



A Test Lab Techno Corp.

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HAC EVALUATION REPORT



Test Report No.	: 1108FS12
Applicant	: HTC Corporation
Trade Name	: HTC
Model Number	: PH85110
EUT Type	: Smartphone
FCC ID	: NM8PH85110
Dates of Test	: Jul. 13 ~ Jul. 29, 2011
Issued Date	: Aug. 02, 2011
Test Environment	: Ambient Temperature : 22 ± 2 °C Relative Humidity : 40 - 70 %
FCC Rule Part(s)	: FCC 47 CFR § 20.19.
HAC Standard	: ANSI C63.19-2007
C63.19 HAC Rated Category	: M3 (RF EMISSIONS)
Test Lab.	: Chang-An Lab

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(Sam Chuang)

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1. Description of Equipment under Test (EUT)

Applicant	:	HTC Corporation		
Applicant Address	:	No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan		
Manufacturer	:	HTC Corporation		
Manufacturer Address	:	No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan		
EUT Type	:	Smartphone		
Trade Name	:	HTC		
Model Number	:	PH85110		
FCC ID	:	NM8PH85110		
IMIE No	:	Sample 1: 004402260059047, Sample 2: 004402260074681		
Tx Frequency	:	824.2	- 848.8	MHz (GSM 850)
		1850.2	- 1909.8	MHz (PCS 1900)
		1852.6	- 1907.4	MHz (WCDMA Band II)
		1712.4	- 1752.6	MHz (WCDMA Band IV)
		826.6	- 846.4	MHz (WCDMA Band V)
RF Output Power	:	2.138 W	(33.30 dBm)	GSM 850
		1.059 W	(30.25 dBm)	PCS 1900
		0.186 W	(22.70 dBm)	WCDMA Band II
		0.206 W	(23.13 dBm)	WCDMA Band IV
		0.208 W	(23.19 dBm)	WCDMA Band V
Antenna Type	:	PIFA Type		
Test Device	:	Production Unit		
Device Category	:	Portable		

This wireless portable device has performed Hearing Aid Compatibility (HAC) measurements for the portable cellular phone. The measurements were performed to ensure compliance to the ANSI C63.19-2007 standards.



<All Air Interfaces / Bands List>

Air-Interface	Band (MHz)	Type	C63.19 Tested	Simultaneous Transmissions	Concurrent Single Transmission	Reduced Power 20.19(e)	Voice Over Digital Transport (Data)
GSM	850	Voice	Yes	Yes WLAN(2450MHz) / BT	Yes	N/A	No
	1900	Voice	Yes		Yes	N/A	No
	GPRS/EGPRS	Data	No	Yes BT/WLAN	Yes	N/A	Yes
WCDMA	Band II	Voice	Yes	Yes WLAN(2450MHz) / BT	Yes	N/A	No
	Band IV	Voice	Yes		Yes	N/A	No
	Band V	Voice	Yes		Yes	N/A	No
	HSDPA/HSUPA	Data	No		Yes	N/A	Yes
WLAN	2450	Data	No	Yes GSM or WCDMA	Yes	N/A	Yes
	5180-5825	Data	No	No	Yes	N/A	Yes
Bluetooth	2450	Data	No	Yes GSM or WCDMA	Yes	N/A	No



2. Introduction

The A Test Lab Techno Corp. has performed measurements of the maximum potential exposure to the user of **HTC Corporation Trade Name: HTC Model(s) : PH85110**. The test procedures, as described in ANSI C63.19-2007 standard were employed. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the equipment are included within this test report.

3. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	Dosimetric E-Filed Probe	ER3DV6R	2256	Aug. 23, 2010	Aug. 23, 2011
SPEAG	Dosimetric H-Filed Probe	H3DV6	6076	Aug. 23, 2010	Aug. 23, 2011
SPEAG	835 MHz System Validation Kit	CD835V3	1149	Dec. 01, 2010	Dec. 01, 2011
SPEAG	1880 MHz System Validation Kit	CD1880V3	1135	Dec. 01, 2010	Dec. 01, 2011
SPEAG	Data Acquisition Electronics	DAE4	779	Jan. 31, 2011	Jan. 31, 2012
SPEAG	Device Holder	N/A	N/A	N.C.R.	
SPEAG	Phantom	SD HAC P01 BA	1038	N.C.R.	
SPEAG	Robot	Staubli TX90XL	F07/564ZA1/C/01	N.C.R.	
SPEAG	Software	DASY5 V5.0 Build 125	N/A	N.C.R.	
SPEAG	Software	SEMCAD X V13.4 Build 125	N/A	N.C.R.	
SPEAG	Measurement Server	SE UMS 011 AA	1025	N.C.R.	
Agilent	Wireless Communication Test Set	CMU200	109369	Aug. 10, 2010	Aug. 10, 2011
Agilent	Spectrum Analyzer(ESA-L)	E4408B	MY45107753	Jul. 07, 2011	Jul. 07, 2012
R&S	Spectrum Analyzer(FSL)	FSL6	100410	N.C.R.	
Agilent	MXG Vector Signal Generator	N5182A	MY47420962	May 27, 2011	May 27, 2012
R&S	Power Sensor	NRP-Z22	100179	May 27, 2011	May 27, 2012
Agilent	Dual Directional Coupler	778D	50334	N.C.R.	
Mini-Circuits	Power Amplifier	ZVE-8G	D042005 671800514	N.C.R.	
Mini-Circuits	Power Amplifier	ZHL-42W-SMA	D111103#5	N.C.R.	

Table 1. Test Equipment List

4. Test Procedure

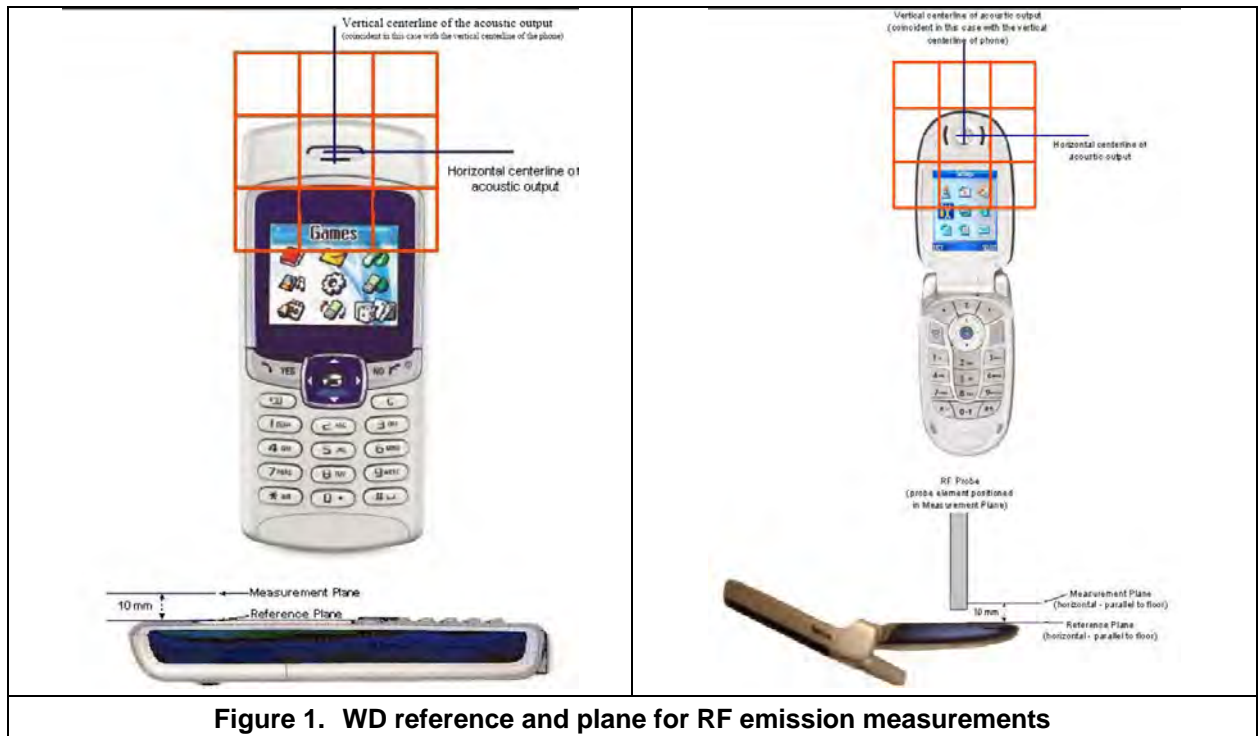


Figure 1. WD reference and plane for RF emission measurements

The following illustrate a typical RF emissions test scan over a wireless communications device:

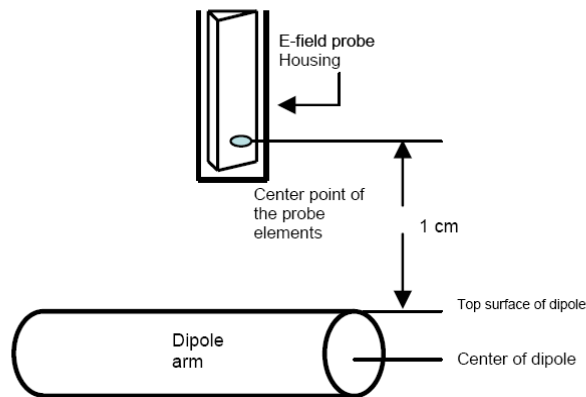
1. Proper operation of the field probe, probe measurement system, other instrumentation, and the positioning system was confirmed.
2. WD is positioned in its intended test position, acoustic output point of the device perpendicular to the field probe.
3. The WD operation for maximum rated RF output power was configured and confirmed with the base station simulator, at the test channel and other normal operating parameters as intended for the test. The battery was ensured to be fully charged before each test.
4. 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.
5. A surface calibration was performed before each setup change to ensure repeatable spacing and proper maintenance of the measurement plane using the HAC Phantom.
6. The measurement system measured the field strength at the reference location.
7. Measurements at 2mm or 5mm increments in the 5 x 5 cm region were performed at a distance 15 mm from the center point of the probe measurement element to the WD. A 360o 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.
8. The system performed a drift evaluation by measuring the field at the reference location.
9. Steps 1-8 were done for both the E and H-Field measurements.

5. System Check

5.1 System check parameters

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 1 cm 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 Validation Procedure

Place a dipole antenna meeting the requirements given in ANSI-PC63.19 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; and
- the probes are 10 mm from the surface of the dipole elements.

Scan the length of the dipole with both E-field and H-field probes and record the maximum values for each. Compare the readings to expected values.

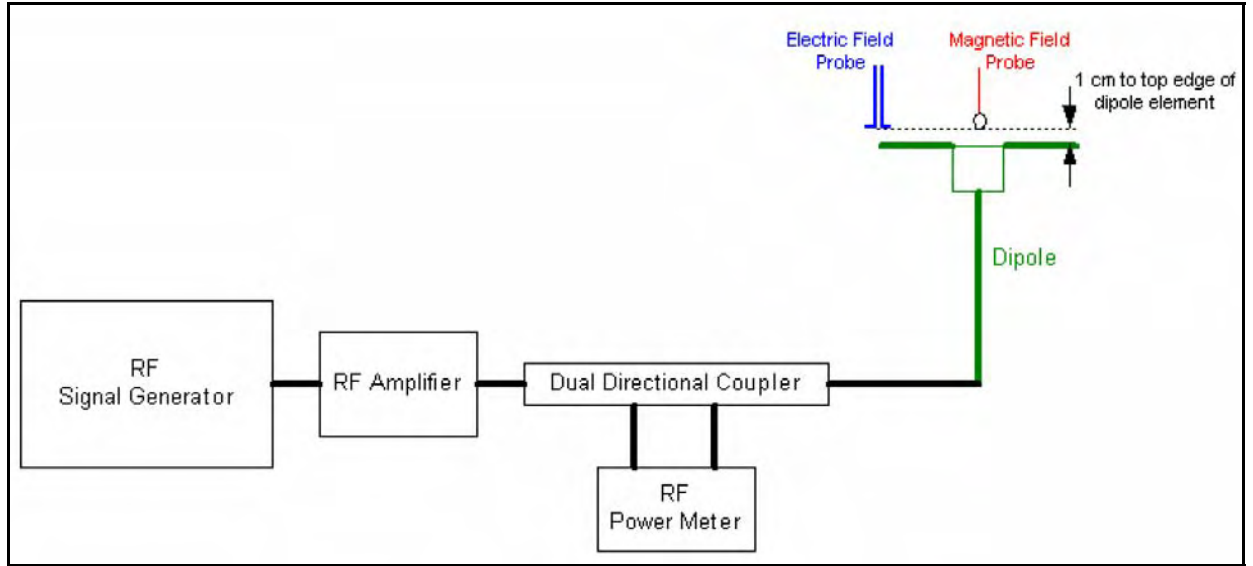


Figure 2. WD dipole calibration procedure

5.3 Illustrative dipole calculated and measured values

Baseband frequencies (MHz)	Frequency (MHz)	E-field calculated values (V/m)	E-field measured values (V/m)	E-field delta (calculated to measured) (V/m) & %	H-field calculated values (A/m)	H-field measured values (A/m)	H-field delta (calculated to measured) (A/m) & %
790–850	835	187			0.476		
806–821	813.5	190			0.481		
896–901	898.5	185			0.477		
1880–2000	1880	149			0.456		
		224.6–236.4			0.5139–0.5226		
		214.9–232.2			0.4954–0.5164		
		213.2–220.9			0.5032–0.5005		
		153.6–149.3			0.4478–0.4035		

NOTE 1— Numeric modeling results will vary based on several factors, including the size of the computational area, boundary conditions selected, grid resolution, accuracy of models for material properties, and other factors. Further, the results obtained by numeric modeling will vary from measured results based on many additional factors, including the degree to which the probe perturbs the field, the degree to which the probe averages the field strength over its dimensions, the linearity of the probe, the differences between the physical dipole and its modeled representation, and many other factors. Numeric computations provided to the committee showed significant variability between different results. Accordingly the values provided should be used judiciously and not interpreted to be absolutely correct. The calculated values provided for dipoles were developed using theoretical numerical computation.

NOTE 2— Delta % = $100 \times (\text{measured peak} - \text{calculated}) / \text{calculated}$. Values within $\pm 25\%$ are acceptable, of which 12% is deviation and 13% is measurement uncertainty. Values independently validated for the dipole actually used in the measurements should be used, when available.



5.4 Validation Results

Dipole	Freq. (MHz)	Protocol	Input Power (mW)	Target for Dipole (V/m)	E-Field Results (V/m)	Deviation	Date
SN:1149	835	CW	100	171.10	178.90	4.56%	Jul. 13, 2011
SN:1149	835	CW	100	171.10	177.80	3.92%	Jul. 29, 2011
SN:1135	1880	CW	100	135.70	141.90	4.57%	Jul. 13, 2011
SN:1135	1880	CW	100	135.70	142.00	4.64%	Jul. 29, 2011

Table 2. Dipole E-Field Measurement Summary

Dipole	Freq. (MHz)	Protocol	Input Power (mW)	Target for Dipole (A/m)	H-Field Results (A/m)	Deviation	Date
SN:1149	835	CW	100	0.473	0.456	-3.59%	Jul. 13, 2011
SN:1149	835	CW	100	0.473	0.462	-2.33%	Jul. 29, 2011
SN:1135	1880	CW	100	0.465	0.447	-3.87%	Jul. 13, 2011
SN:1135	1880	CW	100	0.465	0.444	-4.52%	Jul. 29, 2011

Table 3. Dipole H-Field Measurement Summary

6. Probe Modulation Factor

After every probe calibration, the response of the probe to each applicable modulated signal (CDMA, GSM, WCDMA (UMTS), etc) must be assessed at both 835 MHz, 1880 MHz. 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. For each PMF assessment, a Signal Generator was used to replace the original CW signal with the desired modulated signal. The PMF results are shown in Table 4. RF Field Probe Modulation Response was measured with the field probe and associated measurement equipment. The PMF was measured per ANSI C63.19-2007 using a signal generator as follows:

1. Illuminate a dipole with a CW signal at the intended measured frequency.
2. Fix the probe at a set location relative to the dipole; typically located at the field reference point.
3. Record the reading of the probe measurement system of the CW signal.
4. Substitute a modulated signal of the same amplitude, using the same modulation as that used by the intended WD for the CW signal.
5. Record the reading of the probe measurement system of the modulated signal.
6. The ratio of the CW to modulated signal reading is the probe modulation factor.
7. Spectrum analyzer settings:
 - Center Frequency: nominal center frequency of channel
 - Span: zero
 - Resolution bandwidth \geq emission bandwidth
 - Video bandwidth \geq 20 kHz.
 - Detection: RMS detection.
 - Trigger: Video or IF trigger, adjusted to give a stable display of the transmission.
 - Sweep rate: Set to show a complete transmission cycle.
 - Line max hold may be used temporarily to ease the peak reading.
8. Calculate the Probe Modulation Factor as the ratio between the CW multimeter field reading and the reading for the applicable modulation. I.e., $PMF = \frac{E_{CW}}{E_{mod}}$ and similar for H.

for the applicable modulation. I.e., $PMF = \frac{E_{CW}}{E_{mod}}$ and similar for H.

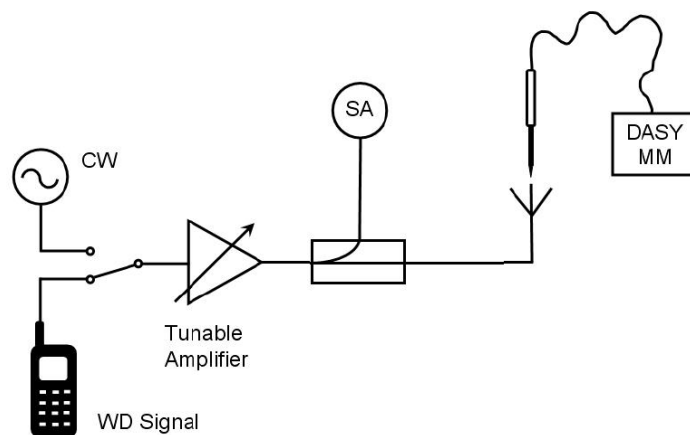


Figure 3. Probe Modulation Factor Measurement Diagram



Formula between PMF and test results

1. HAC test of device and determine the maximum value (M) of grids.
2. Determine the value (P) of PMF according to (M).
3. Find the maximum value (F) from the other data.

$$R = P * F$$

Example:

E-Field Maximum value (M) = 52, Maximum value (F) = 51.8, PMF (P) = 2.82

R = 51.8 * 2.82 = 146.076 V/m

Frequency (MHz)	Protocol	E-Field Probe SN:2256		H-Field Probe SN:6076	
		E-Field (V/m)	E-Field Modulation Factor	H-Field (A/m)	H-Field Modulation Factor
835.0	GSM	< 47	2.53	< 0.14	1.81
		47 - 63	2.54	0.14 - 0.19	2.12
		63 - 84	2.54	0.19 - 0.25	2.37
		84 - 112	2.55	0.25 - 0.34	2.57
		112 - 150	2.56	0.34 - 0.45	2.68
		150 - 200	2.56	0.45 - 0.60	2.71
		200- 266	2.57	0.60 - 0.80	2.64
		266 - 355	2.57	0.80 - 1.07	2.49
		355 - 473	2.58	1.07 - 1.43	2.26
		473 - 631	2.58	1.43 - 1.91	1.98
		631 - 841	2.59	1.91 - 2.54	1.67
841 - 1122	2.60	2.54 - 3.39	1.36		
1880.0	GSM	< 47	2.53	< 0.14	2.63
		47 - 63	2.52	0.14 - 0.19	2.59
		63 - 84	2.51	0.19 - 0.25	2.54
		84 - 112	2.50	0.25 - 0.34	2.44
		112 - 150	2.49	0.34 - 0.45	2.32
		150 - 200	2.48	0.45 - 0.60	2.18
		200- 266	2.47	0.60 - 0.80	2.02
		266 - 355	2.46	0.80 - 1.07	1.92
		355 - 473	2.45	1.07 - 1.43	1.73
		473 - 631	2.44	1.43 - 1.91	1.54
		631 - 841	2.43	1.91 - 2.54	1.36
841 - 1122	2.42	2.54 - 3.39	1.17		



Frequency (MHz)	Protocol	E-Field Probe SN:2256		H-Field Probe SN:6076	
		E-Field (V/m)	E-Field Modulation Factor	H-Field (A/m)	H-Field Modulation Factor
835.0	WCDMA(UMTS)	< 47	1.07	< 0.14	0.86
		47 - 63	1.04	0.14 - 0.19	0.86
		63 - 84	1.01	0.19 - 0.25	0.85
		84 - 112	0.98	0.25 - 0.34	0.83
		112 - 150	0.95	0.34 - 0.45	0.81
		150 - 200	0.92	0.45 - 0.60	0.78
		200- 266	0.89	0.60 - 0.80	0.75
		266 - 355	0.87	0.80 - 1.07	0.72
		355 - 473	0.84	1.07 - 1.43	0.68
		473 - 631	0.82	1.43 - 1.91	0.64
		631 - 841	0.79	1.91 - 2.54	0.61
841 - 1122	0.77	2.54 - 3.39	0.56		
1880.0	WCDMA(UMTS)	< 47	0.90	< 0.14	0.81
		47 - 63	0.89	0.14 - 0.19	0.76
		63 - 84	0.89	0.19 - 0.25	0.71
		84 - 112	0.89	0.25 - 0.34	0.65
		112 - 150	0.89	0.34 - 0.45	0.59
		150 - 200	0.89	0.45 - 0.60	0.52
		200- 266	0.89	0.60 - 0.80	0.46
		266 - 355	0.89	0.80 - 1.07	0.39
		355 - 473	0.89	1.07 - 1.43	0.33
		473 - 631	0.88	1.43 - 1.91	0.28
		631 - 841	0.88	1.91 - 2.54	0.23
841 - 1122	0.88	2.54 - 3.39	0.19		

Table 4. PMF Measurement Summary

Note: PMF measurements were verified at WD's power as an input to the dipole.



7. HAC Testing with RF Transmitters

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

CDMA Devices setup for HAC Measurement.

The signal was setup by creating and maintaining an over the coaxial connection between the DUT and an R&S CMU200 Wireless Communications Test Set. The CDMA radio is available on CDMA 2000(1X) and IS-95. The test equipment was configured to use "all up bits" for RC1 / SO2 on J-STD-008 for CDMA 1900 and TSB-84 for CDMA 800 MHz. The 5cm x 5cm area measurement grid is centered on the acoustic output of the device. The Test Arch provided by SPEAG is used to position the DUT. The WD reference plane is parallel to the device and contains the highest point on its contour in the area of the phone that normally rests against the user's ear. The measurement plane contains the nearest point on the probe sensor(s) relative to the WD. The pictures of the setup are included in 7.3.

WCDMA Devices setup for HAC Measurement.

The following procedures are applicable to WCDMA handsets operating under 3GPP Release 99 and Release 5. The default test configuration is to measure HAC with an established radio link between the DUT and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1. HAC is selectively confirmed for other physical channel configurations (DPCCH & DPDCH_n) according to output power, exposure conditions and device operating capabilities. Both uplink and downlink should be configured with the same RMC or AMR, when required. Maximum output power is verified according to 3GPP TS 34.121 and HAC must be measured according to these maximum output conditions.



8. Test Results

8.1 Description of the Device under Test (DUT)

Modes and Bands of Operation	GSM 850	PCS 1900	WCDMA Band II	WCDMA Band IV	WCDMA Band V
Modulation Mode	GMSK	GMSK	QPSK	QPSK	QPSK
Duty Cycle	1/8.3	1/8.3	1/1	1/1	1/1
Transmitter Frequency Range (MHz)	824.2 - 848.8	1850.2 - 1909.8	1852.6 - 1907.4	1712.4 - 1752.6	826.6 - 846.4



8.2 HAC E-Field measurement results

Band	Rating	E-Field
GSM 850	M3	149.6 to 266.1 V/m
	M4	< 149.6 V/m
PCS 1900	M3	47.3 to 84.1 V/m
	M4	< 47.3 V/m
WCDMA Band II	M3	63.1 to 112.2
	M4	< 63.1
WCDMA Band IV	M3	47.3 to 84.1 V/m
	M4	< 47.3 V/m
WCDMA Band V	M3	199.5 to 354.8
	M4	< 199.5

Table 5. Emissions Limits

Band	Channel	Conducted Power (dBm)	Measured PMF	Drift (dB)	Excluded Cells	Peak Field (V/m)	Rating	Note
GSM 850	128	33.10	2.57	-0.024	2,3,6	200.90	M3	Sample1+battery#1
	128	33.10	2.57	0.028	2,3,6	191.40	M3	Sample1+battery#2
	128	33.10	2.57	-0.025	2,3,6	186.80	M3	Sample2+battery#1
	190	33.20	2.57	-0.060	2,3,6	184.20	M3	Sample1+battery#1
	190	33.20	2.57	-0.004	2,3,6	189.60	M3	Sample2+battery#1
	251	33.30	2.56	-0.008	2,3,6	162.60	M3	Sample1+battery#1
	251	33.30	2.57	-0.063	2,3,6	189.80	M3	Sample2+battery#1
	251	33.30	2.57	-0.032	6,8,9	184.80	M3	Sample2+battery#2
PCS 1900	512	30.10	2.53	0.139	1,2,3	33.90	M4	Sample1+battery#1
	512	30.10	2.53	0.129	1,2,3	36.00	M4	Sample1+battery#2
	512	30.10	2.53	-0.004	7,8,9	32.20	M4	Sample2+battery#1
	512	30.10	2.53	0.018	7,8,9	32.80	M4	Sample2+battery#2
	661	30.20	2.53	0.054	1,2,3	28.90	M4	Sample1+battery#1
	661	30.20	2.53	0.076	7,8,9	28.20	M4	Sample2+battery#1
	810	30.25	2.53	-0.177	1,2,3	26.80	M4	Sample1+battery#1
	810	30.25	2.53	-0.132	7,8,9	26.70	M4	Sample2+battery#1

Note: HAC E-Field measurement results for the portable cellular telephone at highest possible output power.



Band	Channel	Conducted Power (dBm)	Measured PMF	Drift (dB)	Excluded Cells	Peak Field (V/m)	Rating	Note
WCDMA Band II	9262	22.55	0.90	-0.002	7,8,9	20.80	M4	Sample1+battery#1
	9262	22.55	0.90	-0.030	1,2,3	20.60	M4	Sample1+battery#2
	9262	22.55	0.90	-0.109	7,8,9	14.70	M4	Sample2+battery#1
	9400	22.49	0.90	0.174	7,8,9	18.30	M4	Sample1+battery#1
	9400	22.49	0.90	0.003	7,8,9	14.10	M4	Sample2+battery#1
	9538	22.70	0.90	0.003	1,2,3	15.00	M4	Sample1+battery#1
	9538	22.70	0.90	-0.004	7,8,9	14.90	M4	Sample2+battery#1
	9538	22.70	0.90	0.154	7,8,9	14.50	M4	Sample2+battery#2
WCDMA Band IV	1312	22.76	0.90	-0.062	7,8,9	21.00	M4	Sample1+battery#1
	1312	22.76	0.90	-0.051	7,8,9	20.08	M4	Sample1+battery#2
	1312	22.76	0.90	0.029	7,8,9	14.90	M4	Sample2+battery#1
	1413	23.13	0.90	-0.032	7,8,9	20.20	M4	Sample1+battery#1
	1413	23.13	0.90	-0.104	7,8,9	13.90	M4	Sample2+battery#1
	1513	23.00	0.90	-0.045	7,8,9	20.70	M4	Sample1+battery#1
	1513	23.00	0.90	0.176	7,8,9	16.10	M4	Sample2+battery#1
	1513	23.00	0.90	0.027	7,8,9	15.80	M4	Sample2+battery#2
WCDMA Band V	4132	23.19	1.01	-0.022	2,3,6	66.90	M4	Sample1+battery#1
	4132	23.19	1.01	0.181	2,3,6	66.70	M4	Sample1+battery#2
	4132	23.19	1.01	0.000	2,3,6	72.90	M4	Sample2+battery#1
	4132	23.19	1.01	-0.008	2,3,6	70.80	M4	Sample2+battery#2
	4183	22.84	1.04	-0.100	2,3,6	61.90	M4	Sample1+battery#1
	4183	22.84	1.01	0.013	2,3,6	70.30	M4	Sample2+battery#1
	4233	22.89	1.04	-0.013	2,3,6	51.70	M4	Sample1+battery#1
	4233	22.89	1.01	-0.037	2,3,6	70.20	M4	Sample2+battery#1

Note: HAC E-Field measurement results for the portable cellular telephone at highest possible output power.



Turn on Wi-Fi and Bluetooth Function

Band	Channel	Wireless Mode	Peak Field (V/m)
GSM 850	128	-----	200.90
		Wi-Fi	200.50
		Bluetooth	200.70
PCS 1900	512	-----	36.00
		Wi-Fi	35.70
		Bluetooth	35.60
WCDMA Band II	9262	-----	20.80
		Wi-Fi	20.50
		Bluetooth	20.60
WCDMA Band IV	1312	-----	21.00
		Wi-Fi	20.70
		Bluetooth	20.80
WCDMA Band V	4132	-----	72.90
		Wi-Fi	72.50
		Bluetooth	72.70



8.3 HAC H-Field measurement results

Band	Rating	H-Field
GSM 850	M3	0.45 to 0.80 A/m
	M4	< 0.45 A/m
PCS 1900	M3	0.14 to 0.25 A/m
	M4	<0.14 A/m
WCDMA Band II	M3	0.19 to 0.34
	M4	< 0.19
WCDMA Band IV	M3	0.14 to 0.25 A/m
	M4	<0.14 A/m
WCDMA Band V	M3	0.60 to 1.07
	M4	< 0.60

Table 6. Emissions Limits

Band	Channel	Conducted Power (dBm)	Measured PMF	Drift (dB)	Excluded Cells	Peak Field (A/m)	Rating	Note
GSM 850	128	33.10	2.68	-0.058	1,4,7	0.305	M4	Sample1+battery#1
	128	33.10	2.68	-0.029	1,4,7	0.280	M4	Sample1+battery#2
	128	33.10	2.68	-0.069	1,4,7	0.283	M4	Sample2+battery#1
	190	33.20	2.68	-0.003	1,4,7	0.273	M4	Sample1+battery#1
	190	33.20	2.68	-0.015	1,4,7	0.293	M4	Sample2+battery#1
	251	33.30	2.57	0.025	1,4,7	0.231	M4	Sample1+battery#1
	251	33.30	2.71	-0.045	1,4,7	0.316	M4	Sample2+battery#1
	251	33.30	2.68	0.005	1,4,7	0.298	M4	Sample2+battery#2
PCS 1900	512	30.10	2.63	-0.025	2,3,6	0.110	M4	Sample1+battery#1
	512	30.10	2.63	-0.040	2,3,6	0.103	M4	Sample1+battery#2
	512	30.10	2.63	-0.066	2,3,6	0.105	M4	Sample2+battery#1
	512	30.10	2.63	-0.003	2,3,6	0.101	M4	Sample2+battery#2
	661	30.20	2.63	0.011	1,2,3	0.086	M4	Sample1+battery#1
	661	30.20	2.63	0.036	2,3,6	0.091	M4	Sample2+battery#1
	810	30.25	2.63	-0.047	1,2,3	0.083	M4	Sample1+battery#1
	810	30.25	2.63	0.003	2,3,6	0.087	M4	Sample2+battery#1

Note: HAC E-Field measurement results for the portable cellular telephone at highest possible output power.



Band	Channel	Conducted Power (dBm)	Measured PMF	Drift (dB)	Excluded Cells	Peak Field (A/m)	Rating	Note
WCDMA Band II	9262	22.55	0.810	0.053	2,3,6	0.052	M4	Sample1+battery#1
	9262	22.55	0.810	0.001	2,3,6	0.052	M4	Sample1+battery#2
	9262	22.55	0.810	0.065	2,3,6	0.042	M4	Sample2+battery#1
	9400	22.49	0.810	0.028	1,2,3	0.042	M4	Sample1+battery#1
	9400	22.49	0.810	0.012	2,3,6	0.042	M4	Sample2+battery#1
	9538	22.70	0.810	-0.027	1,2,3	0.040	M4	Sample1+battery#1
	9538	22.70	0.810	0.007	2,3,6	0.045	M4	Sample2+battery#1
	9538	22.70	0.810	0.073	2,3,6	0.039	M4	Sample2+battery#2
WCDMA Band IV	1312	22.76	0.810	-0.001	2,3,6	0.061	M4	Sample1+battery#1
	1312	22.76	0.810	0.005	2,3,6	0.060	M4	Sample1+battery#2
	1312	22.76	0.810	-0.017	2,3,6	0.046	M4	Sample2+battery#1
	1312	22.76	0.810	-0.103	2,3,6	0.045	M4	Sample2+battery#2
	1413	23.13	0.810	-0.007	2,3,6	0.058	M4	Sample1+battery#1
	1413	23.13	0.810	0.142	2,3,6	0.041	M4	Sample2+battery#1
	1513	23.00	0.810	-0.097	2,3,6	0.059	M4	Sample1+battery#1
	1513	23.00	0.810	0.005	2,3,6	0.045	M4	Sample2+battery#1
WCDMA Band V	4132	23.19	0.860	-0.013	1,4,7	0.082	M4	Sample1+battery#1
	4132	23.19	0.860	-0.016	1,4,7	0.080	M4	Sample1+battery#2
	4132	23.19	0.860	0.104	1,4,7	0.085	M4	Sample2+battery#1
	4132	23.19	0.860	-0.091	1,4,7	0.082	M4	Sample2+battery#2
	4183	22.84	0.860	0.179	1,4,7	0.074	M4	Sample1+battery#1
	4183	22.84	0.860	-0.092	1,4,7	0.085	M4	Sample2+battery#1
	4233	22.89	0.860	0.001	1,4,7	0.064	M4	Sample1+battery#1
	4233	22.89	0.860	0.170	1,4,7	0.083	M4	Sample2+battery#1

Note: HAC E-Field measurement results for the portable cellular telephone at highest possible output power.



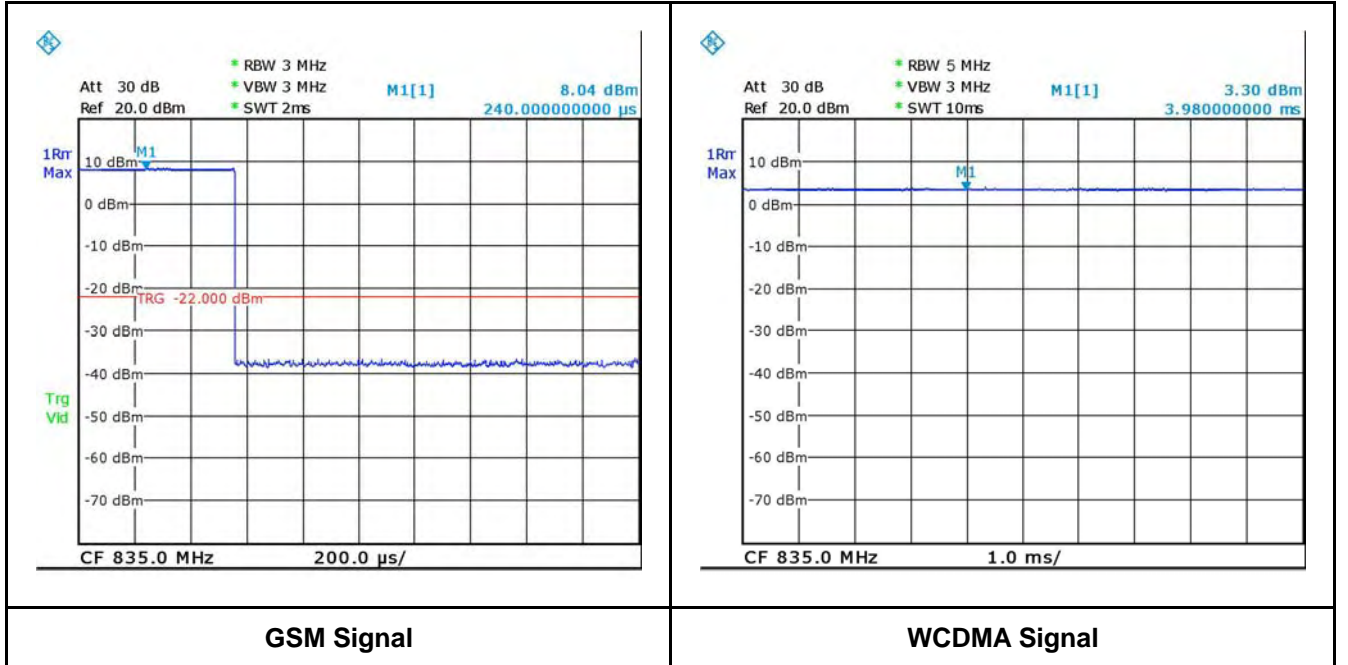
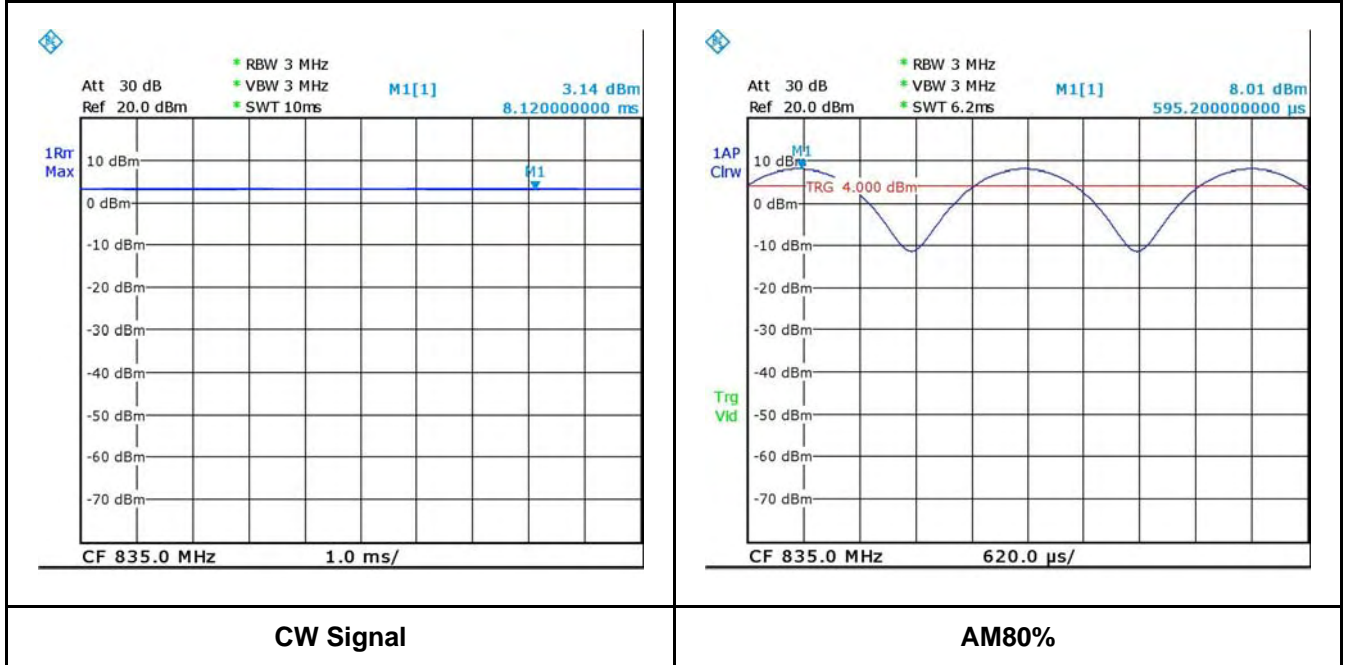
Turn on Wi-Fi and Bluetooth Function

Band	Channel	Wireless Mode	Peak Field (A/m)
GSM 850	128	-----	0.305
		Wi-Fi	0.301
		Bluetooth	0.300
PCS 1900	512	-----	0.110
		Wi-Fi	0.107
		Bluetooth	0.108
WCDMA Band II	9262	-----	0.052
		Wi-Fi	0.049
		Bluetooth	0.050
WCDMA Band IV	1312	-----	0.061
		Wi-Fi	0.060
		Bluetooth	0.058
WCDMA Band V	4132	-----	0.085
		Wi-Fi	0.084
		Bluetooth	0.081



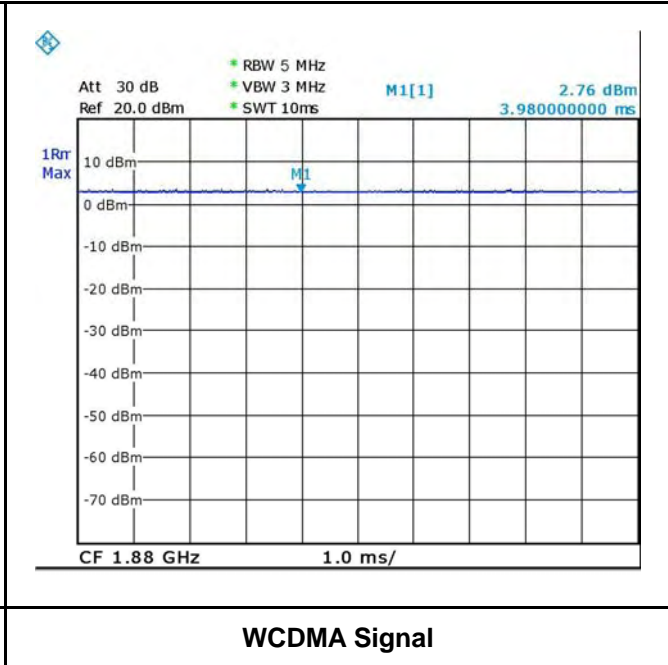
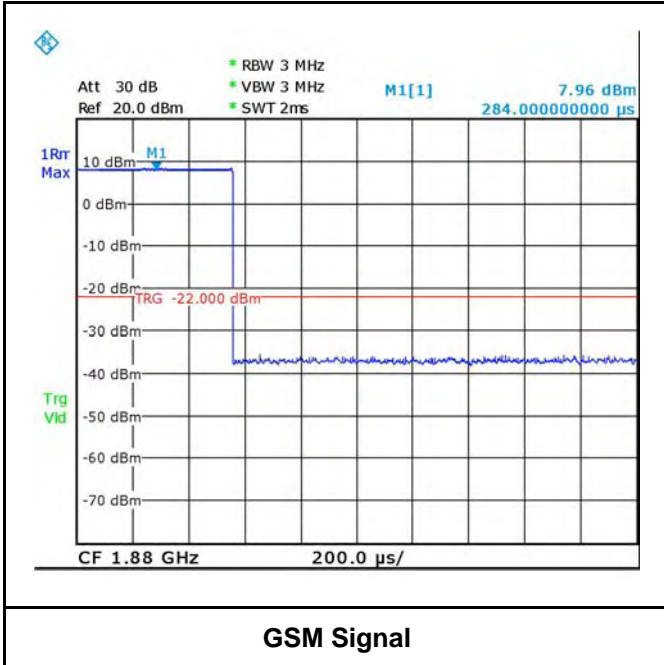
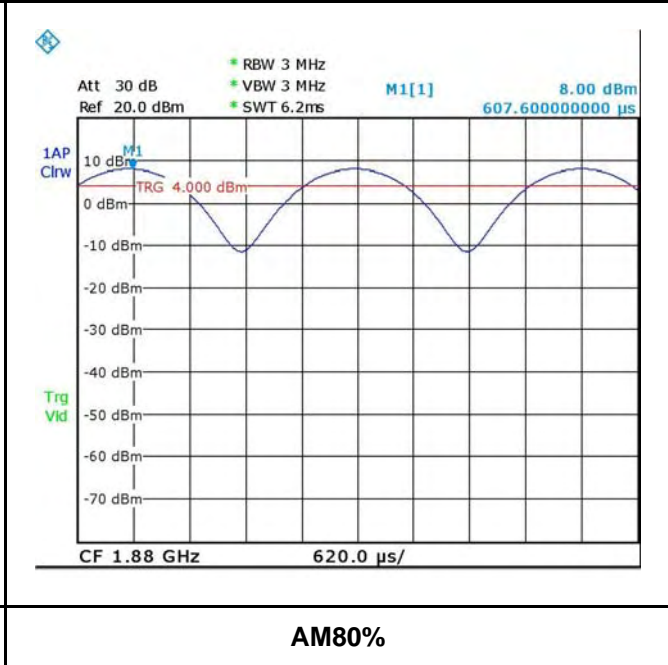
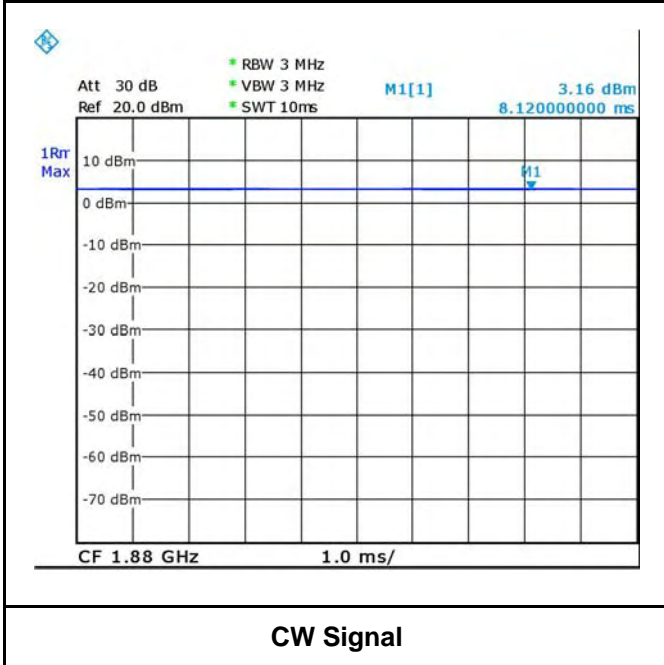
Appendix A - Details of WD signal

835 MHz





1880 MHz





Appendix B - Validation

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 10:21:21 AM

HAC_System Performance Check at 835MHz_20110713_E

DUT: Dipole 835 MHz; Type: CD835V3; Serial: CD835V3 - SN:1149

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

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

Phantom section: E Dipole Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - 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 = 178.9 V/m

Probe Modulation Factor = 1

Device Reference Point: 0, 0, 354.7 mm

Reference Value = 131.9 V/m; Power Drift = 0.021 dB

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

Cursor:

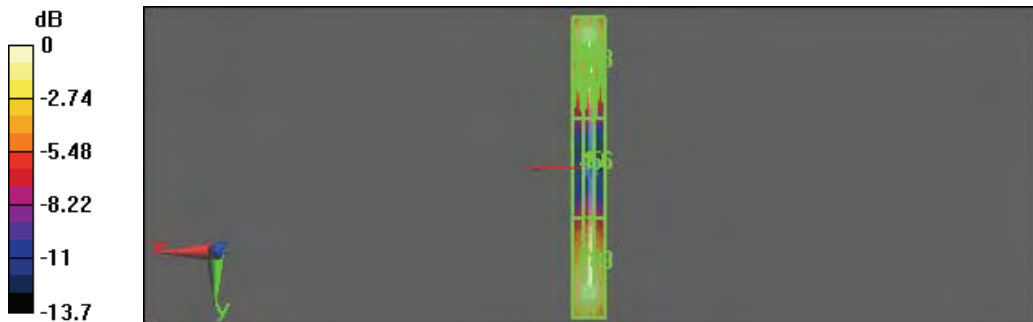
Total = 193.2 V/m

E Category: M4

Location: 0.5, -79, 364.7 mm

Peak E-field in V/m

Grid 1 187.9 M4	Grid 2 193.2 M4	Grid 3 178.6 M4
Grid 4 91.9 M4	Grid 5 93.9 M4	Grid 6 89.2 M4
Grid 7 175.6 M4	Grid 8 178.9 M4	Grid 9 169.5 M4



0 dB = 193.2V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 10:02:50 AM

HAC_System Performance Check at 835MHz_20110729_E

DUT: Dipole 835 MHz; Type: CD835V3; Serial: CD835V3 - SN:1149

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Dipole Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

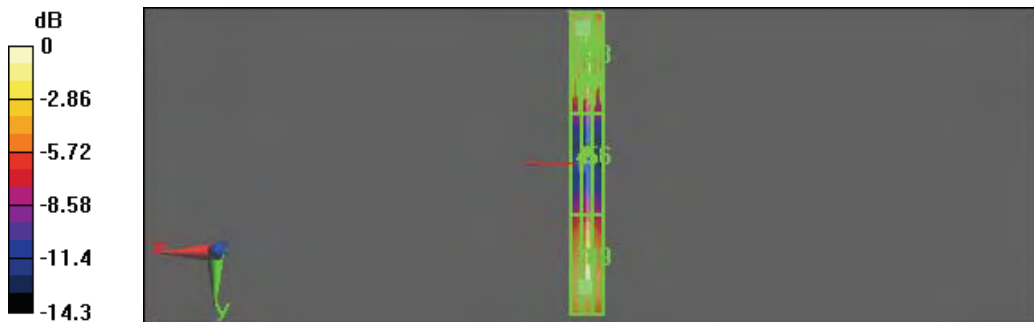
E Scan - ER3DV6 - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 177.8 V/m
 Probe Modulation Factor = 1
 Device Reference Point: 0, 0, 354.7 mm
 Reference Value = 134.1 V/m; Power Drift = -0.00808 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 205.0 V/m
 E Category: M3
 Location: 2, -80.5, 364.7 mm

Peak E-field in V/m

Grid 1 202.5 M3	Grid 2 205.0 M3	Grid 3 187.9 M4
Grid 4 93.7 M4	Grid 5 96.1 M4	Grid 6 91.3 M4
Grid 7 172.8 M4	Grid 8 177.8 M4	Grid 9 168.8 M4



0 dB = 205.0V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 10:50:43 AM

HAC_System Performance Check at 1880MHz_20110713_E

DUT: Dipole 1880 MHz; Type: CD1880V3; Serial: CD1880V3 - SN:1135

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Dipole Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

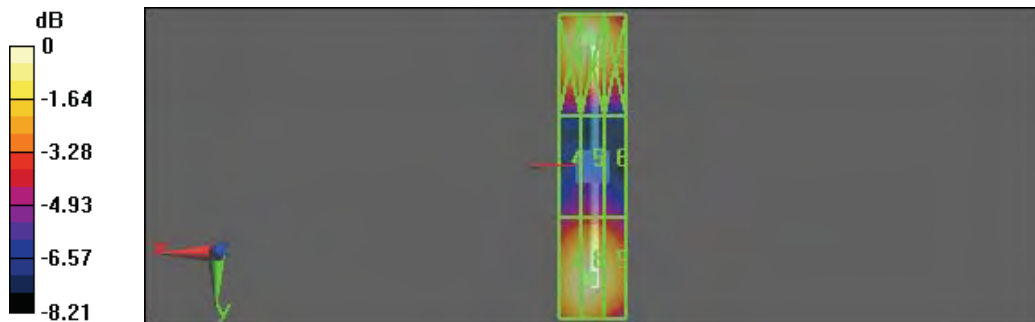
E Scan - ER3DV6 - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 141.9 V/m
 Probe Modulation Factor = 1
 Device Reference Point: 0, 0, 354.7 mm
 Reference Value = 146.7 V/m; Power Drift = -0.027 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Cursor:
 Total = 145.4 V/m
 E Category: M2
 Location: 1.5, -38, 364.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
143.5 M2	145.4 M2	133.5 M2
Grid 4	Grid 5	Grid 6
90 M3	92.8 M3	89.2 M3
Grid 7	Grid 8	Grid 9
139.6 M2	141.9 M2	133.4 M2





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 10:20:04 AM

HAC_System Performance Check at 1880MHz_20110729_E

DUT: Dipole 1880 MHz; Type: CD1880V3; Serial: CD1880V3 - SN:1135

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
Phantom section: E Dipole Section
Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

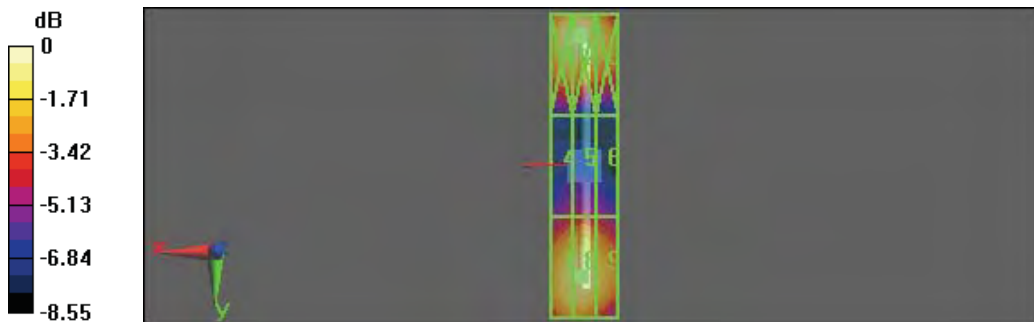
E Scan - ER3DV6 - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 142.0 V/m
Probe Modulation Factor = 1
Device Reference Point: 0, 0, 354.7 mm
Reference Value = 144.5 V/m; Power Drift = -0.00758 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Cursor:
Total = 152.8 V/m
E Category: M2
Location: 1.5, -38.5, 364.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
151.4 M2	152.8 M2	138.9 M2
Grid 4	Grid 5	Grid 6
92.8 M3	95.5 M3	91.4 M3
Grid 7	Grid 8	Grid 9
139.6 M2	142.0 M2	133.5 M2



0 dB = 152.8V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 9:56:38 AM

HAC_System Performance Check at 835MHz_20110713_H

DUT: Dipole 835 MHz; Type: CD835V3; Serial: CD835V3 - SN:1149

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Dipole Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - 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 = 0.456 A/m

Probe Modulation Factor = 1

Device Reference Point: 0, 0, 354.7 mm

Reference Value = 0.483 A/m; Power Drift = -0.00165 dB

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

Cursor:

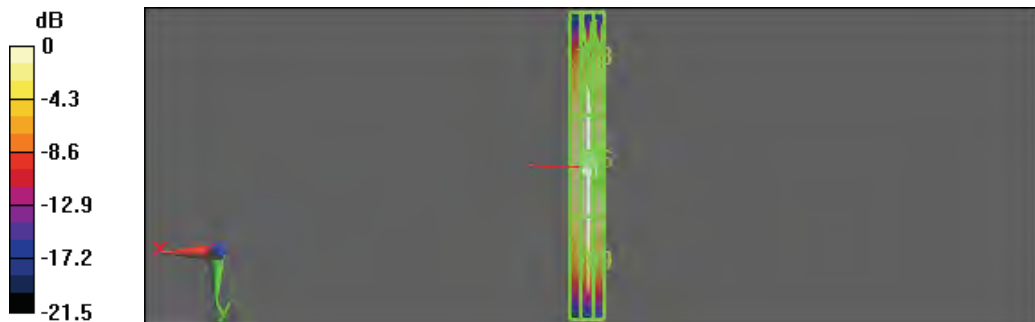
Total = 0.456 A/m

H Category: M4

Location: -1, -3.5, 364.7 mm

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.386 M4	0.417 M4	0.404 M4
Grid 4	Grid 5	Grid 6
0.425 M4	0.456 M4	0.444 M4
Grid 7	Grid 8	Grid 9
0.374 M4	0.405 M4	0.396 M4



0 dB = 0.456A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 9:39:19 AM

HAC_System Performance Check at 835MHz_20110729_H

DUT: Dipole 835 MHz; Type: CD835V3; Serial: CD835V3 - SN:1149

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
Phantom section: H Dipole Section
Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - 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 = 0.462 A/m

Probe Modulation Factor = 1

Device Reference Point: 0, 0, 354.7 mm

Reference Value = 0.487 A/m; Power Drift = 0.00799 dB

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

Cursor:

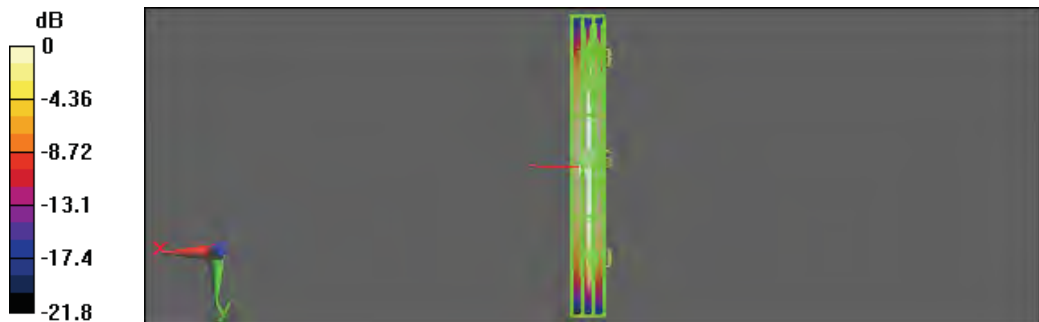
Total = 0.462 A/m

H Category: M4

Location: -1, -5, 364.7 mm

Peak H-field in A/m

Grid 1 0.397 M4	Grid 2 0.427 M4	Grid 3 0.413 M4
Grid 4 0.429 M4	Grid 5 0.462 M4	Grid 6 0.450 M4
Grid 7 0.370 M4	Grid 8 0.403 M4	Grid 9 0.395 M4



0 dB = 0.462A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 11:10:47 AM

HAC_System Performance Check at 1880MHz_20110713_H

DUT: Dipole 1880 MHz; Type: CD1880V3; Serial: CD1880V3 - SN:1135

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Dipole Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

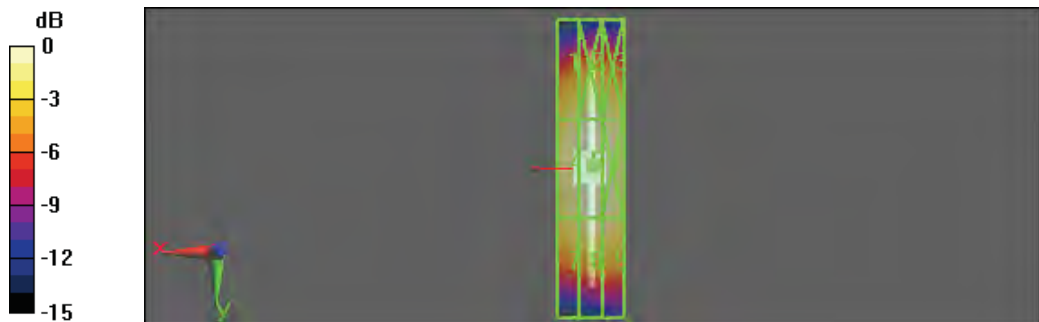
H Scan - H3DV6 - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.447 A/m
 Probe Modulation Factor = 1
 Device Reference Point: 0, 0, 354.7 mm
 Reference Value = 0.473 A/m; Power Drift = -0.00653 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Cursor:
 Total = 0.447 A/m
 H Category: M2
 Location: -1, -0.5, 364.7 mm

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.385 M2	0.413 M2	0.403 M2
Grid 4	Grid 5	Grid 6
0.419 M2	0.447 M2	0.438 M2
Grid 7	Grid 8	Grid 9
0.380 M2	0.405 M2	0.400 M2



0 dB = 0.447A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 10:50:33 AM

HAC_System Performance Check at 1880MHz_20110729_H

DUT: Dipole 1880 MHz; Type: CD1880V3; Serial: CD1880V3 - SN:1135

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Dipole Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

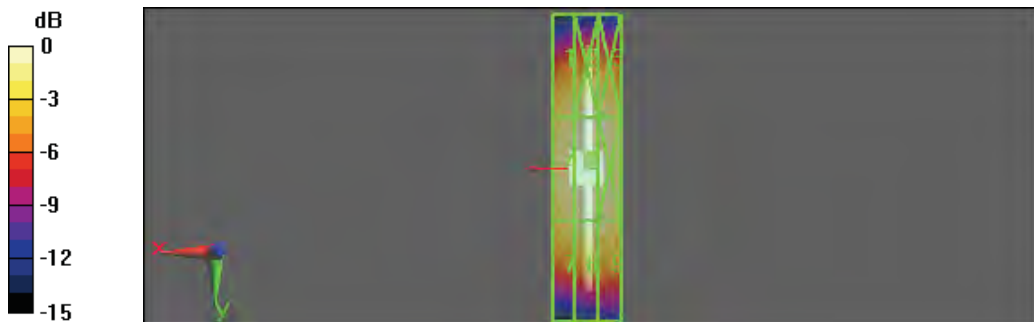
H Scan - H3DV6 - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.444 A/m
 Probe Modulation Factor = 1
 Device Reference Point: 0, 0, 354.7 mm
 Reference Value = 0.468 A/m; Power Drift = -0.00853 dB
Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Cursor:
 Total = 0.444 A/m
 H Category: M2
 Location: -1, -2.5, 364.7 mm

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.387 M2	0.415 M2	0.403 M2
Grid 4	Grid 5	Grid 6
0.417 M2	0.444 M2	0.435 M2
Grid 7	Grid 8	Grid 9
0.373 M2	0.399 M2	0.394 M2



0 dB = 0.444A/m



Appendix C - HAC distribution plots for E-Field and H-Field

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 4:12:52 PM

HAC_GSM850 CH128_E_ Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 200.9 V/m
 Probe Modulation Factor = 2.57

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 98.2 V/m; Power Drift = -0.024 dB

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

Cursor:

Total = 200.9 V/m

E Category: M3

Location: -5.5, -1.5, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
175.2 M3	197.7 M3	196.5 M3
Grid 4	Grid 5	Grid 6
177.0 M3	200.9 M3	199.6 M3
Grid 7	Grid 8	Grid 9
173.2 M3	197.0 M3	195.6 M3





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 4:47:59 PM

HAC_GSM850 CH128_E_Sample 1 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 191.4 V/m
 Probe Modulation Factor = 2.57

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 92.8 V/m; Power Drift = 0.028 dB

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

Cursor:

Total = 191.4 V/m

E Category: M3

Location: -5.5, -1, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
166.8 M3	188.7 M3	187.3 M3
Grid 4	Grid 5	Grid 6
169.4 M3	191.4 M3	189.9 M3
Grid 7	Grid 8	Grid 9
166.4 M3	186.8 M3	185.9 M3





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 2:47:58 PM

HAC_GSM850 CH128_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 186.8 V/m
 Probe Modulation Factor = 2.57

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 92 V/m; Power Drift = -0.025 dB

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

Cursor:

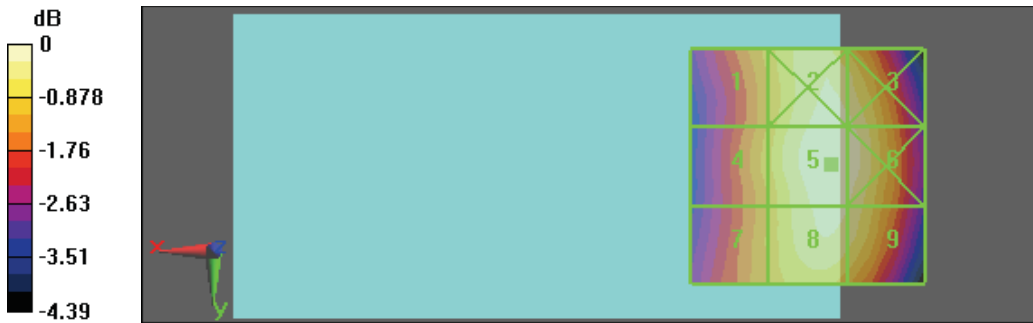
Total = 186.8 V/m

E Category: M3

Location: -5, -0.5, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
166.1 M3	184.4 M3	182.8 M3
Grid 4	Grid 5	Grid 6
167.0 M3	186.8 M3	185.4 M3
Grid 7	Grid 8	Grid 9
164.5 M3	183.3 M3	180.8 M3





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 4:34:36 PM

HAC_GSM850 CH190_E_Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 184.2 V/m

Probe Modulation Factor = 2.57

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 90.1 V/m; Power Drift = -0.060 dB

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

Cursor:

Total = 184.2 V/m

E Category: M3

Location: -6, -2.5, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
159.7 M3	181.5 M3	180.5 M3
Grid 4	Grid 5	Grid 6
162.9 M3	184.2 M3	183.3 M3
Grid 7	Grid 8	Grid 9
160.8 M3	180.5 M3	179.4 M3





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 2:56:03 PM

HAC_GSM850 CH190_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 189.6 V/m

Probe Modulation Factor = 2.57

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 92.2 V/m; Power Drift = -0.00346 dB

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

Cursor:

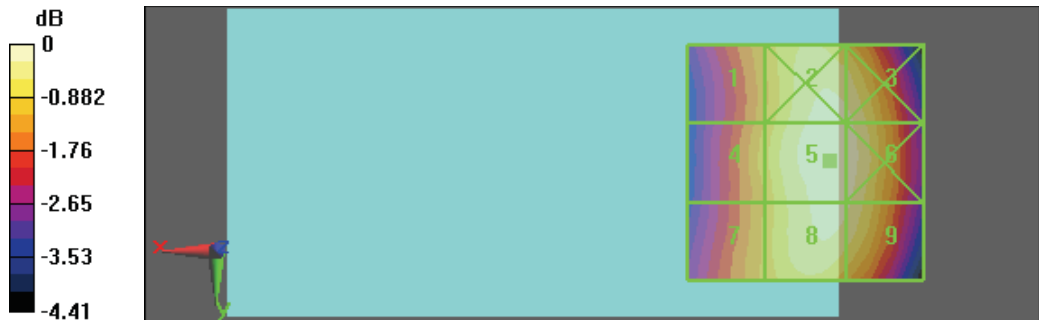
Total = 189.6 V/m

E Category: M3

Location: -5, -0.5, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
166.3 M3	187.0 M3	185.6 M3
Grid 4	Grid 5	Grid 6
169.9 M3	189.6 M3	187.9 M3
Grid 7	Grid 8	Grid 9
168.0 M3	186.7 M3	184.8 M3



0 dB = 189.6V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 4:40:11 PM

HAC_GSM850 CH251_E_ Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 162.6 V/m

Probe Modulation Factor = 2.56

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 79.1 V/m; Power Drift = -0.00819 dB

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

Cursor:

Total = 162.6 V/m

E Category: M3

Location: -5.5, -0.5, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
140.0 M4	159.8 M3	159.4 M3
Grid 4	Grid 5	Grid 6
142.5 M4	162.6 M3	161.1 M3
Grid 7	Grid 8	Grid 9
140.6 M4	159.6 M3	158.4 M3





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 3:01:31 PM

HAC_GSM850 CH251_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 189.8 V/m
 Probe Modulation Factor = 2.57

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 92.2 V/m; Power Drift = -0.063 dB

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

Cursor:

Total = 189.8 V/m

E Category: M3

Location: -5.5, -2, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
165.2 M3	186.4 M3	186.0 M3
Grid 4	Grid 5	Grid 6
168.8 M3	189.8 M3	188.8 M3
Grid 7	Grid 8	Grid 9
168.6 M3	187.1 M3	185.1 M3



0 dB = 189.8V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 3:12:44 PM

HAC_GSM850 CH251_E_ Sample 2 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 184.8 V/m
 Probe Modulation Factor = 2.57

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 90 V/m; Power Drift = -0.032 dB

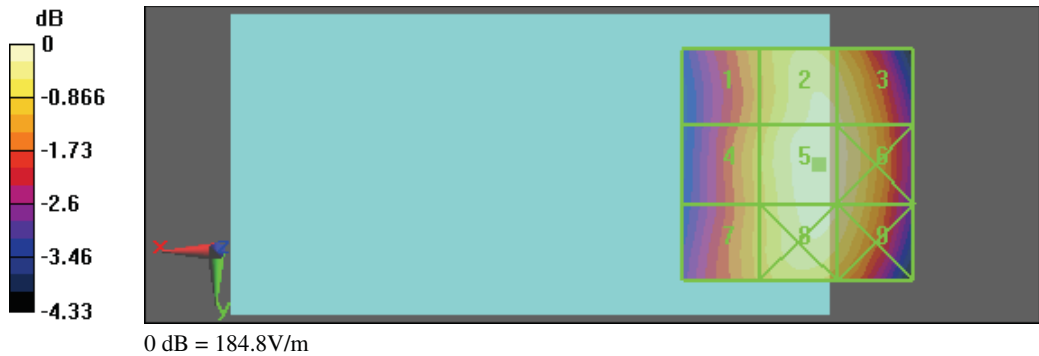
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Cursor:

Total = 184.8 V/m
 E Category: M3
 Location: -4.5, 0, 368.7 mm

Peak E-field in V/m

Grid 1 162.1 M3	Grid 2 181.3 M3	Grid 3 180.3 M3
Grid 4 165.8 M3	Grid 5 184.8 M3	Grid 6 182.1 M3
Grid 7 164.5 M3	Grid 8 182.1 M3	Grid 9 180.0 M3





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 5:58:41 PM

HAC_PCS CH512_E Sample 1 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 33.9 V/m
 Probe Modulation Factor = 2.53

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 7.98 V/m; Power Drift = 0.139 dB

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

Cursor:

Total = 35.4 V/m
 E Category: M4
 Location: 1.5, -25, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
35.1 M4	35.4 M4	33.6 M4
Grid 4	Grid 5	Grid 6
20.8 M4	23.9 M4	23.6 M4
Grid 7	Grid 8	Grid 9
31.9 M4	33.9 M4	32.1 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 5:01:49 PM

HAC_PCS CH512_E_ Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

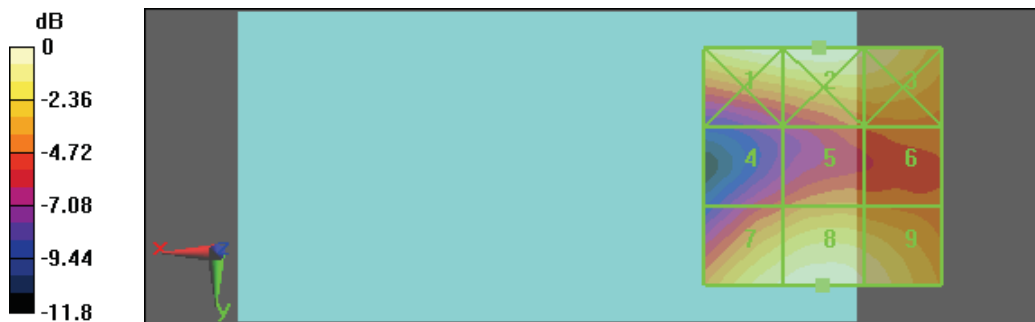
E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 36 V/m
 Probe Modulation Factor = 2.53
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 7.89 V/m; Power Drift = 0.129 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Cursor:
 Total = 36.4 V/m
 E Category: M4
 Location: 1, -25, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
35.7 M4	36.4 M4	34.1 M4
Grid 4	Grid 5	Grid 6
20.9 M4	24.1 M4	23.6 M4
Grid 7	Grid 8	Grid 9
34.1 M4	36 M4	33.7 M4



0 dB = 36.4V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 3:43:26 PM

HAC_PCS CH512_E_ Sample 2 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 32.2 V/m

Probe Modulation Factor = 2.53

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 10.8 V/m; Power Drift = -0.00374 dB

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

Cursor:

Total = 37.9 V/m

E Category: M4

Location: -0.5, 25, 368.7 mm

Peak E-field in V/m

Grid 1 31.8 M4	Grid 2 32.2 M4	Grid 3 30.7 M4
Grid 4 25.1 M4	Grid 5 28.7 M4	Grid 6 28.2 M4
Grid 7 36.1 M4	Grid 8 37.9 M4	Grid 9 35.9 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 3:20:18 PM

HAC_PCS CH512_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 32.8 V/m
 Probe Modulation Factor = 2.53

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 11.1 V/m; Power Drift = 0.018 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Cursor:

Total = 39 V/m
 E Category: M4
 Location: -0.5, 25, 368.7 mm

Peak E-field in V/m

Grid 1 32.1 M4	Grid 2 32.8 M4	Grid 3 31.7 M4
Grid 4 25.3 M4	Grid 5 29.3 M4	Grid 6 28.6 M4
Grid 7 37 M4	Grid 8 39 M4	Grid 9 37 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 5:17:48 PM

HAC_PCS CH661_E_ Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
Phantom section: E Device Section
Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 28.9 V/m
Probe Modulation Factor = 2.53

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 6.55 V/m; Power Drift = 0.054 dB

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

Cursor:

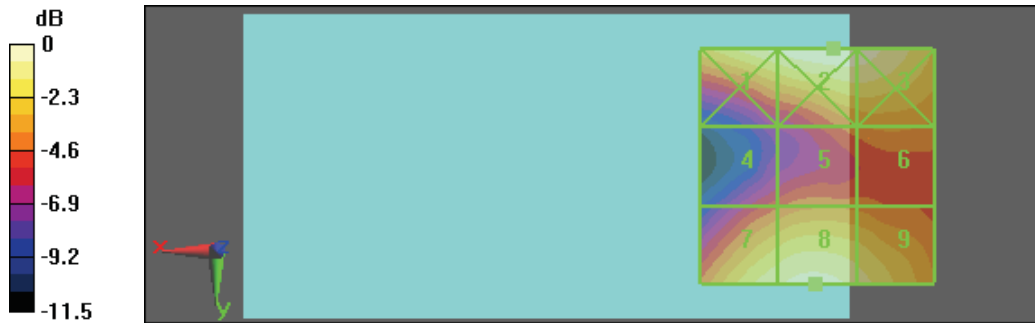
Total = 30.4 V/m

E Category: M4

Location: -3.5, -25, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
28.9 M4	30.4 M4	29.6 M4
Grid 4	Grid 5	Grid 6
17.6 M4	19.3 M4	20.1 M4
Grid 7	Grid 8	Grid 9
27.6 M4	28.9 M4	26.8 M4



0 dB = 30.4V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 3:25:43 PM

HAC_PCS CH661_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1880 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 28.2 V/m

Probe Modulation Factor = 2.53

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 9.65 V/m; Power Drift = 0.00755 dB

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

Cursor:

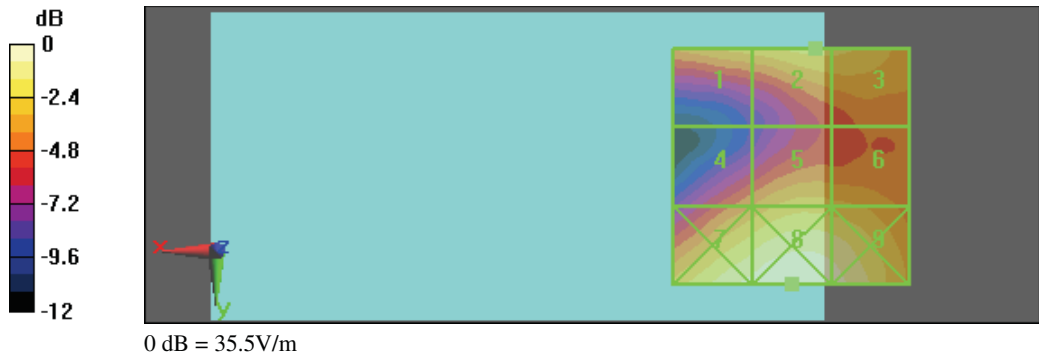
Total = 35.5 V/m

E Category: M4

Location: 0, 25, 368.7 mm

Peak E-field in V/m

Grid 1 26.2 M4	Grid 2 28.2 M4	Grid 3 27.9 M4
Grid 4 22.6 M4	Grid 5 26.1 M4	Grid 6 25.7 M4
Grid 7 33.6 M4	Grid 8 35.5 M4	Grid 9 33.8 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 5:27:23 PM

HAC_PCS CH810_E_ Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 26.8 V/m
 Probe Modulation Factor = 2.53

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 6.66 V/m; Power Drift = -0.177 dB

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

Cursor:

Total = 28.1 V/m

E Category: M4

Location: -0.5, -25, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
26.9 M4	28.1 M4	27.1 M4
Grid 4	Grid 5	Grid 6
17.2 M4	18.8 M4	19.5 M4
Grid 7	Grid 8	Grid 9
26.2 M4	26.8 M4	23.3 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 3:31:31 PM

HAC_PCS CH810_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 26.7 V/m
 Probe Modulation Factor = 2.53

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 7.16 V/m; Power Drift = -0.132 dB

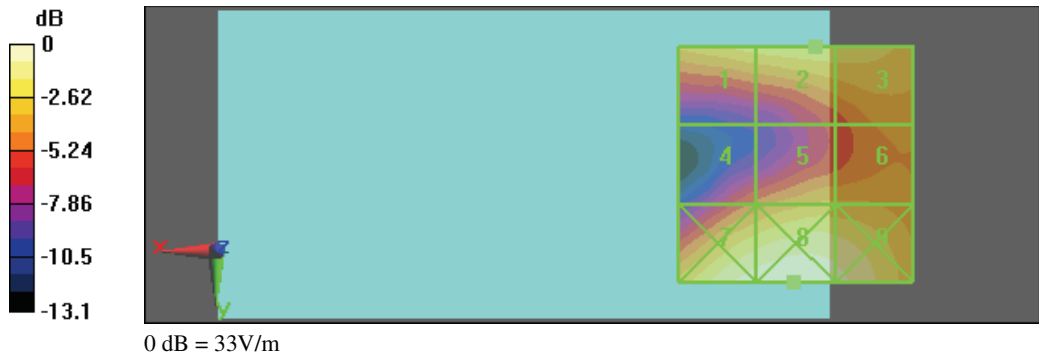
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Cursor:

Total = 33 V/m
 E Category: M4
 Location: 0.5, 25, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
26 M4	26.7 M4	26.5 M4
Grid 4	Grid 5	Grid 6
18.9 M4	22.7 M4	22.6 M4
Grid 7	Grid 8	Grid 9
31.7 M4	33 M4	31 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 6:32:54 PM

HAC_WCDMA Band II CH9262_E_Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 20.8 V/m

Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 12.9 V/m; Power Drift = -0.00199 dB

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

Cursor:

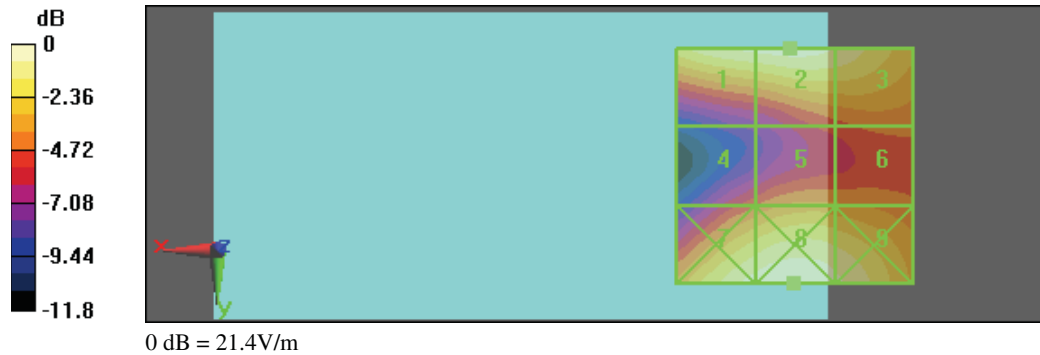
Total = 21.4 V/m

E Category: M4

Location: 0.5, 25, 368.7 mm

Peak E-field in V/m

Grid 1 20.3 M4	Grid 2 20.8 M4	Grid 3 19.7 M4
Grid 4 12.5 M4	Grid 5 14.3 M4	Grid 6 14 M4
Grid 7 20.5 M4	Grid 8 21.4 M4	Grid 9 20 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 7:28:20 PM

HAC_WCDMA Band II CH9262_E_Sample 1 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 20.6 V/m
 Probe Modulation Factor = 0.900
 Device Reference Point: 0, 0, 353.7 mm

Reference Value = 14 V/m; Power Drift = -0.030 dB

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

Cursor:

Total = 21.8 V/m
 E Category: M4
 Location: 2.5, -25, 368.7 mm

Peak E-field in V/m

Grid 1 21.6 M4	Grid 2 21.8 M4	Grid 3 20.2 M4
Grid 4 12.5 M4	Grid 5 14 M4	Grid 6 13.6 M4
Grid 7 19.8 M4	Grid 8 20.6 M4	Grid 9 19.2 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 3:54:11 PM

HAC_WCDMA Band II CH9262_E_Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 14.7 V/m
 Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 14 V/m; Power Drift = -0.109 dB

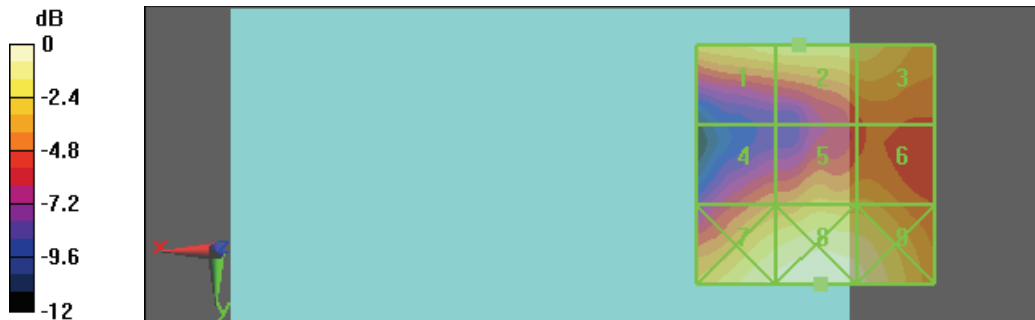
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:

Total = 17.7 V/m
 E Category: M4
 Location: -1, 25, 368.7 mm

Peak E-field in V/m

Grid 1 14.6 M4	Grid 2 14.7 M4	Grid 3 14.4 M4
Grid 4 11.2 M4	Grid 5 12.8 M4	Grid 6 12.8 M4
Grid 7 16.7 M4	Grid 8 17.7 M4	Grid 9 16.8 M4



0 dB = 17.7V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 6:42:05 PM

HAC_WCDMA Band II CH9400_E_Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
Phantom section: E Device Section
Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125;SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 18.3 V/m
Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 10.2 V/m; Power Drift = 0.174 dB

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

Cursor:

Total = 18.4 V/m

E Category: M4

Location: 0.5, 25, 368.7 mm

Peak E-field in V/m

Grid 1 17.4 M4	Grid 2 18.3 M4	Grid 3 17.9 M4
Grid 4 10.7 M4	Grid 5 11.9 M4	Grid 6 12 M4
Grid 7 17.5 M4	Grid 8 18.4 M4	Grid 9 17.1 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 4:01:26 PM

HAC_WCDMA Band II CH9400_E_Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 14.1 V/m

Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 12 V/m; Power Drift = 0.00298 dB

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

Cursor:

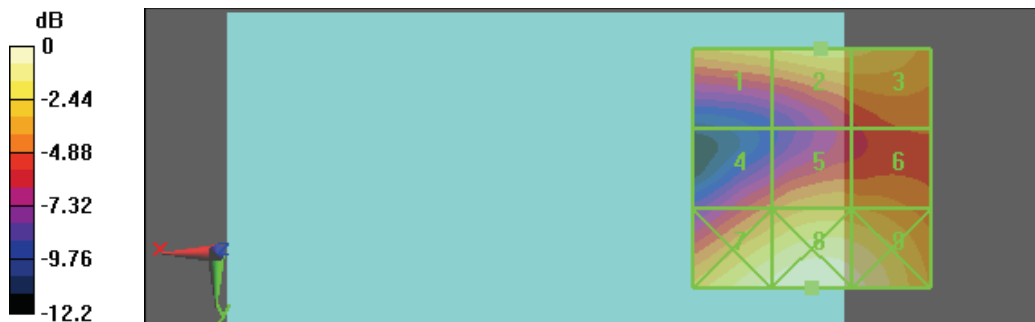
Total = 17.6 V/m

E Category: M4

Location: 0, 25, 368.7 mm

Peak E-field in V/m

Grid 1 13.4 M4	Grid 2 14.1 M4	Grid 3 13.8 M4
Grid 4 10.6 M4	Grid 5 12.4 M4	Grid 6 12.2 M4
Grid 7 16.7 M4	Grid 8 17.6 M4	Grid 9 16.7 M4



0 dB = 17.6V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 7:40:14 PM

HAC_WCDMA Band II CH9538_E_Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASYS, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 15 V/m
 Probe Modulation Factor = 0.900
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 9.52 V/m; Power Drift = 0.031 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 15.8 V/m
 E Category: M4
 Location: 0, -25, 368.7 mm

Peak E-field in V/m

Grid 1 15.1 M4	Grid 2 15.8 M4	Grid 3 15.1 M4
Grid 4 9.21 M4	Grid 5 10.3 M4	Grid 6 10.9 M4
Grid 7 14.7 M4	Grid 8 15 M4	Grid 9 13.3 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 4:08:15 PM

HAC_WCDMA Band II CH9538_E_Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
Phantom section: E Device Section
Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 14.9 V/m

Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 9.65 V/m; Power Drift = -0.00351 dB

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

Cursor:

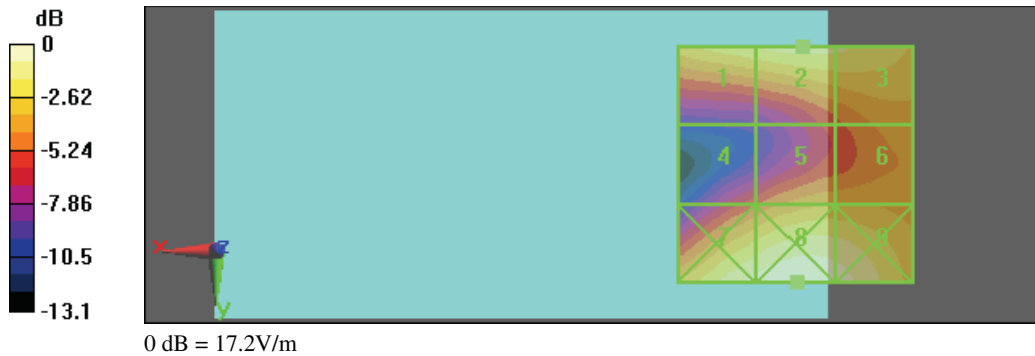
Total = 17.2 V/m

E Category: M4

Location: -0.5, 25, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
14.3 M4	14.9 M4	14.5 M4
Grid 4	Grid 5	Grid 6
9.32 M4	11.5 M4	11.6 M4
Grid 7	Grid 8	Grid 9
16.2 M4	17.2 M4	16.4 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 4:15:31 PM

HAC_WCDMA Band II CH9538_E_Sample 2 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 14.5 V/m
 Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 8.12 V/m; Power Drift = 0.154 dB

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

Cursor:

Total = 16.6 V/m
 E Category: M4
 Location: 0, 25, 368.7 mm

Peak E-field in V/m

Grid 1 14.2 M4	Grid 2 14.5 M4	Grid 3 14 M4
Grid 4 8.8 M4	Grid 5 11 M4	Grid 6 11.1 M4
Grid 7 15.7 M4	Grid 8 16.6 M4	Grid 9 15.8 M4



0 dB = 16.6V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 10:17:15 PM

HAC_WCDMA Band IV CH1312_E_ Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
Phantom section: E Device Section
Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 21 V/m
Probe Modulation Factor = 0.900
Device Reference Point: 0, 0, 353.7 mm
Reference Value = 17.5 V/m; Power Drift = -0.062 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
Total = 25.9 V/m
E Category: M4
Location: 2, 25, 368.7 mm

Peak E-field in V/m

Grid 1 21 M4	Grid 2 19.3 M4	Grid 3 17 M4
Grid 4 16.4 M4	Grid 5 18.2 M4	Grid 6 17.8 M4
Grid 7 25.5 M4	Grid 8 25.9 M4	Grid 9 23.8 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 9:39:46 PM

HAC_WCDMA Band IV CH1312_E_ Sample 1 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 20.8 V/m

Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 16.7 V/m; Power Drift = -0.051 dB

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

Cursor:

Total = 26.1 V/m

E Category: M4

Location: 1, 25, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
20.8 M4	20.1 M4	17.9 M4
Grid 4	Grid 5	Grid 6
16.1 M4	18.4 M4	18 M4
Grid 7	Grid 8	Grid 9
25.5 M4	26.1 M4	24.4 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 4:24:04 PM

HAC_WCDMA Band IV CH1312_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 14.9 V/m

Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 10.9 V/m; Power Drift = 0.029 dB

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

Cursor:

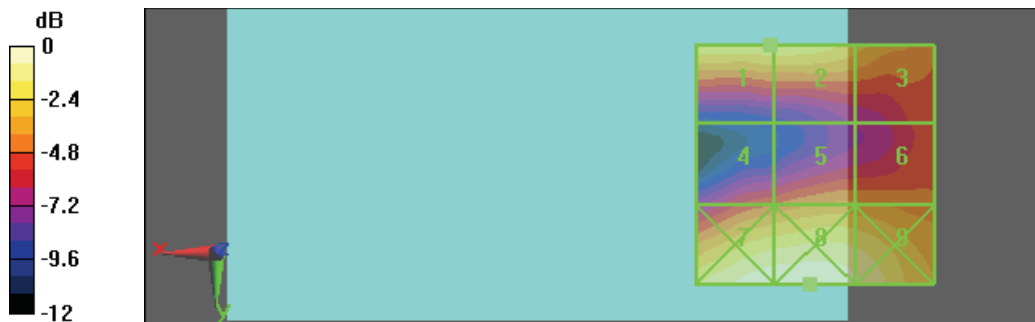
Total = 17.8 V/m

E Category: M4

Location: 1, 25, 368.7 mm

Peak E-field in V/m

Grid 1 14.9 M4	Grid 2 14.9 M4	Grid 3 13 M4
Grid 4 10.4 M4	Grid 5 11.6 M4	Grid 6 11.6 M4
Grid 7 17.7 M4	Grid 8 17.8 M4	Grid 9 16.5 M4



0 dB = 17.8V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 9:50:52 PM

HAC_WCDMA Band IV CH1413_E_ Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 20.2 V/m
 Probe Modulation Factor = 0.900
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 16.5 V/m; Power Drift = -0.032 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 25.3 V/m
 E Category: M4
 Location: 1, 25, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
20.2 M4	19.2 M4	16.9 M4
Grid 4	Grid 5	Grid 6
15.6 M4	17.8 M4	17.5 M4
Grid 7	Grid 8	Grid 9
24.5 M4	25.3 M4	23.6 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 4:34:14 PM

HAC_WCDMA Band IV CH1413_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 13.9 V/m

Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 9.18 V/m; Power Drift = -0.104 dB

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

Cursor:

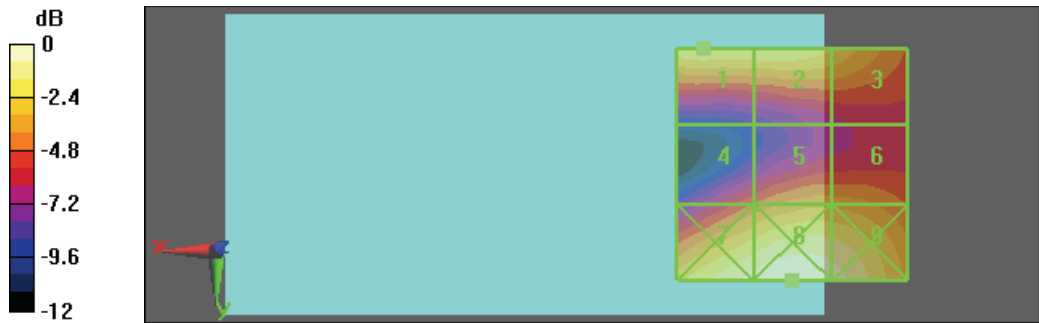
Total = 16.4 V/m

E Category: M4

Location: 0, 25, 368.7 mm

Peak E-field in V/m

Grid 1 13.9 M4	Grid 2 13.9 M4	Grid 3 12.6 M4
Grid 4 9.44 M4	Grid 5 11.1 M4	Grid 6 11 M4
Grid 7 15.6 M4	Grid 8 16.4 M4	Grid 9 15.6 M4



0 dB = 16.4V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 10:03:32 PM

HAC_WCDMA Band IV CH1513_E_ Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 20.7 V/m

Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 16.8 V/m; Power Drift = -0.045 dB

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

Cursor:

Total = 26.1 V/m

E Category: M4

Location: 1, 25, 368.7 mm

Peak E-field in V/m

Grid 1 20.7 M4	Grid 2 20.1 M4	Grid 3 18 M4
Grid 4 16 M4	Grid 5 18.4 M4	Grid 6 18.1 M4
Grid 7 25.4 M4	Grid 8 26.1 M4	Grid 9 24.4 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 4:49:58 PM

HAC_WCDMA Band IV CH1513_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 16.1 V/m
 Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 10.6 V/m; Power Drift = 0.176 dB

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

Cursor:

Total = 19.2 V/m

E Category: M4

Location: 0, 25, 368.7 mm

Peak E-field in V/m

Grid 1 16.1 M4	Grid 2 16.1 M4	Grid 3 14.8 M4
Grid 4 11 M4	Grid 5 12.9 M4	Grid 6 12.8 M4
Grid 7 18.3 M4	Grid 8 19.2 M4	Grid 9 18.2 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 5:00:50 PM

HAC_WCDMA Band IV CH1513_E_ Sample 2 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

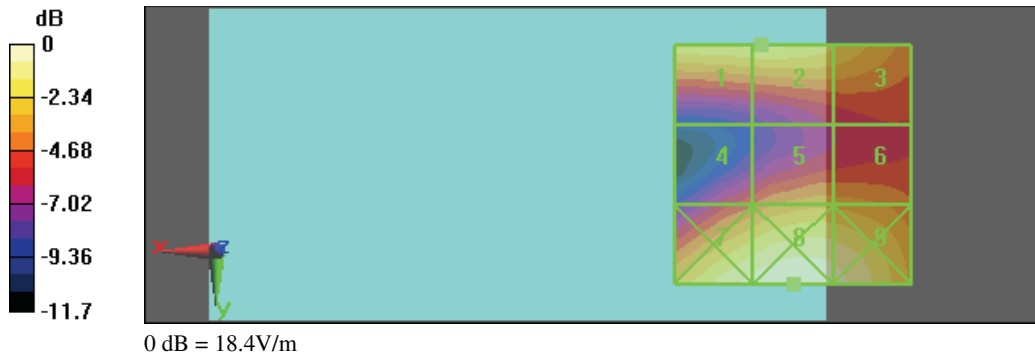
Maximum value of peak Total field = 15.8 V/m
 Probe Modulation Factor = 0.900

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 10.7 V/m; Power Drift = 0.027 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 18.4 V/m
 E Category: M4
 Location: 0, 25, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
15.8 M4	15.8 M4	14.3 M4
Grid 4	Grid 5	Grid 6
10.8 M4	12.6 M4	12.6 M4
Grid 7	Grid 8	Grid 9
17.5 M4	18.4 M4	17.5 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 8:39:02 PM

HAC_WCDMA Band V CH4132_E_Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 66.9 V/m
 Probe Modulation Factor = 1.01

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 83 V/m; Power Drift = -0.022 dB

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

Cursor:

Total = 66.9 V/m
 E Category: M4
 Location: -5, -1, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
58.2 M4	65.8 M4	65.3 M4
Grid 4	Grid 5	Grid 6
59.4 M4	66.9 M4	66.4 M4
Grid 7	Grid 8	Grid 9
58.4 M4	65.7 M4	65 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 9:08:03 PM

HAC_WCDMA Band V CH4132_E_Sample 1 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 66.7 V/m
 Probe Modulation Factor = 1.01

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 80 V/m; Power Drift = 0.181 dB

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

Cursor:

Total = 66.7 V/m
 E Category: M4
 Location: -5, -1, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
57.8 M4	65.6 M4	65.1 M4
Grid 4	Grid 5	Grid 6
58.9 M4	66.7 M4	66.2 M4
Grid 7	Grid 8	Grid 9
58.1 M4	65.4 M4	64.8 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 5:11:06 PM

HAC_WCDMA Band V CH4132_E_Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 72.9 V/m

Probe Modulation Factor = 1.01

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 87.1 V/m; Power Drift = 0.000347 dB

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

Cursor:

Total = 72.9 V/m

E Category: M4

Location: -7, -2, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
63.3 M4	71.9 M4	71.7 M4
Grid 4	Grid 5	Grid 6
62.2 M4	72.9 M4	72.8 M4
Grid 7	Grid 8	Grid 9
61.1 M4	71.5 M4	71.2 M4



0 dB = 72.9V/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 5:31:22 PM

HAC_WCDMA Band V CH4132_E_ Sample 2 with Battery#2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 70.8 V/m

Probe Modulation Factor = 1.01

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 87.4 V/m; Power Drift = -0.00787 dB

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

Cursor:

Total = 70.8 V/m

E Category: M4

Location: -6, -2, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
62.3 M4	69.8 M4	69.5 M4
Grid 4	Grid 5	Grid 6
62.3 M4	70.8 M4	70.4 M4
Grid 7	Grid 8	Grid 9
61.1 M4	69.4 M4	69.1 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 8:48:02 PM

HAC_WCDMA Band V CH4183_E_Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 61.9 V/m
 Probe Modulation Factor = 1.04

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 75.1 V/m; Power Drift = -0.100 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 61.9 V/m
 E Category: M4
 Location: -5, -0.5, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
53.6 M4	60.9 M4	60.2 M4
Grid 4	Grid 5	Grid 6
54.8 M4	61.9 M4	61.1 M4
Grid 7	Grid 8	Grid 9
54 M4	60.8 M4	60.1 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 5:18:59 PM

HAC_WCDMA Band V CH4183_E_ Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

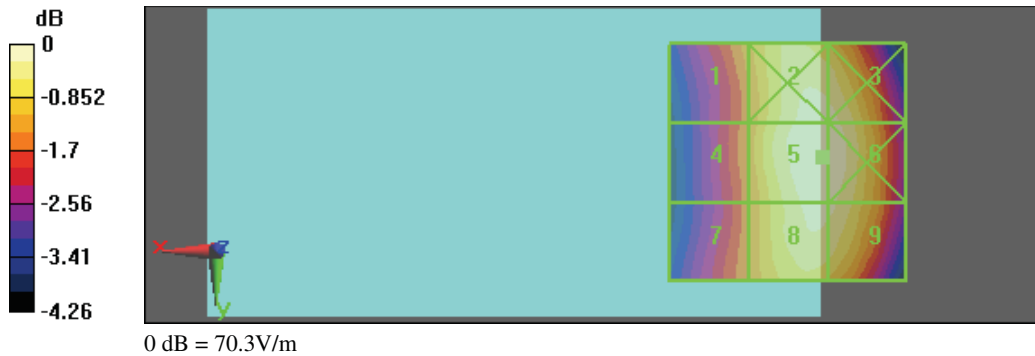
Maximum value of peak Total field = 70.3 V/m
 Probe Modulation Factor = 1.01

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 84.5 V/m; Power Drift = 0.013 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 70.3 V/m
 E Category: M4
 Location: -7.5, -1, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
61 M4	69.5 M4	69.2 M4
Grid 4	Grid 5	Grid 6
60.1 M4	70.3 M4	70.2 M4
Grid 7	Grid 8	Grid 9
59.7 M4	68.9 M4	68.7 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 8:56:33 PM

HAC_WCDMA Band V CH4233_E_Sample 1 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 846.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 51.7 V/m

Probe Modulation Factor = 1.04

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 62.1 V/m; Power Drift = -0.013 dB

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

Cursor:

Total = 51.7 V/m

E Category: M4

Location: -5.5, -1.5, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
44.5 M4	50.9 M4	50.6 M4
Grid 4	Grid 5	Grid 6
45.5 M4	51.7 M4	51.3 M4
Grid 7	Grid 8	Grid 9
44.9 M4	50.7 M4	50.2 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 5:24:36 PM

HAC_WCDMA Band V CH4233_E_Sample 2 with Battery#1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 846.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: ER3DV6R - SN2256; ConvF(1, 1, 1); Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

E Scan - ER3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

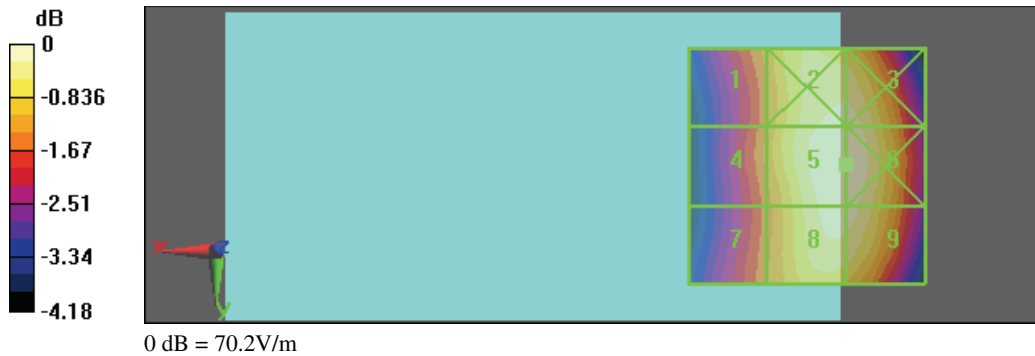
Maximum value of peak Total field = 70.2 V/m
 Probe Modulation Factor = 1.01

Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 84.8 V/m; Power Drift = -0.037 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 70.2 V/m
 E Category: M4
 Location: -8.5, -0.5, 368.7 mm

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
60.9 M4	69.2 M4	69.2 M4
Grid 4	Grid 5	Grid 6
60.5 M4	70.2 M4	70.2 M4
Grid 7	Grid 8	Grid 9
59.5 M4	69.2 M4	69 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 12:00:03 PM

HAC_GSM850 CH128_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.305 A/m

Probe Modulation Factor = 2.68

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.093 A/m; Power Drift = -0.058 dB

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

Cursor:

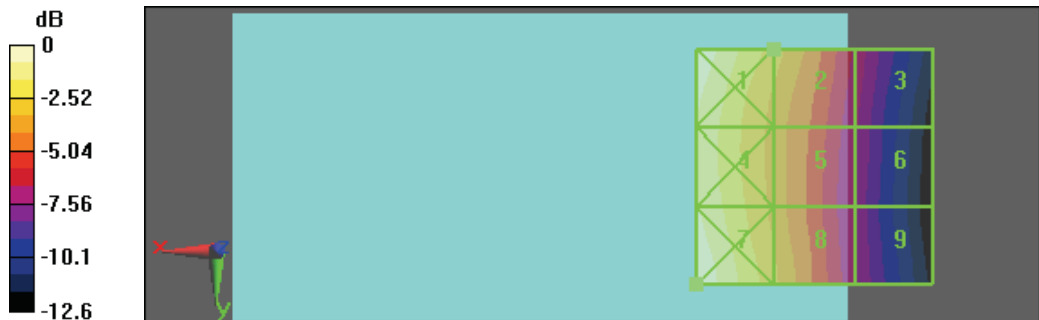
Total = 0.426 A/m

H Category: M4

Location: 25, 25, 368.7 mm

Peak H-field in A/m

Grid 1 0.423 M4	Grid 2 0.305 M4	Grid 3 0.194 M4
Grid 4 0.391 M4	Grid 5 0.281 M4	Grid 6 0.183 M4
Grid 7 0.426 M4	Grid 8 0.297 M4	Grid 9 0.182 M4



0 dB = 0.426A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 1:10:39 PM

HAC_GSM850 CH128_H_Sample 1 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

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

Phantom section: H Device Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.280 A/m

Probe Modulation Factor = 2.68

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.085 A/m; Power Drift = -0.029 dB

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

Cursor:

Total = 0.390 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.390 M4	Grid 2 0.280 M4	Grid 3 0.180 M4
Grid 4 0.356 M4	Grid 5 0.260 M4	Grid 6 0.169 M4
Grid 7 0.390 M4	Grid 8 0.274 M4	Grid 9 0.169 M4



0 dB = 0.390A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 11:26:45 AM

HAC_GSM850 CH128_H_Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.283 A/m

Probe Modulation Factor = 2.68

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.093 A/m; Power Drift = -0.069 dB

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

Cursor:

Total = 0.421 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.421 M4	Grid 2 0.283 M4	Grid 3 0.184 M4
Grid 4 0.383 M4	Grid 5 0.261 M4	Grid 6 0.166 M4
Grid 7 0.400 M4	Grid 8 0.282 M4	Grid 9 0.175 M4



0 dB = 0.421A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 12:20:46 PM

HAC_GSM850 CH190_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.273 A/m
 Probe Modulation Factor = 2.68
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.085 A/m; Power Drift = -0.00276 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Cursor:
 Total = 0.380 A/m
 H Category: M4
 Location: 25, 25, 368.7 mm

Peak H-field in A/m

Grid 1 0.378 M4	Grid 2 0.273 M4	Grid 3 0.175 M4
Grid 4 0.350 M4	Grid 5 0.255 M4	Grid 6 0.165 M4
Grid 7 0.380 M4	Grid 8 0.268 M4	Grid 9 0.164 M4



0 dB = 0.380A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 11:32:30 AM

HAC_GSM850 CH190_H_Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.293 A/m

Probe Modulation Factor = 2.68

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.079 A/m; Power Drift = -0.015 dB

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

Cursor:

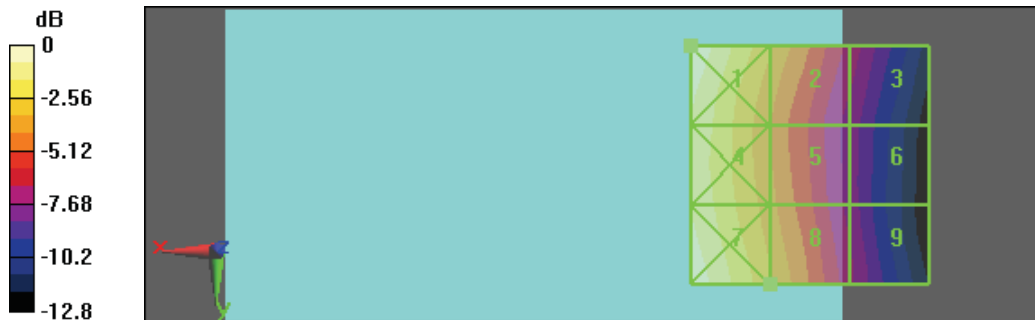
Total = 0.425 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.425 M4	Grid 2 0.292 M4	Grid 3 0.188 M4
Grid 4 0.384 M4	Grid 5 0.271 M4	Grid 6 0.169 M4
Grid 7 0.419 M4	Grid 8 0.293 M4	Grid 9 0.181 M4



0 dB = 0.425A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 1:02:27 PM

HAC_GSM850 CH251_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.231 A/m

Probe Modulation Factor = 2.57

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.076 A/m; Power Drift = 0.025 dB

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

Cursor:

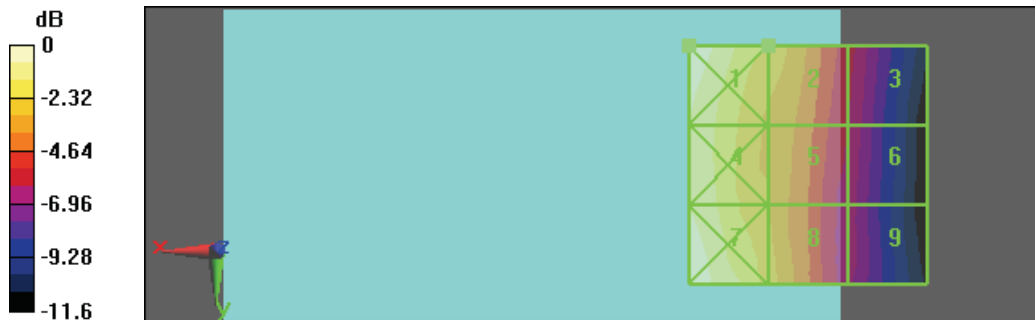
Total = 0.303 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.303 M4	Grid 2 0.231 M4	Grid 3 0.155 M4
Grid 4 0.277 M4	Grid 5 0.215 M4	Grid 6 0.148 M4
Grid 7 0.302 M4	Grid 8 0.223 M4	Grid 9 0.143 M4



0 dB = 0.303A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 12:00:13 PM

HAC_GSM850 CH251_H_Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.316 A/m

Probe Modulation Factor = 2.71

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.100 A/m; Power Drift = -0.045 dB

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

Cursor:

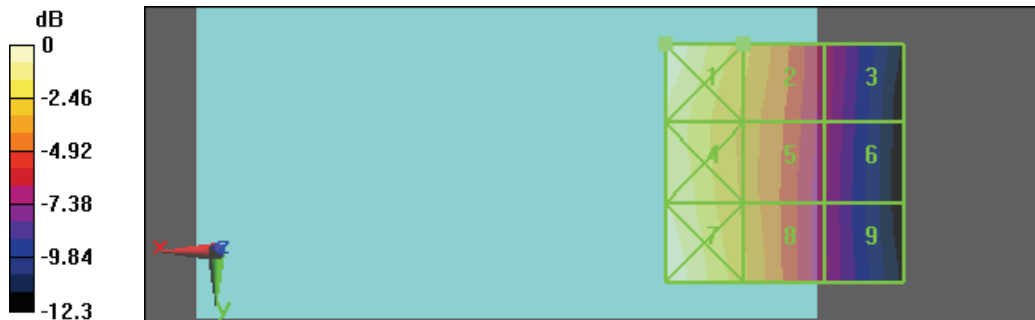
Total = 0.443 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.443 M4	Grid 2 0.316 M4	Grid 3 0.201 M4
Grid 4 0.408 M4	Grid 5 0.298 M4	Grid 6 0.197 M4
Grid 7 0.441 M4	Grid 8 0.310 M4	Grid 9 0.193 M4



0 dB = 0.443A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 12:14:19 PM

HAC_GSM850 CH251_H_Sample 2 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.298 A/m
 Probe Modulation Factor = 2.68
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.095 A/m; Power Drift = 0.00456 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Cursor:
 Total = 0.414 A/m
 H Category: M4
 Location: 25, 25, 368.7 mm

Peak H-field in A/m

Grid 1 0.412 M4	Grid 2 0.298 M4	Grid 3 0.193 M4
Grid 4 0.391 M4	Grid 5 0.286 M4	Grid 6 0.190 M4
Grid 7 0.414 M4	Grid 8 0.294 M4	Grid 9 0.187 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 1:25:31 PM

HAC_PCS CH512_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.110 A/m

Probe Modulation Factor = 2.63

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.046 A/m; Power Drift = -0.025 dB

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

Cursor:

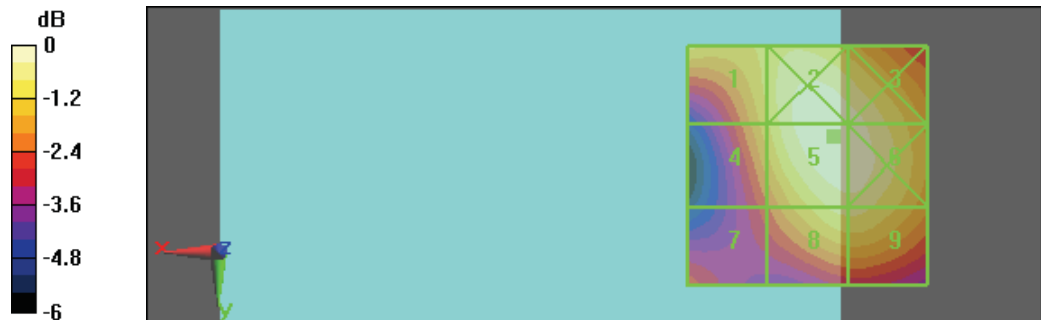
Total = 0.110 A/m

H Category: M4

Location: -5.5, -6, 368.7 mm

Peak H-field in A/m

Grid 1 0.098 M4	Grid 2 0.109 M4	Grid 3 0.108 M4
Grid 4 0.095 M4	Grid 5 0.110 M4	Grid 6 0.109 M4
Grid 7 0.083 M4	Grid 8 0.103 M4	Grid 9 0.103 M4



0 dB = 0.110A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 1:53:27 PM

HAC_PCS CH512_H_ Sample 1 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.103 A/m

Probe Modulation Factor = 2.63

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.043 A/m; Power Drift = -0.040 dB

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

Cursor:

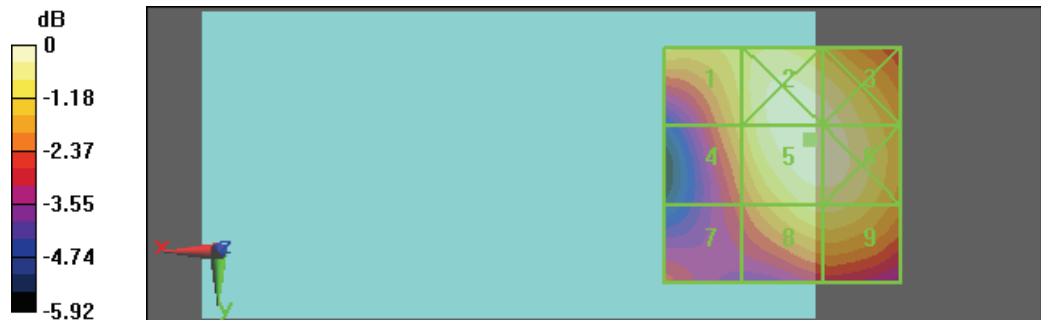
Total = 0.103 A/m

H Category: M4

Location: -6, -5.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.092 M4	Grid 2 0.102 M4	Grid 3 0.101 M4
Grid 4 0.089 M4	Grid 5 0.103 M4	Grid 6 0.102 M4
Grid 7 0.078 M4	Grid 8 0.096 M4	Grid 9 0.096 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 12:23:02 PM

HAC_PCS CH512_H_ Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.105 A/m

Probe Modulation Factor = 2.63

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.040 A/m; Power Drift = -0.066 dB

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

Cursor:

Total = 0.105 A/m

H Category: M4

Location: -8.5, -12, 368.7 mm

Peak H-field in A/m

Grid 1 0.088 M4	Grid 2 0.105 M4	Grid 3 0.105 M4
Grid 4 0.077 M4	Grid 5 0.105 M4	Grid 6 0.105 M4
Grid 7 0.089 M4	Grid 8 0.091 M4	Grid 9 0.092 M4



0 dB = 0.105A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 12:51:58 PM

HAC_PCS CH512_H_ Sample 2 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

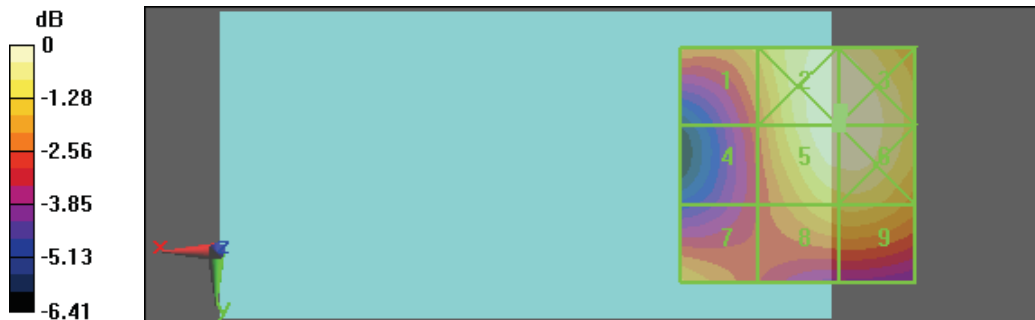
Maximum value of peak Total field = 0.101 A/m
 Probe Modulation Factor = 2.63
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.038 A/m; Power Drift = -0.00253 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Cursor:

Total = 0.101 A/m
 H Category: M4
 Location: -9, -11.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.085 M4	Grid 2 0.101 M4	Grid 3 0.101 M4
Grid 4 0.075 M4	Grid 5 0.101 M4	Grid 6 0.101 M4
Grid 7 0.085 M4	Grid 8 0.088 M4	Grid 9 0.089 M4



0 dB = 0.101A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 1:39:33 PM

HAC_PCS CH661_H_ Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1880 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.086 A/m

Probe Modulation Factor = 2.63

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.036 A/m; Power Drift = 0.011 dB

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

Cursor:

Total = 0.089 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.089 M4	Grid 2 0.088 M4	Grid 3 0.084 M4
Grid 4 0.077 M4	Grid 5 0.086 M4	Grid 6 0.084 M4
Grid 7 0.072 M4	Grid 8 0.078 M4	Grid 9 0.078 M4



0 dB = 0.089A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 12:28:35 PM

HAC_PCS CH661_H_ Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1880 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.091 A/m

Probe Modulation Factor = 2.63

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.033 A/m; Power Drift = 0.036 dB

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

Cursor:

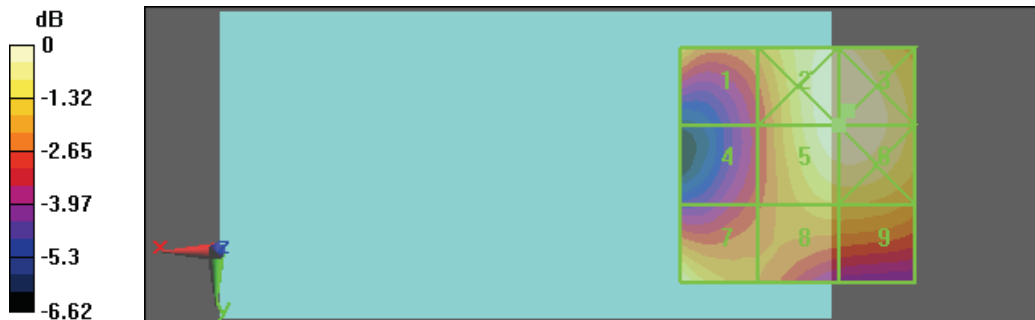
Total = 0.092 A/m

H Category: M4

Location: -10.5, -11.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.079 M4	Grid 2 0.092 M4	Grid 3 0.092 M4
Grid 4 0.067 M4	Grid 5 0.091 M4	Grid 6 0.092 M4
Grid 7 0.089 M4	Grid 8 0.079 M4	Grid 9 0.079 M4



0 dB = 0.092A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 1:45:55 PM

HAC_PCS CH810_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.083 A/m

Probe Modulation Factor = 2.63

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.035 A/m; Power Drift = -0.047 dB

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

Cursor:

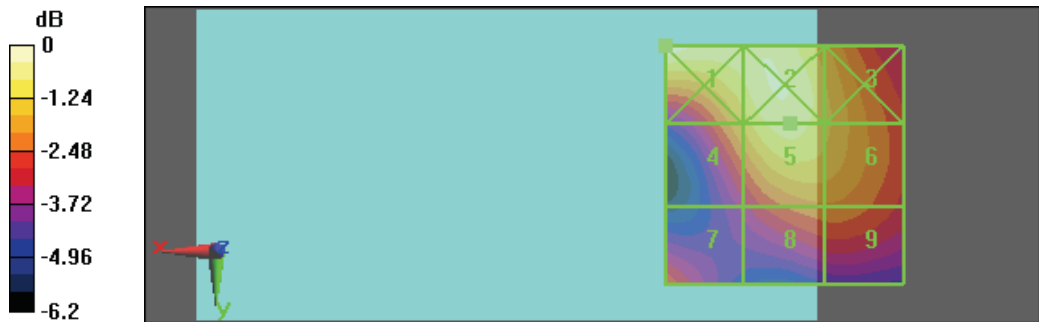
Total = 0.090 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.090 M4	Grid 2 0.086 M4	Grid 3 0.079 M4
Grid 4 0.076 M4	Grid 5 0.083 M4	Grid 6 0.079 M4
Grid 7 0.068 M4	Grid 8 0.071 M4	Grid 9 0.071 M4



0 dB = 0.090A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 12:36:29 PM

HAC_PCS CH810_H_ Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: PCS; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

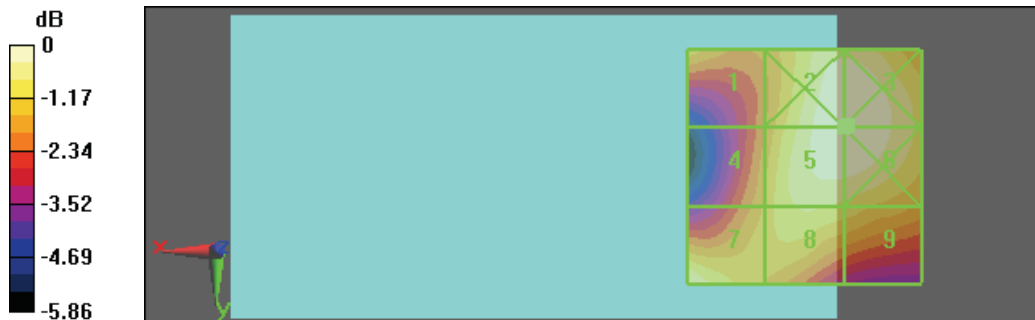
H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.087 A/m
 Probe Modulation Factor = 2.63
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.036 A/m; Power Drift = 0.00299 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Cursor:
 Total = 0.087 A/m
 H Category: M4
 Location: -9.5, -9, 368.7 mm

Peak H-field in A/m

Grid 1 0.075 M4	Grid 2 0.087 M4	Grid 3 0.087 M4
Grid 4 0.073 M4	Grid 5 0.087 M4	Grid 6 0.087 M4
Grid 7 0.085 M4	Grid 8 0.080 M4	Grid 9 0.079 M4



0 dB = 0.087A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 2:38:42 PM

HAC_WCDMA Band II CH9262_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.052 A/m

Probe Modulation Factor = 0.810

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.070 A/m; Power Drift = 0.053 dB

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

Cursor:

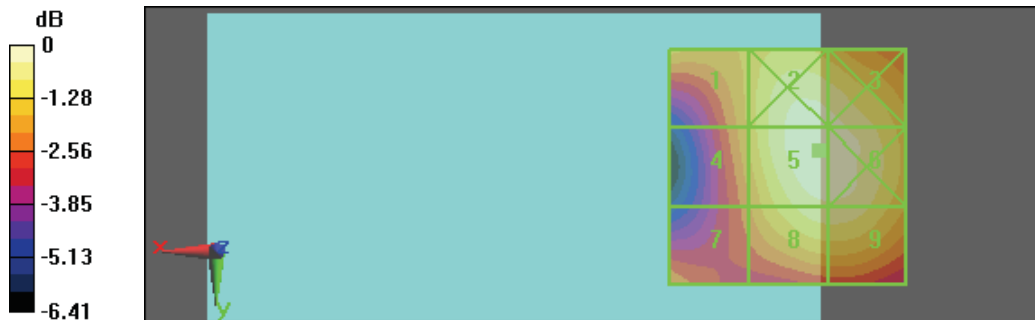
Total = 0.052 A/m

H Category: M4

Location: -6.5, -3.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.044 M4	Grid 2 0.051 M4	Grid 3 0.051 M4
Grid 4 0.043 M4	Grid 5 0.052 M4	Grid 6 0.051 M4
Grid 7 0.041 M4	Grid 8 0.049 M4	Grid 9 0.049 M4



0 dB = 0.052A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 3:15:44 PM

HAC_WCDMA Band II CH9262_H_Sample 1 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

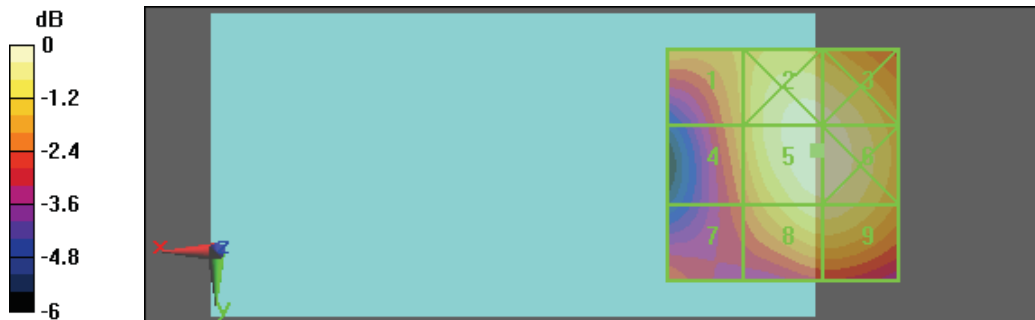
H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.052 A/m
 Probe Modulation Factor = 0.810
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.070 A/m; Power Drift = 0.00141 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 0.052 A/m
 H Category: M4
 Location: -7.5, -3, 368.7 mm

Peak H-field in A/m

Grid 1 0.044 M4	Grid 2 0.051 M4	Grid 3 0.051 M4
Grid 4 0.044 M4	Grid 5 0.052 M4	Grid 6 0.052 M4
Grid 7 0.040 M4	Grid 8 0.049 M4	Grid 9 0.049 M4



0 dB = 0.052A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 1:02:35 PM

HAC_WCDMA Band II CH9262_H_Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1852.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.042 A/m

Probe Modulation Factor = 0.810

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.046 A/m; Power Drift = 0.065 dB

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

Cursor:

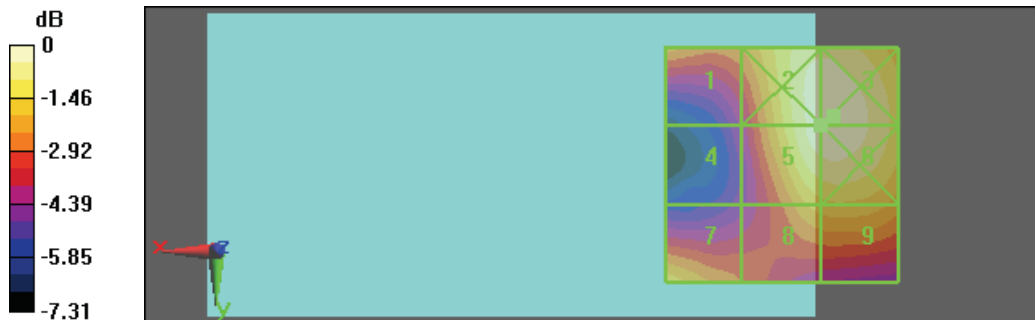
Total = 0.043 A/m

H Category: M4

Location: -11, -10.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.034 M4	Grid 2 0.042 M4	Grid 3 0.043 M4
Grid 4 0.027 M4	Grid 5 0.042 M4	Grid 6 0.042 M4
Grid 7 0.036 M4	Grid 8 0.036 M4	Grid 9 0.036 M4



0 dB = 0.043A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 2:46:08 PM

HAC_WCDMA Band II CH9400_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

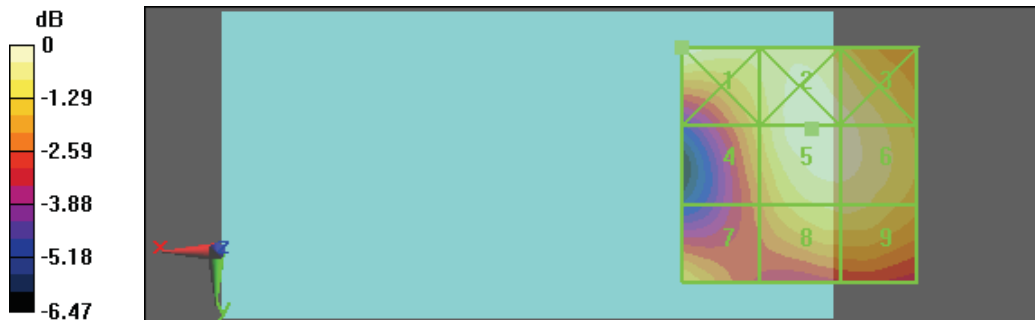
H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.042 A/m
 Probe Modulation Factor = 0.810
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.059 A/m; Power Drift = 0.028 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 0.043 A/m
 H Category: M4
 Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.043 M4	Grid 2 0.042 M4	Grid 3 0.042 M4
Grid 4 0.037 M4	Grid 5 0.042 M4	Grid 6 0.042 M4
Grid 7 0.038 M4	Grid 8 0.040 M4	Grid 9 0.040 M4



0 dB = 0.043A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 1:09:43 PM

HAC_WCDMA Band II CH9400_H_Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.042 A/m

Probe Modulation Factor = 0.810

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.045 A/m; Power Drift = 0.012 dB

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

Cursor:

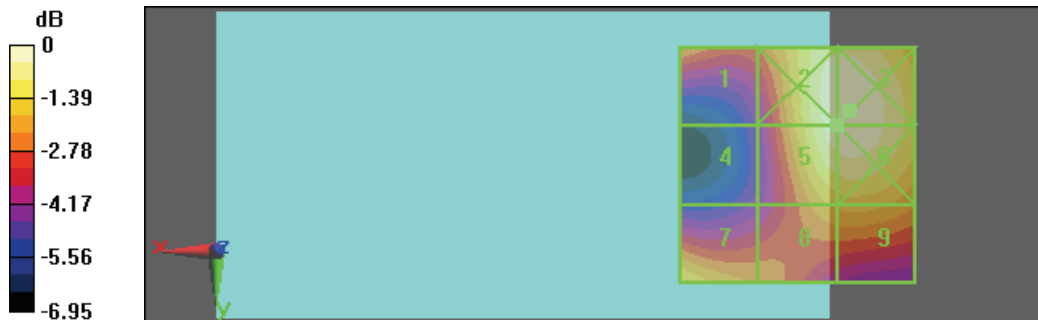
Total = 0.043 A/m

H Category: M4

Location: -11, -11.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.034 M4	Grid 2 0.043 M4	Grid 3 0.043 M4
Grid 4 0.026 M4	Grid 5 0.042 M4	Grid 6 0.043 M4
Grid 7 0.038 M4	Grid 8 0.035 M4	Grid 9 0.036 M4



0 dB = 0.043A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 2:52:47 PM

HAC_WCDMA Band II CH9538_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.040 A/m

Probe Modulation Factor = 0.810

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.056 A/m; Power Drift = -0.027 dB

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

Cursor:

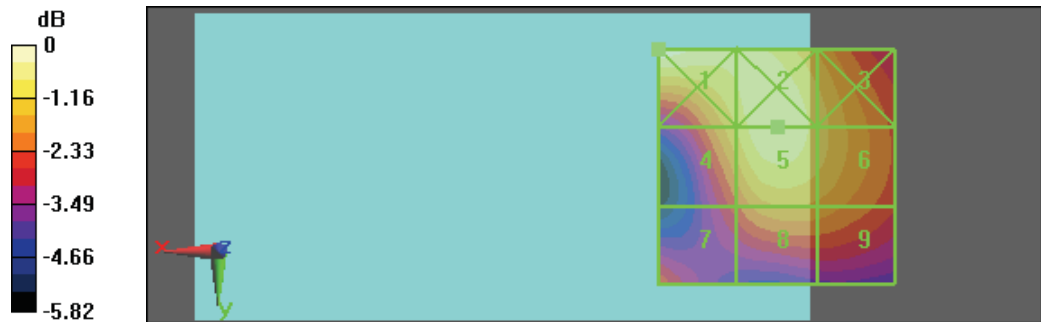
Total = 0.042 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.042 M4	Grid 2 0.040 M4	Grid 3 0.038 M4
Grid 4 0.037 M4	Grid 5 0.040 M4	Grid 6 0.038 M4
Grid 7 0.032 M4	Grid 8 0.035 M4	Grid 9 0.035 M4



0 dB = 0.042A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 1:15:45 PM

HAC_WCDMA Band II CH9538_H_Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

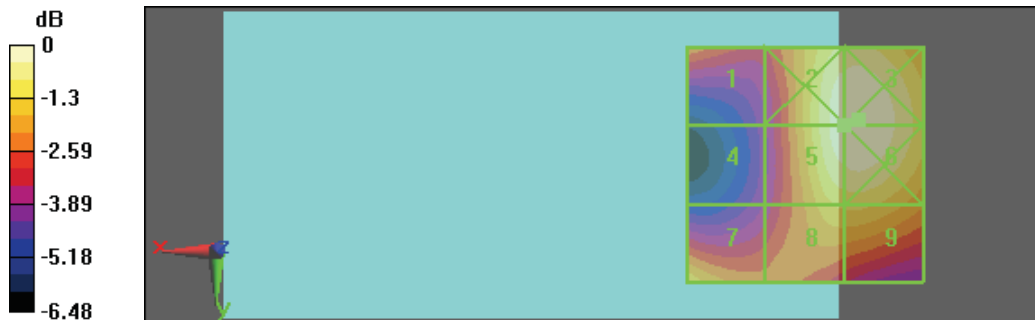
H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.045 A/m
 Probe Modulation Factor = 0.810
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.049 A/m; Power Drift = 0.00721 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 0.045 A/m
 H Category: M4
 Location: -11.5, -9.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.035 M4	Grid 2 0.045 M4	Grid 3 0.045 M4
Grid 4 0.029 M4	Grid 5 0.045 M4	Grid 6 0.045 M4
Grid 7 0.039 M4	Grid 8 0.039 M4	Grid 9 0.039 M4



0 dB = 0.045A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 1:22:13 PM

HAC_WCDMA Band II CH9538_H_Sample 2 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band II; Frequency: 1907.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.039 A/m

Probe Modulation Factor = 0.810

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.049 A/m; Power Drift = 0.073 dB

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

Cursor:

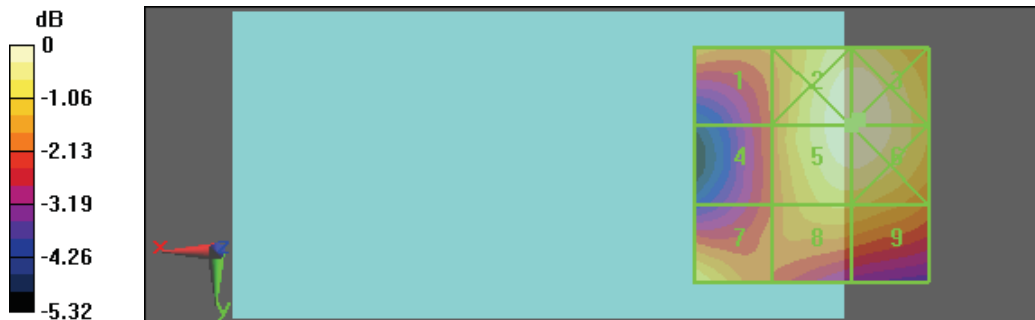
Total = 0.039 A/m

H Category: M4

Location: -10, -9.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.033 M4	Grid 2 0.039 M4	Grid 3 0.039 M4
Grid 4 0.031 M4	Grid 5 0.039 M4	Grid 6 0.039 M4
Grid 7 0.037 M4	Grid 8 0.035 M4	Grid 9 0.035 M4



0 dB = 0.039A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 3:25:06 PM

HAC_WCDMA Band IV CH1312_H_ Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

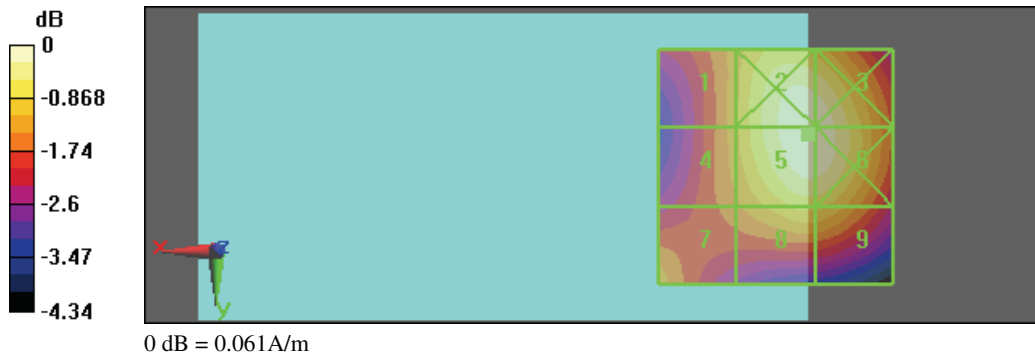
H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.061 A/m
 Probe Modulation Factor = 0.810
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.079 A/m; Power Drift = -0.000757 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 0.061 A/m
 H Category: M4
 Location: -7, -7, 368.7 mm

Peak H-field in A/m

Grid 1 0.053 M4	Grid 2 0.061 M4	Grid 3 0.061 M4
Grid 4 0.053 M4	Grid 5 0.061 M4	Grid 6 0.061 M4
Grid 7 0.053 M4	Grid 8 0.056 M4	Grid 9 0.056 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 3:51:49 PM

HAC_WCDMA Band IV CH1312_H_ Sample 1 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

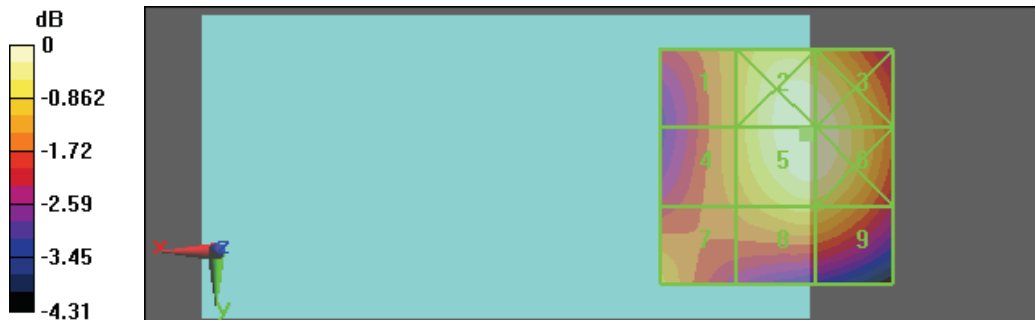
H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.060 A/m
 Probe Modulation Factor = 0.810
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.079 A/m; Power Drift = 0.00483 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 0.060 A/m
 H Category: M4
 Location: -6.5, -7, 368.7 mm

Peak H-field in A/m

Grid 1 0.053 M4	Grid 2 0.060 M4	Grid 3 0.060 M4
Grid 4 0.053 M4	Grid 5 0.060 M4	Grid 6 0.060 M4
Grid 7 0.053 M4	Grid 8 0.055 M4	Grid 9 0.055 M4



0 dB = 0.060A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 1:31:16 PM

HAC_WCDMA Band IV CH1312_H_ Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.046 A/m

Probe Modulation Factor = 0.810

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.057 A/m; Power Drift = -0.017 dB

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

Cursor:

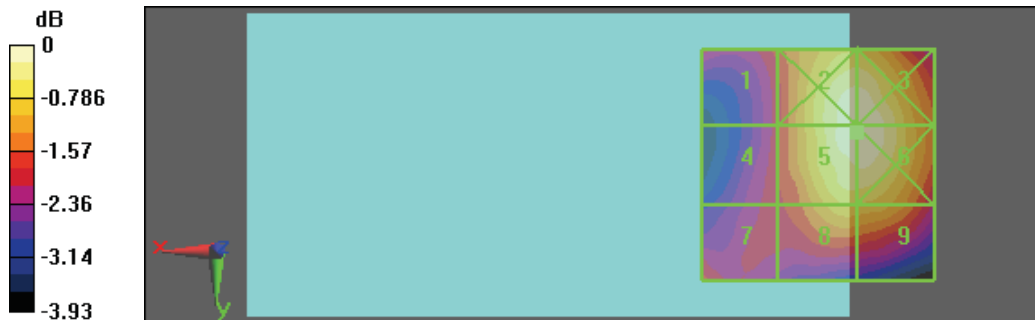
Total = 0.046 A/m

H Category: M4

Location: -8.5, -7, 368.7 mm

Peak H-field in A/m

Grid 1 0.038 M4	Grid 2 0.046 M4	Grid 3 0.046 M4
Grid 4 0.037 M4	Grid 5 0.046 M4	Grid 6 0.046 M4
Grid 7 0.038 M4	Grid 8 0.042 M4	Grid 9 0.042 M4



0 dB = 0.046A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 1:59:57 PM

HAC_WCDMA Band IV CH1312_H_ Sample 2 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.045 A/m

Probe Modulation Factor = 0.810

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.057 A/m; Power Drift = -0.103 dB

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

Cursor:

Total = 0.045 A/m

H Category: M4

Location: -9, -7, 368.7 mm

Peak H-field in A/m

Grid 1 0.037 M4	Grid 2 0.045 M4	Grid 3 0.045 M4
Grid 4 0.037 M4	Grid 5 0.045 M4	Grid 6 0.045 M4
Grid 7 0.038 M4	Grid 8 0.041 M4	Grid 9 0.041 M4



0 dB = 0.045A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 3:31:35 PM

HAC_WCDMA Band IV CH1413_H_ Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

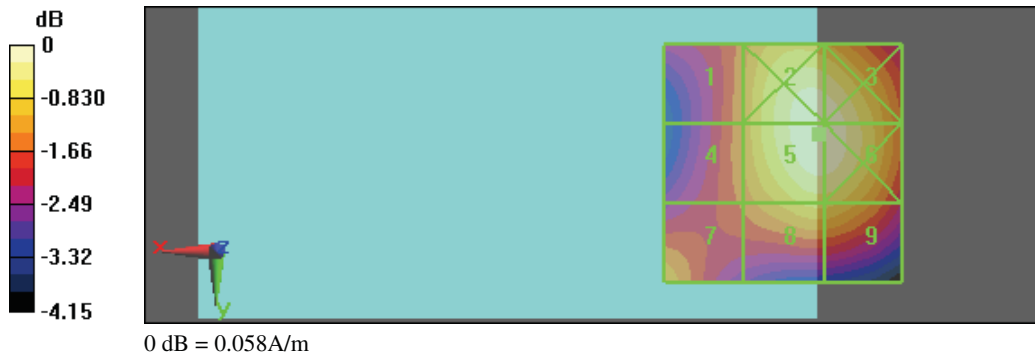
H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.058 A/m
 Probe Modulation Factor = 0.810
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.077 A/m; Power Drift = -0.00662 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 0.058 A/m
 H Category: M4
 Location: -7.5, -6, 368.7 mm

Peak H-field in A/m

Grid 1 0.050 M4	Grid 2 0.058 M4	Grid 3 0.058 M4
Grid 4 0.050 M4	Grid 5 0.058 M4	Grid 6 0.058 M4
Grid 7 0.051 M4	Grid 8 0.053 M4	Grid 9 0.053 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 1:39:57 PM

HAC_WCDMA Band IV CH1413_H_ Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.041 A/m

Probe Modulation Factor = 0.810

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.051 A/m; Power Drift = 0.142 dB

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

Cursor:

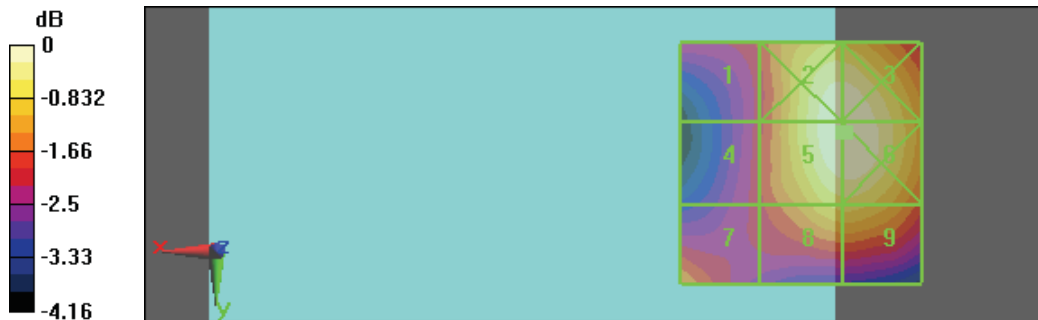
Total = 0.041 A/m

H Category: M4

Location: -9.5, -6.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.033 M4	Grid 2 0.041 M4	Grid 3 0.041 M4
Grid 4 0.033 M4	Grid 5 0.041 M4	Grid 6 0.041 M4
Grid 7 0.035 M4	Grid 8 0.038 M4	Grid 9 0.038 M4



0 dB = 0.041A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 3:45:00 PM

HAC_WCDMA Band IV CH1513_H_ Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.059 A/m

Probe Modulation Factor = 0.810

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.080 A/m; Power Drift = -0.097 dB

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

Cursor:

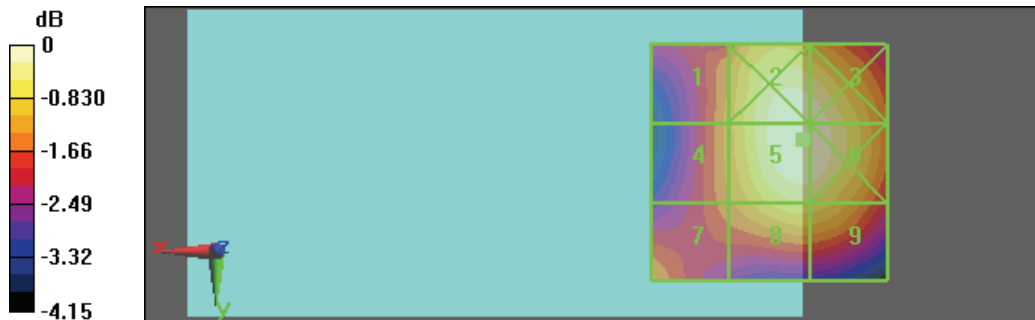
Total = 0.059 A/m

H Category: M4

Location: -7, -5, 368.7 mm

Peak H-field in A/m

Grid 1 0.051 M4	Grid 2 0.059 M4	Grid 3 0.059 M4
Grid 4 0.051 M4	Grid 5 0.059 M4	Grid 6 0.059 M4
Grid 7 0.051 M4	Grid 8 0.055 M4	Grid 9 0.055 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 1:53:27 PM

HAC_WCDMA Band IV CH1513_H_ Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.045 A/m
 Probe Modulation Factor = 0.810
 Device Reference Point: 0, 0, 353.7 mm
 Reference Value = 0.056 A/m; Power Drift = 0.00535 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Cursor:
 Total = 0.045 A/m
 H Category: M4
 Location: -9.5, -6.5, 368.7 mm

Peak H-field in A/m

Grid 1 0.036 M4	Grid 2 0.045 M4	Grid 3 0.045 M4
Grid 4 0.036 M4	Grid 5 0.045 M4	Grid 6 0.045 M4
Grid 7 0.038 M4	Grid 8 0.042 M4	Grid 9 0.042 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 2:02:09 PM

HAC_WCDMA Band V CH4132_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.082 A/m

Probe Modulation Factor = 0.860

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.080 A/m; Power Drift = -0.013 dB

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

Cursor:

Total = 0.109 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.109 M4	Grid 2 0.082 M4	Grid 3 0.053 M4
Grid 4 0.098 M4	Grid 5 0.075 M4	Grid 6 0.050 M4
Grid 7 0.107 M4	Grid 8 0.079 M4	Grid 9 0.049 M4





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 2:27:22 PM

HAC_WCDMA Band V CH4132_H_Sample 1 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.080 A/m

Probe Modulation Factor = 0.860

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.079 A/m; Power Drift = -0.016 dB

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

Cursor:

Total = 0.107 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.107 M4	Grid 2 0.080 M4	Grid 3 0.052 M4
Grid 4 0.097 M4	Grid 5 0.074 M4	Grid 6 0.049 M4
Grid 7 0.106 M4	Grid 8 0.077 M4	Grid 9 0.049 M4



0 dB = 0.107A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 2:09:13 PM

HAC_WCDMA Band V CH4132_H_Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 826.4 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.085 A/m

Probe Modulation Factor = 0.860

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.070 A/m; Power Drift = 0.104 dB

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

Cursor:

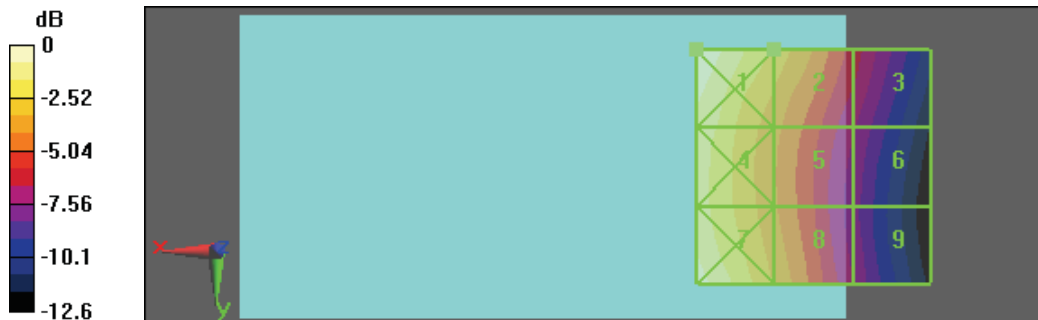
Total = 0.115 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.115 M4	Grid 2 0.085 M4	Grid 3 0.056 M4
Grid 4 0.102 M4	Grid 5 0.074 M4	Grid 6 0.049 M4
Grid 7 0.110 M4	Grid 8 0.078 M4	Grid 9 0.048 M4



0 dB = 0.115A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 2:28:24 PM

HAC_WCDMA Band V CH4132_H_Sample 2 with Battery #2

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 846.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.082 A/m

Probe Modulation Factor = 0.860

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.076 A/m; Power Drift = -0.091 dB

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

Cursor:

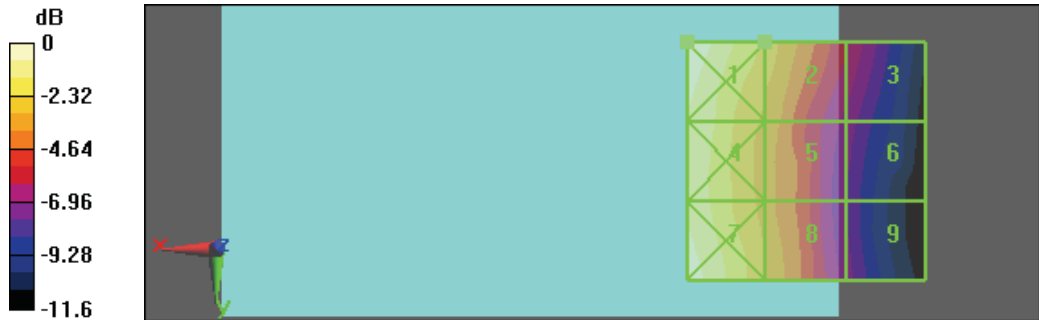
Total = 0.110 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.110 M4	Grid 2 0.082 M4	Grid 3 0.055 M4
Grid 4 0.100 M4	Grid 5 0.075 M4	Grid 6 0.048 M4
Grid 7 0.107 M4	Grid 8 0.077 M4	Grid 9 0.047 M4



0 dB = 0.110A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 2:11:03 PM

HAC_WCDMA Band V CH4183_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.074 A/m

Probe Modulation Factor = 0.860

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.074 A/m; Power Drift = 0.179 dB

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

Cursor:

Total = 0.099 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.099 M4	Grid 2 0.074 M4	Grid 3 0.048 M4
Grid 4 0.091 M4	Grid 5 0.069 M4	Grid 6 0.046 M4
Grid 7 0.099 M4	Grid 8 0.072 M4	Grid 9 0.045 M4



0 dB = 0.099A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 2:15:39 PM

HAC_WCDMA Band V CH4183_H_Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 836.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASYS (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.085 A/m

Probe Modulation Factor = 0.860

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.088 A/m; Power Drift = -0.092 dB

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

Cursor:

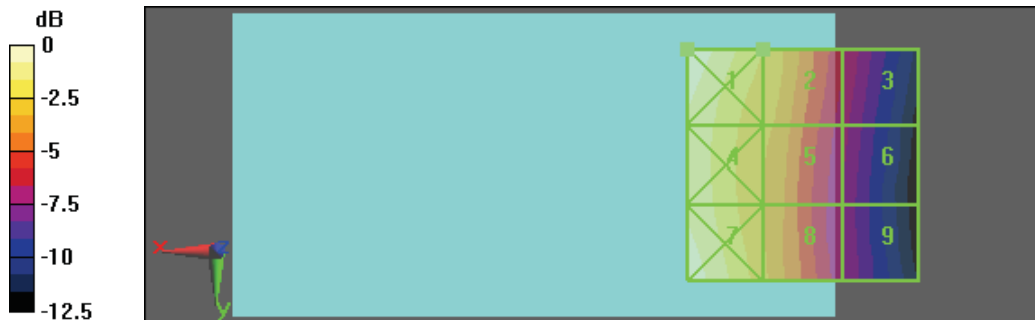
Total = 0.114 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.114 M4	Grid 2 0.085 M4	Grid 3 0.054 M4
Grid 4 0.103 M4	Grid 5 0.079 M4	Grid 6 0.050 M4
Grid 7 0.112 M4	Grid 8 0.080 M4	Grid 9 0.049 M4



0 dB = 0.114A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/13/2011 2:17:48 PM

HAC_WCDMA Band V CH4233_H_Sample 1 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 846.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.064 A/m

Probe Modulation Factor = 0.860

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.068 A/m; Power Drift = 0.0012 dB

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

Cursor:

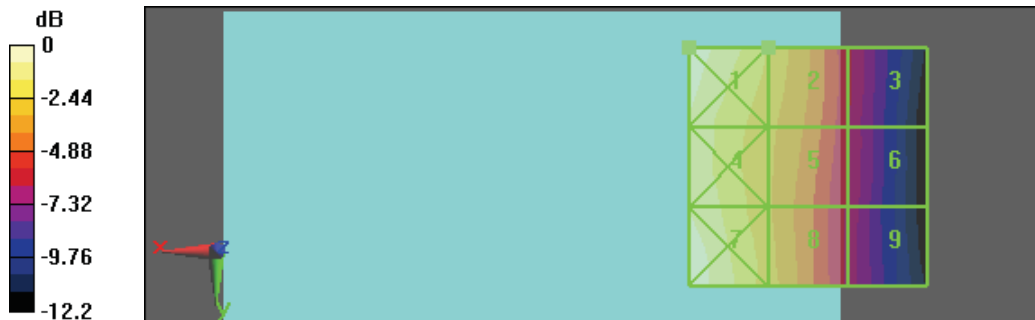
Total = 0.085 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.085 M4	Grid 2 0.064 M4	Grid 3 0.041 M4
Grid 4 0.077 M4	Grid 5 0.060 M4	Grid 6 0.041 M4
Grid 7 0.084 M4	Grid 8 0.061 M4	Grid 9 0.039 M4



0 dB = 0.085A/m



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 7/29/2011 2:21:21 PM

HAC_WCDMA Band V CH4233_H_Sample 2 with Battery #1

DUT: PH85110; Type: Smartphone; FCC ID: NM8PH85110

Communication System: WCDMA Band V; Frequency: 846.6 MHz; Duty Cycle: 1:1
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section
 Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: H3DV6 - SN6076; ; Calibrated: 8/23/2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn779; Calibrated: 1/31/2011
- Phantom: HAC Test Arch 4.6; Type: SD HAC P01 BA; Serial: 1038
- Measurement SW: DASY5, V5.0 Build 125; SEMCAD X Version 13.4 Build 125

H Scan - H3DV6 - measurement distance from the probe sensor center to the Device = 15mm/Hearing Aid Compatibility Test (101x101x1): Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.083 A/m

Probe Modulation Factor = 0.860

Device Reference Point: 0, 0, 353.7 mm

Reference Value = 0.079 A/m; Power Drift = 0.170 dB

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

Cursor:

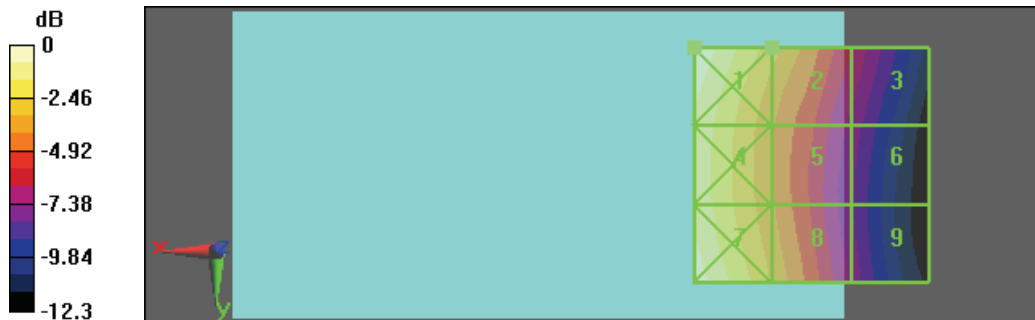
Total = 0.116 A/m

H Category: M4

Location: 25, -25, 368.7 mm

Peak H-field in A/m

Grid 1 0.116 M4	Grid 2 0.083 M4	Grid 3 0.055 M4
Grid 4 0.105 M4	Grid 5 0.074 M4	Grid 6 0.049 M4
Grid 7 0.113 M4	Grid 8 0.079 M4	Grid 9 0.048 M4



0 dB = 0.116A/m



Appendix D - Calibration

All of the instruments Calibration information are listed below.

- Dipole _ CD835V3 SN:1149 Calibration No.CD835V3-1149_Dec10
- Dipole _ CD1880V3 SN:1135 Calibration No.CD1880V3-1135_ Dec10
- Probe _ ER3DV6R SN: 2256 Calibration No. ER3-2256_Aug10
- Probe _ H3DV6 SN: 6076 Calibration No. H3-6076_ Aug10
- DAE _ DAE4 SN:779 Calibration No.DAE4-779_ Jan11



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



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

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

Accreditation No.: **SCS 108**

Client **Auden**

Certificate No: **CD835V3-1149_Dec10**

CALIBRATION CERTIFICATE			
Object	CD835V3 - SN: 1149		
Calibration procedure(s)	QA CAL-20.v5 Calibration procedure for dipoles in air		
Calibration date:	December 01, 2010		
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.			
Calibration Equipment used (M&TE critical for calibration)			
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Probe ER3DV6	SN: 2336	30-Dec-09 (No. ER3-2336_Dec09)	Dec-10
Probe H3DV6	SN: 6065	30-Dec-09 (No. H3-6065_Dec09)	Dec-10
DAE4	SN: 781	20-Oct-10 (No. DAE4-781_Oct10)	Oct-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter Agilent 4419B	SN: GB42420191	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Power sensor HP 8482H	SN: 3318A09450	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Power sensor HP 8482A	SN: US37295597	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11
RF generator E4433B	MY 4100675	03-Nov-04 (in house check Oct-09)	In house check: Oct-11
Calibrated by:	Name Claudio Leubler	Function Laboratory Technician	Signature
Approved by:	Name Fin Bornholt	Function Technical Director	Signature
			Issued: December 1, 2010
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

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



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

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

Accreditation No.: **SCS 108**

References

- [1] ANSI-C63.19-2006
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.
- [2] ANSI-C63.19-2007
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- **Coordinate System:** y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1, 2], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- **Measurement Conditions:** Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- **Antenna Positioning:** The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY5 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- **Feed Point Impedance and Return Loss:** These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- **E- field distribution:** E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1, 2], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- **H-field distribution:** H-field is measured with an isotropic H-field probe with 100mW forward power to the antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field scan. The maximum of the field is available at the center (subgrid 5) above the feed point. The H-field value stated as calibration value represents the maximum of the interpolated H-field, 10mm above the dipole surface at the feed point.



1 Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.2 B0
DASY PP Version	SEMCAD X	V14.2 B2
Phantom	HAC Test Arch	SD HAC P01 BA, #1070
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm	area = 20 x 180 mm
Frequency	835 MHz ± 1 MHz	
Forward power at dipole connector	20.0 dBm = 100mW	
Input power drift	< 0.05 dB	

2 Maximum Field values

H-field 10 mm above dipole surface	condition	interpolated maximum
Maximum measured	100 mW forward power	0.473 A/m

Uncertainty for H-field measurement: 8.2% (k=2)

E-field 10 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end-	100 mW forward power	176.8 V/m
Maximum measured above low end	100 mW forward power	165.4 V/m
Averaged maximum above arm	100 mW forward power	171.1 V/m

Uncertainty for E-field measurement: 12.8% (k=2)

3 Appendix

3.1 Antenna Parameters

Frequency	Return Loss	Impedance
800 MHz	18.4 dB	(46.0 – j10.9) Ohm
835 MHz	26.2 dB	(50.8 + j4.9) Ohm
900 MHz	15.8 dB	(60.7 – j14.5) Ohm
950 MHz	22.3 dB	(45.8 + j6.0) Ohm
960 MHz	16.7 dB	(51.1 + j15.0) Ohm

3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

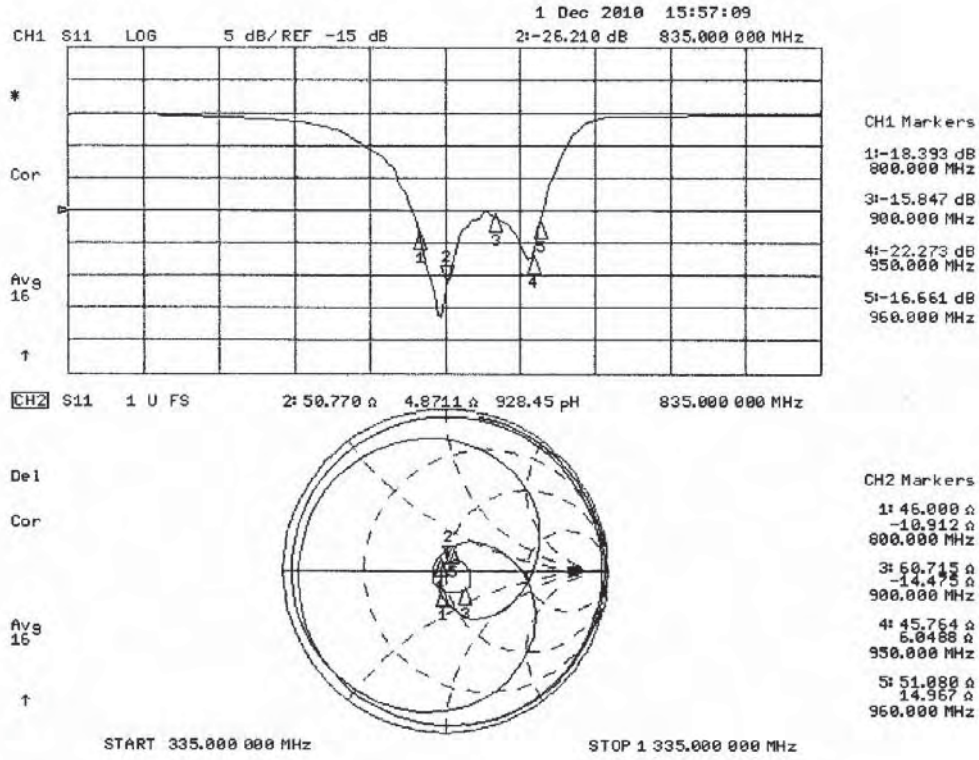
Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.



3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



3.3.3 DASY4 H-field Result

Date/Time: 30.11.2010 09:24:06

Test Laboratory: SPEAG Lab2

HAC RF_CD835_1149_H_101130_CL

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1149

Communication System: CW; Frequency: 835 MHz
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: H3DV6 - SN6065; ; Calibrated: 30.12.2009
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.10.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY52, V52.2 Build 0, Version 52.2.0 (163)
- Postprocessing SW: SEMCAD X, V14.2 Build 2, Version 14.2.2 (1685)

Dipole H-Field measurement @ 835MHz/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 = 0.473 A/m
 Probe Modulation Factor = 1
 Device Reference Point: 0, 0, -6.3 mm
 Reference Value = 0.502 A/m; Power Drift = -0.044 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 0.394 M4	Grid 2 0.411 M4	Grid 3 0.383 M4
Grid 4 0.456 M4	Grid 5 0.473 M4	Grid 6 0.438 M4
Grid 7 0.423 M4	Grid 8 0.440 M4	Grid 9 0.401 M4



3.3.2 DASY4 E-field Result

Date/Time: 01.12.2010 09:55:11

Test Laboratory: SPEAG Lab2

HAC RF_CD835_1149_E_101130_CL

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: 1149

Communication System: CW; Frequency: 835 MHz
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ER3DV6 - SN2336; ConvF(1, 1, 1); Calibrated: 30.12.2009
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.10.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY52, V52.2 Build 0, Version 52.2.0 (163)
- Postprocessing SW: SEMCAD X, V14.2 Build 2, Version 14.2.2 (1685)

Dipole E-Field measurement @ 835MHz/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 = 176.8 V/m

Probe Modulation Factor = 1

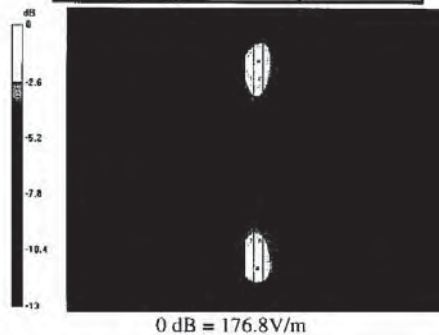
Device Reference Point: 0, 0, -6.3 mm

Reference Value = 114.1 V/m; Power Drift = -0.012 dB

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

Peak E-field in V/m

Grid 1 161.2 M4	Grid 2 165.4 M4	Grid 3 159.7 M4
Grid 4 88.3 M4	Grid 5 89.7 M4	Grid 6 85.7 M4
Grid 7 173.8 M4	Grid 8 176.8 M4	Grid 9 163.9 M4





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Accreditation No.: **SCS 108**

Client **Auder**

Certificate No: **CD1880V3-1135_Dec10**

CALIBRATION CERTIFICATE

Object **CD1880V3 - SN: 1135**

Calibration procedure(s) **QA CAL-20.v5
 Calibration procedure for dipoles in air**

Calibration date: **December 01, 2010**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Probe ER3DV6	SN: 2336	30-Dec-09 (No. ER3-2336_Dec09)	Dec-10
Probe H3DV6	SN: 6065	30-Dec-09 (No. H3-6065_Dec09)	Dec-10
DAE4	SN: 781	20-Oct-10 (No. DAE4-781_Oct10)	Oct-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter Agilent 4419B	SN: GB42420191	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Power sensor HP 8482H	SN: 3318A09450	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Power sensor HP 8482A	SN: US37295597	09-Oct-09 (in house check Oct-10)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11
RF generator E4433B	MY 41000675	03-Nov-04 (in house check Oct-09)	In house check: Oct-11

Calibrated by: **Claudio Laubler** Laboratory Technician *[Signature]*

Approved by: **Fin Bornhott** Technical Director *[Signature]*

Issued: December 1, 2010

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Accreditation No.: **SCS 108**

References

- [1] ANSI-C63.19-2007
American National Standard for Methods of Measurement of Compatibility between Wireless
Communications Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- *Coordinate System:* y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- *Measurement Conditions:* Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- *Antenna Positioning:* The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASYS Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- *Feed Point Impedance and Return Loss:* These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminated by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- *E-field distribution:* E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- *H-field distribution:* H-field is measured with an isotropic H-field probe with 100mW forward power to the antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field scan. The maximum of the field is available at the center (subgrid 5) above the feed point. The H-field value stated as calibration value represents the maximum of the interpolated H-field, 10mm above the dipole surface at the feed point.



1. Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.2 B0
DASY PP Version	SEMCAD X	V14.2 B2
Phantom	HAC Test Arch	SD HAC P01 BA, #1070
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm	area = 20 x 90 mm
Frequency	1880 MHz ± 1 MHz	
Forward power at dipole connector	20.0 dBm = 100mW	
Input power drift	< 0.05 dB	

2. Maximum Field values

H-field 10 mm above dipole surface	condition	Interpolated maximum
Maximum measured	100 mW forward power	0.465 A/m

Uncertainty for H-field measurement: 8.2% (k=2)

E-field 10 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end	100 mW forward power	137.1 V/m
Maximum measured above low end	100 mW forward power	134.3 V/m
Averaged maximum above arm	100 mW forward power	135.7 V/m

Uncertainty for E-field measurement: 12.8% (k=2)

3. Appendix

3.1 Antenna Parameters

Frequency	Return Loss	Impedance
1730 MHz	22.5 dB	(49.9 + j7.6) Ohm
1880 MHz	21.3 dB	(52.1 + j8.6) Ohm
1900 MHz	21.6 dB	(54.5 + j7.4) Ohm
1950 MHz	27.0 dB	(54.5 - j1.4) Ohm
2000 MHz	20.0 dB	(40.9 - j0.2) Ohm

3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

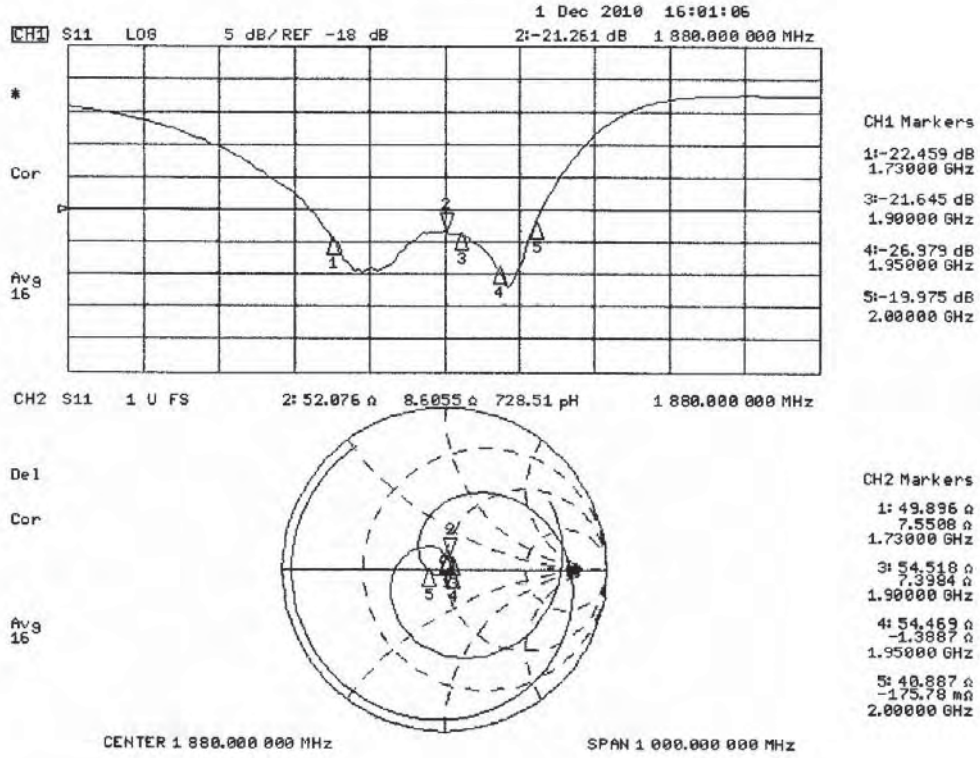
Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.



3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



3.3.2 DASY4 H-Field Result

Date/Time: 30.11.2010 10:31:14

Test Laboratory: SPEAG Lab2

HAC_RF_CD1880_1135_H_101130_CL

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1135

Communication System: CW; Frequency: 1880 MHz
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: H3DV6 - SN6065; ; Calibrated: 30.12.2009
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.10.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY52, V52.2 Build 0, Version 52.2.0 (163)
- Postprocessing SW: SEMCAD X, V14.2 Build 2, Version 14.2.2 (1685)

Dipole H-Field measurement @ 1880MHz/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 = 0.465 A/m

Probe Modulation Factor = 1

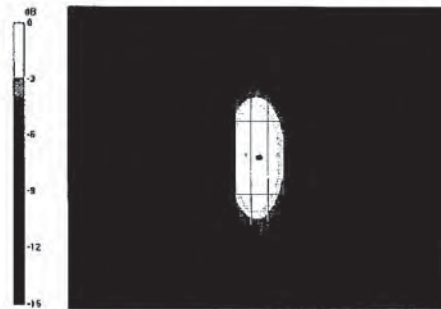
Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.491 A/m; Power Drift = 0.011 dB

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

Peak H-field in A/m

Grid 1 0.414 M2	Grid 2 0.426 M2	Grid 3 0.395 M2
Grid 4 0.453 M2	Grid 5 0.465 M2	Grid 6 0.432 M2
Grid 7 0.413 M2	Grid 8 0.426 M2	Grid 9 0.392 M2



0 dB = 0.465A/m0

3.3.3 DASY4 E-Field Result

Date/Time: 01.12.2010 11:34:11

Test Laboratory: SPEAG Lab2

HAC_RF_CD1880_1135_E_101130_CL

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1135

Communication System: CW; Frequency: 1880 MHz
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: RF Section
 Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ER3DV6 - SN2336; ConvF(1, 1, 1); Calibrated: 30.12.2009
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.10.2010
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY52, V52.2 Build 0, Version 52.2.0 (163)
- Postprocessing SW: SEMCAD X, V14.2 Build 2, Version 14.2.2 (1685)

Dipole E-Field measurement @ 1880MHz/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 = 137.1 V/m

Probe Modulation Factor = 1

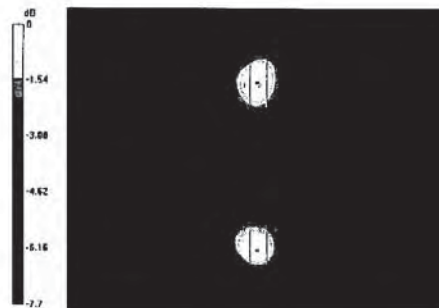
Device Reference Point: 0, 0, -6.3 mm

Reference Value = 153.5 V/m; Power Drift = -0.018 dB

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

Peak E-field in V/m

Grid 1 131.3 M2	Grid 2 134.3 M2	Grid 3 129.7 M2
Grid 4 89 M3	Grid 5 90.4 M3	Grid 6 85.9 M3
Grid 7 134.0 M2	Grid 8 137.1 M2	Grid 9 129.6 M2



0 dB = 137.1 V/m

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Accreditation No.: **SCS 108**

Client **ATL (Auden)**

Certificate No: **ER3-2256_Aug10**

CALIBRATION CERTIFICATE

Object **ER3DV6R - SN:2256**

Calibration procedure(s) **QA CAL-02.v5 and QA CAL-25.v2
Calibration procedure for E-field probes optimized for close near field
evaluations in air**

Calibration date: **August 23, 2010**



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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ER3DV6	SN: 2328	3-Oct-09 (No. ER3-2328_Oct09)	Oct-10
DAE4	SN: 789	23-Dec-09 (No. DAE4-789_Dec09)	Dec-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8948C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

Calibrated by:	Name	Function	Signature
	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 24, 2010

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Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

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



ER3DV6R SN:2256

August 23, 2010

Probe ER3DV6R

SN:2256

Manufactured:	March 15, 2001
Last calibrated:	August 21, 2009
Recalibrated:	August 23, 2010

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)



ER3DV6R SN:2256

August 23, 2010

DASY/EASY - Parameters of Probe: ER3DV6R SN:2256

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)	2.21	1.59	1.68	$\pm 10.1\%$
DCP (mV) ^a	94.2	93.8	101.1	

Modulation Calibration Parameters

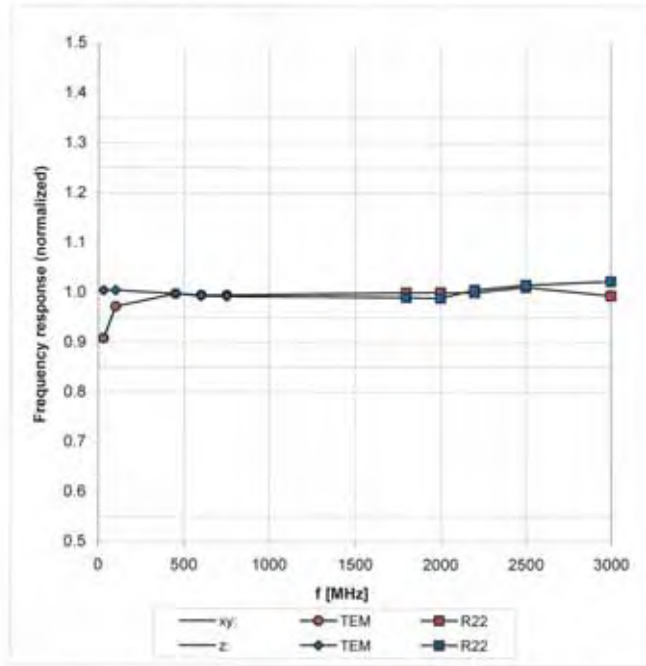
UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc ^e (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300	$\pm 1.5\%$
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

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

^a numerical linearization parameter: uncertainty not required

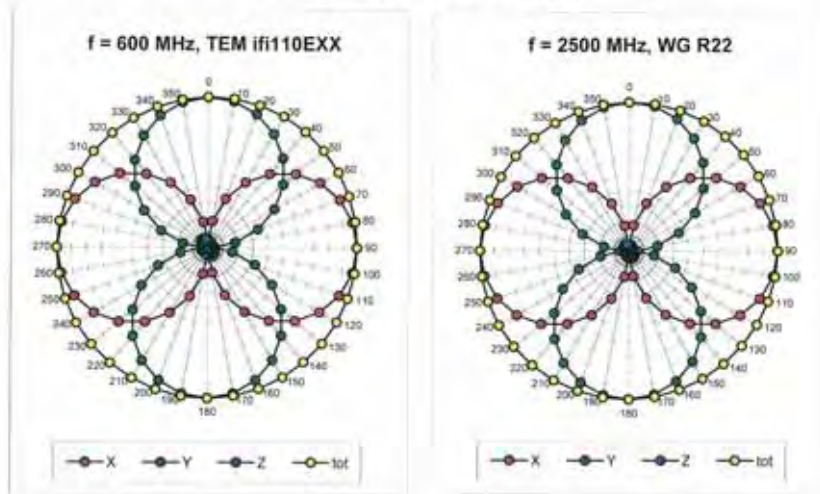
^e Uncertainty is determined using the maximum deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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

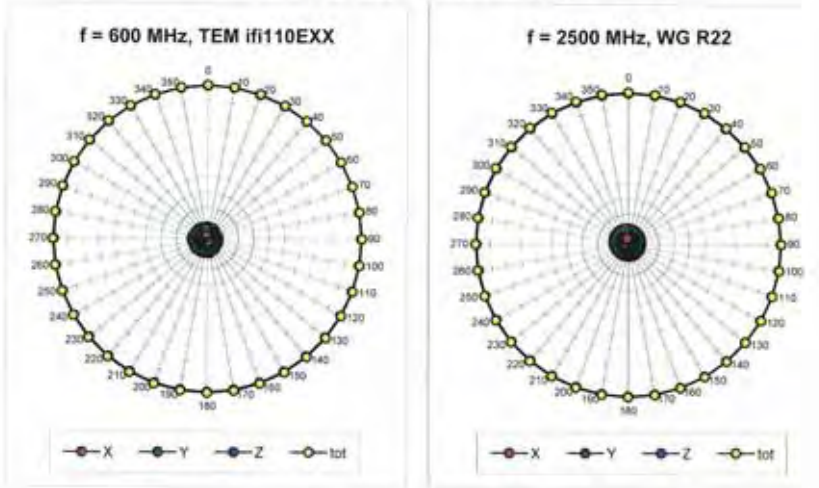


Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

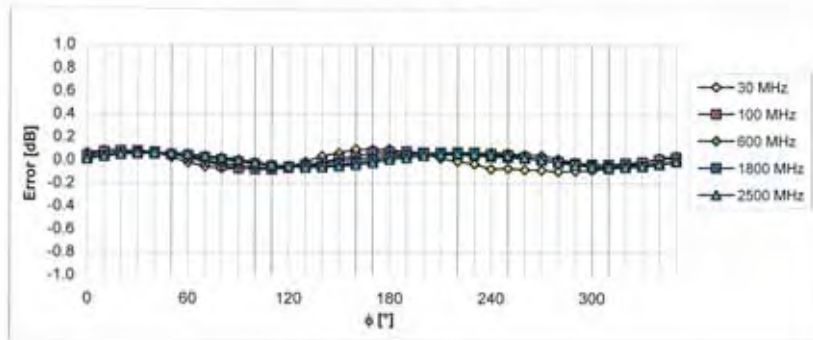
Receiving Pattern (ϕ), $\vartheta = 0^\circ$



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

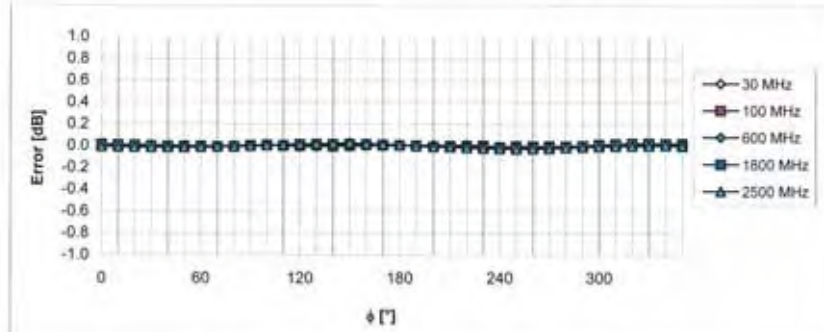


Receiving Pattern (ϕ), $\vartheta = 0^\circ$



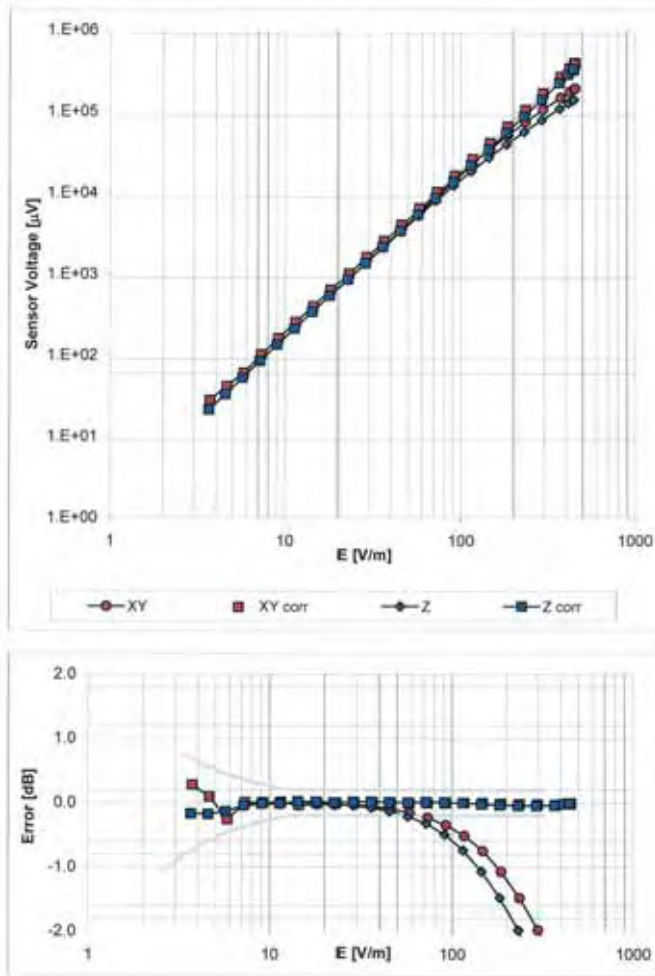
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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



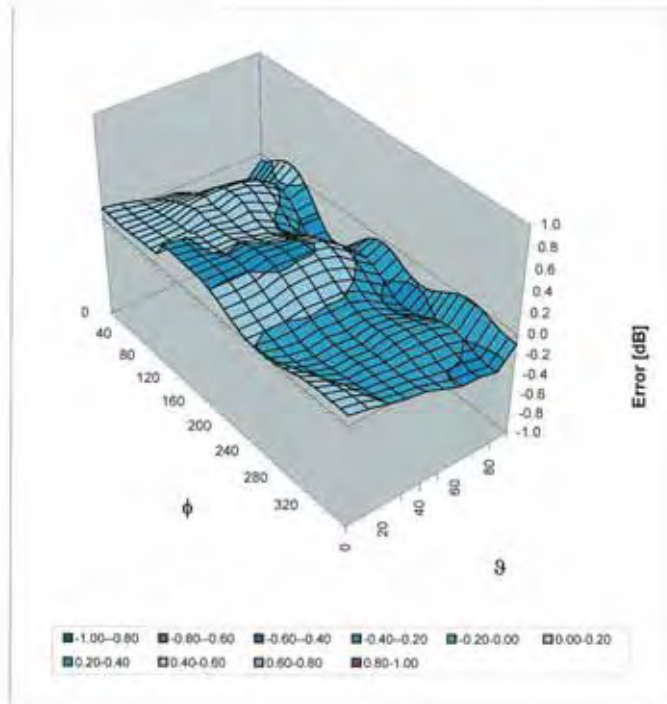
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range f(E-field) (Waveguide R22, f = 1800 MHz)



Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)

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



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



ER3DV6R SN:2256

August 23, 2010

Other Probe Parameters

Sensor Arrangement	Rectangular
Connector Angle (°)	-244.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	8.0 mm
Probe Tip to Sensor X Calibration Point	2.5 mm
Probe Tip to Sensor Y Calibration Point	2.5 mm
Probe Tip to Sensor Z Calibration Point	2.5 mm



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Accreditation No.: **SCS 108**

Client **ATL (Auden)**

Certificate No: **H3-6076_Aug10**

CALIBRATION CERTIFICATE

Object **H3DV6 - SN:6076**

Calibration procedure(s) **QA CAL-03.v5 and QA CAL-25.v2
Calibration procedure for H-field probes optimized for close near field
evaluations in air**

Calibration date: **August 23, 2010**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe H3DV6	SN: 6182	3-Oct-09 (No. H3-6182_Oct09)	Oct-10
DAE4	SN: 789	23-Dec-09 (No. DAE4-789_Dec09)	Dec-10
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

Calibrated by:	Name Jeton Kastrati	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Technical Manager	

Issued: August 24, 2010

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Accreditation No.: **SCS 108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}: Assessed for E-field polarization $\vartheta = 0$ for XY sensors and $\vartheta = 90$ for Z sensor ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide).
- X, Y, Z(f)_{a0a1a2}= X, Y, Z_{a0a1a2} * frequency_response (see Frequency Response Chart).
- DCP_{x,y,z}: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- Ax,y,z; Bx,y,z; Cx,y,z, VR_{x,y,z}: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- Spherical isotropy (3D deviation from isotropy): in a locally homogeneous field realized using an open waveguide setup.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle: The angle is assessed using the information gained by determining the X_{a0a1a2} (no uncertainty required).



H3DV6 SN:6076

August 23, 2010

Probe H3DV6

SN:6076

Manufactured:	October 2, 2000
Last calibrated:	August 19, 2009
Recalibrated:	August 23, 2010

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)



H3DV6 SN:6076

August 23, 2010

DASY/EASY - Parameters of Probe: H3DV6 SN:6076

Basic Calibration Parameters

		Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (A/m / $\sqrt{\mu V}$)	a0	2.85E-3	2.72E-3	3.05E-3	± 5.1%
Norm (A/m / $\sqrt{\mu V}$)	a1	-8.80E-5	-2.35E-4	-3.28E-5	± 5.1%
Norm (A/m / $\sqrt{\mu V}$)	a2	3.38E-5	1.15E-5	-1.72E-4	± 5.1%
DCP (mV) ^A		92.1	81.7	78.1	

Modulation Calibration Parameters

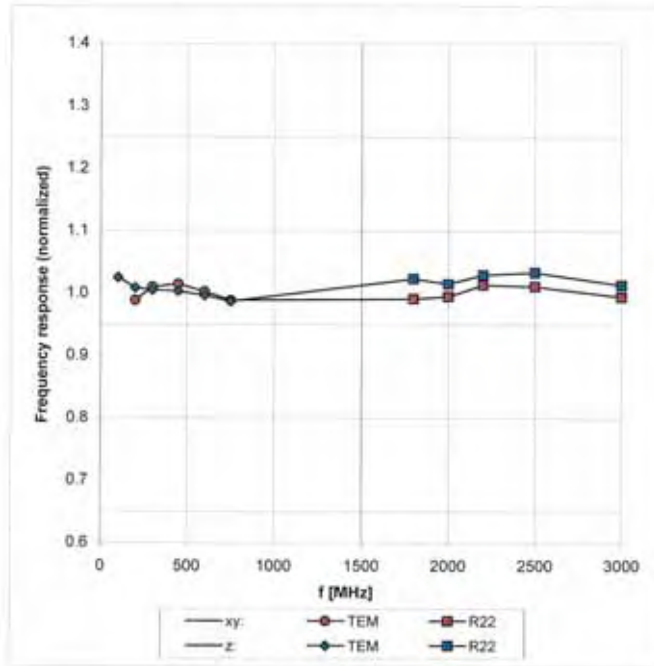
UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc ^E (k=2)
10000	CW	0,00	X	0.00	0.00	1.00	300	± 1.5 %
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

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

^A numerical linearization parameter: uncertainty not required

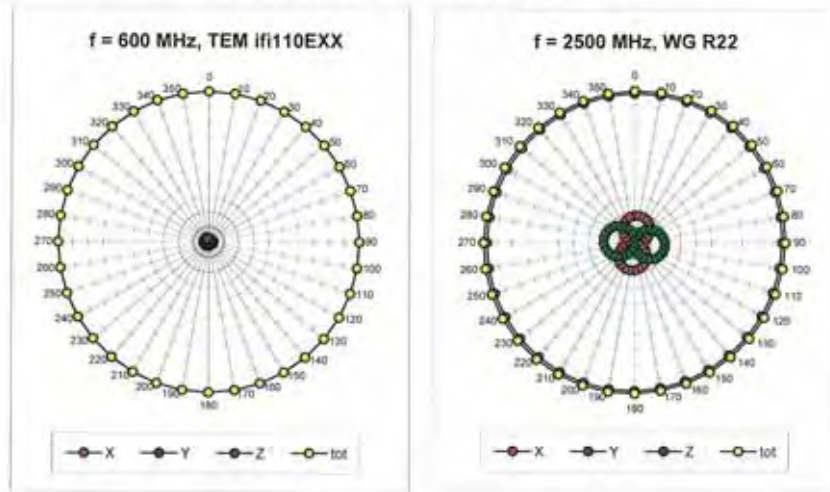
^E Uncertainty is determined using the maximum deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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

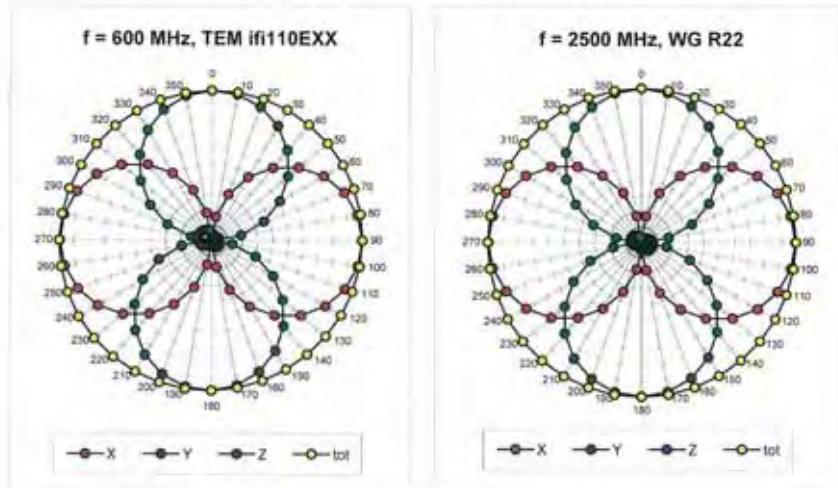


Uncertainty of Frequency Response of H-field: $\pm 6.3\%$ (k=2)

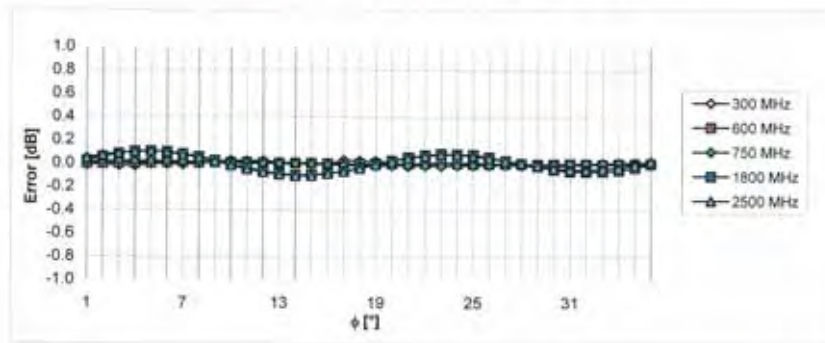
Receiving Pattern (ϕ), $\vartheta = 90^\circ$



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

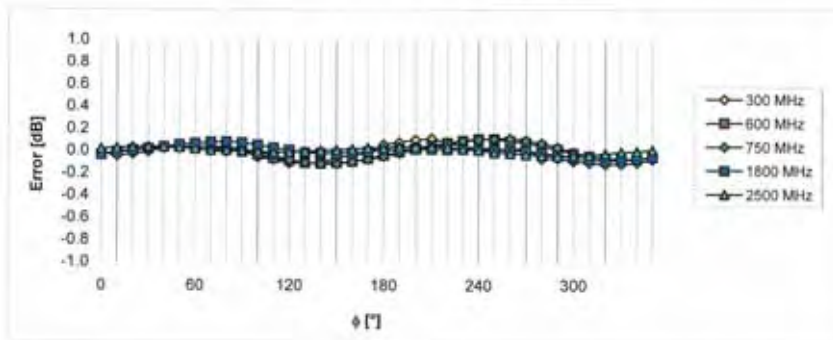


Receiving Pattern (ϕ), $\vartheta = 90^\circ$



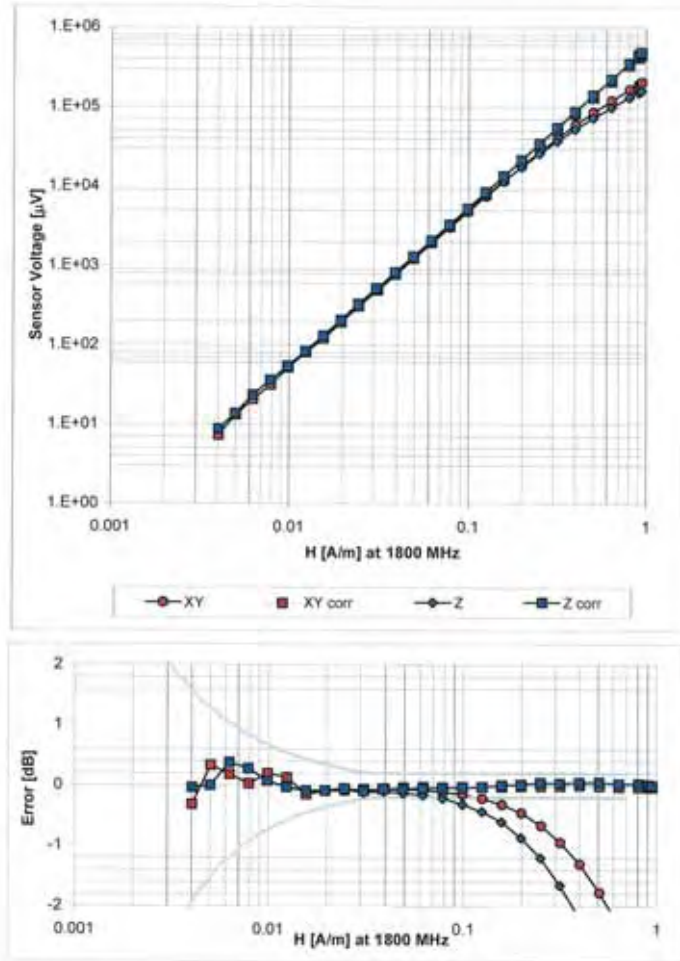
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

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



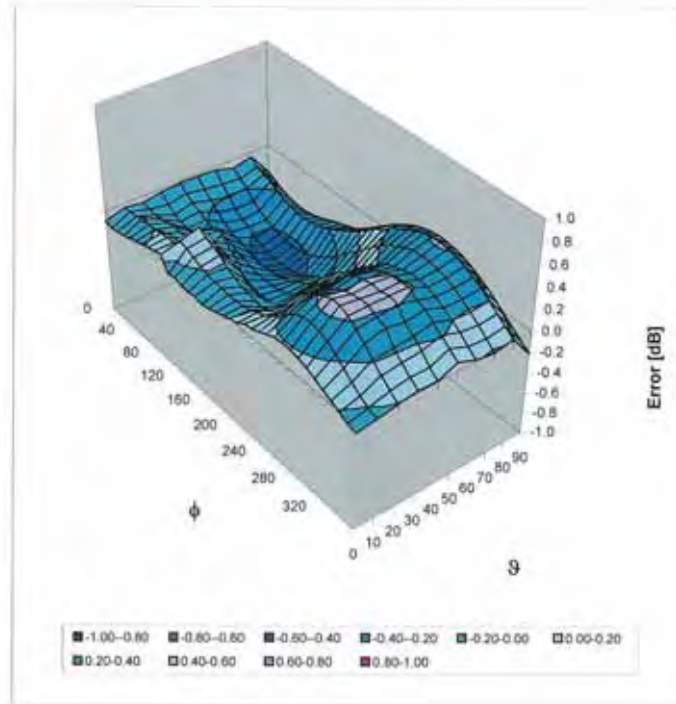
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

Dynamic Range f(H-field) (Waveguide R22, f = 1800 MHz)



Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)

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



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



H3DV6 SN:6076

August 23, 2010

Other Probe Parameters

Sensor Arrangement	Rectangular
Connector Angle (°)	81.5
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	20 mm
Tip Diameter	6.0 mm
Probe Tip to Sensor X Calibration Point	3 mm
Probe Tip to Sensor Y Calibration Point	3 mm
Probe Tip to Sensor Z Calibration Point	3 mm

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Accreditation No.: **SCS 108**

Client **ATL (Auden)**

Certificate No: **DAE4-779_Jan11**

CALIBRATION CERTIFICATE

Object **DAE4 - SD 000 D04 BJ - SN: 779**

Calibration procedure(s) **QA CAL-08.v22
Calibration procedure for the data acquisition electronics (DAE)**

Calibration date: **January 31, 2011**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	28-Sep-10 (No:10376)	Sep-11
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Calibrator Box V1.1	SE UMS 006 AB 1004	07-Jun-10 (in house check)	In house check: Jun-11

	Name	Function	Signature
Calibrated by:	Andrea Guntli	Technician	
Approved by:	Fin Bombholt	R&D Director	

Issued: January 31, 2011

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Glossary

DAE data acquisition electronics
Connector angle information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters

- **DC Voltage Measurement:** Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- **Connector angle:** The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
 - **DC Voltage Measurement Linearity:** Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
 - **Common mode sensitivity:** Influence of a positive or negative common mode voltage on the differential measurement.
 - **Channel separation:** Influence of a voltage on the neighbor channels not subject to an input voltage.
 - **AD Converter Values with inputs shorted:** Values on the internal AD converter corresponding to zero input voltage
 - **Input Offset Measurement:** Output voltage and statistical results over a large number of zero voltage measurements.
 - **Input Offset Current:** Typical value for information; Maximum channel input offset current, not considering the input resistance.
 - **Input resistance:** Typical value for information; DAE input resistance at the connector, during internal auto-zeroing and during measurement.
 - **Low Battery Alarm Voltage:** Typical value for information. Below this voltage, a battery alarm signal is generated.
 - **Power consumption:** Typical value for information. Supply currents in various operating modes.



DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1 μ V, full range = -100...+300 mV

Low Range: 1LSB = 61nV, full range = -1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	404.517 \pm 0.1% (k=2)	403.748 \pm 0.1% (k=2)	403.972 \pm 0.1% (k=2)
Low Range	3.96927 \pm 0.7% (k=2)	3.98585 \pm 0.7% (k=2)	3.99915 \pm 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	155.5 \pm 1 $^{\circ}$
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Appendix

1. DC Voltage Linearity

High Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	200001.8	6.19	0.00
Channel X + Input	20003.75	4.25	0.02
Channel X - Input	-19996.56	3.04	-0.02
Channel Y + Input	200005.0	0.90	0.00
Channel Y + Input	20000.78	1.38	0.01
Channel Y - Input	-19996.43	2.97	-0.01
Channel Z + Input	200002.2	-1.15	-0.00
Channel Z + Input	19999.59	0.19	0.00
Channel Z - Input	-19995.05	4.35	-0.02

Low Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	2000.4	0.25	0.01
Channel X + Input	200.27	0.37	0.18
Channel X - Input	-199.08	1.12	-0.56
Channel Y + Input	2000.1	0.19	0.01
Channel Y + Input	199.01	-0.89	-0.45
Channel Y - Input	-199.30	0.50	-0.25
Channel Z + Input	1999.6	-0.40	-0.02
Channel Z + Input	199.22	-0.88	-0.44
Channel Z - Input	-200.27	-0.37	0.19

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	-3.66	-5.39
	-200	5.82	4.90
Channel Y	200	13.39	13.58
	-200	-14.98	-15.16
Channel Z	200	2.20	2.53
	-200	-4.84	-4.61

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	1.33	-0.57
Channel Y	200	1.97	-	3.29
Channel Z	200	1.19	-0.28	-

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	15613	15134
Channel Y	15831	16218
Channel Z	16150	17743

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input 10M Ω

	Average (μ V)	min. Offset (μ V)	max. Offset (μ V)	Std. Deviation (μ V)
Channel X	-0.26	-1.03	0.79	0.42
Channel Y	0.52	-1.04	2.07	0.58
Channel Z	-2.22	-3.25	-0.85	0.44

6. Input Offset Current

Nominal input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9



Appendix E - Uncertainty

HAC Uncertainty Budget According to NSIC63.19 [1], [2]							
Error Description	Uncertainty value	Prob. Dist.	Div.	(ci) E	(ci) 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	±4.02%	±0.0%
Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
Probe modulation Factor	±15.0%	R	$\sqrt{3}$	1	1	±8.7%	±8.7%
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	±1.7%	±1.7%
RF Reflections	±12.0%	R	$\sqrt{3}$	1	1	±6.9%	±6.9%
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%
Extrap. 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		RSS				±17.5%	±13.8%
Expanded Std. Uncertainty on Power		K=2				±35.0%	±27.6%
Expanded Std. Uncertainty on Field						±17.5%	±13.8%