TESTING LABORATORY
CERTIFICATE # 4297.01

FCC PART 15.407

TEST REPORT

For

TECNO MOBILE LIMITED

FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET
FOTAN NT Hong Kong

FCC ID: 2ADYY-LE6

Report Type:	Product Type:
Original Report	Mobile Phone

Report Number:	SZ1210825-36467E-RF-00C
Report Date:	2021-11-02
Reviewed By:	Candy Li RF Engineer
Prepared By:	Shenzhen Accurate Technology Co., Ltd. 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396 Http://www.atc-lab.com

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.

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Mobile Phone
Tested Model	LE6
Frequency Range	5G Wi-Fi: 5150-5250 MHz; 5725-5850 MHz
Maximum conducted average output power	5150-5250 MHz: 6.74dBm 5725-5850 MHz: 7.49dBm
Modulation Technique	OFDM
Antenna Specification*	-0.9 dBi (It is provided by the applicant)
Voltage Range	DC 3.85V from battery or DC 5.0~12.0V from adapter
Date of Test	2021-09-09 to 2021-11-02
Sample serial number	SZ1210825-36467E-RF-S1
Received date	2021-08-25
Sample/EUT Status	Good condition
Adapter information	Model: U180TSA Input: AC 100-240V~50/60Hz, 0.6A Output: DC 5.0V~9.0V, 2.0A 9.0V~12.0V, 1.5A

Objective

This type approval 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 KDB789033D02 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.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
Emissions, Radiated	30MHz - 1GHz	4.28dB
	1GHz- 18GHz	4.98dB
	18GHz- 26.5GHz	5.06dB
	26.5GHz- 40GHz	4.72dB
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 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. 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.

Listed by Innovation, Science and Economic Development Canada (ISEDC), the Registration Number is 5077A-2.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

The EUT can operate in 802.11a/n20/n40/ac20/ac40/ac80 modes.

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, 802.11n20/ac20 mode: channel 36, 40, 48 were tested; For 802.11n40/ac40 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, 802.11n20/ac20 mode: channel 149, 157, 165 were tested; For 802.11n40/ac40 mode: channel 151, 159 were tested. For 802.11ac80 mode, channel 155 was tested.

EUT Exercise Software

EUT was test in signaling mode.

Test frequencies and power level were configured as below:

Mode	Rate (Mbps)	Frequency (MHz)	Power Level*
802.11 a	6 Mbps	5180	10
	6 Mbps	5200	10
	6 Mbps	5240	10
802.11 n20	MCS0	5180	10
	MCS0	5200	10
	MCS0	5240	10
802.11 n40	MCS0	5190	10
	MCS0	5230	10
802.11 ac20	MCS0	5180	10
	MCS0	5200	10
	MCS0	5240	10
802.11 ac40	MCS0	5190	10
	MCS0	5230	10
802.11 ac80	MCS0	5210	10
802.11 a	6 Mbps	5745	13
	6 Mbps	5785	13
	6 Mbps	5825	13
802.11 n20	MCS0	5745	13
	MCS0	5785	13
	MCS0	5825	13
802.11 n40	MCS0	5755	13
	MCS0	5795	13
802.11 ac20	MCS0	5745	13
	MCS0	5785	13
	MCS0	5825	13
802.11 ac40	MCS0	5755	13
	MCS0	5795	13
802.11 ac80	MCS0	5775	13

Note 1: 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.
Note 2: 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

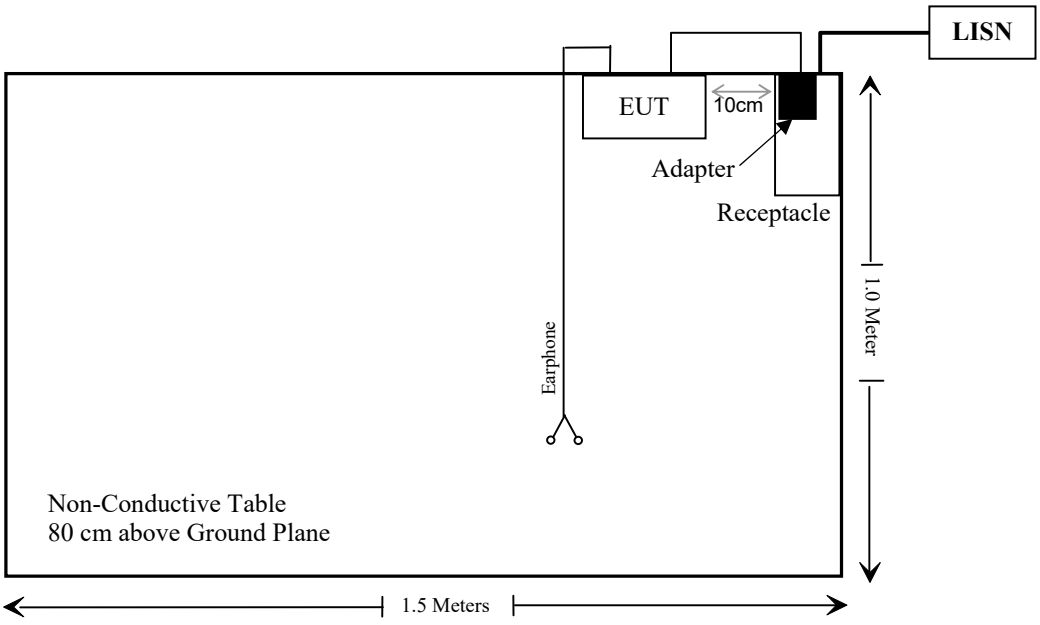
Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

Cable Description	Length (m)	From Port	To
Un-Shielded Detachable USB Cable	1.0	adapter	EUT

Block Diagram of Test Setup

For conducted emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 1.1307 , §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) (1), (4), (9) ,(10)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a) (1), (12),(e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliant
§15.407(a)(1),(3)	Conducted Transmitter Output Power	Compliant
§15.407 (a)(1),(3)	Power Spectral Density	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde& Schwarz	Test Receiver	ESPI3	100396	2020/12/24	2021/12/23
R & S	L.I.S.N.	ENV216	101314	2020/12/25	2021/12/24
Anritsu Corp	50ΩCoaxial Switch	MP59B	6200506474	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-2m	No.2	2020/12/25	2021/12/24
Conducted Emission Test Software: ES-K1 V1.71					
Radiated Emission Test (Below 1G)					
Rohde& Schwarz	Test Receiver	ESR	101817	2020/12/24	2021/12/23
Rohde&Schwarz	Spectrum Analyzer	FSV40	101495	2020/12/24	2021/12/23
SONOMA INSTRUMENT	Amplifier	310 N	186131	2020/12/25	2021/12/24
A.H. Systems, inc.	Preamplifier	PAM-0118P	531	2021/07/08	2022/07/07
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2020/11/28	2021/11/27
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2020/12/25	2021/12/24
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2020/01/05	2023/01/04
OREGON SCIENTIFIC	Temperature & Humidity Meter	JB913R	GZ-WS004	2020/01/02	2023/01/01
Unknown	RF Coaxial Cable	N-5m	No.3	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-5m	No.4	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.5	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.6	2020/12/25	2021/12/24
CD	Band Reject Filter	BRM-5.15/5.35g-45	075	2020/12/25	2021/12/24
CD	Band Reject Filter	BRM-5.725/5.875G-45	065	2020/12/25	2021/12/24
Radiated Emission Test Software: EZ_EMC V 1.1.4.2					

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Spectrum Analyzer	Rohde & Schwarz	FSV-40	101495	2020/12/24	2021/12/23
Tonscend	RF Control Unit	JS0806-2	19G8060182	2021/07/06	2022/07/05

*** 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) (1) &§2.1093 – RF EXPOSURE

Applicable Standard

According to FCC §2.1093 and §1.1307(b) (1), 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.

According to KDB 447498 D01 General RF Exposure Guidance

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where
1. f(GHz) is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.
4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

For worst case:

Frequency (MHz)	Maximum Tune-up power		Calculated Distance (mm)	Calculated Value	Threshold (1-g SAR)	SAR Test Exclusion
	(dBm)	(mW)				
5150-5250	7.0	5.01	5	2.3	3.0	**Yes**
5725-5850	7.6	5.75	5	2.8	3.0	**Yes**

Result: No Standalone SAR test is required

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 was permanently attached and the antenna gain is -0.9dBi, fulfill the requirement of this section. Please refer to the EUT photos.

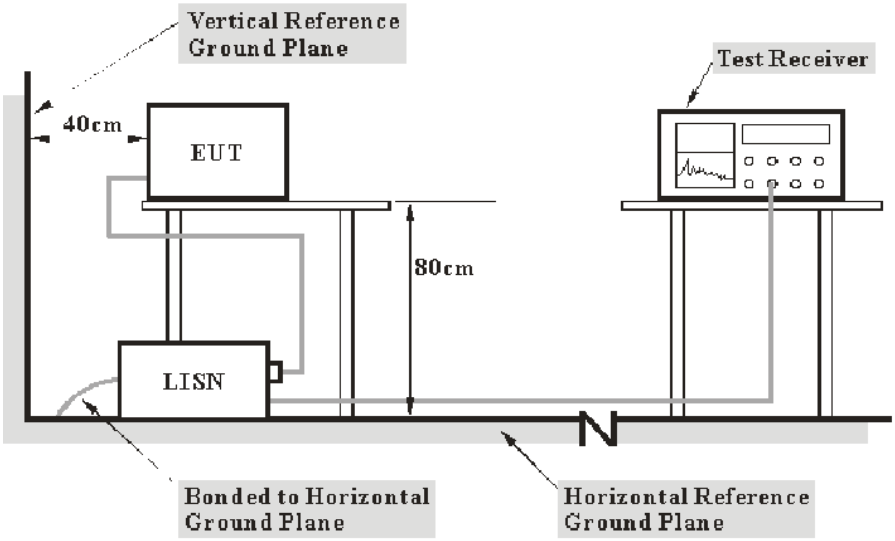
Result: Pass

FCC §15.407 (b) (9) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (9)

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.

Test Data

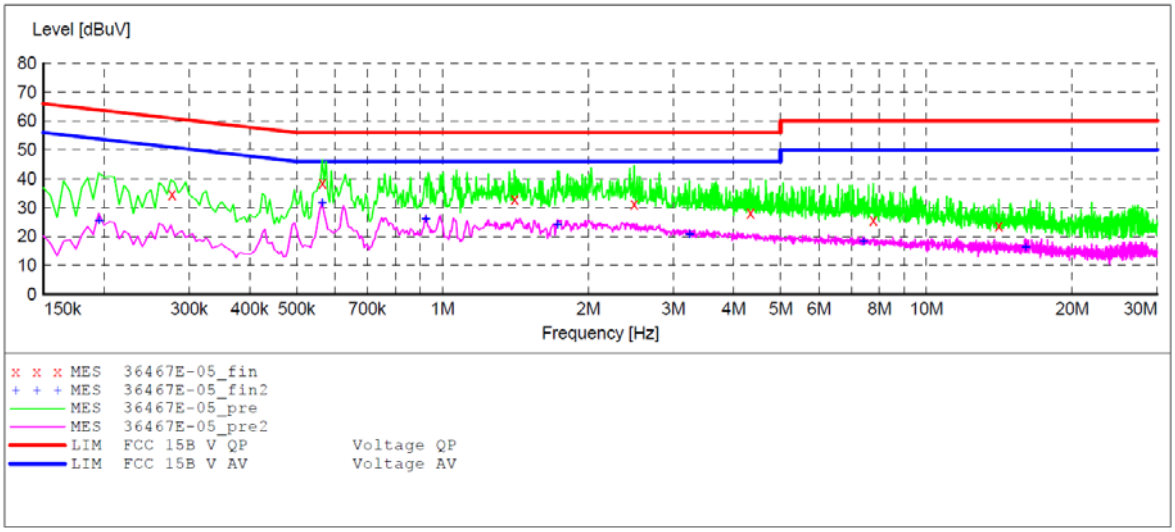
Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	48 %
ATM Pressure:	101.0 kPa

The testing was performed by Fan Yang on 2021-10-02.

EUT operation mode: Transmitting (worst case is 802.11 n20, 5200MHz)

AC 120V/60 Hz, Line:



MEASUREMENT RESULT: "36467E-05_fin"

2021-10-2 09:04

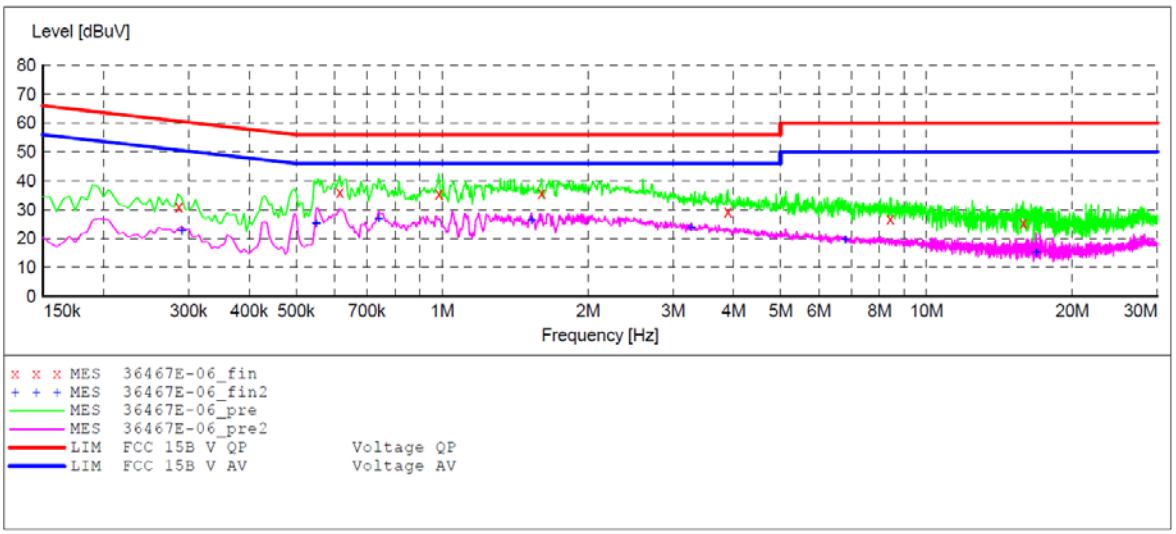
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.275000	35.10	10.9	61	25.9	QP	L1	GND
0.565000	38.50	11.0	56	17.5	QP	L1	GND
1.410000	33.00	11.2	56	23.0	QP	L1	GND
2.490000	31.40	11.3	56	24.6	QP	L1	GND
4.330000	28.20	11.4	56	27.8	QP	L1	GND
7.770000	25.80	11.5	60	34.2	QP	L1	GND
14.125000	23.80	11.6	60	36.2	QP	L1	GND

MEASUREMENT RESULT: "36467E-05_fin2"

2021-10-2 09:04

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.195000	25.50	10.8	54	28.5	AV	L1	GND
0.565000	31.70	11.0	46	14.3	AV	L1	GND
0.925000	26.00	11.1	46	20.0	AV	L1	GND
1.730000	24.00	11.2	46	22.0	AV	L1	GND
3.240000	20.80	11.4	46	25.2	AV	L1	GND
7.410000	18.10	11.5	50	31.9	AV	L1	GND
16.025000	16.30	11.7	50	33.7	AV	L1	GND

AC 120V/60 Hz, Neutral:



MEASUREMENT RESULT: "36467E-06_fin"

2021-10-2 09:06uV

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.285000	30.30	10.9	61	30.7	QP	N	GND
0.615000	36.00	11.0	56	20.0	QP	N	GND
0.985000	35.40	11.1	56	20.6	QP	N	GND
1.605000	35.70	11.2	56	20.3	QP	N	GND
3.890000	29.40	11.4	56	26.6	QP	N	GND
8.420000	26.80	11.5	60	33.2	QP	N	GND
15.850000	25.50	11.7	60	34.5	QP	N	GND

MEASUREMENT RESULT: "36467E-06_fin2"

2021-10-2 09:06

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.290000	22.70	10.9	51	28.3	AV	N	GND
0.550000	25.00	11.0	46	21.0	AV	N	GND
0.740000	26.90	11.1	46	19.1	AV	N	GND
1.530000	26.20	11.2	46	19.8	AV	N	GND
3.270000	23.80	11.4	46	22.2	AV	N	GND
6.800000	19.50	11.5	50	30.5	AV	N	GND
16.850000	15.10	11.7	50	34.9	AV	N	GND

§15.205 & §15.209 & §15.407(B) (1), (4), (9), (10) – UNDESIRABLE EMISSION

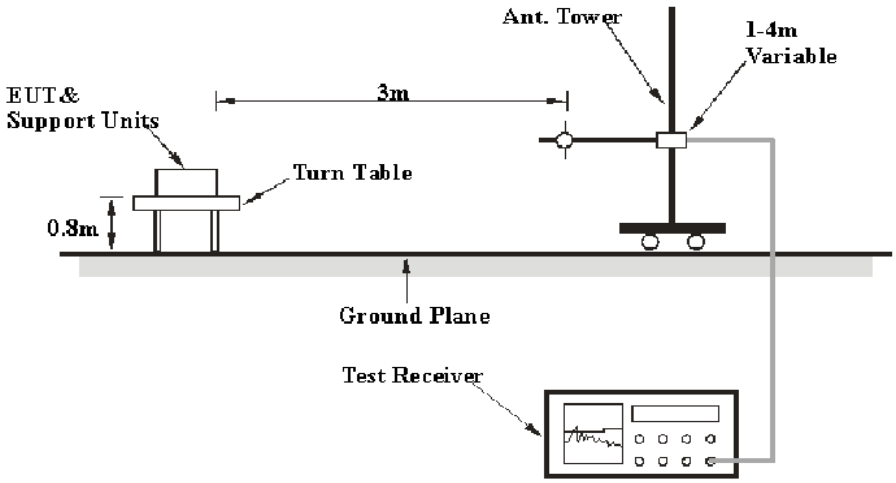
Applicable Standard

FCC §15.407 (b) (1), (4), (9), (10); §15.209; §15.205;

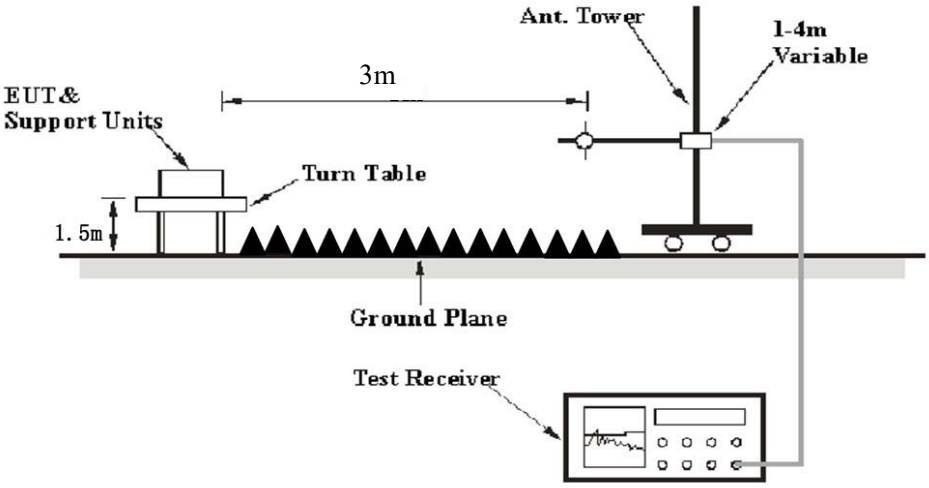
(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(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

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.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

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

Margin = Limit – Corrected Amplitude

Test Data

Environmental Conditions

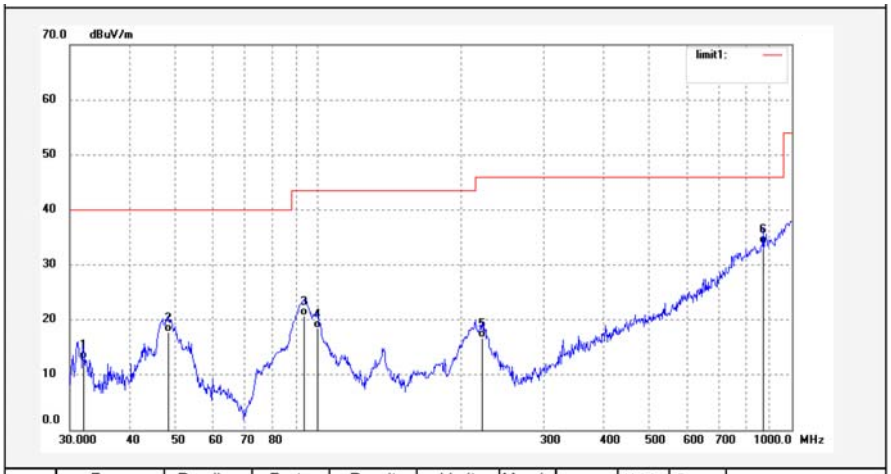
Temperature:	20~23 ℃
Relative Humidity:	45~48 %
ATM Pressure:	101.0~101.2 kPa

The testing was performed by Icey Huang from 2021-10-01 to2021-10-23.

EUT operation mode: Transmitting

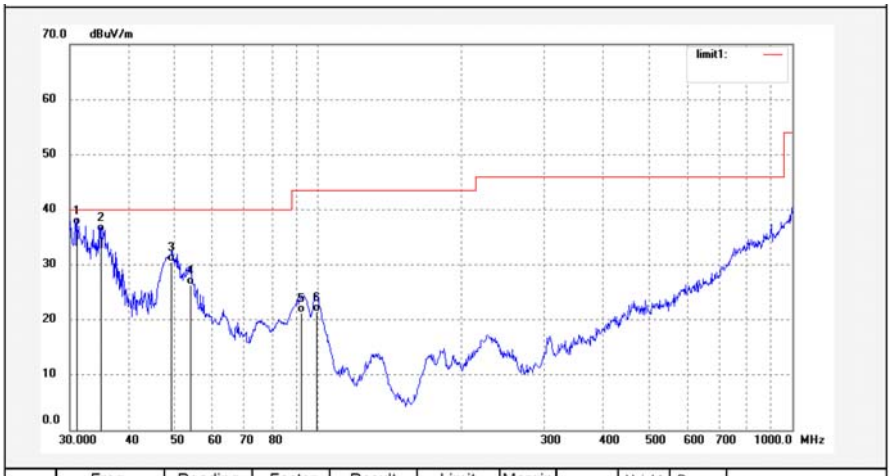
30 MHz~1 GHz: (Worst case is 802.11a , 5200MHz)

Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.0667	29.76	-16.97	12.79	40.00	-27.21	QP			
2	48.5016	32.16	-14.35	17.81	40.00	-22.19	QP			
3	93.7685	43.88	-23.15	20.73	43.50	-22.77	QP			
4	99.8777	39.32	-20.80	18.52	43.50	-24.98	QP			
5	222.1698	36.46	-19.69	16.77	46.00	-29.23	QP			
6	869.1302	27.33	6.47	33.80	46.00	-12.20	QP			

Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.0706	48.03	-10.76	37.27	40.00	-2.73	QP			
2	34.8823	47.88	-11.98	35.90	40.00	-4.10	QP			
3	49.1865	45.10	-14.52	30.58	40.00	-9.42	QP			
4	53.8818	42.80	-16.42	26.38	40.00	-13.62	QP			
5	92.4624	44.55	-23.21	21.34	43.50	-22.16	QP			
6	99.5281	42.44	-20.95	21.49	43.50	-22.01	QP			

1 ~ 40 GHz:

5150-5250 MHz:

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11a									
5180 MHz									
4500	58.04	PK	159	1.2	V	1.89	59.93	74	-14.07
4500	44.68	Ave.	159	1.2	V	1.89	46.57	54	-7.43
4500	55.75	PK	111	2.3	H	1.89	57.64	74	-16.36
4500	42.57	Ave.	111	2.3	H	1.89	44.46	54	-9.54
5150	58.43	PK	141	1.7	V	3.37	61.80	74	-12.2
5150	44.49	Ave.	141	1.7	V	3.37	47.86	54	-6.14
5150	56.21	PK	145	2.2	H	3.37	59.58	74	-14.42
5150	42.26	Ave.	145	2.2	H	3.37	45.63	54	-8.37
10360	38.86	PK	182	2.1	V	14.41	53.27	68.2	-14.93
10360	36.27	PK	216	2.1	H	14.41	50.68	68.2	-17.52
5200 MHz									
10400	40.98	PK	235	1.7	V	11.46	52.44	68.2	-15.76
10400	38.16	PK	156	1.7	H	11.46	49.62	68.2	-18.58
5240 MHz									
5350	56.09	PK	22	1.7	V	3.43	59.52	74	-14.48
5350	43.12	Ave.	22	1.7	V	3.43	46.55	54	-7.45
5350	53.84	PK	196	1.6	H	3.43	57.27	74	-16.73
5350	40.72	Ave.	196	1.6	H	3.43	44.15	54	-9.85
5460	57.67	PK	302	2	V	3.58	61.25	74	-12.75
5460	44.10	Ave.	302	2	V	3.58	47.68	54	-6.32
5460	55.81	PK	54	2.4	H	3.58	59.39	74	-14.61
5460	42.00	Ave.	54	2.4	H	3.58	45.58	54	-8.42
10480	39.90	PK	282	1.7	V	11.53	51.43	68.2	-16.77
10480	37.22	PK	68	1.7	H	11.53	48.75	68.2	-19.45

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11n20									
5180 MHz									
4500	59.69	PK	5	2.3	V	1.89	61.58	74	-12.42
4500	44.92	Ave.	5	2.3	V	1.89	46.81	54	-7.19
4500	57.39	PK	50	1.6	H	1.89	59.28	74	-14.72
4500	42.88	Ave.	50	1.6	H	1.89	44.77	54	-9.23
5150	58.04	PK	25	1.9	V	3.37	61.41	74	-12.59
5150	44.45	Ave.	25	1.9	V	3.37	47.82	54	-6.18
5150	55.87	PK	117	1.4	H	3.37	59.24	74	-14.76
5150	42.09	Ave.	117	1.4	H	3.37	45.46	54	-8.54
10360	38.52	PK	315	2.3	V	14.41	52.93	68.2	-15.27
10360	36.33	PK	167	2.3	H	14.41	50.74	68.2	-17.46
5200 MHz									
10400	40.90	PK	344	2.3	V	11.46	52.36	68.2	-15.84
10400	38.32	PK	1	2.3	H	11.46	49.78	68.2	-18.42
5240 MHz									
5350	56.75	PK	12	1.8	V	3.43	60.18	74	-13.82
5350	43.24	Ave.	12	1.8	V	3.43	46.67	54	-7.33
5350	54.93	PK	234	2.4	H	3.43	58.36	74	-15.64
5350	40.85	Ave.	234	2.4	H	3.43	44.28	54	-9.72
5460	57.66	PK	354	1.9	V	3.58	61.24	74	-12.76
5460	44.13	Ave.	354	1.9	V	3.58	47.71	54	-6.29
5460	54.77	PK	42	1.1	H	3.58	58.35	74	-15.65
5460	41.48	Ave.	42	1.1	H	3.58	45.06	54	-8.94
10480	40.09	PK	39	1.7	V	11.53	51.62	68.2	-16.58
10480	37.70	PK	212	1.7	H	11.53	49.23	68.2	-18.97

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11n40									
5190 MHz									
4500	64.96	PK	342	2.1	V	1.89	66.85	74	-7.15
4500	45.32	Ave.	342	2.1	V	1.89	47.21	54	-6.79
4500	62.46	PK	289	1.5	H	1.89	64.35	74	-9.65
4500	43.25	Ave.	289	1.5	H	1.89	45.14	54	-8.86
5150	57.98	PK	276	1.5	V	3.37	61.35	74	-12.65
5150	44.77	Ave.	276	1.5	V	3.37	48.14	54	-5.86
5150	55.87	PK	267	1.3	H	3.37	59.24	74	-14.76
5150	42.71	Ave.	267	1.3	H	3.37	46.08	54	-7.92
10380	40.31	PK	115	2.2	V	11.43	51.74	68.2	-16.46
10380	37.65	PK	294	2.2	H	11.43	49.08	68.2	-19.12
5230 MHz									
5350	56.30	PK	7	2.1	V	3.43	59.73	74	-14.27
5350	43.32	Ave.	7	2.1	V	3.43	46.75	54	-7.25
5350	53.95	PK	291	1.5	H	3.43	57.38	74	-16.62
5350	41.00	Ave.	291	1.5	H	3.43	44.43	54	-9.57
5460	57.96	PK	207	1.7	V	3.58	61.54	74	-12.46
5460	44.72	Ave.	207	1.7	V	3.58	48.3	54	-5.7
5460	55.77	PK	287	1.7	H	3.58	59.35	74	-14.65
5460	42.26	Ave.	287	1.7	H	3.58	45.84	54	-8.16
10460	39.31	PK	121	1.7	V	11.5	50.81	68.2	-17.39
10460	37.24	PK	63	1.7	H	11.5	48.74	68.2	-19.46

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11ac20									
5180 MHz									
4500	58.20	PK	64	1.6	V	1.89	60.09	74	-13.91
4500	44.88	Ave.	64	1.6	V	1.89	46.77	54	-7.23
4500	55.62	PK	178	2.3	H	1.89	57.51	74	-16.49
4500	42.63	Ave.	178	2.3	H	1.89	44.52	54	-9.48
5150	58.14	PK	23	2.4	V	3.37	61.51	74	-12.49
5150	44.36	Ave.	23	2.4	V	3.37	47.73	54	-6.27
5150	54.87	PK	143	2.1	H	3.37	58.24	74	-15.76
5150	42.05	Ave.	143	2.1	H	3.37	45.42	54	-8.58
10360	37.94	PK	76	1.2	V	14.41	52.35	68.2	-15.85
10360	35.47	PK	99	1.2	H	14.41	49.88	68.2	-18.32
5200 MHz									
10400	40.40	PK	253	1.6	V	11.46	51.86	68.2	-16.34
10400	38.13	PK	253	1.6	H	11.46	49.59	68.2	-18.61
5240 MHz									
5350	56.30	PK	301	1.6	V	3.43	59.73	74	-14.27
5350	43.14	Ave.	301	1.6	V	3.43	46.57	54	-7.43
5350	53.94	PK	288	1.3	H	3.43	57.37	74	-16.63
5350	40.98	Ave.	288	1.3	H	3.43	44.41	54	-9.59
5460	58.87	PK	92	2.3	V	3.58	62.45	74	-11.55
5460	44.34	Ave.	92	2.3	V	3.58	47.92	54	-6.08
5460	56.58	PK	18	1	H	3.58	60.16	74	-13.84
5460	41.84	Ave.	18	1	H	3.58	45.42	54	-8.58
10480	39.68	PK	245	1.7	V	11.53	51.21	68.2	-16.99
10480	37.22	PK	262	1.7	H	11.53	48.75	68.2	-19.45

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11ac40									
5190 MHz									
4500	58.72	PK	210	2.4	V	1.89	60.61	74	-13.39
4500	45.07	Ave.	210	2.4	V	1.89	46.96	54	-7.04
4500	56.66	PK	191	2.1	H	1.89	58.55	74	-15.45
4500	42.67	Ave.	191	2.1	H	1.89	44.56	54	-9.44
5150	57.78	PK	190	1.8	V	3.37	61.15	74	-12.85
5150	44.56	Ave.	190	1.8	V	3.37	47.93	54	-6.07
5150	55.67	PK	177	1.4	H	3.37	59.04	74	-14.96
5150	42.42	Ave.	177	1.4	H	3.37	45.79	54	-8.21
10380	39.86	PK	333	1.8	V	11.43	51.29	68.2	-16.91
10380	37.19	PK	233	1.8	H	11.43	48.62	68.2	-19.58
5230 MHz									
5350	56.00	PK	7	1.4	V	3.43	59.43	74	-14.57
5350	43.44	Ave.	7	1.4	V	3.43	46.87	54	-7.13
5350	53.95	PK	172	1.5	H	3.43	57.38	74	-16.62
5350	40.82	Ave.	172	1.5	H	3.43	44.25	54	-9.75
5460	56.96	PK	108	1.3	V	3.58	60.54	74	-13.46
5460	43.91	Ave.	108	1.3	V	3.58	47.49	54	-6.51
5460	54.69	PK	322	1.9	H	3.58	58.27	74	-15.73
5460	41.60	Ave.	322	1.9	H	3.58	45.18	54	-8.82
10460	39.37	PK	287	1.7	V	11.5	50.87	68.2	-17.33
10460	36.91	PK	175	1.7	H	11.5	48.41	68.2	-19.79

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11ac80									
5210MHz									
4500	58.36	PK	240	1.3	V	1.89	60.25	74	-13.75
4500	45.68	Ave.	240	1.3	V	1.89	47.57	54	-6.43
4500	56.24	PK	47	2	H	1.89	58.13	74	-15.87
4500	43.59	Ave.	47	2	H	1.89	45.48	54	-8.52
5150	57.40	PK	320	1.6	V	3.37	60.77	74	-13.23
5150	44.81	Ave.	320	1.6	V	3.37	48.18	54	-5.82
5150	55.17	PK	165	2.3	H	3.37	58.54	74	-15.46
5150	42.90	Ave.	165	2.3	H	3.37	46.27	54	-7.73
5350	57.32	PK	71	1.1	V	3.43	60.75	74	-13.25
5350	44.74	Ave.	71	1.1	V	3.43	48.17	54	-5.83
5350	54.89	PK	267	1.9	H	3.43	58.32	74	-15.68
5350	42.14	Ave.	267	1.9	H	3.43	45.57	54	-8.43
5460	57.36	PK	349	1.5	V	3.58	60.94	74	-13.06
5460	45.00	Ave.	349	1.5	V	3.58	48.58	54	-5.42
5460	55.01	PK	172	1.1	H	3.58	58.59	74	-15.41
5460	43.15	Ave.	172	1.1	H	3.58	46.73	54	-7.27
10420	39.81	PK	340	2.2	V	11.49	51.3	68.2	-16.90
10420	37.35	PK	80	2.2	H	11.49	48.84	68.2	-19.36

5725-5850 MHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
802.11a									
5745 MHz									
5725	66.28	PK	245	1.9	V	3.97	70.25	122.2	-51.95
5725	63.70	PK	226	2.2	H	3.97	67.67	122.2	-54.53
5720	61.05	PK	30	2.4	V	3.95	65.00	110.8	-45.80
5720	58.93	PK	29	1.4	H	3.95	62.88	110.8	-47.92
5700	60.77	PK	139	2.1	V	3.89	64.66	105.2	-40.54
5700	58.85	PK	71	1.2	H	3.89	62.74	105.2	-42.46
5650	58.16	PK	357	1.4	V	3.75	61.91	68.2	-6.29
5650	55.78	PK	93	1.1	H	3.75	59.53	68.2	-8.67
11490	34.98	PK	61	1.9	V	14.74	49.72	74	-24.28
11490	32.30	PK	241	1.5	H	14.74	47.04	74	-26.96
5785 MHz									
11570	35.63	PK	327	1.5	V	14.74	50.37	74	-23.63
11570	33.19	PK	315	2.3	H	14.74	47.93	74	-26.07
5825 MHz									
5850	64.71	PK	123	1.1	V	4.33	69.04	122.2	-53.16
5850	62.55	PK	143	1.1	H	4.33	66.88	122.2	-55.32
5855	60.79	PK	330	1.5	V	4.35	65.14	110.8	-45.66
5855	58.47	PK	30	1.9	H	4.35	62.82	110.8	-47.98
5875	78.15	PK	51	1.1	V	4.41	82.56	105.2	-22.64
5875	76.10	PK	12	1.2	H	4.41	80.51	105.2	-24.69
5925	59.12	PK	314	1.3	V	4.55	63.67	68.2	-4.53
5925	56.37	PK	226	1.7	H	4.55	60.92	68.2	-7.28
11650	34.30	PK	182	2.4	V	14.79	49.09	74	-24.91
11650	32.02	PK	186	1.4	H	14.79	46.81	74	-27.19

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
802.11n20									
5745 MHz									
5725	68.02	PK	315	1	V	3.97	71.99	122.2	-50.21
5725	65.77	PK	192	2.1	H	3.97	69.74	122.2	-52.46
5720	60.47	PK	334	1.9	V	3.95	64.42	110.8	-46.38
5720	58.13	PK	203	1	H	3.95	62.08	110.8	-48.72
5700	62.18	PK	217	2.1	V	3.89	66.07	105.2	-39.13
5700	59.95	PK	6	1.6	H	3.89	63.84	105.2	-41.36
5650	58.01	PK	287	1.7	V	3.75	61.76	68.2	-6.44
5650	55.41	PK	113	1.4	H	3.75	59.16	68.2	-9.04
11490	35.26	PK	312	2.3	V	14.74	50.00	74	-24.00
11490	32.90	PK	28	2.4	H	14.74	47.64	74	-26.36
5785 MHz									
11570	34.99	PK	188	1	V	14.74	49.73	74	-24.27
11570	32.43	PK	135	2.3	H	14.74	47.17	74	-26.83
5825 MHz									
5850	62.88	PK	137	1.8	V	4.33	67.21	122.2	-54.99
5850	60.68	PK	336	1.4	H	4.33	65.01	122.2	-57.19
5855	60.85	PK	336	2	V	4.35	65.20	110.8	-45.6
5855	58.71	PK	324	1.2	H	4.35	63.06	110.8	-47.74
5875	71.99	PK	250	1.7	V	4.41	76.40	105.2	-28.8
5875	67.66	PK	204	1.4	H	4.41	72.07	105.2	-33.13
5925	59.21	PK	200	1.7	V	4.55	63.76	68.2	-4.44
5925	56.58	PK	240	1.1	H	4.55	61.13	68.2	-7.07
11650	34.37	PK	180	1.6	V	14.79	49.16	74	-24.84
11650	32.15	PK	251	1.8	H	14.79	46.94	74	-27.06

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
802.11n40									
5755 MHz									
5725	74.06	PK	223	1.1	V	3.97	78.03	122.2	-44.17
5725	71.79	PK	354	1.7	H	3.97	75.76	122.2	-46.44
5720	67.20	PK	199	1.4	V	3.95	71.15	110.8	-39.65
5720	64.60	PK	294	2.5	H	3.95	68.55	110.8	-42.25
5700	62.05	PK	166	2.2	V	3.89	65.94	105.2	-39.26
5700	59.20	PK	307	1.7	H	3.89	63.09	105.2	-42.11
5650	58.39	PK	224	1.3	V	3.75	62.14	68.2	-6.06
5650	56.08	PK	344	1.5	H	3.75	59.83	68.2	-8.37
11510	36.54	PK	85	1.1	V	14.74	51.28	74	-22.72
11510	34.41	PK	191	2.4	H	14.74	49.15	74	-24.85
5795 MHz									
5850	64.27	PK	57	1.2	V	4.33	68.60	122.2	-53.6
5850	62.13	PK	292	1.5	H	4.33	66.46	122.2	-55.74
5855	61.40	PK	186	2.3	V	4.35	65.75	110.8	-45.05
5855	59.06	PK	5	1.6	H	4.35	63.41	110.8	-47.39
5875	67.65	PK	274	1.4	V	4.41	72.06	105.2	-33.14
5875	65.32	PK	232	1.7	H	4.41	69.73	105.2	-35.47
5925	59.40	PK	55	2	V	4.55	63.95	68.2	-4.25
5925	57.04	PK	341	1.3	H	4.55	61.59	68.2	-6.61
11590	35.73	PK	171	1.6	V	14.74	50.47	74	-23.53
11590	33.53	PK	98	2	H	14.74	48.27	74	-25.73

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
802.11ac20									
5745 MHz									
5725	66.79	PK	270	1.7	V	3.97	70.76	122.2	-51.44
5725	64.60	PK	138	1.5	H	3.97	68.57	122.2	-53.63
5720	61.47	PK	140	1.5	V	3.95	65.42	110.8	-45.38
5720	58.89	PK	346	2	H	3.95	62.84	110.8	-47.96
5700	63.20	PK	188	2.1	V	3.89	67.09	105.2	-38.11
5700	60.46	PK	67	2.3	H	3.89	64.35	105.2	-40.85
5650	58.58	PK	18	2.1	V	3.75	62.33	68.2	-5.87
5650	56.32	PK	338	1.2	H	3.75	60.07	68.2	-8.13
11490	34.68	PK	335	1.3	V	14.74	49.42	74	-24.58
11490	32.11	PK	306	1.6	H	14.74	46.85	74	-27.15
5785 MHz									
11570	35.67	PK	241	1.7	V	14.74	50.41	74	-23.59
11570	33.29	PK	205	1.3	H	14.74	48.03	74	-25.97
5825 MHz									
5850	61.36	PK	87	2	V	4.33	65.69	122.2	-56.51
5850	58.97	PK	95	2.1	H	4.33	63.30	122.2	-58.9
5855	61.14	PK	82	1.3	V	4.35	65.49	110.8	-45.31
5855	58.54	PK	90	1.9	H	4.35	62.89	110.8	-47.91
5875	70.67	PK	253	1.8	V	4.41	75.08	105.2	-30.12
5875	68.36	PK	228	1.4	H	4.41	72.77	105.2	-32.43
5925	59.62	PK	26	2.4	V	4.55	64.17	68.2	-4.03
5925	57.11	PK	341	2.3	H	4.55	61.66	68.2	-6.54
11650	34.12	PK	203	1.4	V	14.79	48.91	74	-25.09
11650	31.80	PK	245	1.5	H	14.79	46.59	74	-27.41

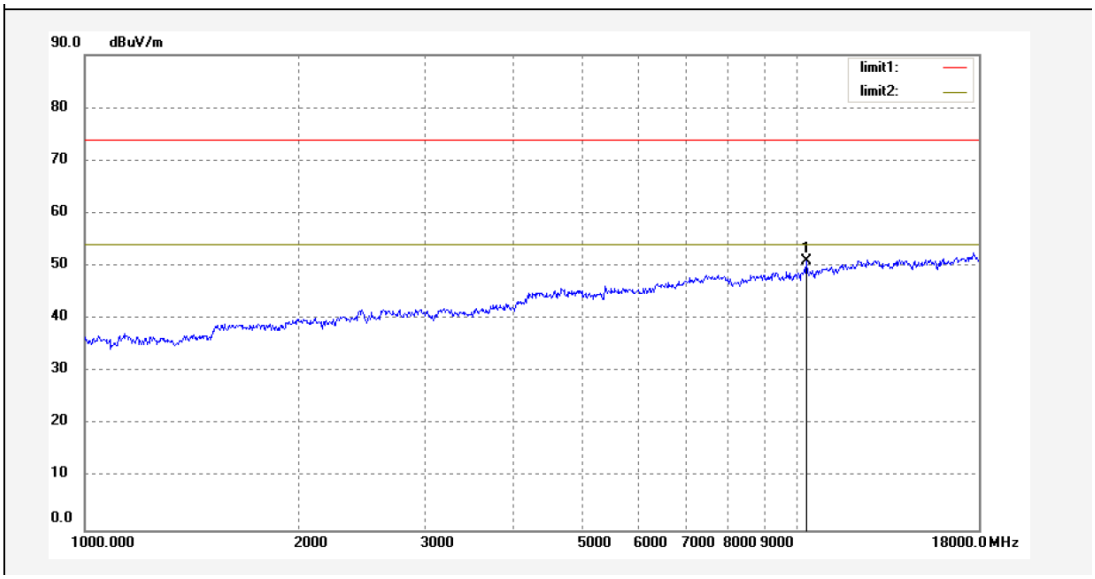
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
802.11ac40									
5755 MHz									
5725	71.82	PK	356	1.5	V	3.97	75.79	122.2	-46.41
5725	69.67	PK	215	1.4	H	3.97	73.64	122.2	-48.56
5720	61.37	PK	321	2.1	V	3.95	65.32	110.8	-45.48
5720	58.91	PK	111	1.4	H	3.95	62.86	110.8	-47.94
5700	62.26	PK	17	2.3	V	3.89	66.15	105.2	-39.05
5700	60.04	PK	55	1.3	H	3.89	63.93	105.2	-41.27
5650	58.25	PK	287	2.2	V	3.75	62.00	68.2	-6.20
5650	55.89	PK	20	1.9	H	3.75	59.64	68.2	-8.56
11510	35.76	PK	16	1.6	V	14.74	50.50	74	-23.50
11510	33.40	PK	29	2.4	H	14.74	48.14	74	-25.86
5795 MHz									
5850	62.91	PK	72	1.1	V	4.33	67.24	122.2	-54.96
5850	60.23	PK	305	1.4	H	4.33	64.56	122.2	-57.64
5855	64.41	PK	156	1.4	V	4.35	68.76	110.8	-42.04
5855	62.09	PK	94	2.4	H	4.35	66.44	110.8	-44.36
5875	70.14	PK	263	1.5	V	4.41	74.55	105.2	-30.65
5875	68.09	PK	308	1	H	4.41	72.50	105.2	-32.7
5925	59.98	PK	263	1.4	V	4.55	64.53	68.2	-3.67
5925	57.31	PK	100	1.5	H	4.55	61.86	68.2	-6.34
11590	34.12	PK	340	2.2	V	14.74	49.92	74	-24.08
11590	31.80	PK	271	2.1	H	14.74	47.53	74	-26.47

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
802.11ac80									
5775 MHz									
5725	71.18	PK	203	1.9	V	3.97	75.15	122.2	-47.05
5725	68.56	PK	158	1	H	3.97	72.53	122.2	-49.67
5720	61.42	PK	325	2.3	V	3.95	65.37	110.8	-45.43
5720	59.09	PK	290	1	H	3.95	63.04	110.8	-47.76
5700	76.00	PK	99	1.8	V	3.89	79.89	105.2	-25.31
5700	73.69	PK	120	2.4	H	3.89	77.58	105.2	-27.62
5650	58.08	PK	117	1.7	V	3.75	61.83	68.2	-6.37
5650	55.71	PK	49	1.3	H	3.75	59.46	68.2	-8.74
5850	65.51	PK	52	2.2	V	4.33	69.84	122.2	-52.36
5850	63.35	PK	73	1.1	H	4.33	67.68	122.2	-54.52
5855	64.17	PK	286	1.8	V	4.35	68.52	110.8	-42.28
5855	61.68	PK	79	2.1	H	4.35	66.03	110.8	-44.77
5875	61.07	PK	280	1.2	V	4.41	65.48	105.2	-39.72
5875	58.27	PK	327	2.1	H	4.41	62.68	105.2	-42.52
5925	59.47	PK	336	1.6	V	4.55	64.02	68.2	-4.18
5925	57.09	PK	352	1.7	H	4.55	61.64	68.2	-6.56
11550	35.90	PK	180	1.7	V	14.74	50.64	74	-23.36
11550	33.48	PK	26	2.4	H	14.74	48.22	74	-25.78

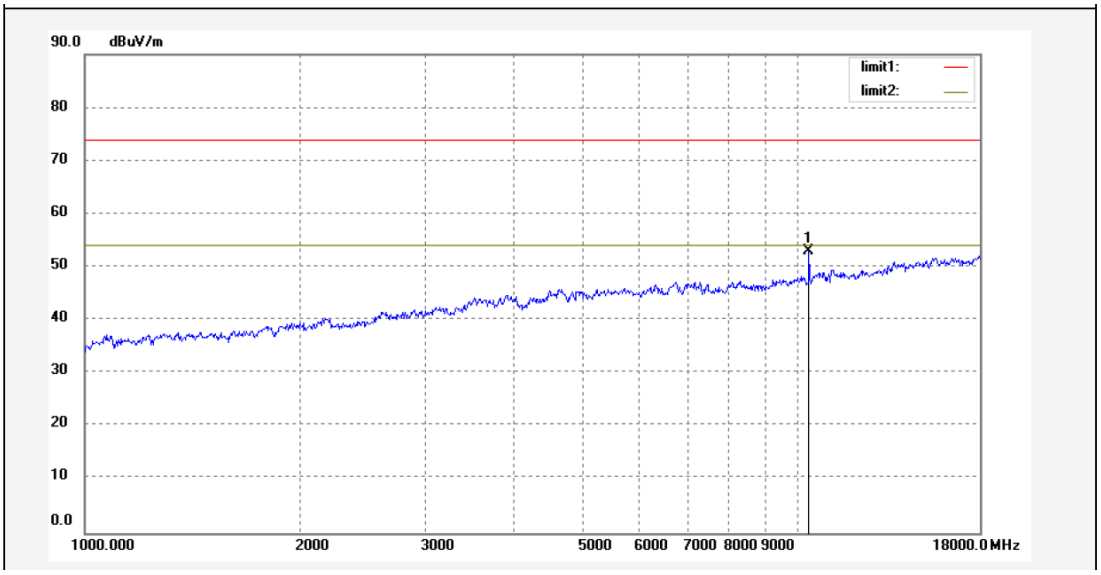
Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin =Corrected. Amplitude - Limit
All other spurious emissions are 20 dB below the limit or are on the system noise floor level.

1-18 GHz:

Pre-scan for Peak
802.11a 5180MHz
Horizontal:

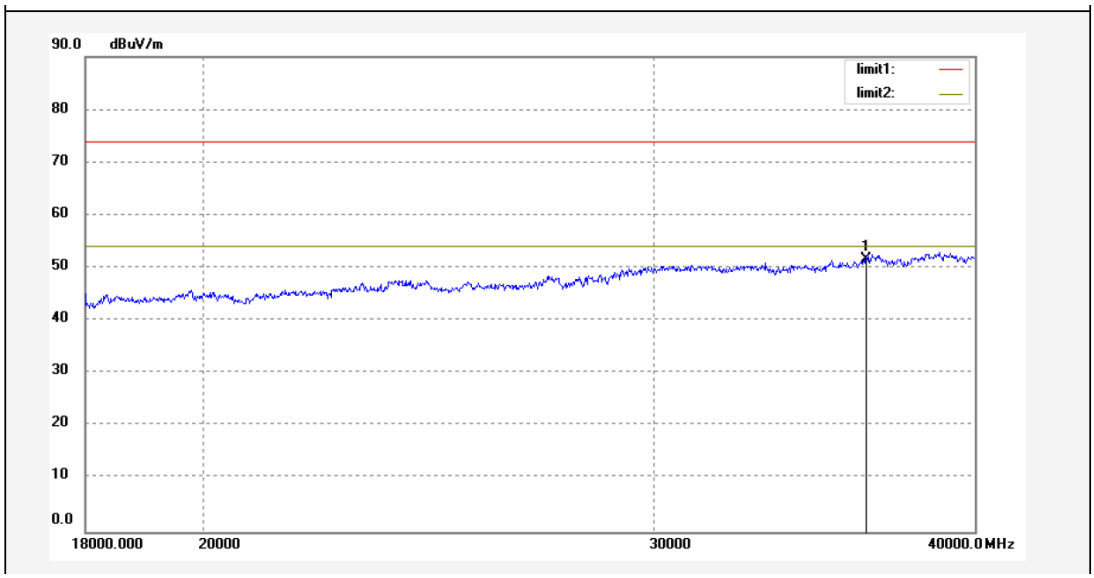


Vertical:

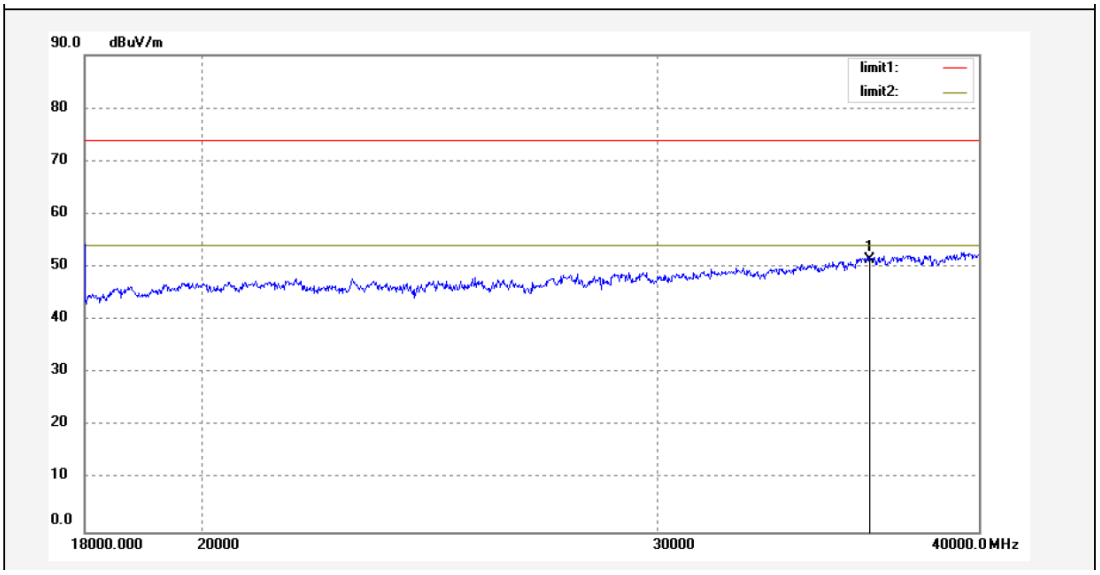


18-40 GHz:

Pre-scan for Peak
802.11a 5180MHz
Horizontal:



Vertical:



FCC §15.407(A) (1) – 26 DB & 6DB EMISSION BANDWIDTH

Applicable Standard

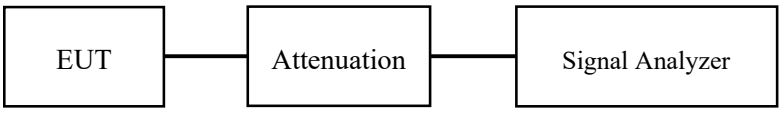
The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band 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

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 5.715-5.85 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:	26.8 ℃
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Paul liu on 2021-09-10.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix

FCC §15.407(a) (1) (3) – CONDUCTED TRANSMITTER OUTPUT POWER

Applicable Standard

For an outdoor 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

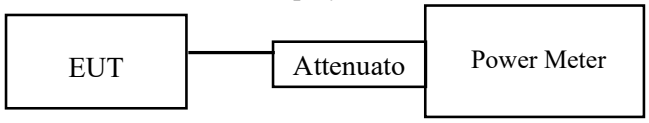
For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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 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

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.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	26.8 ℃
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Paul liu from 2021-09-09 to 2021-10-26.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix

FCC §15.407(a) (1) (3) - POWER SPECTRAL DENSITY

Applicable Standard

For an outdoor 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

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 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

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

a) Set RBW ≥ 1/T, where T is defined in section II.B.l.a).
b) Set VBW ≥ 3 RBW.
c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
d) 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.
e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Test Data

Environmental Conditions

Temperature:	26.8 ℃
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Paul liu from 2021-09-09 to 2021-11-02.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix

APPENDIX

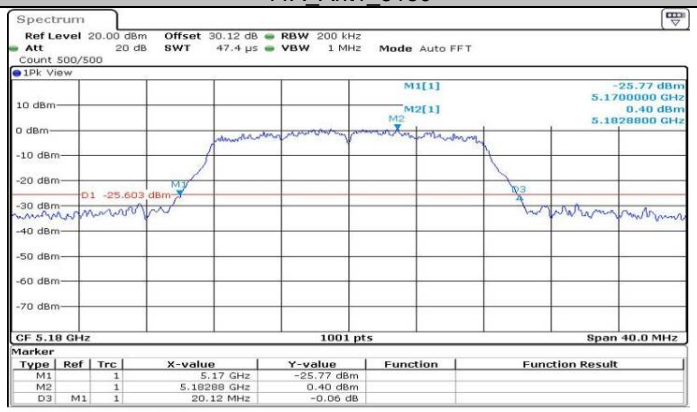
Appendix A1: Emission Bandwidth

Test Result

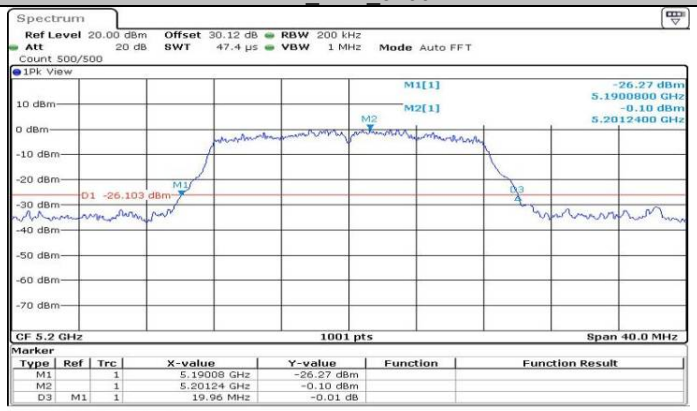
TestMode	Antenna	Channel	26db EBW [MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	20.120	---	PASS
		5200	19.960	---	PASS
		5240	19.640	---	PASS
11N20SISO	Ant1	5180	20.120	---	PASS
		5200	20.080	---	PASS
		5240	20.160	---	PASS
11N40SISO	Ant1	5190	41.520	---	PASS
		5230	41.200	---	PASS
11AC20SISO	Ant1	5180	20.480	---	PASS
		5200	20.160	---	PASS
		5240	20.320	---	PASS
11AC40SISO	Ant1	5190	41.600	---	PASS
		5230	41.520	---	PASS
11AC80SISO	Ant1	5210	81.280	---	PASS

Test Graphs

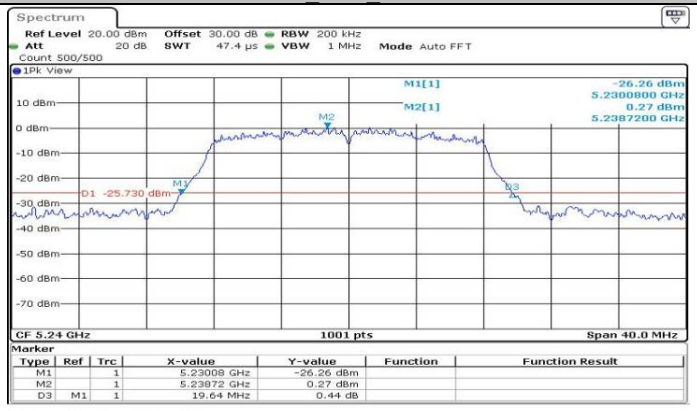
11A_Ant1_5180



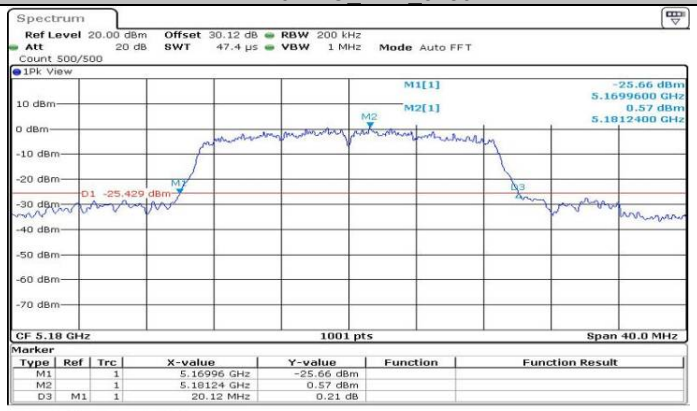
11A_Ant1_5200



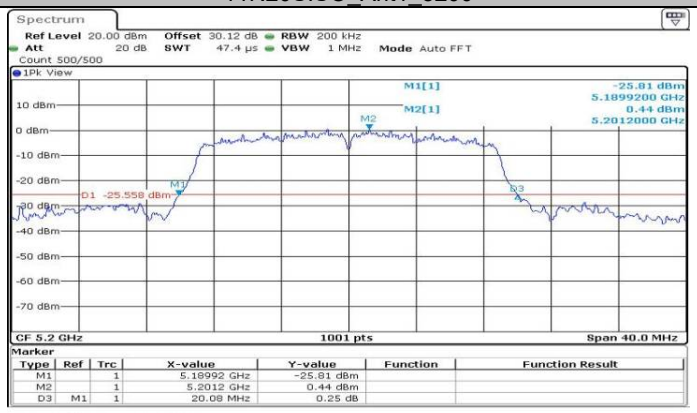
11A_Ant1_5240



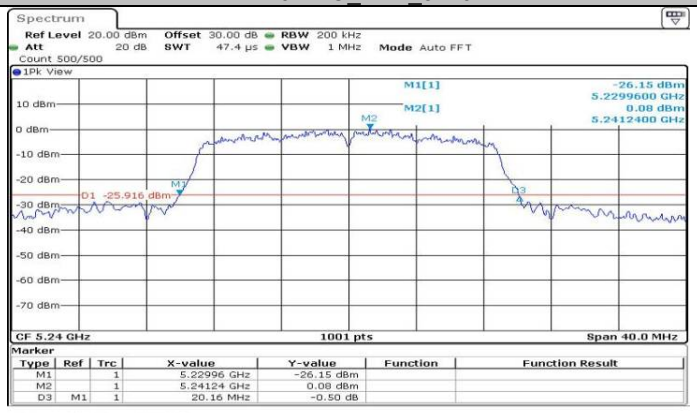
11N20SISO_Ant1_5180



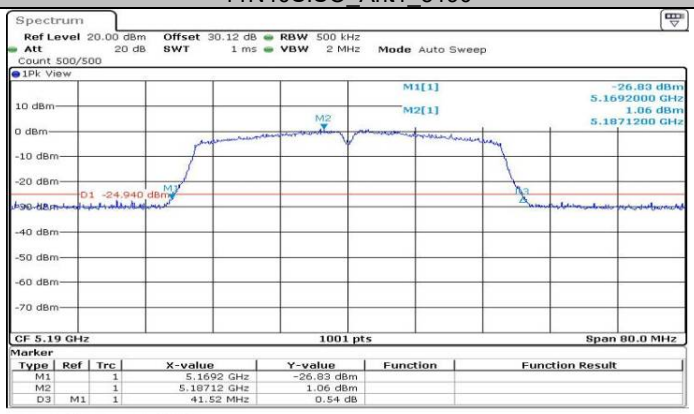
11N20SISO_Ant1_5200



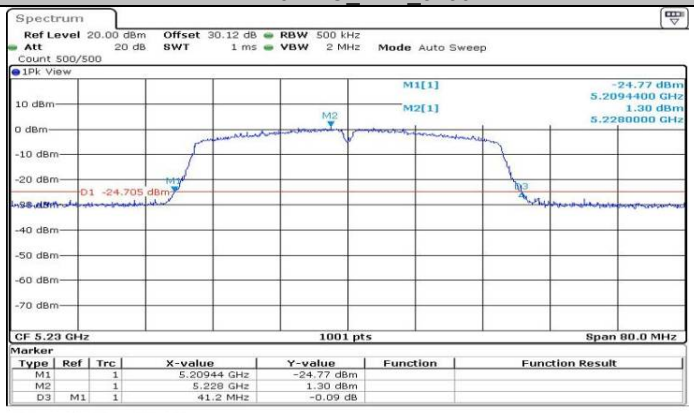
11N20SISO_Ant1_5240



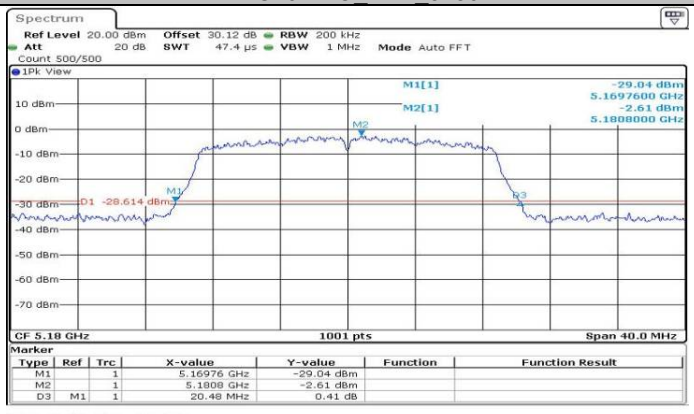
11N40SISO_Ant1_5190



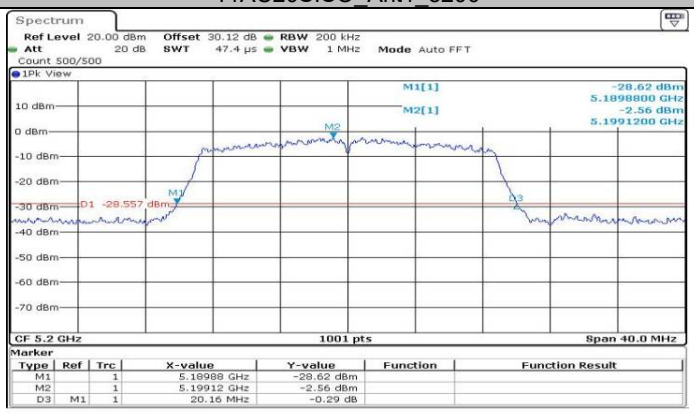
11N40SISO_Ant1_5230



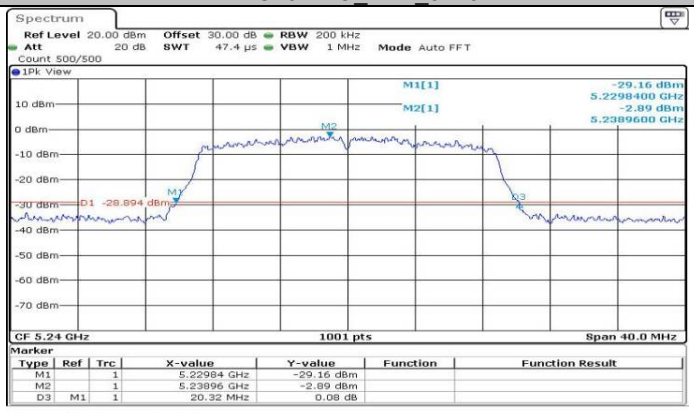
11AC20SISO_Ant1_5180



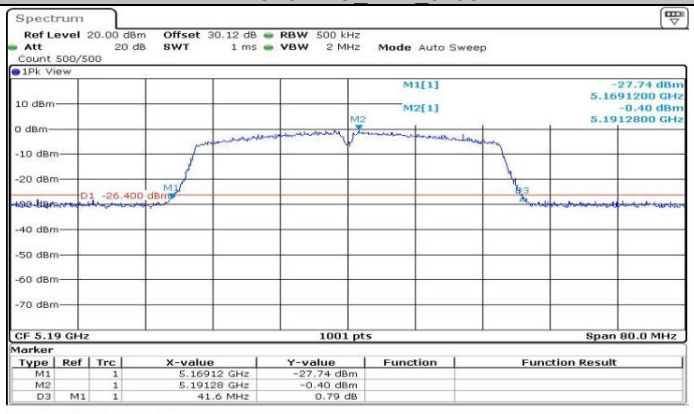
11AC20SISO_Ant1_5200



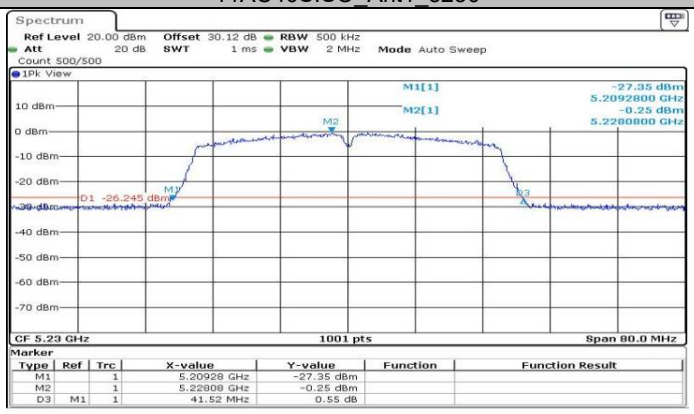
11AC20SISO_Ant1_5240



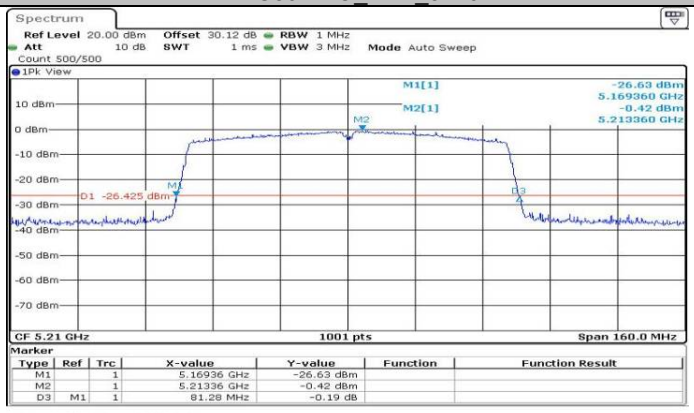
11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5230



11AC80SISO_Ant1_5210



Appendix A2: Occupied channel bandwidth

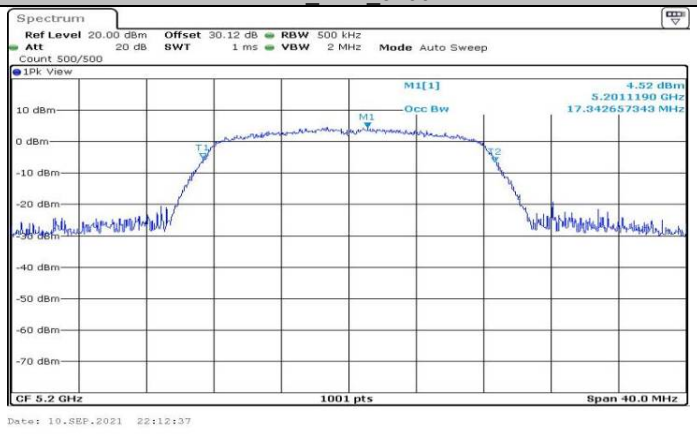
Test Result

TestMode	Antenna	Channel	OCB [MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.423	---	PASS
		5200	17.343	---	PASS
		5240	17.383	---	PASS
		5745	17.502	---	PASS
		5785	17.423	---	PASS
		5825	17.423	---	PASS
11N20SISO	Ant1	5180	18.302	---	PASS
		5200	18.382	---	PASS
		5240	18.342	---	PASS
		5745	18.462	---	PASS
		5785	18.422	---	PASS
		5825	18.382	---	PASS
11N40SISO	Ant1	5190	36.683	---	PASS
		5230	36.683	---	PASS
		5755	37.083	---	PASS
		5795	37.003	---	PASS
11AC20SISO	Ant1	5180	18.142	---	PASS
		5200	18.182	---	PASS
		5240	18.102	---	PASS
		5745	18.302	---	PASS
		5785	18.262	---	PASS
		5825	18.262	---	PASS
11AC40SISO	Ant1	5190	36.843	---	PASS
		5230	36.683	---	PASS
		5755	37.243	---	PASS
		5795	37.243	---	PASS
11AC80SISO	Ant1	5210	75.604	---	PASS
		5775	76.563	---	PASS

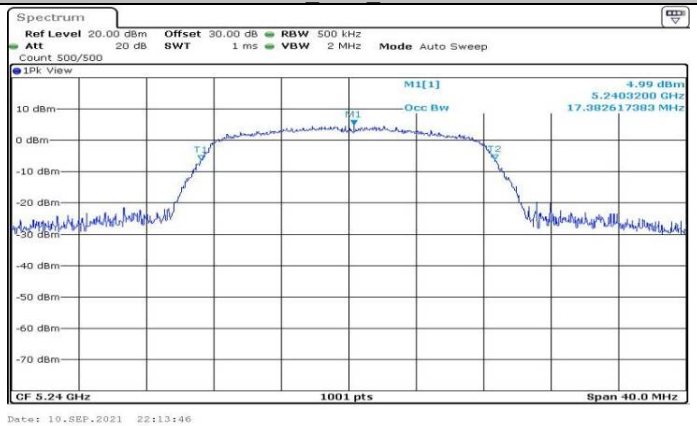
Test Graphs

11A_Ant1_5180

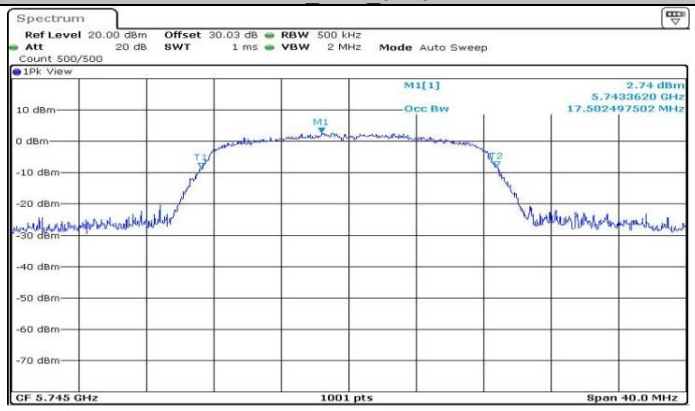
11A_Ant1_5200



11A_Ant1_5240

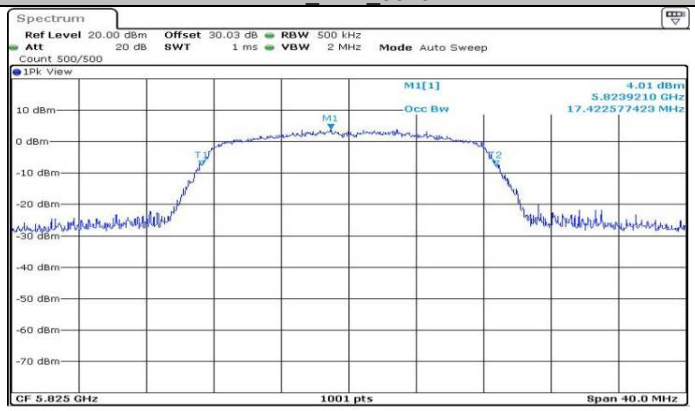


11A_Ant1_5745



11A_Ant1_5785

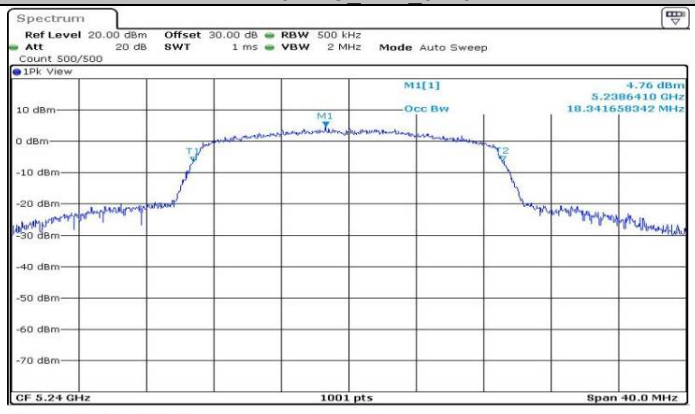
11A_Ant1_5825



11N20SISO_Ant1_5180

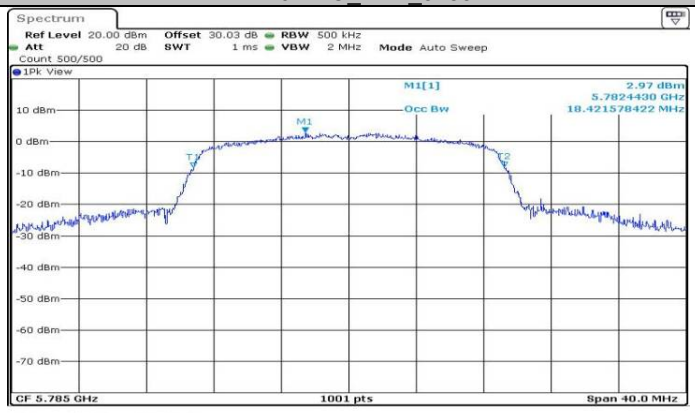
11N20SISO_Ant1_5200

11N20SISO_Ant1_5240

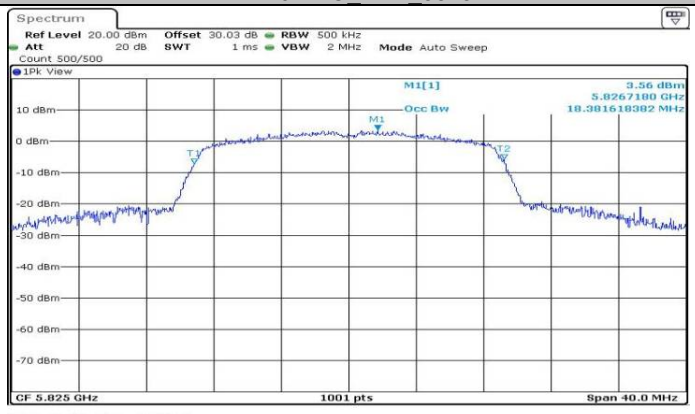


11N20SISO_Ant1_5745

11N20SISO_Ant1_5785



11N20SISO_Ant1_5825



11N40SISO_Ant1_5190

11N40SISO_Ant1_5230

11N40SISO_Ant1_5755

11N40SISO_Ant1_5795

11AC20SISO_Ant1_5180

11AC20SISO_Ant1_5200

11AC20SISO_Ant1_5240

11AC20SISO_Ant1_5745

11AC20SISO_Ant1_5785

11AC20SISO_Ant1_5825

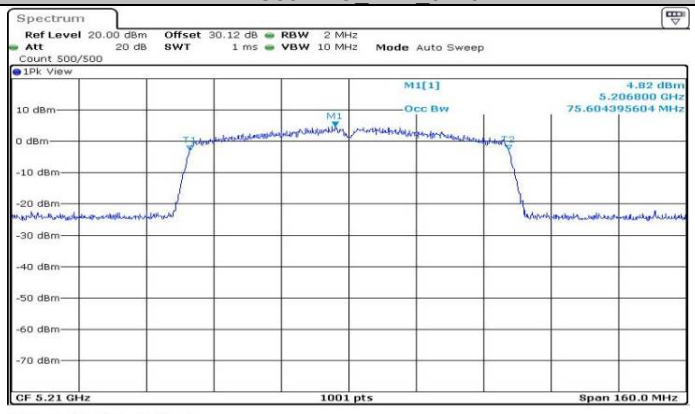
11AC40SISO_Ant1_5190

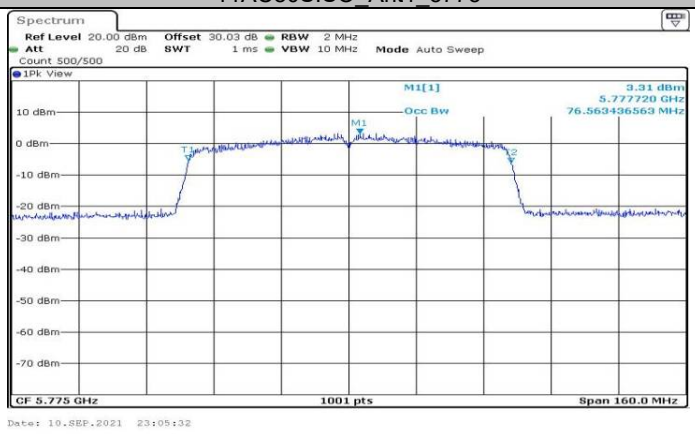
11AC40SISO_Ant1_5230

11AC40SISO_Ant1_5755

11AC40SISO_Ant1_5795

11AC80SISO_Ant1_5210



11AC80SISO_Ant1_5775


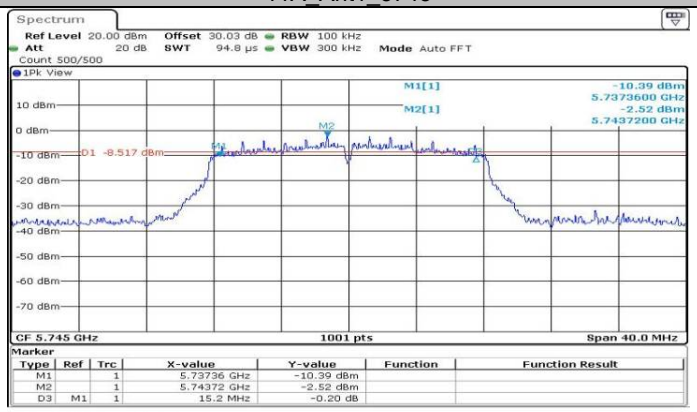
Appendix A3: Min emission bandwidth

Test Result

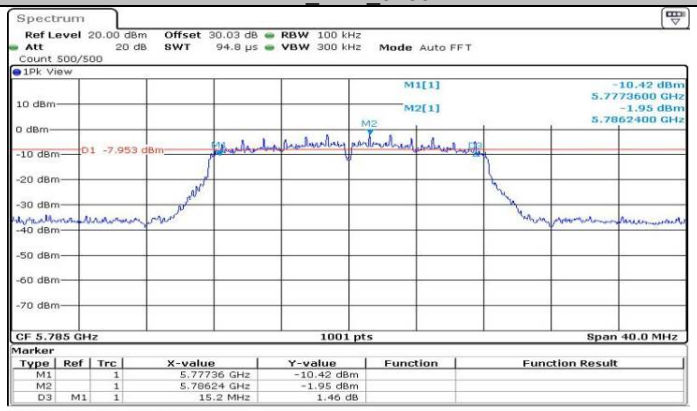
TestMode	Antenna	Channel	6db EBW [MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	15.200	0.5	PASS
		5785	15.200	0.5	PASS
		5825	15.200	0.5	PASS
11N20SISO	Ant1	5745	15.200	0.5	PASS
		5785	15.160	0.5	PASS
		5825	16.480	0.5	PASS
11N40SISO	Ant1	5755	36.480	0.5	PASS
		5795	36.240	0.5	PASS
11AC20SISO	Ant1	5745	17.640	0.5	PASS
		5785	17.640	0.5	PASS
		5825	17.640	0.5	PASS
11AC40SISO	Ant1	5755	36.480	0.5	PASS
		5795	36.240	0.5	PASS
11AC80SISO	Ant1	5775	76.800	0.5	PASS

Test Graphs

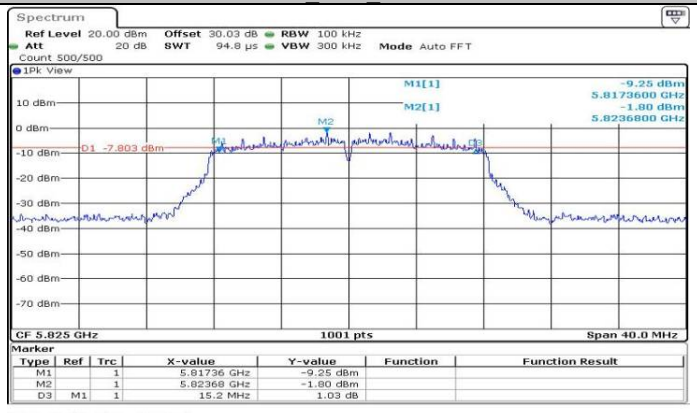
11A_Ant1_5745



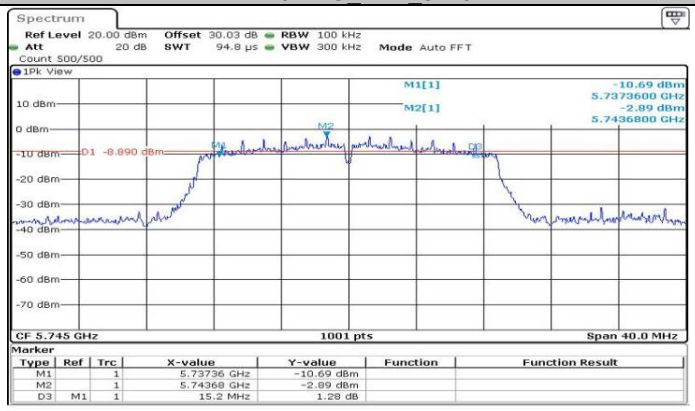
11A_Ant1_5785



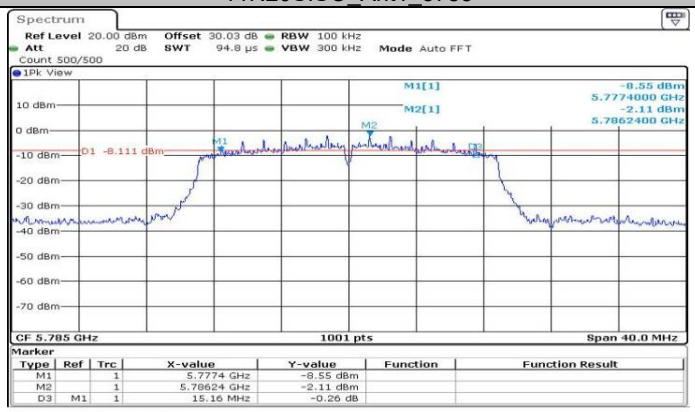
11A_Ant1_5825



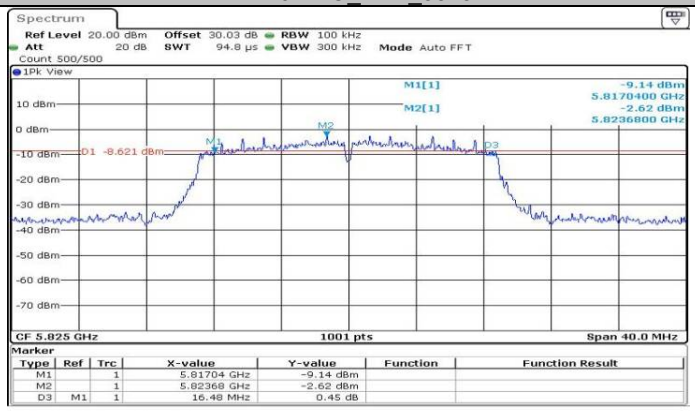
11N20SISO_Ant1_5745



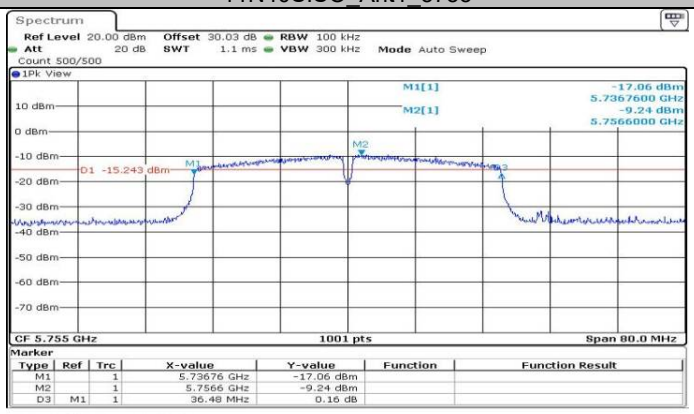
11N20SISO_Ant1_5785



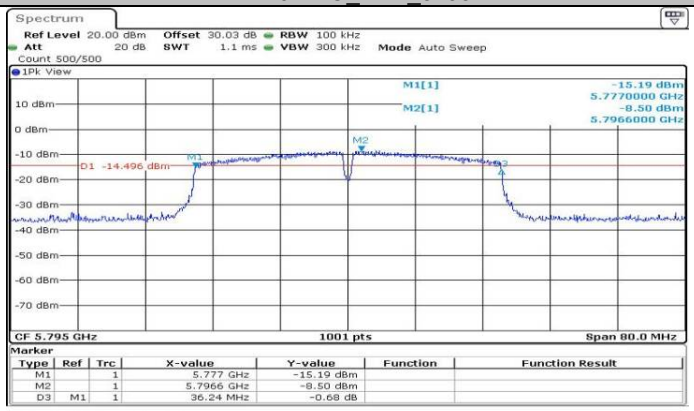
11N20SISO_Ant1_5825



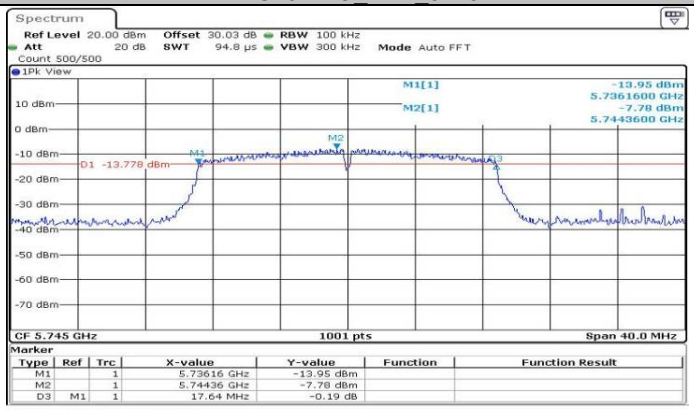
11N40SISO_Ant1_5755



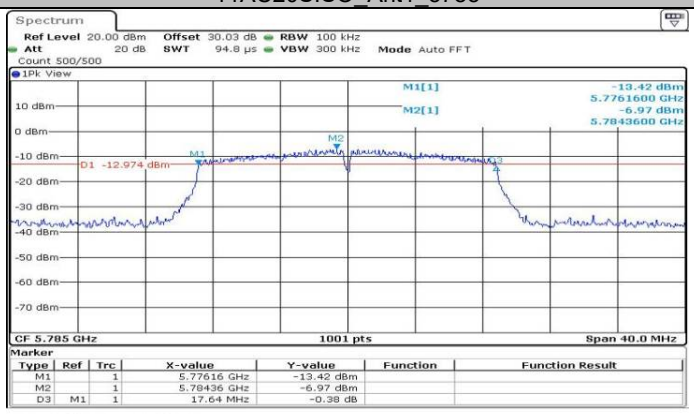
11N40SISO_Ant1_5795



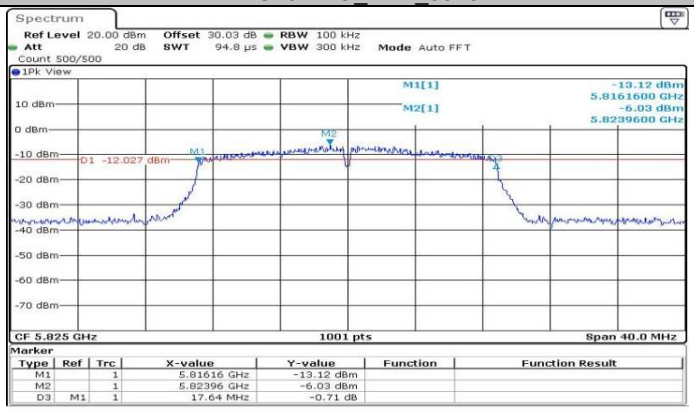
11AC20SISO_Ant1_5745



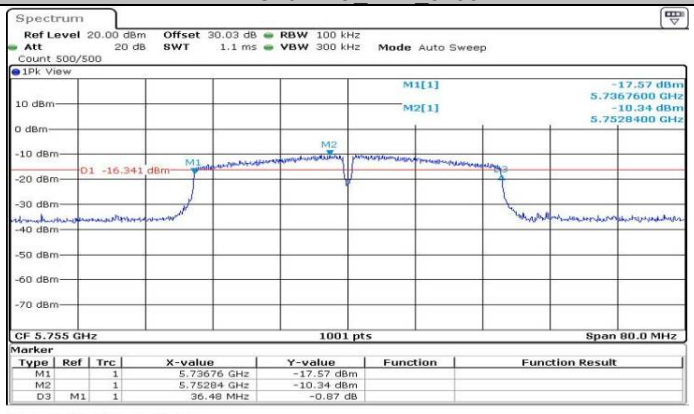
11AC20SISO_Ant1_5785



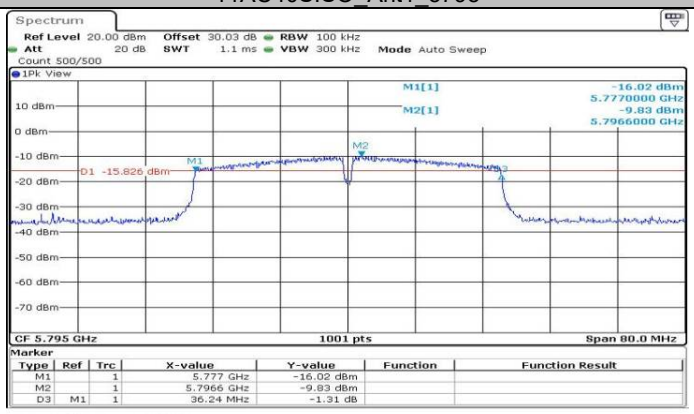
11AC20SISO_Ant1_5825



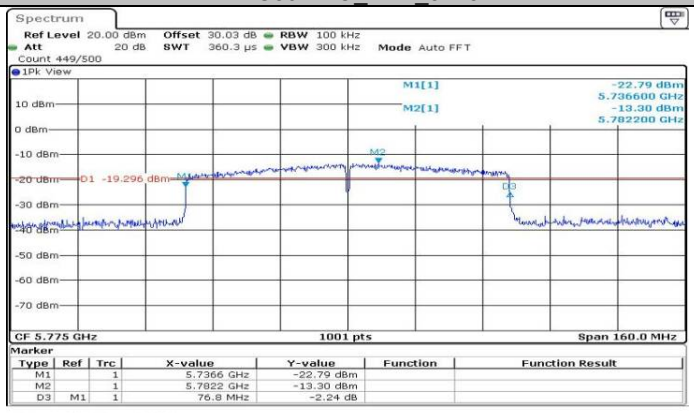
11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5775



Appendix B: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	5180	6.66	≤23.98	PASS
		5200	6.74	≤23.98	PASS
		5240	6.23	≤23.98	PASS
		5745	7.02	≤30	PASS
		5785	7.20	≤30	PASS
		5825	7.44	≤30	PASS
11N20SISO	Ant1	5180	6.71	≤23.98	PASS
		5200	6.07	≤23.98	PASS
		5240	6.50	≤23.98	PASS
		5745	7.16	≤30	PASS
		5785	7.12	≤30	PASS
		5825	7.39	≤30	PASS
11N40SISO	Ant1	5190	6.32	≤23.98	PASS
		5230	6.14	≤23.98	PASS
		5755	6.96	≤30	PASS
		5795	7.17	≤30	PASS
11AC20SISO	Ant1	5180	6.35	≤23.98	PASS
		5200	6.41	≤23.98	PASS
		5240	6.13	≤23.98	PASS
		5745	7.05	≤30	PASS
		5785	7.21	≤30	PASS
		5825	7.49	≤30	PASS
11AC40SISO	Ant1	5190	6.36	≤23.98	PASS
		5230	5.93	≤23.98	PASS
		5755	7.01	≤30	PASS
		5795	7.16	≤30	PASS
11AC80SISO	Ant1	5210	6.15	≤23.98	PASS
		5775	7.08	≤30	PASS

Appendix C: Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	-4.28	≤11	PASS
		5200	-4.44	≤11	PASS
		5240	-4.55	≤11	PASS
		5745	-6.96	≤30	PASS
		5785	-6.85	≤30	PASS
		5825	-6.25	≤30	PASS
11N20SISO	Ant1	5180	-4.33	≤11	PASS
		5200	-5.82	≤11	PASS
		5240	-4.99	≤11	PASS
		5745	-7.22	≤30	PASS
		5785	-7.05	≤30	PASS
		5825	-6.52	≤30	PASS
11N40SISO	Ant1	5190	-7.79	≤11	PASS
		5230	-7.54	≤11	PASS
		5755	-10.28	≤30	PASS
		5795	-9.89	≤30	PASS
11AC20SISO	Ant1	5180	-4.84	≤11	PASS
		5200	-5.02	≤11	PASS
		5240	-5.08	≤11	PASS
		5745	-7.22	≤30	PASS
		5785	-7.08	≤30	PASS
		5825	-6.58	≤30	PASS
11AC40SISO	Ant1	5190	-7.74	≤11	PASS
		5230	-7.98	≤11	PASS
		5755	-10.31	≤30	PASS
		5795	-9.91	≤30	PASS
11AC80SISO	Ant1	5210	-11.12	≤11	PASS
		5775	-13.41	≤30	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.

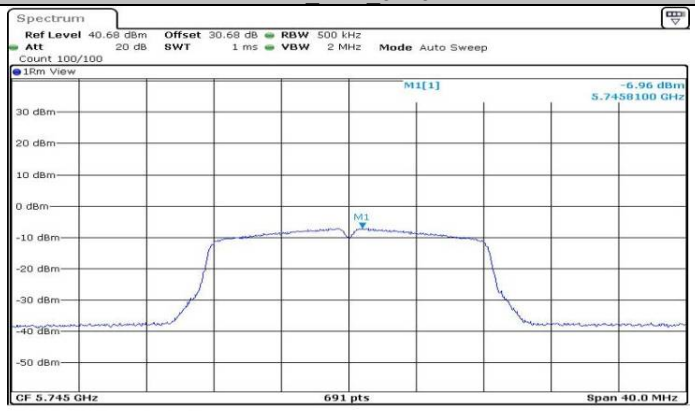
Test Graphs

11A_Ant1_5180

11A_Ant1_5200

11A_Ant1_5240

11A_Ant1_5745



11A_Ant1_5785

11A_Ant1_5825

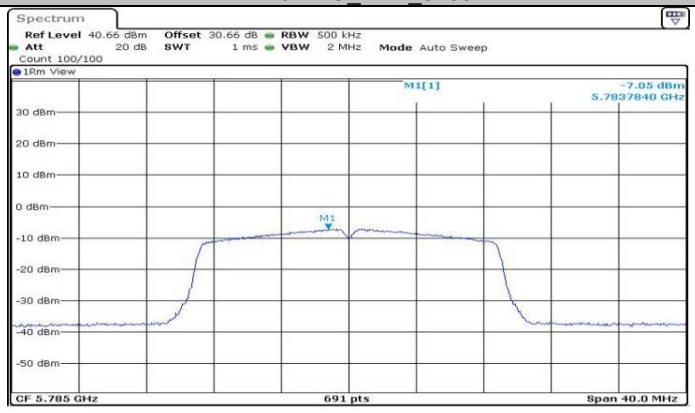
11N20SISO_Ant1_5180

11N20SISO_Ant1_5200

11N20SISO_Ant1_5240

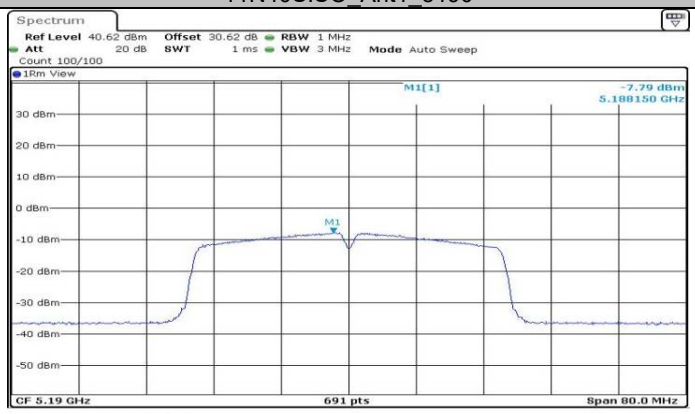
11N20SISO_Ant1_5745

11N20SISO_Ant1_5785

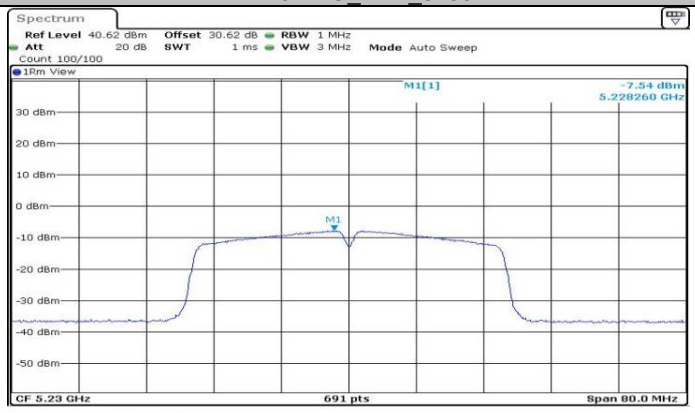


11N20SISO_Ant1_5825

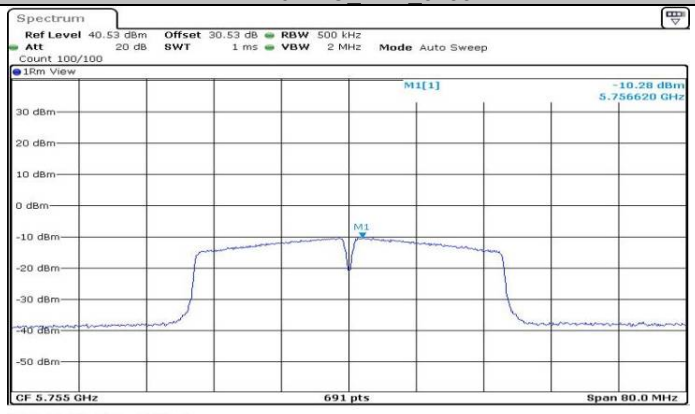
11N40SISO_Ant1_5190



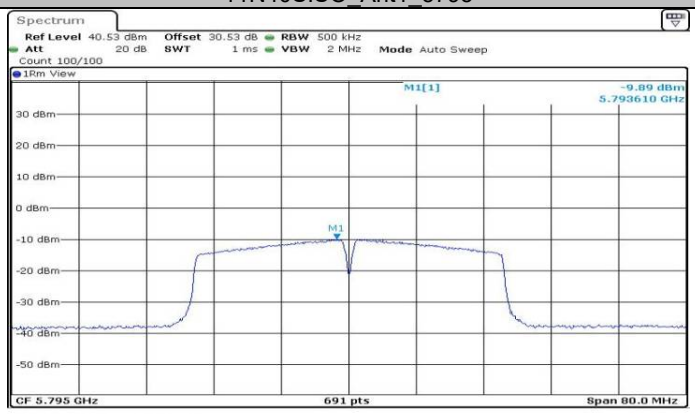
11N40SISO_Ant1_5230



11N40SISO_Ant1_5755



11N40SISO_Ant1_5795



11AC20SISO_Ant1_5180

11AC20SISO_Ant1_5200

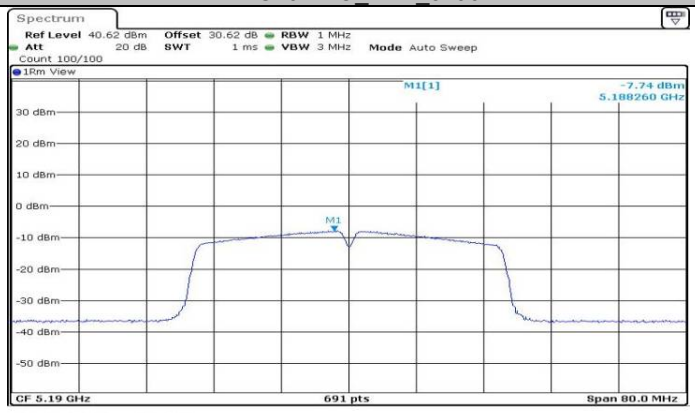
11AC20SISO_Ant1_5240

11AC20SISO_Ant1_5745

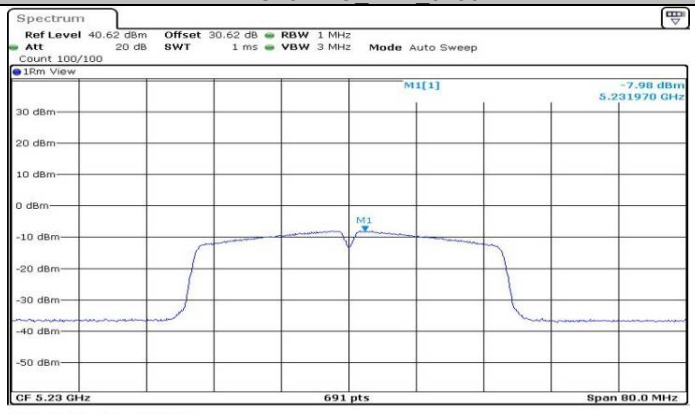
11AC20SISO_Ant1_5785

11AC20SISO_Ant1_5825

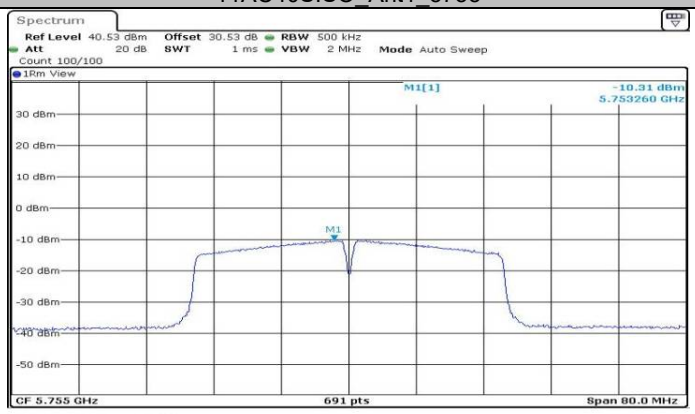
11AC40SISO_Ant1_5190



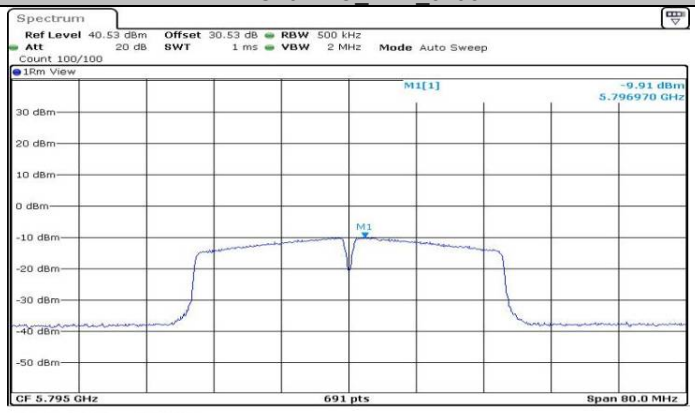
11AC40SISO_Ant1_5230



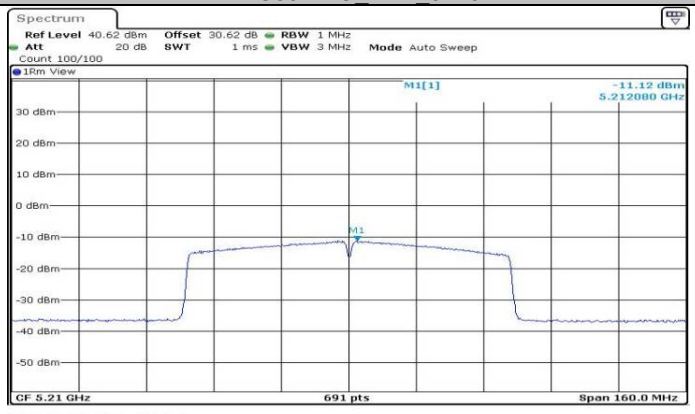
11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5210



11AC80SISO_Ant1_5775

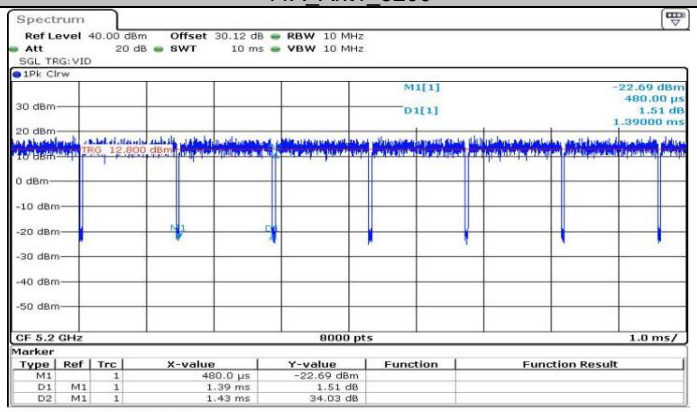

Appendix D: Duty Cycle

Test Result

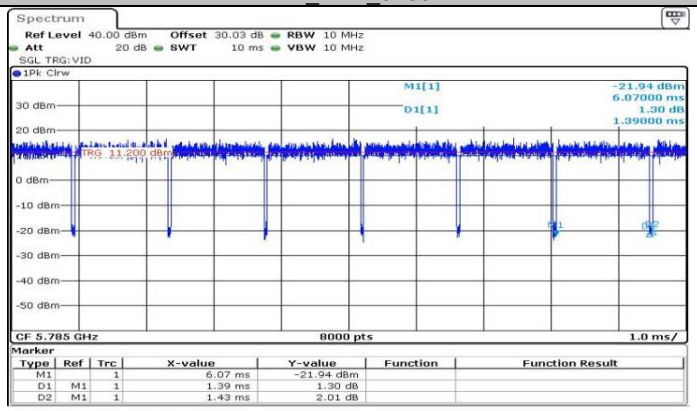
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5200	1.39	1.43	97.20
		5785	1.39	1.43	97.20
11N20SISO	Ant1	5200	1.29	1.33	96.99
		5785	1.29	1.33	96.99
11N40SISO	Ant1	5190	30.00	30.00	100.00
		5755	30.00	30.00	100.00
11AC20SISO	Ant1	5200	30.00	30.00	100.00
		5785	30.00	30.00	100.00
11AC40SISO	Ant1	5190	30.00	30.00	100.00
		5755	30.00	30.00	100.00
11AC80SISO	Ant1	5210	30.00	30.00	100.00
		5775	30.00	30.00	100.00

Test Graphs

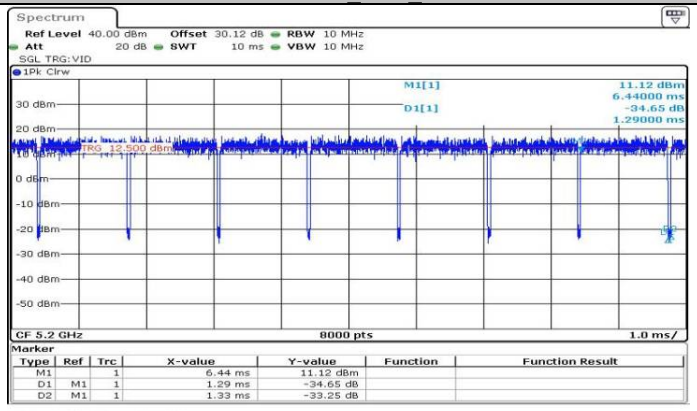
11A_Ant1_5200



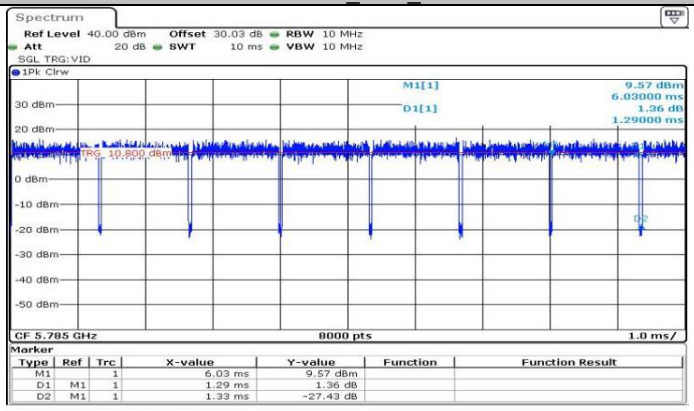
11A_Ant1_5785



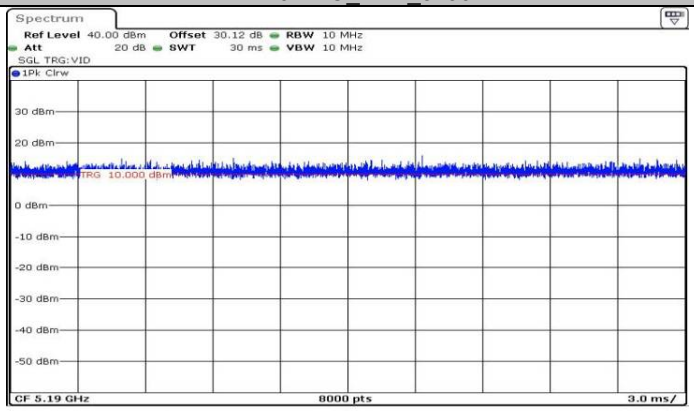
11N20SISO_Ant1_5200



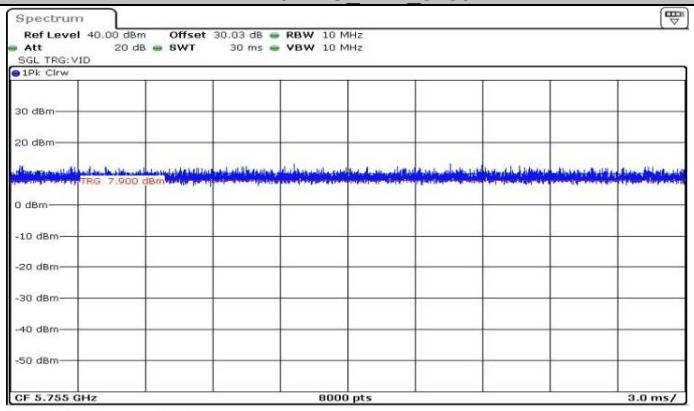
11N20SISO_Ant1_5785



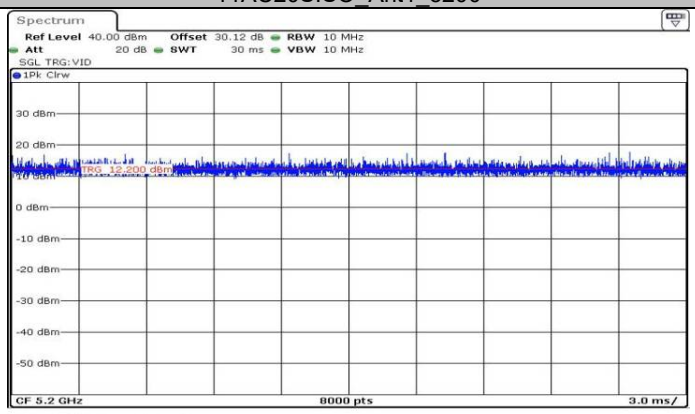
11N40SISO_Ant1_5190



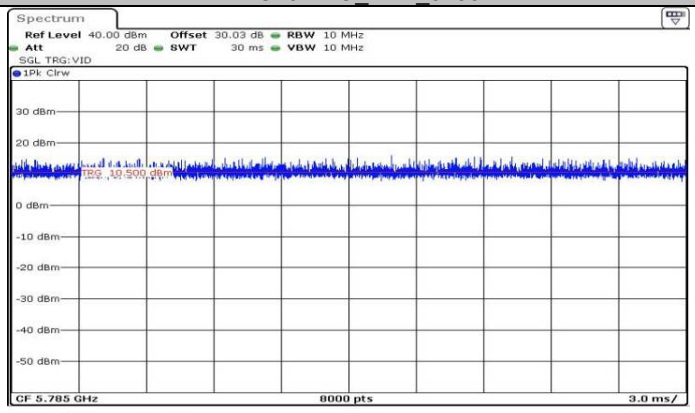
11N40SISO_Ant1_5755



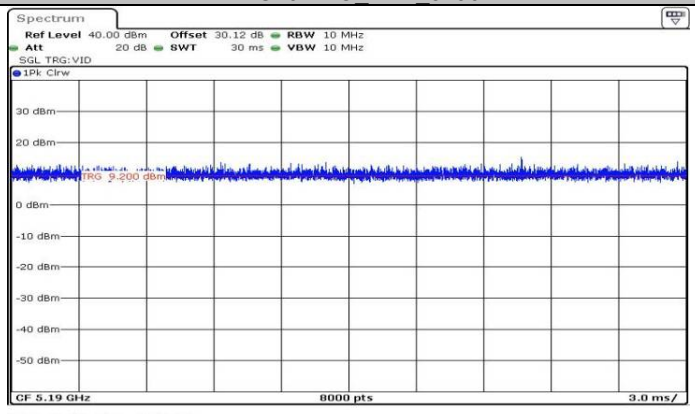
11AC20SISO_Ant1_5200



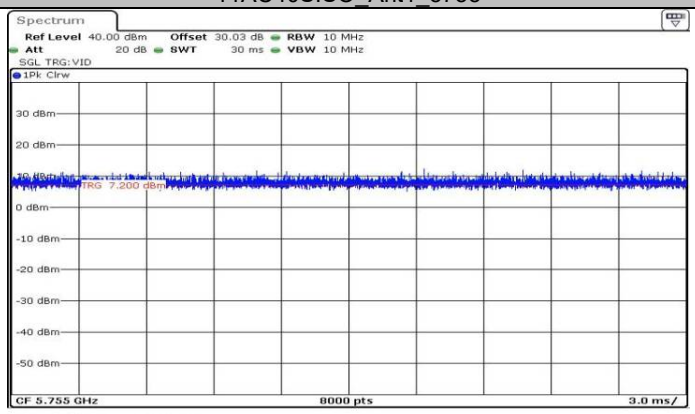
11AC20SISO_Ant1_5785



11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5755



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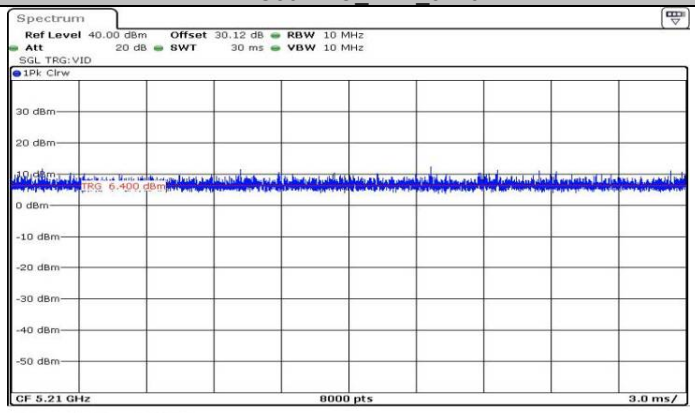

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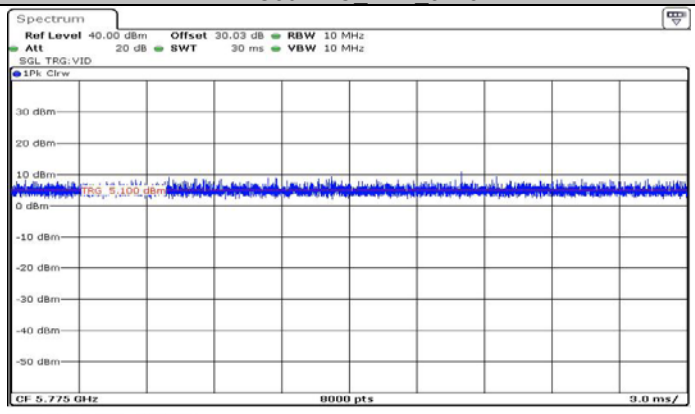

******* END OF REPORT *******