



TEST REPORT

No. I22Z60808-EMC03

for

Razer Inc.

Mobile Hot Spot

Model Name: Gaming Tablet

FCC ID: RWO-RZ450460

with

Hardware Version:V1.0

Software Version: Razer Edge 5G-12-user

Issued Date: 2022-08-20

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US.Government.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I22Z60808-EMC03	Rev.0	1 st edition	2022-07-30
I22Z60808-EMC03	Rev.1	2 nd edition.Add 5G NR FR2 n257.	2022-08-20

Note: the latest revision of the test report supersedes all previous version.

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0 and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#:24849). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Location 1: CTTL (huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191

1.3. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

1.4. Project Data

Testing Start Date: 2022-05-26

Testing End Date: 2022-07-15

1.5. Signature



An Hui

(Prepared this test report)



Zhang Ying

(Reviewed this test report)



Zhang Xia

(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: Razer Inc.
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Telephone: +65 6571 6828

2.2. Manufacturer Information

Company Name: Razer Inc.
Address /Post: 9 Pasteur, Suite 100, Irvine, CA 92618, USA.
Contact: Johnsen Tia
Email: Johnsen.tia@razer.com
Telephone: +65 6571 6828

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Gaming Tablet
Model Name	RZ45-0460VWQ
FCC ID	RWO-RZ450460
Antenna	Internal Antenna
Output power	26.30dBm maximum EIRP measured for n260
Extreme vol. Limits	3.4VDC to 4.45VDC (nominal: 3.87VDC)
Extreme temp. Tolerance	0°C to +55°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL.

The EUT support n260 and n261 bands, 50MHz and 100MHz bandwidth for 1CC, 50MHz+100MHz,100MHz+100MHz for 2CC, SCS 120kHz.

The EUT support n257(27.5GHz to 28.35 GHz) band, 50MHz and 100MHz bandwidth , SCS 120kHz.Other RF parameters were the same as n261

For 5G NR uplink modulation, in CP-OFDM, the EUT supports QPSK, 16QAM, 64QAM, and in DFT-s-OFDM, the EUT supports PI/2 BPSK, QPSK, 16QAM, 64QAM.

The EUT has two antenna modules. Each antenna module has two chains, and supports 2x2 MIMO working mode under CP-OFDM. The two modules did not support transmitting simultaneously.

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI / Serial Number	HW Version	SW Version
UT65a	867034040041429	V1.0	Razer Edge 5G-12-user

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN	Remarks
AE1	Battery	/	inbuilt

AE1

Model	RC30-046001
Manufacturer	ATL
Capacitance	5000mAh
Nominal voltage	3.87V



4. Reference Documents

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 30	UPPER MICROWAVE FLEXIBLE USE SERVICE	10-1-20 Edition
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
KDB 842590	Upper Microwave Flexible Use Service v01r02	April 20, 2021

5. Laboratory Environment

Semi/Full-anechoic chamber SAC-1 (23 meters × 17meters × 10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 M Ω
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3m/10m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (SVSWR)	Between 0 and 6 dB, from 1GHz to 18GHz

6. Summary Of Test Result

n260

Items	Test Name	Clause in FCC rules	limit	Verdict
1	Output Power	2.1046 30.202	+43dBm	P
2	Unwanted Emission	30.203	-13dBm/MHz	P
3	Frequency Stability	2.1055	Fundamental emissions stay within authorized frequency block	P
4	Occupied Bandwidth	2.1049	Not Applicable	Reporting only
5	Band Edge Compliance	2.1051 30.203	-5dBm/MHz from the band edge up to 10% of the channel BW	P

n261/257(27.5GHz to 28.35 GHz)

Items	Test Name	Clause in FCC rules	limit	Verdict
1	Output Power	2.1046 30.202	+43dBm	P
2	Unwanted Emission	30.203	-13dBm/MHz	P
3	Frequency Stability	2.1055	Fundamental emissions stay within authorized frequency block	P
4	Occupied Bandwidth	2.1049	Not Applicable	Reporting only
5	Band Edge Compliance	2.1051 30.203	-5dBm/MHz from the band edge up to 10% of the channel BW	P

Terms used in Verdict column

P	Pass. The EUT complies with the essential requirements in the standard.
NP	Not Performed. The test was not performed by CTTL.
NA	Not Applicable. The test was not applicable.
BR	Re-use test data from basic model report.
F	Fail. The EUT does not comply with the essential requirements in the standard.
Reporting only	No limit. Just report the measurement.



Explanation of worst-case configuration

The worst-case scenario for all measurements is based on the output power, occupied bandwidth, band edge emission measurement investigation results. The test results shown in the following sections represent the worst case measurement results. For each frequency only the maximum measurement results of Beam ID were represent in the report. The Beam ID of maximum results for low, center and high frequency of different chains maybe vary.

7. Measurement Uncertainty

Measurement Uncertainty:

Frequency Range	Uncertainty(dB) (k=2)
30MHz-1GHz	5.18
1GHz-18GHz	5.54
Above 18GHz	5.26

Note: Uncertainty of the above 18GHz, giving only the worst case.

8. Test Equipment Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
1	Antenna	3116	2663	ETS-Lindgren	2022-08-11	1 year
2	Spectrum Analyzer	FSW67	104039	R&S	2023-05-26	1 year
3	Antenna	VULB 9163	302	SCHWARZBECK	2022-12-28	1 year
4	(downconverter)Harmonic Mixer(60GHz-90GHz)	FS-Z90	101655	R&S	2024-01-14	3 years
5	(downconverter)Harmonic Mixer(75GHz-110GHz)	FS-Z110	101463	R&S	2024-01-14	3 years
6	(downconverter)Harmonic Mixer(110GHz-170GHz)/	FS-Z170	101008	R&S	2024-02-17	3 years
7	(downconverter)Harmonic Mixer(170GHz-220GHz)/	FS-Z220	101054	R&S	2023-12-14	3 years
8	Standard Gain Horn Antenna (40GHz-60GHz)	LB-19-25	J202024086	A-INFO	2024-01-14	3 years
9	Standard Gain Horn Antenna (60GHz-90GHz)	LB-12-25	J202062912	A-INFO	2024-02-17	3 years
10	Standard Gain Horn Antenna (75GHz-110GHz)	LB-10-25	J202023232	A-INFO	2024-01-27	3 years
11	Standard Gain Horn Antenna (110GHz-170GHz)	LB-6-25-A	J202061245	A-INFO	2024-01-27	3 years
12	Standard Gain Horn Antenna (170GHz-200GHz)	LB-5-25-A	J202067630	A-INFO	2024-01-27	3 years
13	DC power supply	PAS20-18	UH000695	Kikusui	2022-08-14	1 year
14	Incubator	SH-641	92009470	ESPEC	2024-02-16	2 years
15	Antenna	3116	2661	ETS-Lindgren	2023-02-08	1 year

Annex A: Radiated Test Setup

The radiated test facilities consisted of an indoor 3m/10m semi-anechoic chamber used for final measurements and exploratory measurements from 30MHz-18GHz, when necessary for radiated emissions measurements in the spurious domain. According to Clause 5 in ANSI C63.4-2014, absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz (Figure A.2). For measurements below 1GHz, the absorbers are removed (Figure A.1).

Radiated measurement test sites shall conform to the site validation criteria called out in CISPR 16-1-4:2019 above 18 GHz. The test object is mounted on a positioner (Figure A.3). The positioner is used to move the test object according to the sampling grid. A measurement antenna is placed in the chamber at a suitable measurement antenna far-field distance.

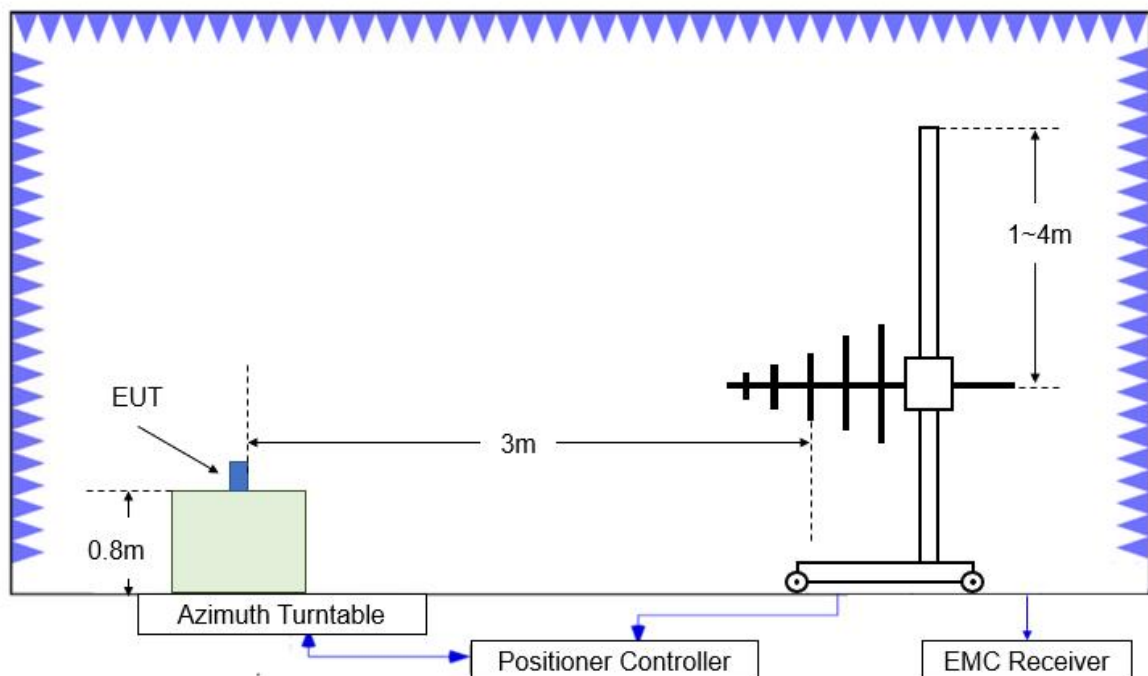


Figure A.1. Test Site Diagram (30MHz-1GHz)

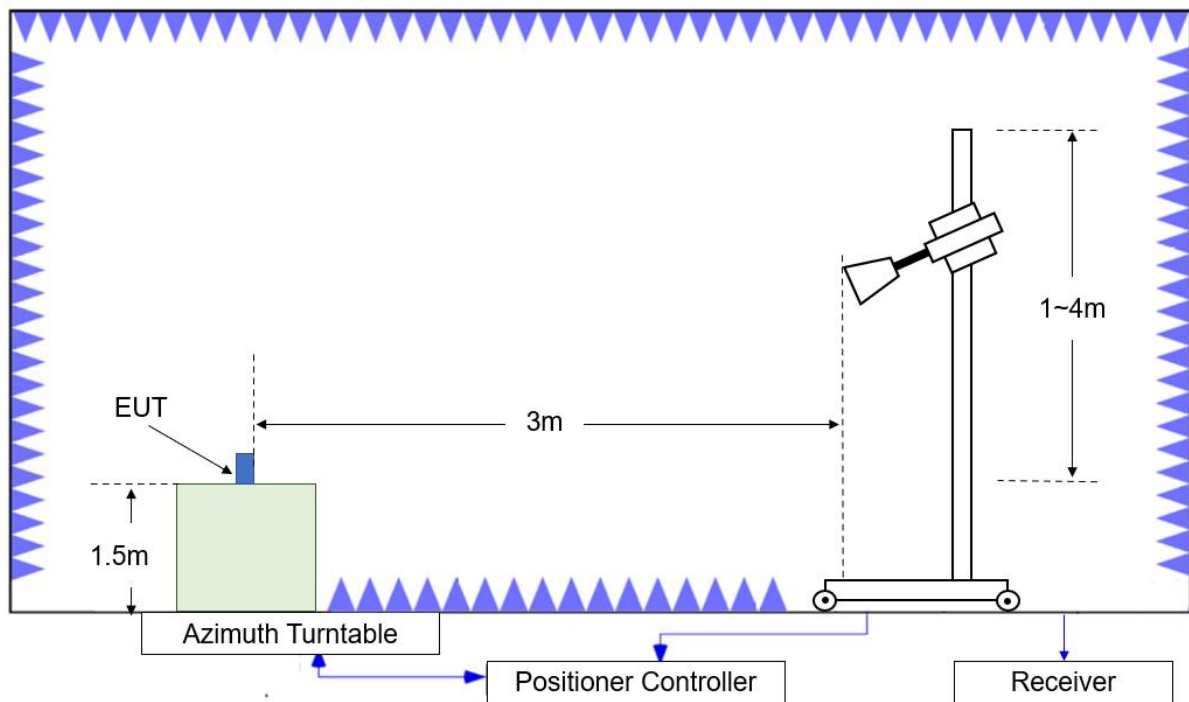


Figure A.2. Test Site Diagram (1GHz-18GHz)

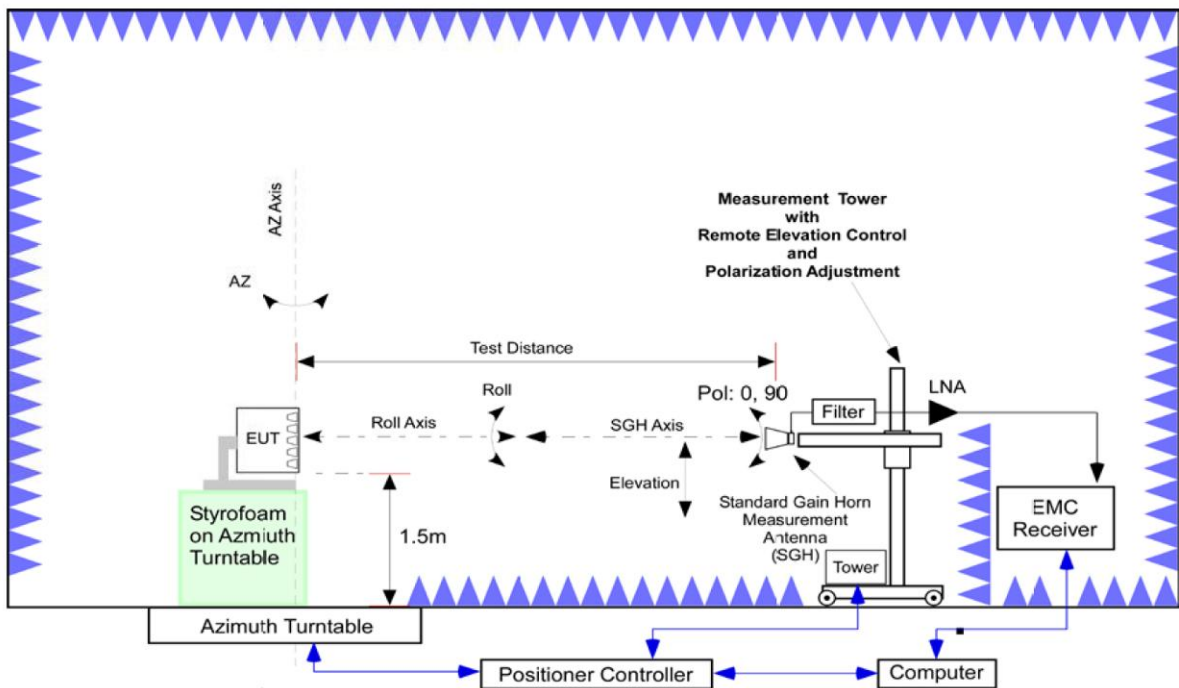


Figure A.3. Test Site Diagram (above 18GHz)

Annex B: Measurement Results

B.1 Radiated Output Power

B.1.1 Summary

In all cases, output power is within the specified limits.

30.202 (b) For mobile stations, the average power of the sum of all antenna elements is limited to a maximum EIRP of +43 dBm.

B.1.2 Minimum Measurement Distance Evaluation

According to KDB 842590 D01, the measurements of the fundamental emission, out of band, harmonics and spurious emissions shall be made in the far field of the measurement antenna. The far-field boundary for mmW antennas is greater than or equal to $2D^2/\lambda$ (with D being the largest dimension of the antenna, and λ the wavelength of the emission). We calculate the far-field boundary and the test distance meet the requirement of standard.

B.1.3 Method of Measurements

NAS1 C63.26 chapter 5.5.2.1: Such radiated measurements shall use substitution methods unless a test site validated to ANSI C63.4 requirements is utilized, in which case, radiated fundamental and/or unwanted emissions can be measured using the direct radiated field strength method.

The EUT was set up for the max output power with pseudo random data modulation.

These measurements were done at 3 frequencies (bottom, middle and top of operational frequency range) for each bandwidth.

An spectrum analyzer is used to perform RF output power measurements, the fundamental condition that measurements be performed only over durations of active transmissions at maximum output power level applies. Thus, a spectrum analyzer can always be used to perform the measurement when the EUT can be configured to transmit continuously.

B.1.4 Test Procedure

According to Clause 5.2.4.4 in ANSI C63.26-2015 and Clause 4.2 in KDB 842590 D01 v01r02

1. Set EUT at maximum output power
2. Select channels for each band and proper modulation
3. Enable channel power measurement function of spectrum analyzer
4. Set RBW = 1% to 5% of the OBW, not to exceed 1MHz
5. Set VBW $\geq 3 \times$ RBW
6. Set span to $2 \times$ to $3 \times$ the OBW
7. Set number of measurement points in sweep $\geq 2 \times$ span/RBW
8. Set Detector = RMS (power averaging)
9. Set Sweep time = auto-couple
10. Trace average at least 100 traces in power averaging (rms) mode
11. Compute the power by integrating the spectrum across the OBW of the signal for signals with continuous operation

Test Note:

EIRP was calculated from measuring field strength by the following formula:

$$\text{EIRP (dBm)} = E \text{ (dB } \mu \text{ V/m)} + 20\log(D) - 104.8$$

where

$$E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$$

where

$$\text{Antenna Factor (dB/m)} = 20\log(F) - \text{Antenna Gain(dBi)} - 29.76$$

Then the average EIRP reported below is calculated by:

$$\text{EIRP (dBm)} = \text{Measured amplitude level (dBm)} - \text{Antenna Gain(dBi)} + \text{Cable Loss(dB)} + 20\log(F) + 20\log(D) - 27.56$$

Where:

F: frequency (MHz)

D: Distance(m) = 3m

B.1.5 Measurement Result

Note: We choose the worst modulation by the EIRP of low channel, the middle channel and high channel measure the EIRP only with the worst modulation.

The plots are showed in Annex D.1.

Note: We choose the worst modulation by the EIRP of middle channel, the low channel and high channel measure the EIRP only with the worst modulation.

n260, Module0, SCS=120kHz, CP-OFDM					
Bandwidth	RB size	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
50MHz	100% RB	37025.04	16.90	/	/
		38499.96	19.46	18.67	16.34
		39975	19.30	/	/
	1RB	37025.04	16.47	/	/
		38499.96	21.29	19.29	17.51
		39975	19.26	/	/
100MHz	100% RB	37050	17.05	/	/
		38499.96	19.83	19.20	16.99
		39949.92	19.23	/	/
	1RB	37050	17.17	/	/
		38499.96	21.18	20.04	17.72
		39949.92	19.74	/	/

n260, Module0, SCS=120kHz,PUSCH DFT						
Bandwidth	RB size	Frequency (MHz)	Power (dBm)			
			PI/2 BPSK	QPSK	16QAM	64QAM
50MHz	100% RB	37025.04	19.27	/	/	/
		38499.96	22.08	22.16	20.59	17.91
		39975	21.55	/	/	/
	1RB	37025.04	20.61	/	/	/
		38499.96	24.11	24.61	22.39	20.30
		39975	23.67	/	/	/
100MHz	100% RB	37050	18.73	/	/	/
		38499.96	21.61	21.65	20.25	17.54
		39949.92	21.09	/	/	/
	1RB	37050	21.03	/	/	/
		38499.96	23.44	24.04	22.02	20.65
		39949.92	23.70	/	/	/

Note: The worst modulation is PUSCH DFT, and we test follow setups used PUSCH DFT.

n260, Module0, SCS=120kHz,PUSCH DFT, MIMO						
Bandwidth	RB size	Frequency (MHz)	Power (dBm)			
			PI/2 BPSK	QPSK	16QAM	64QAM
50MHz	100% RB	37025.04	24.39	/	/	/
		38499.96	24.41	24.15	22.94	20.27
		39975	24.16	/	/	/
	1RB	37025.04	25.54	/	/	/
		38499.96	25.95	25.62	24.23	22.59
		39975	26.30	/	/	/
100MHz	100% RB	37050	24.73	/	/	/
		38499.96	24.48	24.24	22.92	20.64
		39949.92	23.77	/	/	/
	1RB	37050	26.13	/	/	/
		38499.96	26.11	25.84	24.37	22.32
		39949.92	25.89	/	/	/

Note: The worst modulation is PUSCH DFT and MIMO, and we test follow setups used PUSCH DFT and MIMO.

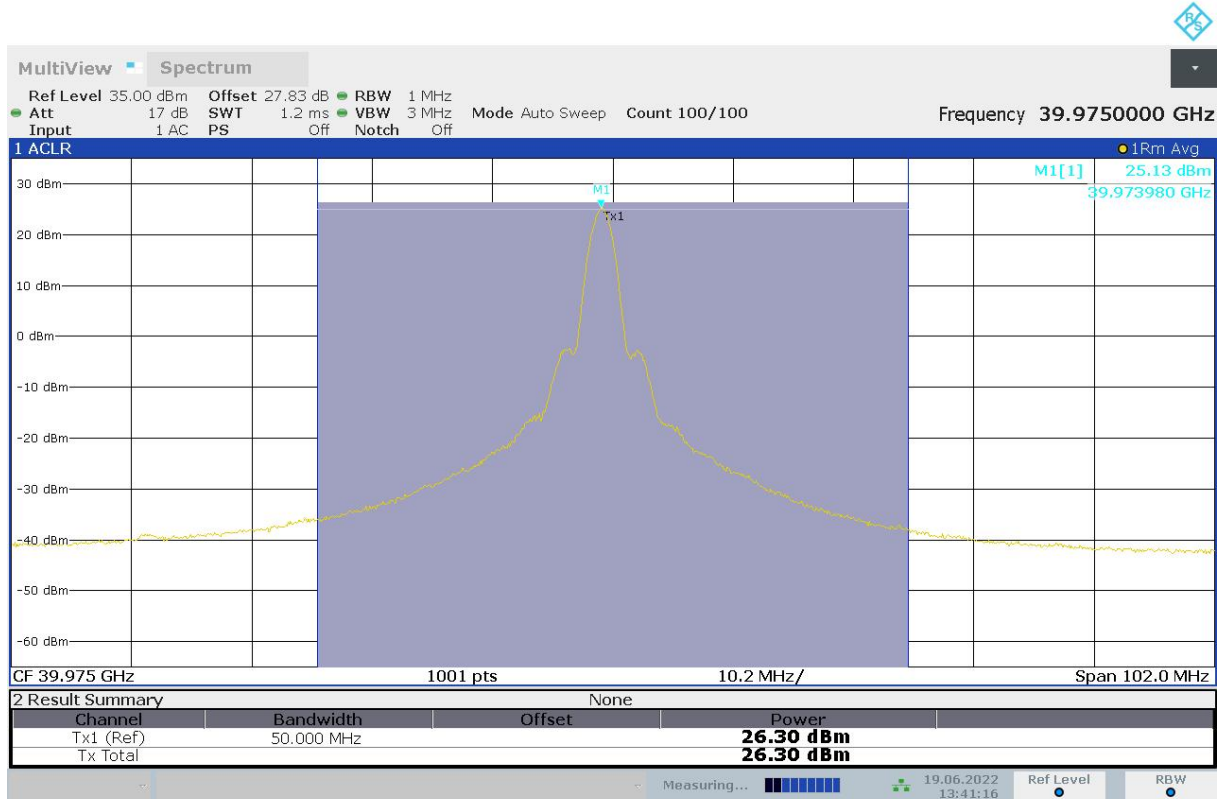
n260, Module1, SCS=120kHz,PUSCH DFT, MIMO						
Bandwidth	RB size	Frequency (MHz)	Power (dBm)			
			PI/2 BPSK	QPSK	16QAM	64QAM
50MHz	100% RB	37025.04	20.67	/	/	/
		38499.96	22.39	/	/	/
		39975	22.56	/	/	/
	1RB	37025.04	22.61	/	/	/
		38499.96	24.52	/	/	/
		39975	24.63	/	/	/
100MHz	100% RB	37050	23.02	/	/	/
		38499.96	23.32	/	/	/
		39949.92	22.31	/	/	/
	1RB	37050	24.92	/	/	/
		38499.96	25.26	/	/	/
		39949.92	24.88	/	/	/

Note: The worst modulation is PUSCH DFT, MIMO and Module0, and we test follow setups used PUSCH DFT and MIMO and Module0.

n260, Module0, SCS=120kHz,PUSCH DFT, MIMO, 2CC						
Bandwidth	RB size	Frequency (MHz)	Power (dBm)			
			PI/2 BPSK	QPSK	16QAM	64QAM
50MHz+ 100MHz	100% RB	37025.04+37099.44	24.10	/	/	/
		38450.04+38524.44	23.55	23.12	21.86	19.40
		39875.52+39949.92	22.64	/	/	/
	1RB	37025.04+37099.44	21.42	/	/	/
		38450.04+38524.44	18.96	19.71	19.45	18.58
		39875.52+39949.92	18.00	/	/	/
100MHz+ 100MHz	100% RB	37050+37149.96	24.37	/	/	/
		38450.04+38550	22.81	23.12	21.67	18.73
		39849.96+39949.92	22.77	/	/	/
	1RB	37050+37149.96	21.22	/	/	/
		38450.04+38550	18.78	19.15	19.11	18.86
		39849.96+39949.92	18.22	/	/	/

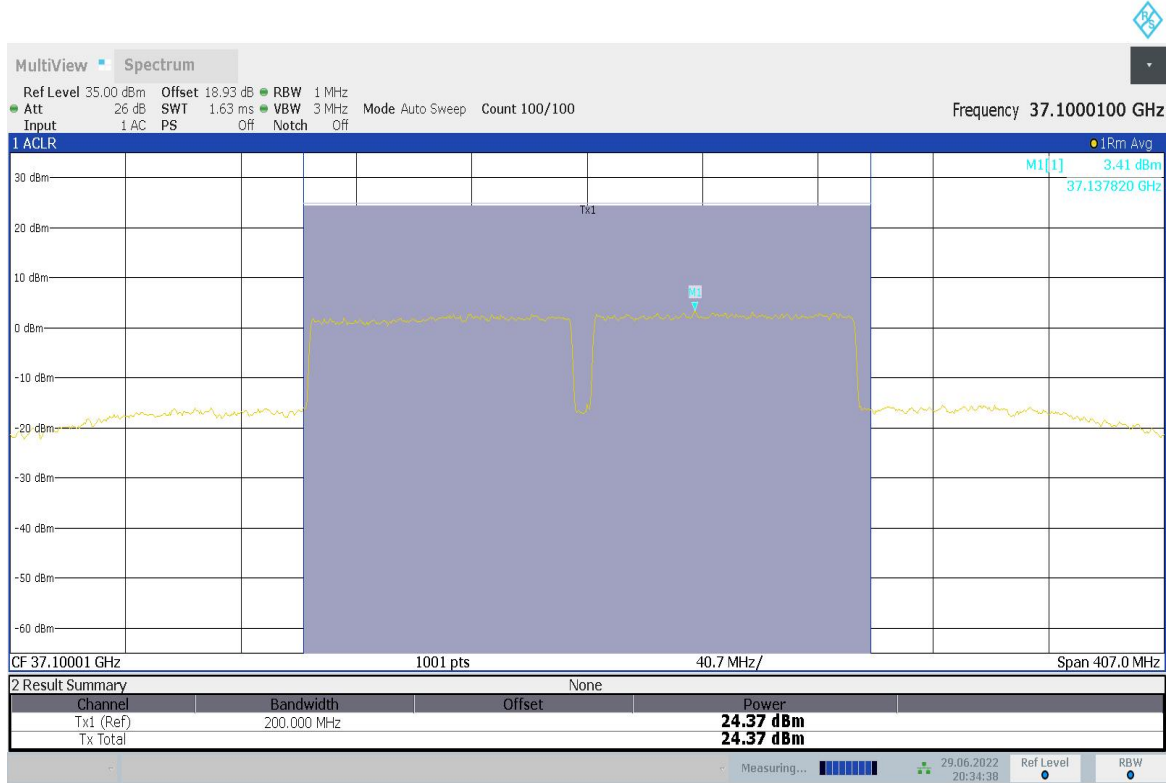
The maximum Power figure was showed in the following page.

n260, Module 0, 500MHz Bandwidth, PUSCH DFT, High Channel, 39975MHz, PI/2 BPSK,
 1 RB, 1CC, 26.30dBm, 1CC



13:41:16 19.06.2022

n260G, Module0, 100MHz+100MHz Bandwidth, PUSCH DFT, Low Channel, QPSK, Full RB, 37050+37149.96MHz, 24.37dBm, 2CC



20:34:38 29.06.2022

Note: We choose the worst modulation by the EIRP of low channel, the middle channel and high channel measure the EIRP only with the worst modulation.

n261, Module0, SCS=120kHz,CP-OFDM					
Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
50MHz	100% RB	27525	17.09	/	/
		27924.96	18.57	17.99	16.35
		28324.92	17.56	/	/
	1RB	27525	18.37	/	/
		27924.96	20.04	18.39	17.29
		28324.92	17.67	/	/
100MHz	100% RB	27550.08	17.46	/	/
		27924.96	18.41	17.58	15.87
		28299.96	17.46	/	/
	1RB	27550.08	17.30	/	/
		27924.96	18.95	17.48	17.02
		28299.96	17.89	/	/

Note: We choose the worst modulation by the EIRP of low channel, the middle channel and high channel measure the EIRP only with the worst modulation.

n261, Module0, SCS=120kHz,PUSCH DFT						
Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)			
			PI/2 BPSK	QPSK	16QAM	64QAM
50MHz	100% RB	27525	19.04	/	/	/
		27924.96	19.83	19.89	18.94	17.20
		28324.92	19.36	/	/	/
	1RB	27525	19.54	/	/	/
		27924.96	21.24	21.43	20.36	18.46
		28324.92	19.68	/	/	/
100MHz	100% RB	27550.08	19.49	/	/	/
		27924.96	20.35	20.52	19.17	17.60
		28299.96	19.50	/	/	/
	1RB	27550.08	19.86	/	/	/
		27924.96	21.72	21.65	20.53	19.14
		28299.96	20.48	/	/	/

Note: The worst modulation is PUSCH DFT, and we test follow setups used PUSCH DFT.

n261, Module0, SCS=120kHz,PUSCH DFT, MIMO						
Bandwidth	RB size	Frequency (MHz)	Power (dBm)			
			PI/2 BPSK	QPSK	16QAM	64QAM
50MHz	100% RB	27525	21.54			
		27924.96	22.69	22.34	21.20	19.95
		28324.92	22.29			
	1RB	27525	22.18			
		27924.96	23.10	22.99	21.97	21.28
		28324.92	22.99			
100MHz	100% RB	27550.08	21.60			
		27924.96	22.58	22.34	21.31	20.27
		28299.96	22.05			
	1RB	27550.08	22.00			
		27924.96	23.02	23.38	22.43	21.54
		28299.96	22.89			

Note: The worst modulation is PUSCH DFT and MIMO, and we test follow setups used PUSCH DFT and MIMO.

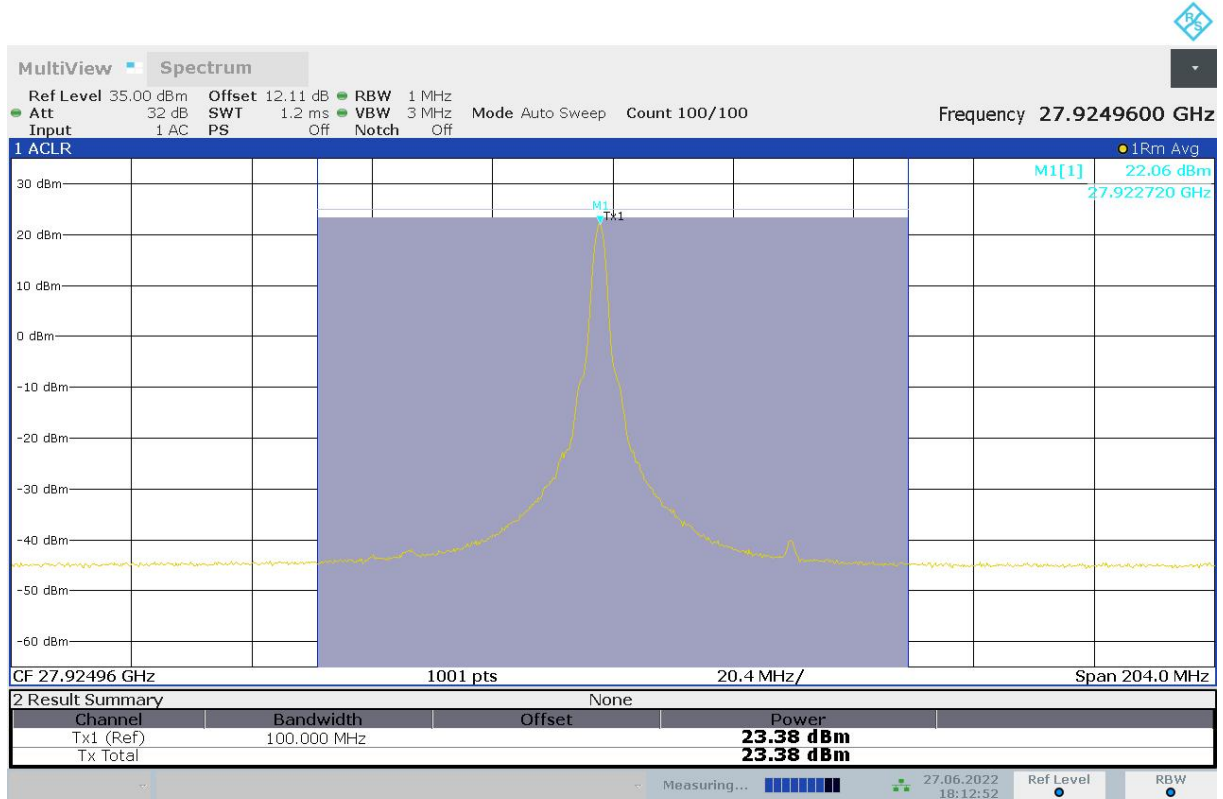
n261, Module1, SCS=120kHz,PUSCH DFT, MIMO						
Bandwidth	RB size	Frequency (MHz)	Power (dBm)			
			PI/2 BPSK	QPSK	16QAM	64QAM
50MHz	100% RB	27525	/	20.02	/	/
		27924.96	/	20.52	/	/
		28324.92	/	19.63	/	/
	1RB	27525	/	20.34	/	/
		27924.96	/	21.21	/	/
		28324.92	/	20.79	/	/
100MHz	100% RB	27550.08	/	20.47	/	/
		27924.96	/	20.69	/	/
		28299.96	/	19.75	/	/
	1RB	27550.08	/	20.52	/	/
		27924.96	/	21.15	/	/
		28299.96	/	20.48	/	/

Note: The worst modulation is PUSCH DFT, MIMO and Module0, and we test follow setups used PUSCH DFT and MIMO and Module0.

n261, Module0, SCS=120kHz,PUSCH DFT, MIMO, 2CC						
Bandwidth	RB size	Frequency (MHz)	Power (dBm)			
			PI/2 BPSK	QPSK	16QAM	64QAM
50MHz+ 100MHz	100% RB	27525+27599.4	20.77			
		27875.04+27949.44	21.66	21.76	20.77	20.02
		28225.56+28299.96	21.22			
	1RB	27525+27599.4	18.95			
		27875.04+27949.44	18.04	19.90	19.42	19.95
		28225.56+28299.96	19.23			
100MHz+ 100MHz	100% RB	27550.08+27650.04	20.83			
		27875.04+27975	21.49	21.28	20.61	19.54
		28200+28299.96	21.20			
	1RB	27550.08+27650.04	18.95			
		27875.04+27975	19.23	19.21	19.43	18.79
		28200+28299.96	18.74			

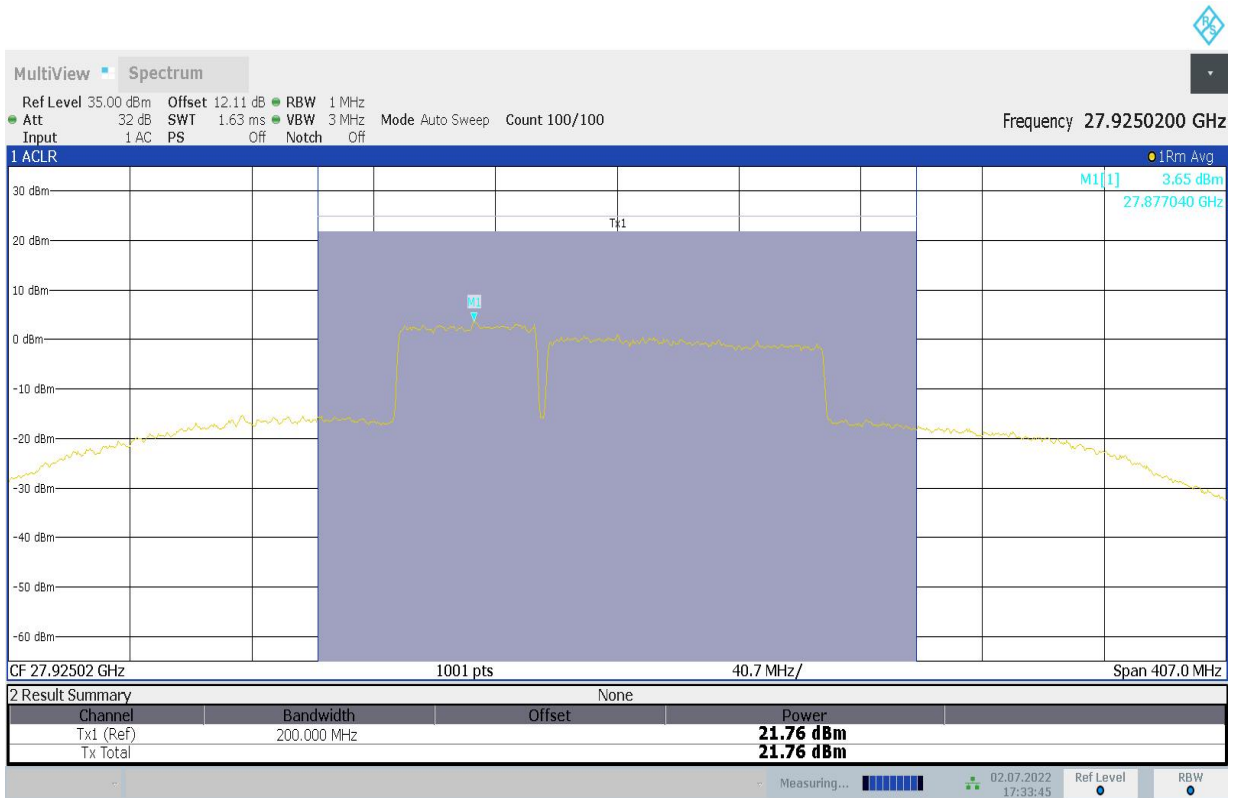
The maximum Power figure was showed in the following page.

n261G, Module 0, 500MHz Bandwidth, PUSCH DFT, High Channel, 39975MHz, QPSK, 1 RB, 1CC, 23.38dBm, 1CC



18:12:52 27.06.2022

n261G, Module0, 50MHz+100MHz Bandwidth, PUSCH DFT, Middle Channel, QPSK, Full RB, 27875.04+27949.44MHz, 21.76dBm, 2CC



17:33:45 02.07.2022

B.2 Emission Limit

B.2.1 Summary

The spectrum of FR2 n260 was scanned from 30 MHz to 200GHz, the spectrum of FR2 n261 was scanned from 30 MHz to 100GHz. All modes of operation were investigated and the worst case configuration results are reported in this section.

30.203 (a) The conductive power or the total radiated power of any emission outside a licensee's frequency block shall be -13dBm/MHz or lower. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.

B.2.2 Minimum Measurement Distance Evaluation

According to KDB842590 D01, the measurements of the fundamental emission, out of band, harmonics and spurious emissions shall be made in the far field of the measurement antenna. The far-field boundary for mmW antennas is greater than or equal to $2D^2/\lambda$ (with D being the largest dimension of the antenna, and λ the wavelength of the emission). We calculate the far-field boundary and the test distance meet the requirement of standard.

B.2.3 Measurement Method

The measurement procedures in ANSI C63.26 are used.

The spectrum was scanned from 30 MHz to the 5th harmonic of the highest frequency generated within the equipment. The resolution bandwidth is set as outlined in Part 30.203.

The spectrum is scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of FR2 n260 and FR2 n261.

NASI C63.26 chapter 5.5.2.1: Such radiated measurements shall use substitution methods unless a test site validated to ANSI C63.4 requirements is utilized, in which case, radiated fundamental and/or unwanted emissions can be measured using the direct radiated field strength method.

B.2.4 Test Procedure

According to Clause 5.5 in ANSI C63.26-2015, 30.203 (b) and Clause 4.4 in KDB 842590 D01 v01r02

1. Set EUT at maximum output power
2. Select channels for each band and proper modulation
3. Set RBW=1MHz, VBW=3MHz
4. Set number of measurement points in sweep $\geq 2 \times \text{span}/\text{RBW}$
5. Set Detector = RMS
6. Set Sweep time = auto-couple
7. The trace was allowed to stabilize

Test Note:

1. The average EIRP reported below is calculated by:

30M-18GHz: $EIRP \text{ (dBm)} = \text{Spectrum Analyzer Level (dBm)} + \text{Path Loss (dB)}$

18GHz-60GHz: $EIRP \text{ (dBm)} = \text{Spectrum Analyzer Level (dBm)} - \text{Antenna Gain (dBi)} + \text{Cable Loss (dB)} + 20\log(F) + 20\log(D) - 27.56$

60GHz-110GHz: $EIRP \text{ (dBm)} = \text{Spectrum Analyzer Level (dBm)} - \text{Antenna Gain (dBi)} + \text{converter Loss (dB)} + 20\log(F) + 20\log(D) - 27.56$

Where: F: frequency (MHz), D: Distance(m), the distance for different frequency range as shown in table.

Frequency Range	Distance(m)	Frequency Range	Distance(m)
30MHz-1GHz	3	60GHz-75GHz	3
1GHz-18GHz	3	75GHz-110GHz	3
18GHz-40GHz	3	110GHz-170GHz	1
40GHz-60GHz	3	170GHz-200GHz	0.5

2. The TRP method refers to the Clause 4.4 of KDB 842590 D01 v01r02. If EIRP measurement results exceed the emission limit, then TRP measurement will be used as an alternative method.

Frequency spectrum to be investigated

a) When required for measurements of conducted and radiated emissions, the spectrum shall be investigated from the lowest RF signal generated in the equipment, without going below 9 kHz, up to at least the frequency shown below.

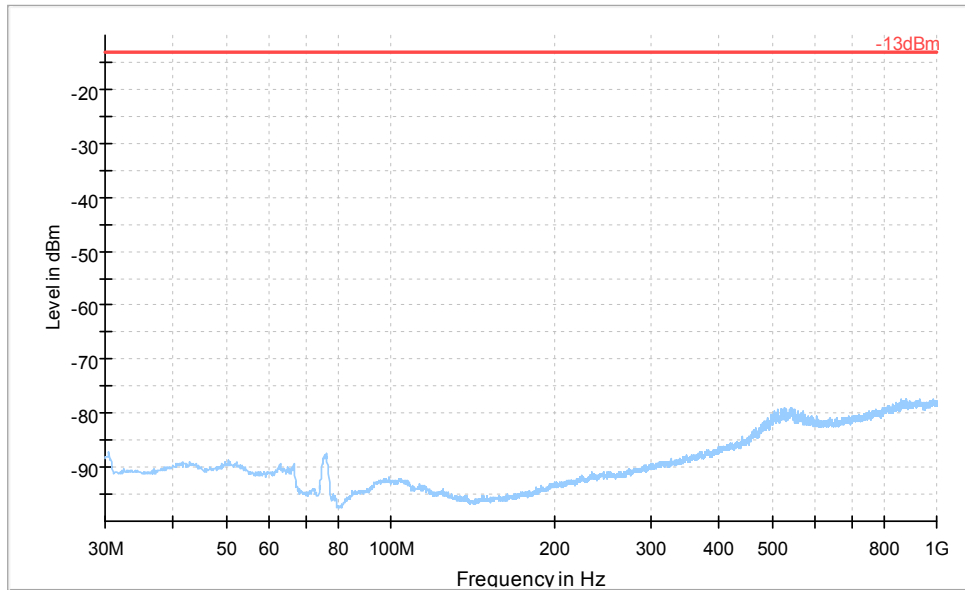
2) If the equipment transmits at or above 10 GHz and below 30 GHz, unwanted emissions measurements shall be performed up to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

2) If the equipment transmits at or above 30 GHz, the measurements shall be performed up to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower.

B.2.5 Measurement Results Table (worse case of the power measured)

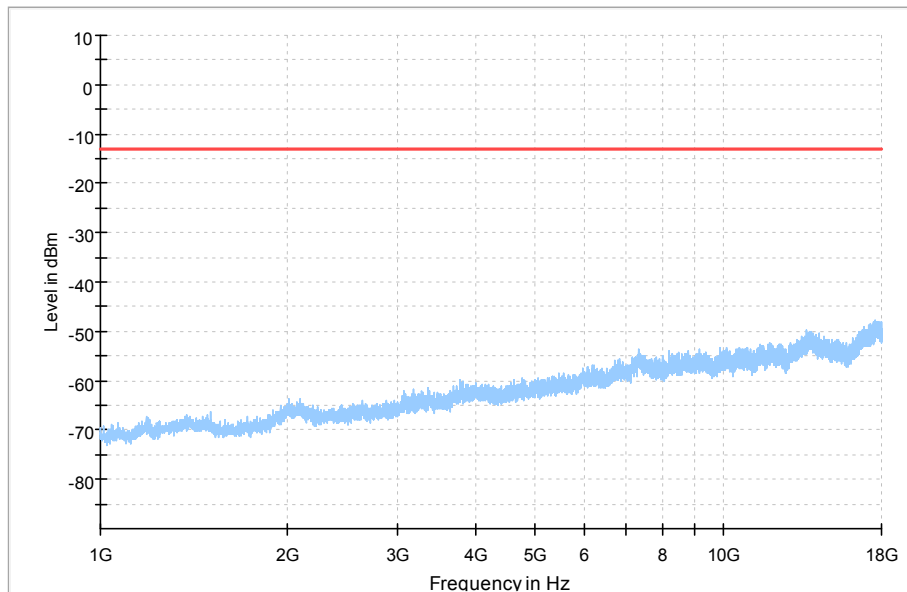
Band	Antenna	Modulation	Bandwidth	RB	Channel	Frequency Range	Result
n260	Module 0 MIMO	DFT PI/2 BPSK	100MHz	1	Low	18GHz-200GHz	Pass
					Middle	30MHz-200GHz	Pass
					High	18GHz-200GHz	Pass
n261	Module 0 MIMO	DFT QPSK	100MHz	1	Low	18GHz-100GHz	Pass
					Middle	30MHz-100GHz	Pass
					High	18GHz-100GHz	Pass

n260



Preview Result 1-RMS * Critical_Freqs RMS -13dBm Final_Result PK+

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Middle channel, 30MHz-1GHz

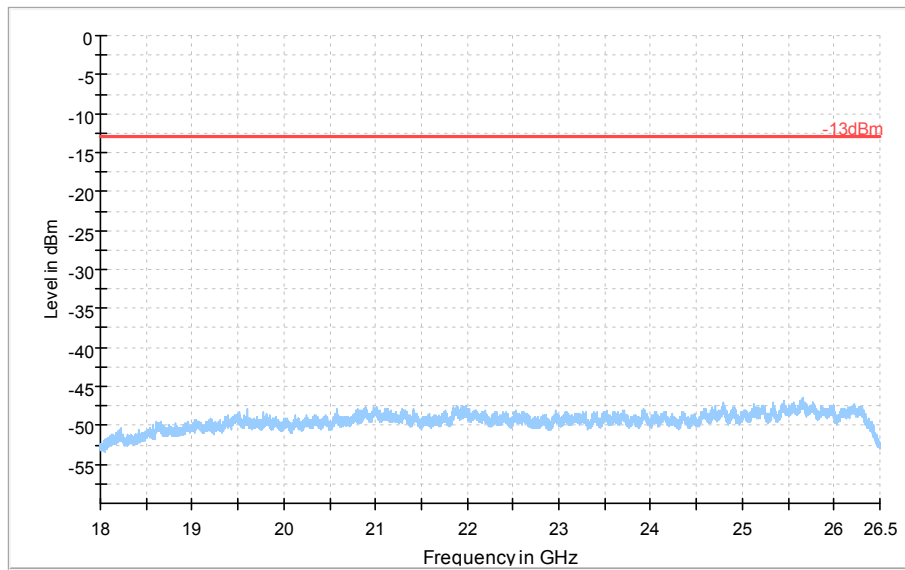


Preview Result 1-RMS * Critical_Freqs RMS -13dBm Final_Result RMS

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Middle channel, 1GHz-18GHz

Note: the spike over the limit was the transmit carrier from EUT.

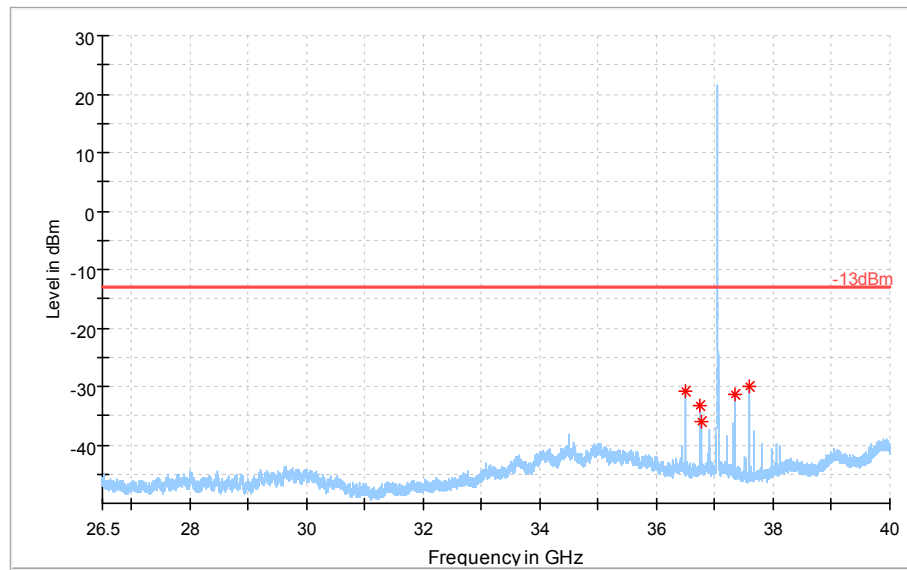
Full Spectrum



— Preview Result 1-RMS * Critical_Freqs RMS — -13dBm ◆ Final_Result RMS

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Low channel, 18GHz-26.5GHz

Full Spectrum



— Preview Result 1-RMS
 * Critical_Freqs RMS
 — -13dBm
 ◆ Final_Result RMS

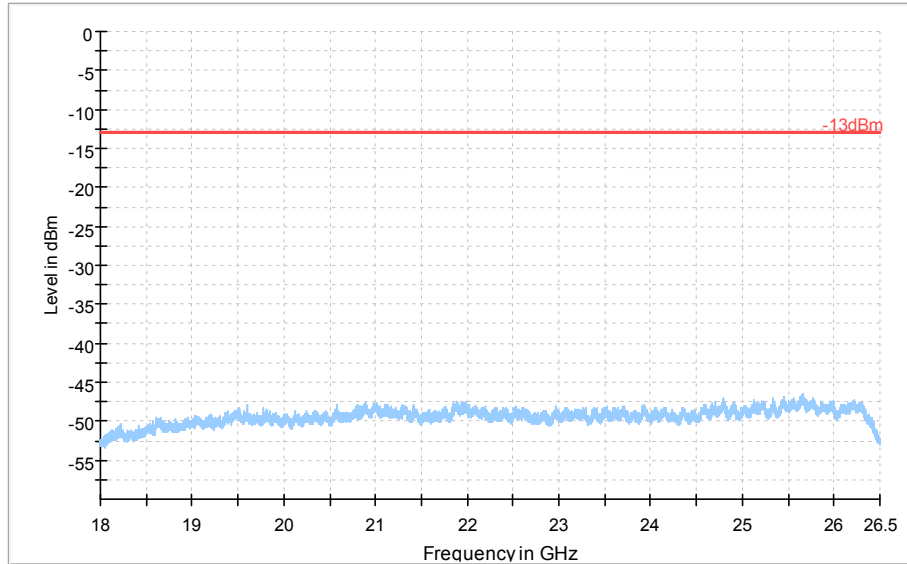
n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Low channel, 26.5GHz-40GHz

Note: the spike over the limit was the transmit carrier from EUT.

Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
36497.200000	-30.83	-13.00	17.83	500.0	1000.000	165.0	H	331.0
36740.650000	-33.24	-13.00	20.24	500.0	1000.000	165.0	H	309.0
36772.600000	-35.94	-13.00	22.94	500.0	1000.000	165.0	H	347.0
37354.900000	-31.47	-13.00	18.47	500.0	1000.000	165.0	V	345.0
37598.350000	-29.98	-13.00	16.98	500.0	1000.000	165.0	H	338.0

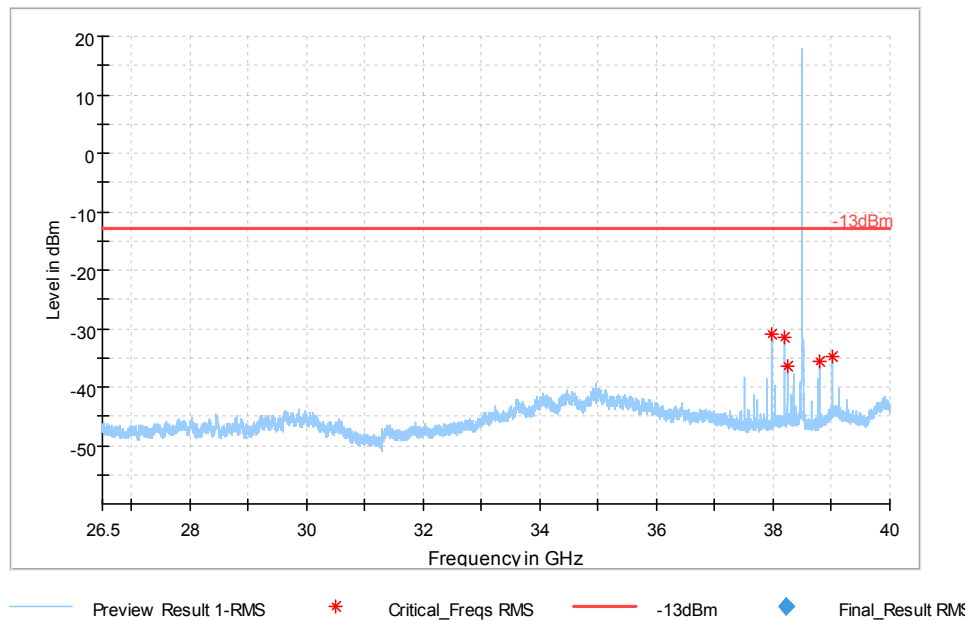
Full Spectrum



Preview Result 1-RMS * Critical_Freqs RMS -13dBm Final_Result RMS

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Middle channel, 18GHz-26.5GHz

Full Spectrum



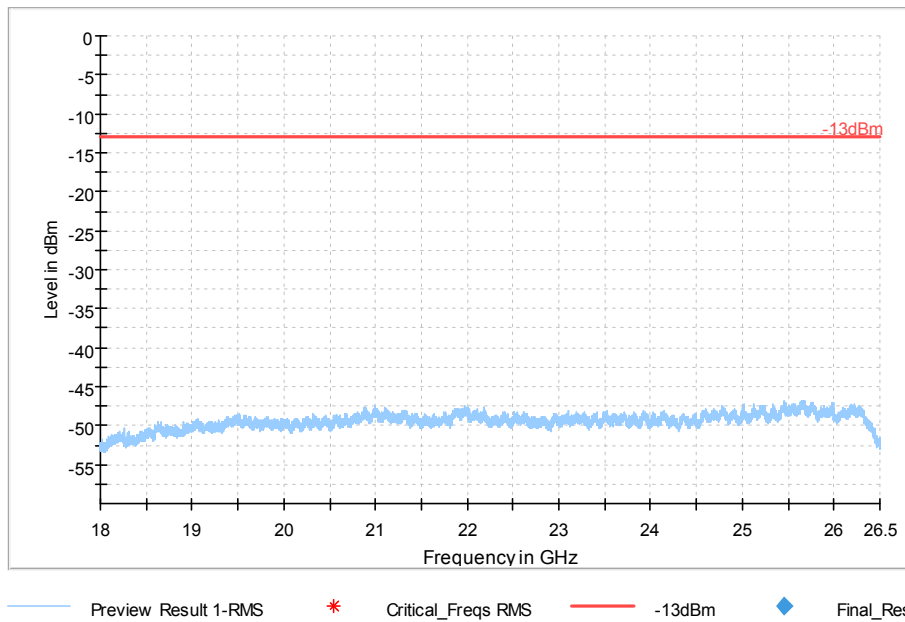
n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Middle channel, 26.5GHz-40GHz

Note: the spike over the limit was the transmit carrier from EUT.

Critical_Freqs

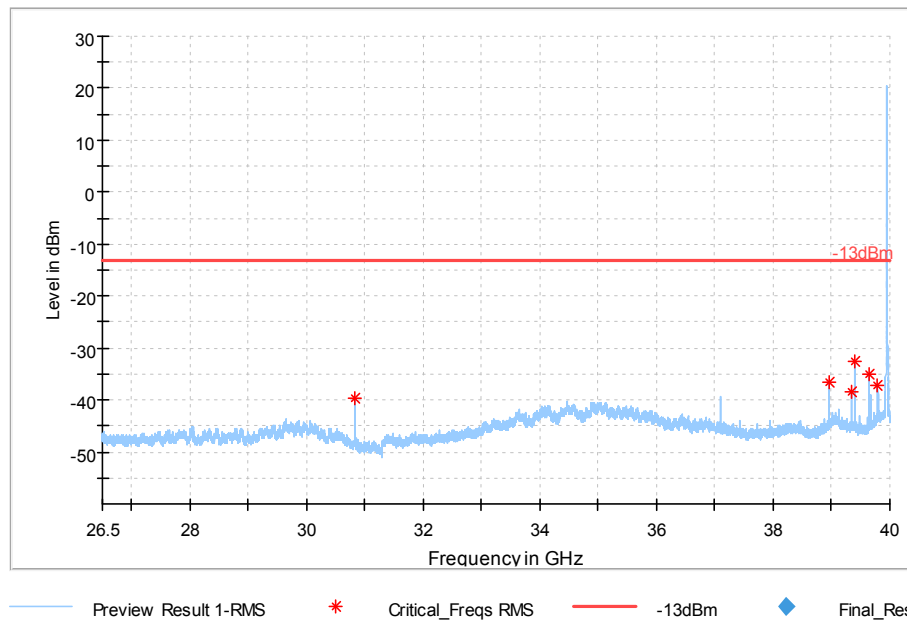
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
37972.750000	-30.97	-13.00	17.97	500.0	1000.000	165.0	V	345.0
38190.550000	-31.56	-13.00	18.56	500.0	1000.000	165.0	H	315.0
38235.550000	-36.49	-13.00	23.49	500.0	1000.000	165.0	H	315.0
38804.800000	-35.73	-13.00	22.73	500.0	1000.000	165.0	V	353.0
39022.150000	-34.72	-13.00	21.72	500.0	1000.000	165.0	H	328.0

Full Spectrum



n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, High channel, 18GHz-26.5GHz

Full Spectrum

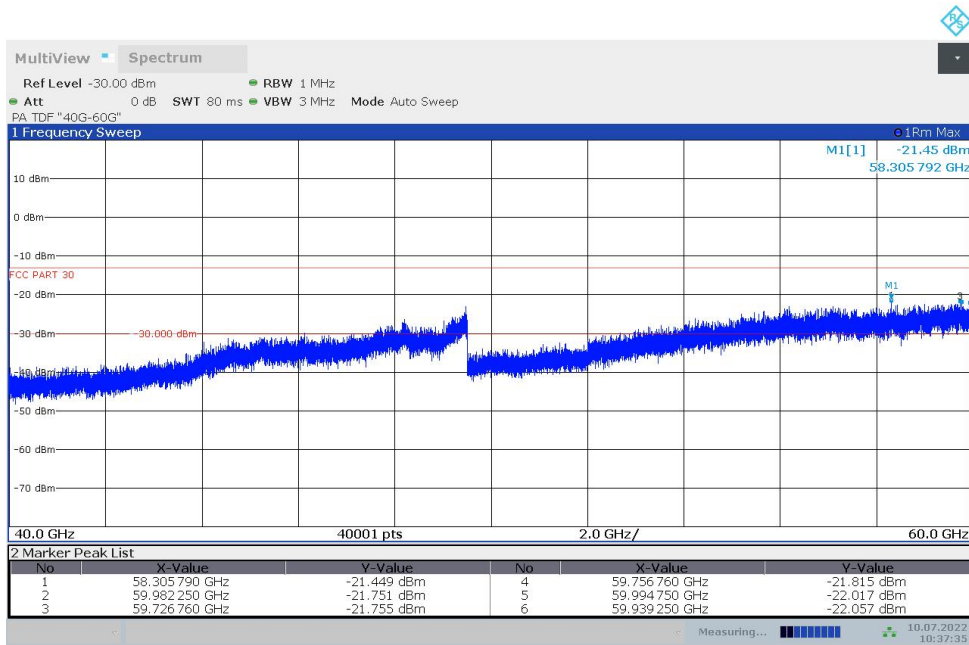


n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, High channel, 26.5GHz-40GH

Note: the spike over the limit was the transmit carrier from EUT.

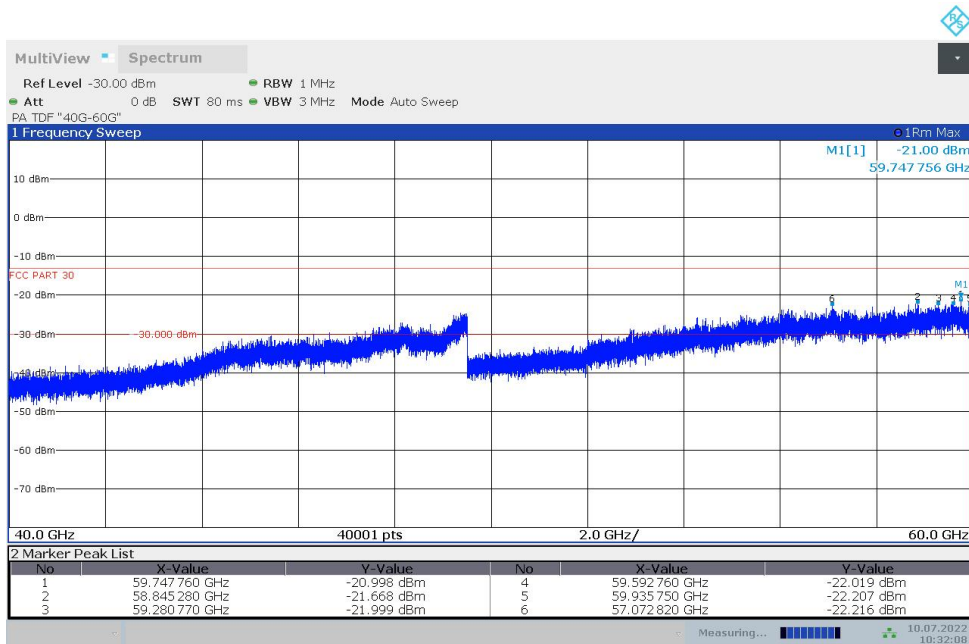
Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
30822.250000	-39.75	-13.00	26.75	500.0	1000.000	165.0	V	0.0
38949.250000	-36.73	-13.00	23.73	500.0	1000.000	165.0	V	326.0
39333.550000	-38.30	-13.00	25.30	500.0	1000.000	165.0	V	0.0
39397.450000	-32.49	-13.00	19.49	500.0	1000.000	165.0	V	326.0
39640.900000	-35.09	-13.00	22.09	500.0	1000.000	165.0	V	0.0



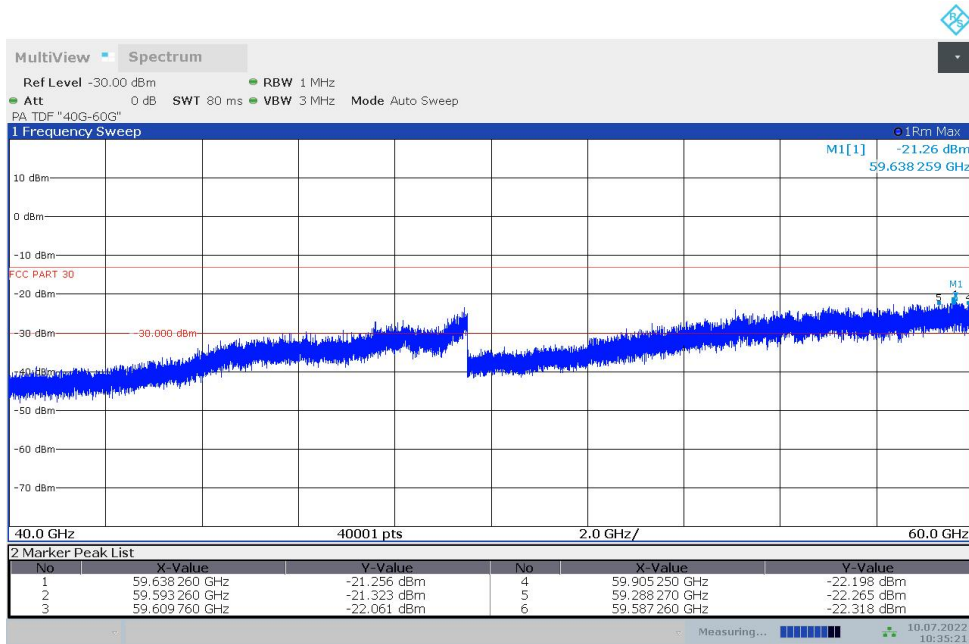
10:37:36 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB Low channel, 40GHz-60GHz



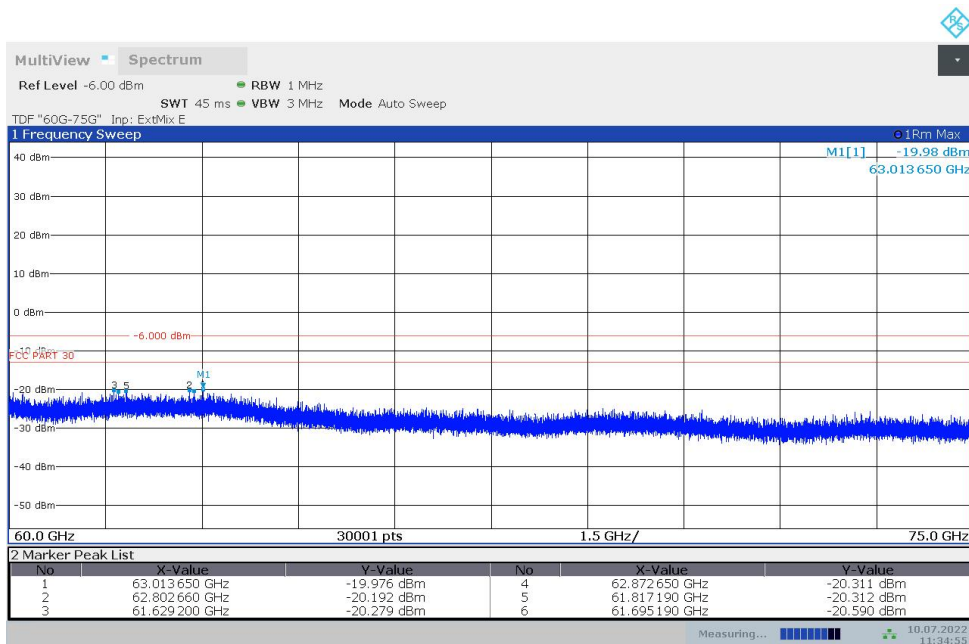
10:32:08 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Middle channel, 40GHz-60GHz



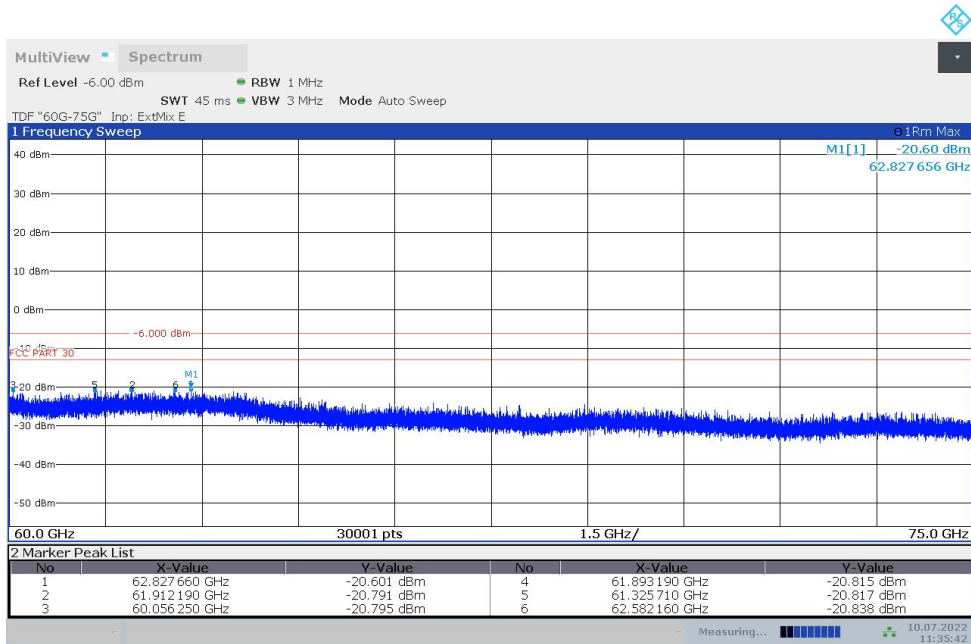
10:35:21 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB , High channel, 40GHz-60GHz



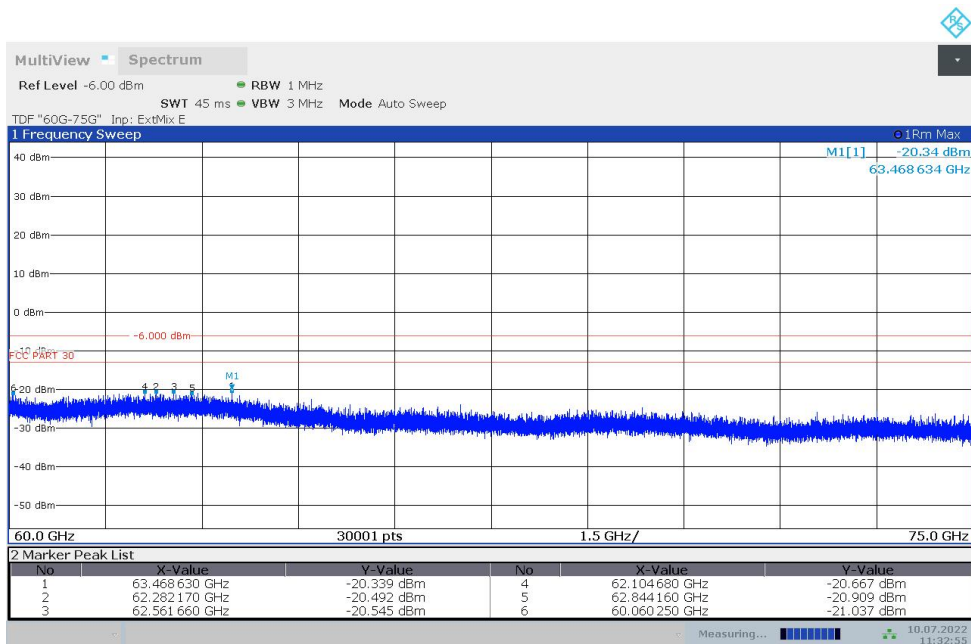
11:34:55 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Low channel, 60GHz-75GHz,



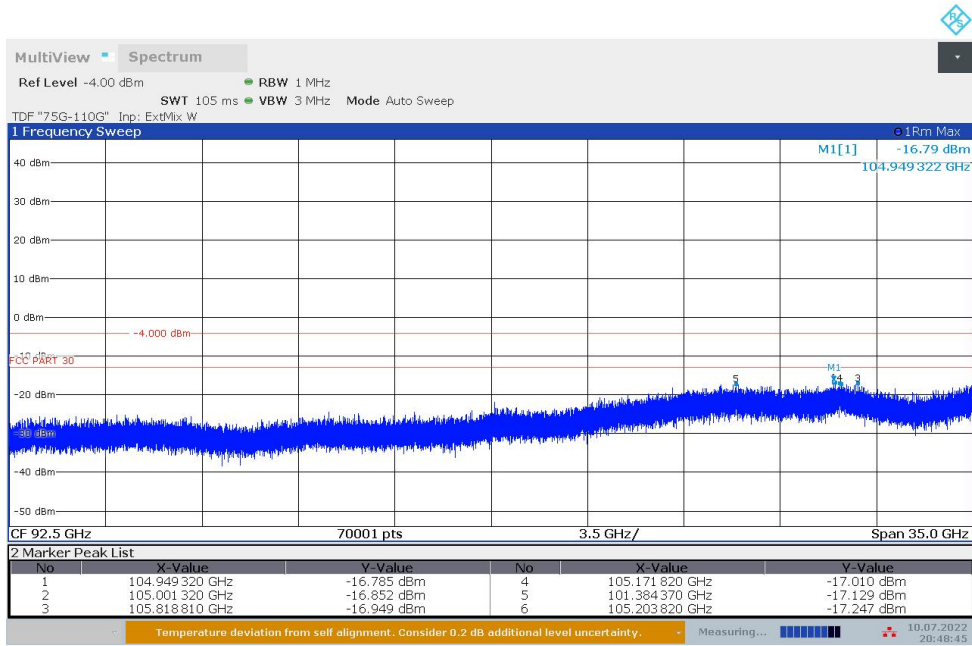
11:35:43 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Middle channel, 60GHz-75GHz,



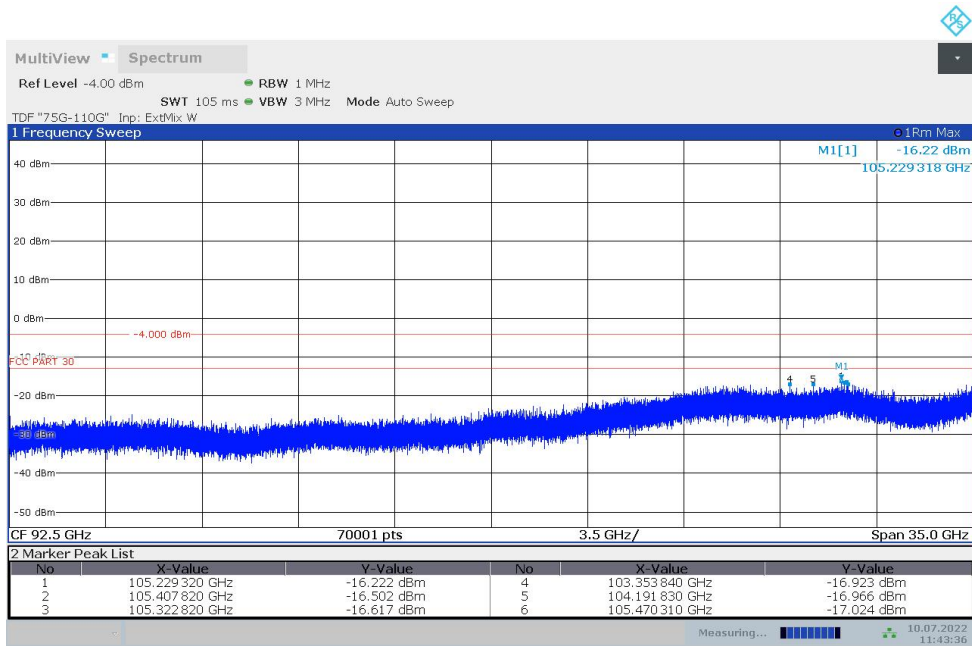
11:32:55 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, High channel, 60GHz-75GHz,



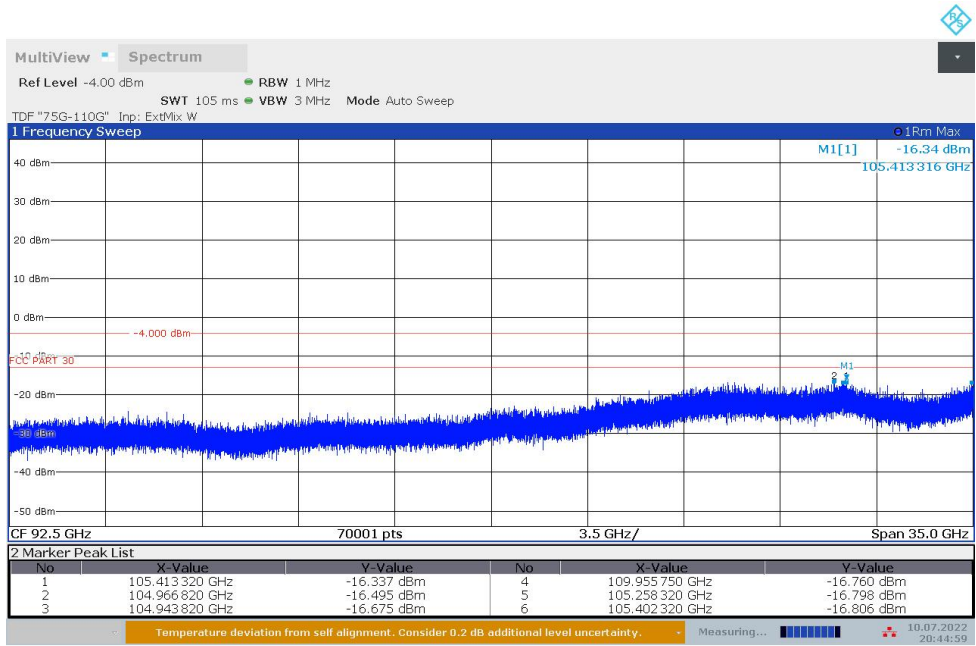
20:48:45 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Low channel, 75GHz-110GHz



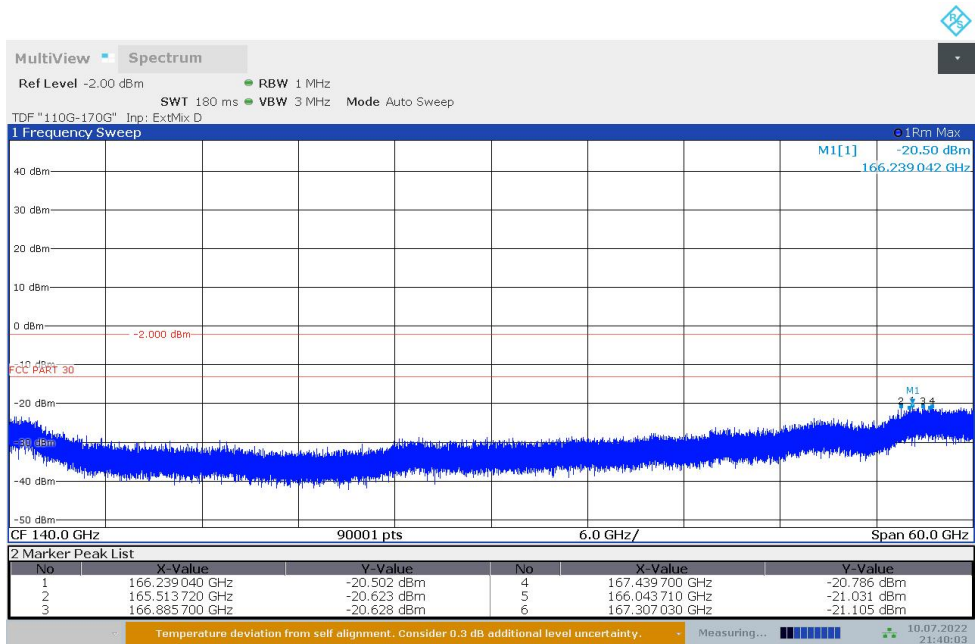
11:43:37 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Middle channel, 75GHz-110GHz



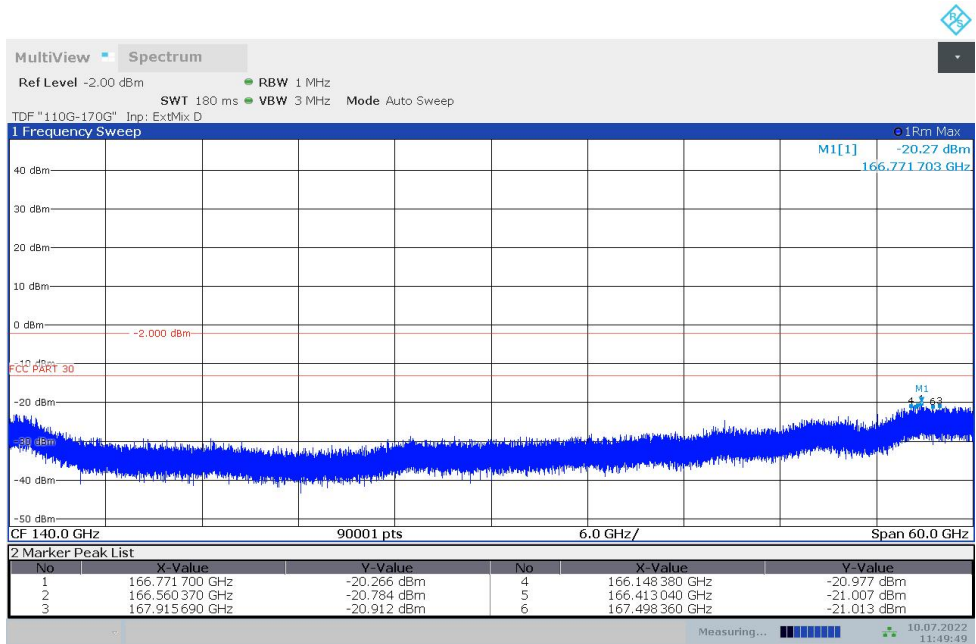
20:44:59 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, High channel, 75GHz-110GHz



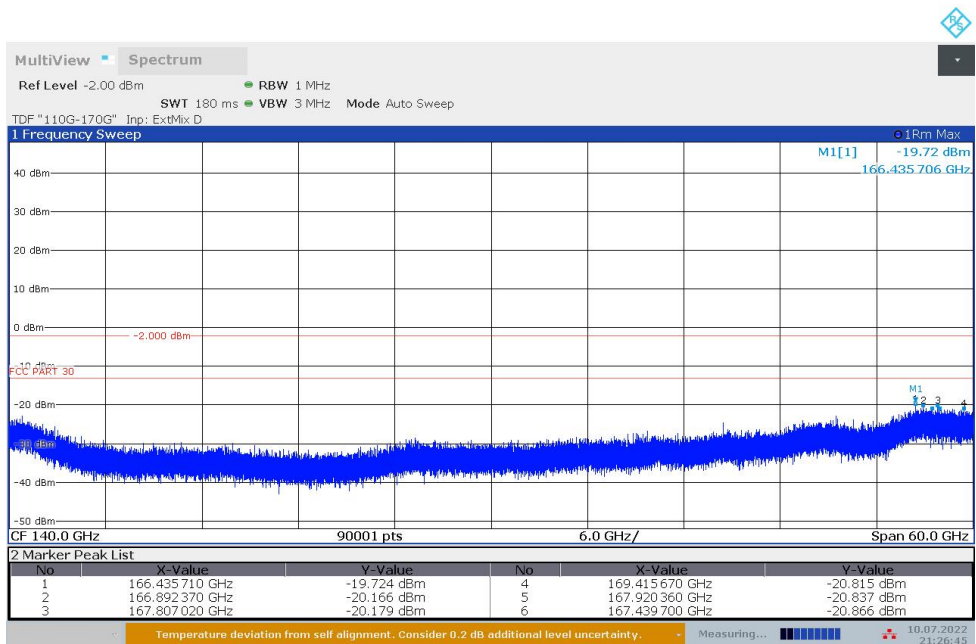
21:40:04 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Low channel, 110GHz-170GHz



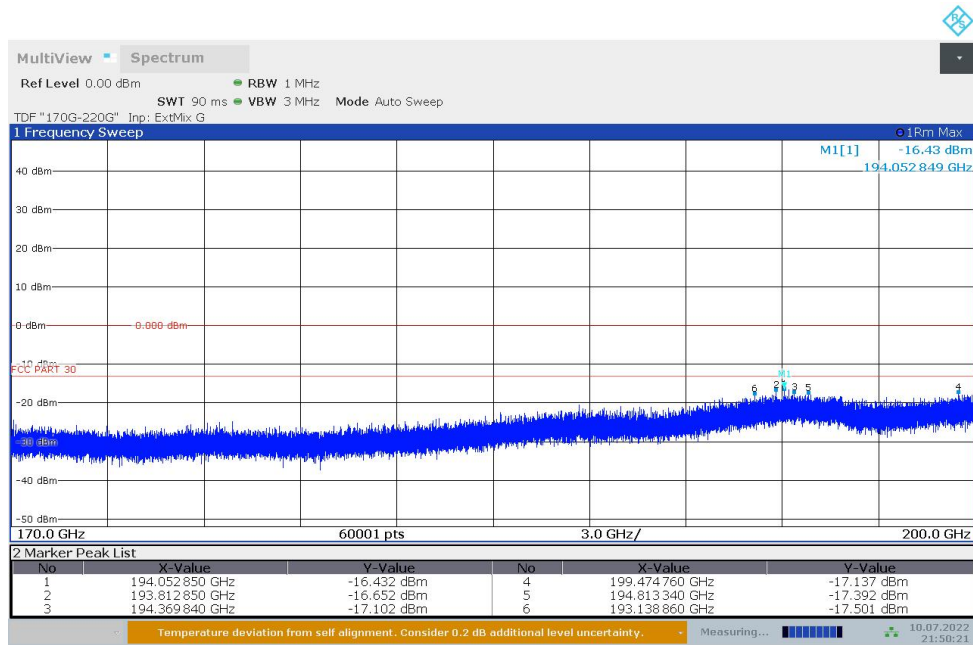
11:49:49 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, Middle channel, 110GHz-170GHz



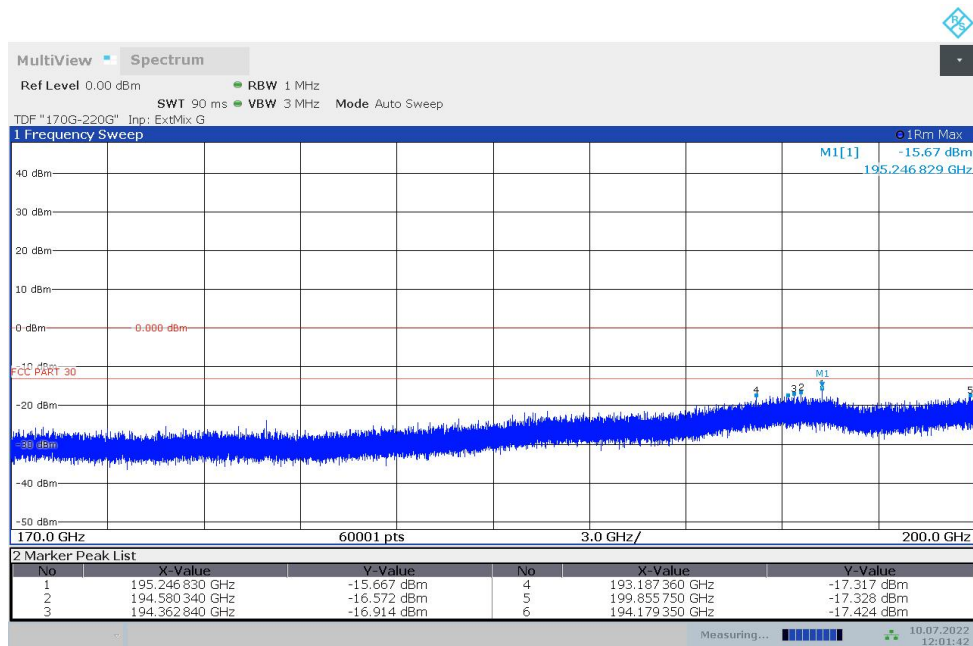
21:26:46 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, High channel, 110GHz-170GHz



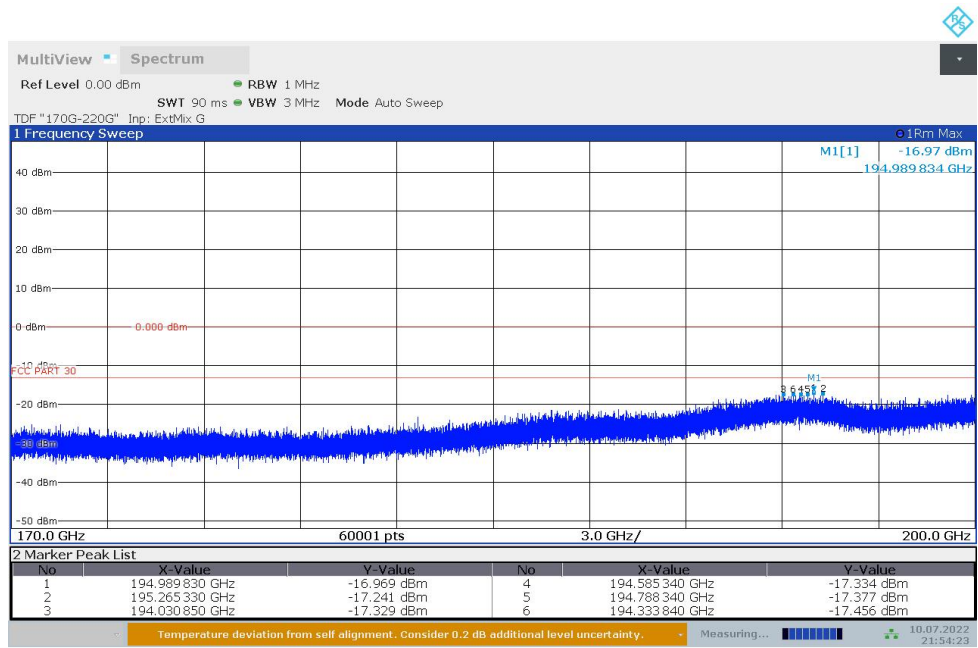
21:50:22 10.07.2022

n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, High channel, 170GHz-200GHz



12:01:42 10.07.2022

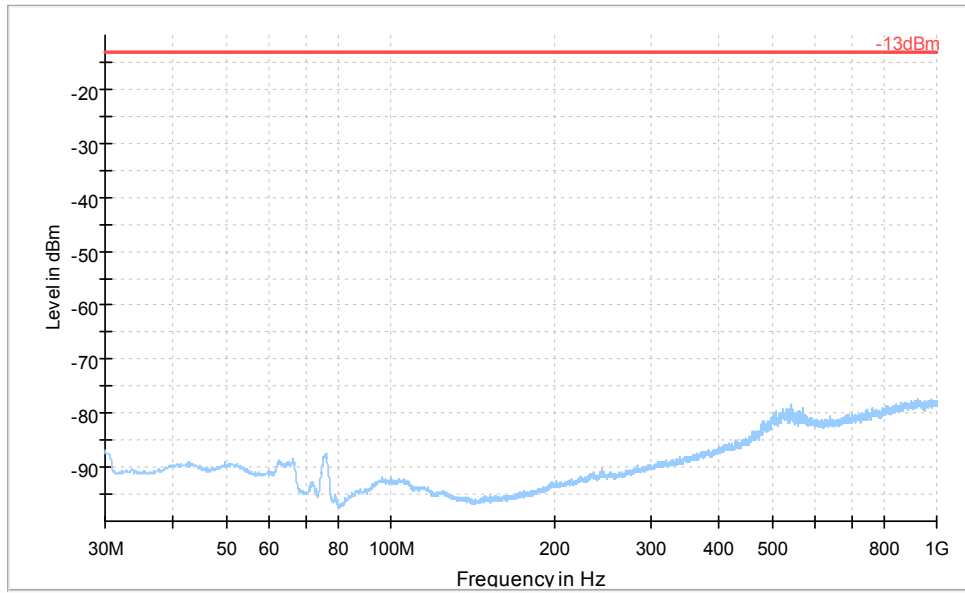
n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, High channel, 170GHz-200GHz



21:54:24 10.07.2022

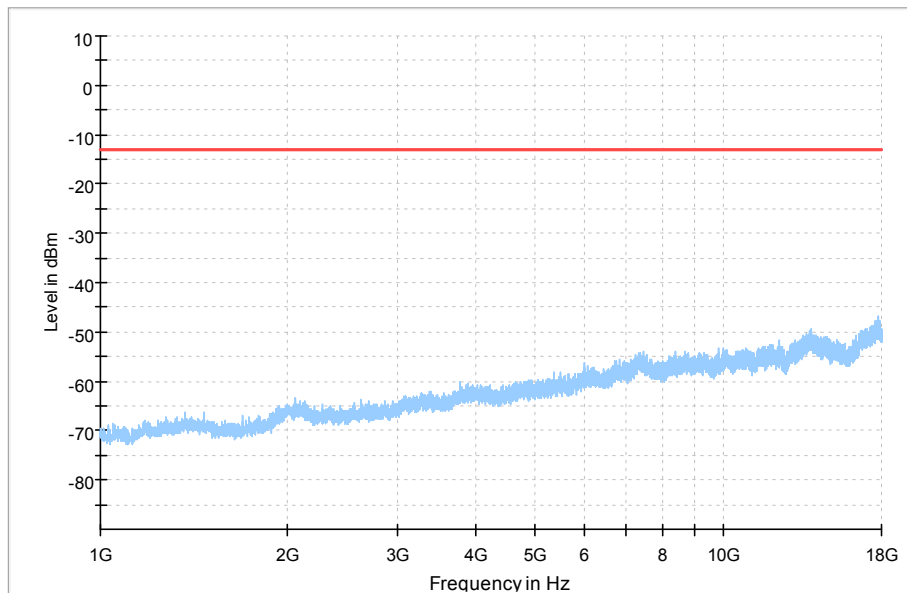
n260,Module 0,MIMO,DFT PI/2 BPSK,100MHz, 1RB, High channel, 170GHz-200GHz

n261



Preview Result 1-RMS * Critical_Freqs RMS -13dBm Final_Result PK+

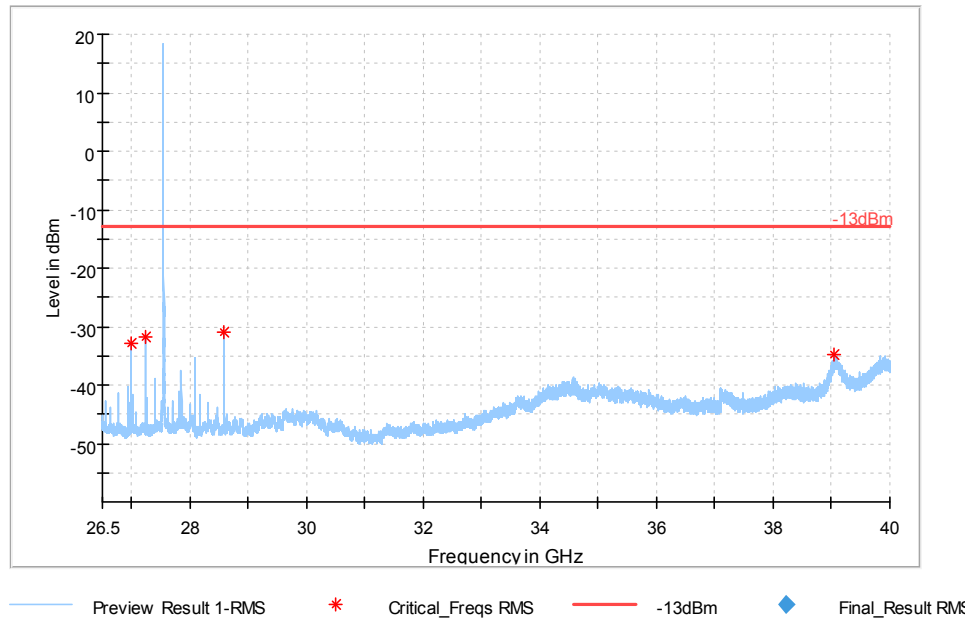
n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Middle chanel, 30MHz-1GHz



Preview Result 1-RMS * Critical_Freqs RMS -13dBm Final_Result RMS

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Middle chanel, 1GHz-18GHz

Full Spectrum



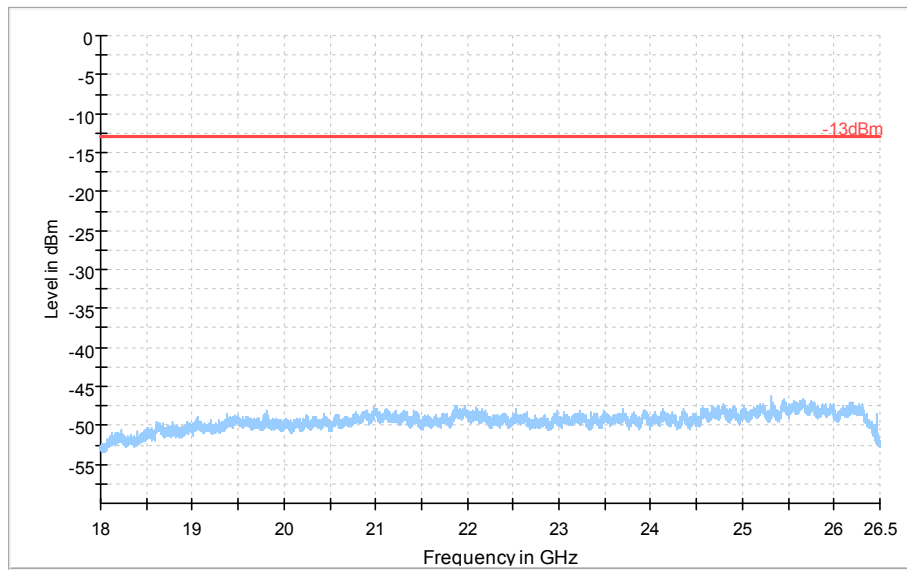
n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Low chanel, 18GHz-26.5GHz

Note: the spike over the limit was the transmit carrier from EUT.

Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
26997.250000	-32.94	-13.00	19.94	500.0	1000.000	165.0	V	359.0
27240.250000	-31.66	-13.00	18.66	500.0	1000.000	165.0	H	344.0
28592.500000	-30.85	-13.00	17.85	500.0	1000.000	165.0	V	320.0
39051.400000	-34.84	-13.00	21.84	500.0	1000.000	165.0	H	317.0

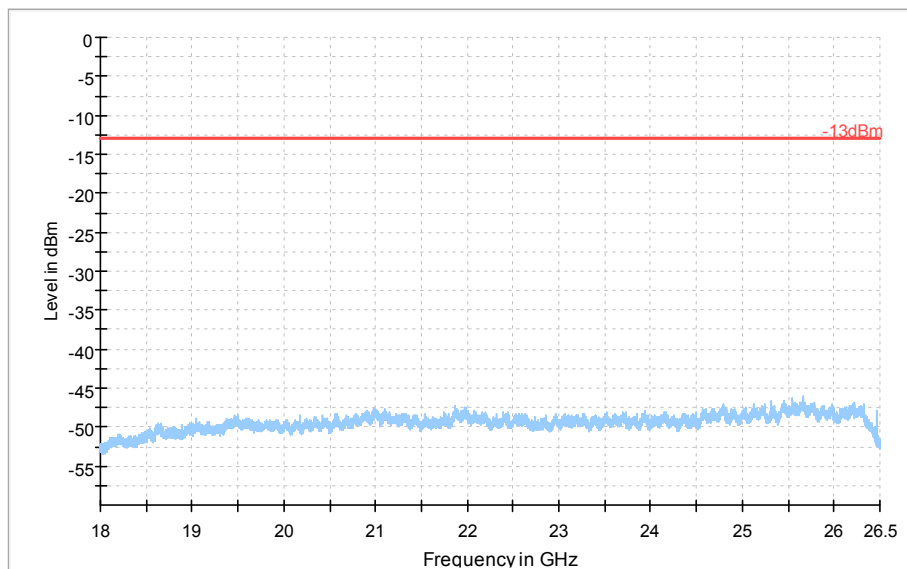
Full Spectrum



— Preview Result 1-RMS * Critical_Freqs RMS — -13dBm ◆ Final_Result RMS

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Low chanel, 26.5GHz-40GHz

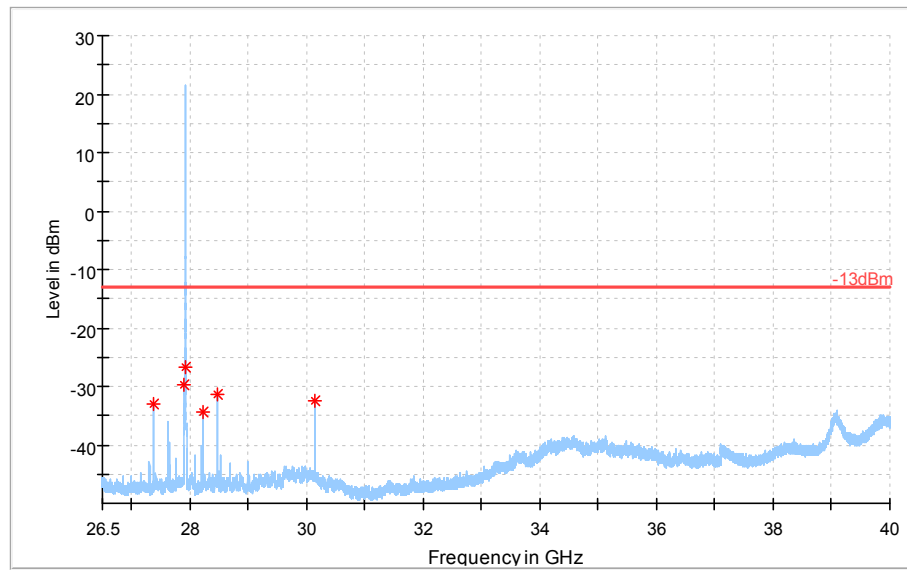
Full Spectrum



— Preview Result 1-RMS * Critical_Freqs RMS — -13dBm ◆ Final_Result RMS

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Middle chanel, 18GHz-26.5GHz

Full Spectrum



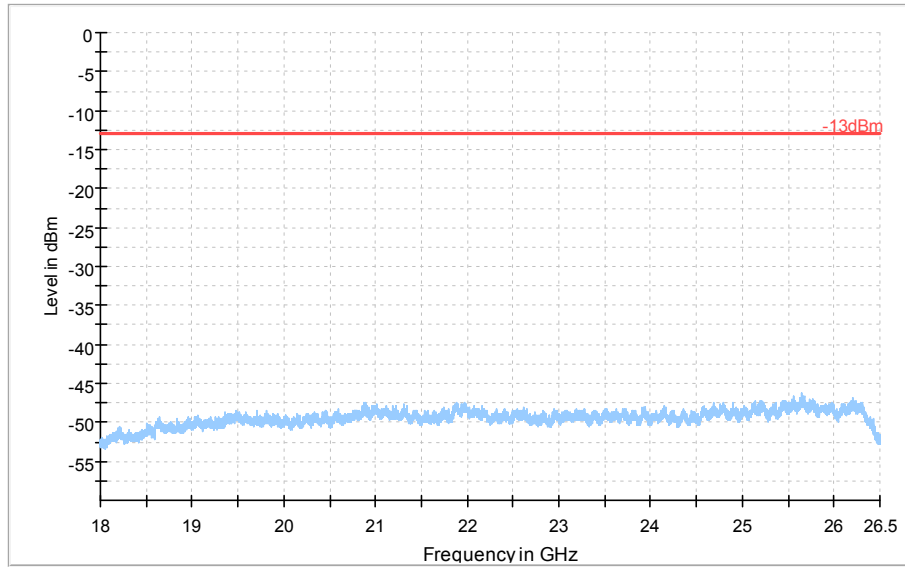
n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Middle chanel, 26.5GHz-40GHz

Note: the spike over the limit was the transmit carrier from EUT.

Critical_Freqs

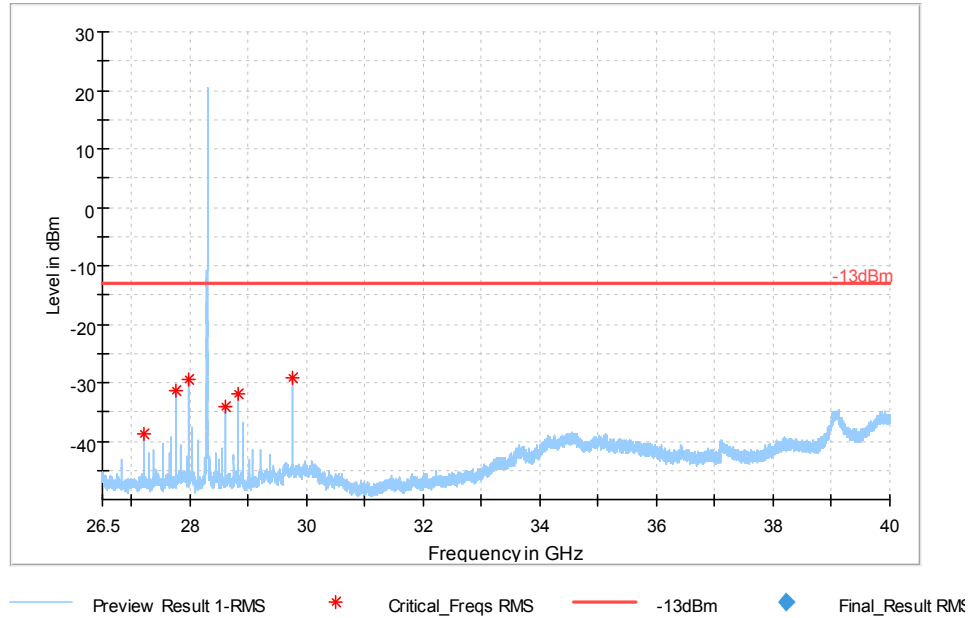
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
27385.150000	-32.92	-13.00	19.92	500.0	1000.000	165.0	H	13.0
27909.850000	-29.61	-13.00	16.61	500.0	1000.000	165.0	H	25.0
27911.650000	-26.75	-13.00	13.75	500.0	1000.000	165.0	H	13.0
28229.800000	-34.39	-13.00	21.39	500.0	1000.000	165.0	V	342.0
28460.200000	-31.37	-13.00	18.37	500.0	1000.000	165.0	H	19.0
30137.800000	-32.36	-13.00	19.36	500.0	1000.000	165.0	H	286.0

Full Spectrum



n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,High chanel, 18GHz-26.5GHz

Full Spectrum

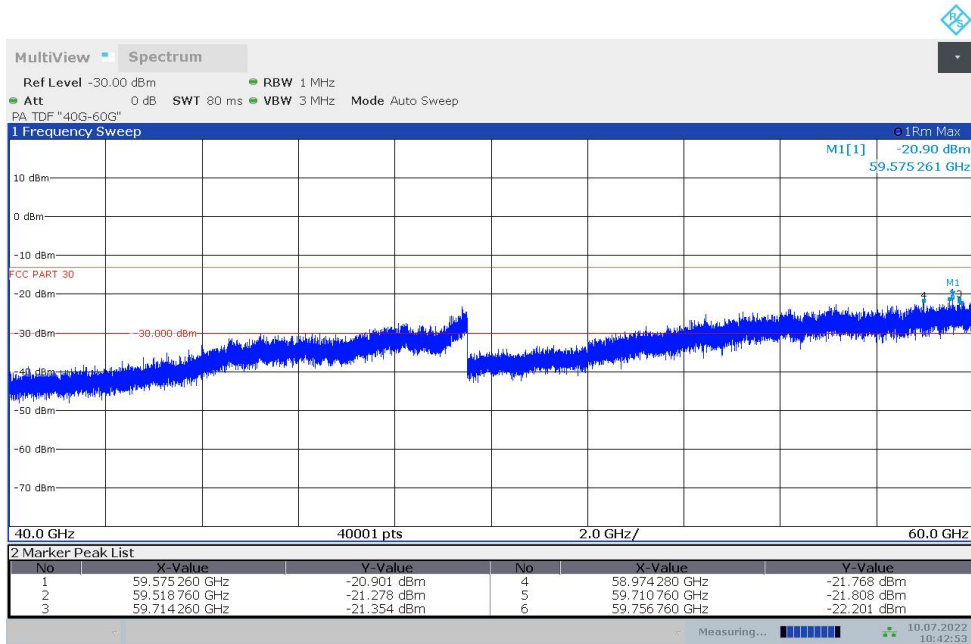


n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,High channel, 26.5GHz-40GHz

Note: the spike over the limit was the transmit carrier from EUT.

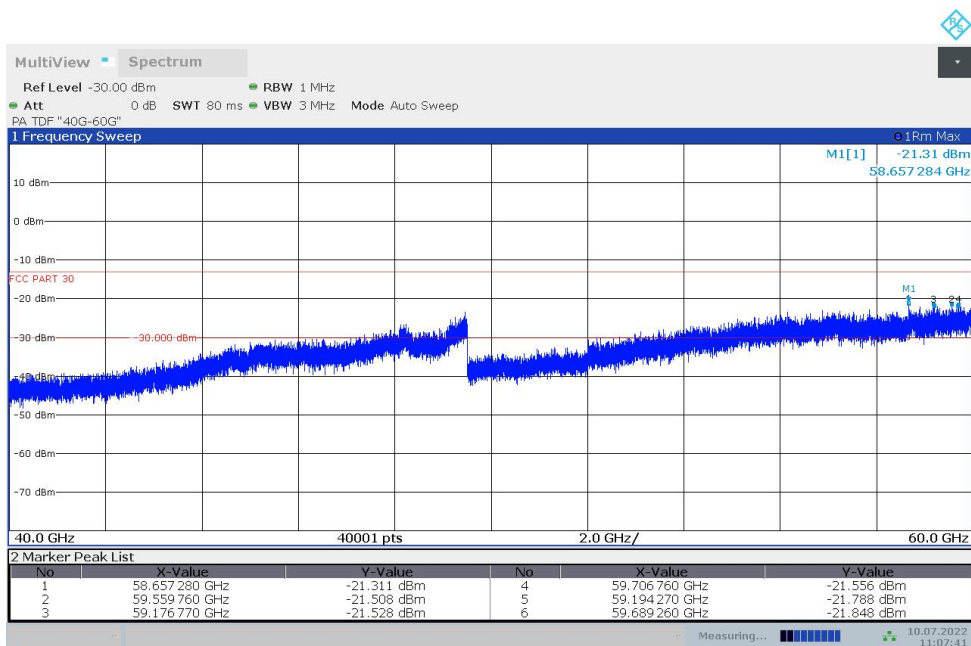
Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
27222.250000	-38.65	-13.00	25.65	500.0	1000.000	165.0	H	0.0
27760.000000	-31.28	-13.00	18.28	500.0	1000.000	165.0	H	25.0
27989.950000	-29.51	-13.00	16.51	500.0	1000.000	165.0	H	3.0
28604.650000	-34.03	-13.00	21.03	500.0	1000.000	165.0	V	333.0
28835.050000	-31.84	-13.00	18.84	500.0	1000.000	165.0	H	25.0
29762.500000	-29.16	-13.00	16.16	500.0	1000.000	165.0	H	11.0



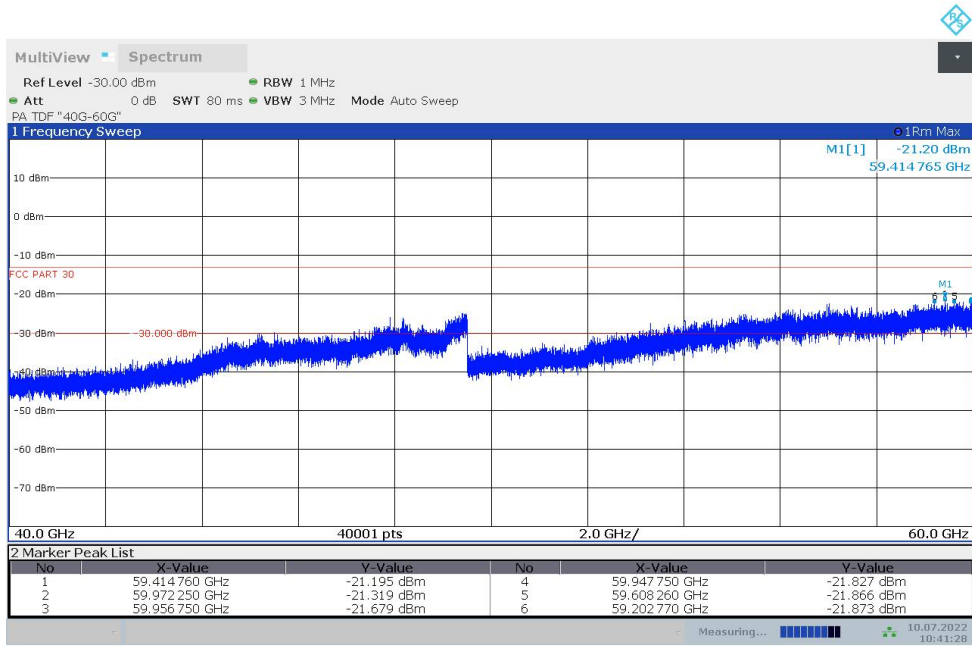
10:42:54 10.07.2022

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Low chanel, 40GHz-60GHz



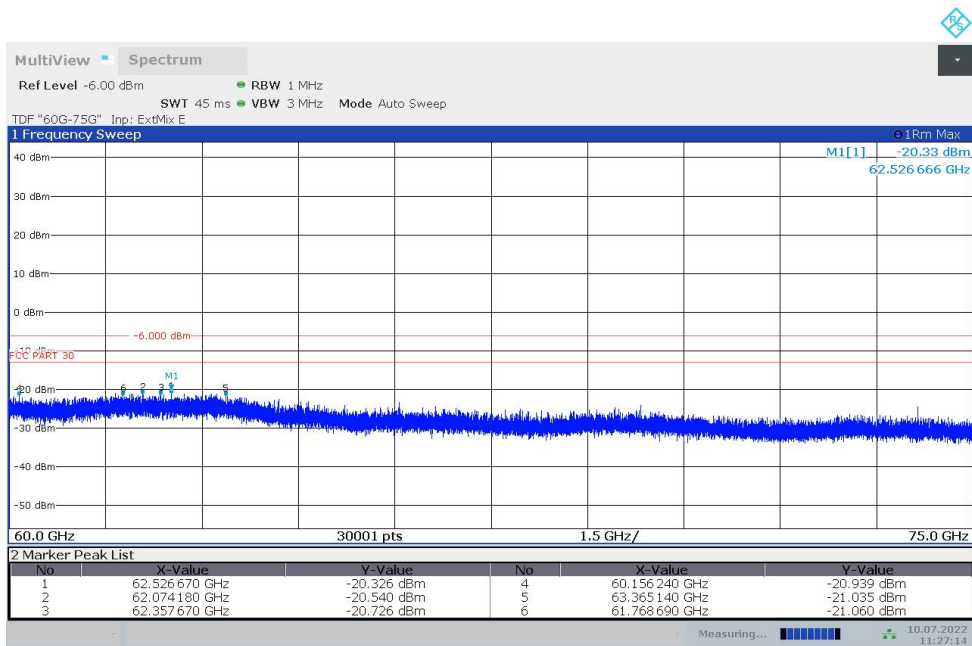
11:07:41 10.07.2022

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Middle chanel, 40GHz-60GHz



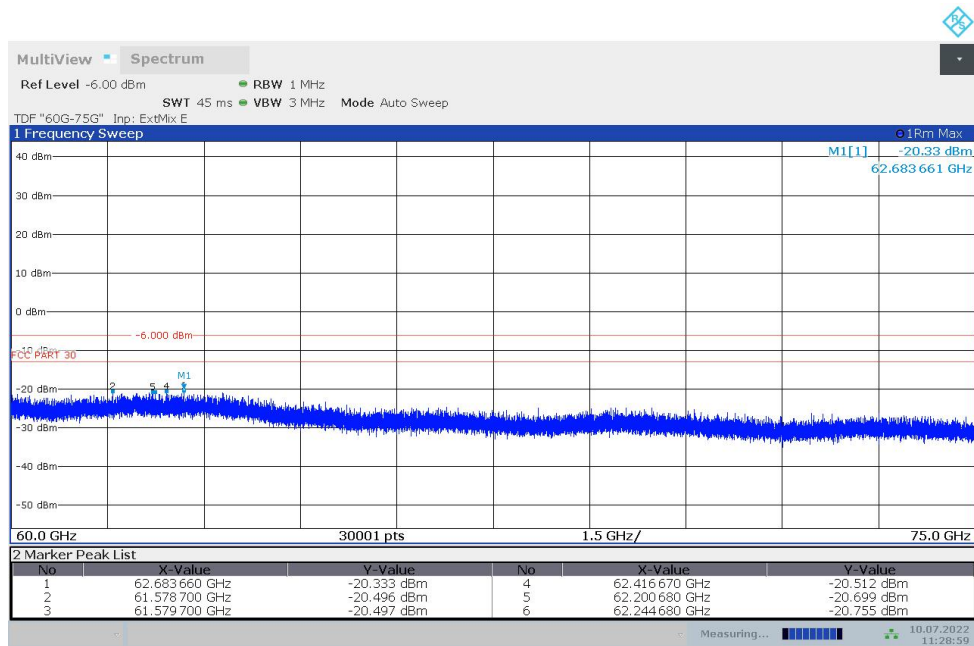
10:41:29 10.07.2022

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,High chanel, 40GHz-60GHz



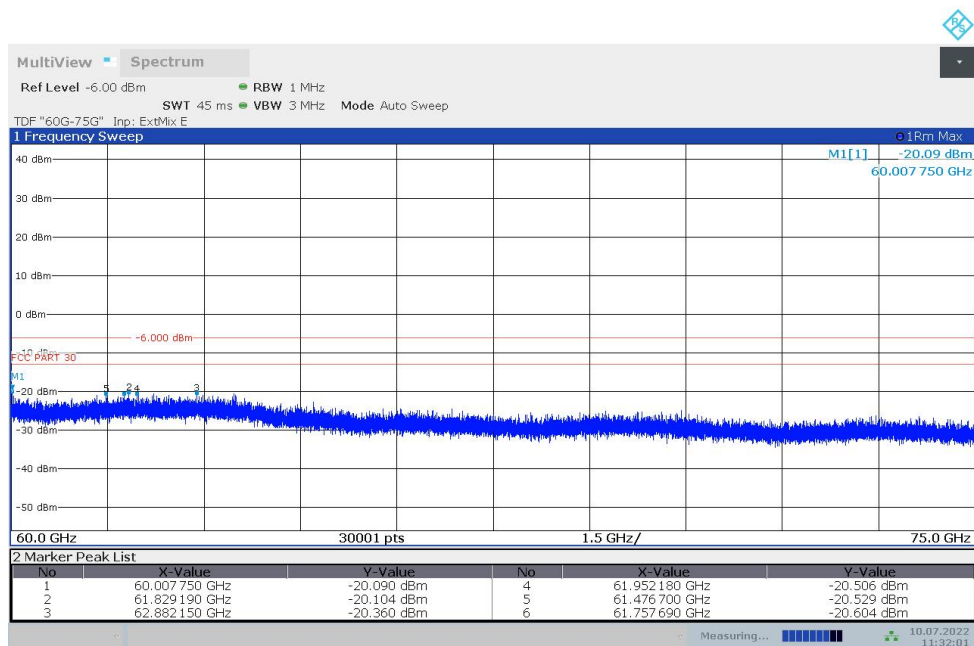
11:27:14 10.07.2022

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Low chanel, 60GHz-75GHz



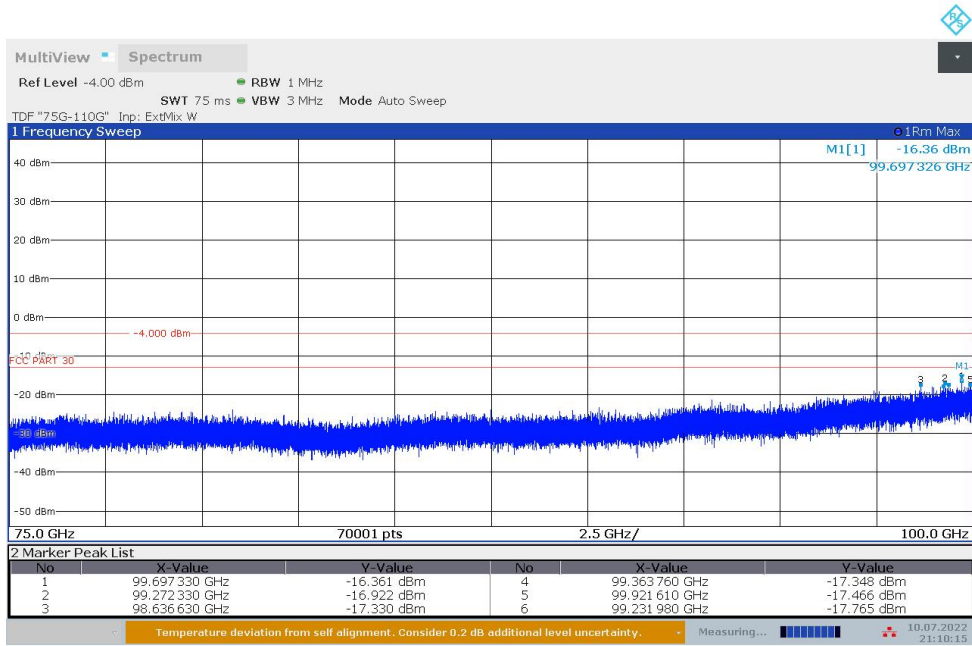
11:28:59 10.07.2022

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Middle chanel, 60GHz-75GHz



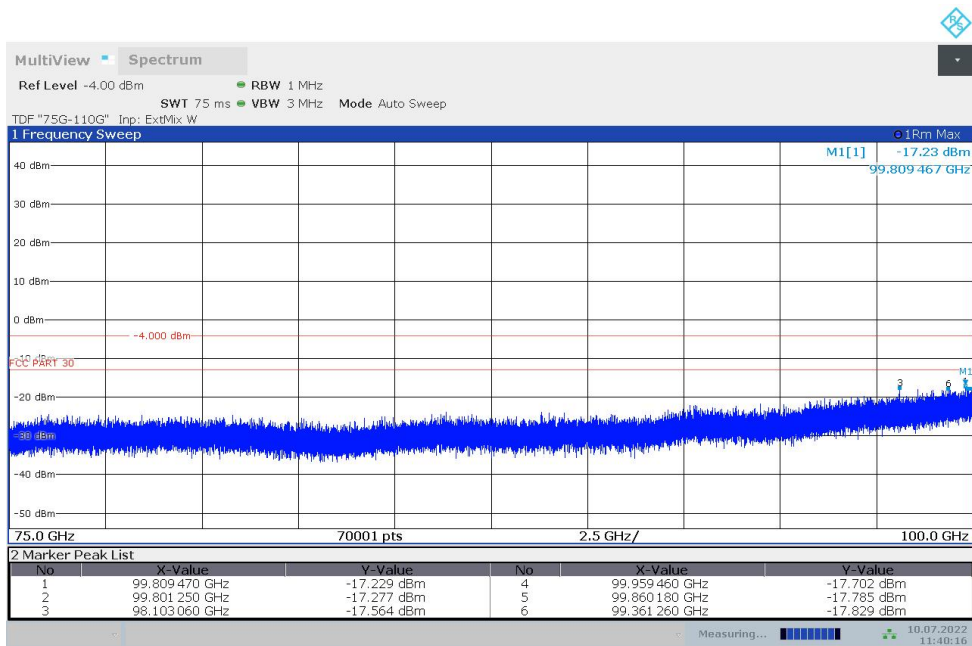
11:32:02 10.07.2022

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,High chanel, 60GHz-75GHz



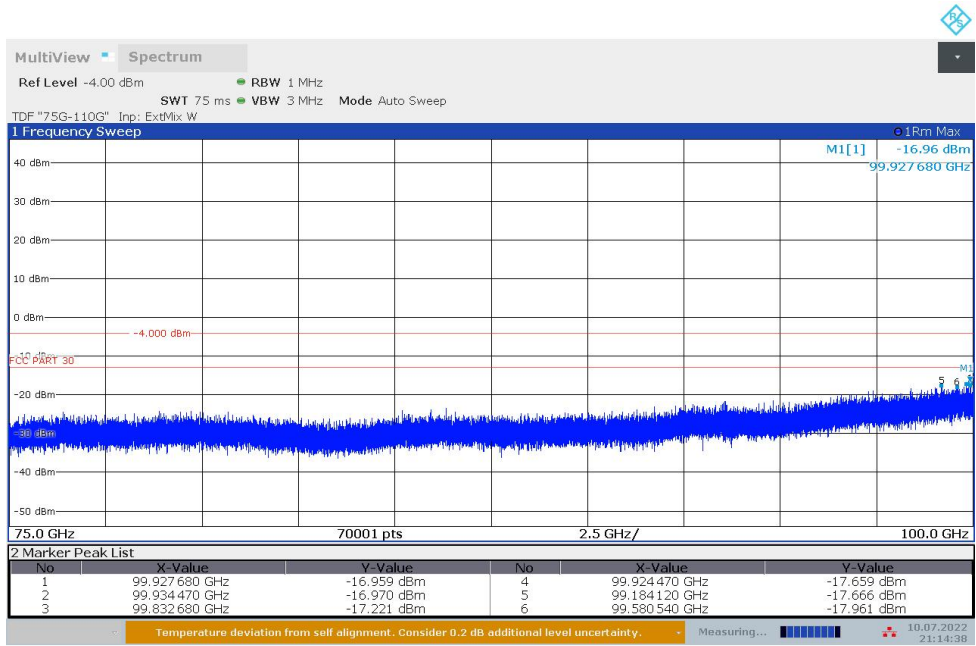
21:10:16 10.07.2022

n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Low chanel, 75Hz-100GHz



11:40:17 10.07.2022

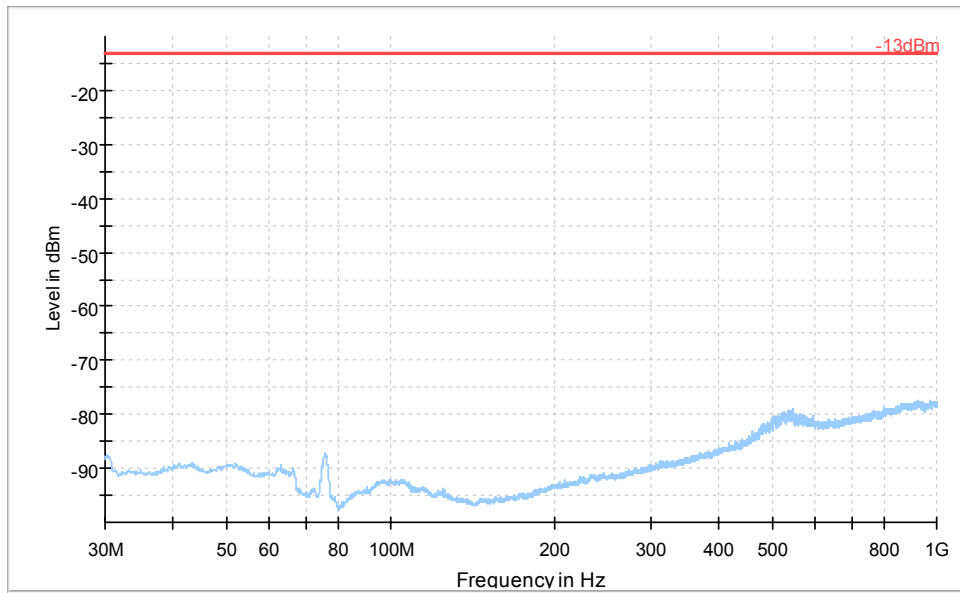
n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,Middle chanel, 75Hz-100GHz



21:14:39 10.07.2022

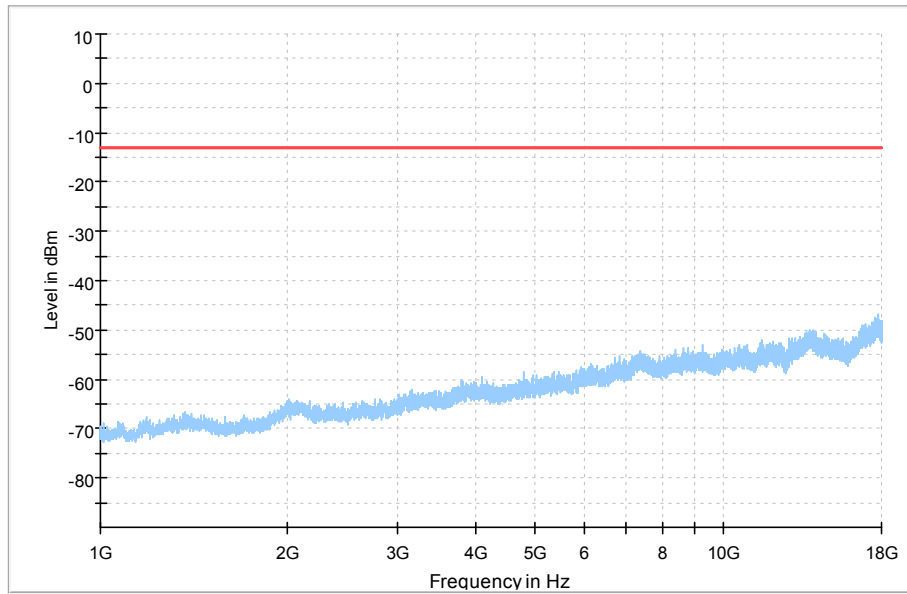
n261 Module 0MIMO, DFT QPSK, 100MHz, 1RB,High chanel, 75Hz-100GHz

Band	Antenna	Modulation	Bandwidth	RB	Channel	Frequency Range	Result
n260G	Module 0 MIMO	DFT PI/2 BPSK	100MHz +100MHz	FULL	Low	18GHz-200GHz	Pass
					Middle	30MHz-200GHz	Pass
					High	18GHz-200GHz	Pass
n261G	Module 0 MIMO	DFT QPSK	50MHz +100MHz	FULL	Low	18GHz-100GHz	Pass
					Middle	30MHz-100GHz	Pass
					High	18GHz-100GHz	Pass



— Preview Result 1-RMS
 * Critical_Freqs RMS
 — -13dBm
 ◆ Final_Result PK+

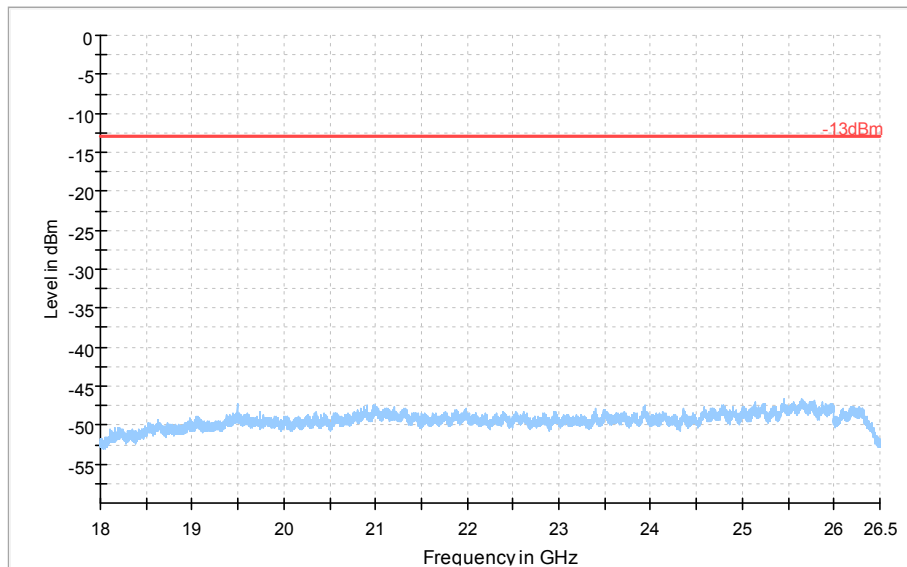
n260G, Module0, 100MHz+100MHz, DFT QPSK, Full RB, Mid channel, 30MHz-1GHz



Preview Result 1-RMS * Critical_Freqs RMS -13dBm Final_Result RMS

n260G, Module0, 100MHz+100MHz, DFT QPSK, Full RB, Mid channel, 1GHz-18GHz

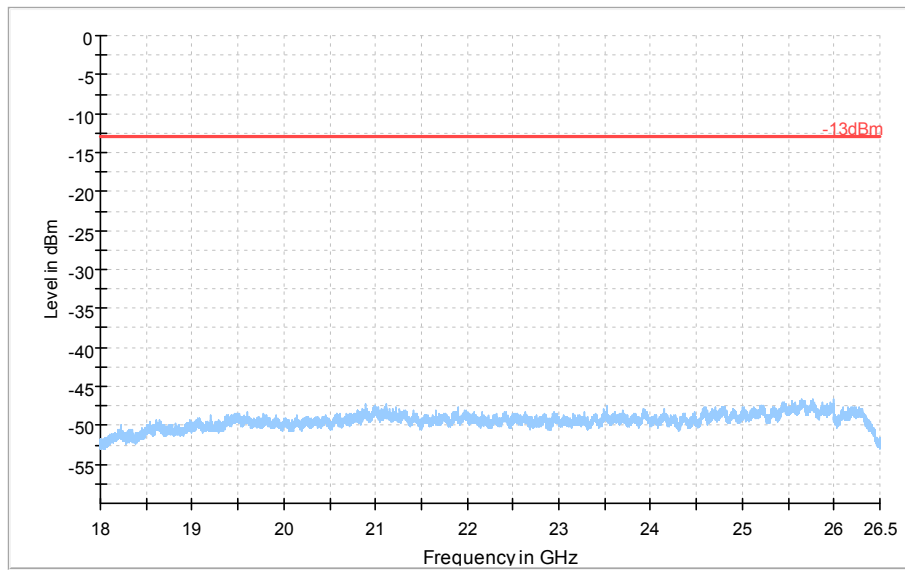
Full Spectrum



Preview Result 1-RMS * Critical_Freqs RMS -13dBm Final_Result RMS

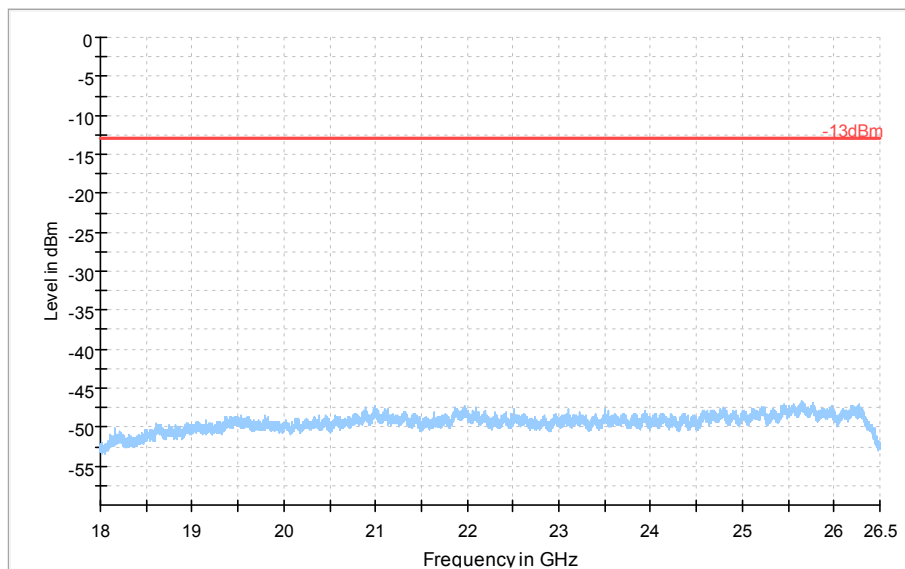
n260G, Module0, 100MHz+100MHz, DFT QPSK, Full RB, Low channel, 18GHz-26.5GHz

Full Spectrum



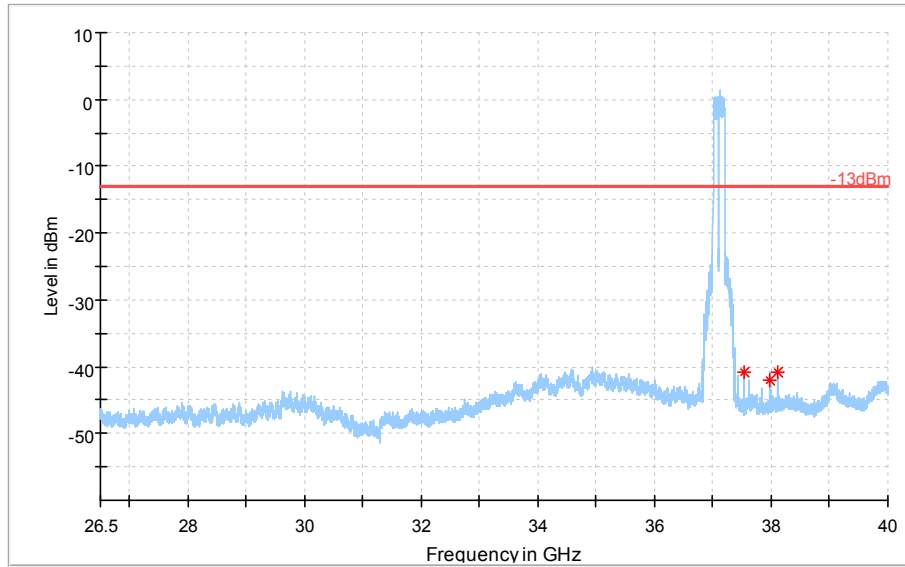
n260G, Module0, 100MHz+100MHz, DFT QPSK, Full RB, Mid channel, 18GHz-26.5GHz

Full Spectrum



n260G, Module0, 100MHz+100MHz, DFT QPSK, Full RB, High channel, 18GHz-26.5GHz

Full Spectrum



— Preview Result 1-RMS
 * Critical_Freqs RMS
 — -13dBm
 ◆ Final_Result RMS

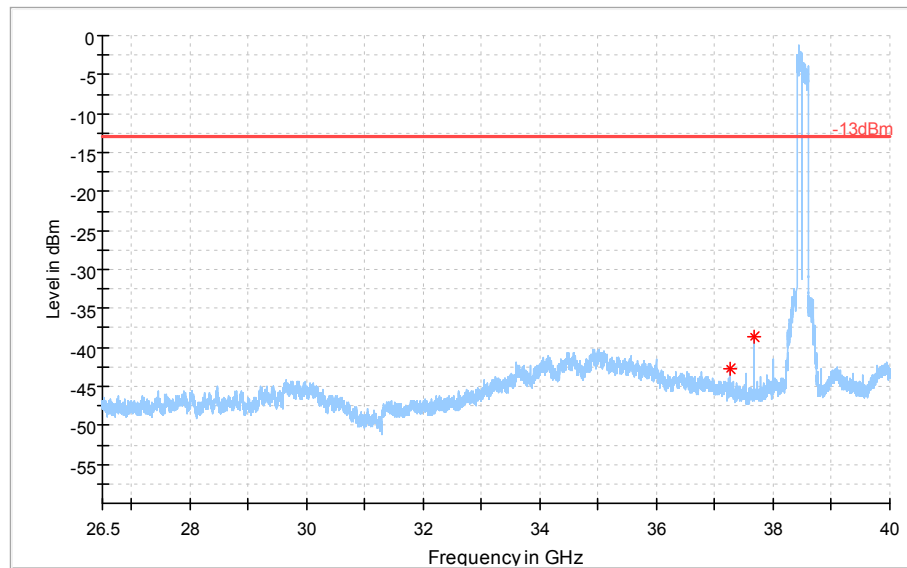
n260G, Module0, 100MHz+100MHz, DFT QPSK, Full RB, Low channel, 26.5GHz-40GHz

Note: the spike over the limit was the transmit carrier from EUT.

Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
37529.500000	-40.84	-13.00	27.84	500.0	1000.000	165.0	V	331.0
37977.250000	-41.91	-13.00	28.91	500.0	1000.000	165.0	V	337.0
38098.300000	-40.82	-13.00	27.82	500.0	1000.000	165.0	V	343.0

Full Spectrum



— Preview Result 1-RMS
 * Critical_Freqs RMS
 — -13dBm
 ◆ Final_Result RMS

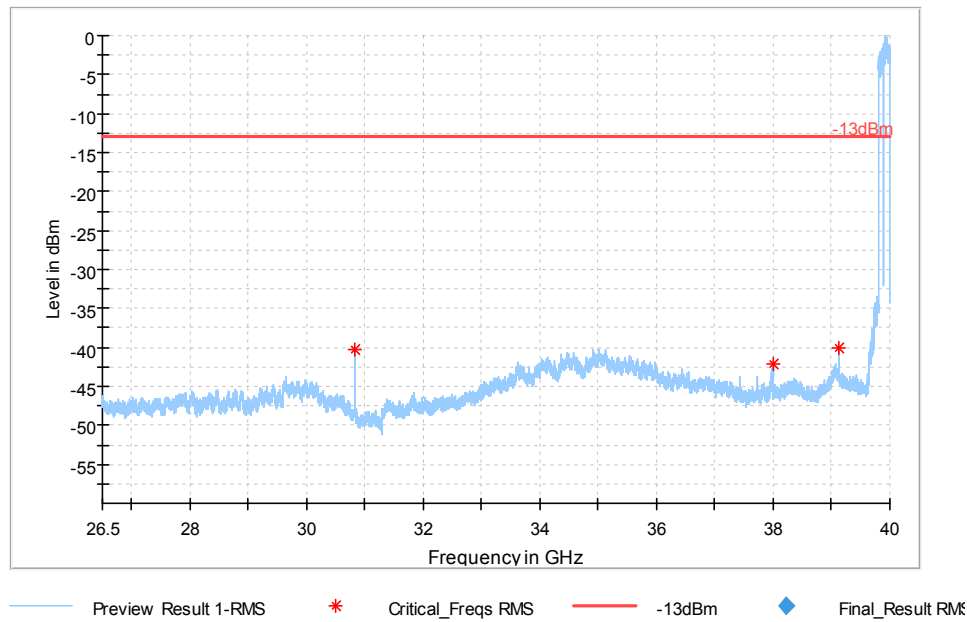
n260G, Module0, 100MHz+100MHz, DFT QPSK, Full RB, Mid channel, 26.5GHz-40GHz

Note: the spike over the limit was the transmit carrier from EUT.

Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
37260.850000	-42.69	-13.00	29.69	500.0	1000.000	165.0	V	331.0
37682.950000	-38.62	-13.00	25.62	500.0	1000.000	165.0	V	331.0

Full Spectrum



n260G, Module0, 100MHz+100MHz, DFT QPSK, Full RB, High channel, 26.5GHz-40GHz
 Note: the spike over the limit was the transmit carrier from EUT.

Critical_Freqs

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
30822.250000	-40.33	-13.00	27.33	500.0	1000.000	165.0	V	0.0
37995.250000	-42.04	-13.00	29.04	500.0	1000.000	165.0	V	341.0
39116.650000	-40.12	-13.00	27.12	500.0	1000.000	165.0	V	335.0