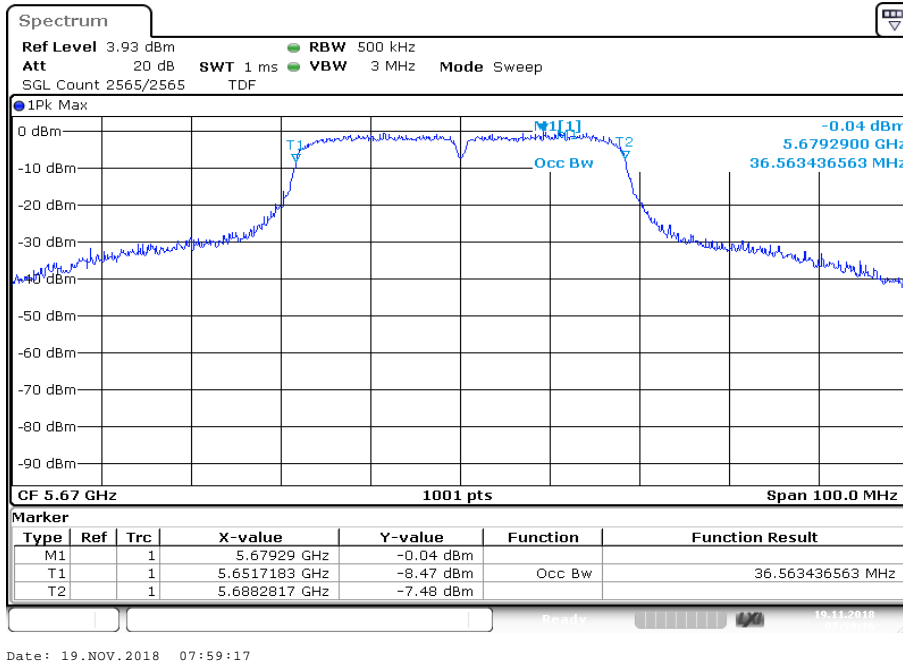
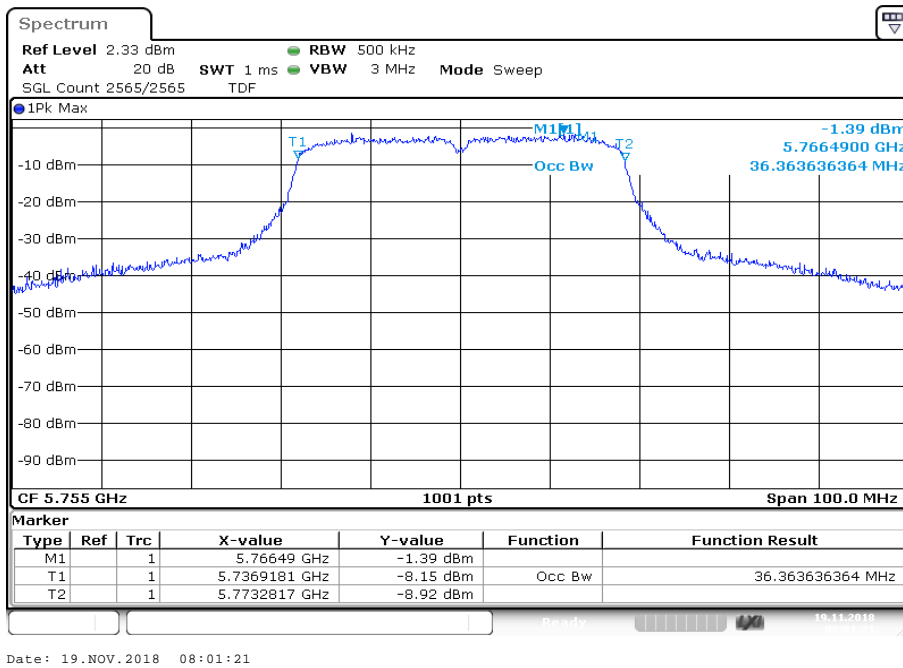


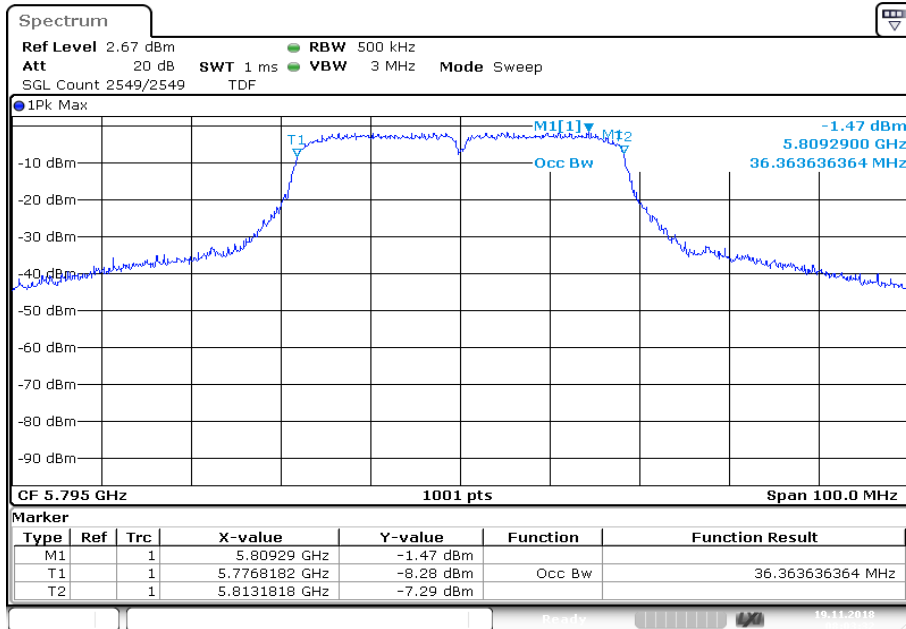
Plot 7: U-NII-2C; highest channel



Plot 8: U-NII-3; lowest channel



Plot 9: U-NII-3; highest channel



Date: 19.NOV.2018 08:03:32

11.9 Band edge compliance radiated

Description:

Measurement of the radiated band edge compliance. The EUT is turned in the position that results in the maximum level at the band edge. Then a sweep over the corresponding restricted band is performed. The EUT is set to the lowest channel for the lower restricted band and to the highest channel for the upper restricted band. Measurement distance is 3m.

Measurement:

| Measurement parameter | |
|--------------------------|------------------------|
| Detector: | Peak / RMS |
| Sweep time: | Auto |
| Resolution bandwidth: | 1 MHz |
| Video bandwidth: | ≥ 3 x RBW |
| Span: | See plots! |
| Trace mode: | Max Hold |
| Test setup: | See sub clause 6.2 – A |
| Measurement uncertainty: | See sub clause 8 |

Limits:

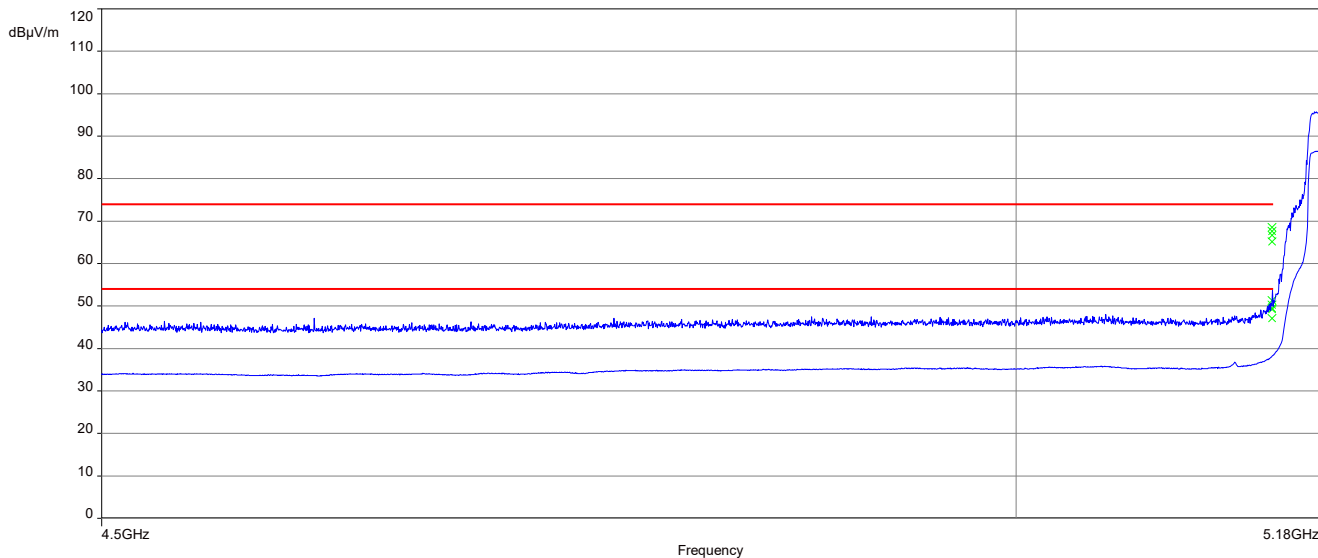
| Band Edge Compliance Radiated |
|--|
| In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)). |
| 74 dBµV/m (peak) 54 dBµV/m (average) |

Result:

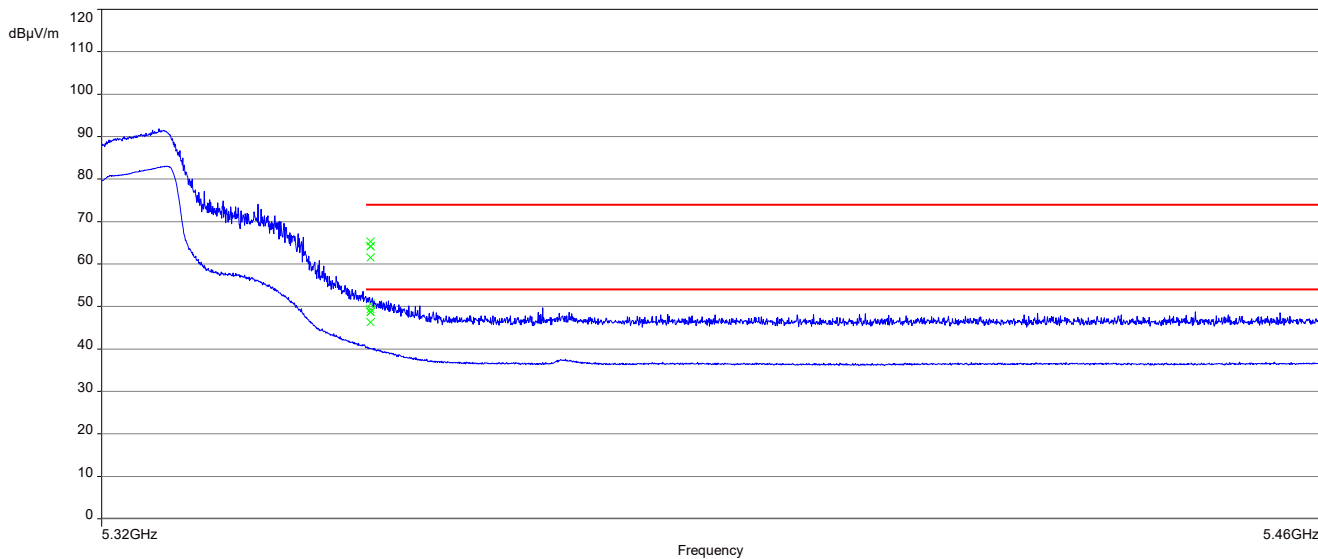
| Scenario | Band Edge Compliance Radiated [dBµV/m] |
|-----------|---|
| band edge | < 74 dBµV/m (peak) < 54 dBµV/m (average) |

Plots:

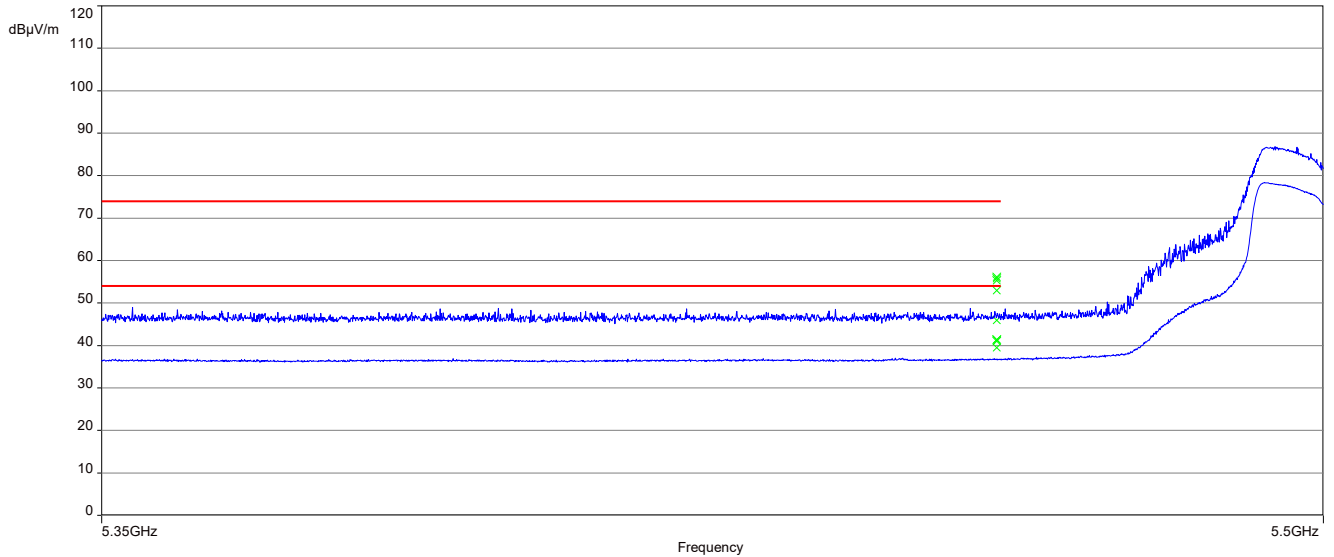
Plot 1: lower band edge; U-NII-1; lowest channel; 20 MHz channel bandwidth



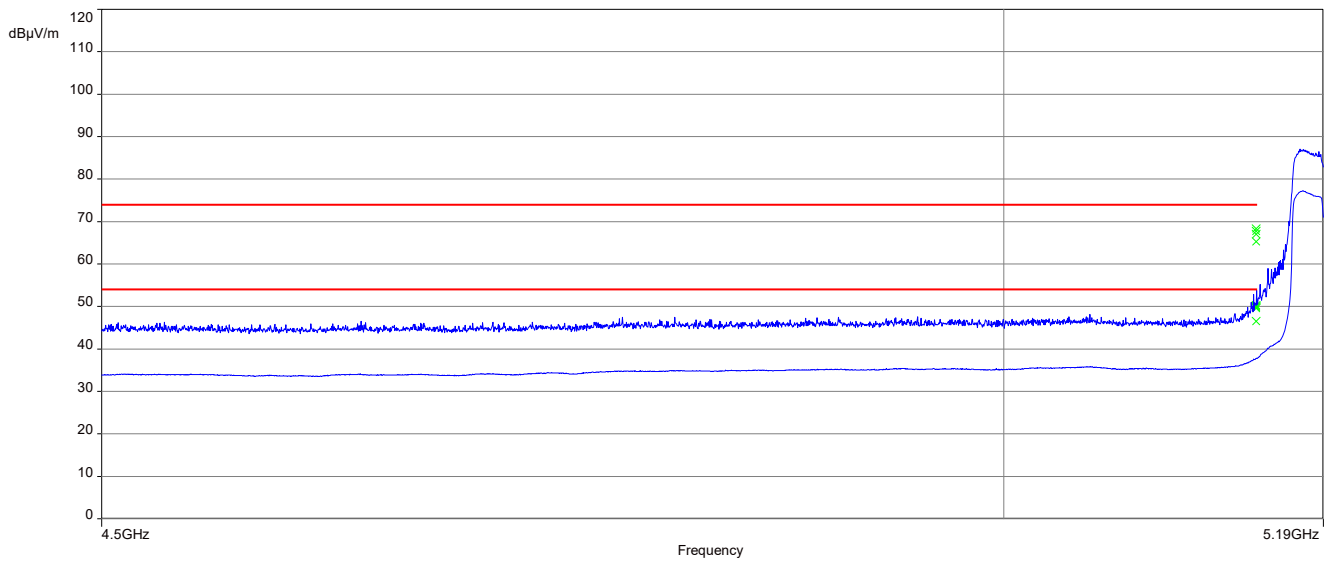
Plot 2: upper band edge; U-NII-2A; highest channel; 20 MHz channel bandwidth



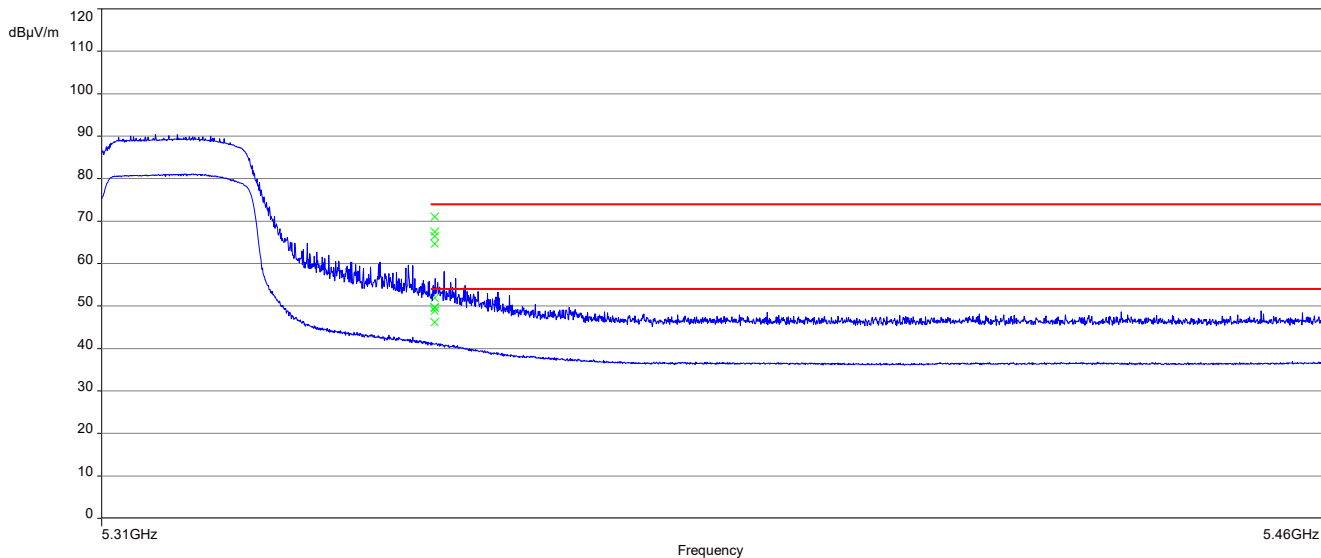
Plot 3: lower band edge; U-NII-2C; lowest channel; 20 MHz channel bandwidth



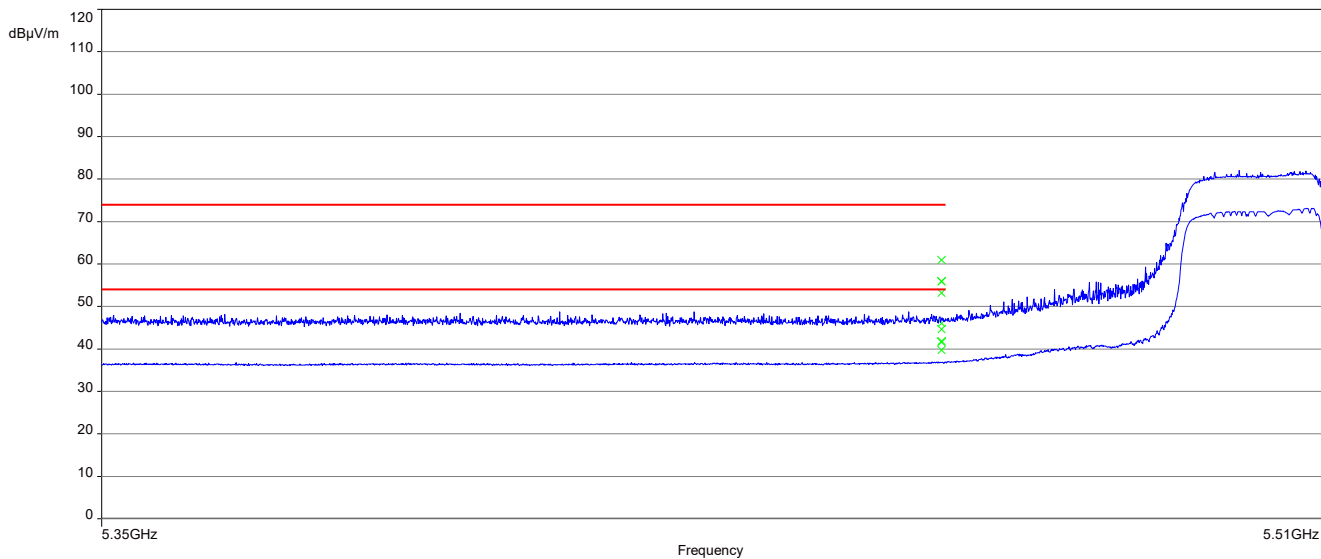
Plot 4: lower band edge; U-NII-1; lowest channel; 40 MHz channel bandwidth



Plot 5: upper band edge; U-NII-2A; highest channel; 40 MHz channel bandwidth



Plot 6: lower band edge; U-NII-2C; lowest channel; 40 MHz channel bandwidth



11.10 Spurious emissions radiated < 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode and receive mode below 30 MHz. The EUT is set first to middle channel. This measurement is representative for all channels and modes. If critical peaks are found the lowest channel and the highest channel will be measured too. Then the EUT is set to receive or idle mode. The limits are recalculated to a measurement distance of 3 m with 40 dB/decade according CFR Part 2.

Measurement:

| Measurement parameter | |
|--------------------------|--|
| Detector: | Peak / Quasi Peak |
| Sweep time: | Auto |
| Video bandwidth: | F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz |
| Resolution bandwidth: | F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz |
| Span: | 9 kHz to 30 MHz |
| Trace mode: | Max Hold |
| Test setup: | See sub clause 6.2 – C |
| Measurement uncertainty: | See sub clause 8 |

Limits:

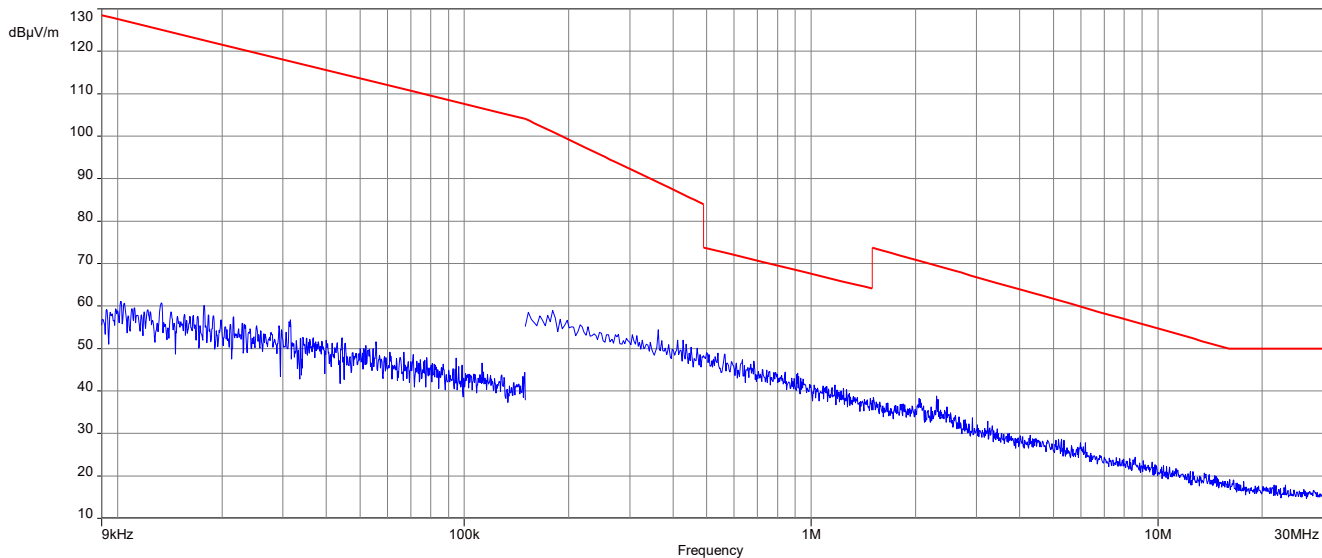
| Spurious Emissions Radiated < 30 MHz | | |
|--------------------------------------|-------------------------|----------------------|
| Frequency (MHz) | Field Strength (dBµV/m) | Measurement distance |
| 0.009 – 0.490 | 2400/F(kHz) | 300 |
| 0.490 – 1.705 | 24000/F(kHz) | 30 |
| 1.705 – 30.0 | 30 | 30 |

Results:

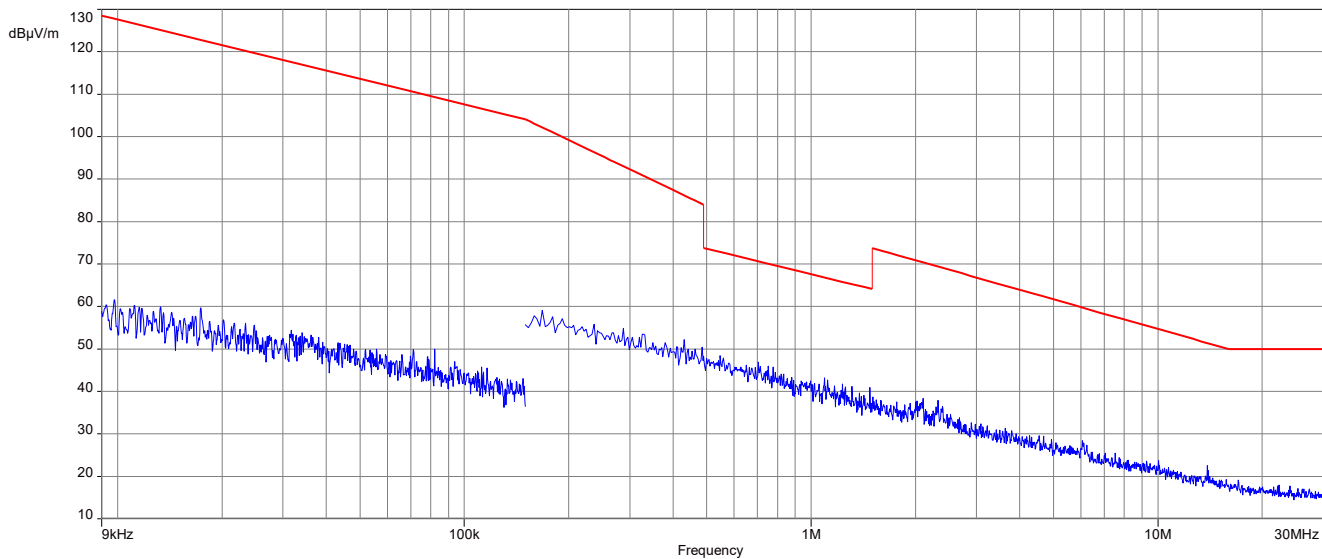
| Spurious Emissions Radiated < 30 MHz [dBµV/m] | | |
|---|----------|----------------|
| F [MHz] | Detector | Level [dBµV/m] |
| All detected emissions are more than 20 dB below the limit. | | |
| | | |
| | | |

Plots: 20 MHz channel bandwidth

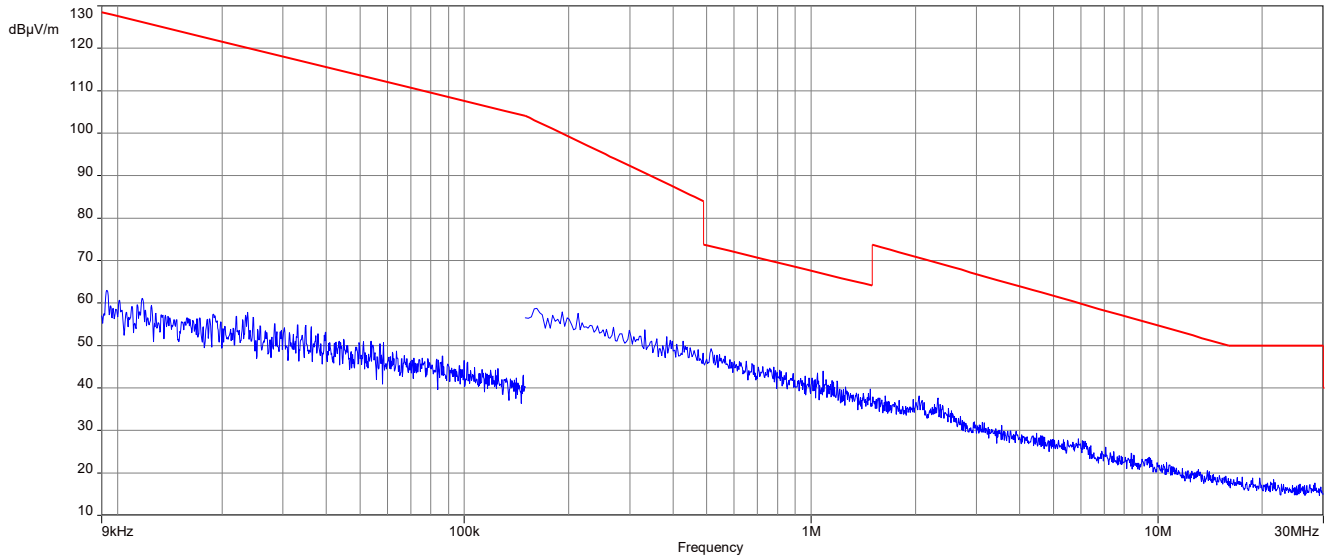
Plot 1: 9 kHz to 30 MHz, U-NII-1; lowest channel



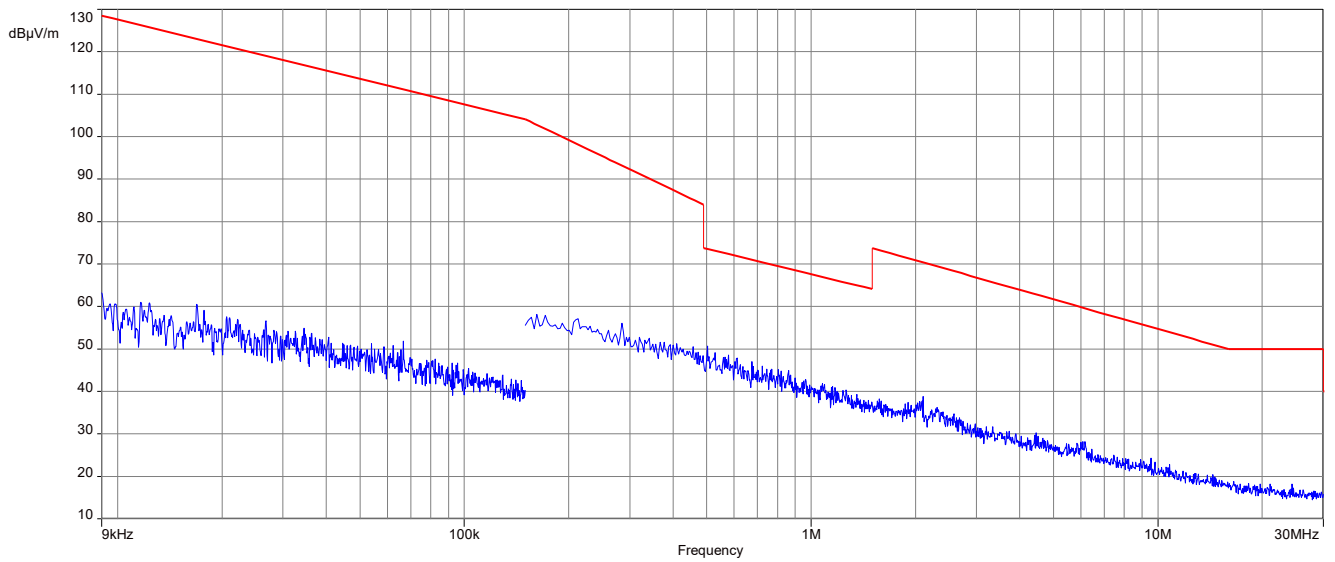
Plot 2: 9 kHz to 30 MHz, U-NII-1; highest channel



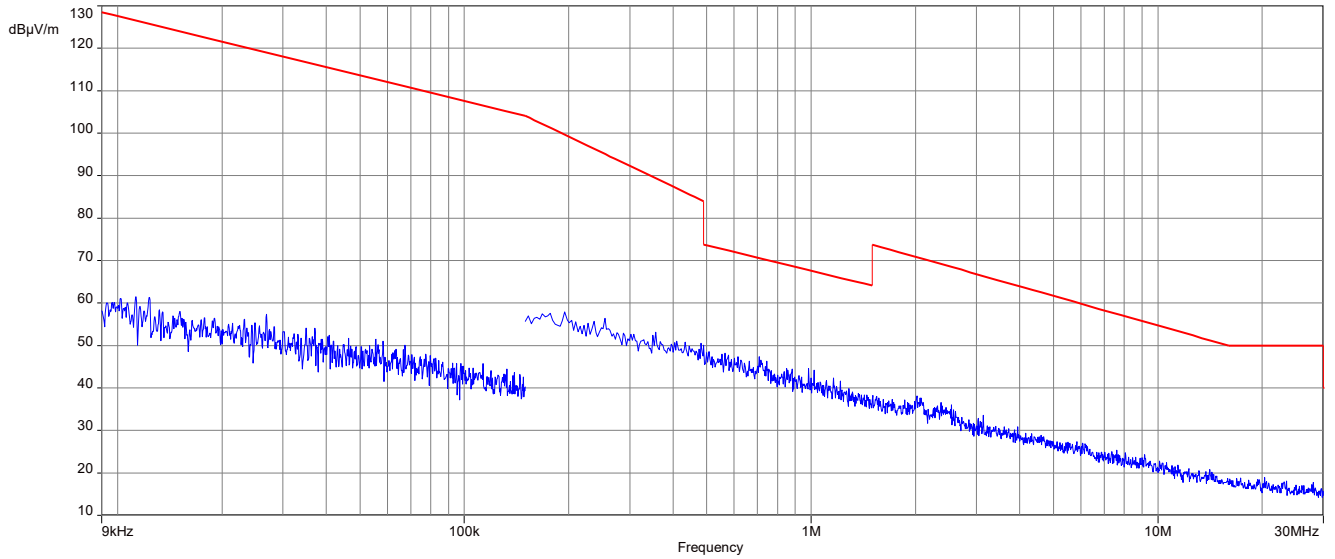
Plot 3: 9 kHz to 30 MHz, U-NII-2A; lowest channel



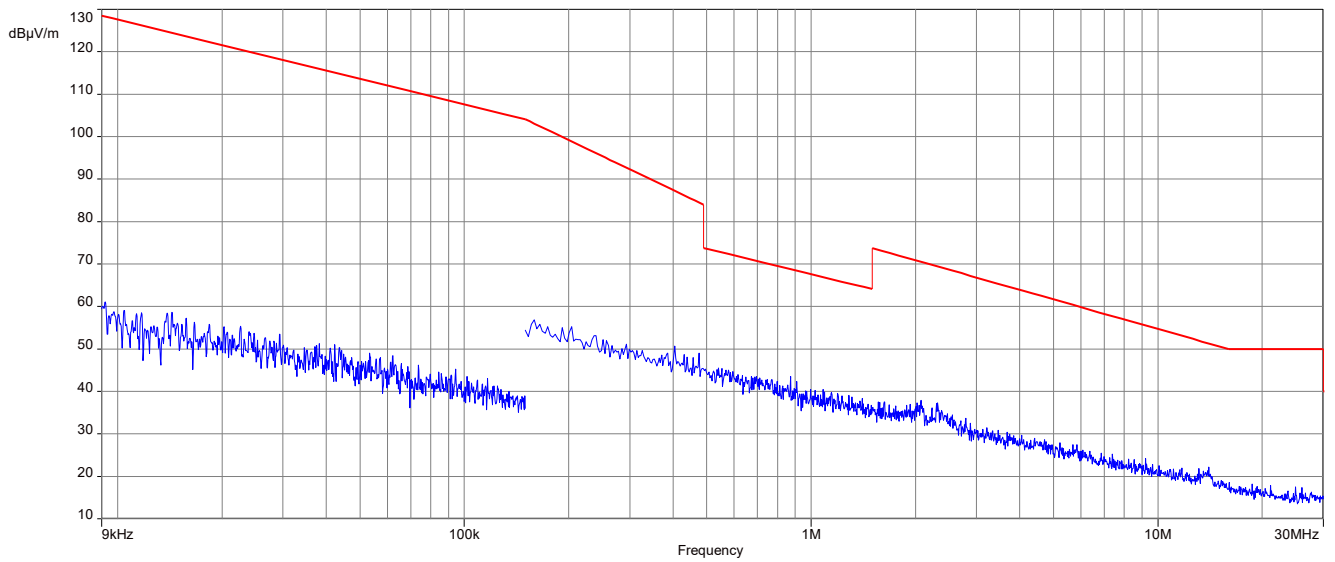
Plot 4: 9 kHz to 30 MHz, U-NII-2A; highest channel



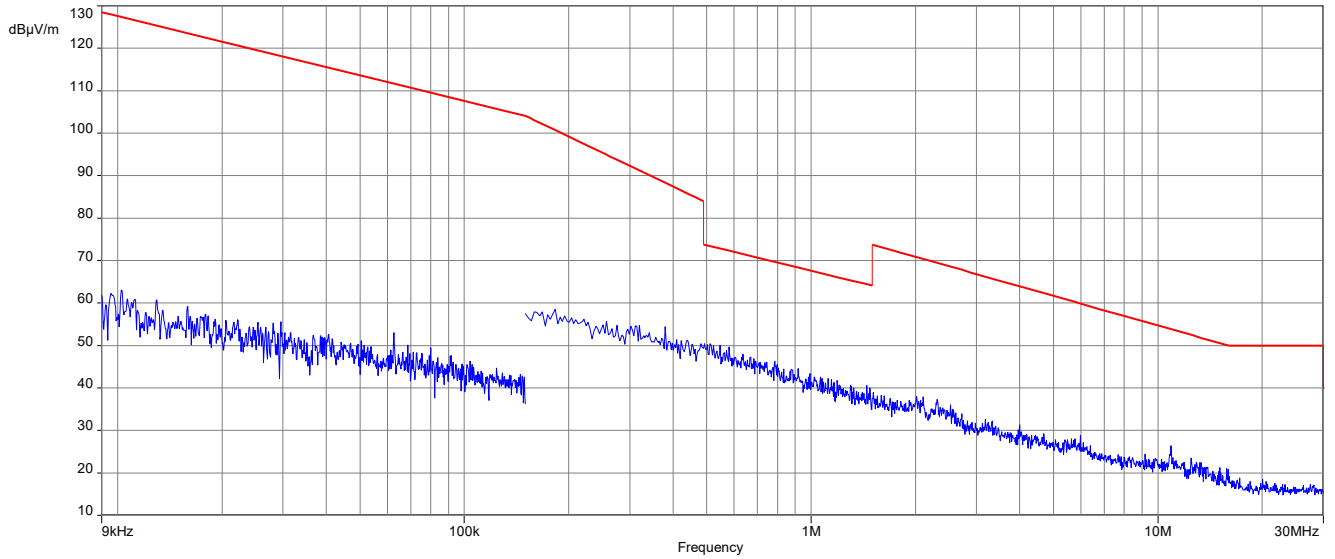
Plot 5: 9 kHz to 30 MHz, U-NII-2C; lowest channel



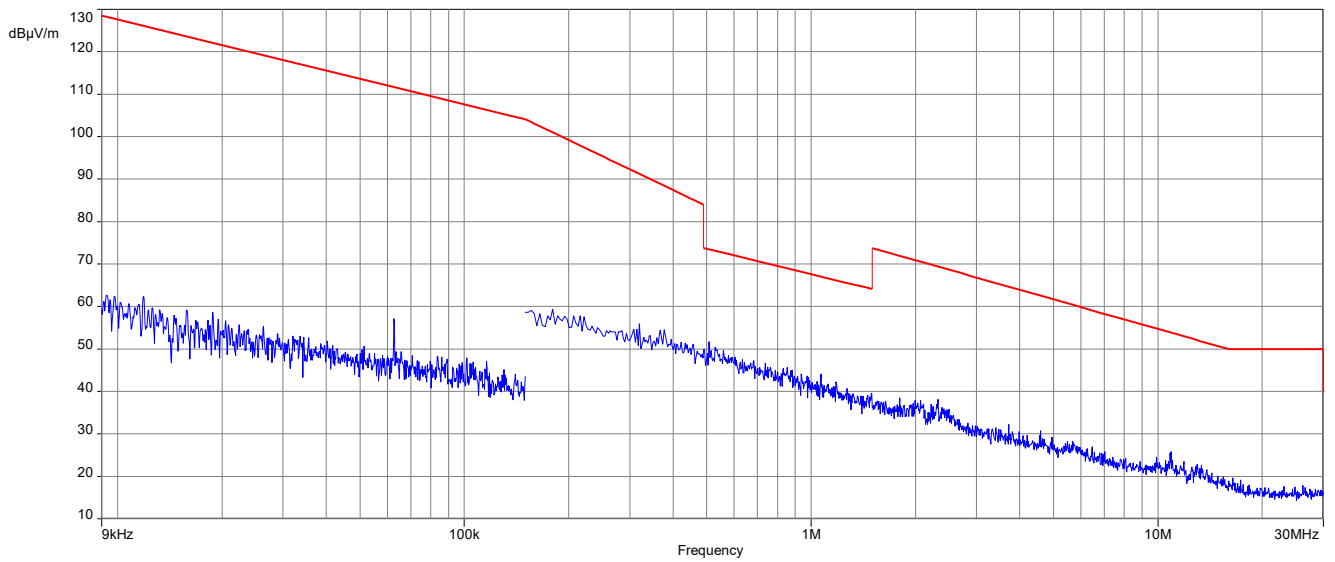
Plot 6: 9 kHz to 30 MHz, U-NII-2C; middle channel



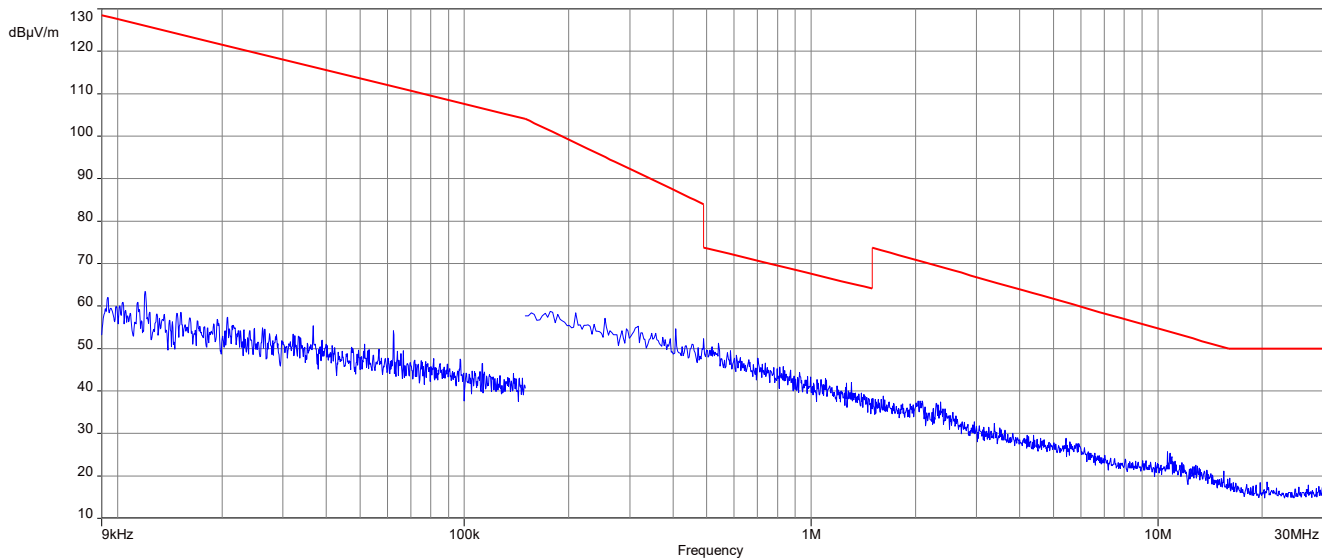
Plot 7: 9 kHz to 30 MHz, U-NII-2C; highest channel



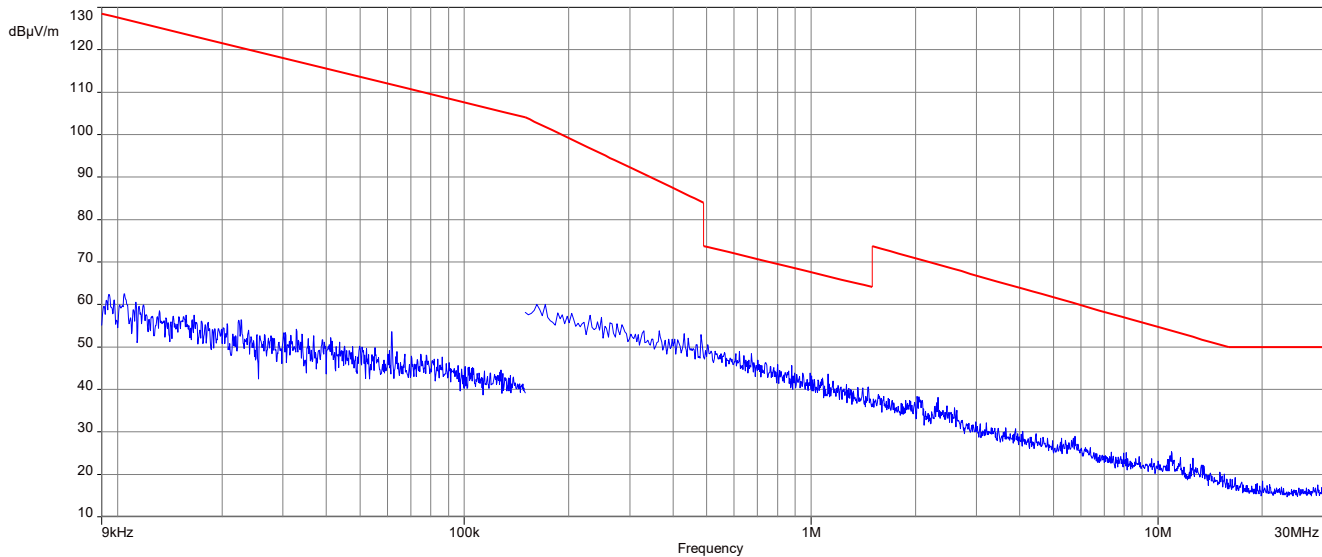
Plot 8: 9 kHz to 30 MHz, U-NII-3; lowest channel



Plot 9: 9 kHz to 30 MHz, U-NII-3; middle channel

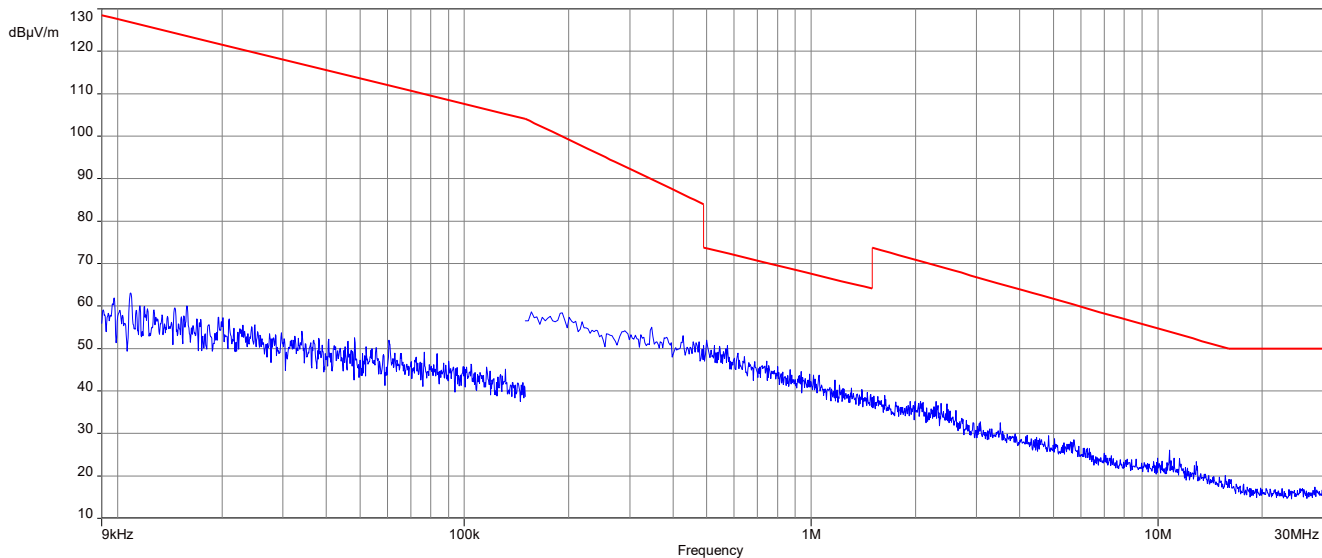


Plot 10: 9 kHz to 30 MHz, U-NII-3; highest channel

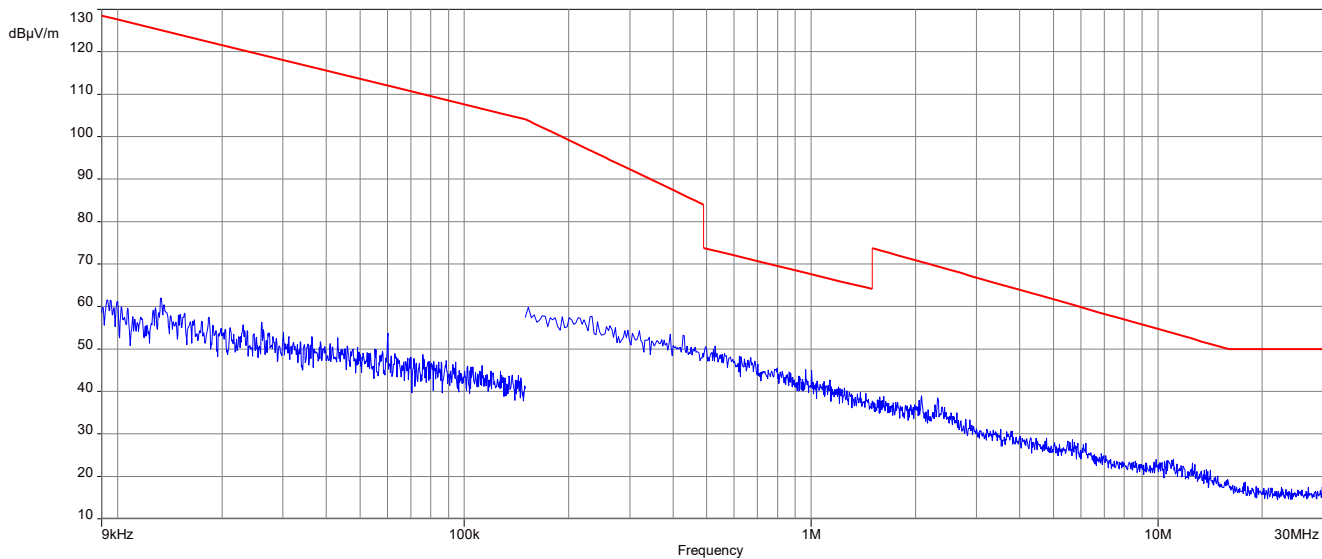


Plots: 40 MHz channel bandwidth

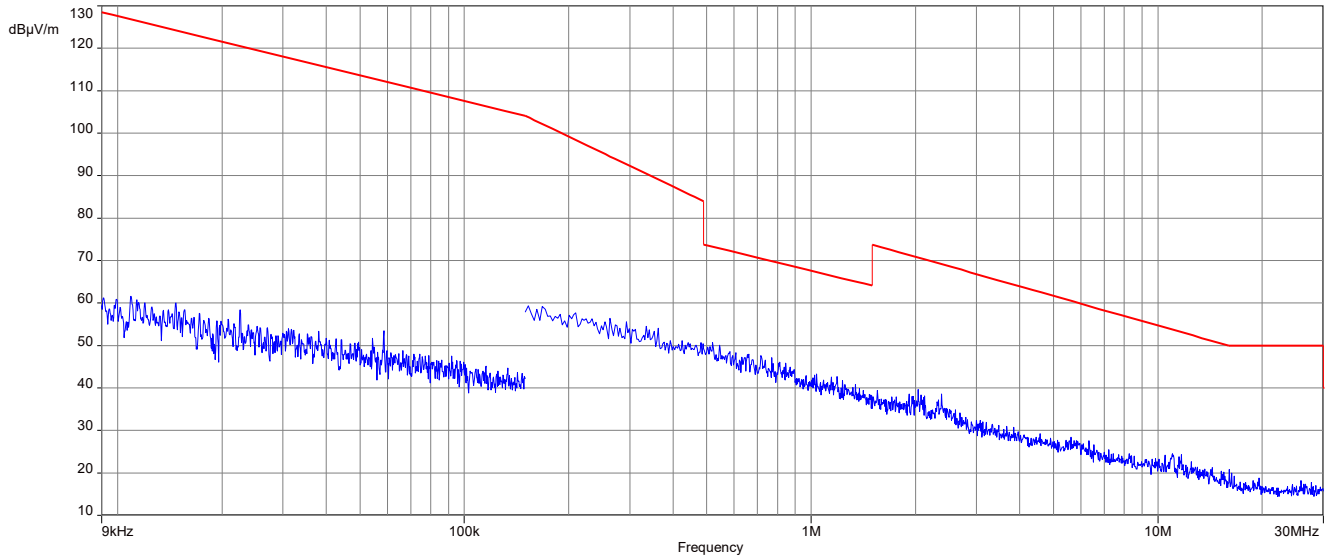
Plot 1: 9 kHz to 30 MHz, U-NII-1; lowest channel



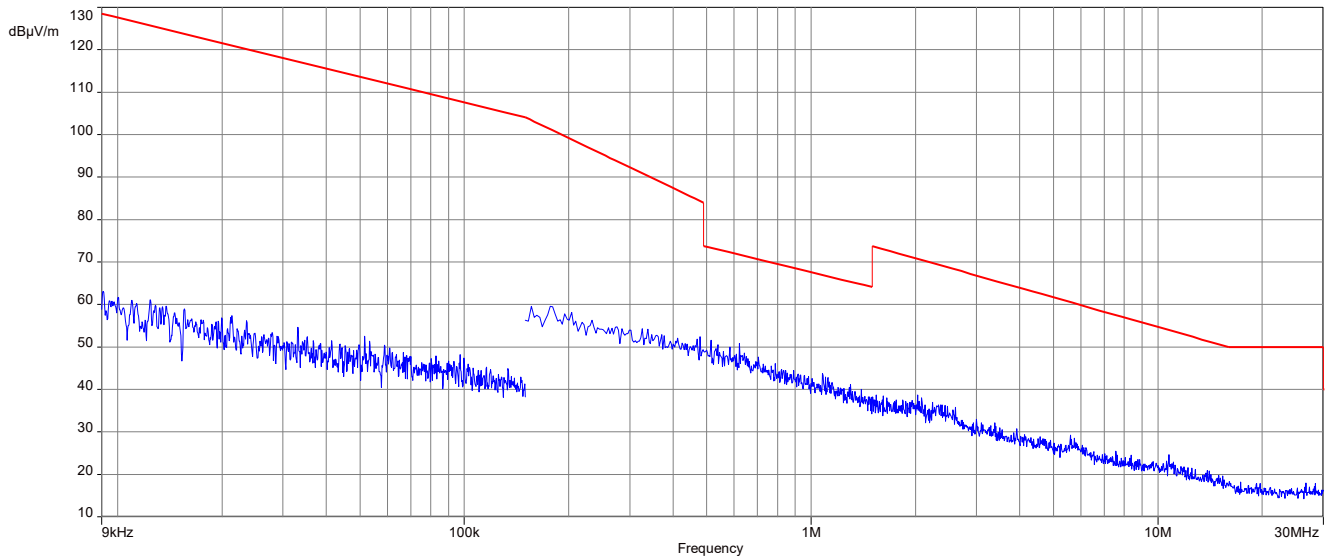
Plot 2: 9 kHz to 30 MHz, U-NII-1; highest channel



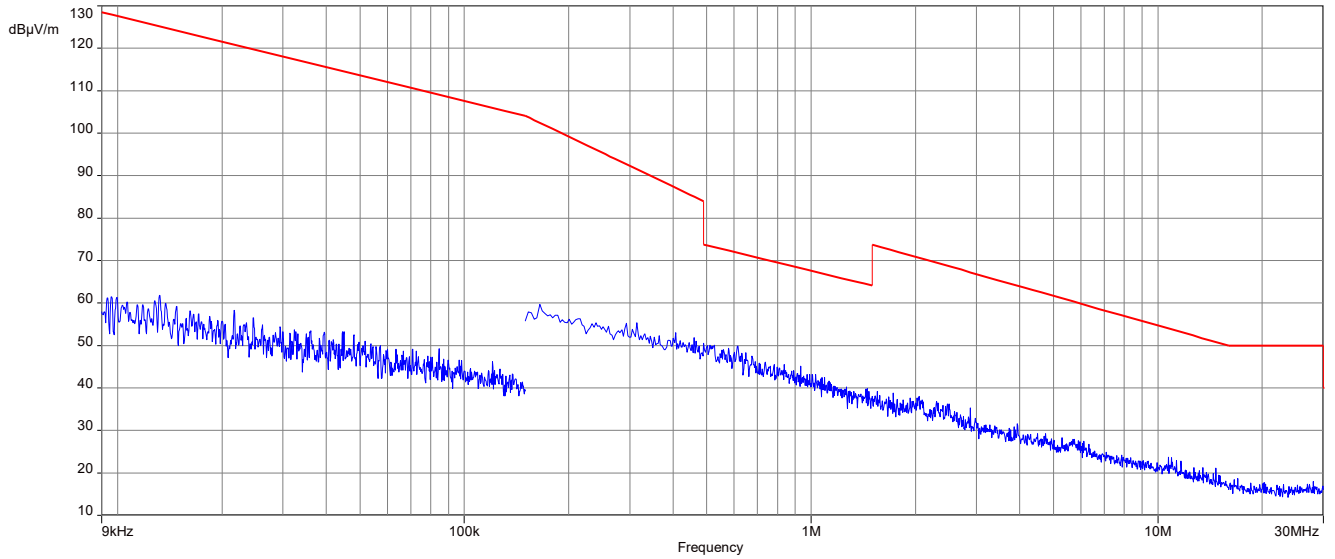
Plot 3: 9 kHz to 30 MHz, U-NII-2A; lowest channel



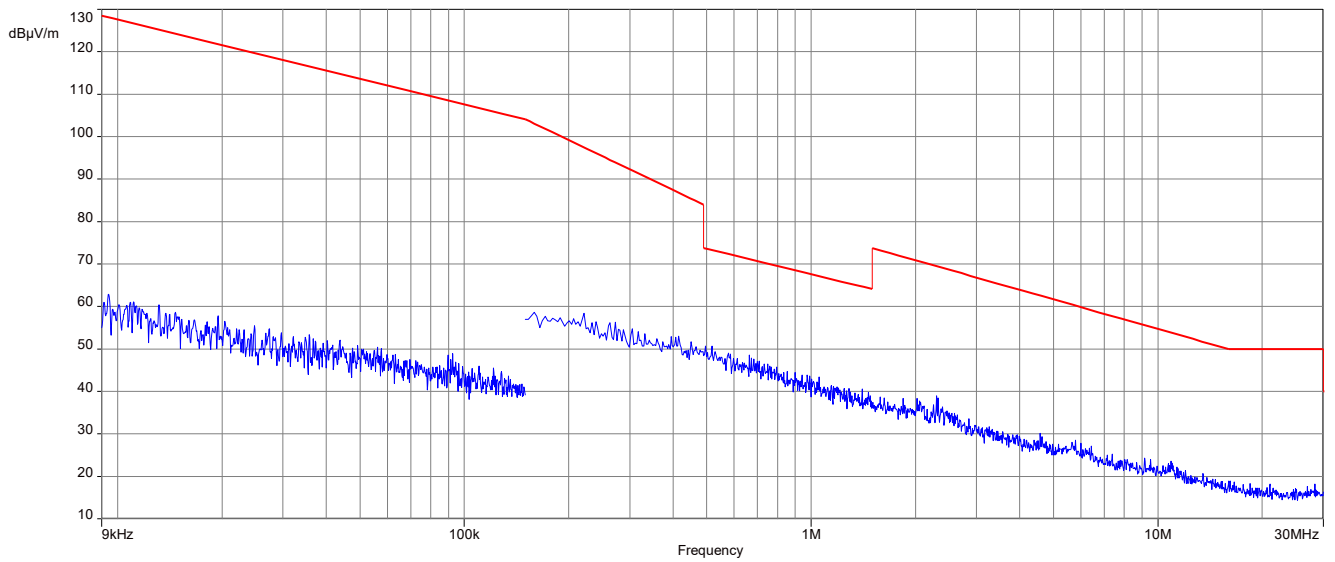
Plot 4: 9 kHz to 30 MHz, U-NII-2A; highest channel



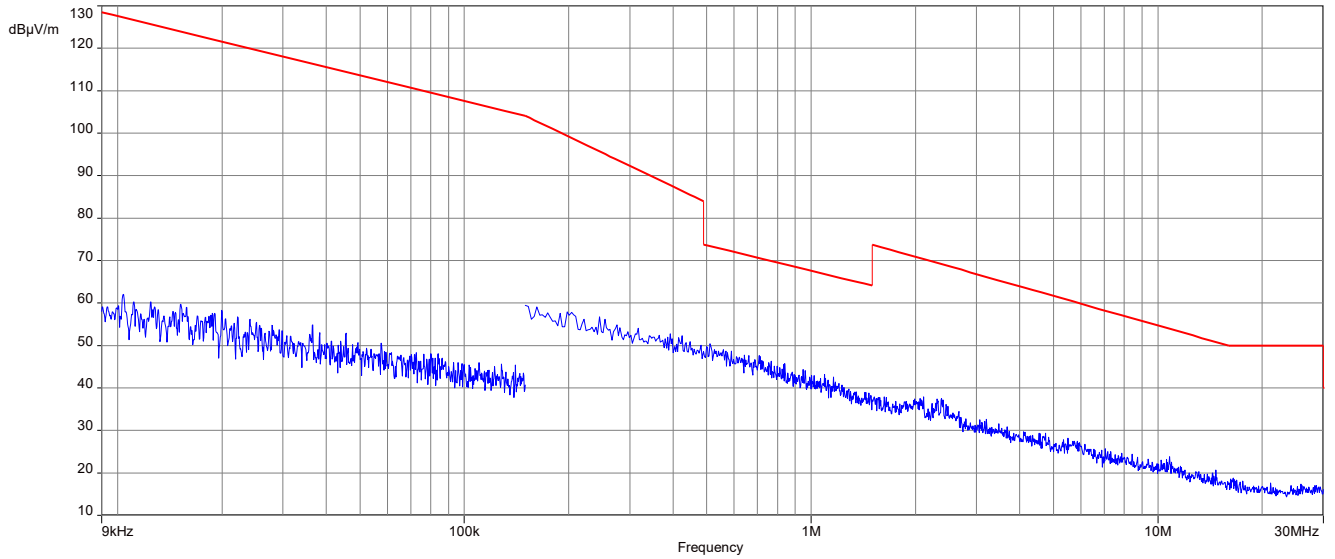
Plot 5: 9 kHz to 30 MHz, U-NII-2C; lowest channel



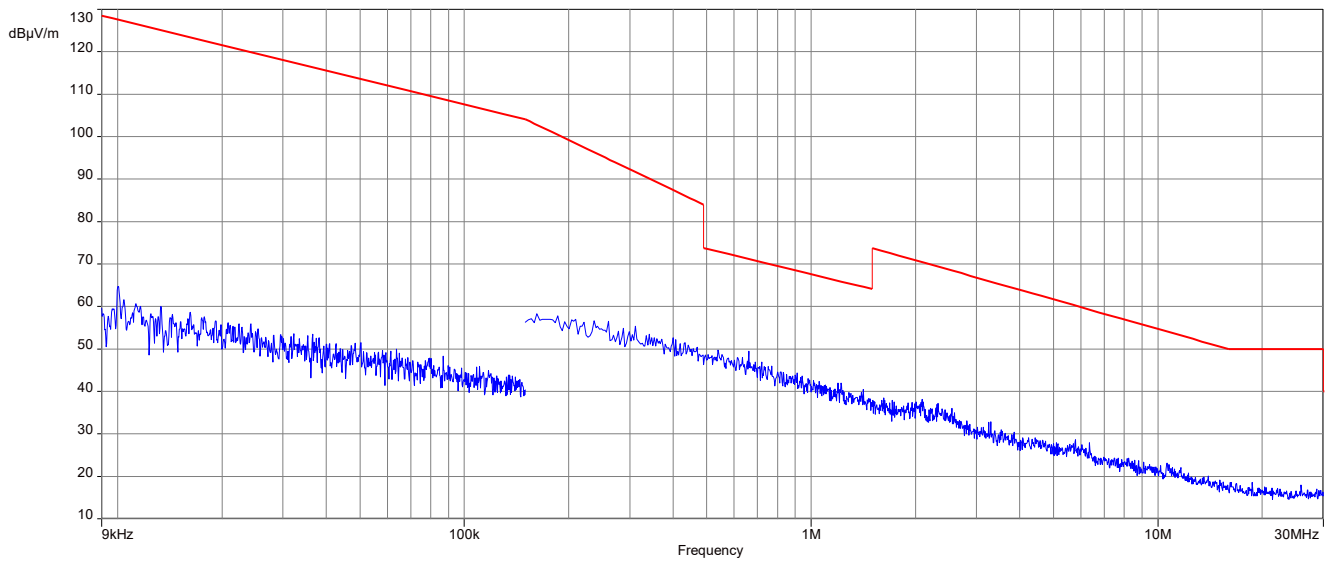
Plot 6: 9 kHz to 30 MHz, U-NII-2C; middle channel



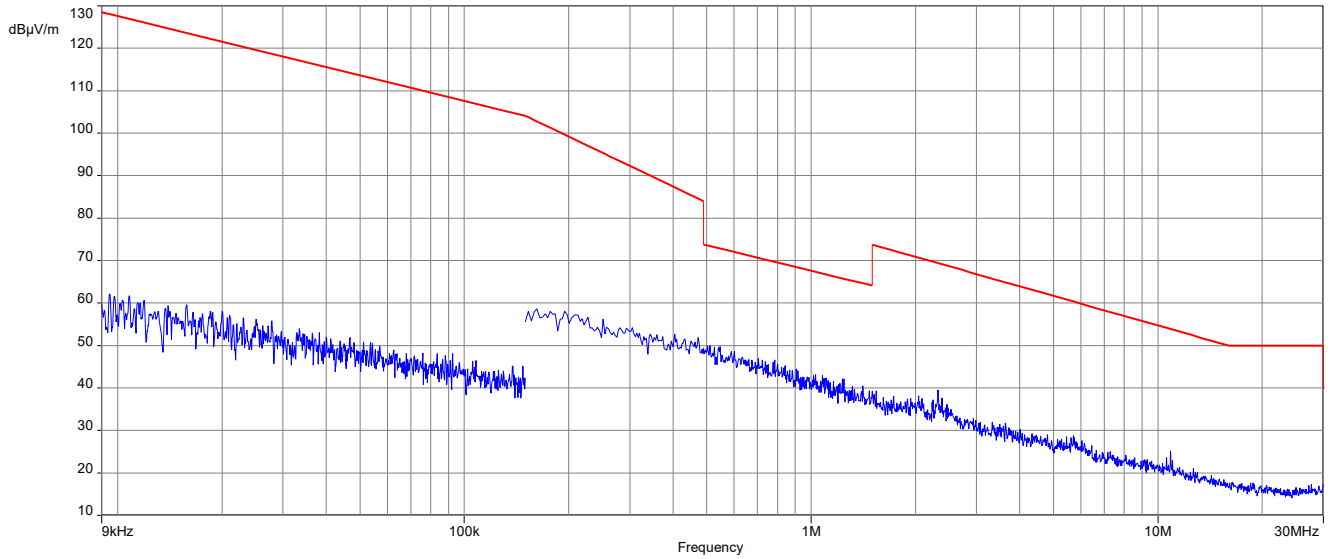
Plot 7: 9 kHz to 30 MHz, U-NII-2C; highest channel



Plot 8: 9 kHz to 30 MHz, U-NII-3; lowest channel



Plot 9: 9 kHz to 30 MHz, U-NII-3; highest channel



11.11 TX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in transmit mode. The measurement is performed at lowest, middle and highest channel.

Measurement:

| Measurement parameter | |
|--------------------------|--|
| Detector: | Quasi Peak below 1 GHz (alternative Peak) Peak above 1 GHz / RMS |
| Sweep time: | Auto |
| Resolution bandwidth: | F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz |
| Video bandwidth: | F < 1 GHz: 100 kHz F > 1 GHz: ≥ 3 MHz / 1 MHz |
| Span: | 30 MHz to 40 GHz |
| Trace mode: | Max Hold / Average with 100 counts + 20 log (1 / X) for duty cycle lower than 100 % |
| Test setup: | See sub clause 6.1 – A See sub clause 6.2 – B See sub clause 6.3 – A |
| Measurement uncertainty: | See sub clause 8 |

Limits:

| TX Spurious Emissions Radiated | | |
|--------------------------------|-------------------------|----------------------|
| §15.209 | | |
| Frequency (MHz) | Field Strength (dBµV/m) | Measurement distance |
| 30 - 88 | 30.0 | 10 |
| 88 – 216 | 33.5 | 10 |
| 216 – 960 | 36.0 | 10 |
| Above 960 | 54.0 | 3 |
| §15.407 | | |
| Outside the restricted bands! | -27 dBm / MHz | |

Results: 20 MHz channel bandwidth

| TX Spurious Emissions Radiated [dBµV/m] / dBm | | | | | | | | |
|---|----------|----------------|----------------|----------|----------------|---|----------|----------------|
| U-NII-1 (5150 MHz to 5250 MHz) | | | | | | | | |
| Lowest channel | | | Middle channel | | | Highest channel | | |
| F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] |
| For emissions below 1 GHz, see the table below the plot. | | | -/- | | | For emissions below 1 GHz, see the table below the plot. | | |
| | Peak | | | | | | Peak | |
| | AVG | | | | | | AVG | |
| For emissions above 18 GHz please take look at the plots. | | | | | | For emissions above 18 GHz please take look at the plots. | | |

| TX Spurious Emissions Radiated [dBµV/m] / dBm | | | | | | | | |
|---|----------|----------------|----------------|----------|----------------|---|----------|----------------|
| U-NII-2A (5250 MHz to 5350 MHz) | | | | | | | | |
| Lowest channel | | | Middle channel | | | Highest channel | | |
| F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] |
| For emissions below 1 GHz, see the table below the plot. | | | -/- | | | For emissions below 1 GHz, see the table below the plot. | | |
| | Peak | | | | | | Peak | |
| | AVG | | | | | | AVG | |
| For emissions above 18 GHz please take look at the plots. | | | | | | For emissions above 18 GHz please take look at the plots. | | |

| TX Spurious Emissions Radiated [dBµV/m] / dBm | | | | | | | | |
|---|----------|----------------|---|----------|----------------|---|----------|----------------|
| U-NII-2C (5470 MHz to 5725 MHz) | | | | | | | | |
| Lowest channel | | | Middle channel | | | Highest channel | | |
| F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] |
| For emissions below 1 GHz, see the table below the plot. | | | For emissions below 1 GHz, see the table below the plot. | | | For emissions below 1 GHz, see the table below the plot. | | |
| | Peak | | | Peak | | | Peak | |
| | AVG | | | AVG | | | AVG | |
| For emissions above 18 GHz please take look at the plots. | | | For emissions above 18 GHz please take look at the plots. | | | For emissions above 18 GHz please take look at the plots. | | |

| TX Spurious Emissions Radiated [dBµV/m] / dBm | | | | | | | | |
|---|----------|----------------|---|----------|----------------|---|----------|----------------|
| U-NII-3 (5725 MHz to 5850 MHz) | | | | | | | | |
| Lowest channel | | | Middle channel | | | Highest channel | | |
| F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] |
| For emissions below 1 GHz, see the table below the plot. | | | For emissions below 1 GHz, see the table below the plot. | | | For emissions below 1 GHz, see the table below the plot. | | |
| | Peak | | | Peak | | | Peak | |
| | AVG | | | AVG | | | AVG | |
| For emissions above 18 GHz please take look at the plots. | | | For emissions above 18 GHz please take look at the plots. | | | For emissions above 18 GHz please take look at the plots. | | |

Results: 40 MHz channel bandwidth

| TX Spurious Emissions Radiated [dBµV/m] / dBm | | | | | | | | |
|---|----------|----------------|----------------|----------|----------------|---|----------|----------------|
| U-NII-1 (5150 MHz to 5250 MHz) | | | | | | | | |
| Lowest channel | | | Middle channel | | | Highest channel | | |
| F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] |
| For emissions below 1 GHz, see the table below the plot. | | | -/- | | | For emissions below 1 GHz, see the table below the plot. | | |
| | Peak | | | | | | Peak | |
| | AVG | | | | | | AVG | |
| For emissions above 18 GHz please take look at the plots. | | | | | | For emissions above 18 GHz please take look at the plots. | | |

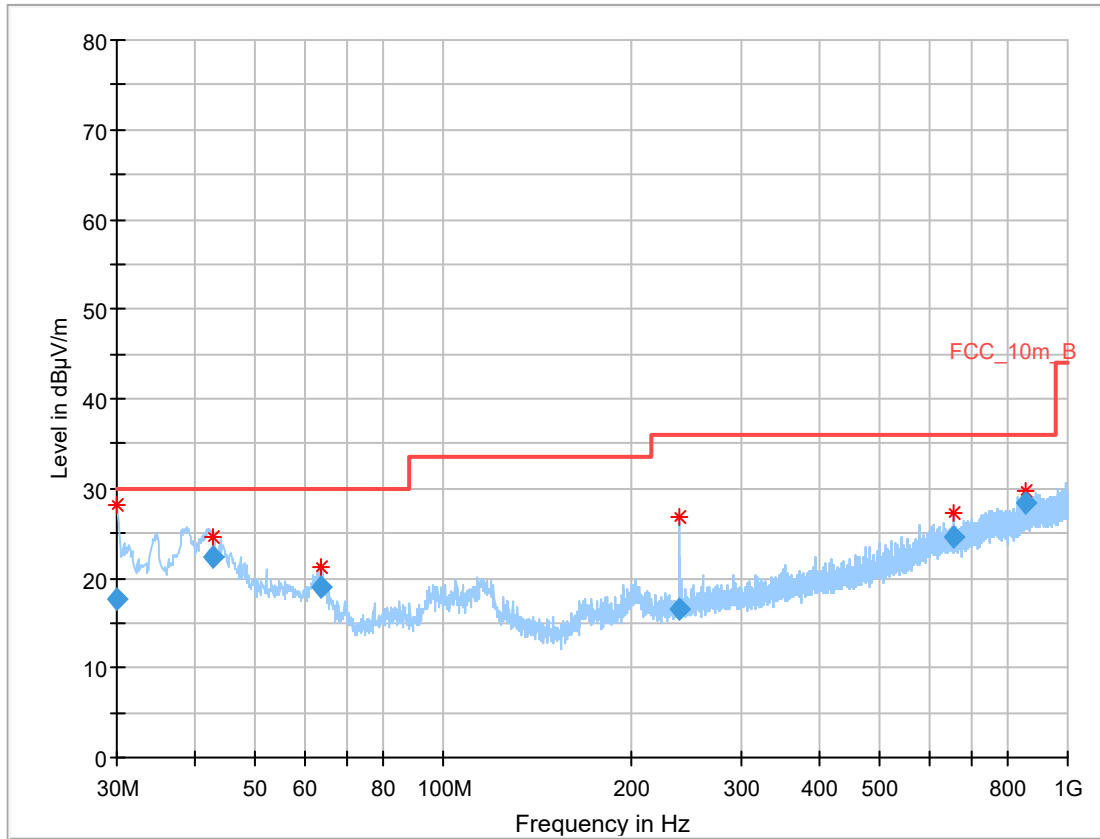
| TX Spurious Emissions Radiated [dBµV/m] / dBm | | | | | | | | |
|---|----------|----------------|----------------|----------|----------------|---|----------|----------------|
| U-NII-2A (5250 MHz to 5350 MHz) | | | | | | | | |
| Lowest channel | | | Middle channel | | | Highest channel | | |
| F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] |
| For emissions below 1 GHz, see the table below the plot. | | | -/- | | | For emissions below 1 GHz, see the table below the plot. | | |
| | Peak | | | | | | Peak | |
| | AVG | | | | | | AVG | |
| For emissions above 18 GHz please take look at the plots. | | | | | | For emissions above 18 GHz please take look at the plots. | | |

| TX Spurious Emissions Radiated [dBµV/m] / dBm | | | | | | | | |
|---|----------|----------------|---|----------|----------------|---|----------|----------------|
| U-NII-2C (5470 MHz to 5725 MHz) | | | | | | | | |
| Lowest channel | | | Middle channel | | | Highest channel | | |
| F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] |
| For emissions below 1 GHz, see the table below the plot. | | | For emissions below 1 GHz, see the table below the plot. | | | For emissions below 1 GHz, see the table below the plot. | | |
| | Peak | | | Peak | | | Peak | |
| | AVG | | | AVG | | | AVG | |
| For emissions above 18 GHz please take look at the plots. | | | For emissions above 18 GHz please take look at the plots. | | | For emissions above 18 GHz please take look at the plots. | | |

| TX Spurious Emissions Radiated [dBµV/m] / dBm | | | | | | | | |
|---|----------|----------------|---|----------|----------------|---|----------|----------------|
| U-NII-3 (5725 MHz to 5850 MHz) | | | | | | | | |
| Lowest channel | | | Middle channel | | | Highest channel | | |
| F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] | F [MHz] | Detector | Level [dBµV/m] |
| For emissions below 1 GHz, see the table below the plot. | | | For emissions below 1 GHz, see the table below the plot. | | | For emissions below 1 GHz, see the table below the plot. | | |
| | Peak | | | Peak | | | Peak | |
| | AVG | | | AVG | | | AVG | |
| For emissions above 18 GHz please take look at the plots. | | | For emissions above 18 GHz please take look at the plots. | | | For emissions above 18 GHz please take look at the plots. | | |

Plots: 20 MHz channel bandwidth

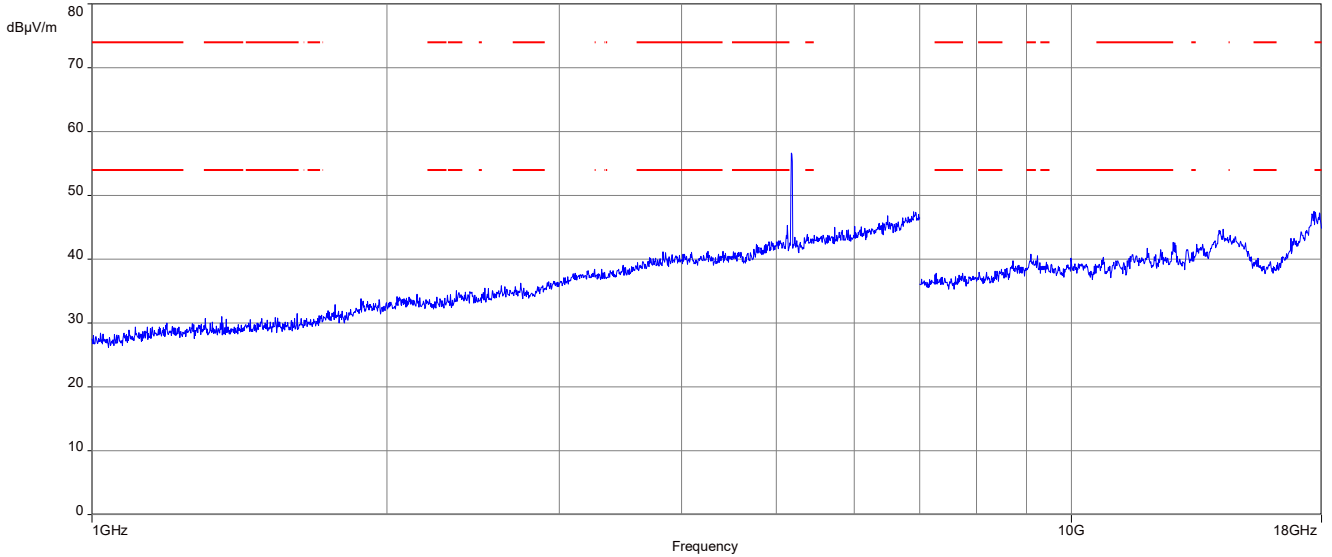
Plot 1: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



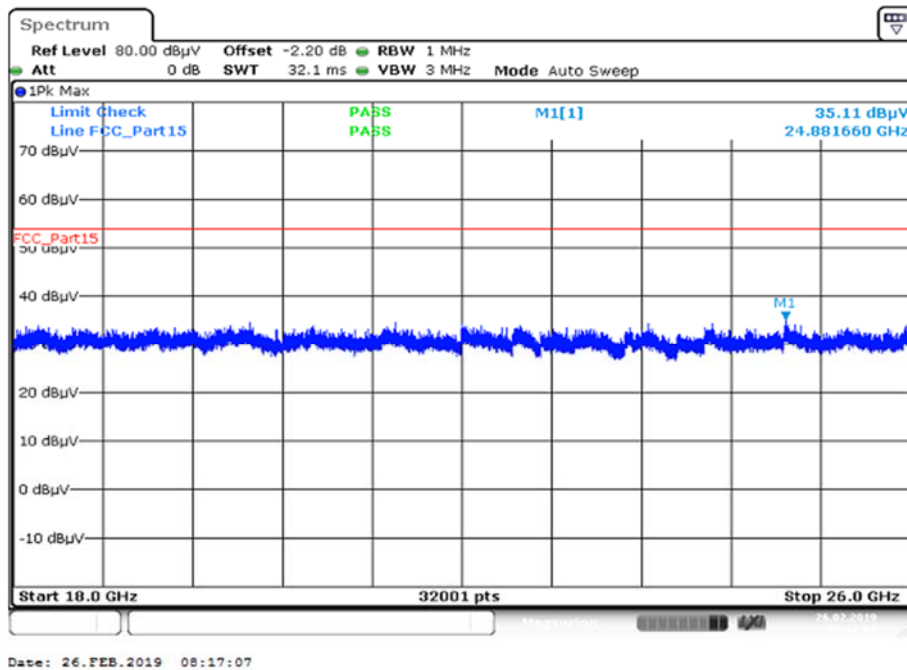
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.020 | 17.66 | 30.0 | 12.34 | 1000 | 120 | 101.0 | H | 306.0 | 13.0 |
| 42.783 | 22.38 | 30.0 | 7.62 | 1000 | 120 | 98.0 | V | 37.0 | 14.6 |
| 63.815 | 18.93 | 30.0 | 11.07 | 1000 | 120 | 98.0 | V | 44.0 | 12.1 |
| 238.388 | 16.50 | 36.0 | 19.50 | 1000 | 120 | 101.0 | V | 354.0 | 13.4 |
| 657.375 | 24.69 | 36.0 | 11.31 | 1000 | 120 | 101.0 | H | -10.0 | 20.8 |
| 855.536 | 28.49 | 36.0 | 7.51 | 1000 | 120 | 170.0 | H | 79.0 | 23.3 |

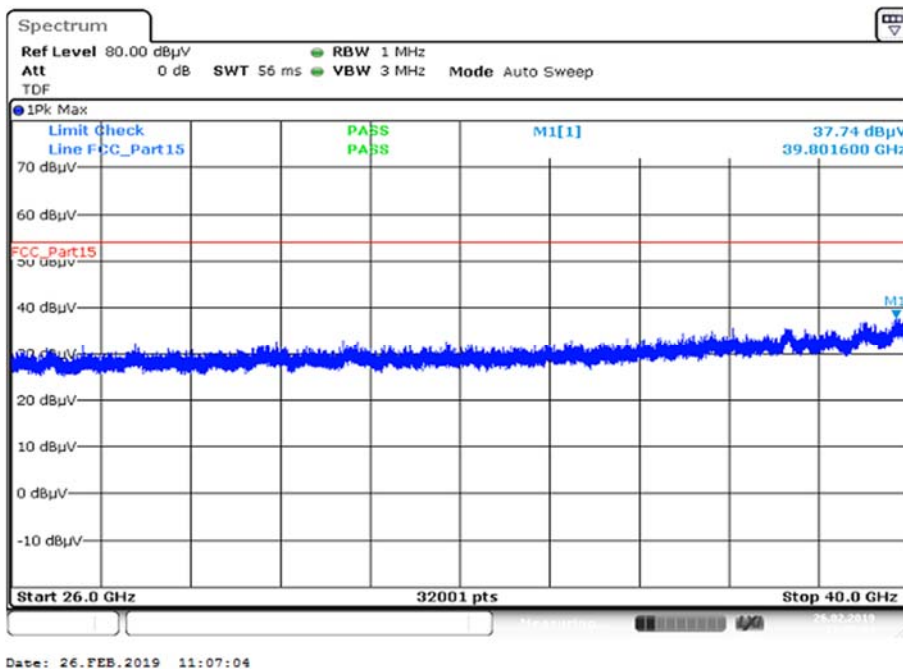
Plot 2: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



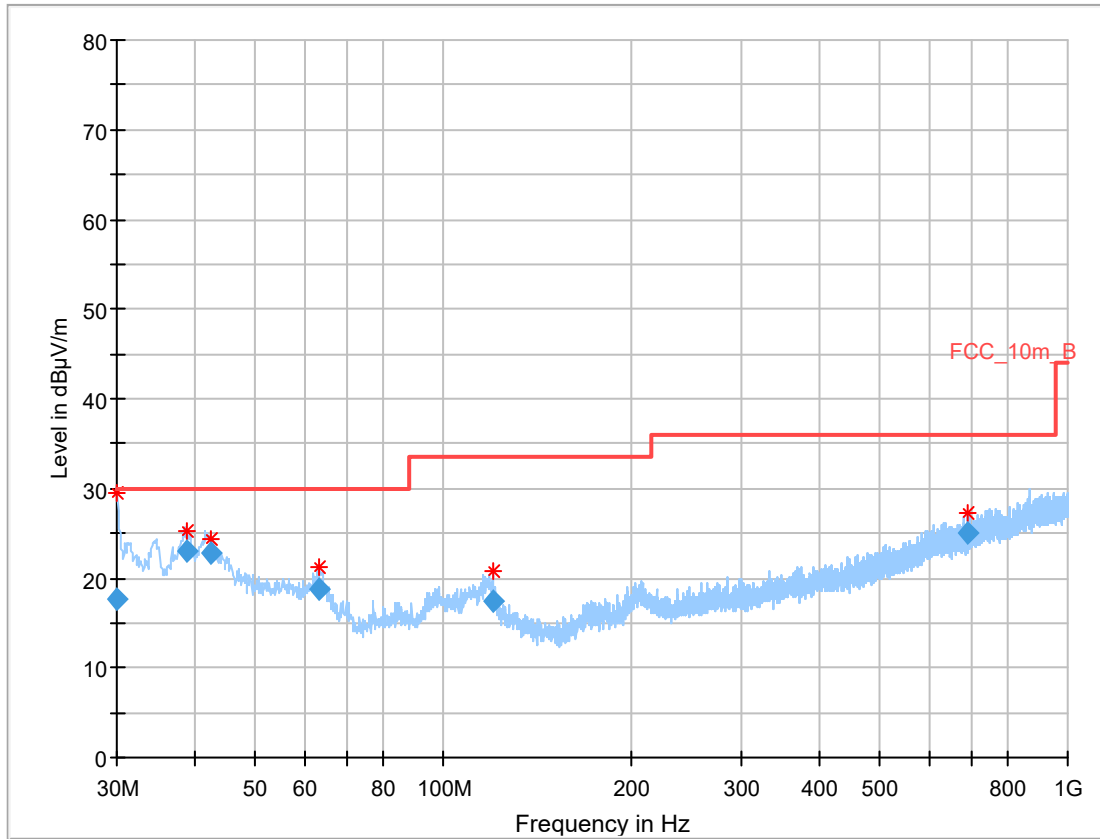
Plot 3: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



Plot 4: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



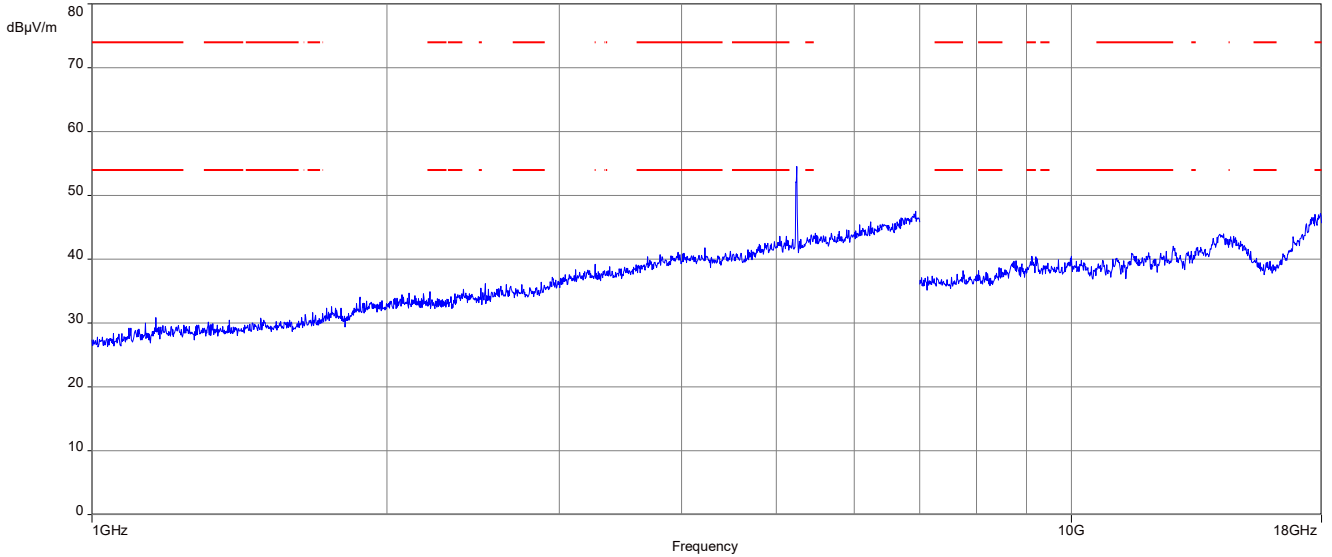
Plot 5: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; highest channel



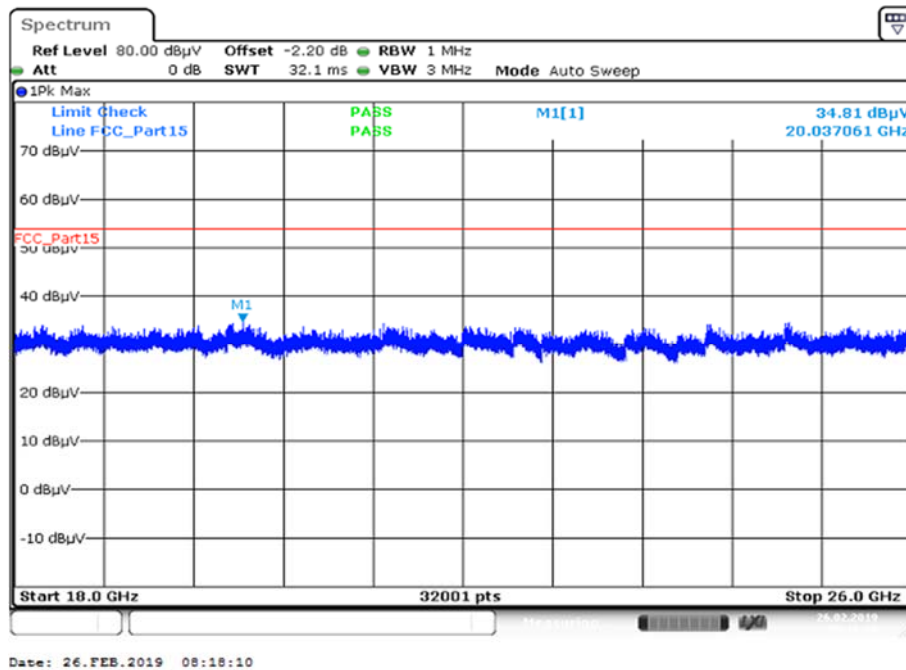
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.008 | 17.72 | 30.0 | 12.28 | 1000 | 120 | 101.0 | H | 147.0 | 13.0 |
| 38.716 | 22.94 | 30.0 | 7.06 | 1000 | 120 | 98.0 | V | 345.0 | 14.2 |
| 42.389 | 22.72 | 30.0 | 7.28 | 1000 | 120 | 98.0 | V | 24.0 | 14.6 |
| 63.261 | 18.71 | 30.0 | 11.29 | 1000 | 120 | 98.0 | V | 11.0 | 12.3 |
| 120.279 | 17.35 | 33.5 | 16.15 | 1000 | 120 | 170.0 | V | 332.0 | 11.3 |
| 692.727 | 25.10 | 36.0 | 10.90 | 1000 | 120 | 170.0 | V | -8.0 | 21.1 |

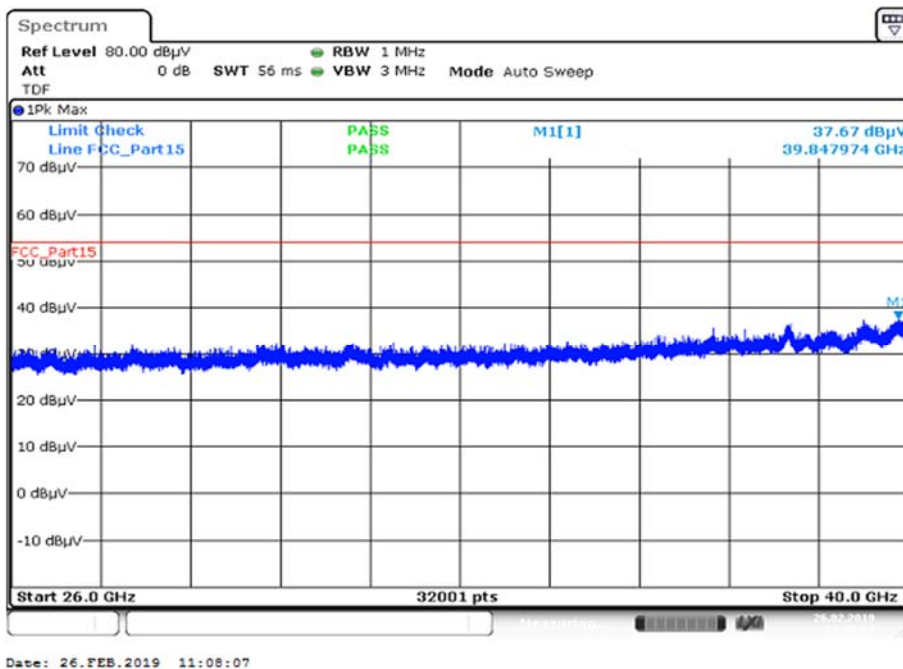
Plot 6: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; highest channel



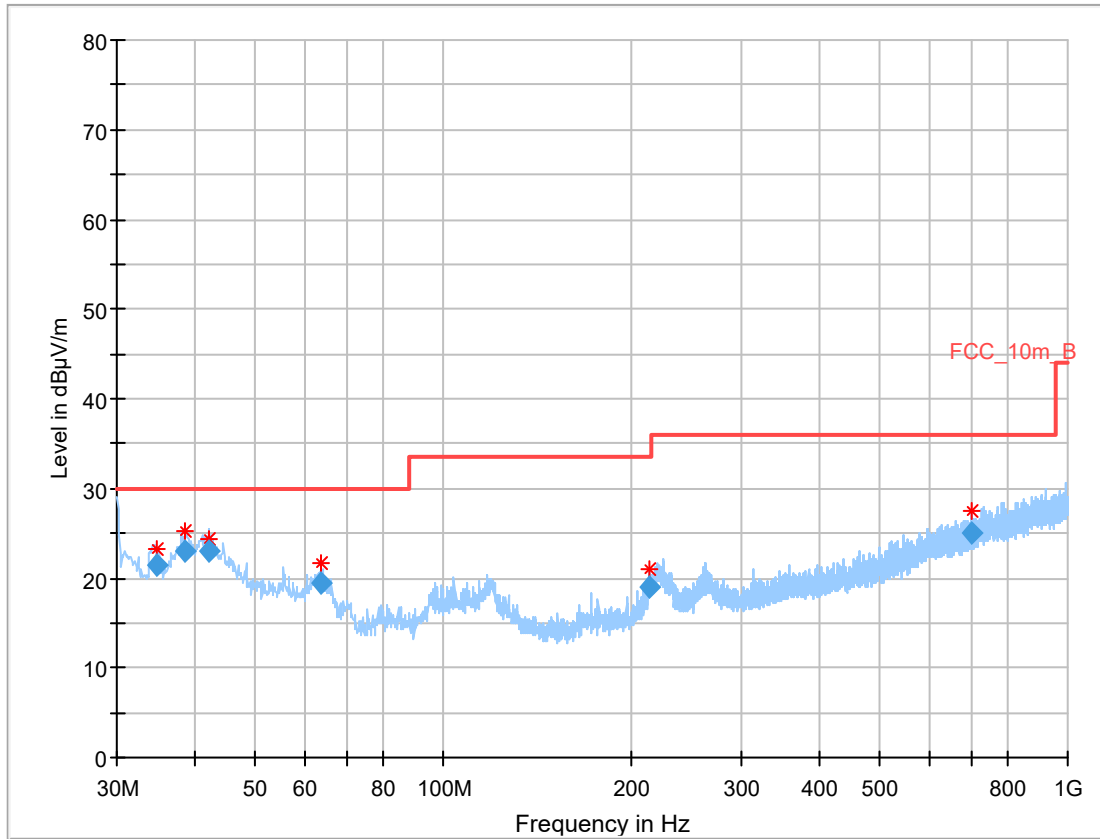
Plot 7: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-1; highest channel



Plot 8: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; highest channel



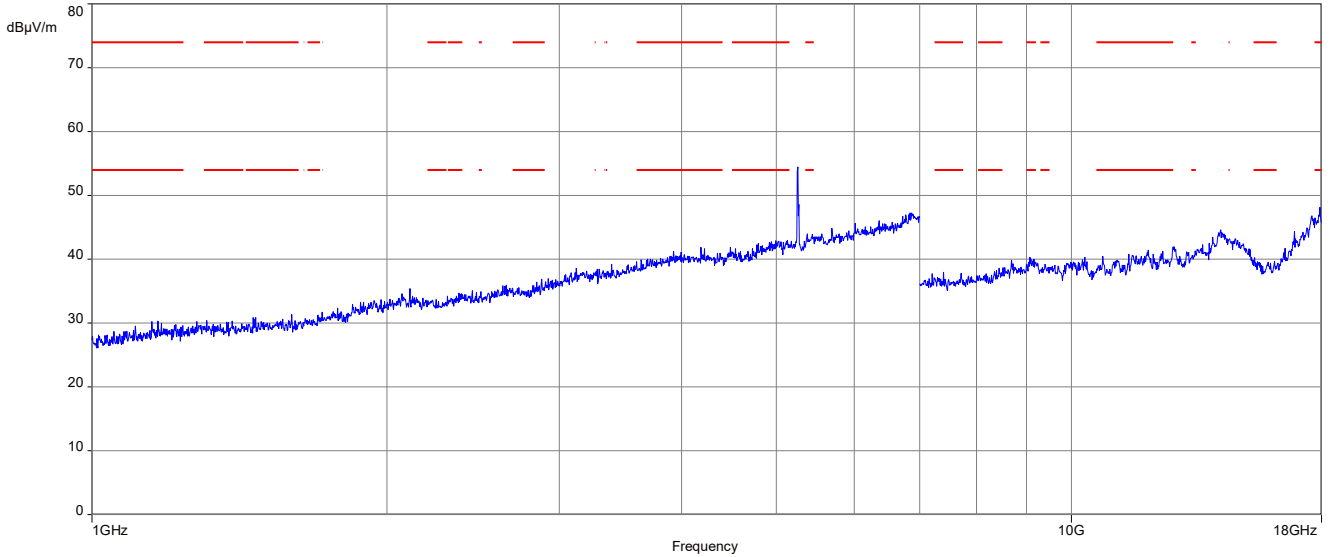
Plot 9: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel



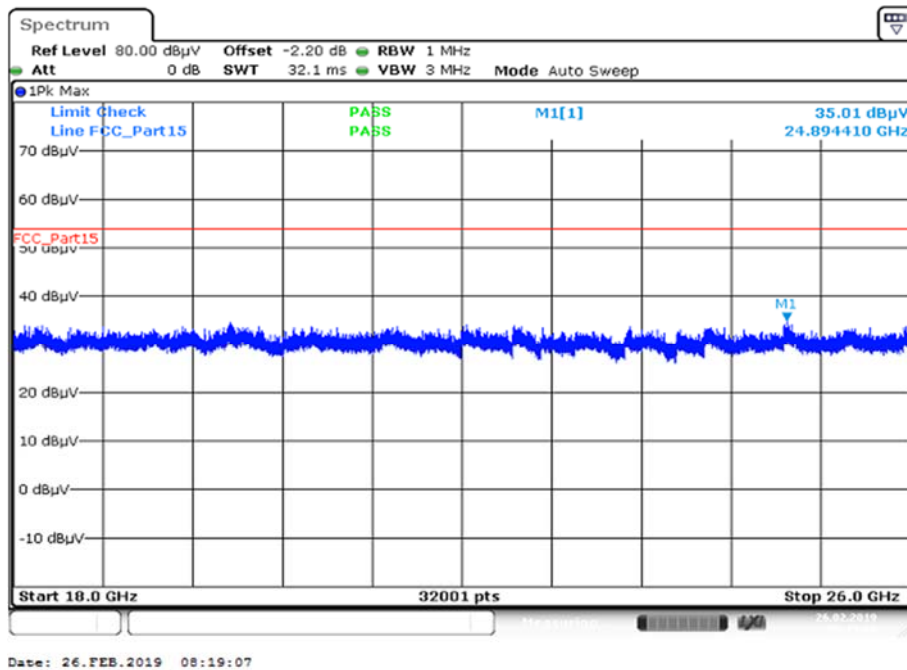
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 34.868 | 21.49 | 30.0 | 8.51 | 1000 | 120 | 98.0 | V | 124.0 | 13.8 |
| 38.677 | 23.01 | 30.0 | 6.99 | 1000 | 120 | 101.0 | V | 133.0 | 14.2 |
| 42.252 | 23.03 | 30.0 | 6.97 | 1000 | 120 | 98.0 | V | 74.0 | 14.5 |
| 63.762 | 19.40 | 30.0 | 10.60 | 1000 | 120 | 170.0 | V | 50.0 | 12.1 |
| 214.490 | 18.97 | 33.5 | 14.53 | 1000 | 120 | 98.0 | V | 126.0 | 12.8 |
| 700.794 | 25.13 | 36.0 | 10.87 | 1000 | 120 | 101.0 | H | 102.0 | 21.1 |

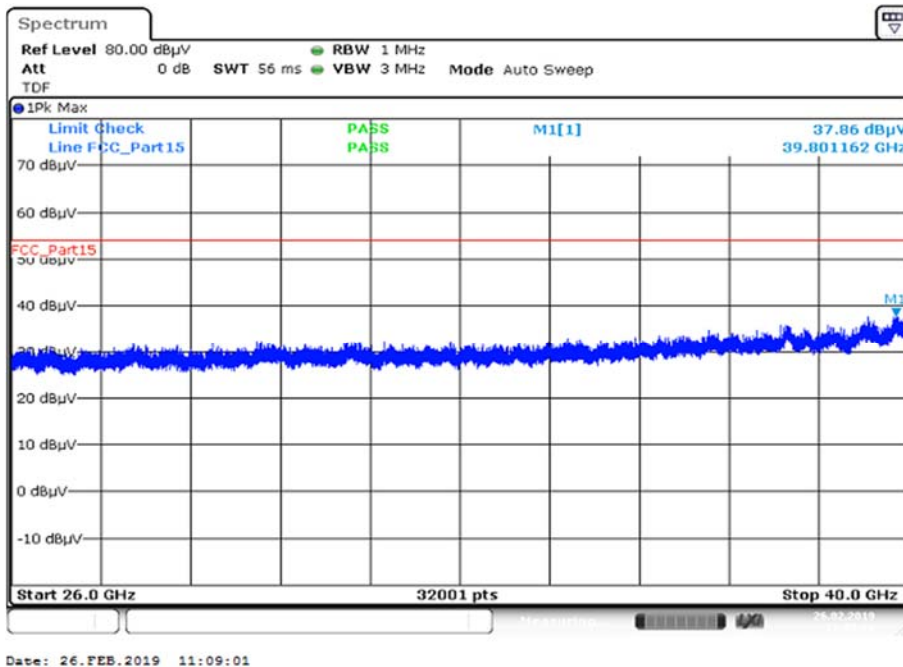
Plot 10: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel



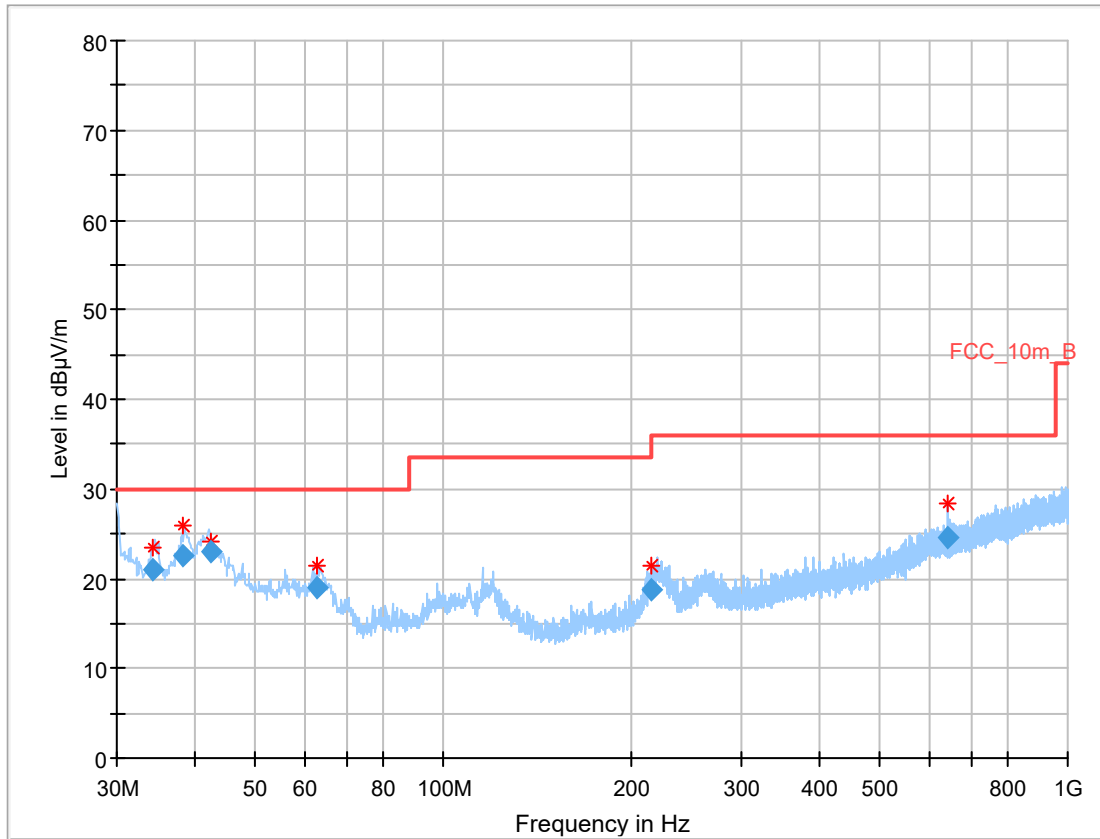
Plot 11: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel



Plot 12: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel



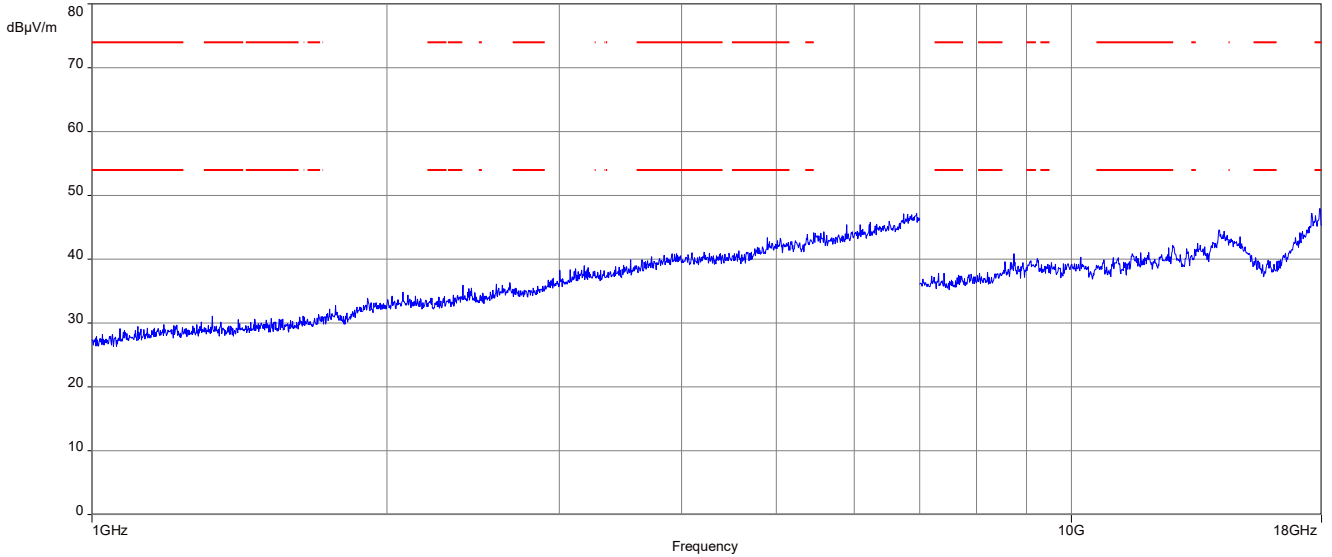
Plot 13: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; highest channel



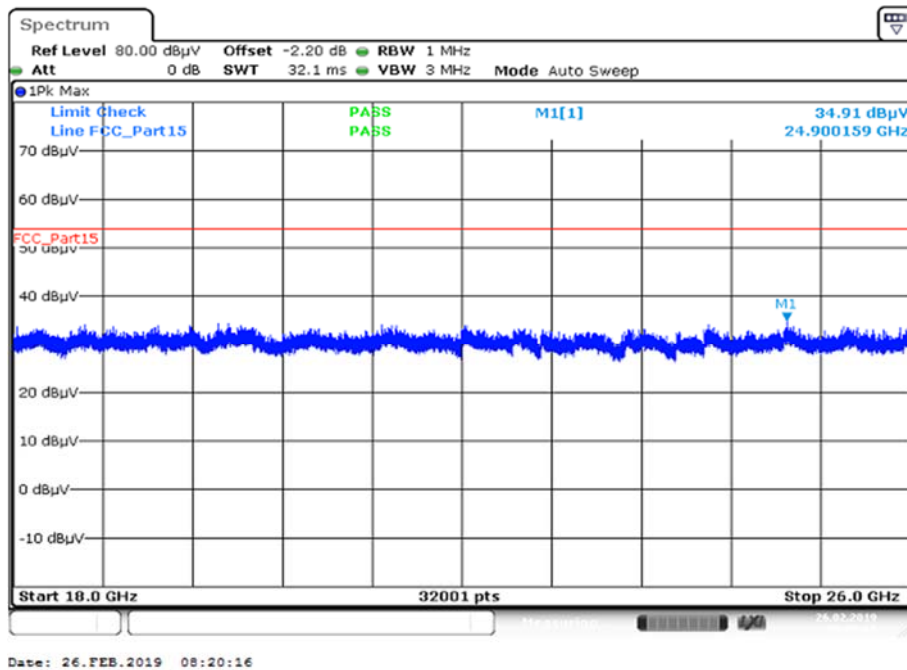
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 34.285 | 20.99 | 30.0 | 9.01 | 1000 | 120 | 101.0 | V | 67.0 | 13.7 |
| 38.378 | 22.59 | 30.0 | 7.41 | 1000 | 120 | 98.0 | V | 141.0 | 14.2 |
| 42.335 | 22.94 | 30.0 | 7.06 | 1000 | 120 | 98.0 | V | 52.0 | 14.6 |
| 62.976 | 18.95 | 30.0 | 11.05 | 1000 | 120 | 170.0 | V | 39.0 | 12.3 |
| 214.739 | 18.79 | 33.5 | 14.71 | 1000 | 120 | 101.0 | V | 108.0 | 12.8 |
| 641.607 | 24.54 | 36.0 | 11.46 | 1000 | 120 | 100.0 | V | 305.0 | 20.7 |

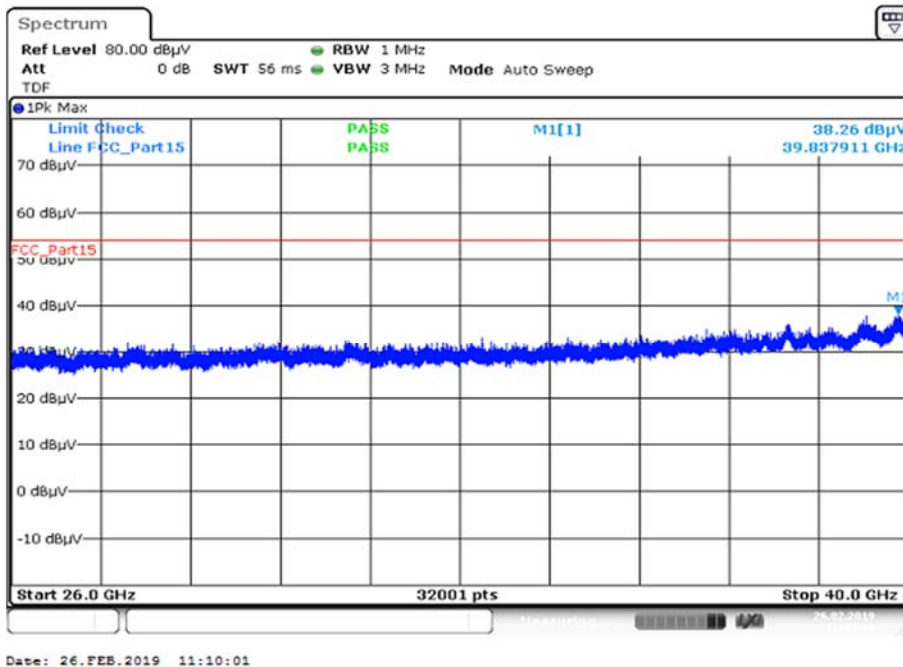
Plot 14: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; highest channel



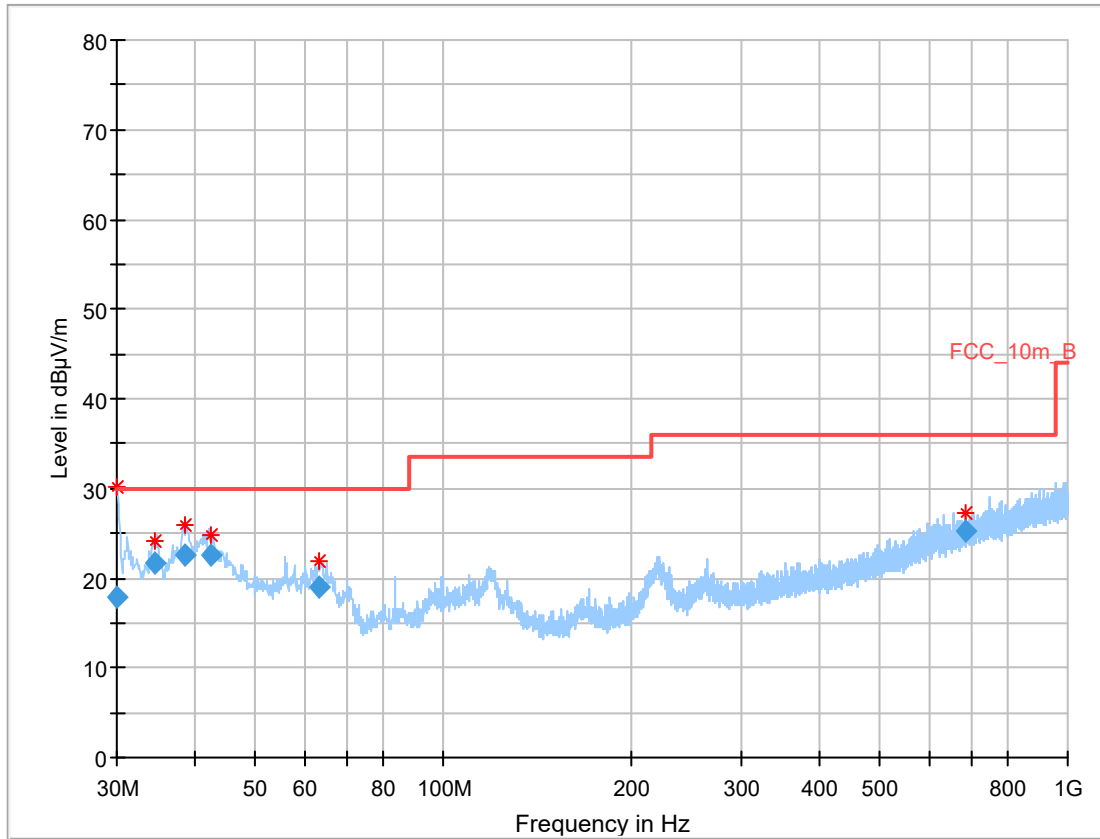
Plot 15: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; highest channel



Plot 16: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; highest channel



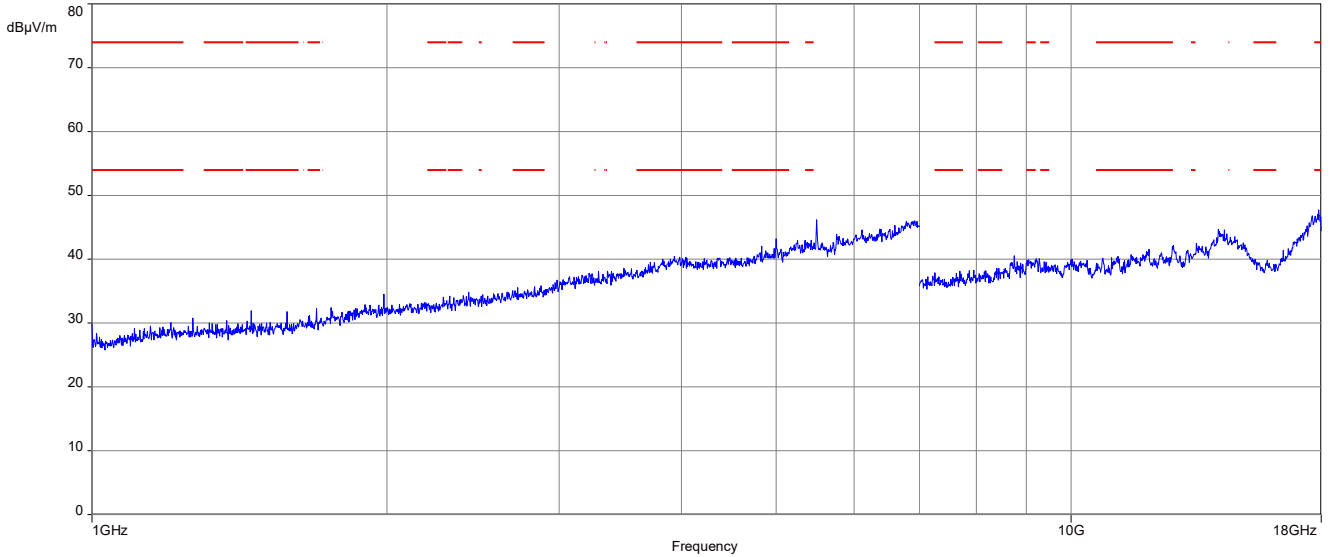
Plot 17: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel



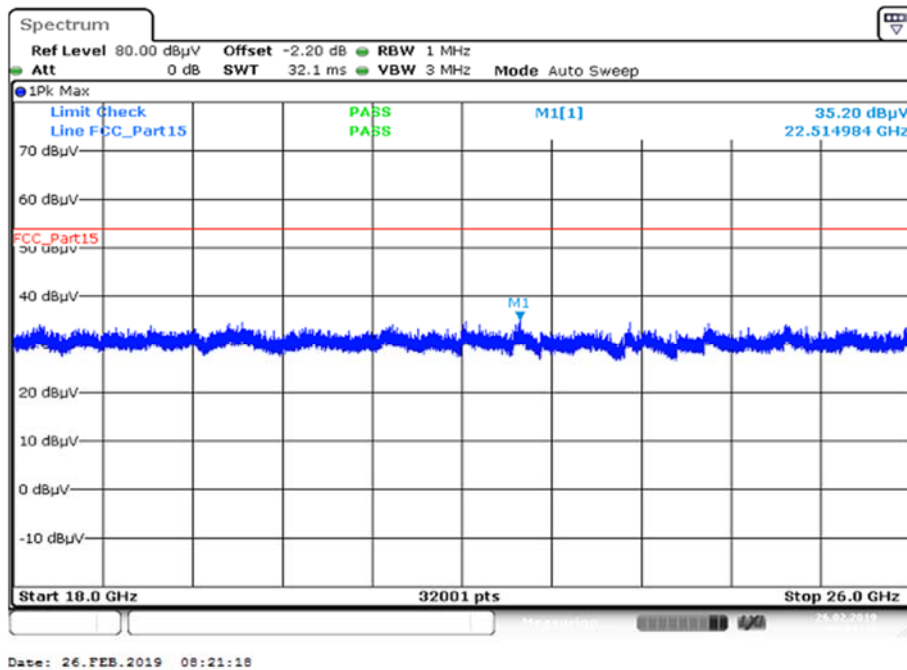
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.017 | 17.86 | 30.0 | 12.14 | 1000 | 120 | 101.0 | H | 11.0 | 13.0 |
| 34.490 | 21.78 | 30.0 | 8.22 | 1000 | 120 | 101.0 | V | 145.0 | 13.7 |
| 38.505 | 22.63 | 30.0 | 7.37 | 1000 | 120 | 98.0 | V | 308.0 | 14.2 |
| 42.364 | 22.50 | 30.0 | 7.50 | 1000 | 120 | 100.0 | V | 144.0 | 14.6 |
| 63.427 | 19.03 | 30.0 | 10.97 | 1000 | 120 | 98.0 | V | 67.0 | 12.2 |
| 684.969 | 25.20 | 36.0 | 10.80 | 1000 | 120 | 170.0 | H | 295.0 | 21.0 |

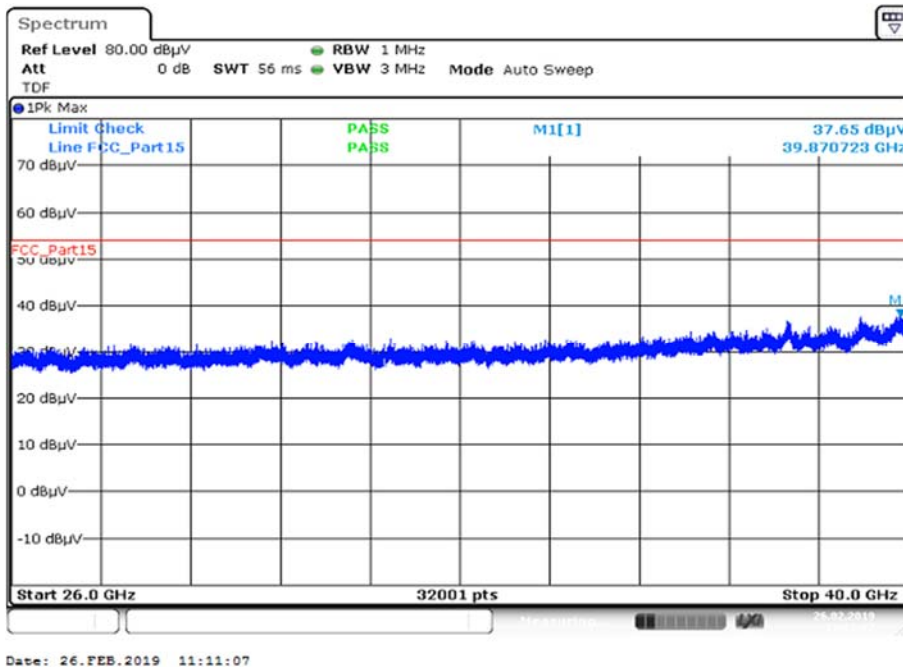
Plot 18: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel



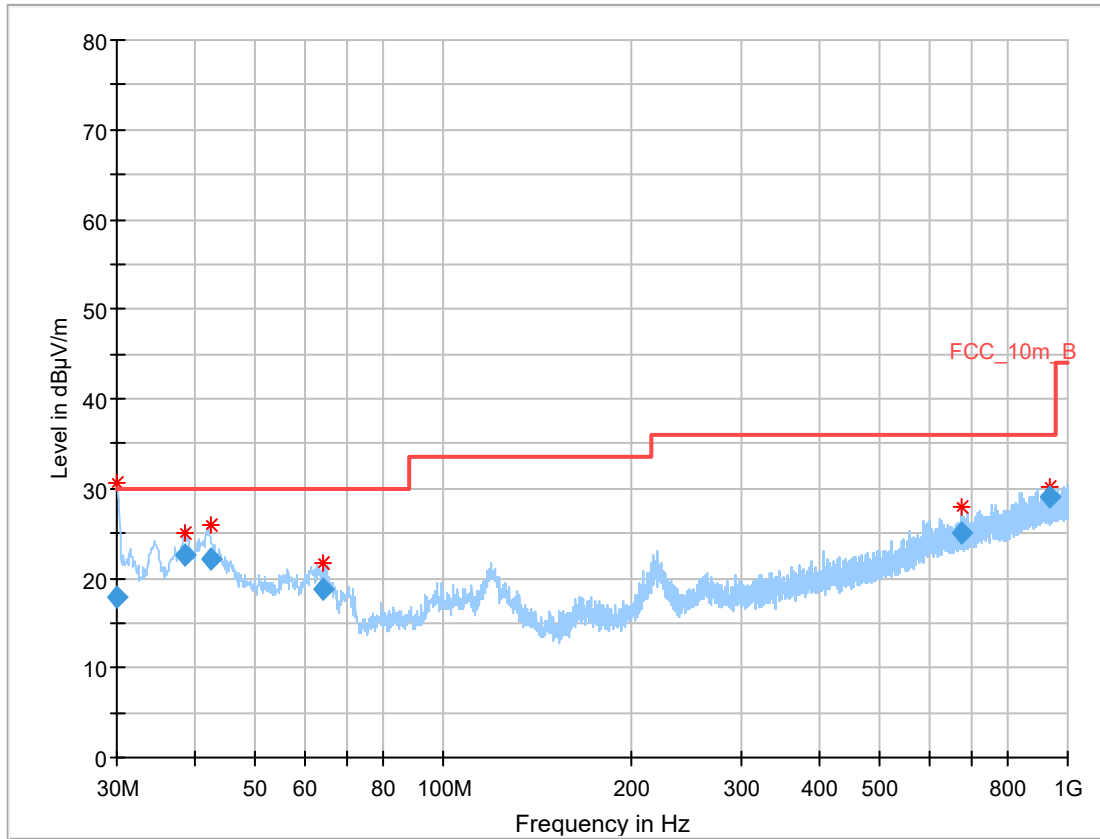
Plot 19: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel



Plot 20: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel



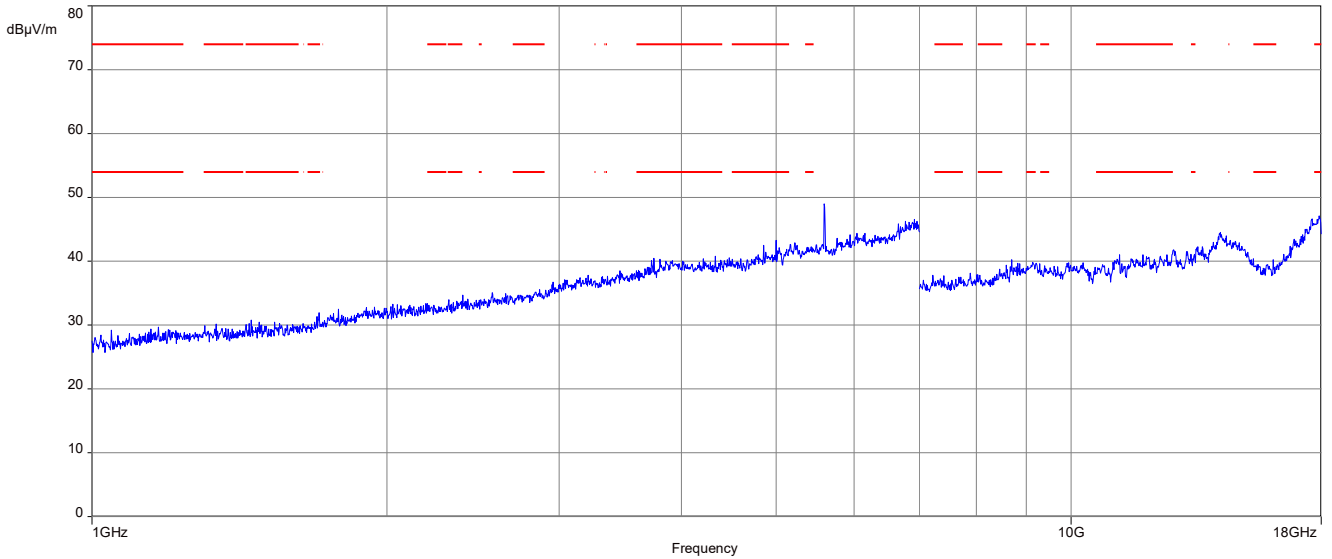
Plot 21: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; middle channel



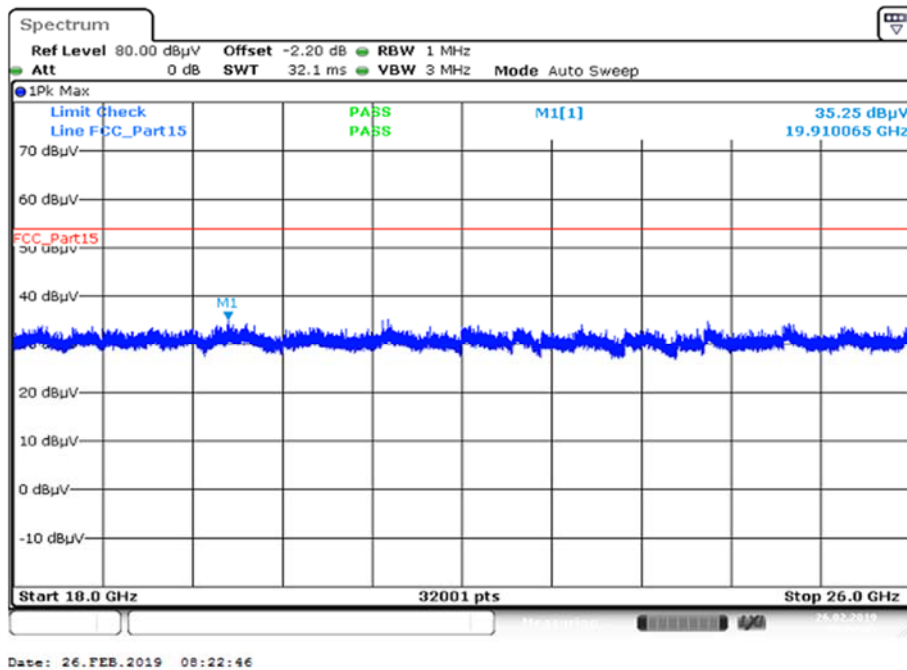
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.008 | 17.90 | 30.0 | 12.10 | 1000 | 120 | 101.0 | H | 253.0 | 13.0 |
| 38.660 | 22.59 | 30.0 | 7.41 | 1000 | 120 | 98.0 | V | 341.0 | 14.2 |
| 42.360 | 22.20 | 30.0 | 7.80 | 1000 | 120 | 100.0 | V | 181.0 | 14.6 |
| 64.107 | 18.77 | 30.0 | 11.23 | 1000 | 120 | 98.0 | V | 13.0 | 12.1 |
| 677.714 | 25.12 | 36.0 | 10.88 | 1000 | 120 | 98.0 | V | 350.0 | 21.0 |
| 933.562 | 29.13 | 36.0 | 6.87 | 1000 | 120 | 98.0 | H | 177.0 | 24.0 |

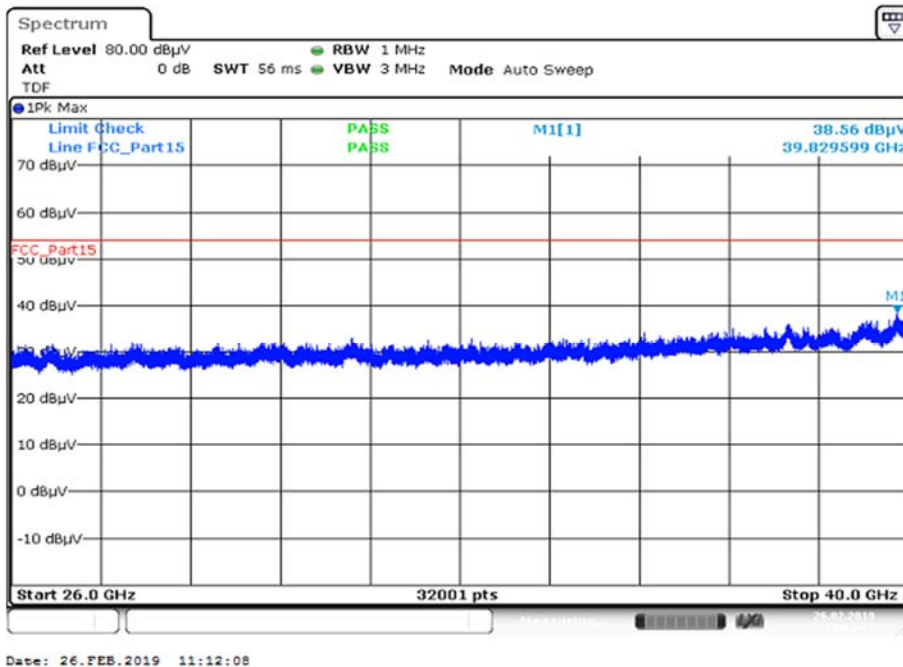
Plot 22: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; middle channel



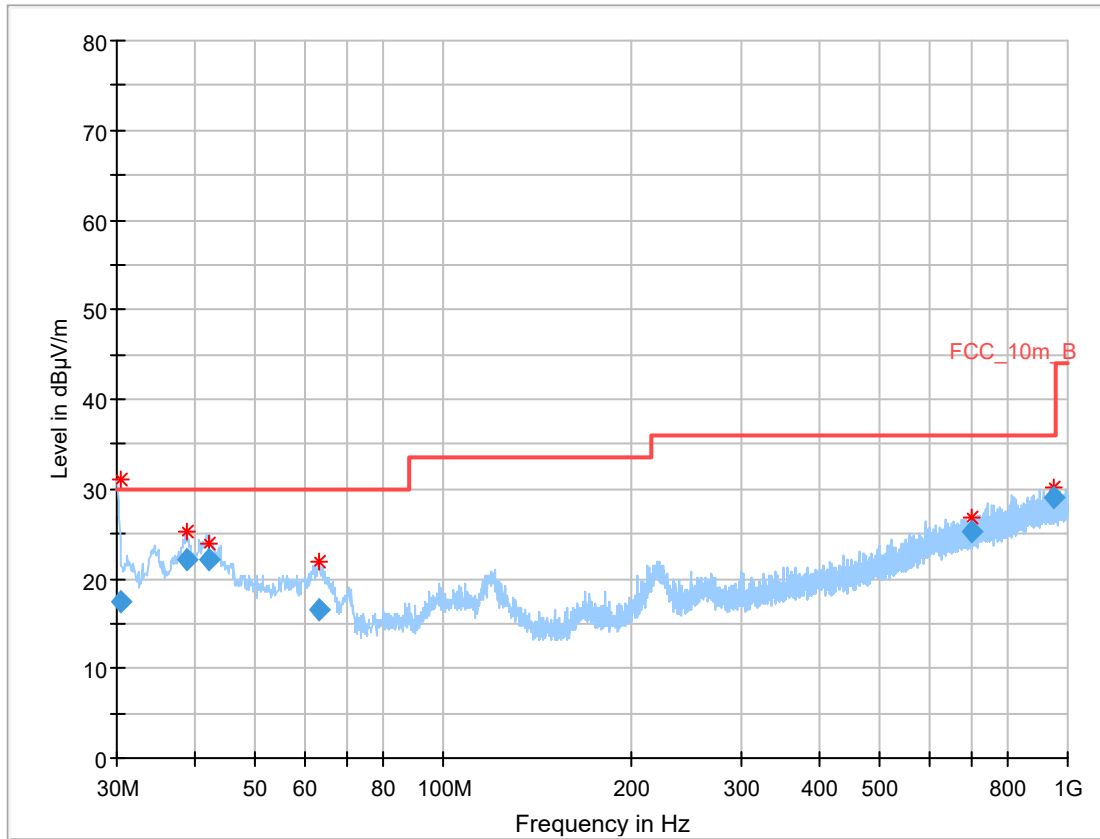
Plot 23: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; middle channel



Plot 24: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; middle channel



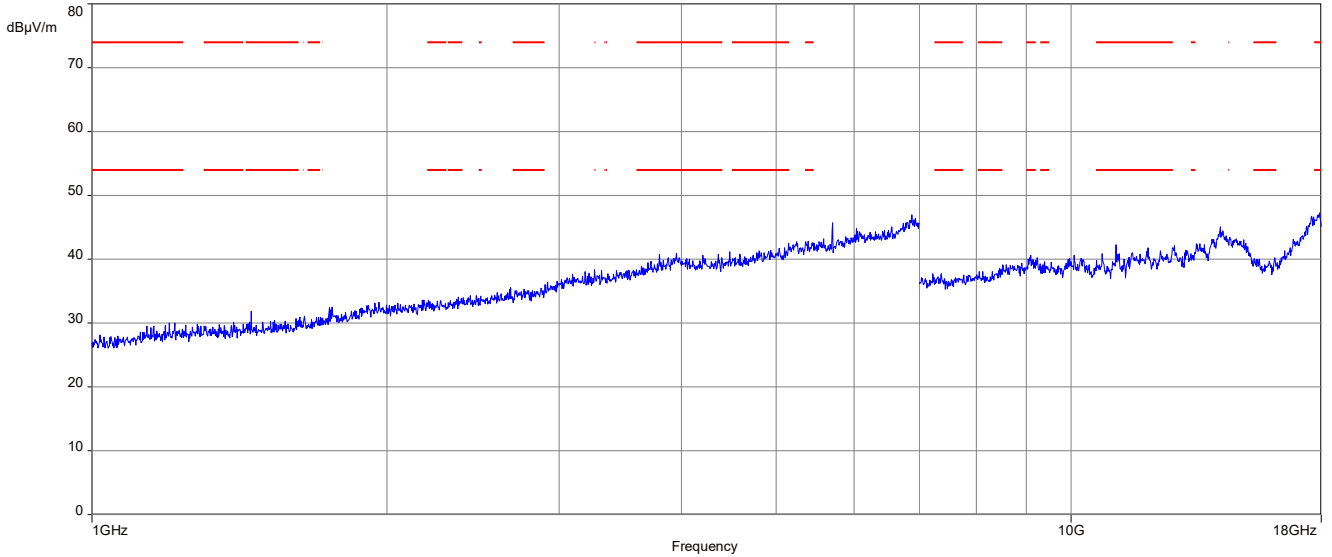
Plot 25: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; highest channel



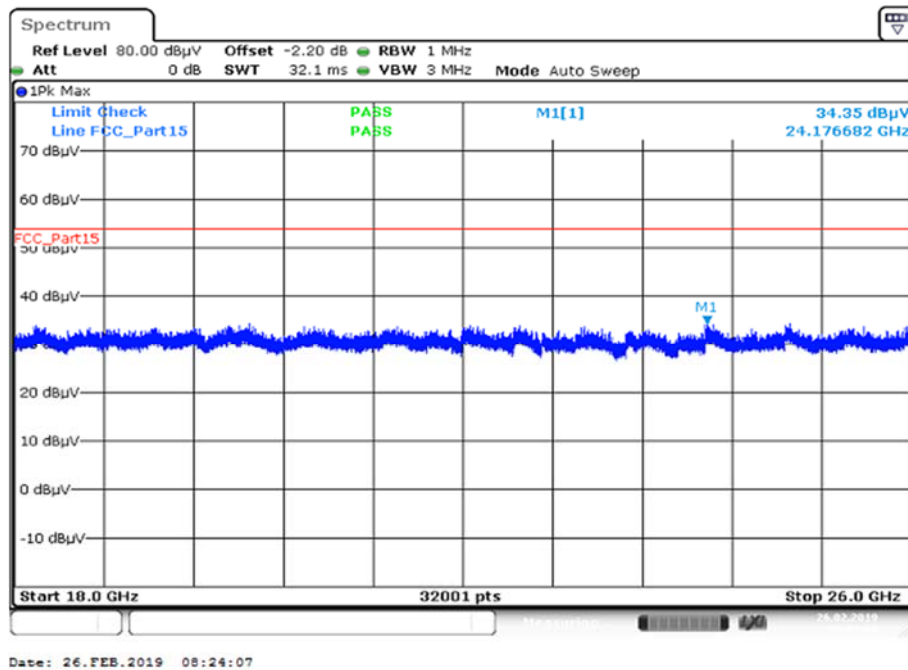
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.453 | 17.48 | 30.0 | 12.52 | 1000 | 120 | 101.0 | H | 282.0 | 13.1 |
| 38.716 | 22.02 | 30.0 | 7.98 | 1000 | 120 | 98.0 | V | 9.0 | 14.2 |
| 42.279 | 22.03 | 30.0 | 7.97 | 1000 | 120 | 98.0 | V | 0.0 | 14.5 |
| 63.334 | 16.58 | 30.0 | 13.42 | 1000 | 120 | 98.0 | V | 69.0 | 12.2 |
| 700.158 | 25.36 | 36.0 | 10.64 | 1000 | 120 | 98.0 | V | 288.0 | 21.1 |
| 946.942 | 29.07 | 36.0 | 6.93 | 1000 | 120 | 170.0 | H | 104.0 | 24.1 |

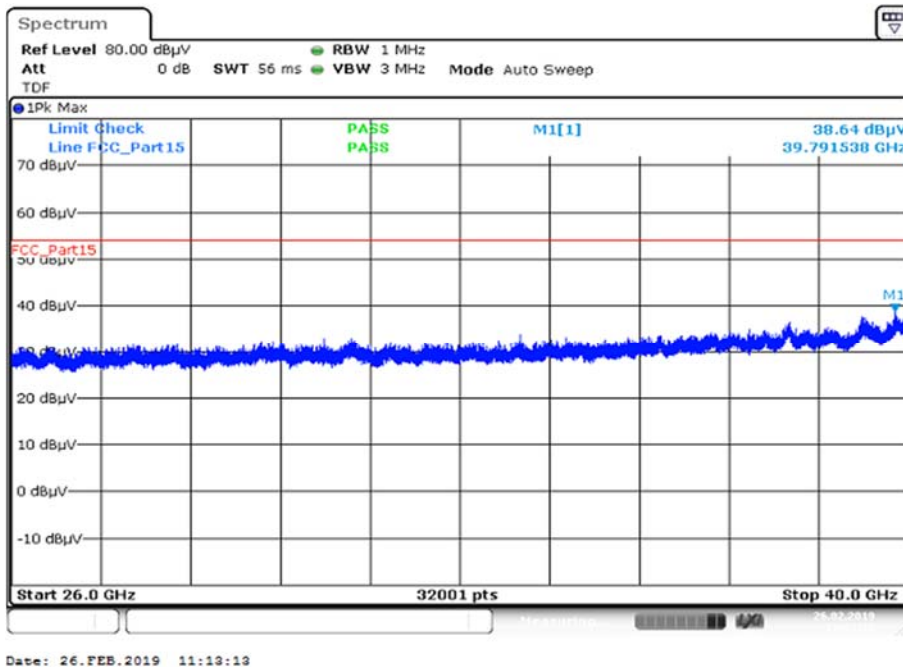
Plot 26: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; highest channel



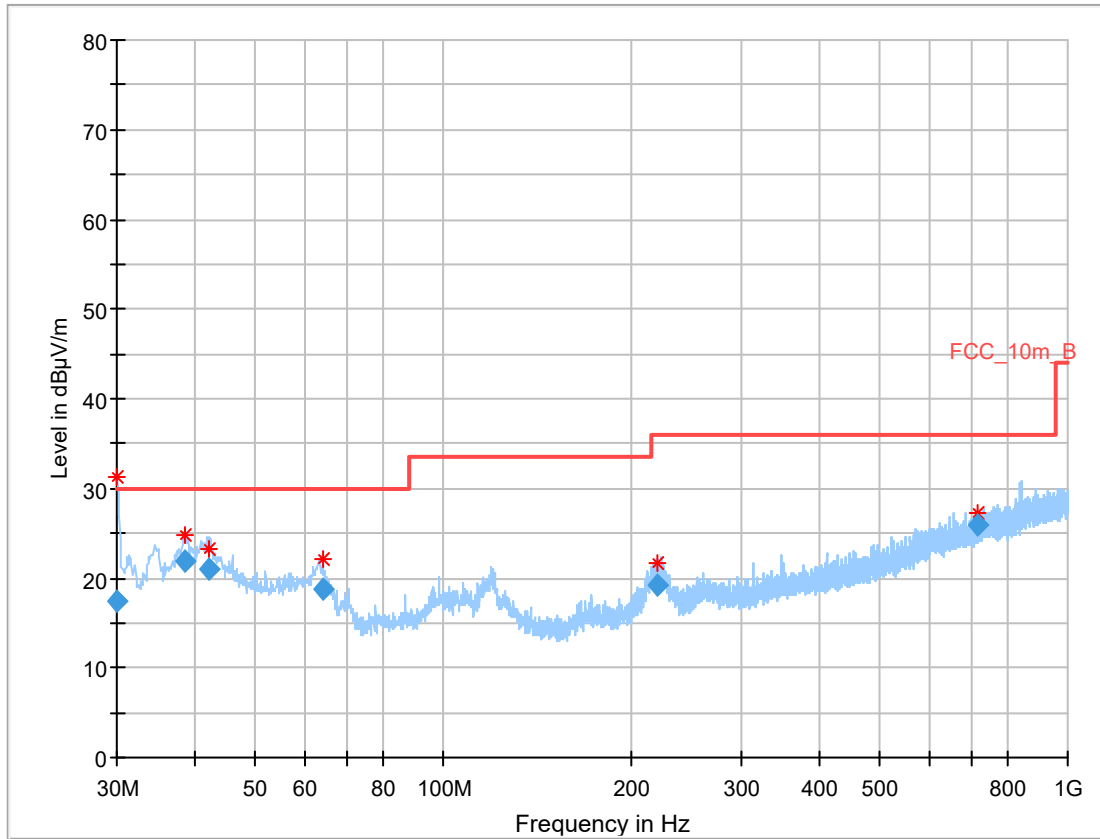
Plot 27: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; highest channel



Plot 28: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; highest channel



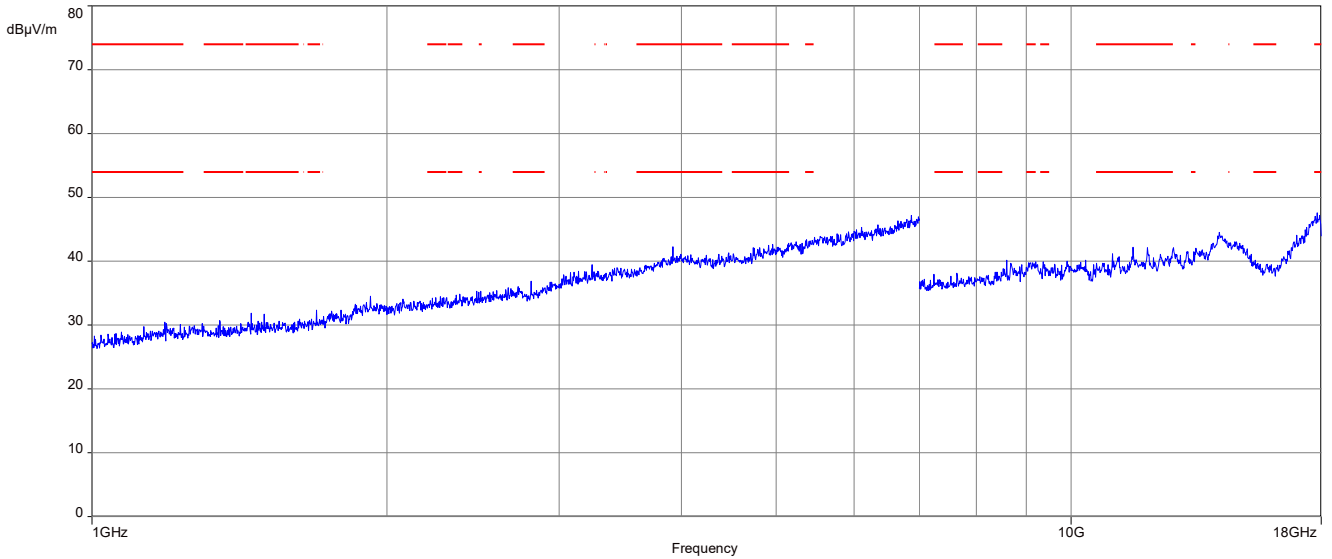
Plot 29: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



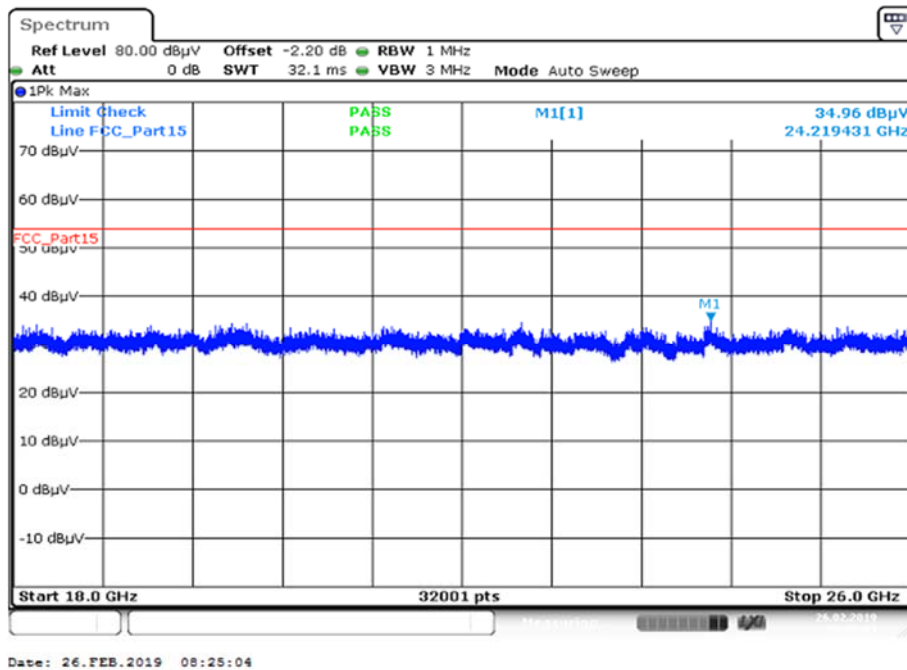
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.060 | 17.34 | 30.0 | 12.66 | 1000 | 120 | 101.0 | H | 71.0 | 13.0 |
| 38.640 | 22.00 | 30.0 | 8.00 | 1000 | 120 | 98.0 | V | 339.0 | 14.2 |
| 42.074 | 20.96 | 30.0 | 9.04 | 1000 | 120 | 170.0 | V | 198.0 | 14.5 |
| 64.011 | 18.85 | 30.0 | 11.15 | 1000 | 120 | 101.0 | V | 16.0 | 12.1 |
| 220.340 | 19.27 | 36.0 | 16.73 | 1000 | 120 | 100.0 | V | 137.0 | 12.9 |
| 719.829 | 25.90 | 36.0 | 10.10 | 1000 | 120 | 170.0 | H | 294.0 | 21.6 |

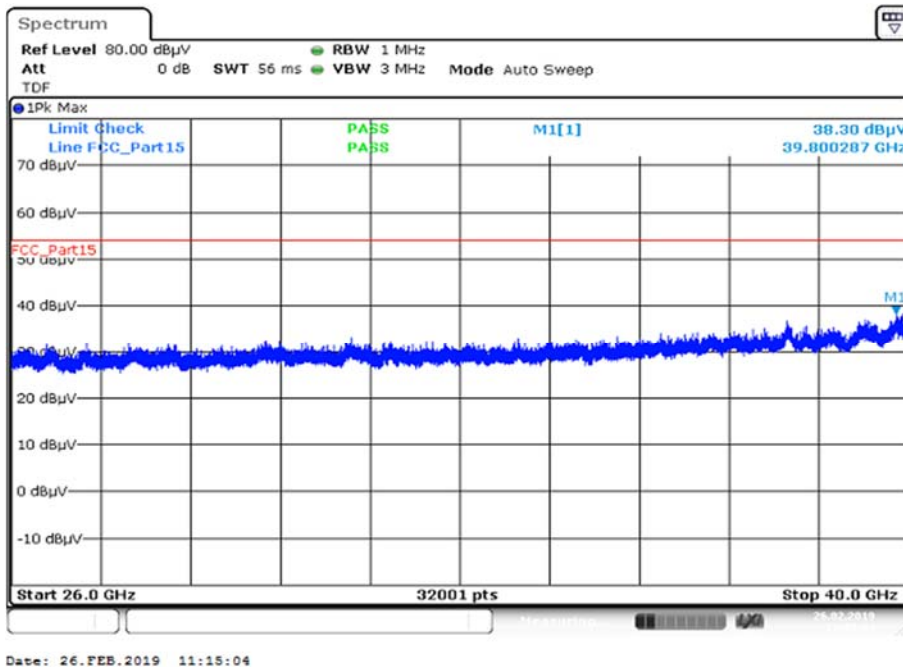
Plot 30: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



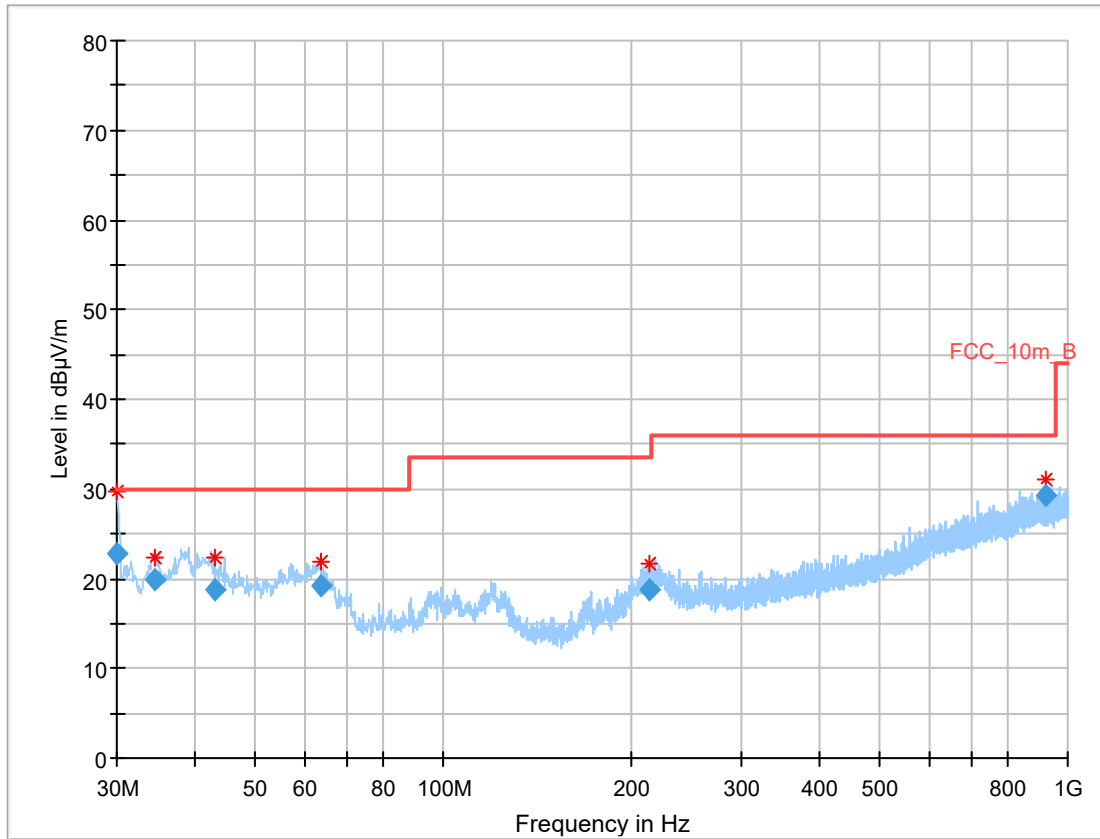
Plot 31: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



Plot 32: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



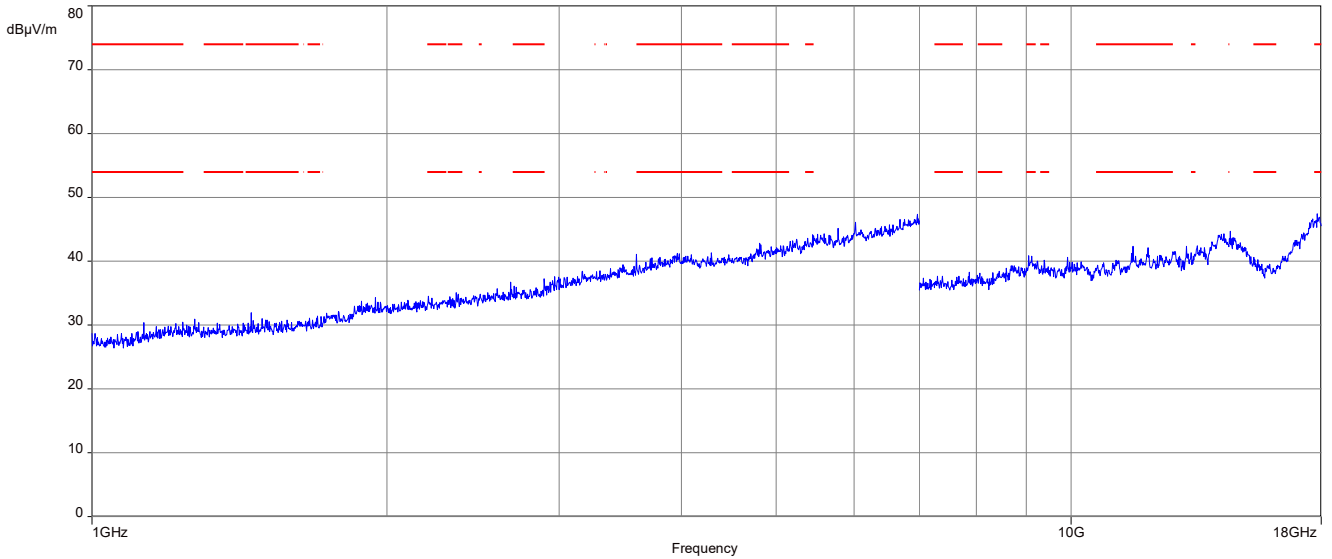
Plot 33: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; middle channel



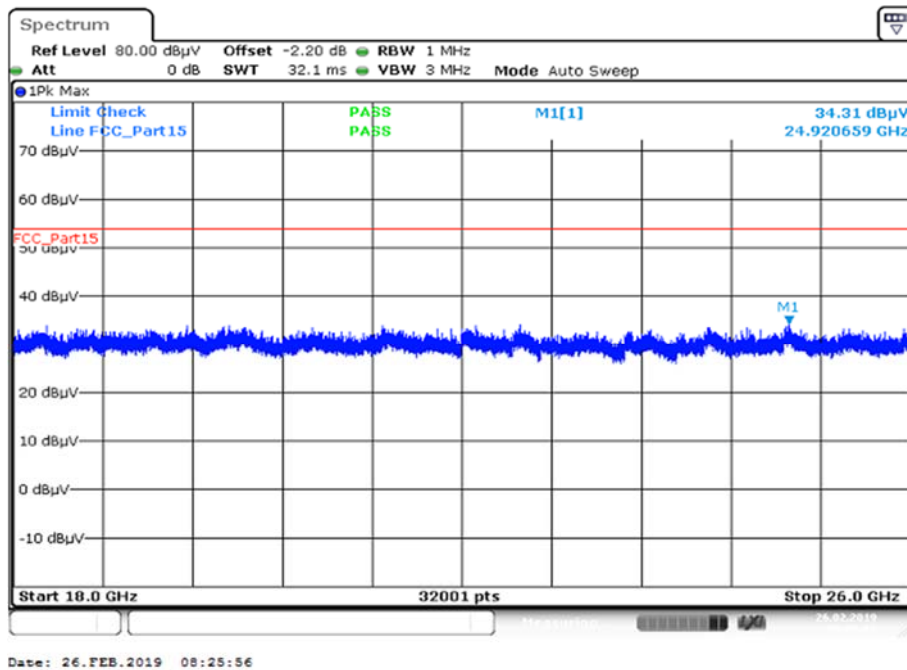
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.006 | 22.76 | 30.0 | 7.24 | 1000 | 120 | 170.0 | H | -10.0 | 13.0 |
| 34.419 | 19.99 | 30.0 | 10.01 | 1000 | 120 | 101.0 | V | 264.0 | 13.7 |
| 42.966 | 18.80 | 30.0 | 11.20 | 1000 | 120 | 101.0 | V | -9.0 | 14.6 |
| 63.506 | 19.12 | 30.0 | 10.88 | 1000 | 120 | 170.0 | V | 36.0 | 12.2 |
| 214.093 | 18.71 | 33.5 | 14.79 | 1000 | 120 | 98.0 | V | 274.0 | 12.8 |
| 921.786 | 29.22 | 36.0 | 6.78 | 1000 | 120 | 170.0 | H | 197.0 | 24.0 |

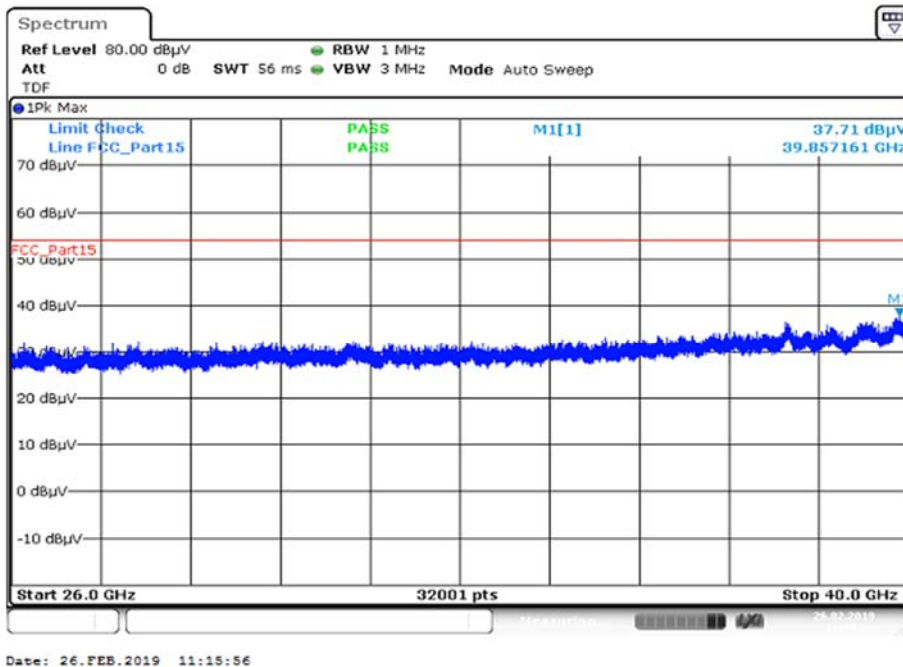
Plot 34: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; middle channel



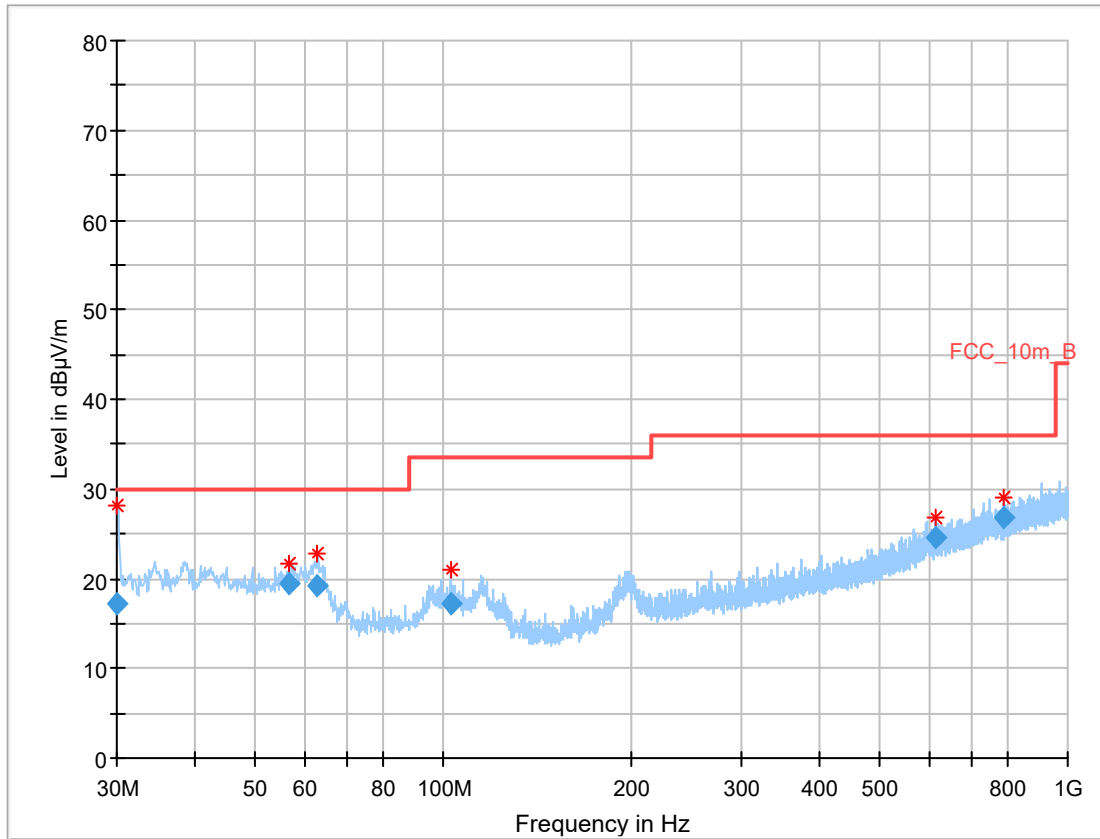
Plot 35: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; middle channel



Plot 36: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; middle channel



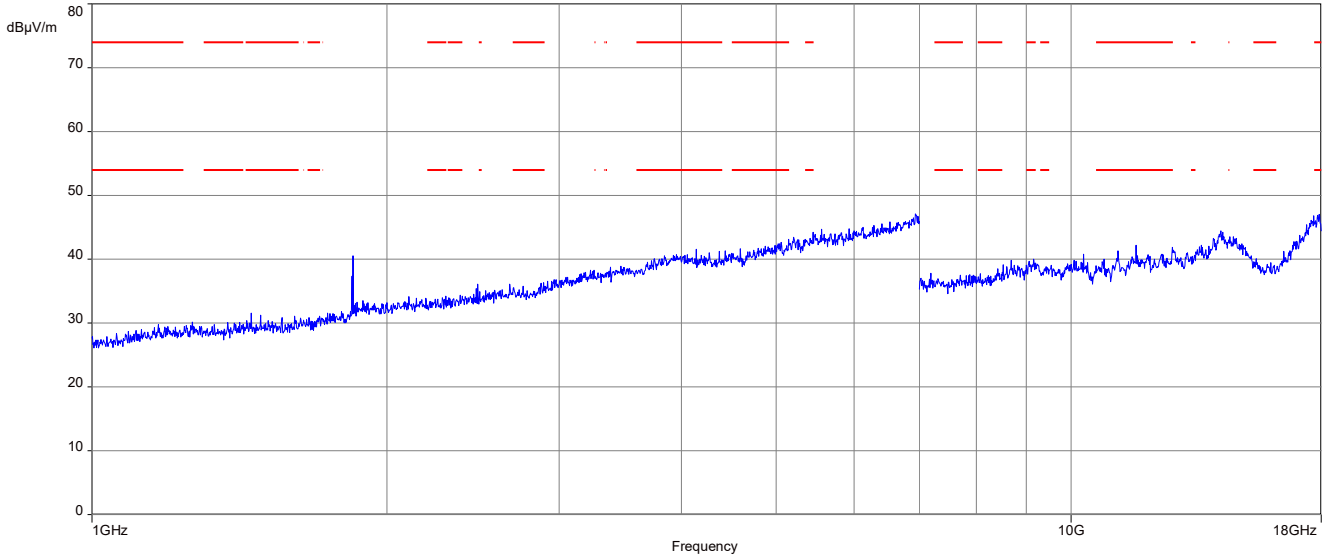
Plot 37: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; highest channel



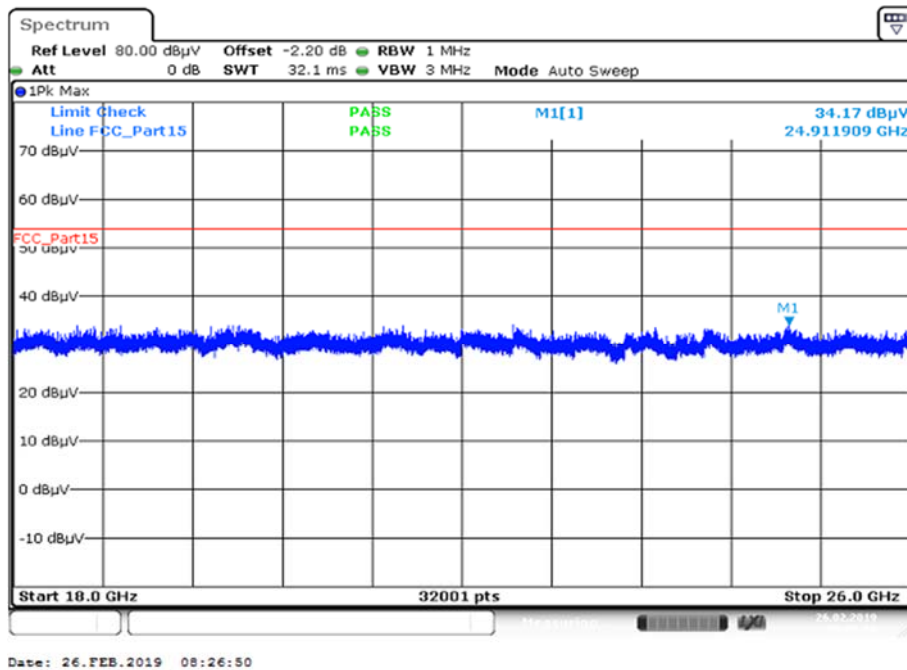
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.028 | 17.29 | 30.0 | 12.71 | 1000 | 120 | 101.0 | H | 299.0 | 13.0 |
| 56.714 | 19.38 | 30.0 | 10.62 | 1000 | 120 | 101.0 | V | 350.0 | 13.8 |
| 62.616 | 19.15 | 30.0 | 10.85 | 1000 | 120 | 160.0 | V | 341.0 | 12.4 |
| 102.656 | 17.29 | 33.5 | 16.21 | 1000 | 120 | 100.0 | V | 350.0 | 12.9 |
| 615.448 | 24.54 | 36.0 | 11.46 | 1000 | 120 | 160.0 | V | 169.0 | 20.5 |
| 790.231 | 26.73 | 36.0 | 9.27 | 1000 | 120 | 160.0 | H | 194.0 | 22.4 |

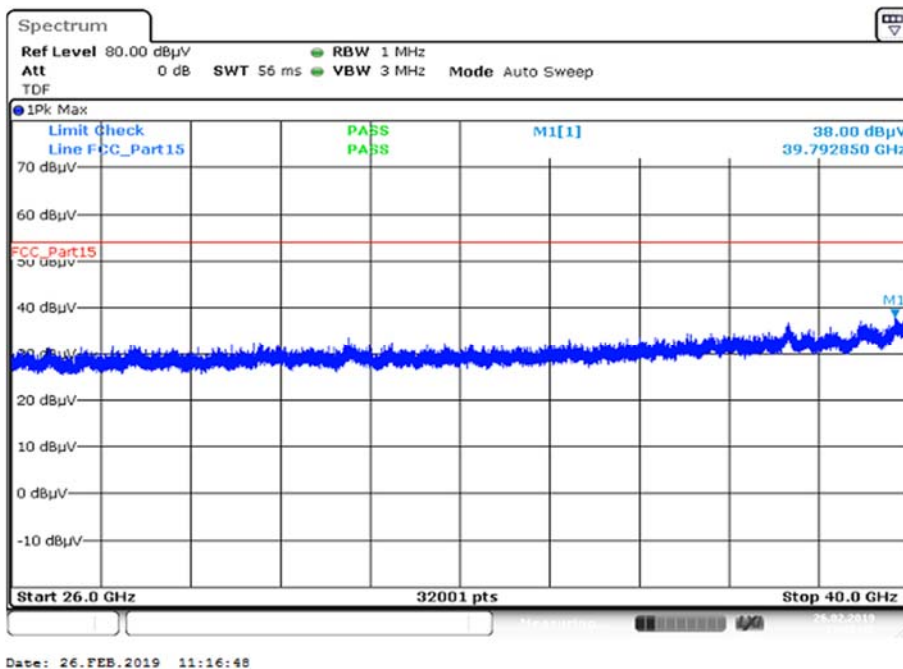
Plot 38: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; highest channel



Plot 39: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; highest channel

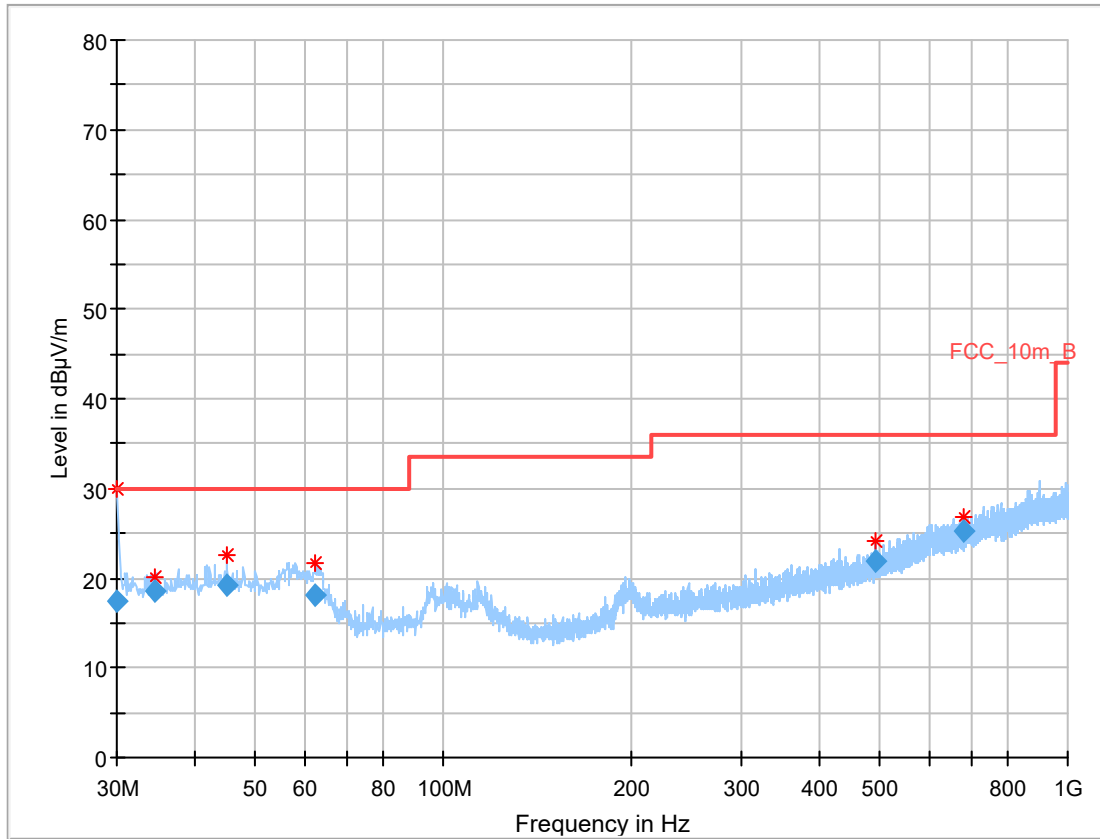


Plot 40: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; highest channel



Plots: 40 MHz channel bandwidth

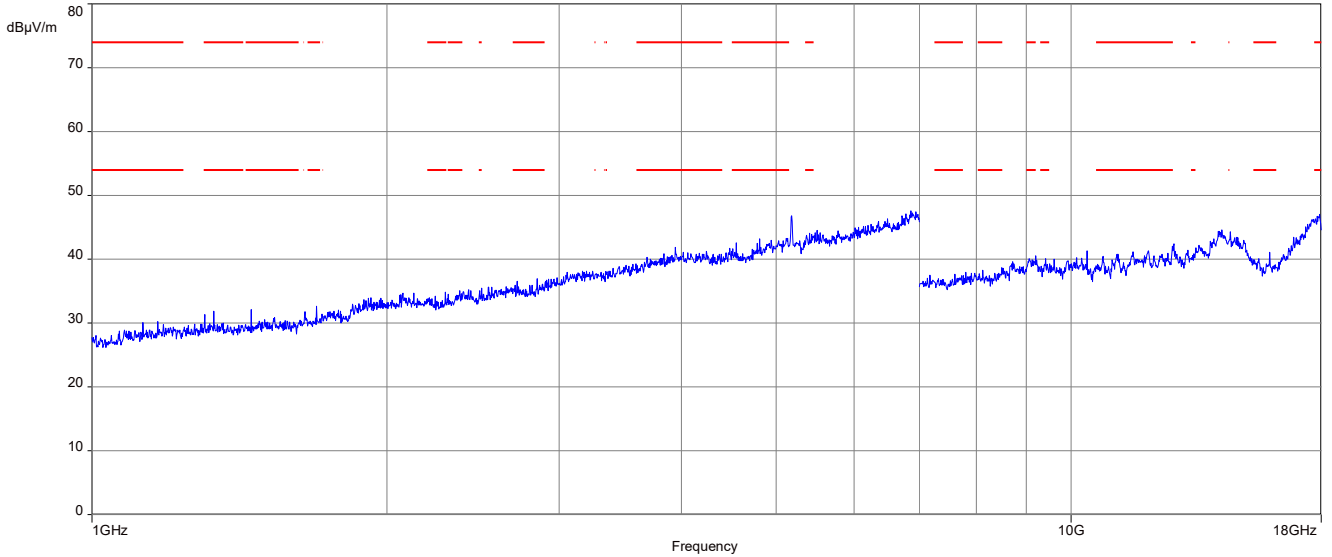
Plot 1: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



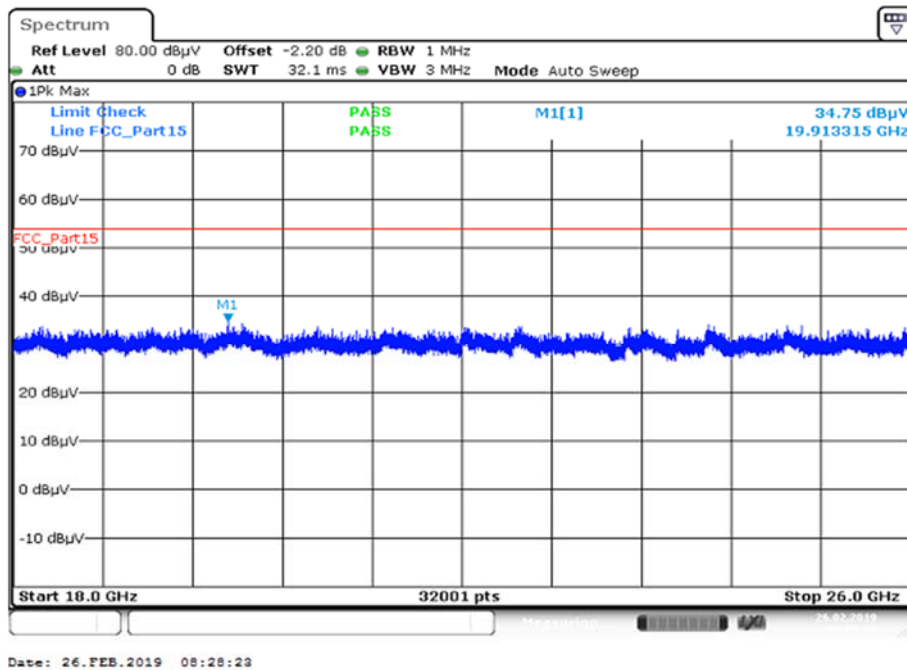
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.006 | 17.45 | 30.0 | 12.55 | 1000 | 120 | 101.0 | H | 266.0 | 13.0 |
| 34.587 | 18.53 | 30.0 | 11.47 | 1000 | 120 | 160.0 | V | 147.0 | 13.7 |
| 45.109 | 19.16 | 30.0 | 10.84 | 1000 | 120 | 101.0 | V | 22.0 | 14.8 |
| 62.173 | 18.19 | 30.0 | 11.81 | 1000 | 120 | 101.0 | V | 350.0 | 12.5 |
| 492.691 | 21.95 | 36.0 | 14.05 | 1000 | 120 | 160.0 | H | 0.0 | 18.1 |
| 680.374 | 25.17 | 36.0 | 10.83 | 1000 | 120 | 160.0 | H | 230.0 | 21.0 |

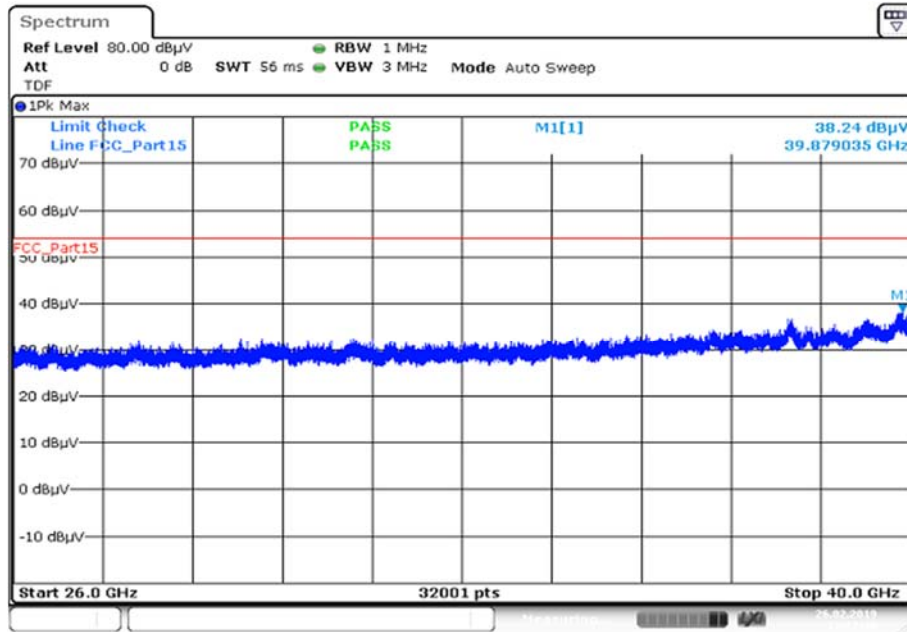
Plot 2: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



Plot 3: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-1; lowest channel

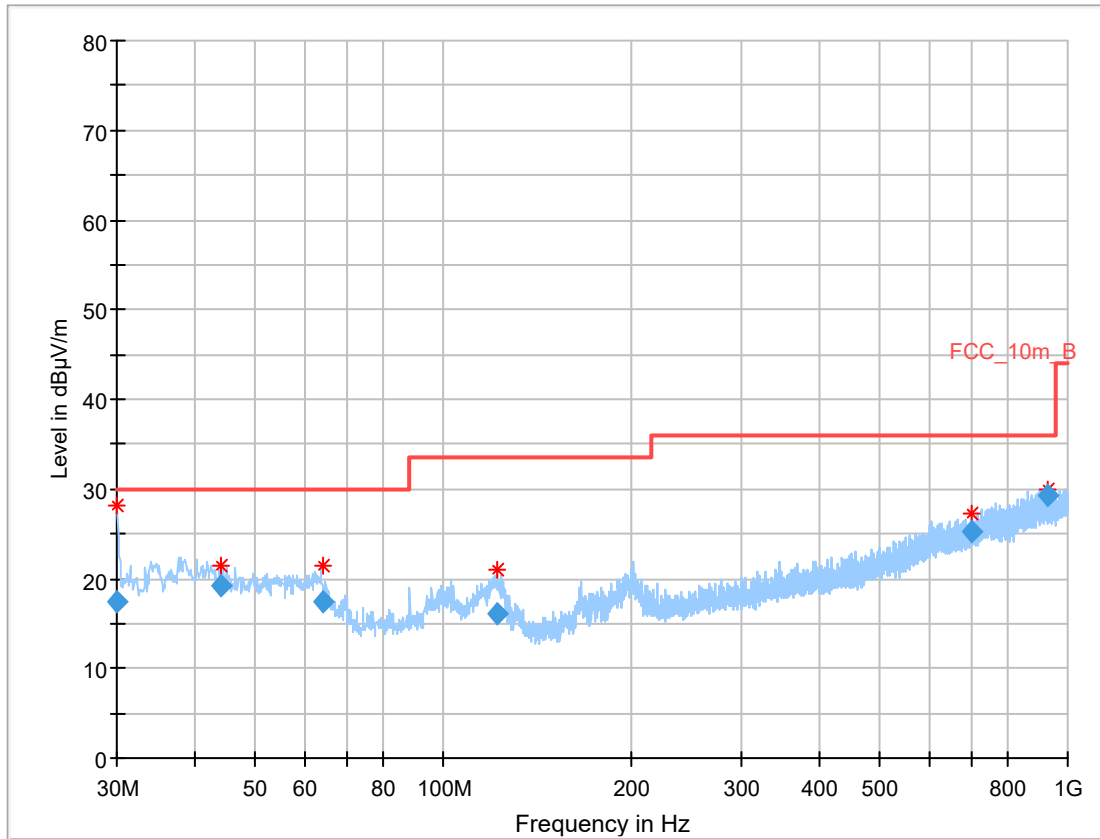


Plot 4: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; lowest channel



Date: 26.FEB.2019 11:17:40

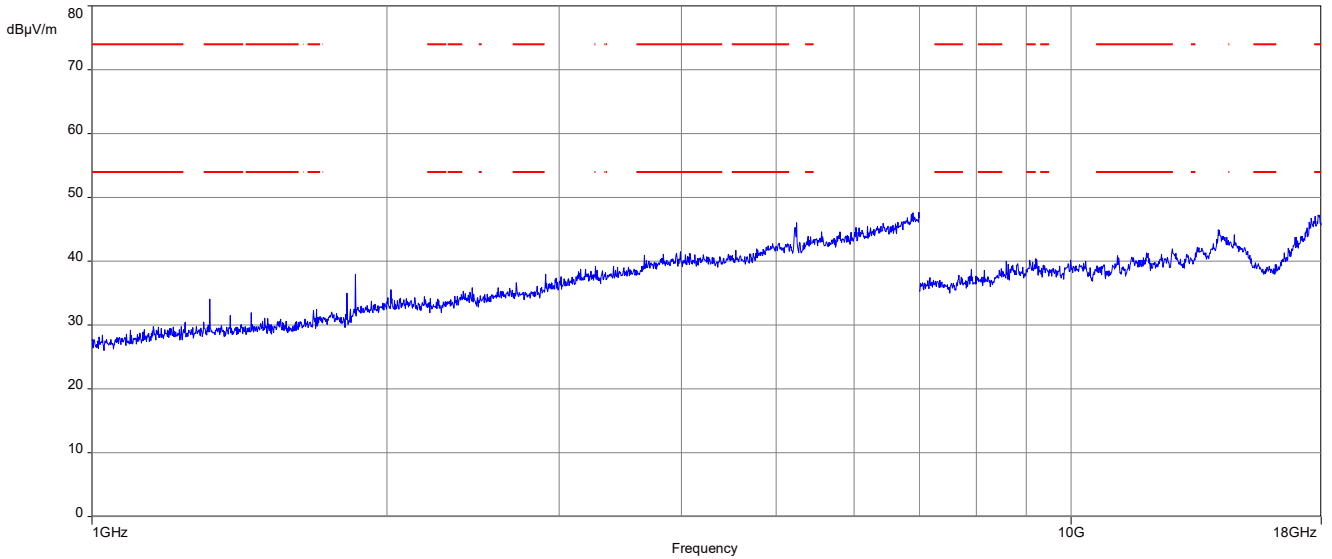
Plot 5: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-1; highest channel



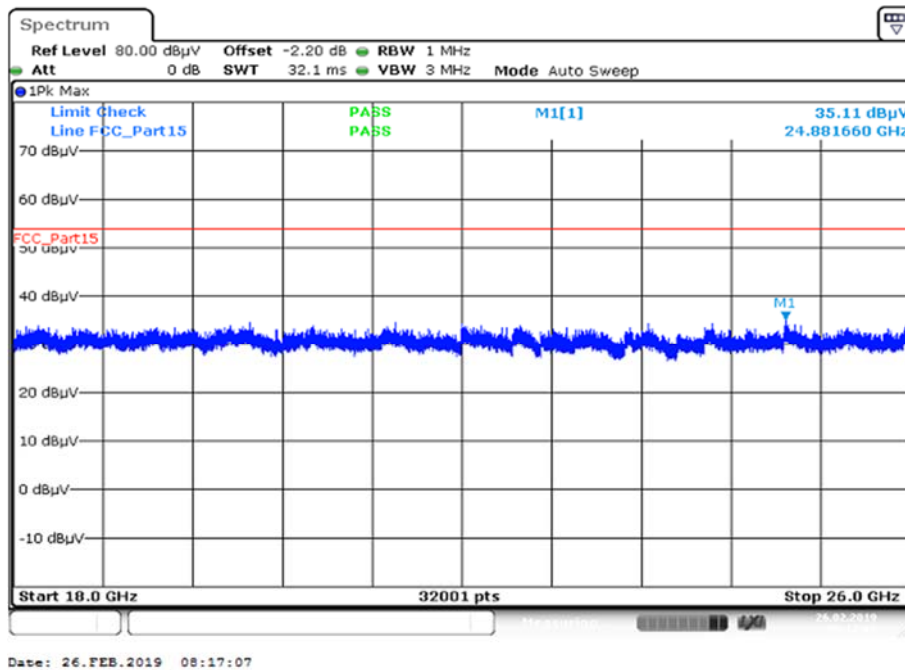
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.008 | 17.40 | 30.0 | 12.60 | 1000 | 120 | 101.0 | H | 87.0 | 13.0 |
| 44.087 | 19.28 | 30.0 | 10.72 | 1000 | 120 | 98.0 | V | 276.0 | 14.7 |
| 64.293 | 17.36 | 30.0 | 12.64 | 1000 | 120 | 101.0 | V | 285.0 | 12.0 |
| 121.829 | 16.15 | 33.5 | 17.35 | 1000 | 120 | 160.0 | V | 121.0 | 11.1 |
| 700.147 | 25.36 | 36.0 | 10.64 | 1000 | 120 | 160.0 | V | 1.0 | 21.1 |
| 926.542 | 29.22 | 36.0 | 6.78 | 1000 | 120 | 160.0 | H | 349.0 | 24.0 |

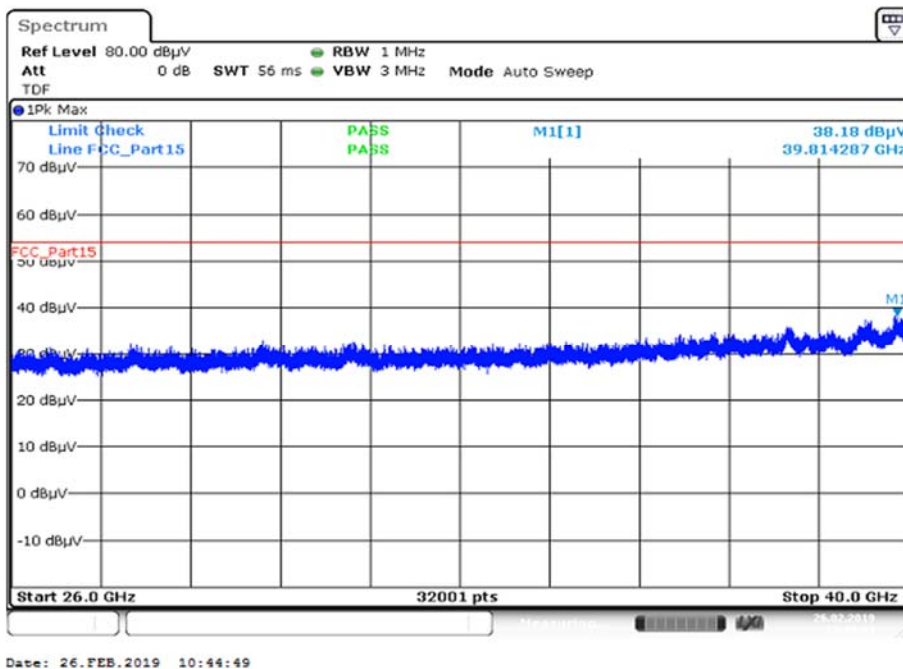
Plot 6: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-1; highest channel



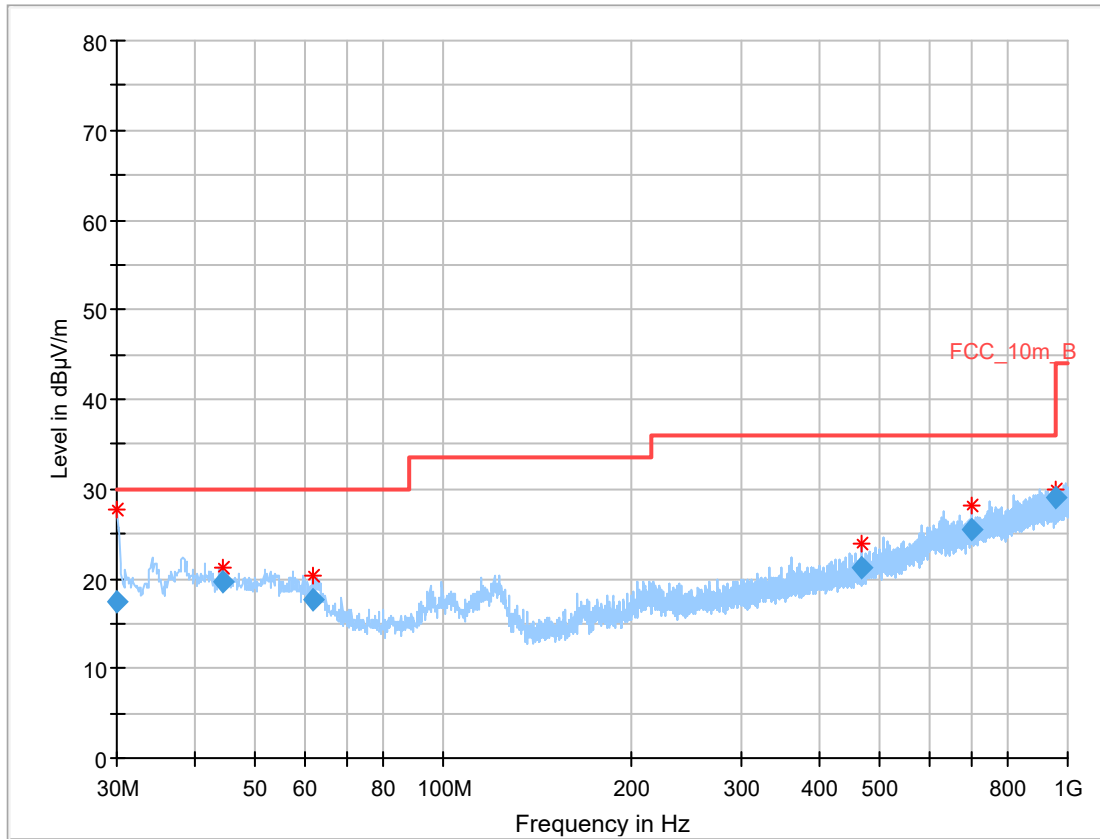
Plot 7: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-1; highest channel



Plot 8: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-1; highest channel



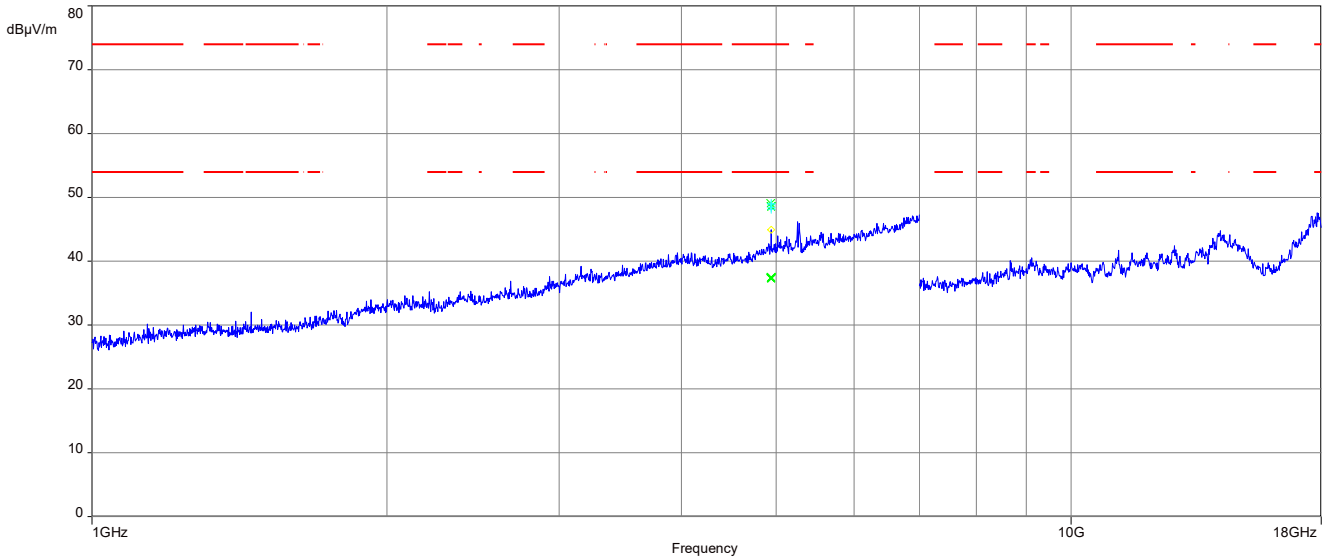
Plot 9: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel



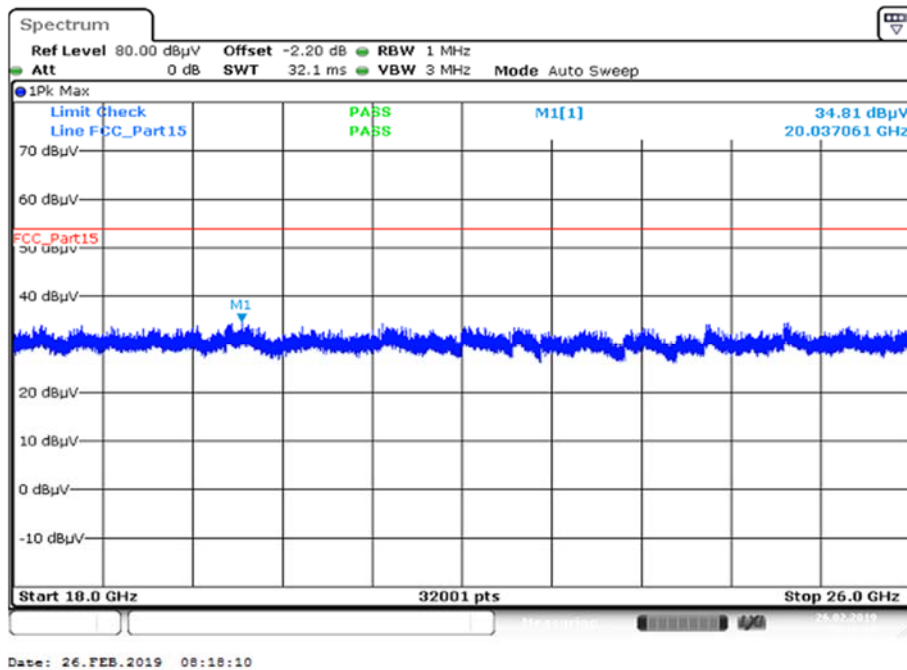
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.006 | 17.50 | 30.0 | 12.50 | 1000 | 120 | 101.0 | H | 163.0 | 13.0 |
| 44.236 | 19.61 | 30.0 | 10.39 | 1000 | 120 | 98.0 | V | 0.0 | 14.7 |
| 62.063 | 17.68 | 30.0 | 12.32 | 1000 | 120 | 160.0 | V | 350.0 | 12.5 |
| 467.683 | 21.27 | 36.0 | 14.73 | 1000 | 120 | 101.0 | V | 12.0 | 17.7 |
| 701.155 | 25.40 | 36.0 | 10.60 | 1000 | 120 | 160.0 | H | 301.0 | 21.2 |
| 958.178 | 29.16 | 36.0 | 6.84 | 1000 | 120 | 160.0 | H | 309.0 | 24.2 |

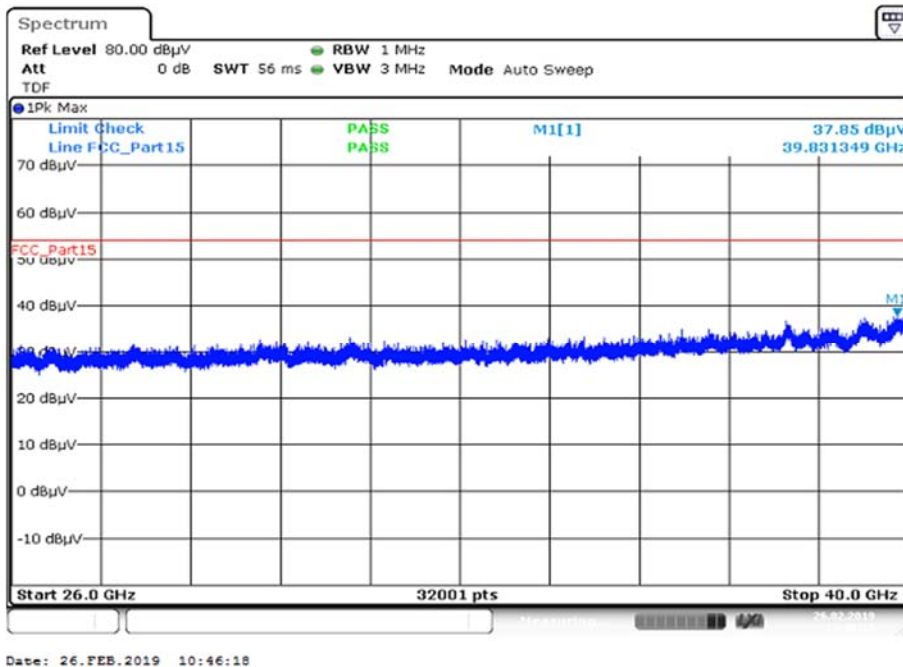
Plot 10: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel



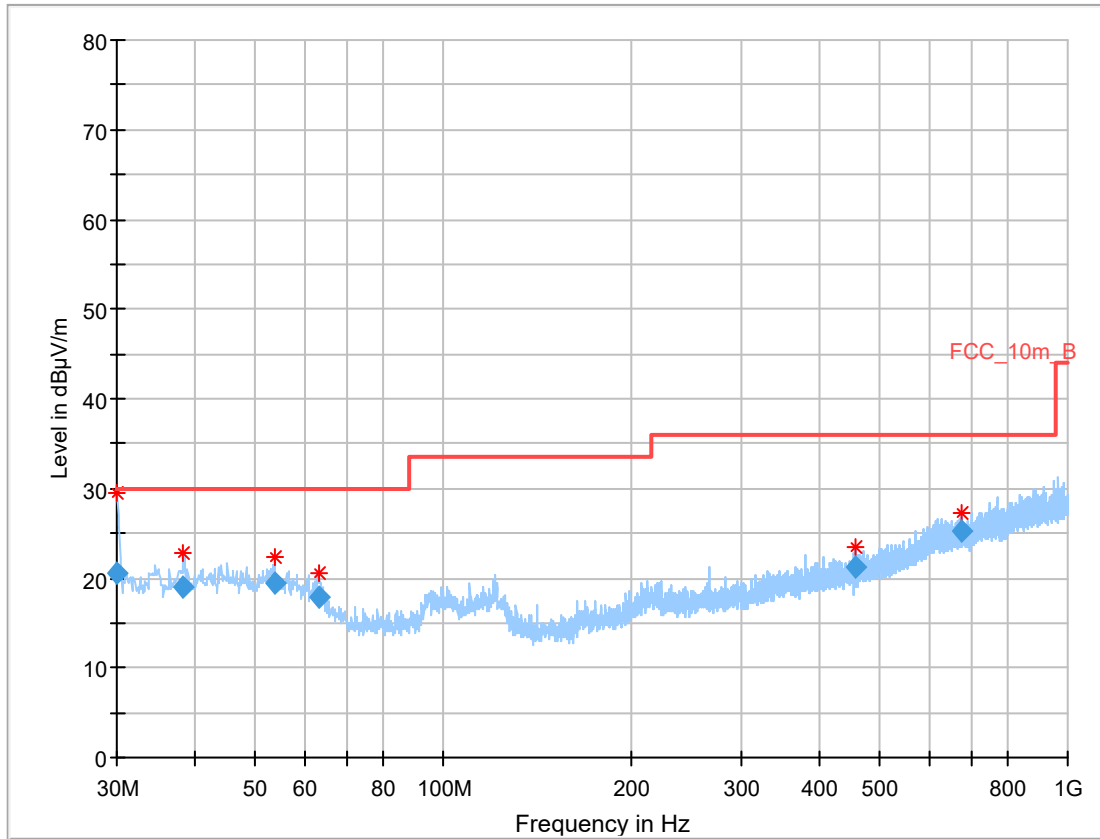
Plot 11: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel



Plot 12: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; lowest channel



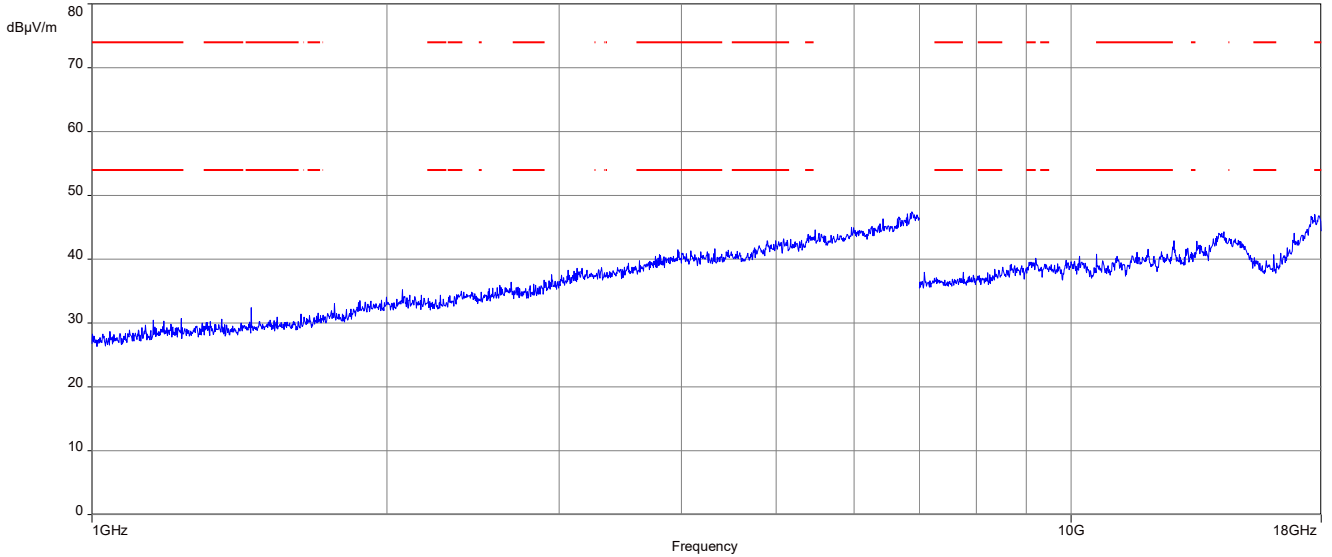
Plot 13: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2A; highest channel



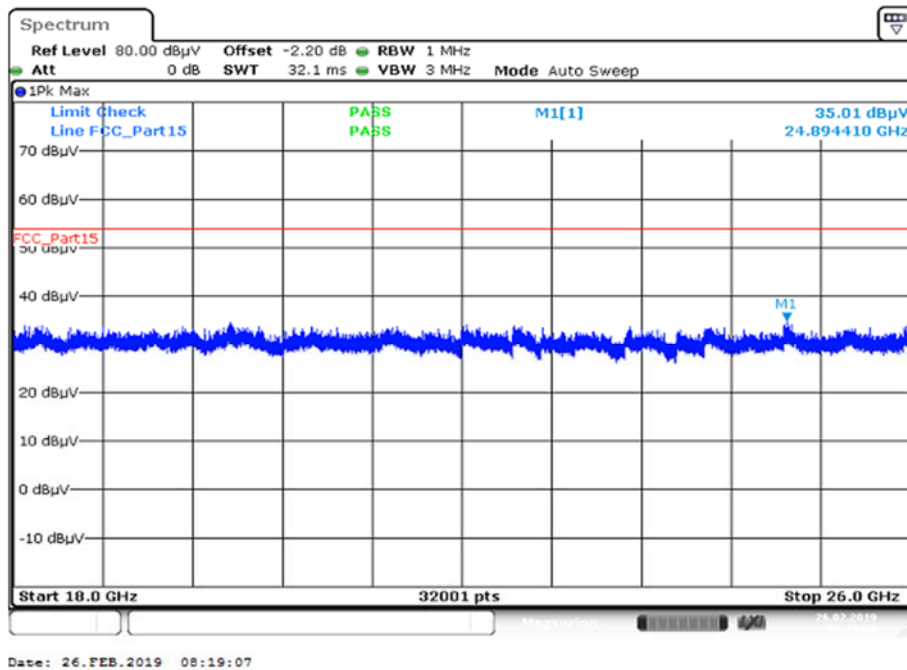
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.020 | 20.49 | 30.0 | 9.51 | 1000 | 120 | 160.0 | H | 249.0 | 13.0 |
| 38.393 | 18.91 | 30.0 | 11.09 | 1000 | 120 | 160.0 | V | 17.0 | 14.2 |
| 53.713 | 19.37 | 30.0 | 10.63 | 1000 | 120 | 101.0 | V | 228.0 | 14.4 |
| 63.115 | 17.81 | 30.0 | 12.19 | 1000 | 120 | 101.0 | V | 1.0 | 12.3 |
| 458.432 | 21.12 | 36.0 | 14.88 | 1000 | 120 | 101.0 | H | 235.0 | 17.5 |
| 676.314 | 25.15 | 36.0 | 10.85 | 1000 | 120 | 160.0 | H | 234.0 | 21.0 |

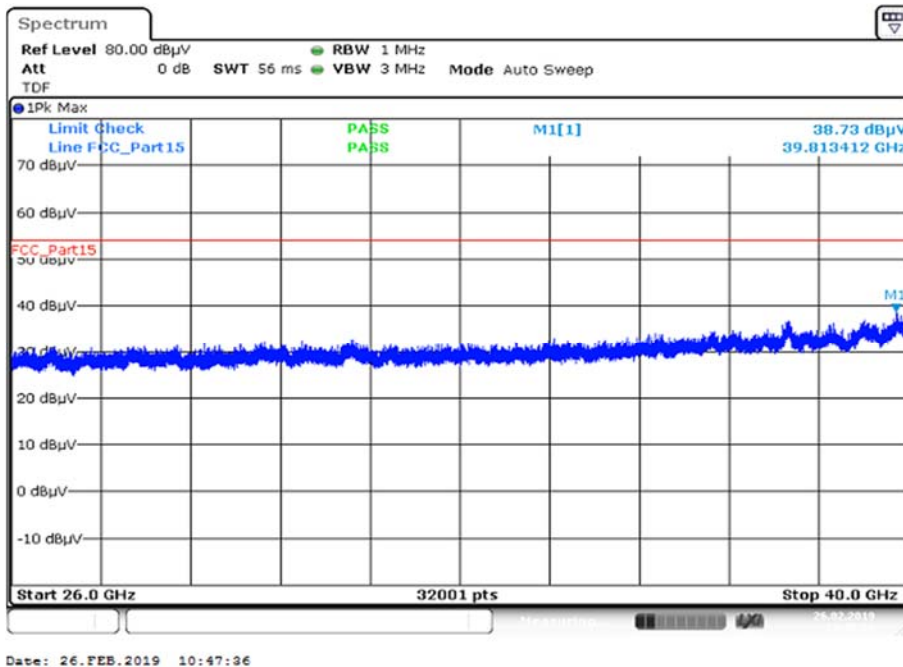
Plot 14: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2A; highest channel



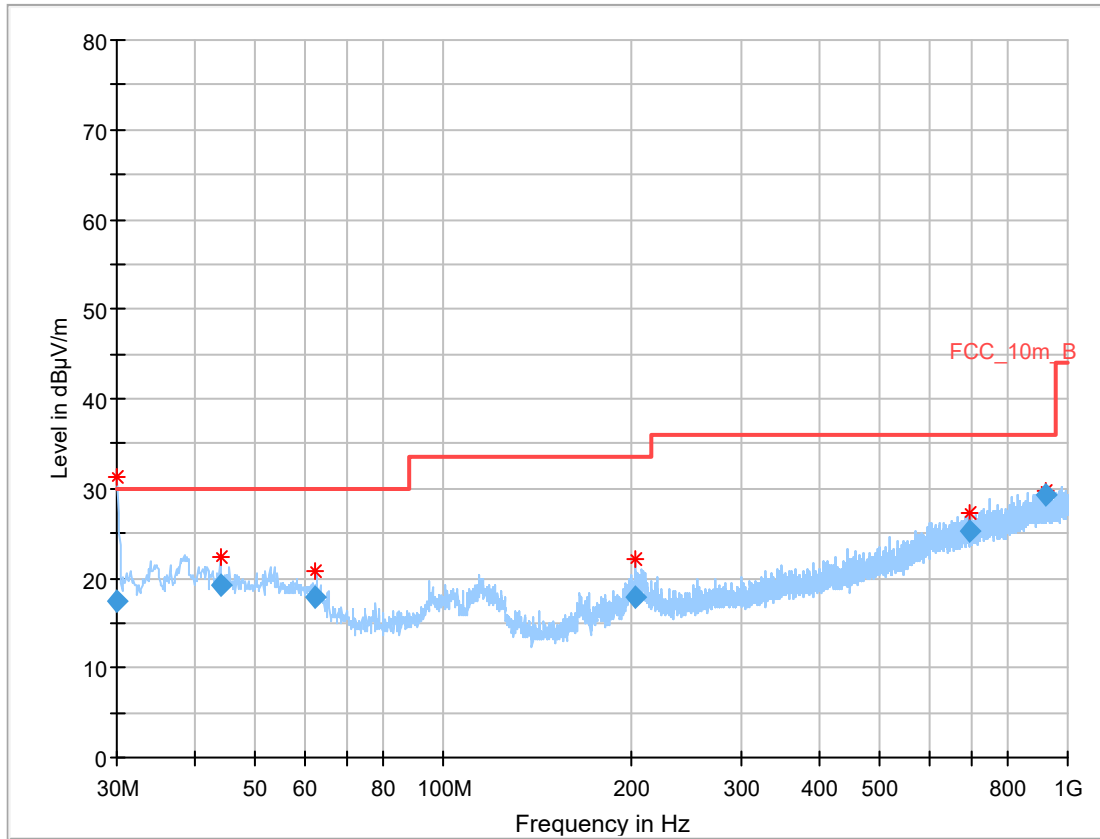
Plot 15: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2A; highest channel



Plot 16: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2A; highest channel



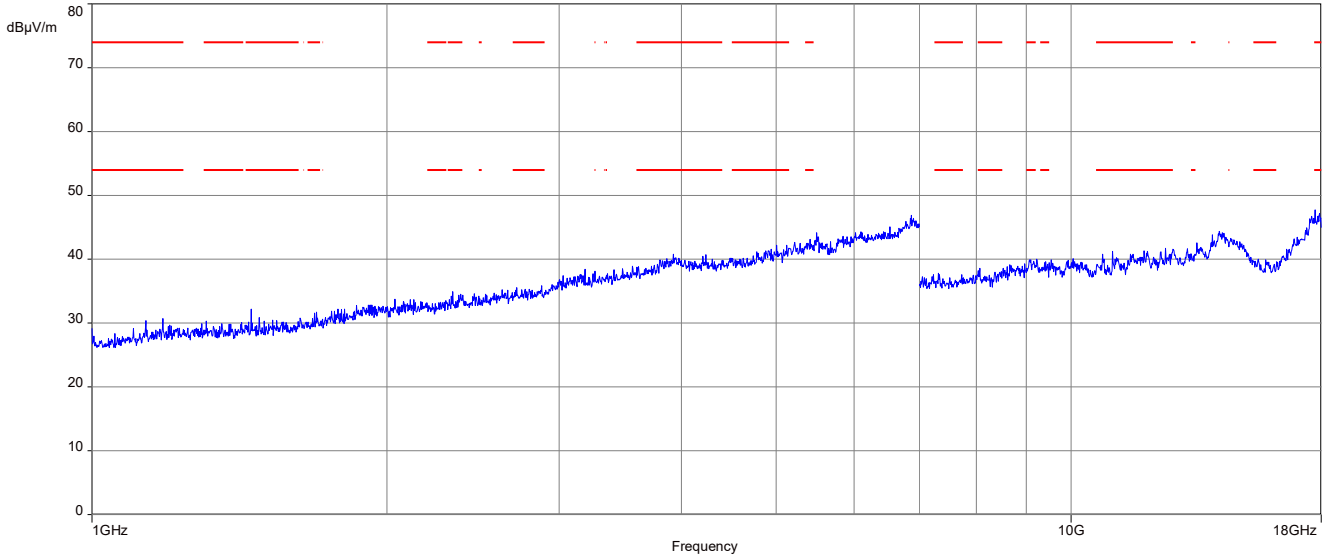
Plot 17: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel



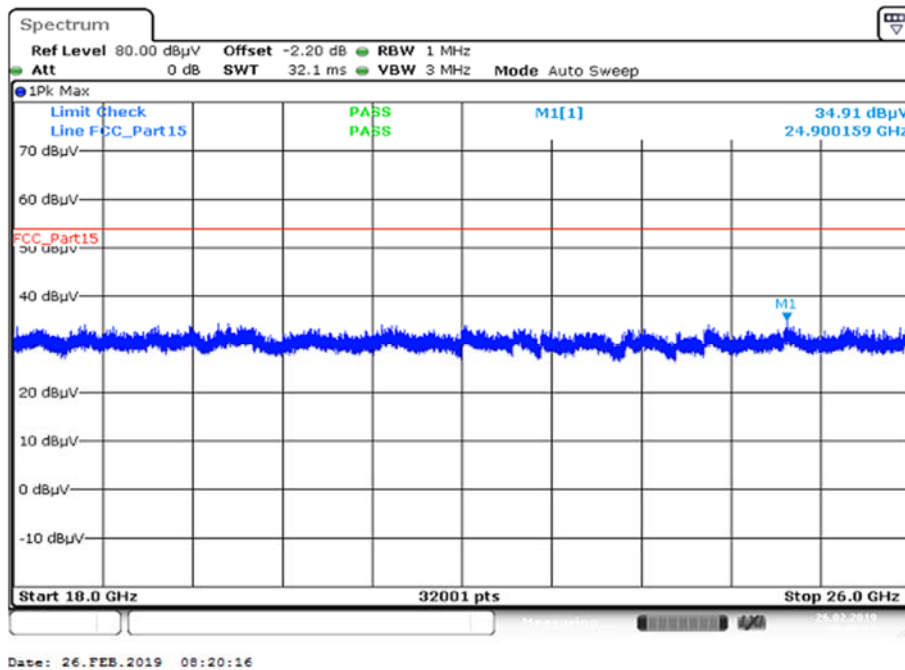
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.004 | 17.51 | 30.0 | 12.49 | 1000 | 120 | 101.0 | H | 27.0 | 13.0 |
| 44.115 | 19.22 | 30.0 | 10.78 | 1000 | 120 | 98.0 | V | 52.0 | 14.7 |
| 62.362 | 17.85 | 30.0 | 12.15 | 1000 | 120 | 160.0 | V | 42.0 | 12.5 |
| 203.161 | 17.79 | 33.5 | 15.71 | 1000 | 120 | 98.0 | V | 44.0 | 12.4 |
| 694.852 | 25.33 | 36.0 | 10.67 | 1000 | 120 | 101.0 | H | 82.0 | 21.1 |
| 922.763 | 29.21 | 36.0 | 6.79 | 1000 | 120 | 160.0 | H | 306.0 | 24.0 |

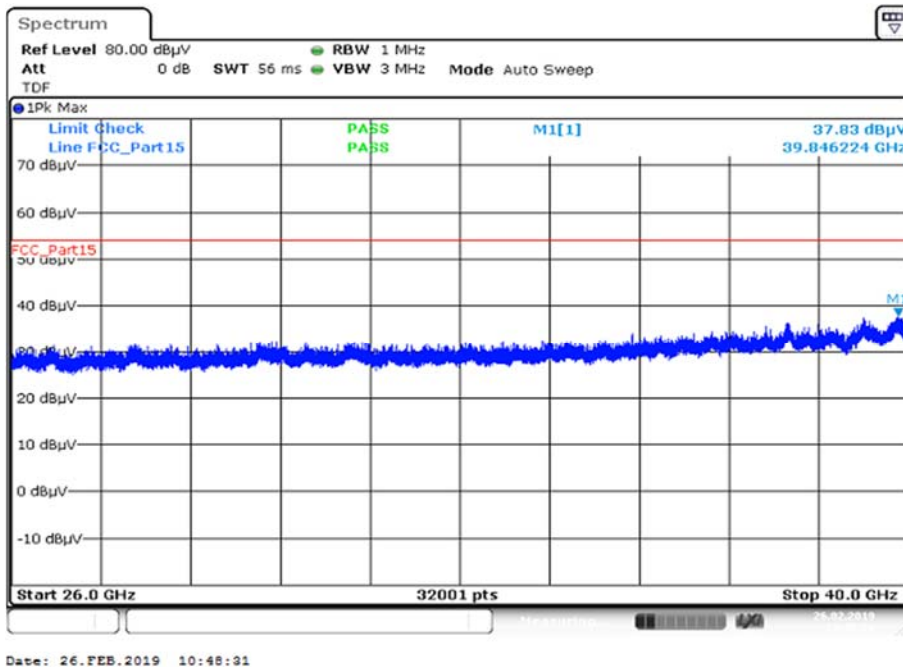
Plot 18: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel



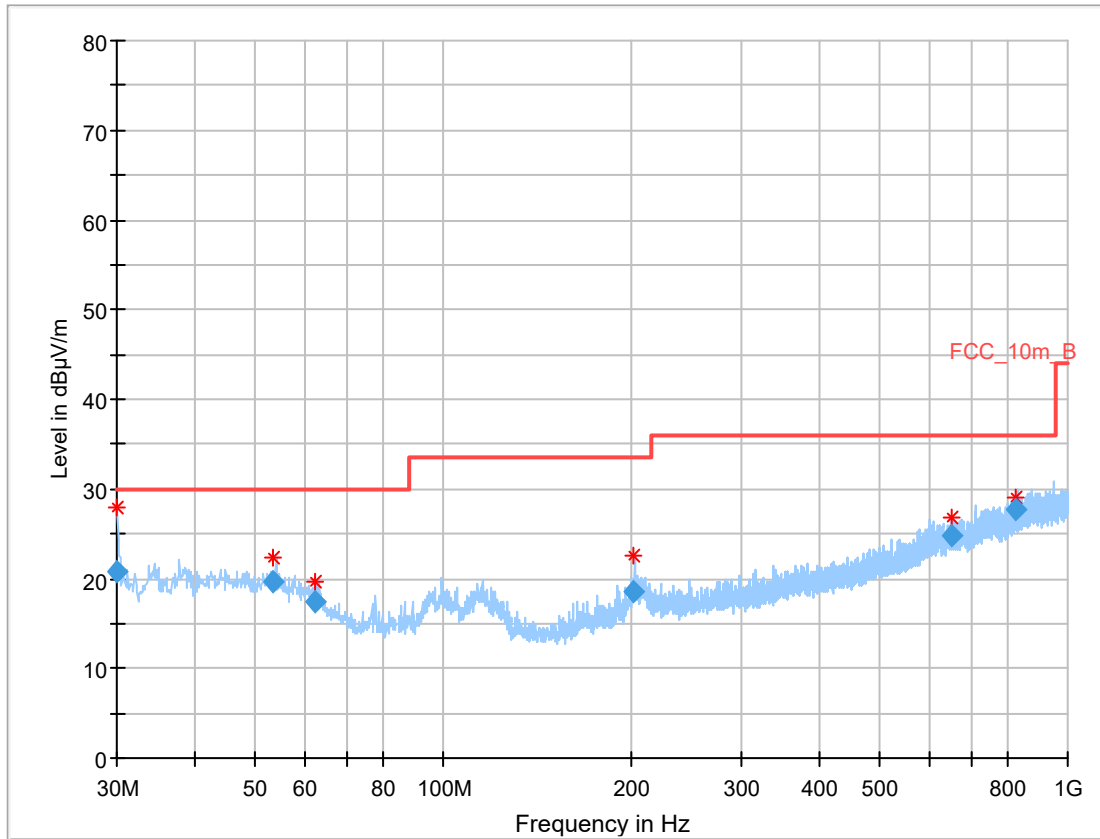
Plot 19: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel



Plot 20: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; lowest channel



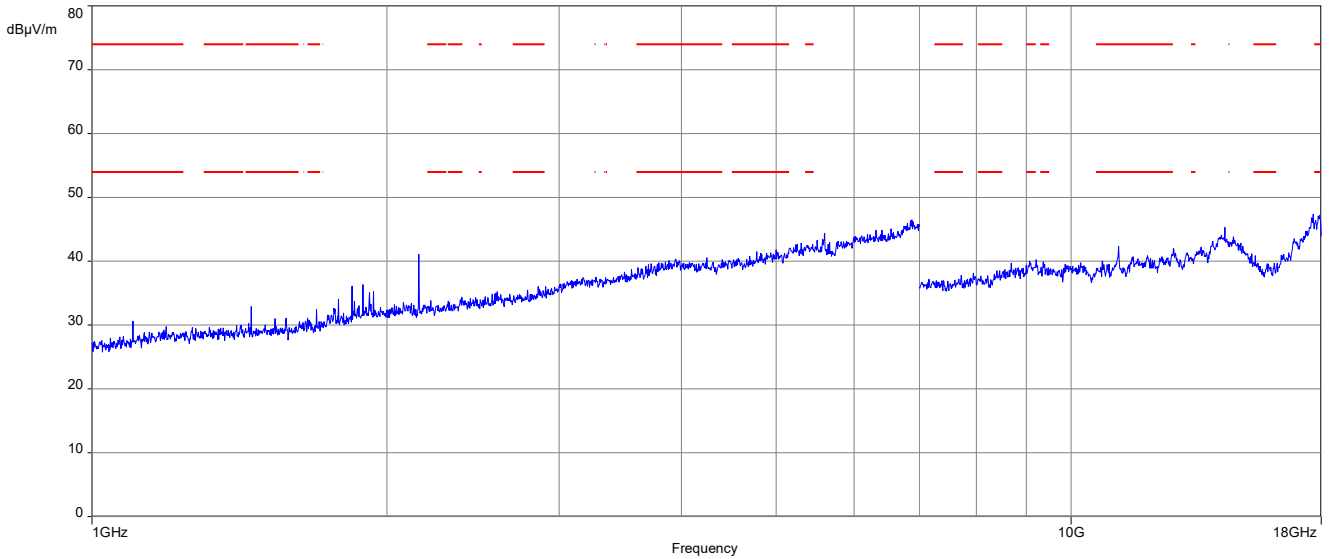
Plot 21: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; middle channel



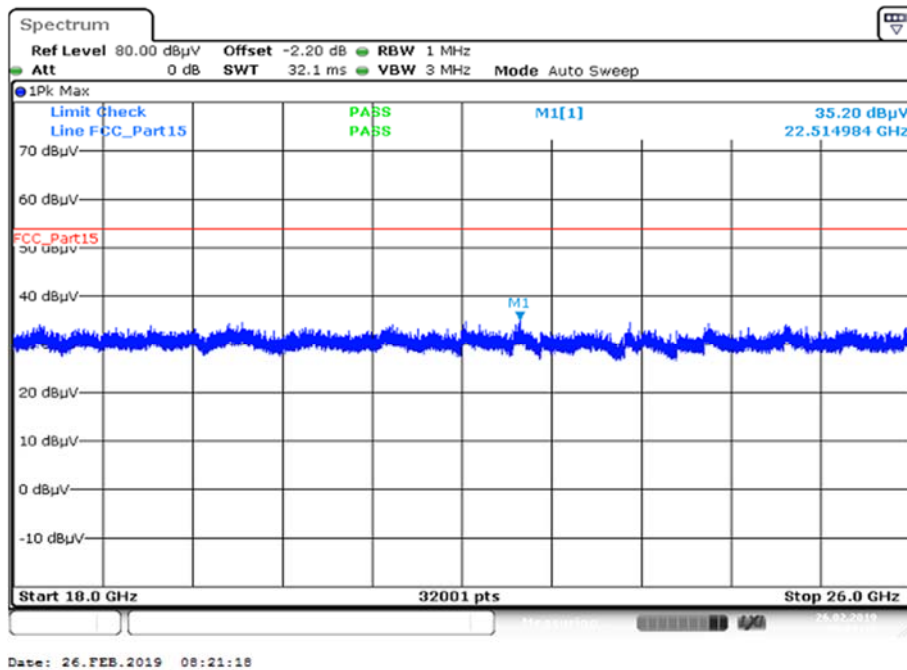
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.011 | 20.86 | 30.0 | 9.14 | 1000 | 120 | 160.0 | H | 29.0 | 13.0 |
| 53.499 | 19.63 | 30.0 | 10.37 | 1000 | 120 | 98.0 | V | 250.0 | 14.4 |
| 62.450 | 17.50 | 30.0 | 12.50 | 1000 | 120 | 100.0 | V | 13.0 | 12.4 |
| 201.957 | 18.51 | 33.5 | 14.99 | 1000 | 120 | 98.0 | V | 95.0 | 12.4 |
| 650.886 | 24.85 | 36.0 | 11.15 | 1000 | 120 | 160.0 | H | 343.0 | 20.8 |
| 826.612 | 27.81 | 36.0 | 8.19 | 1000 | 120 | 160.0 | H | 0.0 | 22.8 |

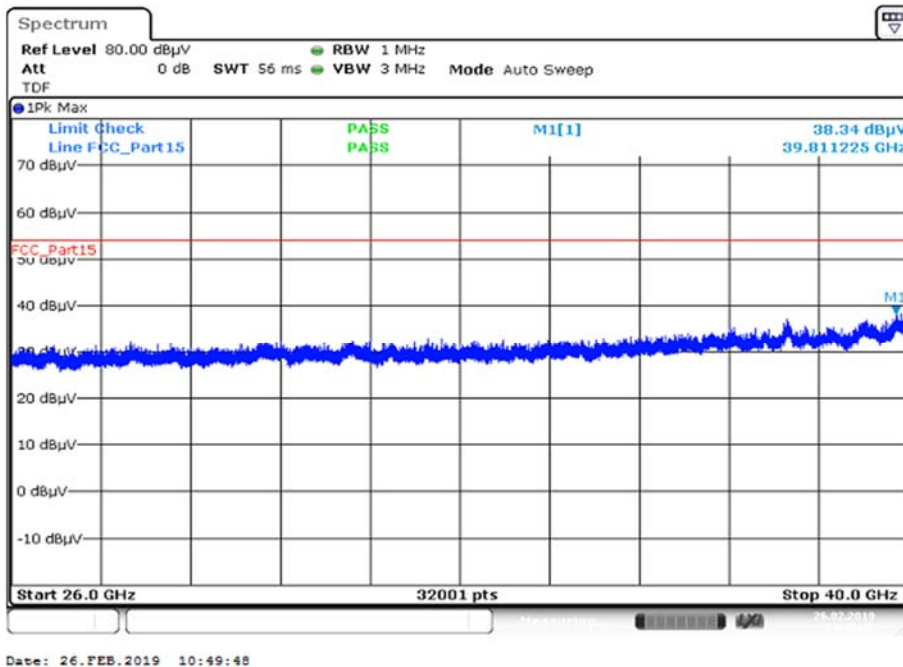
Plot 22: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; middle channel



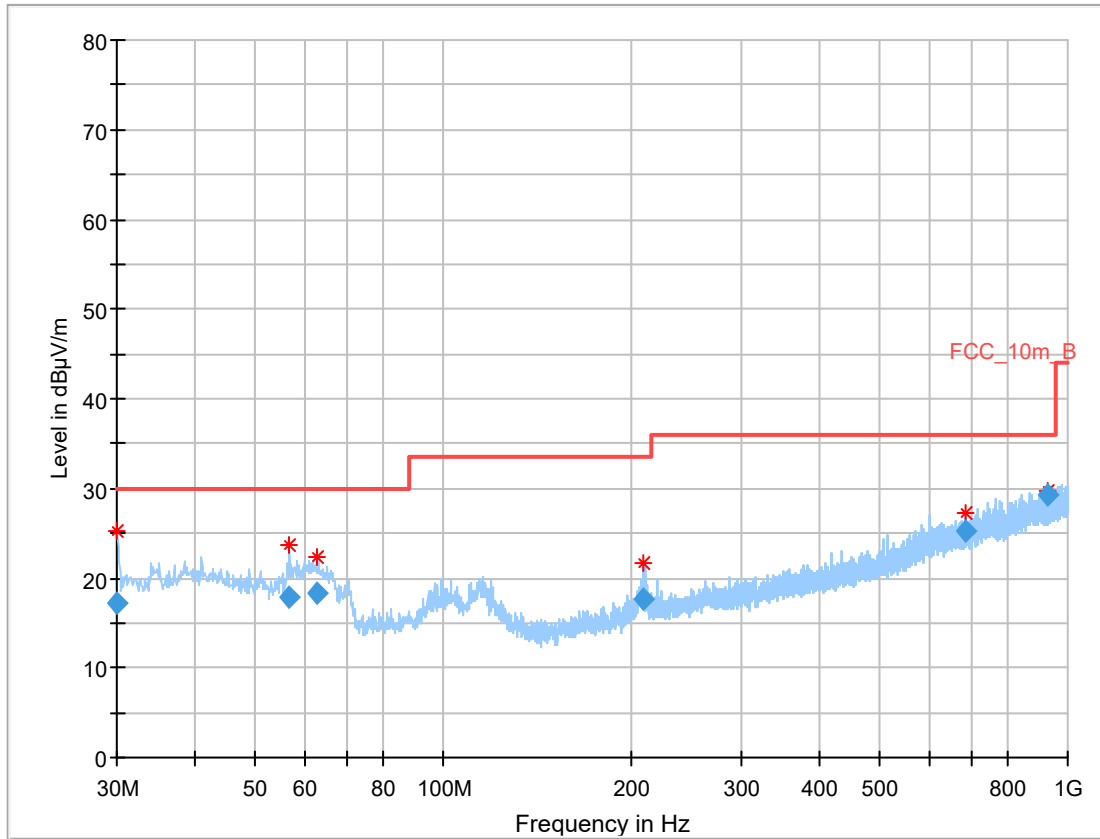
Plot 23: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; middle channel



Plot 24: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; middle channel



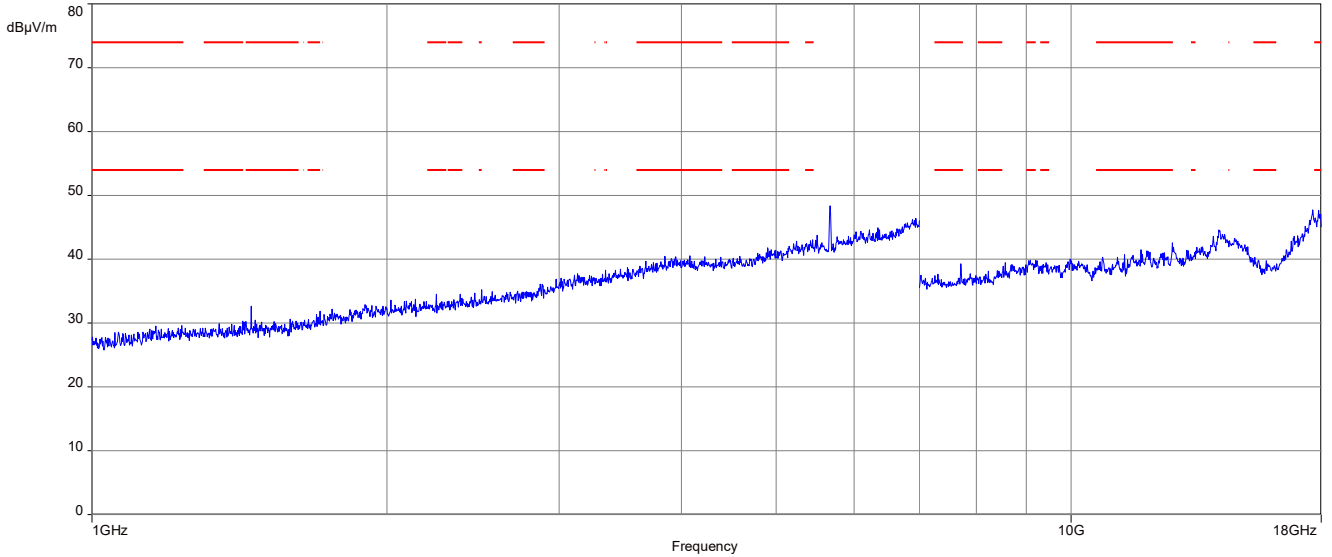
Plot 25: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-2C; highest channel



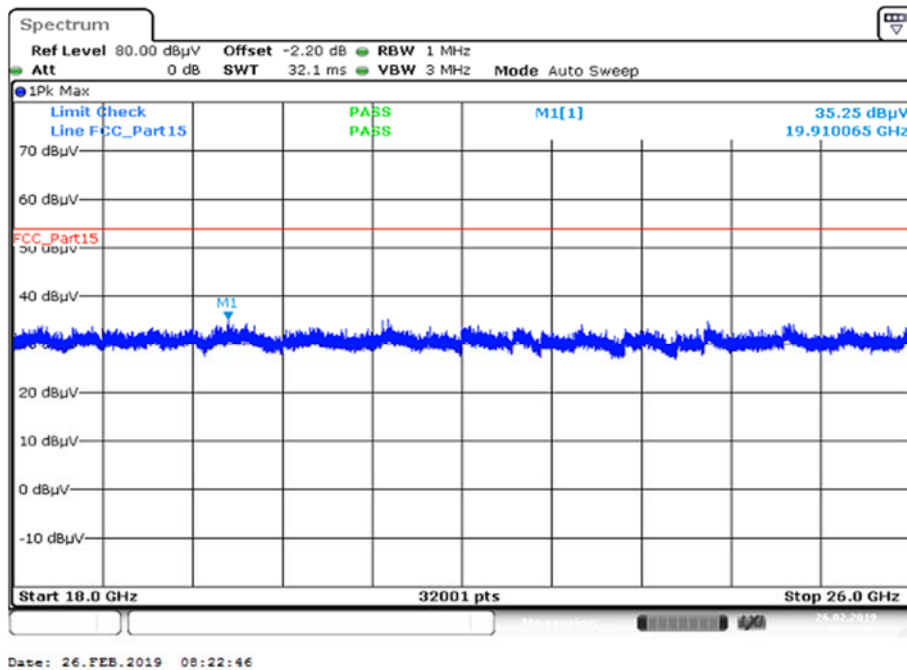
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.045 | 17.15 | 30.0 | 12.85 | 1000 | 120 | 101.0 | H | 350.0 | 13.0 |
| 56.426 | 17.87 | 30.0 | 12.13 | 1000 | 120 | 160.0 | V | 0.0 | 13.9 |
| 62.889 | 18.27 | 30.0 | 11.73 | 1000 | 120 | 160.0 | V | 227.0 | 12.3 |
| 208.775 | 17.68 | 33.5 | 15.82 | 1000 | 120 | 98.0 | V | 98.0 | 12.6 |
| 687.663 | 25.29 | 36.0 | 10.71 | 1000 | 120 | 160.0 | H | 261.0 | 21.0 |
| 927.629 | 29.17 | 36.0 | 6.83 | 1000 | 120 | 160.0 | H | 8.0 | 24.0 |

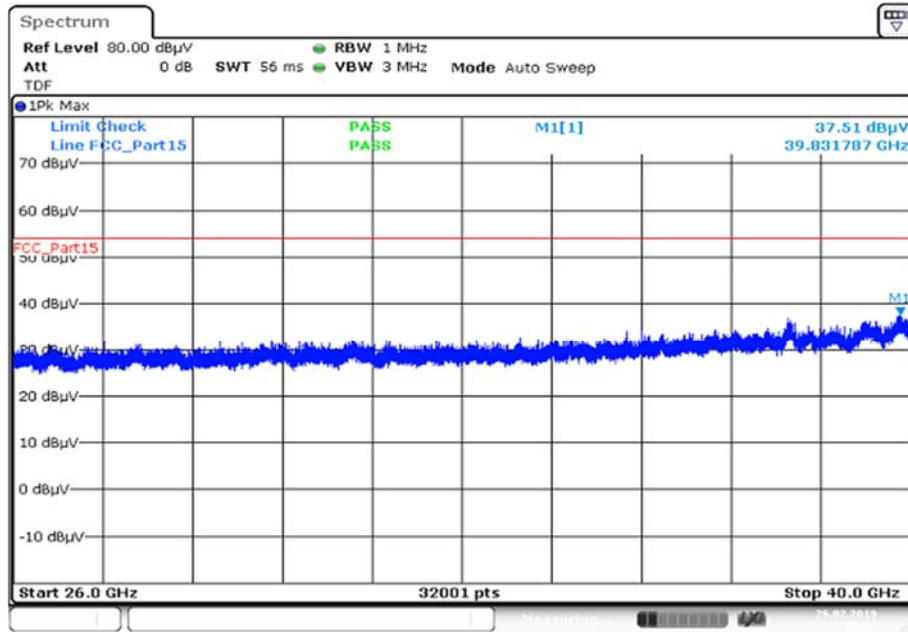
Plot 26: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-2C; highest channel



Plot 27: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-2C; highest channel

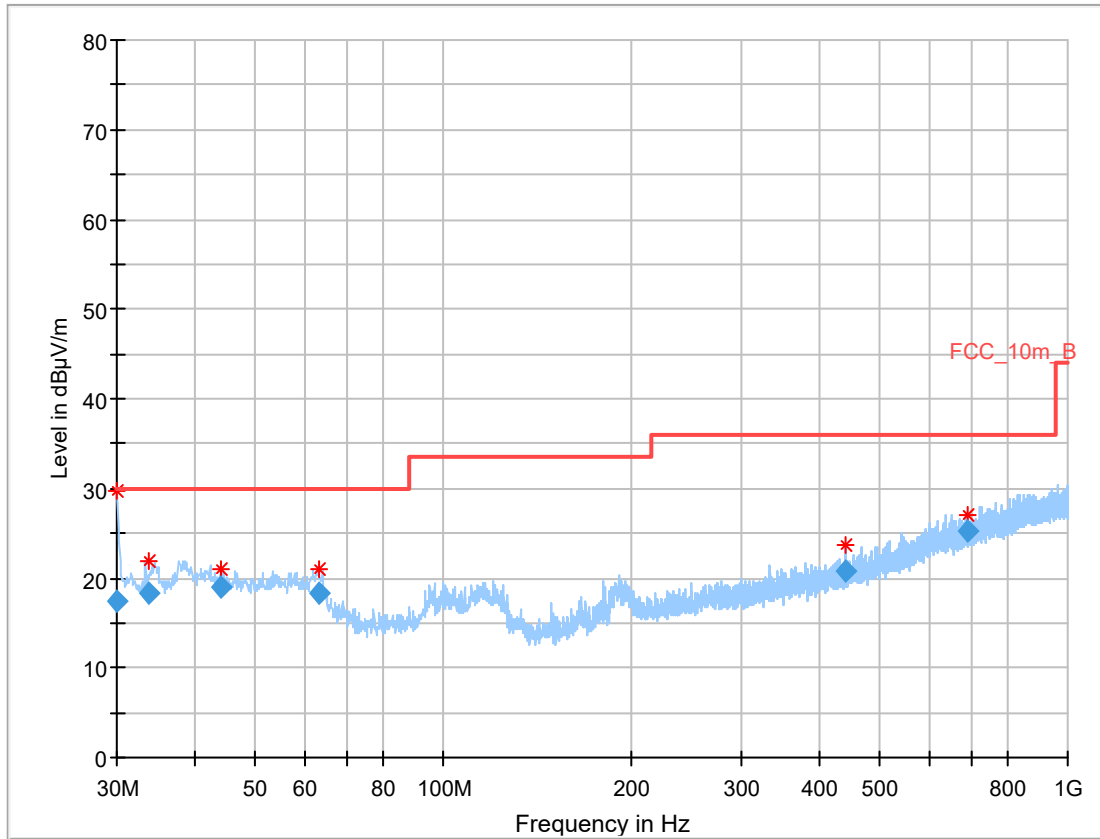


Plot 28: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-2C; highest channel



Date: 26.FEB.2019 10:50:41

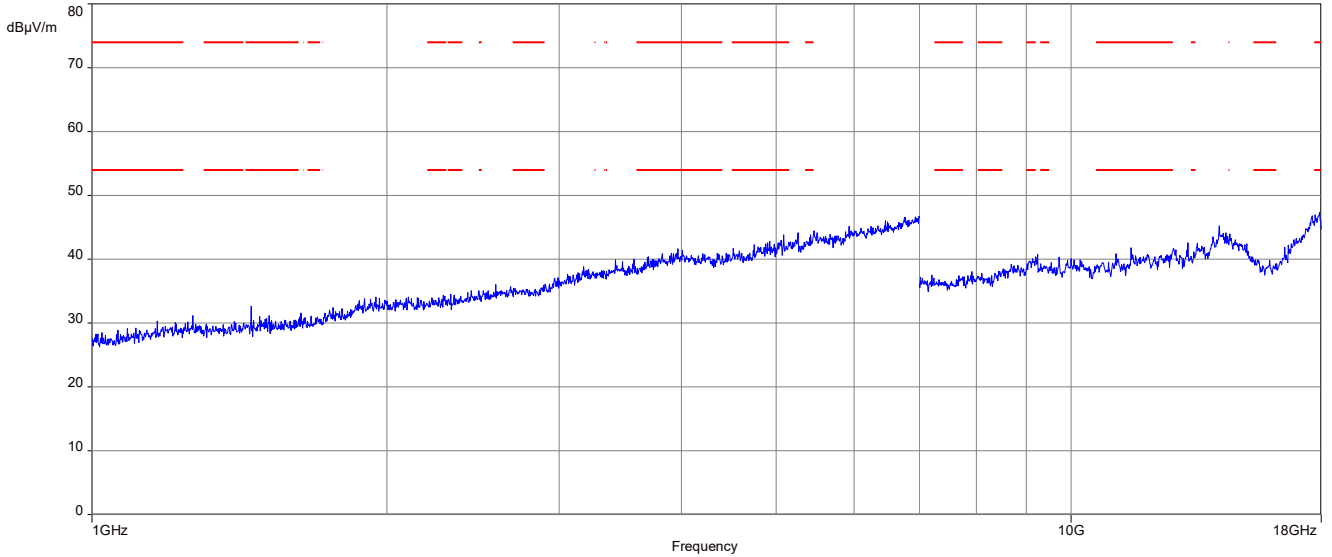
Plot 29: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



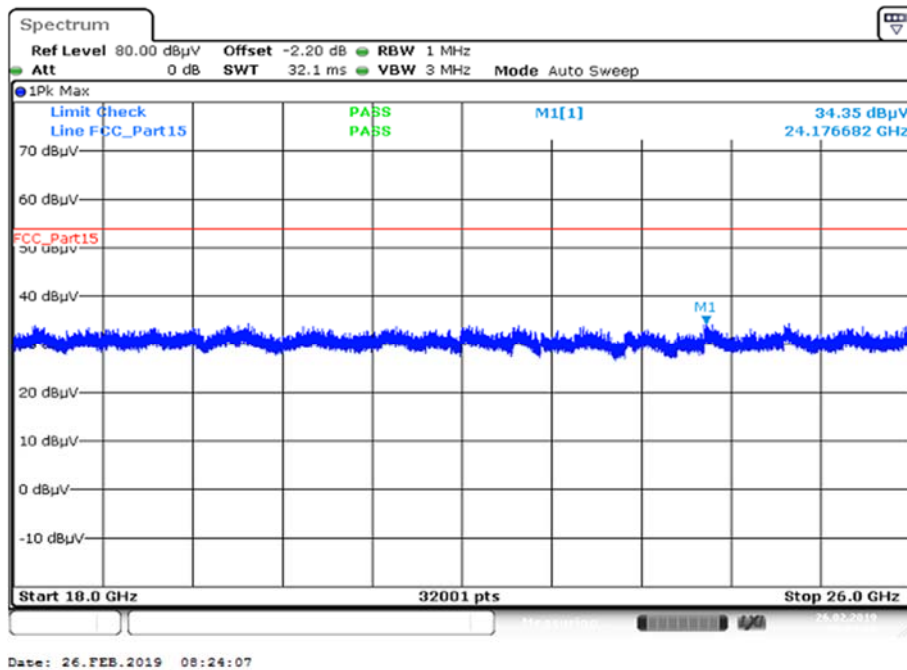
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 30.026 | 17.35 | 30.0 | 12.65 | 1000 | 120 | 100.0 | H | 292.0 | 13.0 |
| 33.649 | 18.23 | 30.0 | 11.77 | 1000 | 120 | 98.0 | V | 349.0 | 13.6 |
| 44.198 | 19.08 | 30.0 | 10.92 | 1000 | 120 | 101.0 | V | 144.0 | 14.7 |
| 63.090 | 18.33 | 30.0 | 11.67 | 1000 | 120 | 160.0 | V | 225.0 | 12.3 |
| 440.046 | 20.87 | 36.0 | 15.13 | 1000 | 120 | 101.0 | V | 302.0 | 17.2 |
| 691.210 | 25.28 | 36.0 | 10.72 | 1000 | 120 | 160.0 | V | 4.0 | 21.1 |

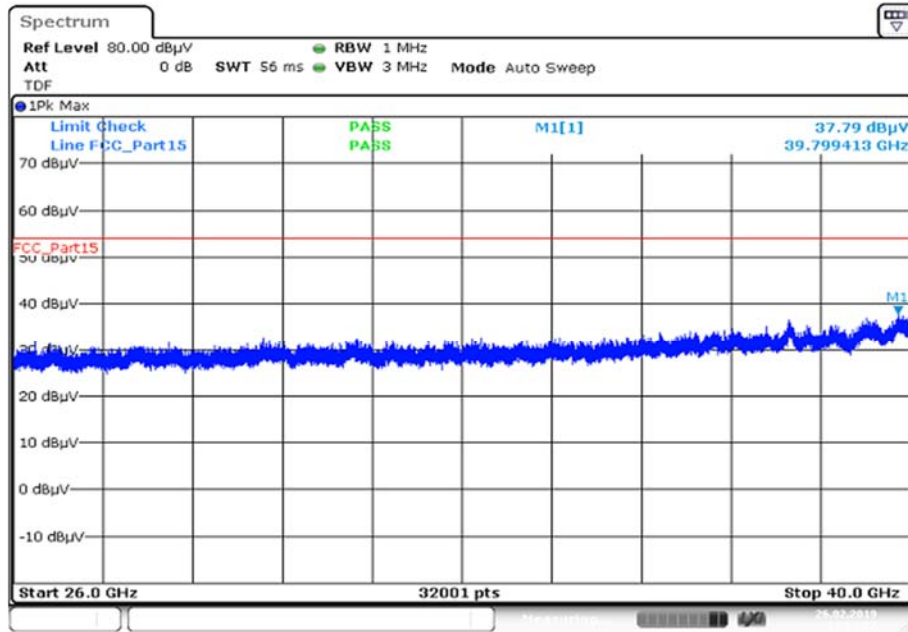
Plot 30: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



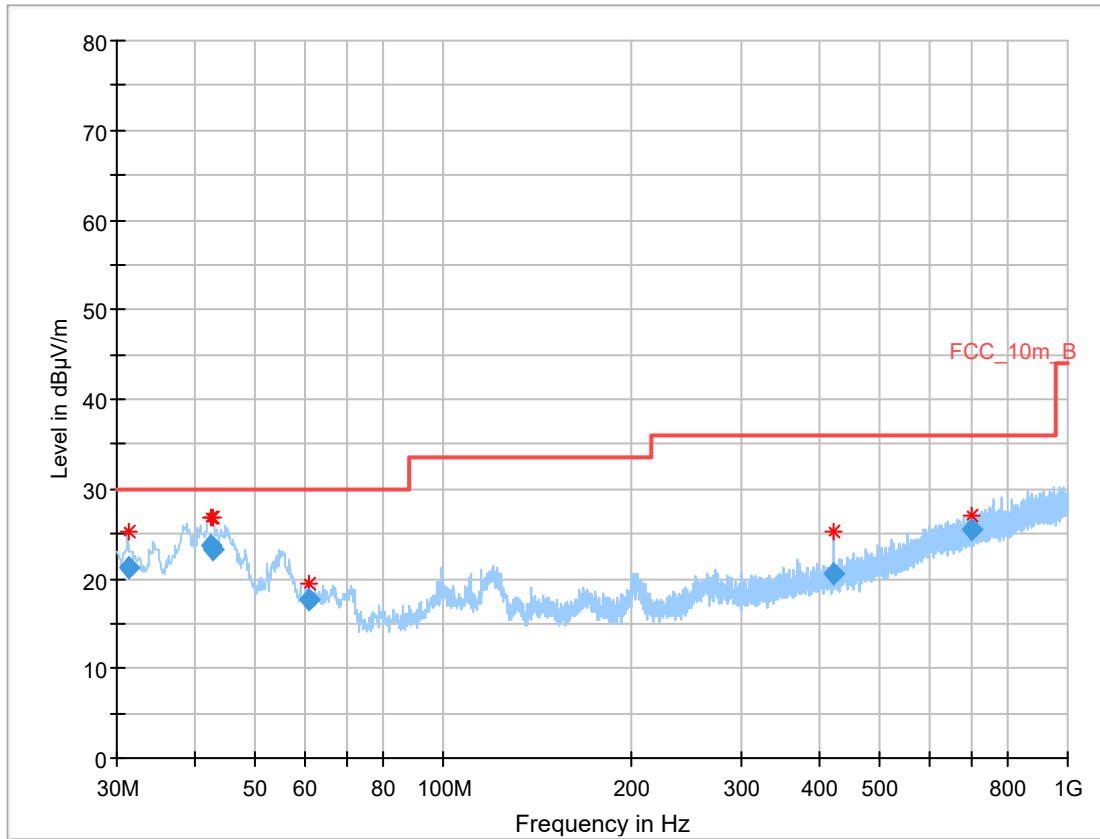
Plot 31: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



Plot 32: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; lowest channel



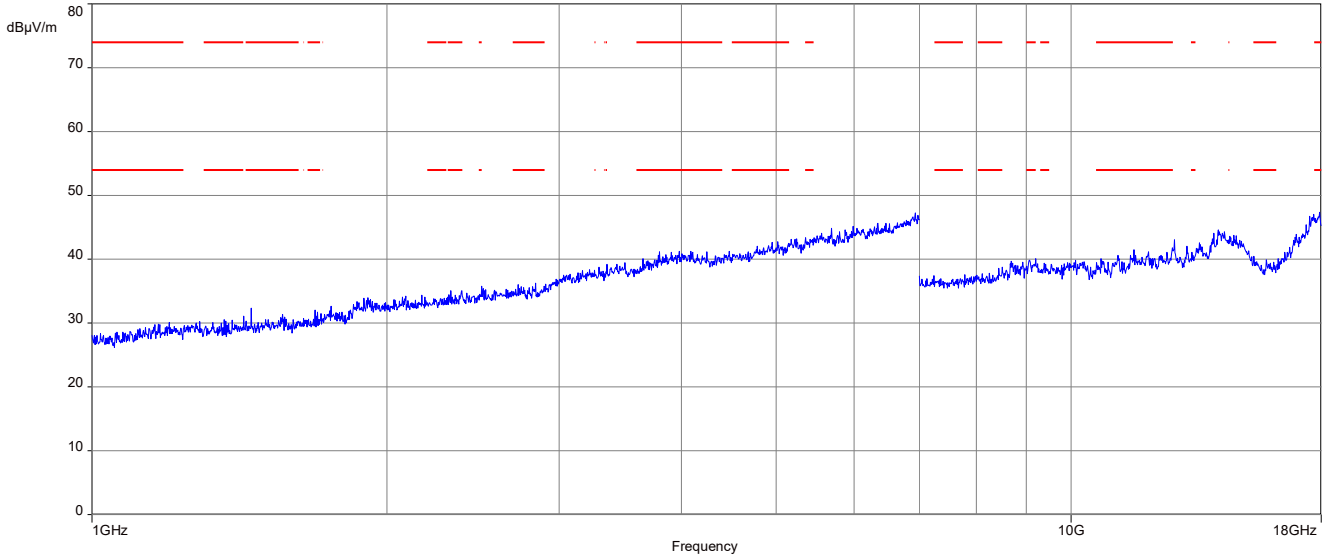
Plot 33: 30 MHz to 1 GHz; vertical & horizontal polarization; U-NII-3; highest channel



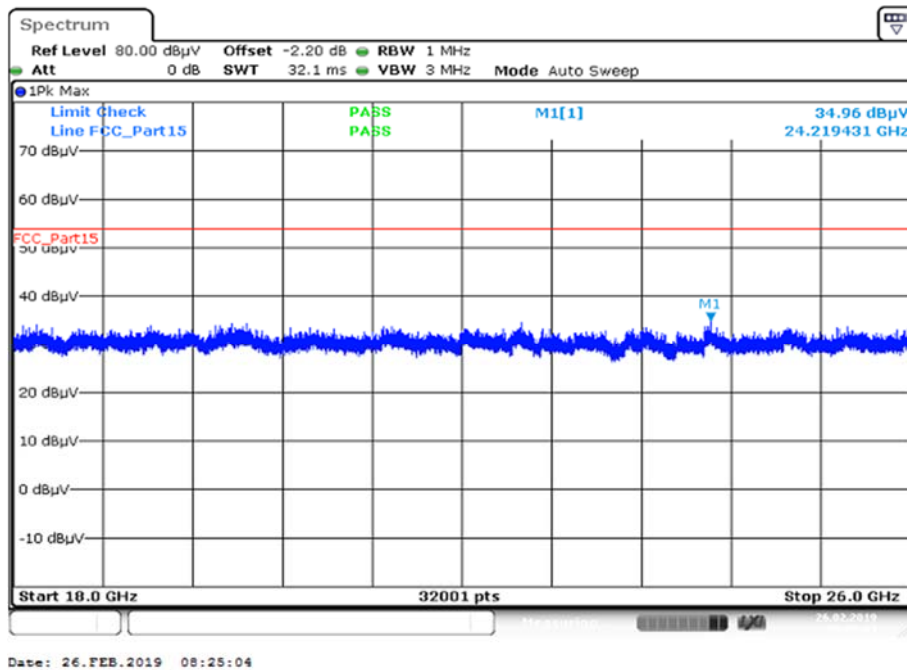
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 31.247 | 21.20 | 30.0 | 8.80 | 1000 | 120 | 101.0 | V | 156.0 | 13.2 |
| 42.373 | 23.78 | 30.0 | 6.22 | 1000 | 120 | 98.0 | V | 38.0 | 14.6 |
| 42.604 | 23.32 | 30.0 | 6.68 | 1000 | 120 | 98.0 | V | 202.0 | 14.6 |
| 60.830 | 17.63 | 30.0 | 12.37 | 1000 | 120 | 101.0 | V | 350.0 | 12.8 |
| 422.475 | 20.56 | 36.0 | 15.44 | 1000 | 120 | 160.0 | H | 335.0 | 17.0 |
| 702.155 | 25.44 | 36.0 | 10.56 | 1000 | 120 | 101.0 | H | 350.0 | 21.2 |

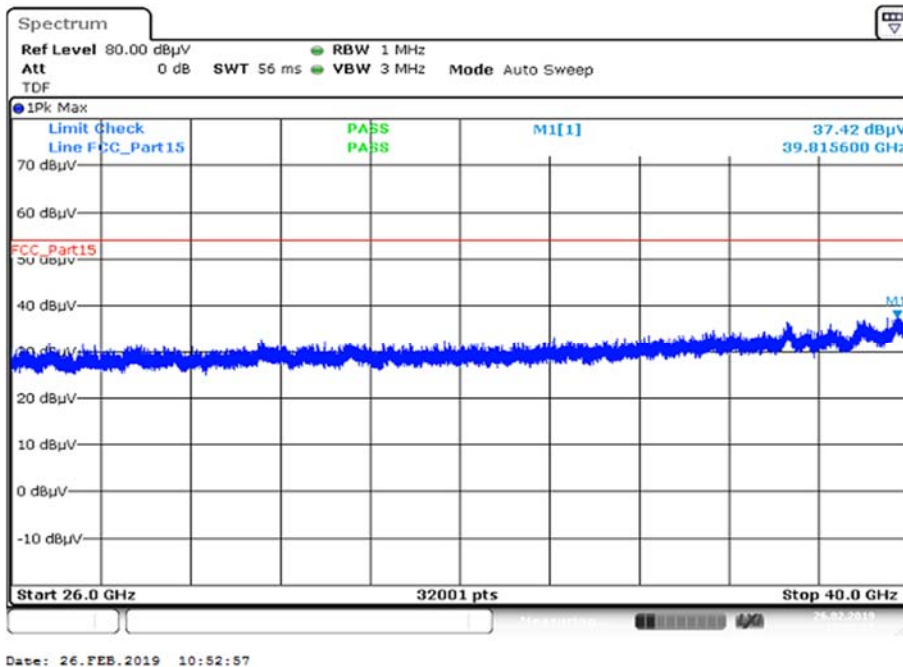
Plot 34: 1 GHz to 18 GHz; vertical & horizontal polarization; U-NII-3; highest channel



Plot 35: 18 GHz to 26 GHz; vertical & horizontal polarization; U-NII-3; highest channel



Plot 36: 26 GHz to 40 GHz; vertical & horizontal polarization; U-NII-3; highest channel



11.12 RX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in idle/receive mode.

Measurement:

| Measurement parameter | |
|--------------------------|--|
| Detector: | Quasi Peak below 1 GHz (alternative Peak) Peak above 1 GHz / RMS |
| Sweep time: | Auto |
| Resolution bandwidth: | F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz |
| Video bandwidth: | F < 1 GHz: 100 kHz F > 1 GHz: ≥ 3 MHz |
| Span: | 30 MHz to 40 GHz |
| Trace mode: | Max Hold / Average with 100 counts + 20 log (1 / X) for duty cycle lower than 100 % |
| Test setup: | See chapter 6.2 – B |
| Measurement uncertainty: | See chapter 8 |

Limits:

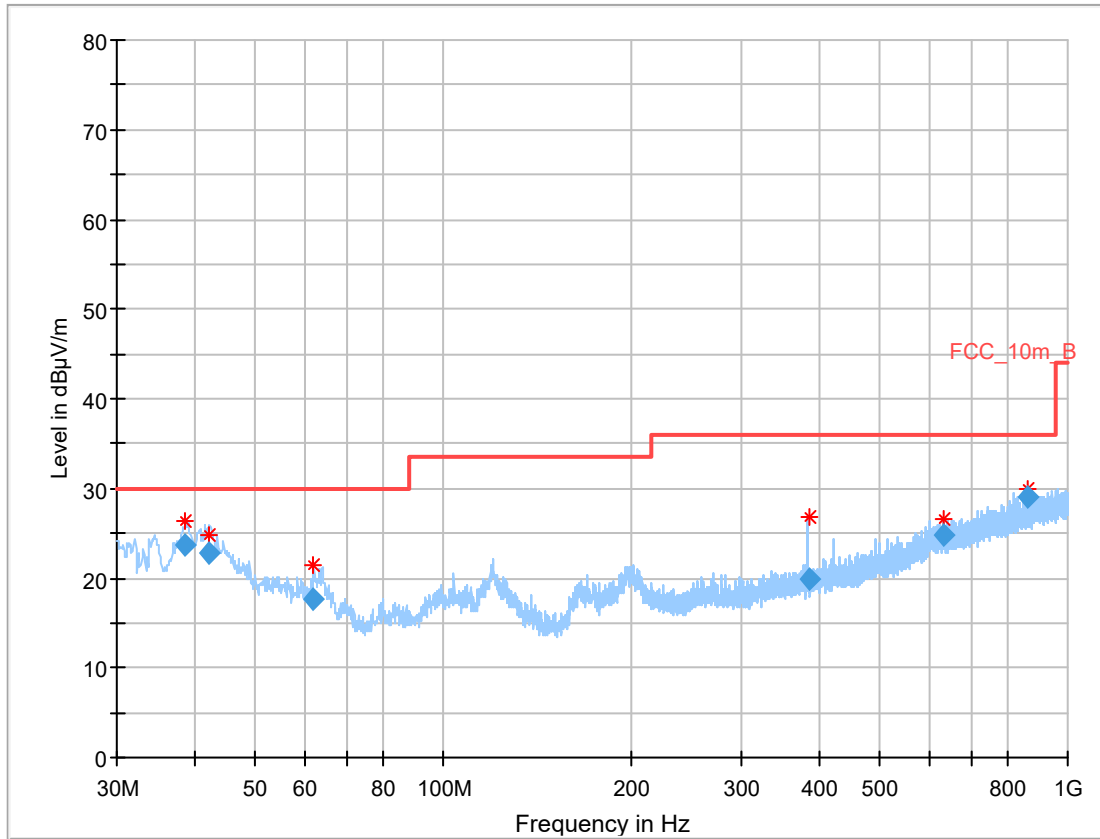
| RX Spurious Emissions Radiated | | |
|--------------------------------|-------------------------------|----------------------|
| Frequency (MHz) | Field Strength (dB μ V/m) | Measurement distance |
| 30 - 88 | 30.0 | 10 |
| 88 – 216 | 33.5 | 10 |
| 216 – 960 | 36.0 | 10 |
| Above 960 | 54.0 | 3 |

Results:

| RX Spurious Emissions Radiated [dB μ V/m] | | |
|---|----------|----------------------|
| F [MHz] | Detector | Level [dB μ V/m] |
| | | |
| | | |

Plots:

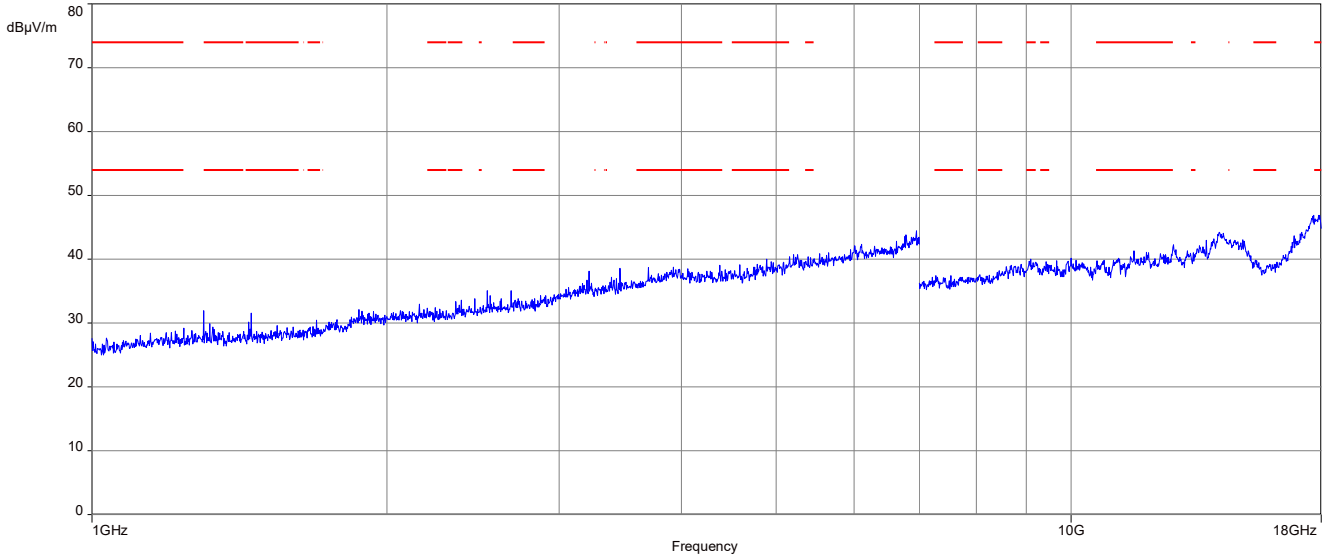
Plot 1: 30 MHz to 1 GHz, vertical & horizontal polarization



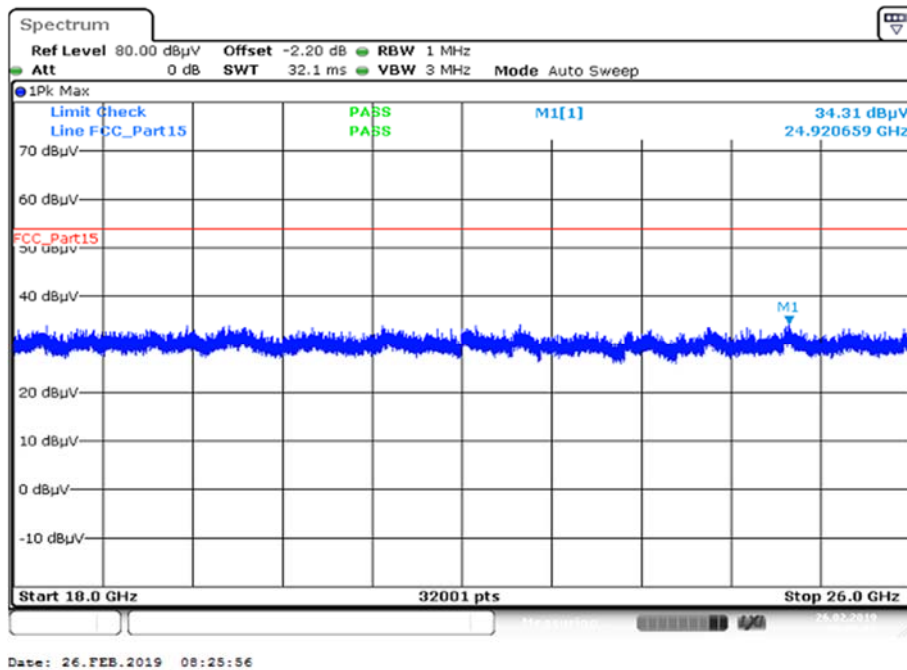
Final_Result:

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|
| 38.649 | 23.70 | 30.0 | 6.30 | 1000 | 120 | 98.0 | V | 279.0 | 14.2 |
| 42.188 | 22.84 | 30.0 | 7.16 | 1000 | 120 | 160.0 | V | 263.0 | 14.5 |
| 61.914 | 17.56 | 30.0 | 12.44 | 1000 | 120 | 101.0 | V | 323.0 | 12.6 |
| 384.464 | 19.96 | 36.0 | 16.04 | 1000 | 120 | 160.0 | H | 266.0 | 16.5 |
| 633.797 | 24.71 | 36.0 | 11.29 | 1000 | 120 | 160.0 | V | 294.0 | 20.6 |
| 859.690 | 28.95 | 36.0 | 7.05 | 1000 | 120 | 101.0 | H | 350.0 | 23.3 |

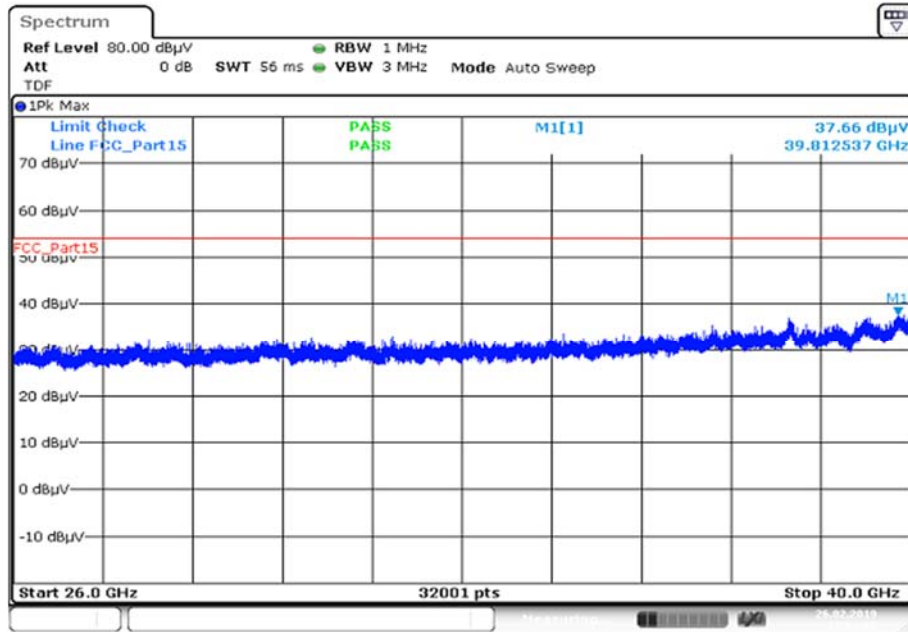
Plot 2: 1 GHz to 18 GHz, vertical & horizontal polarization



Plot 3: 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 4: 26 GHz to 40 GHz, vertical & horizontal polarization



11.13 Spurious emissions conducted < 30 MHz

Description:

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. The EUT is set to middle channel. If critical peaks are found the lowest channel and the highest channel will be measured too. Both power lines, phase and neutral line, are measured. Found peaks are re-measured with average and quasi peak detection to show compliance to the limits.

Measurement:

| Measurement parameter | |
|--------------------------|-----------------------------|
| Detector: | Peak - Quasi Peak / Average |
| Sweep time: | Auto |
| Video bandwidth: | 9 kHz |
| Resolution bandwidth: | 100 kHz |
| Span: | 150 kHz to 30 MHz |
| Trace mode: | Max Hold |
| Test setup: | See sub clause 6.4 – A |
| Measurement uncertainty: | See sub clause 8 |

Limits:

| Spurious Emissions Conducted < 30 MHz | | |
|---------------------------------------|---------------------------|------------------------|
| Frequency (MHz) | Quasi-Peak (dB μ V/m) | Average (dB μ V/m) |
| 0.15 – 0.5 | 66 to 56* | 56 to 46* |
| 0.5 – 5 | 56 | 46 |
| 5 – 30.0 | 60 | 50 |

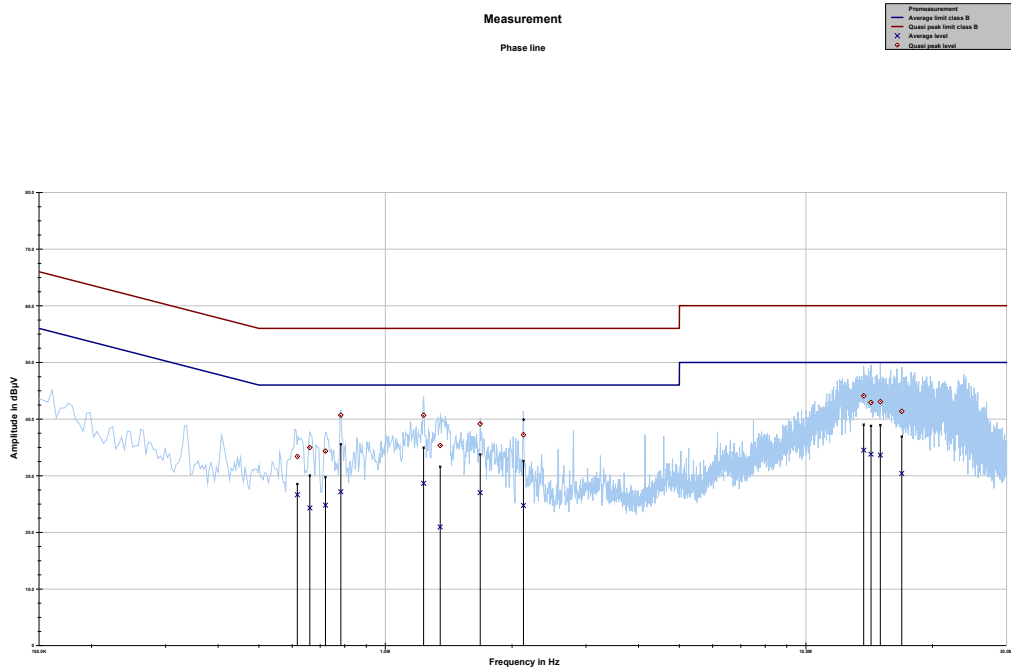
*Decreases with the logarithm of the frequency

Results:

| Spurious Emissions Conducted < 30 MHz [dB μ V/m] | | |
|---|----------|----------------------|
| F [MHz] | Detector | Level [dB μ V/m] |
| All detected emissions are more than 20 dB below the limit. | | |
| | | |

Plots:

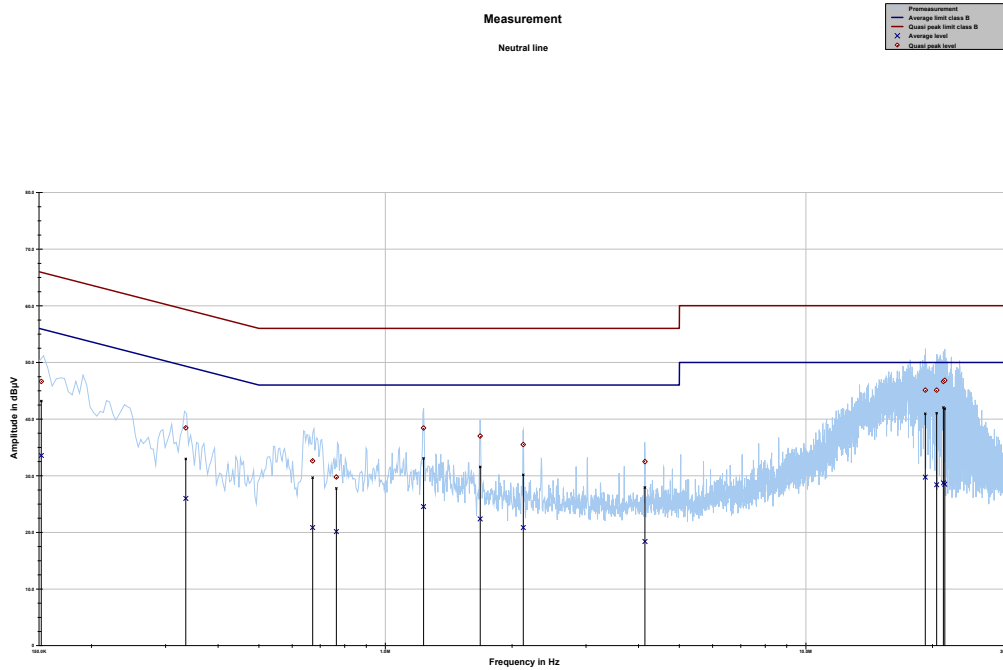
Plot 1: 150 kHz to 30 MHz, phase line



Project ID: 1-6927/18-01-04

| Frequency | Quasi peak level | Margin quasi peak | Limit QP | Average level | Margin average | Limit AV |
|-----------|------------------|-------------------|----------|---------------|----------------|----------|
| MHz | dBµV | dB | dBµV | dBµV | dB | dBµV |
| 0.617398 | 33.39 | 22.61 | 56.000 | 26.64 | 19.36 | 46.000 |
| 0.661040 | 34.99 | 21.01 | 56.000 | 24.31 | 21.69 | 46.000 |
| 0.720033 | 34.35 | 21.65 | 56.000 | 24.79 | 21.21 | 46.000 |
| 0.783528 | 40.69 | 15.31 | 56.000 | 27.17 | 18.83 | 46.000 |
| 1.232918 | 40.67 | 15.33 | 56.000 | 28.65 | 17.35 | 46.000 |
| 1.349883 | 35.34 | 20.66 | 56.000 | 20.97 | 25.03 | 46.000 |
| 1.679865 | 39.16 | 16.84 | 56.000 | 27.01 | 18.99 | 46.000 |
| 2.128990 | 37.23 | 18.77 | 56.000 | 24.74 | 21.26 | 46.000 |
| 13.720467 | 44.10 | 15.90 | 60.000 | 34.51 | 15.49 | 50.000 |
| 14.279560 | 42.92 | 17.08 | 60.000 | 33.80 | 16.20 | 50.000 |
| 15.031560 | 43.07 | 16.93 | 60.000 | 33.65 | 16.35 | 50.000 |
| 16.903465 | 41.36 | 18.64 | 60.000 | 30.39 | 19.61 | 50.000 |

Plot 2: 150 kHz to 30 MHz, neutral line



| Frequency | Quasi peak level | Margin quasi peak | Limit QP | Average level | Margin average | Limit AV |
|-----------|------------------|-------------------|----------|---------------|----------------|----------|
| MHz | dBµV | dB | dBµV | dBµV | dB | dBµV |
| 0.151943 | 46.65 | 19.24 | 65.893 | 33.57 | 22.38 | 55.944 |
| 0.335167 | 38.45 | 20.87 | 59.322 | 25.98 | 24.73 | 50.710 |
| 0.671392 | 32.62 | 23.38 | 56.000 | 20.85 | 25.15 | 46.000 |
| 0.764228 | 29.76 | 26.24 | 56.000 | 20.12 | 25.88 | 46.000 |
| 1.232072 | 38.42 | 17.58 | 56.000 | 24.54 | 21.46 | 46.000 |
| 1.680178 | 37.01 | 18.99 | 56.000 | 22.37 | 23.63 | 46.000 |
| 2.127410 | 35.51 | 20.49 | 56.000 | 20.85 | 25.15 | 46.000 |
| 4.142305 | 32.48 | 23.52 | 56.000 | 18.39 | 27.61 | 46.000 |
| 19.226972 | 45.10 | 14.90 | 60.000 | 29.75 | 20.25 | 50.000 |
| 20.460861 | 45.10 | 14.90 | 60.000 | 28.40 | 21.60 | 50.000 |
| 21.227486 | 46.64 | 13.36 | 60.000 | 28.74 | 21.26 | 50.000 |
| 21.382981 | 46.82 | 13.18 | 60.000 | 28.49 | 21.51 | 50.000 |

12 Observations

No observations except those reported with the single test cases have been made.

Annex A Glossary

| | |
|------------------------|--|
| EUT | Equipment under test |
| DUT | Device under test |
| UUT | Unit under test |
| GUE | GNSS User Equipment |
| ETSI | European Telecommunications Standards Institute |
| EN | European Standard |
| FCC | Federal Communications Commission |
| FCC ID | Company Identifier at FCC |
| IC | Industry Canada |
| PMN | Product marketing name |
| HMN | Host marketing name |
| HVIN | Hardware version identification number |
| FVIN | Firmware version identification number |
| EMC | Electromagnetic Compatibility |
| HW | Hardware |
| SW | Software |
| Inv. No. | Inventory number |
| S/N or SN | Serial number |
| C | Compliant |
| NC | Not compliant |
| NA | Not applicable |
| NP | Not performed |
| PP | Positive peak |
| QP | Quasi peak |
| AVG | Average |
| OC | Operating channel |
| OCW | Operating channel bandwidth |
| OBW | Occupied bandwidth |
| OOB | Out of band |
| DFS | Dynamic frequency selection |
| CAC | Channel availability check |
| OP | Occupancy period |
| NOP | Non occupancy period |
| DC | Duty cycle |
| PER | Packet error rate |
| CW | Clean wave |
| MC | Modulated carrier |
| WLAN | Wireless local area network |
| RLAN | Radio local area network |
| DSSS | Dynamic sequence spread spectrum |
| OFDM | Orthogonal frequency division multiplexing |
| FHSS | Frequency hopping spread spectrum |
| GNSS | Global Navigation Satellite System |
| C/N₀ | Carrier to noise-density ratio, expressed in dB-Hz |

Annex B Document history

| Version | Applied changes | Date of release |
|---------|-----------------|-----------------|
| -/- | Initial release | 2019-03-20 |

Annex C Accreditation Certificate – D-PL-12076-01-04

| first page | last page |
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|  <p>Deutsche Akkreditierungsstelle GmbH</p> <p>Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition</p> <p>Accreditation </p> <p>The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory CTC advanced GmbH Untertürkheimer Straße 6-10, 66117 Saarbrücken</p> <p>is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields: Telecommunication (TC) and Electromagnetic Compatibility (EMC) for Canadian Standards</p> <p>The accreditation certificate shall only apply in connection with the notice of accreditation of 11.01.2019 with the accreditation number D-PL-12076-01 and is valid until 21.04.2021. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 7 pages.</p> <p>Registration number of the certificate: D-PL-12076-01-04</p> <p>Frankfurt am Main, 11.01.2019  Dipl.-Ing. Uwe Zimmermann Head of Division</p> <p><small>See notes annex.</small></p> | <p>Deutsche Akkreditierungsstelle GmbH</p> <p>Office Berlin Spittelmarkt 10 10117 Berlin</p> <p>Office Frankfurt am Main Europa-Allee 52 60327 Frankfurt am Main</p> <p>Office Braunschweig Bundesallee 100 38116 Braunschweig</p> <p>The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkKS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.</p> <p>No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkKS.</p> <p>The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). DAkKS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.</p> <p>The up-to-date state of membership can be retrieved from the following websites: EA: www.european-accreditation.org ILAC: www.ilac.org IAF: www.iaf.eu</p> |

Note: The current certificate annex is published on the website (link see below) of the Accreditation Body DAkKS or may be received by CTC advanced GmbH on request

<https://www.dakks.de/as/ast/d/D-PL-12076-01-04.pdf>

Annex D Accreditation Certificate – D-PL-12076-01-05

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|  <p>Deutsche Akkreditierungsstelle GmbH</p> <p>Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition</p> <p>Accreditation </p> <p>The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory CTC advanced GmbH Untertürkheimer Straße 6-10, 66117 Saarbrücken is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields: Telecommunication (FCC Requirements)</p> <p>The accreditation certificate shall only apply in connection with the notice of accreditation of 11.01.2019 with the accreditation number D-PL-12076-01 and is valid until 21.04.2021. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 5 pages.</p> <p>Registration number of the certificate: D-PL-12076-01-05</p> <p>Frankfurt am Main, 11.01.2019  Dipl.-Biol. Uwe Zimmermann Head of Division</p> <p><small>See notes on sheet 4</small></p> | <p>Deutsche Akkreditierungsstelle GmbH</p> <table border="0"> <tr> <td>Office Berlin Spittelmarkt 10 10117 Berlin</td> <td>Office Frankfurt am Main Europa-Allee 52 60327 Frankfurt am Main</td> <td>Office Braunschweig Bundesallee 100 38116 Braunschweig</td> </tr> </table> <p>The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkkS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.</p> <p>No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkkS.</p> <p>The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). DAkkS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.</p> <p>The up-to-date state of membership can be retrieved from the following websites: EA: www.european-accreditation.org ILAC: www.ilac.org IAF: www.iaf.nu</p> | Office Berlin Spittelmarkt 10 10117 Berlin | Office Frankfurt am Main Europa-Allee 52 60327 Frankfurt am Main | Office Braunschweig Bundesallee 100 38116 Braunschweig |
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END OF TEST REPORT