

## **APPENDIX A. HAC TEST PLOTS**

---

Test Laboratory: HCT CO., LTD.  
 Ambient Temperature / Channel 21.6 °C /128  
 Test Date Jun. 26, 2013

DUT: P2050; Type: Folder; Serial: #1  
 Procedure Name: E Scan – ER3D: 15 mm from Probe Center to the Device

Communication System: UID 10021 – DAA, GSM-FDD (TDMA, GMSK); Frequency: 824.2 MHz; Duty Cycle: 1:8.6896  
 Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>  
 Phantom section: RF Section

DASY5 Configuration:

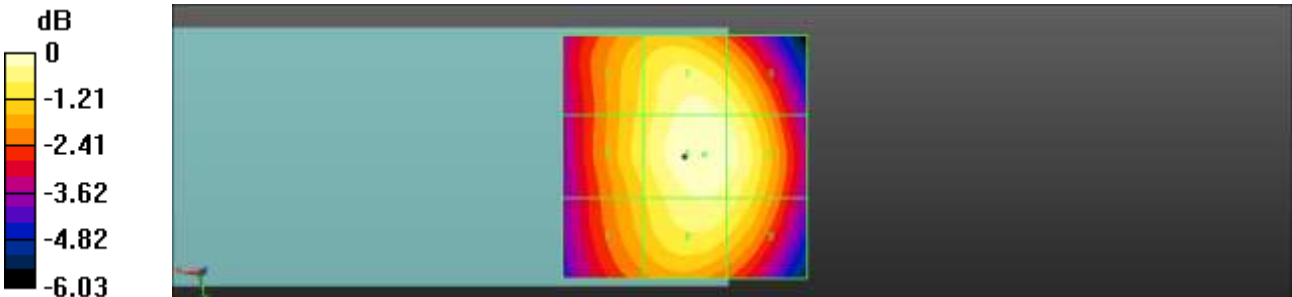
- Probe: ER3DV6 – SN2343; ConvF(1, 1, 1); Calibrated: 15/03/2013;
- Sensor–Surface: (Fix Surface)
- Electronics: DAE4 Sn869; Calibrated: 18/09/2012
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Device E-Field measurement (E-field scan for ANSI C63.19–2007 & –2011 compliance)/E Scan – ER3D: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm  
 Device Reference Point: 0, 0, -6.3 mm  
 Reference Value = 84.01 V/m; Power Drift = -0.02 dB  
 Applied MIF = 3.63 dB  
 RF audio interference level = 39.59 dBV/m  
**Emission category: M4**

MIF scaled E-field

Grid 1 M4 38.56 dBV/m	Grid 2 M4 39.38 dBV/m	Grid 3 M4 39.13 dBV/m
Grid 4 M4 38.71 dBV/m	Grid 5 M4 39.59 dBV/m	Grid 6 M4 39.44 dBV/m
Grid 7 M4 38.34 dBV/m	Grid 8 M4 39.21 dBV/m	Grid 9 M4 39.02 dBV/m

Cursor:  
 Total = 39.59 dBV/m  
 E Category: M4  
 Location: -4, -0.5, 8.7 mm



0 dB = 95.36 V/m = 39.59 dBV/m

Test Laboratory: HCT CO., LTD.  
 Ambient Temperature / Channel 21.6 °C /190  
 Test Date Jun. 26, 2013

DUT: P2050; Type: Folder; Serial: #1  
 Procedure Name: E Scan - ER3D: 15 mm from Probe Center to the Device

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 836.6 MHz;Duty Cycle: 1:8.6896  
 Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>  
 Phantom section: RF Section

DASY5 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 15/03/2013;
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn869; Calibrated: 18/09/2012
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

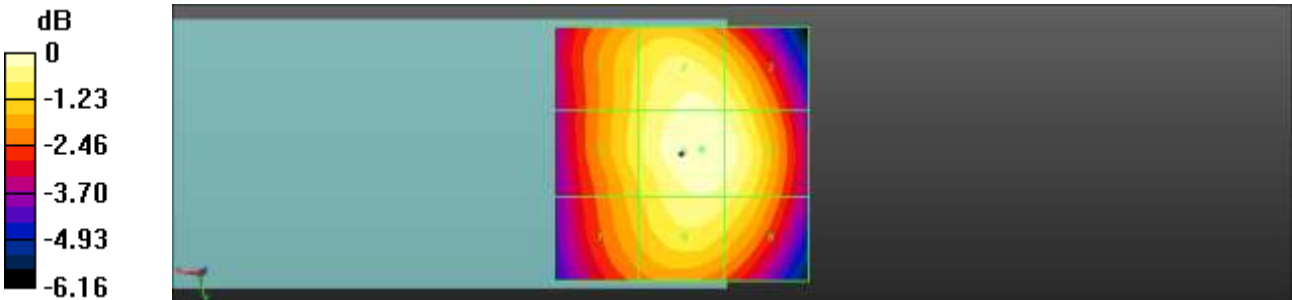
Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm  
 Reference Value = 79.07 V/m; Power Drift = -0.05 dB  
 Applied MIF = 3.63 dB  
 RF audio interference level = 39.03 dBV/m  
**Emission category: M4**

MIF scaled E-field

Grid 1 M4 38 dBV/m	Grid 2 M4 38.8 dBV/m	Grid 3 M4 38.55 dBV/m
Grid 4 M4 38.12 dBV/m	Grid 5 M4 39.03 dBV/m	Grid 6 M4 38.87 dBV/m
Grid 7 M4 37.72 dBV/m	Grid 8 M4 38.6 dBV/m	Grid 9 M4 38.38 dBV/m

Cursor:  
 Total = 39.03 dBV/m  
 E Category: M4  
 Location: -4, -1, 8.7 mm



0 dB = 89.43 V/m = 39.03 dBV/m

Test Laboratory: HCT CO., LTD.  
 Ambient Temperature / Channel 21.6 °C /251  
 Test Date Jun. 26, 2013

DUT: P2050; Type: Folder; Serial: #1  
 Procedure Name: E Scan - ER3D: 15 mm from Probe Center to the Device

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 848.6 MHz; Duty Cycle: 1:8.6896  
 Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>  
 Phantom section: RF Section

DASY5 Configuration:

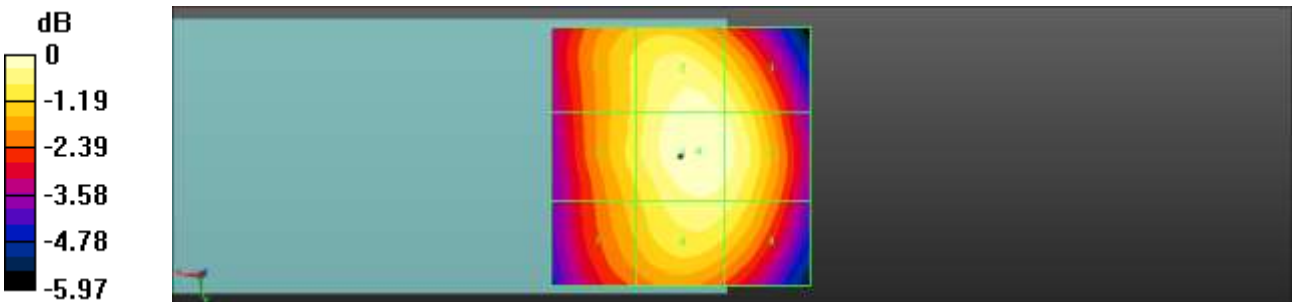
- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 15/03/2013;
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn869; Calibrated: 18/09/2012
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm  
 Device Reference Point: 0, 0, -6.3 mm  
 Reference Value = 63.28 V/m; Power Drift = -0.09 dB  
 Applied MIF = 3.63 dB  
 RF audio interference level = 37.12 dBV/m  
**Emission category: M4**

MIF scaled E-field

Grid 1 M4 36.1 dBV/m	Grid 2 M4 36.92 dBV/m	Grid 3 M4 36.67 dBV/m
Grid 4 M4 36.22 dBV/m	Grid 5 M4 37.12 dBV/m	Grid 6 M4 36.91 dBV/m
Grid 7 M4 35.84 dBV/m	Grid 8 M4 36.69 dBV/m	Grid 9 M4 36.52 dBV/m

Cursor:  
 Total = 37.12 dBV/m  
 E Category: M4  
 Location: -3.5, -1, 8.7 mm



0 dB = 71.76 V/m = 37.12 dBV/m

Test Laboratory: HCT CO., LTD.  
 Ambient Temperature / Channel 21.6 °C /512  
 Test Date Jun. 26, 2013

DUT: P2050; Type: Folder; Serial: #1  
 Procedure Name: E Scan - ER3D: 15 mm from Probe Center to the Device

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 1850.2 MHz;Duty Cycle: 1:8.6896  
 Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>  
 Phantom section: RF Section

DASY5 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 15/03/2013;
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn869; Calibrated: 18/09/2012
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

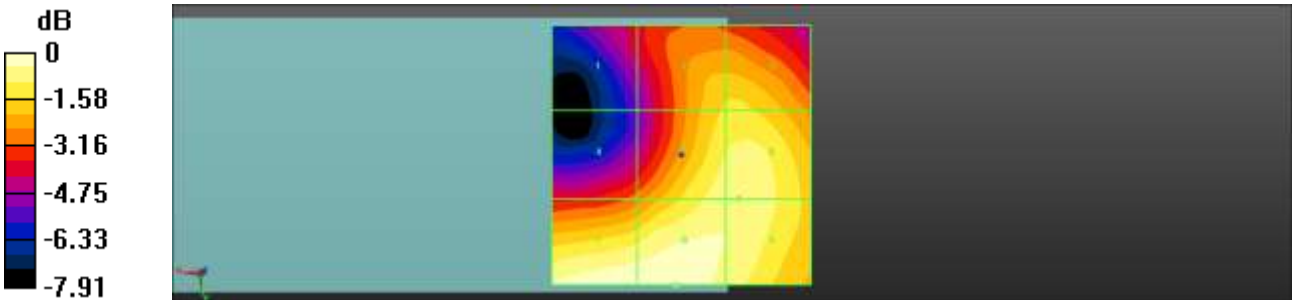
Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm  
 Reference Value = 17.51 V/m; Power Drift = 0.03 dB  
 Applied MIF = 3.63 dB  
 RF audio interference level = 28.80 dBV/m  
**Emission category: M4**

MIF scaled E-field

Grid 1 M4 24.9 dBV/m	Grid 2 M4 27.31 dBV/m	Grid 3 M4 27.39 dBV/m
Grid 4 M4 25.94 dBV/m	Grid 5 M4 28.1 dBV/m	Grid 6 M4 28.16 dBV/m
Grid 7 M4 28.72 dBV/m	Grid 8 M4 28.79 dBV/m	Grid 9 M4 28.27 dBV/m

Cursor:  
 Total = 28.79 dBV/m  
 E Category: M4  
 Location: 1, 25, 8.7 mm



0 dB = 27.53 V/m = 28.80 dBV/m

Test Laboratory: HCT CO., LTD.  
 Ambient Temperature / Channel 21.6 °C /661  
 Test Date Jun. 26, 2013

DUT: P2050; Type: Folder; Serial: #1  
 Procedure Name: E Scan - ER3D: 15 mm from Probe Center to the Device

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz;Duty Cycle: 1:8.6896  
 Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>  
 Phantom section: RF Section

DASY5 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 15/03/2013;
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn869; Calibrated: 18/09/2012
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

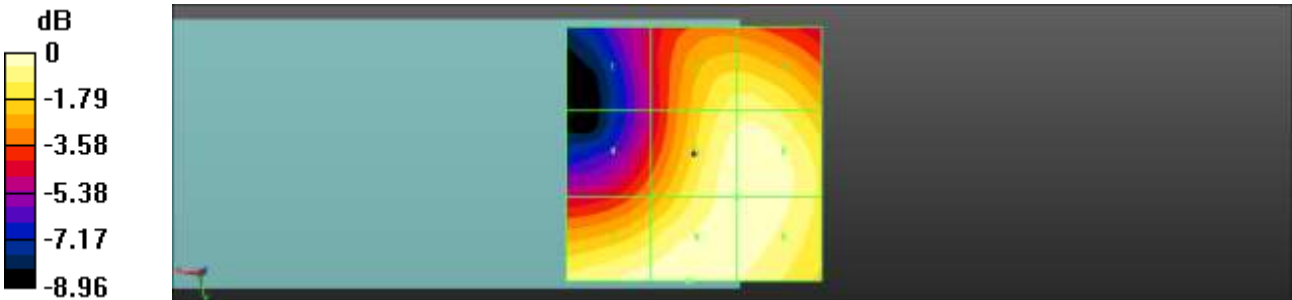
Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm  
 Reference Value = 21.72 V/m; Power Drift = -0.04 dB  
 Applied MIF = 3.63 dB  
 RF audio interference level = 29.68 dBV/m  
**Emission category: M4**

MIF scaled E-field

Grid 1 M4 25.2 dBV/m	Grid 2 M4 28.84 dBV/m	Grid 3 M4 28.91 dBV/m
Grid 4 M4 26.84 dBV/m	Grid 5 M4 29.47 dBV/m	Grid 6 M4 29.58 dBV/m
Grid 7 M4 29.44 dBV/m	Grid 8 M4 29.68 dBV/m	Grid 9 M4 29.55 dBV/m

Cursor:  
 Total = 29.68 dBV/m  
 E Category: M4  
 Location: 1, 25, 8.7 mm



0 dB = 30.48 V/m = 29.68 dBV/m

Test Laboratory: HCT CO., LTD.  
 Ambient Temperature / Channel 21.6 °C /810  
 Test Date Jun. 26, 2013

DUT: P2050; Type: Folder; Serial: #1  
 Procedure Name: E Scan - ER3D: 15 mm from Probe Center to the Device

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 1909.8 MHz;Duty Cycle: 1:8.6896  
 Medium parameters used:  $\sigma = 0$  S/m,  $\epsilon_r = 1$ ;  $\rho = 0$  kg/m<sup>3</sup>  
 Phantom section: RF Section

DASY5 Configuration:

- Probe: ER3DV6 - SN2343; ConvF(1, 1, 1); Calibrated: 15/03/2013;
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn869; Calibrated: 18/09/2012
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

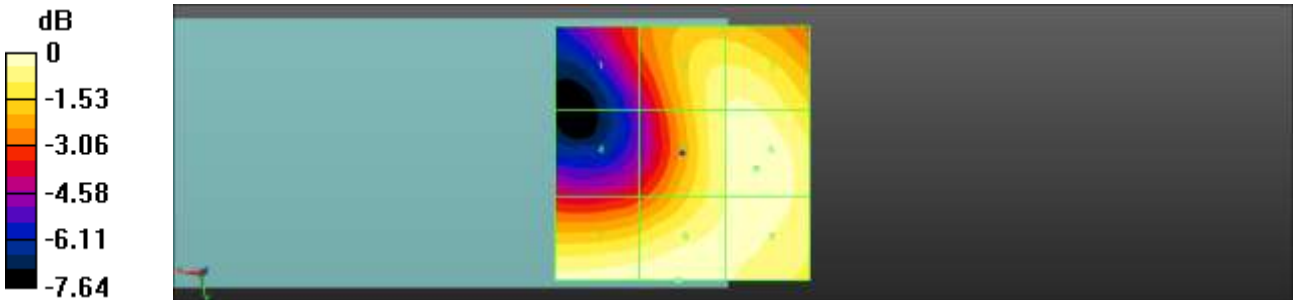
Device E-Field measurement (E-field scan for ANSI C63.19-2007 & -2011 compliance)/E Scan - ER3D: 15 mm from Probe Center to the Device/Hearing Aid Compatibility Test (101x101x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm  
 Reference Value = 20.51 V/m; Power Drift = -0.04 dB  
 Applied MIF = 3.63 dB  
 RF audio interference level = 29.91 dBV/m  
**Emission category: M4**

MIF scaled E-field

Grid 1 M4 26.95 dBV/m	Grid 2 M4 29.4 dBV/m	Grid 3 M4 29.55 dBV/m
Grid 4 M4 26.6 dBV/m	Grid 5 M4 29.46 dBV/m	Grid 6 M4 29.78 dBV/m
Grid 7 M4 29.83 dBV/m	Grid 8 M4 29.91 dBV/m	Grid 9 M4 29.69 dBV/m

Cursor:  
 Total = 29.91 dBV/m  
 E Category: M4  
 Location: 1, 25, 8.7 mm



0 dB = 31.30 V/m = 29.91 dBV/m