TESTING LABORATORY
CERTIFICATE # 4821.01

FCC PART 15.407

TEST REPORT

For

Thundercomm Technology Co., Ltd

Building 4, No. 99, Data Valley Middle Road Xiantao District, Yubei District, Chongqing, China

FCC ID: 2AOHHTURBOXSOMD845

Report Type:	**Product Type:**
Class II Permissive Change	Thundersoft TurboX D845 SOM

Report Number:	SZ1210330-09079E-00AA1
Report Date:	2021-04-25
Reviewed By:	Jacob Kong RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Thundersoft TurboX D845 SOM
Tested Model	TurboX-D845-SOM
Frequency Range	5G Wi-Fi: 5150-5250MHz; 5250-5350MHz; 5470-5725MHz; 5725-5850MHz
Maximum Conducted Average Ouput Power	5150-5250 MHz: 11.73dBm (802.11a), 14.51dBm(802.11n20), 12.49dBm(802.11n40) 14.47dBm (802.11ac20), 12.30dBm(802.11 ac40), 12.61dBm(802.11 ac80) 5250-5350MHz: 11.70dBm (802.11a), 14.18dBm(802.11n20), 12.39dBm(802.11n40) 14.38dBm (802.11ac20), 12.27dBm(802.11 ac40), 9.89dBm(802.11 ac80) 5470-5725MHz: 12.49dBm (802.11a), 13.31dBm(802.11n20), 13.41dBm(802.11n40) 12.82dBm (802.11ac20), 13.21dBm(802.11 ac40), 13.03dBm(802.11 ac80) 5725-5850 MHz: 12.29dBm (802.11a), 14.92dBm(802.11n20), 14.96dBm(802.11n40) 14.92dBm (802.11ac20), 14.99dBm(802.11 ac40), 14.88dBm(802.11 ac80)
Modulation Technique	OFDM
Antenna Specification*	5.7dBi (provided by the applicant)
Voltage Range	DC 3.8 V
Date of Test	2021-04-09 to 2021-04-18
Sample serial number	SZ1210330-09079E-RF-A1-S1(Assigned by BACL, Shenzhen)
Received date	2021-03-30
Sample/EUT Status	Good condition

Objective

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

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

This is a CIIPC application of the device; the differences between the original device and the current one are as follows:

(1) Add a kind of antenna.

(2) Changing the company address to “Building 4, No. 99, Data Valley Middle Road Xiantao District, Yubei District, Chongqing, China”.

Based on above difference listed, the modifications will impact the test item of “Undesirable Emission& Restricted Bands”, “Antenna Requirement” and “Maximum Permissible Exposure(MPE)”, so in this report, we will updated those items and related photos, the other test data and photos please refer to the original report.

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

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). 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 with Power meter		±0.73dB
RF conducted test with spectrum		±1.6dB
AC Power Lines Conducted Emissions		±1.95dB
Emissions, Radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB
Temperature		±1℃
Humidity		±6%
Supply voltages		±0.4%

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

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, 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.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

The device support 802.11a/n20/n40/ac20/ac40/ac80 modes.

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

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For 5250-5350MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
54	5270	62	5310
56	5280	64	5320
58	5290	/	/

For 5470-5725MHz Band, 18 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
102	5510	126	5630
104	5520	128	5640
106	5530	132	5660
108	5540	134	5670
110	5550	136	5680
112	5560	140	5700
116	5580	/	/
118	5590	/	/
120	5600	/	/
122	5610	/	/

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

EUT Exercise Software

"RFtest tool"* software was used. Test frequencies and power level were configured as below:

U-NII	Mode	Channel Number	Frequency (MHz)	Rate (Mbps)	Power Level*
5150 – 5250MHz	802.11 a	CH36	5180	6	15
		CH40	5200	6	15
		CH48	5240	6	15
	802.11 n20	CH36	5180	MCS0	15
		CH40	5200	MCS0	15
		CH48	5240	MCS0	15
	802.11 n40	CH38	5190	MCS0	13
		CH46	5230	MCS0	13
	802.11 ac20	CH36	5180	MCS0	15
		CH40	5200	MCS0	15
		CH48	5240	MCS0	15
	802.11 ac40	CH38	5190	MCS0	13
		CH46	5230	MCS0	13
	802.11 ac80	CH42	5210	MCS0	13
5250 – 5350MHz	802.11 a	CH52	5260	6	15
		CH56	5280	6	15
		CH64	5320	6	15
	802.11 n20	CH52	5260	MCS0	15
		CH56	5280	MCS0	15
		CH64	5320	MCS0	15
	802.11 n40	CH54	5270	MCS0	13
		CH62	5310	MCS0	13
	802.11 ac20	CH52	5260	MCS0	15
		CH56	5280	MCS0	15
		CH64	5320	MCS0	15
	802.11 ac40	CH54	5270	MCS0	13
		CH62	5310	MCS0	13
	802.11 ac80	CH58	5290	MCS0	13

U-NII	Mode	Channel Number	Frequency (MHz)	Rate (Mbps)	Power Level*
5470 – 5725MHz	802.11 a	CH100	5500	6	15
		CH120	5600	6	15
		CH140	5700	6	15
	802.11 n20	CH100	5500	MCS0	13
		CH120	5600	MCS0	13
		CH140	5700	MCS0	13
	802.11 n40	CH102	5510	MCS0	13
		CH118	5590	MCS0	13
	802.11 ac20	CH100	5500	MCS0	13
		CH120	5600	MCS0	13
		CH140	5700	MCS0	13
	802.11 ac40	CH102	5510	MCS0	13
		CH118	5590	MCS0	13
		CH134	5670	MCS0	13
	802.11 ac80	CH106	5530	MCS0	13
		CH122	5610	MCS0	13
5725 – 5850MHz	802.11 a	CH149	5745	6	15
		CH157	5785	6	15
		CH165	5825	6	15
	802.11 n20	CH149	5745	MCS0	15
		CH157	5785	MCS0	15
		CH165	5825	MCS0	15
	802.11 n40	CH151	5755	MCS0	15
		CH159	5795	MCS0	15
	802.11 ac20	CH149	5745	MCS0	15
		CH157	5785	MCS0	15
		CH165	5825	MCS0	15
	802.11 ac40	CH151	5755	MCS0	15
		CH159	5795	MCS0	15
	802.11 ac80	CH155	5775	MCS0	15

The software and power level was provided by the applicant.

Equipment Modifications

No modification was made to the EUT tested.

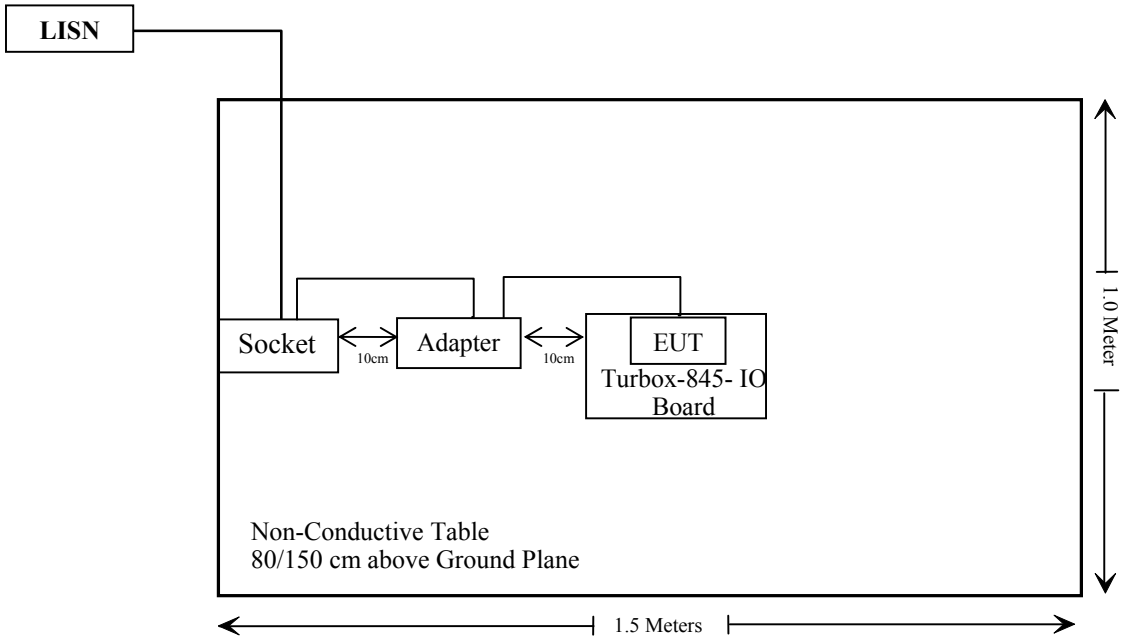
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Thundercomm Technology CO.,Ltd	Turbox-845- IO Board	V02	V02
Thundercomm Technology CO.,Ltd	Adapter	TurboX D845SOM	TurboX D845SOM

External I/O Cable

Cable Description	Length (m)	From/Port	To
Un-shielding Un-Detachable USB Cable	1.2	Turbox-845- IO Board	Adapter

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) (1) & §2.1091	MaximuM Permissible exposure (MPE)	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(6)& §15.207(a)	Conducted Emissions	Compliance*
§15.205& §15.209 &§15.407(b) (1), (2), (3), (4),(7)	Undesirable Emission& Restricted Bands	Compliance
§15.407(b) (1), (2), (3), (4)	Out Of Band Emission	Compliance*
§15.407(a) (1), (5),(e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliance*
§15.407(a)(1),(2), (3)	Conducted Transmitter Output Power	Compliance*
§15.407 (a)(1), (2), (3)	Power Spectral Density	Compliance*

DFS report please refere to SZ1210330-09079E-00DA1 with FCC ID: 2AOHHTURBOXSOMD845, issued by Bay Area Compliance Laboratories Corp. (Shenzhen).

Compliance*: Please refer to the original report RSZ181105003-00A with FCC ID: 2AOHHTURBOXSOMD845, issued by Bay Area Compliance Laboratories Corp. (Shenzhen).

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2020/08/04	2021/08/03
Sonoma instrument	Pre-amplifier	310 N	186238	2020/08/04	2021/08/03
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2020/12/22	2023/12/21
Unknown	Cable 2	RF Cable 2	F-03-EM197	2020/11/29	2021/11/28
Unknown	Cable	Chamber Cable 1	F-03-EM236	2020/11/29	2021/11/28
Rohde & Schwarz	Auto test software	EMC 32	V9.10	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2020/08/04	2021/08/03
COM-POWER	Pre-amplifier	PA-122	181919	2020/11/29	2021/11/28
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2020/11/29	2021/11/28
Sunol Sciences	Horn Antenna	3115	9107-3694	2021/01/15	2024/01/14
Insulted Wire Inc.	RF Cable	SPS-2503-3150	02222010	2020/11/29	2021/11/28
Unknown	RF Cable	W1101-EQ1 OUT	F-19-EM005	2020/11/29	2021/11/28
Unknown	Signal Cable	RG-214	2	2020/11/29	2021/11/28
SNSD	Band Reject filter	BSF5150-5850MN-0899-004	5G filter	2020/04/20	2021/04/20
Ducommun Technolagies	Horn antenna	ARH-4223-02	1007726-02 1304	2020/12/06	2023/12/05
Ducommun Technolagies	Horn antenna	ARH-2823-02	1007726-02 1302	2020/12/06	2023/12/05

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

§1.1307 (b) (1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (Minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \le 1$$

Mode	Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
BT	2402-2480	1.5	1.41	2	1.58	20	0.00044	1.0
BLE	2402-2480	1.5	1.41	6.5	4.47	20	0.0013	1.0
2.4GHz Wi-Fi	2412-2472	1.5	1.41	24.5	281.84	20	0.079	1.0
	2422-2462	1.5	1.41	22.5	177.83	20	0.050	1.0
5GHz Wi-Fi	5150-5250	5.7	3.72	15	31.62	20	0.023	1.0
	5250-5350	5.7	3.72	15	31.62	20	0.023	1.0
	5470-5725	5.7	3.72	14	25.12	20	0.019	1.0
	5725-5850	5.7	3.72	15	31.62	20	0.023	1.0

Note:
1) The conducted power is the tune-up power of the Max Conducted Output Power.
2) BT and Wi-Fi can transmit simultaneously, 2.4GHz Wi-Fi and 5GHz Wi-Fi can't transmit simultaneously for this device.

Simultaneous transmitting consideration:

The ratio=$MPE_{Wi\text{-}Fi}$/limit + MPE_{BT}/limit=0.079/1+0.0013/1=0.0803＜1.0

So simultaneous exposure comply with the limit.

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

Result: Compliance

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 PCB antennas arrangement, which was attached to EUT use the MHF-Type connector and the antenna gain is 5.7 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

§15.205 & §15.209 & §15.407(B) (1), (2), (3), (4),(6),(7) – UNDESIRABLE EMISSION

Applicable Standard

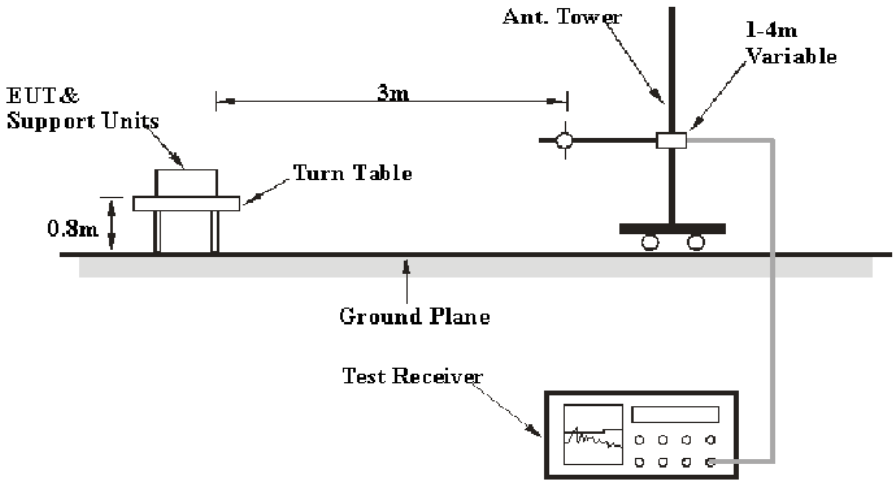
FCC §15.407 (b) (1), (2), (3), (4), (6), (7); §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

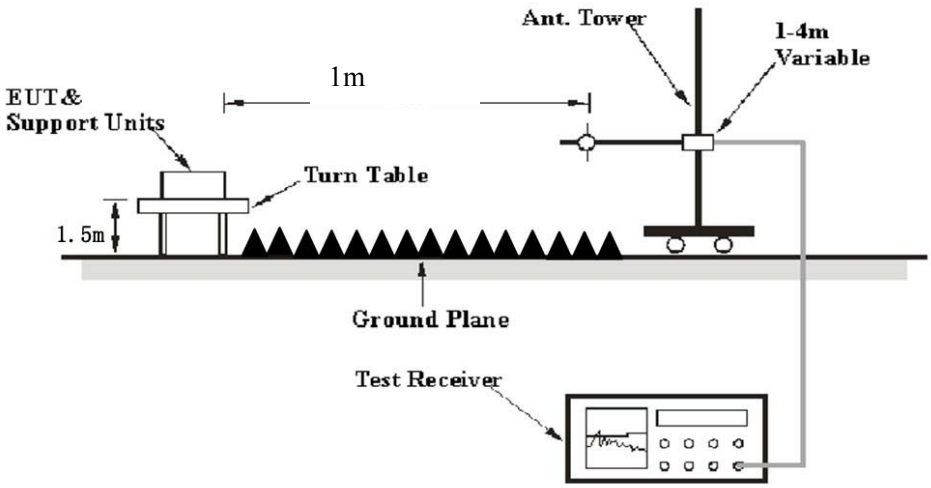
KDB 789033 D02 General UNII Test Procedures New Rules v02r01, clause G),
E[dBμV/m] = EIRP[dBm] - 20 log (d[m]) + 104.77, where E = field strength and d = distance at which field strength limit is specified.
For FCC §15.407 (b) (1), (2), (3), d=1m, non-Restricted bands limit=-27-20*log(1)+104.77=77.77 dBμV/m

EUT Setup

Below 1 GHz:



Above 1 GHz:



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

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

The adapter was connected to a 120VAC/60 Hz power source,

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

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

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

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

Test Procedure

Radiated Spurious Emission

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

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

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

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

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

where

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

So the extrapolation factor of 1m is 20*log(1/3)= -9.5 dB

Corrected Amplitude & Margin Calculation

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

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

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

Margin = Limit – Corrected Amplitude

Test Data

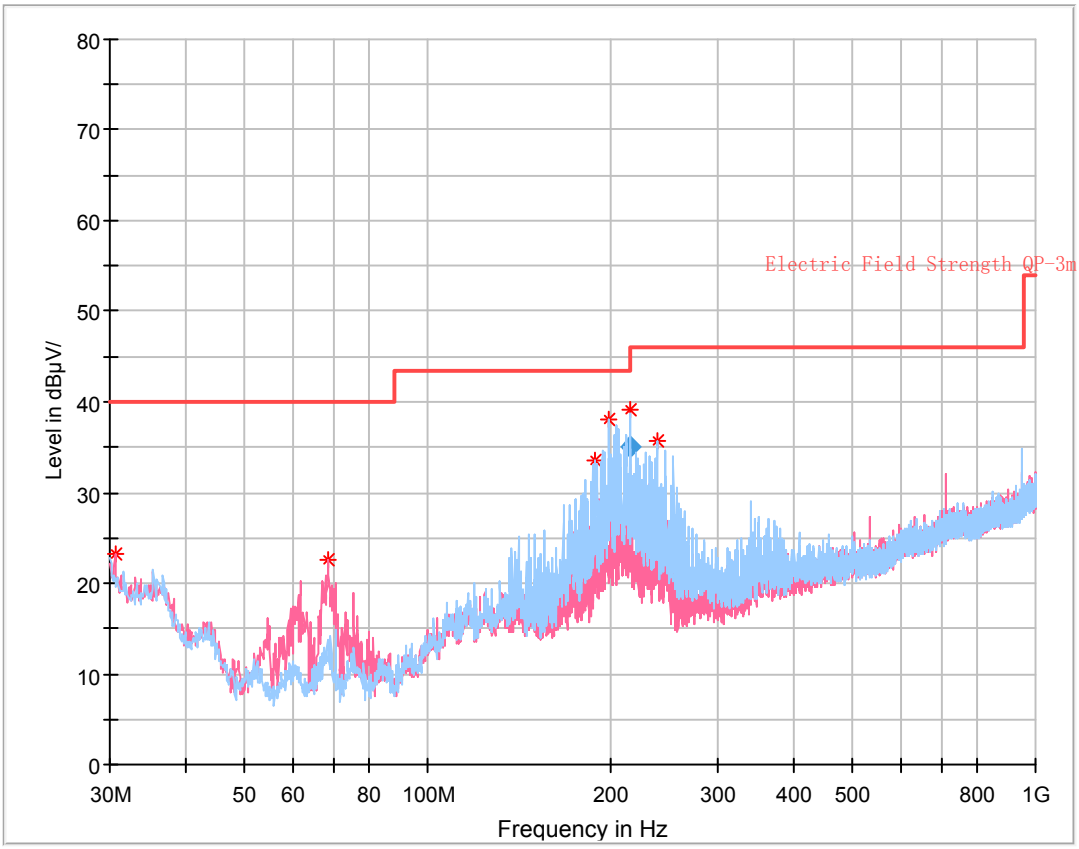
Environmental Conditions

Temperature:	25~26.7 ℃
Relative Humidity:	44~52 %
ATM Pressure:	100.9~101.0 kPa

The testing was performed by Kilroy Deng on 2021-04-09 for below 1GHz and Troy Wang from 2021-04-15 to 2021-04-18 for above 1GHz.

EUT operation mode: Transmitting

30 MHz – 1 GHz: *(worst case)*



Final_Result

Frequency (MHz)	QuasiPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
198.746125	29.00	43.50	14.50	160.0	H	75.0	-11.2
215.954500	35.14	43.50	8.36	141.0	H	86.0	-11.3

Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.606250	23.28	40.00	16.72	100.0	V	70.0	-4.0
68.678750	22.53	40.00	17.47	200.0	V	136.0	-16.2
188.473750	33.55	43.50	9.95	200.0	H	64.0	-12.3
237.943750	35.71	46.00	10.29	100.0	H	110.0	-11.7

Note: QP measurement not performed when the Peak value is more than 6dB lower than limit.

Above 1GHz:

5150-5250 MHz:

802.11a mode: (Prescan with chain 0 and chain 1, the chain 0 is worst case)

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m) @1m	Margin (dB)
802.11a, Chain 0									
5180 MHz									
5144.38	31.70	PK	162	1.1	H	38.36	70.06	83.5	13.44
5144.38	16.67	Ave.	162	1.1	H	38.36	55.03	63.5	8.47
5353.24	31.53	PK	177	1.0	H	39.09	70.62	83.5	12.88
5353.24	16.23	Ave.	177	1.0	H	39.09	55.32	63.5	8.18
10360.00	51.32	PK	352	2.0	H	17.42	68.74	77.7	8.96
5200 MHz									
10400.00	51.43	PK	99	1.3	H	17.52	68.95	77.7	8.75
5240 MHz									
5140.16	31.61	PK	185	2.2	H	38.36	69.97	83.5	13.53
5140.16	16.20	Ave.	185	2.2	H	38.36	54.56	63.5	8.94
5356.12	31.77	PK	304	2.0	H	39.09	70.86	83.5	12.64
5356.12	16.22	Ave.	304	2.0	H	39.09	55.31	63.5	8.19
10480.00	51.86	PK	249	2.5	H	17.25	69.11	77.7	8.59

Transmitting with two antennas:

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m) @1m	Margin (dB)
802.11n20									
5180MHz									
5143.34	31.56	PK	216	1.7	H	38.36	69.92	83.5	13.58
5143.34	16.41	Ave.	216	1.7	H	38.36	54.77	63.5	8.73
5354.30	31.67	PK	261	2.4	H	39.09	70.76	83.5	12.74
5354.30	16.70	Ave.	261	2.4	H	39.09	55.79	63.5	7.71
10360.00	50.74	PK	165	2.5	H	17.42	68.16	77.7	9.54
5200MHz									
10400.00	48.96	PK	254	2.2	H	17.52	66.48	77.7	11.22
5240 MHz									
5140.56	31.55	PK	77	1.5	H	38.36	69.91	83.5	13.59
5140.56	16.53	Ave.	77	1.5	H	38.36	54.89	63.5	8.61
5350.03	31.40	PK	39	1.5	H	39.09	70.49	83.5	13.01
5350.03	16.96	Ave.	39	1.5	H	39.09	56.05	63.5	7.45
10480.00	49.01	PK	193	2.4	H	17.25	66.26	77.7	11.44

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m) @1m	Margin (dB)
802.11n40									
5190 MHz									
5149.53	40.23	PK	205	1.4	H	38.36	78.59	83.5	4.91
5149.53	20.57	Ave.	205	1.4	H	38.36	58.93	63.5	4.57
5352.17	31.95	PK	36	2.1	H	39.09	71.04	83.5	12.46
5352.17	18.73	Ave.	36	2.1	H	39.09	57.82	63.5	5.68
10380.00	49.59	PK	163	1.2	H	17.42	67.01	77.7	10.69
5230MHz									
5148.14	31.80	PK	97	1.1	H	38.36	70.16	83.5	13.34
5148.14	16.41	Ave.	97	1.1	H	38.36	54.77	63.5	8.73
5356.88	31.38	PK	97	2.0	H	39.09	70.47	83.5	13.03
5356.88	16.62	Ave.	97	2.0	H	39.09	55.71	63.5	7.79
10460.00	49.61	PK	103	2.1	H	17.15	66.76	77.7	10.94

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m) @1m	Margin (dB)
802.11ac20									
5180 MHz									
5146.91	32.17	PK	198	2.5	H	38.36	70.53	83.5	12.97
5146.91	17.43	Ave.	198	2.5	H	38.36	55.79	63.5	7.71
5353.81	31.54	PK	316	2.1	H	39.09	70.63	83.5	12.87
5353.81	16.80	Ave.	316	2.1	H	39.09	55.89	63.5	7.61
10360.00	54.54	PK	149	1.5	H	17.42	71.96	77.7	5.74
5200MHz									
10400.00	54.91	PK	11	1.1	H	17.52	72.43	77.7	5.27
5240MHz									
5147.26	31.23	PK	210	1.9	H	38.36	69.59	83.5	13.91
5147.26	16.54	Ave.	210	1.9	H	38.36	54.90	63.5	8.60
5349.25	31.13	PK	214	2.4	H	38.82	69.95	83.5	13.55
5349.25	16.98	Ave.	214	2.4	H	38.82	55.80	63.5	7.70
10480.00	55.79	PK	9	1.2	H	17.25	73.04	77.7	4.66

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m) @1m	Margin (dB)
802.11ac40									
5190 MHz									
5147.65	40.32	PK	121	1.3	H	38.36	78.68	83.5	4.82
5147.65	22.51	Ave.	121	1.3	H	38.36	60.87	63.5	2.63
5361.53	31.45	PK	352	1.6	H	39.09	70.54	83.5	12.96
5361.53	18.56	Ave.	352	1.6	H	39.09	57.65	63.5	5.85
10380.00	47.31	PK	101	1.1	H	17.42	64.73	77.7	12.97
5230MHz									
5144.06	31.14	PK	319	2.0	H	38.36	69.50	83.5	14.00
5144.06	16.41	Ave.	319	2.0	H	38.36	54.77	63.5	8.73
5358.03	31.39	PK	189	1.8	H	39.09	70.48	83.5	13.02
5358.03	16.84	Ave.	189	1.8	H	39.09	55.93	63.5	7.57
10460.00	46.63	PK	346	1.9	H	17.15	63.78	77.7	13.92
802.11ac80									
5210 MHz									
5142.95	39.04	PK	250	1.5	H	38.36	77.40	83.5	6.10
5142.95	21.62	Ave.	250	1.5	H	38.36	59.98	63.5	3.52
5361.53	31.15	PK	289	2.4	H	39.09	70.24	83.5	13.26
5361.53	16.8	Ave.	289	2.4	H	39.09	55.89	63.5	7.61
10420.00	46.63	PK	131	1.7	H	17.52	64.15	77.7	13.55

5250-5350 MHz & 5470-5725 MHz:

802.11a mode: (Prescan with chain 0 and chain 1, the chain 0 is worst case)

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m) @1m	Margin (dB)
802.11a, Chain 0									
5250-5350 MHz									
5260 MHz									
5143.37	31.94	PK	215	1.8	H	38.36	70.30	83.5	13.20
5143.37	16.41	Ave.	215	1.8	H	38.36	54.77	63.5	8.73
5358.76	31.42	PK	153	1.0	H	39.09	70.51	83.5	12.99
5358.76	16.73	Ave.	153	1.0	H	39.09	55.82	63.5	7.68
10520.00	53.57	PK	14	1.8	H	17.25	70.82	77.7	6.88
5280 MHz									
10560.00	51.37	PK	38	1.3	H	17.91	69.28	77.7	8.42
5320MHz									
5144.32	31.22	PK	85	1.2	H	38.36	69.58	83.5	13.92
5144.32	17.14	Ave.	85	1.2	H	38.36	55.50	63.5	8.00
5350.90	31.13	PK	313	2.1	H	39.09	70.22	83.5	13.28
5350.90	17.02	Ave.	313	2.1	H	39.09	56.11	63.5	7.39
10640.00	52.91	PK	170	1.8	H	18.01	70.92	83.5	12.58
10640.00	36.88	Ave.	170	1.8	H	18.01	54.89	63.5	8.61
5470 MHz ~ 5725 MHz									
5500 MHz									
5466.18	31.63	PK	192	1.2	H	39.37	71.00	77.7	6.70
5730.27	32.12	PK	289	1.8	H	39.49	71.61	77.7	6.09
11000.00	52.29	PK	43	2.2	H	17.66	69.95	83.5	13.55
11000.00	36.63	Ave.	43	2.2	H	17.66	54.29	63.5	9.21
5580 MHz									
11160.00	51.86	PK	254	1.1	H	17.39	69.25	83.5	14.25
11160.00	35.64	Ave.	254	1.1	H	17.39	53.03	63.5	10.47
5700 MHz									
5467.10	31.63	PK	321	2.4	H	39.37	71.00	77.7	6.70
5747.73	32.35	PK	119	1.4	H	39.49	71.84	77.7	5.86
11400.00	52.43	PK	331	2.5	H	17.73	70.16	83.5	13.34
11400.00	36.85	Ave.	331	2.5	H	17.73	54.58	63.5	8.92

Transmitting with two antennas:

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m) @1m	Margin (dB)
802.11n20									
5250 MHz ~ 5350 MHz									
5260MHz									
5145.59	31.58	PK	59	1.4	H	38.36	69.94	83.5	13.56
5145.59	16.59	Ave.	59	1.4	H	38.36	54.95	63.5	8.55
5356.32	31.40	PK	54	2.1	H	39.09	70.49	83.5	13.01
5356.32	16.72	Ave.	54	2.1	H	39.09	55.81	63.5	7.69
10520.00	52.73	PK	298	1.2	H	17.25	69.98	77.7	7.72
5280MHz									
10560.00	52.67	PK	282	1.4	H	17.91	70.58	77.7	7.12
5320 MHz									
5147.12	31.65	PK	200	1.8	H	38.36	70.01	83.5	13.49
5147.12	16.29	Ave.	200	1.8	H	38.36	54.65	63.5	8.85
5352.44	35.10	PK	204	1.5	H	39.09	74.19	83.5	9.31
5352.44	19.24	Ave.	204	1.5	H	39.09	58.33	63.5	5.17
10640.00	53.72	PK	123	1.9	H	18.01	71.73	83.5	11.77
10640.00	36.96	Ave.	123	1.9	H	18.01	54.97	63.5	8.53
5470 MHz ~ 5725 MHz									
5500 MHz									
5465.08	31.63	PK	118	1.8	H	39.37	71.00	77.7	6.70
5749.03	32.09	PK	309	1.9	H	39.49	71.58	77.7	6.12
11000.00	49.05	PK	212	2.3	H	17.66	66.71	83.5	16.79
11000.00	33.06	Ave.	212	2.3	H	17.66	50.72	63.5	12.78
5580 MHz									
11160.00	49.24	PK	214	2.3	H	17.39	66.63	83.5	16.87
11160.00	33.15	Ave.	214	2.3	H	17.39	50.54	63.5	12.96
5700 MHz									
5463.98	31.63	PK	311	1.6	H	39.37	71.00	77.7	6.70
5745.35	32.49	PK	320	1.8	H	39.49	71.98	77.7	5.72
11400.00	49.62	PK	191	1.4	H	17.73	67.35	83.5	16.15
11400.00	33.94	Ave.	191	1.4	H	17.73	51.67	63.5	11.83

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m) @1m	Margin (dB)
802.11ac20									
5250 MHz ~ 5350 MHz									
5260MHz									
5144.64	31.53	PK	77	1.1	H	38.36	69.89	83.5	13.61
5144.64	17.09	Ave.	77	1.1	H	38.36	55.45	63.5	8.05
5356.09	31.82	PK	339	1.0	H	39.09	70.91	83.5	12.59
5356.09	17.23	Ave.	339	1.0	H	39.09	56.32	63.5	7.18
10520.00	50.38	PK	36	1.6	H	17.25	67.63	77.7	10.07
5280MHz									
10560.00	49.87	PK	320	1.1	H	17.91	67.78	77.7	9.92
5320 MHz									
5142.84	31.90	PK	98	2.0	H	38.36	70.26	83.5	13.24
5142.84	16.97	Ave.	98	2.0	H	38.36	55.33	63.5	8.17
5351.45	38.12	PK	326	2.0	H	39.09	77.21	83.5	6.29
5351.45	18.03	Ave.	326	2.0	H	39.09	57.12	63.5	6.38
10640.00	51.33	PK	138	2.1	H	18.01	69.34	83.5	14.16
10640.00	35.11	Ave.	138	2.1	H	18.01	53.12	63.5	10.38
5470 MHz ~ 5725 MHz									
5500 MHz									
5468.36	32.07	PK	151	1.2	H	39.37	71.44	77.7	6.26
5738.72	33.04	PK	46	2.3	H	39.49	72.53	77.7	5.17
11000.00	52.33	PK	214	1.6	H	17.66	69.99	83.5	13.51
11000.00	35.34	Ave.	214	1.6	H	17.66	53.00	63.5	10.50
5580 MHz									
11160.00	51.16	PK	305	1.8	H	17.39	68.55	83.5	14.95
11160.00	34.95	Ave.	305	1.8	H	17.39	52.34	63.5	11.16
5700 MHz									
5464.07	32.58	PK	166	2.2	H	39.37	71.95	77.7	5.75
5740.74	32.62	PK	17	2.3	H	39.49	72.11	77.7	5.59
11400.00	51.89	PK	88	1.6	H	17.73	69.62	83.5	13.88
11400.00	35.14	Ave.	88	1.6	H	17.73	52.87	63.5	10.63

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m) @1m	Margin (dB)
802.11n40									
5250 MHz ~ 5350 MHz									
5270MHz									
5148.81	31.01	PK	187	1.9	H	38.36	69.37	83.5	14.13
5148.81	17.19	Ave.	187	1.9	H	38.36	55.55	63.5	7.95
5358.81	31.46	PK	284	2.1	H	39.09	70.55	83.5	12.95
5358.81	17.25	Ave.	284	2.1	H	39.09	56.34	63.5	7.16
10540.00	44.35	PK	219	1.9	H	17.25	61.60	77.7	16.10
5310MHz									
5145.04	31.77	PK	32	1.4	H	38.36	70.13	83.5	13.37
5145.04	17.09	Ave.	32	1.4	H	38.36	55.45	63.5	8.05
5352.73	41.15	PK	285	1.9	H	39.09	80.24	83.5	3.26
5352.73	23.05	Ave.	285	1.9	H	39.09	62.14	63.5	1.36
10620.00	47.47	PK	62	1.1	H	18.01	65.48	83.5	18.02
10620.00	31.57	Ave.	62	1.1	H	18.01	49.58	63.5	13.92
5470 MHz ~ 5725 MHz									
5510MHz									
5466.30	32.89	PK	89	2.3	H	39.37	72.26	77.7	5.44
5749.89	32.85	PK	60	1.8	H	39.49	72.34	77.7	5.36
11020.00	47.48	PK	2	2.4	H	17.66	65.14	83.5	18.36
11020.00	32.38	Ave.	2	2.4	H	17.66	50.04	63.5	13.46
5550MHz									
11100.00	47.22	PK	107	1.6	H	16.72	63.94	83.5	19.56
11100.00	32.14	Ave.	107	1.6	H	16.72	48.86	63.5	14.64
5670MHz									
5463.80	32.52	PK	151	2.0	H	39.37	71.89	77.7	5.81
5756.72	32.88	PK	314	2.2	H	39.61	72.49	77.7	5.21
11340.00	47.39	PK	257	1.7	H	17.43	64.82	83.5	18.68
11340.00	32.26	Ave.	257	1.7	H	17.43	49.69	63.5	13.81

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m) @1m	Margin (dB)
802.11ac40									
5250 MHz ~ 5350 MHz									
5270MHz									
5141.89	31.83	PK	23	1.4	H	38.36	70.19	83.5	13.31
5141.89	17.02	Ave.	23	1.4	H	38.36	55.38	63.5	8.12
5355.11	31.01	PK	22	1.7	H	39.09	70.10	83.5	13.40
5355.11	17.15	Ave.	22	1.7	H	39.09	56.24	63.5	7.26
10540.00	43.05	PK	308	1.8	H	16.67	59.72	77.7	17.98
5310MHz									
5148.65	30.80	PK	21	1.5	H	38.36	69.16	83.5	14.34
5148.65	17.20	Ave.	21	1.5	H	38.36	55.56	63.5	7.94
5350.58	38.54	PK	175	1.1	H	39.09	77.63	83.5	5.87
5350.58	19.12	Ave.	175	1.1	H	39.09	58.21	63.5	5.29
10620.00	42.20	PK	344	2.1	H	18.01	60.21	83.5	23.29
10620.00	28.13	Ave.	344	2.1	H	18.01	46.14	63.5	17.36
5470 MHz ~ 5725 MHz									
5510MHz									
5465.62	32.39	PK	56	1.6	H	39.37	71.76	77.7	5.94
5733.73	32.88	PK	278	1.6	H	39.49	72.37	77.7	5.33
11020.00	47.02	PK	139	1.4	H	17.66	64.68	83.5	18.82
11020.00	31.64	Ave.	139	1.4	H	17.66	49.30	63.5	14.20
5550MHz									
11100.00	46.18	PK	161	1.5	H	16.72	62.90	83.5	20.60
11100.00	31.04	Ave.	161	1.5	H	16.72	47.76	63.5	15.74
5670MHz									
5463.38	32.52	PK	6	1.0	H	39.37	71.89	77.7	5.81
5746.44	33.10	PK	250	1.4	H	39.49	72.59	77.7	5.11
11340.00	46.46	PK	190	1.5	H	17.43	63.89	83.5	19.61
11340.00	31.17	Ave.	190	1.5	H	17.43	48.60	63.5	14.90

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m) @1m	Margin (dB)
802.11ac80									
5250 MHz ~ 5350 MHz									
5290MHz									
5145.04	30.80	PK	234	2.2	H	38.36	69.16	83.5	14.34
5145.04	17.14	Ave.	234	2.2	H	38.36	55.50	63.5	8.00
5350.36	41.19	PK	98	1.8	H	39.09	80.28	83.5	3.22
5350.36	22.72	Ave.	98	1.8	H	39.09	61.81	63.5	1.69
10580.00	47.48	PK	315	1.7	H	17.91	65.39	77.7	12.31
5470 MHz ~ 5725 MHz									
5530MHz									
5464.79	32.01	PK	263	1.5	H	39.37	71.38	77.7	6.32
5755.76	32.70	PK	313	1.4	H	39.61	72.31	77.7	5.39
11060.00	44.77	PK	161	1.1	H	16.72	61.49	83.5	22.01
11060.00	30.16	Ave.	161	1.1	H	16.72	46.88	63.5	16.62
5610MHz									
5464.84	32.26	PK	172	1.3	H	39.37	71.63	77.7	6.07
5729.83	33.43	PK	236	1.0	H	39.49	72.92	77.7	4.78
11220.00	44.61	PK	120	1.6	H	17.39	62.00	83.5	21.50
11220.00	30.03	Ave.	120	1.6	H	17.39	47.42	63.5	16.08

5725-5850 MHz:

802.11a mode: (Prescan with chain 0 and chain 1, the chain 0 is worst case)

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m) @1m	Margin (dB)
802.11a, Chain 0									
5745 MHz									
5648.64	30.59	PK	114	1.9	H	39.46	70.05	77.7	7.65
5694.68	32.72	PK	336	1.1	H	39.49	72.21	110.76	38.55
5719.49	33.52	PK	342	1.5	H	39.49	73.01	120.16	47.15
5724.06	48.96	PK	294	1.4	H	39.49	88.45	129.56	41.11
11490.00	58.67	PK	177	1.2	H	17.47	76.14	83.5	7.36
11490.00	43.97	Ave.	177	1.2	H	17.47	61.44	63.5	2.06
5785MHz									
11570.00	60.3	PK	284	1.3	H	17.51	77.81	83.5	5.69
11570.00	43.76	Ave.	284	1.3	H	17.51	61.27	63.5	2.23
5825MHz									
5850.32	35.85	PK	163	1.9	H	39.87	75.72	130.97	55.25
5856.23	33.48	PK	12	2.2	H	39.87	73.35	119.96	46.61
5921.92	33.53	PK	258	2.0	H	39.97	73.50	79.98	6.48
5996.47	33.26	PK	276	1.1	H	39.84	73.10	77.7	4.60
11650.00	60.59	PK	287	1.6	H	16.18	76.77	83.5	6.73
11650.00	44.41	Ave.	287	1.6	H	16.18	60.59	63.5	2.91

Transmitting with two antennas:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m) @1m	Margin (dB)
802.11n20									
5745 MHz									
5647.50	30.35	PK	332	1.5	H	39.46	69.81	77.7	7.89
5676.95	32.16	PK	289	2.1	H	39.49	71.65	97.64	25.99
5719.72	36.74	PK	212	2.1	H	39.49	76.23	120.22	43.99
5724.44	50.47	PK	355	1.2	H	39.49	89.96	130.42	40.46
11490.00	58.47	PK	190	1.7	H	17.47	75.94	83.5	7.56
11490.00	43.39	Ave.	190	1.7	H	17.47	60.86	63.5	2.64
5785MHz									
11570.00	60.04	PK	49	1.6	H	17.51	77.55	83.5	5.95
11570.00	43.65	Ave.	49	1.6	H	17.51	61.16	63.5	2.34
5825 MHz									
5850.21	37.05	PK	249	2.4	H	39.87	76.92	131.22	54.30
5855.24	34.36	PK	182	1.7	H	39.87	74.23	120.23	46.00
5880.31	33.81	PK	314	2.4	H	39.87	73.68	110.77	37.09
5997.88	33.34	PK	203	1.7	H	39.84	73.18	77.7	4.52
11650.00	59.76	PK	130	2.0	H	16.18	75.94	83.5	7.56
11650.00	44.76	Ave.	130	2.0	H	16.18	60.94	63.5	2.56

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m) @1m	Margin (dB)
802.11n40									
5755 MHz									
5668.53	31.08	PK	79	1.2	H	39.49	70.57	77.7	7.13
5698.37	33.02	PK	243	1.9	H	39.49	72.51	113.49	40.98
5716.89	48.99	PK	191	1.6	H	39.49	88.48	119.43	30.95
5723.97	50.59	PK	334	1.6	H	39.49	90.08	129.35	39.27
11510.00	56.64	PK	319	2.5	H	17.47	74.11	83.5	9.39
11510.00	35.91	Ave.	319	2.5	H	17.47	53.38	63.5	10.12
5795MHz									
5850.40	34.08	PK	15	1.9	H	39.87	73.95	130.79	56.84
5856.31	34.98	PK	281	1.2	H	39.87	74.85	119.93	45.08
5892.47	33.38	PK	96	2.4	H	39.87	73.25	101.77	28.52
5932.74	32.93	PK	60	1.6	H	39.97	72.90	77.7	4.80
11590.00	58.37	PK	193	1.5	H	17.51	75.88	83.5	7.62
11590.00	38.75	Ave.	193	1.5	H	17.51	56.26	63.5	7.24

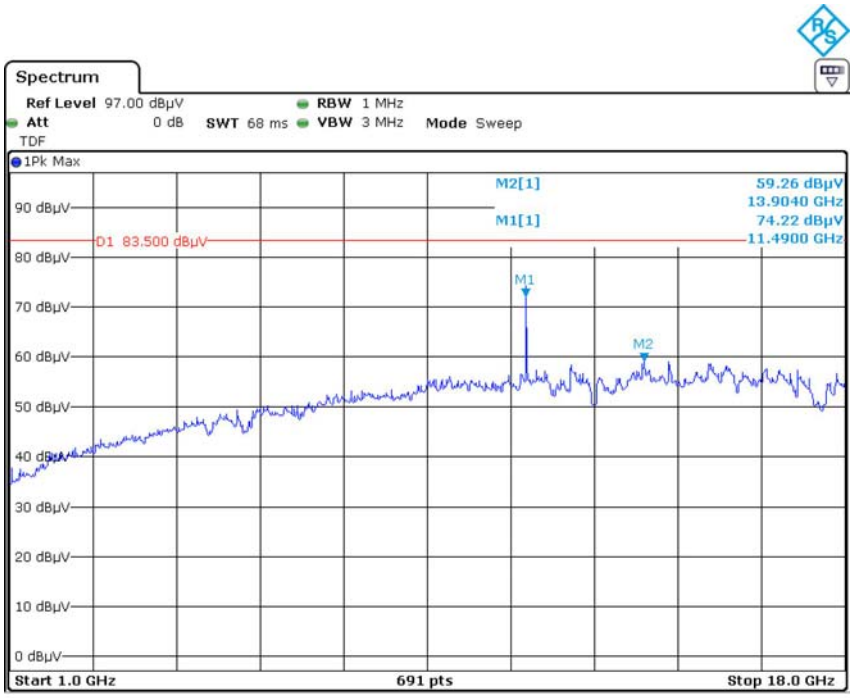
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m) @1m	Margin (dB)
802.11ac20									
5745 MHz									
5616.61	30.02	PK	115	1.8	H	39.46	69.48	77.7	8.22
5697.43	32.10	PK	273	2.0	H	39.49	71.59	112.8	41.21
5719.95	35.93	PK	199	1.8	H	39.49	75.42	120.29	44.87
5724.48	48.39	PK	201	1.5	H	39.49	87.88	130.51	42.63
11490.00	55.49	PK	181	1.8	H	17.47	72.96	83.5	10.54
11490.00	38.92	Ave.	181	1.8	H	17.47	56.39	63.5	7.11
5785 MHz									
11570.00	58.06	PK	61	1.4	H	17.51	75.57	83.5	7.93
11570.00	41.18	Ave.	61	1.4	H	17.51	58.69	63.5	4.81
5825MHz									
5850.18	37.69	PK	116	2.3	H	39.87	77.56	131.29	53.73
5872.23	33.29	PK	84	1.8	H	39.87	73.16	115.48	42.32
5893.56	34.52	PK	356	2.3	H	39.87	74.39	100.97	26.58
5932.21	32.38	PK	231	1.7	H	39.97	72.35	77.7	5.35
11650.00	59.18	PK	279	2.4	H	16.18	75.36	83.5	8.14
11650.00	42.65	Ave.	279	2.4	H	16.18	58.83	63.5	4.67

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m) @1m	Margin (dB)
802.11ac40									
5755 MHz									
5642.06	30.25	PK	1	1.6	H	39.46	69.71	77.7	7.99
5678.03	32.33	PK	299	1.5	H	39.49	71.82	98.44	26.62
5719.00	47.85	PK	127	1.4	H	39.49	87.34	120.02	32.68
5723.82	49.51	PK	226	1.8	H	39.49	89.00	129.01	40.01
11510.00	55.43	PK	261	1.2	H	17.47	72.90	83.5	10.60
11510.00	34.76	Ave.	261	1.2	H	17.47	52.23	63.5	11.27
5795 MHz									
5850.51	33.37	PK	134	1.2	H	39.87	73.24	130.54	57.30
5870.84	33.07	PK	287	2.0	H	39.87	72.94	115.86	42.92
5902.38	32.98	PK	143	1.3	H	39.87	72.85	94.44	21.59
5948.72	32.89	PK	39	2.0	H	39.97	72.86	77.7	4.84
11590.00	53.84	PK	138	1.6	H	17.51	71.35	83.5	12.15
11590.00	35.14	Ave.	138	1.6	H	17.51	52.65	63.5	10.85

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m) @1m	Margin (dB)
802.11ac80									
5775 MHz									
5648.59	31.20	PK	177	2.2	H	39.46	70.66	77.7	7.04
5695.55	37.67	PK	106	2.5	H	39.49	77.16	111.41	34.25
5718.16	41.84	PK	133	1.1	H	39.49	81.33	119.78	38.45
5724.31	42.44	PK	215	2.4	H	39.49	81.93	130.13	48.20
5852.00	40.97	PK	197	1.5	H	39.87	80.84	127.14	46.30
5860.02	39.25	PK	176	2.0	H	39.87	79.12	118.89	39.77
5875.25	35.79	PK	356	2.4	H	39.87	75.66	114.52	38.86
5935.64	33.10	PK	315	1.7	H	39.97	73.07	77.7	4.63
11550.00	52.95	PK	92	1.4	H	17.51	70.46	83.5	13.04
11550.00	35.48	Ave.	92	1.4	H	17.51	52.99	63.5	10.51

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

Pre-scan with 802.11a 5745MHz, for Peak
Horizontal



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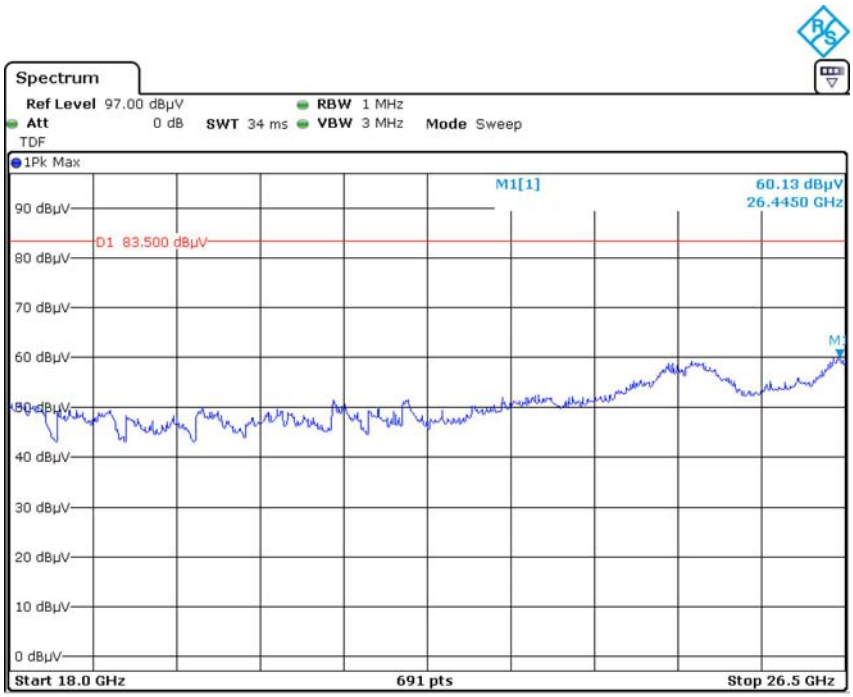

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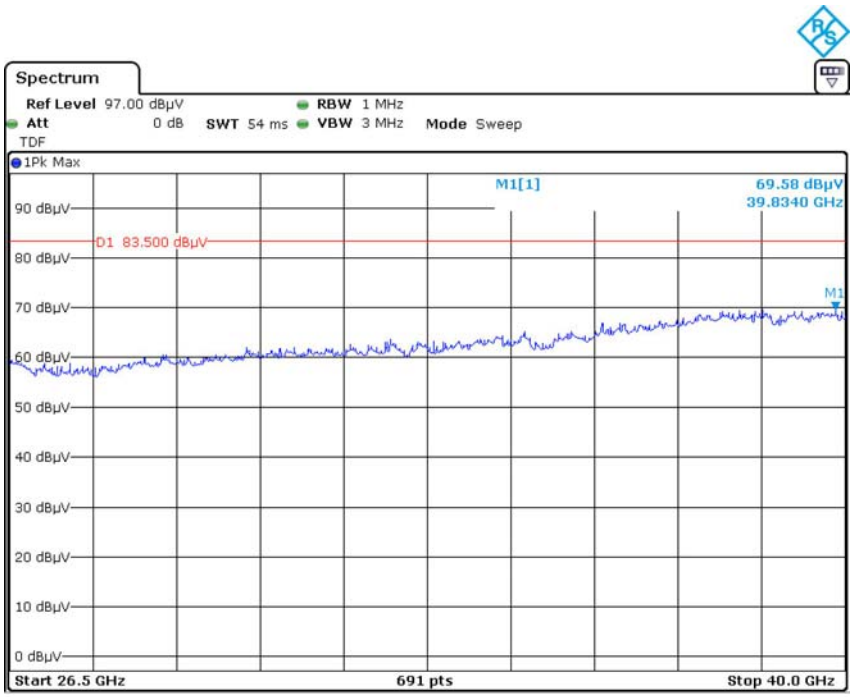
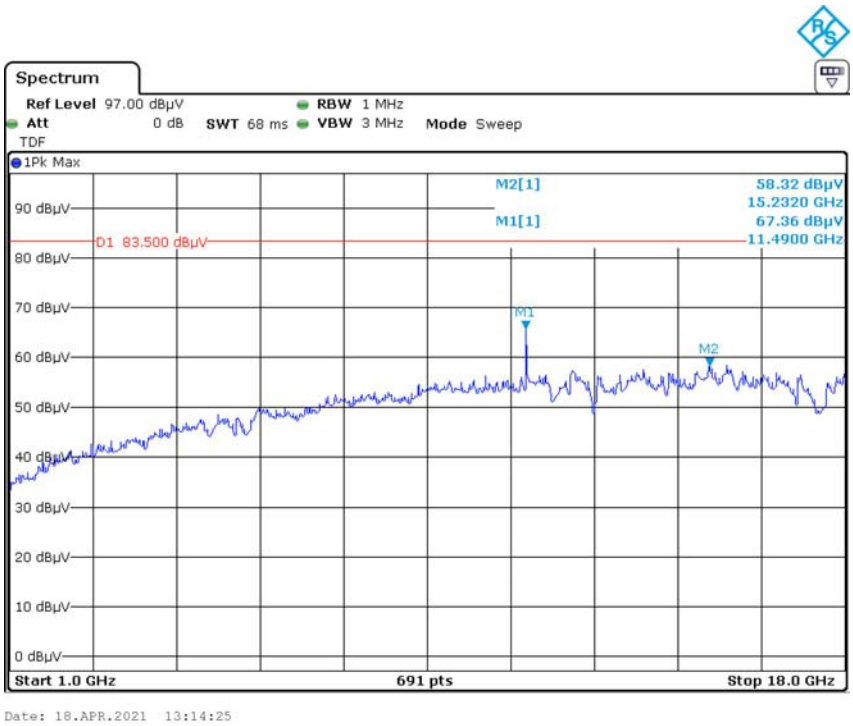
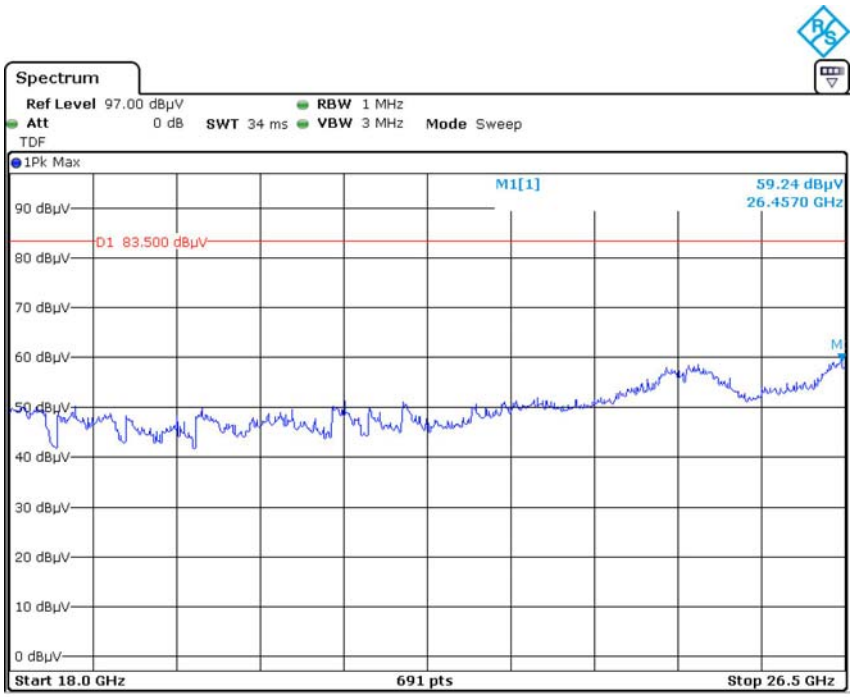

Spectrum
Ref Level 97.00 dBµV
RBW 1 MHz
Att 0 dB
SWT 54 ms
VBW 3 MHz
Mode Sweep
TDF
1Pk Max
M1[1]
69.58 dBµV
39.8340 GHz
D1 83.500 dBµV
M1
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
0 dBµV
Start 26.5 GHz
691 pts
Stop 40.0 GHz
Date: 18.APR.2021 14:10:29

Vertical


Spectrum
Ref Level 97.00 dBµV
RBW 1 MHz
Att 0 dB
SWT 68 ms
VBW 3 MHz
Mode Sweep
TDF
1Pk Max
M2[1]
58.32 dBµV
15.2320 GHz
M1[1]
67.36 dBµV
11.4900 GHz
D1 83.500 dBµV
M1
M2
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
0 dBµV
Start 1.0 GHz
691 pts
Stop 18.0 GHz
Date: 18.APR.2021 13:14:25



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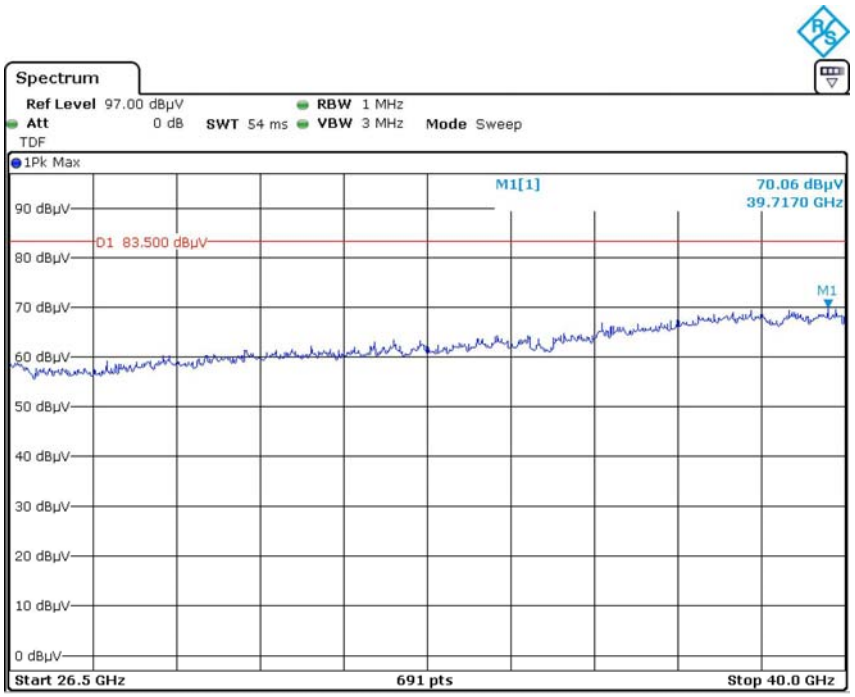

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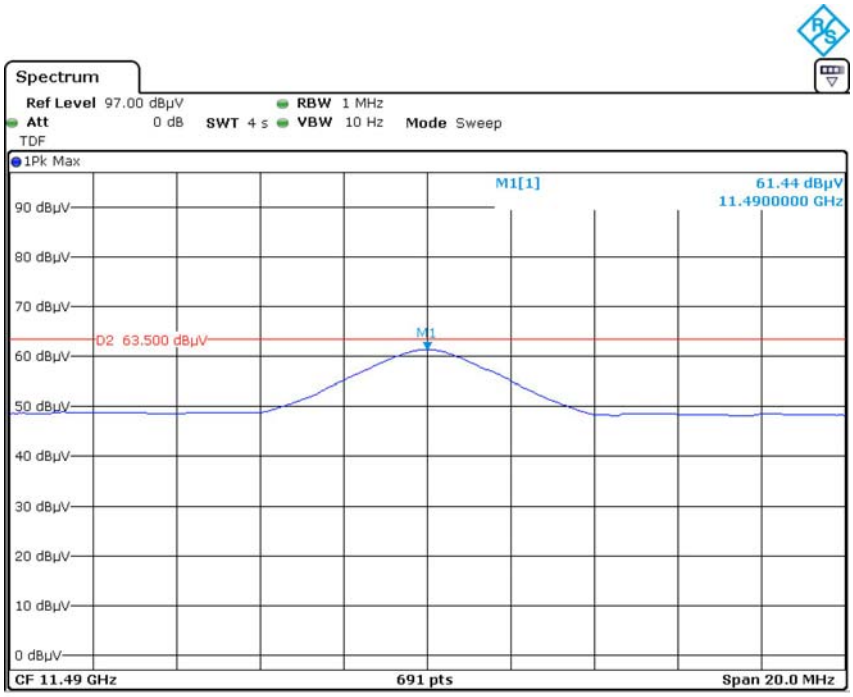
Average
Horizontal



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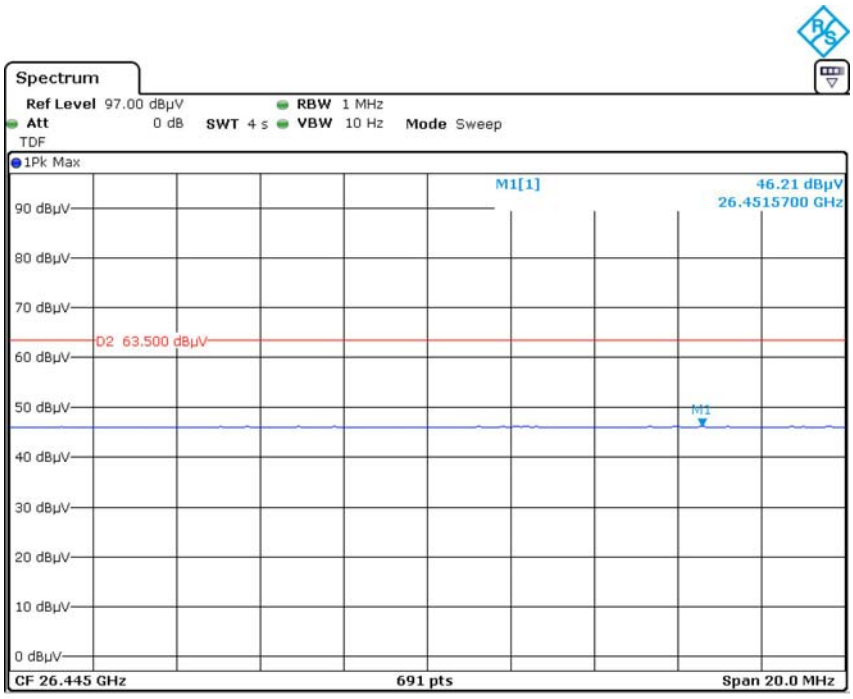

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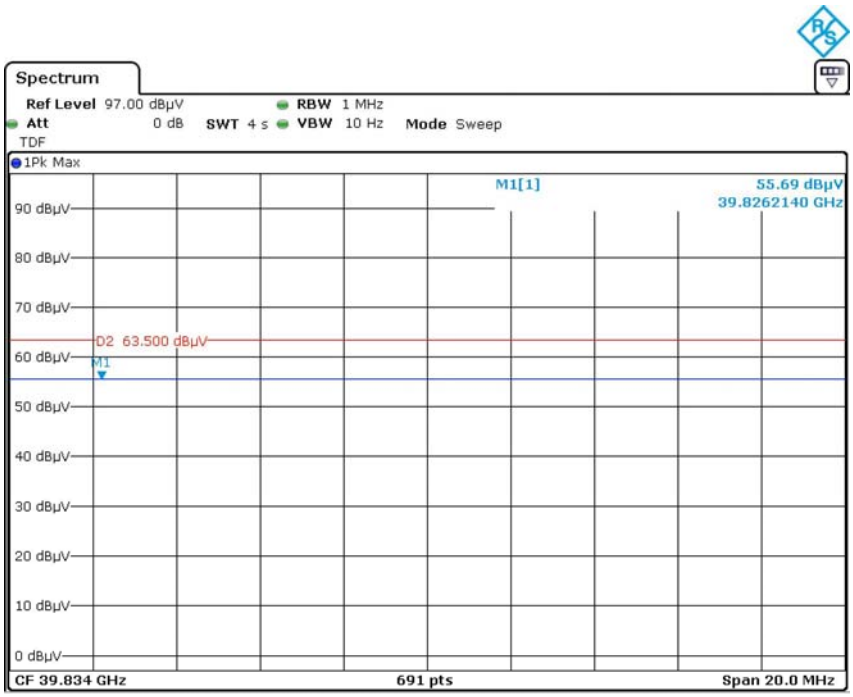
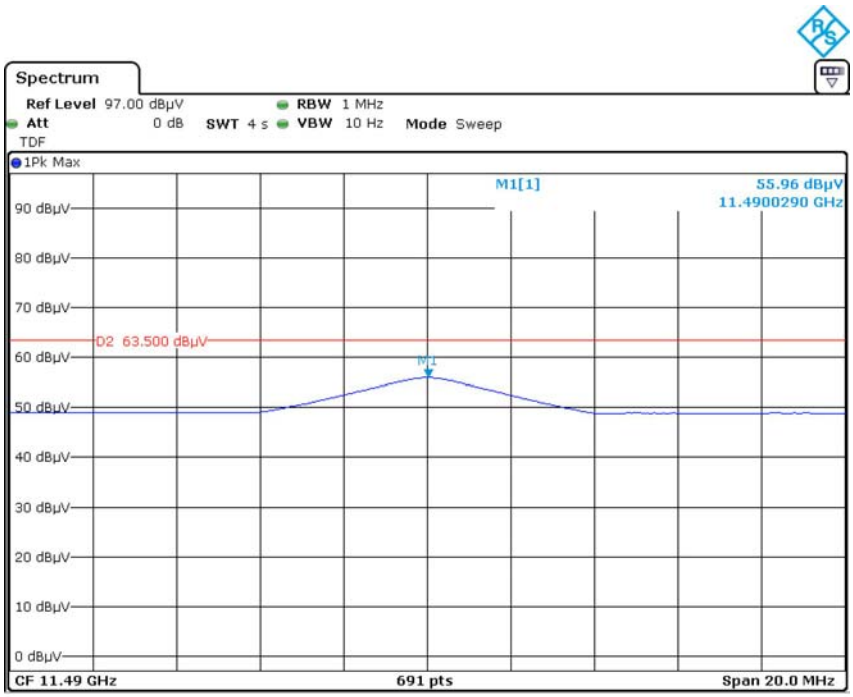
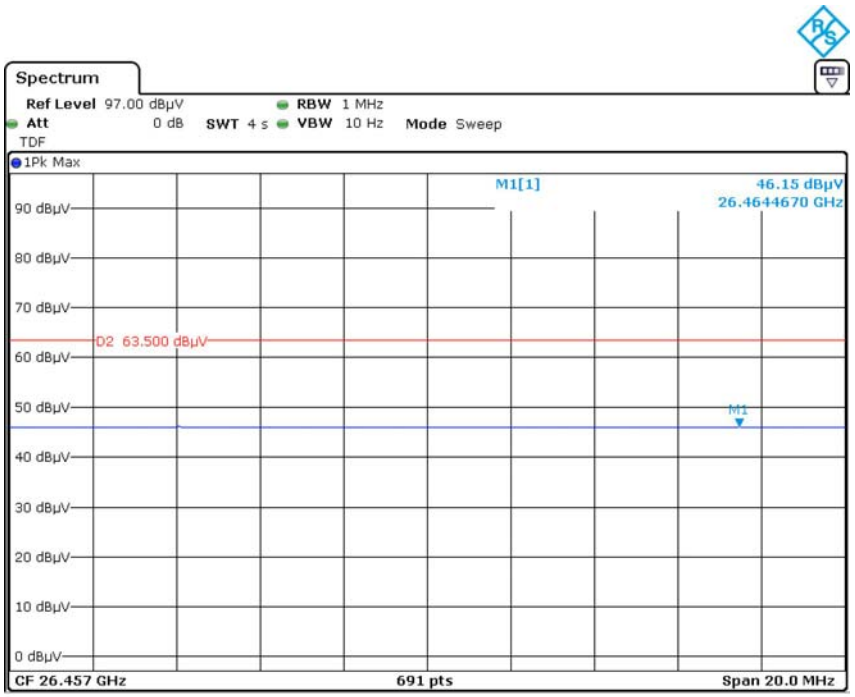

Spectrum
Ref Level 97.00 dBµV
RBW 1 MHz
Att 0 dB
SWT 4 s
VBW 10 Hz
Mode Sweep
TDF
1Pk Max
M1[1]
55.69 dBµV
39.8262140 GHz
D2 63.500 dBµV
M1
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
0 dBµV
CF 39.834 GHz
691 pts
Span 20.0 MHz
Date: 18.APR.2021 14:16:17

Vertical


Spectrum
Ref Level 97.00 dBµV
RBW 1 MHz
Att 0 dB
SWT 4 s
VBW 10 Hz
Mode Sweep
TDF
1Pk Max
M1[1]
55.96 dBµV
11.4900290 GHz
D2 63.500 dBµV
M1
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
0 dBµV
CF 11.49 GHz
691 pts
Span 20.0 MHz
Date: 18.APR.2021 13:19:42



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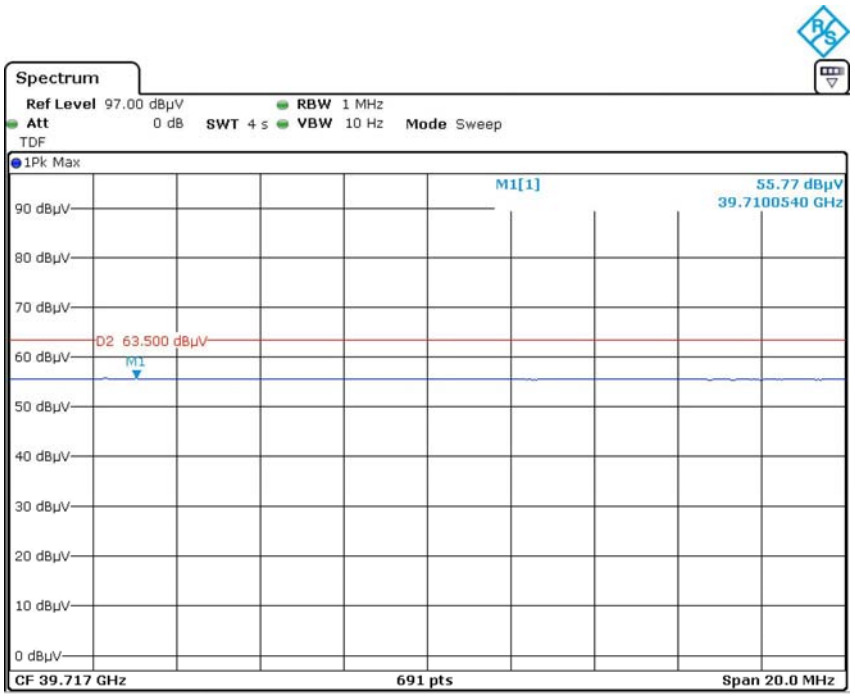

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