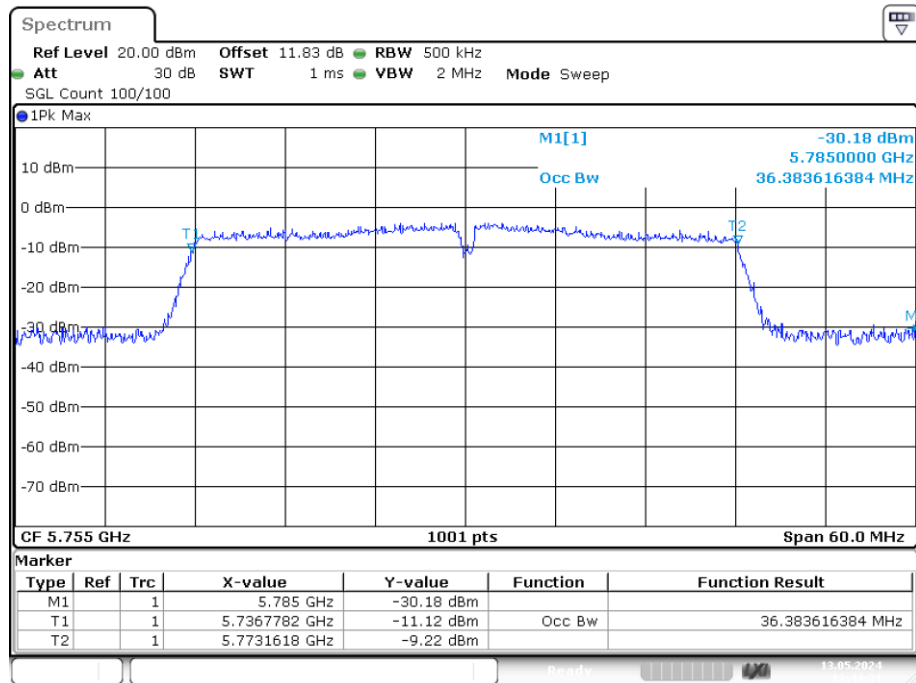
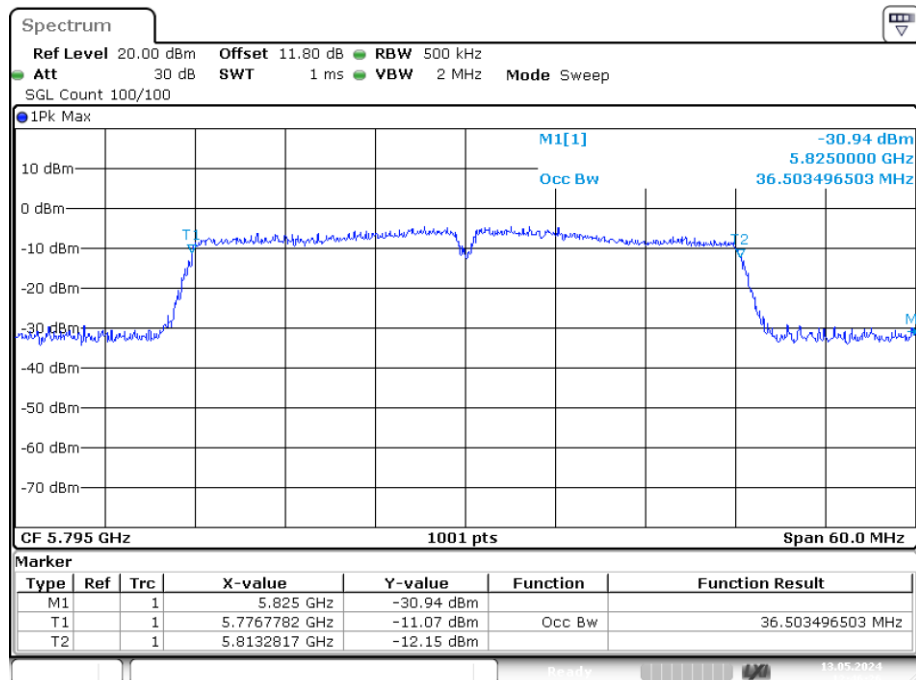


OBW NVNT n40 5755MHz Ant1



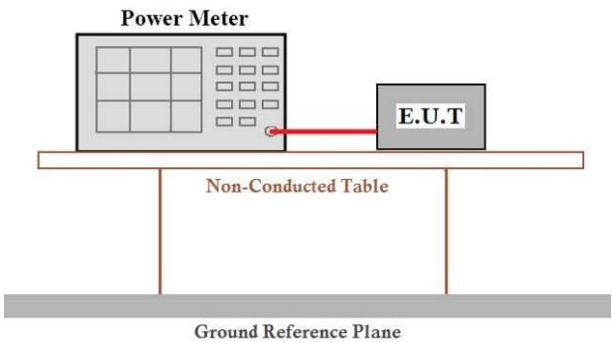
Date: 13.MAY.2024 12:44:30

OBW NVNT n40 5795MHz Ant1



Date: 13.MAY.2024 12:46:26

4.4 Peak Transmit Power

Test Requirement:	FCC Part15 E Section 15.407, RSS-247 Issue 2
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	FCC Part15 E Section 15.407: For the band 5.15-5.25GHz, 5.25-5.35GHz, 5.47-5.725GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 250mW. For the band 5.725-5.85GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 1W. RSS-247 Issue 2: Frequency band 5150-5250 MHz: For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band. Frequency band 5250-5350 MHz: The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band;
Test setup:	 The diagram illustrates the test setup. A 'Power Meter' is connected via a red cable to an 'E.U.T.' (Equipment Under Test). Both are placed on a 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.
Test procedure:	Measurement using an RF average power meter (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied a) The EUT is configured to transmit continuously or to transmit with a constant duty cycle. b) At all times when the EUT is transmitting, it must be transmitting at its maximum power control level. c) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five. (ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section B). (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter. (iv) Adjust the measurement in dBm by adding $10 \log(1/x)$ where x is the duty cycle (e.g., $10 \log(1/0.25)$ if the duty cycle is 25 percent).
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

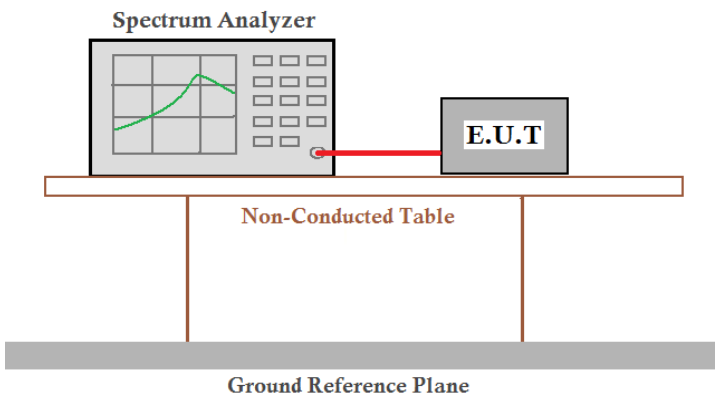
Measurement Data**Band 1 (5150-5250 MHz)**

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	EIRP (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	15.269	15.269	24	Pass
NVNT	a	5200	Ant1	15.207	15.207	24	Pass
NVNT	a	5240	Ant1	15.207	15.207	24	Pass
NVNT	ac20	5180	Ant1	14.593	14.593	24	Pass
NVNT	ac20	5200	Ant1	15.204	15.204	24	Pass
NVNT	ac20	5240	Ant1	15.87	15.87	24	Pass
NVNT	ac40	5190	Ant1	15.116	15.116	24	Pass
NVNT	ac40	5230	Ant1	14.869	14.869	24	Pass
NVNT	ac80	5210	Ant1	15.055	15.055	24	Pass
NVNT	n20	5180	Ant1	15.383	15.383	24	Pass
NVNT	n20	5200	Ant1	15.572	15.572	24	Pass
NVNT	n20	5240	Ant1	15.17	15.17	24	Pass
NVNT	n40	5190	Ant1	15.201	15.201	24	Pass
NVNT	n40	5230	Ant1	14.745	14.745	24	Pass

Band 4 (5725 – 5850 MHz)

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	13.92	30	Pass
NVNT	a	5785	Ant1	14.528	30	Pass
NVNT	a	5825	Ant1	14.75	30	Pass
NVNT	ac20	5745	Ant1	14.09	30	Pass
NVNT	ac20	5785	Ant1	13.569	30	Pass
NVNT	ac20	5825	Ant1	14.332	30	Pass
NVNT	ac40	5755	Ant1	14.131	30	Pass
NVNT	ac40	5795	Ant1	13.032	30	Pass
NVNT	ac80	5775	Ant1	14.683	30	Pass
NVNT	n20	5745	Ant1	15.426	30	Pass
NVNT	n20	5785	Ant1	15.163	30	Pass
NVNT	n20	5825	Ant1	14.382	30	Pass
NVNT	n40	5755	Ant1	14.208	30	Pass
NVNT	n40	5795	Ant1	13.316	30	Pass

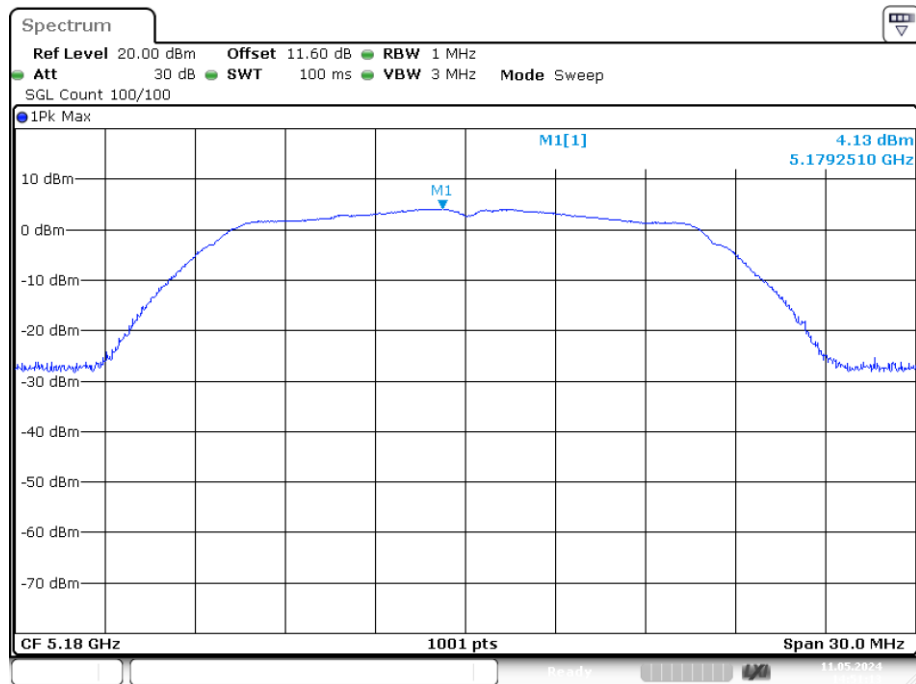
4.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407, RSS-247 Issue 2
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	$\leq 11.00\text{dBm/MHz}$ for 5150MHz-5250MHz, 5250-5350MHz and 5470-5725 MHz $\leq 30.00\text{dBm/500KHz}$ for 5725MHz-5850MHz For 5150MHz-5250MHz: The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by two vertical legs. Below the table is a Ground Reference Plane.
Test procedure:	1) Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E2) for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, "Compute power..." 2) Use the peak search function on the instrument to find the peak of the spectrum. 3) Make the following adjustments to the peak value of the spectrum, if applicable: a) If Method SA-2 or SA-2 Alternative was used, add $10 \log(1/x)$, where x is the duty cycle, to the peak of the spectrum. b) If Method SA-3 Alternative was used and the linear mode was used in step E2)g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging. 4) The result is the PSD.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data**Band 1 (5150 - 5250 MHz)**

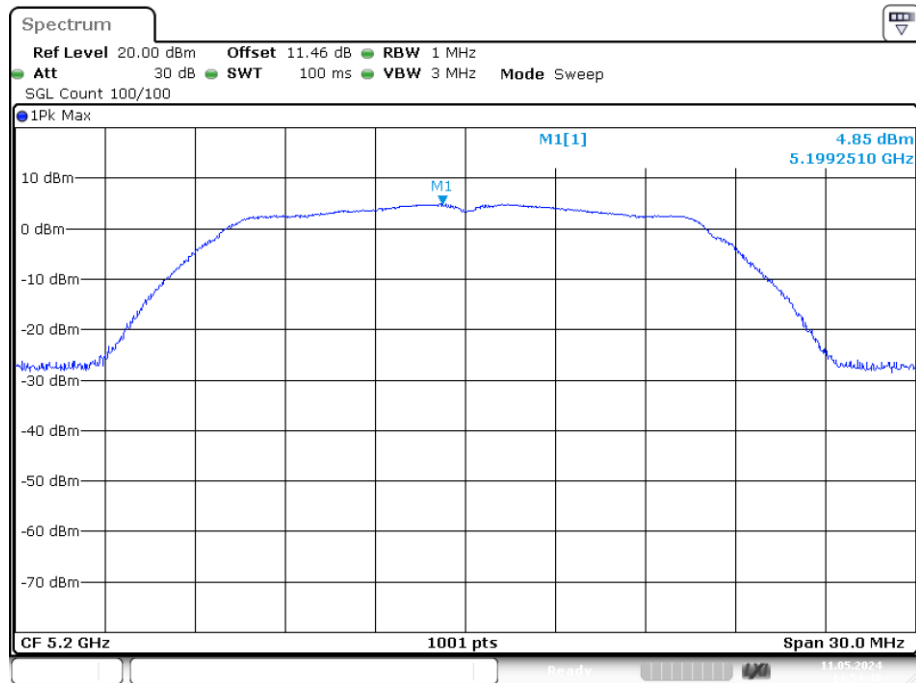
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	4.133	10	Pass
NVNT	a	5200	Ant1	4.851	10	Pass
NVNT	a	5240	Ant1	4.68	10	Pass
NVNT	ac20	5180	Ant1	4.664	10	Pass
NVNT	ac20	5200	Ant1	5.17	10	Pass
NVNT	ac20	5240	Ant1	5.828	10	Pass
NVNT	ac40	5190	Ant1	1.915	10	Pass
NVNT	ac40	5230	Ant1	1.117	10	Pass
NVNT	ac80	5210	Ant1	-0.732	10	Pass
NVNT	n20	5180	Ant1	6.223	10	Pass
NVNT	n20	5200	Ant1	6.063	10	Pass
NVNT	n20	5240	Ant1	5.422	10	Pass
NVNT	n40	5190	Ant1	2.765	10	Pass
NVNT	n40	5230	Ant1	2.69	10	Pass

PSD NVNT a 5180MHz Ant1



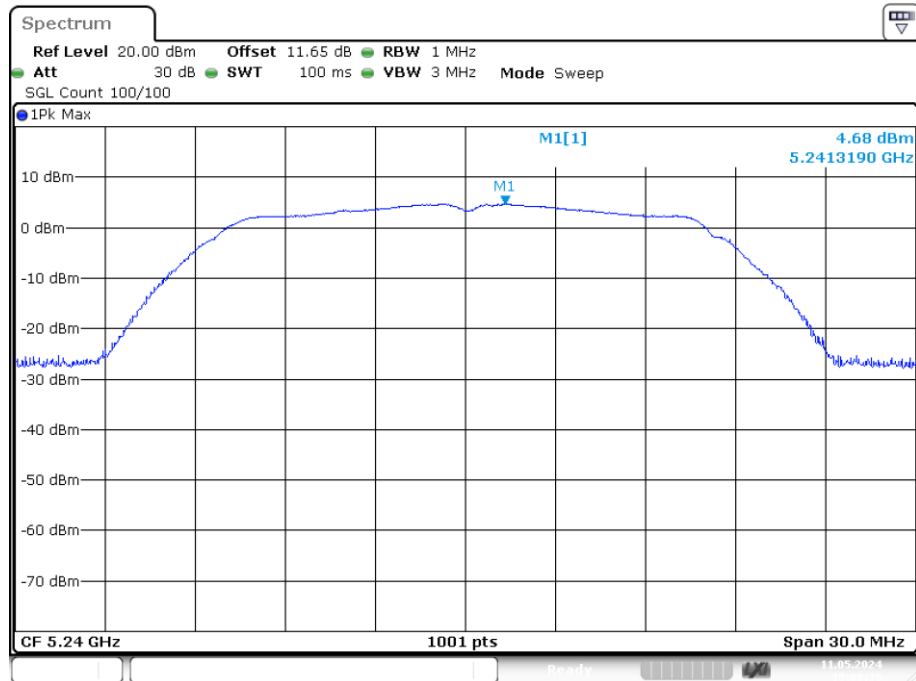
Date: 11.MAY.2024 14:51:12

PSD NVNT a 5200MHz Ant1



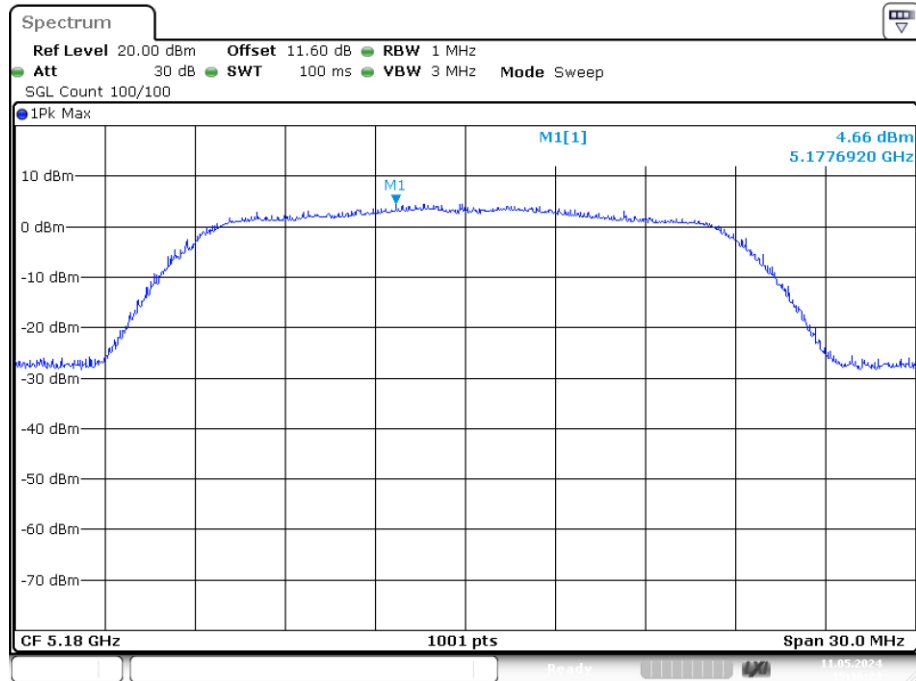
Date: 11.MAY.2024 14:54:49

PSD NVNT a 5240MHz Ant1



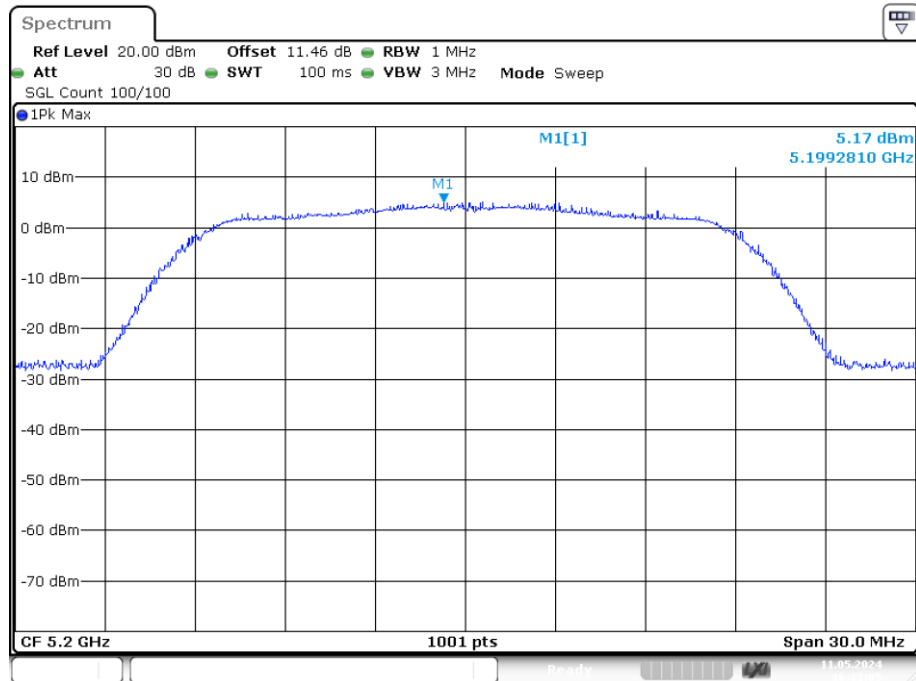
Date: 11.MAY.2024 15:09:39

PSD NVNT ac20 5180MHz Ant1



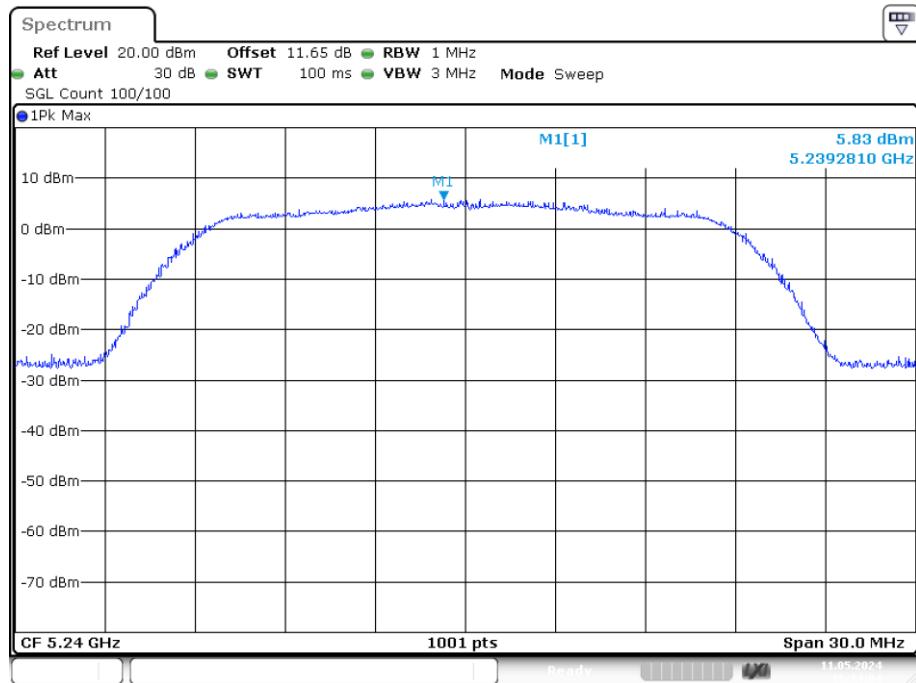
Date: 11.MAY.2024 15:36:22

PSD NVNT ac20 5200MHz Ant1



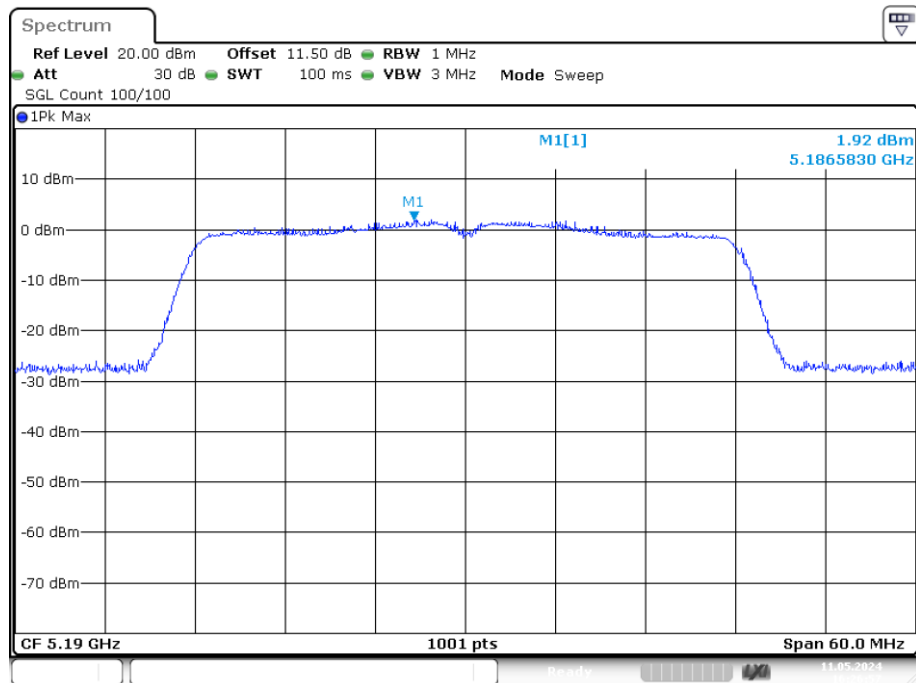
Date: 11.MAY.2024 16:11:05

PSD NVNT ac20 5240MHz Ant1



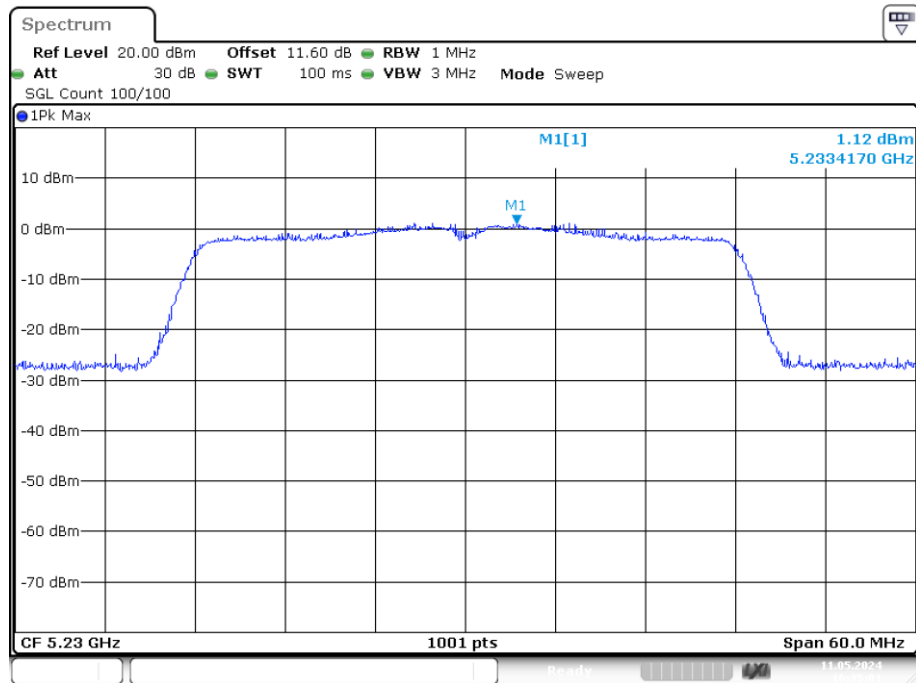
Date: 11.MAY.2024 16:14:04

PSD NVNT ac40 5190MHz Ant1



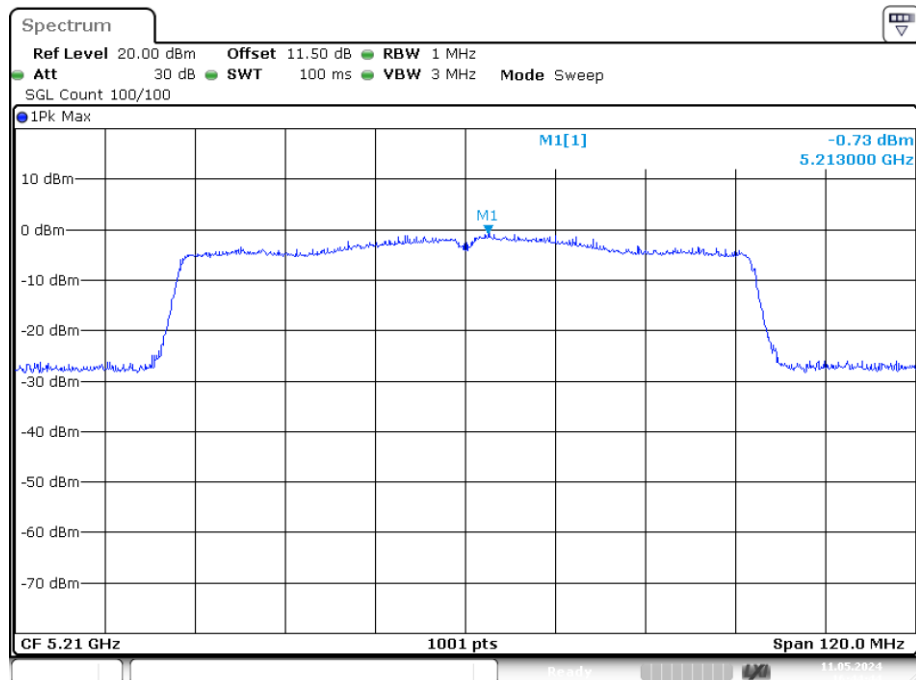
Date: 11.MAY.2024 16:26:57

PSD NVNT ac40 5230MHz Ant1



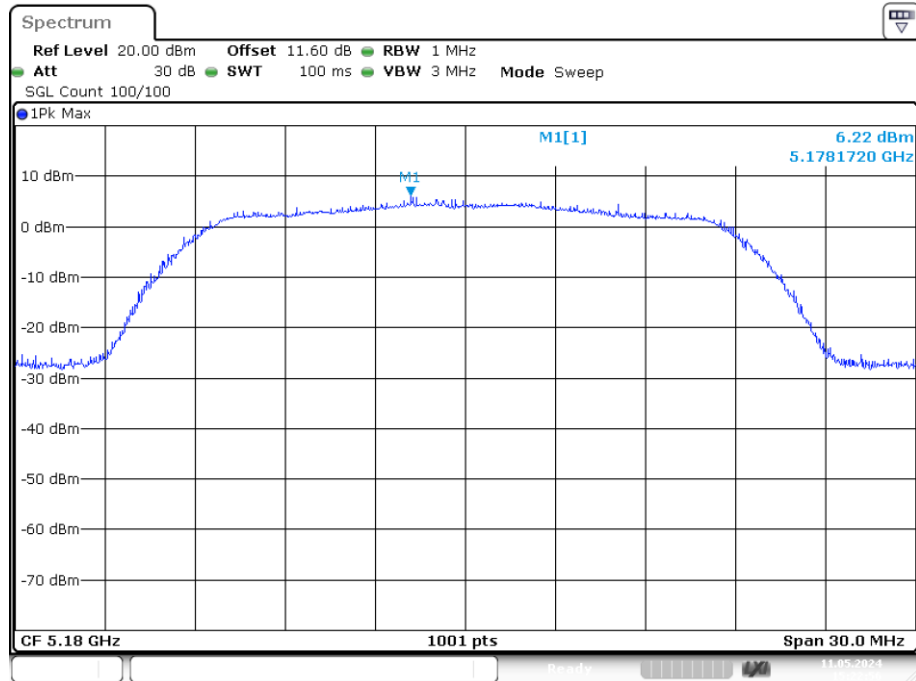
Date: 11.MAY.2024 16:35:01

PSD NVNT ac80 5210MHz Ant1



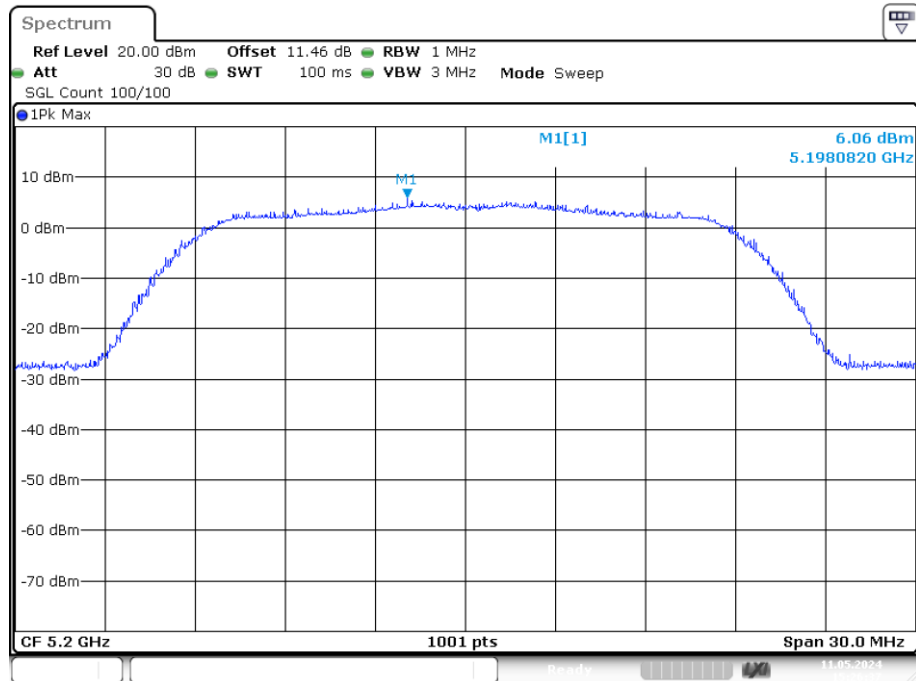
Date: 11.MAY.2024 16:44:43

PSD NVNT n20 5180MHz Ant1



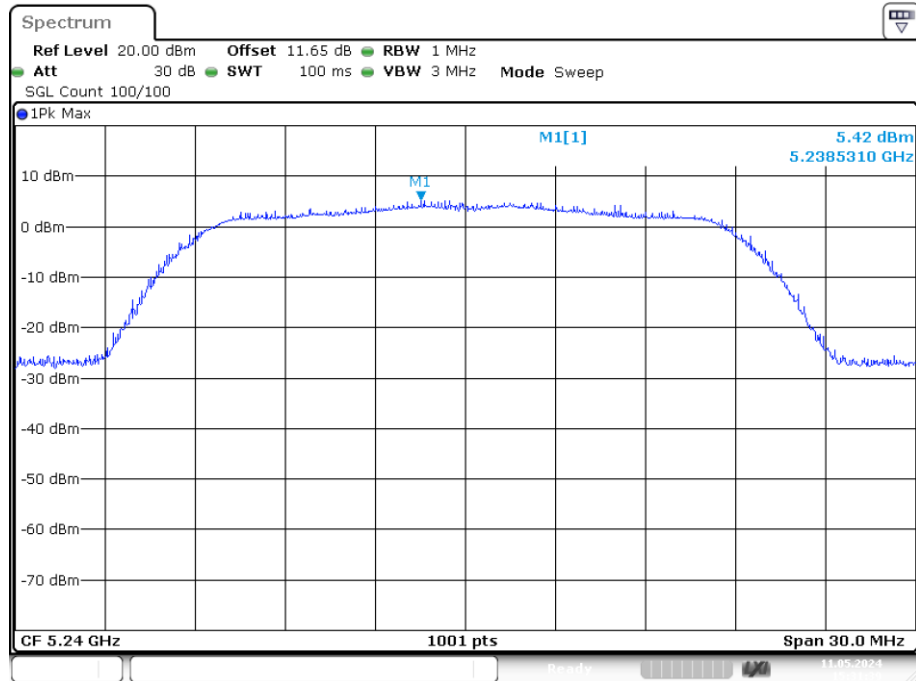
Date: 11.MAY.2024 15:22:56

PSD NVNT n20 5200MHz Ant1



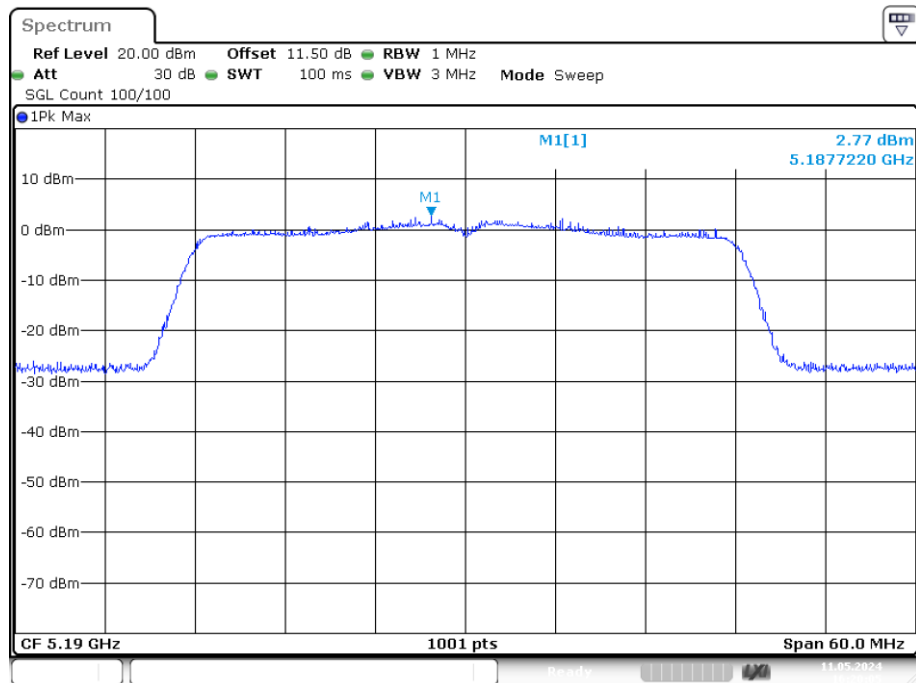
Date: 11.MAY.2024 15:26:38

PSD NVNT n20 5240MHz Ant1



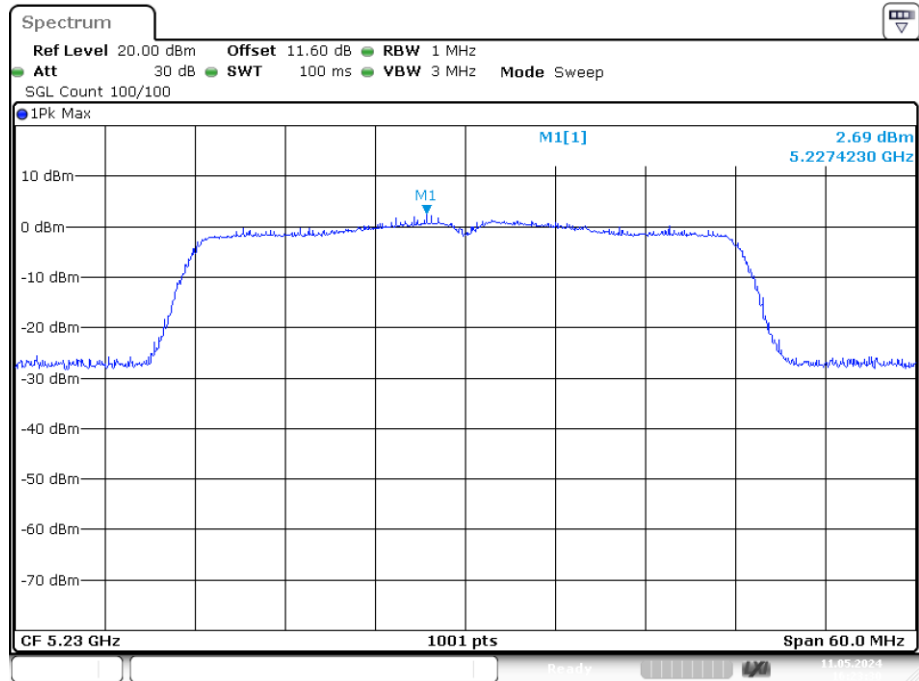
Date: 11.MAY.2024 15:31:39

PSD NVNT n40 5190MHz Ant1



Date: 11.MAY.2024 16:20:05

PSD NVNT n40 5230MHz Ant1

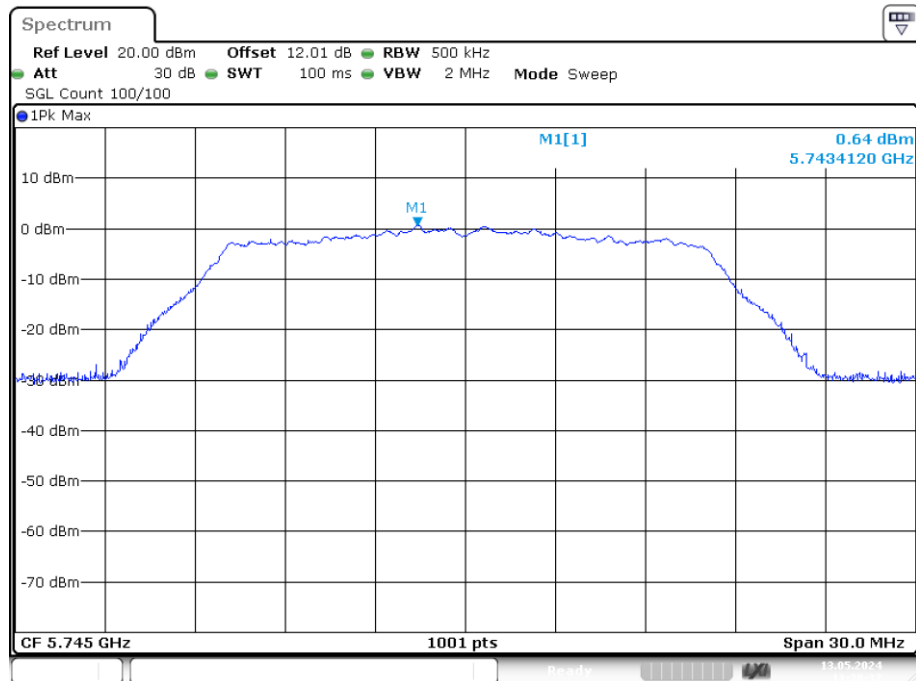


Date: 11.MAY.2024 16:23:29

Band 4 (5725 - 5850 MHz)

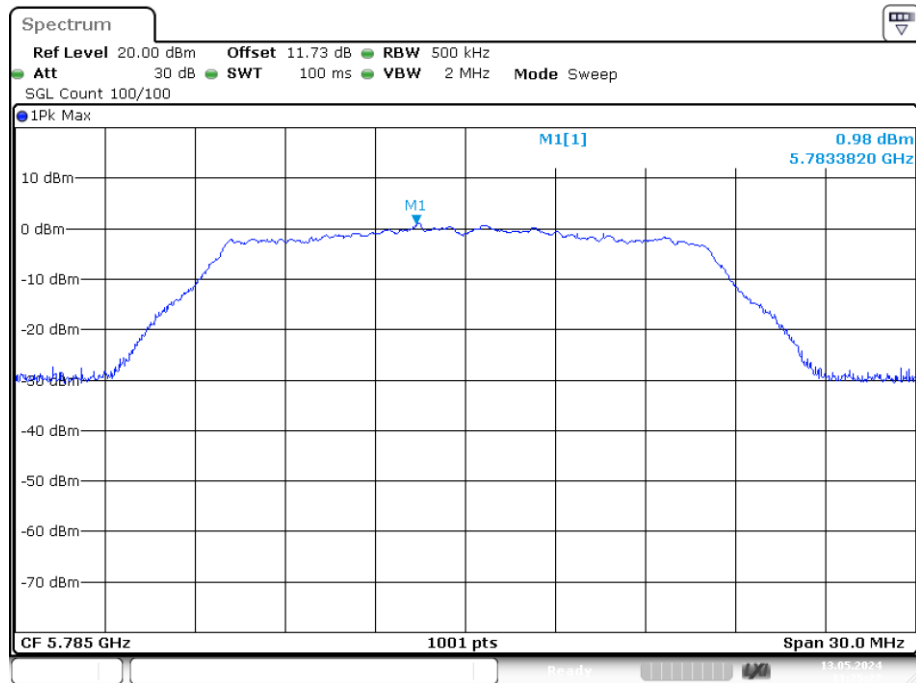
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	0.641	30	Pass
NVNT	a	5785	Ant1	0.983	30	Pass
NVNT	a	5825	Ant1	1.285	30	Pass
NVNT	ac20	5745	Ant1	0.766	30	Pass
NVNT	ac20	5785	Ant1	-0.563	30	Pass
NVNT	ac20	5825	Ant1	0.671	30	Pass
NVNT	ac40	5755	Ant1	-2.481	30	Pass
NVNT	ac40	5795	Ant1	-3.38	30	Pass
NVNT	ac80	5775	Ant1	-4.843	30	Pass
NVNT	n20	5745	Ant1	2.406	30	Pass
NVNT	n20	5785	Ant1	2.023	30	Pass
NVNT	n20	5825	Ant1	0.807	30	Pass
NVNT	n40	5755	Ant1	-2.327	30	Pass
NVNT	n40	5795	Ant1	-2.884	30	Pass

PSD NVNT a 5745MHz Ant1



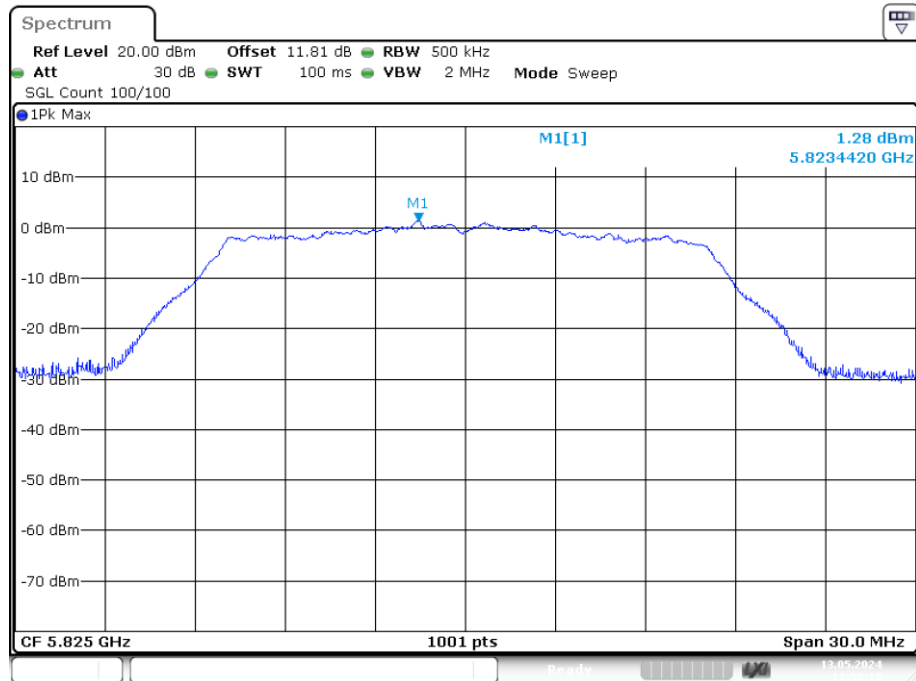
Date: 13.MAY.2024 11:38:36

PSD NVNT a 5785MHz Ant1



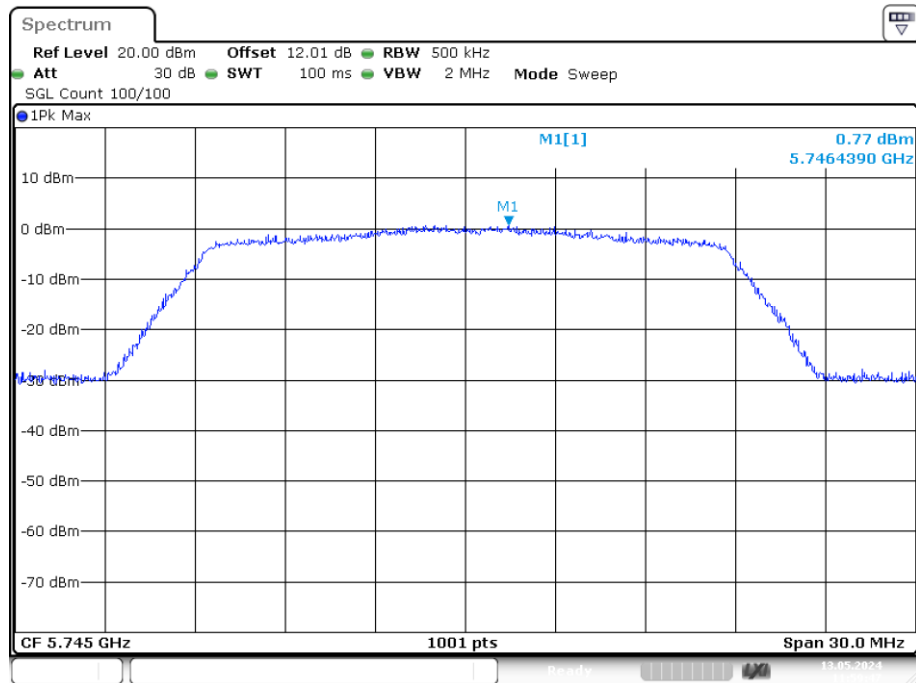
Date: 13.MAY.2024 11:25:27

PSD NVNT a 5825MHz Ant1



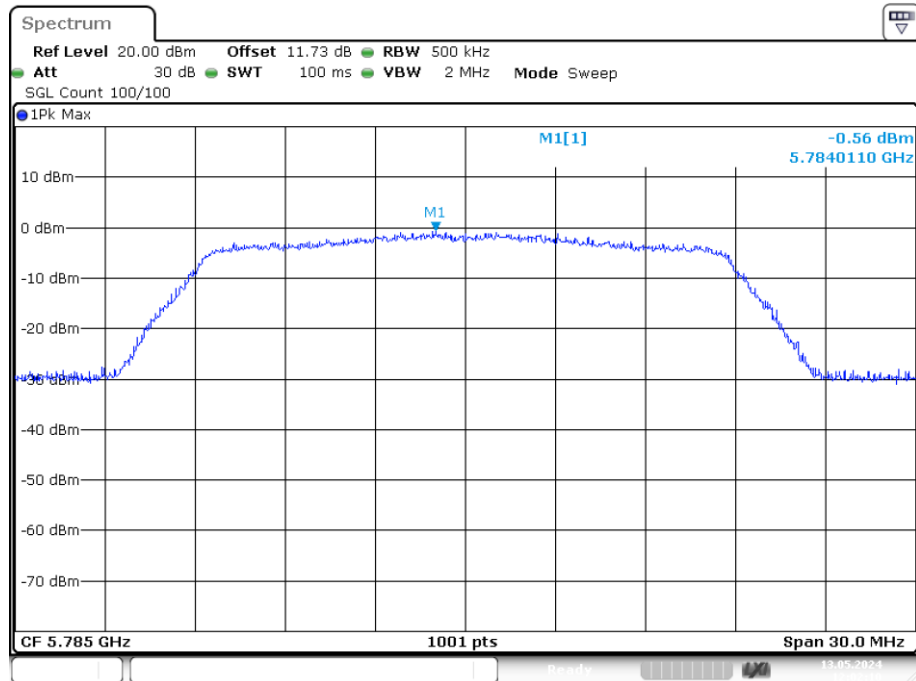
Date: 13.MAY.2024 11:33:19

PSD NVNT ac20 5745MHz Ant1



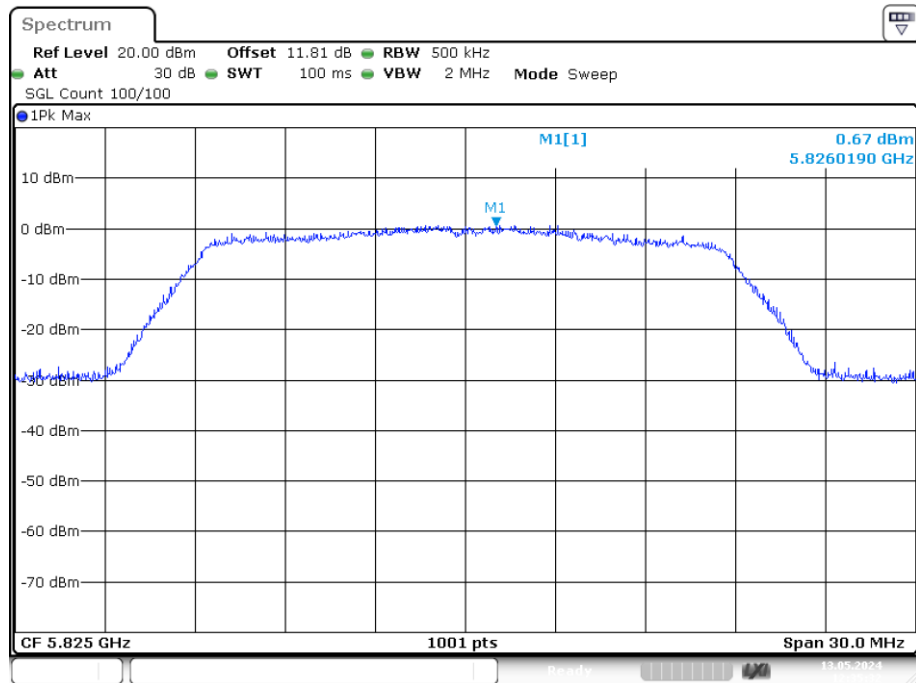
Date: 13.MAY.2024 11:59:47

PSD NVNT ac20 5785MHz Ant1



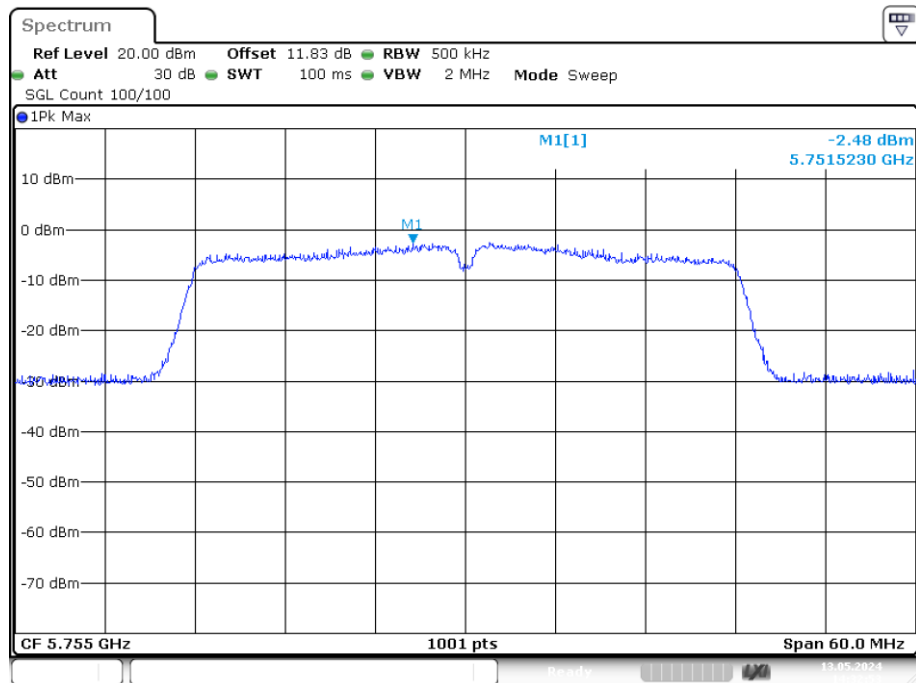
Date: 13.MAY.2024 12:02:10

PSD NVNT ac20 5825MHz Ant1



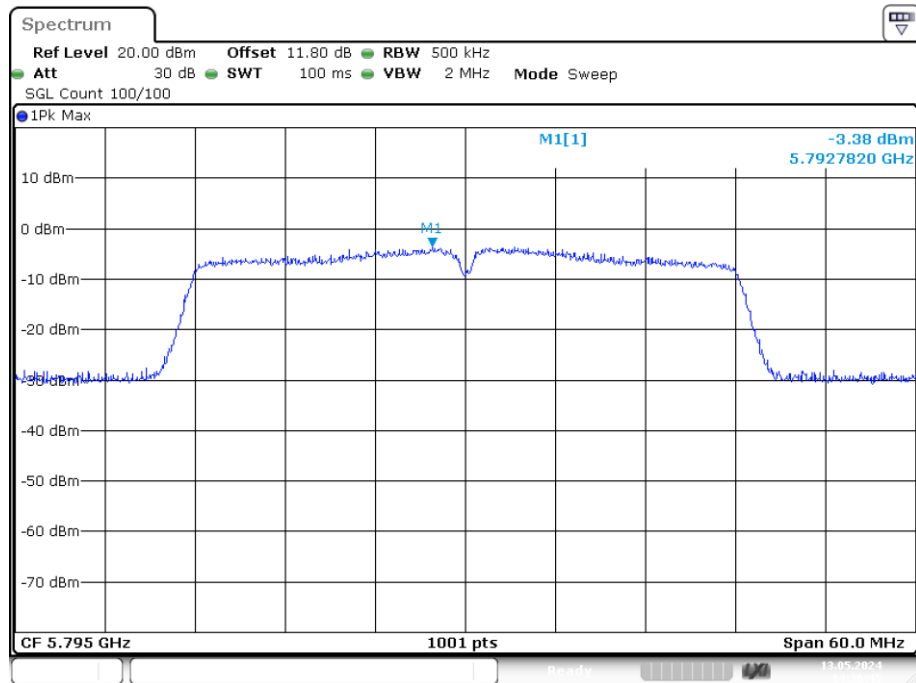
Date: 13.MAY.2024 12:35:32

PSD NVNT ac40 5755MHz Ant1



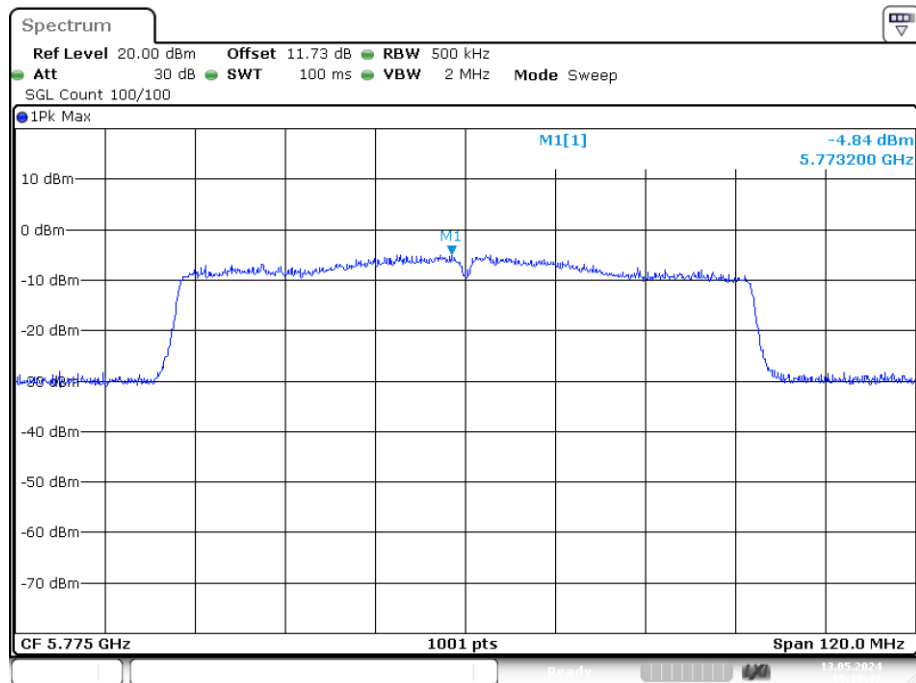
Date: 13.MAY.2024 14:32:53

PSD NVNT ac40 5795MHz Ant1



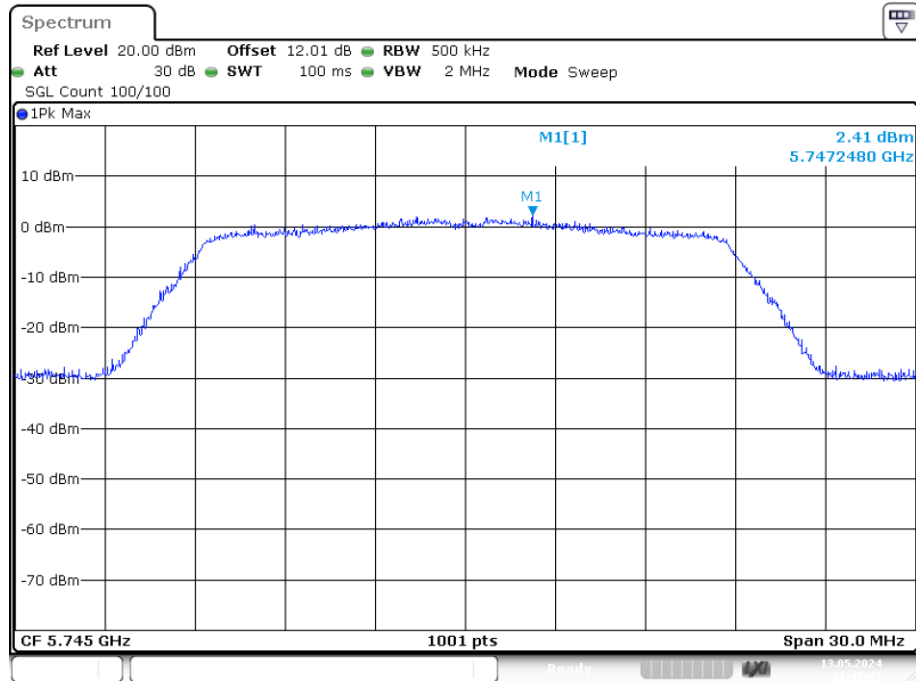
Date: 13.MAY.2024 14:36:45

PSD NVNT ac80 5775MHz Ant1



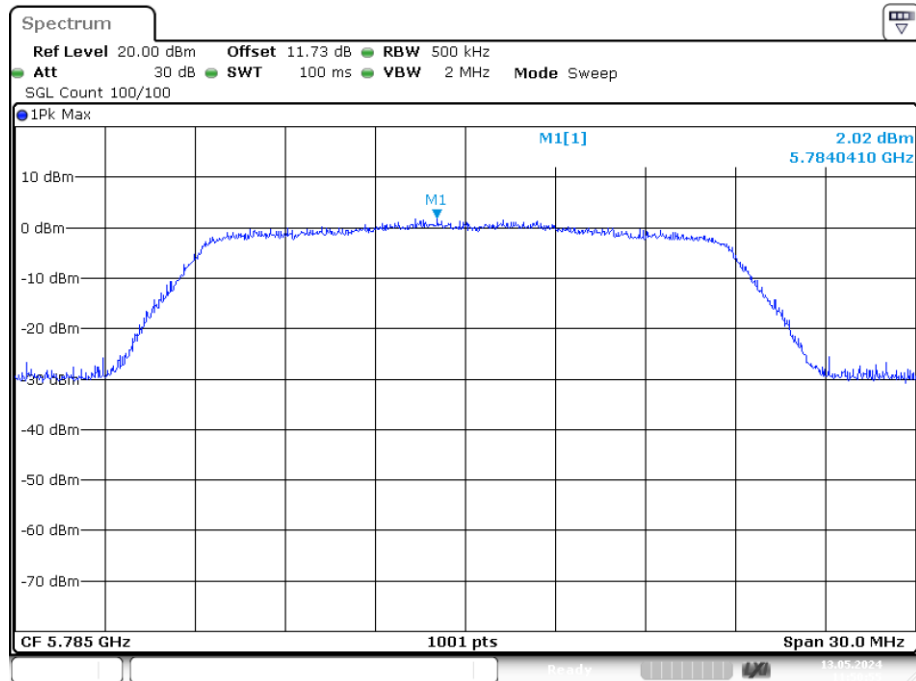
Date: 13.MAY.2024 15:10:17

PSD NVNT n20 5745MHz Ant1



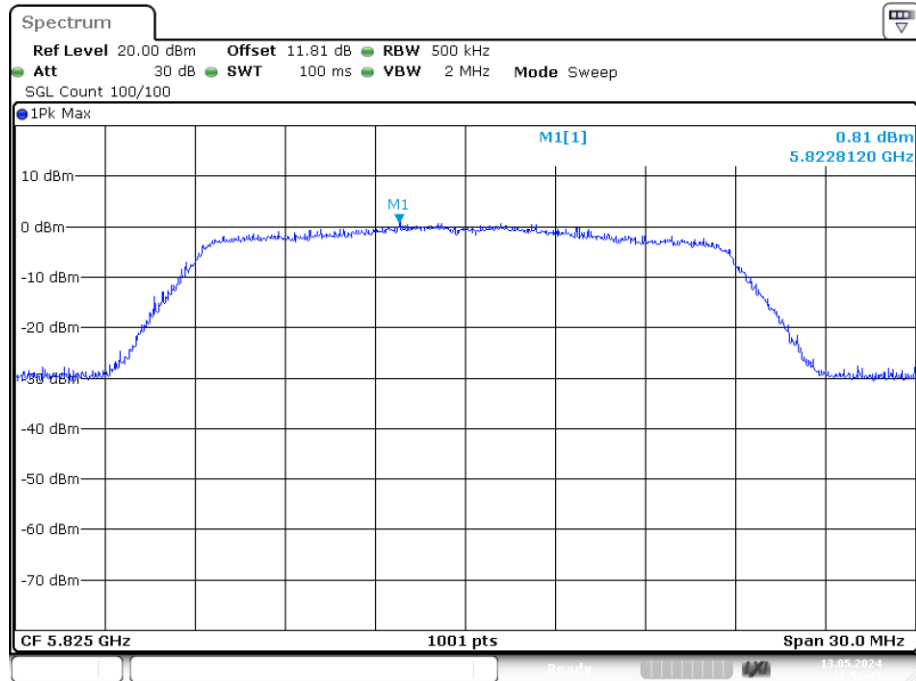
Date: 13.MAY.2024 11:43:49

PSD NVNT n20 5785MHz Ant1



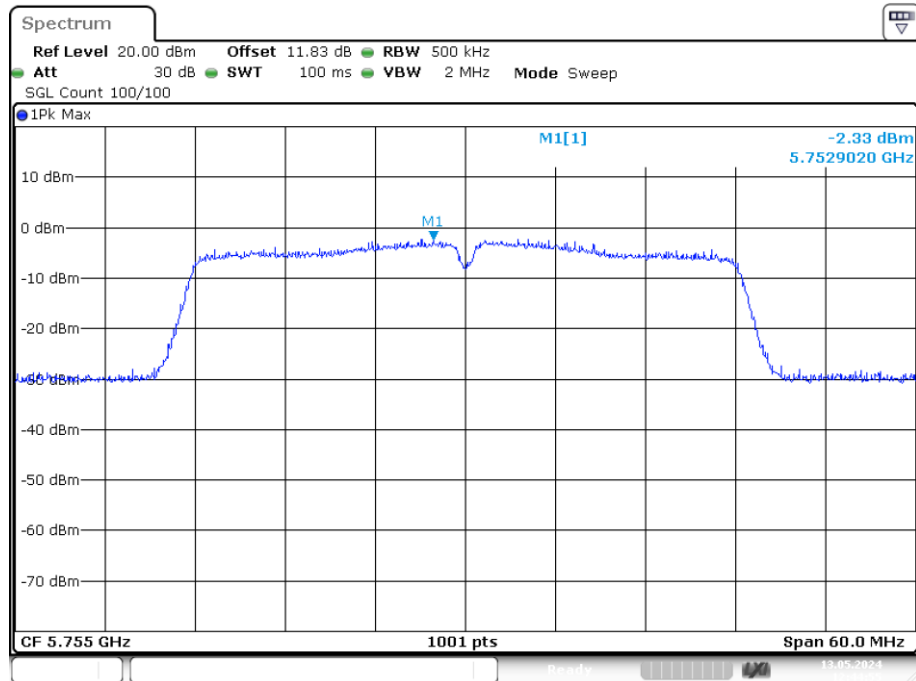
Date: 13.MAY.2024 11:50:56

PSD NVNT n20 5825MHz Ant1



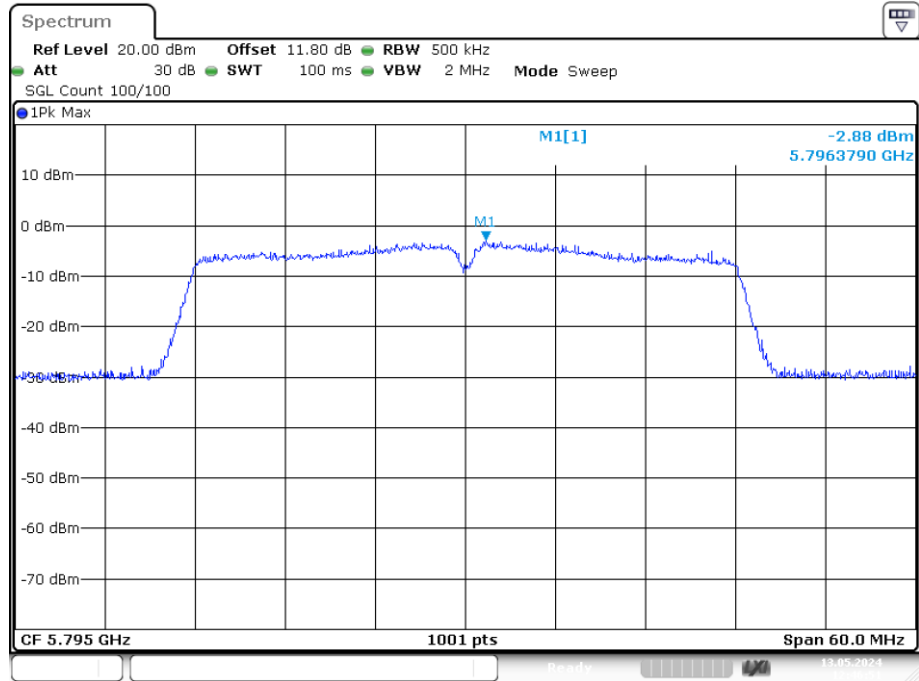
Date: 13.MAY.2024 11:52:48

PSD NVNT n40 5755MHz Ant1



Date: 13.MAY.2024 12:44:55

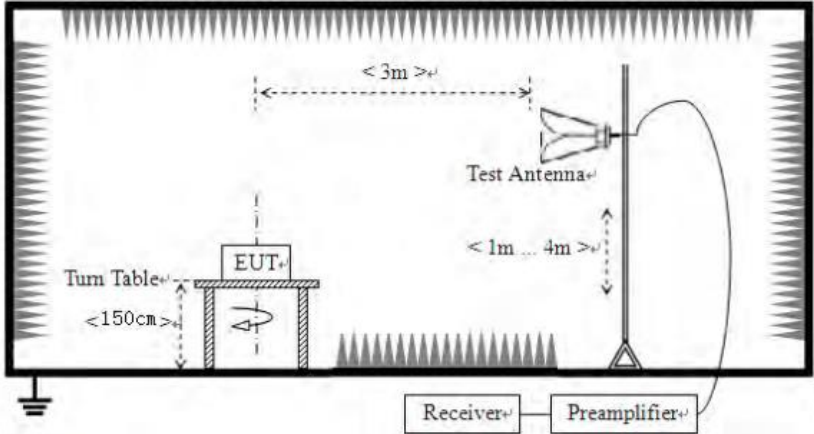
PSD NVNT n40 5795MHz Ant1



Date: 13.MAY.2024 12:46:51

4.6 Band Edge

Test Requirement:	FCC Part15 E Section 15.407 and 15.205, RSS-247 Issue 2, RSS-Gen Issue 5																								
Test Method:	ANSI C63.10:2013																								
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)																								
Receiver setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr><tr><td>AV</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr></table>					Frequency	Detector	RBW	VBW	Remark	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value	AV	1MHz	3MHz	Average Value	
Frequency	Detector	RBW	VBW	Remark																					
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value																					
Above 1GHz	Peak	1MHz	3MHz	Peak Value																					
	AV	1MHz	3MHz	Average Value																					
Limit:	<table><tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr><tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr><tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr><tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr><tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr><tr><td>68.2</td><td>Peak Value</td></tr></table> Undesirable emission limits: (1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. (2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band. (3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.					Frequency	Limit (dBuV/m @3m)	Remark	30MHz-88MHz	40.0	Quasi-peak Value	88MHz-216MHz	43.5	Quasi-peak Value	216MHz-960MHz	46.0	Quasi-peak Value	960MHz-1GHz	54.0	Quasi-peak Value	Above 1GHz	54.0	Average Value	68.2	Peak Value
Frequency	Limit (dBuV/m @3m)	Remark																							
30MHz-88MHz	40.0	Quasi-peak Value																							
88MHz-216MHz	43.5	Quasi-peak Value																							
216MHz-960MHz	46.0	Quasi-peak Value																							
960MHz-1GHz	54.0	Quasi-peak Value																							
Above 1GHz	54.0	Average Value																							
	68.2	Peak Value																							
Test Procedure:	a. The EUT was placed on the top of a rotating table 1.5 m above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.																								
Test setup:	Above 1GHz																								

	
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Remark:

According to KDB 789033 D02 v02r01 section G) 1) (d), for For measurements above 1000 MHz @ 3m distance, the limit of field strength is computed as follows:

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2,$$

For example, if EIRP = -27dBm

$$E[\text{dBuV/m}] = -27 + 95.2 = 68.2\text{dBuV/m}.$$

Measurement Data:**Band1**

Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	36.01	17.21	53.22	68.20	-14.98	PK
V	5150.00	37.79	17.21	55.00	68.20	-13.20	PK
Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	21.92	17.18	39.10	54.00	-14.90	AV
V	5150.00	26.23	17.18	43.41	54.00	-10.59	AV
Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.94	17.21	54.15	68.20	-14.05	PK
V	5350.00	36.21	17.21	53.42	68.20	-14.78	PK
Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	29.29	17.18	46.47	54.00	-7.53	AV
V	5350.00	26.04	17.18	43.22	54.00	-10.78	AV

Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	38.20	17.21	55.41	68.20	-12.79	PK
V	5150.00	37.77	17.21	54.98	68.20	-13.22	PK
Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	21.98	17.18	39.16	54.00	-14.84	AV
V	5150.00	26.11	17.18	43.29	54.00	-10.71	AV
Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	33.93	17.21	51.14	68.20	-17.06	PK
V	5350.00	33.86	17.21	51.07	68.20	-17.13	PK
Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	26.58	17.18	43.76	54.00	-10.24	AV
V	5350.00	26.12	17.18	43.30	54.00	-10.70	AV

Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	35.58	17.21	52.79	68.20	-15.41	PK
V	5150.00	36.61	17.21	53.82	68.20	-14.38	PK
Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	22.63	17.18	39.81	54.00	-14.19	AV
V	5150.00	23.65	17.18	40.83	54.00	-13.17	AV
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	34.66	17.21	51.87	68.20	-16.33	PK
V	5350.00	33.28	17.21	50.49	68.20	-17.71	PK
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	29.04	17.18	46.22	54.00	-7.78	AV
V	5350.00	25.78	17.18	42.96	54.00	-11.04	AV

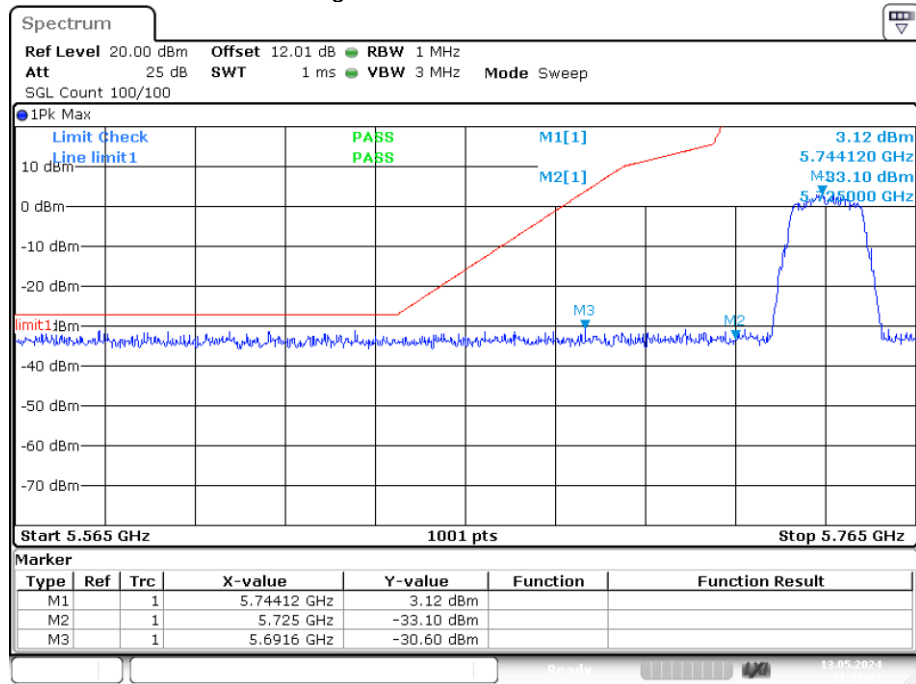
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Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	37.97	17.21	55.18	68.20	-13.02	PK
V	5150.00	36.01	17.21	53.22	68.20	-14.98	PK
Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.57	17.18	42.75	54.00	-11.25	AV
V	5150.00	25.21	17.18	42.39	54.00	-11.61	AV
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	34.73	17.21	51.94	68.20	-16.26	PK
V	5350.00	32.44	17.21	49.65	68.20	-18.55	PK
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	28.25	17.18	45.43	54.00	-8.57	AV
V	5350.00	24.81	17.18	41.99	54.00	-12.01	AV

Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	38.92	17.21	56.13	68.20	-12.07	PK
V	5150.00	37.17	17.21	54.38	68.20	-13.82	PK
Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	22.96	17.18	40.14	54.00	-13.86	AV
V	5150.00	26.47	17.18	43.65	54.00	-10.35	AV
Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	37.59	17.21	54.80	68.20	-13.40	PK
V	5350.00	33.61	17.21	50.82	68.20	-17.38	PK
Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	29.29	17.18	46.47	54.00	-7.53	AV
V	5350.00	25.42	17.18	42.60	54.00	-11.40	AV

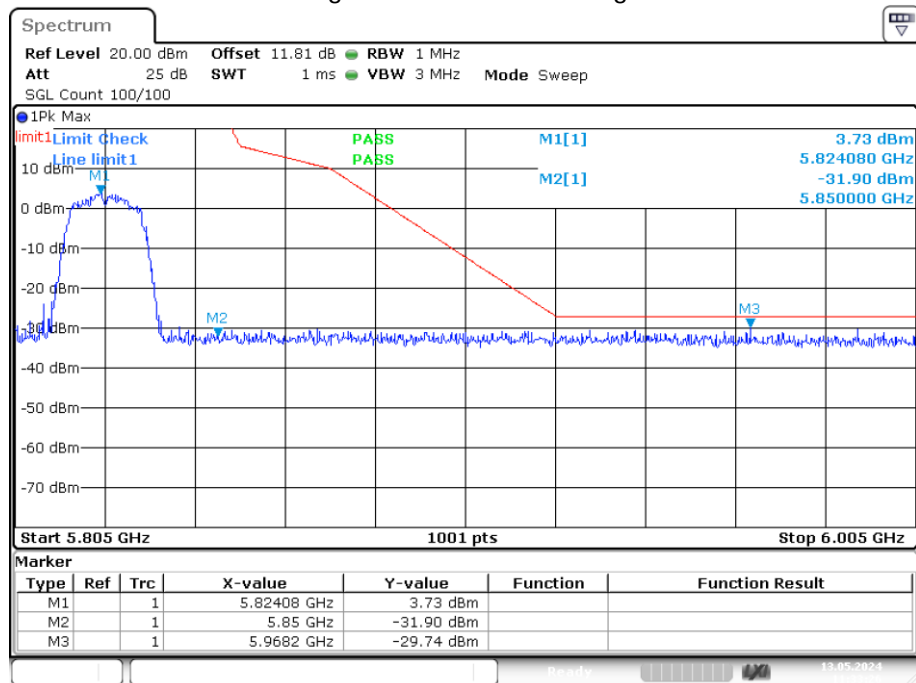
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Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	37.26	17.21	54.47	68.20	-13.73	PK
V	5150.00	36.97	17.21	54.18	68.20	-14.02	PK
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	22.76	17.18	39.94	54.00	-14.06	AV
V	5150.00	24.90	17.18	42.08	54.00	-11.92	AV
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.07	17.21	53.28	68.20	-14.92	PK
V	5350.00	35.59	17.21	52.80	68.20	-15.40	PK
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	27.68	17.18	44.86	54.00	-9.14	AV
V	5350.00	25.58	17.18	42.76	54.00	-11.24	AV

Band4

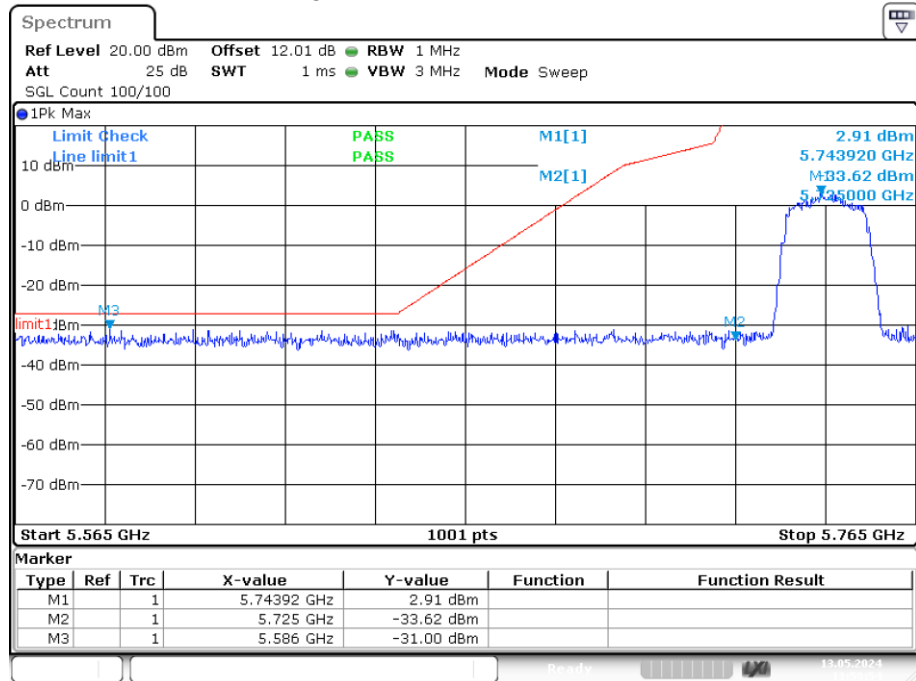
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Band Edge NVNT a 5825MHz High Ant1

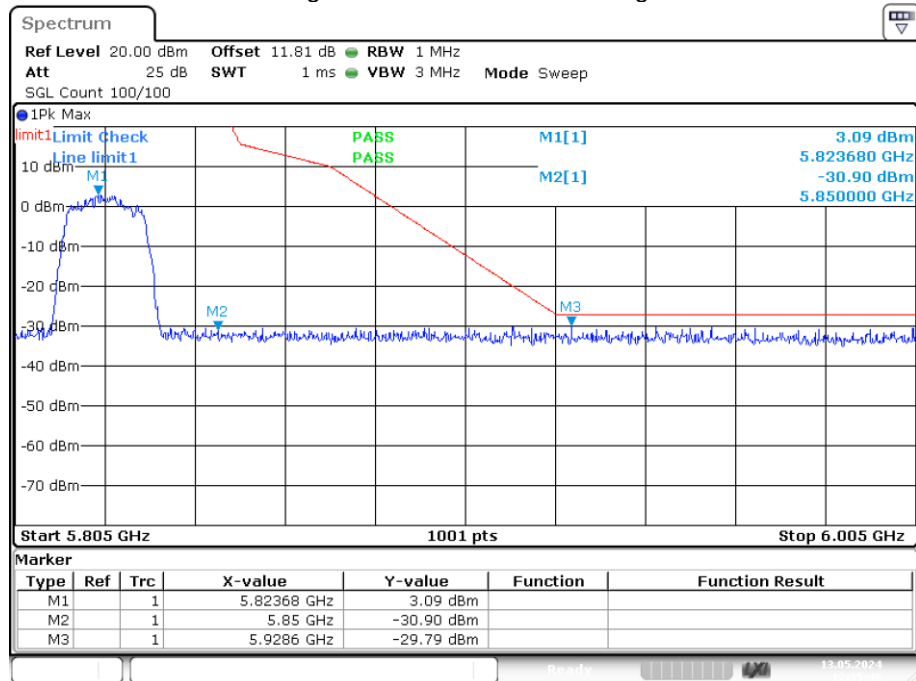


Band Edge NVNT ac20 5745MHz Low Ant1



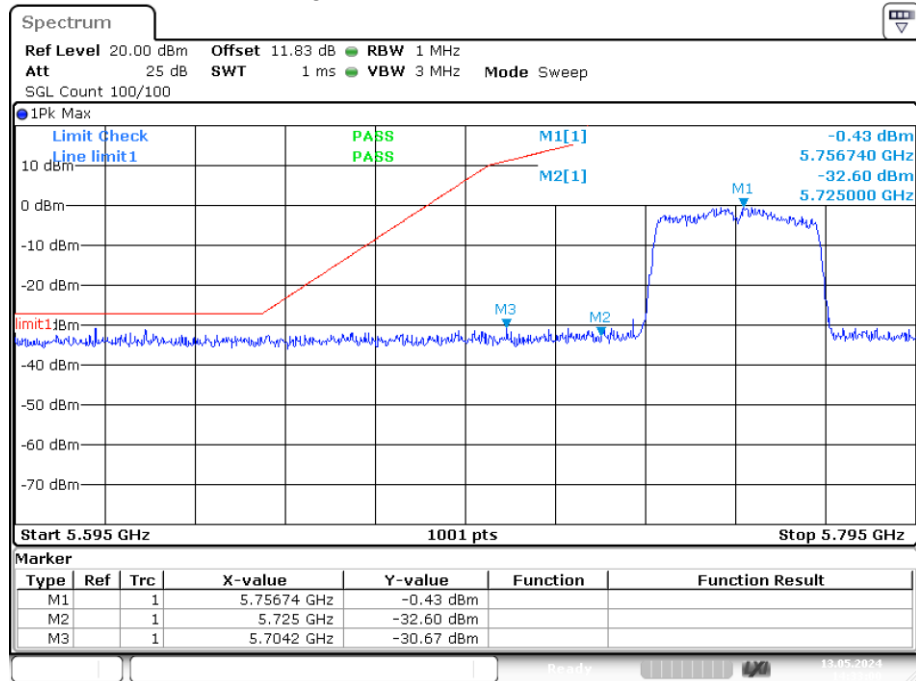
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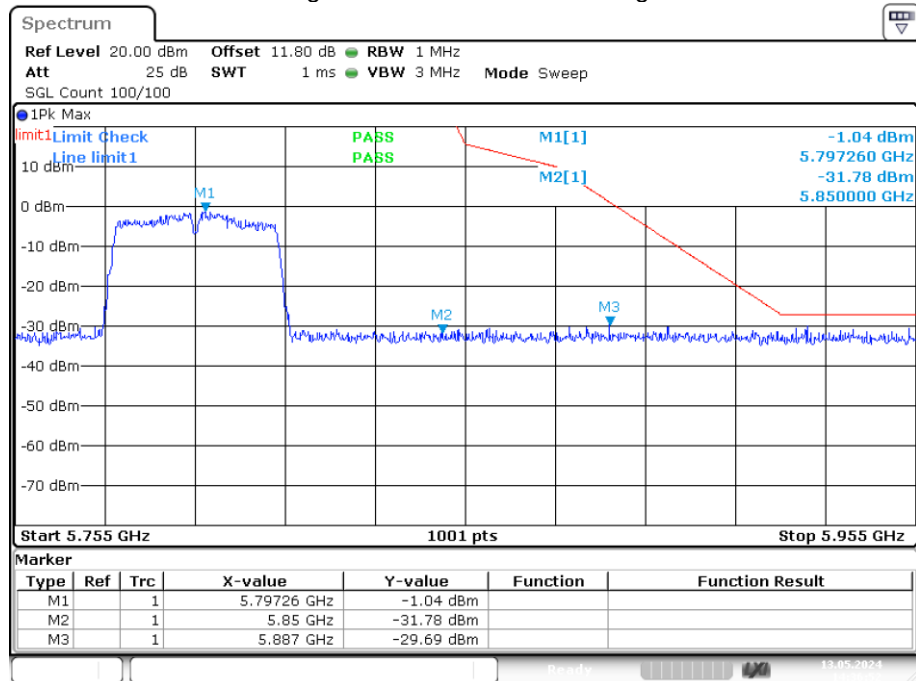
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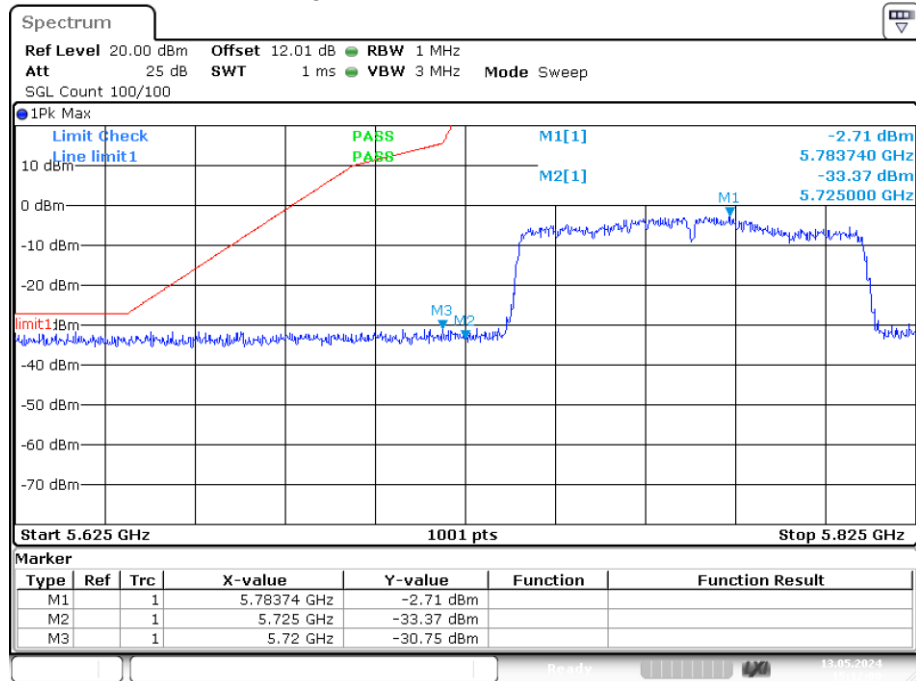
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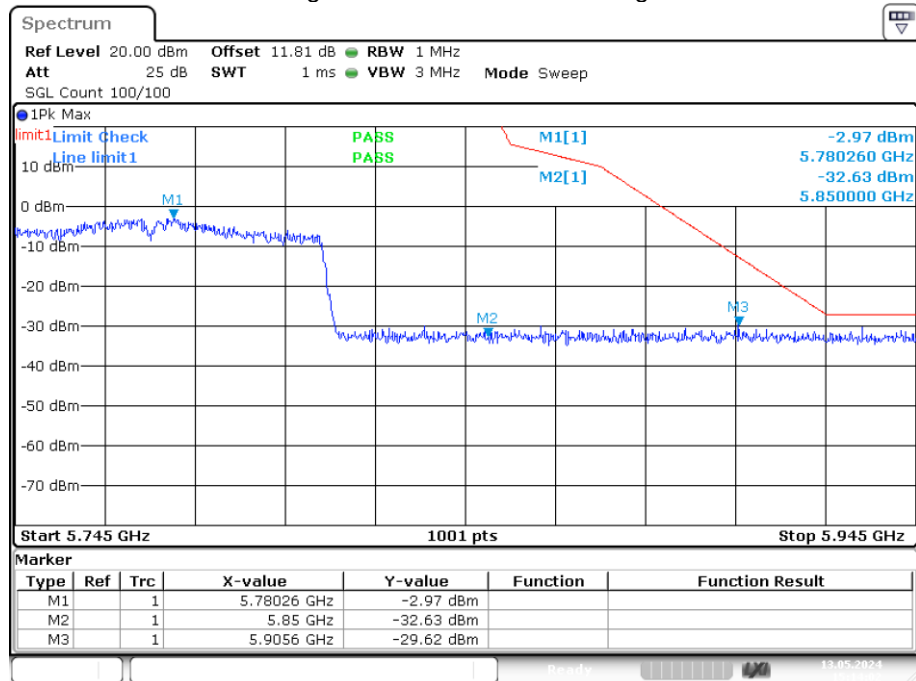
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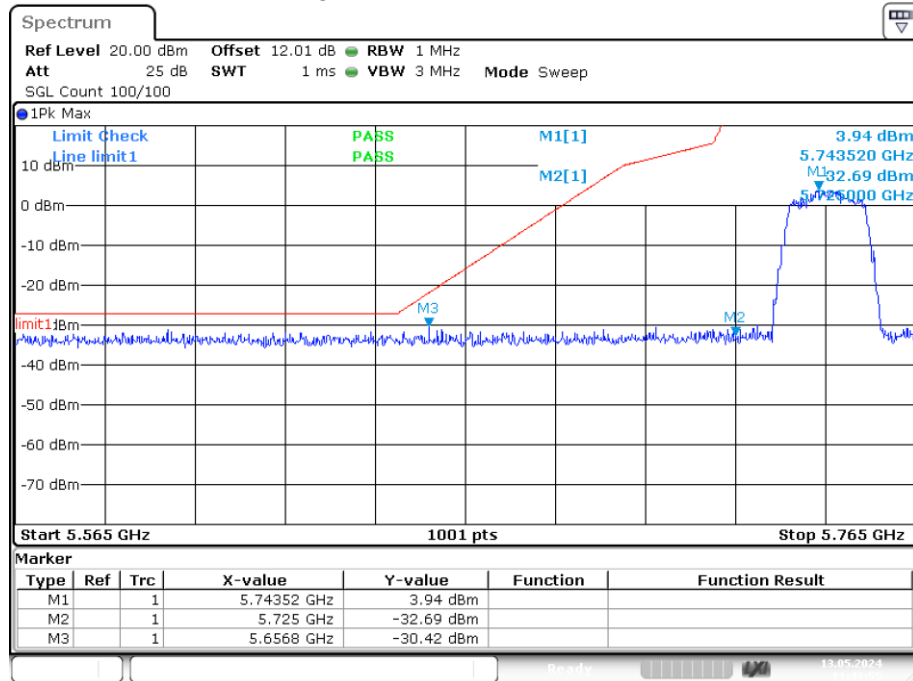
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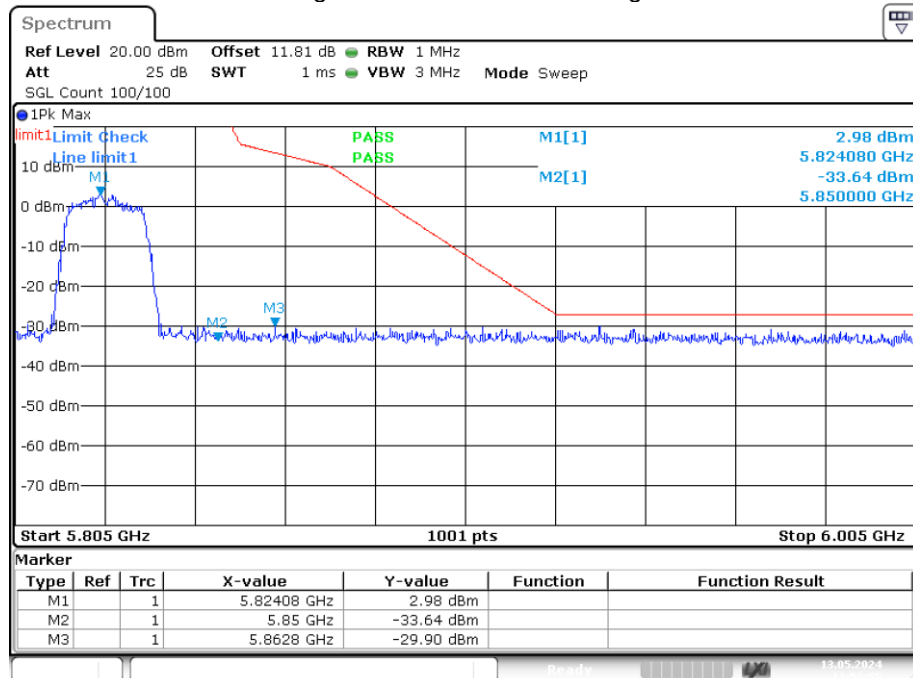
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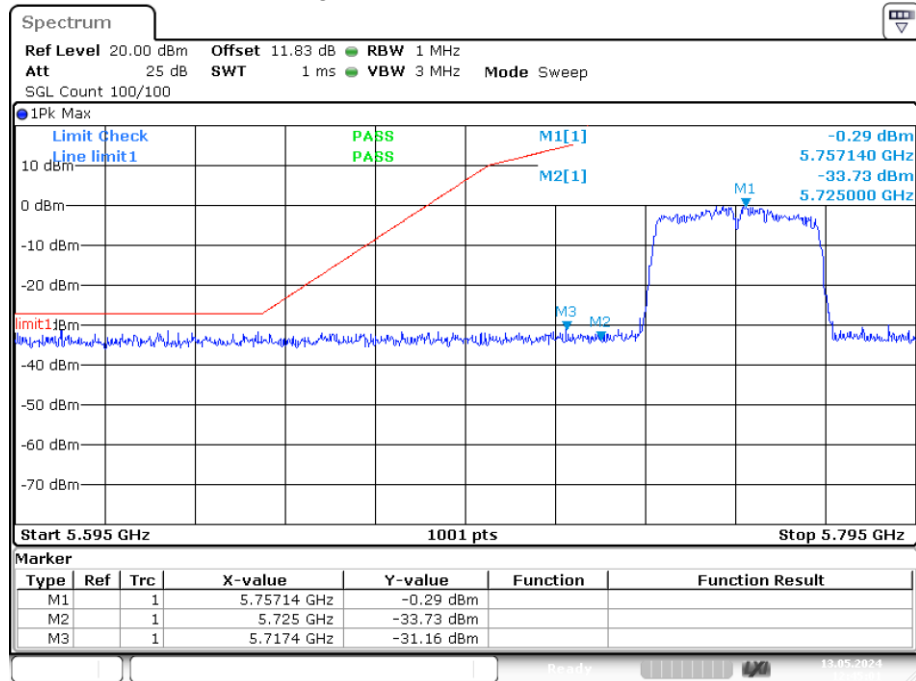
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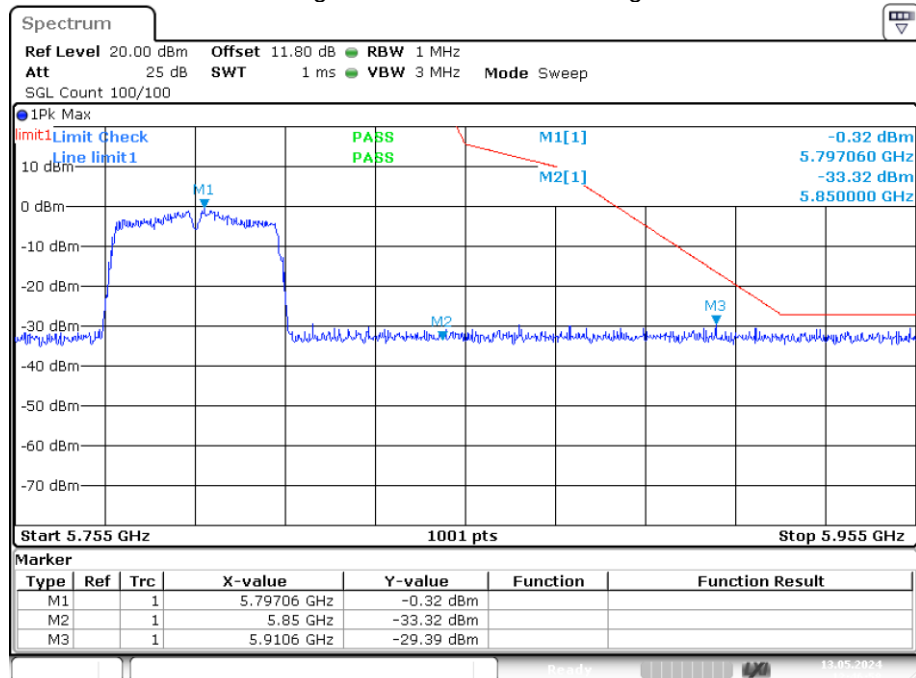
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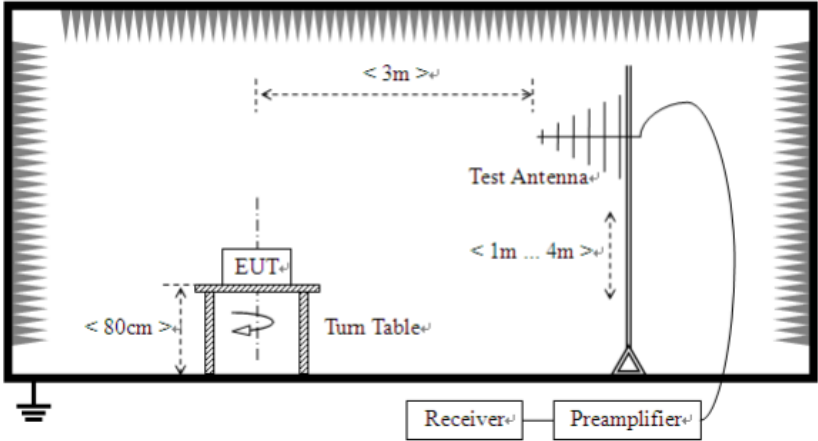
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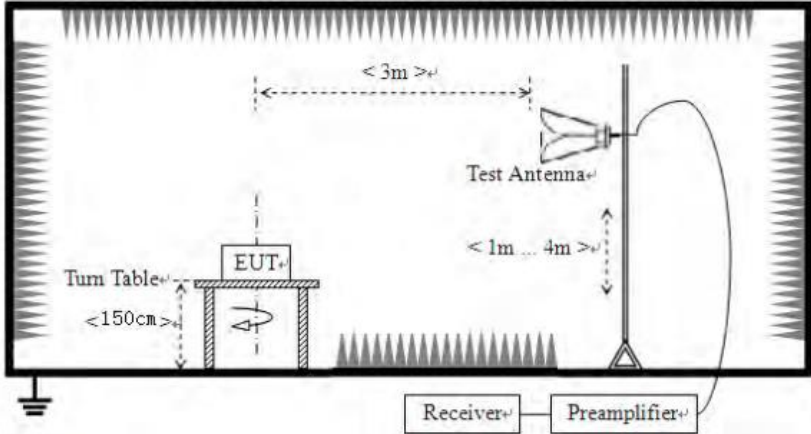


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4.7 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	30MHz to 40GHz				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		AV	1MHz	3MHz	Average Value
Limit:	Frequency		Limit (dBuV/m @3m)		Remark
	30MHz-88MHz		40.0		Quasi-peak Value
	88MHz-216MHz		43.5		Quasi-peak Value
	216MHz-960MHz		46.0		Quasi-peak Value
	960MHz-1GHz		54.0		Quasi-peak Value
	Above 1GHz		74.0		Peak Value
			54.0		Average Value
Test Procedure:	Substitution method was performed to determine the actual ERP emission levels of the EUT. The following test procedure as below:				
	1>.Below 1GHz test procedure:				
	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.				
	2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.				

	maximum signal level is detected by the measuring receiver. Then the turntable should be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver. - Repeat step 4 for test frequency with the test antenna polarized horizontally. - Remove the transmitter and replace it with a substitution antenna - Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends vertically polarized, and with the signal generator tuned to a particular test frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output. - Repeat step 7 with both antennas horizontally polarized for each test frequency. - Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps 7 and 8 by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula: $\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$ where: Pg is the generator output power into the substitution antenna.
Test setup:	Below 1GHz  Above 1GHz

	
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data:**Below 1GHz**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
32.62	47.43	11.25	0.59	30.08	29.19	40	-10.81	Vertical
56.24	40.73	11.93	0.81	29.96	23.51	40	-16.49	Vertical
119.19	46.71	9.4	1.36	29.57	27.90	43.5	-15.60	Vertical
173.30	43.35	8.5	1.7	29.31	24.24	43.5	-19.26	Vertical
443.49	37.32	16.29	3.05	29.41	27.25	46	-18.75	Vertical
860.25	33.19	21.83	4.69	29.14	30.57	46	-15.43	Vertical
62.87	35.79	8.73	0.9	29.89	15.53	40	-24.47	Horizontal
100.71	33.63	11.73	1.19	29.7	16.85	43.5	-26.65	Horizontal
268.98	45.41	12.53	2.22	29.79	30.37	46	-15.63	Horizontal
348.97	36.85	14.5	2.62	29.73	24.24	46	-21.76	Horizontal
627.56	35.60	19.43	3.83	29.27	29.59	46	-16.41	Horizontal
957.31	41.00	22.54	5.06	29.1	39.50	46	-6.50	Horizontal

Above 1GHz:**802.11a(HT20) 5180MHz**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.86	49.49	11.25	14.62	32.65	42.71	74.00	-31.29	Vertical
15540.33	49.94	11.93	17.66	34.46	45.07	74.00	-28.93	Vertical
10360.79	50.87	9.4	14.62	32.65	42.24	74.00	-31.76	Horizontal
15540.07	51.43	8.5	17.66	34.46	43.13	74.00	-30.87	Horizontal

802.11a(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.14	48.85	16.29	17.66	34.46	48.34	74.00	-25.66	Vertical
15600.13	50.05	21.83	17.66	34.46	55.08	74.00	-18.92	Vertical
10400.02	49.70	8.73	17.66	34.46	41.63	74.00	-32.37	Horizontal
15600.20	49.74	11.73	17.66	34.46	44.67	74.00	-29.33	Horizontal

802.11a(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.08	49.38	11.25	14.62	32.65	42.60	74.00	-31.40	Vertical
15720.20	48.81	11.93	17.66	34.46	43.94	74.00	-30.06	Vertical
10480.28	49.31	9.4	14.62	32.65	40.68	74.00	-33.32	Horizontal
15720.21	50.65	8.5	17.66	34.46	42.35	74.00	-31.65	Horizontal

802.11n(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.13	49.52	16.29	17.66	34.46	49.01	74.00	-24.99	Vertical
15540.02	49.69	21.83	17.66	34.46	54.72	74.00	-19.28	Vertical
10360.25	48.74	8.73	17.66	34.46	40.67	74.00	-33.33	Horizontal
15540.04	51.01	11.73	17.66	34.46	45.94	74.00	-28.06	Horizontal

802.11n(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.06	50.48	11.25	14.62	32.65	43.70	74.00	-52.14	Vertical
15600.13	49.66	11.93	17.66	34.46	44.79	74.00	-48.39	Vertical
10400.27	51.59	9.4	14.62	32.65	42.96	74.00	-50.85	Horizontal
15600.31	51.15	8.5	17.66	34.46	42.85	74.00	-52.53	Horizontal

802.11n(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.14	51.90	16.29	17.66	34.46	51.39	74.00	-22.61	Vertical
15720.10	48.67	21.83	17.66	34.46	53.70	74.00	-20.30	Vertical
10480.03	50.20	8.73	17.66	34.46	42.13	74.00	-31.87	Horizontal
15720.03	48.84	11.73	17.66	34.46	43.77	74.00	-30.23	Horizontal

802.11ac(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.18	51.71	11.25	14.62	32.65	44.93	74.00	-29.07	Vertical
15540.01	51.07	11.93	17.66	34.46	46.20	74.00	-27.80	Vertical
10360.17	52.85	9.4	14.62	32.65	44.22	74.00	-29.78	Horizontal
15540.05	52.36	8.5	17.66	34.46	44.06	74.00	-29.94	Horizontal

802.11ac(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.01	49.49	16.29	17.66	34.46	48.98	74.00	-25.02	Vertical
15540.31	49.69	21.83	17.66	34.46	54.72	74.00	-19.28	Vertical
10360.18	51.13	8.73	17.66	34.46	43.06	74.00	-30.94	Horizontal
15540.00	50.77	11.73	17.66	34.46	45.70	74.00	-28.30	Horizontal

802.11ac(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10480.19	52.43	11.25	14.62	32.65	45.65	74.00	-28.35	Vertical
15720.24	52.32	11.93	17.66	34.46	47.45	74.00	-26.55	Vertical
10480.27	51.34	9.4	14.62	32.65	42.71	74.00	-31.29	Horizontal
15720.18	52.33	8.5	17.66	34.46	44.03	74.00	-29.97	Horizontal

802.11n(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.27	50.48	16.29	17.66	34.46	49.97	74.00	-24.03	Vertical
15570.02	51.93	21.83	17.66	34.46	56.96	74.00	-17.04	Vertical
10380.07	49.32	8.73	17.66	34.46	41.25	74.00	-32.75	Horizontal
15570.14	51.96	11.73	17.66	34.46	46.89	74.00	-27.11	Horizontal

802.11n(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.16	50.40	11.25	14.62	32.65	43.62	74.00	-30.38	Vertical
15690.32	48.85	11.93	17.66	34.46	43.98	74.00	-30.02	Vertical
10460.22	50.39	9.4	14.62	32.65	41.76	74.00	-32.24	Horizontal
15690.04	50.17	8.5	17.66	34.46	41.87	74.00	-32.13	Horizontal

802.11ac(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10380.22	51.66	16.29	17.66	34.46	51.15	74.00	-22.85	Vertical
15570.23	49.30	21.83	17.66	34.46	54.33	74.00	-19.67	Vertical
10380.11	49.43	8.73	17.66	34.46	41.36	74.00	-32.64	Horizontal
15570.15	49.71	11.73	17.66	34.46	44.64	74.00	-29.36	Horizontal

802.11ac(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10460.16	50.62	11.25	14.62	32.65	43.84	74.00	-30.16	Vertical
15690.06	50.08	11.93	17.66	34.46	45.21	74.00	-28.79	Vertical
10460.03	52.65	9.4	14.62	32.65	44.02	74.00	-29.98	Horizontal
15690.25	50.19	8.5	17.66	34.46	41.89	74.00	-32.11	Horizontal

802.11ac(HT80) 5210MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10420.05	52.01	16.29	17.66	34.46	51.50	74.00	-22.50	Vertical
15630.24	50.42	21.83	17.66	34.46	55.45	74.00	-18.55	Vertical
10420.03	51.96	8.73	17.66	34.46	43.89	74.00	-30.11	Horizontal
15630.29	50.37	11.73	17.66	34.46	45.30	74.00	-28.70	Horizontal

Note:

1. Level = Read Level + Antenna Factor+ Cable loss- Preamp Factor.
2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. This Report only show the test plots of the worst case (U-NII-1).

4.8 Frequency stability

Test limit	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
Test results:	Pass

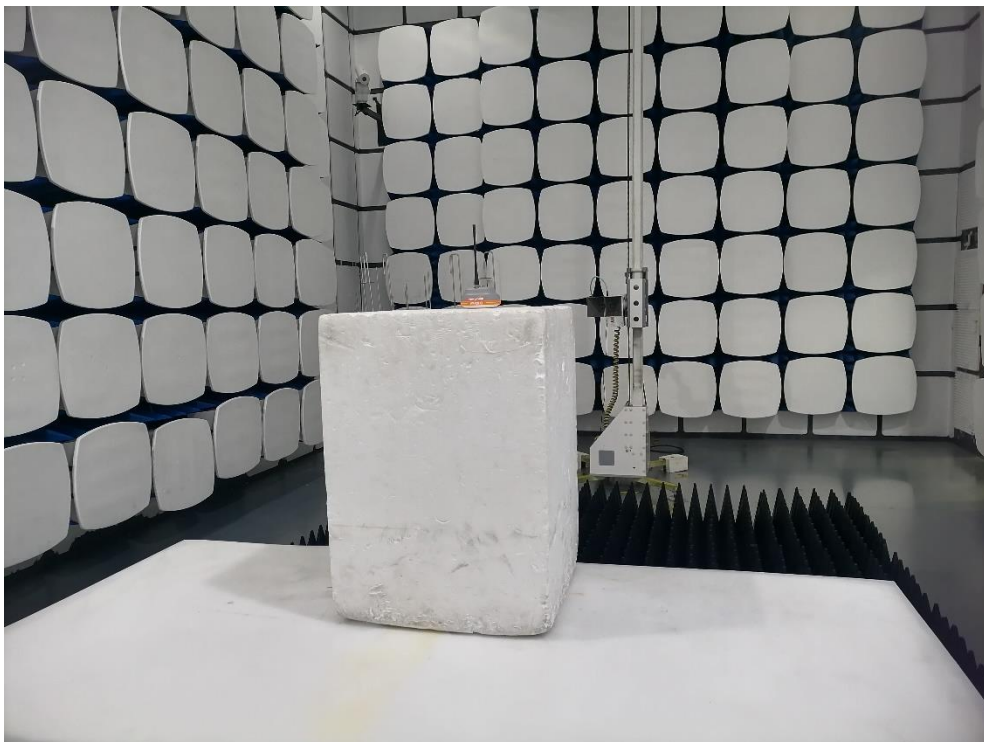
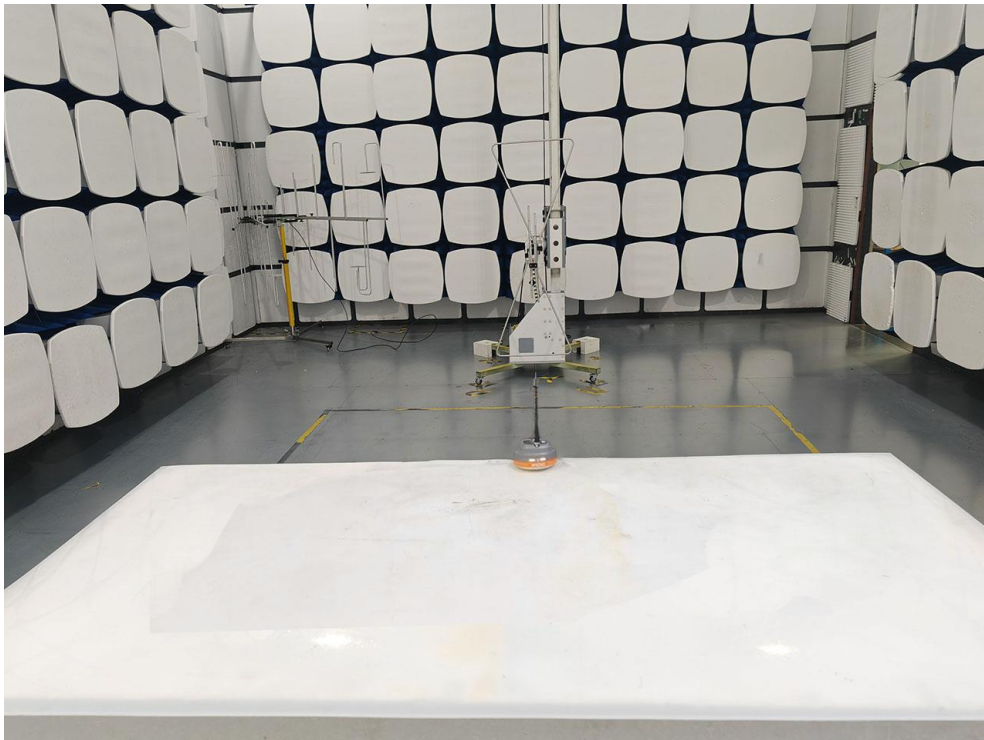
Measurement Data:

Mode	Voltage (V)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
Band 1 (5150-5250 MHz)	DC 6.29V	5179.990	10	5239.995	5
	DC 7.2V	5179.992	8	5239.994	6
	DC 8.51V	5179.990	10	5239.990	10
Mode	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
Band 4 (5725-5850 MHz)	DC 6.29V	5744.991	9	5824.991	9
	DC 7.2V	5744.986	14	5824.987	13
	DC 8.51V	5744.992	8	5824.990	10

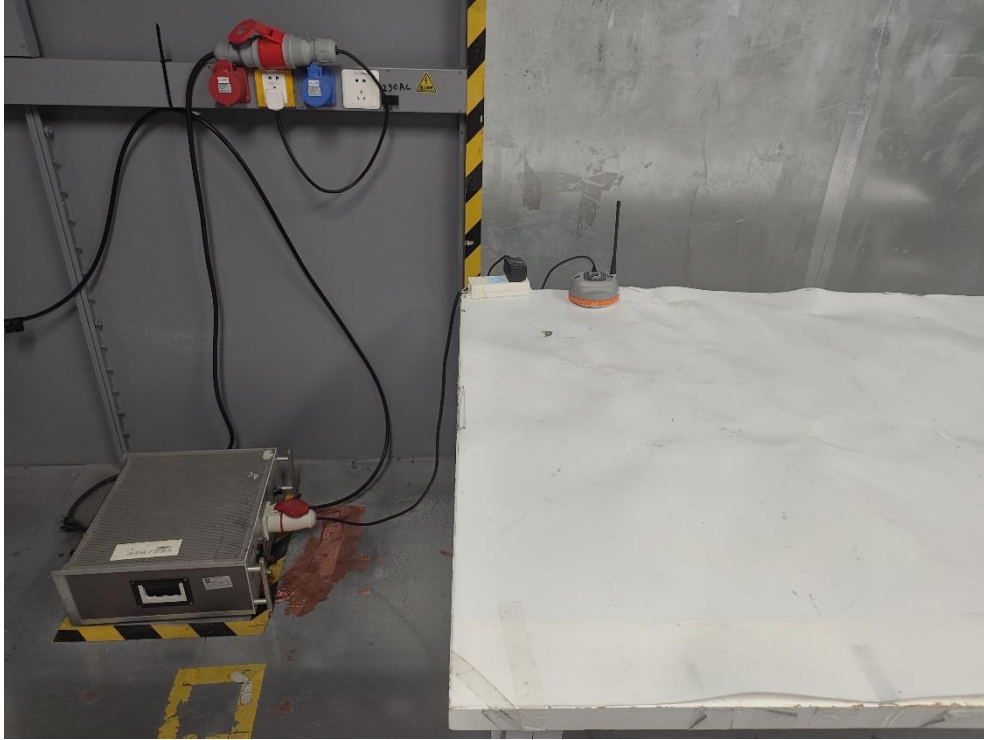
Mode	Temperature (°C)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
Band 1 (5150-5250 MHz)	-20°C	5179.993	7	5239.993	7
	-10°C	5179.989	11	5239.987	13
	-5°C	5179.991	9	5239.994	6
	0°C	5179.994	6	5239.992	8
	+10°C	5179.993	7	5239.994	6
	+20°C	5179.991	9	5239.989	11
	+30°C	5179.991	9	5239.988	12
	+40°C	5179.991	9	5239.990	10
	+50°C	5179.992	8	5239.987	13
Mode	Temperature (°C)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
Band 4 (5725-5850 MHz)	-20°C	5744.994	6	5824.990	10
	-10°C	5744.987	13	5824.991	9
	-5°C	5744.994	6	5824.992	8
	0°C	5744.994	6	5824.994	6
	+10°C	5744.992	8	5824.995	5
	+20°C	5744.990	10	5824.991	9
	+30°C	5744.990	10	5824.990	10
	+40°C	5744.988	12	5824.990	10
	+50°C	5744.992	8	5824.992	8

5 Test setup photo

5.1 Photos of Radiated emission



5.2 Photos of Conducted Emission test



-----END OF REPORT-----