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Annex A: Measurement data and plots

A.1 Spectrum analyser plots: CDMA, CW, 80%AM, signals



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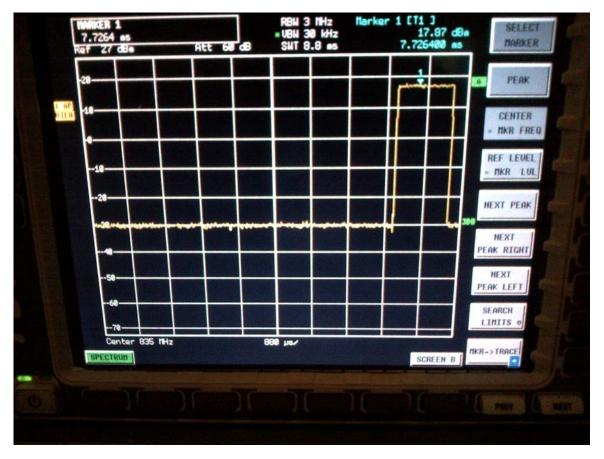
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CDMA 835 MHz (BC0)

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CDMA 835 MHz (BC0) $1/8^{th}$



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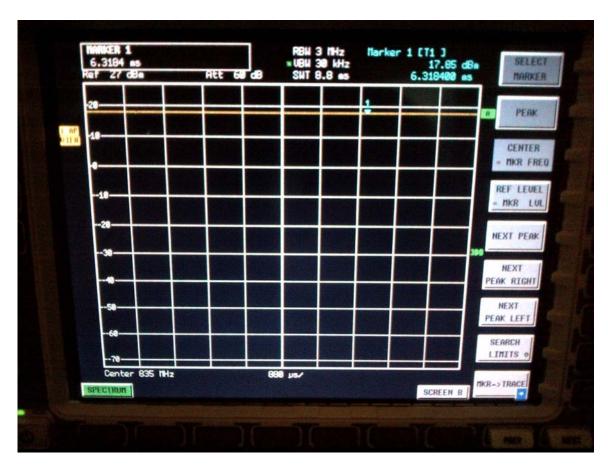
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CW 835 MHz



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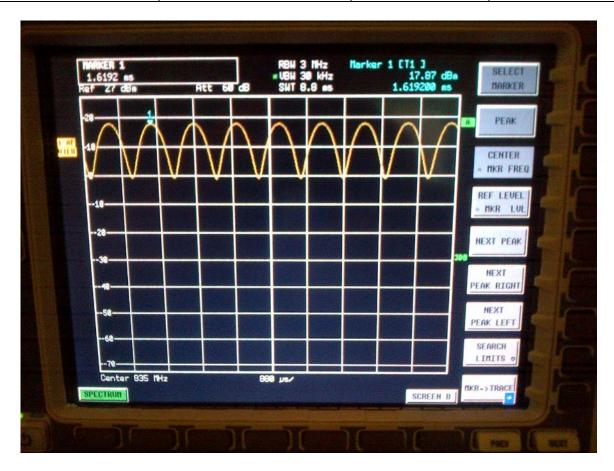
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AM 80% 835 MHz



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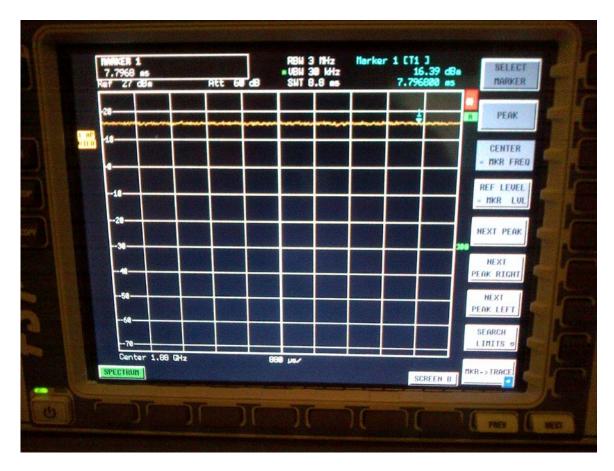
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CDMA 1880 MHz (BC1)



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CDMA 1880 MHz (BC1) 1/8 th



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CW 1880 MHz



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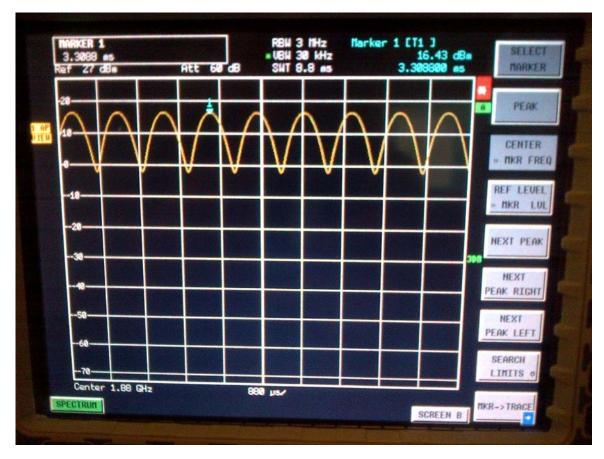
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AM 80% 1880 MHz

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A.2 Dipole validation and probe modulation factor plots



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L6AREY20CW

Test Laboratory: RIM Testing Services

HAC RF_E-Field_PMF_CDMA835 MHz_02_29_12

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1011

Communication System: CDMA 850, Communication System: CDMA 850 1/8th, Communication System: CW, Communication System: AM 80%; Frequency: 835

MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

• Sensor-Surface: (Fix Surface), z = 4.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole E-Field measurement/E Scan - CDMA FR 835_PMF/Hearing

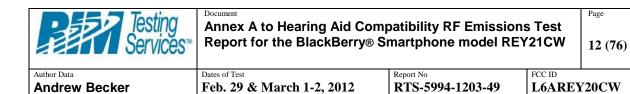
Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 79.95 V/m; Power Drift = -0.18 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 118.9 V/m



PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
104.7	108.7	107.6
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
56.56	57.99	56.06
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
112.0	118.9	116.1
V/m	V/m	V/m

Cursor:

Total = 118.9 V/m E Category: M4

Location: -0.5, 79, 4.7 mm

Dipole E-Field measurement/E Scan - CDMA 1/8th 835_PMF 2/Hearing Aid Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 30.10 V/m; Power Drift = 0.23 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 43.21 V/m

Near-field category: M4 (AWF 0 dB)

PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
39.00	41.81	39.31
V/m	V/m	V/m
Grid 4 M4 20.47 V/m	Grid 5 M4 22.99 V/m	Grid 6 M4 20.34 V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
41.05	43.21	42.62
V/m	V/m	V/m



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Cursor:

Total = 43.214 V/m E Category: M4

Location: -0.5, 84, 4.7 mm

Dipole E-Field measurement/E Scan - CW 835_PMF/Hearing Aid

Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 82.56 V/m; Power Drift = -0.07 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 125.5 V/m

Near-field category: M4 (AWF 0 dB)

PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
110.7	114.9	113.7
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
60.24	61.44	59.31
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
119.5	125.5	122.3
V/m	V/m	V/m

Cursor:

Total = 125.5 V/m E Category: M4

Location: -0.5, 79, 4.7 mm

Dipole E-Field measurement/E Scan - AM80%_ 835_PMF/Hearing Aid

Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 51.22 V/m; Power Drift = 0.06 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 78.06 V/m

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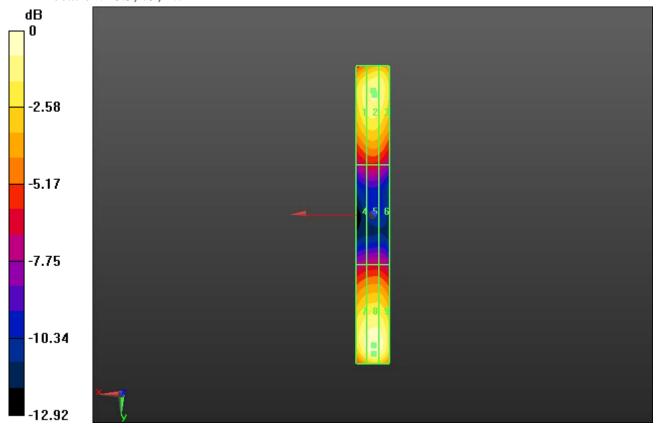
PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
69.60	71.98	71.35
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
38.16	38.79	37.51
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
74.44	78.06	76.37
V/m	V/m	V/m

Cursor:

Total = 78.060 V/m E Category: M4

Location: -0.5, 79, 4.7 mm



0 dB = 118.9V/m = 41.50 dB V/m



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Test Laboratory: RIM Testing Services

HAC RF_E-Field_validation_835 MHz_02_29_12

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1011

Communication System: CW; Frequency: 835 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

• Sensor-Surface: (Fix Surface), z = 4.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

• Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole E-Field measurement/E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid

Compatibility Test (41x361x1): Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 116.9 V/m; Power Drift = -0.40 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 170.2 V/m

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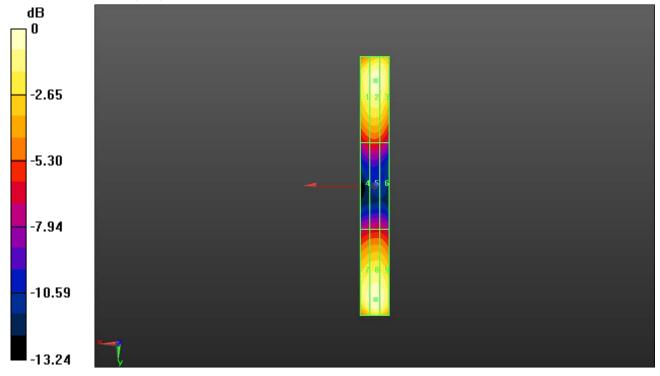
PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
157.8	162.9	160.4
V/m	V/m	V/m
Grid 4 M4 85.01 V/m		Grid 6 M4 83.55 V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
162.0	170.2	166.3
V/m	V/m	V/m

Cursor:

Total = 170.2 V/m E Category: M4

Location: -0.5, 79, 4.7 mm



0 dB = 170.2V/m = 44.62 dB V/m



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Test Laboratory: RIM Testing Services

HAC RF_E-Field_PMF_CDMA1880 MHz_02_29_12

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1008

Communication System: CDMA 1900, Communication System: CDMA 1900

1/8th, Communication System: CW, Communication System: AM 80%;

Frequency: 1880 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

• Sensor-Surface: (Fix Surface), z = 4.7

• Electronics: DAE3 Sn473: Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole E-Field measurement/E Scan - CDMA FR 1880_PMF/Hearing

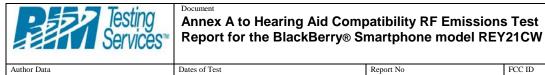
Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 87.80 V/m; Power Drift = 0.04 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 80.60 V/m



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PMF scaled E-field

Grid 1 M3	Grid 2 M3	Grid 3 M3
73.45	76.11	74.97
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
50.62	51.75	50.16
V/m	V/m	V/m
Grid 7 M3	Grid 8 M3	Grid 9 M3
76.91	80.60	78.58
V/m	V/m	V/m

Cursor:

Total = 80.601 V/m E Category: M3

Location: -0.5, 37.5, 4.7 mm

Dipole E-Field measurement/E Scan - CDMA 1/8th 1880_PMF 2/Hearing Aid Compatibility Test (41x181x1): Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 30.81 V/m; Power Drift = 0.09 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 30.61 V/m

Near-field category: M4 (AWF 0 dB)

PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
28.31	30.22	28.54
V /m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
18.23	20.72	18.32
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
26.79	30.61	30.61
V/m	V/m	V/m



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Cursor:

Total = 30.614 V/m E Category: M4

Location: -3.5, 36, 4.7 mm

Dipole E-Field measurement/E Scan- CW 1880_PMF/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 90.26 V/m; Power Drift = -0.02 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 81.58 V/m

Near-field category: M3 (AWF 0 dB)

PMF scaled E-field

Grid 1 M3 75.79 V/m	Grid 2 M3 78.08 V/m	Grid 3 M3 77.27 V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
52.44	53.31	51.71
V/m	V/m	V/m
Grid 7 M3	Grid 8 M3	Grid 9 M3
78.00	81.58	79.79
V/m	V/m	V/m

Cursor:

Total = 81.580 V/m E Category: M3

Location: -0.5, 37.5, 4.7 mm

Dipole E-Field measurement/E Scan - AM80%_ 1880_PMF/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 56.79 V/m; Power Drift = 0.05 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 52.04 V/m

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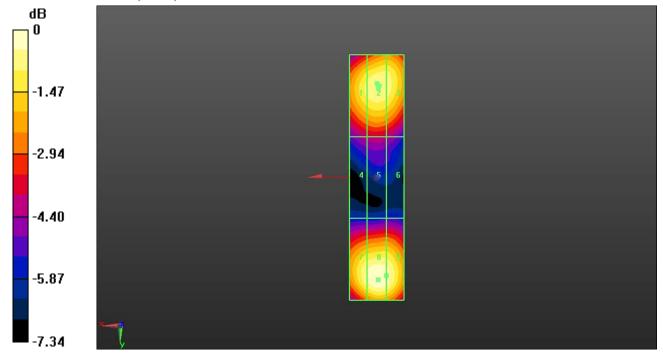
PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
47.54	49.44	48.95
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
33.05	33.87	32.89
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
49.67	52.04	50.92
V/m	V/m	V/m

Cursor:

Total = 52.041 V/m E Category: M4

Location: -0.5, 37.5, 4.7 mm



0 dB = 80.600 V/m = 38.13 dB V/m



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Test Laboratory: RIM Testing Services

HAC RF_E-Field_validation_1880 MHz_02_29_12

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1008

Communication System: CW; Frequency: 1880 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

• Sensor-Surface: (Fix Surface), z = 4.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

• Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole E-Field measurement/E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 142.2 V/m; Power Drift = 0.02 dB

PMR not calibrated. PMF = 1.000 is applied.

E-field emissions = 130.3 V/m

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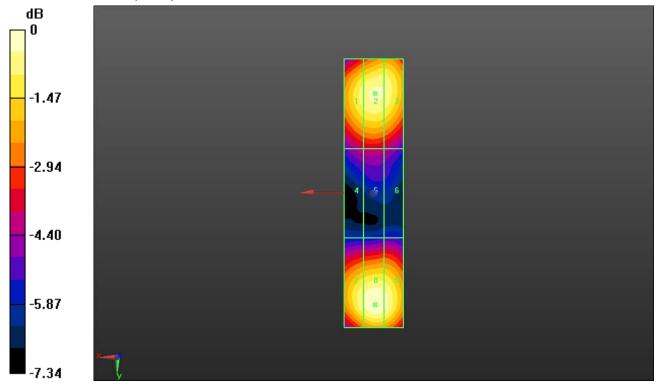
PMF scaled E-field

Grid 1 M2	Grid 2 M2	Grid 3 M2
120.3	124.7	123.0
V/m	V/m	V/m
Grid 4 M3 82.70 V/m		Grid 6 M3 81.81 V/m
Grid 7 M2	Grid 8 M2	Grid 9 M2
123.8	130.3	126.9
V/m	V/m	V/m

Cursor:

Total = 130.3 V/m E Category: M2

Location: -0.5, 37.5, 4.7 mm



0 dB = 130.3 V/m = 42.30 dB V/m



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Test Laboratory: RIM Testing Services

HAC RF_H-Field_PMF_CDMA835 MHz_02_29_12

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1011

Communication System: CDMA 850, Communication System: CDMA 850 1/8th, Communication System: CW, Communication System: AM 80%; Frequency: 835

MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

• Sensor-Surface: (Fix Surface), z = 4.7

• Electronics: DAE3 Sn473: Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole H-Field meausrement with H3DV6 probe/H Scan - CDMA FR 835_PMF/Hearing Aid Compatibility Test (41x181x1): Measurement grid:

dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.37 V/m; Power Drift = 0.11 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.34 A/m

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PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.32 A/m	0.33 A/m	0.32 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.33 A/m	0.34 A/m	0.33 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.32 A/m	0.34 A/m	0.32 A/m

Cursor:

Total = 0.344 A/m H Category: M4

Location: 0, 1.5, 4.7 mm

Dipole H-Field meausrement with H3DV6 probe/H Scan - CDMA 1/8th 835_PMF 2/Hearing Aid Compatibility Test (41x181x1): Measurement grid:

dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.13 V/m; Power Drift = 0.09 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.13 A/m

Near-field category: M4 (AWF 0 dB)

PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.12 A/m	0.12 A/m	0.12 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.13 A/m	0.13 A/m	0.12 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.12 A/m	0.13 A/m	0.12 A/m



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Cursor:

Total = 0.134 A/m H Category: M4 Location: 0, 0, 4.7 mm

Dipole H-Field meausrement with H3DV6 probe/H Scan - CW 835_PMF/Hearing Aid Compatibility Test (41x181x1): Measurement grid:

dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.39 V/m; Power Drift = 0.08 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.35 A/m

Near-field category: M4 (AWF 0 dB)

PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.32 A/m	0.34 A/m	0.32 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.34 A/m	0.35 A/m	0.33 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.33 A/m	0.25 A /m	0.22 4/

Cursor:

Total = 0.355 A/m H Category: M4 Location: 0, 5, 4.7 mm

Dipole H-Field meausrement with H3DV6 probe/H Scan - AM80%_PMF/Hearing Aid Compatibility Test (41x181x1): Measurement grid:

dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.24 V/m; Power Drift = -0.02 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.23 A/m

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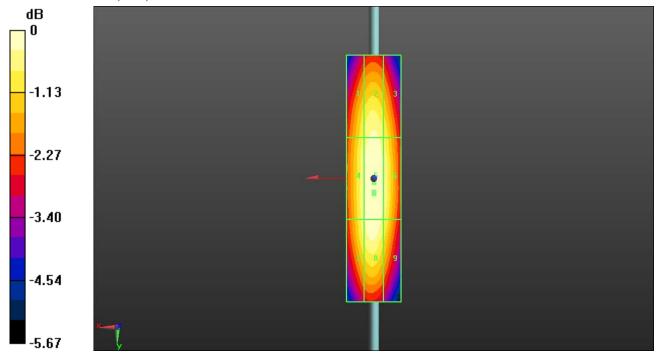
PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.20 A/m	0.21 A/m	0.20 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.21 A/m	0.23 A/m	0.22 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.21 A/m	0.22 A/m	0.21 A/m

Cursor:

Total = 0.227 A/m H Category: M4

Location: 0, 5.5, 4.7 mm



0 dB = 0.340 A/m = -9.37 dB A/m



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L6AREY20CW

Test Laboratory: RIM Testing Services

HAC RF_H-Field_validation_835 MHz_02_29_12

DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1011

Communication System: CW; Frequency: 835 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

• Sensor-Surface: (Fix Surface), z = 4.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

• Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole H-Field meausrement with H3DV6 probe/H Scan - measurement distance from the probe sensor center to CD835 Dipole

= 10mm/Hearing Aid Compatibility Test (41x181x1): Measurement grid:

dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.50 V/m; Power Drift = 0.20 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.47 A/m

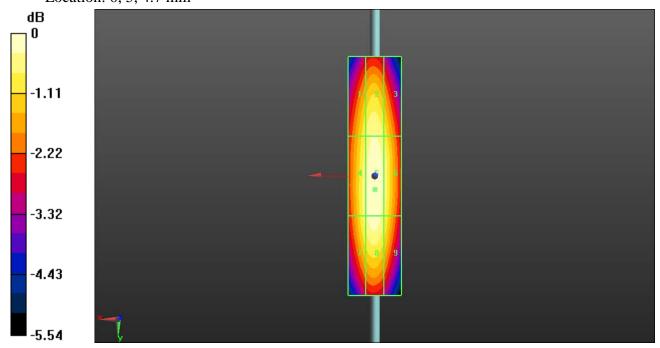
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PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.43 A/m	0.45 A/m	0.43 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.45 A/m	0.47 A/m	0.45 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.44 A/m	0.46 A/m	0.44 A/m

Cursor:

Total = 0.471 A/m H Category: M4 Location: 0, 5, 4.7 mm



0 dB = 0.470 A/m = -6.56 dB A/m



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Test Laboratory: RIM Testing Services

HAC RF_H-Field_PMF_CDMA1880 MHz_02_29_12

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1008

Communication System: CDMA 1900, Communication System: CDMA 1900

1/8th, Communication System: CW, Communication System: AM 80%;

Frequency: 1880 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

• Sensor-Surface: (Fix Surface), z = 4.7

• Electronics: DAE3 Sn473: Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole H-Field meausrement with H3DV6 probe/H Scan -CDMA FR 1880_PMF/Hearing Aid Compatibility Test (41x101x1): Measurement

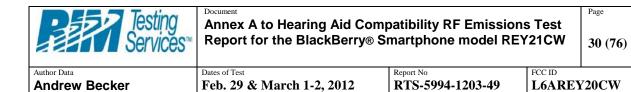
grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.31 V/m; Power Drift = -0.05 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.29 A/m



PMF scaled H-field

Grid 1	Grid 2	Grid 3
M3	M3	M3
0.27 A/m	0.28 A/m	0.27 A/m
М3	Grid 5 M3 0.29 A/m	Grid 6 M3 0.28 A/m
Grid 7	Grid 8	Grid 9
M3	M3	M3
0.27 A/m	0.28 A/m	0.27 A/m

Cursor:

Total = 0.293 A/m H Category: M3

Location: 0, -0.5, 4.7 mm

Dipole H-Field meausrement with H3DV6 probe/H Scan -CDMA 1/8th 1880_PMF 2/Hearing Aid Compatibility Test (41x101x1): Measurement grid:

dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.12 V/m; Power Drift = -0.90 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.11 A/m

Near-field category: M4 (AWF 0 dB)

PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.10 A/m	0.10 A/m	0.09 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.10 A/m	0.11 A/m	0.10 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.09 A/m	0.11 A/m	0.09 A/m



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Cursor:

Total = 0.111 A/m H Category: M4 Location: 0, 0, 4.7 mm

Dipole H-Field meausrement with H3DV6 probe/H Scan - CW 1880_PMF/Hearing Aid Compatibility Test (41x101x1): Measurement grid:

dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.31 V/m; Power Drift = -0.01 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.29 A/m

Near-field category: M3 (AWF 0 dB)

PMF scaled H-field

Grid 1	Grid 2	Grid 3
M3	M3	M3
0.27 A/m	0.28 A/m	0.27 A/m
Grid 4	Grid 5	Grid 6
M3	M3	M3
0.28 A/m	0.29 A/m	0.28 A/m
Grid 7	Grid 8	Grid 9
M3	M3	M3
0.27 A/m	0.28 A/m	0.26 A/m

Cursor:

Total = 0.289 A/m H Category: M3 Location: 0, 0, 4.7 mm

Dipole H-Field meausrement with H3DV6 probe/H Scan - AM80%_1880_PMF/Hearing Aid Compatibility Test (41x101x1):

Measurement grid: dx=5mm, dy=5mm Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.20 V/m; Power Drift = 0.04 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.19 A/m

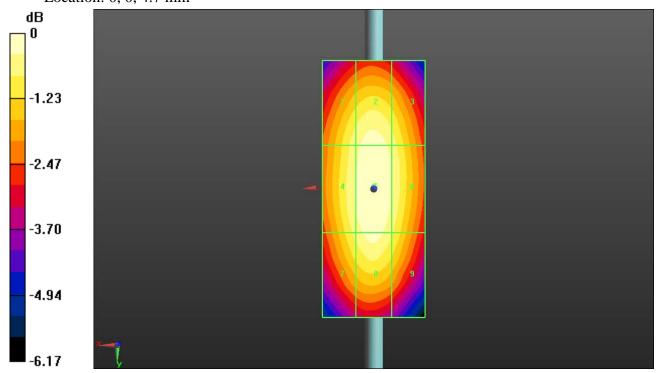
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PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.17 A/m	0.18 A/m	0.17 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.18 A/m	0.19 A/m	0.18 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.17 A/m	0.18 A/m	0.17 A/m

Cursor:

Total = 0.187 A/m H Category: M4 Location: 0, 0, 4.7 mm



0 dB = 0.290 A/m = -10.75 dB A/m



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L6AREY20CW

Test Laboratory: RIM Testing Services

HAC RF_H-Field_validation_1880 MHz_02_29_12

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1008

Communication System: CW; Frequency: 1880 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

• Sensor-Surface: (Fix Surface), z = 4.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

• Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Dipole H-Field meausrement with H3DV6 probe/H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x101x1):

Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.48 V/m; Power Drift = -0.04 dB

PMR not calibrated. PMF = 1.000 is applied.

H-field emissions = 0.45 A/m

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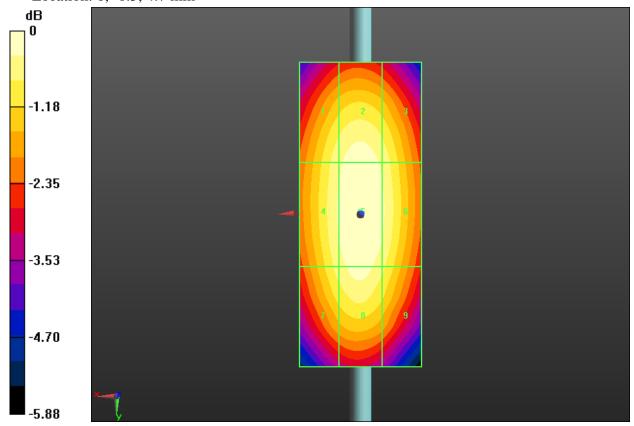
PMF scaled H-field

Grid 1	Grid 2	Grid 3
M2	M2	M2
0.43 A/m	0.44 A/m	0.43 A/m
Grid 4	Grid 5	Grid 6
M2	M2	M2
0.43 A/m	0.45 A/m	0.43 A/m
Grid 7	Grid 8	Grid 9
Grid 7 M2	Grid 8 M2	Grid 9 M2

Cursor:

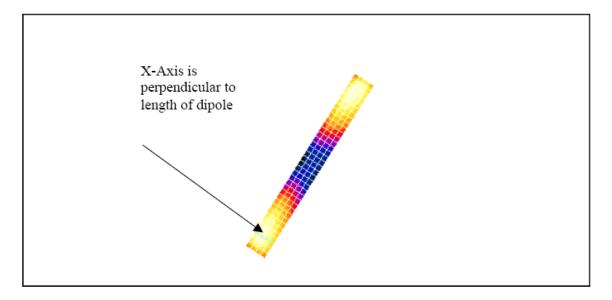
Total = 0.455 A/m H Category: M2

Location: 0, -0.5, 4.7 mm



0 dB = 0.450 A/m = -6.94 dB A/m





The green line in this figure shows the axis along which the points lie.

Comparison of 5mm and 2mm step sizes

An additional set of measurements was taken: dipole validations were performed using 5 mm and 2 mm step sizes. The delta between the two readings is insignificant for both field types (< 0.4% for E and 0% for H), demonstrating that 5 mm is sufficient. The plots follow.

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Date/Time: 14/07/2005 11:35:24 AM

Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1 Medium: Air Medium parameters used: σ = 0 mho/m, $\varepsilon_{\rm r}$ = 1; ρ = 1000 kg/m³

Phantom section: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 SN2285; ConvF(1, 1, 1); Calibrated: 10/12/2004
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 03/01/2005
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (5x19x1):

Measurement grid: dx=5mm, dy=5mm

Maximum value of Total (measured) = 134.8 V/m

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (41x181x1):

Measurement grid: dx=5mm, dy=5mm

Maximum value of Total field (slot averaged) = 131.0 V/m

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

E in V/m (Time averaged) E in V/m (Slot averaged)

Grid 1	Grid 2	Grid 3
123.2	138.1	138.4
Grid 4	Grid 5	Grid 6
80.9	92.3	92.2
Grid 7	Grid 8	Grid 9
		130.7

		Grid 3
123.2	138.1	138.4
Grid 4	Grid 5	Grid 6
80.9	92.3	92.2
	Grid 8	
119.8	131.0	130.7

Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19

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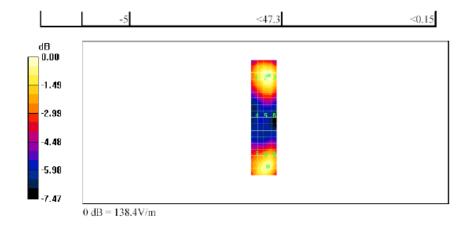
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Lab: RIM Testing Services (RTS)

Dipole Validation 1880 MHz_2mm step_E-Field 07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1 Medium: Air Medium parameters used: σ = 0 mho/m, $\varepsilon_{\rm r}$ = 1; ρ = 1000 kg/m³

Phantom section: H Device Section

DASY4 Configuration:

- Probe: ER3DV6 SN2285; ConvF(1, 1, 1); Calibrated: 10/12/2004
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 03/01/2005
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (11x46x1):

Measurement grid: dx=2mm, dy=2mm

Maximum value of Total (measured) = 138.0 V/m

E Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (101x451x1):

Measurement grid: dx=2mm, dy=2mm

Maximum value of Total field (slot averaged) = 131.2 V/m

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

E in V/m (Time averaged) E in V/m (Slot averaged)

Grid 2 Grid 3 138.6 138.6

Grid 5 **92.1** 138.6 Grid 6

92.1 91.6 Grid 8 Grid 9 131.2 131.0

Grid 1	Grid 2	Grid 3	Grid
123.1	138.6	138.6	123.
Grid 4	Grid 5	Grid 6	Grid
81.4	92.1	91.6	81.4
Grid 7	Grid 8	Grid 9	Grid
121.3	131.2	131.0	121.

Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
М3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19
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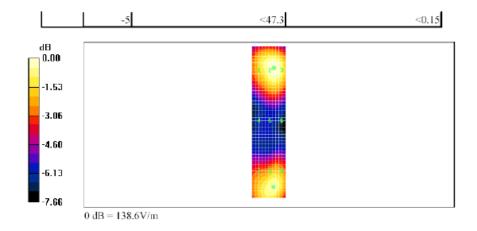
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Lab: RIM Testing Services (RTS)

HAC_H_Dipole_CW 1880_5 mm step_07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz;Duty Cycle: 1:1 Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m³

Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 SN6105; ; Calibrated: 10/12/2004
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 03/01/2005
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

H Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (5x19x1):

Measurement grid: dx=5mm, dy=5mm

Maximum value of Total (measured) = 0.406 A/m

H Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (41x181x1):

Measurement grid: dx=5mm, dy=5mm

Maximum value of Total field (slot averaged) = 0.406 A/m

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

H in A/m (Time averaged) H in A/m (Slot averaged)

Grid 1	Grid 2	Grid 3	Grid 1	Grid 2	Grid 3
0.342	0.359	0.344	0.342	0.359	0.344
		Grid 6	 Grid 4		-
0.389	0.406	0.389	0.389	0.406	0.389
Grid 7			Grid 7		
0.363	0.378	0.363	0.363	0.378	0.363

Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
M3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	
M4	0	<63.1	<0.19

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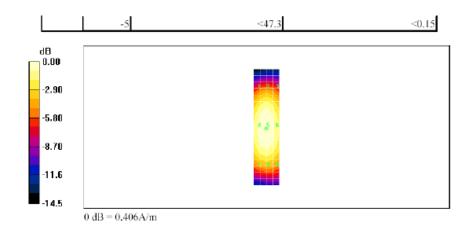
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Lab: RIM Testing Services (RTS)

HAC_H_Dipole_CW 1880_2 mm step_07_14_05

DUT: HAC Dipole 1880 MHz; Type: CD1880V3

Communication System: CW; Frequency: 1880 MHz; Duty Cycle: 1:1 Medium: Air Medium parameters used: σ = 0 mho/m, ϵ_r = 1; ρ = 1 kg/m³

Phantom section: H Dipole Section

DASY4 Configuration:

- Probe: H3DV6 SN6105; ; Calibrated: 10/12/2004
- Sensor-Surface: 0mm (Fix Surface)Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn472; Calibrated: 03/01/2005
- Phantom: HAC Test Arch; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

H Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (11x46x1):

Measurement grid; dx=2mm, dy=2mm

Maximum value of Total (measured) = 0.406 A/m

H Scan 10mm above CD 1880 MHz/Hearing Aid Compatibility Test (101x451x1):

Measurement grid: dx=2mm, dy=2mm

Maximum value of Total field (slot averaged) = 0.406 A/m

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

H in A/m (Time averaged) H in A/m (Slot averaged)

Grid 2 Grid :

Grid 5 Grid 6 **0.406 0.391** Grid 8 Grid 9 **0.380 0.365**

0.348 Grid 6

	Grid 1	Grid 2	Grid 3	Grid :
	0.347	0.361	0.348	0.347
ш			Grid 6	 Grid 4
	0.394	0.406	0.391	0.394
			Grid 9	Grid 7
	0.367	0.380	0.365	0.367

Category	AWF (dB)	Limits for E-Field Emissions (V/m)	Limits for H-Field Emissions (A/m)
M1	0	199.5 - 354.8	0.6 - 1.07
	-5	149.6 - 266.1	0.45 - 0.8
M2	0	112.2 - 199.5	0.34 - 0.6
	-5	84.1 - 149.6	0.25 - 0.45
М3	0	63.1 - 112.2	0.19 - 0.34
	-5	47.3 - 84.1	0.15 - 0.25
M4	0	<63.1	<0.19
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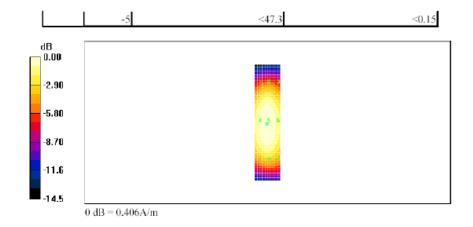
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A.3 RF emissions plots



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Andrew Becker

Feb. 29 & March 1-2, 2012

Report No **RTS-5994-1203-49**

L6AREY20CW

Date/Time: 3/1/2012 12:09:24 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_CDMA850

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 850; Frequency: 824.7 MHz, Frequency: 836.52

MHz, Frequency: 848.52 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

• Sensor-Surface: (Fix Surface), z = 8.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device E-Field measurement with ER probe/E Scan - ER3D - 2007: 15 mm from Probe Center to Device_Low_Chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 91.46 V/m; Power Drift = 0.14 dB

PMR not calibrated. PMF = 1.060 is applied.

E-field emissions = 76.87 V/m



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L6AREY20CW

PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
64.95	73.86	73.00
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
67.96	76.87	75.73
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
69.35	76.42	75.74
V/m	V/m	V/m

Cursor:

Total = 76.870 V/m

E Category: M4

Location: -4.5, 5.5, 8.7 mm

Device E-Field measurement with ER probe/E Scan - ER3D - 2007: 15 mm from Probe Center to the Device_Mid_Chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 104.2 V/m; Power Drift = 0.08 dB

PMR not calibrated. PMF = 1.060 is applied.

E-field emissions = 88.96 V/m



PMF scaled E-field

Grid 1 M4 72.51 V/m	Grid 2 M4 85.41 V/m	Grid 3 M4 85.38 V/m
	.,	Grid 6 M4 88.75 V/m
Grid 7 M4 76.42 V/m	Grid 8 M4 88.48 V/m	Grid 9 M4 88.30 V/m

Cursor:

Total = 88.961 V/m

E Category: M4

Location: -7, 4, 8.7 mm

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 104.5 V/m; Power Drift = 0.08 dB

PMR not calibrated. PMF = 1.060 is applied.

E-field emissions = 88.89 V/m

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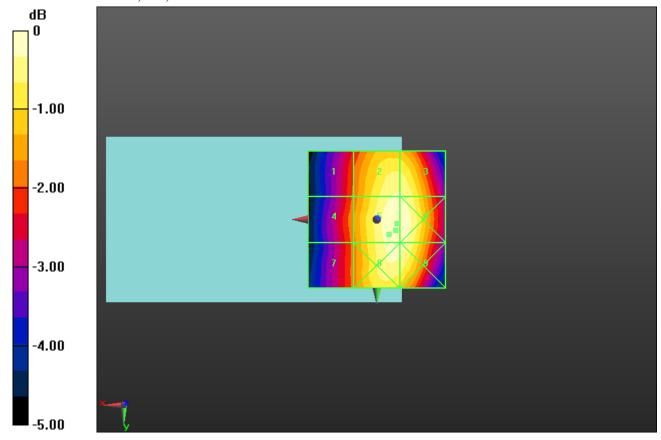
PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
72.32	86.30	86.25
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
74.18	88.89	88.77
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
72.88	87.52	87.39
V/m	V/m	V/m

Cursor:

Total = 88.892 V/m E Category: M4

Location: -7.5, 1.5, 8.7 mm



0 dB = 76.870 V/m = 37.72 dB V/m



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L6AREY20CW

Date/Time: 3/1/2012 4:56:04 PM

Test Laboratory: RIM Testing Services

HAC RF_E-Field_CDMA850_1/8th_Rate

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 850 1/8 th; Frequency: 836.52 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

Sensor-Surface: (Fix Surface), z = 8.7

Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 38.38 V/m; Power Drift = 0.14 dB

PMR not calibrated. PMF = 2.900 is applied.

E-field emissions = 96.45 V/m

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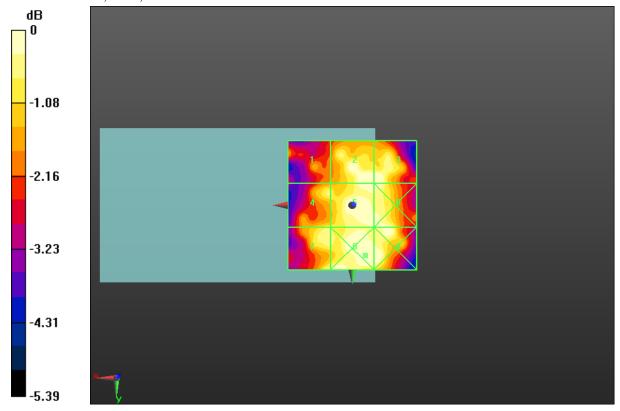
PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
74.87	95.40	94.54
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
83.43	96.45	93.23
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
88.93	98.09	96.18
V/m	V/m	V/m

Cursor:

Total = 98.092 V/m E Category: M4

Location: -5, 19.5, 8.7 mm



0 dB = 89.640 V/m = 39.05 dB V/m



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L6AREY20CW

Test Laboratory: RIM Testing Services

HAC RF E-Field CDMA850 1/8th Rate Telecoil

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 850 1/8 th; Frequency: 836.52 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

• Sensor-Surface: (Fix Surface), z = 8.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device E-Field measurement with ER probe/E Scan - ER3D - 2007: 15 mm from Probe Center to the Device_Telecoil/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 42.11 V/m; Power Drift = -0.79 dB

PMR not calibrated. PMF = 2.900 is applied.

E-field emissions = 94.76 V/m

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Andrew Becker	Feb. 29 & March 1-2, 2012 RTS-5994-1203-49 L6AREY20C		20CW

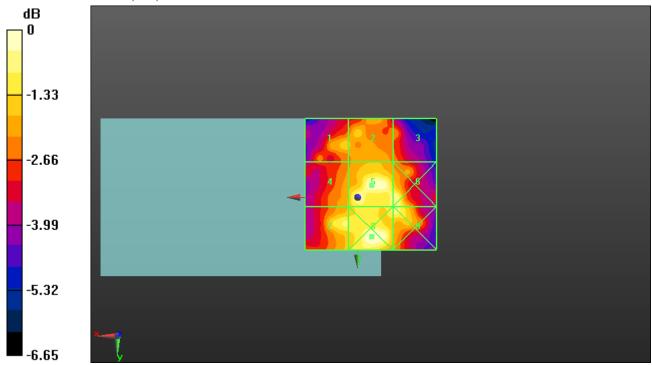
PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
80.58	80.53	73.99
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
79.20	94.76	90.84
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
87.67	96.18	89.07
V/m	V/m	V/m

Cursor:

Total = 96.177 V/m E Category: M4

Location: -5.5, 15, 8.7 mm



0 dB = 95.550 V/m = 39.60 dB V/m



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Test Laboratory: RIM Testing Services

HAC RF_E-Field_CDMA1900

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 1900; Frequency: 1851.25 MHz, Frequency:

1880 MHz, Frequency: 1908.5 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

• Sensor-Surface: (Fix Surface), z = 8.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device E-Field measurement with ER probe/E Scan - ER3D - 2007: 15 mm from Probe Center to Device_Low_Chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 42.85 V/m; Power Drift = 0.22 dB

PMR not calibrated. PMF = 1.010 is applied.

E-field emissions = 48.71 V/m



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PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
25.40	36.30	37.34
V/m	V/m	V/m
Grid 4 M4 28.76 V/m	Grid 5 M4 48.71 V/m	Grid 6 M4 49.13 V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
36.81	50.73	50.73
V/m	V/m	V/m

Cursor:

Total = 50.730 V/m

E Category: M4

Location: -8.5, 18, 8.7 mm

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 39.73 V/m; Power Drift = -0.06 dB

PMR not calibrated. PMF = 1.010 is applied.

E-field emissions = 45.83 V/m



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PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
25.89	32.89	34.37
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
26.93	45.83	46.24
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
36.75	49.70	49.48
V/m	V/m	V/m

Cursor:

Total = 49.698 V/m

E Category: M4

Location: -7, 21.5, 8.7 mm

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 40.71 V/m; Power Drift = 0.01 dB

PMR not calibrated. PMF = 1.010 is applied.

E-field emissions = 45.61 V/m

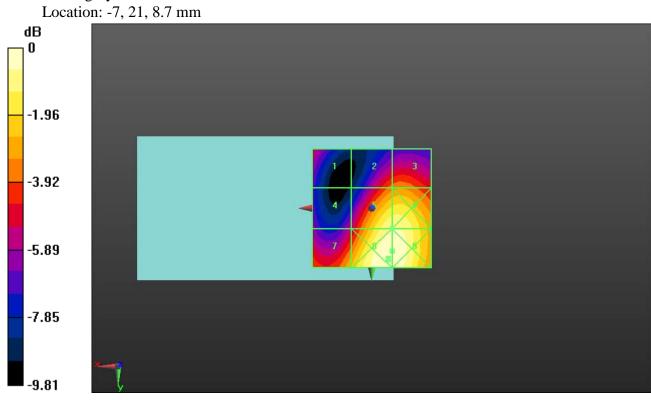
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PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
28.81	33.69	34.63
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
27.60	45.61	45.76
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
37.41	49.15	48.95
V/m	V/m	V/m

Cursor:

Total = 49.145 V/m E Category: M4



0 dB = 50.730 V/m = 34.11 dB V/m



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L6AREY20CW

Date/Time: 3/1/2012 5:08:39 PM

Test Laboratory: RIM Testing Services HAC RF_E-Field_CDMA1900_1/8th_Rate

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 1900 1/8 th; Frequency: 1851.25 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

• Sensor-Surface: (Fix Surface), z = 8.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device E-Field measurement with ER probe/E Scan - ER3D - 2007: 15 mm from Probe Center to Device_Low_Chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 17.91 V/m; Power Drift = -1.22 dB

PMR not calibrated. PMF = 2.670 is applied.

E-field emissions = 45.02 V/m

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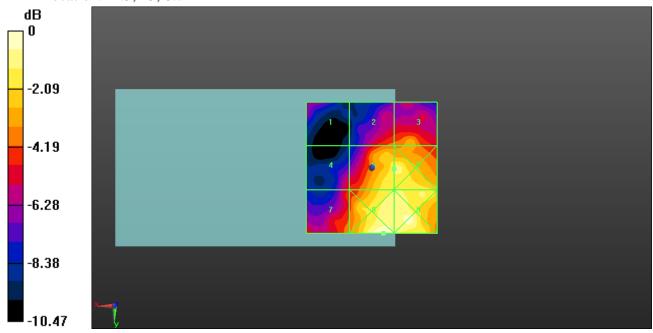
PMF scaled E-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
25.26	33.86	37.35
V/m	V/m	V/m
Grid 4 M4	Grid 5 M4	Grid 6 M4
30.75	45.02	46.51
V/m	V/m	V/m
Grid 7 M4	Grid 8 M4	Grid 9 M4
34.75	52.60	50.44
V/m	V/m	V/m

Cursor:

Total = 52.596 V/m E Category: M4

Location: -4.5, 25, 8.7 mm



0 dB = 52.590 V/m = 34.42 dB V/m



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L6AREY20CW

Test Laboratory: RIM Testing Services

HAC RF_E-Field_CDMA1900_Telecoil

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 1900; Frequency: 1851.25 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: ER3DV6 - SN2286; ConvF(1, 1, 1); Calibrated: 1/9/2012

• Sensor-Surface: (Fix Surface), z = 8.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

• Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device E-Field measurement with ER probe/E Scan - ER3D - 2007: 15 mm from Probe Center to the Device_Telecoil/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 44.20 V/m; Power Drift = 0.10 dB

PMR not calibrated. PMF = 1.010 is applied.

E-field emissions = 45.90 V/m

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Andrew Becker	Feb. 29 & March 1-2, 2012 RTS-5994-1203-49 L6AREY20C		20CW

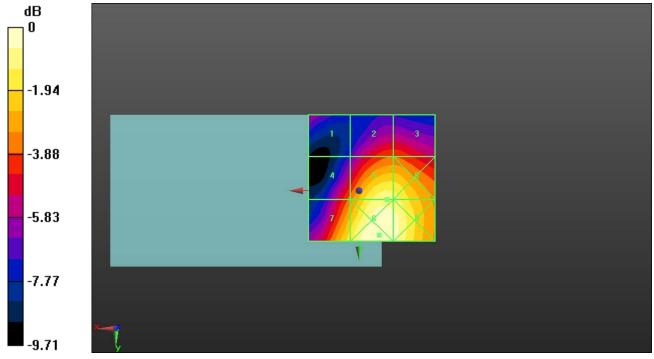
PMF scaled E-field

Grid 1 M4 26.65 V/m	Grid 2 M4 32.50 V/m	Grid 3 M4 32.49 V/m
Grid 4 M4 33.89 V/m	Grid 5 M4 45.90 V/m	Grid 6 M4 45.30 V/m
Grid 7 M4 42.83 V/m	Grid 8 M4 50.89 V/m	Grid 9 M4 48.95 V/m

Cursor:

Total = 50.890 V/m E Category: M4

Location: -8, 17.5, 8.7 mm



0 dB = 50.890 V/m = 34.13 dB V/m



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Date/Time: 3/1/2012 2:36:24 PM

Test Laboratory: RIM Testing Services

HAC RF_H-Field_CDMA850

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 850; Frequency: 824.7 MHz, Frequency: 836.52

MHz, Frequency: 848.52 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

Sensor-Surface: (Fix Surface), z = 8.7

Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the Device_low_chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.08 V/m; Power Drift = 0.10 dB

PMR not calibrated. PMF = 1.030 is applied.

H-field emissions = 0.15 A/m



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PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.15 A/m	0.11 A/m	0.07 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.15 A/m	0.11 A/m	0.06 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.16 A/m	0.11 A/m	0.07 A/m

Cursor:

Andrew Becker

Total = 0.160 A/m

H Category: M4

Location: 25, 24.5, 8.7 mm

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the Device_mid_chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.10 V/m; Power Drift = 0.04 dB

PMR not calibrated. PMF = 1.030 is applied.

H-field emissions = 0.17 A/m



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PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.17 A/m	0.13 A/m	0.08 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.17 A/m	0.12 A/m	0.07 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.18 A/m	0.13 A/m	0.08 A/m

Cursor:

Total = 0.184 A/m

H Category: M4

Location: 25, 22, 8.7 mm

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the Device_high_chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.10 V/m; Power Drift = 0.36 dB

PMR not calibrated. PMF = 1.030 is applied.

H-field emissions = 0.17 A/m

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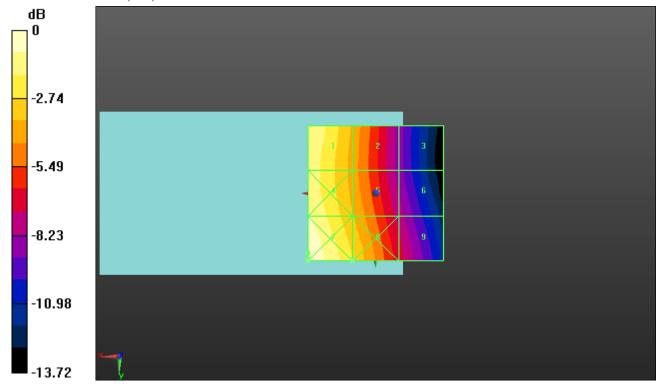
PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.17 A/m	0.13 A/m	0.08 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.18 A/m	0.13 A/m	0.09 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.19 A/m	0.14 A/m	0.10 A/m

Cursor:

Total = 0.190 A/m H Category: M4

Location: 25, 25, 8.7 mm





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L6AREY20CW

Date/Time: 3/1/2012 4:38:58 PM

Test Laboratory: RIM Testing Services

HAC RF_H-Field_CDMA850_1/8th_Rate

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 850 1/8 th; Frequency: 848.52 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

Sensor-Surface: (Fix Surface), z = 8.7

Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the Device_high_chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.04 V/m; Power Drift = 0.30 dB

PMR not calibrated. PMF = 2.650 is applied.

H-field emissions = 0.17 A/m

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Author Data	Dates of Test	Report No	FCC ID	
Andrew Becker	Feb. 29 & March 1-2, 2012	RTS-5994-1203-49	L6AREY	20CW

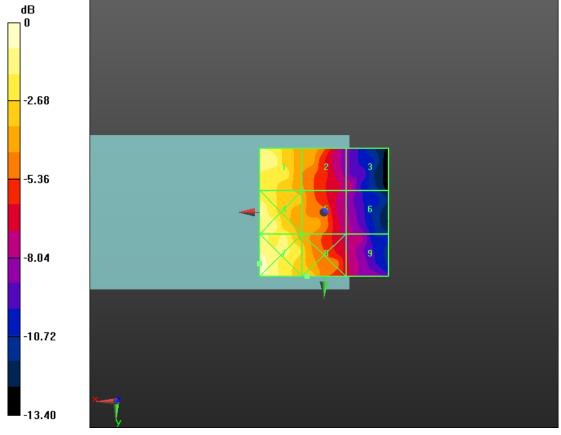
PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.17 A/m	0.12 A/m	0.08 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.18 A/m	0.13 A/m	0.08 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.20 A/m	0.14 A/m	0.09 A/m

Cursor:

Total = 0.197 A/m H Category: M4

Location: 25, 20, 8.7 mm



0 dB = 0.190 A/m = -14.42 dB A/m



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Andrew Becker

Feb. 29 & March 1-2, 2012

Report No **RTS-5994-1203-49**

L6AREY20CW

Date/Time: 3/2/2012 10:52:06 AM

Test Laboratory: RIM Testing Services

HAC RF_H-Field_CDMA850_Telecoil

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 850; Frequency: 848.52 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

• Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

• Sensor-Surface: (Fix Surface), z = 8.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the

Device_Centre_Telecoil/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.10 V/m; Power Drift = 0.18 dB

PMR not calibrated. PMF = 1.030 is applied.

H-field emissions = 0.16 A/m

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Author Data	Dates of Test	Report No	FCC ID	
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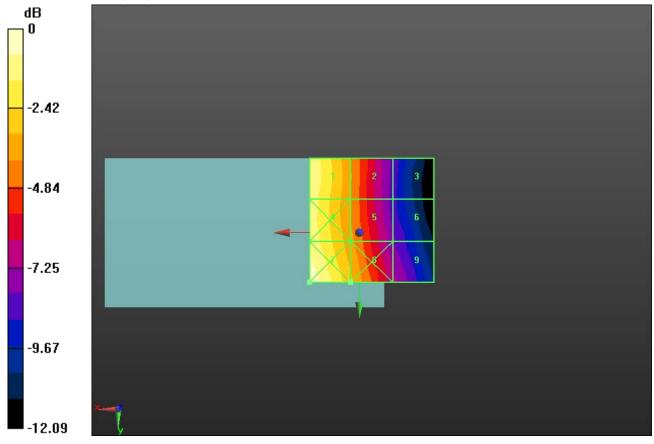
PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.16 A/m	0.11 A/m	0.07 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.16 A/m	0.12 A/m	0.07 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.18 A/m	0.13 A/m	0.08 A/m

Cursor:

Total = 0.175 A/m H Category: M4

Location: 20, 20, 8.7 mm





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Report No RTS-5994-1203-49

L6AREY20CW

Date/Time: 3/1/2012 3:22:33 PM

Test Laboratory: RIM Testing Services

HAC RF_H-Field_CDMA1900

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 1900; Frequency: 1851.25 MHz, Frequency:

1880 MHz, Frequency: 1908.5 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

Sensor-Surface: (Fix Surface), z = 8.7

Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the Device_low_chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.10 V/m; Power Drift = -0.16 dB

PMR not calibrated. PMF = 0.990 is applied.

H-field emissions = 0.11 A/m



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L6AREY20CW

PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.10 A/m	0.10 A/m	0.09 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.13 A/m	0.11 A/m	0.09 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.15 A/m	0.12 A/m	0.08 A/m

Cursor:

Total = 0.145 A/m

H Category: M4

Location: 25, 25, 8.7 mm

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the Device_mid_chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.11 V/m; Power Drift = 0.14 dB

PMR not calibrated. PMF = 0.990 is applied.

H-field emissions = 0.11 A/m



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L6AREY20CW

PMF scaled H-field

Grid 1		Grid 3
M4	M4	M4
0.10 A/m	0.10 A/m	0.09 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.12 A/m	0.11 A/m	0.09 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.14 A/m	0.13 A/m	0.09 A/m

Cursor:

Total = 0.144 A/m

H Category: M4

Location: 25, 25, 8.7 mm

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the Device_high_chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.12 V/m; Power Drift = 0.20 dB

PMR not calibrated. PMF = 0.990 is applied.

H-field emissions = 0.12 A/m

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Andrew Becker	Feb. 29 & March 1-2, 2012	RTS-5994-1203-49	L6AREY	20CW

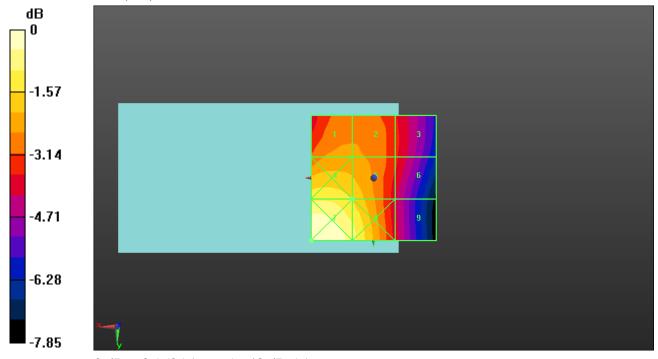
PMF scaled H-field

Grid 1	Grid 2	Grid 3
M4	M4	M4
0.11 A/m	0.11 A/m	0.10 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.13 A/m	0.12 A/m	0.10 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.15 A/m	0.14 A/m	0.10 A/m

Cursor:

Total = 0.153 A/m H Category: M4

Location: 25, 25, 8.7 mm



0 dB = 0.150 A/m = -16.48 dB A/m



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Andrew Becker

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L6AREY20CW

Date/Time: 3/1/2012 4:27:03 PM

Report No

Test Laboratory: RIM Testing Services

HAC RF_H-Field_CDMA1900_1/8th_Rate

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 1900 1/8 th; Frequency: 1908.5 MHz

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

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

Sensor-Surface: (Fix Surface), z = 8.7

Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the Device_high_chan/Hearing Aid

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.04 V/m; Power Drift = 0.19 dB

PMR not calibrated. PMF = 2.600 is applied.

H-field emissions = 0.11 A/m

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Andrew Becker	Feb. 29 & March 1-2, 2012	RTS-5994-1203-49	L6AREY	720CW

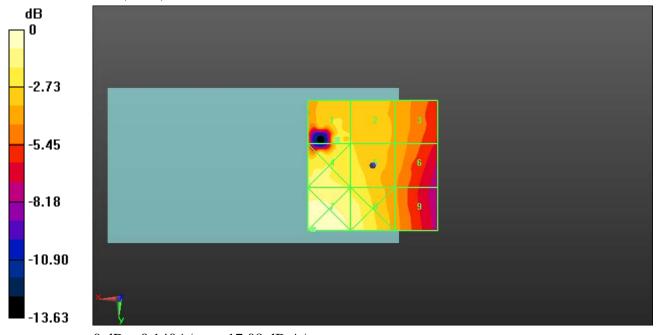
PMF scaled H-field

Grid 1 M4	Grid 2 M4	Grid 3 M4
0.11 A/m	0.10 A/m	0.09 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.12 A/m	0.11 A/m	0.09 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.14 A/m	0.12 A/m	0.09 A/m

Cursor:

Total = 0.139 A/m H Category: M4

Location: 23, 24.5, 8.7 mm



0 dB = 0.140 A/m = -17.08 dB A/m



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Author Data

Andrew Becker

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L6AREY20CW

Date/Time: 3/2/2012 11:22:13 AM

Test Laboratory: RIM Testing Services HAC RF_H-Field_CDMA1900_Telecoil

DUT: BlackBerry Smartphone; Type: Sample; Serial: 297DF9E4

Communication System: CDMA 1900; Frequency: 1908.5 MHz Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

Probe: H3DV6 - SN6105; ; Calibrated: 11/8/2011

• Sensor-Surface: (Fix Surface), z = 8.7

• Electronics: DAE3 Sn473; Calibrated: 1/13/2012

Phantom: HAC RF Test Arch with AMCC; Type: SD HAC P01 BA; Serial: Not Specified

• DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

Device H-Field meausrement with H3DV6 probe/H Scan - H3DV6 -

2007: 15 mm from Probe Center to the

Device_Centre_Telecoil/Hearing Aid Compatibility Test (101x101x1):

Measurement grid: dx=5mm, dy=5mm

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.11 V/m; Power Drift = 0.10 dB

PMR not calibrated. PMF = 0.990 is applied.

H-field emissions = 0.11 A/m

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PMF scaled H-field

Grid 1		Grid 3
M4	M4	M4
0.11 A/m	0.11 A/m	0.09 A/m
Grid 4	Grid 5	Grid 6
M4	M4	M4
0.12 A/m	0.11 A/m	0.09 A/m
Grid 7	Grid 8	Grid 9
M4	M4	M4
0.15 A/m	0.12 A/m	0.09 A/m

Cursor:

Total = 0.147 A/m H Category: M4

Location: 20, 20, 8.7 mm

