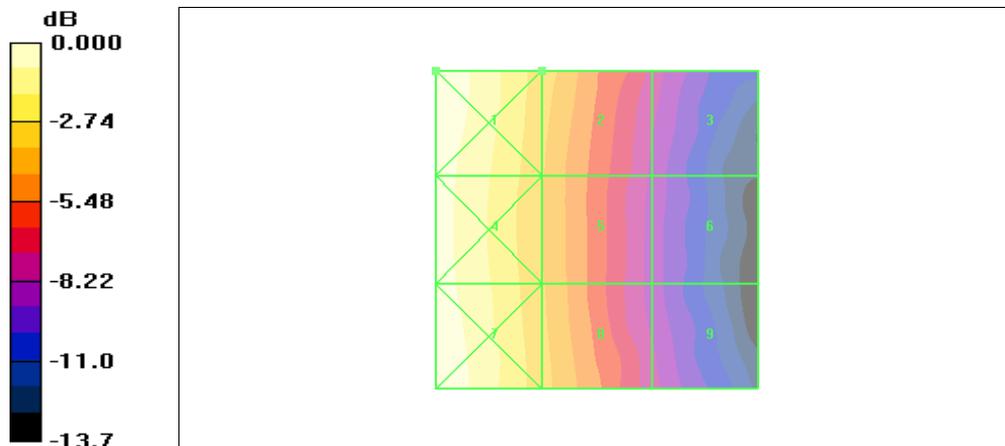
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.051 A/m; Power Drift = 0.038 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.101 M4 | Grid 2 0.070 M4 | Grid 3 0.042 M4 |
| Grid 4 0.096 M4 | Grid 5 0.067 M4 | Grid 6 0.038 M4 |
| Grid 7 0.100 M4 | Grid 8 0.069 M4 | Grid 9 0.041 M4 |



0 dB = 0.101A/m

Figure 58 HAC RF H-Field WCDMA Band V HSDPA Channel 4183

HAC RF H-Field WCDMA Band V HSDPA Low

Date/Time: 1/16/2012 10:39:24 PM

Communication System: WCDMA Band V + HSDPA(8); Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Ambient Temperature: 22.3 °C

Phantom section: RF Section

DASY4 Configuration:

Probe: H3DV6 - SN6187; Calibrated: 06/17/2011

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

Phantom: HAC Test Arch; Type: SD HAC P01 BA;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device Low/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.072 A/m

Probe Modulation Factor = 1.01

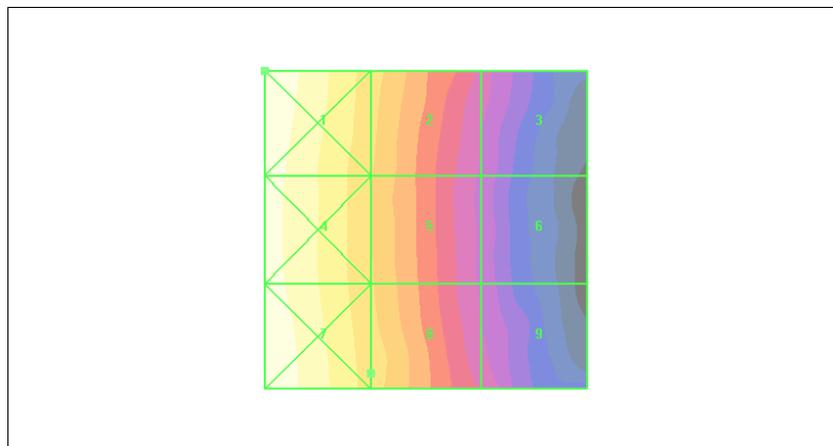
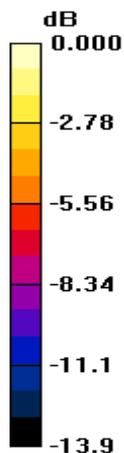
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.052 A/m; Power Drift = 0.064 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|---------------------------|---------------------------|---------------------------|
| Grid 1 0.104 M4 | Grid 2 0.071 M4 | Grid 3 0.043 M4 |
| Grid 4 0.099 M4 | Grid 5 0.069 M4 | Grid 6 0.039 M4 |
| Grid 7 0.104 M4 | Grid 8 0.072 M4 | Grid 9 0.044 M4 |



0 dB = 0.104A/m

Figure 59 HAC RF H-Field WCDMA Band V HSDPA Channel 4132

TA Technology (Shanghai) Co., Ltd. Test Report

Report No. RZA1201-0064HAC01R2

Page 81 of 119

ANNEX C: E-Probe Calibration Certificate

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
S Service suisse d'étalonnage
C Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client

Auden

Certificate No: **ER3-2302_Jun11**

CALIBRATION CERTIFICATE

Object: **ER3DV6 - SN:2302**

Calibration procedure(s): **QA CAL-02.v6, QA CAL-25.v4
Calibration procedure for E-field probes optimized for close near field
evaluations in air.**

Calibration date: **June 15, 2011**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID | Cal Date (Certificate No.) | Scheduled Calibration |
|----------------------------|-----------------|-----------------------------------|------------------------|
| Power meter E4419B | GB41293874 | 31-Mar-11 (No. 217-01372) | Apr-12 |
| Power sensor E4412A | MY41498087 | 31-Mar-11 (No. 217-01372) | Apr-12 |
| Reference 3 dB Attenuator | SN: S5054 (3c) | 29-Mar-11 (No. 217-01369) | Apr-12 |
| Reference 20 dB Attenuator | SN: S5086 (20b) | 29-Mar-11 (No. 217-01367) | Apr-12 |
| Reference 30 dB Attenuator | SN: S5129 (30b) | 29-Mar-11 (No. 217-01370) | Apr-12 |
| Reference Probe ER3DV6 | SN: 2328 | 4-Oct-10 (No. ER3-2328_Oct10) | Oct-11 |
| DAE4 | SN: 789 | 6-Apr-11 (No. DAE4-789_Apr11) | Apr-12 |
| Secondary Standards | ID | Check Date (in house) | Scheduled Check |
| RF generator HP 8648C | US3642UD1700 | 4-Aug-09 (in house check Oct-09) | In house check: Oct-11 |
| Network Analyzer HP 8753E | US37390585 | 18-Oct-01 (in house check Oct-10) | In house check: Oct-11 |

| | Name | Function | Signature |
|----------------|---------------|-----------------------|-----------|
| Calibrated by: | Jeton Kasrat | Laboratory Technician | |
| Approved by: | Katja Pokovic | Technical Manager | |

Issued: June 17, 2011

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No. RZA1201-0064HAC01R2

Page 82 of 119

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

| | |
|------------------------|---|
| NORM _{x,y,z} | sensitivity in free space |
| DCP | diode compression point |
| CF | crest factor (1/duty_cycle) of the RF signal |
| A, B, C | modulation dependent linearization parameters |
| Polarization φ | φ rotation around probe axis |
| Polarization θ | θ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\theta = 0$ is normal to probe axis |
| Connector Angle | information used in DASY system to align probe sensor X to the robot coordinate system |

Calibration is Performed According to the Following Standards:

- IEEE Std 1309-2005, "IEEE Standard for calibration of electromagnetic field sensors and probes, excluding antennas, from 9 kHz to 40 GHz", December 2005.

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\theta = 0$ for XY sensors and $\theta = 90$ for Z sensor ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart).
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- Spherical isotropy (3D deviation from isotropy)**: in a locally homogeneous field realized using an open waveguide setup.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM_x (no uncertainty required).

ER3DV6 – SN:2302

June 15, 2011

Probe ER3DV6

SN:2302

Manufactured: November 6, 2002
Calibrated: June 15, 2011

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

TA Technology (Shanghai) Co., Ltd.

Test Report

ER3DV6- SN:2302

June 15, 2011

DASY/EASY - Parameters of Probe: ER3DV6 - SN:2302

Basic Calibration Parameters

| | Sensor X | Sensor Y | Sensor Z | Unc (k=2) |
|--|----------|----------|----------|--------------|
| Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) | 1.47 | 1.34 | 1.44 | $\pm 10.1\%$ |
| DCP (mV) ^a | 98.2 | 96.7 | 101.8 | |

Modulation Calibration Parameters

| UID | Communication System Name | PAR | | A dB | B dB | C dB | VR mV | Unc ^E (k=2) |
|-------|---------------------------|------|---|---------|---------|---------|----------|---------------------------|
| 10000 | CW | 0.00 | X | 0.00 | 0.00 | 1.00 | 113.8 | $\pm 3.0\%$ |
| | | | Y | 0.00 | 0.00 | 1.00 | 99.1 | |
| | | | Z | 0.00 | 0.00 | 1.00 | 95.3 | |

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

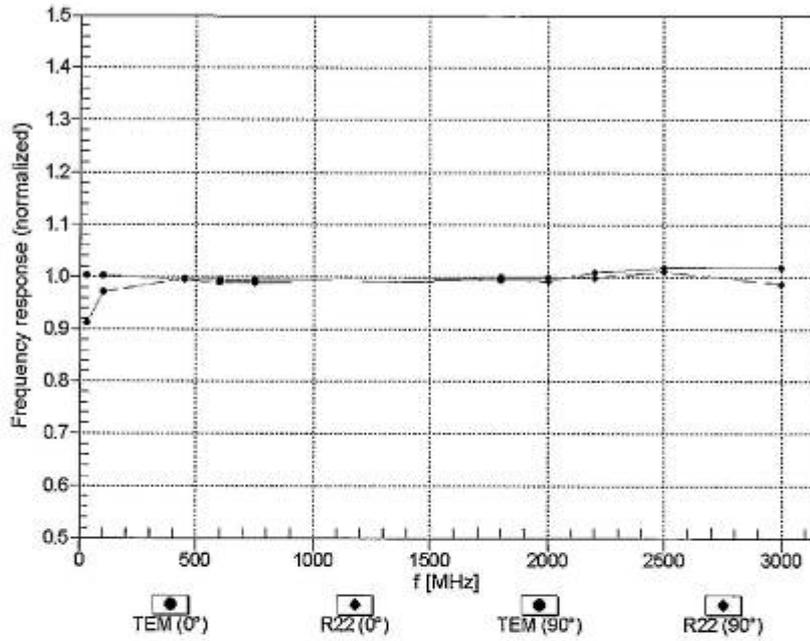
^a Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

ER3DV6-SN:2302

June 15, 2011

Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)

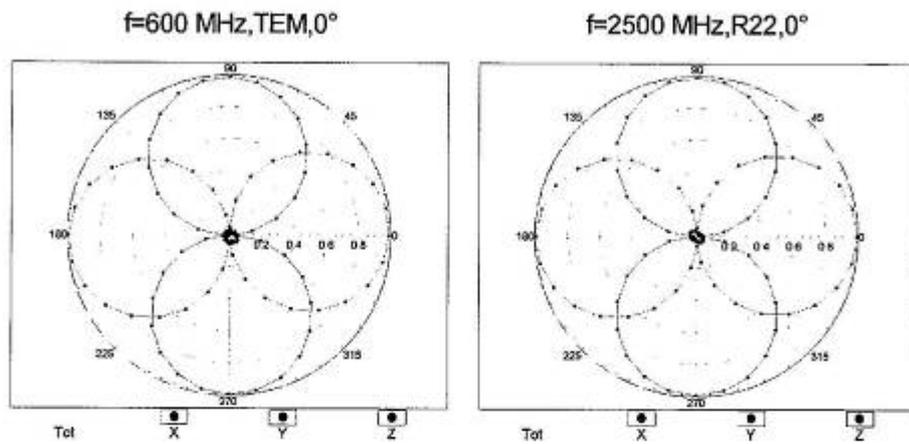


Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

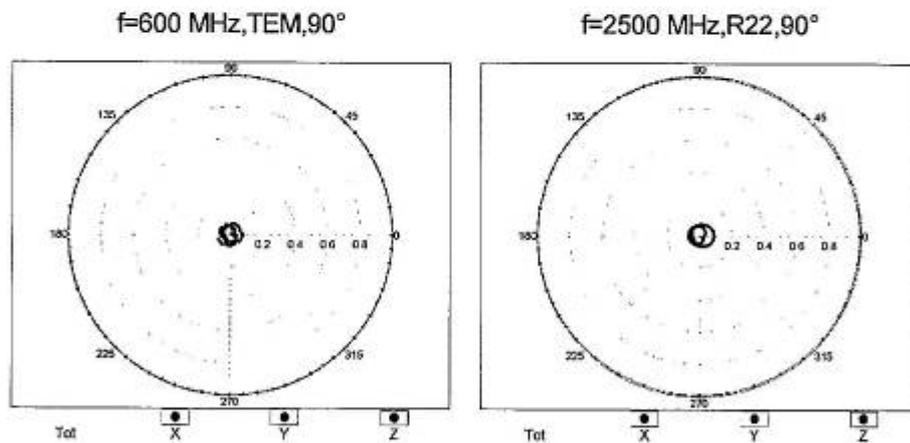
ER3DV6-SN:2302

June 15, 2011

Receiving Pattern (ϕ), $\vartheta = 0^\circ$



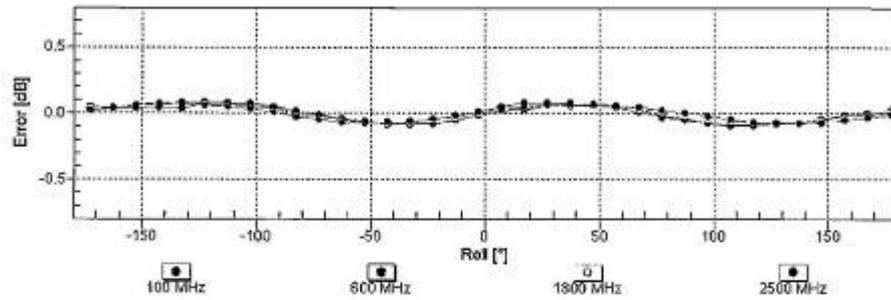
Receiving Pattern (ϕ), $\vartheta = 90^\circ$



ER3DV6-SN:2302

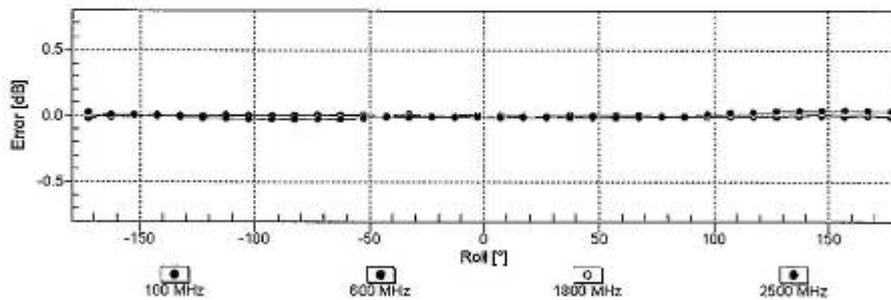
June 15, 2011

Receiving Pattern (ϕ), $\vartheta = 0^\circ$



Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Receiving Pattern (ϕ), $\vartheta = 90^\circ$

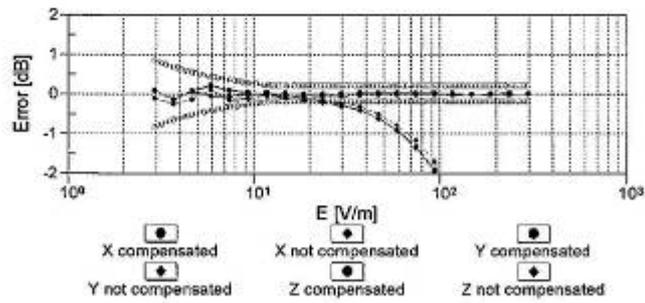
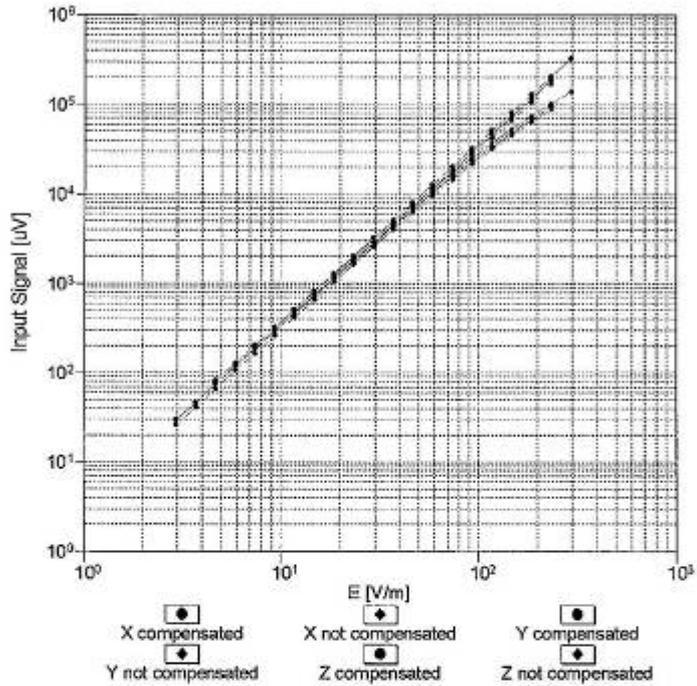


Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

ER3DV6-SN:2302

June 15, 2011

Dynamic Range f(E-field)
 (TEM cell , f = 900 MHz)

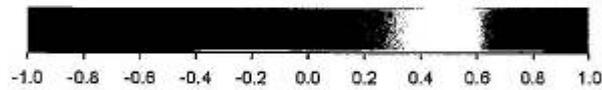
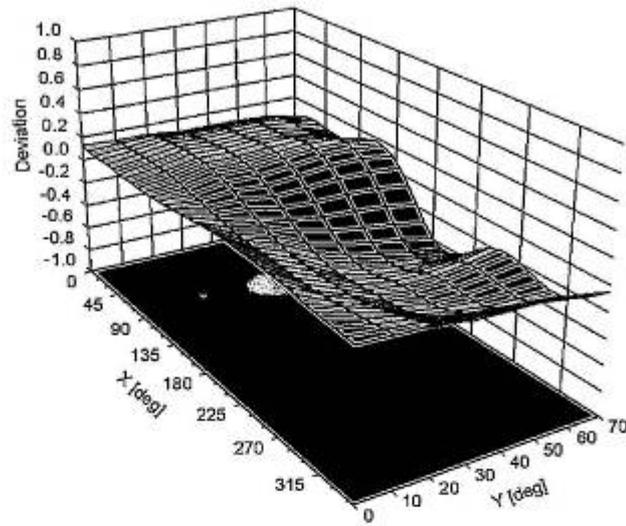


Uncertainty of Linearity Assessment: ± 0.6% (k=2)

ER3DV6-SN:2302

June 15, 2011

Deviation from Isotropy in Air
Error (ϕ , θ), $f = 900$ MHz



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 90 of 119

ER3DV6-SN:2302

June 15, 2011

DASY/EASY - Parameters of Probe: ER3DV6 - SN:2302

Other Probe Parameters

| | |
|---|-------------|
| Sensor Arrangement | Rectangular |
| Connector Angle (°) | -2.7 |
| Mechanical Surface Detection Mode | enabled |
| Optical Surface Detection Mode | disabled |
| Probe Overall Length | 337 mm |
| Probe Body Diameter | 10 mm |
| Tip Length | 10 mm |
| Tip Diameter | 8 mm |
| Probe Tip to Sensor X Calibration Point | 2.5 mm |
| Probe Tip to Sensor Y Calibration Point | 2.5 mm |
| Probe Tip to Sensor Z Calibration Point | 2.5 mm |

TA Technology (Shanghai) Co., Ltd. Test Report

Report No. RZA1201-0064HAC01R2

Page 91 of 119

ANNEX D: H-Probe Calibration Certificate

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client: **Auden**

Certificate No: **H3-6187_Jun11**

CALIBRATION CERTIFICATE

| | |
|--|--|
| Object | H3DV6 - SN:6187 |
| Calibration procedure(s) | QA-CAL-03.v6; QA-CAL-25.v4 Calibration procedure for H-field probes optimized for close near field evaluations in air |
| Calibration date: | June 17, 2011 |
| <p>This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.</p> <p>All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.</p> <p>Calibration Equipment used (M&TE critical for calibration)</p> | |

| Primary Standards | ID | Cal Date (Certificate No.) | Scheduled Calibration |
|----------------------------|-----------------|-----------------------------------|------------------------|
| Power meter E4419B | GB41293674 | 31-Mar-11 (No. 217-01372) | Apr-12 |
| Power sensor E4412A | MY41498087 | 31-Mar-11 (No. 217-01372) | Apr-12 |
| Reference 3 dB Attenuator | SN: S5054 (3c) | 29-Mar-11 (No. 217-01369) | Apr-12 |
| Reference 20 dB Attenuator | SN: S5086 (20b) | 29-Mar-11 (No. 217-01367) | Apr-12 |
| Reference 30 dB Attenuator | SN: S5129 (30b) | 29-Mar-11 (No. 217-01370) | Apr-12 |
| Reference Probe H3DV6 | SN: 6182 | 4-Oct-10 (No. H3-6182_Oct10) | Oct-11 |
| DAE4 | SN: 789 | 6-Apr-11 (No. DAE4-789_Apr11) | Apr-12 |
| Secondary Standards | ID | Check Date (in house) | Scheduled Check |
| RF generator HP 8648C | US3642U01700 | 4-Aug-99 (in house check Oct-09) | In house check: Oct-11 |
| Network Analyzer HP 8753E | US37390585 | 18-Oct-01 (in house check Oct-10) | In house check: Oct-11 |

| | | | |
|---|-------------------------|-----------------------------------|-----------------------|
| Calibrated by: | Name Claudio Leubler | Function Laboratory Technician | Signature |
| Approved by: | Name Kata Pokovic | Technical Manager | |
| | | | Issued: June 17, 2011 |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. | | | |

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No. RZA1201-0064HAC01R2

Page 92 of 119

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 108**

The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Glossary:

| | |
|-----------------------|---|
| NORM _{x,y,z} | sensitivity in free space |
| DCP | diode compression point |
| CF | crest factor (1/duty_cycle) of the RF signal |
| A, B, C | modulation dependent linearization parameters |
| Polarization ϕ | ϕ rotation around probe axis |
| Polarization θ | θ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\theta = 0$ is normal to probe axis |
| Connector Angle | information used in DASY system to align probe sensor X to the robot coordinate system |

Calibration is Performed According to the Following Standards:

- IEEE Std 1309-2005, "IEEE Standard for calibration of electromagnetic field sensors and probes, excluding antennas, from 9 kHz to 40 GHz", December 2005.

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\theta = 0$ for XY sensors and $\theta = 90$ for Z sensor ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide).
- X, Y, Z(f)_a0a1a2 = X, Y, Z_a0a1a2 * frequency_response** (see Frequency Response Chart).
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}; A, B, C** are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- Spherical isotropy (3D deviation from isotropy)**: in a locally homogeneous field realized using an open waveguide setup.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle**: The angle is assessed using the information gained by determining the X_a0a1a2 (no uncertainty required).

H3DV6 – SN:6187

June 17, 2011

Probe H3DV6

SN:6187

Manufactured: June 8, 2004
Calibrated: June 17, 2011

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

TA Technology (Shanghai) Co., Ltd.

Test Report

H3DV6- SN:6187

June 17, 2011

DASY/EASY - Parameters of Probe: H3DV6 - SN:6187

Basic Calibration Parameters

| | | Sensor X | Sensor Y | Sensor Z | Unc (k=2) |
|----------------------------------|----|------------|-----------|------------|-------------|
| Norm (A/m / $\sqrt{\text{mV}}$) | a0 | 3.25E-003 | 2.53E-003 | 3.06E-003 | $\pm 5.1\%$ |
| Norm (A/m / $\sqrt{\text{mV}}$) | a1 | -2.03E-005 | 4.43E-005 | -4.88E-005 | $\pm 5.1\%$ |
| Norm (A/m / $\sqrt{\text{mV}}$) | a2 | 2.36E-005 | 1.59E-005 | 7.21E-005 | $\pm 5.1\%$ |
| DCP (mV) ^B | | 108.1 | 92.6 | 91.8 | |

Modulation Calibration Parameters

| UID | Communication System Name | PAR | | A dB | B dB | C dB | VR mV | Unc ^E (k=2) |
|-------|---------------------------|------|---|---------|---------|---------|----------|---------------------------|
| 10000 | CW | 0.00 | X | 0.00 | 0.00 | 1.00 | 77.7 | $\pm 3.0\%$ |
| | | | Y | 0.00 | 0.00 | 1.00 | 72.9 | |
| | | | Z | 0.00 | 0.00 | 1.00 | 90.7 | |

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

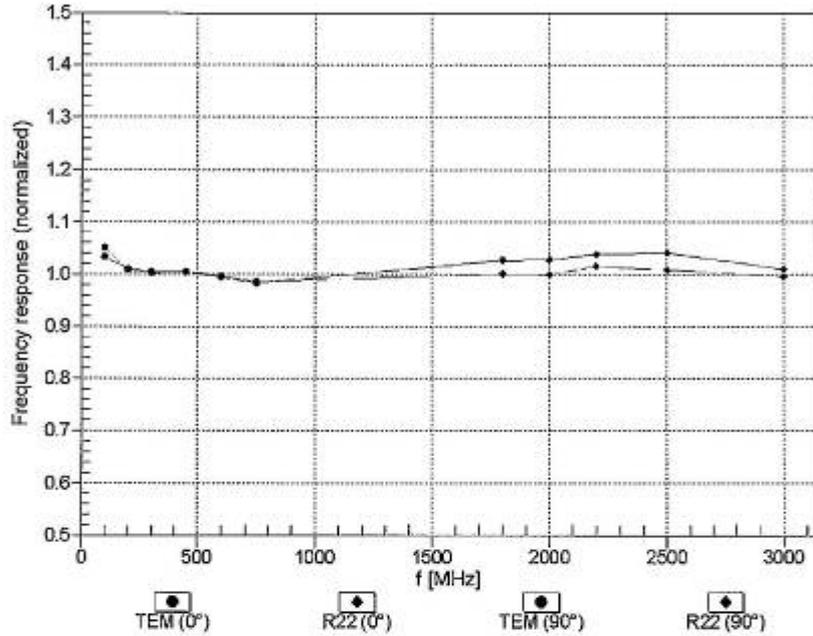
^B Numerical linearization parameter; uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

H3DV6-SN:6187

June 17, 2011

Frequency Response of H-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)

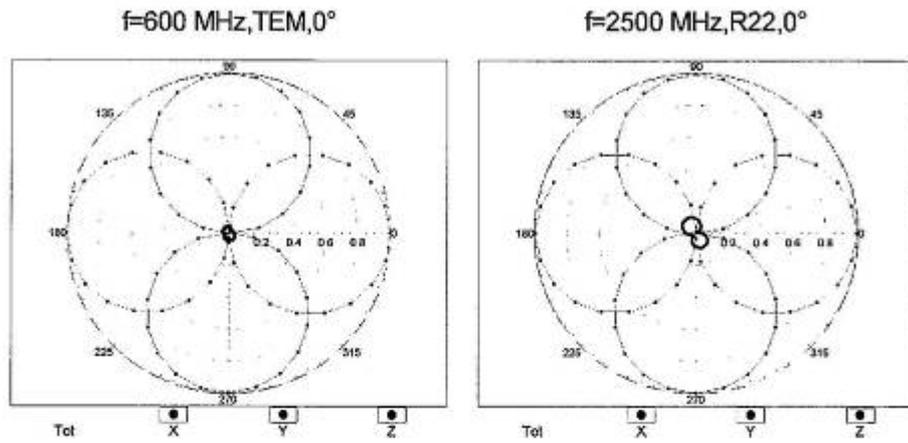


Uncertainty of Frequency Response of H-field: $\pm 6.3\%$ (k=2)

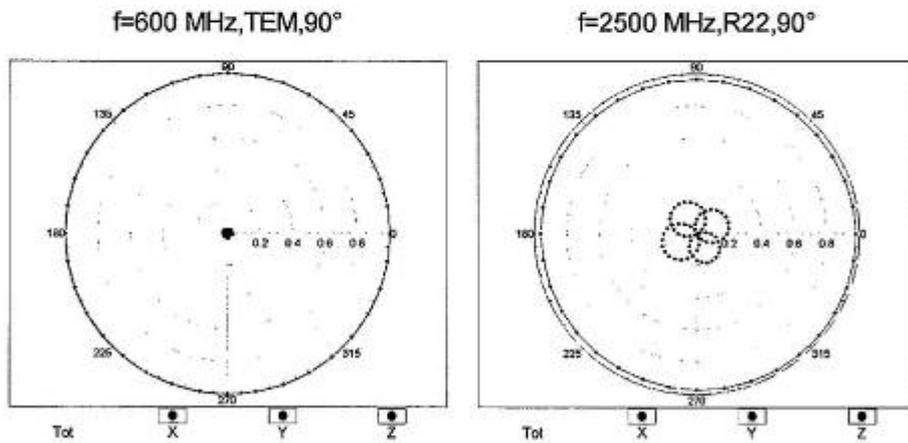
H3DV6- SN:8187

June 17, 2011

Receiving Pattern (ϕ), $\vartheta = 0^\circ$



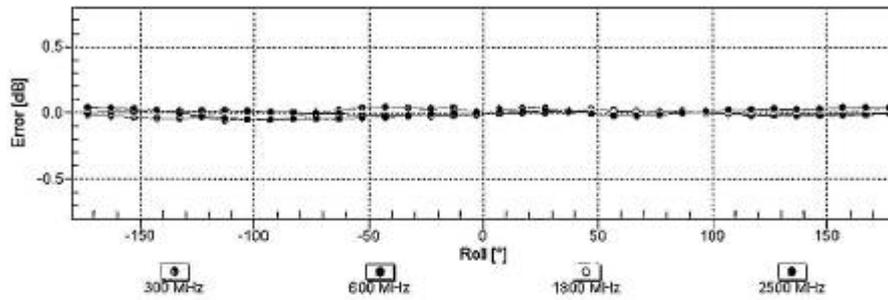
Receiving Pattern (ϕ), $\vartheta = 90^\circ$



H3DV6- SN:6187

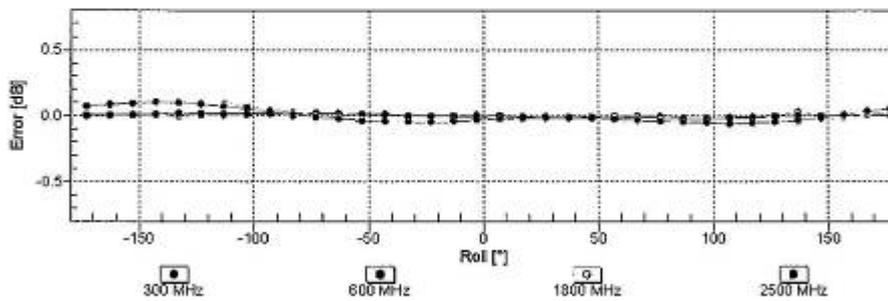
June 17, 2011

Receiving Pattern (ϕ), $\vartheta = 0^\circ$



Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Receiving Pattern (ϕ), $\vartheta = 90^\circ$



Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

TA Technology (Shanghai) Co., Ltd. Test Report

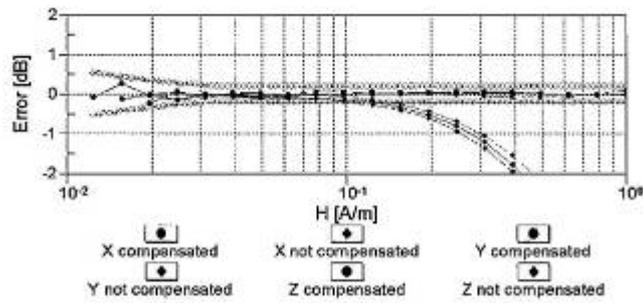
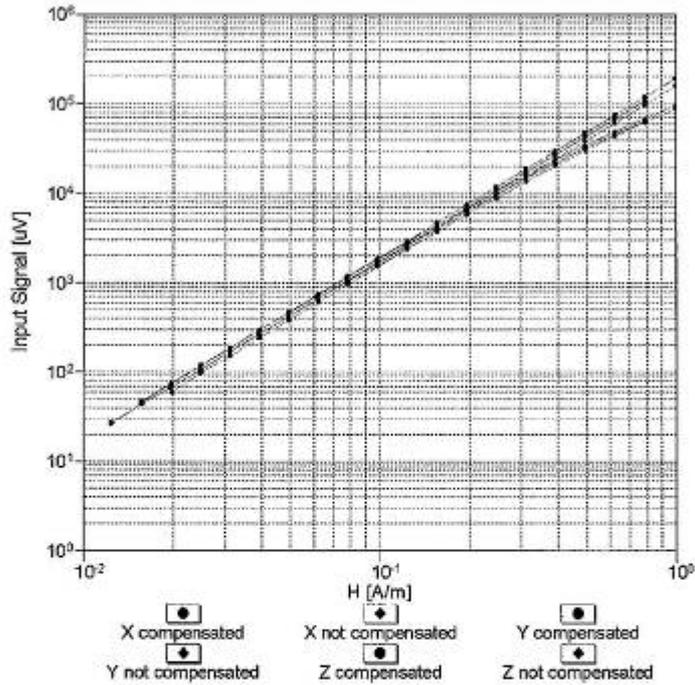
Report No. RZA1201-0064HAC01R2

Page 98 of 119

H3DV6- SN:6167

June 17, 2011

Dynamic Range f(H-field) (TEM cell, f = 900 MHz)

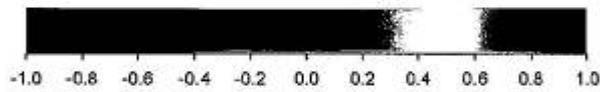
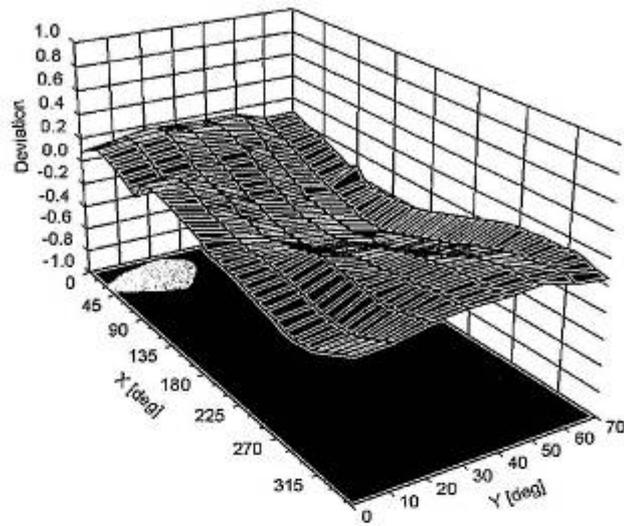


Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)

H3DV6- SN:6167

June 17, 2011

Deviation from Isotropy in Air
Error (ϕ , θ), $f = 900$ MHz



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 100 of 119

H3DV6- SN:6187

June 17, 2011

DASY/EASY - Parameters of Probe: H3DV6 - SN:6187

Other Probe Parameters

| | |
|---|-------------|
| Sensor Arrangement | Rectangular |
| Connector Angle (°) | -113 |
| Mechanical Surface Detection Mode | enabled |
| Optical Surface Detection Mode | disabled |
| Probe Overall Length | 337 mm |
| Probe Body Diameter | 10 mm |
| Tip Length | 20 mm |
| Tip Diameter | 6 mm |
| Probe Tip to Sensor X Calibration Point | 3 mm |
| Probe Tip to Sensor Y Calibration Point | 3 mm |
| Probe Tip to Sensor Z Calibration Point | 3 mm |

TA Technology (Shanghai) Co., Ltd. Test Report

Report No. RZA1201-0064HAC01R2

Page 101 of 119

ANNEX E: CD835V3 Dipole Calibration Certificate

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
S Service suisse d'étalonnage
C Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **TA Technology (Auden)**

Certificate No: **CD835V3-1133_Apr09**

CALIBRATION CERTIFICATE

Object: **CD835V3 - SN: 1133**

Calibration procedure(s): **QA CAL-20.v4
Calibration procedure for dipoles in air**

Calibration date: **April 22, 2009**

Condition of the calibrated item: **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
All calibrations have been conducted in the closed laboratory facility; environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID # | Cal Date (Certificate No.) | Scheduled Calibration |
|---------------------------|-------------|-----------------------------------|------------------------|
| Power meter EPM-442A | GB37480704 | 08-Oct-08 (No. 217-00898) | Oct-09 |
| Power sensor HP 8461A | US37292783 | 08-Oct-08 (No. 217-00898) | Oct-09 |
| Probe ER3DV6 | SN: 2336 | 22-Dec-08 (No. ER3-2336_Dec08) | Dec-09 |
| Probe H3DV6 | SN: 6065 | 22-Dec-08 (No. H3-6065_Dec08) | Dec-09 |
| DAE4 | SN: 781 | 20-Feb-09 (No. DAE4-781_Feb09) | Feb-10 |
| Secondary Standards | ID # | Check Date (in house) | Scheduled Check |
| Power meter R&S NRP | SN: 101748 | 23-Sep-08 (in house check Dec-08) | In house check: Dec-10 |
| Power sensor R&S NRP-Z91 | SN: 100711 | 25-Aug-08 (in house check Dec-08) | In house check: Dec-10 |
| Power sensor R&S NRP-Z91 | SN: 100712 | 25-Aug-08 (in house check Dec-08) | In house check: Dec-10 |
| Network Analyzer HP 8753E | US37390585 | 18-Oct-01 (in house check Oct-08) | In house check: Oct-09 |
| RF generator E4433B | MY 41310391 | 03-Nov-04 (in house check Oct-07) | In house check: Oct-09 |

| | | | |
|----------------|--------------------|-----------------------|-----------|
| | Name | Function | Signature |
| Calibrated by: | Mike Mell | Laboratory Technician | |
| Approved by: | Fin Bombolt | Technical Director | |

Issued: April 24, 2009

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No. RZA1201-0064HAC01R2

Page 102 of 119

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
S Service suisse d'étalonnage
C Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

References

- [1] ANSI-C63.19-2006
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.
- [2] ANSI-C63.19-2007
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- **Coordinate System:** y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1, 2], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- **Measurement Conditions:** Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- **Antenna Positioning:** The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY4 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- **Feed Point Impedance and Return Loss:** These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminated by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- **E-field distribution:** E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1, 2], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- **H-field distribution:** H-field is measured with an isotropic H-field probe with 100mW forward power to the antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field scan. The maximum of the field is available at the center (subgrid 5) above the feed point. The H-field value stated as calibration value represents the maximum of the interpolated H-field, 10mm above the dipole surface at the feed point.

TA Technology (Shanghai) Co., Ltd.

Test Report

1 Measurement Conditions

DASY system configuration, as far as not given on page 1.

| | | |
|------------------------------------|------------------|----------------------|
| DASY Version | DASY4 | V4.7 B80 |
| DASY PP Version | SEMCAD | V1.8 B186 |
| Phantom | HAC Test Arch | SD HAC P01 BA, #1070 |
| Distance Dipole Top - Probe Center | 10 mm | |
| Scan resolution | dx, dy = 5 mm | area = 20 x 180 mm |
| Frequency | 835 MHz ± 1 MHz | |
| Forward power at dipole connector | 20.0 dBm = 100mW | |
| Input power drift | < 0.05 dB | |

2 Maximum Field values

| H-field 10 mm above dipole surface | condition | interpolated maximum |
|------------------------------------|----------------------|----------------------|
| Maximum measured | 100 mW forward power | 0.446 A/m |

Uncertainty for H-field measurement: 8.2% (k=2)

| E-field 10 mm above dipole surface | condition | Interpolated maximum |
|------------------------------------|----------------------|----------------------|
| Maximum measured above high end- | 100 mW forward power | 158.2 V/m |
| Maximum measured above low end | 100 mW forward power | 157.3 V/m |
| Averaged maximum above arm | 100 mW forward power | 157.8 V/m |

Uncertainty for E-field measurement: 12.8% (k=2)

3 Appendix

3.1 Antenna Parameters

| Frequency | Return Loss | Impedance |
|-----------|-------------|----------------------|
| 800 MHz | 18.2 dB | (43.3 – j12.9) Ohm |
| 835 MHz | 33.2 dB | (49.3 + j2.1) Ohm |
| 900 MHz | 17.4 dB | (53.5 – j13.6) Ohm |
| 950 MHz | 20.0 dB | (44.3 + j7.5) Ohm |
| 960 MHz | 14.8 dB | (53.2 + j18.8) Ohm |

3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

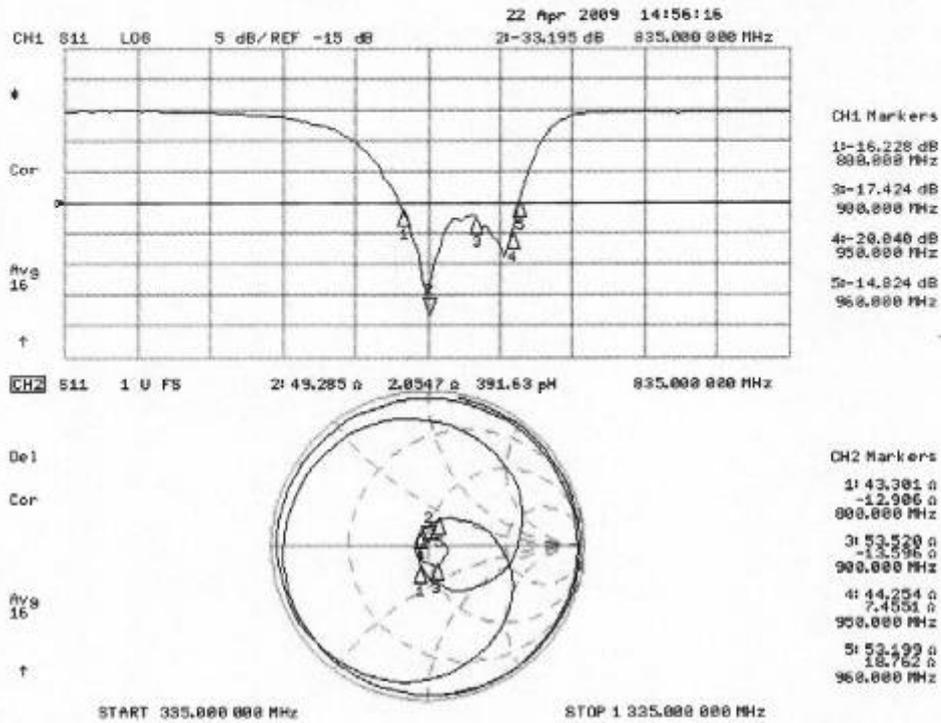
The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



3.3.2 DASY4 H-field Result

Date/Time: 21.04.2009 13:38:21

Test Laboratory: SPEAG Lab 2

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1133
 Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASY4 (High Precision Assessment)

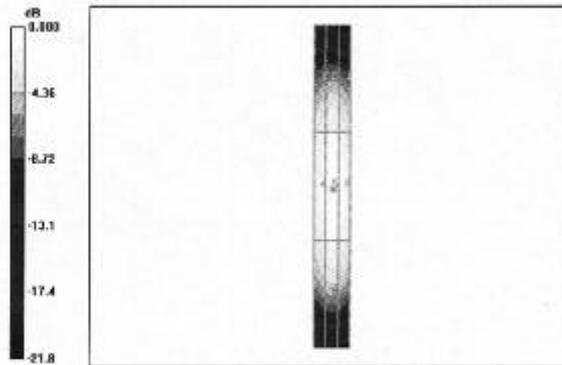
DASY4 Configuration:

- Probe: H3DV6 - SN6065; ; Calibrated: 22.12.2008
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.02.2009
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.446 A/m
 Probe Modulation Factor = 1.00
 Device Reference Point: 0.000, 0.000, -6.30 mm
 Reference Value = 0.472 A/m; Power Drift = -0.006 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

| | | |
|-----------------|-----------------|-----------------|
| Grid 1 | Grid 2 | Grid 3 |
| 0.364 M4 | 0.385 M4 | 0.368 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 0.417 M4 | 0.446 M4 | 0.426 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 0.365 M4 | 0.393 M4 | 0.376 M4 |



0 dB = 0.446A/m

3.3.3 DASY4 E-field Result

Date/Time: 22.04.2009 12:51:53

Test Laboratory: SPEAG Lab 2

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1133
 Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASY4 (High Precision Assessment)

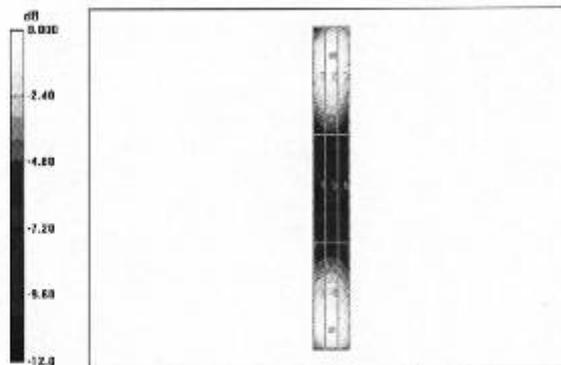
DASY4 Configuration:

- Probe: ER3DV6 - SN2336; ConvF(1, 1, 1); Calibrated: 22.12.2008
- Sensor-Surface: (Fix Surface)
- Electronics: DA4 Sn781; Calibrated: 20.02.2009
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 158.2 V/m
 Probe Modulation Factor = 1.00
 Device Reference Point: 0.000, 0.000, -6.30 mm
 Reference Value = 105.8 V/m; Power Drift = -0.013 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------|----------|----------|
| Grid 1 | Grid 2 | Grid 3 |
| 152.4 M4 | 158.2 M4 | 154.6 M4 |
| Grid 4 | Grid 5 | Grid 6 |
| 84.6 M4 | 86.9 M4 | 84.2 M4 |
| Grid 7 | Grid 8 | Grid 9 |
| 151.7 M4 | 157.3 M4 | 152.4 M4 |



0 dB = 158.2V/m

TA Technology (Shanghai) Co., Ltd. Test Report

Report No. RZA1201-0064HAC01R2

Page 107 of 119

ANNEX F: CD1880V3 Dipole Calibration Certificate

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
S Service suisse d'étalonnage
C Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **TA Technology (Auden)**

Certificate No: **CD1880V3-1115_Apr09**

CALIBRATION CERTIFICATE

Object: **CD1880V3 - SN: 1115**

Calibration procedure(s): **QA CAL-20.v4
Calibration procedure for dipoles in air**

Calibration date: **April 22, 2009**

Condition of the calibrated item: **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID # | Cal Date (Certificate No.) | Scheduled Calibration |
|-----------------------|------------|--------------------------------|-----------------------|
| Power meter EPM-442A | GB37480704 | 08-Oct-08 (No. 217-00898) | Oct-09 |
| Power sensor HP 8481A | US37282783 | 08-Oct-08 (No. 217-00898) | Oct-09 |
| Probe ER3DV6 | SN: 2336 | 22-Dec-08 (No. ER3-2336_Dec08) | Dec-09 |
| Probe H3DV6 | SN: 6065 | 22-Dec-08 (No. H3-6065_Dec08) | Dec-09 |
| DAE4 | SN 781 | 20-Feb-09 (No. DAE4-781_Feb09) | Feb-10 |

| Secondary Standards | ID # | Check Date (in house) | Scheduled Check |
|---------------------------|-------------|-----------------------------------|------------------------|
| Power meter R&S NRP | SN: 101748 | 23-Sep-08 (in house check Dec-08) | In house check: Dec-10 |
| Power sensor R&S NRP-Z91 | SN: 100711 | 25-Aug-08 (in house check Dec-08) | In house check: Dec-10 |
| Power sensor R&S NRP-Z91 | SN: 100712 | 25-Aug-08 (in house check Dec-08) | In house check: Dec-10 |
| Network Analyzer HP 8753E | US37390586 | 18-Oct-01 (in house check Oct-08) | In house check: Oct-09 |
| RF generator E4433B | MY 41310391 | 22-Nov-04 (in house check Oct-07) | In house check: Oct-09 |

| | | | |
|----------------|-------------|-----------------------|-----------|
| | Name | Function | Signature |
| Calibrated by: | Mike Mehl | Laboratory Technician | |
| Approved by: | Fin Bomholt | Technical Director | |

Issued: April 24, 2009

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
S Service suisse d'étalonnage
C Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

References

- [1] ANSI-C63.19-2006
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.
- [2] ANSI-C63.19-2007
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- **Coordinate System:** y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1, 2], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- **Measurement Conditions:** Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- **Antenna Positioning:** The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY4 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- **Feed Point Impedance and Return Loss:** These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminated by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- **E-field distribution:** E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1, 2], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- **H-field distribution:** H-field is measured with an isotropic H-field probe with 100mW forward power to the antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field scan. The maximum of the field is available at the center (subgrid 5) above the feed point. The H-field value stated as calibration value represents the maximum of the interpolated H-field, 10mm above the dipole surface at the feed point.

TA Technology (Shanghai) Co., Ltd.

Test Report

1. Measurement Conditions

DASY system configuration, as far as not given on page 1.

| | | |
|------------------------------------|------------------|----------------------|
| DASY Version | DASY4 | V4.7 B80 |
| DASY PP Version | SEMCAD | V1.8 B186 |
| Phantom | HAC Test Arch | SD HAC P01 BA, #1070 |
| Distance Dipole Top - Probe Center | 10 mm | |
| Scan resolution | dx, dy = 5 mm | area = 20 x 90 mm |
| Frequency | 1880 MHz ± 1 MHz | |
| Forward power at dipole connector | 20.0 dBm = 100mW | |
| Input power drift | < 0.05 dB | |

2. Maximum Field values

| H-field 10 mm above dipole surface | condition | Interpolated maximum |
|------------------------------------|----------------------|----------------------|
| Maximum measured | 100 mW forward power | 0.468 A/m |

Uncertainty for H-field measurement: 8.2% (k=2)

| E-field 10 mm above dipole surface | condition | Interpolated maximum |
|------------------------------------|----------------------|----------------------|
| Maximum measured above high end | 100 mW forward power | 140.5 V/m |
| Maximum measured above low end | 100 mW forward power | 138.2 V/m |
| Averaged maximum above arm | 100 mW forward power | 139.4 V/m |

Uncertainty for E-field measurement: 12.8% (k=2)

3. Appendix

3.1 Antenna Parameters

| Frequency | Return Loss | Impedance |
|-----------------|----------------|----------------------------|
| 1710 MHz | 24.0 dB | (52.4 + j8.0) Ohm |
| 1880 MHz | 21.4 dB | (46.8 + j7.6) Ohm |
| 1900 MHz | 22.4 dB | (48.1 + j7.2) Ohm |
| 1950 MHz | 30.1 dB | (50.1 + j3.1) Ohm |
| 2000 MHz | 18.4 dB | (40.5 + j5.4) Ohm |

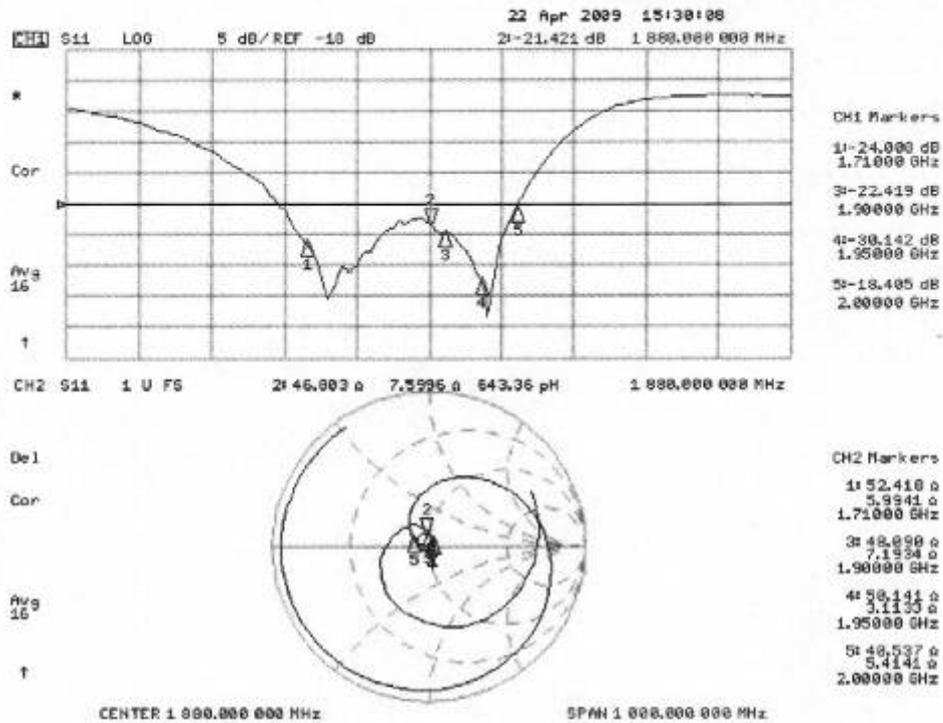
3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth. The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals. Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



TA Technology (Shanghai) Co., Ltd.

Test Report

3.3.2 DASYS4 H-Field Result

Date/Time: 21.04.2009 16:14:56

Test Laboratory: SPEAG Lab 2

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1115

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: RF Section

Measurement Standard: DASYS4 (High Precision Assessment)

DASYS4 Configuration:

- Probe: H3DV6 - SN6065; Calibrated: 22.12.2008
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.02.2009
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASYS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.468 A/m

Probe Modulation Factor = 1.00

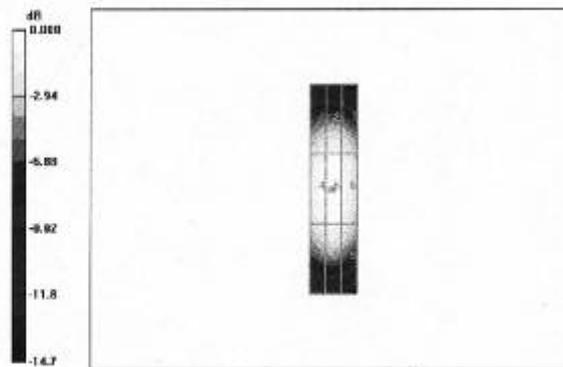
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 0.497 A/m; Power Drift = -0.028 dB

Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m

| | | |
|----------|----------|----------|
| Grid 1 | Grid 2 | Grid 3 |
| 0.410 M2 | 0.428 M2 | 0.405 M2 |
| Grid 4 | Grid 5 | Grid 6 |
| 0.448 M2 | 0.468 M2 | 0.442 M2 |
| Grid 7 | Grid 8 | Grid 9 |
| 0.409 M2 | 0.430 M2 | 0.403 M2 |



0 dB = 0.468A/m

3.3.3 DASYS4 E-Field Result

Date/Time: 22.04.2009 15:33:14

Test Laboratory: SPEAG Lab 2

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1115

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Phantom section: RF Section

Measurement Standard: DASYS4 (High Precision Assessment)

DASYS4 Configuration:

- Probe: ER3DV6 - SN2336; ConvF(1, 1, 1); Calibrated: 22.12.2008
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.02.2009
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASYS4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 140.5 V/m

Probe Modulation Factor = 1.00

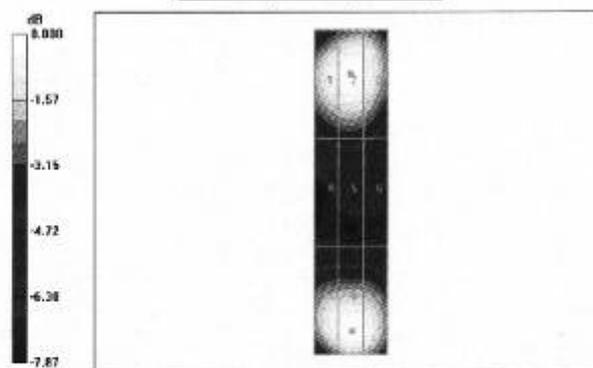
Device Reference Point: 0.000, 0.000, -6.30 mm

Reference Value = 157.9 V/m; Power Drift = 0.005 dB

Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak E-field in V/m

| | | |
|----------|----------|----------|
| Grid 1 | Grid 2 | Grid 3 |
| 133.8 M2 | 138.2 M2 | 134.2 M2 |
| Grid 4 | Grid 5 | Grid 6 |
| 90.3 M3 | 92.5 M3 | 88.2 M3 |
| Grid 7 | Grid 8 | Grid 9 |
| 132.9 M2 | 140.5 M2 | 137.0 M2 |



0 dB = 140.5V/m

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No. RZA1201-0064HAC01R2

Page 113 of 119

ANNEX G: DAE4 Calibration Certificate

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **TA-SH (Auden)**

Certificate No: **DAE4-871_Nov11**

| CALIBRATION CERTIFICATE | | | | | | | | | | | | | | | | | | | |
|--|---|----------------------------|---------------------------|-------------------|------|----------------------------|-----------------------|-------------------------------|-------------|----------------------|--------|---------------------|------|-----------------------|-----------------|---------------------|--------------------|----------------------------|------------------------|
| Object | DAE4 - SD 000 D04 BJ - SN: 871 | | | | | | | | | | | | | | | | | | |
| Calibration procedure(s) | QA CAL-06.v23 Calibration procedure for the data acquisition electronics (DAE) | | | | | | | | | | | | | | | | | | |
| Calibration date: | November 22, 2011 | | | | | | | | | | | | | | | | | | |
| <p>This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.</p> <p>All calibrations have been conducted in the closed laboratory facility; environment temperature (22 ± 3)°C and humidity < 70%.</p> <p>Calibration Equipment used (M&TE critical for calibration)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Primary Standards</th> <th style="width: 15%;">ID #</th> <th style="width: 30%;">Cal Date (Certificate No.)</th> <th style="width: 25%;">Scheduled Calibration</th> </tr> </thead> <tbody> <tr> <td>Keithley Multimeter Type 2001</td> <td>SN: 0810278</td> <td>28-Sep-11 (No:11450)</td> <td>Sep-12</td> </tr> <tr> <th>Secondary Standards</th> <th>ID #</th> <th>Check Date (in house)</th> <th>Scheduled Check</th> </tr> <tr> <td>Calibrator Box V1.1</td> <td>SE UMS 006 AB 1004</td> <td>08-Jun-11 (in house check)</td> <td>In house check: Jun-12</td> </tr> </tbody> </table> | | | | Primary Standards | ID # | Cal Date (Certificate No.) | Scheduled Calibration | Keithley Multimeter Type 2001 | SN: 0810278 | 28-Sep-11 (No:11450) | Sep-12 | Secondary Standards | ID # | Check Date (in house) | Scheduled Check | Calibrator Box V1.1 | SE UMS 006 AB 1004 | 08-Jun-11 (in house check) | In house check: Jun-12 |
| Primary Standards | ID # | Cal Date (Certificate No.) | Scheduled Calibration | | | | | | | | | | | | | | | | |
| Keithley Multimeter Type 2001 | SN: 0810278 | 28-Sep-11 (No:11450) | Sep-12 | | | | | | | | | | | | | | | | |
| Secondary Standards | ID # | Check Date (in house) | Scheduled Check | | | | | | | | | | | | | | | | |
| Calibrator Box V1.1 | SE UMS 006 AB 1004 | 08-Jun-11 (in house check) | In house check: Jun-12 | | | | | | | | | | | | | | | | |
| Calibrated by: | Name Andrea Gunti | Function Technician | Signature | | | | | | | | | | | | | | | | |
| Approved by: | Fin Bornholt | R&D Director | | | | | | | | | | | | | | | | | |
| | | | Issued: November 22, 2011 | | | | | | | | | | | | | | | | |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. | | | | | | | | | | | | | | | | | | | |

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No. RZA1201-0064HAC01R2

Page 114 of 119

**Calibration Laboratory of
Schmid & Partner
Engineering AG**
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary

DAE data acquisition electronics
Connector angle information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters

- **DC Voltage Measurement:** Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- **Connector angle:** The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
 - **DC Voltage Measurement Linearity:** Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
 - **Common mode sensitivity:** Influence of a positive or negative common mode voltage on the differential measurement.
 - **Channel separation:** Influence of a voltage on the neighbor channels not subject to an input voltage.
 - **AD Converter Values with inputs shorted:** Values on the internal AD converter corresponding to zero input voltage
 - **Input Offset Measurement:** Output voltage and statistical results over a large number of zero voltage measurements.
 - **Input Offset Current:** Typical value for information; Maximum channel input offset current, not considering the input resistance.
 - **Input resistance:** Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
 - **Low Battery Alarm Voltage:** Typical value for information. Below this voltage, a battery alarm signal is generated.
 - **Power consumption:** Typical value for information. Supply currents in various operating modes.

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No. RZA1201-0064HAC01R2

Page 115 of 119

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1 μ V, full range = -100...+300 mV

Low Range: 1LSB = 61nV, full range = -1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

| Calibration Factors | X | Y | Z |
|---------------------|--------------------------|--------------------------|--------------------------|
| High Range | 404.749 \pm 0.1% (k=2) | 404.733 \pm 0.1% (k=2) | 405.174 \pm 0.1% (k=2) |
| Low Range | 3.98175 \pm 0.7% (k=2) | 3.93601 \pm 0.7% (k=2) | 3.96830 \pm 0.7% (k=2) |

Connector Angle

| | |
|---|------------------------------------|
| Connector Angle to be used in DASY system | 90.0 $^{\circ}$ \pm 1 $^{\circ}$ |
|---|------------------------------------|

TA Technology (Shanghai) Co., Ltd.

Test Report

Appendix

1. DC Voltage Linearity

| High Range | Reading (μV) | Difference (μV) | Error (%) |
|-------------------|---------------------------|------------------------------|-----------|
| Channel X + Input | 199991.9 | -0.91 | -0.00 |
| Channel X + Input | 20000.28 | 0.48 | 0.00 |
| Channel X - Input | -19998.51 | 0.59 | -0.00 |
| Channel Y + Input | 200003.0 | 1.24 | 0.00 |
| Channel Y + Input | 19999.67 | 0.17 | 0.00 |
| Channel Y - Input | -20000.04 | -0.34 | 0.00 |
| Channel Z + Input | 200010.1 | -0.11 | -0.00 |
| Channel Z + Input | 19999.33 | -0.07 | -0.00 |
| Channel Z - Input | -20001.45 | -0.85 | 0.00 |

| Low Range | Reading (μV) | Difference (μV) | Error (%) |
|-------------------|---------------------------|------------------------------|-----------|
| Channel X + Input | 2000.0 | 0.05 | 0.00 |
| Channel X + Input | 199.81 | -0.09 | -0.04 |
| Channel X - Input | -199.63 | 0.37 | -0.19 |
| Channel Y + Input | 1999.9 | -0.22 | -0.01 |
| Channel Y + Input | 198.81 | -1.19 | -0.59 |
| Channel Y - Input | -201.62 | -1.72 | 0.86 |
| Channel Z + Input | 2000.4 | 0.48 | 0.02 |
| Channel Z + Input | 199.30 | -0.70 | -0.35 |
| Channel Z - Input | -200.86 | -1.06 | 0.53 |

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

| | Common mode Input Voltage (mV) | High Range Average Reading (μV) | Low Range Average Reading (μV) |
|-----------|--------------------------------|--|---|
| Channel X | 200 | 14.43 | 13.13 |
| | -200 | -12.22 | -13.72 |
| Channel Y | 200 | -10.07 | -9.78 |
| | -200 | 9.61 | 8.66 |
| Channel Z | 200 | -0.56 | -0.83 |
| | -200 | -0.01 | 0.11 |

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

| | Input Voltage (mV) | Channel X (μV) | Channel Y (μV) | Channel Z (μV) |
|-----------|--------------------|-----------------------------|-----------------------------|-----------------------------|
| Channel X | 200 | - | 3.08 | 0.09 |
| Channel Y | 200 | 3.19 | - | 4.59 |
| Channel Z | 200 | 0.90 | -0.06 | - |

TA Technology (Shanghai) Co., Ltd.

Test Report

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

| | High Range (LSB) | Low Range (LSB) |
|-----------|------------------|-----------------|
| Channel X | 15920 | 15519 |
| Channel Y | 16179 | 17567 |
| Channel Z | 15791 | 15270 |

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input 10M Ω

| | Average (μ V) | min. Offset (μ V) | max. Offset (μ V) | Std. Deviation (μ V) |
|-----------|--------------------|------------------------|------------------------|---------------------------|
| Channel X | 0.03 | -1.16 | 2.66 | 0.46 |
| Channel Y | -0.63 | -3.22 | 0.29 | 0.46 |
| Channel Z | -0.87 | -2.03 | 0.28 | 0.46 |

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

| | Zeroing (kOhm) | Measuring (MOhm) |
|-----------|----------------|------------------|
| Channel X | 200 | 200 |
| Channel Y | 200 | 200 |
| Channel Z | 200 | 200 |

8. Low Battery Alarm Voltage (Typical values for information)

| Typical values | Alarm Level (VDC) |
|----------------|-------------------|
| Supply (+ Vcc) | +7.9 |
| Supply (- Vcc) | -7.6 |

9. Power Consumption (Typical values for information)

| Typical values | Switched off (mA) | Stand by (mA) | Transmitting (mA) |
|----------------|-------------------|---------------|-------------------|
| Supply (+ Vcc) | +0.01 | +6 | +14 |
| Supply (- Vcc) | -0.01 | -8 | -9 |

ANNEX H: The EUT Appearances and Test Configuration



a: EUT



b: Battery

Picture 1: Constituents of EUT

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No. RZA1201-0064HAC01R2

Page 119 of 119



Picture 2: Test Setup