

APPENDIX A. HAC TEST PLOTS

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /1013

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 824.7 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

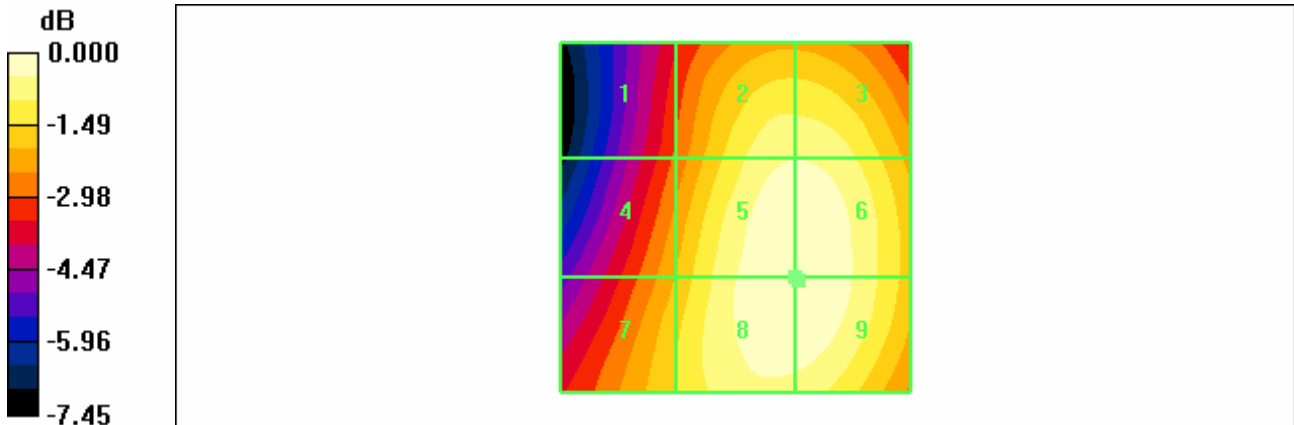
Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 31.4 V/m
 Probe Modulation Factor = 0.941
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 41.4 V/m; Power Drift = -0.102 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
22.6 M4	29.6 M4	29.6 M4
Grid 4	Grid 5	Grid 6
25.1 M4	31.4 M4	31.4 M4
Grid 7	Grid 8	Grid 9
26.5 M4	31.4 M4	31.4 M4

Cursor:

Total = 31.4 V/m
 E Category: M4
 Location: -9, 9, 369.9 mm



0 dB = 31.4V/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /384

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

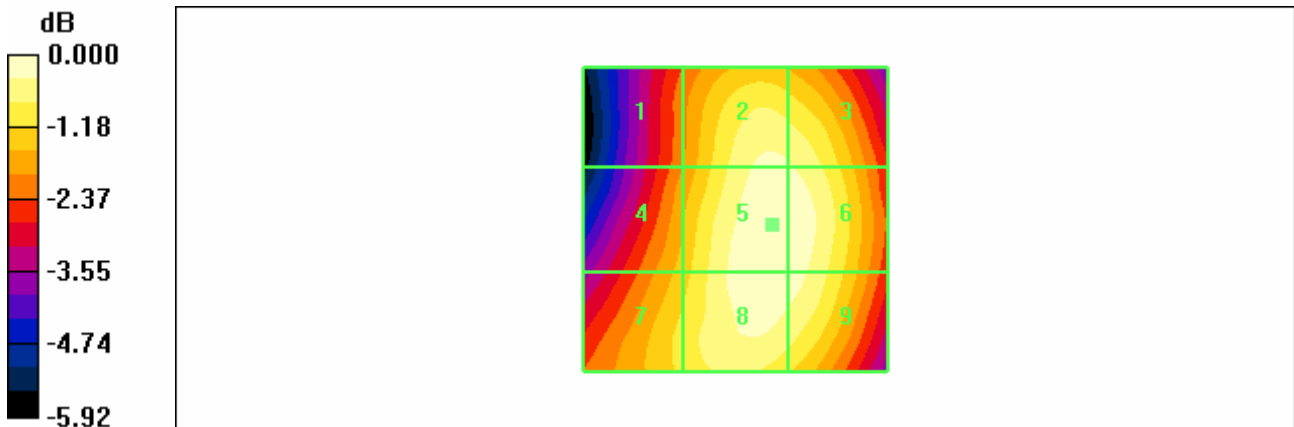
Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 31.4 V/m
 Probe Modulation Factor = 0.941
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 43.5 V/m; Power Drift = 0.029 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
25.1 M4	30.4 M4	30.2 M4
Grid 4	Grid 5	Grid 6
26.9 M4	31.4 M4	31.1 M4
Grid 7	Grid 8	Grid 9
28.0 M4	31.2 M4	30.9 M4

Cursor:

Total = 31.4 V/m
 E Category: M4
 Location: -6, 1, 369.9 mm



0 dB = 31.4V/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /777
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 848.31 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

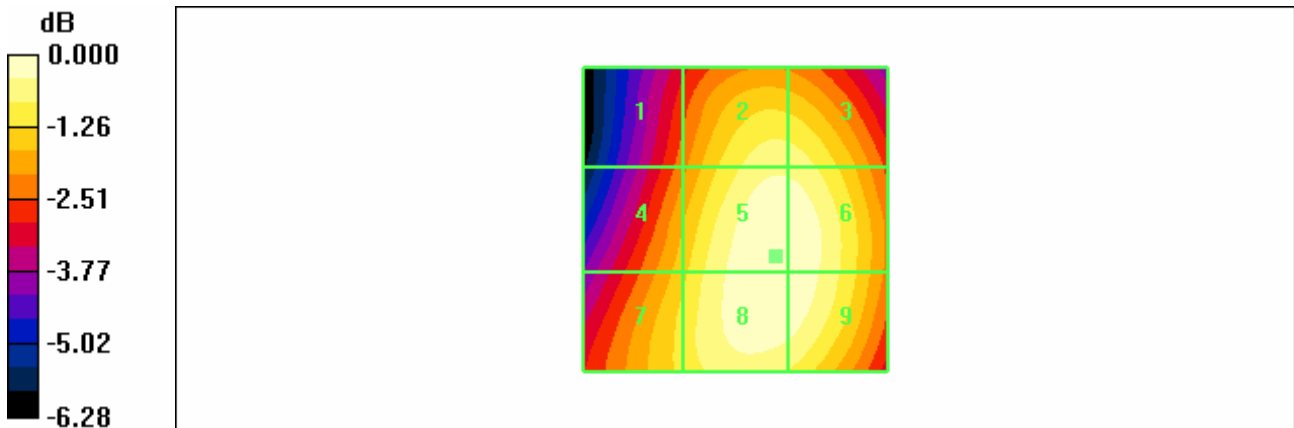
DASY4 Configuration:
 - Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 39.5 V/m
 Probe Modulation Factor = 0.941
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 53.7 V/m; Power Drift = 0.010 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
30.7 M4	37.3 M4	37.2 M4
Grid 4	Grid 5	Grid 6
33.7 M4	39.5 M4	39.4 M4
Grid 7	Grid 8	Grid 9
34.9 M4	39.5 M4	39.3 M4

Cursor:
 Total = 39.5 V/m
 E Category: M4
 Location: -6.5, 6, 369.9 mm



0 dB = 39.5V/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /25
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: PCS 1900MHz FCC; Frequency: 1851.25 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

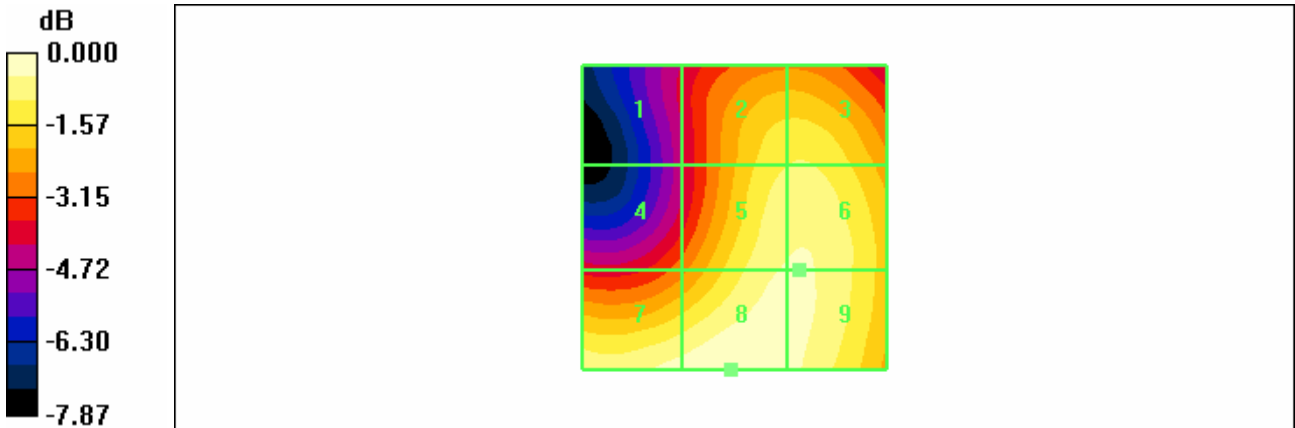
DASY4 Configuration:
 - Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 27.1 V/m
 Probe Modulation Factor = 0.966
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 29.9 V/m; Power Drift = -0.008 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
17.1 M4	24.0 M4	24.2 M4
Grid 4	Grid 5	Grid 6
19.6 M4	25.6 M4	25.7 M4
Grid 7	Grid 8	Grid 9
26.3 M4	27.1 M4	26.1 M4

Cursor:
 Total = 27.1 V/m
 E Category: M4
 Location: 0.5, 25, 369.9 mm



0 dB = 27.1V/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /600

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: PCS 1900MHz FCC; 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

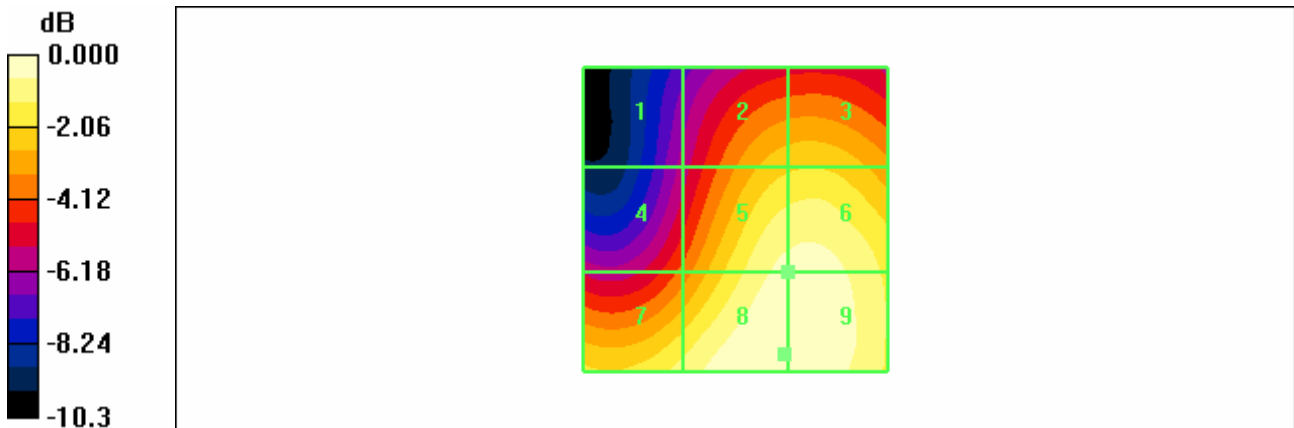
Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 26.7 V/m
 Probe Modulation Factor = 0.966
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 28.3 V/m; Power Drift = -0.067 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
13.7 M4	20.8 M4	21.1 M4
Grid 4	Grid 5	Grid 6
17.2 M4	25.3 M4	25.6 M4
Grid 7	Grid 8	Grid 9
23.6 M4	26.7 M4	26.7 M4

Cursor:

Total = 26.7 V/m
 E Category: M4
 Location: -8, 22, 369.9 mm



0 dB = 26.7V/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /1175

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: PCS 1900MHz FCC; Frequency: 1908.75 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

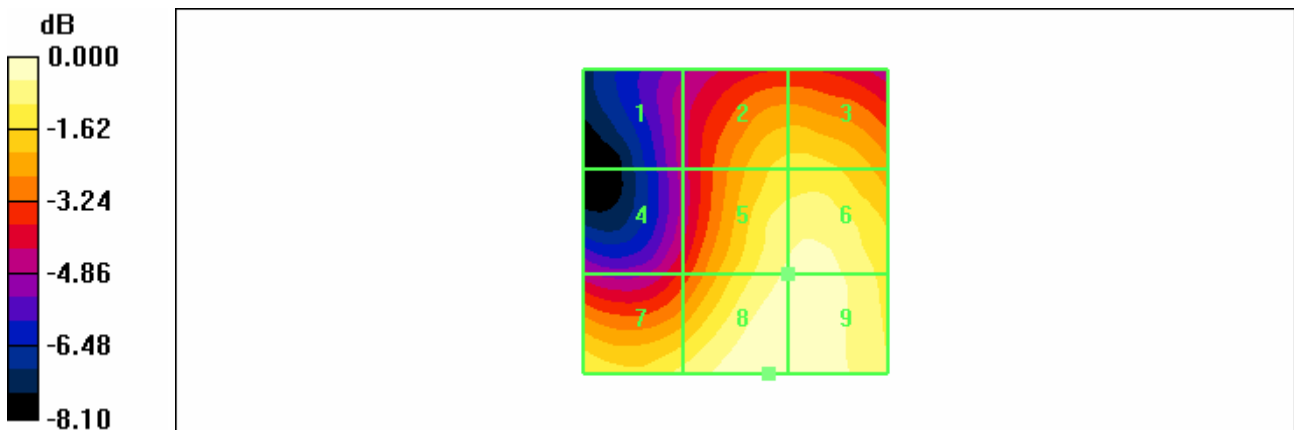
Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 27.9 V/m
 Probe Modulation Factor = 0.966
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 30.9 V/m; Power Drift = 0.077 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
16.7 M4	23.7 M4	23.9 M4
Grid 4	Grid 5	Grid 6
18.5 M4	26.5 M4	26.9 M4
Grid 7	Grid 8	Grid 9
25.2 M4	27.9 M4	27.8 M4

Cursor:

Total = 27.9 V/m
 E Category: M4
 Location: -5.5, 25, 369.9 mm



0 dB = 27.9V/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /1175
 Test Date Apr. 1, 2009
 Option Extended

DUT: WP8990; Type: Folder; Serial: #1

Communication System: PCS 1900MHz FCC; Frequency: 1908.75 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

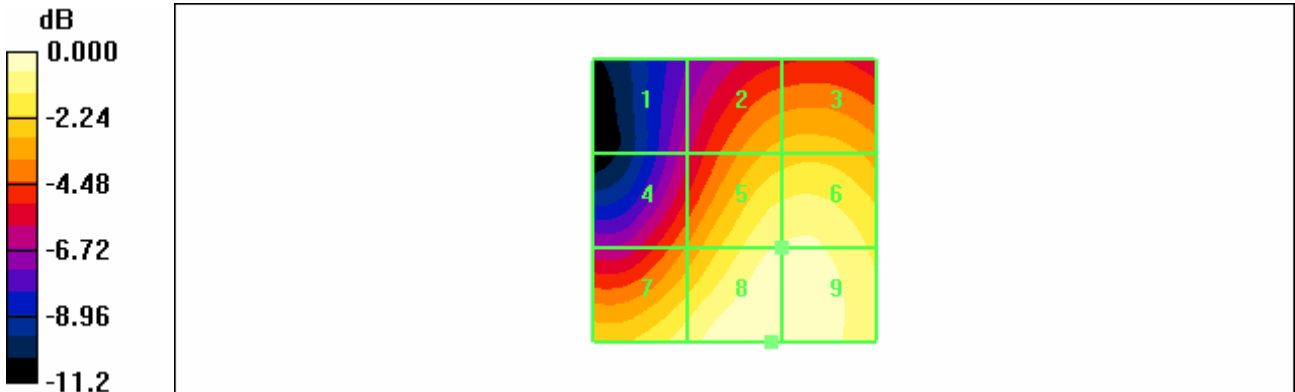
Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 27.8 V/m
 Probe Modulation Factor = 0.966
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 27.2 V/m; Power Drift = 0.099 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
13.6 M4	20.5 M4	20.9 M4
Grid 4	Grid 5	Grid 6
18.3 M4	25.8 M4	26.0 M4
Grid 7	Grid 8	Grid 9
24.6 M4	27.8 M4	27.7 M4

Cursor:

Total = 27.8 V/m
 E Category: M4
 Location: -6.5, 25, 369.9 mm



0 dB = 27.8V/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /1013
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 824.7 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

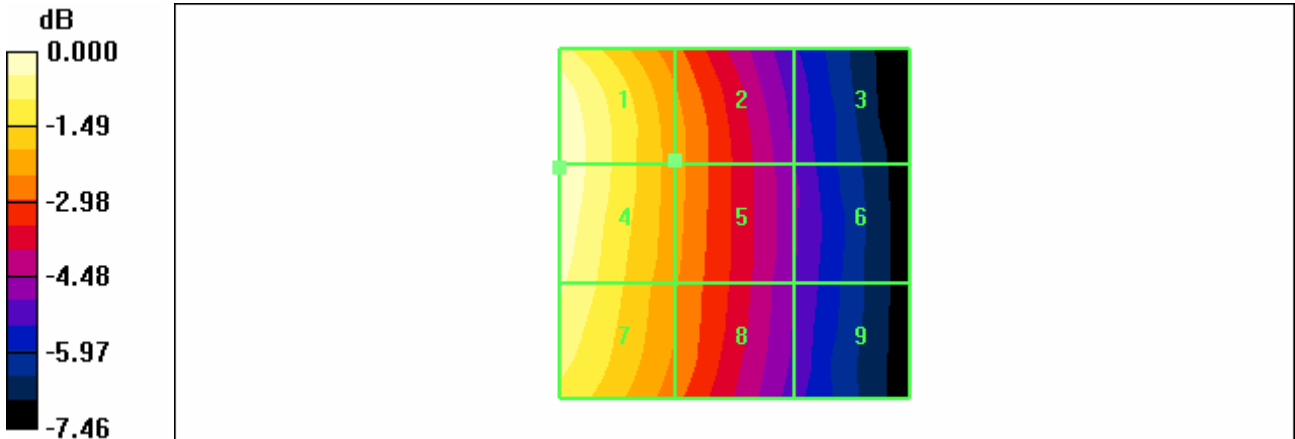
DASY4 Configuration:
 - Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.070 A/m
 Probe Modulation Factor = 0.850
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.057 A/m; Power Drift = -0.092 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.070 M4	0.054 M4	0.040 M4
Grid 4	Grid 5	Grid 6
0.070 M4	0.054 M4	0.040 M4
Grid 7	Grid 8	Grid 9
0.067 M4	0.053 M4	0.040 M4

Cursor:
 Total = 0.070 A/m
 H Category: M4
 Location: 25, -8, 369.4 mm



0 dB = 0.070A/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /384

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 836.52 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

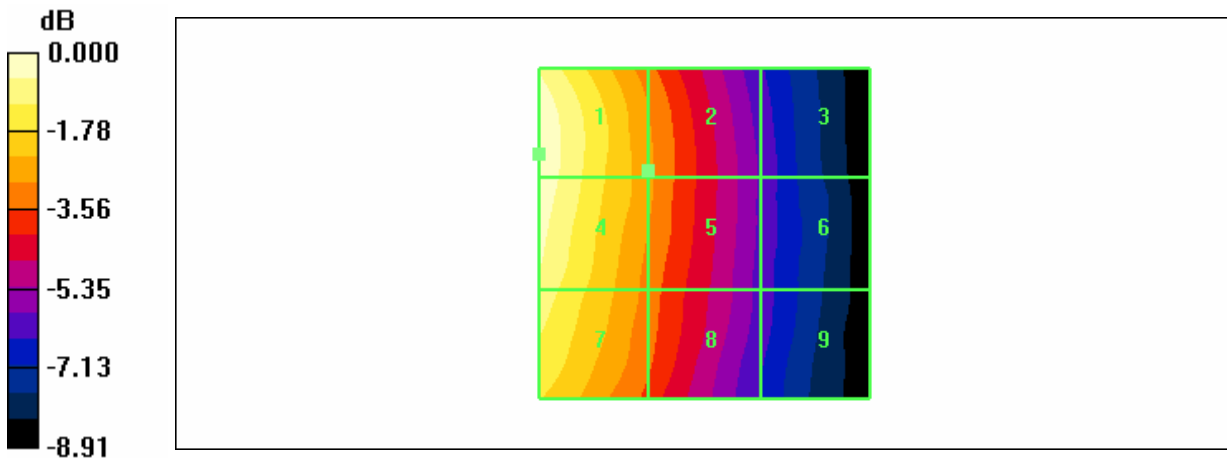
DASY4 Configuration:
 - Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.072 A/m
 Probe Modulation Factor = 0.850
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.053 A/m; Power Drift = -0.028 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 0.072 M4	Grid 2 0.052 M4	Grid 3 0.036 M4
Grid 4 0.071 M4	Grid 5 0.052 M4	Grid 6 0.036 M4
Grid 7 0.066 M4	Grid 8 0.050 M4	Grid 9 0.035 M4

Cursor:
 Total = 0.072 A/m
 H Category: M4
 Location: 25, -12, 369.4 mm



0 dB = 0.072A/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /777

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: CDMA 835MHz FCC; Frequency: 848.31 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

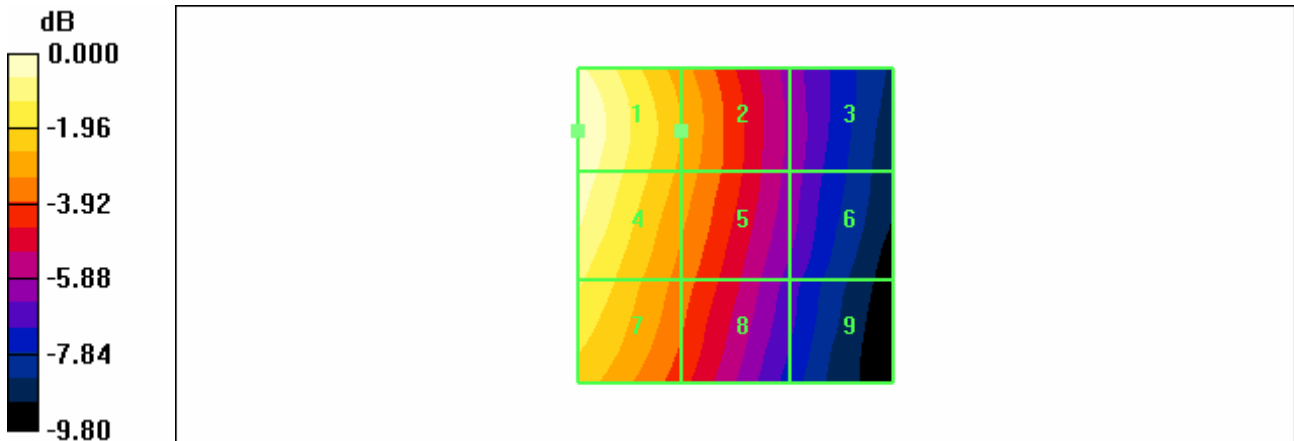
Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.084 A/m
 Probe Modulation Factor = 0.850
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.060 A/m; Power Drift = -0.003 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 0.084 M4	Grid 2 0.062 M4	Grid 3 0.042 M4
Grid 4 0.082 M4	Grid 5 0.061 M4	Grid 6 0.042 M4
Grid 7 0.073 M4	Grid 8 0.056 M4	Grid 9 0.039 M4

Cursor:

Total = 0.084 A/m
 H Category: M4
 Location: 25, -15, 369.4 mm



0 dB = 0.084A/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /25
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: PCS 1900MHz FCC; Frequency: 1851.25 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

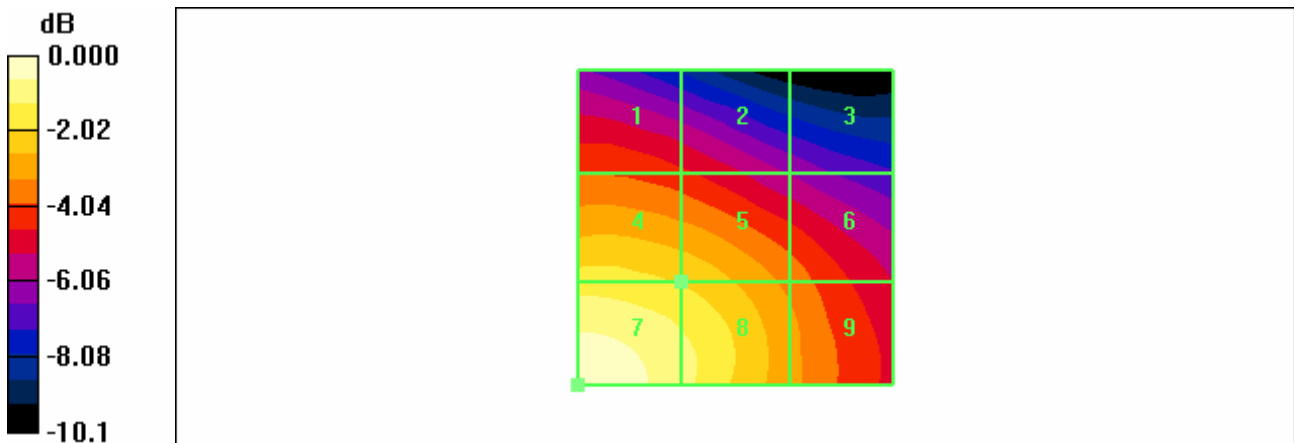
DASY4 Configuration:
 - Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.065 A/m
 Probe Modulation Factor = 0.651
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.068 A/m; Power Drift = -0.015 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.041 M4	0.039 M4	0.032 M4
Grid 4	Grid 5	Grid 6
0.054 M4	0.051 M4	0.043 M4
Grid 7	Grid 8	Grid 9
0.065 M4	0.057 M4	0.045 M4

Cursor:
 Total = 0.065 A/m
 H Category: M4
 Location: 25, 25, 369.4 mm



0 dB = 0.065A/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /600

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: PCS 1900MHz FCC; 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

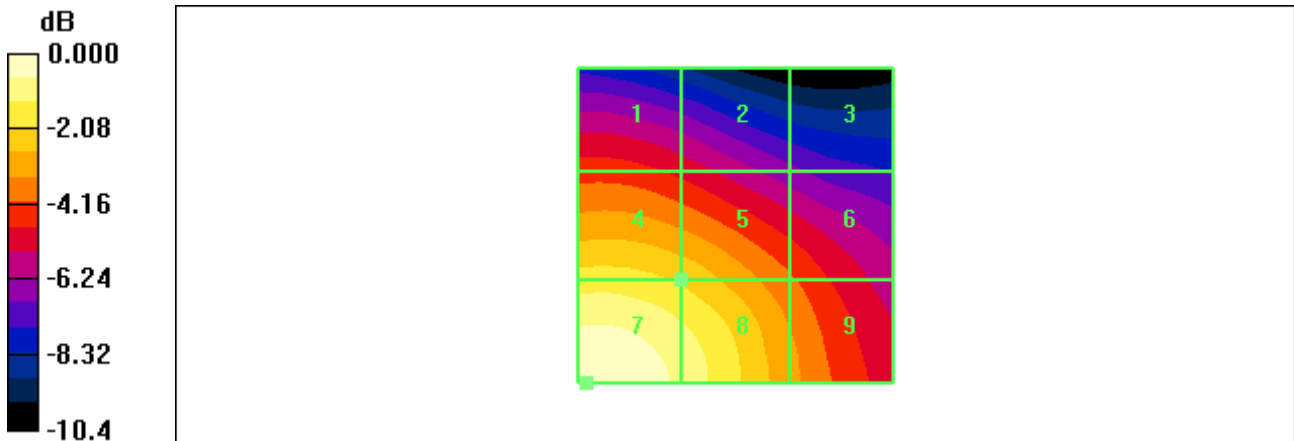
Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.067 A/m
 Probe Modulation Factor = 0.651
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.067 A/m; Power Drift = 0.050 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1 0.040 M4	Grid 2 0.038 M4	Grid 3 0.031 M4
Grid 4 0.055 M4	Grid 5 0.052 M4	Grid 6 0.042 M4
Grid 7 0.067 M4	Grid 8 0.060 M4	Grid 9 0.046 M4

Cursor:

Total = 0.067 A/m
 H Category: M4
 Location: 23.5, 25, 369.4 mm



0 dB = 0.067A/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /1175
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: PCS 1900MHz FCC; Frequency: 1908.75 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

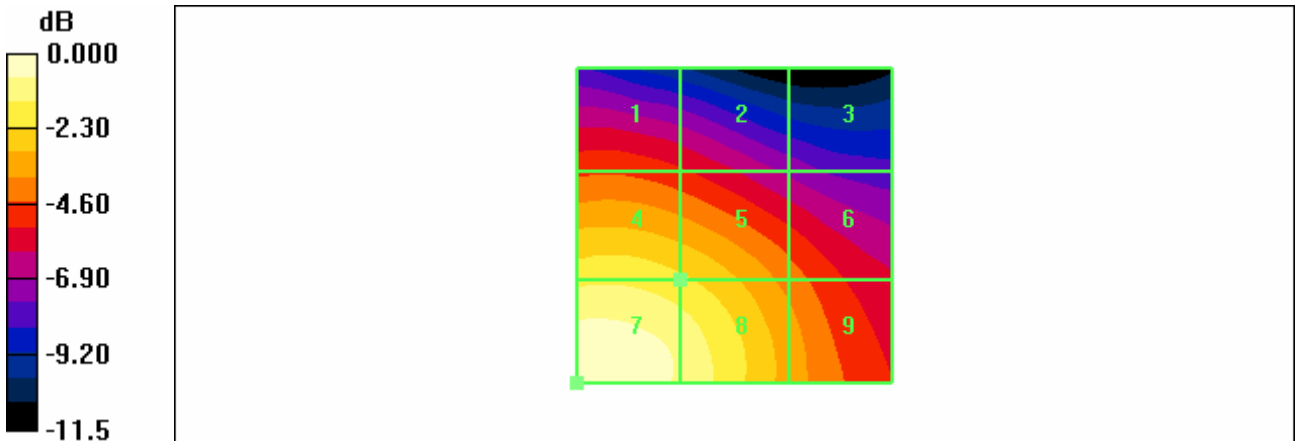
DASY4 Configuration:
 - Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.074 A/m
 Probe Modulation Factor = 0.651
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.073 A/m; Power Drift = 0.010 dB
Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.043 M4	0.041 M4	0.033 M4
Grid 4	Grid 5	Grid 6
0.061 M4	0.058 M4	0.046 M4
Grid 7	Grid 8	Grid 9
0.074 M4	0.067 M4	0.050 M4

Cursor:
 Total = 0.074 A/m
 H Category: M4
 Location: 25, 25, 369.4 mm



0 dB = 0.074A/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /128
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

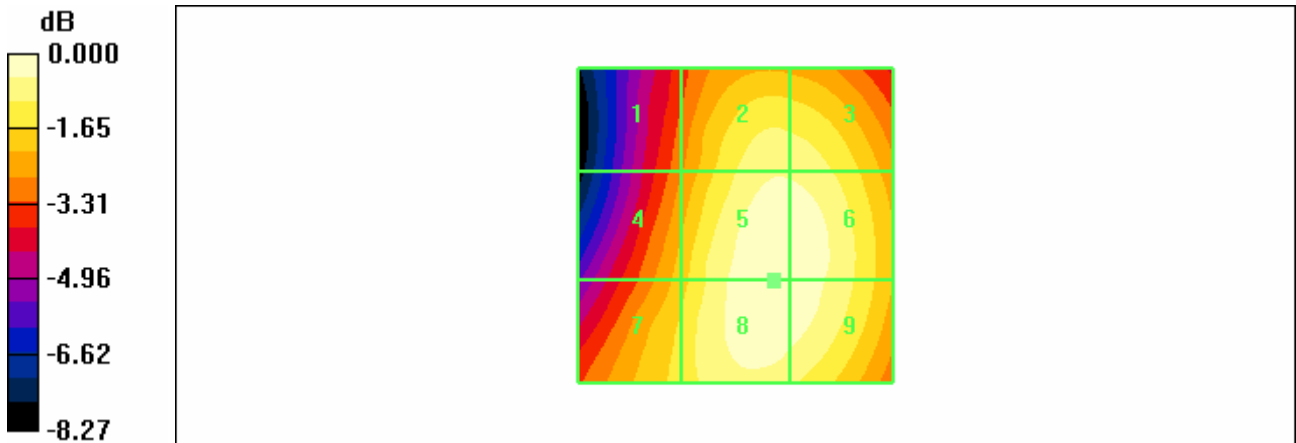
DASY4 Configuration:
 - Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 72.9 V/m
 Probe Modulation Factor = 2.76
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 33.3 V/m; Power Drift = -0.180 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
53.0 M4	68.1 M4	67.9 M4
Grid 4	Grid 5	Grid 6
58.8 M4	72.9 M4	72.1 M4
Grid 7	Grid 8	Grid 9
62.0 M4	72.9 M4	72.1 M4

Cursor:
 Total = 72.9 V/m
 E Category: M4
 Location: -6, 9, 369.9 mm



0 dB = 72.9V/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /190

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

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

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

Phantom section: E Device Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

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

Maximum value of peak Total field = 89.3 V/m

Probe Modulation Factor = 2.76

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 42.1 V/m; Power Drift = 0.000 dB

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

Peak E-field in V/m

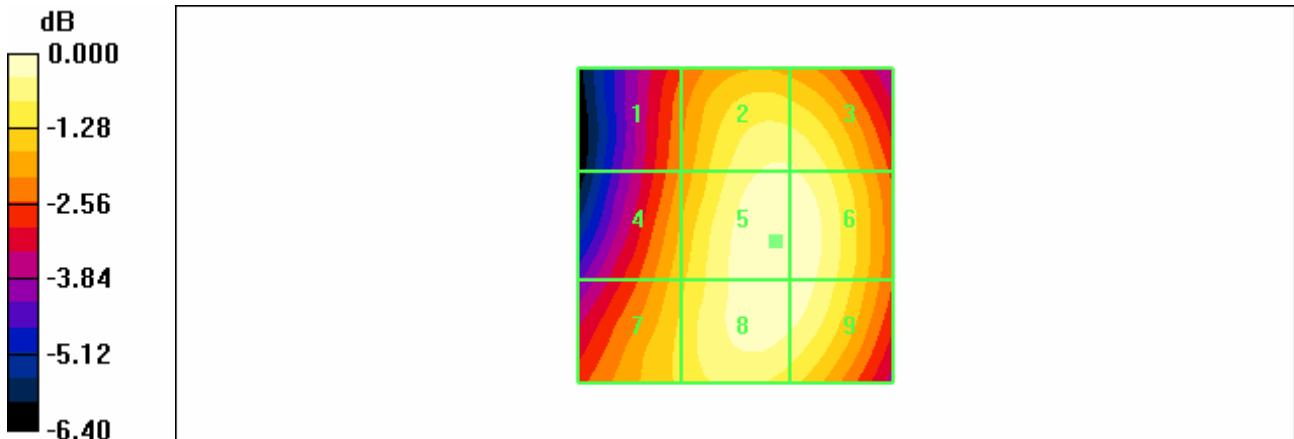
Grid 1	Grid 2	Grid 3
70.8 M4	85.9 M4	85.7 M4
Grid 4	Grid 5	Grid 6
76.2 M4	89.3 M4	89.0 M4
Grid 7	Grid 8	Grid 9
78.5 M4	88.9 M4	88.4 M4

Cursor:

Total = 89.3 V/m

E Category: M4

Location: -6.5, 2.5, 369.9 mm



0 dB = 89.3V/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /251
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³
 Phantom section: E Device Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

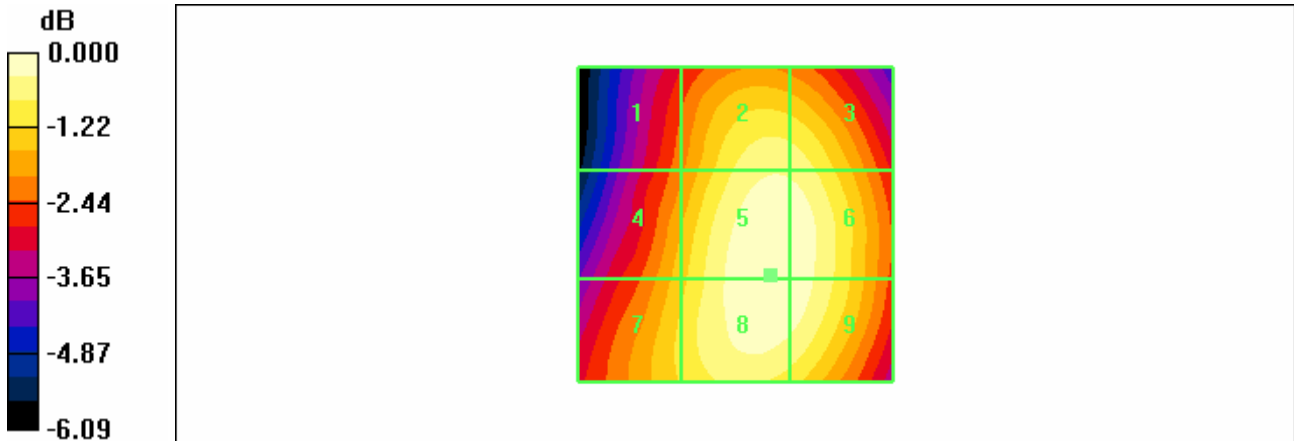
DASY4 Configuration:
 - Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 114.4 V/m
 Probe Modulation Factor = 2.76
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 54.5 V/m; Power Drift = -0.073 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
90.0 M4	108.8 M4	108.3 M4
Grid 4	Grid 5	Grid 6
98.0 M4	114.4 M4	113.6 M4
Grid 7	Grid 8	Grid 9
101.0 M4	114.3 M4	113.3 M4

Cursor:
 Total = 114.4 V/m
 E Category: M4
 Location: -5.5, 8, 369.9 mm



0 dB = 114.4V/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /512
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 1900; 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

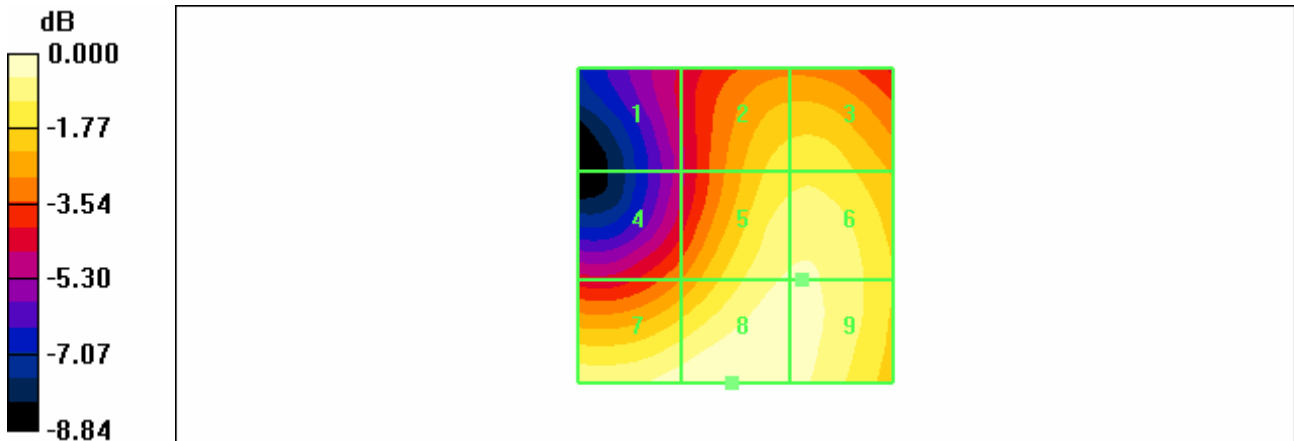
DASY4 Configuration:
 - Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 45.0 V/m
 Probe Modulation Factor = 2.71
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 16.7 V/m; Power Drift = 0.037 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
26.8 M4	38.3 M4	38.7 M4
Grid 4	Grid 5	Grid 6
32.1 M4	42.4 M4	42.5 M4
Grid 7	Grid 8	Grid 9
43.7 M4	45.0 M4	43.7 M4

Cursor:
 Total = 45.0 V/m
 E Category: M4
 Location: 0.5, 25, 369.9 mm



0 dB = 45.0V/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /661
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 1900; 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

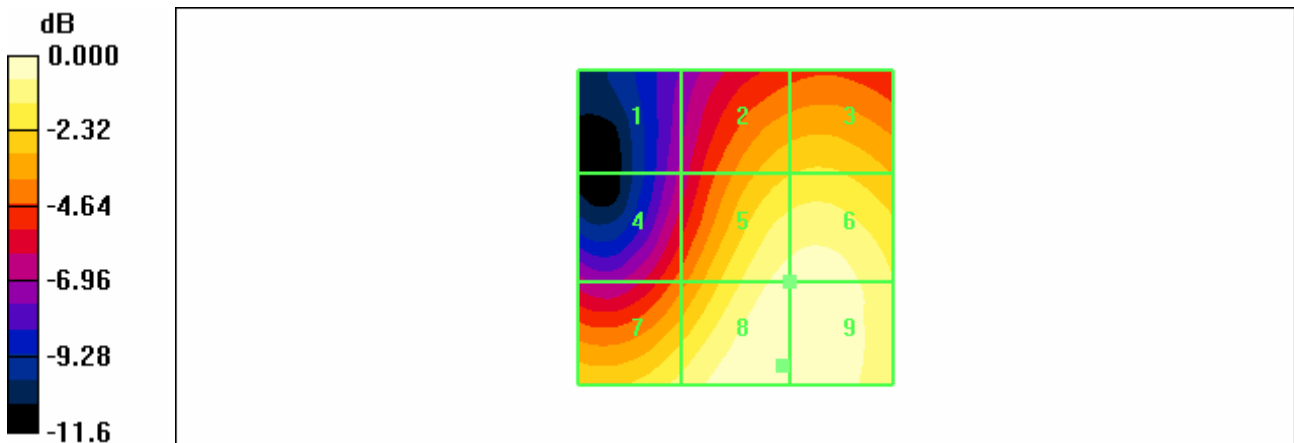
DASY4 Configuration:
 - Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 47.4 V/m
 Probe Modulation Factor = 2.71
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 17.2 V/m; Power Drift = 0.026 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
22.2 M4	36.2 M4	37.0 M4
Grid 4	Grid 5	Grid 6
29.4 M4	44.9 M4	45.4 M4
Grid 7	Grid 8	Grid 9
41.0 M4	47.4 M3	47.4 M3

Cursor:
 Total = 47.4 V/m
 E Category: M3
 Location: -7.5, 22, 369.9 mm



0 dB = 47.4V/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /810
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 1900; 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

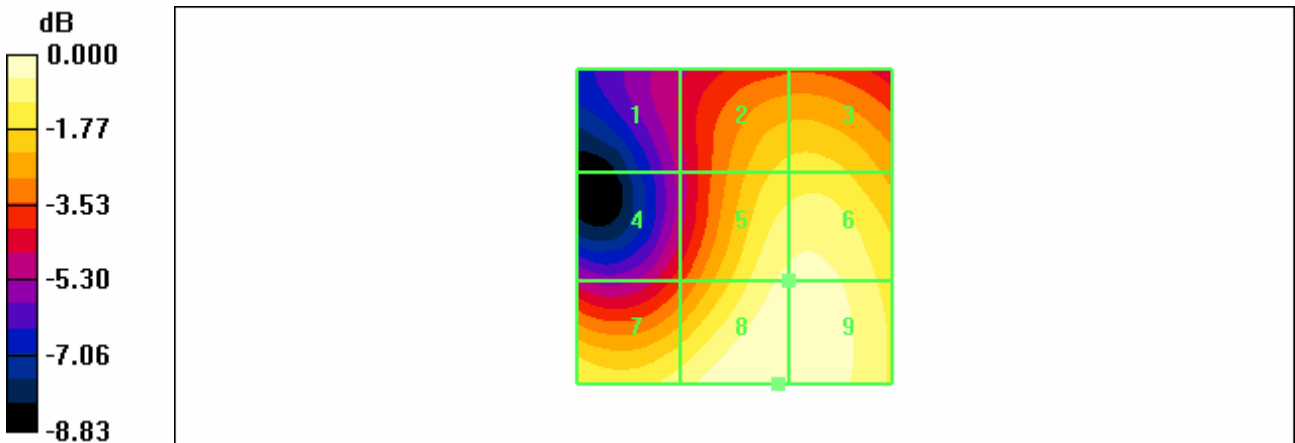
DASY4 Configuration:
 - Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

E Scan - ER3D - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 53.2 V/m
 Probe Modulation Factor = 2.71
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 20.3 V/m; Power Drift = 0.013 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak E-field in V/m

Grid 1	Grid 2	Grid 3
31.4 M4	44.6 M4	45.1 M4
Grid 4	Grid 5	Grid 6
34.8 M4	50.4 M3	50.9 M3
Grid 7	Grid 8	Grid 9
48.4 M3	53.2 M3	53.2 M3

Cursor:
 Total = 53.2 V/m
 E Category: M3
 Location: -7, 25, 369.9 mm



0 dB = 53.2V/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /128
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

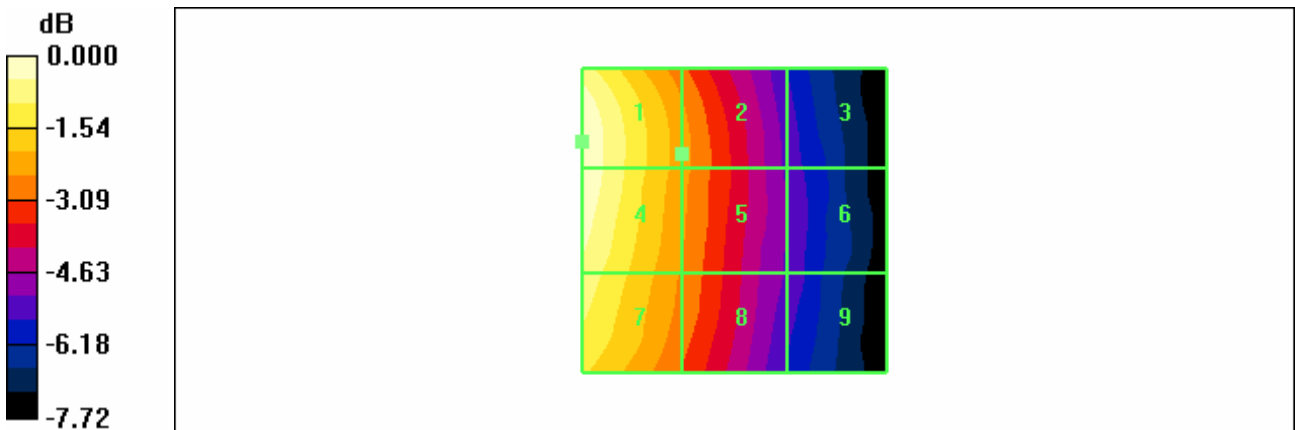
DASY4 Configuration:
 - Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.134 A/m
 Probe Modulation Factor = 1.97
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.046 A/m; Power Drift = -0.014 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

Grid 1 0.134 M4	Grid 2 0.102 M4	Grid 3 0.073 M4
Grid 4 0.133 M4	Grid 5 0.102 M4	Grid 6 0.075 M4
Grid 7 0.125 M4	Grid 8 0.099 M4	Grid 9 0.074 M4

Cursor:
 Total = 0.134 A/m
 H Category: M4
 Location: 25, -13, 369.4 mm



0 dB = 0.134A/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /190

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

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

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

Phantom section: H Device Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

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

Maximum value of peak Total field = 0.163 A/m

Probe Modulation Factor = 1.97

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.053 A/m; Power Drift = -0.060 dB

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

Peak H-field in A/m

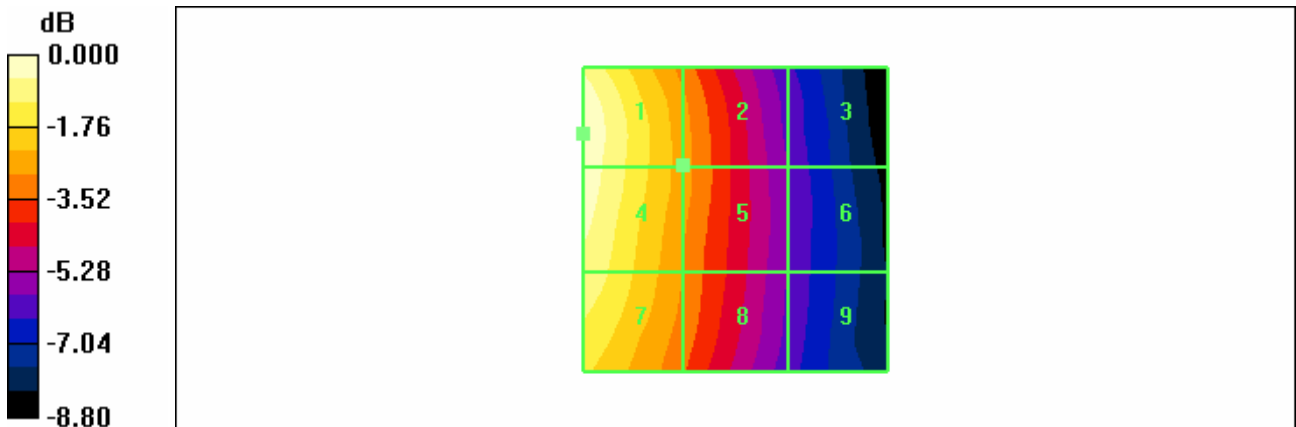
Grid 1	Grid 2	Grid 3
0.163 M4	0.120 M4	0.083 M4
Grid 4	Grid 5	Grid 6
0.161 M4	0.120 M4	0.084 M4
Grid 7	Grid 8	Grid 9
0.150 M4	0.116 M4	0.083 M4

Cursor:

Total = 0.163 A/m

H Category: M4

Location: 25, -14, 369.4 mm



0 dB = 0.163A/m

Test Laboratory: HCT CO., LTD.
 Ambient Temperature / Channel 21.5 °C /251
 Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
 Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³
 Phantom section: H Device Section ; Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

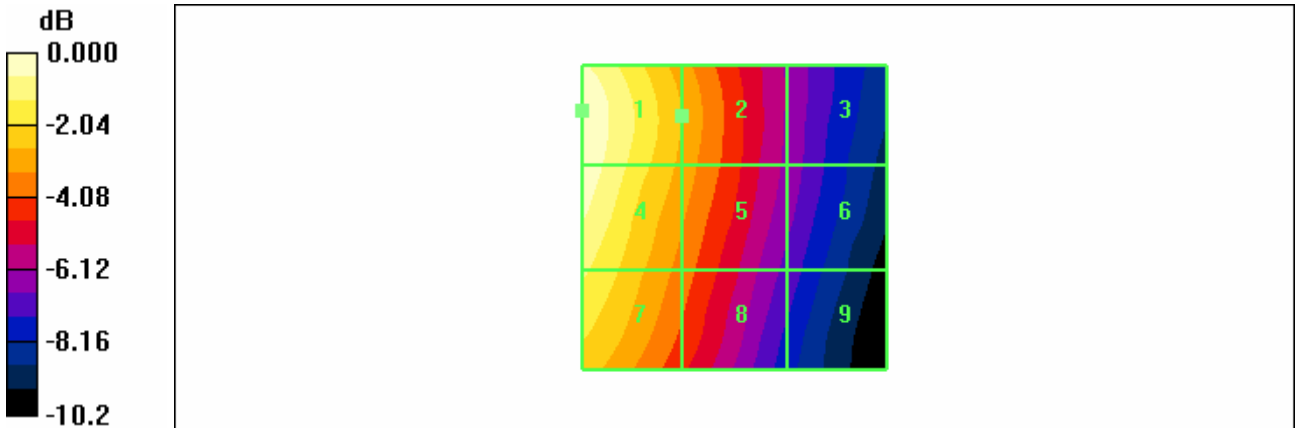
DASY4 Configuration:
 - Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.204 A/m
 Probe Modulation Factor = 1.97
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.062 A/m; Power Drift = -0.091 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.204 M4	0.148 M4	0.101 M4
Grid 4	Grid 5	Grid 6
0.201 M4	0.145 M4	0.099 M4
Grid 7	Grid 8	Grid 9
0.178 M4	0.133 M4	0.091 M4

Cursor:
 Total = 0.204 A/m
 H Category: M4
 Location: 25, -17.5, 369.4 mm



0 dB = 0.204A/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /512

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 1900; 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
- Sensor-Surface: (Fix Surface)
- Electronics: DAE3 Sn466; Calibrated: 2008-07-17
- Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

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

Maximum value of peak Total field = 0.129 A/m

Probe Modulation Factor = 2.24

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.039 A/m; Power Drift = -0.014 dB

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

Peak H-field in A/m

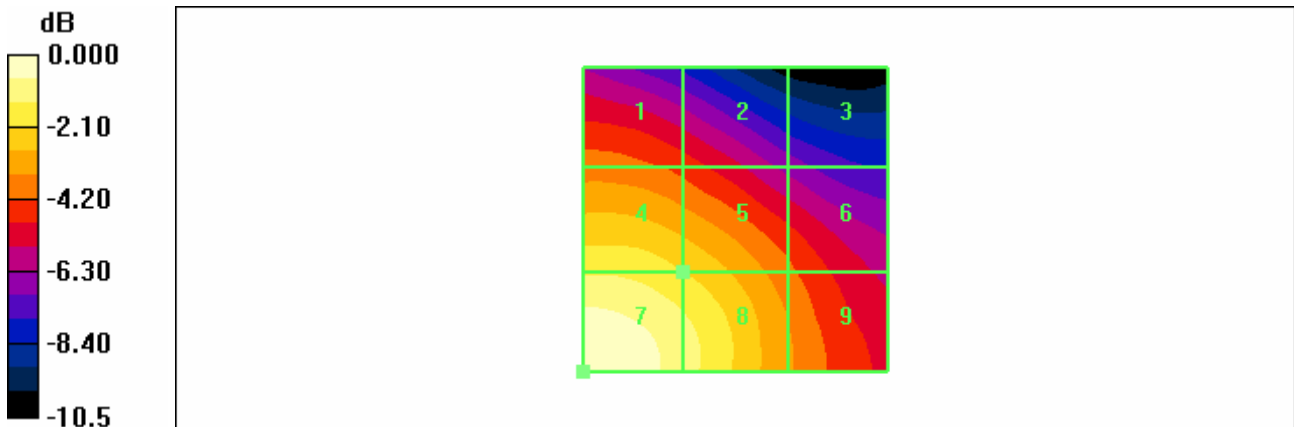
Grid 1 0.084 M4	Grid 2 0.077 M4	Grid 3 0.061 M4
Grid 4 0.109 M4	Grid 5 0.101 M4	Grid 6 0.082 M4
Grid 7 0.129 M4	Grid 8 0.114 M4	Grid 9 0.088 M4

Cursor:

Total = 0.129 A/m

H Category: M4

Location: 25, 25, 369.4 mm



0 dB = 0.129A/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /661

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 1900; 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

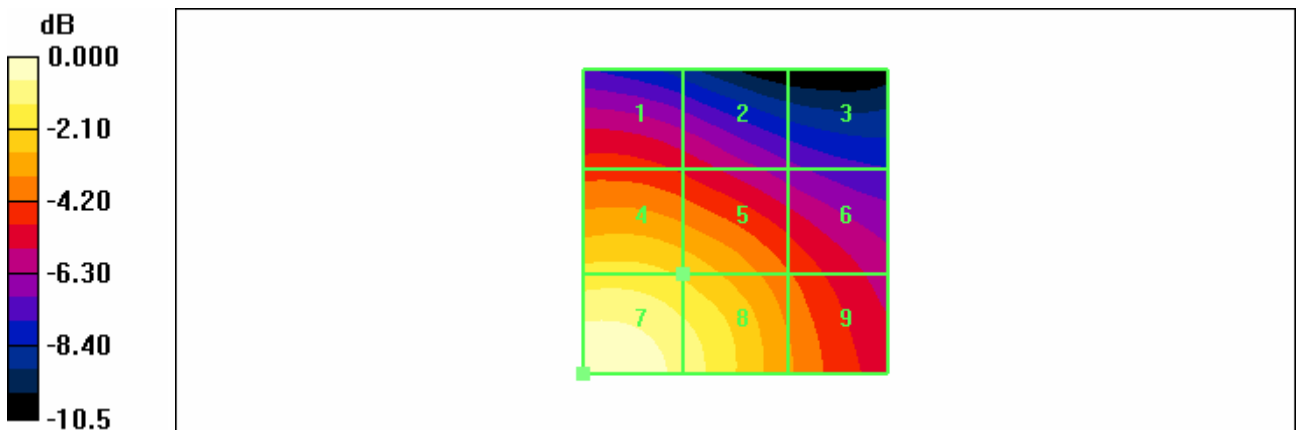
DASY4 Configuration:
 - Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.132 A/m
 Probe Modulation Factor = 2.24
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.038 A/m; Power Drift = 0.053 dB
Hearing Aid Near-Field Category: M4 (AWF -5 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.079 M4	0.074 M4	0.061 M4
Grid 4	Grid 5	Grid 6
0.108 M4	0.102 M4	0.082 M4
Grid 7	Grid 8	Grid 9
0.132 M4	0.118 M4	0.090 M4

Cursor:
 Total = 0.132 A/m
 H Category: M4
 Location: 25, 25, 369.4 mm



0 dB = 0.132A/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /810

Test Date Apr. 1, 2009

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 1900; 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

DASY4 Configuration:

- Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19

- Sensor-Surface: (Fix Surface)

- Electronics: DAE3 Sn466; Calibrated: 2008-07-17

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

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):

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

Maximum value of peak Total field = 0.177 A/m

Probe Modulation Factor = 2.24

Device Reference Point: 0.000, 0.000, 353.7 mm

Reference Value = 0.051 A/m; Power Drift = 0.042 dB

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

Peak H-field in A/m

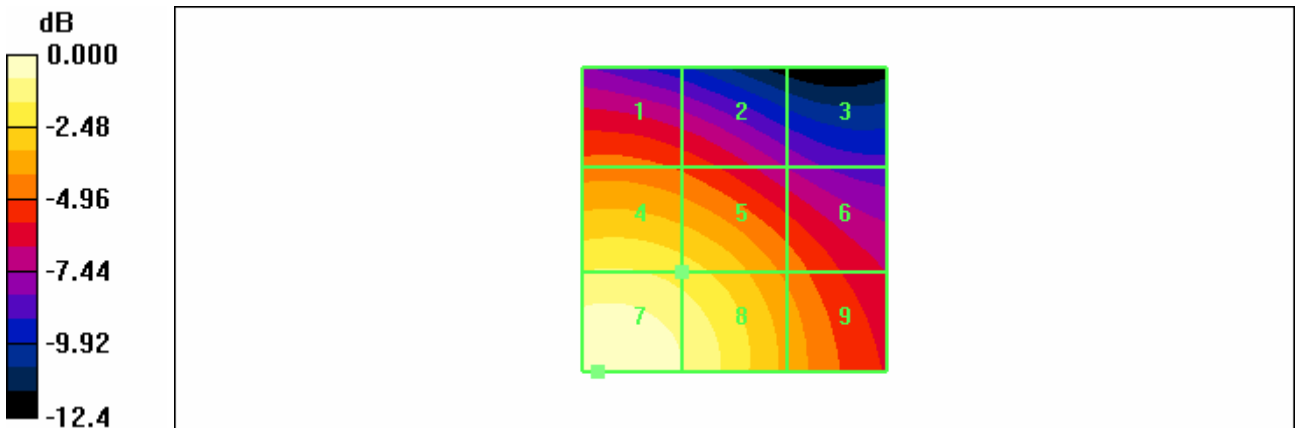
Grid 1 0.105 M4	Grid 2 0.098 M4	Grid 3 0.075 M4
Grid 4 0.148 M3	Grid 5 0.140 M4	Grid 6 0.107 M4
Grid 7 0.177 M3	Grid 8 0.161 M3	Grid 9 0.118 M4

Cursor:

Total = 0.177 A/m

H Category: M3

Location: 22.5, 25, 369.4 mm



0 dB = 0.177A/m

Test Laboratory: HCT CO., LTD.

Ambient Temperature / Channel 21.5 °C /810

Test Date Apr. 1, 2009

Option Extended

DUT: WP8990; Type: Folder; Serial: #1

Communication System: GSM 1900; 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 SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 176

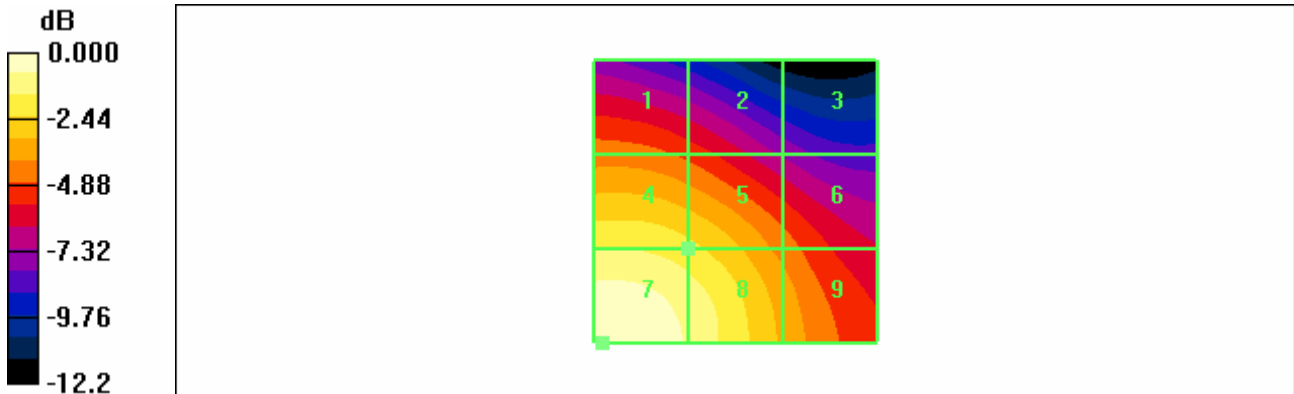
- DASY4 Configuration:
- Probe: H3DV6 - SN6101; ; Calibrated: 2008-05-19
 - Sensor-Surface: (Fix Surface)
 - Electronics: DAE3 Sn466; Calibrated: 2008-07-17
 - Phantom: HAC Test Arch; Type: SD HAC P01 BA

H Scan - H3DV6 - 2007: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1):
 Measurement grid: dx=5mm, dy=5mm
 Maximum value of peak Total field = 0.167 A/m
 Probe Modulation Factor = 2.24
 Device Reference Point: 0.000, 0.000, 353.7 mm
 Reference Value = 0.047 A/m; Power Drift = 0.044 dB
Hearing Aid Near-Field Category: M3 (AWF -5 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.100 M4	0.092 M4	0.071 M4
Grid 4	Grid 5	Grid 6
0.139 M4	0.131 M4	0.101 M4
Grid 7	Grid 8	Grid 9
0.167 M3	0.150 M3	0.113 M4

Cursor:
 Total = 0.167 A/m
 H Category: M3
 Location: 23.5, 25, 369.4 mm



0 dB = 0.167A/m