

6.2 Maximum peak power and band edges emissions (CSSS)

Test site: semi-anechoic chamber (foam) open test site
 semi-anechoic chamber (ferrites)

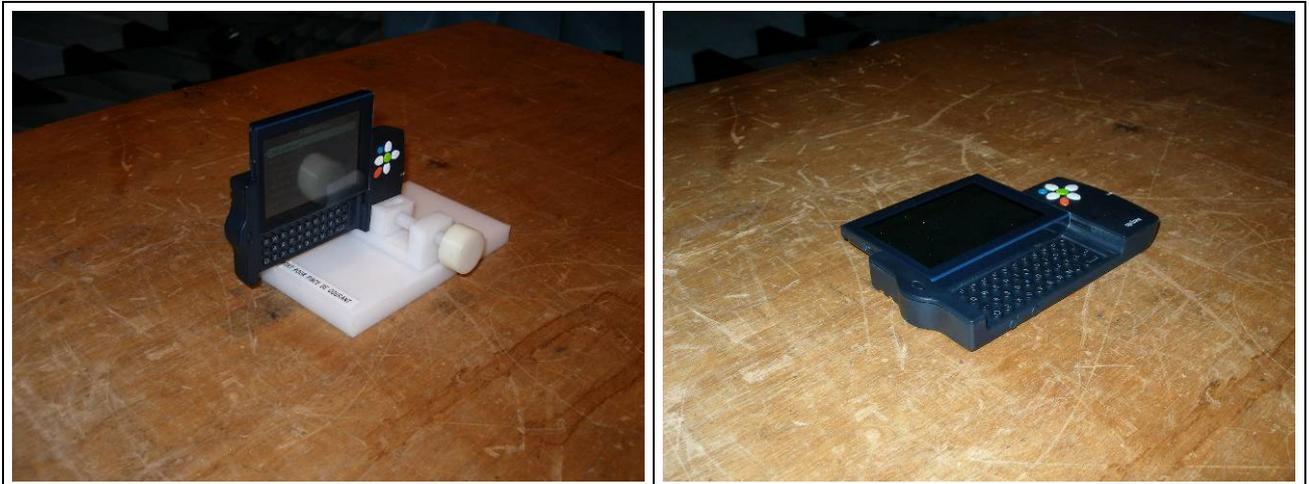
Distance: 30 m 10 m 3 m 1 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.7 dB

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height as the EUT successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test. The peak values are recorded continuously on the graph. The values exceeding a limit are remeasured manually using a receiver.

Test set-up:



Remarks:

- Limit values expressed in dBµV/m and transformed to a measuring distance of 1m (factor used = 20 dB/decade) if necessary
 e.g.: for f = 1GHz the limit is 500µV/m at 3m;

$$20 \log \left(\frac{500_{[\mu V / m]}}{1_{[\mu V / m]}} \right) + 20 \log \left(\frac{3_{[m]}}{1_{[m]}} \right) = 63.5 dB\mu V \text{ at } 1m$$
- Carrier limit for 1 W calculated with $E_{[V / m]} = \frac{\sqrt{30 P_{[W EIRP]}}}{d_{[m]}} = 5.47 V/m = 134.7 dB\mu V/m$

Test equipment:

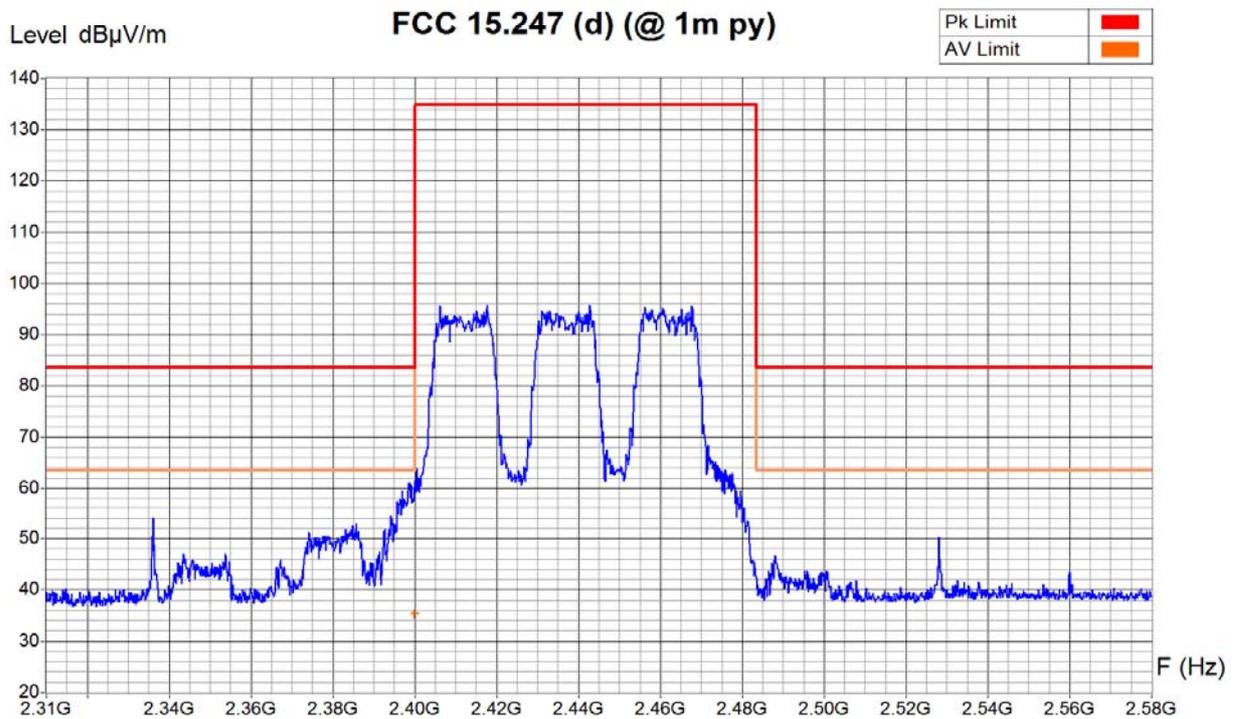
| | | | | | | |
|-------------------|---|--------------------------------|--------------------------------|---|--------------------------------|---|
| Spectrum analyser | <input type="checkbox"/> 88-14 | <input type="checkbox"/> 90-26 | <input type="checkbox"/> 94-24 | <input checked="" type="checkbox"/> 02-06 | <input type="checkbox"/> 03-45 | <input type="checkbox"/> 03-57 |
| Receiver | <input type="checkbox"/> 85-04 | <input type="checkbox"/> 90-43 | <input type="checkbox"/> 94-35 | | | |
| Preamplifier | <input type="checkbox"/> 90-01 | <input type="checkbox"/> 95-86 | <input type="checkbox"/> 05-56 | <input type="checkbox"/> 05-59 | <input type="checkbox"/> 05-62 | <input checked="" type="checkbox"/> 05-87 |
| Antenna (horn) | <input checked="" type="checkbox"/> 90-24 | <input type="checkbox"/> 90-29 | <input type="checkbox"/> 98-12 | <input type="checkbox"/> 98-13 | <input type="checkbox"/> | |
| Cables | Succoflex 1 m | | | | | |

Result: pass fail not applicable not tested

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx; CSSS Channel 1, 6 and 11; Pmax
 Remarks :



| | |
|-----------------|-----------------|
| Zone | 2.31 GHz - 2.58 |
| Video Bandwidth | 100 KHz |
| Resol Bandwidth | 100 KHz |

Receiver Measures

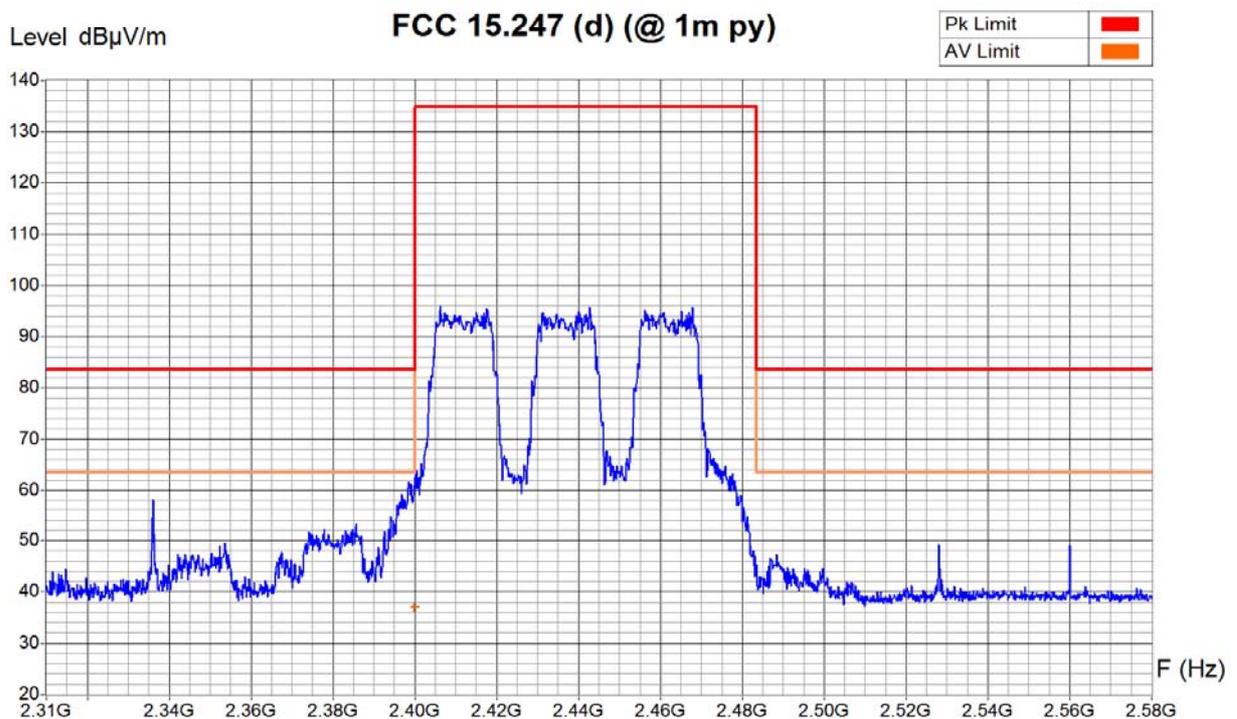
| Frequency | Peak | QuasiPeak (x) | Average (+) | QP Margin |
|-----------|-------------|---------------|-------------|-----------|
| 2.40 GHz | 61.0 dBµV/m | NaN dBµV/m | 35.4 dBµV/m | NaN dB |

Operator: E. Staub
 Date/Time: 08.04.2008 09:52
 Filename:
 2007722_handheld_FCC
 carrier-CSSS_000h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx; CSSS Channel 1, 6 and 11; Pmax
 Remarks :



| | |
|-----------------|-----------------|
| Zone | 2.31 GHz - 2.58 |
| Video Bandwidth | 100 KHz |
| Resol Bandwidth | 100 KHz |

Receiver Measures

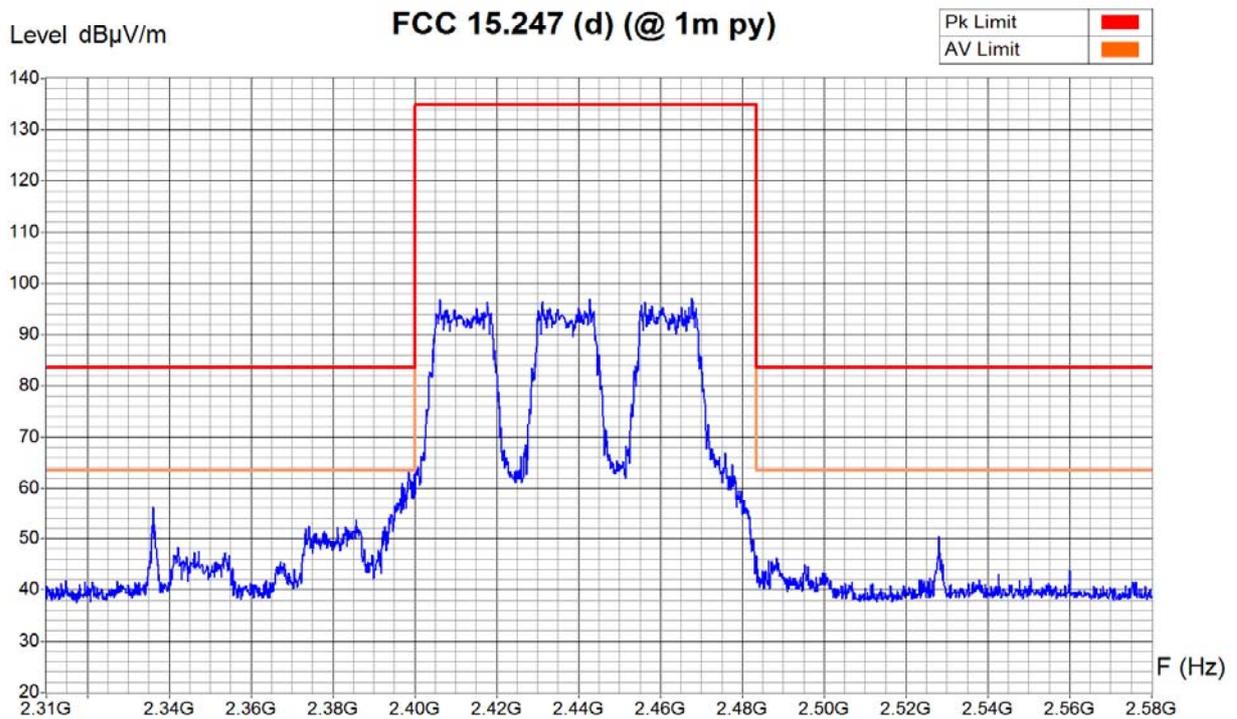
| Frequency | Peak | QuasiPeak (x) | Average (+) | QP Margin |
|-----------|-------------|---------------|-------------|-----------|
| 2.40 GHz | 62.6 dBµV/m | NaN dBµV/m | 37.0 dBµV/m | NaN dB |

Operator: E. Staub
 Date/Time: 08.04.2008 11:34
 Filename:
 2007722_handheld_FCC
 carrier-CSSS_000v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx; CSSS Channel 1, 6 and 11; Pmax
 Remarks :



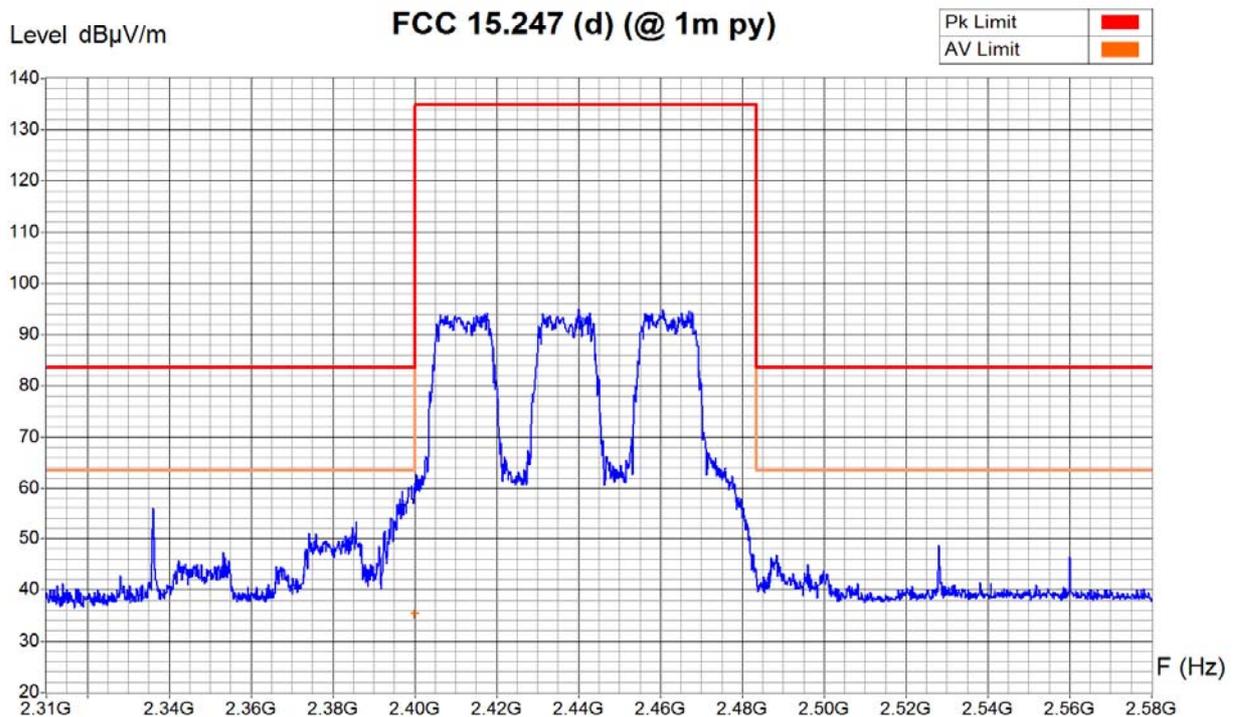
| | |
|-----------------|-----------------|
| Zone | 2.31 GHz - 2.58 |
| Video Bandwidth | 100 KHz |
| Resol Bandwidth | 100 KHz |

| | |
|------------|---|
| Operator: | E. Staub |
| Date/Time: | 08.04.2008 12:07 |
| Filename: | 20077722_handheld_FCC carrier-CSSS_001h.png/.txt |

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx; CSSS Channel 1, 6 and 11; Pmax
 Remarks :



| | |
|-----------------|-----------------|
| Zone | 2.31 GHz - 2.58 |
| Video Bandwidth | 100 KHz |
| Resol Bandwidth | 100 KHz |

Receiver Measures

| Frequency | Peak | QuasiPeak (x) | Average (+) | QP Margin |
|-----------|-------------|---------------|-------------|-----------|
| 2.40 GHz | 61.0 dBµV/m | NaN dBµV/m | 35.4 dBµV/m | NaN dB |

Operator: E. Staub
 Date/Time: 08.04.2008 11:44
 Filename:
 2007722_handheld_FCC
 carrier-CSSS_001v.png/.txt

6.3 Spurious emission (CSSS)

6.3.1 Radiated emission - Electromagnetic field (30 MHz – 1 GHz)

Test site: semi-anechoic chamber (foam) open test site
 semi-anechoic chamber (ferrites)

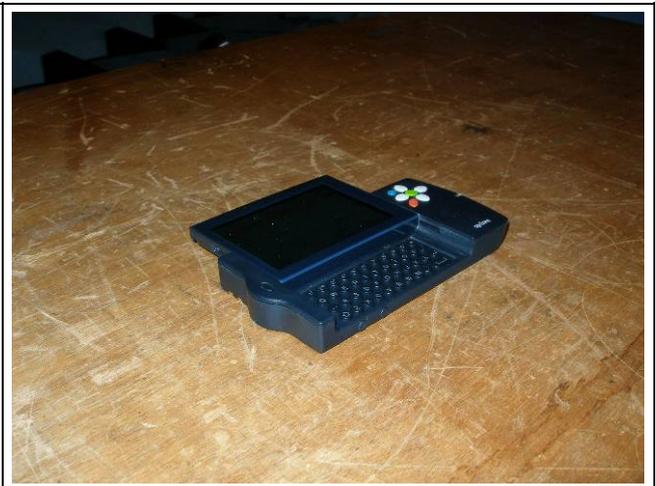
Distance: 30 m 10 m 3 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.6 dB (30 - 300 MHz) / ± 3.7 dB (300 - 1000 MHz)

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is moved from 1 to 4 m in height successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test. The peak values are recorded continuously on the graph. The values exceeding a limit are remeasured manually using a receiver.

Test set-up:



Remarks: *Limit values expressed in dBµV/m and transformed to a measuring distance of 3m (factor used = 20 dB/decade) if necessary*
 e.g.: for f = 40MHz the limit is 100µV/m at 3m;

$$20 \log \left(\frac{100_{[\mu V / m]}}{1_{[\mu V / m]}} \right) = 40dB\mu V \text{ at } 3m$$

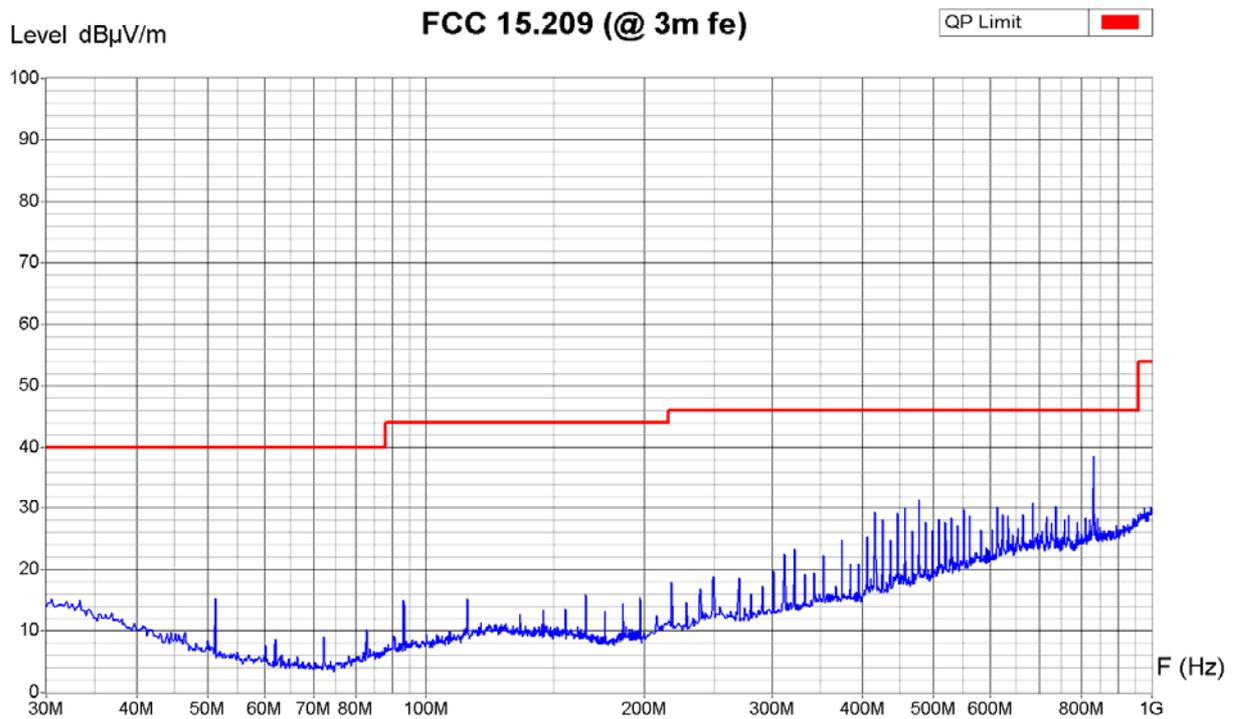
Test equipment:

| | | | | | | |
|---------------------|---|--------------------------------|---|---|---|--------------------------------|
| Spectrum analyser | <input type="checkbox"/> 88-14 | <input type="checkbox"/> 90-26 | <input type="checkbox"/> 94-24 | <input type="checkbox"/> 02-06 | <input checked="" type="checkbox"/> 03-45 | <input type="checkbox"/> 03-57 |
| Receiver | <input type="checkbox"/> 85-04 | <input type="checkbox"/> 90-43 | <input checked="" type="checkbox"/> 94-35 | | | |
| Preamplifier | <input type="checkbox"/> 90-01 | <input type="checkbox"/> 95-86 | <input type="checkbox"/> 05-56 | <input checked="" type="checkbox"/> 05-59 | <input type="checkbox"/> 05-62 | <input type="checkbox"/> |
| Antenna (biconical) | <input type="checkbox"/> 82-02 | <input type="checkbox"/> 87-05 | <input type="checkbox"/> 87-16 | <input type="checkbox"/> 91-05 | <input type="checkbox"/> 94-37 | |
| Antenna (log-per) | <input type="checkbox"/> 88-20 | <input type="checkbox"/> 90-30 | <input type="checkbox"/> 91-35 | <input type="checkbox"/> 94-64 | | |
| Antenna (bilog) | <input checked="" type="checkbox"/> 94-03 | <input type="checkbox"/> 05-38 | <input type="checkbox"/> | | | |
| Antenna (horn) | <input type="checkbox"/> 90-24 | <input type="checkbox"/> 90-29 | <input type="checkbox"/> 98-12 | <input type="checkbox"/> 98-13 | <input type="checkbox"/> | |
| Cables | <input checked="" type="checkbox"/> 06-01 | | | | | |

Result: pass fail not applicable not tested

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 1 - 4m

Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



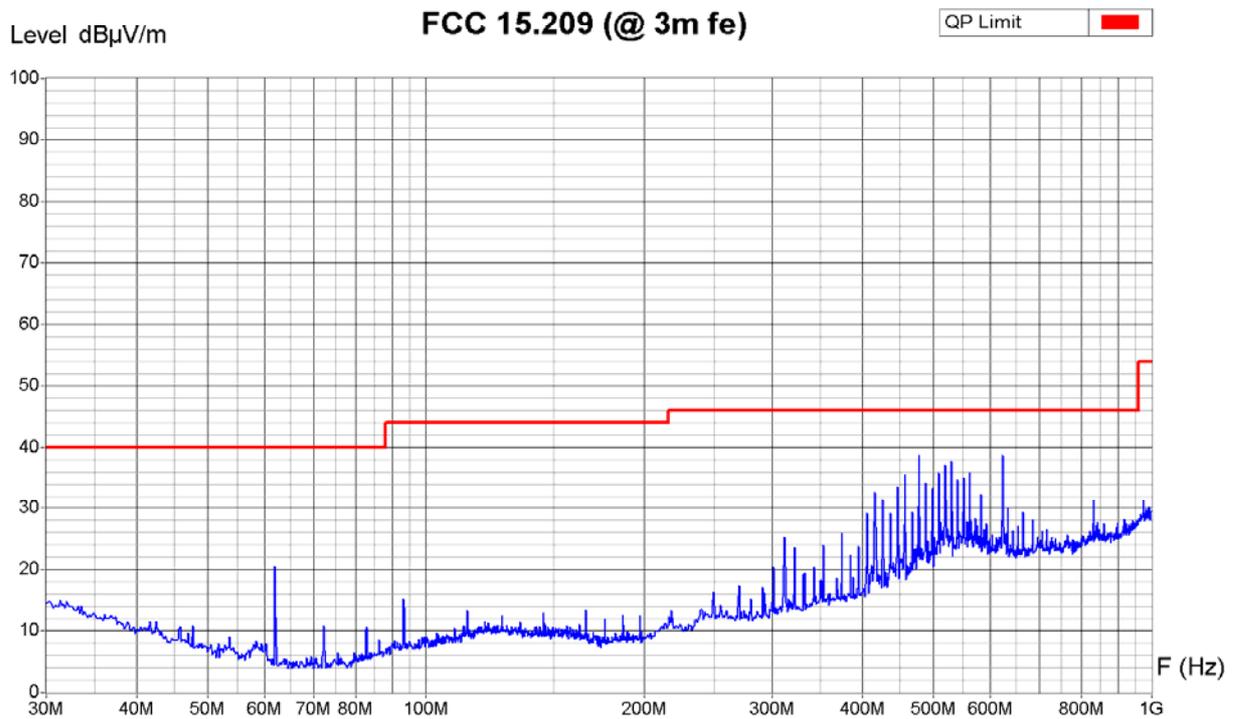
| | | |
|-----------------|------------------|-----------------|
| Zone | 30 MHz - 199 MHz | 199 MHz - 1 GHz |
| Video Bandwidth | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 16.04.08 13:51
 Filename:
 2007722_handheld_FCC
 SP-CSSS_018h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 1 - 4m



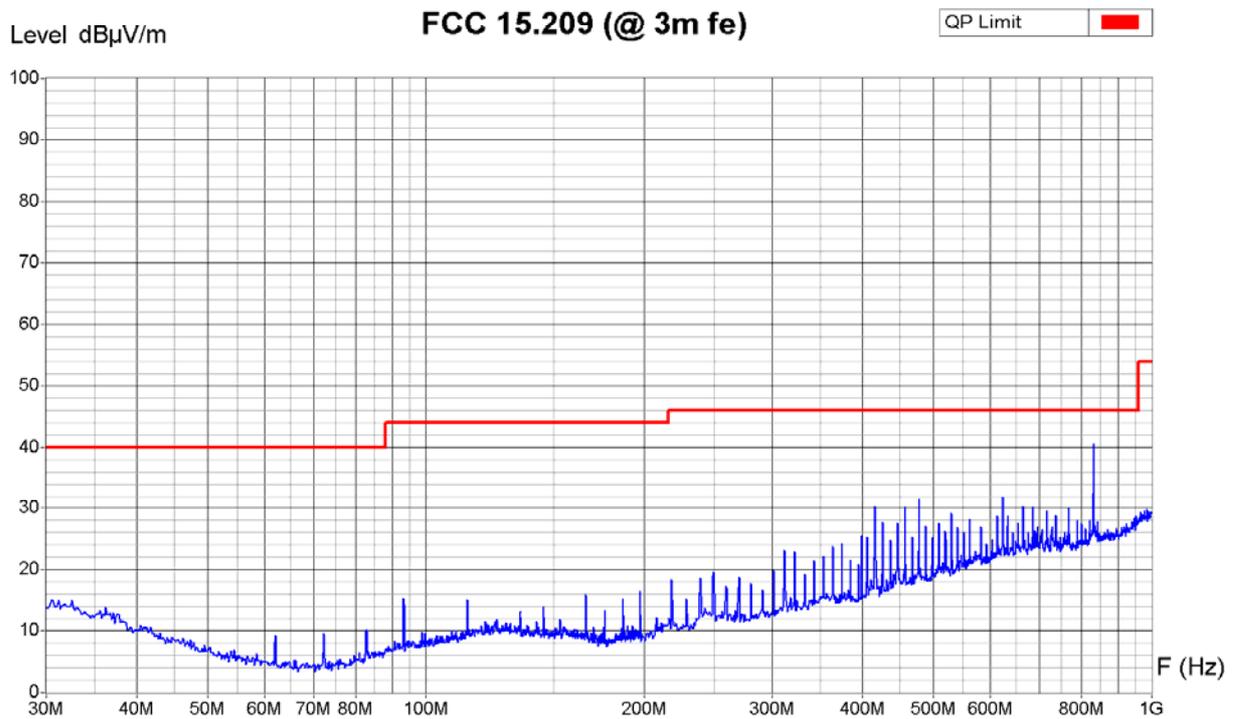
Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



| | | |
|-----------------|------------------|-----------------|
| Zone | 30 MHz - 199 MHz | 199 MHz - 1 GHz |
| Video Bandwidth | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 16.04.08 14:00
 Filename:
 2007722_handheld_FCC
 SP-CSSS_018v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 1 - 4m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 6, Pmax
 Remarks :



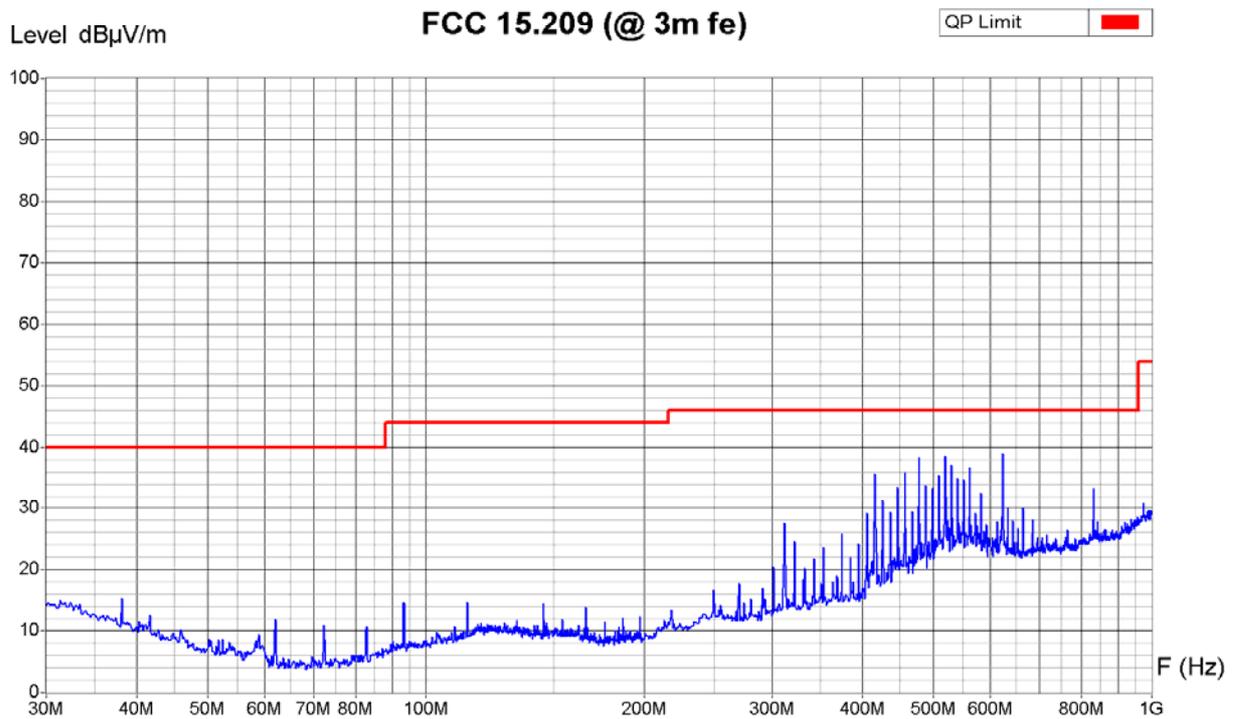
| | | |
|-----------------|------------------|-----------------|
| Zone | 30 MHz - 199 MHz | 199 MHz - 1 GHz |
| Video Bandwidth | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 16.04.08 14:17
 Filename:
 2007722_handheld_FCC
 SP-CSSS_019h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 1 - 4m



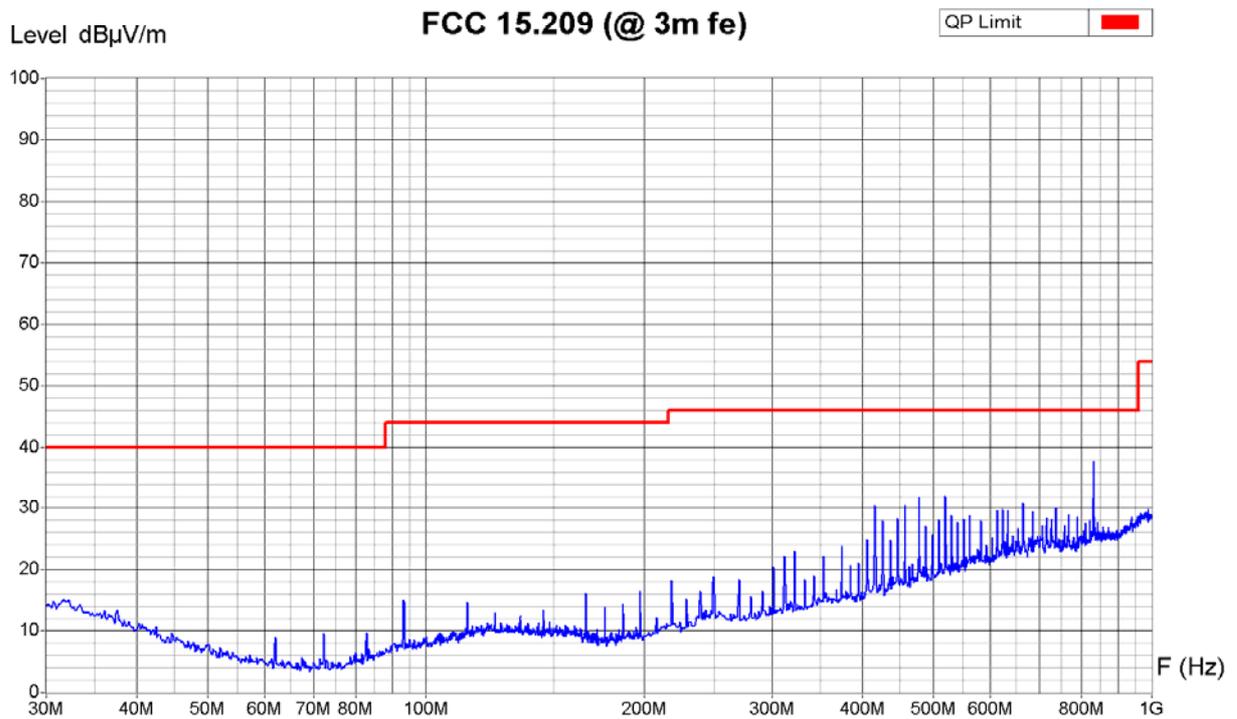
Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 6, Pmax
 Remarks :



| | | |
|-----------------|------------------|-----------------|
| Zone | 30 MHz - 199 MHz | 199 MHz - 1 GHz |
| Video Bandwidth | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 16.04.08 14:09
 Filename:
 2007722_handheld_FCC
 SP-CSSS_019v.png/.txt

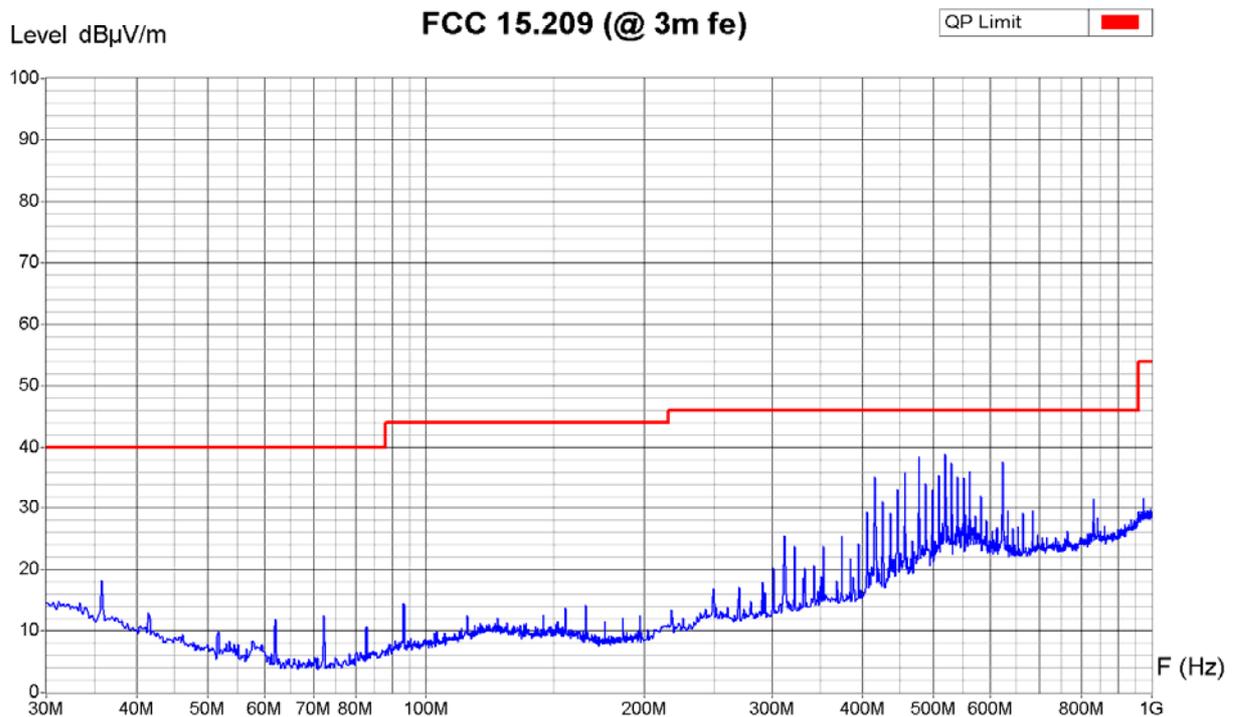
Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 1 - 4m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 11, Pmax
 Remarks :



| | | |
|-----------------|------------------|-----------------|
| Zone | 30 MHz - 199 MHz | 199 MHz - 1 GHz |
| Video Bandwidth | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 16.04.08 14:24
 Filename:
 2007722_handheld_FCC
 SP-CSSS_020h.png/.txt

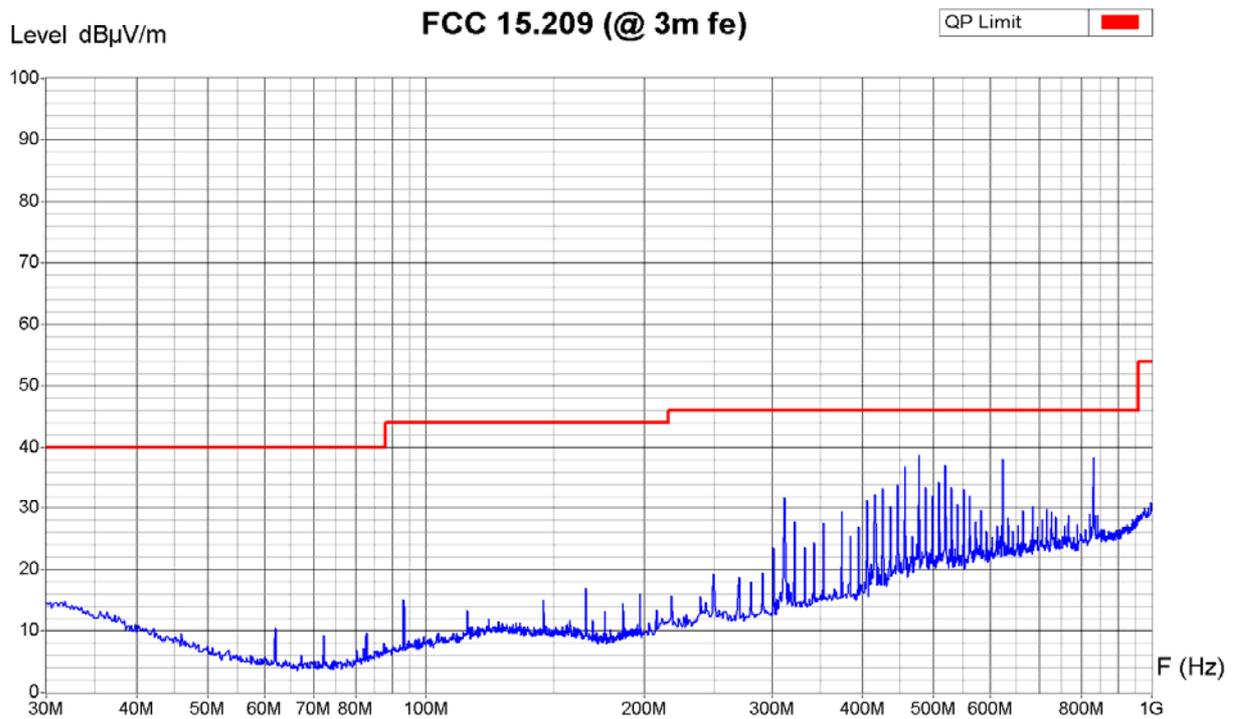
Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 1 - 4m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 11, Pmax
 Remarks :



| | | |
|-----------------|------------------|-----------------|
| Zone | 30 MHz - 199 MHz | 199 MHz - 1 GHz |
| Video Bandwidth | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 16.04.08 14:31
 Filename:
 2007722_handheld_FCC
 SP-CSSS_020v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 1 - 4m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



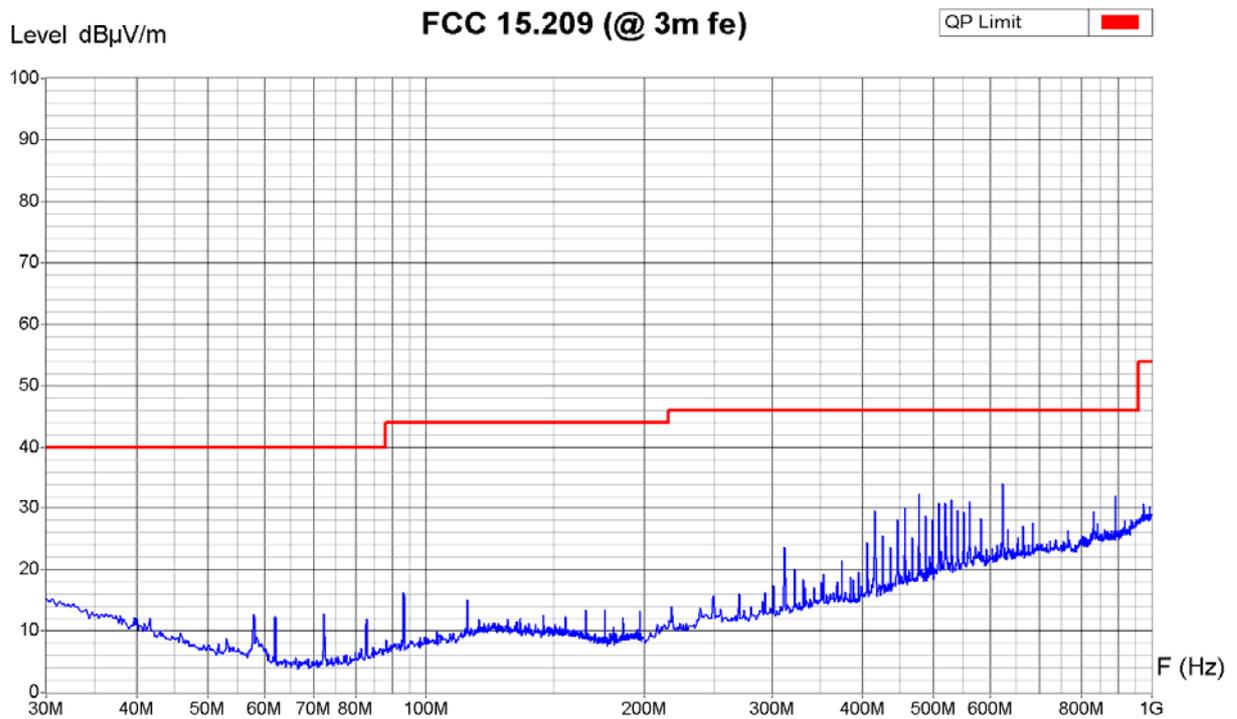
| | | |
|-----------------|------------------|-----------------|
| Zone | 30 MHz - 199 MHz | 199 MHz - 1 GHz |
| Video Bandwidth | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 16.04.08 16:58
 Filename:
 2007722_handheld_FCC
 SP-CSSS_021h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 1 - 4m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



| | | |
|-----------------|------------------|-----------------|
| Zone | 30 MHz - 199 MHz | 199 MHz - 1 GHz |
| Video Bandwidth | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 16.04.08 16:51
 Filename:
 2007722_handheld_FCC
 SP-CSSS_021v.png/.txt

6.3.2 Radiated emission - Electromagnetic field (1 GHz – 2.8 GHz)

Test site: semi-anechoic chamber (foam) open test site
 semi-anechoic chamber (ferrites)

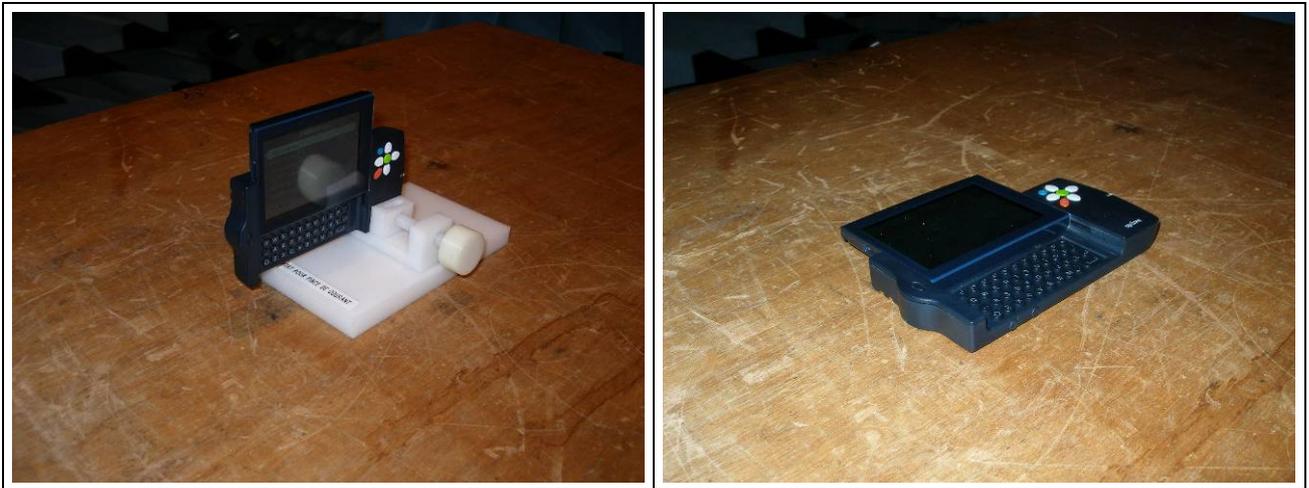
Distance: 30 m 10 m 3 m 1 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.7 dB

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height as the EUT successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test. The peak values are recorded continuously on the graph. The values exceeding a limit are remeasured manually using a receiver.

Test set-up:



Remarks: Limit values expressed in dBµV/m and transformed to a measuring distance of 1m (factor used = 20 dB/decade) if necessary
 e.g.: for f = 1GHz the limit is 500µV/m at 3m;

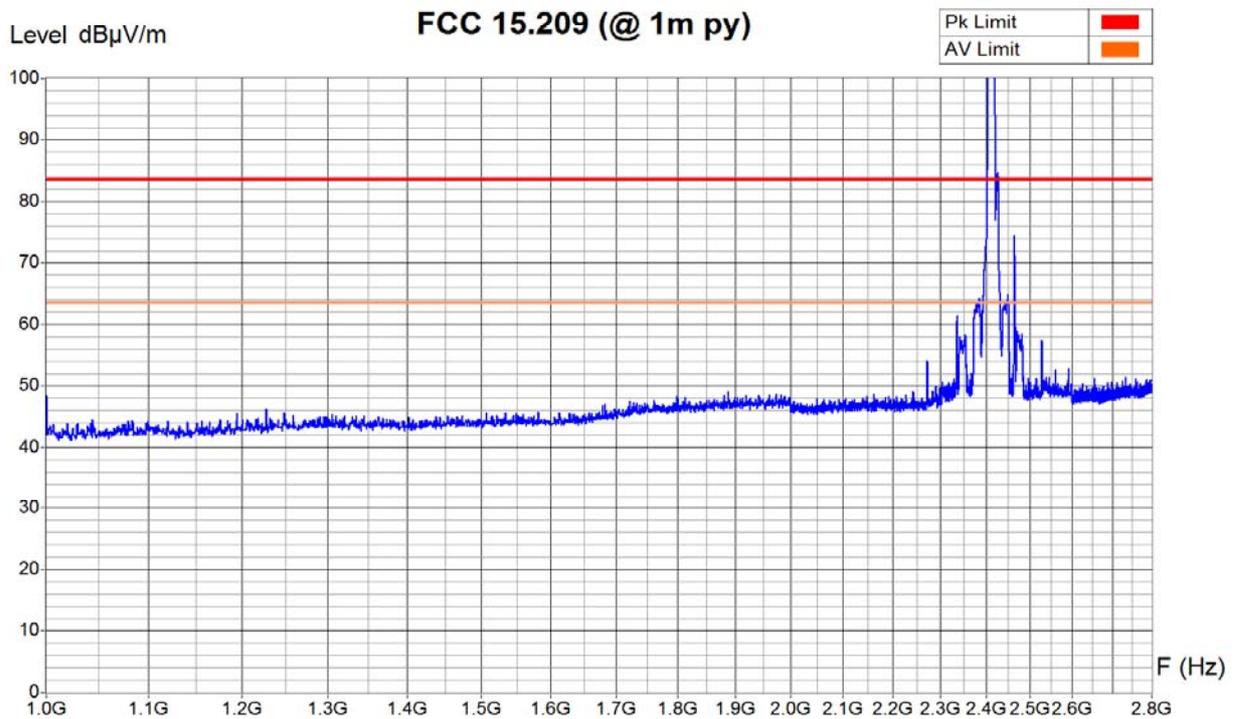
$$20 \log \left(\frac{500_{[\mu V / m]}}{1_{[\mu V / m]}} \right) + 20 \log \left(\frac{3_{[m]}}{1_{[m]}} \right) = 63.5 dB\mu V \text{ at } 1m$$

Test equipment:

| | | | | | | |
|---------------------|---|--------------------------------|--------------------------------|---|--------------------------------|---|
| Spectrum analyser | <input type="checkbox"/> 88-14 | <input type="checkbox"/> 90-26 | <input type="checkbox"/> 94-24 | <input checked="" type="checkbox"/> 02-06 | <input type="checkbox"/> 03-45 | <input type="checkbox"/> 03-57 |
| Receiver | <input type="checkbox"/> 85-04 | <input type="checkbox"/> 90-43 | <input type="checkbox"/> 94-35 | | | |
| Preamplifier | <input type="checkbox"/> 90-01 | <input type="checkbox"/> 95-86 | <input type="checkbox"/> 05-56 | <input type="checkbox"/> 05-59 | <input type="checkbox"/> 05-62 | <input checked="" type="checkbox"/> 05-87 |
| Antenna (biconical) | <input type="checkbox"/> 82-02 | <input type="checkbox"/> 87-05 | <input type="checkbox"/> 87-16 | <input type="checkbox"/> 91-05 | <input type="checkbox"/> 94-37 | |
| Antenna (log-per) | <input type="checkbox"/> 88-20 | <input type="checkbox"/> 90-30 | <input type="checkbox"/> 91-35 | <input type="checkbox"/> 94-64 | | |
| Antenna (bilog) | <input type="checkbox"/> 94-03 | <input type="checkbox"/> 05-38 | <input type="checkbox"/> | | | |
| Antenna (horn) | <input checked="" type="checkbox"/> 90-24 | <input type="checkbox"/> 90-29 | <input type="checkbox"/> 98-12 | <input type="checkbox"/> 98-13 | <input type="checkbox"/> | |
| Cables | Succoflex 1 m | | | | | |

Result: pass fail not applicable not tested

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSS Channel 1, Pmax
 Remarks :

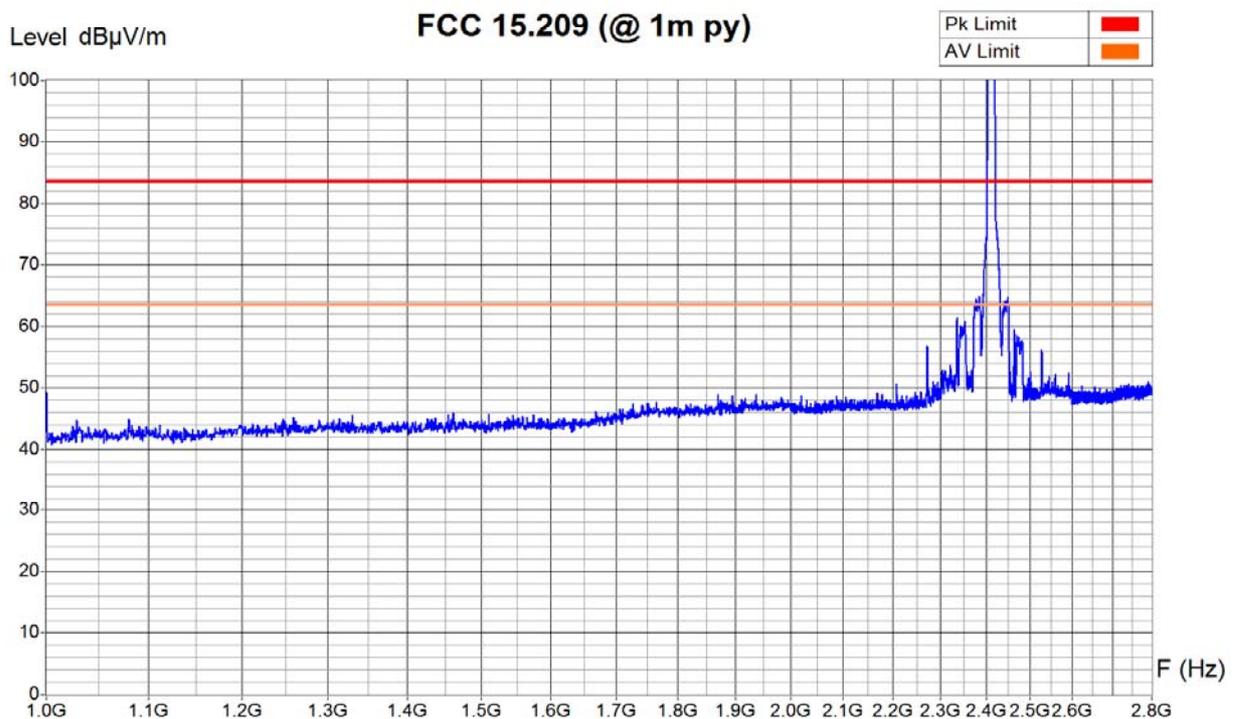


| Zone | 1 GHz - 2 GHz | 2 GHz - 2.60 GHz | 2.60 GHz - 2.80 |
|-----------------|---------------|------------------|-----------------|
| Video Bandwidth | 1 MHz | 1 MHz | 1 MHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 1 MHz |

Operator: E. Staub
 Date/Time: 07.04.2008 14:42
 Filename:
 2007722_handheld_FCC
 SP-CSS_000h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

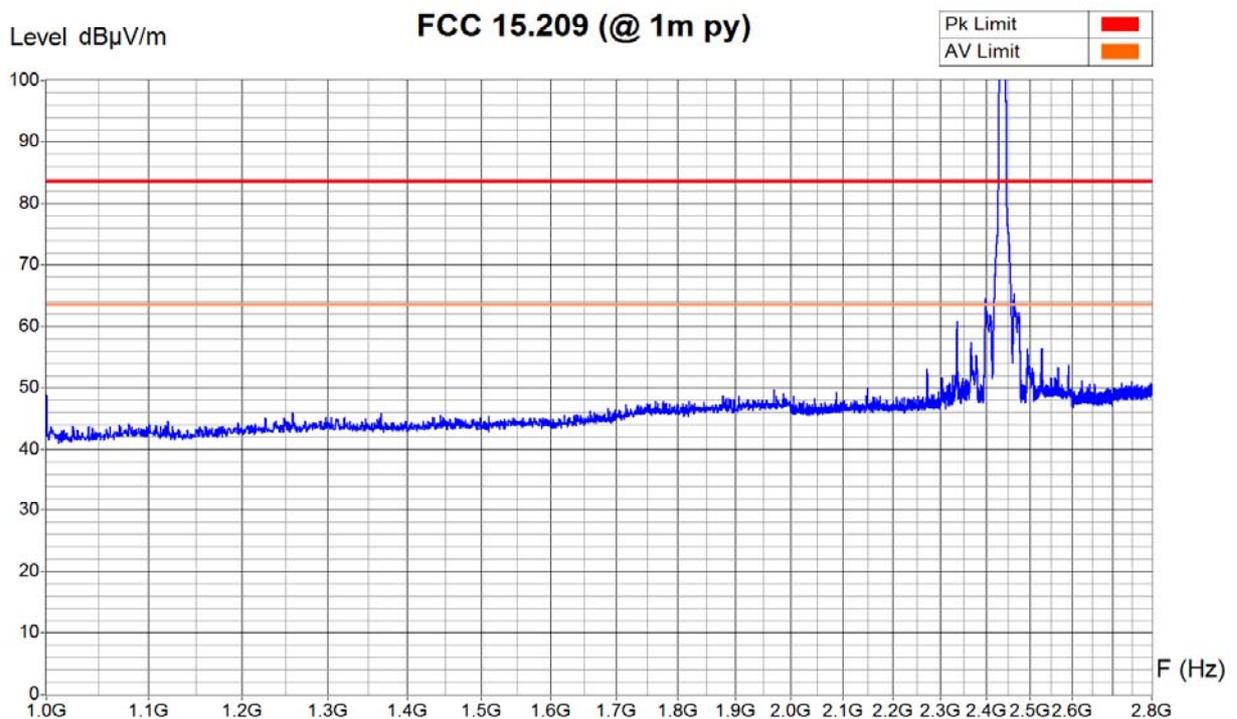
Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSS Channel 1, Pmax
 Remarks :



| Zone | 1 GHz - 2 GHz | 2 GHz - 2.60 GHz | 2.60 GHz - 2.80 |
|-----------------|---------------|------------------|-----------------|
| Video Bandwidth | 1 MHz | 1 MHz | 1 MHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 1 MHz |

Operator: E. Staub
 Date/Time: 07.04.2008 14:48
 Filename:
 2007722_handheld_FCC
 SP-CSS_000v.png/.txt

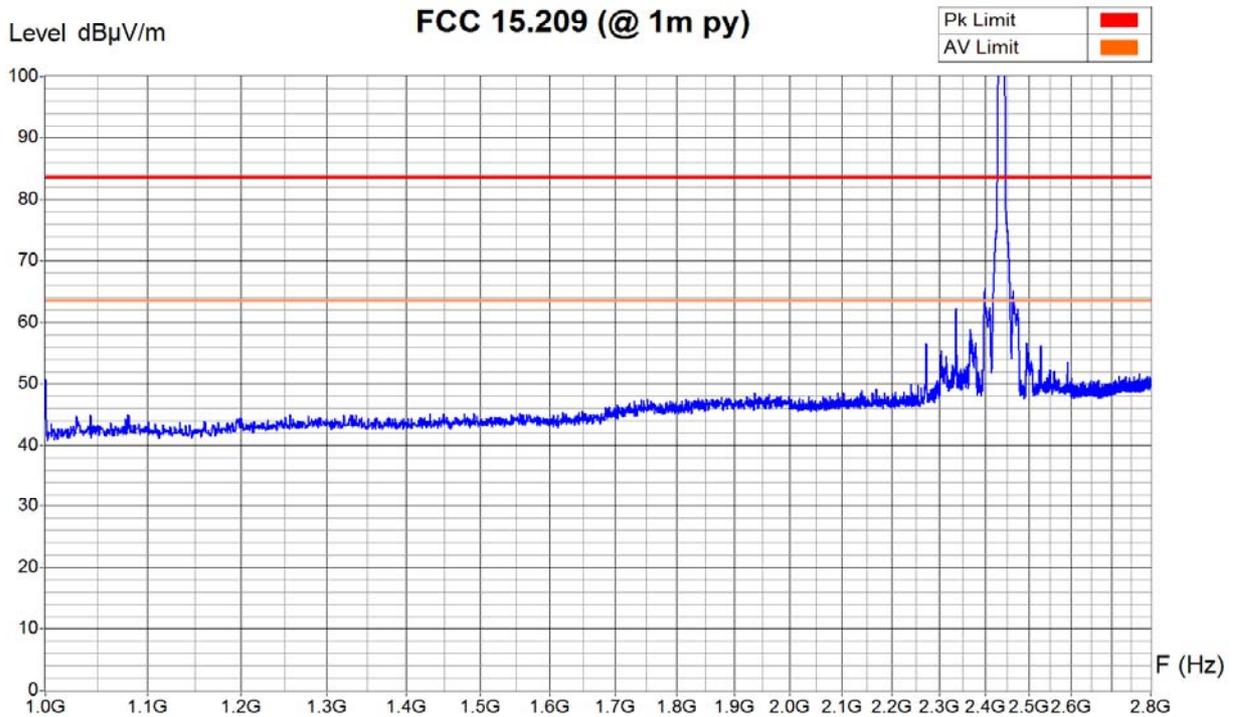
Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSS Channel 6, Pmax
 Remarks :



| Zone | 1 GHz - 2 GHz | 2 GHz - 2.60 GHz | 2.60 GHz - 2.80 |
|-----------------|---------------|------------------|-----------------|
| Video Bandwidth | 1 MHz | 1 MHz | 1 MHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 1 MHz |

Operator: E. Staub
 Date/Time: 07.04.2008 14:58
 Filename:
 2007722_handheld_FCC
 SP-CSS__001h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSS Channel 6, Pmax
 Remarks :

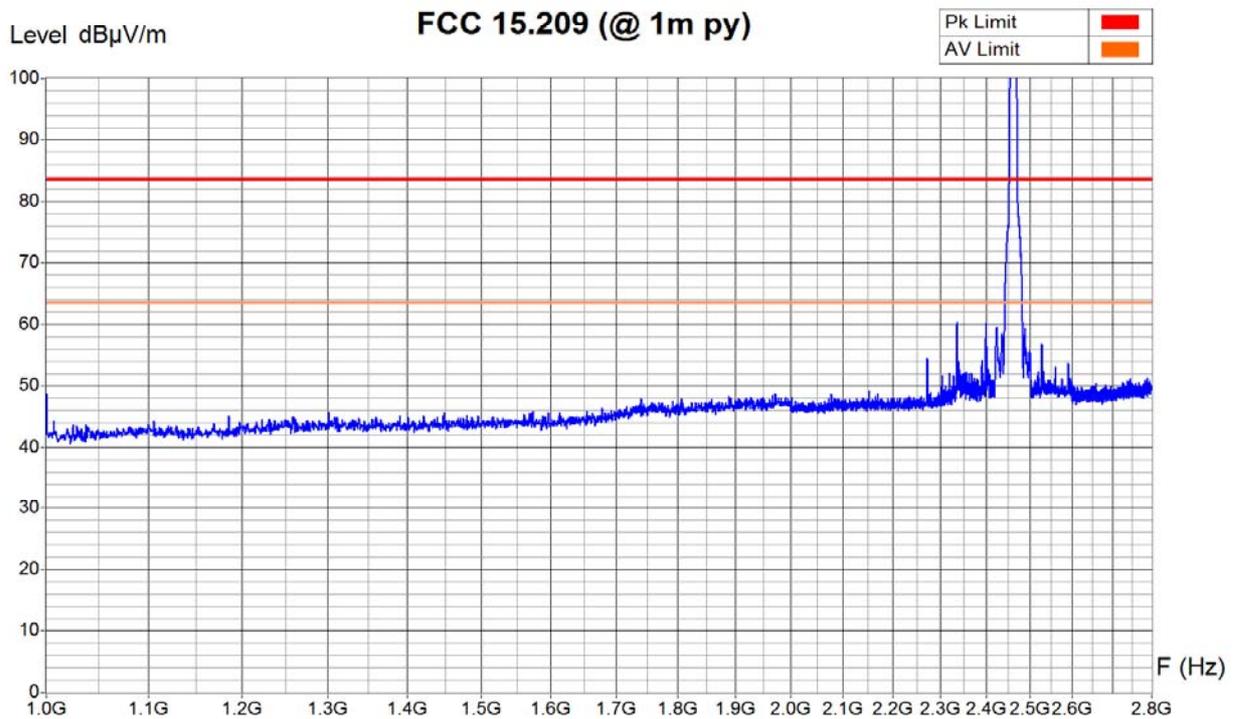


| Zone | 1 GHz - 2 GHz | 2 GHz - 2.60 GHz | 2.60 GHz - 2.80 |
|-----------------|---------------|------------------|-----------------|
| Video Bandwidth | 1 MHz | 1 MHz | 1 MHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 1 MHz |

Operator: E. Staub
 Date/Time: 07.04.2008 14:53
 Filename:
 2007722_handheld_FCC
 SP-CSS_001v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

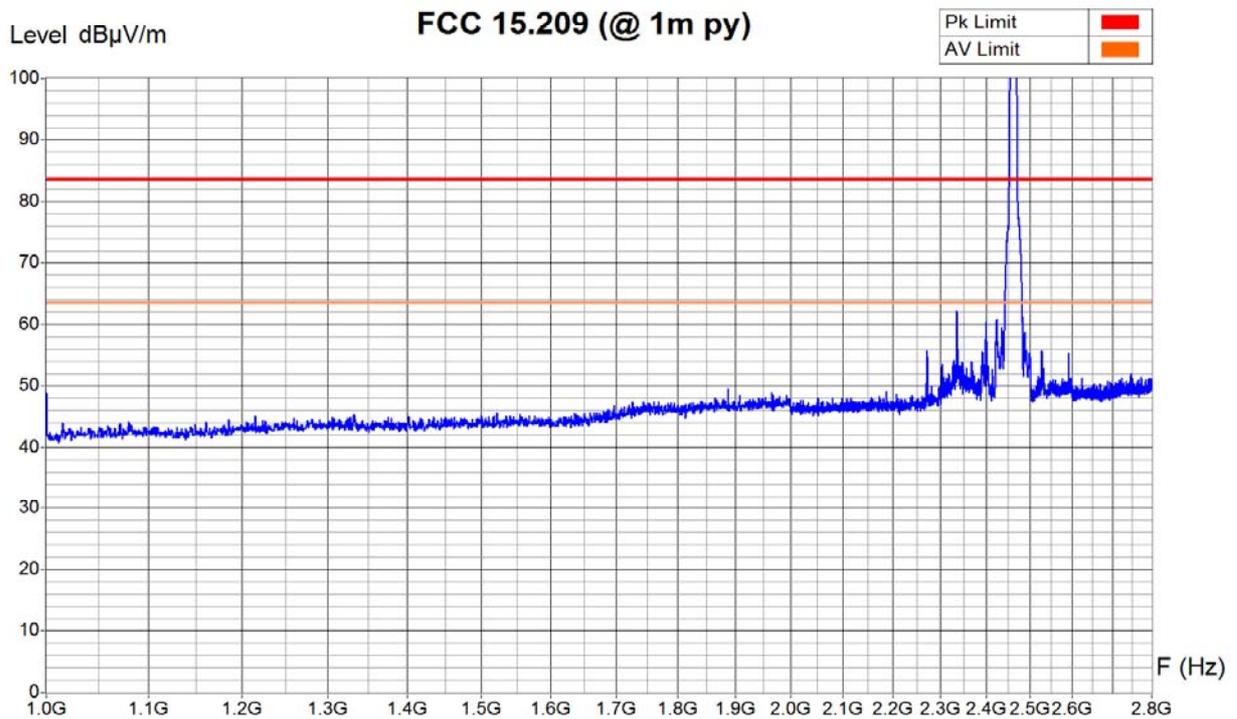
Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSS Channel 11, Pmax
 Remarks :



| Zone | 1 GHz - 2 GHz | 2 GHz - 2.60 GHz | 2.60 GHz - 2.80 |
|-----------------|---------------|------------------|-----------------|
| Video Bandwidth | 1 MHz | 1 MHz | 1 MHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 1 MHz |

Operator: E. Staub
 Date/Time: 07.04.2008 15:03
 Filename:
 2007722_handheld_FCC
 SP-CSS__002h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSS Channel 11, Pmax
 Remarks :

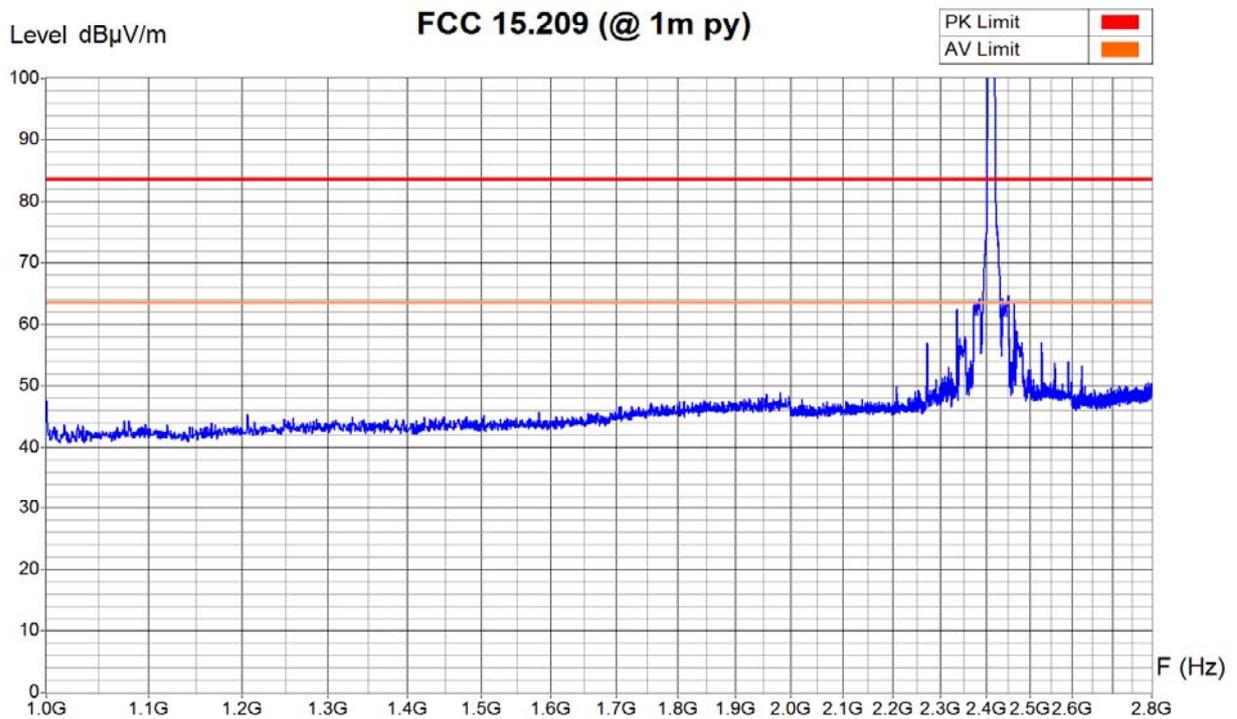


| Zone | 1 GHz - 2 GHz | 2 GHz - 2.60 GHz | 2.60 GHz - 2.80 |
|-----------------|---------------|------------------|-----------------|
| Video Bandwidth | 1 MHz | 1 MHz | 1 MHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 1 MHz |

Operator: E. Staub
 Date/Time: 07.04.2008 15:17
 Filename:
 2007722_handheld_FCC
 SP-CSS_002v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

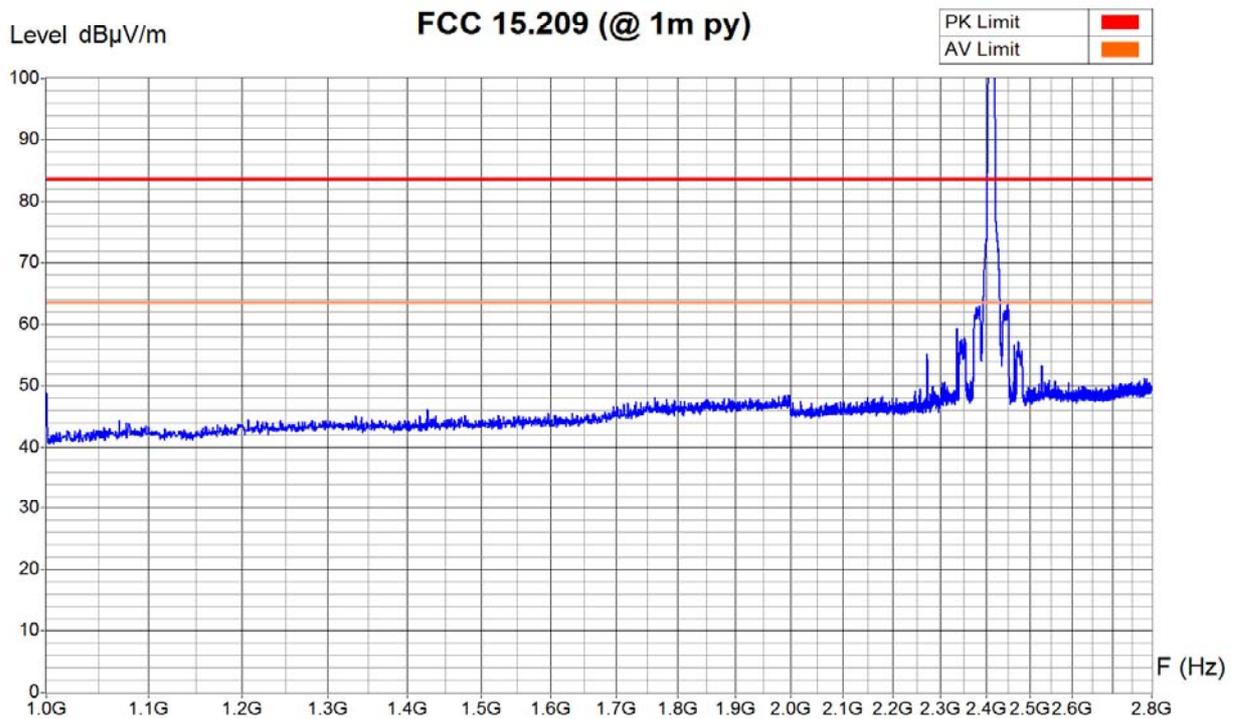
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSS Channel 1, Pmax
 Remarks :



| Zone | 1 GHz - 2 GHz | 2 GHz - 2.60 GHz | 2.60 GHz - 2.80 |
|-----------------|---------------|------------------|-----------------|
| Video Bandwidth | 1 MHz | 1 MHz | 1 MHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 1 MHz |

Operator: E. Staub
 Date/Time: 07.04.2008 17:12
 Filename:
 2007722_handheld_FCC
 SP-CSS_003h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSS Channel 1, Pmax
 Remarks :



| Zone | 1 GHz - 2 GHz | 2 GHz - 2.60 GHz | 2.60 GHz - 2.80 |
|-----------------|---------------|------------------|-----------------|
| Video Bandwidth | 1 MHz | 1 MHz | 1 MHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 1 MHz |

Operator: E. Staub
 Date/Time: 07.04.2008 17:17
 Filename:
 2007722_handheld_FCC
 SP-CSS_003v.png/.txt

6.3.3 Radiated emission - Electromagnetic field (2.8 GHz – 13 GHz)

Test site: semi-anechoic chamber (foam) open test site
 semi-anechoic chamber (ferrites)

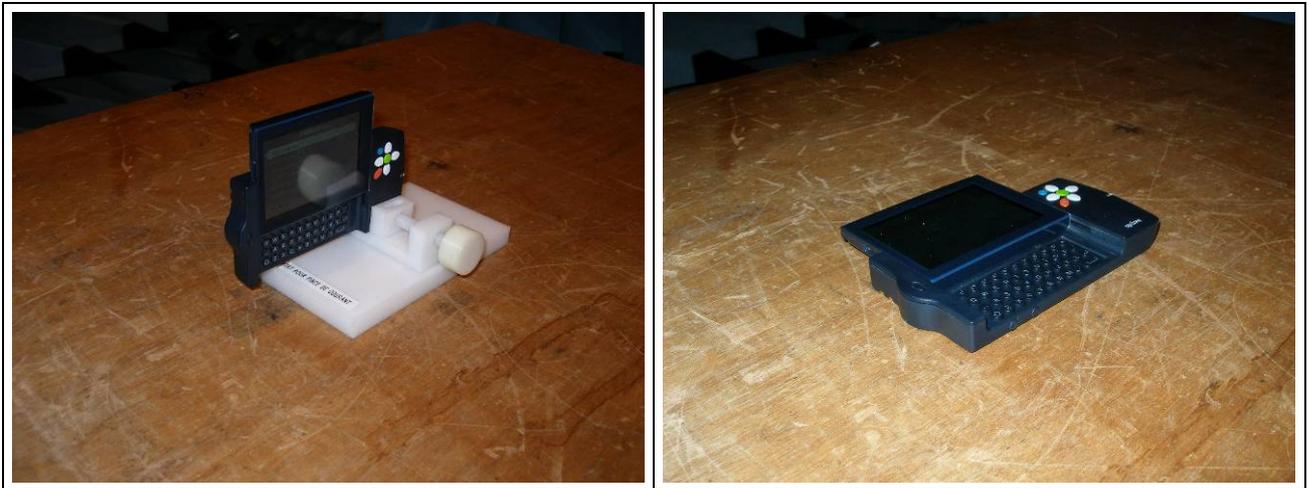
Distance: 30 m 10 m 3 m 1 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.7 dB

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height as the EUT successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test. The peak values are recorded continuously on the graph. The values exceeding a limit are remeasured manually using a receiver.

Test set-up:



Remarks: Limit values expressed in dBµV/m and transformed to a measuring distance of 1m (factor used = 20 dB/decade) if necessary
 e.g.: for f = 3GHz the limit is 500µV/m at 3m;

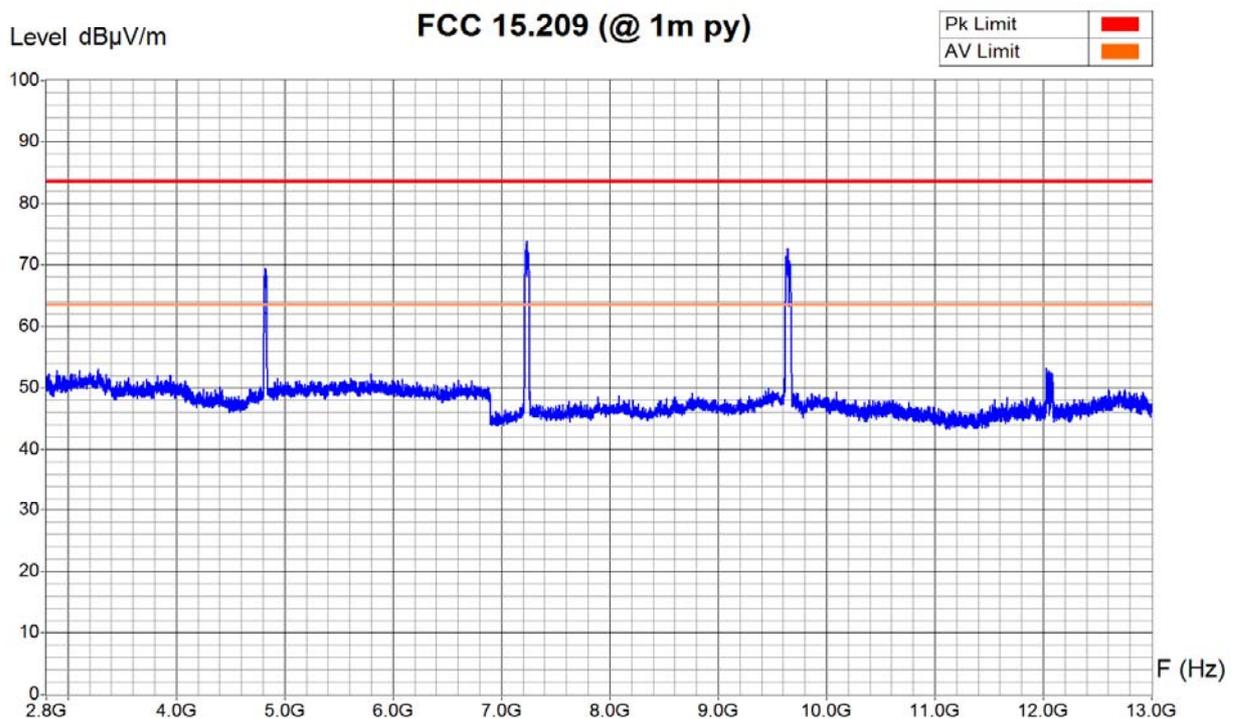
$$20 \log \left(\frac{500_{[\mu V / m]}}{1_{[\mu V / m]}} \right) + 20 \log \left(\frac{3_{[m]}}{1_{[m]}} \right) = 63.5 dB\mu V \text{ at } 1m$$

Test equipment:

| | | | | | | |
|---------------------|---|--------------------------------|---|---|--------------------------------|--------------------------------|
| Spectrum analyser | <input type="checkbox"/> 88-14 | <input type="checkbox"/> 90-26 | <input type="checkbox"/> 94-24 | <input checked="" type="checkbox"/> 02-06 | <input type="checkbox"/> 03-45 | <input type="checkbox"/> 03-57 |
| Receiver | <input type="checkbox"/> 85-04 | <input type="checkbox"/> 90-43 | <input type="checkbox"/> 94-35 | | | |
| Preamplifier | <input type="checkbox"/> 90-01 | <input type="checkbox"/> 95-86 | <input checked="" type="checkbox"/> 05-56 | <input type="checkbox"/> 05-59 | <input type="checkbox"/> 05-62 | <input type="checkbox"/> 05-87 |
| Antenna (biconical) | <input type="checkbox"/> 82-02 | <input type="checkbox"/> 87-05 | <input type="checkbox"/> 87-16 | <input type="checkbox"/> 91-05 | <input type="checkbox"/> 94-37 | |
| Antenna (log-per) | <input type="checkbox"/> 88-20 | <input type="checkbox"/> 90-30 | <input type="checkbox"/> 91-35 | <input type="checkbox"/> 94-64 | | |
| Antenna (bilog) | <input type="checkbox"/> 94-03 | <input type="checkbox"/> 05-38 | <input type="checkbox"/> | | | |
| Antenna (horn) | <input checked="" type="checkbox"/> 90-24 | <input type="checkbox"/> 90-29 | <input type="checkbox"/> 98-12 | <input type="checkbox"/> 98-13 | <input type="checkbox"/> | |
| Cables | Succoflex 1 m | | | | | |
| Filters | <input checked="" type="checkbox"/> High pass | | | | | |

Result: pass fail not applicable not tested

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



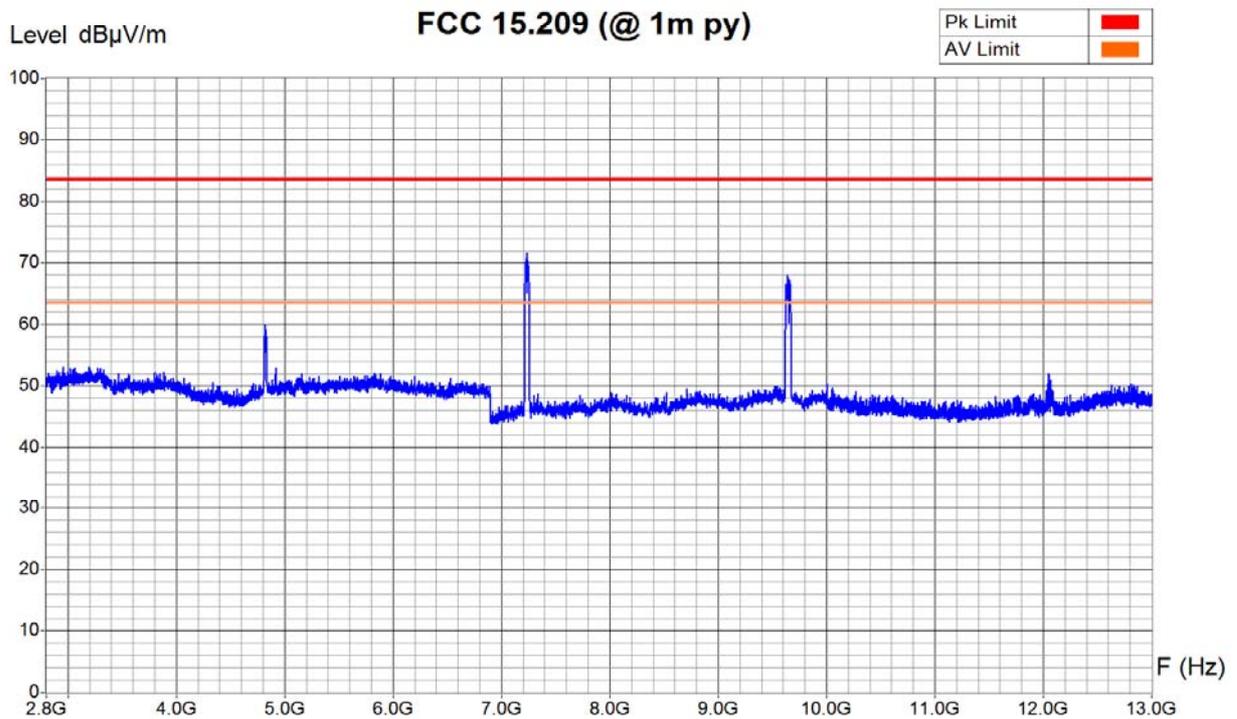
| Zone | 2.80 GHz - 4.60 | 4.60 GHz - 6.90 | 6.90 GHz - 10 GHz | 10 GHz - 11.50 GHz | 11.50 GHz - 13 GHz |
|-----------------|-----------------|-----------------|-------------------|--------------------|--------------------|
| Video Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 08.04.2008 17:08
 Filename:
 2007722_handheld_FCC
 SP-CSSS_006h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :

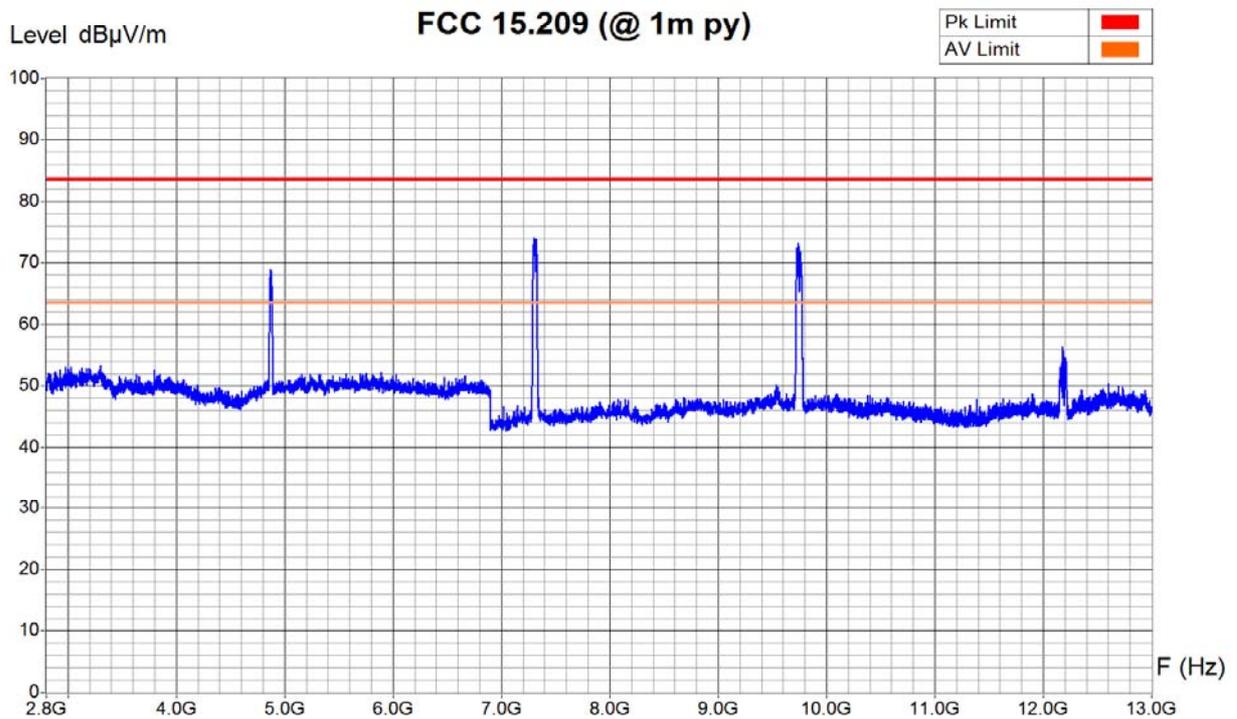


| Zone | 2.80 GHz - 4.60 | 4.60 GHz - 6.90 | 6.90 GHz - 10 GHz | 10 GHz - 11.50 GHz | 11.50 GHz - 13 GHz |
|-----------------|-----------------|-----------------|-------------------|--------------------|--------------------|
| Video Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 10.04.2008 09:20
 Filename:
 2007722_handheld_FCC
 SP-CSSS_006v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 6, Pmax
 Remarks :



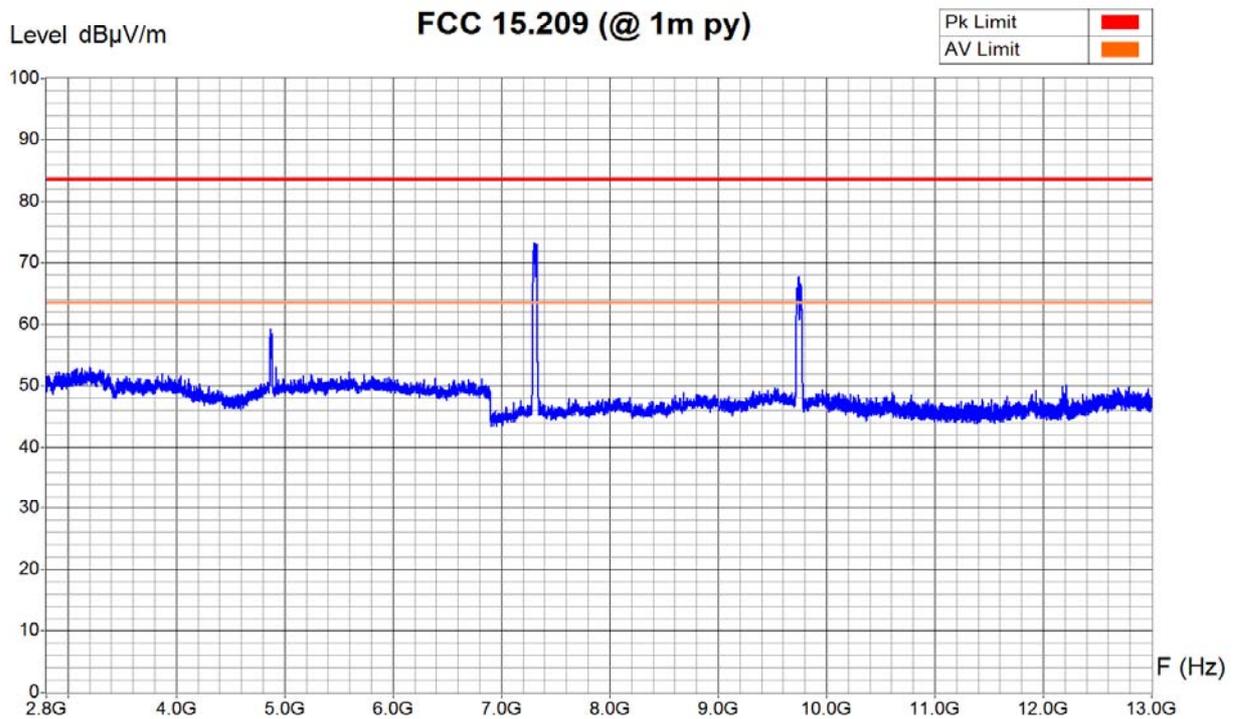
| Zone | 2.80 GHz - 4.60 | 4.60 GHz - 6.90 | 6.90 GHz - 10 GHz | 10 GHz - 11.50 GHz | 11.50 GHz - 13 GHz |
|-----------------|-----------------|-----------------|-------------------|--------------------|--------------------|
| Video Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 08.04.2008 17:13
 Filename:
 2007722_handheld_FCC
 SP-CSSS_007h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



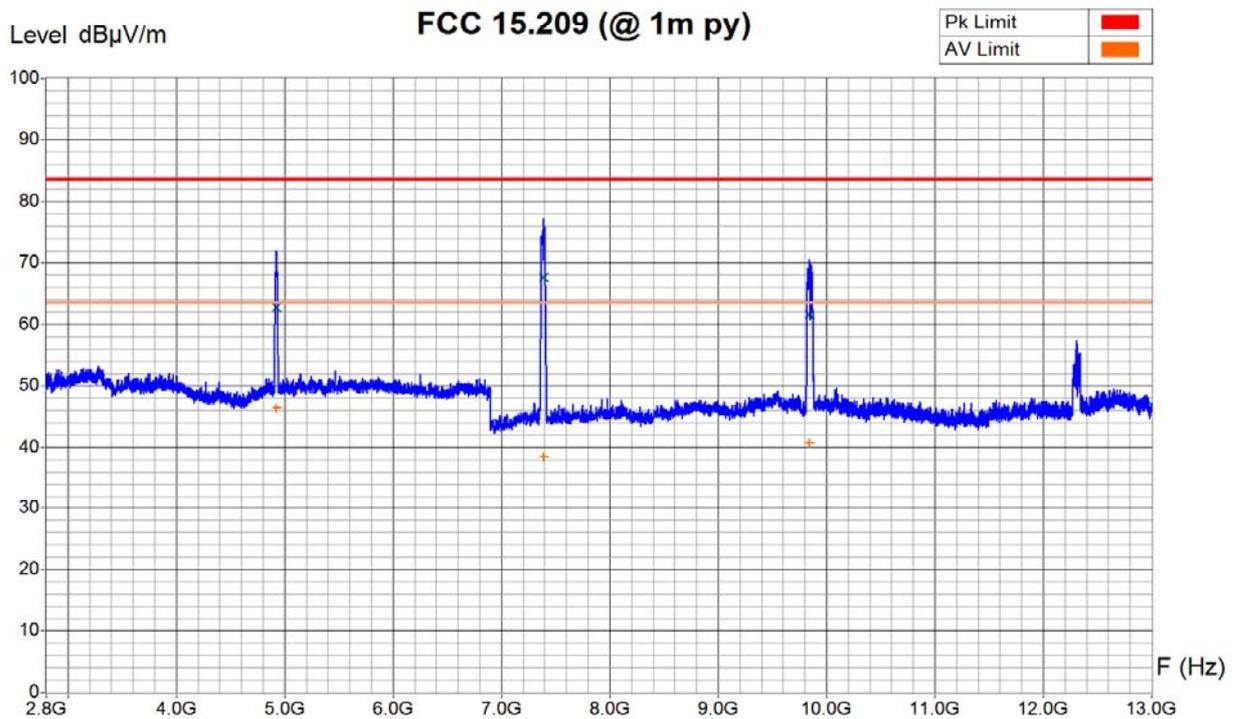
Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 6, Pmax
 Remarks :



| Zone | 2.80 GHz - 4.60 | 4.60 GHz - 6.90 | 6.90 GHz - 10 GHz | 10 GHz - 11.50 GHz | 11.50 GHz - 13 GHz |
|-----------------|-----------------|-----------------|-------------------|--------------------|--------------------|
| Video Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 10.04.2008 09:24
 Filename:
 2007722_handheld_FCC
 SP-CSSS_007v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 11, Pmax
 Remarks :



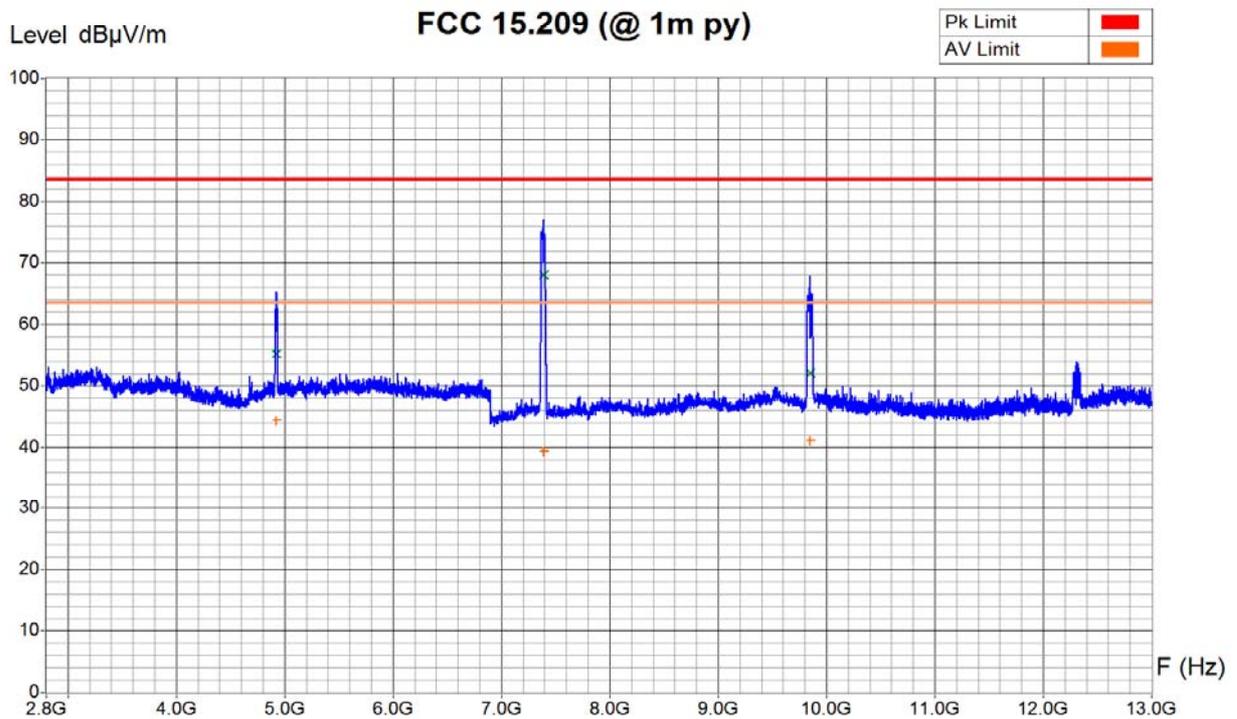
| Zone | 2.80 GHz - 4.60 | 4.60 GHz - 6.90 | 6.90 GHz - 10 GHz | 10 GHz - 11.50 GHz | 11.50 GHz - 13 GHz |
|-----------------|-----------------|-----------------|-------------------|--------------------|--------------------|
| Video Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |

Receiver Measures

| Frequency | Peak | QuasiPeak (x) | Average (+) | QP Margin |
|-----------|-------------|---------------|-------------|-----------|
| 4.93 GHz | 71.9 dBµV/m | 62.7 dBµV/m | 46.5 dBµV/m | NaN dB |
| 2.15 GHz | 0.0 dBµV/m | 0.0 dBµV/m | 0.0 dBµV/m | 0.0 dB |
| 2.15 GHz | 0.0 dBµV/m | 0.0 dBµV/m | 0.0 dBµV/m | 0.0 dB |

Operator: E. Staub
 Date/Time: 08.04.2008 17:18
 Filename:
 2007722_handheld_FCC
 SP-CSSS_008h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 11, Pmax
 Remarks :



| | | | | | |
|-----------------|-----------------|-----------------|-------------------|--------------------|--------------------|
| Zone | 2.80 GHz - 4.60 | 4.60 GHz - 6.90 | 6.90 GHz - 10 GHz | 10 GHz - 11.50 GHz | 11.50 GHz - 13 GHz |
| Video Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |

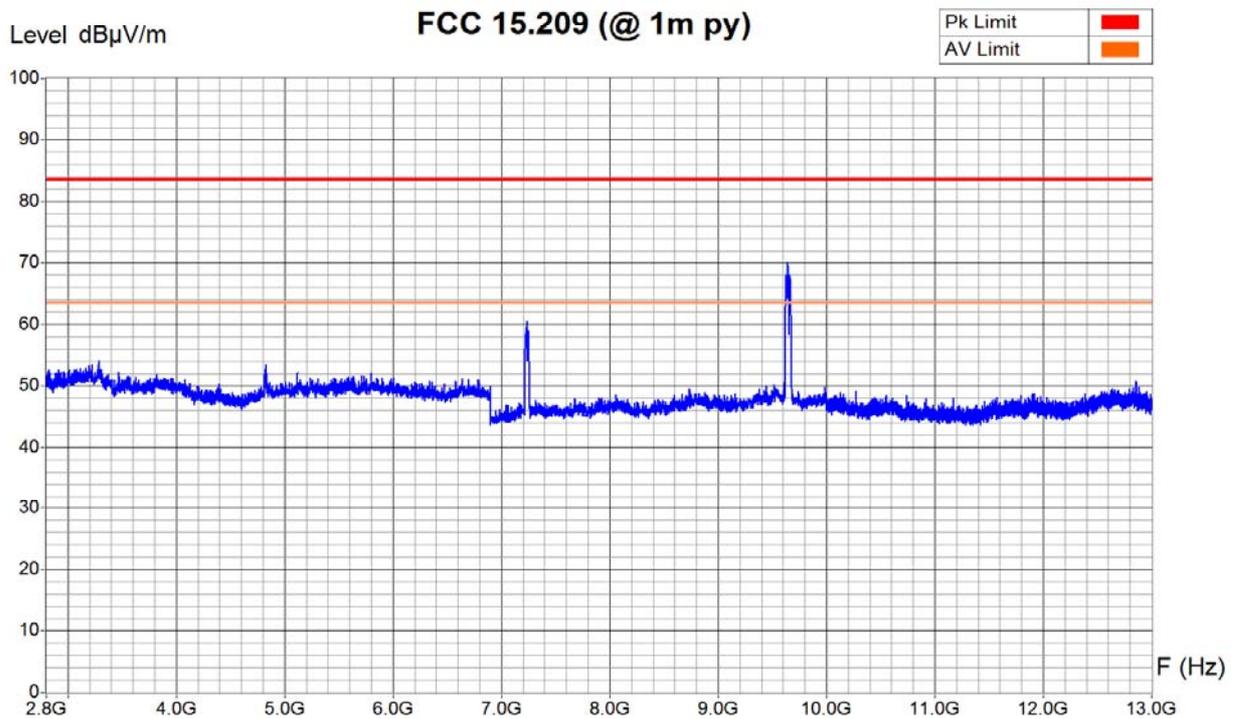
Receiver Measures

| Frequency | Peak | QuasiPeak (x) | Average (+) | QP Margin |
|-----------|-------------|---------------|-------------|-----------|
| 4.93 GHz | 65.3 dBµV/m | 55.2 dBµV/m | 44.4 dBµV/m | NaN dB |
| 2.15 GHz | 0.0 dBµV/m | 0.0 dBµV/m | 0.0 dBµV/m | 0.0 dB |
| 2.15 GHz | 0.0 dBµV/m | 0.0 dBµV/m | 0.0 dBµV/m | 0.0 dB |

Operator: E. Staub
 Date/Time: 10.04.2008 09:28
 Filename:
 2007722_handheld_FCC
 SP-CSSS_008v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



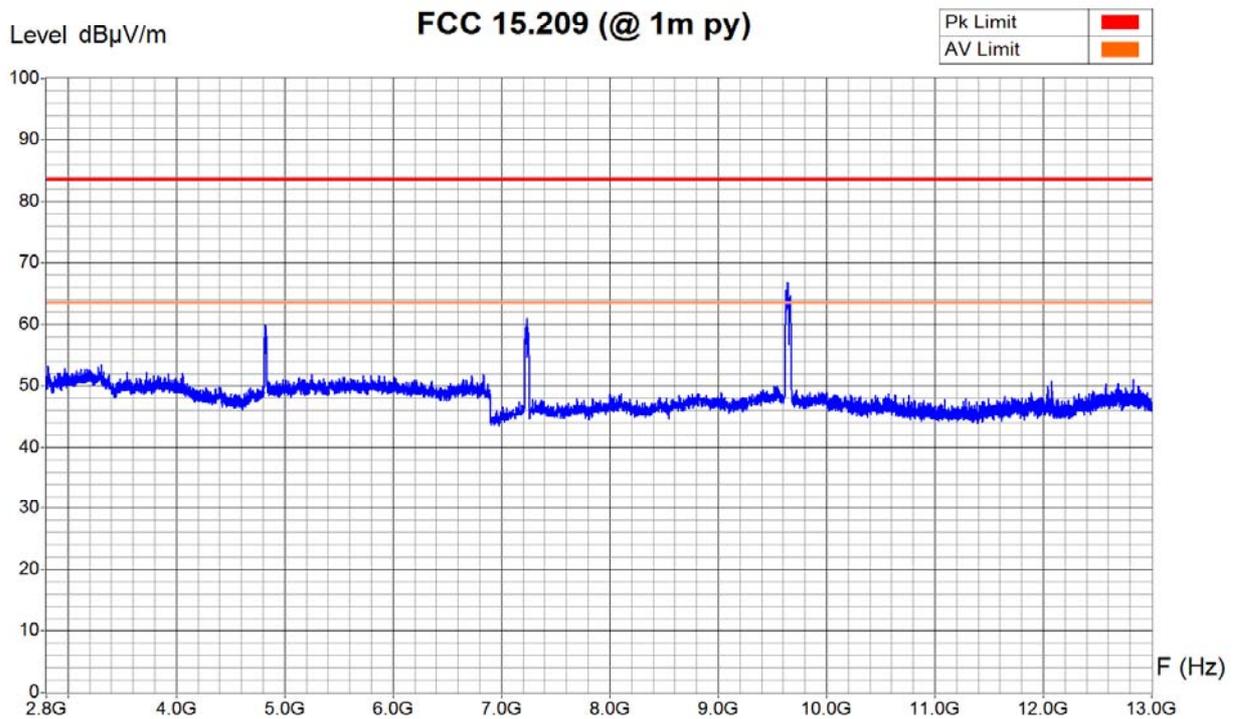
| Zone | 2.80 GHz - 4.60 | 4.60 GHz - 6.90 | 6.90 GHz - 10 GHz | 10 GHz - 11.50 GHz | 11.50 GHz - 13 GHz |
|-----------------|-----------------|-----------------|-------------------|--------------------|--------------------|
| Video Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 10.04.2008 12:14
 Filename:
 2007722_handheld_FCC
 SP-CSSS_015h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



| Zone | 2.80 GHz - 4.60 | 4.60 GHz - 6.90 | 6.90 GHz - 10 GHz | 10 GHz - 11.50 GHz | 11.50 GHz - 13 GHz |
|-----------------|-----------------|-----------------|-------------------|--------------------|--------------------|
| Video Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 1 MHz | 1 MHz | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 10.04.2008 12:05
 Filename:
 2007722_handheld_FCC
 SP-CSSS_015v.png/.txt

6.3.4 Radiated emission - Electromagnetic field (13 GHz – 18 GHz)

Test site: semi-anechoic chamber (foam) open test site
 semi-anechoic chamber (ferrites)

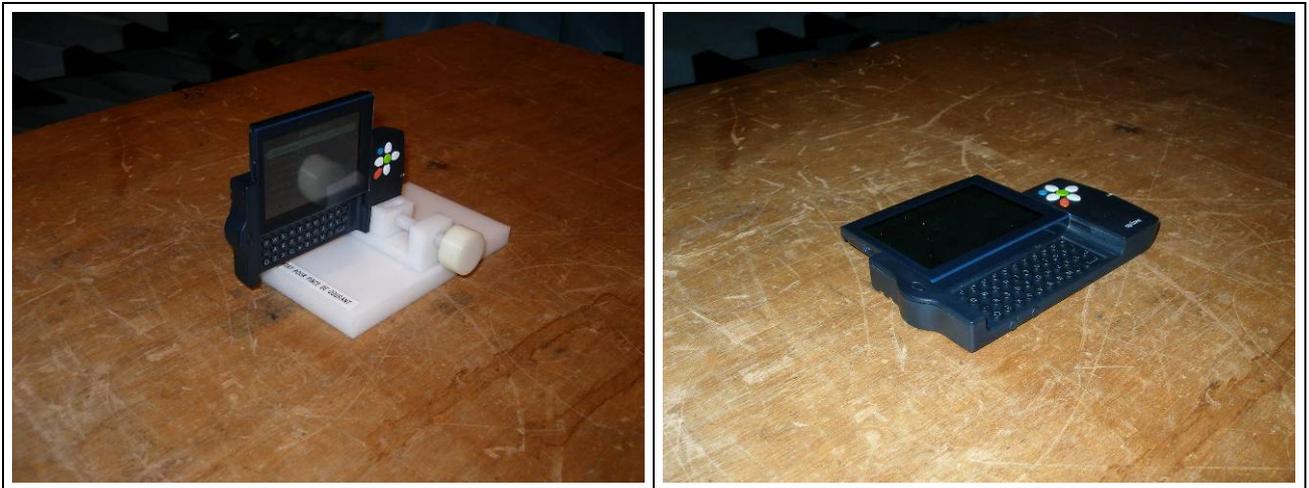
Distance: 30 m 10 m 3 m 1 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.7 dB

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height as the EUT successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test. The peak values are recorded continuously on the graph. The values exceeding a limit are remeasured manually using a receiver.

Test set-up:



Remarks: Limit values expressed in dBµV/m and transformed to a measuring distance of 1m (factor used = 20 dB/decade) if necessary
 e.g.: for f = 13GHz the limit is 500µV/m at 3m;

$$20 \log \left(\frac{500_{[\mu V / m]}}{1_{[\mu V / m]}} \right) + 20 \log \left(\frac{3_{[m]}}{1_{[m]}} \right) = 63.5 dB\mu V \text{ at } 1m$$

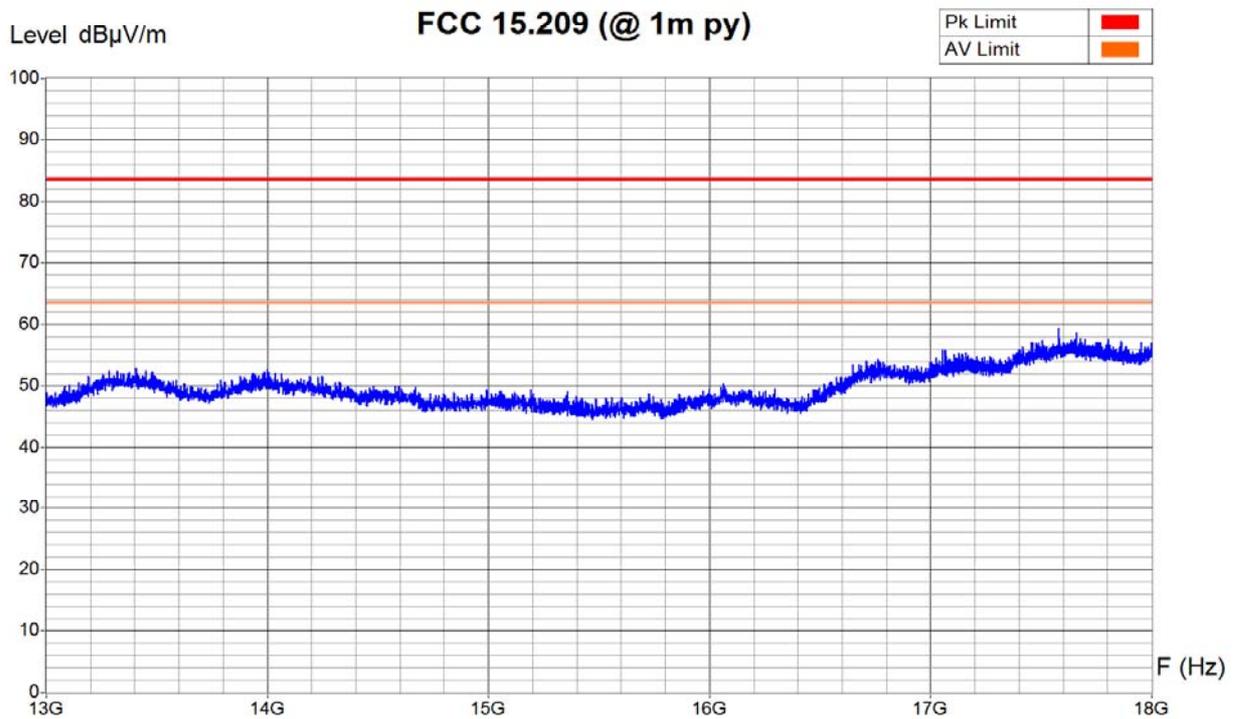
Test equipment:

| | | | | | | |
|---------------------|---|--------------------------------|---|---|--------------------------------|--------------------------------|
| Spectrum analyser | <input type="checkbox"/> 88-14 | <input type="checkbox"/> 90-26 | <input type="checkbox"/> 94-24 | <input checked="" type="checkbox"/> 02-06 | <input type="checkbox"/> 03-45 | <input type="checkbox"/> 03-57 |
| Receiver | <input type="checkbox"/> 85-04 | <input type="checkbox"/> 90-43 | <input type="checkbox"/> 94-35 | | | |
| Preamplifier | <input type="checkbox"/> 90-01 | <input type="checkbox"/> 95-86 | <input checked="" type="checkbox"/> 05-56 | <input type="checkbox"/> 05-59 | <input type="checkbox"/> 05-62 | <input type="checkbox"/> 05-87 |
| Antenna (biconical) | <input type="checkbox"/> 82-02 | <input type="checkbox"/> 87-05 | <input type="checkbox"/> 87-16 | <input type="checkbox"/> 91-05 | <input type="checkbox"/> 94-37 | |
| Antenna (log-per) | <input type="checkbox"/> 88-20 | <input type="checkbox"/> 90-30 | <input type="checkbox"/> 91-35 | <input type="checkbox"/> 94-64 | | |
| Antenna (bilog) | <input type="checkbox"/> 94-03 | <input type="checkbox"/> 05-38 | <input type="checkbox"/> | | | |
| Antenna (horn) | <input checked="" type="checkbox"/> 90-24 | <input type="checkbox"/> 90-29 | <input type="checkbox"/> 98-12 | <input type="checkbox"/> 98-13 | <input type="checkbox"/> | |
| Cables | Succoflex 1 m | | | | | |
| Filters | <input checked="" type="checkbox"/> High pass | | | | | |

Result: pass fail not applicable not tested

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :

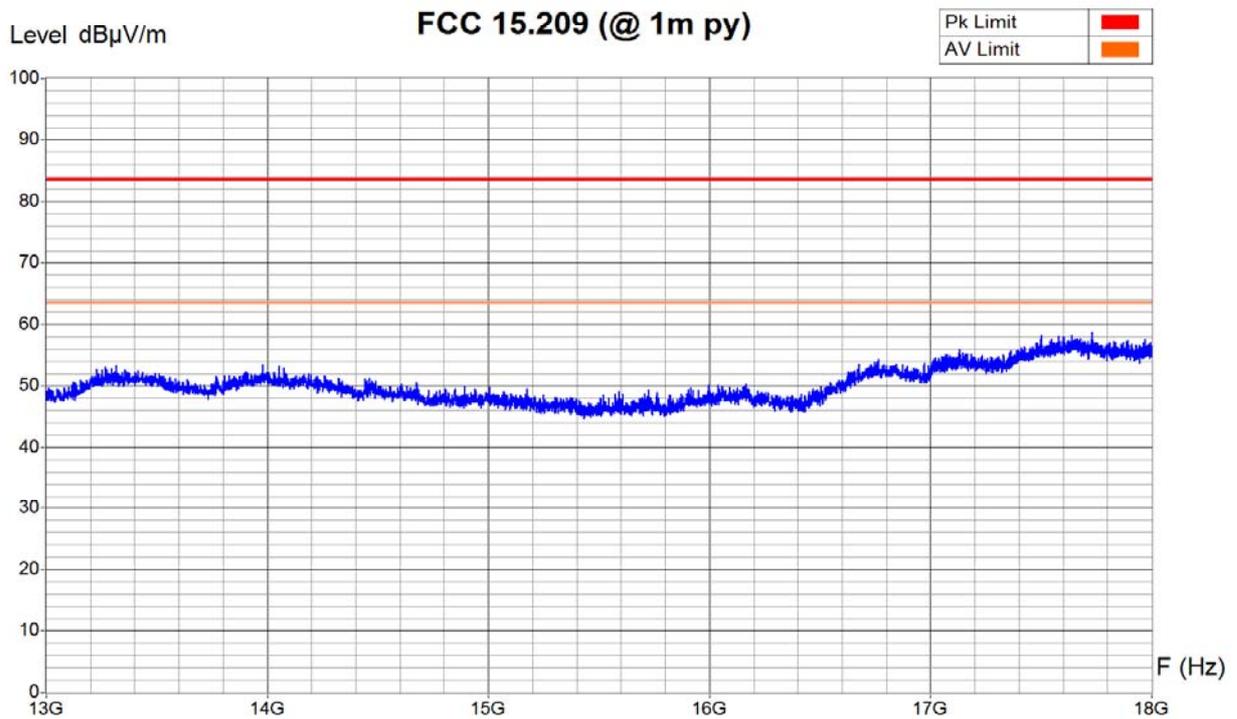


| Zone | 13 GHz - 15 GHz | 15 GHz - 17 GHz | 17 GHz - 18 GHz |
|-----------------|-----------------|-----------------|-----------------|
| Video Bandwidth | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 10.04.2008 17:01
 Filename:
 2007722_handheld_FCC
 SP-CSSS_009h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :

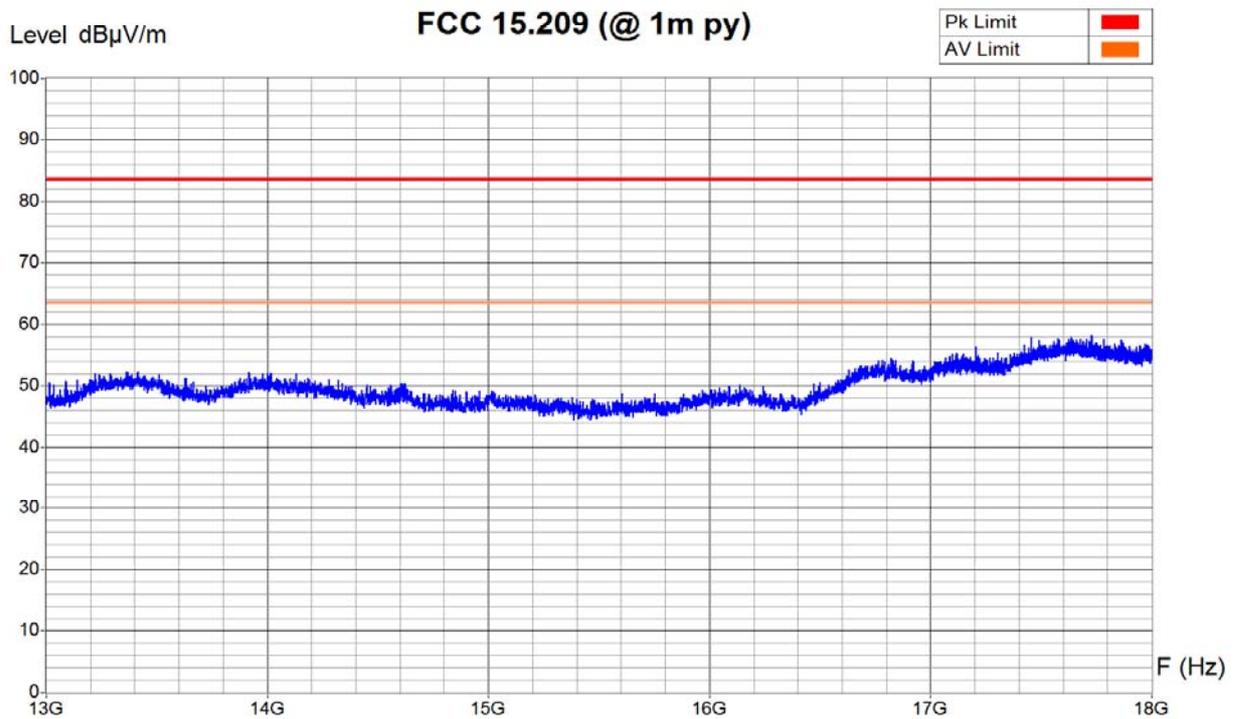


| Zone | 13 GHz - 15 GHz | 15 GHz - 17 GHz | 17 GHz - 18 GHz |
|-----------------|-----------------|-----------------|-----------------|
| Video Bandwidth | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 10.04.2008 17:17
 Filename:
 2007722_handheld_FCC
 SP-CSSS_009v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

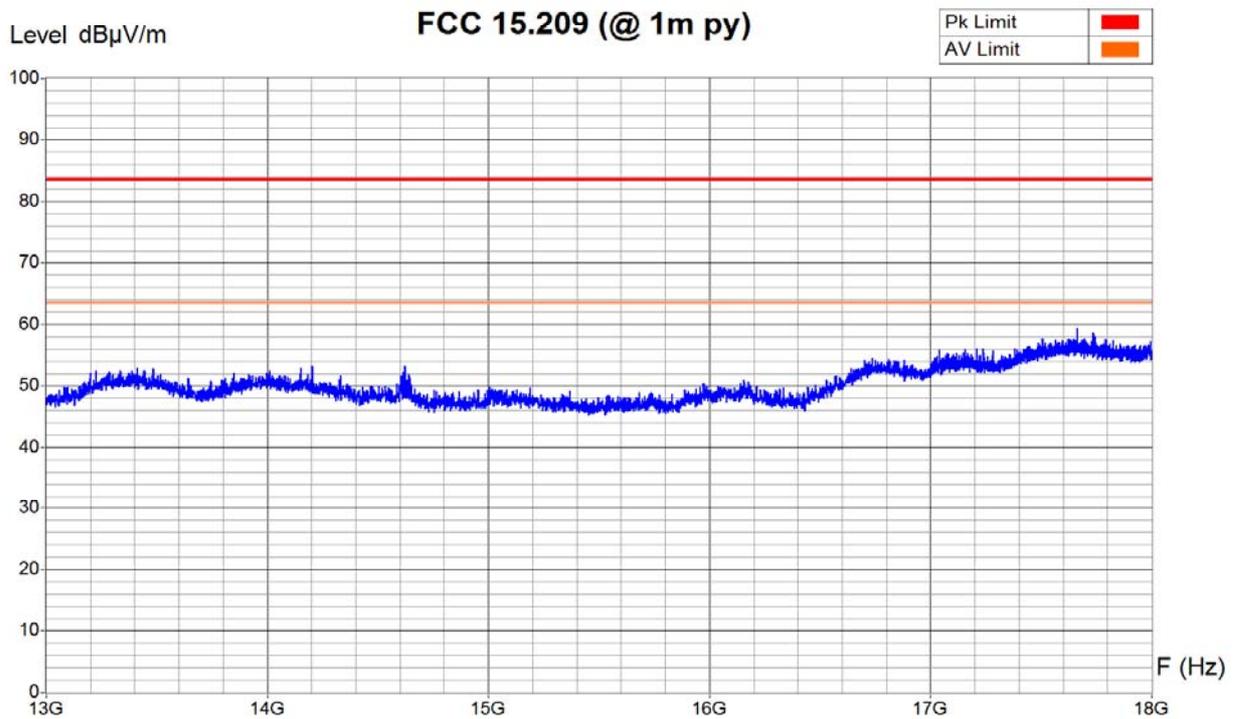
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 6, Pmax
 Remarks :



| Zone | 13 GHz - 15 GHz | 15 GHz - 17 GHz | 17 GHz - 18 GHz |
|-----------------|-----------------|-----------------|-----------------|
| Video Bandwidth | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 10.04.2008 17:04
 Filename:
 2007722_handheld_FCC
 SP-CSSS_010h.png/.txt

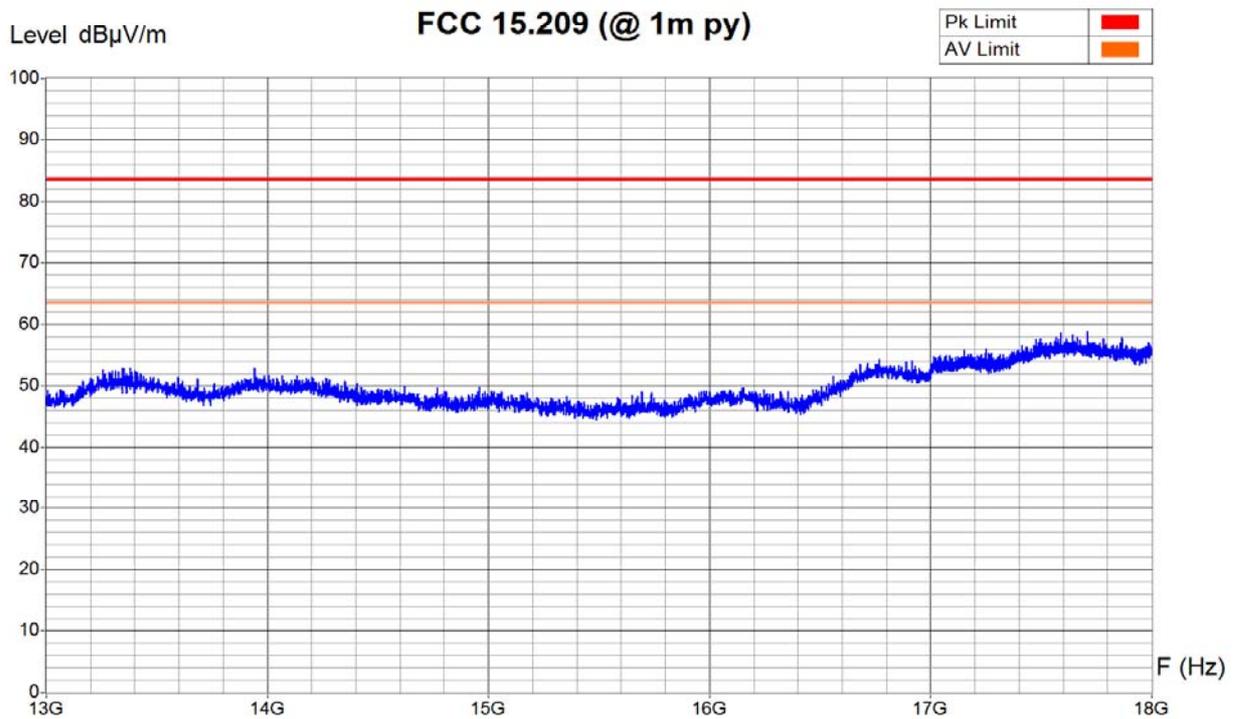
Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 6, Pmax
 Remarks :



| Zone | 13 GHz - 15 GHz | 15 GHz - 17 GHz | 17 GHz - 18 GHz |
|-----------------|-----------------|-----------------|-----------------|
| Video Bandwidth | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 10.04.2008 17:20
 Filename:
 2007722_handheld_FCC
 SP-CSSS_010v.png/.txt

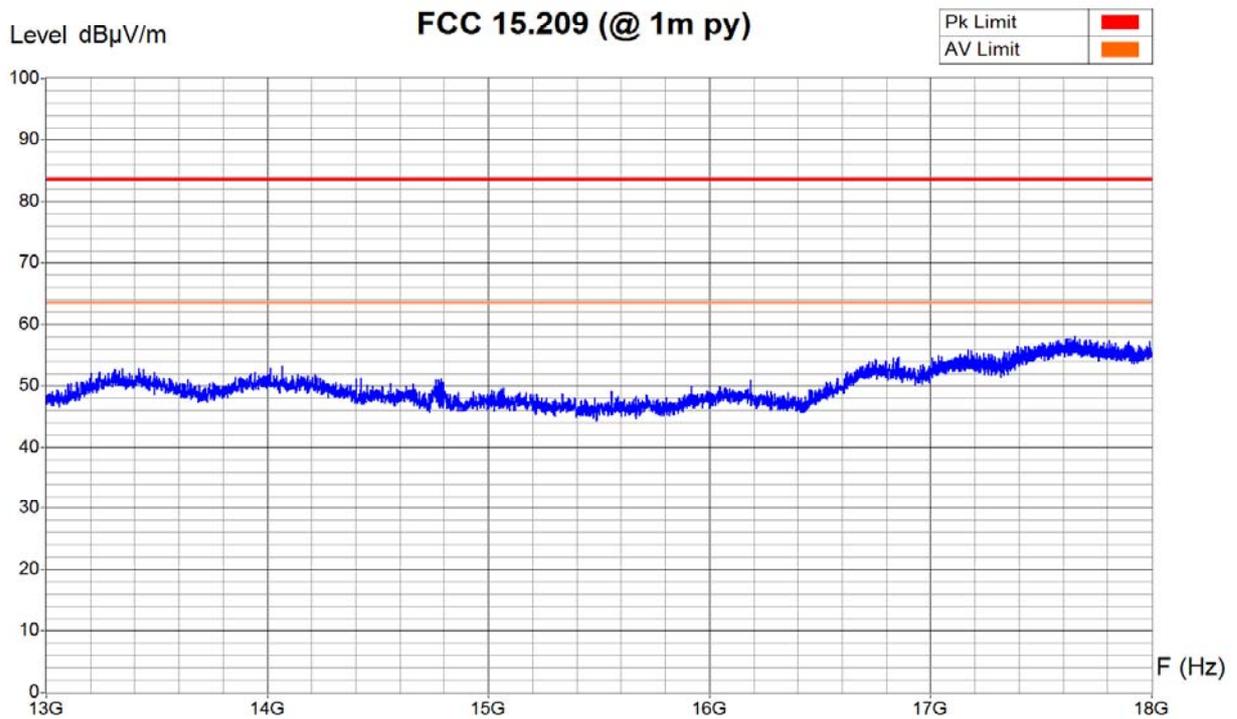
Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 11, Pmax
 Remarks :



| Zone | 13 GHz - 15 GHz | 15 GHz - 17 GHz | 17 GHz - 18 GHz |
|-----------------|-----------------|-----------------|-----------------|
| Video Bandwidth | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 300 KHz | 300 KHz | 300 KHz |

| |
|--|
| Operator: E. Staub |
| Date/Time: 10.04.2008 17:08 |
| Filename: 2007722_handheld_FCC SP-CSSS_011h.png/.txt |

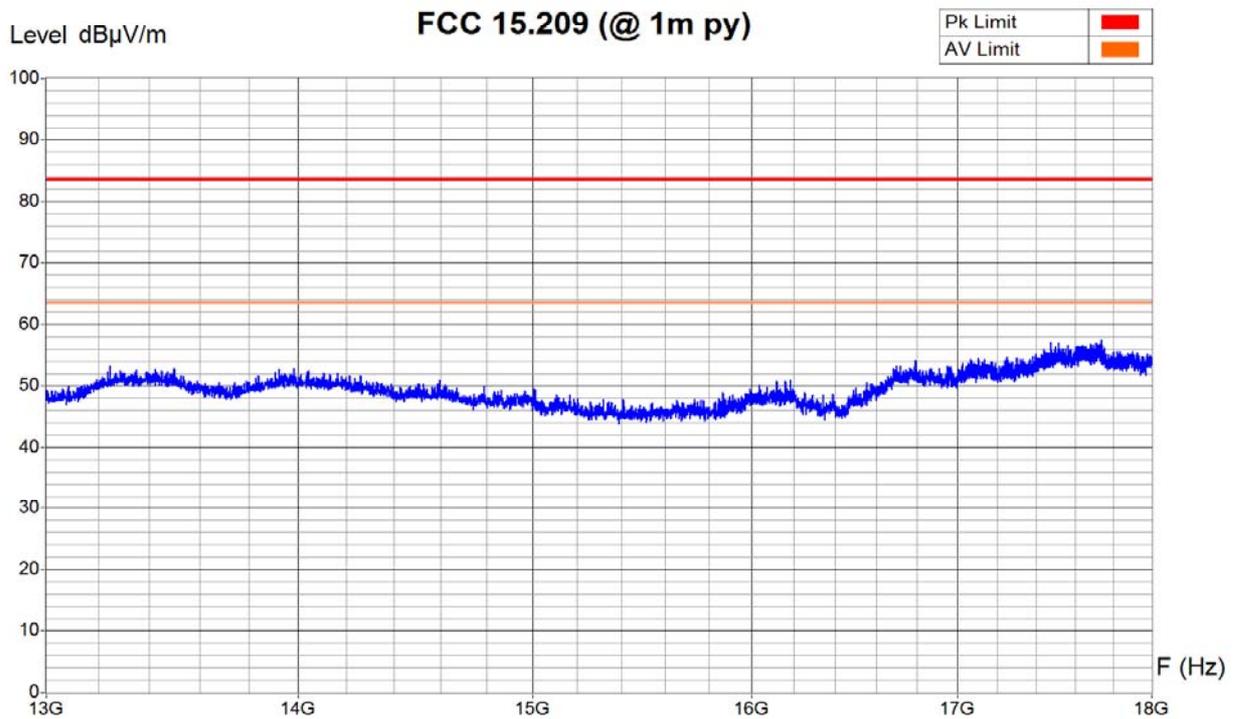
Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 11, Pmax
 Remarks :



| Zone | 13 GHz - 15 GHz | 15 GHz - 17 GHz | 17 GHz - 18 GHz |
|-----------------|-----------------|-----------------|-----------------|
| Video Bandwidth | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 300 KHz | 300 KHz | 300 KHz |

| |
|--|
| Operator: E. Staub |
| Date/Time: 10.04.2008 17:22 |
| Filename: 2007722_handheld_FCC SP-CSSS_011v.png/.txt |

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



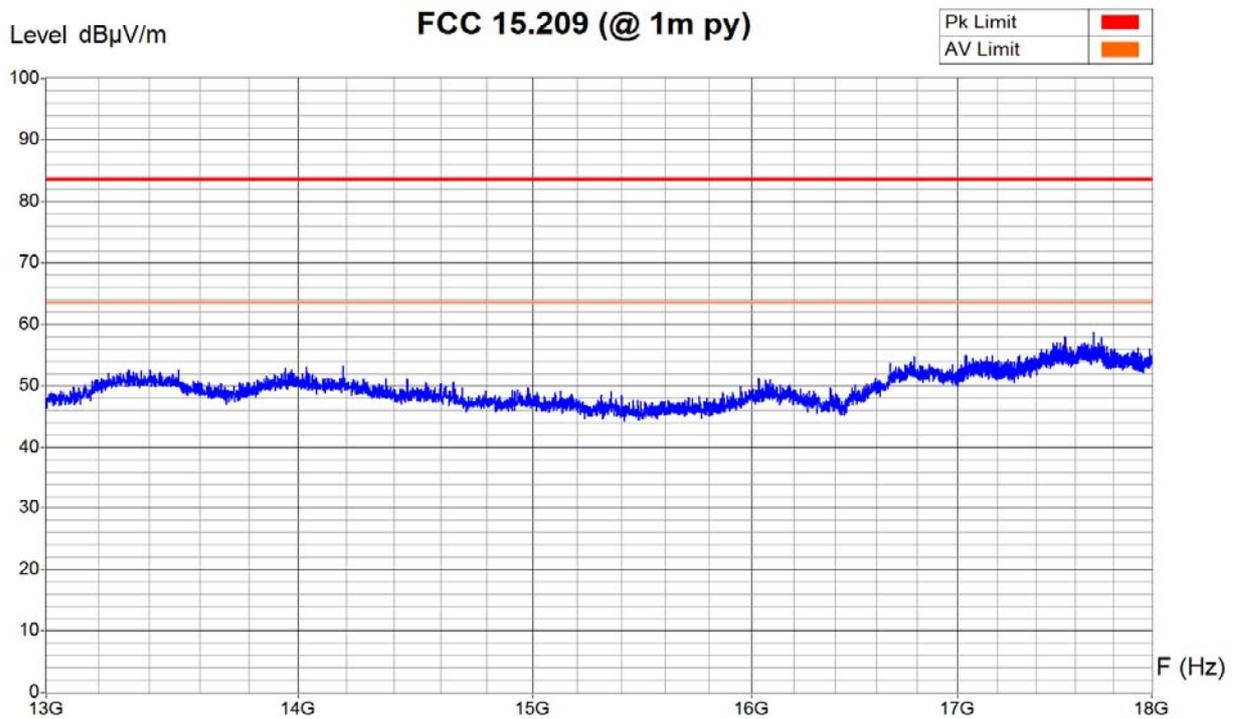
| Zone | 13 GHz - 15 GHz | 15 GHz - 17 GHz | 17 GHz - 18 GHz |
|-----------------|-----------------|-----------------|-----------------|
| Video Bandwidth | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 14:20
 Filename:
 2007722_handheld_FCC
 SP-CSSS_016h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



| Zone | 13 GHz - 15 GHz | 15 GHz - 17 GHz | 17 GHz - 18 GHz |
|-----------------|-----------------|-----------------|-----------------|
| Video Bandwidth | 300 KHz | 300 KHz | 300 KHz |
| Resol Bandwidth | 300 KHz | 300 KHz | 300 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 14:17
 Filename:
 2007722_handheld_FCC
 SP-CSSS_016v.png/.txt

6.3.5 Radiated emission - Electromagnetic field (18 GHz – 26.5 GHz)

Test site: semi-anechoic chamber (foam) open test site
 semi-anechoic chamber (ferrites)

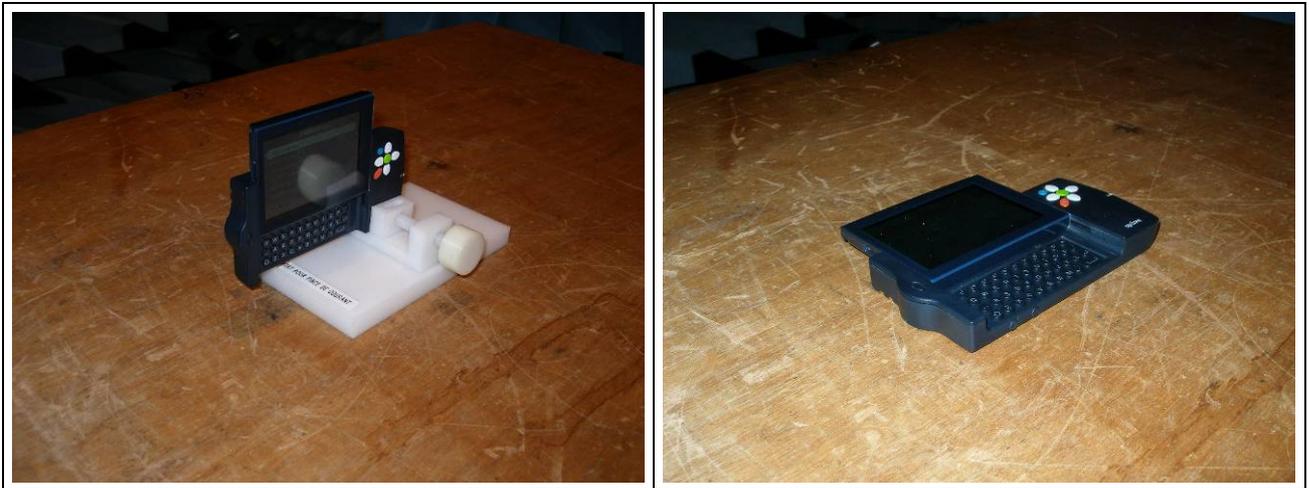
Distance: 30 m 10 m 3 m 1 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.7 dB

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height as the EUT successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test. The peak values are recorded continuously on the graph. The values exceeding a limit are remeasured manually using a receiver.

Test set-up:



Remarks: *Limit values expressed in dBµV/m and transformed to a measuring distance of 1m (factor used = 20 dB/decade) if necessary*
 e.g.: for f = 18GHz the limit is 500µV/m at 3m;

$$20 \log \left(\frac{500_{[\mu V / m]}}{1_{[\mu V / m]}} \right) + 20 \log \left(\frac{3_{[m]}}{1_{[m]}} \right) = 63.5 dB\mu V \text{ at } 1m$$

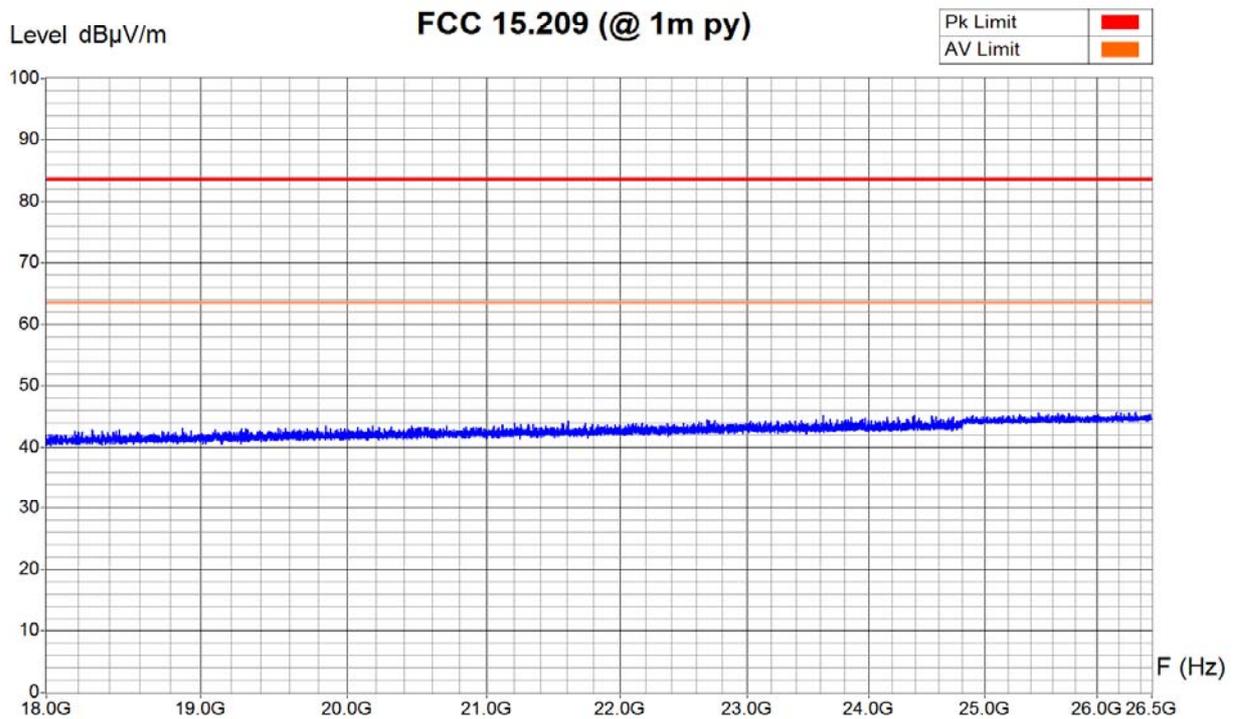
Test equipment:

| | | | | | | |
|-------------------|--------------------------------|--------------------------------|--|---|--------------------------------|--------------------------------|
| Spectrum analyser | <input type="checkbox"/> 88-14 | <input type="checkbox"/> 90-26 | <input type="checkbox"/> 94-24 | <input checked="" type="checkbox"/> 02-06 | <input type="checkbox"/> 03-45 | <input type="checkbox"/> 03-57 |
| Receiver | <input type="checkbox"/> 85-04 | <input type="checkbox"/> 90-43 | <input type="checkbox"/> 94-35 | | | |
| Preamplifier | <input type="checkbox"/> 90-01 | <input type="checkbox"/> 95-86 | <input type="checkbox"/> 05-56 | <input type="checkbox"/> 05-59 | <input type="checkbox"/> 05-62 | <input type="checkbox"/> |
| Antenna (horn) | <input type="checkbox"/> 90-24 | <input type="checkbox"/> 90-29 | <input checked="" type="checkbox"/> 98-12 | <input type="checkbox"/> 98-13 | <input type="checkbox"/> | |
| External mixers | <input type="checkbox"/> 94-03 | <input type="checkbox"/> 05-38 | <input checked="" type="checkbox"/> 11970K | | | |
| Cables | Succoflex 1 m | | | | | |

Result: pass fail not applicable not tested

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

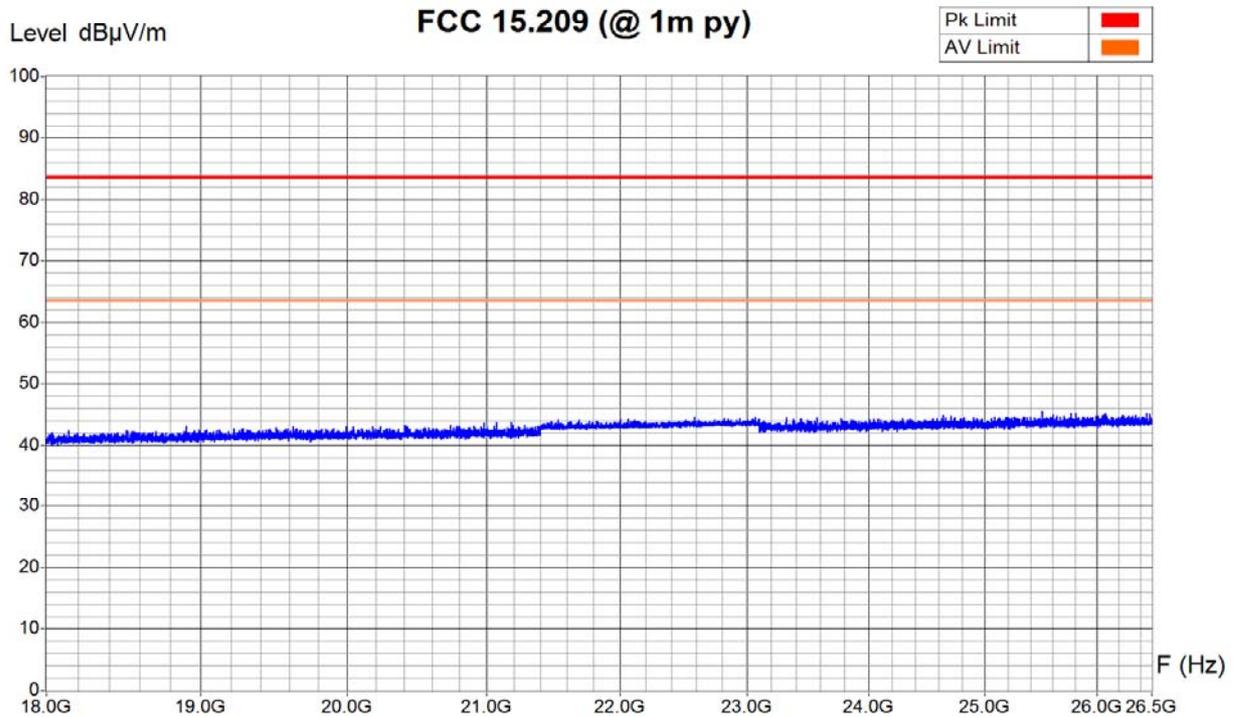
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



| Zone | 18 GHz - 19.70 GHz | 19.70 GHz - 21.40 | 21.40 GHz - 23.10 | 23.10 GHz - 24.80 | 24.80 GHz - 26.50 |
|-----------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| Video Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 09:35
 Filename:
 2007722_handheld_FCC
 SP-CSSS_012h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :

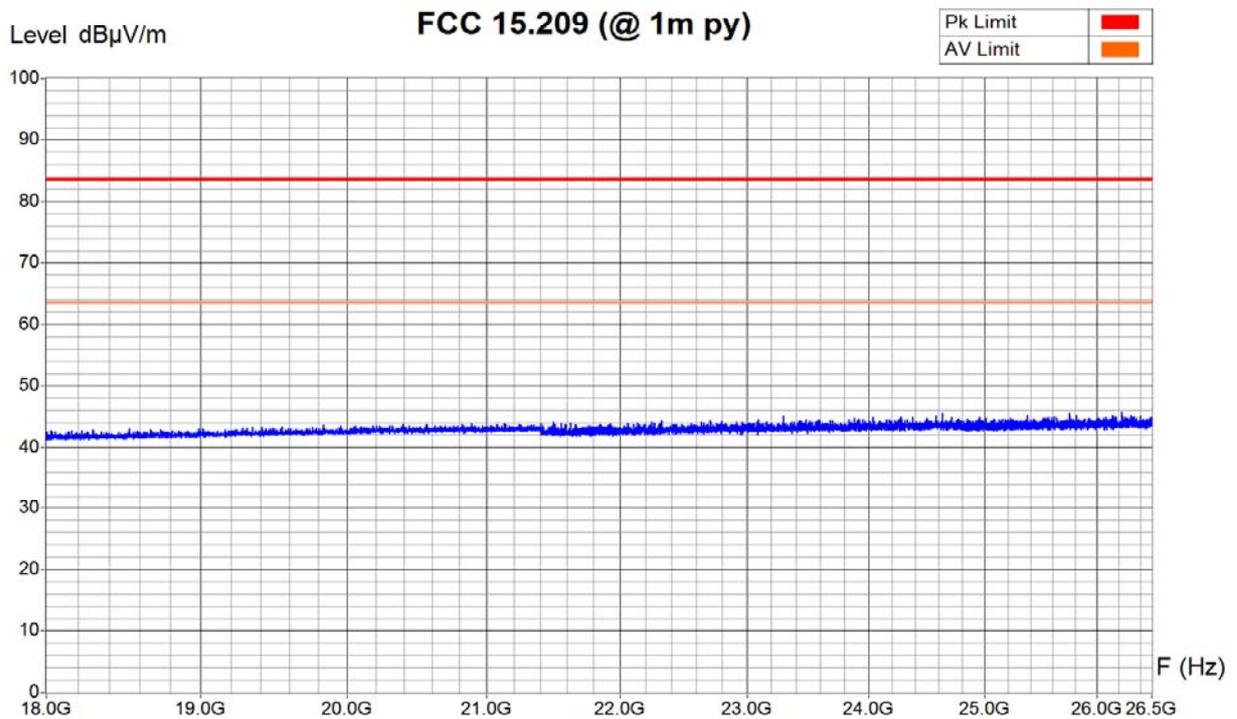


| Zone | 18 GHz - 19.70 GHz | 19.70 GHz - 21.40 | 21.40 GHz - 23.10 | 23.10 GHz - 24.80 | 24.80 GHz - 26.50 |
|-----------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| Video Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 10:48
 Filename:
 2007722_handheld_FCC
 SP-CSSS_012v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 6, Pmax
 Remarks :

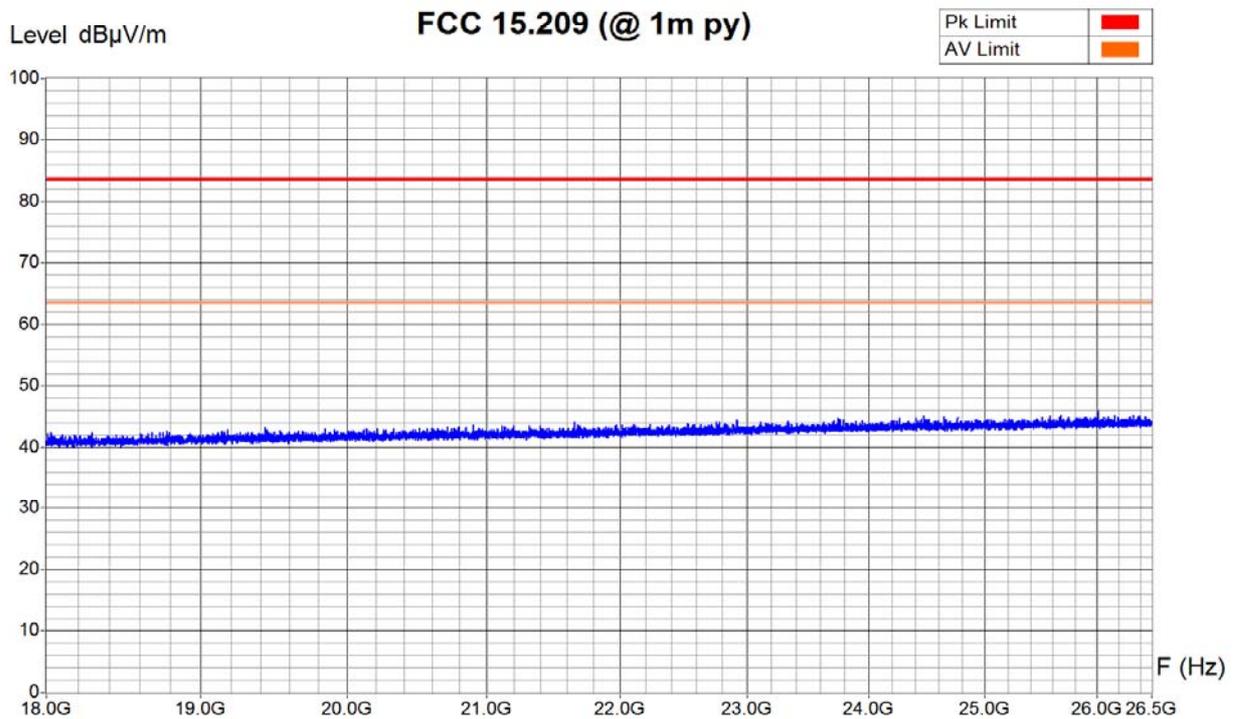


| Zone | 18 GHz - 19.70 GHz | 19.70 GHz - 21.40 | 21.40 GHz - 23.10 | 23.10 GHz - 24.80 | 24.80 GHz - 26.50 |
|-----------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| Video Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 09:39
 Filename:
 2007722_handheld_FCC
 SP-CSSS_013h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 6, Pmax
 Remarks :

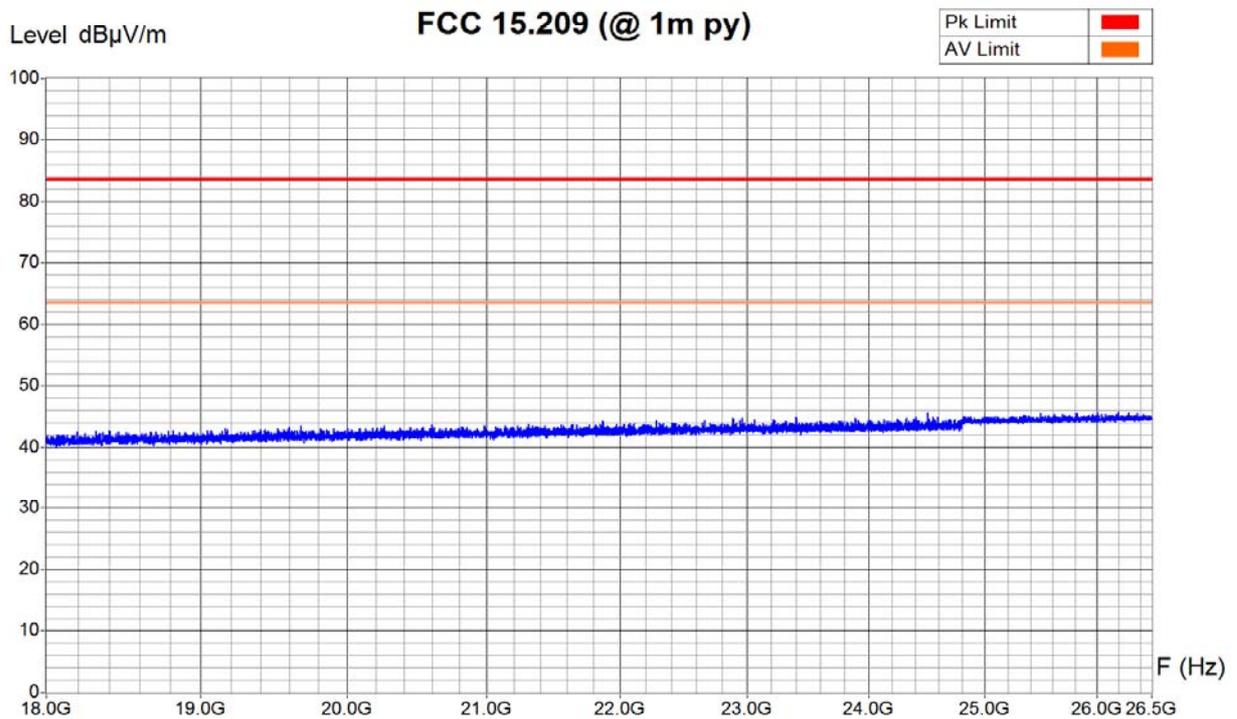


| Zone | 18 GHz - 19.70 GHz | 19.70 GHz - 21.40 | 21.40 GHz - 23.10 | 23.10 GHz - 24.80 | 24.80 GHz - 26.50 |
|-----------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| Video Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 10:53
 Filename:
 2007722_handheld_FCC
 SP-CSSS_013v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 11, Pmax
 Remarks :

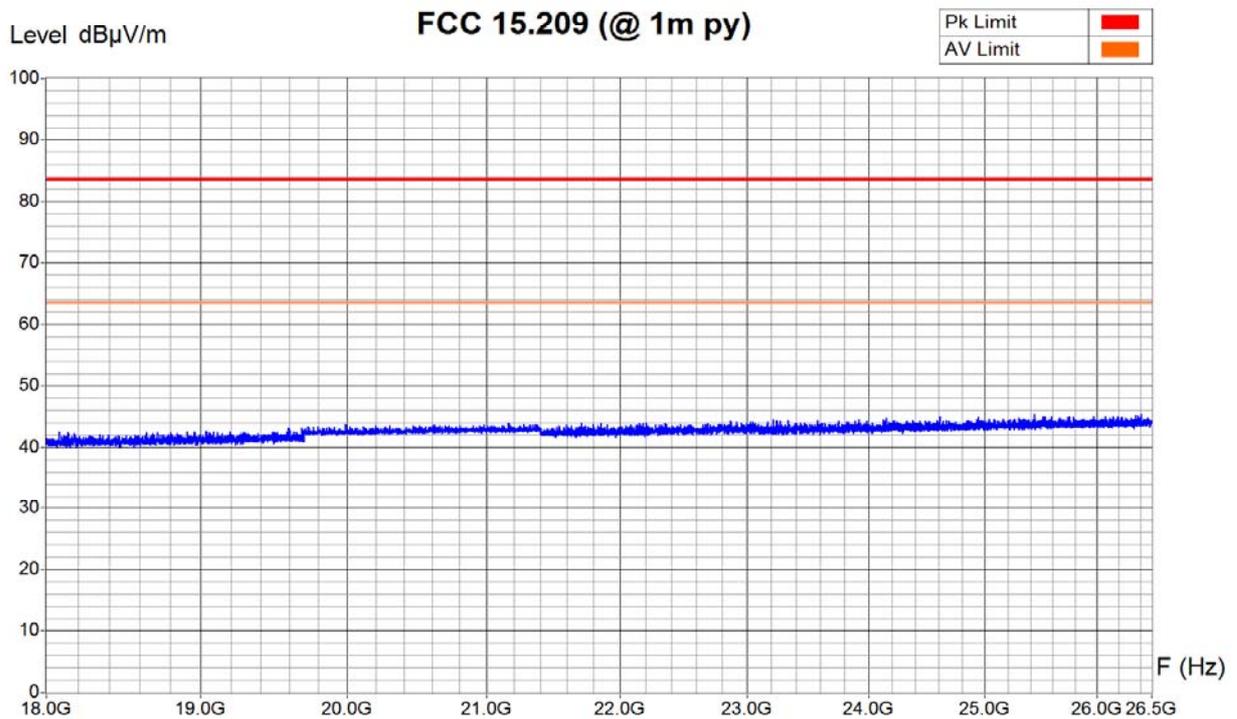


| Zone | 18 GHz - 19.70 GHz | 19.70 GHz - 21.40 | 21.40 GHz - 23.10 | 23.10 GHz - 24.80 | 24.80 GHz - 26.50 |
|-----------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| Video Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 09:43
 Filename:
 2007722_handheld_FCC
 SP-CSSS_014h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m

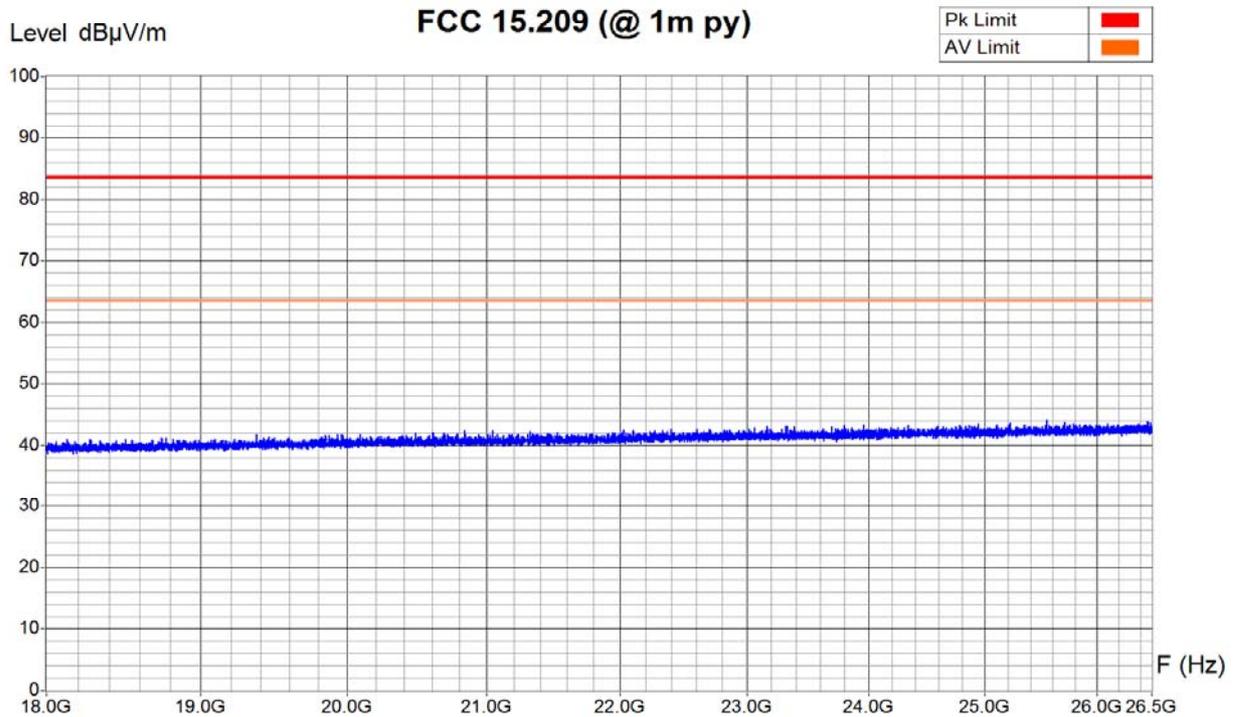
Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx, CSSS Channel 11, Pmax
 Remarks :



| Zone | 18 GHz - 19.70 GHz | 19.70 GHz - 21.40 | 21.40 GHz - 23.10 | 23.10 GHz - 24.80 | 24.80 GHz - 26.50 |
|-----------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| Video Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 10:59
 Filename:
 2007722_handheld_FCC
 SP-CSSS_014v.png/.txt

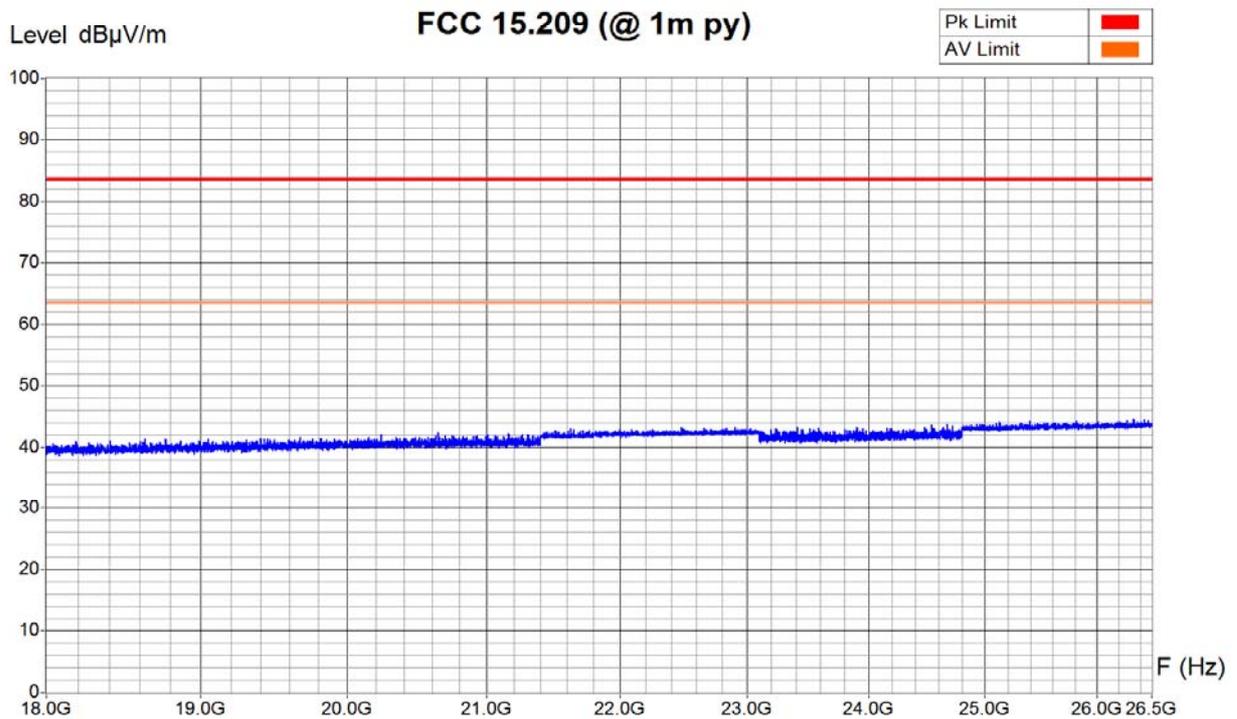
Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



| Zone | 18 GHz - 19.70 GHz | 19.70 GHz - 21.40 | 21.40 GHz - 23.10 | 23.10 GHz - 24.80 | 24.80 GHz - 26.50 |
|-----------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| Video Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 10:13
 Filename:
 2007722_handheld_FCC
 SP-CSSS_017h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m
 Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx, CSSS Channel 1, Pmax
 Remarks :



| Zone | 18 GHz - 19.70 GHz | 19.70 GHz - 21.40 | 21.40 GHz - 23.10 | 23.10 GHz - 24.80 | 24.80 GHz - 26.50 |
|-----------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| Video Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |
| Resol Bandwidth | 100 KHz | 100 KHz | 100 KHz | 100 KHz | 100 KHz |

Operator: E. Staub
 Date/Time: 15.04.2008 10:24
 Filename:
 2007722_handheld_FCC
 SP-CSSS_017v.png/.txt

6.4 Maximum peak power and band edges emissions (WLAN)

Test site: semi-anechoic chamber (foam) open test site
 semi-anechoic chamber (ferrites)

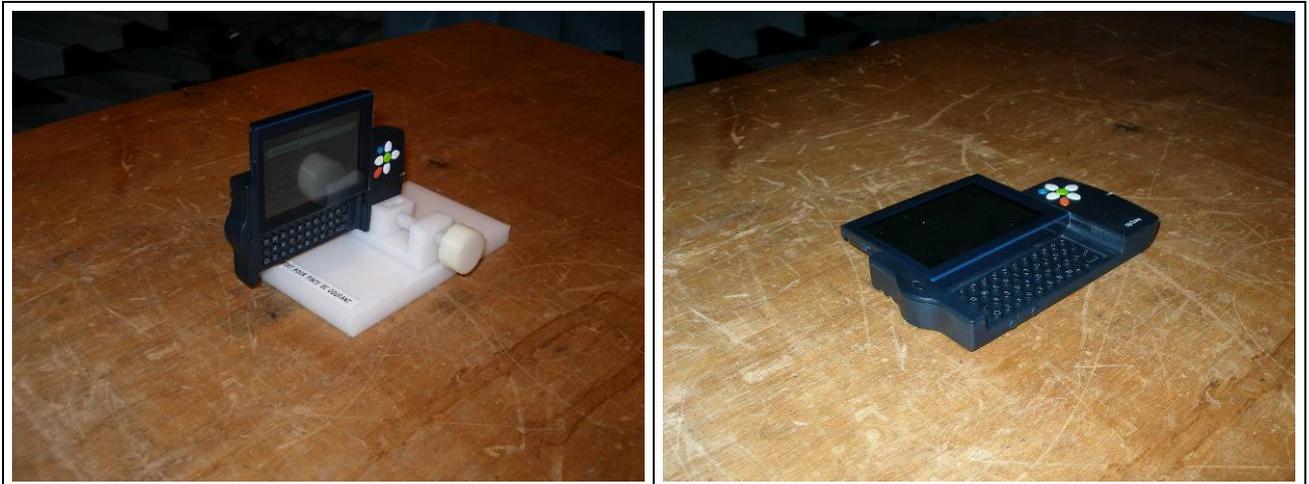
Distance: 30 m 10 m 3 m 1 m

Position of EUT: 0.8 m (height of the equipment under test above floor)

Meas. uncertainty: ± 4.7 dB

Test method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The antenna is placed at the same height as the EUT successively with horizontal and vertical polarisations. The turning table is operated through 360° during the measurements. The recordings are carried out taking into account the maximum value of all the disturbances appearing while the apparatus is under test. The peak values are recorded continuously on the graph. The values exceeding a limit are remeasured manually using a receiver.

Test set-up:



Remarks:

- Limit values expressed in dBµV/m and transformed to a measuring distance of 1m (factor used = 20 dB/decade) if necessary
 e.g.: for f = 1GHz the general limit is 500µV/m at 3m;
 $20 \log_{10} (500\mu V/m) + 20 \log_{10} (3m/1m) = 63.5 \text{ dB}\mu V/m \text{ at } 1m$
- Carrier limit for 1 W calculated with $E_{[V/m]} = \frac{\sqrt{30 P_{[W \text{ EIRP}]}}}{d_{[m]}} = 5.47 \text{ V/m} = 134.7 \text{ dB}\mu V/m$

Test equipment:

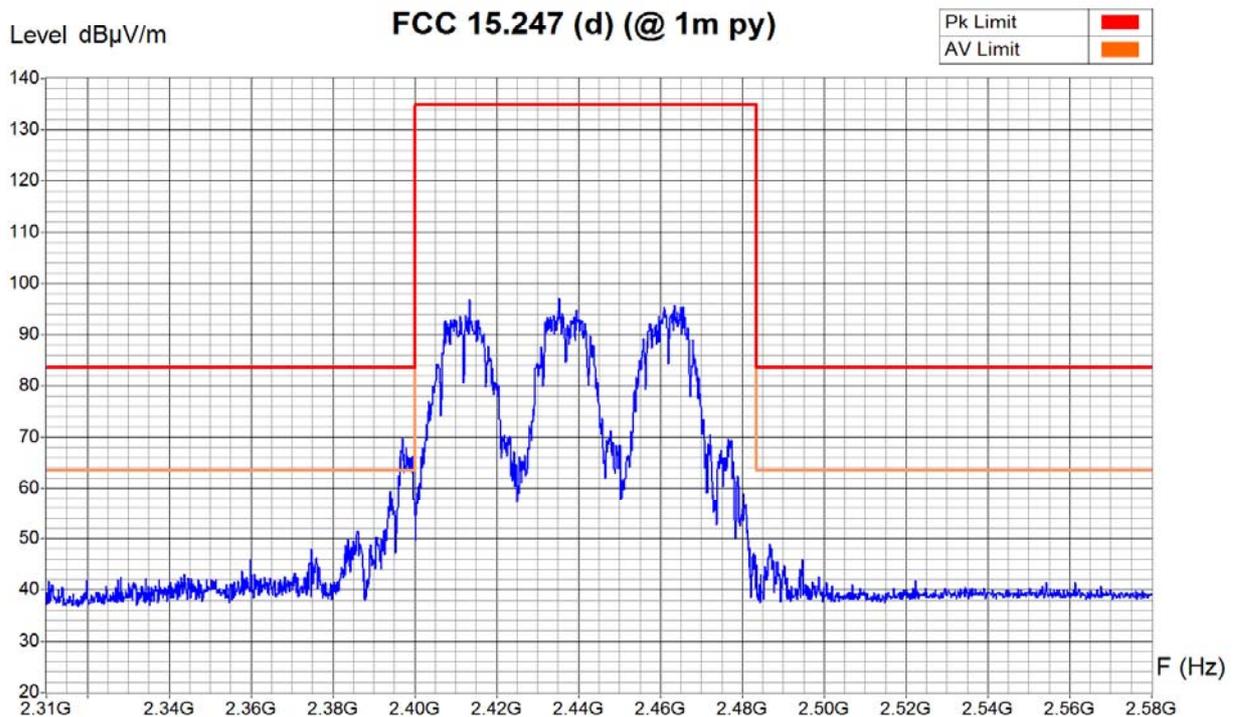
| | | | | | | |
|-------------------|---|--------------------------------|--------------------------------|---|--------------------------------|---|
| Spectrum analyser | <input type="checkbox"/> 88-14 | <input type="checkbox"/> 90-26 | <input type="checkbox"/> 94-24 | <input checked="" type="checkbox"/> 02-06 | <input type="checkbox"/> 03-45 | <input type="checkbox"/> 03-57 |
| Receiver | <input type="checkbox"/> 85-04 | <input type="checkbox"/> 90-43 | <input type="checkbox"/> 94-35 | | | |
| Preamplifier | <input type="checkbox"/> 90-01 | <input type="checkbox"/> 95-86 | <input type="checkbox"/> 05-56 | <input type="checkbox"/> 05-59 | <input type="checkbox"/> 05-62 | <input checked="" type="checkbox"/> 05-87 |
| Antenna (horn) | <input checked="" type="checkbox"/> 90-24 | <input type="checkbox"/> 90-29 | <input type="checkbox"/> 98-12 | <input type="checkbox"/> 98-13 | <input type="checkbox"/> | |
| Cables | Succoflex 1 m | | | | | |

Result: pass fail not applicable not tested

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx; WLAN Channel 1, 6 and 11; Pmax
 Remarks :



| | |
|-----------------|-----------------|
| Zone | 2.31 GHz - 2.58 |
| Video Bandwidth | 100 KHz |
| Resol Bandwidth | 100 KHz |

Receiver Measures

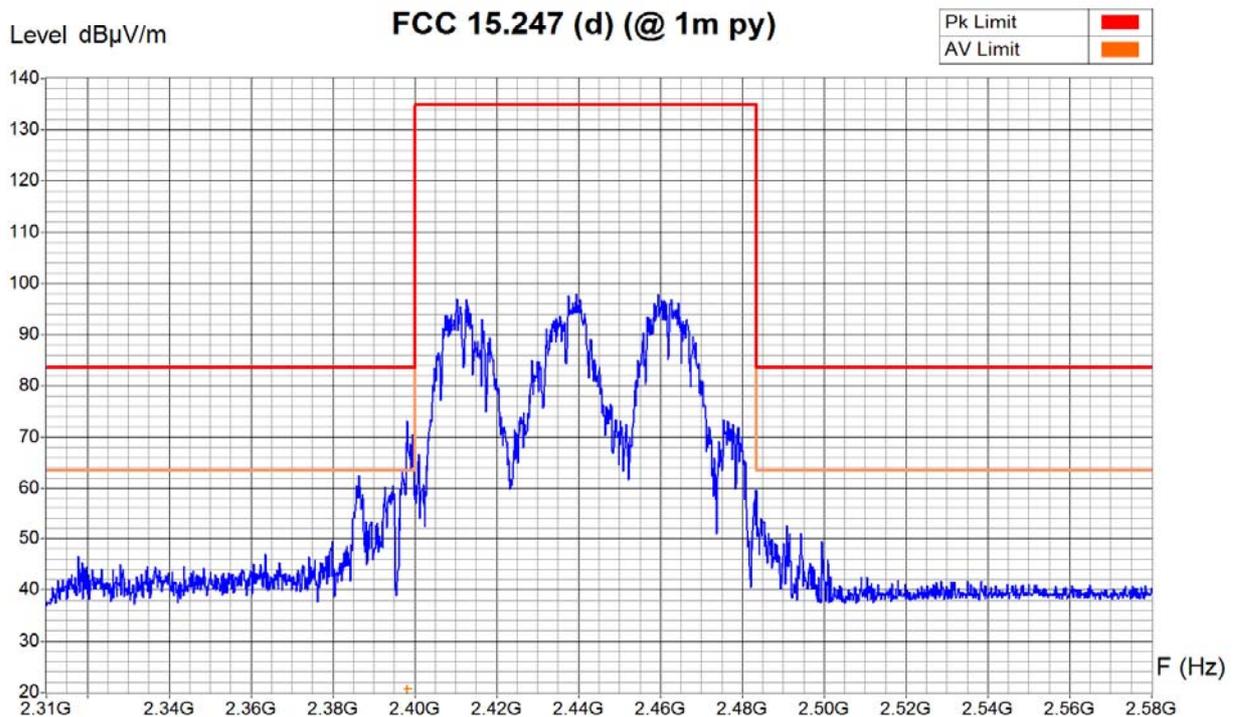
| Frequency | Peak | QuasiPeak (x) | Average (+) | QP Margin |
|-----------|-------------|---------------|-------------|-----------|
| 2.40 GHz | 69.9 dBµV/m | NaN dBµV/m | 17.2 dBµV/m | NaN dB |

Operator: E. Staub
 Date/Time: 08.04.2008 14:18
 Filename:
 2007722_handheld_FCC
 carrier-WLAN_000h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, upright
 Operating Conditions : Tx; WLAN Channel 1, 6 and 11; Pmax
 Remarks :



| | |
|-----------------|-----------------|
| Zone | 2.31 GHz - 2.58 |
| Video Bandwidth | 100 KHz |
| Resol Bandwidth | 100 KHz |

Receiver Measures

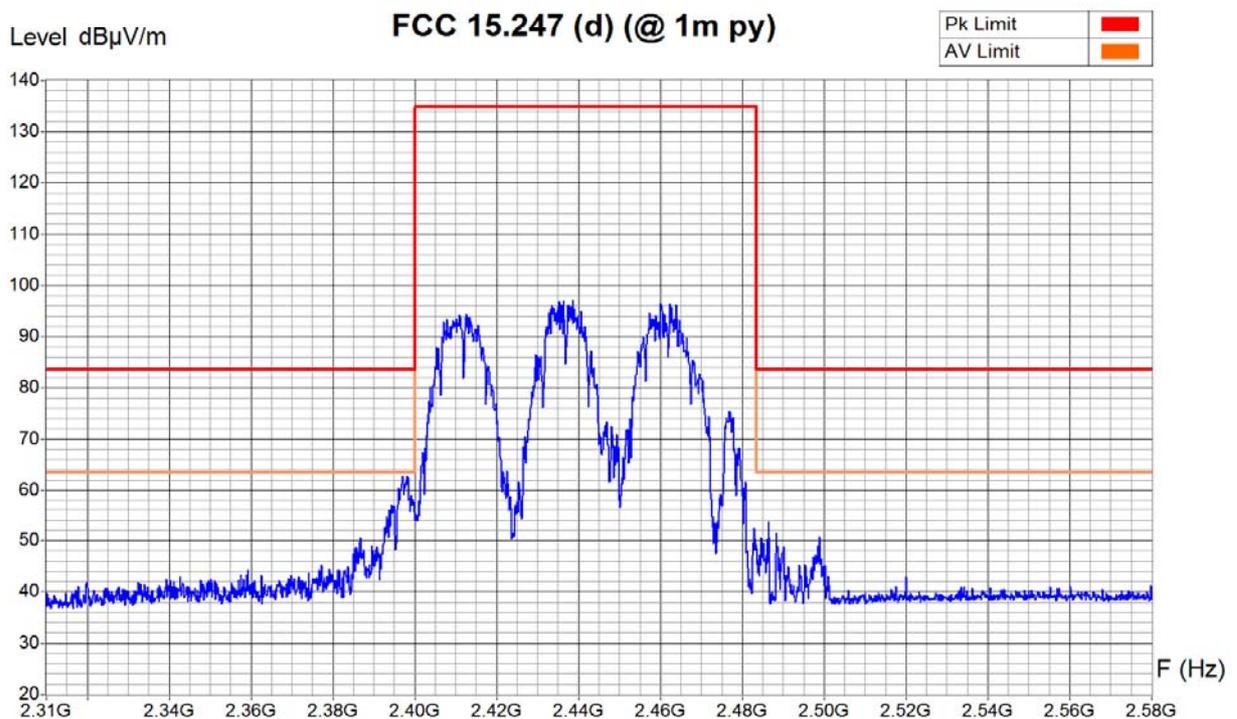
| Frequency | Peak | QuasiPeak (x) | Average (+) | QP Margin |
|-----------|-------------|---------------|-------------|-----------|
| 2.40 GHz | 73.2 dBµV/m | NaN dBµV/m | 20.6 dBµV/m | NaN dB |

Operator: E. Staub
 Date/Time: 08.04.2008 13:51
 Filename:
 2007722_handheld_FCC
 carrier-WLAN_000v.png/.txt

Measurement Type : Radiated Field
 Polarisation : Horizontal
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx; WLAN Channel 1, 6 and 11; Pmax
 Remarks :



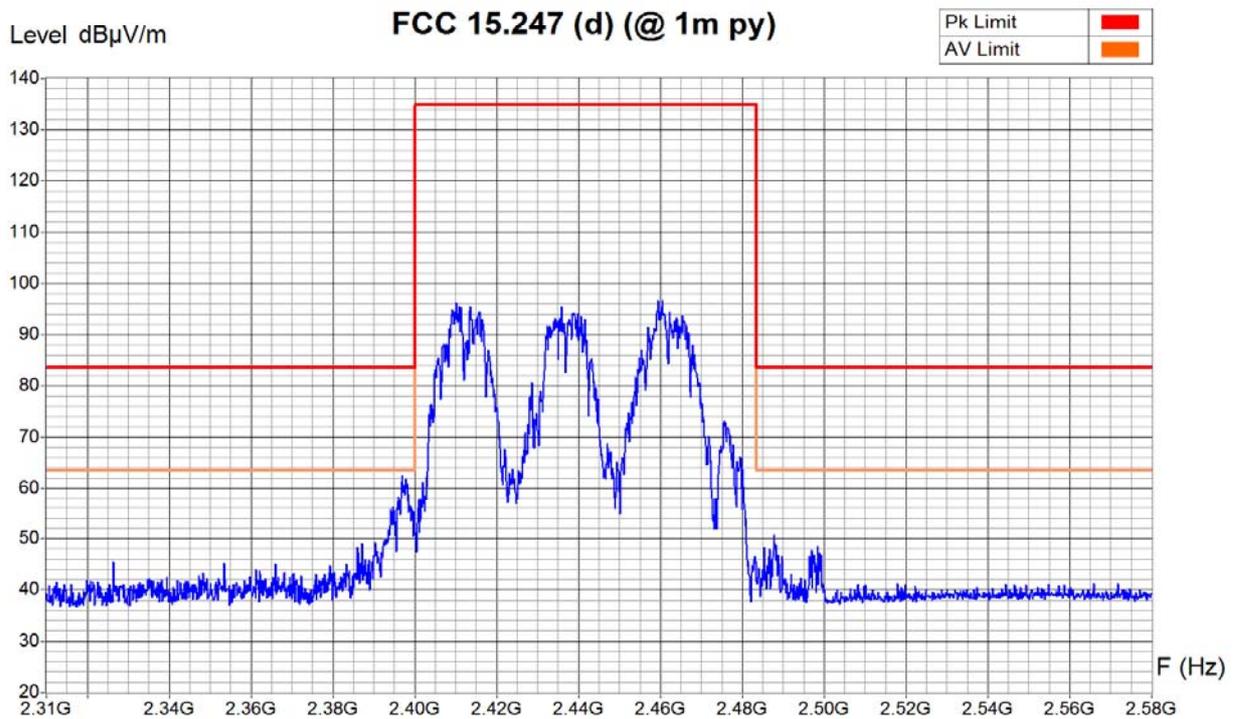
| | |
|-----------------|-----------------|
| Zone | 2.31 GHz - 2.58 |
| Video Bandwidth | 100 KHz |
| Resol Bandwidth | 100 KHz |

Operator: E. Staub
 Date/Time: 08.04.2008 12:11
 Filename:
 20077722_handheld_FCC
 carrier-WLAN_001h.png/.txt

Measurement Type : Radiated Field
 Polarisation : Vertical
 Table Angle : 0 - 360°
 Antenna Height : 0.8m



Equipment Under Test : SpotMell handheld
 Set-Up : handheld open, laying
 Operating Conditions : Tx; WLAN Channel 1, 6 and 11; Pmax
 Remarks :



| | |
|-----------------|-----------------|
| Zone | 2.31 GHz - 2.58 |
| Video Bandwidth | 100 KHz |
| Resol Bandwidth | 100 KHz |

| | |
|-----------|---|
| Operator | E. Staub |
| Date/Time | 08.04.2008 13:44 |
| Filename | 20077722_handheld_FCC carrier-WLAN_001v.png/.txt |