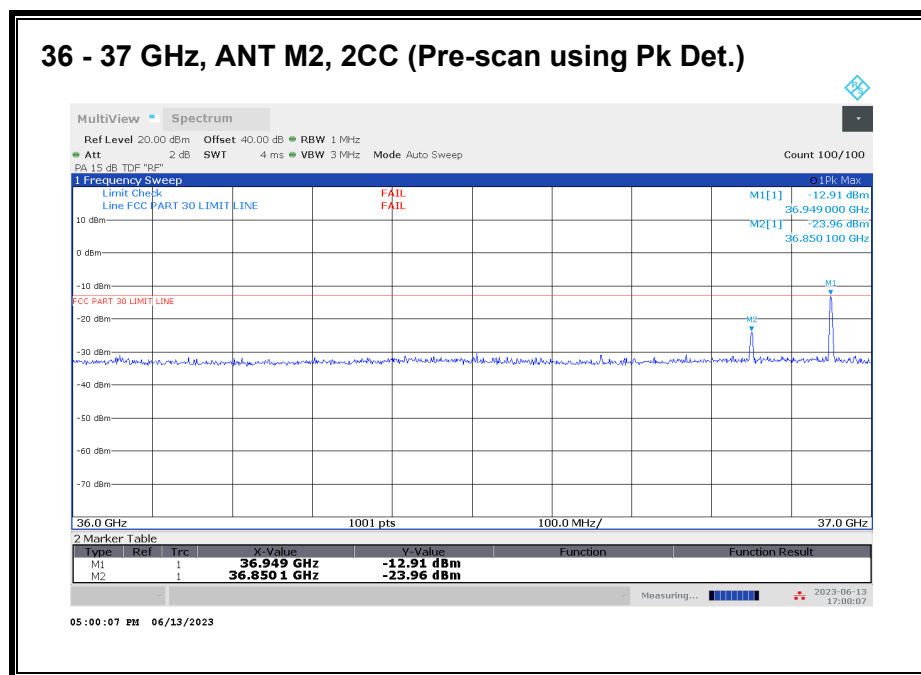


### 36 - 37 GHz n260, 2CC



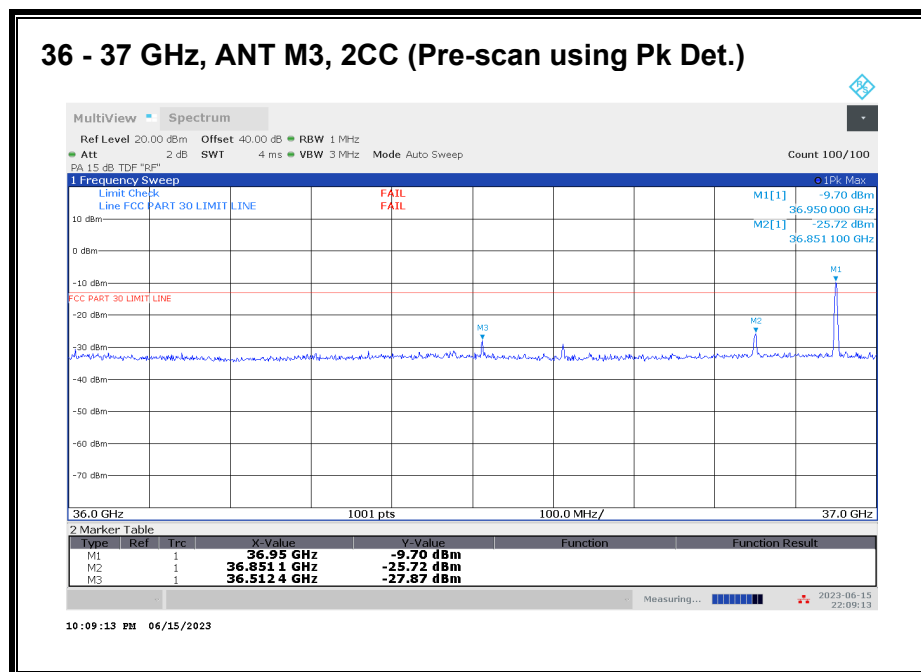
Worst case configuration:

SISO-DUAL\_QPSK\_(100 MHz + 100 MHz)\_Low CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M2	36.949	3	--	-19.20	-13	-6.20



Worst case configuration:

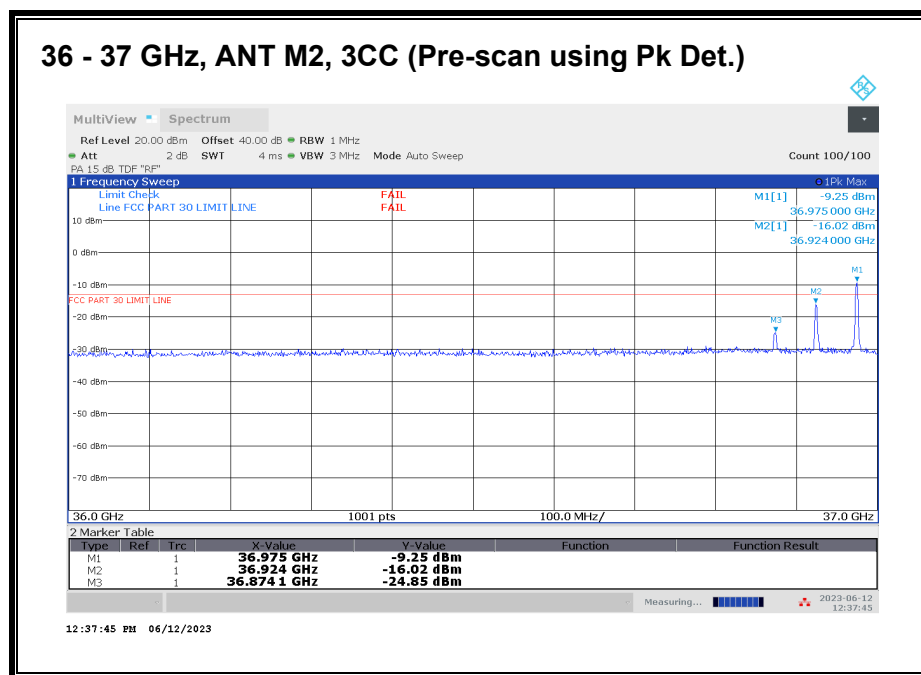
SISO-DUAL\_QPSK\_(100 MHz + 100 MHz)\_Low CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M3	36.949	3	--	-18.08	-13	-5.08

### 36 - 37 GHz n260, 3CC



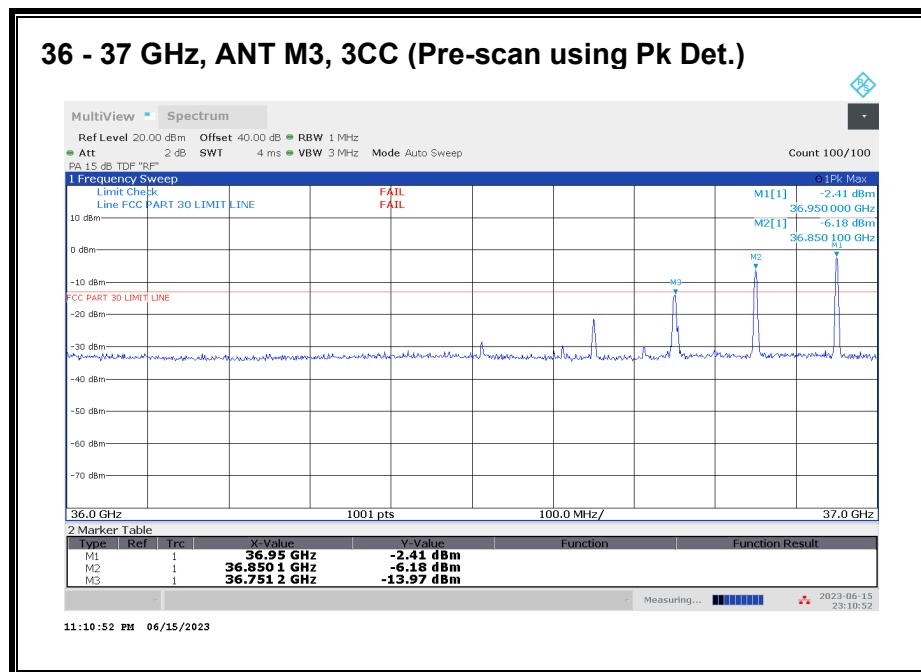
Worst case configuration:

SISO-DUAL\_QPSK\_(50 MHz + 50 MHz + 50 MHz)\_Low CH\_RB Offset 1/15 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M2	36.974	3	--	-18.43	-13	-5.43



Worst case configuration:

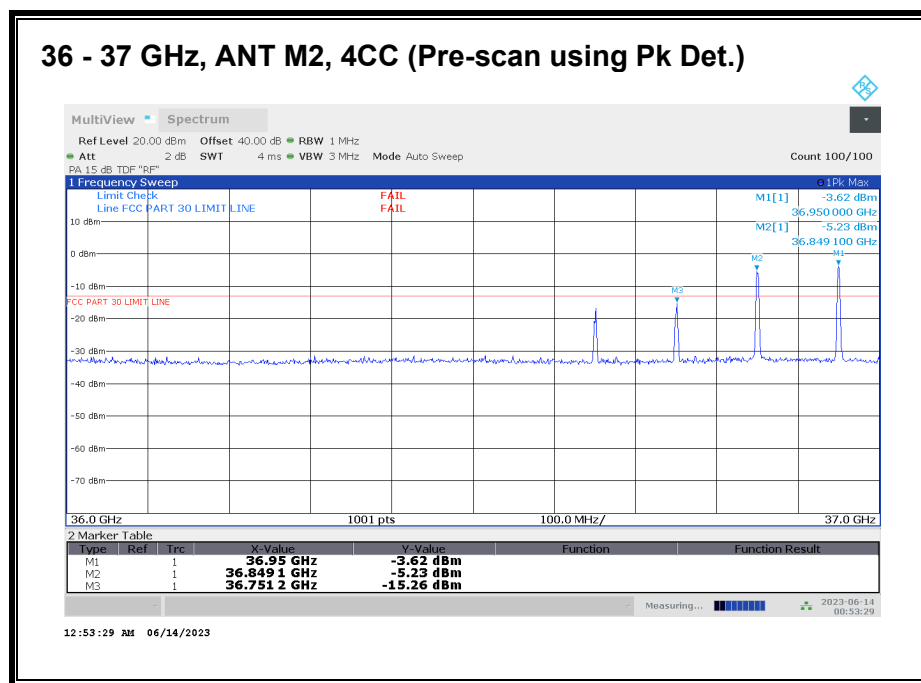
SISO-DUAL\_QPSK\_(100 MHz + 100 MHz + 100 MHz)\_Low CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M3	36.949	3	--	-19.92	-13	-6.92

### 36 - 37 GHz n260, 4CC



Worst case configuration:

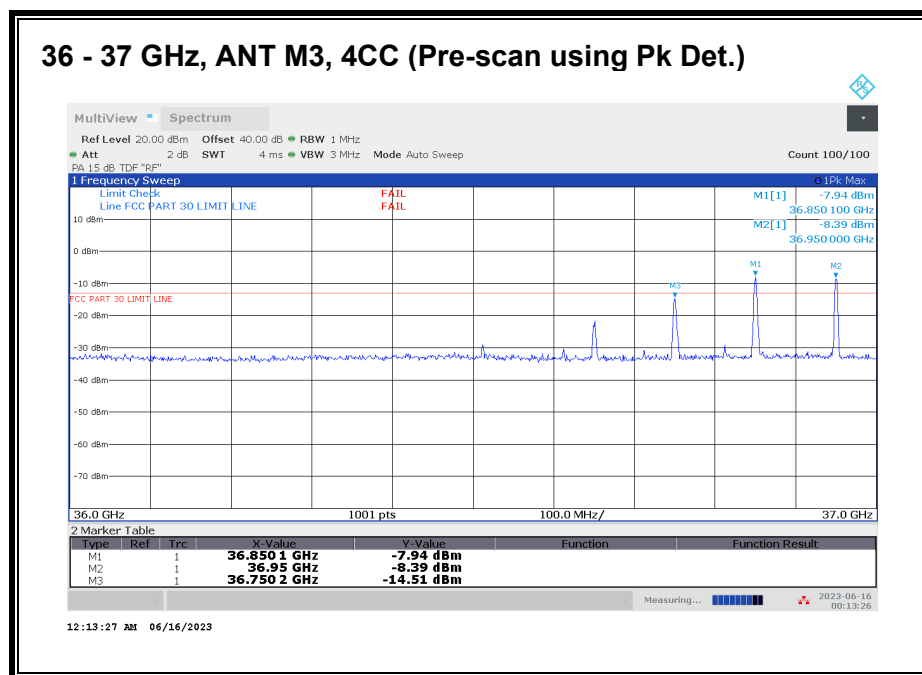
SISO-DUAL\_QPSK\_(100 MHz + 100 MHz + 100 MHz + 100 MHz)\_Low CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M2	36.949	3	--	-17.40	-13	-4.40

### 36 - 37 GHz n260, 4CC



Worst case configuration:

SISO-DUAL\_QPSK\_(100 MHz + 100 MHz + 100 MHz + 100 MHz)\_Low CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

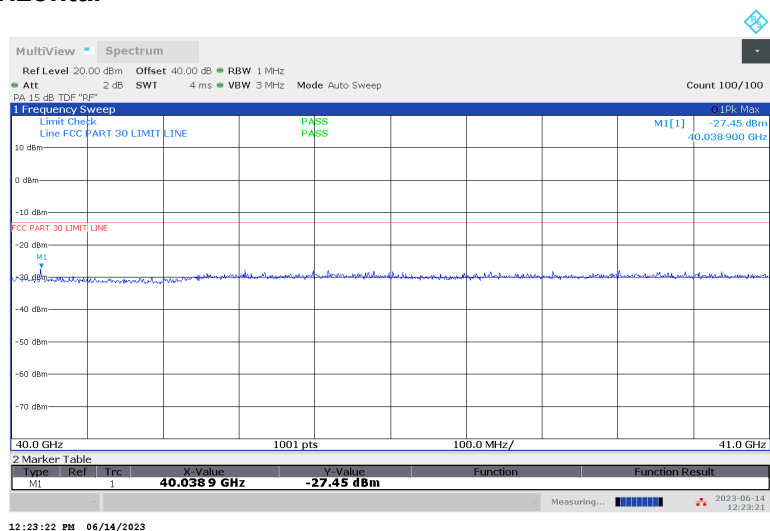
All emissions were investigated, and the 2 highest emissions were reported.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M3	36.849	3	--	-17.92	-13	-4.92
M3	36.949	3	--	-19.63	-13	-6.63

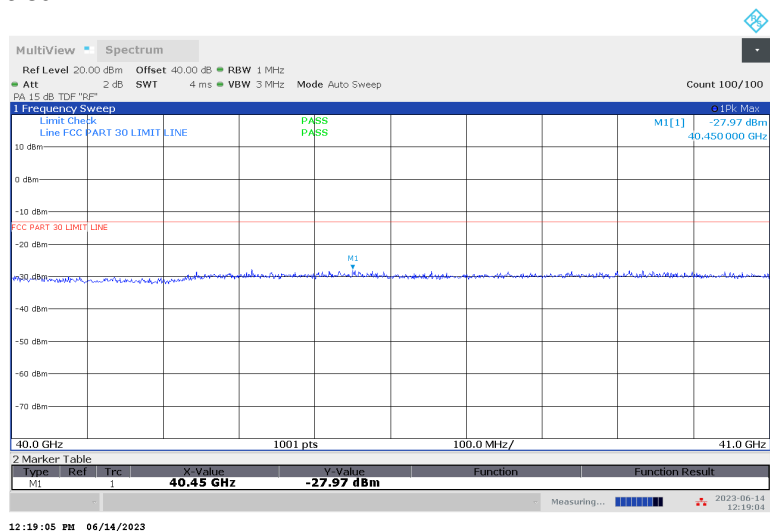
### 8.4.34. RSE n260 40 – 41 GHz

Note: 37 - 40 GHz covered by Fundamental and BE measurements.

#### 40 – 41 GHz, ANT M2, 1CC (Pre-scan using Pk Det.) Horizontal

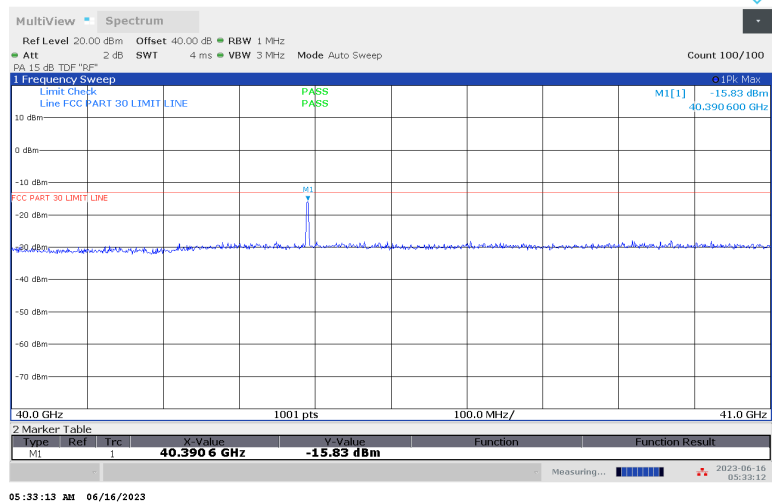


#### 40 – 41 GHz, ANT M2, 1CC (Pre-scan using Pk Det.) Vertical

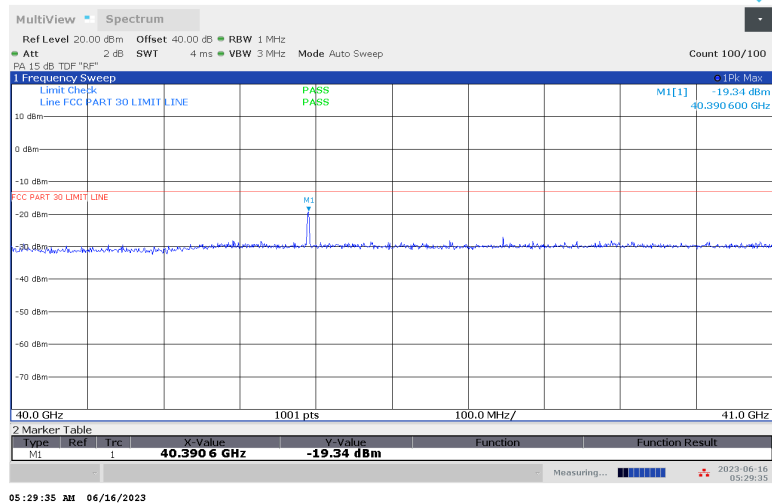


No emission detected using Peak Detection.

### 40 – 41 GHz, ANT M3, 1CC (Pre-scan using Pk Det.) Horizontal



### 40 – 41 GHz, ANT M3, 1CC (Pre-scan using Pk Det.) Vertical



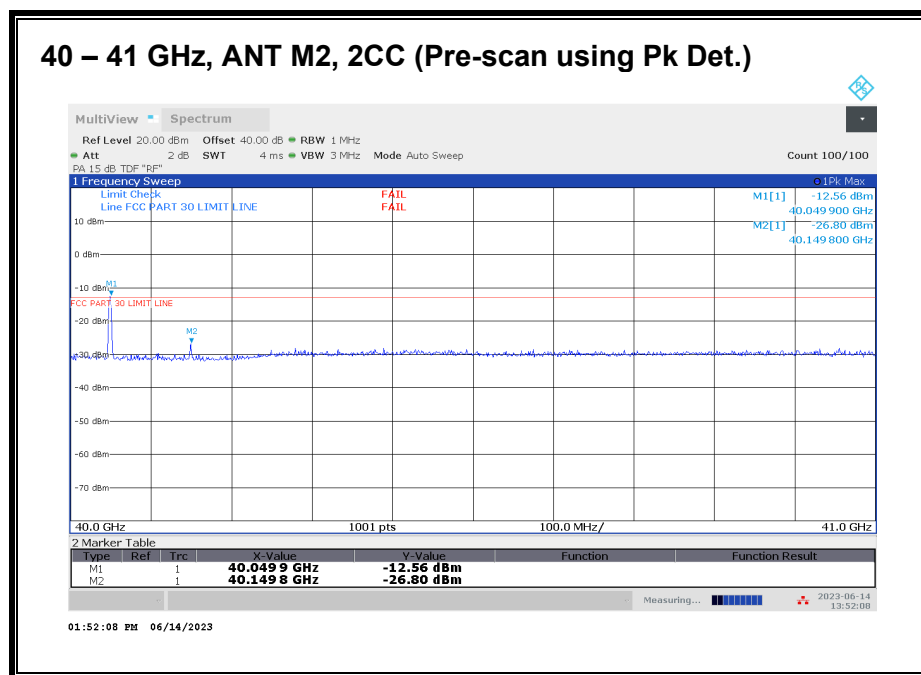
Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.



**40 – 41 GHz n260, 1CC**

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M3	40.390	3	H	-19.24	-13	-6.24
M3	40.390	3	V	-23.28	-13	-10.28

# **40 – 41 GHz n260, 2CC**



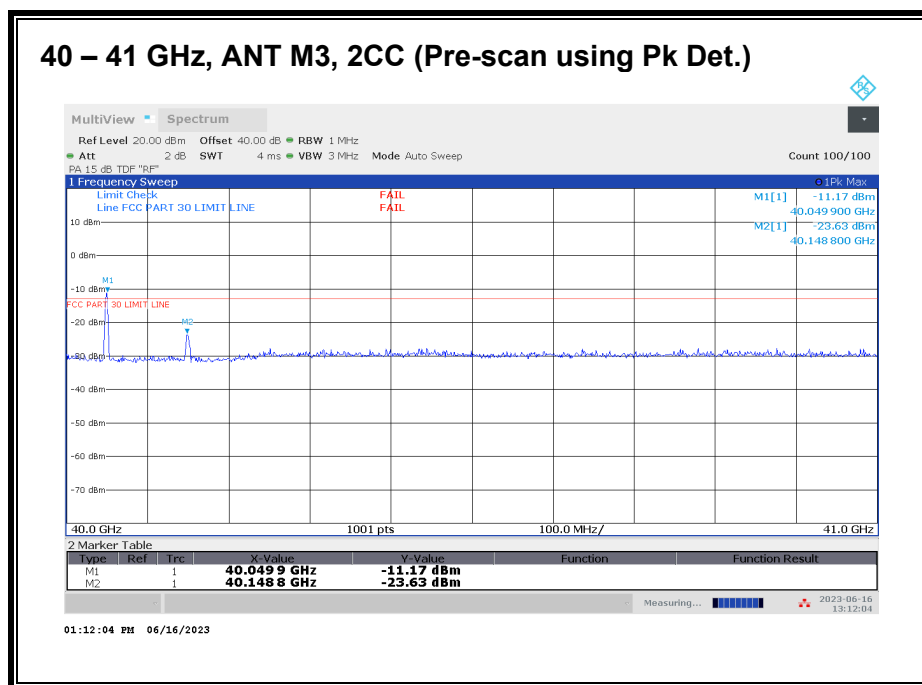
Worst case configuration:

SISO-DUAL\_QPSK\_(100 MHz + 100 MHz)\_High CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M2	40.049	3	--	-26.53	-13	-13.53



Worst case configuration:

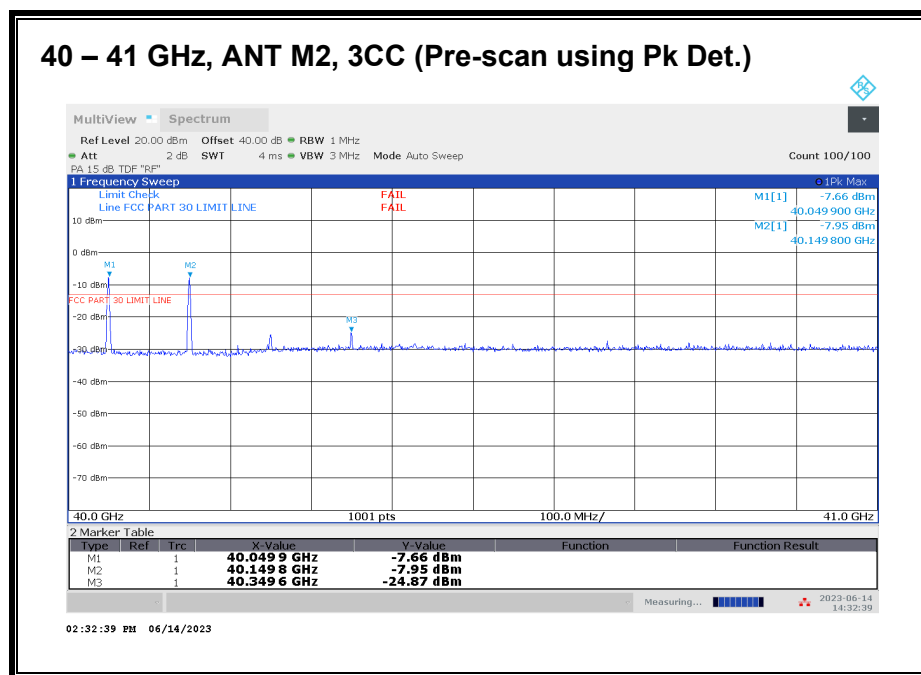
SISO-DUAL\_QPSK\_(100 MHz + 100 MHz)\_High CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M3	40.049	3	--	-24.05	-13	-11.05

# **40 – 41 GHz n260, 3CC**



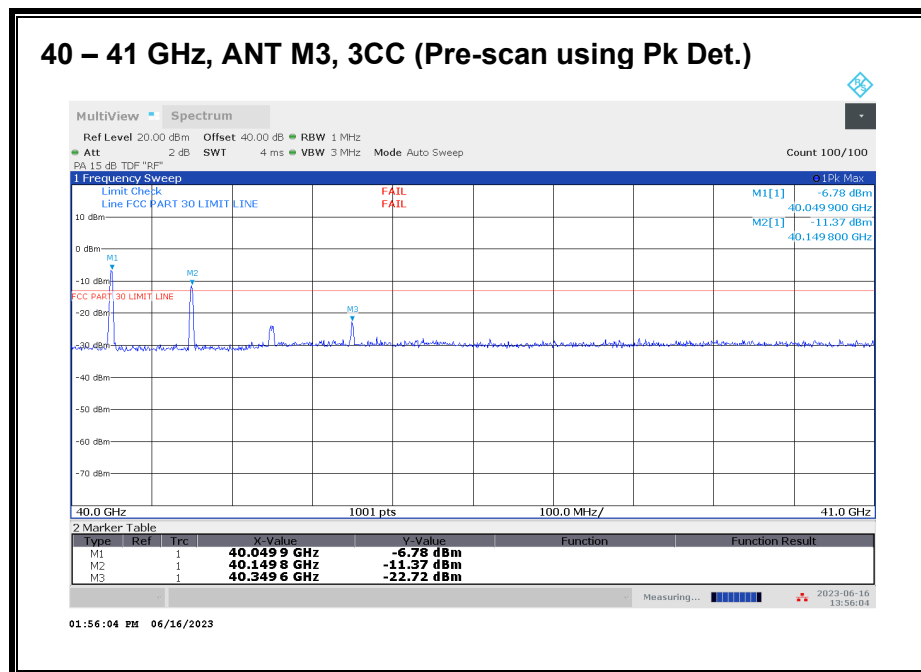
Worst case configuration:

SISO-DUAL\_QPSK\_(100 MHz + 100 MHz + 100 MHz)\_High CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M2	40.049	3	--	-20.88	-13	-7.88



Worst case configuration:

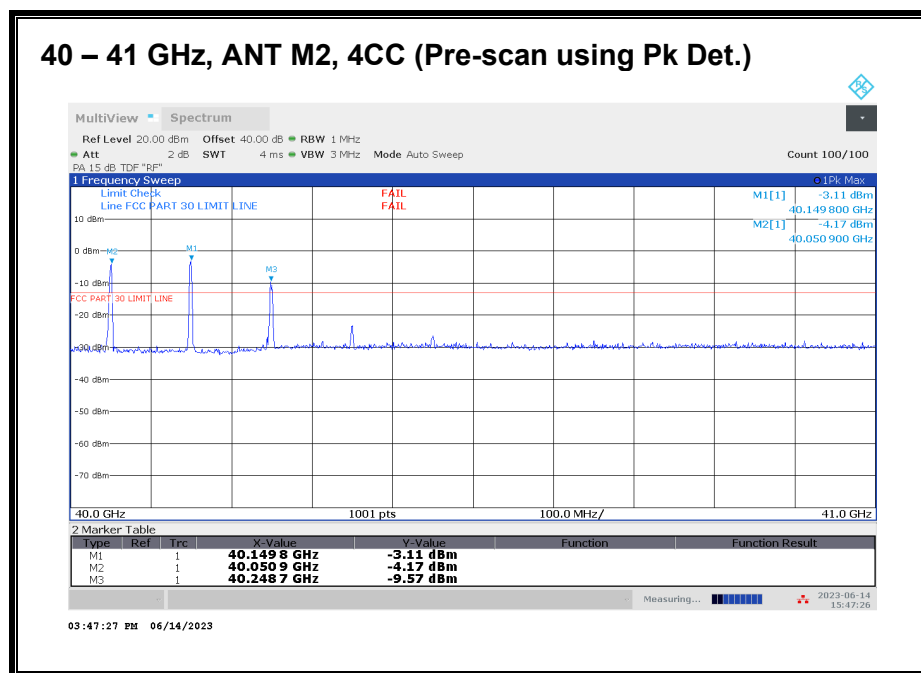
SISO-DUAL\_QPSK\_(100 MHz + 100 MHz + 100 MHz)\_High CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

Antenna	Freq.	Meas.	Rx Ant.	Corrected	TRP Limit	Margin
	(GHz)	Distance	Polarity	Avg EIRP	(dBm)	(dB)
		(m)	H/V	(dBm)		
M3	40.049	3	--	-20.05	-13	-7.05

# **40 – 41 GHz n260, 4CC**



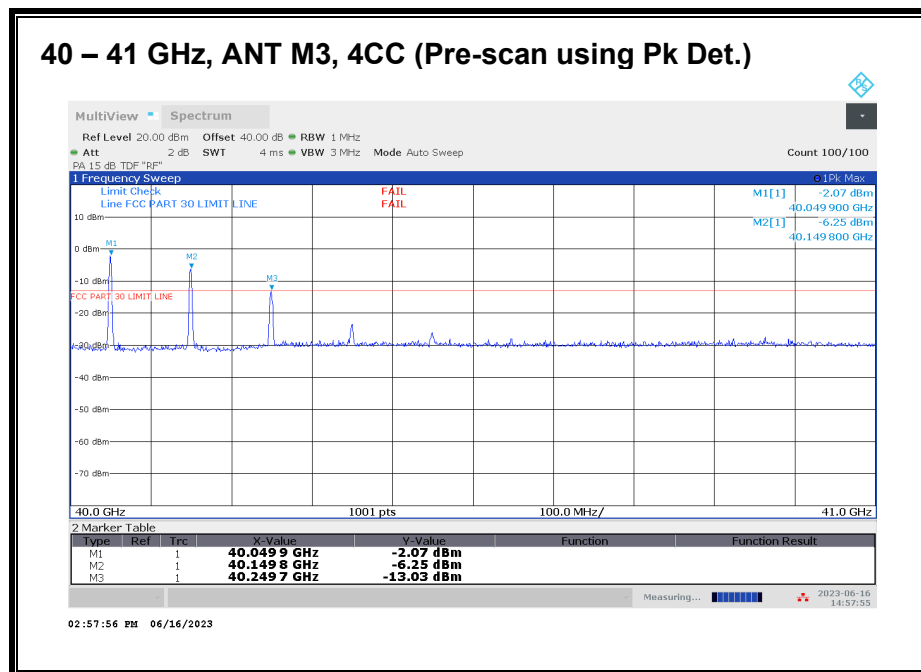
Worst case configuration:

SISO-DUAL\_QPSK\_(100 MHz + 100 MHz + 100 MHz + 100 MHz)\_High CH\_RB Offset 1/32 (1RB-M)

Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and 2 highest emissions were reported.

Antenna	Freq.	Meas.	Rx Ant.	Corrected	TRP Limit	Margin
	(GHz)	Distance	Polarity	Avg EIRP	(dBm)	(dB)
		(m)	H/V	(dBm)		
M2	40.149	3	--	-17.61	-13	-4.61
M2	40.049	3	--	-19.38	-13	-6.38



Worst case configuration:

SISO-DUAL\_QPSK\_(100 MHz + 100 MHz + 100 MHz + 100 MHz)\_High CH\_RB Offset 1/32 (1RB-M)

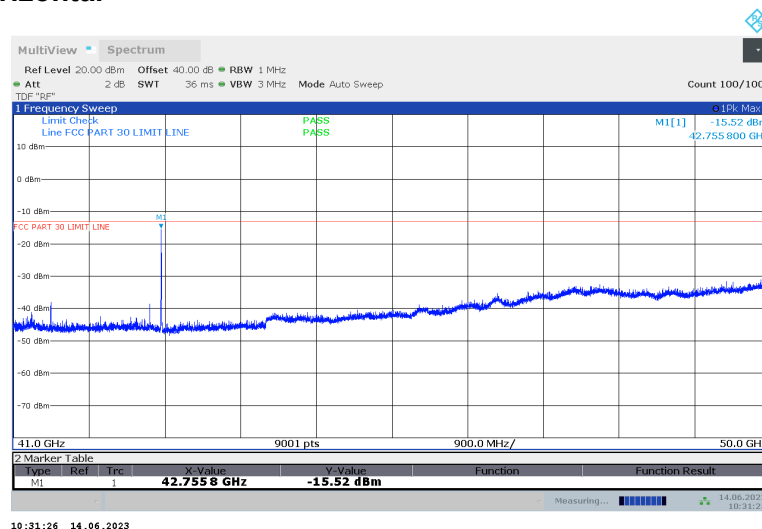
Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

All emissions were investigated, and the highest emission was reported.

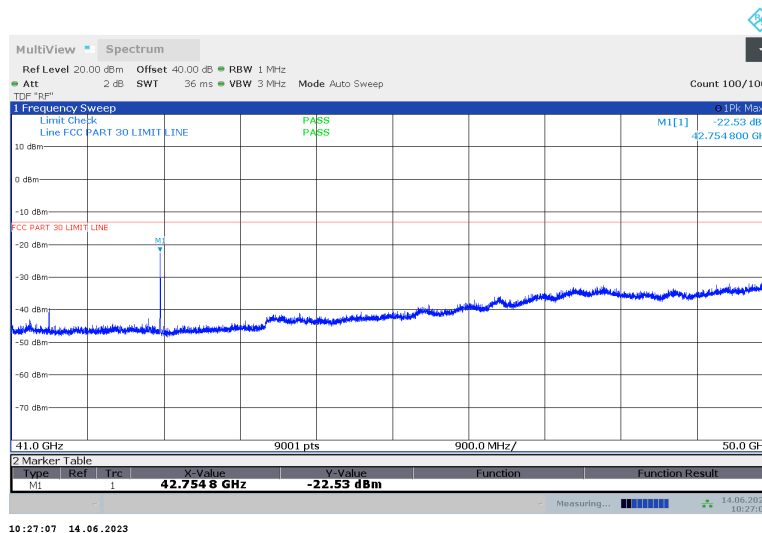
Antenna	Freq.	Meas.	Rx Ant.	Corrected	TRP Limit	Margin
	(GHz)	Distance	Polarity	Avg EIRP	(dBm)	(dB)
		(m)	H/V	(dBm)		
M3	40.049	3	--	-17.29	-13	-4.29

## 8.4.35. RSE n260 41 – 50 GHz

### 41 – 50 GHz, ANT M2, 1CC (Pre-scan using Pk Det.) Horizontal



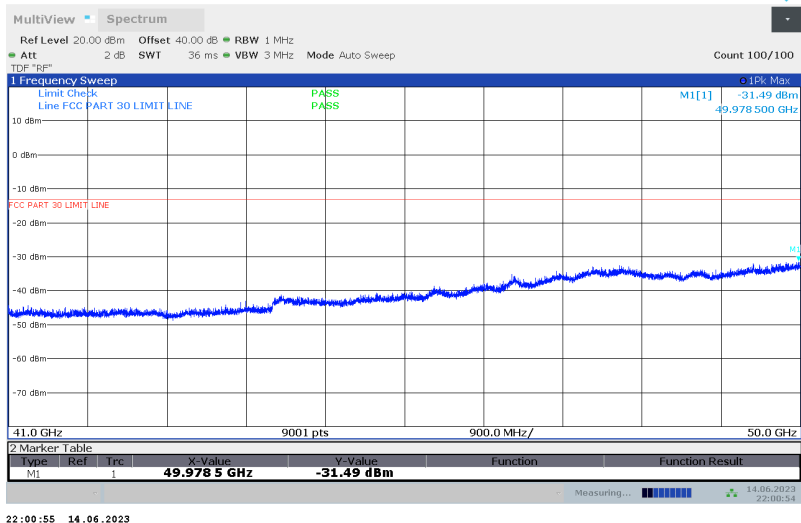
### 41 – 50 GHz, ANT M2, 1CC (Pre-scan using Pk Det.) Vertical



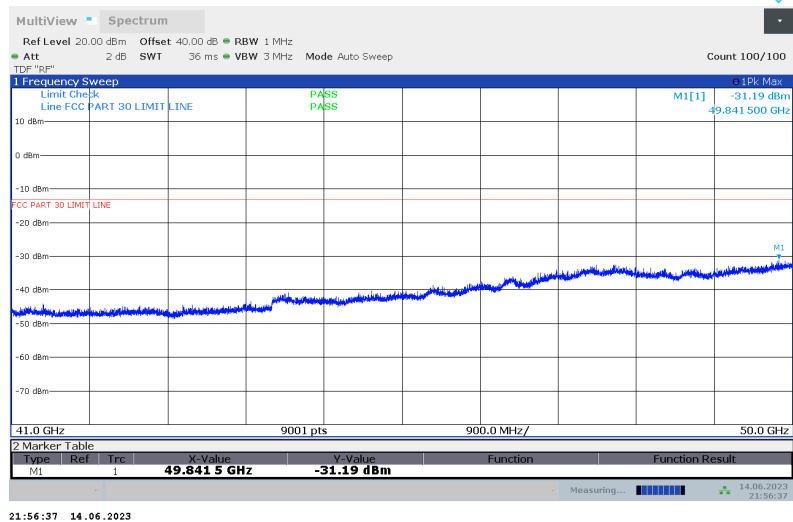
Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.



### 41 – 50 GHz, ANT M3, 1CC (Pre-scan using Pk Det.) Horizontal



### 41 – 50 GHz, ANT M3, 1CC (Pre-scan using Pk Det.) Vertical



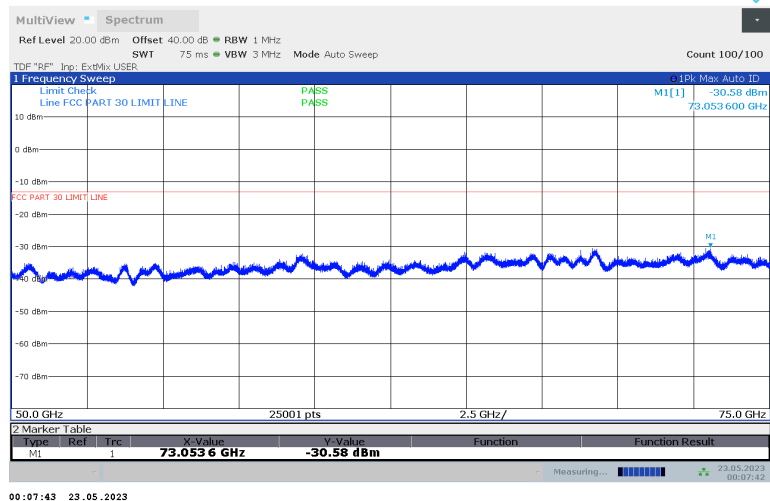
No emission detected using Peak Detection.

**41 - 50 GHz n260, 1CC**

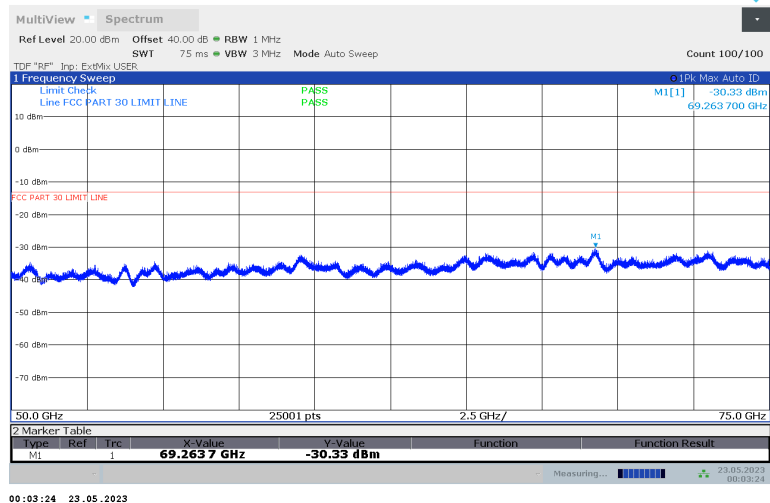
Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M2	42.755	3	H	-16.12	-13	-3.12
M2	42.755	3	V	-29.99	-13	-16.99

## 8.4.36. RSE n260 50 - 75 GHz

### 50 - 75 GHz, ANT M2 (Pre-scan using Pk Det.) Horizontal

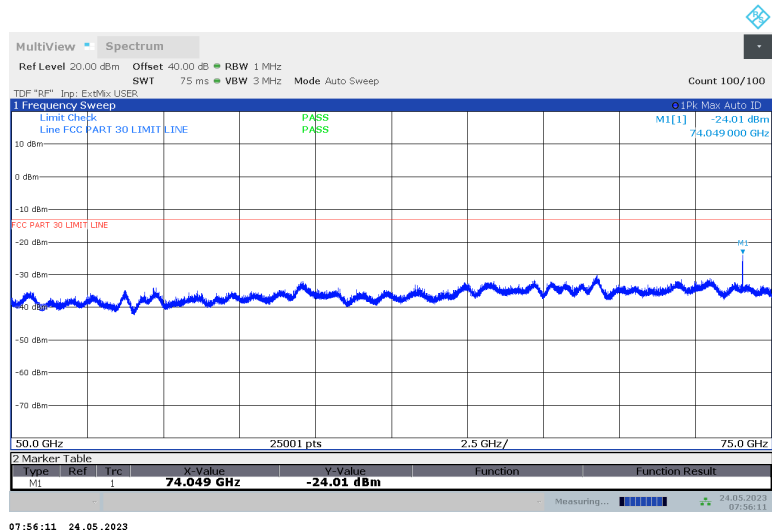


### 50 - 75 GHz, ANT M2 (Pre-scan using Pk Det.) Vertical

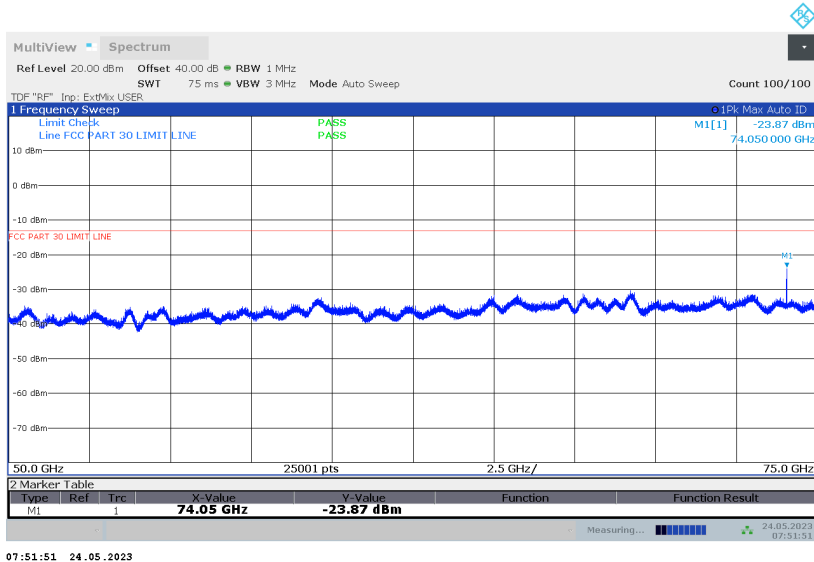


No emission detected using Peak Detection.

### 50 - 75 GHz, ANT M3 (Pre-scan using Pk Det.) Horizontal



### 50 - 75 GHz, ANT M3 (Pre-scan using Pk Det.) Vertical



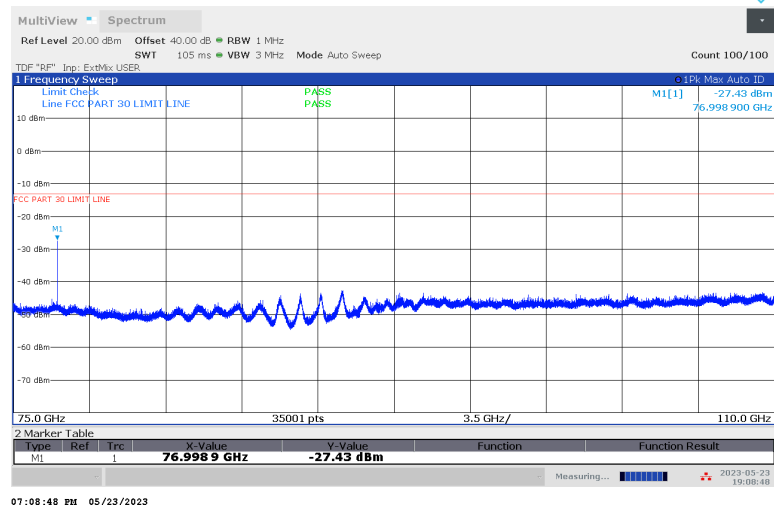
Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

**50 - 75 GHz n260, 1CC**

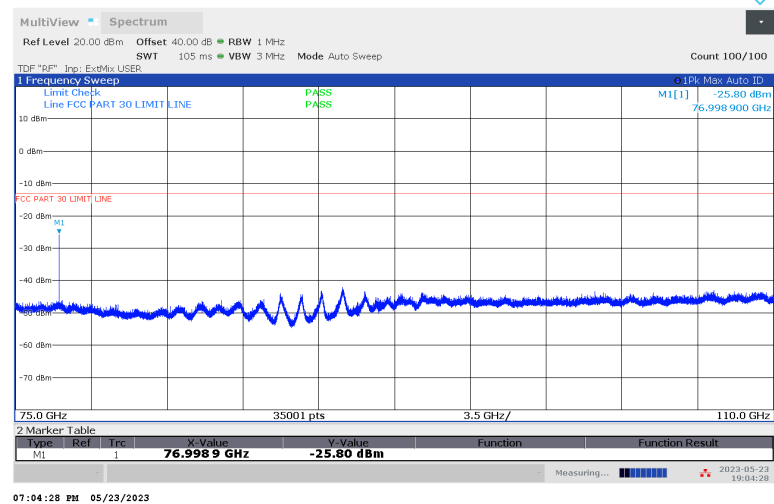
Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M3	74.049	1.5	H	-38.55	-13	-25.55
M3	74.049	1.5	V	-32.87	-13	-19.87

## 8.4.37. RSE n260 75 - 110 GHz

### 75 - 110 GHz, ANT M2 (Pre-scan using Pk Det.) Horizontal

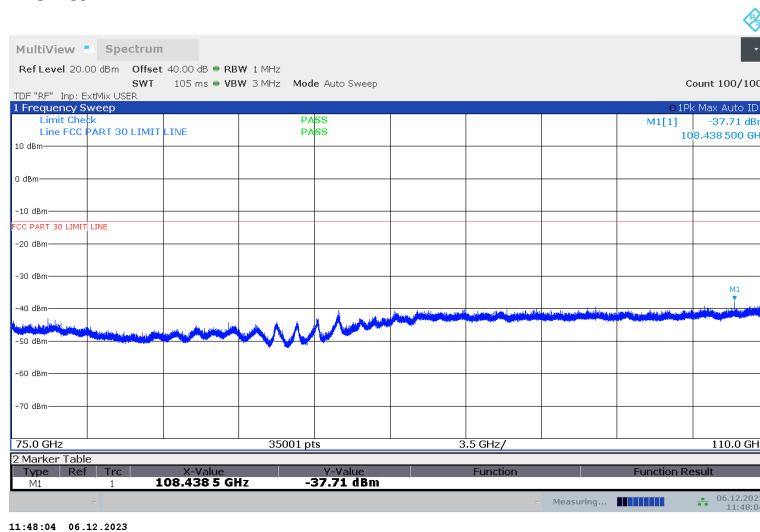


### 75 - 110 GHz, ANT M2 (Pre-scan using Pk Det.) Vertical

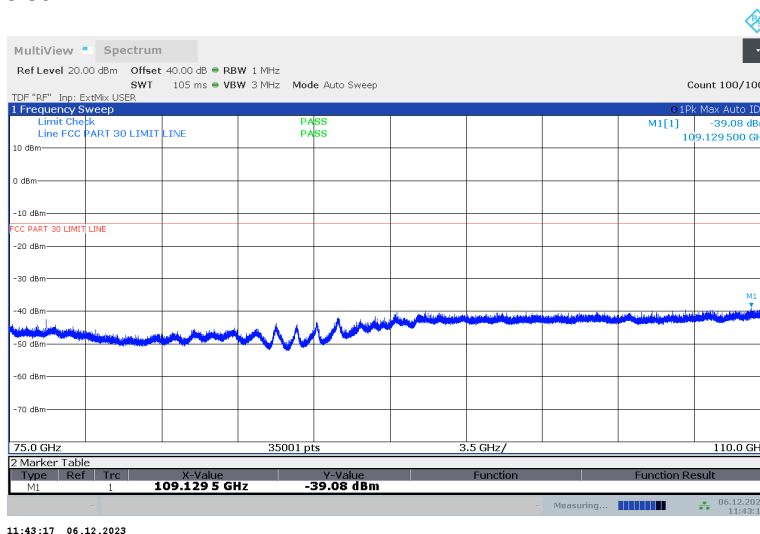


Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

## 75 - 110 GHz, ANT M3 (Pre-scan using Pk Det.) Horizontal



## 75 - 110 GHz, ANT M3 (Pre-scan using Pk Det.) Vertical



No emission detected using Peak Detection.

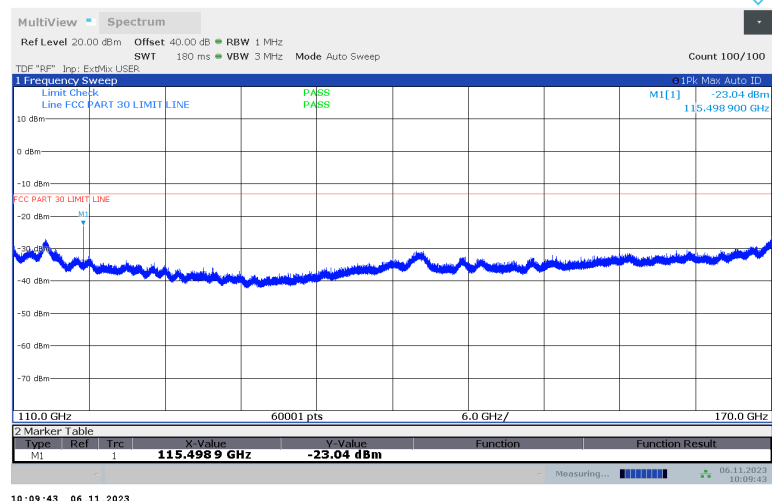
**75 - 110 GHz n260, 1CC**

Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M2	76.999	1	H	-36.64	-13	-23.64
M2	76.999	1	V	-30.22	-13	-17.22

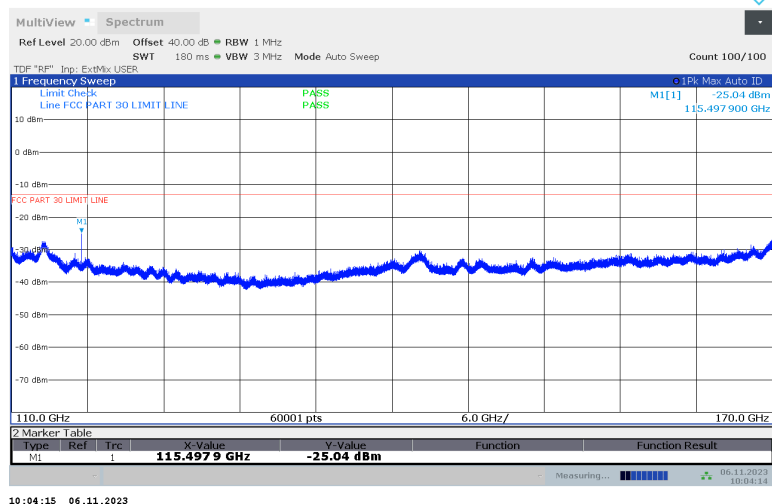


## 8.4.38. RSE n260 110 - 170 GHz

### 110 - 170 GHz, ANT M2 (Pre-scan using Pk Det.) Horizontal

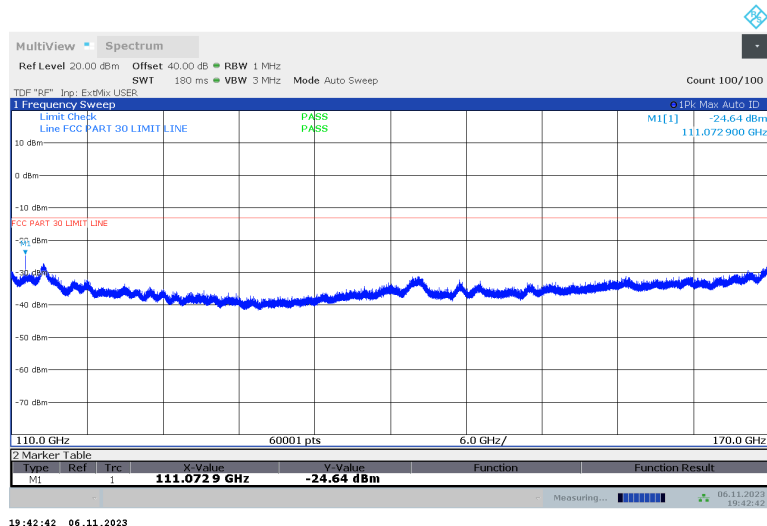


### 110 - 170 GHz, ANT M2 (Pre-scan using Pk Det.) Vertical

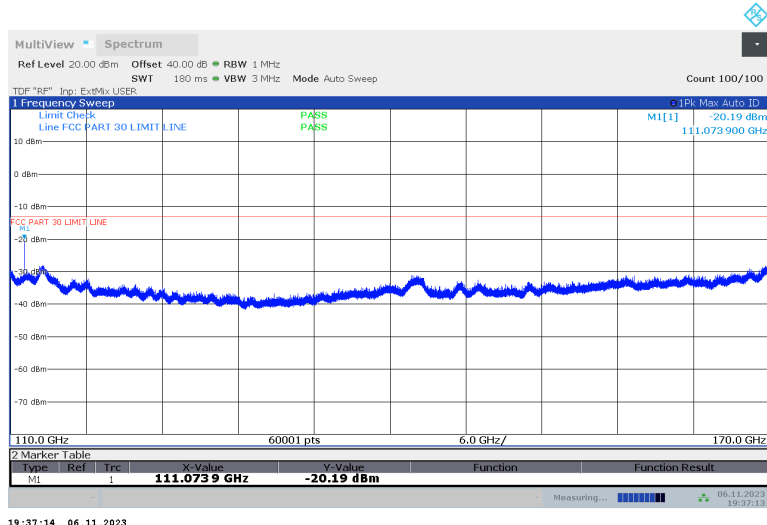


Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

### 110 - 170 GHz, ANT M3 (Pre-scan using Pk Det.) Horizontal



### 110 - 170 GHz, ANT M3 (Pre-scan using Pk Det.) Vertical



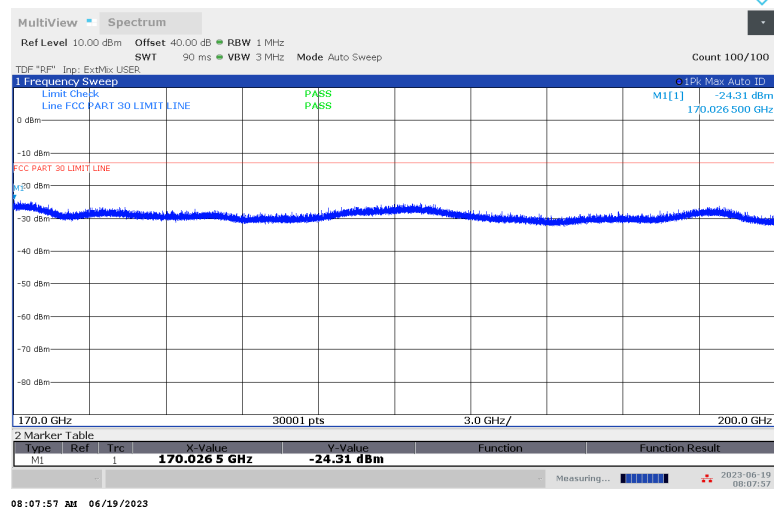
Emissions detected using Peak Detection at pre-scan. Avg EIRP was measured.

**110 - 170 GHz n260, 1CC**

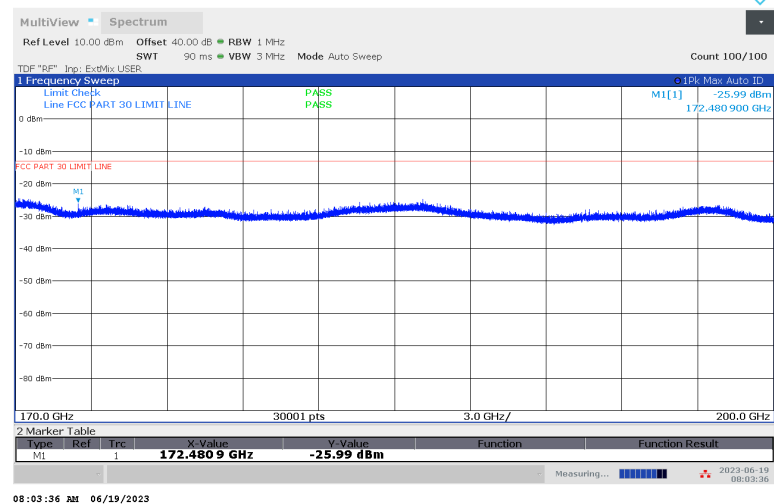
Antenna	Freq.	Meas. Distance	Rx Ant. Polarity	Corrected Avg EIRP	TRP Limit	Margin
	(GHz)	(m)	H/V	(dBm)	(dBm)	(dB)
M2	115.497	1	H	-28.90	-13	-15.90
M2	115.497	1	V	-37.05	-13	-24.05
M3	111.073	1	H	-37.76	-13	-24.76
M3	111.073	1	V	-28.61	-13	-15.61

### 8.4.39. RSE n260 170 - 200 GHz

#### 170 - 200 GHz, ANT M2 (Pre-scan using Pk Det.) Horizontal

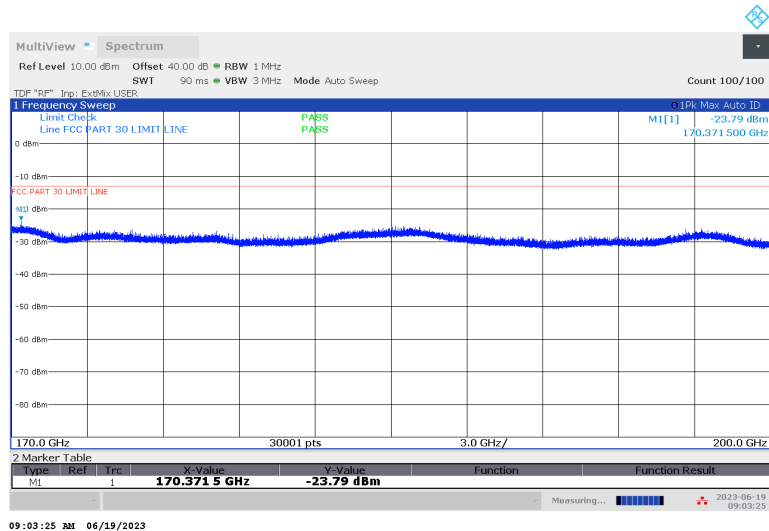


#### 170 - 200 GHz, ANT M2 (Pre-scan using Pk Det.) Vertical

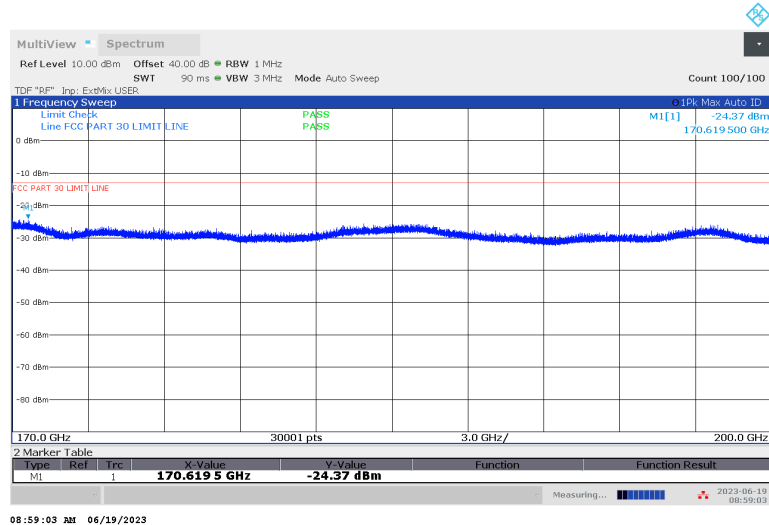


No emission detected using Peak Detection.

## 170 - 200 GHz, ANT M3 (Pre-scan using Pk Det.) Horizontal



## 170 - 200 GHz, ANT M3 (Pre-scan using Pk Det.) Vertical



No emission detected using Peak Detection.

## 8.5. FREQUENCY STABILITY

### RULE PART(S)

FCC: §2.1055

### LIMIT

For reporting purposes only

### TEST PROCEDURES

KDB 842590 D01 Upper Microwave Flexible Use Service v01r02 Section 4.5  
ANSI C63.26-2015 Section 5.6

#### **Test procedures for temperature variation:**

- Position the EUT in temperature/humidity chamber with power off.
  - Set chamber temperature to -30°C and stabilize the EUT for at least 30 minutes.
  - Record maximum change in frequency within one minute after powering the EUT.
  - Increase chamber temperature at 10°C intervals from -30°C to 50°C. Record maximum change in frequency at each temperature.
  - A period of at least 30 minutes is provided to allow stabilization of the equipment at each temperature level.
- Temp. = -30°C to +50°C

#### **Test procedures for voltage variation:**

- Position the EUT in temperature/humidity chamber with power off.
  - Set chamber temperature to 20°C.
  - Record maximum frequency change within one minute after powering the EUT.
  - The primary supply voltage is varied from 85% to 115% of the nominal value for hand-carried, battery-powered equipment. primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.
- Voltage = (85% - 115%)
  - Nominal: 3.8 VDC; Low: 3.32 VDC; High: 4.37 VDC

The measurements were performed with the CW signal of center frequency of each frequency band. Testing of n258 SB1 and n261 bands on Ant M2 represent the performance of Chipset 1. Likewise, testing of n258 SB2 and n260 bands on Ant M3, represent the performance of Chipset 2.

### RESULTS

See the following pages.

Employee IDs: 24303 & 31925

Test Date: 06/26/2023

Test Location: Temperature Chamber B

### 8.5.1. FREQUENCY STABILITY n258 SB1

		Antenna M2 n258 SB1	
Input Voltage	Environment	Frequency	Delta
	Temperature (°C)	(GHz)	(kHz)
Normal	50	24.3550738	33.000
Normal	40	24.3550498	9.000
Normal	30	24.3550318	-9.000
<b>Normal</b>	<b>20</b>	<b>24.3550408</b>	<b>Reference</b>
Normal	10	24.3549839	-56.900
Normal	0	24.3549989	-41.900
Normal	-10	24.3550018	-39.000
Normal	-20	24.3550408	0.000
Normal	-30	24.3550978	57.000
115%	20	24.3550168	-24.000
85%	20	24.3550138	-27.000

### 8.5.2. FREQUENCY STABILITY n258 SB2

		Antenna M3 n258 SB2	
Input Voltage	Environment	Frequency	Delta
	Temperature (°C)	(GHz)	(kHz)
Normal	50	25.0049389	-48.000
Normal	40	25.0049839	-3.000
Normal	30	25.0049779	-9.000
<b>Normal</b>	<b>20</b>	<b>25.0049869</b>	<b>Reference</b>
Normal	10	25.0049569	-30.000
Normal	0	25.0049869	0.000
Normal	-10	25.0049659	-21.000
Normal	-20	25.0049599	-27.000
Normal	-30	25.0049509	-36.000
115%	20	25.0049989	12.000
85%	20	25.0049929	6.000

### 8.5.3. FREQUENCY STABILITY n261

		Antenna M2 n261	
Input Voltage	Environment	Frequency	Delta
	Temperature (°C)	(GHz)	(kHz)
Normal	50	27.9300620	44.960
Normal	40	27.9300859	68.930
Normal	30	27.9300410	23.980
<b>Normal</b>	<b>20</b>	<b>27.9300170</b>	<b>Reference</b>
Normal	10	27.9300050	-11.990
Normal	0	27.9300080	-8.990
Normal	-10	27.9299750	-41.960
Normal	-20	27.9299930	-23.980
Normal	-30	27.9300380	20.980
115%	20	27.9300020	-14.980
85%	20	27.9300110	-5.990

### 8.5.4. FREQUENCY STABILITY n260

		Antenna M3 n260	
Input Voltage	Environment	Frequency	Delta
	Temperature (°C)	(GHz)	(kHz)
Normal	50	38.5050487	68.900
Normal	40	38.5049498	-30.000
Normal	30	38.5050067	26.900
<b>Normal</b>	<b>20</b>	<b>38.5049798</b>	<b>Reference</b>
Normal	10	38.5050067	26.900
Normal	0	38.5050007	20.900
Normal	-10	38.5050457	65.900
Normal	-20	38.5049408	-39.000
Normal	-30	38.5049168	-63.000
115%	20	38.5050007	20.900
85%	20	38.5049977	17.900

The occupied bandwidths (Section 8.1) are smaller than the channel bandwidths by at least 2.2 MHz for all modes of operation, the signal is at least 1.1 MHz from either edge of the channel. As the channels are fully contained within the FCC-allocated bands, and the frequency stability is significantly less than 1.1 MHz, with maximum frequency shift of 68.93 kHz over the test conditions (Ant M2 n261 at 40°C). The signal is always contained within the allocated channel, therefore, always contained within the allocated band.



## **9. SETUP PHOTOS**

Please refer to 14523771-EP29V1 for setup photos.

# **END OF REPORT**

## **APPENDIX A**

**1. 50 - 75 GHz VDI WR15SAX-F**

**Serial No.: SAX 621**

**2. 75 - 110 GHz VDI WR10SAX-F**

**Serial No.: SAX 860**

**3. 110 - 170 GHz VDI WR6.5SAX-F**

**Serial No.: SAX 624**

**4. 170 - 260 GHz VDI WR4.3SAX-F**

**Serial No.: SAX 651**



**Virginia Diodes, Inc**  
979 2nd St. SE  
Suite 309  
Charlottesville, VA 22902  
Phone: 434-297-3257  
Fax: 434-297-3258

***Certificate of Conformance***

To: UL LLC  
47173 Benicia Street  
Fremont, CA 94538  
United States

From: Virginia Diodes, Inc  
979 2nd St. SE  
Suite 309  
Charlottesville, VA 22902

Packing List No: 224251  
Shipping Date: 10/18/22

Today's Date: 10/18/22  
PO Number: 7862024311

Quantity Shipped	Unit	Description	Order-Job Number
1	EA	RETEST-WR15SAX-F Retest of WR15SAX-F / SN: SAX 621	220523A-01
1	EA	RETEST-WR10SAX-F Retest of WR10SAX-F / SN: SAX 860	220523A-02
1	EA	RETEST-WR6.5SAX-F Retest of WR6.5SAX-F / SN: SAX 624	220523A-03
1	EA	RETEST-WR4.3SAX-F Retest of WR4.3SAX-F / SN: SAX 651	220523A-04

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

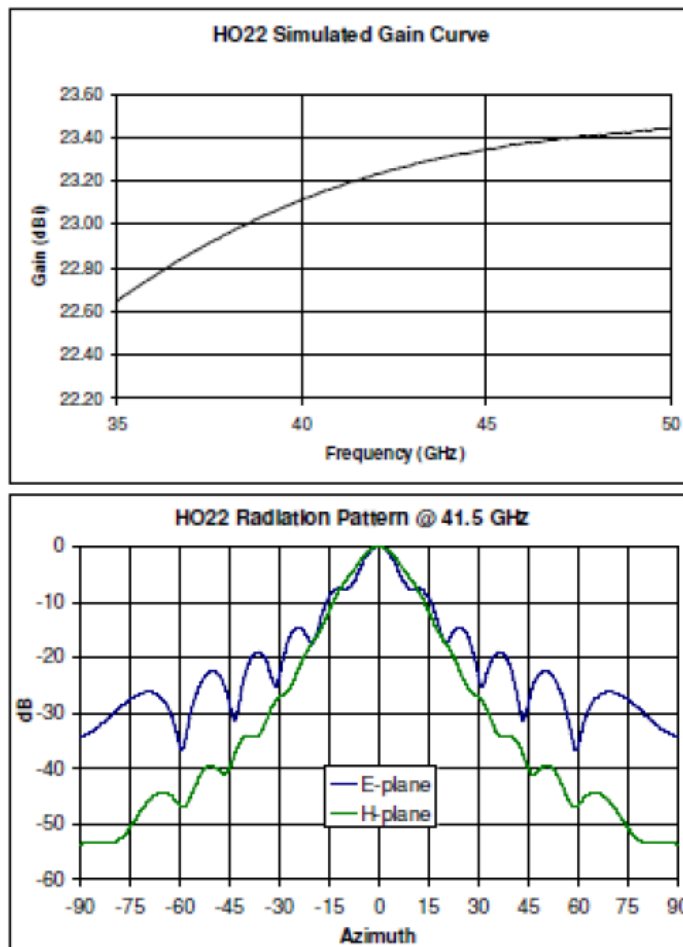
  
\_\_\_\_\_  
Authorized Signature  
Virginia Diodes, Inc

Page 1 of 1

## 5. 35 - 50 GHz CMI HO22R HORN ANTENNA



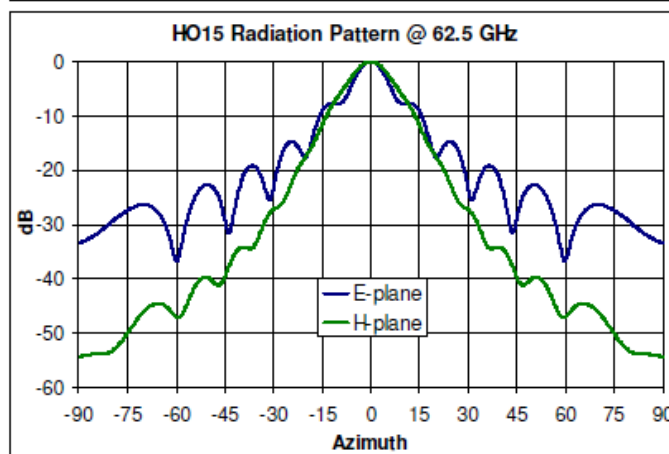
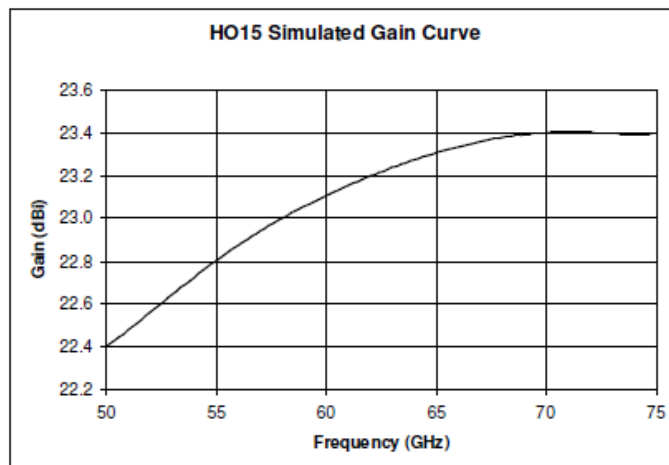
24 Boston Court  
Longmont, CO 80501  
303 651-0707 (P)  
303 651-0706 (F)  
www.custommicrowave.com



## 6. 50 - 75 GHz CMI HO15R HORN ANTENNA



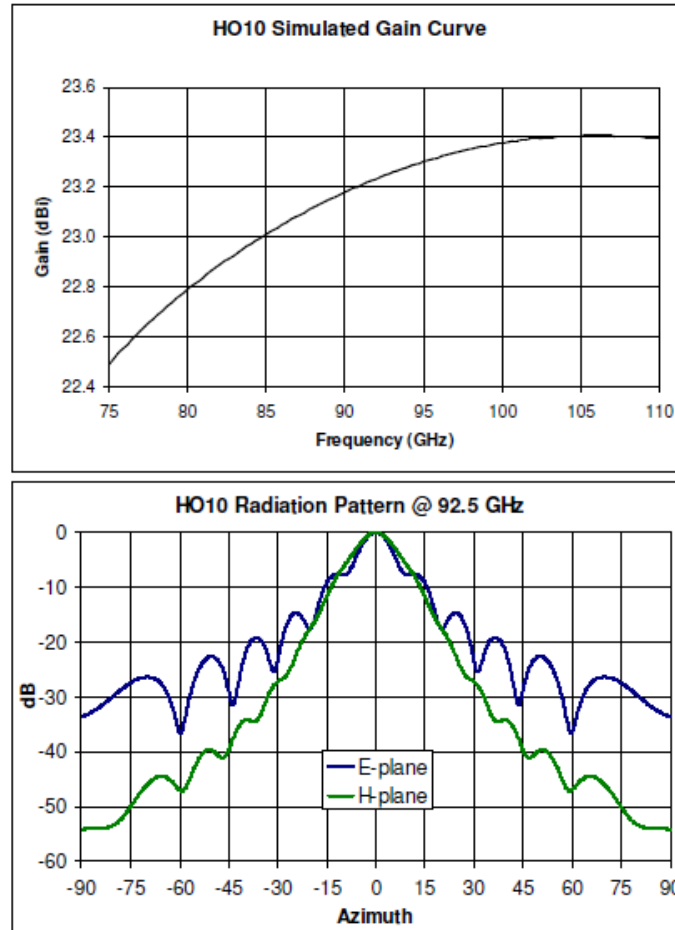
24 Boston Court  
Longmont, CO 80501  
303 651-0707(P)  
303 651-0706(F)  
www.custommicrowave.com



## 7. 75 - 110 GHz CMI HO10R HORN ANTENNA



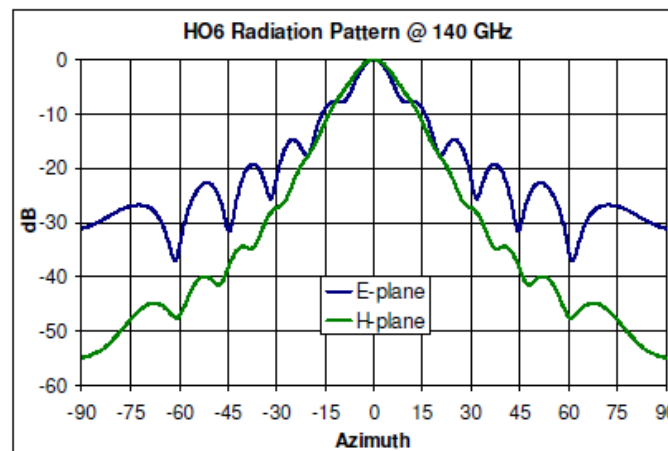
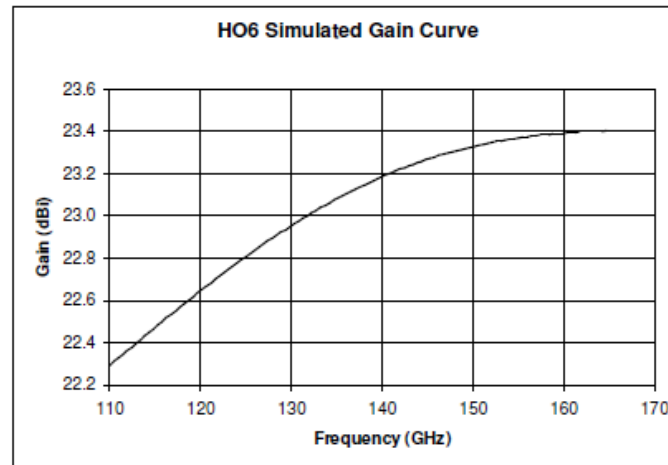
24 Boston Court  
Longmont, CO 80501  
303 651-0707(P)  
303 651-0706(F)  
www.custommicrowave.com



## 8. 110 - 170 GHz CMI HO6R HORN ANTENNA



24 Boston Court  
Longmont, CO 80501  
303 651-0707(P)  
303 651-0706(F)  
www.custommicrowave.com



## 9. 170 - 260 GHz CMI HO4R HORN ANTENNA



24 Boston Court  
Longmont, CO 80501  
303 651-0707(P)  
303 651-0706(F)  
www.custommicrowave.com

