TESTREPORT

Applicant Name :	Shenzhen Junge Yunchuang Technology Co., Ltd.
Address :	1204, Unit 3, Building C, Fu Gui Yuan, Fu Gui Road, Fu Hua Community, Xixiang Street, Baoan District, Shenzhen, China
Report Number:	RA230516-26708E-RF-00
FCC ID:	2A3FP-P05

Test Standard (s)

FCC PART 15.407

Sample Description

Product Type:	Projector
Model No.:	RV500W
Multiple Model(s) No.:	SK518W, J501, J502, J503, J504, J505
Trade Mark:	N/A
Date Received:	2023/05/16
Report Date:	2023/06/06

Test Result:	Pass*

* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Roger Ling
EMC Engineer

Approved By:

Candy Li
EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★ ".
Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RA230516-26708E-RF-00	Original Report	2023/06/06

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Projector
Tested model	RV500W
Multiple Model(s)	SK518W, J501, J502, J503, J504, J505 (model difference see product declaration letter of similarity)
Frequency Range	5G Wi-Fi: 5150-5250MHz; 5725-5850MHz
Mode	802.11a/n20/n40
Maximum Conducted Average Output Power	5150-5250 MHz: 13.52dBm 5725-5850 MHz: 12.30dBm
Modulation Technique	OFDM
Antenna Specification*	2.97dBi (It is provided by the applicant)
Voltage Range	AC 100-240V
Sample serial number	RE&CE:25TJ-1 RF: 25TJ-2 (Assigned by ATC)
Sample/EUT Status	Good condition

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB789033 D02 General U-NII Test Procedures New Rules v02r01.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF Frequency		$0.082*10^{-7}$
RF output power, conducted		0.71dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
Audio Frequency Response		0.1dB
Low Pass Filter Response		1.2dB
Modulation Limiting		1%
Emissions, Radiated	9kHz - 30MHz	2.06dB
	30MHz - 1GHz	5.08dB
	1GHz - 18GHz	4.96dB
	18GHz - 26.5GHz	5.16dB
	26.5GHz - 40GHz	4.64dB
Temperature		1℃
Humidity		6%
Supply voltages		0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189.

Accredited by American Association for Laboratory Accreditation (A2LA). The Certificate Number is 4297.01

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0016. The Registration Number is 30241.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.

The device support 802.11a/n20/n40 mode

For 5150-5250MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240

For 802.11a/ n20 mode: channel 36, 40, 48 were tested;
For 802.11n40 mode: channel 38, 46 were tested;

For 5725-5850MHz Band, 8 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785
151	5755	159	5795
153	5765	161	5805
/	/	165	5825

For 802.11a/ n20 mode: channel 149, 157, 165 were tested;
For 802.11n40 mode: channel 151, 159 were tested;

EUT Exercise Software

"SecureCRT*" Exercise Software was used.

U-NII	Mode	Data rate	Power Level		
			Low Channel	Middle Channel	High Channel
5150 – 5250MHz	802.11a	6Mbps	40	40	40
	802.11n20	MCS0	40	40	40
	802.11n40	MCS0	40	/	40
5725 – 5850MHz	802.11a	6Mbps	40	40	40
	802.11n20	MCS0	40	40	40
	802.11n40	MCS0	40	/	40

The worse-case data rates are determined to be as follows for each mode based upon investigations by measuring the output power and PSD across all data rated bandwidths, and modulations.

The software and power level was provided by the applicant.

Duty cycle

Test Result: Pass. Please refer to the Appendix.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

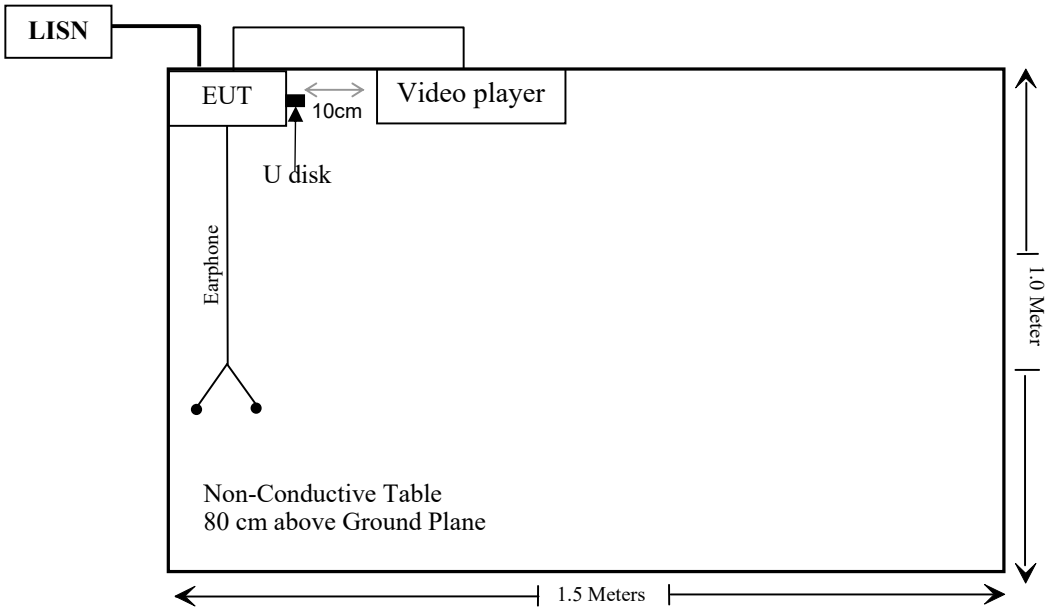
Manufacturer	Description	Model	Serial Number
GIEC	Video player	BDP-G4350	BD4350KXM21041500732
Unknown	U disk	Unknown	Unknown
Unknown	Earphone	Unknown	Unknown

External I/O Cable

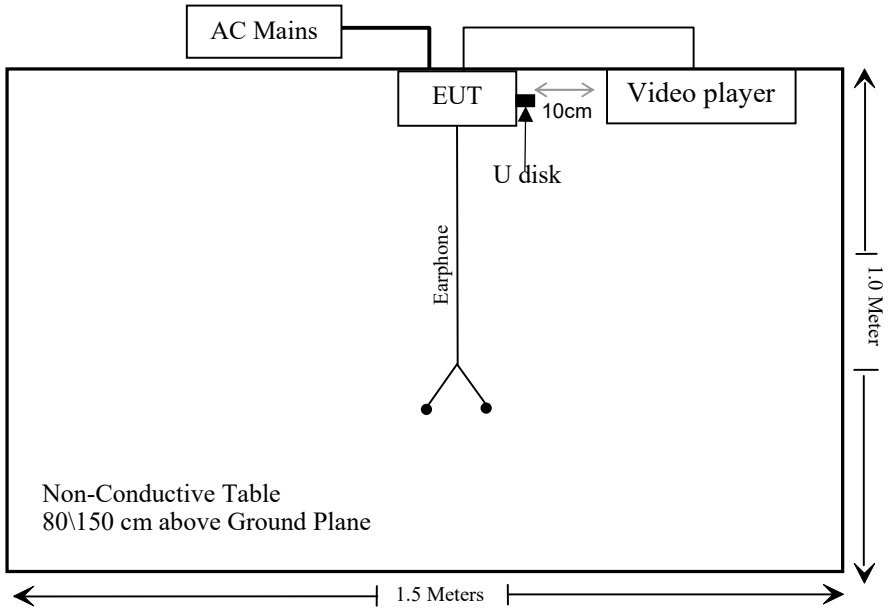
Cable Description	Length (m)	From Port	To
Un-shielded detachable AC cable	1.0	EUT	LISN/AC Mains
Un-shielded detachable Audio cable	1.0	EUT	Video player

Block Diagram of Test Setup

For conducted emission



For Radiated Emissions:



Note: the support table edge was flush with the center of turntable

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 1.1307 ,§2.1091	MPE-BASED EXEMPTION	Compliant
§15.203	Antenna Requirement	Compliant
§15.407(b)(9)& §15.207(a)	Conducted Emissions	Compliant
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a) (e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliant
§15.407(a)	Conducted Transmitter Output Power	Compliant
§15.407 (a)	Power Spectral Density	Compliant
§15.407 (h)	Transmit Power Control (TPC)	Not Applicable
§15.407 (h)	Dynamic Frequency Selection (DFS)	Not Applicable

Not Applicable: the EUT not operating within frequency range of 5250-5350MHz&5470-5725MHz.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde& Schwarz	EMI Test Receiver	ESCI	100784	2022/11/25	2023/11/24
Rohde & Schwarz	L.I.S.N.	ENV216	101314	2022/11/25	2023/11/24
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2022/12/07	2023/12/06
Unknown	RF Coaxial Cable	No.17	N0350	2022/11/25	2023/11/24
Conducted Emission Test Software: e3 19821b (V9)					
Radiated Emissions Test					
Rohde& Schwarz	Test Receiver	ESR	102725	2022/11/25	2023/11/24
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2022/11/25	2023/11/24
SONOMA INSTRUMENT	Amplifier	310 N	186131	2022/11/08	2023/11/07
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2022/11/08	2023/11/07
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2022/11/08	2023/11/07
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	837	2023/02/22	2026/02/21
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2022/12/26	2025/12/25
Radiated Emission Test Software: e3 19821b (V9)					
Unknown	RF Coaxial Cable	No.10	N050	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.11	N1000	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.12	N040	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.13	N300	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.14	N800	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.15	N600	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.16	N650	2022/11/25	2023/11/24
CD	Band Reject Filter	BRM-5.15/5.35g-45	075	2022/11/25	2023/11/24
CD	Band Reject Filter	BRM-5.725/5.875G-45	065	2022/11/25	2023/11/24

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde&Schwarz	Spectrum Analyzer	FSV-40	101590	2022/11/25	2023/11/24
Tonscend	RF Control Unit	JS0806-2	19G8060182	2022/10/24	2023/10/23
Agilent	Power Sensor	U2021XA	MY5425003	2023/02/25	2024/02/24
HP	20dB Attenuator	8491A	53857	2022/11/25	2023/11/24
WEINSCHEL	10dB Attenuator	5324	AU 3842	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.31	RF-01	Each time	

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307 (B) (3) & §2.1091- MPE-BASED EXEMPTION

Applicable Standard

According to subpart 1.1307 (b) (3) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:

General frequency and separation-distance dependent MPE-based effective radiated power(ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] to support an exemptionfrom further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

Ris the minimum separation distance in meters
f = frequency in MHz

For multiple RF sources: Multiple RF sources are exempt if:

in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation:

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

Result

Mode	Frequency (MHz)	Tune up conducted power	Antenna Gain		ERP		Evaluation Distance (m)	ERP Limit (W)
		(dBm)	(dBi)	(dBd)	(dBm)	(W)		
BT	2402-2480	2.0	-0.68	-2.83	-0.83	0.001	0.2	0.768
2.4G Wi-Fi	2412-2462	16.0	2.30	0.15	16.15	0.041	0.2	0.768
5G Wi-Fi	5150-5250	14.0	2.97	0.82	14.82	0.030	0.2	0.768
	5725-5850	13.0	2.97	0.82	13.82	0.024	0.2	0.768

Note: 1. The tune up conducted power and antenna gain was declared by the applicant.
2. The BT can transmit at same time with 2.4G Wi-Fi or 5G Wi-Fi
3. 0dBd=2.15dBi

Simultaneous transmitting consideration (worst case):

The ratio=ERP_{BT}/limit+ERP_{Wi-Fi}/limit=0.001/0.768+0.041/0.768=0.055＜1.0, so simultaneous exposure is compliant.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.407 (a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has one internal antenna arrangement for 5G Wi-Fi which were permanently attached. Please refer to the EUT photos.

Type	Antenna Gain	Impedance	Frequency Range
FPC	2.97dBi	50 Ω	5150-5850MHz

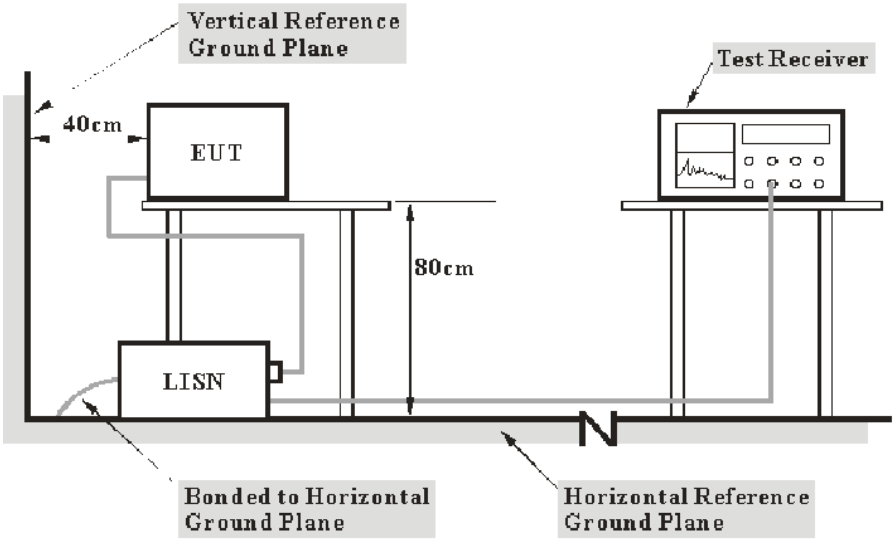
Result: Compliant.

FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and Average detection mode.

Corrected Factor & Margin Calculation

The Transd factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

Transd Factor = LISN VDF + Cable Loss

The "**Over limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over limit of -7 dB means the emission is 7 dB below the limit. The equation for calculation is as follows:

Over Limit = Level – Limit
Level = Read Level + Factor

Test Data

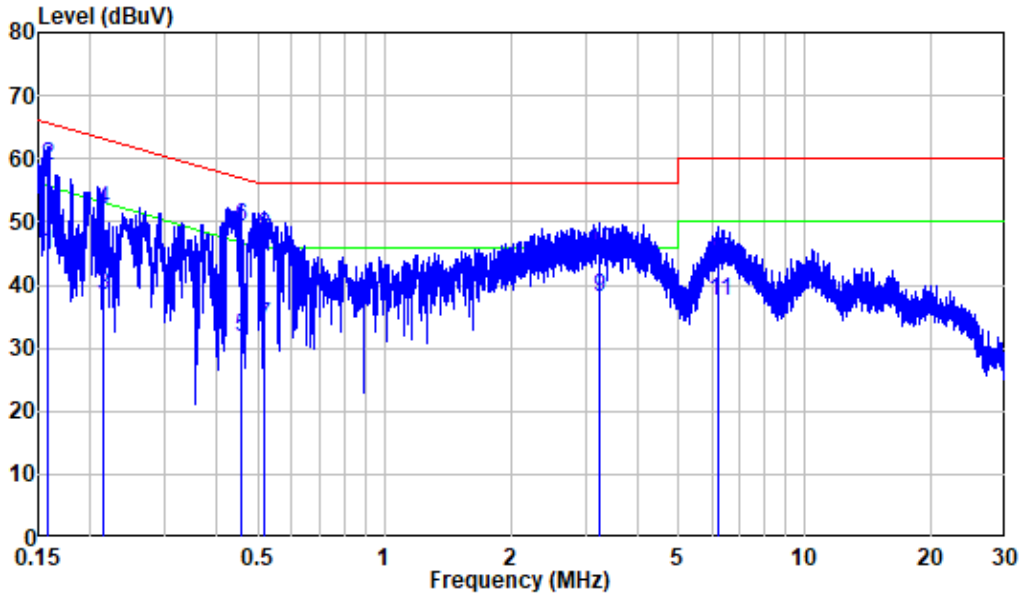
Environmental Conditions

Temperature:	23 °C
Relative Humidity:	49 %
ATM Pressure:	101.0 kPa

The testing was performed by Jerry Wu on 2023-05-31.

EUT operation mode: Transmitting (802.11a, 5180MHz)

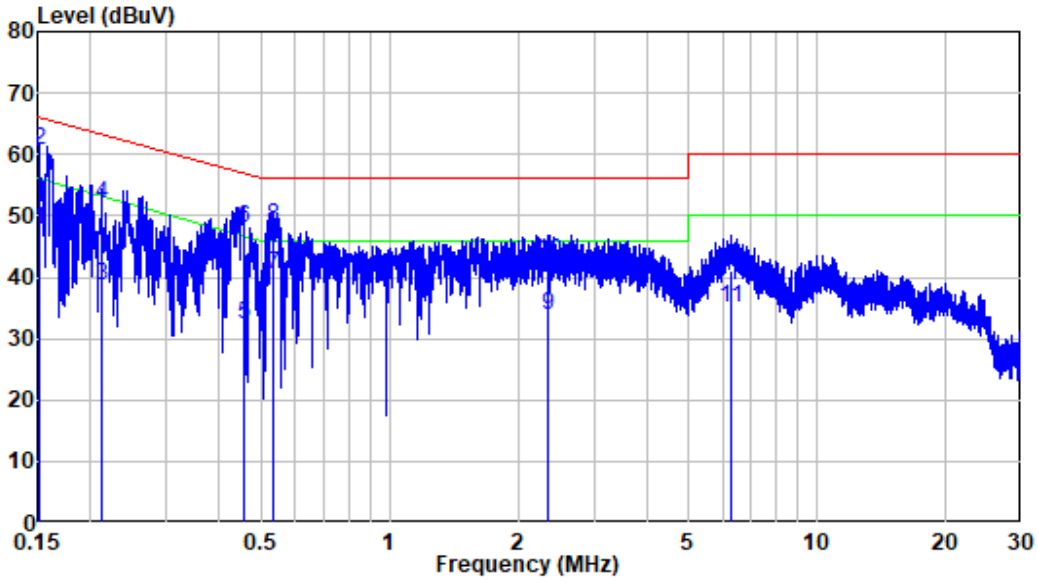
AC 120V/60 Hz, Line:



Site : Shielding Room
Condition: Line
Job No. : RA230516-26708E-RF
Mode : 5G WIFI Transmitting
Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.159	10.28	34.58	44.86	55.52	-10.66	Average
2	0.159	10.28	48.59	58.87	65.52	-6.65	QP
3	0.214	10.29	28.15	38.44	53.06	-14.62	Average
4	0.214	10.29	41.67	51.96	63.06	-11.10	QP
5	0.456	10.36	21.26	31.62	46.76	-15.14	Average
6	0.456	10.36	38.90	49.26	56.76	-7.50	QP
7	0.517	10.39	23.10	33.49	46.00	-12.51	Average
8	0.517	10.39	37.32	47.71	56.00	-8.29	QP
9	3.243	10.50	27.47	37.97	46.00	-8.03	Average
10	3.243	10.50	34.88	45.38	56.00	-10.62	QP
11	6.244	10.43	27.15	37.58	50.00	-12.42	Average
12	6.244	10.43	33.38	43.81	60.00	-16.19	QP

AC 120V/60 Hz, Neutral:



Site : Shielding Room
Condition: Neutral
Job No. : RA230516-26708E-RF
Mode : 5G WIFI Transmitting
Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.151	10.27	37.45	47.72	55.92	-8.20	Average
2	0.151	10.27	50.45	60.72	65.92	-5.20	QP
3	0.212	10.38	28.23	38.61	53.12	-14.51	Average
4	0.212	10.38	41.45	51.83	63.12	-11.29	QP
5	0.455	10.37	22.01	32.38	46.79	-14.41	Average
6	0.455	10.37	37.59	47.96	56.79	-8.83	QP
7	0.534	10.39	29.91	40.30	46.00	-5.70	Average
8	0.534	10.39	37.76	48.15	56.00	-7.85	QP
9	2.351	10.56	23.24	33.80	46.00	-12.20	Average
10	2.351	10.56	31.93	42.49	56.00	-13.51	QP
11	6.269	10.49	24.44	34.93	50.00	-15.07	Average
12	6.269	10.49	30.65	41.14	60.00	-18.86	QP

§15.205 & §15.209 & §15.407(B)– UNDESIRABLE EMISSION

Applicable Standard

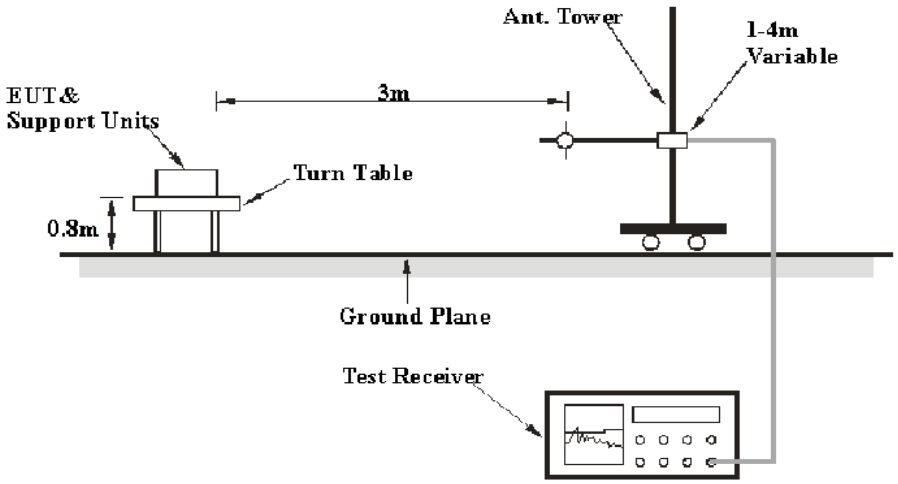
FCC §15.407 (b); §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following 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 e.i.r.p. 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 e.i.r.p. of −27 dBm/MHz.
(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 e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

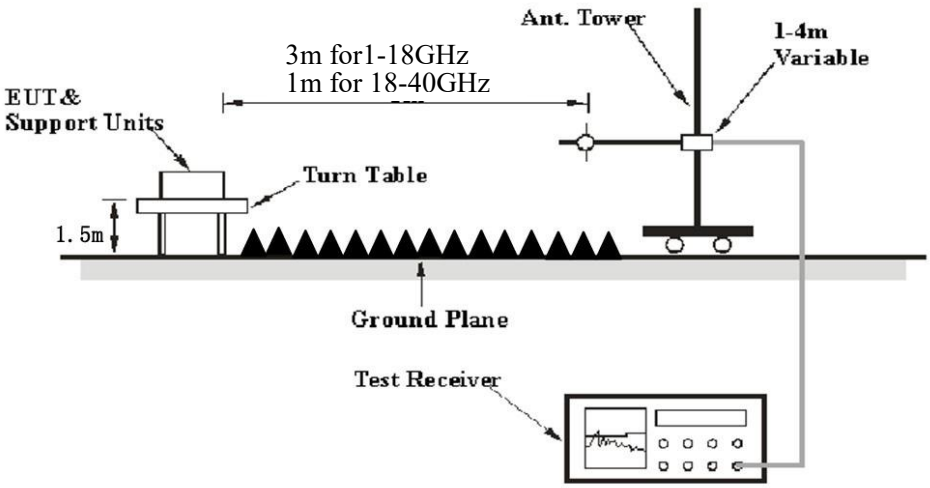
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

Below 1 GHz:



Above 1 GHz:



The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	PK
	1MHz	10 Hz Note 1	/	Average
	1MHz	＞1/T Note 2	/	Average

Note 1: when duty cycle is no less than 98%
Note 2: when duty cycle is less than 98%

Test Procedure

Radiated Spurious Emission

During the radiated emission test, the adapter was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all the installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

According to ANSI C63.10-2013,9.4: For field strength measurements made at other than the distance at which the applicable limit is specified,extrapolate the measured field strength to the field strength at the distance specified by the limit using an inverse distance correction factor (20 dB/decade of distance). In some cases, a different distance correction factor may be required;

$$E_{\mathrm{SpecLimit}} = E_{\mathrm{Meas}} + 20\log\left(\frac{d_{\mathrm{Meas}}}{d_{\mathrm{SpecLimit}}}\right)$$

where

$E_{\mathrm{SpecLimit}}$	is the field strength of the emission at the distance specified by the limit, in dBμV/m
E_{Meas}	is the field strength of the emission at the measurement distance, in dBμV/m
d_{Meas}	is the measurement distance, in m
$d_{\mathrm{SpecLimit}}$	is the distance specified by the limit, in m

So the extrapolation factor of 1m is 20*log(1/3)= -9.5 dB, for 18-40GHz range, the limit of 1m distance was added by 9.5dB from limit of 3m to compared with the result measurement at 1m distance.

Factor & Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The "**Over Limit/Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

Over Limit/Margin = Level / Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Data

Environmental Conditions

Temperature:	23~25.5 ℃
Relative Humidity:	50~52%
ATM Pressure:	101.0 kPa

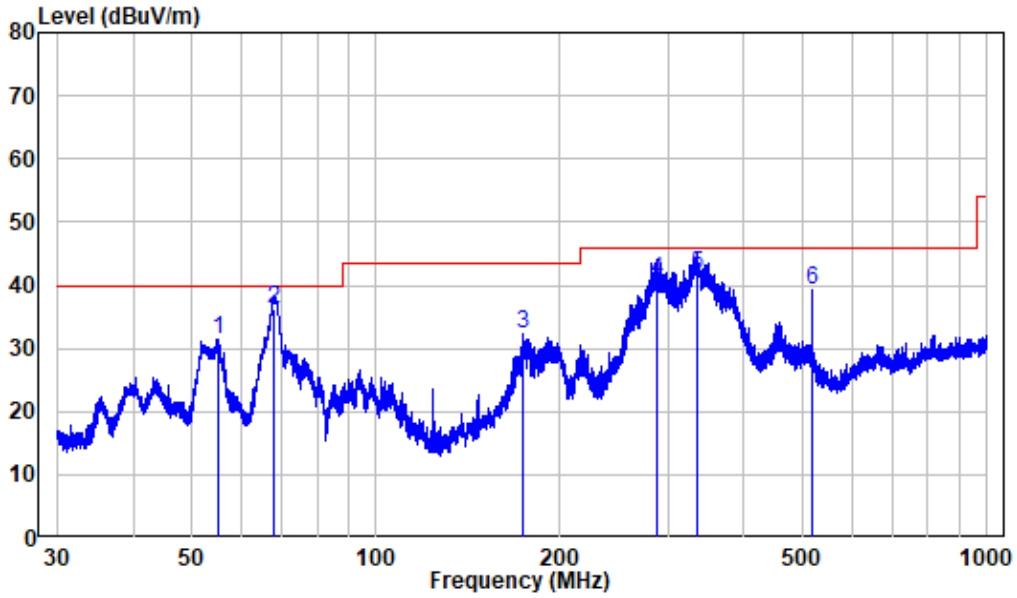
The testing was performed by Jason Liu on 2023-05-30 for below 1GHz,and on 2023-05-24 for above 1GHz.

EUT operation mode: Transmitting (Pre-scan in the X, Y and Z axes of orientation, the worst case of X-axes orientation was recorded)

30 MHz – 1 GHz: *(802.11a, 5180MHz)*

Note: When the test result of Peak was more than 6dB below the limit of QP, just the Peak value was recorded.

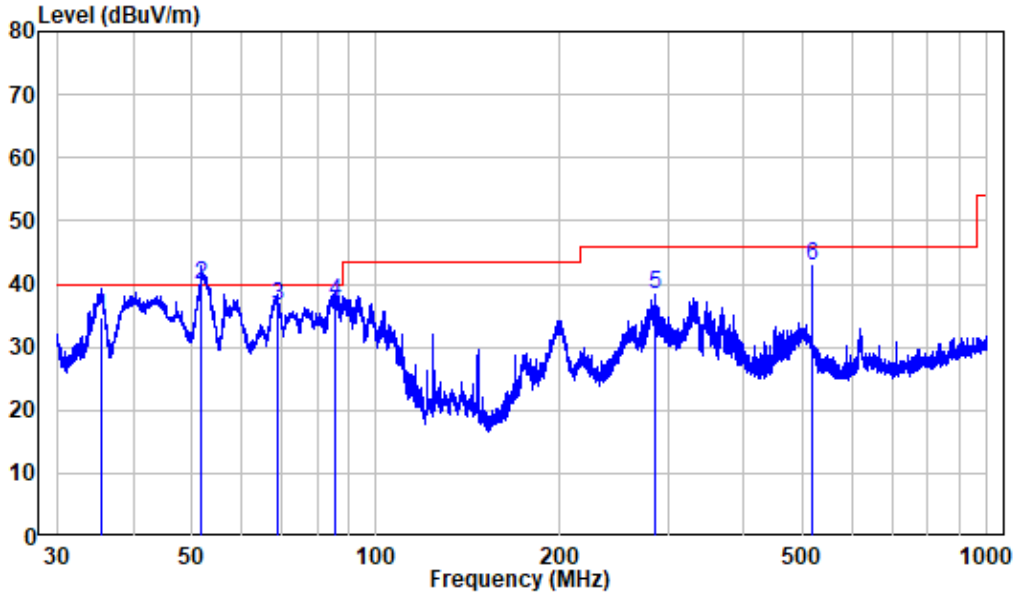
Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : RA230516-26708E-RF
Test Mode: 5G WIFI Transmitting

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	55.197	-10.26	41.61	31.35	40.00	-8.65	Peak
2	68.181	-13.92	50.10	36.18	40.00	-3.82	QP
3	174.042	-13.18	45.42	32.24	43.50	-11.26	Peak
4	287.990	-9.36	50.00	40.64	46.00	-5.36	QP
5	335.888	-7.58	49.30	41.72	46.00	-4.28	QP
6	516.116	-4.28	43.65	39.37	46.00	-6.63	QP

Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : RA230516-26708E-RF
Test Mode: 5G WIFI Transmitting

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	35.437	-11.40	46.01	34.61	40.00	-5.39	QP
2	51.820	-9.97	49.70	39.73	40.00	-0.27	QP
3	68.872	-14.24	50.79	36.55	40.00	-3.45	QP
4	85.785	-15.31	52.29	36.98	40.00	-3.02	QP
5	285.852	-9.42	47.89	38.47	46.00	-7.53	Peak
6	516.116	-4.28	47.00	42.72	46.00	-3.28	QP

Above 1GHz:

5150-5250 MHz:

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11a									
5180MHz									
4500	65.84	PK	262	1.9	H	-6.01	59.83	74	-14.17
4500	54.00	AV	262	1.9	H	-6.01	47.99	54	-6.01
4500	65.72	PK	223	1.7	V	-6.01	59.71	74	-14.29
4500	53.89	AV	223	1.7	V	-6.01	47.88	54	-6.12
5150	68.18	PK	211	2.5	H	-4.29	63.89	74	-10.11
5150	54.91	AV	211	2.5	H	-4.29	50.62	54	-3.38
5150	68.06	PK	264	2.2	V	-4.29	63.77	74	-10.23
5150	54.80	AV	264	2.2	V	-4.29	50.51	54	-3.49
10360	54.40	PK	314	1.6	H	6.04	60.44	68.2	-7.76
10360	54.17	PK	159	1.6	V	6.04	60.21	68.2	-7.99
5200MHz									
10400	54.55	PK	143	1.3	H	6.30	60.85	68.2	-7.35
10400	54.34	PK	312	1.3	V	6.30	60.64	68.2	-7.56
5240MHz									
5350	64.97	PK	23	1.3	H	-3.15	61.82	74	-12.18
5350	50.63	AV	23	1.3	H	-3.15	47.48	54	-6.52
5350	64.85	PK	273	1.8	V	-3.15	61.70	74	-12.30
5350	50.52	AV	273	1.8	V	-3.15	47.37	54	-6.63
5460	62.53	PK	339	2.5	H	-2.38	60.15	74	-13.85
5460	49.08	AV	339	2.5	H	-2.38	46.70	54	-7.30
5460	62.41	PK	188	1.5	V	-2.38	60.03	74	-13.97
5460	48.97	AV	188	1.5	V	-2.38	46.59	54	-7.41
10480	55.49	PK	234	1.1	H	6.00	61.49	68.2	-6.71
10480	55.36	PK	297	1.1	V	6.00	61.36	68.2	-6.84

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11n20									
5180MHz									
4500	65.91	PK	317	2.1	H	-6.01	59.90	74	-14.10
4500	54.08	AV	317	2.1	H	-6.01	48.07	54	-5.93
4500	65.79	PK	141	1.3	V	-6.01	59.78	74	-14.22
4500	52.97	AV	141	1.3	V	-6.01	46.96	54	-7.04
5150	68.43	PK	303	2.2	H	-4.29	64.14	74	-9.86
5150	55.05	AV	303	2.2	H	-4.29	50.76	54	-3.24
5150	68.31	PK	288	2.2	V	-4.29	64.02	74	-9.98
5150	54.94	AV	288	2.2	V	-4.29	50.65	54	-3.35
10360	54.59	PK	83	1.6	H	6.04	60.63	68.2	-7.57
10360	54.38	PK	184	1.6	V	6.04	60.42	68.2	-7.78
5200MHz									
10400	54.69	PK	311	2.1	H	6.30	60.99	68.2	-7.21
10400	54.46	PK	295	2.1	V	6.30	60.76	68.2	-7.44
5240MHz									
5350	65.16	PK	100	1.1	H	-3.15	62.01	74	-11.99
5350	50.81	AV	100	1.1	H	-3.15	47.66	54	-6.34
5350	60.04	PK	279	1.3	V	-3.15	56.89	74	-17.11
5350	50.70	AV	279	1.3	V	-3.15	47.55	54	-6.45
5460	62.65	PK	82	1.3	H	-2.38	60.27	74	-13.73
5460	49.22	AV	82	1.3	H	-2.38	46.84	54	-7.16
5460	62.54	PK	68	1	V	-2.38	60.16	74	-13.84
5460	49.10	AV	68	1	V	-2.38	46.72	54	-7.28
10480	55.72	PK	51	2.5	H	6.00	61.72	68.2	-6.48
10480	55.50	PK	171	2.5	V	6.00	61.50	68.2	-6.70

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11n40									
5190MHz									
4500	66.40	PK	63	2	H	-6.01	60.39	74	-13.61
4500	54.29	AV	63	2	H	-6.01	48.28	54	-5.72
4500	66.28	PK	358	1.3	V	-6.01	60.27	74	-13.73
4500	54.17	AV	358	1.3	V	-6.01	48.16	54	-5.84
5150	69.58	PK	70	2.4	H	-4.29	65.29	74	-8.71
5150	55.27	AV	70	2.4	H	-4.29	50.98	54	-3.02
5150	69.46	PK	268	1.7	V	-4.29	65.17	74	-8.83
5150	55.15	AV	268	1.7	V	-4.29	50.86	54	-3.14
10380	53.98	PK	72	2.1	H	6.17	60.15	68.2	-8.05
10380	53.85	PK	282	2.1	V	6.17	60.02	68.2	-8.18
5230MHz									
5350	65.44	PK	243	1.5	H	-3.15	62.29	74	-11.71
5350	51.56	AV	243	1.5	H	-3.15	48.41	54	-5.59
5350	60.33	PK	129	2.4	V	-3.15	57.18	74	-16.82
5350	51.45	AV	129	2.4	V	-3.15	48.30	54	-5.70
5460	62.85	PK	303	2	H	-2.38	60.47	74	-13.53
5460	49.89	AV	303	2	H	-2.38	47.51	54	-6.49
5460	62.74	PK	276	1.3	V	-2.38	60.36	74	-13.64
5460	49.77	AV	276	1.3	V	-2.38	47.39	54	-6.61
10460	55.02	PK	165	1.9	H	5.91	60.93	68.2	-7.27
10460	54.81	PK	355	1.9	V	5.91	60.72	68.2	-7.48

5725-5850 MHz:

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11a									
5745MHz									
5650	64.91	PK	52	2	H	-2.80	62.11	68.2	-6.09
5700	65.62	PK	162	1.6	H	-1.62	64.00	105.2	-41.20
5720	68.27	PK	178	1.1	H	-1.95	66.32	110.8	-44.48
5725	71.57	PK	37	1.9	H	-2.03	69.54	122.2	-52.66
5650	64.77	PK	61	2.1	V	-2.80	61.97	68.2	-6.23
5700	65.10	PK	3	1.3	V	-1.62	63.48	105.2	-41.72
5720	67.68	PK	255	1.2	V	-1.95	65.73	110.8	-45.07
5725	70.39	PK	149	2.3	V	-2.03	68.36	122.2	-53.84
11490	52.87	PK	299	1.7	H	7.99	60.86	74	-13.14
11490	39.73	AV	345	1.7	H	7.99	47.72	54	-6.28
11490	52.64	PK	304	1.3	V	7.99	60.63	74	-13.37
11490	39.52	AV	308	1.3	V	7.99	47.51	54	-6.49
5785MHz									
11570	53.77	PK	352	2.1	H	7.69	61.46	74	-12.54
11570	40.49	AV	216	2.1	H	7.69	48.18	54	-5.82
11570	53.55	PK	166	1.1	V	7.69	61.24	74	-12.76
11570	40.28	AV	334	1.1	V	7.69	47.97	54	-6.03
5825MHz									
5850	68.28	PK	82	2.3	H	-0.60	67.68	122.2	-54.52
5855	67.06	PK	89	2.3	H	-0.50	66.56	110.8	-44.24
5875	65.58	PK	14	1.6	H	-0.09	65.49	105.2	-39.71
5925	63.72	PK	136	1.3	H	-0.12	63.60	68.2	-4.60
5850	67.66	PK	353	2.2	V	-0.60	67.06	122.2	-55.14
5855	66.50	PK	111	2.3	V	-0.50	66.00	110.8	-44.80
5875	64.96	PK	124	1.7	V	-0.09	64.87	105.2	-40.33
5925	63.57	PK	27	1.2	V	-0.12	63.45	68.2	-4.75
11650	54.77	PK	320	2.3	H	6.82	61.59	74	-12.41
11650	41.33	AV	211	2.3	H	6.82	48.15	54	-5.85
11650	54.55	PK	284	1.8	V	6.82	61.37	74	-12.63
11650	41.12	AV	46	1.8	V	6.82	47.94	54	-6.06

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11n20									
5745 MHz									
5650	65.23	PK	47	1.2	H	-2.80	62.43	68.2	-5.77
5700	66.44	PK	334	1.6	H	-1.62	64.82	105.2	-40.38
5720	68.99	PK	33	2.4	H	-1.95	67.04	110.8	-43.76
5725	73.63	PK	133	1.7	H	-2.03	71.60	122.2	-50.60
5650	65.09	PK	310	1	V	-2.80	62.29	68.2	-5.91
5700	65.83	PK	351	1.1	V	-1.62	64.21	105.2	-40.99
5720	68.13	PK	190	1.7	V	-1.95	66.18	110.8	-44.62
5725	72.50	PK	198	2.2	V	-2.03	70.47	122.2	-51.73
11490	52.93	PK	137	2.4	H	7.99	60.92	74	-13.08
11490	39.84	AV	79	2.4	H	7.99	47.83	54	-6.17
11490	52.70	PK	212	2.3	V	7.99	60.69	74	-13.31
11490	39.62	AV	77	2.3	V	7.99	47.61	54	-6.39
5785 MHz									
11570	53.88	PK	319	2.4	H	7.69	61.57	74	-12.43
11570	40.54	AV	59	2.4	H	7.69	48.23	54	-5.77
11570	53.65	PK	230	2.4	V	7.69	61.34	74	-12.66
11570	40.32	AV	121	2.4	V	7.69	48.01	54	-5.99
5825MHz									
5850	69.19	PK	49	1.4	H	-0.60	68.59	122.2	-53.61
5855	68.00	PK	165	2.4	H	-0.50	67.50	110.8	-43.30
5875	66.35	PK	290	2.4	H	-0.09	66.26	105.2	-38.94
5925	63.87	PK	266	1.1	H	-0.12	63.75	68.2	-4.45
5850	68.27	PK	32	2	V	-0.60	67.67	122.2	-54.53
5855	67.06	PK	130	1.1	V	-0.50	66.56	110.8	-44.24
5875	65.64	PK	16	1.1	V	-0.09	65.55	105.2	-39.65
5925	63.74	PK	39	2.4	V	-0.12	63.62	68.2	-4.58
11650	54.95	PK	325	1.1	H	6.82	61.77	74	-12.23
11650	41.52	AV	330	1.1	H	6.82	48.34	54	-5.66
11650	54.73	PK	289	2.2	V	6.82	61.55	74	-12.45
11650	41.29	AV	242	2.2	V	6.82	48.11	54	-5.89

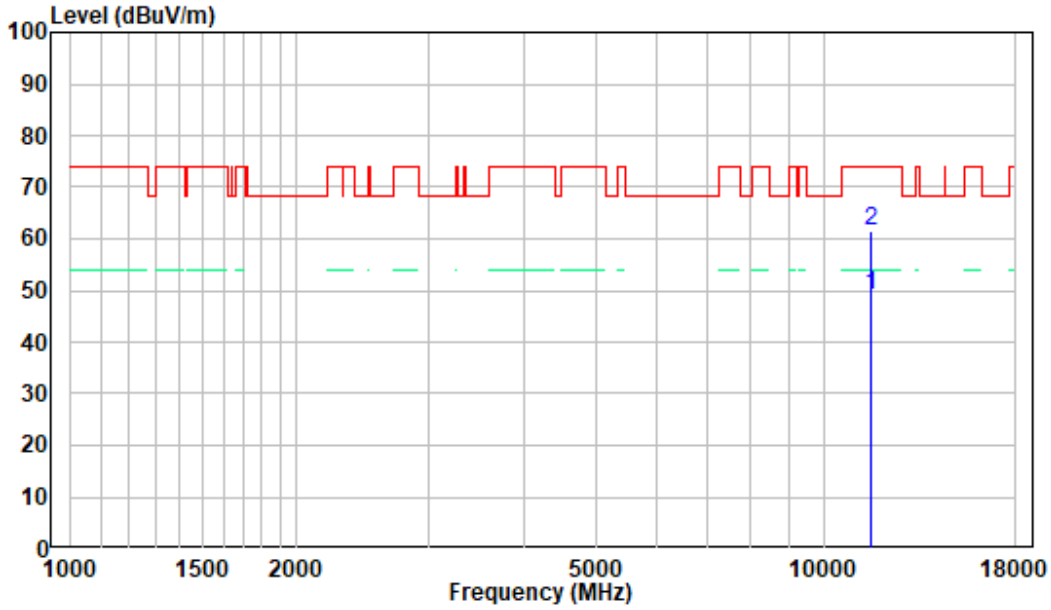
Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11n40									
5755 MHz									
5650	65.59	PK	270	2.2	H	-2.80	62.79	68.2	-5.41
5700	68.32	PK	197	1.8	H	-1.62	66.70	105.2	-38.50
5720	75.62	PK	15	1.6	H	-1.95	73.67	110.8	-37.13
5725	78.16	PK	45	2	H	-2.03	76.13	122.2	-46.07
5650	65.44	PK	138	1.9	V	-2.80	62.64	68.2	-5.56
5700	67.74	PK	237	2.3	V	-1.62	66.12	105.2	-39.08
5720	74.05	PK	295	1.9	V	-1.95	72.10	110.8	-38.70
5725	76.51	PK	179	2	V	-2.03	74.48	122.2	-47.72
11510	53.03	PK	247	2.3	H	8.04	61.07	74	-12.93
11510	40.61	AV	123	2.3	H	8.04	48.65	54	-5.35
11510	52.82	PK	25	1.3	V	8.04	60.86	74	-13.14
11510	40.39	AV	233	1.3	V	8.04	48.43	54	-5.57
5795 MHz									
5850	69.07	PK	147	2.2	H	-0.60	68.47	122.2	-53.73
5855	67.09	PK	331	1.3	H	-0.50	66.59	110.8	-44.21
5875	65.54	PK	297	1.2	H	-0.09	65.45	105.2	-39.75
5925	64.30	PK	232	1.2	H	-0.12	64.18	68.2	-4.02
5850	68.16	PK	56	1.7	V	-0.60	67.56	122.2	-54.64
5855	66.57	PK	307	2.5	V	-0.50	66.07	110.8	-44.73
5875	65.04	PK	324	2.1	V	-0.09	64.95	105.2	-40.25
5925	64.15	PK	20	2.5	V	-0.12	64.03	68.2	-4.17
11590	54.08	PK	282	1.9	H	7.60	61.68	74	-12.32
11590	41.46	AV	89	1.9	H	7.60	49.06	54	-4.94
11590	53.87	PK	40	1.3	V	7.60	61.47	74	-12.53
11590	41.25	AV	287	1.3	V	7.60	48.85	54	-5.15

Note:
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.

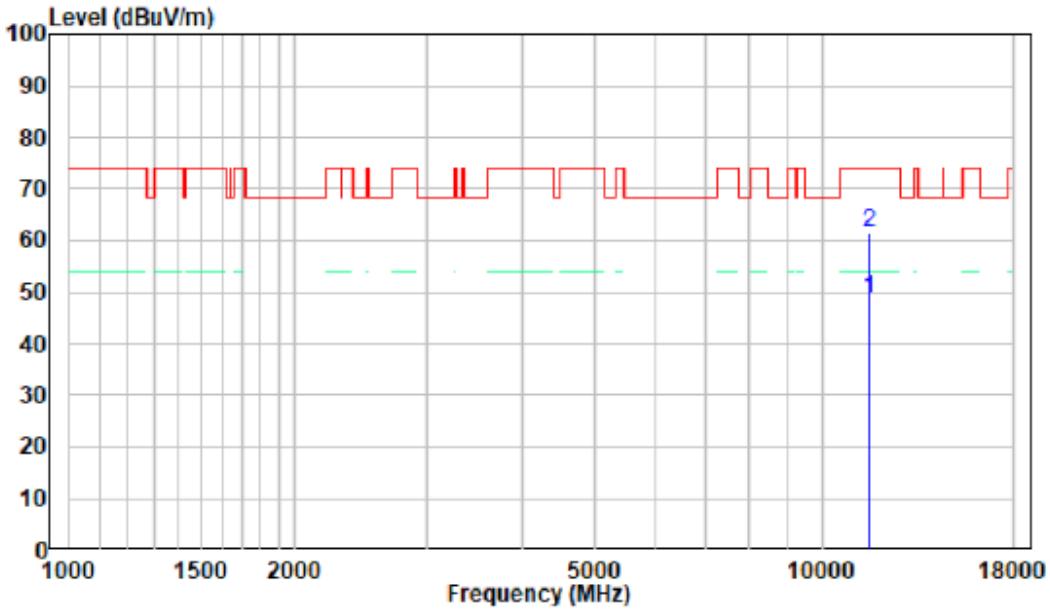
1 GHz - 18 GHz: (Pre-Scan plots)

802.11 n40, 5795MHz

Horizontal



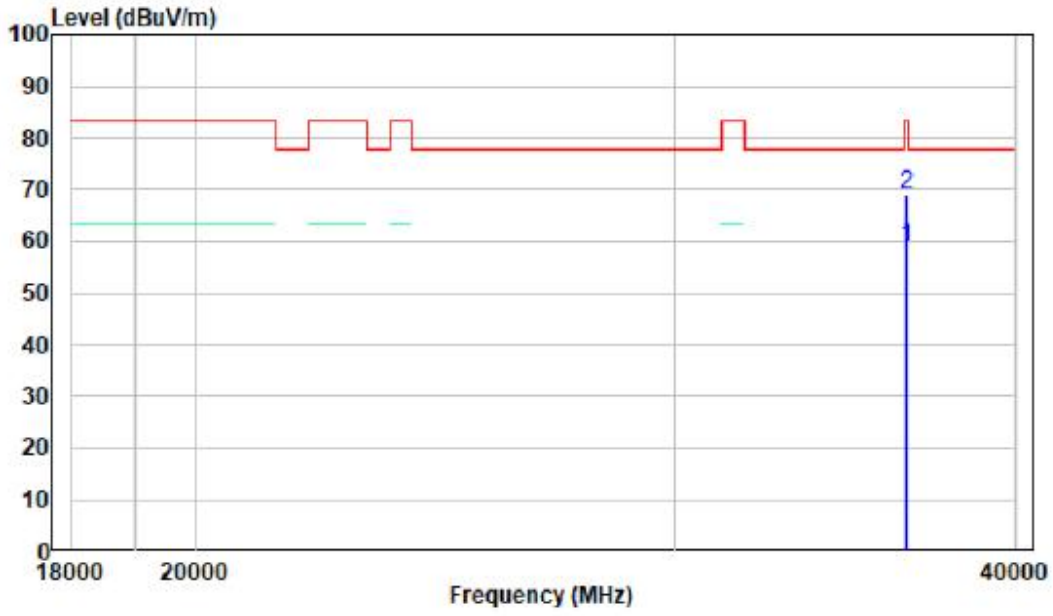
Vertical



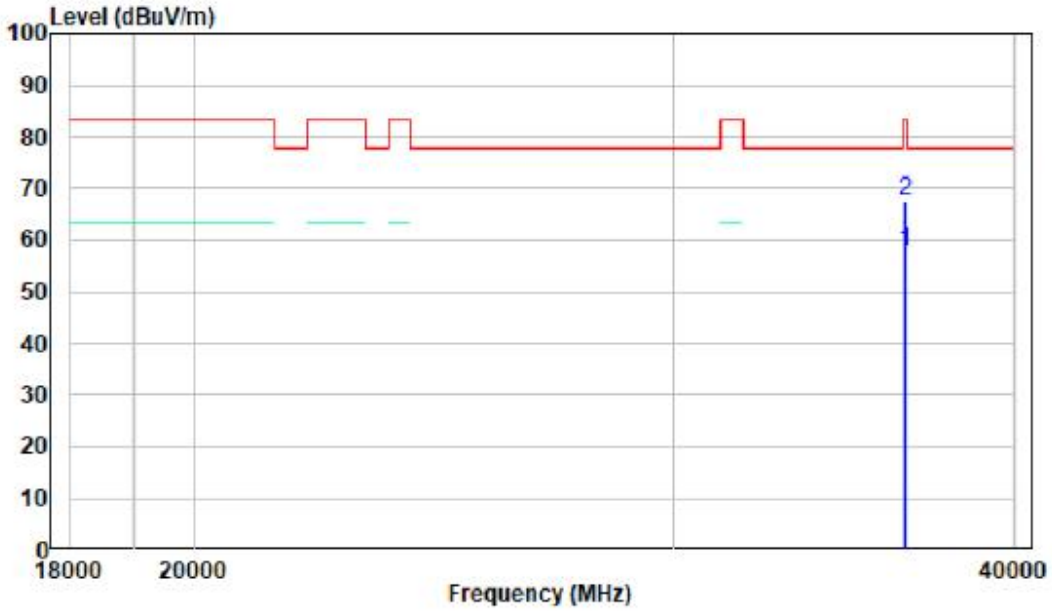
18-40GHz: (Pre-Scan plots)

802.11 n40, 5795MHz

Horizontal



Vertical



FCC §15.407(a),(e) – 26 dB & 6dB EMISSION BANDWIDTH

Applicable Standard

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

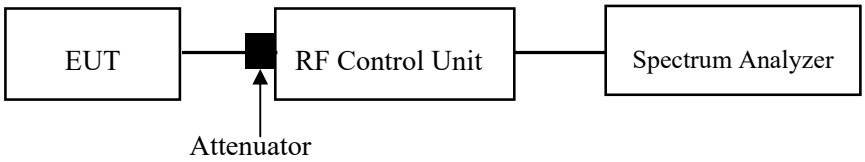
Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

According to KDB789033 D02 section II.C and section II.D

1. Emission Bandwidth (EBW)
a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. **Minimum Emission Bandwidth for the band 5.725-5.85 GHz**
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



Test Data

Environmental Conditions

Temperature:	24.5℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Amanda Wei on 2023-05-30.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

FCC §15.407(a) – CONDUCTED TRANSMITTER OUTPUT POWER

Applicable Standard

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

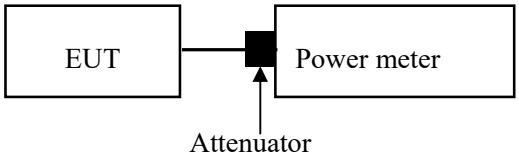
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method PM-G should be applied

1: Place the EUT on a bench and set it in transmitting mode.

2: Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.



Test Data

Environmental Conditions

Temperature:	24.5℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Amanda Wei on 2023-05-30.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

FCC §15.407(a) - POWER SPECTRAL DENSITY

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Method SA-2 should be applied

a) Set RBW=1MHz or 500 kHz. VBW>3 RBW

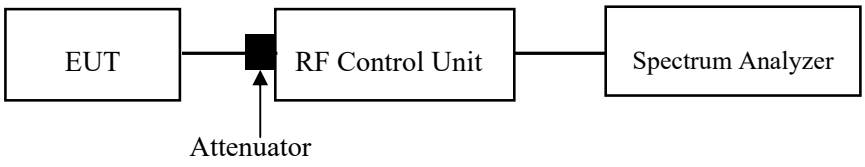
b) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 10g (500 kHz RBW) to the measured result. Where as RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

c) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (<1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement. f) Detector=power averaging(1ms)

d) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter. it is recommended to use reduced RBW of 100 kHz for the II.F.5.c) anc ILF 5.d. since RBW=100 kHz is available on nearly all spectrum analyzers.

h) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.



Test Data

Environmental Conditions

Temperature:	24.5℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Amanda Wei on 2023-05-30.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

APPENDIX

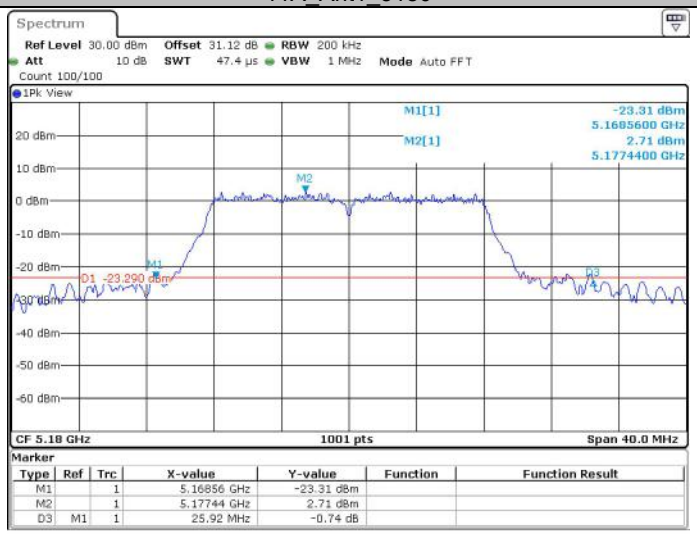
Appendix A1: Emission Bandwidth

Test Result

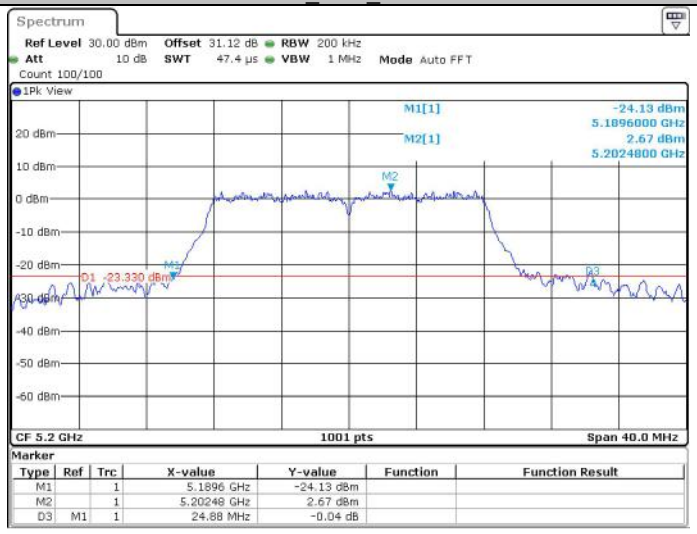
Test Mode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	25.92	5168.56	5194.48	---	---
		5200	24.88	5189.60	5214.48	---	---
		5240	25.92	5228.60	5254.52	---	---
11N20SISO	Ant1	5180	21.32	5169.52	5190.84	---	---
		5200	21.76	5189.52	5211.28	---	---
		5240	21.20	5229.56	5250.76	---	---
11N40SISO	Ant1	5190	42.88	5169.04	5211.92	---	---
		5230	42.08	5209.20	5251.28	---	---

Test Graphs

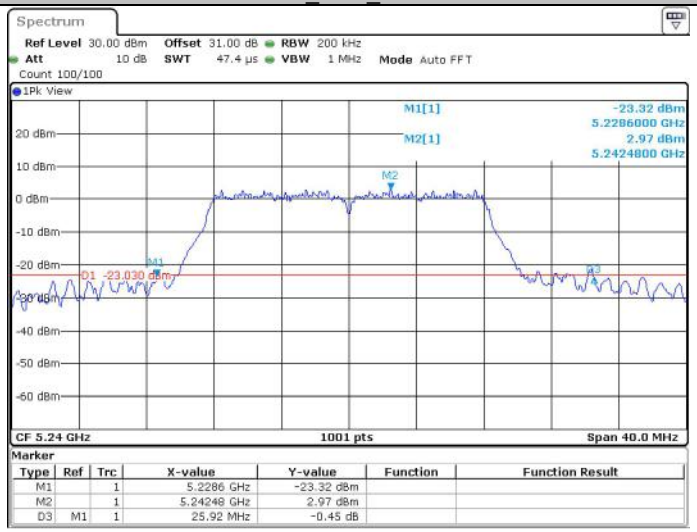
11A_Ant1_5180



11A_Ant1_5200

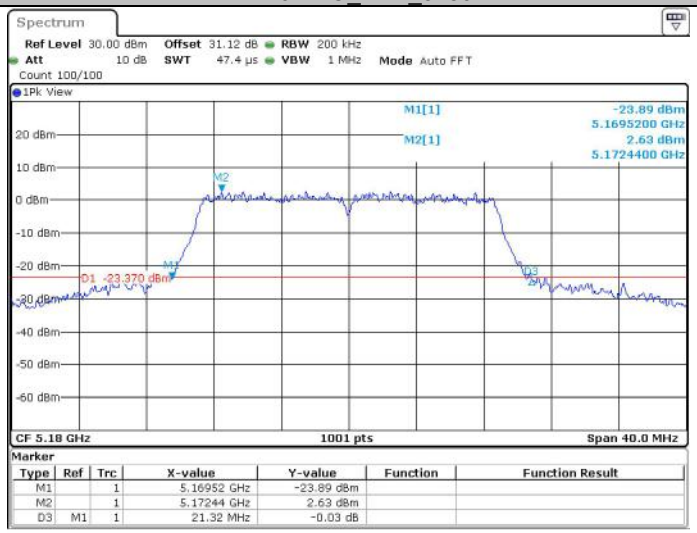


11A_Ant1_5240



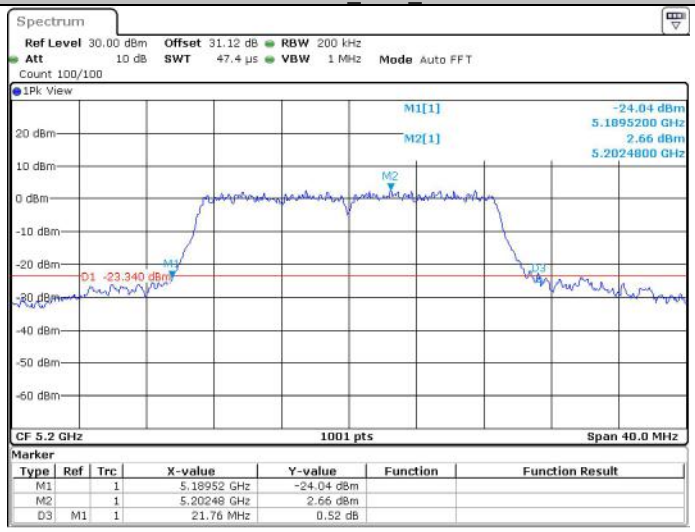
Date: 30.MAY.2023 01:33:06

11N20SISO_Ant1_5180



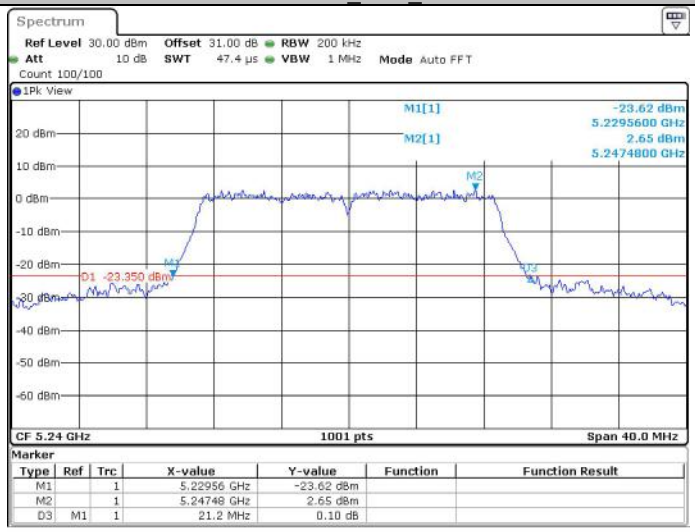
Date: 30.MAY.2023 01:43:10

11N20SISO_Ant1_5200



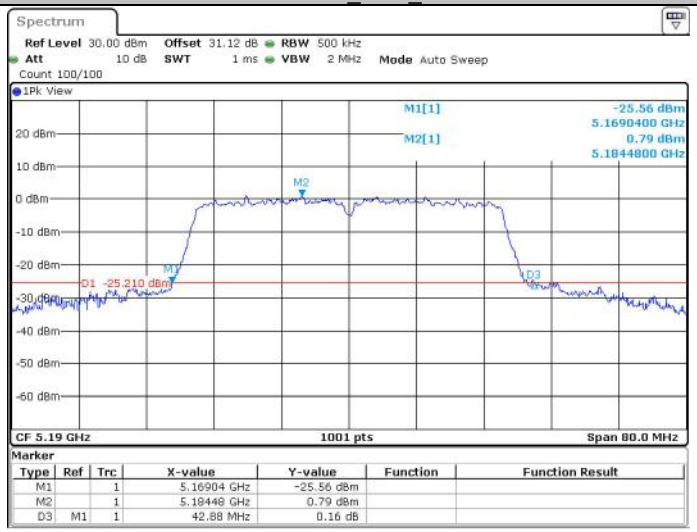
Date: 30.MAY.2023 01:45:47

11N20SISO_Ant1_5240



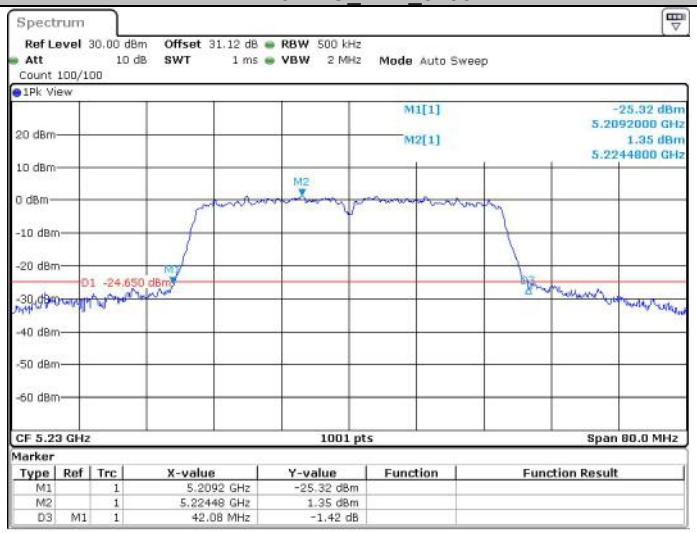
Date: 30.MAY.2023 01:47:50

11N40SISO_Ant1_5190



Date: 30.MAY.2023 02:02:41

11N40SISO_Ant1_5230



Date: 30.MAY.2023 02:04:09

Appendix A2: Occupied channel bandwidth

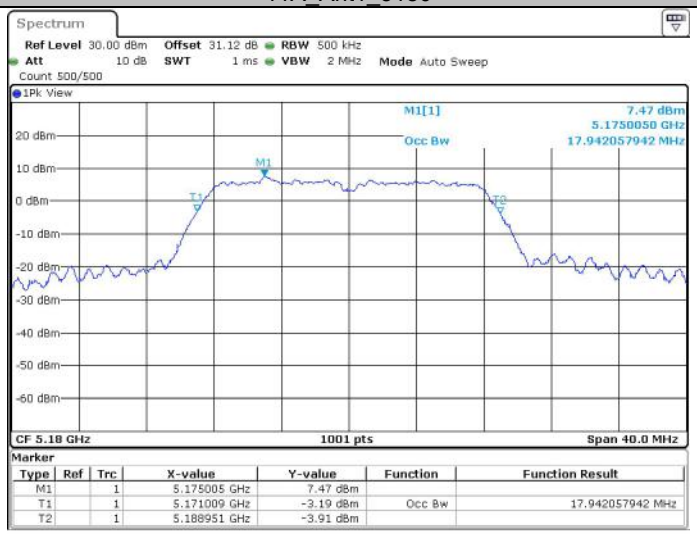
Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.942	5171.009	5188.951	---	---
		5200	17.982	5191.089	5209.071	---	---
		5240	17.942	5231.049	5248.991	---	---
		5745	17.822	5735.969	5753.791	---	---
		5785	17.742	5776.009	5793.751	---	---
		5825	17.662	5816.089	5833.751	---	---
11N20SISO	Ant1	5180	18.541	5170.689	5189.231	---	---
		5200	18.501	5190.769	5209.271	---	---
		5240	18.501	5230.729	5249.231	---	---
		5745	18.422	5735.729	5754.151	---	---
		5785	18.382	5775.729	5794.111	---	---
		5825	18.342	5815.769	5834.111	---	---
11N40SISO	Ant1	5190	36.923	5171.538	5208.462	---	---
		5230	36.843	5211.618	5248.462	---	---
		5755	36.923	5736.538	5773.462	---	---
		5795	36.923	5776.459	5813.382	---	---

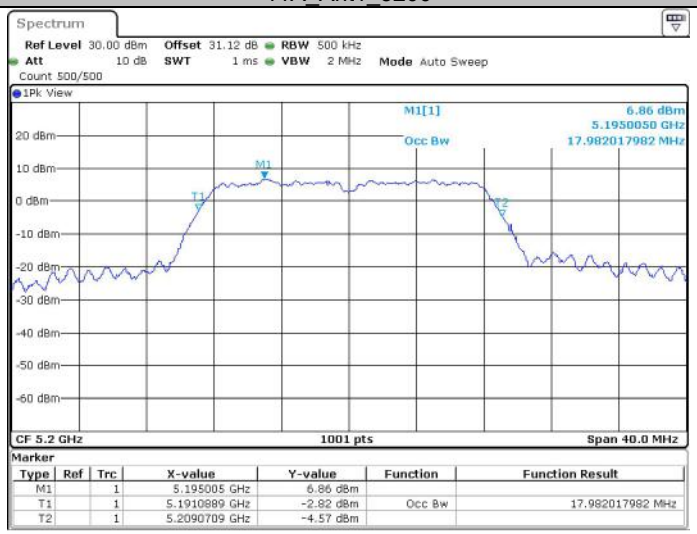
Note: the device not operating with any part of OBW fall within 5250-5350MHz and 5470-5725MHz range.

Test Graphs

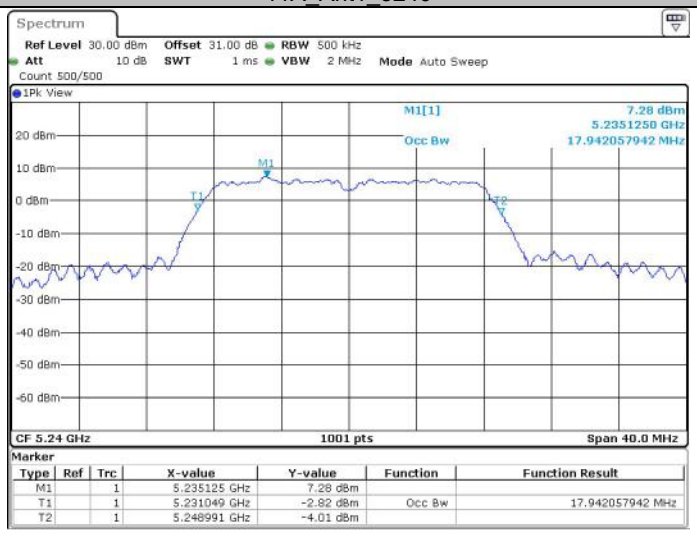
11A_Ant1_5180



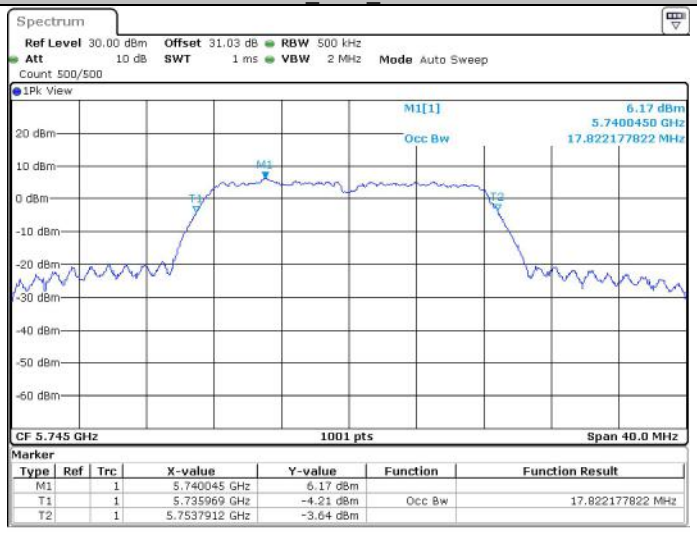
11A_Ant1_5200



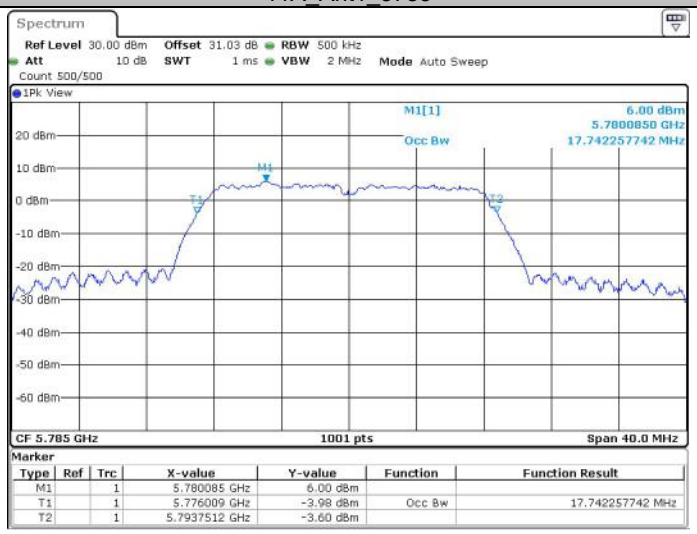
11A_Ant1_5240



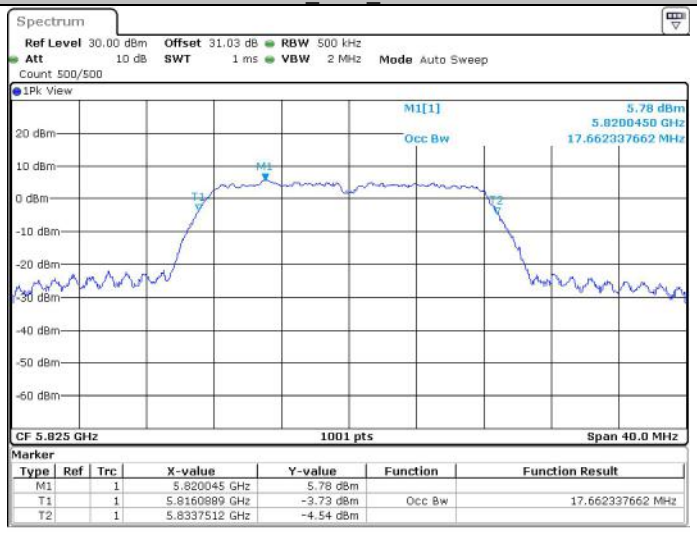
11A_Ant1_5745



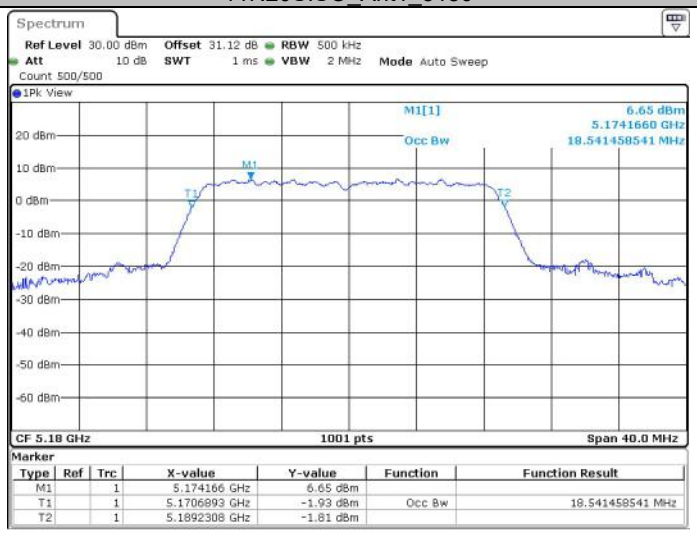
11A_Ant1_5785



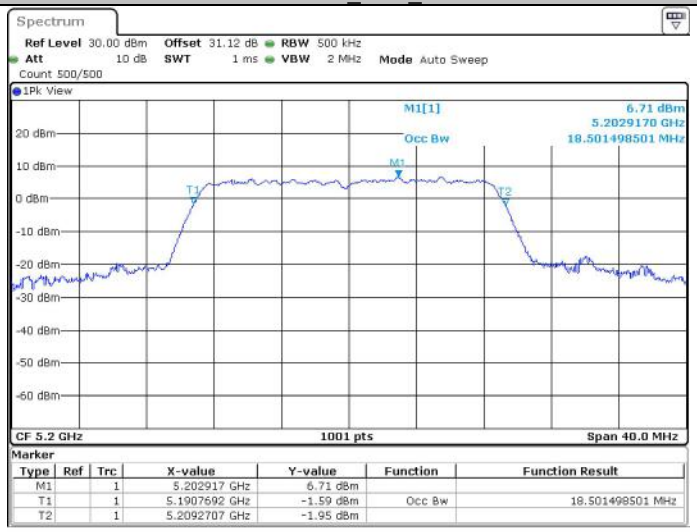
11A_Ant1_5825



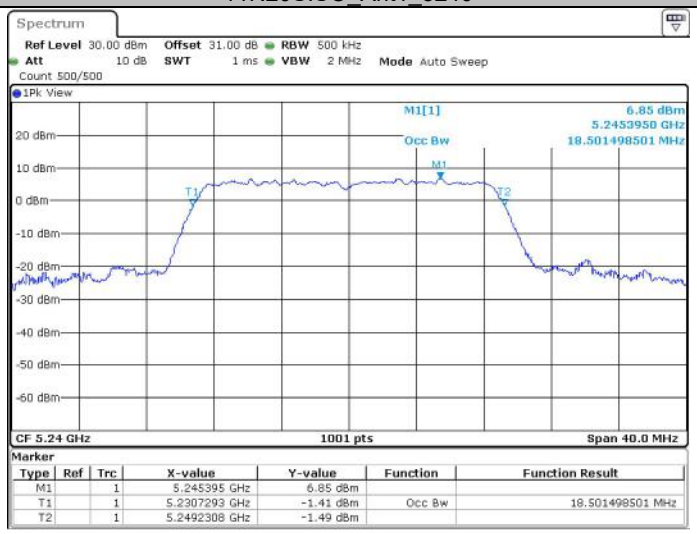
11N20SISO_Ant1_5180



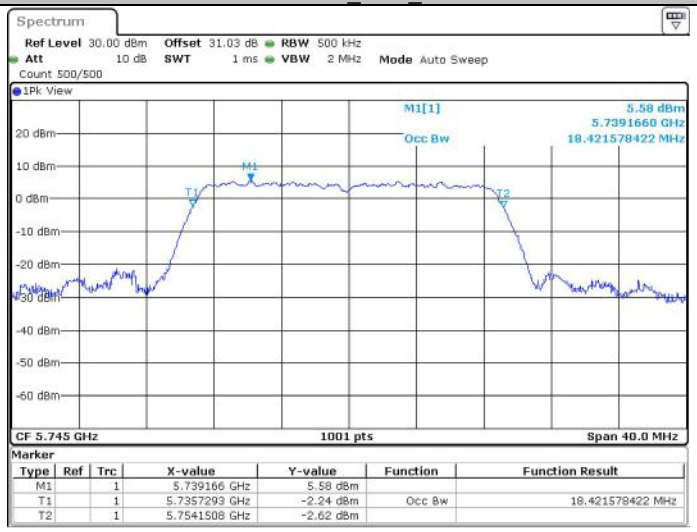
11N20SISO_Ant1_5200



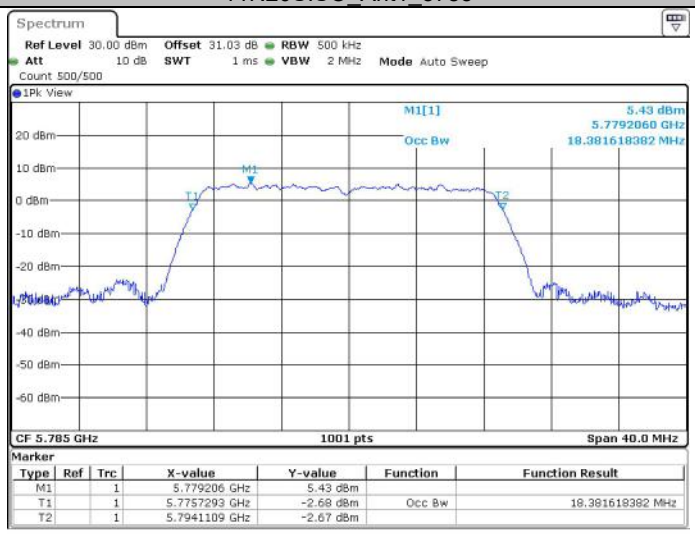
11N20SISO_Ant1_5240



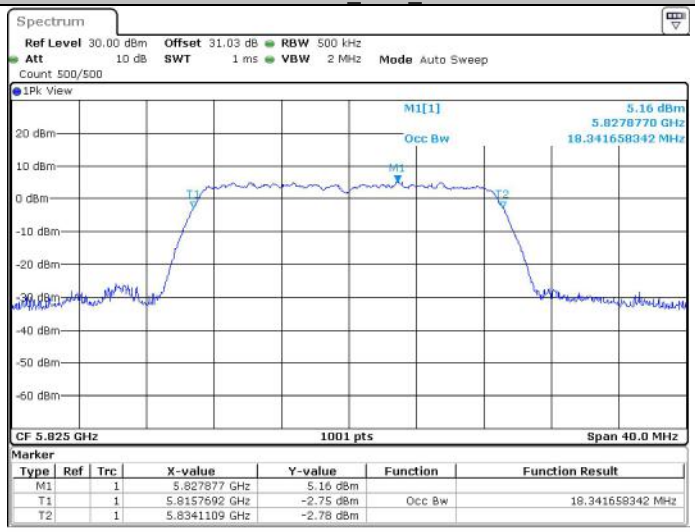
11N20SISO_Ant1_5745



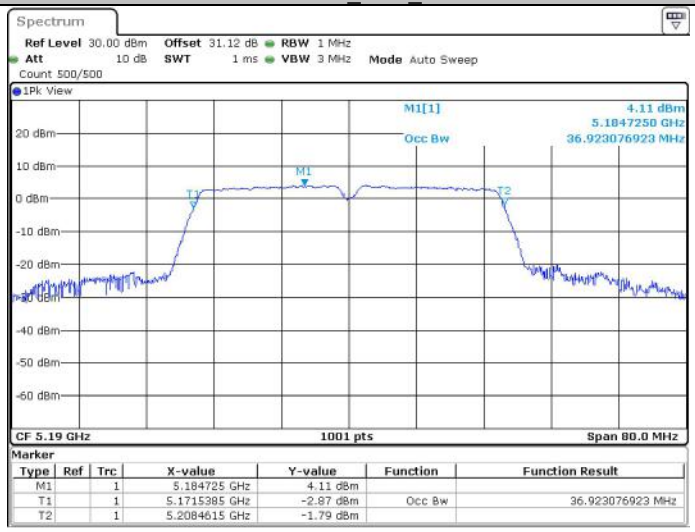
11N20SISO_Ant1_5785



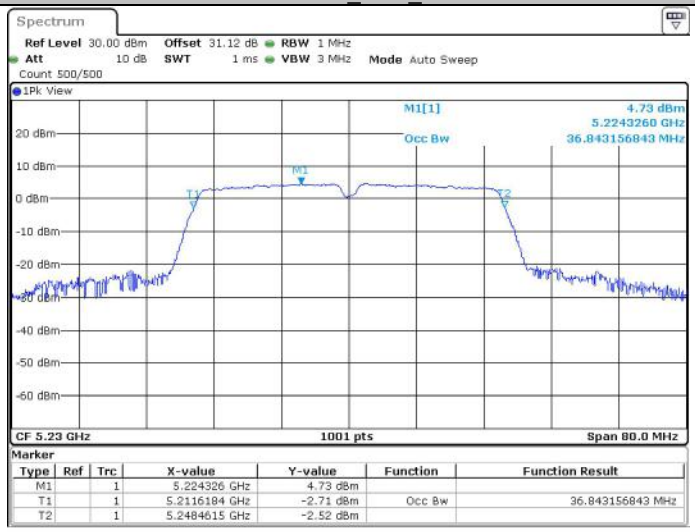
11N20SISO_Ant1_5825



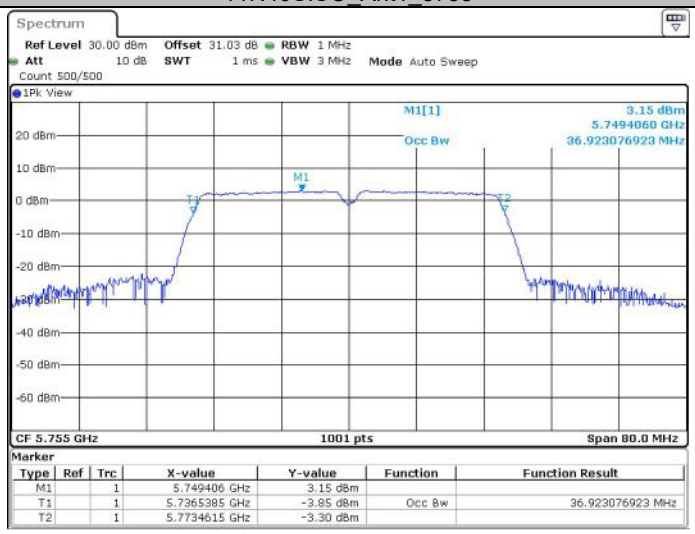
11N40SISO_Ant1_5190



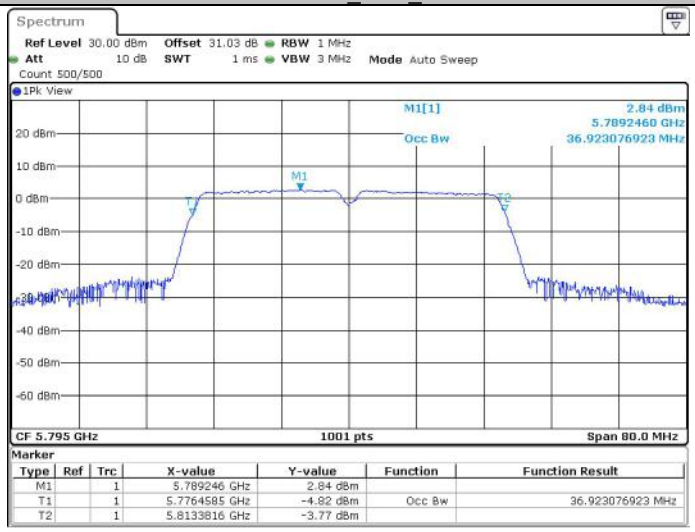
11N40SISO_Ant1_5230



11N40SISO_Ant1_5755



11N40SISO_Ant1_5795



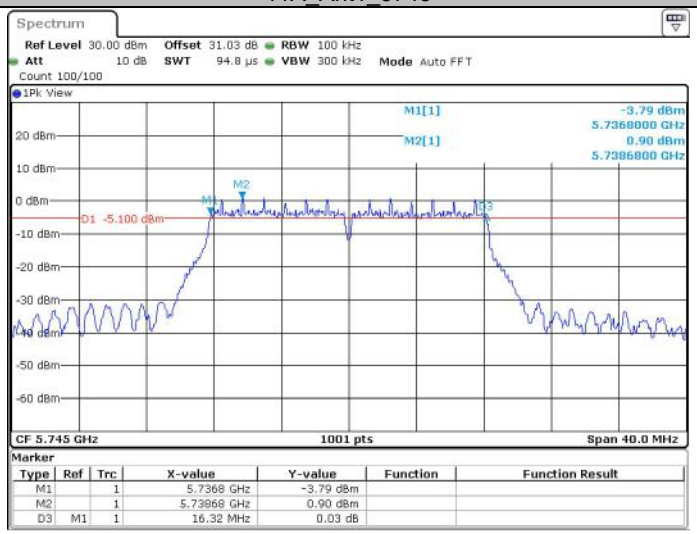
Appendix A3: Min emission bandwidth

Test Result B4

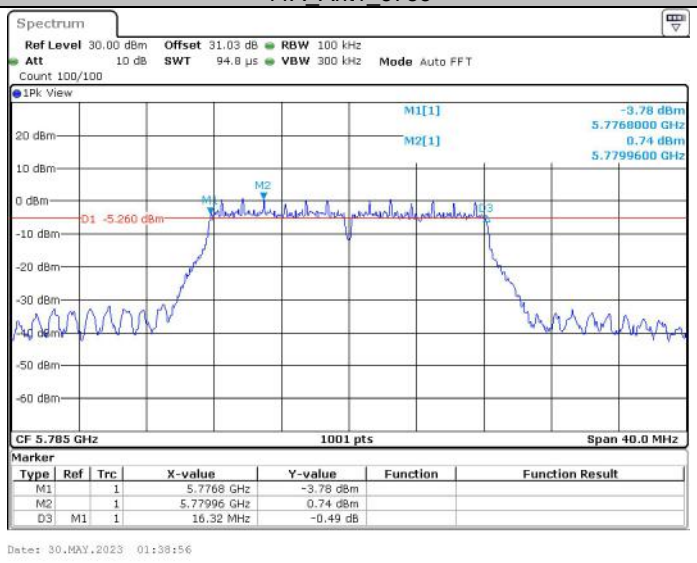
Test Mode	Antenna	Frequency[MHz]	6db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.32	5736.80	5753.12	0.5	PASS
		5785	16.32	5776.80	5793.12	0.5	PASS
		5825	16.32	5816.80	5833.12	0.5	PASS
11N20SISO	Ant1	5745	17.60	5736.16	5753.76	0.5	PASS
		5785	17.60	5776.16	5793.76	0.5	PASS
		5825	17.56	5816.16	5833.72	0.5	PASS
11N40SISO	Ant1	5755	36.32	5736.84	5773.16	0.5	PASS
		5795	36.32	5776.84	5813.16	0.5	PASS

Test Graphs B4

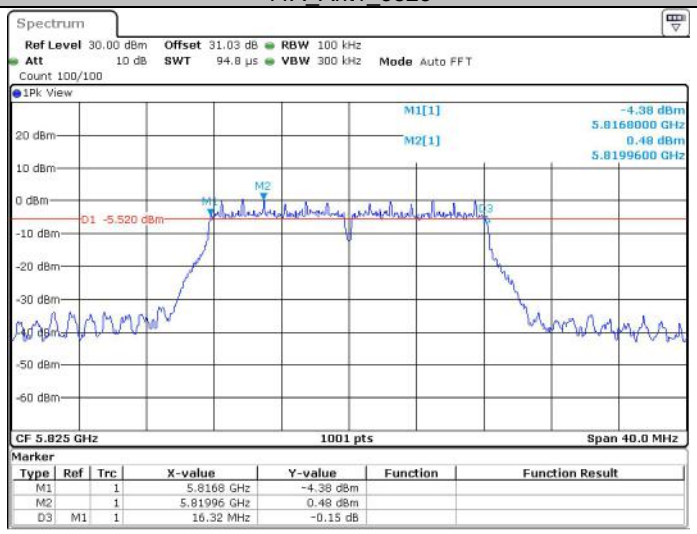
11A_Ant1_5745



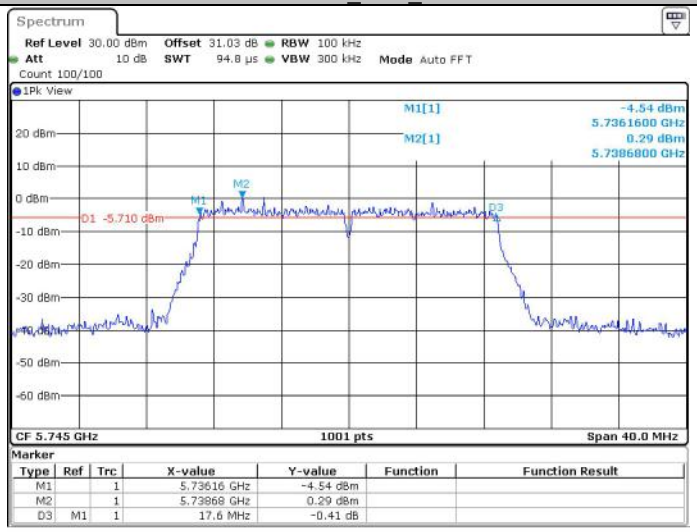
11A_Ant1_5785



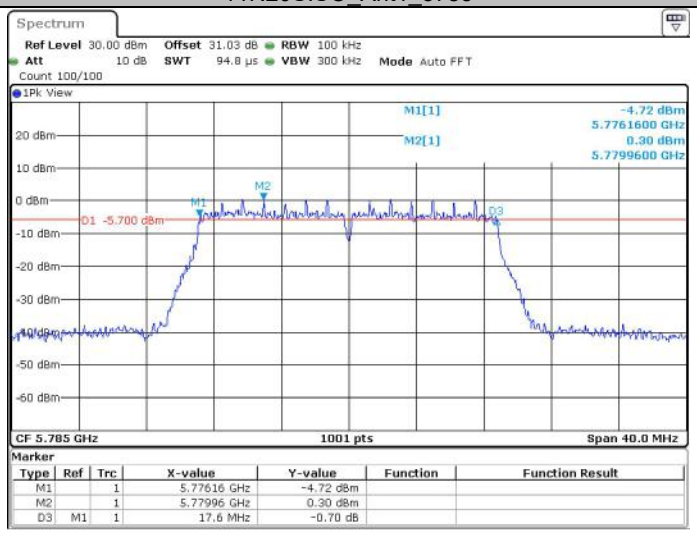
11A_Ant1_5825



11N20SISO_Ant1_5745

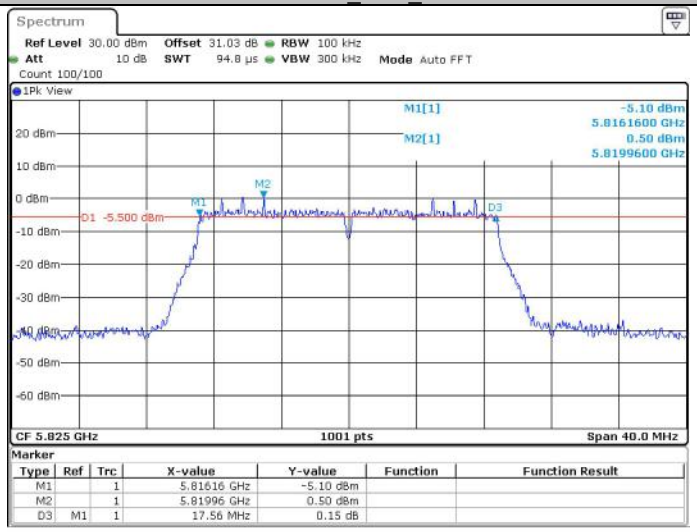


11N20SISO_Ant1_5785



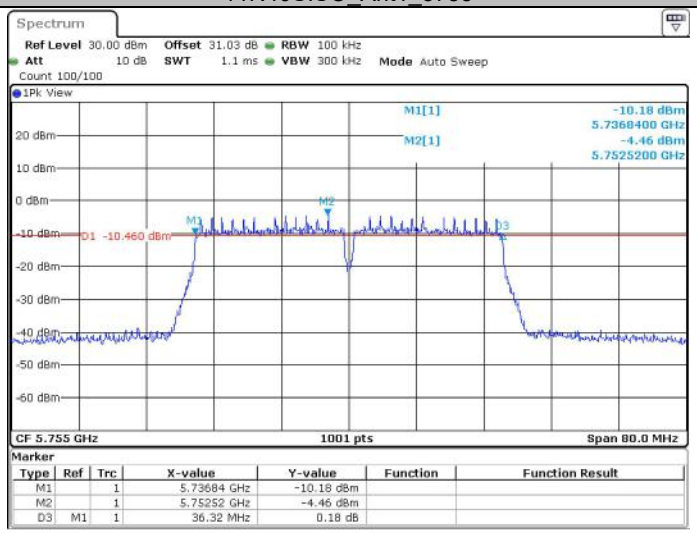
Date: 30.MAY.2023 01:58:42

11N20SISO_Ant1_5825

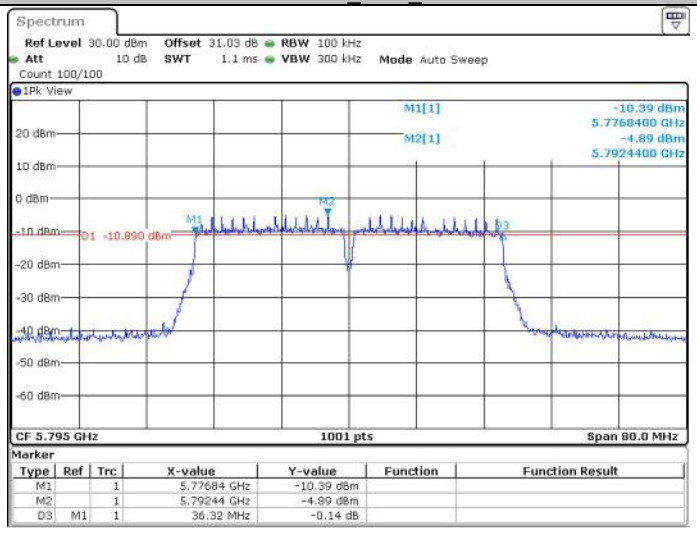


Date: 30.MAY.2023 02:00:20

11N40SISO_Ant1_5755



11N40SISO_Ant1_5795



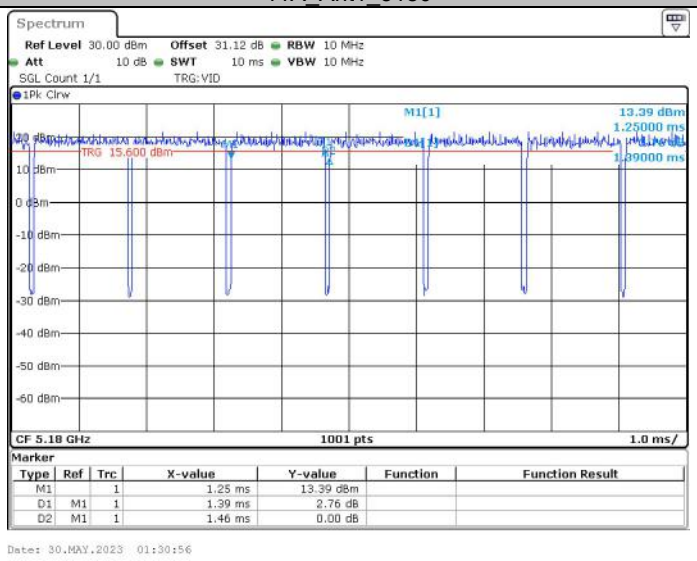
Appendix B: Duty Cycle

Test Result

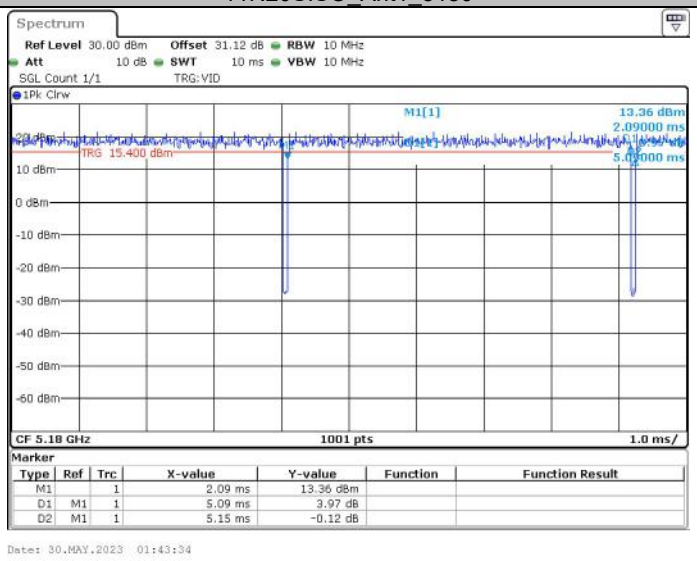
Test Mode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Duty cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
11A	Ant1	5180	1.39	1.46	95.21	0.21	0.72
11N20SISO	Ant1	5180	5.09	5.15	98.83	/	/
11N40SISO	Ant1	5190	2.47	2.54	97.24	0.12	0.40

Test Graphs

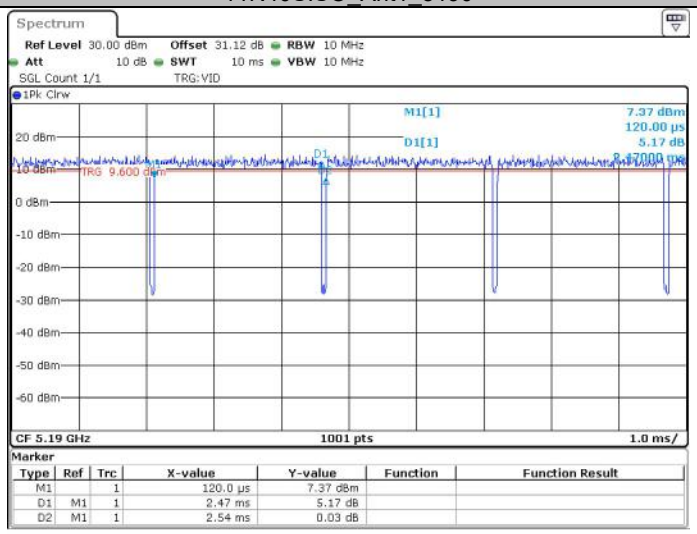
11A_Ant1_5180



11N20SISO_Ant1_5180



11N40SISO_Ant1_5190



Appendix C: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	13.29	≤23.98	PASS
		5200	13.20	≤23.98	PASS
		5240	**13.52**	≤23.98	PASS
		5745	**12.30**	≤30.00	PASS
		5785	12.04	≤30.00	PASS
		5825	11.93	≤30.00	PASS
11N20SISO	Ant1	5180	13.25	≤23.98	PASS
		5200	13.14	≤23.98	PASS
		5240	13.45	≤23.98	PASS
		5745	12.23	≤30.00	PASS
		5785	11.99	≤30.00	PASS
		5825	11.85	≤30.00	PASS
11N40SISO	Ant1	5190	10.35	≤23.98	PASS
		5230	10.82	≤23.98	PASS
		5755	9.66	≤30.00	PASS
		5795	9.15	≤30.00	PASS

Note: The Duty Cycle Factor is compensated in the result.

Appendix D: Maximum power spectral density

Test Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	2.01	≤11.00	PASS
		5200	1.92	≤11.00	PASS
		5240	2.18	≤11.00	PASS
		5745	-1.97	≤30.00	PASS
		5785	-2.02	≤30.00	PASS
		5825	-2.22	≤30.00	PASS
11N20SISO	Ant1	5180	1.78	≤11.00	PASS
		5200	1.64	≤11.00	PASS
		5240	1.78	≤11.00	PASS
		5745	-2.17	≤30.00	PASS
		5785	-2.56	≤30.00	PASS
		5825	-2.6	≤30.00	PASS
11N40SISO	Ant1	5190	-4.32	≤11.00	PASS
		5230	-3.57	≤11.00	PASS
		5755	-7.77	≤30.00	PASS
		5795	-8.3	≤30.00	PASS

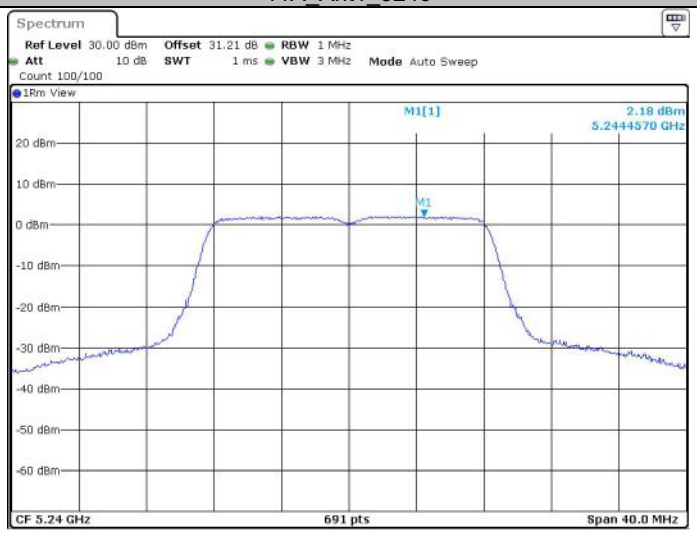
Note: 1. The Result and Limit Unit is dBm/500 kHz in the band 5.725−5.85 GHz.
2. The Duty Cycle Factor is compensated in the graph.

Test Graphs

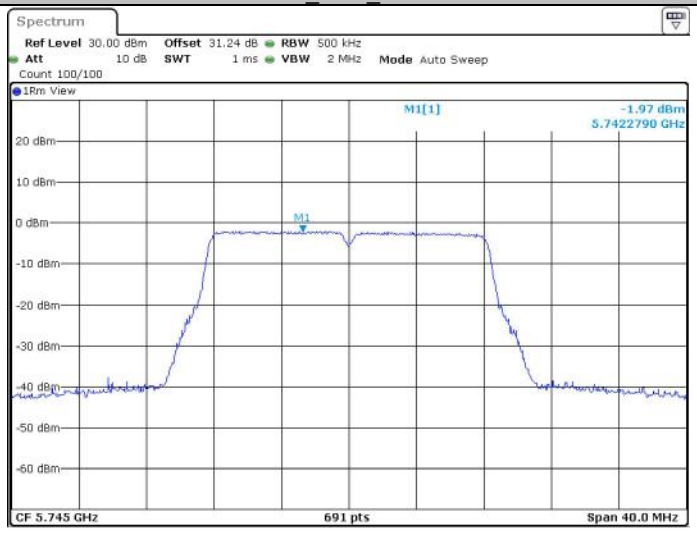
11A_Ant1_5180

11A_Ant1_5200

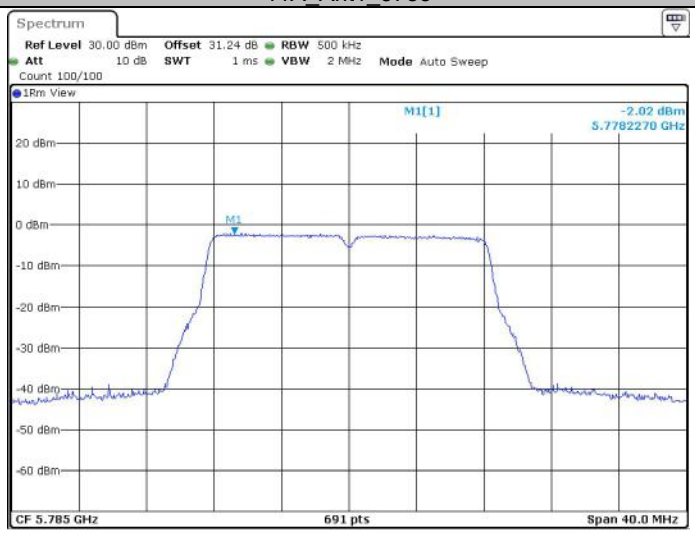
11A_Ant1_5240



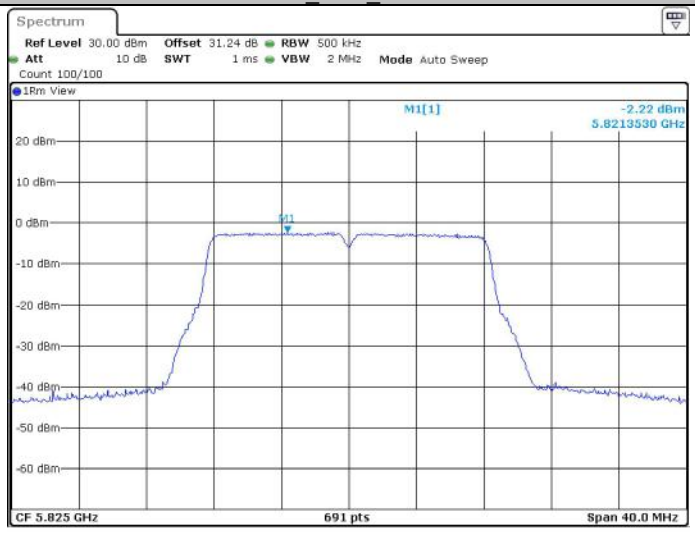
11A_Ant1_5745



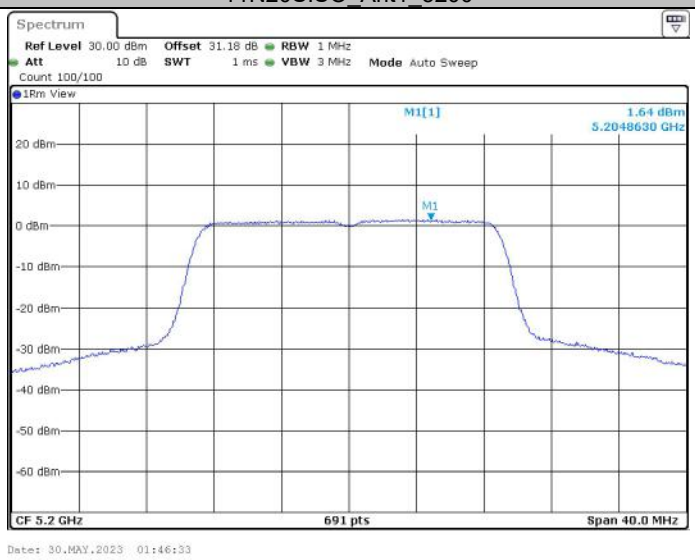
11A_Ant1_5785



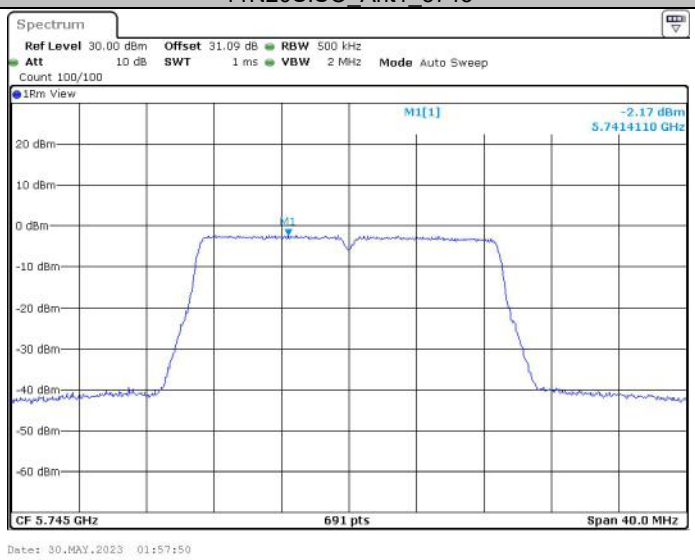
11A_Ant1_5825

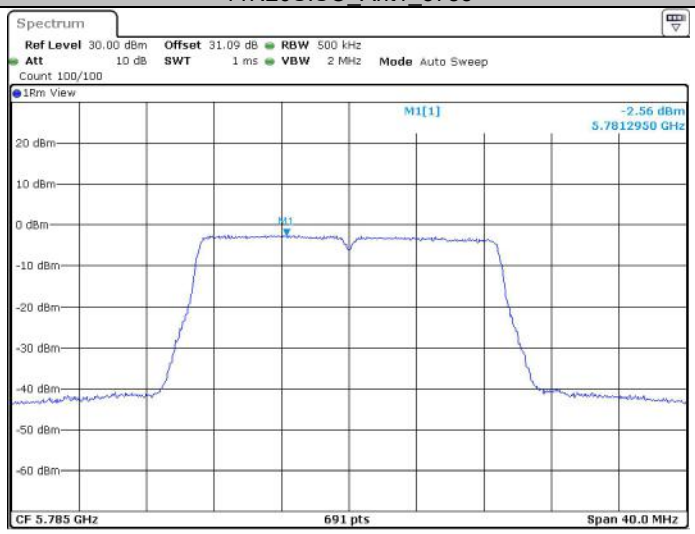
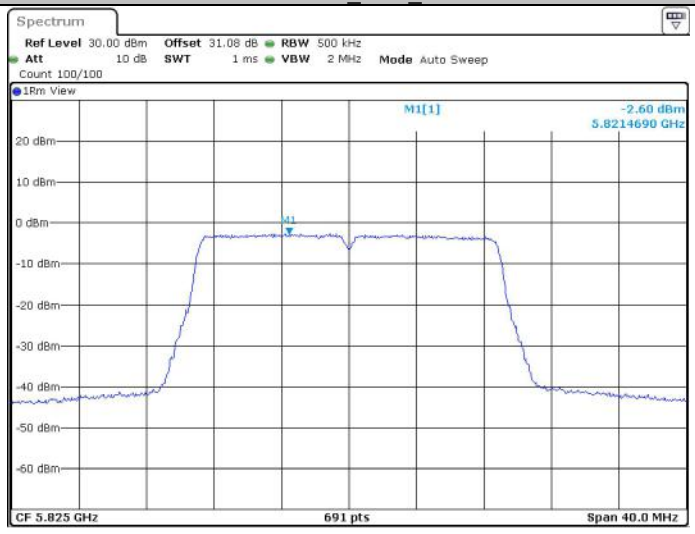


11N20SISO_Ant1_5180

11N20SISO_Ant1_5200


11N20SISO_Ant1_5240

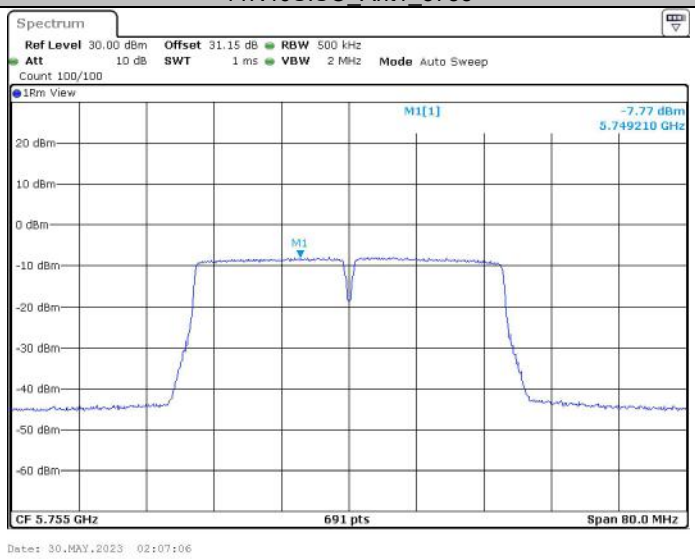
11N20SISO_Ant1_5745


11N20SISO_Ant1_5785

11N20SISO_Ant1_5825


11N40SISO_Ant1_5190

11N40SISO_Ant1_5230


11N40SISO_Ant1_5755



11N40SISO_Ant1_5795

******* END OF REPORT *******