

Plot 7-102. N patch EIRP Plot (Band n260 – 100MHz-4CC Mid Channel DFT-s-OFDM QPSK)

FCC ID: A3LSMS911U		PART 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2209010096-08.A3L	Test Dates: 10/18/2022 – 11/14/2022	EUT Type: Portable Handset		Page 88 of 201

## 7.4 Radiated Spurious and Harmonic Emissions

### Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

***The conductive power or total radiated power of any emissions outside a licensee's frequency block shall be -13dBm/1MHz.***

### Test Procedure Used

ANSI C63.26-2015 – Section 5.7.4  
KDB 842590 D01 – Section 4.4.3

### Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 100 GHz for n261/n258 and 200GHz for n260. Several plots are used to show investigations in this entire span.
2. Detector = RMS
3. Trace mode = trace average
4. Sweep time = auto couple
5. Number of sweep points  $\geq 2 \times \text{Span/RBW}$
6. The trace was allowed to stabilize
7. RBW = 1MHz, VBW = 3MHz

### Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) All radiated spurious emissions were measured as EIRP to compare with the §30.203 TRP limits. Emissions that were found to be non-compliant using the EIRP method were re-measured using the Spherical Grid TRP Method per KDB 842590 D01 Section 4.4.3.3.4.
- 3) The plots in this section were taken with the analyzer set to max hold. All final measurements shown in the tables that accompany the plots were taken with trace averaging performed over 100 sweeps while the analyzer was triggering on a specific emission of interest.
- 4) Elements within the same antenna array are correlated to produce beamforming array gain. Antenna arrays cannot be correlated with another antenna array. During testing, only one antenna array was active.

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- 5) The plots from 1 – 200GHz show corrected average EIRP levels. The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states:  $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$ ; where D is the measurement distance (in the far field region) in m. The field strength E is calculated  $E (dB\mu V/m) = \text{Spectrum Analyzer Level (dBm)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} + \text{Harmonic Mixer Conversion Loss (dB)} + 107$ . All appropriate Antenna Factors and Cable Losses have been applied in the spectrum analyzer for each measurement. For measurements > 40GHz, a Harmonic Mixer Conversion Loss was also applied to the spectrum analyzer.
- 6) Emissions below 18GHz were measured at a 3 meter test distance, while emissions above 18GHz were measured at the appropriate far field distance. The far field of the mmWave signal is based on formula:  $R > 2D^2/\text{wavelength}$ , where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, D is the largest dimension of the measurement antenna.

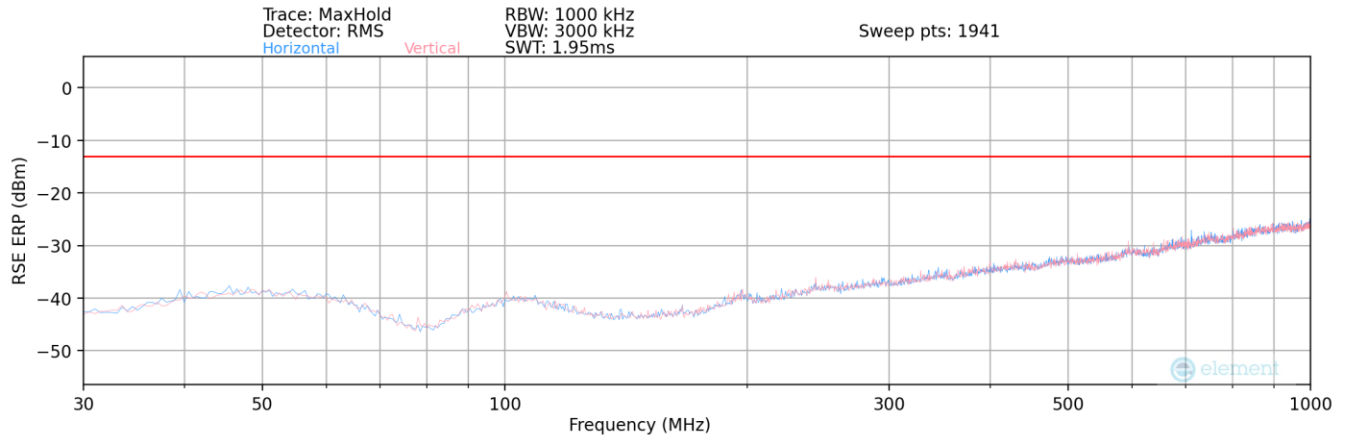
Frequency Range (GHz)	Wavelength(cm)	Far Field Distance (m)	Measurement Distance (m)
18-40	0.749	0.54	1.00
40-60	0.500	1.39	1.50
60-90	0.333	0.91	1.00
90-140	0.214	0.58	1.00
140-200	0.150	0.39	1.00

**Table 7-30. Far-Field Distance & Measurement Distance per Frequency Range**

- 7) All emissions from 18MHz - 40GHz were measured using a spectrum analyzer with an internal preamplifier. Emissions >40GHz were measured using a harmonic mixer with the spectrum analyzer.
- 8) All RSE's were measured with 1CC. It was determined that adding more CC's causes the overall amplitude of just 1CC to decrease, therefore, 1CC is the worst case for the purposes of spurious emissions measurements.
- 9) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 10) All RSE's were investigated in EN-DC mode, NR-DC mode and with 802.11 chipset active. It was determined that there is no new emission introduced by EN-DC mode, NR-DC mode, or the 802.11 chipset. For EN-DC mode, n258 uses LTE B2, B5, B12, B14, B30 and B66, n261 uses LTE B2, B4, B5, B12, B13, B48 and B66, n260 uses LTE B2, B5, B12, B13, B14, B30, B48 and B66. For NR-DC mode, n258 uses NR n2, n5, n12, n25, n30, n41, n66 and n77, n261 uses NR n2, n5, n25, n41, n48, n66 and n77, n260 uses NR n2, n5, n12, n25, n30, n41, n48, n66 and n77.
- 11) LTE and FR1 anchor bands supports default configuration and Tx hopping configuration. Both configurations were investigated. FR1 Band n2 and LTE B66 were used as anchor band for EN-DC and NR-DC investigations. Only the worst case spurious emission measurements has been included in this report.

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## Band n258-R1 – M patch 30MHz - 1GHz



**Plot 7-103. M patch - n258-R1 Radiated Spurious Plot (EN-DC anchor n2)**

### Spurious Emissions ERP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 - 2.15 \text{ (dB)}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
990.36	Low	50	2Tx	QPSK	V	-	-	-34.80	-13.00	-21.80
904.45	Mid	50	2Tx	QPSK	V	-	-	-35.47	-13.00	-22.47
994.06	High	50	2Tx	QPSK	V	-	-	-34.75	-13.00	-21.75

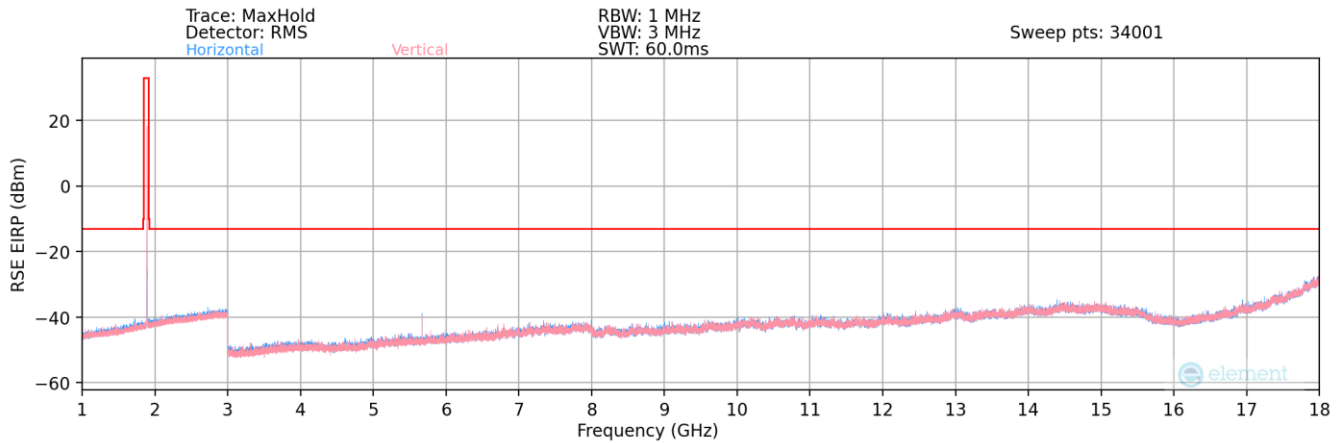
**Table 7-31. M patch - n258-R1 Radiated Spurious Emissions Table (EN-DC anchor n2 - 30MHz - 1GHz)**

### Notes

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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# 1GHz - 18GHz



**Plot 7-104. M patch - n258-R1 Radiated Spurious Plot (NR-DC anchor n2)**

## Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
17395.04	Low	50	2Tx	QPSK	V	-	-	-47.45	-13.00	-34.45
17370.04	Mid	50	2Tx	QPSK	V	-	-	-47.22	-13.00	-34.22
17344.92	High	50	2Tx	QPSK	V	-	-	-47.74	-13.00	-34.74

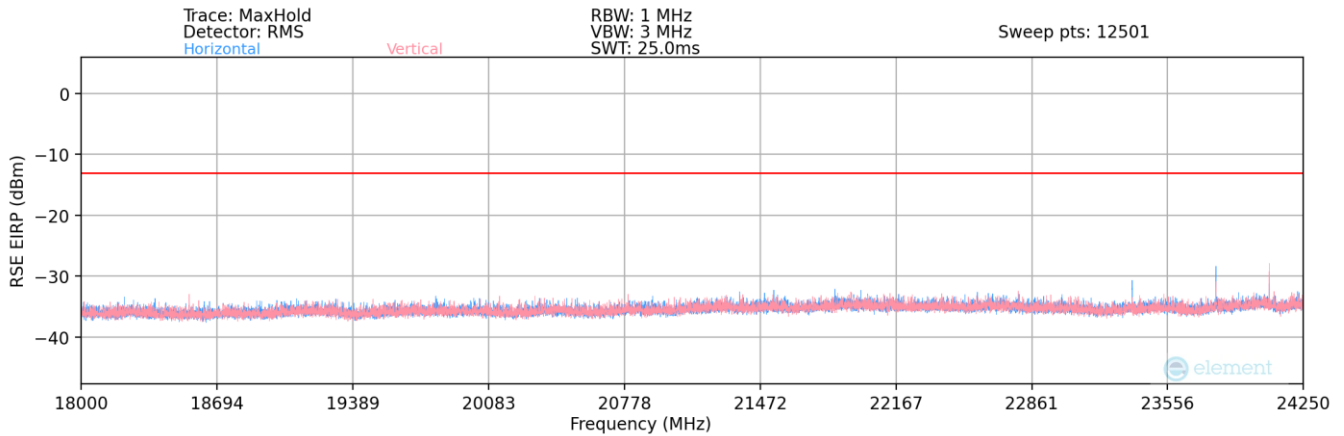
**Table 7-32. M patch - n258-R1 Radiated Spurious Emissions Table (NR-DC anchor n2, 1GHz - 18GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

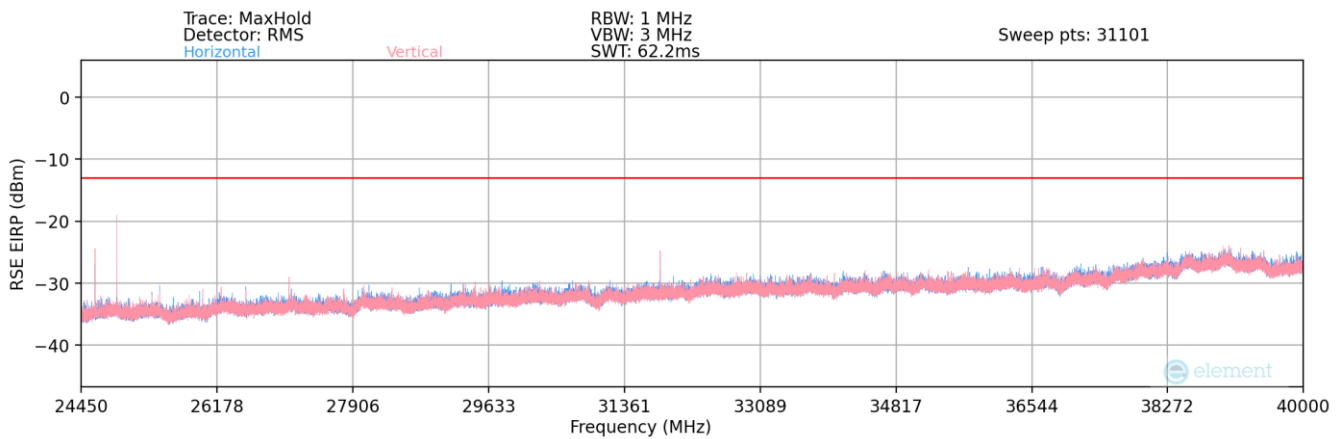
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### 18GHz-24.25GHz



**Plot 7-105. M patch - n258-R1 Radiated Spurious Plot**

### 24.45GHz-40GHz



**Plot 7-106. M patch - n258-R1 Radiated Spurious Plot**

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## Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
23178.64	Low	50	2Tx	QPSK	H	71	285	-41.59	-13.00	-28.59
23449.57	Low	50	2Tx	QPSK	H	88	280	-30.48	-13.00	-17.48
23727.12	Low	50	2Tx	QPSK	V	74	277	-31.26	-13.00	-18.26
24824.16	Low	50	2Tx	QPSK	V	74	285	-19.83	-13.00	-6.83
23374.65	Mid	50	2Tx	QPSK	H	95	279	-30.27	-13.00	-17.27
23802.01	Mid	50	2Tx	QPSK	H	77	297	-29.00	-13.00	-16.00
24076.58	Mid	50	2Tx	QPSK	V	80	277	-38.21	-13.00	-25.21
24899.32	Mid	50	2Tx	QPSK	V	75	282	-21.03	-13.00	-8.03
23299.95	High	50	2Tx	QPSK	H	75	288	-29.74	-13.00	-16.74
23328.72	High	50	2Tx	QPSK	H	72	287	-40.92	-13.00	-27.92
23876.88	High	50	2Tx	QPSK	V	74	277	-31.82	-13.00	-18.82
24899.54	High	50	2Tx	QPSK	V	75	283	-20.47	-13.00	-7.47

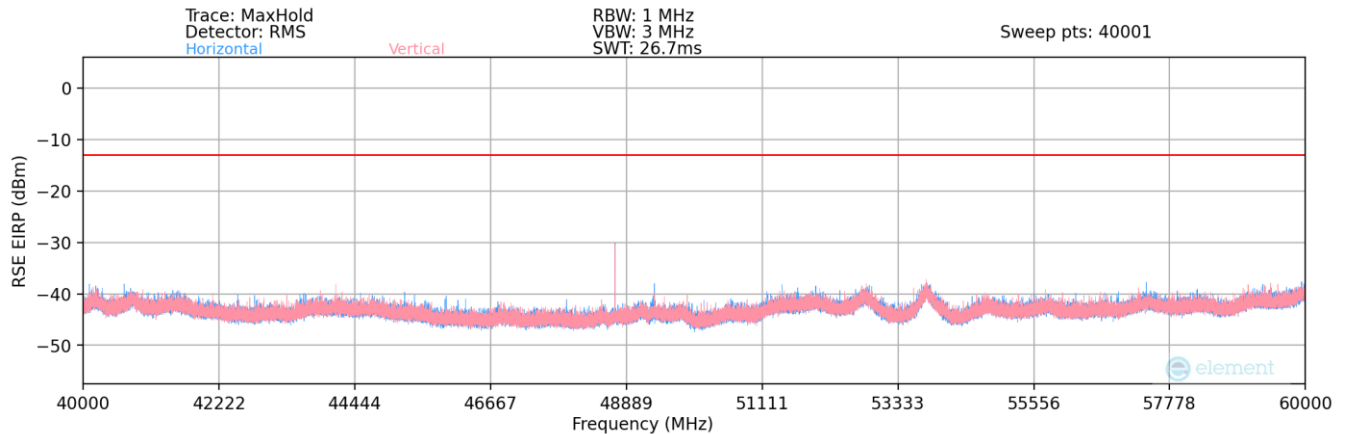
**Table 7-33. M patch - n258-R1 Radiated Spurious Emissions Table (18GHz - 40GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

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## 40GHz - 60GHz



**Plot 7-107. M patch - n258-R1 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
48550.90	Low	50	2Tx	QPSK	H	75	298	-28.52	-13.00	-15.52
48700.62	Mid	50	2Tx	QPSK	H	72	298	-29.25	-13.00	-16.25
48850.49	High	50	2Tx	QPSK	H	75	303	-27.85	-13.00	-14.85

**Table 7-34. M patch - n258-R1 Radiated Spurious Emissions Table (40GHz - 60GHz)**

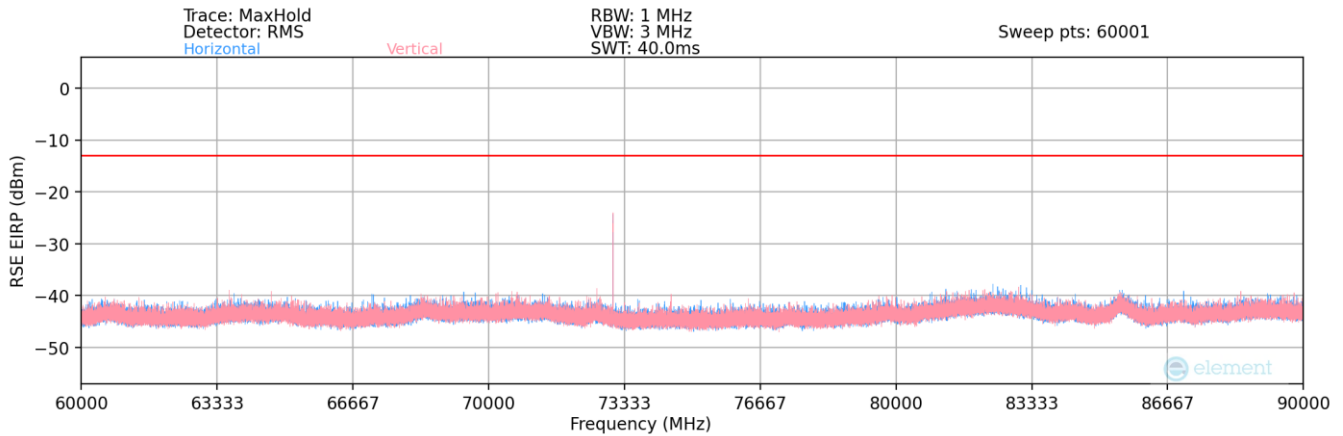
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

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## 60GHz - 90GHz



Plot 7-108. M patch - n258-R1 Radiated Spurious Plot

### Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
72826.02	Low	50	2Tx	QPSK	V	26	222	-19.52	-13.00	-6.52
73050.84	Mid	50	2Tx	QPSK	V	358	216	-22.43	-13.00	-9.43
73276.11	High	50	2Tx	QPSK	V	26	223	-21.34	-13.00	-8.34

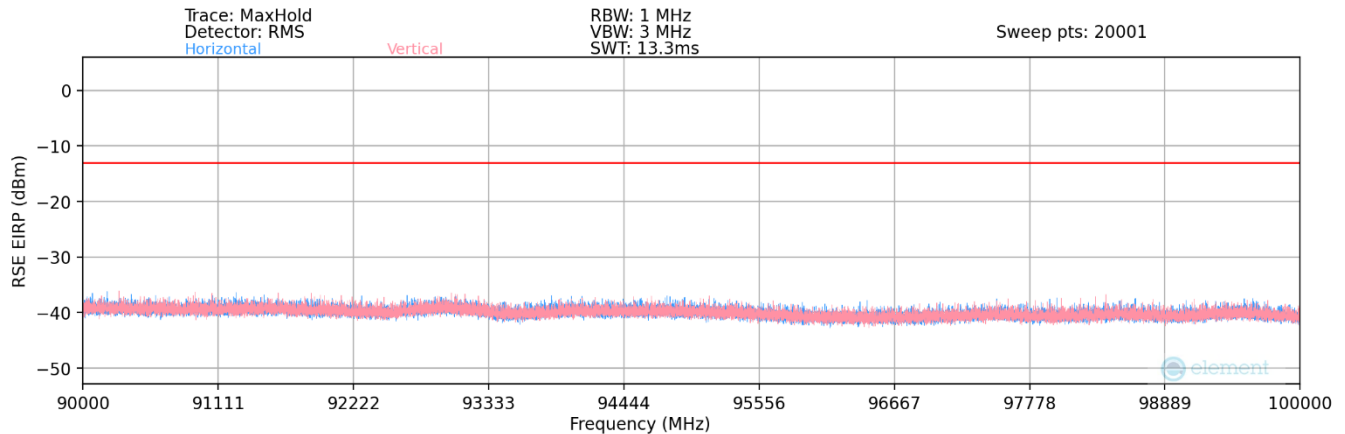
Table 7-35. M patch - n258-R1 Radiated Spurious Emissions Table (60GHz - 90GHz)

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## 90GHz - 100GHz



**Plot 7-109. M patch - n258-R1 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

**RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]**

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
97105.13	Low	50	2Tx	QPSK	V	-	-	-46.51	-13.00	-33.51
97411.60	Mid	50	2Tx	QPSK	V	-	-	-46.18	-13.00	-33.18
97694.53	High	50	2Tx	QPSK	V	-	-	-46.24	-13.00	-33.24

**Plot 7-110. M patch - n258-R1 Radiated Spurious Emissions Table (90GHz - 100GHz)**

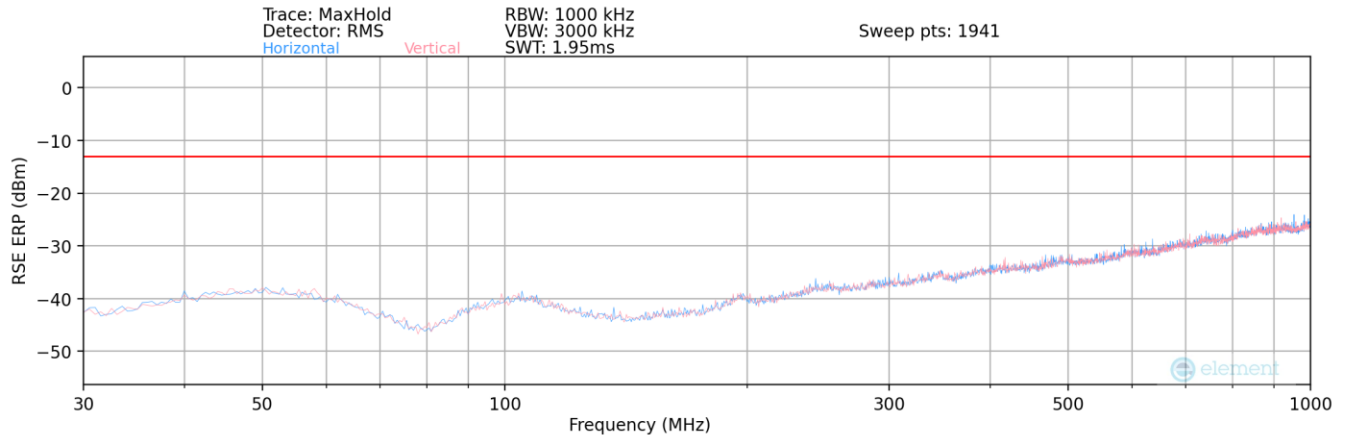
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## Band n258-R1 – N patch 30MHz - 1GHz



**Plot 7-111. N patch - n258-R1 Radiated Spurious Plot (NR-DC anchor n2)**

### Spurious Emissions ERP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 - 2.15 \text{ (dB)}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
930.52	Low	50	2Tx	QPSK	H	-	-	-35.21	-13.00	-22.21
992.56	Mid	50	2Tx	QPSK	H	-	-	-34.65	-13.00	-21.65
992.16	High	50	2Tx	QPSK	H	-	-	-34.53	-13.00	-21.53

**Table 7-36. N patch - n258-R1 Radiated Spurious Emissions Table (NR-DC anchor n2, 30MHz - 1GHz)**

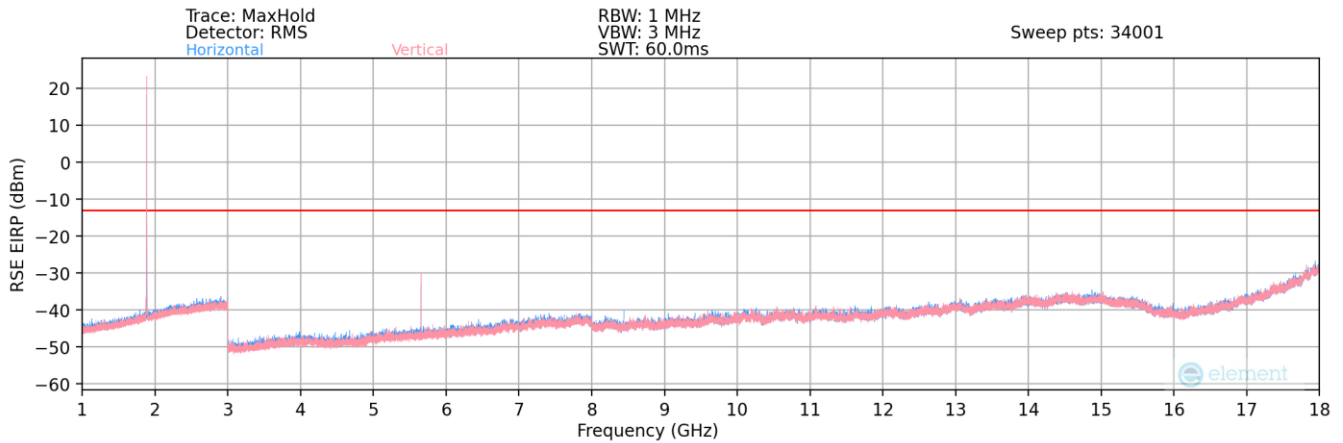
### Notes

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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## 1GHz - 18GHz



Plot 7-112. N patch - n258-R1 Radiated Spurious Plot (NR-DC anchor n2)

### Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
8367.07	Low	50	2Tx	QPSK	H	220	14	-45.64	-13.00	-32.64
8442.08	Mid	50	2Tx	QPSK	H	213	11	-45.08	-13.00	-32.08
8516.92	High	50	2Tx	QPSK	H	224	12	-43.79	-13.00	-30.79

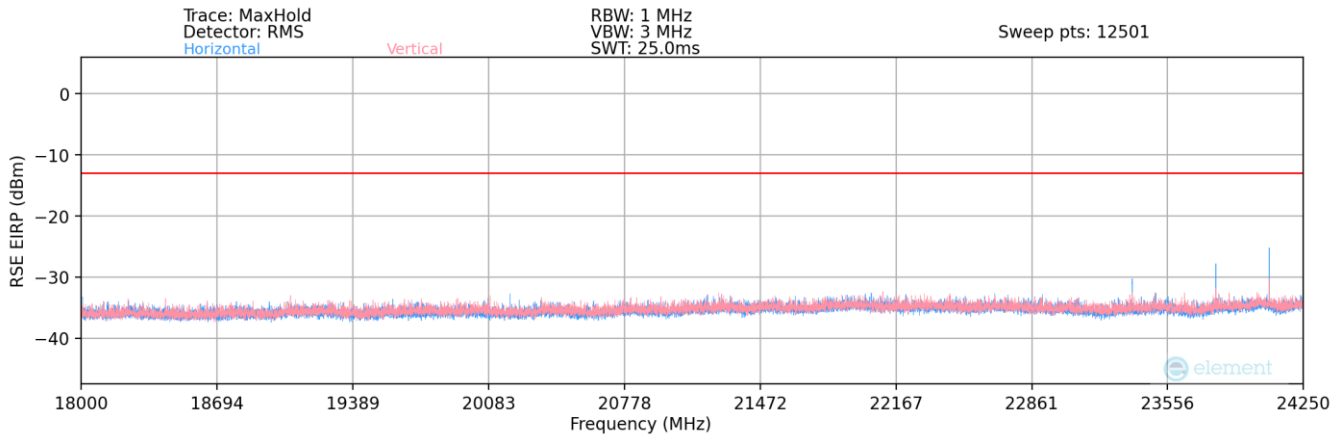
Table 7-37. N patch - n258-R1 Radiated Spurious Emissions Table (NR-DC anchor n2, 1GHz - 18GHz)

### Notes

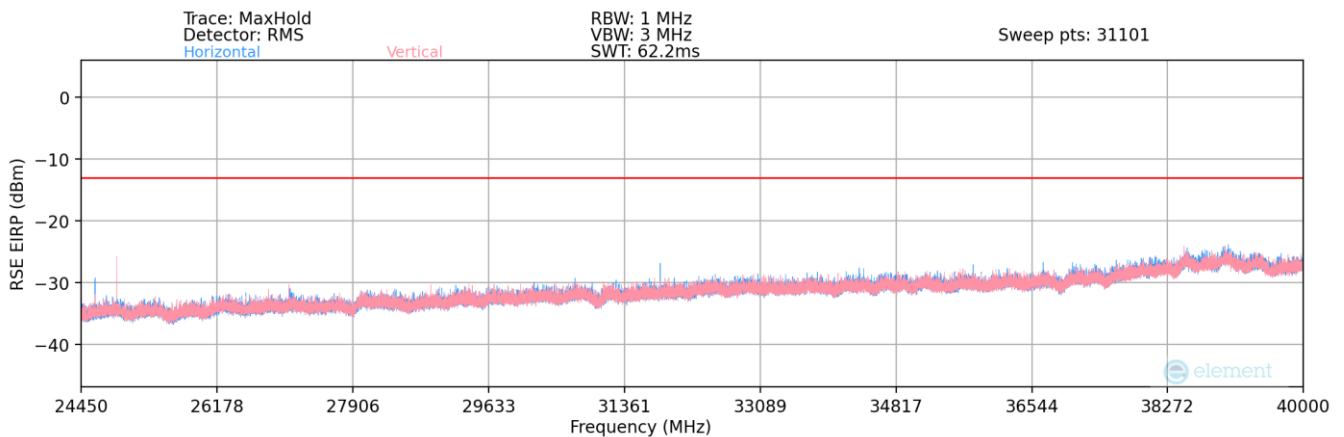
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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## 18GHz-24.25GHz



## 24.45GHz-40GHz



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## Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
23276.64	Low	50	2Tx	QPSK	H	68	245	-42.35	-13.00	-29.35
23449.49	Low	50	2Tx	QPSK	H	58	246	-30.61	-13.00	-17.61
23727.21	Low	50	2Tx	QPSK	H	62	243	-32.40	-13.00	-19.40
24824.12	Low	50	2Tx	QPSK	V	52	256	-23.53	-13.00	-10.53
23253.48	Mid	50	2Tx	QPSK	H	53	261	-41.83	-13.00	-28.83
23374.67	Mid	50	2Tx	QPSK	H	53	257	-31.29	-13.00	-18.29
23802.27	Mid	50	2Tx	QPSK	H	51	244	-32.74	-13.00	-19.74
24899.24	Mid	50	2Tx	QPSK	V	23	257	-24.68	-13.00	-11.68
23299.82	High	50	2Tx	QPSK	H	64	253	-31.91	-13.00	-18.91
23426.47	High	50	2Tx	QPSK	H	67	248	-42.43	-13.00	-29.43
23877.24	High	50	2Tx	QPSK	H	62	244	-32.93	-13.00	-19.93
24974.41	High	50	2Tx	QPSK	V	37	255	-24.42	-13.00	-11.42

**Table 7-38. N patch - n258-R1 Radiated Spurious Emissions Table (18GHz - 40GHz)**

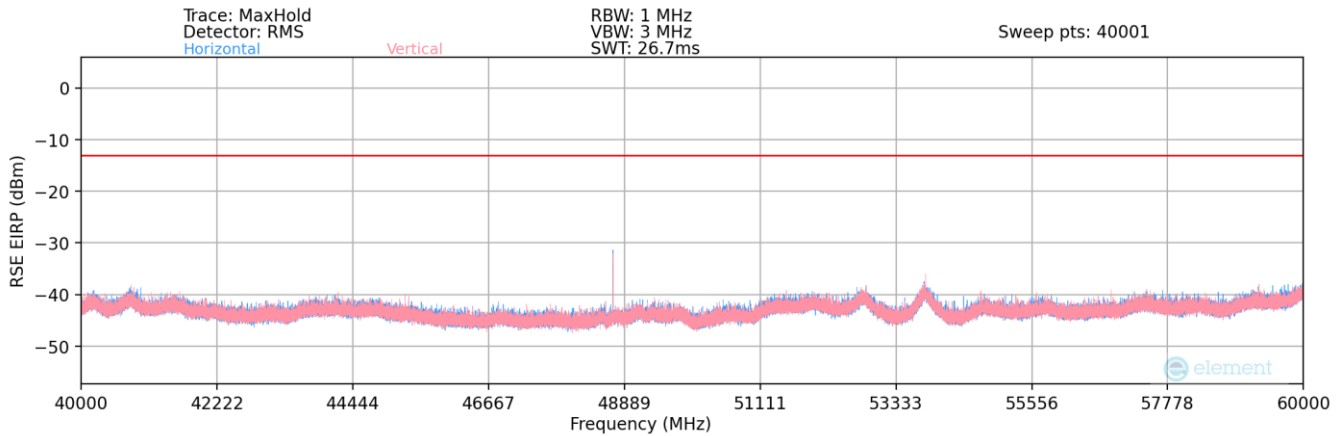
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

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V1.0

## 40GHz - 60GHz



Plot 7-115. N patch - n258-R1 Radiated Spurious Plot

### Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
48552.22	Low	50	2Tx	QPSK	V	230	188	-30.78	-13.00	-17.78
48700.65	Mid	50	2Tx	QPSK	V	229	186	-30.20	-13.00	-17.20
48850.46	High	50	2Tx	QPSK	V	229	186	-31.20	-13.00	-18.20

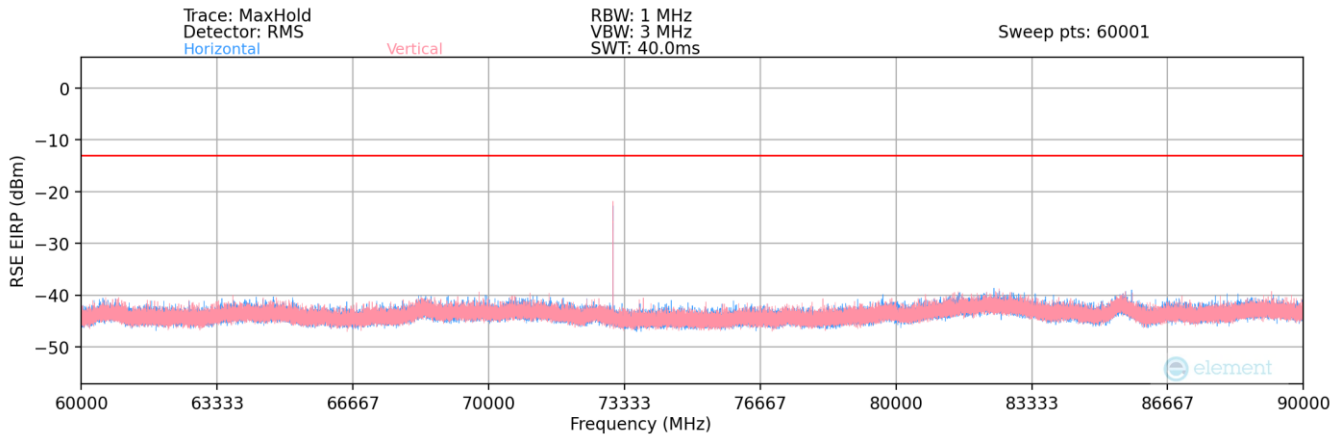
Table 7-39. N patch - n258-R1 Radiated Spurious Emissions Table (40GHz - 60GHz)

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

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## 60GHz - 90GHz



**Plot 7-116. N patch - n258-R1 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
72826.20	Low	50	2Tx	QPSK	H	15	207	-22.59	-13.00	-9.59
75050.75	Mid	50	2Tx	QPSK	H	18	206	-19.68	-13.00	-6.68
73276.59	High	50	2Tx	QPSK	H	30	208	-20.04	-13.00	-7.04

**Table 7-40. N patch - n258-R1 Radiated Spurious Emissions Table (60GHz - 90GHz)**

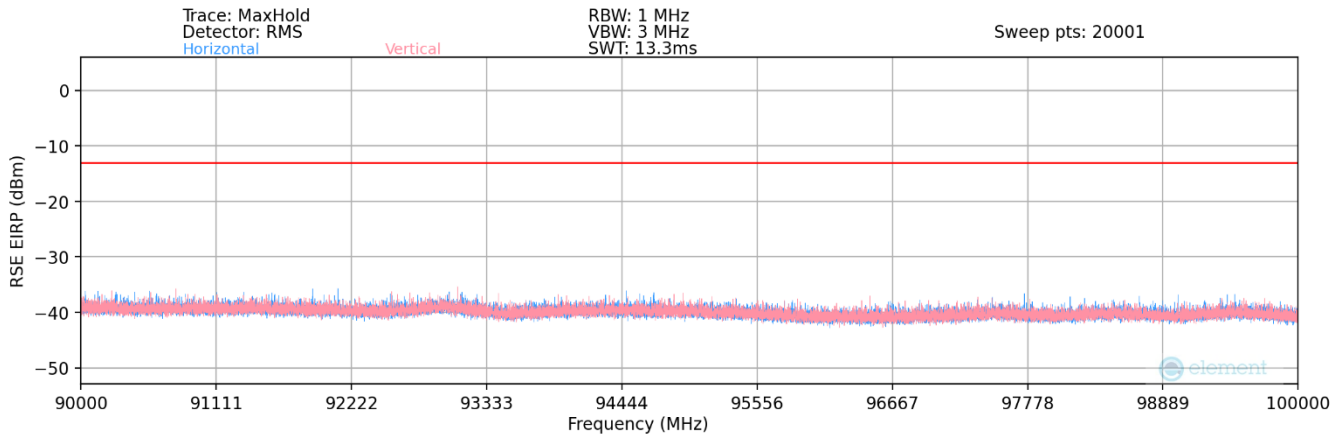
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## 90GHz - 100GHz



**Plot 7-117. N patch - n258-R1 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
97095.86	Low	50	2Tx	QPSK	V	-	-	-46.65	-13.00	-33.65
97390.95	Mid	50	2Tx	QPSK	V	-	-	-45.91	-13.00	-32.91
97716.82	High	50	2Tx	QPSK	V	-	-	-46.22	-13.00	-33.22

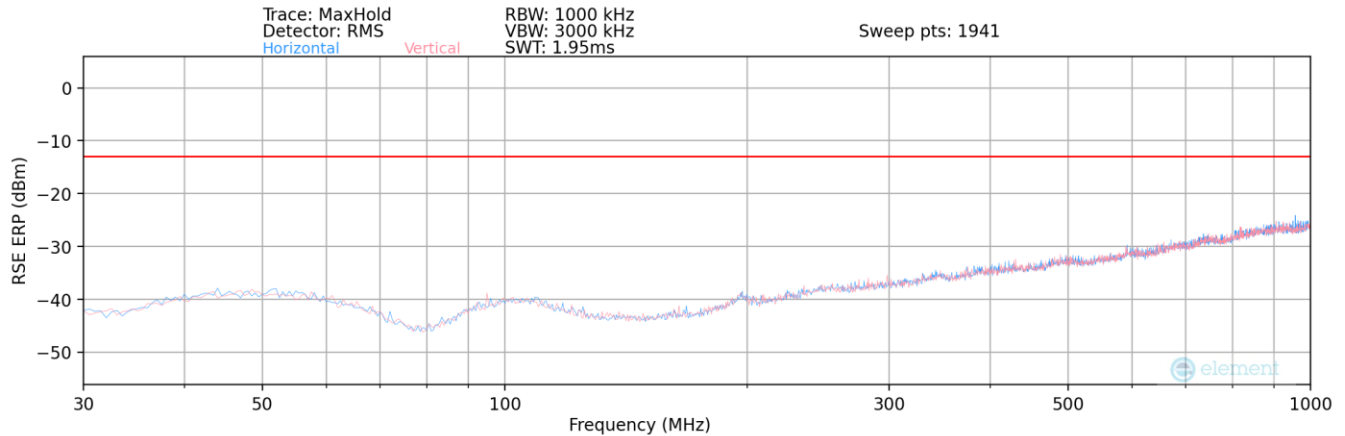
**Plot 7-118. N patch - n258-R1 Radiated Spurious Emissions Table (90GHz - 100GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## Band n258-R2 – M patch 30MHz - 1GHz



Plot 7-119. M patch - n258-R2 Radiated Spurious Plot (EN-DC anchor B66)

### Spurious Emissions ERP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 - 2.15 \text{ (dB)}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
999.15	Low	50	2Tx	QPSK	H	-	-	-34.57	-13.00	-21.57
990.86	Mid	50	2Tx	QPSK	H	-	-	-34.55	-13.00	-21.55
902.35	High	50	2Tx	QPSK	H	-	-	-35.27	-13.00	-22.27

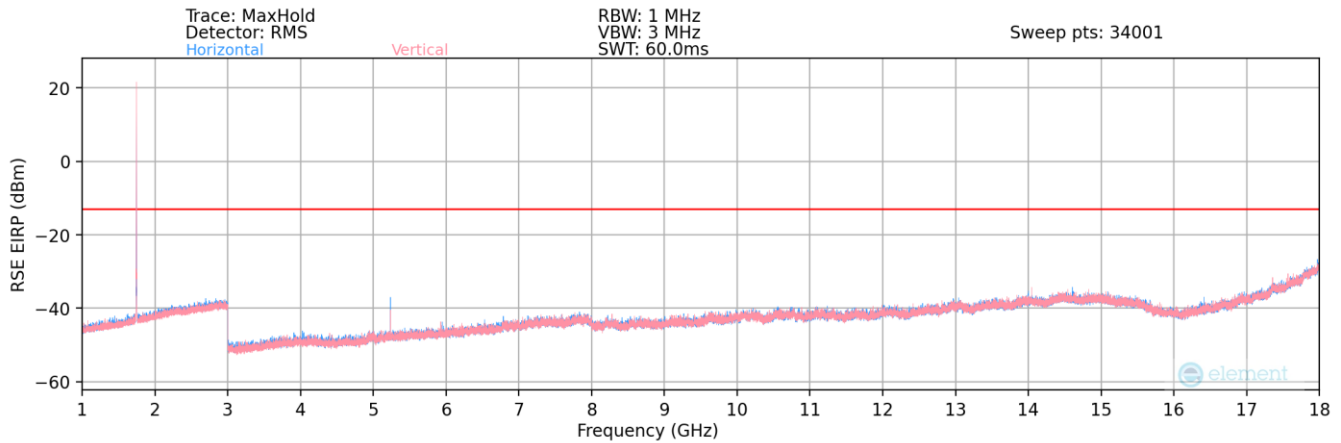
Table 7-41. M patch - n258-R2 Radiated Spurious Emissions Table (EN-DC anchor B66, 30MHz - 1GHz)

### Notes

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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# 1GHz - 18GHz



**Plot 7-120. M patch - n258-R2 Radiated Spurious Plot (EN-DC anchor B66)**

## Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
17335.08	Low	50	2Tx	QPSK	H	-	-	-48.06	-13.00	-35.06
17479.96	Mid	50	2Tx	QPSK	H	-	-	-47.38	-13.00	-34.38
17624.96	High	50	2Tx	QPSK	H	-	-	-45.82	-13.00	-32.82

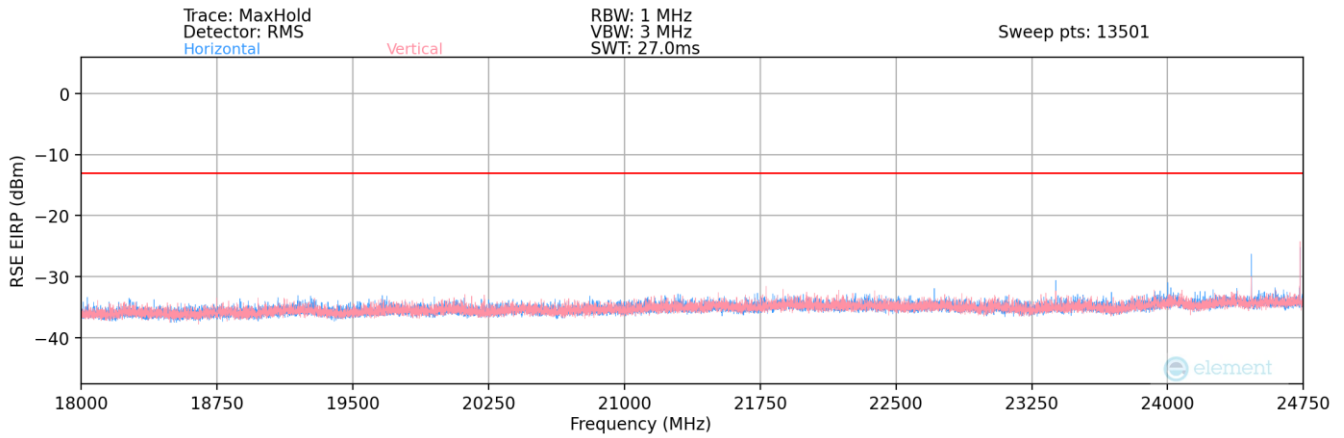
**Table 7-42. M patch - n258-R2 Radiated Spurious Emissions Table (EN-DC anchor B66, 1GHz - 18GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

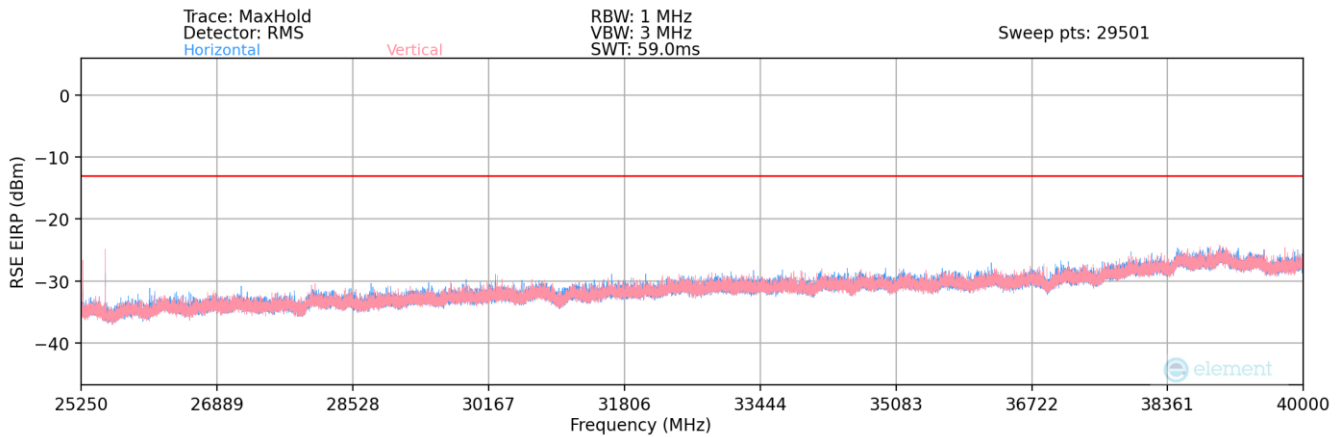
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### 18GHz-24.75GHz



**Plot 7-121. M patch - n258-R2 Radiated Spurious Plot**

### 25.25GHz-40GHz



**Plot 7-122. M patch - n258-R2 Radiated Spurious Plot**

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## Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
24057.15	Low	50	2Tx	QPSK	H	-	-	-33.19	-13.00	-20.19
24207.03	Low	50	2Tx	QPSK	H	93	297	-28.98	-13.00	-15.98
25030.91	Low	50	2Tx	QPSK	V	75	287	-31.24	-13.00	-18.24
25344.67	Low	50	2Tx	QPSK	V	74	282	-23.39	-13.00	-10.39
24001.73	Mid	50	2Tx	QPSK	H	84	291	-35.78	-13.00	-22.78
24463.24	Mid	50	2Tx	QPSK	H	67	295	-31.29	-13.00	-18.29
24729.46	Mid	50	2Tx	QPSK	V	120	276	-34.82	-13.00	-21.82
25538.54	Mid	50	2Tx	QPSK	V	87	279	-25.80	-13.00	-12.80
23772.44	High	50	2Tx	QPSK	H	87	295	-28.60	-13.00	-15.60
24662.31	High	50	2Tx	QPSK	H	91	296	-28.14	-13.00	-15.14
25589.41	High	50	2Tx	QPSK	V	-	-	-31.08	-13.00	-18.08
25789.21	High	50	2Tx	QPSK	V	75	280	-25.04	-13.00	-12.04

**Table 7-43. M patch - n258-R2 Radiated Spurious Emissions Table (18GHz - 40GHz)**

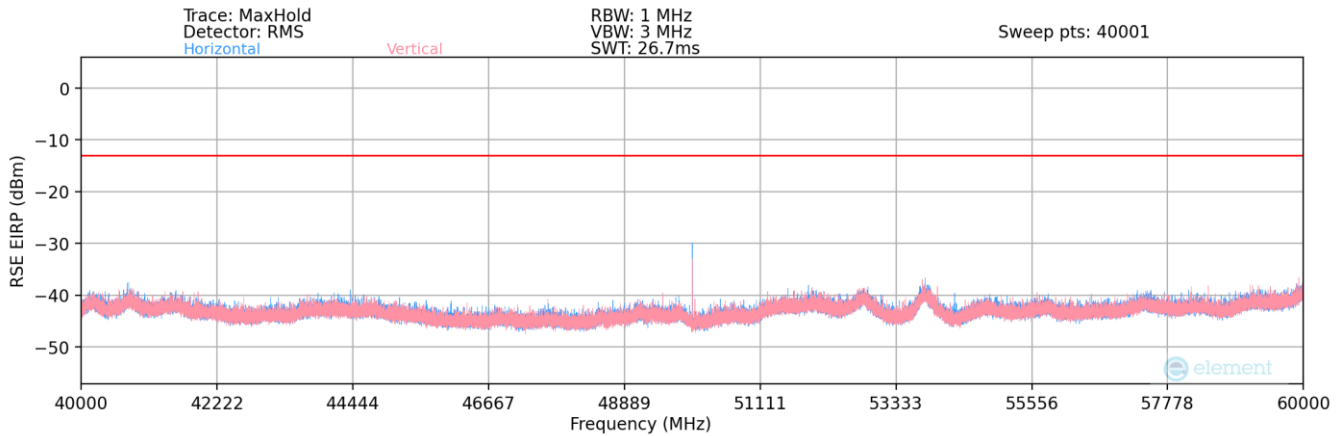
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

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## 40GHz - 60GHz



**Plot 7-123. M patch - n258-R2 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
49550.84	Low	50	2Tx	QPSK	V	211	65	-26.83	-13.00	-13.83
50000.46	Mid	50	2Tx	QPSK	V	210	53	-28.73	-13.00	-15.73
50450.79	High	50	2Tx	QPSK	V	210	54	-28.53	-13.00	-15.53

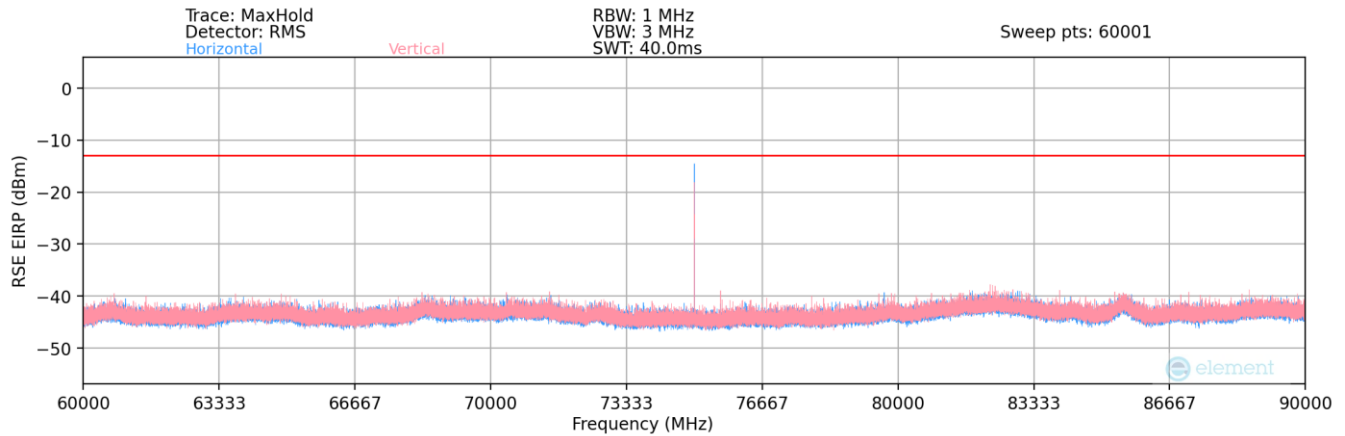
**Table 7-44. M patch - n258-R2 Radiated Spurious Emissions Table (40GHz - 60GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

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## 60GHz - 90GHz



Plot 7-124. M patch - n258-R2 Radiated Spurious Plot

### Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
74326.20	Low	50	2Tx	QPSK	V	13	208	-22.35	-13.00	-9.35
75000.96	Mid	50	2Tx	QPSK	V	12	208	-23.00	-13.00	-10.00
75675.96	High	50	2Tx	QPSK	V	20	204	-23.51	-13.00	-10.51

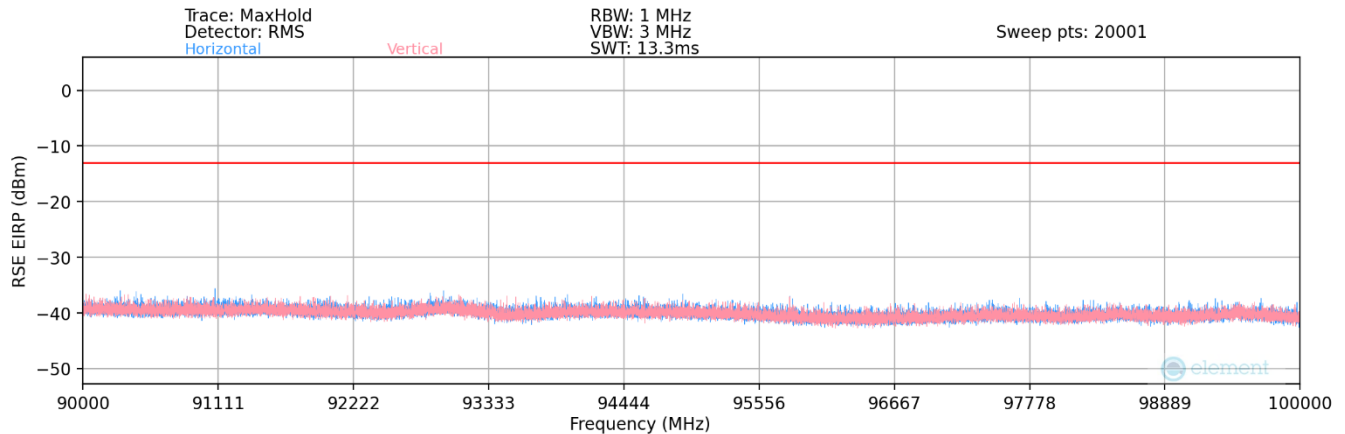
Table 7-45. M patch - n258-R2 Radiated Spurious Emissions Table (60GHz - 90GHz)

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## 90GHz - 100GHz



**Plot 7-125. M patch - n258-R2 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
99112.03	Low	50	2Tx	QPSK	H	-	-	-46.30	-13.00	-33.30
99990.72	Mid	50	2Tx	QPSK	H	-	-	-46.26	-13.00	-33.26
100890.42	High	50	2Tx	QPSK	H	-	-	-46.15	-13.00	-33.15

**Plot 7-126. M patch - n258-R2 Radiated Spurious Emissions Table (90GHz - 100GHz)**

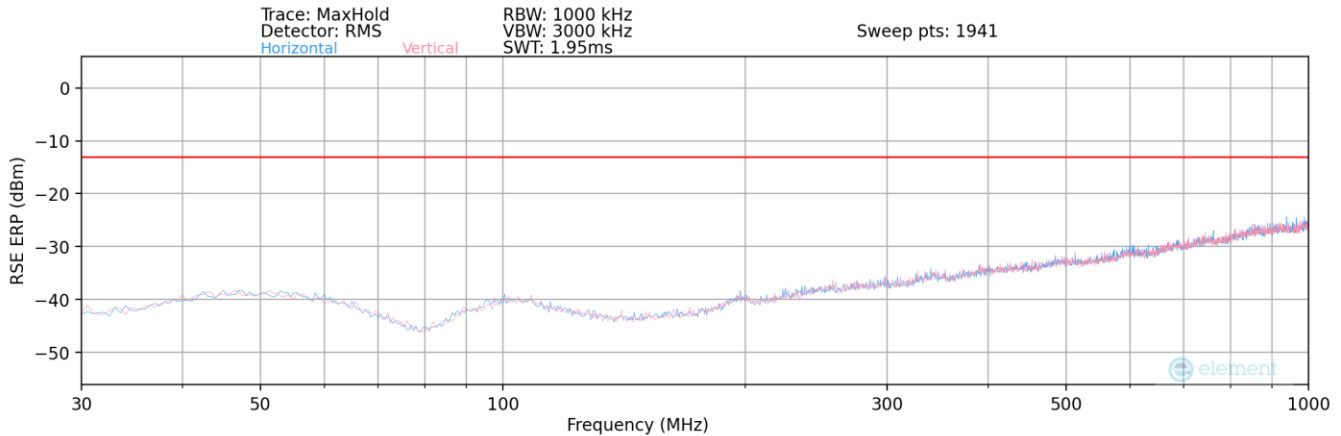
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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**Band n258-R2 – N patch  
30MHz - 1GHz**



**Plot 7-127. N patch - n258-R2 Radiated Spurious Plot (NR-DC anchor n2)**

**Spurious Emissions ERP Sample Calculation (n258-R2)**

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 - 2.15 \text{ (dB)}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
993.46	Low	50	2Tx	QPSK	H	-	-	-34.55	-13.00	-21.55
992.56	Mid	50	2Tx	QPSK	H	-	-	-34.59	-13.00	-21.59
982.87	High	50	2Tx	QPSK	H	-	-	-34.67	-13.00	-21.67

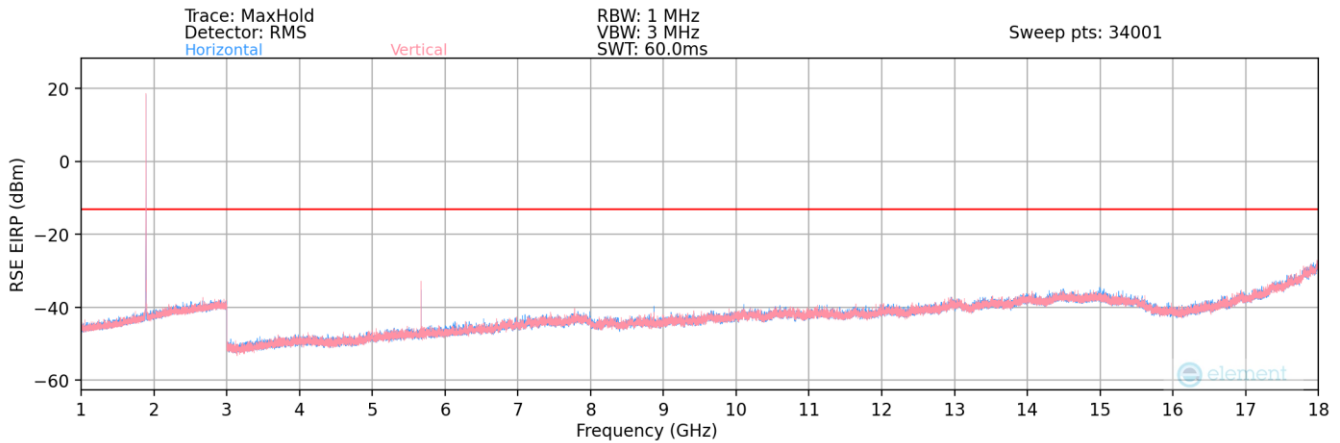
**Table 7-46. N patch - n258-R2 Radiated Spurious Emissions Table (NR-DC anchor n2, 30MHz - 1GHz)**

**Notes**

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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# 1GHz - 18GHz



**Plot 7-128. N patch - n258-R2 Radiated Spurious Plot (NR-DC anchor n2)**

## Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
8846.76	Low	50	2Tx	QPSK	H	216	295	-40.39	-13.00	-27.39
8872.53	Mid	50	2Tx	QPSK	H	218	296	-41.62	-13.00	-28.62
8892.71	High	50	2Tx	QPSK	H	222	299	-41.38	-13.00	-28.38

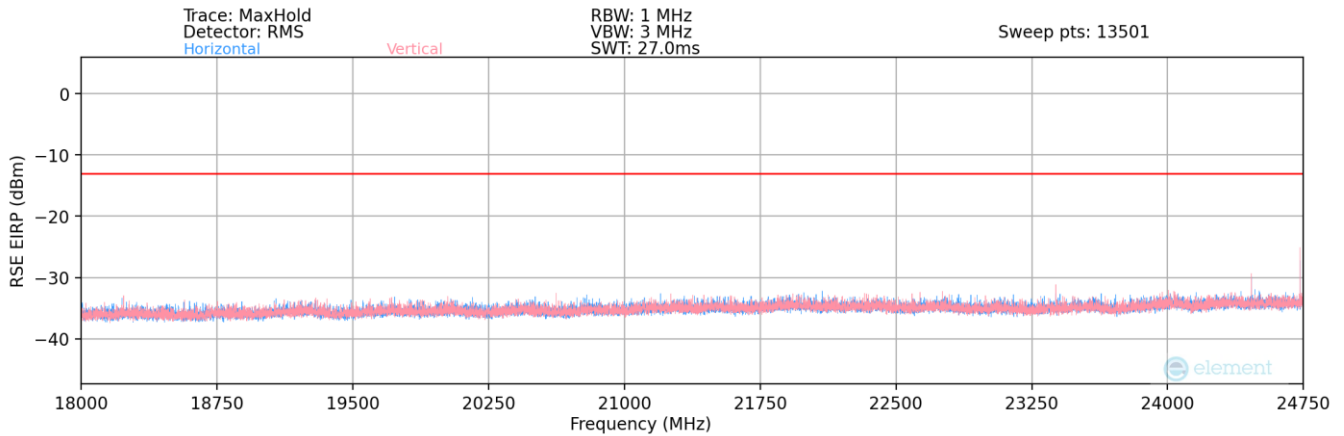
**Table 7-47. N patch - n258-R2 Radiated Spurious Emissions Table (NR-DC anchor n2, 1GHz - 18GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

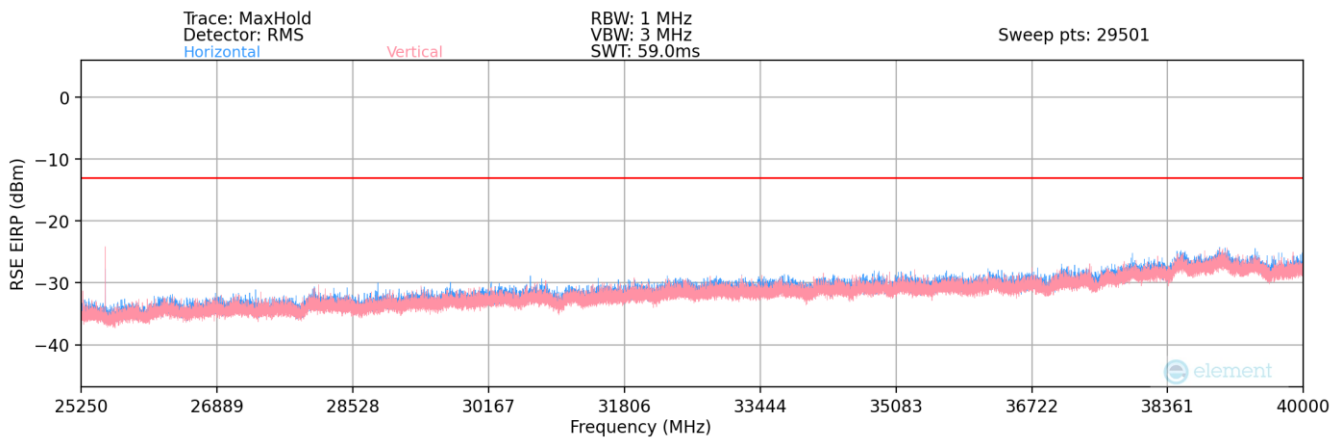
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### 18GHz-24.75GHz



**Plot 7-129. N patch - n258-R2 Radiated Spurious Plot**

### 25.25GHz-40GHz



**Plot 7-130. N patch - n258-R2 Radiated Spurious Plot**

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## Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
24206.67	Low	50	2Tx	QPSK	V	40	264	-32.61	-13.00	-19.61
24462.13	Low	50	2Tx	QPSK	V	41	266	-35.48	-13.00	-22.48
25344.56	Low	50	2Tx	QPSK	V	41	257	-24.06	-13.00	-11.06
25599.93	Low	50	2Tx	QPSK	V	25	257	-36.39	-13.00	-23.39
23383.02	Mid	50	2Tx	QPSK	V	39	262	-32.13	-13.00	-19.13
24463.19	Mid	50	2Tx	QPSK	V	42	268	-27.73	-13.00	-14.73
25538.21	Mid	50	2Tx	QPSK	V	19	265	-23.87	-13.00	-10.87
26342.44	Mid	50	2Tx	QPSK	V	20	266	-35.06	-13.00	-22.06
23772.63	High	50	2Tx	QPSK	V	31	258	-31.06	-13.00	-18.06
24662.58	High	50	2Tx	QPSK	V	50	251	-27.25	-13.00	-14.25
25788.77	High	50	2Tx	QPSK	V	25	260	-24.48	-13.00	-11.48
25907.09	High	50	2Tx	QPSK	V	32	259	-35.27	-13.00	-22.27

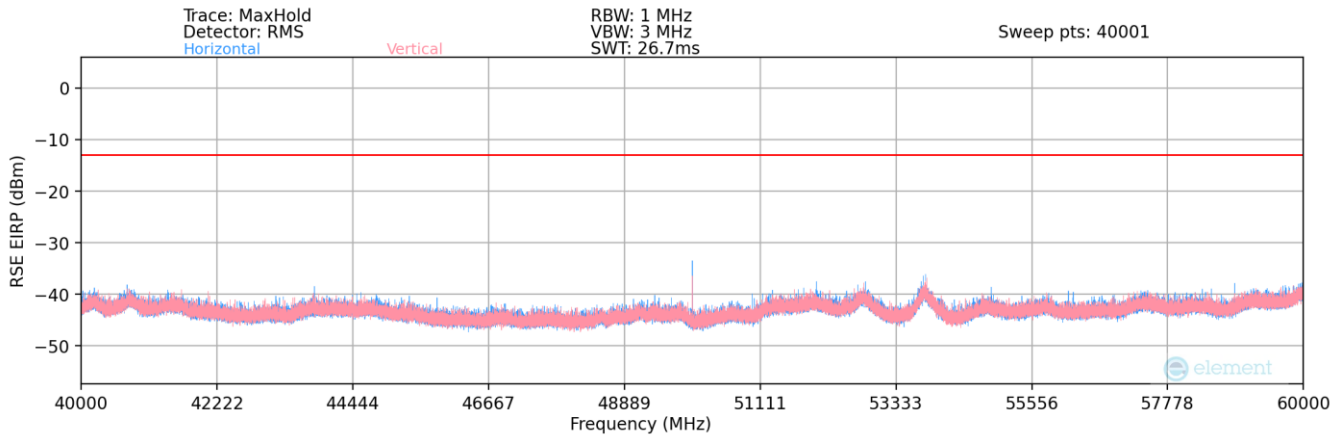
**Table 7-48. N patch - n258-R2 Radiated Spurious Emissions Table (18GHz - 40GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

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## 40GHz - 60GHz



**Plot 7-131. N patch - n258-R2 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
49550.90	Low	50	2Tx	QPSK	H	74	302	-26.65	-13.00	-13.65
50000.61	Mid	50	2Tx	QPSK	H	74	301	-32.21	-13.00	-19.21
50450.76	High	50	2Tx	QPSK	H	71	298	-34.58	-13.00	-21.58

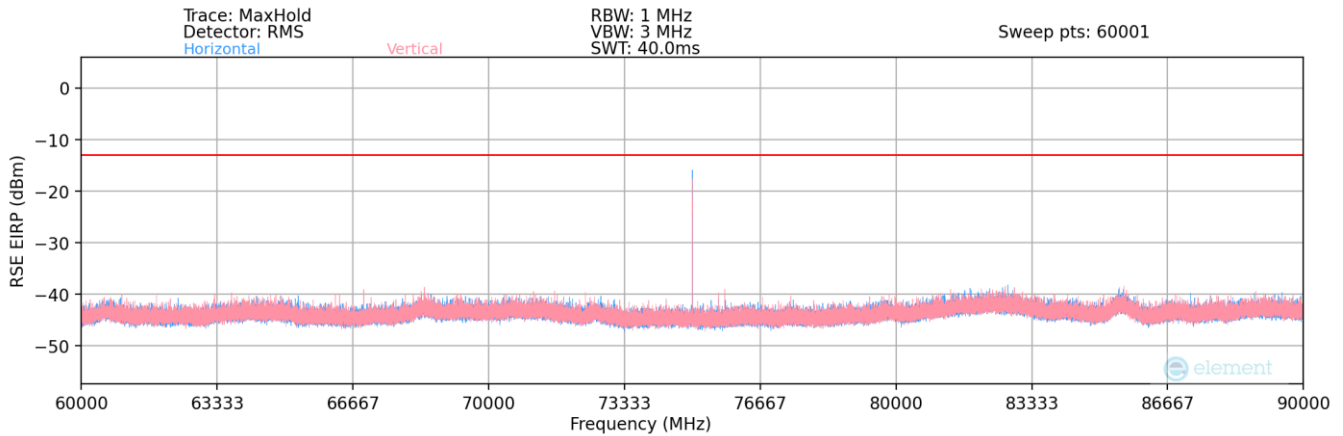
**Table 7-49. N patch - n258-R2 Radiated Spurious Emissions Table (40GHz - 60GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

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## 60GHz - 90GHz



**Plot 7-132. N patch - n258-R2 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
74328.39	Low	50	2Tx	QPSK	H	304	175	-24.83	-13.00	-11.83
75000.96	Mid	50	2Tx	QPSK	H	289	206	-17.09	-13.00	-4.09
75678.00	High	50	2Tx	QPSK	H	301	177	-24.10	-13.00	-11.10

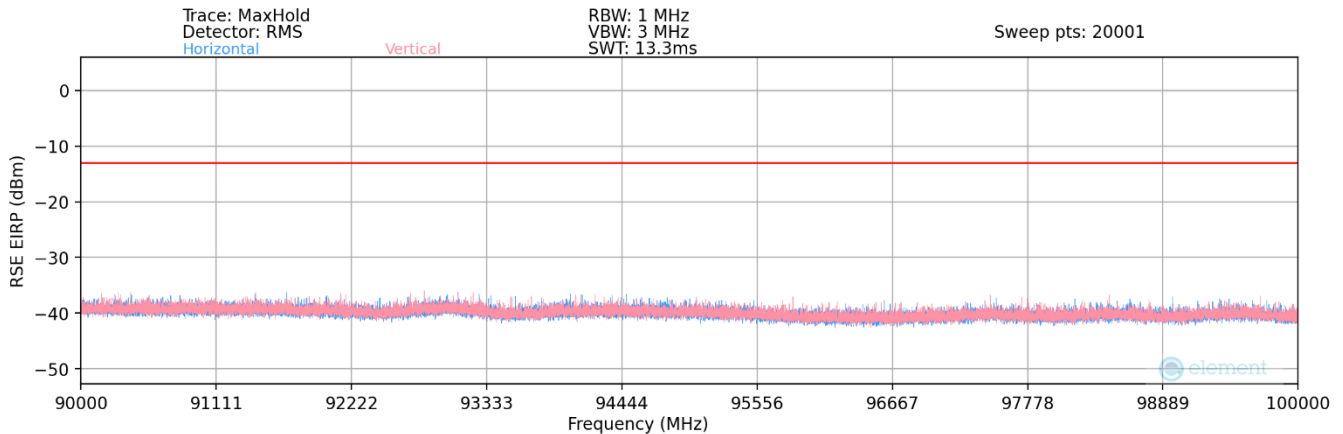
**Table 7-50. N patch - n258-R2 Radiated Spurious Emissions Table (60GHz - 90GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## 90GHz - 100GHz



**Plot 7-133. N patch - n258-R2 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
99094.33	Low	50	2Tx	QPSK	H	-	-	-46.43	-13.00	-33.43
99996.00	Mid	50	2Tx	QPSK	H	-	-	-46.37	-13.00	-33.37
100910.01	High	50	2Tx	QPSK	H	-	-	-46.00	-13.00	-33.00

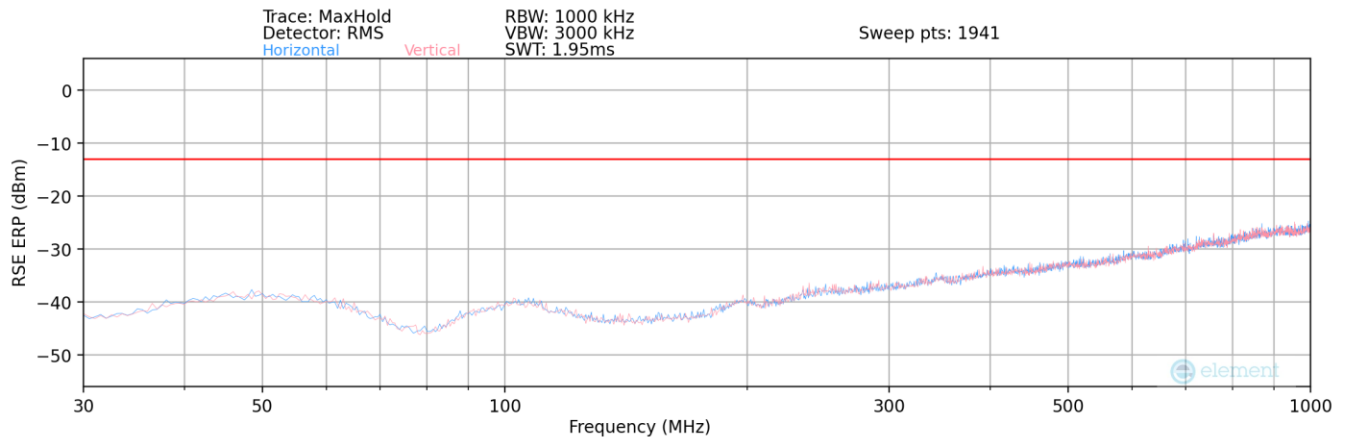
**Plot 7-134. N patch - n258-R2 Radiated Spurious Emissions Table (90GHz - 100GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## Band n261 – M patch 30MHz - 1GHz



**Plot 7-135. M patch - n261 Radiated Spurious Plot (EN-DC anchor B66)**

### Spurious Emissions ERP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 - 2.15 \text{ (dB)}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
997.15	Low	50	2Tx	QPSK	H	-	-	-34.51	-13.00	-21.51
999.15	Mid	50	2Tx	QPSK	H	-	-	-34.42	-13.00	-21.42
975.97	High	50	2Tx	QPSK	H	-	-	-35.15	-13.00	-22.15

**Table 7-51. M patch - n261 Radiated Spurious Emissions Table (EN-DC anchor B66, 30MHz - 1GHz)**

### Notes

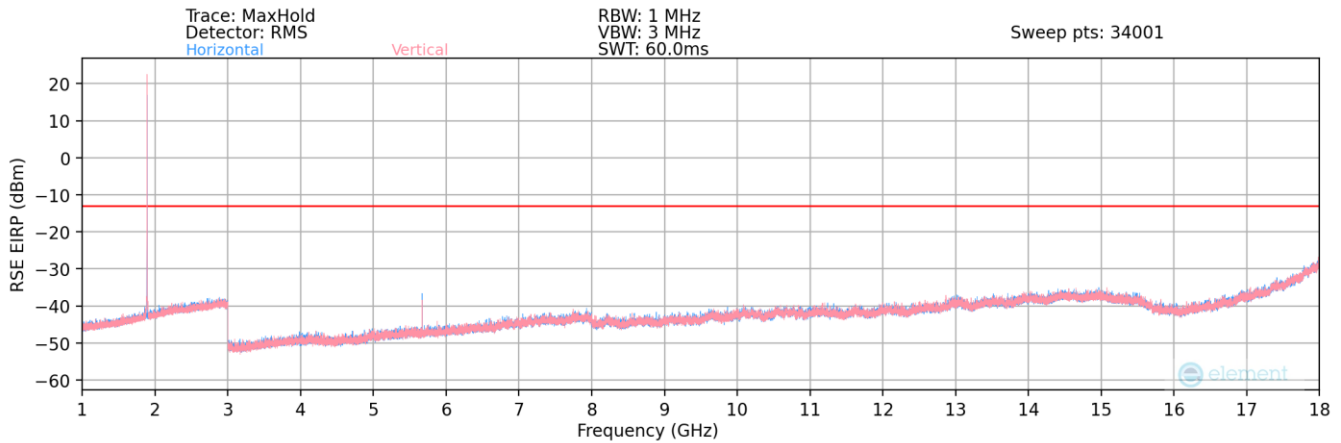
The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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# 1GHz - 18GHz



**Plot 7-136. M patch - n261 Radiated Spurious Plot (EN-DC anchor B66)**

## Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
17205.00	Low	50	2Tx	QPSK	H	-	-	-47.75	-13.00	-34.75
17454.96	Mid	50	2Tx	QPSK	H	-	-	-46.35	-13.00	-33.35
17704.92	High	50	2Tx	QPSK	H	-	-	-42.83	-13.00	-29.83

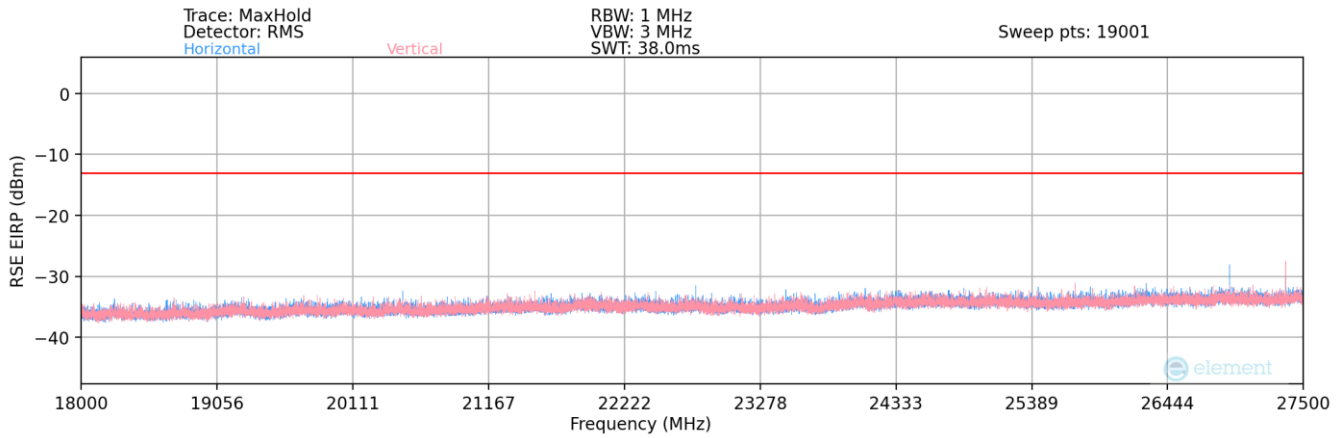
**Table 7-52. M patch - n261 Radiated Spurious Emissions Table (EN-DC anchor B66, 1GHz - 18GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

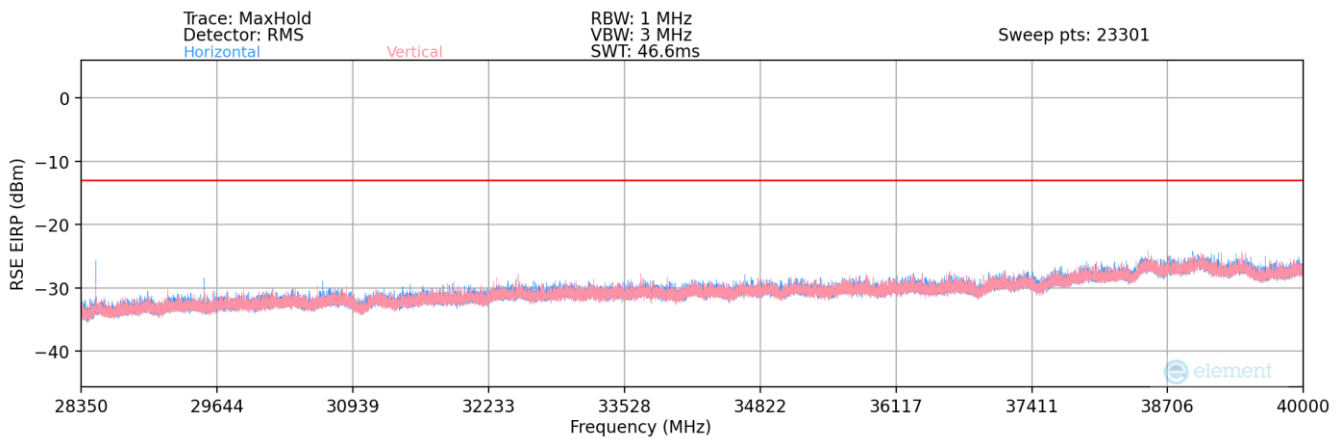
FCC ID: A3LSMS911U	<b>PART 30 MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Technical Manager
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### 18GHz-27.5GHz



**Plot 7-137. M patch - n261 Radiated Spurious Plot**

### 28.35GHz-40GHz



**Plot 7-138. M patch - n261 Radiated Spurious Plot**

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## Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
26541.38	Low	50	2Tx	QPSK	H	86	268	-19.92	-13.00	-6.92
26962.58	Low	50	2Tx	QPSK	H	86	278	-25.40	-13.00	-12.40
28088.94	Low	50	2Tx	QPSK	V	105	276	-36.76	-13.00	-23.76
28510.02	Low	50	2Tx	QPSK	H	94	288	-36.77	-13.00	-23.77
26926.47	Mid	50	2Tx	QPSK	H	85	278	-28.09	-13.00	-15.09
27362.39	Mid	50	2Tx	QPSK	V	111	275	-26.20	-13.00	-13.20
28488.56	Mid	50	2Tx	QPSK	H	93	271	-28.82	-13.00	-15.82
29520.36	Mid	50	2Tx	QPSK	H	95	275	-36.65	-13.00	-23.65
27326.52	High	50	2Tx	QPSK	H	84	278	-28.72	-13.00	-15.72
27813.42	High	50	2Tx	QPSK	H	85	279	-27.26	-13.00	-14.26
28837.45	High	50	2Tx	QPSK	H	104	275	-27.77	-13.00	-14.77
30042.24	High	50	2Tx	QPSK	H	87	276	-27.50	-13.00	-14.50

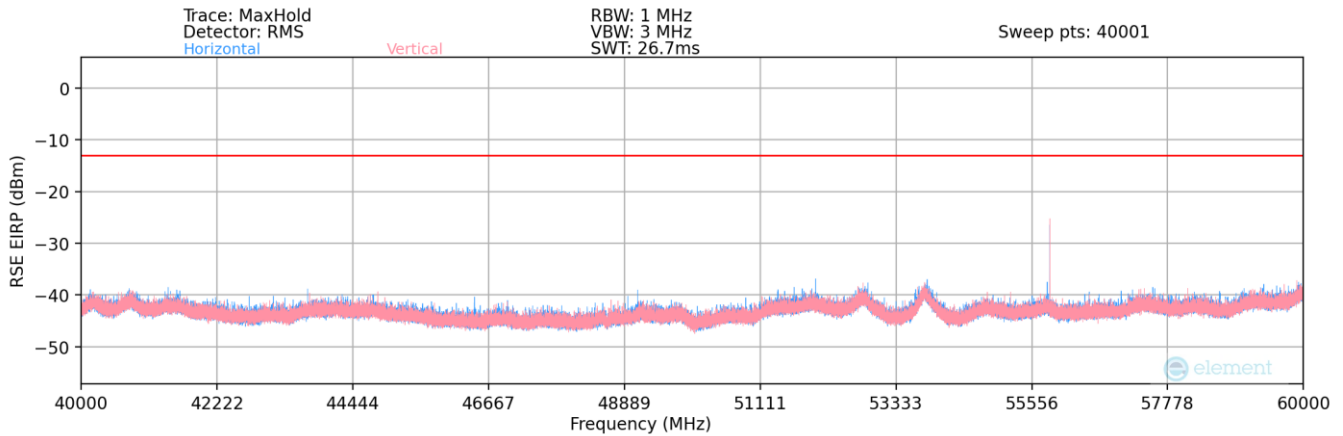
**Table 7-53. M patch - n261 Radiated Spurious Emissions Table (18GHz - 40GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

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## 40GHz - 60GHz



**Plot 7-139. M patch - n261 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
55050.93	Low	50	2Tx	QPSK	V	340	64	-25.65	-13.00	-12.65
55850.61	Mid	50	2Tx	QPSK	V	341	65	-23.79	-13.00	-10.79
56650.53	High	50	2Tx	QPSK	V	343	64	-23.52	-13.00	-10.52

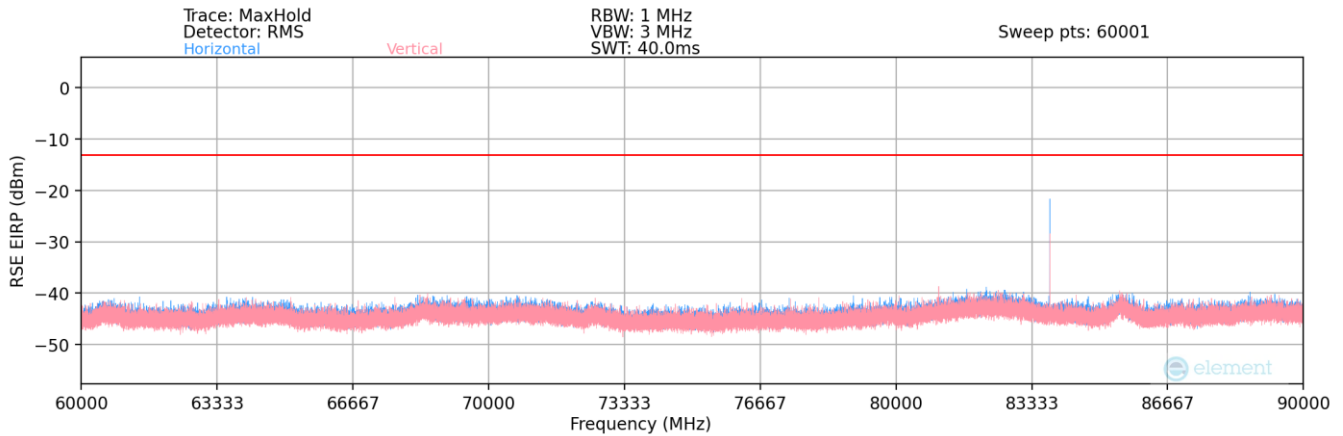
**Table 7-54. M patch - n261 Radiated Spurious Emissions Table (40GHz - 60GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

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## 60GHz - 90GHz



**Plot 7-140. M patch - n261 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
82576.35	Low	50	2Tx	QPSK	H	68	222	-27.25	-13.00	-14.25
83775.74	Mid	50	2Tx	QPSK	H	47	224	-23.88	-13.00	-10.88
84975.96	High	50	2Tx	QPSK	H	72	262	-23.01	-13.00	-10.01

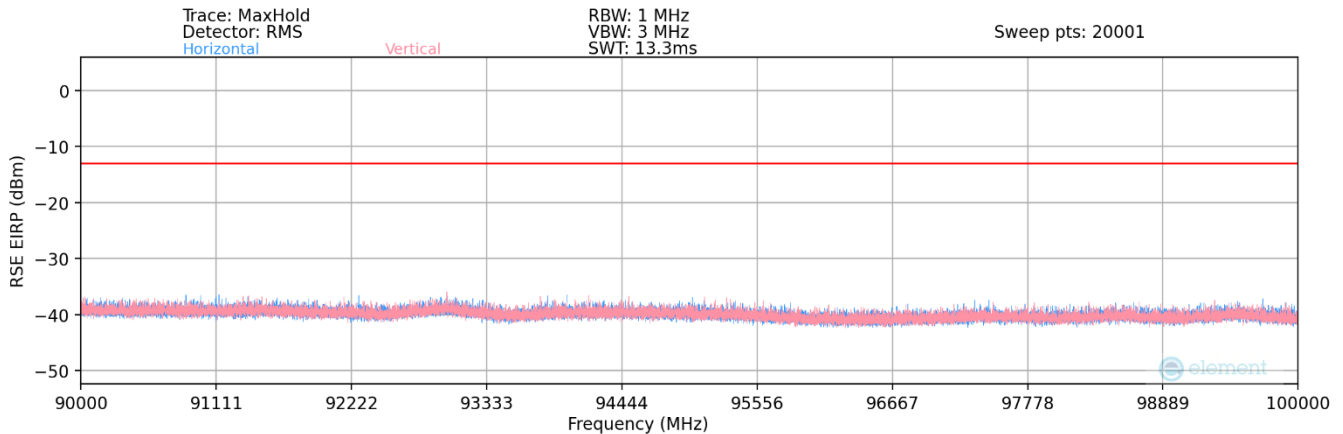
**Table 7-55. M patch - n261 Radiated Spurious Emissions Table (60GHz - 90GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## 90GHz - 100GHz



**Plot 7-141. M patch – n261 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log}(Dm) - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
97104.31	Low	50	2Tx	QPSK	V	-	-	-46.05	-13.00	-33.05
97400.10	Mid	50	2Tx	QPSK	V	-	-	-46.02	-13.00	-33.02
97699.83	High	50	2Tx	QPSK	V	-	-	-45.99	-13.00	-32.99

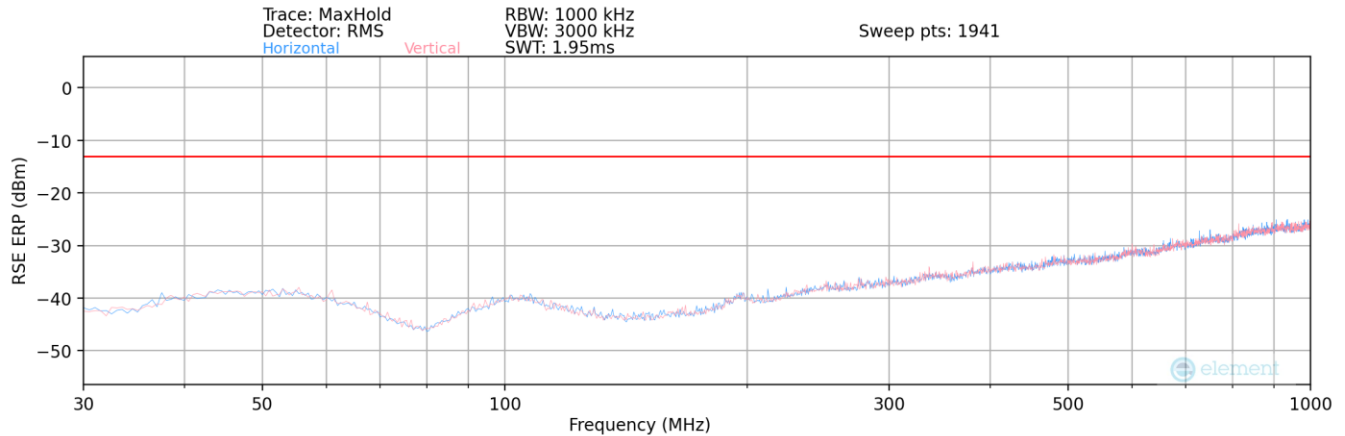
**Plot 7-142. M patch - n261 Radiated Spurious Emissions Table (90GHz - 100GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## Band n261 – N patch 30MHz - 1GHz



**Plot 7-143. N patch - n261 Radiated Spurious Plot (NR-DC anchor n2)**

### Spurious Emissions ERP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 - 2.15 \text{ (dB)}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
920.53	Low	50	2Tx	QPSK	H	-	-	-35.09	-13.00	-22.09
995.85	Mid	50	2Tx	QPSK	H	-	-	-34.47	-13.00	-21.47
996.95	High	50	2Tx	QPSK	H	-	-	-34.56	-13.00	-21.56

**Table 7-56. N patch - n261 Radiated Spurious Emissions Table (NR-DC anchor n2, 30MHz - 1GHz)**

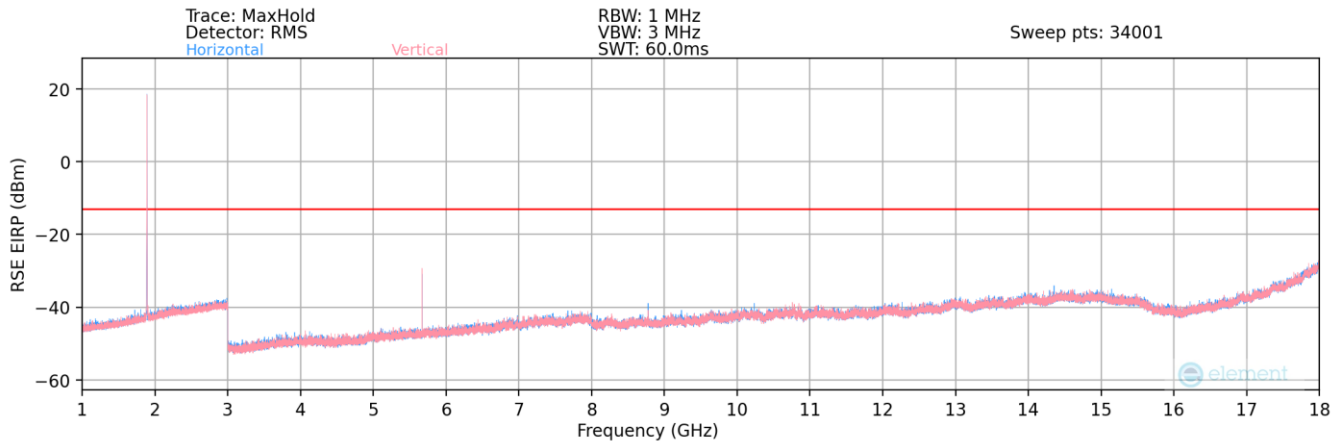
### Notes

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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## 1GHz - 18GHz



**Plot 7-144. N patch - n261 Radiated Spurious Plot (NR-DC anchor n2)**

### Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
8600.44	Low	50	2Tx	QPSK	H	202	292	-45.02	-13.00	-32.02
8777.00	Mid	50	2Tx	QPSK	H	206	296	-40.36	-13.00	-27.36
8869.53	High	50	2Tx	QPSK	H	217	293	-41.76	-13.00	-28.76

**Table 7-57. N patch - n261 Radiated Spurious Emissions Table (NR-DC anchor n2, 1GHz - 18GHz)**

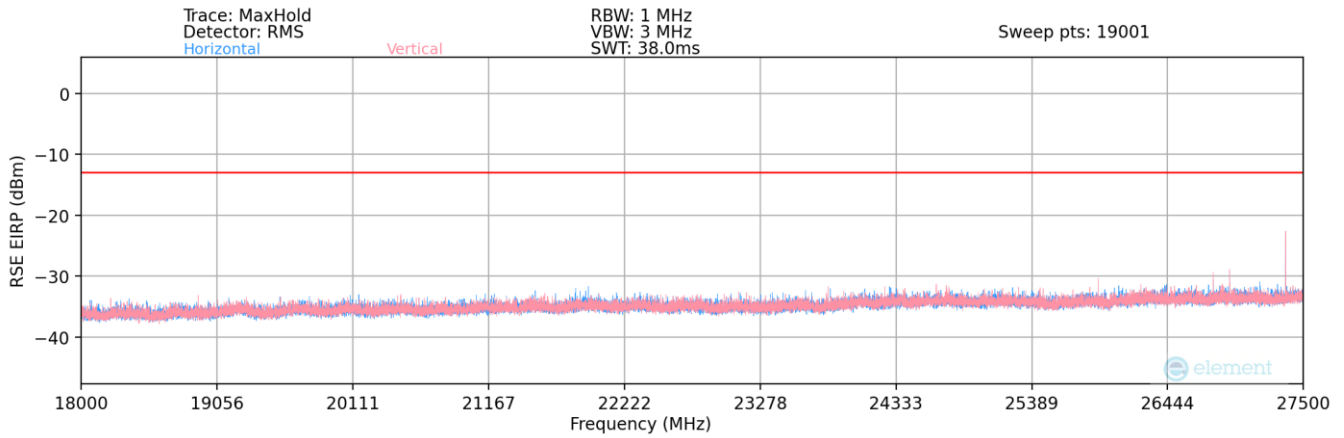
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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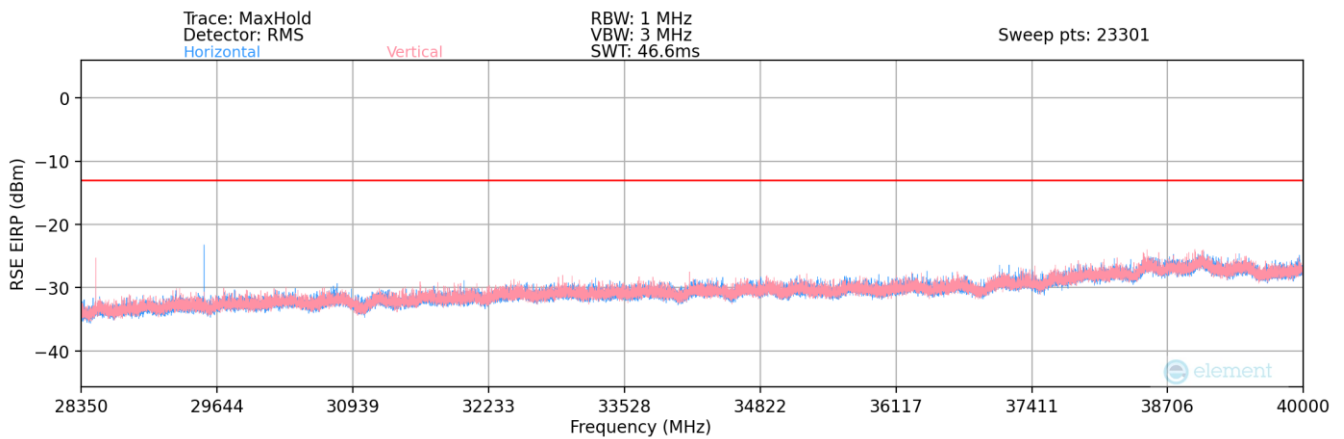


### 18GHz-27.5GHz



**Plot 7-145. N patch - n261 Radiated Spurious Plot**

### 28.35GHz-40GHz



**Plot 7-146. N patch - n261 Radiated Spurious Plot**

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## Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
26541.38	Low	50	2Tx	QPSK	H	354	283	-22.79	-13.00	-9.79
26962.44	Low	50	2Tx	QPSK	V	7	284	-25.03	-13.00	-12.03
28088.61	Low	50	2Tx	QPSK	V	15	280	-25.02	-13.00	-12.02
28509.57	Low	50	2Tx	QPSK	H	12	274	-30.50	-13.00	-17.50
26799.16	Mid	50	2Tx	QPSK	V	19	278	-30.45	-13.00	-17.45
27362.42	Mid	50	2Tx	QPSK	V	19	281	-22.05	-13.00	-9.05
28488.85	Mid	50	2Tx	QPSK	V	2	282	-24.05	-13.00	-11.05
29520.66	Mid	50	2Tx	QPSK	H	351	280	-23.99	-13.00	-10.99
27135.80	High	50	2Tx	QPSK	V	27	269	-29.97	-13.00	-16.97
27813.61	High	50	2Tx	QPSK	V	8	280	-21.23	-13.00	-8.23
28837.63	High	50	2Tx	QPSK	V	15	280	-23.87	-13.00	-10.87
30041.92	High	50	2Tx	QPSK	H	10	283	-27.76	-13.00	-14.76

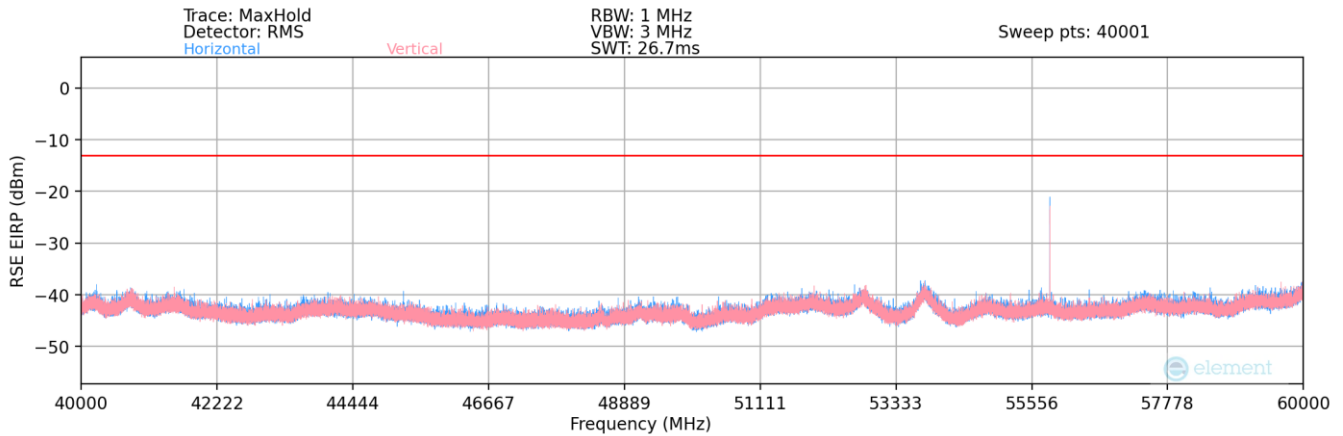
**Table 7-58. N patch - n261 Radiated Spurious Emissions Table (18GHz - 40GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

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## 40GHz - 60GHz



**Plot 7-147. N patch - n261 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
55052.28	Low	50	2Tx	QPSK	H	71	177	-30.09	-13.00	-17.09
55850.46	Mid	50	2Tx	QPSK	H	64	178	-26.05	-13.00	-13.05
56650.47	High	50	2Tx	QPSK	H	65	179	-25.57	-13.00	-12.57

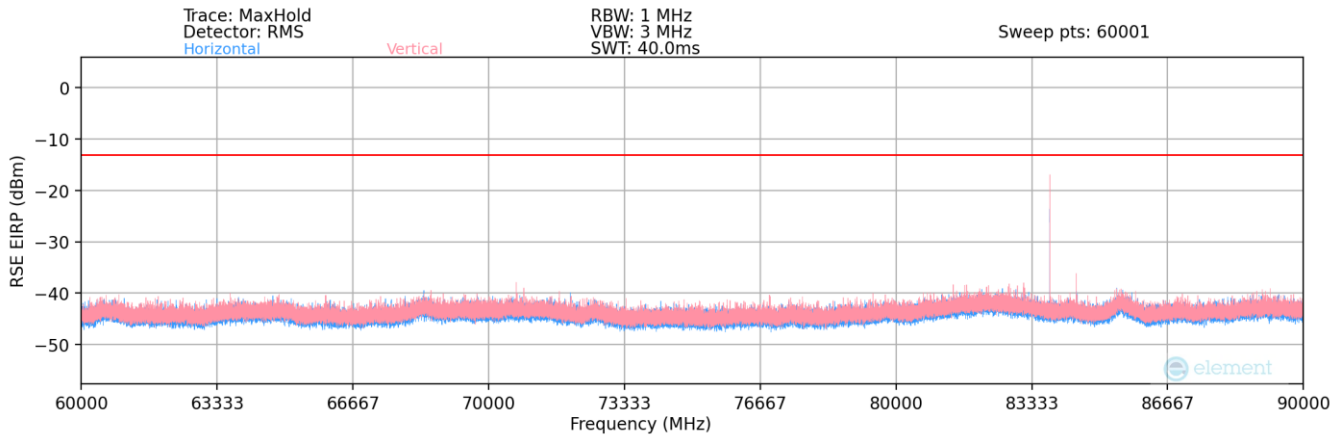
**Table 7-59. N patch - n261 Radiated Spurious Emissions Table (40GHz - 60GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

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## 60GHz - 90GHz



**Plot 7-148. N patch - n261 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
82575.99	Low	50	2Tx	QPSK	V	351	160	-19.18	-13.00	-6.18
83776.91	Mid	50	2Tx	QPSK	V	356	191	-21.19	-13.00	-8.19
84977.70	High	50	2Tx	QPSK	V	10	191	-23.03	-13.00	-10.03

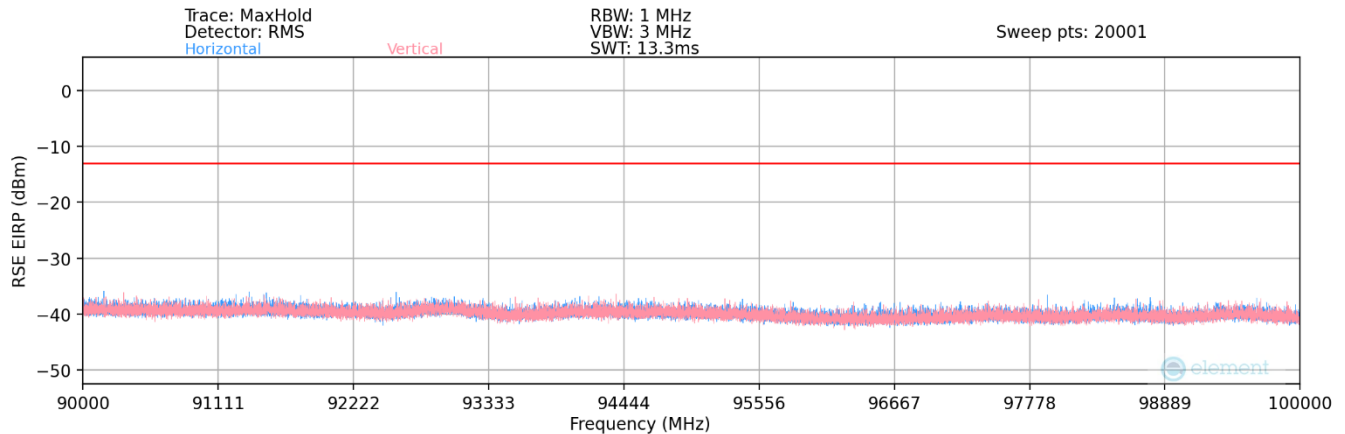
**Table 7-60. N patch - n261 Radiated Spurious Emissions Table (60GHz - 90GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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## 90GHz - 100GHz



**Plot 7-149. N patch – n261 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
97101.91	Low	50	2Tx	QPSK	V	-	-	-45.94	-13.00	-32.94
97403.35	Mid	50	2Tx	QPSK	V	-	-	-45.96	-13.00	-32.96
97698.07	High	50	2Tx	QPSK	V	-	-	-45.95	-13.00	-32.95

**Plot 7-150. N patch - n261 Radiated Spurious Emissions Table (90GHz - 100GHz)**

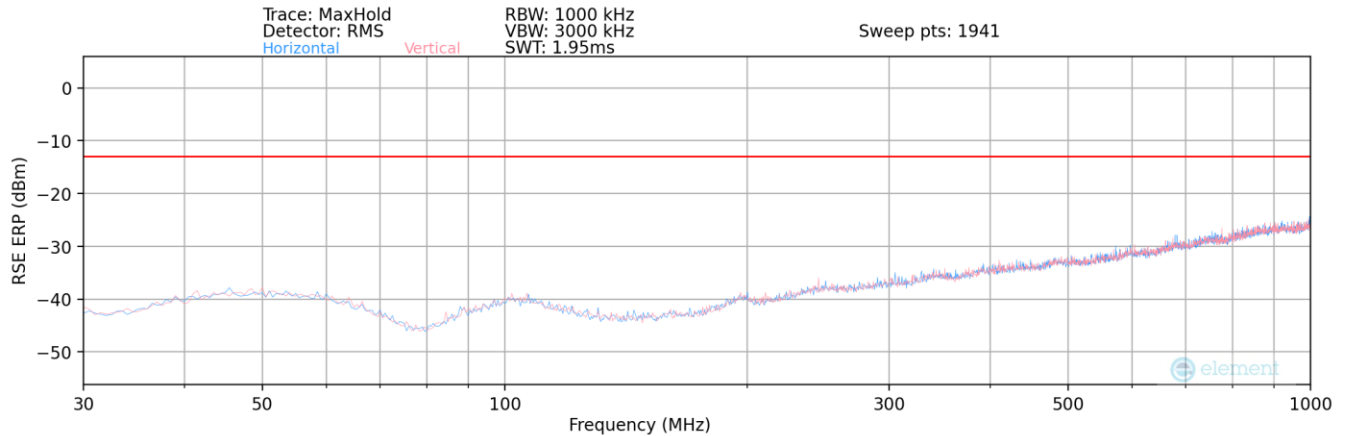
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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V1.0

## Band n260 – M patch 30MHz - 1GHz



**Plot 7-151. M patch - n260 Radiated Spurious Plot (NR-DC anchor n2)**

### Spurious Emissions ERP Sample Calculation (n260)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE ERP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 - 2.15 \text{ (dB)}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
999.55	Low	50	2Tx	QPSK	H	-	-	-34.44	-13.00	-21.44
993.46	Mid	50	2Tx	QPSK	H	-	-	-34.47	-13.00	-21.47
998.55	High	50	2Tx	QPSK	H	-	-	-34.41	-13.00	-21.41

**Table 7-61. M patch - n260 Radiated Spurious Emissions Table (NR-DC anchor n2, 30MHz - 1GHz)**

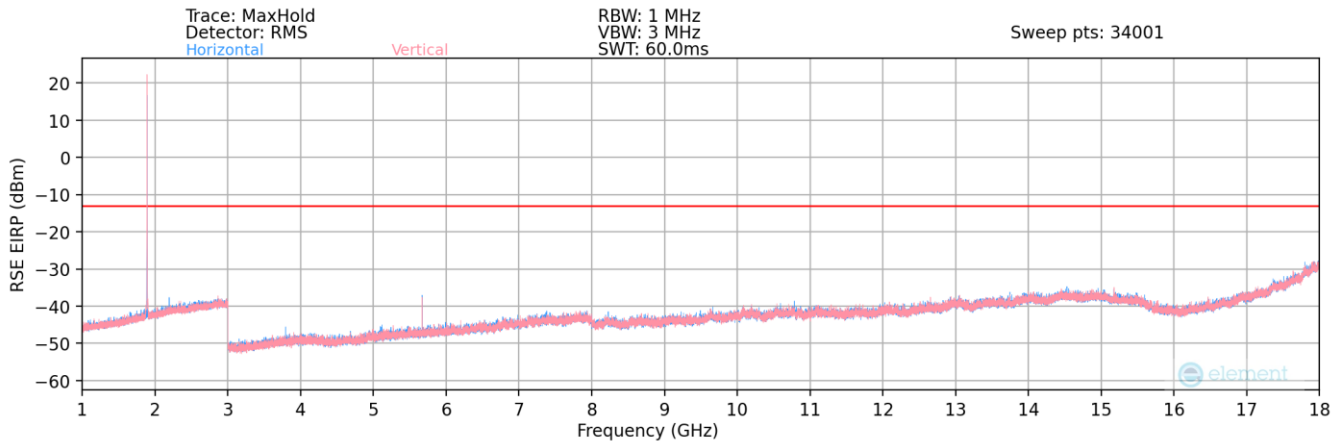
### Notes

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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V1.0

# 1GHz - 18GHz



**Plot 7-152. M patch - n260 Radiated Spurious Plot (NR-DC anchor n2)**

## Spurious Emissions EIRP Sample Calculation (n260)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
10637.61	Low	50	2Tx	QPSK	H	-	-	-55.62	-13.00	-42.62
10628.12	Mid	50	2Tx	QPSK	H	-	-	-55.66	-13.00	-42.66
10659.09	High	50	2Tx	QPSK	H	-	-	-55.45	-13.00	-42.45

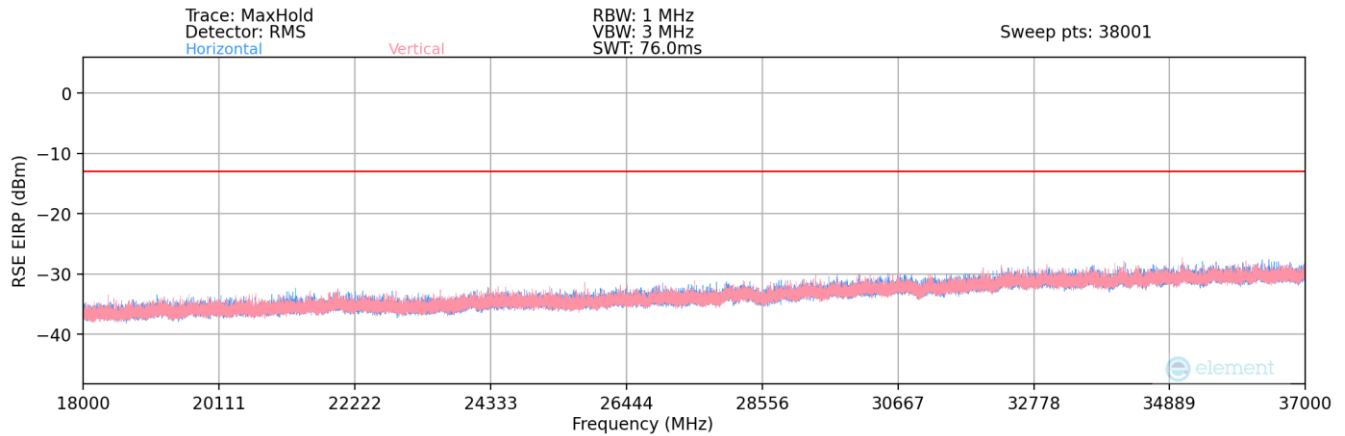
**Table 7-62. M patch - n260 Radiated Spurious Emissions Table (NR-DC anchor n2, 1GHz - 18GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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## 18GHz-37GHz



**Plot 7-153. M patch - n260 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n260)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
34063.44	Low	50	2Tx	QPSK	H	-	-	-34.35	-13.00	-21.35
34101.80	Low	50	2Tx	QPSK	H	-	-	-34.08	-13.00	-21.08
35585.39	Low	50	2Tx	QPSK	H	-	-	-33.07	-13.00	-20.07
36488.44	Low	50	2Tx	QPSK	H	123	273	-30.00	-13.00	-17.00
37191.79	Mid	50	2Tx	QPSK	H	-	-	-32.44	-13.00	-19.44
37501.47	Mid	50	2Tx	QPSK	H	108	273	-32.24	-13.00	-19.24
37682.98	Mid	50	2Tx	QPSK	H	104	271	-30.89	-13.00	-17.89
37911.59	Mid	50	2Tx	QPSK	H	120	275	-25.65	-13.00	-12.65
37032.02	High	50	2Tx	QPSK	H	122	273	-26.79	-13.00	-13.79
37620.55	High	50	2Tx	QPSK	H	119	272	-21.76	-13.00	-8.76
38209.48	High	50	2Tx	QPSK	H	117	271	-26.72	-13.00	-13.72
39386.93	High	50	2Tx	QPSK	H	120	271	-24.79	-13.00	-11.79

**Table 7-63. M patch - n260 Radiated Spurious Emissions Table (18GHz - 40GHz)**

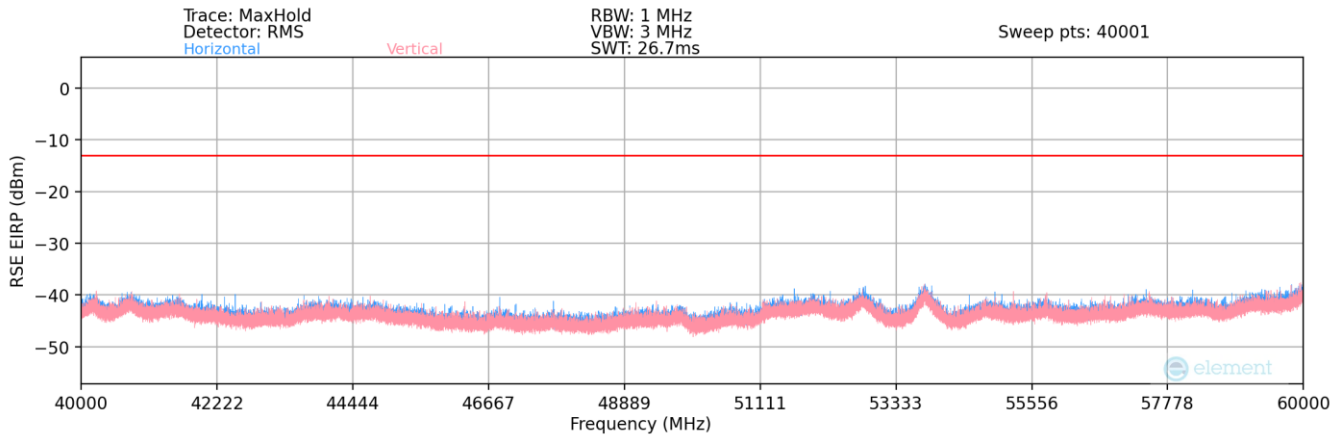
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 1 meter.

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## 40GHz - 60GHz



**Plot 7-154. M patch - n260 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n260)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
43003.60	Low	50	2Tx	QPSK	H	-	-	-50.17	-13.00	-37.17
48000.87	Mid	50	2Tx	QPSK	H	-	-	-51.35	-13.00	-38.35
52010.95	High	50	2Tx	QPSK	H	-	-	-47.51	-13.00	-34.51

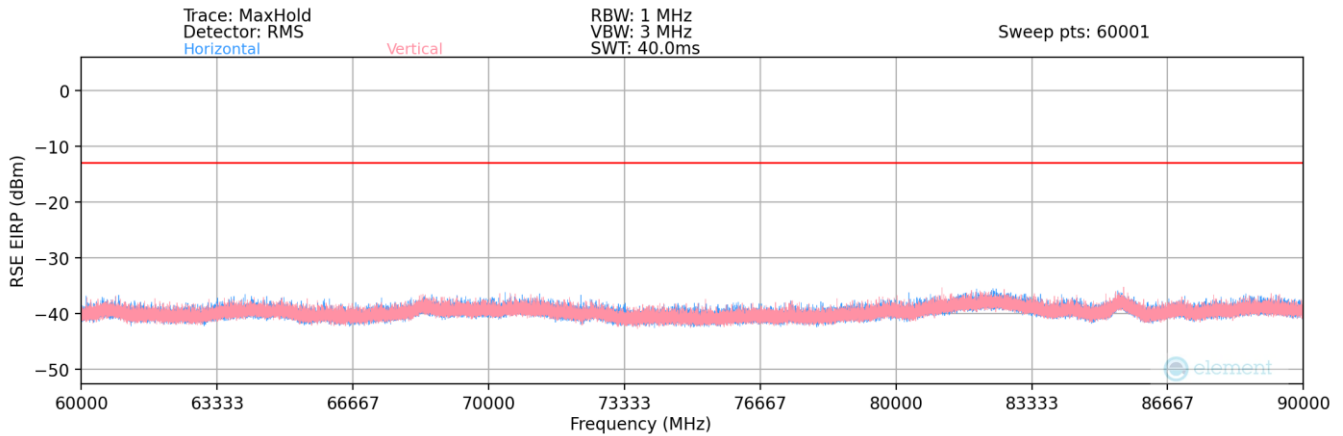
**Table 7-64. M patch - n260 Radiated Spurious Emissions Table (40GHz - 60GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

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## 60GHz - 90GHz



**Plot 7-155. M patch - n260 Radiated Spurious Plot**

### Spurious Emissions EIRP Sample Calculation (n260)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Roll [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
74050.80	Low	50	2Tx	QPSK	H	92	326	-37.05	-13.00	-24.05
77001.78	Mid	50	2Tx	QPSK	H	87	325	-35.87	-13.00	-22.87
79950.72	High	50	2Tx	QPSK	H	92	337	-42.37	-13.00	-29.37

**Table 7-65. M patch - n260 Radiated Spurious Emissions Table (60GHz - 90GHz)**

### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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