



TEST REPORT

Applicant Name : Shenzhen Hi-Link Electronic CO.,Ltd
Address : Room 301, Building 1, 1970 Science & Technology Park, Minzhi Community, Minzhi Street, Longhua District, Shenzhen, China
Report Number : SZNS1220412-13800E-RF-00B
FCC ID: 2AD56HLK-RM60

Test Standard (s)
FCC PART 15.407

Sample Description

Product: WIFI6 Wireless Router Module
Tested Model: HLK-RM60
Date Received: 2022-04-12
Report Date: 2022-08-16

Test Result:	PASS*
--------------	-------

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

Prepared and Checked By:

Jeff Jiang
EMC Engineer

Approved By:

Candy Li
EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk "★". Customer model name, addresses, names, trademarks etc. are not considered data.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Shenzhen Accurate Technology Co., Ltd.

1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China
Tel: +86 755-26503290 Fax: +86 755-26503396 Web: www.atc-lab.com

TABLE OF CONTENTS

GENERAL INFORMATION	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
TEST METHODOLOGY	4
MEASUREMENT UNCERTAINTY	5
TEST FACILITY	5
SYSTEM TEST CONFIGURATION	6
DESCRIPTION OF TEST CONFIGURATION	6
EUT EXERCISE SOFTWARE	7
DUTY CYCLE	9
EQUIPMENT MODIFICATIONS	9
SUPPORT EQUIPMENT LIST AND DETAILS	9
EXTERNAL I/O CABLE	9
BLOCK DIAGRAM OF TEST SETUP	10
SUMMARY OF TEST RESULTS	11
TEST EQUIPMENT LIST	12
FCC §1.1307 (b) – RF EXPOSURE	14
FCC §15.203 – ANTENNA REQUIREMENT	16
APPLICABLE STANDARD	16
ANTENNA CONNECTOR CONSTRUCTION	16
FCC §15.407 (B) (8) §15.207 (A) – CONDUCTED EMISSIONS	17
APPLICABLE STANDARD	17
EUT SETUP	17
EMI TEST RECEIVER SETUP	17
TEST PROCEDURE	17
TEST DATA	18
§15.205 & §15.209 & §15.407(B) (1), (4), (7), (8) , (9), (10) – UNDESIRABLE EMISSION	21
APPLICABLE STANDARD	21
EUT SETUP	21
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	22
TEST PROCEDURE	22
FACTOR & MARGIN CALCULATION	23
TEST DATA	23
FCC §15.407(a)(e) – BANDWIDTH	48
APPLICABLE STANDARD	48
TEST PROCEDURE	48
TEST DATA	49
FCC §15.407(a) (1) (3) – CONDUCTED TRANSMITTER OUTPUT POWER	50
APPLICABLE STANDARD	50
TEST PROCEDURE	50
TEST DATA	50
FCC §15.407(a) (1) (3) - POWER SPECTRAL DENSITY	51
APPLICABLE STANDARD	51
TEST PROCEDURE	51
TEST DATA	52

APPENDIX	53
APPENDIX A1: EMISSION BANDWIDTH	53
APPENDIX A2: OCCUPIED CHANNEL BANDWIDTH	84
APPENDIX A3: MIN EMISSION BANDWIDTH.....	115
APPENDIX B: MAXIMUM CONDUCTED AVERAGE OUTPUT POWER.....	131
APPENDIX C: MAXIMUM POWER SPECTRAL DENSITY	139
APPENDIX D: DUTY CYCLE.....	203

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	WIFI6 Wireless Router Module
Tested Model	HLK-RM60
Frequency Range	5G Wi-Fi: 5150-5250 MHz; 5725-5850 MHz
Maximum Average Conducted Output Power	5150-5250 MHz 16.80dBm (802.11a), 19.59dBm(802.11n20), 19.76dBm(802.11n40), 19.64dBm (802.11ac20), 20.00dBm (802.11ac40), 21.31dBm (802.11ac80) , 19.56dBm (802.11ax20), 20.29dBm (802.11ax40), 21.39dBm (802.11ax80) 5725-5850 MHz 15.12dBm (802.11a), 17.31dBm(802.11n20), 17.76dBm(802.11n40), 17.78dBm (802.11ac20), 18.46dBm (802.11ac40), 19.23dBm (802.11ac80), 18.85dBm (802.11ax20), 19.46dBm (802.11ax40), 21.28dBm (802.11ax80)
Modulation Technique	OFDM, OFDMA
Antenna Specification*	Band1: 3.62dBi, Band4: 3.52dBi (provided by the applicant)
Voltage Range	DC 3.3V
Sample number	SZNS1220412-13800E-RF-S1 (Assigned by ATC)
Sample/EUT Status	Good condition

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
AC Power Lines Conducted Emissions		2.72dB
Emissions, Radiated	30MHz - 1GHz	4.28dB
	1GHz - 18GHz	4.98dB
	18GHz - 26.5GHz	5.06dB
	26.5GHz - 40GHz	4.72dB
Temperature		1°C
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 4297.01 .

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

The device only supports 5G Wi-Fi 802.11a/n20/n40/ac20/ac40/ac80/ax20/ax40/ax80 modes, which was declared by manufacturer.

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/ax20 channel 36, 40, 48 were tested;

For 802.11n40/ac40/ax40 channel 38, 46 were tested.

For 802.11ac80/ac80 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/ax20, Channel 149, 157, 165 were tested;

For 802.11n40/ac40/ax40, Channel 151, 159 were tested.

For 802.11ac80/ax80, Channel 155 was tested.

EUT Exercise Software

“MT795 QA 0.0.2.15”* software was used to test and power level as below:

Frequency Range	Mode	Date rate	Channel	Power Level*
5150 - 5250 MHz	802.11a	6Mbps	Low	Default
			Middle	Default
			High	Default
	802.11n20	MCS0	Low	22
			Middle	22
			High	22
	802.11n40	MCS0	Low	22
			Middle	22
			High	22
	802.11 ac20	MCS0	Low	15
			Middle	15
			High	15
	802.11 ac40	MCS0	Low	17
			Middle	17
			High	17
	802.11 ac80	MCS0	Low	17
			Middle	17
			High	17

Frequency Range	Mode	Date rate	Tones	Channel	Power Level*
5150 - 5250 MHz	802.11 ax20	MCS0	26	Low	19
				Middle	19
				High	19
			52	Low	18
				Middle	18
				High	18
			106	Low	18
				Middle	16
				High	16
			242	Low	16
				Middle	16
				High	16
	802.11 ax40	MCS0	26	Low	18
				High	20
			52	Low	20
				High	20
			106	Low	20
				High	20
			242	Low	18
				High	18
			484	Low	17
				High	17
	802.11 ax80	MCS0	26	Middle	20
			52	Middle	20
			106	Middle	20
			242	Middle	20
			484	Middle	18
			996	Middle	18

Frequency Range	Mode	Date rate	Channel	Power Level*
5725 - 5850 MHz	802.11a	6Mbps	Low	14
			Middle	14
			High	14
	802.11n20	MCS0	Low	13
			Middle	13
			High	13
	802.11n40	MCS0	Low	13
			Middle	13
			High	13
	802.11 ac20	MCS0	Low	13
			Middle	13
			High	13
	802.11 ac40	MCS0	Low	13
			Middle	13
			High	13
	802.11 ac80	MCS0	Low	13
			Middle	13
			High	13

Frequency Range	Mode	Date rate	Tones	Channel	Power Level*
5725 - 5850 MHz	802.11 ax20	MCS0	26	Low	13
				Middle	13
				High	13
			52	Low	12
				Middle	12
				High	12
			106	Low	13
				Middle	13
				High	13
			242	Low	12
				Middle	12
				High	12
	802.11 ax40	MCS0	26	Low	18
				High	18
			52	Low	16
				High	16
			106	Low	18
				High	18
			242	Low	15
				High	15
			484	Low	13
				High	13
	802.11 ax80	MCS0	26	Middle	18
			52	Middle	16
			106	Middle	18
			242	Middle	15
			484	Middle	13
			996	Middle	13

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

The device supports SISO for 802.11a mode, and supports SISO and MIMO for 802.11n, 802.11ac, 802.11ax modes. Per pretest the SISO and MIMO modes, and the worst case recorded in this report for 802.11n, 802.11ac, 802.11ax modes. All the antenna ports have the same power level for SISO and MIMO modes.

Duty cycle

Please refer to the Appendix.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

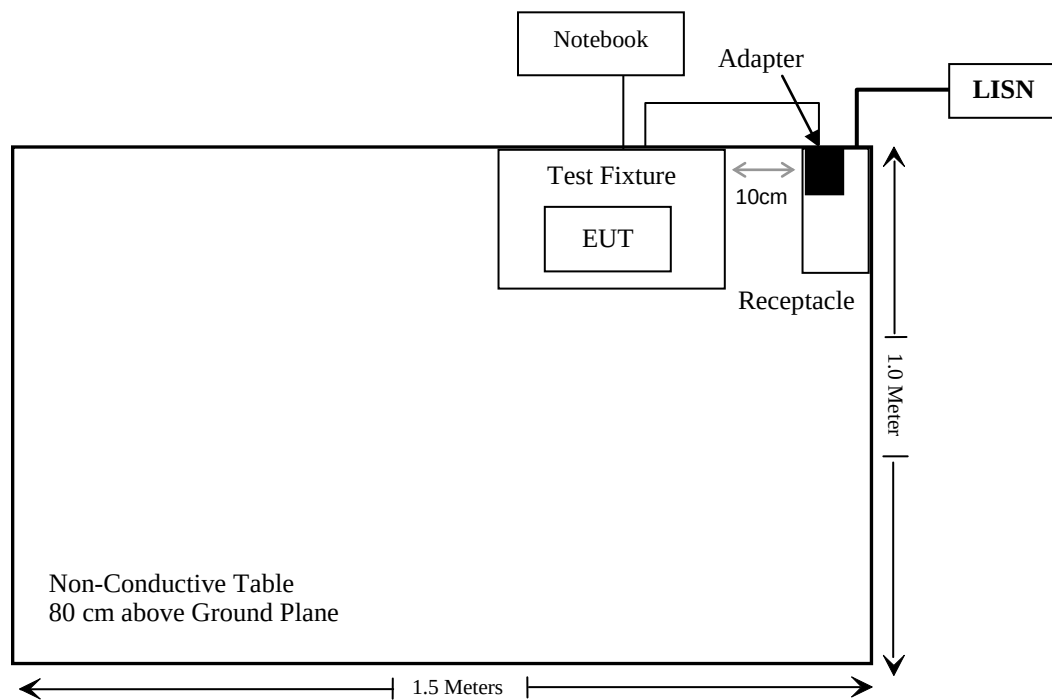
Manufacturer	Description	Model	Serial Number
MOSO POWER SUPPLY TECHNOLOGY CO., LTD.	Adapter	MS-V2500R120-030J0-DE	191612759
DELL	Notebook	Latitude E5570	6DCCRC2
Unknown	Test Fixture	Unknown	Unknown

External I/O Cable

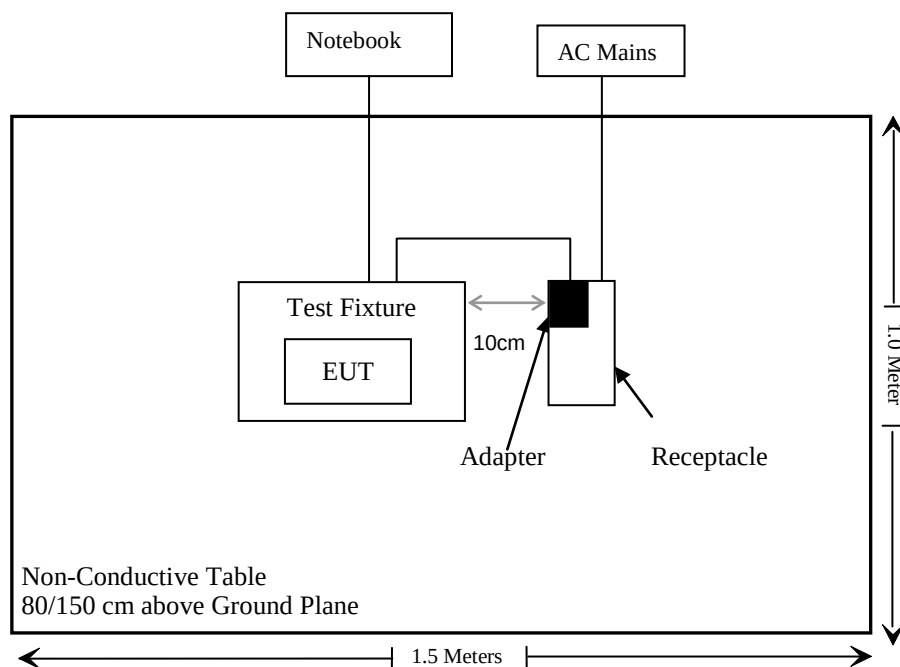
Cable Description	Length (m)	From Port	To
Un-shielding Detachable DC Cable	1.0	Test Fixture	Adapter
Un-shielding Detachable RJ45 Cable	8.0	Test Fixture	Notebook

Block Diagram of Test Setup

For Conducted Emission:



For Radiated Emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
1.1307 (b)	RF Exposure	Compliant
§15.203	Antenna Requirement	Compliant
§15.407(b)(8) & §15.207(a)	Conducted Emissions	Compliant
§15.205 & §15.209 & §15.407(b) (1), (4), (7), (8), (9), (10)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a) (12), (e)	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	EMI Test Receiver	ESCI	100784	2021/12/13	2022/12/12
R & S	L.I.S.N.	ENV216	101314	2021/12/13	2022/12/12
Anritsu Corp	50Ω Coaxial Switch	MP59B	6200506474	2021/12/13	2022/12/12
Unknown	RF Coaxial Cable	No.17	N0350	2021/12/14	2022/12/13
Conducted Emission Test Software: e3 19821b(V9)					
Radiated Emissions Test					
Rohde & Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12
Rohde & Schwarz	Spectrum Analyzer	FSV40	101949	2021/12/13	2022/12/12
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-184055 36-J0	15964001002	2021/11/11	2022/11/10
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2020/01/05	2023/01/04
CD	High PASS Filter	HPM-8.0/18G -60	020	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.10	N050	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.11	N1000	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.12	N040	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.13	N300	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.14	N800	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.15	N600	2021/12/14	2022/12/13
Radiated Emission Test Software: e3 19821b(V9)					

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2021/12/13	2022/12/12
Rohde & Schwarz	Open Switch and Control Unit	OSP120 + OSP-B157	101244 + 100866	2021/12/13	2022/12/12
WEINSCHTEL	10dB Attenuator	5324	AU 3842	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.33	RF-03	Each time	

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

FCC §1.1307 (b) – RF EXPOSURE

Applicable Standard

According to FCC §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.

According to KDB 447498 D04 Interim General RF Exposure Guidance v01, clause 2.1.4 –MPE-Based Exemption:

An alternative to the SAR-based exemption is provided in § 1.1307(b)(3)(i)(C), for a much wider frequency range, from 300 kHz to 100 GHz, applicable for separation distances greater or equal to $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. The MPE-based test exemption condition is in terms of ERP, defined as the product of the maximum antenna gain and the delivered maximum time-averaged power. For this case, a RF source is an RF exempt device if its ERP (watts) is no more than a frequency-dependent value, as detailed tabular form in Appendix B. These limits have been derived based on the basic specifications on Maximum Permissible Exposure (MPE) considered for the FCC rules in § 1.1310(e)(1).

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

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

f = frequency in MHz;

R = minimum separation distance from the body of a nearby person (appropriate units, e.g., m);

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

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

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

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of this section for Pth, including existing exempt transmitters and those being added.

b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

P_i = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

$P_{th,i}$ = the exemption threshold power (P_{th}) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i.

ERP_j = the ERP of fixed, mobile, or portable RF source j.

ERP_{th,j} = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least $\lambda/2\pi$ according to the applicable formula of paragraph (b)(3)(i)(C) of this section.

Evaluated_k = the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.

Exposure Limit_k = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k, as applicable from § 1.1310 of this chapter.

Test result

For worst case:

Mode	Frequency Range (MHz)	Tune-up Output Power		Antenna Gain		ERP		Evaluation Distance (cm)	MPE-Based Exemption Threshold (W)
		(dBm)	(mW)	(dBi)	(dBd)	(dBm)	(W)		
2.4G Wi-Fi	2412-2462	24.0	251.19	3.13	0.98	24.98	0.315	20	0.768
5G Wi-Fi	5150-5250	21.5	141.25	3.62	1.47	22.97	0.198	20	0.768
5G Wi-Fi	5725-5850	21.5	141.25	3.52	1.37	22.87	0.194	20	0.768

Note 1: The tune-up power was declared by the applicant.

Note 2: 0dBd=2.15dBi.

Note 3: The 2.4G Wi-Fi function can transmit at the same time with the 5G Wi-Fi function.

Simultaneous transmitting consideration:

The ratio= $MPE_{2.4G\ Wi-Fi} / \text{limit} + MPE_{5G\ Wi-Fi} / \text{limit} = 0.315/0.768 + 0.198/0.768 = 0.668 < 1.0$

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

Result: Compliant.

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

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

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

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

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

Antenna Connector Construction

The EUT has two Antennas arrangement for 5G Wi-Fi, which was used a unique coupling attached and the antenna gain is 3.62dBi (Band 1) and 3.52dBi (Band 4), fulfill the requirement of this section. Please refer to the EUT photos.

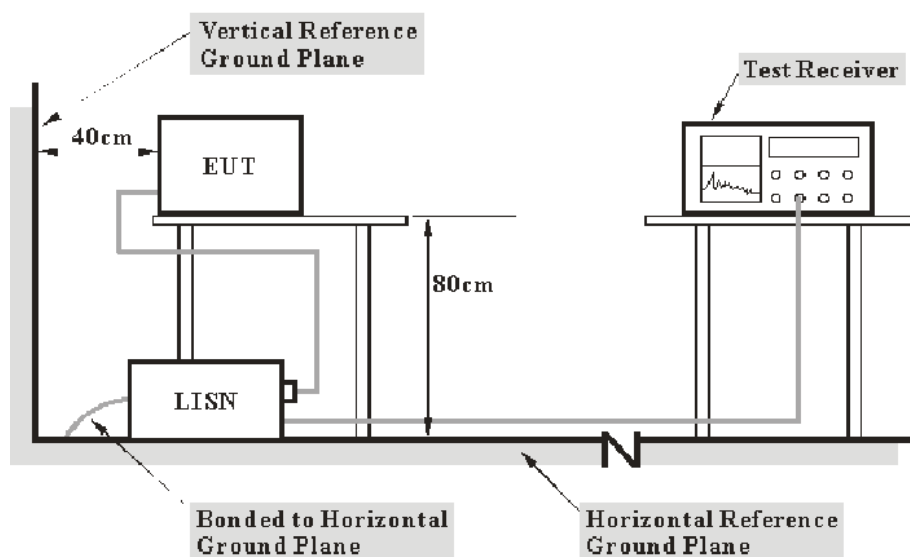
Result: Compliant.

FCC §15.407 (B) (8) §15.207 (A) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (8)

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.

Factor & Margin Calculation

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

$$\text{Factor} = \text{LISN VDF} + \text{Cable Loss}$$

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:

$$\begin{aligned}\text{Over Limit} &= \text{Level} - \text{Limit} \\ \text{Level} &= \text{Read Level} + \text{Factor}\end{aligned}$$

Test Data

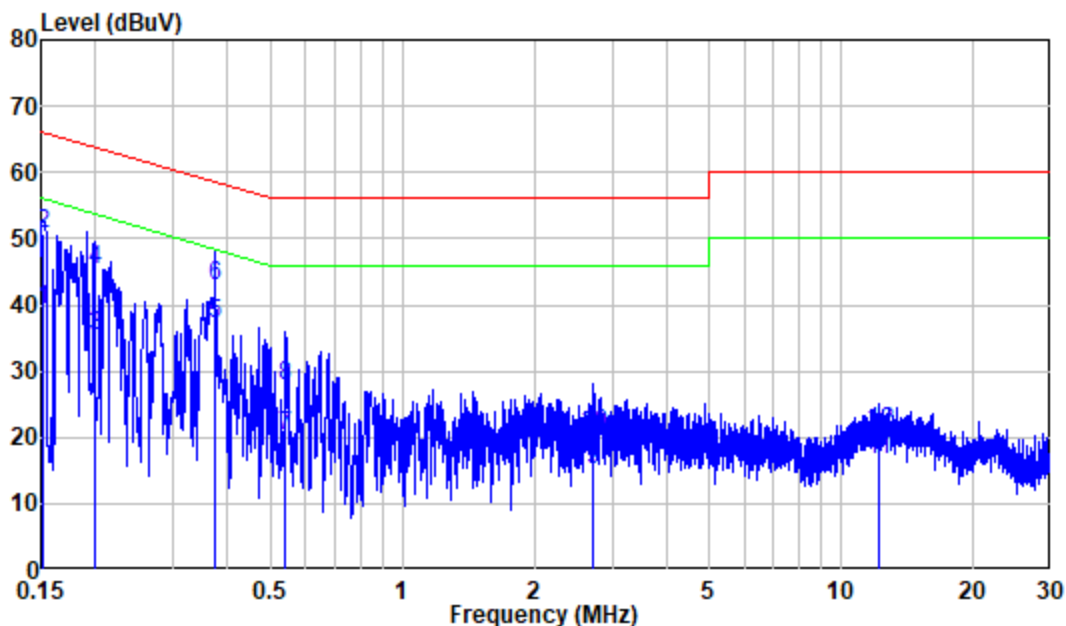
Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	101.1 kPa

The testing was performed by Jason Liu on 2022-06-15.

EUT operation mode: 5G Wi-Fi Transmitting (worst case for 802.11a, 5240MHz, antenna 1)

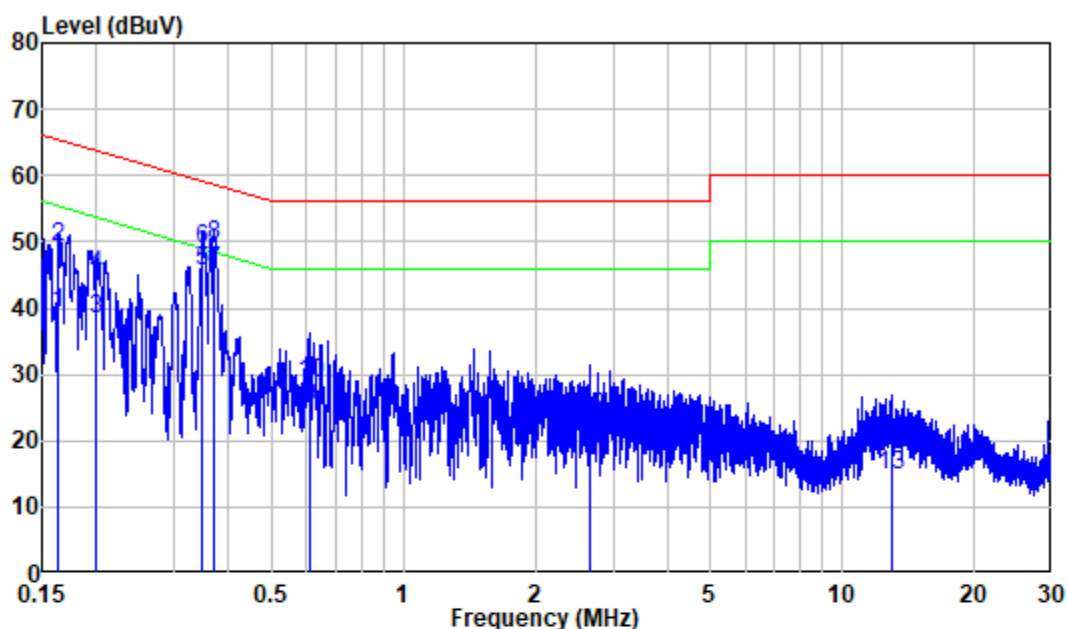
AC 120V/60 Hz, Line



Site : Shielding Room
 Condition: Line
 Job No. : SZNS1220412-13800E-RF
 Mode : 5G WIFI Transmitting
 Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.152	9.80	29.49	39.29	55.90	-16.61	Average
2	0.152	9.80	40.84	50.64	65.90	-15.26	QP
3	0.200	9.80	25.60	35.40	53.61	-18.21	Average
4	0.200	9.80	35.52	45.32	63.61	-18.29	QP
5	0.374	9.80	27.27	37.07	48.41	-11.34	Average
6	0.374	9.80	33.13	42.93	58.41	-15.48	QP
7	0.541	9.81	10.49	20.30	46.00	-25.70	Average
8	0.541	9.81	17.84	27.65	56.00	-28.35	QP
9	2.705	9.83	5.28	15.11	46.00	-30.89	Average
10	2.705	9.83	10.69	20.52	56.00	-35.48	QP
11	12.180	9.92	6.61	16.53	50.00	-33.47	Average
12	12.180	9.92	10.91	20.83	60.00	-39.17	QP

AC 120V/60 Hz, Neutral



Site : Shielding Room
 Condition: Neutral
 Job No. : SZNS1220412-13800E-RF
 Mode : 5G WIFI Transmitting
 Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.164	9.80	29.41	39.21	55.27	-16.06	Average
2	0.164	9.80	39.32	49.12	65.27	-16.15	QP
3	0.200	9.80	28.52	38.32	53.61	-15.29	Average
4	0.200	9.80	35.23	45.03	63.61	-18.58	QP
5	0.349	9.80	35.77	45.57	48.99	-3.42	Average
6	0.349	9.80	39.17	48.97	58.99	-10.02	QP
7	0.371	9.80	35.88	45.68	48.49	-2.81	Average
8	0.371	9.80	39.63	49.43	58.49	-9.06	QP
9	0.610	9.81	15.35	25.16	46.00	-20.84	Average
10	0.610	9.81	18.90	28.71	56.00	-27.29	QP
11	2.669	9.83	6.91	16.74	46.00	-29.26	Average
12	2.669	9.83	13.66	23.49	56.00	-32.51	QP
13	12.894	10.03	4.84	14.87	50.00	-35.13	Average
14	12.894	10.03	10.33	20.36	60.00	-39.64	QP

§15.205 & §15.209 & §15.407(B) (1), (4), (7), (8) , (9), (10) – UNDESIRABLE EMISSION

Applicable Standard

FCC §15.407 (b) (1), (4), (7), (8), (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.

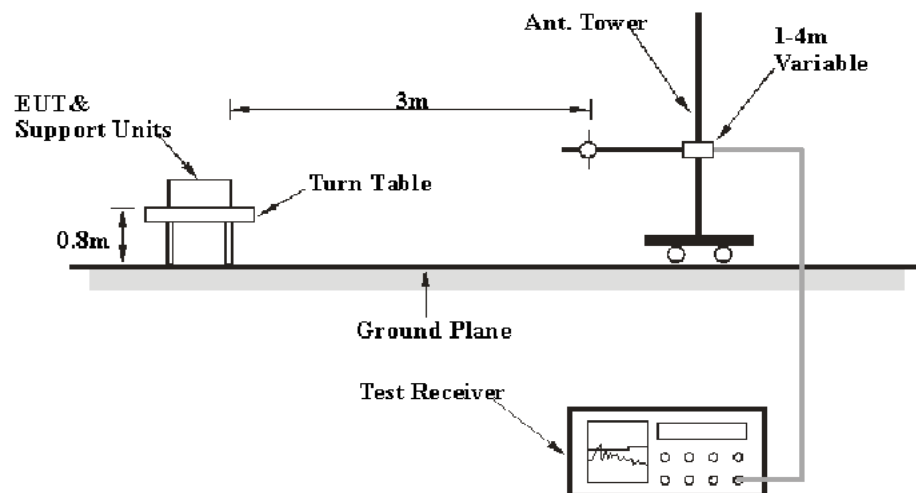
(4) For transmitters operating in the 5.725-5.85 GHz band:

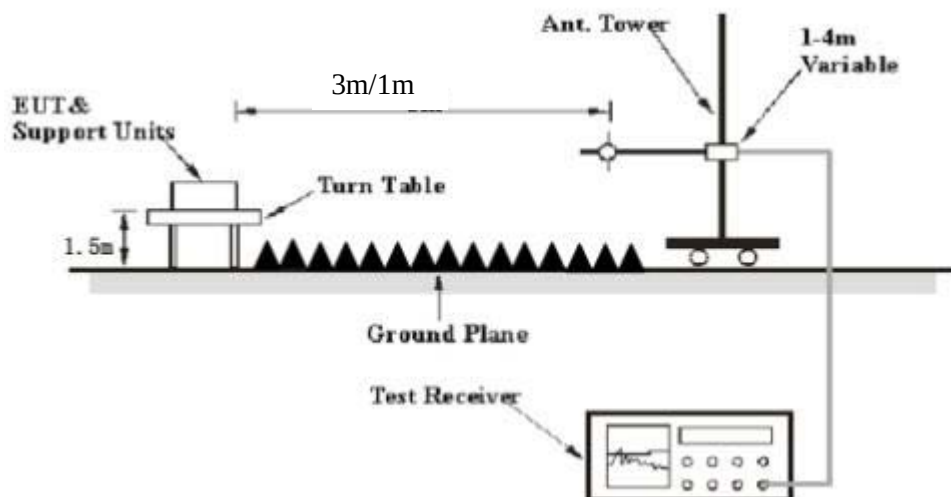
(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the 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:

Note: 1-18GHz tested @3m, 18-40GHz tested @1m.

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.

EMI Test Receiver & Spectrum Analyzer Setup

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%

If the maximized peak measured value complies with the limit, then it is unnecessary to perform QP/Average measurement.

Test Procedure**Radiated Spurious Emission**

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

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:

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\begin{aligned}\text{Over Limit/Margin} &= \text{Level} / \text{Corrected Amplitude} - \text{Limit} \\ \text{Level} / \text{Corrected Amplitude} &= \text{Read Level} + \text{Factor}\end{aligned}$$

Test Data

Environmental Conditions

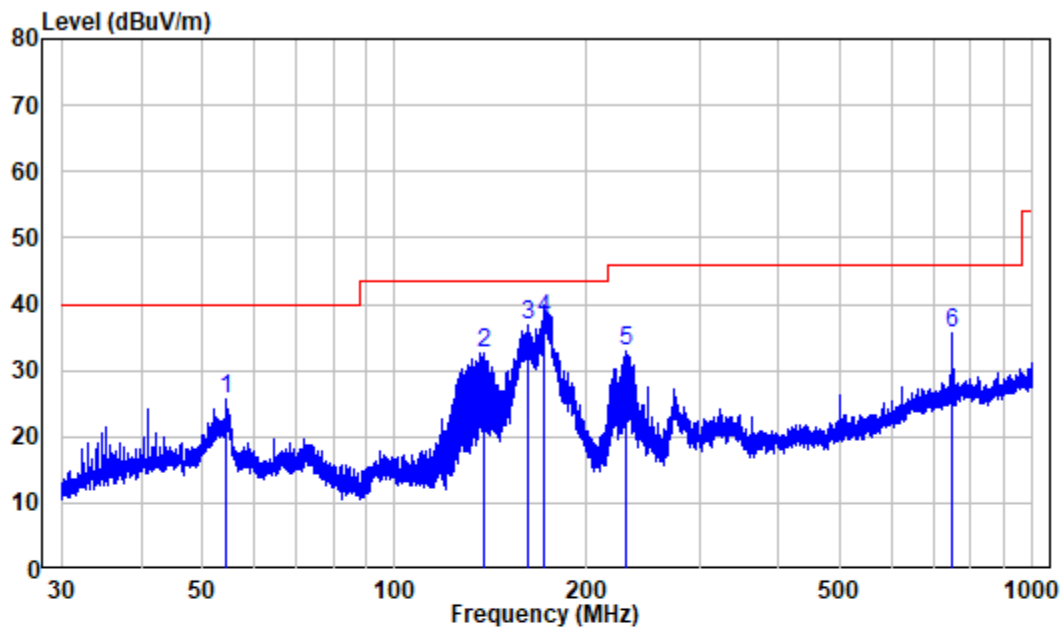
Temperature:	22-24°C
Relative Humidity:	49-61 %
ATM Pressure:	101.0-103.0 kPa

The testing was performed by Level Li from 2022-05-10 to 2022-05-27.

EUT operation mode: 5G WIFI Transmitting (Pre-scan in the X, Y and Z axes of orientation, the worst case as setup photos as below)

30 MHz~1 GHz: (worst case for 802.11a, 5240MHz, Antenna 1)

Horizontal:



Site : chamber

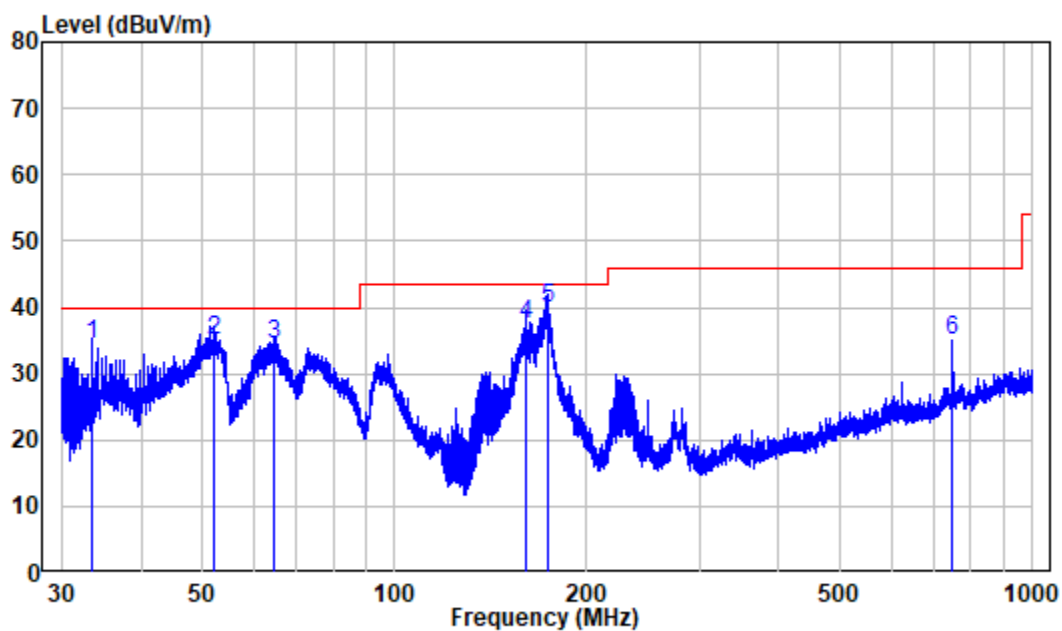
Condition: 3m HORIZONTAL

Job No. : SZNS1220412-13800E-RF

Test Mode: 5G WIFI Transmitting

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	54.404	-10.32	35.85	25.53	40.00	-14.47	Peak
2	137.661	-15.31	47.82	32.51	43.50	-10.99	Peak
3	161.899	-14.28	51.24	36.96	43.50	-6.54	Peak
4	171.318	-13.45	51.29	37.84	43.50	-5.66	QP
5	229.695	-11.12	43.91	32.79	46.00	-13.21	Peak
6	750.108	-0.87	36.54	35.67	46.00	-10.33	Peak

Vertical



Site : chamber

Condition: 3m VERTICAL

Job No. : SZNS1220412-13800E-RF

Test Mode: 5G WIFI Transmitting

	Freq	Factor	Read Level	Level	Limit	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	33.562	-11.93	46.35	34.42	40.00	-5.58	QP
2	52.208	-10.01	45.11	35.10	40.00	-4.90	QP
3	64.801	-12.44	46.96	34.52	40.00	-5.48	QP
4	160.346	-14.21	51.78	37.57	43.50	-5.93	QP
5	173.433	-13.24	53.22	39.98	43.50	-3.52	QP
6	750.108	-0.87	35.90	35.03	46.00	-10.97	QP

1 ~ 40 GHz: Per pretest the SISO and MIMO modes, and the worst case is SISO was recorded in this report for 802.11n, 802.11ac, 802.11ax modes.

Ant1:

(5150-5250MHz)

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit	Margin
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)			(dBμV/m)	(dB)
Band1 802.11 A, Low Channel									
4500	56.98	PK	15	1.7	H	-4.72	52.26	74	-21.74
4500	57.27	PK	205	1.6	V	-4.72	52.55	74	-21.45
5150	66.89	PK	79	2.2	H	-2.73	64.16	74	-9.84
5150	55.00	AV	79	2.2	H	-2.73	52.27	54	-1.73
5150	59.10	PK	270	1.8	V	-2.73	56.37	74	-17.63
5150	46.00	AV	270	1.8	V	-2.73	43.27	54	-10.73
10360	41.52	PK	276	1.7	H	8.12	49.64	68.2	-18.56
10360	42.66	PK	203	1.6	V	8.12	50.78	68.2	-17.42
Band1 802.11 A, Middle Channel									
10400	41.73	PK	42	1.6	H	8.24	49.97	68.2	-18.23
10400	42.70	PK	323	1.9	V	8.24	50.94	68.2	-17.26
Band1 802.11 A, High Channel									
5350	56.52	PK	140	1.3	H	-2.33	54.19	74	-19.81
5350	44.00	AV	140	1.3	H	-2.33	41.67	54	-12.33
5350	55.70	PK	4	2.0	V	-2.33	53.37	74	-20.63
5460	55.51	PK	65	1.8	H	-2.26	53.25	74	-20.75
5460	55.46	PK	208	2.1	V	-2.26	53.20	74	-20.8
10480	42.37	PK	334	1.8	H	8.57	50.94	68.2	-17.26
10480	42.58	PK	208	1.6	V	8.57	51.15	68.2	-17.05
Band1 802.11 N20, Low Channel									
4500	54.78	PK	19	1.6	H	-4.72	50.06	74	-23.94
4500	55.00	PK	331	1.6	V	-4.72	50.28	74	-23.72
5150	66.13	PK	348	1.9	H	-2.73	63.40	74	-10.6
5150	52.50	AV	348	1.9	H	-2.73	49.77	54	-4.23
5150	58.26	PK	160	2.0	V	-2.73	55.53	74	-18.47
5150	45.00	AV	160	2.0	V	-2.73	42.27	54	-11.73
10360	42.23	PK	64	1.5	H	8.12	50.35	68.2	-17.85
10360	42.84	PK	9	1.5	V	8.12	50.96	68.2	-17.24
Band1 802.11 N20, Middle Channel									
10400	41.46	PK	122	2.1	H	8.24	49.70	68.2	-18.5
10400	42.36	PK	110	1.7	V	8.24	50.60	68.2	-17.6
Band1 802.11 N20, High Channel									
5350	56.71	PK	163	1.6	H	-2.33	54.38	74	-19.62
5350	44.47	AV	163	1.6	H	-2.33	42.14	54	-11.86
5350	56.55	PK	90	1.9	V	-2.33	54.22	74	-19.78
5350	44.30	AV	90	1.9	V	-2.33	41.97	54	-12.03
5460	55.70	PK	9	1.5	H	-2.26	53.44	74	-20.56
5460	55.46	PK	315	1.4	V	-2.26	53.20	74	-20.8
10480	41.96	PK	113	1.5	H	8.57	50.53	68.2	-17.67
10480	42.21	PK	135	1.0	V	8.57	50.78	68.2	-17.42

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band1 802.11 N40, Low Channel									
4500	54.65	PK	114	1.8	H	-4.72	49.93	74	-24.07
4500	55.72	PK	15	1.6	V	-4.72	51.00	74	-23
5150	67.30	PK	181	1.5	H	-2.73	64.57	74	-9.43
5150	54.00	AV	181	1.5	H	-2.73	51.27	54	-2.73
5150	60.93	PK	109	1.9	V	-2.73	58.20	74	-15.8
5150	47.30	AV	109	1.9	V	-2.73	44.57	54	-9.43
10380	41.56	PK	172	1.6	H	8.19	49.75	68.2	-18.45
10380	42.03	PK	50	1.9	V	8.19	50.22	68.2	-17.98
Band1 802.11 N40 High Channel									
5350	62.26	PK	331	1.8	H	-2.33	59.93	74	-14.07
5350	48.31	AV	331	1.8	H	-2.33	45.98	54	-8.02
5350	59.99	PK	100	1.4	V	-2.33	57.66	74	-16.34
5350	46.66	AV	100	1.4	V	-2.33	44.33	54	-9.67
5460	55.33	PK	210	1.4	H	-2.26	53.07	74	-20.93
5460	55.02	PK	121	1.8	V	-2.26	52.76	74	-21.24
10460	41.49	PK	148	1.5	H	8.48	49.97	68.2	-18.23
10460	41.68	PK	312	1.8	V	8.48	50.16	68.2	-18.04
Band1 802.11 AC20, Low Channel									
4500	55.13	PK	188	1.7	H	-4.72	50.41	74	-23.59
4500	56.06	PK	42	2.0	V	-4.72	51.34	74	-22.66
5150	64.99	PK	311	1.8	H	-2.73	62.26	74	-11.74
5150	51.00	AV	311	1.8	H	-2.73	48.27	54	-5.73
5150	58.26	PK	166	1.6	V	-2.73	55.53	74	-18.47
5150	44.97	AV	166	1.6	V	-2.73	42.24	54	-11.76
10360	41.66	PK	262	1.0	H	8.12	49.78	68.2	-18.42
10360	42.83	PK	160	1.8	V	8.12	50.95	68.2	-17.25
Band1 802.11 AC20, Middle Channel									
10400	42.34	PK	39	1.5	H	8.24	50.58	68.2	-17.62
10400	42.87	PK	61	1.7	V	8.24	51.11	68.2	-17.09
Band1 802.11 AC20, High Channel									
5350	56.66	PK	226	2.0	H	-2.33	54.33	74	-19.67
5350	43.92	AV	226	2.0	H	-2.33	41.59	54	-12.41
5350	56.78	PK	84	1.7	V	-2.33	54.45	74	-19.55
5350	43.00	AV	84	1.7	V	-2.33	40.67	54	-13.33
5460	56.02	PK	275	1.5	H	-2.26	53.76	74	-20.24
5460	55.85	PK	130	1.8	V	-2.26	53.59	74	-20.41
10480	42.33	PK	327	1.9	H	8.57	50.90	68.2	-17.3
10480	42.67	PK	28	2.1	V	8.57	51.24	68.2	-16.96

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band1 802.11 AC40, Low Channel									
4500	54.38	PK	67	1.3	H	-4.72	49.66	74	-24.34
4500	55.34	PK	263	2.1	V	-4.72	50.62	74	-23.38
5150	66.90	PK	104	2.2	H	-2.73	64.17	74	-9.83
5150	53.97	AV	104	2.2	H	-2.73	51.24	54	-2.76
5150	64.16	PK	332	1.6	V	-2.73	61.43	74	-12.57
5150	50.00	AV	332	1.6	V	-2.73	47.27	54	-6.73
10380	42.14	PK	350	1.9	H	8.19	50.33	68.2	-17.87
10380	42.65	PK	215	1.5	V	8.19	50.84	68.2	-17.36
Band1 802.11 AC40, High Channel									
5350	57.68	PK	272	2.1	H	-2.33	55.35	74	-18.65
5350	43.99	AV	272	2.1	H	-2.33	41.66	54	-12.34
5350	58.12	PK	151	1.8	V	-2.33	55.79	74	-18.21
5350	44.27	AV	151	1.8	V	-2.33	41.94	54	-12.06
5460	55.43	PK	52	1.5	H	-2.26	53.17	74	-20.83
5460	55.40	PK	138	2.0	V	-2.26	53.14	74	-20.86
10460	41.65	PK	98	1.7	H	8.48	50.13	68.2	-18.07
10460	41.87	PK	317	2.1	V	8.48	50.35	68.2	-17.85
Band1 802.11 AC80									
4500	55.08	PK	206	1.8	H	-4.72	50.36	74	-23.64
4500	54.55	PK	339	1.6	V	-4.72	49.83	74	-24.17
5150	62.74	PK	48	1.9	H	-2.73	60.01	74	-13.99
5150	49.92	AV	48	1.9	H	-2.73	47.19	54	-6.81
5150	55.55	PK	52	2.2	V	-2.73	52.82	74	-21.18
5350	56.02	PK	96	1.9	H	-2.33	53.69	74	-20.31
5350	56.69	PK	256	1.8	V	-2.33	54.36	74	-19.64
5350	42.91	AV	256	1.8	V	-2.33	40.58	54	-13.42
5460	55.66	PK	157	1.8	H	-2.26	53.40	74	-20.6
5460	55.56	PK	344	1.7	V	-2.26	53.30	74	-20.7
10420	41.53	PK	343	1.5	H	8.31	49.84	68.2	-18.36
10420	42.36	PK	17	2.2	V	8.31	50.67	68.2	-17.53
Band1 802.11 AX20, Low Channel									
4500	54.99	PK	339	2.1	H	-4.72	50.27	74	-23.73
4500	54.88	PK	116	1.5	V	-4.72	50.16	74	-23.84
5150	64.52	PK	303	1.8	H	-2.73	61.79	74	-12.21
5150	51.00	AV	303	1.8	H	-2.73	48.27	54	-5.73
5150	58.37	PK	277	1.3	V	-2.73	55.64	74	-18.36
5150	45.65	AV	277	1.3	V	-2.73	42.92	54	-11.08
10360	42.20	PK	259	1.9	H	8.12	50.32	68.2	-17.88
10360	42.79	PK	82	1.5	V	8.12	50.91	68.2	-17.29

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band1 802.11 AX20, Middle Channel									
10400	41.55	PK	74	1.8	H	8.24	49.79	68.2	-18.41
10400	41.90	PK	27	1.5	V	8.24	50.14	68.2	-18.06
Band1 802.11 AX20, High Channel									
5350	57.12	PK	123	1.5	H	-2.33	54.79	74	-19.21
5350	41.76	AV	123	1.5	H	-2.33	39.43	54	-14.57
5350	58.08	PK	232	1.7	V	-2.33	55.75	74	-18.25
5350	43.07	AV	232	1.7	V	-2.33	40.74	54	-13.26
5460	58.06	PK	217	2.1	H	-2.26	55.80	74	-18.2
5460	48.38	AV	256	2.1	H	-2.26	46.12	54	-7.88
5460	55.73	PK	349	1.7	V	-2.26	53.47	74	-20.53
10480	41.94	PK	22	1.4	H	8.57	50.51	68.2	-17.69
10480	42.42	PK	149	1.4	V	8.57	50.99	68.2	-17.21
Band1 802.11 AX40, Low Channel									
4500	56.26	PK	224	1.9	H	-4.72	51.54	74	-22.46
4500	54.77	PK	326	1.3	V	-4.72	50.05	74	-23.95
5150	67.16	PK	108	1.3	H	-2.73	64.43	74	-9.57
5150	53.97	AV	108	1.3	H	-2.73	51.24	54	-2.76
5150	65.98	PK	146	1.4	V	-2.73	63.25	74	-10.75
5150	52.05	AV	146	1.4	V	-2.73	49.32	54	-4.68
10380	42.47	PK	23	2.0	H	8.19	50.66	68.2	-17.54
10380	42.95	PK	250	1.7	V	8.19	51.14	68.2	-17.06
Band1 802.11 AX40, High Channel									
5350	57.77	PK	97	1.7	H	-2.33	55.44	74	-18.56
5350	43.71	AV	97	1.7	H	-2.33	41.38	54	-12.62
5350	57.02	PK	238	1.5	V	-2.33	54.69	74	-19.31
5350	42.51	AV	238	1.5	V	-2.33	40.18	54	-13.82
5460	55.52	PK	345	1.4	H	-2.26	53.26	74	-20.74
5460	55.68	PK	108	1.3	V	-2.26	53.42	74	-20.58
10460	42.49	PK	190	1.6	H	8.48	50.97	68.2	-17.23
10460	42.63	PK	348	1.9	V	8.48	51.11	68.2	-17.09
Band1 802.11 AX80									
4500	55.60	PK	146	2.1	H	-4.72	50.88	74	-23.12
4500	54.80	PK	93	1.3	V	-4.72	50.08	74	-23.92
5150	66.82	PK	172	2.1	H	-2.73	64.09	74	-9.91
5150	54.00	AV	172	2.1	H	-2.73	51.27	54	-2.73
5150	54.99	PK	190	2.1	V	-2.73	52.26	74	-21.74
5350	57.23	PK	161	1.6	H	-2.33	54.90	74	-19.1
5350	42.95	AV	161	1.6	H	-2.33	40.62	54	-13.38
5350	56.13	PK	14	1.5	V	-2.33	53.80	74	-20.2
5460	56.01	PK	115	1.7	H	-2.26	53.75	74	-20.25
5460	55.46	PK	340	2.0	V	-2.26	53.20	74	-20.8
10420	41.50	PK	121	1.6	H	8.31	49.81	68.2	-18.39
10420	42.35	PK	37	1.9	V	8.31	50.66	68.2	-17.54

(5725-5850MHz)

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit	Margin
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)			(dBμV/m)	(dB)
BAND4 802.11A, Low Channel									
5725	85.38	PK	1	2.1	H	-1.96	83.42	122.2	-38.78
5725	70.74	PK	243	1.3	V	-1.96	68.78	122.2	-53.42
5720	74.90	PK	4	2.1	H	-1.96	72.94	110.8	-37.86
5720	63.17	PK	354	1.6	V	-1.96	61.21	110.8	-49.59
5700	64.69	PK	11	1.2	H	-2.02	62.67	105.2	-42.53
5700	56.22	PK	232	1.4	V	-2.02	54.20	105.2	-51
5650	58.51	PK	278	2.0	H	-1.95	56.56	68.2	-11.64
5650	56.17	PK	110	1.4	V	-1.95	54.22	68.2	-13.98
11490	43.86	PK	231	1.3	H	6.63	50.49	74	-23.51
11490	44.80	PK	98	1.5	V	6.63	51.43	74	-22.57
BAND4 802.11A, Middle Channel									
11570	44.00	PK	310	1.9	H	6.59	50.59	74	-23.41
11570	44.74	PK	170	2.1	V	6.59	51.33	74	-22.67
BAND4 802.11A, High Channel									
5850	73.22	PK	112	1.6	H	-1.81	71.41	122.2	-50.79
5850	62.38	PK	118	1.8	V	-1.81	60.57	122.2	-61.63
5855	71.72	PK	27	1.5	H	-1.82	69.90	110.8	-40.9
5855	59.50	PK	2	1.9	V	-1.82	57.68	110.8	-53.12
5875	60.30	PK	169	1.7	H	-1.84	58.46	105.2	-46.74
5875	57.07	PK	272	2.1	V	-1.84	55.23	105.2	-49.97
5925	57.34	PK	308	1.8	H	-1.83	55.51	68.2	-12.69
5925	57.06	PK	180	1.4	V	-1.83	55.23	68.2	-12.97
11650	44.74	PK	104	1.9	H	6.77	51.51	74	-22.49
11650	45.36	PK	335	1.6	V	6.77	52.13	74	-21.87
BAND4 802.11N20, Low Channel									
5725	80.80	PK	71	1.9	H	-1.96	78.84	122.2	-43.36
5725	67.69	PK	84	2.2	V	-1.96	65.73	122.2	-56.47
5720	72.45	PK	187	1.8	H	-1.96	70.49	110.8	-40.31
5720	59.62	PK	238	1.5	V	-1.96	57.66	110.8	-53.14
5700	61.94	PK	315	2.0	H	-2.02	59.92	105.2	-45.28
5700	53.12	PK	279	2.1	V	-2.02	51.10	105.2	-54.1
5650	57.31	PK	44	2.1	H	-1.95	55.36	68.2	-12.84
5650	55.59	PK	219	1.4	V	-1.95	53.64	68.2	-14.56
11490	44.29	PK	202	1.4	H	6.63	50.92	74	-23.08
11490	44.63	PK	45	1.6	V	6.63	51.26	74	-22.74
BAND4 802.11N20, Middle Channel									
11570	43.62	PK	168	2.1	H	6.59	50.21	74	-23.79
11570	45.03	PK	350	2.0	V	6.59	51.62	74	-22.38

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
BAND4 802.11N20, High Channel									
5850	70.65	PK	173	1.6	H	-1.81	68.84	122.2	-53.36
5850	59.82	PK	160	1.7	V	-1.81	58.01	122.2	-64.19
5855	68.69	PK	195	2.1	H	-1.82	66.87	110.8	-43.93
5855	58.08	PK	112	1.8	V	-1.82	56.26	110.8	-54.54
5875	60.94	PK	271	1.6	H	-1.84	59.10	105.2	-46.1
5875	56.44	PK	321	2.1	V	-1.84	54.60	105.2	-50.6
5925	56.28	PK	232	1.5	H	-1.83	54.45	68.2	-13.75
5925	56.35	PK	17	1.9	V	-1.83	54.52	68.2	-13.68
11650	44.35	PK	216	1.6	H	6.77	51.12	74	-22.88
11650	44.78	PK	221	1.5	V	6.77	51.55	74	-22.45
BAND4 802.11N40, Low Channel									
5725	92.42	PK	332	1.2	H	-1.96	90.46	122.2	-31.74
5725	78.24	PK	264	1.1	V	-1.96	76.28	122.2	-45.92
5720	86.51	PK	189	2.0	H	-1.96	84.55	110.8	-26.25
5720	72.00	PK	331	2.0	V	-1.96	70.04	110.8	-40.76
5700	76.77	PK	344	1.9	H	-2.02	74.75	105.2	-30.45
5700	63.55	PK	254	2.1	V	-2.02	61.53	105.2	-43.67
5650	62.35	PK	171	1.7	H	-1.95	60.40	68.2	-7.8
5650	56.12	PK	92	1.5	V	-1.95	54.17	68.2	-14.03
11510	44.72	PK	230	1.6	H	6.59	51.31	74	-22.69
11510	45.00	PK	137	1.1	V	6.59	51.59	74	-22.41
BAND4 802.11N40, High Channel									
5850	81.76	PK	156	1.3	H	-1.81	79.95	122.2	-42.25
5850	69.35	PK	318	1.8	V	-1.81	67.54	122.2	-54.66
5855	79.95	PK	202	2.1	H	-1.82	78.13	110.8	-32.67
5855	67.56	PK	197	1.0	V	-1.82	65.74	110.8	-45.06
5875	68.74	PK	222	2.1	H	-1.84	66.90	105.2	-38.3
5875	59.00	PK	327	2.2	V	-1.84	57.16	105.2	-48.04
5925	56.48	PK	360	1.8	H	-1.83	54.65	68.2	-13.55
5925	57.70	PK	304	1.8	V	-1.83	55.87	68.2	-12.33
11590	45.19	PK	97	2.2	H	6.57	51.76	74	-22.24
11590	45.65	PK	343	1.9	V	6.57	52.22	74	-21.78

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
BAND4 802.11AC20, Low Channel									
5725	78.80	PK	157	1.9	H	-1.96	76.84	122.2	-45.36
5725	65.95	PK	307	1.4	V	-1.96	63.99	122.2	-58.21
5720	70.60	PK	266	1.3	H	-1.96	68.64	110.8	-42.16
5720	57.02	PK	142	1.8	V	-1.96	55.06	110.8	-55.74
5700	61.94	PK	171	1.6	H	-2.02	59.92	105.2	-45.28
5700	51.58	PK	93	2.1	V	-2.02	49.56	105.2	-55.64
5650	56.87	PK	345	1.6	H	-1.95	54.92	68.2	-13.28
5650	55.31	PK	284	1.9	V	-1.95	53.36	68.2	-14.84
11490	44.58	PK	50	2.2	H	6.63	51.21	74	-22.79
11490	46.04	PK	248	2.2	V	6.63	52.67	74	-21.33
BAND4 802.11 AC20, Middle Channel									
11570	44.00	PK	126	2.0	H	6.59	50.59	74	-23.41
11570	44.83	PK	147	2.0	V	6.59	51.42	74	-22.58
BAND4 802.11 AC20, High Channel									
5850	68.67	PK	298	1.7	H	-1.81	66.86	122.2	-55.34
5850	58.53	PK	208	2.2	V	-1.81	56.72	122.2	-65.48
5855	67.31	PK	218	1.6	H	-1.82	65.49	110.8	-45.31
5855	56.95	PK	188	1.4	V	-1.82	55.13	110.8	-55.67
5875	59.19	PK	195	1.3	H	-1.84	57.35	105.2	-47.85
5875	55.78	PK	264	1.8	V	-1.84	53.94	105.2	-51.26
5925	56.15	PK	122	1.5	H	-1.83	54.32	68.2	-13.88
5925	56.47	PK	199	1.5	V	-1.83	54.64	68.2	-13.56
11650	44.40	PK	92	1.4	H	6.77	51.17	74	-22.83
11650	45.08	PK	300	1.3	V	6.77	51.85	74	-22.15
BAND4 802.11 AC40, Low Channel									
5725	91.51	PK	291	1.3	H	-1.96	89.55	122.2	-32.65
5725	77.29	PK	309	1.7	V	-1.96	75.33	122.2	-46.87
5720	85.40	PK	246	2.1	H	-1.96	83.44	110.8	-27.36
5720	71.10	PK	70	2.0	V	-1.96	69.14	110.8	-41.66
5700	75.64	PK	99	1.5	H	-2.02	73.62	105.2	-31.58
5700	62.65	PK	266	16	V	-2.02	60.63	105.2	-44.57
5650	61.50	PK	177	1.6	H	-1.95	59.55	68.2	-8.65
5650	56.89	PK	85	1.5	V	-1.95	54.94	68.2	-13.26
11510	44.67	PK	14	1.7	H	6.59	51.26	74	-22.74
11510	45.30	PK	135	1.7	V	6.59	51.89	74	-22.11

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
BAND4 802.11 AC40, High Channel									
5850	80.45	PK	107	1.8	H	-1.81	78.64	122.2	-43.56
5850	68.12	PK	6	1.4	V	-1.81	66.31	122.2	-55.89
5855	78.98	PK	74	1.3	H	-1.82	77.16	110.8	-33.64
5855	66.93	PK	302	1.5	V	-1.82	65.11	110.8	-45.69
5875	67.47	PK	80	2.0	H	-1.84	65.63	105.2	-39.57
5875	57.82	PK	105	1.9	V	-1.84	55.98	105.2	-49.22
5925	55.80	PK	60	1.5	H	-1.83	53.97	68.2	-14.23
5925	56.77	PK	294	1.5	V	-1.83	54.94	68.2	-13.26
11590	44.34	PK	131	2.1	H	6.57	50.91	74	-23.09
11590	44.67	PK	258	1.6	V	6.57	51.24	74	-22.76
BAND4 802.11AC80									
5725	82.96	PK	265	1.3	H	-1.96	81.00	122.2	-41.2
5725	70.71	PK	59	2.1	V	-1.96	68.75	122.2	-53.45
5720	85.33	PK	54	1.9	H	-1.96	83.37	110.8	-27.43
5720	74.39	PK	159	1.9	V	-1.96	72.43	110.8	-38.37
5700	77.84	PK	301	1.8	H	-2.02	75.82	105.2	-29.38
5700	65.34	PK	343	1.4	V	-2.02	63.32	105.2	-41.88
5650	64.41	PK	353	1.7	H	-1.95	62.46	68.2	-5.74
5650	56.20	PK	3	1.5	V	-1.95	54.25	68.2	-13.95
5850	77.84	PK	335	1.7	H	-1.81	76.03	122.2	-46.17
5850	65.33	PK	33	1.8	V	-1.81	63.52	122.2	-58.68
5855	75.80	PK	19	1.7	H	-1.82	73.98	110.8	-36.82
5855	64.84	PK	328	2.1	V	-1.82	63.02	110.8	-47.78
5875	69.78	PK	170	1.3	H	-1.84	67.94	105.2	-37.26
5875	60.84	PK	304	1.3	V	-1.84	59.00	105.2	-46.2
5925	56.15	PK	6	1.6	V	-1.83	54.32	68.2	-13.88
5925	63.15	PK	263	1.5	H	-1.83	61.32	68.2	-6.88
11550	44.20	PK	149	1.6	H	6.61	50.81	74	-23.19
11550	44.78	PK	345	1.9	V	6.61	51.39	74	-22.61
Band4 802.11 AX20, Low Channel									
5725	78.85	PK	356	1.6	H	-1.96	76.89	122.2	-45.31
5725	65.06	PK	159	2.0	V	-1.96	63.10	122.2	-59.1
5720	69.64	PK	308	1.5	H	-1.96	67.68	110.8	-43.12
5720	56.73	PK	219	1.8	V	-1.96	54.77	110.8	-56.03
5700	61.38	PK	31	1.2	H	-2.02	59.36	105.2	-45.84
5700	51.04	PK	82	1.3	V	-2.02	49.02	105.2	-56.18
5650	56.13	PK	328	1.5	H	-1.95	54.18	68.2	-14.02
5650	55.48	PK	20	1.8	V	-1.95	53.53	68.2	-14.67
11490	44.04	PK	104	1.7	H	6.63	50.67	74	-23.33
11490	44.56	PK	192	1.8	V	6.63	51.19	74	-22.81

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band4 802.11 AX20, Middle Channel									
11570	44.77	PK	101	2.0	H	6.59	51.36	74	-22.64
11570	45.34	PK	184	1.6	V	6.59	51.93	74	-22.07
Band4 802.11 AX20, High Channel									
5850	67.47	PK	186	2.2	H	-1.81	65.66	122.2	-56.54
5850	58.14	PK	24	1.9	V	-1.81	56.33	122.2	-65.87
5855	66.25	PK	220	1.6	H	-1.82	64.43	110.8	-46.37
5855	56.21	PK	65	2.0	V	-1.82	54.39	110.8	-56.41
5875	58.40	PK	235	1.8	H	-1.84	56.56	105.2	-48.64
5875	54.88	PK	9	2.0	V	-1.84	53.04	105.2	-52.16
5925	55.72	PK	328	1.6	H	-1.83	53.89	68.2	-14.31
5925	56.05	PK	339	1.4	V	-1.83	54.22	68.2	-13.98
11650	44.08	PK	103	1.6	H	6.77	50.85	74	-23.15
11650	44.64	PK	212	1.9	V	6.77	51.41	74	-22.59
Band4 802.11 AX40, Low Channel									
5725	90.52	PK	307	2.1	H	-1.96	88.56	122.2	-33.64
5725	77.29	PK	129	1.7	V	-1.96	75.33	122.2	-46.87
5720	84.25	PK	278	1.7	H	-1.96	82.29	110.8	-28.51
5720	70.42	PK	264	2.1	V	-1.96	68.46	110.8	-42.34
5700	74.57	PK	350	1.6	H	-2.02	72.55	105.2	-32.65
5700	61.96	PK	285	1.5	V	-2.02	59.94	105.2	-45.26
5650	60.47	PK	344	1.7	H	-1.95	58.52	68.2	-9.68
5650	56.28	PK	75	2.2	V	-1.95	54.33	68.2	-13.87
11510	44.63	PK	35	1.9	H	6.59	51.22	74	-22.78
11510	45.28	PK	192	1.5	V	6.59	51.87	74	-22.13
Band4 802.11 AX40, High Channel									
5850	78.70	PK	125	1.4	H	-1.81	76.89	122.2	-45.31
5850	67.27	PK	295	2.0	V	-1.81	65.46	122.2	-56.74
5855	78.11	PK	176	1.6	H	-1.82	76.29	110.8	-34.51
5855	66.25	PK	71	2.0	V	-1.82	64.43	110.8	-46.37
5875	66.76	PK	93	2.0	H	-1.84	64.92	105.2	-40.28
5875	56.88	PK	166	1.3	V	-1.84	55.04	105.2	-50.16
5925	55.65	PK	42	1.3	H	-1.83	53.82	68.2	-14.38
5925	56.46	PK	150	1.7	V	-1.83	54.63	68.2	-13.57
11590	44.37	PK	336	2.1	H	6.57	50.94	74	-23.06
11590	45.05	PK	125	1.6	V	6.57	51.62	74	-22.38

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band4 802.11 AX80									
5725	81.51	PK	69	2.2	H	-1.96	79.55	122.2	-42.65
5725	68.90	PK	181	1.7	V	-1.96	66.94	122.2	-55.26
5720	84.22	PK	203	1.7	H	-1.96	82.26	110.8	-28.54
5720	73.12	PK	16	1.6	V	-1.96	71.16	110.8	-39.64
5700	76.97	PK	163	1.7	H	-2.02	74.95	105.2	-30.25
5700	64.94	PK	343	2.2	V	-2.02	62.92	105.2	-42.28
5650	63.66	PK	277	1.7	H	-1.95	61.71	68.2	-6.49
5650	55.51	PK	220	1.7	V	-1.95	53.56	68.2	-14.64
5850	76.95	PK	60	1.4	H	-1.81	75.14	122.2	-47.06
5850	64.33	PK	65	2.0	V	-1.81	62.52	122.2	-59.68
5855	75.33	PK	157	1.2	H	-1.82	73.51	110.8	-37.29
5855	64.43	PK	79	1.7	V	-1.82	62.61	110.8	-48.19
5875	68.57	PK	230	1.2	H	-1.84	66.73	105.2	-38.47
5875	59.96	PK	236	1.4	V	-1.84	58.12	105.2	-47.08
5925	55.69	PK	24	1.9	V	-1.83	53.86	68.2	-14.34
5925	62.07	PK	292	2.0	H	-1.83	60.24	68.2	-7.96
11550	43.79	PK	137	1.3	H	6.61	50.40	74	-23.6
11550	44.48	PK	35	1.8	V	6.61	51.09	74	-22.91

Ant2:
(5150-5250MHz)

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit	Margin
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)			(dBμV/m)	(dB)
Band1 802.11 A, Low Channel									
4500	56.11	PK	205	1.4	H	-4.72	51.39	74	-22.61
4500	56.29	PK	318	1.9	V	-4.72	51.57	74	-22.43
5150	65.97	PK	183	2.0	H	-2.73	63.24	74	-10.76
5150	53.87	AV	183	2.0	H	-2.73	51.14	54	-2.86
5150	57.85	PK	338	1.7	V	-2.73	55.12	74	-18.88
5150	44.95	AV	338	1.7	V	-2.73	42.22	54	-11.78
10360	40.47	PK	218	2.0	H	8.12	48.59	68.2	-19.61
10360	41.76	PK	306	2.0	V	8.12	49.88	68.2	-18.32
Band1 802.11 A, Middle Channel									
10400	40.63	PK	12	1.5	H	8.24	48.87	68.2	-19.33
10400	41.54	PK	143	1.5	V	8.24	49.78	68.2	-18.42
Band1 802.11 A, High Channel									
5350	55.56	PK	338	2.0	H	-2.33	53.23	74	-20.77
5350	42.73	AV	338	2.0	H	-2.33	40.40	54	-13.6
5350	54.78	PK	321	1.3	V	-2.33	52.45	74	-21.55
5460	54.55	PK	55	1.6	H	-2.26	52.29	74	-21.71
5460	54.52	PK	276	1.5	V	-2.26	52.26	74	-21.74
10480	41.41	PK	307	1.8	H	8.57	49.98	68.2	-18.22
10480	41.60	PK	76	2.1	V	8.57	50.17	68.2	-18.03
Band1 802.11 N20, Low Channel									
4500	53.90	PK	73	1.9	H	-4.72	49.18	74	-24.82
4500	54.03	PK	343	1.6	V	-4.72	49.31	74	-24.69
5150	65.22	PK	233	1.5	H	-2.73	62.49	74	-11.51
5150	51.46	AV	233	1.5	H	-2.73	48.73	54	-5.27
5150	57.11	PK	331	1.5	V	-2.73	54.38	74	-19.62
5150	43.99	AV	331	1.5	V	-2.73	41.26	54	-12.74
10360	41.39	PK	25	2.2	H	8.12	49.51	68.2	-18.69
10360	41.71	PK	91	1.5	V	8.12	49.83	68.2	-18.37
Band1 802.11 N20, Middle Channel									
10400	40.53	PK	44	1.9	H	8.24	48.77	68.2	-19.43
10400	41.54	PK	237	1.4	V	8.24	49.78	68.2	-18.42
Band1 802.11 N20, High Channel									
5350	55.91	PK	294	1.7	H	-2.33	53.58	74	-20.42
5350	43.45	AV	294	1.7	H	-2.33	41.12	54	-12.88
5350	55.59	PK	142	1.4	V	-2.33	53.26	74	-20.74
5350	43.27	AV	142	1.4	V	-2.33	40.94	54	-13.06
5460	54.92	PK	332	1.3	H	-2.26	52.66	74	-21.34
5460	54.42	PK	248	1.8	V	-2.26	52.16	74	-21.84
10480	41.10	PK	48	1.7	H	8.57	49.67	68.2	-18.53
10480	41.02	PK	195	1.6	V	8.57	49.59	68.2	-18.61

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band1 802.11 N40, Low Channel									
4500	53.65	PK	296	1.5	H	-4.72	48.93	74	-25.07
4500	54.85	PK	107	1.6	V	-4.72	50.13	74	-23.87
5150	66.21	PK	20	2.1	H	-2.73	63.48	74	-10.52
5150	52.85	AV	20	2.1	H	-2.73	50.12	54	-3.88
5150	59.97	PK	126	1.6	V	-2.73	57.24	74	-16.76
5150	46.06	AV	126	1.6	V	-2.73	43.33	54	-10.67
10380	40.32	PK	66	1.2	H	8.19	48.51	68.2	-19.69
10380	41.53	PK	357	2.1	V	8.19	49.72	68.2	-18.48
Band1 802.11 N40, High Channel									
5350	61.12	PK	165	1.6	H	-2.33	58.79	74	-15.21
5350	47.27	AV	165	1.6	H	-2.33	44.94	54	-9.06
5350	58.99	PK	128	1.9	V	-2.33	56.66	74	-17.34
5350	45.64	AV	128	1.9	V	-2.33	43.31	54	-10.69
5460	54.43	PK	270	1.2	H	-2.26	52.17	74	-21.83
5460	54.05	PK	118	2.1	V	-2.26	51.79	74	-22.21
10460	40.41	PK	115	1.3	H	8.48	48.89	68.2	-19.31
10460	40.64	PK	245	1.6	V	8.48	49.12	68.2	-19.08
Band1 802.11 AC20, Low Channel									
4500	54.08	PK	30	1.8	H	-4.72	49.36	74	-24.64
4500	55.17	PK	240	1.9	V	-4.72	50.45	74	-23.55
5150	63.95	PK	22	1.8	H	-2.73	61.22	74	-12.78
5150	50.00	AV	22	1.8	H	-2.73	47.27	54	-6.73
5150	56.98	PK	234	1.5	V	-2.73	54.25	74	-19.75
5150	44.07	AV	234	1.5	V	-2.73	41.34	54	-12.66
10360	40.74	PK	38	2.1	H	8.12	48.86	68.2	-19.34
10360	41.81	PK	22	1.8	V	8.12	49.93	68.2	-18.27
Band1 802.11 AC20, Middle Channel									
10400	41.21	PK	157	1.3	H	8.24	49.45	68.2	-18.75
10400	41.84	PK	9	1.4	V	8.24	50.08	68.2	-18.12
Band1 802.11 AC20, High Channel									
5350	55.68	PK	314	2.1	H	-2.33	53.35	74	-20.65
5350	42.78	AV	314	2.1	H	-2.33	40.45	54	-13.55
5350	55.85	PK	9	1.8	V	-2.33	53.52	74	-20.48
5350	41.92	AV	9	1.8	V	-2.33	39.59	54	-14.41
5460	54.94	PK	162	1.6	H	-2.26	52.68	74	-21.32
5460	54.81	PK	62	1.6	V	-2.26	52.55	74	-21.45
10480	41.41	PK	135	1.6	H	8.57	49.98	68.2	-18.22
10480	41.65	PK	61	1.9	V	8.57	50.22	68.2	-17.98

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band1 802.11 AC40, Low Channel									
4500	53.32	PK	196	1.7	H	-4.72	48.60	74	-25.4
4500	54.40	PK	254	1.5	V	-4.72	49.68	74	-24.32
5150	65.89	PK	108	1.6	H	-2.73	63.16	74	-10.84
5150	53.11	AV	108	1.6	H	-2.73	50.38	54	-3.62
5150	63.11	PK	196	1.7	V	-2.73	60.38	74	-13.62
5150	48.88	AV	196	1.7	V	-2.73	46.15	54	-7.85
10380	41.16	PK	220	1.4	H	8.19	49.35	68.2	-18.85
10380	41.60	PK	171	1.6	V	8.19	49.79	68.2	-18.41
Band1 802.11 AC40, High Channel									
5350	56.63	PK	314	1.7	H	-2.33	54.30	74	-19.7
5350	43.07	AV	314	1.7	H	-2.33	40.74	54	-13.26
5350	57.02	PK	79	2.0	V	-2.33	54.69	74	-19.31
5350	43.25	AV	79	2.0	V	-2.33	40.92	54	-13.08
5460	54.51	PK	38	1.2	H	-2.26	52.25	74	-21.75
5460	54.44	PK	199	1.6	V	-2.26	52.18	74	-21.82
10460	40.61	PK	334	1.4	H	8.48	49.09	68.2	-19.11
10460	40.77	PK	82	2.2	V	8.48	49.25	68.2	-18.95
Band1 802.11 AC80									
4500	53.87	PK	315	1.5	H	-4.72	49.15	74	-24.85
4500	53.63	PK	52	1.3	V	-4.72	48.91	74	-25.09
5150	62.70	PK	119	1.4	H	-2.73	59.97	74	-14.03
5150	48.79	AV	119	1.4	H	-2.73	46.06	54	-7.94
5150	54.54	PK	85	1.2	V	-2.73	51.81	74	-22.19
5350	54.99	PK	56	2.1	H	-2.33	52.66	74	-21.34
5350	55.49	PK	223	1.7	V	-2.33	53.16	74	-20.84
5350	41.97	AV	223	1.7	V	-2.33	39.64	54	-14.36
5460	54.51	PK	134	1.5	H	-2.26	52.25	74	-21.75
5460	54.52	PK	344	1.5	V	-2.26	52.26	74	-21.74
10420	40.44	PK	77	2.1	H	8.31	48.75	68.2	-19.45
10420	41.27	PK	307	1.8	V	8.31	49.58	68.2	-18.62
Band1 802.11 AX20, Low Channel									
4500	54.36	PK	97	2.0	H	-4.72	49.64	74	-24.36
4500	53.94	PK	346	1.7	V	-4.72	49.22	74	-24.78
5150	63.41	PK	121	2.2	H	-2.73	60.68	74	-13.32
5150	49.88	AV	121	2.2	H	-2.73	47.15	54	-6.85
5150	57.32	PK	212	2.0	V	-2.73	54.59	74	-19.41
5150	44.60	AV	212	2.0	V	-2.73	41.87	54	-12.13
10360	41.13	PK	240	1.8	H	8.12	49.25	68.2	-18.95
10360	41.74	PK	336	1.4	V	8.12	49.86	68.2	-18.34

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band1 802.11 AX20, Middle Channel									
10400	40.52	PK	154	1.4	H	8.24	48.76	68.2	-19.44
10400	41.80	PK	343	1.5	V	8.24	50.04	68.2	-18.16
Band1 802.11 AX20, High Channel									
5350	56.18	PK	87	1.6	H	-2.33	53.85	74	-20.15
5350	40.66	AV	87	1.6	H	-2.33	38.33	54	-15.67
5350	56.97	PK	148	1.9	V	-2.33	54.64	74	-19.36
5350	42.00	AV	148	1.9	V	-2.33	39.67	54	-14.33
5460	56.95	PK	120	1.8	H	-2.26	54.69	74	-19.31
5460	47.31	AV	120	1.8	H	-2.26	45.05	54	-8.95
5460	54.80	PK	140	1.4	V	-2.26	52.54	74	-21.46
10480	40.88	PK	169	1.8	H	8.57	49.45	68.2	-18.75
10480	41.32	PK	110	1.2	V	8.57	49.89	68.2	-18.31
Band1 802.11 AX40, Low Channel									
4500	55.27	PK	208	1.4	H	-4.72	50.55	74	-23.45
4500	53.86	PK	245	2.1	V	-4.72	49.14	74	-24.86
5150	66.12	PK	230	1.6	H	-2.73	63.39	74	-10.61
5150	52.95	AV	230	1.6	H	-2.73	50.22	54	-3.78
5150	64.95	PK	40	1.8	V	-2.73	62.22	74	-11.78
5150	50.89	AV	40	1.8	V	-2.73	48.16	54	-5.84
10380	41.75	PK	28	1.8	H	8.19	49.94	68.2	-18.26
10380	41.97	PK	190	1.5	V	8.19	50.16	68.2	-18.04
Band1 802.11 AX40, High Channel									
5350	56.68	PK	236	1.5	H	-2.33	54.35	74	-19.65
5350	42.58	AV	236	1.5	H	-2.33	40.25	54	-13.75
5350	55.88	PK	46	2.1	V	-2.33	53.55	74	-20.45
5350	41.39	AV	46	2.1	V	-2.33	39.06	54	-14.94
5460	54.44	PK	195	1.4	H	-2.26	52.18	74	-21.82
5460	54.65	PK	300	1.4	V	-2.26	52.39	74	-21.61
10460	41.40	PK	157	2.0	H	8.48	49.88	68.2	-18.32
10460	41.60	PK	343	1.6	V	8.48	50.08	68.2	-18.12
Band1 802.11 AX80									
4500	54.60	PK	265	1.5	H	-4.72	49.88	74	-24.12
4500	53.84	PK	77	1.7	V	-4.72	49.12	74	-24.88
5150	65.89	PK	143	1.5	H	-2.73	63.16	74	-10.84
5150	52.86	AV	143	1.5	H	-2.73	50.13	54	-3.87
5150	53.95	PK	125	1.6	V	-2.73	51.22	74	-22.78
5350	56.28	PK	32	1.4	H	-2.33	53.95	74	-20.05
5350	41.92	AV	32	1.4	H	-2.33	39.59	54	-14.41
5350	56.02	PK	174	1.7	V	-2.33	53.69	74	-20.31
5460	54.92	PK	308	1.5	H	-2.26	52.66	74	-21.34
5460	54.80	PK	276	1.8	V	-2.26	52.54	74	-21.46
10420	40.55	PK	290	2.0	H	8.31	48.86	68.2	-19.34
10420	41.28	PK	58	1.6	V	8.31	49.59	68.2	-18.61

(5725-5850MHz)

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit	Margin
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)			(dBμV/m)	(dB)
BAND4 802.11A, Low Channel									
5725	84.52	PK	162	1.6	H	-1.96	82.56	122.2	-39.64
5725	69.90	PK	20	1.7	V	-1.96	67.94	122.2	-54.26
5720	74.02	PK	238	2.0	H	-1.96	72.06	110.8	-38.74
5720	62.02	PK	292	1.6	V	-1.96	60.06	110.8	-50.74
5700	63.61	PK	178	2.2	H	-2.02	61.59	105.2	-43.61
5700	55.19	PK	187	1.6	V	-2.02	53.17	105.2	-52.03
5650	57.40	PK	229	2.0	H	-1.95	55.45	68.2	-12.75
5650	55.39	PK	304	1.5	V	-1.95	53.44	68.2	-14.76
11490	43.00	PK	147	1.6	H	6.63	49.63	74	-24.37
11490	43.63	PK	323	2.2	V	6.63	50.26	74	-23.74
BAND4 802.11A, Middle Channel									
11570	43.04	PK	110	1.5	H	6.59	49.63	74	-24.37
11570	43.57	PK	326	1.9	V	6.59	50.16	74	-23.84
BAND4 802.11A, High Channel									
5850	72.27	PK	274	2.0	H	-1.81	70.46	122.2	-51.74
5850	61.67	PK	211	2.2	V	-1.81	59.86	122.2	-62.34
5855	70.74	PK	267	1.8	H	-1.82	68.92	110.8	-41.88
5855	58.49	PK	85	1.4	V	-1.82	56.67	110.8	-54.13
5875	59.52	PK	182	2.0	H	-1.84	57.68	105.2	-47.52
5875	56.18	PK	41	2.1	V	-1.84	54.34	105.2	-50.86
5925	56.25	PK	153	2.0	H	-1.83	54.42	68.2	-13.78
5925	56.14	PK	126	1.3	V	-1.83	54.31	68.2	-13.89
11650	43.67	PK	290	2.1	H	6.77	50.44	74	-23.56
11650	44.49	PK	292	1.7	V	6.77	51.26	74	-22.74
BAND4 802.11N20, Low Channel									
5725	79.85	PK	147	2.0	H	-1.96	77.89	122.2	-44.31
5725	66.71	PK	83	1.7	V	-1.96	64.75	122.2	-57.45
5720	71.44	PK	70	1.7	H	-1.96	69.48	110.8	-41.32
5720	58.60	PK	349	1.8	V	-1.96	56.64	110.8	-54.16
5700	60.48	PK	335	1.6	H	-2.02	58.46	105.2	-46.74
5700	52.10	PK	261	1.6	V	-2.02	50.08	105.2	-55.12
5650	56.31	PK	292	2.1	H	-1.95	54.36	68.2	-13.84
5650	54.89	PK	68	1.8	V	-1.95	52.94	68.2	-15.26
11490	43.31	PK	218	1.8	H	6.63	49.94	74	-24.06
11490	43.86	PK	168	2.0	V	6.63	50.49	74	-23.51
802.11N20 BAND4, Middle Channel									
11570	42.90	PK	350	1.0	H	6.59	49.49	74	-24.51
11570	43.77	PK	158	1.4	V	6.59	50.36	74	-23.64

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
BAND4 802.11N20, High Channel									
5850	69.69	PK	182	1.6	H	-1.81	67.88	122.2	-54.32
5850	58.85	PK	64	1.4	V	-1.81	57.04	122.2	-65.16
5855	67.95	PK	1	2.2	H	-1.82	66.13	110.8	-44.67
5855	57.25	PK	57	2.1	V	-1.82	55.43	110.8	-55.37
5875	59.78	PK	221	1.4	H	-1.84	57.94	105.2	-47.26
5875	55.67	PK	53	1.6	V	-1.84	53.83	105.2	-51.37
5925	55.43	PK	308	2.1	H	-1.83	53.60	68.2	-14.6
5925	55.46	PK	111	2.0	V	-1.83	53.63	68.2	-14.57
11650	43.39	PK	255	1.6	H	6.77	50.16	74	-23.84
11650	43.76	PK	248	1.4	V	6.77	50.53	74	-23.47
BAND4 802.11N40, Low Channel									
5725	91.42	PK	133	1.7	H	-1.96	89.46	122.2	-32.74
5725	77.36	PK	118	1.5	V	-1.96	75.40	122.2	-46.8
5720	85.35	PK	344	1.8	H	-1.96	83.39	110.8	-27.41
5720	71.02	PK	145	1.8	V	-1.96	69.06	110.8	-41.74
5700	75.68	PK	193	1.8	H	-2.02	73.66	105.2	-31.54
5700	62.91	PK	336	1.7	V	-2.02	60.89	105.2	-44.31
5650	61.95	PK	261	1.6	H	-1.95	60.00	68.2	-8.2
5650	55.12	PK	310	2.0	V	-1.95	53.17	68.2	-15.03
11510	44.00	PK	124	1.9	H	6.59	50.59	74	-23.41
11510	43.96	PK	107	1.2	V	6.59	50.55	74	-23.45
BAND4 802.11N40, High Channel									
5850	80.75	PK	302	1.6	H	-1.81	78.94	122.2	-43.26
5850	68.37	PK	250	2.0	V	-1.81	66.56	122.2	-55.64
5855	78.94	PK	144	1.7	H	-1.82	77.12	110.8	-33.68
5855	66.54	PK	209	2.1	V	-1.82	64.72	110.8	-46.08
5875	67.63	PK	282	2.0	H	-1.84	65.79	105.2	-39.41
5875	57.98	PK	151	1.7	V	-1.84	56.14	105.2	-49.06
5925	55.47	PK	180	1.5	H	-1.83	53.64	68.2	-14.56
5925	56.76	PK	170	2.0	V	-1.83	54.93	68.2	-13.27
11590	44.27	PK	344	1.3	H	6.57	50.84	74	-23.16
11590	44.98	PK	44	1.5	V	6.57	51.55	74	-22.45

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
BAND4 802.11AC20, Low Channel									
5725	77.65	PK	16	1.5	H	-1.96	75.69	122.2	-46.51
5725	64.84	PK	134	1.8	V	-1.96	62.88	122.2	-59.32
5720	69.58	PK	216	1.6	H	-1.96	67.62	110.8	-43.18
5720	55.92	PK	147	1.7	V	-1.96	53.96	110.8	-56.84
5700	61.04	PK	268	1.2	H	-2.02	59.02	105.2	-46.18
5700	50.75	PK	196	2.1	V	-2.02	48.73	105.2	-56.47
5650	55.59	PK	12	1.5	H	-1.95	53.64	68.2	-14.56
5650	54.31	PK	211	1.8	V	-1.95	52.36	68.2	-15.84
11490	43.59	PK	177	1.5	H	6.63	50.22	74	-23.78
11490	46.00	PK	56	1.4	V	6.63	52.63	74	-21.37
BAND4 802.11 AC20, Middle Channel									
11570	43.23	PK	255	1.8	H	6.59	49.82	74	-24.18
11570	43.87	PK	95	1.7	V	6.59	50.46	74	-23.54
BAND4 802.11 AC20, High Channel									
5850	67.64	PK	68	2.0	H	-1.81	65.83	122.2	-56.37
5850	57.54	PK	264	1.9	V	-1.81	55.73	122.2	-66.47
5855	66.25	PK	215	2.1	H	-1.82	64.43	110.8	-46.37
5855	55.84	PK	230	2.1	V	-1.82	54.02	110.8	-56.78
5875	58.46	PK	113	1.5	H	-1.84	56.62	105.2	-48.58
5875	54.41	PK	230	1.5	V	-1.84	52.57	105.2	-52.63
5925	55.19	PK	198	1.4	H	-1.83	53.36	68.2	-14.84
5925	55.47	PK	230	1.4	V	-1.83	53.64	68.2	-14.56
11650	43.66	PK	344	1.9	H	6.77	50.43	74	-23.57
11650	44.02	PK	343	1.5	V	6.77	50.79	74	-23.21
BAND4 802.11 AC40, Low Channel									
5725	90.59	PK	212	2.0	H	-1.96	88.63	122.2	-33.57
5725	76.51	PK	87	1.5	V	-1.96	74.55	122.2	-47.65
5720	84.02	PK	259	1.8	H	-1.96	82.06	110.8	-28.74
5720	70.07	PK	200	2.0	V	-1.96	68.11	110.8	-42.69
5700	74.38	PK	207	1.9	H	-2.02	72.36	105.2	-32.84
5700	61.75	PK	5	1.5	V	-2.02	59.73	105.2	-45.47
5650	60.48	PK	272	1.8	H	-1.95	58.53	68.2	-9.67
5650	55.89	PK	200	1.5	V	-1.95	53.94	68.2	-14.26
11510	43.67	PK	328	1.9	H	6.59	50.26	74	-23.74
11510	44.16	PK	267	1.6	V	6.59	50.75	74	-23.25

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
BAND4 802.11 AC40, High Channel									
5850	79.45	PK	53	1.8	H	-1.81	77.64	122.2	-44.56
5850	67.07	PK	148	2.2	V	-1.81	65.26	122.2	-56.94
5855	78.10	PK	68	2.2	H	-1.82	76.28	110.8	-34.52
5855	65.78	PK	81	1.5	V	-1.82	63.96	110.8	-46.84
5875	66.76	PK	219	1.6	H	-1.84	64.92	105.2	-40.28
5875	56.78	PK	171	1.7	V	-1.84	54.94	105.2	-50.26
5925	54.69	PK	268	1.9	H	-1.83	52.86	68.2	-15.34
5925	55.76	PK	135	1.5	V	-1.83	53.93	68.2	-14.27
11590	43.38	PK	329	2.1	H	6.57	49.95	74	-24.05
11590	43.95	PK	313	1.4	V	6.57	50.52	74	-23.48
BAND4 802.11AC80									
5725	81.90	PK	276	1.5	H	-1.96	79.94	122.2	-42.26
5725	69.59	PK	40	1.9	V	-1.96	67.63	122.2	-54.57
5720	84.30	PK	273	2.0	H	-1.96	82.34	110.8	-28.46
5720	73.35	PK	153	1.4	V	-1.96	71.39	110.8	-39.41
5700	76.93	PK	207	2.2	H	-2.02	74.91	105.2	-30.29
5700	64.38	PK	270	1.4	V	-2.02	62.36	105.2	-42.84
5650	63.57	PK	220	1.7	H	-1.95	61.62	68.2	-6.58
5650	55.19	PK	230	2.2	V	-1.95	53.24	68.2	-14.96
5850	76.45	PK	221	1.6	H	-1.81	74.64	122.2	-47.56
5850	64.34	PK	32	2.1	V	-1.81	62.53	122.2	-59.67
5855	74.77	PK	298	2.0	H	-1.82	72.95	110.8	-37.85
5855	64.11	PK	172	1.9	V	-1.82	62.29	110.8	-48.51
5875	68.80	PK	14	1.9	H	-1.84	66.96	105.2	-38.24
5875	59.54	PK	109	2.2	V	-1.84	57.70	105.2	-47.5
5925	55.18	PK	319	1.5	V	-1.83	53.35	68.2	-14.85
5925	62.09	PK	20	1.5	H	-1.83	60.26	68.2	-7.94
11550	43.33	PK	20	2.1	H	6.61	49.94	74	-24.06
11550	43.82	PK	71	1.8	V	6.61	50.43	74	-23.57
Band4 802.11 AX20, Low Channel									
5725	77.91	PK	216	2.0	H	-1.96	75.95	122.2	-46.25
5725	64.13	PK	26	1.7	V	-1.96	62.17	122.2	-60.03
5720	68.58	PK	150	2.2	H	-1.96	66.62	110.8	-44.18
5720	55.50	PK	267	1.9	V	-1.96	53.54	110.8	-57.26
5700	60.88	PK	186	1.8	H	-2.02	58.86	105.2	-46.34
5700	50.09	PK	241	1.6	V	-2.02	48.07	105.2	-57.13
5650	55.09	PK	85	1.5	H	-1.95	53.14	68.2	-15.06
5650	54.67	PK	32	1.7	V	-1.95	52.72	68.2	-15.48
11490	42.99	PK	192	1.3	H	6.63	49.62	74	-24.38
11490	43.53	PK	152	1.6	V	6.63	50.16	74	-23.84

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band4 802.11 AX20, Middle Channel									
11570	43.74	PK	263	1.5	H	6.59	50.33	74	-23.67
11570	44.32	PK	143	1.9	V	6.59	50.91	74	-23.09
Band4 802.11 AX20, High Channel									
5850	66.37	PK	239	2.0	H	-1.81	64.56	122.2	-57.64
5850	57.17	PK	46	1.3	V	-1.81	55.36	122.2	-66.84
5855	65.05	PK	82	1.5	H	-1.82	63.23	110.8	-47.57
5855	55.13	PK	8	2.0	V	-1.82	53.31	110.8	-57.49
5875	57.43	PK	249	1.8	H	-1.84	55.59	105.2	-49.61
5875	53.86	PK	80	1.9	V	-1.84	52.02	105.2	-53.18
5925	54.72	PK	294	2.1	H	-1.83	52.89	68.2	-15.31
5925	55.07	PK	51	1.8	V	-1.83	53.24	68.2	-14.96
11650	43.05	PK	292	2.1	H	6.77	49.82	74	-24.18
11650	43.59	PK	324	1.5	V	6.77	50.36	74	-23.64
Band4 802.11 AX40, Low Channel									
5725	89.58	PK	327	1.6	H	-1.96	87.62	122.2	-34.58
5725	76.32	PK	106	1.5	V	-1.96	74.36	122.2	-47.84
5720	83.25	PK	96	1.7	H	-1.96	81.29	110.8	-29.51
5720	69.48	PK	195	2.1	V	-1.96	67.52	110.8	-43.28
5700	73.58	PK	217	1.5	H	-2.02	71.56	105.2	-33.64
5700	60.70	PK	158	1.5	V	-2.02	58.68	105.2	-46.52
5650	59.31	PK	326	1.8	H	-1.95	57.36	68.2	-10.84
5650	55.33	PK	321	2.0	V	-1.95	53.38	68.2	-14.82
11510	43.57	PK	82	1.6	H	6.59	50.16	74	-23.84
11510	44.23	PK	278	1.7	V	6.59	50.82	74	-23.18
Band4 802.11 AX40, High Channel									
5850	77.83	PK	296	1.8	H	-1.81	76.02	122.2	-46.18
5850	66.47	PK	8	1.6	V	-1.81	64.66	122.2	-57.54
5855	77.14	PK	168	1.2	H	-1.82	75.32	110.8	-35.48
5855	65.11	PK	296	2.1	V	-1.82	63.29	110.8	-47.51
5875	64.76	PK	6	1.5	H	-1.84	62.92	105.2	-42.28
5875	55.86	PK	223	1.6	V	-1.84	54.02	105.2	-51.18
5925	54.75	PK	264	1.5	H	-1.83	52.92	68.2	-15.28
5925	55.49	PK	334	1.3	V	-1.83	53.66	68.2	-14.54
11590	43.37	PK	263	1.7	H	6.57	49.94	74	-24.06
11590	43.86	PK	286	2.0	V	6.57	50.43	74	-23.57

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBuV)	PK/QP/AV		Height (m)	Polar (H/V)				
Band4 802.11 AX80									
5725	80.65	PK	92	2.0	H	-1.96	78.69	122.2	-43.51
5725	67.88	PK	336	1.4	V	-1.96	65.92	122.2	-56.28
5720	83.22	PK	31	1.7	H	-1.96	81.26	110.8	-29.54
5720	73.09	PK	79	1.5	V	-1.96	71.13	110.8	-39.67
5700	75.94	PK	162	1.6	H	-2.02	73.92	105.2	-31.28
5700	63.71	PK	29	1.9	V	-2.02	61.69	105.2	-43.51
5650	62.31	PK	162	1.5	H	-1.95	60.36	68.2	-7.84
5650	54.48	PK	321	1.7	V	-1.95	52.53	68.2	-15.67
5850	75.95	PK	35	1.9	H	-1.81	74.14	122.2	-48.06
5850	63.73	PK	312	2.1	V	-1.81	61.92	122.2	-60.28
5855	74.10	PK	205	2.1	H	-1.82	72.28	110.8	-38.52
5855	63.44	PK	74	1.7	V	-1.82	61.62	110.8	-49.18
5875	67.47	PK	48	1.4	H	-1.84	65.63	105.2	-39.57
5875	58.91	PK	349	1.9	V	-1.84	57.07	105.2	-48.13
5925	54.76	PK	127	1.8	V	-1.83	52.93	68.2	-15.27
5925	61.08	PK	79	2.0	H	-1.83	59.25	68.2	-8.95
11550	43.23	PK	223	1.7	H	6.61	49.84	74	-24.16
11550	44.21	PK	249	1.5	V	6.61	50.82	74	-23.18

Note 1:

Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

Corrected Amplitude = Corrected Factor + Reading

Margin = Corrected Amplitude – Limit

The other spurious emission which is in the noise floor level was not recorded.

The test result of peak was 20dB below to the limit of peak, which can be compliant to the average limit, so just peak value was recorded.

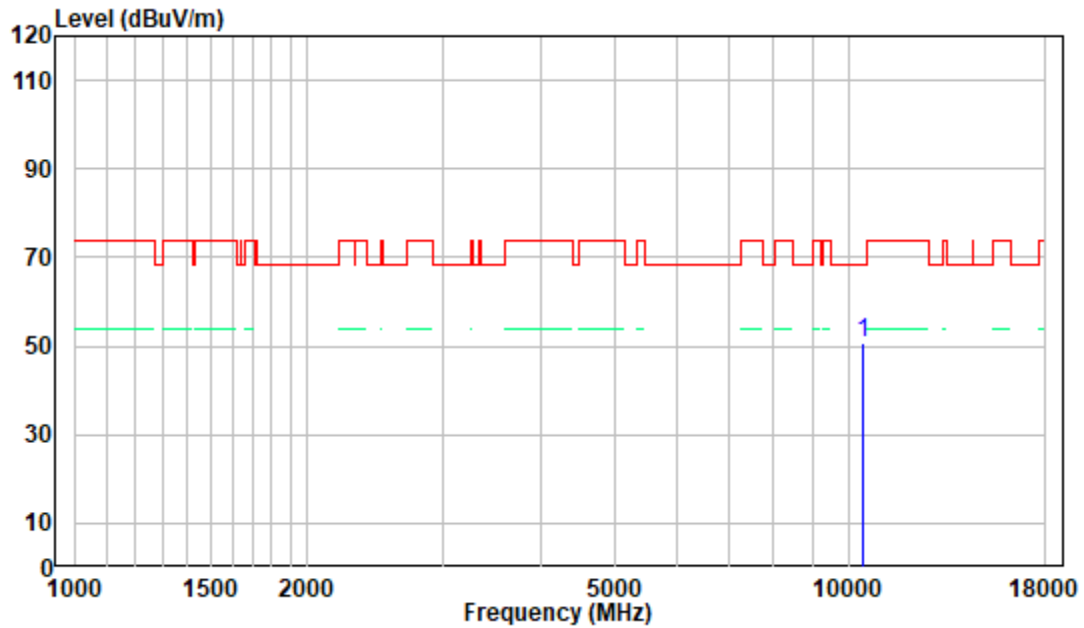
Note 2:

Worst case Tones of 242 for 802.11AX20, Worst case Tones of 484 for 802.11AX40 and Worst case Tones of 996 for 802.11AX80.

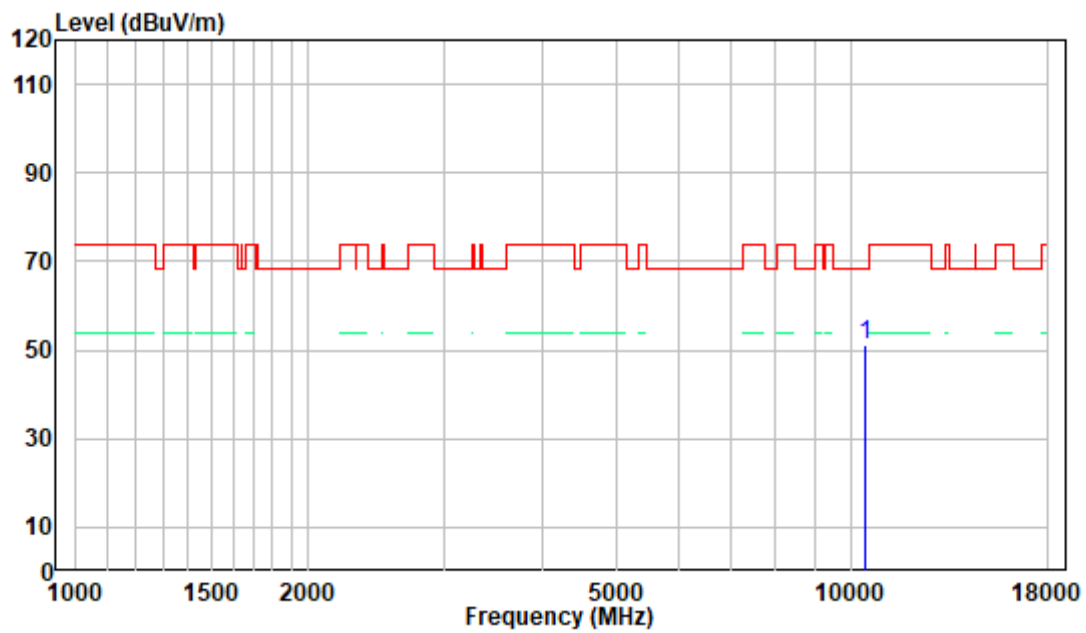
1-18 GHz:

Pre-scan plots:

802.11a, 5240MHz, Antenna 1
Horizontal



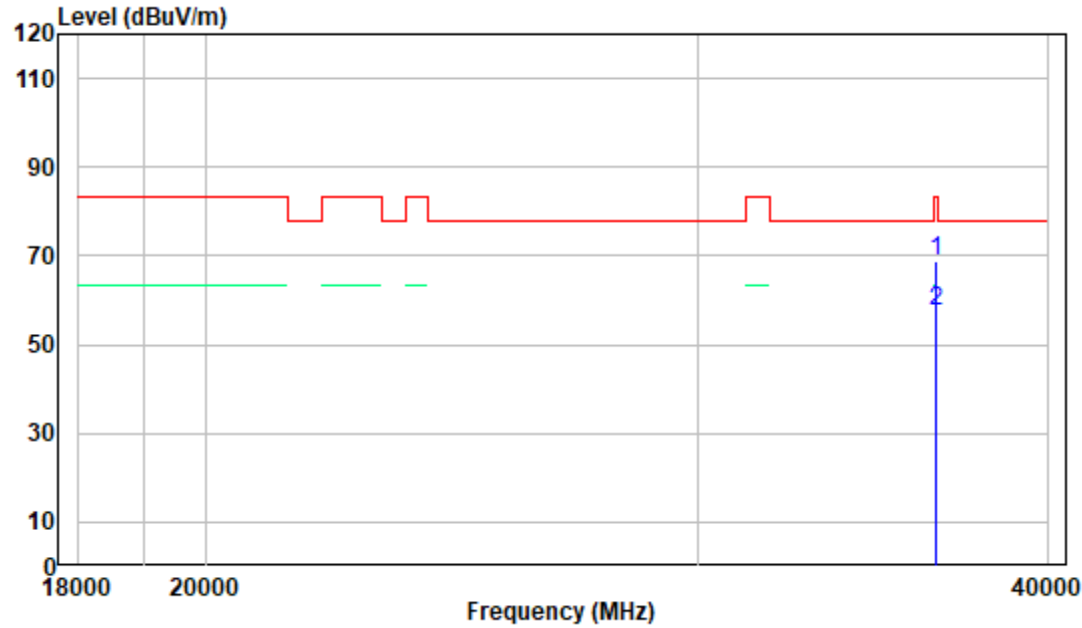
Vertical



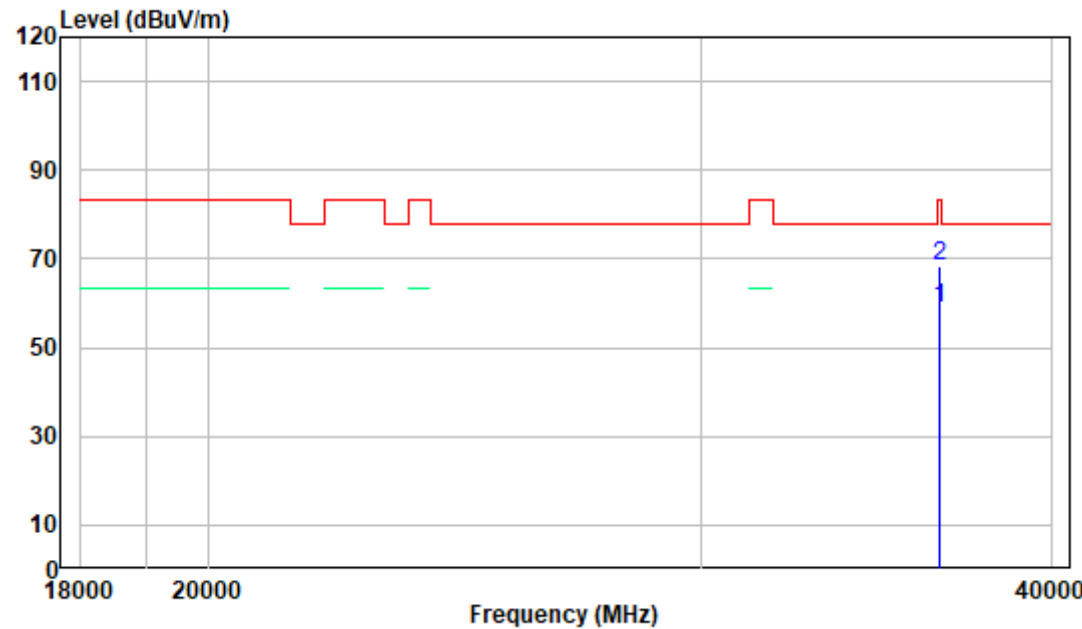
18-40 GHz:

Pre-scan plots:

802.11a, 5240MHz, Antenna 1
Horizontal



Vertical



FCC §15.407(a)(e) – 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

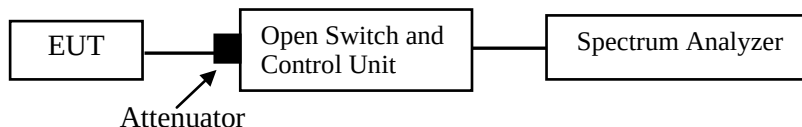
1. Emission Bandwidth (EBW)

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- 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:

- Set RBW = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.
- 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:	22~26 °C
Relative Humidity:	49~58 %
ATM Pressure:	101.0~101.2 kPa

The testing was performed by Cat Kang from 2022-05-24 to 2022-06-10.

EUT operation mode: Transmitting

Test Result: PASS; please refer to the Appendix.

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

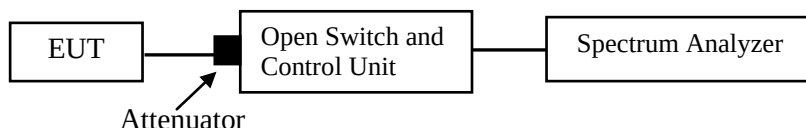
Applicable Standard

For 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:	22~26 °C
Relative Humidity:	49~58 %
ATM Pressure:	101.1~101.2 kPa

The testing was performed by Cat Kang from 2022-05-24 to 2022-06-09 and Glenn Jiang from 2022-07-01 to 2022-08-16.

EUT operation mode: Transmitting

Test Result: PASS

Please refer to the Appendix.

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

Applicable Standard

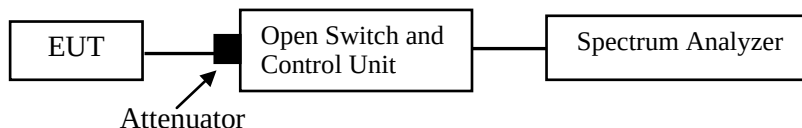
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting 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:

- Set $RBW \geq 1/T$, where T is defined in section II.B.1.a).
- Set $VBW \geq 3 RBW$.
- If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log(500 \text{ kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ kHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10 \log(1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- 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:	22~26 °C
Relative Humidity:	49~58 %
ATM Pressure:	101.0~101.2 kPa

The testing was performed by Cat Kang from 2022-05-24 to 2022-06-09 and Glenn Jiang from 2022-07-01 to 2022-08-16.

EUT operation mode: Transmitting

Test Result: PASS

Please refer to the Appendix.

APPENDIX

Appendix A1: Emission Bandwidth

Test Result

5150~5250 MHz:

Test Mode	Channel	Antenna	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	5180	Ant1	20.040	5170.000	5190.040	---	PASS
		Ant2	20.320	5169.880	5190.200	---	PASS
	5200	Ant1	20.160	5189.880	5210.040	---	PASS
		Ant2	19.960	5189.920	5209.880	---	PASS
	5240	Ant1	19.880	5230.080	5249.960	---	PASS
		Ant2	19.920	5229.960	5249.880	---	PASS
11N20MIMO	5180	Ant1	20.360	5169.800	5190.160	---	PASS
		Ant2	20.200	5169.840	5190.040	---	PASS
	5200	Ant1	20.440	5189.760	5210.200	---	PASS
		Ant2	20.320	5189.840	5210.160	---	PASS
	5240	Ant1	20.080	5229.960	5250.040	---	PASS
		Ant2	20.400	5229.720	5250.120	---	PASS
11N40MIMO	5190	Ant1	40.640	5169.680	5210.320	---	PASS
		Ant2	40.960	5169.360	5210.320	---	PASS
	5230	Ant1	40.800	5209.680	5250.480	---	PASS
		Ant2	40.960	5209.600	5250.560	---	PASS
11AC20MIMO	5180	Ant1	20.360	5169.840	5190.200	---	PASS
		Ant2	20.160	5169.880	5190.040	---	PASS
	5200	Ant1	20.240	5189.800	5210.040	---	PASS
		Ant2	20.200	5189.840	5210.040	---	PASS
	5240	Ant1	20.400	5229.840	5250.240	---	PASS
		Ant2	20.240	5229.920	5250.160	---	PASS

Test Mode	Channel	Antenna	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11AC40MIMO	5190	Ant1	40.560	5169.680	5210.240	---	PASS
		Ant2	40.160	5170.000	5210.160	---	PASS
	5230	Ant1	40.880	5209.600	5250.480	---	PASS
		Ant2	40.320	5209.680	5250.000	---	PASS
11AC80MIMO	5210	Ant1	80.320	5170.000	5250.320	---	PASS
		Ant2	80.160	5169.840	5250.000	---	PASS
11AX20MIMO	5180	Ant1	23.080	5168.240	5191.320	---	PASS
		Ant2	23.240	5168.440	5191.680	---	PASS
	5200	Ant1	26.200	5185.680	5211.880	---	PASS
		Ant2	23.000	5188.800	5211.800	---	PASS
	5240	Ant1	19.960	5230.000	5249.960	---	PASS
		Ant2	24.960	5226.360	5251.320	---	PASS
11AX40MIMO	5190	Ant1	39.920	5170.080	5210.000	---	PASS
		Ant2	39.840	5170.080	5209.920	---	PASS
	5230	Ant1	39.760	5210.160	5249.920	---	PASS
		Ant2	39.840	5210.080	5249.920	---	PASS
11AX80MIMO	5210	Ant1	80.800	5169.680	5250.480	---	PASS
		Ant2	80.000	5170.000	5250.000	---	PASS

5725~5850 MHz:

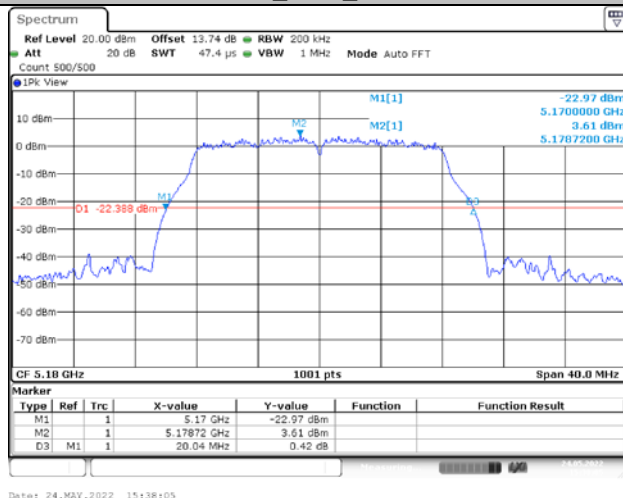
Test Mode	Channel	Antenna	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	5745	Ant1	20.120	5734.920	5755.040	---	PASS
		Ant2	19.960	5734.960	5754.920	---	PASS
	5785	Ant1	20.080	5774.920	5795.000	---	PASS
		Ant2	20.000	5775.040	5795.040	---	PASS
	5825	Ant1	20.080	5814.960	5835.040	---	PASS
		Ant2	20.200	5814.840	5835.040	---	PASS
11N20MIMO	5745	Ant1	20.480	5734.680	5755.160	---	PASS
		Ant2	20.400	5734.800	5755.200	---	PASS
	5785	Ant1	20.480	5774.760	5795.240	---	PASS
		Ant2	20.200	5774.920	5795.120	---	PASS
	5825	Ant1	20.360	5814.840	5835.200	---	PASS
		Ant2	20.520	5814.760	5835.280	---	PASS
11N40MIMO	5755	Ant1	40.640	5734.760	5775.400	---	PASS
		Ant2	40.880	5734.520	5775.400	---	PASS
	5795	Ant1	40.960	5774.600	5815.560	---	PASS
		Ant2	40.880	5774.520	5815.400	---	PASS
11AC20MIMO	5745	Ant1	20.360	5734.720	5755.080	---	PASS
		Ant2	20.440	5734.720	5755.160	---	PASS
	5785	Ant1	20.400	5774.720	5795.120	---	PASS
		Ant2	20.280	5774.840	5795.120	---	PASS
	5825	Ant1	20.320	5814.800	5835.120	---	PASS
		Ant2	20.240	5814.840	5835.080	---	PASS

Test Mode	Channel	Antenna	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11AC40MIMO	5755	Ant1	40.800	5734.600	5775.400	---	PASS
		Ant2	40.400	5734.840	5775.240	---	PASS
	5795	Ant1	40.800	5774.600	5815.400	---	PASS
		Ant2	40.160	5774.840	5815.000	---	PASS
11AC80MIMO	5775	Ant1	80.160	5735.000	5815.160	---	PASS
		Ant2	80.160	5735.000	5815.160	---	PASS
11AX20MIMO	5745	Ant1	22.560	5734.040	5756.600	---	PASS
		Ant2	22.800	5733.520	5756.320	---	PASS
	5785	Ant1	23.360	5773.480	5796.840	---	PASS
		Ant2	23.120	5773.440	5796.560	---	PASS
	5825	Ant1	23.520	5813.280	5836.800	---	PASS
		Ant2	24.760	5814.040	5838.800	---	PASS
11AX40MIMO	5755	Ant1	39.840	5735.160	5775.000	---	PASS
		Ant2	39.840	5735.160	5775.000	---	PASS
	5795	Ant1	39.840	5770.120	5809.960	---	PASS
		Ant2	39.840	5775.160	5815.000	---	PASS
11AX80MIMO	5775	Ant1	80.800	5734.680	5815.480	---	PASS
		Ant2	80.160	5735.000	5815.160	---	PASS

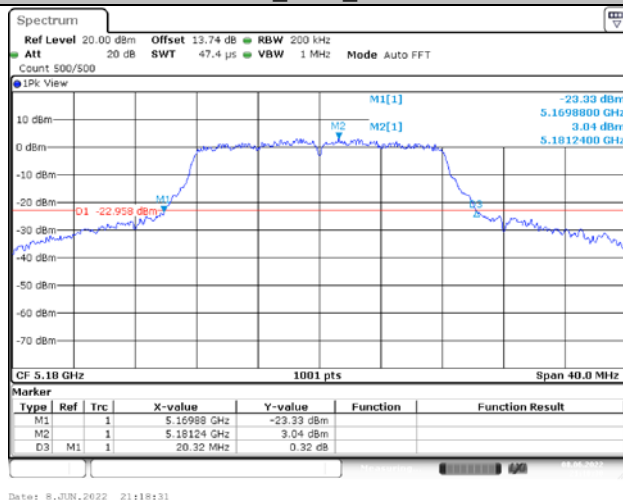
Note: The Maximum Tones and Full RU Index was tested and recorded for 802.11AX modes.

Test Graphs

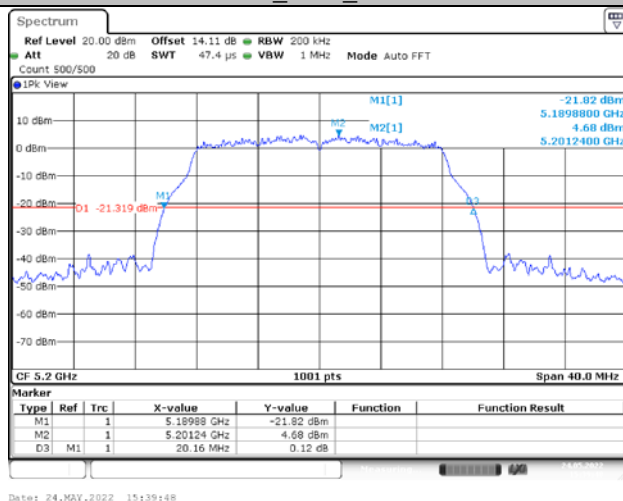
11A_Ant1_5180



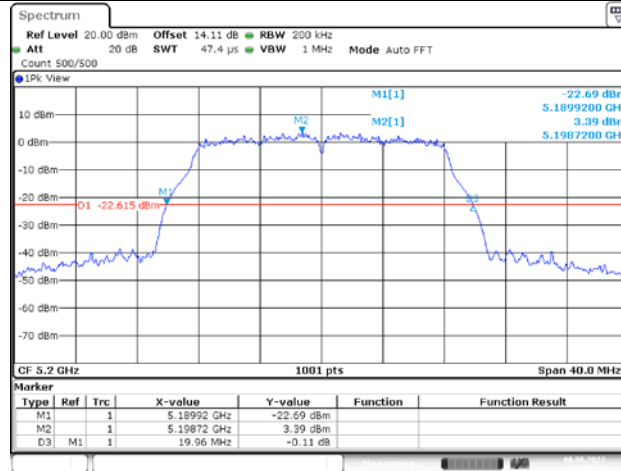
11A_Ant2_5180



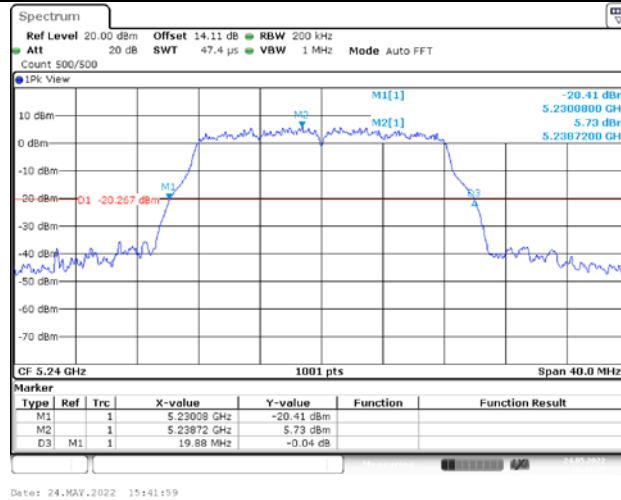
11A_Ant1_5200



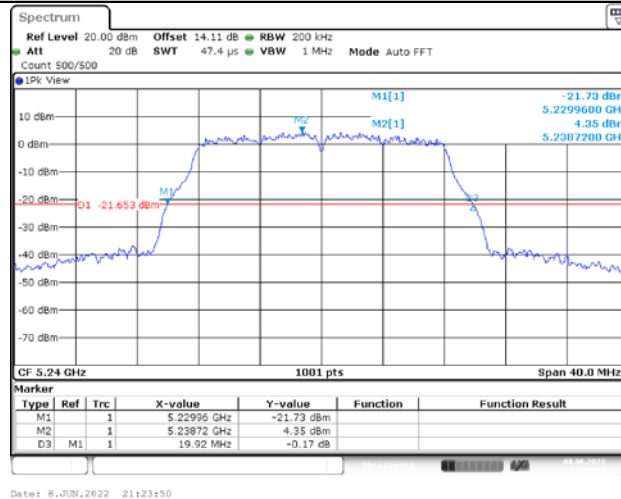
11A_Ant2_5200



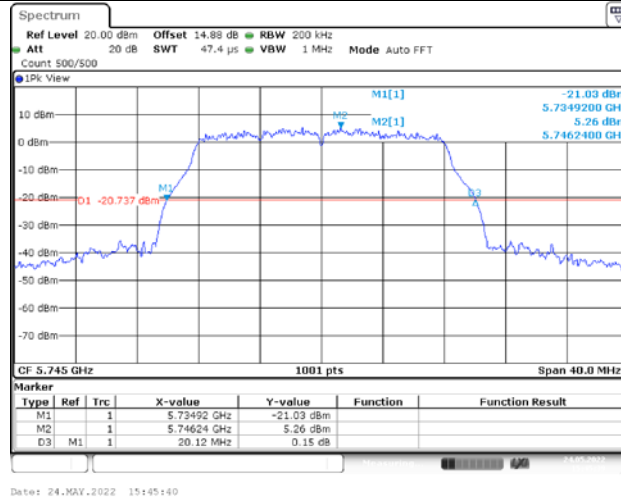
11A_Ant1_5240



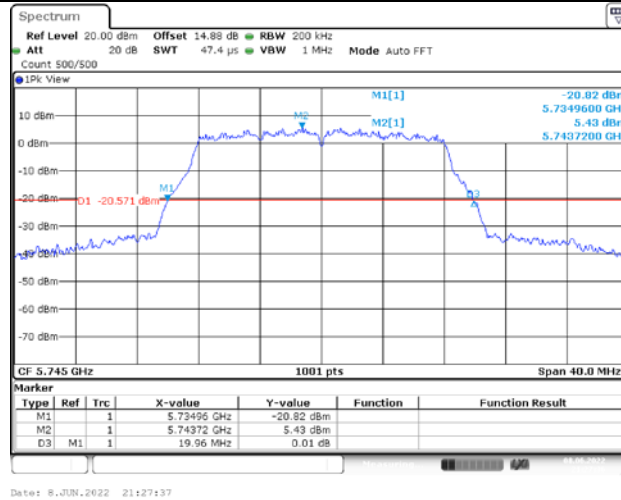
11A_Ant2_5240



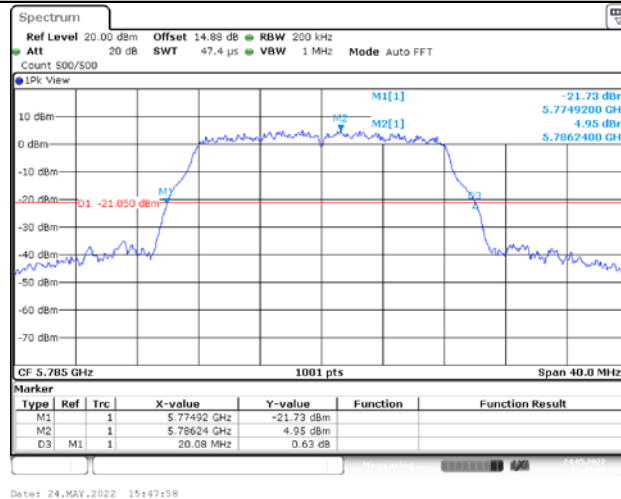
11A_Ant1_5745



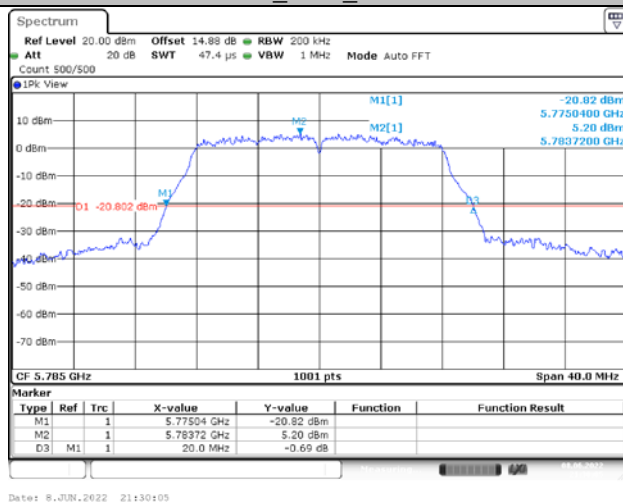
11A_Ant2_5745



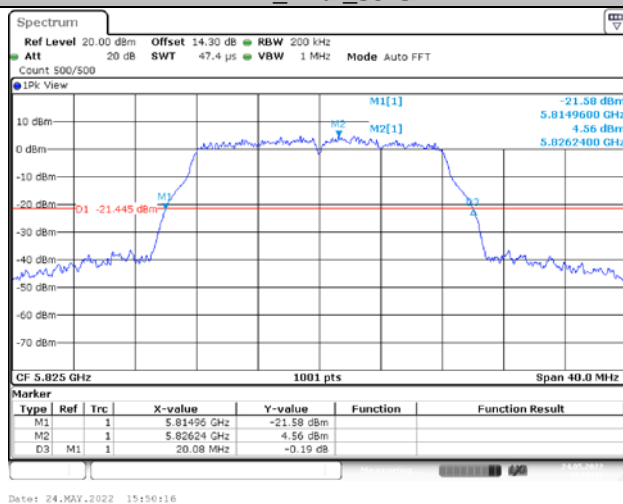
11A_Ant1_5785



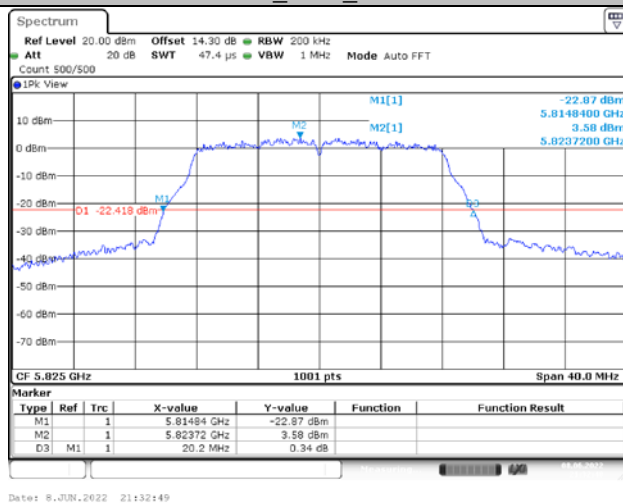
11A_Ant2_5785



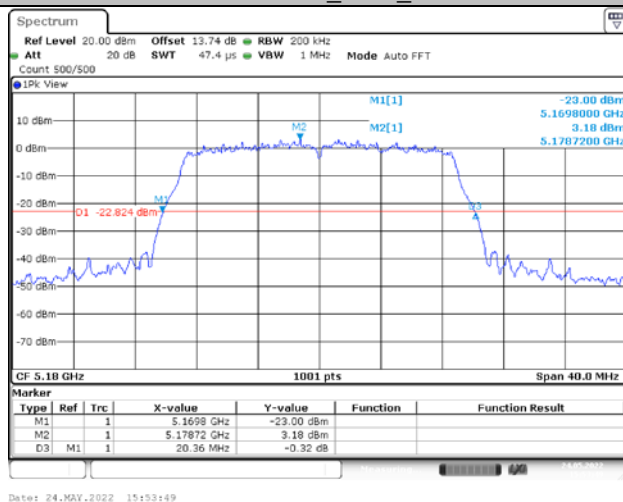
11A_Ant1_5825



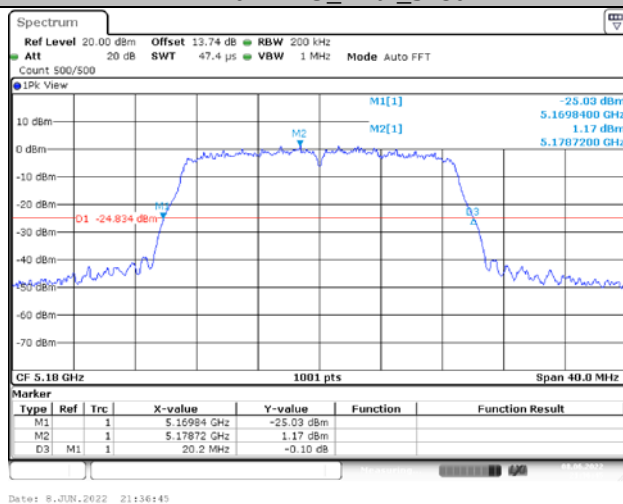
11A_Ant2_5825



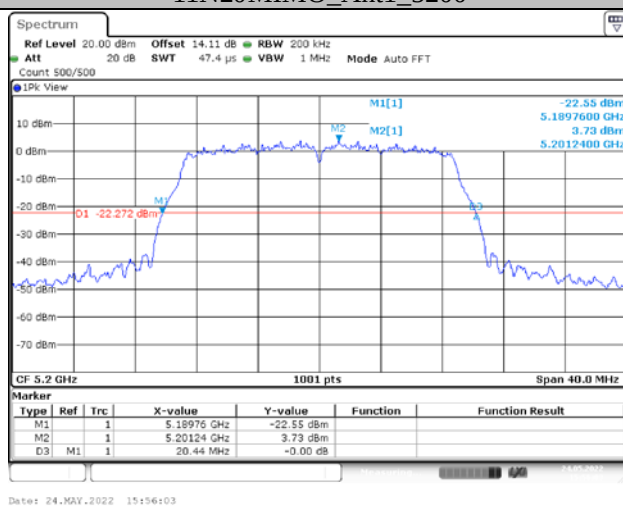
11N20MIMO_Ant1_5180



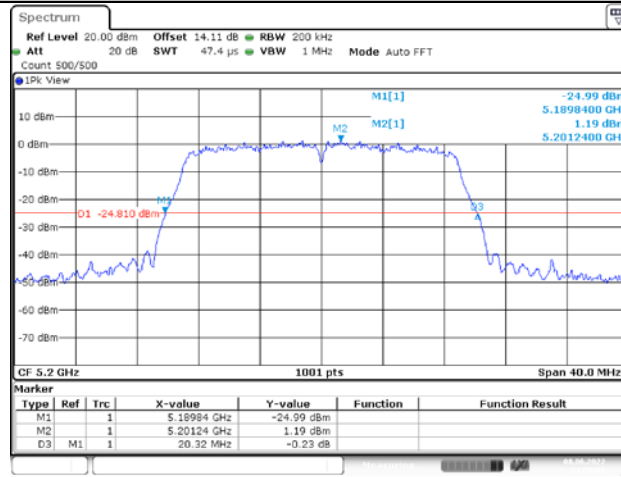
11N20MIMO_Ant2_5180



11N20MIMO_Ant1_5200

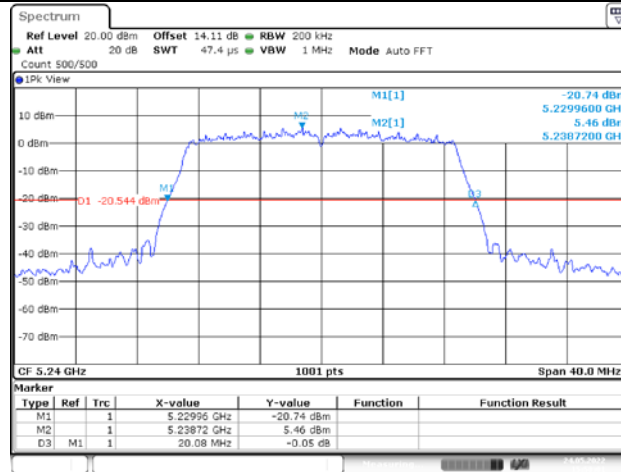


11N20MIMO_Ant2_5200



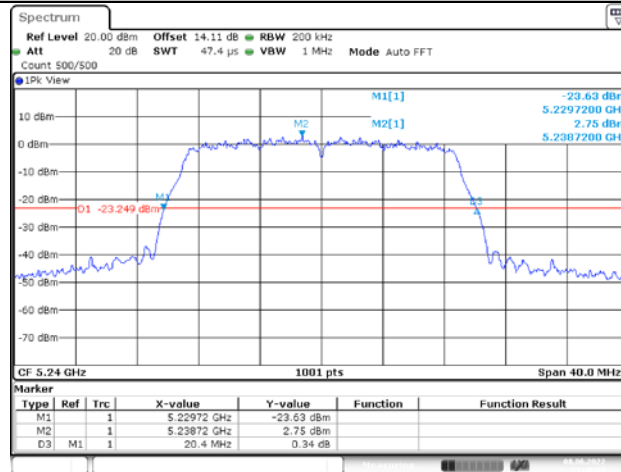
Date: 8 JUN 2022 21:38:52

11N20MIMO_Ant1_5240



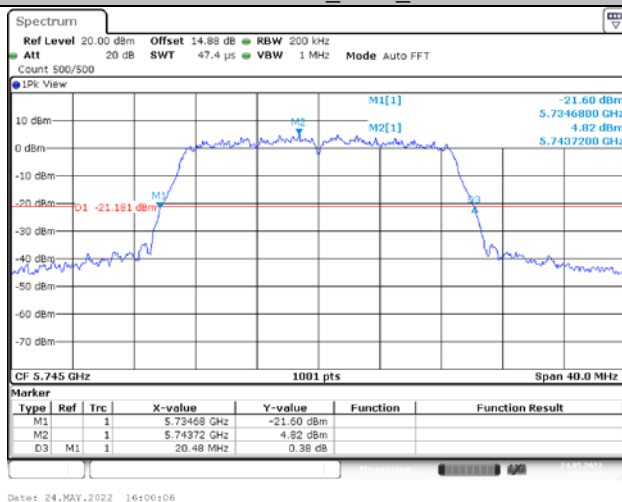
Date: 24 MAY 2022 15:38:02

11N20MIMO_Ant2_5240

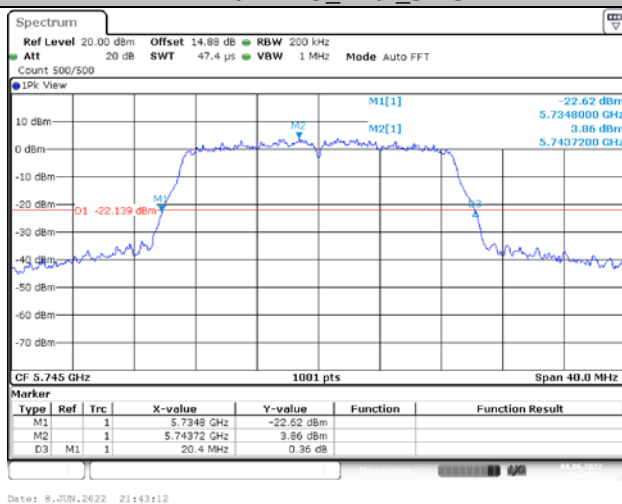


Date: 8 JUN 2022 21:41:00

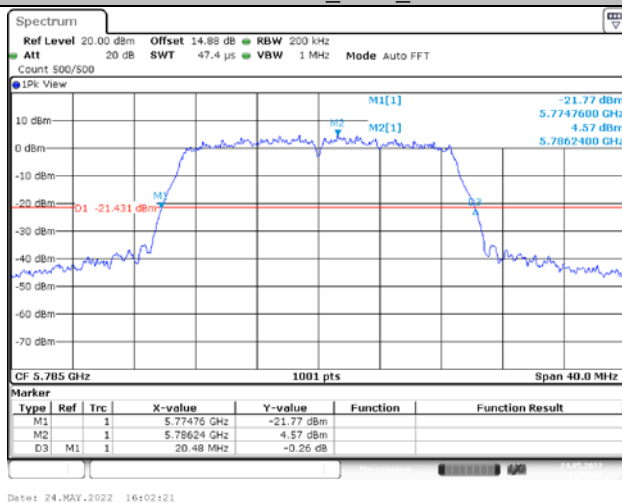
11N20MIMO_Ant1_5745



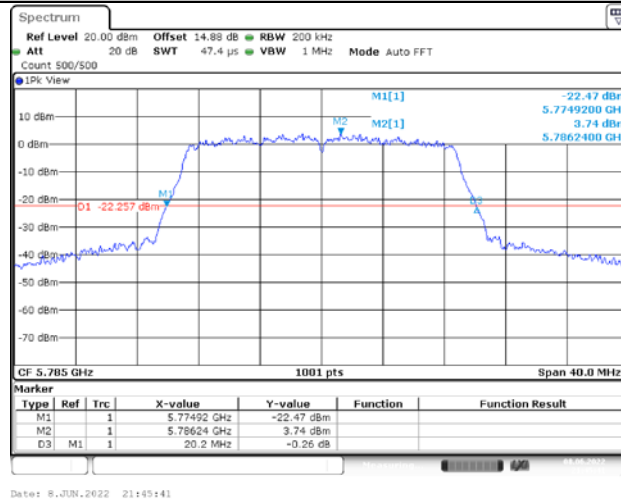
11N20MIMO_Ant2_5745



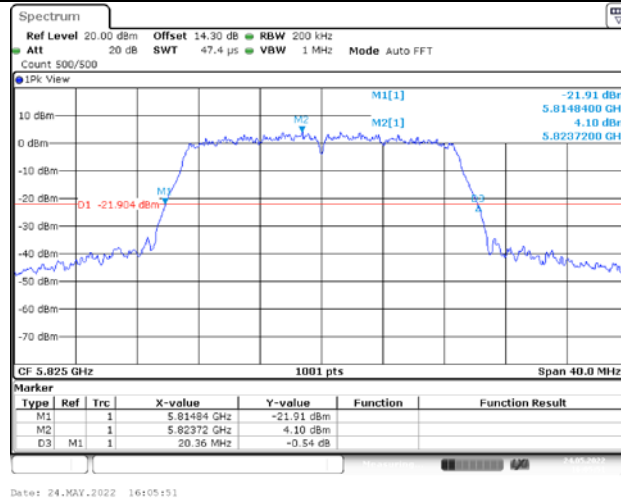
11N20MIMO_Ant1_5785



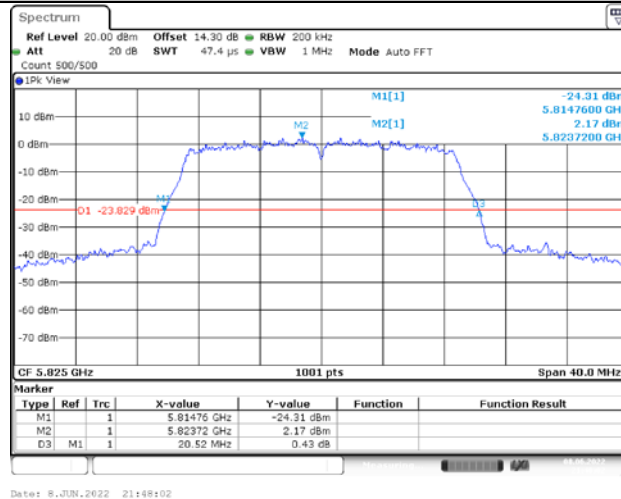
11N20MIMO_Ant2_5785



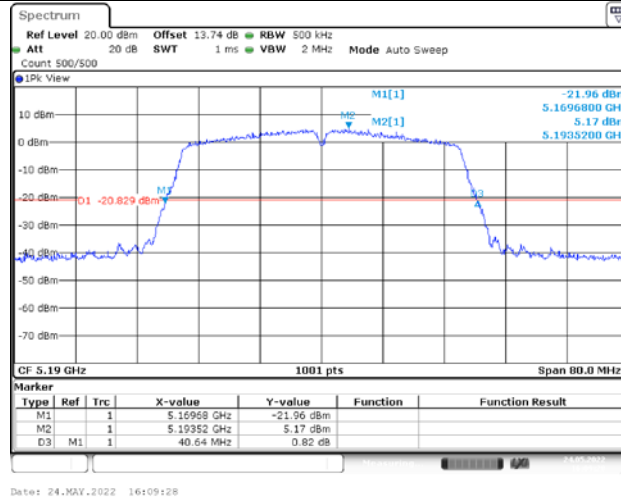
11N20MIMO_Ant1_5825



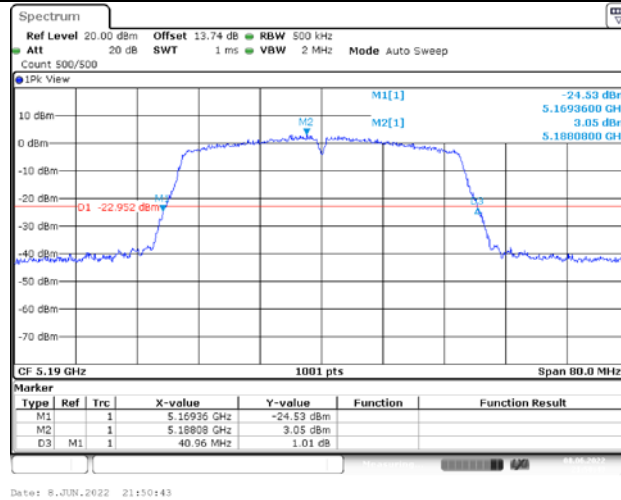
11N20MIMO_Ant2_5825



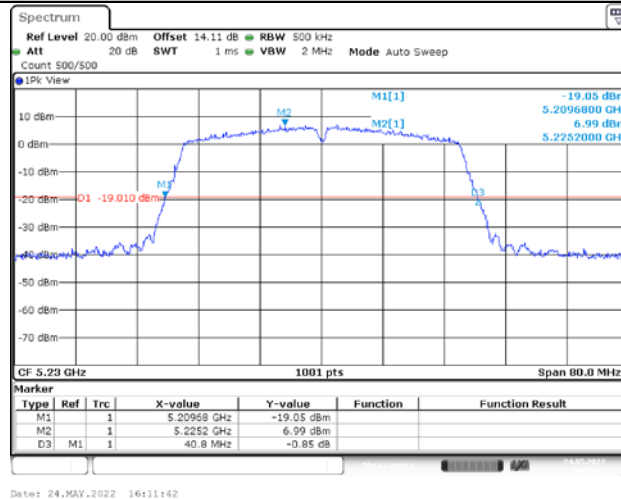
11N40MIMO_Ant1_5190



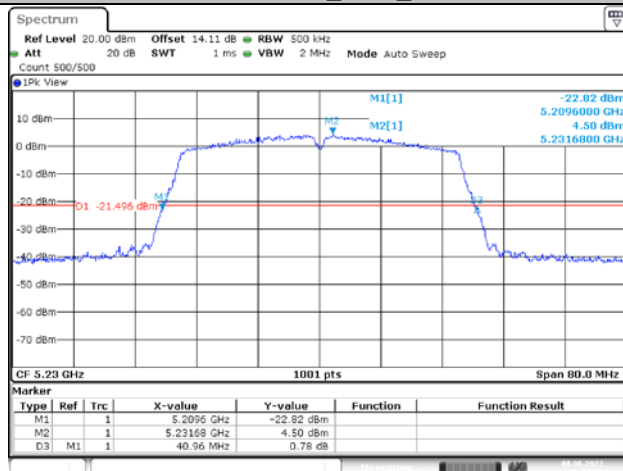
11N40MIMO_Ant2_5190



11N40MIMO_Ant1_5230

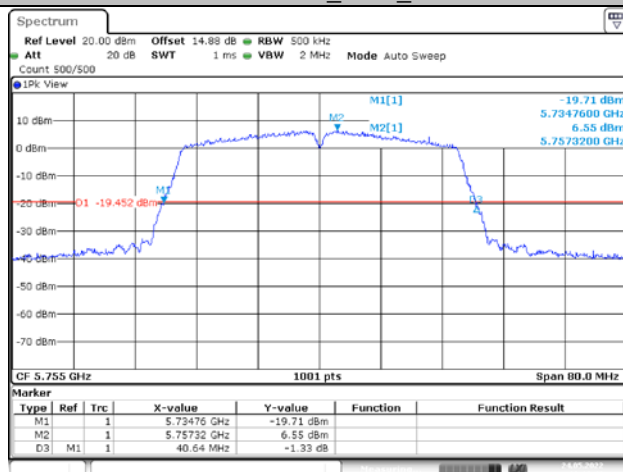


11N40MIMO_Ant2_5230



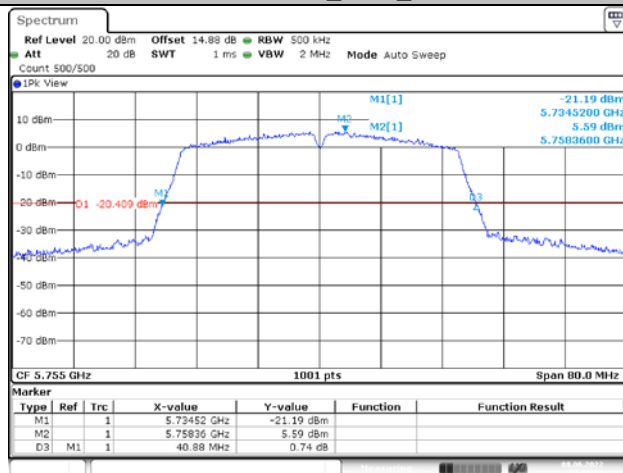
Date: 8.JUN.2022 21:52:46

11N40MIMO_Ant1_5755



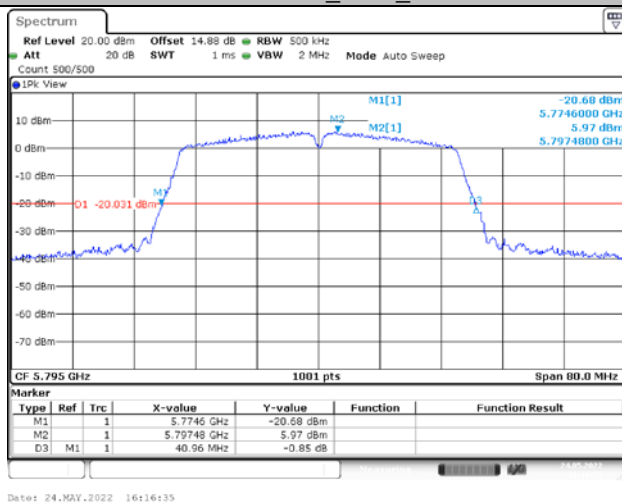
Date: 24.MAY.2022 16:13:49

11N40MIMO_Ant2_5755

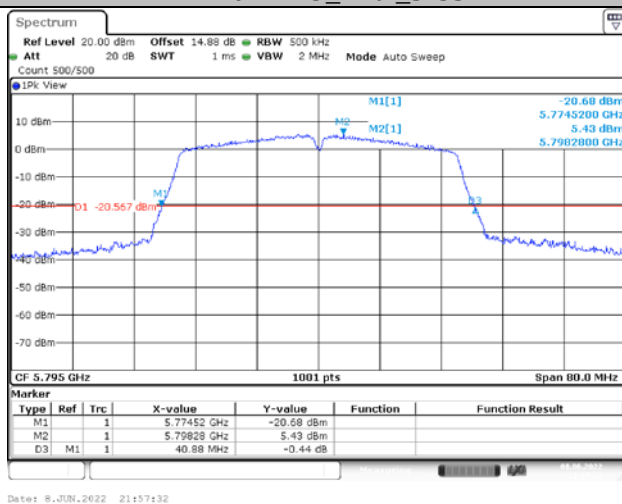


Date: 8.JUN.2022 21:55:13

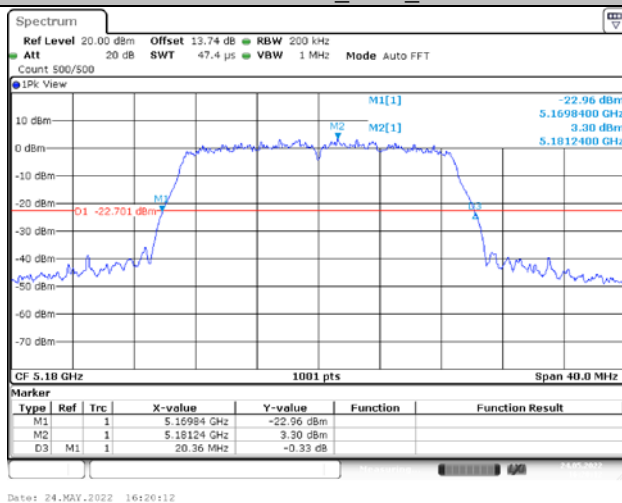
11N40MIMO_Ant1_5795



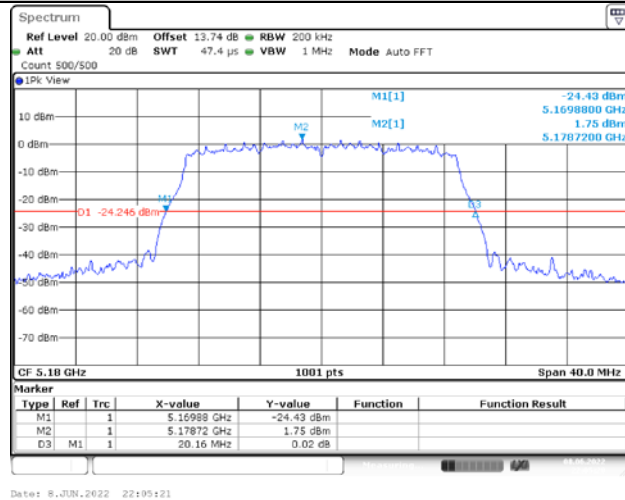
11N40MIMO_Ant2_5795



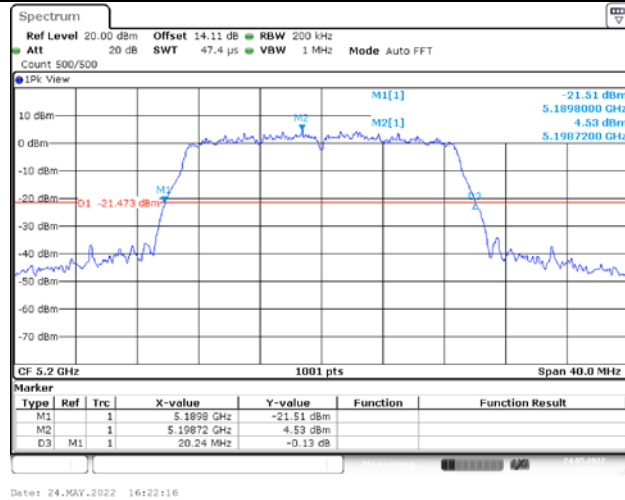
11AC20MIMO_Ant1_5180



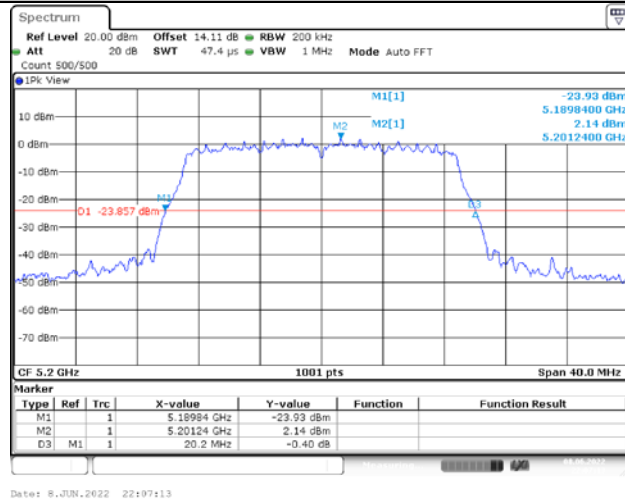
11AC20MIMO_Ant2_5180



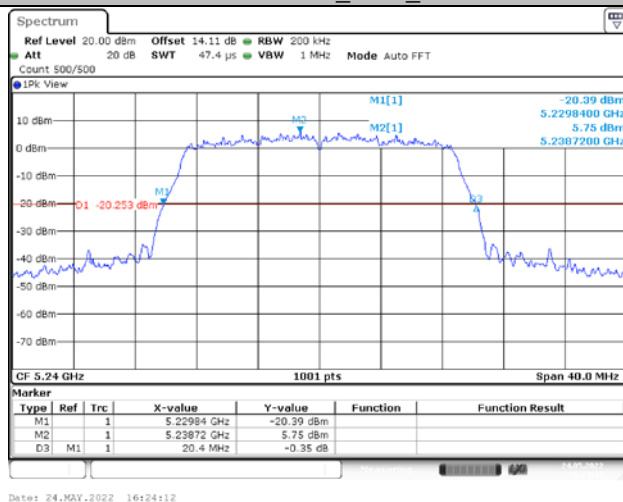
11AC20MIMO_Ant1_5200



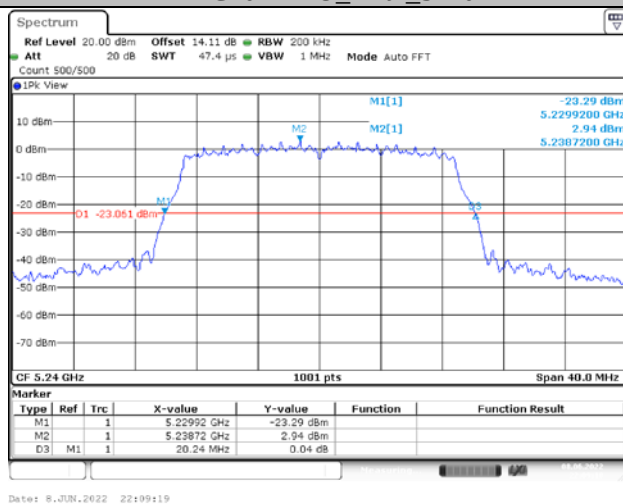
11AC20MIMO_Ant2_5200



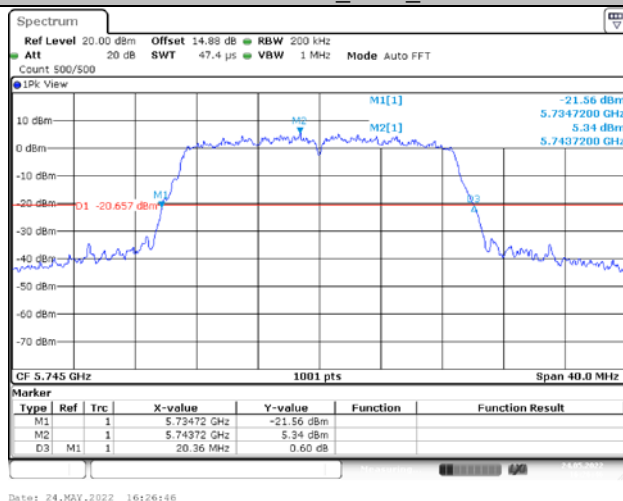
11AC20MIMO_Ant1_5240



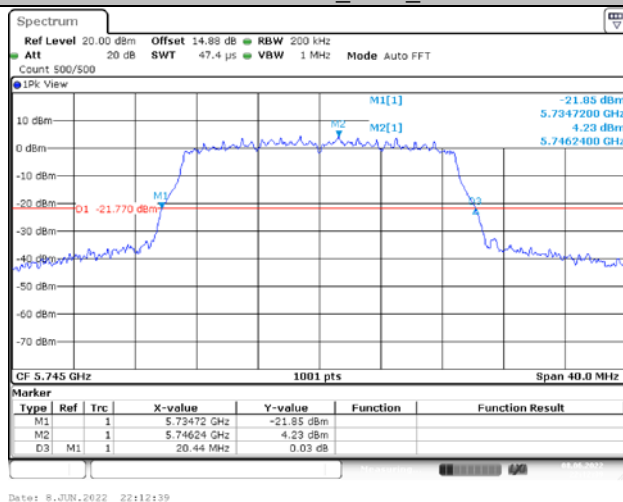
11AC20MIMO_Ant2_5240



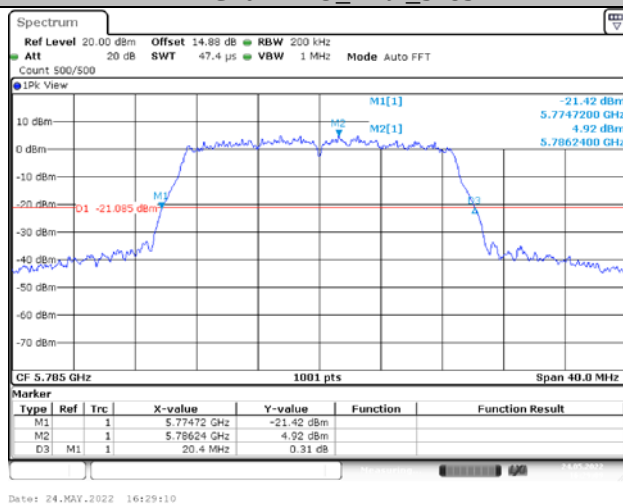
11AC20MIMO_Ant1_5745



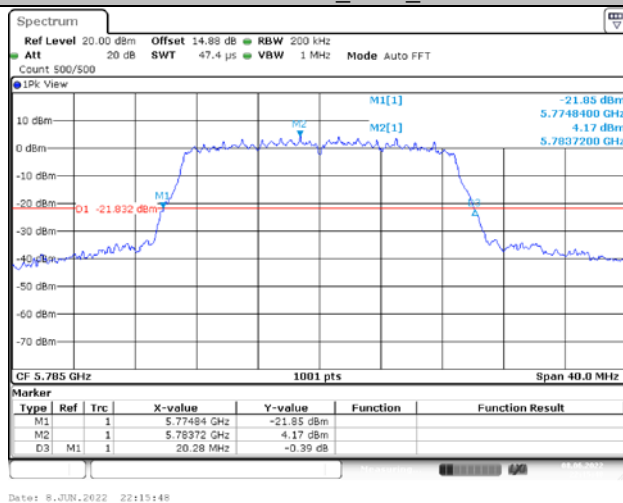
11AC20MIMO_Ant2_5745



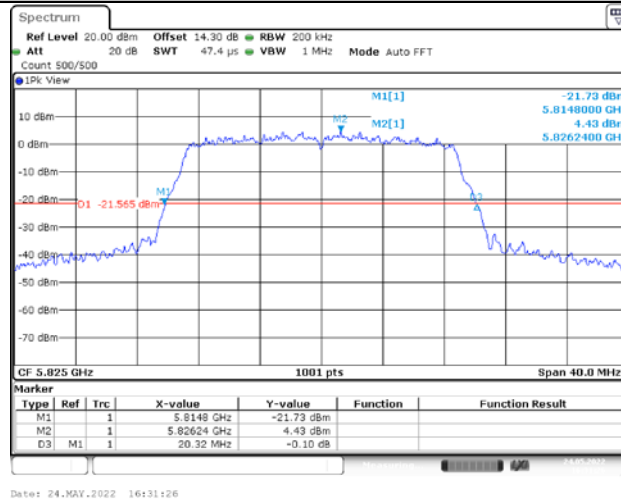
11AC20MIMO_Ant1_5785



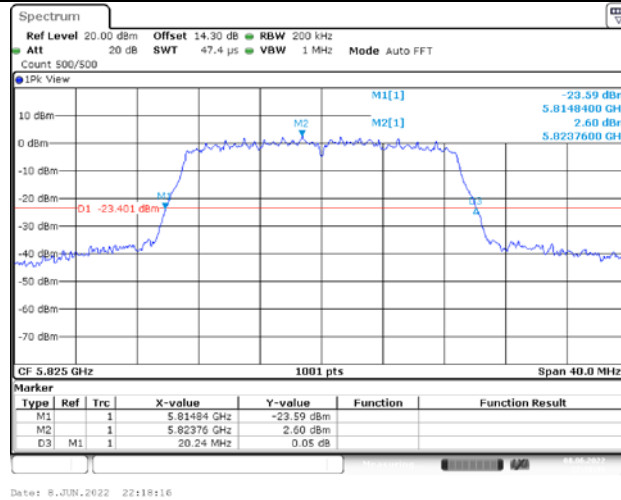
11AC20MIMO_Ant2_5785



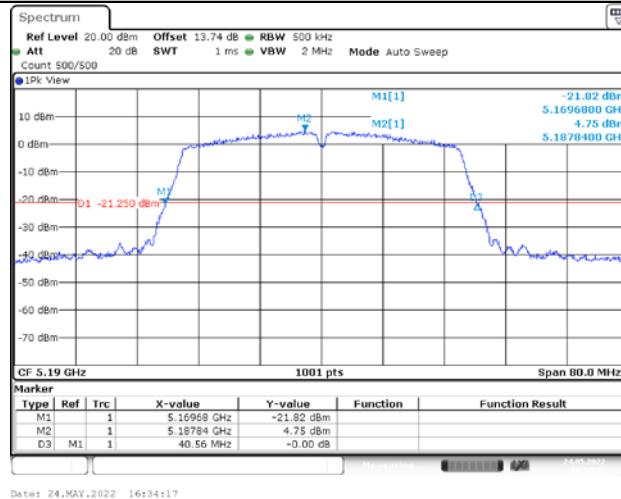
11AC20MIMO_Ant1_5825



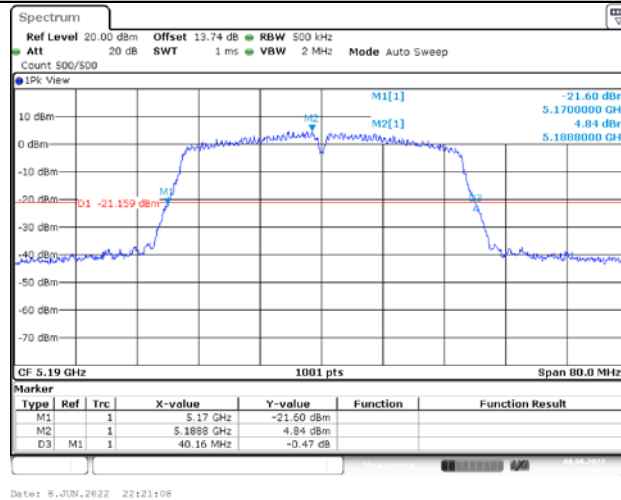
11AC20MIMO_Ant2_5825



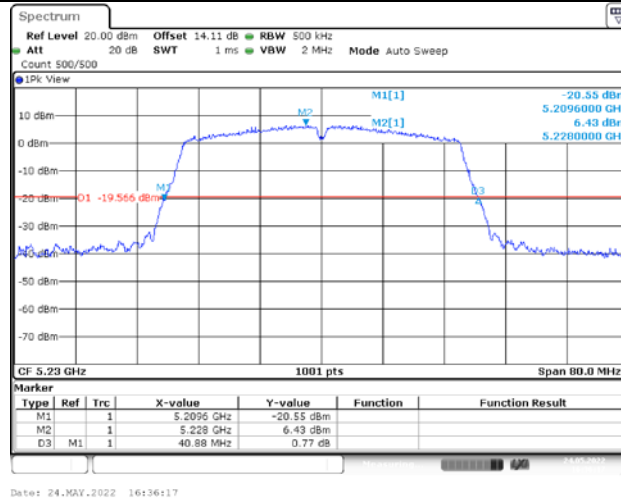
11AC40MIMO_Ant1_5190



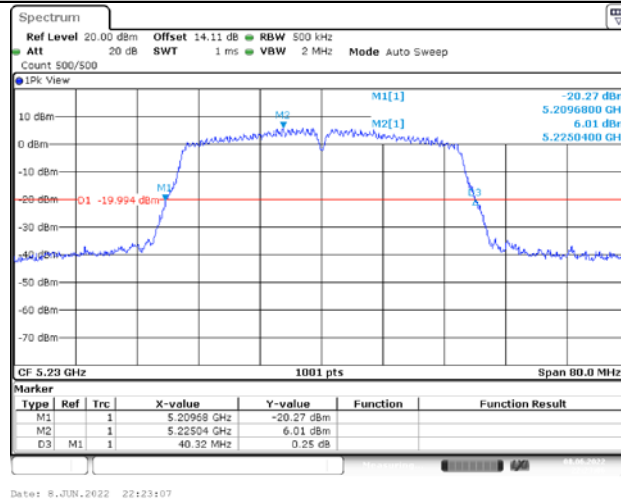
11AC40MIMO_Ant2_5190



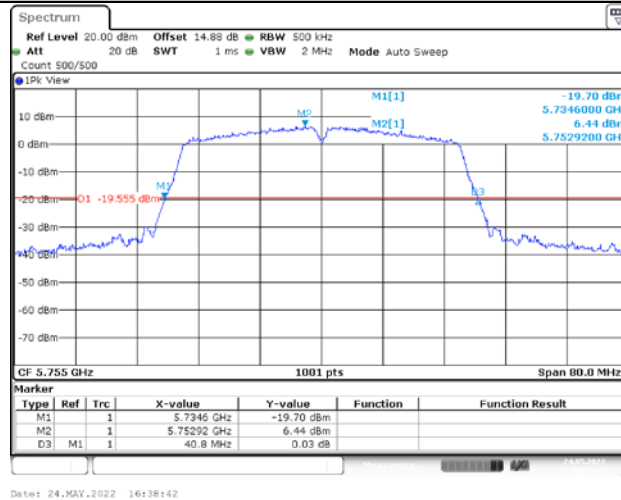
11AC40MIMO_Ant1_5230



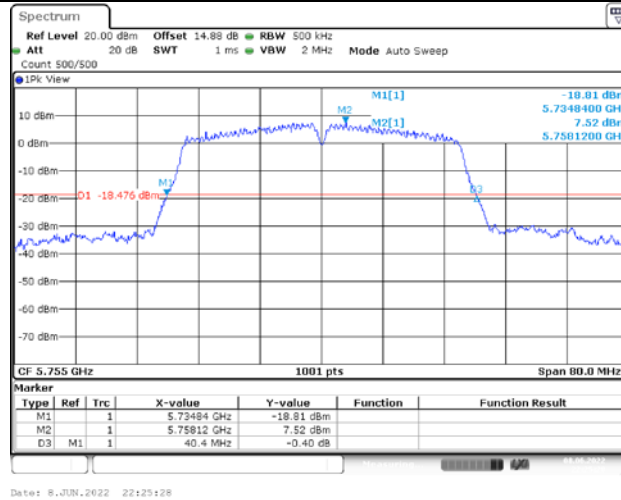
11AC40MIMO_Ant2_5230



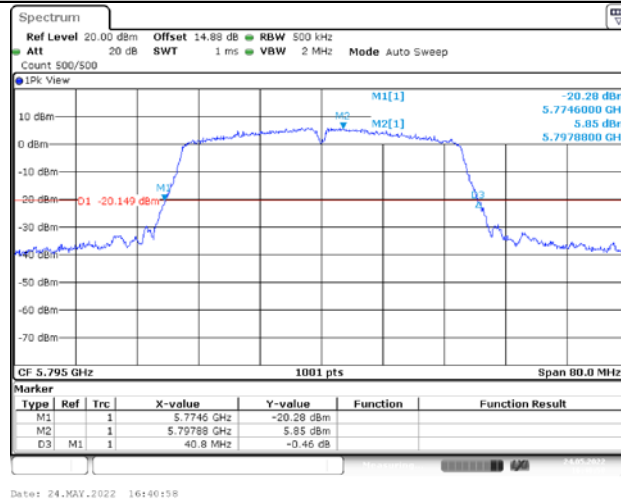
11AC40MIMO_Ant1_5755



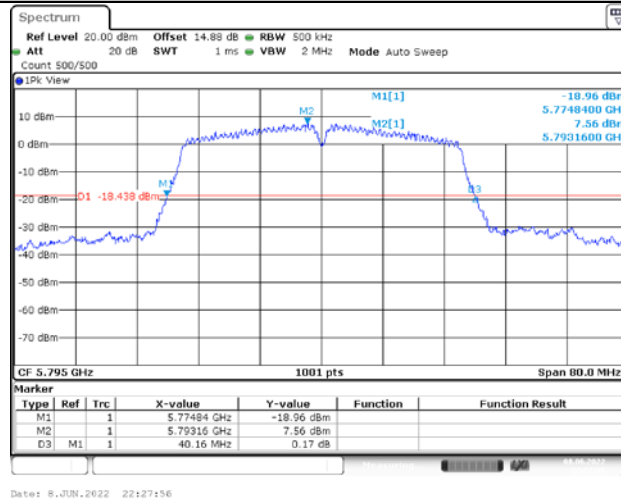
11AC40MIMO_Ant2_5755



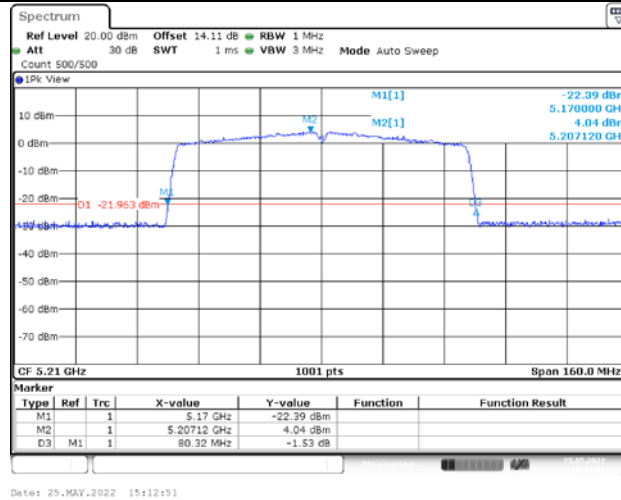
11AC40MIMO_Ant1_5795



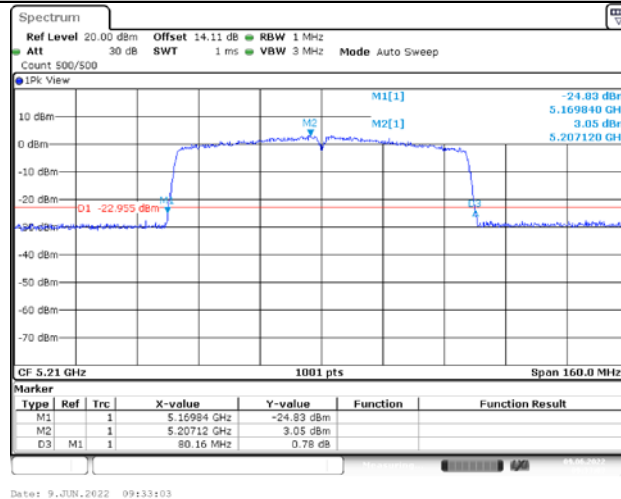
11AC40MIMO_Ant2_5795



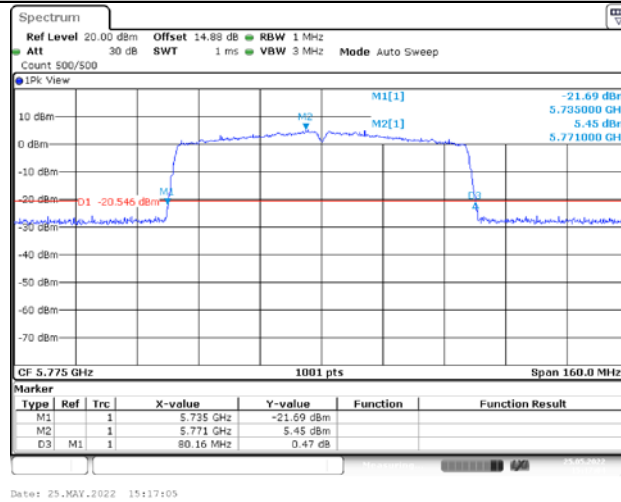
11AC80MIMO_Ant1_5210



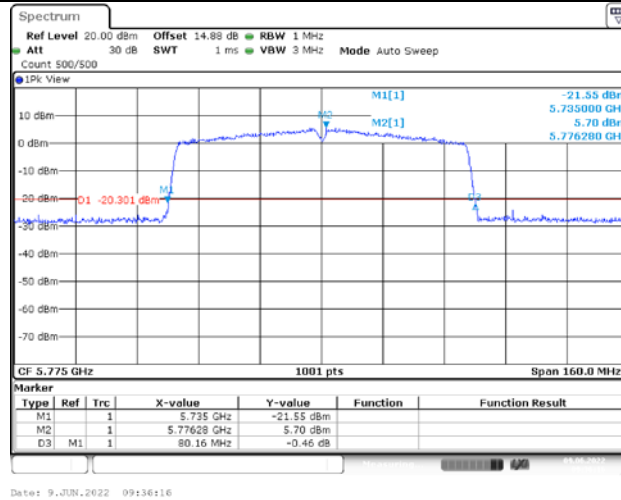
11AC80MIMO_Ant2_5210



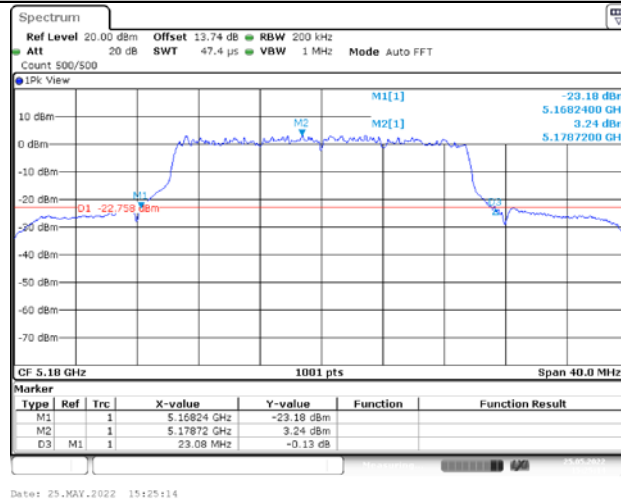
11AC80MIMO_Ant1_5775



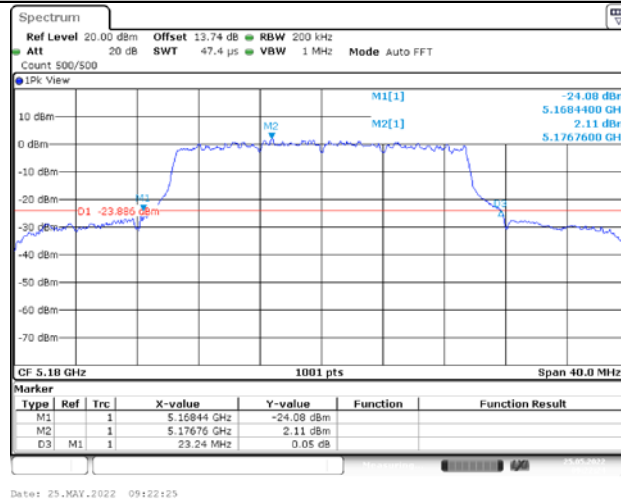
11AC80MIMO_Ant2_5775



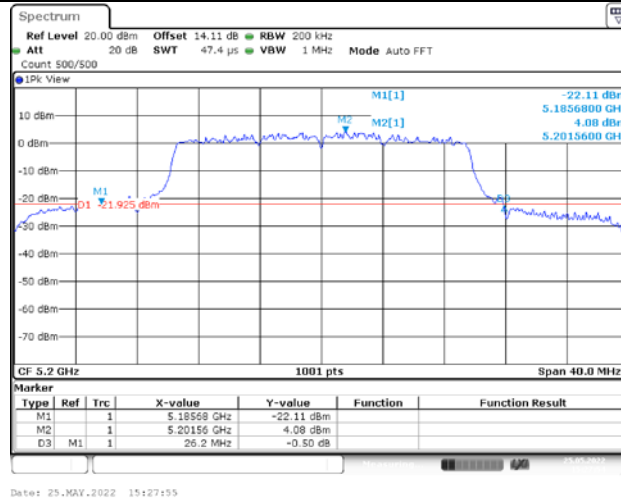
11AX20MIMO_Ant1_5180



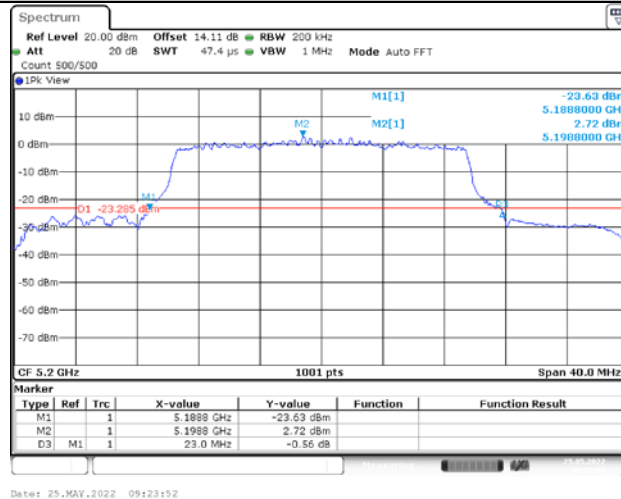
11AX20MIMO_Ant2_5180



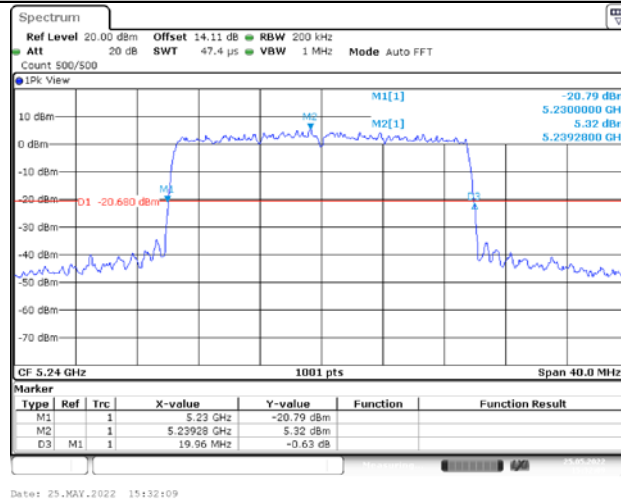
11AX20MIMO_Ant1_5200



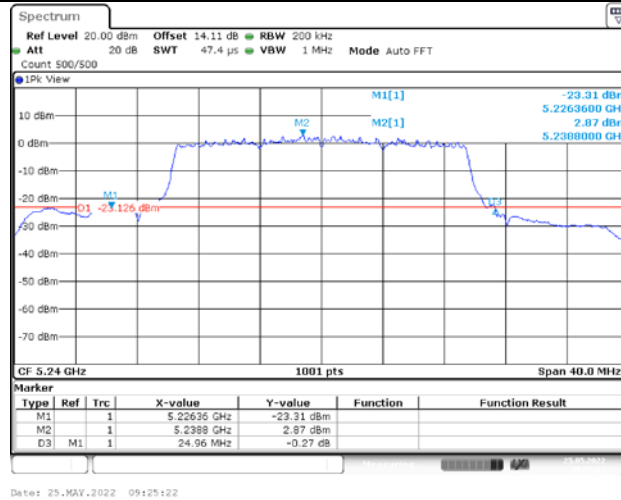
11AX20MIMO_Ant2_5200



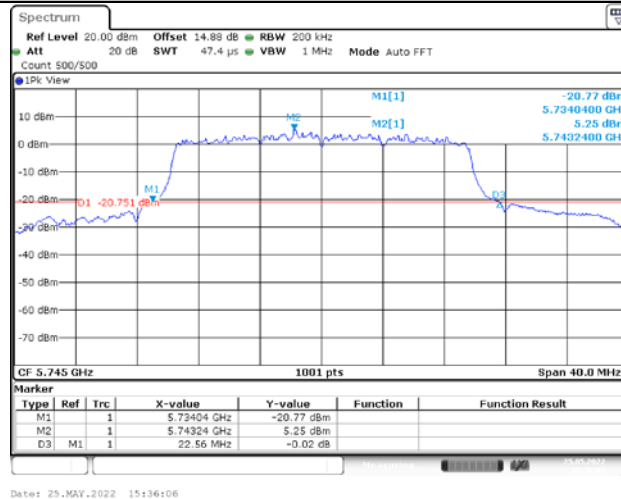
11AX20MIMO_Ant1_5240



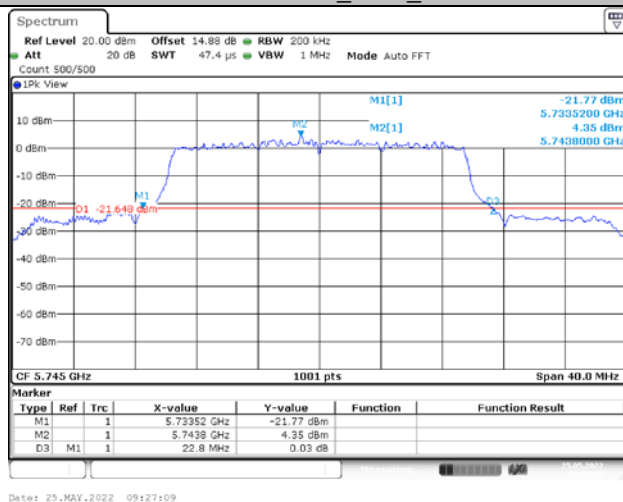
11AX20MIMO_Ant2_5240



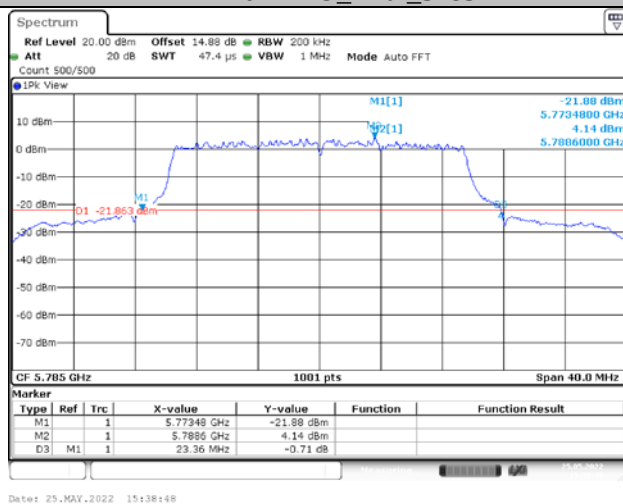
11AX20MIMO_Ant1_5745



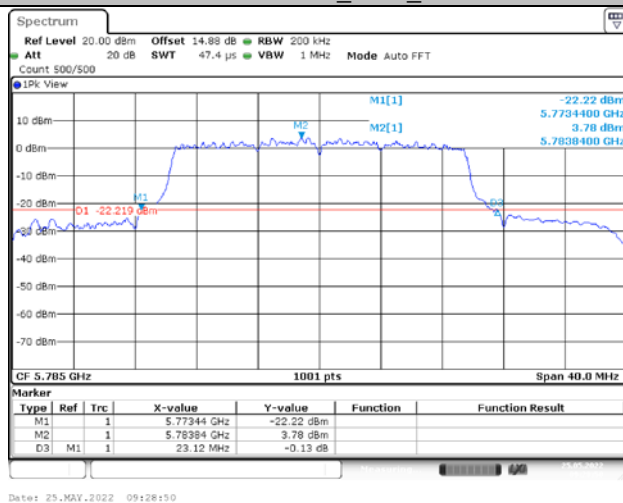
11AX20MIMO_Ant2_5745



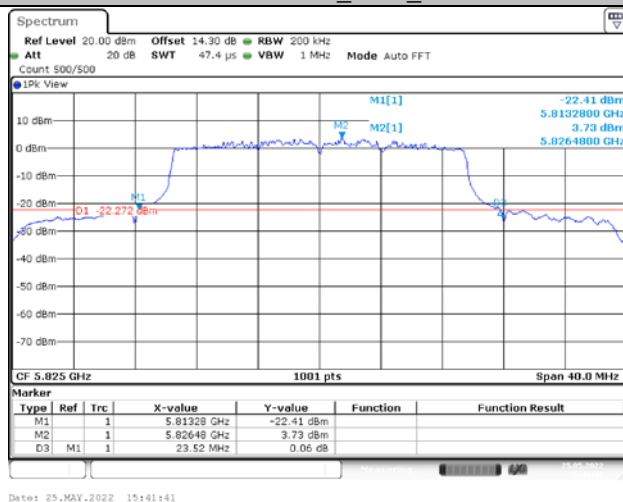
11AX20MIMO_Ant1_5785



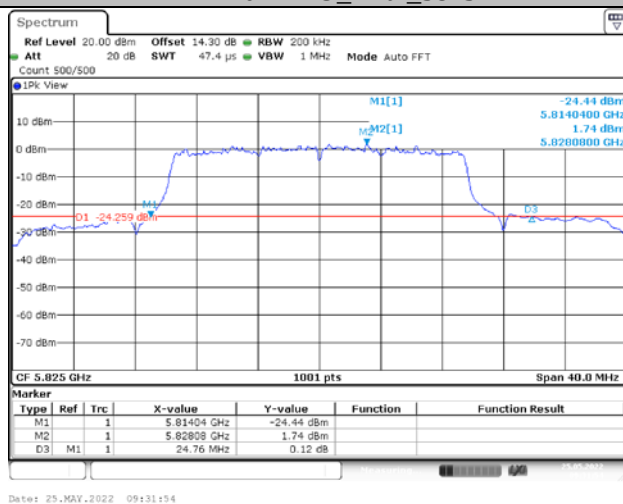
11AX20MIMO_Ant2_5785



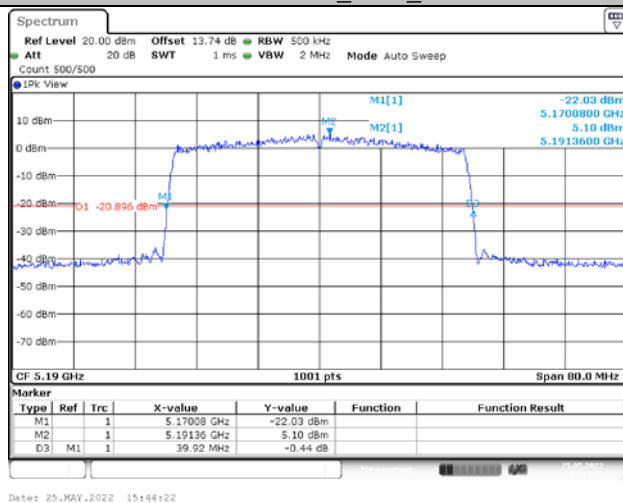
11AX20MIMO_Ant1_5825



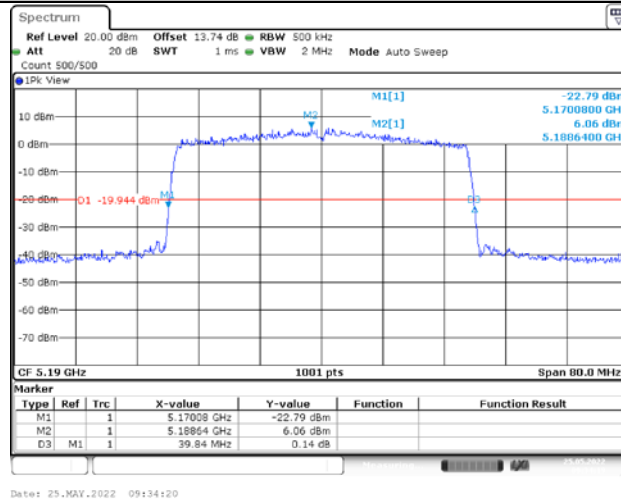
11AX20MIMO_Ant2_5825



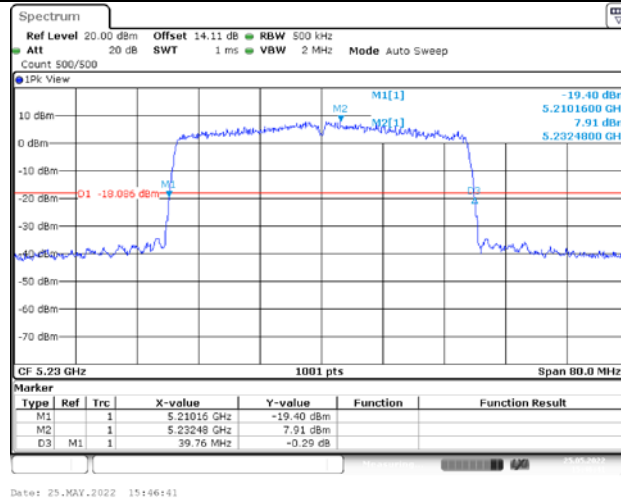
11AX40MIMO_Ant1_5190



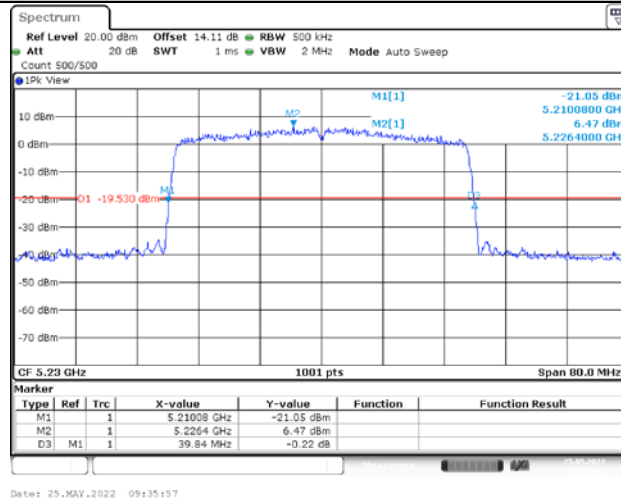
11AX40MIMO_Ant2_5190



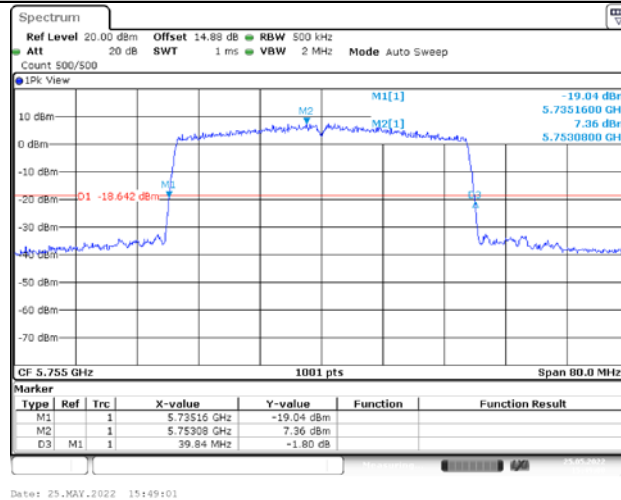
11AX40MIMO_Ant1_5230



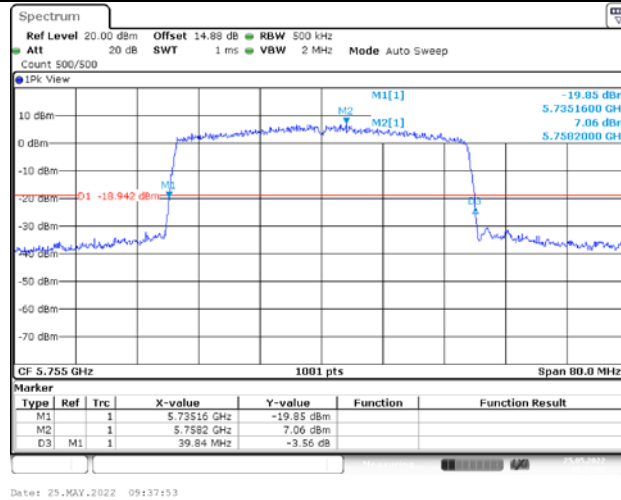
11AX40MIMO_Ant2_5230



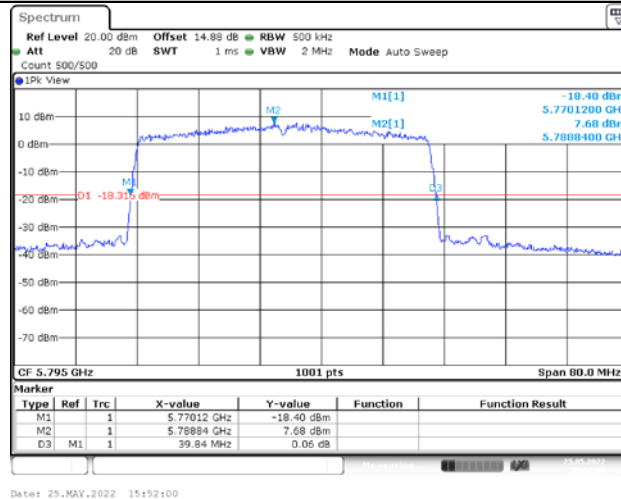
11AX40MIMO_Ant1_5755



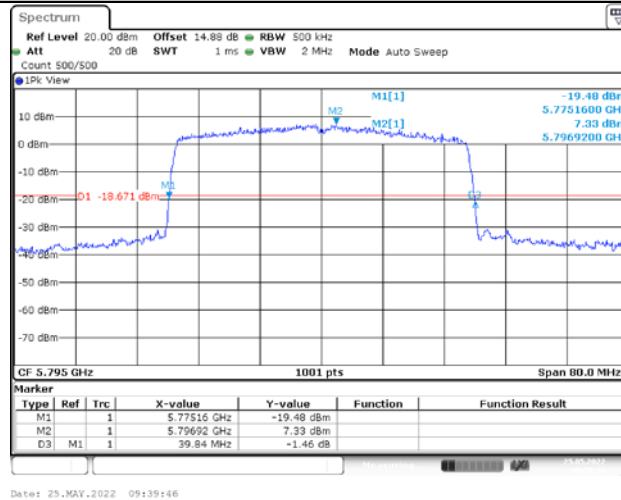
11AX40MIMO_Ant2_5755



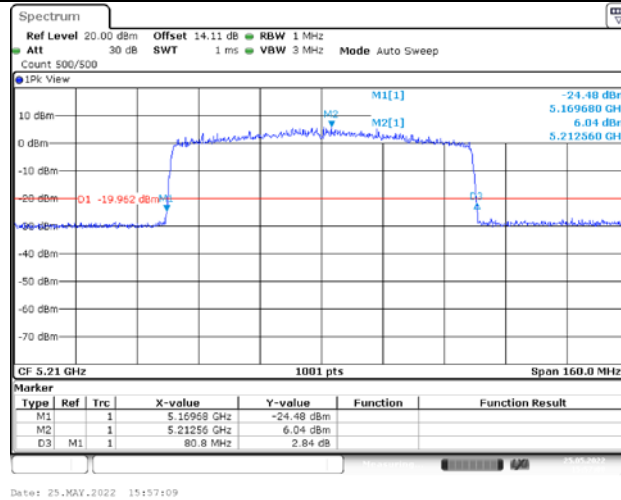
11AX40MIMO_Ant1_5795



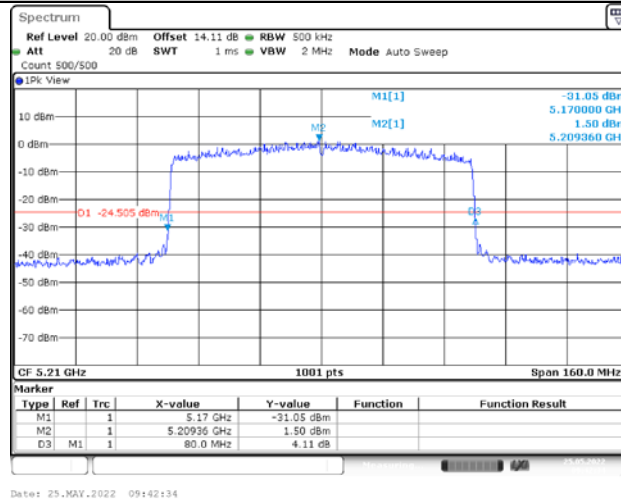
11AX40MIMO_Ant2_5795



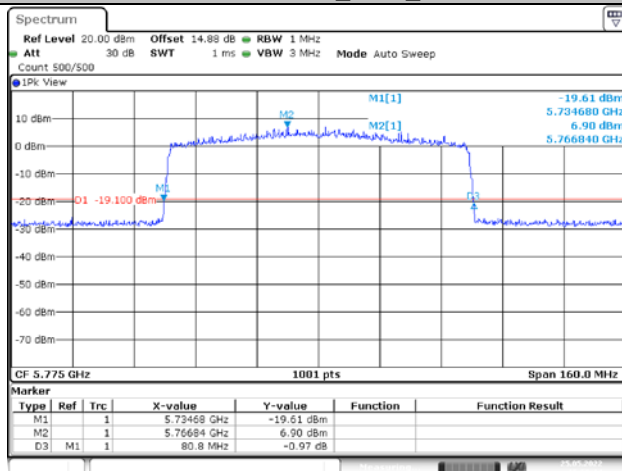
11AX80MIMO_Ant1_5210



11AX80MIMO_Ant2_5210

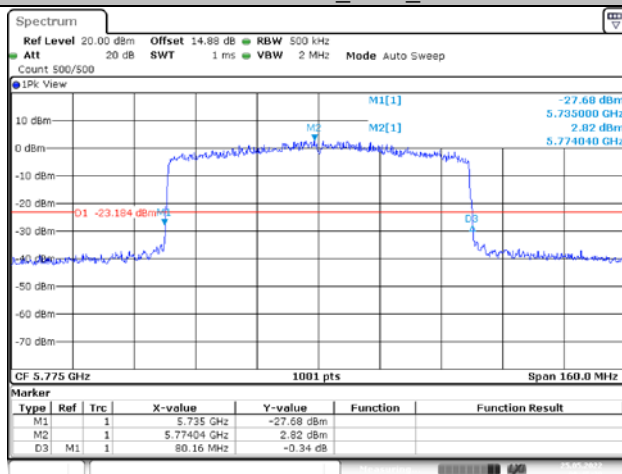


11AX80MIMO_Ant1_5775



Date: 25.MAY.2022 15:59:15

11AX80MIMO_Ant2_5775



Date: 25.MAY.2022 09:45:29