



## **Appendix B. HAC Measurement Plots**

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| <b>HAC Measurement Plots of GSM850</b>  |
| <b>HAC Measurement Plots of GSM1900</b> |

Test Laboratory: HUAWEI SAR/HAC Lab

HAC\_ER3DV6\_Y536A1-GSM850-251CH

DUT: Y536A1; Type: Smart Phone; Serial: SAR1

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 848.8 MHz;Duty Cycle: 1:8.6896

Medium parameters used:  $\sigma = 0 \text{ S/m}$ ,  $\epsilon_r = 1$ ;  $\rho = 0 \text{ kg/m}^3$

Phantom section: RF Section

DASY Configuration:

- Probe: ER3DV6 - SN2441; ConvF(1, 1, 1); Calibrated: 2013-11-29;
- Sensor-Surface: (Fix Surface),  $z = 8.7$
- Electronics: DAE4 Sn1236; Calibrated: 2013-11-25
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1053
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 76.15 V/m; Power Drift = 0.02 dB

Applied MIF = 3.63 dB

RF audio interference level = 39.03 dBV/m

Emission category: M4

MIF scaled E-field

|                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| Grid 1 M4<br>38.58 dBV/m | Grid 2 M4<br>38.98 dBV/m | Grid 3 M4<br>38.75 dBV/m |
| Grid 4 M4<br>38.29 dBV/m | Grid 5 M4<br>39.03 dBV/m | Grid 6 M4<br>38.8 dBV/m  |
| Grid 7 M4<br>37.78 dBV/m | Grid 8 M4<br>38.54 dBV/m | Grid 9 M4<br>38.31 dBV/m |

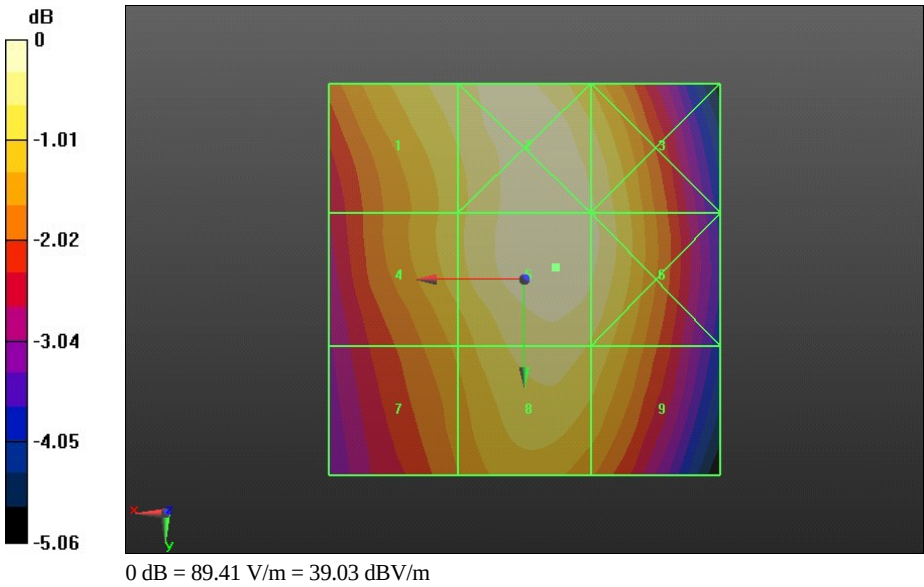
| Category | Limits for E-Field Emissions < 960MHz | Limits for E-Field Emissions > 960MHz |
|----------|---------------------------------------|---------------------------------------|
| M1       | 50 dBV/m - 55 dB V/m                  | 40 dBV/m - 45 dB V/m                  |
| M2       | 45 dBV/m - 50 dB V/m                  | 35 dBV/m - 40 dB V/m                  |
| M3       | 40 dBV/m - 45 dB V/m                  | 30 dBV/m - 35 dB V/m                  |
| M4       | <40 dBV/m                             | <30 dBV/m                             |

Cursor:

Total = 39.03 dBV/m

E Category: M4

Location: -4, -1.5, 8.7 mm



Test Laboratory: HUAWEI SAR/HAC Lab

HAC\_ER3DV6\_Y536A1-GSM850-190CH

DUT: Y536A1; Type: Smart Phone; Serial: SAR1

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 836.6 MHz;Duty Cycle: 1:8.6896

Medium parameters used:  $\sigma = 0 \text{ S/m}$ ,  $\epsilon_r = 1$ ;  $\rho = 0 \text{ kg/m}^3$

Phantom section: RF Section

DASY Configuration:

- Probe: ER3DV6 - SN2441; ConvF(1, 1, 1); Calibrated: 2013-11-29;
- Sensor-Surface: (Fix Surface),  $z = 8.7$
- Electronics: DAE4 Sn1236; Calibrated: 2013-11-25
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1053
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 81.71 V/m; Power Drift = 0.01 dB

Applied MIF = 3.63 dB

RF audio interference level = 39.57 dBV/m

Emission category: M4

MIF scaled E-field

|                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| Grid 1 M4<br>39.14 dBV/m | Grid 2 M4<br>39.53 dBV/m | Grid 3 M4<br>39.28 dBV/m |
| Grid 4 M4<br>38.85 dBV/m | Grid 5 M4<br>39.57 dBV/m | Grid 6 M4<br>39.31 dBV/m |
| Grid 7 M4<br>38.43 dBV/m | Grid 8 M4<br>39.12 dBV/m | Grid 9 M4<br>38.87 dBV/m |

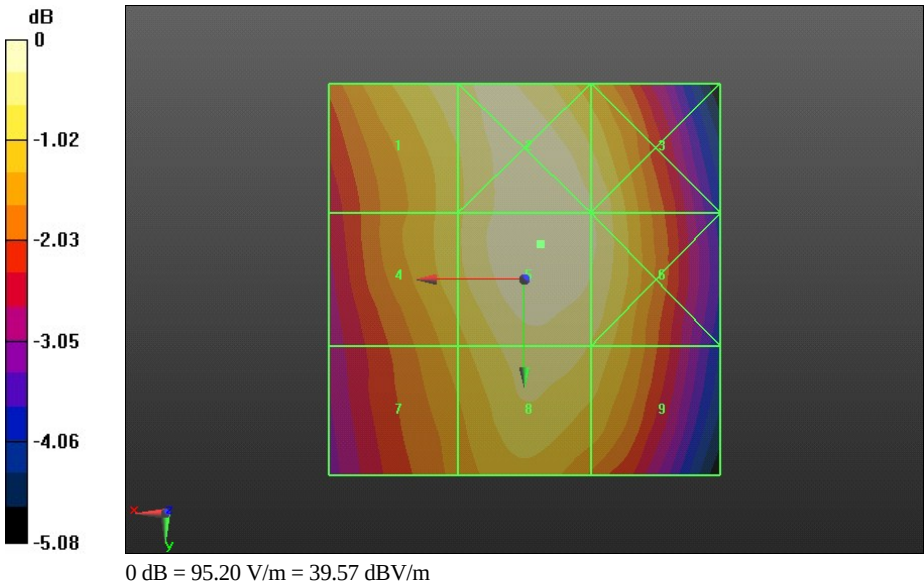
| Category | Limits for E-Field Emissions < 960MHz | Limits for E-Field Emissions > 960MHz |
|----------|---------------------------------------|---------------------------------------|
| M1       | 50 dBV/m - 55 dB V/m                  | 40 dBV/m - 45 dB V/m                  |
| M2       | 45 dBV/m - 50 dB V/m                  | 35 dBV/m - 40 dB V/m                  |
| M3       | 40 dBV/m - 45 dB V/m                  | 30 dBV/m - 35 dB V/m                  |
| M4       | <40 dBV/m                             | <30 dBV/m                             |

Cursor:

Total = 39.57 dBV/m

E Category: M4

Location: -2, -4.5, 8.7 mm



Test Laboratory: HUAWEI SAR/HAC Lab

HAC\_ER3DV6\_Y536A1-GSM850-128CH

DUT: Y536A1; Type: Smart Phone; Serial: SAR1

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 824.2 MHz;Duty Cycle: 1:8.6896

Medium parameters used:  $\sigma = 0 \text{ S/m}$ ,  $\epsilon_r = 1$ ;  $\rho = 0 \text{ kg/m}^3$

Phantom section: RF Section

DASY Configuration:

- Probe: ER3DV6 - SN2441; ConvF(1, 1, 1); Calibrated: 2013-11-29;
- Sensor-Surface: (Fix Surface),  $z = 8.7$
- Electronics: DAE4 Sn1236; Calibrated: 2013-11-25
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1053
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 85.56 V/m; Power Drift = -0.07 dB

Applied MIF = 3.63 dB

RF audio interference level = 39.91 dBV/m

Emission category: M4

MIF scaled E-field

|                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| Grid 1 M4<br>39.47 dBV/m | Grid 2 M4<br>39.85 dBV/m | Grid 3 M4<br>39.55 dBV/m |
| Grid 4 M4<br>39.27 dBV/m | Grid 5 M4<br>39.91 dBV/m | Grid 6 M4<br>39.59 dBV/m |
| Grid 7 M4<br>38.78 dBV/m | Grid 8 M4<br>39.4 dBV/m  | Grid 9 M4<br>39.17 dBV/m |

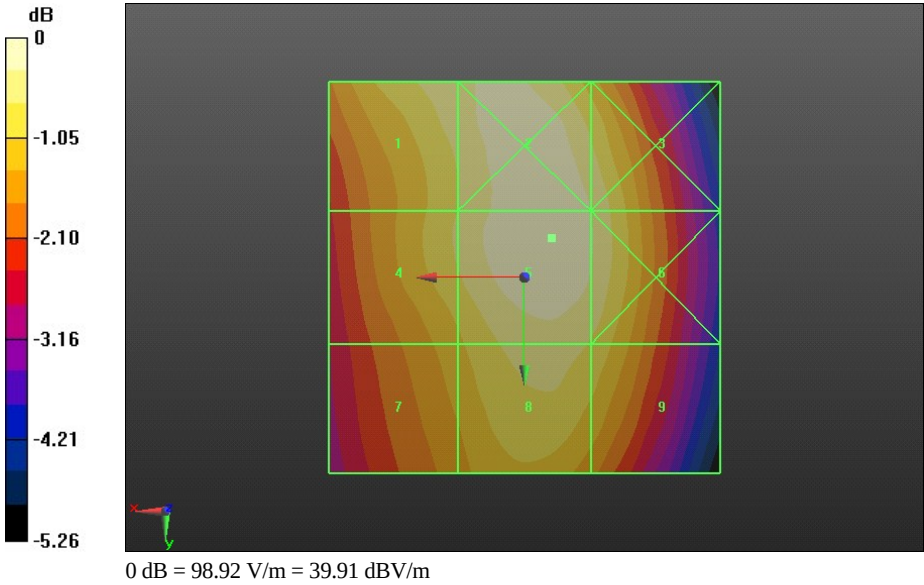
| Category | Limits for E-Field Emissions < 960MHz | Limits for E-Field Emissions > 960MHz |
|----------|---------------------------------------|---------------------------------------|
| M1       | 50 dBV/m - 55 dB V/m                  | 40 dBV/m - 45 dB V/m                  |
| M2       | 45 dBV/m - 50 dB V/m                  | 35 dBV/m - 40 dB V/m                  |
| M3       | 40 dBV/m - 45 dB V/m                  | 30 dBV/m - 35 dB V/m                  |
| M4       | <40 dBV/m                             | <30 dBV/m                             |

Cursor:

Total = 39.91 dBV/m

E Category: M4

Location: -3.5, -5, 8.7 mm



Test Laboratory: HUAWEI SAR/HAC Lab

HAC\_ER3DV6\_Y536A1-GSM1900-810CH

DUT: Y536A1; Type: Smart Phone; Serial: SAR1

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 1909.8 MHz;Duty Cycle: 1:8.6896

Medium parameters used:  $\sigma = 0 \text{ S/m}$ ,  $\epsilon_r = 1$ ;  $\rho = 0 \text{ kg/m}^3$

Phantom section: RF Section

DASY Configuration:

- Probe: ER3DV6 - SN2441; ConvF(1, 1, 1); Calibrated: 2013-11-29;
- Sensor-Surface: (Fix Surface),  $z = 8.7$
- Electronics: DAE4 Sn1236; Calibrated: 2013-11-25
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1053
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 26.08 V/m; Power Drift = -0.00 dB

Applied MIF = 3.63 dB

RF audio interference level = 31.42 dBV/m

Emission category: M3

MIF scaled E-field

|                                 |                                 |                                 |
|---------------------------------|---------------------------------|---------------------------------|
| Grid 1 <b>M4</b><br>25.87 dBV/m | Grid 2 <b>M4</b><br>28.82 dBV/m | Grid 3 <b>M4</b><br>28.85 dBV/m |
| Grid 4 <b>M4</b><br>28.88 dBV/m | Grid 5 <b>M3</b><br>31.42 dBV/m | Grid 6 <b>M3</b><br>31.4 dBV/m  |
| Grid 7 <b>M3</b><br>31.26 dBV/m | Grid 8 <b>M3</b><br>32.14 dBV/m | Grid 9 <b>M3</b><br>31.92 dBV/m |

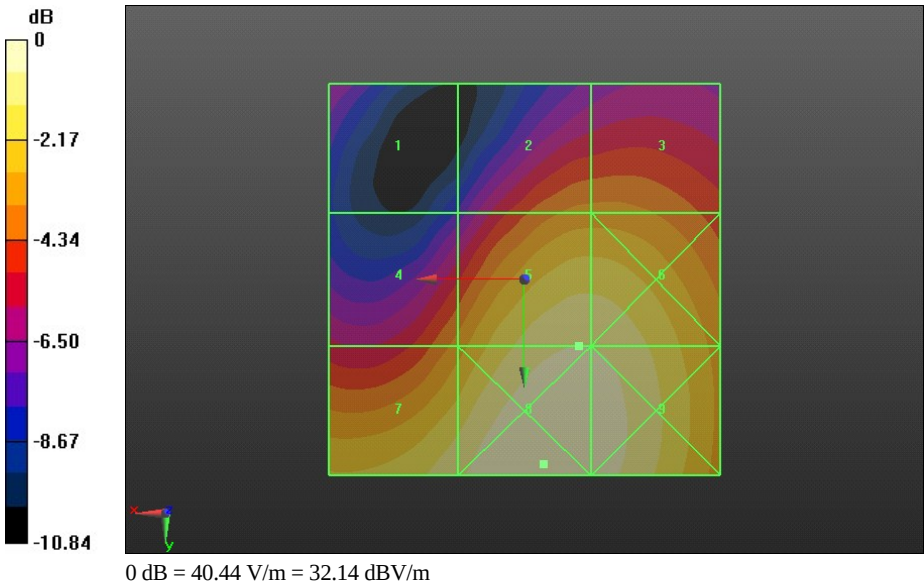
| Category | Limits for E-Field Emissions < 960MHz | Limits for E-Field Emissions > 960MHz |
|----------|---------------------------------------|---------------------------------------|
| M1       | 50 dBV/m - 55 dB V/m                  | 40 dBV/m - 45 dB V/m                  |
| M2       | 45 dBV/m - 50 dB V/m                  | 35 dBV/m - 40 dB V/m                  |
| M3       | 40 dBV/m - 45 dB V/m                  | 30 dBV/m - 35 dB V/m                  |
| M4       | <40 dBV/m                             | <30 dBV/m                             |

Cursor:

Total = 32.14 dBV/m

E Category: M3

Location: -2.5, 23.5, 8.7 mm



Test Laboratory: HUAWEI SAR/HAC Lab

HAC\_ER3DV6\_Y536A1-GSM1900-661CH

DUT: Y536A1; Type: Smart Phone; Serial: SAR1

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz;Duty Cycle: 1:8.6896

Medium parameters used:  $\sigma = 0 \text{ S/m}$ ,  $\epsilon_r = 1$ ;  $\rho = 0 \text{ kg/m}^3$

Phantom section: RF Section

DASY Configuration:

- Probe: ER3DV6 - SN2441; ConvF(1, 1, 1); Calibrated: 2013-11-29;
- Sensor-Surface: (Fix Surface),  $z = 8.7$
- Electronics: DAE4 Sn1236; Calibrated: 2013-11-25
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1053
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 28.71 V/m; Power Drift = 0.02 dB

Applied MIF = 3.63 dB

RF audio interference level = 31.96 dBV/m

Emission category: M3

MIF scaled E-field

|                                 |                                 |                                 |
|---------------------------------|---------------------------------|---------------------------------|
| Grid 1 <b>M4</b><br>25.36 dBV/m | Grid 2 <b>M3</b><br>30.07 dBV/m | Grid 3 <b>M3</b><br>30.09 dBV/m |
| Grid 4 <b>M4</b><br>28.77 dBV/m | Grid 5 <b>M3</b><br>31.96 dBV/m | Grid 6 <b>M3</b><br>31.95 dBV/m |
| Grid 7 <b>M3</b><br>30.95 dBV/m | Grid 8 <b>M3</b><br>32.24 dBV/m | Grid 9 <b>M3</b><br>32.18 dBV/m |

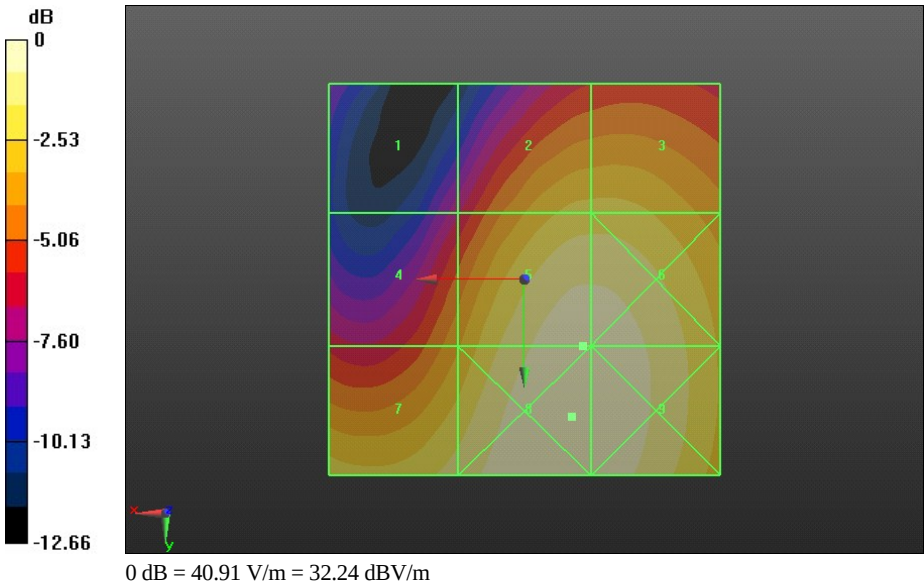
| Category | Limits for E-Field Emissions < 960MHz | Limits for E-Field Emissions > 960MHz |
|----------|---------------------------------------|---------------------------------------|
| M1       | 50 dBV/m - 55 dB V/m                  | 40 dBV/m - 45 dB V/m                  |
| M2       | 45 dBV/m - 50 dB V/m                  | 35 dBV/m - 40 dB V/m                  |
| M3       | 40 dBV/m - 45 dB V/m                  | 30 dBV/m - 35 dB V/m                  |
| M4       | <40 dBV/m                             | <30 dBV/m                             |

Cursor:

Total = 32.24 dBV/m

E Category: M3

Location: -6, 17.5, 8.7 mm



Test Laboratory: HUAWEI SAR/HAC Lab

HAC\_ER3DV6\_Y536A1-GSM1900-512CH

DUT: Y536A1; Type: Smart Phone; Serial: SAR1

Communication System: UID 10021 - DAA, GSM-FDD (TDMA, GMSK); Frequency: 1850.2 MHz;Duty Cycle: 1:8.6896

Medium parameters used:  $\sigma = 0 \text{ S/m}$ ,  $\epsilon_r = 1$ ;  $\rho = 0 \text{ kg/m}^3$

Phantom section: RF Section

DASY Configuration:

- Probe: ER3DV6 - SN2441; ConvF(1, 1, 1); Calibrated: 2013-11-29;
- Sensor-Surface: (Fix Surface),  $z = 8.7$
- Electronics: DAE4 Sn1236; Calibrated: 2013-11-25
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1053
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

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

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 30.97 V/m; Power Drift = -0.02 dB

Applied MIF = 3.63 dB

RF audio interference level = 32.45 dBV/m

Emission category: M3

MIF scaled E-field

|                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| Grid 1 M4<br>26.29 dBV/m | Grid 2 M3<br>30.59 dBV/m | Grid 3 M3<br>30.6 dBV/m  |
| Grid 4 M4<br>29.34 dBV/m | Grid 5 M3<br>32.45 dBV/m | Grid 6 M3<br>32.43 dBV/m |
| Grid 7 M3<br>30.84 dBV/m | Grid 8 M3<br>32.6 dBV/m  | Grid 9 M3<br>32.57 dBV/m |

| Category | Limits for E-Field Emissions < 960MHz | Limits for E-Field Emissions > 960MHz |
|----------|---------------------------------------|---------------------------------------|
| M1       | 50 dBV/m - 55 dB V/m                  | 40 dBV/m - 45 dB V/m                  |
| M2       | 45 dBV/m - 50 dB V/m                  | 35 dBV/m - 40 dB V/m                  |
| M3       | 40 dBV/m - 45 dB V/m                  | 30 dBV/m - 35 dB V/m                  |
| M4       | <40 dBV/m                             | <30 dBV/m                             |

Cursor:

Total = 32.60 dBV/m

E Category: M3

Location: -6.5, 15.5, 8.7 mm

