TESTREPORT

Applicant Name :	TECNO MOBILE LIMITED
Address :	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG
Report Number :	RA230324-14521E-RF-00C
FCC ID:	2ADYY-CK6NS

Test Standard (s)

FCC PART 15.407

Sample Description

Product Type:	Mobile Phone
Model No.:	CK6ns
Multiple Model(s) No.:	N/A
Trade Mark:	TECNO
Date Received:	2023/03/24
Report Date:	2023/04/26

Test Result:	Pass*

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

Prepared and Checked By:

Nick Fang
EMC Engineer

Approved By:

Candy Li
EMC Engineer

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RA230324-14521E-RF-00C	Original Report	2023-04-26

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	5G Wi-Fi: 5150-5250MHz; 5725-5850MHz
Mode	802.11a / n20/n40/ac20/ac40/ac80
Maximum Conducted Average Output Power	5150-5250 MHz:11.06dBm 5725-5850 MHz:10.45dBm
Modulation Technique	OFDM
Antenna Specification*	3.4dBi (provided by the applicant)
Voltage Range	DC 3.87V from battery or DC 5V or 7.5V from adapter
Test Sample serial number	23MJ_1 for Conducted and Radiated Emissions Test 23MJ_5 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter information	Model: U180TSA Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 5.0V, 2.4A or DC 7.5V, 2.4A 18.0W Max

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
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 429 7.01.

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 802.11 a/ ac20/ac40/ac80, the n20/n40 mode was reduced test as it identical to ac20/ac40 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
42	5210	/	/

For 802.11a/ac20 mode: channel 36, 40, 48 were tested;
For 802.11ac40 mode: channel 38, 46 were tested;
For 802.11ac80 mode, channel 42 was 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
155	5775	165	5825

For 802.11a/ac20 mode: channel 149, 157, 165 were tested;
For 802.11ac40 mode: channel 151, 159 were tested;
For 802.11ac80 mode, channel 155 was tested

EUT Exercise Software

EUT was test in engineering mode.

The worst case was performed under:

U-NII	Mode	Data rate	Power Level*		
			Low Channel	Middle Channel	High Channel
5150 – 5250MHz	802.11a	6Mbps	16.5	16.5	16.5
	802.11ac20	MCS0	16	16	16
	802.11ac40	MCS0	16	/	16
	802.11ac80	MCS0	/	15	/
5725 – 5850MHz	802.11a	6Mbps	16.5	16.5	16.5
	802.11ac20	MCS0	16	16	16
	802.11ac40	MCS0	16	/	16
	802.11ac80	MCS0	/	16	/

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 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

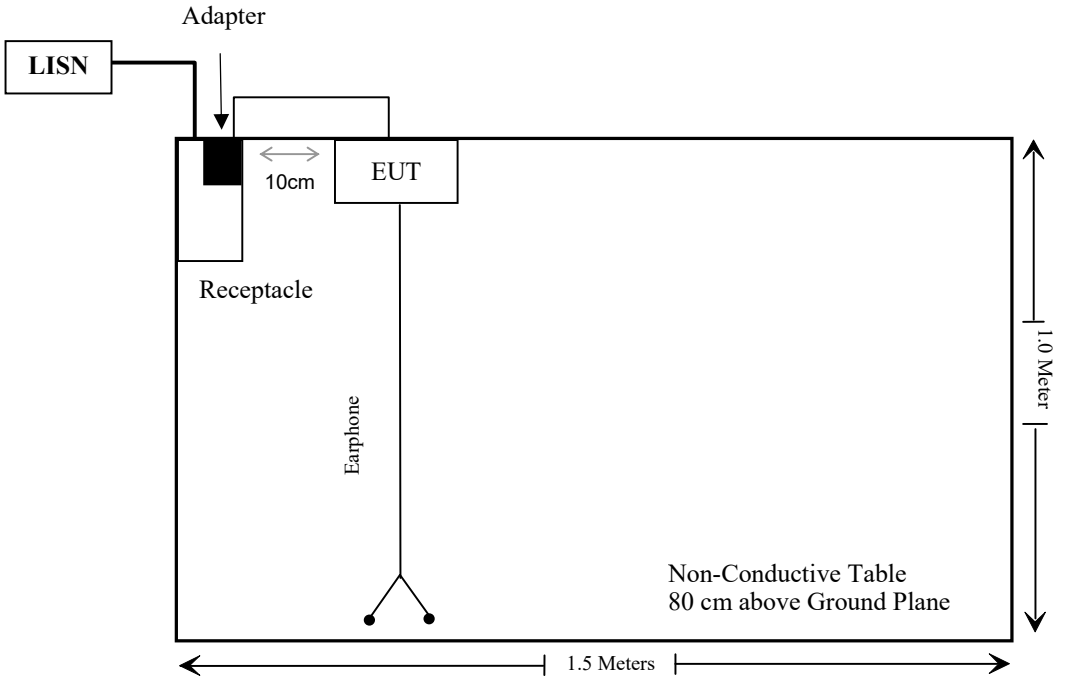
Manufacturer	Description	Model	Serial Number
Unknown	earphone	Unknown	Unknown

External I/O Cable

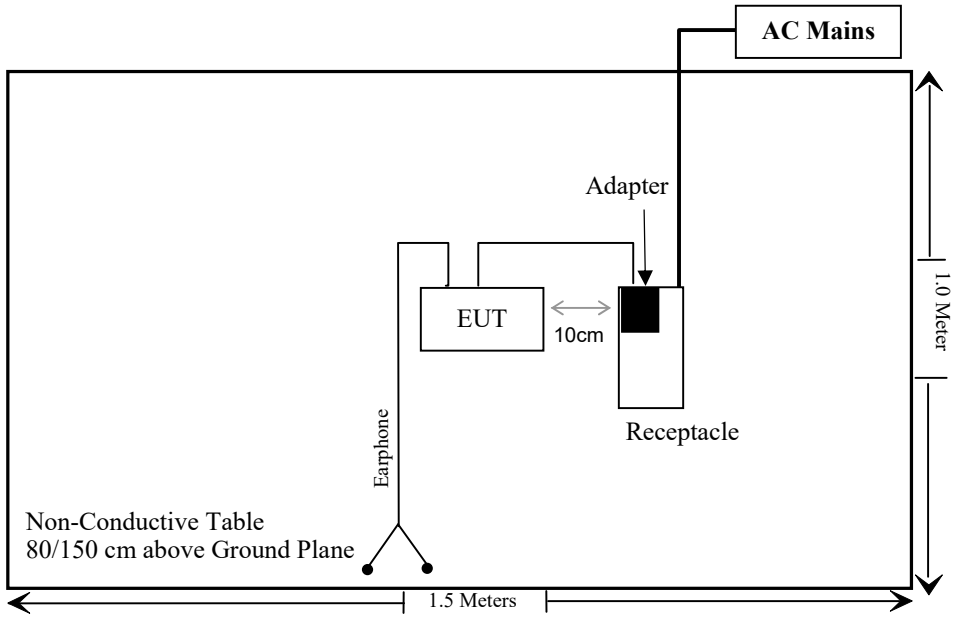
Cable Description	Length (m)	From Port	To
Un-shielding Detachable USB Cable	1.0	EUT	Adapter

Block Diagram of Test Setup

For Conducted Emissions



For Radiated Emissions:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) & §2.1093	RF Exposure	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 has not operate within DFS frequency band, not supports TPC function

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.	ESH3-Z5	100305	2022/12/01	2023/11/30
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
Unknown	RF Coaxial Cable	No.18	N0850	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	9120D-1067	2022/11/30	2025/11/29
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

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde&Schwarz	Spectrum Analyzer	FSV-40	101495	2022/11/25	2023/11/24
Tonscend	RF Control Unit	JS0806-2	19G8060182	2022/10/24	2023/10/23
Agilent	USB wideband power sensor	U2021XA	MY54250003	2022/6/27	2023/6/26

*** 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) & §2.1093 – RF EXPOSURE

Applicable Standard

According to FCC §2.1093 and §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Measurement Result

Please refer to SAR test report: RA230324-14521E-SA.

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.
c. 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 which was permanently attached, and the maximum antenna gain is 3.4dBi, fulfill the requirement of this section. Please refer to the EUT photos.

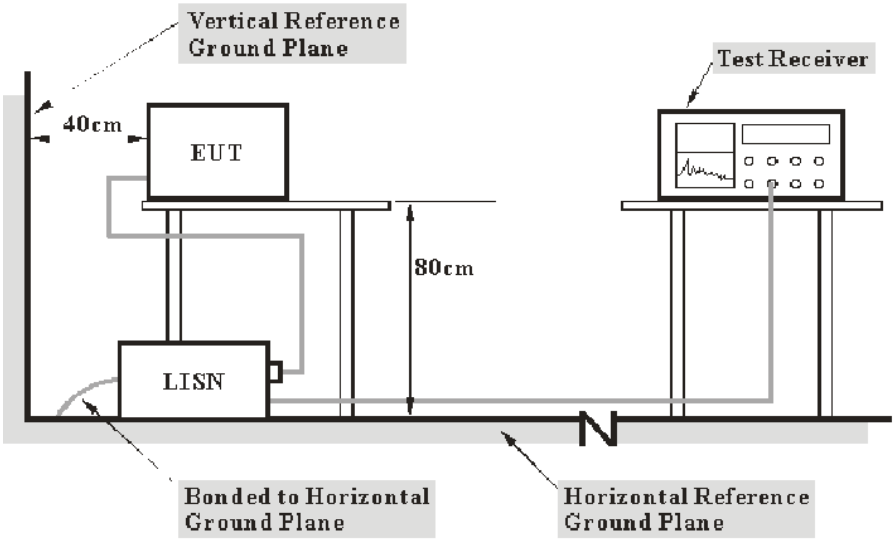
Result: Compliant.

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

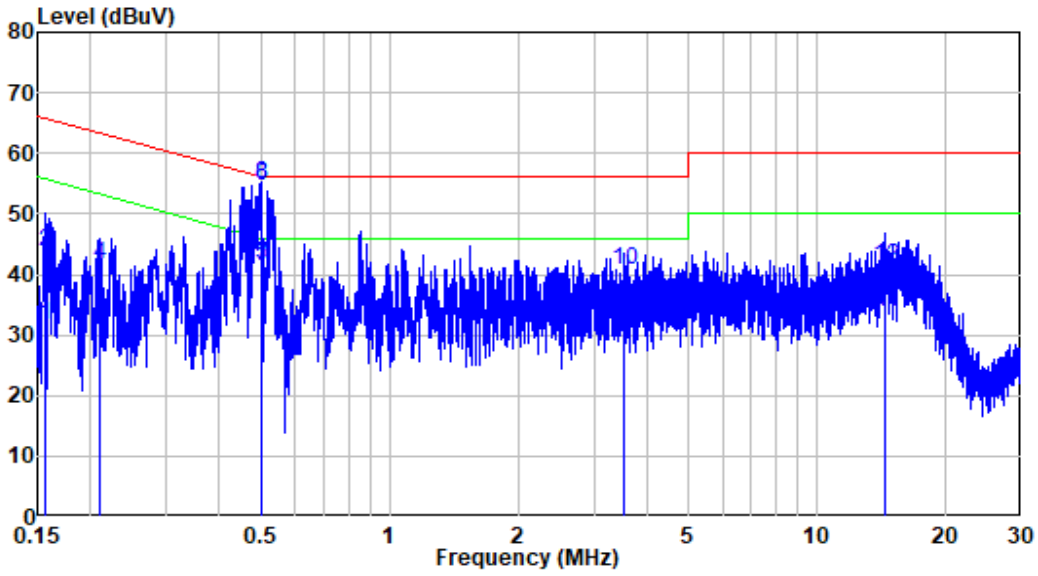
Environmental Conditions

Temperature:	22 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Jerry on 2023-04-21.

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

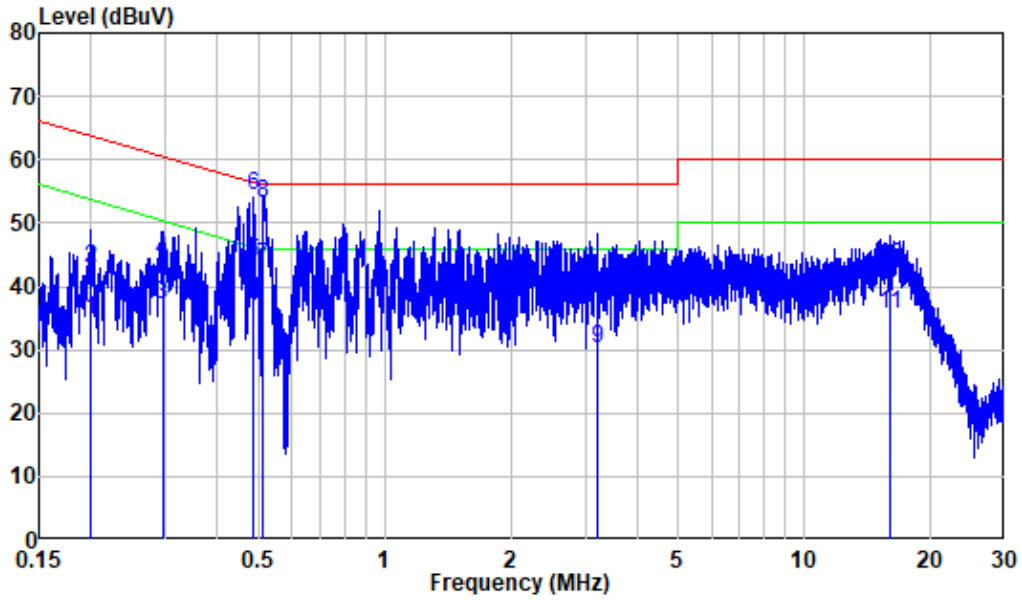
AC 120V/60 Hz, Line:



Site : Shielding Room
Condition: Line
Job No. : RA230324-14521E-RF
Mode : Charging+5G WIFI Transmitting
Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.157	10.22	21.47	31.69	55.63	-23.94	Average
2	0.157	10.22	33.70	43.92	65.63	-21.71	QP
3	0.209	10.30	20.84	31.14	53.24	-22.10	Average
4	0.209	10.30	31.41	41.71	63.24	-21.53	QP
5	0.499	10.30	31.40	41.70	46.02	-4.32	Average
6	0.499	10.30	44.45	54.75	56.02	-1.27	QP
7	0.500	10.30	31.03	41.33	46.00	-4.67	Average
8	0.500	10.30	44.61	54.91	56.00	-1.09	QP
9	3.537	10.44	19.80	30.24	46.00	-15.76	Average
10	3.537	10.44	30.45	40.89	56.00	-15.11	QP
11	14.460	10.26	23.46	33.72	50.00	-16.28	Average
12	14.460	10.26	31.19	41.45	60.00	-18.55	QP

AC 120V/60 Hz, Neutral:



Site : Shielding Room
Condition: Neutral
Job No. : RA230324-14521E-RF
Mode : Charging+5G WIFI Transmitting
Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.199	9.80	24.94	34.74	53.67	-18.93	Average
2	0.199	9.80	33.19	42.99	63.67	-20.68	QP
3	0.295	9.80	27.25	37.05	50.38	-13.33	Average
4	0.295	9.80	34.42	44.22	60.38	-16.16	QP
5	0.487	9.80	33.91	43.71	46.22	-2.51	Average
6	0.487	9.80	44.66	54.46	56.22	-1.76	QP
7	0.511	9.81	33.27	43.08	46.00	-2.92	Average
8	0.511	9.81	43.29	53.10	56.00	-2.90	QP
9	3.207	9.83	20.26	30.09	46.00	-15.91	Average
10	3.207	9.83	29.06	38.89	56.00	-17.11	QP
11	15.906	9.96	25.53	35.49	50.00	-14.51	Average
12	15.906	9.96	33.19	43.15	60.00	-16.85	QP

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

Applicable Standard

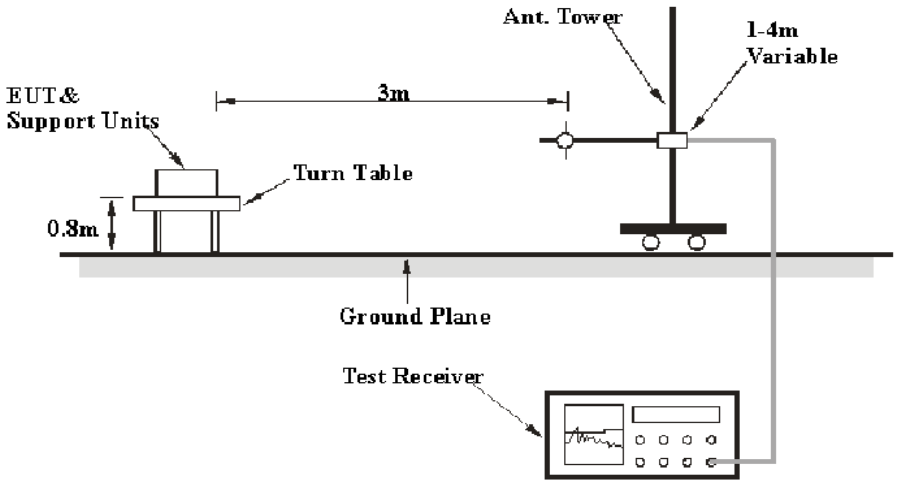
FCC §15.407 (b); §15.209; §15.205;

(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.

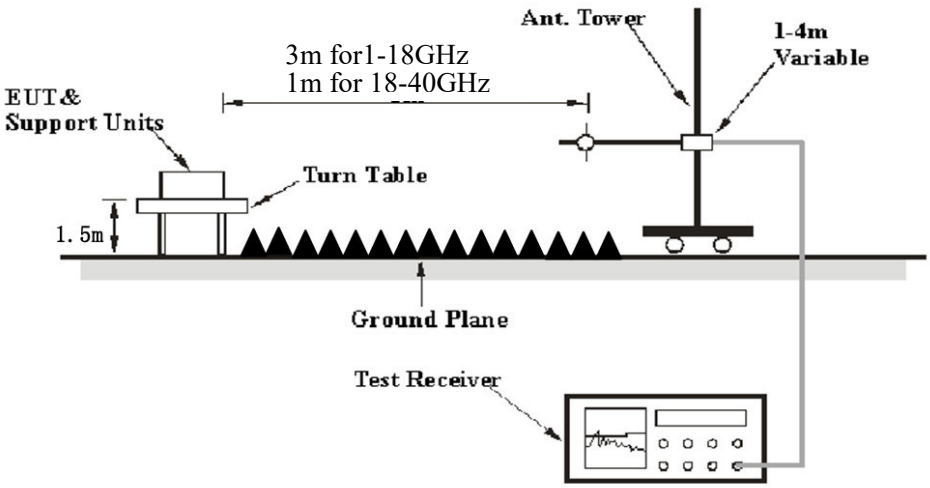
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

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:	24~26.5 ℃
Relative Humidity:	55~57 %
ATM Pressure:	101.0 kPa

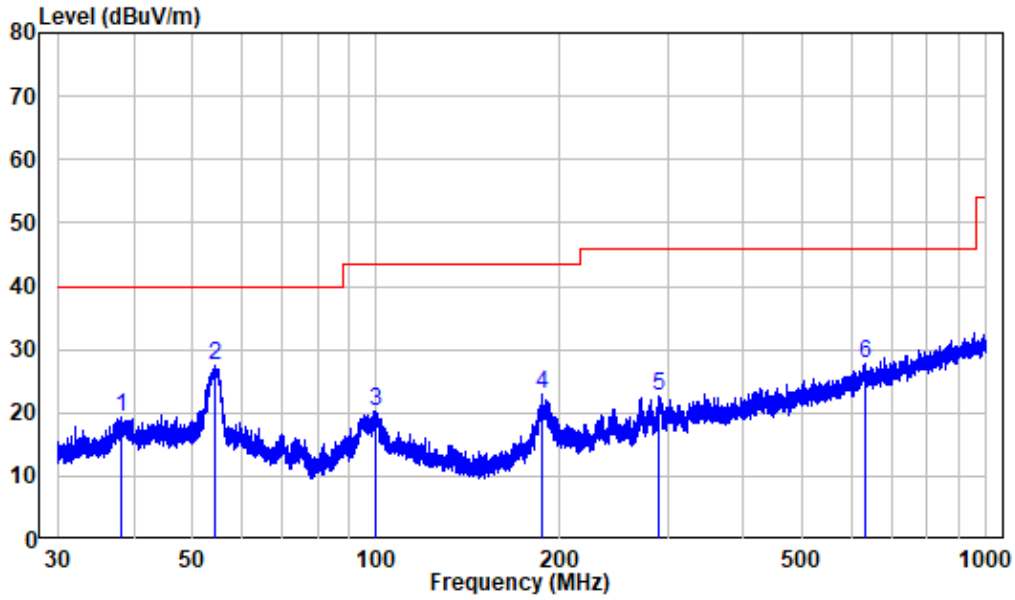
The testing was performed by Jimi Zheng on 2023-04-20 for below 1GHz and on 2023-04-09 for above 1GHz.

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: *(worst case is 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.

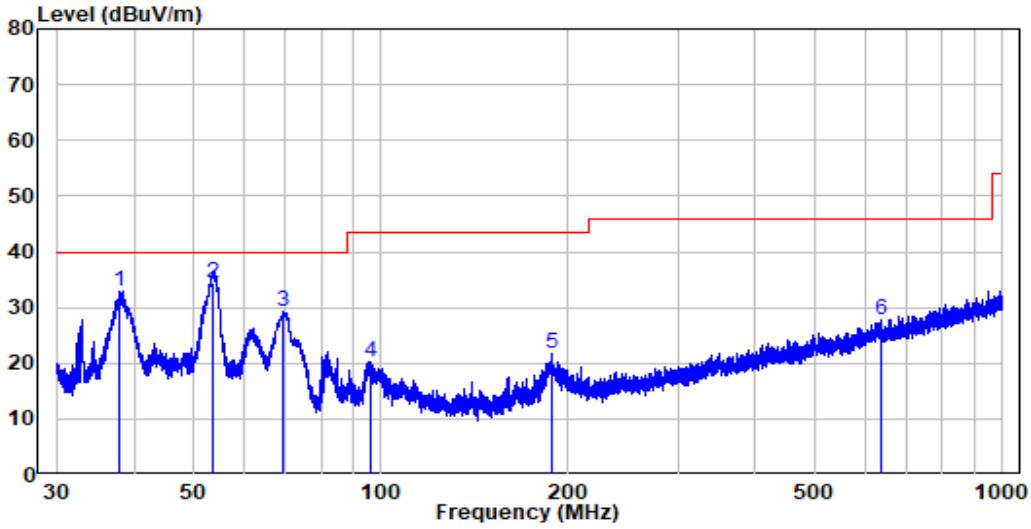
Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : RA230324-14521E-RF
Test Mode: 5G WIFI

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	38.078	-10.89	30.22	19.33	40.00	-20.67	Peak
2	54.237	-10.39	37.91	27.52	40.00	-12.48	Peak
3	99.615	-11.86	32.20	20.34	43.50	-23.16	Peak
4	186.523	-11.97	34.94	22.97	43.50	-20.53	Peak
5	291.164	-9.24	31.77	22.53	46.00	-23.47	Peak
6	632.797	-1.84	29.69	27.85	46.00	-18.15	Peak

Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : RA230324-14521E-RF
Test Mode: 5G WIFI

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	37.878	-10.93	43.77	32.84	40.00	-7.16	Peak
2	53.670	-10.33	44.90	34.57	40.00	-5.43	QP
3	69.662	-14.58	43.77	29.19	40.00	-10.81	Peak
4	95.846	-12.40	32.53	20.13	43.50	-23.37	Peak
5	188.330	-11.78	33.51	21.73	43.50	-21.77	Peak
6	638.369	-1.87	29.73	27.86	46.00	-18.14	Peak

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	66.07	PK	193	2.2	H	-6.44	59.63	74	-14.37
4500	54.09	AV	193	2.2	H	-6.44	47.65	54	-6.35
4500	66.21	PK	142	2.4	V	-6.44	59.77	74	-14.23
4500	54.10	AV	142	2.4	V	-6.44	47.66	54	-6.34
5150	71.38	PK	207	1.5	H	-4.91	66.47	74	-7.53
5150	56.20	AV	207	1.5	H	-4.91	51.29	54	-2.71
5150	72.48	PK	168	1.3	V	-4.91	67.57	74	-6.43
5150	56.66	AV	168	1.3	V	-4.91	51.75	54	-2.25
10360	55.28	PK	62	2	H	5.36	60.64	68.2	-7.56
10360	54.93	PK	59	2	V	5.36	60.29	68.2	-7.91
5200MHz									
10400	54.82	PK	80	2.1	H	5.66	60.48	68.2	-7.72
10400	54.50	PK	277	2.1	V	5.66	60.16	68.2	-8.04
5240MHz									
5350	66.14	PK	244	2.3	H	-3.89	62.25	74	-11.75
5350	51.06	AV	244	2.3	H	-3.89	47.17	54	-6.83
5350	66.25	PK	3	1.1	V	-3.89	62.36	74	-11.64
5350	51.18	AV	3	1.1	V	-3.89	47.29	54	-6.71
5460	63.39	PK	98	1.3	H	-3.24	60.15	74	-13.85
5460	49.56	AV	98	1.3	H	-3.24	46.32	54	-7.68
5460	63.51	PK	88	1.3	V	-3.24	60.27	74	-13.73
5460	49.68	AV	88	1.3	V	-3.24	46.44	54	-7.56
10480	54.90	PK	241	2.5	H	5.52	60.42	68.2	-7.78
10480	54.61	PK	153	2.5	V	5.52	60.13	68.2	-8.07

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)				
802.11AC20									
5180MHz									
4500	66.53	PK	349	1.8	H	-6.44	60.09	74	-13.91
4500	54.41	AV	349	1.8	H	-6.44	47.97	54	-6.03
4500	66.67	PK	65	1.5	V	-6.44	60.23	74	-13.77
4500	54.54	AV	65	1.5	V	-6.44	48.10	54	-5.90
5150	72.90	PK	330	1.1	H	-4.91	67.99	74	-6.01
5150	55.57	AV	330	1.1	H	-4.91	50.66	54	-3.34
5150	74.34	PK	26	1.2	V	-4.91	69.43	74	-4.57
5150	55.78	AV	26	1.2	V	-4.91	50.87	54	-3.13
10360	55.23	PK	138	1.7	H	5.36	60.59	68.2	-7.61
10360	54.88	PK	183	1.7	V	5.36	60.24	68.2	-7.96
5200MHz									
10400	54.72	PK	98	1.2	H	5.66	60.38	68.2	-7.82
10400	54.41	PK	328	1.2	V	5.66	60.07	68.2	-8.13
5240MHz									
5350	66.34	PK	298	1.3	H	-3.89	62.45	74	-11.55
5350	51.27	AV	298	1.3	H	-3.89	47.38	54	-6.62
5350	66.48	PK	34	2.3	V	-3.89	62.59	74	-11.41
5350	51.41	AV	34	2.3	V	-3.89	47.52	54	-6.48
5460	63.65	PK	267	1.1	H	-3.24	60.41	74	-13.59
5460	49.88	AV	267	1.1	H	-3.24	46.64	54	-7.36
5460	63.76	PK	214	1.6	V	-3.24	60.52	74	-13.48
5460	49.99	AV	214	1.6	V	-3.24	46.75	54	-7.25
10480	54.77	PK	227	1.5	H	5.52	60.29	68.2	-7.91
10480	54.50	PK	102	1.5	V	5.52	60.02	68.2	-8.18

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)				
802.11AC40									
5190MHz									
4500	66.26	PK	171	1.9	H	-6.44	59.82	74	-14.18
4500	55.74	AV	171	1.9	H	-6.44	49.30	54	-4.70
4500	66.37	PK	212	2.1	V	-6.44	59.93	74	-14.07
4500	54.85	AV	212	2.1	V	-6.44	48.41	54	-5.59
5150	71.74	PK	3	1.6	H	-4.91	66.83	74	-7.17
5150	55.83	AV	3	1.6	H	-4.91	50.92	54	-3.08
5150	72.86	PK	30	2.2	V	-4.91	67.95	74	-6.05
5150	56.15	AV	30	2.2	V	-4.91	51.24	54	-2.76
10380	55.01	PK	341	1.6	H	5.51	60.52	68.2	-7.68
10380	54.83	PK	30	1.6	V	5.51	60.34	68.2	-7.86
5230MHz									
5350	66.44	PK	59	2.4	H	-3.89	62.55	74	-11.45
5350	51.73	AV	59	2.4	H	-3.89	47.84	54	-6.16
5350	66.56	PK	199	1.1	V	-3.89	62.67	74	-11.33
5350	51.85	AV	199	1.1	V	-3.89	47.96	54	-6.04
5460	63.39	PK	137	2	H	-3.24	60.15	74	-13.85
5460	50.08	AV	137	2	H	-3.24	46.84	54	-7.16
5460	63.50	PK	143	1.1	V	-3.24	60.26	74	-13.74
5460	50.21	AV	143	1.1	V	-3.24	46.97	54	-7.03
10460	54.84	PK	99	1.2	H	5.51	60.35	68.2	-7.85
10460	54.67	PK	326	1.2	V	5.51	60.18	68.2	-8.02

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)				
802.11AC80									
5210MHz									
4500	66.32	PK	6	1.7	H	-6.44	59.88	74	-14.12
4500	55.50	AV	6	1.7	H	-6.44	49.06	54	-4.94
4500	66.43	PK	160	2.3	V	-6.44	59.99	74	-14.01
4500	55.61	AV	160	2.3	V	-6.44	49.17	54	-4.83
5150	71.70	PK	75	1.1	H	-4.91	66.79	74	-7.21
5150	56.78	AV	75	1.1	H	-4.91	51.87	54	-2.13
5150	72.47	PK	293	2.4	V	-4.91	67.56	74	-6.44
5150	57.04	AV	293	2.4	V	-4.91	52.13	54	-1.87
5350	66.45	PK	50	1.9	H	-3.89	62.56	74	-11.44
5350	53.00	AV	50	1.9	H	-3.89	49.11	54	-4.89
5350	66.57	PK	199	1.1	V	-3.89	62.68	74	-11.32
5350	53.12	AV	199	1.1	V	-3.89	49.23	54	-4.77
5460	63.45	PK	7	2	H	-3.24	60.21	74	-13.79
5460	51.39	AV	7	2	H	-3.24	48.15	54	-5.85
5460	63.57	PK	269	1.5	V	-3.24	60.33	74	-13.67
5460	51.50	AV	269	1.5	V	-3.24	48.26	54	-5.74
10420	55.02	PK	88	1.7	H	5.60	60.62	68.2	-7.58
10420	54.87	PK	152	1.7	V	5.60	60.47	68.2	-7.73

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	66.01	PK	200	1.1	H	-3.64	62.37	68.2	-5.83
5700	66.82	PK	122	1.9	H	-2.30	64.52	105.2	-40.68
5720	69.68	PK	202	1.3	H	-2.64	67.04	110.8	-43.76
5725	76.56	PK	249	2.5	H	-2.73	73.83	122.2	-48.37
5650	66.14	PK	288	1.6	V	-3.64	62.50	68.2	-5.70
5700	67.44	PK	145	2	V	-2.30	65.14	105.2	-40.06
5720	70.71	PK	279	1.8	V	-2.64	68.07	110.8	-42.73
5725	79.01	PK	25	2	V	-2.73	76.28	122.2	-45.92
11490	53.92	PK	150	1.2	H	7.00	60.92	74	-13.08
11490	40.43	AV	144	1.2	H	7.00	47.43	54	-6.57
11490	53.71	PK	350	2.3	V	7.00	60.71	74	-13.29
11490	40.26	AV	1	2.3	V	7.00	47.26	54	-6.74
5785MHz									
11570	54.44	PK	130	1.5	H	6.60	61.04	74	-12.96
11570	40.96	AV	299	1.5	H	6.60	47.56	54	-6.44
11570	54.28	PK	110	2.3	V	6.60	60.88	74	-13.12
11570	40.90	AV	204	2.3	V	6.60	47.50	54	-6.50
5825MHz									
5850	69.57	PK	198	2.3	H	-1.37	68.20	122.2	-54.00
5855	67.94	PK	34	2.3	H	-1.25	66.69	110.8	-44.11
5875	65.81	PK	59	1.4	H	-0.75	65.06	105.2	-40.14
5925	63.90	PK	85	1.2	H	-0.46	63.44	68.2	-4.76
5850	70.63	PK	205	1.4	V	-1.37	69.26	122.2	-52.94
5855	68.60	PK	8	1.1	V	-1.25	67.35	110.8	-43.45
5875	66.53	PK	95	1.7	V	-0.75	65.78	105.2	-39.42
5925	64.05	PK	289	1.8	V	-0.46	63.59	68.2	-4.61
11650	54.97	PK	20	1.6	H	5.55	60.52	74	-13.48
11650	41.50	AV	344	1.6	H	5.55	47.05	54	-6.95
11650	54.82	PK	331	1.4	V	5.55	60.37	74	-13.63
11650	41.36	AV	125	1.4	V	5.55	46.91	54	-7.09

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)				
802.11AC20									
5745MHz									
5650	66.21	PK	297	1.2	H	-3.64	62.57	68.2	-5.63
5700	67.40	PK	218	1.8	H	-2.30	65.10	105.2	-40.10
5720	70.28	PK	245	2.5	H	-2.64	67.64	110.8	-43.16
5725	78.22	PK	24	1.5	H	-2.73	75.49	122.2	-46.71
5650	66.34	PK	297	2.2	V	-3.64	62.70	68.2	-5.50
5700	67.79	PK	172	1.4	V	-2.30	65.49	105.2	-39.71
5720	72.38	PK	346	1.5	V	-2.64	69.74	110.8	-41.06
5725	80.84	PK	173	1.4	V	-2.73	78.11	122.2	-44.09
11490	54.12	PK	230	2.3	H	7.00	61.12	74	-12.88
11490	40.61	AV	333	2.3	H	7.00	47.61	54	-6.39
11490	53.90	PK	295	2.2	V	7.00	60.90	74	-13.10
11490	40.43	AV	193	2.2	V	7.00	47.43	54	-6.57
5785MHz									
11570	54.58	PK	35	1.5	H	6.60	61.18	74	-12.82
11570	41.13	AV	245	1.5	H	6.60	47.73	54	-6.27
11570	54.36	PK	260	1.9	V	6.60	60.96	74	-13.04
11570	40.92	AV	303	1.9	V	6.60	47.52	54	-6.48
5825MHz									
5850	71.32	PK	352	2.4	H	-1.37	69.95	122.2	-52.25
5855	68.02	PK	190	2.3	H	-1.25	66.77	110.8	-44.03
5875	66.55	PK	108	1.6	H	-0.75	65.80	105.2	-39.40
5925	64.10	PK	293	2.5	H	-0.46	63.64	68.2	-4.56
5850	73.25	PK	311	1.8	V	-1.37	71.88	122.2	-50.32
5855	69.60	PK	22	1.3	V	-1.25	68.35	110.8	-42.45
5875	67.41	PK	41	2.3	V	-0.75	66.66	105.2	-38.54
5925	64.24	PK	56	2	V	-0.46	63.78	68.2	-4.42
11650	55.03	PK	144	1.8	H	5.55	60.58	74	-13.42
11650	41.67	AV	213	1.8	H	5.55	47.22	54	-6.78
11650	54.84	PK	230	2.1	V	5.55	60.39	74	-13.61
11650	41.49	AV	310	2.1	V	5.55	47.04	54	-6.96

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)				
802.11AC40									
5755MHz									
5650	66.40	PK	36	1.4	H	-3.64	62.76	68.2	-5.44
5700	68.59	PK	347	1.6	H	-2.30	66.29	105.2	-38.91
5720	76.12	PK	340	2.2	H	-2.64	73.48	110.8	-37.32
5725	80.35	PK	229	1.6	H	-2.73	77.62	122.2	-44.58
5650	66.53	PK	294	1.2	V	-3.64	62.89	68.2	-5.31
5700	70.40	PK	54	1.5	V	-2.30	68.10	105.2	-37.10
5720	78.35	PK	14	1.2	V	-2.64	75.71	110.8	-35.09
5725	82.86	PK	116	1.5	V	-2.73	80.13	122.2	-42.07
11510	53.95	PK	2	1.4	H	7.06	61.01	74	-12.99
11510	41.48	AV	121	1.4	H	7.06	48.54	54	-5.46
11510	53.77	PK	157	1.9	V	7.06	60.83	74	-13.17
11510	41.31	AV	119	1.9	V	7.06	48.37	54	-5.63
5795MHz									
5850	68.43	PK	45	1.6	H	-1.37	67.06	122.2	-55.14
5855	67.10	PK	130	1.7	H	-1.25	65.85	110.8	-44.95
5875	65.85	PK	216	1.6	H	-0.75	65.10	105.2	-40.10
5925	64.20	PK	180	2	H	-0.46	63.74	68.2	-4.46
5850	69.07	PK	168	2.2	V	-1.37	67.70	122.2	-54.50
5855	67.60	PK	247	2	V	-1.25	66.35	110.8	-44.45
5875	66.34	PK	327	1.7	V	-0.75	65.59	105.2	-39.61
5925	64.34	PK	268	1.5	V	-0.46	63.88	68.2	-4.32
11590	54.67	PK	176	1.2	H	6.43	61.10	74	-12.90
11590	42.18	AV	141	1.2	H	6.43	48.61	54	-5.39
11590	54.49	PK	66	1.9	V	6.43	60.92	74	-13.08
11590	42.00	AV	108	1.9	V	6.43	48.43	54	-5.57

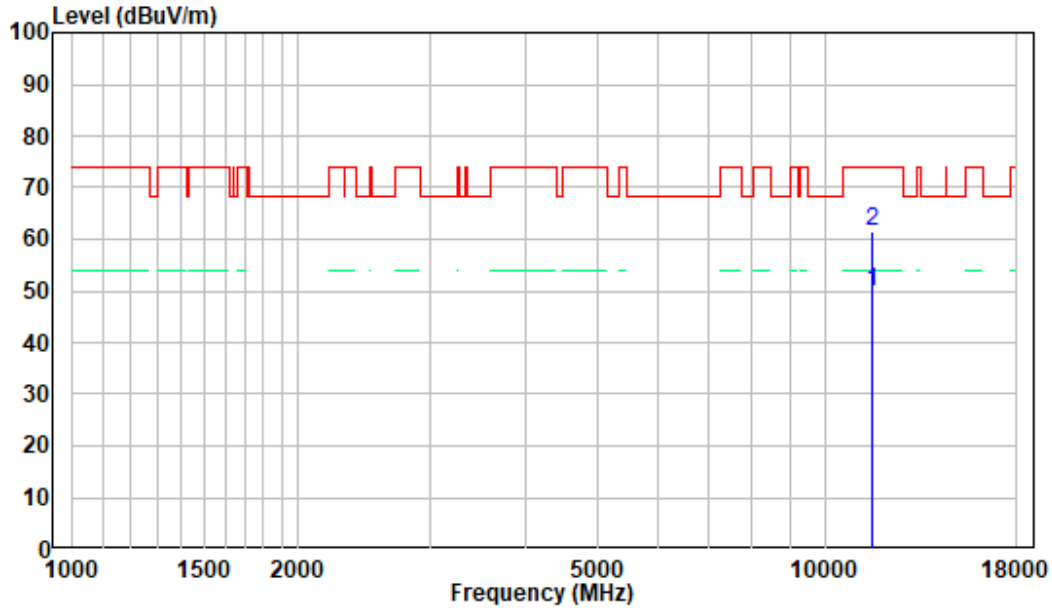
Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11AC80									
5775MHz									
5650	66.92	PK	296	2.4	H	-3.64	63.28	68.2	-4.92
5700	71.93	PK	290	1.5	H	-2.30	69.63	105.2	-35.57
5720	76.53	PK	349	1.1	H	-2.64	73.89	110.8	-36.91
5725	81.25	PK	101	1.8	H	-2.73	78.52	122.2	-43.68
5650	67.07	PK	103	1.1	V	-3.64	63.43	68.2	-4.77
5700	73.80	PK	38	1.9	V	-2.30	71.50	105.2	-33.70
5720	78.85	PK	275	2.4	V	-2.64	76.21	110.8	-34.59
5725	83.77	PK	296	2.5	V	-2.73	81.04	122.2	-41.16
5850	71.23	PK	173	1.3	H	-1.37	69.86	122.2	-52.34
5855	69.25	PK	136	2.4	H	-1.25	68.00	110.8	-42.80
5875	67.60	PK	240	2.4	H	-0.75	66.85	105.2	-38.35
5925	64.95	PK	186	2	H	-0.46	64.49	68.2	-3.71
5850	73.05	PK	270	1.5	V	-1.37	71.68	122.2	-50.52
5855	70.30	PK	5	2.4	V	-1.25	69.05	110.8	-41.75
5875	68.29	PK	233	1.3	V	-0.75	67.54	105.2	-37.66
5925	65.15	PK	245	2.4	V	-0.46	64.69	68.2	-3.51
11550	54.68	PK	307	2.1	H	6.77	61.45	74	-12.55
11550	42.97	AV	178	2.1	H	6.77	49.74	54	-4.26
11550	54.49	PK	187	1.9	V	6.77	61.26	74	-12.74
11550	42.76	AV	284	1.9	V	6.77	49.53	54	-4.47

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

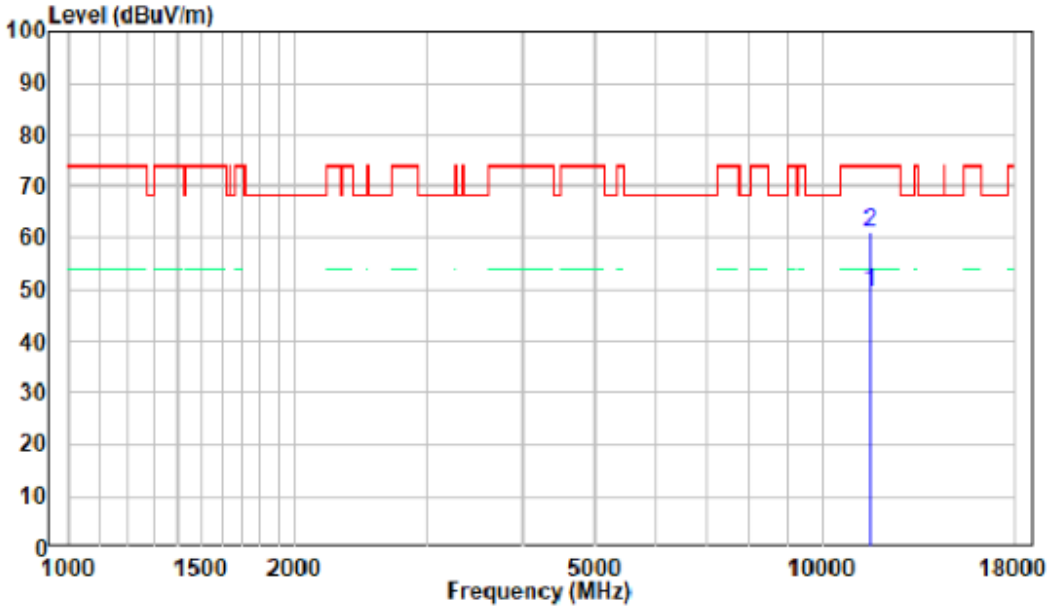
1 GHz - 18 GHz: (Pre-Scan plots)

802.11 a, 5180MHz

Horizontal



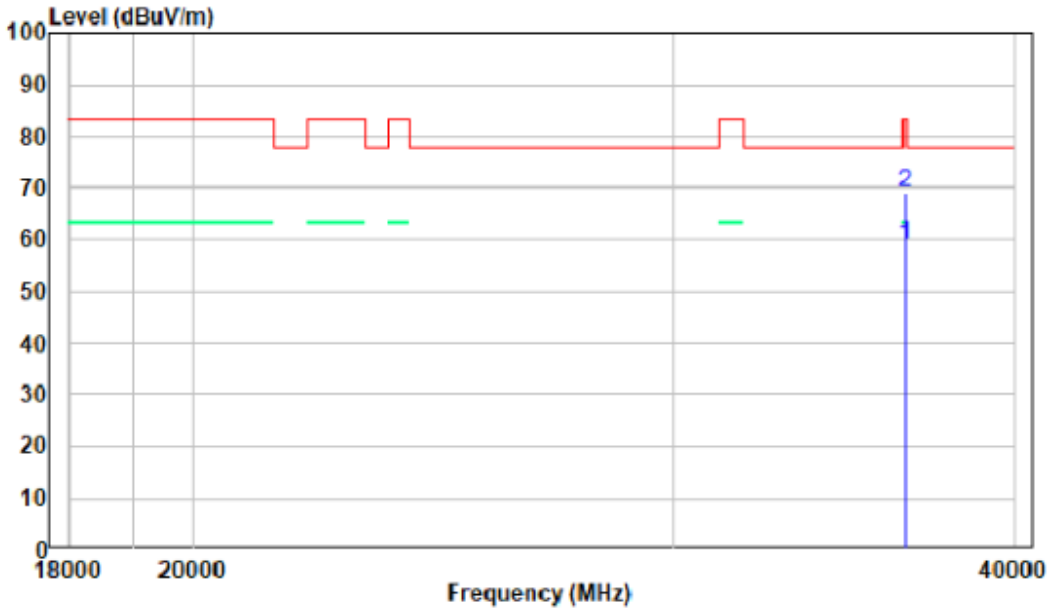
Vertical



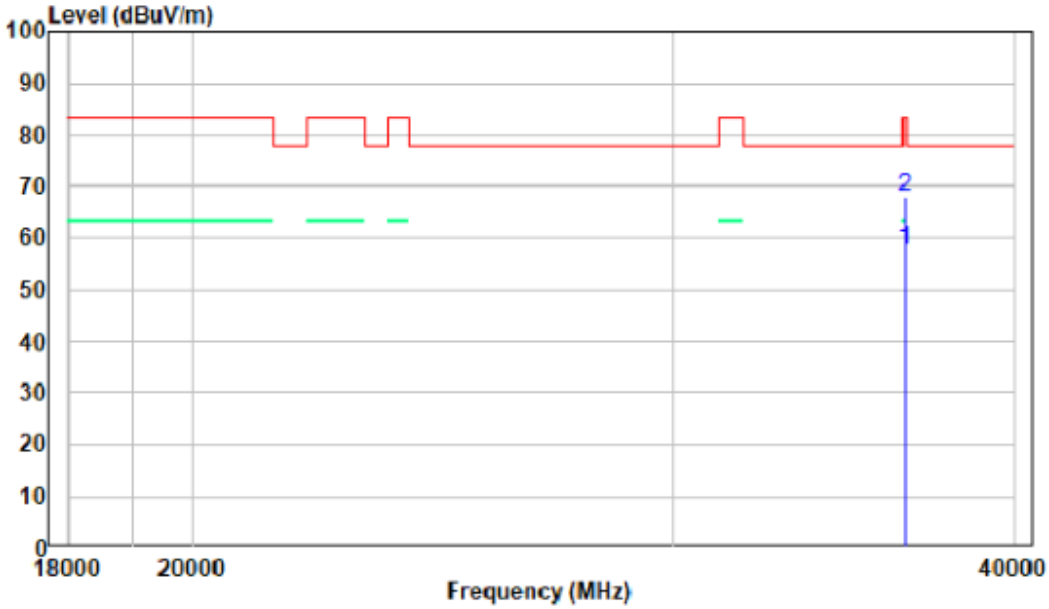
18-40GHz: (Pre-Scan plots)

802.11 a, 5180MHz

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.

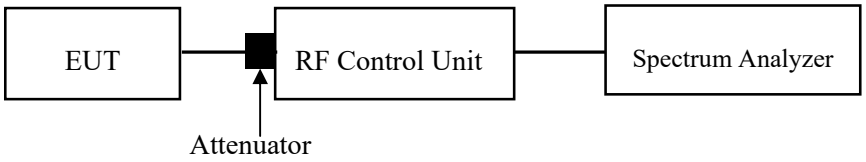
Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

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:	51%
ATM Pressure:	101.0 kPa

The testing was performed by Bob Liao on 2023-04-12.

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.

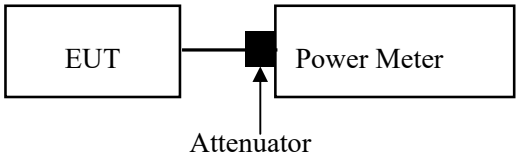
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 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

a. Place the EUT on a bench and set it in transmitting mode.
b. 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:	51%
ATM Pressure:	101.0 kPa

The testing was performed by Bob Liao on 2023-04-12.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

FCC §15.407(a) - POWER SPECTRAL DENSITY

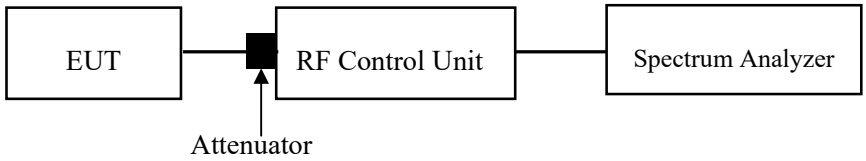
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting 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 span to encompass the entire EBW(or, alternatively, the entire 99% occupied Bandwidth) of the signal.
b) Set sweep trigger to “free run.”.
c) Set RBW=1MHz or 500kHz Set VBW>3 MHz or 2MHz.
d) Number of points in sweep>2 x span/RBW.(This ensures that bin-to-bin spacing is <RBW/2. so that narrowband signals are not lost between frequency bins.)
e) Sweep time = auto.
f) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
g) Trace mode = max hold.
h) Do not use sweep triggering. Allow the sweep to “free run.”
i) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
j) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).



Test Data

Environmental Conditions

Temperature:	24.5 ℃
Relative Humidity:	51%
ATM Pressure:	101.0 kPa

The testing was performed by Bob Liao on 2023-04-12.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

APPENDIX

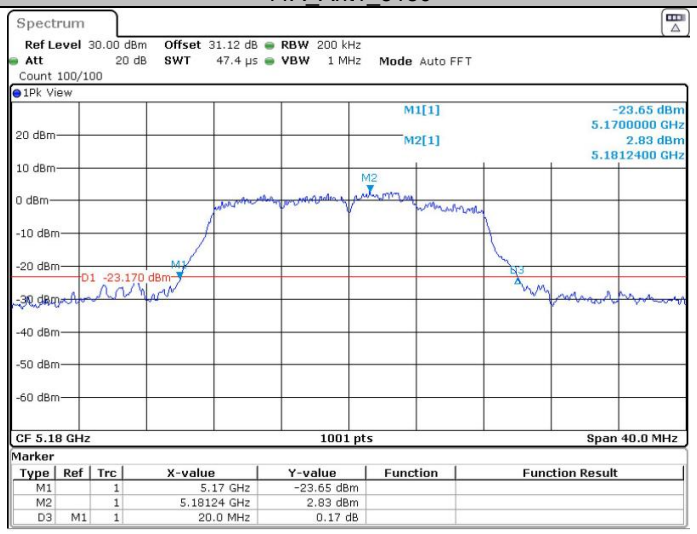
Appendix A1: Emission Bandwidth

Test Result

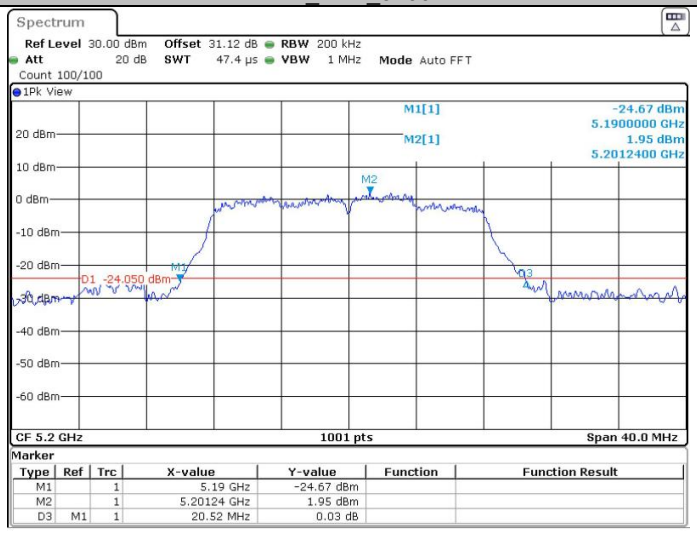
Test Mode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	20.00	5170.00	5190.00	---	---
		5200	20.52	5190.00	5210.52	---	---
		5240	19.88	5230.04	5249.92	---	---
11AC20SISO	Ant1	5180	20.36	5169.88	5190.24	---	---
		5200	20.28	5189.84	5210.12	---	---
		5240	20.16	5229.96	5250.12	---	---
11AC40SISO	Ant1	5190	41.20	5169.36	5210.56	---	---
		5230	40.80	5209.76	5250.56	---	---
11AC80SISO	Ant1	5210	81.92	5169.20	5251.12	---	---

Test Graphs

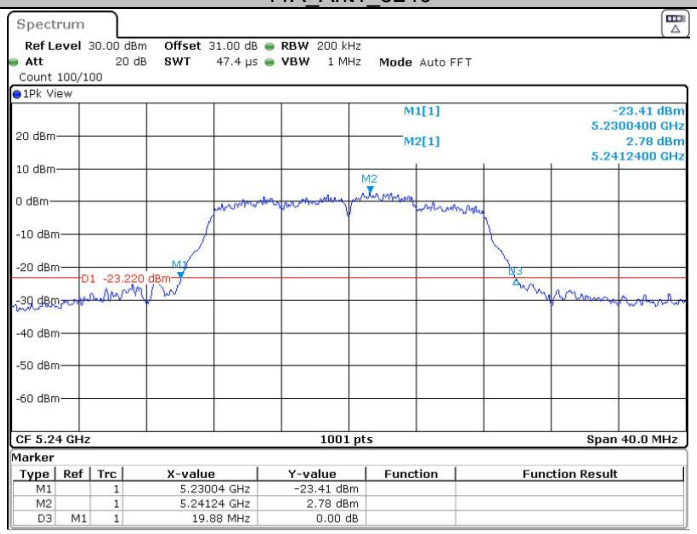
11A_Ant1_5180



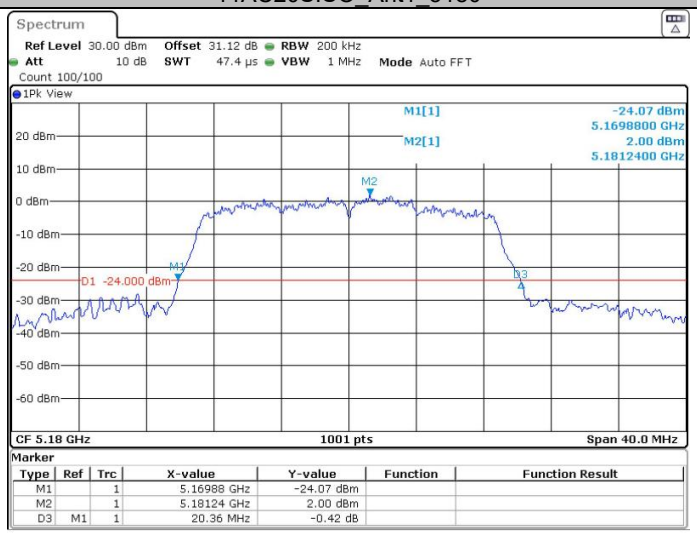
11A_Ant1_5200



11A_Ant1_5240

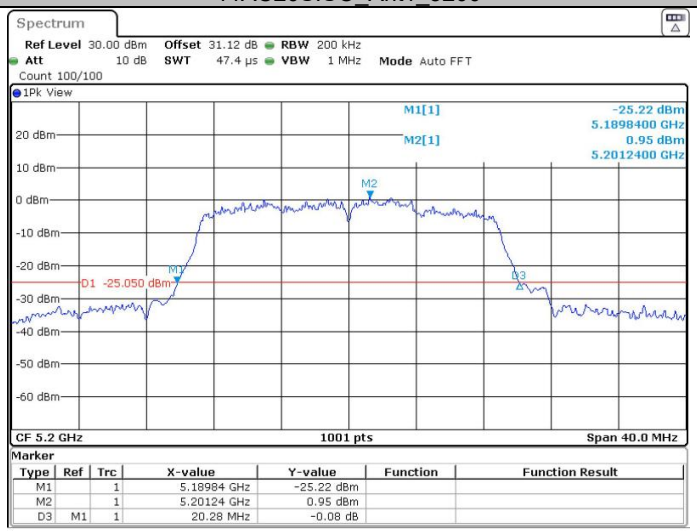


11AC20SISO_Ant1_5180



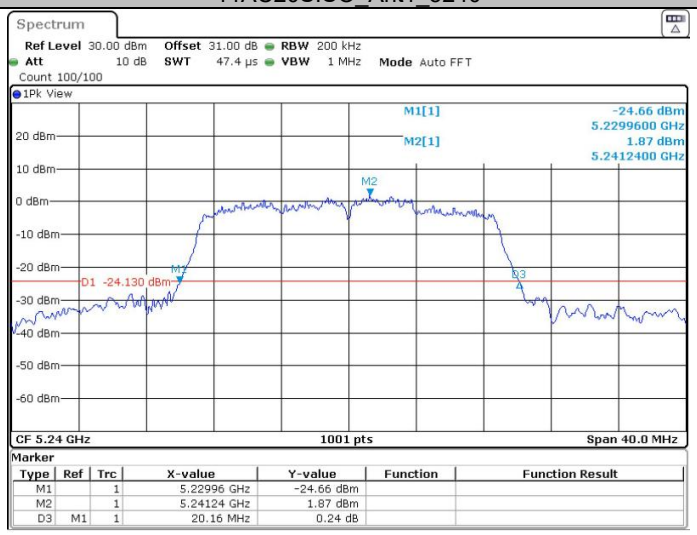
Date: 12.APR.2023 07:03:16

11AC20SISO_Ant1_5200



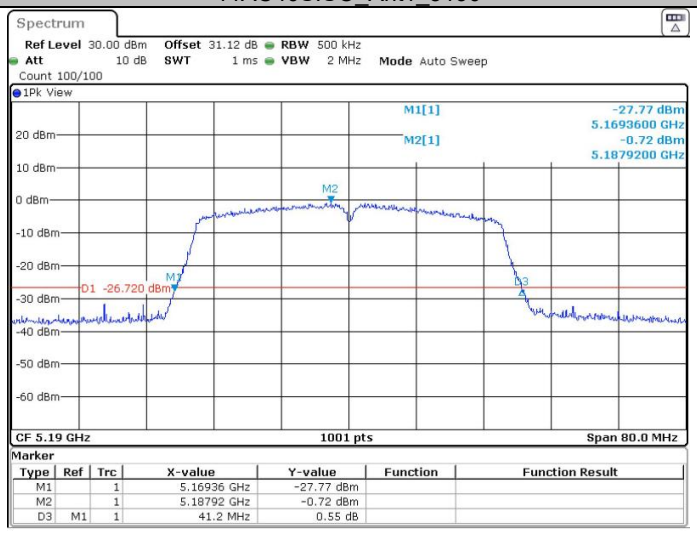
Date: 12.APR.2023 07:05:02

11AC20SISO_Ant1_5240



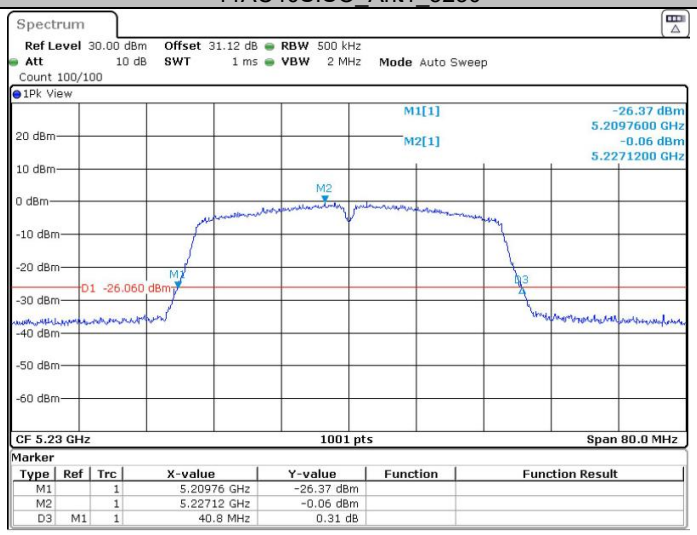
Date: 12.APR.2023 07:06:31

11AC40SISO_Ant1_5190



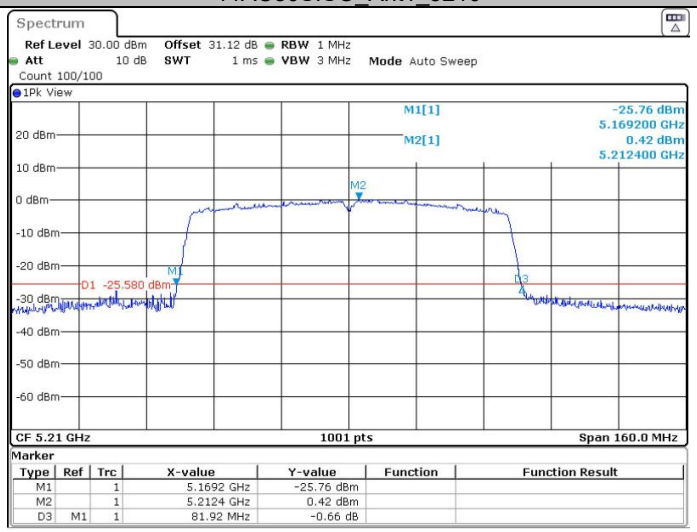
Date: 12.APR.2023 07:14:05

11AC40SISO_Ant1_5230



Date: 12.APR.2023 07:16:30

11AC80SISO_Ant1_5210



Date: 12.APR.2023 07:25:19

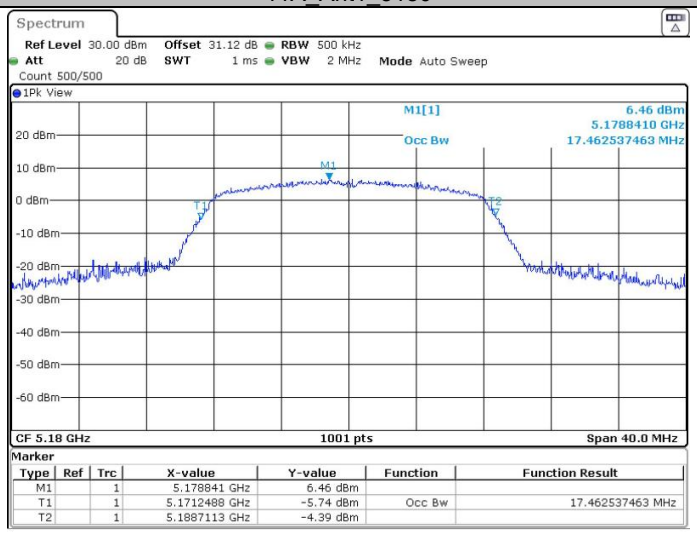
Appendix A2: Occupied channel bandwidth

Test Result

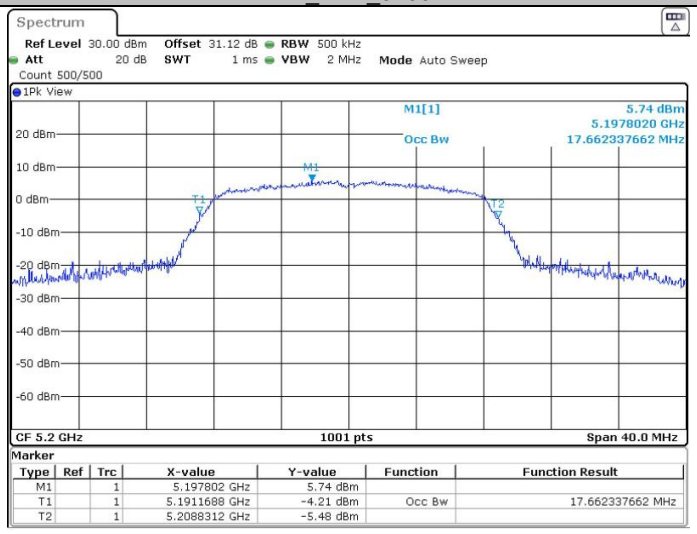
Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.463	5171.249	5188.711	---	---
		5200	17.662	5191.169	5208.831	---	---
		5240	17.542	5231.209	5248.751	---	---
		5745	17.463	5736.289	5753.751	---	---
		5785	17.423	5776.369	5793.791	---	---
		5825	17.542	5816.289	5833.831	---	---
11AC20SISO	Ant1	5180	18.222	5170.889	5189.111	---	---
		5200	18.302	5190.889	5209.191	---	---
		5240	18.262	5230.889	5249.151	---	---
		5745	18.302	5735.849	5754.151	---	---
		5785	18.262	5775.929	5794.191	---	---
		5825	18.302	5815.889	5834.191	---	---
11AC40SISO	Ant1	5190	36.843	5171.618	5208.462	---	---
		5230	36.763	5211.698	5248.462	---	---
		5755	37.003	5736.618	5773.621	---	---
		5795	37.003	5776.618	5813.621	---	---
11AC80SISO	Ant1	5210	76.084	5171.958	5248.042	---	---
		5775	76.404	5737.118	5813.521	---	---

Test Graphs

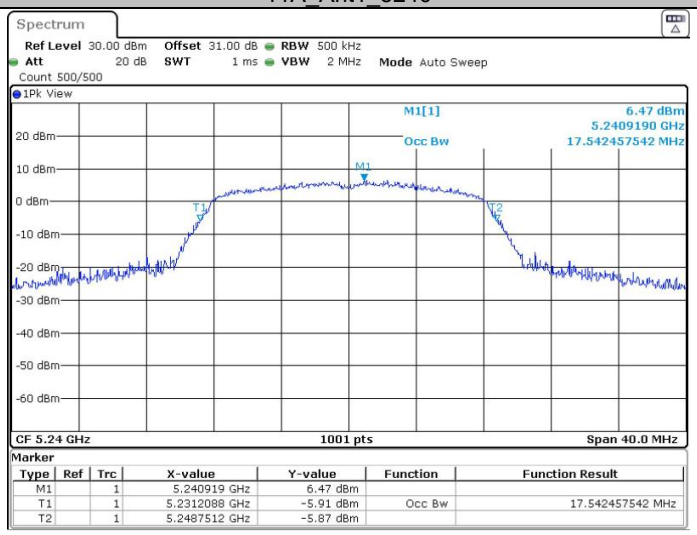
11A_Ant1_5180



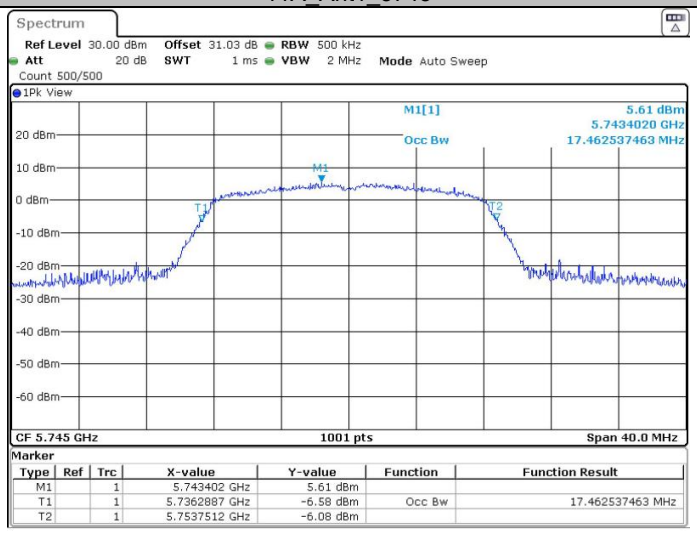
11A_Ant1_5200



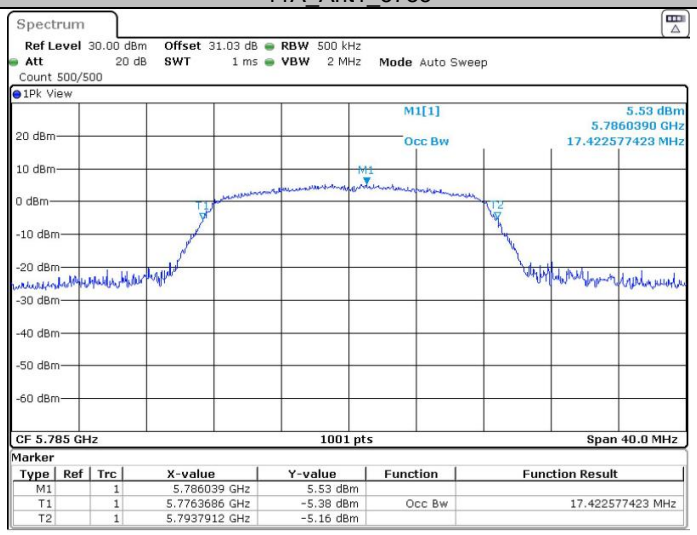
11A_Ant1_5240



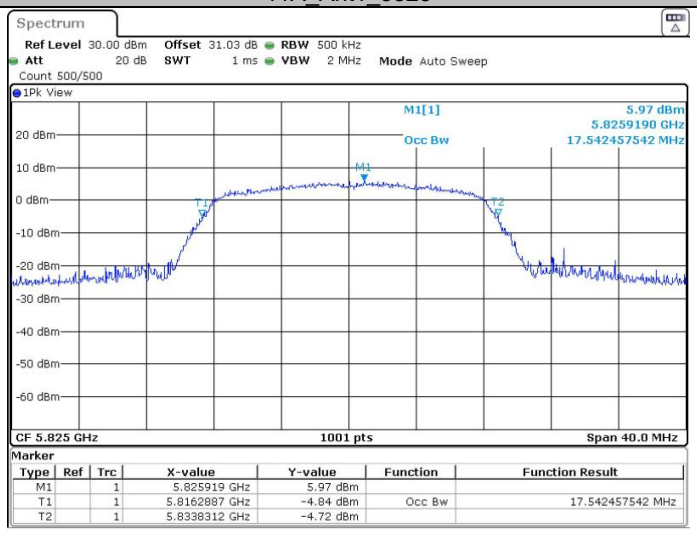
11A_Ant1_5745



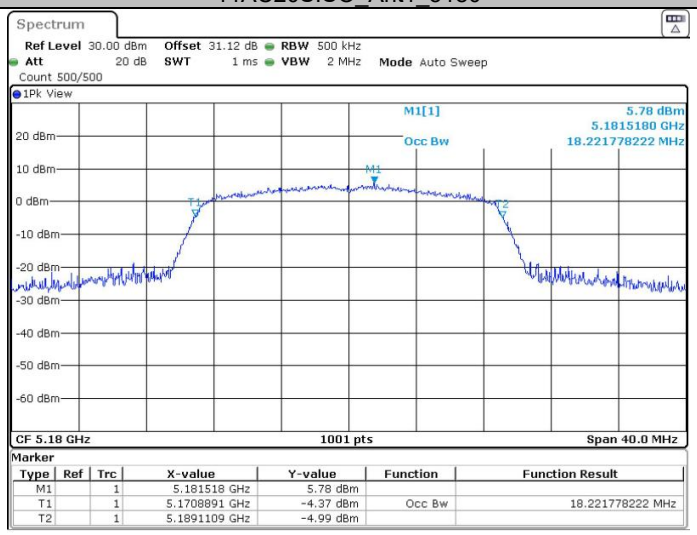
11A_Ant1_5785



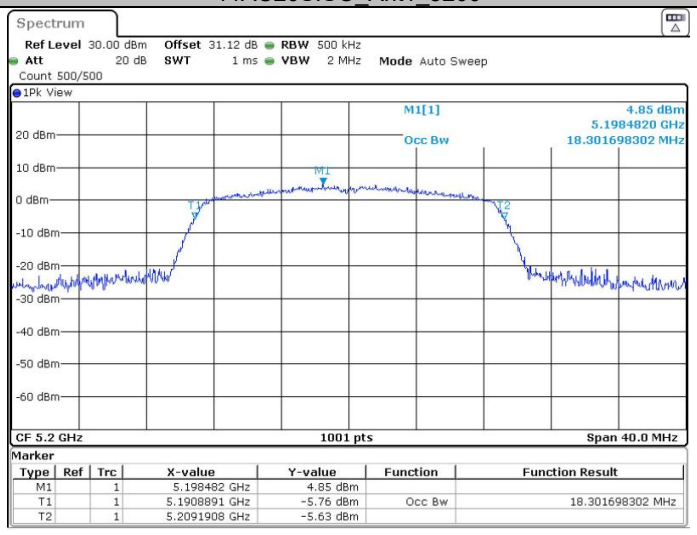
11A_Ant1_5825



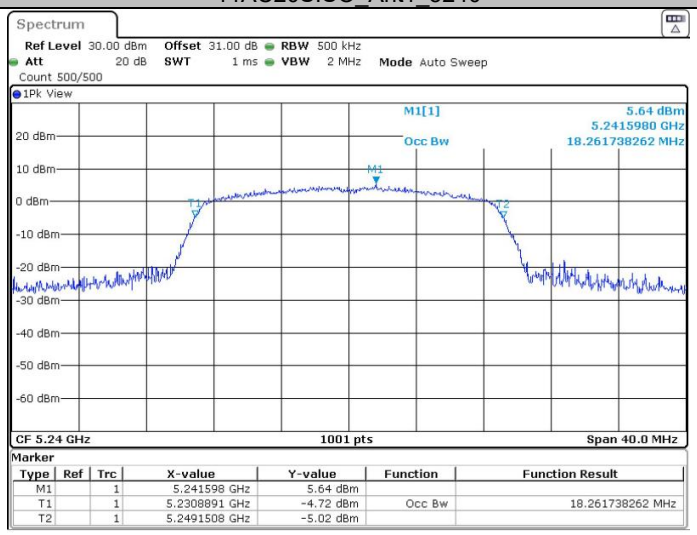
11AC20SISO_Ant1_5180



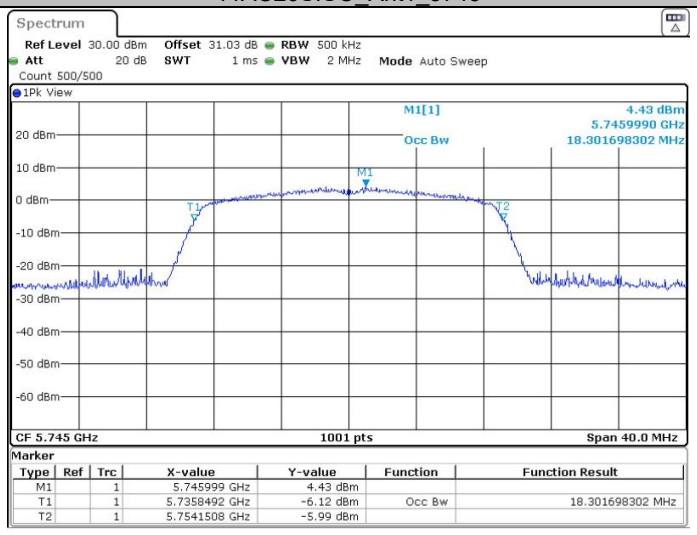
11AC20SISO_Ant1_5200



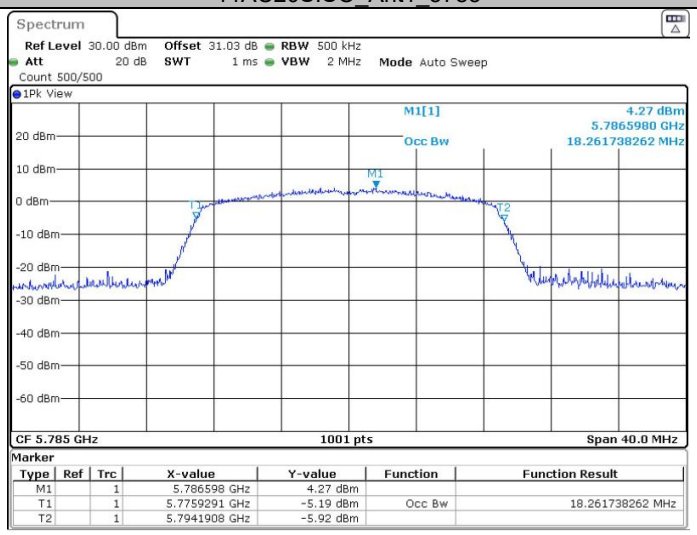
11AC20SISO_Ant1_5240



11AC20SISO_Ant1_5745

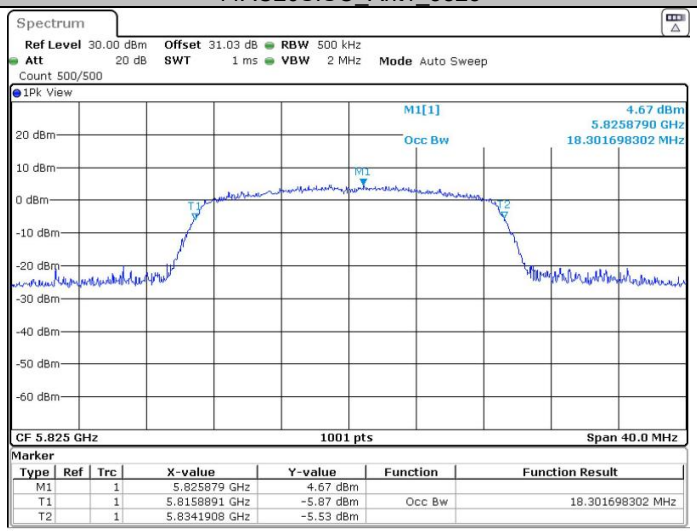


11AC20SISO_Ant1_5785



Date: 12.APR.2023 07:09:58

11AC20SISO_Ant1_5825



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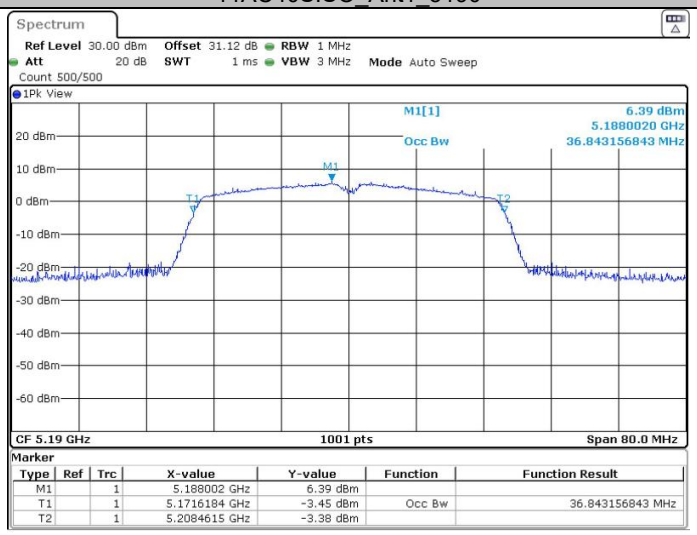
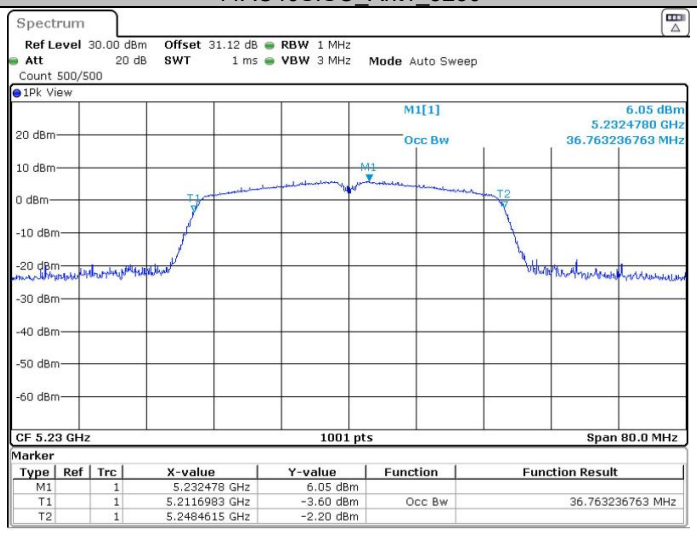
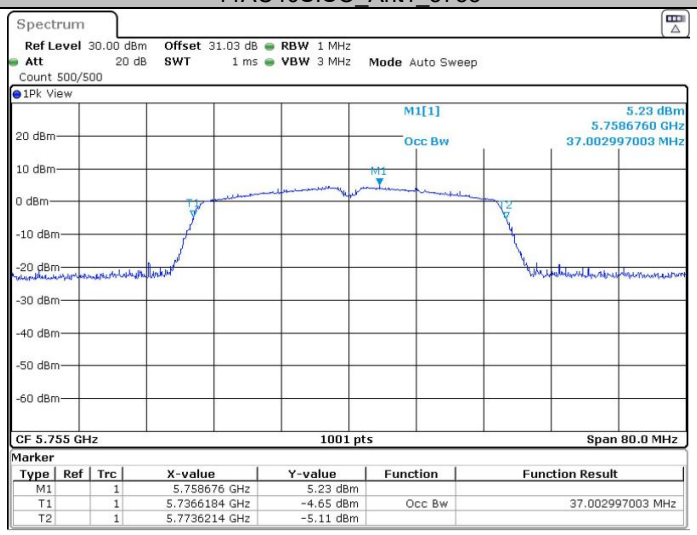
11AC40SISO_Ant1_5190



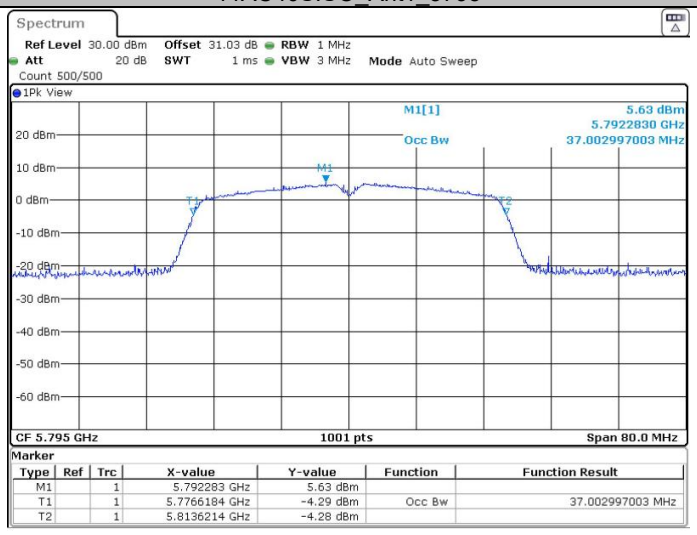
11AC40SISO_Ant1_5230



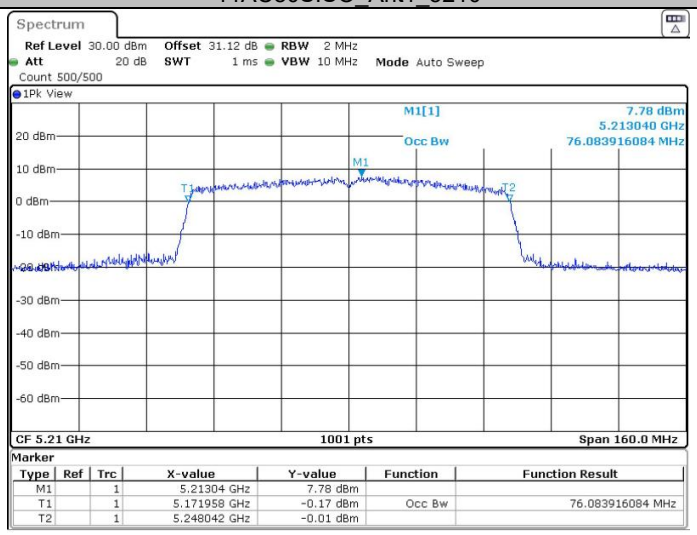
11AC40SISO_Ant1_5755



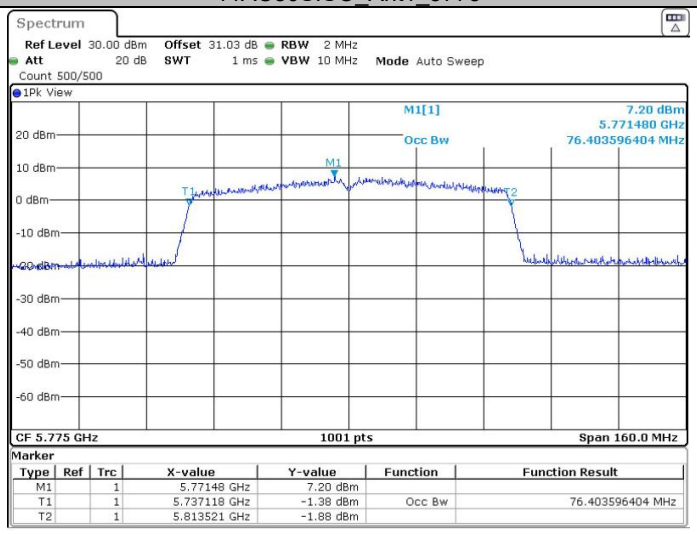
11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5210



11AC80SISO_Ant1_5775



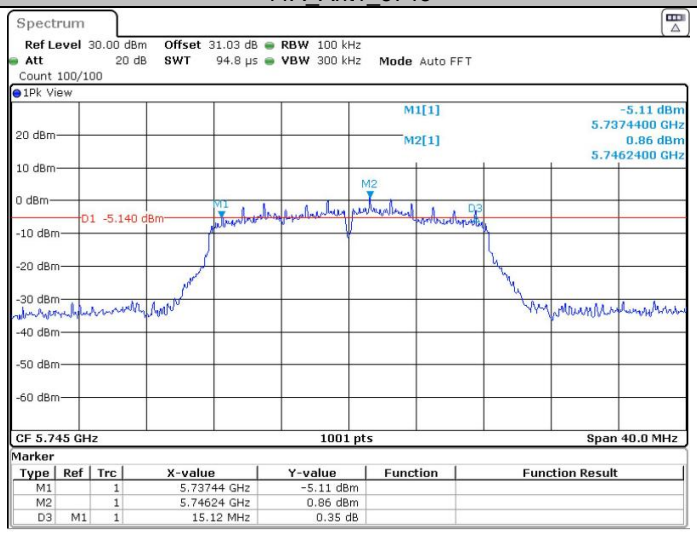
Appendix A3: Min emission bandwidth

Test Result B4

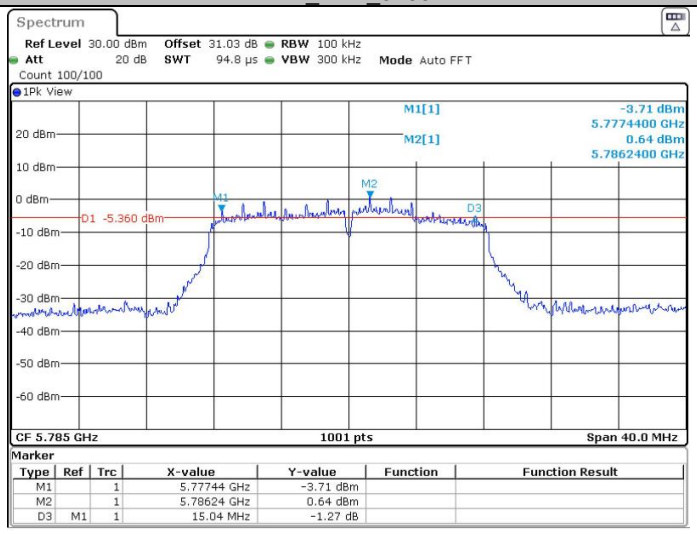
Test Mode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	15.12	5737.44	5752.56	0.5	PASS
		5785	15.04	5777.44	5792.48	0.5	PASS
		5825	15.12	5817.44	5832.56	0.5	PASS
11AC20SISO	Ant1	5745	15.04	5737.44	5752.48	0.5	PASS
		5785	15.08	5777.44	5792.52	0.5	PASS
		5825	15.12	5817.44	5832.56	0.5	PASS
11AC40SISO	Ant1	5755	35.12	5737.48	5772.60	0.5	PASS
		5795	35.12	5777.48	5812.60	0.5	PASS
11AC80SISO	Ant1	5775	68.96	5743.64	5812.60	0.5	PASS

Test Graphs B4

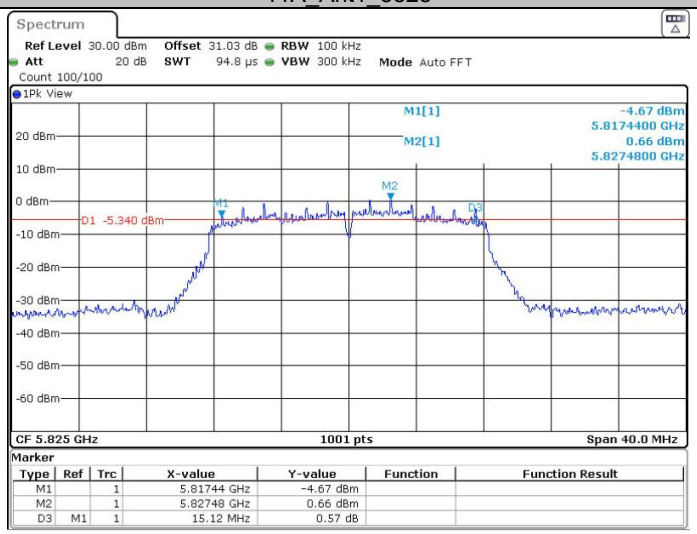
11A_Ant1_5745



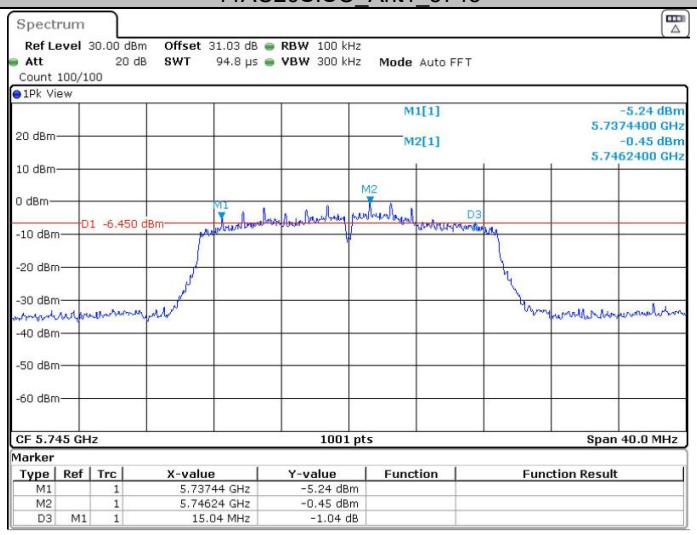
11A_Ant1_5785



11A_Ant1_5825

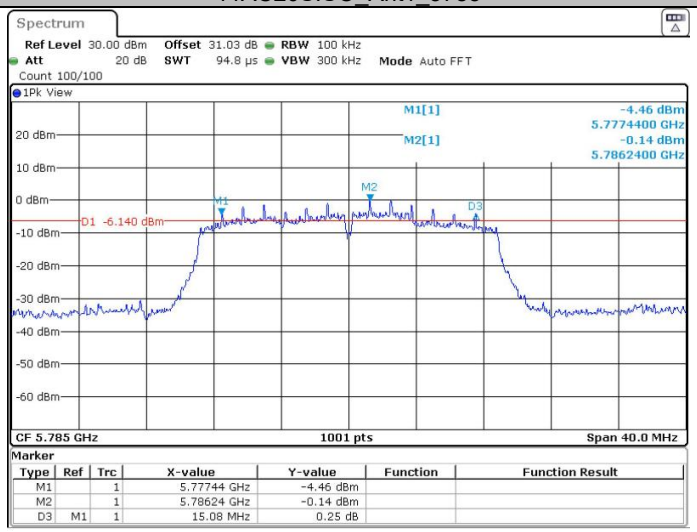


11AC20SISO_Ant1_5745



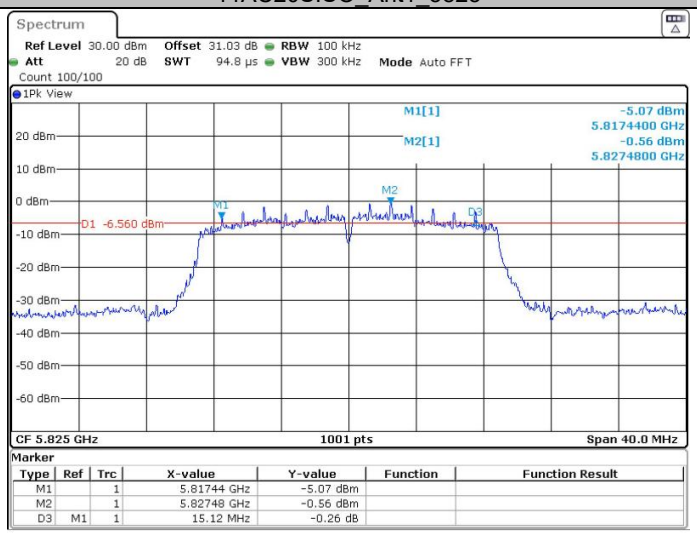
Date: 12.APR.2023 07:08:04

11AC20SISO_Ant1_5785



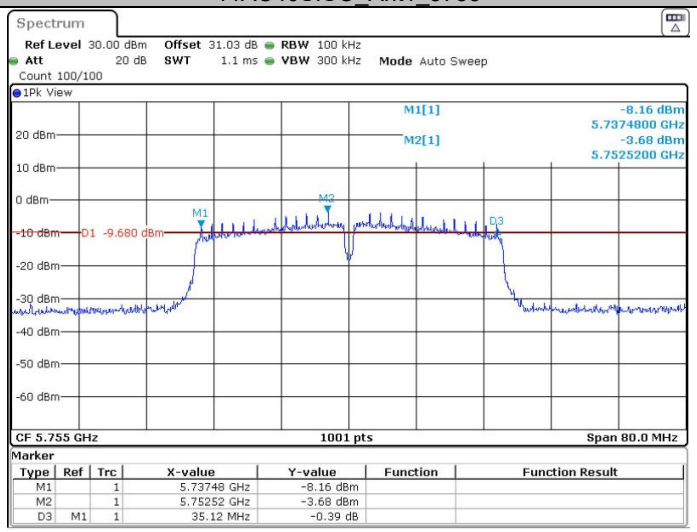
Date: 12.APR.2023 07:09:46

11AC20SISO_Ant1_5825



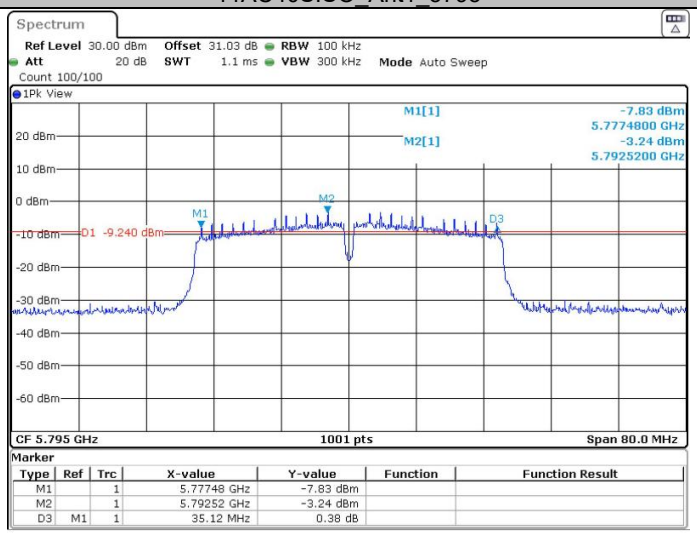
Date: 12.APR.2023 07:11:21

11AC40SISO_Ant1_5755



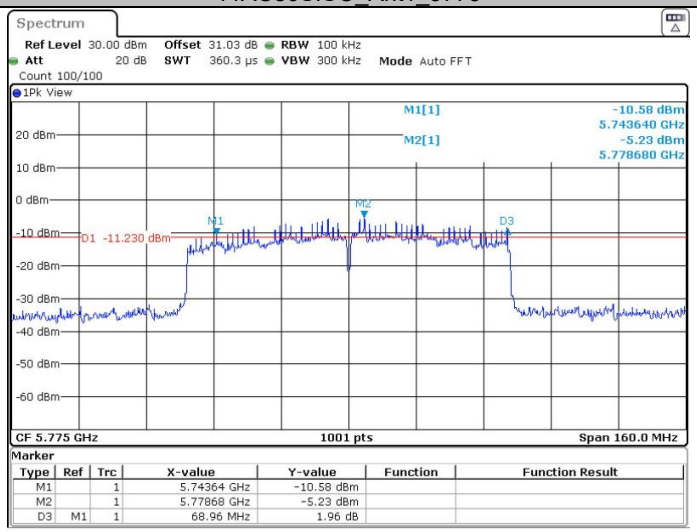
Date: 12.APR.2023 07:20:15

11AC40SISO_Ant1_5795



Date: 12.APR.2023 07:22:11

11AC80SISO_Ant1_5775



Date: 12.APR.2023 07:27:35

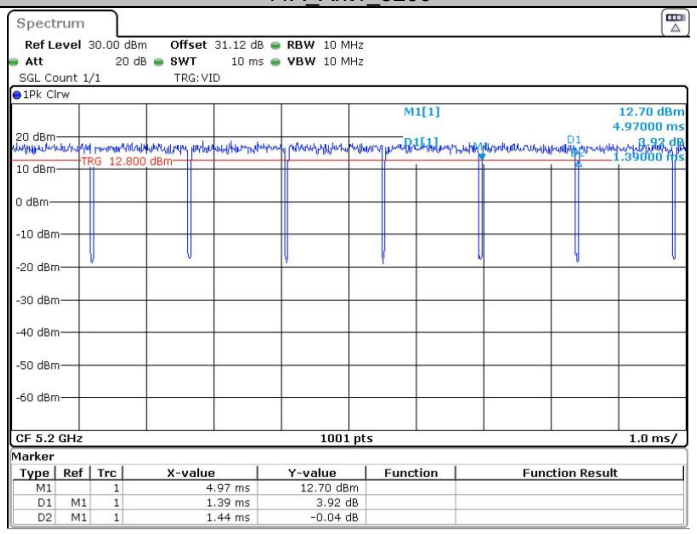
Appendix B: Duty Cycle

Test Result

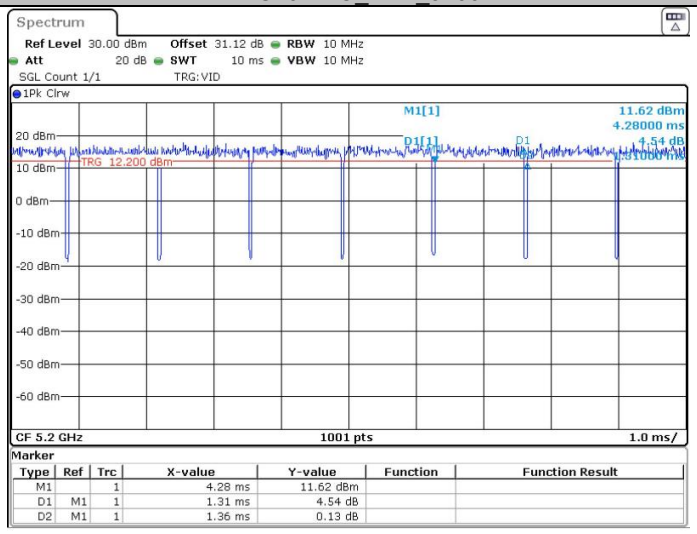
Test Mode	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]	1/T Minimum VBW (kHz)
11A	5200	1.39	1.44	96.53	0.15	0.72
11AC20SISO	5200	1.31	1.36	96.32	0.16	0.76
11AC40SISO	5190	0.65	0.70	92.86	0.32	1.54
11AC80SISO	5210	0.32	0.37	86.49	0.63	3.13

Test Graphs

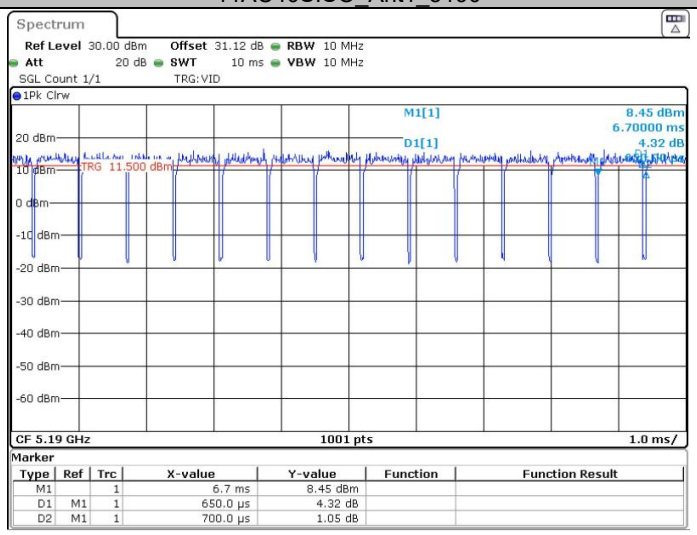
11A_Ant1_5200



11AC20SISO_Ant1_5200

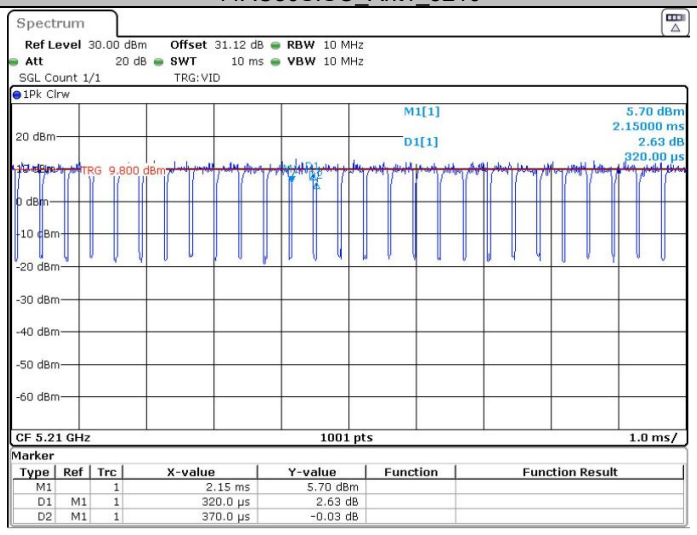


11AC40SISO_Ant1_5190



Date: 12.APR.2023 07:14:50

11AC80SISO_Ant1_5210



Date: 12.APR.2023 07:24:38

Appendix C: Maximum conducted output power

Test Result Channel Power

Test Mode	Antenna	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	10.96	≤23.98	PASS
		5200	11.01	≤23.98	PASS
		5240	11.06	≤23.98	PASS
		5745	10.04	≤30.00	PASS
		5785	10.10	≤30.00	PASS
		5825	10.45	≤30.00	PASS
11AC20SISO	Ant1	5180	10.55	≤23.98	PASS
		5200	10.03	≤23.98	PASS
		5240	10.35	≤23.98	PASS
		5745	9.38	≤30.00	PASS
		5785	9.64	≤30.00	PASS
		5825	10.05	≤30.00	PASS
11AC40SISO	Ant1	5190	10.28	≤23.98	PASS
		5230	10.35	≤23.98	PASS
		5755	9.22	≤30.00	PASS
		5795	9.66	≤30.00	PASS
11AC80SISO	Ant1	5210	9.08	≤23.98	PASS
		5775	9.20	≤30.00	PASS

Appendix D: Maximum power spectral density

Test Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	0.78	≤11.00	PASS
		5200	0.66	≤11.00	PASS
		5240	1.11	≤11.00	PASS
		5745	-3.1	≤30.00	PASS
		5785	-2.93	≤30.00	PASS
		5825	-2.73	≤30.00	PASS
11AC20SISO	Ant1	5180	0.28	≤11.00	PASS
		5200	-0.18	≤11.00	PASS
		5240	0.11	≤11.00	PASS
		5745	-3.79	≤30.00	PASS
		5785	-3.76	≤30.00	PASS
		5825	-3.02	≤30.00	PASS
11AC40SISO	Ant1	5190	-2.81	≤11.00	PASS
		5230	-2.47	≤11.00	PASS
		5755	-6.94	≤30.00	PASS
		5795	-6.13	≤30.00	PASS
11AC80SISO	Ant1	5210	-6.94	≤11.00	PASS
		5775	-9.85	≤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 and RBW Factor is compensated in the graph.

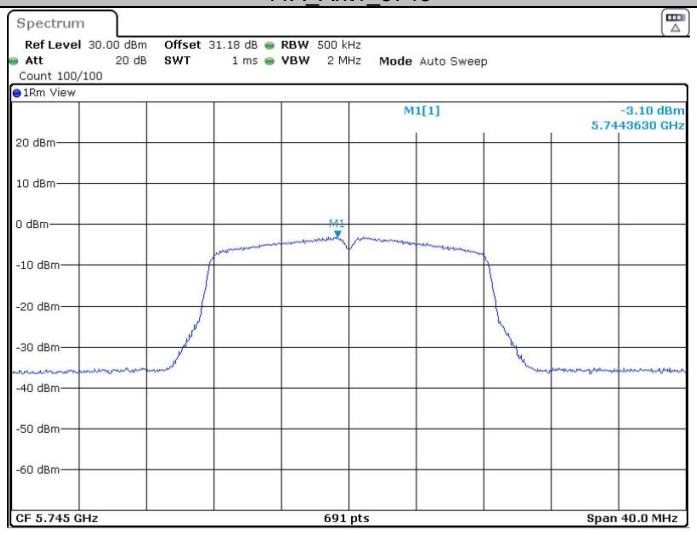
Test Graphs

11A_Ant1_5180

11A_Ant1_5200

11A_Ant1_5240

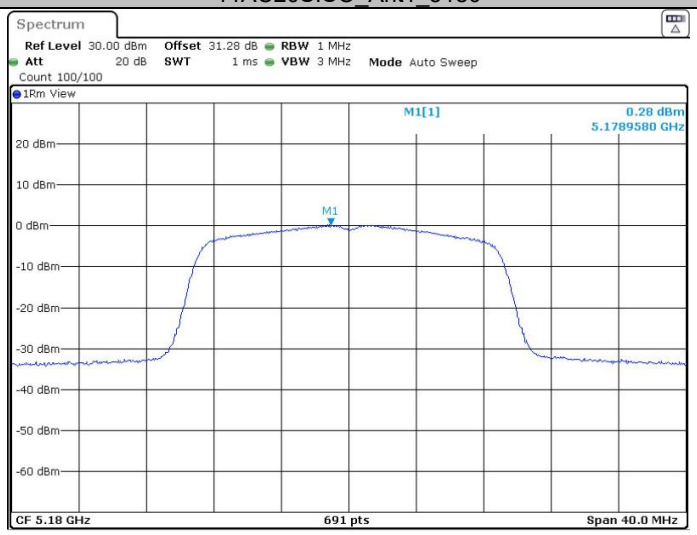
11A_Ant1_5745



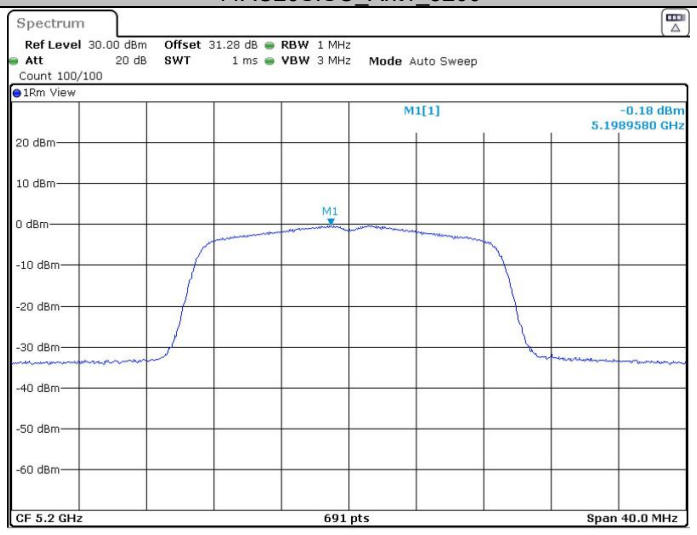
11A_Ant1_5785

11A_Ant1_5825

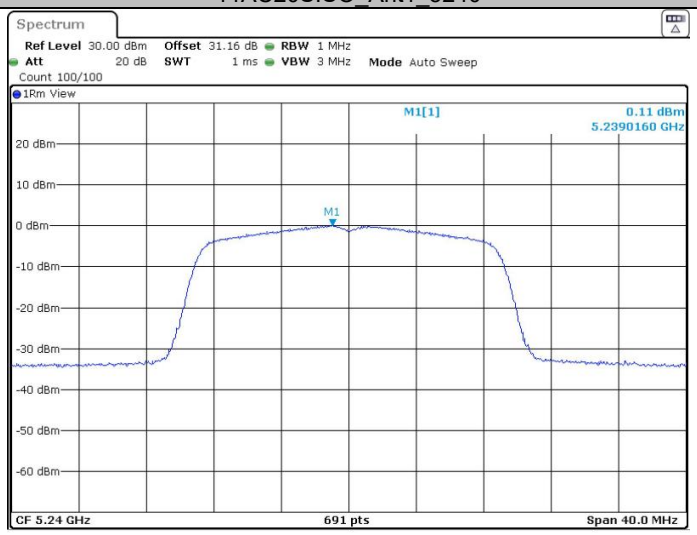
11AC20SISO_Ant1_5180



11AC20SISO_Ant1_5200



11AC20SISO_Ant1_5240

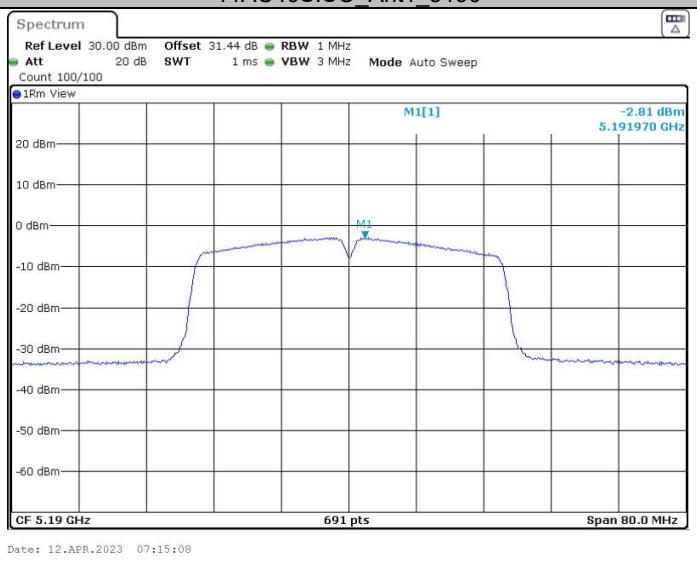


11AC20SISO_Ant1_5745

11AC20SISO_Ant1_5785

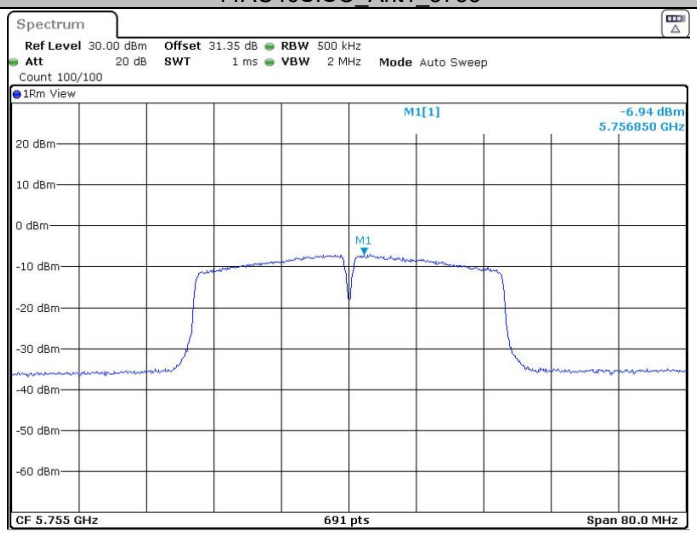
11AC20SISO_Ant1_5825

11AC40SISO_Ant1_5190

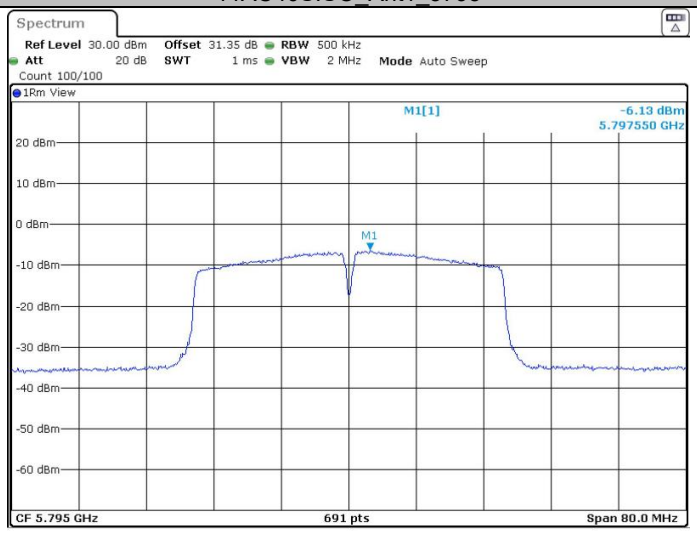


11AC40SISO_Ant1_5230

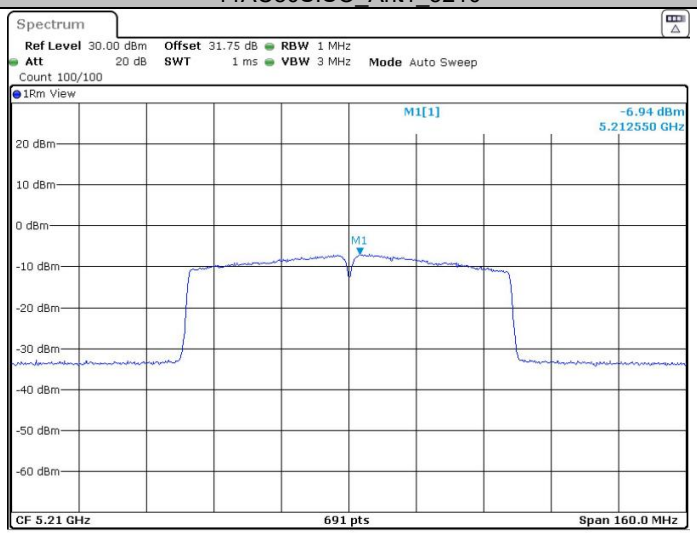
11AC40SISO_Ant1_5755



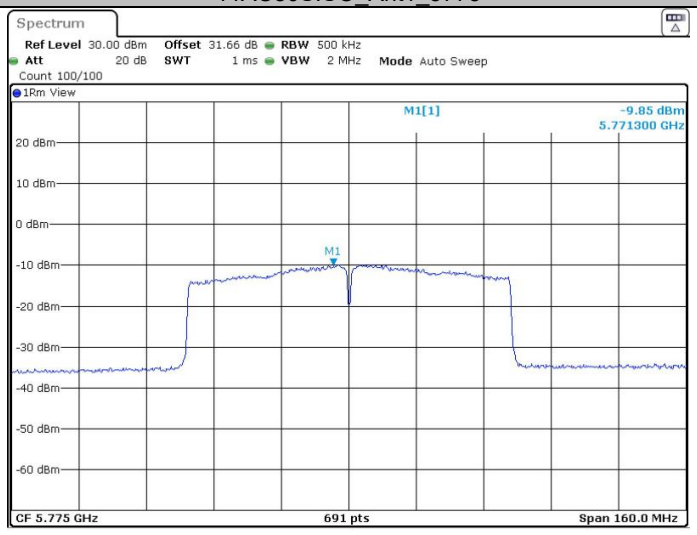
11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5210



11AC80SISO_Ant1_5775



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