TESTING LABORATORY
CERTIFICATE#4323.01

FCC PART 15.407

TEST REPORT

For

Wallys Communications Technologies Co.,Ltd

Room 2723, Le Jia building, Jia Rui Xiang No.8, Suzhou Industrial Park, Suzhou, P.R 215000
China

FCC ID: 2AG7VDR4029

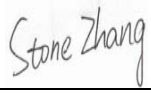
Report Type: Original Report	**Product Type:** Wireless Router Module	
Test Engineer:	Stone Zhang	
Report Number:	RSHA200217004-00B	
Report Date:	2020-06-15	
Reviewed By:	Oscar Ye EMC Manager	
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road,Kunshan,Jiangsu province,China Tel: +86-0512-86175000 Fax: +86-0512-88934268 www.baclcorp.com.cn	

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Wallys Communications Technologies Co.,Ltd
Tested Model:	DR4029
Series Model:	DR4019
Model Difference:	Model name
Product Type	Wireless Router Module
Power Supply	DC 24V
RF Function	5G Wi-Fi
Operating Band/Frequency:	Band 1:5150~5250MHz, Band 4: 5725~5850MHz
Channel Number:	Band 1: 7, Band 4: 8
Channel Separation:	802.11a/802.11ac20/n20: 20MHz; 802.11n40/802.11ac40:40 MHz, 802.11ac80: 80 MHz
Modulation Type	DSSS,OFDM
Antenna Type:	Antenna 1: Omni Antenna; Antenna 2: Directional Antenna; Antenna 3: Directional Antenna
Maximum Antenna Gain:	Antenna1 gain: 4.0dBi; Antenna2 gain: 15.0 dBi; Antenna3 gain: 18.0 dBi

**All measurement and test data in this report was gathered from production sample serial number: 20200217004. (Assigned by the BACL. The EUT supplied by the applicant was received on 2020-02-17)*

Objective

This type approval report is prepared on behalf of *Wallys Communications Technologies 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.

Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS submissions with FCC ID: 2AG7VDR4029.

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%

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

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (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.

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

802.11a/802.11ac20/n20 mode Channel 36, 40, 48 were tested.
802.11n40/802.11ac40 mode Channel 38, 46 were tested.
802.11ac80 mode Channel 42 was tested

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

For **5725~5850** MHz band,

802.11a/802.11ac20/n20 mode Channel 149, 157, 165 were tested.
802.11n40/802.11ac40 mode Channel 151, 159 were tested.
802.11ac80 mode Channel 155 was tested.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	159	5795
151	5755	161	5805
153	5765	165	5825
155	5775	/	/
157	5785	/	/

Note:

802.11a supports SISO, 802.11ac20/n20 and 802.11n40/802.11ac40/80 support SISO and MIMO mode. For Radiated Emission, according to pretest, the worst case is 802.11ac20/n20 and 802.11n40/802.11ac40/80 MIMO mode. 802.11n20/40 MIMO mode test data were recorded in the report.

For Conducted Test:

802.11a: each transmit Chains were tested
802.11ac: each transmit Chains were tested
802.11n: each transmit Chains were tested

For Radiated Test:

For 802.11a: SISO for each transmit Chain
For 802.11ac: MIMO for two transmit Chains
For 802.11n: MIMO for two transmit Chains

EUT Exercise Software

RF test tool: QRCT

The worst case was performed under:

5150MHz-5250MHz Band:

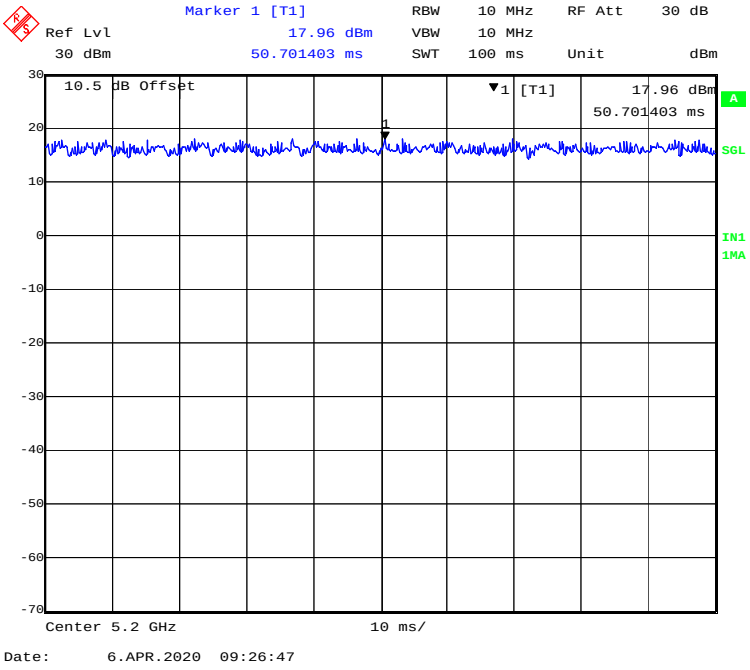
Mode	Data rate	Channel	Power Setting	
			Chain 0	Chain 1
802.11a	6 Mbps	5180	12	12
		5200		
		5240		
802.11ac20	MCS0	5180	9	9
		5200		
		5240		
802.11n-HT20	MCS0	5180	9	9
		5200		
		5240		
802.11ac40	MCS0	5190	9	9
		5230		
802.11n-HT40	MCS0	5190	9	9
		5230		
802.11ac80	MCS0	5210	9	9

5725MHz-5850MHz Band:

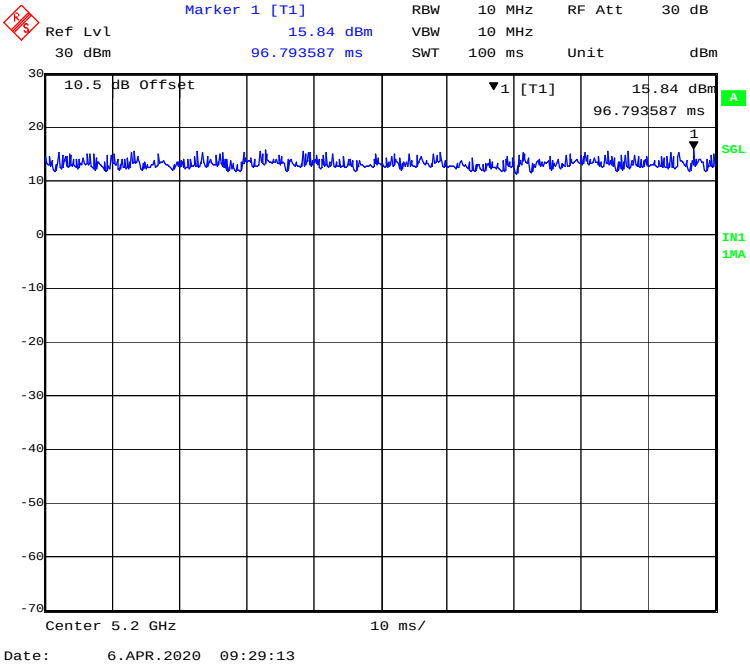
Mode	Data rate	Channel	Power Setting	
			Chain 0	Chain 1
802.11a	6 Mbps	5745	13	13
		5785		
		5825		
802.11ac20	MCS0	5745	10	10
		5785		
		5825		
802.11n-HT20	MCS0	5745	10	10
		5785		
		5825		
802.11ac40	MCS0	5755	10	10
		5795		
802.11n-HT40	MCS0	5755	10	10
		5795		
802.11ac80	MCS0	5775	10	10

Duty Cycle
5150MHz-5250MHz Band-Chain0:

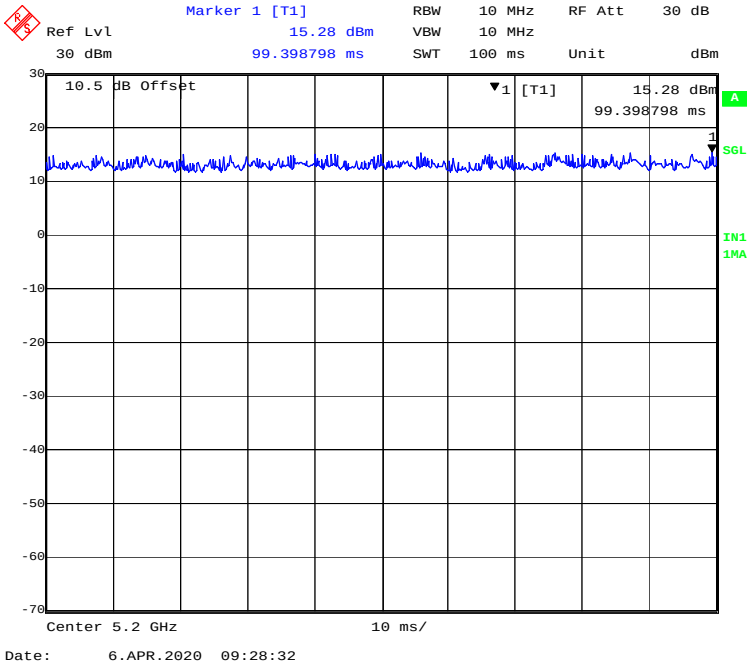
802.11a mode



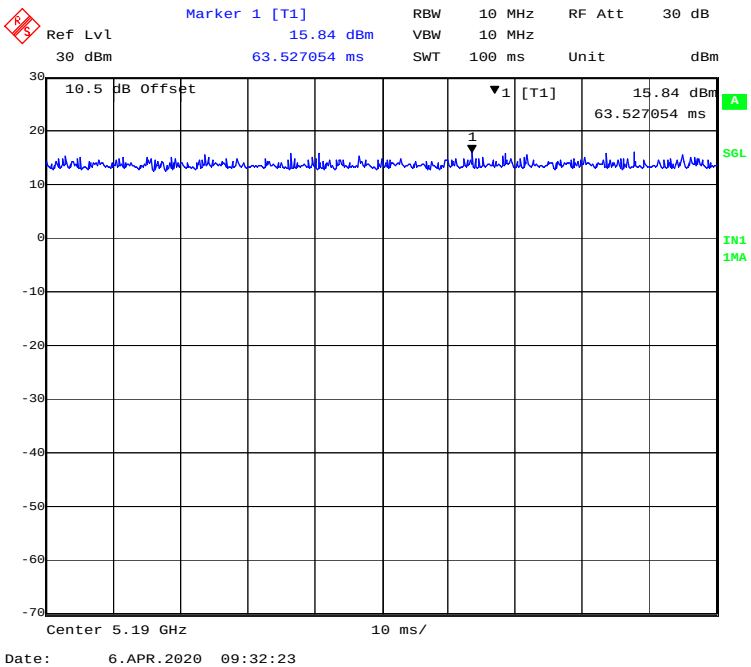
802.11ac20 mode



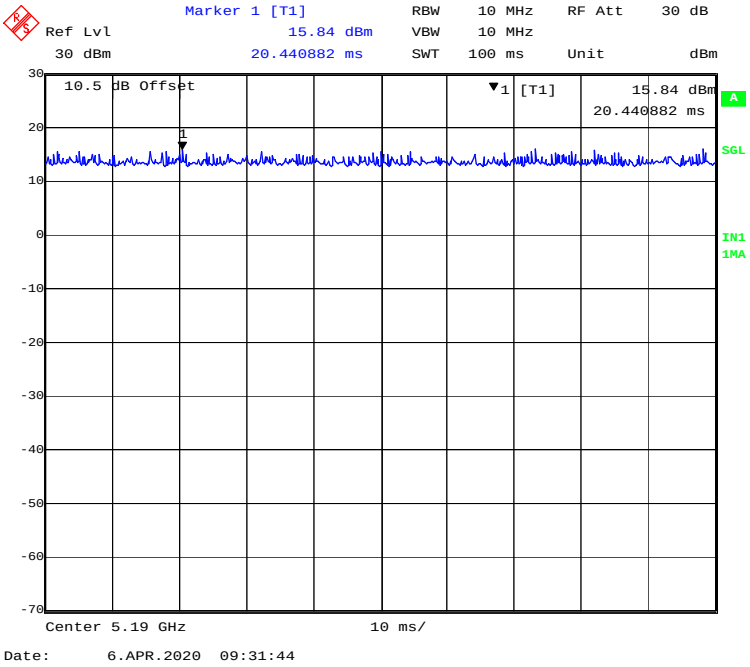
802.11n-HT20 mode



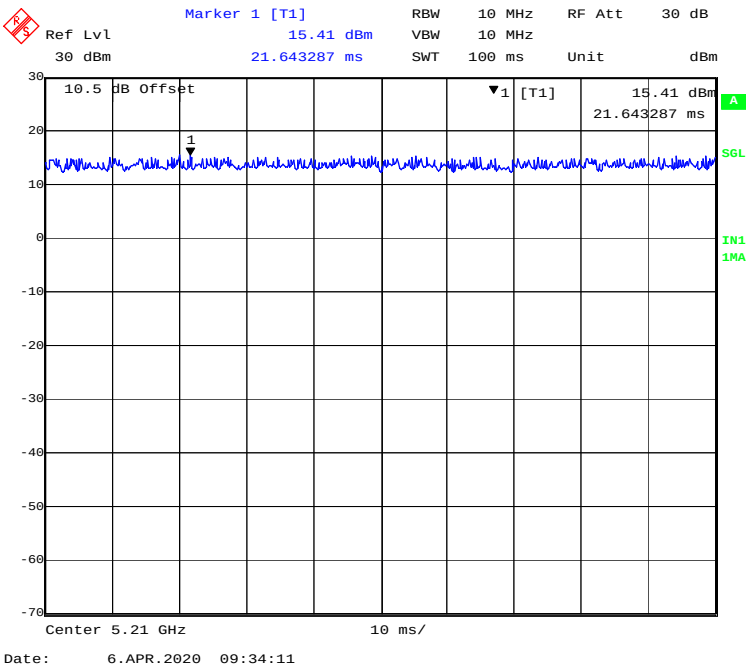
802.11 ac40 mode



802.11n-HT40 mode

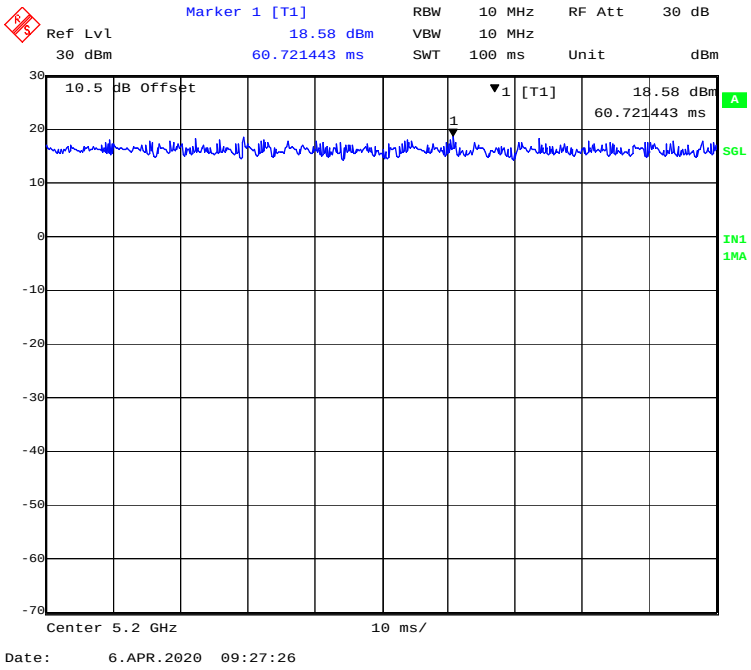


802.11 ac80 mode

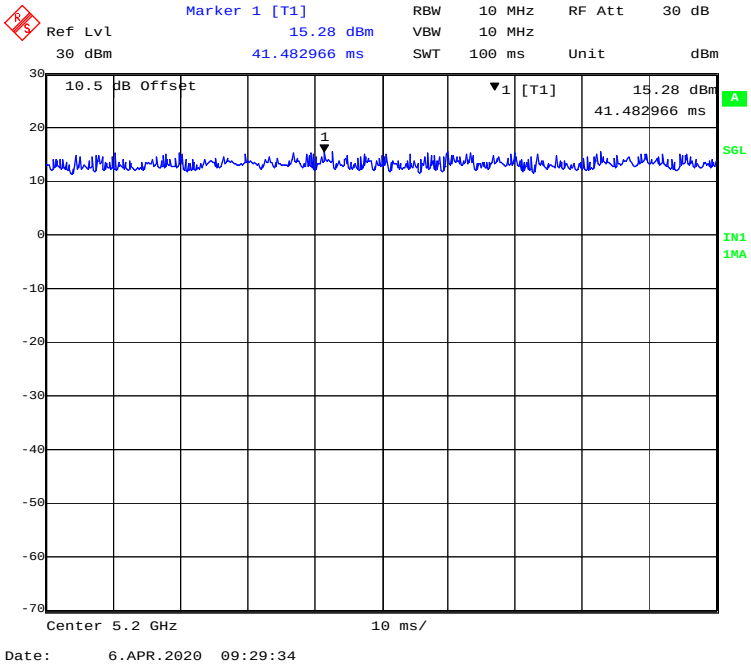


5150MHz-5250MHz Band-Chain1:

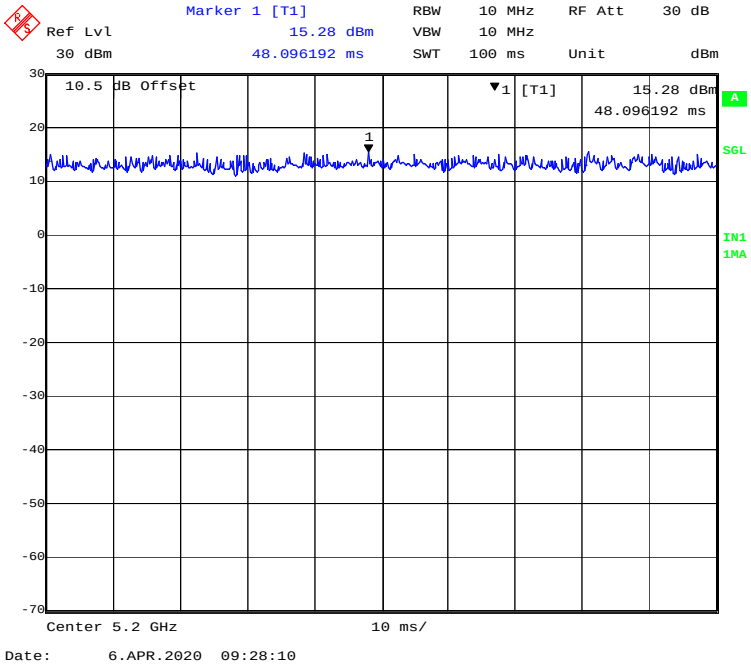
802.11a mode



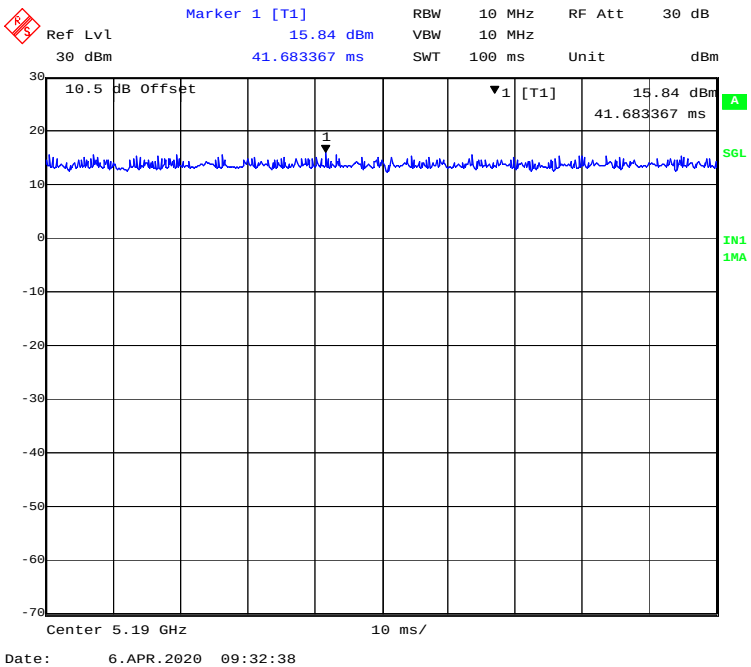
802.11ac20 mode



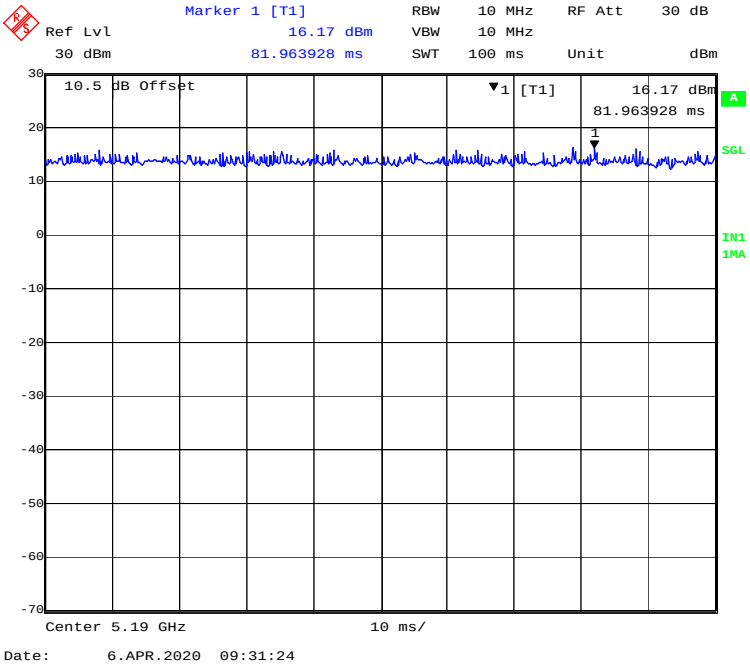
802.11n-HT20 mode



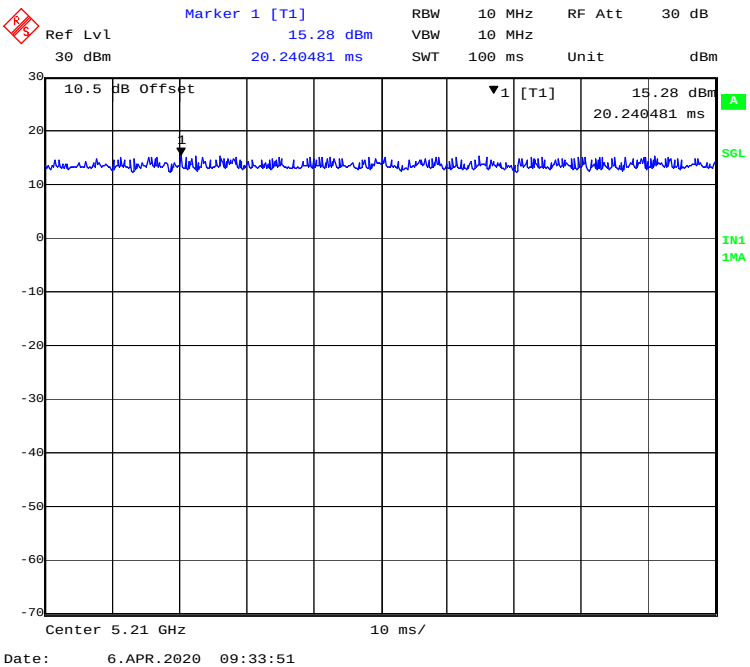
802.11 ac40 mode



802.11n-HT40 mode

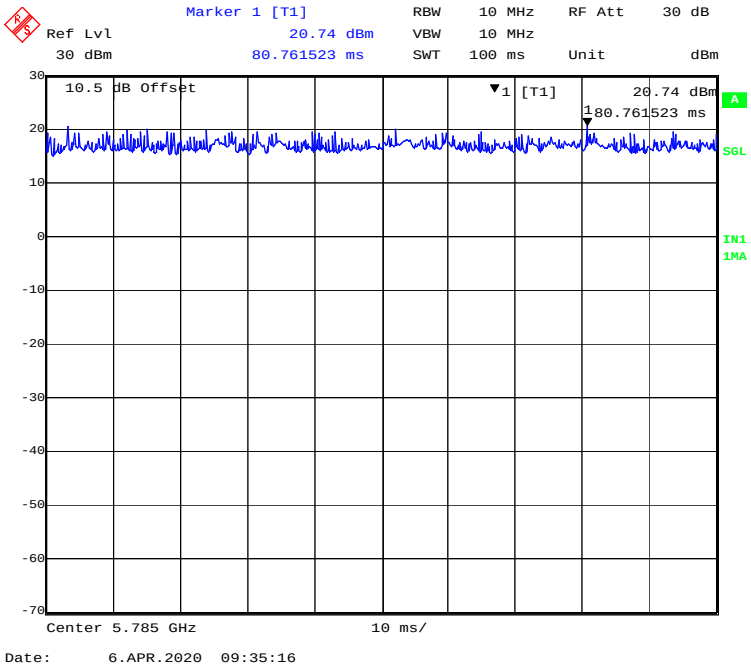


802.11 ac80 mode

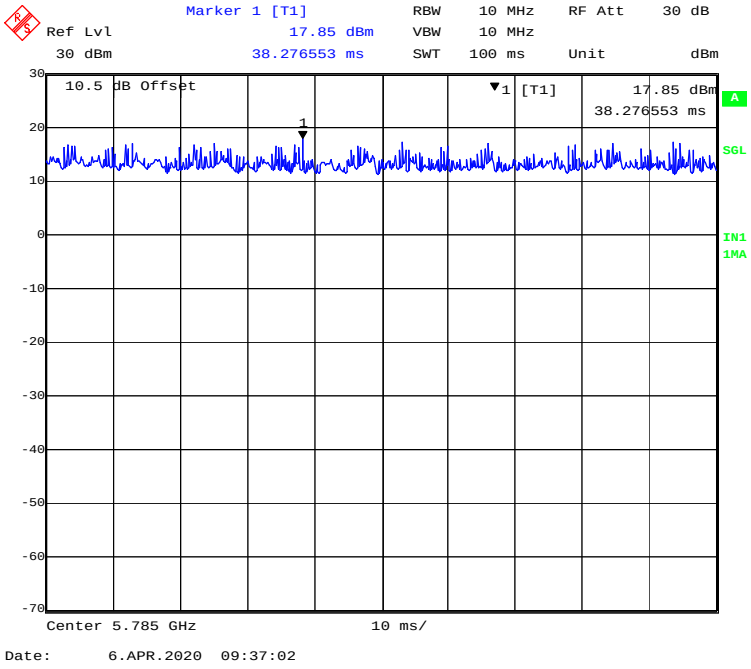


5725MHz-5850MHz Band-Chain0:

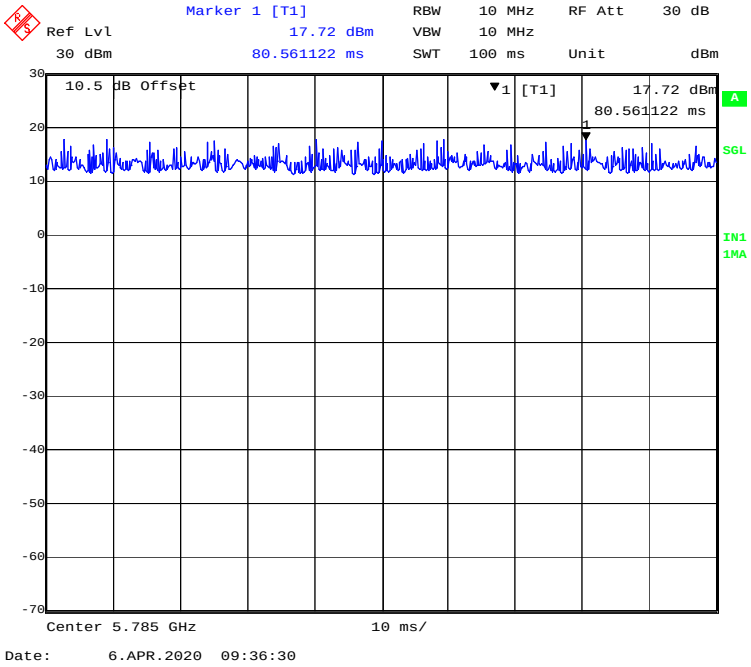
802.11a mode



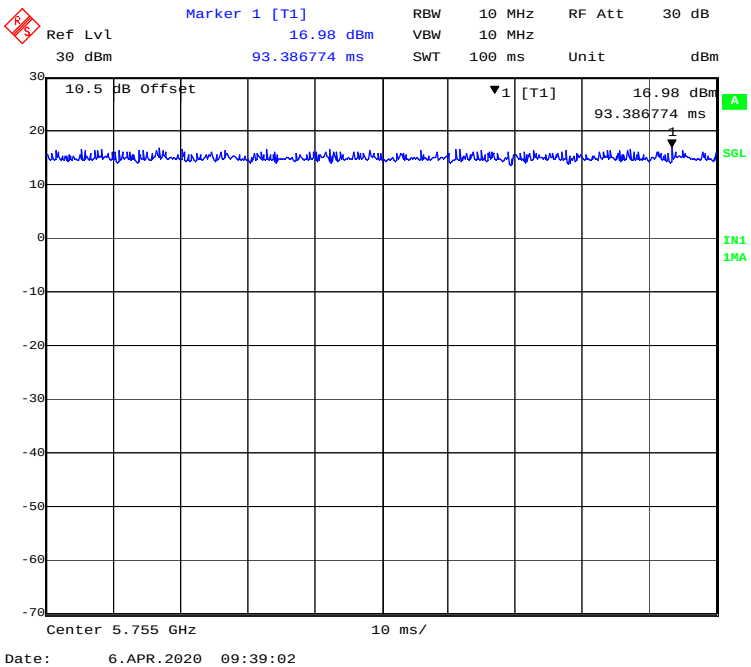
802.11ac20 mode



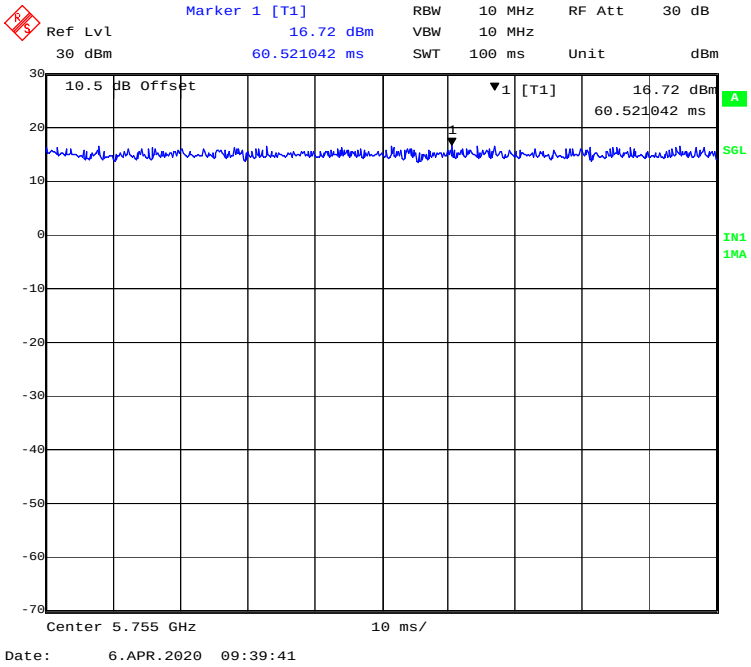
802.11n-HT20 mode



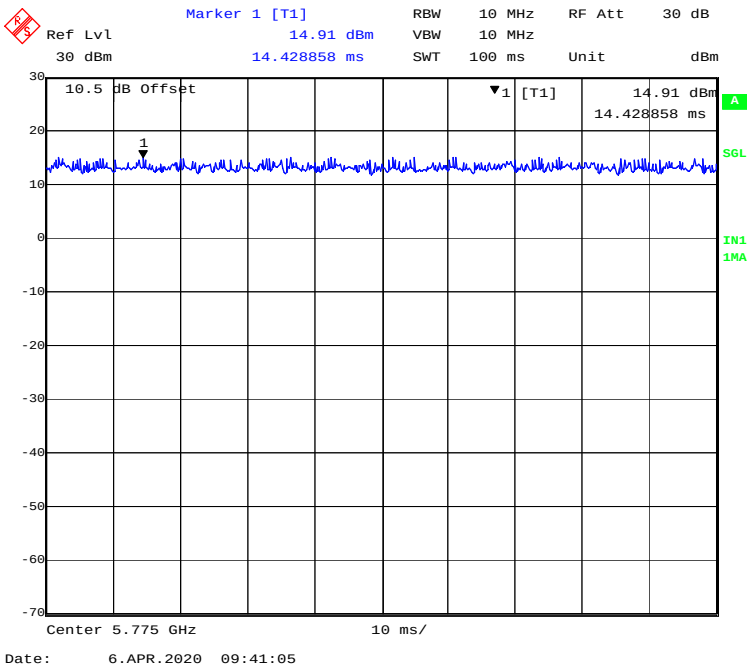
802.11 ac40 mode



802.11n-HT40 mode

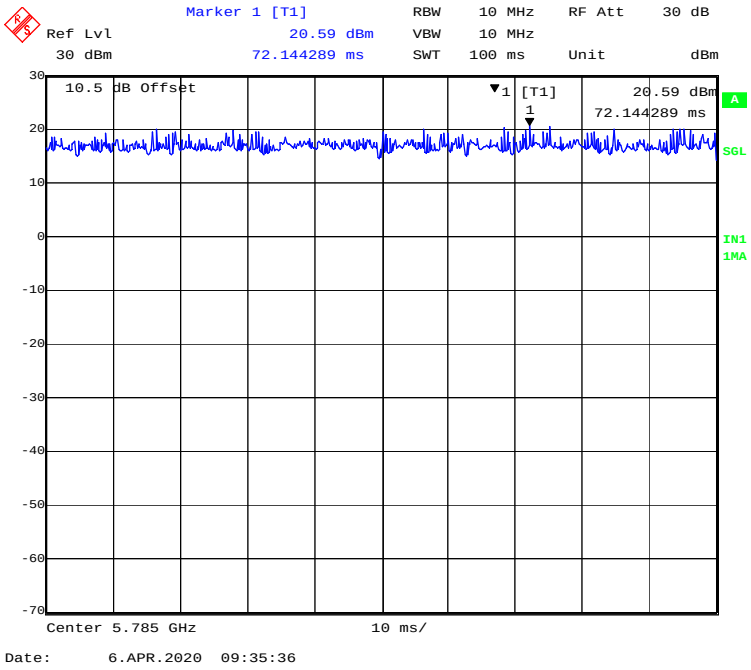


802.11n- ac80 mode

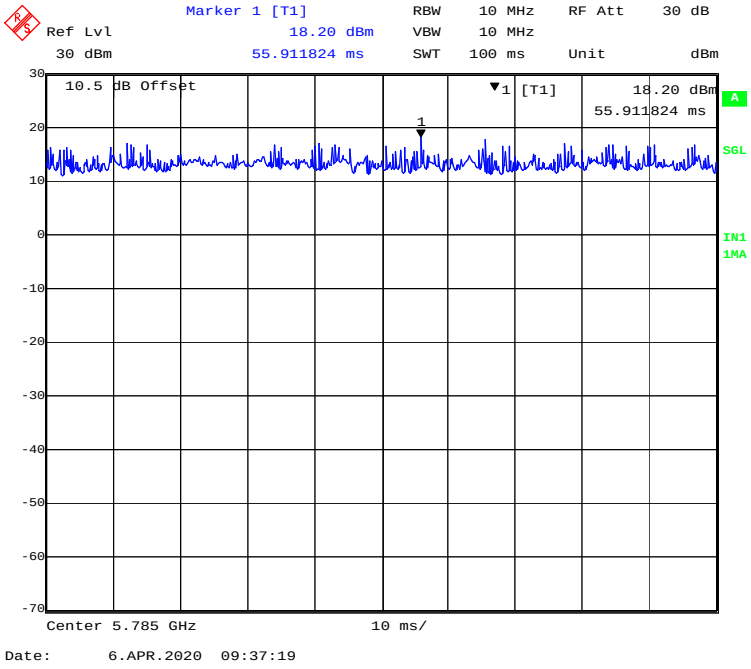


5725MHz-5850MHz Band-Chain1:

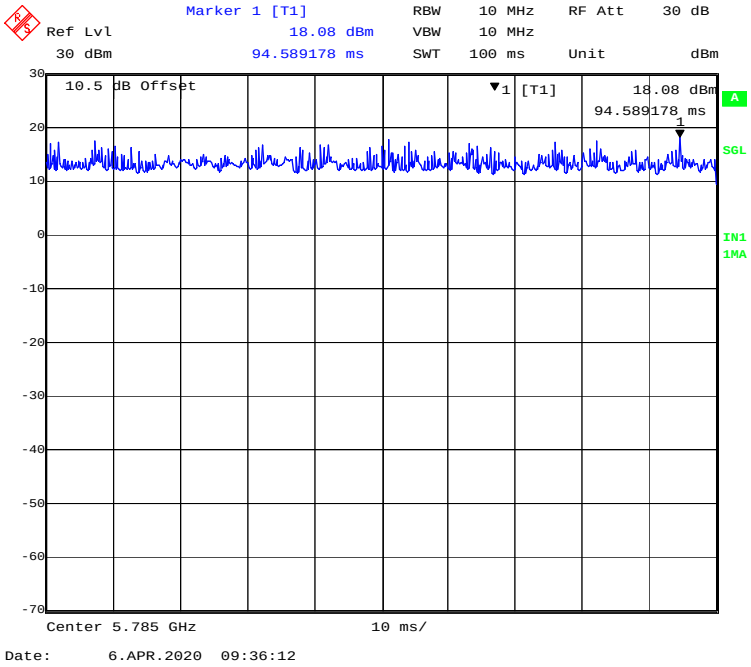
802.11a mode



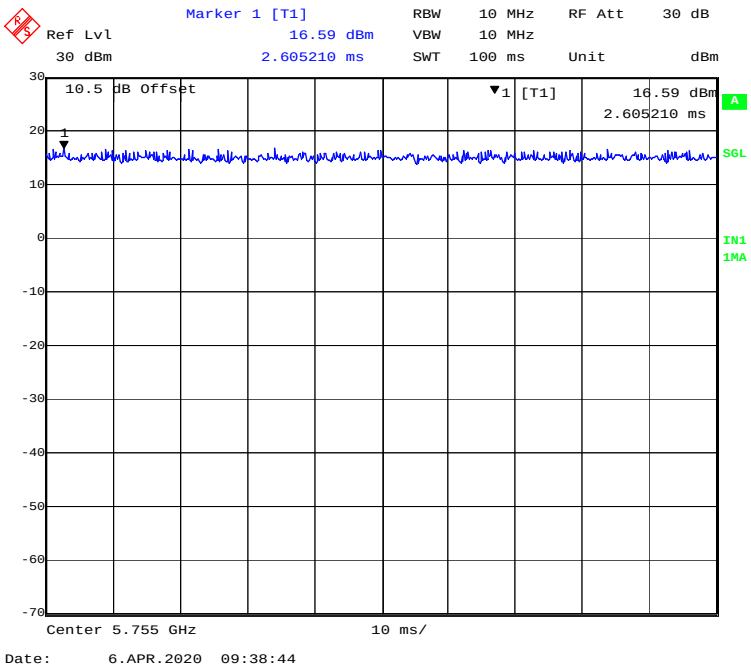
802.11ac20 mode



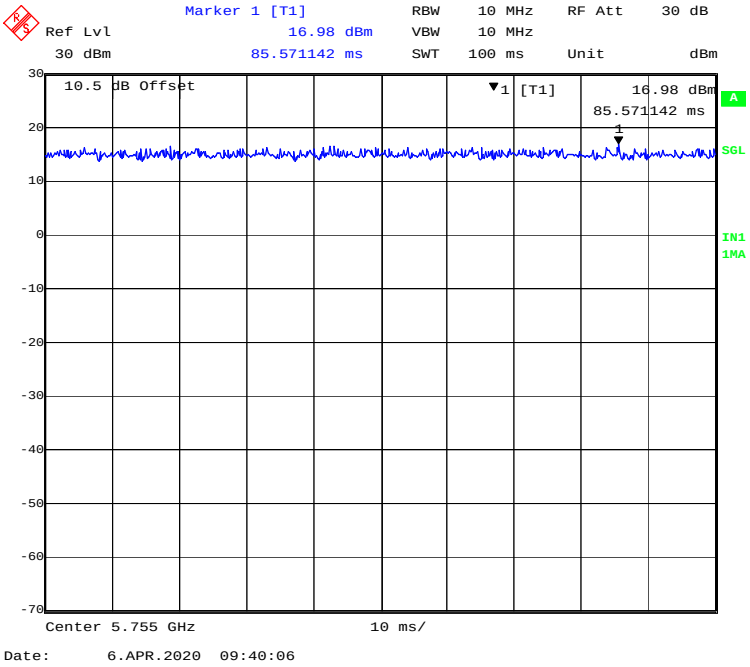
802.11n-HT20 mode



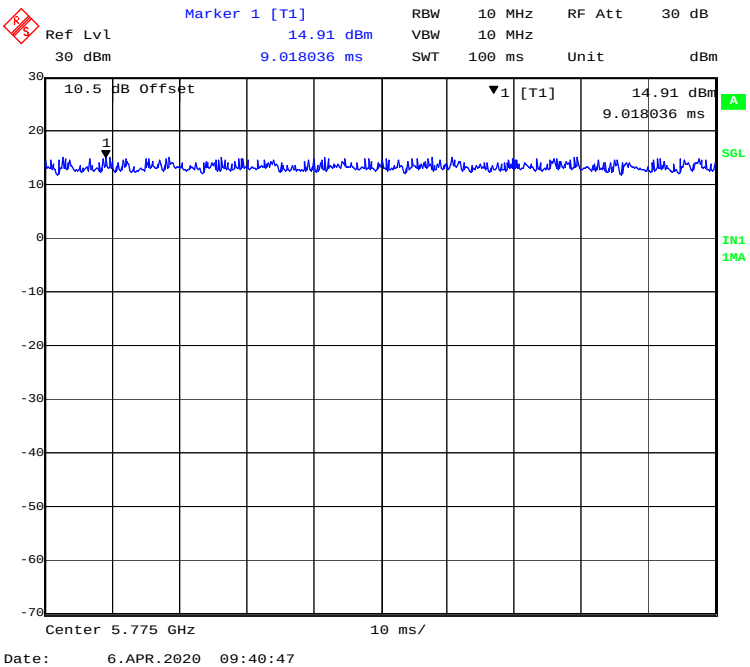
802.11 ac40 mode



802.11n-HT40 mode



802.11n- ac80 mode



Chain 0

Mode	Frequency Range (MHz)	Duty Cycle (%)	T (ms)	1/T (kHz)	10log(1/x)
802.11a	5150-5250	100	/	/	0
802.11ac20		100	/	/	0
802.11n-HT20		100	/	/	0
802.11ac40		100	/	/	0
802.11n-HT40		100	/	/	0
802.11ac80		100	/	/	0
802.11a	5725-5850	100	/	/	0
802.11ac20		100	/	/	0
802.11n-HT20		100	/	/	0
802.11ac40		100	/	/	0
802.11n-HT40		100	/	/	0
802.11ac80		100	/	/	0

Chain 1

Mode	Frequency Range (MHz)	Duty Cycle (%)	T (ms)	1/T (kHz)	10log(1/x)
802.11a	5150-5250	100	/	/	0
802.11ac20		100	/	/	0
802.11n-HT20		100	/	/	0
802.11ac40		100	/	/	0
802.11n-HT40		100	/	/	0
802.11ac80		100	/	/	0
802.11a	5725-5850	100	/	/	0
802.11ac20		100	/	/	0
802.11n-HT20		100	/	/	0
802.11ac40		100	/	/	0
802.11n-HT40		100	/	/	0
802.11ac80		100	/	/	0

Note: "x" means duty cycle.

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

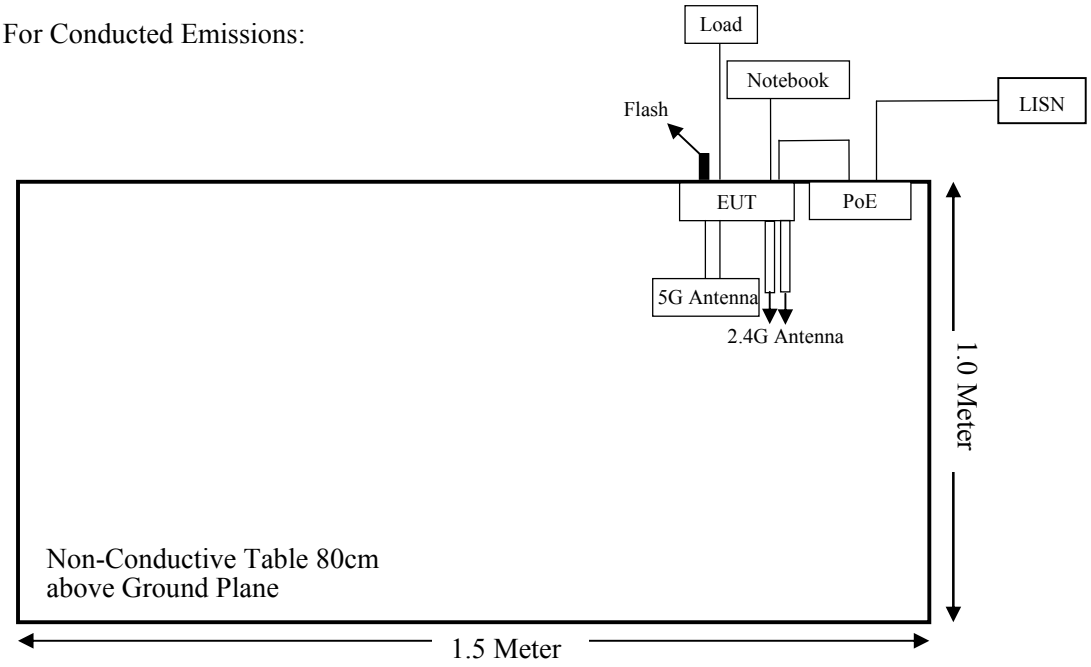
Manufacturer	Description	Model	Serial Number
Wallys	PoE	PSE801G	/
BACL	Load	/	/
DELL	Notebook	E6410	3094742521
Kingston	Flash	32G	/

External I/O Cable

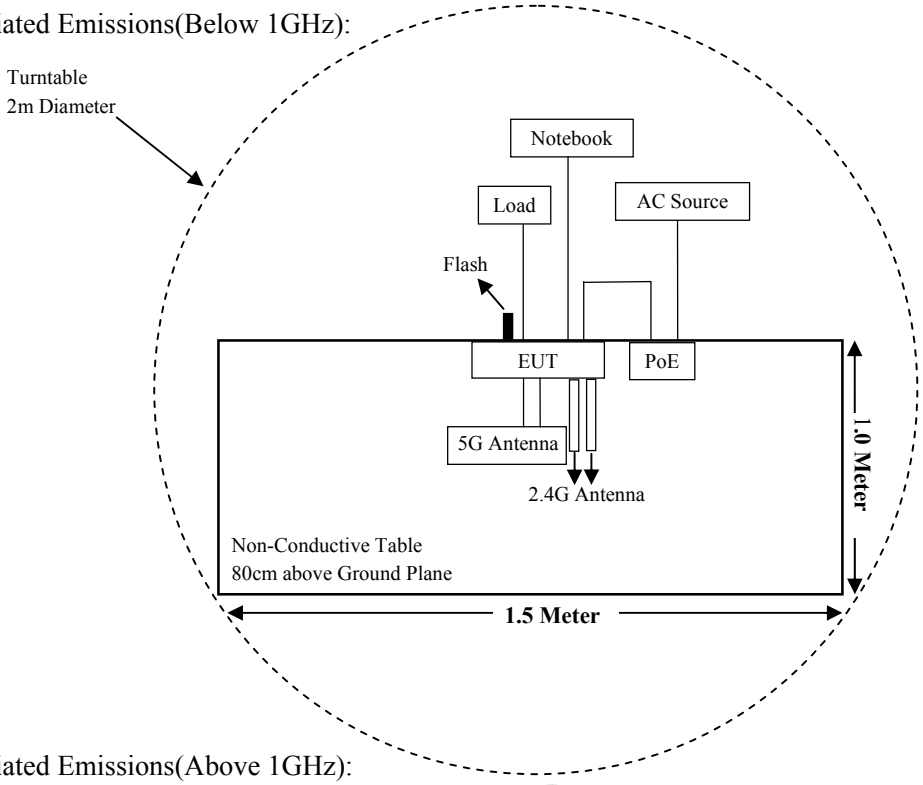
Cable Description	Length (m)	From Port	To
Power Cable	1.0	EUT	PoE
Power Cable	1.0	PoE	AC Source

Block Diagram of Test Setup

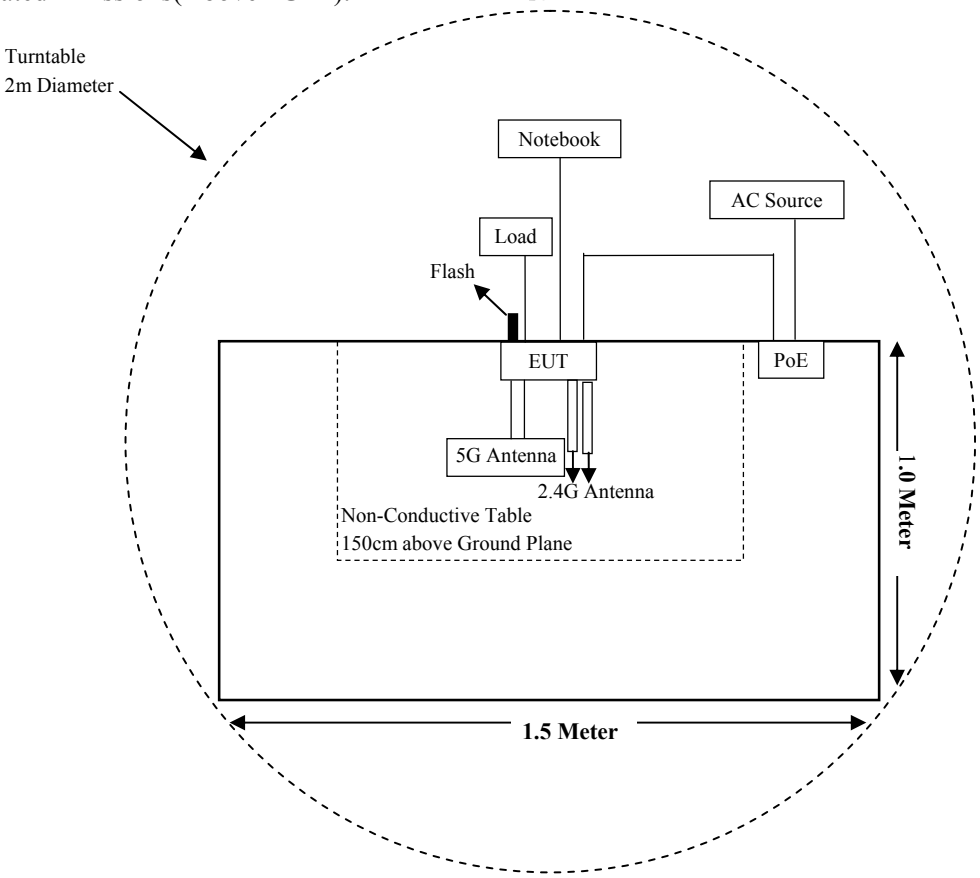
For Conducted Emissions:



For Radiated Emissions(Below 1GHz):



For Radiated Emissions(Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310& §2.1091	MAXIMUM PERMISSIBLE EXPOSURE (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
FCC §15.207 & §15.407(b) (6)	AC Power Line Conducted Emissions	Compliant
§15.205 & §15.209 & §15.407(b) (1) ,(6) ,(7)	Undesirable Emission & Restricted Bands	Compliant
§15.407(a)(1) (5) & §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	2019-12-14	2020-12-13
Sunol Sciences	Broadband Antenna	JB3	A090413-1	2017-12-26	2020-12-25
Sonoma Instrunent	Pre-amplifier	310N	171205	2019-08-14	2020-08-13
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-8	008	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2019-08-15	2020-08-14
Radiated Emission Test（Chamber 2#）					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2019-04-01	2020-03-31
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2020-04-01	2021-03-31
ETS-LINDGREN	Horn Antenna	3115	9207-3900	2017-07-15	2020-07-14
ETS-LINDGREN	Horn Antenna	3116	00084159	2020-01-17	2023-01-16
A.H.Systems, inc	Amplifier	PAM-0118P	512	2020-02-20	2021-02-19
SELECTOR	Amplifier	EM18G40G	060726	2020-03-22	2021-03-21
MICRO-TRONICS	Band Reject Filter	BRC50703	G094	2019-08-05	2020-08-04
MICRO-TRONICS	Band Reject Filter	BRC50705	G085	2019-08-05	2020-08-04
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-6	006	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-11	011	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-12	012	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-13	013	2019-08-15	2020-08-14
RF Conducted Test					
Rohde & Schwarz	Signal Analyzer	FSIQ26	836131/009	2019-12-14	2020-12-13
Agilent	Power Meter	N1912A	MY5000492	2019-11-18	2020-11-17
Agilent	Power Sensor	N1921A	MY54210024	2019-11-18	2020-11-17
Narda	Attenuator	10dB	010	2019-08-15	2020-08-14
Wallys	RF Cable	Wallys C01	C01	Each Time	N/A

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
ROHDE&SCHWARZ	EMI Test receiver	ESR	1316.3003K03-101746-zn	2019-07-11	2020-07-10
Rohde & Schwarz	LISN	ENV216	3560655016	2019-12-14	2020-12-13
Audix	Test Software	e3	V9	---	---
Rohde & Schwarz	Pulse limiter	ESH3-Z2	0357.8810.54	2019-08-10	2020-08-09
MICRO-COAX	Coaxial Cable	Cable-15	015	2019-08-15	2020-08-14

*** 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).

§1.1310& §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247(i) 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	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/		f/1500	30
1500-100,000	/		1.0	30

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

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:

2.4G Wi-Fi

Mode	Frequency Range (MHz)	Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)	MPE Ratio
		(dBi)	(numeric)	(dBm)	(mW)				
802.11b	2412~2462	4.0	2.51	26.50	446.68	30	0.0992	1.0	0.0626
802.11g		4.0	2.51	26.00	398.11	30	0.0884	1.0	0.0558
802.11n-HT20		4.0	2.51	27.00	501.19	30	0.1113	1.0	**0.1113**
802.11n-HT40	2422~2452	4.0	2.51	26.00	398.11	30	0.0884	1.0	0.0558

5G Wi-Fi

Mode	Frequency Range (MHz)	Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)	MPE Ratio
802.11a	5150~5250	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
	5725~5850	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
802.11ac20	5150~5250	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
	5725~5850	18.0	63.10	16.50	44.67	30	0.2492	1.0	0.2492
802.11n20	5150~5250	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
	5725~5850	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
802.11ac40	5150~5250	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
	5725~5850	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
802.11n40	5150~5250	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
	5725~5850	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
802.11ac80	5210	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796
	5775	18.0	63.10	17.00	50.12	30	0.2796	1.0	0.2796

Note:
(1) The Tune-up output power was declared by the Manufacturer.
(2) 2.4G Wi-Fi and 5G Wi-Fi can transmit simultaneously, The worst condition as below:

$$\sum_i \frac{S_i}{S_{Limit,i}} = 0.1113/1.00+0.2796/1.00=0.1113+0.2796=0.3909<1.0$$

Conclusion: The device meets MPE at distance 30cm.

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 three antennas for 5G Wi-Fi. Antenna use a unique type of connector to attach to the EUT.

Function	Antenna No.	Chain	Antenna Type	Model number	manufacturer	Max. Antenna Gain
5G Wi-Fi	1	0	Omni	DPA1319500SBAB501	Wallystech	4.0
		1				
	2	0	Directional	JHP-5159-15D60	HL Tronics (kunshan) Co., Ltd	15.0
		1				
	3	0	Directional	JHP-5159-18D25E	HL Tronics (kunshan) Co., Ltd	18.0
		1				

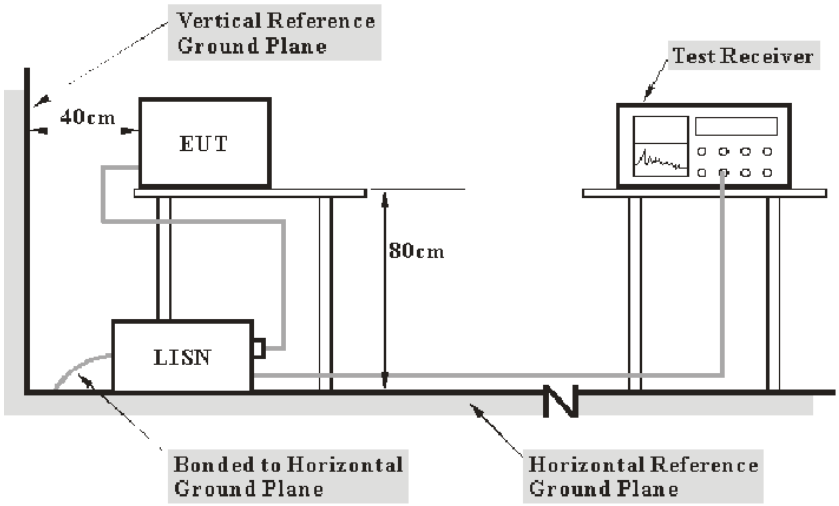
Result: Compliant.

FCC §15.407 (b) (6) §15.207 (a) – AC POWER LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a), §15.407(b) (6)

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 PoE was connected to the first LISN and the other support equipments were connected to the outlet of the second LISN.

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

All data was recorded in the Quasi-peak and average detection mode.

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:

Corrected 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 7 dB 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

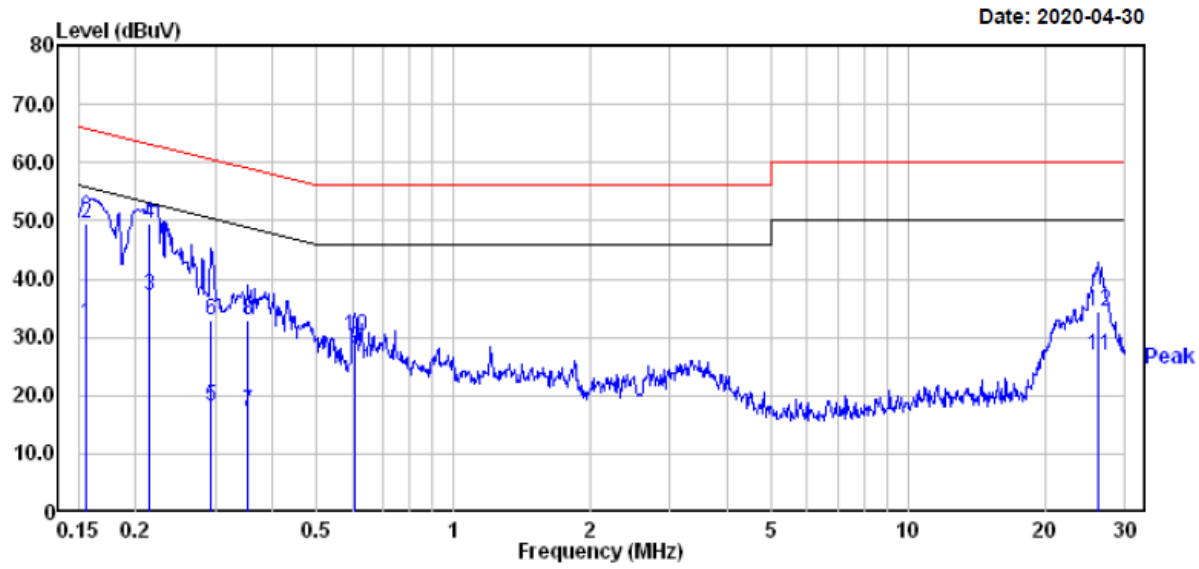
Temperature:	23.2~25.4 ℃
Relative Humidity:	48~51 %
ATM Pressure:	101.1~101.3 kPa

The testing was performed by Stone Zhang from 2020-04-30 to 2020-05-13.

Antenna 1

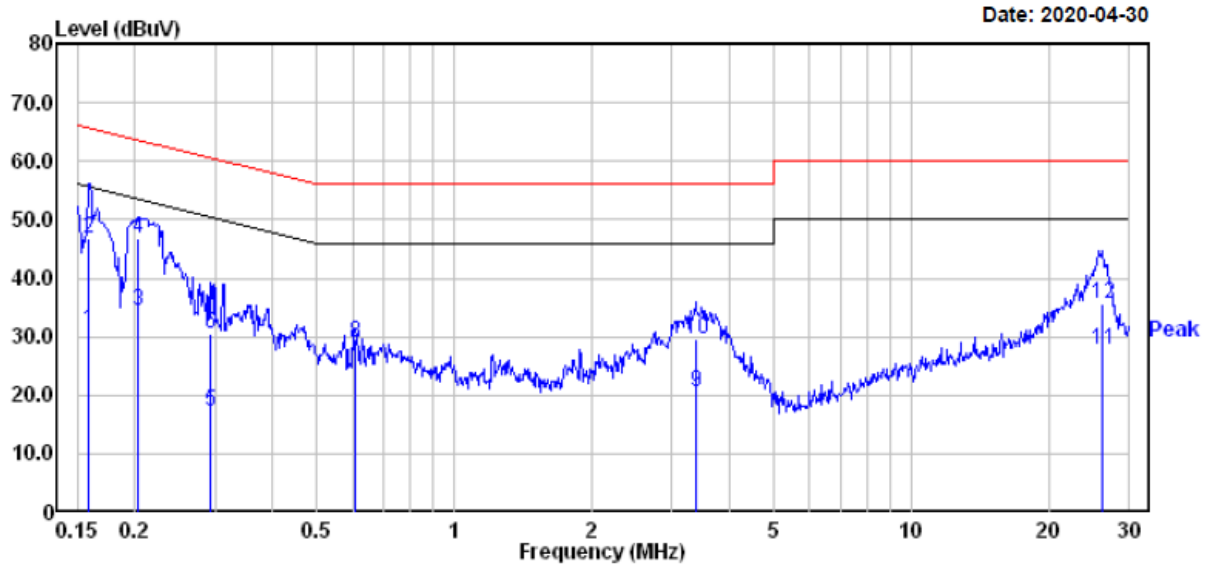
EUT operation mode: Transmitting in 802.11n-HT20 mode middle channel of 5150~5250MHz (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.156	12.40	19.82	32.22	55.69	-23.47	Average
2	0.156	29.70	19.82	49.52	65.69	-16.17	QP
3	0.214	17.20	19.82	37.02	53.05	-16.03	Average
4	0.214	29.60	19.82	49.42	63.05	-13.63	QP
5	0.294	-1.60	19.83	18.23	50.41	-32.18	Average
6	0.294	13.20	19.83	33.03	60.41	-27.38	QP
7	0.352	-2.61	19.81	17.20	48.91	-31.71	Average
8	0.352	12.99	19.81	32.80	58.91	-26.11	QP
9	0.608	8.40	19.75	28.15	46.00	-17.85	Average
10	0.608	10.40	19.75	30.15	56.00	-25.85	QP
11	26.139	7.10	19.71	26.81	50.00	-23.19	Average
12	26.139	14.60	19.71	34.31	60.00	-25.69	QP

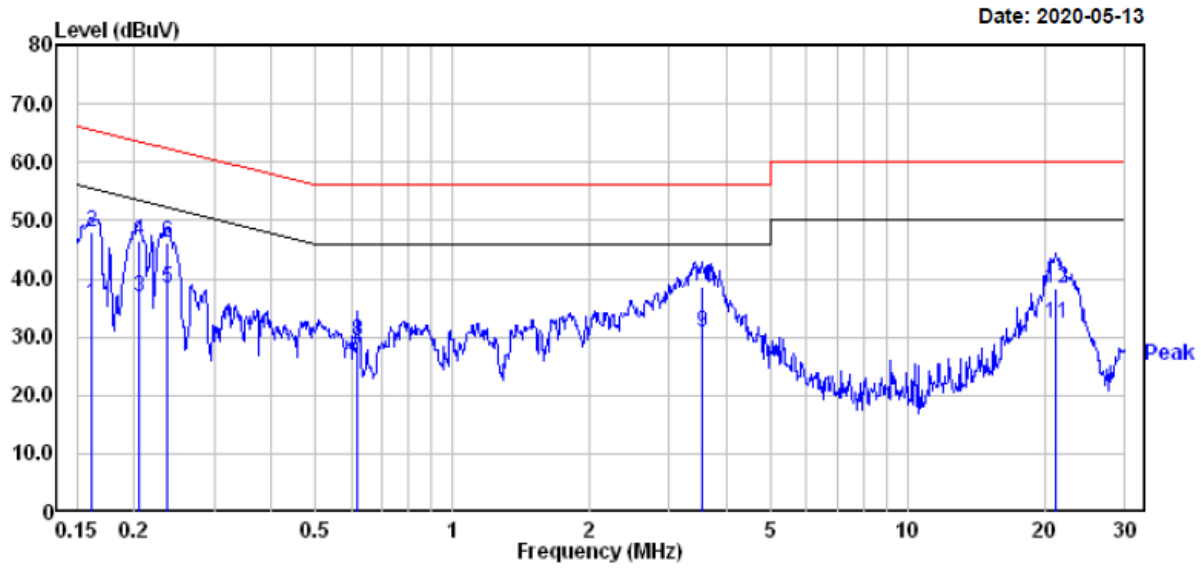
AC 120V/60 Hz, Neutral



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.159	11.40	19.82	31.22	55.52	-24.30	Average
2	0.159	27.10	19.82	46.92	65.52	-18.60	QP
3	0.203	14.50	19.82	34.32	53.49	-19.17	Average
4	0.203	26.90	19.82	46.72	63.49	-16.77	QP
5	0.294	-2.60	19.83	17.23	50.41	-33.18	Average
6	0.294	10.60	19.83	30.43	60.41	-29.98	QP
7	0.608	6.90	19.75	26.65	46.00	-19.35	Average
8	0.608	9.20	19.75	28.95	56.00	-27.05	QP
9	3.381	1.20	19.46	20.66	46.00	-25.34	Average
10	3.381	10.10	19.46	29.56	56.00	-26.44	QP
11	26.278	8.10	19.72	27.82	50.00	-22.18	Average
12	26.278	16.00	19.72	35.72	60.00	-24.28	QP

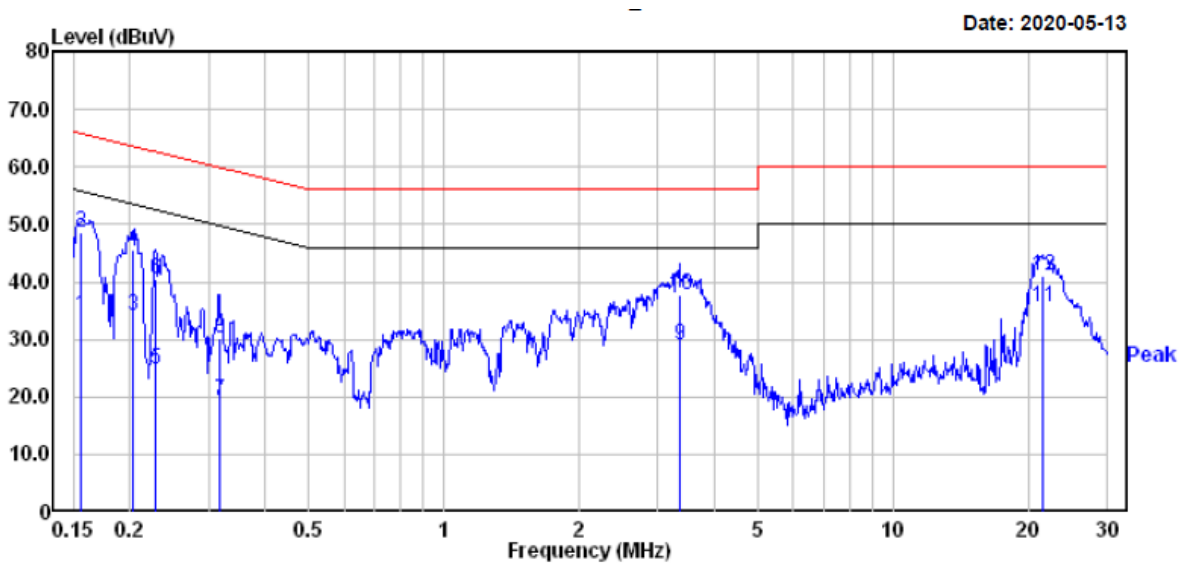
EUT operation mode: Transmitting in 802.11n-HT20 mode middle channel of 5725-5850MHz (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.161	15.80	19.83	35.63	55.43	-19.80	Average
2	0.161	28.10	19.83	47.93	65.43	-17.50	QP
3	0.205	17.10	19.82	36.92	53.40	-16.48	Average
4	0.205	26.80	19.82	46.62	63.40	-16.78	QP
5	0.237	18.40	19.82	38.22	52.22	-14.00	Average
6	0.237	26.40	19.82	46.22	62.22	-16.00	QP
7	0.621	6.40	19.75	26.15	46.00	-19.85	Average
8	0.621	9.50	19.75	29.25	56.00	-26.75	QP
9	3.528	11.40	19.47	30.87	46.00	-15.13	Average
10	3.528	19.30	19.47	38.77	56.00	-17.23	QP
11	21.260	12.49	19.89	32.38	50.00	-17.62	Average
12	21.260	18.39	19.89	38.28	60.00	-21.72	QP

AC 120V/60 Hz, Neutral

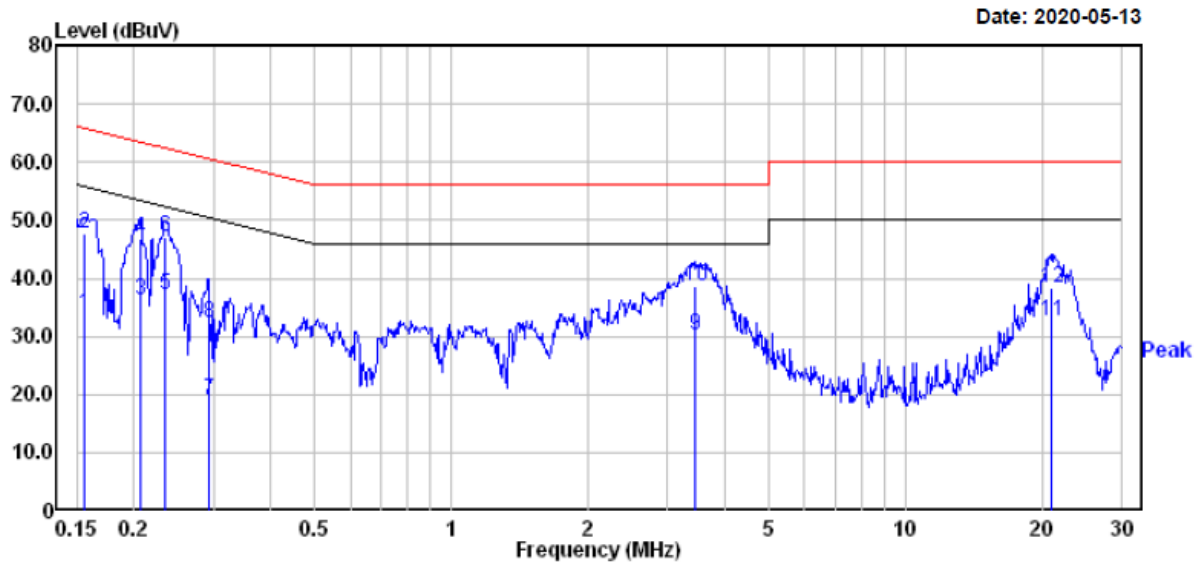


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.156	14.30	19.82	34.12	55.69	-21.57	Average
2	0.156	28.90	19.82	48.72	65.69	-16.97	QP
3	0.203	14.30	19.82	34.12	53.49	-19.37	Average
4	0.203	25.80	19.82	45.62	63.49	-17.87	QP
5	0.228	4.80	19.82	24.62	52.52	-27.90	Average
6	0.228	20.50	19.82	40.32	62.52	-22.20	QP
7	0.317	-0.50	19.82	19.32	49.79	-30.47	Average
8	0.317	10.50	19.82	30.32	59.79	-29.47	QP
9	3.346	9.60	19.46	29.06	46.00	-16.94	Average
10	3.346	18.20	19.46	37.66	56.00	-18.34	QP
11	21.486	15.70	19.87	35.57	50.00	-14.43	Average
12	21.486	21.10	19.87	40.97	60.00	-19.03	QP

Antenna 2

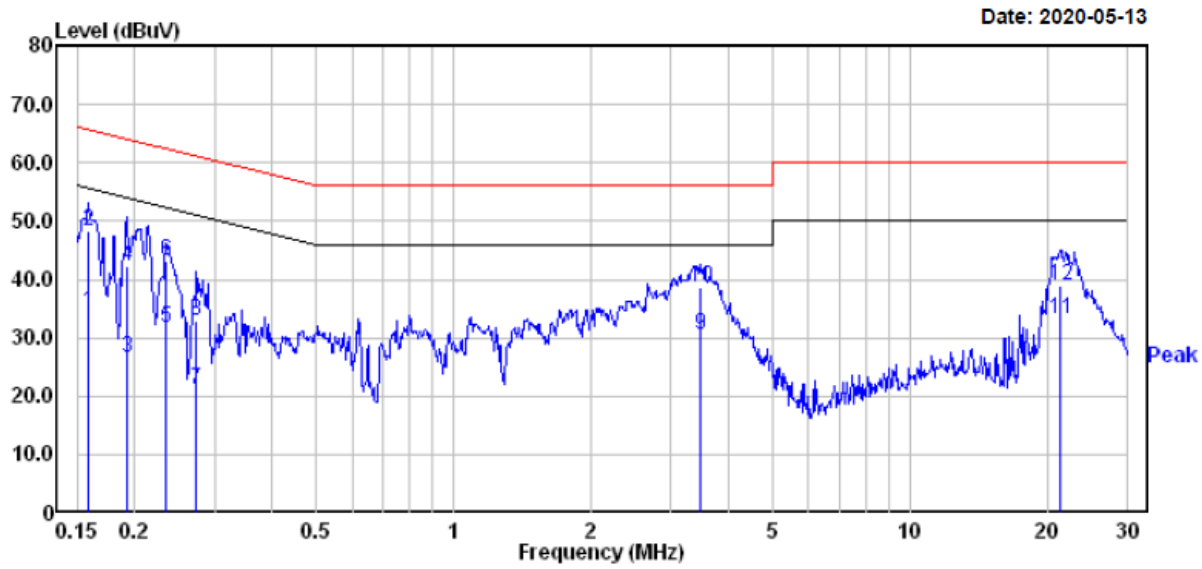
EUT operation mode: Transmitting in 802.11n-HT20 mode middle channel of 5150~5250MHz (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.156	13.90	19.82	33.72	55.69	-21.97	Average
2	0.156	27.80	19.82	47.62	65.69	-18.07	QP
3	0.206	16.30	19.82	36.12	53.36	-17.24	Average
4	0.206	27.10	19.82	46.92	63.36	-16.44	QP
5	0.234	17.40	19.82	37.22	52.30	-15.08	Average
6	0.234	27.20	19.82	47.02	62.30	-15.28	QP
7	0.292	-0.80	19.83	19.03	50.46	-31.43	Average
8	0.292	12.40	19.83	32.23	60.46	-28.23	QP
9	3.436	10.60	19.46	30.06	46.00	-15.94	Average
10	3.436	19.20	19.46	38.66	56.00	-17.34	QP
11	20.924	12.69	19.91	32.60	50.00	-17.40	Average
12	20.924	18.49	19.91	38.40	60.00	-21.60	QP

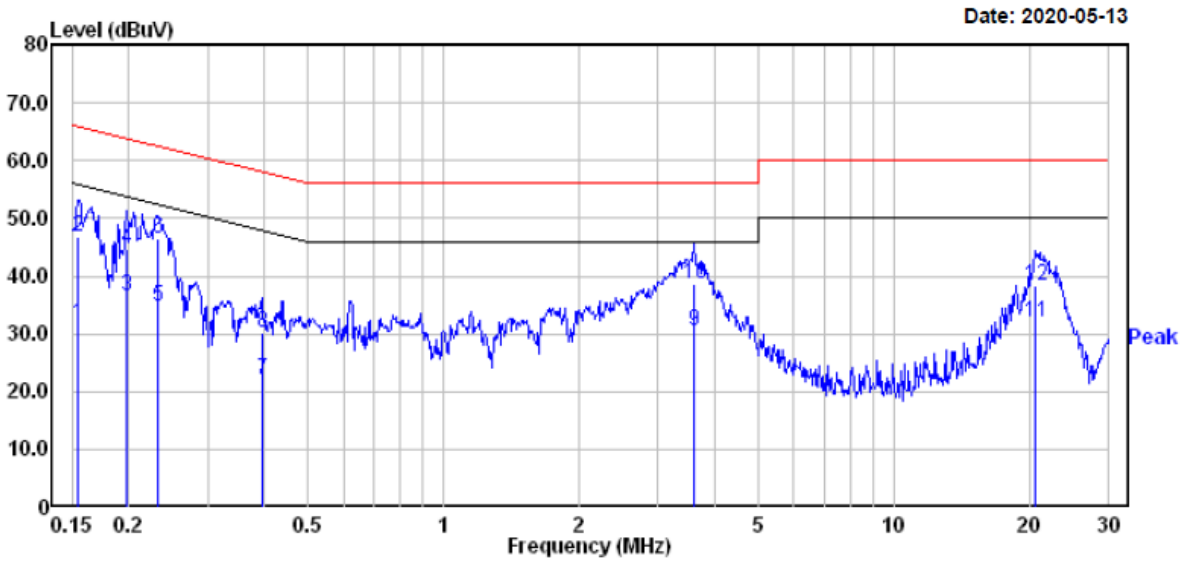
AC 120V/60 Hz, Neutral



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	14.70	19.82	34.52	55.56	-21.04	Average
2	0.158	28.40	19.82	48.22	65.56	-17.34	QP
3	0.192	6.80	19.82	26.62	53.93	-27.31	Average
4	0.192	22.30	19.82	42.12	63.93	-21.81	QP
5	0.234	12.00	19.82	31.82	52.30	-20.48	Average
6	0.234	23.20	19.82	43.02	62.30	-19.28	QP
7	0.273	1.30	19.82	21.12	51.03	-29.91	Average
8	0.273	13.20	19.82	33.02	61.03	-28.01	QP
9	3.491	11.00	19.46	30.46	46.00	-15.54	Average
10	3.491	19.10	19.46	38.56	56.00	-17.44	QP
11	21.373	13.30	19.88	33.18	50.00	-16.82	Average
12	21.373	19.00	19.88	38.88	60.00	-21.12	QP

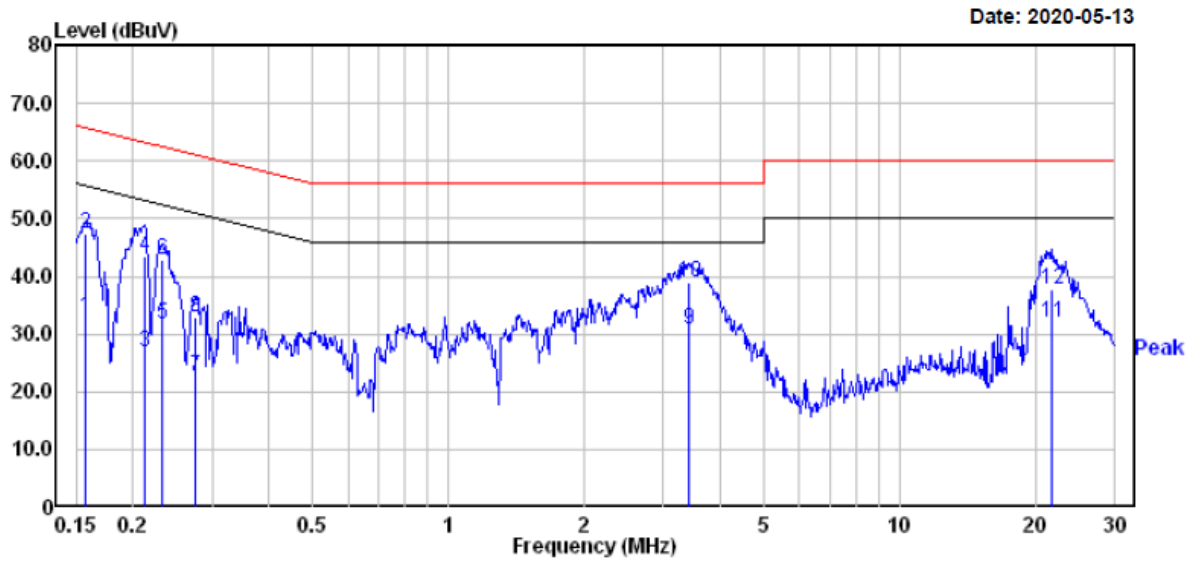
EUT operation mode: Transmitting in 802.11n-HT20 mode middle channel of 5725-5850MHz (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.154	11.80	19.82	31.62	55.78	-24.16	Average
2	0.154	27.10	19.82	46.92	65.78	-18.86	QP
3	0.199	16.80	19.82	36.62	53.67	-17.05	Average
4	0.199	24.80	19.82	44.62	63.67	-19.05	QP
5	0.232	15.00	19.82	34.82	52.39	-17.57	Average
6	0.232	26.80	19.82	46.62	62.39	-15.77	QP
7	0.396	2.39	19.75	22.14	47.95	-25.81	Average
8	0.396	10.39	19.75	30.14	57.95	-27.81	QP
9	3.603	10.90	19.47	30.37	46.00	-15.63	Average
10	3.603	19.10	19.47	38.57	56.00	-17.43	QP
11	20.704	12.11	19.91	32.02	50.00	-17.98	Average
12	20.704	18.41	19.91	38.32	60.00	-21.68	QP

AC 120V/60 Hz, Neutral

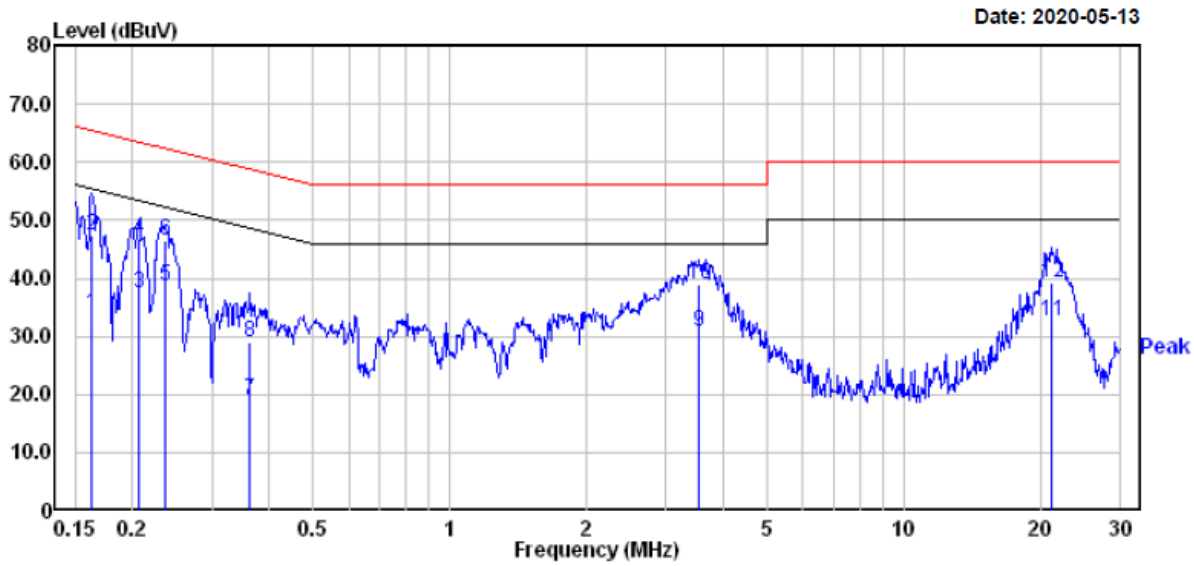


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.157	13.20	19.82	33.02	55.60	-22.58	Average
2	0.157	27.70	19.82	47.52	65.60	-18.08	QP
3	0.212	6.90	19.82	26.72	53.14	-26.42	Average
4	0.212	23.70	19.82	43.52	63.14	-19.62	QP
5	0.233	12.00	19.82	31.82	52.35	-20.53	Average
6	0.233	23.10	19.82	42.92	62.35	-19.43	QP
7	0.276	2.70	19.82	22.52	50.94	-28.42	Average
8	0.276	13.20	19.82	33.02	60.94	-27.92	QP
9	3.417	11.30	19.46	30.76	46.00	-15.24	Average
10	3.417	19.40	19.46	38.86	56.00	-17.14	QP
11	21.830	12.30	19.85	32.15	50.00	-17.85	Average
12	21.830	18.00	19.85	37.85	60.00	-22.15	QP

Antenna 3

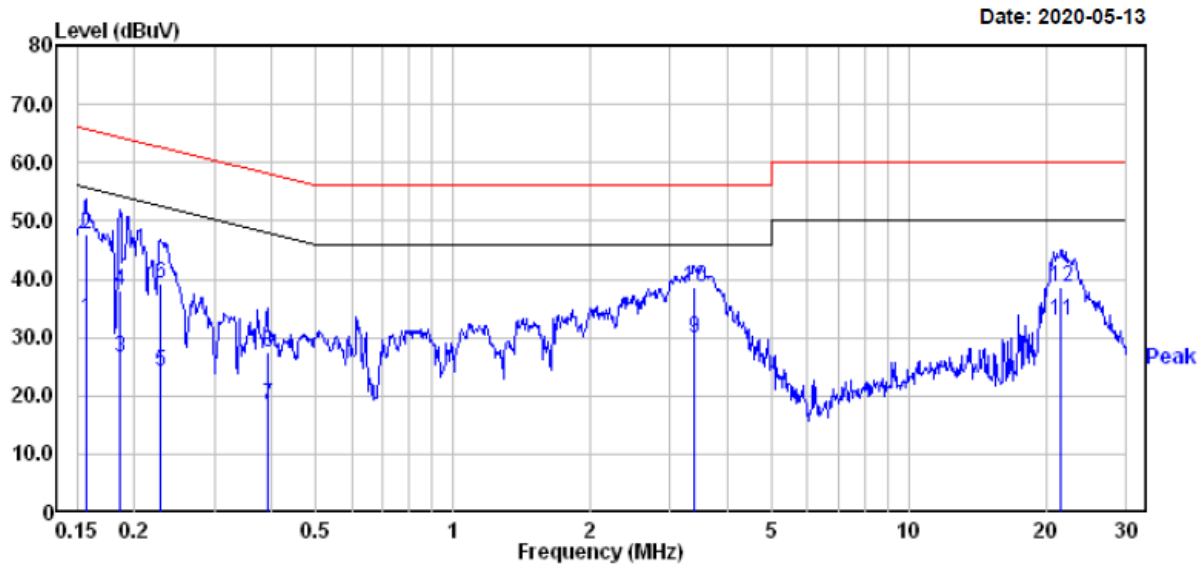
EUT operation mode: Transmitting in 802.11n-HT20 mode middle channel of 5150~5250MHz (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.163	14.10	19.83	33.93	55.30	-21.37	Average
2	0.163	27.50	19.83	47.33	65.30	-17.97	QP
3	0.207	17.60	19.82	37.42	53.32	-15.90	Average
4	0.207	27.00	19.82	46.82	63.32	-16.50	QP
5	0.237	18.70	19.82	38.52	52.22	-13.70	Average
6	0.237	26.60	19.82	46.42	62.22	-15.80	QP
7	0.363	-0.90	19.79	18.89	48.65	-29.76	Average
8	0.363	9.10	19.79	28.89	58.65	-29.76	QP
9	3.547	11.40	19.47	30.87	46.00	-15.13	Average
10	3.547	19.40	19.47	38.87	56.00	-17.13	QP
11	21.147	12.80	19.89	32.69	50.00	-17.31	Average
12	21.147	19.50	19.89	39.39	60.00	-20.61	QP

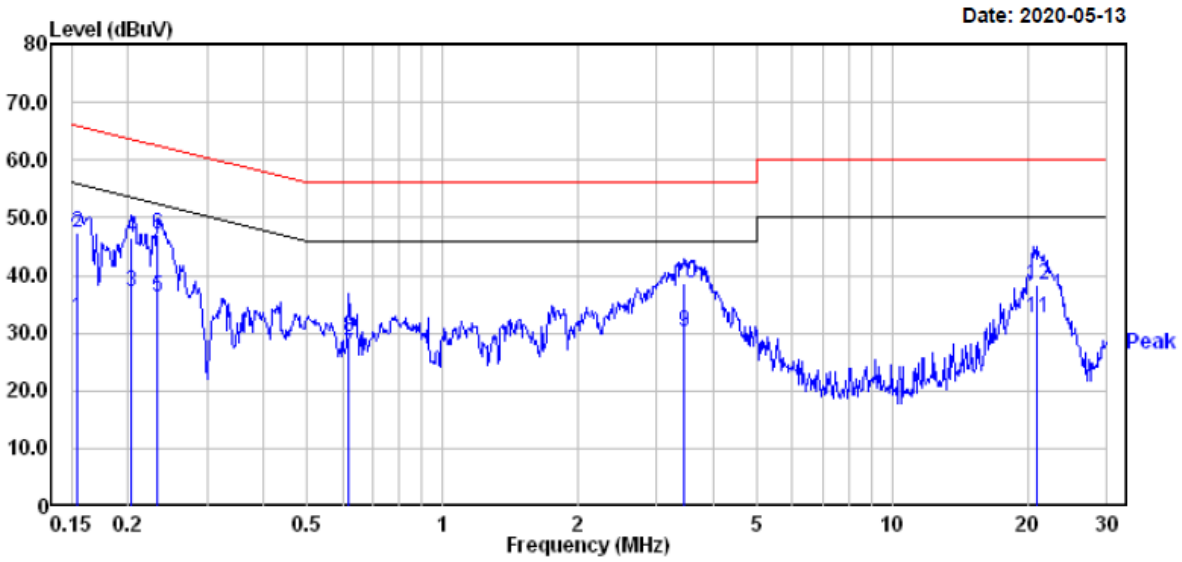
AC 120V/60 Hz, Neutral



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.156	13.30	19.82	33.12	55.65	-22.53	Average
2	0.156	28.00	19.82	47.82	65.65	-17.83	QP
3	0.186	6.61	19.82	26.43	54.20	-27.77	Average
4	0.186	18.31	19.82	38.13	64.20	-26.07	QP
5	0.228	4.20	19.82	24.02	52.52	-28.50	Average
6	0.228	19.30	19.82	39.12	62.52	-23.40	QP
7	0.391	-1.30	19.75	18.45	48.03	-29.58	Average
8	0.391	7.70	19.75	27.45	58.03	-30.58	QP
9	3.399	10.40	19.46	29.86	46.00	-16.14	Average
10	3.399	19.20	19.46	38.66	56.00	-17.34	QP
11	21.600	13.10	19.86	32.96	50.00	-17.04	Average
12	21.600	18.90	19.86	38.76	60.00	-21.24	QP

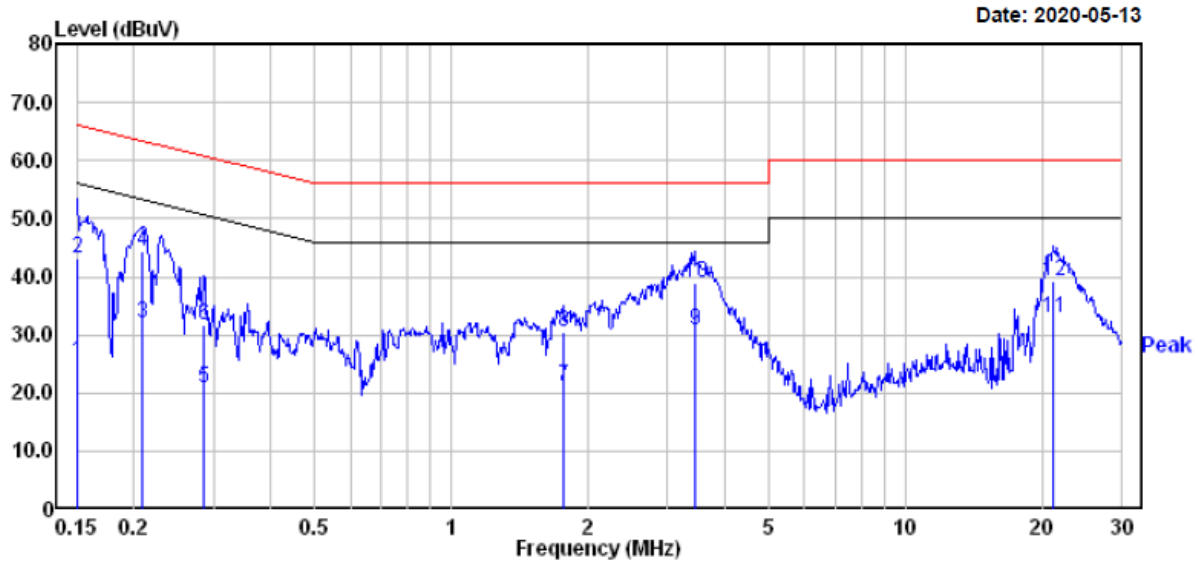
EUT operation mode: Transmitting in 802.11n-HT20 mode middle channel of 5725-5850MHz (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.155	12.90	19.82	32.72	55.74	-23.02	Average
2	0.155	27.50	19.82	47.32	65.74	-18.42	QP
3	0.204	17.40	19.82	37.22	53.45	-16.23	Average
4	0.204	26.60	19.82	46.42	63.45	-17.03	QP
5	0.233	16.40	19.82	36.22	52.35	-16.13	Average
6	0.233	27.20	19.82	47.02	62.35	-15.33	QP
7	0.621	6.40	19.75	26.15	46.00	-19.85	Average
8	0.621	9.60	19.75	29.35	56.00	-26.65	QP
9	3.436	10.80	19.46	30.26	46.00	-15.74	Average
10	3.436	19.30	19.46	38.76	56.00	-17.24	QP
11	21.035	12.70	19.90	32.60	50.00	-17.40	Average
12	21.035	18.50	19.90	38.40	60.00	-21.60	QP

AC 120V/60 Hz, Neutral

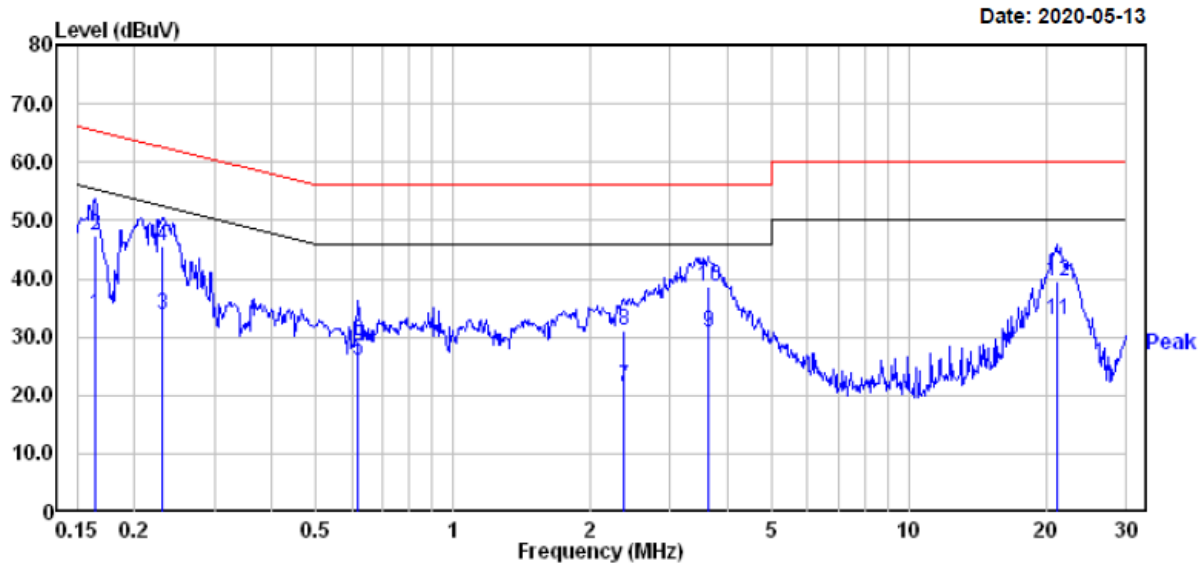


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.150	5.50	19.82	25.32	56.00	-30.68	Average
2	0.150	23.50	19.82	43.32	66.00	-22.68	QP
3	0.209	12.20	19.82	32.02	53.23	-21.21	Average
4	0.209	24.70	19.82	44.52	63.23	-18.71	QP
5	0.285	1.00	19.82	20.82	50.68	-29.86	Average
6	0.285	12.00	19.82	31.82	60.68	-28.86	QP
7	1.762	1.40	19.84	21.24	46.00	-24.76	Average
8	1.762	10.60	19.84	30.44	56.00	-25.56	QP
9	3.436	11.20	19.46	30.66	46.00	-15.34	Average
10	3.436	19.60	19.46	39.06	56.00	-16.94	QP
11	21.147	13.10	19.89	32.99	50.00	-17.01	Average
12	21.147	19.40	19.89	39.29	60.00	-20.71	QP

2.4G Wi-Fi Antenna 2& 5G Wi-Fi Antenna 1 Transmit simultaneously

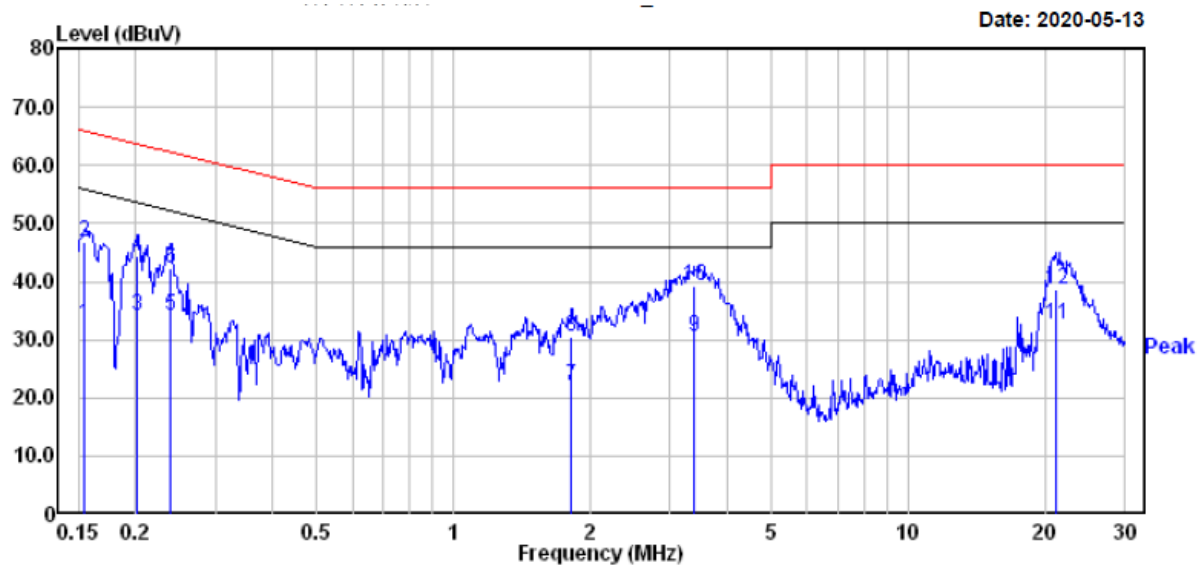
EUT operation mode: ***Transmitting in 2.4G Wi-Fi 802.11 n-HT20 (Chain0&Chain 1) high Channel and 5G Wi-Fi Band 1 802.11n-HT40 low channel (Chain 0&Chain 1)***

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.164	13.90	19.83	33.73	55.25	-21.52	Average
2	0.164	27.50	19.83	47.33	65.25	-17.92	QP
3	0.230	13.90	19.82	33.72	52.44	-18.72	Average
4	0.230	25.90	19.82	45.72	62.44	-16.72	QP
5	0.621	6.20	19.75	25.95	46.00	-20.05	Average
6	0.621	9.60	19.75	29.35	56.00	-26.65	QP
7	2.371	1.80	19.56	21.36	46.00	-24.64	Average
8	2.371	11.50	19.56	31.06	56.00	-24.94	QP
9	3.623	11.20	19.47	30.67	46.00	-15.33	Average
10	3.623	19.20	19.47	38.67	56.00	-17.33	QP
11	21.147	12.90	19.89	32.79	50.00	-17.21	Average
12	21.147	19.70	19.89	39.59	60.00	-20.41	QP

AC 120V/60 Hz, Neutral

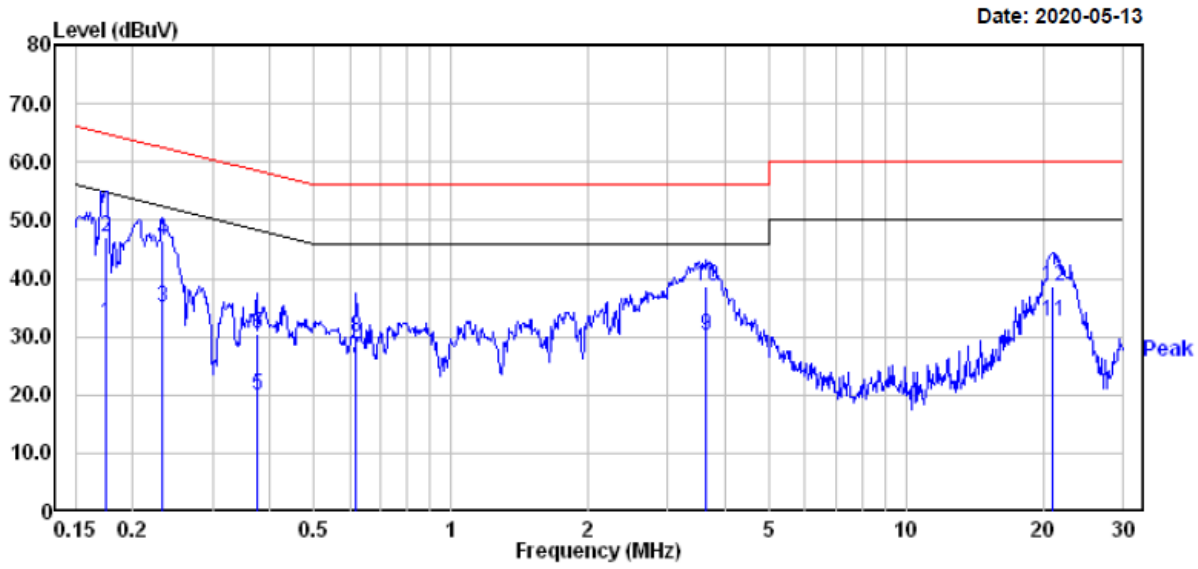


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.155	12.70	19.82	32.52	55.74	-23.22	Average
2	0.155	27.00	19.82	46.82	65.74	-18.92	QP
3	0.202	14.40	19.82	34.22	53.54	-19.32	Average
4	0.202	24.50	19.82	44.32	63.54	-19.22	QP
5	0.239	14.30	19.82	34.12	52.13	-18.01	Average
6	0.239	22.30	19.82	42.12	62.13	-20.01	QP
7	1.819	2.09	19.84	21.93	46.00	-24.07	Average
8	1.819	10.69	19.84	30.53	56.00	-25.47	QP
9	3.399	11.00	19.46	30.46	46.00	-15.54	Average
10	3.399	19.80	19.46	39.26	56.00	-16.74	QP
11	21.260	12.79	19.89	32.68	50.00	-17.32	Average
12	21.260	18.89	19.89	38.78	60.00	-21.22	QP

2.4G Wi-Fi Antenna 2& 5G Wi-Fi Antenna 2 Transmit simultaneously

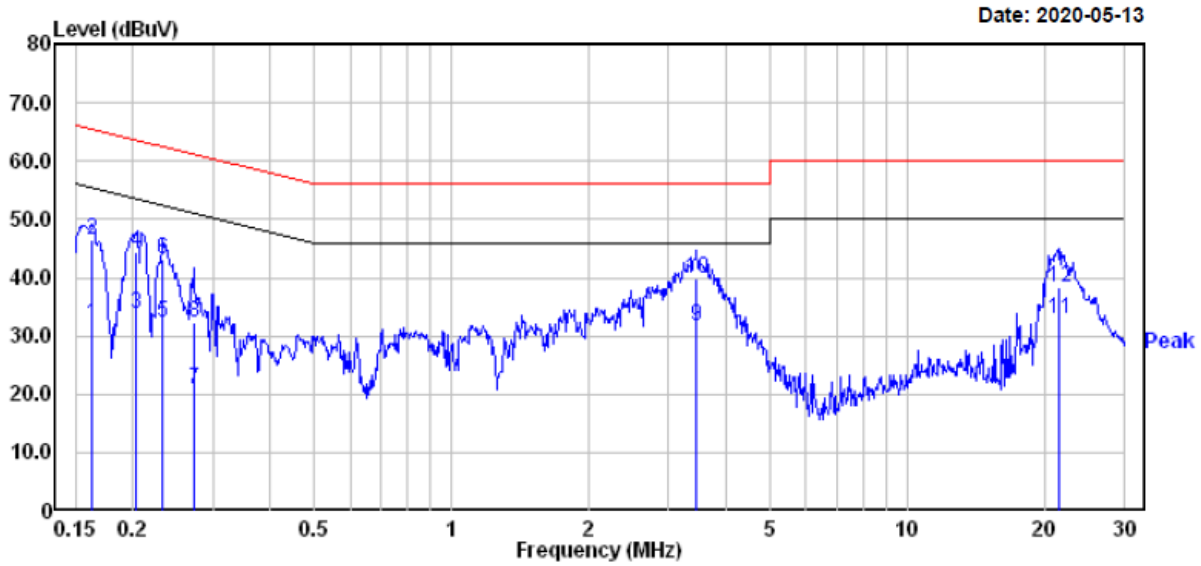
EUT operation mode: ***Transmitting in 2.4G Wi-Fi 802.11 n-HT20 (Chain0&Chain 1) high Channel and 5G Wi-Fi Band 1 802.11n-HT40 low channel (Chain 0&Chain 1)***

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.175	12.60	19.83	32.43	54.72	-22.29	Average
2	0.175	27.40	19.83	47.23	64.72	-17.49	QP
3	0.232	15.20	19.82	35.02	52.39	-17.37	Average
4	0.232	26.80	19.82	46.62	62.39	-15.77	QP
5	0.375	0.10	19.77	19.87	48.39	-28.52	Average
6	0.375	10.60	19.77	30.37	58.39	-28.02	QP
7	0.621	6.50	19.75	26.25	46.00	-19.75	Average
8	0.621	10.10	19.75	29.85	56.00	-26.15	QP
9	3.642	10.70	19.47	30.17	46.00	-15.83	Average
10	3.642	19.30	19.47	38.77	56.00	-17.23	QP
11	21.035	12.80	19.90	32.70	50.00	-17.30	Average
12	21.035	18.60	19.90	38.50	60.00	-21.50	QP

AC 120V/60 Hz, Neutral

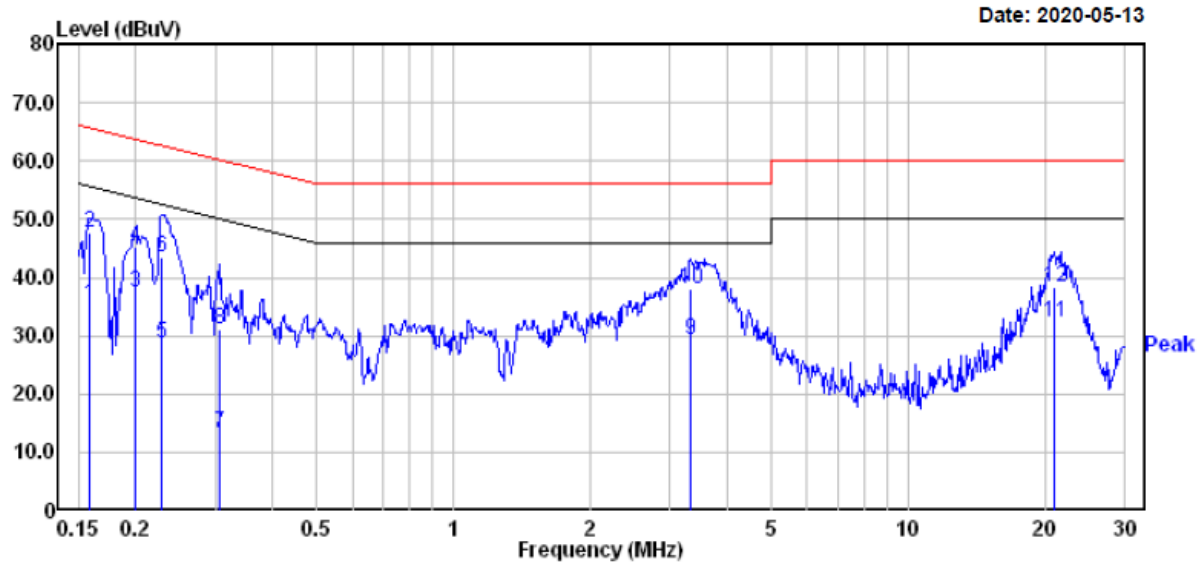


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.162	12.30	19.83	32.13	55.34	-23.21	Average
2	0.162	26.60	19.83	46.43	65.34	-18.91	QP
3	0.204	13.90	19.82	33.72	53.45	-19.73	Average
4	0.204	24.70	19.82	44.52	63.45	-18.93	QP
5	0.233	12.40	19.82	32.22	52.35	-20.13	Average
6	0.233	23.30	19.82	43.12	62.35	-19.23	QP
7	0.272	1.10	19.82	20.92	51.07	-30.15	Average
8	0.272	12.60	19.82	32.42	61.07	-28.65	QP
9	3.454	12.10	19.46	31.56	46.00	-14.44	Average
10	3.454	20.30	19.46	39.76	56.00	-16.24	QP
11	21.486	13.00	19.87	32.87	50.00	-17.13	Average
12	21.486	18.60	19.87	38.47	60.00	-21.53	QP

2.4G Wi-Fi Antenna 2 & 5G Wi-Fi Antenna 3 Transmit simultaneously

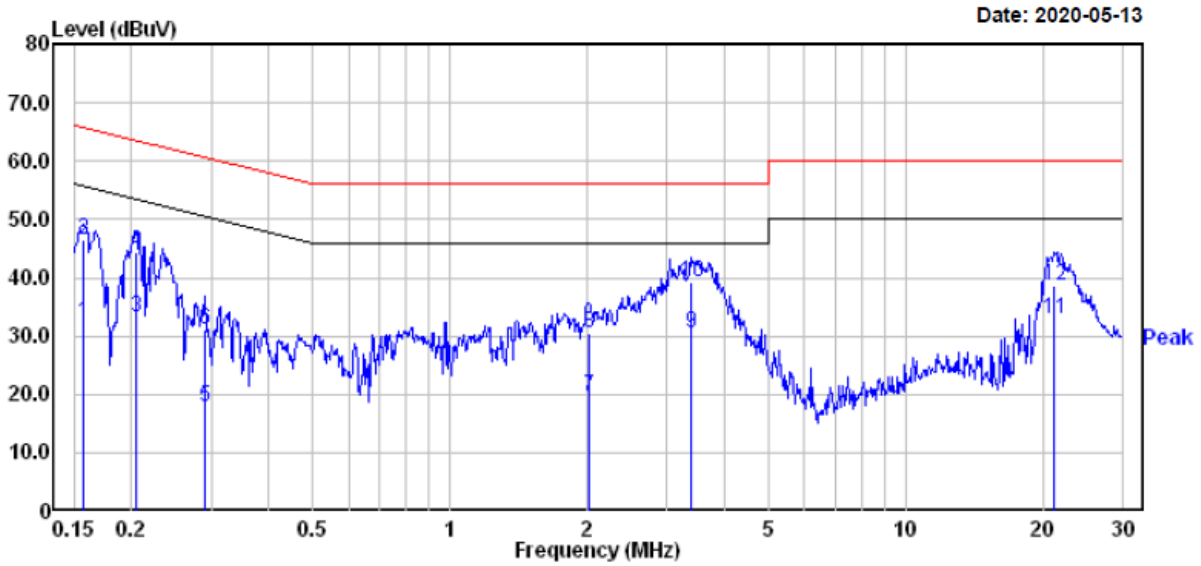
EUT operation mode: ***Transmitting in 2.4G Wi-Fi 802.11 n-HT20 (Chain0&Chain 1) high Channel and 5G Wi-Fi Band 1 802.11n-HT40 low channel (Chain 0&Chain 1)***

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	15.40	19.82	35.22	55.56	-20.34	Average
2	0.158	27.90	19.82	47.72	65.56	-17.84	QP
3	0.200	17.50	19.82	37.32	53.62	-16.30	Average
4	0.200	25.50	19.82	45.32	63.62	-18.30	QP
5	0.228	9.00	19.82	28.82	52.52	-23.70	Average
6	0.228	23.60	19.82	43.42	62.52	-19.10	QP
7	0.305	-6.51	19.83	13.32	50.10	-36.78	Average
8	0.305	11.19	19.83	31.02	60.10	-29.08	QP
9	3.328	9.90	19.46	29.36	46.00	-16.64	Average
10	3.328	18.70	19.46	38.16	56.00	-17.84	QP
11	20.924	12.49	19.91	32.40	50.00	-17.60	Average
12	20.924	18.49	19.91	38.40	60.00	-21.60	QP

AC 120V/60 Hz, Neutral

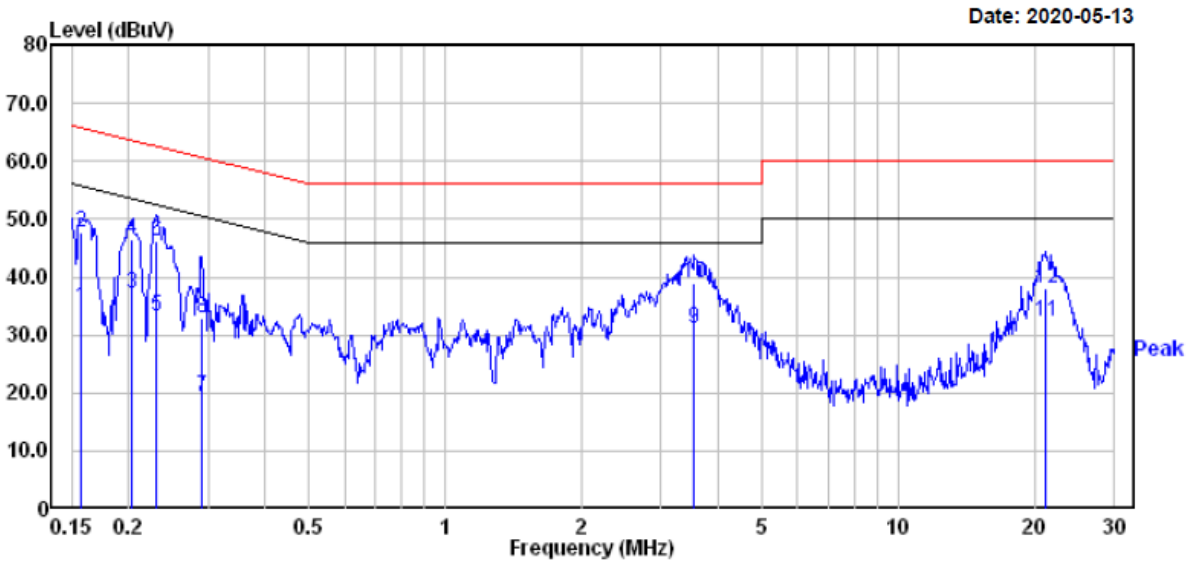


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.156	12.60	19.82	32.42	55.65	-23.23	Average
2	0.156	26.80	19.82	46.62	65.65	-19.03	QP
3	0.205	13.50	19.82	33.32	53.40	-20.08	Average
4	0.205	24.60	19.82	44.42	63.40	-18.98	QP
5	0.289	-2.10	19.82	17.72	50.54	-32.82	Average
6	0.289	11.30	19.82	31.12	60.54	-29.42	QP
7	2.012	-0.20	19.82	19.62	46.00	-26.38	Average
8	2.012	10.60	19.82	30.42	56.00	-25.58	QP
9	3.399	11.10	19.46	30.56	46.00	-15.44	Average
10	3.399	19.80	19.46	39.26	56.00	-16.74	QP
11	21.147	13.00	19.89	32.89	50.00	-17.11	Average
12	21.147	18.80	19.89	38.69	60.00	-21.31	QP

2.4G Wi-Fi Antenna 1 & 5G Wi-Fi Antenna 2 Transmit simultaneously

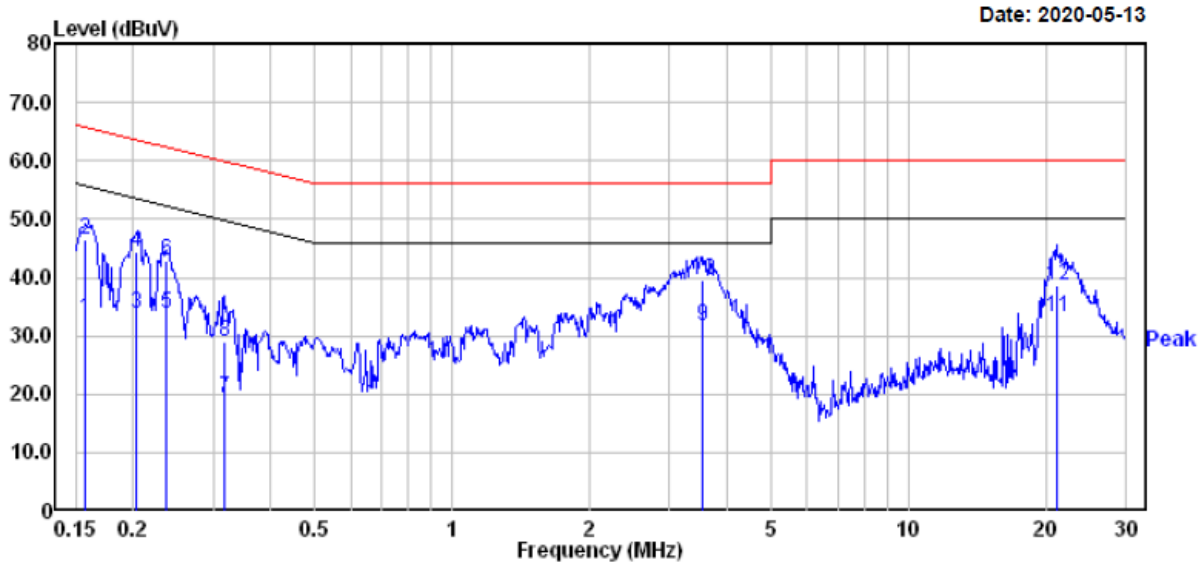
EUT operation mode: ***Transmitting in 2.4G Wi-Fi 802.11 n-HT20 (Chain0&Chain 1) high Channel and 5G Wi-Fi Band 1 802.11n-HT40 low channel (Chain 0&Chain 1)***

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.157	14.90	19.82	34.72	55.60	-20.88	Average
2	0.157	27.90	19.82	47.72	65.60	-17.88	QP
3	0.204	17.40	19.82	37.22	53.45	-16.23	Average
4	0.204	26.70	19.82	46.52	63.45	-16.93	QP
5	0.230	13.40	19.82	33.22	52.44	-19.22	Average
6	0.230	26.30	19.82	46.12	62.44	-16.32	QP
7	0.291	-0.40	19.82	19.42	50.50	-31.08	Average
8	0.291	13.20	19.82	33.02	60.50	-27.48	QP
9	3.547	11.70	19.47	31.17	46.00	-14.83	Average
10	3.547	19.60	19.47	39.07	56.00	-16.93	QP
11	21.260	12.39	19.89	32.28	50.00	-17.72	Average
12	21.260	18.19	19.89	38.08	60.00	-21.92	QP

AC 120V/60 Hz, Neutral

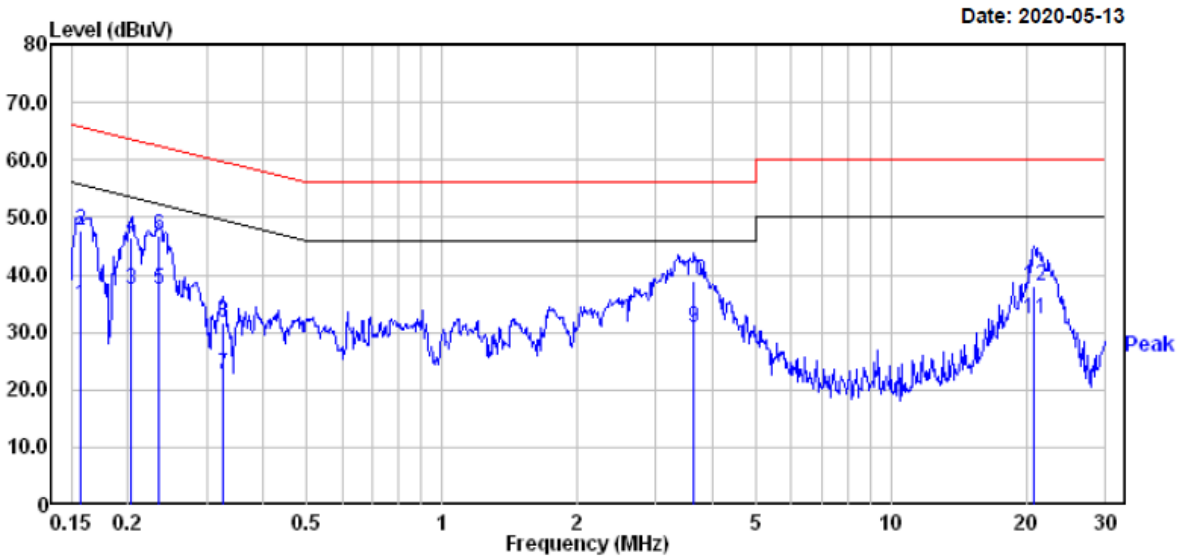


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.157	13.20	19.82	33.02	55.60	-22.58	Average
2	0.157	26.80	19.82	46.62	65.60	-18.98	QP
3	0.204	14.00	19.82	33.82	53.45	-19.63	Average
4	0.204	24.50	19.82	44.32	63.45	-19.13	QP
5	0.237	14.00	19.82	33.82	52.22	-18.40	Average
6	0.237	23.10	19.82	42.92	62.22	-19.30	QP
7	0.317	-0.40	19.82	19.42	49.79	-30.37	Average
8	0.317	9.10	19.82	28.92	59.79	-30.87	QP
9	3.528	12.20	19.47	31.67	46.00	-14.33	Average
10	3.528	20.00	19.47	39.47	56.00	-16.53	QP
11	21.147	13.20	19.89	33.09	50.00	-16.91	Average
12	21.147	18.90	19.89	38.79	60.00	-21.21	QP

2.4G Wi-Fi Antenna 1& 5G Wi-Fi Antenna 3 Transmit simultaneously

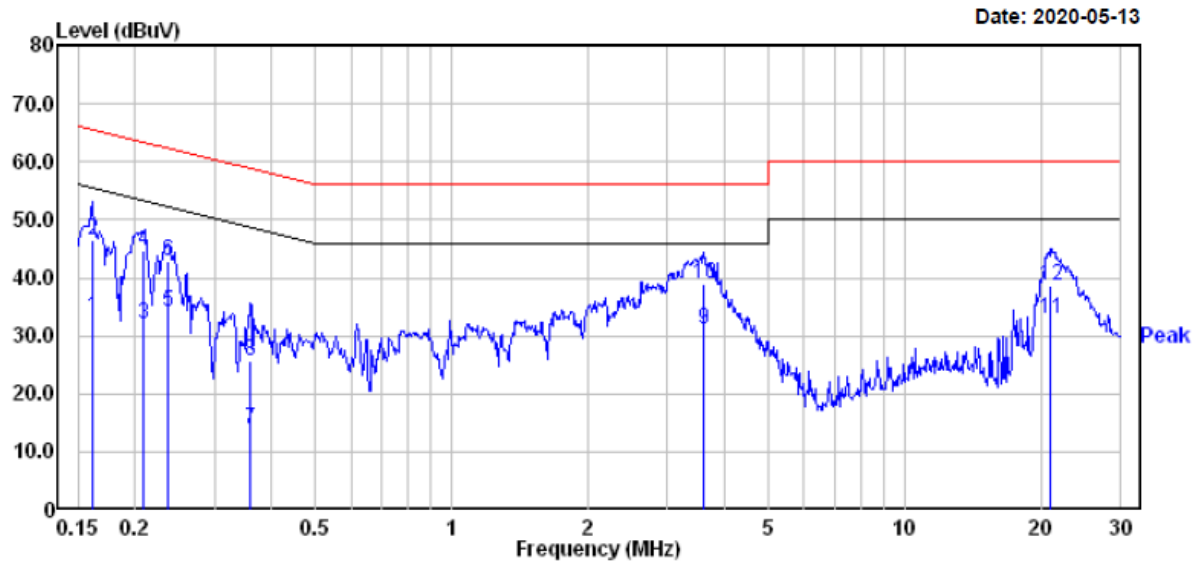
EUT operation mode: ***Transmitting in 2.4G Wi-Fi 802.11 n-HT20 (Chain0&Chain 1) high Channel and 5G Wi-Fi Band 1 802.11n-HT40 low channel (Chain 0&Chain 1)***

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.156	15.00	19.82	34.82	55.65	-20.83	Average
2	0.156	27.90	19.82	47.72	65.65	-17.93	QP
3	0.204	17.70	19.82	37.52	53.45	-15.93	Average
4	0.204	26.70	19.82	46.52	63.45	-16.93	QP
5	0.234	17.70	19.82	37.52	52.30	-14.78	Average
6	0.234	27.10	19.82	46.92	62.30	-15.38	QP
7	0.325	2.70	19.82	22.52	49.57	-27.05	Average
8	0.325	11.90	19.82	31.72	59.57	-27.85	QP
9	3.642	11.40	19.47	30.87	46.00	-15.13	Average
10	3.642	19.60	19.47	39.07	56.00	-16.93	QP
11	20.814	12.41	19.90	32.31	50.00	-17.69	Average
12	20.814	18.01	19.90	37.91	60.00	-22.09	QP

AC 120V/60 Hz, Neutral



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.161	13.40	19.83	33.23	55.43	-22.20	Average
2	0.161	26.80	19.83	46.63	65.43	-18.80	QP
3	0.208	12.20	19.82	32.02	53.27	-21.25	Average
4	0.208	24.80	19.82	44.62	63.27	-18.65	QP
5	0.237	14.30	19.82	34.12	52.22	-18.10	Average
6	0.237	23.00	19.82	42.82	62.22	-19.40	QP
7	0.360	-5.81	19.80	13.99	48.74	-34.75	Average
8	0.360	5.89	19.80	25.69	58.74	-33.05	QP
9	3.603	11.60	19.47	31.07	46.00	-14.93	Average
10	3.603	19.50	19.47	38.97	56.00	-17.03	QP
11	21.035	12.90	19.90	32.80	50.00	-17.20	Average
12	21.035	18.60	19.90	38.50	60.00	-21.50	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),(6),(7) – UNDESIRABLE EMISSION & RESTRICTED BANDS

Applicable Standard

FCC §15.407 (b) (1), (6), (7); §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 EIRP of –27dBm/MHz

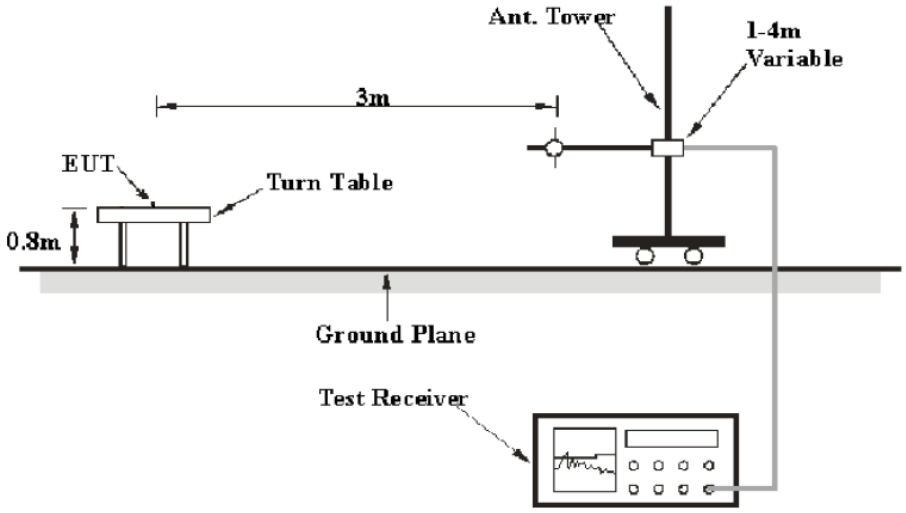
For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to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

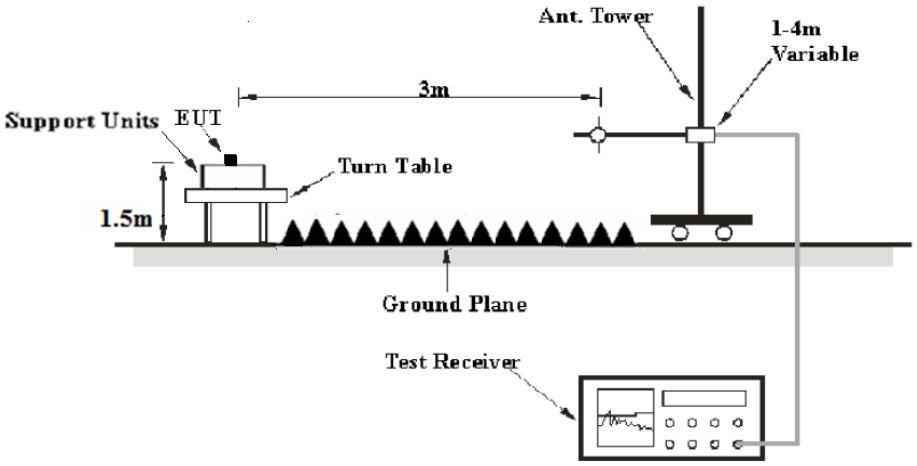
According to 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as: E [dBμV/m] = EIRP [dBm] + 95.2, for d = 3 meters.

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	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1GHz	1MHz	3 MHz	/	PK
	1MHz	3 MHz	/	Ave.

Test Procedure

During the radiated emission test, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

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

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

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna 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 –Extrapolation result

Test Data

Environmental Conditions

Temperature:	24.8~25.2 ℃
Relative Humidity:	48~51 %
ATM Pressure:	101.1~101.3 kPa

The testing was performed by Stone Zhang from 2020-03-31 to 2020-06-16.

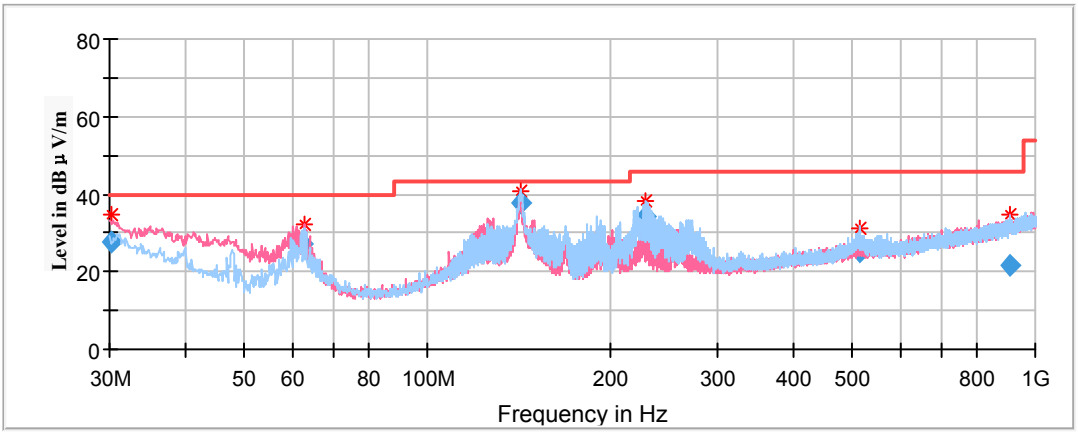
Test Mode: Transmitting

Antenna 1

Spurious Emission Test

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

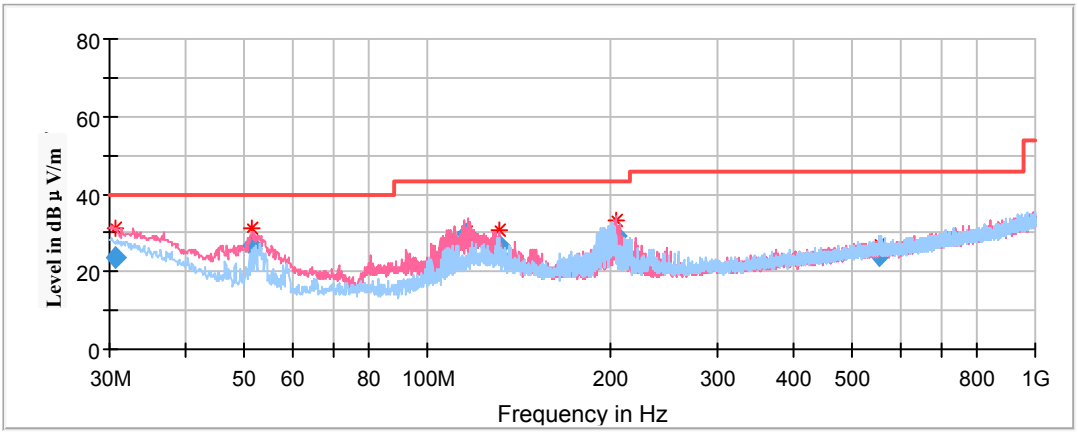
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11 ac80 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11a mode in channel 5240MHz(Chain0) in Z-axis of orientation was recorded.



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)				
30.14	27.78	100	V	155	-4	40.00	12.22
62.18	27.26	100	V	113	-17.8	40.00	12.74
142.55	37.69	200	H	210	-12.1	43.50	5.81
228.52	34.20	200	H	289	-12.2	46.00	11.80
513.72	25.35	200	H	283	-6	46.00	20.65
908.97	21.81	200	V	151	0.2	46.00	24.19

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

Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11 ac80 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11a mode in channel 5825MHz(Chain0) in Z-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)				
30.60	23.50	100	V	28	-4.3	40.00	16.50
51.44	26.78	100	V	110	-17.6	40.00	13.22
116.21	29.68	100	V	136	-11.9	43.50	13.82
131.05	26.56	100	V	151	-11.6	43.50	16.94
204.97	28.98	100	V	141	-12.3	43.50	14.52
554.30	24.28	200	H	274	-5.6	46.00	21.72

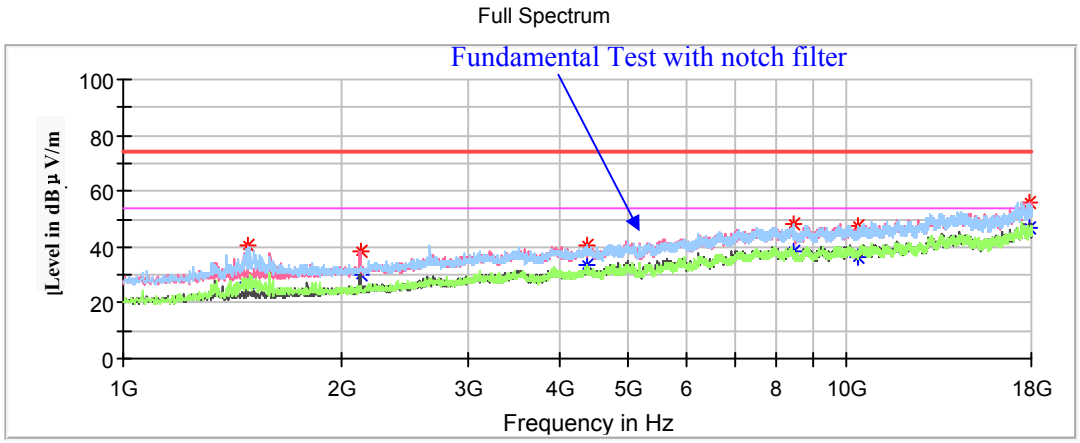
1GHz-18GHz (5150-5250MHz Band):

802.11a Mode(Chain0):

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

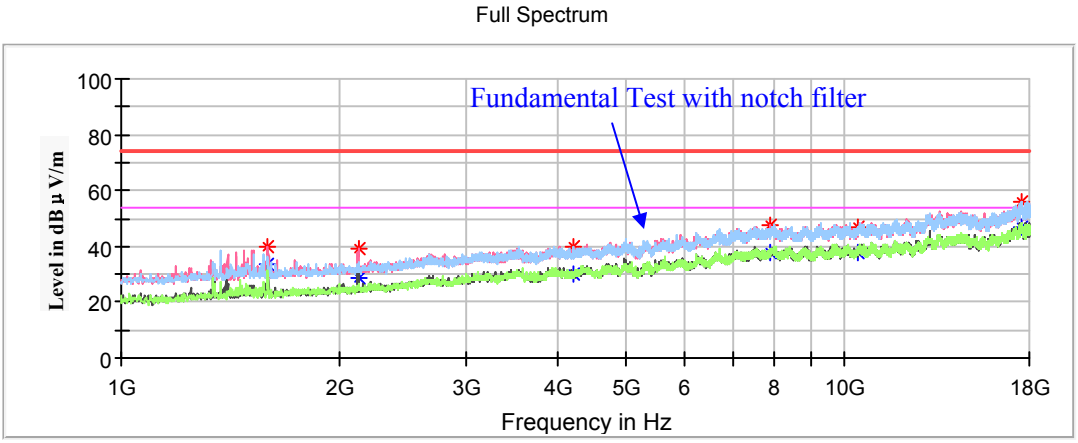
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



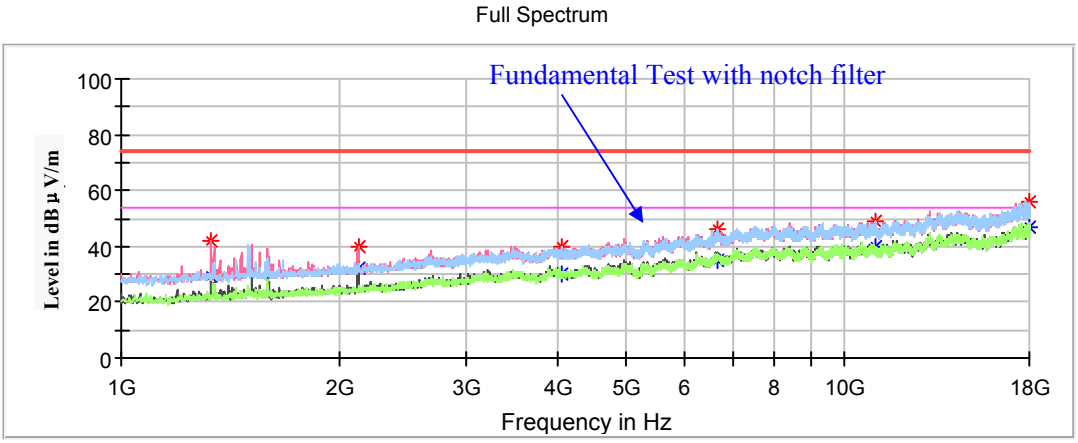
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1489.60	---	27.53	100	V	235	-16.4	54.00	26.47
1489.60	40.47	---	100	V	235	-16.4	74.00	33.53
2128.80	38.36	---	150	V	296	-13.9	68.20	29.84
4379.60	---	33.34	100	H	250	-6.4	54.00	20.66
4379.60	40.74	---	100	H	250	-6.4	74.00	33.26
8449.40	---	38.46	100	H	109	1.4	54.00	15.54
8449.40	48.57	---	100	H	109	1.4	74.00	25.43
10355.10	47.28	---	150	H	248	2.2	68.20	20.92
17838.50	---	46.53	150	V	0	8.8	54.00	7.47
17838.50	55.85	---	150	V	0	8.8	74.00	18.15

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)				
1593.30	---	33.39	150	V	245	-16.0	54.00	20.61
1593.30	39.77	---	150	V	245	-16.0	74.00	34.23
2127.10	39.04	---	100	V	261	-13.9	68.20	29.16
4223.20	---	30.2	100	H	0	-6.6	54.00	23.80
4223.20	39.68	---	100	H	0	-6.6	74.00	34.32
7881.60	47.31	---	100	V	242	1.6	68.20	20.89
10404.40	46.72	---	100	H	235	2.2	68.20	21.48
17510.40	55.99	---	150	H	0	8.9	68.20	12.21

High Channel: 5240MHz



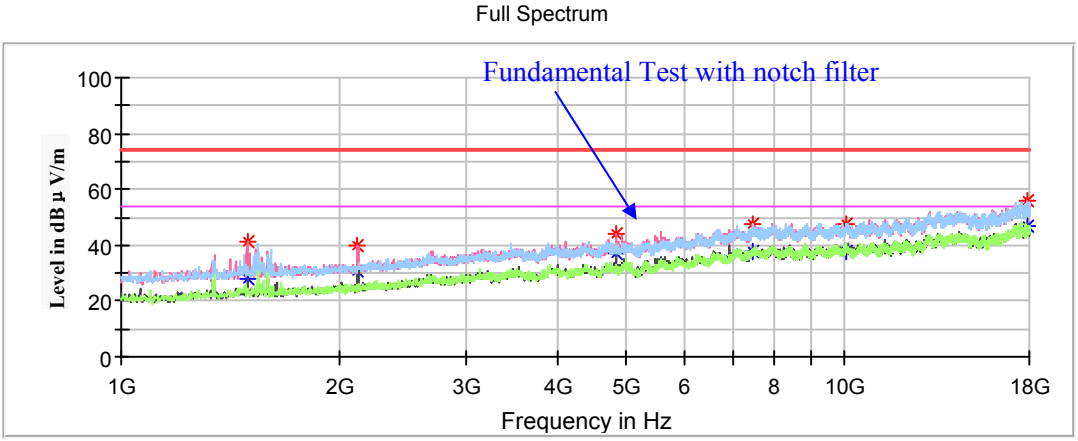
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1329.80	---	29.21	100	V	270	-17.3	54.00	24.79
1329.80	41.83	---	100	V	270	-17.3	74.00	32.17
2127.10	39.59	---	100	V	284	-13.9	68.20	28.61
4071.90	---	30.01	100	H	0	-6.9	54.00	23.99
4071.90	39.56	---	100	H	0	-6.9	74.00	34.44
6661.00	46.3	---	150	H	203	-0.8	68.20	21.90
11004.50	---	40.08	100	H	317	2.9	54.00	13.92
11004.50	49.29	---	100	H	317	2.9	74.00	24.71
17945.60	---	46.78	150	V	299	8.8	54.00	7.22
17945.60	55.65	---	150	V	299	8.8	74.00	18.35

802.11a Mode(Chain1):

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

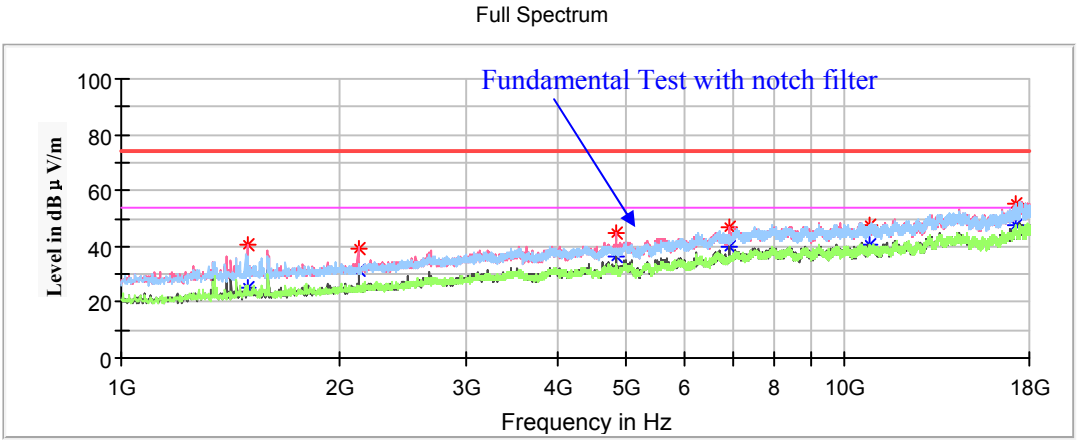
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



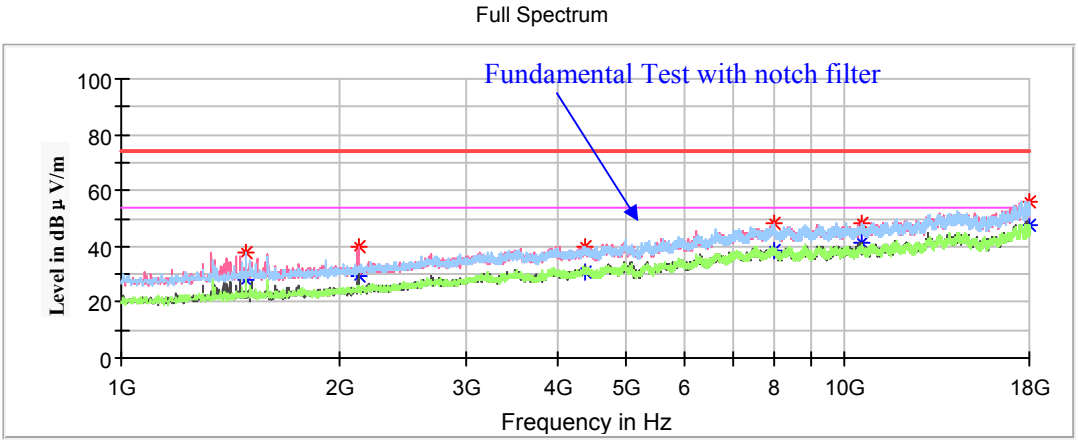
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1494.70	---	27.79	100	V	232	-16.4	54.00	26.21
1494.70	41.19	---	100	V	232	-16.4	74.00	32.81
2123.70	39.95	---	100	V	260	-14.0	68.20	28.25
4823.30	---	36.8	100	V	317	-5.5	54.00	17.20
4823.30	44.3	---	100	V	317	-5.5	74.00	29.70
7448.10	---	37.86	150	H	62	0.9	54.00	16.14
7448.10	47.61	---	150	H	62	0.9	74.00	26.39
10050.80	47.69	---	150	H	270	2	68.20	20.51
17942.20	---	46.71	150	V	99	8.8	54.00	7.29
17942.20	55.64	---	150	V	99	8.8	74.00	18.36

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)				
1493.00	---	25.44	150	V	260	-16.4	54.00	28.56
1493.00	40.42	---	150	V	260	-16.4	74.00	33.58
2130.50	39.05	---	100	V	266	-13.9	68.20	29.15
4821.60	---	36.22	150	V	337	-5.5	54.00	17.78
4821.60	44.6	---	150	V	337	-5.5	74.00	29.40
6933.00	46.72	---	150	V	83	-0.2	68.20	21.48
10851.50	---	40.35	100	H	111	2.7	54.00	13.65
10851.50	47.72	---	100	H	111	2.7	74.00	26.28
17211.20	55.33	---	100	H	296	7.9	68.20	12.87

High Channel: 5240MHz



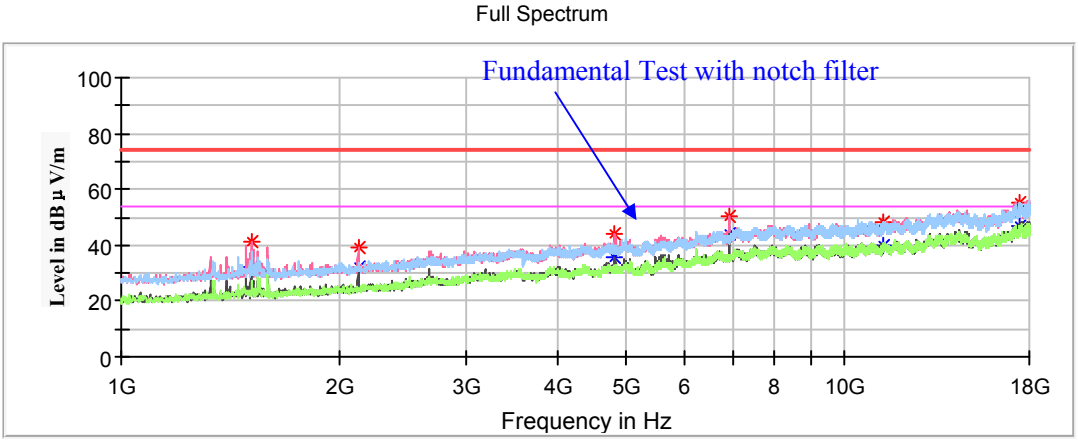
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1484.50	---	27.82	100	H	127	-16.4	54.00	26.18
1484.50	37.67	---	100	H	127	-16.4	74.00	36.33
2127.10	39.52	---	100	V	261	-13.9	68.20	28.68
4377.90	---	30.9	100	H	1	-6.4	54.00	23.10
4377.90	39.76	---	100	H	1	-6.4	74.00	34.24
7983.60	48.17	---	150	V	246	1.8	68.20	20.03
10535.30	48.19	---	150	V	5	2.4	68.20	20.01
17949.00	---	47.34	100	H	99	8.8	54.00	6.66
17949.00	56.14	---	100	H	99	8.8	74.00	17.86

802.11ac20 Mode(Chain0+Chain1):

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

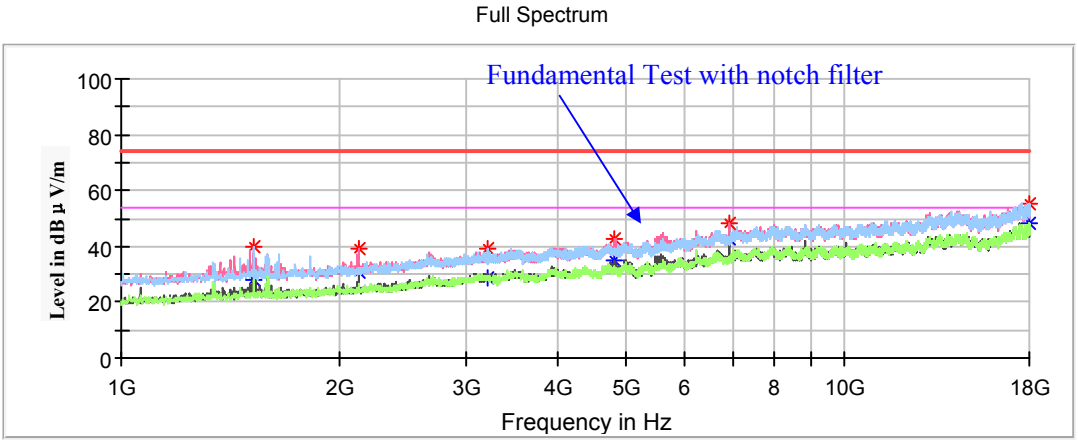
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



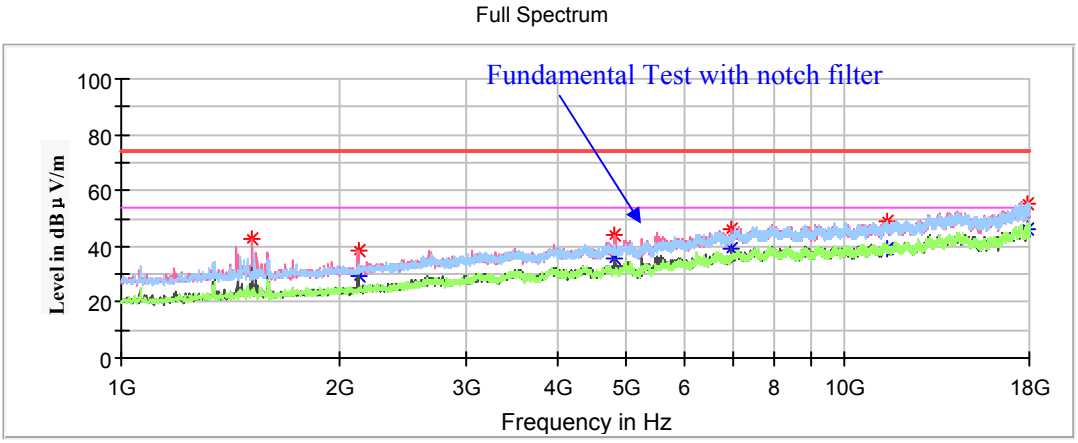
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1511.70	---	32.41	200	V	228	-16.3	54.00	21.59
1511.70	41.48	---	200	V	228	-16.3	74.00	32.52
2130.50	38.87	---	150	V	262	-13.9	68.20	29.33
4816.50	---	35.87	150	V	71	-5.6	54.00	18.13
4816.50	44.4	---	150	V	71	-5.6	74.00	29.60
6905.80	50.19	---	200	V	0	-0.3	68.20	18.01
11322.40	---	39.93	200	H	5	2.8	54.00	14.07
11322.40	48.45	---	200	H	5	2.8	74.00	25.55
17464.50	55.28	---	200	H	14	8.8	68.20	12.92

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)				
1527.00	---	28.05	200	H	118	-16.3	54.00	25.95
1527.00	40.11	---	200	H	118	-16.3	74.00	33.89
2127.10	39.1	---	150	V	221	-13.9	68.20	29.10
3215.10	38.93	---	150	H	48	-9.5	68.20	29.27
4816.50	---	35.2	150	V	57	-5.6	54.00	18.80
4816.50	42.55	---	150	V	57	-5.6	74.00	31.45
6933.00	48.42	---	150	V	71	-0.2	68.20	19.78
17949.00	---	48.57	200	H	341	8.8	54.00	5.43
17949.00	55.3	---	200	H	341	8.8	74.00	18.70

High Channel: 5240MHz

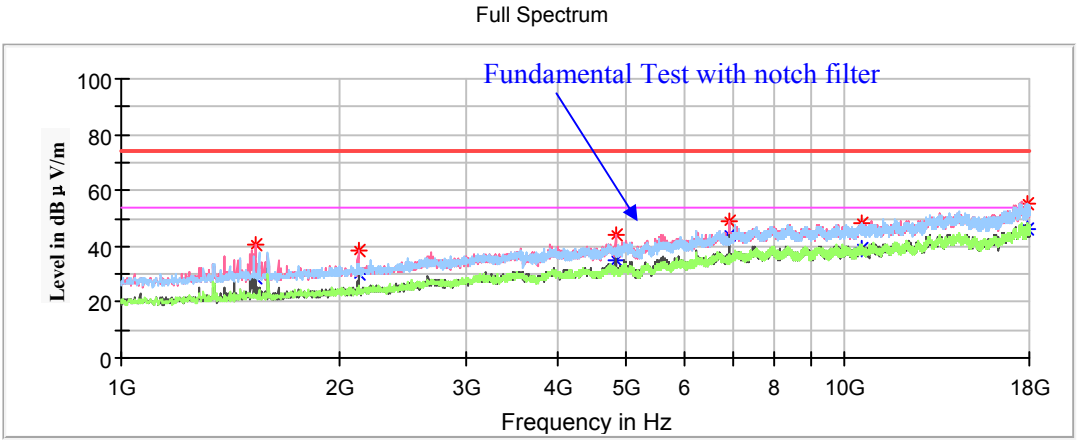


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1518.50	---	31.04	150	V	312	-16.3	54.00	22.96
1518.50	42.91	---	150	V	312	-16.3	74.00	31.09
2130.50	38.61	---	200	V	206	-13.9	68.20	29.59
4816.50	---	35.72	150	V	47	-5.6	54.00	18.28
4816.50	43.8	---	150	V	47	-5.6	74.00	30.20
6985.70	46.1	---	200	V	0	-0.1	68.20	22.10
11412.50	---	39.16	200	H	213	2.8	54.00	14.84
11412.50	48.69	---	200	H	213	2.8	74.00	25.31
17932.00	---	46.39	150	H	359	8.8	54.00	7.61
17932.00	55.29	---	150	H	359	8.8	74.00	18.71

802.11n-HT20 Mode*(Chain0+Chain1):*
*Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded*

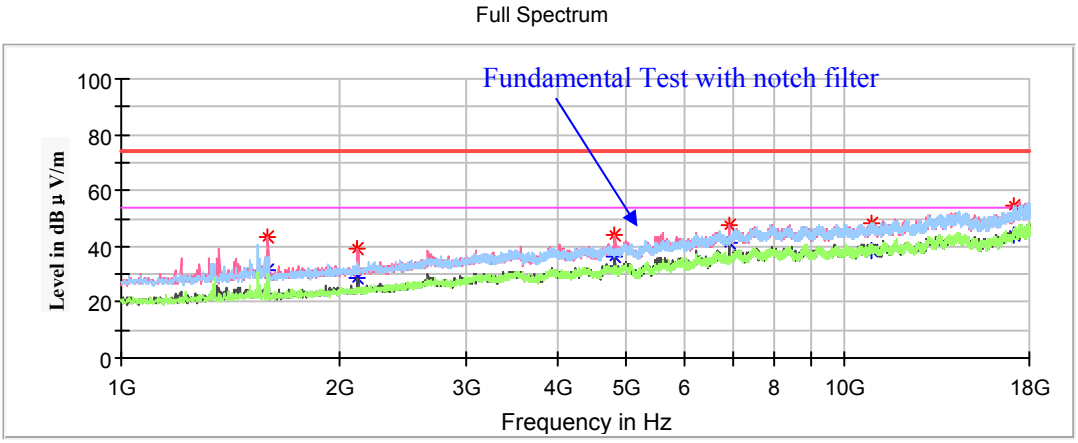
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



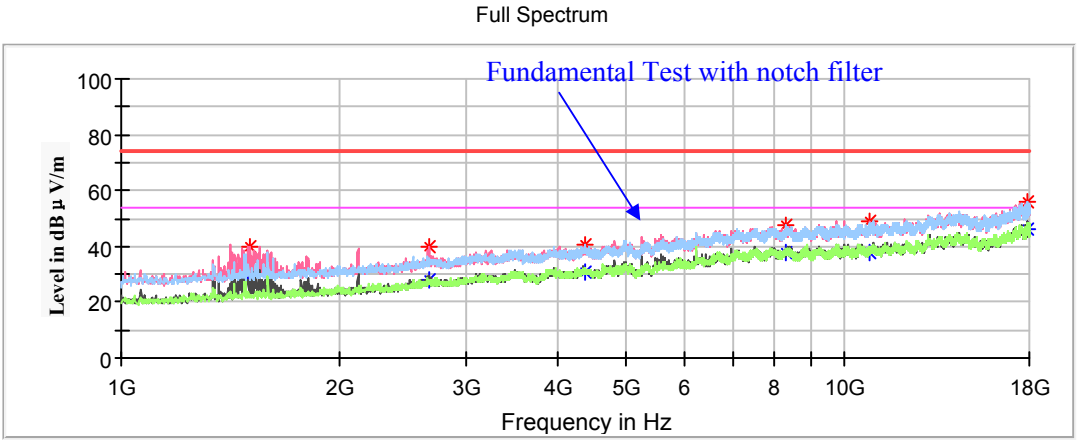
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1532.10	---	28.78	150	V	226	-16.2	54.00	25.22
1532.10	40.24	---	150	V	226	-16.2	74.00	33.76
2130.50	38.47	---	150	V	270	-13.9	68.20	29.73
4819.90	---	34.89	150	V	19	-5.6	54.00	19.11
4819.90	44.03	---	150	V	19	-5.6	74.00	29.97
6905.80	48.66	---	150	V	0	-0.3	68.20	19.54
10531.90	48.02	---	200	H	1	2.3	68.20	20.18
17915.00	---	45.89	150	H	341	8.8	54.00	8.11
17915.00	54.96	---	150	H	341	8.8	74.00	19.04

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)				
1596.70	---	31.72	200	V	248	-16.0	54.00	22.28
1596.70	43.03	---	200	V	248	-16.0	74.00	30.97
2123.70	38.98	---	200	V	262	-14.0	68.20	29.22
4816.50	---	36.66	150	V	62	-5.6	54.00	17.34
4816.50	43.99	---	150	V	62	-5.6	74.00	30.01
6933.00	47.82	---	200	V	0	-0.2	68.20	20.38
10860.00	---	38.58	200	H	26	2.7	54.00	15.42
10860.00	48.44	---	200	H	26	2.7	74.00	25.56
17093.90	54.41	---	200	H	26	7.5	68.20	13.79

High Channel: 5240MHz



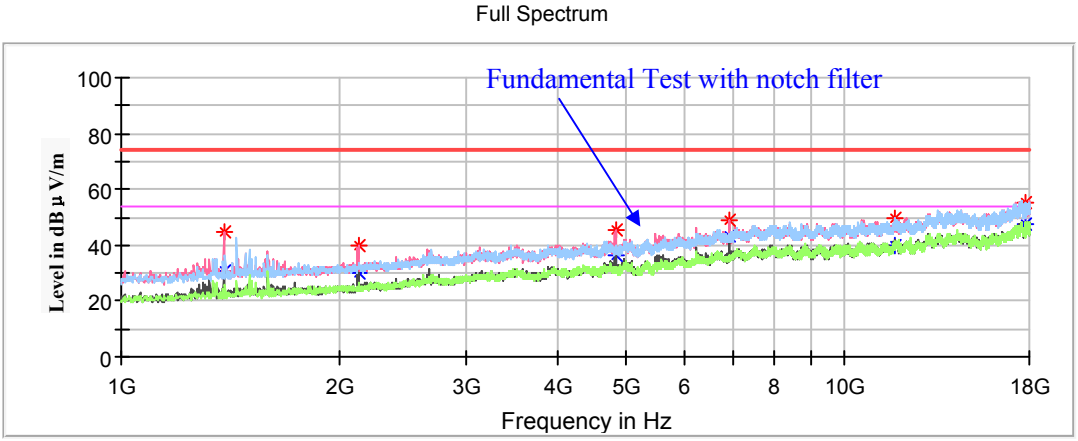
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1510.00	---	28.69	200	V	218	-16.3	54.00	25.31
1510.00	39.96	---	200	V	218	-16.3	74.00	34.04
2660.90	40.08	---	200	V	218	-11.7	68.20	28.12
4367.70	---	30.64	200	H	162	-6.4	54.00	23.36
4367.70	40.43	---	200	H	162	-6.4	74.00	33.57
8276.00	---	37.86	150	H	218	1.5	54.00	16.14
8276.00	47.28	---	150	H	218	1.5	74.00	26.72
10856.60	---	37.62	200	V	0	2.7	54.00	16.38
10856.60	48.7	---	200	V	0	2.7	74.00	25.30
17937.10	---	46.43	150	H	32	8.8	54.00	7.57
17937.10	56.25	---	150	H	32	8.8	74.00	17.75

802.11ac40 Mode(Chain0+Chain1):

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

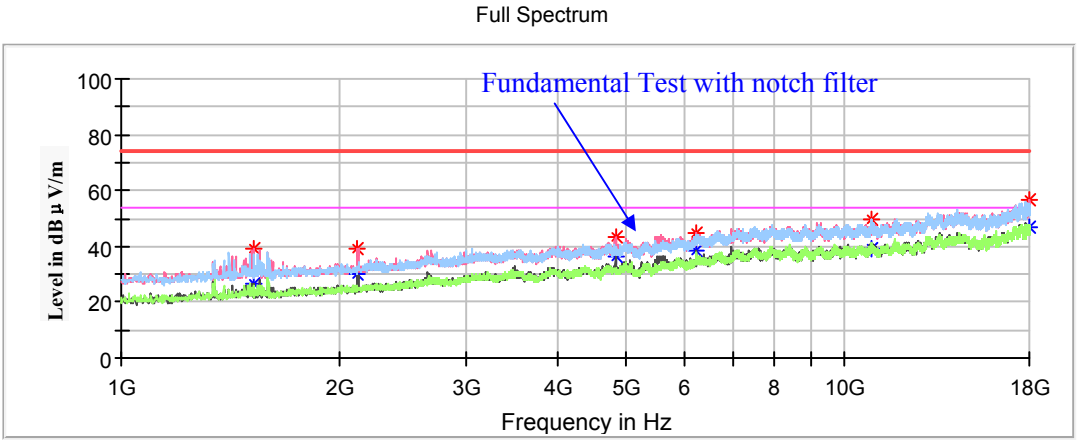
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1385.90	---	30.8	150	V	256	-17.0	54.00	23.20
1385.90	44.76	---	150	V	256	-17.0	74.00	29.24
2127.10	39.71	---	200	V	250	-13.9	68.20	28.49
4818.20	---	36.66	200	V	60	-5.6	54.00	17.34
4818.20	45.14	---	200	V	60	-5.6	74.00	28.86
6919.40	49.27	---	200	V	0	-0.2	68.20	18.93
11764.40	---	40.19	150	H	205	3.3	54.00	13.81
11764.40	49.57	---	150	H	205	3.3	74.00	24.43
17828.30	---	47.67	200	H	263	8.8	54.00	6.33
17828.30	55.47	---	200	H	263	8.8	74.00	18.53

High Channel: 5230MHz

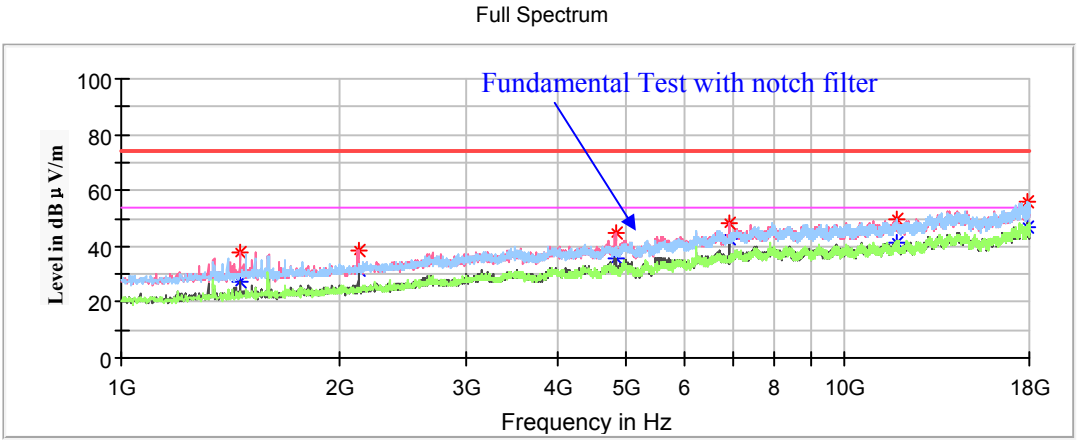


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1523.60	---	26.45	200	V	231	-16.3	54.00	27.55
1523.60	39.29	---	200	V	231	-16.3	74.00	34.71
2123.70	39.2	---	150	V	289	-14.0	68.20	29.00
4818.20	---	36.53	150	V	47	-5.6	54.00	17.47
4818.20	43.5	---	150	V	47	-5.6	74.00	30.50
6249.60	44.68	---	200	V	14	-2.1	68.20	23.52
10909.30	---	38.82	150	H	198	2.8	54.00	15.18
10909.30	49.45	---	150	H	198	2.8	74.00	24.55
17964.30	---	46.87	200	V	71	8.8	54.00	7.13
17964.30	56.53	---	200	V	71	8.8	74.00	17.47

802.11n-HT40 Mode*(Chain0+Chain1)*:
*Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded*

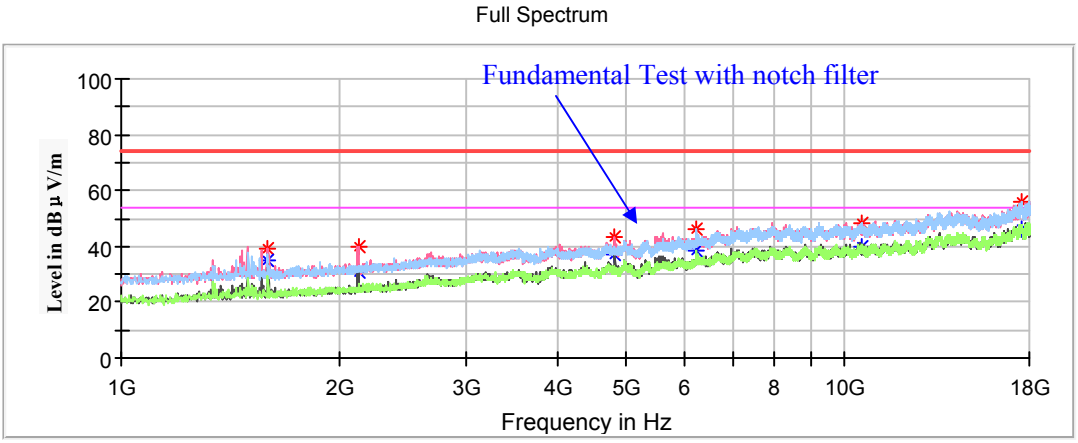
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1462.40	---	27.16	150	V	289	-16.6	54.00	26.84
1462.40	37.53	---	150	V	289	-16.6	74.00	36.47
2128.80	38.36	---	200	V	261	-13.9	68.20	29.84
4818.20	---	35.55	150	V	47	-5.6	54.00	18.45
4818.20	44.77	---	150	V	47	-5.6	74.00	29.23
6919.40	48.23	---	200	V	358	-0.2	68.20	19.97
11774.60	---	41.03	150	H	229	3.4	54.00	12.97
11774.60	49.39	---	150	H	229	3.4	74.00	24.61
17938.80	---	46.78	200	H	41	8.8	54.00	7.22
17938.80	55.95	---	200	H	41	8.8	74.00	18.05

High Channel: 5230MHz

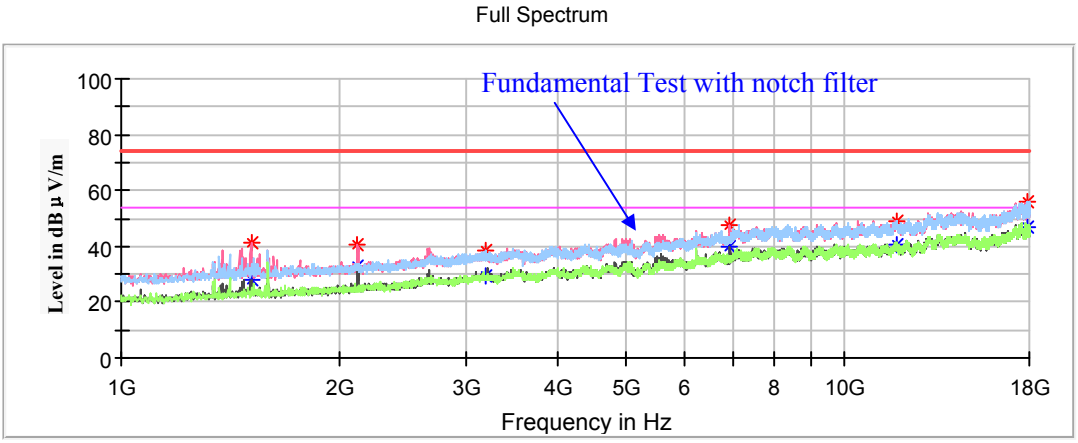


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1596.70	---	34.98	200	V	236	-16.0	54.00	19.02
1596.70	39.18	---	200	V	236	-16.0	74.00	34.82
2127.10	39.77	---	200	V	267	-13.9	68.20	28.43
4816.50	---	36.91	150	V	51	-5.6	54.00	17.09
4816.50	43.3	---	150	V	51	-5.6	74.00	30.70
6249.60	45.91	---	150	H	329	-2.1	68.20	22.29
10545.50	48.22	---	200	H	154	2.4	68.20	19.98
17518.90	56.17	---	200	H	32	8.9	68.20	12.03

802.11ac80 Mode*(Chain0+Chain1)*:
*Pre-scan with X,Y and Z axes of orientation, the worst case **Z-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: 5210MHz



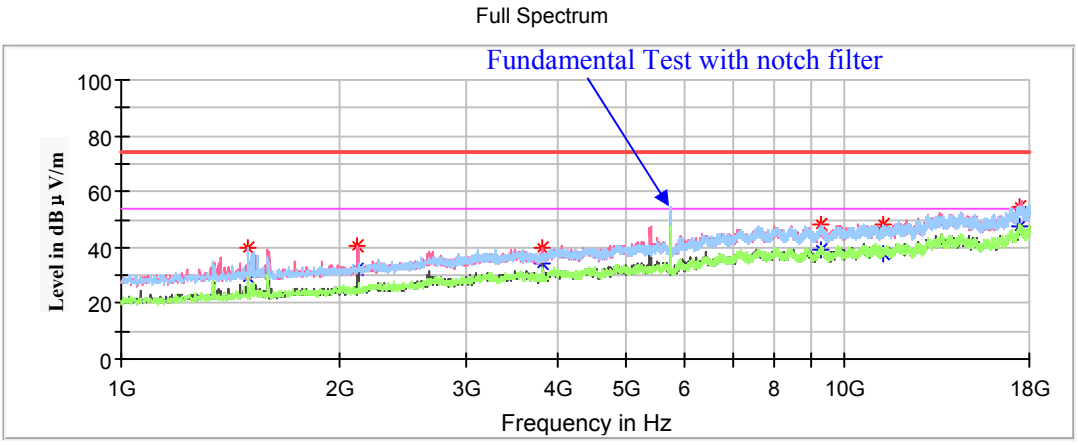
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1511.70	---	27.76	150	V	312	-16.3	54.00	26.24
1511.70	41.43	---	150	V	312	-16.3	74.00	32.57
2123.70	40.44	---	200	V	266	-14.0	68.20	27.76
3182.80	38.57	---	200	H	353	-9.6	68.20	29.63
6946.60	47.87	---	200	V	113	-0.2	68.20	20.33
11778.00	---	40.85	200	H	314	3.4	54.00	13.15
11778.00	49.02	---	200	H	314	3.4	74.00	24.98
17937.10	---	47.01	150	V	359	8.8	54.00	6.99
17937.10	56.08	---	150	V	359	8.8	74.00	17.92

5725-5850MHz Band:
1GHz-18GHz:

802.11a Mode(Chain0):
*(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded.)*

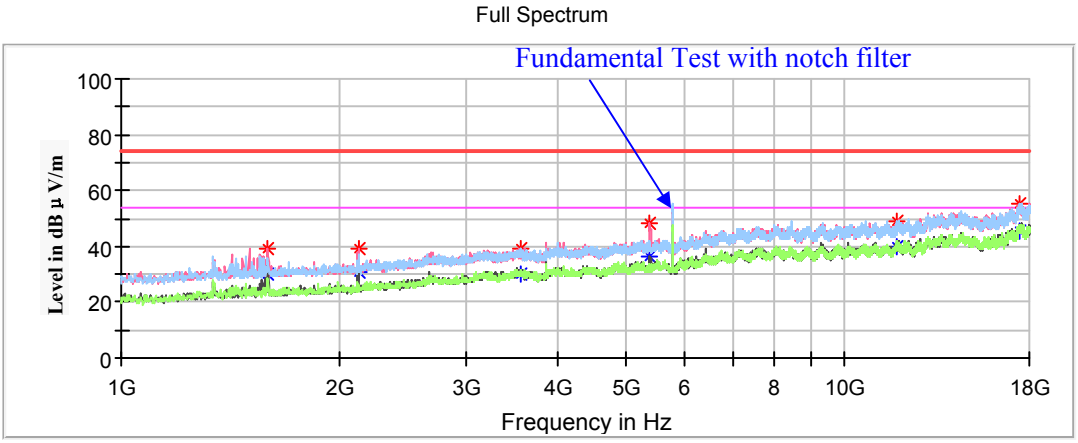
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



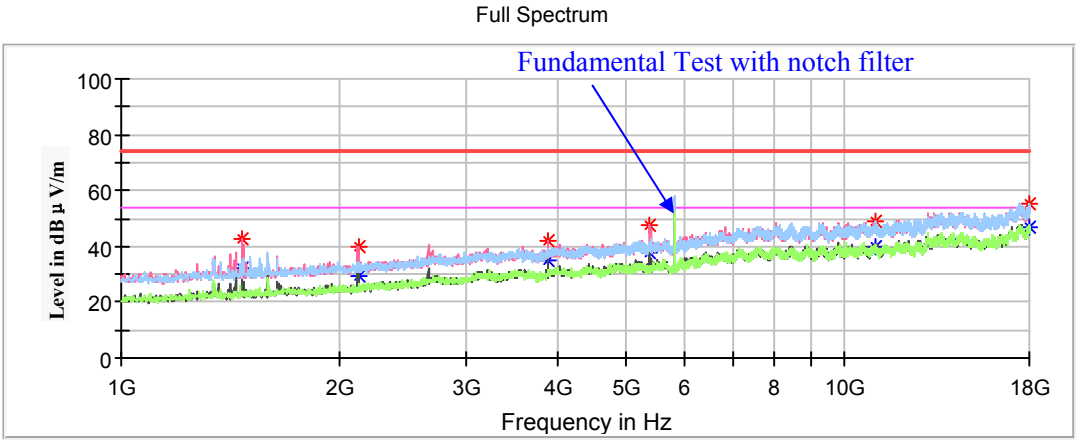
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1498.10	---	29.62	200	H	161	-16.4	54.00	24.38
1498.10	39.97	---	200	H	161	-16.4	74.00	34.03
2123.70	40.46	---	150	V	256	-14	68.20	27.74
3828.80	---	34.4	150	V	47	-7.6	54.00	19.60
3828.80	39.68	---	150	V	47	-7.6	74.00	34.32
9280.70	48.2	---	200	V	60	2	68.20	20.00
11269.70	---	37.51	150	H	74	2.8	54.00	16.49
11269.70	47.9	---	150	H	74	2.8	74.00	26.10
17456.00	54.72	---	200	H	131	8.7	68.20	13.48

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)				
1593.30	---	30.17	150	V	242	-16.0	54.00	23.83
1593.30	39.41	---	150	V	242	-16.0	74.00	34.59
2128.80	39.41	---	150	V	256	-13.9	68.20	28.79
3573.80	39.44	---	150	H	280	-8.6	68.20	28.76
5365.60	---	36.09	200	V	55	-4.3	54.00	17.91
5365.60	48.17	---	200	V	55	-4.3	74.00	25.83
11791.60	---	39.69	200	H	0	3.4	54.00	14.31
11791.60	49.05	---	200	H	0	3.4	74.00	24.95
17401.60	55.15	---	200	H	334	8.6	68.20	13.05

High Channel: 5825MHz



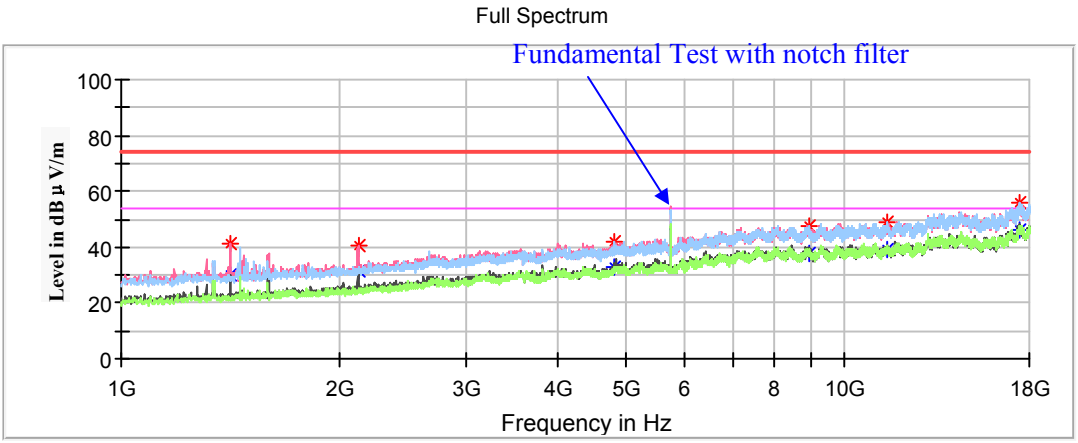
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1470.90	---	32.24	200	V	236	-16.5	54.00	21.76
1470.90	42.74	---	200	V	236	-16.5	74.00	31.26
2125.40	39.9	---	200	V	266	-14.0	68.20	28.30
3883.20	---	34.8	150	V	291	-7.4	54.00	19.20
3883.20	41.84	---	150	V	291	-7.4	74.00	32.16
5367.30	---	37.63	150	V	68	-4.2	54.00	16.37
5367.30	47.82	---	150	V	68	-4.2	74.00	26.18
10999.40	---	40.11	150	H	358	2.9	54.00	13.89
10999.40	48.79	---	150	H	358	2.9	74.00	25.21
17971.10	---	46.56	200	H	247	8.8	54.00	7.44
17971.10	55.09	---	200	H	247	8.8	74.00	18.91

802.11a Mode(Chain1):

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

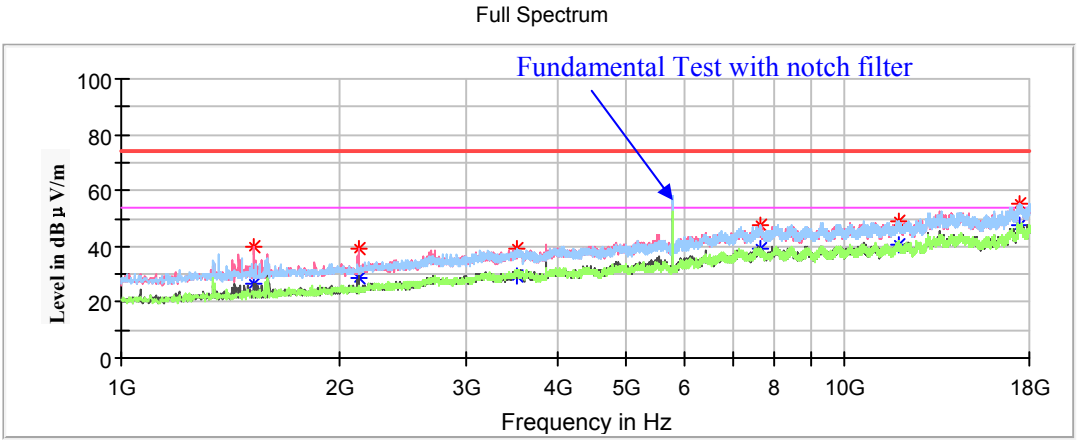
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



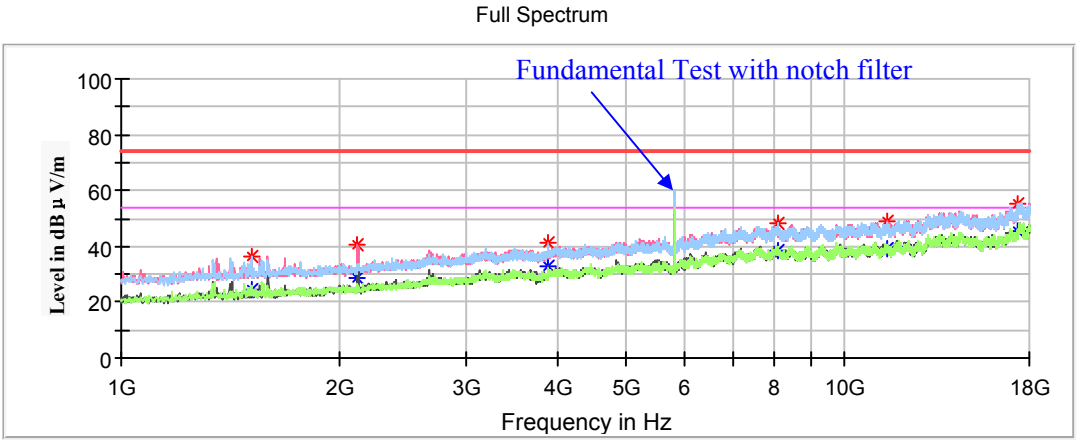
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1413.10	---	29.76	150	V	227	-16.8	54.00	24.24
1413.10	41.47	---	150	V	227	-16.8	74.00	32.53
2125.40	40.56	---	200	V	265	-14	68.20	27.64
4808.00	---	32.73	200	H	145	-5.6	54.00	21.27
4808.00	42.29	---	200	H	145	-5.6	74.00	31.71
8928.80	47.7	---	200	H	346	1.8	68.20	20.50
11470.30	---	39.46	150	H	276	2.8	54.00	14.54
11470.30	48.76	---	150	H	276	2.8	74.00	25.24
17498.50	55.71	---	200	H	346	8.9	68.20	12.49

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)				
1527.00	---	26.79	150	V	255	-16.3	54.00	27.21
1527.00	39.64	---	150	V	255	-16.3	74.00	34.36
2130.50	39.04	---	150	V	255	-13.9	68.20	29.16
3522.80	39.08	---	200	H	346	-8.7	68.20	29.12
7631.70	---	39.11	150	H	266	1.2	54.00	14.89
7631.70	47.85	---	150	H	266	1.2	74.00	26.15
11890.20	---	40.26	200	V	153	3.6	54.00	13.74
11890.20	48.76	---	200	V	153	3.6	74.00	25.24
17481.50	55.35	---	150	V	78	8.8	68.20	12.85

High Channel: 5825MHz



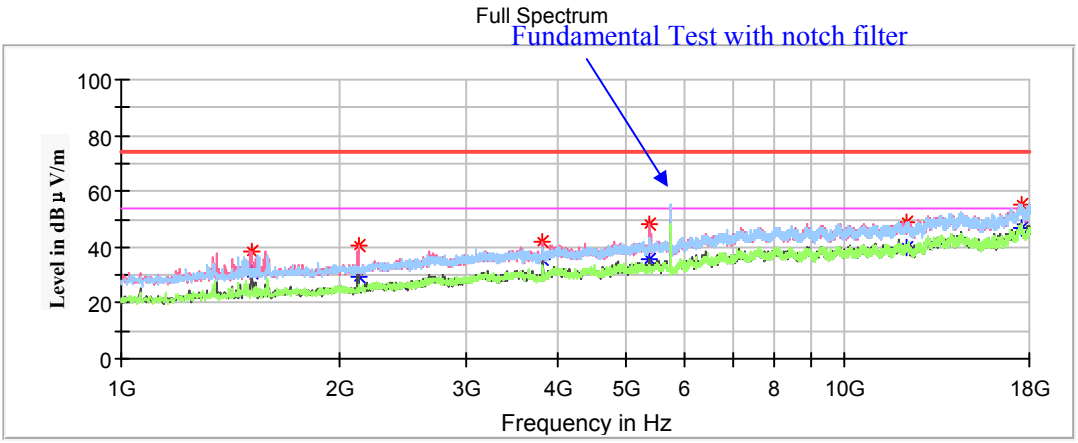
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1513.40	---	24.72	200	H	175	-16.3	54.00	29.28
1513.40	36.71	---	200	H	175	-16.3	74.00	37.29
2123.70	40.32	---	150	V	270	-14.0	68.20	27.88
3883.20	---	32.87	150	V	2	-7.4	54.00	21.13
3883.20	41.27	---	150	V	2	-7.4	74.00	32.73
8102.60	---	38.36	150	H	31	1.7	54.00	15.64
8102.60	48.23	---	150	H	31	1.7	74.00	25.77
11453.30	---	39.4	150	V	227	2.8	54.00	14.60
11453.30	48.69	---	150	V	227	2.8	74.00	25.31
17376.10	55.32	---	200	H	291	8.5	68.20	12.88

802.11ac20 Mode(Chain0+Chain1):

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

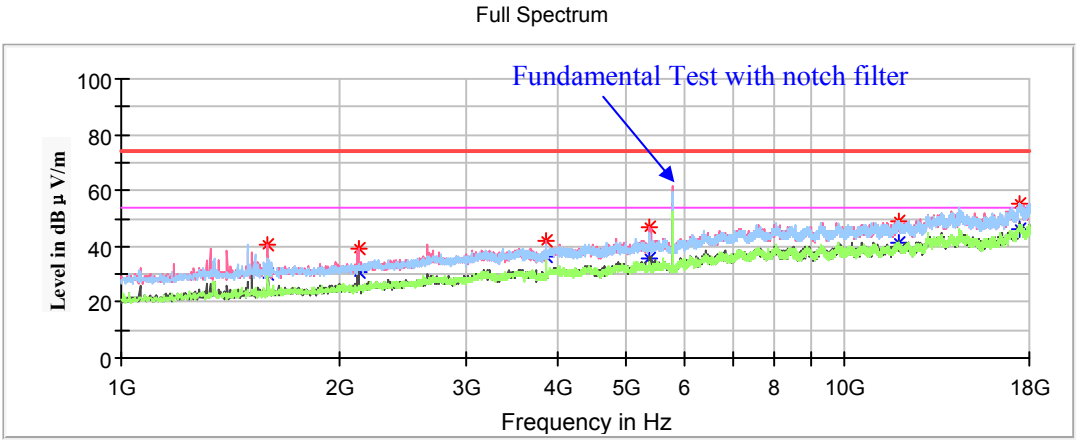
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



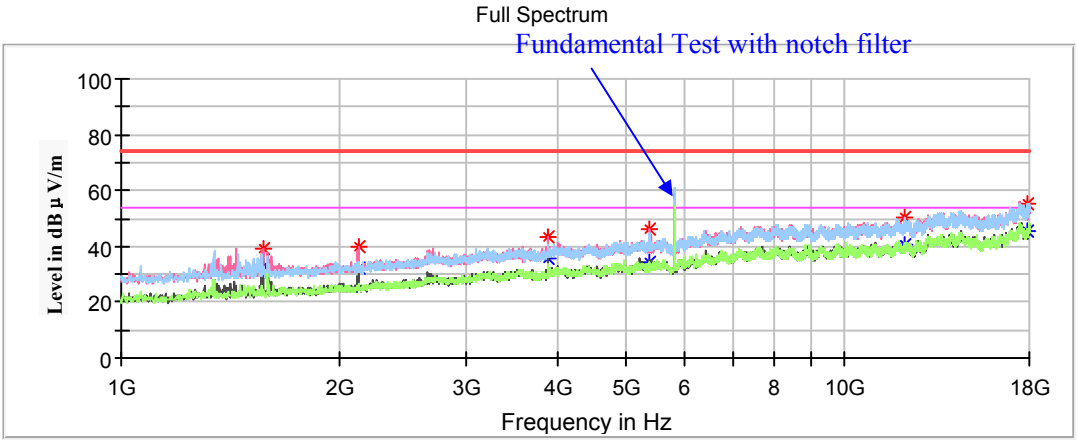
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1511.70	---	30.51	150	V	262	-16.3	54.00	23.49
1511.70	38.59	---	150	V	262	-16.3	74.00	35.41
2127.10	40.37	---	200	V	262	-13.9	68.20	27.83
3828.80	---	35.88	150	V	334	-7.6	54.00	18.12
3828.80	42.14	---	150	V	334	-7.6	74.00	31.86
5362.20	---	35.69	150	V	47	-4.3	54.00	18.31
5362.20	48.18	---	150	V	47	-4.3	74.00	25.82
12182.60	---	39.72	200	H	124	3.5	54.00	14.28
12182.60	48.82	---	200	H	124	3.5	74.00	25.18
17566.50	55.38	---	200	H	299	8.9	68.20	12.82

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)				
1595.00	---	30.04	200	V	18	-16.0	54.00	23.96
1595.00	40.65	---	200	V	18	-16.0	74.00	33.35
2130.50	39.02	---	150	V	248	-13.9	68.20	29.18
3856.00	---	36.23	200	V	7	-7.5	54.00	17.77
3856.00	41.95	---	200	V	7	-7.5	74.00	32.05
5369.00	---	35.59	150	V	48	-4.2	54.00	18.41
5369.00	46.94	---	150	V	48	-4.2	74.00	27.06
11849.40	---	41.11	150	H	306	3.5	54.00	12.89
11849.40	49.13	---	150	H	306	3.5	74.00	24.87
17496.80	55.53	---	150	H	126	8.9	68.20	12.67

High Channel: 5825MHz

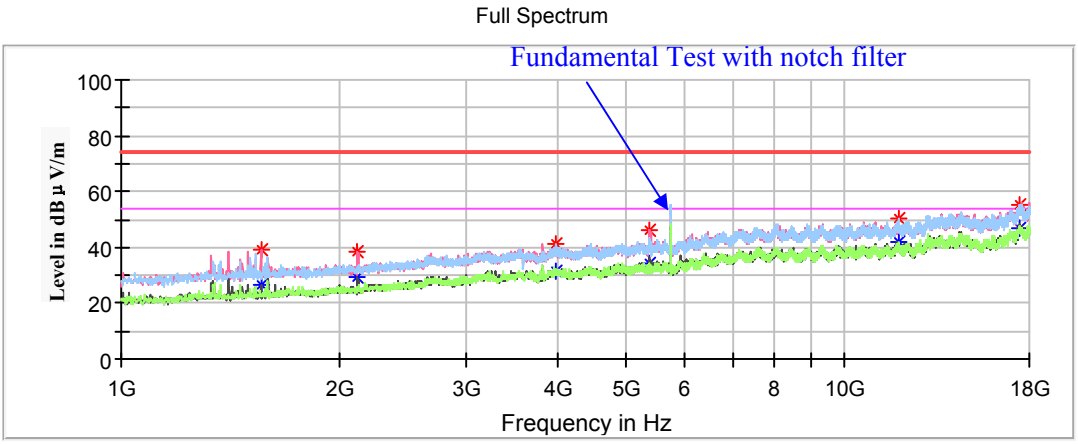


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1569.50	---	32.79	150	V	242	-16.1	54.00	21.21
1569.50	39.08	---	150	V	242	-16.1	74.00	34.92
2127.10	39.89	---	200	V	266	-13.9	68.20	28.31
3883.20	---	35.88	200	V	40	-7.4	54.00	18.12
3883.20	43.08	---	200	V	40	-7.4	74.00	30.92
5362.20	---	34.36	150	V	0	-4.3	54.00	19.64
5362.20	46.17	---	150	V	47	-4.3	74.00	27.83
12138.40	---	40.75	200	H	95	3.6	54.00	13.25
12138.40	50.07	---	200	H	95	3.6	74.00	23.93
17938.80	---	45.11	150	H	340	8.8	54.00	8.89
17938.80	54.91	---	150	H	340	8.8	74.00	19.09

802.11n-HT20 Mode*(Chain0+Chain1):*
*(Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)*

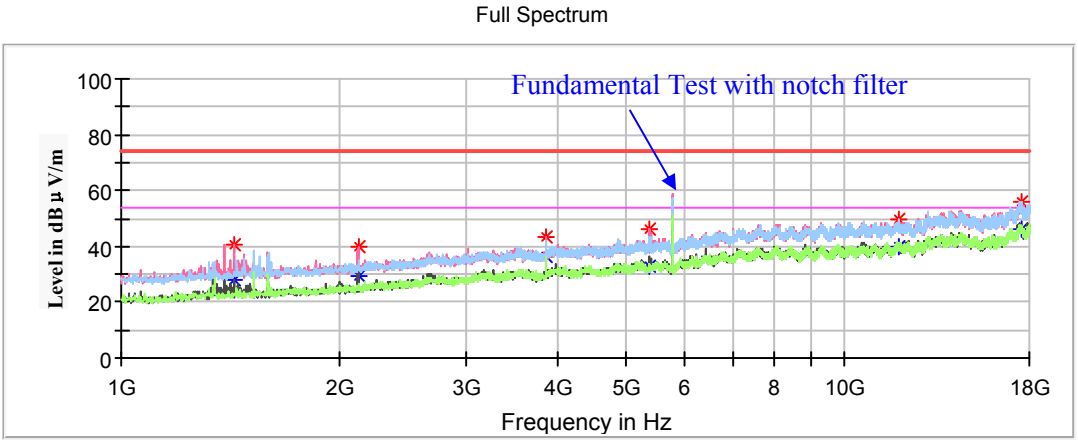
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



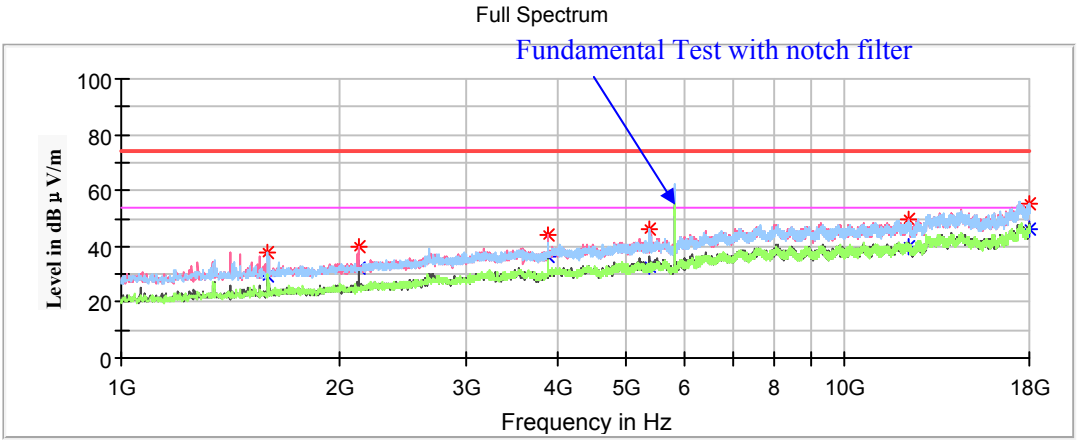
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1559.30	---	26.68	200	V	235	-16.1	54.00	27.32
1559.30	39.28	---	200	V	235	-16.1	74.00	34.72
2123.70	38.22	---	200	V	296	-14	68.20	29.98
3998.80	---	31.63	150	H	329	-7.0	54.00	22.37
3998.80	41.3	---	150	H	329	-7.0	74.00	32.70
5365.60	---	33.97	200	V	79	-4.3	54.00	20.03
5365.60	46.26	---	200	V	79	-4.3	74.00	27.74
11842.60	---	41.91	150	H	347	3.5	54.00	12.09
11842.60	50.01	---	150	H	347	3.5	74.00	23.99
17464.50	55.15	---	150	H	32	8.8	68.20	13.05

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)				
1431.80	---	27.91	150	V	227	-16.7	54.00	26.09
1431.80	40.3	---	150	V	227	-16.7	74.00	33.70
2125.40	39.74	---	200	V	265	-14.0	68.20	28.46
3856.00	---	36.6	200	V	0	-7.5	54.00	17.40
3856.00	43.05	---	200	V	0	-7.5	74.00	30.95
5362.20	---	33.14	150	V	47	-4.3	54.00	20.86
5362.20	46.34	---	150	V	47	-4.3	74.00	27.66
11878.30	---	40.17	200	H	347	3.6	54.00	13.83
11878.30	49.56	---	200	H	347	3.6	74.00	24.44
17525.70	56.09	---	150	H	0	8.9	68.20	12.11

High Channel: 5825MHz



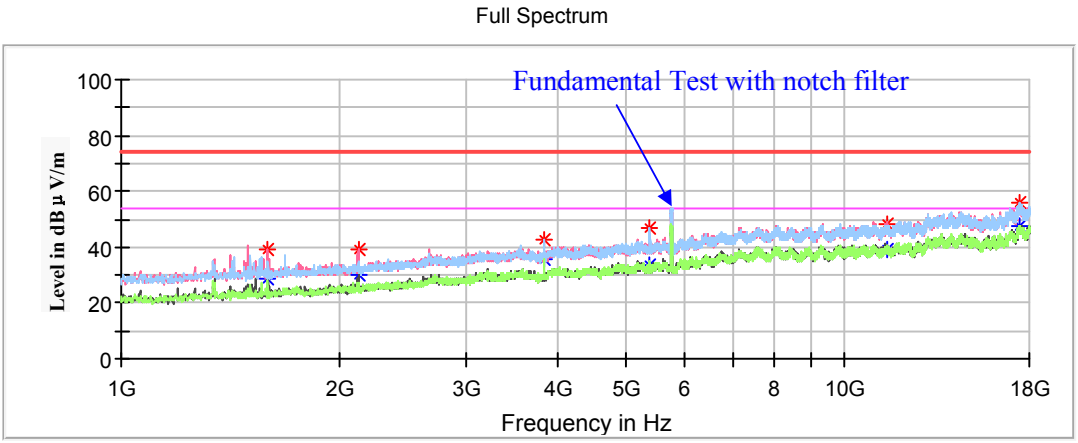
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.00	---	29.56	150	H	185	-16.0	54.00	24.44
1595.00	37.68	---	150	H	185	-16.0	74.00	36.32
2127.10	39.93	---	200	V	261	-13.9	68.20	28.27
3883.20	---	36.7	150	V	31	-7.4	54.00	17.30
3883.20	44.3	---	150	V	31	-7.4	74.00	29.70
5363.90	---	33.17	150	H	97	-4.3	54.00	20.83
5363.90	46.01	---	150	H	97	-4.3	74.00	27.99
12231.90	---	39.77	200	V	143	3.4	54.00	14.23
12231.90	49.45	---	200	V	143	3.4	74.00	24.55
17964.30	---	46.3	200	H	320	8.8	54.00	7.70
17964.30	54.98	---	200	H	320	8.8	74.00	19.02

802.11ac40 Mode(Chain0+Chain1):

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

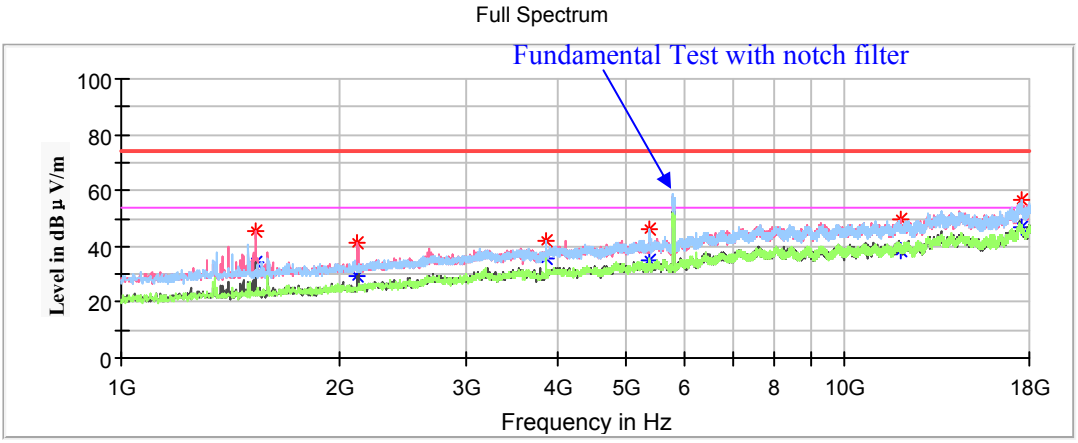
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1593.30	---	28.54	150	V	243	-16.0	54.00	25.46
1593.30	39.01	---	150	V	243	-16.0	74.00	34.99
2128.80	39.45	---	200	V	265	-13.9	68.20	28.75
3835.60	---	35.71	200	H	33	-7.6	54.00	18.29
3835.60	42.33	---	200	H	33	-7.6	74.00	31.67
5367.30	---	33.45	150	H	296	-4.2	54.00	20.55
5367.30	46.5	---	150	H	296	-4.2	74.00	27.50
11472.00	---	39.08	150	V	228	2.8	54.00	14.92
11472.00	48.59	---	150	V	228	2.8	74.00	25.41
17483.20	56.09	---	150	H	264	8.8	68.20	12.11

High Channel: 5795MHz

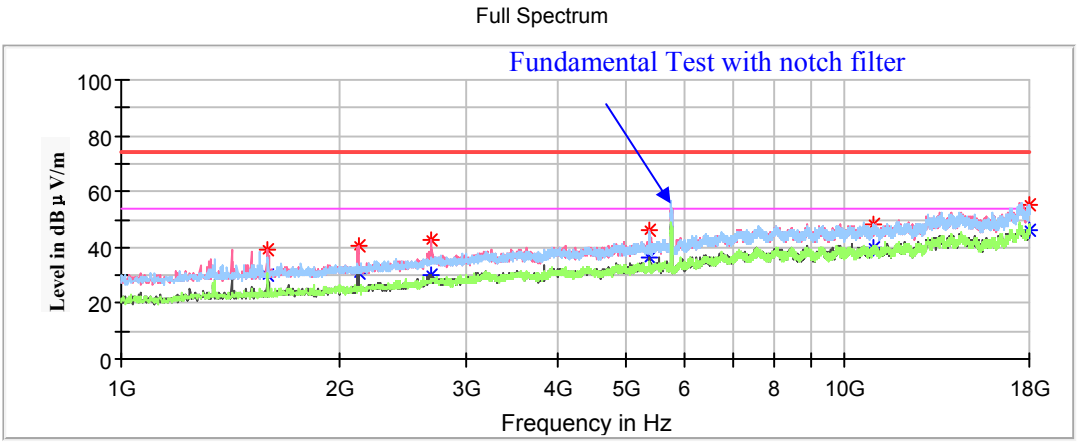


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1533.80	---	34.13	200	V	234	-16.2	54.00	19.87
1533.80	45.39	---	200	V	234	-16.2	74.00	28.61
2123.70	41.45	---	200	V	265	-14	68.20	26.75
3862.80	---	35.79	200	H	278	-7.5	54.00	18.21
3862.80	41.72	---	200	H	278	-7.5	74.00	32.28
5363.90	---	34.65	150	H	296	-4.3	54.00	19.35
5363.90	45.84	---	150	H	296	-4.3	74.00	28.16
11936.10	---	38.53	200	V	351	3.7	54.00	15.47
11936.10	49.48	---	200	V	351	3.7	74.00	24.52
17554.60	56.29	---	150	H	1	8.9	68.20	11.91

802.11n-HT40 Mode*(Chain0+Chain1)*:
*(Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)*

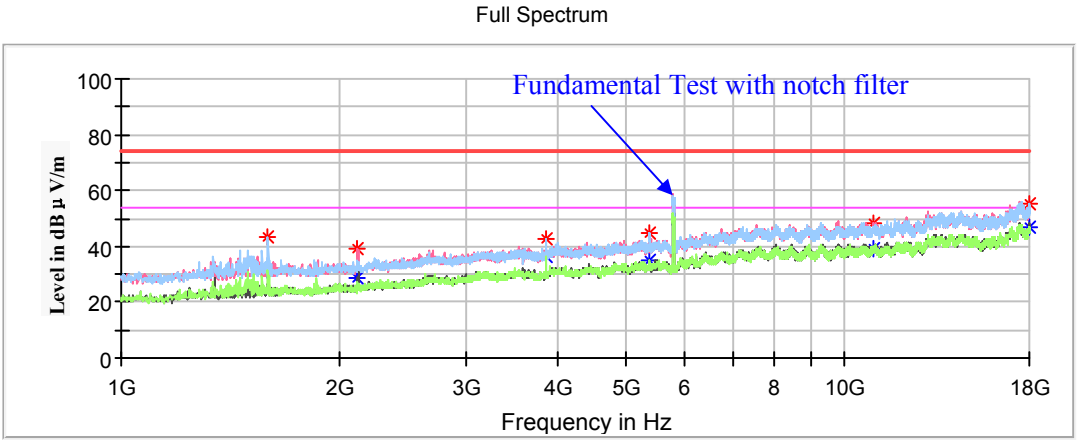
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1595.00	---	29.73	200	V	233	-16.0	54.00	24.27
1595.00	38.86	---	200	V	233	-16.0	74.00	35.14
2125.40	40.62	---	150	V	263	-14.0	68.20	27.58
2684.70	42.95	---	200	V	159	-11.6	68.20	25.25
5365.60	---	36.03	200	V	0	-4.3	54.00	17.97
5365.60	46.14	---	200	V	0	-4.3	74.00	27.86
10938.20	---	39.98	150	H	199	2.8	54.00	14.02
10938.20	48.01	---	150	H	199	2.8	74.00	25.99
17950.70	---	45.82	150	H	0	8.8	54.00	8.18
17950.70	55.35	---	150	H	0	8.8	74.00	18.65

High Channel: 5795MHz

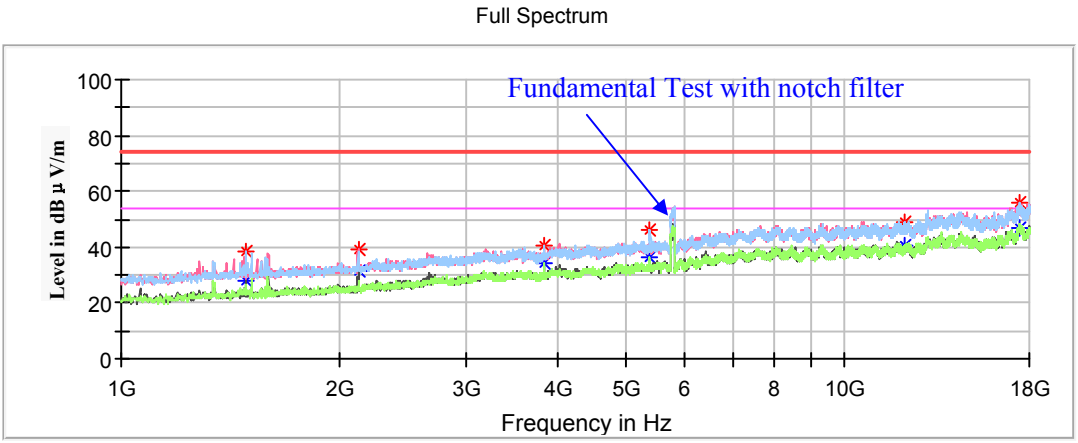


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1596.70	---	31.72	200	H	110	-16.0	54.00	22.28
1596.70	43.41	---	200	H	110	-16.0	74.00	30.59
2123.70	39.02	---	150	V	247	-14.0	68.20	29.18
3862.80	---	36.15	150	H	290	-7.5	54.00	17.85
3862.80	42.47	---	150	H	290	-7.5	74.00	31.53
5367.30	---	35.11	150	H	67	-4.2	54.00	18.89
5367.30	44.7	---	150	H	67	-4.2	74.00	29.30
10980.70	---	39.15	200	V	304	2.9	54.00	14.85
10980.70	48	---	200	V	304	2.9	74.00	26.00
17950.70	---	46.81	200	H	257	8.8	54.00	7.19
17950.70	55.49	---	200	H	257	8.8	74.00	18.51

802.11ac80 Mode(Chain0+Chain1):
*(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-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: 5775MHz

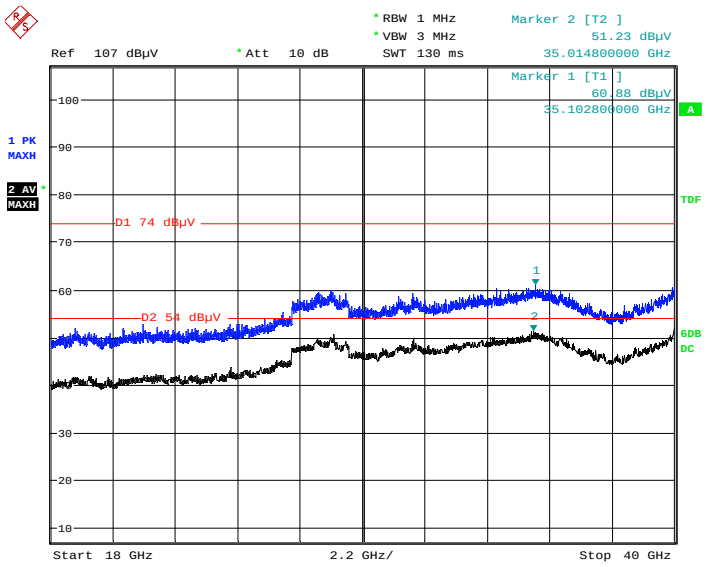


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1489.60	---	27.73	200	V	235	-16.4	54.00	26.27
1489.60	38.79	---	200	V	235	-16.4	74.00	35.21
2130.50	39.35	---	200	V	265	-13.9	68.20	28.85
3849.20	---	34.5	200	H	278	-7.5	54.00	19.50
3849.20	40.27	---	200	H	278	-7.5	74.00	33.73
5367.30	---	36.23	150	H	290	-4.2	54.00	17.77
5367.30	46.44	---	150	H	290	-4.2	74.00	27.56
12123.10	---	40.82	200	V	190	3.6	54.00	13.18
12123.10	48.88	---	200	V	190	3.6	74.00	25.12
17464.50	55.96	---	200	H	321	8.8	68.20	12.24

18GHz-40GHz (5150-5250MHz Band):

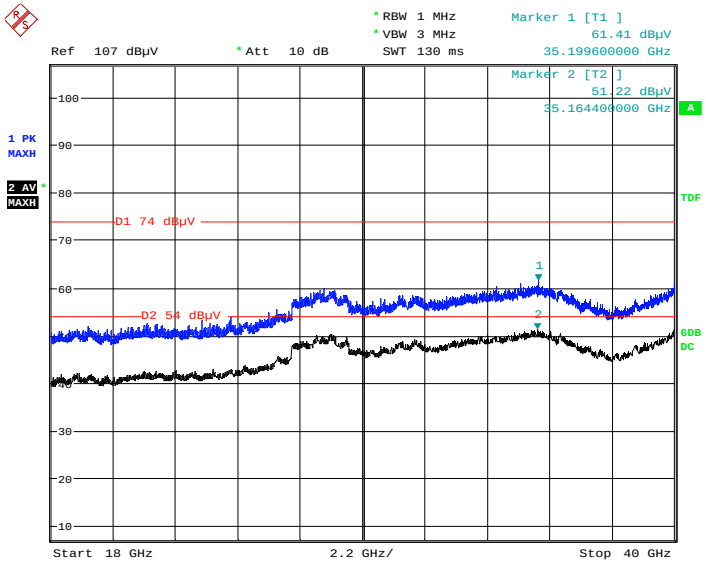
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11 ac80 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11a mode in channel 5240 in Z-axis of orientation was recorded.

Horizontal



Date: 9.MAY.2020 02:00:34

Vertical

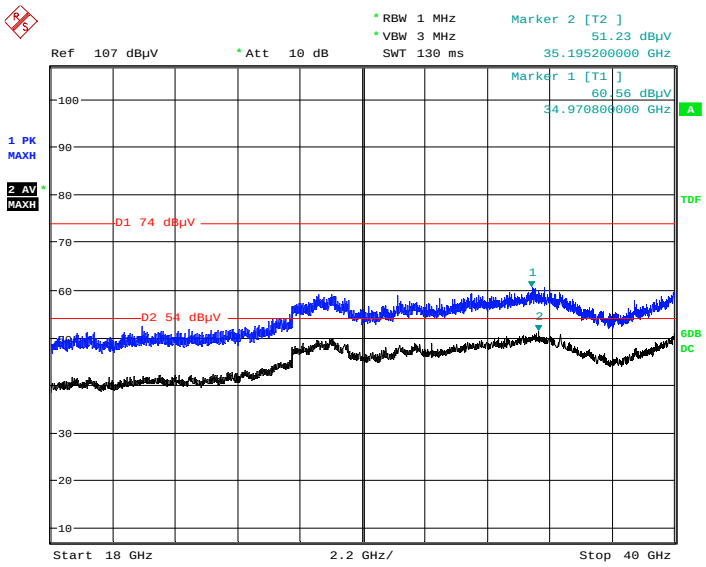


Date: 9.MAY.2020 02:22:49

18GHz-40GHz (5725-5850 Band):

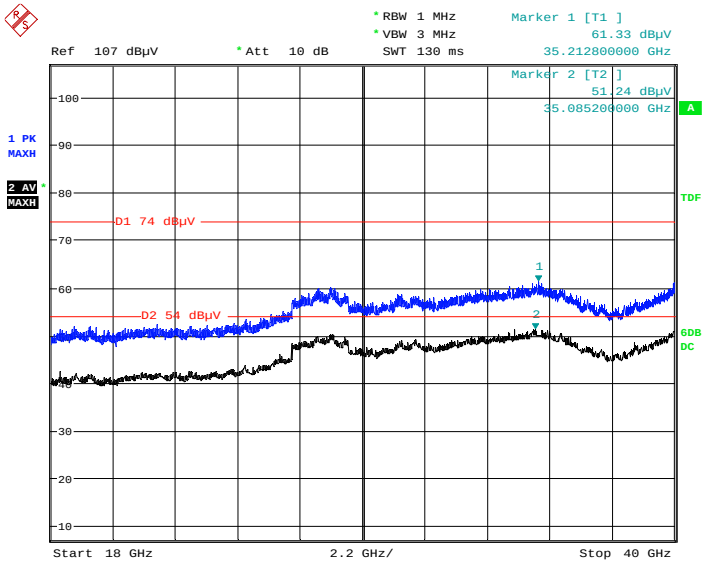
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11 ac80 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11a mode in channel 5825 in Z-axis of orientation was recorded.

Horizontal



Date: 9.MAY.2020 02:45:27

Vertical



Date: 9.MAY.2020 03:02:27

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

1: These emissions were tested without amplifier and the test distance is 1.5m.
2. 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
3. Corrected Factor = Antenna factor (RX) + Cable Loss
Corrected Amplitude = Corrected Factor + Reading
Margin = Limit - Corrected. Amplitude

802.11a Mode-Chain0: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5180MHz								
5150.00	---	55.71	150	V	287	15.2	60.00	4.29
5150.00	63.13	---	150	V	3	15.2	80.00	16.87
High Channel: 5240MHz								
5350.00	65.17	---	100	V	100	15.7	80.00	14.83
5350.00	---	57.28	100	V	100	15.7	60.00	2.72

802.11a Mode-Chain1: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5180MHz								
5150.00	---	57.29	150	V	207	15.2	60.00	2.71
5150.00	64.49	---	150	V	207	15.2	80.00	15.51
High Channel: 5240MHz								
5350.00	65.17	---	100	V	358	15.7	80.00	14.83
5350.00	---	57.28	200	V	154	15.7	60.00	2.72

802.11ac20 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5180MHz								
5150.00	---	57.09	150	V	189	15.2	60.00	2.91
5150.00	63.75	---	100	V	327	15.2	80.00	16.25
High Channel: 5240MHz								
5350.00	64.64	---	100	V	160	15.7	80.00	15.36
5350.00	---	57.49	100	V	292	15.7	60.00	2.51

802.11n-HT20 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5180MHz								
5150.00	---	57.5	100	V	292	15.2	60.00	2.5
5150.00	64.86	---	100	V	292	15.2	80.00	15.14
High Channel: 5240MHz								
5350.00	64.7	---	150	V	96	15.7	80.00	15.3
5350.00	---	57.17	100	V	96	15.7	60.00	2.83

802.11ac40 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5190MHz								
5150.00	---	56.71	100	V	358	15.2	60.00	3.29
5150.00	64.81	---	150	V	358	15.2	80.00	15.19
High Channel: 5230MHz								
5350.00	64.72	---	100	V	12	15.7	80.00	15.28
5350.00	---	57.08	100	V	12	15.7	60.00	2.92

802.11n-HT40 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5190MHz								
5150.00	---	57.24	150	V	206	15.2	60.00	2.76
5150.00	64.58	---	150	V	318	15.2	80.00	15.42
High Channel: 5230MHz								
5350.00	64.72	---	150	V	207	15.7	80.00	15.28
5350.00	---	57.78	150	V	17	15.7	60.00	2.22

802.11ac80 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5210MHz								
5150.00	---	57.21	100	V	359	15.2	60.00	2.79
5150.00	64.88	---	100	V	359	15.2	80.00	15.12
5350.00	66.64	---	200	V	234	16.9	80.00	13.36
5350.00	---	57.17	150	V	234	16.9	60.00	2.83

Band Edge Emissions Test (5725-5850MHz band):

Note:
1: These emissions were tested without amplifier and the test distance is 1.5m.
2. The test distance is 1.5m instead of 3m, Extrapolation Factor=20*log(3m /1.5m)=6.0dB
3. Corrected Factor = Antenna factor (RX) + Cable Loss
Corrected Amplitude = Corrected Factor + Reading
Margin = Limit - Corrected. Amplitude

802.11a Mode-Chain0: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit @3m (dBμV/m)	Limit @1.5m (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)					
Low Channel: 5745MHz									
5650.00	64.18	---	100	V	281	16.4	68.2	74.2	10.02
5700.00	64.24	---	200	V	28	16.5	105.2	111.2	46.96
5720.00	65.11	---	200	V	32	16.5	110.8	116.8	51.69
5725.00	64.61	---	100	V	157	16.5	122.2	128.2	63.59
High Channel: 5825MHz									
5850.00	64.38	---	200	H	330	16.7	122.2	128.2	63.82
5855.00	66.46	---	100	V	37	16.7	110.8	116.8	50.34
5875.00	64.57	---	150	V	278	16.8	105.2	111.2	46.63
5925.00	65.78	---	200	V	199	16.9	68.2	74.2	8.42

802.11a Mode-Chain1: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit @3m (dBμV/m)	Limit @1.5m (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)					
Low Channel: 5745MHz									
5650.00	65.43	---	100	H	261	16.4	68.2	74.2	8.77
5700.00	63.52	---	150	V	227	16.5	105.2	111.2	47.68
5720.00	64.21	---	100	H	46	16.5	110.8	116.8	52.59
5725.00	63.84	---	200	H	324	16.5	122.2	128.2	64.36
High Channel: 5825MHz									
5850.00	65.22	---	200	V	179	16.7	122.2	128.2	62.98
5855.00	65.43	---	150	H	297	16.7	110.8	116.8	51.37
5875.00	65.47	---	200	V	189	16.8	105.2	111.2	45.73
5925.00	65.43	---	150	H	138	16.9	68.2	74.2	8.77

802.11ac20 Mode-Chain0+ Chain1: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit @3m (dBμV/m)	Limit @1.5m (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)					
Low Channel: 5745MHz									
5650.00	65.04	---	200	V	68	16.4	68.2	74.2	9.16
5700.00	65.43	---	200	H	106	16.5	105.2	111.2	45.77
5720.00	65.72	---	150	H	226	16.5	110.8	116.8	51.08
5725.00	65.67	---	200	V	287	16.5	122.2	128.2	62.53
High Channel: 5825MHz									
5850.00	65.72	---	150	V	51	16.7	122.2	128.2	62.48
5855.00	65.00	---	200	H	170	16.7	110.8	116.8	51.8
5875.00	65.93	---	200	V	265	16.8	105.2	111.2	45.27
5925.00	64.56	---	200	V	291	16.9	68.2	74.2	9.64

802.11n-HT20 Mode- Chain0+ Chain1: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit @3m (dBμV/m)	Limit @1.5m (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)					
Low Channel: 5745MHz									
5650.00	65.39	---	150	H	51	16.4	68.2	74.2	8.81
5700.00	66.75	---	150	V	24	16.5	105.2	111.2	44.45
5720.00	64.25	---	200	H	94	16.5	110.8	116.8	52.55
5725.00	64.92	---	150	H	28	16.5	122.2	128.2	63.28
High Channel: 5825MHz									
5850.00	65.26	---	200	V	41	16.7	122.2	128.2	62.94
5855.00	65.19	---	150	V	93	16.7	110.8	116.8	51.61
5875.00	65.66	---	150	H	294	16.8	105.2	111.2	45.54
5925.00	64.38	---	200	H	81	16.9	68.2	74.2	9.82

802.11ac40 Mode- Chain0+ Chain1: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit @3m (dBμV/m)	Limit @1.5m (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)					
Low Channel: 5745MHz									
5650.00	64.72	---	200	V	187	16.4	68.2	74.2	9.48
5700.00	65.41	---	150	H	12	16.5	105.2	111.2	45.79
5720.00	65.30	---	200	H	201	16.5	110.8	116.8	51.5
5725.00	65.18	---	200	H	146	16.5	122.2	128.2	63.02
High Channel: 5825MHz									
5850.00	65.96	---	200	H	31	16.7	122.2	128.2	62.24
5855.00	65.48	---	200	H	251	16.7	110.8	116.8	51.32
5875.00	65.10	---	200	H	57	16.8	105.2	111.2	46.1
5925.00	65.14	---	200	H	18	16.9	68.2	74.2	9.06

802.11n-HT40 Mode- Chain0+ Chain1: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit @3m (dBμV/m)	Limit @1.5m (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)					
Low Channel: 5745MHz									
5650.00	64.57	---	150	V	328	16.4	68.2	74.2	9.63
5700.00	65.35	---	200	V	103	16.5	105.2	111.2	45.85
5720.00	65.82	---	150	V	74	16.5	110.8	116.8	50.98
5725.00	65.62	---	200	H	76	16.5	122.2	128.2	62.58
High Channel: 5825MHz									
5850.00	65.97	---	150	H	171	16.7	122.2	128.2	62.23
5855.00	65.77	---	200	H	264	16.7	110.8	116.8	51.03
5875.00	65.39	---	150	V	252	16.8	105.2	111.2	45.81
5925.00	64.84	---	150	V	178	16.9	68.2	74.2	9.36

802.11ac80 Mode- Chain0+ Chain1: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

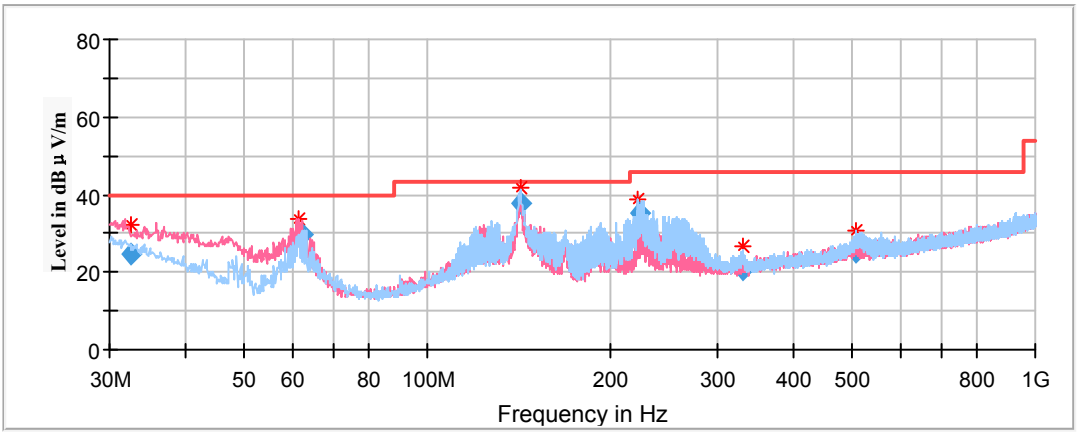
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit @3m (dBµV/m)	Limit @1.5m (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)					
Low Channel: 5775MHz									
5650.00	65.29	---	200	V	4	16.4	68.2	74.2	8.91
5700.00	65.57	---	150	H	1	16.5	105.2	111.2	45.63
5720.00	65.88	---	150	H	6	16.5	110.8	116.8	50.92
5725.00	65.98	---	150	H	88	16.5	122.2	128.2	62.22
5850.00	65.84	---	200	V	247	16.7	122.2	128.2	62.36
5855.00	65.34	---	200	V	181	16.7	110.8	116.8	51.46
5875.00	65.09	---	200	V	300	16.8	105.2	111.2	46.11
5925.00	65.36	---	200	V	15	16.9	68.2	74.2	8.84

Antenna 2

Spurious Emission Test

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

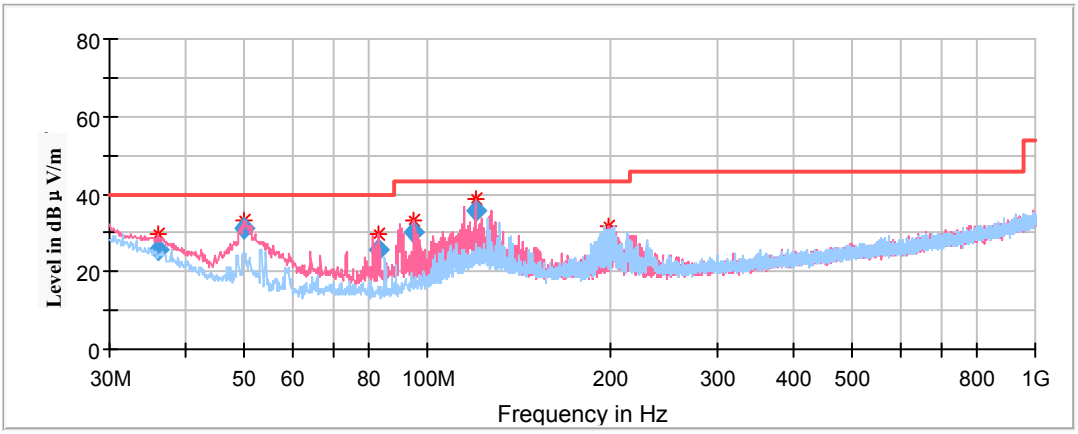
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11 ac80 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11a mode in channel 5240MHz(Chain0) in Z-axis of orientation was recorded.



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)				
32.43	24.50	100	V	67	-5.6	40.00	15.50
62.17	29.50	100	V	77	-17.8	40.00	10.50
142.41	37.50	200	H	7	-12	43.50	6.00
223.05	35.38	100	H	92	-12.2	46.00	10.62
329.39	20.68	100	H	272	-9.9	46.00	25.32
506.65	25.14	200	H	77	-6.1	46.00	20.86

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

Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11 ac80 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11a mode in channel 5825MHz(Chain0) in Z-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)				
36.06	25.87	100	V	204	-8	40.00	14.13
50.01	30.96	100	V	82	-17.5	40.00	9.04
83.11	25.89	100	V	107	-17.7	40.00	14.11
94.99	30.27	100	V	355	-16.2	43.50	13.23
119.85	35.82	100	V	179	-11.2	43.50	7.68
198.78	27.87	100	V	117	-12.4	43.50	15.63

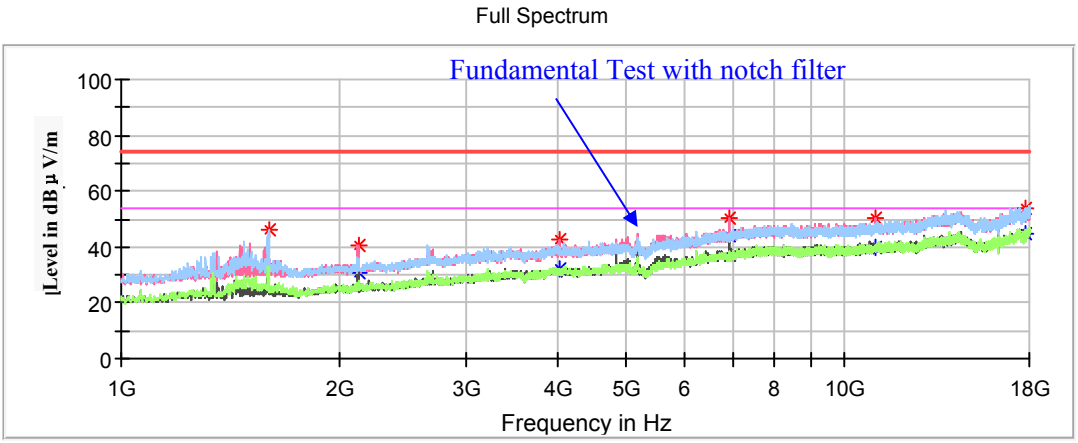
1GHz-18GHz (5150-5250MHz Band):

802.11a Mode(Chain0):

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

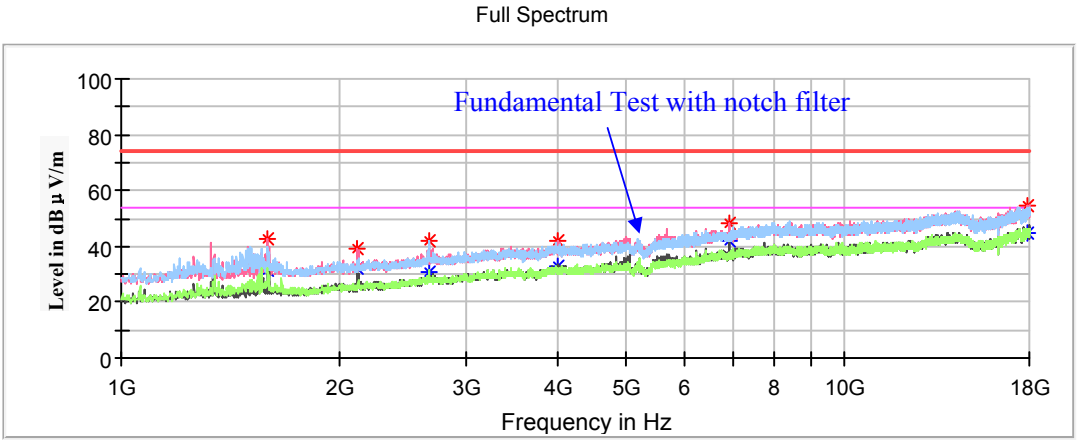
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



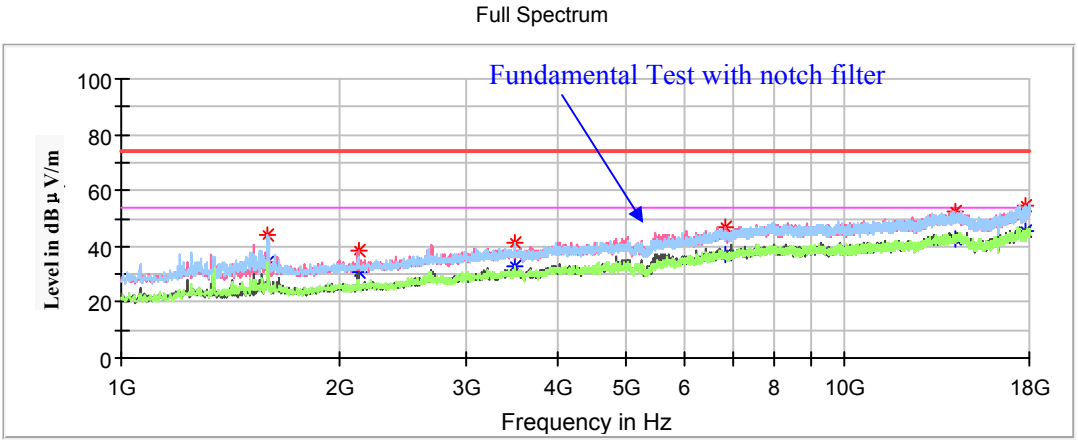
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1598.40	---	32.8	200	H	65	-16.0	54.00	21.20
1598.40	45.94	---	200	H	65	-16.0	74.00	28.06
2125.40	40.71	---	200	V	182	-14.0	68.20	27.49
4026.00	---	32.42	200	V	79	-7.0	54.00	21.58
4026.00	42.46	---	200	V	79	-7.0	74.00	31.54
6905.80	50.27	---	200	V	197	-0.3	68.20	17.93
11016.40	---	40.12	200	V	242	2.9	54.00	13.88
11016.40	50.18	---	200	V	242	2.9	74.00	23.82
17830.00	---	44.49	150	H	346	8.8	54.00	9.51
17830.00	53.87	---	150	H	346	8.8	74.00	20.13

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)				
1593.30	---	31.12	200	V	108	-16.0	54.00	22.88
1593.30	42.6	---	200	V	108	-16.0	74.00	31.40
2123.70	38.93	---	200	V	158	-14.0	68.20	29.27
2662.60	41.86	---	200	H	275	-11.7	68.20	26.34
4022.60	---	33.19	150	V	48	-7.0	54.00	20.81
4022.60	42.17	---	150	V	48	-7.0	74.00	31.83
6933.00	48.09	---	150	V	32	-0.2	68.20	20.11
17913.30	---	44.79	150	V	290	8.8	54.00	9.21
17913.30	54.54	---	150	V	290	8.8	74.00	19.46

High Channel: 5240MHz



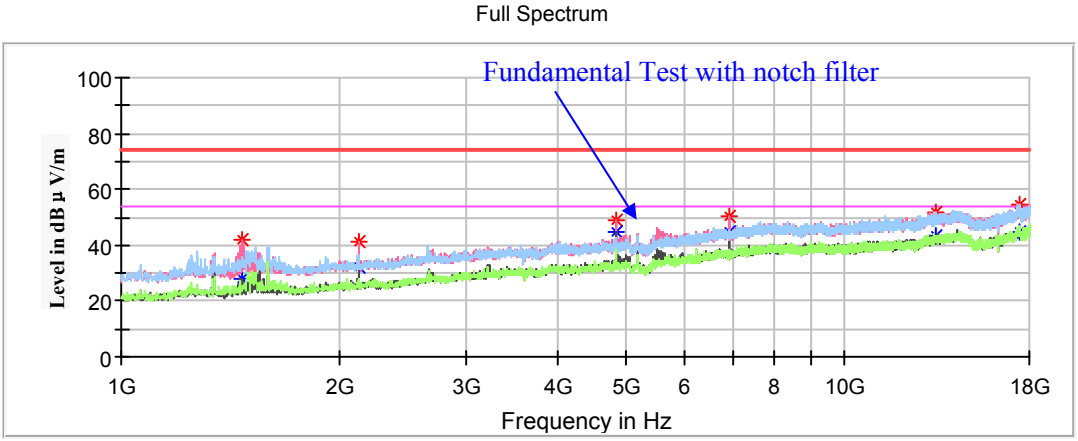
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.30	---	34.61	200	H	65	-16.0	54.00	19.39
1593.30	44.12	---	200	H	65	-16.0	74.00	29.88
2128.80	38.71	---	150	V	238	-13.9	68.20	29.49
3492.20	41.14	---	200	H	20	-8.8	68.20	27.06
6824.20	46.80	---	150	V	145	-0.5	68.20	21.40
14258.30	52.77	---	150	V	334	6.3	68.20	15.43
17809.60	---	45.34	200	H	191	8.8	54.00	8.66
17809.60	54.82	---	200	H	191	8.8	74.00	19.18

802.11a Mode(Chain1):

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

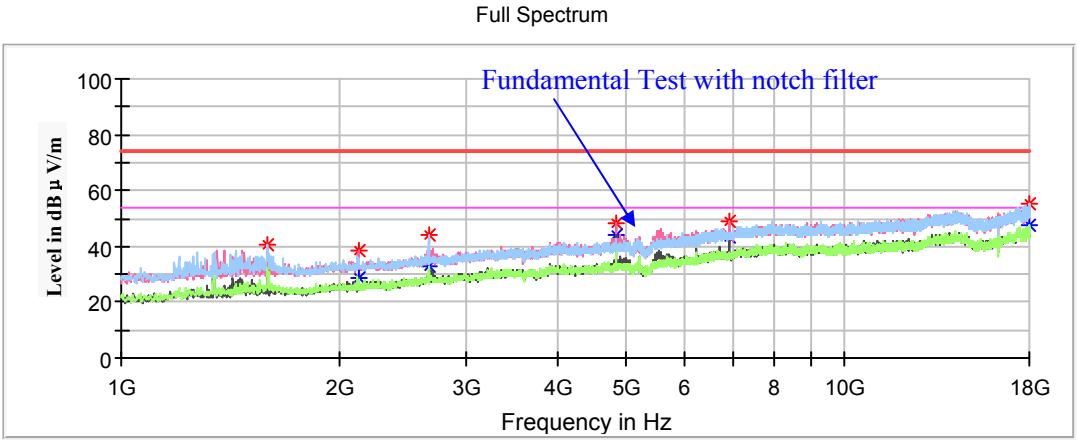
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



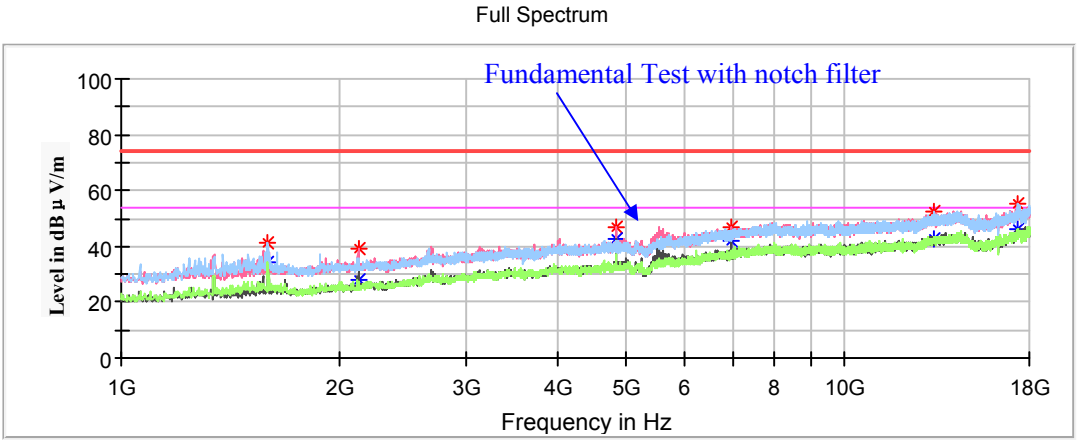
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1472.60	---	27.82	150	V	238	-16.5	54.00	26.18
1472.60	41.82	---	150	V	238	-16.5	74.00	32.18
2130.50	41	---	200	V	174	-13.9	68.20	27.20
4823.30	---	44.61	150	V	20	-5.5	54.00	9.39
4823.30	49.24	---	150	V	20	-5.5	74.00	24.76
6905.80	50.37	---	150	V	2	-0.3	68.20	17.83
13340.30	---	43.36	150	V	20	5.5	54.00	10.64
13340.30	51.95	---	150	V	20	5.5	74.00	22.05
17479.80	54.5	---	150	H	279	8.8	68.20	13.70

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)				
1593.30	---	32.2	200	H	93	-16.0	54.00	21.80
1593.30	40.78	---	200	H	93	-16.0	74.00	33.22
2130.50	38.30	---	200	V	249	-13.9	68.20	29.90
2657.50	44.06	---	150	H	264	-11.7	68.20	24.14
4823.30	---	44.07	150	V	202	-5.5	54.00	9.93
4823.30	48.01	---	150	V	202	-5.5	74.00	25.99
6933.00	48.63	---	150	V	2	-0.2	68.20	19.57
17952.40	---	47.52	150	V	35	8.8	54.00	6.48
17952.40	55.41	---	150	H	35	8.8	74.00	18.59

High Channel: 5240MHz



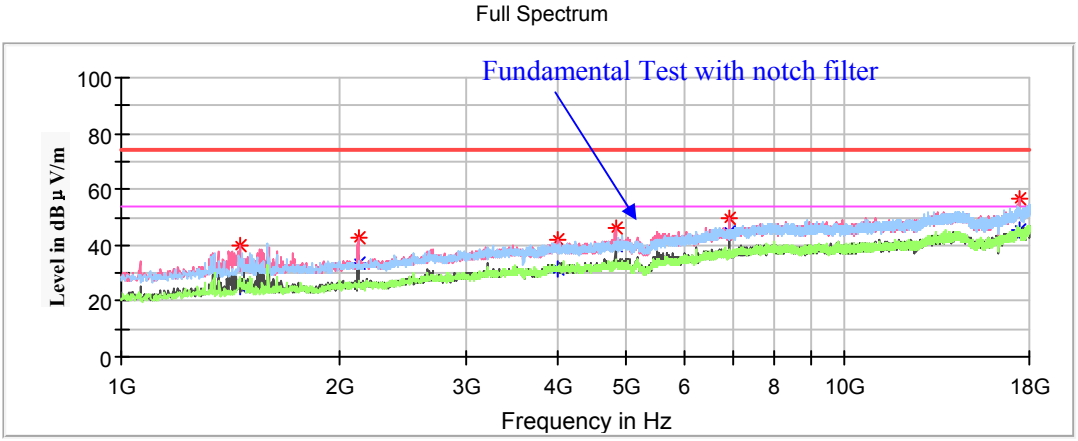
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.30	---	34.60	200	H	64	-16.0	54.00	19.40
1593.30	41.58	---	200	H	64	-16.0	74.00	32.42
2127.10	39.03	---	150	V	221	-13.9	68.20	29.17
4823.30	---	42.82	150	V	177	-5.5	54.00	11.18
4823.30	46.64	---	150	V	177	-5.5	74.00	27.36
6985.70	47.19	---	150	V	117	-0.1	68.20	21.01
13323.30	---	43	150	H	203	5.5	54.00	11.00
13323.30	52.46	---	150	H	203	5.5	74.00	21.54
17386.30	55.01	---	200	H	178	8.5	68.20	13.19

802.11ac20 Mode(Chain0+Chain1):

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

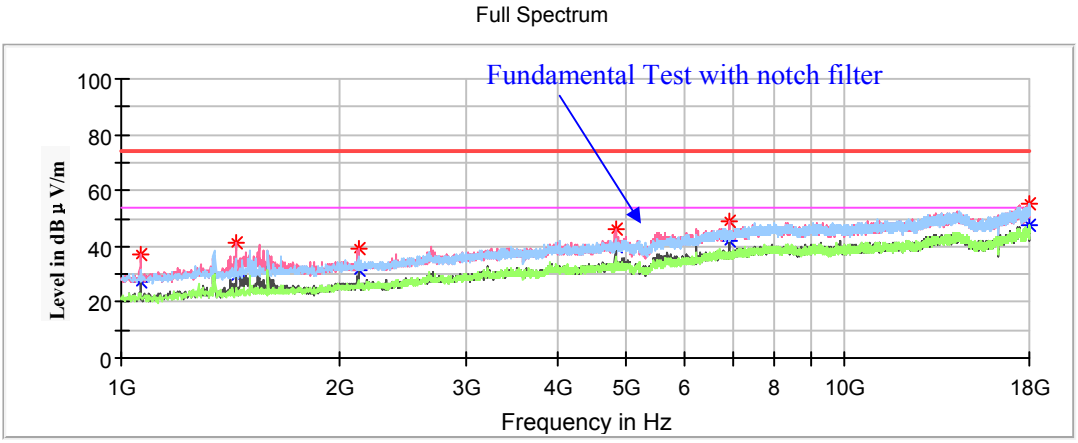
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



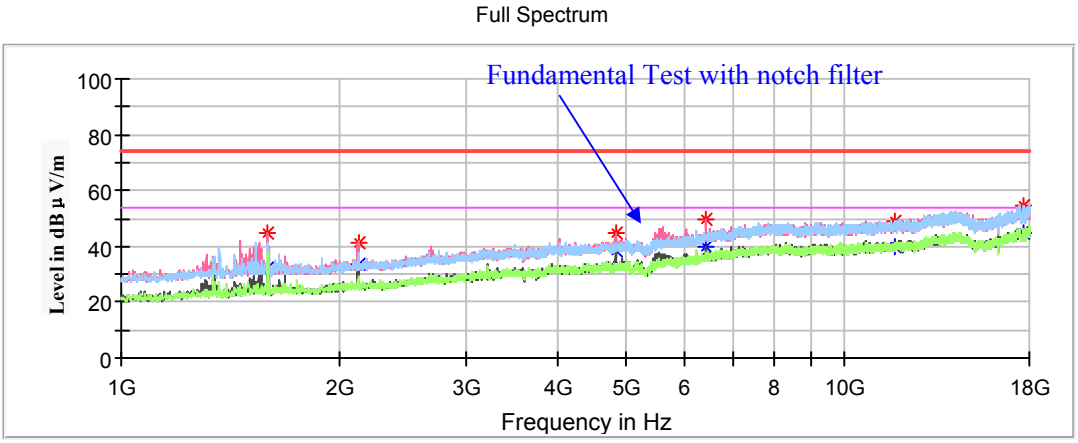
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1462.40	---	25.11	150	V	126	-16.6	54.00	28.89
1462.40	40.05	---	150	V	126	-16.6	74.00	33.95
2128.80	42.61	---	200	V	181	-13.9	68.20	25.59
4022.60	---	31.56	150	V	80	-7.0	54.00	22.44
4022.60	41.69	---	150	V	80	-7.0	74.00	32.31
4818.20	---	40.07	200	V	273	-5.6	54.00	13.93
4818.20	46.06	---	200	V	273	-5.6	74.00	27.94
6905.80	49.65	---	150	V	2	-0.3	68.20	18.55
17474.70	56.34	---	200	V	78	8.8	68.20	11.86

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)				
1062.90	---	27.53	150	V	48	-18.7	54.00	26.47
1062.90	36.99	---	150	V	48	-18.7	74.00	37.01
1442.00	---	29.21	150	V	127	-16.7	54.00	24.79
1442.00	40.98	---	150	V	127	-16.7	74.00	33.02
2128.80	39.17	---	200	V	218	-13.9	68.20	29.03
4818.20	---	39.55	150	V	172	-5.6	54.00	14.45
4818.20	46.22	---	150	V	172	-5.6	74.00	27.78
6933.00	48.62	---	150	V	157	-0.2	68.20	19.58
17967.70	---	47.28	200	H	33	8.8	54.00	6.72
17967.70	54.91	---	200	H	33	8.8	74.00	19.09

High Channel: 5240MHz

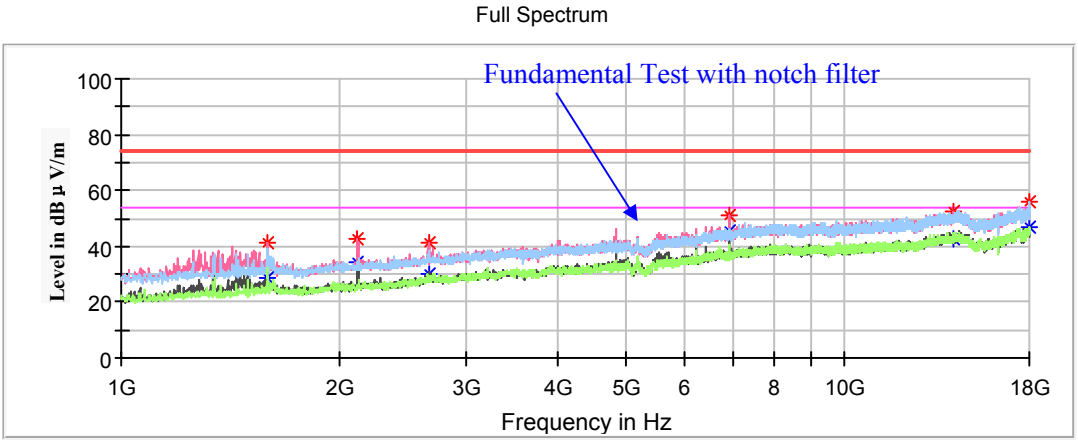


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.00	---	31.83	200	V	129	-16.0	54.00	22.17
1595.00	44.43	---	200	V	129	-16.0	74.00	29.57
2130.50	41.6	---	200	V	188	-13.9	68.20	26.60
4818.20	---	38.76	150	V	355	-5.6	54.00	15.24
4818.20	45.1	---	150	V	355	-5.6	74.00	28.90
6424.70	49.47	---	200	V	144	-1.5	68.20	18.73
11735.50	---	40.05	200	H	148	3.3	54.00	13.95
11735.50	49.1	---	200	H	148	3.3	74.00	24.90
17656.60	54.53	---	150	H	173	8.9	68.20	13.67

802.11n-HT20 Mode*(Chain0+Chain1):*
*Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded*

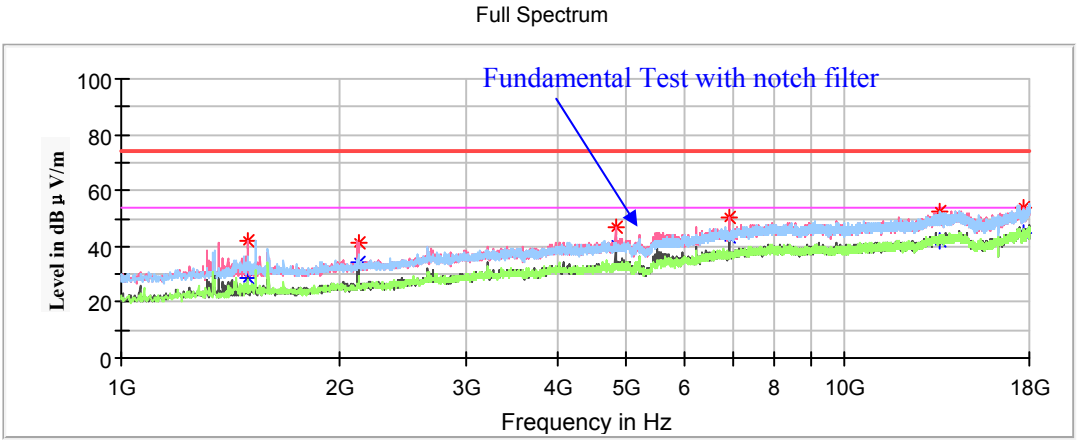
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



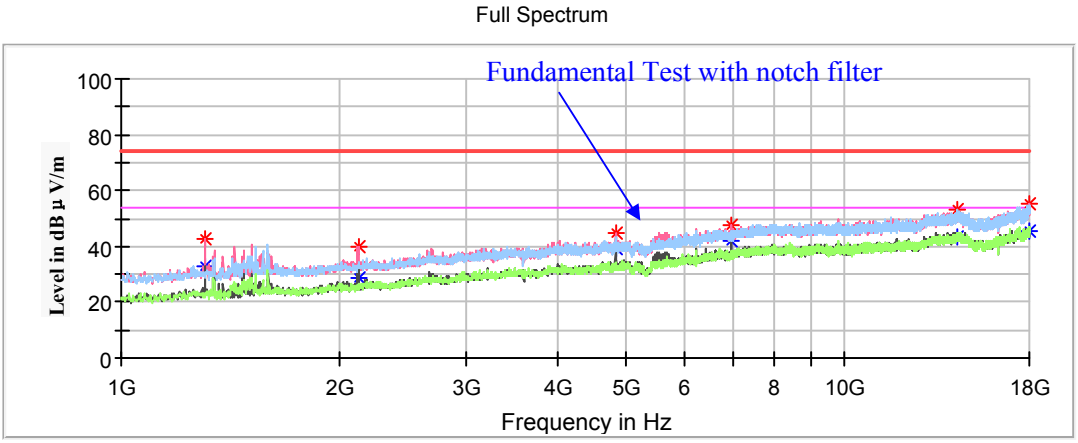
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.00	---	28.63	150	V	122	-16.0	54.00	25.37
1595.00	41.01	---	150	V	122	-16.0	74.00	32.99
2123.70	42.46	---	200	V	181	-14.0	68.20	25.74
2657.50	40.93	---	200	V	197	-11.7	68.20	27.27
6905.80	50.97	---	150	V	0	-0.3	68.20	17.23
14154.60	52.46	---	150	V	295	6.3	68.20	15.74
17962.60	---	47.16	200	H	260	8.8	54.00	6.84
17962.60	55.63	---	200	H	260	8.8	74.00	18.37

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)				
1494.70	---	28.99	200	V	275	-16.4	54.00	25.01
1494.70	41.69	---	200	V	275	-16.4	74.00	32.31
2130.50	41.17	---	200	V	172	-13.9	68.20	27.03
4818.20	---	40.75	200	V	260	-5.6	54.00	13.25
4818.20	46.62	---	200	V	260	-5.6	74.00	27.38
6933.00	50.23	---	150	V	5	-0.2	68.20	17.97
13515.40	52.77	---	150	H	275	5.7	68.20	15.43
17653.20	54.18	---	200	V	112	8.9	68.20	14.02

High Channel: 5240MHz



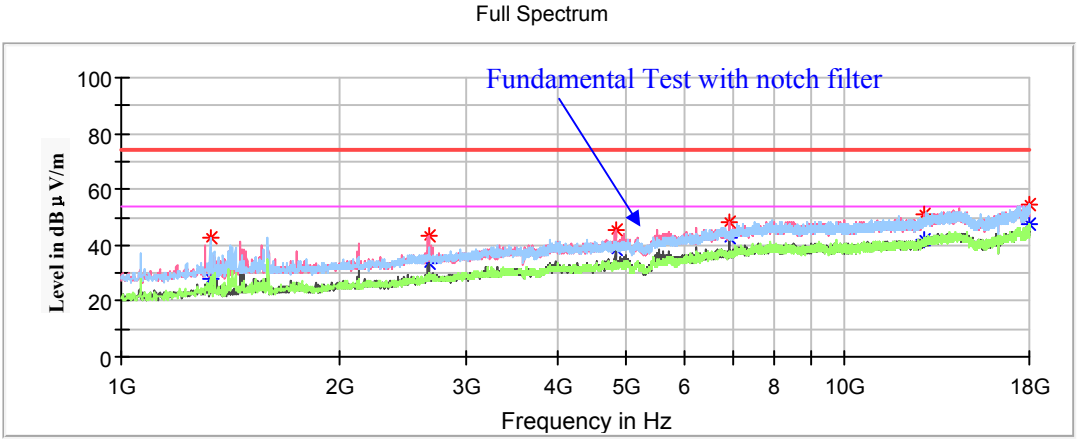
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1306.00	---	32.61	200	V	306	-17.4	54.00	21.39
1306.00	42.7	---	200	V	306	-17.4	74.00	31.30
2130.50	39.99	---	200	V	247	-13.9	68.20	28.21
4818.20	---	39.51	200	V	262	-5.6	54.00	14.49
4818.20	44.74	---	200	V	262	-5.6	74.00	29.26
6985.70	47.29	---	150	V	9	-0.1	68.20	20.91
14338.20	53.00	---	150	H	355	6.4	68.20	15.20
17971.10	---	45.4	150	V	327	8.8	54.00	8.60
17971.10	54.92	---	150	V	327	8.8	74.00	19.08

802.11ac40 Mode(Chain0+Chain1):

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

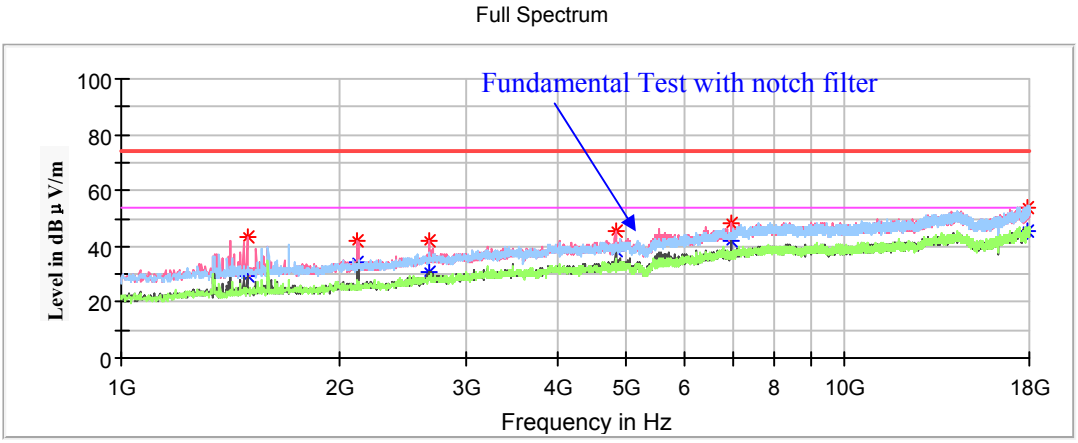
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1326.40	---	28.21	200	H	0	-17.3	54.00	25.79
1326.40	42.78	---	200	H	0	-17.3	74.00	31.22
2657.50	43.68	---	200	V	203	-11.7	68.20	24.52
4818.20	---	38.67	150	V	173	-5.6	54.00	15.33
4818.20	45.56	---	150	V	173	-5.6	74.00	28.44
6919.40	48.49	---	150	V	112	-0.2	68.20	19.71
12847.30	51.23	---	150	V	96	4.5	68.20	16.97
17991.50	---	47.37	200	H	136	8.8	54.00	6.63
17991.50	54.5	---	200	H	136	8.8	74.00	19.50

High Channel: 5230MHz

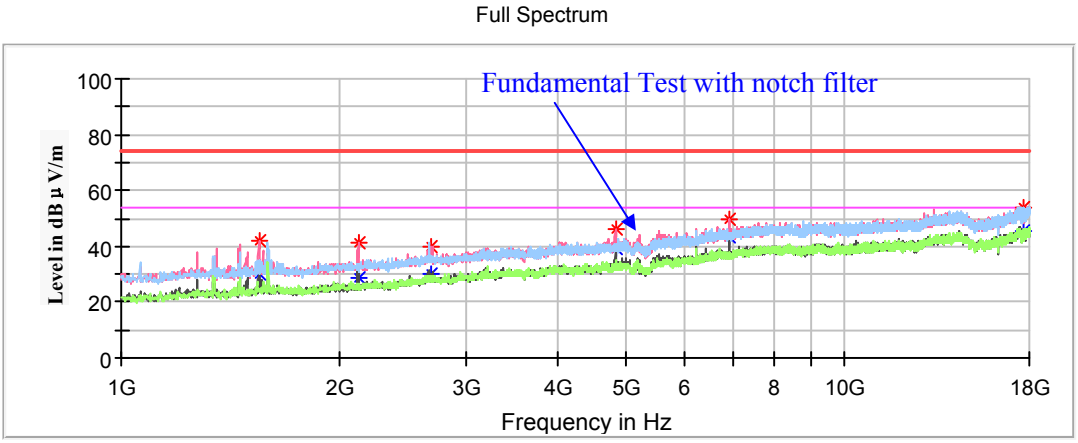


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1493.00	---	29.35	150	V	238	-16.4	54.00	24.65
1493.00	43.08	---	150	V	238	-16.4	74.00	30.92
2123.70	41.64	---	200	V	171	-14.0	68.20	26.56
2660.90	42.04	---	150	V	267	-11.7	68.20	26.16
4818.20	---	38.56	150	V	238	-5.6	54.00	15.44
4818.20	45.62	---	150	V	238	-5.6	74.00	28.38
6972.10	48.52	---	150	V	49	-0.1	68.20	19.68
17838.50	---	45.32	150	V	87	8.8	54.00	8.68
17838.50	53.96	---	150	V	87	8.8	74.00	20.04

802.11n-HT40 Mode*(Chain0+Chain1)*:
*Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded*

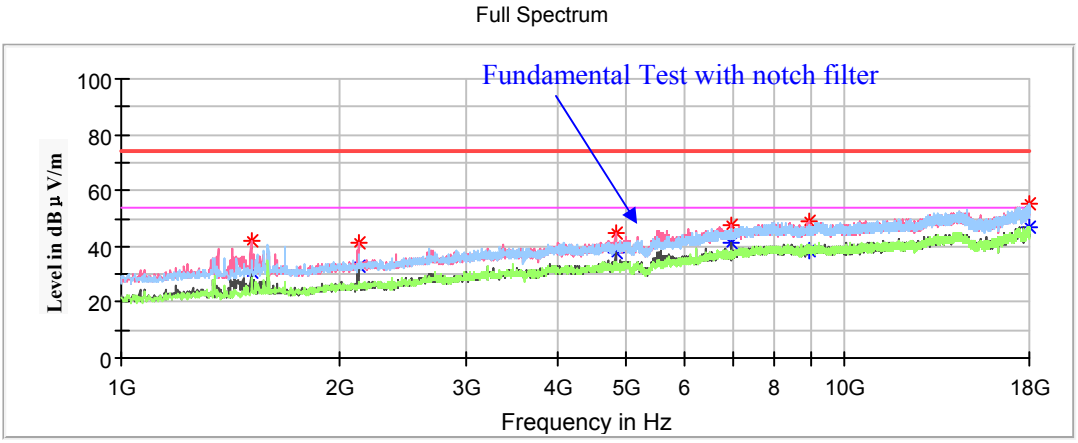
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1549.10	---	29.82	200	V	271	-16.2	54.00	24.18
1549.10	41.8	---	200	V	271	-16.2	74.00	32.20
2130.50	41.16	---	200	V	165	-13.9	68.20	27.04
2684.70	39.54	---	200	V	0	-11.6	68.20	28.66
4818.20	---	38.94	150	V	188	-5.6	54.00	15.06
4818.20	46.17	---	150	V	188	-5.6	74.00	27.83
6919.40	49.65	---	150	V	0	-0.2	68.20	18.55
17746.40	---	45.2	150	V	7	8.9	54.00	8.80
17746.40	53.83	---	150	V	7	8.9	74.00	20.17

High Channel: 5230MHz

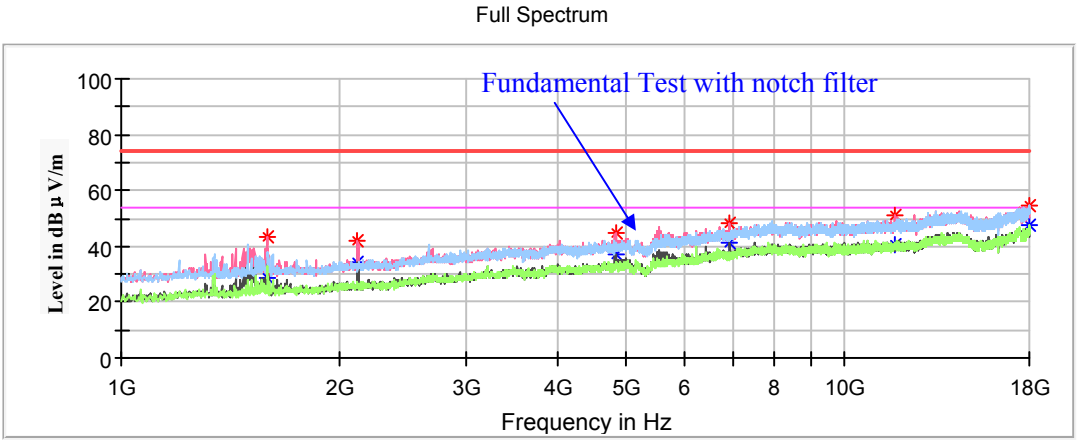


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1511.70	---	30.53	200	V	312	-16.3	54.00	23.47
1511.70	41.69	---	200	V	312	-16.3	74.00	32.31
2128.80	41.07	---	200	V	176	-13.9	68.20	27.13
4818.20	---	38.09	150	V	87	-5.6	54.00	15.91
4818.20	45.05	---	150	V	87	-5.6	74.00	28.95
6972.10	47.70	---	150	V	73	-0.1	68.20	20.50
8944.10	49.17	---	200	V	352	1.8	68.20	19.03
17954.10	---	46.57	150	H	202	8.8	54.00	7.43
17954.10	55.3	---	150	H	202	8.8	74.00	18.70

802.11ac80 Mode*(Chain0+Chain1)*:
*Pre-scan with X,Y and Z axes of orientation, the worst case **Z-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: 5210MHz



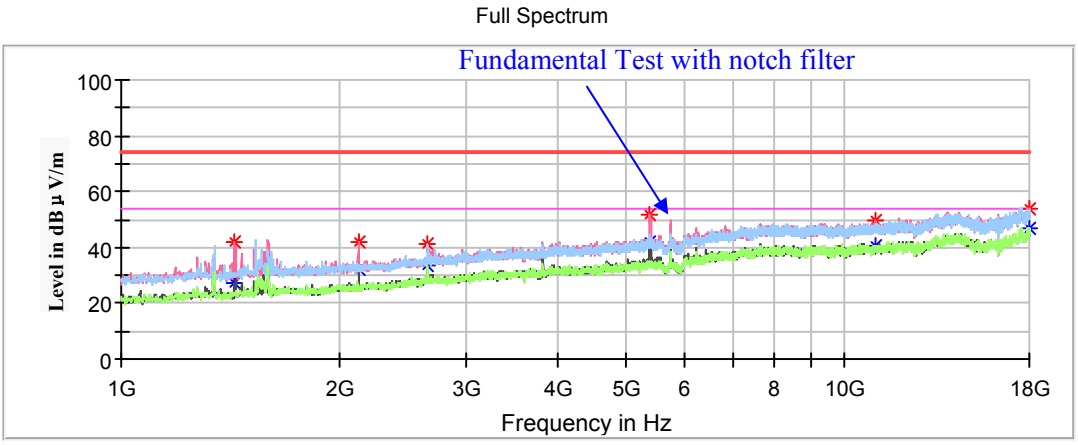
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1589.90	---	28.67	150	V	119	-16.0	54.00	25.33
1589.90	43.07	---	150	V	119	-16.0	74.00	30.93
2123.70	42.17	---	200	V	173	-14.0	68.20	26.03
4818.20	---	37.05	150	V	239	-5.6	54.00	16.95
4818.20	44.67	---	150	V	239	-5.6	74.00	29.33
6946.60	48.5	---	150	V	358	-0.2	68.20	19.70
11750.80	---	40.62	200	V	0	3.3	54.00	13.38
11750.80	51.08	---	200	V	0	3.3	74.00	22.92
17977.90	---	47.34	150	H	70	8.8	54.00	6.66
17977.90	54.82	---	150	H	70	8.8	74.00	19.18

5725-5850MHz Band:
1GHz-18GHz:

802.11a Mode(Chain0):
*(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded.)*

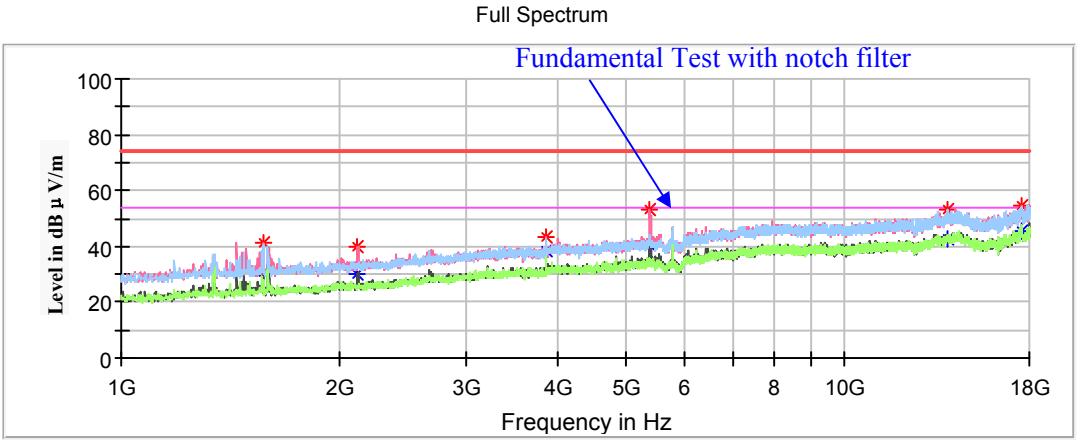
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



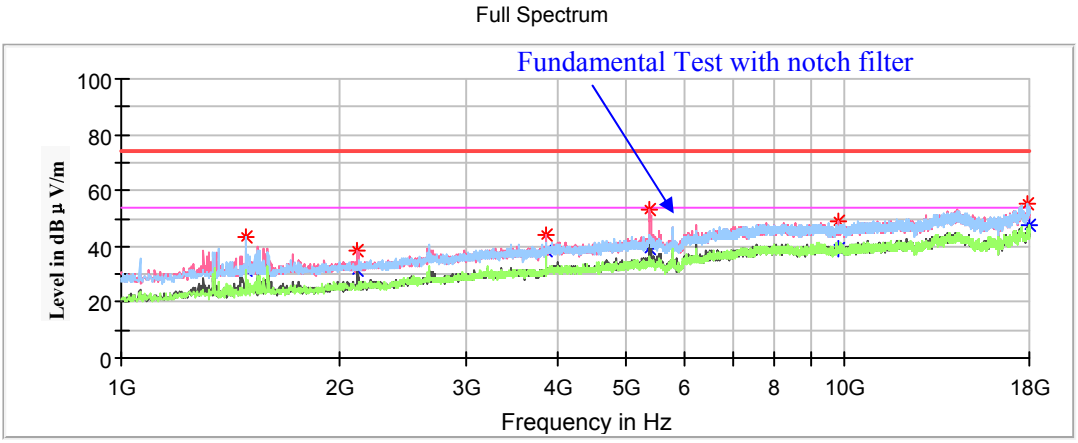
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1435.20	---	27.49	150	V	127	-16.7	54.00	26.51
1435.20	42.06	---	150	V	127	-16.7	74.00	31.94
2128.80	41.82	---	150	V	173	-13.9	68.20	26.38
2655.80	41.06	---	200	H	276	-11.7	68.20	27.14
5365.60	---	41.78	150	V	112	-4.3	54.00	12.22
5365.60	51.8	---	150	V	112	-4.3	74.00	22.20
11030.00	---	40.43	150	V	2	2.9	54.00	13.57
11030.00	49.8	---	150	V	2	2.9	74.00	24.20
17971.10	---	47.18	150	H	123	8.8	54.00	6.82
17971.10	53.98	---	150	H	123	8.8	74.00	20.02

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)				
1569.50	---	30.90	200	V	311	-16.1	54.00	23.10
1569.50	41.48	---	200	V	311	-16.1	74.00	32.52
2123.70	39.99	---	200	V	157	-14	68.20	28.21
3856.00	---	38.6	150	V	33	-7.5	54.00	15.40
3856.00	43.6	---	150	V	33	-7.5	74.00	30.40
5363.90	---	40.31	150	V	19	-4.3	54.00	13.69
5363.90	52.9	---	150	V	19	-4.3	74.00	21.10
13906.40	53.31	---	150	H	218	6.1	68.20	14.89
17556.30	54.23	---	200	V	113	8.9	68.20	13.97

High Channel: 5825MHz



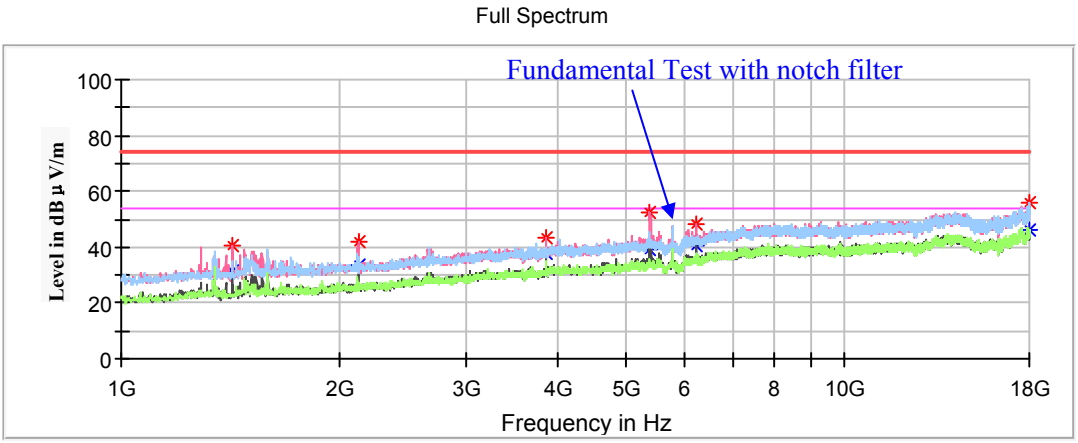
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1484.50	---	31.58	200	H	96	-16.4	54.00	22.42
1484.50	43.43	---	200	H	96	-16.4	74.00	30.57
2123.70	38.25	---	200	V	196	-14	68.20	29.95
3856.00	---	38.68	150	V	0	-7.5	54.00	15.32
3856.00	43.93	---	150	V	0	-7.5	74.00	30.07
5370.70	---	39.42	150	V	187	-4.2	54.00	14.58
5370.70	53.21	---	150	V	187	-4.2	74.00	20.79
9829.80	49.18	---	200	V	121	2	68.20	19.02
17926.90	---	47.76	200	H	305	8.8	54.00	6.24
17926.90	55.17	---	200	H	305	8.8	74.00	18.83

802.11a Mode(Chain1):

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

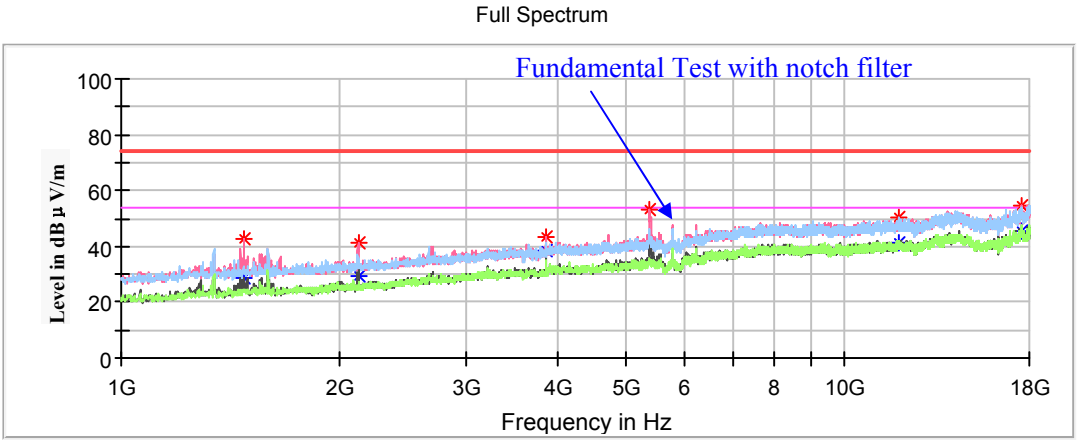
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



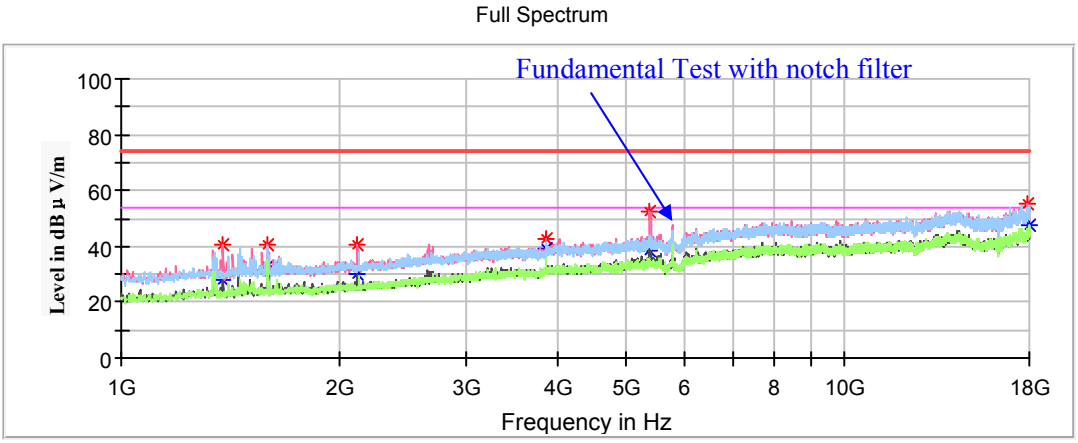
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1426.70	---	31.19	200	V	241	-16.8	54.00	22.81
1426.70	40.27	---	200	V	241	-16.8	74.00	33.73
2127.10	42.25	---	200	V	177	-13.9	68.20	25.95
3856.00	---	38.07	150	V	353	-7.5	54.00	15.93
3856.00	43.51	---	150	V	353	-7.5	74.00	30.49
5370.70	---	38.93	150	V	19	-4.2	54.00	15.07
5370.70	52.61	---	150	V	19	-4.2	74.00	21.39
6249.60	48.5	---	150	V	285	-2.1	68.20	19.70
17976.20	---	46.42	200	H	334	8.8	54.00	7.58
17976.20	55.62	---	200	H	337	8.8	74.00	18.38

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)				
1479.40	---	28.55	200	V	272	-16.5	54.00	25.45
1479.40	42.82	---	200	V	272	-16.5	74.00	31.18
2125.40	41.53	---	200	V	186	-14	68.20	26.67
3856.00	---	38.53	150	V	153	-7.5	54.00	15.47
3856.00	43.11	---	150	V	153	-7.5	74.00	30.89
5362.20	---	40.87	150	V	67	-4.3	54.00	13.13
5362.20	53.16	---	150	V	67	-4.3	74.00	20.84
11847.70	---	40.95	200	H	76	3.5	54.00	13.05
11847.70	50.65	---	200	H	76	3.5	74.00	23.35
17541.00	54.35	---	200	V	52	8.9	68.20	13.85

High Channel: 5825MHz



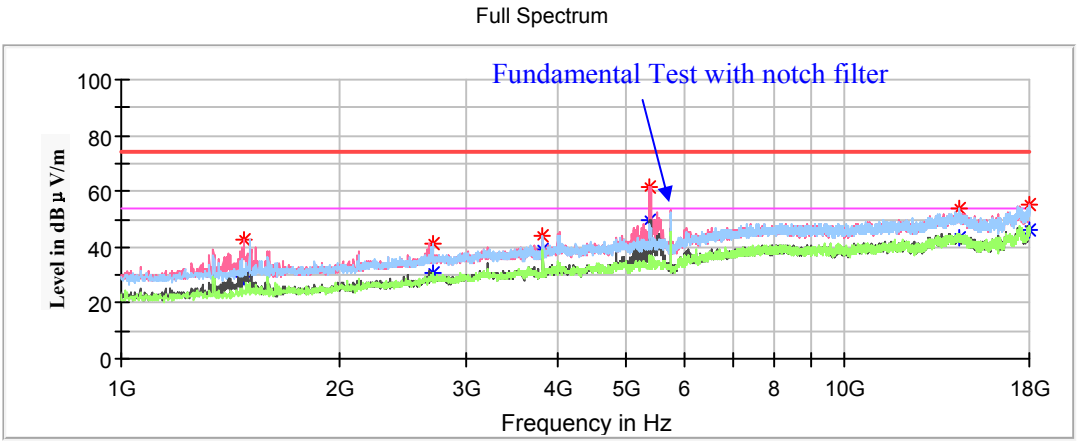
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1382.50	---	28.27	150	V	215	-17.0	54.00	25.73
1382.50	40.22	---	150	V	215	-17.0	74.00	33.78
1593.30	---	32.56	200	H	177	-16.0	54.00	21.44
1593.30	40.6	---	200	H	177	-16.0	74.00	33.40
2123.70	40.87	---	200	V	177	-14.0	68.20	27.33
3856.00	---	38.82	150	V	353	-7.5	54.00	15.18
3856.00	42.79	---	150	V	353	-7.5	74.00	31.21
5369.00	---	38.64	150	V	109	-4.2	54.00	15.36
5369.00	52.77	---	150	V	109	-4.2	74.00	21.23
17928.60	---	47.22	150	H	152	8.8	54.00	6.78
17928.60	55.12	---	150	H	152	8.8	74.00	18.88

802.11ac20 Mode(Chain0+Chain1):

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

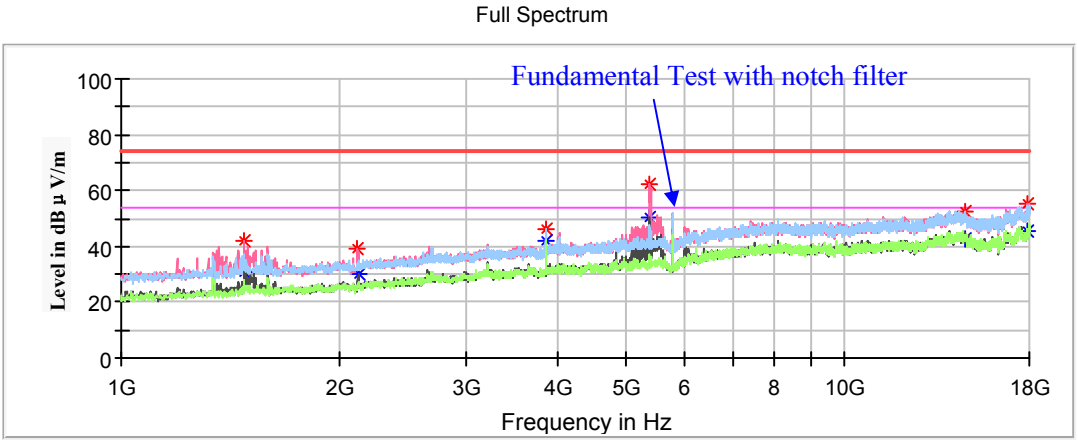
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



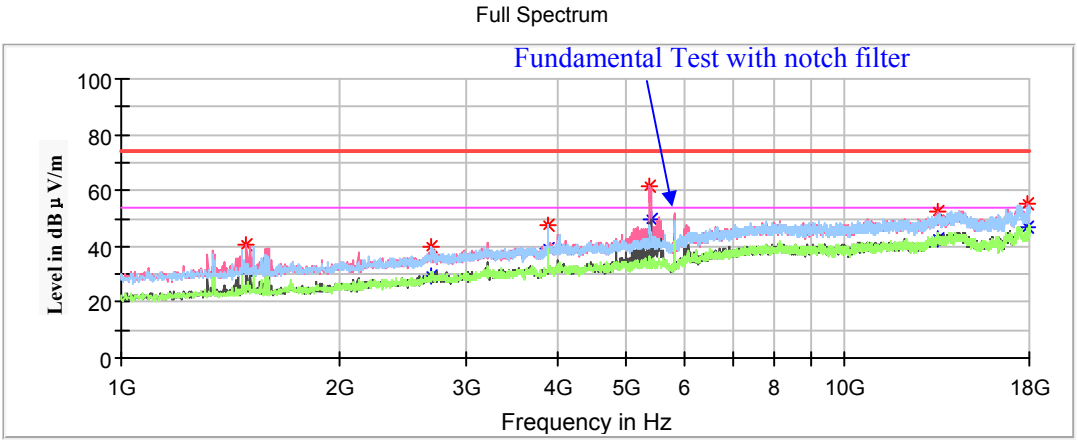
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1477.70	---	29.62	150	V	131	-16.5	54.00	24.38
1477.70	43.00	---	150	V	131	-16.5	74.00	31.00
2693.20	41.28	---	200	H	186	-11.5	68.20	26.92
3828.80	---	38.94	150	H	156	-7.6	54.00	15.06
3828.80	44.01	---	200	H	156	-7.6	74.00	29.99
5369.00	---	49.85	150	V	19	-4.2	54.00	4.15
5369.00	61.76	---	200	V	19	-4.2	74.00	12.24
14394.30	53.6	---	150	H	273	6.4	68.20	14.60
17986.40	---	46.06	200	V	117	8.8	54.00	7.94
17986.40	55.45	---	200	V	117	8.8	74.00	18.55

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)				
1477.70	---	30.62	200	V	235	-16.5	54.00	23.38
1477.70	41.88	---	200	V	235	-16.5	74.00	32.12
2123.70	39.17	---	150	V	248	-14	68.20	29.03
3856.00	---	41.74	200	H	311	-7.5	54.00	12.26
3856.00	46.09	---	200	H	311	-7.5	74.00	27.91
5365.60	---	50.5	150	V	19	-4.3	54.00	3.50
5365.60	62.51	---	150	V	19	-4.2	74.00	11.49
14671.40	52.72	---	150	H	174	6.0	68.20	15.48
17923.50	---	45.22	200	V	1	8.8	54.00	8.78
17923.50	54.91	---	200	V	1	8.8	74.00	19.09

High Channel: 5825MHz

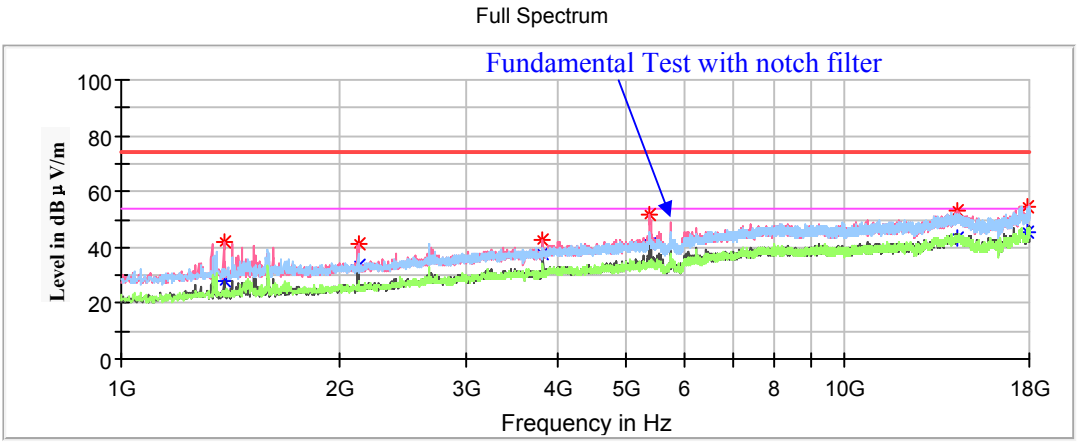


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1491.30	---	31.18	150	V	32	-16.4	54.00	22.82
1491.30	40.34	---	150	V	32	-16.4	74.00	33.66
2679.60	39.68	---	200	H	230	-11.6	68.20	28.52
3883.20	---	39.16	200	H	309	-7.4	54.00	14.84
3883.20	47.79	---	200	H	309	-7.4	74.00	26.21
5387.70	---	49.39	150	V	19	-4.2	54.00	4.61
5387.70	61.7	---	150	V	19	-4.2	74.00	12.30
13415.10	52.47	---	150	V	261	5.6	68.20	15.73
17937.10	---	46.86	200	V	348	8.8	54.00	7.14
17937.10	55.2	---	200	V	348	8.8	74.00	18.80

802.11n-HT20 Mode*(Chain0+Chain1):*
*(Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)*

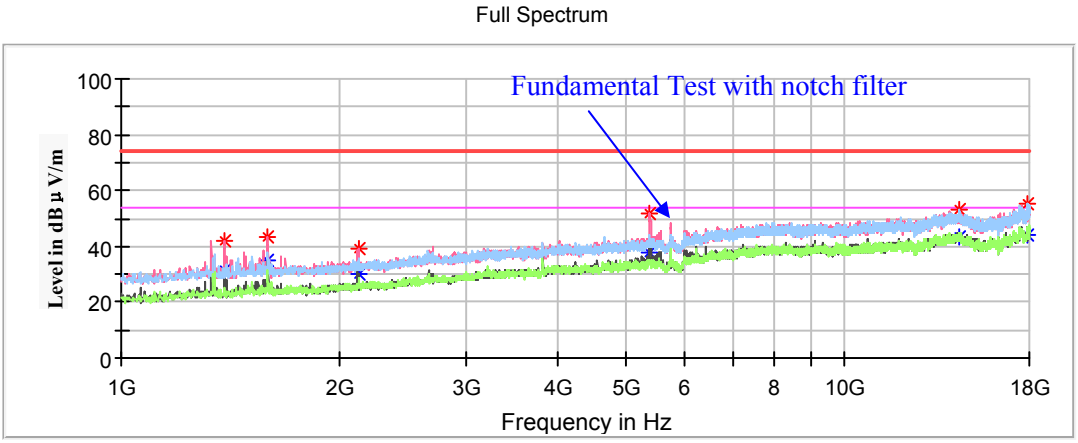
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



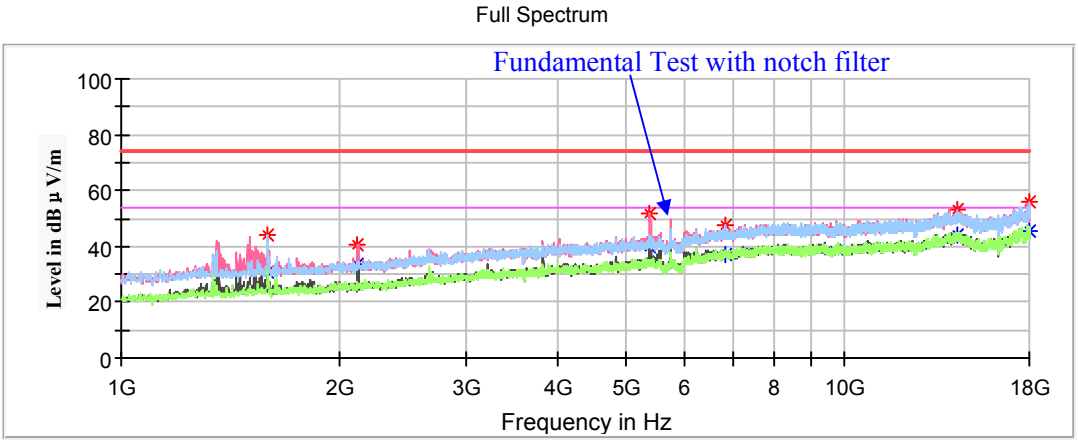
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1385.90	---	27.74	200	V	219	-17.0	54.00	26.26
1385.90	42.15	---	200	V	219	-17.0	74.00	31.85
2130.50	41.14	---	200	V	177	-13.9	68.20	27.06
3828.80	---	37.85	150	V	32	-7.6	54.00	16.15
3828.80	42.58	---	150	V	32	-7.6	74.00	31.42
5365.60	---	41.03	150	V	20	-4.3	54.00	12.97
5365.60	51.72	---	150	V	20	-4.3	74.00	22.28
14351.80	53.39	---	150	V	353	6.4	68.20	14.81
17928.60	---	45.76	200	V	67	8.8	54.00	8.24
17928.60	54.45	---	200	V	67	8.8	74.00	19.55

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)				
1387.60	---	31.38	200	V	219	-17.0	54.00	22.62
1387.60	42.27	---	200	V	219	-17.0	74.00	31.73
1593.30	---	35.01	200	V	134	-16.0	54.00	18.99
1593.30	43.63	---	200	V	134	-16.0	74.00	30.37
2130.50	38.9	---	200	V	198	-13.9	68.20	29.30
5374.10	---	37.49	150	V	84	-4.2	54.00	16.51
5374.10	51.81	---	150	V	84	-4.2	74.00	22.19
14413.00	53.01	---	150	H	73	6.5	68.20	15.19
17909.90	---	44.33	200	H	299	8.8	54.00	9.67
17909.90	55.48	---	200	H	299	8.8	74.00	18.52

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)				
1595.00	---	31.09	150	H	272	-16.0	54.00	22.91
1595.00	44.27	---	150	H	272	-16.0	74.00	29.73
2123.70	40.36	---	200	V	186	-14.0	68.20	27.84
5362.20	---	40.18	150	V	20	-4.3	54.00	13.82
5362.20	51.8	---	150	V	20	-4.3	74.00	22.20
6842.90	47.56	---	200	H	56	-0.4	68.20	20.64
14336.50	53.45	---	200	V	17	6.4	68.20	14.75
17969.40	---	45.66	200	H	207	8.8	54.00	8.34
17969.40	56.13	---	200	H	207	8.8	74.00	17.87