

HAC TEST REPORT

Test Item: Summary Result HAC Category = M3

REPORT NO.: HC990525C05A

MODEL NO.: W418G / WX345

FCC ID: IHDP56LJ5

RECEIVED: Oct. 18, 2010

TESTED: Oct. 18, 2010

ISSUED: Oct. 19, 2010

APPLICANT: Arima Communications Corp.

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ISSUED BY: Bureau Veritas Consumer Products Services
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1. CERTIFICATION

PRODUCT : GSM / GPRS Mobile Phone

MODEL NO. : W418G / WX345

MODEL DISCREPANCY: All the specification and layout are identical except they come with different model numbers for marketing purposes.

BRAND : Motorola

APPLICANT : Arima Communications Corp.

TESTED : Oct. 18, 2010

TEST SAMPLE : Production Unit

STANDARDS : FCC Part 20.19
ANSI C63.19 2007

TEST ITEM: RF emissions

The above equipment (Model: W418G) have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's characteristics under the conditions specified in this report.

PREPARED BY : Andrea Hsia , **DATE**: Oct. 19, 2010
Andrea Hsia / Specialist

TECHNICAL ACCEPTANCE : Mason Chang , **DATE**: Oct. 19, 2010
Responsible for RF Mason Chang / Engineer

APPROVED BY : Gary Chang , **DATE**: Oct. 19, 2010
Gary Chang / Assistant Manager

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	GSM / GPRS Mobile Phone	
MODEL NO.	W418G / WX345	
MODEL DISCREPANCY	All the specification and layout are identical except they come with different model numbers for marketing purposes.	
POWER SUPPLY	3.7Vdc (Battery) 5.0Vdc (Adapter)	
CLASSIFICATION	Production Unit	
MODULATION TYPE	GMSK	
FREQUENCY RANGE	824MHz ~ 849MHz (GSM850) 1850MHz ~ 1910MHz (PCS1900)	
CHANNEL FREQUENCIES UNDER TEST AND ITS CONDUCTED OUTPUT POWER	GSM 850	GSM 1900
	32.9dBm / CH 128: 824.2MHz	29.9dBm / CH 512: 1850.2MHz
	32.9dBm / CH 190: 836.6MHz	29.9dBm / CH 661: 1880.0MHz
	32.9dBm / CH 251: 848.8MHz	29.9dBm / CH 810: 1909.8MHz
HAC RATE CATEGORY	M3	
ANTENNA TYPE	Embedded inverted-F antenna	
MAX. ANTENNA GAIN	850MHz: -4.5dBi	1900MHz: -4.1dBi
DATA CABLE	Refer to NOTE	
I/O PORTS	Refer to user's manual	
ACCESSORY DEVICES	Refer to NOTE	

NOTE:

1. All models are listed as below.

Brand	Model Name	Remark
MOTOROLA	W418G	for Tracfone
MOTOROLA	WX345	for North America generic

2. The EUT is a GSM / GPRS Mobile Phone. The functions of EUT listed as below:

RF Emission	TEST STANDARD	REFERENCE REPORT
HAC Test Report	FCC Part 20.19	HC990525C05A
HAC T-coil Test Report		HC990525C05A-1

3. The communicated functions of EUT listed as below:

		850MHz	1900MHz
2G	GSM	√	√
	GPRS	√	√

4. The EUT were tested with the following lithium battery and adapter:

Lithium Battery	
BRAND :	MOTOROLA
MODEL :	BQ50
RATING :	3.7V, 910mAh, 3.4Wh

BRAND:	MOTOROLA
MODEL:	DCH3-050US-0303
INPUT:	100-240Vac, 50-60Hz, 0.2A
OUTPUT:	5Vdc, 550mA



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5. HW version: FP.
6. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
1	Universal Radio Communication Tester	R&S	CMU200	101095	Dec. 02, 2010

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

NOTE: All power cords of the above support units are non shielded (1.8m).

2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to the specifications of the manufacturer, this product must comply with the requirements of the following standards:

FCC Part 20.19

ANSI C63.19 – 2007

All test items have been performed and recorded as per the above standards.

3. GENERAL INFORMATION OF THE DASY4 SYSTEM

3.1. GENERAL INFORMATION OF TEST EQUIPMENT

DASY4 (software 4.7 Build 80) consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY4 software defined. The DASY4 software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC.

ER3DV6 E-FIELD PROBE

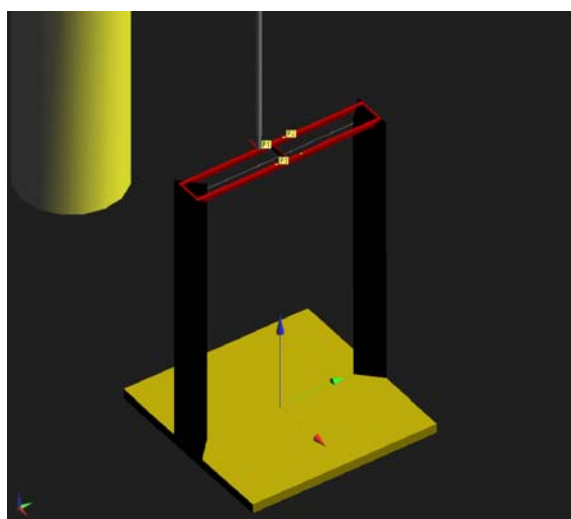
CONSTRUCTION	One dipole parallel, two dipoles normal to probe axis Built-in shielding against static charges
CALIBRATION	In air from 100MHz to 3.0GHz (absolute accuracy $\pm 6.0\%$, $k = 2$)
FREQUENCY	100MHz to > 6 GHz; Linearity: ± 0.2 dB (100MHz to 3GHz)
DIRECTIVITY	± 0.2 dB in air (rotation around probe axis) ± 0.4 dB in air (rotation normal to probe axis)
DYNAMIC RANGE	2V/m to > 1000 V/m (M3 or better device readings fall well below diode compression point) Linearity: ± 0.2 dB
DIMENSIONS	Overall length: 330mm (Tip: 16mm) Tip diameter: 8mm (Body: 12mm) Distance from probe tip to dipole centers: 2.5mm

H3DV6 H-FIELD PROBE

CONSTRUCTION	Three concentric loop sensors with 3.8mm loop diameters Resistively loaded detector diodes for linear response Built-in shielding against static charges
FREQUENCY	200MHz to 3GHz (absolute accuracy $\pm 6.0\%$, $k = 2$); Output linearized
DIRECTIVITY	$\pm 0.25\text{dB}$ (spherical isotropy error)
DYNAMIC RANGE	10mA/m to 2A/m at 1GHz (M3 or better device readings fall well below diode compression point)
DIMENSIONS	Overall length: 330mm (Tip: 40mm) Tip diameter: 6mm (Body: 12mm) Distance from probe tip to dipole centers: 3mm
E-FIELD INTERFERENCE	< 10% at 3GHz (for plane wave)

NOTE: The Probe parameters have been calibrated by the SPEAG. Please reference "APPENDIX D" for the Calibration Certification Report.

HAC ARCH



DIMENSIONS	370 x 370 x 370mm
-------------------	-------------------

SYSTEM VALIDATION KITS:

- Frequency Band:** 800 ~ 960MHz (free space)
Return Loss: > 15dB
CD835V3 **Calibrated at:** 835MHz
Power Capability: 50W continuous
Length & Height: 166 x 330mm
- Frequency Band:** 1710 ~ 2000MHz (free space)
Return Loss: > 18dB
CD1880V3 **Calibrated at:** 1880MHz
Power Capability: 50W continuous
Length & Height: 80.8 x 330mm



DEVICE HOLDER



- CONSTRUCTION** Supports accurate and reliable positioning of any phone effect on near field
 $\pm 0.5\text{dB}$

DATA ACQUISITION ELECTRONICS (DAE)



CONSTRUCTION The data acquisition electronics (DAE3) consists of a highly sensitive electrometer grade preamplifier with auto-zeroing, a channel and gain-switching multiplex, a fast 16 bit AD converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The mechanical probe is mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection. The input impedance of the DAE3 box is 200M Ω ; the inputs are symmetrical and floating. Common mode rejection is above 80dB.

3.2. TEST EQUIPMENT LIST

ITEM	NAME	BRAND	TYPE	SERIES NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
1	SAM Phantom	S & P	SD HAC P01 BA	1034	NA	NA
2	Signal Generator	Agilent	E8257C	MY43320668	Feb. 23, 2010	Feb. 22, 2011
3	E-Field Probe	Speag	ER3DV6	2302	Jun. 15, 2010	Jun. 14, 2011
4	H-Field Probe	Speag	H3DV6	6187	Jun. 15, 2010	Jun. 14, 2011
5	DAE	S & P	DAE	861	Jan. 22, 2010	Jan. 21, 2011
6	Robot Positioner	Staubli Unimation	NA	NA	NA	NA
7	Validation Dipole	S & P	CD835V3	1041	Apr. 26, 2010	Apr. 25, 2011
8	Validation Dipole	S & P	CD1880V3	1135	Jan. 13, 2010	Jan. 12, 2011

NOTE: Before starting the measurement, all test equipment shall be warmed up for 30min.

3.3. MEASUREMENT UNCERTAINTY

HAC UNCERTAINTY BUDGET ACCORDING TO ANSI C63.19[1]							
ERROR DESCRIPTION	UNCERTAINTY VALUE	PROBABILITY DISTRIBUTION	DIVISOR	(Ci) E	(Ci) H	STD. UNC. E (%)	STD. UNC. H (%)
MEASUREMENT SYSTEM							
Probe calibration	5.1	Normal	1	1	1	5.1	5.1
Axial isotropy	0.5	Rectangular	$\sqrt{3}$	1	1	0.3	0.3
Sensor Displacement	16.5	Rectangular	$\sqrt{3}$	1	0.145	9.5	1.4
Boundary Effects	2.4	Rectangular	$\sqrt{3}$	1	1	1.4	1.4
Linearity	0.6	Rectangular	$\sqrt{3}$	1	1	0.3	0.3
Scaling to Peak Envelope Power	2.0	Rectangular	$\sqrt{3}$	1	1	1.2	1.2
System Detection Limit	1.0	Rectangular	$\sqrt{3}$	1	1	0.6	0.6
Readout Electronics	0.3	Rectangular	$\sqrt{3}$	1	1	0.2	0.2
Response Time	0.8	Rectangular	$\sqrt{3}$	1	1	0.5	0.5
Integration Time	2.6	Rectangular	$\sqrt{3}$	1	1	1.5	1.5
RF Ambient Condition	3.0	Rectangular	$\sqrt{3}$	1	1	1.7	1.7
RF Reflections	12.0	Rectangular	$\sqrt{3}$	1	1	6.9	6.9
Probe Positioner	1.2	Rectangular	$\sqrt{3}$	1	0.67	0.7	0.5
Probe Positioning	4.7	Rectangular	$\sqrt{3}$	1	0.67	2.7	1.8
Extrap. And Interpolation	1.0	Rectangular	$\sqrt{3}$	1	1	0.6	0.6
TEST SAMPLE RELATED							
Device Positioning Vertical	2.6	Normal	1	1	1	2.6	2.6
Device Positioning Lateral	2.6	Normal	1	1	1	2.6	2.6
Device Holder and Phantom	2.4	Rectangular	$\sqrt{3}$	1	1	1.4	1.4
Power Drift	5.0	Rectangular	$\sqrt{3}$	1	1	2.9	2.9
PHANTOM AND SETUP RELATED							
Phantom Thickness	2.4	Rectangular	$\sqrt{3}$	1	0.67	1.4	0.9
COMBINED STD. UNCERTAINTY						14.4	10.7
EXPANDED STD. UNCERTAINTY ON POWER						28.8	21.3
EXPANDED STD. UNCERTAINTY ON FIELD						14.4	10.7

NOTE: Worst-case uncertainty budget for HAC free field assessment according to ANSI C63.19 [1]. The budget is valid for the frequency range 800MHz ~ 3GHz and represents a worst-case analysis. For specific tests and configurations, the uncertainty could be considerably smaller.

3.4. GENERAL DESCRIPTION OF THE HAC EVALUATION

The DASY4 post-processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the micro-volt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters: - Sensitivity	Norm _i , a _{i0} , a _{i1} , a _{i2}
- Conversion factor	ConvF _i
- Diode compression point	dcp _i
Device parameters: - Frequency	F
- Crest factor	Cf

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

V _i = compensated signal of channel i	(i = x, y, z)
U _i = input signal of channel i	(i = x, y, z)
Cf = crest factor of exciting field	(DASY parameter)
dcp _i = diode compression point	(DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

$$\textbf{E-field probes: } E_i = \sqrt{\frac{V_i}{\text{Norm}_i \cdot \text{ConvF}}}$$

$$\textbf{H-field probes: } H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}$$

V_i = compensated signal of channel i ($i = x, y, z$)

Norm_i = sensor sensitivity of channel i $\mu\text{V}/(\text{V/m})^2$ for E-field Probes ($i = x, y, z$)

ConvF = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

F = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

E = field strength in V/m

E_{tot} = total field strength in V/m

NOTE: The signal response time is evaluated as the time required by the system to reach 90% of the expected final value after an on/off switch of the power source with an integration time of 500ms and a probe response time of < 5ms. In the current implementation, DASY4 waits longer than 100ms after having reached the grid point before starting a measurement, i.e., the response time uncertainty is negligible.

4. PERFORMANCE CATEGORIES

The ANSI Standard presents performance requirements for acceptable interoperability of hearing aids with wireless communications devices. When these parameters are met, a hearing aid operates acceptably in close proximity to a wireless communications device.

CATEGORY NEAR FIELD	TELEPHONE RF PARAMETERS < 960MHz				
	AWF	E-FIELD EMISSION CW (dBV/m)	E-FIELD EMISSION CW (V/m)	H-FIELD EMISSION CW (dBA/m)	H-FIELD EMISSION CW (A/m)
M1	0	56.0 to 61.0	631.0 to 1122.0	5.6 to 10.6	1.91 to 3.39
	-5	53.5 to 58.5	473.2 to 841.4	3.1 to 8.1	1.43 to 2.54
M2	0	51.0 to 56.0	354.8 to 631.0	0.6 to 5.6	1.07 to 1.91
	-5	48.5 to 53.5	266.1 to 473.2	-1.9 to 3.1	0.80 to 1.43
M3	0	46.0 to 51.0	199.5 to 354.8	-4.4 to 0.6	0.60 to 1.07
	-5	43.5 to 48.5	149.6 to 266.1	-6.9 to -1.9	0.45 to 0.80
M4	0	< 46.0	< 199.5	< -4.4	< 0.60
	-5	< 43.5	< 149.6	< -6.9	< 0.45

CATEGORY NEAR FIELD	TELEPHONE RF PARAMETERS > 960MHz				
	AWF	E-FIELD EMISSION CW (dBV/m)	E-FIELD EMISSION CW (V/m)	H-FIELD EMISSION CW (dBA/m)	H-FIELD EMISSION CW (A/m)
M1	0	46.0 to 51.0	199.5 to 354.8	-4.4 to 0.6	0.60 to 1.07
	-5	43.5 to 48.5	149.6 to 266.1	-6.9 to -1.9	0.45 to 0.80
M2	0	41.0 to 46.0	112.2 to 199.5	-9.4 to -4.4	0.34 to 0.60
	-5	48.5 to 53.5	84.1 to 149.6	-11.9 to -6.9	0.25 to 0.45
M3	0	36.0 to 41.0	63.1 to 112.2	-14.4 to -9.4	0.19 to 0.34
	-5	33.5 to 38.5	47.3 to 84.1	-16.9 to -11.9	0.14 to 0.25
M4	0	< 36.0	< 63.1	< -14.4	< 0.19
	-5	< 33.5	< 47.3	< -16.9	< 0.14

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ARTICULATION WEIGHING FACTOR (AWF)

The following AWF factors shall be used for the standard transmission protocols:

STANDARD	TECHNOLOGY	AWF (dB)
TIA/EIA/IS-2000	CDMA	0
TIA/EIA-136	TDMA (50Hz)	0
iDENTM	TDMA (22 and 11Hz)	0
J-STD-007	GSM (217)	-5
T1/T1P1/3GPP	UMTS (WCDMA)	0

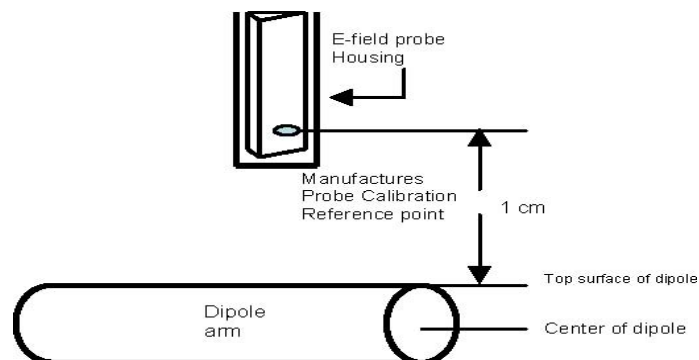
5. SYSTEM CHECK

The measured values (E-field and H-field) were compared with the values provided by the probe manufacturer and must within the allowed tolerance of **25%**.

5.1. VALIDATION STRUCTURE

The input signal was an un-modulated continuous wave. The following points were taken into consideration in performing this check:

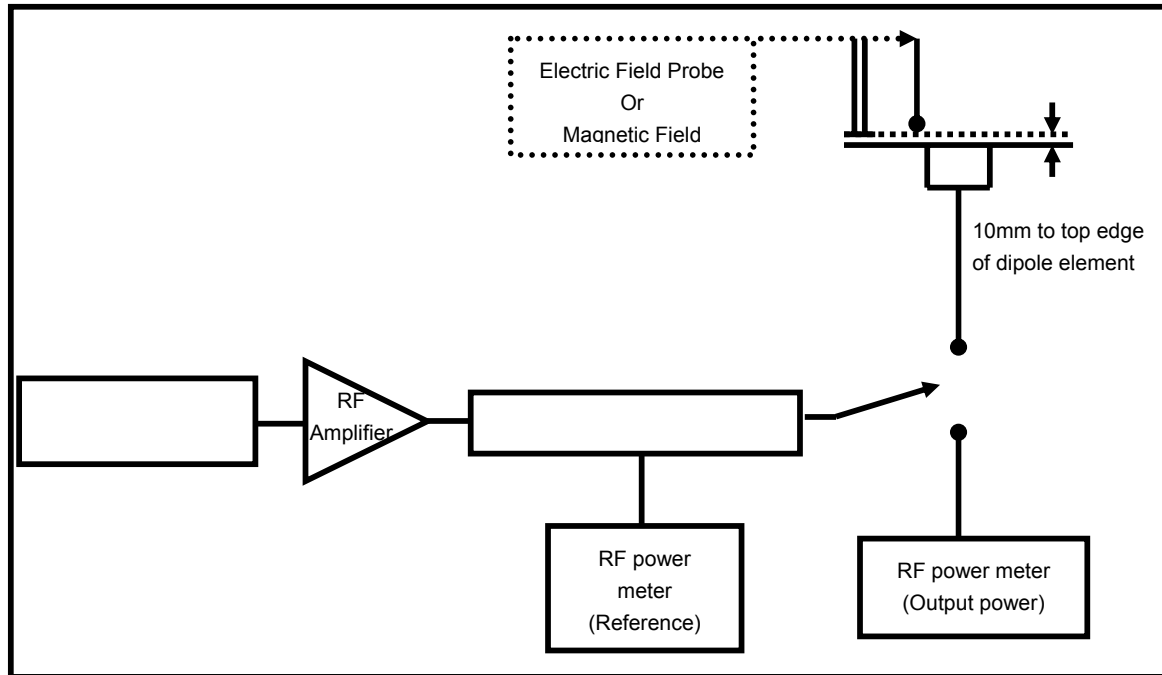
- Average Input Power $P = 100\text{mW RMS}$ (20dBm RMS) after adjustment for return loss
- The test fixture must meet the 2 wavelength separation criterion
- The proper measurement of the 1cm probe to dipole separation, which is measured from top surface of the dipole to the calibration reference point of the sensor, defined by the probe manufacturer is shown in the following diagram:



5.2. SYSTEM CHECK PROCEDURE

1. Before you start the system performance check, need only to tell the system with which components (probe type, validation dipole and HAC arch) are performing the system performance check; the system will take care of all parameters.

The system check configuration is shown in the following figure:



2. The dipole was energized with a 20dBm unmodulated continuous-wave signal.
3. The length of the dipole was scanned with both E-field and H-field probes and the maximum values for each were recorded.



5.3. VALIDATION RESULTS

SYSTEM CHECK						
TEST FREQUENCY (MHz)	BEGIN TEST SG POWER (mW)	REQUIRED E-FILED (V/m)	MEASURED E-FILED (V/m)	DEVIATION (%)	SEPARATION DISTANCE (mm)	TESTED DATE
835	100.0	165.9	139.7	-15.79	10	Oct. 18, 2010
1880	100.0	141.9	116.5	-17.90	10	Oct. 18, 2010
TEST FREQUENCY (MHz)	BEGIN TEST SG POWER (mW)	REQUIRED H-FILED (A/m)	MEASURED H-FILED (A/m)	DEVIATION (%)	SEPARATION DISTANCE (mm)	TESTED DATE
835	100.0	0.454	0.411	-9.47	10	Oct. 18, 2010
1880	100.0	0.468	0.405	-13.46	10	Oct. 18, 2010
TESTED BY	Sam Onn					

NOTE: Please see Appendix for the system validation test data.

6. MODULATION FACTOR

A calibration was made of the modulation response of the probe and its instrumentation chain. This calibration was performed with the field probe, attached to its instrumentation. The response of the probe system to a CW field at the frequency of interest is compared to its response to a modulated signal with equal peak amplitude to that of a CW signal. The field level of the test signals are ensured to 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 reading was applied to the DUT measurements.

This was done using the following procedure:

1. Fixing the probe in a set location relative to a field generating device, such as a reference dipole antenna, as illustrated in the system check procedure.
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 10dB 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 RF signal generator producing an 80%AM signal and set to the wireless device operating frequency. Set the amplitude of the signal to equal that recorded from the wireless device.
8. Record the reading of the probe measurement system of the 80%AM signal.
9. The ratio, in linear units, of the probe reading in Step 3) or 8) to the reading in Step 6) is the E-field modulation factor.
10. Steps 1-9 were repeated at all frequency bands and for both E and H field probes.

NOTE: The ratio of the CW to modulated signal reading is the modulation factor. The modulation factors obtained were applied to readings taken of the actual wireless device, in order to obtain an accurate peak field reading using the formula:

$$\text{Peak} = 20 \cdot \log(\text{Raw} \cdot \text{ProbeModulationFactor})$$

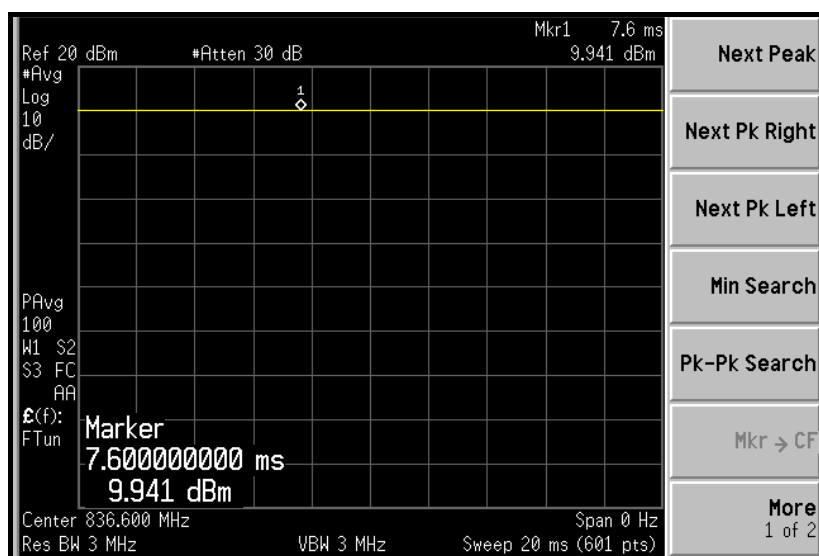


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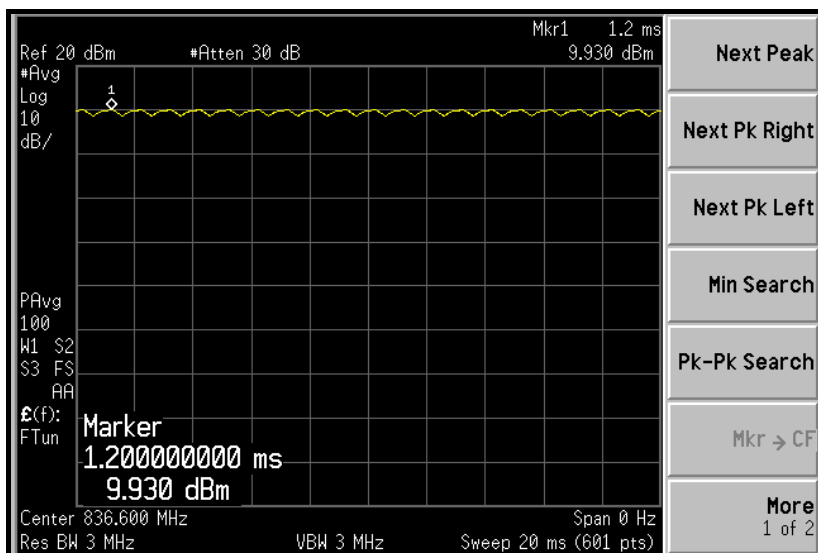
6.1 MODULATION FACTOR TEST RESULTS

TEST FREQUENCY (MHz)	PROTOCOL	REFERENCE LEVEL	MEASURED E-FILED (V/m)	E-FILED MODULATION FACTOR	TESTED DATE
836.6	CW	Refer to the next three plots	389.0	NA	Oct. 18, 2010
	80% AM		339.9	1.14	
	GSM 850		133.6	2.91	
TEST FREQUENCY (MHz)	PROTOCOL	REFERENCE LEVEL	MEASURED H-FILED (A/m)	H-FILED MODULATION FACTOR	TESTED DATE
836.6	CW	Refer to the next three plots	1.26	NA	Oct. 18, 2010
	80% AM		1.27	0.99	
	GSM 850		0.511	2.47	
TESTED BY	Sam Onn				

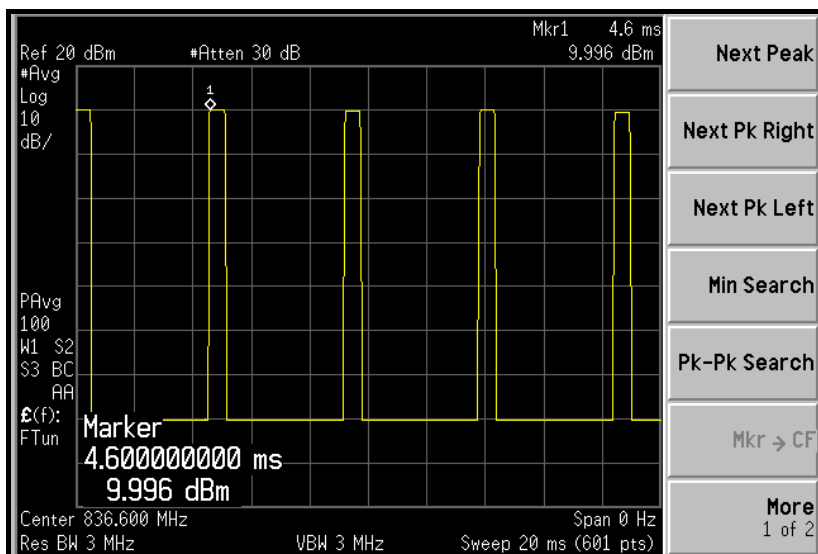
CW SIGNAL:



80% AM SIGNAL:



GSM 850 SIGNAL:

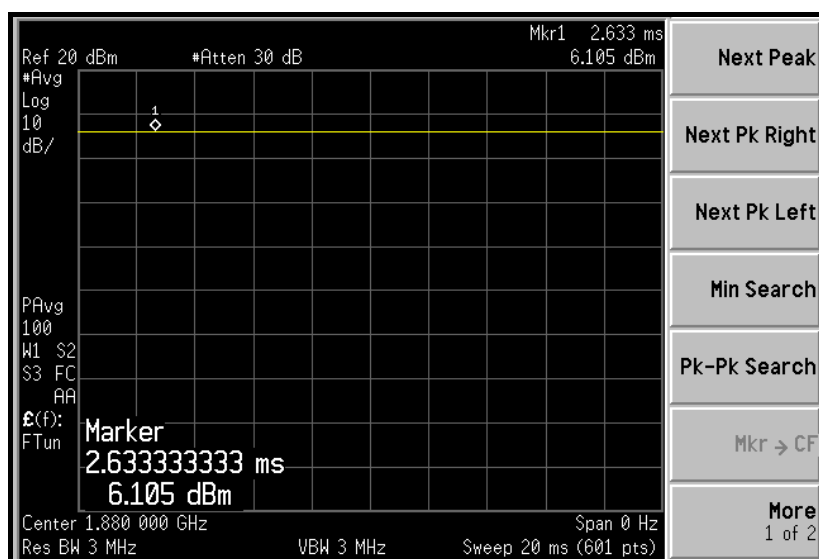




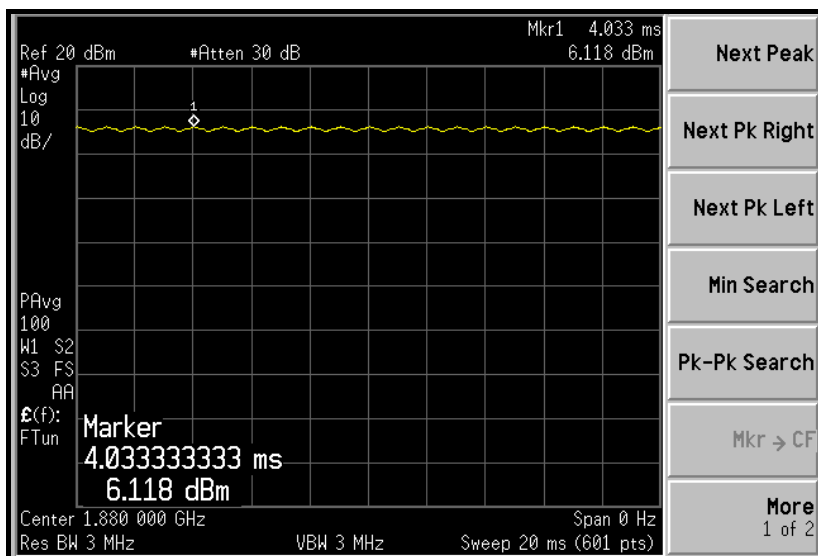
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TEST FREQUENCY (MHz)	PROTOCOL	REFERENCE LEVEL	MEASURED E-FILED (V/m)	E-FILED MODULATION FACTOR	TESTED DATE
1880.0	CW	Refer to the next three plots	208.4	NA	Oct. 18, 2010
	80% AM		189.4	1.10	
	PCS 1900		69.3	3.01	
TEST FREQUENCY (MHz)	PROTOCOL	REFERENCE LEVEL	MEASURED H-FILED (A/m)	H-FILED MODULATION FACTOR	TESTED DATE
1880.0	CW	Refer to the next three plots	0.8	NA	Oct. 18, 2010
	80% AM		0.848	0.94	
	PCS 1900		0.351	2.28	
TESTED BY	Sam Onn				

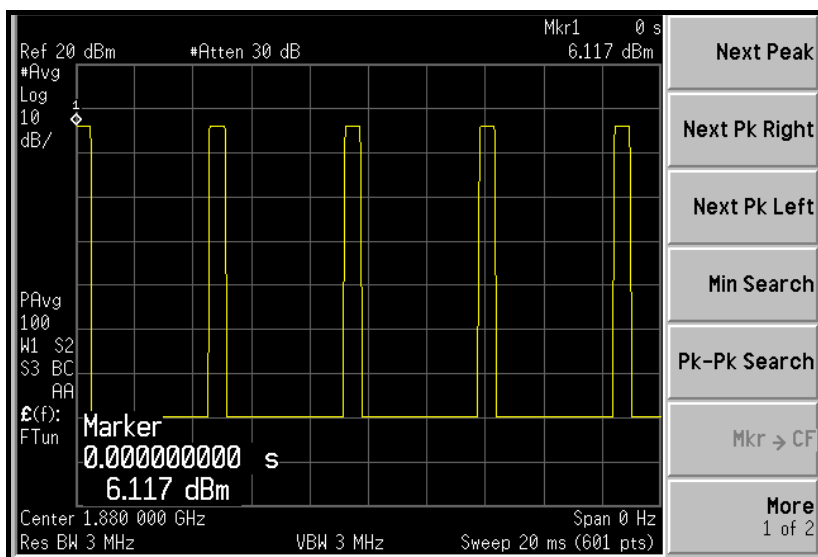
CW SIGNAL:



80% AM SIGNAL:

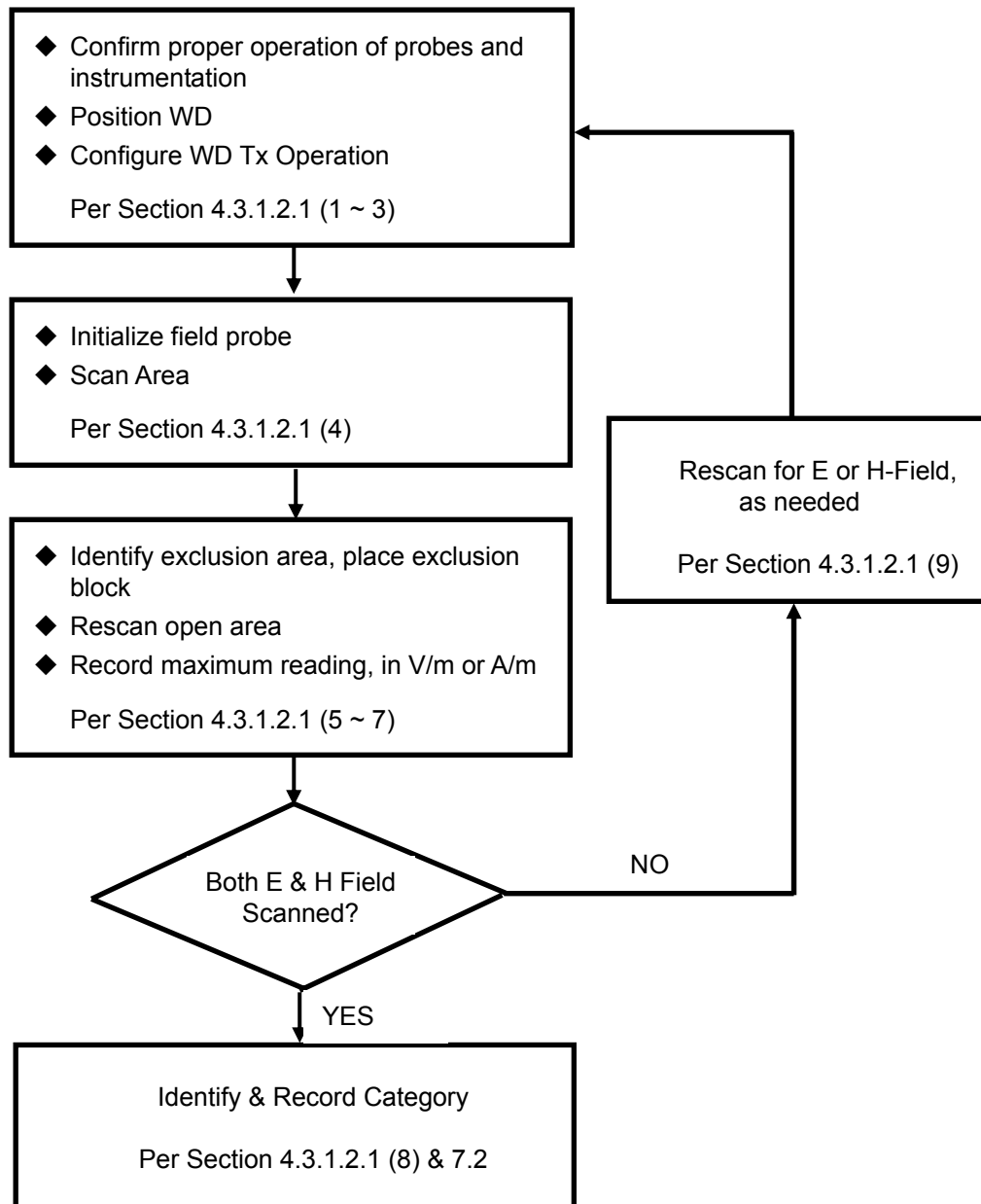


PCS 1900 SIGNAL:



7. RF EMISSION TEST PROCEDURES

7.1. TEST INSTRUCTION



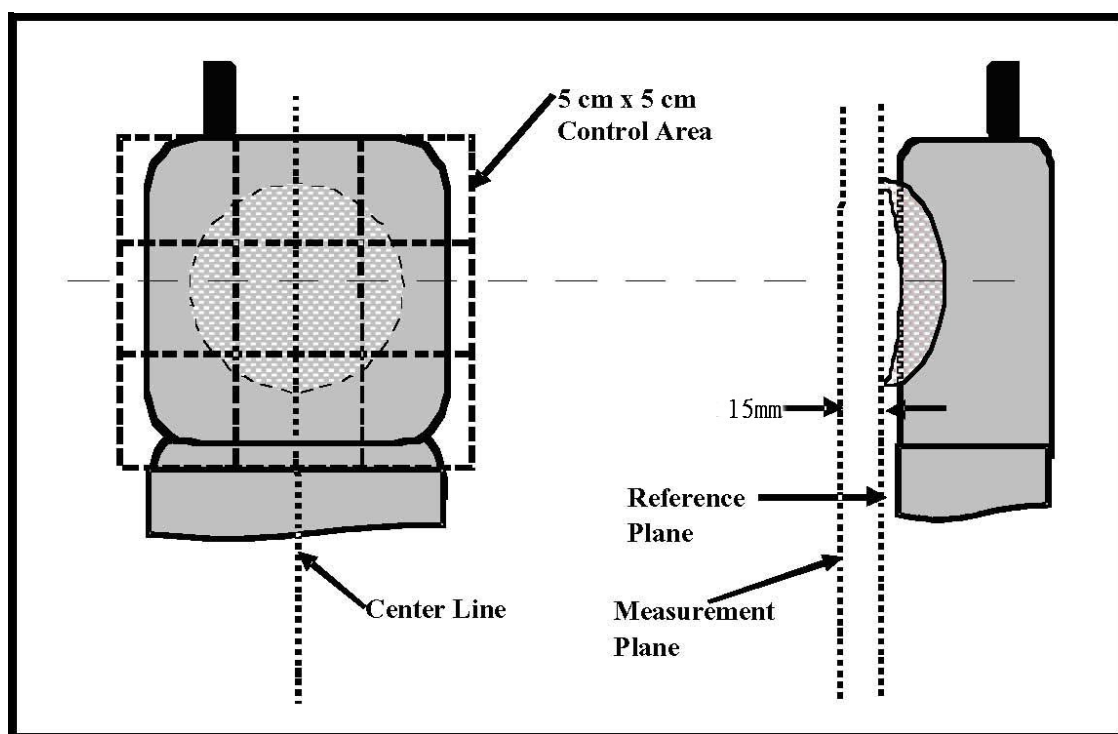
7.2. TEST PROCEDURES

The EUT makes a phone call to the GSM base station. Establish the simulation communication configuration rather the actual communication. Then the EUT could continuous the transmission mode. Adjust the PCL of the base station could controlled the EUT to transmitted the maximum output power. The base station also could control the transmission channel.

The recommended procedure for assessing the RF emission value consists of the following steps:

1. Proper operation of the field probe, probe measurement system, other instrumentation, and the positioning system was confirmed.
2. WD is positioned in its intended test position, acoustic output point of the device perpendicular to the field probe.
3. The center sub-grid was centered over the center of the acoustic output (also audio band magnetic output, if applicable). The WD audio output was positioned tangent (as physically possible) to the measurement plane.
4. A surface calibration was performed before each setup change to ensure repeatable spacing and proper maintenance of the measurement plane using the HAC arch.
5. The measurement system measured the field strength at the reference location.
6. Measurements at 2mm increments in the 5 x 5cm region were performed and recorded. A 360° rotation about the azimuth axis at the maximum interpolated position was measured. For the worst-case condition, the peak reading from this rotation was used in re-evaluating the HAC category.
7. Steps 1-6 were done for both the E and H-Field measurements.

7.3. DESCRIPTION OF TEST POSITION AND CONFIGURATIONS



7.4. SUMMARY OF MEASURED HAC RESULTS

E-FIELD EMISSION

ENVIRONMENTAL CONDITION			Air Temperature : 22.8°C, Humidity : 60%RH					
TESTED BY			Sam Onn		DATE		Oct. 18, 2010	
FREQ. (MHz)	CHAN.	MODE	CONDUCTED PEAK POWER (dBm)	DRIFT (dB)	MEASURED PMF	EXCLUDED CELLS	PEAK FIELD (V/m)	RATING
824.2 (Low)	128	GSM 850	32.9	-0.068	2.91	6, 8, 9	137.5	M4
836.6 (Mid.)	190		32.9	0.000		6, 8, 9	144.8	M4
848.8 (High)	251		32.9	-0.021		6, 8, 9	139.1	M4

NOTE:

1. Please see the Appendix A for the measured data and test plots.
2. The variation of the EUT conducted power measured before and after HAC testing should not over 5%.

ENVIRONMENTAL CONDITION			Air Temperature : 22.8°C, Humidity : 60%RH					
TESTED BY			Sam Onn		DATE		Oct. 18, 2010	
FREQ. (MHz)	CHAN.	MODE	CONDUCTED PEAK POWER (dBm)	DRIFT (dB)	MEASURED PMF	EXCLUDED CELLS	PEAK FIELD (V/m)	RATING
1850.2 (Low)	512	PCS 1900	29.9	-0.025	3.01	6, 8, 9	64.2	M3
1880.0 (Mid.)	661		29.9	0.019		7, 8, 9	57.0	M3
1909.8 (High)	810		29.9	-0.008		7, 8, 9	53.6	M3

NOTE:

1. Please see the Appendix A for the measured data and test plots.
2. The variation of the EUT conducted power measured before and after HAC testing should not over 5%.

H-FIELD EMISSION

ENVIRONMENTAL CONDITION			Air Temperature : 22.8°C, Humidity : 60%RH					
TESTED BY			Sam Onn		DATE		Oct. 18, 2010	
FREQ. (MHz)	CHAN.	MODE	CONDUCTED PEAK POWER (dBm)	DRIFT (dB)	MEASURED PMF	EXCLUDED CELLS	PEAK FIELD (A/m)	RATING
824.2 (Low)	128	GSM 850	32.9	0.007	2.47	1, 4, 7	0.192	M4
836.6 (Mid.)	190		32.9	0.012		1, 4, 7	0.192	M4
848.8 (High)	251		32.9	0.009		1, 4, 7	0.194	M4

NOTE:

1. Please see the Appendix A for the measured data and test plots.
2. The variation of the EUT conducted power measured before and after HAC testing should not over 5%.

ENVIRONMENTAL CONDITION			Air Temperature : 22.8°C, Humidity : 60%RH					
TESTED BY			Sam Onn		DATE		Oct. 18, 2010	
FREQ. (MHz)	CHAN.	MODE	CONDUCTED PEAK POWER (dBm)	DRIFT (dB)	MEASURED PMF	EXCLUDED CELLS	PEAK FIELD (A/m)	RATING
1850.2 (Low)	512	PCS 1900	29.9	-0.049	2.28	4, 7, 8	0.180	M3
1880.0 (Mid.)	661		29.9	-0.002		4, 7, 8	0.164	M3
1909.8 (High)	810		29.9	-0.028		4, 7, 8	0.164	M3

NOTE:

1. Please see the Appendix A for the measured data and test plots.
2. The variation of the EUT conducted power measured before and after HAC testing should not over 5%.

8. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

---END---

Appendix A : E-field Test data

Test Laboratory: Bureau Veritas ADT

E_GSM850-Ch128

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 824.2 MHz

Communication System: GSM 850 ; Frequency: 824.2 MHz ; Duty Cycle: 1:8.3 Modulation type: GMSK
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³ ;
Phantom section: E Device Section ;
Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch128/Hearing Aid

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

Maximum value of peak Total field = **137.5** V/m

Probe Modulation Factor = 2.91

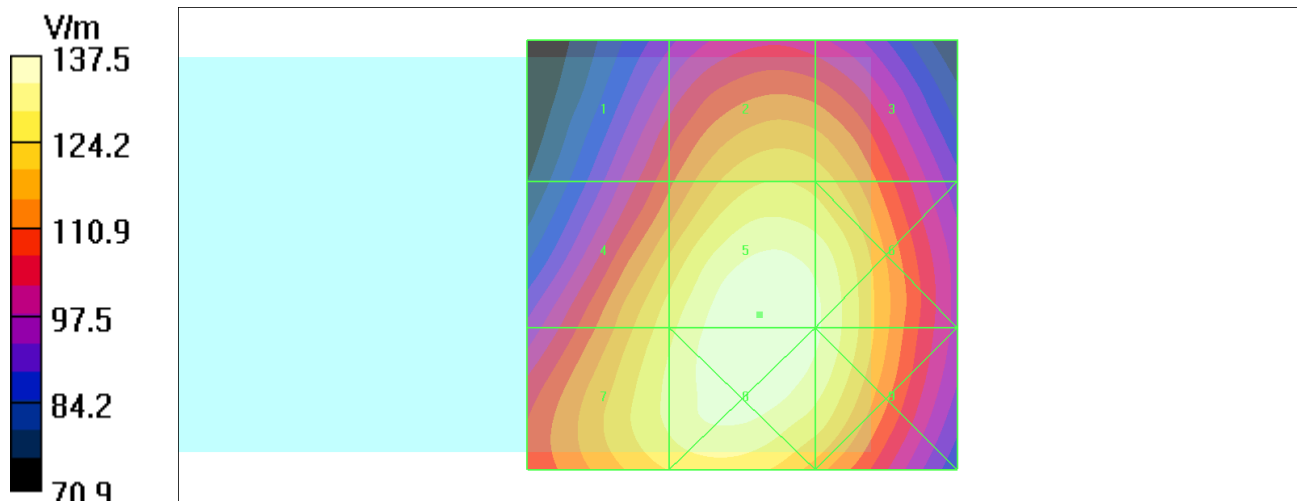
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 58.5 V/m; Power Drift = -0.068 dB

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

Peak E-field in V/m

Grid 1 110.0 M4	Grid 2 124.4 M4	Grid 3 122.6 M4
Grid 4 127.3 M4	Grid 5 137.5 M4	Grid 6 134.0 M4
Grid 7 129.9 M4	Grid 8 137.4 M4	Grid 9 134.0 M4



Test Laboratory: Bureau Veritas ADT

E_GSM850-Ch190

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 836.6 MHz

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

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

Phantom section: E Device Section ;

Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch190/Hearing Aid

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

Maximum value of peak Total field = **144.8** V/m

Probe Modulation Factor = 2.91

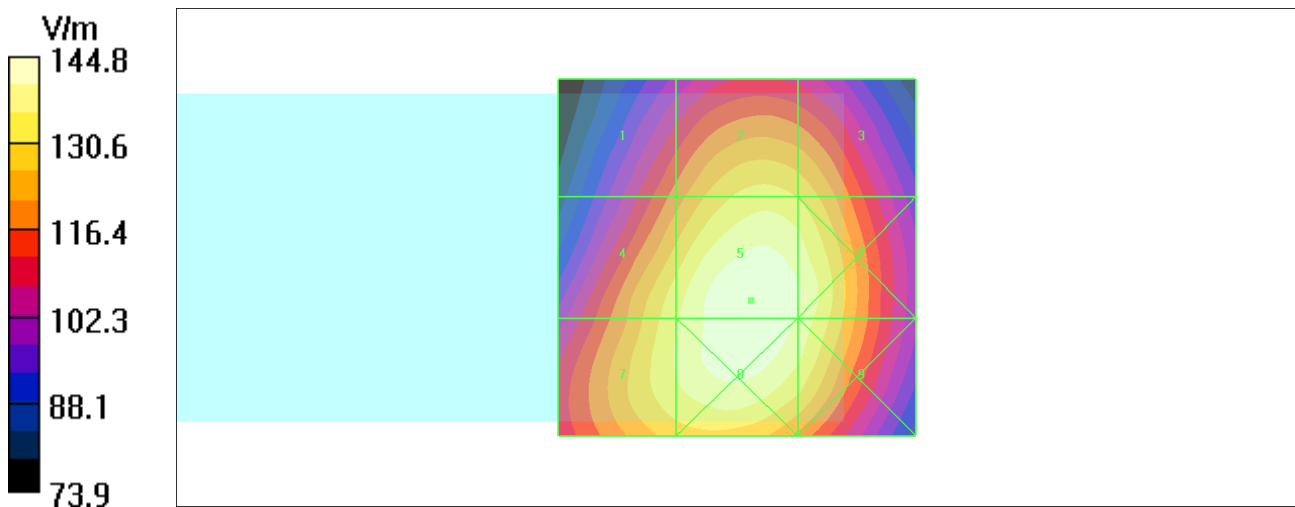
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 61.9 V/m; Power Drift = 0.000 dB

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

Peak E-field in V/m

Grid 1 119.0 M4	Grid 2 133.0 M4	Grid 3 130.4 M4
Grid 4 134.8 M4	Grid 5 144.8 M4	Grid 6 140.8 M4
Grid 7 135.9 M4	Grid 8 144.3 M4	Grid 9 139.5 M4



Date/Time: 2010/10/18 19:40:47

Test Laboratory: Bureau Veritas ADT

E_GSM850-Ch251

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 848.8 MHz

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

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

Phantom section: E Device Section ;

Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch251/Hearing Aid

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

Maximum value of peak Total field = **139.1** V/m

Probe Modulation Factor = 2.91

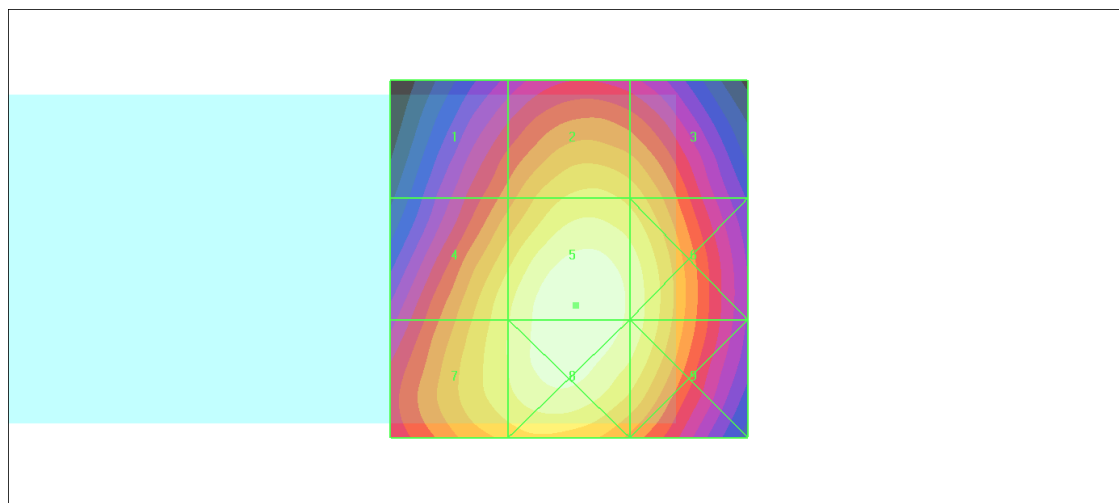
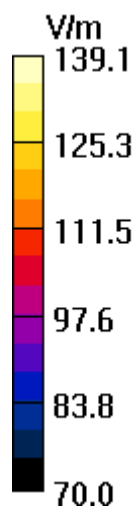
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 59.9 V/m; Power Drift = -0.021 dB

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

Peak E-field in V/m

Grid 1 114.3 M4	Grid 2 127.0 M4	Grid 3 124.0 M4
Grid 4 129.7 M4	Grid 5 139.1 M4	Grid 6 133.7 M4
Grid 7 130.3 M4	Grid 8 138.9 M4	Grid 9 133.4 M4



Date/Time: 2010/10/18 19:49:45

Test Laboratory: Bureau Veritas ADT

E_PCS1900-Ch512

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 1850.2 MHz
 Communication System: PCS 1900 ; Frequency: 1850.2 MHz ; Duty Cycle: 1:8.3Modulation
 type: GMSK
 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³ ;
 Phantom section: E Device Section ;
 Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch512/Hearing Aid

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

Maximum value of peak Total field = **64.2** V/m

Probe Modulation Factor = 3.01

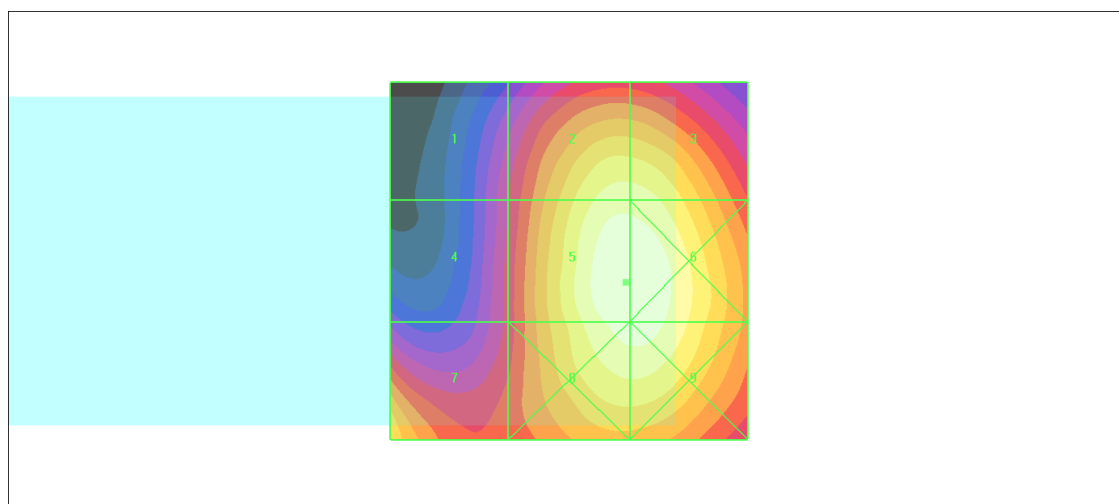
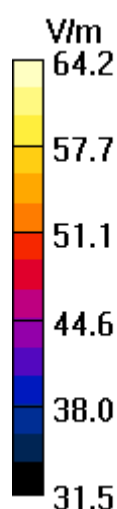
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 26.2 V/m; Power Drift = -0.025 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
46.9 M4	61.2 M3	61.2 M3
Grid 4	Grid 5	Grid 6
47.8 M3	64.2 M3	64.2 M3
Grid 7	Grid 8	Grid 9
57.8 M3	63.3 M3	63.3 M3



Date/Time: 2010/10/18 19:55:11

Test Laboratory: Bureau Veritas ADT

E_PCS1900-Ch661

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 1880 MHz

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

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

Phantom section: E Device Section ;

Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch661/Hearing Aid

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

Maximum value of peak Total field = **57.0** V/m

Probe Modulation Factor = 3.01

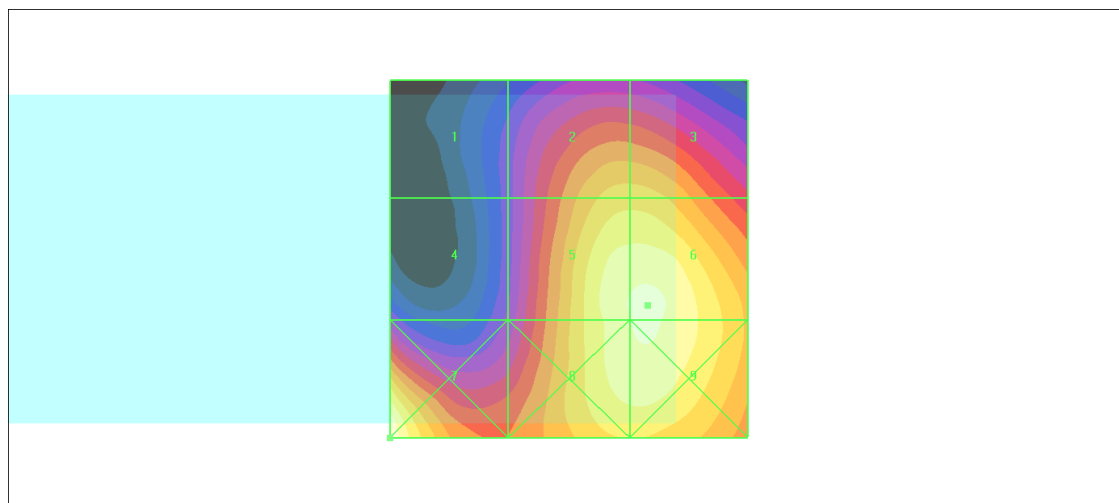
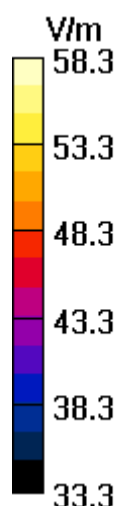
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 21.8 V/m; Power Drift = 0.019 dB

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

Peak E-field in V/m

Grid 1 41.1 M4	Grid 2 52.7 M3	Grid 3 52.7 M3
Grid 4 42.3 M4	Grid 5 56.7 M3	Grid 6 57.0 M3
Grid 7 58.3 M3	Grid 8 56.6 M3	Grid 9 56.9 M3



Test Laboratory: Bureau Veritas ADT

E_PCS1900-Ch810

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 1909.8 MHz

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

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

Phantom section: E Device Section ;

Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch810/Hearing Aid

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

Maximum value of peak Total field = **53.6** V/m

Probe Modulation Factor = 3.01

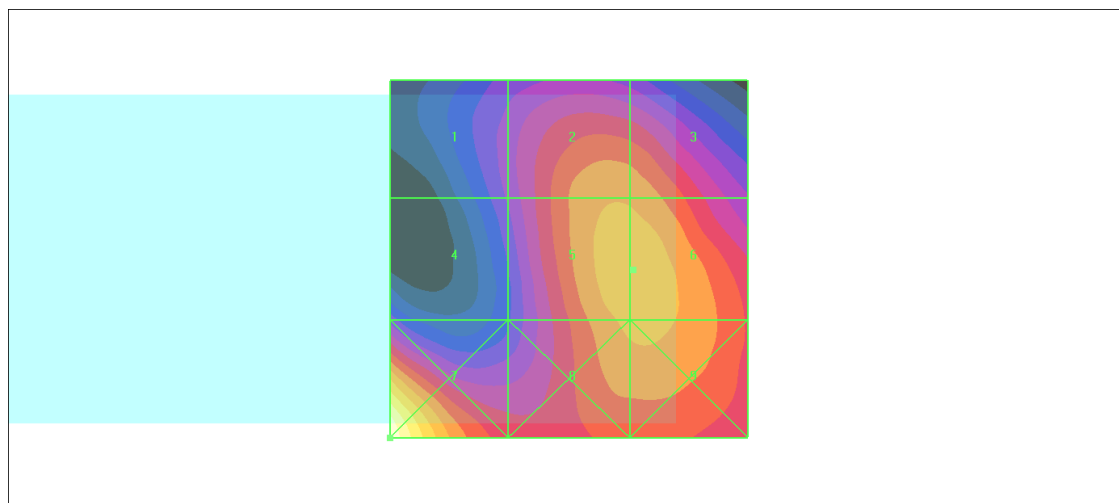
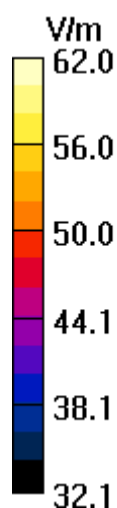
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 21.4 V/m; Power Drift = -0.008 dB

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

Peak E-field in V/m

Grid 1 43.3 M4	Grid 2 51.9 M3	Grid 3 51.8 M3
Grid 4 42.5 M4	Grid 5 53.6 M3	Grid 6 53.6 M3
Grid 7 62.0 M3	Grid 8 52.7 M3	Grid 9 52.9 M3



Appendix A : H-field Test data

Date/Time: 2010/10/18 20:31:22

Test Laboratory: Bureau Veritas ADT

H GSM850-Ch128

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 824.2 MHz

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

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

Phantom section: H Device Section ;

Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch128/Hearing Aid

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

Maximum value of peak Total field = **0.192 A/m**

Probe Modulation Factor = 2.47

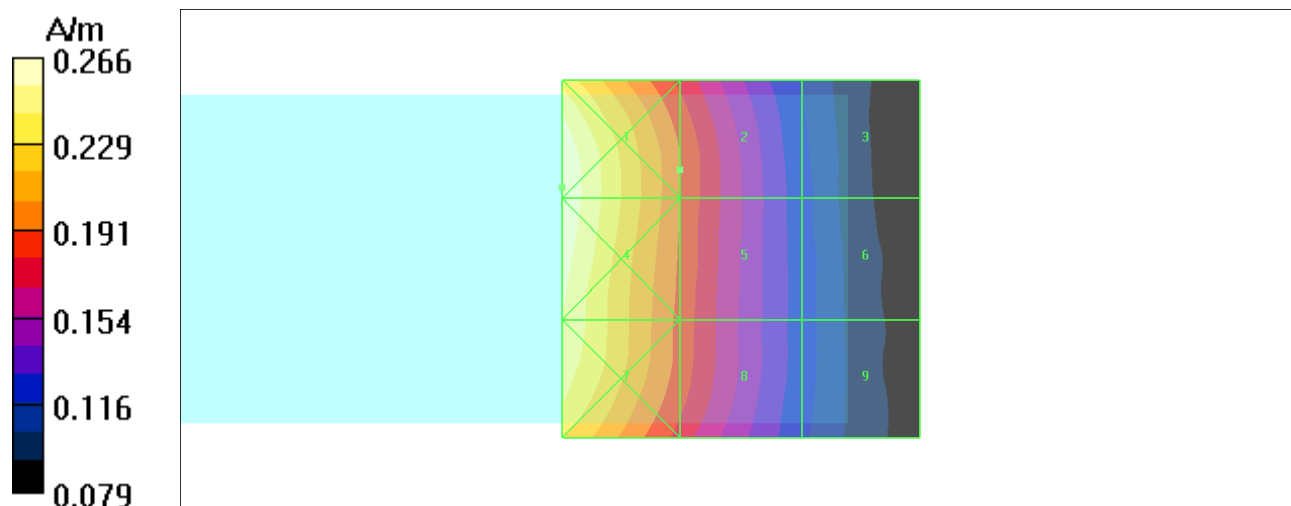
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.065 A/m; Power Drift = 0.007 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.266 M4	0.192 M4	0.122 M4
Grid 4	Grid 5	Grid 6
0.265 M4	0.192 M4	0.124 M4
Grid 7	Grid 8	Grid 9
0.254 M4	0.188 M4	0.123 M4



Date/Time: 2010/10/18 20:36:24

Test Laboratory: Bureau Veritas ADT

H_GSM850-Ch190

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 836.6 MHz

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

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

Phantom section: H Device Section ;

Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch190/Hearing Aid

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

Maximum value of peak Total field = **0.192** A/m

Probe Modulation Factor = 2.47

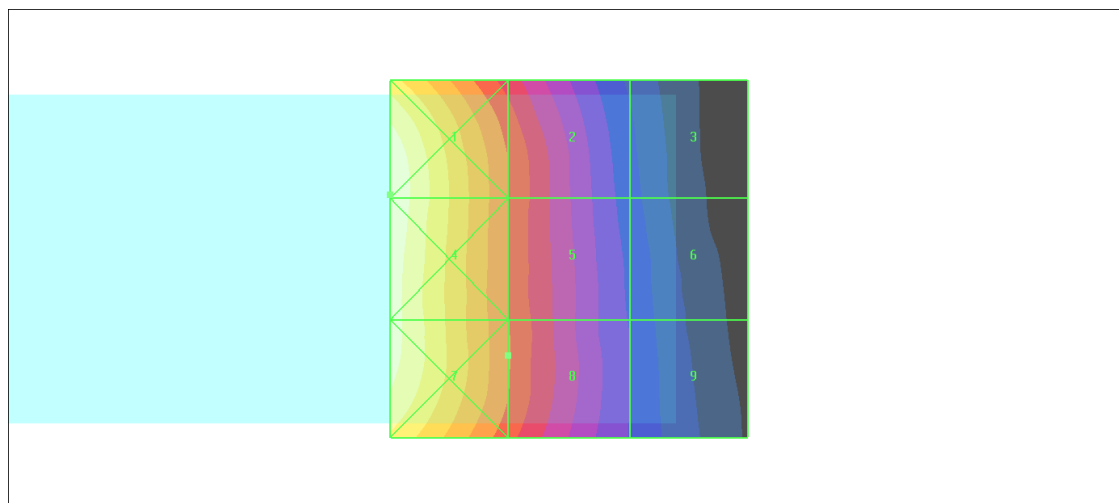
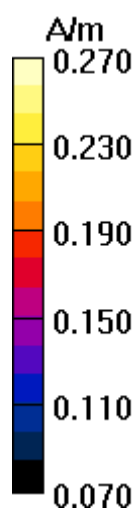
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.065 A/m; Power Drift = 0.012 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.270 M4	0.191 M4	0.117 M4
Grid 4	Grid 5	Grid 6
0.270 M4	0.191 M4	0.123 M4
Grid 7	Grid 8	Grid 9
0.264 M4	0.192 M4	0.125 M4



Date/Time: 2010/10/18 20:41:23

Test Laboratory: Bureau Veritas ADT

H GSM850-Ch251

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 848.8 MHz

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

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

Phantom section: H Device Section ;

Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch251/Hearing Aid

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

Maximum value of peak Total field = **0.194 A/m**

Probe Modulation Factor = 2.47

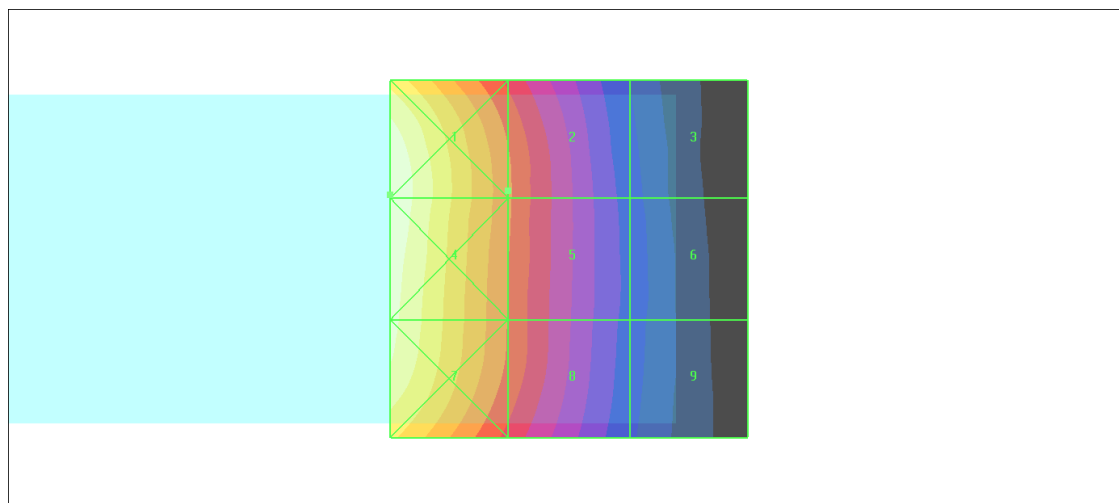
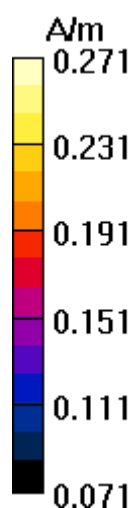
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.065 A/m; Power Drift = 0.009 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.271 M4	0.194 M4	0.119 M4
Grid 4	Grid 5	Grid 6
0.271 M4	0.194 M4	0.121 M4
Grid 7	Grid 8	Grid 9
0.262 M4	0.191 M4	0.120 M4



Date/Time: 2010/10/18 20:11:55

Test Laboratory: Bureau Veritas ADT

H_PCS1900-Ch512

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 1850.2 MHz
 Communication System: PCS 1900 ; Frequency: 1850.2 MHz ; Duty Cycle: 1:8.3Modulation
 type: GMSK
 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ ;
 Phantom section: H Device Section ;
 Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch512/Hearing Aid

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

Maximum value of peak Total field = **0.180** A/m

Probe Modulation Factor = 2.28

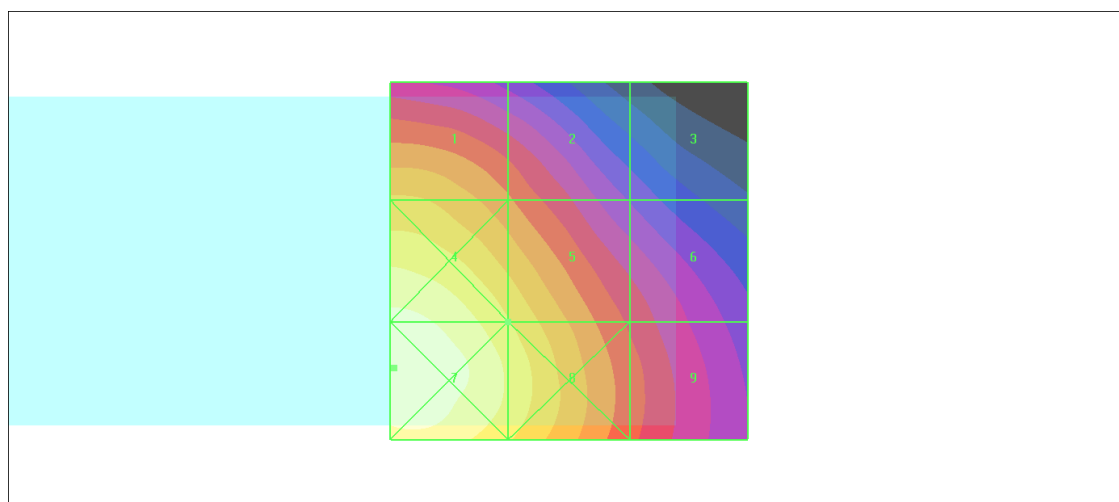
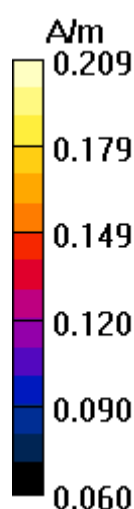
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.070 A/m; Power Drift = -0.049 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.171 M3	0.151 M3	0.109 M4
0.202 M3	0.180 M3	0.138 M4
0.209 M3	0.188 M3	0.145 M3



Date/Time: 2010/10/18 20:17:12

Test Laboratory: Bureau Veritas ADT

H_PCS1900-Ch661

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 1880 MHz

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

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

Phantom section: H Device Section ;

Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch661/Hearing Aid

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

Maximum value of peak Total field = **0.164** A/m

Probe Modulation Factor = 2.28

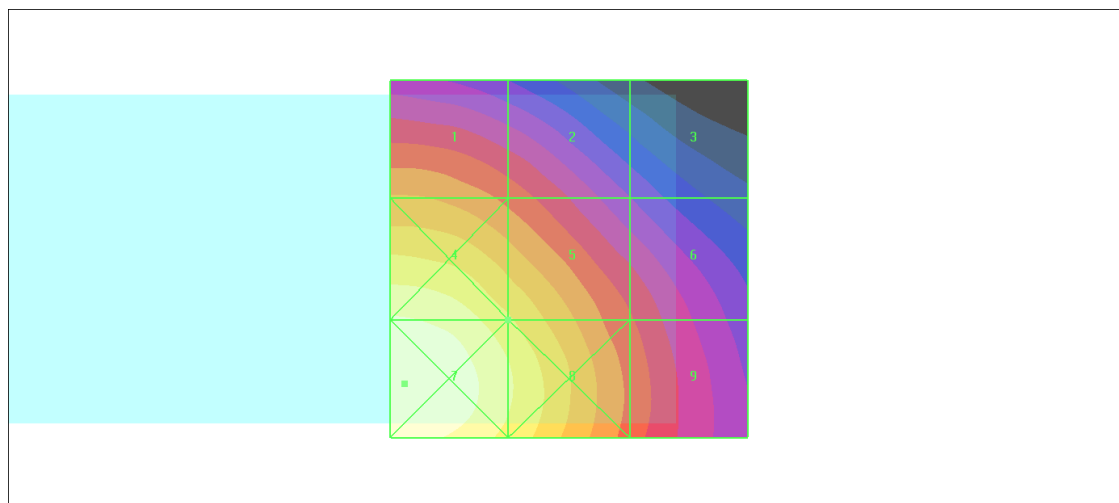
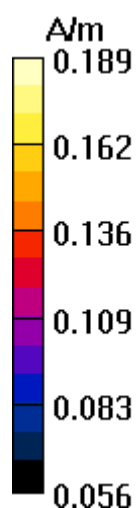
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.064 A/m; Power Drift = -0.002 dB

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

Peak H-field in A/m

Grid 1 0.146 M3	Grid 2 0.133 M4	Grid 3 0.101 M4
Grid 4 0.181 M3	Grid 5 0.164 M3	Grid 6 0.128 M4
Grid 7 0.189 M3	Grid 8 0.173 M3	Grid 9 0.134 M4



Test Laboratory: Bureau Veritas ADT

H_PCS1900-Ch810

DUT: GSM Mobile Phone ; Type :W418G / WX345 ; Test Frequency: 1909.8 MHz

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

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

Phantom section: H Device Section ;

Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- 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 Ch810/Hearing Aid

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

Maximum value of peak Total field = **0.164** A/m

Probe Modulation Factor = 2.28

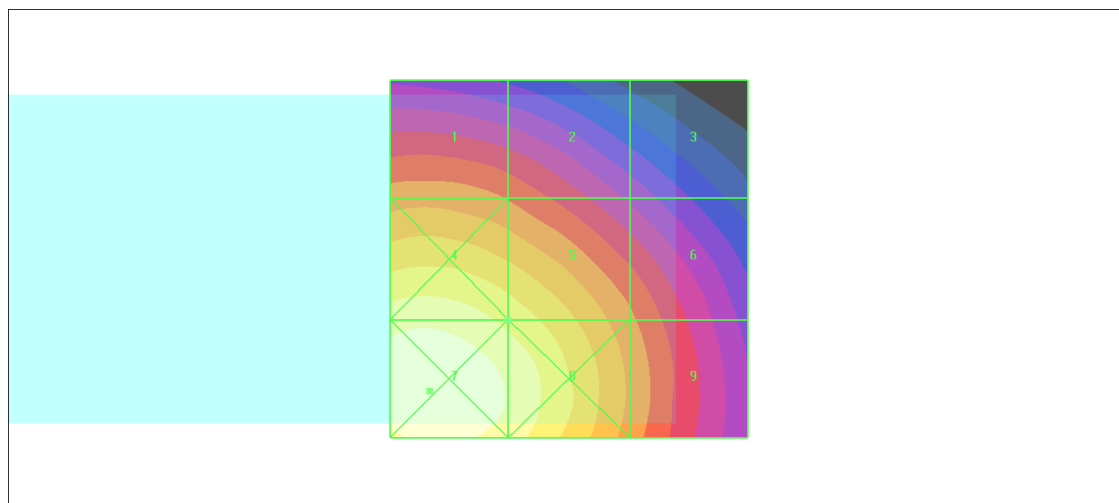
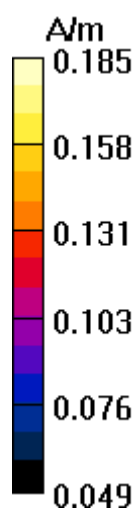
Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.064 A/m; Power Drift = -0.028 dB

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

Peak H-field in A/m

Grid 1 0.137 M4	Grid 2 0.130 M4	Grid 3 0.102 M4
Grid 4 0.174 M3	Grid 5 0.164 M3	Grid 6 0.133 M4
Grid 7 0.185 M3	Grid 8 0.175 M3	Grid 9 0.138 M4



Appendix A : PMF of E&H Field

Date/Time: 2010/10/18 18:16:53

Test Laboratory: Bureau Veritas ADT

E_WD_836.6 MHz

DUT: HAC Dipole 835 MHz ; Type: D835V3 ; Serial: 1041 ; Test Frequency: 836.6 MHz

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

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

Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **133.6** V/m

Probe Modulation Factor = 1.00

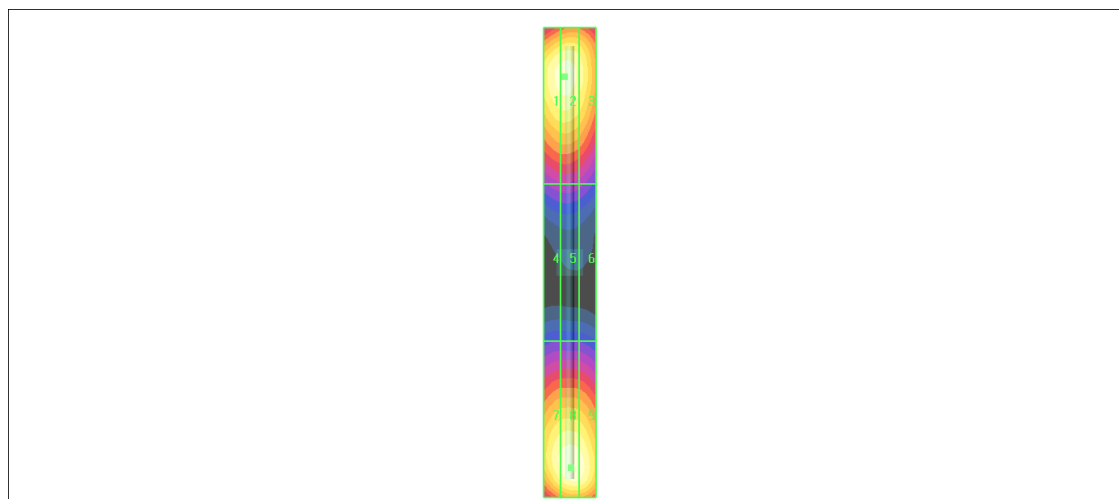
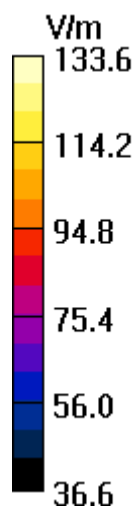
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 88.2 V/m; Power Drift = -0.013 dB

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

Peak E-field in V/m

Grid 1 130.1 M4	Grid 2 130.5 M4	Grid 3 125.4 M4
Grid 4 74.4 M4	Grid 5 74.9 M4	Grid 6 72.3 M4
Grid 7 128.8 M4	Grid 8 133.6 M4	Grid 9 131.5 M4



Date/Time: 2010/10/18 18:25:25

Test Laboratory: Bureau Veritas ADT

E_CW_836.6 MHz

DUT: HAC Dipole 835 MHz ; Type: D835V3 ; Serial: 1041 ; Test Frequency: 836.6 MHz

Communication System: CW ; Frequency: 836.6 MHz; Duty Cycle: 1:1; Modulation type: CW

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

Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **389.0** V/m

Probe Modulation Factor = 1.00

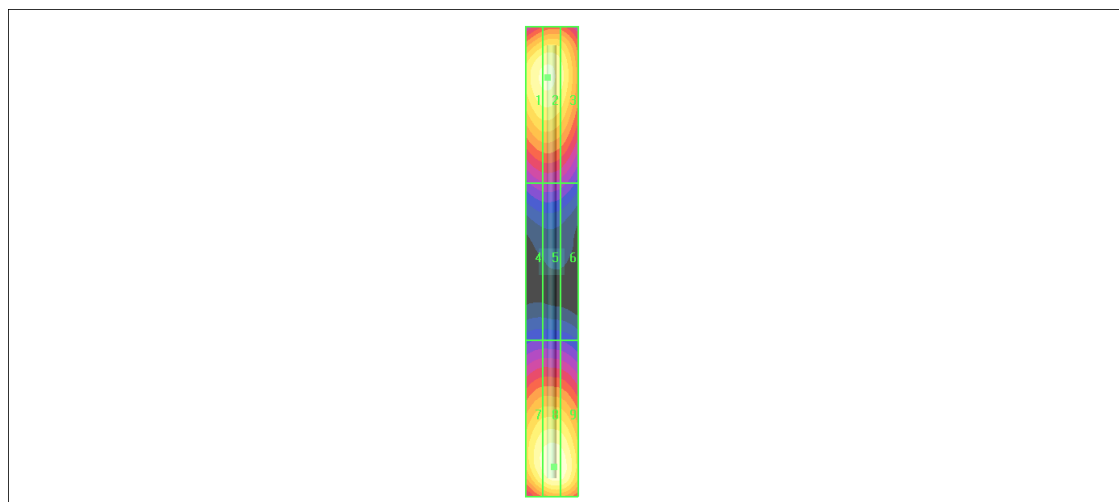
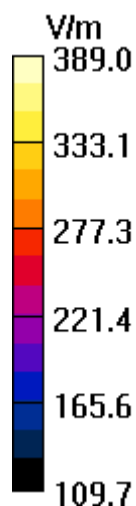
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 258.6 V/m; Power Drift = 0.056 dB

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

Peak E-field in V/m

Grid 1 374.7 M2	Grid 2 376.8 M2	Grid 3 360.1 M2
Grid 4 219.0 M3	Grid 5 220.7 M3	Grid 6 212.9 M3
Grid 7 376.2 M2	Grid 8 389.0 M2	Grid 9 384.8 M2



Date/Time: 2010/10/18 18:45:56

Test Laboratory: Bureau Veritas ADT

E_AM_836.6 MHz

DUT: HAC Dipole 835 MHz ; Type: D835V3 ; Serial: 1041 ; Test Frequency: 836.6 MHz

Communication System: AM ; Frequency: 836.6 MHz; Duty Cycle: 1:1; Modulation type: AM

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

Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **339.9** V/m

Probe Modulation Factor = 1.00

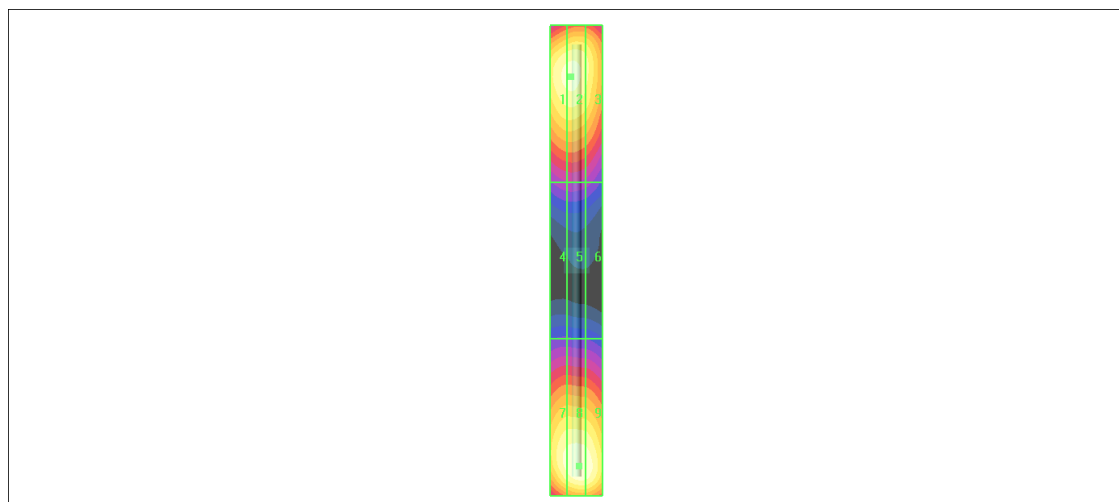
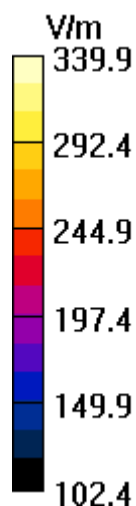
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 229.6 V/m; Power Drift = -0.025 dB

Hearing Aid Near-Field Category: M3 (AWF 0 dB)

Peak E-field in V/m

Grid 1 330.0 M3	Grid 2 331.2 M3	Grid 3 316.3 M3
Grid 4 196.7 M4	Grid 5 197.6 M4	Grid 6 191.7 M4
Grid 7 331.7 M3	Grid 8 339.9 M3	Grid 9 337.6 M3



Date/Time: 2010/10/18 14:53:53

Test Laboratory: Bureau Veritas ADT

H_WD_836.6 MHz

DUT: HAC Dipole 835 MHz ; Type: D835V3 ; Serial: 1041 ; Test Frequency: 836.6 MHz

Communication System: GSM 850 ; Frequency: 836.6 MHz; Duty Cycle: 1:8.3; Modulation type: GMSK
Medium: Air; Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **0.511** A/m

Probe Modulation Factor = 1.00

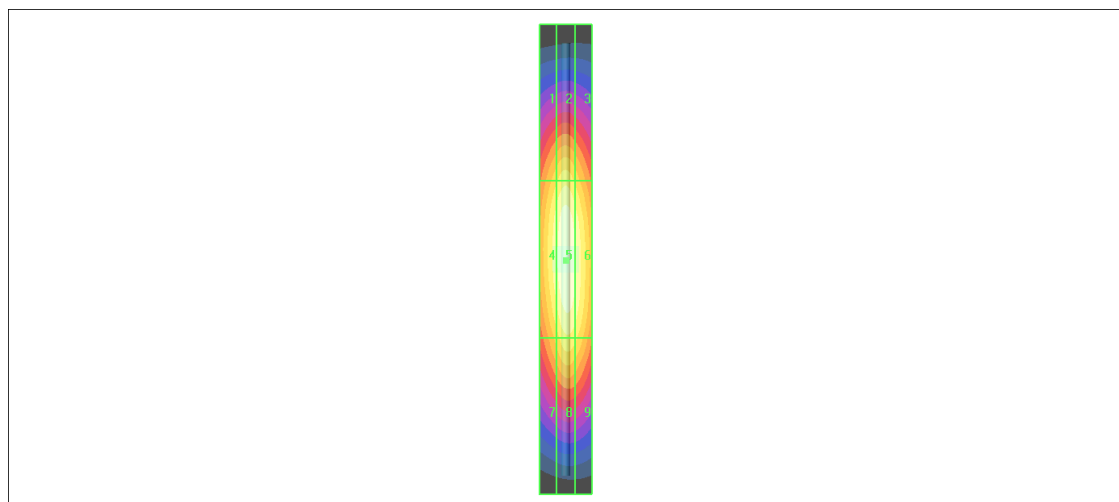
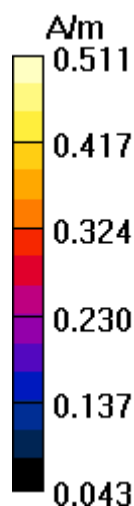
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 0.543 A/m; Power Drift = 0.005 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.414 M4	0.441 M4	0.410 M4
Grid 4	Grid 5	Grid 6
0.476 M3	0.511 M3	0.484 M3
Grid 7	Grid 8	Grid 9
0.402 M4	0.444 M4	0.427 M4



Date/Time: 2010/10/18 17:12:33

Test Laboratory: Bureau Veritas ADT

H_CW_836.6 MHz

DUT: HAC Dipole 835 MHz ; Type: D835V3 ; Serial: 1041 ; Test Frequency: 836.6 MHz

Communication System: CW ; Frequency: 836.6 MHz; Duty Cycle: 1:1; Modulation type: CW

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

Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **1.26** A/m

Probe Modulation Factor = 1.00

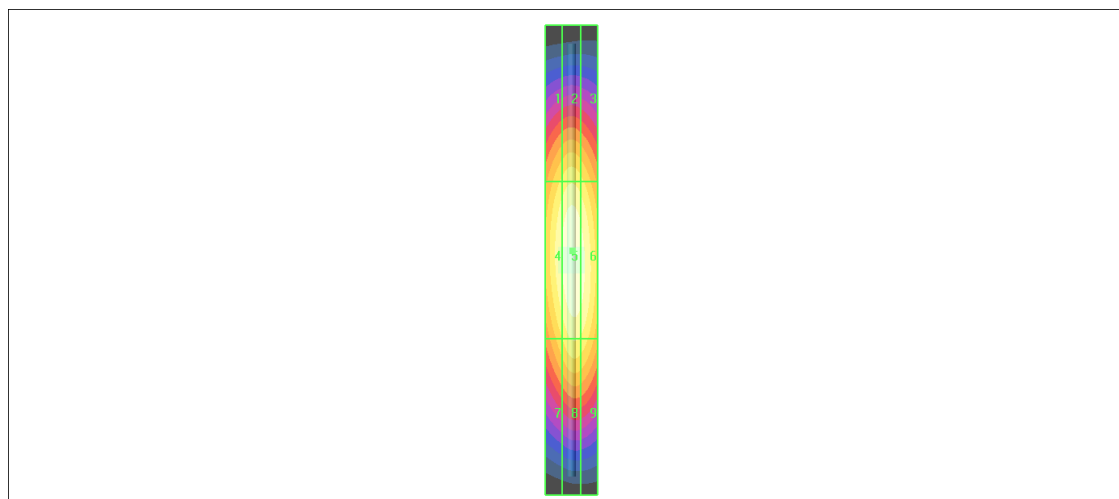
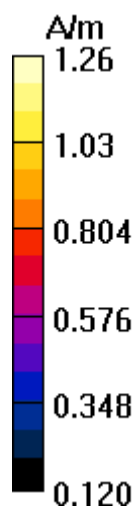
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 1.33 A/m; Power Drift = 0.048 dB

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

Peak H-field in A/m

Grid 1 1.06 M3	Grid 2 1.10 M2	Grid 3 1.06 M3
Grid 4 1.19 M2	Grid 5 1.26 M2	Grid 6 1.22 M2
Grid 7 1.03 M3	Grid 8 1.12 M2	Grid 9 1.10 M2



Date/Time: 2010/10/18 17:20:04

Test Laboratory: Bureau Veritas ADT

H_AM_836.6 MHz

DUT: HAC Dipole 835 MHz ; Type: D835V3 ; Serial: 1041 ; Test Frequency: 836.6 MHz

Communication System: AM ; Frequency: 836.6 MHz; Duty Cycle: 1:1; Modulation type: AM

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

Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **1.27** A/m

Probe Modulation Factor = 1.00

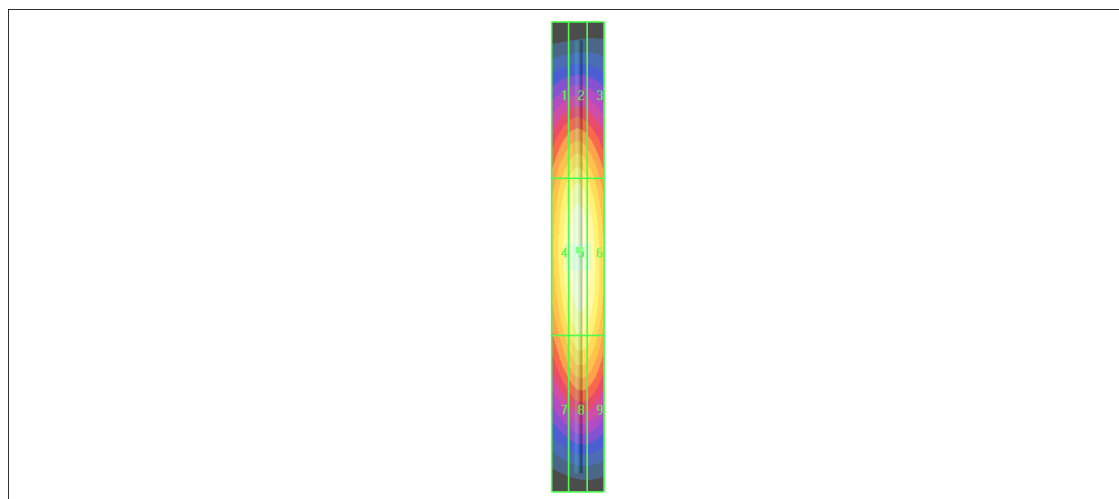
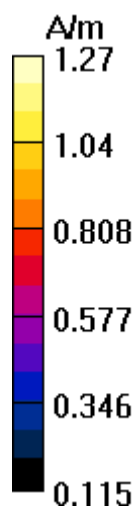
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 1.35 A/m; Power Drift = 0.010 dB

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

Peak H-field in A/m

Grid 1 1.04 M3	Grid 2 1.10 M2	Grid 3 1.04 M3
Grid 4 1.19 M2	Grid 5 1.27 M2	Grid 6 1.22 M2
Grid 7 1.01 M3	Grid 8 1.11 M2	Grid 9 1.09 M2



Date/Time: 2010/10/18 18:17:37

Test Laboratory: Bureau Veritas ADT

E_WD 1880 MHz

DUT: HAC Dipole 1880 MHz ; Type: CD1880V3 ; Serial: 1032 ; Test Frequency: 1880 MHz

Communication System: PCS 1900 ; Frequency: 1880 MHz; Duty Cycle: 1:8.3; Modulation type: GMSK
Medium: Air; Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³

Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **69.3** V/m

Probe Modulation Factor = 1.00

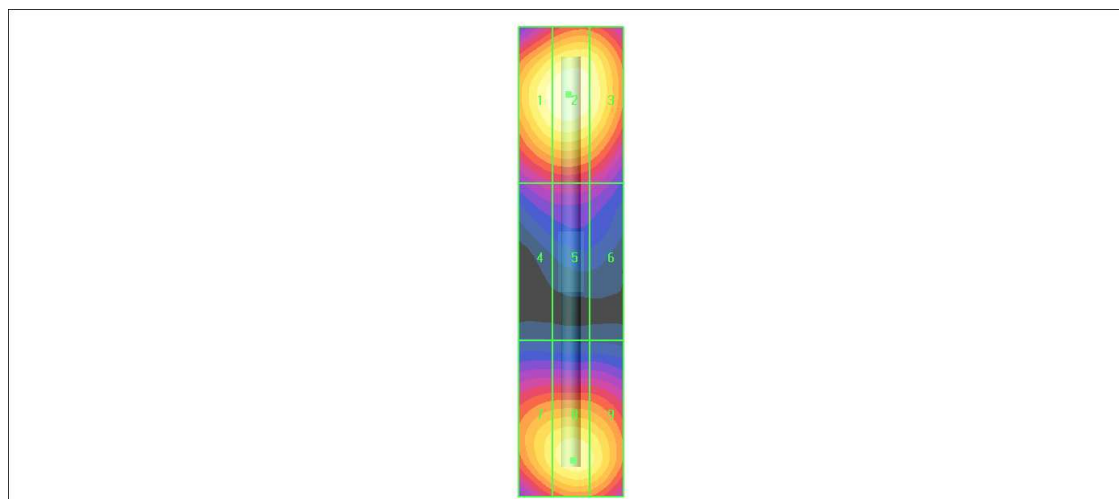
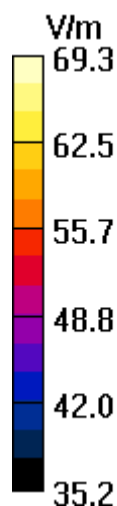
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 72.6 V/m; Power Drift = -0.055 dB

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

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
68.1 M3	69.3 M3	67.6 M3
Grid 4	Grid 5	Grid 6
50.8 M3	51.3 M3	50.2 M3
Grid 7	Grid 8	Grid 9
64.3 M3	66.4 M3	65.5 M3



Date/Time: 2010/10/18 18:26:53

Test Laboratory: Bureau Veritas ADT

E_CW 1880 MHz

DUT: HAC Dipole 1880 MHz ; Type: CD1880V3 ; Serial: 1032 ; Test Frequency: 1880 MHz

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

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

Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **208.4** V/m

Probe Modulation Factor = 1.00

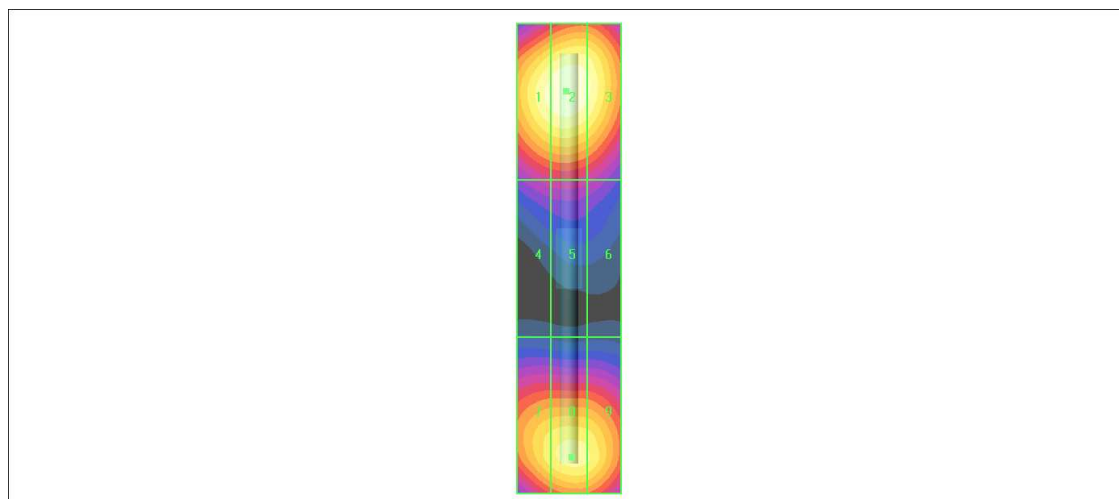
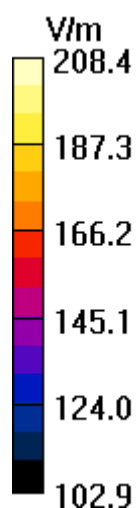
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 217.5 V/m; Power Drift = -0.035 dB

Hearing Aid Near-Field Category: M1 (AWF 0 dB)

Peak E-field in V/m

Grid 1 204.5 M1	Grid 2 208.4 M1	Grid 3 203.2 M1
Grid 4 150.4 M2	Grid 5 152.2 M2	Grid 6 147.9 M2
Grid 7 192.1 M2	Grid 8 198.1 M2	Grid 9 195.7 M2



Date/Time: 2010/10/18 18:33:12

Test Laboratory: Bureau Veritas ADT

E_AM 1880 MHz

DUT: HAC Dipole 1880 MHz ; Type: CD1880V3 ; Serial: 1032 ; Test Frequency: 1880 MHz

Communication System: AM ; Frequency: 1880 MHz; Duty Cycle: 1:1; Modulation type: AM

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

Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **189.4** V/m

Probe Modulation Factor = 1.00

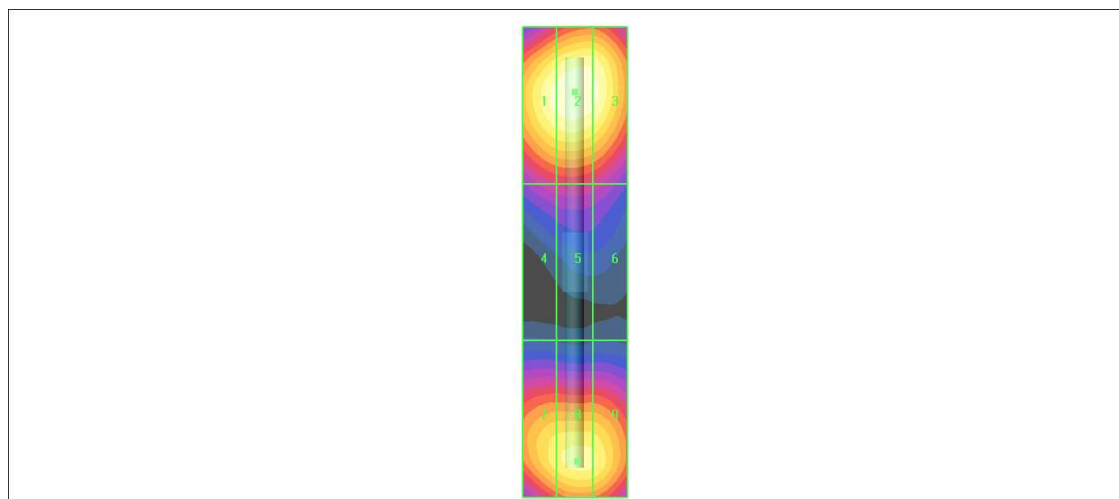
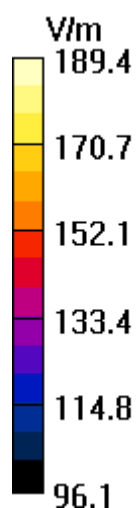
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 196.9 V/m; Power Drift = 0.010 dB

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

Peak E-field in V/m

Grid 1 185.9 M2	Grid 2 189.4 M2	Grid 3 186.6 M2
Grid 4 139.7 M2	Grid 5 141.4 M2	Grid 6 137.8 M2
Grid 7 175.3 M2	Grid 8 180.1 M2	Grid 9 178.5 M2



Date/Time: 2010/10/18 15:15:39

Test Laboratory: Bureau Veritas ADT

H_WD 1880 MHz

DUT: HAC Dipole 1880 MHz ; Type: CD1880V3 ; Serial: 1032 ; Test Frequency: 1880 MHz

Communication System: PCS 1900 ; Frequency: 1880 MHz; Duty Cycle: 1:8.3; Modulation type: GMSK
Medium: Air; Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- Measurement SW: DASY4, 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 = **0.351** A/m

Probe Modulation Factor = 1.00

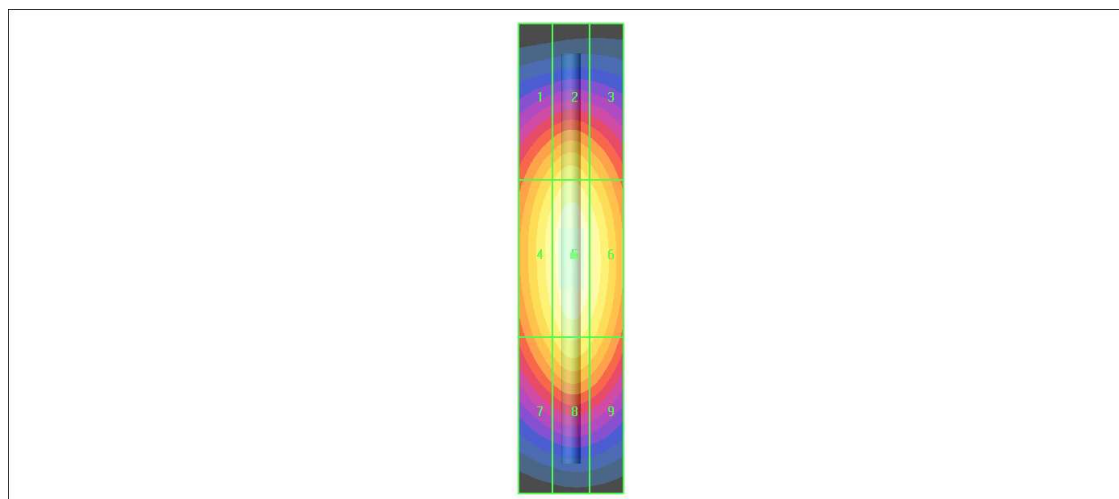
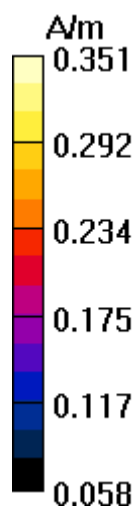
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 0.373 A/m; Power Drift = -0.031 dB

Hearing Aid Near-Field Category: M2 (AWF -5 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.292 M2	0.311 M2	0.292 M2
Grid 4	Grid 5	Grid 6
0.327 M2	0.351 M2	0.334 M2
Grid 7	Grid 8	Grid 9
0.293 M2	0.316 M2	0.301 M2



Date/Time: 2010/10/18 15:39:49

Test Laboratory: Bureau Veritas ADT

H_CW 1880 MHz

DUT: HAC Dipole 1880 MHz ; Type: CD1880V3 ; Serial: 1032 ; Test Frequency: 1880 MHz

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

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

Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- Measurement SW: DASY4, 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 = **0.800** A/m

Probe Modulation Factor = 1.00

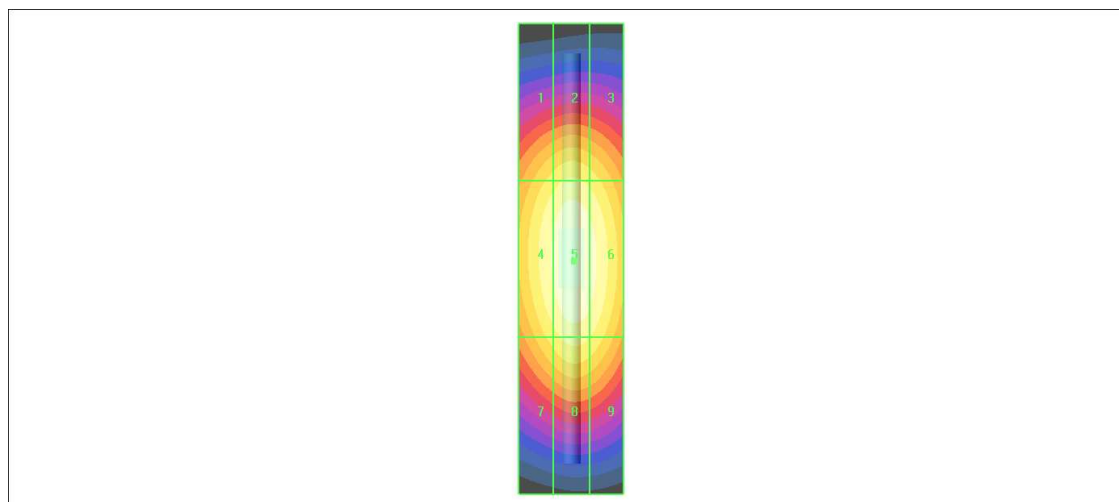
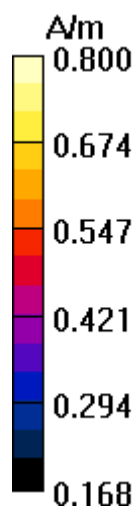
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 0.845 A/m; Power Drift = -0.031 dB

Hearing Aid Near-Field Category: M1 (AWF 0 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.694 M1	0.723 M1	0.702 M1
Grid 4	Grid 5	Grid 6
0.765 M1	0.800 M1	0.778 M1
Grid 7	Grid 8	Grid 9
0.695 M1	0.734 M1	0.717 M1



Date/Time: 2010/10/18 15:45:27

Test Laboratory: Bureau Veritas ADT

H_AM 1880MHz

DUT: HAC Dipole 1880 MHz ; Type: CD1880V3 ; Serial: 1032 ; Test Frequency: 1880 MHz

Communication System: AM ; Frequency: 1880 MHz; Duty Cycle: 1:1; Modulation type: AM

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

Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- Measurement SW: DASY4, 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 = **0.848** A/m

Probe Modulation Factor = 1.00

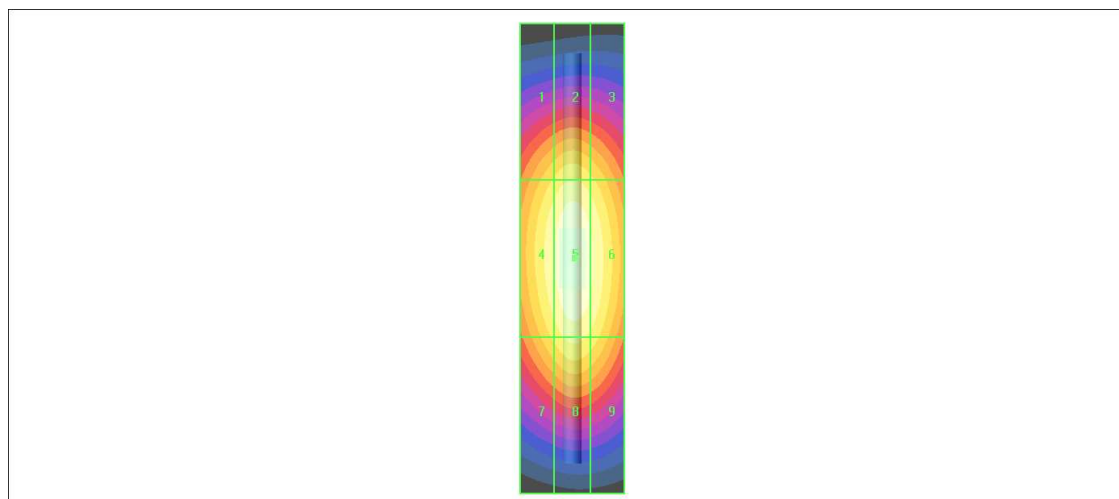
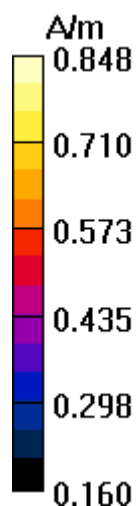
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 0.898 A/m; Power Drift = -0.021 dB

Hearing Aid Near-Field Category: M1 (AWF 0 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.717 M1	0.759 M1	0.725 M1
Grid 4	Grid 5	Grid 6
0.799 M1	0.848 M1	0.813 M1
Grid 7	Grid 8	Grid 9
0.722 M1	0.772 M1	0.743 M1



Appendix A: System Validation

Date/Time: 2010/10/18 17:33:50

Test Laboratory: Bureau Veritas ADT

E_835 MHz

DUT: HAC Dipole 835 MHz ; Type: D835V3 ; Serial: 1041 ; Test Frequency: 835 MHz

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

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

Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **139.7** V/m

Probe Modulation Factor = 1.00

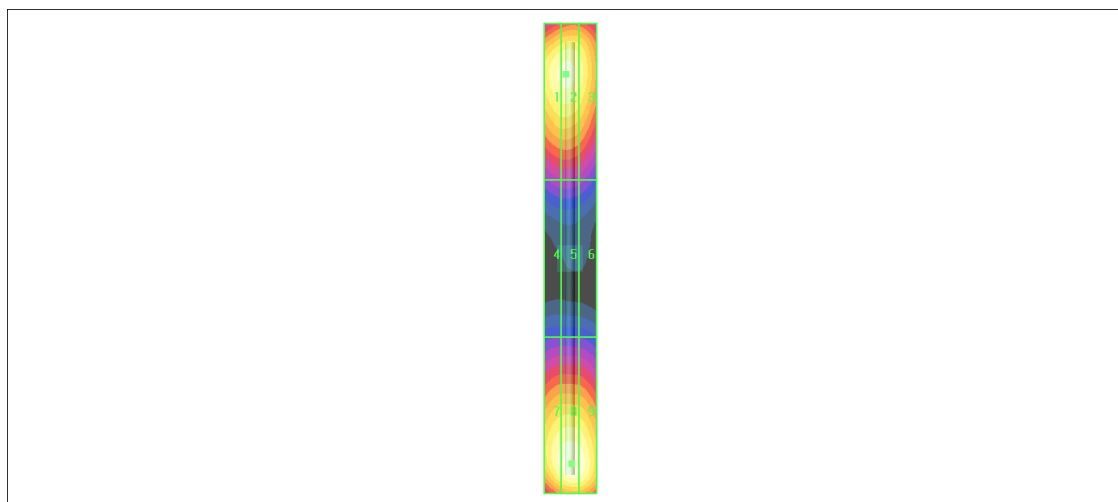
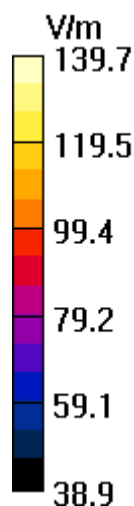
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 88.5 V/m; Power Drift = -0.052 dB

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

Peak E-field in V/m

Grid 1 128.3 M4	Grid 2 129.2 M4	Grid 3 123.9 M4
Grid 4 74.5 M4	Grid 5 75.0 M4	Grid 6 72.3 M4
Grid 7 129.1 M4	Grid 8 133.1 M4	Grid 9 131.5 M4



Date/Time: 2010/10/18 14:17:14

Test Laboratory: Bureau Veritas ADT

H_835 MHz

DUT: HAC Dipole 835 MHz ; Type: D835V3 ; Serial: 1041 ; Test Frequency: 835 MHz

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

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

Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **0.411** A/m

Probe Modulation Factor = 1.00

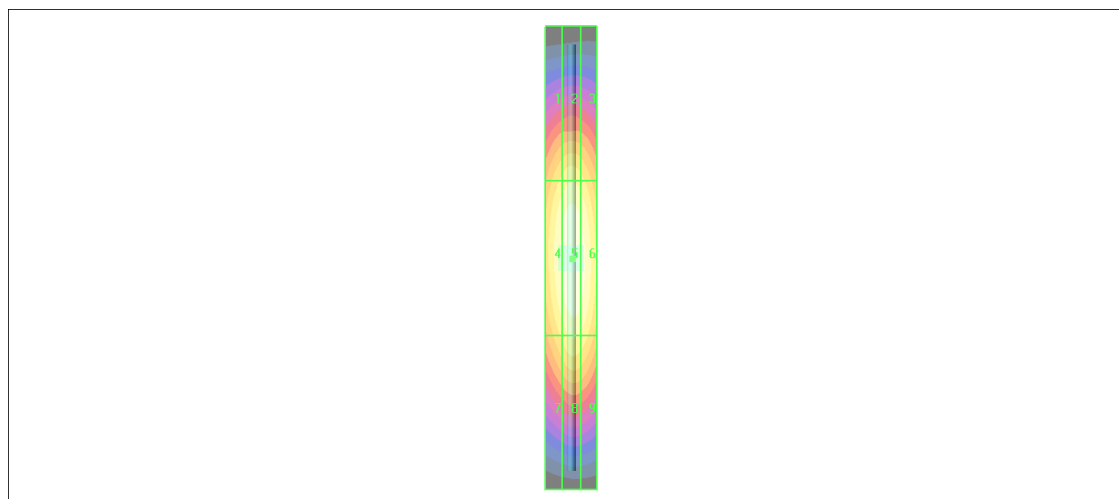
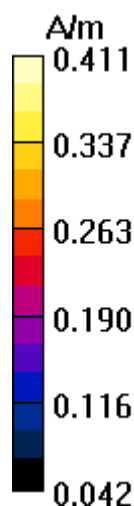
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 0.435 A/m; Power Drift = -0.019 dB

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

Peak H-field in A/m

Grid 1 0.347 M4	Grid 2 0.361 M4	Grid 3 0.349 M4
Grid 4 0.393 M4	Grid 5 0.411 M4	Grid 6 0.400 M4
Grid 7 0.346 M4	Grid 8 0.367 M4	Grid 9 0.360 M4



Date/Time: 2010/10/18 18:54:22

Test Laboratory: Bureau Veritas ADT

E_1880 MHz

DUT: HAC Dipole 1880 MHz ; Type: CD1880V3 ; Serial: 1032 ; Test Frequency: 1880 MHz

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

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

Phantom section: E Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: ER3DV6 - SN2302 ; ConvF(1, 1, 1) ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- 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 = **116.5** V/m

Probe Modulation Factor = 1.00

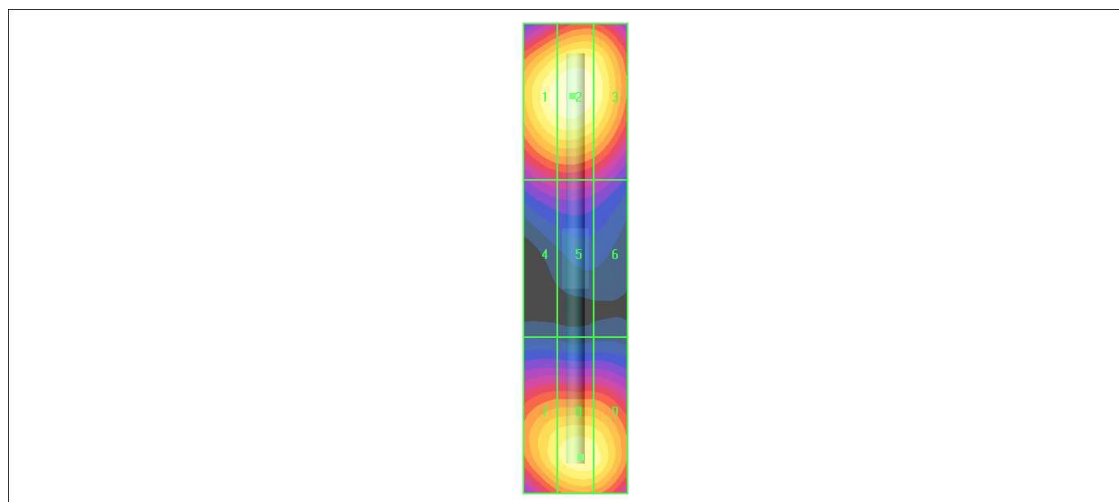
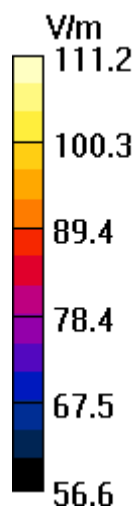
Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 112.4 V/m; Power Drift = -0.034 dB

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

Peak E-field in V/m

Grid 1 104.2 M3	Grid 2 105.9 M3	Grid 3 102.7 M3
Grid 4 78.0 M3	Grid 5 78.7 M3	Grid 6 76.2 M3
Grid 7 98.6 M3	Grid 8 102.0 M3	Grid 9 101.0 M3



Date/Time: 2010/10/18 14:06:46

Test Laboratory: Bureau Veritas ADT

H_1880 MHz

DUT: HAC Dipole 1880 MHz ; Type: CD1880V3 ; Serial: 1032 ; Test Frequency: 1880 MHz

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

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

Phantom section: H Dipole Section Measurement Standard: DASY4 (High Precision Assessment);

DASY4 Configuration:

- Probe: H3DV6 - SN6187 ; ; Calibrated: 2010/6/15
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn861; Calibrated: 2010/1/22
- Phantom: HAC Test Arch; Type: SD HAC P01 BA; Serial: 1202
- Measurement SW: DASY4, 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 = **0.405** A/m

Probe Modulation Factor = 1.00

Device Reference Point: 0.000, 0.000, 354.7 mm

Reference Value = 0.426 A/m; Power Drift = -0.019 dB

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

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.350 M2	0.365 M2	0.356 M2
Grid 4	Grid 5	Grid 6
0.388 M2	0.405 M2	0.394 M2
Grid 7	Grid 8	Grid 9
0.353 M2	0.369 M2	0.360 M2

