

FCC Part 15.407

TEST REPORT

For

FEITIAN Technologies Co., Ltd.

Floor 17th, Tower B, Huizhi Mansion, No.9 Xueqing Road, Haidian District, Beijing,
China

FCC ID: ZD3FTF20SC200RNA

Report Type:
Original Report

Product Type:
Android POS Terminal

Report Producer : Coco Lin *Coco Lin*

Report Number : RXZ210922002RF02

Report Date : 2021-11-01

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Revision History

Revision	No.	Report Number	Issue Date	Description	Author/ Revised by
0.0	RXZ210922002	RXZ210922002RF02	2021-11-01	Original Report	Coco Lin

TABLE OF CONTENTS

1	General Information	5
1.1	Product Description for Equipment under Test (EUT).....	5
1.2	Objective.....	6
1.3	Related Submittal(s)/Grant(s).....	6
1.4	Test Methodology	6
1.5	Statement of Compliance.....	6
1.6	Measurement Uncertainty	7
1.7	Environmental Conditions	7
1.8	Test Facility	7
2	System Test Configuration	8
2.1	Description of Test Configuration	8
2.2	Equipment Modifications	8
2.3	EUT Exercise Software	9
2.4	Test Mode	9
2.5	Support Equipment List and Details.....	10
2.6	External Cable List and Details	10
2.7	Block Diagram of Test Setup	10
2.8	Duty Cycle.....	12
3	Summary of Test Results.....	14
4	Test Equipment List and Details	15
5	FCC §15.407(f), §1.1310, § 2.1093 - RF Exposure	17
5.1	Applicable Standard.....	17
5.2	RF Exposure Evaluation Result.....	17
6	FCC §15.203 – Antenna Requirements.....	18
6.1	Applicable Standard.....	18
6.2	Antenna List and Details	18
7	FCC §15.407(b)(9) & §15.207(a) – AC Line Conducted Emissions.....	19
7.1	Applicable Standard	19
7.2	EUT Setup	19
7.3	EMI Test Receiver Setup	20
7.4	Test Procedure	20
7.5	Corrected Factor & Margin Calculation.....	20
7.6	Test Results.....	21
8	FCC §15.209, §15.205 , §15.407(b) – Spurious Emissions	25
8.1	Applicable Standard	25
8.2	EUT Setup	26
8.3	EMI Test Receiver & Spectrum Analyzer Setup.....	27
8.4	Test Procedure	27
8.5	Corrected Factor & Margin Calculation.....	27
8.6	Test Results.....	28
9	FCC §15.407(a)(e) – Emission Bandwidth And Occupied Bandwidth	43
9.1	Applicable Standard	43

9.2	Test Procedure	43
9.3	Test Results.....	44
10	FCC §15.407(a) – Maximum Output Power.....	61
10.1	Applicable Standard	61
10.2	Test Procedure	61
10.3	Test Results.....	62
11	FCC §15.407(a) – Power Spectral Density.....	63
11.1	Applicable Standard	63
11.2	Test Procedure	63
11.3	Test Results.....	64

1 General Information

1.1 Product Description for Equipment under Test (EUT)

Applicant	FEITIAN Technologies Co., Ltd..
	Floor 17th, Tower B, Huizhi Mansion, No.9 Xueqing Road, Haidian District, Beijing, China
Manufacturer	FEITIAN Technologies Co., Ltd..
	Floor 17th, Tower B, Huizhi Mansion, No.9 Xueqing Road, Haidian District, Beijing, China
Brand(Trade) Name	N/A
Product (Equipment)	Android POS Terminal
Main Model Name	F20 FP
Series Model Name	F20
Model Discrepancy	F20 FP with Touch Function F20 without Touch Function
Frequency Range	5180 MHz ~ 5240 MHz, 5745 MHz ~ 5825 MHz
Transmit Power	IEEE 802.11a Mode: 10.68 dBm IEEE802.11n HT20/ ac VHT20 Mode: 10.59 dBm IEEE 802.11n HT40/ ac VHT40 Mode: 10.05 dBm
Modulation Technique	IEEE 802.11a Mode: OFDM IEEE 802.11n HT20/ ac VHT20 Mode: OFDM IEEE 802.11n HT20/ ac VHT40 Mode: OFDM
Power Operation (Voltage Range)	☒ AC 120V/60Hz ☒ Adapter1 Brand Name: DEE VAN Model: DSA-10PF06-05 FUS I/P: 100-240Vac, 0.3A O/P: 5Vdc, 2.0A Adapter2 Brand Name: TEKA Model: TEKA-UCA20US I/P: 100-240Vac, 0.35A O/P: 5Vdc, 2.0A ☐ By AC Power Cord ☐ PoE
	☒ DC Type ☒ Battery: Rechargeable Li-ion Battery Rechargeable Li-polymer Battery Brand Name: ShenZhen Utility Power Source Co., Ltd. Model: D07 7.6V dc_2500mAh ☐ DC Power Supply ☐ External from USB Cable ☐ External DC Adapter
	☐ Host System

Received Date	Sep. 24, 2021
Date of Test	Sep. 28, 2021 ~ Oct. 12, 2021

*All measurement and test data in this report was gathered from production sample serial number: RXZ210922002-01(Assigned by BACL).

1.2 Objective

This report is prepared on behalf of *FEITIAN Technologies Co., Ltd.* in accordance with Part 2, Subpart J, Part 15, Subparts A, C and E of the Federal Communication Commission's rules.

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

1.3 Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS submission with FCC ID: ZD3FTF20SC200RNA

FCC Part 15.247 DSS Submittal with FCC ID: ZD3FTF20SC200RNA

FCC Part 15.225 DXX submissions with FCC ID: ZD3FTF20SC200RNA

FCC Part 22H24E27 PCB submissions with FCC ID: ZD3FTF20SC200RNA

FCC Part 90 PCB submissions with FCC ID: ZD3FTF20SC200RNA

1.4 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
KDB 789033 D02 General UNII Test Procedures New Rules v02r01

1.5 Statement of Compliance

Decision Rule: No, (The test results do not include MU judgment)

It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

The determination of the test results does not require consideration of the uncertainty of the measurement, unless the assessment is required by customer agreement, regulation or standard document specification.

Bay Area Compliance Laboratories Corp. is not responsible for the authenticity of the information provided by the applicant that affects the test results.

1.6 Measurement Uncertainty

Parameter		Uncertainty
AC Mains		+/- 2.36 dB
RF output power, conducted		+/- 0.93 dB
Occupied Bandwidth		+/- 0.35 MHz
Power Spectral Density, conducted		+/- 0.93 dBm/3kHz
Unwanted Emissions, conducted		+/- 1.69 dBm
Emissions, radiated	30 MHz~1GHz	+/- 5.22 dB
	1 GHz~18 GHz	+/- 6.12 dB
	18 GHz~40 GHz	+/- 4.99 dB
Temperature		+/- 1.27 °C
Humidity		+/- 3 %

1.7 Environmental Conditions

Test Site	Test Data	Temperature (°C)	Relative Humidity (%)	ATM Pressure (hPa)	Test Engineer
AC Line Conducted Emissions	2021/10/12	27.2	50.5	1010	Boris Kao
Radiation Spurious Emissions	2021/10/1 ~ 20121/10/4	24.1 ~ 26.7	56 ~ 61	1010	David.Lee
Conducted Spurious Emissions	2021/9/28	25.4	47	1010	David.Lee
Emission Bandwidth And Occupied Bandwidth	2021/9/28	25.4	47	1010	David.Lee
Maximum Output Power	2021/9/28	25.4	47	1010	David.Lee
Power Spectral Density	2021/9/28	25.4	47	1010	David.Lee

1.8 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. to collect test data is located on

☒ 70, Lane 169, Sec. 2, Datong Road, Xizhi Dist., New Taipei City 22183, Taiwan, R.O.C.

Bay Area Compliance Laboratories Corp. is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 3732) and the FCC designation No.TW3732 under the Mutual Recognition Agreement (MRA) in FCC Test.

2 System Test Configuration

2.1 Description of Test Configuration

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

The system support 802.11a/ac 20/n ht20/ac 40/n ht40/ac vht20/ac vht40, the vht20/vht40 were reduced since the identical parameters with 802.11n ht20 and ht40.

For 5150 ~ 5250MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

For 5725 ~ 5850MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

2.2 Equipment Modifications

No modification was made to the EUT.

2.3 EUT Exercise Software

The EUT was programmed to be in continuously transmitting mode.

The software was used “QRCT V3.0”.

UNII Band	Mode	Channel	Frequency (MHz)	Power setting
UNII-1	802.11a	36	5180	10
		40	5200	10
		48	5240	10
UNII-3		149	5745	10
		157	5785	10
		165	5825	10
UNII-1	802.11n 20 / ac 20	36	5180	10
		40	5200	10
		48	5240	10
UNII-3		149	5745	10
		157	5785	10
		165	5825	10
UNII-1	802.11n 40 / ac 40	38	5190	10
		46	5230	10
UNII-3		151	5755	10
		159	5795	10

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

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

802.11a: 6Mbps

802.11n HT20: MCS0

802.11n HT40: MCS0

2.4 Test Mode

Pre-scan

AC Line Conducted Emissions and Radiated Spurious Emissions

Mode 1: F20 FP + Adapter (Model : DSA-10PF06-05 FSU).

Mode 2: F20 FP + Adapter (Model : TEKA-UCA20US).

Mode 3: F20 + Adapter (Model : DSA-10PF06-05 FSU).

Mode 4: F20 + Adapter (Model : TEKA-UCA20US).

Worst case is the F20 + Adapter (Model : DSA-10PF06-05 FSU).

Full System F20 + Adapter (Model : DSA-10PF06-05 FSU) for all test item.

2.5 Support Equipment List and Details

Description	Manufacturer	Model Number	S/N
NB	DELL	E6410	8N7PXN1
Adapter-1	DEE VAN ENTERPRISE	DSA-10PF06-05 FSU	N/A
Adapter-2	TEKA	TEKA-UCA20US	N/A
Dock	FEITIAN	F20-1	N/A

2.6 External Cable List and Details

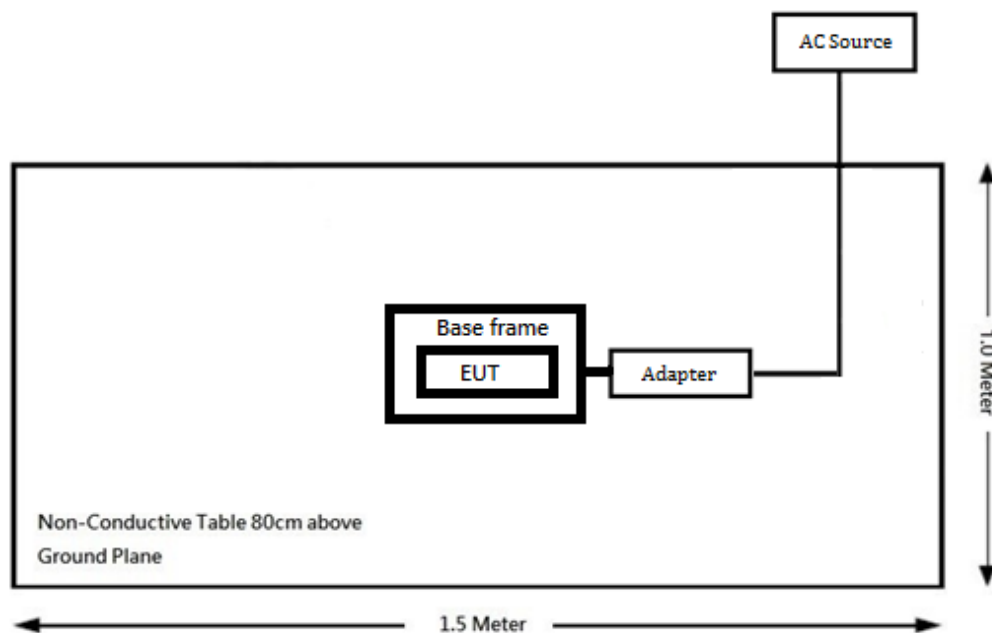
Cable Description	Length (m)	From	To
USB Cable	1.5	Adapter	EUT

2.7 Block Diagram of Test Setup

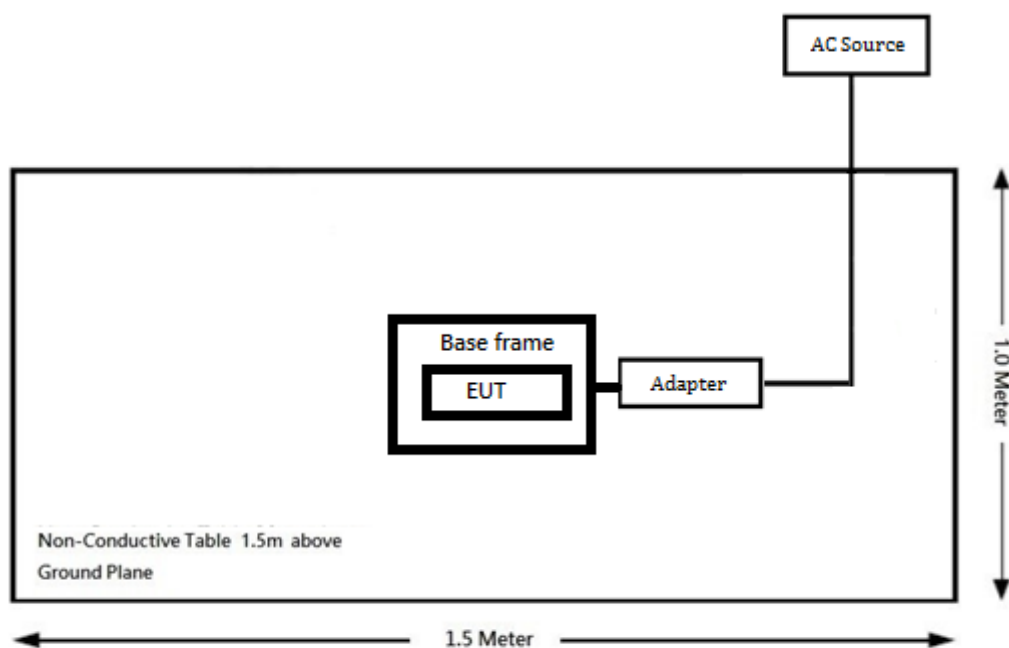
See test photographs attached in setup photos for the actual connections between EUT and support equipment.

Radiation:

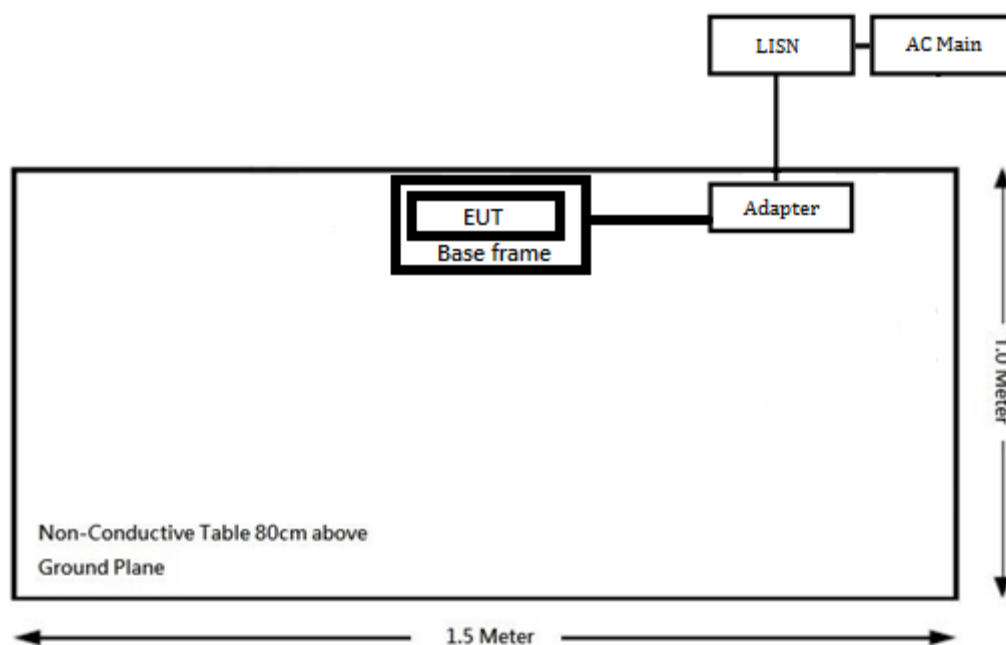
Below 1GHz:



Above 1GHz:



Conduction:



2.8 Duty Cycle

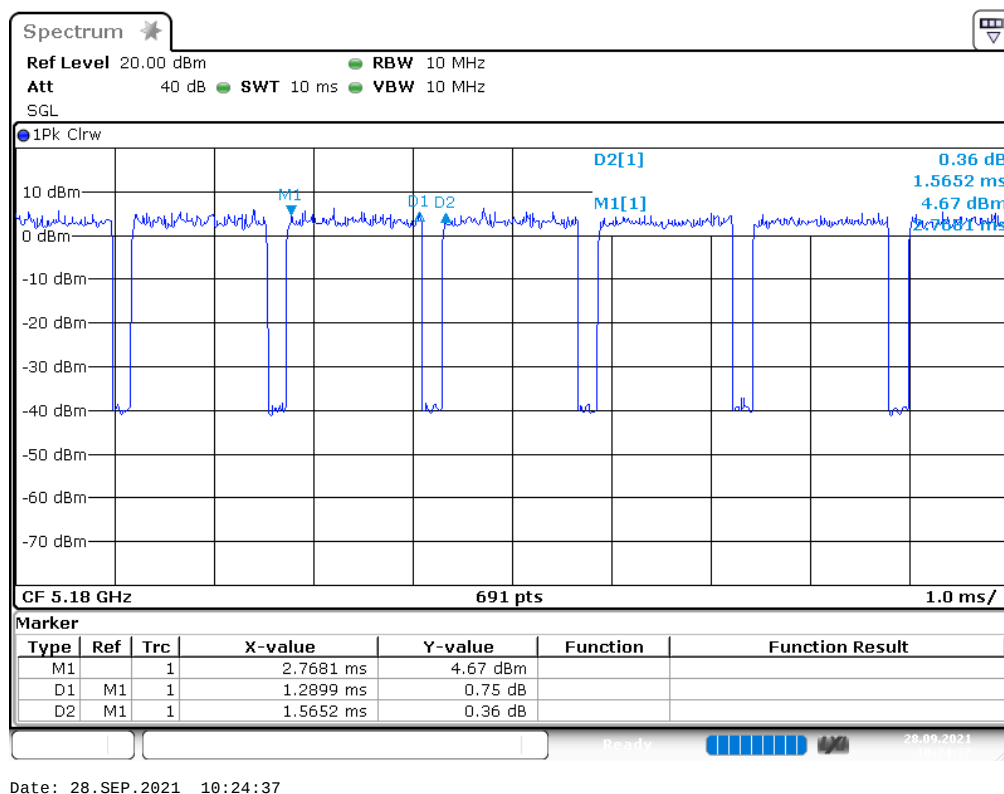
According to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section B: Measurements of duty cycle, x, and maximum power transmission duration, T, are required for each tested mode of operation.

Radio Mode	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
CDD Mode				
802.11a	1.29	1.57	0.82	0.86
802.11n HT20	1.22	1.48	0.82	0.86
802.11n HT40	0.59	0.90	0.66	1.80

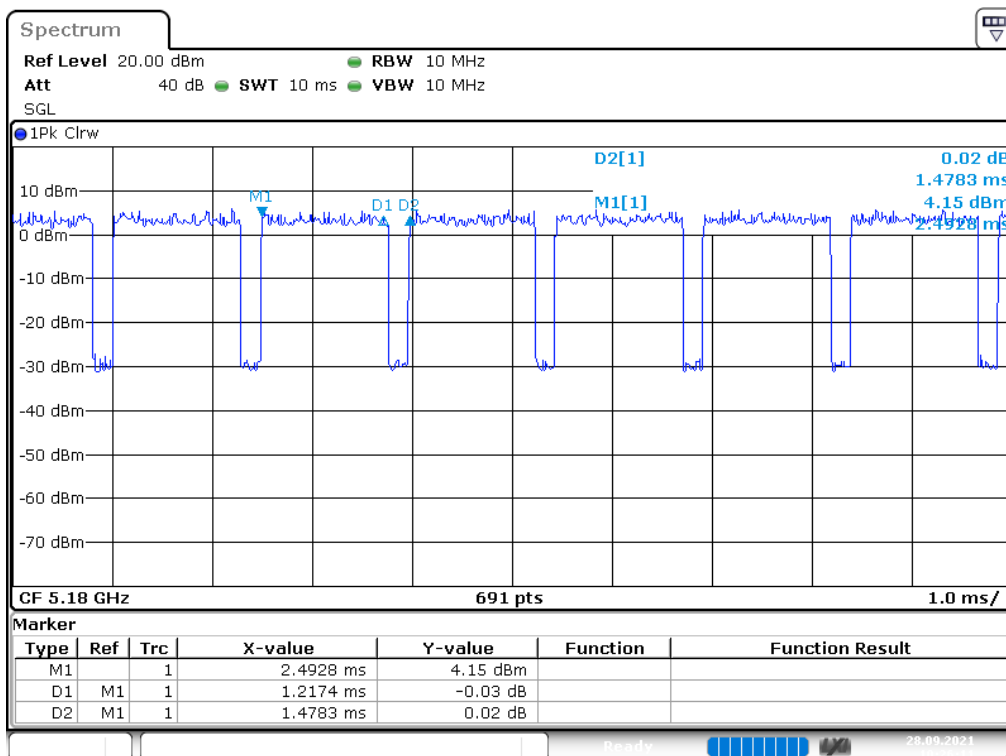
Note: Duty Cycle Correction Factor = $10 \cdot \log(1/\text{duty cycle})$

Please refer to the following plots.

A Mode

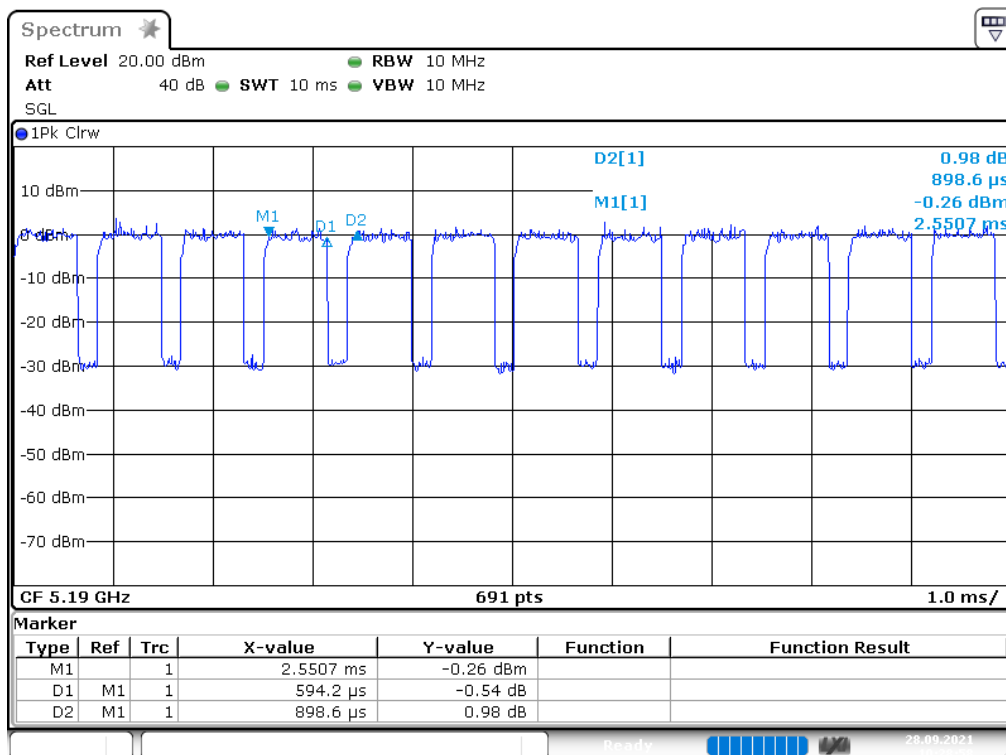


N20 Mode



Date: 28.SEP.2021 10:26:11

N40 Mode



Date: 28.SEP.2021 10:28:59

3 Summary of Test Results

FCC Rules	Description of Test	Results
§15.407(f), §1.1310, §2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(9) & §15.207(a)	AC Line Conducted Emissions	Compliance
§15.205 & §15.209 & §15.407(b)	Unwanted Emission	Compliance
§15.407(a)(e)	Emission Bandwidth	Compliance
§15.407(a)(1)(3)	Conducted Transmitter Output Power	Compliance
§15.407(a)(1)(3)	Power Spectral Density	Compliance

4 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
AC Line Conduction Room (CON-A)					
LISN	Rohde & Schwarz	ENV216	101612	2020/12/30	2021/12/29
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2020/11/12	2021/11/11
Pulse Limiter	Rohde & Schwarz	ESH3Z2	TXZEM104	2021/7/29	2022/7/29
RF Cable	EMEC	EM-CB5D	001	2021/6/11	2022/6/11
Software	AUDIX	E3	V9.150826k	N.C.R	N.C.R
Radiation 3M Room (966-A)					
Bilog Antenna with 6 dB Attenuator	SUNOL SCIENCES & MINI-CIRCUITS	JB6/UNAT-6+	A050115/15542_01	2021/01/19	2022/01/18
Horn Antenna	EMCO	3115	9311-4158	2021/08/26	2022/08/25
Horn Antenna	ETS-Lindgren	3116	62638	2021/08/11	2022/08/10
Preamplifier	Sonoma	310N	130602	2021/06/08	2022/06/07
Preamplifier	A.H. system Inc.	PAM-0118P	466	2020/11/5	2021/11/4
Microwave Preamplifier	EM Electronics Corporation	EM18G40G	060656	2020/12/30	2021/12/29
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2020/11/12	2021/11/11
Spectrum Analyzer	Rohde & Schwarz	FSV40	101435	2021/01/07	2022/01/06
Micro flex Cable	UTIFLEX	UFB197C-1-2362-70U-70U	225757-001	2021/2/1	2022/1/31
Coaxial Cable	COMMATE	PEWC	8Dr	2020/12/25	2021/12/24
Coaxial Cable	UTIFLEX	UFB311A-Q-1440-300300	220490-006	2021/2/1	2022/1/31
Coaxial Cable	JUNFLON	J12J102248-00-B-5	AUG-07-15-044	2020/12/25	2021/12/24
Cable	EMC	EMC105-SM-SM-10000	201003	2021/2/3	2022/2/2
Turn Table	Champro	TT-2000	060772-T	N.C.R	N.C.R
Antenna Tower	Champro	AM-BS-4500-B	060772-A	N.C.R	N.C.R
Controller	Champro	EM1000	60772	N.C.R	N.C.R
Software	Farad	EZ_EM C	BACL-03A1	N.C.R	N.C.R

Conducted Room

Spectrum Analyzer	Rohde & Schwarz	FSV40	101140	2021/1/7	2022/1/6
Cable	UTIFLEX	UFA210A	9435	2020/10/08	2021/10/07
Attenuator	MINI-CIRCUITS	BW-S10W5+	1419	2021/1/28	2022/1/27
Power Sensor	KEYSIGHT	U2021XA	MY54080018	2021/01/28	2022/01/27

***Statement of Traceability:** BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to the SI System of Units via the R.O.C. Center for Measurement Standards of the Electronics Testing Center, Taiwan (ETC) or to another internationally recognized National Metrology Institute (NMI), and were compliant with the current Taiwan Accreditation Foundation (TAF) requirements

5 FCC §15.407(f), §1.1310, § 2.1093 - RF Exposure

5.1 Applicable Standard

According to §15.407(f) and §1.1310, 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..

5.2 RF Exposure Evaluation Result

Please refer to the SAR report, report No.: RXZ210922002SA01.

6 FCC §15.203 – Antenna Requirements

6.1 Applicable Standard

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.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna does not exceed 6dBi. 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 colocated 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.

6.2 Antenna List and Details

Manufacturer	Model	Antenna Type	Antenna Gain
AUDEN TECHNO (KUNSHAN) CO. LTD	F200	FPC Antenna	3 dBi

Fulfill the requirement of this section. Please refer to the EUT photos

Result: Compliance

7 FCC §15.407(b)(9) & § 15.207(a) – AC Line Conducted Emissions

7.1 Applicable Standard

As per FCC §15.407(b) (9)

Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207

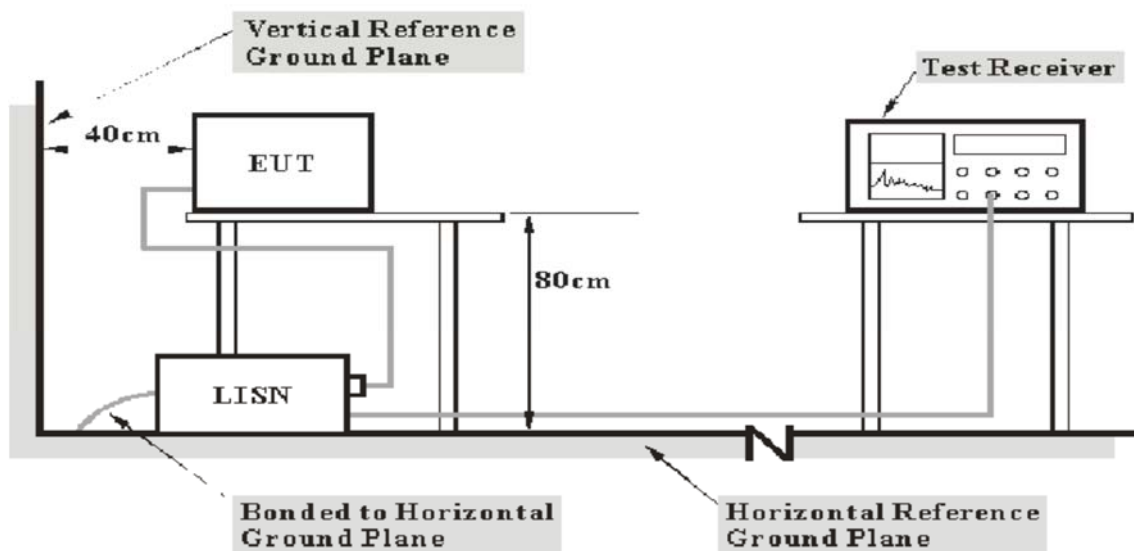
The lower limit applies at the boundary between the frequencies ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 ^{Note 1}	56 to 46 ^{Note 2}
0.5-5	56	46
5-30	60	50

Note 1: Decreases with the logarithm of the frequency.

Note 2: A linear average detector is required

7.2 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 C63.10-2020 measurement procedure. The specification used was with the FCC Part 15.207 limits.

7.3 EMI Test Receiver Setup

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

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

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

7.4 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of 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.

7.5 Corrected Factor & Margin Calculation

The factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

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

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 Over Limit calculation is as follows:

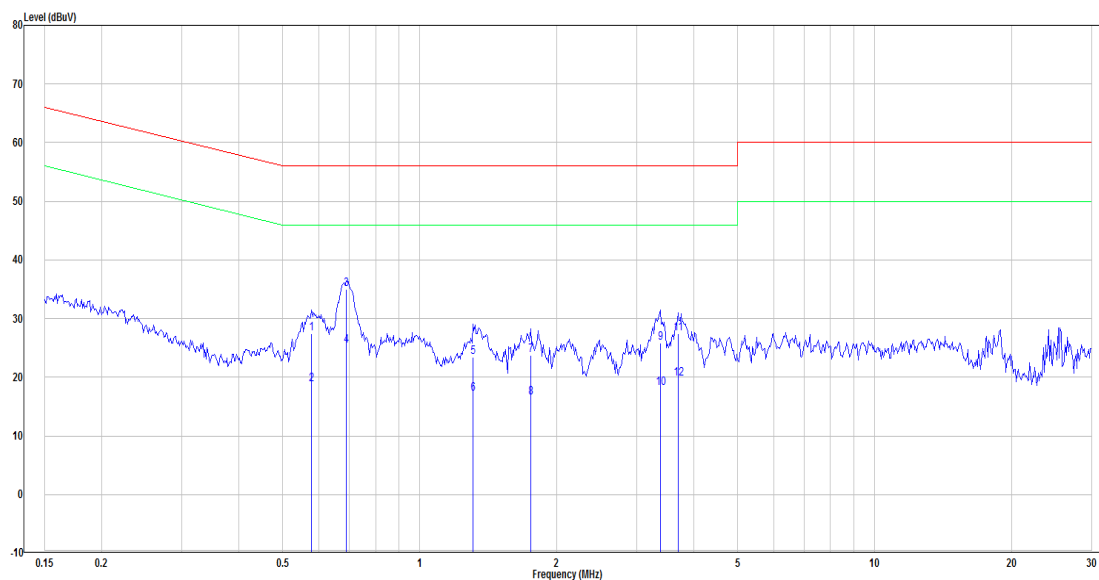
$$\text{Over Limit} = \text{Level} - \text{Limit Line}$$

7.6 Test Results

Test Mode: Transmitting

802.11n HT20 mode low channel of 5150~5250MHz (worst case)

Main: AC120 V, 60 Hz, Line



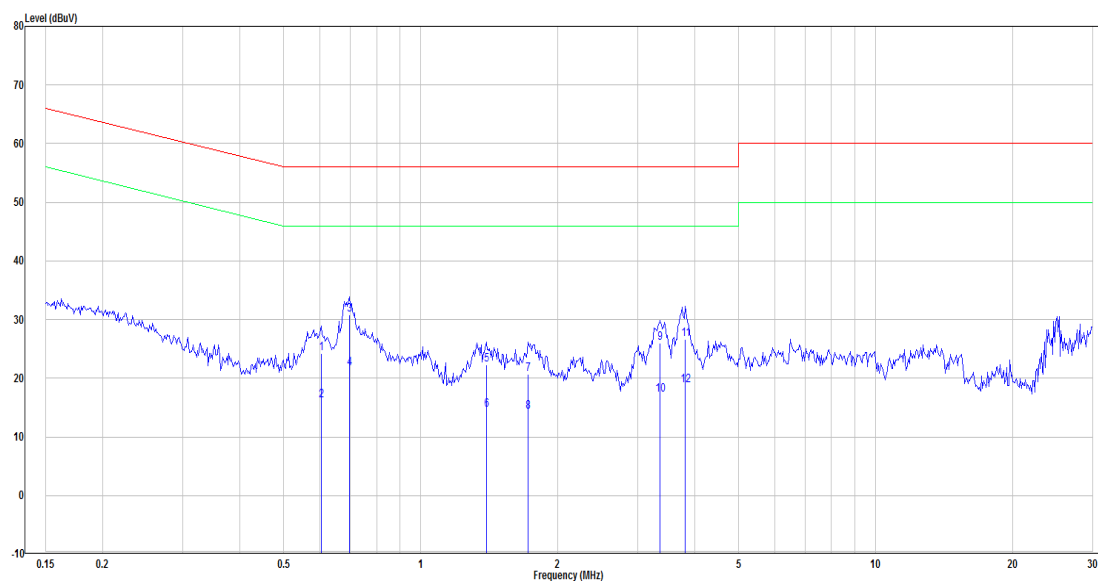
No.	Frequency (MHz)	Reading (dBμV)	Correct Factor(dB)	Result (dBμV)	Limit (dBμV)	Over limit (dB)	Remark
1	0.579	7.79	19.59	27.38	56.00	-28.62	QP
2	0.579	-0.87	19.59	18.72	46.00	-27.28	Average
3	0.690	15.45	19.60	35.05	56.00	-20.95	QP
4	0.690	5.72	19.60	25.32	46.00	-20.68	Average
5	1.310	3.80	19.62	23.42	56.00	-32.58	QP
6	1.310	-2.47	19.62	17.15	46.00	-28.85	Average
7	1.753	4.15	19.63	23.78	56.00	-32.22	QP
8	1.753	-3.10	19.63	16.53	46.00	-29.47	Average
9	3.381	6.14	19.67	25.81	56.00	-30.19	QP
10	3.381	-1.51	19.67	18.16	46.00	-27.84	Average
11	3.700	7.70	19.68	27.38	56.00	-28.62	QP
12	3.700	0.03	19.68	19.71	46.00	-26.29	Average

Note:

Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

Main: AC120 V, 60 Hz, Neutral

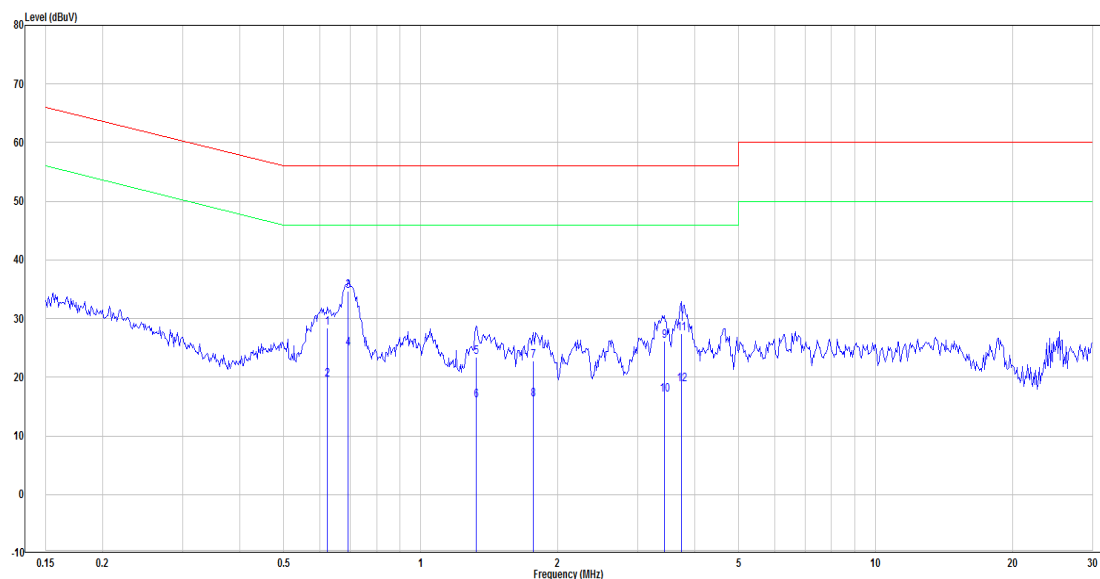
No.	Frequency	Reading	Correct	Result	Limit	Over limit	Remark
	(MHz)	(dBμV)	Factor(dB)	(dBμV)	(dBμV)	(dB)	
1	0.604	4.70	19.59	24.29	56.00	-31.71	QP
2	0.604	-3.46	19.59	16.13	46.00	-29.87	Average
3	0.697	11.20	19.59	30.79	56.00	-25.21	QP
4	0.697	2.01	19.59	21.60	46.00	-24.40	Average
5	1.396	2.68	19.62	22.30	56.00	-33.70	QP
6	1.396	-4.96	19.62	14.66	46.00	-31.34	Average
7	1.725	1.09	19.63	20.72	56.00	-35.28	QP
8	1.725	-5.41	19.63	14.22	46.00	-31.78	Average
9	3.364	6.28	19.67	25.95	56.00	-30.05	QP
10	3.364	-2.51	19.67	17.16	46.00	-28.84	Average
11	3.820	7.01	19.69	26.70	56.00	-29.30	QP
12	3.820	-0.97	19.69	18.72	46.00	-27.28	Average

Note:

Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

802.11a mode low channel of 5745~5850MHz (worst case)**Main: AC120 V, 60 Hz, Line**

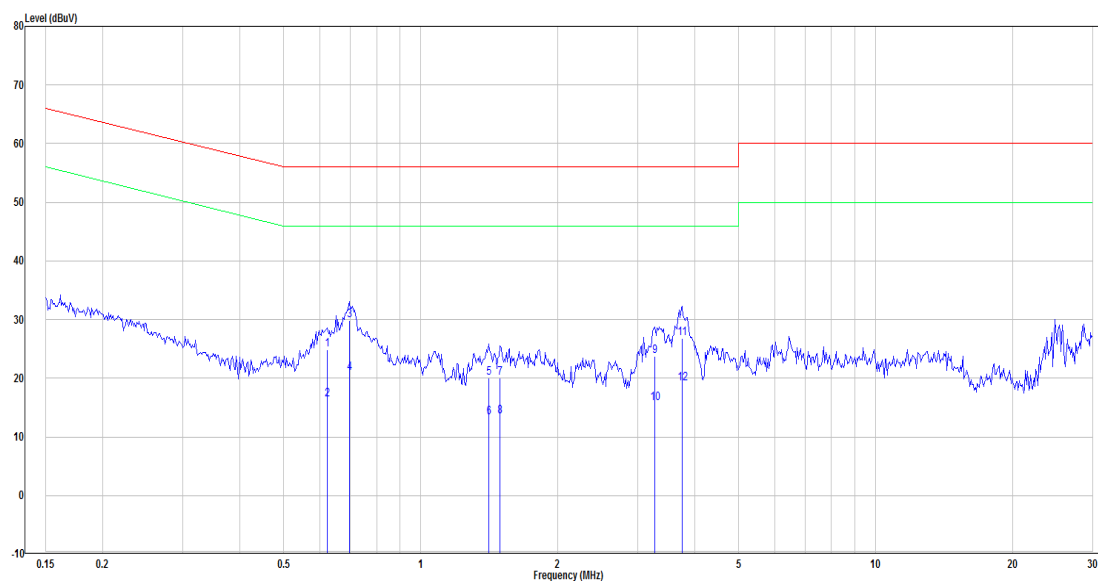
No.	Frequency (MHz)	Reading (dBμV)	Correct Factor(dB)	Result (dBμV)	Limit (dBμV)	Over limit (dB)	Remark
1	0.624	8.86	19.60	28.46	56.00	-27.54	QP
2	0.624	-0.01	19.60	19.59	46.00	-26.41	Average
3	0.694	15.07	19.60	34.67	56.00	-21.33	QP
4	0.694	5.28	19.60	24.88	46.00	-21.12	Average
5	1.324	3.81	19.62	23.43	56.00	-32.57	QP
6	1.324	-3.51	19.62	16.11	46.00	-29.89	Average
7	1.772	3.08	19.63	22.71	56.00	-33.29	QP
8	1.772	-3.52	19.63	16.11	46.00	-29.89	Average
9	3.436	6.50	19.68	26.18	56.00	-29.82	QP
10	3.436	-2.74	19.68	16.94	46.00	-29.06	Average
11	3.740	7.72	19.68	27.40	56.00	-28.60	QP
12	3.740	-0.85	19.68	18.83	46.00	-27.17	Average

Note:

Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

Main: AC120 V, 60 Hz, Neutral

No.	Frequency	Reading	Correct	Result	Limit	Over limit	Remark
	(MHz)	(dBμV)	Factor(dB)	(dBμV)	(dBμV)	(dB)	
1	0.624	5.21	19.59	24.80	56.00	-31.20	QP
2	0.624	-3.21	19.59	16.38	46.00	-29.62	Average
3	0.697	10.25	19.59	29.84	56.00	-26.16	QP
4	0.697	1.26	19.59	20.85	46.00	-25.15	Average
5	1.411	0.42	19.62	20.04	56.00	-35.96	QP
6	1.411	-6.31	19.62	13.31	46.00	-32.69	Average
7	1.495	0.40	19.62	20.02	56.00	-35.98	QP
8	1.495	-6.13	19.62	13.49	46.00	-32.51	Average
9	3.276	4.10	19.67	23.77	56.00	-32.23	QP
10	3.276	-3.99	19.67	15.68	46.00	-30.32	Average
11	3.759	7.13	19.68	26.81	56.00	-29.19	QP
12	3.759	-0.53	19.68	19.15	46.00	-26.85	Average

Note:

Level = Read Level + Factor

Over Limit = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

8 FCC §15.209, §15.205 , §15.407(b) – Spurious Emissions

8.1 Applicable Standard

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 – 0.110	16.42 – 16.423	608 – 614	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	960 – 1240	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	1300 – 1427	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1435 – 1626.5	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1645.5 – 1646.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1660 – 1710	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1718.8 – 1722.2	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	2200 – 2300	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2310 – 2390	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2483.5 – 2500	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2690 – 2900	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	3260 – 3267	22.01 – 23.12
8.41425 – 8.41475	162.0125 – 167.17	3.332 – 3.339	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3.3458 – 3.358	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3.600 – 4.400	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4		Above 38.6
13.36 – 13.41	399.9 – 410		

As per FCC §15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

Note 1: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

As per FCC Part 15.407 (b)

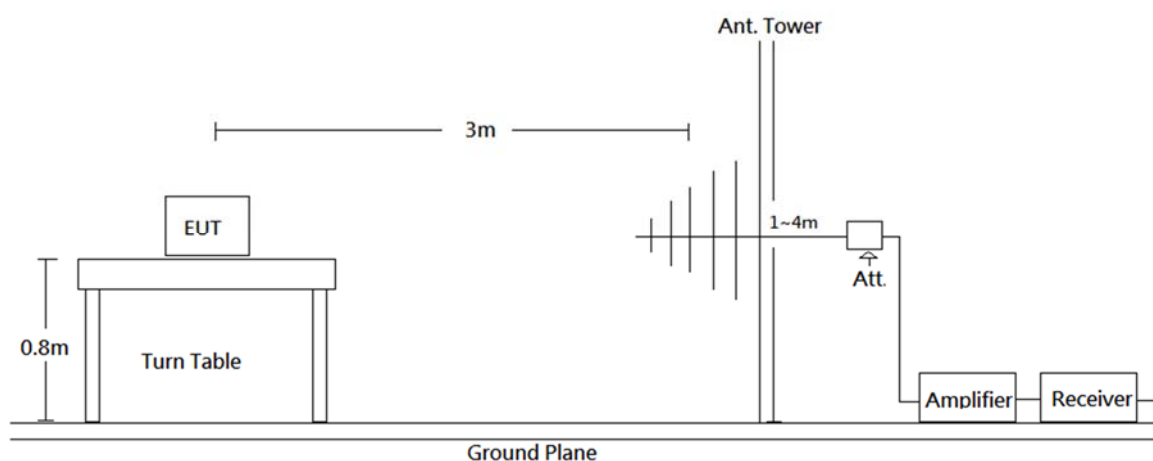
- For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band 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..

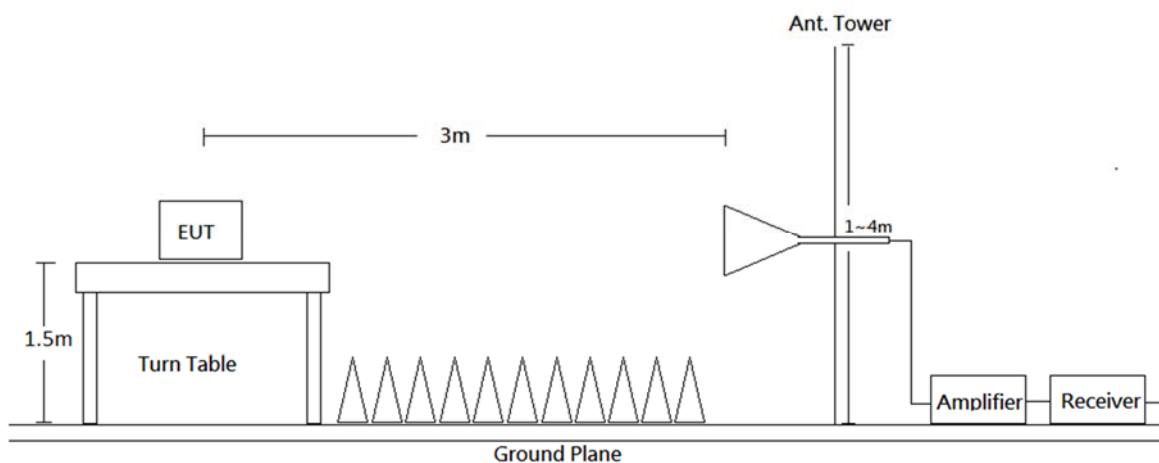
- The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

8.2 EUT Setup

Below 1 GHz:



Above 1 GHz:



Radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC Part 15.209 and FCC 15.407 Limits.

8.3 EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz. During the radiated emission test, the EMI test receiver was set with the following configurations measurement method 6.3 in ANSI C63.10.

Frequency Range	RBW	VBW	Duty cycle	Measurement method
30-1000 MHz	120 kHz	/	/	QP
Above 1 GHz	1 MHz	3 MHz	/	PK
	1 MHz	3 MHz	>98%	Ave
	1 MHz	1/T	<98%	Ave

8.4 Test Procedure

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

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

According to C63.10, emission shall be computed as: $E [dB\mu V/m] = EIRP[dBm] + 95.2$, for $d = 3$ meters.

All emissions under the average limit and under the noise floor have not recorded in the report

8.5 Corrected Factor & Margin Calculation

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

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

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

$$\text{Margin} = \text{Result} - \text{Limit}$$

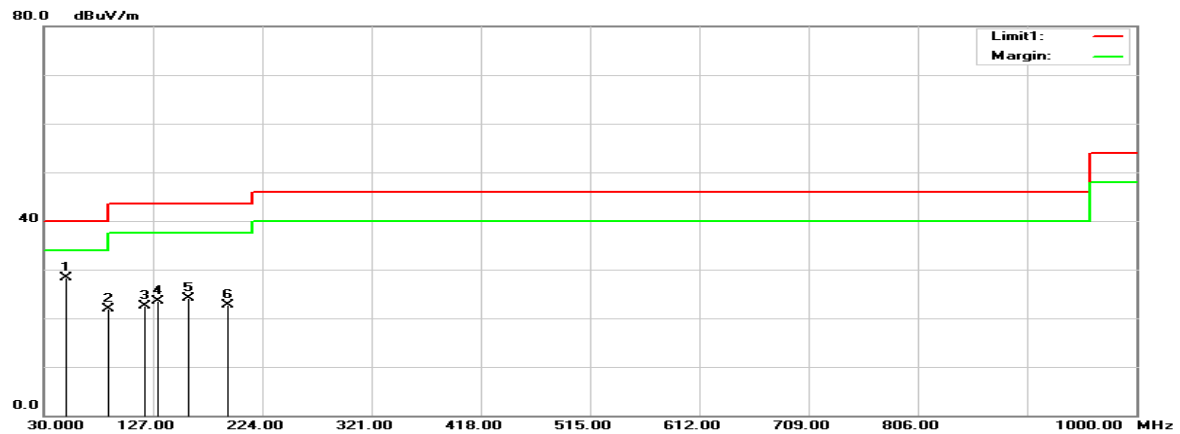
8.6 Test Results

Test Mode: Transmitting

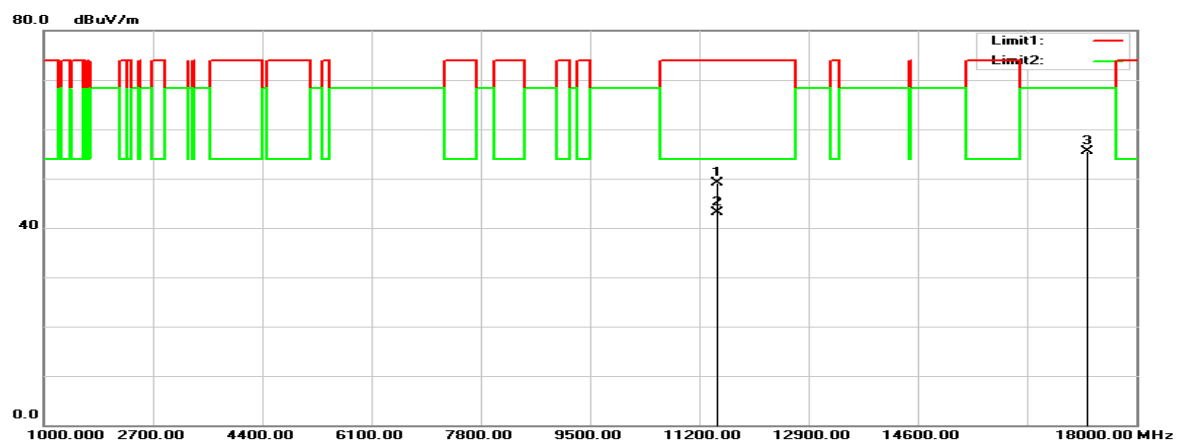
(Pre-scan with three orthogonal axis, and worse case as X axis.)

Horizontal (worst case is Wi-Fi a mode 5745MHz)

30MHz-1GHz:



1GHz-18GHz:

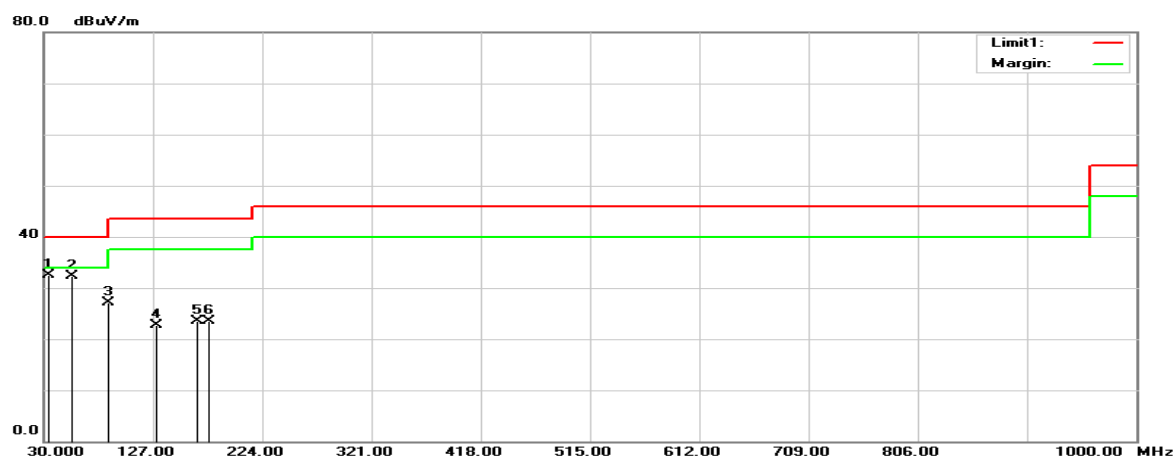


18GHz-40GHz:

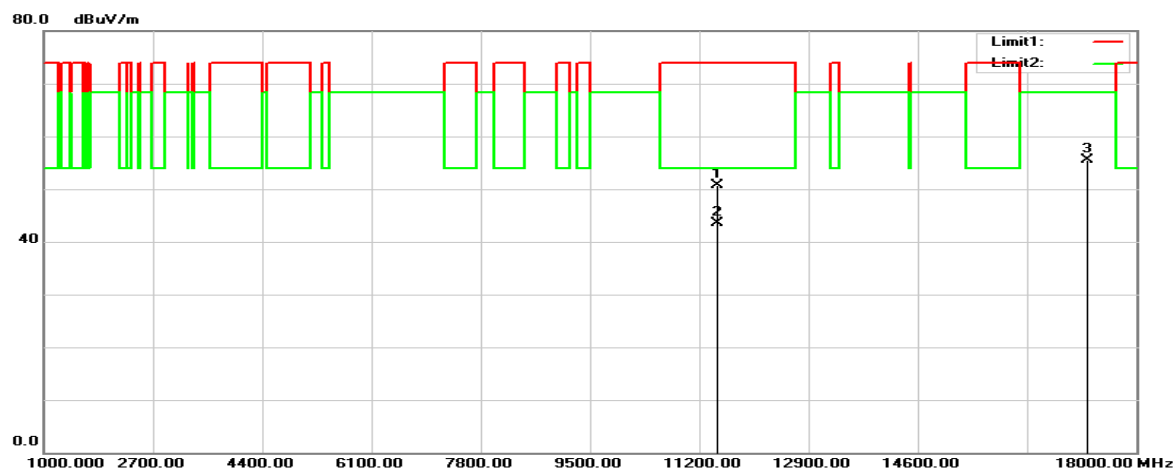


Vertical (worst case is Wi-Fi a mode 5745MHz)

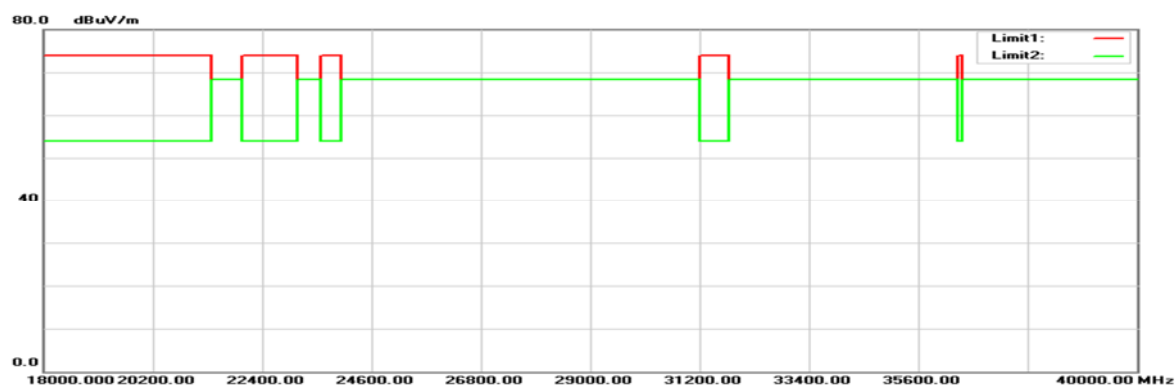
30MHz-1GHz:



1GHz-18GHz:



18GHz-40GHz:



Below 1GHz**Horizontal**

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dB μ V)	Factor(dB/m)	(dB μ V/m)	(dB μ V/m)	(dB)	(cm)	(°)	
50.3700	44.60	-16.25	28.35	40.00	-11.65	100	214	peak
87.2300	38.77	-16.80	21.97	40.00	-18.03	100	321	peak
120.2100	32.80	-10.27	22.53	43.50	-20.97	100	256	peak
130.8800	33.87	-10.29	23.58	43.50	-19.92	100	95	peak
159.0100	35.41	-11.24	24.17	43.50	-19.33	100	174	peak
192.9600	34.93	-12.29	22.64	43.50	-20.86	100	112	peak

Vertical

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dB μ V)	Factor(dB/m)	(dB μ V/m)	(dB μ V/m)	(dB)	(cm)	(°)	
34.8500	39.09	-6.65	32.44	40.00	-7.56	100	321	peak
55.2200	49.65	-17.29	32.36	40.00	-7.64	100	96	peak
87.2300	43.86	-16.80	27.06	40.00	-12.94	100	74	peak
129.9100	32.77	-10.13	22.64	43.50	-20.86	100	66	peak
165.8000	35.25	-11.71	23.54	43.50	-19.96	100	47	peak
176.4700	36.18	-12.75	23.43	43.50	-20.07	100	118	peak

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

For UNII-1 Band I:**Above 1GHz****Horizontal**

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
a Mode, Low channel								
5146.900	55.79	-2.17	53.62	74.00	-20.38	130	107	peak
5146.900	42.83	-2.17	40.66	54.00	-13.34	130	107	AVG
5180.000	97.51	-2.29	95.22	N/A	N/A	130	107	peak
5180.000	86.63	-2.29	84.34	N/A	N/A	130	107	AVG
10360.000	42.19	7.11	49.30	68.23	-18.93	148	33	peak
15540.000	41.77	11.95	53.72	74.00	-20.28	148	27	peak
15540.000	34.22	11.95	46.17	54.00	-7.83	148	27	AVG
a Mode, Middle channel								
5200.000	96.71	-2.37	94.34	N/A	N/A	132	105	peak
5200.000	86.39	-2.37	84.02	N/A	N/A	132	105	AVG
10400.000	40.99	7.42	48.41	68.23	-19.82	157	125	peak
15600.000	42.41	11.63	54.04	74.00	-19.96	166	133	peak
15600.000	34.28	11.63	45.91	54.00	-8.09	166	133	AVG
a Mode, High channel								
5079.600	56.06	-2.13	53.93	74.00	-20.07	125	110	peak
5079.600	42.76	-2.13	40.63	54.00	-13.37	125	110	AVG
5240.000	93.43	-2.62	90.81	N/A	N/A	125	110	peak
5240.000	82.90	-2.62	80.28	N/A	N/A	125	110	AVG
5416.000	55.81	-2.59	53.22	74.00	-20.78	125	110	peak
5416.000	42.84	-2.59	40.25	54.00	-13.75	125	110	AVG
10480.000	42.38	7.98	50.36	68.23	-17.87	138	128	peak
15720.000	43.47	11.35	54.82	74.00	-19.18	146	135	peak
15720.000	34.22	11.35	45.57	54.00	-8.43	146	135	AVG

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

Vertical

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
a Mode, Low channel								
5127.100	56.88	-2.10	54.78	74.00	-19.22	101	124	peak
5127.100	44.23	-2.10	42.13	54.00	-11.87	101	124	AVG
5180.000	104.45	-2.29	102.16	N/A	N/A	101	124	peak
5180.000	93.74	-2.29	91.45	N/A	N/A	101	124	AVG
10360.000	40.45	7.11	47.56	68.23	-20.67	166	23	peak
15540.000	42.55	11.95	54.50	74.00	-19.50	154	25	peak
15540.000	34.28	11.95	46.23	54.00	-7.77	154	25	AVG
a Mode, Middle channel								
5200.000	104.38	-2.37	102.01	N/A	N/A	105	136	peak
5200.000	94.08	-2.37	91.71	N/A	N/A	105	136	AVG
10400.000	42.68	7.42	50.10	68.23	-18.13	151	166	peak
15600.000	42.87	11.63	54.50	74.00	-19.50	138	254	peak
15600.000	34.28	11.63	45.91	54.00	-8.09	138	254	AVG
a Mode, High channel								
5120.400	56.05	-2.08	53.97	74.00	-20.03	105	128	peak
5120.400	42.84	-2.08	40.76	54.00	-13.24	105	128	AVG
5240.000	105.01	-2.62	102.39	N/A	N/A	105	128	peak
5240.000	94.37	-2.62	91.75	N/A	N/A	105	128	AVG
5404.000	55.96	-2.44	53.52	74.00	-20.48	105	128	peak
5404.000	42.82	-2.44	40.38	54.00	-13.62	105	128	AVG
10480.000	40.91	7.98	48.89	68.23	-19.34	146	223	peak
15720.000	43.36	11.35	54.71	74.00	-19.29	157	124	peak
15720.000	34.21	11.35	45.56	54.00	-8.44	157	124	AVG

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

Horizontal

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
N20 Mode, Low channel								
5147.350	56.83	-2.17	54.66	74.00	-19.34	128	151	peak
5147.350	42.79	-2.17	40.62	54.00	-13.38	128	151	AVG
5180.000	91.31	-2.29	89.02	N/A	N/A	128	151	peak
5180.000	80.55	-2.29	78.26	N/A	N/A	128	151	AVG
10360.000	41.46	7.11	48.57	68.23	-19.66	138	223	peak
15540.000	41.04	11.95	52.99	74.00	-21.01	154	328	peak
15540.000	33.07	11.95	45.02	54.00	-8.98	154	328	AVG
N20 Mode, Middle channel								
5200.000	92.39	-2.37	90.02	N/A	N/A	132	125	peak
5200.000	81.51	-2.37	79.14	N/A	N/A	132	125	AVG
10400.000	40.59	7.42	48.01	68.23	-20.22	138	256	peak
15600.000	41.56	11.63	53.19	74.00	-20.81	144	139	peak
15600.000	33.24	11.63	44.87	54.00	-9.13	144	139	AVG
N20 Mode, High channel								
5135.200	57.00	-2.14	54.86	74.00	-19.14	134	105	peak
5135.200	42.85	-2.14	40.71	54.00	-13.29	134	105	AVG
5240.000	93.50	-2.62	90.88	N/A	N/A	134	105	peak
5240.000	82.77	-2.62	80.15	N/A	N/A	134	105	AVG
5387.200	56.45	-2.45	54.00	74.00	-20.00	134	105	peak
5387.200	42.95	-2.45	40.50	54.00	-13.50	134	105	AVG
10480.000	40.12	7.98	48.10	68.23	-20.13	138	256	peak
15720.000	44.46	11.35	55.81	74.00	-18.19	144	231	peak
15720.000	33.37	11.35	44.72	54.00	-9.28	144	231	AVG

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

Vertical

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
N20 Mode, Low channel								
5126.650	56.42	-2.10	54.32	74.00	-19.68	109	131	peak
5126.650	43.88	-2.10	41.78	54.00	-12.22	109	131	AVG
5180.000	104.71	-2.29	102.42	N/A	N/A	109	131	peak
5180.000	93.94	-2.29	91.65	N/A	N/A	109	131	AVG
10360.000	40.47	7.11	47.58	68.23	-20.65	138	322	peak
15540.000	42.44	11.95	54.39	74.00	-19.61	144	255	peak
15540.000	33.26	11.95	45.21	54.00	-8.79	144	255	AVG
N20 Mode, Middle channel								
5200.000	103.95	-2.37	101.58	N/A	N/A	105	135	peak
5200.000	93.84	-2.37	91.47	N/A	N/A	105	135	AVG
10400.000	41.24	7.42	48.66	68.23	-19.57	156	139	peak
15600.000	42.77	11.63	54.40	74.00	-19.60	173	255	peak
15600.000	33.28	11.63	44.91	54.00	-9.09	173	255	AVG
N20 Mode, High channel								
5104.400	56.20	-2.03	54.17	74.00	-19.83	109	138	peak
5104.400	43.04	-2.03	41.01	54.00	-12.99	109	138	AVG
5240.000	105.46	-2.62	102.84	N/A	N/A	109	138	peak
5240.000	94.29	-2.62	91.67	N/A	N/A	109	138	AVG
5362.000	56.12	-2.55	53.57	74.00	-20.43	109	138	peak
5362.000	42.89	-2.55	40.34	54.00	-13.66	109	138	AVG
10480.000	40.84	7.98	48.82	68.23	-19.41	138	248	peak
15720.000	43.55	11.35	54.90	74.00	-19.10	155	321	peak
15720.000	33.21	11.35	44.56	54.00	-9.44	155	321	AVG

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

Horizontal

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
N40 Mode, Low channel								
5119.920	56.36	-2.08	54.28	74.00	-19.72	102	131	peak
5119.920	43.26	-2.08	41.18	54.00	-12.82	102	131	AVG
5190.000	88.65	-2.33	86.32	N/A	N/A	102	131	peak
5190.000	78.22	-2.33	75.89	N/A	N/A	102	131	AVG
10380.000	41.55	7.27	48.82	68.23	-19.41	138	233	peak
15570.000	42.42	11.79	54.21	74.00	-19.79	156	155	peak
15570.000	32.57	11.79	44.36	54.00	-9.64	156	155	AVG
N40 Mode, High channel								
5146.400	56.49	-2.17	54.32	74.00	-19.68	135	128	peak
5146.400	43.26	-2.17	41.09	54.00	-12.91	135	128	AVG
5230.000	89.40	-2.56	86.84	N/A	N/A	135	128	peak
5230.000	79.33	-2.56	76.77	N/A	N/A	135	128	AVG
5424.400	56.29	-2.69	53.60	74.00	-20.40	135	128	peak
5424.400	42.82	-2.69	40.13	54.00	-13.87	135	128	AVG
10460.000	40.04	7.84	47.88	68.23	-20.35	135	258	peak
15690.000	44.37	11.33	55.70	74.00	-18.30	146	311	peak
15690.000	32.28	11.33	43.61	54.00	-10.39	146	311	AVG

Vertical

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
N40 Mode, Low channel								
5147.120	63.64	-2.17	61.47	74.00	-12.53	105	135	peak
5147.120	47.02	-2.17	44.85	54.00	-9.15	105	135	AVG
5190.000	101.23	-2.33	98.90	N/A	N/A	105	135	peak
5190.000	90.34	-2.33	88.01	N/A	N/A	105	135	AVG
10380.000	40.67	7.27	47.94	68.23	-20.29	138	255	peak
15570.000	42.91	11.79	54.70	74.00	-19.30	146	133	peak
15570.000	32.66	11.79	44.45	54.00	-9.55	146	133	AVG
N40 Mode, High channel								
5126.000	56.22	-2.10	54.12	74.00	-19.88	102	135	peak
5126.000	43.47	-2.10	41.37	54.00	-12.63	102	135	AVG
5230.000	101.17	-2.56	98.61	N/A	N/A	102	135	peak
5230.000	91.04	-2.56	88.48	N/A	N/A	102	135	AVG
5402.400	55.65	-2.42	53.23	74.00	-20.77	102	135	peak
5402.400	42.93	-2.42	40.51	54.00	-13.49	102	135	AVG
10460.000	41.94	7.84	49.78	68.23	-18.45	133	224	peak
15690.000	45.02	11.33	56.35	74.00	-17.65	158	311	peak
15690.000	33.57	11.33	44.90	54.00	-9.10	158	311	AVG

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

For UNII-3 Band IV:**Above 1GHz****Horizontal**

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
a Mode, Low channel								
5637.360	55.43	-2.72	52.71	68.20	-15.49	128	105	peak
5670.840	55.42	-2.68	52.74	83.62	-30.88	128	105	peak
5713.320	55.25	-2.66	52.59	108.93	-56.34	128	105	peak
5724.480	56.90	-2.67	54.23	121.01	-66.78	128	105	peak
5745.000	100.71	-2.70	98.01	N/A	N/A	128	105	peak
5745.000	89.98	-2.70	87.28	N/A	N/A	128	105	AVG
5853.720	54.87	-2.14	52.73	113.72	-60.99	128	105	peak
5858.400	55.53	-2.10	53.43	109.85	-56.42	128	105	peak
5916.000	56.24	-1.65	54.59	74.86	-20.27	128	105	peak
5946.240	55.81	-1.72	54.09	68.20	-14.11	128	105	peak
11490.000	40.20	8.87	49.07	74.00	-24.93	128	255	peak
11490.000	34.28	8.87	43.15	54.00	-10.85	128	138	AVG
17235.000	41.81	13.63	55.44	68.23	-12.79	134	138	peak
a Mode, Middle channel								
5633.040	55.95	-2.73	53.22	68.20	-14.98	125	117	peak
5678.760	55.75	-2.67	53.08	89.48	-36.40	125	117	peak
5714.040	55.01	-2.66	52.35	109.13	-56.78	125	117	peak
5723.400	55.18	-2.67	52.51	118.55	-66.04	125	117	peak
5785.000	98.58	-2.67	95.91	N/A	N/A	125	117	peak
5785.000	88.78	-2.67	86.11	N/A	N/A	125	117	AVG
5854.080	55.43	-2.14	53.29	112.90	-59.61	125	117	peak
5860.560	56.17	-2.08	54.09	109.24	-55.15	125	117	peak
5907.720	56.88	-1.62	55.26	80.99	-25.73	125	117	peak
5927.520	55.43	-1.66	53.77	68.20	-14.43	125	117	peak
11570.000	41.21	9.41	50.62	74.00	-23.38	138	238	peak
11570.000	33.28	9.41	42.69	54.00	-11.31	138	238	AVG
17355.000	41.55	13.67	55.22	68.23	-13.01	144	256	peak
a Mode, High channel								
5634.120	56.56	-2.73	53.83	68.20	-14.37	135	118	peak
5673.360	56.00	-2.68	53.32	85.49	-32.17	135	118	peak
5719.080	55.52	-2.67	52.85	110.54	-57.69	135	118	peak
5723.400	54.97	-2.67	52.30	118.55	-66.25	135	118	peak
5825.000	98.46	-2.42	96.04	N/A	N/A	135	118	peak
5825.000	89.08	-2.42	86.66	N/A	N/A	135	118	AVG
5852.640	55.44	-2.15	53.29	116.18	-62.89	135	118	peak
5861.280	55.98	-2.07	53.91	109.04	-55.13	135	118	peak
5892.600	56.51	-1.76	54.75	92.18	-37.43	135	118	peak
5949.120	55.58	-1.73	53.85	68.20	-14.35	135	118	peak
11650.000	41.12	9.34	50.46	74.00	-23.54	138	238	peak
11650.000	33.27	9.34	42.61	54.00	-11.39	138	238	AVG
17475.000	41.05	13.14	54.19	68.23	-14.04	146	158	peak

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

Vertical

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
a Mode, Low channel								
5647.800	55.73	-2.71	53.02	68.20	-15.18	120	130	peak
5688.120	56.89	-2.66	54.23	96.41	-42.18	120	130	peak
5718.720	55.34	-2.67	52.67	110.44	-57.77	120	130	peak
5723.400	62.22	-2.67	59.55	118.55	-59.00	120	130	peak
5745.000	102.15	-2.70	99.45	N/A	N/A	120	130	peak
5745.000	91.73	-2.70	89.03	N/A	N/A	120	130	AVG
5854.800	55.61	-2.13	53.48	111.26	-57.78	120	130	peak
5855.160	55.26	-2.13	53.13	110.76	-57.63	120	130	peak
5890.440	55.88	-1.79	54.09	93.77	-39.68	120	130	peak
5925.000	54.77	-1.67	53.10	68.20	-15.10	120	130	peak
11490.000	41.77	8.87	50.64	74.00	-23.36	187	238	peak
11490.000	34.55	8.87	43.42	54.00	-10.58	187	238	AVG
17235.000	41.87	13.63	55.50	68.23	-12.73	156	146	peak
a Mode, Middle channel								
5632.320	55.72	-2.74	52.98	68.20	-15.22	108	131	peak
5651.040	55.82	-2.71	53.11	68.97	-15.86	108	131	peak
5703.960	55.37	-2.65	52.72	106.31	-53.59	108	131	peak
5723.400	54.69	-2.67	52.02	118.55	-66.53	108	131	peak
5785.000	100.07	-2.67	97.40	N/A	N/A	108	131	peak
5785.000	90.68	-2.67	88.01	N/A	N/A	108	131	AVG
5853.000	55.06	-2.15	52.91	115.36	-62.45	108	131	peak
5870.280	56.50	-1.98	54.52	106.52	-52.00	108	131	peak
5915.640	55.62	-1.65	53.97	75.13	-21.16	108	131	peak
5932.920	55.92	-1.68	54.24	68.20	-13.96	108	131	peak
11570.000	39.77	9.41	49.18	74.00	-24.82	158	256	peak
11570.000	34.28	9.41	43.69	54.00	-10.31	158	256	AVG
17355.000	41.22	13.67	54.89	68.23	-13.34	136	238	peak
a Mode, High channel								
5633.400	56.34	-2.73	53.61	68.20	-14.59	105	130	peak
5677.680	55.50	-2.67	52.83	88.68	-35.85	105	130	peak
5710.080	56.04	-2.65	53.39	108.02	-54.63	105	130	peak
5720.160	55.11	-2.67	52.44	111.16	-58.72	105	130	peak
5825.000	99.69	-2.42	97.27	N/A	N/A	105	130	peak
5825.000	89.50	-2.42	87.08	N/A	N/A	105	130	AVG
5852.640	54.75	-2.15	52.60	116.18	-63.58	105	130	peak
5869.200	55.04	-1.98	53.06	106.82	-53.76	105	130	peak
5918.520	55.31	-1.65	53.66	73.00	-19.34	105	130	peak
5932.920	55.51	-1.68	53.83	68.20	-14.37	105	130	peak
11650.000	40.72	9.34	50.06	74.00	-23.94	150	212	peak
11650.000	35.33	9.34	44.67	54.00	-9.33	150	212	AVG
17475.000	42.19	13.14	55.33	68.20	-12.87	150	1	peak

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain
Spurious emissions more than 20 dB below the limit were not reported.

Horizontal

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
N20 Mode, Low channel								
5613.240	54.88	-2.76	52.12	68.20	-16.08	135	112	peak
5676.600	55.62	-2.67	52.95	87.88	-34.93	135	112	peak
5716.920	56.64	-2.66	53.98	109.94	-55.96	135	112	peak
5723.400	59.78	-2.67	57.11	118.55	-61.44	135	112	peak
5745.000	100.24	-2.70	97.54	N/A	N/A	135	112	peak
5745.000	89.95	-2.70	87.25	N/A	N/A	135	112	AVG
5852.640	55.81	-2.15	53.66	116.18	-62.52	135	112	peak
5865.960	55.91	-2.02	53.89	107.73	-53.84	135	112	peak
5876.400	55.73	-1.92	53.81	104.16	-50.35	135	112	peak
5925.720	56.39	-1.68	54.71	68.20	-13.49	135	112	peak
11490.000	40.87	8.87	49.74	74.00	-24.26	155	235	peak
11490.000	33.28	8.87	42.15	54.00	-11.85	155	235	AVG
17235.000	42.50	13.63	56.13	68.23	-12.10	138	322	peak
N20 Mode, Middle channel								
5622.600	55.08	-2.75	52.33	68.20	-15.87	135	110	peak
5673.360	56.39	-2.68	53.71	85.49	-31.78	135	110	peak
5714.760	55.66	-2.66	53.00	109.33	-56.33	135	110	peak
5725.000	54.80	-2.67	52.13	122.20	-70.07	135	110	peak
5785.000	98.34	-2.67	95.67	N/A	N/A	135	110	peak
5785.000	88.44	-2.67	85.77	N/A	N/A	135	110	AVG
5850.120	55.67	-2.17	53.50	121.93	-68.43	135	110	peak
5873.520	55.69	-1.95	53.74	105.61	-51.87	135	110	peak
5904.120	56.23	-1.63	54.60	83.65	-29.05	135	110	peak
5931.840	55.28	-1.68	53.60	68.20	-14.60	135	110	peak
11570.000	40.79	9.41	50.20	74.00	-23.80	145	238	peak
11570.000	33.24	9.41	42.65	54.00	-11.35	145	238	AVG
17355.000	41.49	13.67	55.16	68.23	-13.07	166	322	peak
N20 Mode, High channel								
5640.240	54.90	-2.72	52.18	68.20	-16.02	138	212	peak
5670.840	57.44	-2.68	54.76	83.62	-28.86	138	212	peak
5706.120	55.17	-2.65	52.52	106.91	-54.39	138	212	peak
5720.160	55.08	-2.67	52.41	111.16	-58.75	138	212	peak
5825.000	98.36	-2.42	95.94	N/A	N/A	138	212	peak
5825.000	88.52	-2.42	86.10	N/A	N/A	138	212	AVG
5854.440	55.38	-2.13	53.25	112.08	-58.83	138	212	peak
5862.000	55.70	-2.07	53.63	108.84	-55.21	138	212	peak
5878.920	55.95	-1.90	54.05	102.30	-48.25	138	212	peak
5949.840	55.85	-1.73	54.12	68.20	-14.08	138	212	peak
11650.000	39.93	9.34	49.27	74.00	-24.73	145	238	peak
11650.000	31.28	9.34	40.62	54.00	-13.38	145	238	AVG
17475.000	40.27	13.14	53.41	68.23	-14.82	166	311	peak

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

Vertical

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
N20 Mode, Low channel								
5647.800	55.73	-2.71	53.02	68.20	-15.18	120	130	peak
5688.120	56.89	-2.66	54.23	96.41	-42.18	120	130	peak
5718.720	55.34	-2.67	52.67	110.44	-57.77	120	130	peak
5723.400	62.22	-2.67	59.55	118.55	-59.00	120	130	peak
5745.000	102.15	-2.70	99.45	N/A	N/A	120	130	peak
5745.000	91.73	-2.70	89.03	N/A	N/A	120	130	AVG
5854.800	55.61	-2.13	53.48	111.26	-57.78	120	130	peak
5855.160	55.26	-2.13	53.13	110.76	-57.63	120	130	peak
5890.440	55.88	-1.79	54.09	93.77	-39.68	120	130	peak
5925.000	54.77	-1.67	53.10	68.20	-15.10	120	130	peak
11490.000	41.03	8.87	49.90	74.00	-24.10	138	136	peak
11490.000	32.55	8.87	41.42	54.00	-12.58	138	136	AVG
17235.000	43.19	13.63	56.82	68.23	-11.41	155	254	peak
N20 Mode, Middle channel								
5624.400	55.35	-2.75	52.60	68.20	-15.60	105	138	peak
5689.920	56.17	-2.66	53.51	97.74	-44.23	105	138	peak
5709.360	54.93	-2.66	52.27	107.82	-55.55	105	138	peak
5721.960	55.95	-2.66	53.29	115.27	-61.98	105	138	peak
5785.000	100.42	-2.67	97.75	N/A	N/A	105	138	peak
5785.000	90.42	-2.67	87.75	N/A	N/A	105	138	AVG
5851.200	54.95	-2.16	52.79	119.46	-66.67	105	138	peak
5858.400	55.40	-2.10	53.30	109.85	-56.55	105	138	peak
5914.920	56.04	-1.64	54.40	75.66	-21.26	105	138	peak
5937.960	55.81	-1.70	54.11	68.20	-14.09	105	138	peak
11570.000	40.33	9.41	49.74	74.00	-24.26	138	256	peak
11570.000	33.47	9.41	42.88	54.00	-11.12	138	256	AVG
17355.000	41.25	13.67	54.92	68.23	-13.31	144	234	peak
N20 Mode, High channel								
5635.560	55.46	-2.72	52.74	68.20	-15.46	105	131	peak
5690.280	55.24	-2.66	52.58	98.01	-45.43	105	131	peak
5703.240	55.44	-2.65	52.79	106.11	-53.32	105	131	peak
5723.760	55.18	-2.67	52.51	119.37	-66.86	105	131	peak
5825.000	98.73	-2.42	96.31	N/A	N/A	105	131	peak
5825.000	89.19	-2.42	86.77	N/A	N/A	105	131	AVG
5851.920	55.22	-2.16	53.06	117.82	-64.76	105	131	peak
5862.000	55.70	-2.07	53.63	108.84	-55.21	105	131	peak
5898.360	55.86	-1.71	54.15	87.91	-33.76	105	131	peak
5934.360	55.39	-1.69	53.70	68.20	-14.50	105	131	peak
11650.000	41.19	9.34	50.53	74.00	-23.47	145	211	peak
11650.000	32.28	9.34	41.62	54.00	-12.38	145	211	AVG
17475.000	40.91	13.14	54.05	68.23	-14.18	166	138	peak

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

Horizontal

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
N40 Mode, Low channel								
5632.680	55.80	-2.73	53.07	68.20	-15.13	125	102	peak
5699.280	55.96	-2.64	53.32	104.67	-51.35	125	102	peak
5717.640	57.82	-2.67	55.15	110.14	-54.99	125	102	peak
5723.400	61.67	-2.67	59.00	118.55	-59.55	125	102	peak
5755.000	95.59	-2.69	92.90	N/A	N/A	125	102	peak
5755.000	85.75	-2.69	83.06	N/A	N/A	125	102	AVG
5853.720	54.61	-2.14	52.47	113.72	-61.25	125	102	peak
5859.840	55.73	-2.08	53.65	109.44	-55.79	125	102	peak
5923.920	56.83	-1.67	55.16	69.00	-13.84	125	102	peak
5938.320	55.91	-1.70	54.21	68.20	-13.99	125	102	peak
11510.000	39.72	9.01	48.73	74.00	-25.27	144	238	peak
11510.000	31.45	9.01	40.46	54.00	-13.54	144	238	AVG
17265.000	41.77	13.67	55.44	68.23	-12.79	156	322	peak
N40 Mode, High channel								
5629.800	55.22	-2.74	52.48	68.20	-15.72	128	134	peak
5661.480	55.29	-2.70	52.59	76.70	-24.11	128	134	peak
5707.560	55.18	-2.66	52.52	107.32	-54.80	128	134	peak
5723.040	55.30	-2.67	52.63	117.73	-65.10	128	134	peak
5795.000	94.57	-2.66	91.91	N/A	N/A	128	134	peak
5795.000	84.89	-2.66	82.23	N/A	N/A	128	134	AVG
5853.360	54.68	-2.14	52.54	114.54	-62.00	128	134	peak
5862.720	56.63	-2.05	54.58	108.64	-54.06	128	134	peak
5899.080	55.97	-1.70	54.27	87.38	-33.11	128	134	peak
5934.360	56.08	-1.69	54.39	68.20	-13.81	128	134	peak
11590.000	41.61	9.55	51.16	74.00	-22.84	157	238	peak
11590.000	33.58	9.55	43.13	54.00	-10.87	157	238	AVG
17385.000	41.54	13.63	55.17	68.23	-13.06	146	146	peak

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

Vertical

Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
(MHz)	(dBμV)	Factor(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	(cm)	(°)	
N40 Mode, Low channel								
5630.880	55.38	-2.74	52.64	68.20	-15.56	110	135	peak
5658.960	56.33	-2.70	53.63	74.83	-21.20	110	135	peak
5718.000	57.80	-2.67	55.13	110.24	-55.11	110	135	peak
5722.320	64.36	-2.66	61.70	116.09	-54.39	110	135	peak
5755.000	97.76	-2.69	95.07	N/A	N/A	110	135	peak
5755.000	87.76	-2.69	85.07	N/A	N/A	110	135	AVG
5854.080	54.27	-2.14	52.13	112.90	-60.77	110	135	peak
5871.360	55.72	-1.96	53.76	106.22	-52.46	110	135	peak
5883.600	55.65	-1.85	53.80	98.84	-45.04	110	135	peak
5949.480	55.30	-1.73	53.57	68.20	-14.63	110	135	peak
11510.000	40.24	9.01	49.25	74.00	-24.75	138	328	peak
11510.000	32.38	9.01	41.39	54.00	-12.61	138	328	AVG
17265.000	40.94	13.67	54.61	68.23	-13.62	146	255	peak
N40 Mode, High channel								
5625.840	55.17	-2.74	52.43	68.20	-15.77	106	135	peak
5693.520	55.99	-2.65	53.34	100.40	-47.06	106	135	peak
5716.560	54.89	-2.66	52.23	109.84	-57.61	106	135	peak
5722.680	54.93	-2.67	52.26	116.91	-64.65	106	135	peak
5795.000	96.19	-2.66	93.53	N/A	N/A	106	135	peak
5795.000	86.31	-2.66	83.65	N/A	N/A	106	135	AVG
5850.840	55.58	-2.16	53.42	120.28	-66.86	106	135	peak
5870.280	55.34	-1.98	53.36	106.52	-53.16	106	135	peak
5883.960	55.73	-1.85	53.88	98.57	-44.69	106	135	peak
5934.000	55.52	-1.69	53.83	68.20	-14.37	106	135	peak
11590.000	41.24	9.55	50.79	74.00	-23.21	144	239	peak
11590.000	32.58	9.55	42.13	54.00	-11.87	144	239	AVG
17385.000	42.71	13.63	56.34	68.23	-11.89	156	328	peak

Result = Reading + Correct Factor

Margin = Result – Limit

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported.

9 FCC §15.407(a)(e) – Emission Bandwidth And Occupied Bandwidth

9.1 Applicable Standard

As per FCC §15.407(a): 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.

As per FCC §15.407(e): for equipment operating in the band 5725 – 5850 MHz, the minimum 6 dB bandwidth of U-NII devices shall be 500 kHz.

9.2 Test Procedure

Emission Bandwidth (EBW)

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

Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

9.3 Test Results

Test mode: Transmitting

UNII Band	Mode	Channel	Frequency (MHz)	26dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)
UNII-1	802.11a	36	5180	22.56	16.98
		40	5200	22.40	16.78
		48	5240	22.44	16.86
	802.11n HT20	36	5180	22.88	17.94
		40	5200	22.68	17.86
		48	5240	22.92	17.94
	802.11n HT40	38	5190	43.36	36.12
		46	5230	43.92	36.28

UNII Band	Mode	Channel	Frequency (MHz)	6dB Emission Bandwidth (MHz)	99% Emission Bandwidth (MHz)	Limit (kHz)	Result
UNII-3	802.11a	149	5745	16.44	16.82	≥500	PASS
		157	5785	16.40	16.70	≥500	PASS
		165	5825	16.44	16.70	≥500	PASS
	802.11n HT20	149	5745	17.60	17.86	≥500	PASS
		157	5785	17.60	17.82	≥500	PASS
		165	5825	17.60	17.98	≥500	PASS
	802.11n HT40	151	5755	35.68	36.36	≥500	PASS
		159	5795	35.52	36.20	≥500	PASS

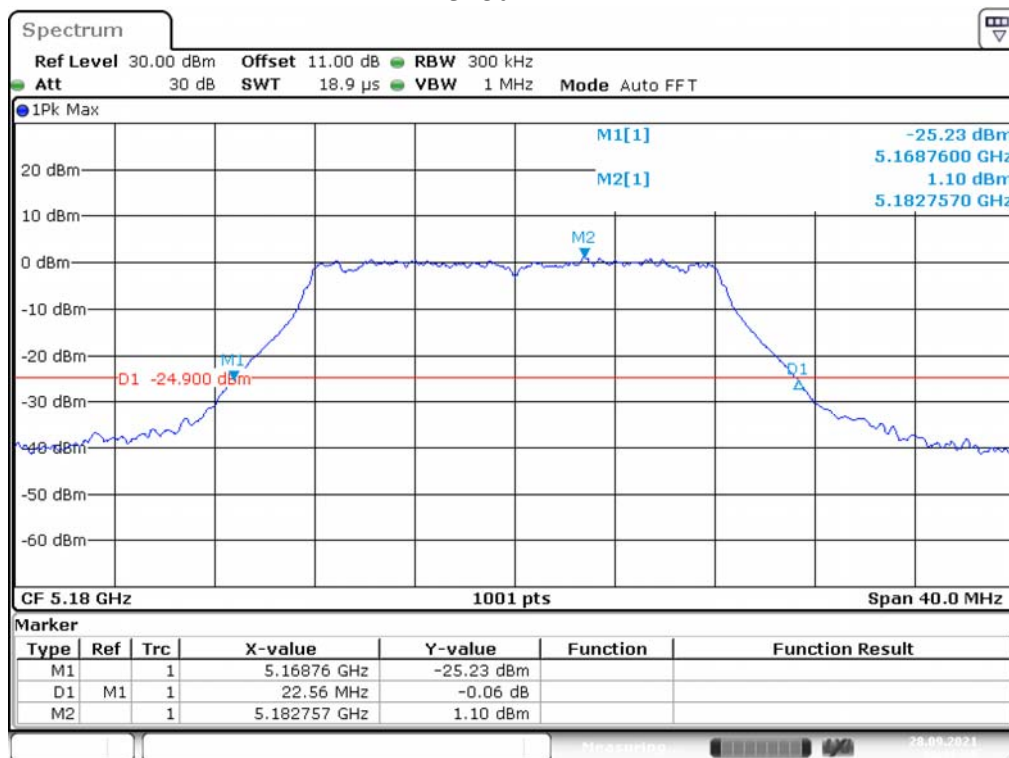
Please refer to the following plots

Transmitting Mode:

UNII-1 Band I / BW 26dBc

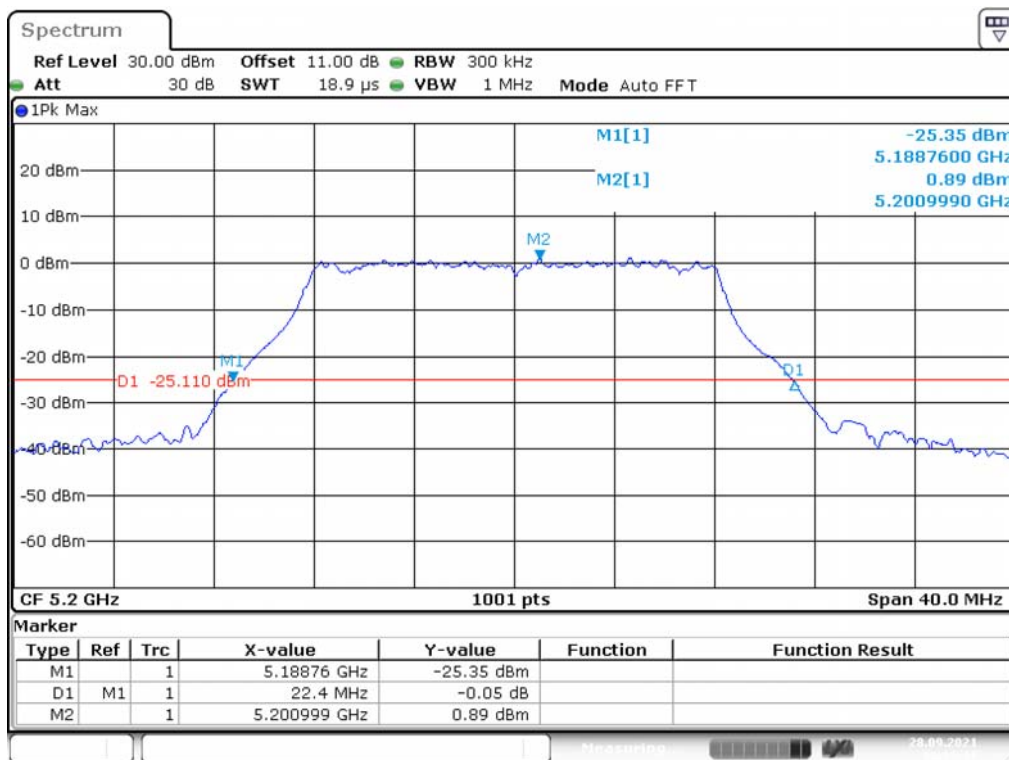
IEEE 802.11a Mode / 5150 ~ 5250MHz

5180MHz



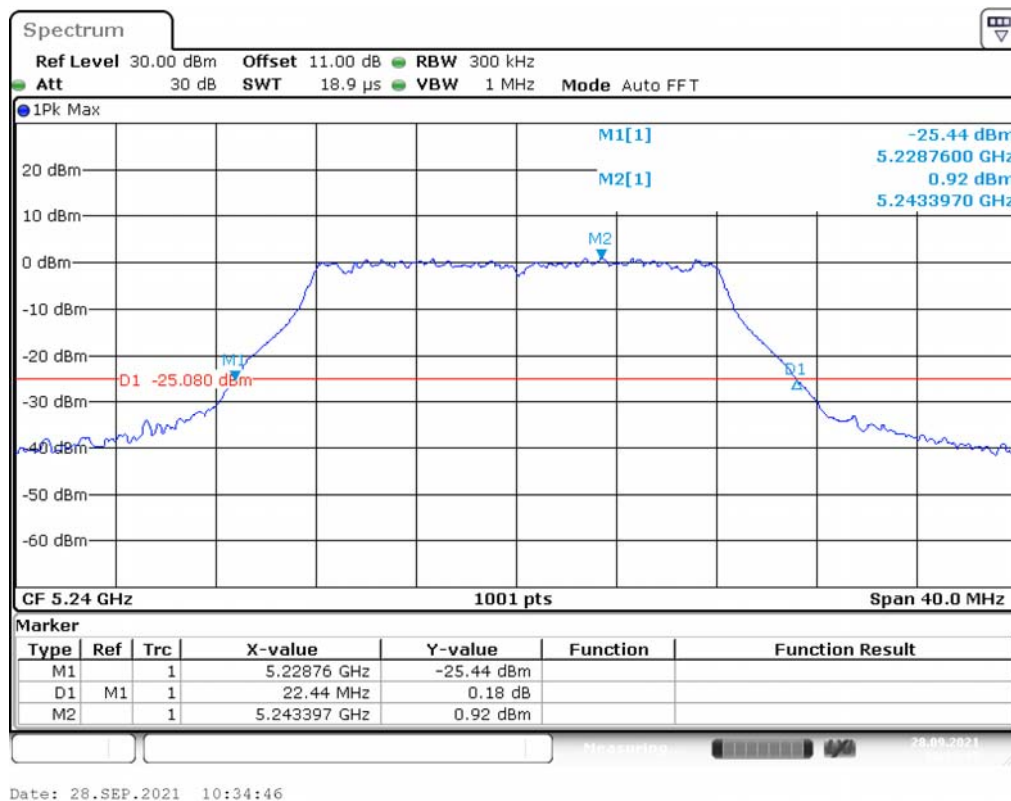
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5200MHz



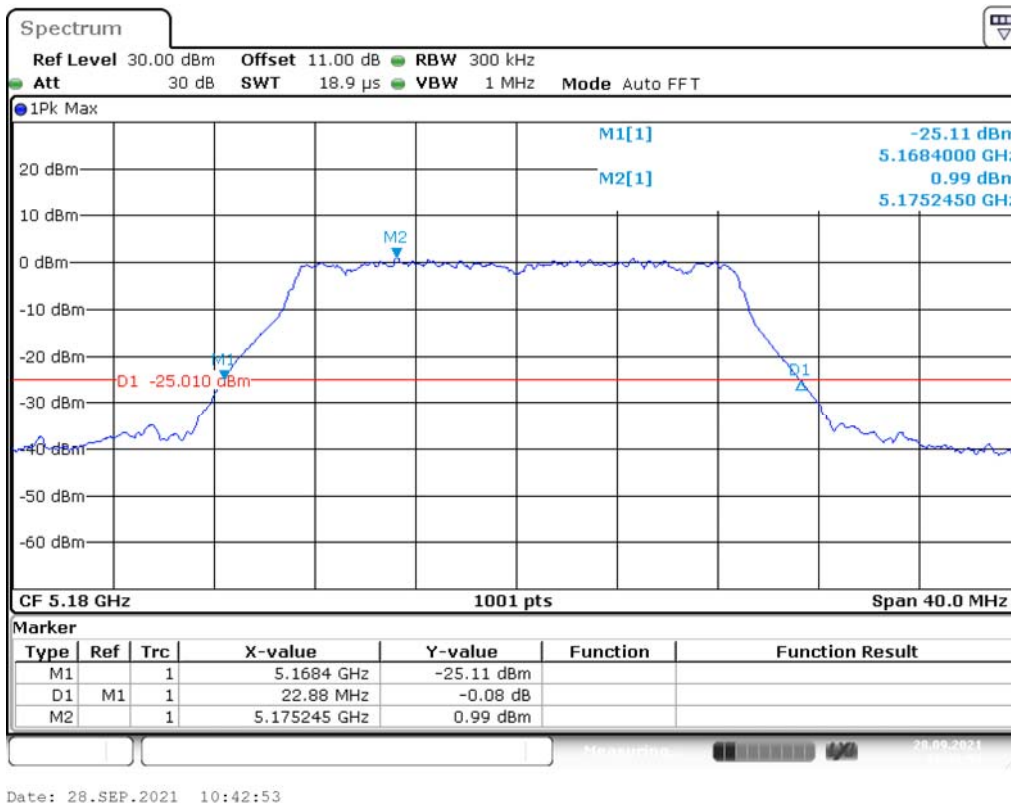
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5240MHz

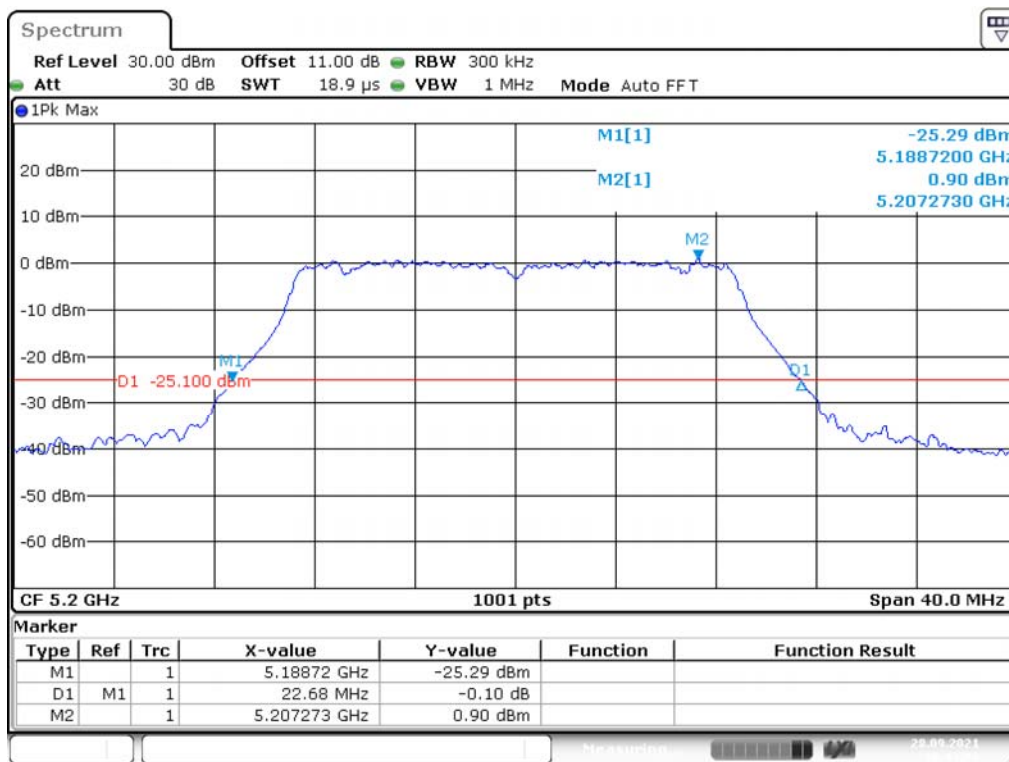


IEEE 802.11n HT20 Mode / 5150 ~ 5250MHz

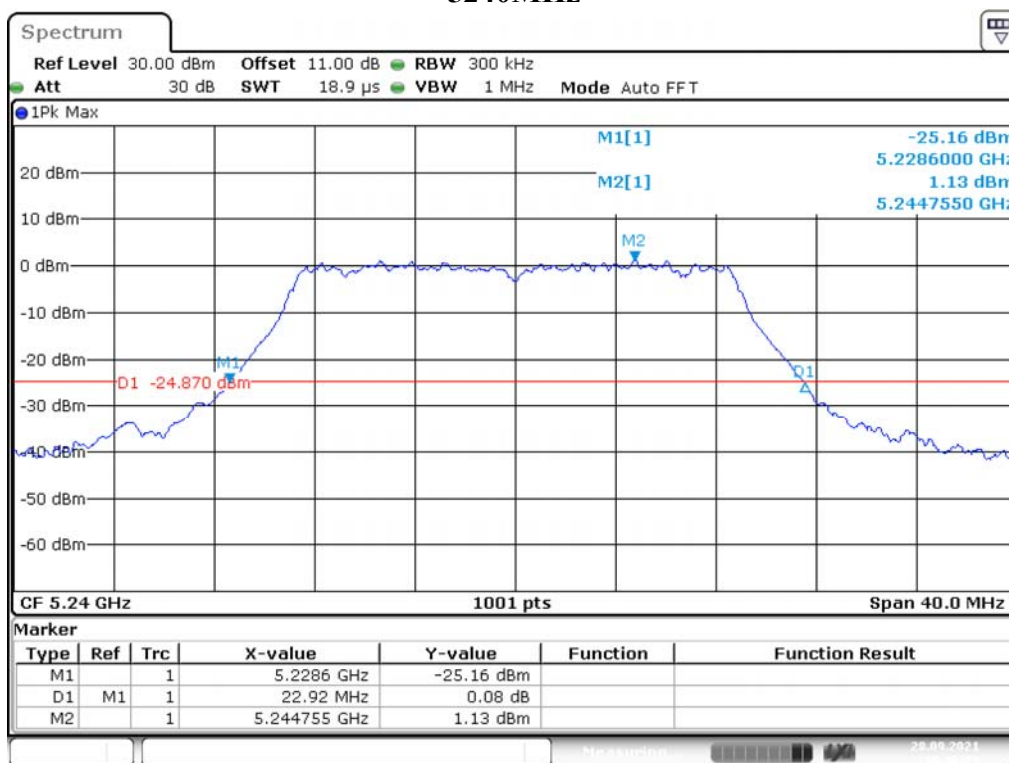
5180MHz

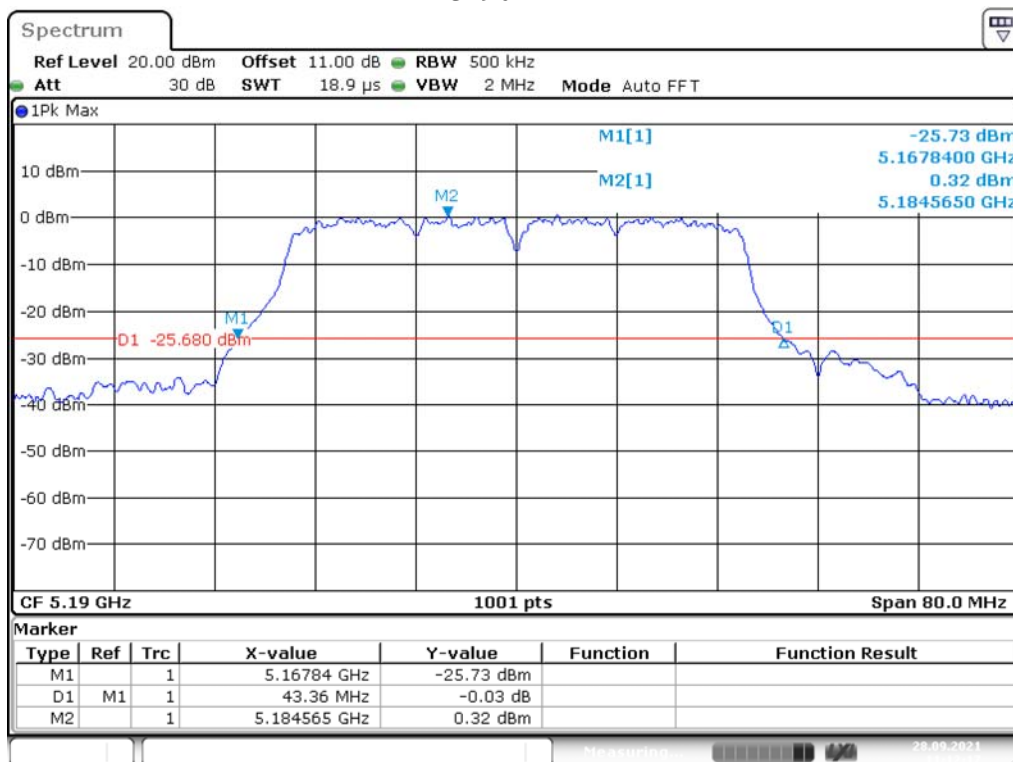


5200MHz

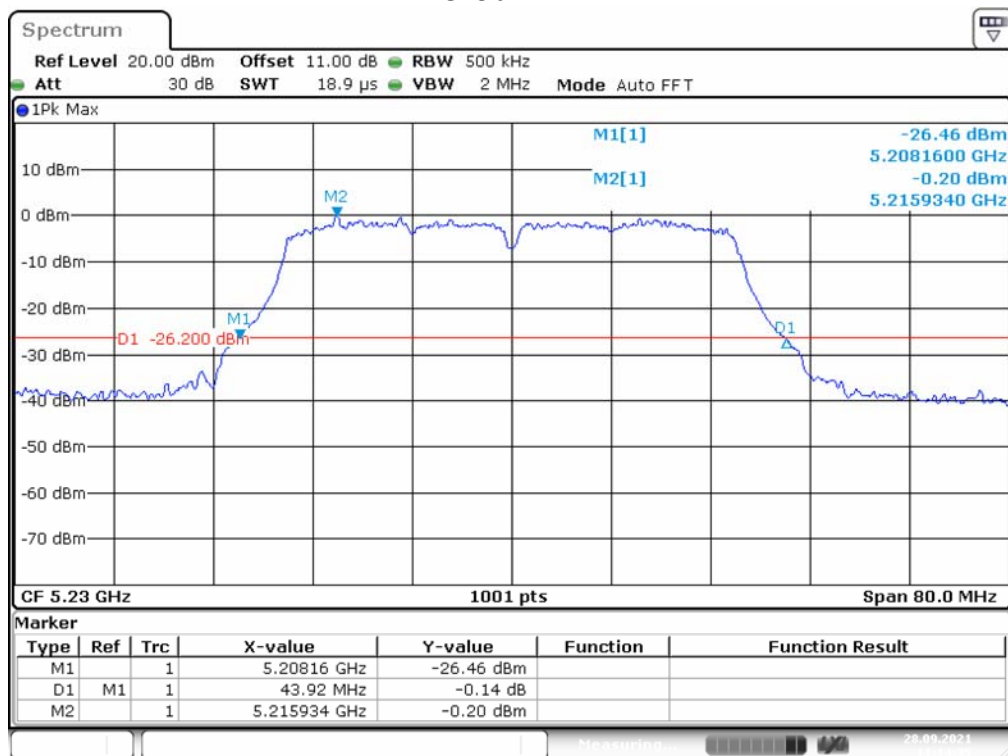


5240MHz



IEEE 802.11n HT40 Mode / 5150 ~ 5250MHz
5190MHz

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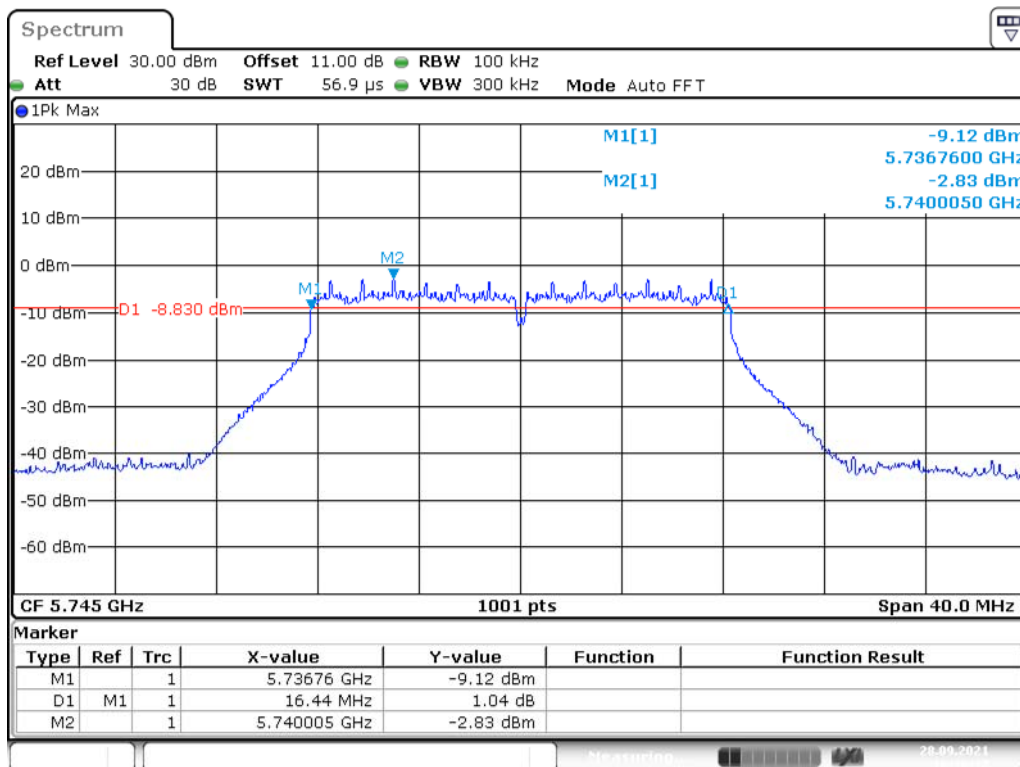
5230MHz

Date: 28.SEP.2021 11:14:36

UNII-3 Band IV / BW 6dBc

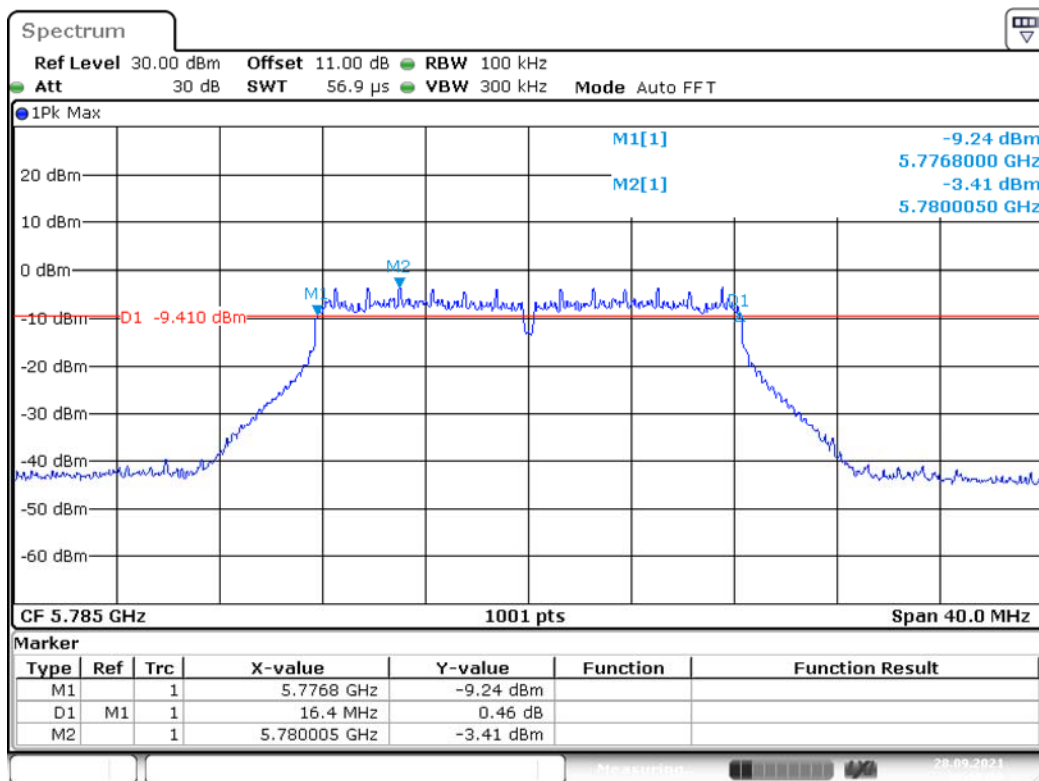
IEEE 802.11a Mode / 5725 ~ 5850MHz

5745MHz



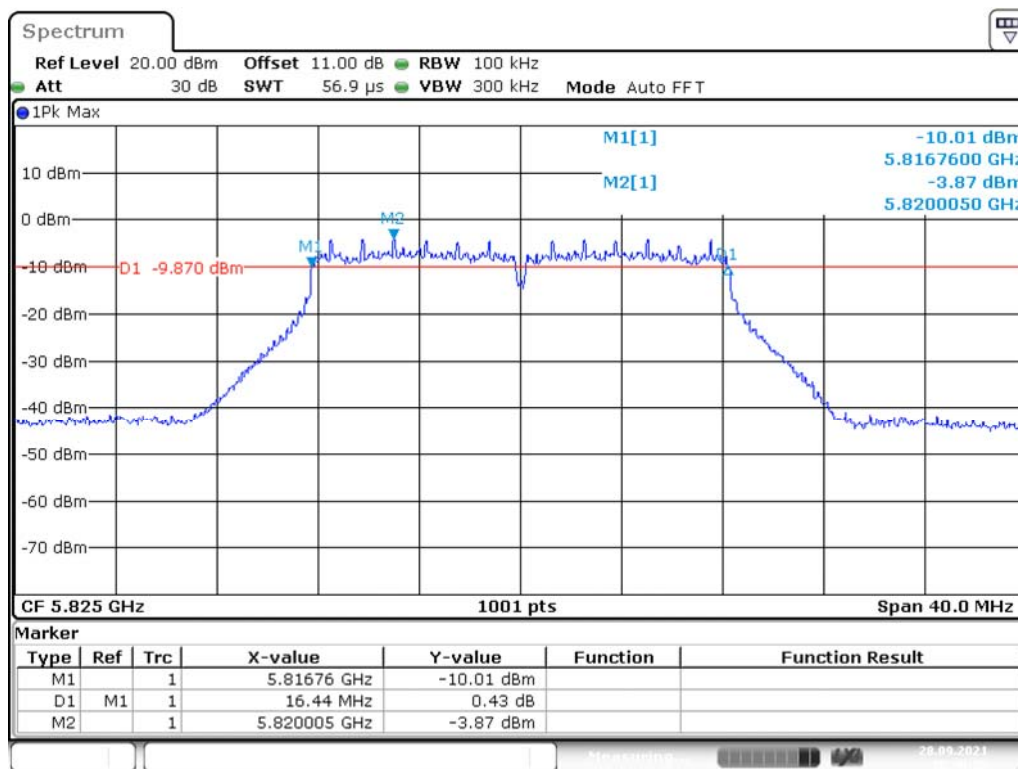
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5785MHz



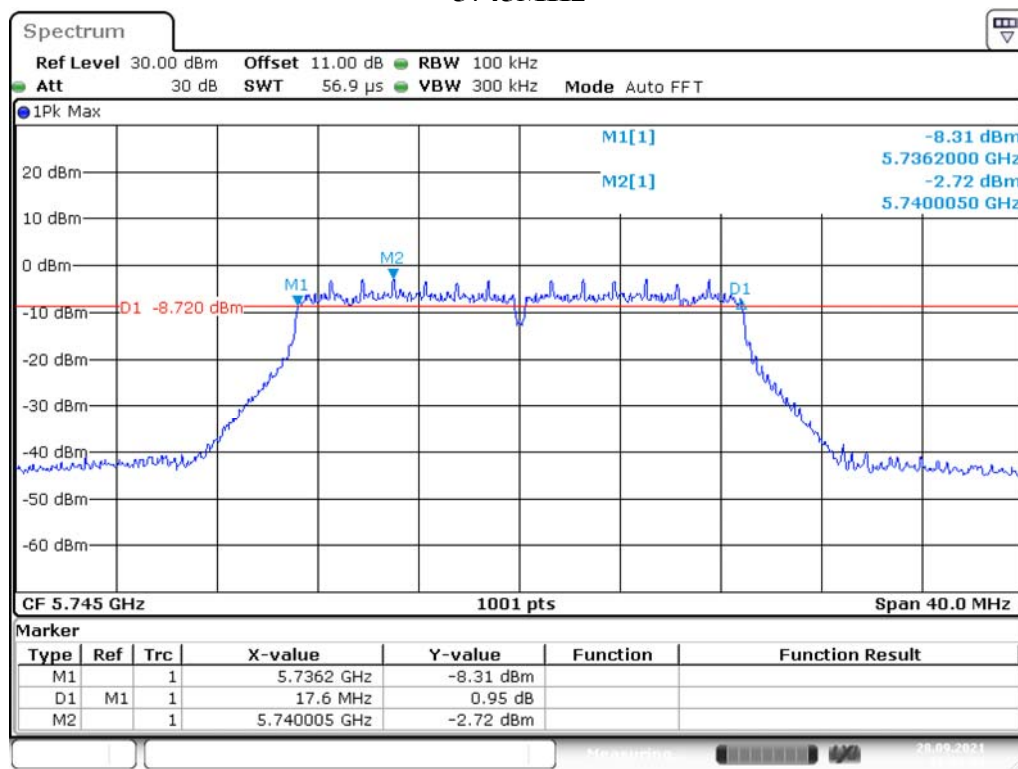
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5825MHz

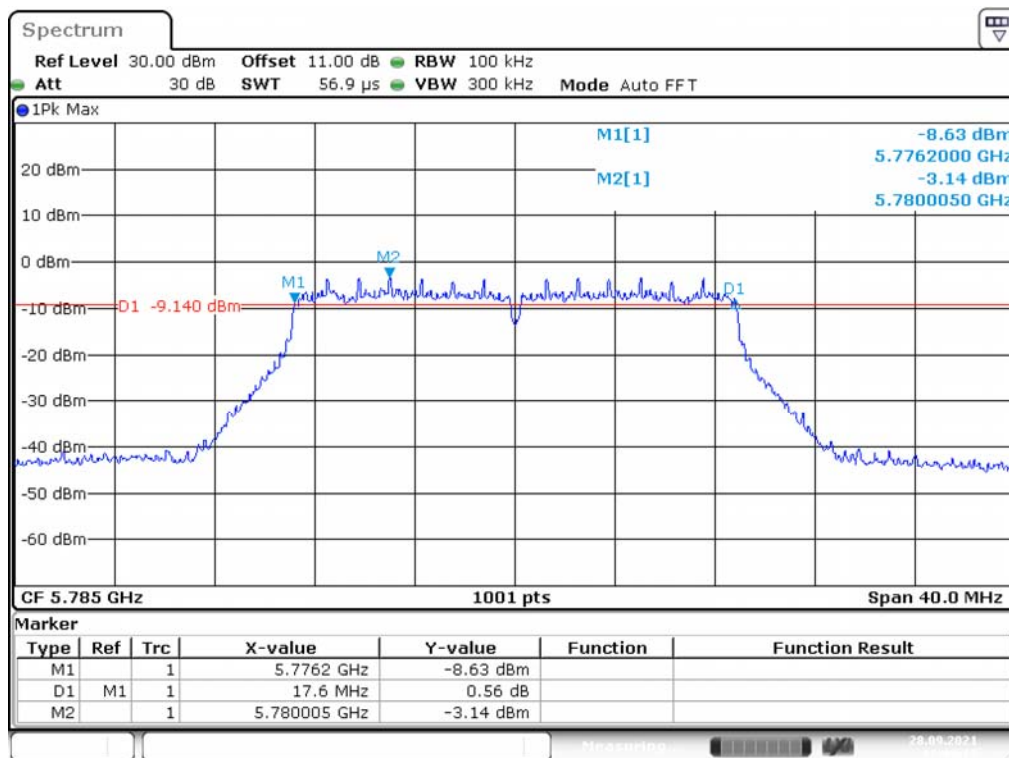


IEEE 802.11n HT20 Mode / 5725 ~ 5850MHz

5745MHz

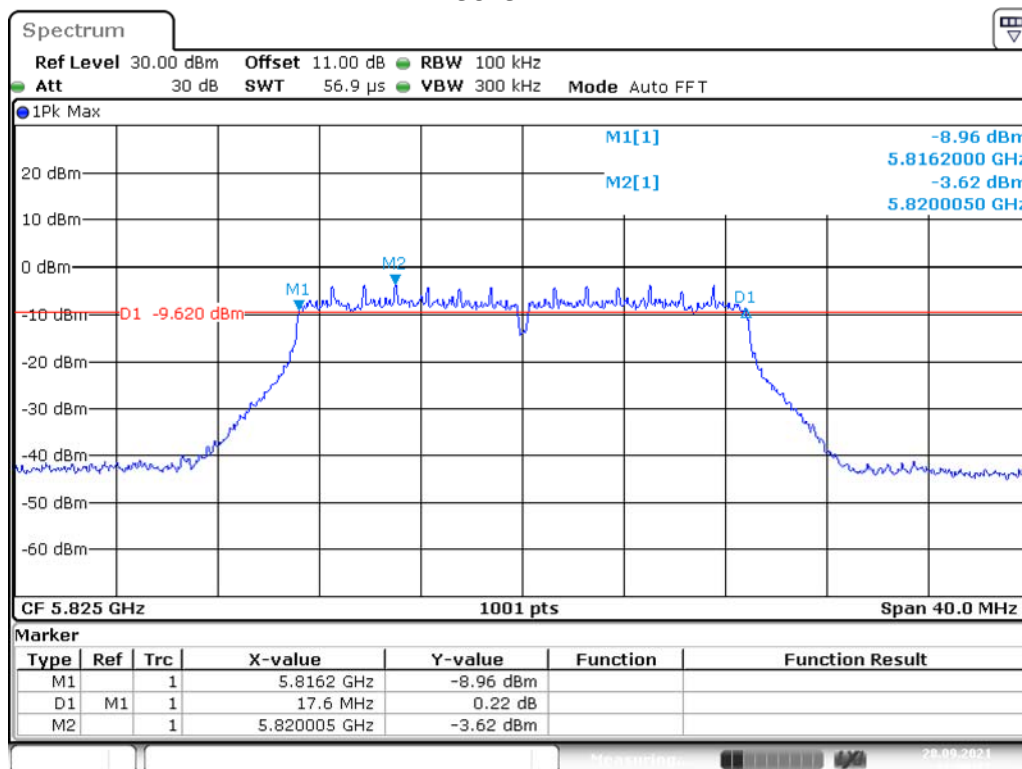


5785MHz

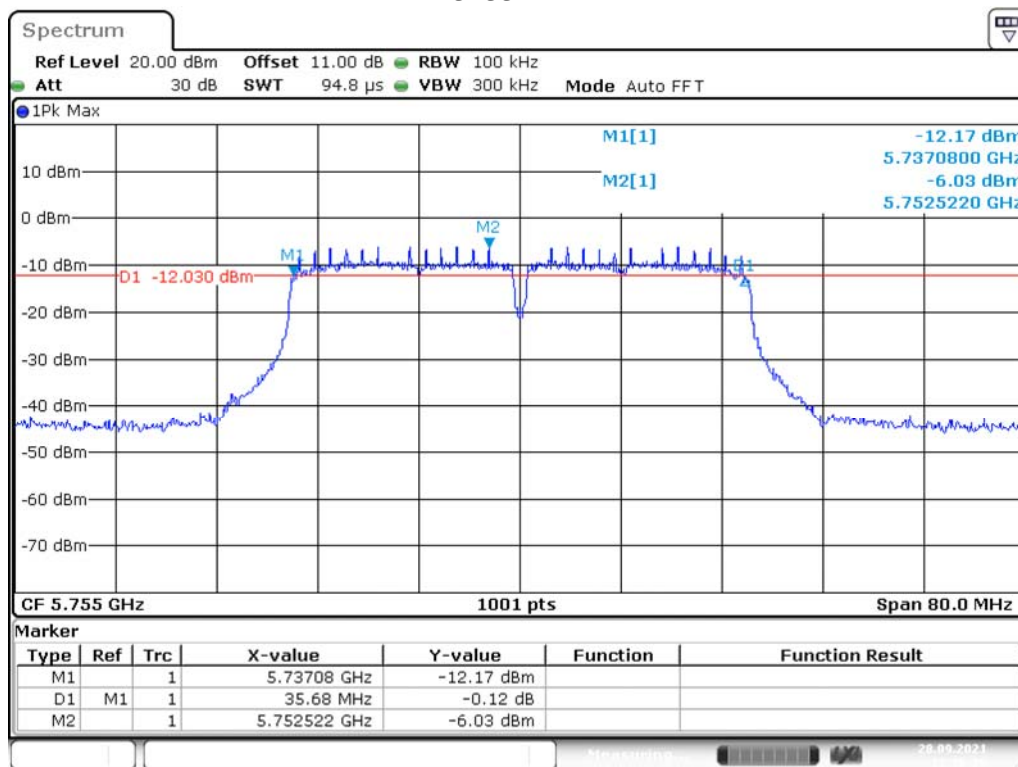


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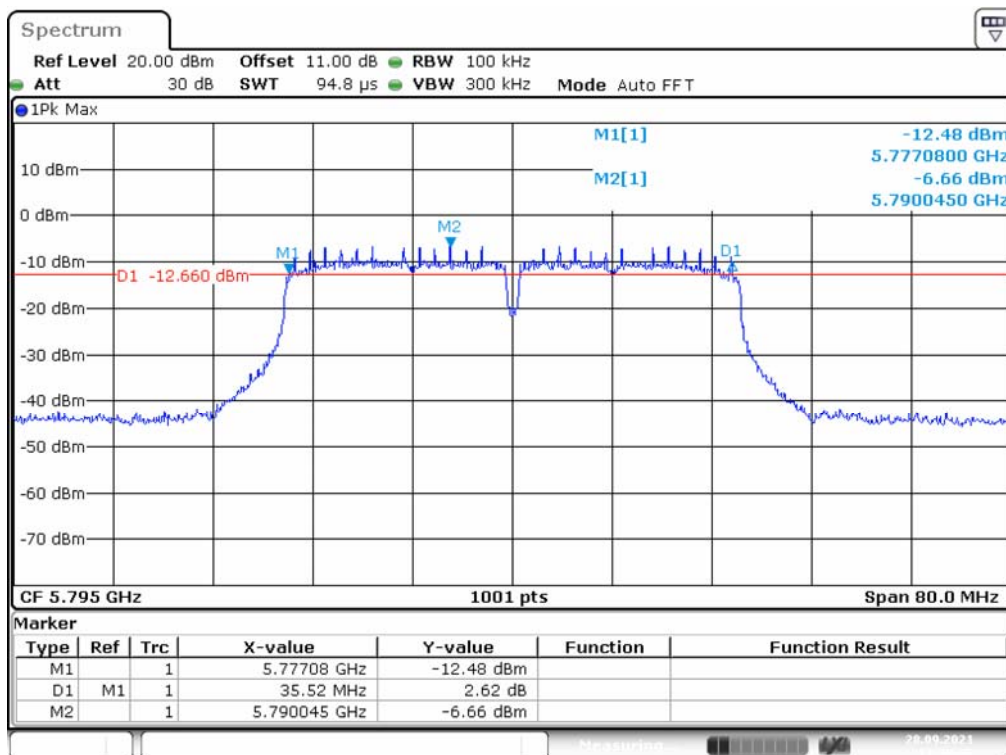
5825MHz



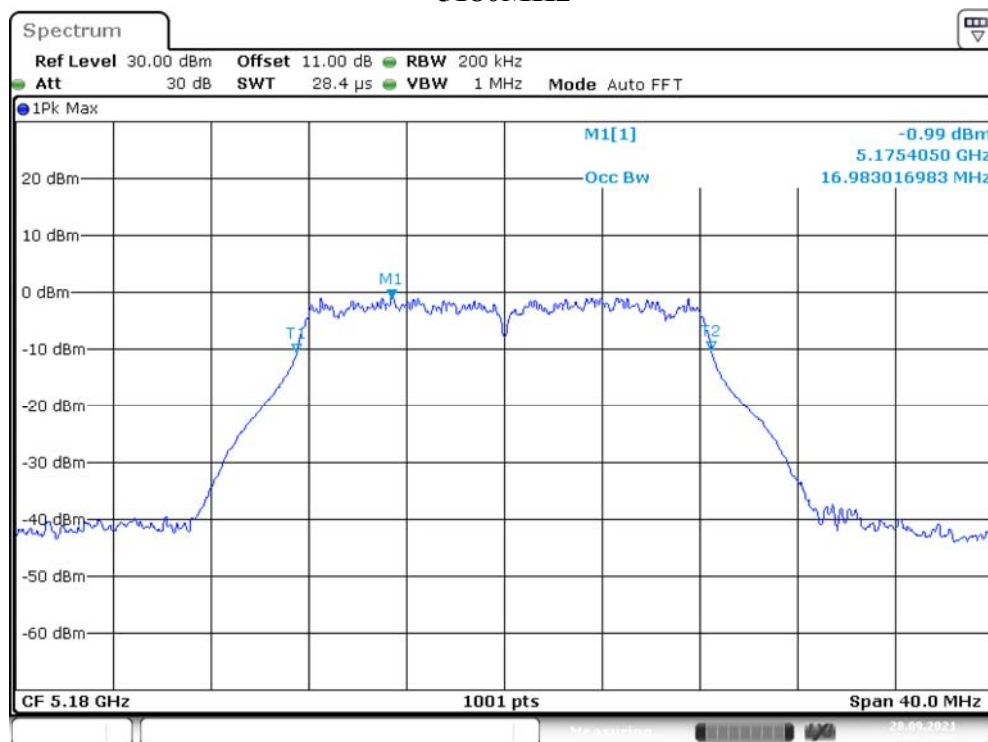
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IEEE 802.11n HT40 Mode / 5725 ~ 5850MHz
5755MHz

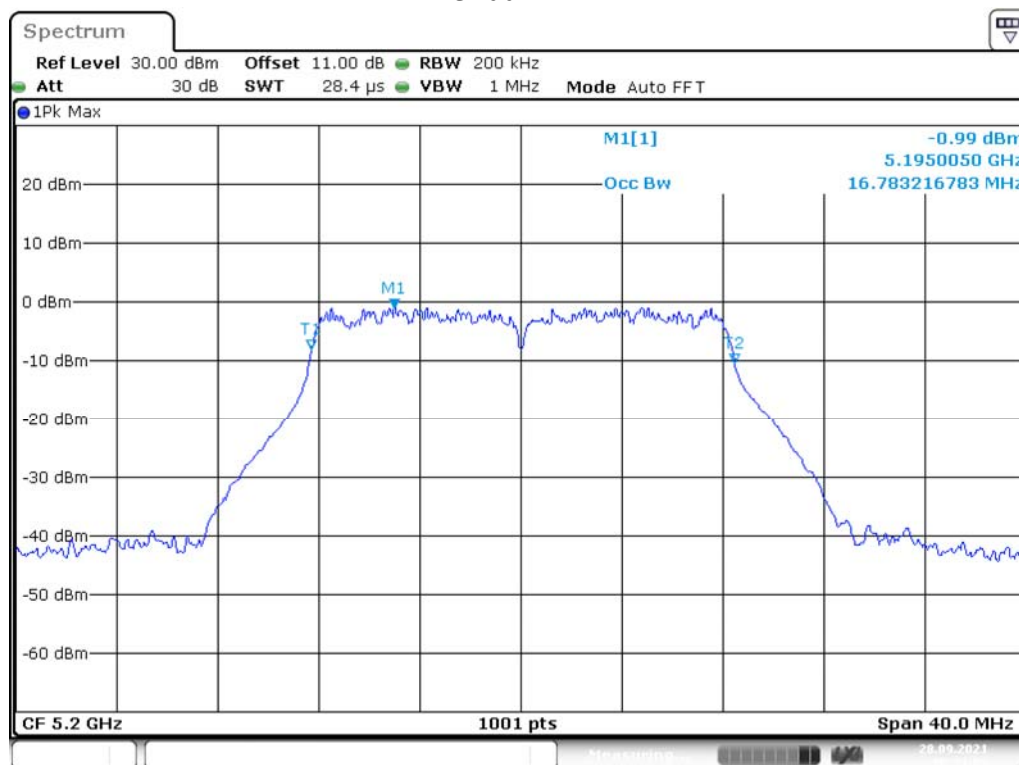
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5795MHz

Date: 28.SEP.2021 11:18:57

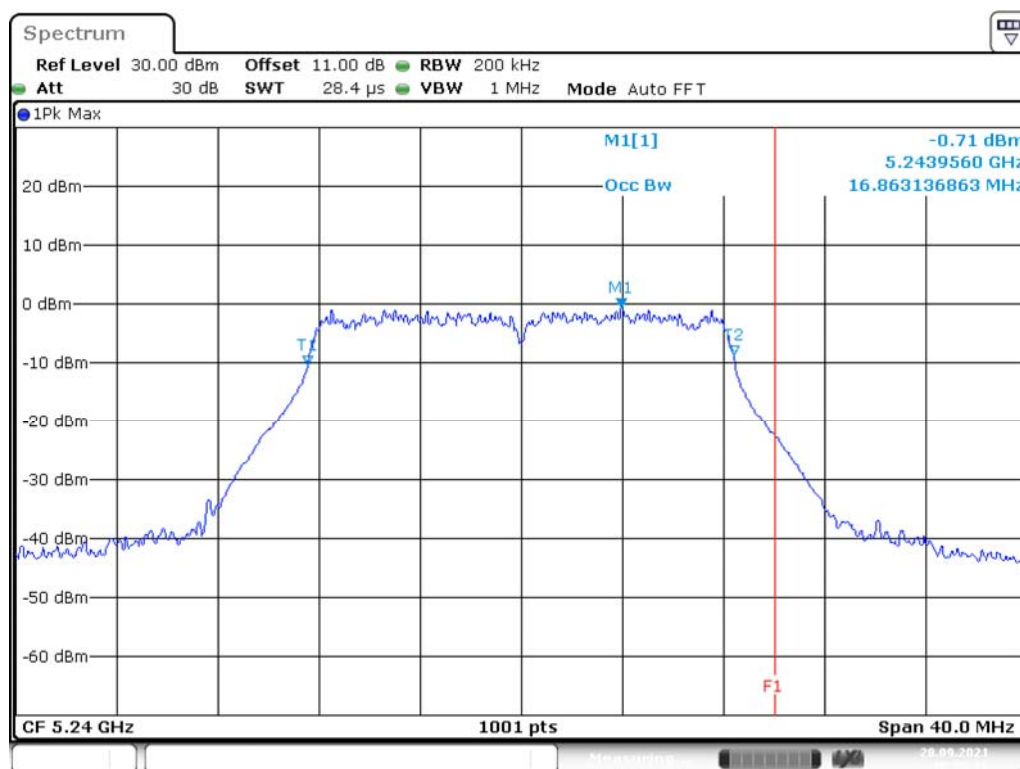
**UNII-1 Band I / OBW 99%
IEEE 802.11a Mode / 5150 ~ 5250MHz****5180MHz**

Date: 28.SEP.2021 10:32:21

5200MHz

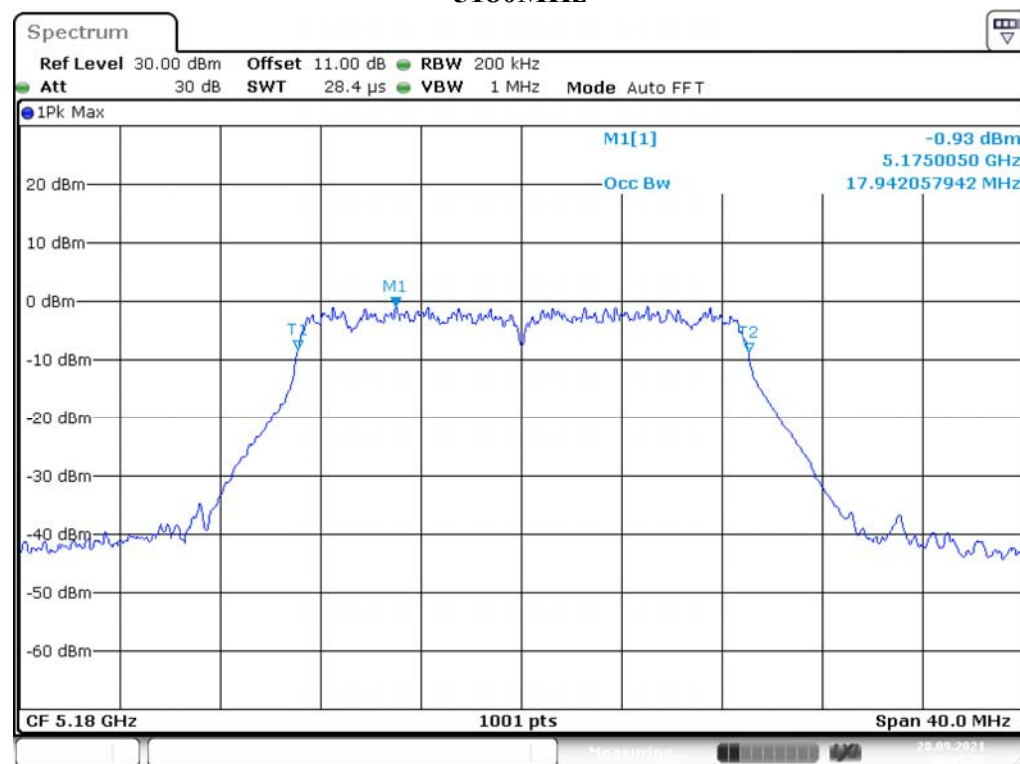
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5240MHz



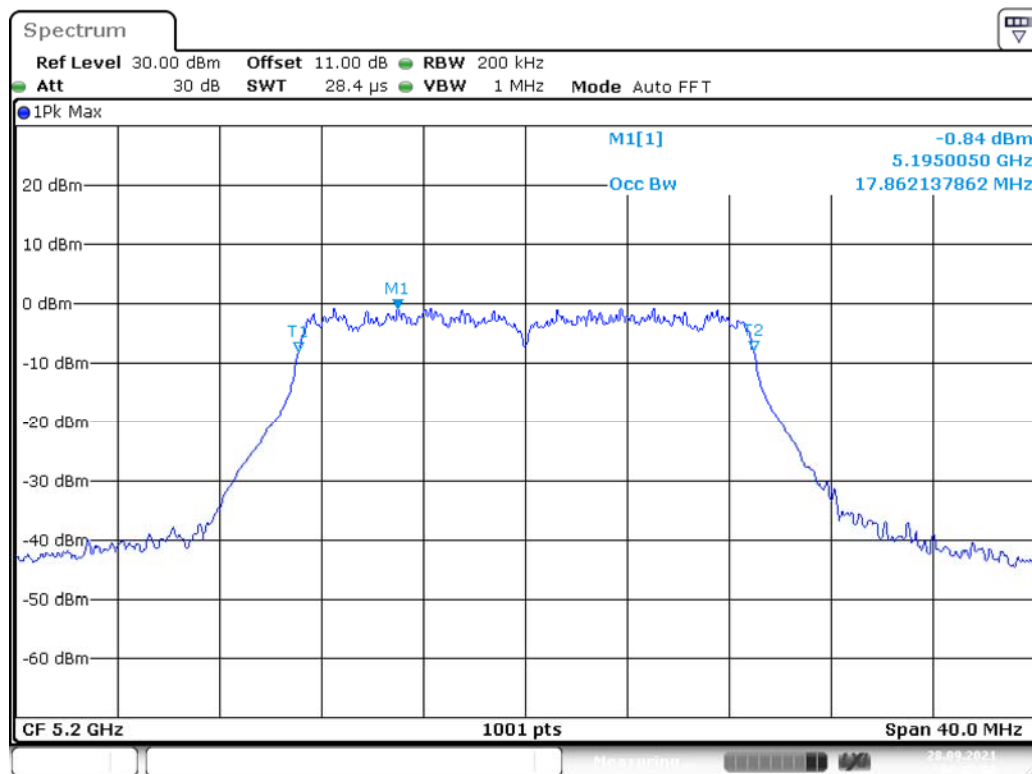
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IEEE 802.11n HT20 Mode / 5150 ~ 5250MHz
5180MHz



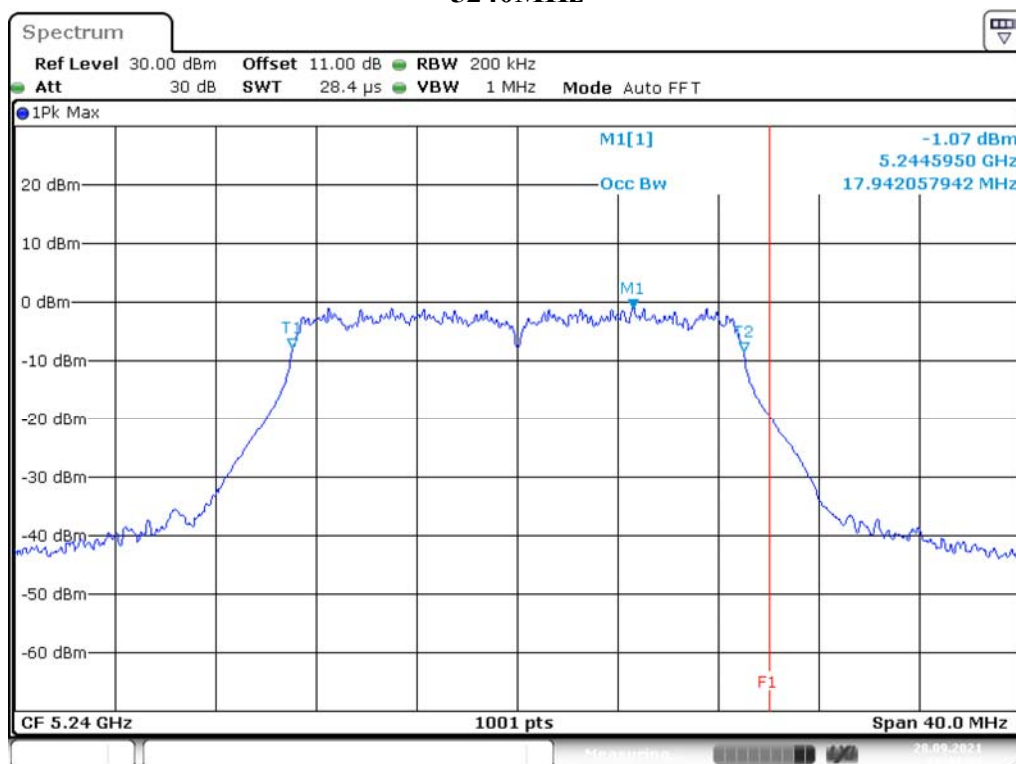
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5200MHz

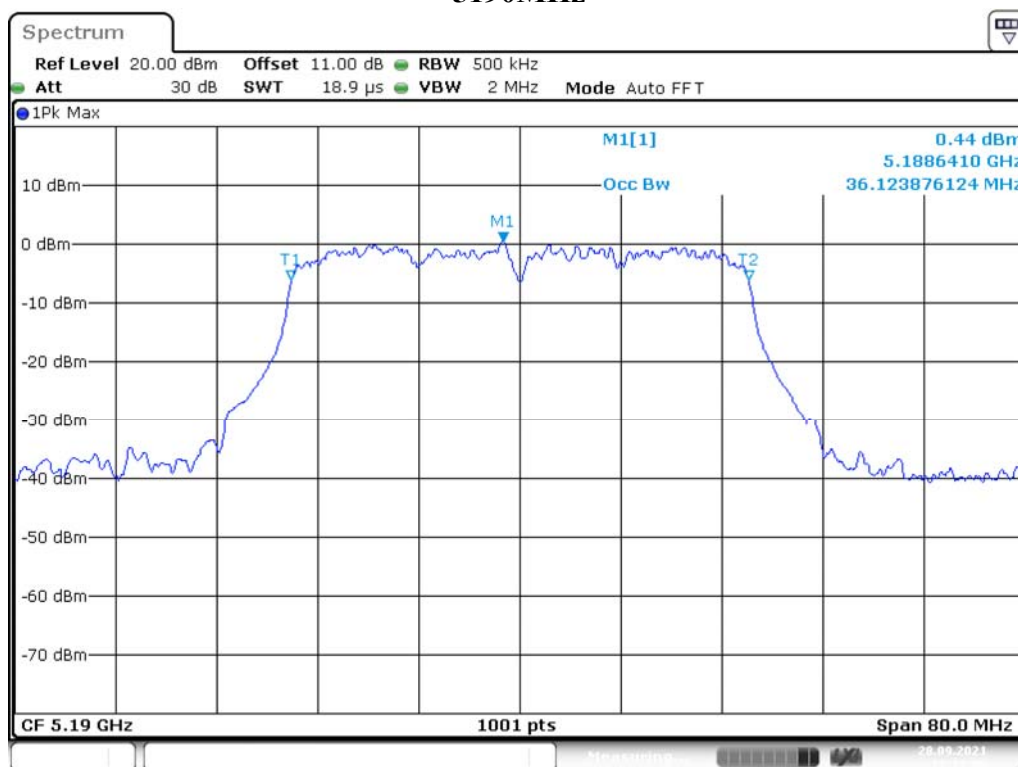


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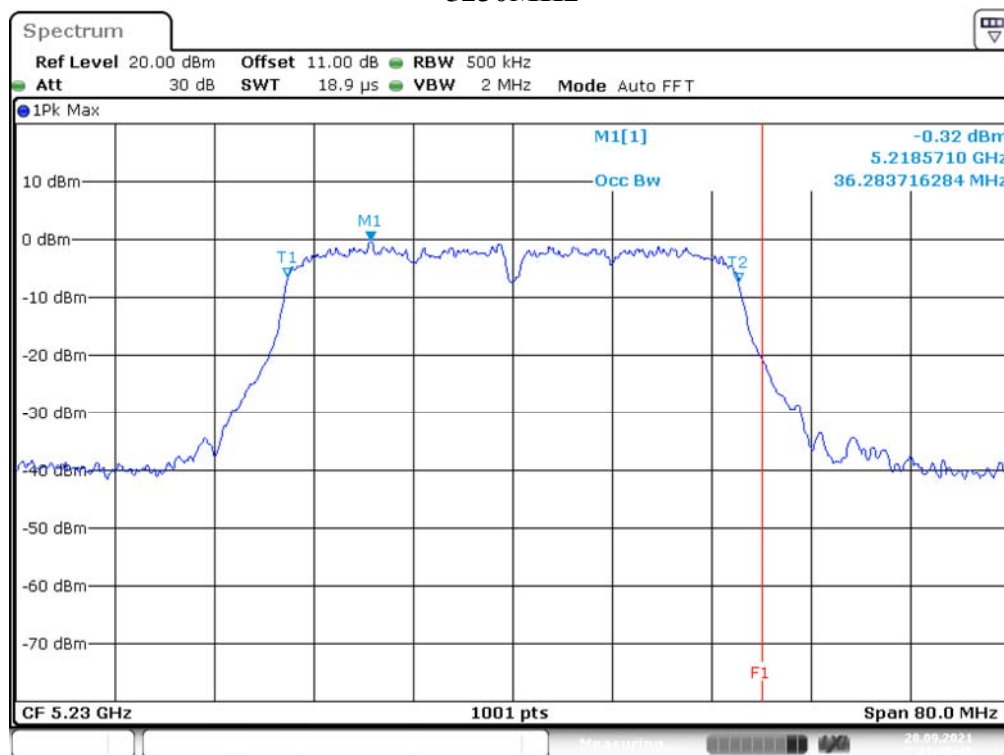
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IEEE 802.11n HT40 Mode / 5150 ~ 5250MHz
5190MHz

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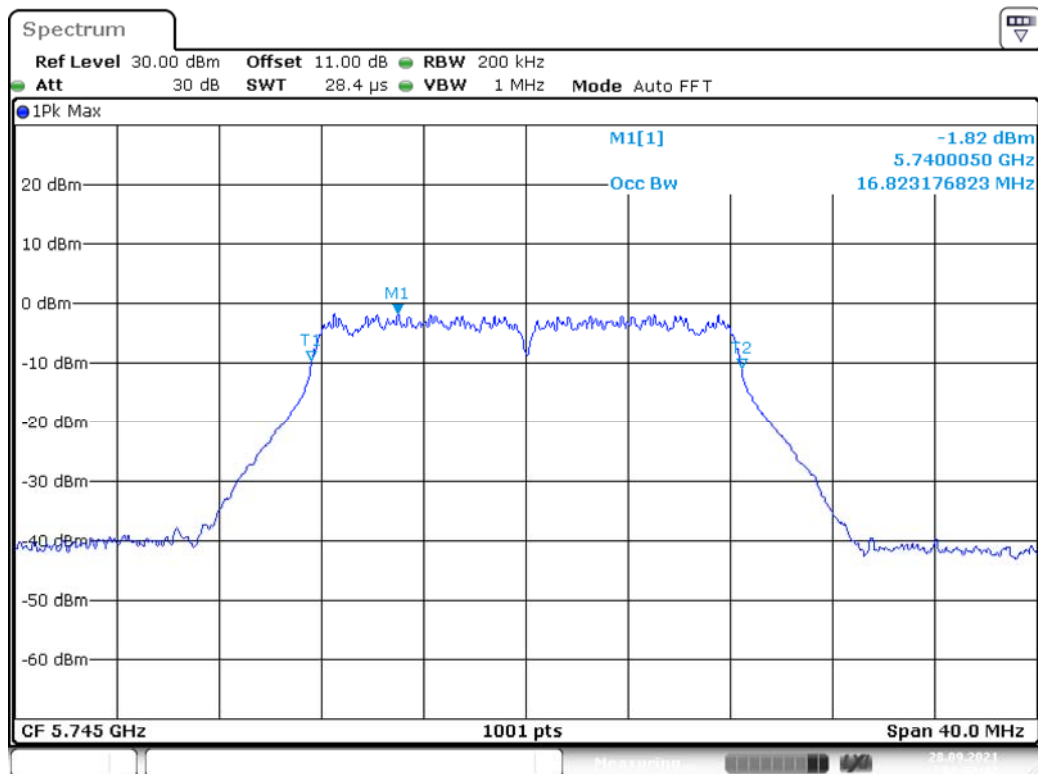
5230MHz

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UNII-3 Band IV / OBW 99%

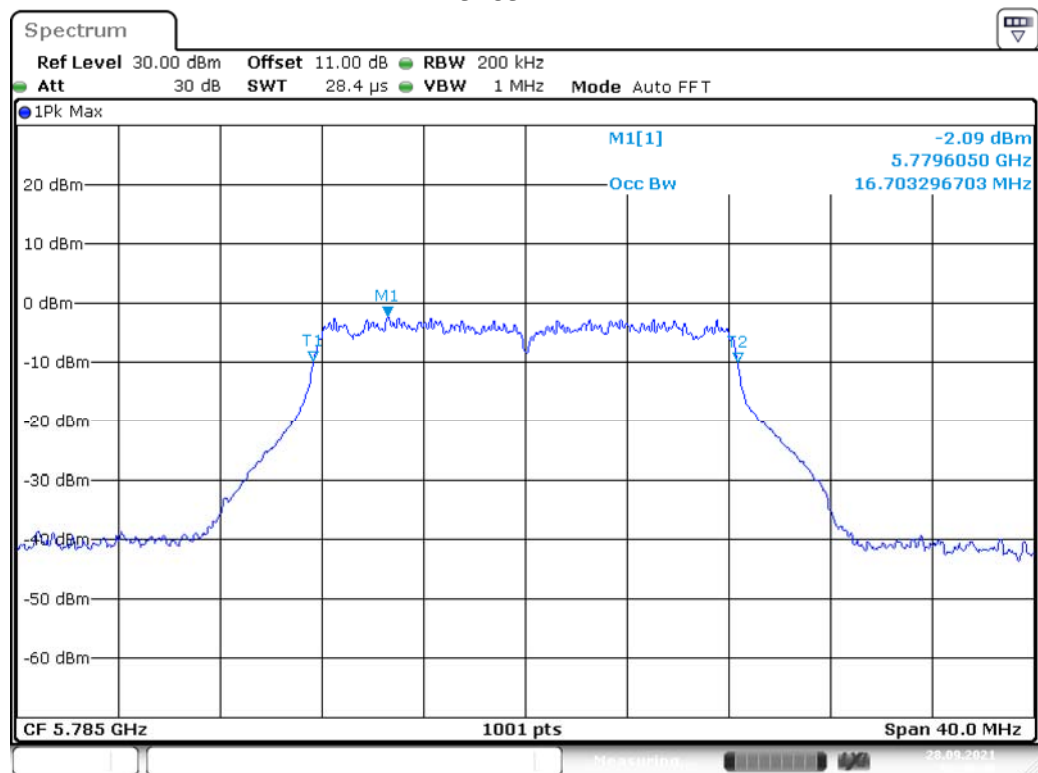
IEEE 802.11a Mode / 5725 ~ 5850MHz

5745MHz

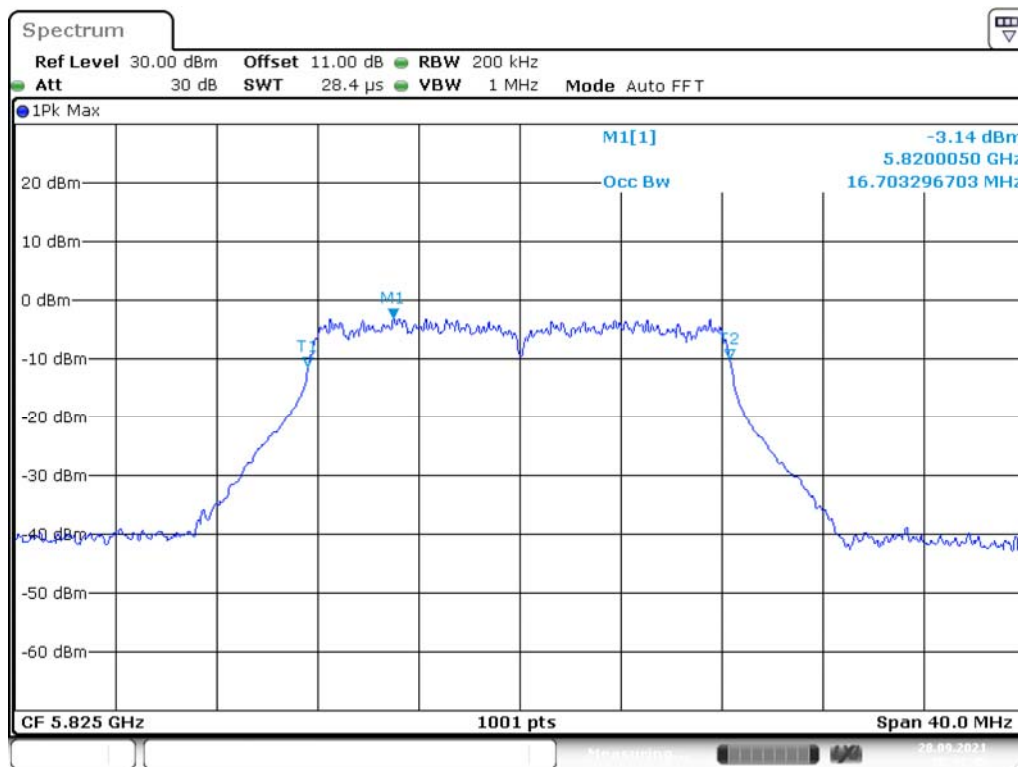
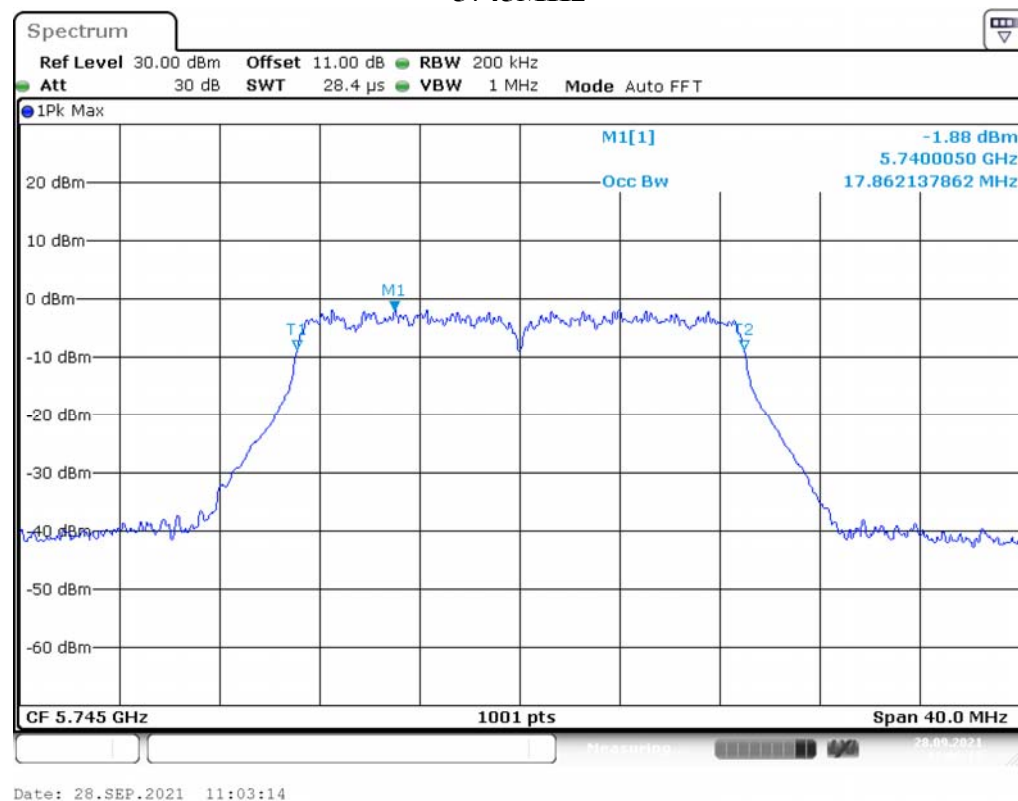


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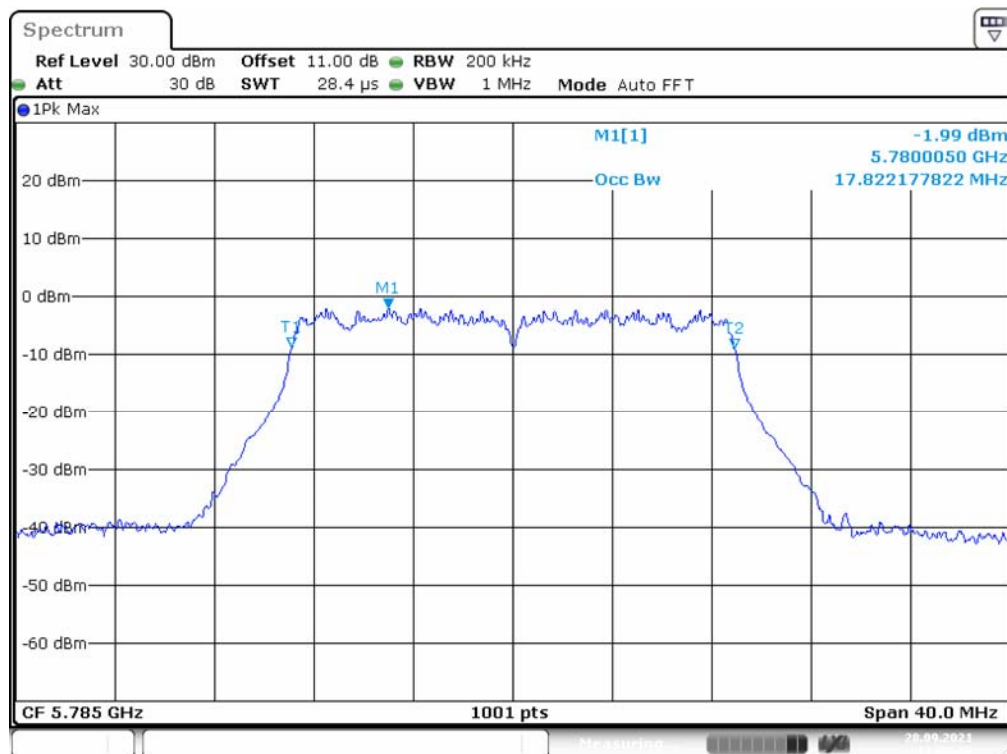
5785MHz



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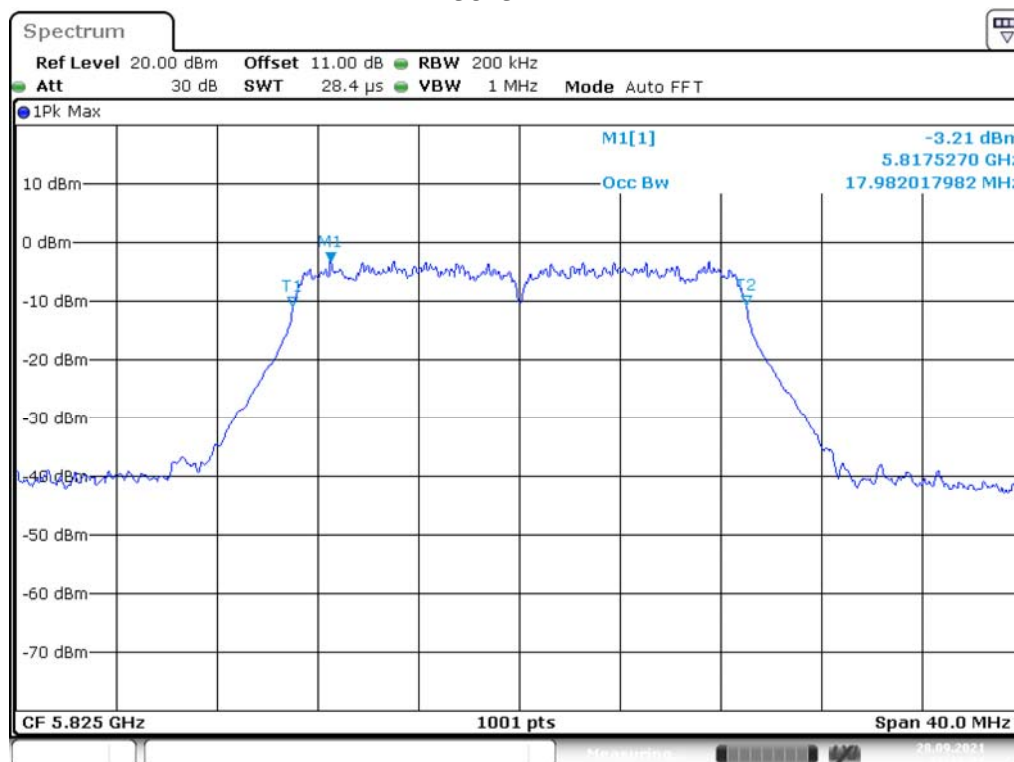
5825MHz**IEEE 802.11n HT20 Mode / 5725 ~ 5850MHz****5745MHz**

5785MHz

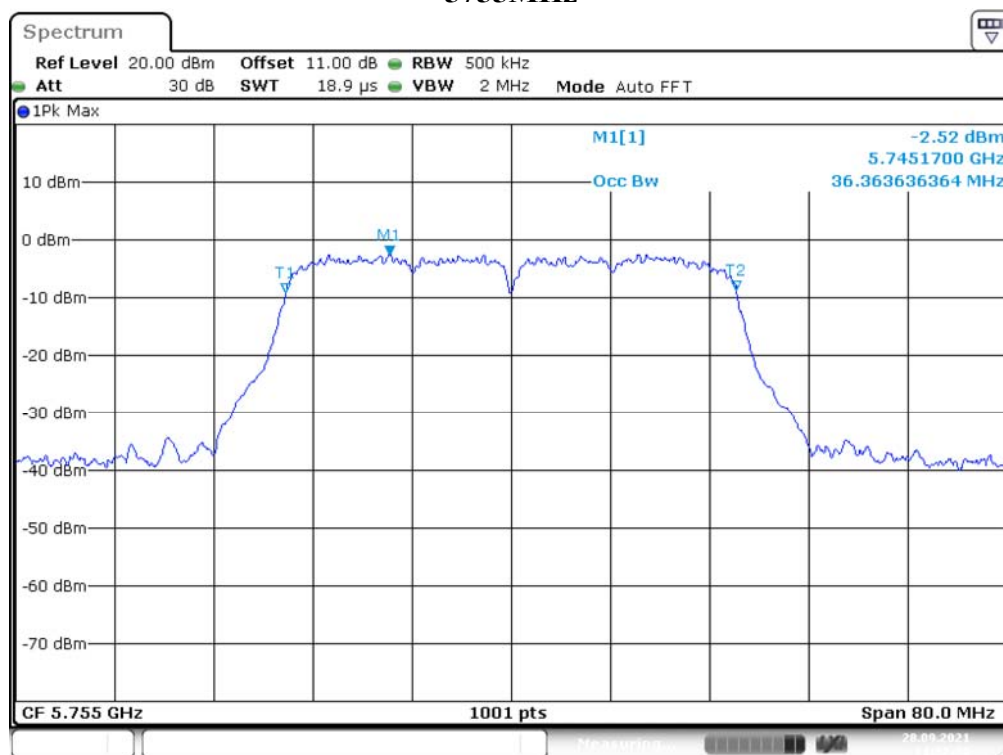


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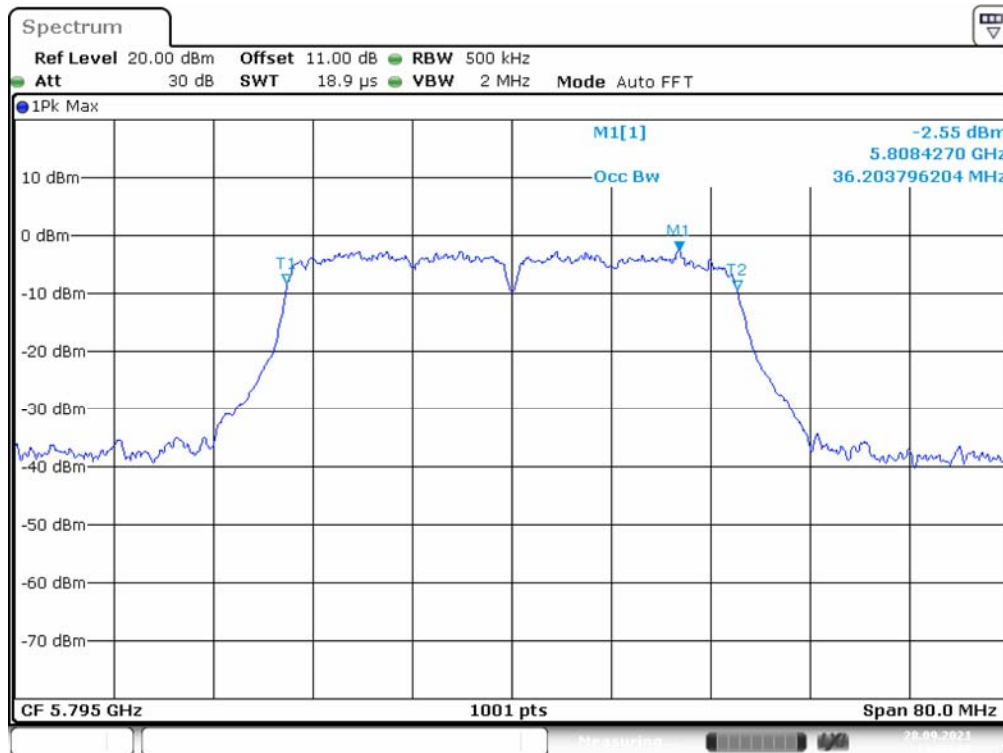
5825MHz



Date: 28.SEP.2021 11:10:22

IEEE 802.11n HT40 Mode / 5725 ~ 5850MHz
5755MHz

Date: 28.SEP.2021 11:17:40

5795MHz

Date: 28.SEP.2021 11:20:07

10 FCC §15.407(a) – Maximum Output Power

10.1 Applicable Standard

According to FCC §15.407(a):

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

For 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.

10.2 Test Procedure

The use Power Meter

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 a Power sensor.

10.3 Test Results

Test Mode: Transmitting

UNII Band	Mode	Channel	Frequency (MHz)	Maximum Conducted Average Output Power (dBm)	Duty Factor (dB)	Total Maximum Conducted Average Output Power With Duty Factor (dBm)	Limit (dBm)
UNII-1	802.11a	36	5180	9.67	0.86	10.53	24
		40	5200	9.82	0.86	10.68	24
		48	5240	9.64	0.86	10.50	24
UNII-3		149	5745	9.49	0.86	10.35	30
		157	5785	8.82	0.86	9.68	30
		165	5825	8.15	0.86	9.01	30
UNII-1	802.11n HT20 / ac VHT20	36	5180	9.66	0.86	10.52	24
		40	5200	9.73	0.86	10.59	24
		48	5240	9.67	0.86	10.53	24
UNII-3		149	5745	9.44	0.86	10.30	30
		157	5785	8.76	0.86	9.62	30
		165	5825	8.12	0.86	8.98	30
UNII-1	802.11n HT40 / ac VHT40	38	5190	8.25	1.80	10.05	24
		46	5230	7.92	1.80	9.72	24
UNII-3		151	5755	7.67	1.80	9.47	30
		159	5795	7.01	1.80	8.81	30

Note: The maximum antenna gain is 3.0 dBi.

11 FCC § 15.407(a) – Power Spectral Density

11.1 Applicable Standard

According to FCC §15.407(a):

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

In addition, the maximum power spectral density shall not exceed 17dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi.

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 30dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6dBi 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.

11.2 Test Procedure

The measurements are base on FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section F: Maximum power spectral density (PPSD)

11.3 Test Results

Test Mode: Transmitting

UNII Band	Mode	Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Duty Factor (dB)	Power Spectral Density with duty factor (dBm/MHz)	Limit (dBm/MHz)
UNII-1	802.11a	36	5180	5.76	0.86	6.62	11
		40	5200	6.00	0.86	6.86	11
		48	5240	6.02	0.86	6.88	11
	802.11n HT20	36	5180	5.81	0.86	6.67	11
		40	5200	5.99	0.86	6.85	11
		48	5240	5.79	0.86	6.65	11
	802.11n HT40	38	5190	3.15	1.8	4.95	11
		46	5230	2.31	1.8	4.11	11
UNII Band	Mode	Channel	Frequency (MHz)	Power Spectral Density (dBm/500kHz)	Duty Factor (dB)	Power Spectral Density with duty factor (dBm/500kHz)	Limit (dBm/500kHz)
UNII-3	802.11a	149	5745	2.07	0.86	2.93	30
		157	5785	1.54	0.86	2.40	30
		165	5825	1.11	0.86	1.97	30
	802.11n HT20	149	5745	1.58	0.86	2.44	30
		157	5785	1.36	0.86	2.22	30
		165	5825	0.90	0.86	1.76	30
	802.11n HT40	151	5755	-2.37	1.8	-0.57	30
		159	5795	-2.64	1.8	-0.84	30

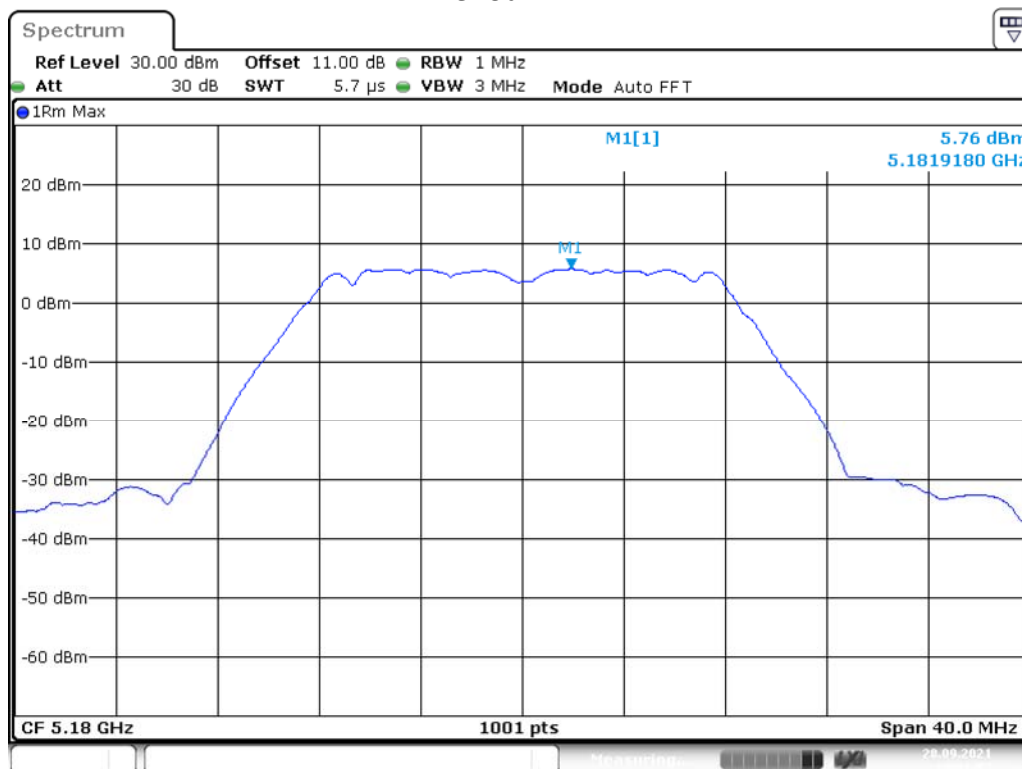
Note: The maximum antenna gain is 3.0 dBi.

Test Mode: Transmitting

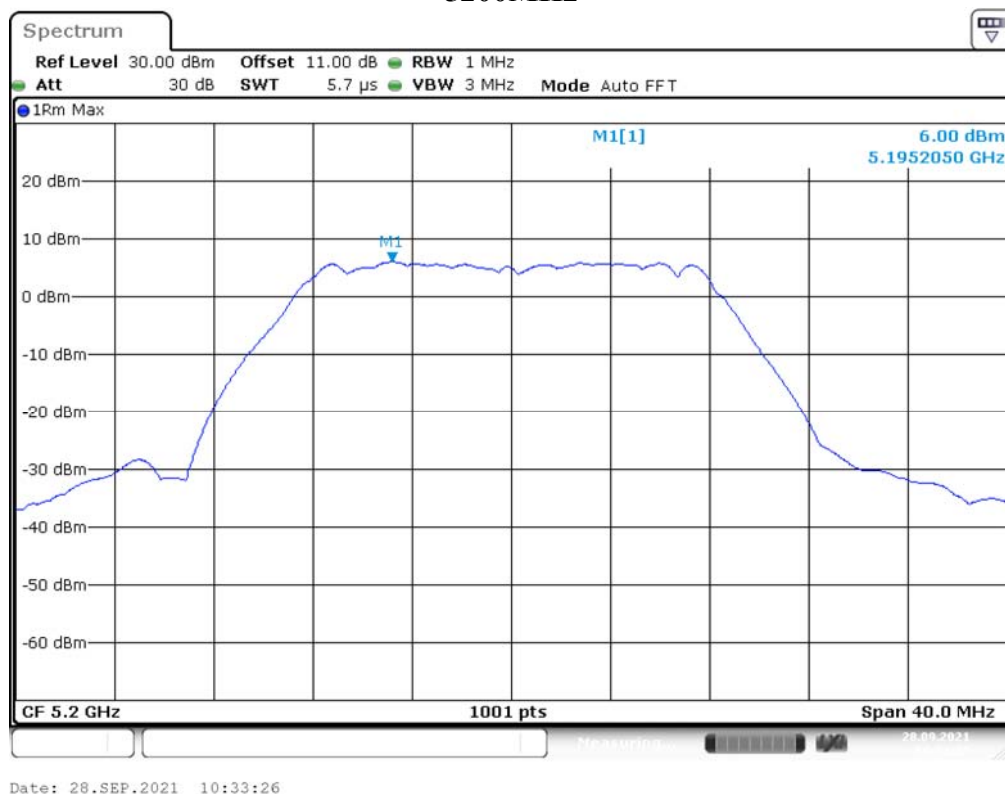
UNII-1 Band I PSD

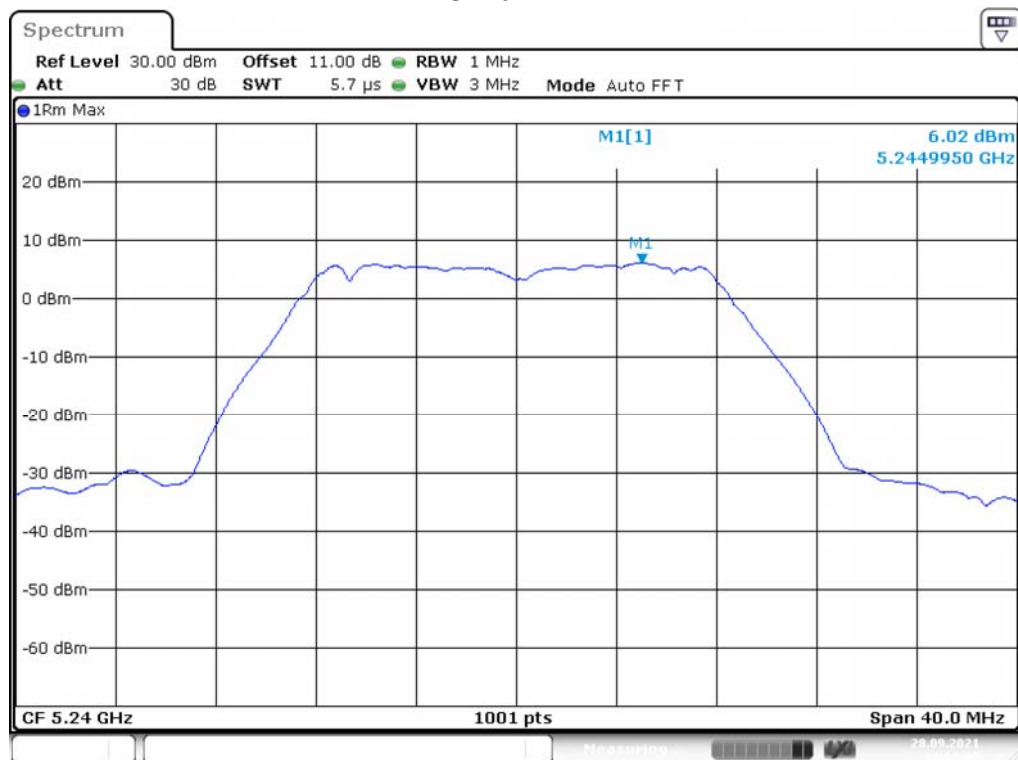
IEEE 802.11a Mode / 5150 ~ 5250MHz

5180MHz

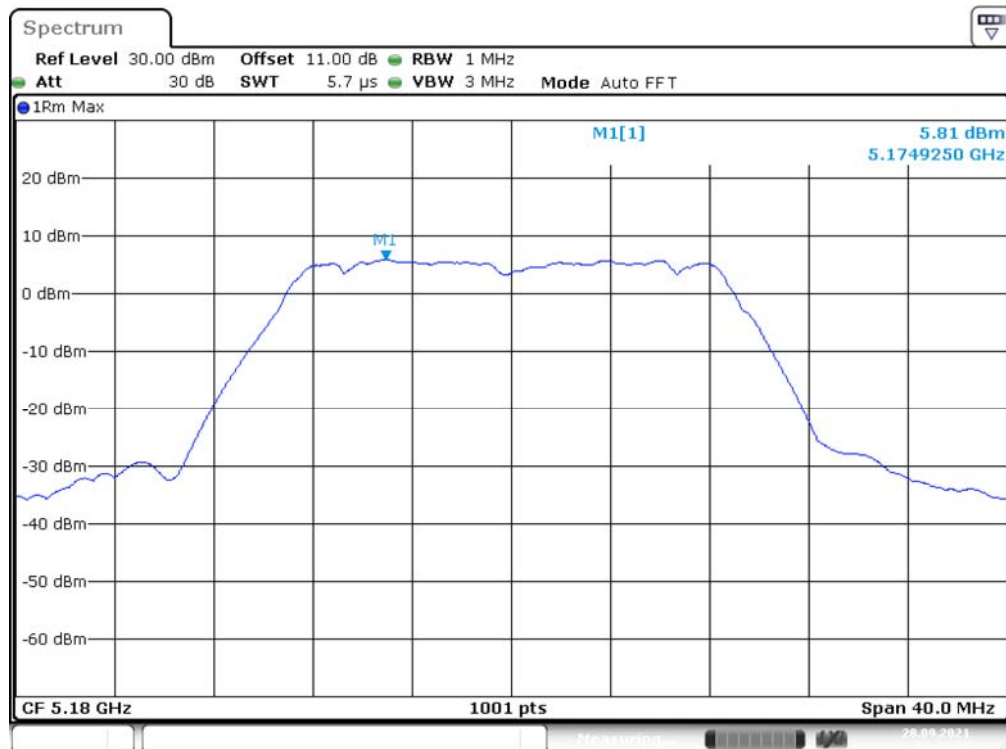


5200MHz



5240MHz

Date: 28.SEP.2021 10:35:00

IEEE 802.11n HT20 Mode / 5150 ~ 5250MHz**5180MHz**

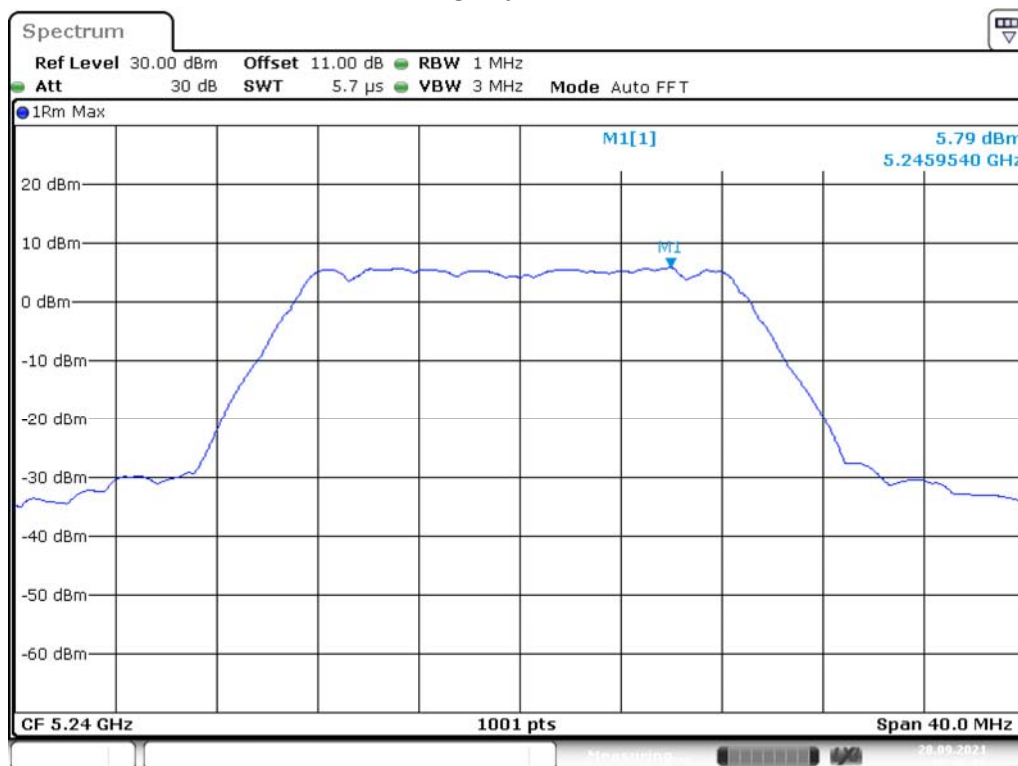
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5200MHz



Date: 28.SEP.2021 10:44:41

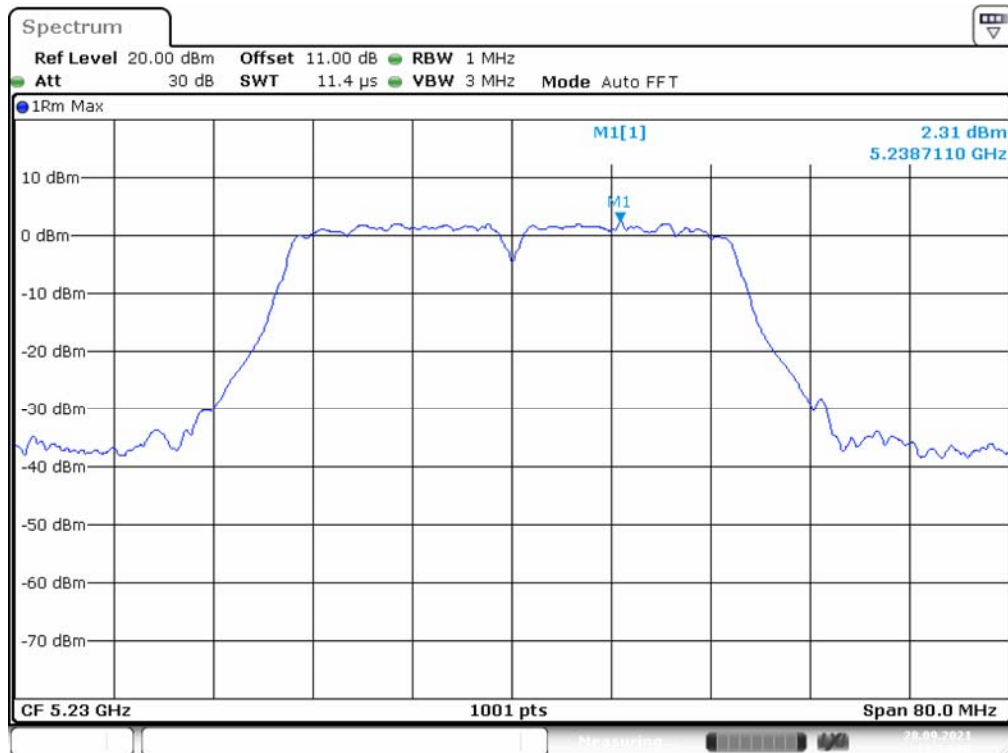
5240MHz



Date: 28.SEP.2021 10:46:36

IEEE 802.11n HT40 Mode / 5150 ~ 5250MHz
5190MHz

Date: 28.SEP.2021 11:12:32

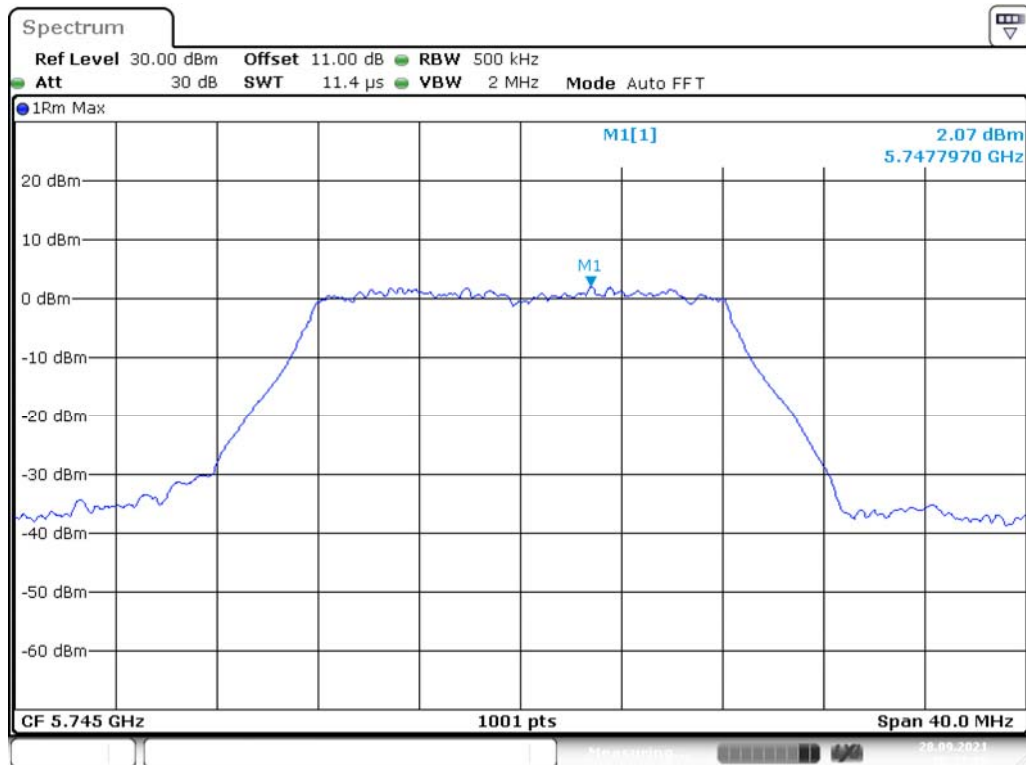
5230MHz

Date: 28.SEP.2021 11:14:50

UNII-3 Band IV PSD

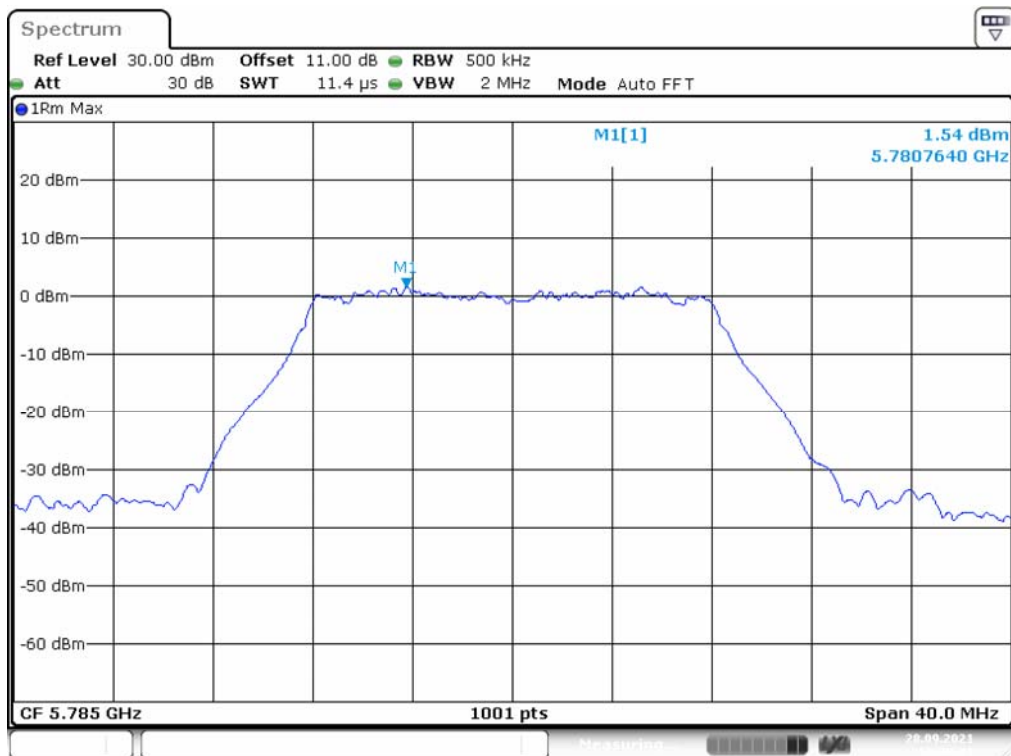
IEEE 802.11a mode / 5725 ~ 5850MHz

5745MHz



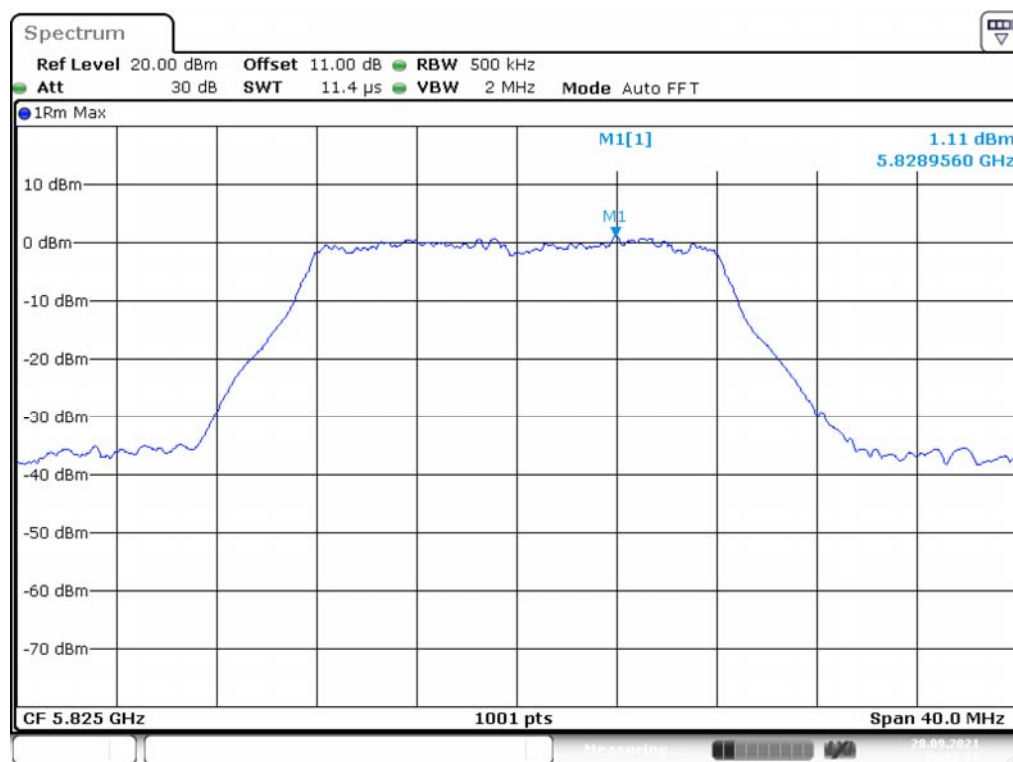
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5785MHz



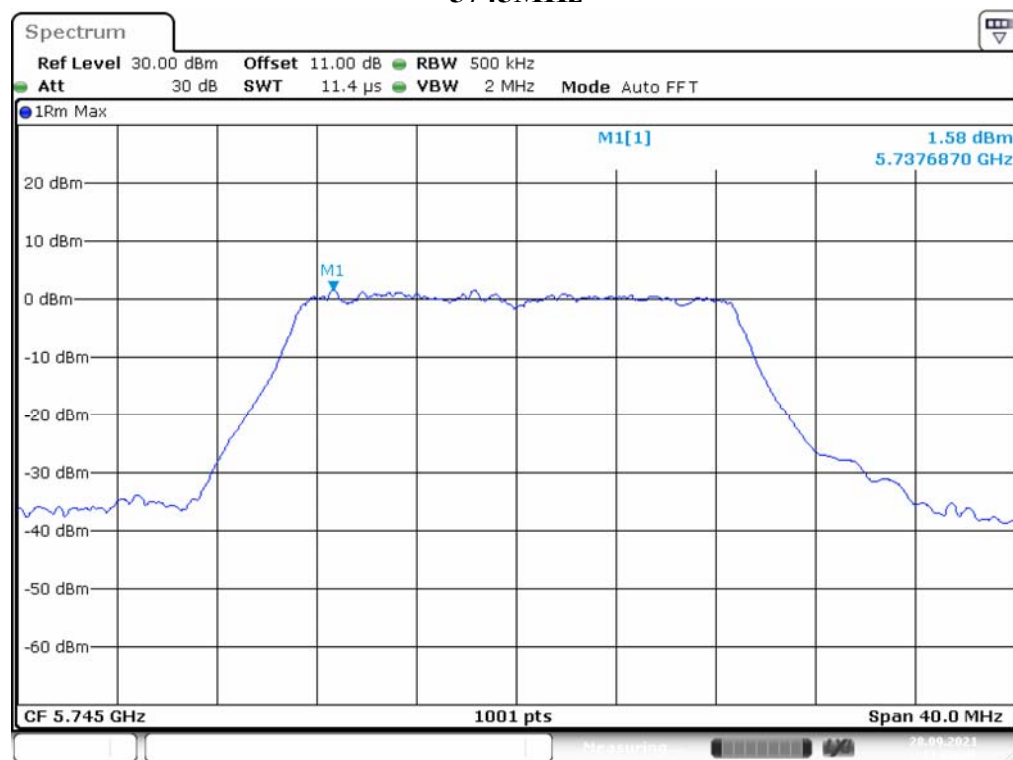
Date: 28.SEP.2021 10:39:21

5825MHz



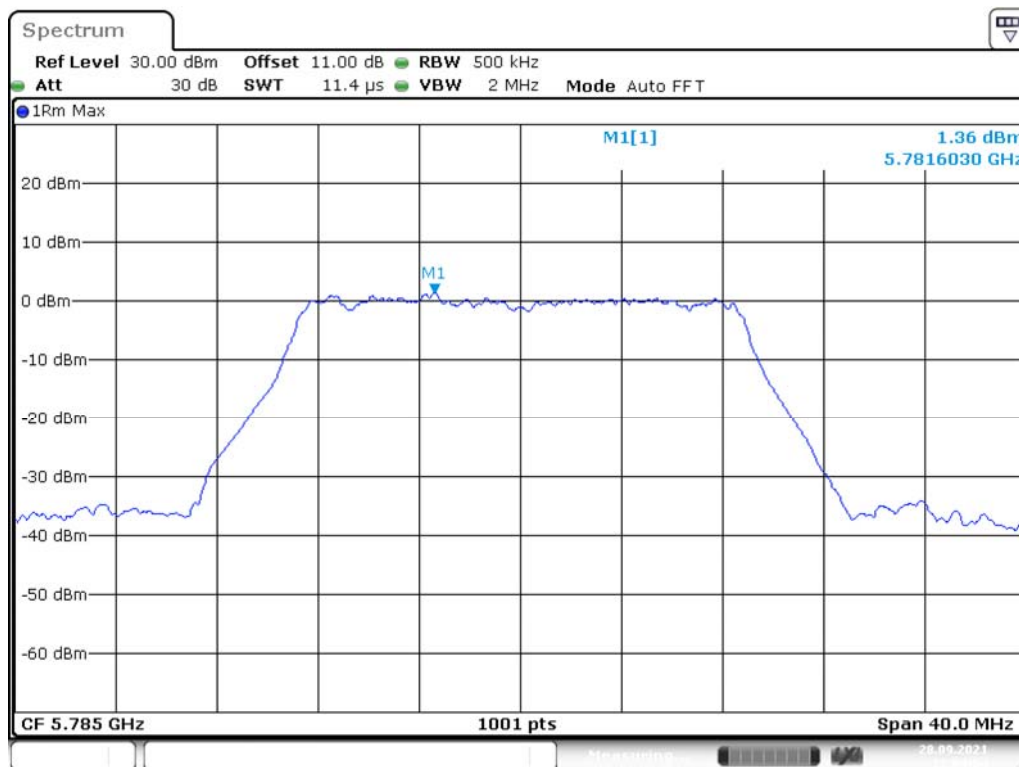
Date: 28.SEP.2021 10:41:18

IEEE 802.11n HT20 Mode / 5725 ~ 5850MHz
5745MHz



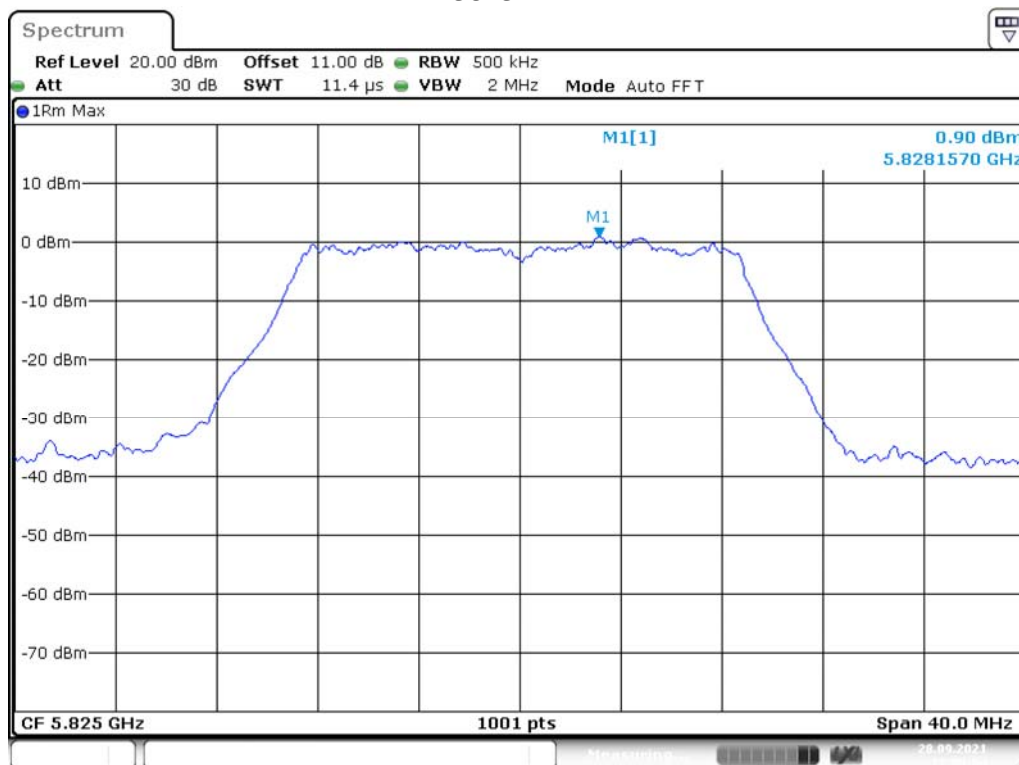
Date: 28.SEP.2021 11:02:46

5785MHz

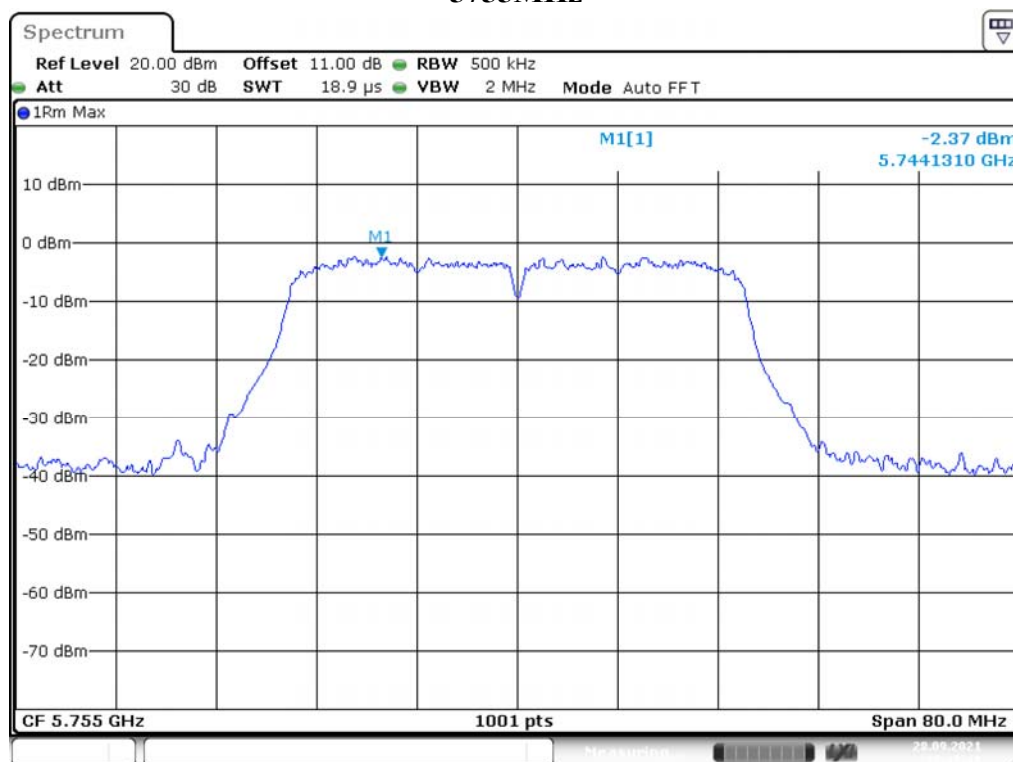


Date: 28.SEP.2021 11:04:55

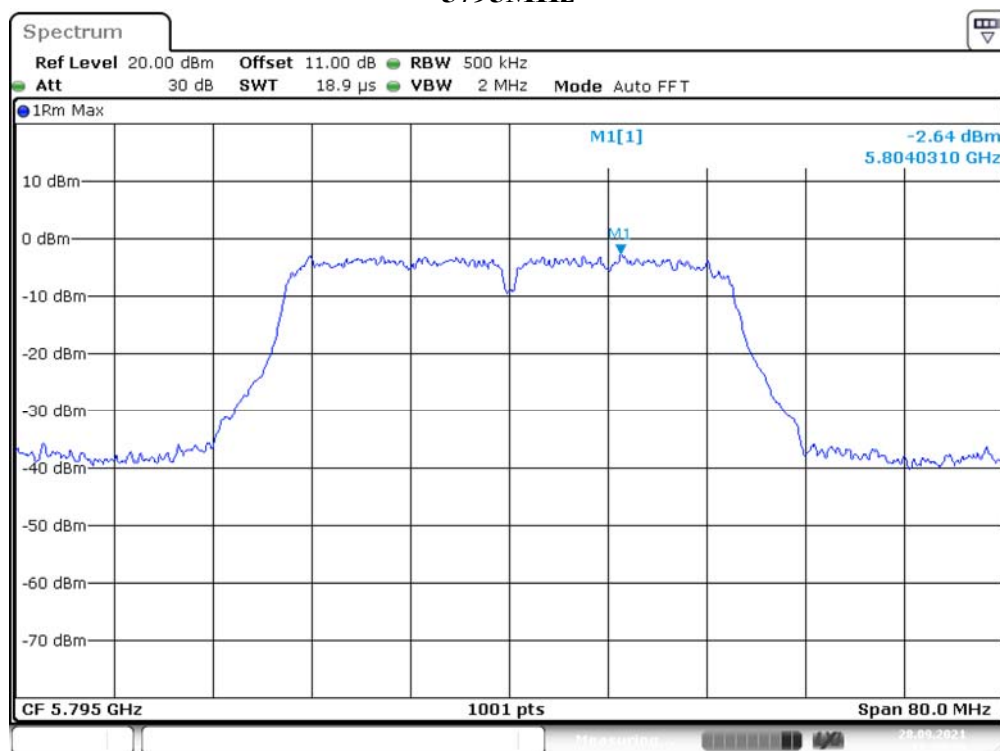
5825MHz



Date: 28.SEP.2021 11:09:55

IEEE 802.11n HT40 Mode / 5725 ~ 5850MHz
5755MHz

Date: 28.SEP.2021 11:17:12

5795MHz

Date: 28.SEP.2021 11:19:39

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