TESTING LABORATORY
CERTIFICATE#4323.01

FCC PART 15.407

TEST REPORT

For

Hangzhou Arenti Technology Co., Ltd.

Zandsteen 50, 2132 MR Hoofddorp, Noord-Holland, Netherlands

FCC ID: 2A2MQ-MINI18

Report Type:	Product Type:
Original Report	IP CAMERA

Project Engineer:	Tyrone Wang
Report Number:	RSHA210818001-00C
Report Date:	2021-09-01
Reviewed By:	Kyle Xu
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road,Kunshan,Jiangsu province,China Tel: +86-0512-86175000 Fax: +86-0512-88934268 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Hangzhou Arenti Technology Co., Ltd.	
Tested Model	Mini 18S	
Series Model	Mini 18T,Mini 18X,Mini 18Q,MiniCam	
Product Type	IP CAMERA	
Power Supply	DC 5V from adapter	
Maximum Output Power	5G Wi-Fi B1:	5G Wi-Fi B4:
	802.11a:13.24dBm	14.40dBm
	802.11n20:13.24dBm	14.62dBm
	802.11n40:8.55dBm	14.84dBm
Operating Frequency	5G Wi-Fi B1: 5180-5240 MHz, B4: 5745-5825 MHz	
Channel Number	5G Wi-Fi B1: 6, B4: 7	
Channel Separation	5G Wi-Fi: 802.11a/n20: 20MHz; 802.11n40: 40 MHz	
Modulation Type	OFDM	
Antenna Type	FPC Antenna	
*Maximum Antenna Gain	4.4dBi	

Adapter-1 Information:
Model: TPA-46B050100UU
Input: AC 100-240V~50/60Hz, 0.2A
Output: DC 5.0V, 1000mA

Adapter-2 Information:
Model: GTA92-0501000US
Input: AC 100-240V~50/60Hz, 0.3A
Output: USB-A DC 5.0V, 1.0A, 5.0W

**Note: The Maximum Antenna Gain was declared by the applicant.*

**All measurement and test data in this report was gathered from production sample serial number: RSHA210818001-1(Assigned by the BACL. The EUT supplied by the applicant was received on 2021-08-18)*

Objective

This type approval report is prepared on behalf of *Hangzhou Arenti Technology Co., Ltd.* in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions' rules.

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

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Kunshan).

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19 dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emission	30MHz~1GHz	6.11dB
	1GHz~6GHz	4.45dB
	6GHz~18GHz	5.23dB
	18GHz~40GHz	5.65dB
Occupied Bandwidth		0.5kHz
Temperature		1.0℃
Humidity		6%

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01), the FCC designation No. CN1185 under the FCC KDB 974614 D01 and CAB identifier CN0004 under the ISED requirement. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

For **5150~5250 MHz** band, test channel list is as below,

802.11a/n20 mode Channel 36, 40, 48 were tested.
802.11n40 mode Channel 38, 46 were tested.

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

For **5725~5850 MHz** band,

802.11a/n20 mode Channel 149, 157, 165 were tested.
802.11n40 mode Channel 151, 159 were tested.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	159	5795
151	5755	161	5805
153	5765	165	5825
157	5785	/	/

EUT Exercise Software

RF test tool: Demo

The worst case was performed under:

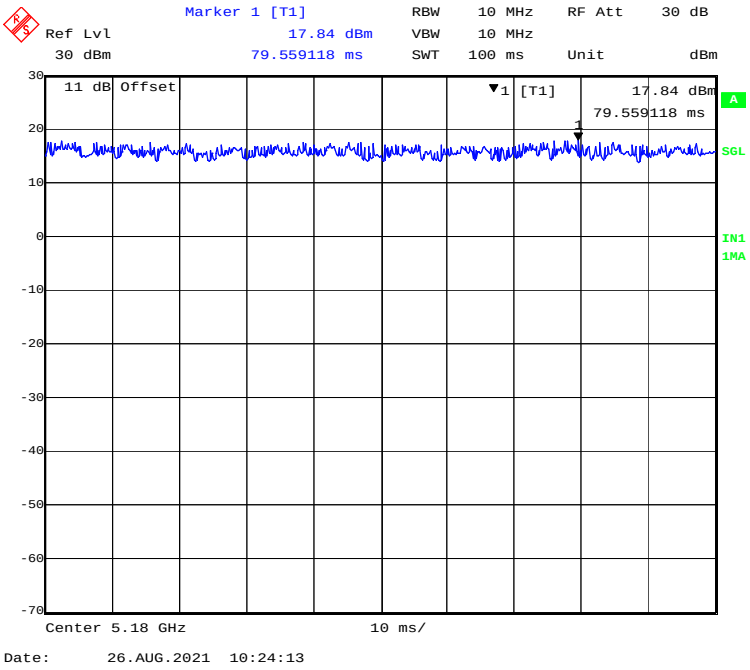
Mode	Data rate	*Power level setting	
		5150-5250 Band	5725-5850 Band
802.11a	6 Mbps	51	60
802.11n-HT20	MCS0	56	56
802.11 n-HT 40	MCS0	48	56

Note*: The power level setting was declared by the applicant.

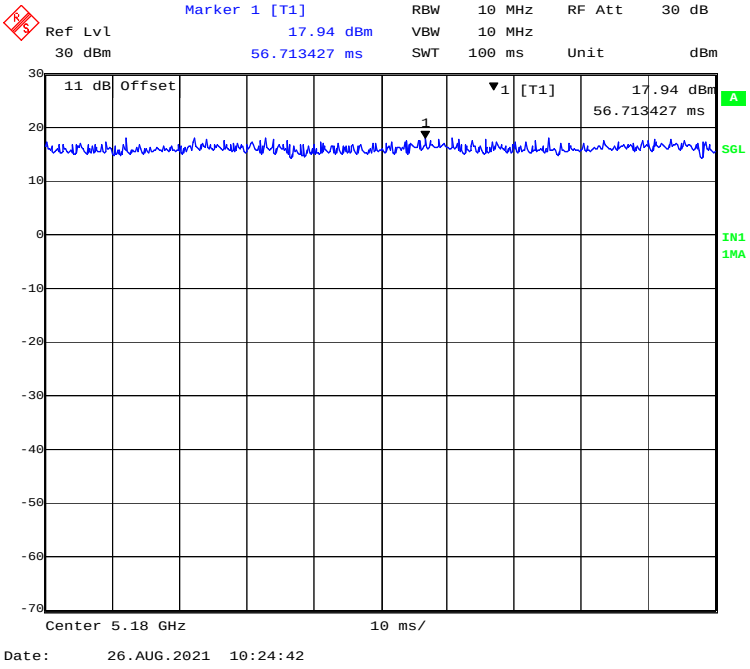
Duty Cycle

5150MHz-5250MHz Band:

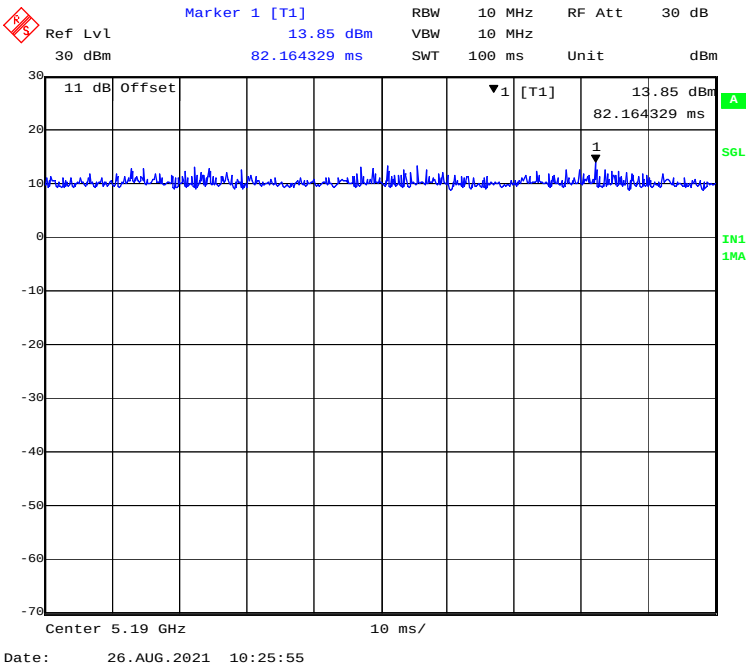
802.11a mode



802.11n-HT20 mode

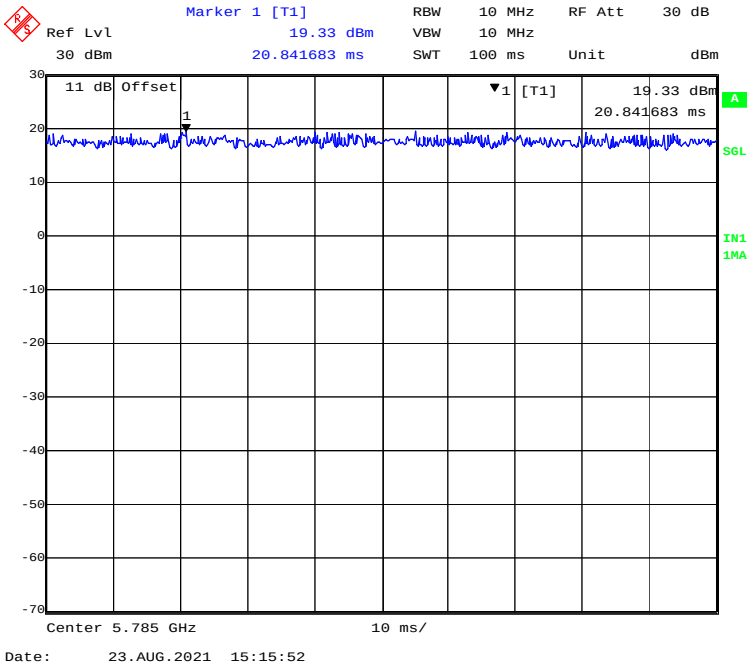


802.11n-HT40 mode

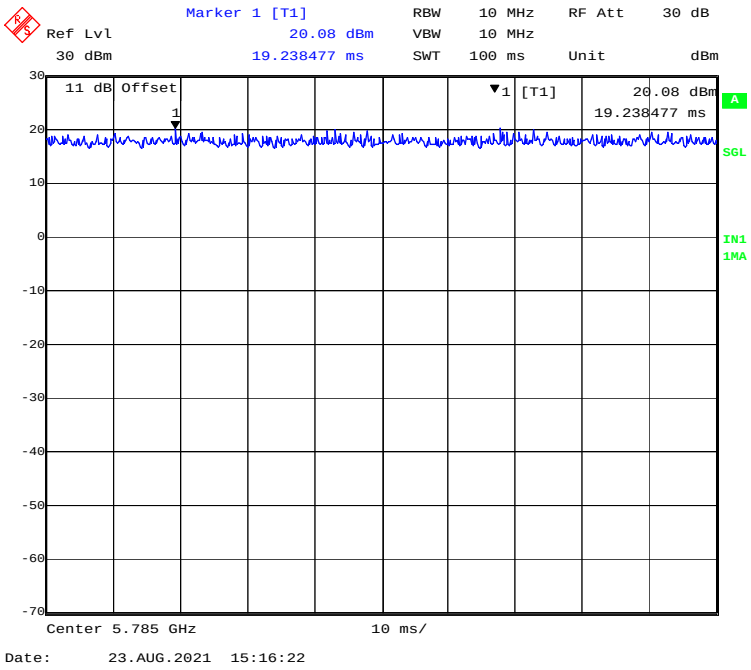


5725MHz-5850MHz Band:

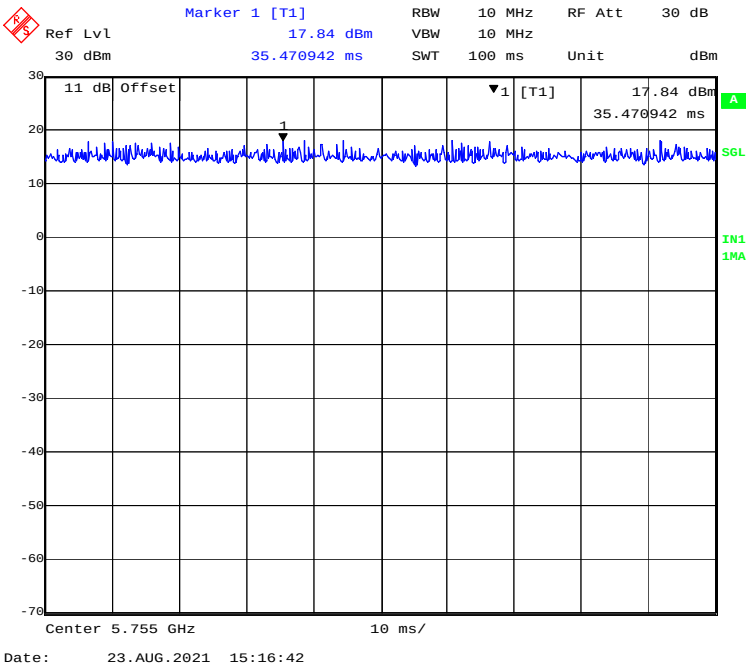
802.11a mode



802.11n-HT20 mode



802.11n-HT40 mode



Mode	Frequency Range (MHz)	Duty Cycle (%)	T_{on} (ms)	T_{on+off} (ms)	10log(1/x)
802.11a	5150-5250	100	100	100	0
802.11n-HT20		100	100	100	0
802.11n-HT40		100	100	100	0
802.11a	5725-5850	100	100	100	0
802.11n-HT20		100	100	100	0
802.11n-HT40		100	100	100	0

Note: "x" means duty cycle.

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

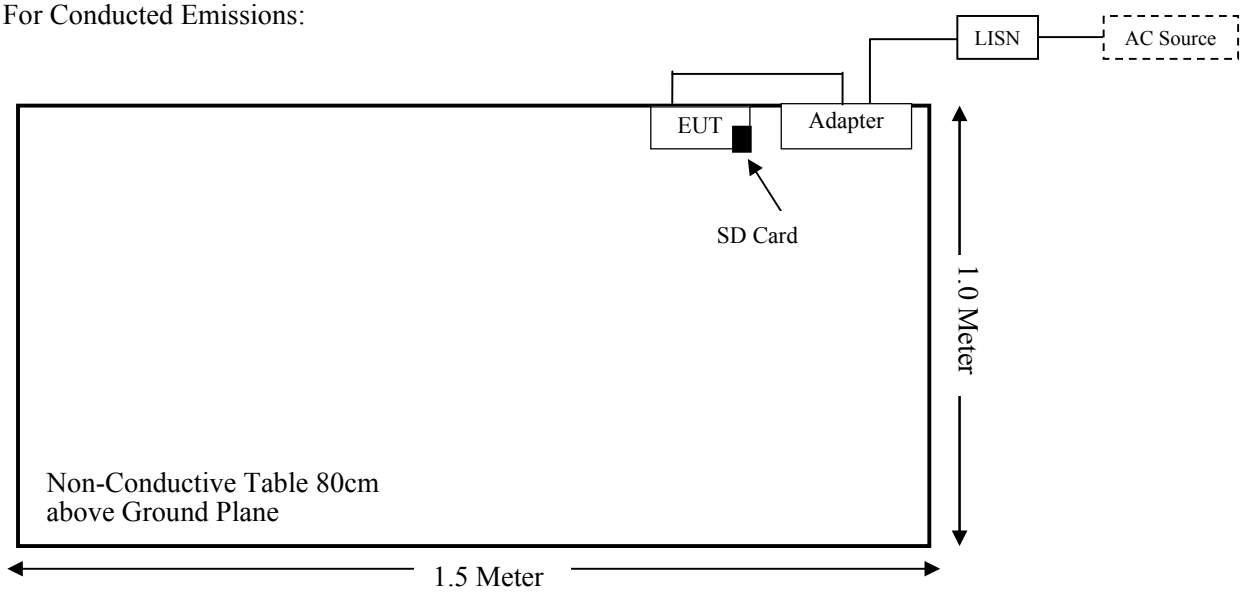
Manufacturer	Description	Model	Serial Number
Sandisk	SD card	32G	72810VCP9128

External I/O Cable

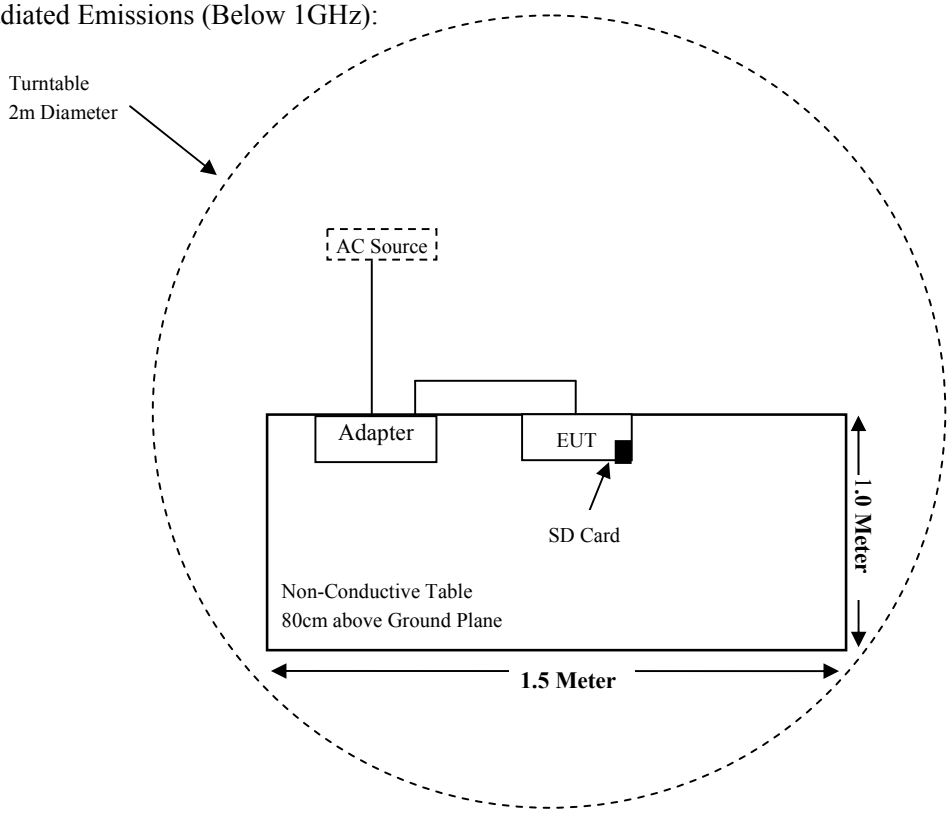
Cable Description	Length (m)	From Port	To
USB Cable	2.0	EUT	Adapter
Power Cable	1.0	Adapter	LISN/AC Source

Block Diagram of Test Setup

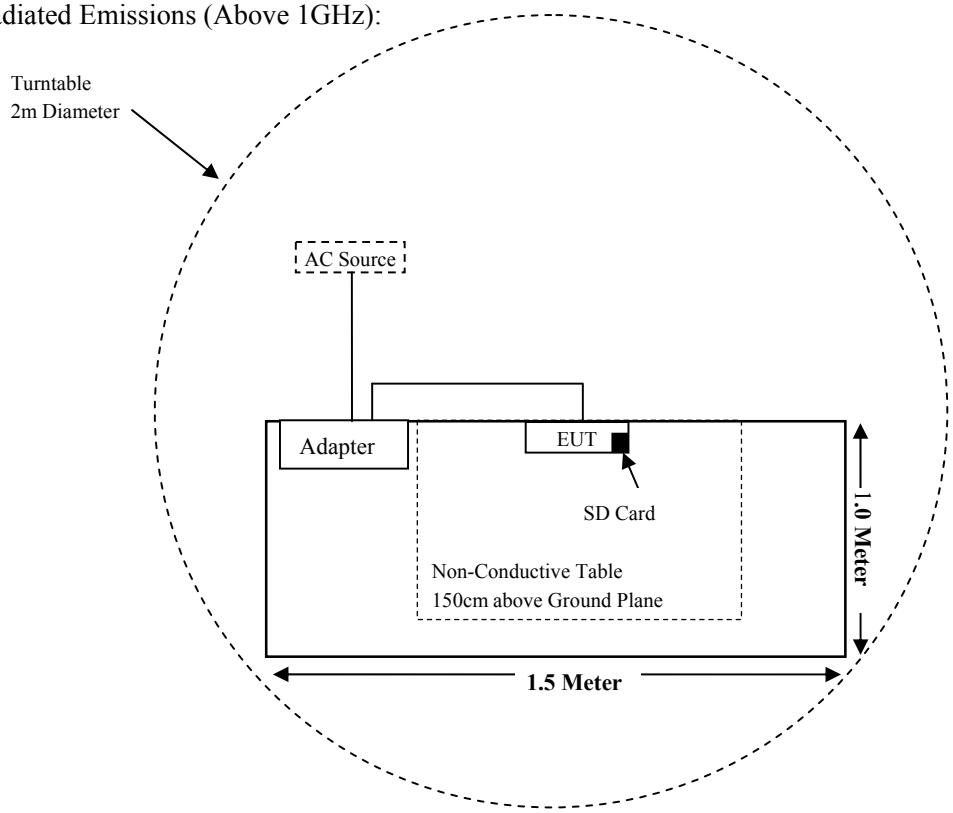
For Conducted Emissions:



For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §1.1310 & §2.1091	MAXIMUM PERMISSIBLE EXPOSURE (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 & §15.407(b) (9)	AC Power Line Conducted Emissions	Compliant
§ 15.205 & §15.209 & §15.407(b) (1), (4), (8),(9)	Undesirable Emission & Restricted Bands	Compliant
§§15.407(a) &§15.407(e)	Emission Bandwidth	Compliant
§15.407(a) (1) (3)	Conducted Transmitter Output Power	Compliant
§15.407(a) (1) (3)	Power Spectral Density	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test（Chamber 1#）					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2020-11-27	2021-11-26
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2020-01-07	2023-01-06
Sonoma Instrument	Pre-amplifier	310N	171205	2021-08-14	2022-08-13
Rohde & Schwarz	Auto Test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2021-08-15	2022-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2021-08-15	2022-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2021-08-15	2022-08-14
Radiated Emission Test（Chamber 2#）					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2021-03-16	2022-03-15
ETS-LINDGREN	Horn Antenna	3115	9311-4159	2020-07-15	2023-07-14
ETS-LINDGREN	Horn Antenna	3116	2516	2020-01-07	2023-01-06
A.H.Systems,inc	Amplifier	PAM-0118P	512	2021-08-14	2022-08-13
EM Electronics Corporation	Amplifier	EM18G40G	060726	2021-03-22	2022-03-21
MICRO-TRONICS	Band Reject Filter	BRC50703	G094	2021-08-05	2022-08-04
MICRO-TRONICS	Band Reject Filter	BRC50705	G085	2021-08-05	2022-08-04
Narda	Attenuator	10dB	010	2021-08-05	2022-08-04
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	2021-08-15	2022-08-14
MICRO-COAX	Coaxial Cable	Cable-11	011	2021-08-15	2022-08-14
MICRO-COAX	Coaxial Cable	Cable-12	012	2021-08-15	2022-08-14
MICRO-COAX	Coaxial Cable	Cable-13	013	2021-08-15	2022-08-14
RF Conducted Test					
Rohde & Schwarz	EMI Test Receiver	ESIB26	100146	2020-11-27	2021-11-26
Agilent	Power Meter	N1912A	MY5000492	2020-11-18	2021-11-17
Agilent	Power Sensor	N1921A	MY54210024	2020-11-18	2021-11-17
Narda	Attenuator	10dB	010	2021-08-15	2022-08-14
Arenti	RF Cable	Arenti C01	C01	Each Time	N/A
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K03-101746-zn	2021-07-28	2022-07-27
Rohde & Schwarz	LISN	ENV216	101115	2020-11-27	2021-11-26
Audix	Test Software	e3	V9	N/A	N/A
Rohde & Schwarz	Pulse limiter	ESH3-Z2	100552	2021-08-10	2022-08-09
MICRO-COAX	Coaxial Cable	Cable-15	015	2021-08-15	2022-08-14

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

FCC §1.1310 & §2.1091 –MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §2.1091 and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) 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/f²)	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;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = 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);

Calculated Data:

Mode	Frequency Range (MHz)	Antenna Gain		Tune-up Output Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
802.11b	2412~2462	2.5	1.78	16.50	44.67	20	0.0158	1.0
802.11g		2.5	1.78	19.50	89.13	20	0.0316	1.0
802.11 n-HT20		2.5	1.78	20.00	100.00	20	0.0354	1.0
802.11 n-HT40	2422~2452	2.5	1.78	16.00	39.81	20	0.0141	1.0
802.11a	5150~5250	4.4	2.75	13.50	22.39	20	0.0122	1.0
	5725~5850	4.4	2.75	14.50	28.18	20	0.0154	1.0
802.11n20	5150~5250	4.4	2.75	13.50	22.39	20	0.0122	1.0
	5725~5850	4.4	2.75	15.00	31.62	20	0.0173	1.0
802.11n40	5150~5250	4.4	2.75	9.00	7.94	20	0.0043	1.0
	5725~5850	4.4	2.75	15.00	31.62	20	0.0173	1.0

Note: 1. For the above tune up power were declared by the manufacturer.
2. 2.4G Wi-Fi and 5G Wi-Fi can't transmit simultaneously.

Result: The device meet FCC MPE at 20 cm distance.

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, 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 exceeds 6 dBi.

Antenna Connector Construction

The EUT has an FPC antenna for 5G Wi-Fi which the antenna gain is 4.4dBi, fulfill the requirement of this section. Please refer to the EUT photos.

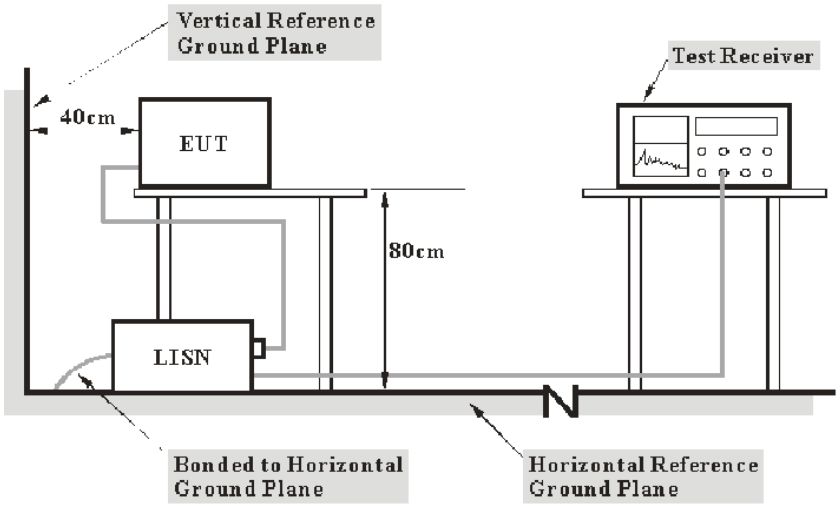
Result: Compliant.

FCC §15.407 (b) (8) §15.207 (a) – AC POWER LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a), §15.407(b) (9)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

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

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

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

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

Corrected Factor & Over Limit Calculation

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

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)

The "**Over Limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit of 7dB means the emission is 7 dB above the limit. The equation for Over Limit calculation is as follows:

Over Limit (dB) = Read level (dBμV) + Factor (dB) - Limit (dBμV)

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

Test Data

Environmental Conditions

Temperature:	24.9 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

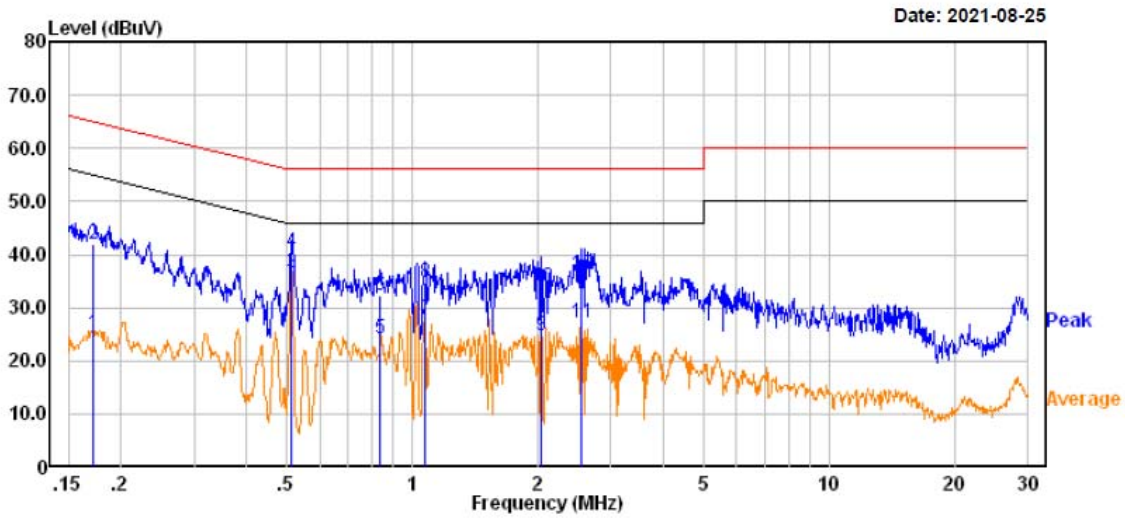
The testing was performed by Tyrone Wang on 2021-08-25.

EUT operation mode: Transmitting in 802.11a mode low channel of 5150-5250MHz (worst case)

Version: AK330L

AC 120V/60 Hz, Line

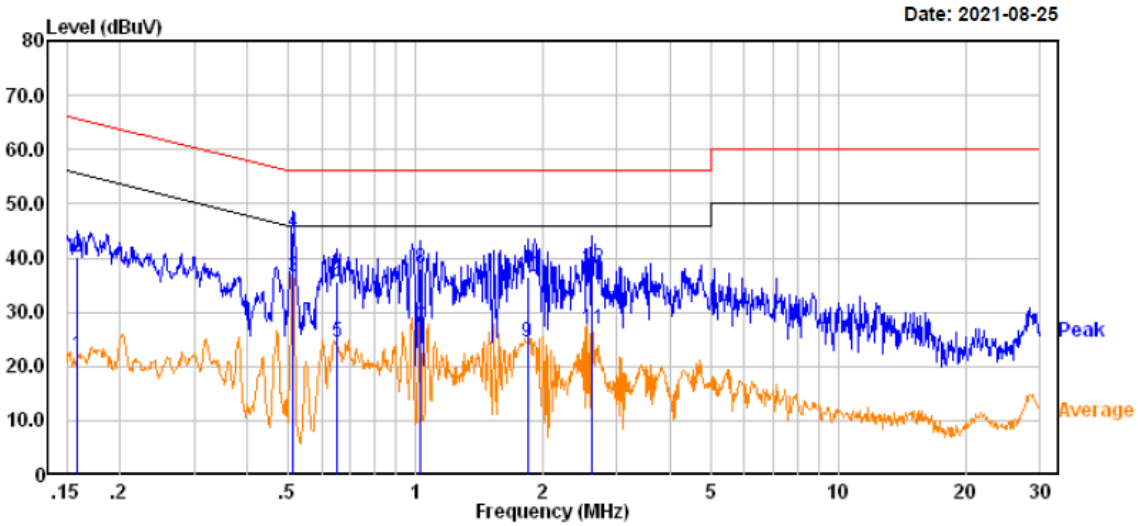
Adapter-1: TPA-46B050100UU



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.172	5.13	19.83	24.96	54.88	-29.92	Average
2	0.172	22.20	19.83	42.03	64.88	-22.85	QP
3	0.514	16.66	19.76	36.42	46.00	-9.58	Average
4	0.514	20.80	19.76	40.56	56.00	-15.44	QP
5	0.837	4.43	19.71	24.14	46.00	-21.86	Average
6	0.837	12.50	19.71	32.21	56.00	-23.79	QP
7	1.074	7.83	19.82	27.65	46.00	-18.35	Average
8	1.074	14.90	19.82	34.72	56.00	-21.28	QP
9	2.043	4.84	19.80	24.64	46.00	-21.36	Average
10	2.043	13.90	19.80	33.70	56.00	-22.30	QP
11	2.557	7.62	19.48	27.10	46.00	-18.90	Average
12	2.557	16.69	19.48	36.17	56.00	-19.83	QP

AC 120V/60 Hz, Neutral

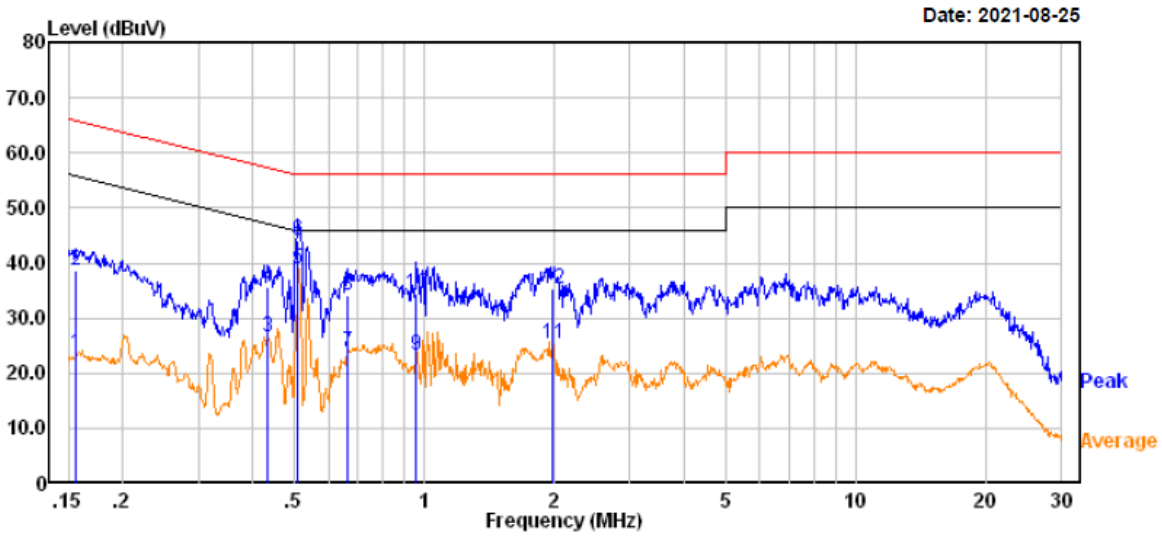
Adapter-1: TPA-46B050100UU



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	2.22	19.82	22.04	55.54	-33.50	Average
2	0.158	20.20	19.82	40.02	65.54	-25.52	QP
3	0.514	16.72	19.76	36.48	46.00	-9.52	Average
4	0.514	24.80	19.76	44.56	56.00	-11.44	QP
5	0.653	4.85	19.75	24.60	46.00	-21.40	Average
6	0.653	15.90	19.75	35.65	56.00	-20.35	QP
7	1.027	7.25	19.82	27.07	46.00	-18.93	Average
8	1.027	18.30	19.82	38.12	56.00	-17.88	QP
9	1.840	4.64	19.84	24.48	46.00	-21.52	Average
10	1.840	16.79	19.84	36.63	56.00	-19.37	QP
11	2.609	7.51	19.48	26.99	46.00	-19.01	Average
12	2.609	18.49	19.48	37.97	56.00	-18.03	QP

AC 120V/60 Hz, Line

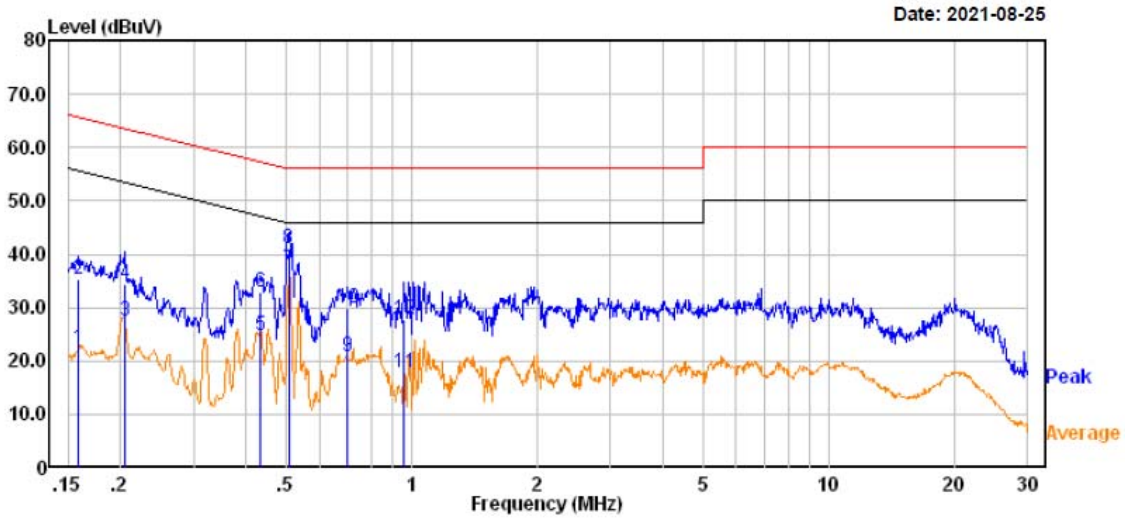
Adapter-2: GTA92-0501000US



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.155	3.67	19.82	23.49	55.71	-32.22	Average
2	0.155	18.80	19.82	38.62	65.71	-27.09	QP
3	0.432	6.86	19.75	26.61	47.22	-20.61	Average
4	0.432	15.80	19.75	35.55	57.22	-21.67	QP
5	0.509	19.23	19.76	38.99	46.00	-7.01	Average
6	0.509	24.30	19.76	44.06	56.00	-11.94	QP
7	0.666	4.22	19.75	23.97	46.00	-22.03	Average
8	0.666	14.30	19.75	34.05	56.00	-21.95	QP
9	0.958	3.46	19.78	23.24	46.00	-22.76	Average
10	0.958	14.50	19.78	34.28	56.00	-21.72	QP
11	1.993	5.48	19.83	25.31	46.00	-20.69	Average
12	1.993	15.50	19.83	35.33	56.00	-20.67	QP

AC 120V/60 Hz, Neutral

Adapter-2: GTA92-0501000US



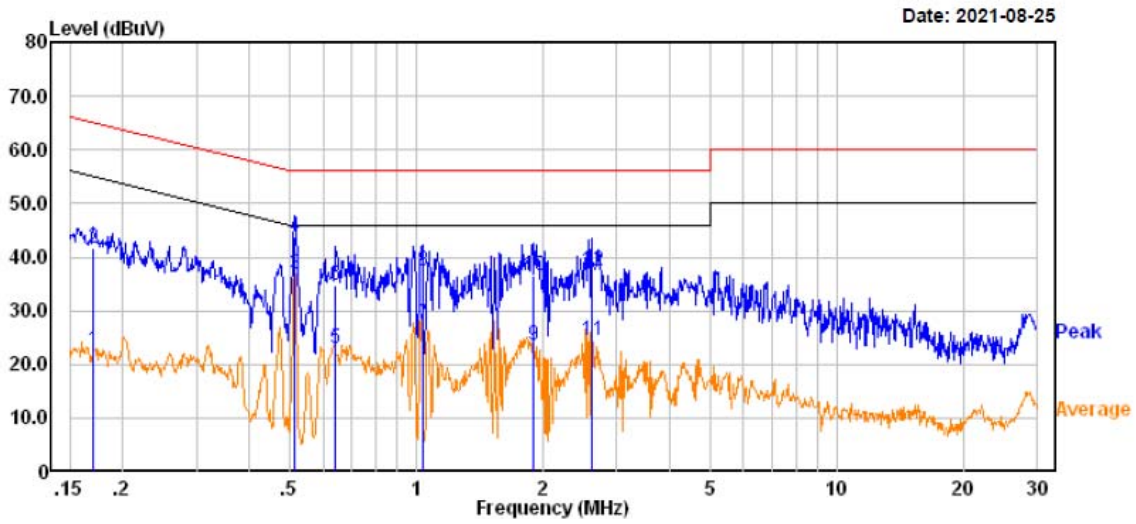
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	2.61	19.82	22.43	55.54	-33.11	Average
2	0.158	15.60	19.82	35.42	65.54	-30.12	QP
3	0.204	7.53	19.82	27.35	53.43	-26.08	Average
4	0.204	14.60	19.82	34.42	63.43	-29.01	QP
5	0.434	5.08	19.75	24.83	47.18	-22.35	Average
6	0.434	13.10	19.75	32.85	57.18	-24.33	QP
7	0.506	17.23	19.76	36.99	46.00	-9.01	Average
8	0.506	21.30	19.76	41.06	56.00	-14.94	QP
9	0.703	0.93	19.75	20.68	46.00	-25.32	Average
10	0.703	10.00	19.75	29.75	56.00	-26.25	QP
11	0.958	-1.92	19.78	17.86	46.00	-28.14	Average
12	0.958	8.00	19.78	27.78	56.00	-28.22	QP

Note:
1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
2) Over Limit (dB) = Read level (dBμV) + Factor (dB) - Limit (dBμV)

Version: AK300

AC 120V/60 Hz, Line

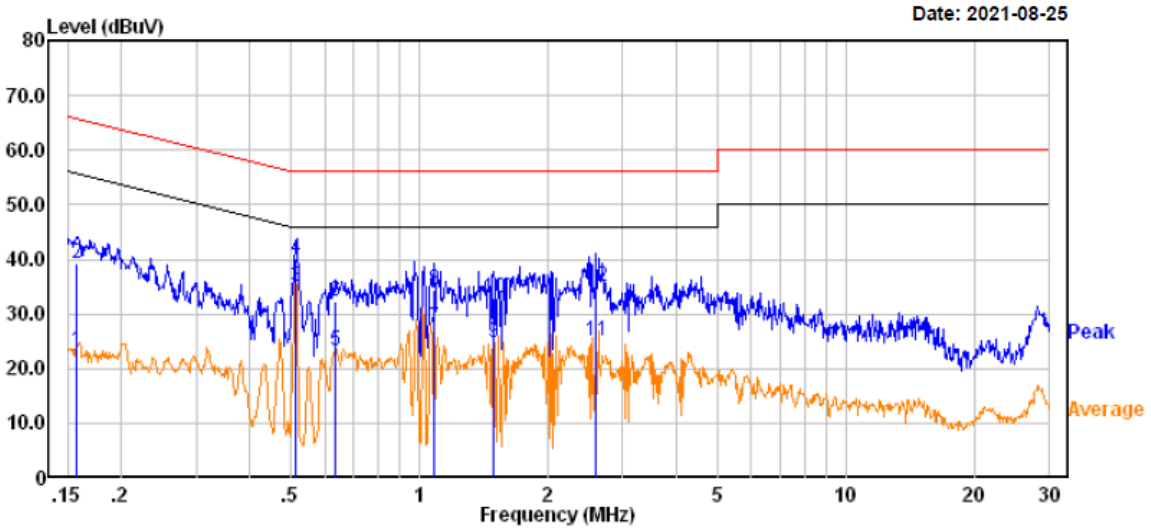
Adapter-1: TPA-46B050100UU



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.170	2.78	19.83	22.61	54.96	-32.35	Average
2	0.170	21.80	19.83	41.63	64.96	-23.33	QP
3	0.514	17.06	19.76	36.82	46.00	-9.18	Average
4	0.514	24.00	19.76	43.76	56.00	-12.24	QP
5	0.643	3.07	19.75	22.82	46.00	-23.18	Average
6	0.643	15.00	19.75	34.75	56.00	-21.25	QP
7	1.032	7.56	19.82	27.38	46.00	-18.62	Average
8	1.032	17.60	19.82	37.42	56.00	-18.58	QP
9	1.896	3.78	19.83	23.61	46.00	-22.39	Average
10	1.896	16.80	19.83	36.63	56.00	-19.37	QP
11	2.609	4.90	19.48	24.38	46.00	-21.62	Average
12	2.609	17.99	19.48	37.47	56.00	-18.53	QP

AC 120V/60 Hz, Neutral

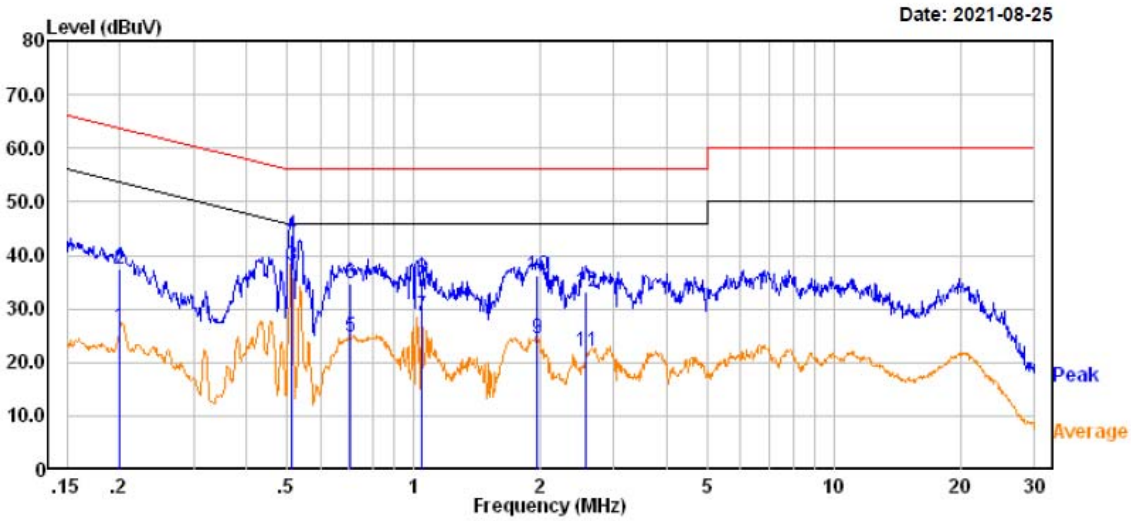
Adapter-1: TPA-46B050100UU



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.157	3.37	19.82	23.19	55.63	-32.44	Average
2	0.157	19.40	19.82	39.22	65.63	-26.41	QP
3	0.514	15.31	19.76	35.07	46.00	-10.93	Average
4	0.514	20.30	19.76	40.06	56.00	-15.94	QP
5	0.633	3.53	19.75	23.28	46.00	-22.72	Average
6	0.633	12.60	19.75	32.35	56.00	-23.65	QP
7	1.080	7.53	19.82	27.35	46.00	-18.65	Average
8	1.080	14.50	19.82	34.32	56.00	-21.68	QP
9	1.493	4.93	19.84	24.77	46.00	-21.23	Average
10	1.493	13.00	19.84	32.84	56.00	-23.16	QP
11	2.596	5.43	19.48	24.91	46.00	-21.09	Average
12	2.596	15.49	19.48	34.97	56.00	-21.03	QP

AC 120V/60 Hz, Line

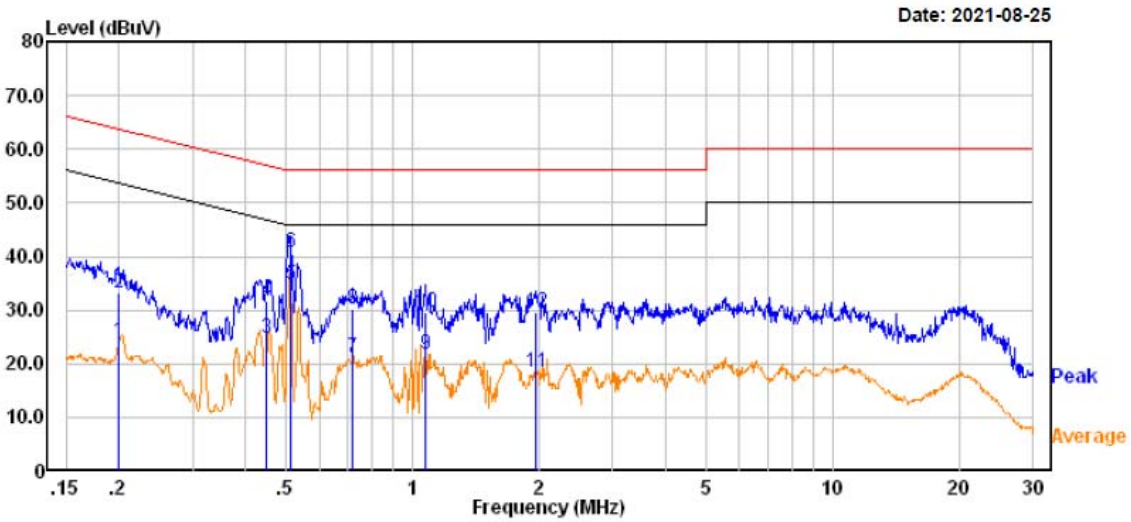
Adapter-2: GTA92-0501000US



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.200	6.63	19.82	26.45	53.60	-27.15	Average
2	0.200	17.60	19.82	37.42	63.60	-26.18	QP
3	0.511	18.23	19.76	37.99	46.00	-8.01	Average
4	0.511	24.10	19.76	43.86	56.00	-12.14	QP
5	0.707	4.98	19.75	24.73	46.00	-21.27	Average
6	0.707	15.00	19.75	34.75	56.00	-21.25	QP
7	1.043	8.77	19.82	28.59	46.00	-17.41	Average
8	1.043	15.70	19.82	35.52	56.00	-20.48	QP
9	1.973	4.52	19.83	24.35	46.00	-21.65	Average
10	1.973	16.50	19.83	36.33	56.00	-19.67	QP
11	2.570	2.68	19.48	22.16	46.00	-23.84	Average
12	2.570	13.79	19.48	33.27	56.00	-22.73	QP

AC 120V/60 Hz, Neutral

Adapter-2: GTA92-0501000US



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.200	4.36	19.82	24.18	53.60	-29.42	Average
2	0.200	13.40	19.82	33.22	63.60	-30.38	QP
3	0.449	4.98	19.75	24.73	46.89	-22.16	Average
4	0.449	12.00	19.75	31.75	56.89	-25.14	QP
5	0.511	15.06	19.76	34.82	46.00	-11.18	Average
6	0.511	21.00	19.76	40.76	56.00	-15.24	QP
7	0.721	1.31	19.74	21.05	46.00	-24.95	Average
8	0.721	10.40	19.74	30.14	56.00	-25.86	QP
9	1.074	1.88	19.82	21.70	46.00	-24.30	Average
10	1.074	9.90	19.82	29.72	56.00	-26.28	QP
11	1.973	-1.28	19.83	18.55	46.00	-27.45	Average
12	1.973	9.80	19.83	29.63	56.00	-26.37	QP

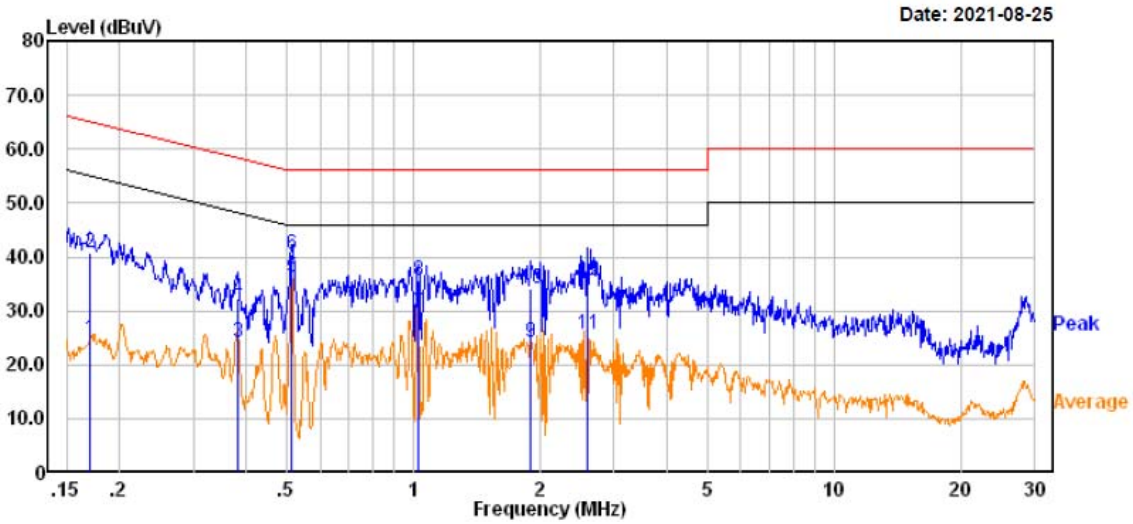
Note:
1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
2) Over Limit (dB) = Read level (dBµV) + Factor (dB) - Limit (dBµV)

EUT operation mode: Transmitting in 802.11a mode low channel of 5725-5850MHz (worst case)

Version: AK300

AC 120V/60 Hz, Line

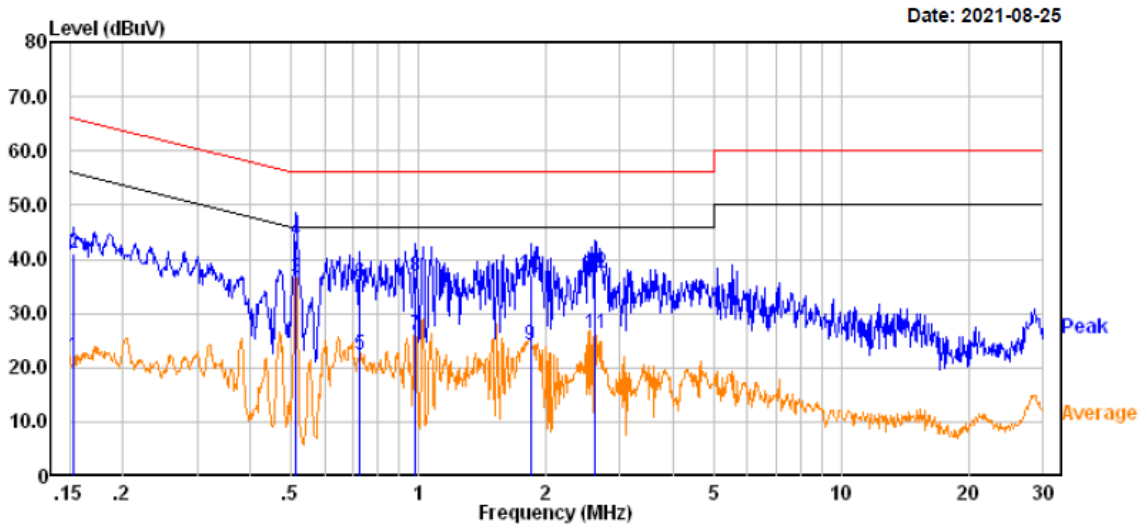
Adapter-1: TPA-46B050100UU



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.170	4.91	19.83	24.74	54.96	-30.22	Average
2	0.170	21.00	19.83	40.83	64.96	-24.13	QP
3	0.381	4.40	19.77	24.17	48.26	-24.09	Average
4	0.381	12.49	19.77	32.26	58.26	-26.00	QP
5	0.514	16.56	19.76	36.32	46.00	-9.68	Average
6	0.514	20.60	19.76	40.36	56.00	-15.64	QP
7	1.027	9.70	19.82	29.52	46.00	-16.48	Average
8	1.027	15.80	19.82	35.62	56.00	-20.38	QP
9	1.906	4.29	19.83	24.12	46.00	-21.88	Average
10	1.906	14.30	19.83	34.13	56.00	-21.87	QP
11	2.596	6.29	19.48	25.77	46.00	-20.23	Average
12	2.596	16.29	19.48	35.77	56.00	-20.23	QP

AC 120V/60 Hz, Neutral

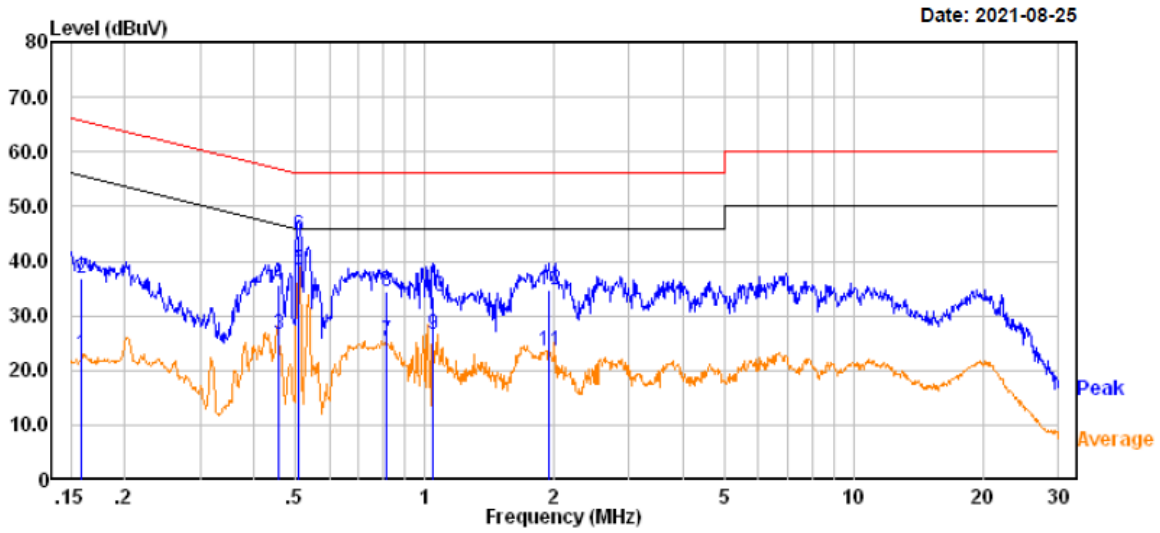
Adapter-1: TPA-46B050100UU



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.153	2.18	19.82	22.00	55.83	-33.83	Average
2	0.153	21.20	19.82	41.02	65.83	-24.81	QP
3	0.514	16.85	19.76	36.61	46.00	-9.39	Average
4	0.514	23.80	19.76	43.56	56.00	-12.44	QP
5	0.728	2.71	19.74	22.45	46.00	-23.55	Average
6	0.728	15.80	19.74	35.54	56.00	-20.46	QP
7	0.982	6.03	19.80	25.83	46.00	-20.17	Average
8	0.982	17.00	19.80	36.80	56.00	-19.20	QP
9	1.840	4.17	19.84	24.01	46.00	-21.99	Average
10	1.840	17.19	19.84	37.03	56.00	-18.97	QP
11	2.609	6.87	19.48	26.35	46.00	-19.65	Average
12	2.609	17.99	19.48	37.47	56.00	-18.53	QP

AC 120V/60 Hz, Line

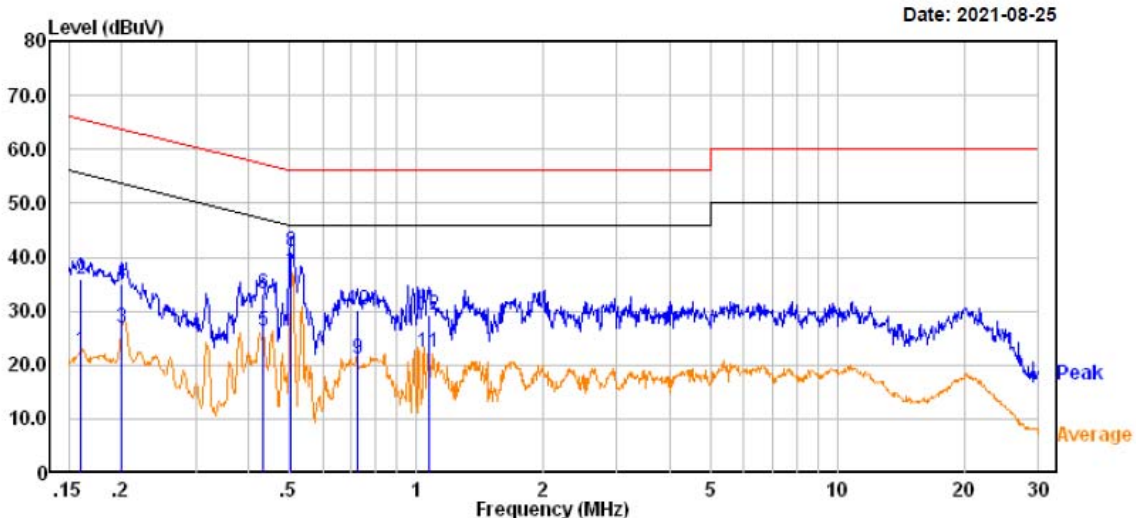
Adapter-2: GTA92-0501000US



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	3.03	19.82	22.85	55.54	-32.69	Average
2	0.158	17.00	19.82	36.82	65.54	-28.72	QP
3	0.456	6.92	19.75	26.67	46.77	-20.10	Average
4	0.456	16.00	19.75	35.75	56.77	-21.02	QP
5	0.509	18.64	19.76	38.40	46.00	-7.60	Average
6	0.509	24.80	19.76	44.56	56.00	-11.44	QP
7	0.817	5.68	19.70	25.38	46.00	-20.62	Average
8	0.817	14.81	19.70	34.51	56.00	-21.49	QP
9	1.043	6.72	19.82	26.54	46.00	-19.46	Average
10	1.043	13.80	19.82	33.62	56.00	-22.38	QP
11	1.944	3.71	19.83	23.54	46.00	-22.46	Average
12	1.944	14.80	19.83	34.63	56.00	-21.37	QP

AC 120V/60 Hz, Neutral

Adapter-2: GTA92-0501000US



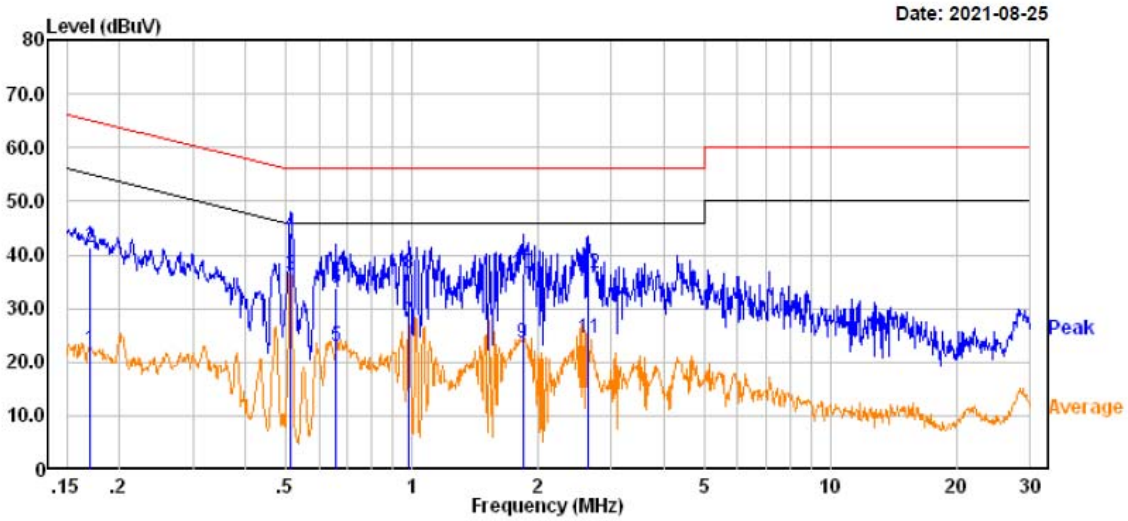
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.160	2.91	19.83	22.74	55.46	-32.72	Average
2	0.160	16.00	19.83	35.83	65.46	-29.63	QP
3	0.199	7.07	19.82	26.89	53.64	-26.75	Average
4	0.199	15.10	19.82	34.92	63.64	-28.72	QP
5	0.434	6.40	19.75	26.15	47.18	-21.03	Average
6	0.434	13.40	19.75	33.15	57.18	-24.03	QP
7	0.504	17.10	19.76	36.86	46.00	-9.14	Average
8	0.504	21.20	19.76	40.96	56.00	-15.04	QP
9	0.728	1.39	19.74	21.13	46.00	-24.87	Average
10	0.728	10.40	19.74	30.14	56.00	-25.86	QP
11	1.069	2.44	19.82	22.26	46.00	-23.74	Average
12	1.069	9.50	19.82	29.32	56.00	-26.68	QP

Note:
1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
2) Over Limit (dB) = Read level (dBμV) + Factor (dB) - Limit (dBμV)

Version: AK300

AC 120V/60 Hz, Line

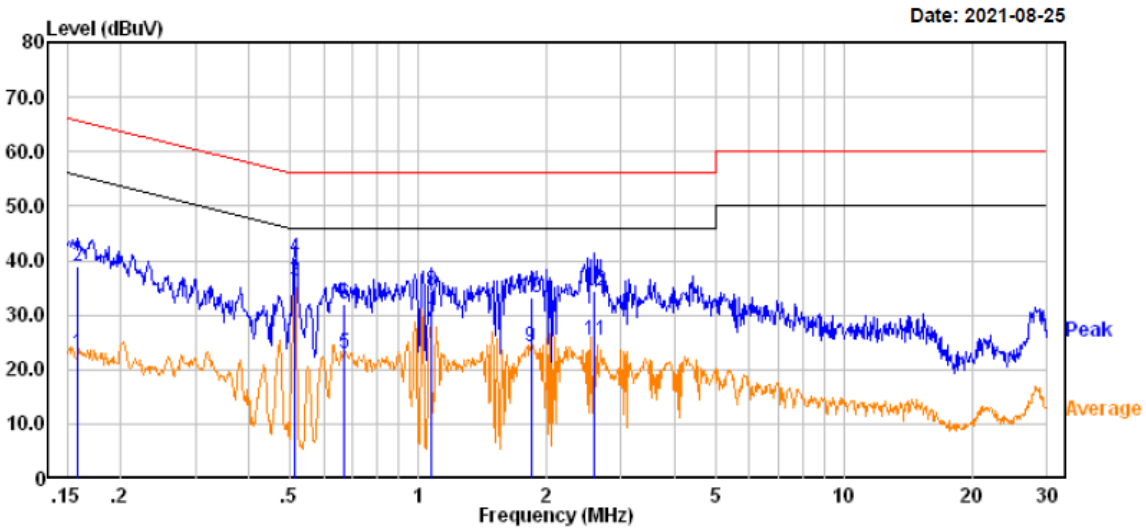
Adapter-1: TPA-46B050100UU



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.171	2.42	19.83	22.25	54.92	-32.67	Average
2	0.171	21.50	19.83	41.33	64.92	-23.59	QP
3	0.514	16.32	19.76	36.08	46.00	-9.92	Average
4	0.514	24.30	19.76	44.06	56.00	-11.94	QP
5	0.656	3.16	19.75	22.91	46.00	-23.09	Average
6	0.656	14.20	19.75	33.95	56.00	-22.05	QP
7	0.982	7.75	19.80	27.55	46.00	-18.45	Average
8	0.982	16.70	19.80	36.50	56.00	-19.50	QP
9	1.840	3.85	19.84	23.69	46.00	-22.31	Average
10	1.840	16.79	19.84	36.63	56.00	-19.37	QP
11	2.648	4.99	19.47	24.46	46.00	-21.54	Average
12	2.648	17.00	19.47	36.47	56.00	-19.53	QP

AC 120V/60 Hz, Neutral

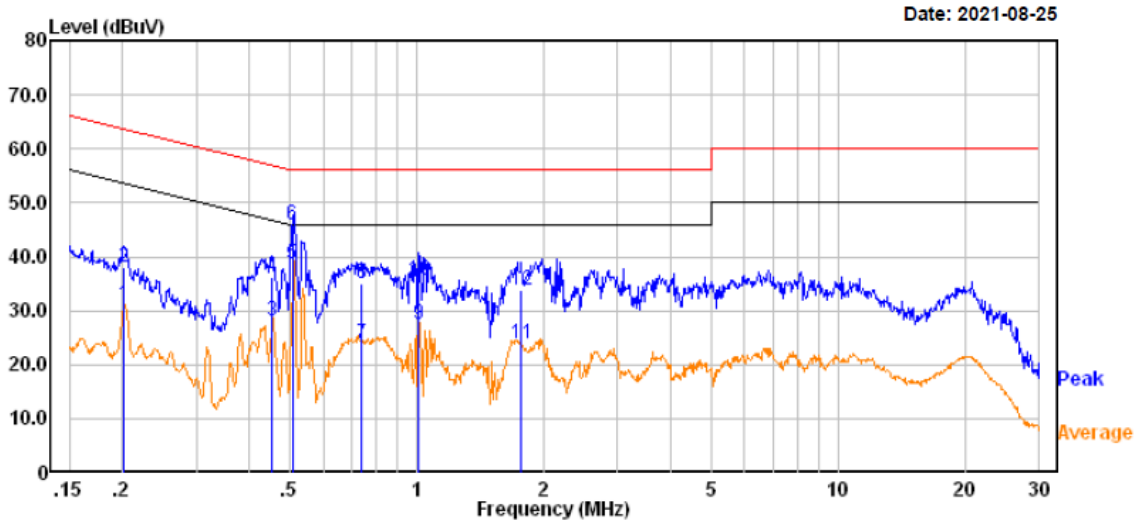
Adapter-1: TPA-46B050100UU



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	3.22	19.82	23.04	55.54	-32.50	Average
2	0.158	19.20	19.82	39.02	65.54	-26.52	QP
3	0.514	16.60	19.76	36.36	46.00	-9.64	Average
4	0.514	20.80	19.76	40.56	56.00	-15.44	QP
5	0.672	3.30	19.75	23.05	46.00	-22.95	Average
6	0.672	12.30	19.75	32.05	56.00	-23.95	QP
7	1.074	8.84	19.82	28.66	46.00	-17.34	Average
8	1.074	14.70	19.82	34.52	56.00	-21.48	QP
9	1.840	4.27	19.84	24.11	46.00	-21.89	Average
10	1.840	13.39	19.84	33.23	56.00	-22.77	QP
11	2.596	5.92	19.48	25.40	46.00	-20.60	Average
12	2.596	14.99	19.48	34.47	56.00	-21.53	QP

AC 120V/60 Hz, Line

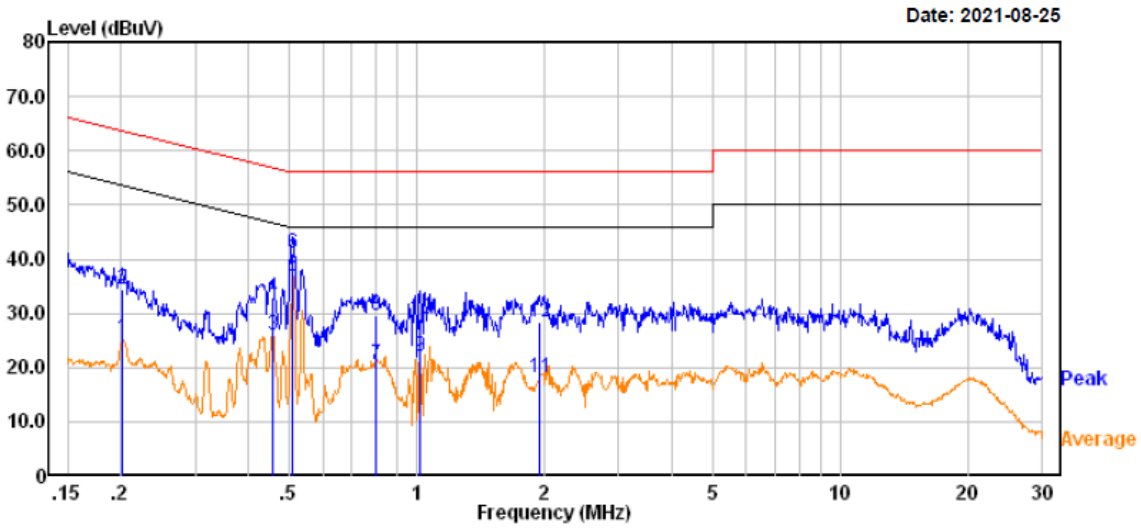
Adapter-2: GTA92-0501000US



	Freq	Read Level	Factor	Limit Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.201	11.18	19.82	31.00	53.56	-22.56	Average
2	0.201	18.20	19.82	38.02	63.56	-25.54	QP
3	0.454	8.41	19.75	28.16	46.81	-18.65	Average
4	0.454	16.50	19.75	36.25	56.81	-20.56	QP
5	0.506	18.96	19.76	38.72	46.00	-7.28	Average
6	0.506	26.00	19.76	45.76	56.00	-10.24	QP
7	0.739	4.25	19.73	23.98	46.00	-22.02	Average
8	0.739	15.30	19.73	35.03	56.00	-20.97	QP
9	1.012	7.79	19.82	27.61	46.00	-18.39	Average
10	1.012	15.80	19.82	35.62	56.00	-20.38	QP
11	1.768	4.06	19.84	23.90	46.00	-22.10	Average
12	1.768	14.00	19.84	33.84	56.00	-22.16	QP

AC 120V/60 Hz, Neutral

Adapter-2: GTA92-0501000US



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.202	5.62	19.82	25.44	53.52	-28.08	Average
2	0.202	14.60	19.82	34.42	63.52	-29.10	QP
3	0.456	6.19	19.75	25.94	46.77	-20.83	Average
4	0.456	13.20	19.75	32.95	56.77	-23.82	QP
5	0.509	17.21	19.76	36.97	46.00	-9.03	Average
6	0.509	21.20	19.76	40.96	56.00	-15.04	QP
7	0.801	0.87	19.70	20.57	46.00	-25.43	Average
8	0.801	9.80	19.70	29.50	56.00	-26.50	QP
9	1.017	2.31	19.82	22.13	46.00	-23.87	Average
10	1.017	9.30	19.82	29.12	56.00	-26.88	QP
11	1.944	-1.61	19.83	18.22	46.00	-27.78	Average
12	1.944	8.40	19.83	28.23	56.00	-27.77	QP

Note:
1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
2) Over Limit (dB) = Read level (dBµV) + Factor (dB) - Limit (dBµV)

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

Applicable Standard

FCC §15.407 (b) (1), (4), (8), (9); §15.209; §15.205;

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.

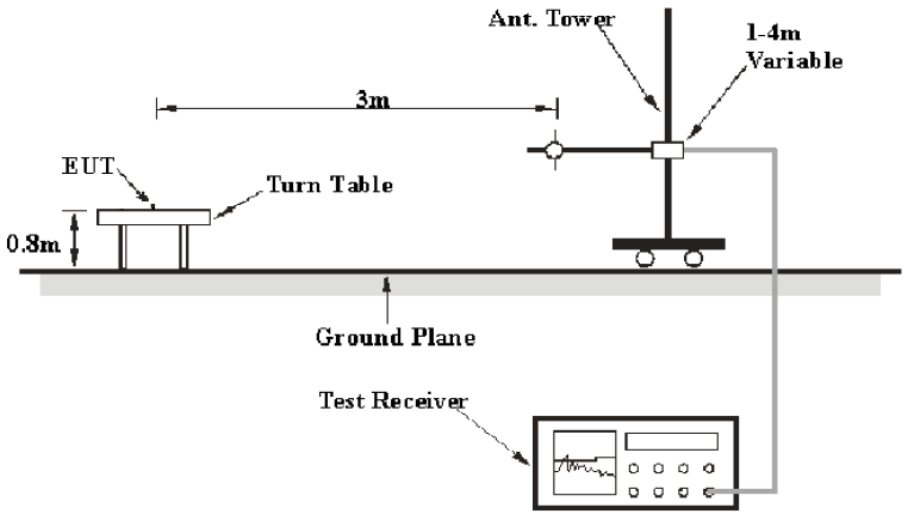
For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to 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.

As per FCC §15.35(d):Unless otherwise specified, on any frenquency or frequencies above 1000MHz,the radiated emission limits are based on the use of measurement instrunmentation employing an average detector function. Unless otherwise specified, measurements above 1000MHz shall be performed using a minimum resolution bandwidth of 1MHz.

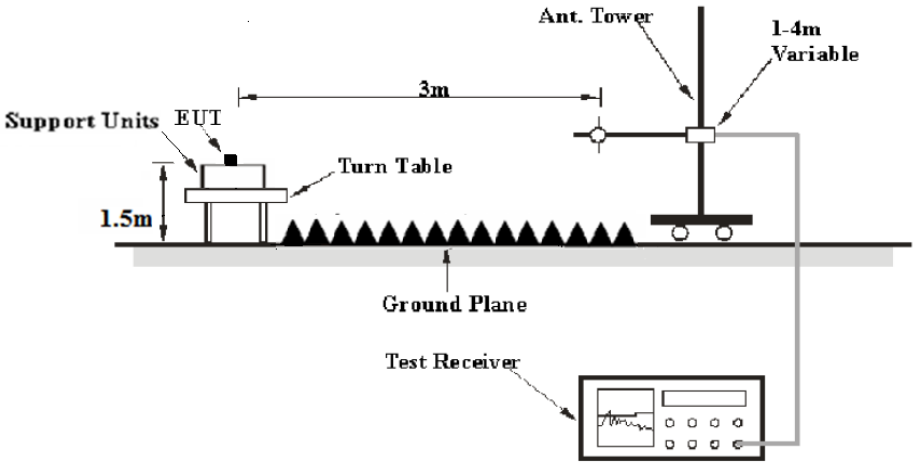
According to 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as: E [dBμV/m] = EIRP [dBm] + 95.2, for d = 3 meters.

EUT Setup

Below 1 GHz:



1 GHz-40GHz:



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 spacing between the peripherals was 10 cm.

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 setup was set with the following configurations:

Frequency Range	RBW	Video B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	QP
Above 1GHz	1MHz	3 MHz	PK
	1MHz	3 MHz	AV

Test Procedure

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

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

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss 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:	24.1~24.9 ℃
Relative Humidity:	50~54 %
ATM Pressure:	100.9~101.7 kPa

The testing was performed by Tyrone Wang from 2021-08-23 to 2021-08-25.

Test Mode: Transmitting

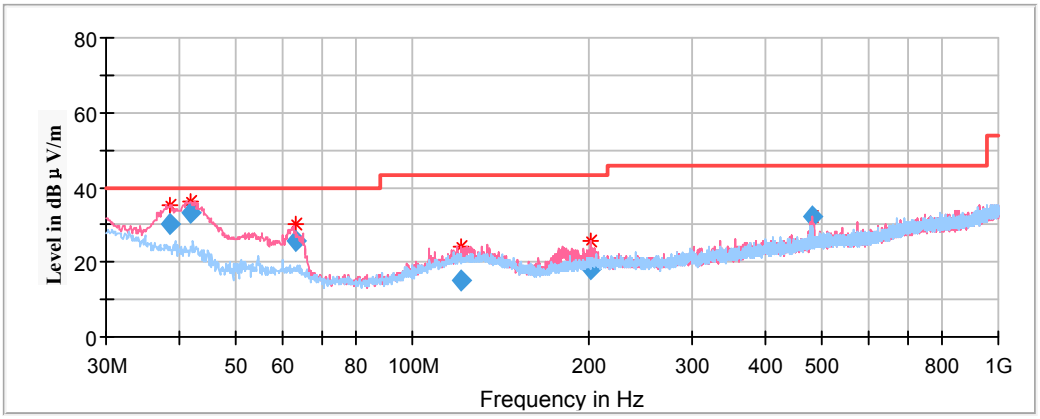
Version:AK330L

Spurious Emission Test

30MHz-1GHz (5150-5250MHz Band):

Adapter-1: TPA-46B050100UU

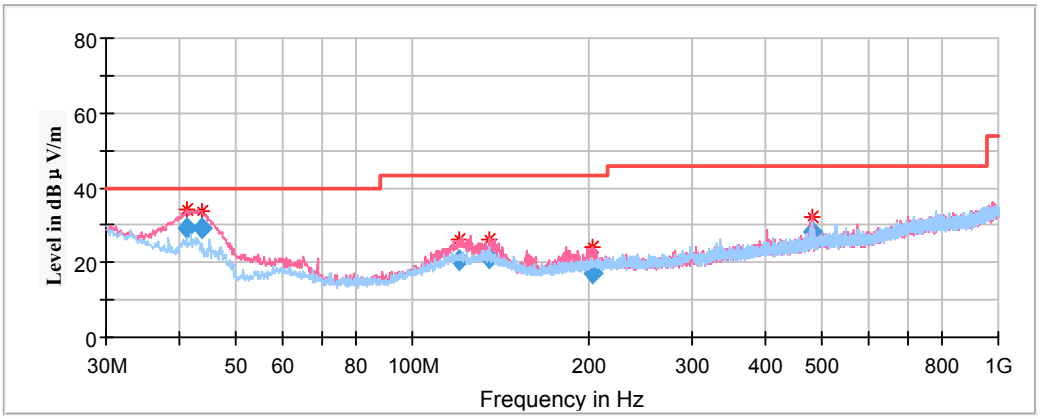
Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11a mode low channel*** *in Y-axis of orientation was recorded*



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
38.625850	30.22	100.0	V	150.0	-9.5	40.00	9.78
41.816200	33.28	100.0	V	243.0	-11.7	40.00	6.72
63.216550	25.48	100.0	V	221.0	-15.2	40.00	14.52
121.074400	14.97	100.0	V	287.0	-10.9	43.50	28.53
201.972600	18.07	100.0	V	359.0	-12.0	43.50	25.43
480.011550	31.96	200.0	V	312.0	-6.1	46.00	14.04

Adapter-2: GTA92-0501000US

Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 ac80 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11a mode low channel*** *in Y-axis of orientation was recorded*

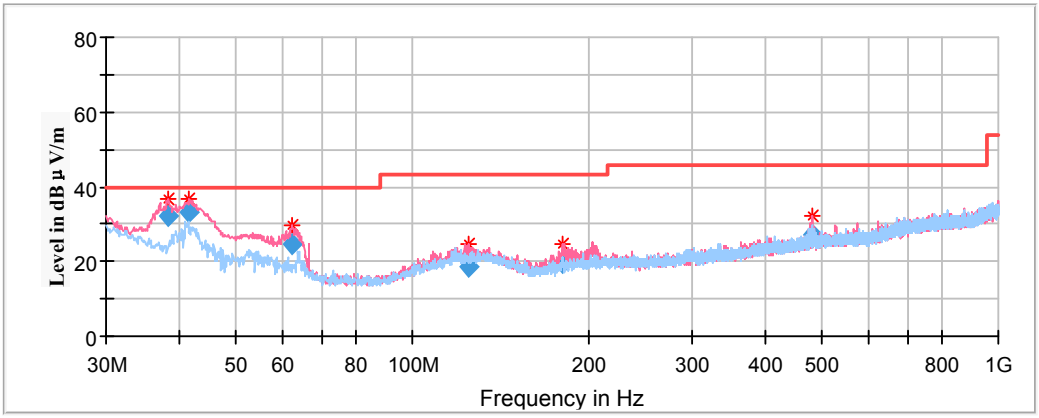


Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
41.157600	29.32	100.0	V	202.0	-11.9	40.00	10.68
43.581250	29.07	100.0	V	236.0	-12.4	40.00	10.93
120.113550	20.38	100.0	V	126.0	-10.8	43.50	23.12
135.641500	21.20	100.0	V	99.0	-11.4	43.50	22.30
202.905100	17.30	100.0	V	153.0	-12.0	43.50	26.20
481.242200	28.32	200.0	V	313.0	-6.1	46.00	17.68

30MHz-1GHz (5725-5850MHz Band):

Adapter-1: TPA-46B050100UU

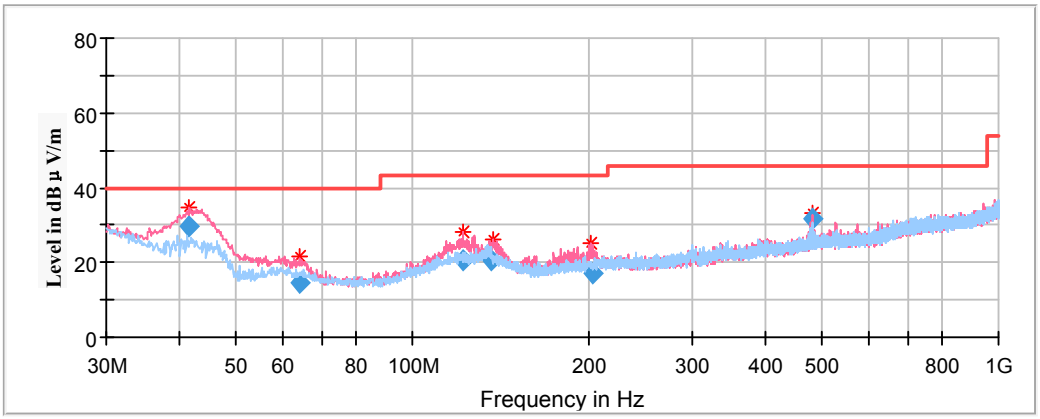
Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11a mode low channel*** *in Y-axis of orientation was recorded*



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
38.365550	32.23	100.0	V	154.0	-9.2	40.00	7.77
41.640500	33.42	100.0	V	154.0	-12.1	40.00	6.58
62.375850	24.78	100.0	V	187.0	-15.1	40.00	15.22
124.848550	18.38	100.0	V	192.0	-11.0	43.50	25.12
180.631300	19.45	100.0	V	352.0	-13.3	43.50	24.05
481.186700	27.08	199.0	V	37.0	-6.1	46.00	18.92

Adapter-2: GTA92-0501000US

Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11a mode low channel*** *in Y-axis of orientation was recorded*



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
41.645900	29.93	100.0	V	236.0	-12.0	40.00	10.07
64.209350	14.46	100.0	V	214.0	-15.5	40.00	25.54
121.528100	20.58	100.0	V	143.0	-10.9	43.50	22.92
136.116750	20.53	100.0	V	110.0	-11.5	43.50	22.97
202.543350	17.35	100.0	V	110.0	-12.0	43.50	26.15
480.006150	31.50	200.0	V	329.0	-6.1	46.00	14.50

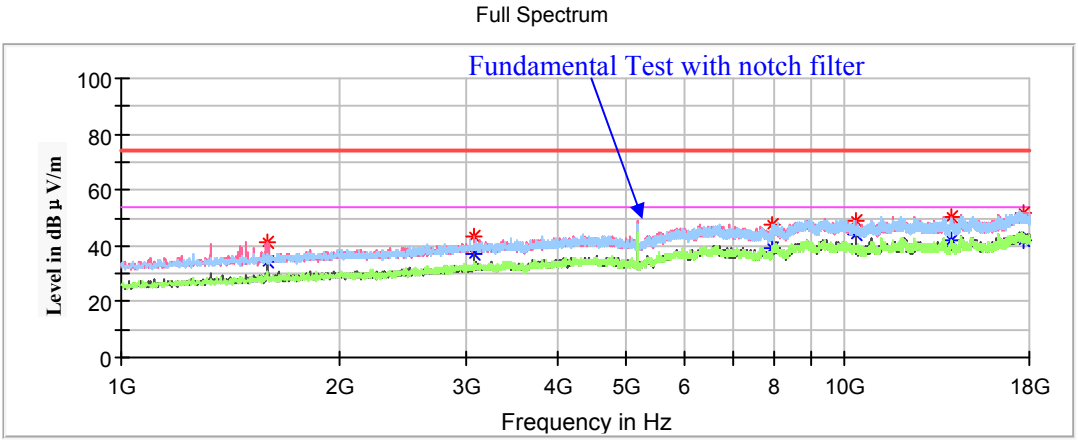
1GHz-18GHz (5150-5250MHz Band): (Power by adapter 1 worst case)

802.11a Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

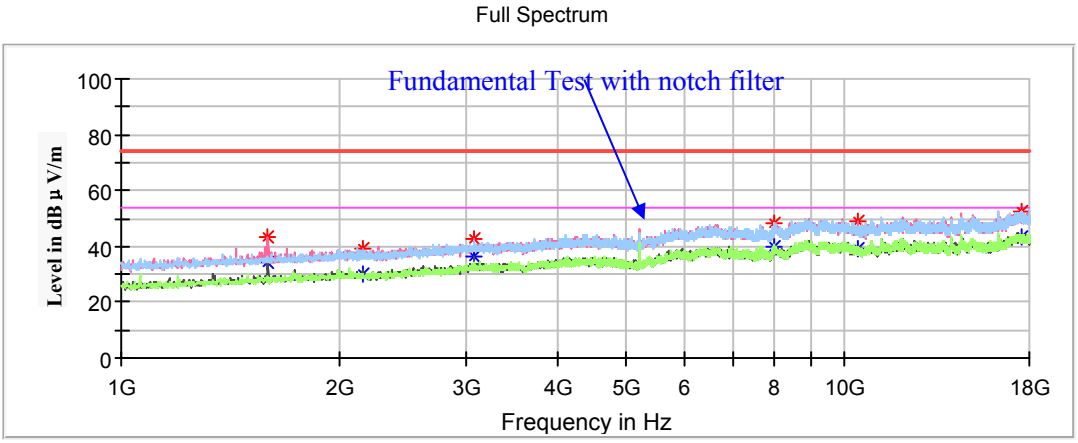
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



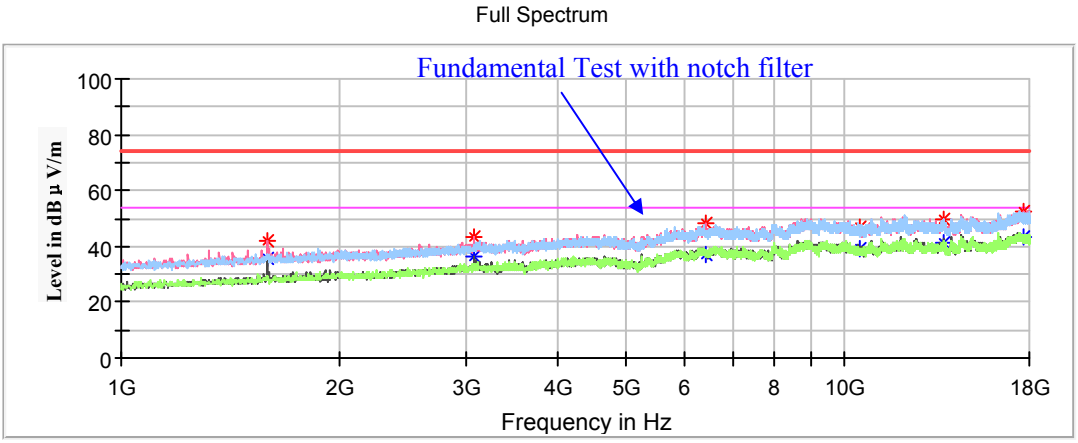
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	---	34.17	150.0	V	270.0	-6.2	54.00	19.83
1593.300000	40.98	---	150.0	V	270.0	-6.2	74.00	33.02
3070.600000	43.40	---	200.0	V	200.0	-2.0	68.20	24.80
7954.700000	47.67	---	150.0	H	0.0	6.0	68.20	20.53
10360.200000	48.77	---	150.0	V	178.0	8.5	68.20	19.43
14001.600000	50.12	---	200.0	V	0.0	10.0	68.20	18.08
17719.500000	---	42.05	200.0	V	0.0	13.9	54.00	11.95
17719.500000	51.52	---	200.0	V	0.0	13.9	74.00	22.48

Middle Channel: 5200MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1596.700000	43.48	---	200.0	V	257.0	-6.2	68.20	24.72
2154.300000	39.30	---	150.0	V	20.0	-4.6	68.20	28.90
3070.600000	42.64	---	200.0	V	354.0	-2.0	68.20	25.56
7997.200000	48.57	---	150.0	H	225.0	6.1	68.20	19.63
10399.300000	48.79	---	200.0	V	168.0	8.5	68.20	19.41
17541.000000	52.25	---	200.0	H	154.0	14.3	68.20	15.95

High Channel: 5240MHz



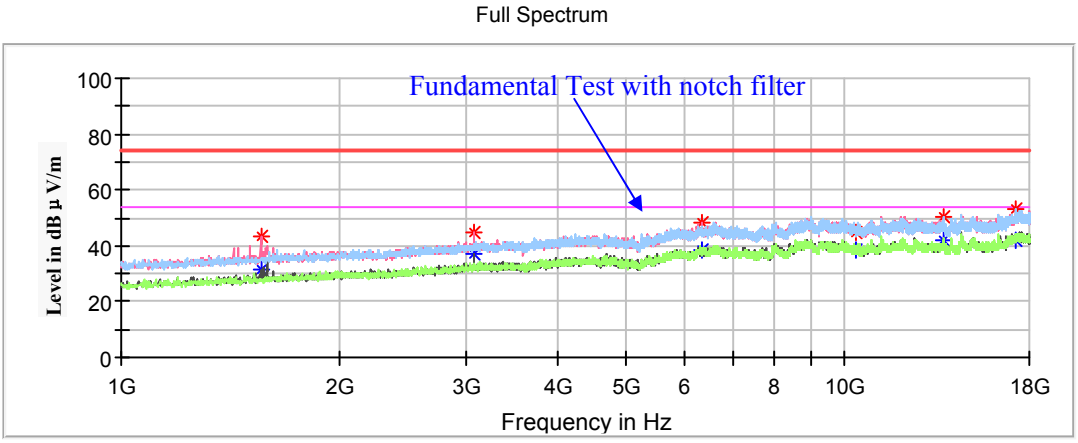
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	---	35.71	150.0	V	258.0	-6.2	54.00	18.29
1593.300000	42.08	---	150.0	V	258.0	-6.2	74.00	31.92
3070.600000	43.01	---	200.0	V	3.0	-2.0	68.20	25.19
6409.400000	48.08	---	200.0	H	349.0	5.2	68.20	20.12
10480.900000	46.66	---	150.0	V	169.0	8.4	68.20	21.54
13707.500000	49.72	---	150.0	V	232.0	10.0	68.20	18.48
17619.200000	52.68	---	200.0	V	0.0	14.2	68.20	15.52

802.11n-HT20 Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

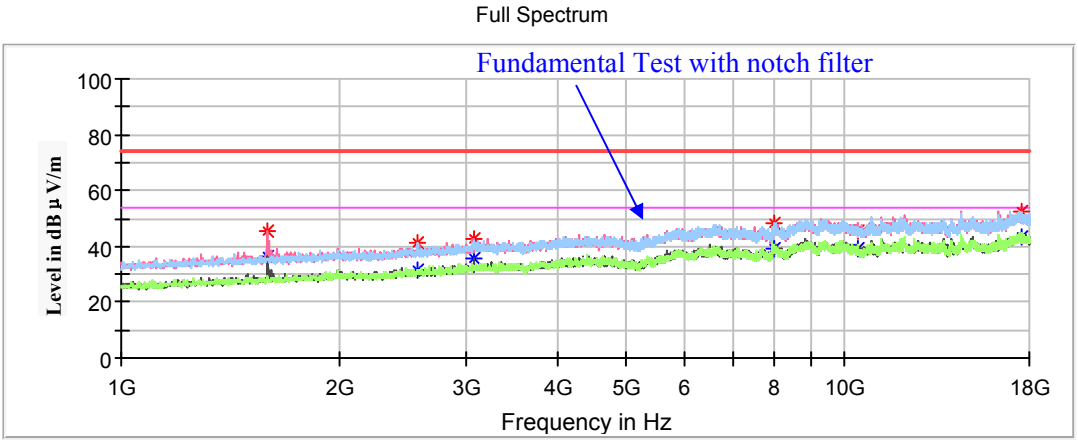
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



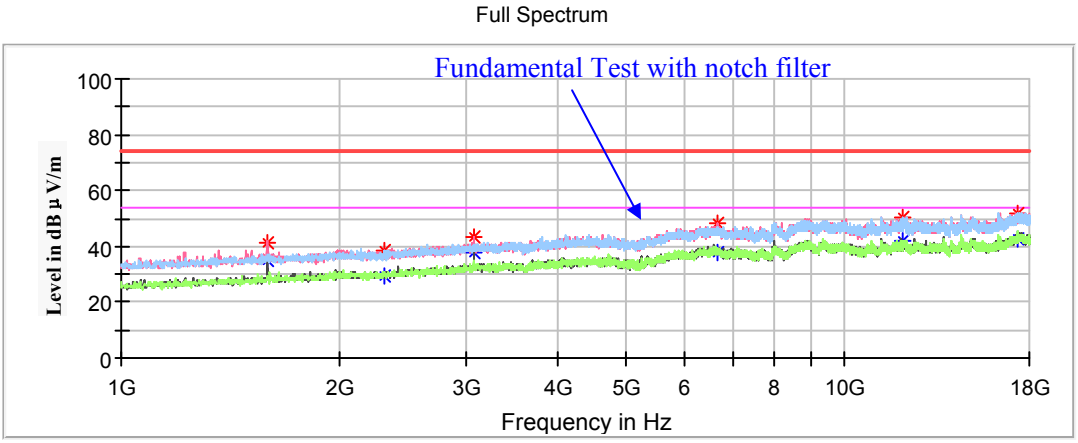
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1559.300000	43.30	---	200.0	V	238.0	-6.3	74.00	30.70
1559.300000	---	31.40	200.0	V	238.0	-6.3	54.00	22.60
3070.600000	44.88	---	200.0	V	199.0	-2.0	68.20	23.32
6351.600000	48.58	---	150.0	V	194.0	5.0	68.20	19.62
10360.200000	44.70	---	200.0	V	44.0	8.5	68.20	23.50
13685.400000	50.41	---	200.0	H	355.0	10.0	68.20	17.79
17221.400000	53.14	---	200.0	H	271.0	13.6	68.20	15.06

Middle Channel: 5200MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	45.16	---	200.0	V	270.0	-6.2	74.00	28.84
1591.600000	---	36.26	200.0	V	270.0	-6.2	54.00	17.74
2572.500000	41.40	---	150.0	H	345.0	-3.7	68.20	26.80
3070.600000	42.43	---	150.0	V	221.0	-2.0	68.20	25.77
7997.200000	48.43	---	150.0	V	233.0	6.1	68.20	19.77
10419.700000	45.75	---	150.0	H	140.0	8.5	68.20	22.45
17559.700000	52.18	---	150.0	V	208.0	14.3	68.20	16.02

High Channel: 5240MHz



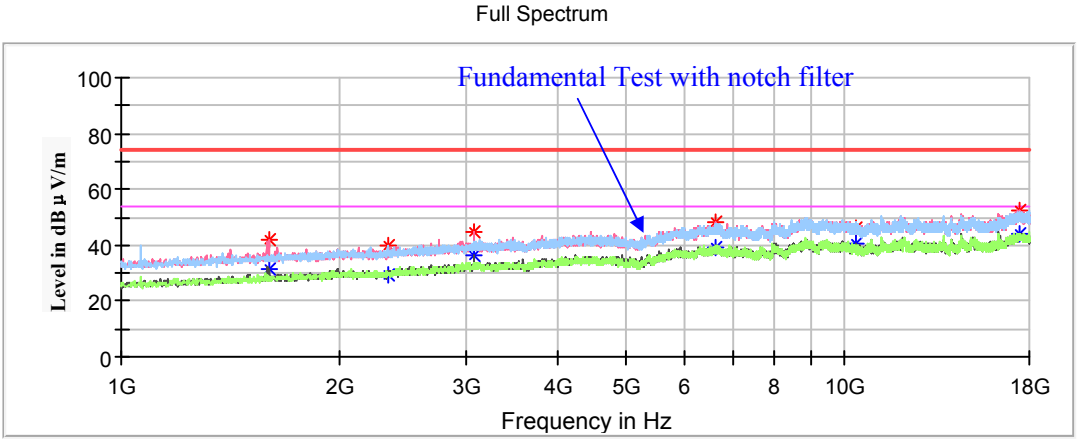
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	---	35.05	200.0	V	270.0	-6.2	54.00	18.95
1591.600000	41.20	---	200.0	V	270.0	-6.2	74.00	32.80
2307.300000	38.79	---	200.0	H	50.0	-4.3	68.20	29.41
3070.600000	43.48	---	200.0	V	204.0	-2.0	68.20	24.72
6666.100000	48.27	---	150.0	V	15.0	5.5	68.20	19.93
12060.200000	---	42.21	200.0	H	258.0	10.1	54.00	11.79
12060.200000	50.66	---	200.0	H	258.0	10.1	74.00	23.34
17299.600000	52.01	---	150.0	V	0.0	13.8	68.20	16.19

802.11n-HT40 Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

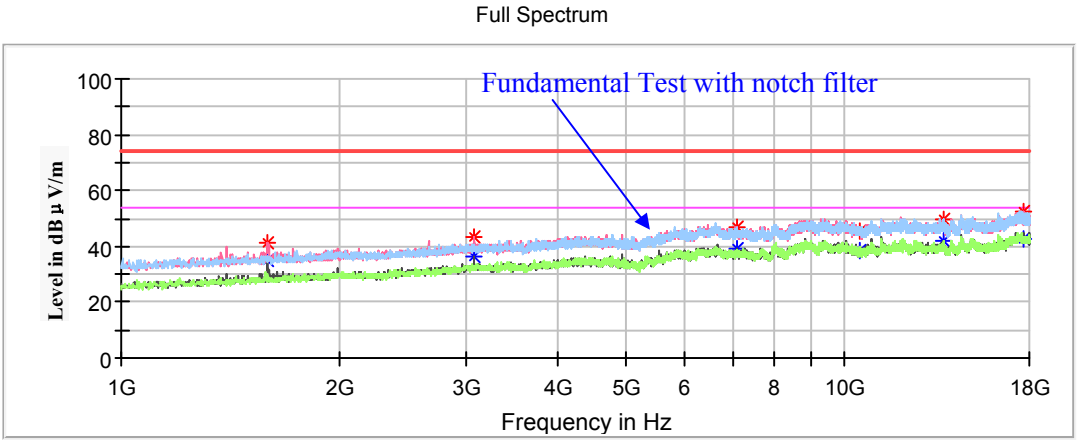
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5190MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1598.400000	---	31.68	200.0	V	296.0	-6.2	54.00	22.32
1598.400000	41.72	---	200.0	V	296.0	-6.2	74.00	32.28
2332.800000	---	29.57	200.0	H	148.0	-4.3	54.00	24.43
2332.800000	39.75	---	200.0	H	148.0	-4.3	74.00	34.25
3070.600000	44.56	---	200.0	V	204.0	-2.0	68.20	23.64
6633.800000	48.00	---	150.0	V	8.0	5.5	68.20	20.20
10380.600000	46.05	---	150.0	H	191.0	8.5	68.20	22.15
17484.900000	52.58	---	150.0	V	355.0	14.4	68.20	15.62

High Channel: 5230MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	41.08	---	150.0	V	273.0	-6.2	74.00	32.92
1591.600000	---	35.30	150.0	V	273.0	-6.2	54.00	18.70
3070.600000	43.33	---	150.0	V	221.0	-2.0	68.20	24.87
7084.300000	47.10	---	150.0	V	78.0	5.6	68.20	21.10
10462.200000	45.56	---	150.0	H	127.0	8.5	68.20	22.64
13678.600000	49.81	---	200.0	V	309.0	10.0	68.20	18.39
17641.300000	52.63	---	200.0	H	316.0	14.1	68.20	15.57

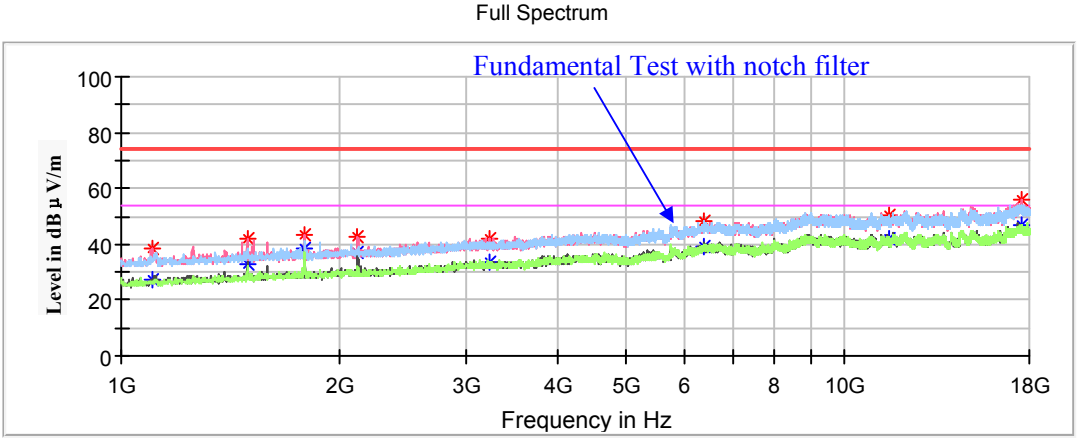
1GHz-18GHz (5725-5850MHz Band): (Power by adapter 1 worst case)

802.11a Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

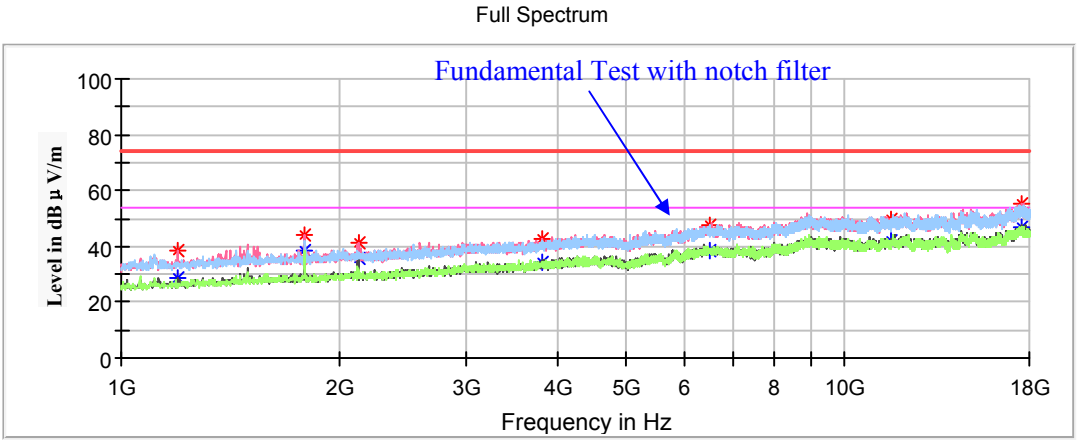
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



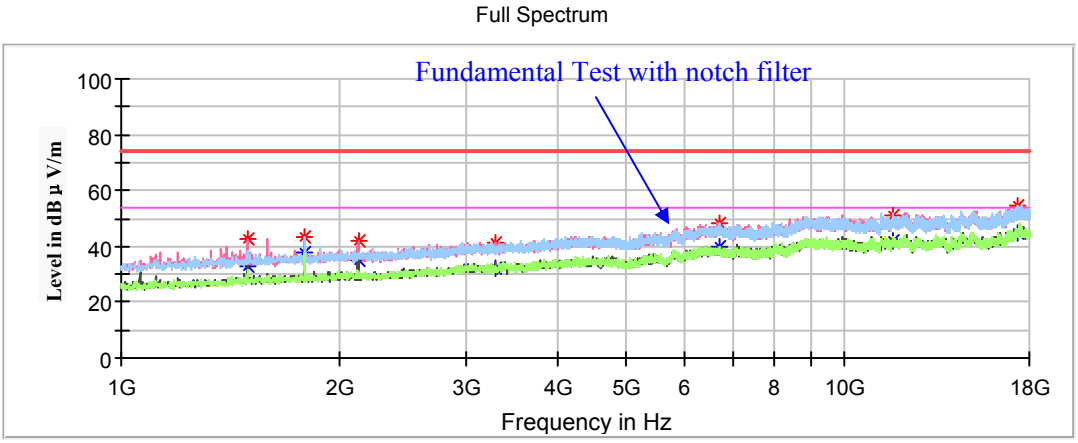
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1105.400000	---	27.26	200.0	V	182.0	-8.5	54.00	26.74
1105.400000	38.23	---	200.0	V	182.0	-8.5	74.00	35.77
1493.000000	---	32.86	150.0	V	305.0	-6.5	54.00	21.14
1493.000000	42.18	---	150.0	V	305.0	-6.5	74.00	31.82
1792.200000	43.30	---	150.0	V	225.0	-5.6	68.20	24.90
2123.700000	42.62	---	150.0	V	292.0	-4.7	68.20	25.58
3221.900000	42.05	---	200.0	H	358.0	-1.9	68.20	26.15
6377.100000	47.99	---	200.0	H	124.0	5.1	68.20	2021
11487.300000	---	41.90	150.0	H	49.0	10.6	54.00	12.10
11487.300000	50.21	---	150.0	H	49.0	10.6	74.00	23.79
17561.400000	55.62	---	200.0	V	8.0	14.3	68.20	12.58

Middle Channel: 5785MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1198.900000	---	28.40	200.0	V	271.0	-8.0	54.00	25.60
1198.900000	38.25	---	200.0	V	271.0	-8.0	74.00	35.75
1793.900000	43.73	---	150.0	H	117.0	-5.5	68.20	24.47
2127.100000	41.22	---	150.0	V	117.0	-4.7	68.20	26.98
3822.000000	---	33.99	150.0	H	283.0	-0.3	54.00	20.01
3822.000000	42.97	---	150.0	H	283.0	-0.3	74.00	31.03
6494.400000	47.84	---	150.0	V	218.0	5.4	68.20	20.36
11568.900000	---	42.22	200.0	H	354.0	10.5	54.00	11.78
11568.900000	49.64	---	200.0	H	354.0	10.5	74.00	24.36
17573.300000	55.01	---	200.0	V	104.0	14.3	68.20	13.19

High Channel: 5825MHz



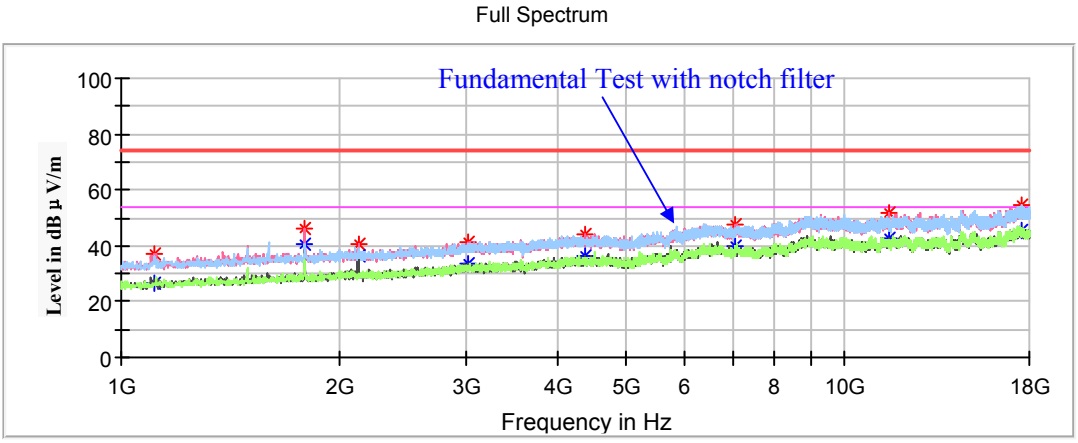
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1493.000000	---	32.98	150.0	V	283.0	-6.5	54.00	21.02
1493.000000	42.53	---	150.0	V	283.0	-6.5	74.00	31.47
1790.500000	43.11	---	200.0	H	117.0	-5.6	68.20	25.09
2125.400000	41.68	---	150.0	V	122.0	-4.7	68.20	26.52
3283.100000	41.13	---	200.0	V	33.0	-1.9	68.20	27.07
6700.100000	48.17	---	150.0	H	233.0	5.5	68.20	20.03
11652.200000	---	42.02	200.0	V	122.0	10.4	54.00	11.98
11652.200000	51.19	---	200.0	V	122.0	10.4	74.00	22.81
17386.300000	54.22	---	150.0	V	59.0	14.1	68.20	13.98

802.11n-HT20 Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

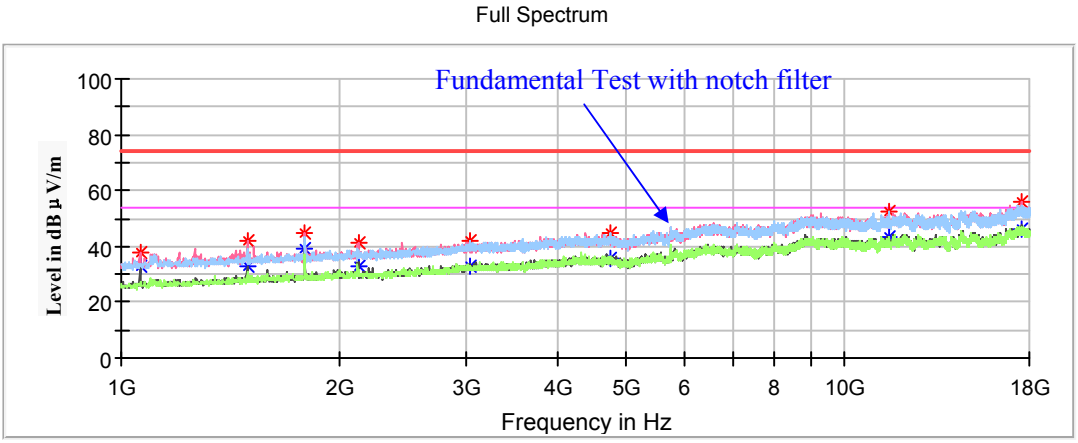
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



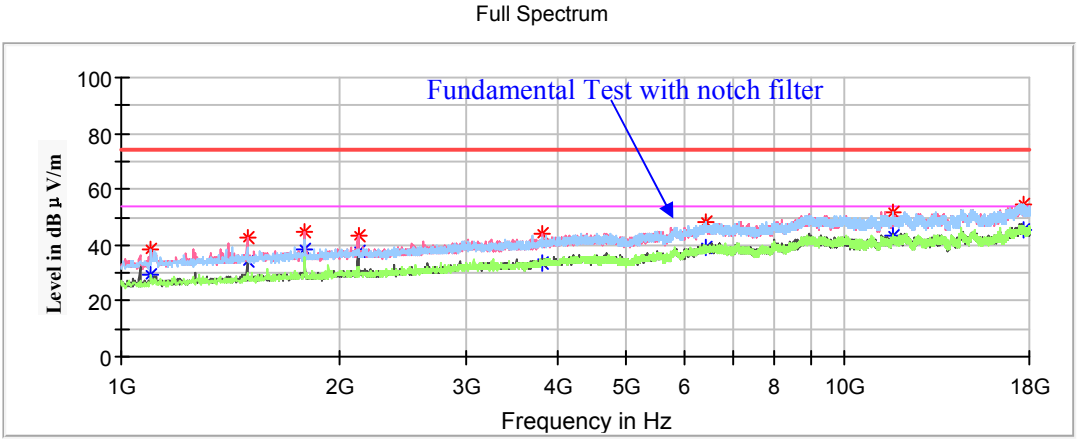
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1110.500000	---	26.41	150.0	V	216.0	-8.5	54.00	27.59
1110.500000	36.89	---	150.0	V	216.0	-8.5	74.00	37.11
1792.200000	46.07	---	200.0	V	216.0	-5.6	68.20	22.13
2127.100000	40.54	---	150.0	V	190.0	-4.7	68.20	27.66
3007.700000	41.45	---	200.0	V	58.0	-2.0	68.20	26.75
4379.600000	---	36.19	200.0	V	295.0	1.1	54.00	17.81
4379.600000	43.89	---	200.0	V	295.0	1.1	74.00	30.11
7075.800000	47.87	---	200.0	V	177.0	5.6	68.20	20.33
11489.000000	---	42.70	150.0	V	255.0	10.6	54.00	11.30
11489.000000	51.90	---	150.0	V	255.0	10.6	74.00	22.10
17544.400000	54.34	---	200.0	V	28.0	14.3	68.20	13.86

Middle Channel: 5785MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1061.200000	---	32.95	150.0	V	279.0	-8.7	54.00	21.05
1061.200000	37.70	---	150.0	V	279.0	-8.7	74.00	36.30
1494.700000	---	32.83	150.0	V	74.0	-6.5	54.00	21.17
1494.700000	41.80	---	150.0	V	74.0	-6.5	74.00	32.20
1792.200000	44.76	---	200.0	V	206.0	-5.6	68.20	23.44
2125.400000	41.38	---	200.0	V	116.0	-4.7	68.20	26.82
3028.100000	42.05	---	200.0	H	283.0	-2.0	68.20	26.15
4740.000000	44.64	---	150.0	H	353.0	0.8	74.00	29.36
4740.000000	---	36.00	150.0	H	353.0	0.8	54.00	18.00
11570.600000	52.46	---	200.0	H	71.0	10.6	74.00	21.54
11570.300000	---	43.50	200.0	H	71.0	10.6	54.00	10.50
17551.200000	55.67	---	150.0	V	150.0	14.3	68.20	12.53

High Channel: 5825MHz



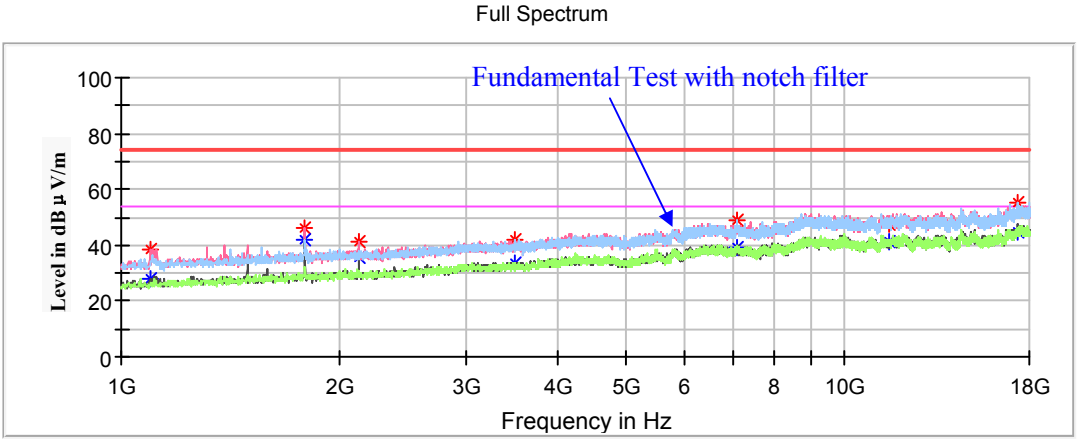
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1100.300000	---	29.30	150.0	H	313.0	-8.5	54.00	24.70
1100.300000	38.16	---	150.0	H	313.0	-8.5	74.00	35.84
1493.000000	---	34.51	150.0	V	46.0	-6.5	54.00	19.49
1493.000000	42.84	---	150.0	V	46.0	-6.5	74.00	31.16
1792.200000	44.90	---	200.0	V	206.0	-5.6	68.20	23.30
2125.400000	43.30	---	150.0	V	292.0	-4.7	68.20	24.90
3828.800000	---	33.61	200.0	V	231.0	-0.3	54.00	20.39
3828.800000	43.89	---	200.0	V	231.0	-0.3	74.00	30.11
6436.600000	48.08	---	200.0	V	63.0	5.3	68.20	20.12
11653.900000	---	43.53	150.0	H	211.0	10.4	54.00	10.47
11653.900000	51.94	---	150.0	H	211.0	10.4	74.00	22.06
17637.900000	54.83	---	150.0	H	249.0	14.1	68.20	13.37

802.11n-HT40 Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

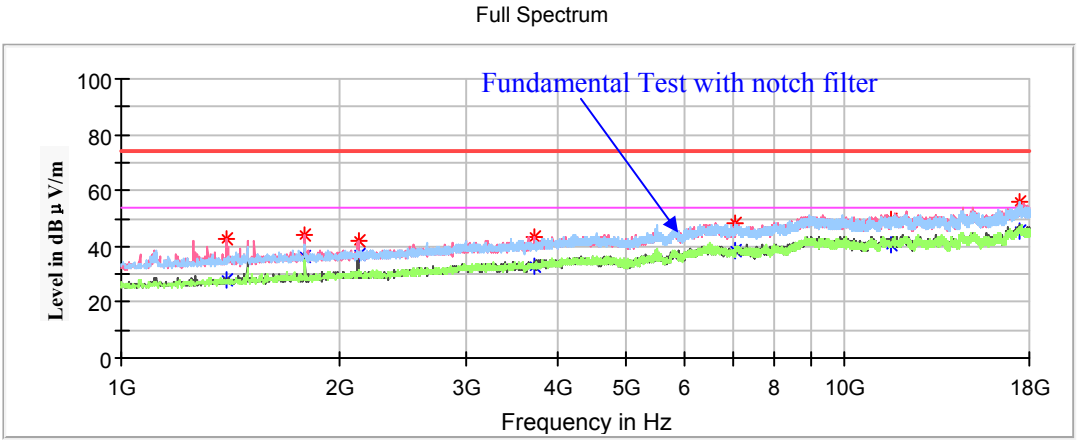
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5755MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1100.300000	---	28.17	200.0	V	187.0	-8.5	54.00	25.83
1100.300000	38.69	---	200.0	V	187.0	-8.5	74.00	35.31
1793.900000	46.05	---	200.0	V	213.0	-5.5	68.20	22.15
2127.100000	41.08	---	200.0	V	60.0	-4.7	68.20	27.12
3509.200000	41.95	---	150.0	H	143.0	-1.7	68.20	26.25
7099.600000	48.60	---	200.0	H	15.0	5.5	68.20	19.60
11511.100000	---	40.98	200.0	H	270.0	10.6	54.00	13.02
11511.100000	47.58	---	200.0	H	270.0	10.6	74.00	26.42
17371.000000	55.55	---	150.0	H	270.0	14.1	68.20	12.65

High Channel: 5795MHz

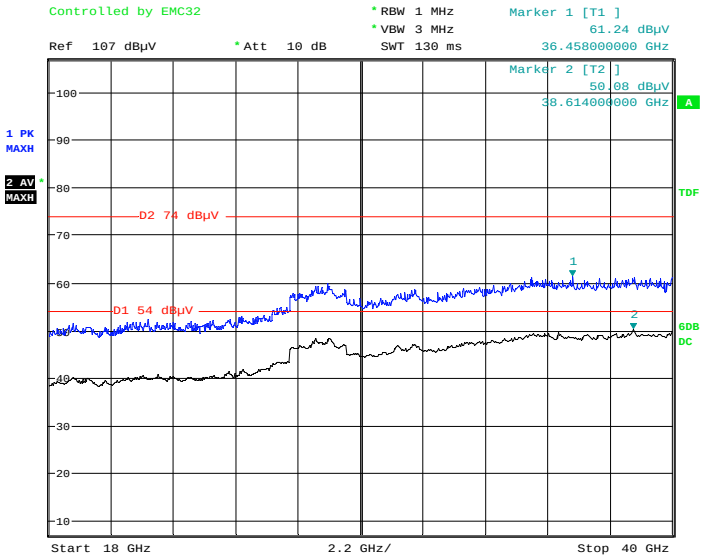


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1397.800000	---	27.71	150.0	V	178.0	-7.0	54.00	26.29
1397.800000	42.79	---	150.0	V	178.0	-7.0	74.00	31.21
1790.500000	44.40	---	200.0	V	198.0	-5.6	68.20	23.80
2125.400000	42.04	---	150.0	V	283.0	-4.7	68.20	26.16
3725.100000	---	33.20	200.0	H	60.0	-0.7	54.00	20.80
3725.100000	43.64	---	200.0	H	60.0	-0.7	74.00	30.36
7074.100000	48.26	---	150.0	V	25.0	5.6	68.20	19.94
11591.000000	---	40.70	200.0	H	306.0	10.5	54.00	13.30
11591.000000	49.70	---	200.0	H	306.0	10.5	74.00	24.30
17405.000000	56.02	---	150.0	H	206.0	14.2	68.20	12.18

18GHz-40GHz (5150-5250MHz Band): (Power by adapter 1 worst case)

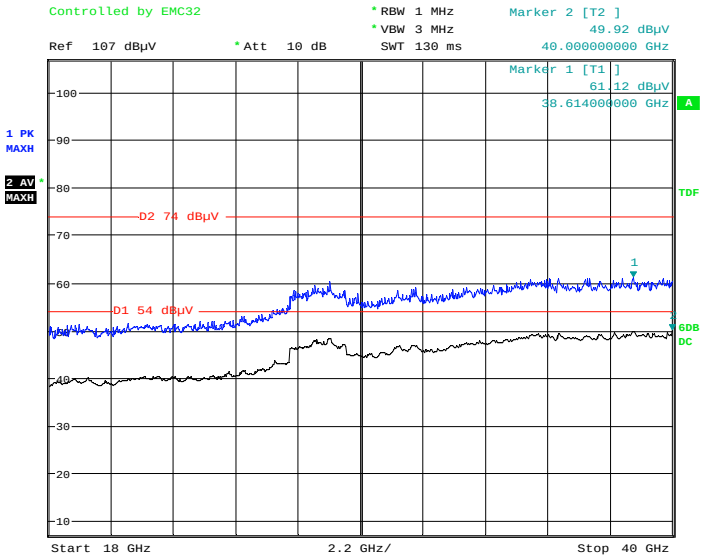
*Pre-scan with 802.11a, 802.11n-HT20, 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case **802.11a mode low channel** in Y-axis of orientation was recorded*

Horizontal



Date: 25.AUG.2021 05:06:40

Vertical

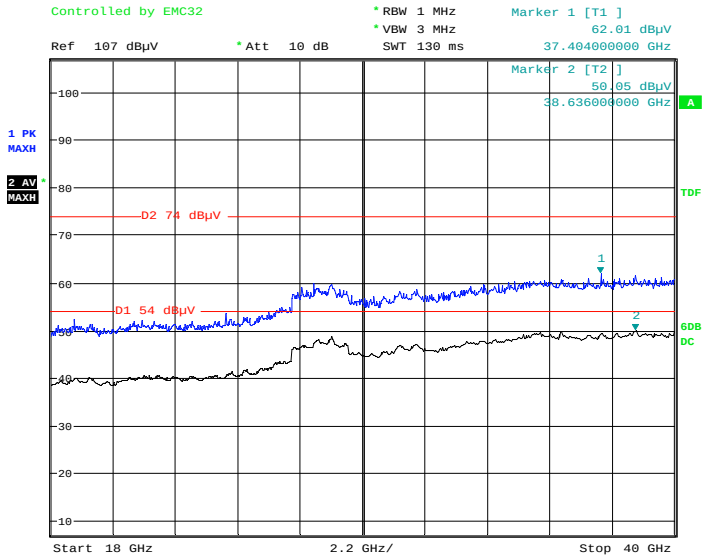


Date: 25.AUG.2021 05:07:50

18GHz-40GHz (5725-5850MHz Band): (Power by adapter 1 worst case)

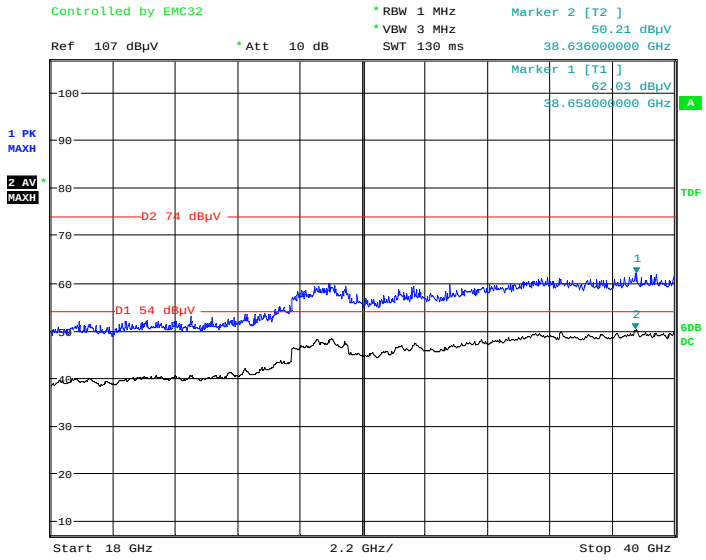
*Pre-scan with 802.11a, 802.11n-HT20, 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case **802.11a mode low channel** in **Y**-axis of orientation was recorded*

Horizontal



Date: 25.AUG.2021 05:09:41

Vertical



Date: 25.AUG.2021 05:12:01

Restricted Bands Emissions Test (5150-5250MHz Band):

Note:
1. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
2. Corrected Amplitude = Corrected Factor + Reading
3. Margin = Limit - Corrected. Amplitude
4. The test distance is 1.5m instead of 3m, Extrapolation Factor=20*log(3m /1.5m)=6.0dB
   The PK limit 80dBuv/m @1.5m instead of 74dBuv/m @3.0m
   The AV limit 60dBuv/m @1.5m instead of 54dBuv/m @3.0m

802.11a Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation in vertical polarization was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m) @1.5m	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5180MHz								
5150.00	60.89	---	150.0	V	0.0	11.4	80.00	19.11
5150.00	---	57.27	150.0	V	0.0	11.4	60.00	2.73
High Channel: 5240MHz								
5350.00	57.59	---	150.0	V	358.0	11.8	80.00	22.41
5350.00	---	53.65	150.0	V	358.0	11.8	60.00	6.35

802.11n-HT20 Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation in vertical polarization was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m) @1.5m	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5180MHz								
5150.00	61.73	---	150.0	H	59.0	11.4	80.00	18.27
5150.00	---	56.70	150.0	H	59.0	11.4	60.00	3.30
High Channel: 5240MHz								
5350.00	57.74	---	150.0	H	40.0	11.8	80.00	22.26
5350.00	---	54.44	150.0	H	40.0	11.8	60.00	5.56

802.11n-HT40 Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation in vertical polarization was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m) @1.5m	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5190MHz								
5150.00	64.63	---	150.0	H	60.0	11.4	80.00	15.37
5150.00	---	59.20	150.0	H	60.0	11.4	60.00	0.80
High Channel: 5230MHz								
5350.00	57.68	---	200.0	H	0.0	11.8	80.00	22.32
5350.00	---	54.72	200.0	H	0.0	11.8	60.00	5.28

Restricted Bands Emissions Test (5725-5850MHz Band):

Note:
1. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
2. Corrected Amplitude = Corrected Factor + Reading
3. Margin = Limit - Corrected. Amplitude

802.11a Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5745MHz								
5650.00	59.08	---	150.0	H	196.0	13.0	68.20	9.12
5700.00	59.82	---	150.0	H	244.0	13.3	105.20	45.38
5720.00	61.21	---	150.0	V	55.0	13.4	110.86	49.65
5725.00	66.75	---	200.0	H	40.0	13.4	122.20	55.45
High Channel: 5825MHz								
5850.00	62.85	---	150.0	V	298.0	14.2	122.20	59.35
5855.00	62.89	---	150.0	H	144.0	14.2	110.79	47.89
5875.00	59.95	---	150.0	H	240.0	14.3	105.16	45.21
5925.00	60.92	---	200.0	V	358.0	14.7	68.20	7.28

802.11n-HT20 Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5745MHz								
5650.00	59.72	---	150.0	V	216.0	13.0	68.20	8.48
5700.00	59.56	---	200.0	H	89.0	13.3	105.21	45.65
5720.00	60.18	---	200.0	V	108.0	13.4	110.80	50.62
5725.00	67.00	---	150.0	H	39.0	13.4	122.20	55.20
High Channel: 5825MHz								
5850.00	65.20	---	200.0	H	51.0	14.2	122.20	57.00
5855.00	63.13	---	150.0	H	44.0	14.2	110.79	47.67
5875.00	60.22	---	150.0	H	260.0	14.3	105.20	44.98
5925.00	60.25	---	150.0	V	152.0	14.7	68.20	7.95

802.11n-HT40 Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5755MHz								
5650.00	58.33	---	200.0	H	98.0	13.0	68.20	9.87
5700.00	59.17	---	200.0	V	312.0	13.3	105.20	46.03
5720.00	69.22	---	150.0	H	339.0	13.4	110.86	41.64
5725.00	66.32	---	200.0	V	227.0	13.4	122.20	55.88
High Channel: 5795MHz								
5850.00	59.72	---	200.0	V	287.0	14.2	122.20	62.48
5855.00	60.66	---	200.0	V	256.0	14.2	110.80	50.14
5875.00	60.43	---	200.0	H	48.0	14.3	105.16	44.74
5925.00	59.99	---	200.0	H	267.0	14.7	68.20	8.21

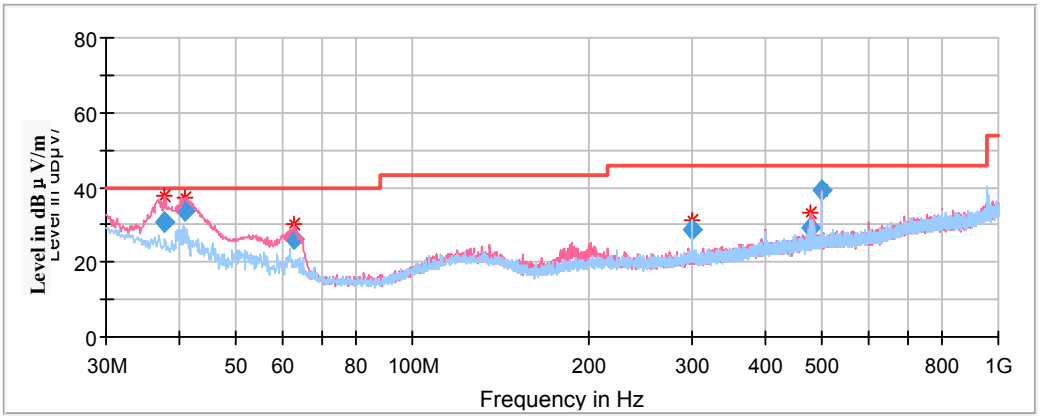
Version:AK300

Spurious Emission Test

30MHz-1GHz (5150-5250MHz Band):

Adapter-1: TPA-46B050100UU

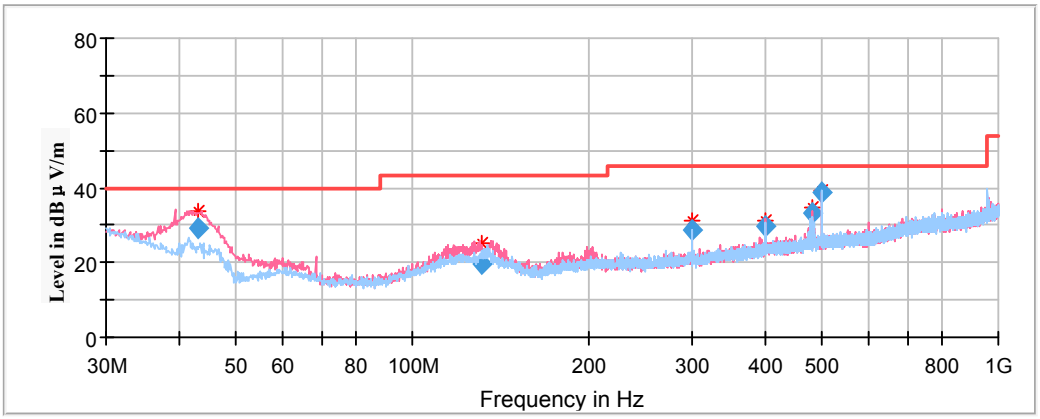
Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11a mode low channel*** *in Y-axis of orientation was recorded*



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
37.768000	30.75	100.0	V	226.0	-8.7	40.00	9.25
40.946650	33.74	100.0	V	182.0	-11.1	40.00	6.26
62.859650	25.98	100.0	V	242.0	-15.2	40.00	14.02
300.004850	28.84	100.0	H	103.0	-10.8	46.00	17.16
478.870500	29.38	200.0	V	288.0	-6.1	46.00	16.62
500.017200	39.36	100.0	V	166.0	-5.6	46.00	6.64

Adapter-2: GTA92-0501000US

Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 ac80 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11a mode low channel*** *in Y-axis of orientation was recorded*

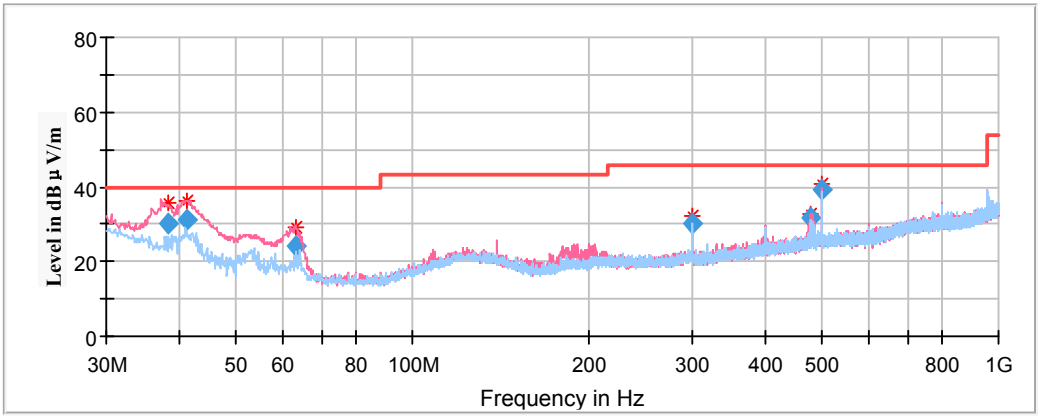


Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
42.936350	29.27	100.0	V	183.0	-12.4	40.00	10.73
131.122650	19.65	100.0	V	210.0	-11.3	43.50	23.85
299.991950	28.76	100.0	H	76.0	-10.8	46.00	17.24
400.018400	29.85	200.0	V	2.0	-8.0	46.00	16.15
479.996850	33.14	200.0	V	341.0	-6.1	46.00	12.86
500.004000	38.76	200.0	H	129.0	-5.6	46.00	7.24

30MHz-1GHz (5725-5850MHz Band):

Adapter-1: TPA-46B050100UU

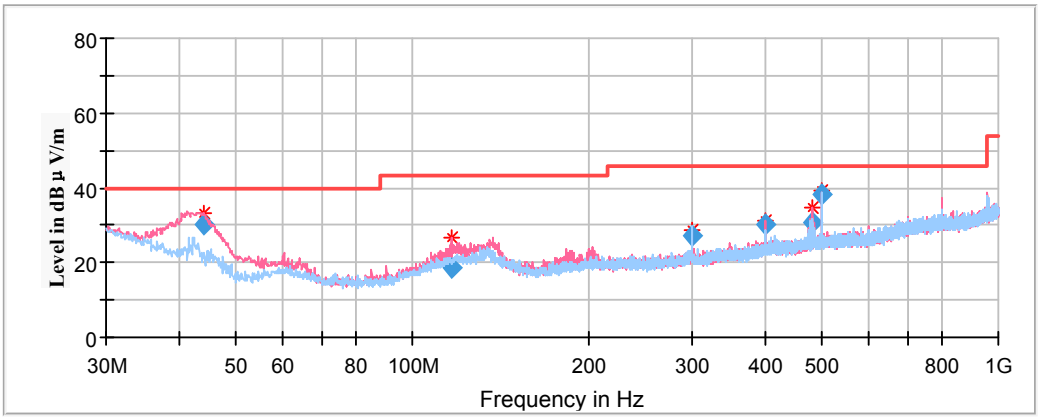
Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11a mode low channel*** *in Y-axis of orientation was recorded*



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
38.376900	30.20	100.0	V	224.0	-9.3	40.00	9.80
41.193350	31.25	100.0	V	274.0	-11.3	40.00	8.75
63.425250	24.37	100.0	V	296.0	-15.3	40.00	15.63
300.012650	30.14	100.0	H	80.0	-10.8	46.00	15.86
478.855500	31.57	100.0	V	181.0	-6.1	46.00	14.43
500.005800	39.33	100.0	V	176.0	-5.6	46.00	6.67

Adapter-2: GTA92-0501000US

Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11a mode low channel*** *in Y-axis of orientation was recorded*



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
43.895200	30.17	100.0	V	180.0	-13.1	40.00	9.83
116.693350	18.54	100.0	V	158.0	-11.6	43.50	24.96
299.990450	26.92	100.0	H	41.0	-10.8	46.00	19.08
400.014450	29.99	200.0	V	0.0	-8.0	46.00	16.01
481.154300	30.84	200.0	V	303.0	-6.1	46.00	15.16
499.996800	38.33	200.0	H	115.0	-5.6	46.00	7.67

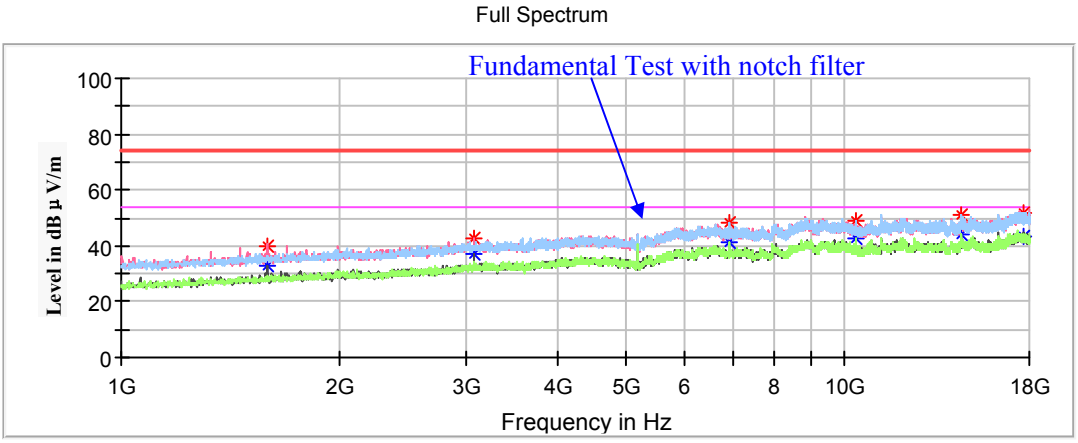
1GHz-18GHz (5150-5250MHz Band): (Power by adapter 1 worst case)

802.11a Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

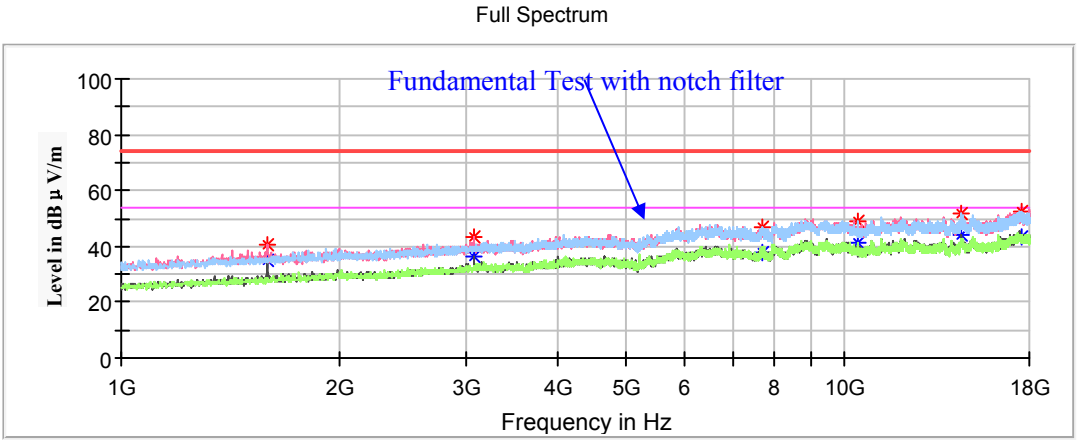
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



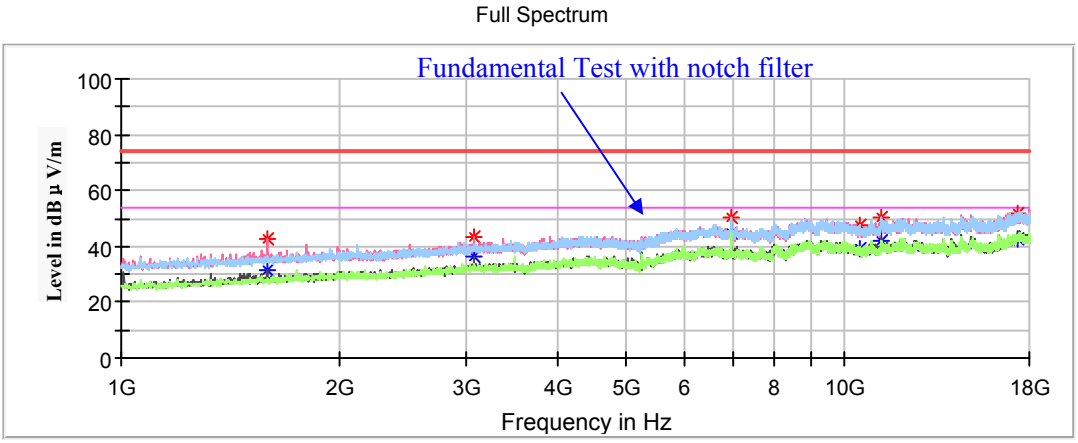
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	---	32.98	200.0	V	63.0	-6.2	54.00	21.02
1591.600000	39.91	---	200.0	V	63.0	-6.2	74.00	34.09
3070.600000	42.38	---	200.0	V	194.0	-2.0	68.20	25.82
6905.800000	48.40	---	150.0	H	334.0	5.7	68.20	19.80
10360.200000	49.08	---	200.0	H	323.0	8.5	68.20	19.12
14489.500000	---	44.15	150.0	H	36.0	10.9	54.00	9.85
14489.500000	51.25	---	200.0	H	160.0	10.9	74.00	22.75
17636.200000	51.98	---	200.0	V	129.0	14.1	68.20	16.22

Middle Channel: 5200MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	---	35.23	150.0	V	269.0	-6.2	54.00	18.77
1591.600000	40.80	---	150.0	V	269.0	-6.2	74.00	33.20
3070.600000	43.41	---	200.0	V	199.0	-2.0	68.20	24.79
7689.500000	---	37.75	200.0	V	186.0	5.3	54.00	16.25
7689.500000	46.84	---	200.0	V	186.0	5.3	74.00	27.16
10401.000000	48.83	---	200.0	H	345.0	8.5	68.20	19.37
14486.100000	---	44.04	200.0	V	225.0	10.9	54.00	9.96
14486.100000	52.06	---	200.0	V	225.0	10.9	74.00	21.94
17505.300000	52.68	---	200.0	H	128.0	14.4	68.20	15.52

High Channel: 5240MHz



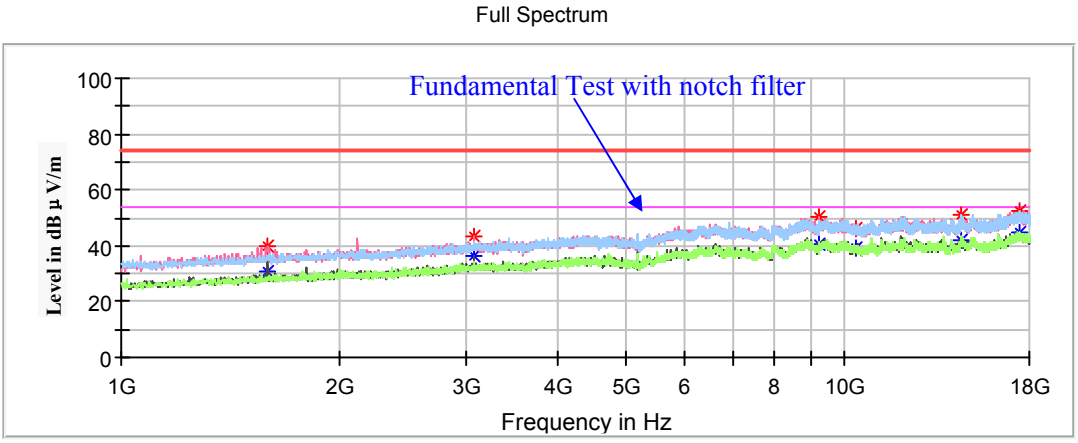
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	---	31.22	200.0	V	274.0	-6.2	54.00	22.78
1593.300000	42.83	---	200.0	V	274.0	-6.2	74.00	31.17
3070.600000	43.56	---	150.0	V	230.0	-2.0	68.20	24.64
6985.700000	50.30	---	200.0	H	353.0	5.7	68.20	17.90
10480.900000	47.87	---	150.0	H	326.0	8.4	68.20	20.33
11205.100000	---	42.18	150.0	V	0.0	10.0	54.00	11.82
11205.100000	50.52	---	150.0	V	0.0	10.0	74.00	23.48
17291.100000	51.94	---	150.0	H	356.0	13.8	68.20	16.26

802.11n-HT20 Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

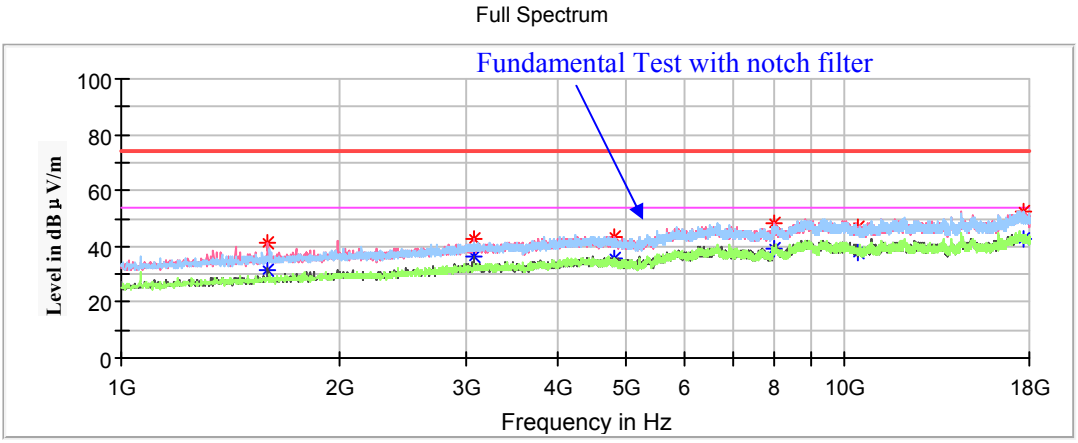
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



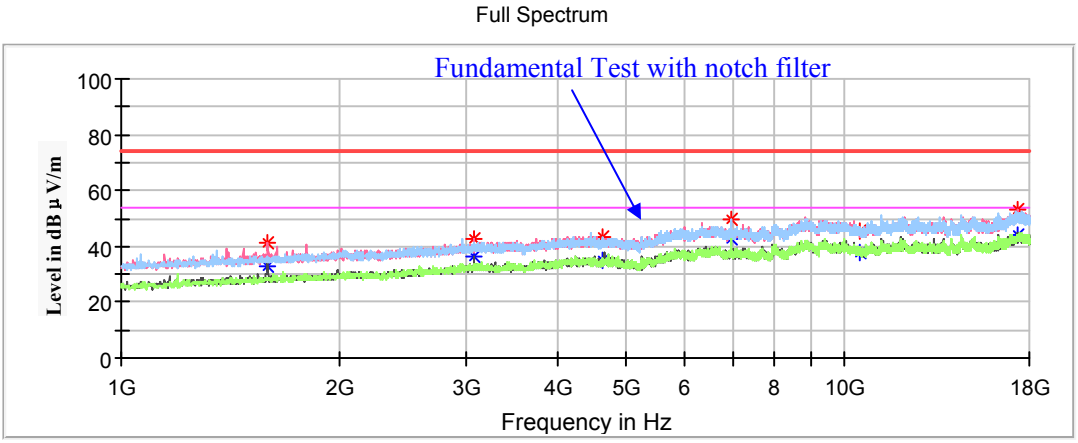
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	40.03	---	150.0	V	114.0	-6.2	74.00	33.97
1593.300000	---	31.12	150.0	V	114.0	-6.2	54.00	22.88
3070.600000	43.20	---	200.0	V	200.0	-2.0	68.20	25.00
9234.800000	50.38	---	200.0	V	0.0	9.3	68.20	17.82
10360.200000	46.25	---	200.0	H	319.0	8.5	68.20	21.95
14498.000000	---	41.93	200.0	H	331.0	10.9	54.00	12.07
14498.000000	51.31	---	200.0	H	331.0	10.9	74.00	22.69
17464.500000	52.41	---	200.0	V	340.0	14.3	68.20	15.79

Middle Channel: 5200MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1596.700000	---	31.56	150.0	V	297.0	-6.2	54.00	22.44
1596.700000	40.93	---	150.0	V	297.0	-6.2	74.00	33.07
3070.600000	42.79	---	200.0	V	195.0	-2.0	68.20	25.41
4792.700000	---	35.35	200.0	V	246.0	0.6	54.00	18.65
4792.700000	43.24	---	200.0	V	246.0	0.6	74.00	30.76
7997.200000	47.94	---	150.0	V	98.0	6.1	68.20	20.26
10401.000000	46.86	---	150.0	V	200.0	8.5	68.20	21.34
17699.100000	52.44	---	150.0	V	310.0	14.0	68.20	15.76

High Channel: 5240MHz



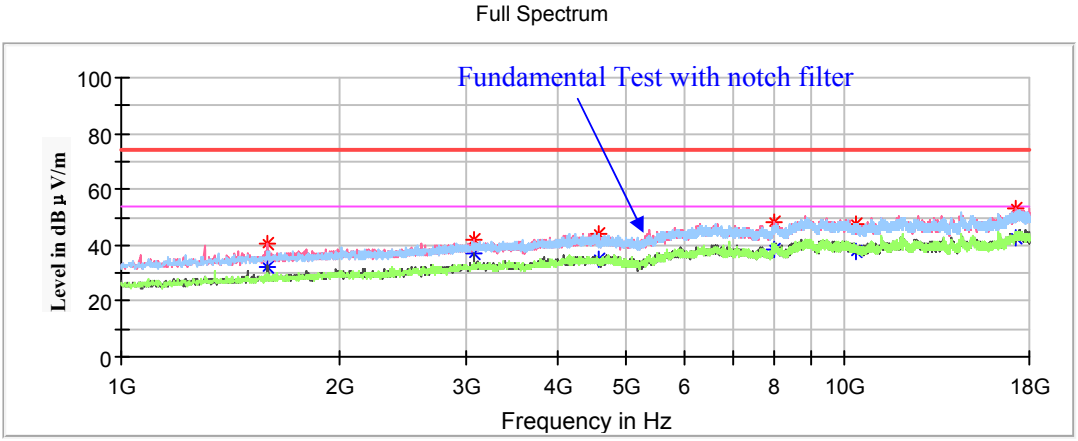
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	41.12	---	200.0	V	283.0	-6.2	74.00	32.88
1595.000000	---	33.18	200.0	V	283.0	-6.2	54.00	20.82
3070.600000	42.66	---	200.0	V	194.0	-2.0	68.20	25.54
4641.400000	---	34.69	150.0	V	200.0	1.0	54.00	19.31
4641.400000	43.47	---	150.0	H	262.0	1.0	74.00	30.53
6985.700000	49.39	---	200.0	H	0.0	5.7	68.20	18.81
10480.900000	45.63	---	150.0	H	134.0	8.4	68.20	22.57
17369.300000	53.00	---	200.0	V	257.0	14.0	68.20	15.20

802.11n-HT40 Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

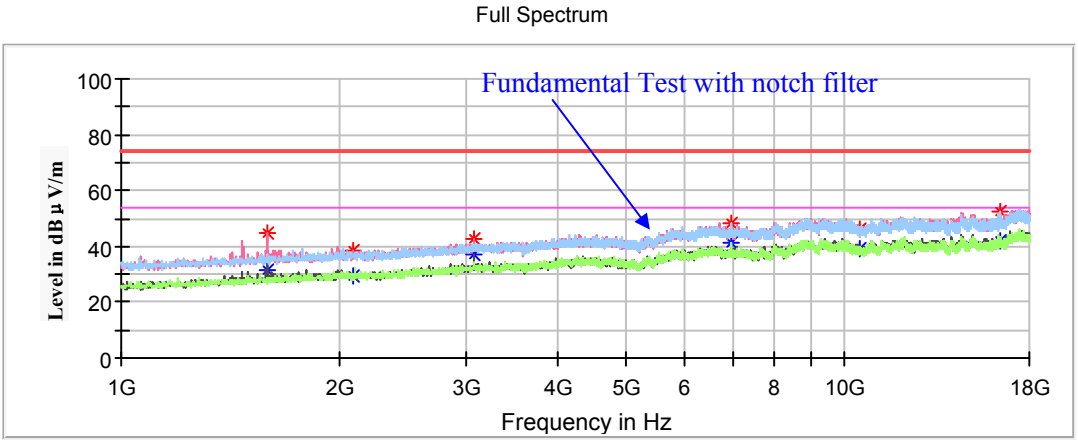
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5190MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	---	32.10	150.0	V	77.0	-6.2	54.00	21.90
1591.600000	40.40	---	150.0	V	77.0	-6.2	74.00	33.60
3070.600000	42.02	---	200.0	V	219.0	-2.0	68.20	26.18
4561.500000	---	35.16	200.0	H	11.0	1.2	54.00	18.84
4561.500000	44.29	---	200.0	H	11.0	1.2	74.00	29.71
7980.200000	47.94	---	200.0	H	252.0	6.0	68.20	20.26
10382.300000	47.41	---	200.0	H	345.0	8.5	68.20	20.79
17252.000000	52.82	---	200.0	H	111.0	13.7	68.20	15.38

High Channel: 5230MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	---	31.80	150.0	V	296.0	-6.2	54.00	22.20
1595.000000	44.54	---	150.0	V	296.0	-6.2	74.00	29.46
2091.400000	38.57	---	150.0	V	0.0	-4.7	68.20	29.63
3070.600000	42.72	---	150.0	V	230.0	-2.0	68.20	25.48
6972.100000	48.30	---	200.0	H	10.0	5.7	68.20	19.90
10462.200000	46.36	---	200.0	V	0.0	8.5	68.20	21.84
16388.400000	52.36	---	200.0	V	270.0	11.5	68.20	15.84

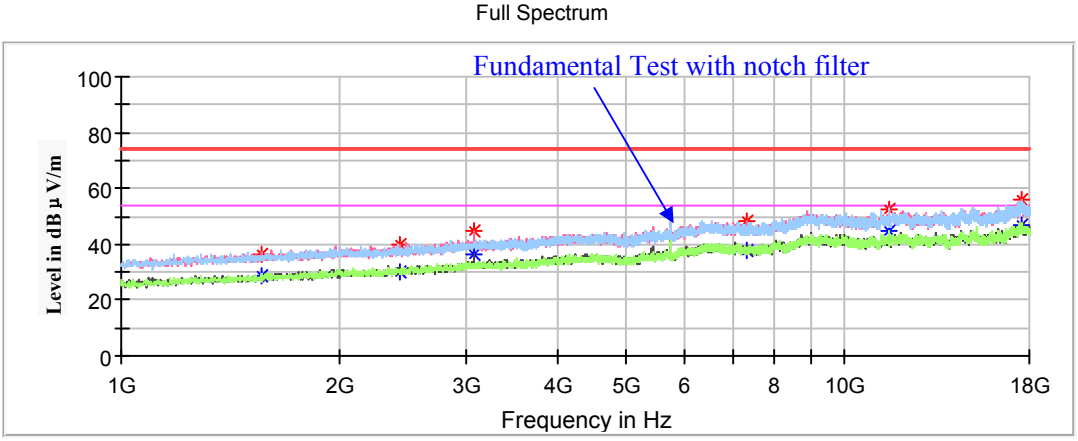
1GHz-18GHz (5725-5850MHz Band): (Power by adapter 1 worst case)

802.11a Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

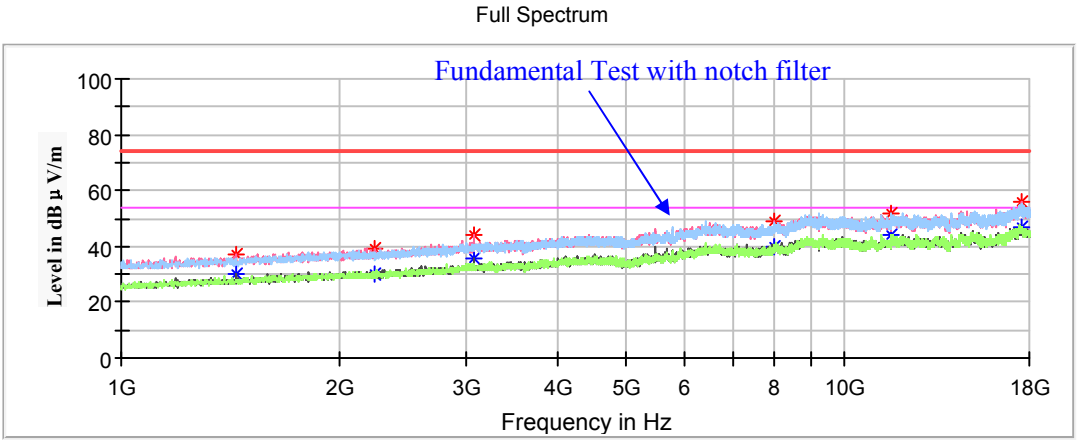
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



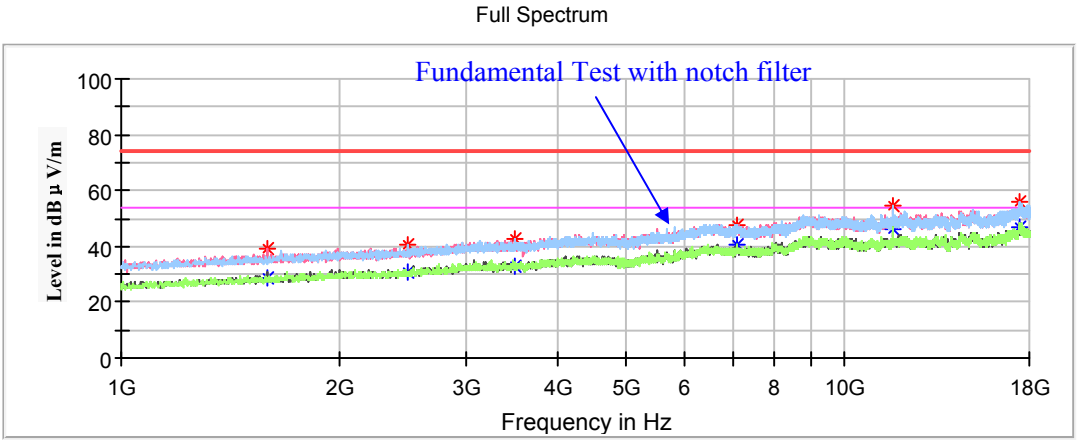
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1559.300000	---	28.49	150.0	H	231.0	-6.3	54.00	25.51
1559.300000	36.70	---	150.0	H	231.0	-6.3	74.00	37.30
2434.800000	39.73	---	150.0	V	207.0	-4.1	68.20	28.47
3070.600000	44.56	---	150.0	V	270.0	-2.0	68.20	23.64
7327.400000	48.05	---	200.0	V	204.0	5.1	74.00	25.95
7327.400000	---	37.68	200.0	V	204.0	5.1	54.00	16.32
11489.000000	52.12	---	150.0	H	231.0	10.6	74.00	21.88
11489.000000	---	44.81	150.0	H	231.0	10.6	54.00	9.19
17544.400000	55.95	---	150.0	H	116.0	14.3	68.20	12.25

Middle Channel: 5785MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1443.700000	---	29.91	150.0	V	219.0	-6.8	54.00	24.09
1443.700000	36.77	---	150.0	V	219.0	-6.8	74.00	37.23
2246.100000	38.89	---	150.0	V	25.0	-4.5	74.00	35.11
2246.100000	---	30.26	150.0	V	25.0	-4.5	54.00	23.74
3070.600000	44.15	---	150.0	V	270.0	-2.0	68.20	24.05
7990.400000	49.19	---	200.0	V	205.0	6.0	68.20	19.01
11565.500000	51.57	---	200.0	H	211.0	10.5	74.00	22.43
11565.500000	---	44.22	200.0	H	211.0	10.5	54.00	9.78
17518.900000	56.15	---	200.0	V	98.0	14.4	68.20	12.05

High Channel: 5825MHz



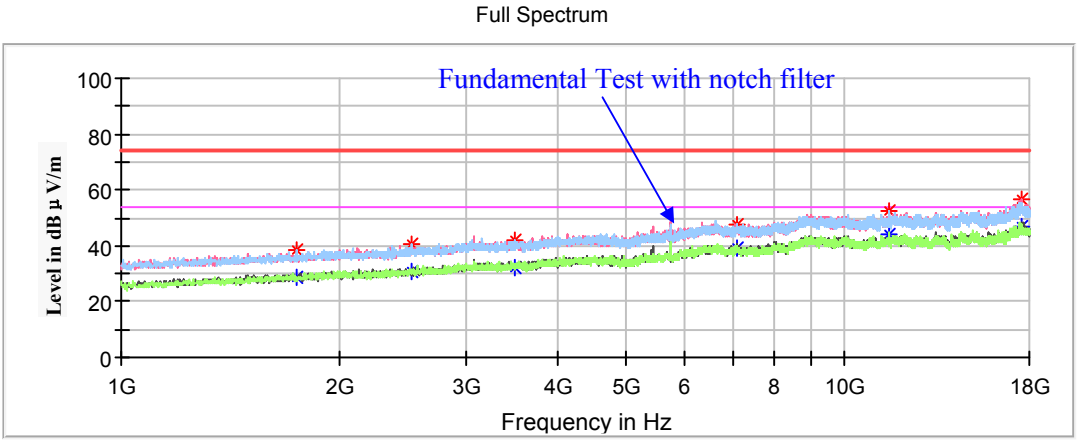
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	---	29.01	150.0	V	295.0	-6.2	54.00	24.99
1593.300000	39.34	---	150.0	V	295.0	-6.2	74.00	34.66
2484.100000	40.48	---	200.0	H	313.0	-4.0	74.00	33.52
2484.100000	---	30.86	200.0	H	313.0	-4.0	54.00	23.14
3505.800000	42.43	---	150.0	V	244.0	-1.7	68.20	25.77
7096.200000	47.79	---	200.0	H	198.0	5.5	68.20	20.41
11652.200000	---	45.98	150.0	H	283.0	10.4	54.00	8.02
11652.200000	54.33	---	150.0	H	283.0	10.4	74.00	19.67
17474.700000	55.76	---	150.0	H	231.0	14.4	68.20	12.44

802.11n-HT20 Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

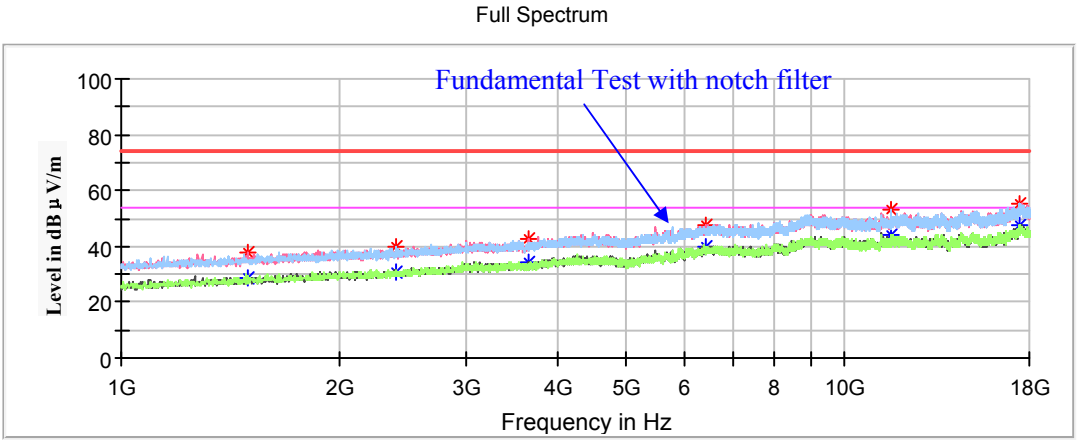
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



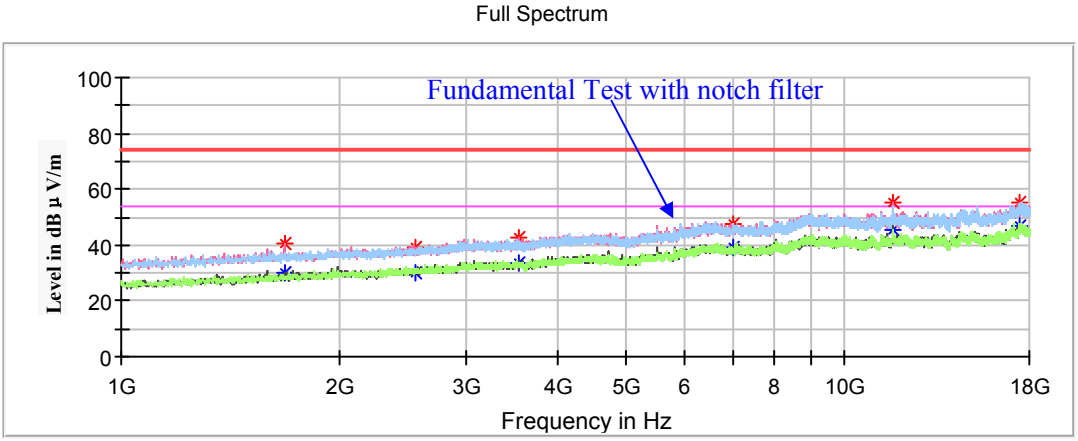
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1748.000000	38.27	---	150.0	H	103.0	-5.7	68.20	29.93
2524.900000	40.24	---	150.0	V	281.0	-3.9	68.20	27.96
3507.500000	42.04	---	200.0	H	312.0	-1.7	68.20	26.16
7086.000000	47.43	---	150.0	H	4.0	5.6	68.20	20.77
11487.300000	---	43.79	200.0	H	210.0	10.6	54.00	10.21
11487.300000	52.70	---	200.0	H	210.0	10.6	74.00	21.30
17571.600000	56.83	---	200.0	H	210.0	14.3	68.20	11.37

Middle Channel: 5785MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1496.400000	37.53	---	150.0	V	173.0	-6.5	74.00	36.47
1496.400000	---	28.71	150.0	V	173.0	-6.5	54.00	25.29
2402.500000	39.63	---	150.0	H	251.0	-4.2	68.20	28.57
3646.900000	42.45	---	150.0	V	349.0	-1.1	74.00	31.55
3646.900000	---	34.31	150.0	V	349.0	-1.1	54.00	19.69
6443.400000	47.50	---	150.0	H	0.0	5.3	68.20	20.70
11574.000000	---	44.03	200.0	H	217.0	10.5	54.00	9.97
11574.000000	53.00	---	200.0	H	217.0	10.5	74.00	21.00
17469.600000	55.12	---	150.0	H	319.0	14.3	68.20	13.08

High Channel: 5825MHz



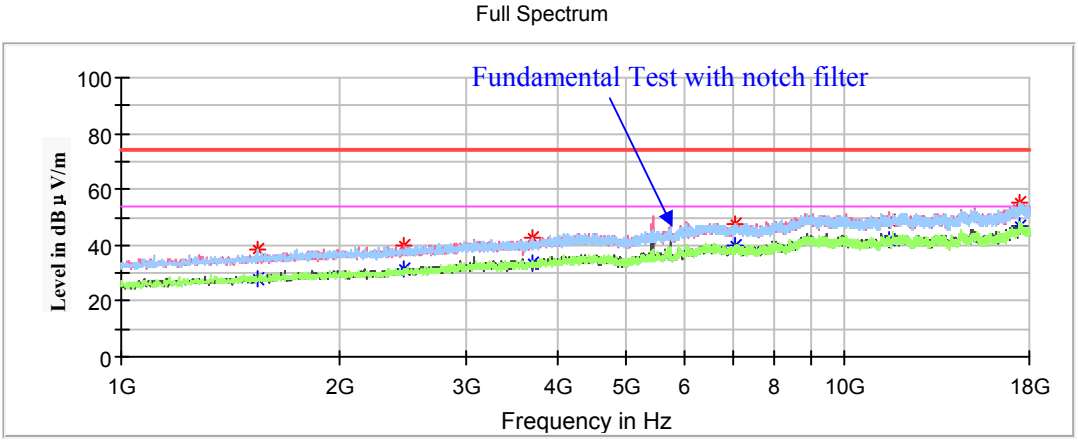
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1680.000000	40.64	---	200.0	V	27.0	-5.9	74.00	33.36
1680.000000	---	30.34	200.0	V	27.0	-5.9	54.00	23.66
2558.900000	39.09	---	200.0	V	1.0	-3.8	68.20	29.11
3539.800000	42.51	---	150.0	V	274.0	-1.5	68.20	25.69
7011.200000	47.81	---	150.0	V	338.0	5.7	68.20	20.39
11642.000000	55.09	---	200.0	V	231.0	10.4	74.00	18.91
11642.000000	---	45.32	200.0	V	231.0	10.4	54.00	8.68
17490.000000	55.43	---	150.0	H	150.0	14.4	68.20	12.77

802.11n-HT40 Mode:

*(Pre-scan in the X, Y and Z axes of orientation, the worst case **Y-axis of orientation** was recorded.)*

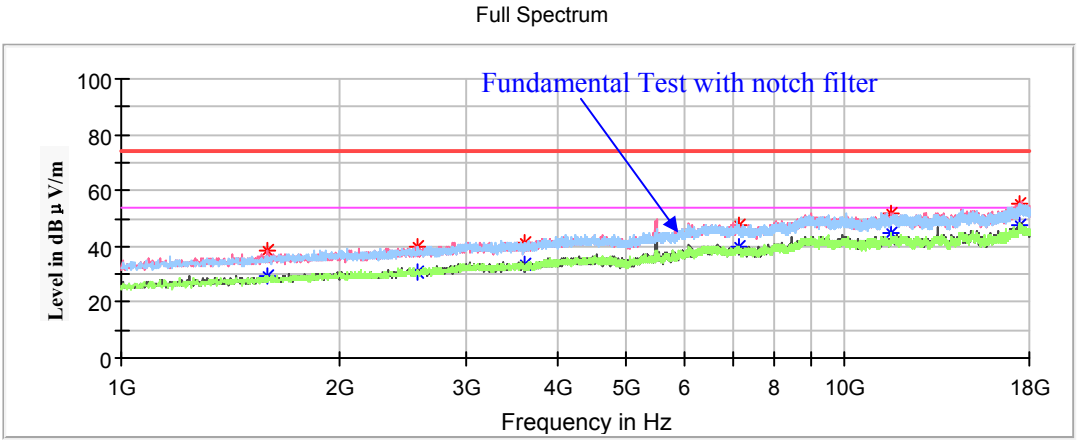
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5755MHz



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1542.300000	---	28.10	150.0	H	149.0	-6.4	54.00	25.90
1542.300000	38.13	---	150.0	H	149.0	-6.4	74.00	35.87
2458.600000	40.04	---	150.0	V	0.0	-4.1	68.20	28.16
3691.100000	---	33.74	200.0	H	340.0	-0.9	54.00	20.26
3691.100000	42.56	---	200.0	H	340.0	-0.9	74.00	31.44
7069.000000	47.84	---	150.0	H	266.0	5.6	68.20	20.36
11507.700000	---	42.30	200.0	H	170.0	10.6	54.00	11.70
11507.700000	48.94	---	200.0	H	170.0	10.6	74.00	25.06
17479.800000	55.20	---	200.0	H	340.0	14.4	68.20	13.00

High Channel: 5795MHz

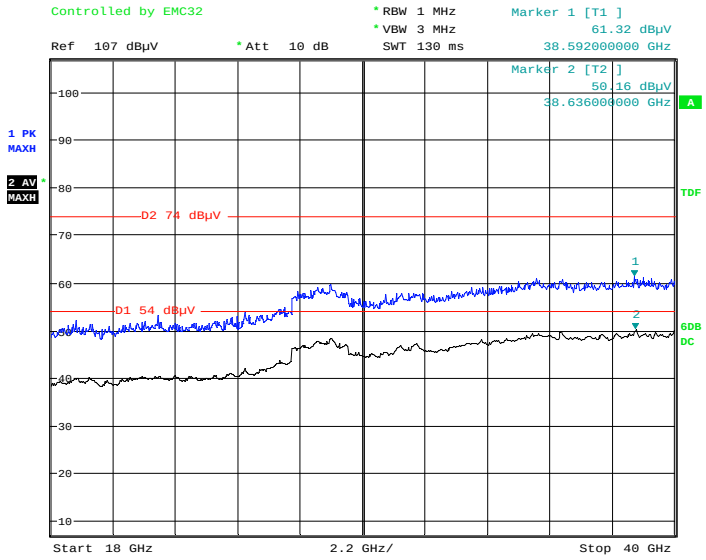


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	---	29.09	200.0	V	300.0	-6.2	54.00	24.91
1595.000000	38.74	---	200.0	V	300.0	-6.2	74.00	35.26
2572.500000	39.97	---	150.0	V	256.0	-3.7	68.20	28.23
3607.800000	---	33.89	200.0	V	300.0	-1.2	54.00	20.11
3607.800000	41.22	---	200.0	V	300.0	-1.2	74.00	32.78
7131.900000	47.81	---	200.0	V	160.0	5.5	68.20	20.39
11591.000000	51.73	---	150.0	V	216.0	10.5	74.00	22.27
11591.000000	---	44.51	150.0	V	216.0	10.5	54.00	9.49
17464.500000	54.98	---	200.0	V	160.0	14.3	68.20	13.22

18GHz-40GHz (5150-5250MHz Band): (Power by adapter 1 worst case)

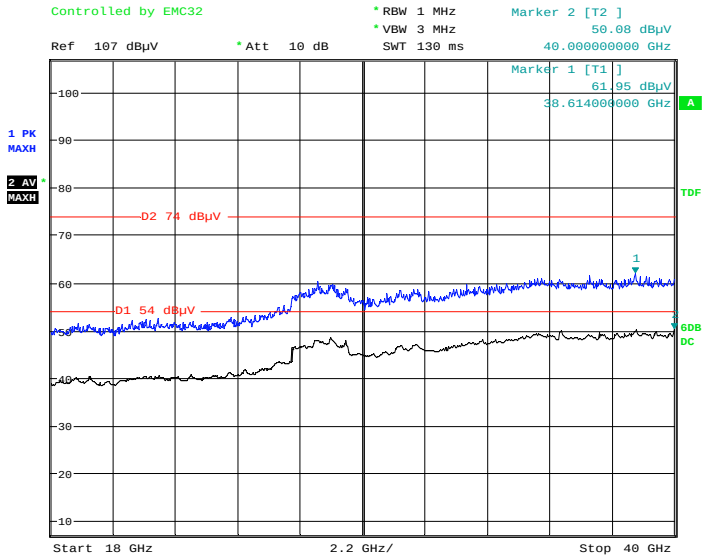
*Pre-scan with 802.11a, 802.11n-HT20, 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case **802.11a mode low channel** in Y-axis of orientation was recorded*

Horizontal



Date: 25.AUG.2021 05:13:46

Vertical

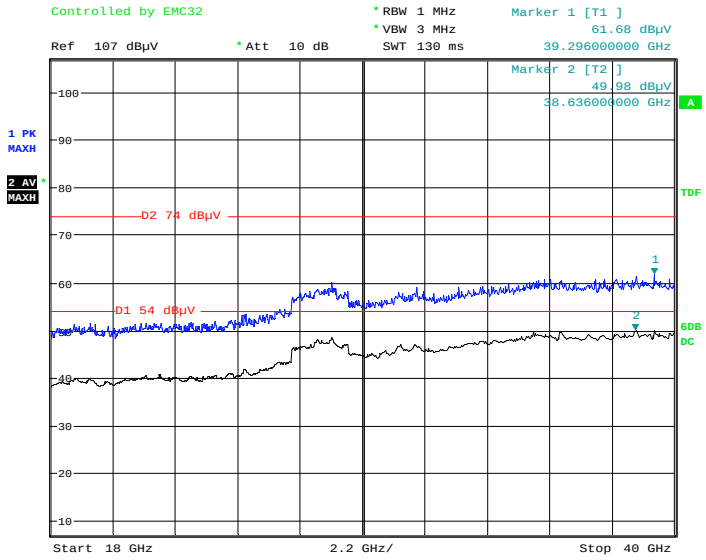


Date: 25.AUG.2021 05:16:26

18GHz-40GHz (5725-5850MHz Band): (Power by adapter 1 worst case)

*Pre-scan with 802.11a, 802.11n-HT20, 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case **802.11a mode low channel** in **Y**-axis of orientation was recorded*

Horizontal



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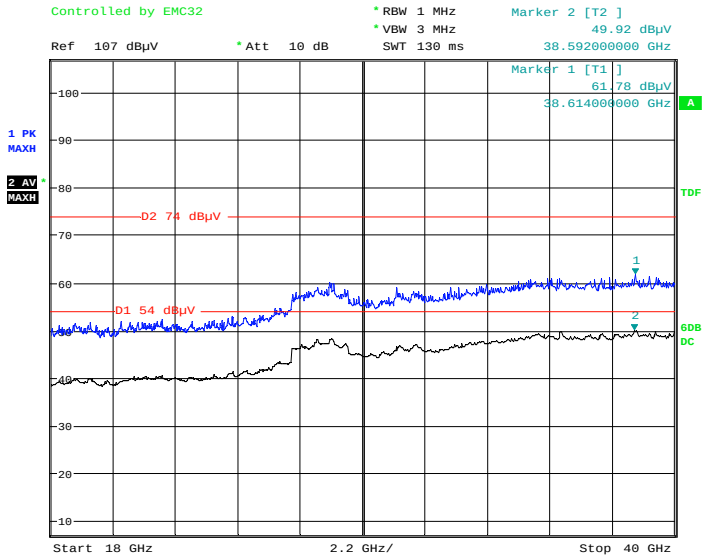
Vertical



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Restricted Bands Emissions Test (5150-5250MHz Band):

Note:
1. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
2. Corrected Amplitude = Corrected Factor + Reading
3.Margin = Limit - Corrected. Amplitude
4. The test distance is 1.5m instead of 3m, Extrapolation Factor=20*log(3m /1.5m)=6.0dB
   The PK limit 80dBuv/m @1.5m instead of 74dBuv/m @3.0m
   The AV limit 60dBuv/m @1.5m instead of 54dBuv/m @3.0m

802.11a Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation in vertical polarization was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m) @1.5m	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5180MHz								
5150.00	64.23	---	150.0	V	358.0	11.4	80.00	15.77
5150.00	---	57.63	150.0	V	358.0	11.4	60.00	2.37
High Channel: 5240MHz								
5350.00	58.08	---	150.0	V	286.0	11.8	80.00	21.92
5350.00	---	54.34	150.0	V	286.0	11.8	60.00	5.66

802.11n-HT20 Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation in vertical polarization was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m) @1.5m	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5180MHz								
5150.00	61.18	---	150.0	V	78.0	11.4	80.00	18.82
5150.00	---	54.95	150.0	V	78.0	11.4	60.00	5.05
High Channel: 5240MHz								
5350.00	56.97	---	200.0	H	316.0	11.8	80.00	23.03
5350.00	---	54.90	200.0	H	316.0	11.8	60.00	5.10

802.11n-HT40 Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation in vertical polarization was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m) @1.5m	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5190MHz								
5150.00	64.15	---	150.0	H	138.0	11.4	80.00	15.85
5150.00	---	59.57	150.0	H	138.0	11.4	60.00	0.43
High Channel: 5230MHz								
5350.00	57.18	---	200.0	H	219.0	11.8	80.00	22.82
5350.00	---	54.61	200.0	H	219.0	11.8	60.00	5.39

Restricted Bands Emissions Test (5725-5850MHz Band):

Note:
1. This test was performed with the 10dB attenuator.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
3. Corrected Amplitude = Corrected Factor + Reading
4. Margin = Limit - Corrected. Amplitude

802.11a Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5745MHz								
5650.00	59.47	---	200.0	H	321.0	13.0	68.20	8.73
5700.00	60.60	---	150.0	V	58.0	13.3	105.20	44.60
5720.00	66.81	---	150.0	V	284.0	13.4	110.80	43.99
5725.00	69.08	---	150.0	V	302.0	13.4	122.20	53.12
High Channel: 5825MHz								
5850.00	68.43	---	150.0	V	257.0	14.2	122.20	53.77
5855.00	64.02	---	200.0	V	323.0	14.2	110.80	46.78
5875.00	59.45	---	200.0	H	172.0	14.3	105.20	45.75
5925.00	59.40	---	200.0	H	0.0	14.7	68.20	8.80

802.11n-HT20 Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5745MHz								
5650.00	58.08	---	150.0	V	120.0	13.0	68.20	10.12
5700.00	60.44	---	150.0	V	2.0	13.3	105.20	44.76
5720.00	65.69	---	150.0	V	349.0	13.4	110.80	45.11
5725.00	75.31	---	150.0	V	337.0	13.4	122.20	46.89
High Channel: 5825MHz								
5850.00	69.90	---	150.0	V	282.0	14.2	122.20	52.30
5855.00	65.05	---	200.0	H	349.0	14.2	110.80	45.75
5875.00	59.06	---	150.0	H	89.0	14.3	105.20	46.14
5925.00	59.57	---	200.0	V	359.0	14.7	68.20	8.63

802.11n-HT40 Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Y-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5755MHz								
5650.00	58.22	---	200.0	H	110.0	13.0	68.20	9.98
5700.00	59.02	---	150.0	H	271.0	13.3	105.20	46.18
5720.00	74.13	---	150.0	V	319.0	13.4	110.80	36.67
5725.00	72.71	---	150.0	V	337.0	13.4	122.20	49.49
High Channel: 5795MHz								
5850.00	60.76	---	150.0	H	248.0	14.2	122.20	61.44
5855.00	60.17	---	150.0	H	359.0	14.2	110.80	50.63
5875.00	59.83	---	150.0	H	217.0	14.3	105.20	45.37
5925.00	60.56	---	150.0	V	129.0	14.7	68.20	7.64

FCC §15.407(a) &§15.407(e)–EMISSION BANDWIDTH

Applicable Standard

.
The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz band is made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

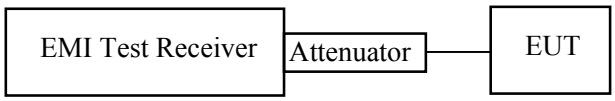
Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

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

2. **Minimum Emission Bandwidth for the band 5.725-5.85 GHz**
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.

g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



Test Data

Environmental Conditions

Temperature:	24.1-25 °C
Relative Humidity:	48-50%
ATM Pressure:	100.8-101.0 kPa

The testing was performed by Tyrone Wang from 2021-08-23 to 2021-08-26.

Test Result: Compliant

5150-5250 MHz:

Test mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	Low	5180	27.856	17.234
	Middle	5200	28.858	17.074
	High	5240	29.739	17.315
802.11n-HT20	Low	5180	21.082	18.116
	Middle	5200	21.202	18.116
	High	5240	21.002	18.036
802.11n-HT40	Low	5190	50.180	36.713
	High	5230	50.501	36.713

5725-5850MHz:

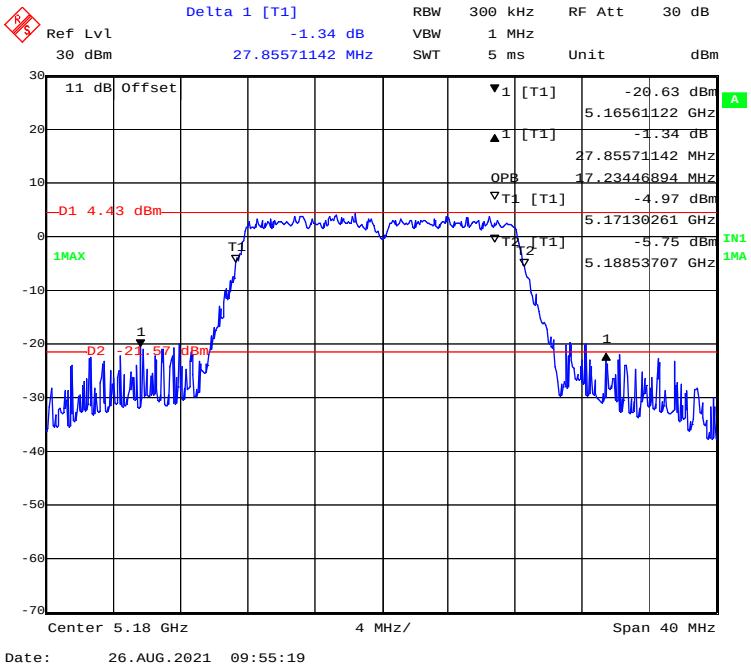
Test mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
802.11a	Low	5745	16.513	17.876	≥0.5
	Middle	5785	16.513	17.796	≥0.5
	High	5825	16.513	17.635	≥0.5
802.11n-HT20	Low	5745	17.715	18.597	≥0.5
	Middle	5785	17.715	18.597	≥0.5
	High	5825	17.715	18.357	≥0.5
802.11n-HT40	Low	5755	36.273	37.675	≥0.5
	High	5795	36.232	37.515	≥0.5

Note: No transmitted signal in the 99% bandwidth extends into the U-NII-2A and U-NII-2C band.

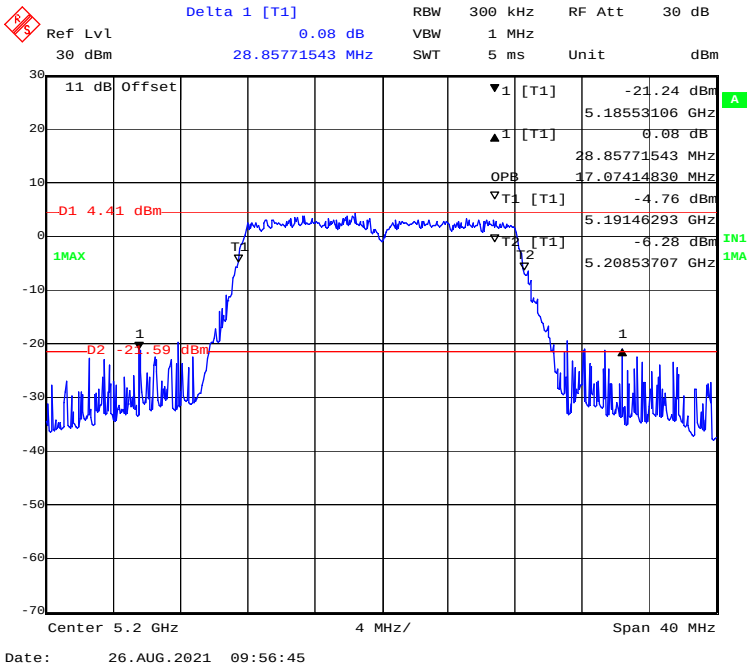
5150-5250 MHz Band:

26 Bandwidth&99% Occupied Bandwidth

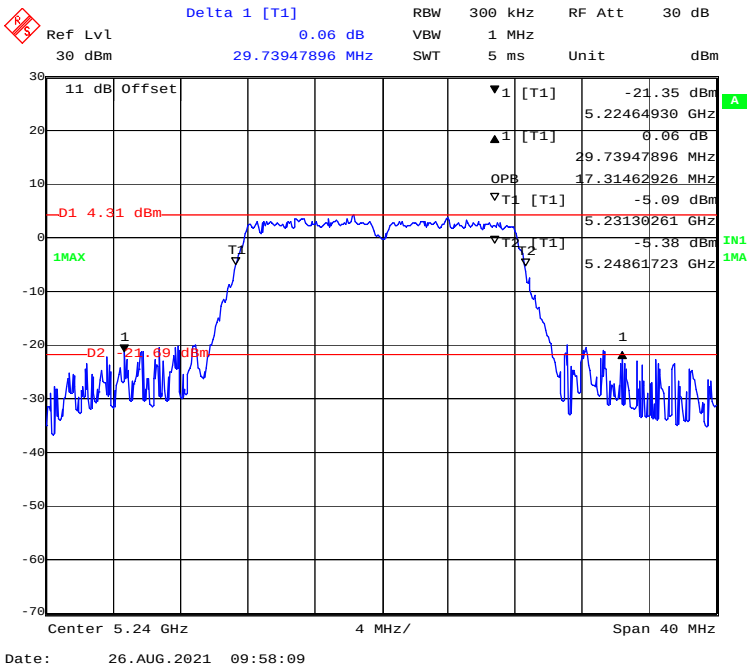
802.11a mode, 5180MHz



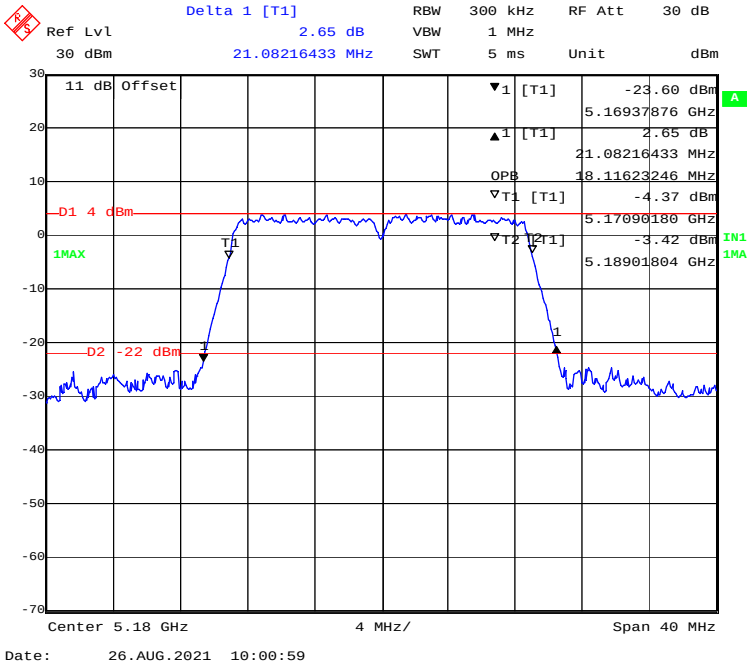
802.11a mode, 5200MHz



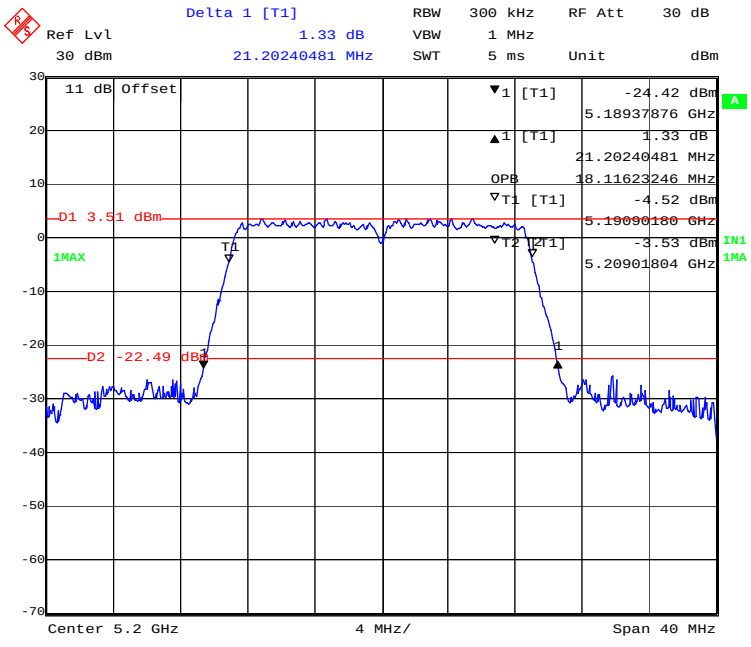
802.11a mode, 5240MHz



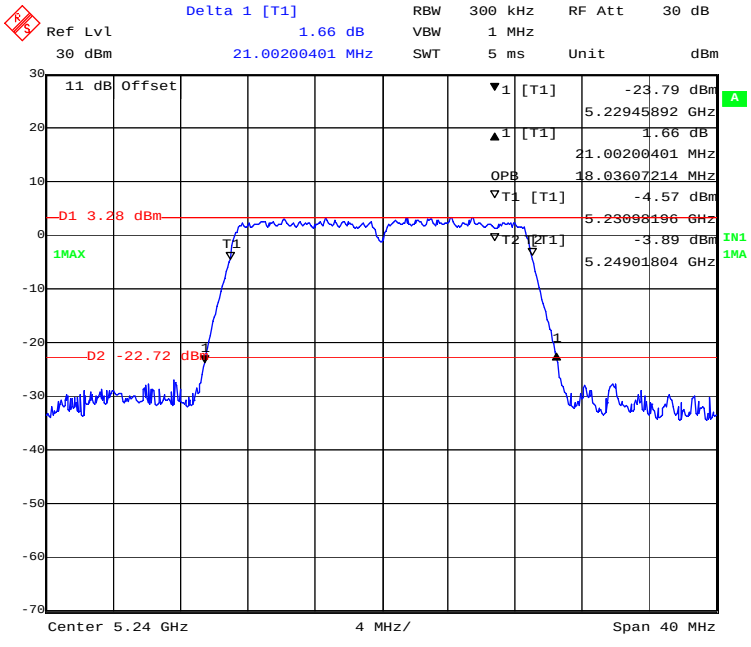
802.11n-HT20 mode, 5180MHz



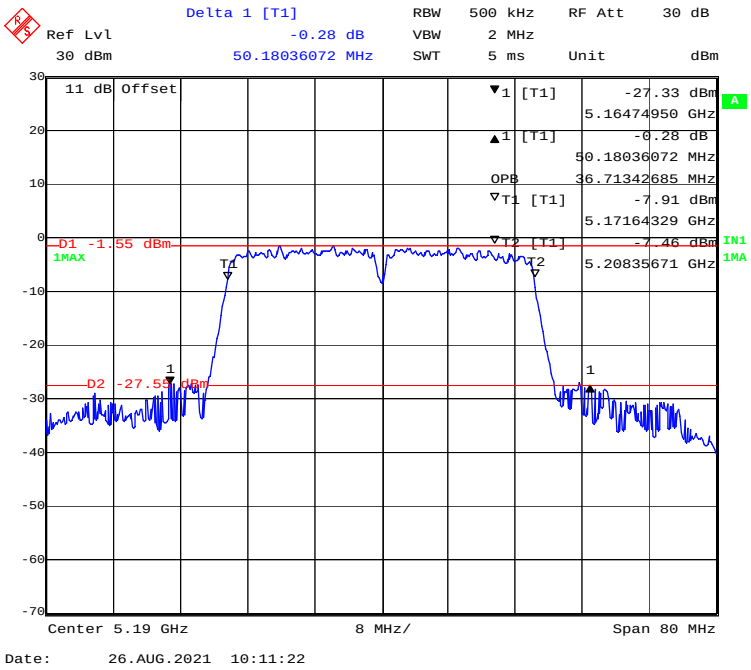
802.11n-HT20 mode, 5200MHz



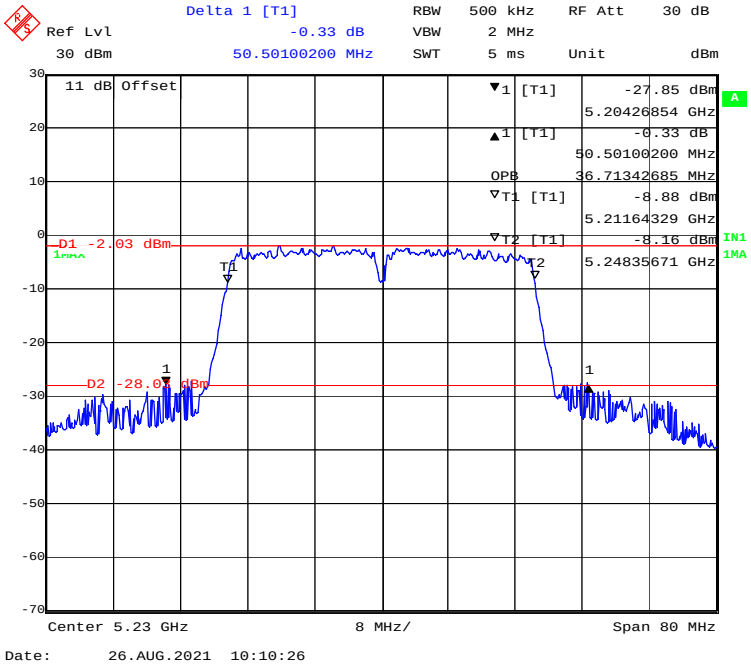
802.11n-HT20 mode, 5240MHz



802.11n-HT40 mode, 5190MHz



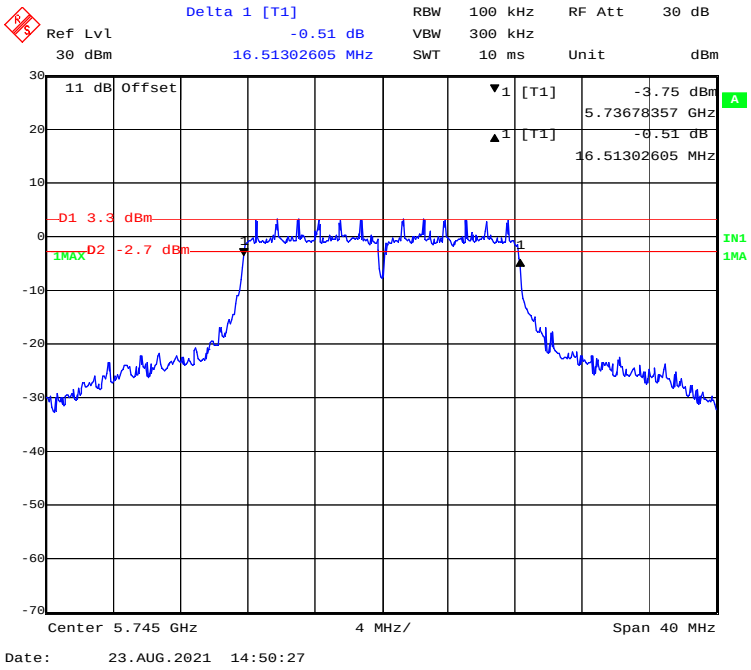
802.11n-HT40 mode, 5230MHz



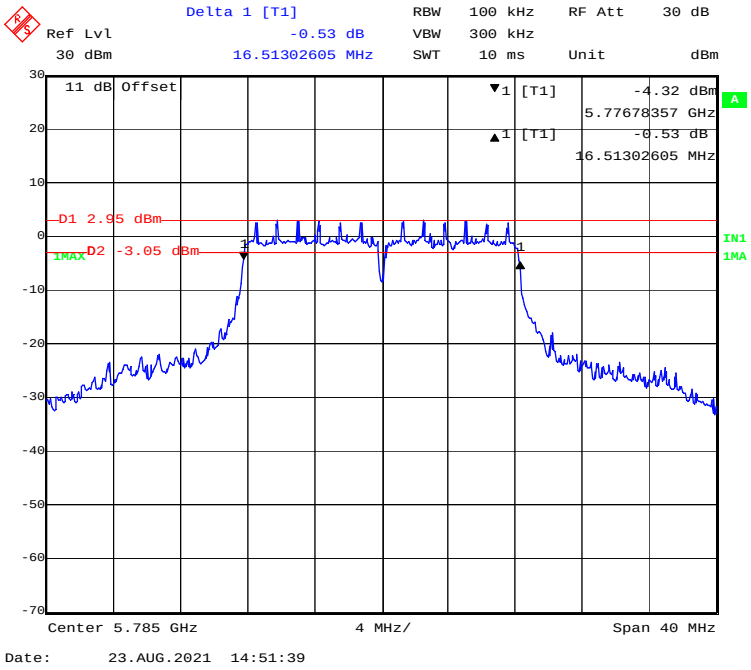
5725-5850 MHz Band

6dB Bandwidth

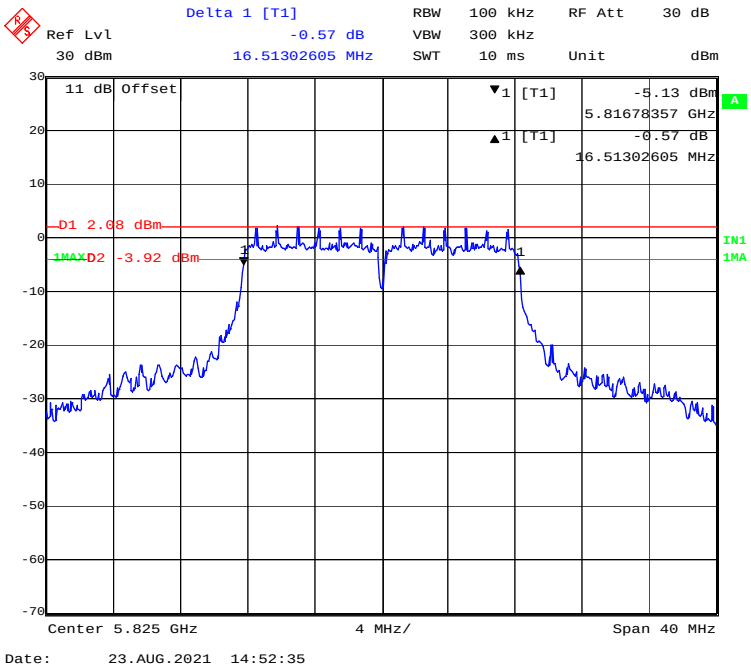
802.11a mode, 5745MHz



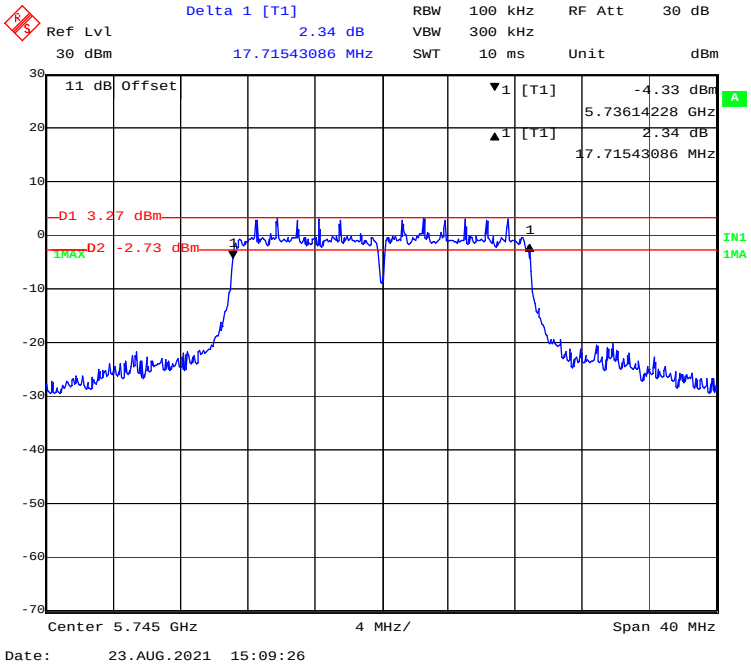
802.11a mode, 5785MHz



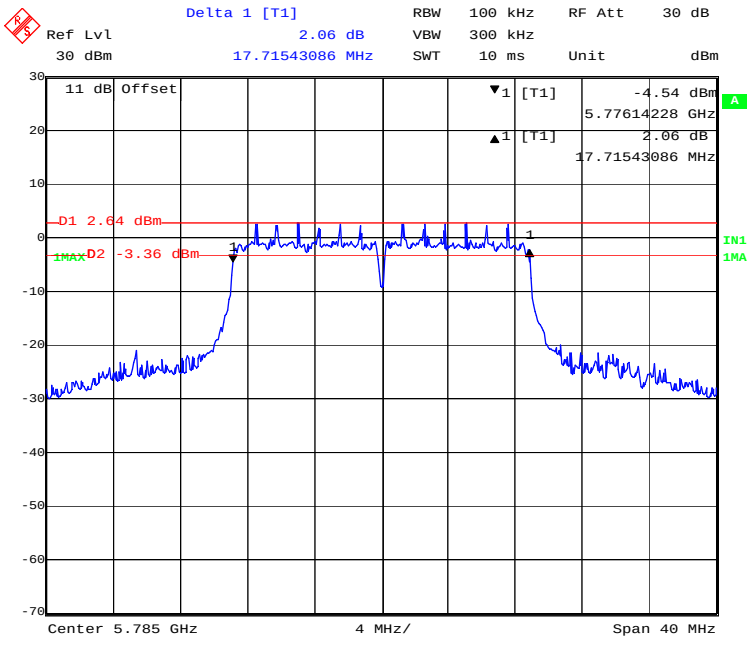
802.11a mode, 5825MHz



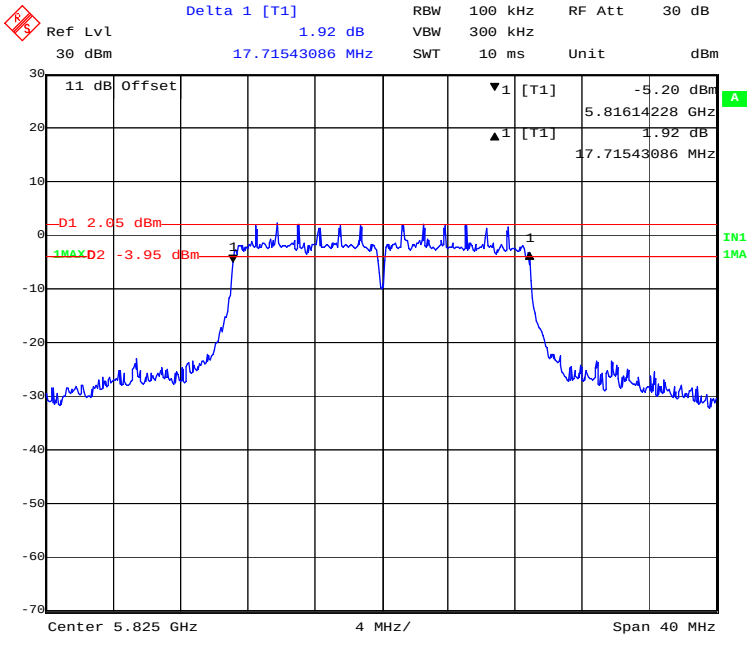
802.11n-HT20 mode, 5745MHz



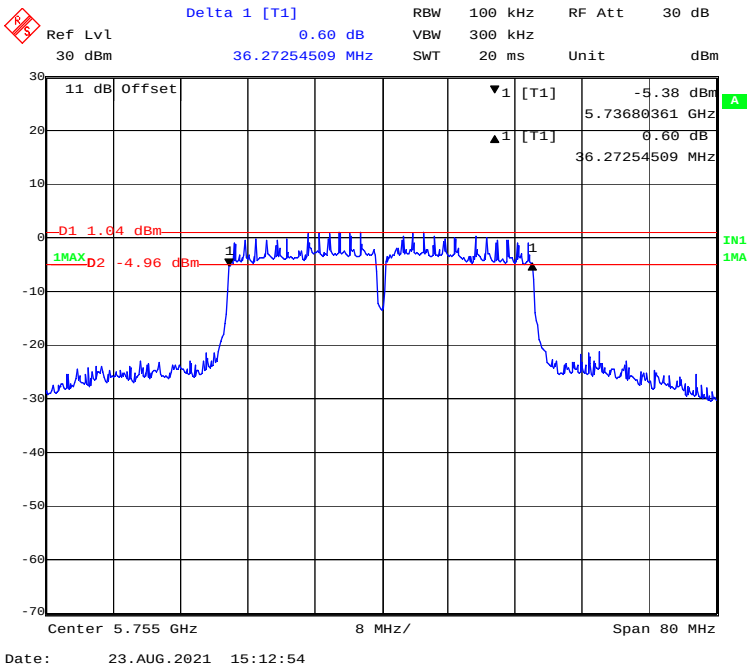
802.11n-HT20 mode, 5785MHz



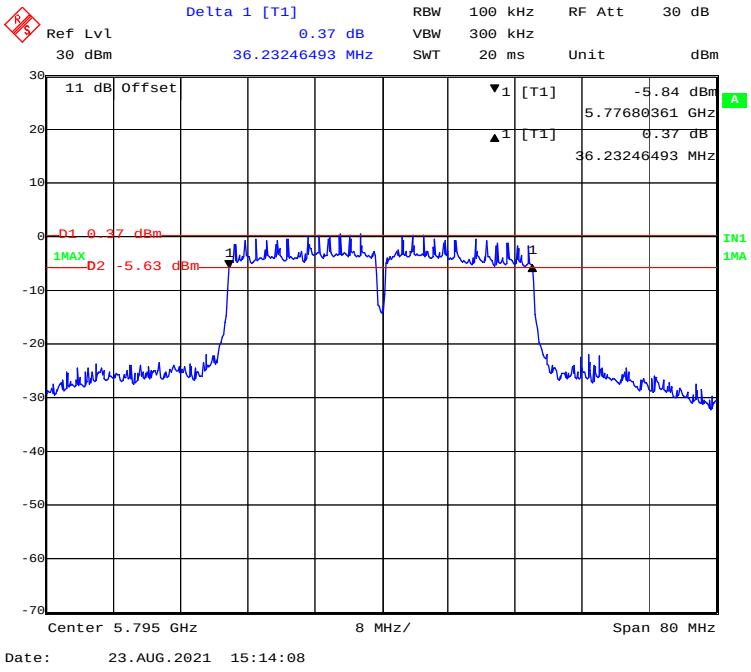
802.11n-HT20 mode, 5825MHz



802.11n-HT40 mode, 5755MHz

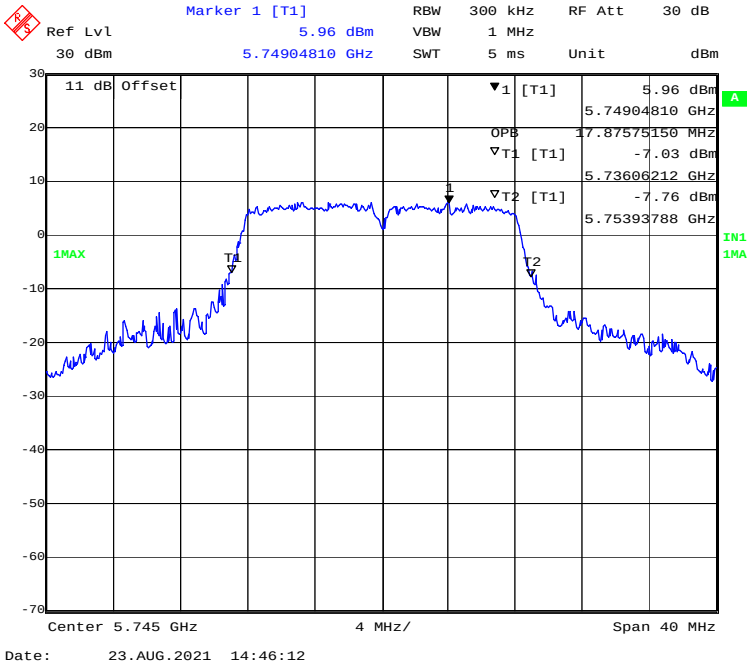


802.11n-HT40 mode, 5795MHz

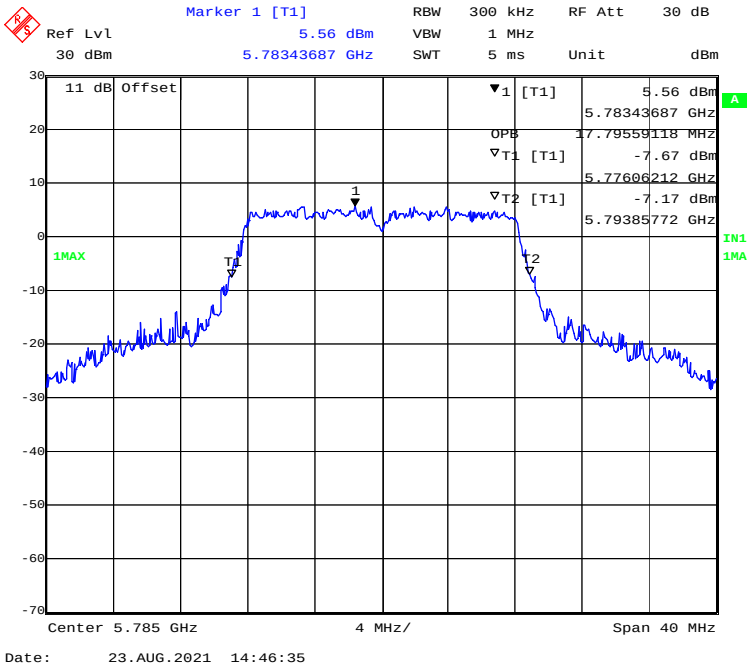


99% Occupied Bandwidth:

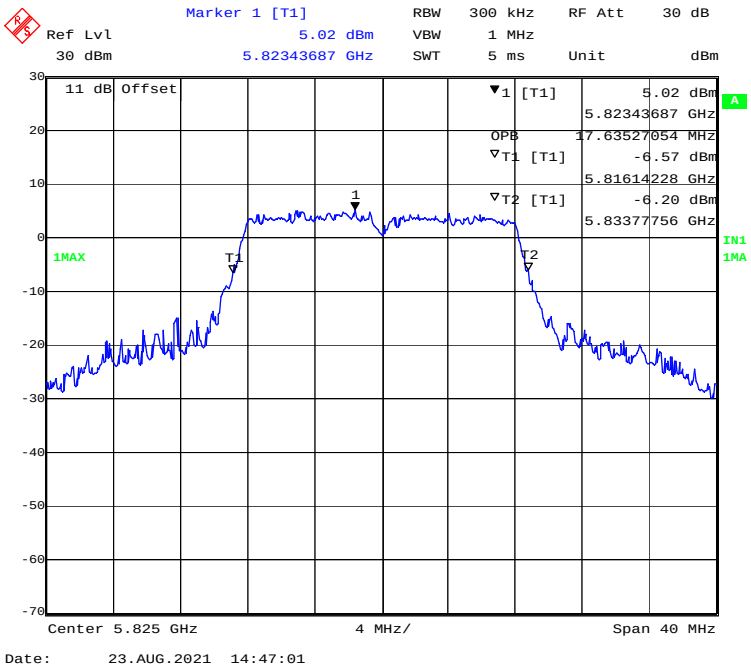
802.11a mode, 5745MHz



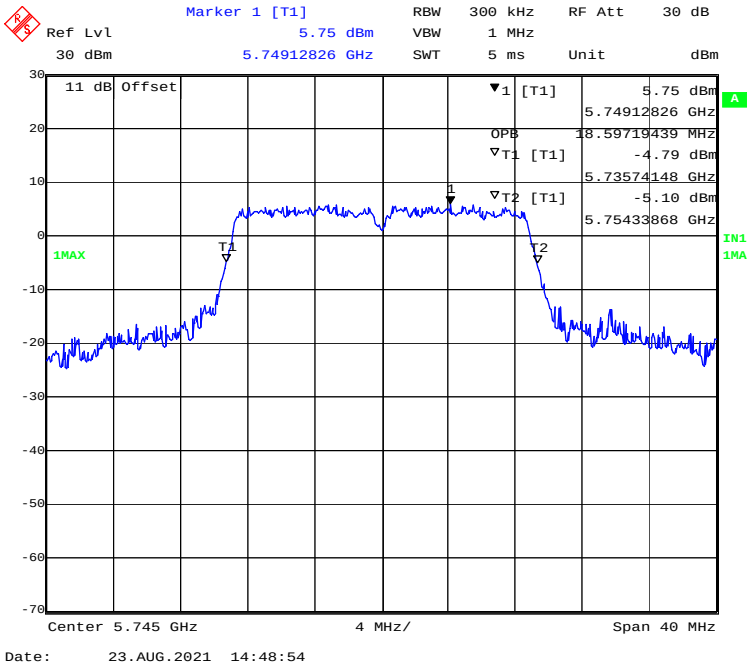
802.11a mode, 5785MHz



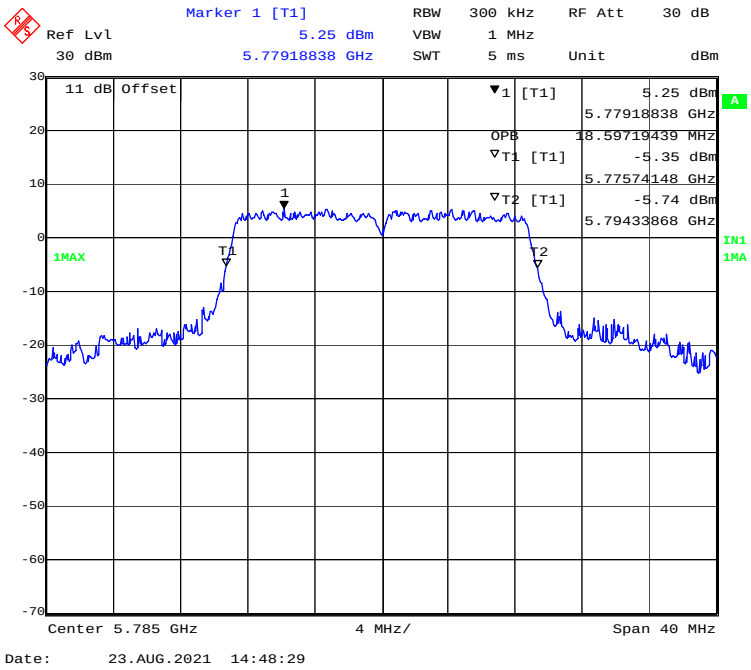
802.11a mode, 5825MHz



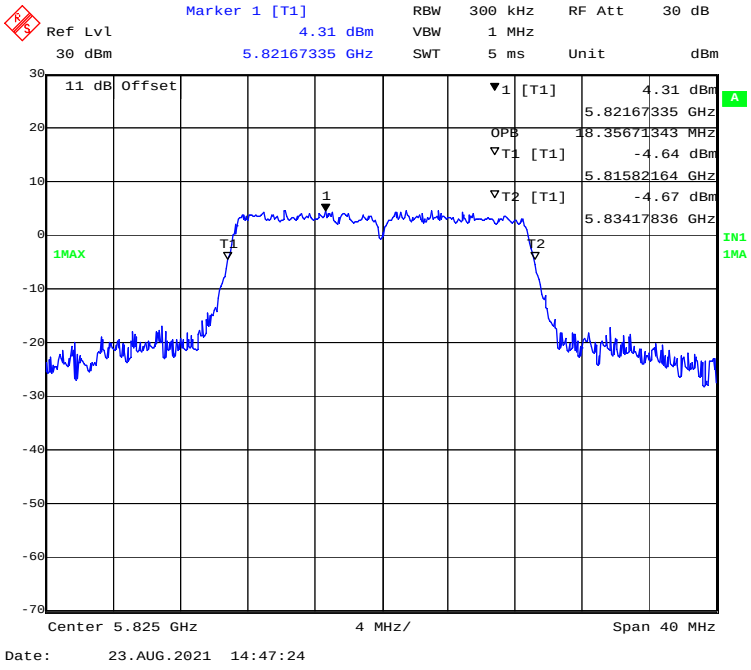
802.11n-HT20 mode, 5745MHz



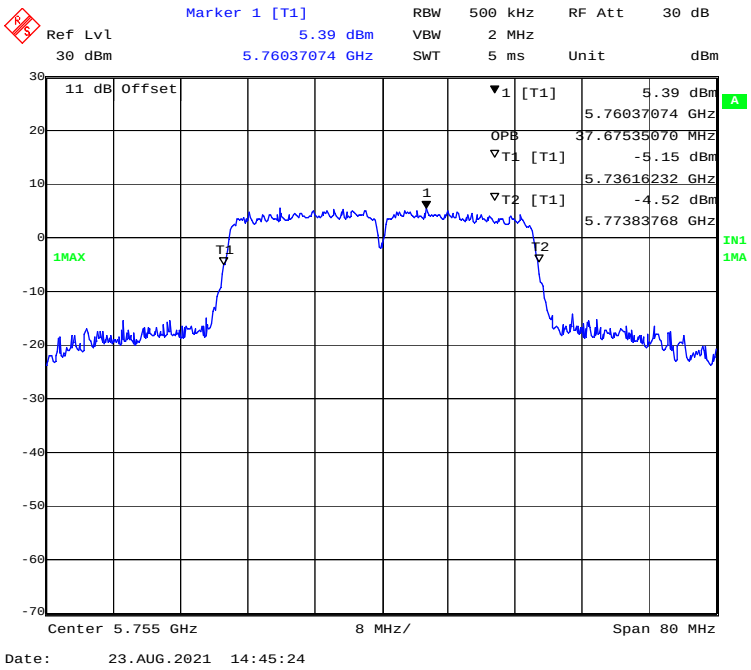
802.11n-HT20 mode, 5785MHz



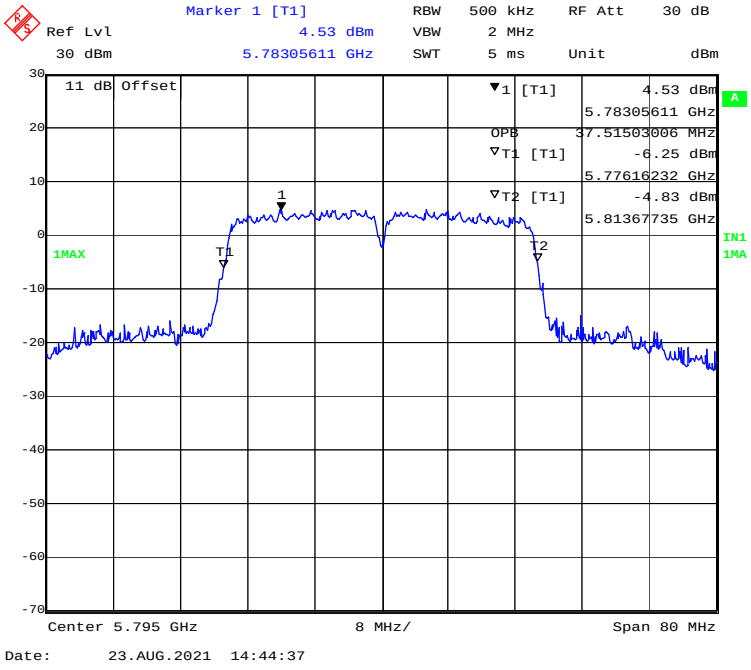
802.11n-HT20 mode, 5825MHz



802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz



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

Applicable Standard

According to §15.407(a)(1)

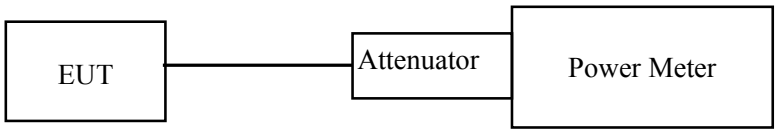
(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	24.1 °C
Relative Humidity:	50%
ATM Pressure:	101.0 kPa

The testing was performed by Tyrone Wang on 2021-08-26.

Test Mode: Transmitting

Test mode	Band	Frequency (MHz)	Average Conducted Output Power (dBm)	Limit (dBm)	Result
802.11a	5150-5250 MHz	5180	13.24	24	PASS
		5200	12.81	24	PASS
		5240	12.43	24	PASS
802.11n-HT20	5150-5250 MHz	5180	13.24	24	PASS
		5200	12.98	24	PASS
		5240	12.63	24	PASS
802.11n-HT40	5150-5250 MHz	5190	8.55	24	PASS
		5230	8.06	24	PASS

Test mode	Band	Frequency (MHz)	Average Conducted Output Power (dBm)	Limit (dBm)	Result
802.11a	5725-5850 MHz	5745	14.40	30	PASS
		5785	13.92	30	PASS
		5825	13.15	30	PASS
802.11n-HT20	5725-5850 MHz	5745	14.62	30	PASS
		5785	14.14	30	PASS
		5825	13.40	30	PASS
802.11n-HT40	5725-5850 MHz	5755	14.84	30	PASS
		5795	14.31	30	PASS

Note: The maximum antenna gain is 4.4dBi.

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

Applicable Standard

According to §15.407(a) (1)

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

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

Test Data

Environmental Conditions

Temperature:	24.1-25 °C
Relative Humidity:	49-50%
ATM Pressure:	100.8-101.0kPa

The testing was performed by Tyrone Wang on 2021-08-23 to 2021-08-26.

Test Mode: Transmitting

5150MHz-5250MHz:

Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	Low	5180	2.90	11	PASS
	Middle	5200	2.59	11	PASS
	High	5240	2.31	11	PASS
802.11n-HT20	Low	5180	2.54	11	PASS
	Middle	5200	2.50	11	PASS
	High	5240	2.12	11	PASS
802.11n-HT40	Low	5190	-5.08	11	PASS
	High	5230	-5.47	11	PASS

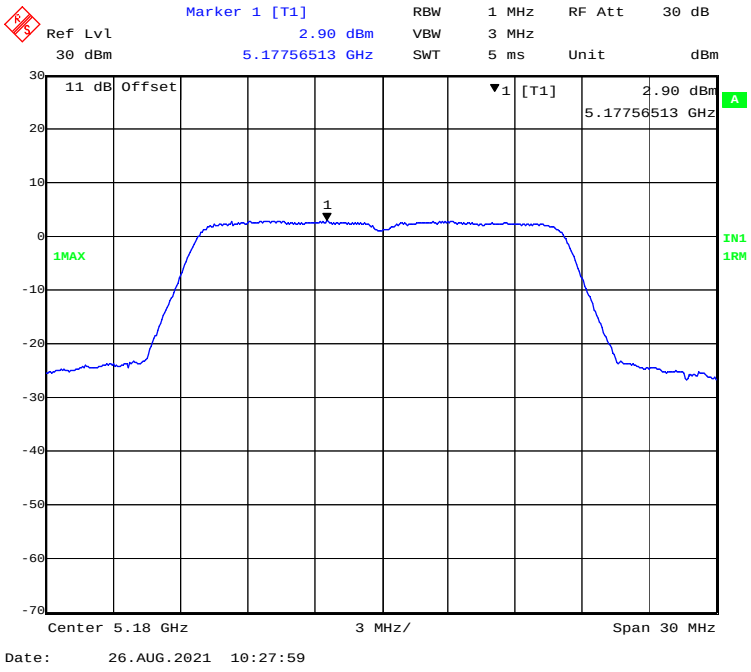
5725MHz-5850MHz:

Mode	Channel	Frequency (MHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11a	Low	5745	3.81	30	PASS
	Middle	5785	3.46	30	PASS
	High	5825	2.46	30	PASS
802.11n-HT20	Low	5745	3.30	30	PASS
	Middle	5785	3.13	30	PASS
	High	5825	2.46	30	PASS
802.11n-HT40	Low	5755	1.56	30	PASS
	High	5795	0.77	30	PASS

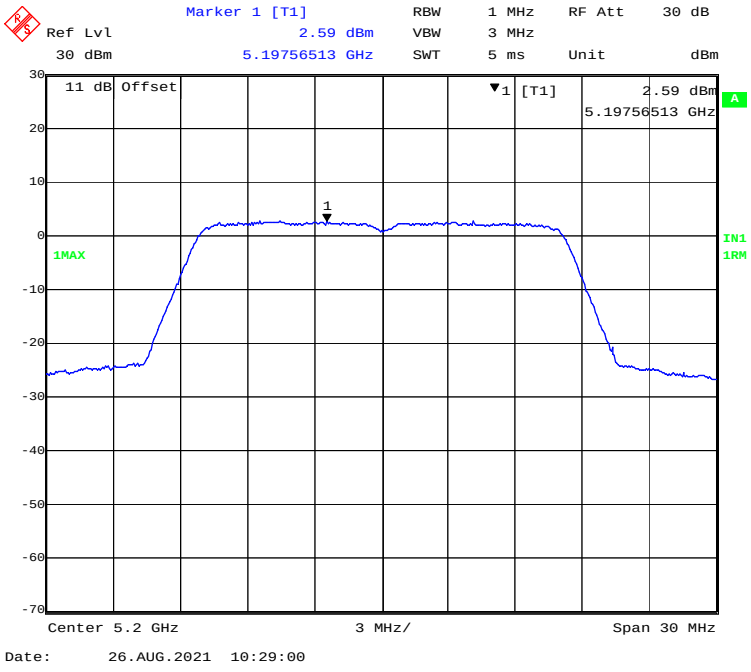
Note: The maximum antenna gain is 4.4dBi.

5150MHz-5250MHz Band:

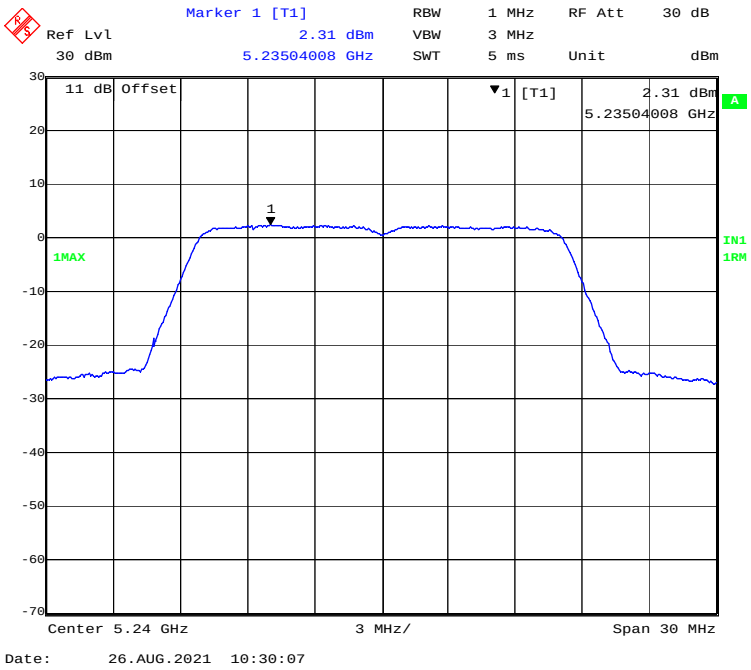
802.11a mode, Power spectral density-5180MHz



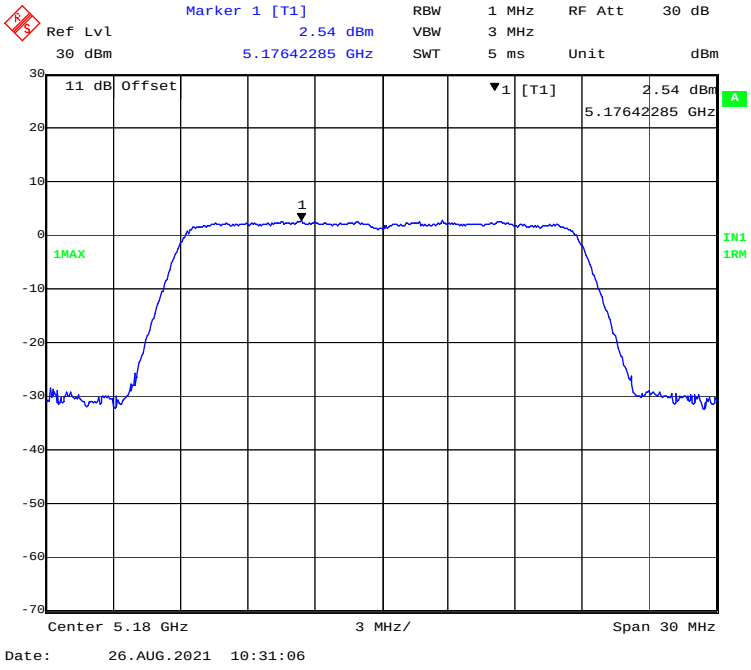
802.11a mode, Power spectral density-5200MHz



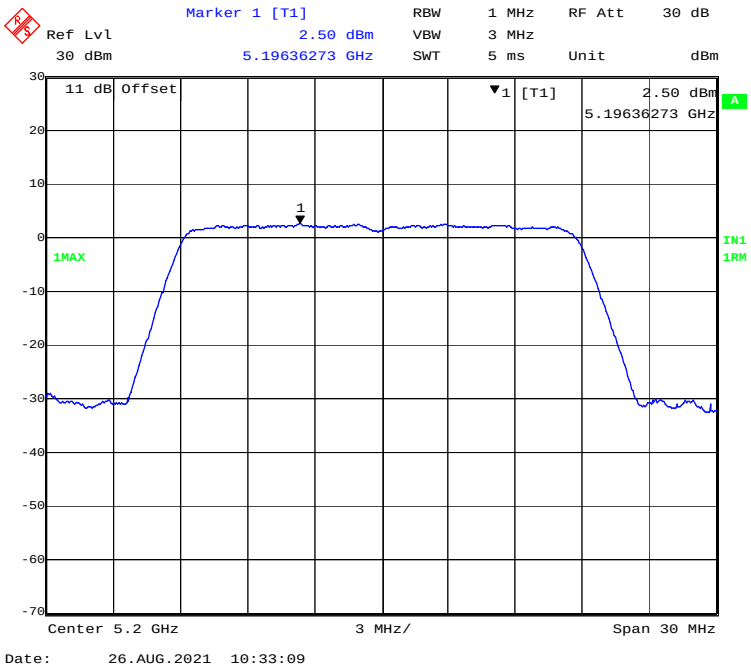
802.11a mode, Power spectral density-5240MHz



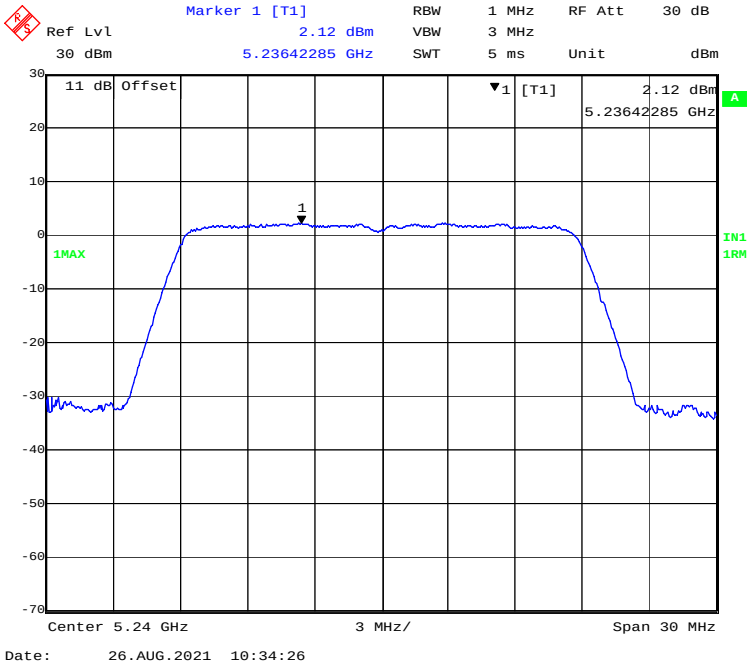
802.11n-HT20 mode, Power spectral density-5180MHz



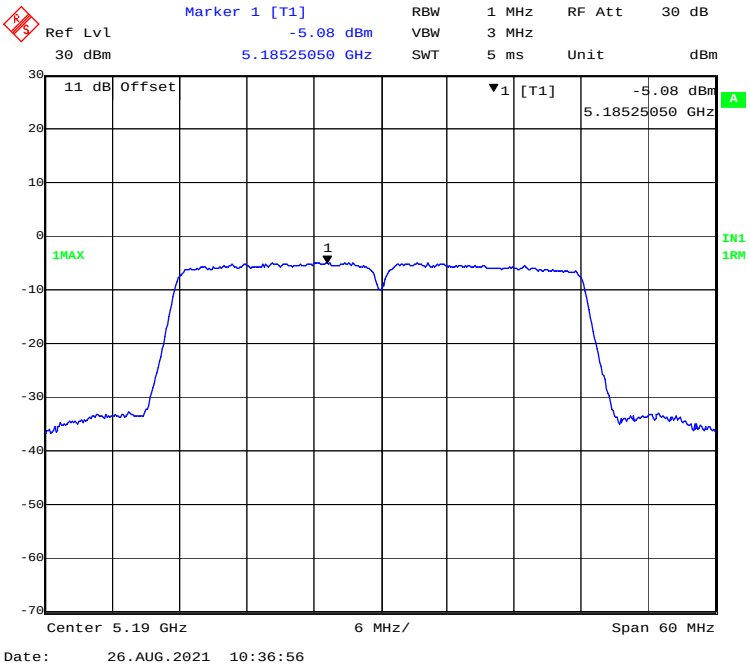
802.11n-HT20 mode, Power spectral density-5200MHz



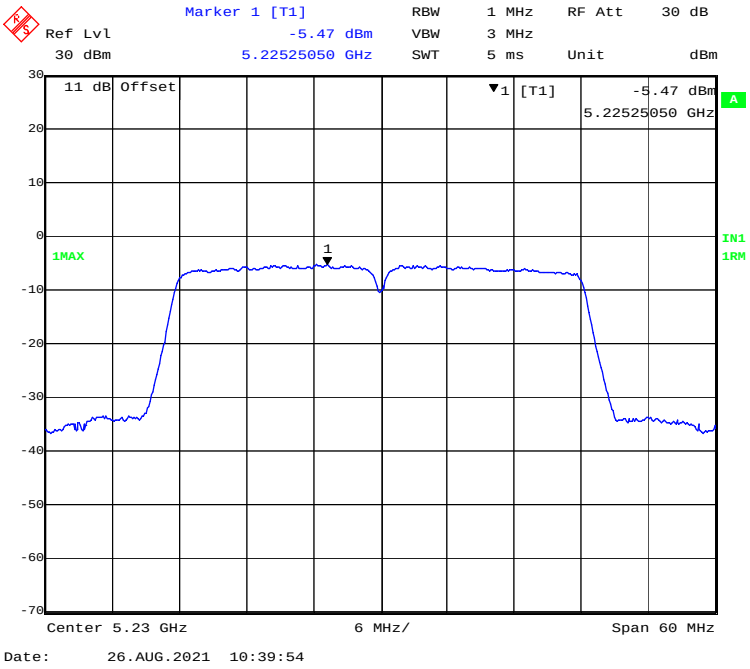
802.11n-HT20 mode, Power spectral density-5240MHz



802.11n-HT40 mode, Power spectral density-5190MHz

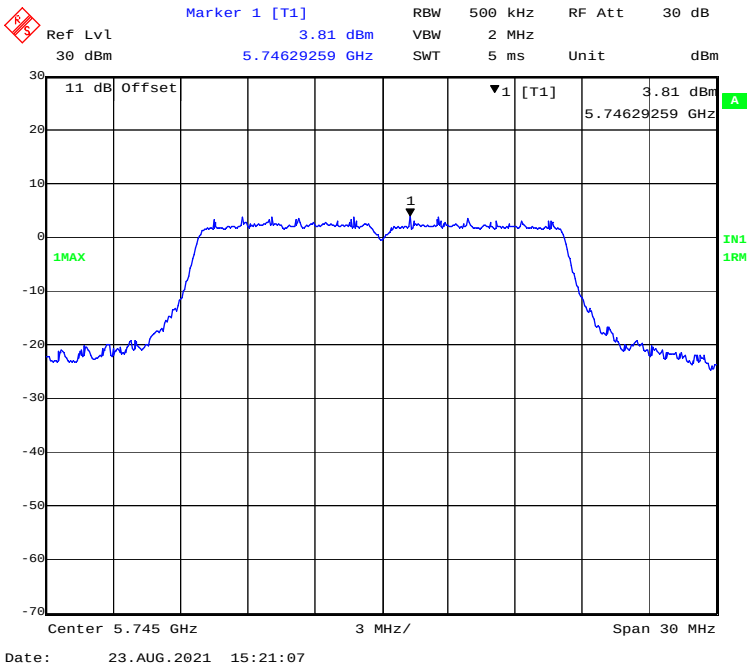


802.11n-HT40 mode, Power spectral density-5230MHz

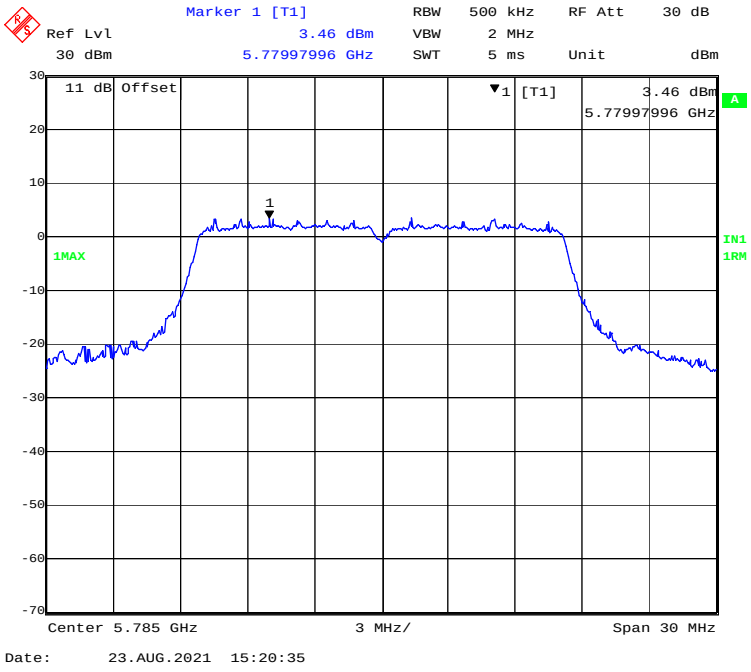


5725MHz-5850 MHz Band:

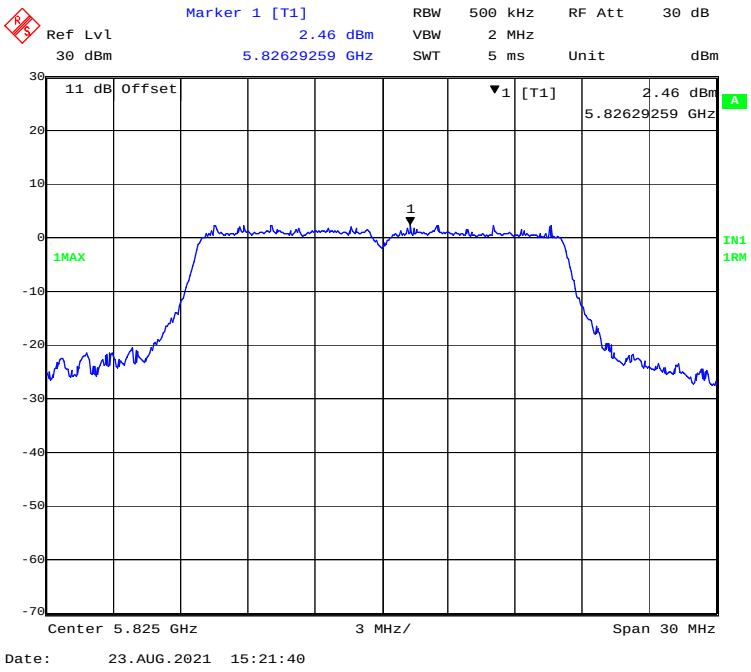
802.11a mode, Power spectral density-5745MHz



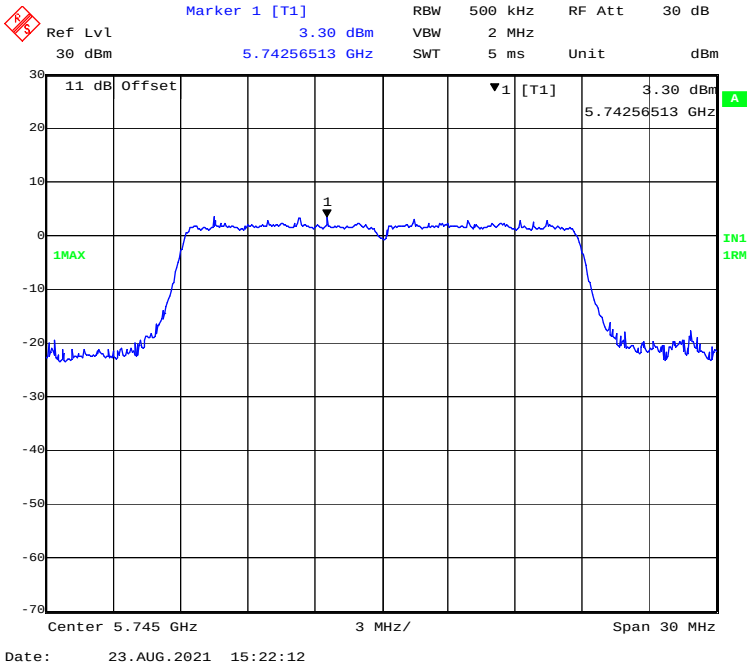
802.11a mode, Power spectral density-5785MHz



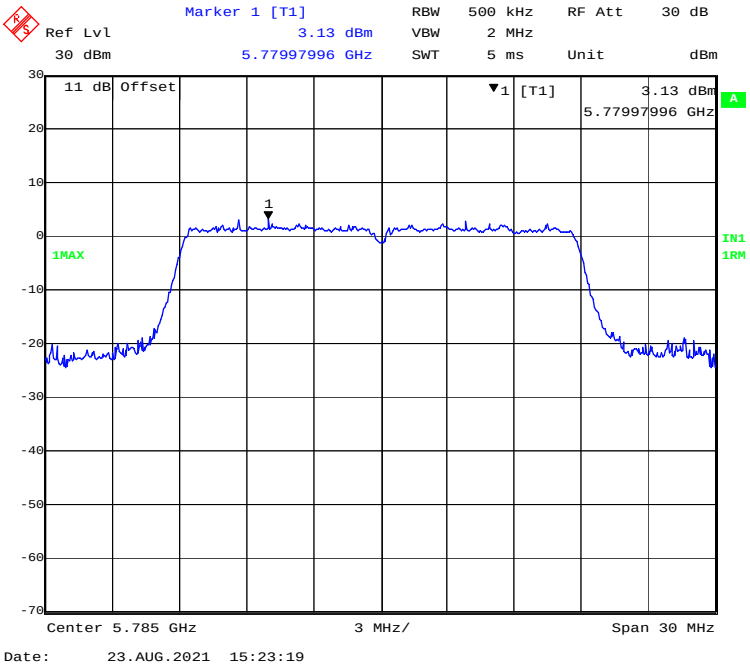
802.11a mode, Power spectral density-5825MHz



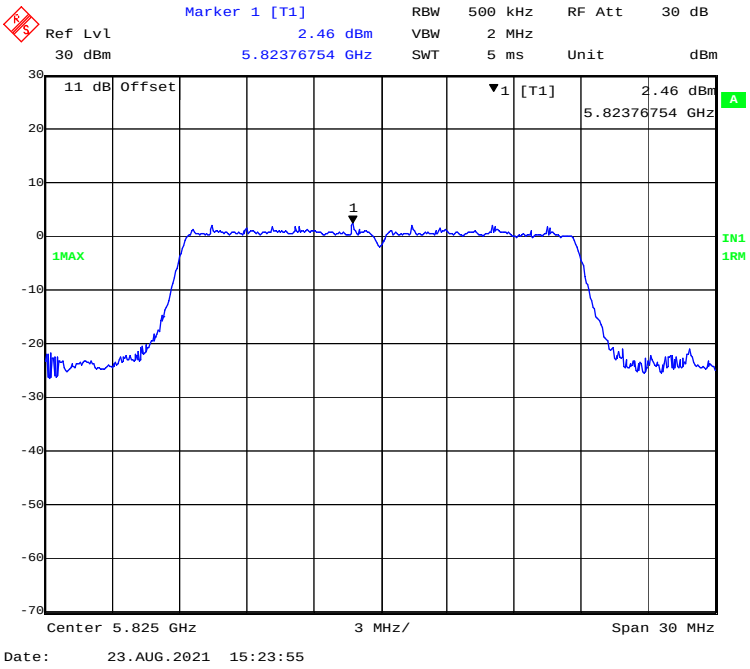
802.11n-HT20 mode, Power spectral density-5745MHz



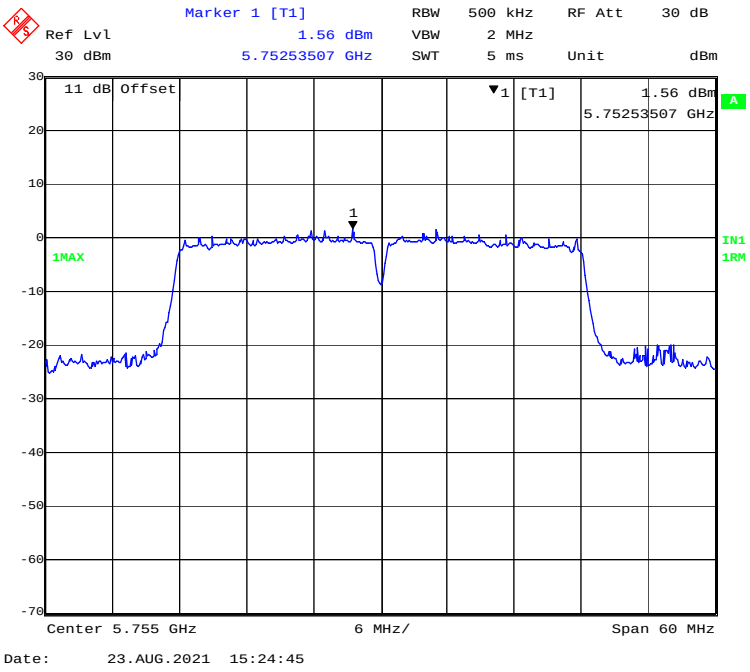
802.11n-HT20 mode, Power spectral density-5785MHz



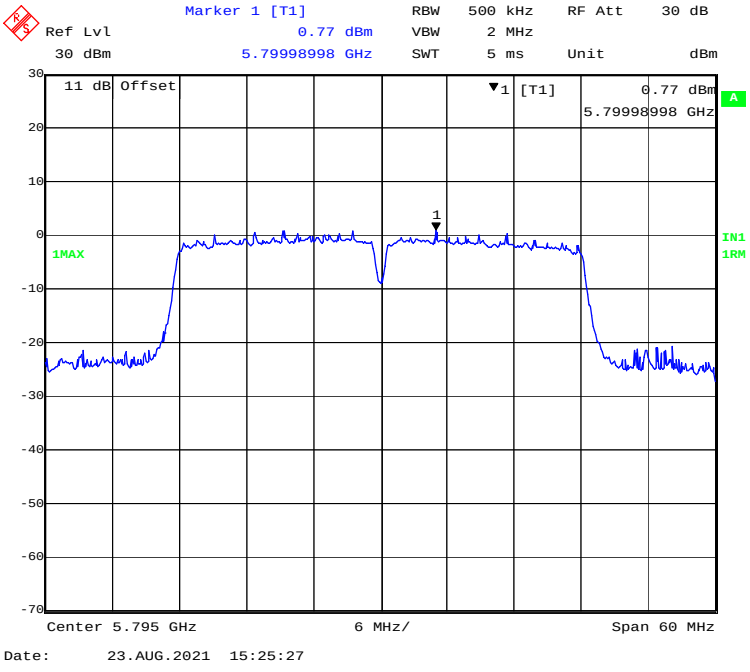
802.11n-HT20 mode, Power spectral density-5825MHz



802.11n-HT40 mode, Power spectral density-5755MHz



802.11n-HT40 mode, Power spectral density-5795MHz



Declarations

1: BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

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

3: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

4: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

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