

## Prüfdokumentation

Test documentation

### 4.3.4 Test results (Field strength of fundamental emissions)

#### 4.3.4.1 Radiated measurements

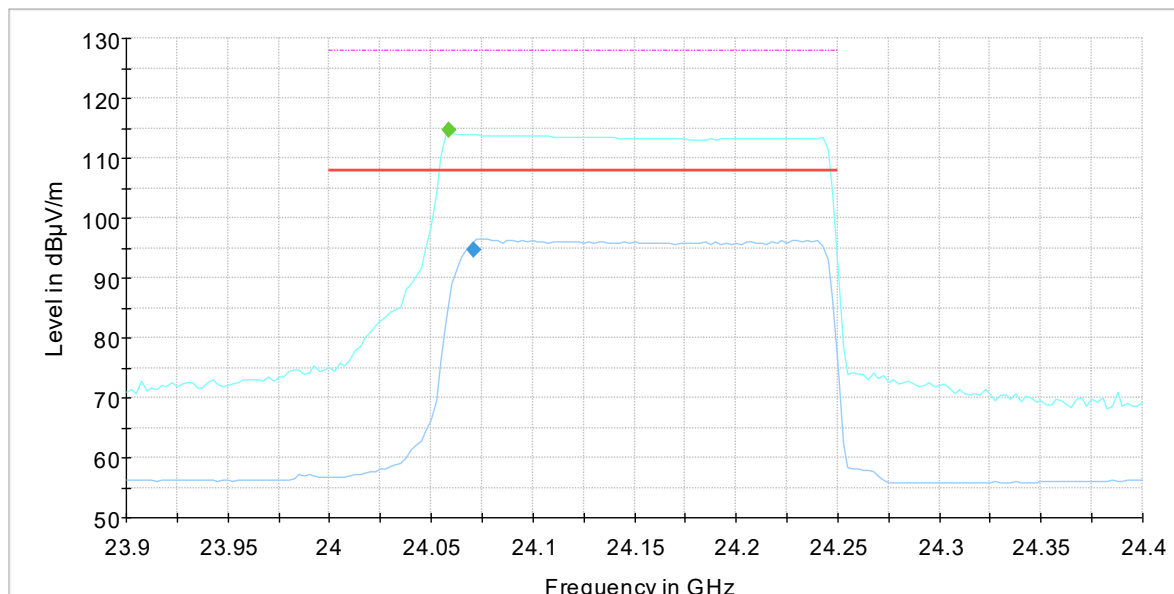
As the FMCW-desensitization factor for the used RBW is 0.00dB (see 2.2), no additional correction factor needs to be applied to the peak field strength measurements.

The average field strength was not measured according to the standard and only used to determine the worst-case position.

The average field strength was therefore remeasured on the worst-case position with a RBW of 1MHz and a sweep time of 0.1s per Sweep Point. Max hold was used to get the highest average field strength.

##### 4.3.4.1.1 Mode Area\_lowdoppler\_0dB

##### 4.3.4.1.1.1 Peak field strength measurement and worst-case position evaluation for average field strength measurement



- Preview Result 2-PK+
- Preview Result 1-AVG
- FCC\_15C\_15.249\_Fundamental\_Field\_Strenght\_Avg
- FCC\_15C\_15.249\_Fundamental\_Field\_Strenght\_Peak
- ◆ Final\_Result AVG
- ◆ Final\_Result PK+

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) | Result |
|-----------------|------------------|------------------|----------------|-------------|-----|---------------|-----------------|------------|--------|
| 24059.0         | 114.75           | ---              | 128.00         | 13.25       | V   | 103.0         | -2.0            | 22.7       | Pass   |
| 24071.0         | ---              | 94.74            | ---            | ---         | V   | 109.0         | -3.0            | 22.7       | ---    |

The average field strength level from this measurement is informative only, as the Sweep Time for final measurement is not according to the standard.

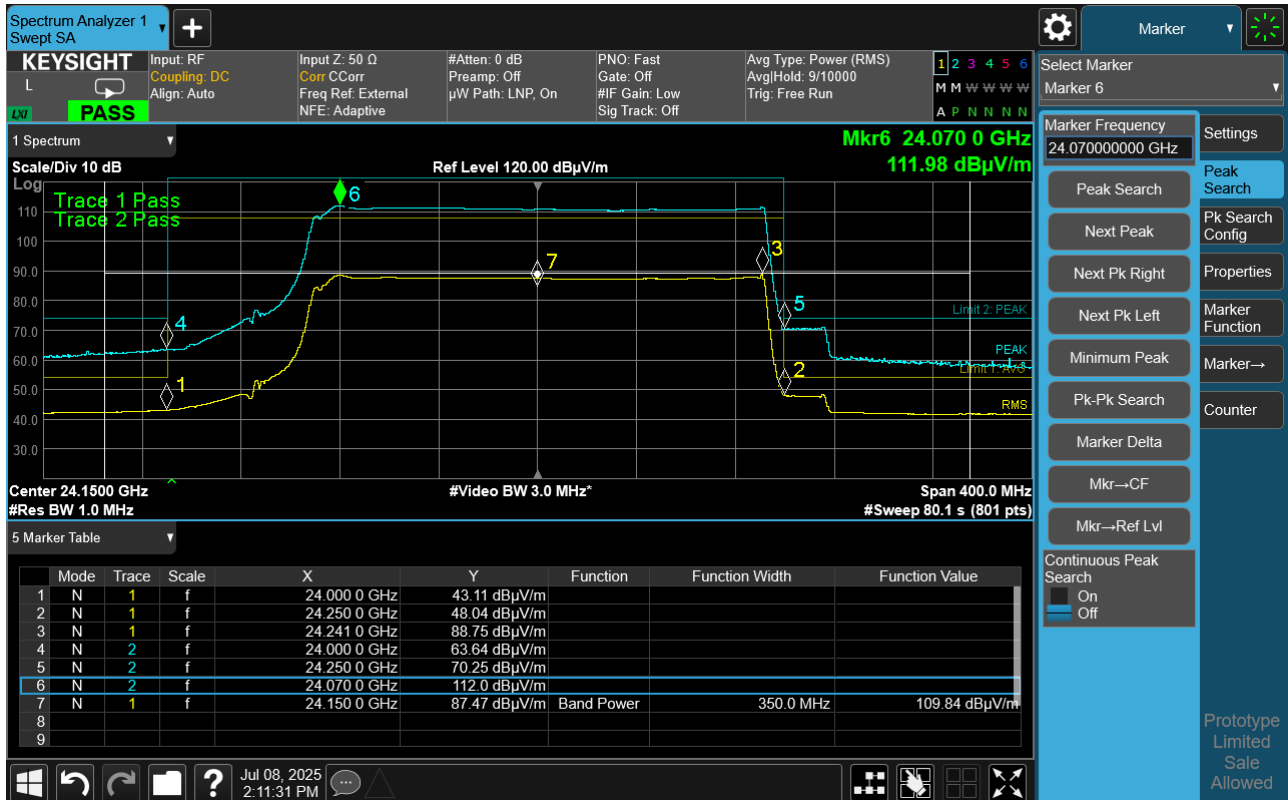
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 42 von 122  
Page 42 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.1.2 Average field strength measurement on worst case position (Average) Azimuth 109deg; Elevation -3deg; Vertical polarization



| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (s) | Pol | Azimuth (deg) | Elevation (deg) | Result |
|-----------------|------------------|----------------|-------------|----------------|-----|---------------|-----------------|--------|
| 24241.0         | 88.75            | 108.00         | 19.25       | 80.1           | V   | 109.0         | -3.0            | Pass   |

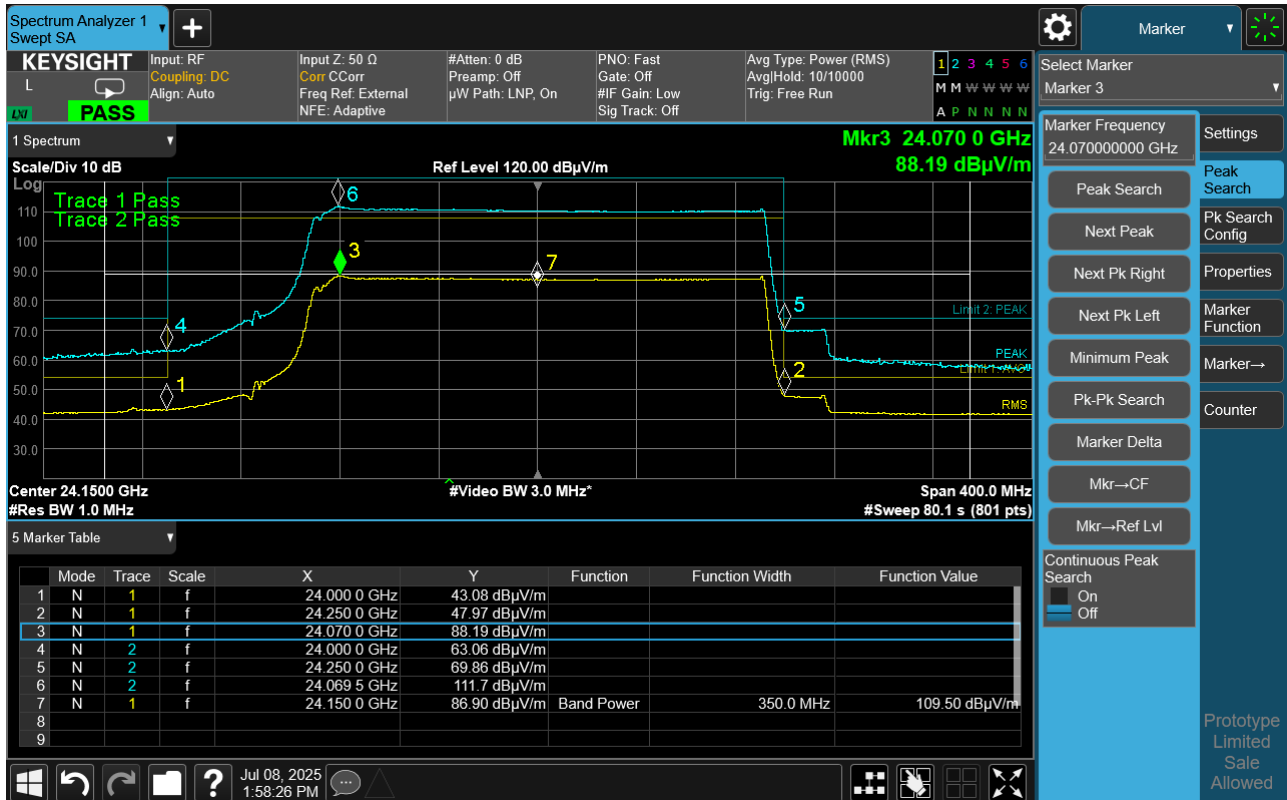
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 43 von 122  
Page 43 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.1.3 Average field strength measurement on worst case position (Peak) Azimuth 103deg; Elevation -2deg; Vertical polarization



| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (s) | Pol | Azimuth (deg) | Elevation (deg) | Result |
|-----------------|------------------|----------------|-------------|----------------|-----|---------------|-----------------|--------|
| 24070.0         | 88.19            | 108.00         | 19.81       | 80.1           | V   | 103.0         | -2.0            | Pass   |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

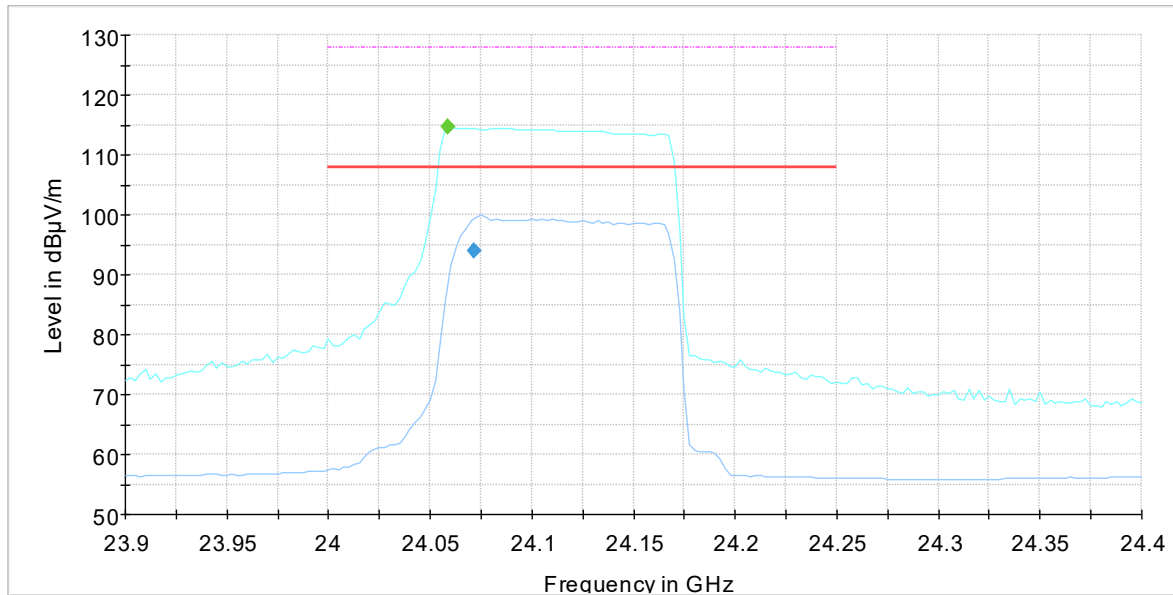
Seite 44 von 122  
Page 44 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.2 Mode Road\_0dB

#### 4.3.4.1.2.1 Peak field strength measurement and worst-case position evaluation for average field strength measurement



 Preview Result 2-PK+  
 Preview Result 1-AVG  
 FCC\_15C\_15.249\_Fundamental\_Field\_Strenght\_Avg  
 FCC\_15C\_15.249\_Fundamental\_Field\_Strenght\_Peak  
 Final\_Result AVG  
 Final\_Result PK+

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) | Result |
|-----------------|------------------|------------------|----------------|-------------|-----|---------------|-----------------|------------|--------|
| 24059.0         | 114.62           | ---              | 128.00         | 13.38       | V   | 105.0         | -1.0            | 22.7       | Pass   |
| 24071.5         | ---              | 93.84            | ---            | ---         | H   | -2.0          | 88.0            | 22.7       | ---    |

The average field strength level from this measurement is informative only, as the Sweep Time for final measurement is not according to the standard.

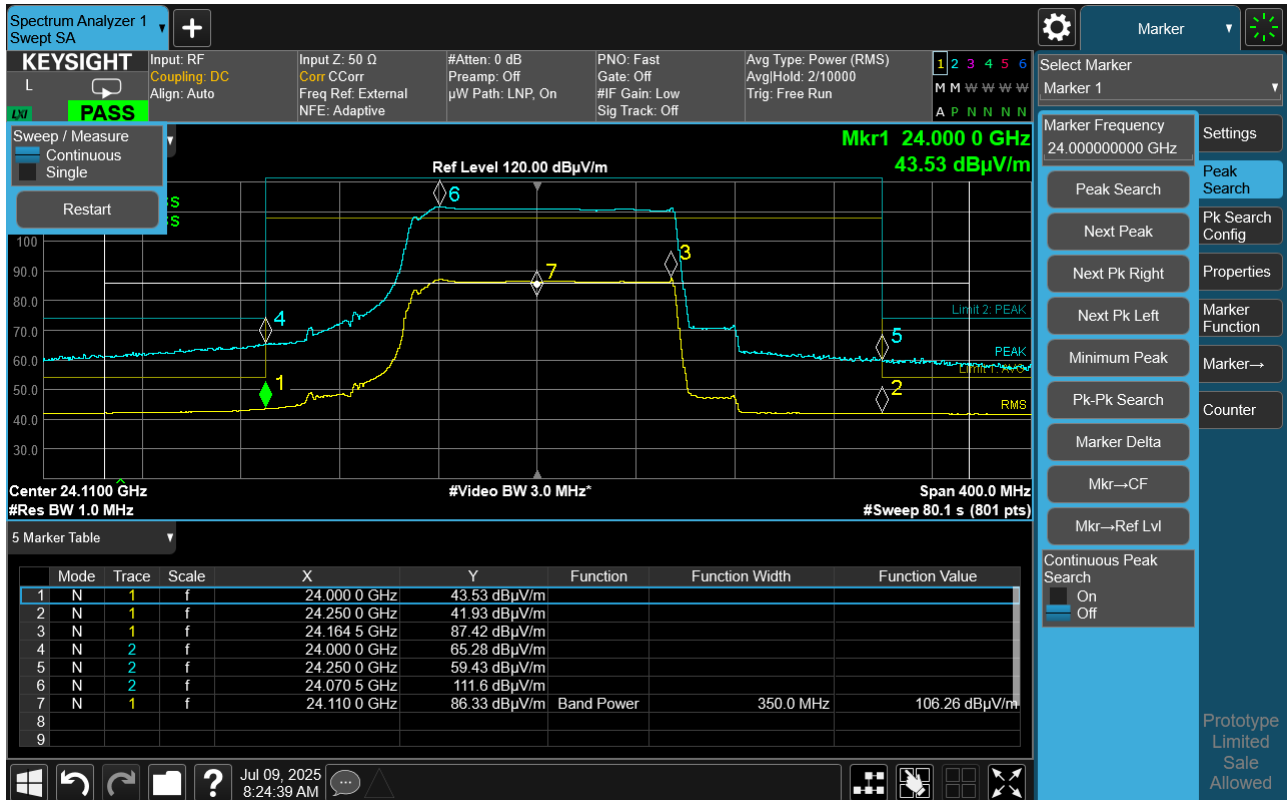
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 45 von 122  
Page 45 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.2.2 Average field strength measurement on worst case position (Average) Azimuth -2deg; Elevation 88deg; Horizontal polarization



| Frequency (MHz) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (s) | Pol | Azimuth (deg) | Elevation (deg) | Result |
|-----------------|------------------|----------------|-------------|----------------|-----|---------------|-----------------|--------|
| 24164.5         | 87.42            | 108            | 20.58       | 80.1           | H   | -2            | 88              | Pass   |

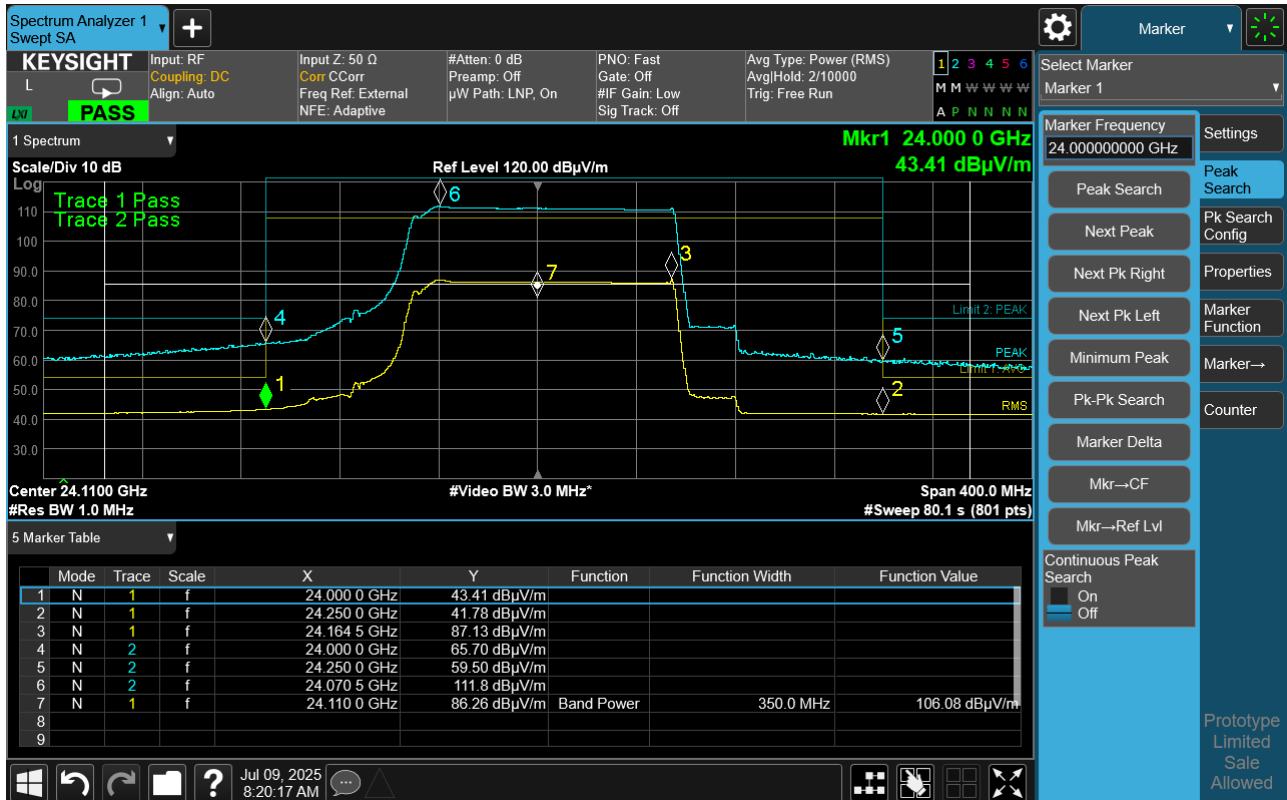
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 46 von 122  
Page 46 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.2.3 Average field strength measurement on worst case position (Peak) Azimuth 105deg; Elevation -1deg; Vertical polarization



| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (s) | Pol | Azimuth (deg) | Elevation (deg) | Result |
|-----------------|------------------|----------------|-------------|----------------|-----|---------------|-----------------|--------|
| 24164.5         | 87.13            | 108            | 20.87       | 80.1           | V   | 105           | -1              | Pass   |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

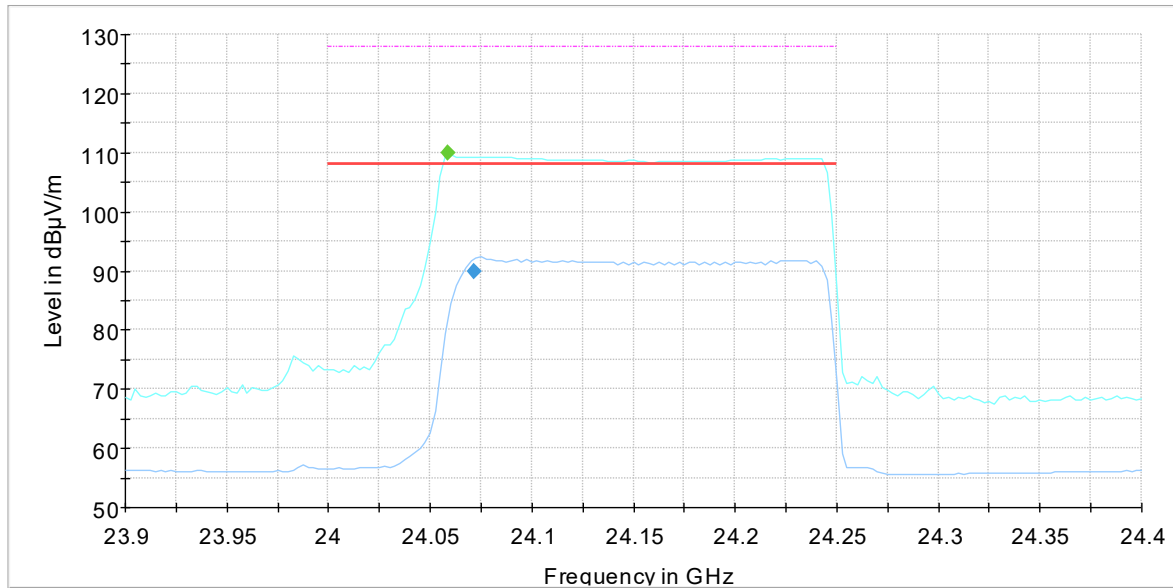
Seite 47 von 122  
Page 47 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.3 Mode Area\_lowdoppler\_-4dB

#### 4.3.4.1.3.1 Peak field strength measurement and worst-case position evaluation for average field strength measurement



Preview Result 2-PK+  
 Preview Result 1-AVG  
 FCC\_15C\_15.249\_Fundamental\_Field\_Strenght\_Avg  
 FCC\_15C\_15.249\_Fundamental\_Field\_Strenght\_Peak  
 Final\_Result AVG  
 Final\_Result PK+

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) | Result |
|-----------------|------------------|------------------|----------------|-------------|-----|---------------|-----------------|------------|--------|
| 24059.00        | 109.93           | ---              | 128.00         | 18.07       | V   | 102.0         | -2.0            | 22.7       | Pass   |
| 24071.50        | ---              | 89.89            | ---            | ---         | H   | -2.0          | 86.0            | 22.7       | ---    |

The average field strength level from this measurement is informative only, as the Sweep Time for final measurement is not according to the standard.

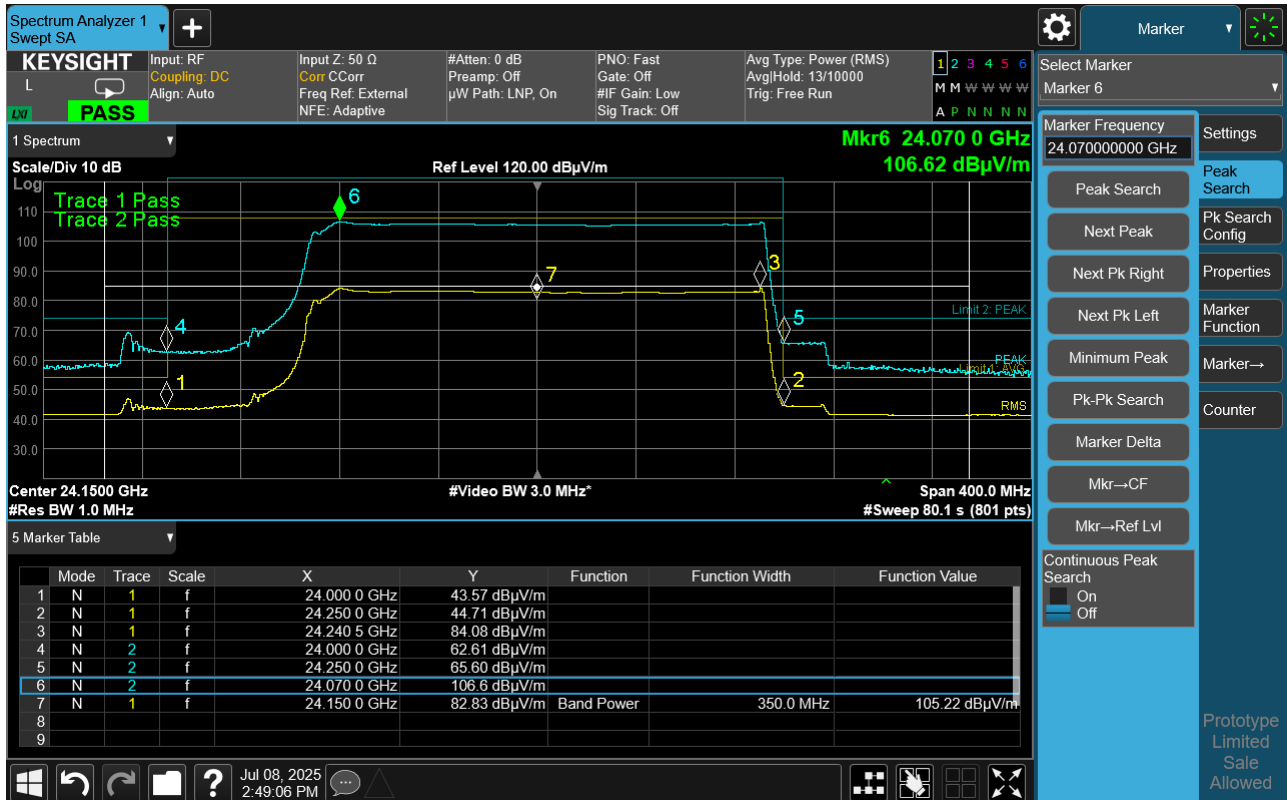
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 48 von 122  
Page 48 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.3.2 Average field strength measurement on worst case position (Average) Azimuth -2deg; Elevation 86deg; Horizontal polarization



| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (s) | Pol | Azimuth (deg) | Elevation (deg) | Result |
|-----------------|------------------|----------------|-------------|----------------|-----|---------------|-----------------|--------|
| 24240.5         | 84.08            | 108            | 23.92       | 80.1           | H   | -2            | 86              | Pass   |

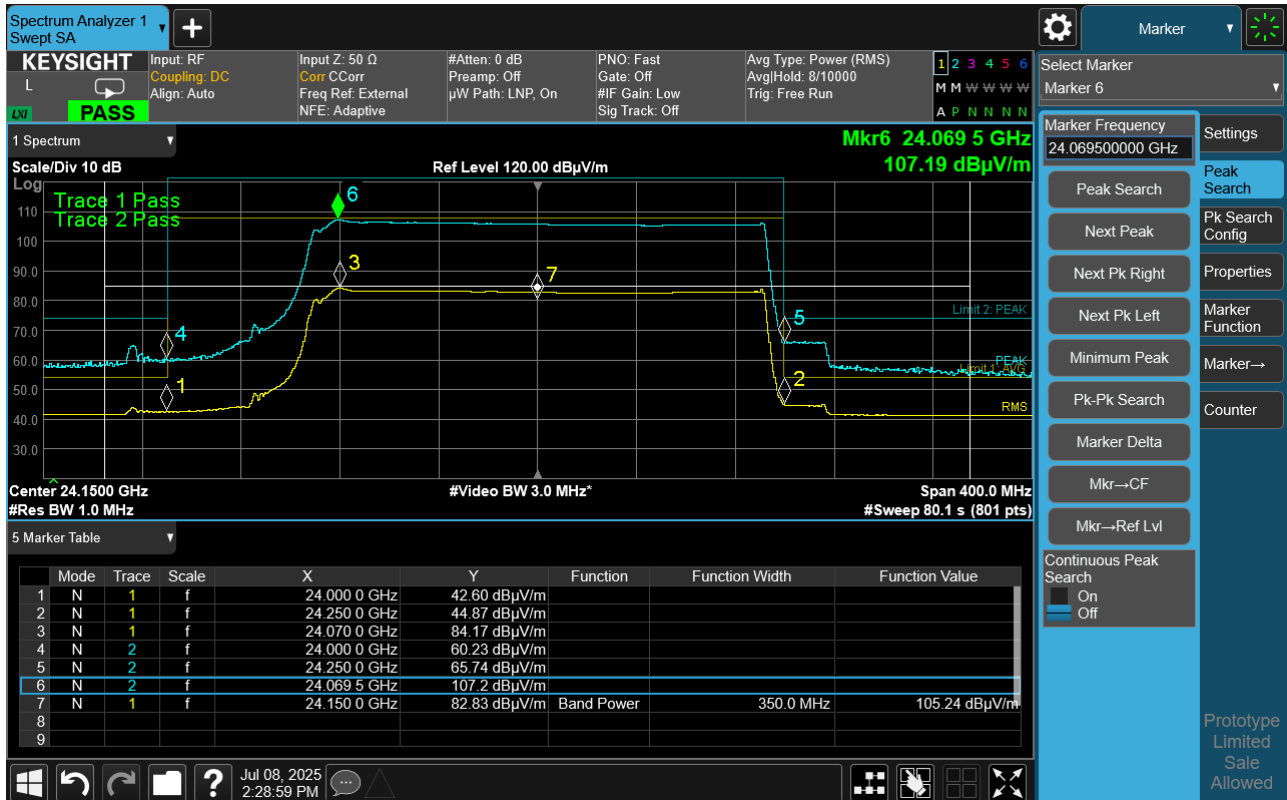
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 49 von 122  
Page 49 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.3.3 Average field strength measurement on worst case position (Peak) Azimuth 102deg; Elevation -2deg; Vertical polarization



| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (s) | Pol | Azimuth (deg) | Elevation (deg) | Result |
|-----------------|------------------|----------------|-------------|----------------|-----|---------------|-----------------|--------|
| 24070.0         | 84.17            | 108            | 23.83       | 80.1           | V   | 102           | -2              | Pass   |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

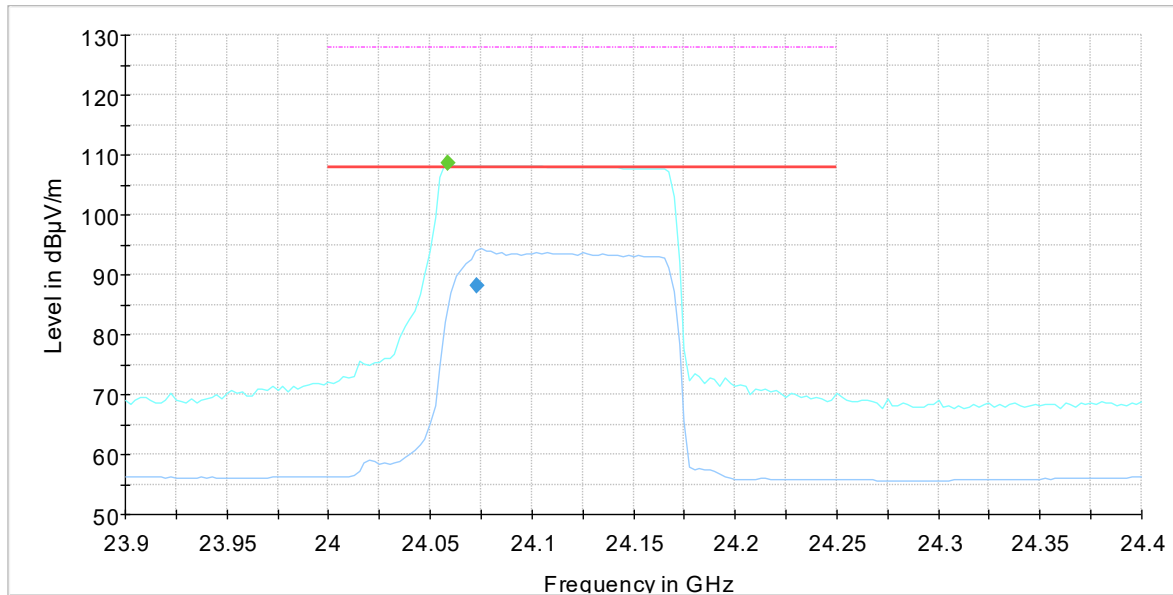
Seite 50 von 122  
Page 50 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.4 Mode Road\_-4dB

#### 4.3.4.1.4.1 Peak field strength measurement and worst-case position evaluation for average field strength measurement



— Preview Result 2-PK+  
— Preview Result 1-AVG  
— FCC\_15C\_15.249\_Fundamental\_Field\_Strenght\_Avg  
— FCC\_15C\_15.249\_Fundamental\_Field\_Strenght\_Peak  
◆ Final\_Result AVG  
◆ Final\_Result PK+

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) | Result |
|-----------------|------------------|------------------|----------------|-------------|-----|---------------|-----------------|------------|--------|
| 24058.500       | 108.70           | ---              | 128.00         | 19.30       | H   | -3.0          | 94.0            | 22.7       | Pass   |
| 24073.000       | ---              | 88.12            | ---            | ---         | H   | -7.0          | 89.0            | 22.7       | ---    |

The average field strength level from this measurement is informative only, as the Sweep Time for final measurement is not according to the standard.

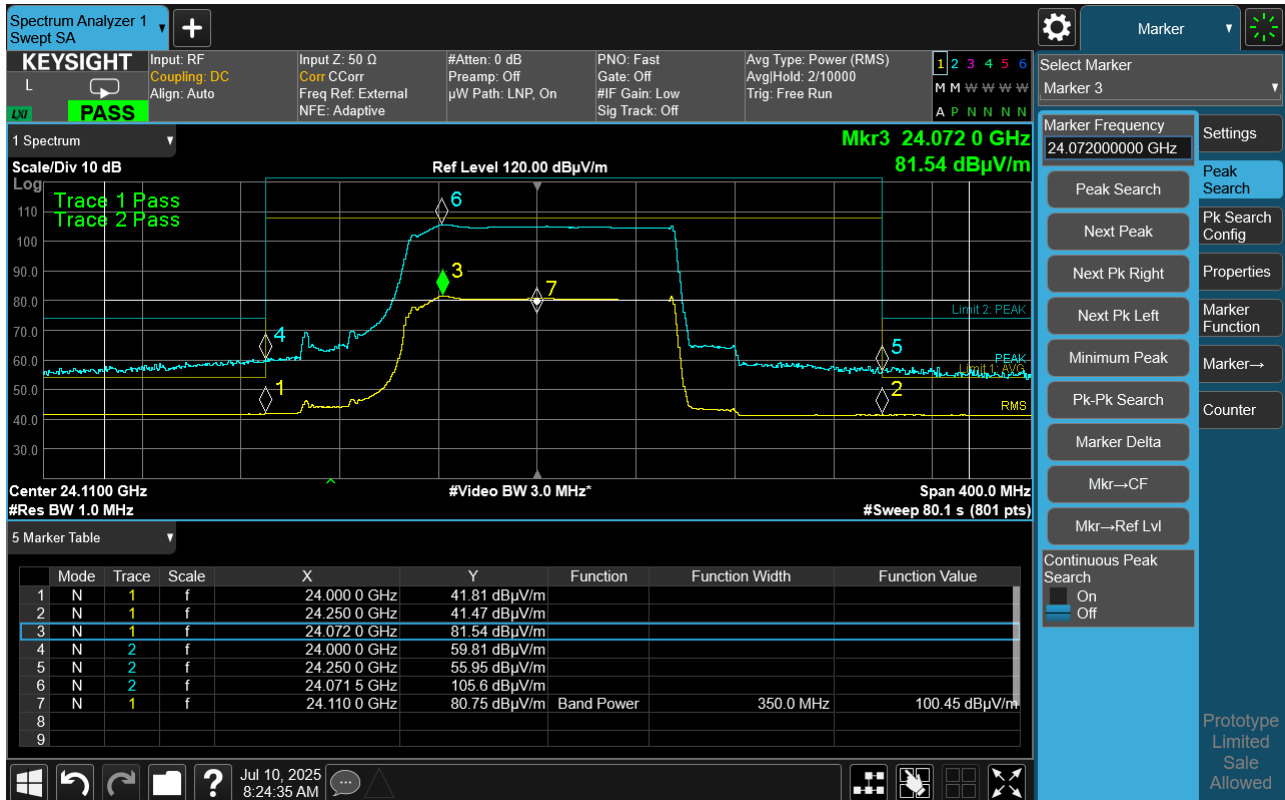
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 51 von 122  
Page 51 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.4.2 Average field strength measurement on worst case position (Average) Azimuth -7deg; Elevation 89deg; Horizontal polarization



| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (s) | Pol | Azimuth (deg) | Elevation (deg) | Result |
|-----------------|------------------|----------------|-------------|----------------|-----|---------------|-----------------|--------|
| 24072.0         | 81.54            | 108            | 26.46       | 80.1           | H   | -7            | 89              | Pass   |

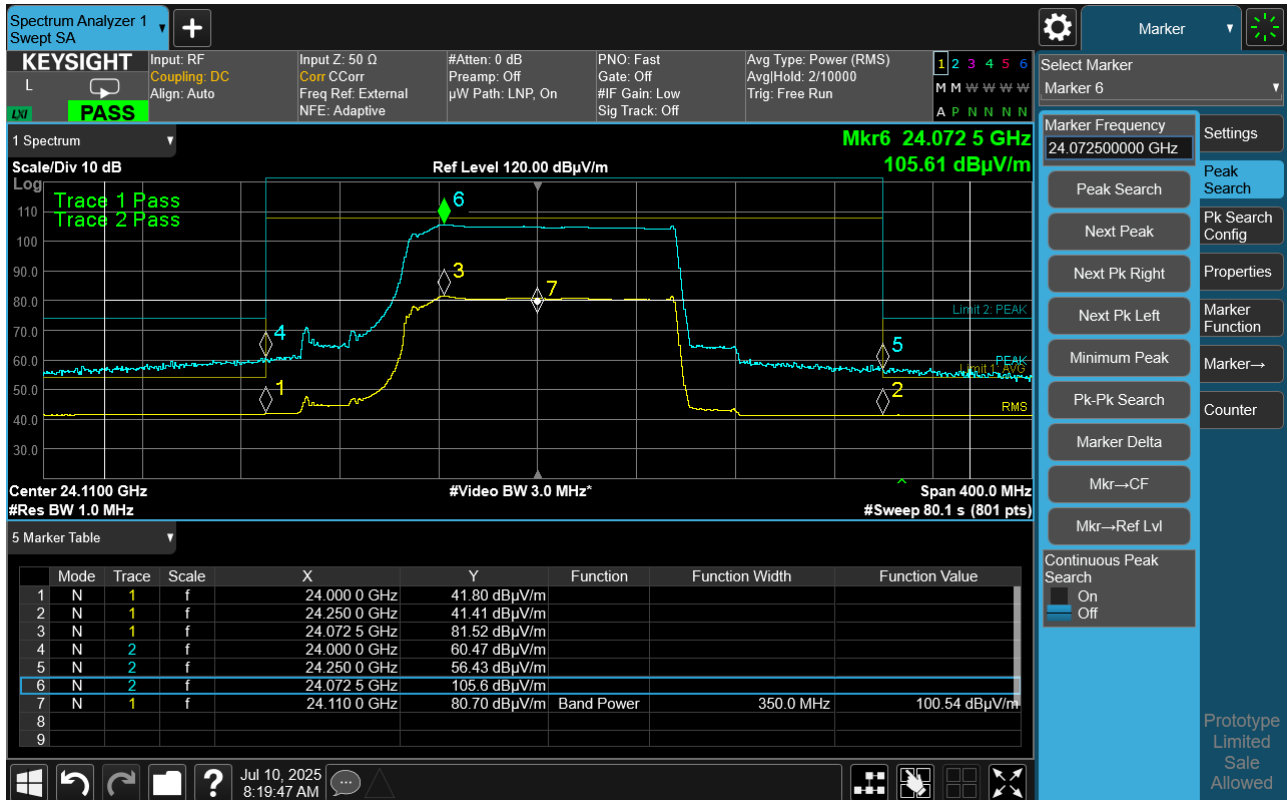
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 52 von 122  
Page 52 of 122

## Prüfdokumentation

Test documentation

### 4.3.4.1.4.3 Average field strength measurement on worst case position (Peak) Azimuth -3deg; Elevation 94deg; Horizontal polarization



| Frequency (MHz) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (s) | Pol | Azimuth (deg) | Elevation (deg) | Result |
|-----------------|------------------|----------------|-------------|----------------|-----|---------------|-----------------|--------|
| 24072.5         | 81.52            | 108            | 26.48       | 80.1           | H   | -3            | 94              | Pass   |

### 4.3.5 Final test result (Field strength of fundamental emissions)

Measured maximum field strength: 114.75dBμV/m (Peak); 88.75dBμV/m (Average)

|                   |      |
|-------------------|------|
| Final test result | Pass |
|-------------------|------|

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 53 von 122  
Page 53 of 122

**Prüfdokumentation**  
Test documentation

## 4.4 Field strength of unwanted and harmonic emissions

### 4.4.1 Requirements / Limits

FCC §15.249 (a) and ISSED RSS-210 sec. B.10 a

The field strength of harmonic emissions measured at the distance of 3 m shall not exceed the following limits.

|                                     | Fundamental frequency [MHz] | Harmonic limit [ $\mu\text{V/m}$ ] | Harmonic Limit [ $\text{dB}\mu\text{V/m}$ ] |
|-------------------------------------|-----------------------------|------------------------------------|---------------------------------------------|
| <input type="checkbox"/>            | 902-928                     | 500                                | 54                                          |
| <input type="checkbox"/>            | 2400-2483.5                 | 500                                | 54                                          |
| <input type="checkbox"/>            | 5725-5875                   | 500                                | 54                                          |
| <input checked="" type="checkbox"/> | 24000-24250                 | 2500                               | 68                                          |

Used conversion factor [ $\text{mV/m}$ ]->[ $\text{dB}\mu\text{V/m}$ ]:  $\text{Limit}_{\text{dB}\mu\text{V/m}} = 20 \log (\text{Limit}_{\text{mV/m}} * 1000) \text{ dB}\mu\text{V/m}$

For example, if the  $\text{limit}_{\text{mV/m}}$  is given with  $1 \text{ mV/m}$ , then the  $\text{limit}_{\text{dB}\mu\text{V/m}}$  is calculated to:

$\text{Limit}_{\text{dB}\mu\text{V/m}} = 20 * \log((1 * 1000)) \text{ dB}\mu\text{V/m} = 60 \text{ dB}\mu\text{V/m}$ .

ISSED RSS-210 sec. 7:

Unless otherwise specified, the measurements shall be performed in accordance with ANSI C63.10.

FCC §15.249 (c) and ISSED RSS-210 sec. B.10 b:

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits whichever is the lesser attenuation.

FCC Part 15, Subpart C, §15.35(a); ANSI C63.10:

On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a CISPR quasi-peak detector function and related measurement bandwidths, unless otherwise specified.

FCC Part 15, Subpart C, §15.35(b); ANSI C63.10:

Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1 MHz.

FCC Part 15, Subpart C, §15.35(b); ANSI C63.10:

..., there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit....

FCC Part 15, Subpart C, §15.35(c); ISSED RSS-Gen sec. 8.2:

Unless otherwise specified, when the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 54 von 122  
Page 54 of 122

## Prüfdokumentation

Test documentation

FCC Part 15, Subpart C, §15.209; ISED RSS-Gen sec. 8.9  
General radiated emission limits:

| Frequency [MHz] | Measurement distance [m] | Limit [ $\mu\text{A/m}$ ] | Limit [ $\mu\text{V/m}$ ] | Limit [dB $\mu\text{V/m}$ ] | Limit @3m [dB $\mu\text{V/m}$ ] | Detector |
|-----------------|--------------------------|---------------------------|---------------------------|-----------------------------|---------------------------------|----------|
| 0.009 – 0.09    | 300                      | 6.37/F                    | 2400/F                    | 48.5 ... 28.5               | 128.5 ... 108.5                 | AVG(Pk)  |
| 0.09 – 0.11     | 300                      | 6.37/F                    | 2400/F                    | 28.5 ... 26.8               | 108.5 ... 106.8                 | QP       |
| 0.11 – 0.49     | 300                      | 6.37/F                    | 2400/F                    | 26.8 ... 13.8               | 106.8 ... 93.8                  | AVG(Pk)  |
| 0.49 – 1.705    | 30                       | 63.7/F                    | 24000/F                   | 33.8 ... 23.0               | 73.8 ... 63.0                   | QP       |
| 1.705 – 30      | 30                       | 0.08                      | 30                        | 29.5                        | 69.5                            | QP       |
| 30 – 88         | 3                        |                           | 100                       | 40.0                        | 40.0                            | QP       |
| 88 – 216        | 3                        |                           | 150                       | 43.5                        | 43.5                            | QP       |
| 216 – 960       | 3                        |                           | 200                       | 46.0                        | 46.0                            | QP       |
| 960 - 1000      | 3                        |                           | 500                       | 54.0                        | 54.0                            | QP       |
| 1000 - 40000    | 3                        |                           | 500                       | 54.0                        | 54.0                            | AVG(Pk)  |

F: Frequency in kHz

Used conversion factor [ $\mu\text{A/m}$ ]->[ $\mu\text{V/m}$ ]:  $\text{Limit}_{\mu\text{V/m}} = \text{Limit}_{\mu\text{A/m}} * 376.7 \mu\text{V/m}$

Used conversion factor [ $\mu\text{V/m}$ ]->[dB $\mu\text{V/m}$ ]:  $\text{Limit}_{\text{dB}\mu\text{V/m}} = 20 \log (\text{Limit}_{\mu\text{V/m}})$  dB $\mu\text{V/m}$

For example, if the  $\text{Limit}_{\mu\text{A/m}}$  is given with 5 $\mu\text{A/m}$ , then the  $\text{limit}_{\mu\text{V/m}}$  is calculated to:

$\text{Limit}_{\mu\text{V/m}} = 5 * 376.7 \mu\text{V/m} = 1883.5 \mu\text{V/m}$  and the  $\text{Limit}_{\text{dB}\mu\text{V/m}}$  is calculated to:

$\text{Limit}_{\text{dB}\mu\text{V/m}} = 20 * \log(1883.5) \text{ dB}\mu\text{V/m} = 65.5 \text{ dB}\mu\text{V/m}$ .

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90kHz, 110–490kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing a linear average detector.

FCC Part 15, Subpart C, §15.31 (f)(2); ISED RSS-Gen sec. 6.5:

At frequencies below 30MHz, the limit values are corrected with an inverse linear distance extrapolation factor (40dB/decade).

FCC Part 15, Subpart A, §15.33 (a)(1-2); ANSI C63.10 clause 5.5; ISED RSS-Gen sec. 6.13.2:

For an intentional radiator operating below 10 GHz, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

## Prüfdokumentation

Test documentation

### 4.4.2 Radiated measurements with general limit (Unwanted emissions)

#### 4.4.2.1 Test Method

Radiated unwanted Emissions were tested against the general limits specified in § 15.209(a) ISSED RSS-Gen sec. 8.9. Emissions that fall inside the frequency band in which the intentional radiator is operating were excluded.

Emissions that exceed the general limits were additionally tested for the further requirements of §15.249 (d); ISSED RSS-210 sec. B.10

A test program that controls instrumentation and data logging was used to automate the preliminary RF emission test procedure. Preliminary emission testing was performed inside the anechoic chamber. The measurement equipment was located outside of the chamber. A video camera was placed inside the chamber to view the EUT. The different measurement setups for each frequency range are shown below.

For the final testing, the placement of EUT and cables were the same as for preliminary testing. The six highest emissions relative to the limit were measured unless such emissions were more than 20 dB below the limit. If less than six emissions are within 20 dB of the limit, then the noise level of the receiver is measured at frequencies where emissions are expected. Multiples of all oscillator and microprocessor frequencies were also checked. For the measurements in the frequency range 30 MHz to 1 GHz for each measured frequency the peak emission was maximized by manipulating the receiving antenna from 1 to 4 meters above the ground plane and placing it at the position that produced the maximum signal strength reading. The turntable was then rotated through 360° while observing the peak signal and placing the EUT at the position that produced maximum radiation.

For measurement above 1 GHz the turntable and positioner step sizes were set to a range of 22° and the antenna height is fixed.

For the measurements in the frequency ranges (90-110kHz, 490 kHz-1 GHz) quasi-peak detector was used, while average and peak detectors were used in other ranges.

Final testing was performed on an SVSWR compliant test site.

The final average electric field value ( $E_{\text{final}}$ ) is calculated using the following equation:

$$E_{\text{final}} = \text{RawRec} + \text{Corr}$$

While

$$\text{Corr} = \text{AF} + \text{SigPathAtt} + \text{PreampAtt}$$

Were

$E_{\text{final}}$ : final average electric field value

RawRec: Receiver reading

AF: Antenna factor

SigPathAtt: Signalpath losses

PreampAtt: Preamplifier losses

For example, if a Receiver reading of 1dB $\mu$ V was measured and the Antenna factor is 2 dB/m, the Signalpath losses are 3dB and the Preamplifier losses are -10dB, then the Correction is calculated to:

Corr = (2+3-10) dB= -5dB and the Final electric field strength  $E_{\text{Final}}$  is calculated to:

$$E_{\text{Final}} = (1 - 5) \text{ dB}\mu\text{V/m} = -4 \text{ dB}\mu\text{V/m}$$

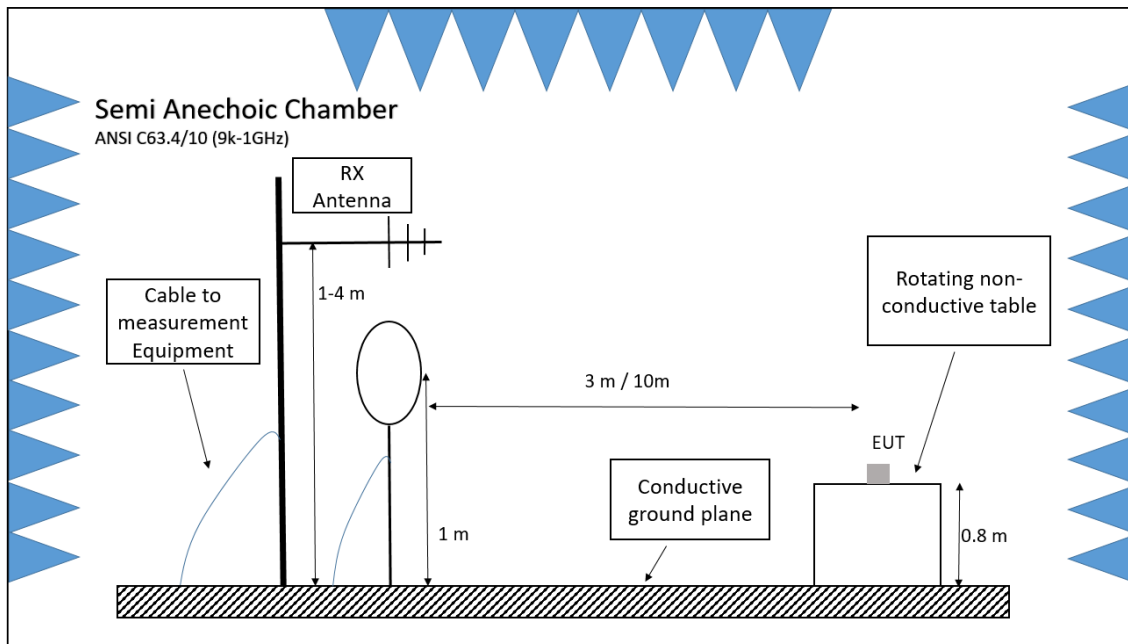
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 56 von 122  
Page 56 of 122

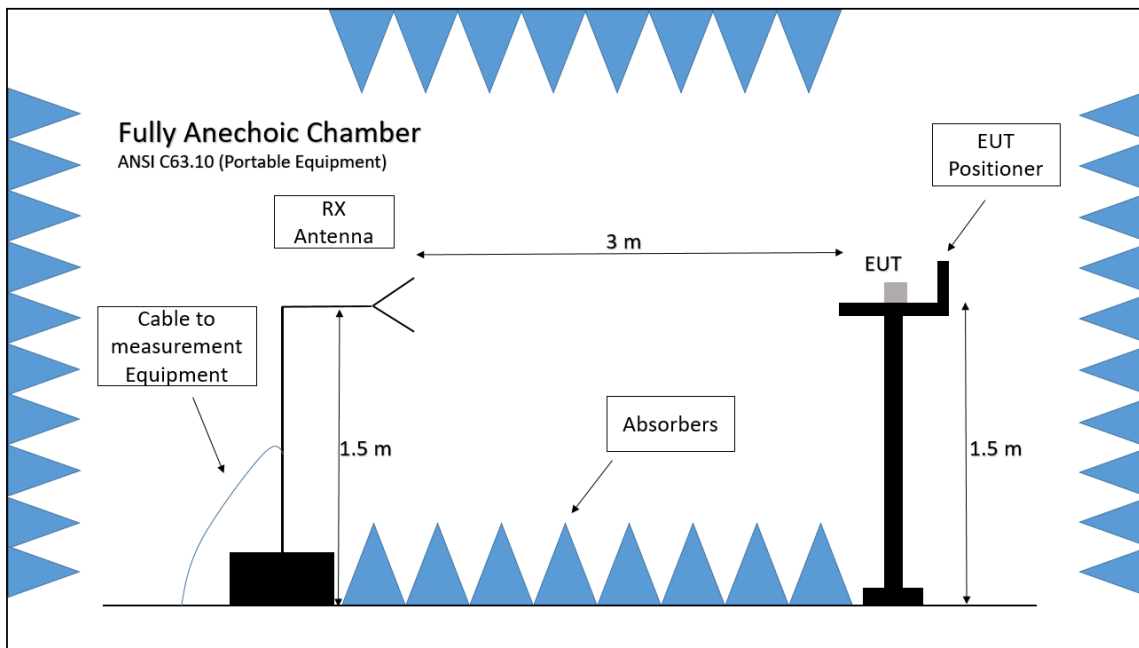
## Prüfdokumentation Test documentation

### 4.4.2.2 EUT positioning (Radiated measurements with general limit; Unwanted emissions)

#### 4.4.2.2.1 EUT positioning below 1GHz



#### 4.4.2.2.2 EUT positioning above 1GHz



**Prüfbericht-Nr.: DE2500IA 001**  
Test report no.:

Seite 57 von 122  
Page 57 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.3 Measurement Setup (Radiated measurements with general limit; Unwanted emissions)

#### 4.4.2.3.1 Measurement Setup 9kHz - 30MHz

|                                |                                                                                                           |
|--------------------------------|-----------------------------------------------------------------------------------------------------------|
| Test Site                      | SAC (Semi Anechoic Chamber)                                                                               |
| Receiving Antenna              | Loop antenna (HFH 2)                                                                                      |
| Receiving Antenna Height       | 1m                                                                                                        |
| Receiving Antenna Polarization | Parallel and perpendicular to the EUT (EUT without Loop antenna)<br>According to ANSI C63.10 clause 6.4.6 |
| EUT Table                      | 1.0m x 1.5m non-conductive table 80cm above the floor                                                     |
| EUT Turn Table Step Size       | 22.5° during exploratory tests<br>Linear during maximizations for final measurements                      |
| Receiver Configurations        | Average and peak detectors (9-90kHz and 110-490kHz)<br>Quasi Peak detector (90-110kHz and 490kHz-30MHz)   |
|                                | RBW: 200Hz (9 - 150kHz) and 9 kHz (150kHz – 30MHz)                                                        |
|                                | Step Size: 50Hz (9-150kHz) and 2.25kHz (150k-30MHz)                                                       |
|                                | Sweep Time: 100ms (FFT) during exploratory tests<br>Sweep Time: 1s for final measurements                 |

#### 4.4.2.3.2 Measurement Setup 30MHz - 1GHz

|                                |                                                                                                                |
|--------------------------------|----------------------------------------------------------------------------------------------------------------|
| Test Site                      | SAC (Semi Anechoic Chamber)                                                                                    |
| Receiving Antenna              | Hybrid Antenna VULB 9168                                                                                       |
| Receiving Antenna height       | Varied (1m to 4m, step size 1m) during exploratory tests<br>Linear during maximizations for final measurements |
| Receiving Antenna Polarization | Horizontal and Vertical                                                                                        |
| EUT Table                      | 1.0m x 1.5m non-conductive table 80cm above the floor                                                          |
| EUT Turn Table Step Size       | 45° during exploratory tests<br>Linear during maximizations for final measurements                             |
| Receiver Configurations        | Average and peak detector                                                                                      |
|                                | RBW :120 kHz                                                                                                   |
|                                | Step Size: 30kHz (30-1000MHz)                                                                                  |
|                                | Sweep Time: 20ms (FFT) during exploratory tests<br>Sweep Time: 1s for final measurements                       |

**Prüfbericht-Nr.: DE2500IA 001**  
Test report no.:

Seite 58 von 122  
Page 58 of 122

**Prüfdokumentation**  
Test documentation

4.4.2.3.3 Measurement Setup 1GHz- 18GHz

|                                |                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------|
| Test Site                      | FAC (Fully-anechoic chamber)                                                                |
| Receiving Antenna              | Horn Antenna HF907 (1-18GHz)                                                                |
| Receiving Antenna Height       | 1.5m                                                                                        |
| Receiving Antenna Polarization | Horizontal – Vertical                                                                       |
| EUT Positioner                 | 40cm x 60cm non-conductive positioner 1.5m above the floor<br>Step size elevation angle 30° |
| EUT Turn Table Step Size       | Continuous turning                                                                          |
| Spectrum Analyzer              | Average and peak detectors                                                                  |
|                                | RBW: 1 MHz                                                                                  |
|                                | Sweep Time: 1s during exploratory tests<br>Sweep Time: 1s for final measurements            |

4.4.2.3.4 Measurement Setup 18GHz- 40GHz

|                                |                                                                                             |
|--------------------------------|---------------------------------------------------------------------------------------------|
| Test Site                      | FAC (Fully-anechoic chamber)                                                                |
| Receiving Antenna              | Horn Antenna 3116C-PA (18-40GHz)                                                            |
| Receiving Antenna Height       | 1.5m                                                                                        |
| Receiving Antenna Polarization | Horizontal – Vertical                                                                       |
| EUT Positioner                 | 40cm x 60cm non-conductive positioner 1.5m above the floor<br>Step size elevation angle 30° |
| EUT Turn Table Step Size       | Continuous turning                                                                          |
| Spectrum Analyzer              | Average and peak detectors                                                                  |
|                                | RBW: 1 MHz                                                                                  |
|                                | Sweep Time: 1s during exploratory tests<br>Sweep Time: 1s for final measurements            |

4.4.2.3.5 Measurement Setup 40GHz- 60GHz

|                                |                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------|
| Test Site                      | FAC (Fully-anechoic chamber)                                                                  |
| Receiving Antenna              | Horn Antenna M19RH (40-60GHz)                                                                 |
| Receiving Antenna Height       | 1.5m                                                                                          |
| Receiving Antenna distance     | 0.6m                                                                                          |
| Receiving Antenna Polarization | Vertical                                                                                      |
| EUT Positioner                 | 40cm x 60cm non-conductive positioner 1.5m above the floor<br>Step size elevation angle 22.5° |
| EUT Turn Table Step Size       | Continuous turning                                                                            |
| Spectrum Analyzer              | Average and peak detectors                                                                    |
|                                | RBW: 1 MHz                                                                                    |
|                                | Sweep Time: 1s during exploratory tests with Max Hold                                         |

**Prüfbericht-Nr.: DE2500IA 001**  
Test report no.:

Seite 59 von 122  
Page 59 of 122

**Prüfdokumentation**  
Test documentation

4.4.2.3.6 Measurement Setup 60GHz- 90GHz

|                                |                                                                   |
|--------------------------------|-------------------------------------------------------------------|
| Test Site                      | FAC (Fully-anechoic chamber)                                      |
| Receiving Antenna              | SAX322 Extension Module with external Horn Antenna M12RH 60-90GHz |
| Receiving Antenna Height       | 1.5m                                                              |
| Receiving Antenna distance     | 0.1m                                                              |
| Receiving Antenna Polarization | Vertical                                                          |
| EUT Positioner                 | Manuel exploratory over whole sphere of EUT                       |
| EUT Turn Table Step Size       | Manuel exploratory over whole sphere of EUT                       |
| Spectrum Analyzer              | Average and peak detectors                                        |
|                                | RBW: 1 MHz                                                        |
|                                | Sweep Time: 1s during exploratory tests with Max Hold             |

4.4.2.3.7 Measurement Setup 90GHz- 110GHz

|                                |                                                                    |
|--------------------------------|--------------------------------------------------------------------|
| Test Site                      | FAC (Fully-anechoic chamber)                                       |
| Receiving Antenna              | SAX321 Extension Module with external Horn Antenna M08RH 90-120GHz |
| Receiving Antenna Height       | 1.5m                                                               |
| Receiving Antenna distance     | 0.1m                                                               |
| Receiving Antenna Polarization | Vertical                                                           |
| EUT Positioner                 | Manuel exploratory over whole sphere of EUT                        |
| EUT Turn Table Step Size       | Manuel exploratory over whole sphere of EUT                        |
| Spectrum Analyzer              | Average and peak detectors                                         |
|                                | RBW: 1 MHz                                                         |
|                                | Sweep Time: 1s during exploratory tests with Max Hold              |

4.4.2.4 Test Setup (Radiated measurements with general limit; Unwanted emissions)

|                    |                                                                                                                                                                                                                                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT                | A003954064-001 (rad. sample)                                                                                                                                                                                                                               |
| Companion device   | EUT in Test Mode. Therefore, no Companion Device was used.                                                                                                                                                                                                 |
| Operation mode     | <input checked="" type="checkbox"/> 1: TX-Mode Area_lowdoppler_0dB <input checked="" type="checkbox"/> 2: TX-Mode Road_0dB<br><input checked="" type="checkbox"/> 3: TX-Mode Area_lowdoppler_-4dB <input checked="" type="checkbox"/> 4: TX-Mode Road_-4dB |
| Further parameters | -                                                                                                                                                                                                                                                          |
| Test engineer      | Primož Erzen                                                                                                                                                                                                                                               |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 60 von 122  
Page 60 of 122

## Prüfdokumentation

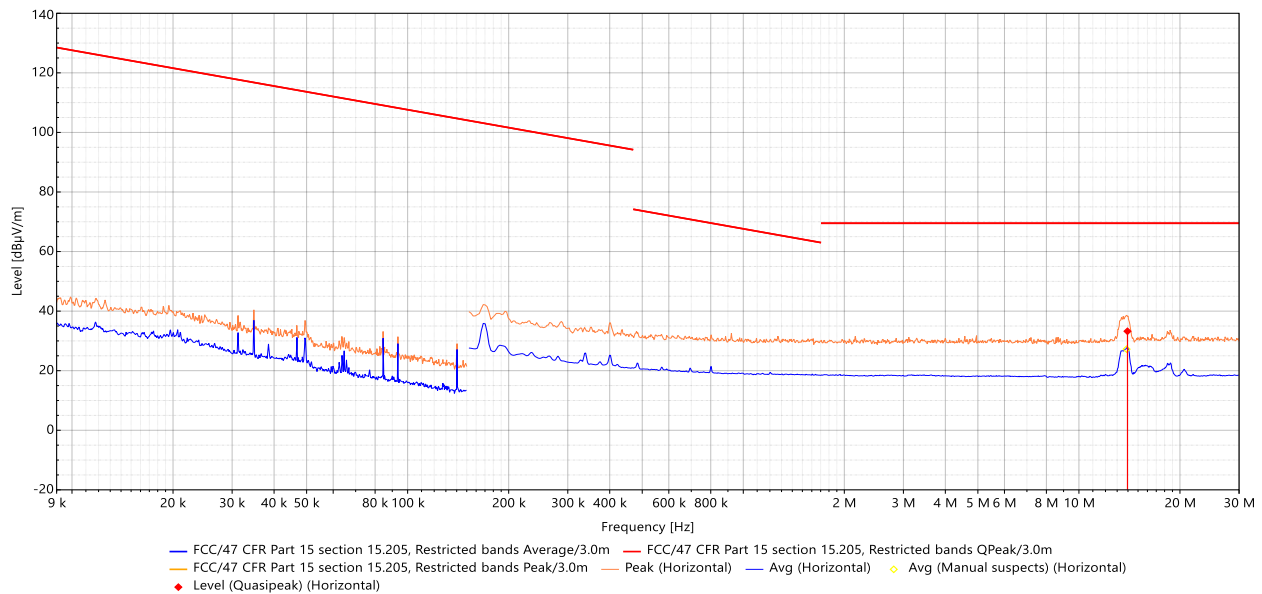
Test documentation

### 4.4.2.5 Test results (Radiated measurements with general limit; Unwanted emissions)

#### 4.4.2.5.1 9 kHz to 30 MHz, Mode Area\_lowdoppler\_0dB

##### 4.4.2.5.1.1 Perpendicular Polarization

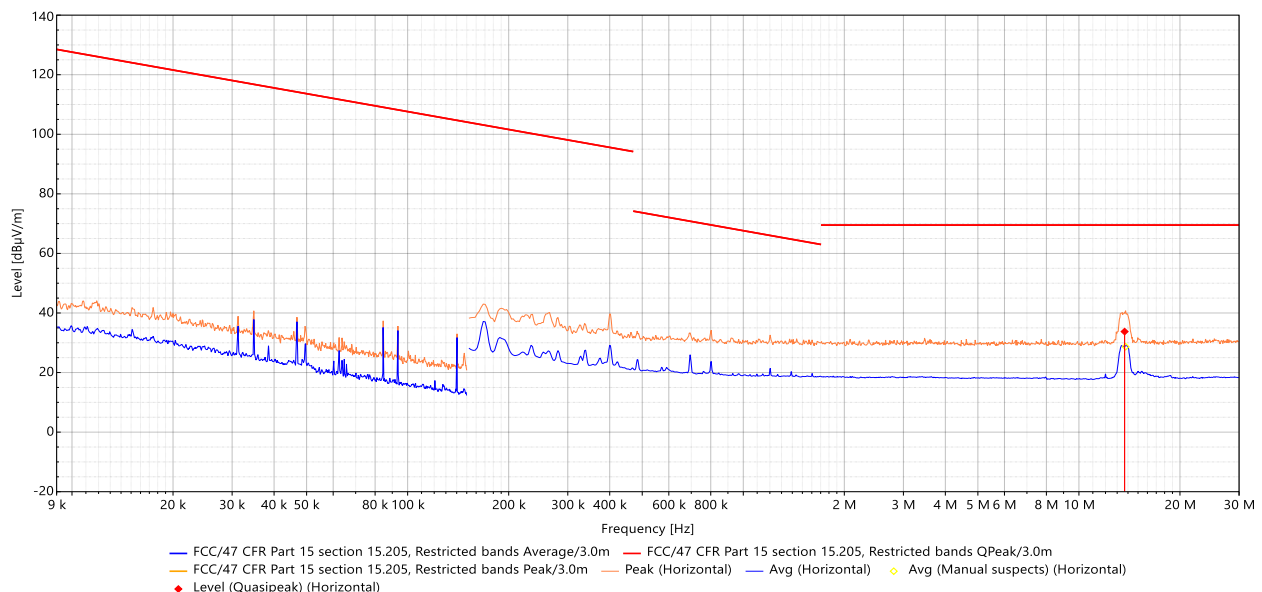
#22



| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Azimuth (deg) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|---------------|------------|
| 13.953          | 33.2           | 69.5           | -36.3       | 133.3         | 19.8       |

##### 4.4.2.5.1.2 Parallel Polarization

#27



| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Azimuth (deg) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|---------------|------------|
| 13.681          | 33.8           | 69.5           | -35.7       | 176.0         | 19.8       |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 61 von 122  
Page 61 of 122

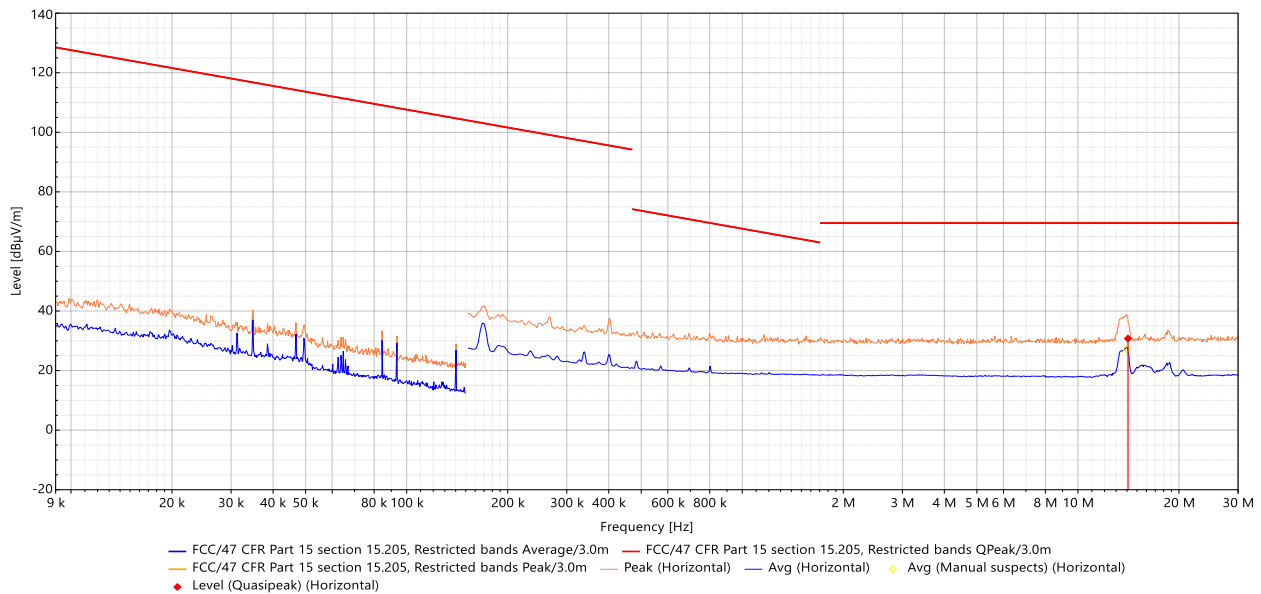
## Prüfdokumentation

Test documentation

### 4.4.2.5.2 9 kHz to 30 MHz, Mode Road\_0dB

#### 4.4.2.5.2.1 Perpendicular Polarization

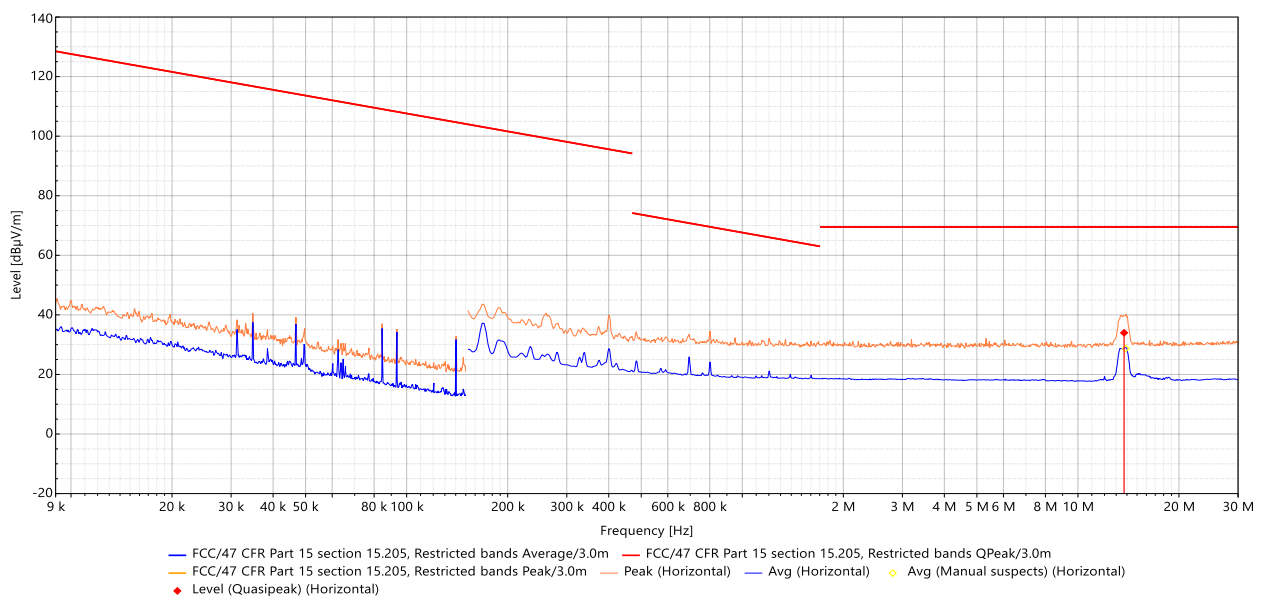
#23



| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Azimuth (deg) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|---------------|------------|
| 14.103          | 30.8           | 69.5           | -38.7       | 22.7          | 19.8       |

#### 4.4.2.5.2.2 Parallel Polarization

#26



| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Azimuth (deg) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|---------------|------------|
| 13.726          | 34.0           | 69.5           | -35.5       | 308.7         | 19.8       |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 62 von 122  
Page 62 of 122

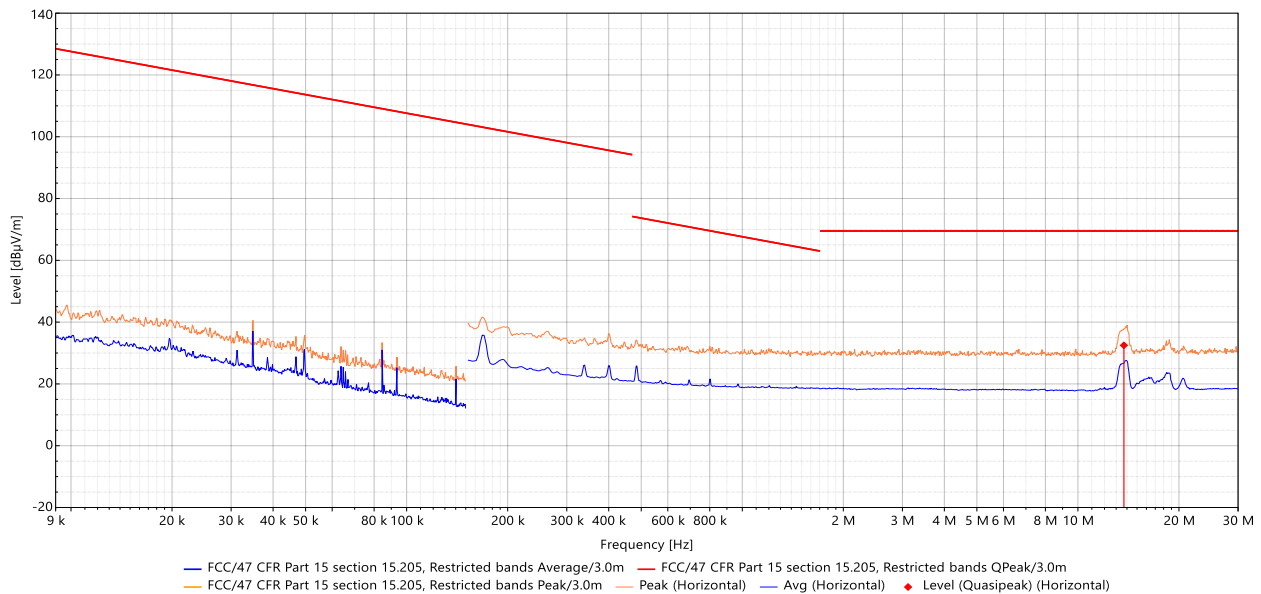
## Prüfdokumentation

Test documentation

4.4.2.5.3 9 kHz to 30 MHz, Area\_lowdoppler\_-4dB

4.4.2.5.3.1 Perpendicular Polarization

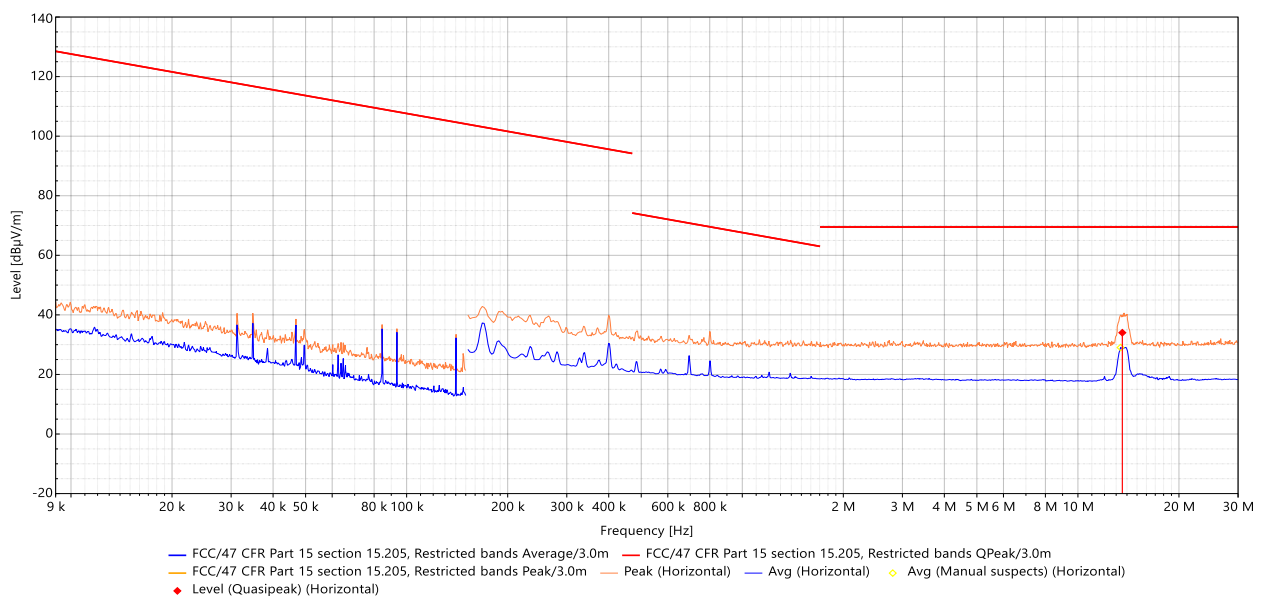
#21



| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Azimuth (deg) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|---------------|------------|
| 13.709          | 32.5           | 69.5           | -37.0       | 49.7          | 19.8       |

4.4.2.5.3.2 Parallel Polarization

#28



| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Azimuth (deg) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|---------------|------------|
| 13.562          | 34.0           | 69.5           | -35.5       | 285.1         | 19.8       |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

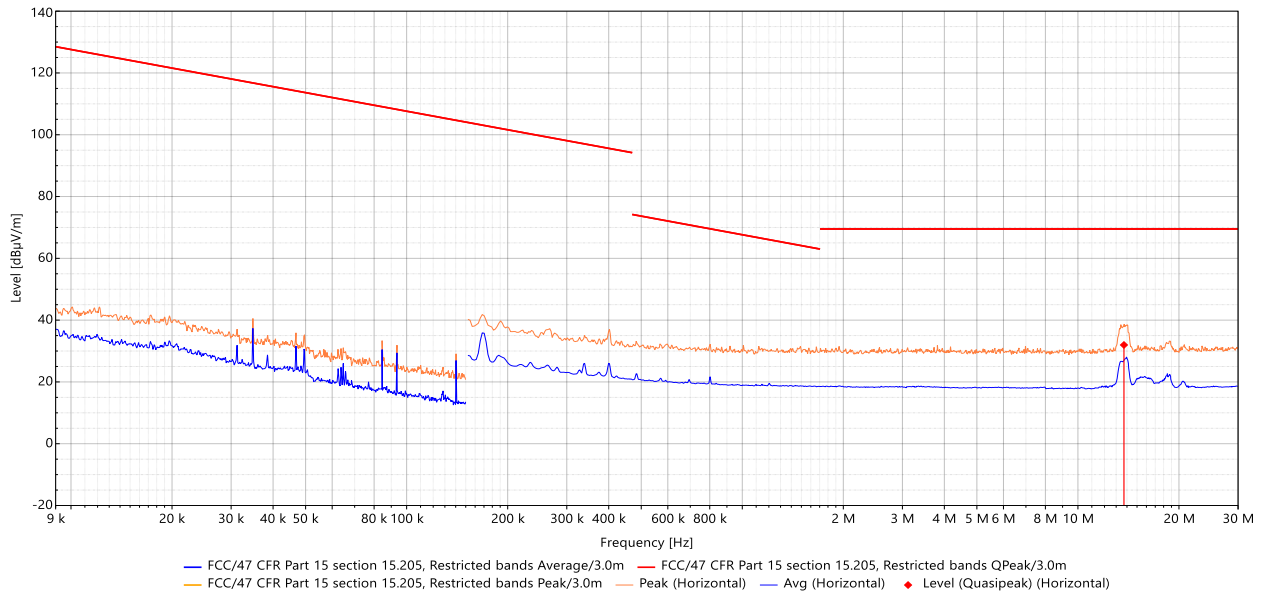
Seite 63 von 122  
Page 63 of 122

**Prüfdokumentation**  
Test documentation

4.4.2.5.4 9 kHz to 30 MHz, Mode Road\_-4dB

4.4.2.5.4.1 Perpendicular Polarization

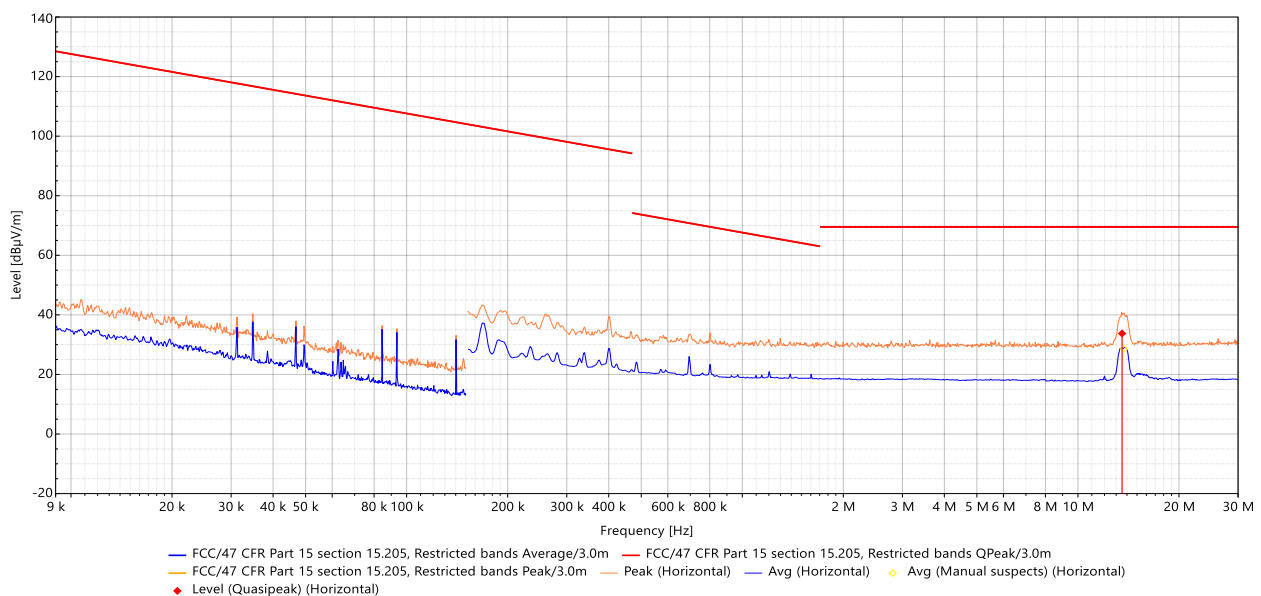
#24



| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Azimuth (deg) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|---------------|------------|
| 13.713          | 32.0           | 69.5           | -37.5       | 311.5         | 19.8       |

4.4.2.5.4.2 Parallel Polarization

#25



| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Azimuth (deg) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|---------------|------------|
| 13.537          | 33.8           | 69.5           | -35.7       | 89.0          | 19.8       |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

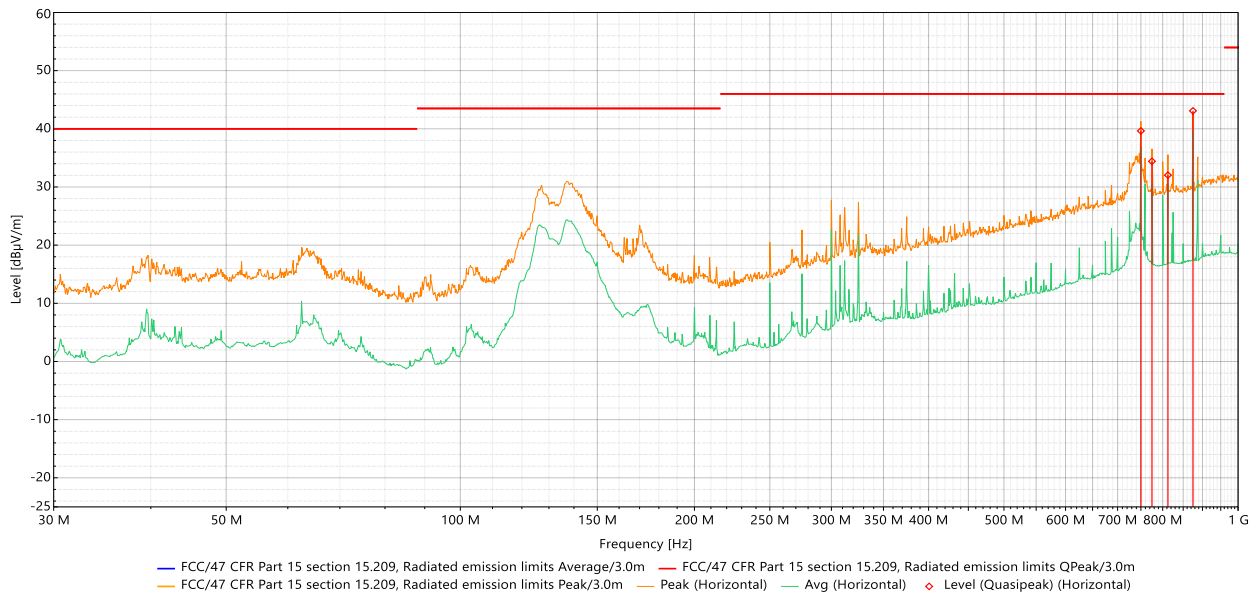
Seite 64 von 122  
Page 64 of 122

## Prüfdokumentation

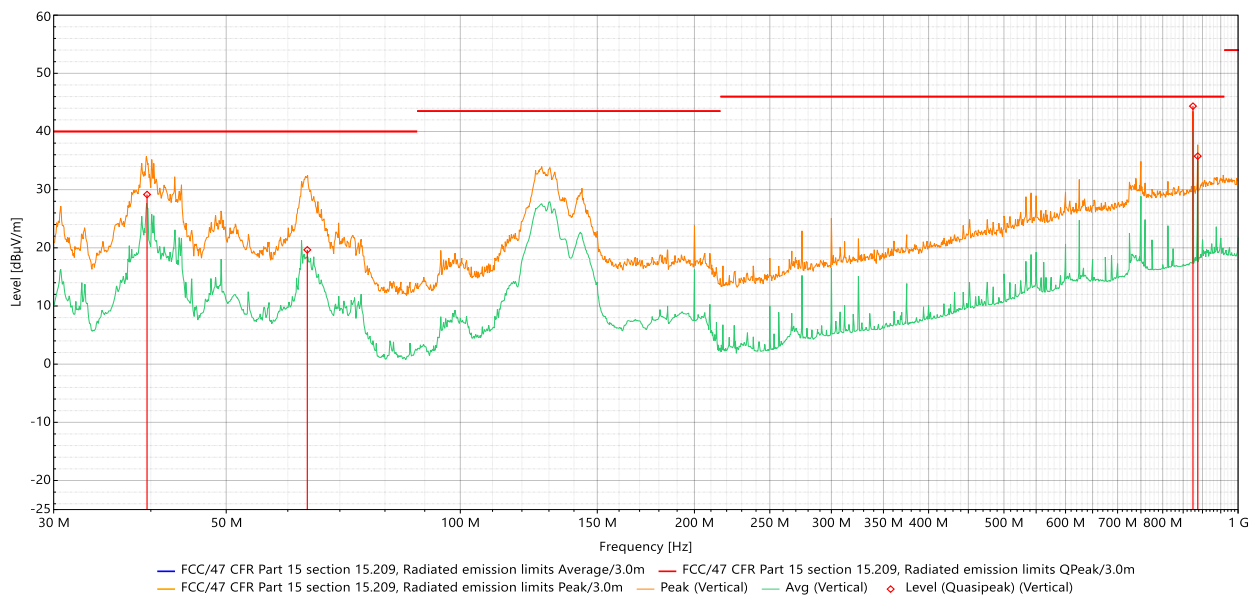
Test documentation

### 4.4.2.5.5 30 MHz to 1 GHz, Mode Area\_lowdoppler\_0dB

#### 4.4.2.5.5.1 Horizontal Polarization



#### 4.4.2.5.5.2 Vertical Polarization



#### 4.4.2.5.5.3 Results

| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Azimuth (deg) | Height (m) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|-----|---------------|------------|------------|
| 63.572          | 19.6           | 40.0           | -20.4       | V   | 179.6         | 1.41       | 13.8       |
| 812.501         | 32.0           | 46.0           | -14.0       | H   | 0.9           | 1.04       | 27.0       |
| 775             | 34.4           | 46.0           | -11.6       | H   | 7.6           | 1.02       | 26.6       |
| 39.554          | 29.2           | 40.0           | -10.8       | V   | 268.3         | 1.11       | 14.0       |
| 887.502         | 35.8           | 46.0           | -10.2       | V   | 1.9           | 1.11       | 27.6       |
| 750.002         | 39.6           | 46.0           | -6.4        | H   | 1.8           | 1.00       | 26.5       |
| 875.002         | 43.1           | 46.0           | -2.9        | H   | 0.0           | 1.45       | 27.5       |
| 875.001         | 44.4           | 46.0           | -1.6        | V   | 0.6           | 1.05       | 27.5       |

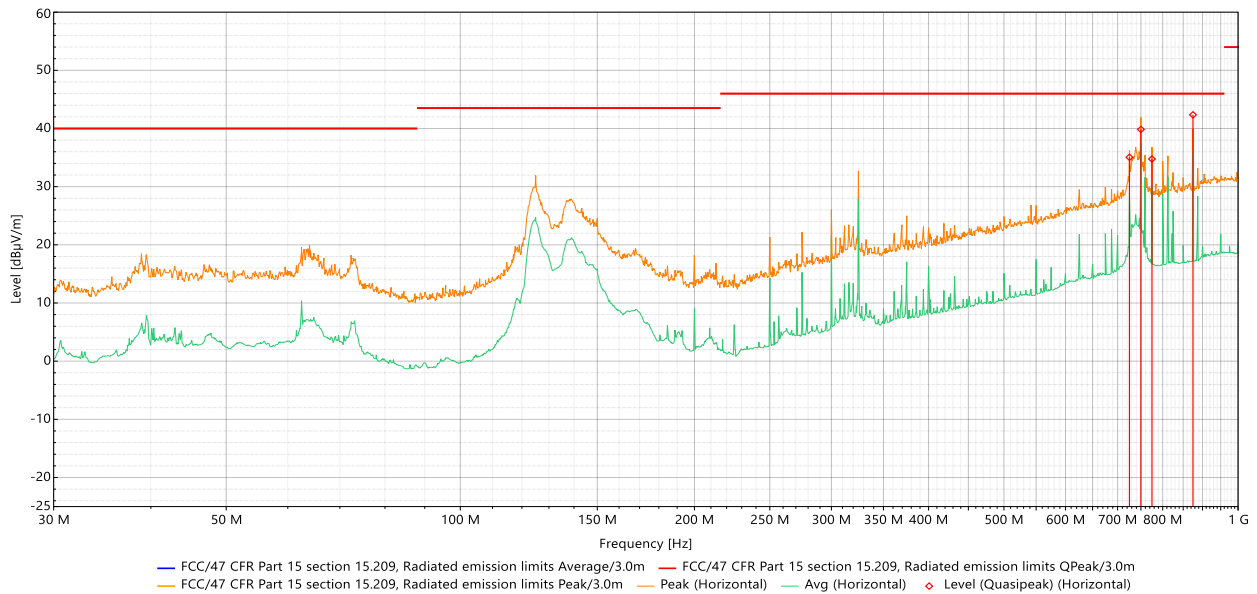
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 65 von 122  
Page 65 of 122

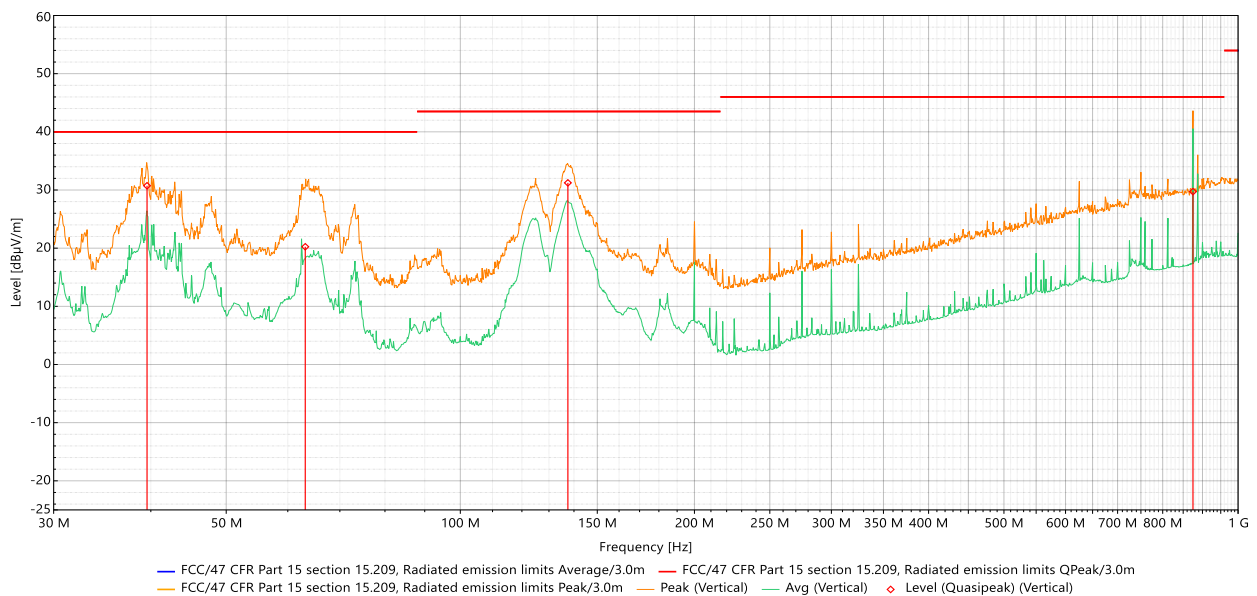
## Prüfdokumentation Test documentation

### 4.4.2.5.6 30 MHz to 1 GHz, Mode Road\_0dB

#### 4.4.2.5.6.1 Horizontal Polarization



#### 4.4.2.5.6.2 Vertical Polarization



#### 4.4.2.5.6.3 Results

| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Azimuth (deg) | Height (m) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|-----|---------------|------------|------------|
| 63.185          | 20.2           | 40.0           | -19.8       | V   | 74.4          | 1.16       | 13.8       |
| 875.002         | 29.7           | 46.0           | -16.3       | V   | 27.1          | 1.15       | 27.5       |
| 137.499         | 31.2           | 43.5           | -12.3       | V   | 266.9         | 1.00       | 14.1       |
| 775.001         | 34.7           | 46.0           | -11.3       | H   | 0.0           | 1.00       | 26.6       |
| 725.001         | 35.1           | 46.0           | -10.9       | H   | 1.9           | 1.22       | 25.0       |
| 39.554          | 30.7           | 40.0           | -9.3        | V   | 109.5         | 1.06       | 14.0       |
| 750.001         | 39.8           | 46.0           | -6.2        | H   | 8.1           | 1.05       | 26.5       |
| 875.001         | 42.4           | 46.0           | -3.6        | H   | 1.8           | 1.43       | 27.5       |

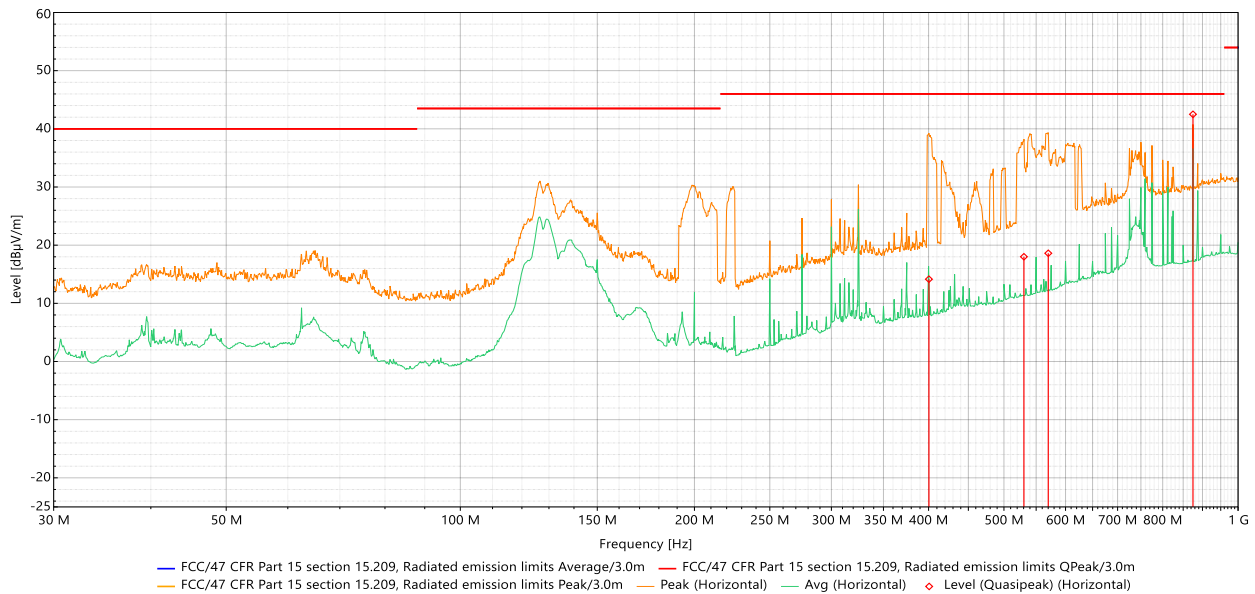
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 66 von 122  
Page 66 of 122

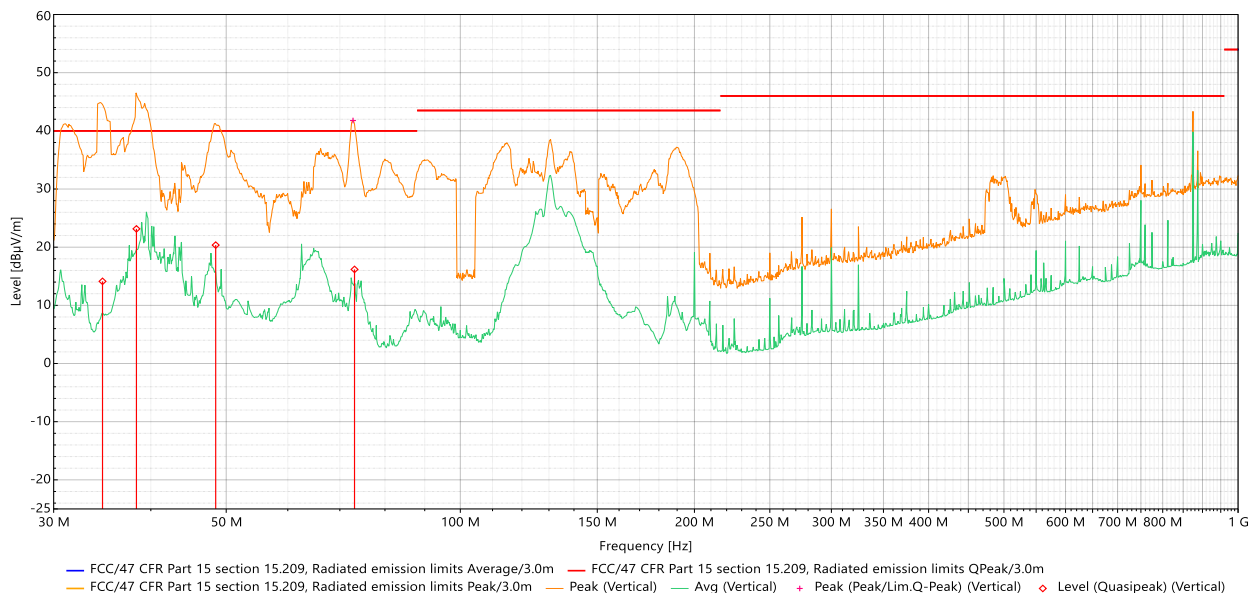
## Prüfdokumentation Test documentation

### 4.4.2.5.7 30 MHz to 1 GHz, Mode Area\_lowdoppler\_-4dB

#### 4.4.2.5.7.1 Horizontal Polarization



#### 4.4.2.5.7.2 Vertical Polarization



#### 4.4.2.5.7.3 Results

| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Azimuth (deg) | Height (m) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|-----|---------------|------------|------------|
| 400.413         | 14.1           | 46.0           | -31.9       | H   | 104.7         | 3.09       | 18.6       |
| 530.449         | 18.0           | 46.0           | -28.0       | H   | 74.7          | 1.11       | 21.9       |
| 570.13          | 18.6           | 46.0           | -27.4       | H   | 243.3         | 3.98       | 22.6       |
| 34.669          | 14.1           | 40.0           | -25.9       | V   | 237.5         | 1.03       | 13.4       |
| 73.109          | 16.2           | 40.0           | -23.8       | V   | 100.9         | 1.39       | 12.4       |
| 48.469          | 20.4           | 40.0           | -19.6       | V   | 99.6          | 1.27       | 14.7       |
| 38.331          | 23.2           | 40.0           | -16.8       | V   | 108.4         | 1.33       | 13.8       |
| 875.001         | 42.5           | 46.0           | -3.5        | H   | 4.6           | 1.48       | 27.5       |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

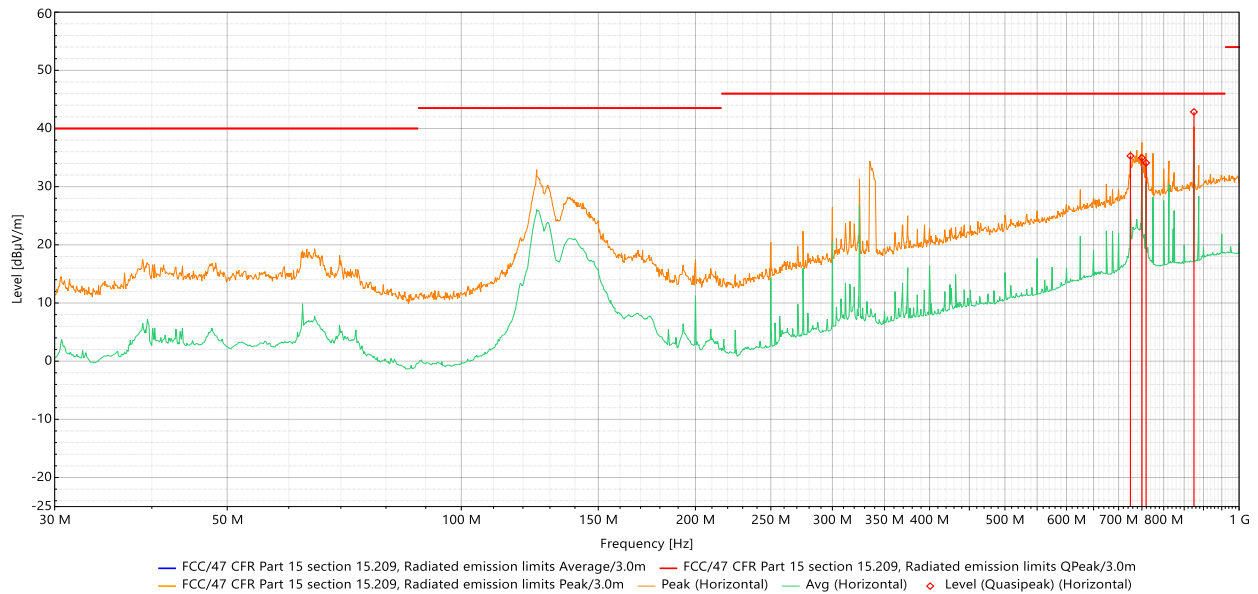
Seite 67 von 122  
Page 67 of 122

## Prüfdokumentation

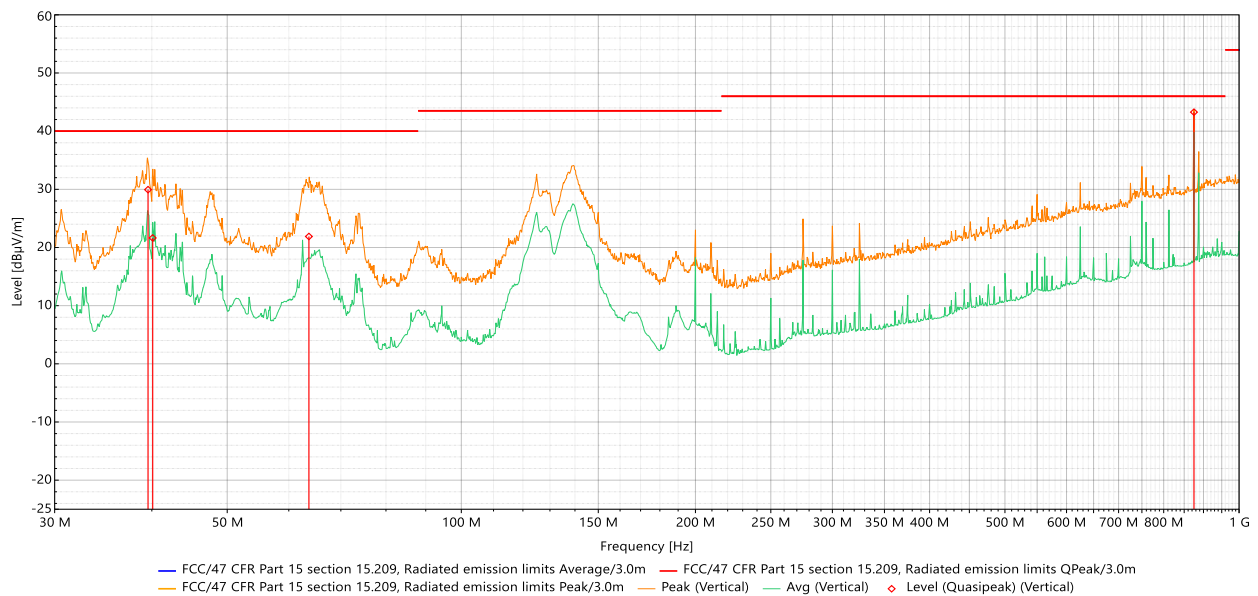
Test documentation

### 4.4.2.5.8 30 MHz to 1 GHz, Mode Road<sub>-</sub>4dB

#### 4.4.2.5.8.1 Horizontal Polarization



#### 4.4.2.5.8.2 Vertical Polarization



#### 4.4.2.5.8.3 Results

| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Pol | Azimuth (deg) | Height (m) | Corr. (dB) |
|-----------------|----------------|----------------|-------------|-----|---------------|------------|------------|
| 40.104          | 21.6           | 40.0           | -18.4       | V   | 87.9          | 1.23       | 14.1       |
| 63.684          | 21.9           | 40.0           | -18.1       | V   | 67.0          | 1.06       | 13.8       |
| 759.376         | 34.1           | 46.0           | -11.9       | H   | 24.2          | 1.02       | 26.5       |
| 750.002         | 35.0           | 46.0           | -11.0       | H   | 187.9         | 1.00       | 26.5       |
| 725.001         | 35.3           | 46.0           | -10.7       | H   | 0.0           | 1.17       | 25.0       |
| 39.554          | 29.9           | 40.0           | -10.1       | V   | 80.0          | 1.02       | 14.0       |
| 875.001         | 42.8           | 46.0           | -3.2        | H   | 0.9           | 1.49       | 27.5       |
| 875.001 M       | 43.3           | 46.0           | -2.7        | V   | 0.4           | 1.12       | 27.5       |

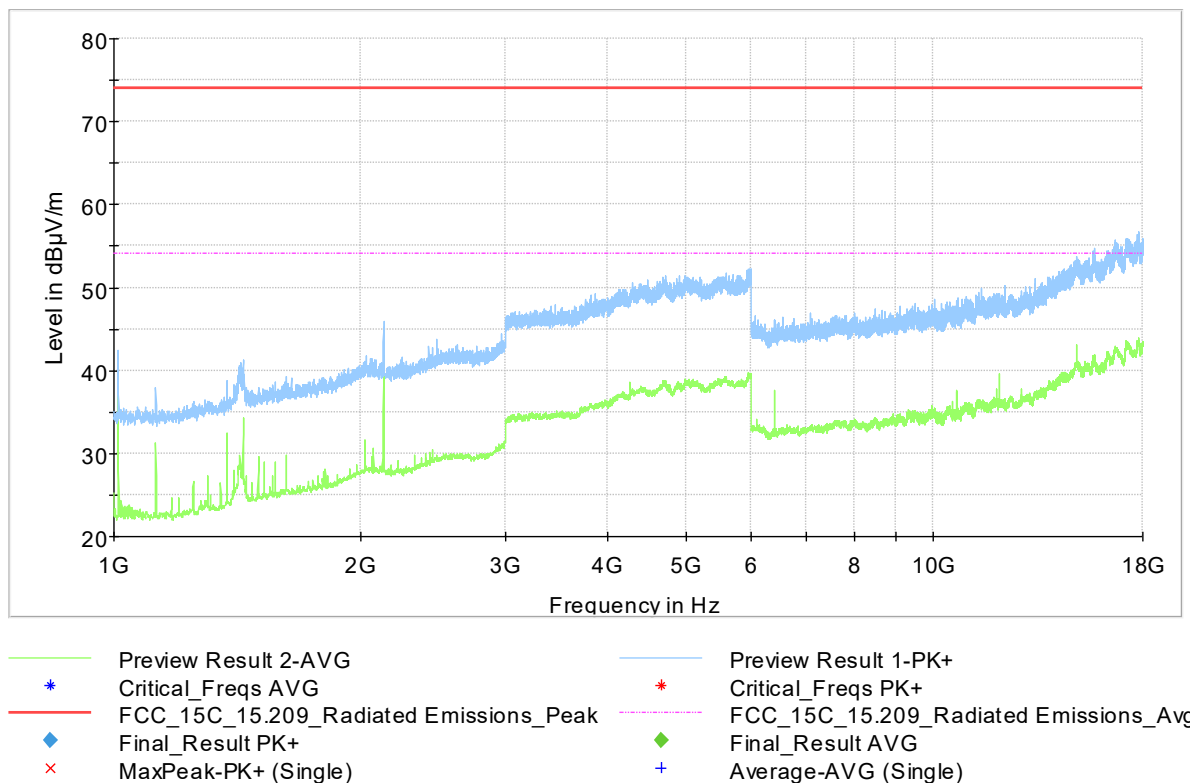
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 68 von 122  
Page 68 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.9 1 to 18GHz, Mode Area\_lowdoppler\_0dB



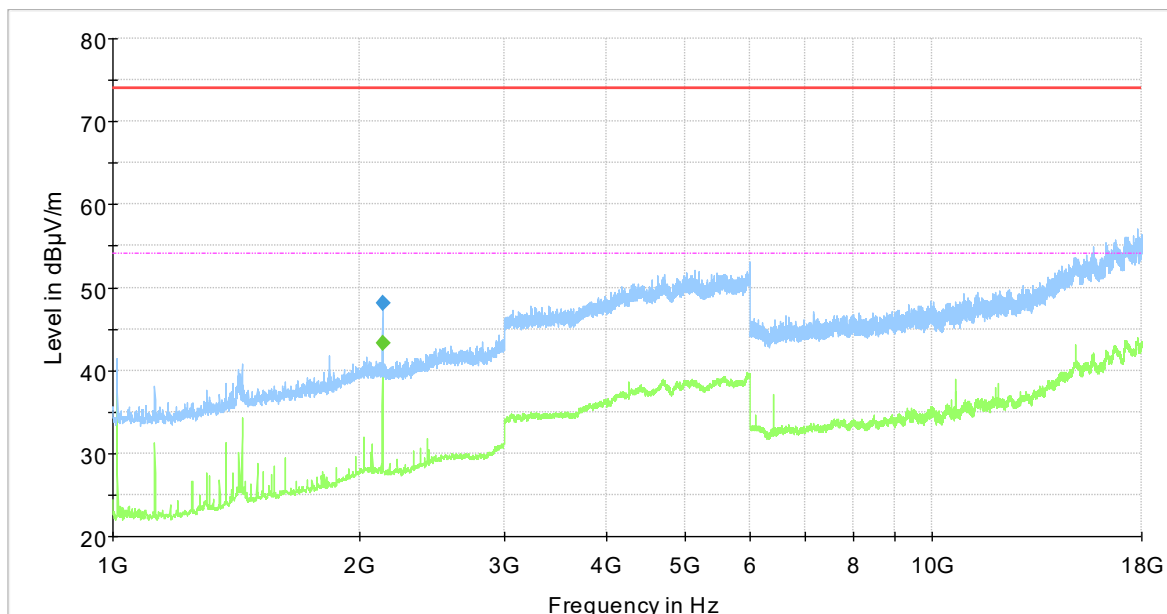
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 69 von 122  
Page 69 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.10 1 to 18GHz, Mode Road\_0dB



- |                                                                                     |                                        |                                                                                     |                                       |
|-------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|
|  | Preview Result 2-AVG                   |  | Preview Result 1-PK+                  |
|  | Critical_Freqs AVG                     |  | Critical_Freqs PK+                    |
|  | FCC_15C_15.209_Radiated Emissions_Peak |  | FCC_15C_15.209_Radiated Emissions_Avg |
|  | Final_Result PK+                       |  | Final_Result AVG                      |
|  | MaxPeak-PK+ (Single)                   |  | Average-AVG (Single)                  |

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Band width (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|------------------|-------------|-----|---------------|-----------------|------------|
| 2133.370        | 48.03            | ---              | 74.00          | 25.97       | 1000            | 1000             | 150.0       | H   | 212.0         | 86.0            | -3.2       |
| 2133.435        | ---              | 43.22            | 54.00          | 10.78       | 1000            | 1000             | 150.0       | H   | 214.0         | 99.0            | -3.2       |

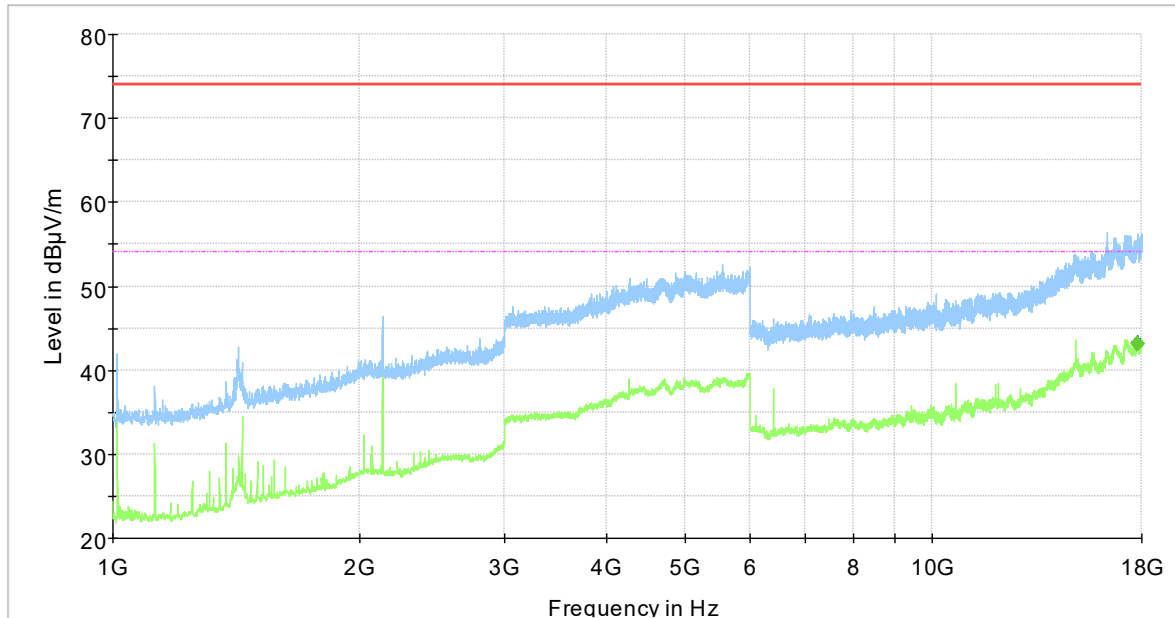
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 70 von 122  
Page 70 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.11 1 to 18GHz, Mode Area\_lowdoppler\_-4dB



|                                        |                                       |
|----------------------------------------|---------------------------------------|
| Preview Result 2-AVG                   | Preview Result 1-PK+                  |
| Critical_Freqs AVG                     | Critical_Freqs PK+                    |
| FCC_15C_15.209_Radiated Emissions_Peak | FCC_15C_15.209_Radiated Emissions_Avg |
| Final_Result PK+                       | Final_Result AVG                      |
| MaxPeak-PK+ (Single)                   | Average-AVG (Single)                  |

| Frequency (MHz) | MaxPeak (dBμV/m) | Average (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Meas. Time (ms) | Band width (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|------------------|-------------|-----|---------------|-----------------|------------|
| 17807.61        | ---              | 43.09            | 54.00          | 10.91       | 1000            | 1000             | 150.0       | V   | 343.0         | 20.0            | 11.5       |

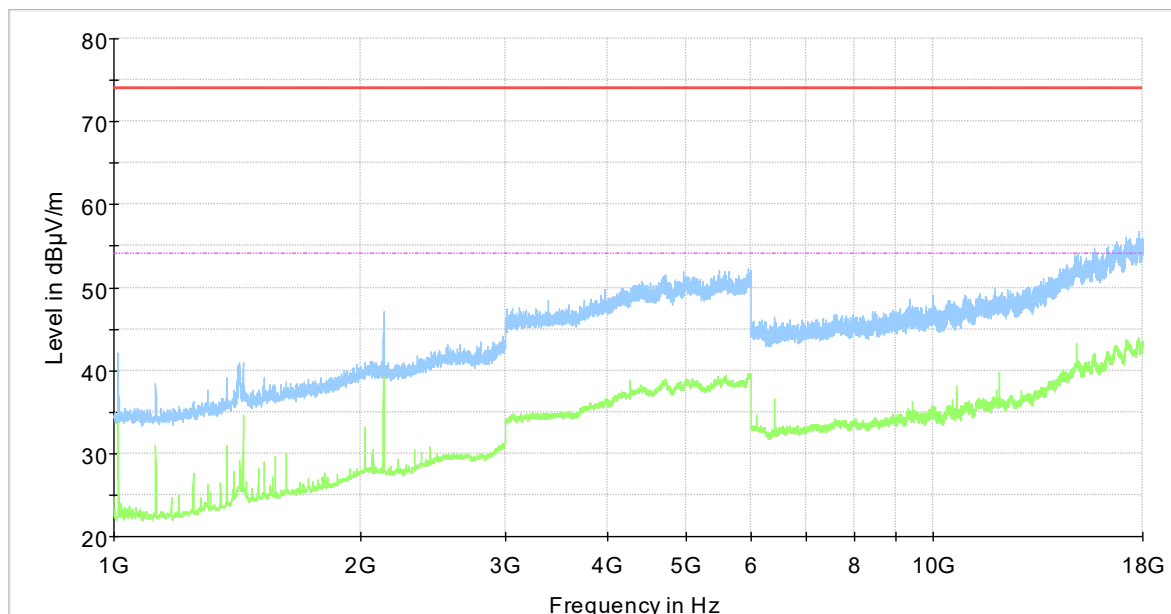
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 71 von 122  
Page 71 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.12 1 to 18GHz, Mode Road\_-4dB



- |                                                                                     |                                        |                                                                                     |                                       |
|-------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|
|  | Preview Result 2-AVG                   |  | Preview Result 1-PK+                  |
|  | Critical_Freqs AVG                     |  | Critical_Freqs PK+                    |
|  | FCC_15C_15.209_Radiated Emissions_Peak |  | FCC_15C_15.209_Radiated Emissions_Avg |
|  | Final_Result PK+                       |  | Final_Result AVG                      |
|  | MaxPeak-PK+ (Single)                   |  | Average-AVG (Single)                  |

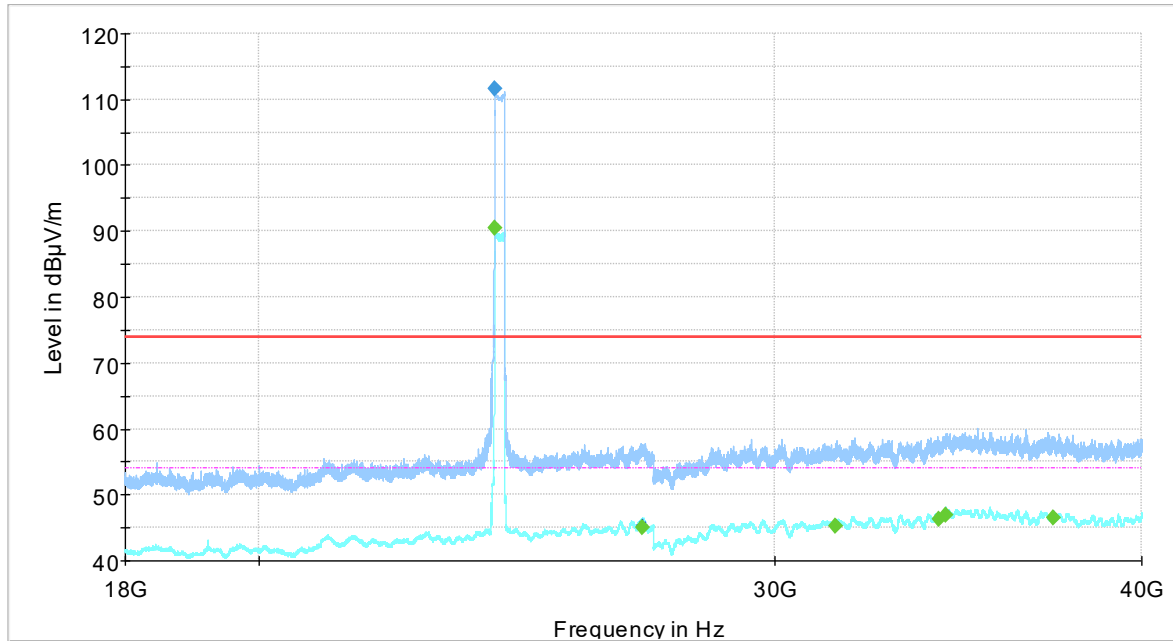
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 72 von 122  
Page 72 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.13 18 to 40GHz, Mode Area\_lowdoppler\_0dB



— Preview Result 2-AVG  
— Preview Result 1-PK+  
\* Critical\_Freqs AVG  
\* Critical\_Freqs PK+  
— FCC\_15C\_15.209\_Radiated Emissions\_Peak  
— FCC\_15C\_15.209\_Radiated Emissions\_Avg  
♦ Final\_Result PK+  
♦ Final\_Result AVG

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Band width (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|------------------|-------------|-----|---------------|-----------------|------------|
| 24069.68        | Wanted TX-Signal |                  |                |             | 1000            | 1000             | 150.0       | H   | -2.0          | 84.0            | 22.7       |
| 24070.37        |                  |                  |                |             | 1000            | 1000             | 150.0       | H   | -2.0          | 82.0            | 22.7       |
| 27019.70        | ---              | 45.12            | 54.00          | 8.88        | 1000            | 1000             | 150.0       | V   | 212.0         | 3.0             | 24.1       |
| 31462.83        | ---              | 45.18            | 54.00          | 8.82        | 1000            | 1000             | 150.0       | H   | 197.0         | 19.0            | 31.5       |
| 34093.90        | ---              | 46.24            | 54.00          | 7.76        | 1000            | 1000             | 150.0       | V   | 32.0          | 88.0            | 33.3       |
| 34302.48        | ---              | 46.86            | 54.00          | 7.14        | 1000            | 1000             | 150.0       | H   | 76.0          | -18.0           | 33.6       |
| 37307.20        | ---              | 46.40            | 54.00          | 7.60        | 1000            | 1000             | 150.0       | V   | 282.0         | 53.0            | 31.1       |

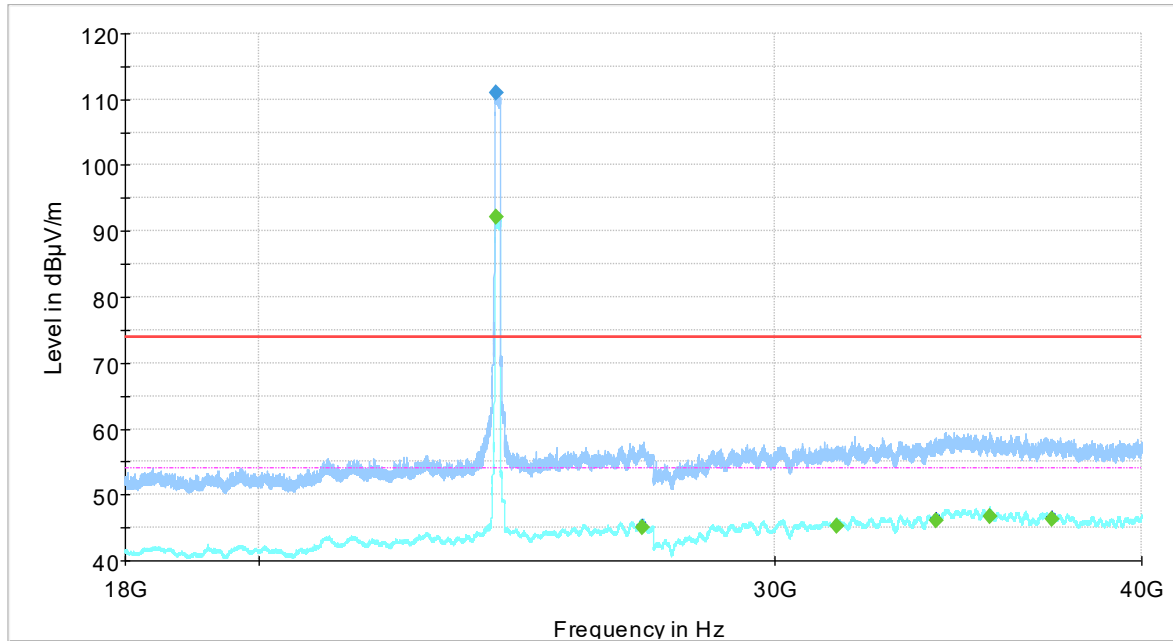
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 73 von 122  
Page 73 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.14 18 to 40GHz, Mode Road\_0dB



— Preview Result 2-AVG  
— Preview Result 1-PK+  
\* Critical\_Freqs AVG  
\* Critical\_Freqs PK+  
— FCC\_15C\_15.209\_Radiated Emissions\_Peak  
— FCC\_15C\_15.209\_Radiated Emissions\_Avg  
♦ Final\_Result PK+  
♦ Final\_Result AVG

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Band width (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|------------------|-------------|-----|---------------|-----------------|------------|
| 24086.02        | Wanted TX-Signal |                  |                |             | 1000            | 1000             | 150.0       | V   | 105.0         | -2.0            | 22.6       |
| 24102.85        |                  |                  |                |             | 1000            | 1000             | 150.0       | H   | -3.0          | 86.0            | 22.6       |
| 27032.30        | ---              | 45.08            | 54.00          | 8.92        | 1000            | 1000             | 150.0       | V   | 179.0         | 65.0            | 24.1       |
| 31470.79        | ---              | 45.13            | 54.00          | 8.87        | 1000            | 1000             | 150.0       | V   | 333.0         | 78.0            | 31.5       |
| 34028.33        | ---              | 46.13            | 54.00          | 7.87        | 1000            | 1000             | 150.0       | V   | 98.0          | 65.0            | 33.0       |
| 35499.02        | ---              | 46.68            | 54.00          | 7.32        | 1000            | 1000             | 150.0       | V   | 116.0         | 66.0            | 33.0       |
| 37300.00        | ---              | 46.36            | 54.00          | 7.64        | 1000            | 1000             | 150.0       | V   | 239.0         | 89.0            | 31.1       |

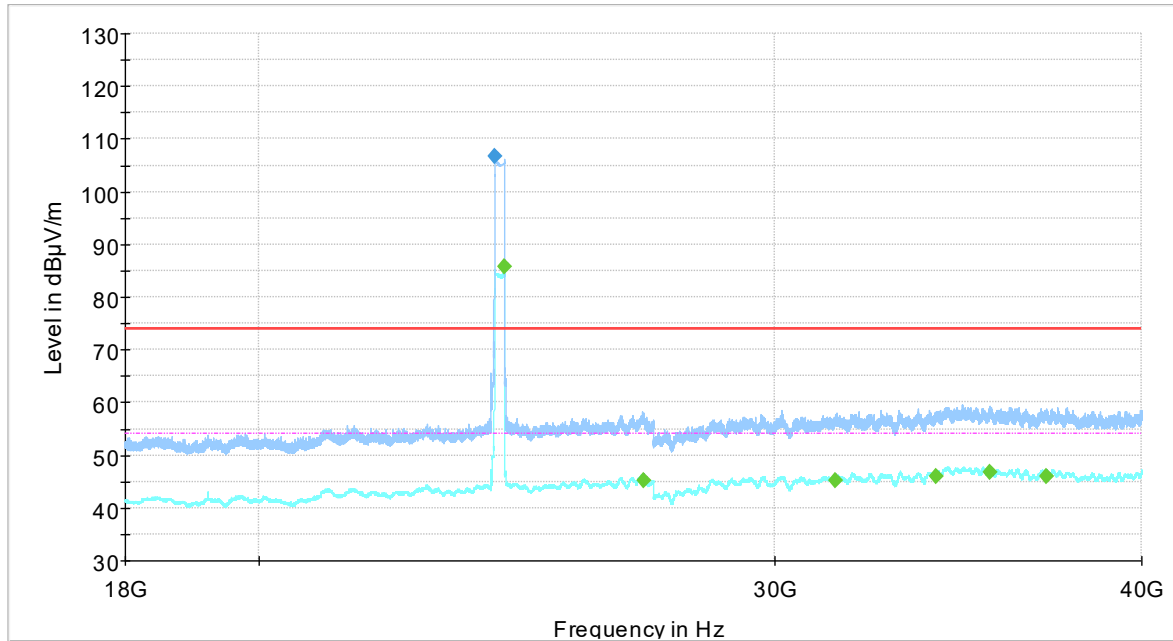
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 74 von 122  
Page 74 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.15 18 to 40GHz, Mode Area\_lowdoppler\_-4dB



— Preview Result 2-AVG  
\* Critical\_Freqs AVG  
— FCC\_15C\_15.209\_Radiated Emissions\_Peak  
◆ Final\_Result PK+

— Preview Result 1-PK+  
\* Critical\_Freqs PK+  
- - - FCC\_15C\_15.209\_Radiated Emissions\_Avg  
◆ Final\_Result AVG

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Band width (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|------------------|-------------|-----|---------------|-----------------|------------|
| 24069.58        | Wanted TX-Signal |                  |                |             | 1000            | 1000             | 150.0       | V   | 101.0         | -3.0            | 22.7       |
| 24240.53        |                  |                  |                |             | 1000            | 1000             | 150.0       | H   | -3.0          | 90.0            | 22.6       |
| 27047.00        | ---              | 45.20            | 54.00          | 8.80        | 1000            | 1000             | 150.0       | H   | 295.0         | 25.0            | 24.1       |
| 31454.94        | ---              | 45.11            | 54.00          | 8.89        | 1000            | 1000             | 150.0       | V   | 191.0         | 78.0            | 31.5       |
| 34052.22        | ---              | 46.00            | 54.00          | 8.00        | 1000            | 1000             | 150.0       | V   | 204.0         | 58.0            | 33.1       |
| 35500.65        | ---              | 46.67            | 54.00          | 7.33        | 1000            | 1000             | 150.0       | V   | 38.0          | 57.0            | 33.0       |
| 37102.90        | ---              | 46.09            | 54.00          | 7.91        | 1000            | 1000             | 150.0       | H   | 282.0         | 62.0            | 31.4       |

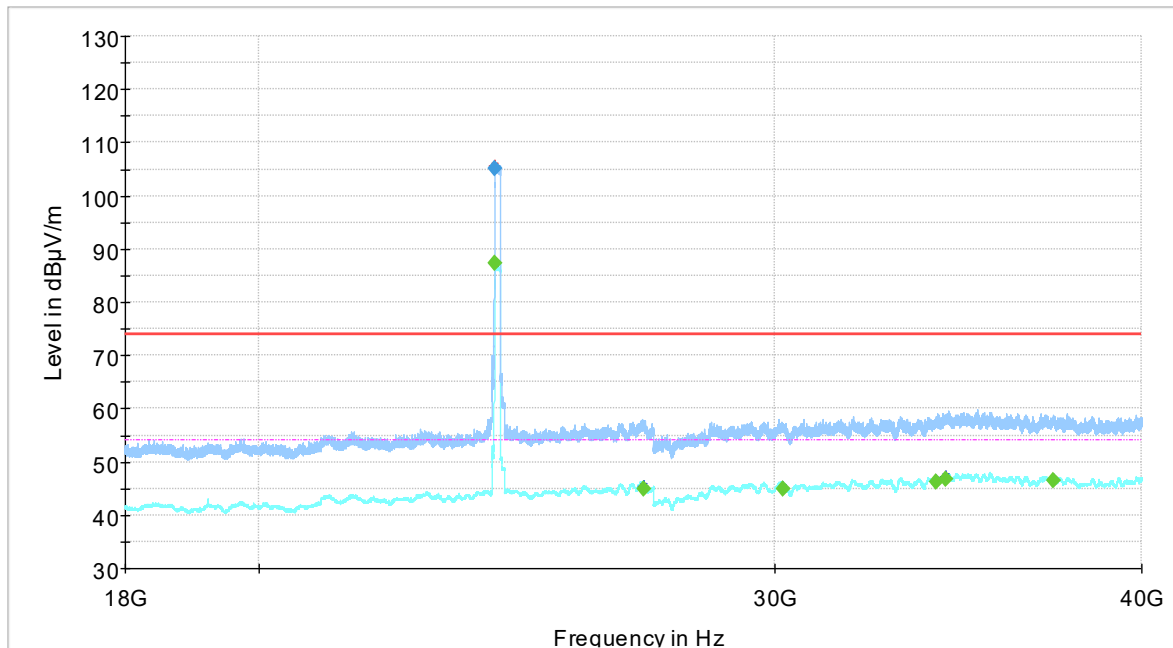
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 75 von 122  
Page 75 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.16 18 to 40GHz, Mode Road \_-4dB



— Preview Result 2-AVG  
\* Critical\_Freqs AVG  
— FCC\_15C\_15.209\_Radiated Emissions\_Peak  
♦ Final\_Result PK+

— Preview Result 1-PK+  
\* Critical\_Freqs PK+  
— FCC\_15C\_15.209\_Radiated Emissions\_Avg  
♦ Final\_Result AVG

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Band width (kHz) | Height (cm) | Pol | Azimuth (deg) | Elevation (deg) | Corr. (dB) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|------------------|-------------|-----|---------------|-----------------|------------|
| 24072.52        | Wanted TX-Signal |                  |                |             | 1000            | 1000             | 150.0       | H   | -7.0          | 89.0            | 22.7       |
| 24072.57        |                  |                  |                |             | 1000            | 1000             | 150.0       | V   | 265.0         | -1.0            | 22.7       |
| 27042.10        | ---              | 45.02            | 54.00          | 8.98        | 1000            | 1000             | 150.0       | V   | 53.0          | 87.0            | 24.1       |
| 30165.70        | ---              | 44.99            | 54.00          | 9.01        | 1000            | 1000             | 150.0       | H   | 238.0         | 18.0            | 30.9       |
| 34024.85        | ---              | 46.14            | 54.00          | 7.86        | 1000            | 1000             | 150.0       | H   | 271.0         | -6.0            | 33.0       |
| 34297.43        | ---              | 46.86            | 54.00          | 7.14        | 1000            | 1000             | 150.0       | H   | 218.0         | 18.0            | 33.6       |
| 37320.00        | ---              | 46.37            | 54.00          | 7.63        | 1000            | 1000             | 150.0       | H   | 75.0          | -20.0           | 31.1       |

Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

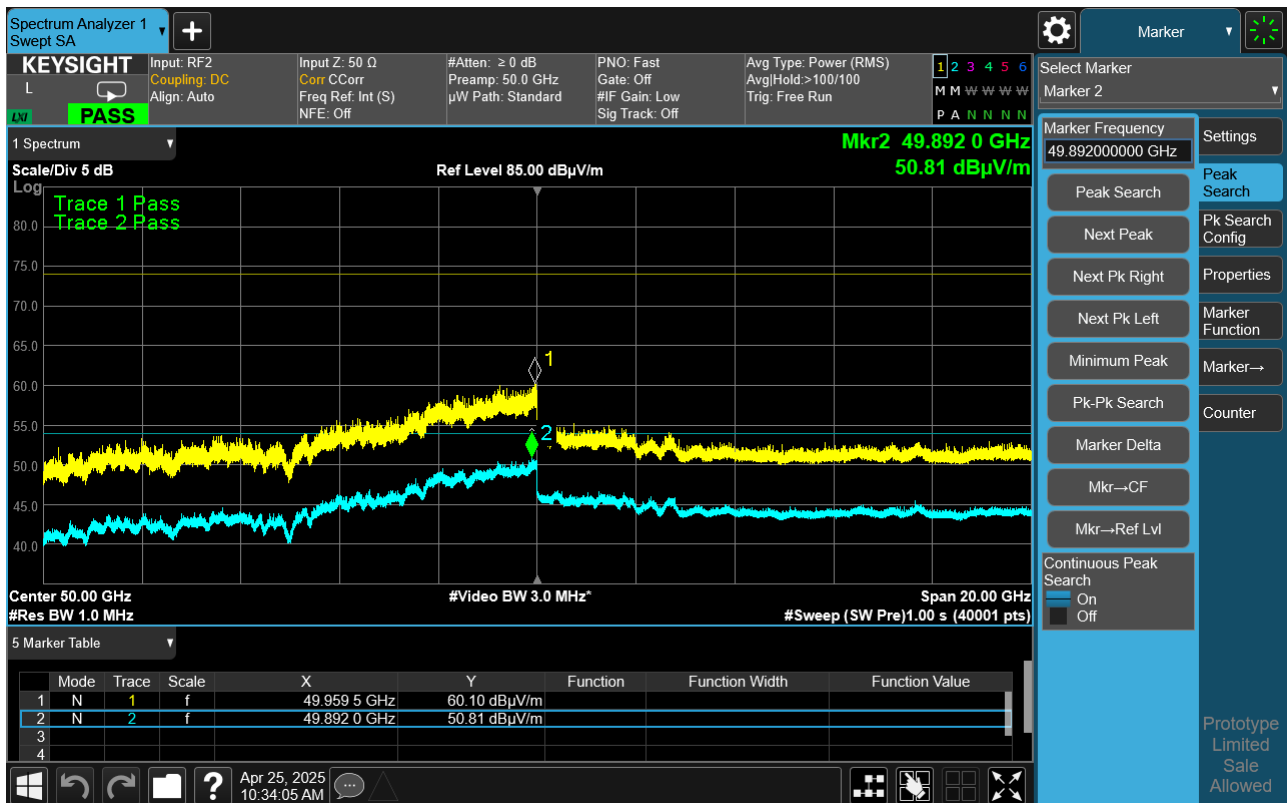
Seite 76 von 122  
Page 76 of 122

## Prüfdokumentation

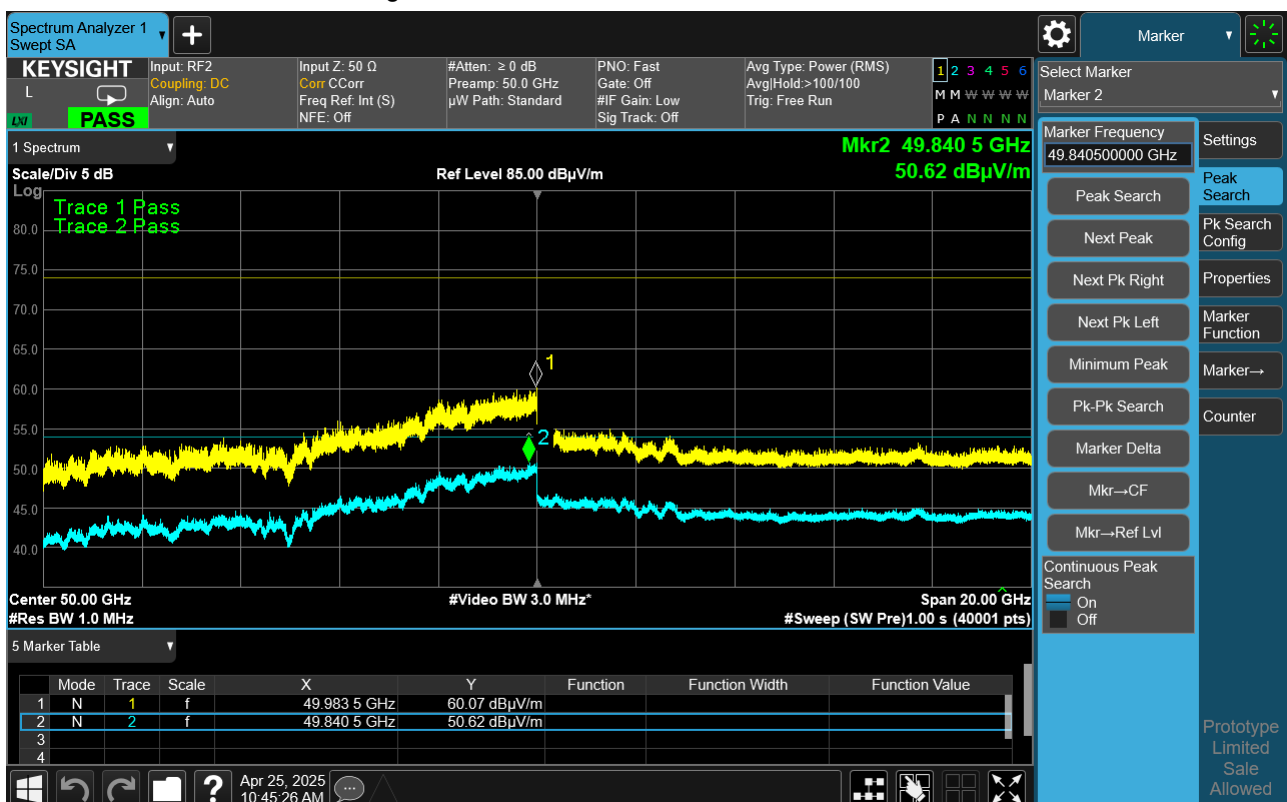
Test documentation

4.4.2.5.17 40 to 60GHz, Area\_lowdoppler \_0dB

4.4.2.5.17.1 Elevation 0deg



4.4.2.5.17.2 Elevation 22.5deg



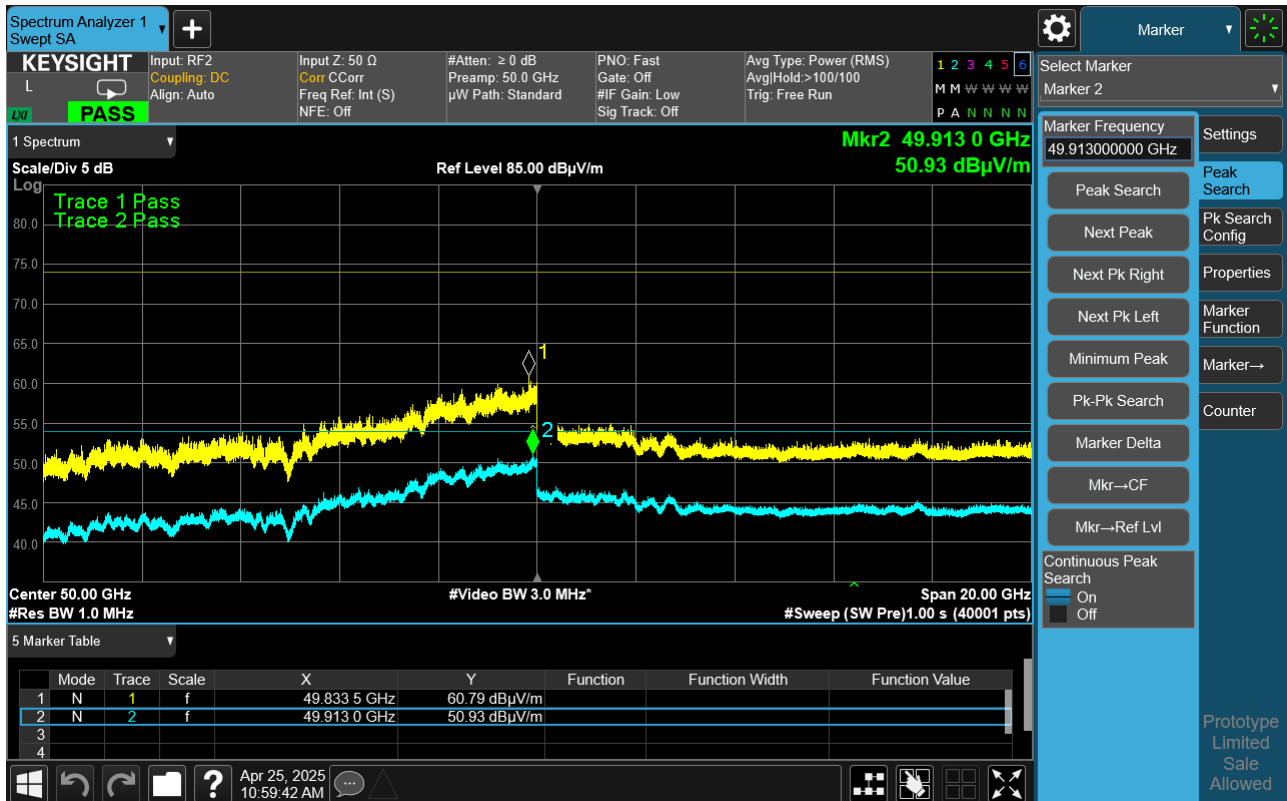
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 77 von 122  
Page 77 of 122

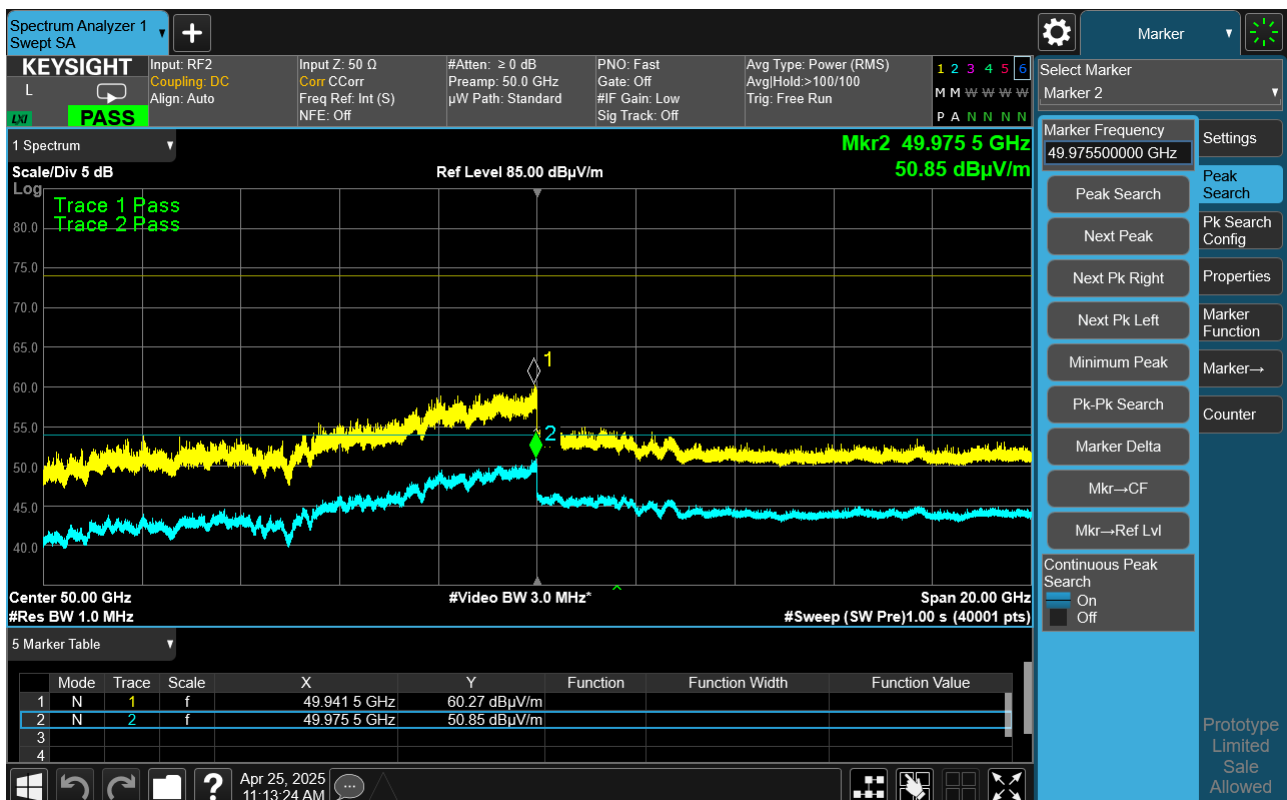
## Prüfdokumentation

Test documentation

### 4.4.2.5.17.3 Elevation 45deg



### 4.4.2.5.17.4 Elevation 67.5deg



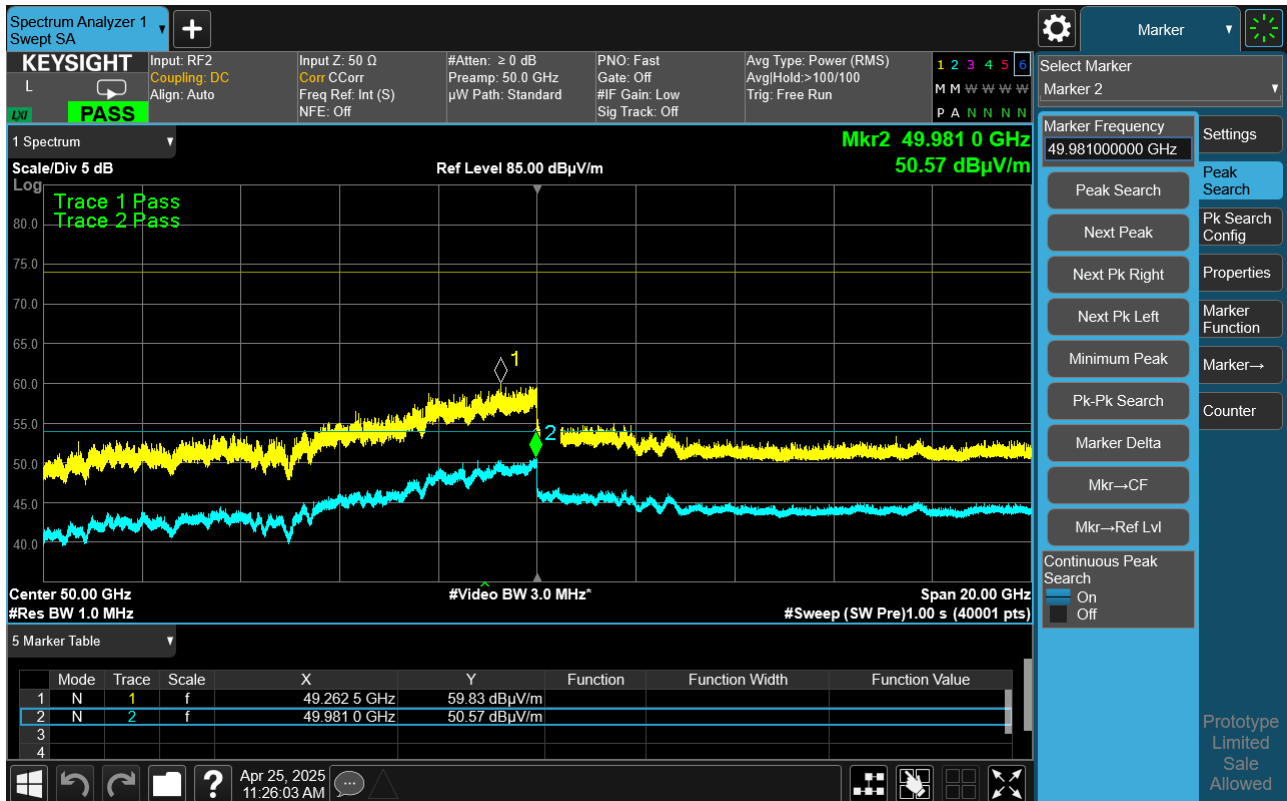
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 78 von 122  
Page 78 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.17.5 Elevation 90deg



Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

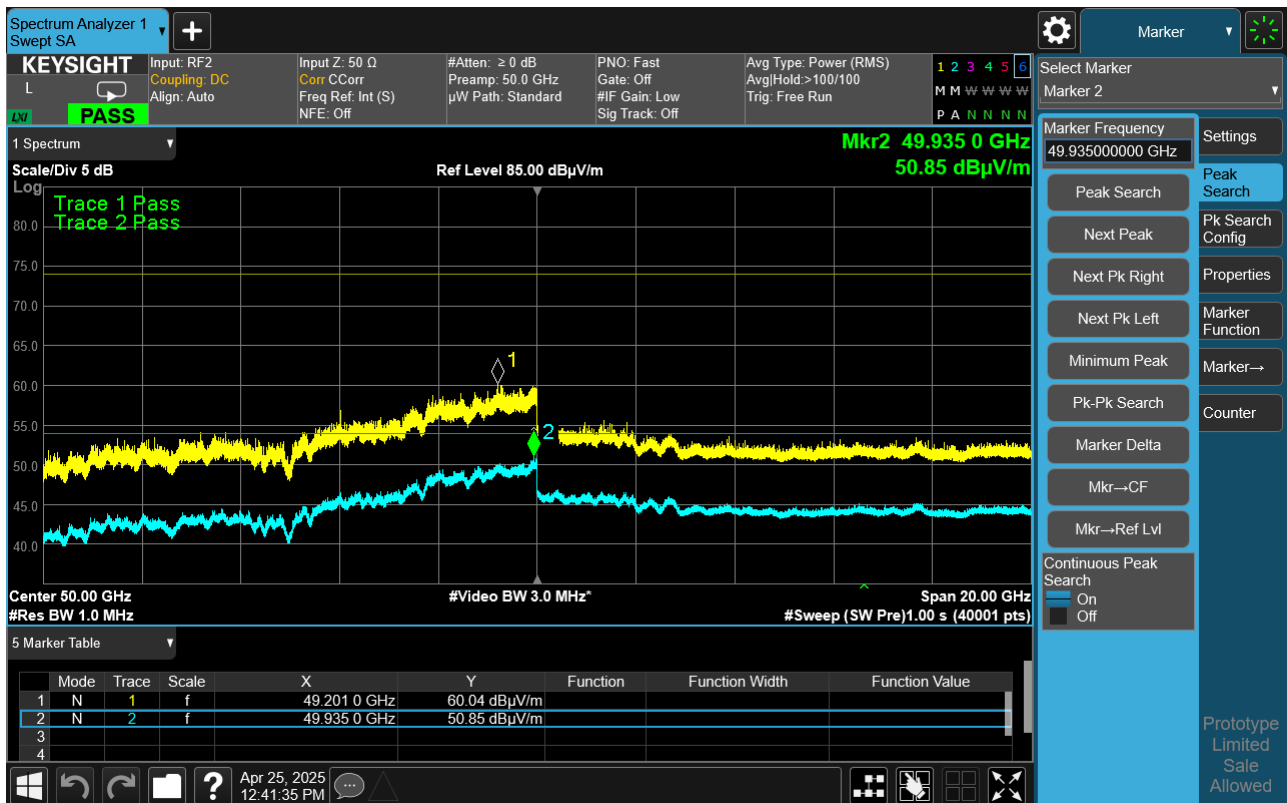
Seite 79 von 122  
Page 79 of 122

## Prüfdokumentation

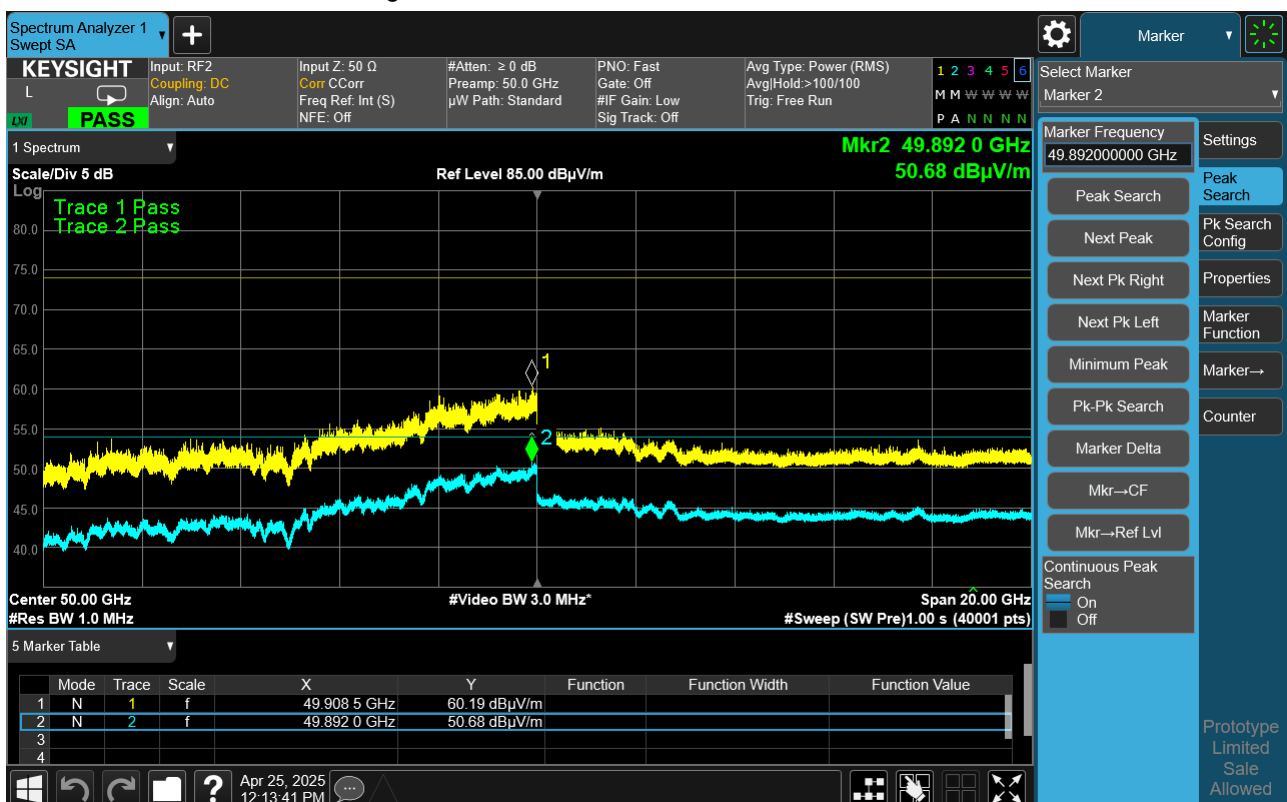
Test documentation

4.4.2.5.18 40 to 60GHz, Mode Road \_0dB

4.4.2.5.18.1 Elevation 0deg



4.4.2.5.18.2 Elevation 22.5deg



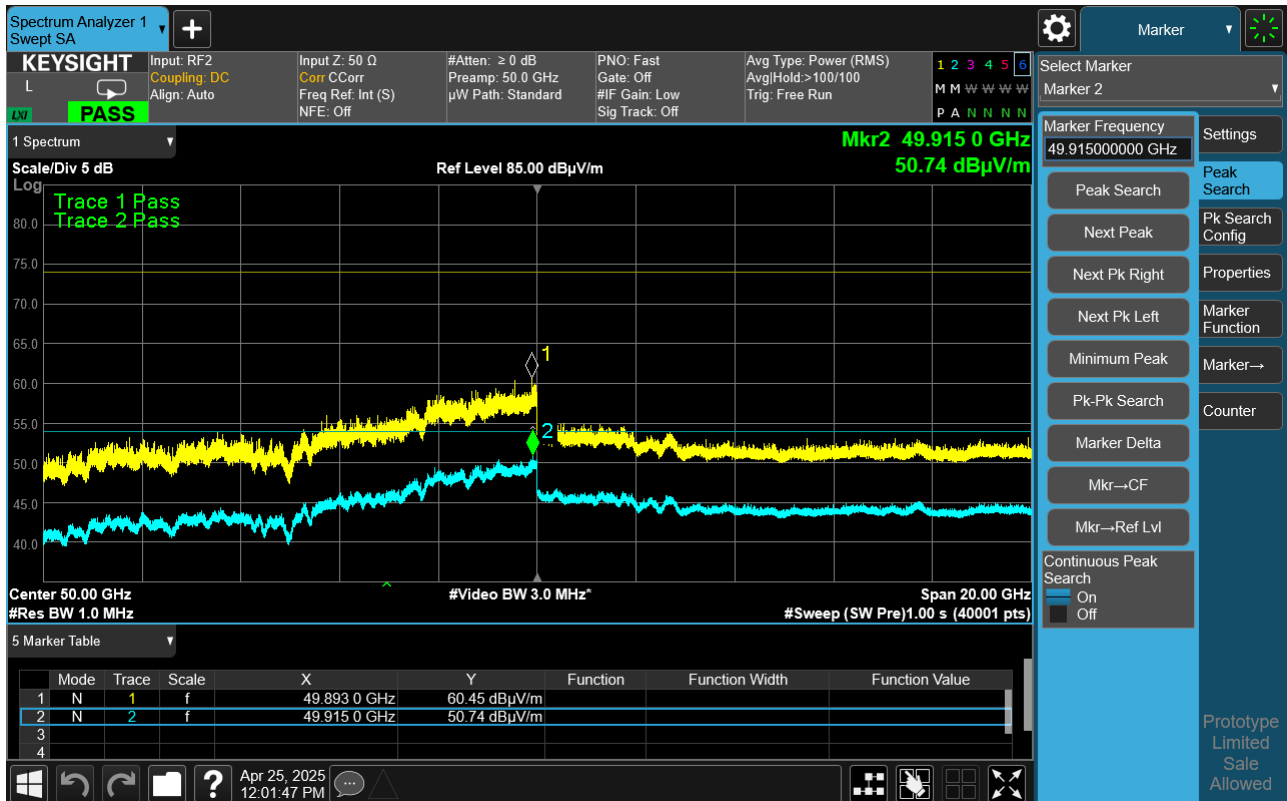
Prüfbericht-Nr.: DE2500IA 001  
Test report no.:

Seite 80 von 122  
Page 80 of 122

## Prüfdokumentation

Test documentation

### 4.4.2.5.18.3 Elevation 45deg



### 4.4.2.5.18.4 Elevation 67.5deg

