DAT-PL-162/04-01

TESTING
No. L0570

TEST REPORT

REPORT NUMBER: I11GW4774-HAC-RF

ON

Type of Equipment: yippee 3G_A
Type of Designation: one touch 901A
Manufacturer: TCT Mobile Limited

ACCORDING TO

FCC Part 20.19: COMMERCIAL MOBILE RADIO SERVICES - Hearing aid-compatible mobile handsets, 10–1–09 Edition

ANSI C63.19-2007 American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids, RF section

China Telecommunication Technology Labs.

Month date, year
Mar. 09, 2011
Signature

He Guili
Director

FCC ID:	RAD161
Report Date:	2011-03-09
Test Firm Name:	China Telecommunication Technology Labs
Registration Number:	840587

Statement

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 20.19. The sample tested was found to comply with the requirements defined in the applied rules.

Table of Contents

1. General Information

1.1 Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with the requirements of FCC CFR 47 Part 20.19.

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviations from, additions to, or exclusions from the test specifications have been made. See Annex F.

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Position: Engineer

Department: Department of EMC test

Signature: 

Editor of this test report:

Name: Li Guoqing

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Date: 2011-03-09

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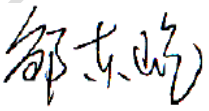
Department: Department of EMC test

Date: 2011-03-09

Signature: 

1.3 Testing Laboratory information

1.3.1 Location

Name:	China Telecommunication Technology Labs.
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1.3.2 Details of accreditation status

Accredited by:	China National Accreditation Service for Conformity Assessment (CNAS)
Registration number:	CNAS Registration No. CNAS L0570
Standard:	ISO/IEC 17025:2005

1.3.3 Test location, where different from section 1.3.1

Name:	------
Address:	------

1.4 Details of applicant or manufacturer

1.4.1 Applicant

Name:	TCT Mobile Limited
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1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name:	--
Address:	--

1.4.3 Manufactory (if different from applicant in section 1.4.1)

Name:	--
Address:	--

2 Test Item

2.1 General Information

Manufacturer: TCT Mobile Limited
Model Name: one touch 901A
Product Name yippee 3G_A
Serial Number: 012596000000839
Production Status: Product
Receipt date of test item: 2011-03-02

2.2 Outline of EUT

EUT is a GSM/GPRS/EDGE/WCDMA mobile phone, supporting 850 Band/1900 Band/FDD Band V and FDD Band II.

2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	handset	ALCATEL	900A-2AALMX0-W	012596000000839	--
B	adapter	Tenpao	S003KU0500040	CBA3120AG0C2	--
C	battery	BYD	Li-Lon	CAB31L0000C1	--
D	Earphone	Shunda	STEREO Headset	CCB3160A10C2	--
E	Data Cable	Juwei	Micro usb cable	CDA3122001C1	--

2.5 Other Information

Version of hardware and software:

HW Version: PIO

SW Version: sw524

Adaptor information:

Input: 100-240VAC 150mA
Output: 5.0V 400mA

Battery information: 1000mAh Nominal Voltage: 3.7V

2.6 EUT Photographs

Face view

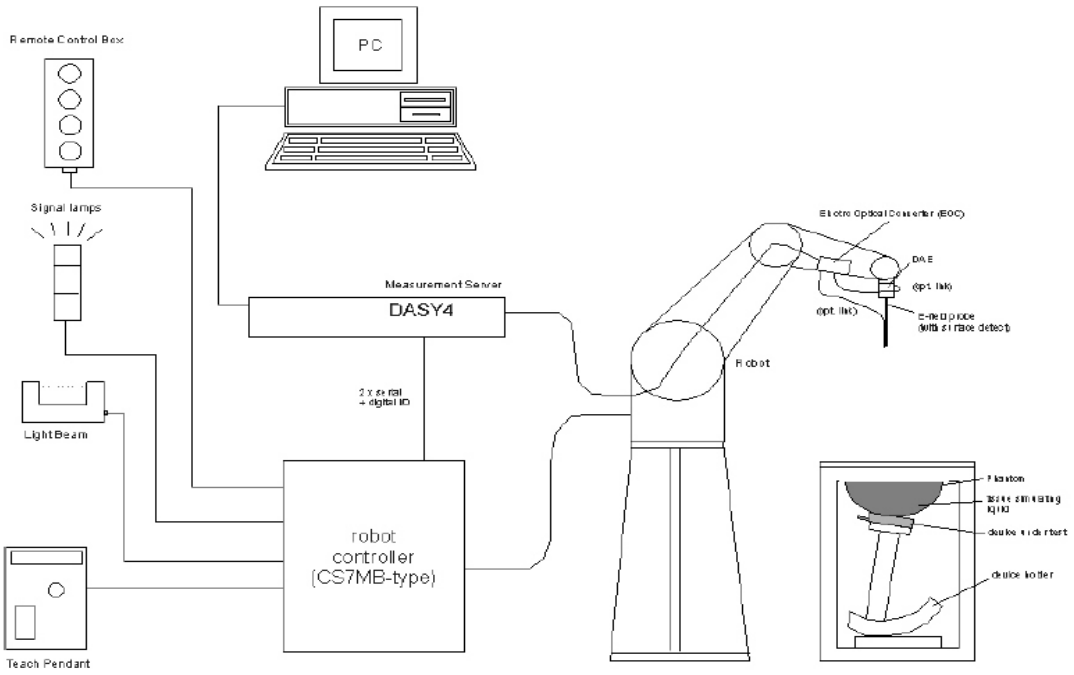
Back view

3 Test Configurations

3.1 HAC Measurement System

All measurements were performed using the automated near-field scanning system, DASY5, from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision industrial robot which positions the probes with a positional repeatability of better than 0.02mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit.

A cell controller system containing the power supply, robot controller, teach pendant (Joystick) and remote control, is used to drive the robot motors. The PC consists of the Intel ® Core ™ 2 Duo CPU E6750 @ 2.66 GHzwith Windows XP SP3 system and HAC Measurement Software DASY5, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc., which is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical signal to digital electric signal of the DAE and transfers data to the PC plug-in card.



Demonstration of measurement system setup

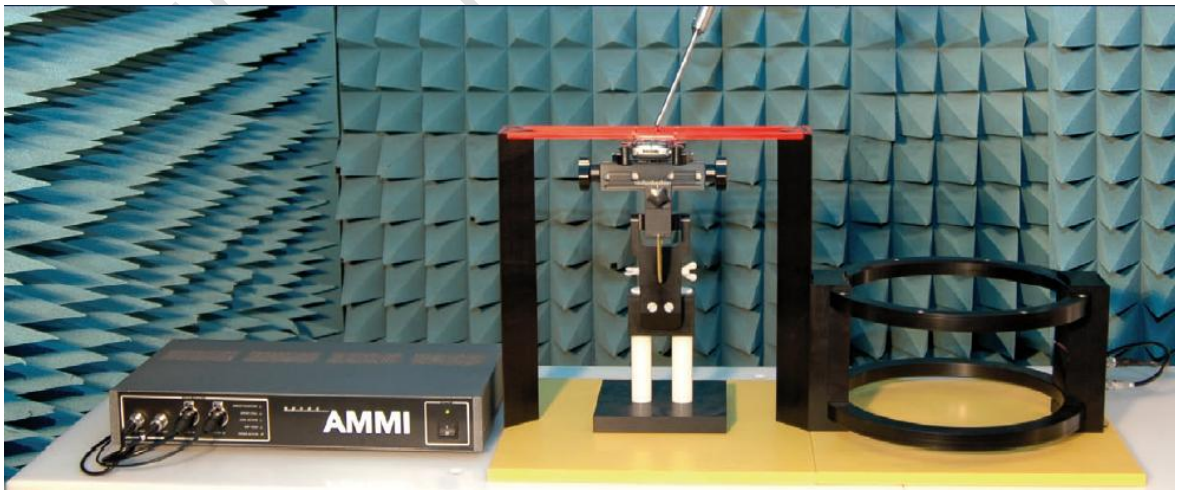
The DAE4 consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is

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.

3.2 HAC Measurement System Specifications

Item	Description
Test Arch	
function:	enables easy and well defined positioning of the phone and calibration dipoles as well as simple teaching of the robot
dimensions:	370 mm x 370 mm x 375 mm
Device Holder	
function:	supports accurate positioning of any phone
effect on near-field:	<+/- 0.5dB
Broadband Calibration Dipoles CD835 / CD1880 / CD 2450 including holder and transportation box	
frequency bands:	800 - 960 / 1710 - 2000 / 2250 - 2650 MHz
return loss:	>15 / >18 / >18 dB over frequency band
calibrated at:	835 / 1880 / 2450 MHz (return loss >20 dB)
Audio Magnetic Field Probe AM1D	
frequency range:	0.1 - 20 kHz (RF sensitivity <-100 dB, fully RF shielded)
sensitivity:	<-50 dB A/m @ 1 kHz
pre-amplifier:	40 dB, symmetric
dimensions:	tip diameter / length: 6 / 290 mm, sensor according to ANSI-PC63.19
Audio Magnetic Measurement Instrument (AMMI)	
sampling rate:	48 kHz / 24 bit
dynamic range:	85 dB
test signal generation:	user selectable and predefined (via PC)
calibration:	auto-calibration / full system calibration using AMCC with monitor output
dimensions:	482 x 65 x 270 mm
Helmholtz Calibration Coil (AMCC)	
Dimensions:	370 x 370 x 196 mm, according to ANSI-PC63.19

Item	Description
HAC Extension Software for DASY5	
precise teaching:	easy teaching with adaptive distance verification
measurement area:	flexible selection of measurement area, predefined according to ANSI-PC63.19
RF evaluation:	automatic exclusion of high-level areas
ABM evaluation:	spectral processing, filtering, weighting and evaluation according to ANSI-PC63.19
report:	documentation ready for compliance report
Isotropic H-Field Probe H3D	
frequency band:	200 - 3000 MHz (free space)
dynamic range:	10 mA/m to 2 A/m at 1 GHz
linearity:	± 0.2 dB (100 MHz to 3 GHz)
directivity:	± 0.25 dB (spherical isotropy error)
dimensions:	tip diameter / length: 6 / 330 mm
Isotropic E-Field Probe ER3D	
frequency:	100 - 6000 MHz
dynamic range:	2 V/m to > 1000 V/m
linearity:	± 0.2 dB (100 MHz to 6 GHz)
directivity:	± 0.2 dB in air (rotation around probe axis), ± 0.4 dB in air (rotation normal to probe axis)
dimensions:	tip diameter / length: 8 / 330 mm



3.3 Test Equipments List

ITEM	TYPE	S/N	CALIBRATION DATE	DUE DATE
E-field probe	ER3DV6	2435	2010-05-20	2011-05-19
H-field	H3DV6	6268	2010-05-21	2011-05-20
DAE	DAE4	549	2010-05-20	2011-05-19
Dipole	CD835V3	1090	2010-05-17	2011-05-16
Dipole	CD1880V3	1089	2010-05-17	2011-05-16
Power Meter	E4417A	GB41050460	2010-05-25	2012-05-20
Radio Communication Analyzer	CMU200	1100000802	2010-06-01	2011-05-31
Signal Generator	SMP04	100064	2010-05-24	2011-05-23
Power Sensor	E9327A	US40440198	2010-07-13	2011-07-12
Power Sensor	E9327A	US40440326	2010-07-26	2011-07-25
Power Amplifier	150W1000	150W1000	NA	NA
Frequency Spectrum Analyzer	E7405A	US41160321	2010-08-23	2011-08-22
Attenuator	20dB	836471/003	NA	NA
Attenuator	20dB	836471/004	NA	NA
Attenuator	2	BL1250	NA	NA
Attenuator	2	BK774	NA	NA
Dual directional coupler	4242-20	04200	NA	NA
Probe kit	85070E	3G-S-00139	NA	NA
Network Analyzer	8753ES	MY40002093	2010-05-26	2011-05-25

3.4 Test Condition

Specifications ANSI C63.19-2007
Date of Tests from 2011-03-02 to 2011-03-07
Operation Mode TX at the highest output peak power level
Method of measurement: ANSI C63.19-2007

Date:	Ambient Temperature (℃)	Ambient Humidity (%)
	20~~25	30~~70
2011-03-02	21.2	35.2
2011-03-03	20.7	38.5
2011-03-04	20.2	40.1
2011-03-07	20.5	36.6

3.5 EUT Setup

3.5.1 RF Emission Reference Plane

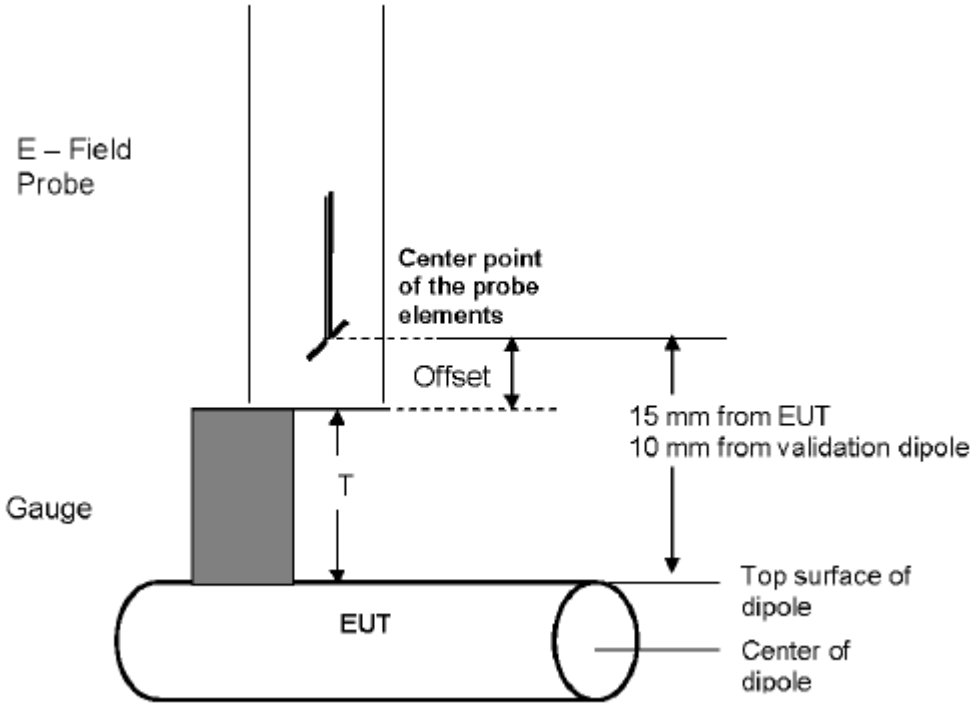
Following figures illustrate the references and reference plane that shall be used in the EUT emissions measurement.

- The grid is 50.0 mm by 50.0 mm area that is divided into nine evenly sized blocks or sub-grids.
- The grid is centered on the audio frequency output transducer of the EUT (speaker or T-Coil).
- The grid is in a reference plane, which is defined as the planar area that contains the highest point in the area of the phone that normally rests against the user's ear. It is parallel to the centerline of the receiver area of the phone and is defined by the points of the receiver-end of the EUT handset, which, in normal handset use, rest against the ear.
- The measurement plane is parallel to, and 10.0 mm in front of, the reference plane.

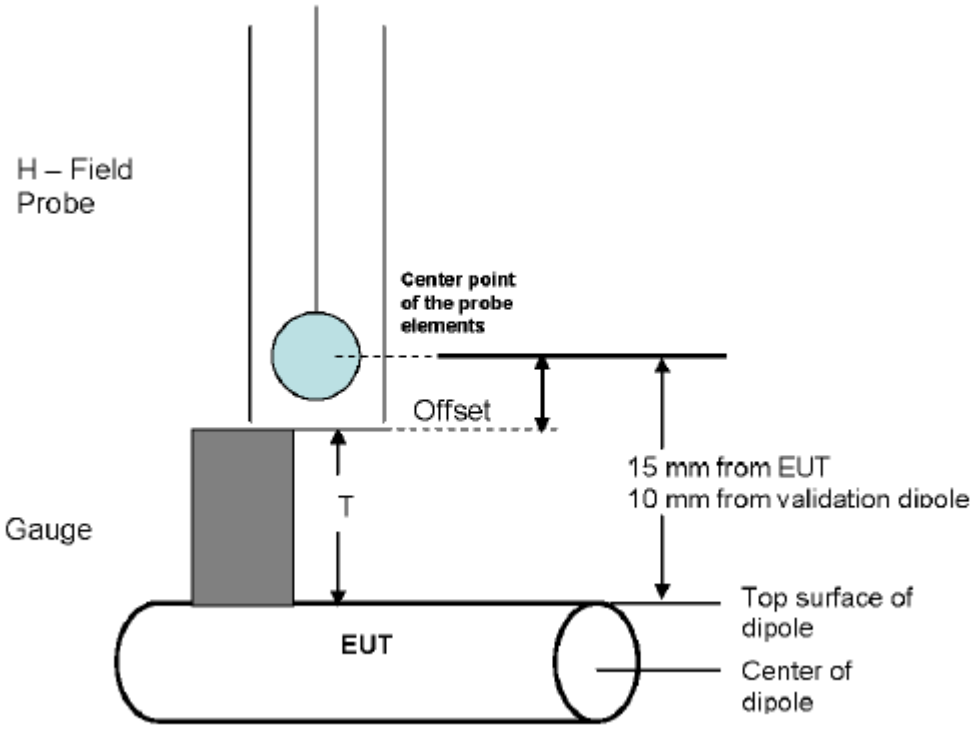
RF Emission Reference Plane

3.5.2 Measurement Distance to Probe

The following figures show the RF emission measurement distances between the EUT or dipoles and probes.

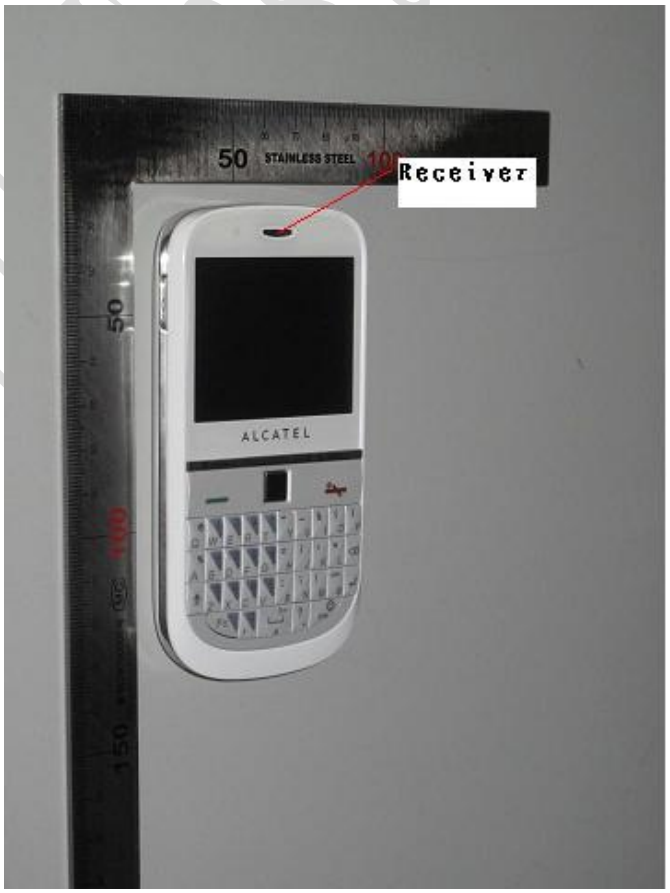


E-field measurement

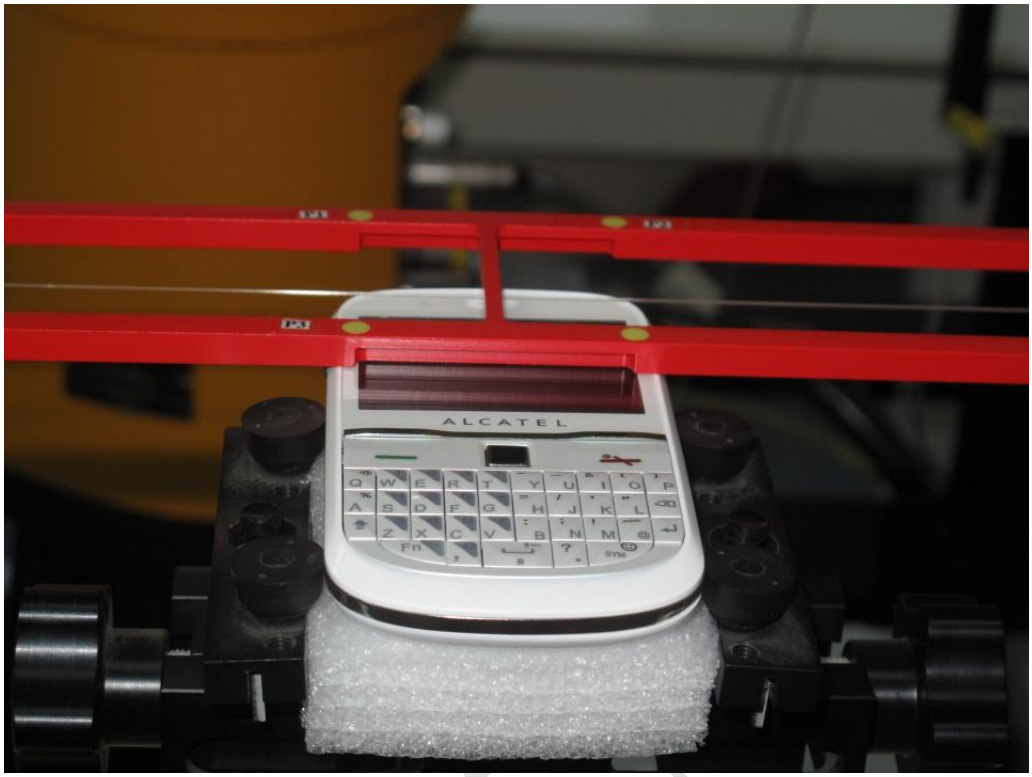


H-field measurement

3.5.3 EUT Setup photos



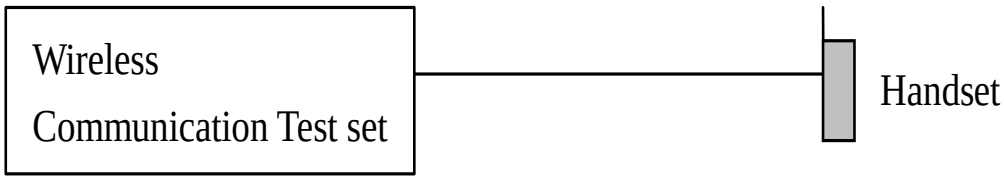
EUT Receiver Position



EUT Setup

3.6 EUT Power

The output power measurement test setup is demonstrated as following figure.



Demonstration of Conducted power measurement

The power control level settings and measurement value are as following table.

Conducted Power Measurement

System and Channel	PCL	Power (dBm)
GSM850 Ch128	5	32.41
GSM850 Ch190	5	32.40
GSM850 Ch251	5	32.43
PCS1900 Ch512	0	29.89
PCS1900 Ch661	0	29.80
PCS1900 Ch810	0	29.88
FDD Band V Ch4132	--	22.02
FDD Band V Ch4175	--	22.01
FDD Band V Ch4233	--	22.67
FDD Band II Ch9262	--	22.43
FDD Band II Ch9400	--	22.50
FDD Band II Ch9538	--	22.38

4 Test Results

4.1 Applicable Category Regulations

Category	AWF (dB)	Limits for E-Field Emissions (V/m) > 960MHz	Limits for H-Field Emissions (A/m) > 960MHz
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.14 - 0.25
M4	0	<63.1	<0.19
	-5	<47.3	<0.14
Category	AWF (dB)	Limits for E-Field Emissions (V/m) < 960MHz	Limits for H-Field Emissions (A/m) < 960 MHz
M1	0	631 - 1122	1.91 - 3.39
	-5	473.2 - 841.4	1.43 - 2.54
M2	0	354.8 - 631	1.07 - 1.91
	-5	266.1 - 473.2	0.8 - 1.43
M3	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M4	0	<199.5	<0.6
	-5	<149.6	<0.45

4.2 General Conclusions

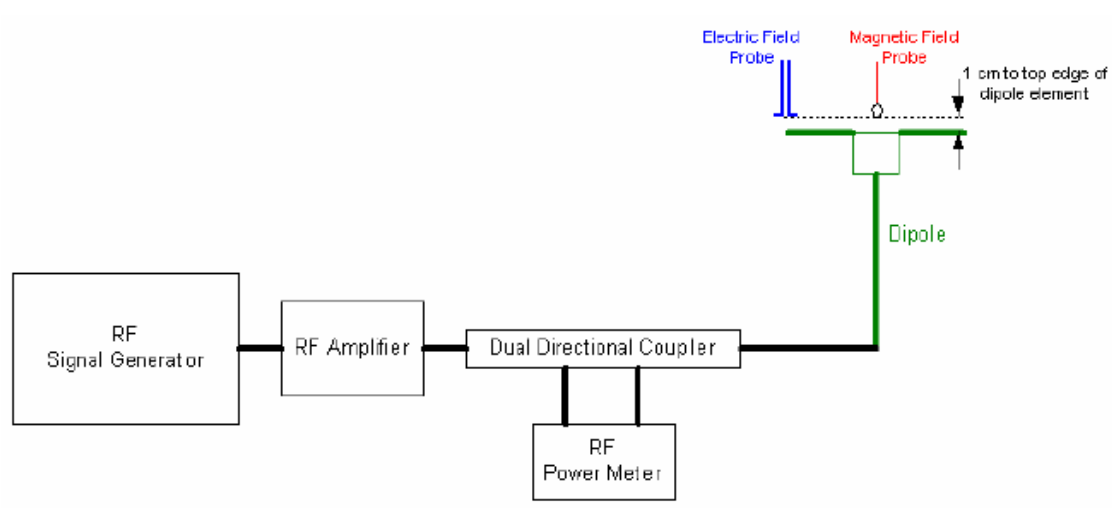
The EUT complies with the category M3.

Note:
All measurements are traceable to national standards.

5 System Validations

5.1 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 Setup

5.2 Validation Results

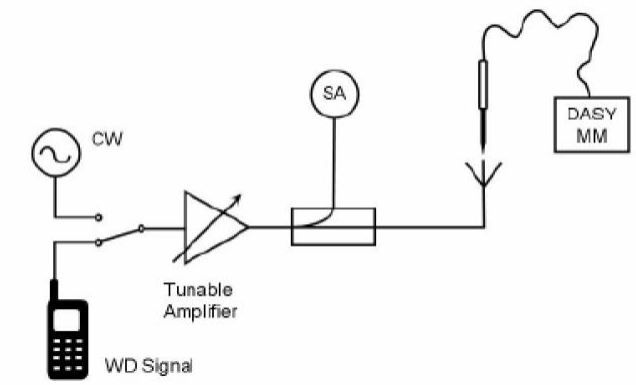
E-field Validation					
Item	Reference value	Tolerance limit	Output power at antenna	Measured value	Error [%]
CW835MHz	169.9 V/m	±10%	100mW	163.0 V/m	-4.1
CW1880MHz	141.4 V/m	±10%	100mW	136.4 V/m	-3.5
H-field Validation					
Item	Reference value	Tolerance limit	Output power at antenna	Measured value	Error [%]
CW835MHz	0.456 A/m	±10%	100mW	0.413 A/m	-9.5
CW1880MHz	0.465A/m	±10%	100mW	0.428 A/m	-7.9

6 Probe Modulation Factor Measurements

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.

6.1 PMF Test Procedures

1. Fix the field probe in a set location relative to a field generating device, such as the reference dipole antenna, as illustrated in following figure.
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. PMFE = ECW/Emod (PMFH = HCW/Hmod)
8. Repeat the previous steps using the H-field probe, except locate the probe at the center of the dipole.



PMF Test Setup

6.2 PMF Test Results

6.2.1 E-field probe

6.2.1.1 Frequency 835MHz (GSM)

signal	Output power at antenna	E-field Value
CW	20dBm	193.10 V/m
80%AM	20dBm	118.70 V/m
GMSK	20dBm	67.10 V/m
PMF=2.88		

6.2.1.2 Frequency 1880MHz (GSM)

signal	Output power at antenna	E-field Value
CW	20dBm	68.00 V/m
80%AM	20dBm	43.60 V/m
GMSK	20dBm	23.39 V/m
PMF=2.91		

6.2.1.3 Frequency 835MHz (WCDMA)

signal	Output power at antenna	E-field Value
CW	20dBm	76.50 V/m
80%AM	20dBm	49.23 V/m
WCDMA	20dBm	76.12 V/m
PMF=1.00		

6.2.1.4 Frequency 1880MHz (WCDMA)

signal	Output power at antenna	E-field Value
CW	20dBm	67.60 V/m
80%AM	20dBm	43.19 V/m
WCDMA	20dBm	66.32 V/m
PMF=1.02		

6.2.2 H-field Probe

6.2.2.1 Frequency 835MHz (GSM)

signal	Output power at antenna	H-field Value
CW	20dBm	0.4681 A/m
80%AM	20dBm	0.3062 A/m
GMSK	20dBm	0.1712 A/m
PMF=2.73		

6.2.2.2 Frequency 1880MHz (GSM)

signal	Output power at antenna	H-field Value
CW	20dBm	0.2164 A/m
80%AM	20dBm	0.1430 A/m
GMSK	20dBm	0.0829 A/m
PMF=2.61		

6.2.2.3 Frequency 835MHz (WCDMA)

signal	Output power at antenna	H-field Value
CW	20dBm	0.2061 A/m
80%AM	20dBm	0.1317 A/m
GMSK	20dBm	0.2026 A/m
PMF=1.02		

6.2.2.4 Frequency 1880MHz (WCDMA)

signal	Output power at antenna	H-field Value
CW	20dBm	0.2112 A/m
80%AM	20dBm	0.1383 A/m
GMSK	20dBm	0.2369 A/m
PMF=0.89		

7 RF Emission Measurements

7.1 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 are 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 centered on the center of the T-Coil mode 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 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) to 10) for both 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.

7.2 RF Emission Measurement Data

7.2.1 E-field Measurement

GSM 850 band:

Channel and frequency	AWF	Measured Value (V/m)	Power Drift (dB)	Category
Low: 128/824.2MHz	-5	223.9	-0.003	M3
Mid: 190/836.6MHz	-5	216.7	0.047	M3
High: 251/848.8MHz	-5	219.1	0.069	M3

PCS 1900 band:

Channel and frequency	AWF	Measured Value (V/m)	Power Drift (dB)	Category
Low: 512/1850.2MHz	-5	73.9	0.013	M3
Mid: 661/1880.0MHz	-5	69.5	0.001	M3
High: 810/1909.9MHz	-5	66.3	-0.025	M3

FDD BandV band:

Channel and frequency	AWF	Measured Value (V/m)	Power Drift (dB)	Category
Low: 4132/826.4MHz	-5	77.5	-0.149	M4
Mid: 4175/835.0MHz	-5	72.7	-0.030	M4
High: 4233/846.6MHz	-5	81.2	-0.051	M4

FDD BandII band:

Channel and frequency	AWF	Measured Value (V/m)	Power Drift (dB)	Category
Low: 9262/1852.4MHz	-5	33.0	-0.051	M4
Mid: 9400/1880.0MHz	-5	36.9	-0.426	M4
High: 9538/1907.6MHz	-5	31.3	0.014	M4

7.2.2 H-field Measurement

GSM 850 band:

Channel and frequency	AWF	Measured Value (A/m)	Power Drift (dB)	Category
Low: 128/824.2MHz	-5	0.324	-0.060	M4
Mid: 190/836.6MHz	-5	0.323	0.046	M4
High: 251/848.8MHz	-5	0.304	-0.007	M4

PCS 1900 band:

Channel and frequency	AWF	Measured Value (V/m)	Power Drift (dB)	Category
Low: 512/1850.2MHz	-5	0.177	0.063	M3
Mid: 661/1880.0MHz	-5	0.173	-0.039	M3
High: 810/1909.9MHz	-5	0.162	0.058	M3

FDD BandV band:

Channel and frequency	AWF	Measured Value (A/m)	Power Drift (dB)	Category
Low: 4132/826.4MHz	-5	0.115	-0.006	M4
Mid: 4175/835.0MHz	-5	0.115	0.017	M4
High: 4233/846.6MHz	-5	0.116	-0.012	M4

FDD BandII band:

Channel and frequency	AWF	Measured Value (V/m)	Power Drift (dB)	Category
Low: 9262/1852.4MHz	-5	0.074	0.004	M4
Mid: 9400/1880.0MHz	-5	0.085	-0.020	M4
High: 9538/1907.6MHz	-5	0.074	-0.019	M4

7.3 Measurement uncertainty

Error Description	Unc. value, ±%	Prob. Dist.	Div.	c_i E	c_i H	Std.Unc. E ±%	Std.Unc. H ±%
Measurement System							
Probe Calibration	5.1	N	1	1	1	5.1	5.1
Axial Isotropy	4.7	R	$\sqrt{3}$	1	1	2.7	2.7
Sensor Displacement	16.5	R	$\sqrt{3}$	1	0.145	9.5	1.4
Test Arch	7.2	R	$\sqrt{3}$	1	0	4.1	0.0
Linearity	4.7	R	$\sqrt{3}$	1	1	2.7	2.7
Scaling to Peak Envelope Power	0.0	R	$\sqrt{3}$	1	1	0.0	0.0
System Detection Limit	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
Readout Electronics	0.3	N	1	1	1	0.3	0.3
Response Time	0.8	R	$\sqrt{3}$	1	1	0.5	0.5
Integration Time	2.6	R	$\sqrt{3}$	1	1	1.5	1.5
RF Ambient Conditions	3.0	R	$\sqrt{3}$	1	1	6.9	6.9
RF Reflections	12.0	R	$\sqrt{3}$	1	1	0.9	0.9
Probe Positioner	1.2	R	$\sqrt{3}$	1	0.67	0.7	0.5
Probe Positioning	4.7	R	$\sqrt{3}$	1	0.67	2.7	1.8
Extrapolation. And Interpolation	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
Test Sample Related							
Device Positioning Vertical	4.7	R	$\sqrt{3}$	1	0.67	2.7	1.8
Device Positioning Lateral	1.0	R	$\sqrt{3}$	1	1	0.6	0.6
Device Holder and Phantom	2.4	R	$\sqrt{3}$	1	1	1.4	1.4
Power Drift	5.0	R	$\sqrt{3}$	1	1	2.9	2.9
Phantom and Setup Related							
Phantom Thickness	2.4	R	$\sqrt{3}$	1	0.67	1.4	0.9
Combined Std Uncertainty						±15.2%	±10.8%
Expanded Std Uncertainty on Power						±30.4%	±21.6%
Expanded Std Uncertainty on Field						**±15.2%**	**±10.8%**

ANNEX A Photographs

Picture 1 test layout

ANNEX B Validation Graphical Results

B.1 E-field at 835MHz

Test Laboratory: CTTL

HAC_RF_E_Vali835MHz

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: --

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY4 Configuration:

- Probe: ER3DV6 - SN2435; ConvF(1, 1, 1); Calibrated: 2010-5-20
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn549; Calibrated: 2010-5-20
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

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 = 153.1 V/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 100.9 V/m; Power Drift = -0.034 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

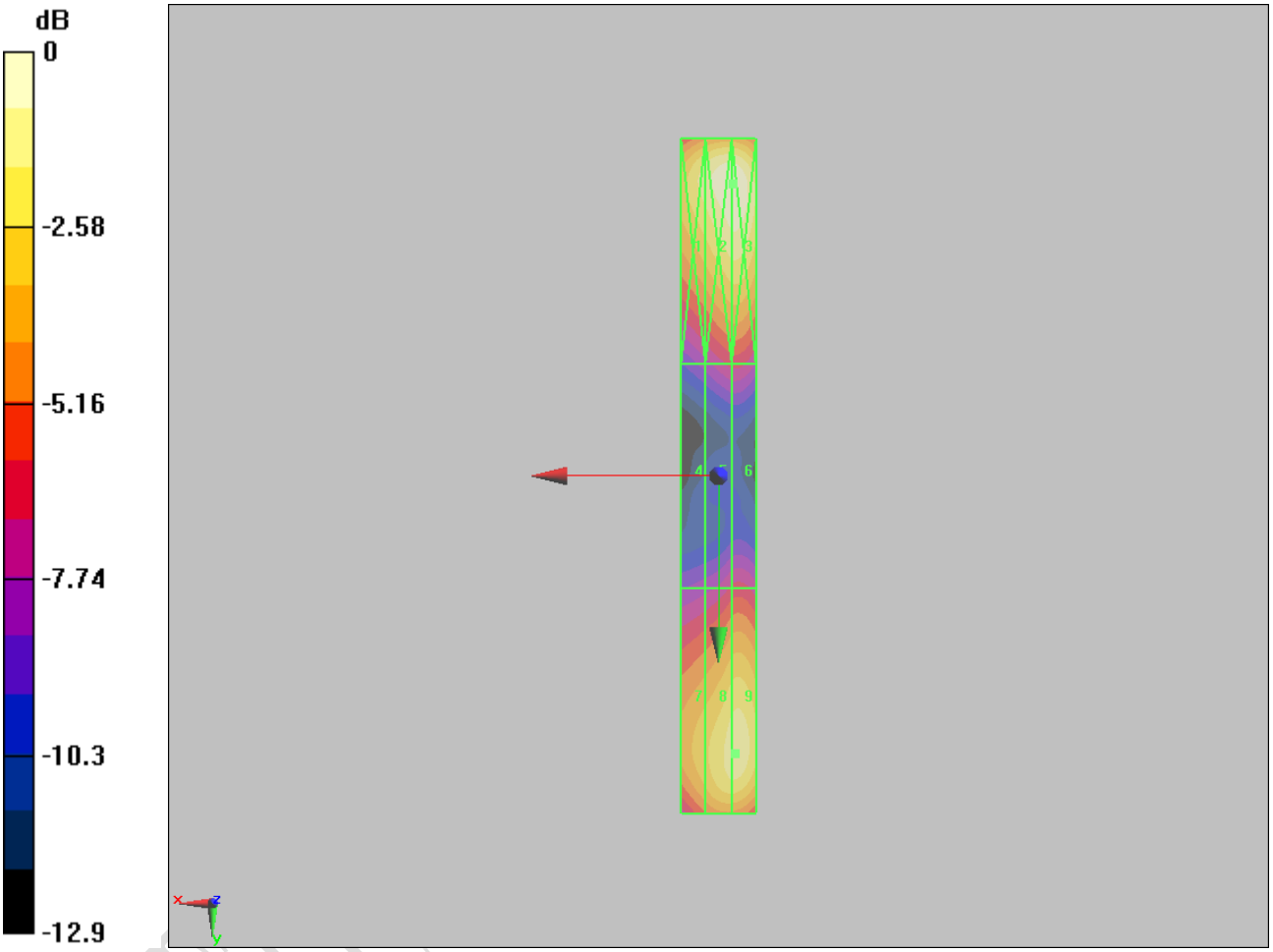
Grid 1 **151.3 M4**	Grid 2 **173.7 M4**	Grid 3 **173.8 M4**
Grid 4 **69.2 M4**	Grid 5 **81.7 M4**	Grid 6 **82.5 M4**
Grid 7 **127.3 M4**	Grid 8 **151.6 M4**	Grid 9 **153.1 M4**

Cursor:

Total = 173.8 V/m

E Category: M4

Location: -4, -78, 4.7 mm



0 dB = 173.8V/m

B.2 E-field at 1880MHz

Test Laboratory: CTTL

HAC_RF_E_Vali1880MHz

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: --

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY4 Configuration:

- Probe: ER3DV6 - SN2435; ConvF(1, 1, 1); Calibrated: 2010-5-20
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn549; Calibrated: 2010-5-20
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

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 = 130.8 V/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 128.9 V/m; Power Drift = -0.012 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak E-field in V/m

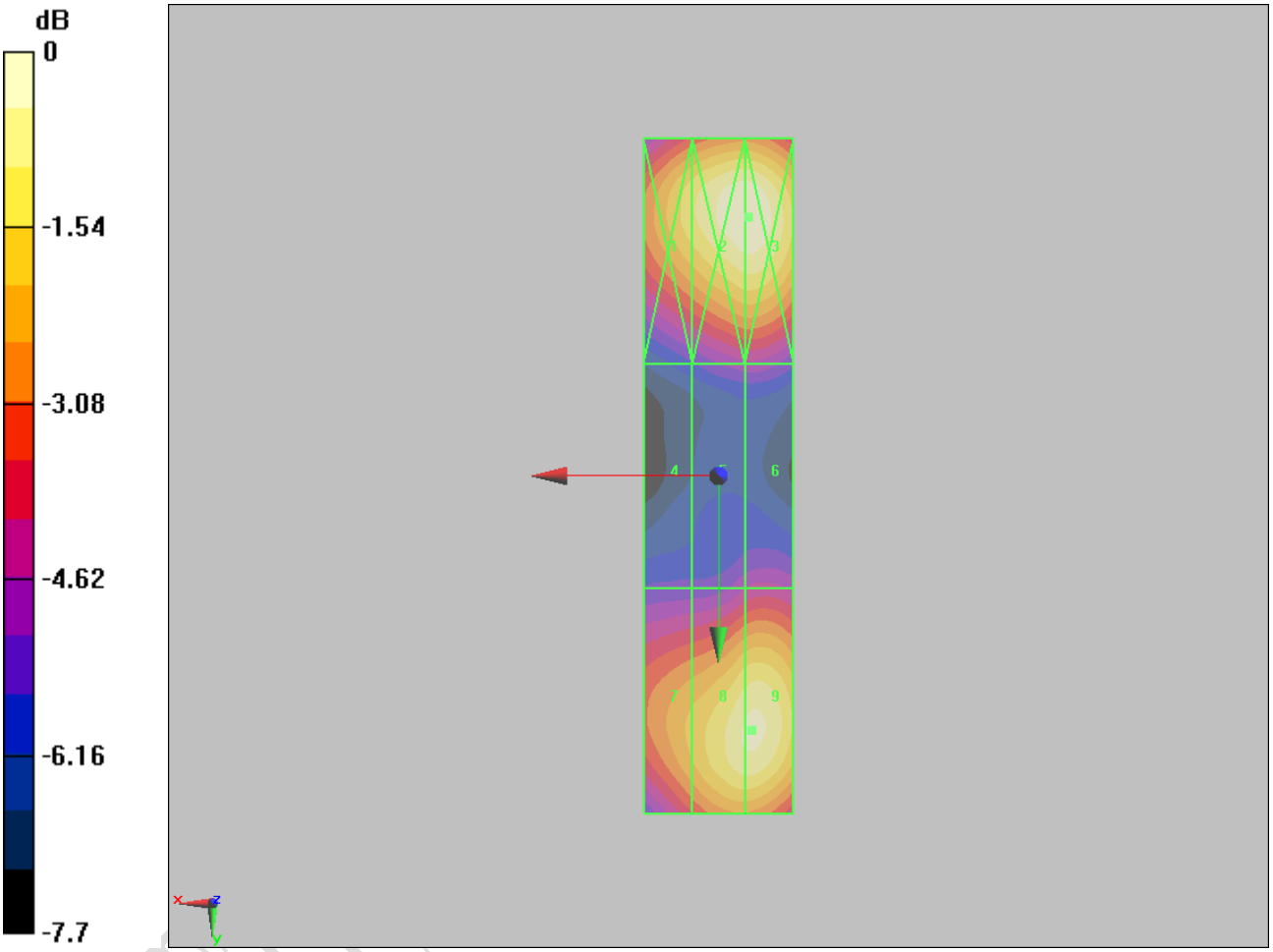
Grid 1 **120.0 M2**	Grid 2 **136.4 M2**	Grid 3 **136.4 M2**
Grid 4 **73.3 M3**	Grid 5 **80.4 M3**	Grid 6 **82.3 M3**
Grid 7 **110.2 M3**	Grid 8 **129.7 M2**	Grid 9 **130.8 M2**

Cursor:

Total = 136.4 V/m

E Category: M2

Location: -4, -34.5, 4.7 mm



0 dB = 136.4V/m

B.3 H-field at 835MHz

Test Laboratory: CTTL

HAC_RF_H_Vali835MHz

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: --

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY4 Configuration:

- Probe: H3DV6 - SN6268; ; Calibrated: 2010-5-21
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn549; Calibrated: 2010-5-20
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm 2/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm
Maximum value of peak Total field = 0.413 A/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 0.436 A/m; Power Drift = 0.011 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

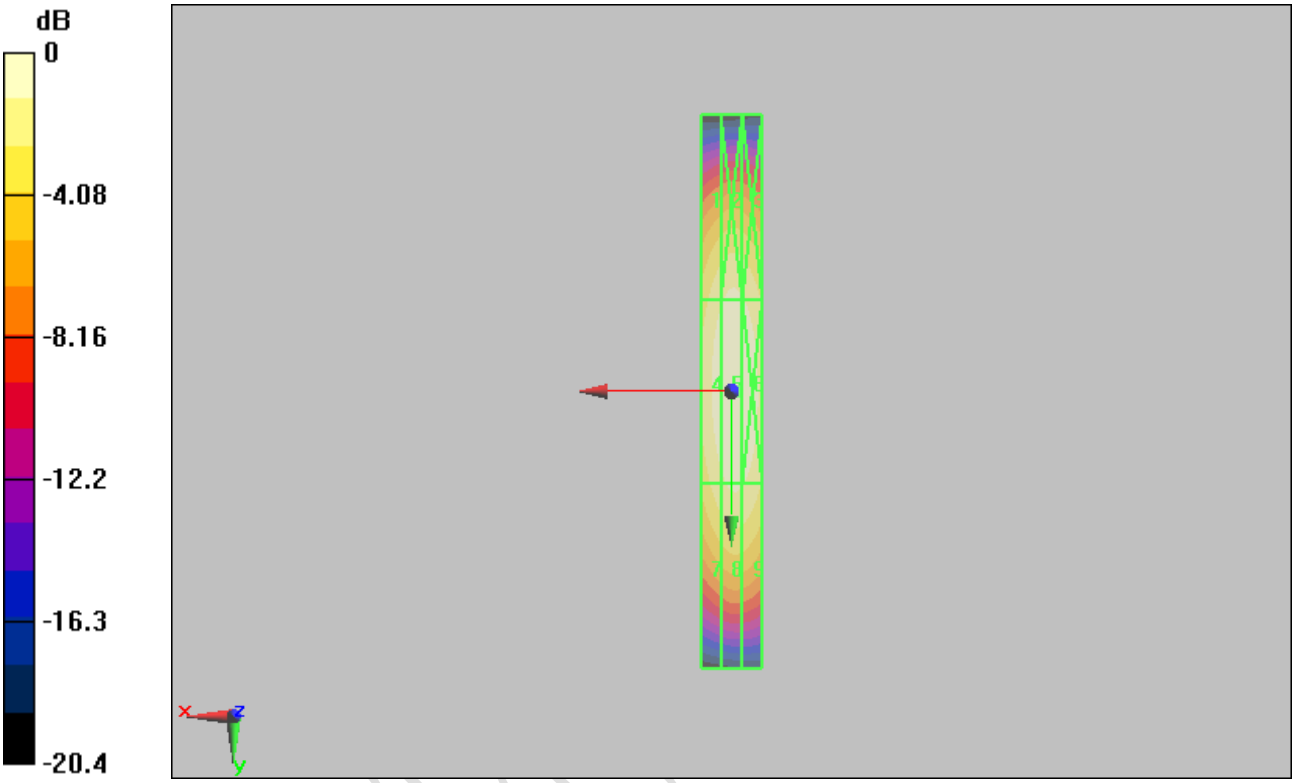
Grid 1 **0.345 M4**	Grid 2 **0.366 M4**	Grid 3 **0.356 M4**
Grid 4 **0.387 M4**	Grid 5 **0.413 M4**	Grid 6 **0.403 M4**
Grid 7 **0.338 M4**	Grid 8 **0.363 M4**	Grid 9 **0.356 M4**

Cursor:

Total = 0.413 A/m

H Category: M4

Location: -1, 0, 4.7 mm



0 dB = 0.413A/m

B.4 H-field at 1880MHz

Test Laboratory: CTTL

HAC_RF_H_Vali1880MHz

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: --

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1 kg/m^3
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY4 Configuration:

- Probe: H3DV6 - SN6268; ; Calibrated: 2010-5-21
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn549; Calibrated: 2010-5-20
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

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 = 0.428 A/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 0.450 A/m; Power Drift = -0.024 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m

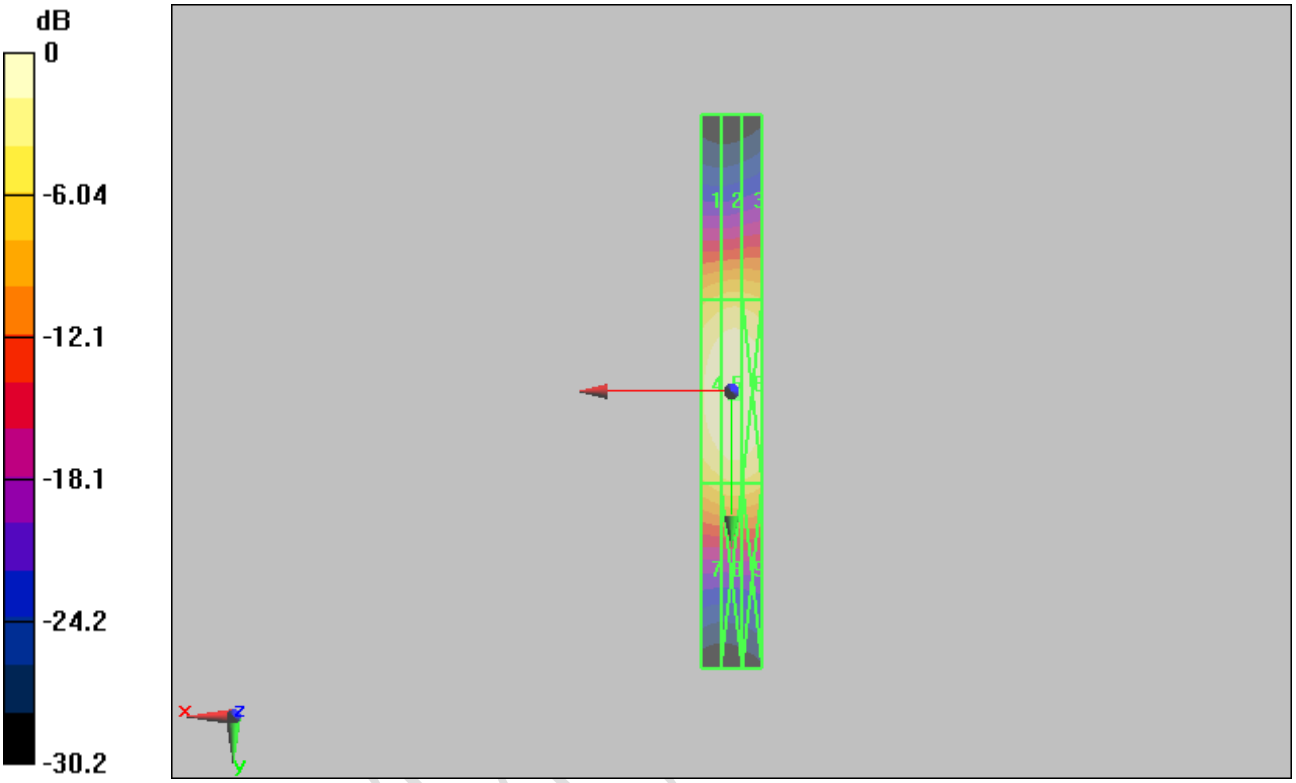
Grid 1 **0.231 M3**	Grid 2 **0.243 M3**	Grid 3 **0.239 M3**
Grid 4 **0.404 M2**	Grid 5 **0.428 M2**	Grid 6 **0.419 M2**
Grid 7 **0.245 M3**	Grid 8 **0.262 M3**	Grid 9 **0.258 M3**

Cursor:

Total = 0.428 A/m

H Category: M2

Location: -1, 1, 4.7 mm



0 dB = 0.428A/m

Annex C PMF Measurements Graphical Results

C.1 E-field CW at 835 MHz(GSM)

Test Laboratory: CTTL

HAC_RF_E_PMF_835MHz_CW_20dBm

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: --

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 mho/m, ε_r = 1; ρ = 1000 kg/m^3
Phantom section: RF Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY4 Configuration:

- Probe: ER3DV6 - SN2435; ConvF(1, 1, 1); Calibrated: 2010-5-20
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn549; Calibrated: 2010-5-20
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY5, V5.0 Build 119; SEMCAD X Version 13.2 Build 87

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 = 168.4 V/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, -6.3 mm
Reference Value = 108.7 V/m; Power Drift = 0.011 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1 **164.1 M4**	Grid 2 **192.0 M4**	Grid 3 **193.1 M4**
Grid 4 **75.7 M4**	Grid 5 **90.1 M4**	Grid 6 **90.8 M4**
Grid 7 **138.7 M4**	Grid 8 **166.2 M4**	Grid 9 **168.4 M4**