TESTING LABORATORY
CERTIFICATE#4323.01

FCC PART 15.247

TEST REPORT

For

Shanghai Sunmi Technology Co.,Ltd.

Room 605, Block 7, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai 200433 China

FCC ID: 2AH25T2SW

Report Type:	**Product Type:**
Original Report	POS System

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Report Number:	RKSA200804002-00C
Report Date:	2020-11-12
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Shanghai Sunmi Technology Co.,Ltd.
Product Type:	POS System
Tested Model:	L1563, L1573
Series Model:	L1562, L1561, L1572, L1571
Model Difference	See Declaration of Similarity
Power Supply:	DC 24.0V from Adapter
RF Function:	2.4G Wi-Fi, BLE(1Mbps), BLE(2Mbps)
Operating Band/Frequency:	2.4G Wi-Fi: 2412-2462 MHz(b/g/n20), 2422-2452 MHz(n40) BLE(1Mbps)/BLE(2Mbps): 2402-2480 MHz
Channel Number:	2.4G Wi-Fi: 11(b/g/n20), 7(n40) BLE(1Mbps)/BLE(2Mbps): 40
Channel Separation:	2.4G Wi-Fi: 5 MHz, BLE(1Mbps)/BLE(2Mbps): 2 MHz
Modulation Type:	2.4G Wi-Fi: OFDM,DSSS; BLE(1Mbps)/BLE(2Mbps): GFSK
Antenna Type:	2.4G Wi-Fi/BLE: L1563: PCB Antenna; L1573: PCB Antenna
*Maximum Antenna Gain:	2.4G Wi-Fi: L1563:Chain0: 2.19 dBi, Chain1: 2.19 dBi; L1573:Chain0:1.14 dBi, Chain1: 1.14 dBi BLE: L1563: 2.19 dBi; L1573: 1.14 dBi

Adapter1 information（L1563/L1562/L1561）:
Model: CYSE65-240250
Input: AC 100V-240V, 50/60Hz, 1.7A
Output: DC 24.0V, 2.5A, 60.0W

Adapter2 information（L1573/L1572/L1571）:
Model: CYZS36-240150
Input: AC 100V-240V, 50/60Hz, 1.5A
Output: DC 24.0V, 1.5A

Note1: The Maximum Antenna Gain was declared by the manufacturer.

Note2: According to product differences, choose model L1563 and L1573 for full test.

**All measurement and test data in this report was gathered from production sample serial number: 20200804002. (Assigned by the BACL. The EUT supplied by the applicant was received on 2020-08-04)*

Objective

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

The tests were performed in order to determine Compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

FCC Part 15.247 DSS submissions with FCC ID: 2AH25T2SW
FCC Part 15.407 NII submissions with FCC ID: 2AH25T2SW
FCC Part 15B JAB submissions with FCC ID: 2AH25T2SW

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and FCC KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

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

Test Facility

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

Test channel list is as below:

For 802.11b, 802.11g and 802.11n-HT20 mode, EUT was tested with Channel 1, 6 and 11;

For 802.11n-HT40 mode, EUT was tested with Channel 3, 6 and 9;

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	/	/

For BLE mode, EUT was tested with channel 0, 19 and 39.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	…	…
…	…	…	…
…	…	…	…
18	2438	38	2478
19	2440	39	2480

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

RF test software: QRCT3

Pre-scan with all the data rates, and the worst case was performed as below:

Mode	Data Rate	Channel	Power Level	
			Chain0	Chain1
802.11b	1 Mbps	Low	18	18
		Middle	18	18
		High	18	18
802.11g	6 Mbps	Low	15	14
		Middle	15	14
		High	15	14
802.11n-HT20	MCS0	Low	12	12
		Middle	12	12
		High	12	12
802.11n-HT40	MCS0	Low	9	9
		Middle	11	11
		High	9	9
BLE	1Mbps	Low	Default	/
		Middle	Default	/
		High	Default	/
	2Mbps	Low	Default	/
		Middle	Default	/
		High	Default	/

Note: 802.11b/g supports SISO, 802.11n20/n40 supports SISO and MIMO mode. For Radiated Emission, according to pretest, the worst case for 802.11n20/n40 is MIMO mode. So 802.11n20/n40 MIMO mode test data were recorded in the report.

For Conducted Test:

802.11b & 802.11g & 802.11n: each transmit chain was tested.

Based on the same RF electrical parameters of all models, the model of L1563 was selected for testing.

For Radiated Test:

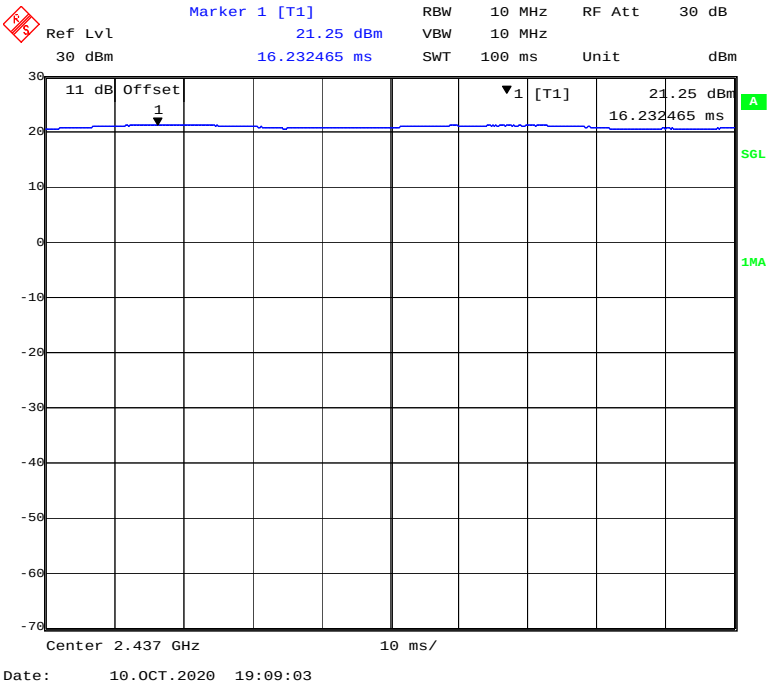
802.11b & 802.11g, SISO for each transmit chain
802.11n: MIMO for two transmit chains

Based on the same RF electrical parameters except for antennas gains, the models of L1563 and L1573 were selected for testing.

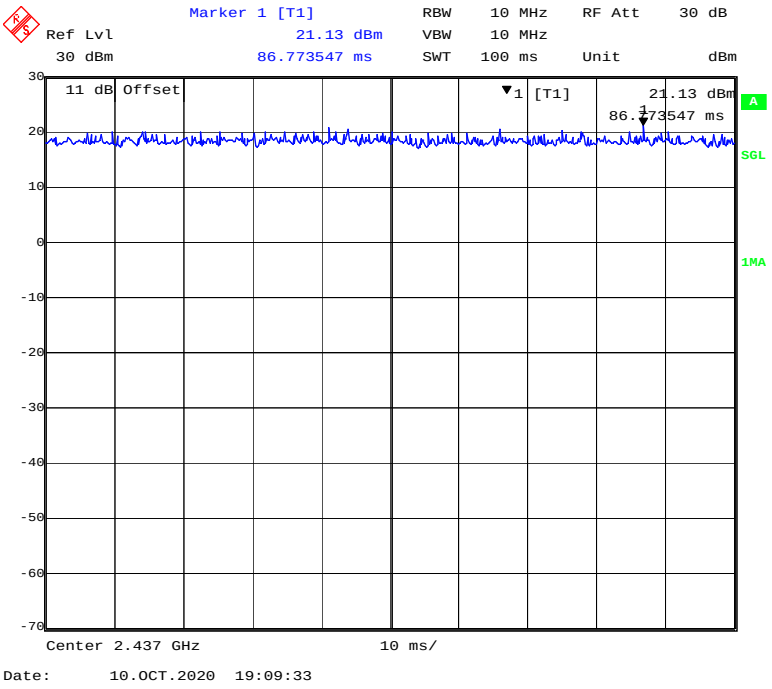
Duty Cycle:

Chain0:

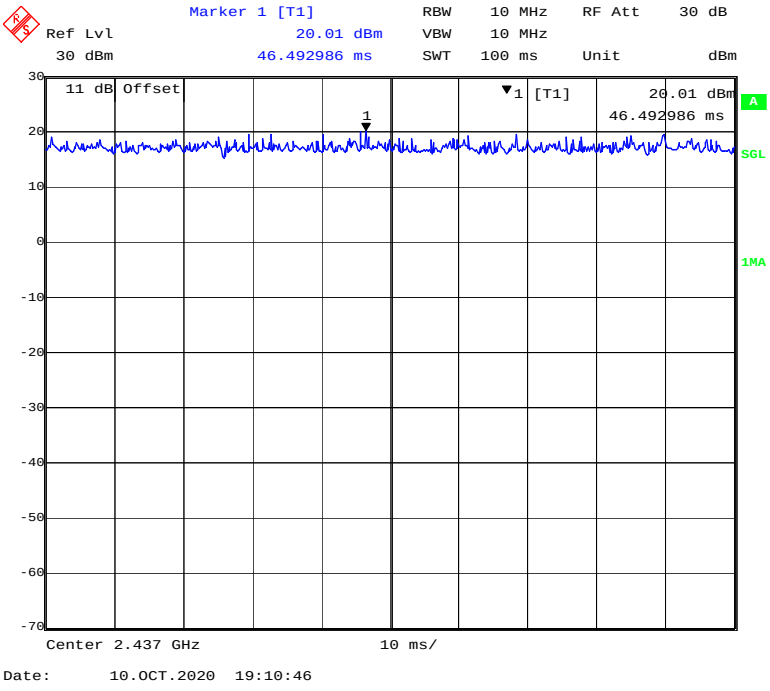
802.11b Mode Middle Channel



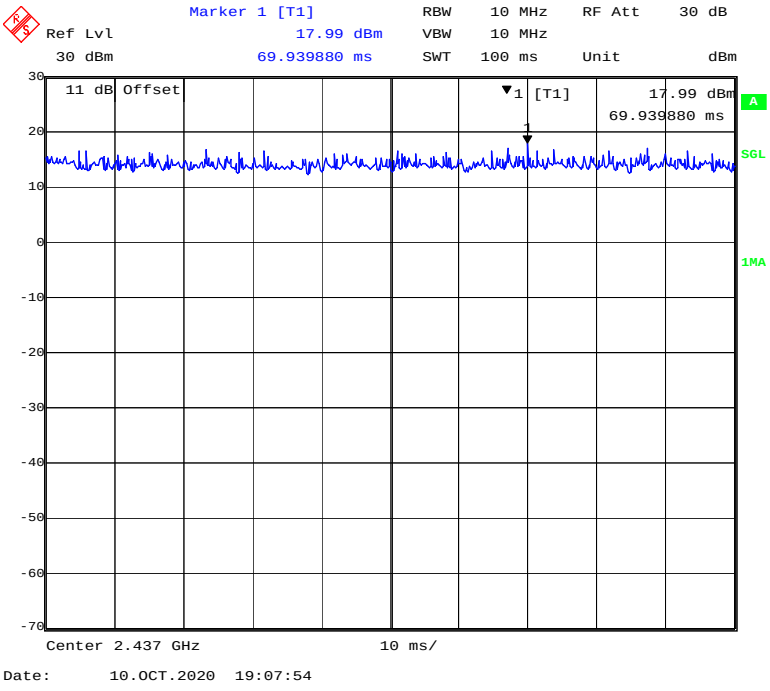
802.11g Mode Middle Channel



802.11n-HT20 Mode Middle Channel

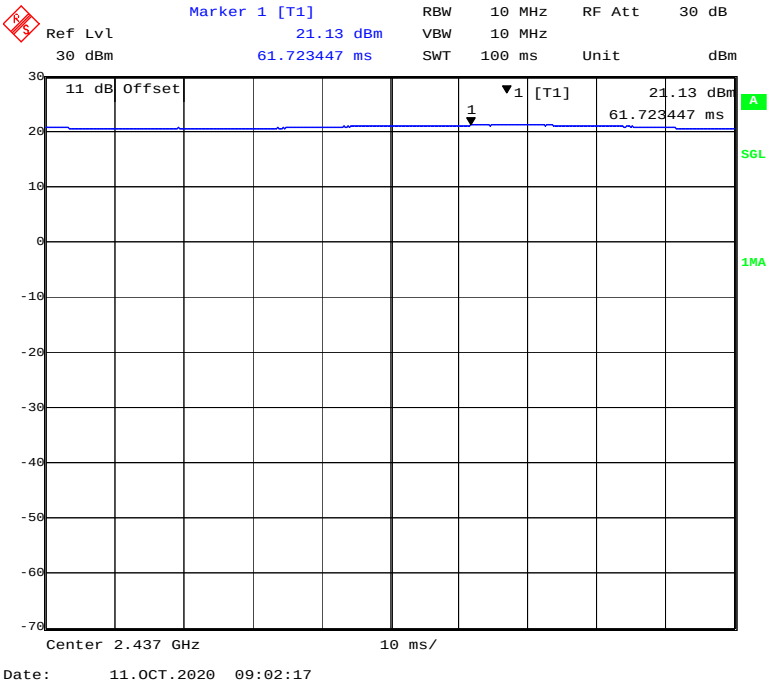


802.11n-HT40 Mode Middle Channel

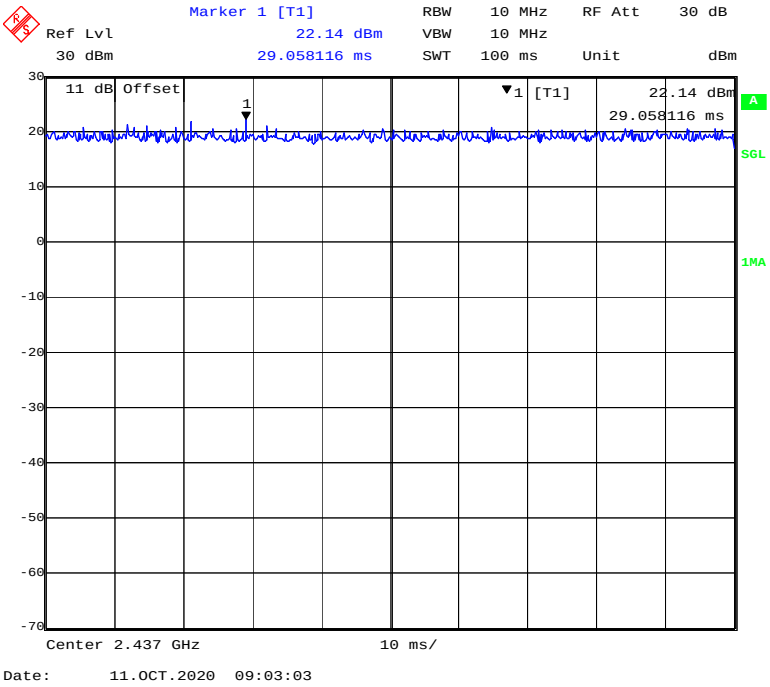


Chain1:

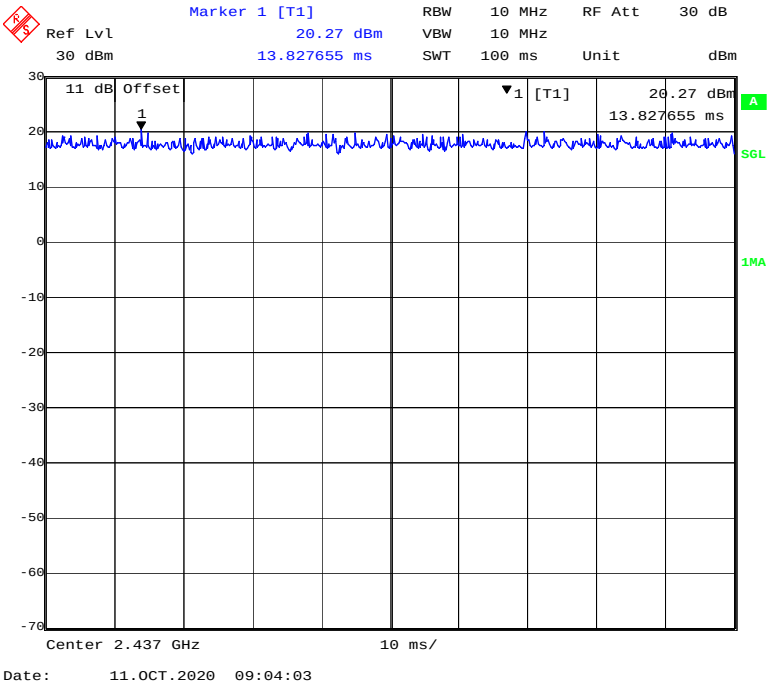
802.11b Mode Middle Channel



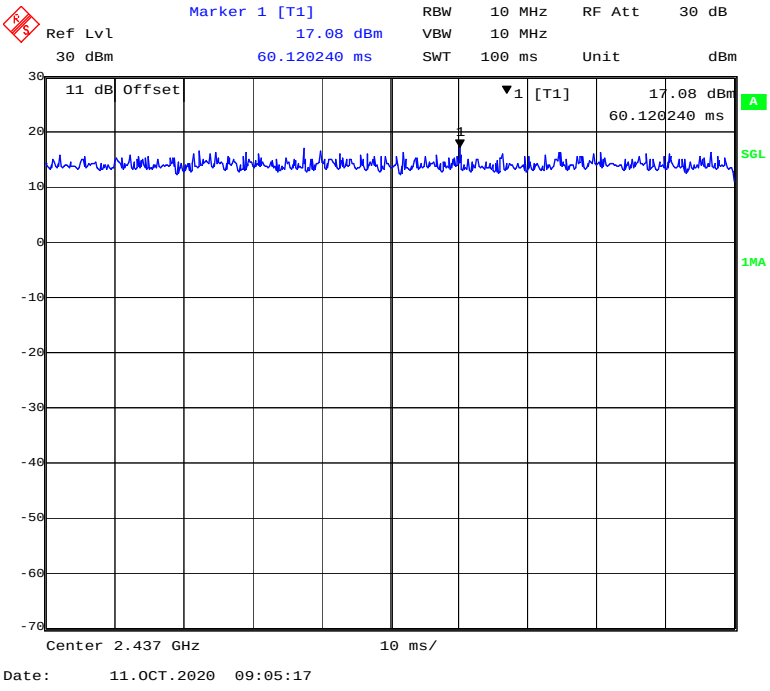
802.11g Mode Middle Channel



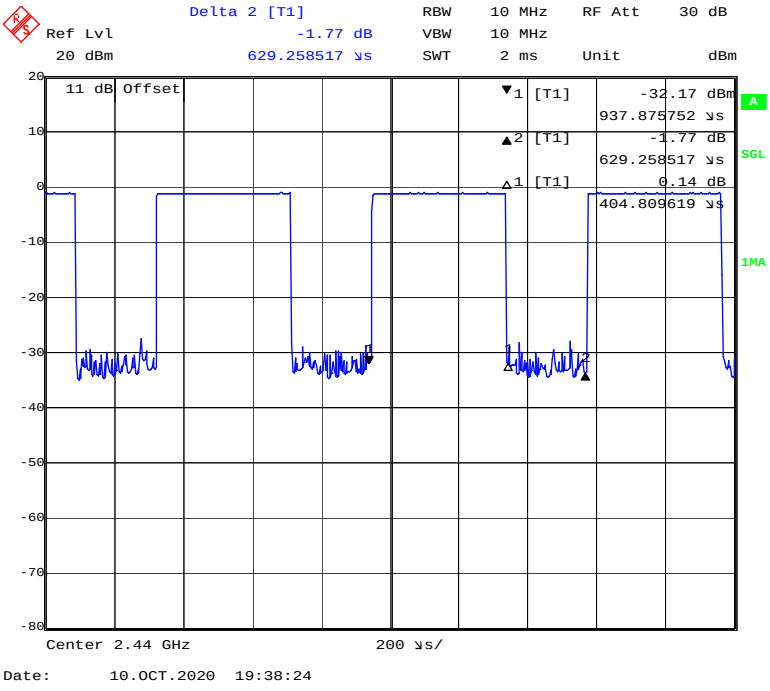
802.11n-HT20 Mode Middle Channel



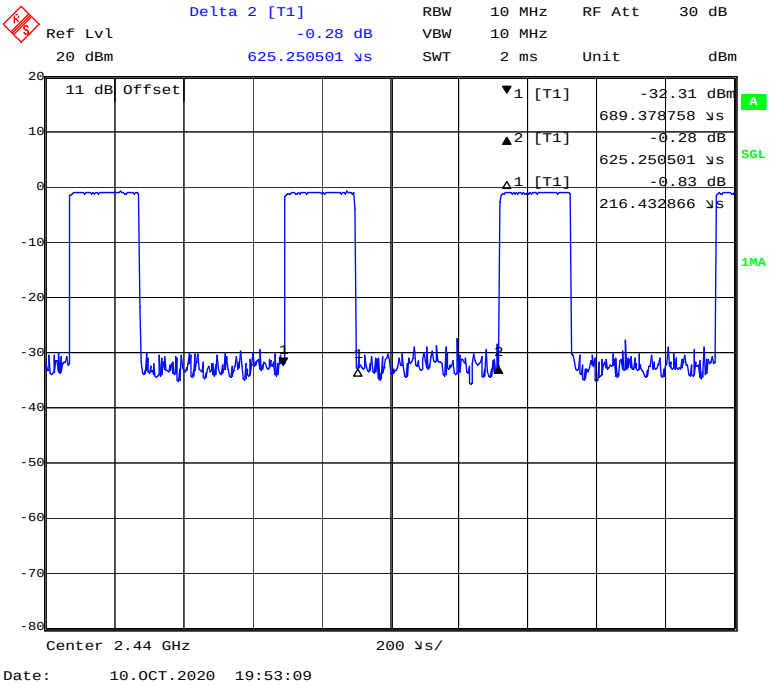
802.11n-HT40 Mode Middle Channel



BLE(1Mbps) Mode Middle Channel



BLE(2Mbps) Mode Middle Channel



Mode	Duty Cycle (%)	T(ms)	1/T(kHz)	10log(1/x)
802.11b	100.00	/	/	0.00
802.11g	100.00	/	/	0.00
802.11n-HT20	100.00	/	/	0.00
802.11n-HT40	100.00	/	/	0.00
BLE(1Mbps)	64.39	0.405	2.47	1.91
BLE(1Mbps)	34.56	0.216	4.63	4.61

Note: "x" means the Duty Cycle.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Shanghai Sunmi Technology Co.,Ltd.	Cash Box	/	/
TP-LINK	Router	EC26CA652860	1153150000000
/	Printer	/	/
/	Earphone	/	/
Sandisk	USB flash disk	/	/
Sandisk	SD card	SDSQUNC-032G-ZN6MA	/

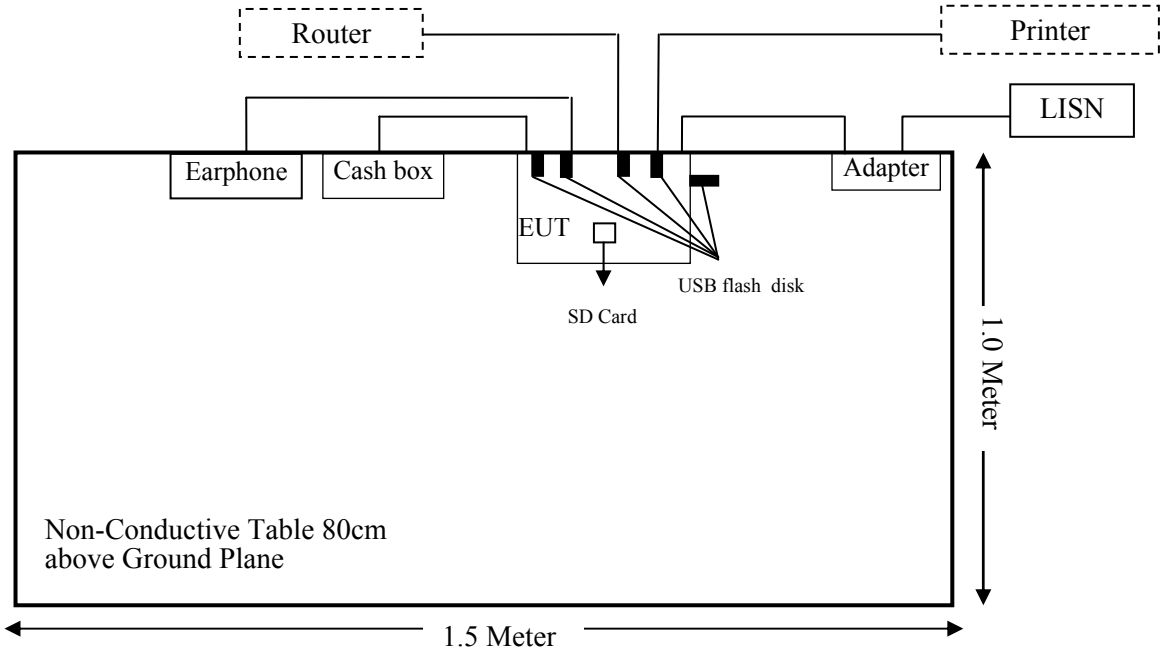
External I/O Cable

Cable Description	Shielding Type	Length (m)	From Port	To
RJ11 Cable	Un-shielding	0.5	EUT	Cash Box
USB Cable	Un-shielding	1.0	EUT	Adapter
Power Cable	Un-shielding	1.0	Adapter	LISN/AC Source
Audio Cable	Un-shielding	1.0	EUT	Earphone
Data Cable	Un-shielding	10	EUT	Printer
RJ45 Cable	Un-shielding	1.0	EUT	Router

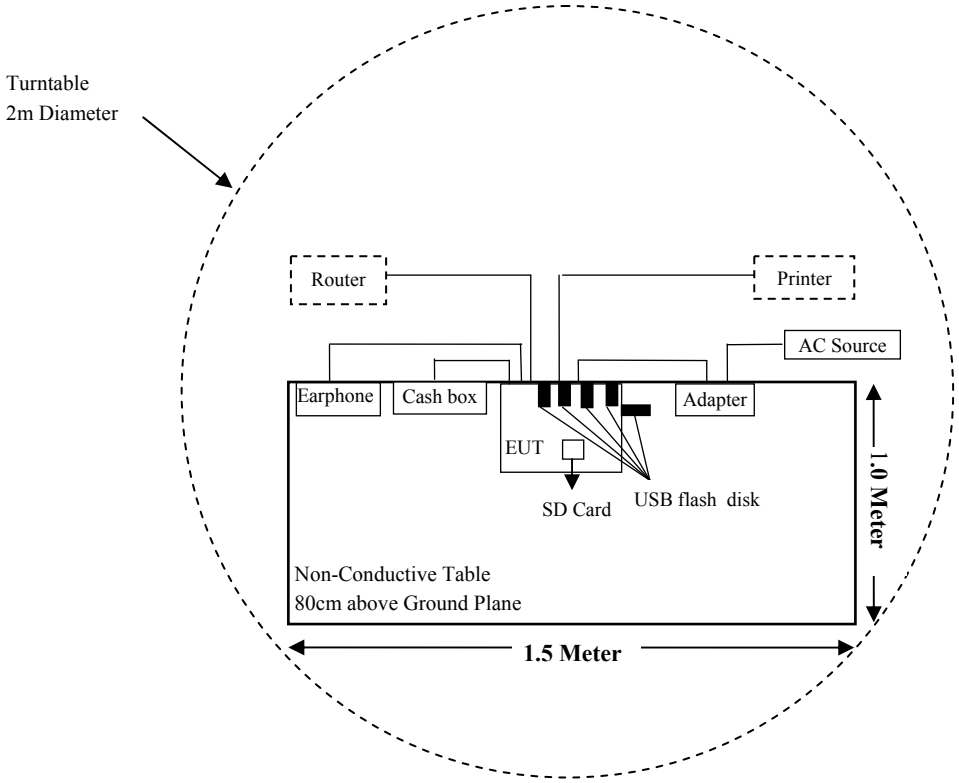
Block Diagram of Test Setup

For model: L1563

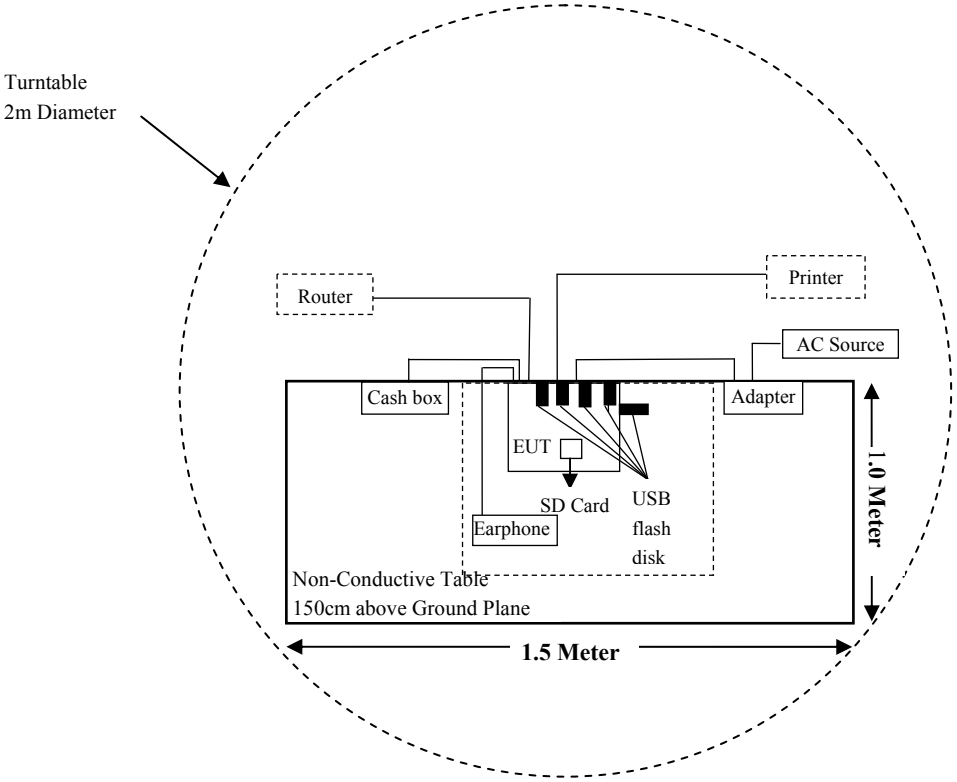
For Conducted Emissions:



For Radiated Emissions (Below 1GHz):

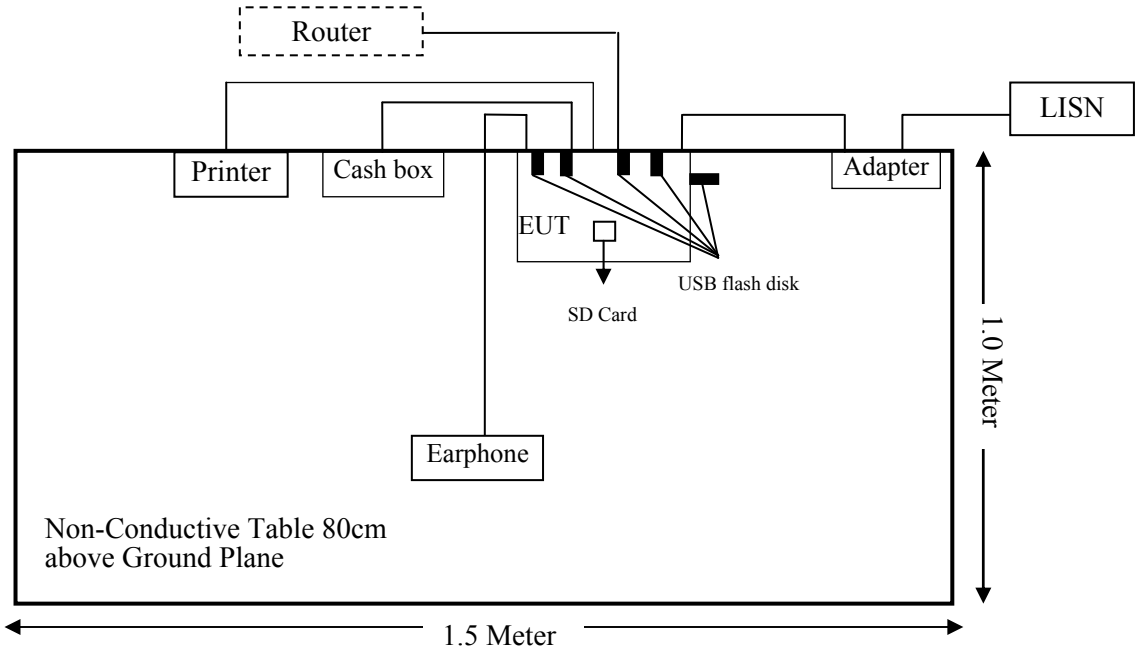


For Radiated Emissions (Above 1GHz):

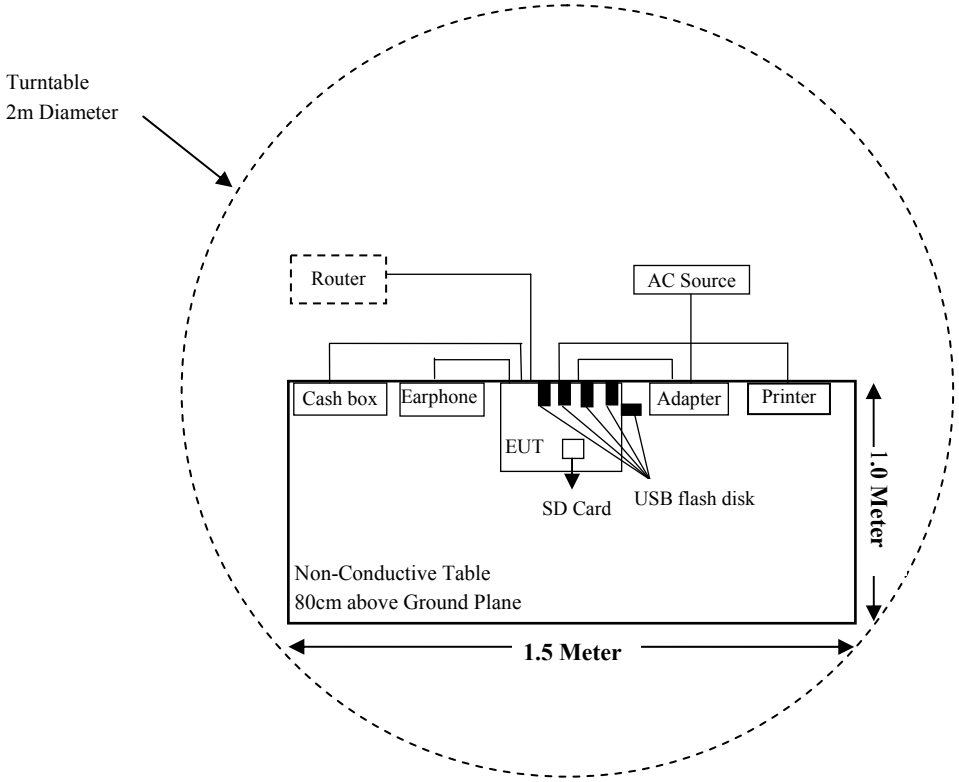


For model: L1573

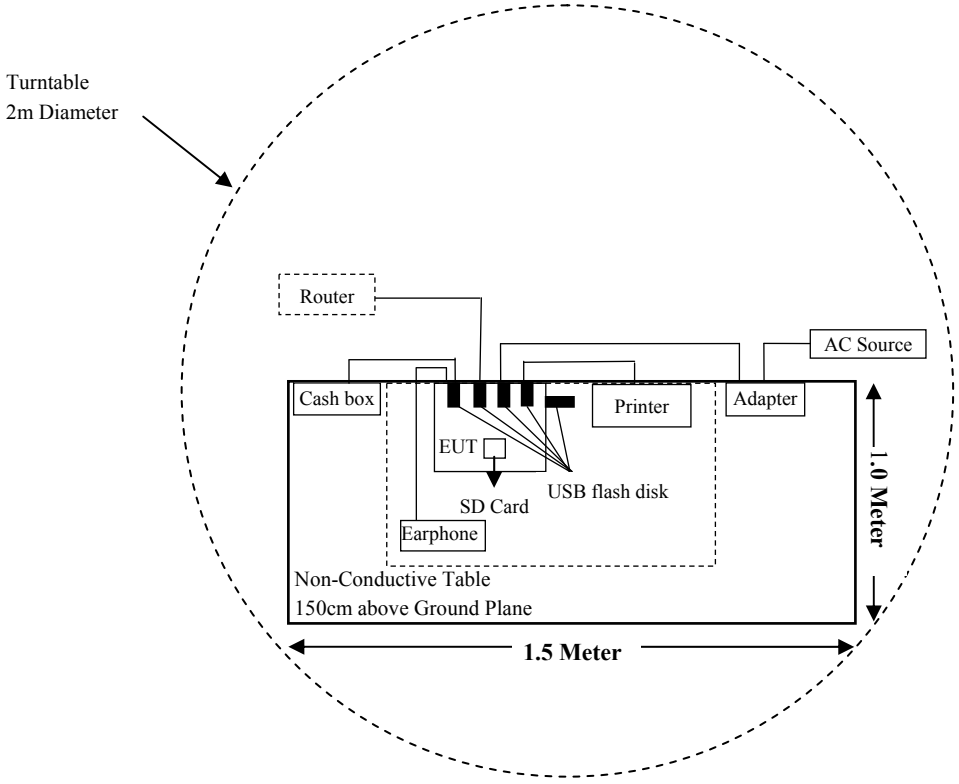
For Conducted Emissions:



For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (I), §1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.247(d)	Spurious Emissions at Antenna Port	Compliant
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	Band Edge	Compliant
§15.247(e)	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	2020-08-14	2021-08-13
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-8	008	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2020-08-15	2021-08-14
Radiated Emission Test（Chamber 2#）					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2020-04-01	2021-03-31
ETS-LINDGREN	Horn Antenna	3115	6229	2020-01-10	2023-01-09
ETS-LINDGREN	Horn Antenna	3116	00084159	2019-10-18	2022-10-17
A.H.Systems,inc	Amplifier	PAM-0118P	512	2020-02-20	2021-02-19
EM Electronics Corporation	Amplifier	EM18G40G	060726	2020-03-22	2021-03-21
MICRO-TRONICS	Band Reject Filter	BRM50702	G024	2020-08-05	2021-08-04
Narda	Attenuator	10dB	010	2020-08-15	2021-08-14
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-6	006	2019-12-12	2020-12-11
MICRO-COAX	Coaxial Cable	Cable-11	011	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-12	012	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-13	013	2020-08-15	2021-08-14
RF Conducted Test					
Rohde & Schwarz	Signal Analyzer	FSIQ26	836131/009	2019-12-14	2020-12-13
Narda	Attenuator	10dB	010	2020-08-05	2021-08-04
Agilent	Power Meter	N1912A	MY5000492	2019-11-18	2020-11-17
Agilent	Power Sensor	N1921A	MY54210024	2019-11-18	2020-11-17
Sunmi	RF Cable	01	Sunmi C01	Each Time	/
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K03-101746-zn	2020-08-05	2021-08-04
Rohde & Schwarz	LISN	ENV216	3560655016	2019-11-30	2020-11-29
Audix	Test Software	e3	V9	--	--
Rohde & Schwarz	Pulse limiter	ESH3-Z2	0357.8810.54	2020-08-10	2021-08-09
MICRO-COAX	Coaxial Cable	Cable-15	015	2020-08-15	2021-08-14

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

FCC §15.247 (I) & §1.1310 & §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247 (i) and subpart 1.1310, 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure				
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

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 (worst case):

Model: L1563

2.4G Wi-Fi/BLE/BT:

Mode	Frequency Range (MHz)	Maximum Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
802.11b	2412-2462	2.19	1.66	23.00	199.53	20	0.0659	1.0
802.11g		2.19	1.66	24.00	251.19	20	0.0829	1.0
802.11n-HT20		2.19	1.66	24.00	251.19	20	0.0829	1.0
802.11n-HT40	2422-2452	2.19	1.66	23.50	223.87	20	0.0739	1.0
BLE (1Mbps)	2402-2480	2.19	1.66	0.50	1.12	20	0.0004	1.0
BLE (2Mbps)	2402-2480	2.19	1.66	1.00	1.26	20	0.0004	1.0
BT	2402-2480	2.19	1.66	9.50	8.91	20	0.0029	1.0

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)
802.11a	5150~5250	0.05	1.01	18.50	70.79	20	0.0142	1.0
	5725~5850	0.05	1.01	21.00	125.89	20	0.0253	1.0
802.11ac20	5150~5250	0.05	1.01	20.50	112.20	20	0.0225	1.0
	5725~5850	0.05	1.01	23.00	199.53	20	0.0401	1.0
802.11n20	5150~5250	0.05	1.01	20.50	112.20	20	0.0225	1.0
	5725~5850	0.05	1.01	23.00	199.53	20	0.0401	1.0
802.11ac40	5150~5250	0.05	1.01	16.00	39.81	20	0.0080	1.0
	5725~5850	0.05	1.01	22.50	177.83	20	0.0357	1.0
802.11n40	5150~5250	0.05	1.01	16.00	39.81	20	0.0080	1.0
	5725~5850	0.05	1.01	22.50	177.83	20	0.0357	1.0
802.11ac80	5150~5250	0.05	1.01	10.50	11.22	20	0.0023	1.0
	5725~5850	0.05	1.01	23.00	199.53	20	0.0401	1.0

Note: 1. The tune up power were declared by the manufacturer.
2. Wi-Fi and BT/BLE can't transmit simultaneously.
3. For 802.11b, 802.11g, 802.11a, the tune-up power is base on SISO mode
For 802.11ac20/n20/n40/ac40/ac80, the tune-up power is base on MIMO mode

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

Model: L1573

2.4G Wi-Fi/BLE/BT:

Mode	Frequency Range (MHz)	Maximum Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
802.11b	2412-2462	1.14	1.30	23.00	199.53	20	0.0516	1.0
802.11g		1.14	1.30	24.00	251.19	20	0.0650	1.0
802.11n-HT20		1.14	1.30	24.00	251.19	20	0.0650	1.0
802.11n-HT40	2422-2452	1.14	1.30	23.50	223.87	20	0.0579	1.0
BLE (1Mbps)	2402-2480	1.14	1.30	0.50	1.12	20	0.0003	1.0
BLE (2Mbps)	2402-2480	1.14	1.30	1.00	1.26	20	0.0003	1.0
BT	2402-2480	1.14	1.30	9.50	8.91	20	0.0023	1.0

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)
802.11a	5150~5250	1.57	1.44	18.50	70.79	20	0.0203	1.0
	5725~5850	1.57	1.44	21.00	125.89	20	0.0361	1.0
802.11ac20	5150~5250	1.57	1.44	20.50	112.20	20	0.0321	1.0
	5725~5850	1.57	1.44	23.00	199.53	20	0.0570	1.0
802.11n20	5150~5250	1.57	1.44	20.50	112.20	20	0.0321	1.0
	5725~5850	1.57	1.44	23.00	199.53	20	0.0570	1.0
802.11ac40	5150~5250	1.57	1.44	16.00	39.81	20	0.0114	1.0
	5725~5850	1.57	1.44	22.50	177.83	20	0.0509	1.0
802.11n40	5150~5250	1.57	1.44	16.00	39.81	20	0.0114	1.0
	5725~5850	1.57	1.44	22.50	177.83	20	0.0509	1.0
802.11ac80	5150~5250	1.57	1.44	10.50	11.22	20	0.0032	1.0
	5725~5850	1.57	1.44	23.00	199.53	20	0.0570	1.0

Note: 1. The tune up power were declared by the manufacturer.
2. Wi-Fi and BT/BLE can't transmit simultaneously.
3. For 802.11b, 802.11g, 802.11a, the tune-up power is base on SISO mode
For 802.11ac20/n20/n40/ac40/ac80, the tune-up power is base on MIMO mode

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

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

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

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

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.
And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT (model: L1563) has an internal PCB antenna for 2.4G Wi-Fi & BLE, which the antenna gain is 2.19 dBi, fulfill the requirement of this section; The EUT (model: L1573) has an internal PCB antenna for 2.4G Wi-Fi & BLE, which the antenna gain is 1.14 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

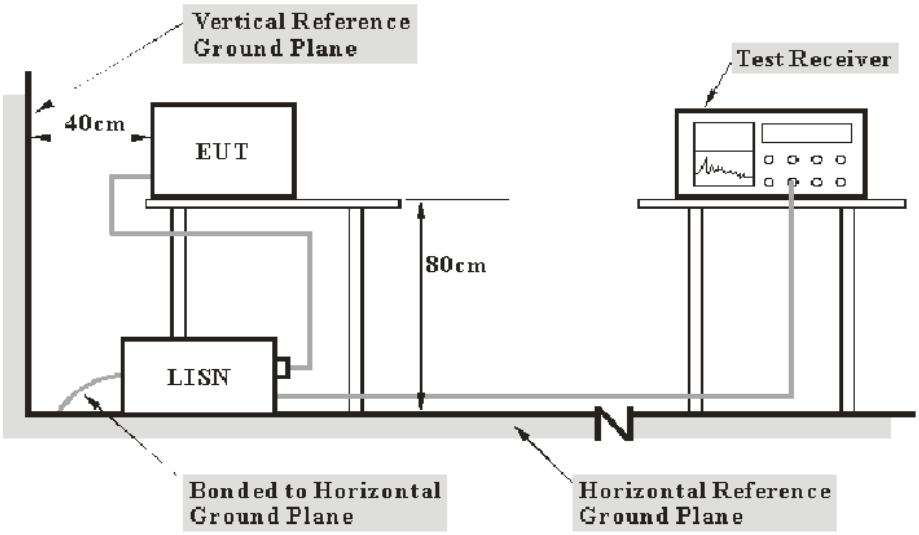
Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

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 measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207.

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

ANSI C63.10-2013 clause 6.2

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

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

Factor & Over Limit Calculation

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

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

The "**Over Limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit of 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:	24.6-25.2 ℃
Relative Humidity:	46-50 %
ATM Pressure:	101.3-101.6 kPa

The testing was performed by CK Huang from 2020-09-03 to 2020-09-27.

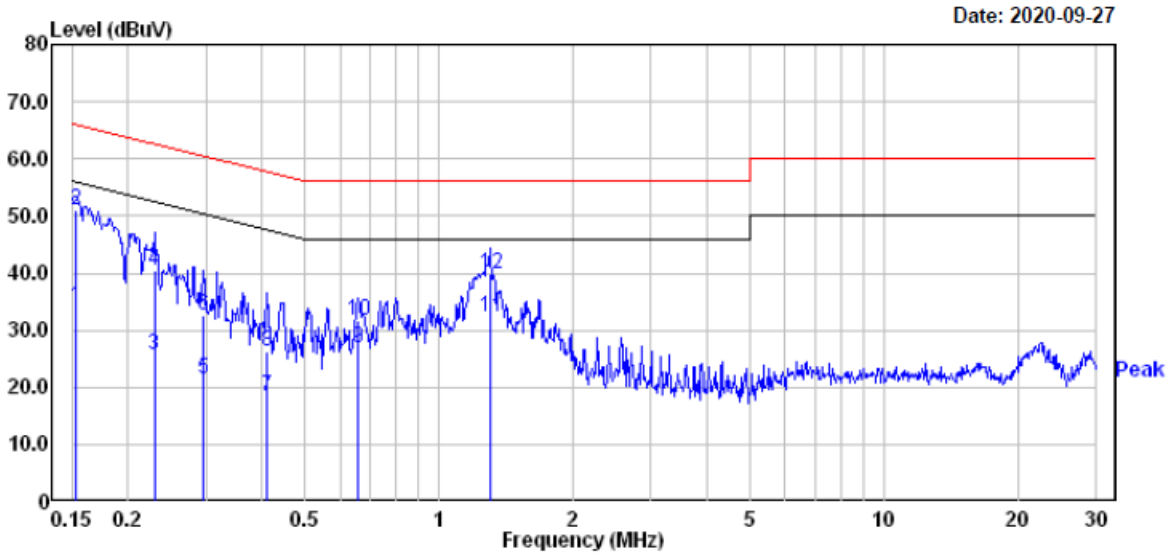
Test Result: Compliant.

Model: L1563

For Wi-Fi Mode:

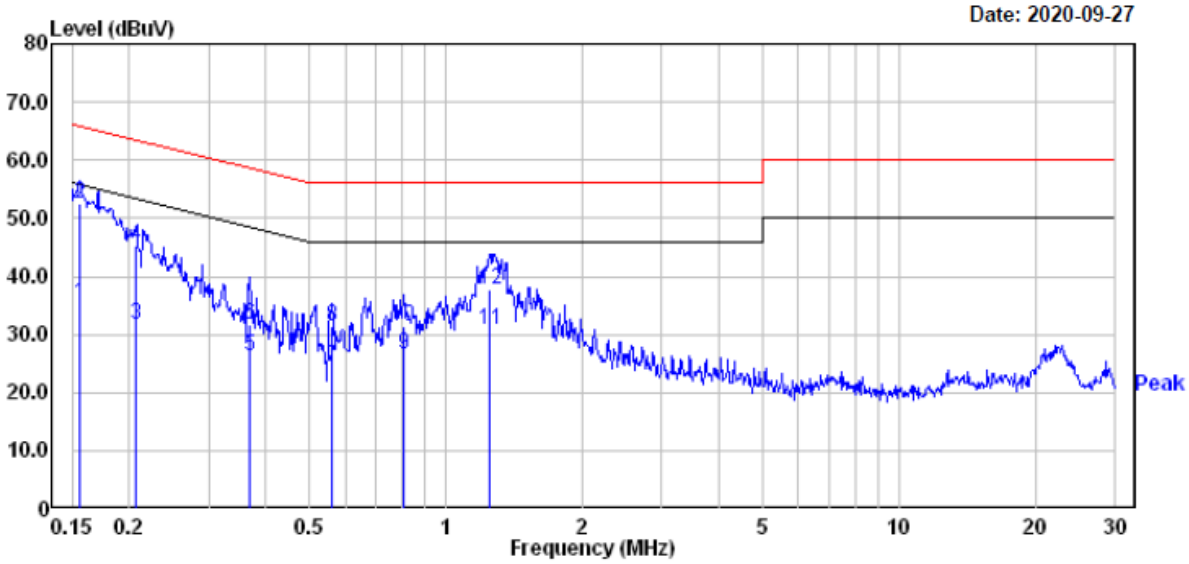
EUT operation mode: Transmitting in 802.11n-HT20 mode high channel (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.152	14.20	19.82	34.02	55.87	-21.85	Average
2	0.152	31.10	19.82	50.92	65.87	-14.95	QP
3	0.229	5.74	19.82	25.56	52.48	-26.92	Average
4	0.229	20.50	19.82	40.32	62.48	-22.16	QP
5	0.296	1.70	19.83	21.53	50.37	-28.84	Average
6	0.296	12.90	19.83	32.73	60.37	-27.64	QP
7	0.410	-1.30	19.74	18.44	47.64	-29.20	Average
8	0.410	6.40	19.74	26.14	57.64	-31.50	QP
9	0.658	7.10	19.75	26.85	46.00	-19.15	Average
10	0.658	12.00	19.75	31.75	56.00	-24.25	QP
11	1.303	12.60	19.82	32.42	46.00	-13.58	Average
12	1.303	19.90	19.82	39.72	56.00	-16.28	QP

AC 120V/60 Hz, Neutral

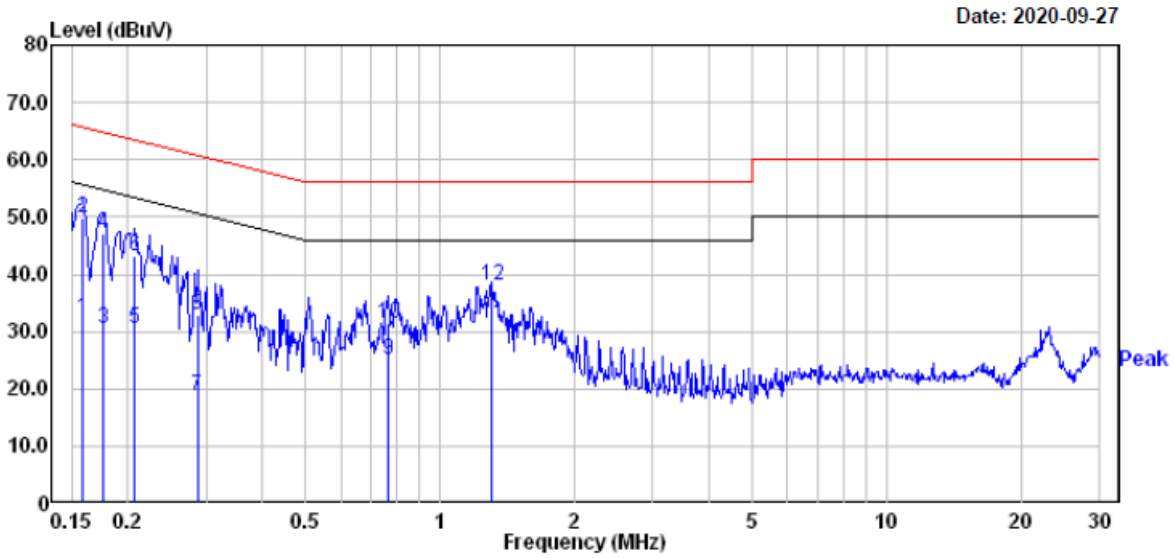


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.156	15.40	19.82	35.22	55.69	-20.47	Average
2	0.156	32.70	19.82	52.52	65.69	-13.17	QP
3	0.207	11.80	19.82	31.62	53.32	-21.70	Average
4	0.207	25.50	19.82	45.32	63.32	-18.00	QP
5	0.369	6.60	19.78	26.38	48.52	-22.14	Average
6	0.369	11.90	19.78	31.68	58.52	-26.84	QP
7	0.561	4.60	19.75	24.35	46.00	-21.65	Average
8	0.561	11.50	19.75	31.25	56.00	-24.75	QP
9	0.804	7.00	19.70	26.70	46.00	-19.30	Average
10	0.804	11.60	19.70	31.30	56.00	-24.70	QP
11	1.249	10.90	19.82	30.72	46.00	-15.28	Average
12	1.249	17.80	19.82	37.62	56.00	-18.38	QP

For BLE (1Mbps) Mode:

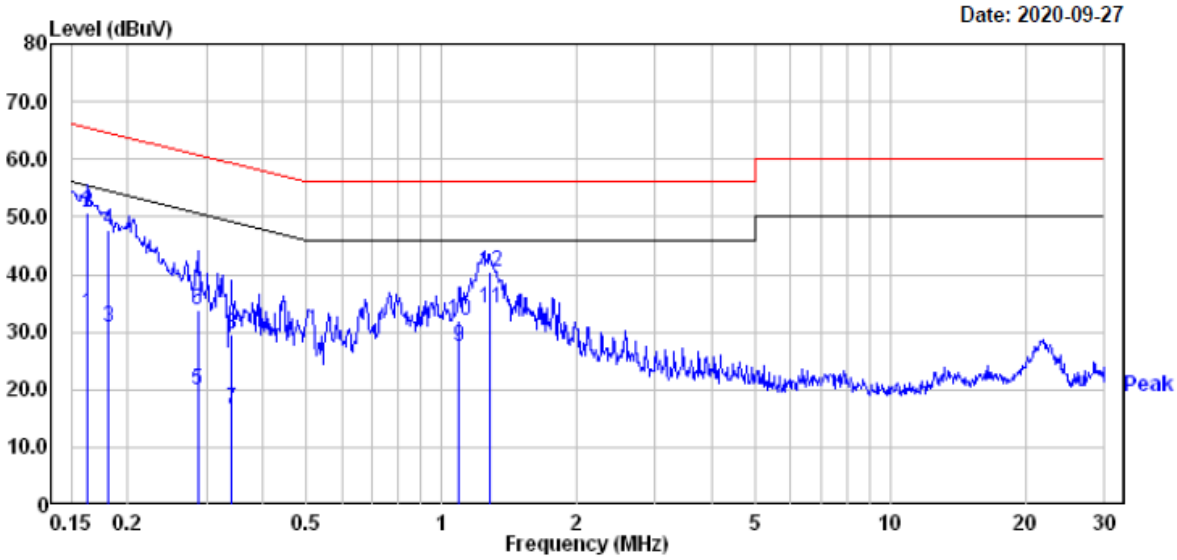
EUT operation mode: Transmitting in low channel (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.159	12.50	19.82	32.32	55.52	-23.20	Average
2	0.159	30.00	19.82	49.82	65.52	-15.70	QP
3	0.176	10.60	19.83	30.43	54.68	-24.25	Average
4	0.176	27.20	19.83	47.03	64.68	-17.65	QP
5	0.207	10.60	19.82	30.42	53.32	-22.90	Average
6	0.207	23.40	19.82	43.22	63.32	-20.10	QP
7	0.286	-1.20	19.82	18.62	50.63	-32.01	Average
8	0.286	13.00	19.82	32.82	60.63	-27.81	QP
9	0.763	5.40	19.72	25.12	46.00	-20.88	Average
10	0.763	11.60	19.72	31.32	56.00	-24.68	QP
11	1.310	11.60	19.82	31.42	46.00	-14.58	Average
12	1.310	18.20	19.82	38.02	56.00	-17.98	QP

AC 120V/60 Hz, Neutral

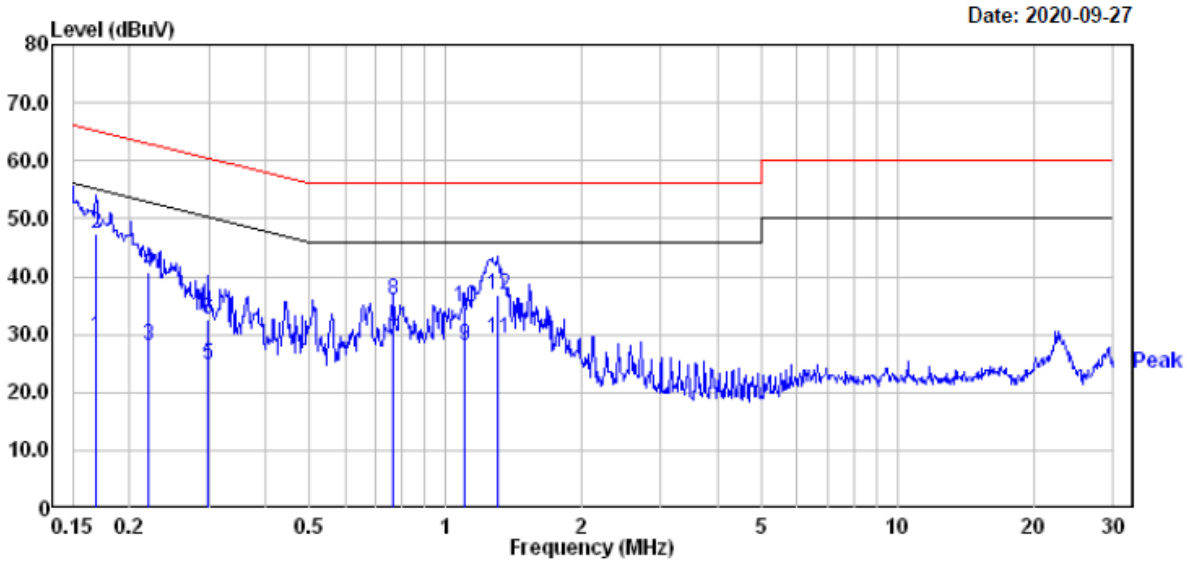


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.163	13.40	19.83	33.23	55.30	-22.07	Average
2	0.163	30.80	19.83	50.63	65.30	-14.67	QP
3	0.181	11.10	19.83	30.93	54.46	-23.53	Average
4	0.181	27.90	19.83	47.73	64.46	-16.73	QP
5	0.286	0.20	19.82	20.02	50.63	-30.61	Average
6	0.286	14.10	19.82	33.92	60.63	-26.71	QP
7	0.341	-3.30	19.81	16.51	49.18	-32.67	Average
8	0.341	9.70	19.81	29.51	59.18	-29.67	QP
9	1.094	7.60	19.82	27.42	46.00	-18.58	Average
10	1.094	12.10	19.82	31.92	56.00	-24.08	QP
11	1.282	14.20	19.82	34.02	46.00	-11.98	Average
12	1.282	20.70	19.82	40.52	56.00	-15.48	QP

For BLE (2Mbps) Mode:

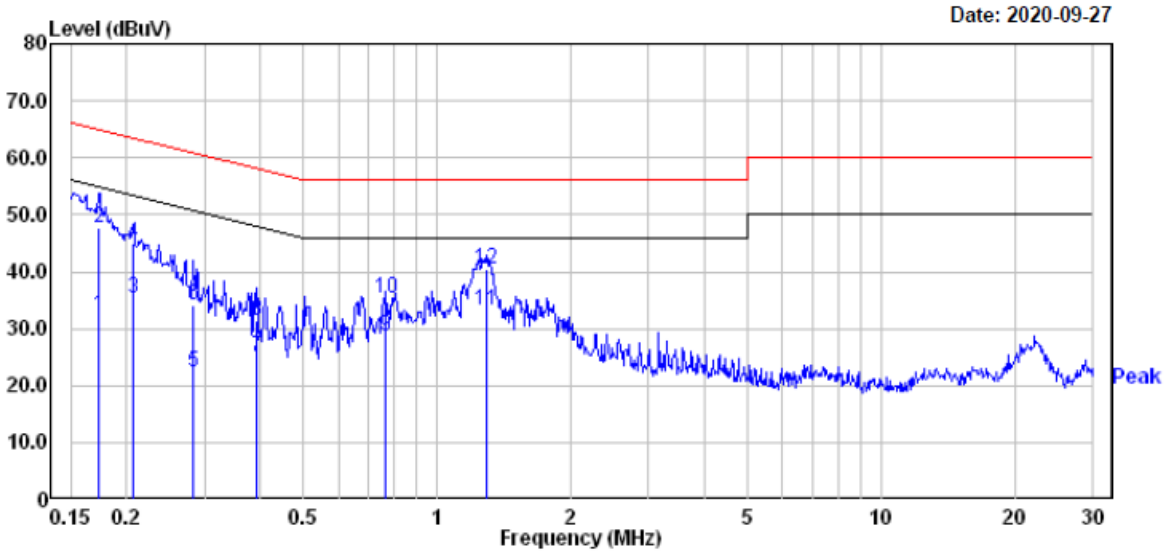
EUT operation mode: Transmitting in low channel (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.169	9.90	19.83	29.73	55.03	-25.30	Average
2	0.169	27.50	19.83	47.33	65.03	-17.70	QP
3	0.221	8.20	19.82	28.02	52.79	-24.77	Average
4	0.221	21.00	19.82	40.82	62.79	-21.97	QP
5	0.299	5.00	19.83	24.83	50.28	-25.45	Average
6	0.299	12.80	19.83	32.63	60.28	-27.65	QP
7	0.767	9.20	19.72	28.92	46.00	-17.08	Average
8	0.767	16.30	19.72	36.02	56.00	-19.98	QP
9	1.100	8.41	19.81	28.22	46.00	-17.78	Average
10	1.100	14.91	19.81	34.72	56.00	-21.28	QP
11	1.310	9.37	19.82	29.19	46.00	-16.81	Average
12	1.310	17.10	19.82	36.92	56.00	-19.08	QP

AC 120V/60 Hz, Neutral



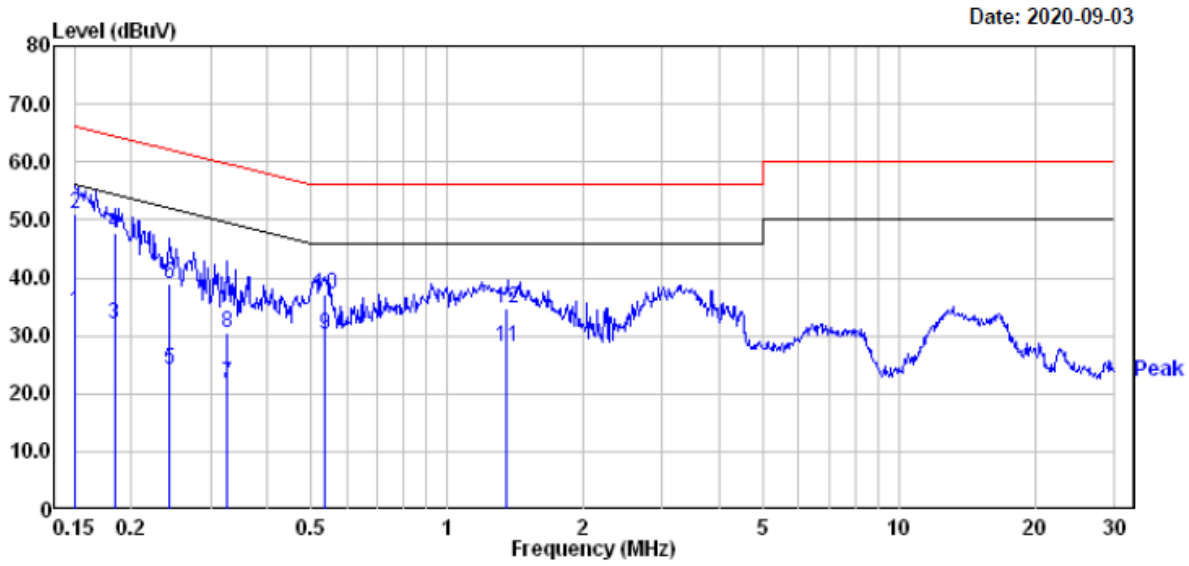
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.173	12.50	19.83	32.33	54.81	-22.48	Average
2	0.173	28.00	19.83	47.83	64.81	-16.98	QP
3	0.207	15.50	19.82	35.32	53.32	-18.00	Average
4	0.207	25.10	19.82	44.92	63.32	-18.40	QP
5	0.283	2.60	19.82	22.42	50.72	-28.30	Average
6	0.283	14.30	19.82	34.12	60.72	-26.60	QP
7	0.391	5.20	19.75	24.95	48.03	-23.08	Average
8	0.391	11.70	19.75	31.45	58.03	-26.58	QP
9	0.767	8.90	19.72	28.62	46.00	-17.38	Average
10	0.767	15.70	19.72	35.42	56.00	-20.58	QP
11	1.289	13.40	19.82	33.22	46.00	-12.78	Average
12	1.289	20.70	19.82	40.52	56.00	-15.48	QP

Model: L1573

For Wi-Fi Mode:

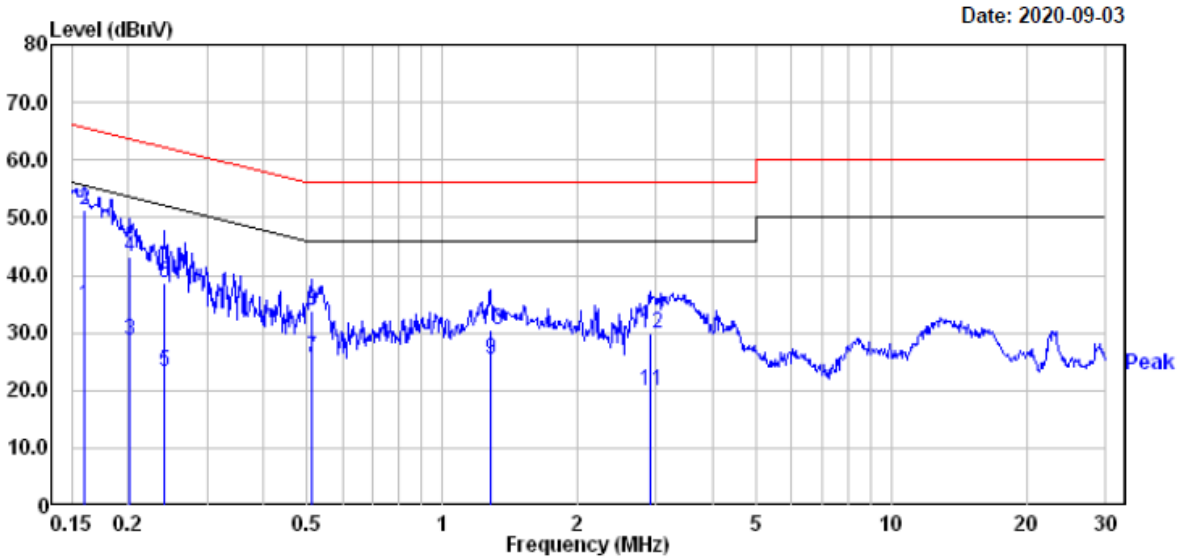
EUT operation mode: Transmitting in 802.11n-HT20 mode high channel (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.150	14.20	19.82	34.02	56.00	-21.98	Average
2	0.150	31.30	19.82	51.12	66.00	-14.88	QP
3	0.183	12.30	19.83	32.13	54.33	-22.20	Average
4	0.183	27.90	19.83	47.73	64.33	-16.60	QP
5	0.243	4.40	19.82	24.22	52.00	-27.78	Average
6	0.243	19.20	19.82	39.02	62.00	-22.98	QP
7	0.327	1.80	19.82	21.62	49.53	-27.91	Average
8	0.327	10.70	19.82	30.52	59.53	-29.01	QP
9	0.538	10.41	19.75	30.16	46.00	-15.84	Average
10	0.538	17.31	19.75	37.06	56.00	-18.94	QP
11	1.359	8.30	19.83	28.13	46.00	-17.87	Average
12	1.359	15.00	19.83	34.83	56.00	-21.17	QP

AC 120V/60 Hz, Neutral

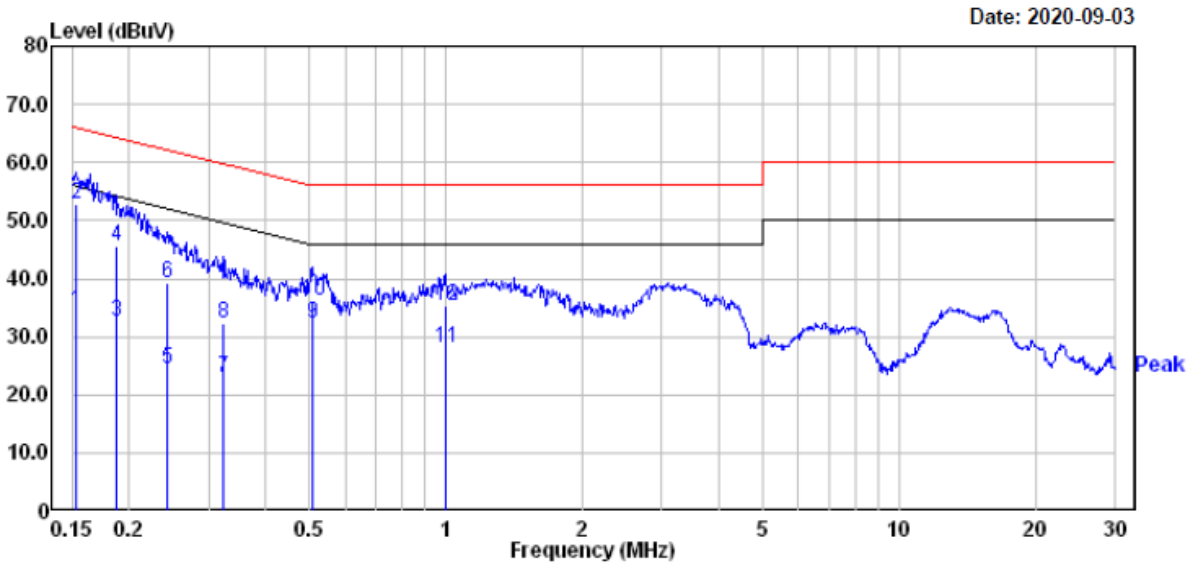


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.160	15.00	19.83	34.83	55.47	-20.64	Average
2	0.160	31.40	19.83	51.23	65.47	-14.24	QP
3	0.201	9.00	19.82	28.82	53.58	-24.76	Average
4	0.201	23.30	19.82	43.12	63.58	-20.46	QP
5	0.240	3.30	19.82	23.12	52.08	-28.96	Average
6	0.240	18.90	19.82	38.72	62.08	-23.36	QP
7	0.513	5.90	19.76	25.66	46.00	-20.34	Average
8	0.513	14.20	19.76	33.96	56.00	-22.04	QP
9	1.282	5.40	19.82	25.22	46.00	-20.78	Average
10	1.282	10.60	19.82	30.42	56.00	-25.58	QP
11	2.900	0.60	19.46	20.06	46.00	-25.94	Average
12	2.900	10.40	19.46	29.86	56.00	-26.14	QP

For BLE (1Mbps) Mode:

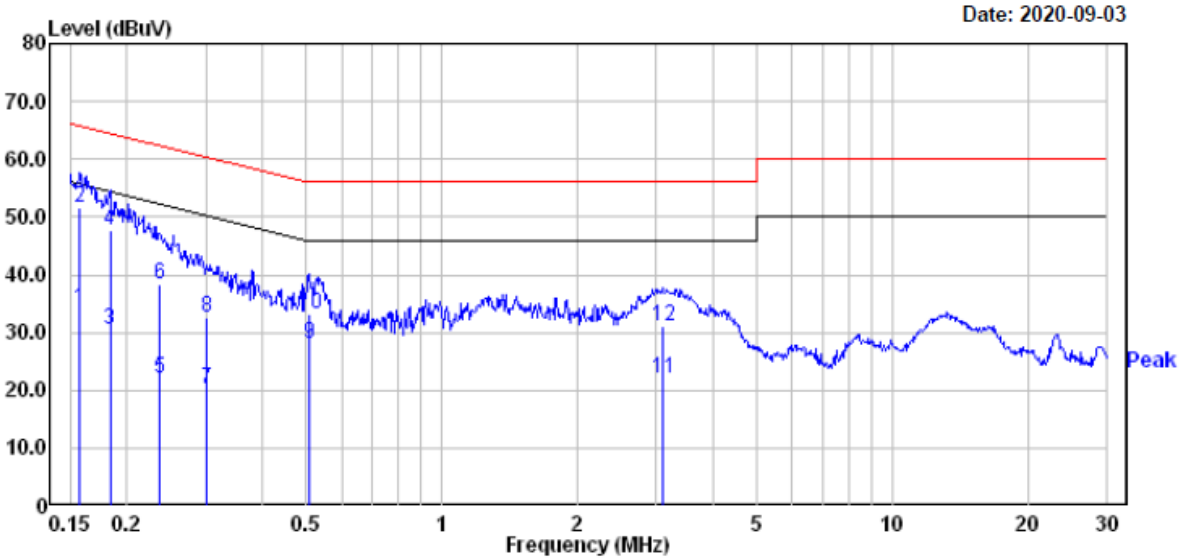
EUT operation mode: Transmitting in low channel (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.152	14.50	19.82	34.32	55.87	-21.55	Average
2	0.152	33.00	19.82	52.82	65.87	-13.05	QP
3	0.187	12.81	19.82	32.63	54.15	-21.52	Average
4	0.187	25.91	19.82	45.73	64.15	-18.42	QP
5	0.243	4.50	19.82	24.32	52.00	-27.68	Average
6	0.243	19.40	19.82	39.22	62.00	-22.78	QP
7	0.323	3.20	19.82	23.02	49.62	-26.60	Average
8	0.323	12.50	19.82	32.32	59.62	-27.30	QP
9	0.507	12.60	19.76	32.36	46.00	-13.64	Average
10	0.507	16.60	19.76	36.36	56.00	-19.64	QP
11	1.000	8.30	19.82	28.12	46.00	-17.88	Average
12	1.000	15.40	19.82	35.22	56.00	-20.78	QP

AC 120V/60 Hz, Neutral

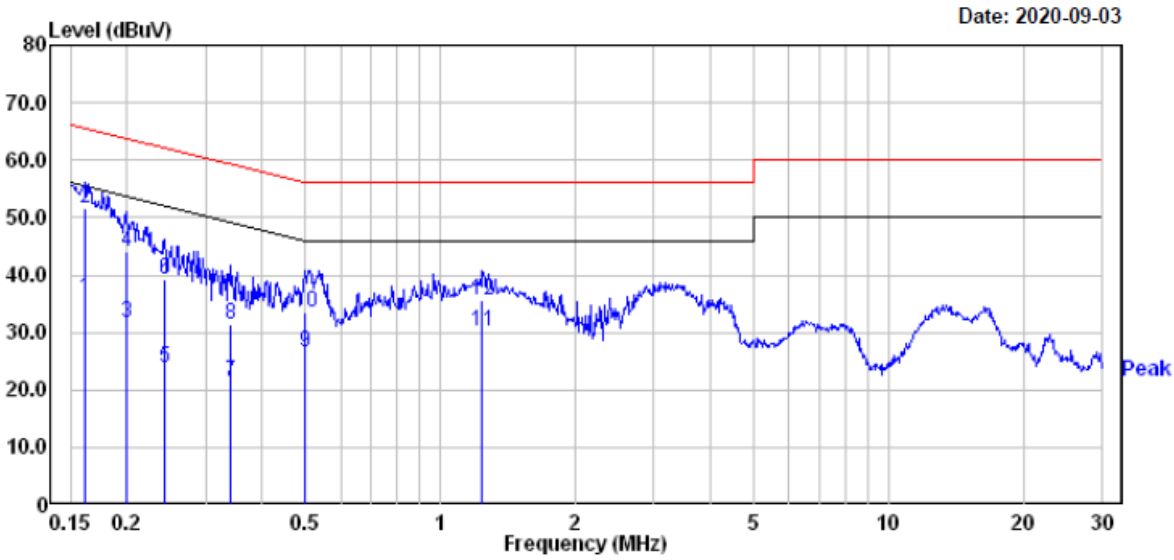


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.157	14.30	19.82	34.12	55.60	-21.48	Average
2	0.157	31.70	19.82	51.52	65.60	-14.08	QP
3	0.183	10.70	19.83	30.53	54.33	-23.80	Average
4	0.183	28.00	19.83	47.83	64.33	-16.50	QP
5	0.237	2.30	19.82	22.12	52.22	-30.10	Average
6	0.237	18.40	19.82	38.22	62.22	-24.00	QP
7	0.300	0.30	19.83	20.13	50.24	-30.11	Average
8	0.300	12.70	19.83	32.53	60.24	-27.71	QP
9	0.507	8.30	19.76	28.06	46.00	-17.94	Average
10	0.507	13.50	19.76	33.26	56.00	-22.74	QP
11	3.090	2.50	19.46	21.96	46.00	-24.04	Average
12	3.090	11.60	19.46	31.06	56.00	-24.94	QP

For BLE (2Mbps) Mode:

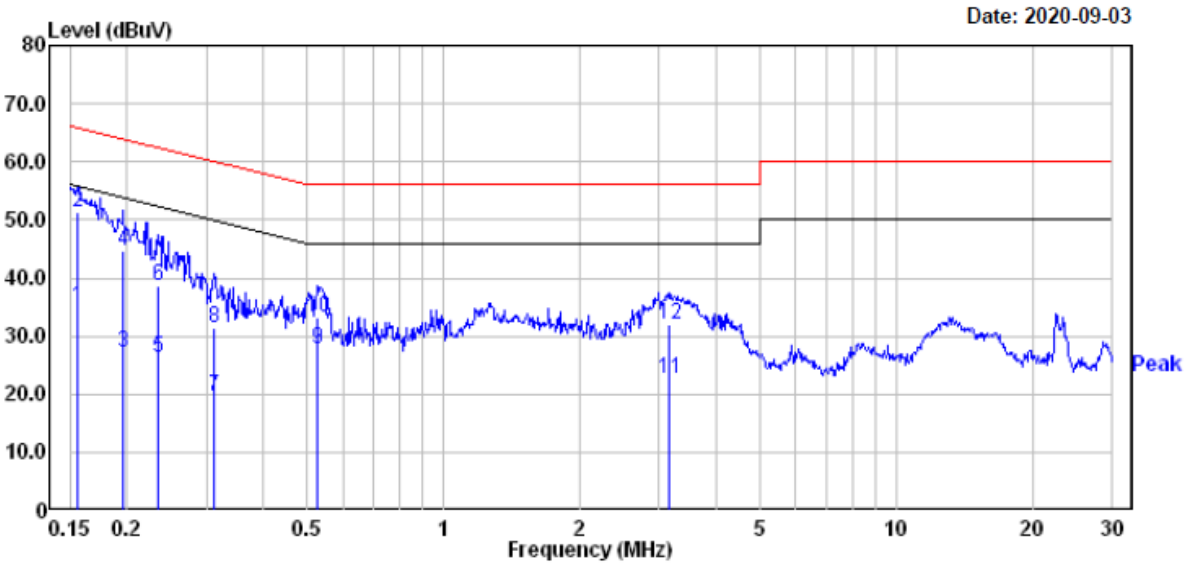
EUT operation mode: Transmitting in low channel (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.161	16.21	19.83	36.04	55.43	-19.39	Average
2	0.161	31.80	19.83	51.63	65.43	-13.80	QP
3	0.200	12.00	19.82	31.82	53.62	-21.80	Average
4	0.200	24.30	19.82	44.12	63.62	-19.50	QP
5	0.243	4.10	19.82	23.92	52.00	-28.08	Average
6	0.243	19.40	19.82	39.22	62.00	-22.78	QP
7	0.339	1.70	19.81	21.51	49.22	-27.71	Average
8	0.339	11.50	19.81	31.31	59.22	-27.91	QP
9	0.499	6.70	19.76	26.46	46.01	-19.55	Average
10	0.499	13.70	19.76	33.46	56.01	-22.55	QP
11	1.242	10.41	19.81	30.22	46.00	-15.78	Average
12	1.242	15.91	19.81	35.72	56.00	-20.28	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	15.10	19.82	34.92	55.69	-20.77	Average
2	0.156	31.60	19.82	51.42	65.69	-14.27	QP
3	0.197	7.20	19.82	27.02	53.76	-26.74	Average
4	0.197	25.00	19.82	44.82	63.76	-18.94	QP
5	0.234	6.40	19.82	26.22	52.30	-26.08	Average
6	0.234	18.90	19.82	38.72	62.30	-23.58	QP
7	0.312	-0.31	19.83	19.52	49.93	-30.41	Average
8	0.312	11.69	19.83	31.52	59.93	-28.41	QP
9	0.527	8.01	19.75	27.76	46.00	-18.24	Average
10	0.527	13.51	19.75	33.26	56.00	-22.74	QP
11	3.156	3.10	19.46	22.56	46.00	-23.44	Average
12	3.156	12.60	19.46	32.06	56.00	-23.94	QP

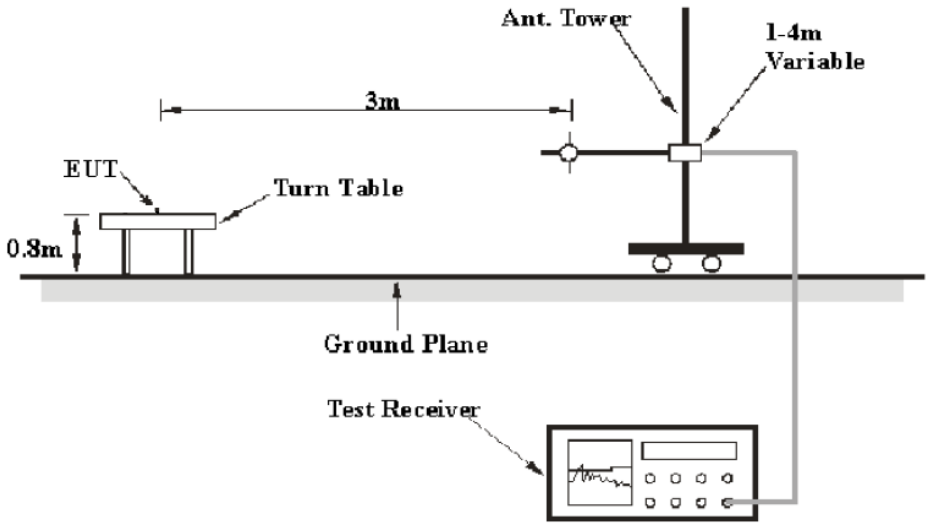
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

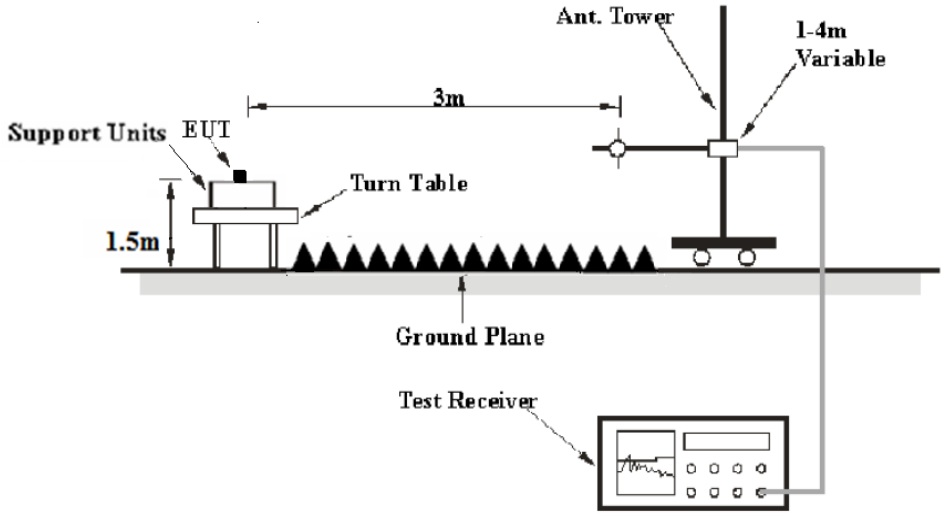
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

Below 1 GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 25 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

According to ANSI C63.10-2013 clause 6.5, 6.6 and 6.7.

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

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude (dBμV /m) = Meter Reading (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

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 (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV /m)

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247.

Test Data

Environmental Conditions

Temperature:	21.8-22.5℃
Relative Humidity:	49-53%
ATM Pressure:	101.0-101.2kPa

The testing was performed by CK Huang from 2020-09-27 to 2020-10-16.

Test Result: Compliant.

EUT operation mode: Transmitting

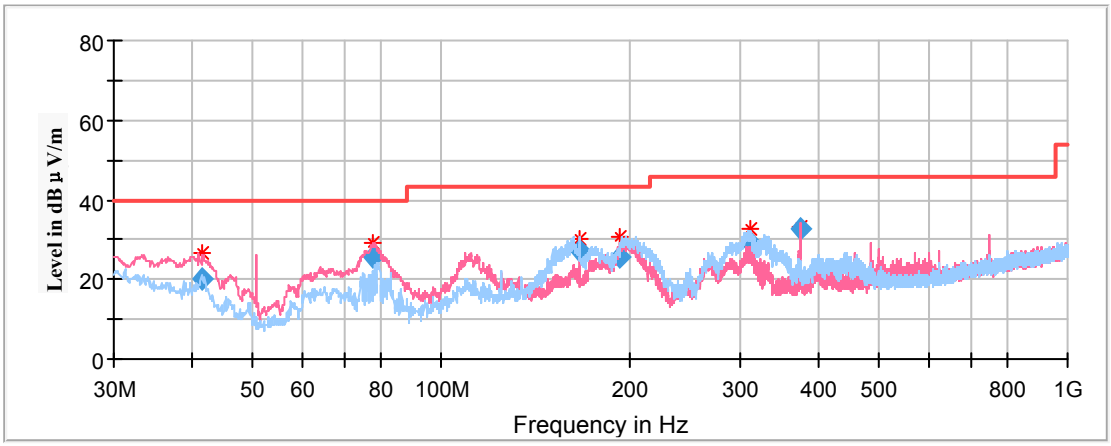
Model: L1563

For Wi-Fi Mode:

Spurious Emission Test:

30MHz-1GHz:

Pre-Scan with 802.11b, 802.11g, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case ***high channel of 802.11b-HT20 Mode in Z-axis of orientation*** *was recorded*



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	Quasi-peak (dBµV/m)	Height (cm)	Polar (H/V)				
41.393450	20.26	100.0	V	99.0	-18.2	40.00	19.74
77.968500	25.74	100.0	V	203.0	-23.9	40.00	14.26
166.306600	27.03	200.0	H	132.0	-19.0	43.50	16.47
193.260400	25.91	200.0	H	159.0	-18.0	43.50	17.59
310.529450	29.35	100.0	H	173.0	-16.8	46.00	16.65
374.270150	32.62	100.0	V	161.0	-15.2	46.00	13.38

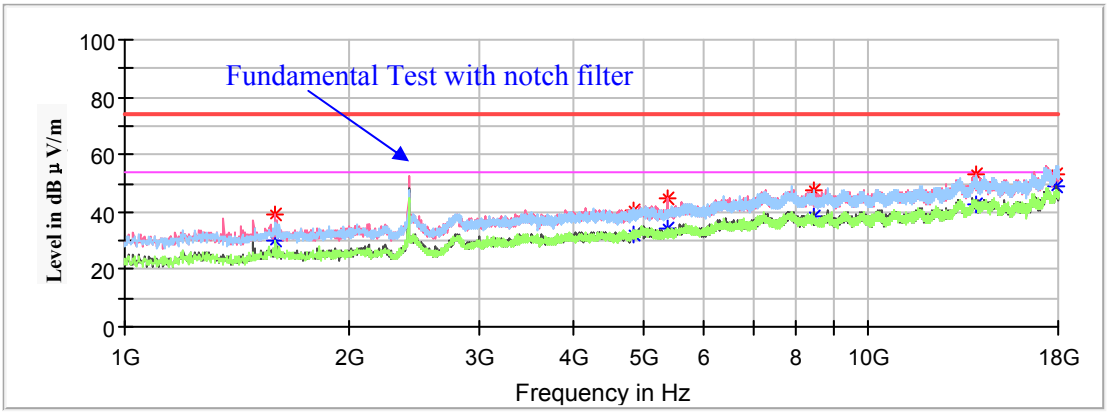
1GHz-18GHz:

Chain0:

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

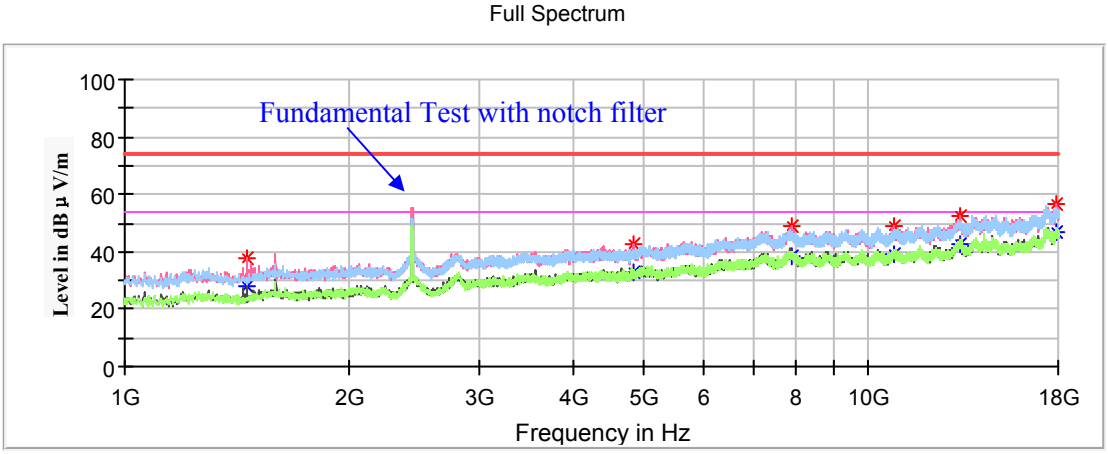
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2412MHz



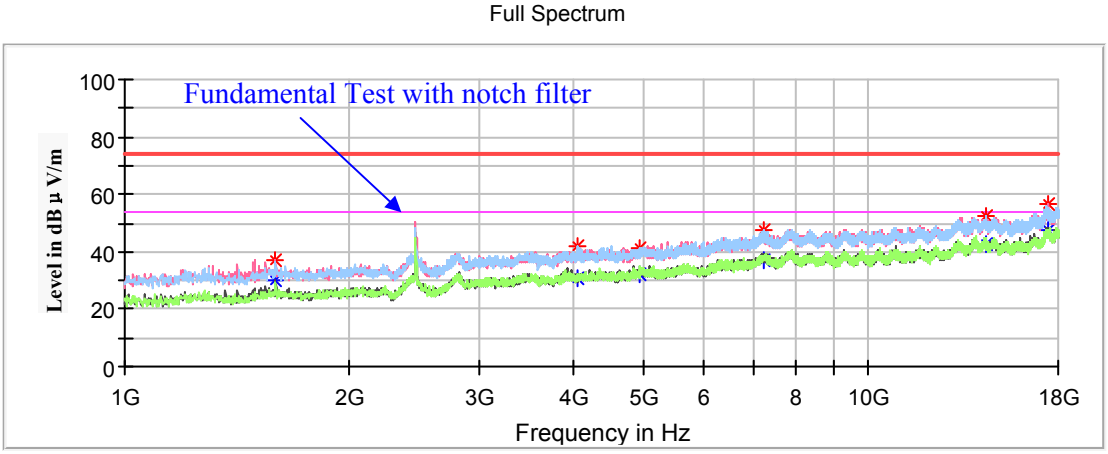
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1595.000000	---	30.14	150.0	V	161.0	-16.0	54.00	23.86
1595.000000	39.01	---	150.0	V	161.0	-16.0	74.00	34.99
4824.000000	---	32.43	150.0	H	359.0	-5.5	54.00	21.57
4824.000000	40.79	---	150.0	H	359.0	-5.5	74.00	33.21
5365.600000	---	33.93	150.0	V	0.0	-4.3	54.00	20.07
5365.600000	44.70	---	150.0	V	0.0	-4.3	74.00	29.30
8432.400000	---	38.50	150.0	V	213.0	1.4	54.00	15.50
8432.400000	47.31	---	150.0	V	213.0	1.4	74.00	26.69
13986.300000	---	42.74	150.0	H	295.0	6.1	54.00	11.26
13986.300000	52.88	---	150.0	H	295.0	6.1	74.00	21.12
17916.700000	53.30	---	150.0	V	136.0	8.8	74.00	20.70
17916.700000	---	48.64	150.0	V	136.0	8.8	54.00	5.36

Middle Channel: 2437MHz



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)				
1459.000000	---	27.71	150.0	V	236.0	-16.6	54.00	26.29
1459.000000	38.08	---	150.0	V	236.0	-16.6	74.00	35.92
4874.000000	---	32.89	150.0	H	109.0	-5.4	54.00	21.11
4874.000000	42.51	---	150.0	H	109.0	-5.4	74.00	31.49
7879.900000	---	38.62	150.0	V	68.0	1.6	54.00	15.38
7879.900000	48.66	---	150.0	V	68.0	1.6	74.00	25.34
10849.800000	---	38.90	150.0	H	29.0	2.7	54.00	15.10
10849.800000	48.84	---	150.0	H	29.0	2.7	74.00	25.16
13255.300000	---	42.95	150.0	V	30.0	5.5	54.00	11.05
13255.300000	52.45	---	150.0	V	30.0	5.5	74.00	21.55
17930.300000	---	46.73	150.0	H	109.0	8.8	54.00	7.27
17930.300000	56.48	---	150.0	H	109.0	8.8	74.00	17.52

High Channel: 2462MHz

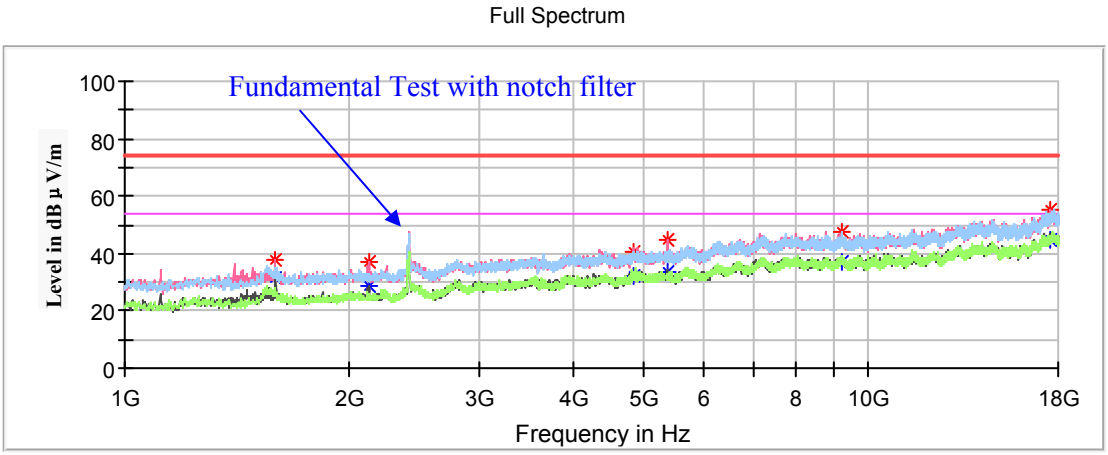


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	37.31	---	150.0	V	256.0	-16.0	74.00	36.69
1593.300000	---	29.83	150.0	V	256.0	-16.0	54.00	24.17
4070.200000	41.74	---	150.0	H	263.0	-6.9	74.00	32.26
4070.200000	---	30.94	150.0	H	263.0	-6.9	54.00	23.06
4924.000000	---	32.25	150.0	H	238.0	-5.3	54.00	21.75
4924.000000	40.92	---	150.0	H	238.0	-5.3	74.00	33.08
7386.000000	47.28	---	150.0	H	357.0	0.5	74.00	26.72
7386.000000	---	37.38	150.0	H	357.0	0.5	54.00	16.62
14414.700000	52.54	---	150.0	H	41.0	6.5	74.00	21.46
14414.700000	---	42.69	150.0	H	41.0	6.5	54.00	11.31
17406.700000	56.61	---	150.0	V	84.0	8.6	74.00	17.39
17406.700000	---	47.51	150.0	V	84.0	8.6	54.00	6.49

802.11g Mode:
*(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 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

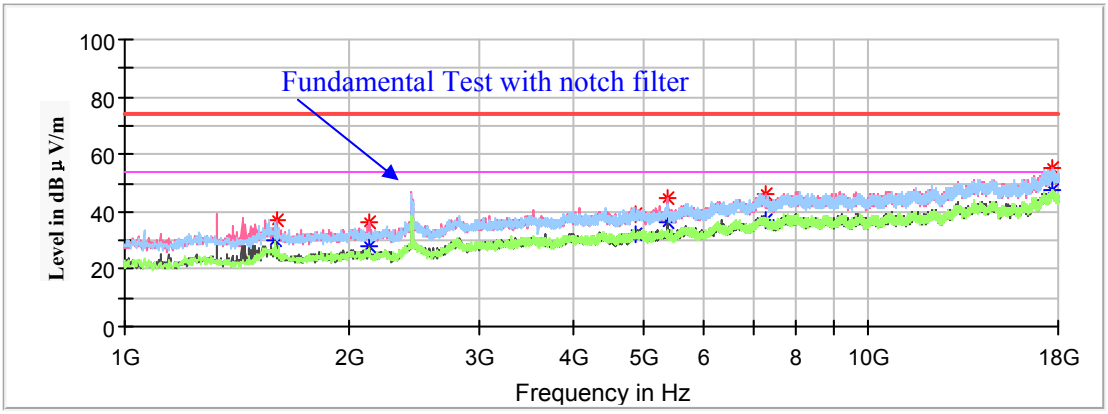
Low Channel: 2412MHz



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)				
1595.000000	37.93	---	150.0	V	234.0	-16.0	74.00	36.07
1595.000000	---	31.71	150.0	V	234.0	-16.0	54.00	22.29
2127.100000	37.13	---	150.0	V	274.0	-13.9	74.00	36.87
2127.100000	---	28.33	150.0	V	274.0	-13.9	54.00	25.67
4824.000000	40.54	---	150.0	V	358.0	-5.5	74.00	33.46
4824.000000	---	32.29	150.0	V	358.0	-5.5	54.00	21.71
5380.900000	---	33.82	150.0	V	7.0	-4.2	54.00	20.18
5380.900000	44.95	---	150.0	V	7.0	-4.2	74.00	29.05
9192.300000	---	37.13	150.0	H	314.0	2.0	54.00	16.87
9192.300000	47.90	---	150.0	H	314.0	2.0	74.00	26.10
17576.700000	---	44.90	150.0	V	55.0	8.9	54.00	9.10
17576.700000	55.07	---	150.0	V	55.0	8.9	74.00	18.93

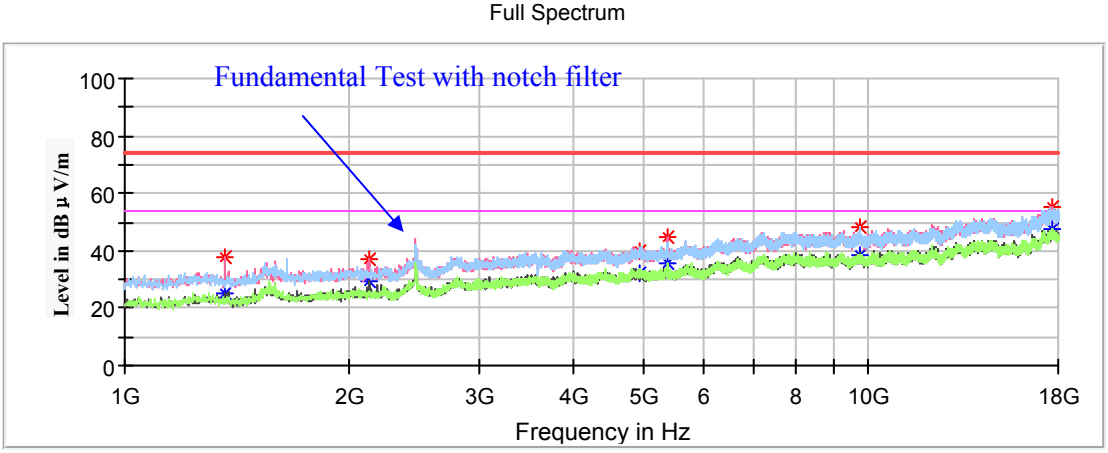
Middle Channel: 2437MHz

Full Spectrum



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)				
1596.700000	---	29.95	150.0	V	259.0	-16.0	54.00	24.05
1596.700000	37.39	---	150.0	V	259.0	-16.0	74.00	36.61
2127.100000	36.22	---	150.0	V	259.0	-13.9	74.00	37.78
2127.100000	---	27.73	150.0	V	259.0	-13.9	54.00	26.27
4874.000000	---	31.83	150.0	H	166.0	-5.4	54.00	22.17
4874.000000	39.37	---	150.0	H	166.0	-5.4	74.00	34.63
5365.600000	---	36.26	150.0	V	2.0	-4.3	54.00	17.74
5365.600000	44.88	---	150.0	V	2.0	-4.2	74.00	29.12
7278.100000	46.43	---	150.0	V	51.0	0.5	74.00	27.57
7278.100000	---	37.22	150.0	V	51.0	0.5	54.00	16.78
17675.300000	55.05	---	150.0	V	346.0	8.9	74.00	18.95
17675.300000	---	47.50	150.0	V	346.0	8.9	54.00	6.50

High Channel: 2462MHz



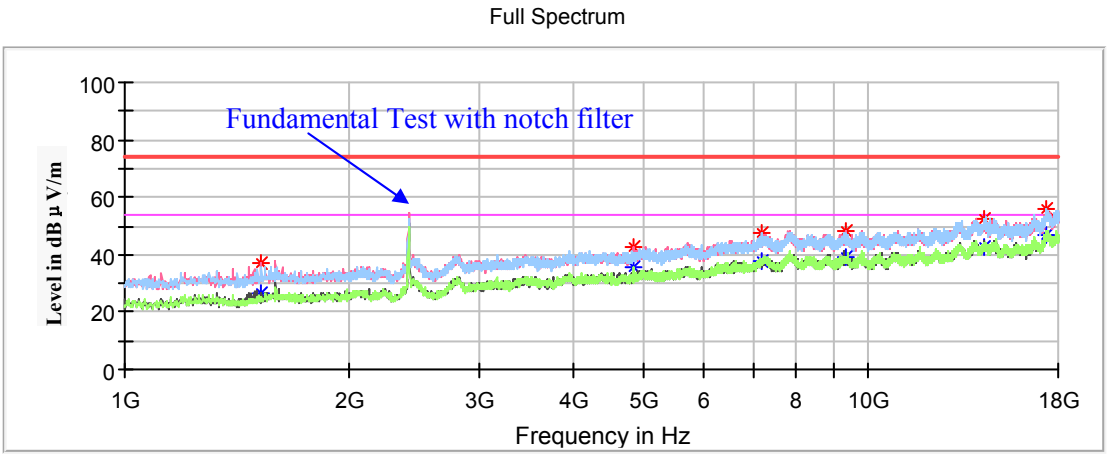
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1362.100000	---	25.26	150.0	V	276.0	-17.1	54.00	28.74
1362.100000	37.62	---	150.0	V	276.0	-17.1	74.00	36.38
2127.100000	---	29.50	150.0	V	276.0	-13.9	54.00	24.50
2127.100000	36.89	---	150.0	V	276.0	-13.9	74.00	37.11
4924.000000	39.67	---	150.0	V	173.0	-5.3	74.00	34.33
4924.000000	---	32.52	150.0	V	173.0	-5.3	54.00	21.48
5367.300000	45.00	---	150.0	H	85.0	-4.2	74.00	29.00
5367.300000	---	35.89	150.0	H	85.0	-4.2	54.00	18.11
9736.300000	---	38.45	150.0	V	29.0	2.0	54.00	15.55
9736.300000	48.03	---	150.0	V	29.0	2.0	74.00	25.97
17719.500000	---	47.37	150.0	H	36.0	8.9	54.00	6.63
17719.500000	55.14	---	150.0	H	36.0	8.9	74.00	18.86

Chain1:

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

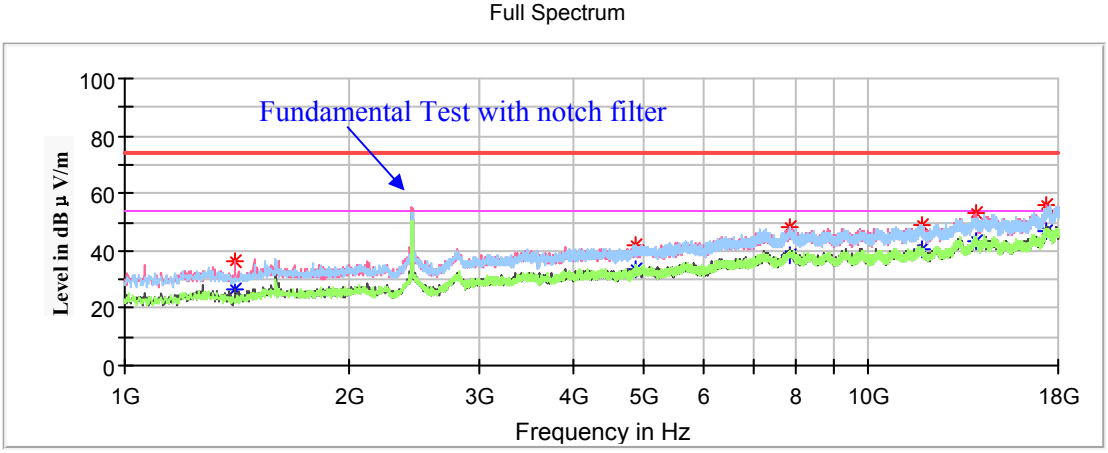
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2412MHz



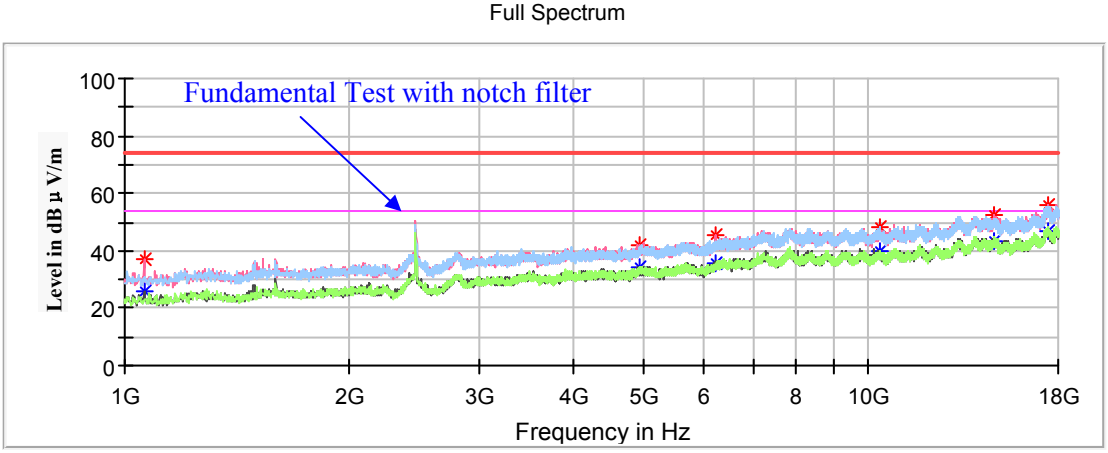
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1525.300000	---	26.23	150.0	V	276.0	-16.3	54.00	27.77
1525.300000	37.16	---	150.0	V	276.0	-16.3	74.00	36.84
4824.000000	---	35.40	150.0	H	198.0	-5.5	54.00	18.60
4824.000000	42.61	---	150.0	H	198.0	-5.5	74.00	31.39
7236.000000	---	37.65	150.0	V	14.0	0.4	54.00	16.35
7236.000000	47.83	---	150.0	V	14.0	0.4	74.00	26.17
9336.800000	---	39.14	150.0	V	64.0	2.0	54.00	14.86
9336.800000	48.51	---	150.0	V	64.0	2.0	74.00	25.49
14321.200000	---	42.68	150.0	V	276.0	6.4	54.00	11.32
14321.200000	52.71	---	150.0	V	276.0	6.4	74.00	21.29
17389.700000	---	47.07	150.0	V	128.0	8.5	54.00	6.93
17389.700000	55.87	---	150.0	V	128.0	8.5	74.00	18.13

Middle Channel: 2437MHz



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)				
1404.600000	---	26.31	150.0	V	230.0	-16.9	54.00	27.69
1404.600000	36.58	---	150.0	V	230.0	-16.9	74.00	37.42
4874.000000	---	33.76	150.0	H	330.0	-5.4	54.00	20.24
4874.000000	42.31	---	150.0	H	330.0	-5.4	74.00	31.69
7830.600000	---	38.48	150.0	H	148.0	1.5	54.00	15.52
7830.600000	48.39	---	150.0	H	148.0	1.5	74.00	25.61
11774.600000	---	40.33	150.0	H	122.0	3.4	54.00	13.67
11774.600000	49.15	---	150.0	H	122.0	3.4	74.00	24.85
13916.600000	---	43.45	150.0	V	256.0	6.1	54.00	10.55
13916.600000	53.12	---	150.0	V	256.0	6.1	74.00	20.88
17389.700000	---	47.02	150.0	H	109.0	8.5	54.00	6.98
17389.700000	56.10	---	150.0	H	109.0	8.5	74.00	17.90

High Channel: 2462MHz

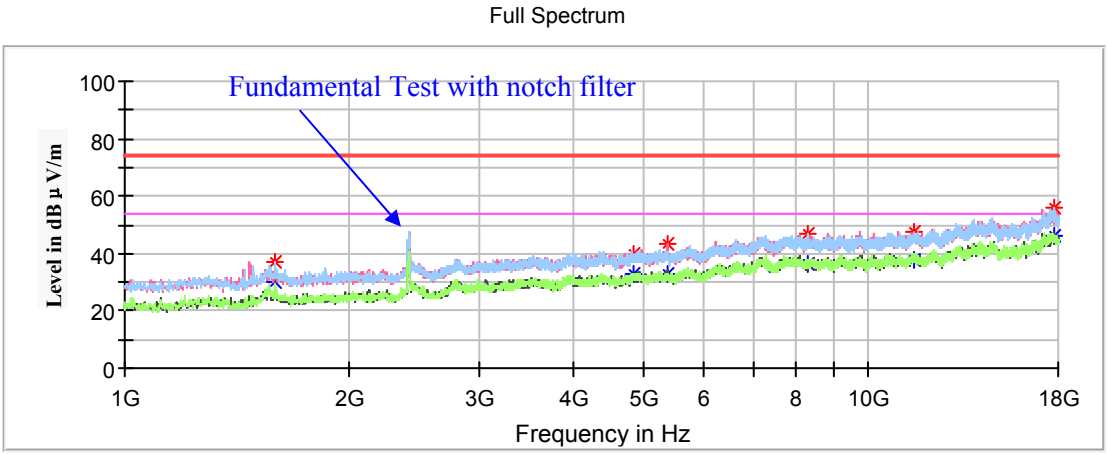


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1061.200000	---	25.75	150.0	V	358.0	-18.7	54.00	28.25
1061.200000	36.77	---	150.0	V	358.0	-18.7	74.00	37.23
4924.000000	---	34.22	150.0	H	174.0	-5.3	54.00	19.78
4924.000000	41.74	---	150.0	H	174.0	-5.3	74.00	32.26
6239.400000	---	35.64	150.0	V	110.0	-2.1	54.00	18.36
6239.400000	45.24	---	150.0	V	110.0	-2.1	74.00	28.76
10387.400000	---	39.55	150.0	V	0.0	2.2	54.00	14.45
10387.400000	48.19	---	150.0	V	0.0	2.2	74.00	25.81
14778.500000	---	43.29	150.0	V	123.0	5.7	54.00	10.71
14778.500000	52.59	---	150.0	V	123.0	5.7	74.00	21.41
17459.400000	---	47.18	150.0	V	353.0	8.8	54.00	6.82
17459.400000	55.84	---	150.0	V	353.0	8.8	74.00	18.16

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

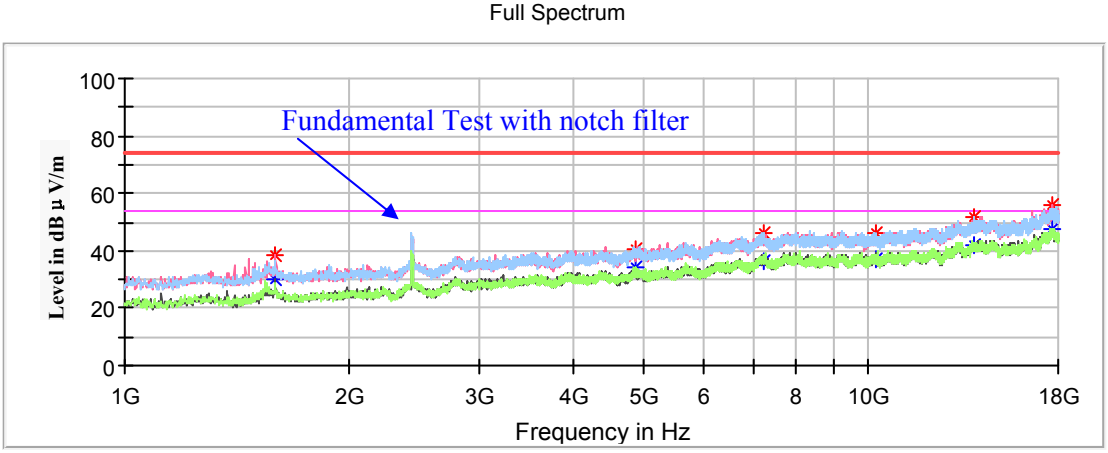
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2412MHz



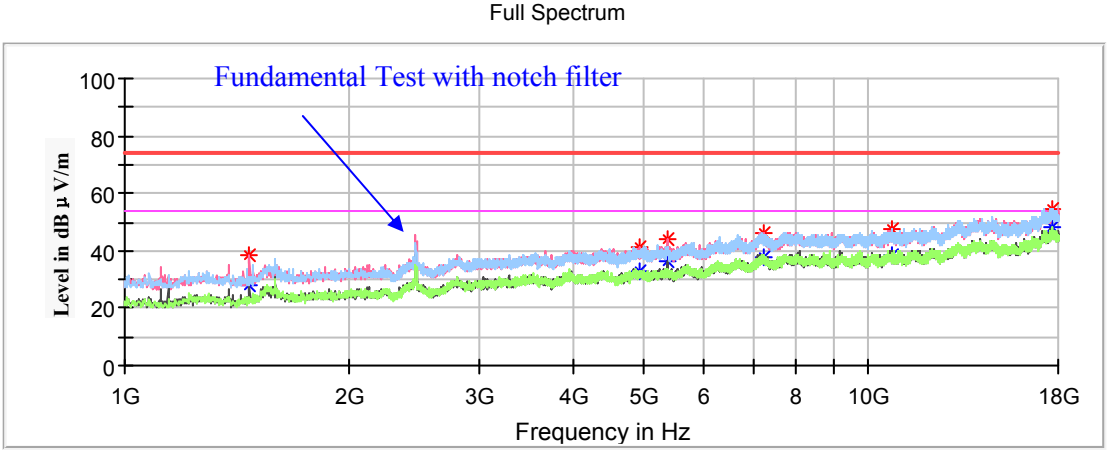
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1593.300000	37.32	---	150.0	V	229.0	-16.0	74.00	36.68
1593.300000	---	30.00	150.0	V	229.0	-16.0	54.00	24.00
4824.000000	40.13	---	150.0	V	144.0	-5.5	74.00	33.87
4824.000000	---	32.73	150.0	V	144.0	-5.5	54.00	21.27
5365.600000	43.23	---	150.0	V	358.0	-4.3	74.00	30.77
5365.600000	---	33.10	150.0	V	358.0	-4.3	54.00	20.90
8289.600000	47.16	---	150.0	H	131.0	1.5	74.00	26.84
8289.600000	---	36.45	150.0	H	131.0	1.5	54.00	17.55
11516.200000	47.61	---	150.0	V	123.0	2.8	74.00	26.39
11516.200000	---	37.68	150.0	V	123.0	2.8	54.00	16.32
17785.800000	---	46.17	150.0	H	294.0	8.8	54.00	7.83
17785.800000	55.62	---	150.0	H	294.0	8.8	74.00	18.38

Middle Channel: 2437MHz



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)				
1593.300000	---	29.89	150.0	V	247.0	-16.0	54.00	24.11
1593.300000	38.54	---	150.0	V	247.0	-16.0	74.00	35.46
4874.000000	---	33.95	150.0	H	238.0	-5.4	54.00	20.05
4874.000000	40.53	---	150.0	H	238.0	-5.4	74.00	33.47
7311.000000	---	36.58	150.0	H	65.0	0.5	54.00	17.42
7311.000000	46.12	---	150.0	H	65.0	0.5	74.00	27.88
10205.500000	---	37.03	150.0	V	72.0	2.1	54.00	16.97
10205.500000	46.13	---	150.0	V	72.0	2.1	74.00	27.87
13855.400000	---	41.99	150.0	H	310.0	6.0	54.00	12.01
13855.400000	51.62	---	150.0	H	310.0	6.0	74.00	22.38
17654.900000	55.80	---	150.0	V	0.0	8.9	74.00	18.20
17654.900000	---	47.40	150.0	V	0.0	8.9	54.00	6.60

High Channel: 2462MHz

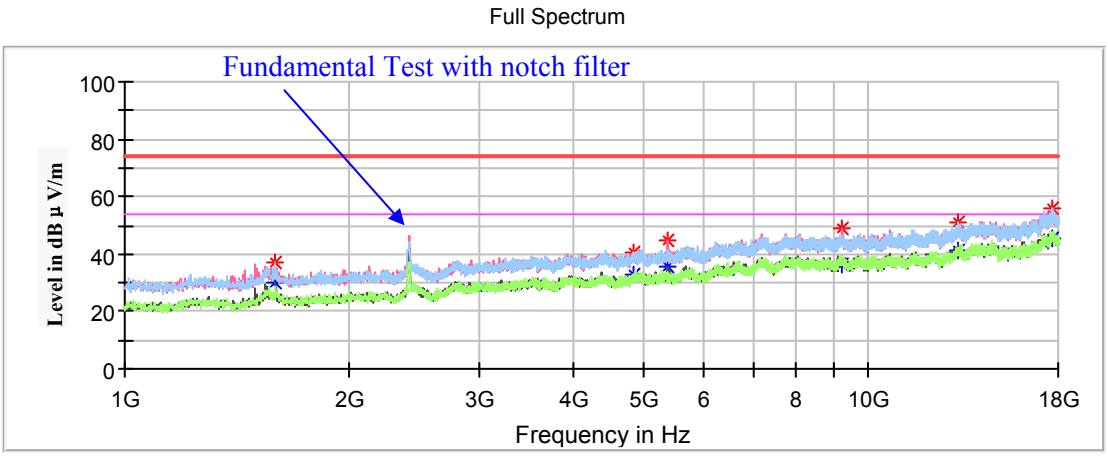


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1472.600000	---	28.21	150.0	V	121.0	-16.5	54.00	25.79
1472.600000	38.49	---	150.0	V	121.0	-16.5	74.00	35.51
4924.000000	---	32.58	150.0	V	287.0	-5.3	54.00	21.42
4924.000000	41.24	---	150.0	V	287.0	-5.3	74.00	32.76
5362.200000	---	36.02	150.0	V	0.0	-4.3	54.00	17.98
5362.200000	44.10	---	150.0	V	0.0	-4.3	74.00	29.90
7222.000000	---	37.96	150.0	H	323.0	0.4	54.00	16.04
7222.000000	46.49	---	150.0	H	323.0	0.4	74.00	27.51
10727.400000	---	38.50	150.0	H	91.0	2.6	54.00	15.50
10727.400000	47.47	---	150.0	H	91.0	2.6	74.00	26.53
17654.900000	---	48.34	150.0	H	19.0	8.9	54.00	5.66
17654.900000	54.74	---	150.0	H	19.0	8.9	74.00	19.26

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

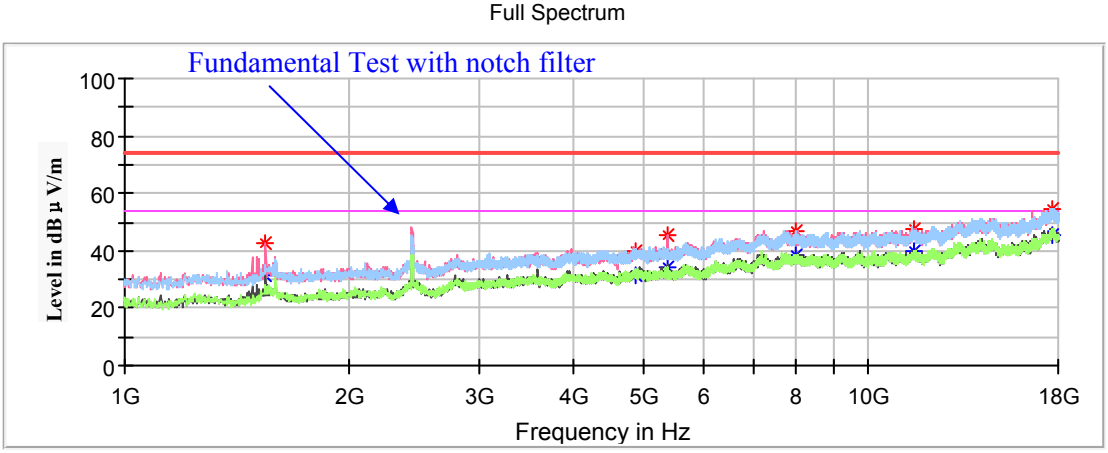
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel : 2412MHz



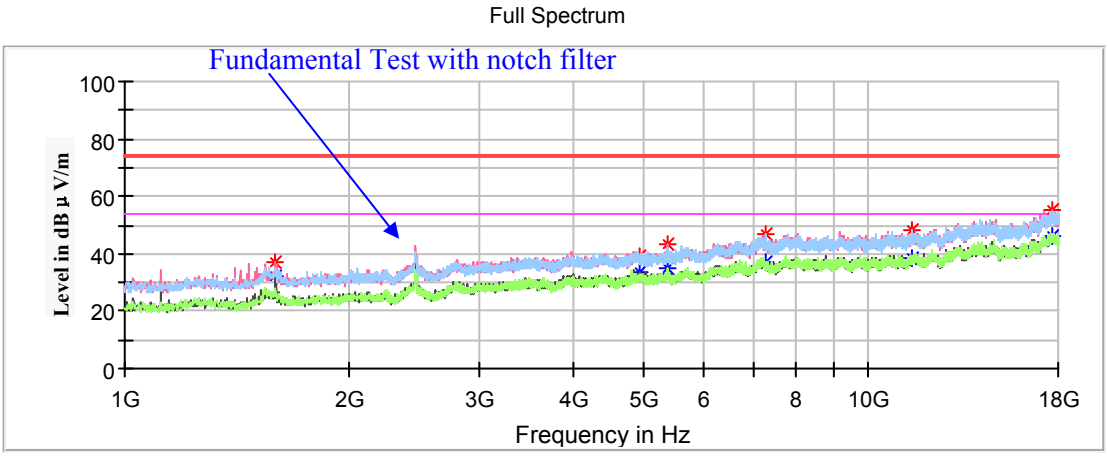
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1591.600000	37.05	---	150.0	V	248.0	-16.0	74.00	36.95
1591.600000	---	30.19	150.0	V	248.0	-16.0	54.00	23.81
4824.000000	40.53	---	150.0	H	9.0	-5.5	74.00	33.47
4824.000000	---	33.15	150.0	H	9.0	-5.5	54.00	20.85
5369.000000	44.89	---	150.0	V	2.0	-4.2	74.00	29.11
5369.000000	---	35.36	150.0	V	2.0	-4.2	54.00	18.64
9239.900000	48.66	---	150.0	V	326.0	2.0	74.00	25.34
9239.900000	---	36.56	150.0	V	326.0	2.0	54.00	17.44
13199.200000	50.73	---	150.0	H	9.0	5.4	74.00	23.27
13199.200000	---	41.33	150.0	H	9.0	5.4	54.00	12.67
17627.700000	---	45.50	150.0	H	9.0	8.9	54.00	8.50
17627.700000	55.95	---	150.0	H	9.0	8.9	74.00	18.05

Middle Channel: 2437MHz



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)				
1547.400000	---	31.31	150.0	V	226.0	-16.2	54.00	22.69
1547.400000	42.84	---	150.0	V	226.0	-16.2	74.00	31.16
4874.000000	---	31.41	150.0	V	339.0	-5.4	54.00	22.59
4874.000000	39.62	---	150.0	V	339.0	-5.4	74.00	34.38
5367.300000	---	34.35	150.0	V	356.0	-4.2	54.00	19.65
5367.300000	45.44	---	150.0	V	356.0	-4.2	74.00	28.56
7980.200000	---	38.14	150.0	H	257.0	1.8	54.00	15.86
7980.200000	47.14	---	150.0	H	257.0	1.8	74.00	26.86
11528.100000	---	39.55	150.0	V	121.0	2.9	54.00	14.45
11528.100000	47.58	---	150.0	V	121.0	2.9	74.00	26.42
17714.400000	---	45.18	150.0	V	121.0	8.9	54.00	8.82
17714.400000	54.86	---	150.0	V	121.0	8.9	74.00	19.14

High Channel : 2462MHz

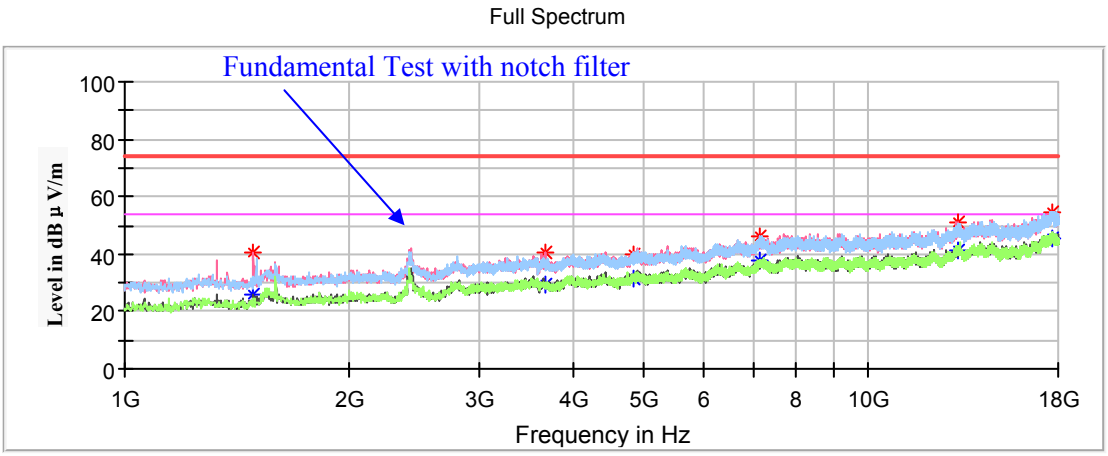


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	37.29	---	150.0	V	297.0	-16.0	74.00	36.71
1593.300000	---	31.87	150.0	V	297.0	-16.0	54.00	22.13
4924.000000	39.40	---	150.0	V	152.0	-5.3	74.00	34.60
4924.000000	---	33.22	150.0	V	152.0	-5.3	54.00	20.78
5370.700000	---	34.92	150.0	H	46.0	-4.2	54.00	19.08
5370.700000	43.35	---	150.0	H	46.0	-4.2	74.00	30.65
7261.100000	---	36.80	150.0	H	352.0	0.5	54.00	17.20
7261.100000	47.17	---	150.0	H	352.0	0.5	74.00	26.83
11473.700000	---	38.24	150.0	H	126.0	2.8	54.00	15.76
11473.700000	48.51	---	150.0	H	126.0	2.8	74.00	25.49
17675.300000	---	45.88	150.0	V	333.0	8.9	54.00	8.12
17675.300000	54.90	---	150.0	V	333.0	8.9	74.00	19.10

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

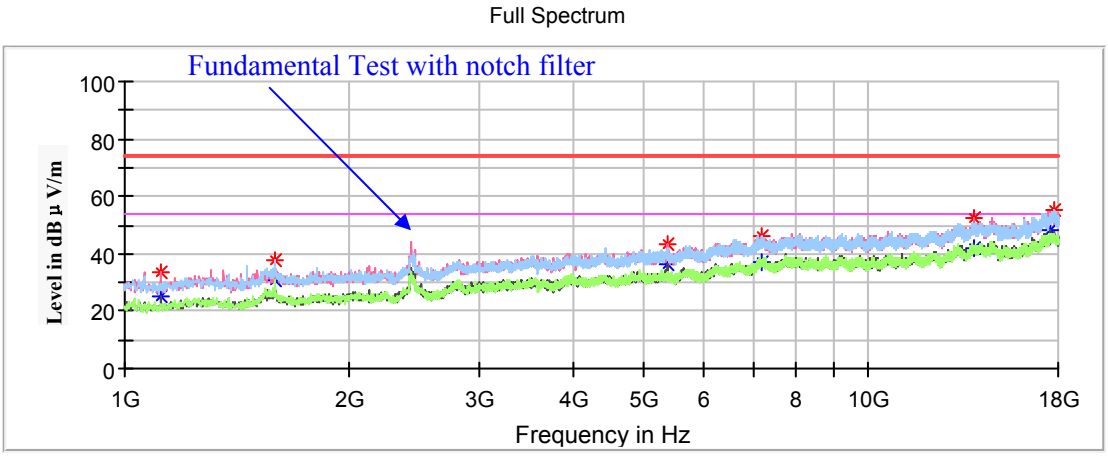
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel : 2422MHz



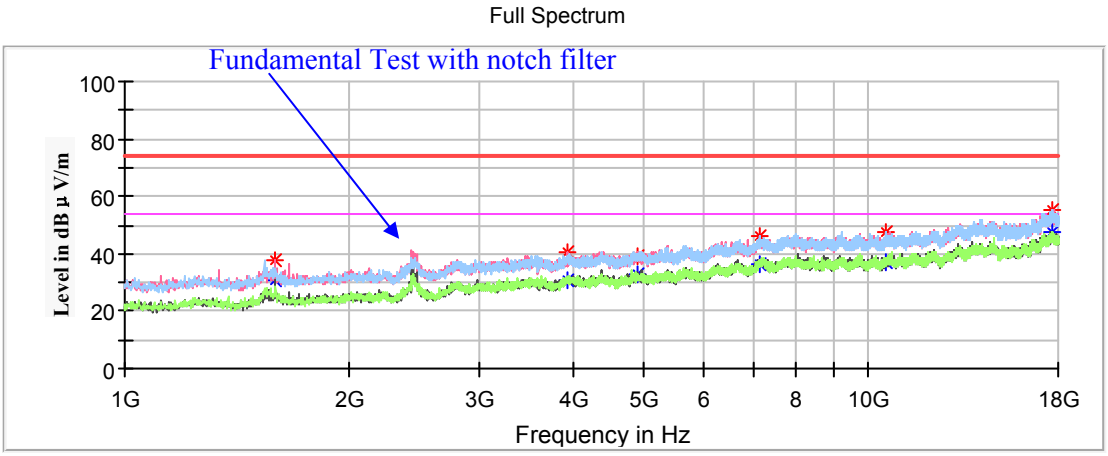
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1491.300000	40.30	---	150.0	V	226.0	-16.4	74.00	33.70
1491.300000	---	26.18	150.0	V	226.0	-16.4	54.00	27.82
3675.800000	---	29.35	150.0	V	65.0	-8.2	54.00	24.65
3675.800000	40.37	---	150.0	V	65.0	-8.2	74.00	33.63
4844.000000	40.19	---	150.0	H	325.0	-5.5	74.00	33.81
4844.000000	---	31.52	150.0	H	325.0	-5.5	54.00	22.48
7266.000000	---	37.86	150.0	H	323.0	0.4	54.00	16.14
7266.000000	46.49	---	150.0	H	323.0	0.4	74.00	27.51
13170.300000	---	41.45	150.0	V	307.0	5.4	54.00	12.55
13170.300000	50.98	---	150.0	V	307.0	5.4	74.00	23.02
17641.300000	---	45.67	150.0	V	0.0	8.9	54.00	8.33
17641.300000	54.84	---	150.0	V	0.0	8.9	74.00	19.16

Middle Channel: 2437MHz



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)				
1117.300000	---	25.25	150.0	V	357.0	-18.4	54.00	28.75
1117.300000	33.61	---	150.0	V	357.0	-18.4	74.00	40.39
1593.300000	37.92	---	150.0	H	151.0	-16.0	74.00	36.08
1593.300000	---	30.69	150.0	H	151.0	-16.0	54.00	23.31
5362.200000	---	36.34	150.0	V	268.0	-4.3	54.00	17.66
5362.200000	43.45	---	150.0	V	268.0	-4.3	74.00	30.55
7311.000000	46.04	---	150.0	V	326.0	0.5	74.00	27.96
7311.000000	---	36.96	150.0	V	326.0	0.5	54.00	17.04
13865.600000	52.32	---	150.0	V	101.0	6.0	74.00	21.68
13865.600000	---	42.09	150.0	V	101.0	6.0	54.00	11.91
17598.800000	---	48.18	150.0	V	357.0	8.8	54.00	5.82
17598.800000	55.44	---	150.0	V	357.0	8.8	74.00	18.56

High Channel : 2452MHz

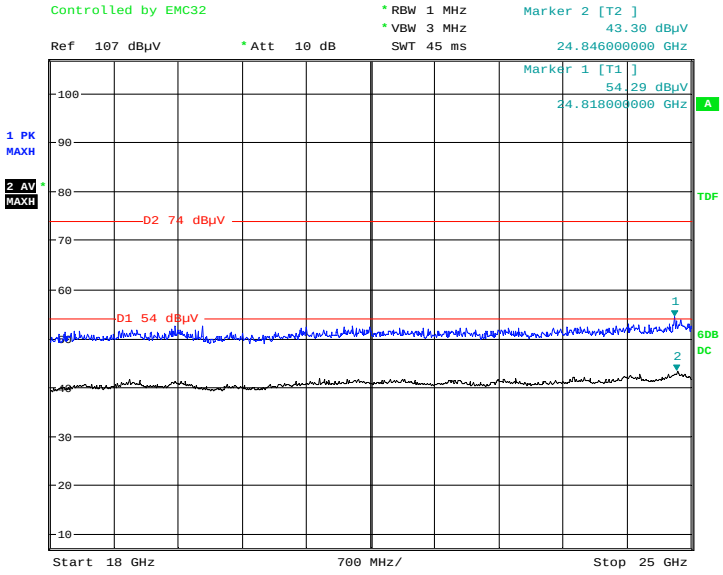


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	---	30.99	150.0	V	248.0	-16.0	54.00	23.01
1593.300000	37.47	---	150.0	V	248.0	-16.0	74.00	36.53
3930.800000	---	30.44	150.0	H	7.0	-7.3	54.00	23.56
3930.800000	40.75	---	150.0	H	7.0	-7.3	74.00	33.25
4904.000000	---	32.53	150.0	H	326.0	-5.3	54.00	21.47
4904.000000	39.01	---	150.0	H	326.0	-5.3	74.00	34.99
7356.000000	---	36.26	150.0	H	112.0	0.5	54.00	17.74
7356.000000	46.43	---	150.0	H	112.0	0.5	74.00	27.57
10588.000000	---	37.10	150.0	H	28.0	2.4	54.00	16.90
10588.000000	47.80	---	150.0	H	28.0	2.4	74.00	26.20
17643.000000	---	47.78	150.0	H	153.0	8.9	54.00	6.22
17643.000000	55.49	---	150.0	H	153.0	8.9	74.00	18.51

18GHz-25GHz:

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

Horizontal



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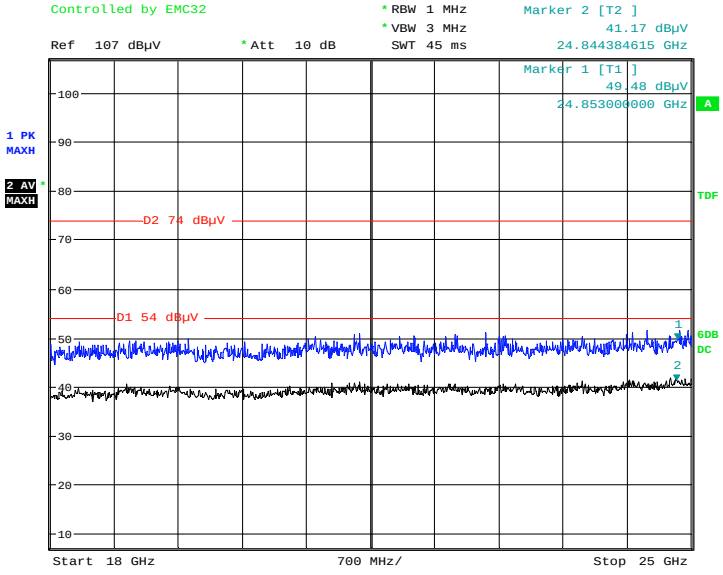
Vertical



Date: 27.SEP.2020 20:07:51

Restricted Bands Emissions Test:

Note:
1. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Chain0

802.11b Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	47.03	---	150.0	V	25.0	-2.9	74.00	26.97
2390.00	---	43.59	150.0	V	25.0	-2.9	54.00	10.41
High Channel: 2462MHz								
2483.50	46.89	---	150.0	V	261.0	-2.5	74.00	27.11
2483.50	---	44.25	150.0	V	261.0	-2.5	54.00	9.75

802.11g Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	57.58	---	150.0	V	61.0	-2.9	74.00	16.42
2390.00	---	49.48	150.0	V	61.0	-2.9	54.00	4.52
High Channel: 2462MHz								
2483.50	58.39	---	150.0	V	56.0	-2.5	74.00	15.61
2483.50	---	52.12	150.0	V	56.0	-2.5	54.00	1.88

Chain1

802.11b Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	46.84	---	150.0	V	77.0	-2.9	74.00	27.16
2390.00	---	43.57	150.0	V	77.0	-2.9	54.00	10.43
High Channel: 2462MHz								
2483.50	46.97	---	150.0	V	260.0	-2.5	74.00	27.03
2483.50	---	43.85	150.0	V	260.0	-2.5	54.00	10.15

802.11g Mode: *(Pre-scan in the X,Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	54.53	---	200.0	V	76.0	-2.9	74.00	19.47
2390.00	---	50.11	200.0	V	76.0	-2.9	54.00	3.89
High Channel: 2462MHz								
2483.50	52.89	---	200.0	V	74.0	-2.5	74.00	21.11
2483.50	---	48.70	200.0	V	74.0	-2.5	54.00	5.30

Chain0+Chain1

802.11n-HT20 Mode: *(Pre-scan in the X,Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	---	47.43	150.0	V	245.0	-2.9	54.00	6.57
2390.00	51.92	---	150.0	V	245.0	-2.9	74.00	22.08
High Channel: 2462MHz								
2483.50	---	47.69	150.0	V	69.0	-2.5	54.00	6.31
2483.50	51.44	---	150.0	V	69.0	-2.5	74.00	22.56

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

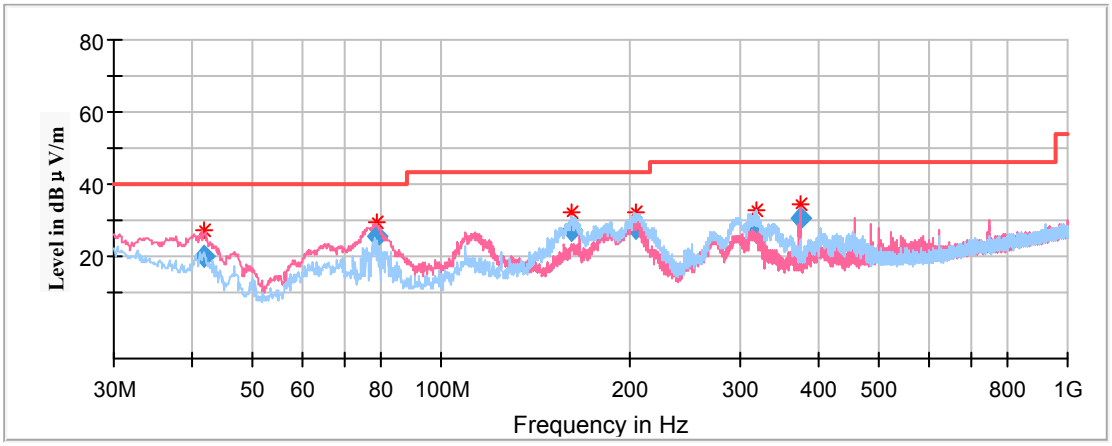
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 2422MHz								
2390.00	50.45	---	150.0	V	265.0	-2.9	74.00	23.55
2390.00	---	47.52	150.0	V	265.0	-2.9	54.00	6.48
High Channel: 2452MHz								
2483.50	50.78	---	150.0	V	54.0	-2.5	74.00	23.22
2483.50	---	48.65	150.0	V	54.0	-2.5	54.00	5.35

For BLE (1Mbps) Mode:

Spurious Emission Test:

30MHz-1GHz:

*(Pre-scan with low, middle and high channels of operation in the X,Y and Z axes of orientation, the worst case **low channel of operation in the Z axis of orientation** was recorded)*



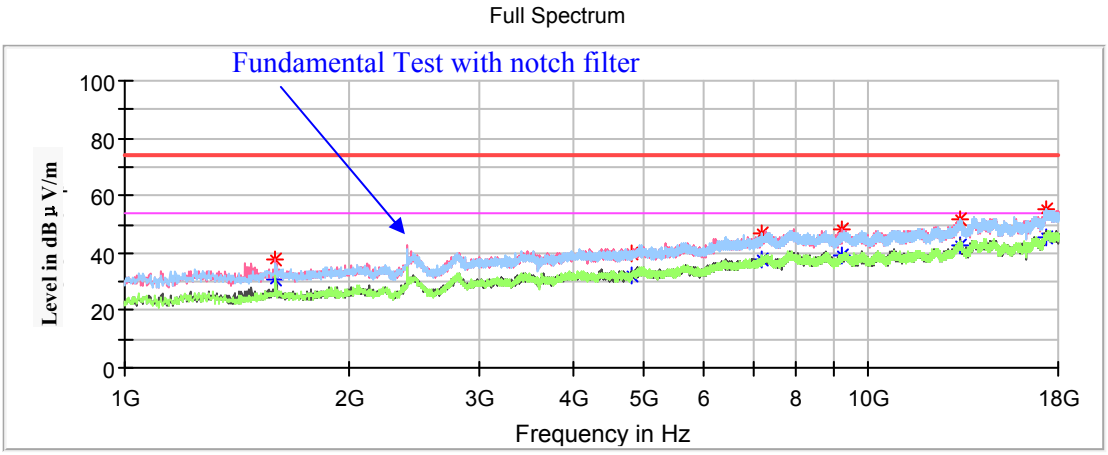
Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	Quasi-peak (dBµV/m)	Height (cm)	Polar (H/V)				
41.782700	19.96	100.0	V	260.0	-18.5	40.00	20.04
78.802300	26.02	100.0	V	271.0	-24.0	40.00	13.98
161.294800	27.48	200.0	H	128.0	-18.8	43.50	16.02
204.192200	27.90	100.0	H	146.0	-17.9	43.50	15.60
318.083700	26.79	100.0	H	168.0	-16.6	46.00	19.21
374.271050	30.54	100.0	V	177.0	-15.2	46.00	15.46

1GHz-18GHz

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

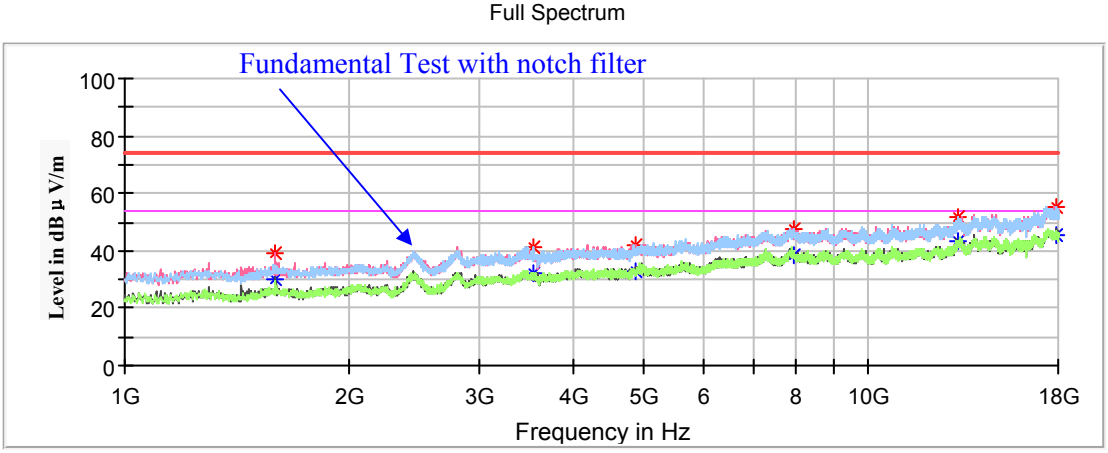
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2402MHz



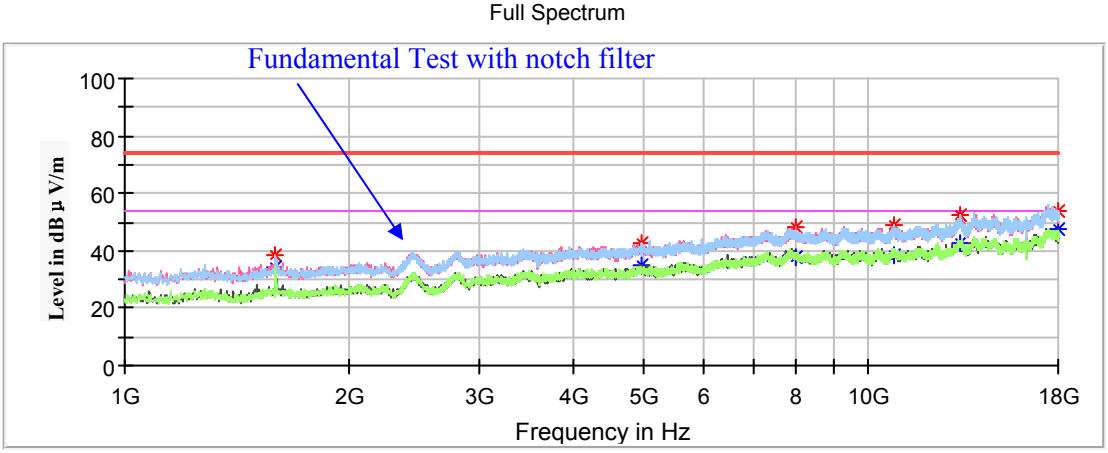
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1593.300000	---	30.77	150.0	V	250.0	-16.0	54.00	23.23
1593.300000	37.54	---	150.0	V	250.0	-16.0	74.00	36.46
4804.000000	---	32.30	150.0	V	339.0	-5.6	54.00	21.70
4804.000000	39.86	---	150.0	V	339.0	-5.6	74.00	34.14
7206.000000	---	37.96	150.0	V	155.0	0.5	54.00	16.04
7206.000000	46.77	---	150.0	V	155.0	0.5	74.00	27.23
9233.100000	---	38.90	150.0	V	207.0	2.0	54.00	15.10
9233.100000	48.10	---	150.0	V	207.0	2.0	74.00	25.90
13250.200000	---	42.60	200.0	H	0.0	5.5	54.00	11.40
13250.200000	51.79	---	200.0	H	0.0	5.5	74.00	22.21
17357.400000	---	45.41	150.0	V	49.0	8.4	54.00	8.59
17357.400000	55.52	---	150.0	V	49.0	8.4	74.00	18.48

Middle Channel: 2440MHz



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)				
1593.300000	---	30.41	200.0	V	64.0	-16.0	54.00	23.59
1593.300000	39.36	---	200.0	V	64.0	-16.0	74.00	34.64
3550.000000	---	31.84	150.0	H	269.0	-8.6	54.00	22.16
3550.000000	41.05	---	150.0	H	269.0	-8.6	74.00	32.95
4880.000000	---	32.59	200.0	H	160.0	-5.4	54.00	21.41
4880.000000	42.06	---	200.0	H	160.0	-5.4	74.00	31.94
7937.700000	---	38.54	200.0	H	51.0	1.7	54.00	15.46
7937.700000	47.61	---	200.0	H	51.0	1.7	74.00	26.39
13204.300000	---	43.69	200.0	H	274.0	5.4	54.00	10.31
13204.300000	51.55	---	200.0	H	274.0	5.4	74.00	22.45
17845.300000	---	45.47	150.0	H	38.0	8.8	54.00	8.53
17845.300000	55.41	---	150.0	H	38.0	8.8	74.00	18.59

High Channel: 2480MHz

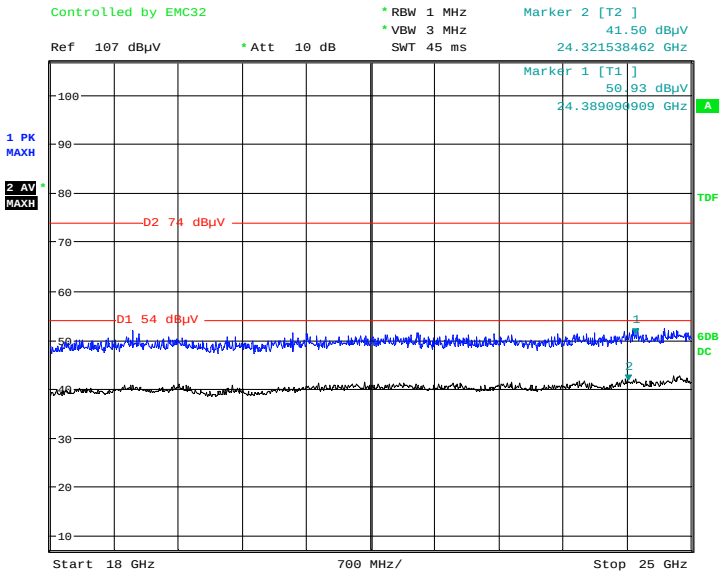


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1596.700000	---	34.29	150.0	H	323.0	-16.0	54.00	19.71
1596.700000	38.23	---	150.0	H	323.0	-16.0	74.00	35.77
4960.000000	---	35.14	200.0	V	2.0	-5.3	54.00	18.86
4960.000000	42.70	---	200.0	V	2.0	-5.3	74.00	31.30
7968.300000	---	37.92	150.0	H	176.0	1.8	54.00	16.08
7968.300000	48.45	---	150.0	H	176.0	1.8	74.00	25.55
10797.100000	---	38.66	150.0	V	209.0	2.7	54.00	15.34
10797.100000	48.82	---	150.0	V	209.0	2.7	74.00	25.18
13257.000000	---	42.44	150.0	H	163.0	5.5	54.00	11.56
13257.000000	52.49	---	150.0	H	163.0	5.5	74.00	21.51
17949.000000	54.06	---	150.0	H	69.0	8.8	74.00	19.94
17949.000000	---	47.48	150.0	H	69.0	8.8	54.00	6.52

18GHz-25GHz

*(The worst case **low channel of operation in the Z axis of orientation** was recorded)*

Horizontal



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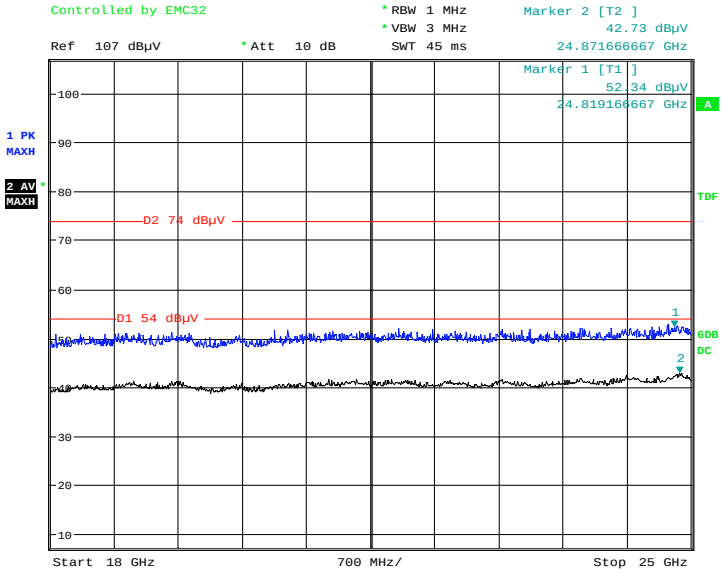
Vertical



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Restricted Bands Emissions Test:

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

Note:

1. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

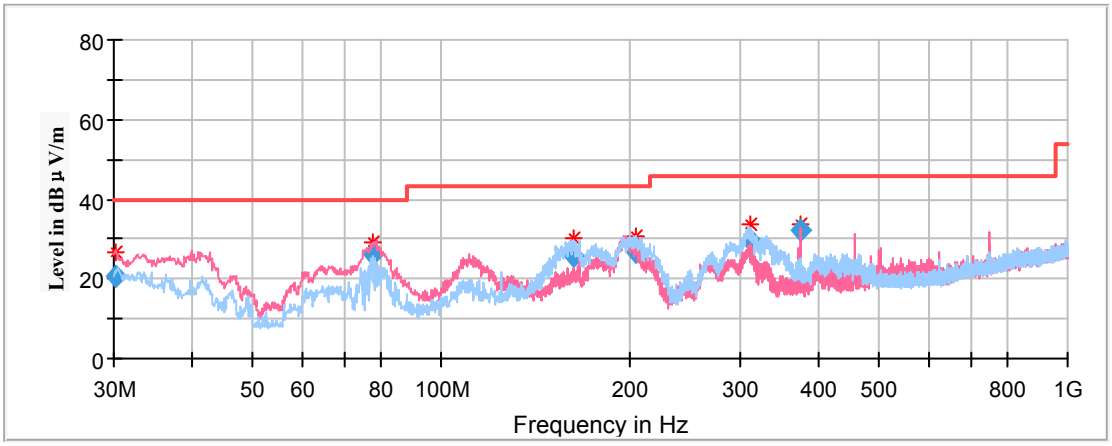
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 2402MHz								
2390.00	---	51.45	200.0	V	56.0	-2.9	54.00	2.55
2390.00	58.42	---	200.0	V	56.0	-2.9	74.00	15.58
High Channel: 2480MHz								
2483.50	47.26	---	150.0	V	335.0	-2.5	74.00	26.74
2483.50	---	44.26	150.0	V	335.0	-2.5	54.00	9.74

For BLE (2Mbps) Mode:

Spurious Emission Test:

30MHz-1GHz:

*(Pre-scan with low, middle and high channels of operation in the X,Y and Z axes of orientation, the worst case **low channel of operation in the Z axis of orientation** was recorded)*



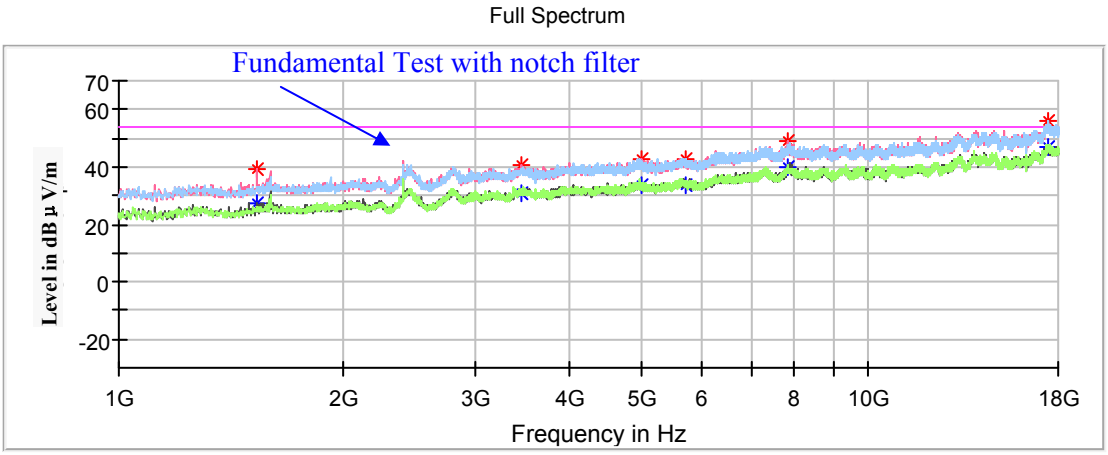
Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	Quasi-peak (dBµV/m)	Height (cm)	Polar (H/V)				
30.328661	20.50	100.0	V	95.0	-10.8	40.00	19.50
77.785150	25.94	100.0	V	228.0	-23.8	40.00	14.06
162.828750	25.87	200.0	H	145.0	-18.9	43.50	17.63
203.963000	26.75	100.0	H	159.0	-17.9	43.50	16.75
310.575200	29.84	100.0	H	175.0	-16.8	46.00	16.16
374.274650	32.31	100.0	V	159.0	-15.2	46.00	13.69

1GHz-18GHz

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

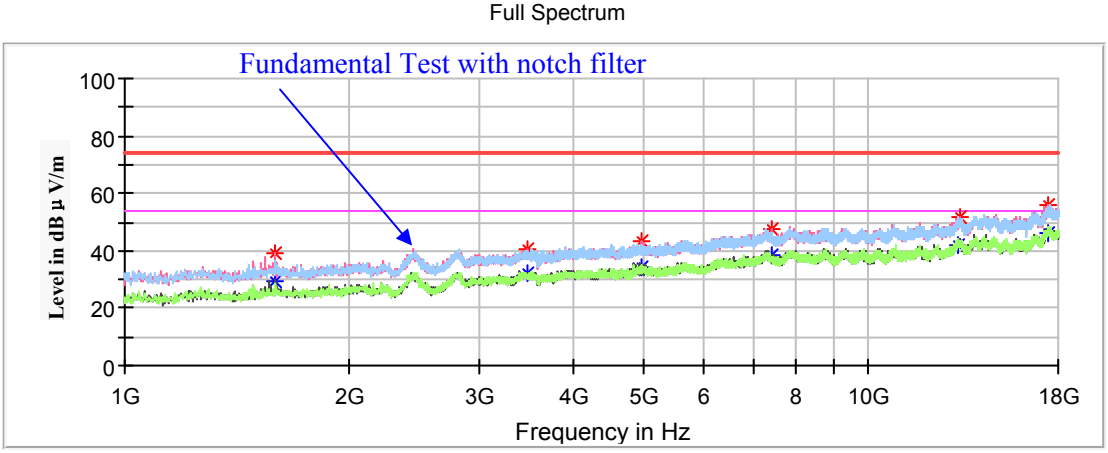
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2402MHz



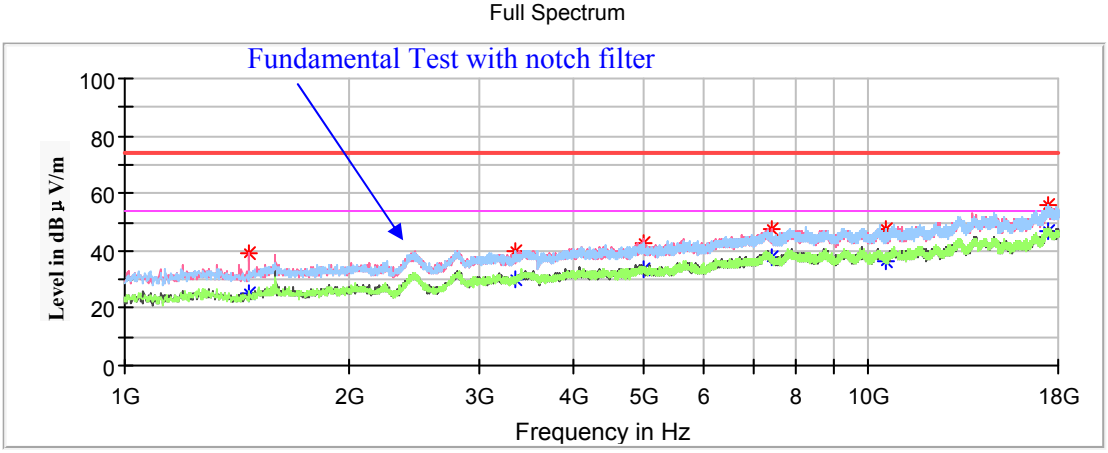
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1530.400000	---	27.56	150.0	V	118.0	-16.2	54.00	26.44
1530.400000	39.31	---	150.0	V	118.0	-16.2	74.00	34.69
3459.900000	---	31.15	150.0	V	352.0	-8.9	54.00	22.85
3459.900000	40.44	---	150.0	V	352.0	-8.9	74.00	33.56
4804.000000	---	33.50	200.0	V	1.0	-5.6	54.00	20.50
4804.000000	43.06	---	200.0	V	1.0	-5.6	74.00	30.94
5722.600000	---	33.62	200.0	V	26.0	-3.5	54.00	20.38
5722.600000	43.05	---	200.0	V	26.0	-3.5	74.00	30.95
7834.000000	---	39.91	200.0	V	155.0	1.6	54.00	14.09
7834.000000	48.86	---	200.0	V	155.0	1.6	74.00	25.14
17461.100000	---	47.06	150.0	H	296.0	8.8	54.00	6.94
17461.100000	55.93	---	150.0	H	296.0	8.8	74.00	18.07

Middle Channel: 2440MHz



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)				
1595.000000	---	29.71	200.0	V	21.0	-16.0	54.00	24.29
1595.000000	38.94	---	200.0	V	21.0	-16.0	74.00	35.06
3468.400000	---	31.91	200.0	V	205.0	-8.9	54.00	22.09
3468.400000	40.39	---	200.0	V	205.0	-8.9	74.00	33.61
4880.000000	---	34.41	150.0	V	218.0	-5.4	54.00	19.59
4880.000000	43.13	---	150.0	V	218.0	-5.4	74.00	30.87
7320.000000	---	38.63	200.0	V	110.0	0.6	54.00	15.37
7320.000000	47.37	---	200.0	V	110.0	0.6	74.00	26.63
13240.000000	---	42.21	150.0	V	333.0	5.4	54.00	11.79
13240.000000	51.75	---	150.0	V	333.0	5.4	74.00	22.25
17474.700000	---	46.03	200.0	V	166.0	8.8	54.00	7.97
17474.700000	56.18	---	200.0	V	166.0	8.8	74.00	17.82

High Channel: 2480MHz

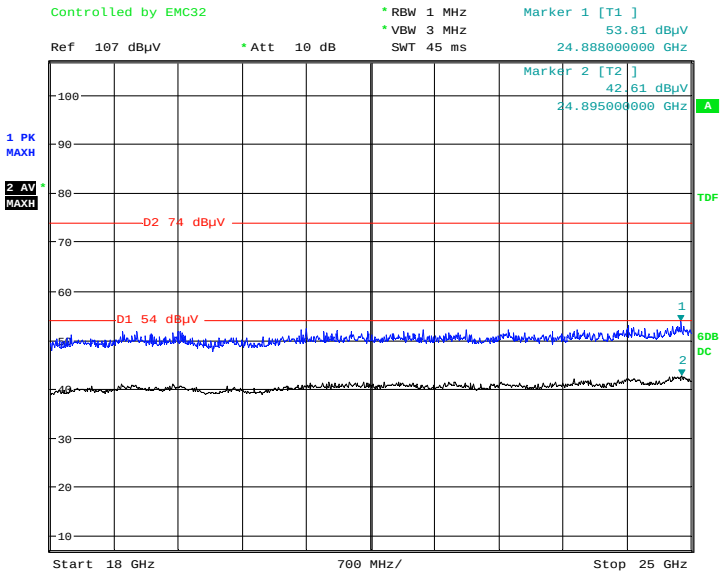


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1470.900000	---	25.29	200.0	V	244.0	-16.5	54.00	28.71
1470.900000	39.45	---	200.0	V	244.0	-16.5	74.00	34.55
3357.900000	---	29.77	200.0	V	358.0	-9.2	54.00	24.23
3357.900000	40.06	---	200.0	V	358.0	-9.2	74.00	33.94
4960.000000	---	33.23	200.0	V	218.0	-5.3	54.00	20.77
4960.000000	42.75	---	200.0	V	218.0	-5.3	74.00	31.25
7440.000000	---	37.89	200.0	V	295.0	0.7	54.00	16.11
7440.000000	47.47	---	200.0	V	295.0	0.7	74.00	26.53
10542.100000	---	36.67	150.0	H	271.0	2.4	54.00	17.33
10542.100000	47.44	---	150.0	H	271.0	2.4	74.00	26.56
17496.800000	---	46.61	200.0	H	46.0	8.9	54.00	7.39
17496.800000	56.27	---	200.0	H	46.0	8.9	74.00	17.73

18GHz-25GHz

*(The worst case **low channel of operation in the Z axis of orientation** was recorded)*

Horizontal



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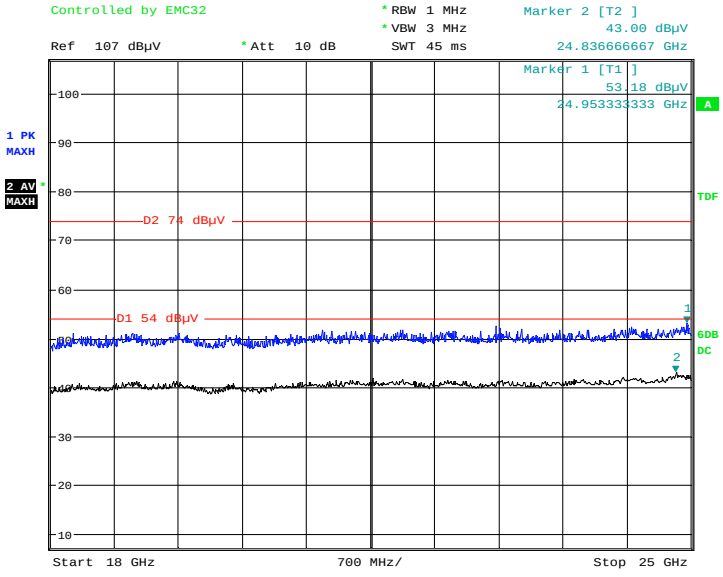
Vertical



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Restricted Bands Emissions Test:

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

Note:

1. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

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: 2402MHz								
2390.00	48.45	---	200.0	V	332.0	-2.9	74.00	25.55
2390.00	---	43.75	200.0	V	332.0	-2.9	54.00	10.25
High Channel: 2480MHz								
2483.50	48.08	---	150.0	V	182.0	-2.5	74.00	25.92
2483.50	---	45.07	150.0	V	182.0	-2.5	54.00	8.93

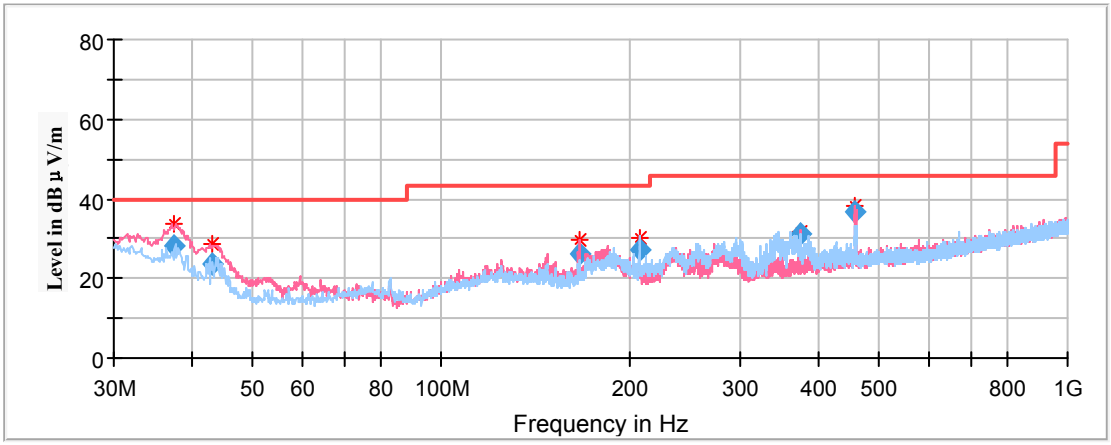
Model: L1573

For Wi-Fi Mode:

Spurious Emission Test:

30MHz-1GHz:

Pre-Scan with 802.11b, 802.11g, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case ***high channel of 802.11n-HT20 Mode in Z-axis of orientation*** *was recorded*



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	Quasi-peak (dBµV/m)	Height (cm)	Polar (H/V)				
37.475600	28.40	100.0	V	25.0	-9.5	40.00	11.60
43.081350	23.67	100.0	V	0.0	-13.3	40.00	16.33
166.315600	26.18	100.0	V	311.0	-13.5	43.50	17.32
207.851250	27.13	200.0	H	250.0	-12.7	43.50	16.37
374.242850	31.15	100.0	V	0.0	-9.2	46.00	14.85
457.484000	36.53	100.0	V	352.0	-7.2	46.00	9.47

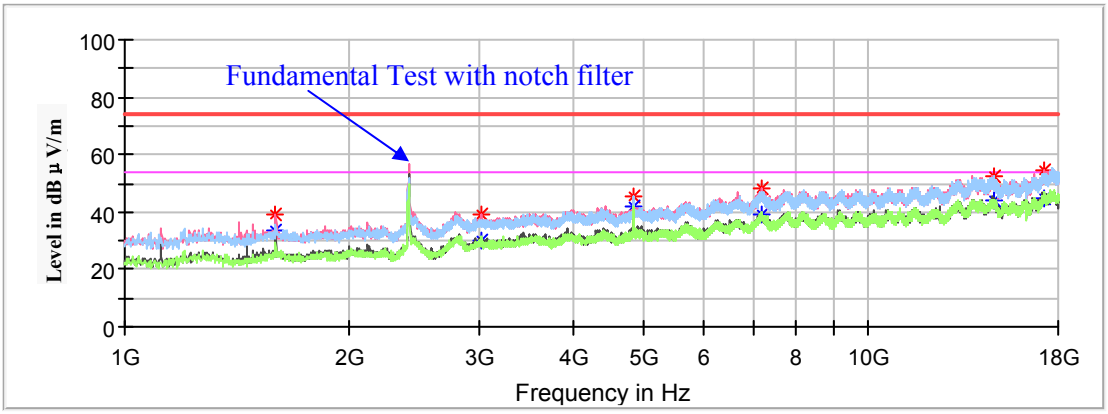
1GHz-18GHz:

Chain0:

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

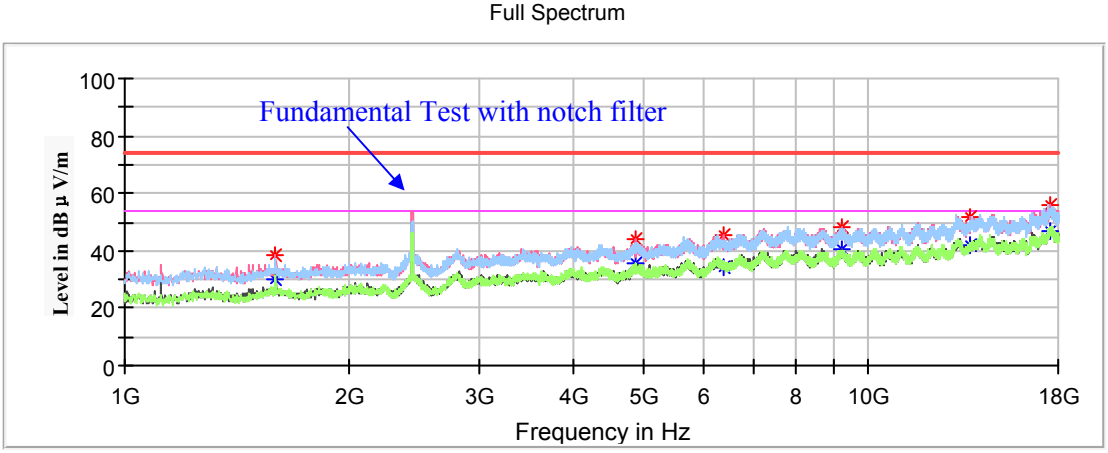
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2412MHz



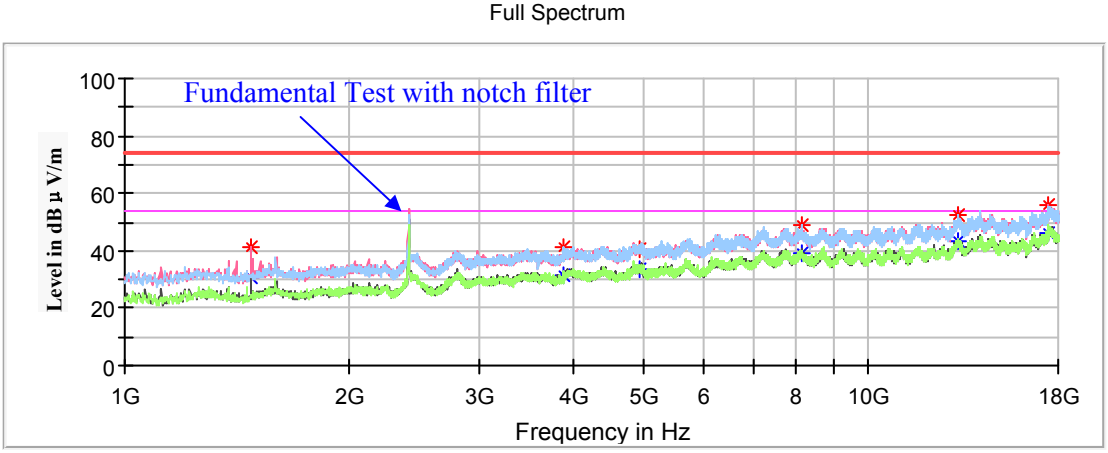
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1596.700000	39.43	---	150.0	V	192.0	-16.0	74.00	34.57
1596.700000	---	33.89	150.0	V	192.0	-16.0	54.00	20.11
3011.100000	39.05	---	150.0	V	192.0	-10.1	74.00	34.95
3011.100000	---	30.18	150.0	V	192.0	-10.1	54.00	23.82
4824.000000	45.53	---	150.0	V	0.0	-5.5	74.00	28.47
4824.000000	---	41.90	150.0	V	0.0	-5.5	54.00	12.10
7236.000000	48.23	---	150.0	V	154.0	0.4	74.00	25.77
7236.000000	---	39.05	150.0	V	154.0	0.4	54.00	14.95
14741.100000	52.48	---	150.0	H	358.0	5.8	74.00	21.52
14741.100000	---	43.89	150.0	H	358.0	5.8	54.00	10.11
17221.400000	---	44.44	150.0	V	256.0	7.9	54.00	9.56
17221.400000	54.44	---	150.0	V	256.0	7.9	74.00	19.56

Middle Channel: 2437MHz



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)				
1593.300000	38.58	---	150.0	V	196.0	-16.0	74.00	35.42
1593.300000	---	29.72	150.0	V	196.0	-16.0	54.00	24.28
4874.000000	---	35.89	150.0	H	140.0	-5.4	54.00	18.11
4874.000000	44.13	---	150.0	H	140.0	-5.4	74.00	29.87
6399.200000	---	34.35	150.0	H	242.0	-1.6	54.00	19.65
6399.200000	45.66	---	150.0	H	242.0	-1.6	74.00	28.34
9212.700000	48.21	---	150.0	V	306.0	2.0	74.00	25.79
9212.700000	---	40.37	150.0	V	306.0	2.0	54.00	13.63
13717.700000	52.01	---	150.0	V	318.0	5.9	74.00	21.99
13717.700000	---	42.04	150.0	V	318.0	5.9	54.00	11.96
17529.100000	---	46.64	150.0	V	342.0	8.9	54.00	7.36
17529.100000	55.78	---	150.0	V	342.0	8.9	74.00	18.22

High Channel: 2462MHz

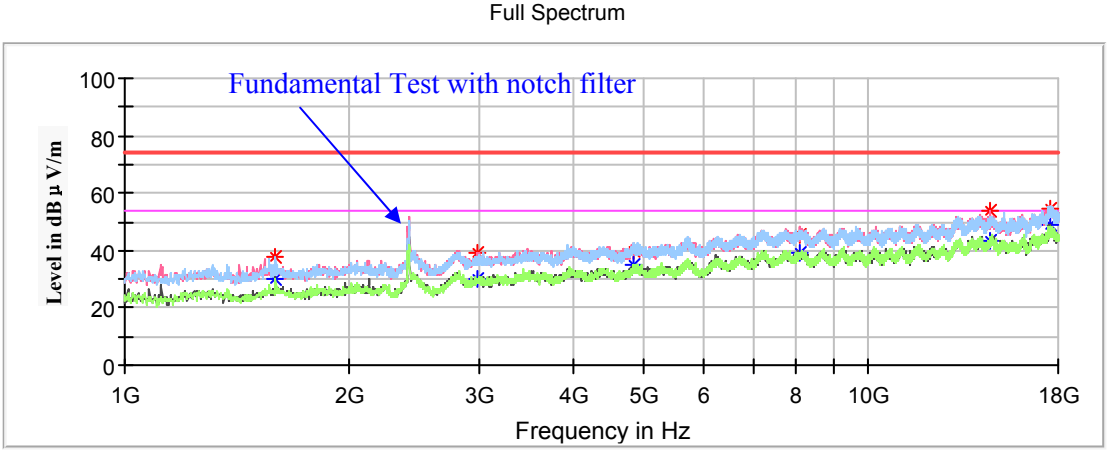


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1477.700000	41.02	---	150.0	V	77.0	-16.5	74.00	32.98
1477.700000	---	30.47	150.0	V	77.0	-16.5	54.00	23.53
3896.800000	---	31.22	150.0	V	338.0	-7.4	54.00	22.78
3896.800000	41.36	---	150.0	V	338.0	-7.4	74.00	32.64
4924.000000	40.31	---	150.0	V	155.0	-5.3	74.00	33.69
4924.000000	---	33.63	150.0	V	155.0	-5.3	54.00	20.37
8116.200000	---	39.06	150.0	H	47.0	1.7	54.00	14.94
8116.200000	48.92	---	150.0	H	47.0	1.7	74.00	25.08
13206.000000	---	43.25	150.0	H	98.0	5.4	54.00	10.75
13206.000000	52.50	---	150.0	H	98.0	5.4	74.00	21.50
17500.200000	---	46.43	150.0	V	181.0	8.9	54.00	7.57
17500.200000	55.77	---	150.0	V	181.0	8.9	74.00	18.23

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

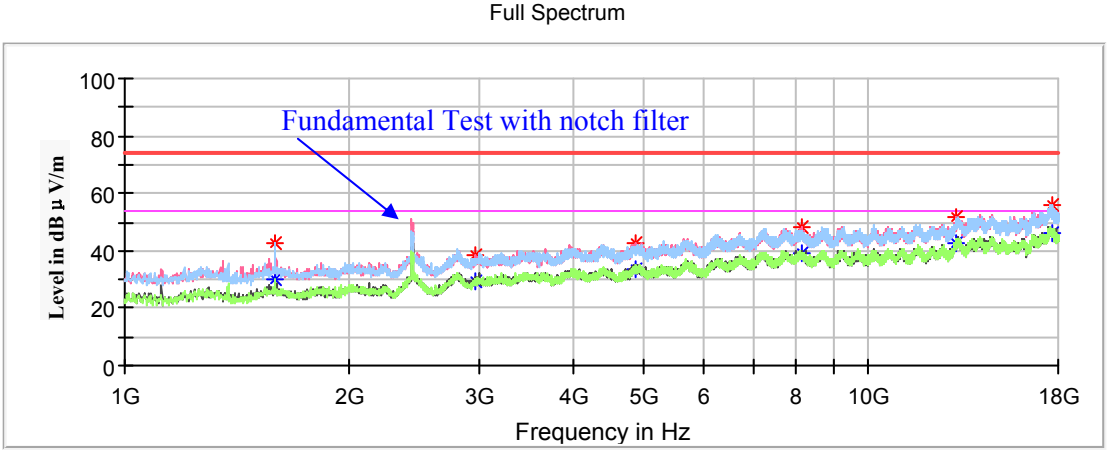
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2412MHz



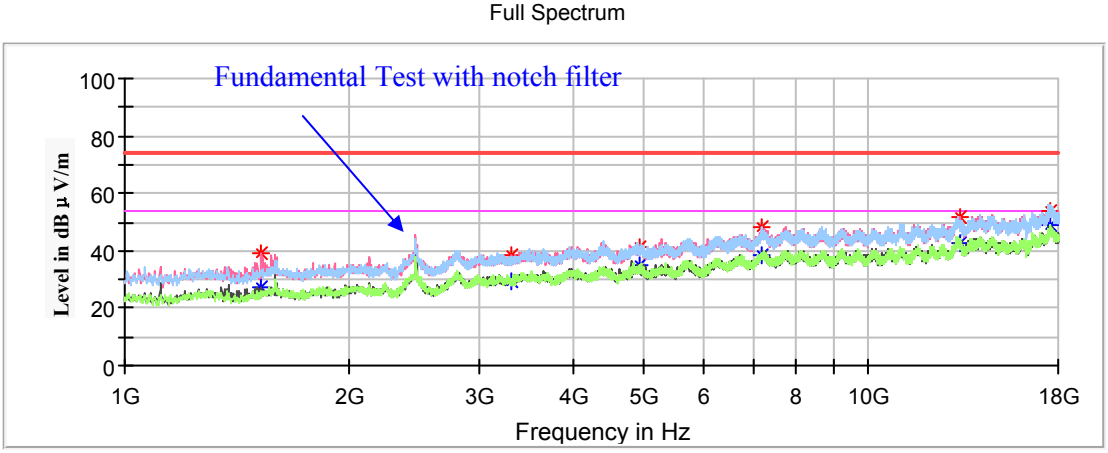
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1596.700000	37.61	---	150.0	H	65.0	-16.0	74.00	36.39
1596.700000	---	29.96	150.0	H	65.0	-16.0	54.00	24.04
2985.600000	---	30.08	150.0	V	301.0	-10.2	54.00	23.92
2985.600000	38.98	---	150.0	V	301.0	-10.2	74.00	35.02
4824.000000	39.97	---	150.0	V	148.0	-5.5	74.00	34.03
4824.000000	---	34.83	150.0	V	148.0	-5.5	54.00	19.17
8102.600000	45.32	---	150.0	V	29.0	1.7	74.00	28.68
8102.600000	---	39.19	150.0	V	29.0	1.7	54.00	14.81
14606.800000	53.59	---	150.0	V	350.0	6.2	74.00	20.41
14606.800000	---	43.67	150.0	V	350.0	6.2	54.00	10.33
17535.900000	---	48.84	150.0	V	186.0	8.9	54.00	5.16
17535.900000	54.27	---	150.0	V	186.0	8.9	74.00	19.73

Middle Channel: 2437MHz



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)				
1593.300000	---	30.07	150.0	H	296.0	-16.0	54.00	23.93
1593.300000	42.62	---	150.0	H	296.0	-16.0	74.00	31.38
2965.200000	---	29.29	150.0	V	81.0	-10.3	54.00	24.71
2965.200000	38.36	---	150.0	V	81.0	-10.3	74.00	35.64
4874.000000	---	33.26	150.0	H	0.0	-5.4	54.00	20.74
4874.000000	42.84	---	150.0	H	0.0	-5.4	74.00	31.16
8153.600000	---	39.20	150.0	V	41.0	1.7	54.00	14.80
8153.600000	48.08	---	150.0	V	41.0	1.7	74.00	25.92
13131.200000	---	42.52	150.0	V	339.0	5.3	54.00	11.48
13131.200000	52.00	---	150.0	V	339.0	5.3	74.00	22.00
17660.000000	56.12	---	150.0	H	14.0	8.9	74.00	17.88
17660.000000	---	45.81	150.0	H	14.0	8.9	54.00	8.19

High Channel: 2462MHz



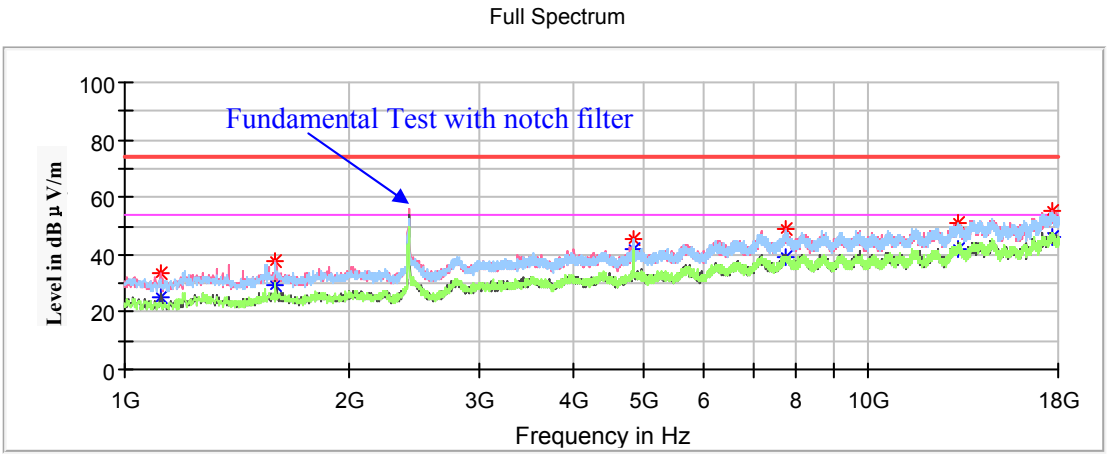
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1528.700000	39.00	---	150.0	V	208.0	-16.3	74.00	35.00
1528.700000	---	27.30	150.0	V	208.0	-16.3	54.00	26.70
3320.500000	---	29.30	150.0	V	233.0	-9.3	54.00	24.70
3320.500000	38.69	---	150.0	V	233.0	-9.3	74.00	35.31
4924.000000	---	35.10	150.0	V	182.0	-5.3	54.00	18.90
4924.000000	40.96	---	150.0	V	182.0	-5.3	74.00	33.04
7386.000000	---	38.68	150.0	V	309.0	0.5	54.00	15.32
7386.000000	48.12	---	150.0	V	309.0	0.5	74.00	25.88
13253.600000	---	42.68	150.0	V	0.0	5.5	54.00	11.32
13253.600000	51.64	---	150.0	V	0.0	5.5	74.00	22.36
17573.300000	53.58	---	150.0	H	231.0	8.9	74.00	20.42
17573.300000	---	48.83	150.0	H	231.0	8.9	54.00	5.17

Chain1:

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

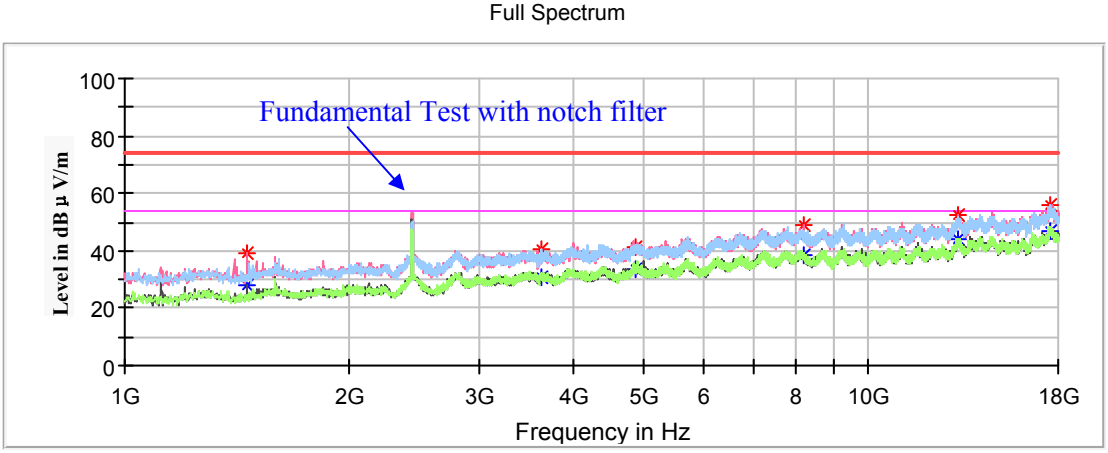
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2412MHz



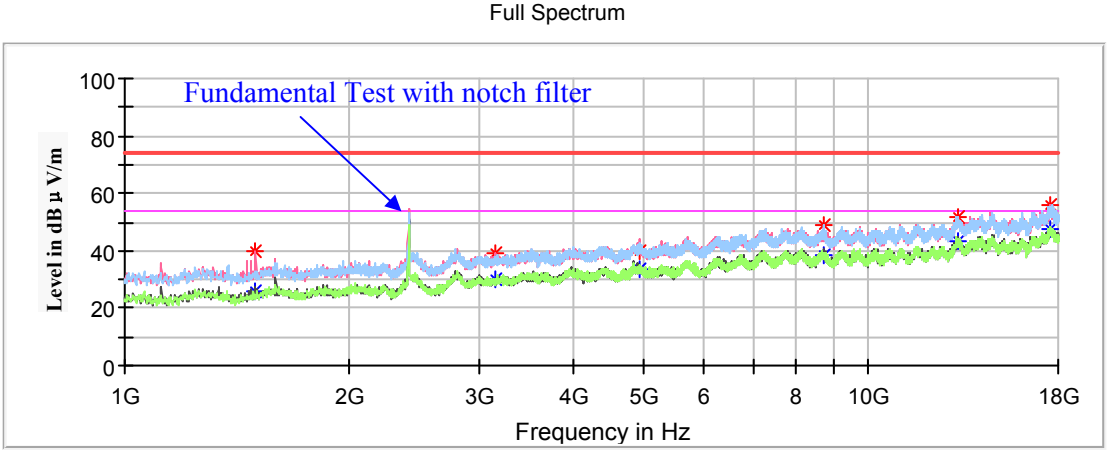
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1115.600000	---	24.84	150.0	V	16.0	-18.4	54.00	29.16
1115.600000	33.46	---	150.0	V	16.0	-18.4	74.00	40.54
1596.700000	---	29.26	150.0	V	191.0	-16.0	54.00	24.74
1596.700000	37.66	---	150.0	V	191.0	-16.0	74.00	36.34
4824.000000	---	41.90	150.0	H	309.0	-5.5	54.00	12.10
4824.000000	45.57	---	150.0	H	309.0	-5.5	74.00	28.43
7737.100000	---	39.37	150.0	H	169.0	1.4	54.00	14.63
7737.100000	48.99	---	150.0	H	169.0	1.4	74.00	25.01
13160.100000	---	42.04	150.0	H	296.0	5.4	54.00	11.96
13160.100000	51.35	---	150.0	H	296.0	5.4	74.00	22.65
17665.100000	---	46.48	150.0	H	322.0	8.9	54.00	7.52
17665.100000	55.01	---	150.0	H	322.0	8.9	74.00	18.99

Middle Channel: 2437MHz



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)				
1457.300000	---	27.92	150.0	V	257.0	-16.6	54.00	26.08
1457.300000	39.00	---	150.0	V	257.0	-16.6	74.00	35.00
3641.800000	---	31.00	150.0	V	180.0	-8.3	54.00	23.00
3641.800000	40.49	---	150.0	V	180.0	-8.3	74.00	33.51
4874.000000	---	33.50	150.0	V	129.0	-5.4	54.00	20.50
4874.000000	41.60	---	150.0	V	129.0	-5.4	74.00	32.40
8165.500000	---	38.28	150.0	V	356.0	1.7	54.00	15.72
8165.500000	48.96	---	150.0	V	356.0	1.7	74.00	25.04
13168.600000	---	44.18	150.0	V	231.0	5.4	54.00	9.82
13168.600000	52.39	---	150.0	V	231.0	5.4	74.00	21.61
17576.700000	---	46.79	150.0	H	221.0	8.9	54.00	7.21
17576.700000	56.06	---	150.0	H	221.0	8.9	74.00	17.94

High Channel: 2462MHz

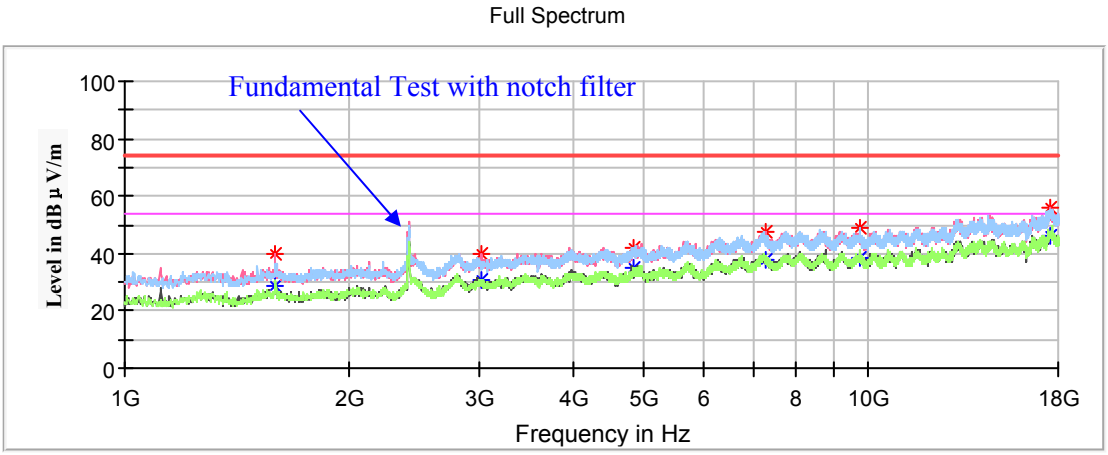


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1499.800000	---	26.06	150.0	V	195.0	-16.4	54.00	27.94
1499.800000	39.72	---	150.0	V	195.0	-16.4	74.00	34.28
3150.500000	---	29.95	150.0	V	77.0	-9.7	54.00	24.05
3150.500000	39.06	---	150.0	V	77.0	-9.7	74.00	34.94
4924.000000	---	33.77	150.0	V	309.0	-5.3	54.00	20.23
4924.000000	40.09	---	150.0	V	309.0	-5.3	74.00	33.91
8704.400000	---	38.72	150.0	H	60.0	1.6	54.00	15.28
8704.400000	48.92	---	150.0	H	60.0	1.6	74.00	25.08
13189.000000	---	43.24	150.0	V	327.0	5.4	54.00	10.76
13189.000000	51.93	---	150.0	V	327.0	5.4	74.00	22.07
17581.800000	---	47.53	150.0	V	25.0	8.9	54.00	6.47
17581.800000	56.15	---	150.0	V	25.0	8.9	74.00	17.85

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

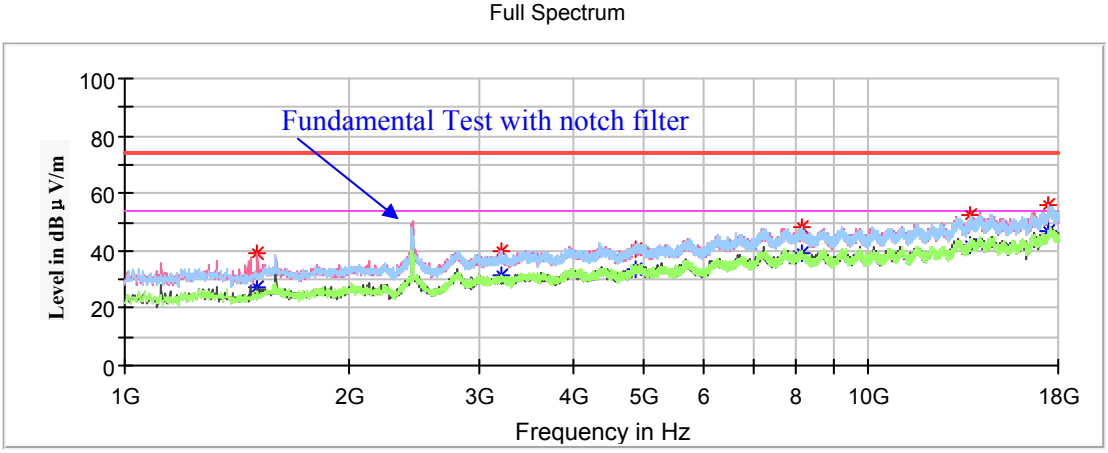
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2412MHz



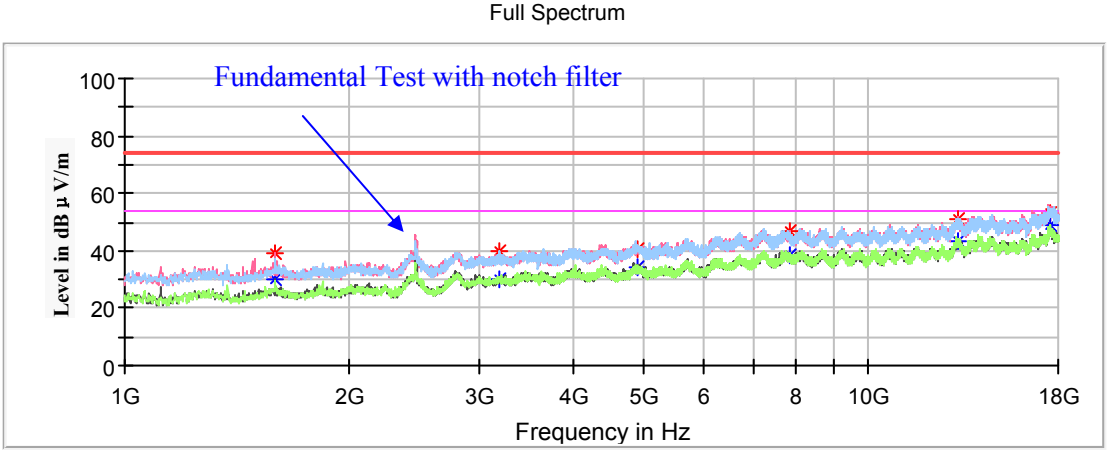
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1595.000000	39.86	---	150.0	V	197.0	-16.0	74.00	34.14
1595.000000	---	28.72	150.0	V	197.0	-16.0	54.00	25.28
3016.200000	---	30.67	150.0	V	0.0	-10.1	54.00	23.33
3016.200000	40.14	---	150.0	V	0.0	-10.1	74.00	33.86
4824.000000	---	35.07	150.0	H	192.0	-5.5	54.00	18.93
4824.000000	41.83	---	150.0	H	192.0	-5.5	74.00	32.17
7236.000000	---	38.05	150.0	H	355.0	0.4	54.00	15.95
7236.000000	47.45	---	150.0	H	355.0	0.4	74.00	26.55
9717.600000	---	38.41	150.0	H	257.0	2.0	54.00	15.59
9717.600000	48.95	---	150.0	H	257.0	2.0	74.00	25.05
17520.600000	---	45.92	150.0	V	286.0	8.9	54.00	8.08
17520.600000	55.60	---	150.0	V	286.0	8.9	74.00	18.40

Middle Channel: 2437MHz



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)				
1510.000000	---	27.35	150.0	V	77.0	-16.3	54.00	26.65
1510.000000	39.03	---	150.0	V	77.0	-16.3	74.00	34.97
3211.700000	39.77	---	150.0	H	40.0	-9.6	74.00	34.23
3211.700000	---	31.22	150.0	H	40.0	-9.6	54.00	22.78
4874.000000	40.40	---	150.0	V	354.0	-5.4	74.00	33.60
4874.000000	---	33.41	150.0	V	354.0	-5.4	54.00	20.59
8128.100000	48.33	---	150.0	H	271.0	1.7	74.00	25.67
8128.100000	---	38.86	150.0	H	271.0	1.7	54.00	15.14
13719.400000	---	41.81	150.0	V	0.0	5.9	54.00	12.19
13719.400000	52.19	---	150.0	V	0.0	5.9	74.00	21.81
17476.400000	56.15	---	150.0	H	271.0	8.8	74.00	17.85
17476.400000	---	46.77	150.0	H	271.0	8.8	54.00	7.23

High Channel: 2462MHz

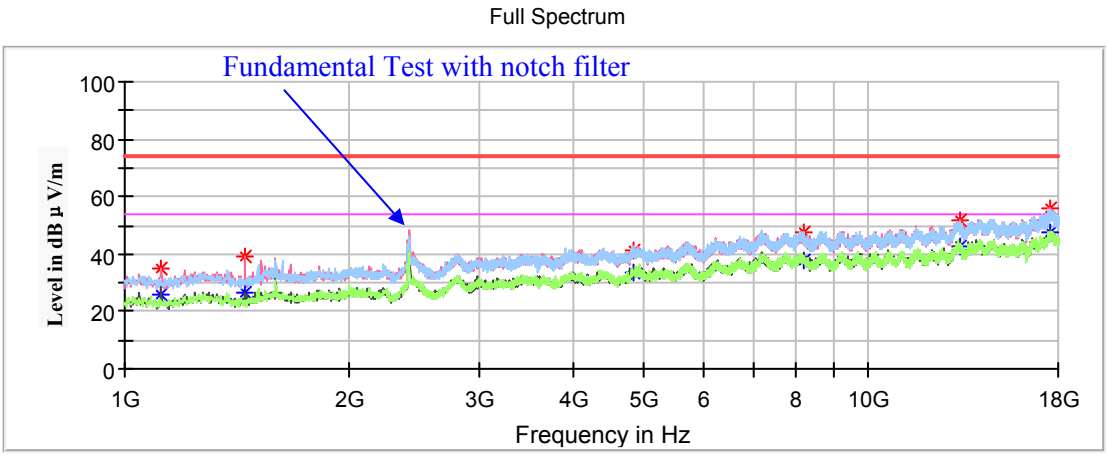


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	38.91	---	150.0	V	198.0	-16.0	74.00	35.09
1595.000000	---	30.03	150.0	V	198.0	-16.0	54.00	23.97
3191.300000	---	29.78	150.0	H	111.0	-9.6	54.00	24.22
3191.300000	39.80	---	150.0	H	111.0	-9.6	74.00	34.20
4924.000000	---	34.57	150.0	H	35.0	-5.3	54.00	19.43
4924.000000	40.91	---	150.0	H	35.0	-5.3	74.00	33.09
7825.500000	---	38.37	150.0	V	325.0	1.5	54.00	15.63
7825.500000	46.75	---	150.0	V	325.0	1.5	74.00	27.25
13172.000000	51.34	---	150.0	V	77.0	5.4	74.00	22.66
13172.000000	---	43.04	150.0	V	77.0	5.4	54.00	10.96
17593.700000	53.17	---	150.0	H	213.0	8.9	74.00	20.83
17593.700000	---	48.94	150.0	H	213.0	8.9	54.00	5.06

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

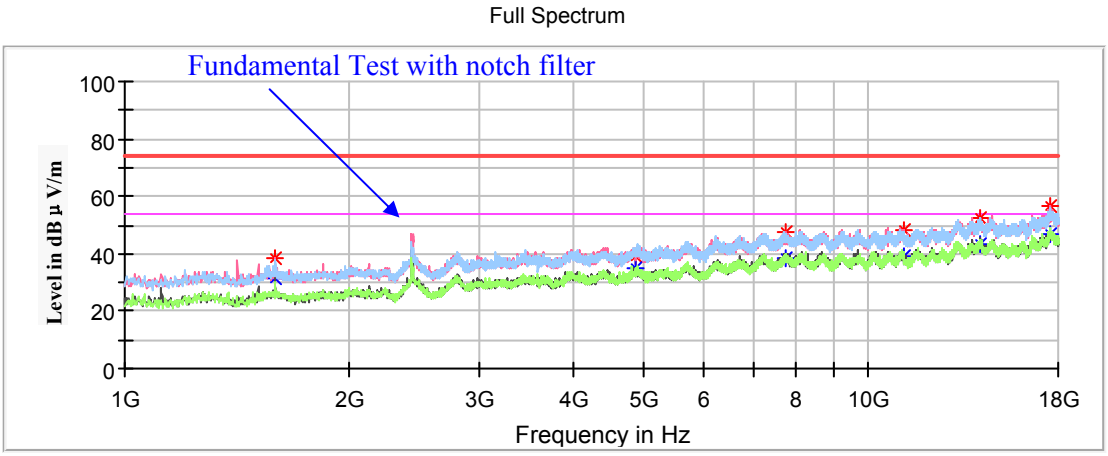
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel : 2412MHz



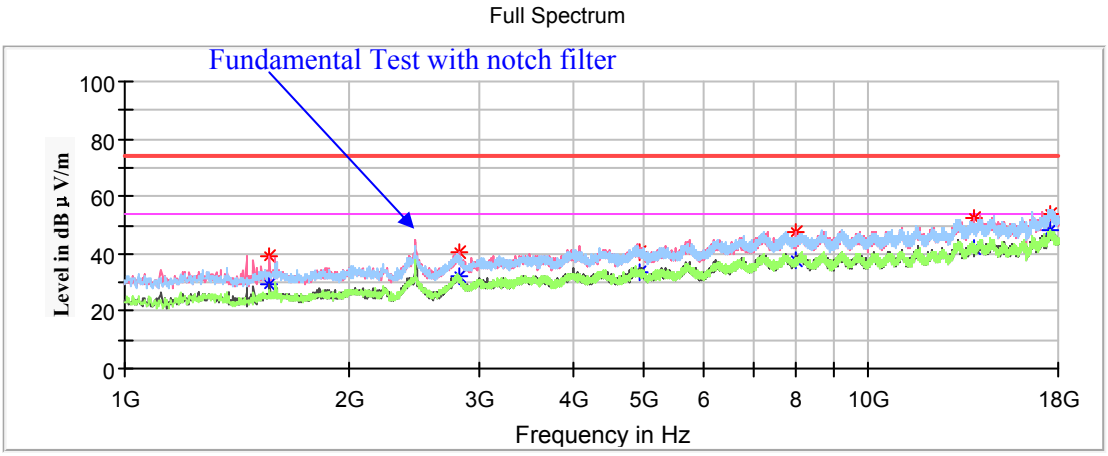
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1120.700000	---	25.67	150.0	V	7.0	-18.4	54.00	28.33
1120.700000	35.12	---	150.0	V	7.0	-18.4	74.00	38.88
1452.200000	---	26.53	150.0	V	206.0	-16.6	54.00	27.47
1452.200000	39.02	---	150.0	V	206.0	-16.6	74.00	34.98
4824.000000	---	33.36	150.0	V	0.0	-5.5	54.00	20.64
4824.000000	41.42	---	150.0	V	0.0	-5.5	74.00	32.58
8191.000000	---	37.62	150.0	H	111.0	1.6	54.00	16.38
8191.000000	47.57	---	150.0	H	111.0	1.6	74.00	26.43
13243.400000	---	42.40	150.0	V	0.0	5.4	54.00	11.60
13243.400000	51.69	---	150.0	V	0.0	5.4	74.00	22.31
17510.400000	---	47.29	150.0	V	231.0	8.9	54.00	6.71
17510.400000	55.73	---	150.0	V	231.0	8.9	74.00	18.27

Middle Channel: 2437MHz



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)				
1593.300000	38.16	---	150.0	V	197.0	-16.0	74.00	35.84
1593.300000	---	31.80	150.0	V	197.0	-16.0	54.00	22.20
4874.000000	---	35.31	150.0	H	175.0	-5.4	54.00	18.69
4874.000000	39.48	---	150.0	H	175.0	-5.4	74.00	34.52
7726.900000	47.49	---	150.0	V	235.0	1.4	74.00	26.51
7726.900000	---	38.79	150.0	V	235.0	1.4	54.00	15.21
11166.000000	---	38.90	150.0	H	252.0	2.9	54.00	15.10
11166.000000	48.39	---	150.0	H	252.0	2.9	74.00	25.61
14125.700000	---	43.56	150.0	H	35.0	6.2	54.00	10.44
14125.700000	52.62	---	150.0	H	35.0	6.2	74.00	21.38
17554.600000	56.34	---	150.0	V	311.0	8.9	74.00	17.66
17554.600000	---	46.68	150.0	V	311.0	8.9	54.00	7.32

High Channel : 2462MHz

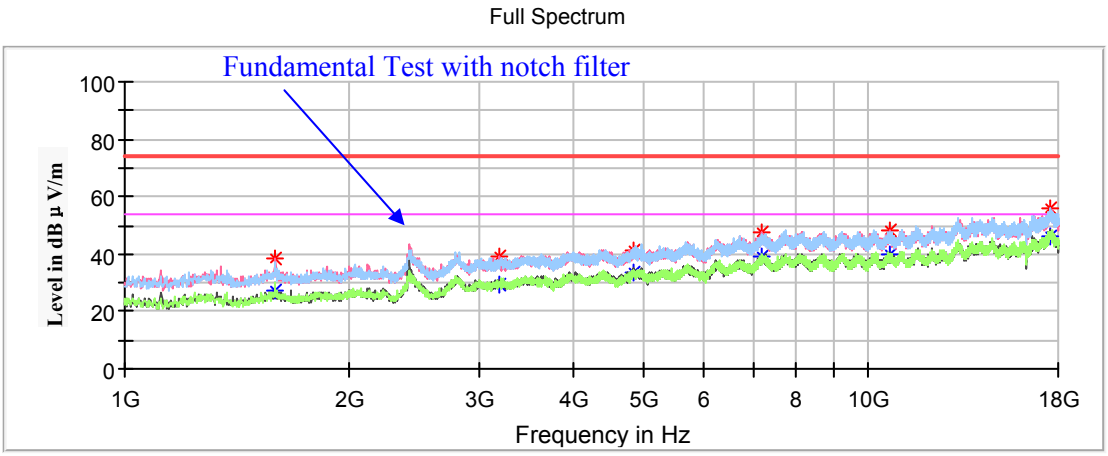


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1567.800000	---	29.58	150.0	V	204.0	-16.1	54.00	24.42
1567.800000	38.82	---	150.0	V	204.0	-16.1	74.00	35.18
2810.500000	---	31.92	150.0	V	156.0	-11.0	54.00	22.08
2810.500000	40.22	---	150.0	V	156.0	-11.0	74.00	33.78
4924.000000	---	33.87	150.0	H	109.0	-5.3	54.00	20.13
4924.000000	40.72	---	150.0	H	109.0	-5.3	74.00	33.28
7997.200000	---	38.10	150.0	H	121.0	1.8	54.00	15.90
7997.200000	47.61	---	150.0	H	121.0	1.8	74.00	26.39
13850.300000	---	41.67	150.0	V	331.0	6.0	54.00	12.33
13850.300000	52.38	---	150.0	V	331.0	6.0	74.00	21.62
17580.100000	53.88	---	150.0	V	0.0	8.9	74.00	20.12
17580.100000	---	48.04	150.0	V	0.0	8.9	54.00	5.96

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

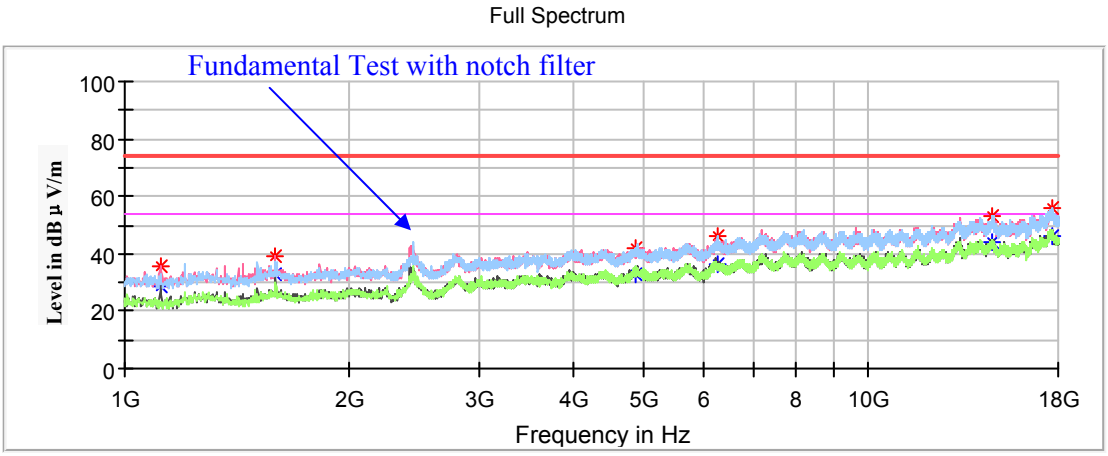
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel : 2422MHz



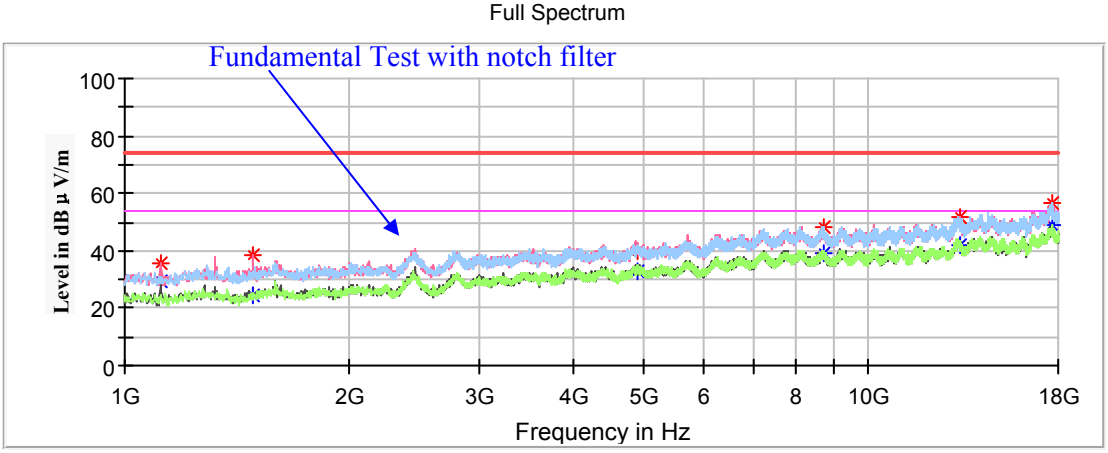
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1596.700000	---	27.39	150.0	H	181.0	-16.0	54.00	26.61
1596.700000	38.72	---	150.0	H	181.0	-16.0	74.00	35.28
3194.700000	---	29.31	150.0	V	274.0	-9.6	54.00	24.69
3194.700000	39.46	---	150.0	V	274.0	-9.6	74.00	34.54
4844.000000	---	33.41	150.0	V	134.0	-5.5	54.00	20.59
4844.000000	41.26	---	150.0	V	134.0	-5.5	74.00	32.74
7266.000000	---	39.12	150.0	V	5.0	0.4	54.00	14.88
7266.000000	47.62	---	150.0	V	5.0	0.4	74.00	26.38
10717.200000	---	40.08	150.0	V	107.0	2.6	54.00	13.92
10717.200000	48.60	---	150.0	V	107.0	2.6	74.00	25.40
17520.600000	---	46.23	150.0	H	79.0	8.9	54.00	7.77
17520.600000	55.81	---	150.0	H	79.0	8.9	74.00	18.19

Middle Channel: 2437MHz



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)				
1117.300000	---	28.79	150.0	V	8.0	-18.4	54.00	25.21
1117.300000	35.61	---	150.0	V	8.0	-18.4	74.00	38.39
1593.300000	---	32.64	150.0	V	193.0	-16.0	54.00	21.36
1593.300000	38.84	---	150.0	V	193.0	-16.0	74.00	35.16
4874.000000	---	33.19	150.0	V	355.0	-5.4	54.00	20.81
4874.000000	41.69	---	150.0	V	355.0	-5.4	74.00	32.31
6264.900000	---	36.68	150.0	V	261.0	-2.0	54.00	17.32
6264.900000	46.25	---	150.0	V	261.0	-2.0	74.00	27.75
14669.700000	---	43.81	150.0	V	311.0	6.0	54.00	10.19
14669.700000	53.06	---	150.0	V	311.0	6.0	74.00	20.94
17641.300000	---	46.48	150.0	H	64.0	8.9	54.00	7.52
17641.300000	55.82	---	150.0	H	64.0	8.9	74.00	18.18

High Channel : 2452MHz

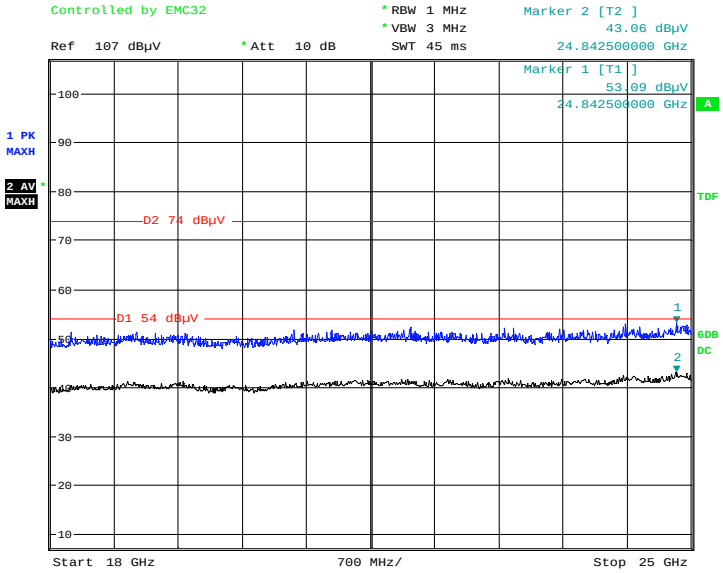


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1117.300000	---	29.68	150.0	V	7.0	-18.4	54.00	24.32
1117.300000	35.57	---	150.0	V	7.0	-18.4	74.00	38.43
1486.200000	---	24.58	150.0	V	89.0	-16.4	54.00	29.42
1486.200000	38.27	---	150.0	V	89.0	-16.4	74.00	35.73
4904.000000	---	32.71	150.0	V	193.0	-5.3	54.00	21.29
4904.000000	40.16	---	150.0	V	193.0	-5.3	74.00	33.84
8699.300000	---	39.32	150.0	H	166.0	1.5	54.00	14.68
8699.300000	48.14	---	150.0	H	166.0	1.5	74.00	25.86
13258.700000	---	41.79	150.0	H	65.0	5.5	54.00	12.21
13258.700000	51.93	---	150.0	H	65.0	5.5	74.00	22.07
17654.900000	---	48.65	150.0	H	257.0	8.9	54.00	5.35
17654.900000	56.34	---	150.0	H	257.0	8.9	74.00	17.66

18GHz-25GHz:

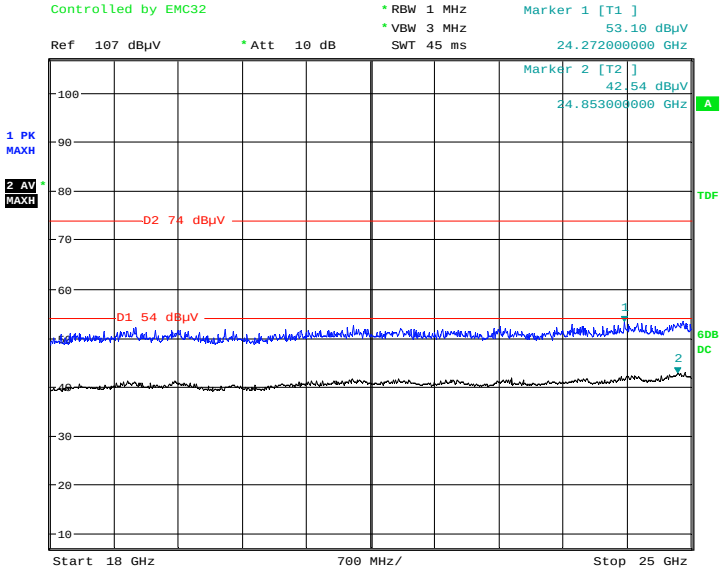
Pre-scan with 802.11b, 802.11g, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case ***high channel of 802.11n-HT20 mode in Z-axis of orientation*** *was recorded*

Horizontal



Date: 5.OCT.2020 13:58:48

Vertical



Date: 5.OCT.2020 13:51:29

Restricted Bands Emissions Test:

Note:
1. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Chain0

802.11b Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	53.30	---	150.0	V	100.0	-2.9	74.00	20.70
2390.00	---	50.88	150.0	V	100.0	-2.9	54.00	3.12
High Channel: 2462MHz								
2483.50	52.17	---	150.0	V	83.0	-2.5	74.00	21.83
2483.50	---	49.07	150.0	V	83.0	-2.5	54.00	4.93

802.11g Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	54.74	---	150.0	V	85.0	-2.9	74.00	19.26
2390.00	---	50.20	150.0	V	85.0	-2.9	54.00	3.80
High Channel: 2462MHz								
2483.50	54.56	---	150.0	V	58.0	-2.5	74.00	19.44
2483.50	---	49.77	150.0	V	58.0	-2.5	54.00	4.23

Chain1

802.11b Mode: *(Pre-scan in the X, Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	53.21	---	150.0	V	84.0	-2.9	74.00	20.79
2390.00	---	50.84	150.0	V	84.0	-2.9	54.00	3.16
High Channel: 2462MHz								
2483.50	53.04	---	150.0	V	40.0	-2.5	74.00	20.96
2483.50	---	50.40	150.0	V	40.0	-2.5	54.00	3.60

802.11g Mode: *(Pre-scan in the X,Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	57.22	---	150.0	V	80.0	-2.9	74.00	16.78
2390.00	---	51.37	150.0	V	80.0	-2.9	54.00	2.63
High Channel: 2462MHz								
2483.50	58.84	---	150.0	V	77.0	-2.5	74.00	15.16
2483.50	---	51.05	150.0	V	77.0	-2.5	54.00	2.95

Chain0+Chain1

802.11n-HT20 Mode: *(Pre-scan in the X,Y and Z axes of orientation, the worst case 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: 2412MHz								
2390.00	52.62	---	150.0	V	84.0	-2.9	74.00	21.38
2390.00	---	48.63	150.0	V	84.0	-2.9	54.00	5.37
High Channel: 2462MHz								
2483.50	51.76	---	150.0	V	269.0	-2.5	74.00	22.24
2483.50	---	46.57	150.0	V	269.0	-2.5	54.00	7.43

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

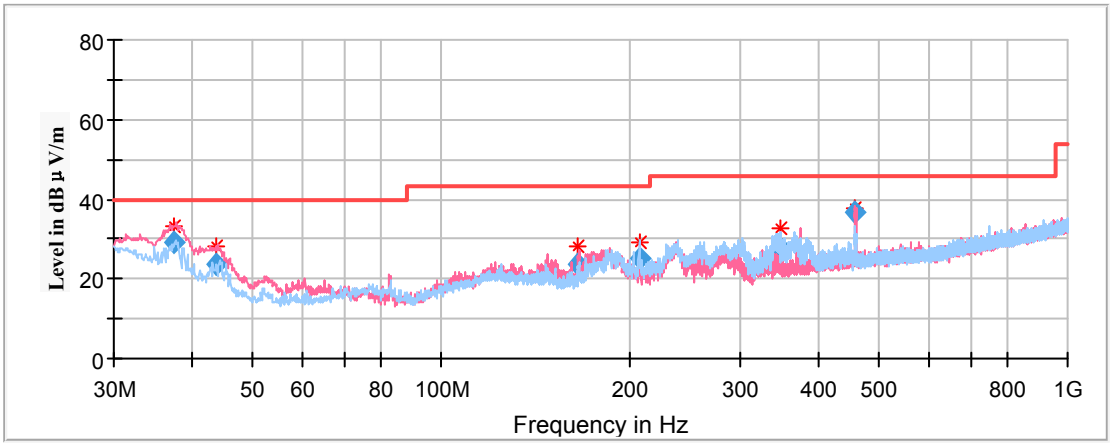
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 2422MHz								
2390.00	---	51.48	150.0	V	270.0	-2.9	54.00	2.52
2390.00	55.09	---	150.0	V	270.0	-2.9	74.00	18.91
High Channel: 2452MHz								
2483.50	51.11	---	150.0	V	97.0	-2.5	74.00	22.89
2483.50	---	48.97	150.0	V	97.0	-2.5	54.00	5.03

For BLE (1Mbps) Mode:

Spurious Emission Test:

30MHz-1GHz:

*(Pre-scan with low, middle and high channels of operation in the X,Y and Z axes of orientation, the worst case **low channel of operation in the Z axis of orientation** was recorded)*



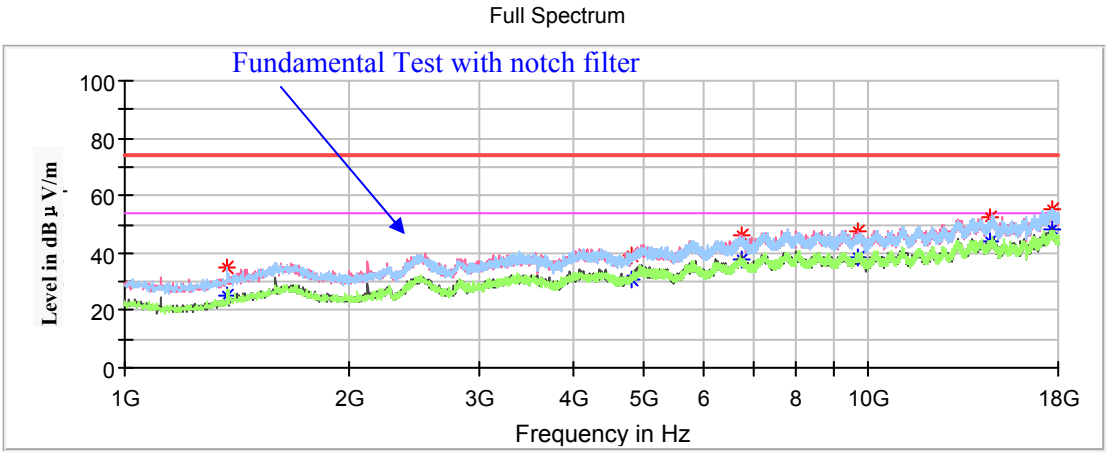
Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	Quasi-peak (dBµV/m)	Height (cm)	Polar (H/V)				
37.458800	29.22	100.0	V	19.0	-9.4	40.00	10.78
43.676050	23.47	100.0	V	218.0	-13.7	40.00	16.53
165.533500	23.56	100.0	V	191.0	-13.4	43.50	19.94
207.105950	25.19	100.0	H	243.0	-12.7	43.50	18.31
347.157050	27.62	100.0	H	164.0	-9.9	46.00	18.38
457.447350	36.69	100.0	V	19.0	-7.2	46.00	9.31

1GHz-18GHz

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

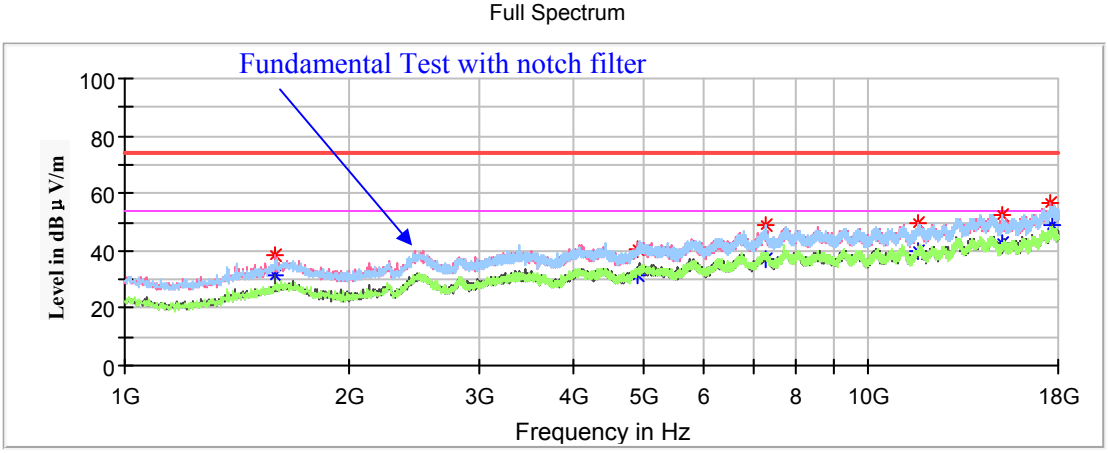
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2402MHz



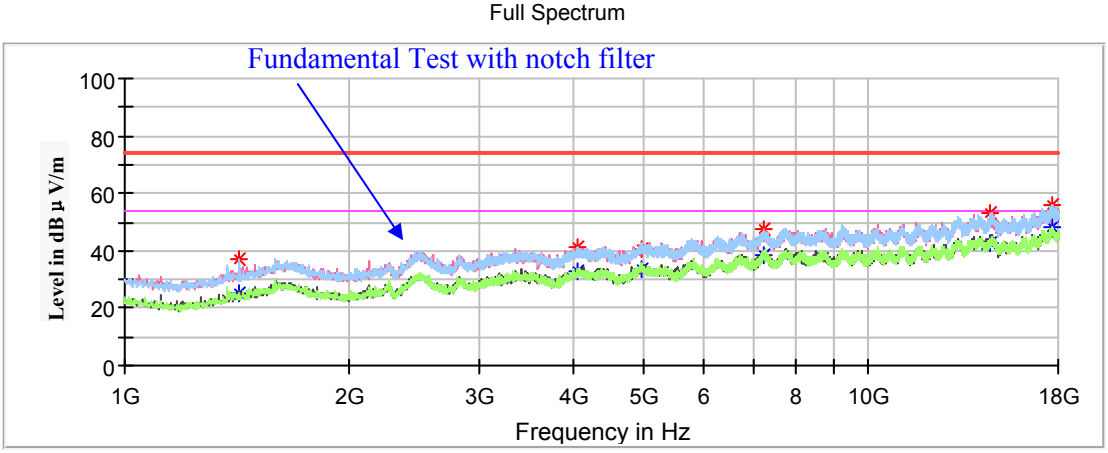
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1374.000000	---	25.30	150.0	H	162.0	-17.0	54.00	28.70
1374.000000	35.29	---	150.0	H	162.0	-17.0	74.00	38.71
4804.000000	---	31.07	150.0	H	0.0	-5.6	54.00	22.93
4804.000000	39.28	---	150.0	H	0.0	-5.6	74.00	34.72
6749.400000	---	37.43	150.0	V	0.0	-0.6	54.00	16.57
6749.400000	45.85	---	150.0	V	0.0	-0.6	74.00	28.15
9705.700000	---	38.18	150.0	H	86.0	2.0	54.00	15.82
9705.700000	47.64	---	150.0	H	86.0	2.0	74.00	26.36
14620.400000	---	44.38	150.0	H	12.0	6.2	54.00	9.62
14620.400000	52.63	---	150.0	H	12.0	6.2	74.00	21.37
17656.600000	55.16	---	150.0	H	218.0	8.9	74.00	18.84
17656.600000	---	48.30	150.0	H	218.0	8.9	54.00	5.70

Middle Channel: 2440MHz



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)				
1593.300000	---	31.47	150.0	V	244.0	-16.0	54.00	22.53
1593.300000	38.16	---	150.0	V	244.0	-16.0	74.00	35.84
4880.000000	---	31.30	150.0	V	168.0	-5.4	54.00	22.70
4880.000000	40.60	---	150.0	V	168.0	-5.4	74.00	33.40
7320.000000	---	37.21	150.0	V	282.0	0.6	54.00	16.79
7320.000000	48.88	---	150.0	V	282.0	0.6	74.00	25.12
11676.000000	---	40.07	150.0	V	206.0	3.2	54.00	13.93
11676.000000	49.60	---	150.0	V	206.0	3.2	74.00	24.40
15155.900000	---	42.65	150.0	H	111.0	5.0	54.00	11.35
15155.900000	52.13	---	150.0	H	111.0	5.0	74.00	21.87
17593.700000	56.49	---	150.0	V	89.0	8.9	74.00	17.51
17593.700000	---	48.96	150.0	V	89.0	8.9	54.00	5.04

High Channel: 2480MHz

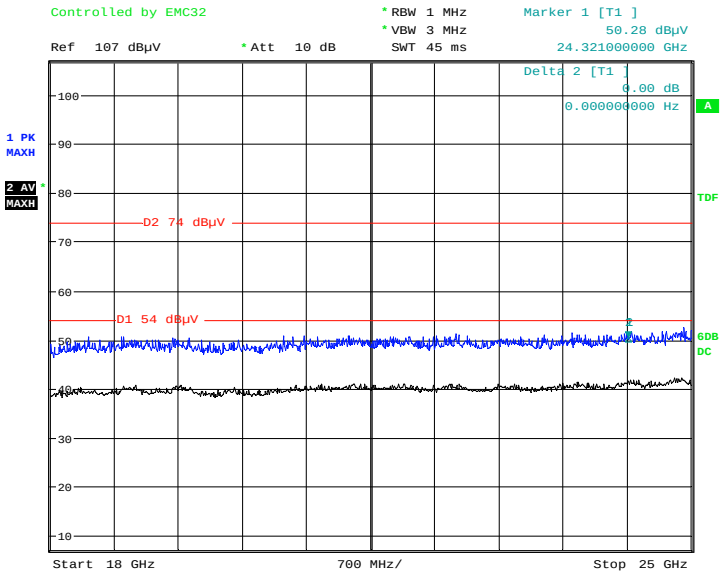


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1428.400000	---	25.23	150.0	H	111.0	-16.7	54.00	28.77
1428.400000	37.36	---	150.0	H	111.0	-16.7	74.00	36.64
4071.900000	---	32.76	150.0	H	47.0	-6.9	54.00	21.24
4071.900000	41.45	---	150.0	H	47.0	-6.9	74.00	32.55
4960.000000	---	33.54	150.0	H	117.0	-5.3	54.00	20.46
4960.000000	40.70	---	150.0	H	117.0	-5.3	74.00	33.30
7440.000000	---	38.75	150.0	H	340.0	0.7	54.00	15.25
7440.000000	47.49	---	150.0	H	340.0	0.7	74.00	26.51
14567.700000	---	42.84	150.0	V	117.0	6.3	54.00	11.16
14567.700000	53.39	---	150.0	V	117.0	6.3	74.00	20.61
17656.600000	---	48.06	150.0	H	73.0	8.9	54.00	5.94
17656.600000	56.26	---	150.0	H	73.0	8.9	74.00	17.74

18GHz-25GHz

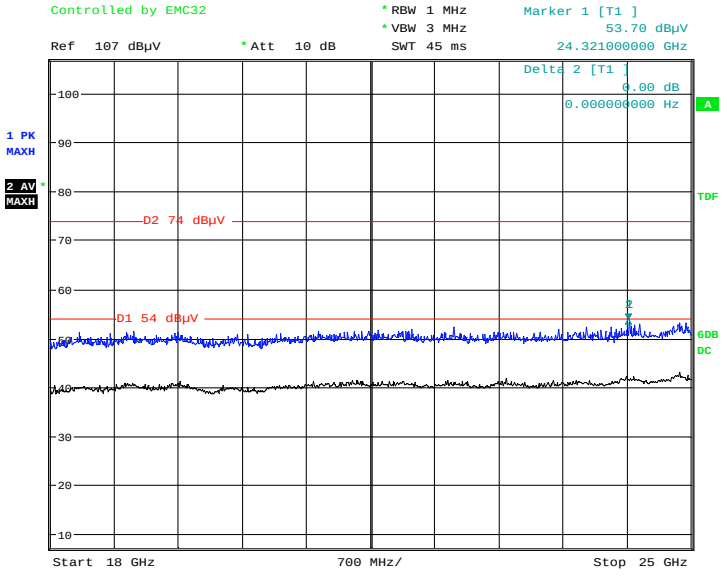
*(The worst case **low channel of operation in the Z axis of orientation** was recorded)*

Horizontal



Date: 16.OCT.2020 17:10:21

Vertical



Date: 16.OCT.2020 18:08:17

Restricted Bands Emissions Test:

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

Note:

1. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

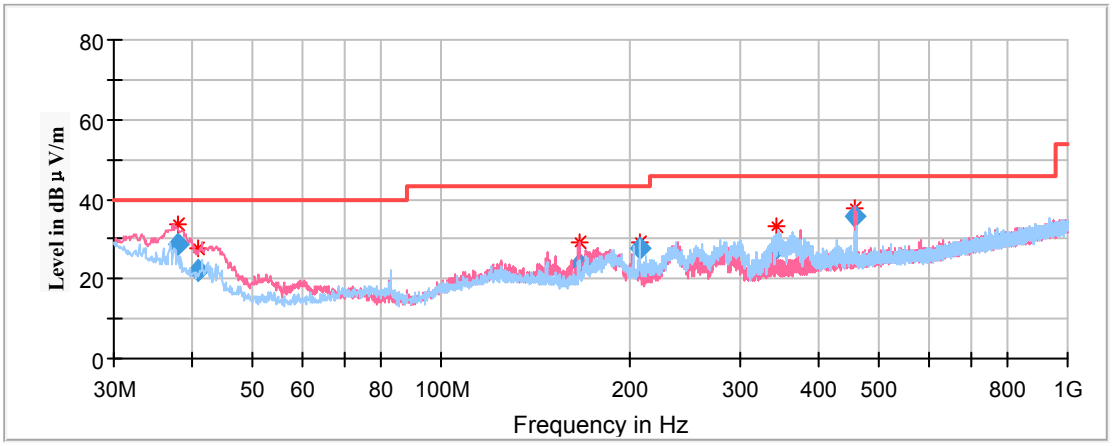
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 2402MHz								
2390.00	---	28.25	150.0	V	209.0	-12.9	54.00	25.75
2390.00	37.26	---	150.0	V	209.0	-12.9	74.00	36.74
High Channel: 2480MHz								
2483.50	---	29.55	150.0	V	223.0	-12.5	54.00	24.45
2483.50	38.10	---	150.0	V	223.0	-12.5	74.00	35.90

For BLE (2Mbps) Mode:

Spurious Emission Test:

30MHz-1GHz:

*(Pre-scan with low, middle and high channels of operation in the X,Y and Z axes of orientation, the worst case **low channel of operation in the Z axis of orientation** was recorded)*



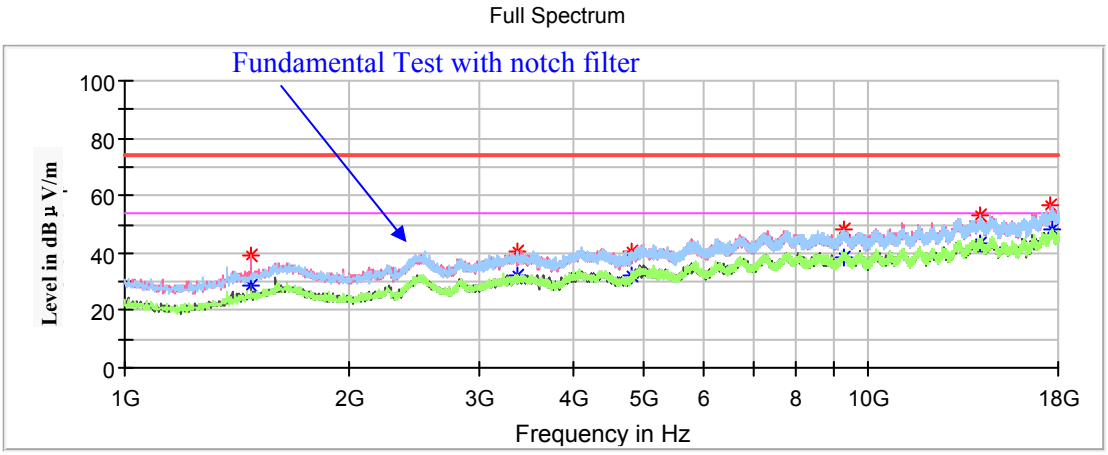
Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	Quasi-peak (dBµV/m)	Height (cm)	Polar (H/V)				
37.943450	28.87	100.0	V	124.0	-9.8	40.00	11.13
40.968850	22.38	100.0	V	71.0	-11.8	40.00	17.62
165.755800	23.54	100.0	V	220.0	-13.5	43.50	19.96
207.895000	27.56	200.0	H	244.0	-12.7	43.50	15.94
343.904550	27.78	101.0	H	162.0	-10.0	46.00	18.22
457.458450	35.91	100.0	V	198.0	-7.2	46.00	10.09

1GHz-18GHz

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

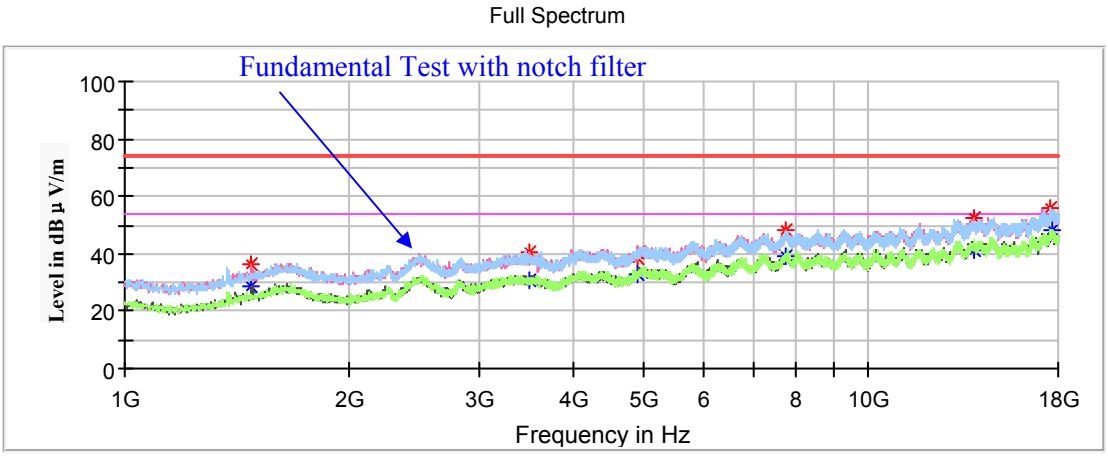
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

Low Channel: 2402MHz



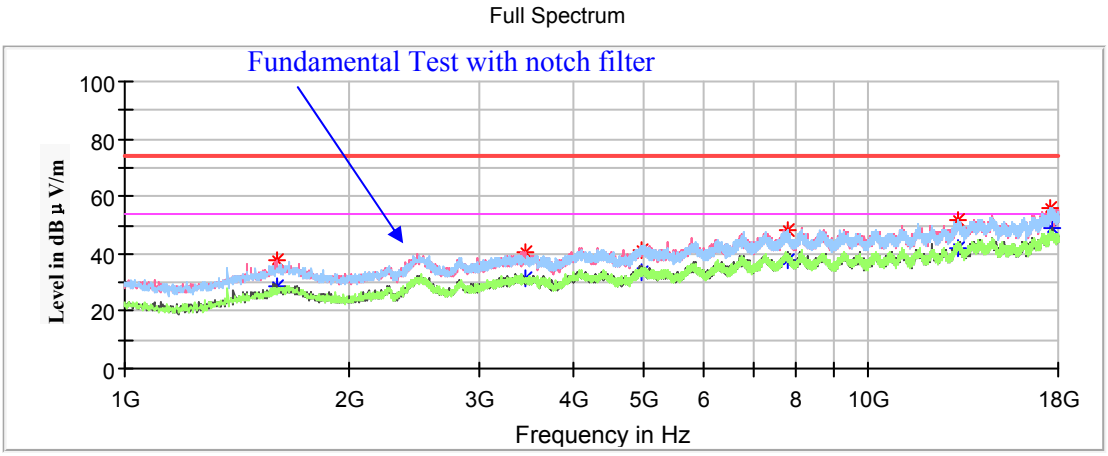
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1477.700000	---	28.51	150.0	V	235.0	-16.5	54.00	25.49
1477.700000	38.86	---	150.0	V	235.0	-16.5	74.00	35.14
3373.200000	---	31.95	150.0	H	283.0	-9.1	54.00	22.05
3373.200000	40.80	---	150.0	H	283.0	-9.1	74.00	33.20
4804.000000	---	31.90	150.0	H	128.0	-5.6	54.00	22.10
4804.000000	40.45	---	150.0	H	128.0	-5.6	74.00	33.55
9256.900000	48.24	---	150.0	V	248.0	2.0	74.00	25.76
9256.900000	---	38.79	150.0	V	248.0	2.0	54.00	15.21
14147.800000	---	43.54	150.0	H	15.0	6.3	54.00	10.46
14147.800000	53.28	---	150.0	H	15.0	6.3	74.00	20.72
17607.300000	56.65	---	150.0	V	348.0	8.9	74.00	17.35
17607.300000	---	48.41	150.0	V	348.0	8.9	54.00	5.59

Middle Channel: 2440MHz



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)				
1481.100000	---	28.40	150.0	V	244.0	-16.5	54.00	25.60
1481.100000	36.40	---	150.0	V	244.0	-16.5	74.00	37.60
3492.200000	---	31.06	150.0	V	0.0	-8.8	54.00	22.94
3492.200000	40.83	---	150.0	V	0.0	-8.8	74.00	33.17
4880.000000	---	32.66	150.0	H	0.0	-5.4	54.00	21.34
4880.000000	38.49	---	150.0	H	0.0	-5.4	74.00	35.51
7752.400000	---	39.46	150.0	V	155.0	1.4	54.00	14.54
7752.400000	48.24	---	150.0	V	155.0	1.4	74.00	25.76
13874.100000	---	41.54	150.0	H	231.0	6.0	54.00	12.46
13874.100000	52.25	---	150.0	H	231.0	6.0	74.00	21.75
17592.000000	56.07	---	150.0	H	168.0	8.9	74.00	17.93
17592.000000	---	48.41	150.0	H	168.0	8.9	54.00	5.59

High Channel: 2480MHz

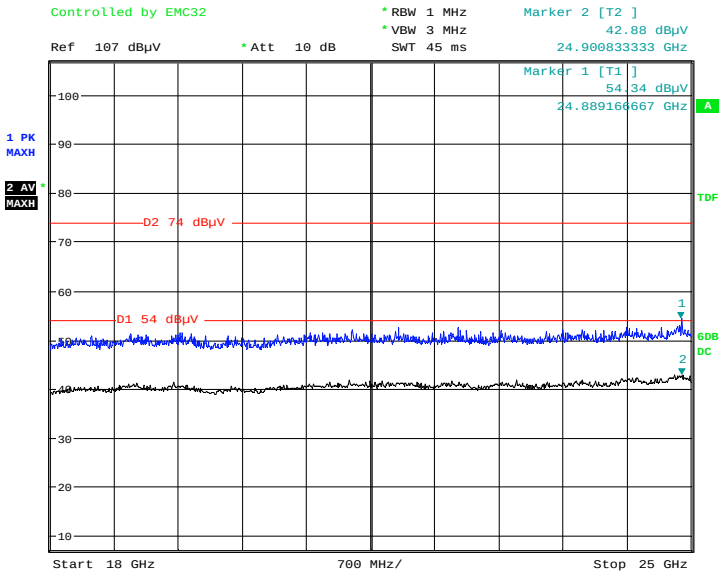


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1598.400000	---	28.49	150.0	V	238.0	-16.0	54.00	25.51
1598.400000	38.08	---	150.0	V	238.0	-16.0	74.00	35.92
3461.600000	---	31.14	150.0	V	301.0	-8.9	54.00	22.86
3461.600000	40.82	---	150.0	V	301.0	-8.9	74.00	33.18
4960.000000	---	33.53	150.0	V	148.0	-5.3	54.00	20.47
4960.000000	41.30	---	150.0	V	148.0	-5.3	74.00	32.70
7811.900000	---	37.63	150.0	V	200.0	1.5	54.00	16.37
7811.900000	48.26	---	150.0	V	200.0	1.5	74.00	25.74
13161.800000	---	42.04	150.0	H	191.0	5.4	54.00	11.96
13161.800000	51.95	---	150.0	H	191.0	5.4	74.00	22.05
17660.000000	56.04	---	150.0	H	204.0	8.9	74.00	17.96
17660.000000	---	48.79	150.0	H	204.0	8.9	54.00	5.21

18GHz-25GHz

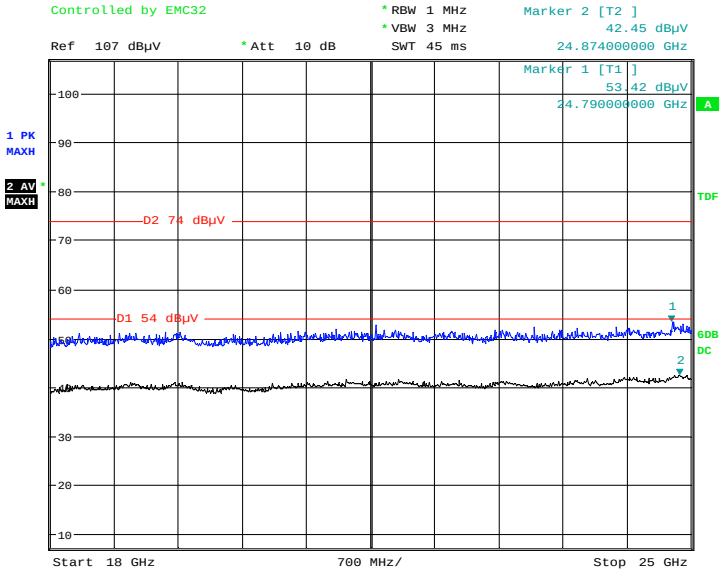
*(The worst case **low channel of operation in the Z axis of orientation** was recorded)*

Horizontal



Date: 5.OCT.2020 17:26:18

Vertical



Date: 5.OCT.2020 17:18:45

Restricted Bands Emissions Test:

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

Note:

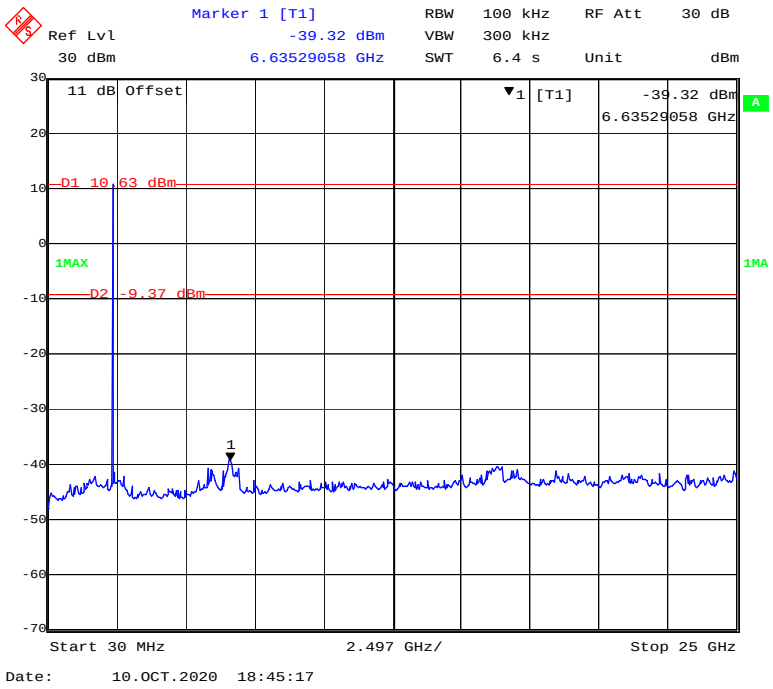
1. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

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: 2402MHz								
2390.00	---	27.80	150.0	V	272.0	-12.9	54.00	26.20
2390.00	36.81	---	150.0	V	272.0	-12.9	74.00	37.19
High Channel: 2480MHz								
2483.50	---	28.64	150.0	V	249.0	-12.5	54.00	25.36
2483.50	38.91	---	150.0	V	249.0	-12.5	74.00	35.09

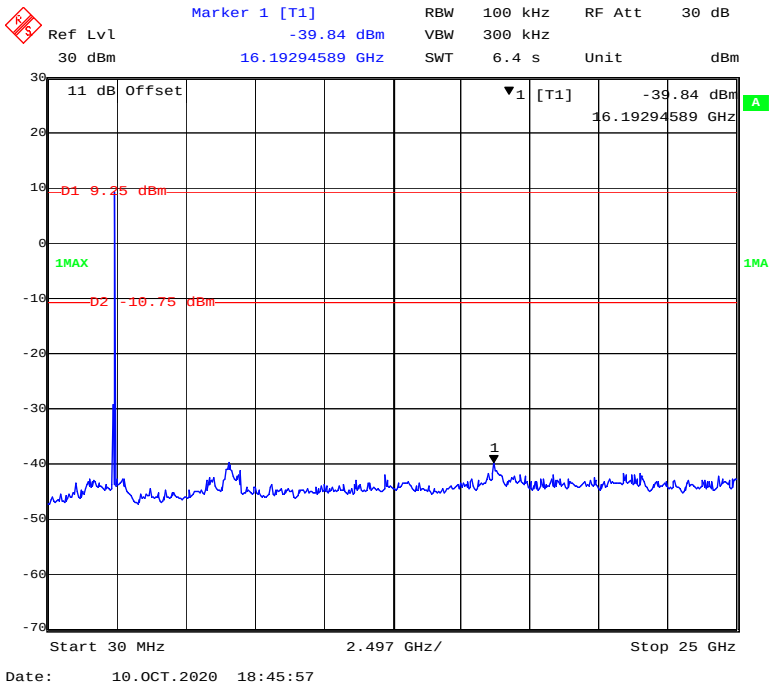
Conducted Spurious Emissions at Antenna Port

Chain0

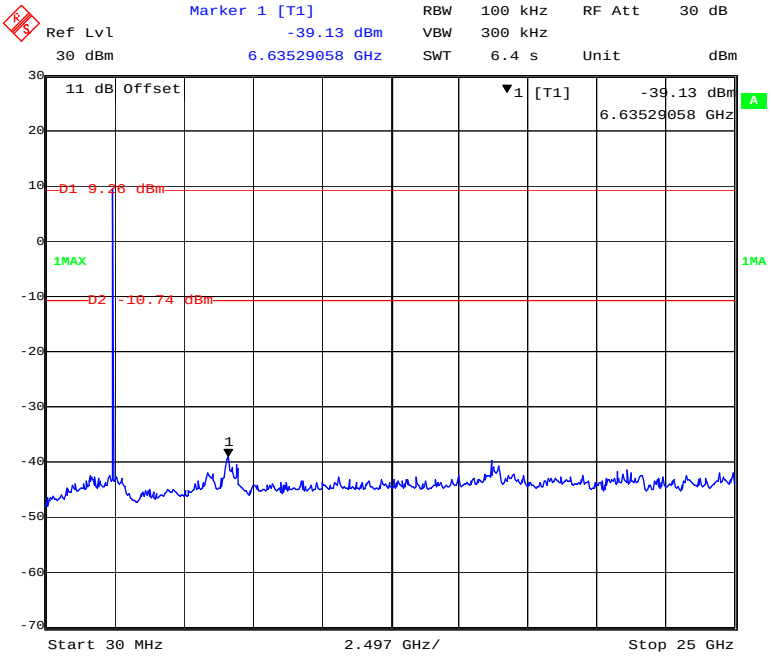
802.11b Mode Low Channel



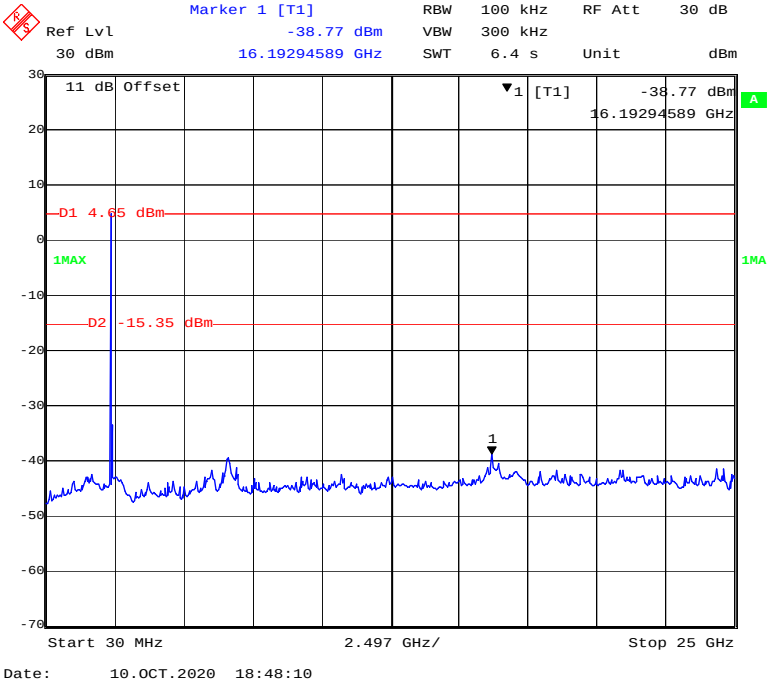
802.11b Mode Middle Channel



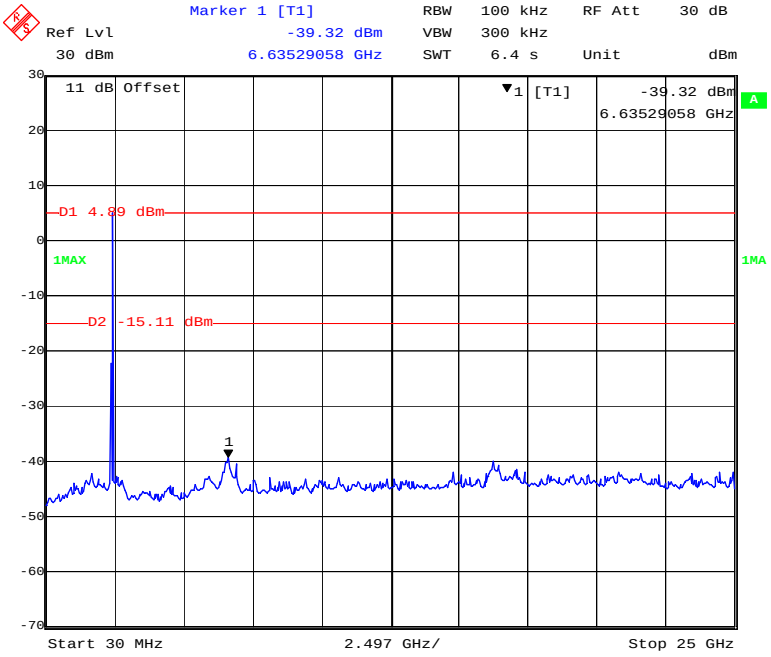
802.11b Mode High Channel



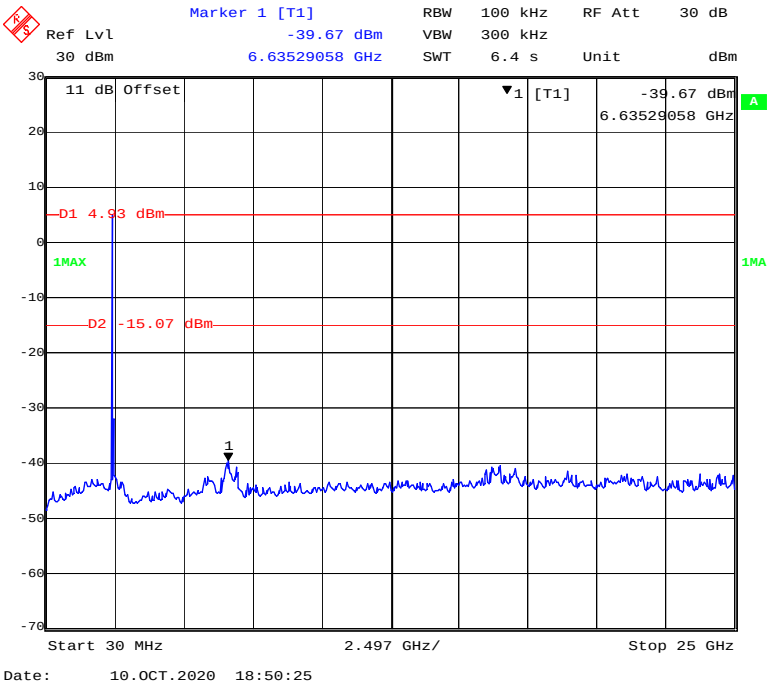
802.11g Mode Low Channel



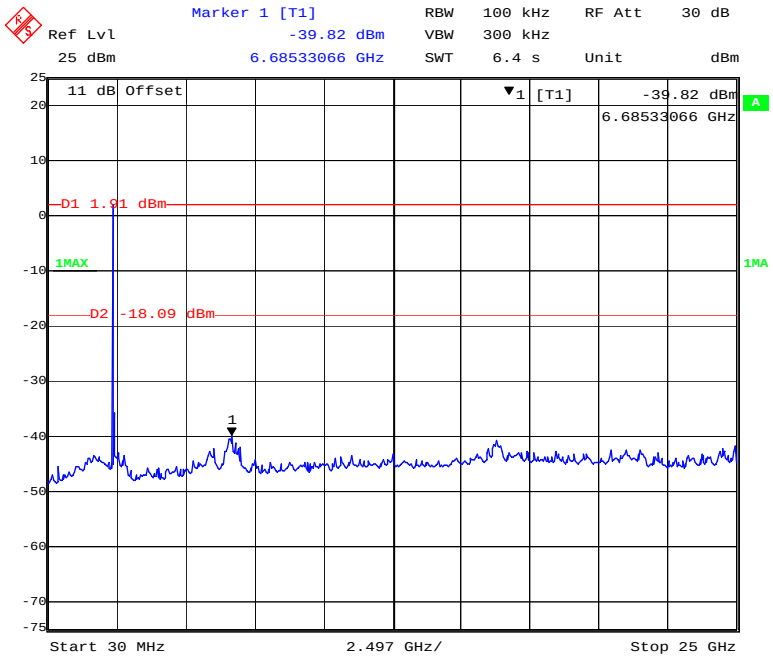
802.11g Mode Middle Channel



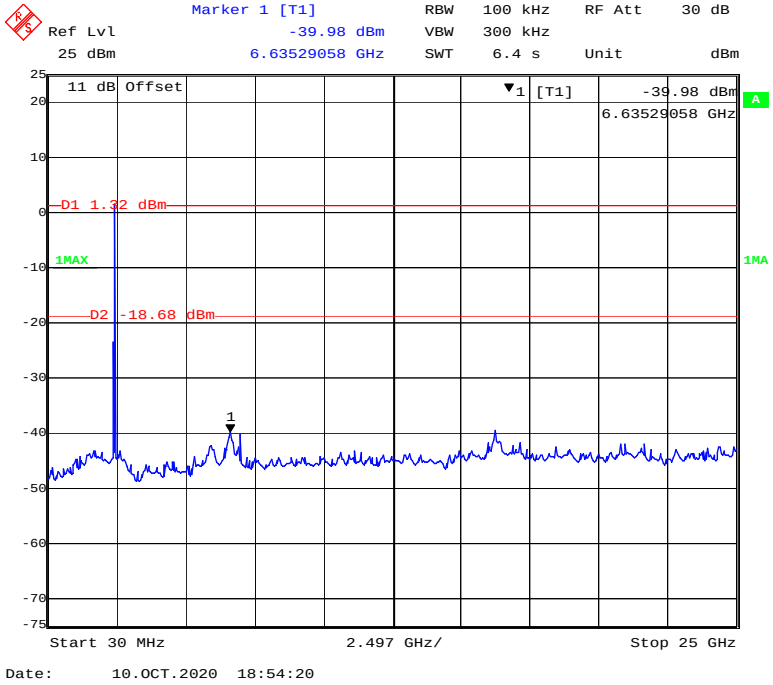
802.11g Mode High Channel



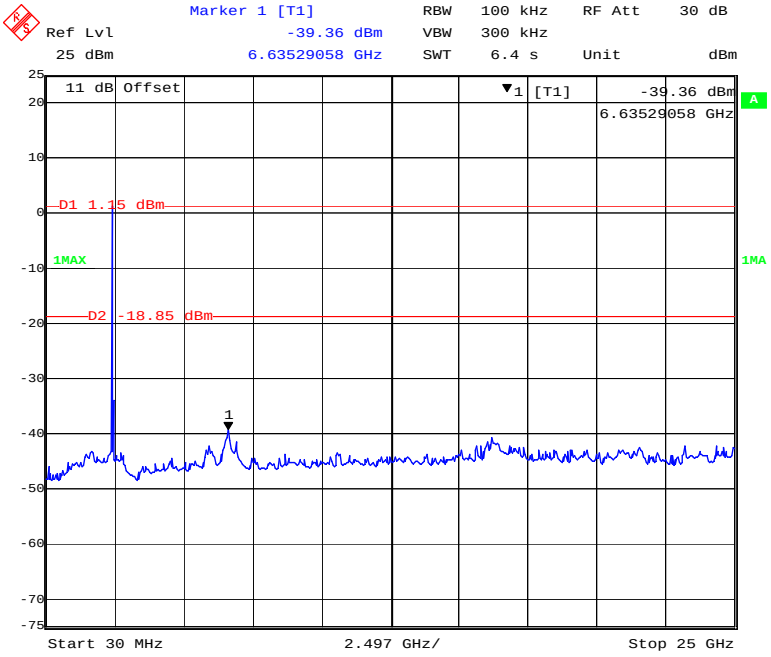
802.11n-HT20 Mode Low Channel



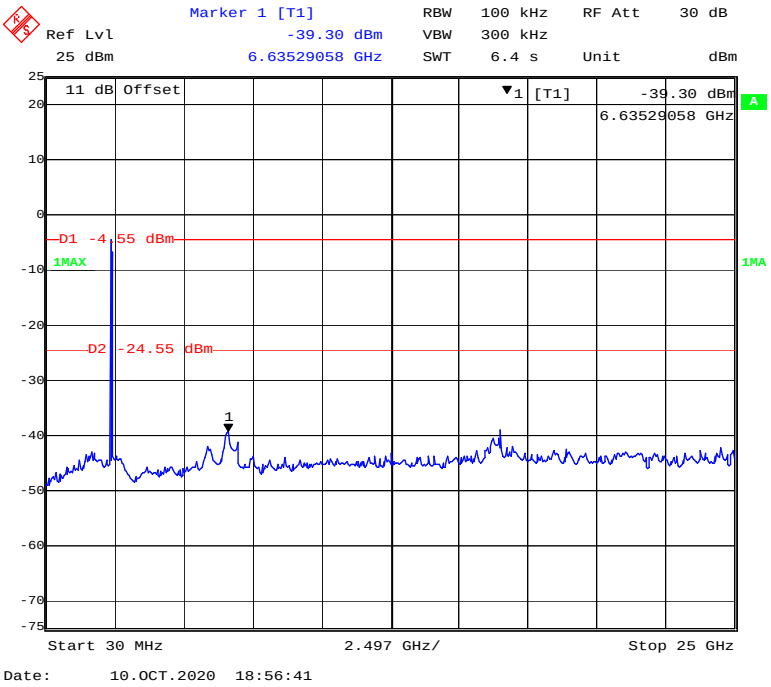
802.11n-HT20 Mode Middle Channel



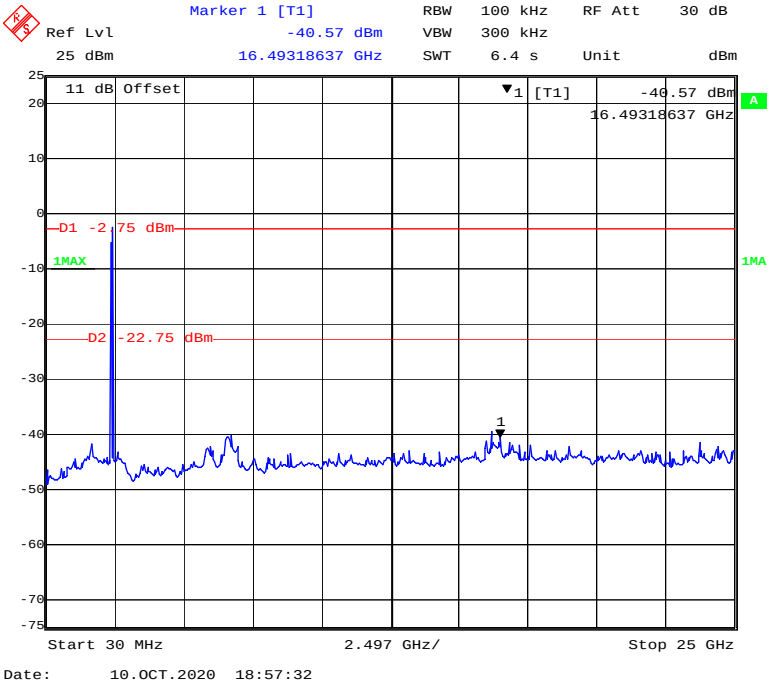
802.11n-HT20 Mode High Channel



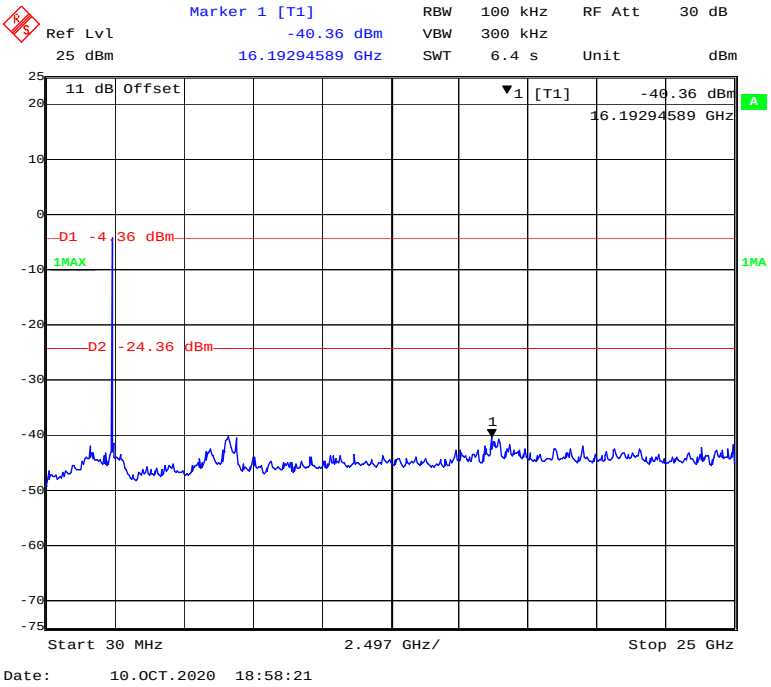
802.11n-HT40 Mode Low Channel



802.11n-HT40 Mode Middle Channel

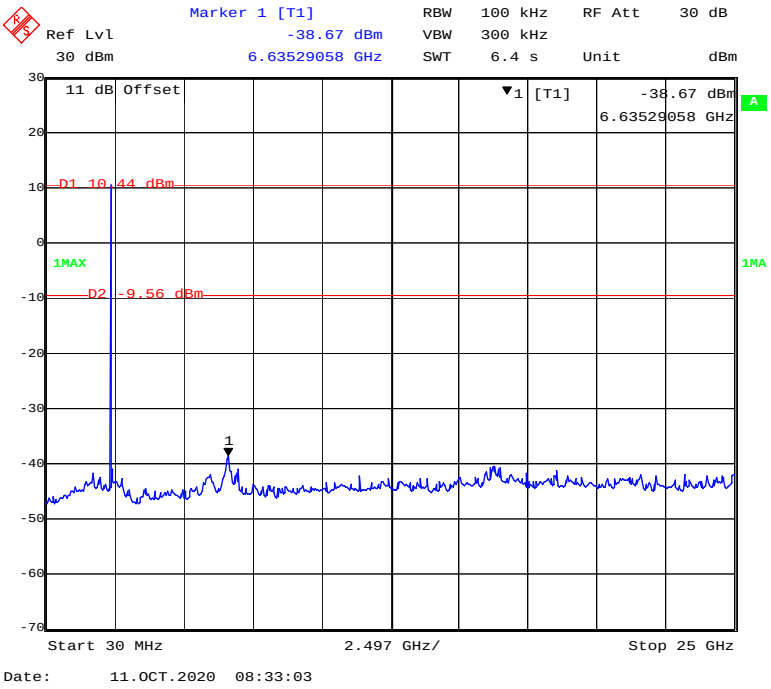


802.11n-HT40 Mode High Channel

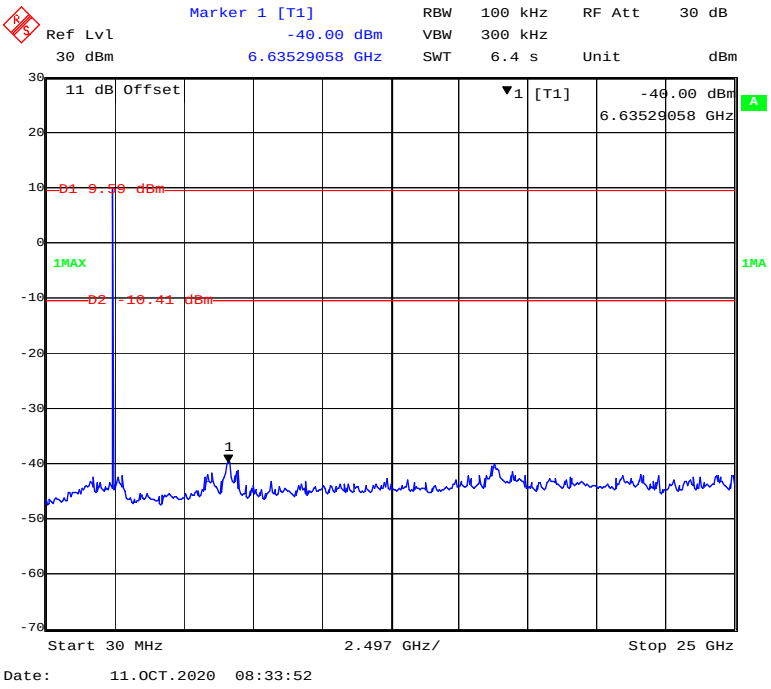


Chain1

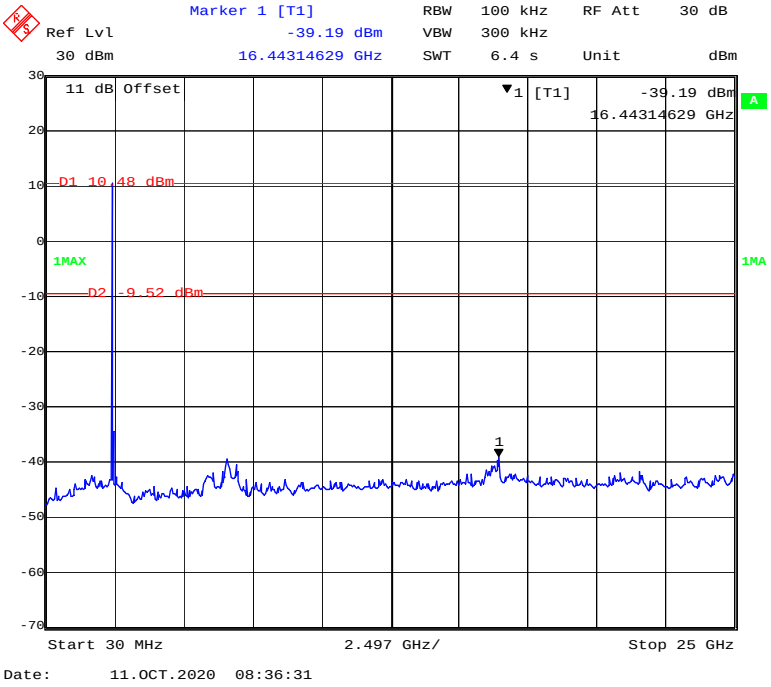
802.11b Mode Low Channel



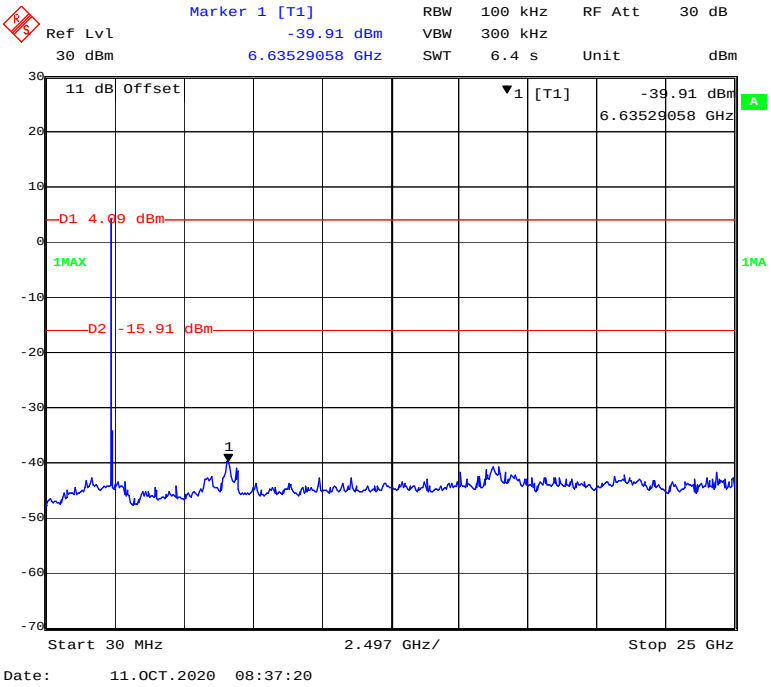
802.11b Mode Middle Channel



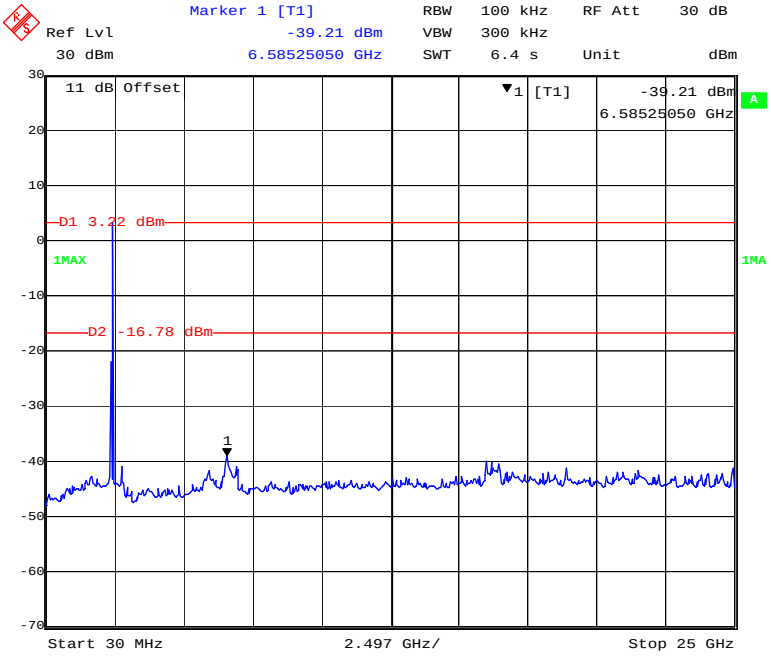
802.11b Mode High Channel



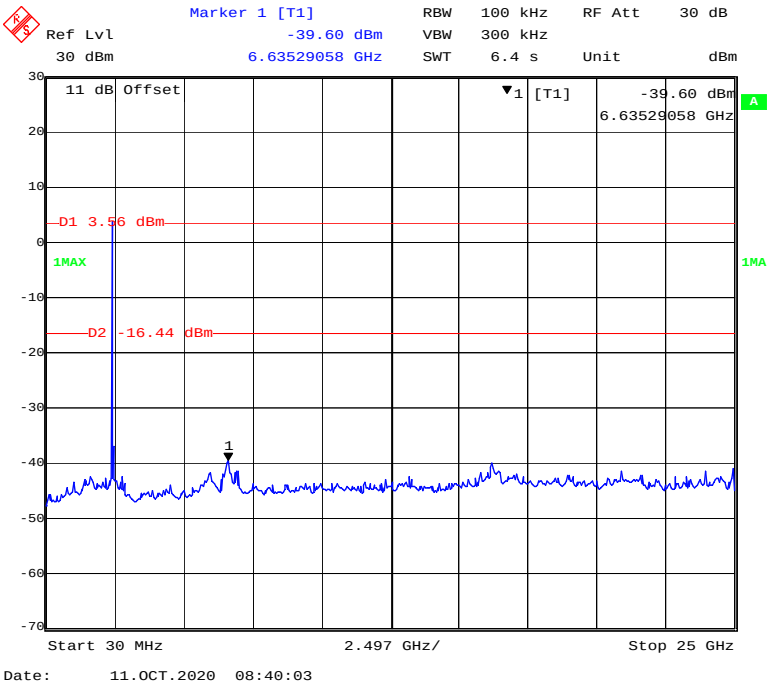
802.11g Mode Low Channel



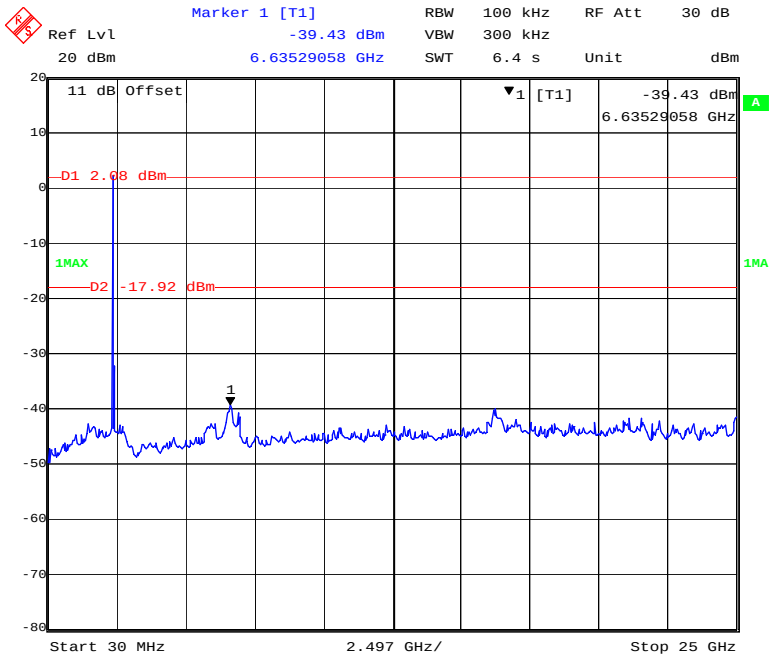
802.11g Mode Middle Channel



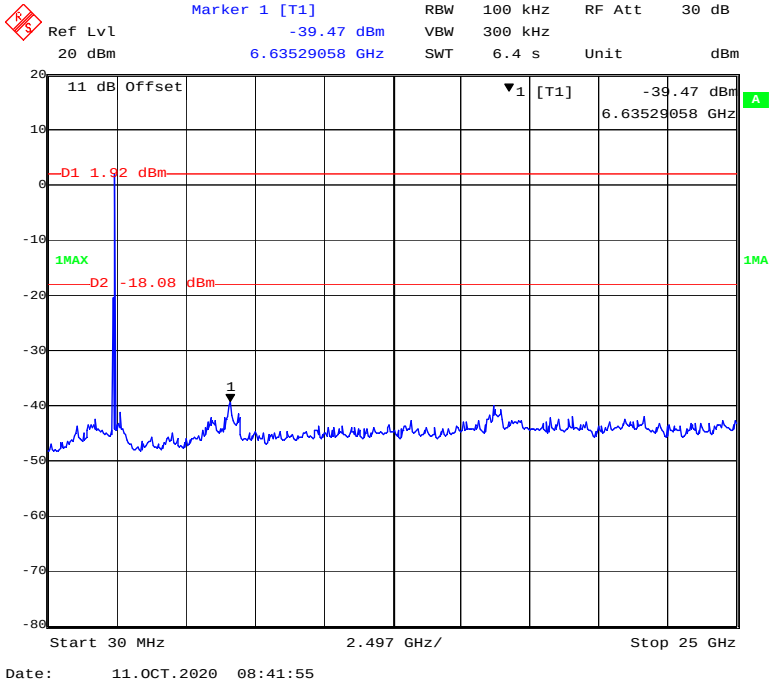
802.11g Mode High Channel



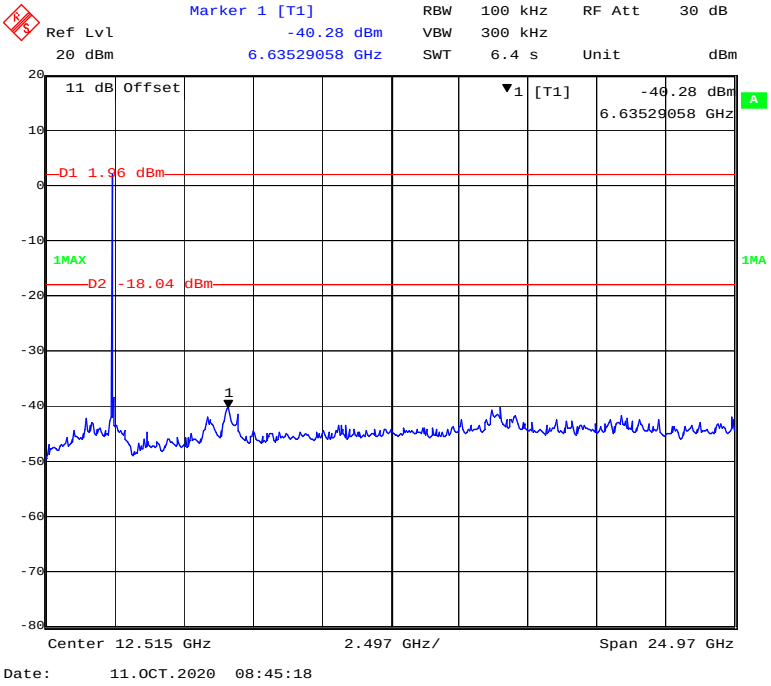
802.11n-HT20 Mode Low Channel



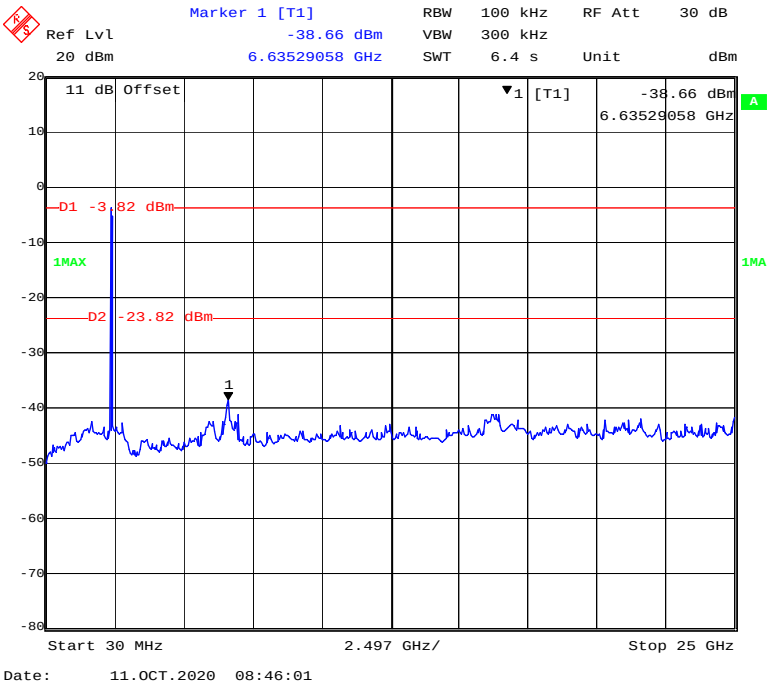
802.11n-HT20 Mode Middle Channel



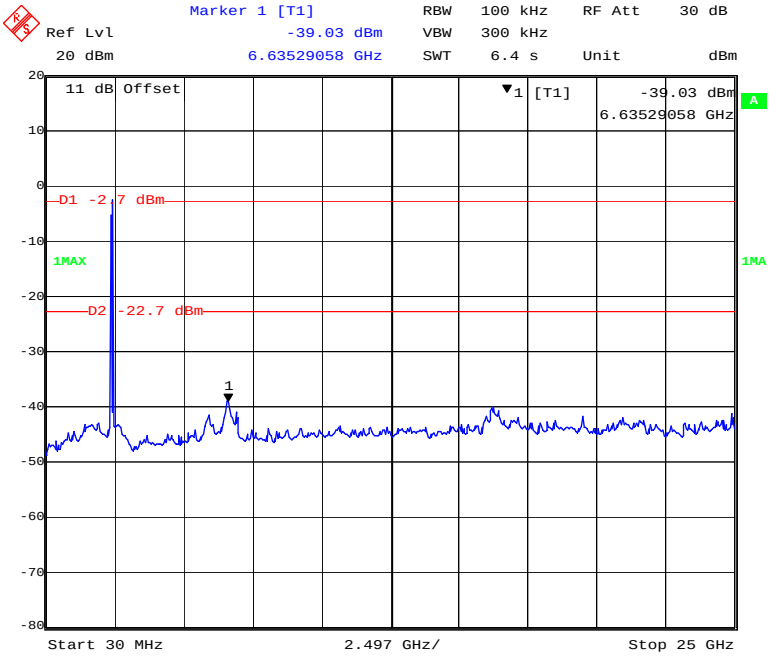
802.11n-HT20 Mode High Channel



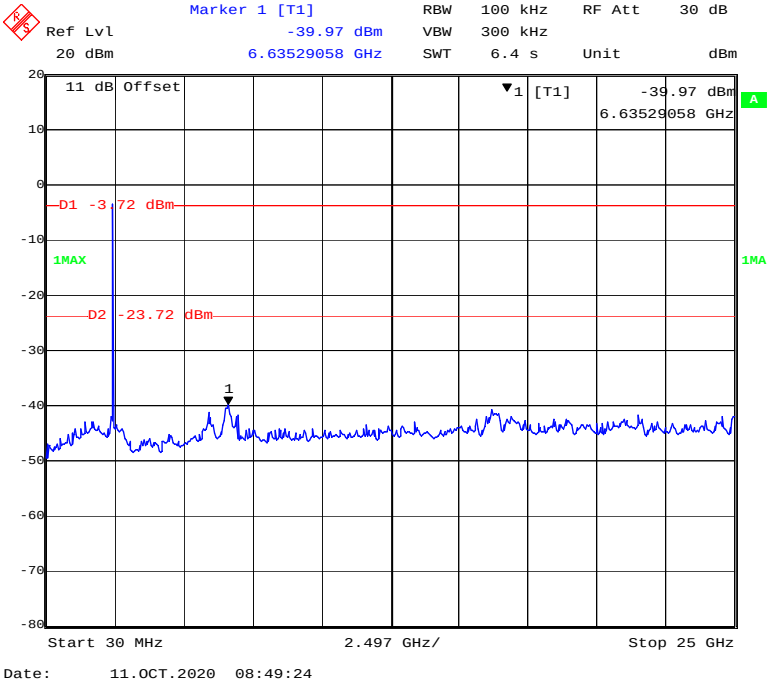
802.11n-HT40 Mode Low Channel



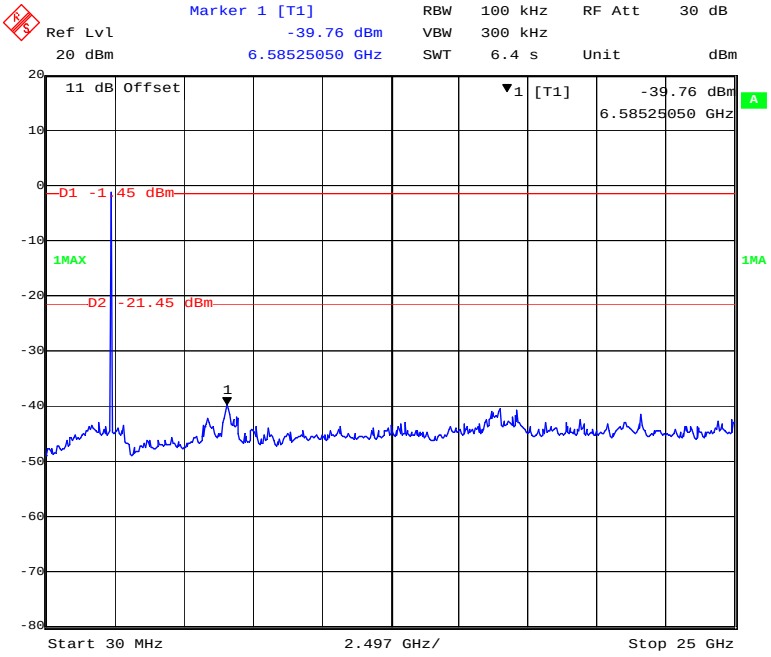
802.11n-HT40 Mode Middle Channel



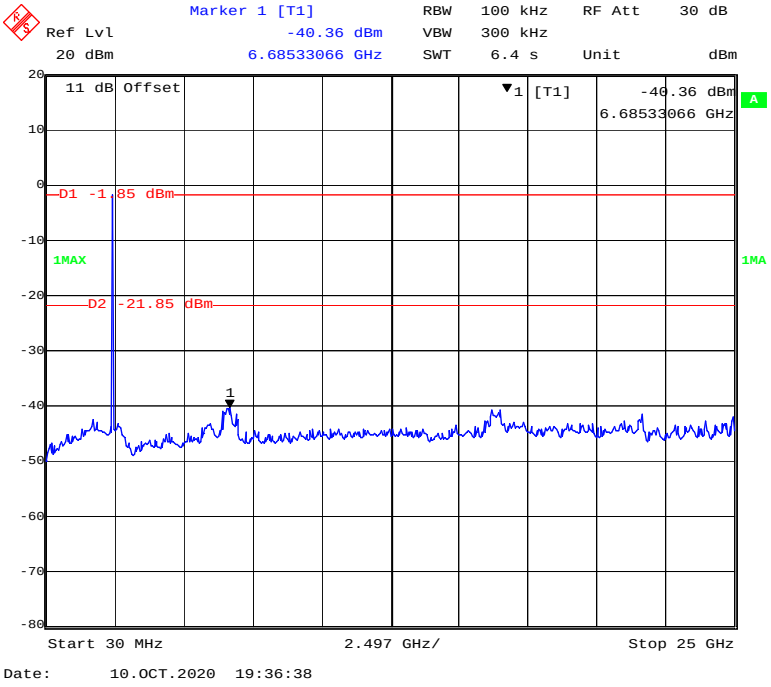
802.11n-HT40 Mode High Channel



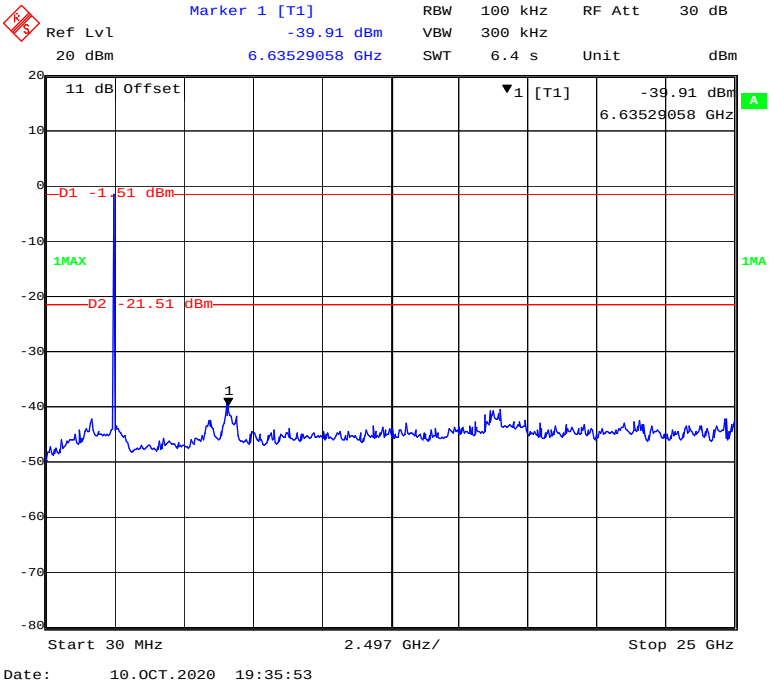
BLE (1Mbps) Mode Low Channel



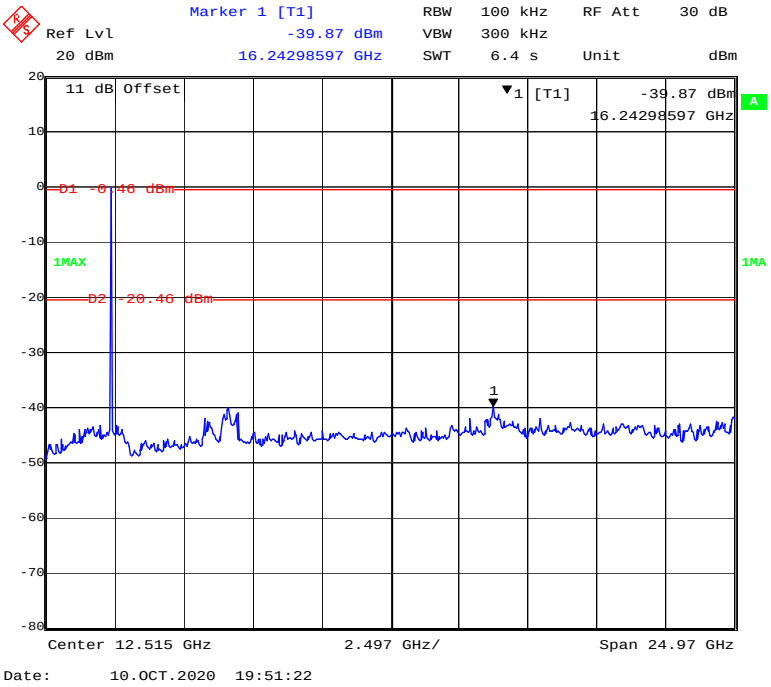
BLE (1Mbps) Mode Middle Channel



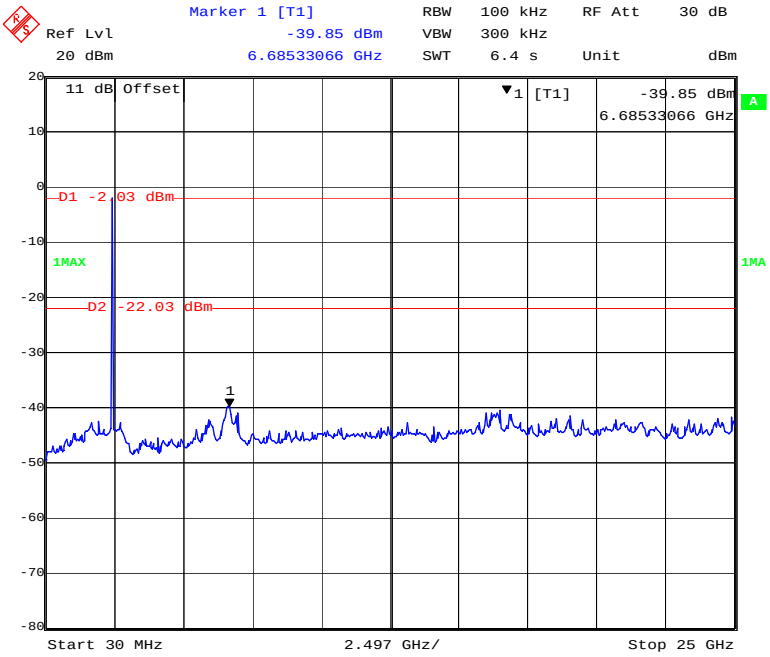
BLE (1Mbps) Mode High Channel



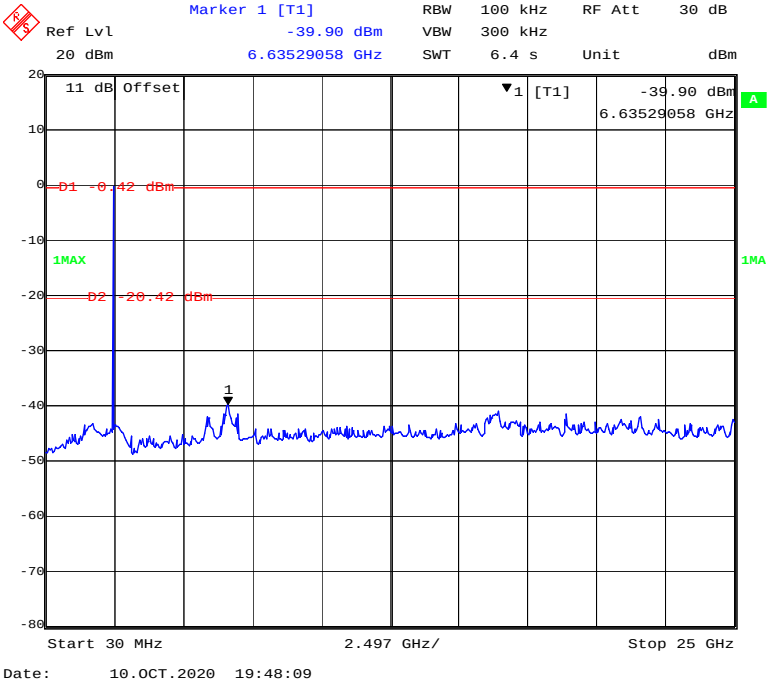
BLE (2Mbps) Mode Low Channel



BLE (2Mbps) Mode Middle Channel



BLE (2Mbps) Mode High Channel



FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

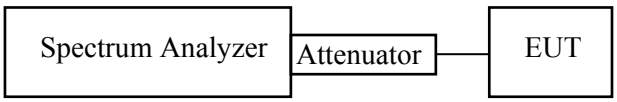
Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.8.1

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



Test Data

Environmental Conditions

Temperature:	22.5-24.3 ℃
Relative Humidity:	46-50 %
ATM Pressure:	101.2-101.5 kPa

The testing was performed by CK Huang from 2020-10-10 to 2020-11-12.

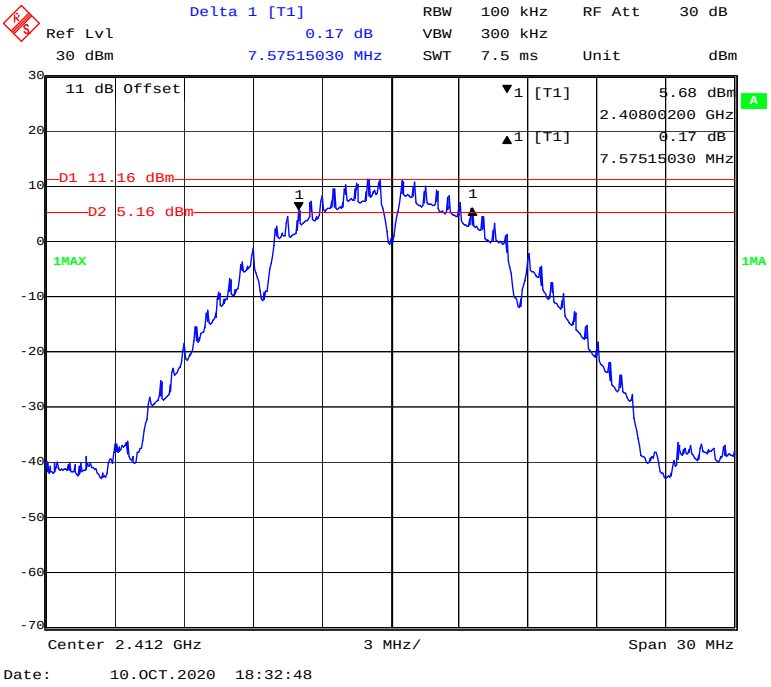
EUT operation mode: Transmitting

Test Result: Compliant.

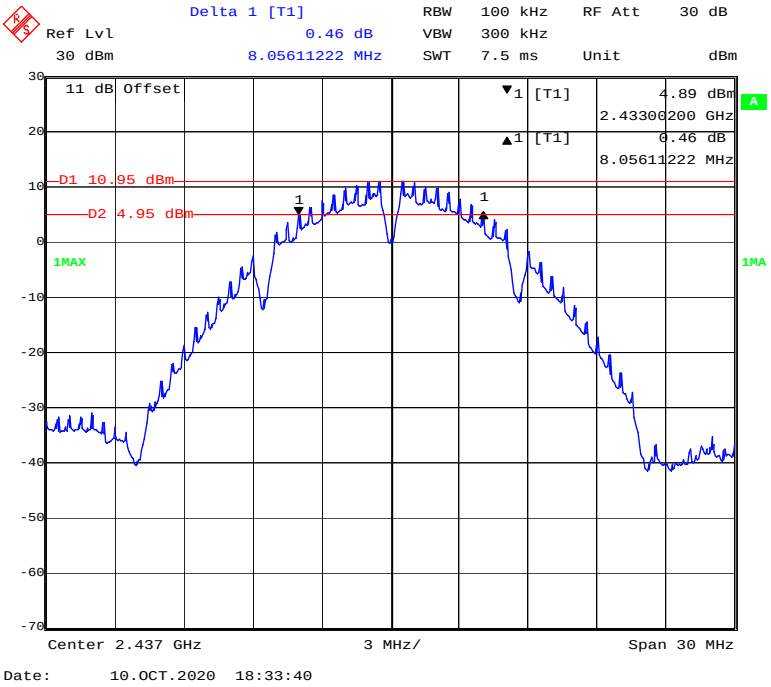
Chain0

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
802.11b Mode			
Low	2412	7.575	≥0.5
Middle	2437	8.056	≥0.5
High	2462	7.575	≥0.5
802.11g Mode			
Low	2412	15.210	≥0.5
Middle	2437	15.932	≥0.5
High	2462	15.691	≥0.5
802.11n-HT20 Mode			
Low	2412	15.210	≥0.5
Middle	2437	16.533	≥0.5
High	2462	15.992	≥0.5
802.11n-HT40 Mode			
Low	2422	35.711	≥0.5
Middle	2437	36.313	≥0.5
High	2452	35.351	≥0.5

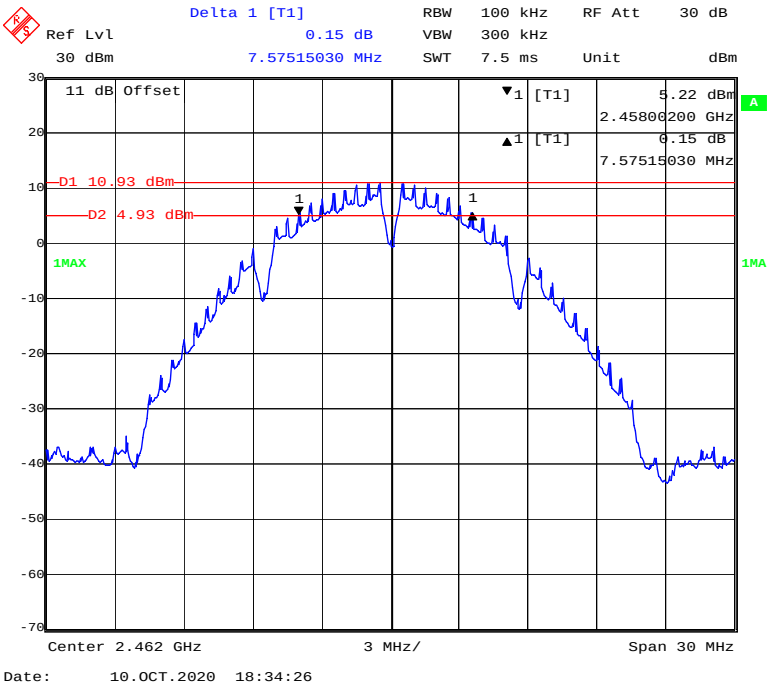
802.11b Mode Low Channel



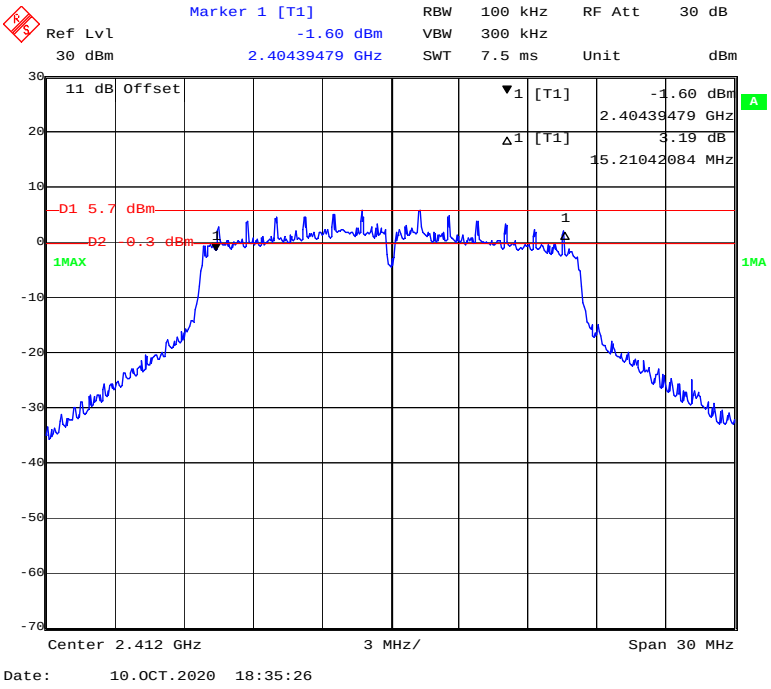
802.11b Mode Middle Channel



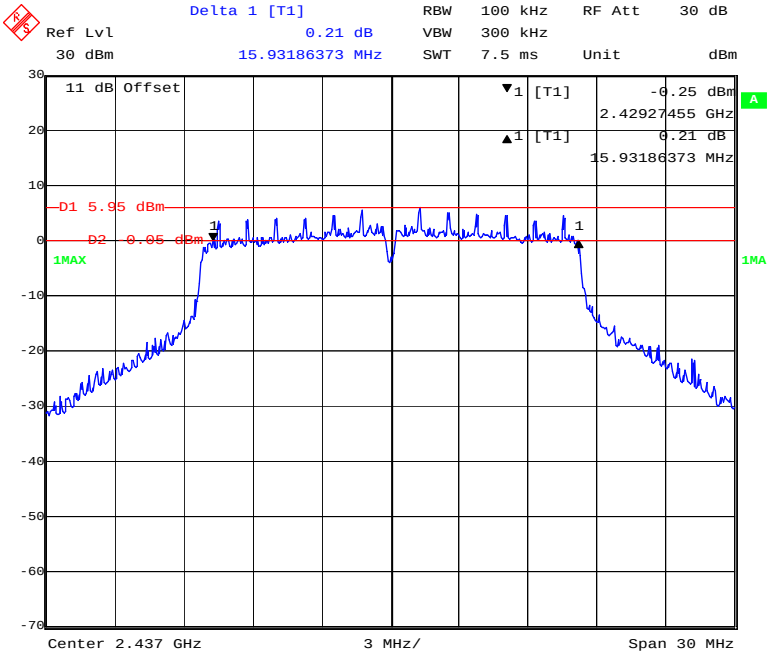
802.11b Mode High Channel



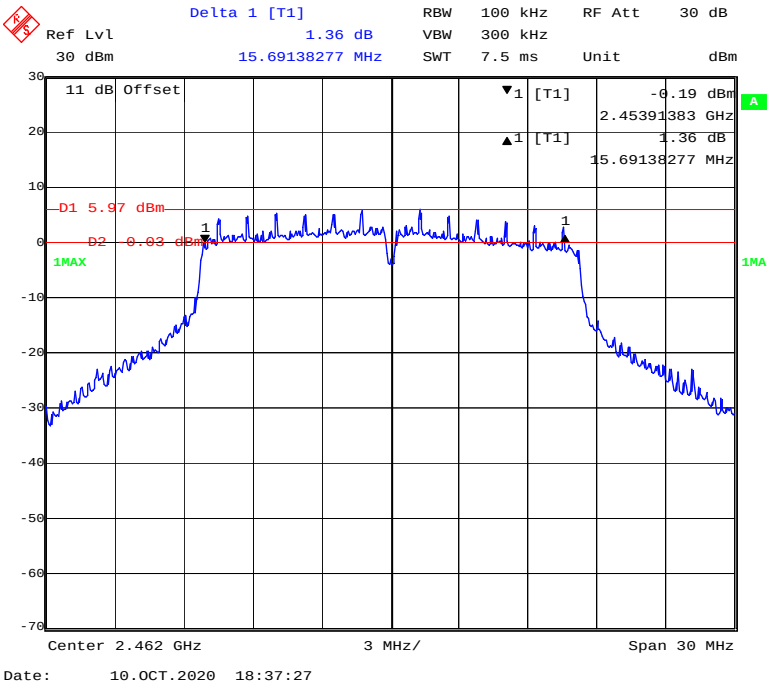
802.11g Mode Low Channel



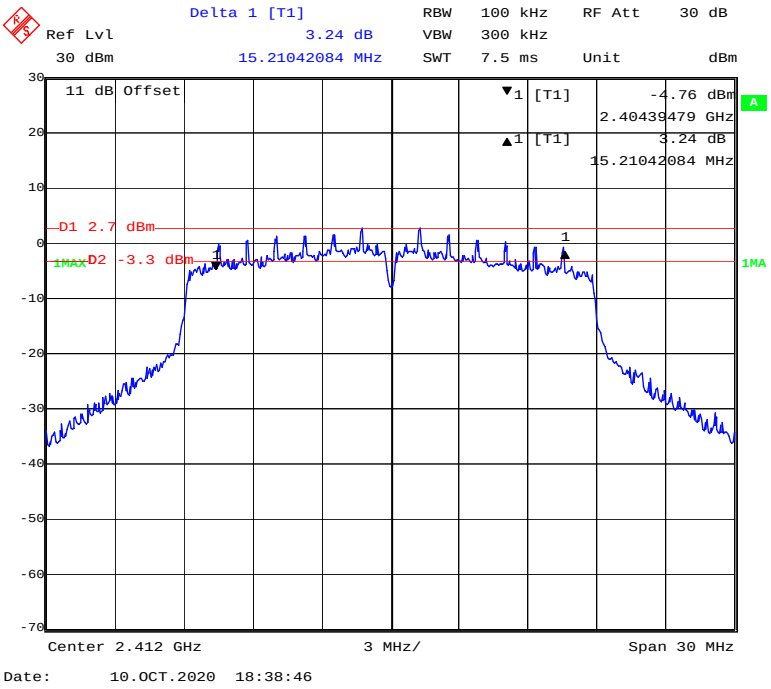
802.11g Mode Middle Channel



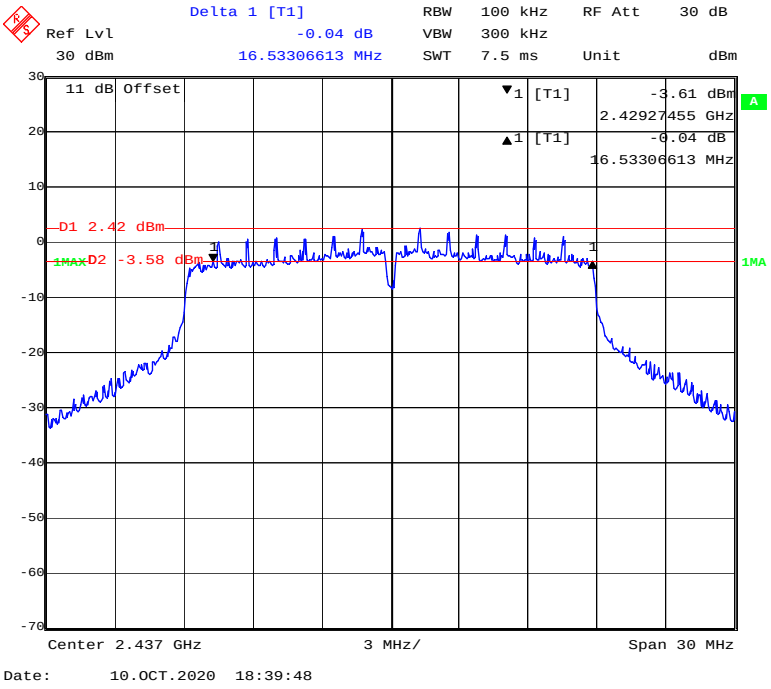
802.11g Mode High Channel



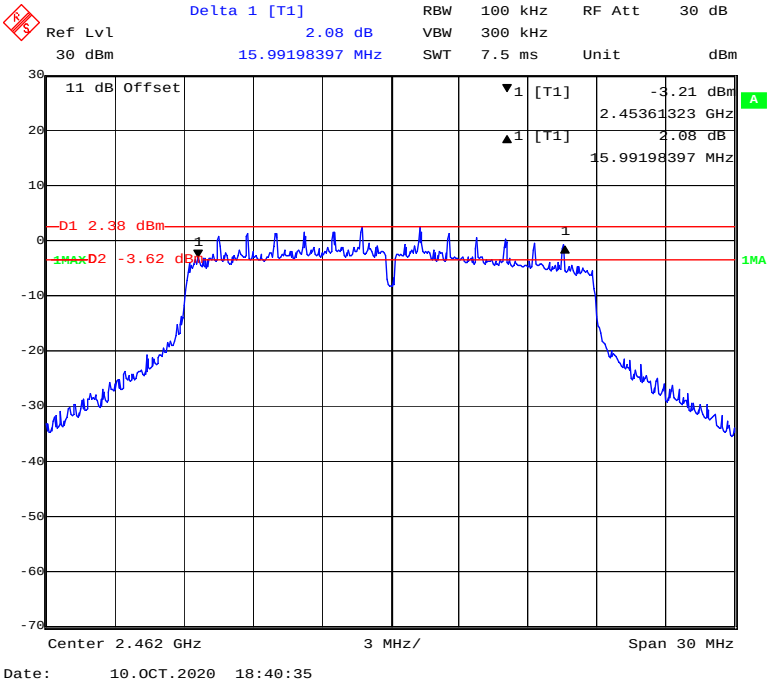
802.11n-HT20 Mode Low Channel



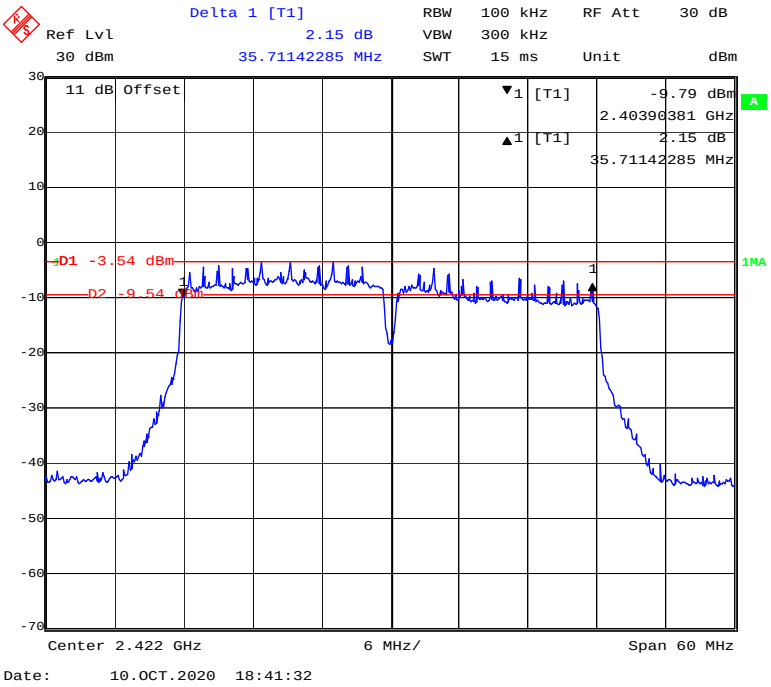
802.11n-HT20 Mode Middle Channel



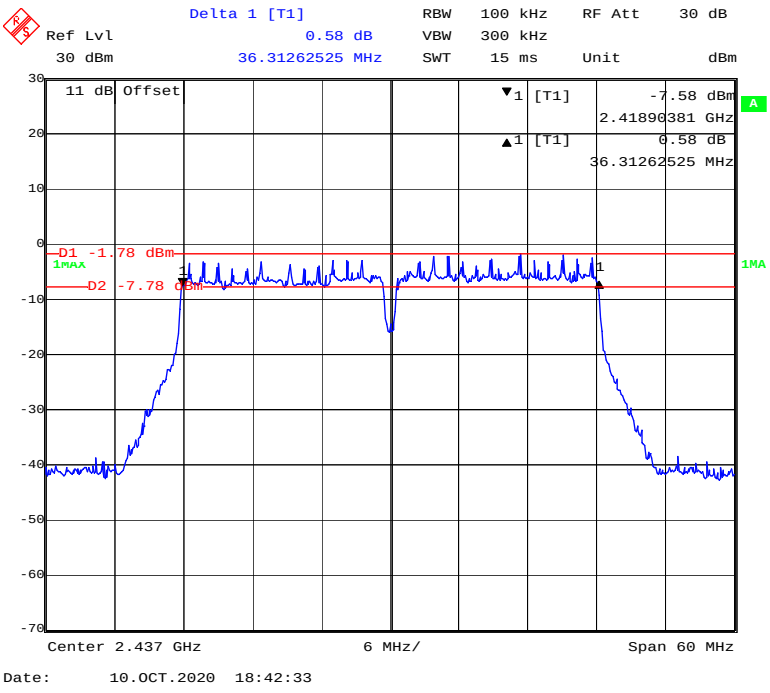
802.11n-HT20 Mode High Channel



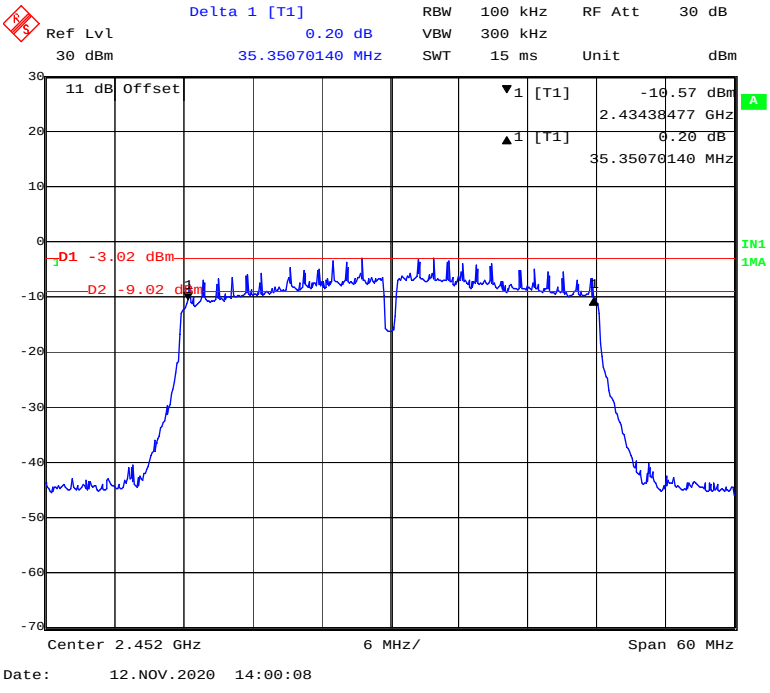
802.11n-HT40 Mode Low Channel



802.11n-HT40 Mode Middle Channel



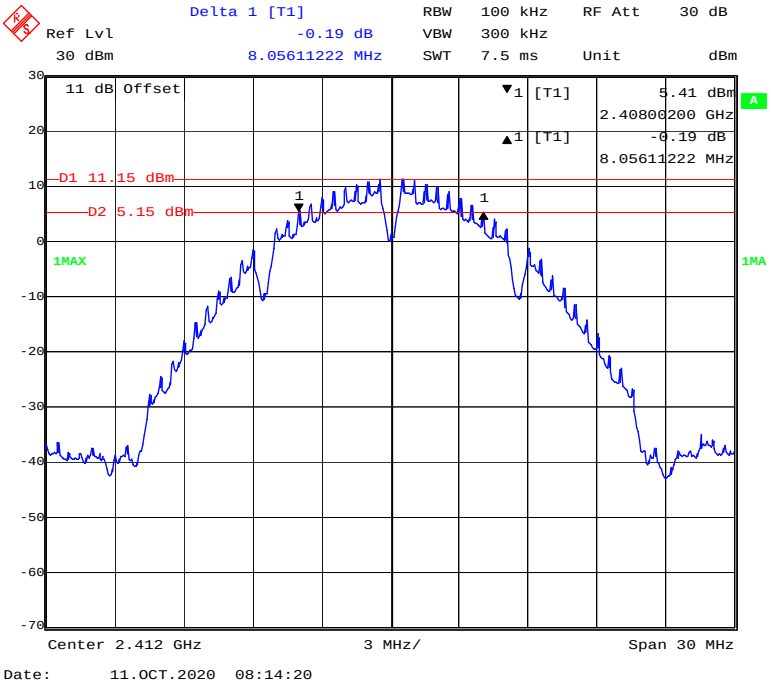
802.11n-HT40 Mode High Channel



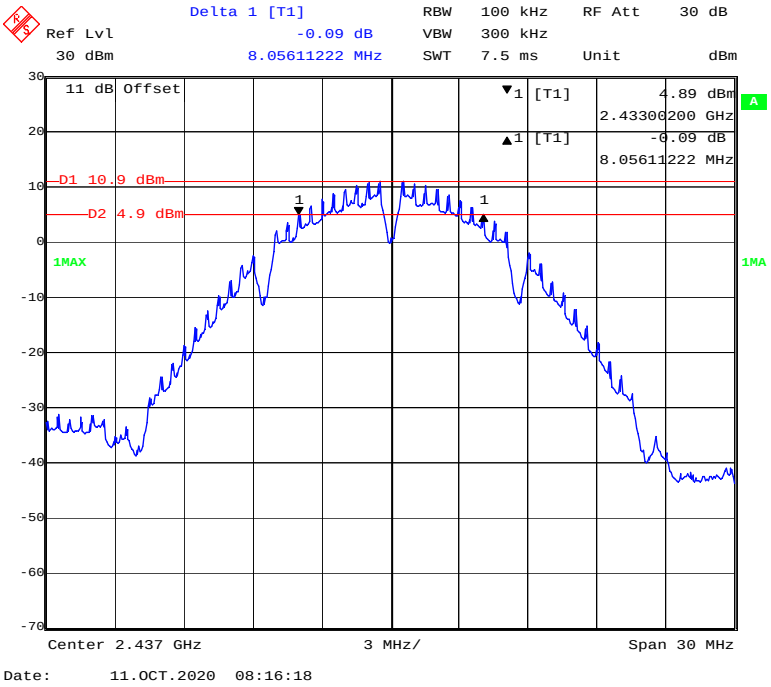
Chain1

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
802.11b Mode			
Low	2412	8.056	≥0.5
Middle	2437	8.056	≥0.5
High	2462	7.575	≥0.5
802.11g Mode			
Low	2412	15.331	≥0.5
Middle	2437	16.353	≥0.5
High	2462	15.872	≥0.5
802.11n-HT20 Mode			
Low	2412	15.992	≥0.5
Middle	2437	16.894	≥0.5
High	2462	16.172	≥0.5
802.11n-HT40 Mode			
Low	2422	35.351	≥0.5
Middle	2437	36.433	≥0.5
High	2452	35.351	≥0.5

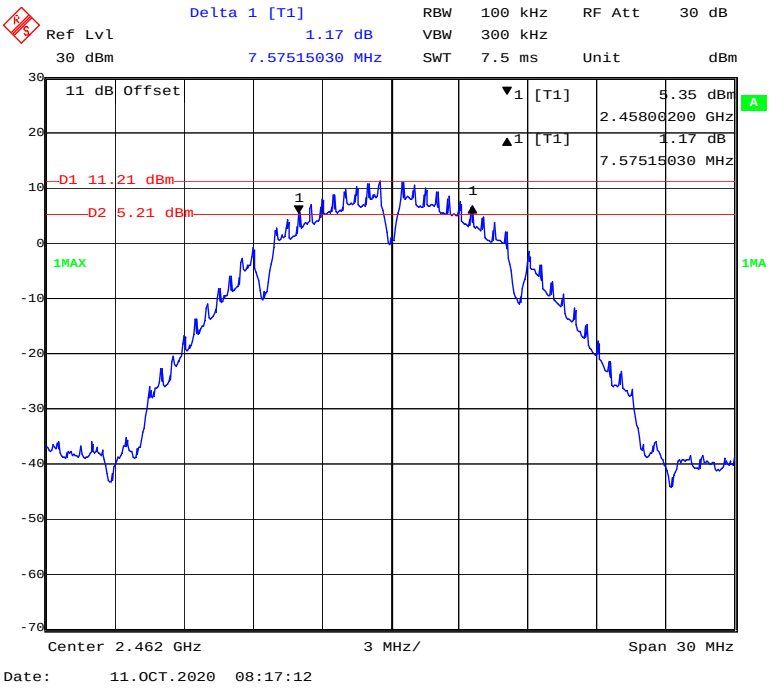
802.11b Mode Low Channel



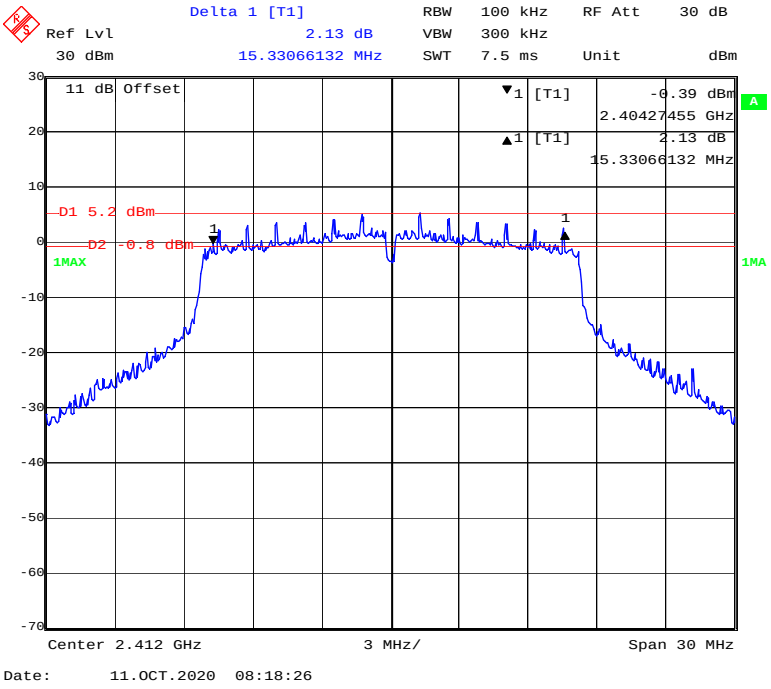
802.11b Mode Middle Channel



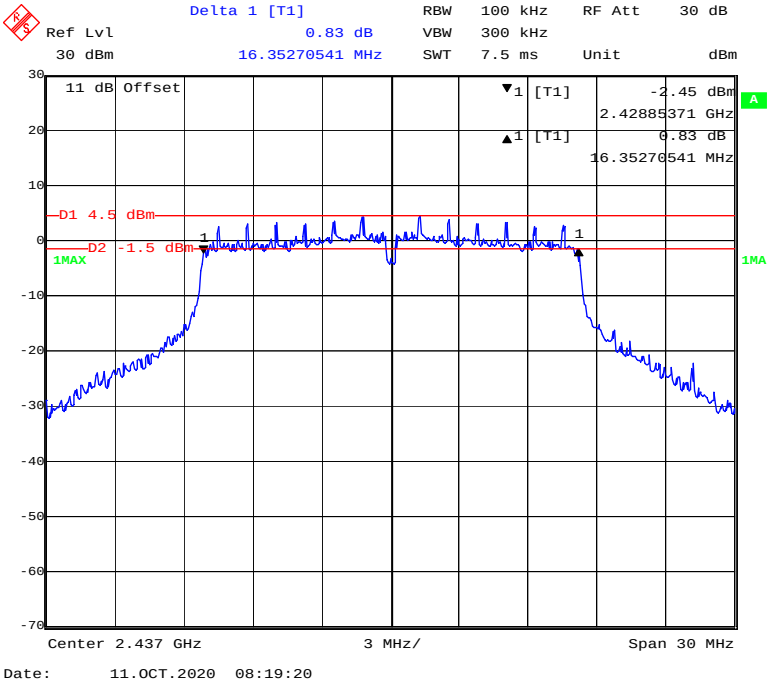
802.11b Mode High Channel



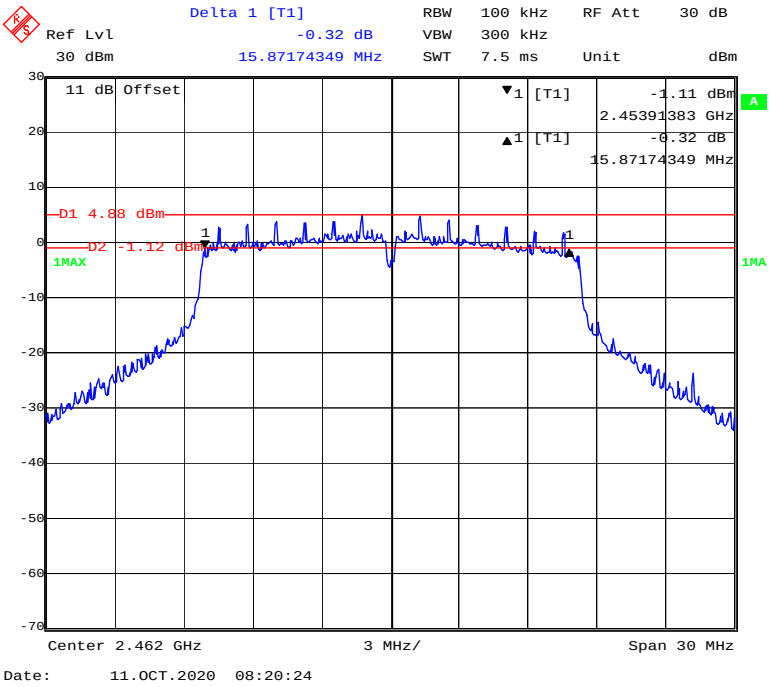
802.11g Mode Low Channel



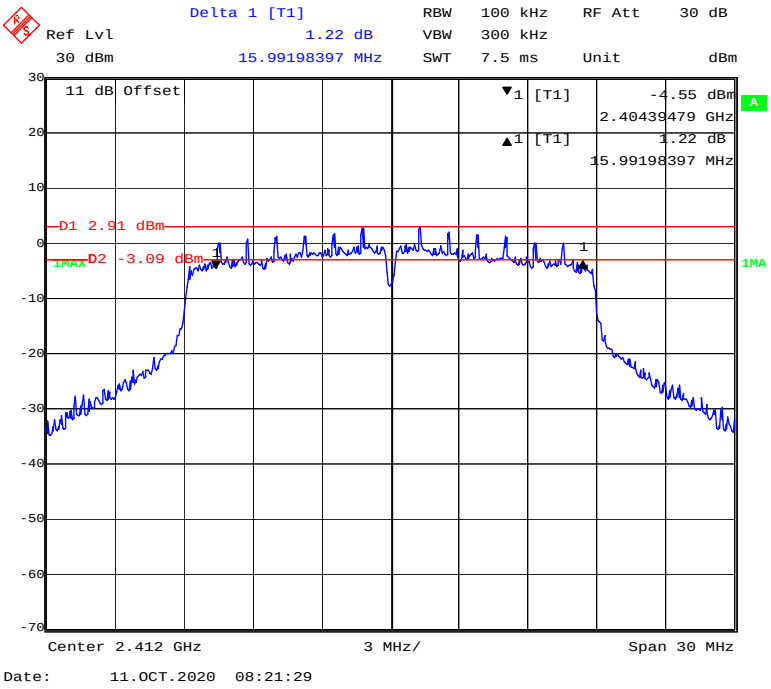
802.11g Mode Middle Channel



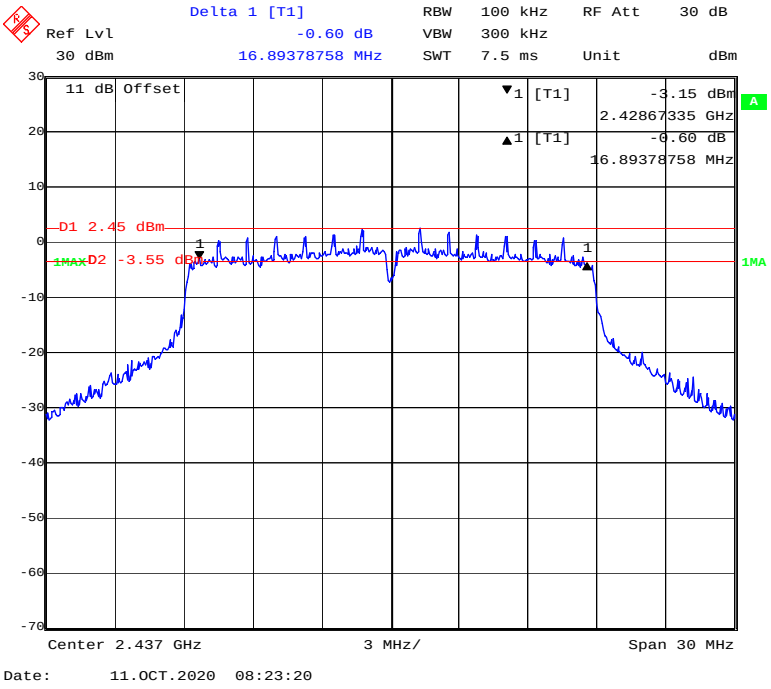
802.11g Mode High Channel



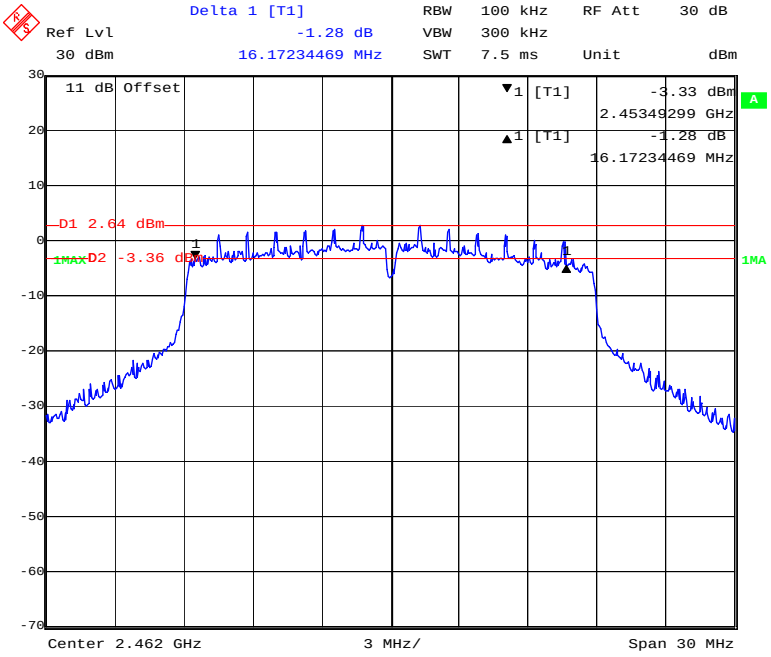
802.11n-HT20 Mode Low Channel



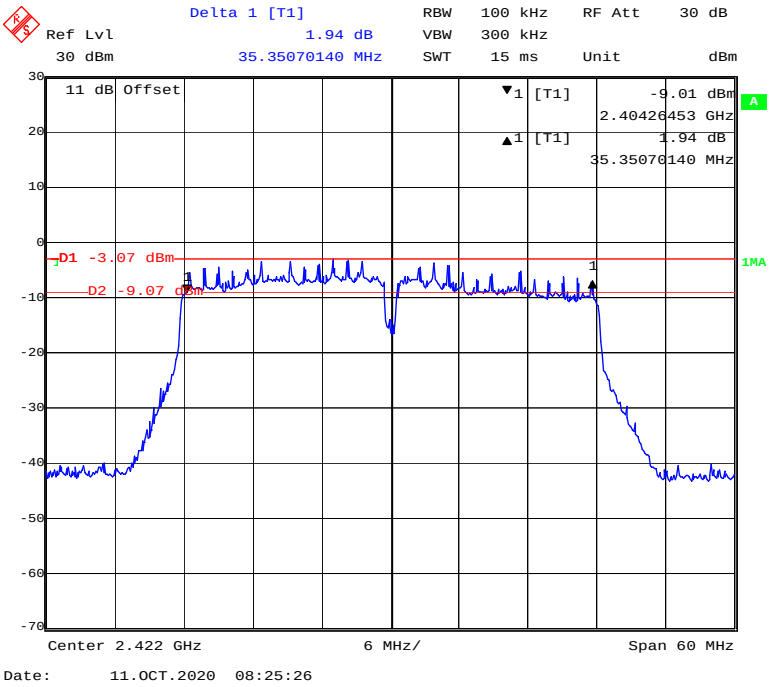
802.11n-HT20 Mode Middle Channel



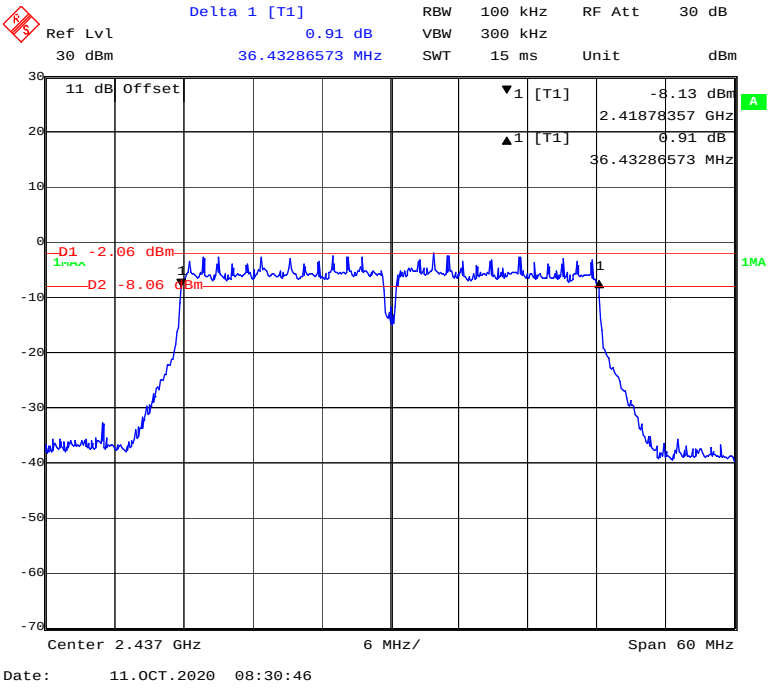
802.11n-HT20 Mode High Channel



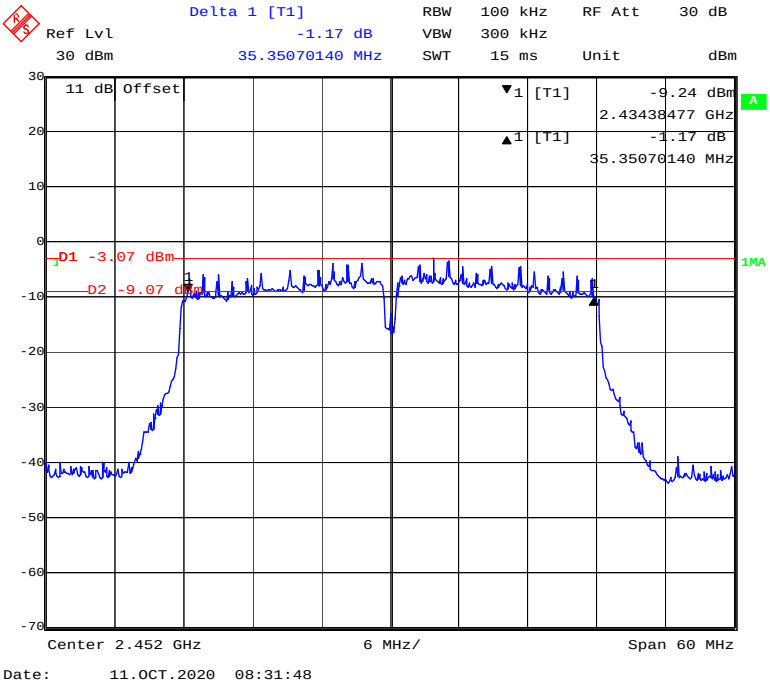
802.11n-HT40 Mode Low Channel



802.11n-HT40 Mode Middle Channel

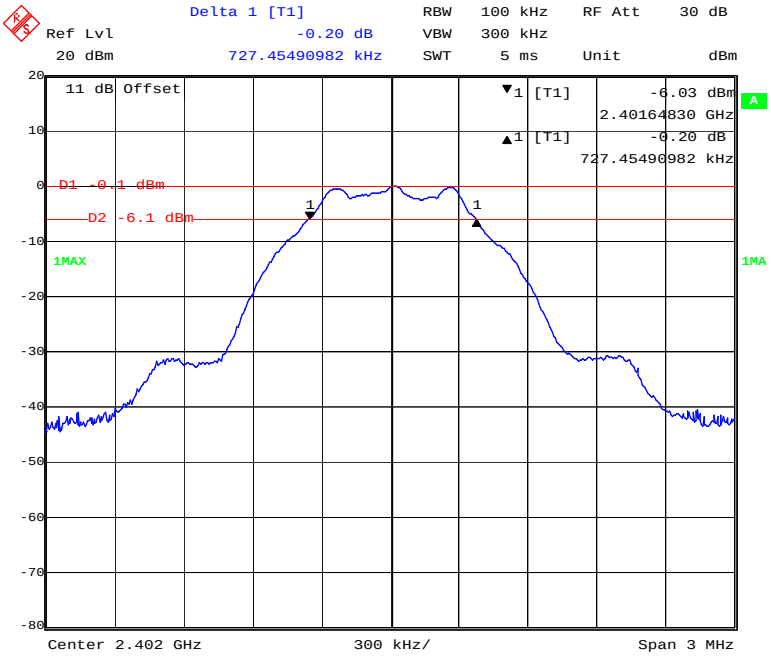


802.11n-HT40 Mode High Channel

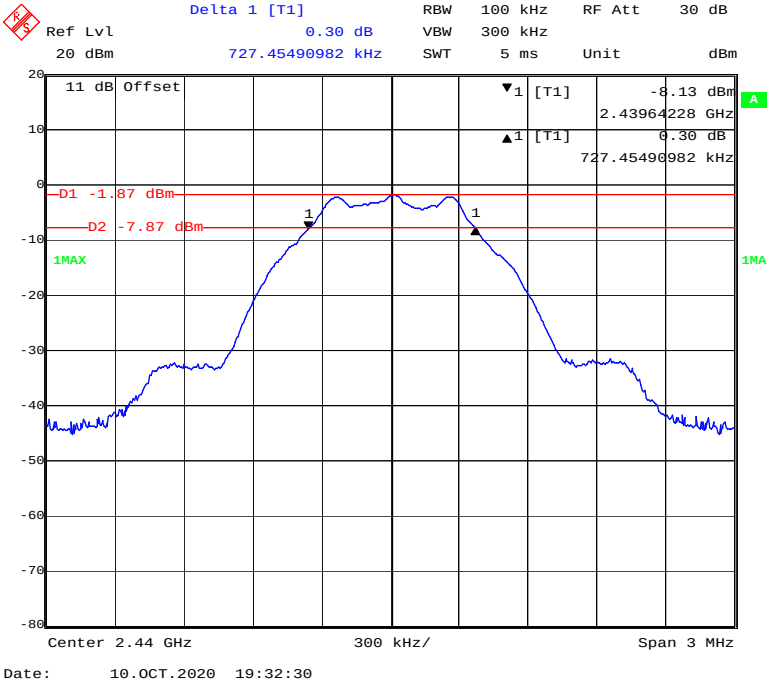


Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
BLE (1Mbps) Mode			
Low	2402	0.727	≥0.5
Middle	2440	0.727	≥0.5
High	2480	0.733	≥0.5
BLE (2Mbps) Mode			
Low	2402	1.186	≥0.5
Middle	2440	1.194	≥0.5
High	2480	1.194	≥0.5

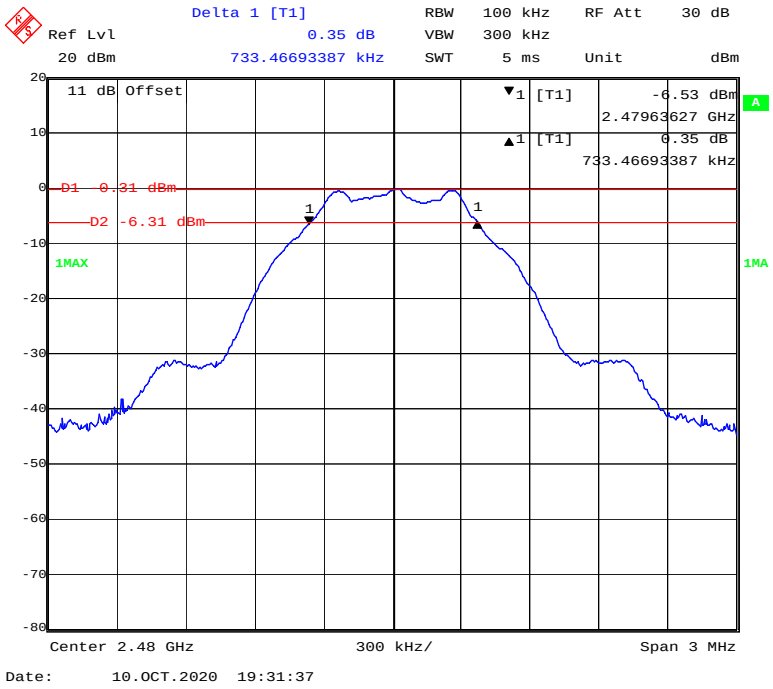
BLE (1Mbps) Mode Low Channel



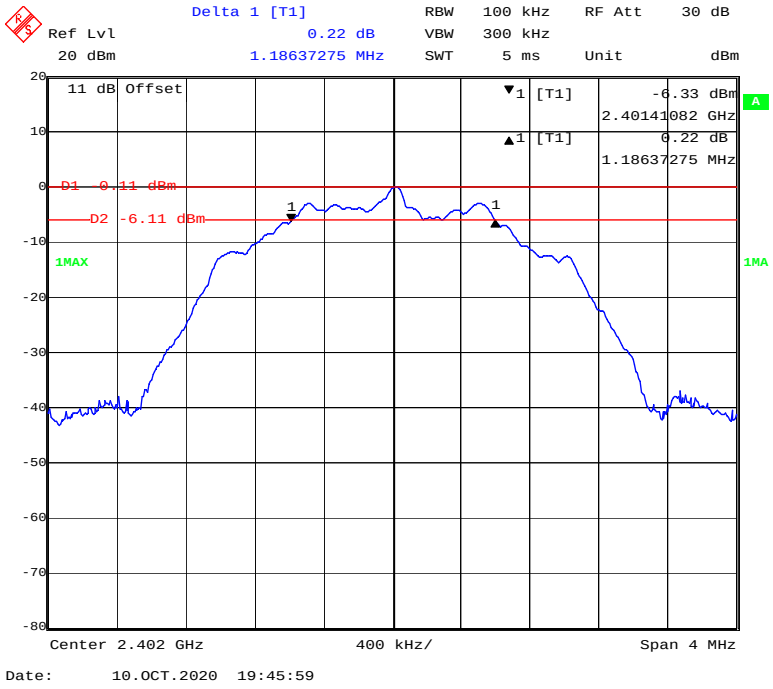
BLE (1Mbps) Mode Middle Channel



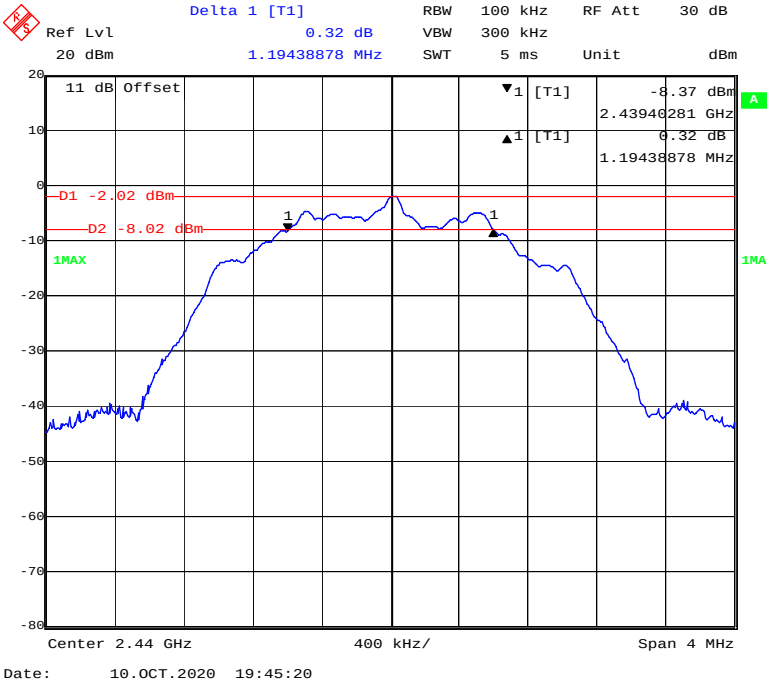
BLE (1Mbps) Mode High Channel



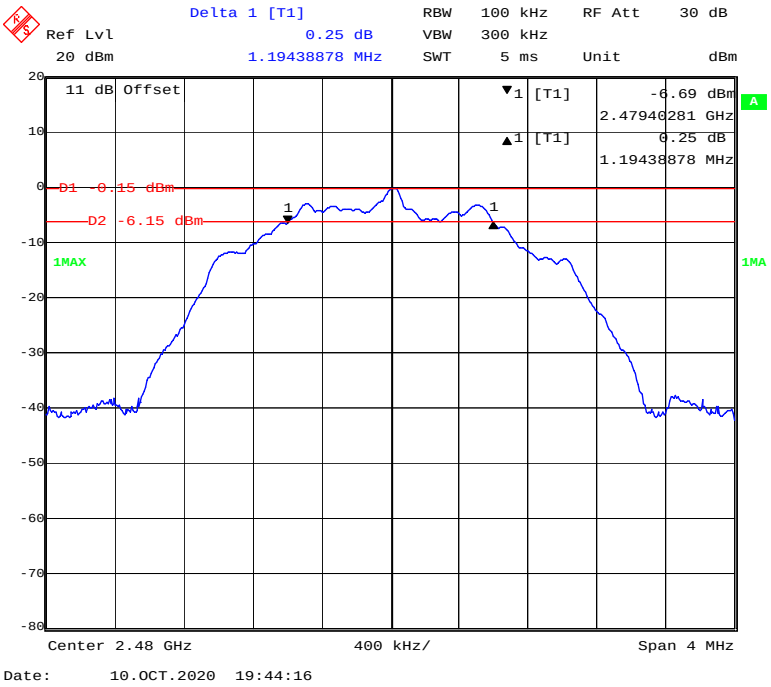
BLE (2Mbps) Mode Low Channel



BLE (2Mbps) Mode Middle Channel



BLE (2Mbps) Mode High Channel



FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

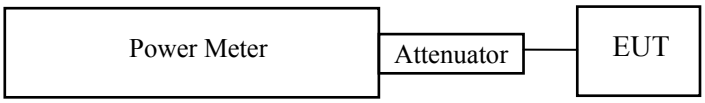
According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, Compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

For Wi-Fi:

According to ANSI C63.10-2013 sub-clause 11.9.1.3

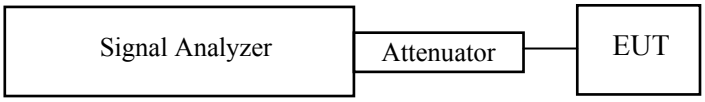
The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.



For BLE:

According to ANSI C63.10-2013 sub-clause 11.9.1.1

1. Set the RBW ≥ DTS bandwidth.
2. Set VBW ≥ 3 x RBW.
3. Set span ≥ 3 x RBW
4. Sweep time = auto couple.
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use peak marker function to determine the peak amplitude level.



Test Data

Environmental Conditions

Temperature:	24.6~25 ℃
Relative Humidity:	49~50 %
ATM Pressure:	101.1~101.2 kPa

The testing was performed by CK Huang from 2020-10-10 to 2020-10-11.

Test Result: Compliant.

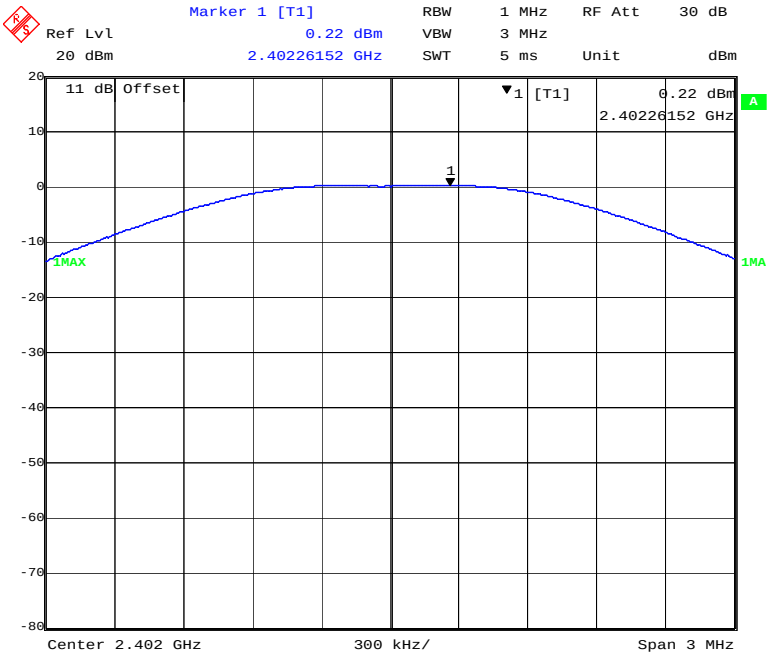
EUT operation mode: Transmitting

Test mode	Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)			Limit (dBm)	Result
			Chain0	Chain1	Total		
802.11b	Low	2412	22.01	22.76	/	30	Pass
	Middle	2437	22.02	22.39	/	30	Pass
	High	2462	21.99	22.66	/	30	Pass
802.11g	Low	2412	23.75	23.12	/	30	Pass
	Middle	2437	23.24	23.04	/	30	Pass
	High	2462	23.39	23.18	/	30	Pass
802.11n-HT20	Low	2412	20.04	21.11	23.62	30	Pass
	Middle	2437	20.25	21.03	23.67	30	Pass
	High	2462	20.09	21.30	23.75	30	Pass
802.11n-HT40	Low	2422	17.76	19.07	21.47	30	Pass
	Middle	2437	19.63	20.57	23.14	30	Pass
	High	2452	18.15	19.07	21.64	30	Pass

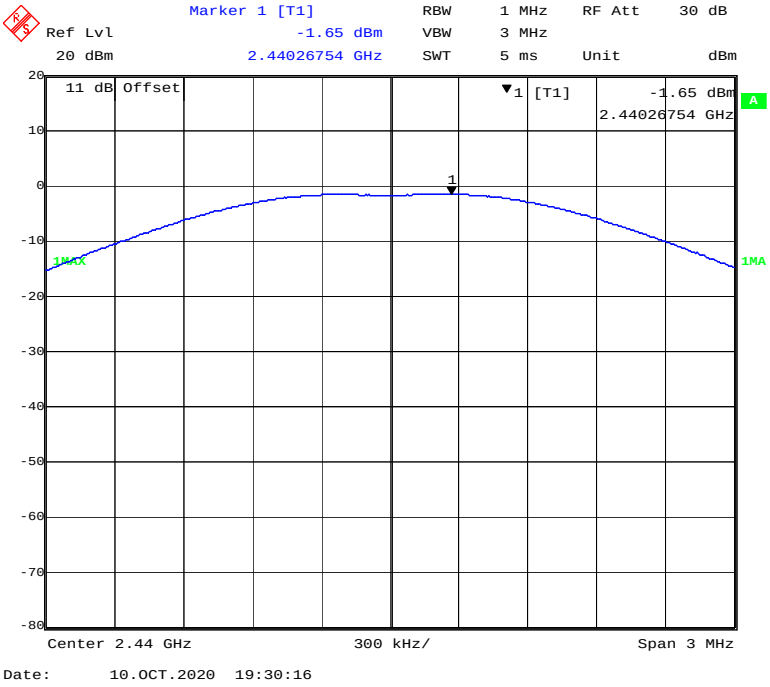
*Note: The total output power=10*Log (10^ (Chain0/10) + 10^ (Chain1/10))*
The maximum antenna gain is 2.19dBi, the device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices:
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leqslant 4$;
So: Directional gain = GANT + Array Gain =2.19dBi < 6dBi, no RF out power limit was reduced.

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Limit (dBm)	Result
BLE (1Mbps) Mode				
Low	2402	0.22	30	Pass
Middle	2440	-1.65	30	Pass
High	2480	-0.01	30	Pass
BLE (2Mbps) Mode				
Low	2402	0.74	30	Pass
Middle	2440	-1.17	30	Pass
High	2480	0.49	30	Pass

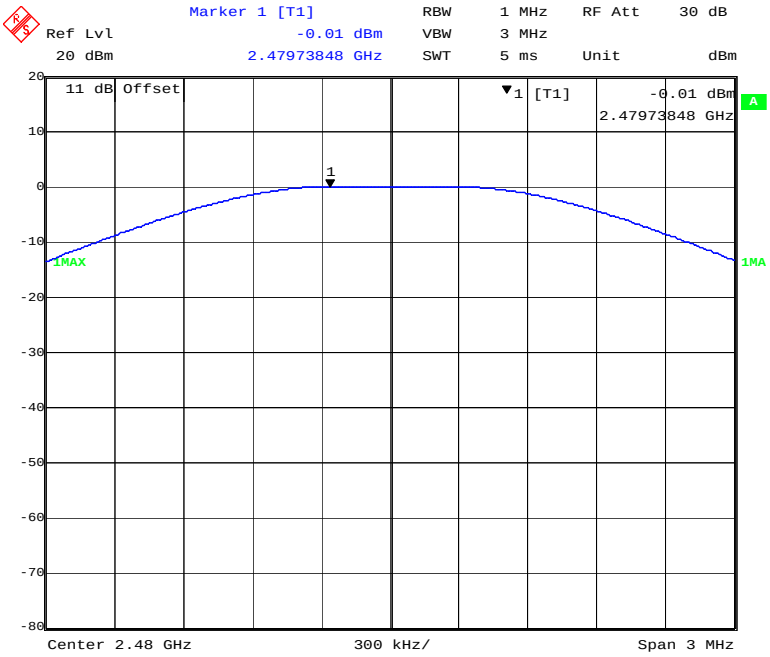
BLE (1Mbps) Mode Low Channel



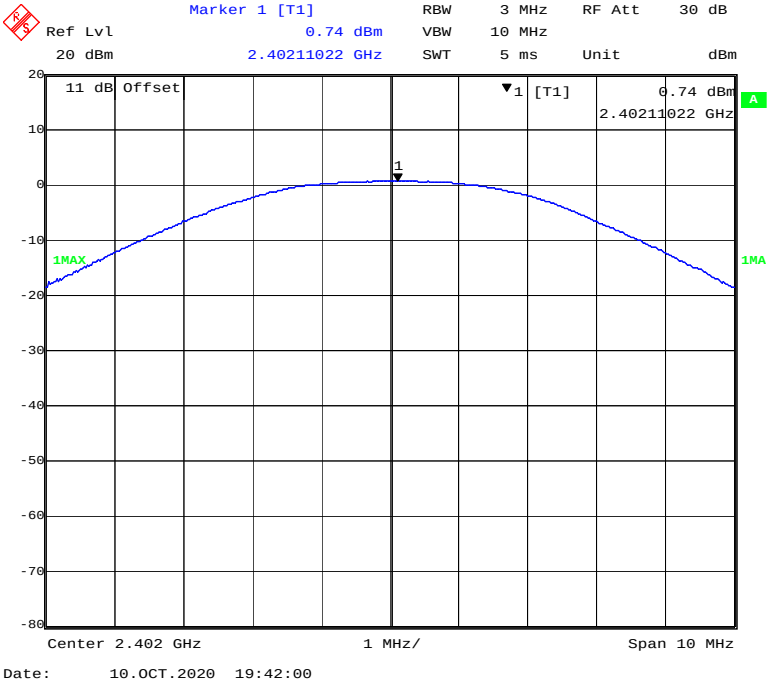
BLE (1Mbps) Mode Middle Channel



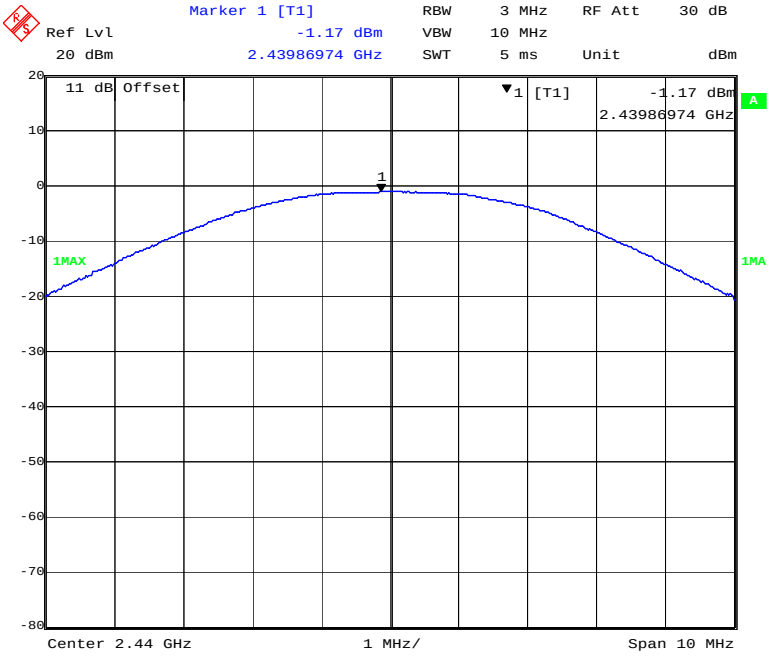
BLE (1Mbps) Mode High Channel



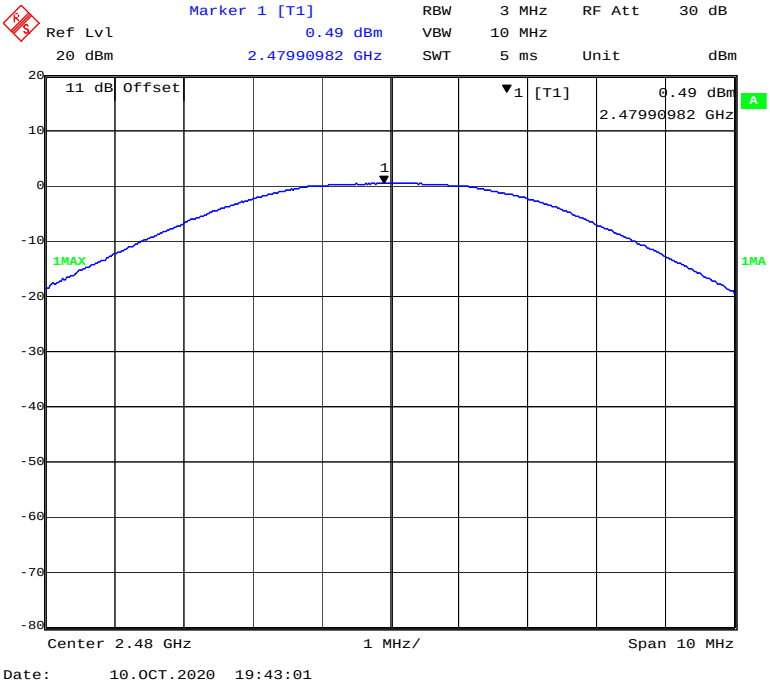
BLE (2Mbps) Mode Low Channel



BLE (2Mbps) Mode Middle Channel



BLE (2Mbps) Mode High Channel



FCC §15.247(d) – BAND EDGE

Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates Compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

According to ANSI C63.10-2013 sub-clause 6.10.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Data

Environmental Conditions

Temperature:	24.6-25.1 ℃
Relative Humidity:	46-50 %
ATM Pressure:	101.1-101.5 kPa

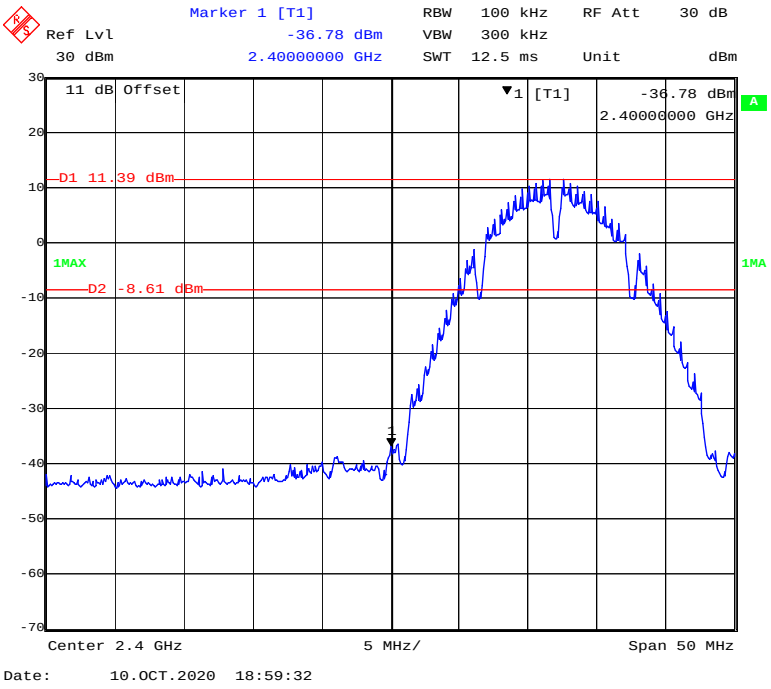
The testing was performed by CK Huang from 2020-10-10 to 2020-10-11.

EUT operation mode: Transmitting

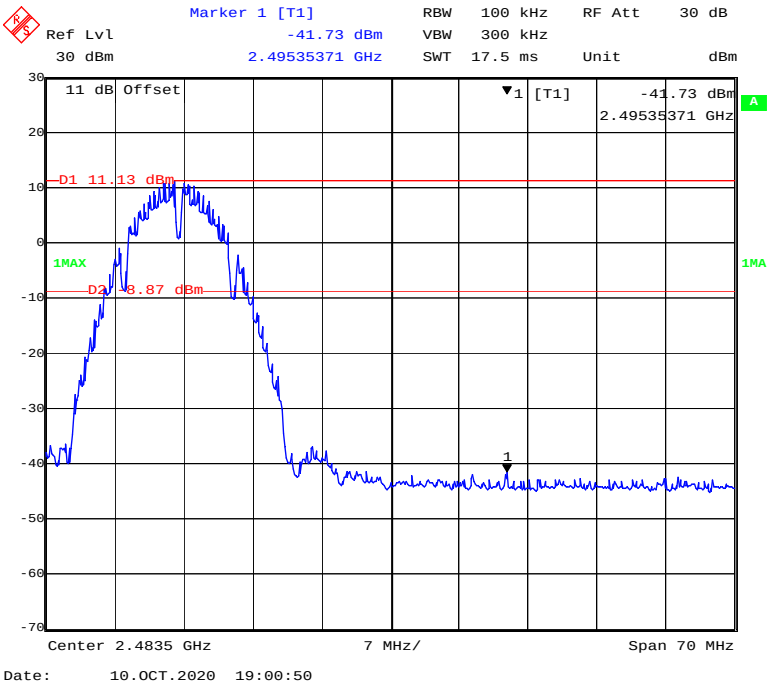
Test Result: Compliant.

Chain0

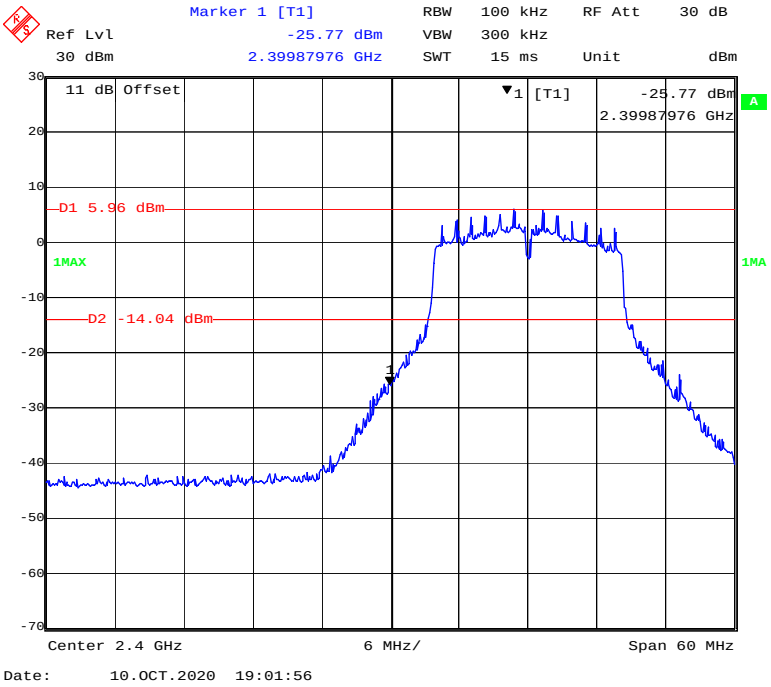
802.11b Mode Left Side



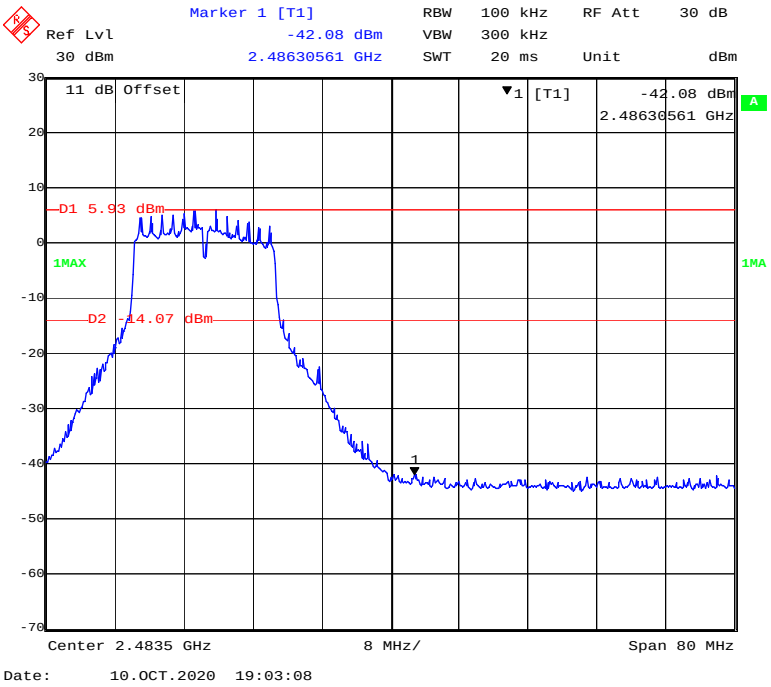
802.11b Mode Right Side



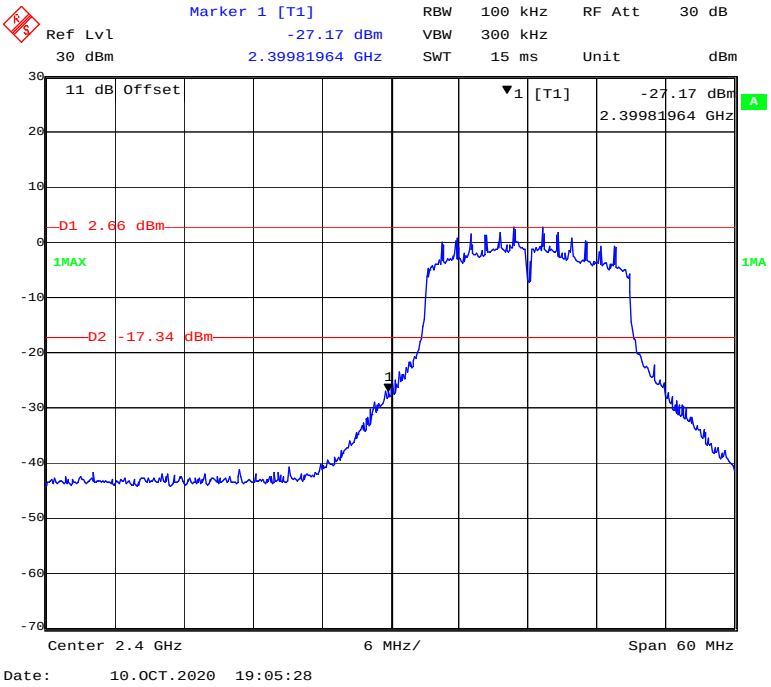
802.11g Mode Left Side



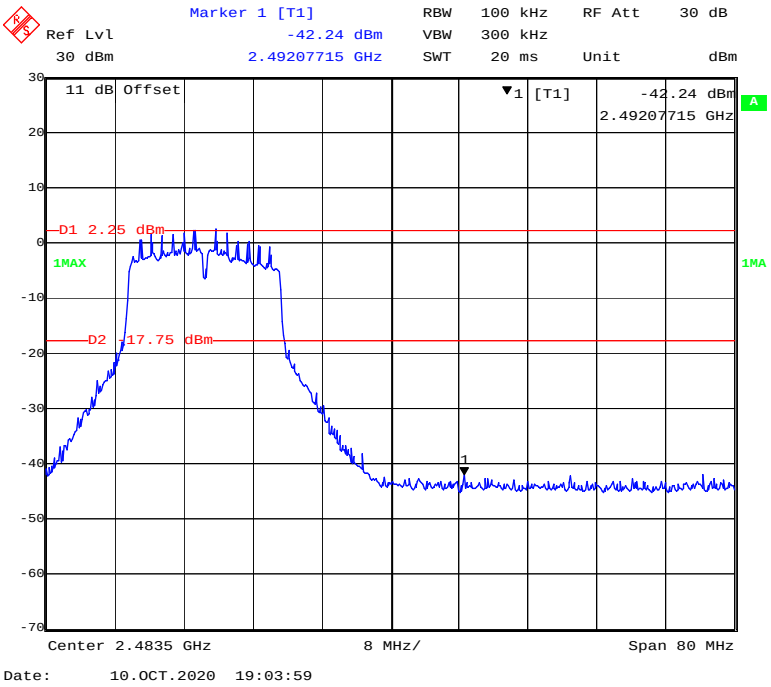
802.11g Mode Right Side



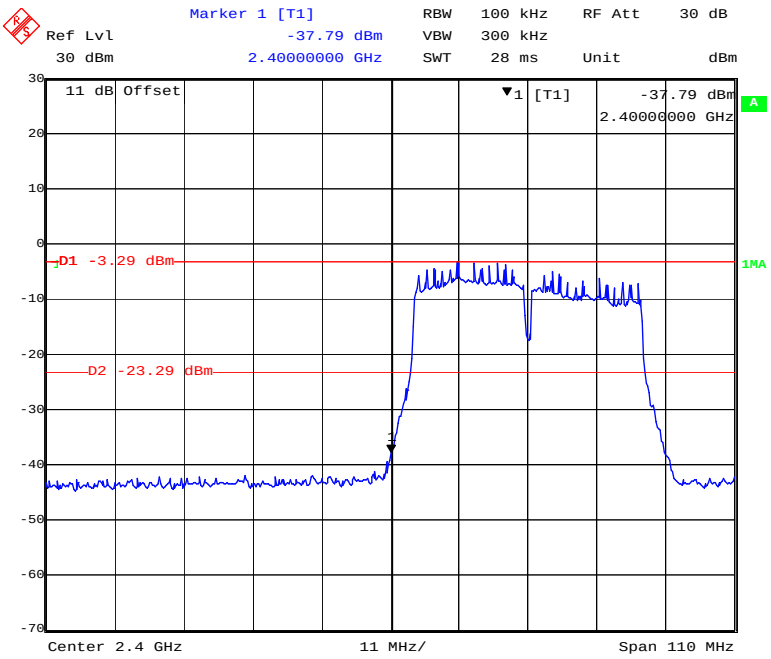
802.11n-HT20 Mode Left Side



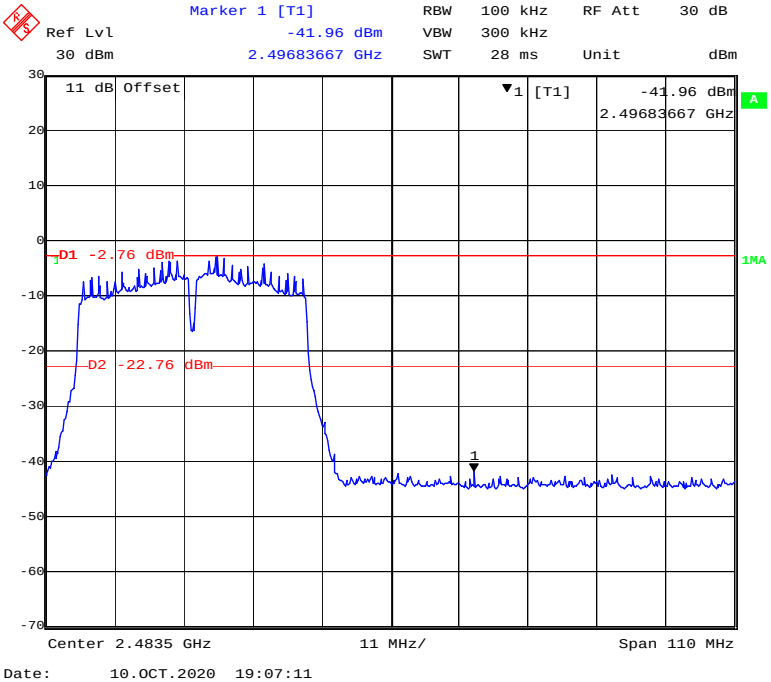
802.11n-HT20 Mode Right Side



802.11n-HT40 Mode Left Side

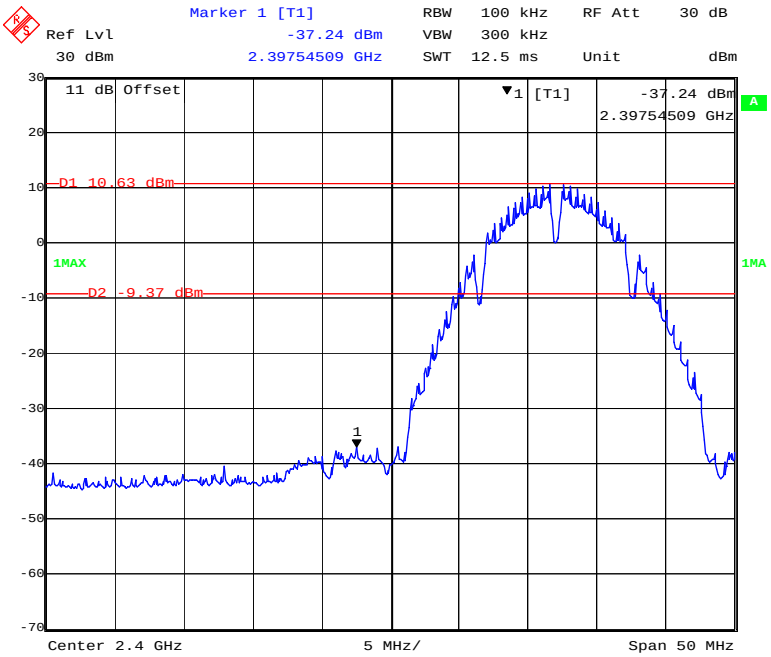


802.11n-HT40 Mode Right Side

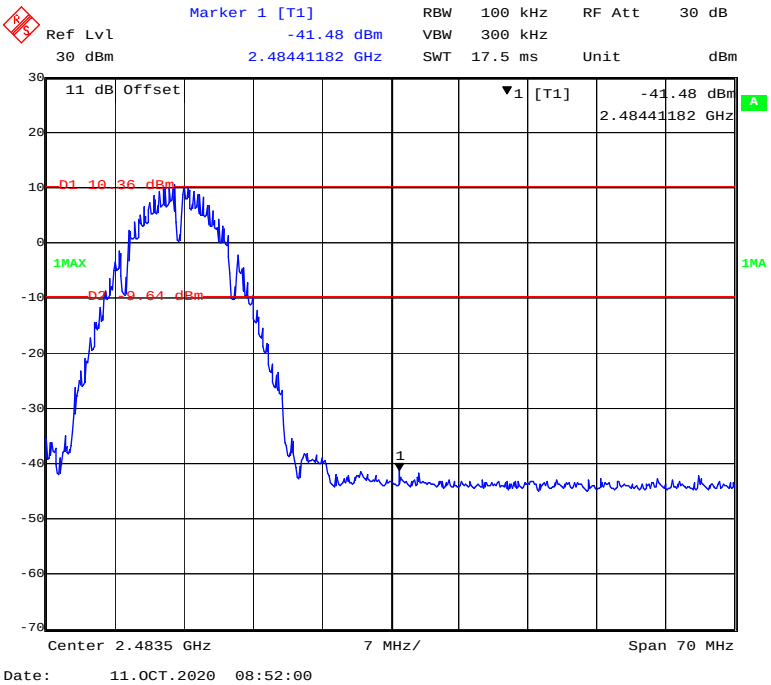


Chain1

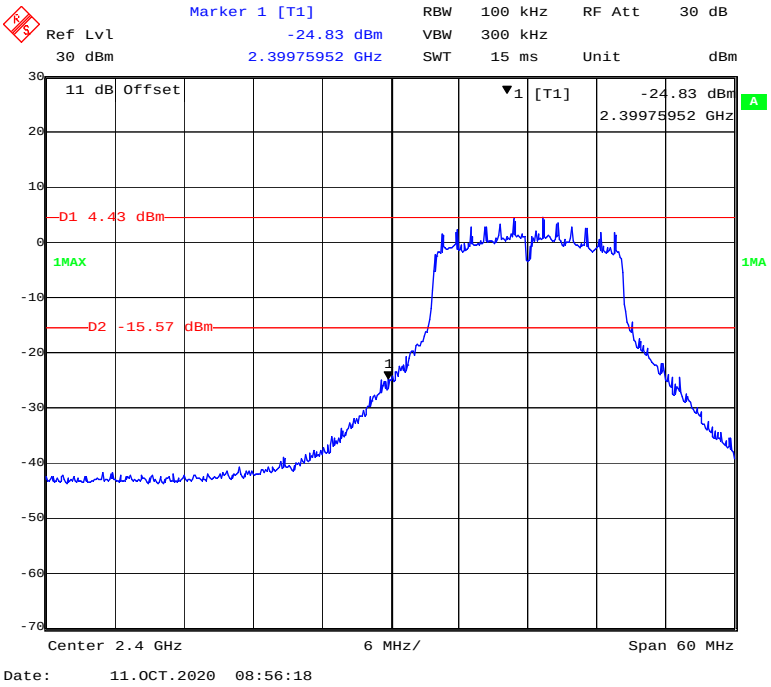
802.11b Mode Left Side



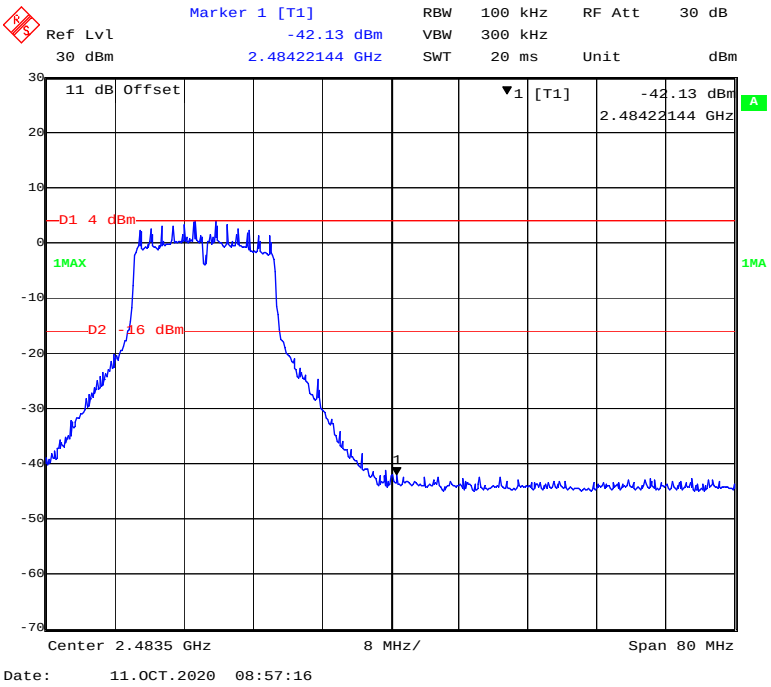
802.11b Mode Right Side



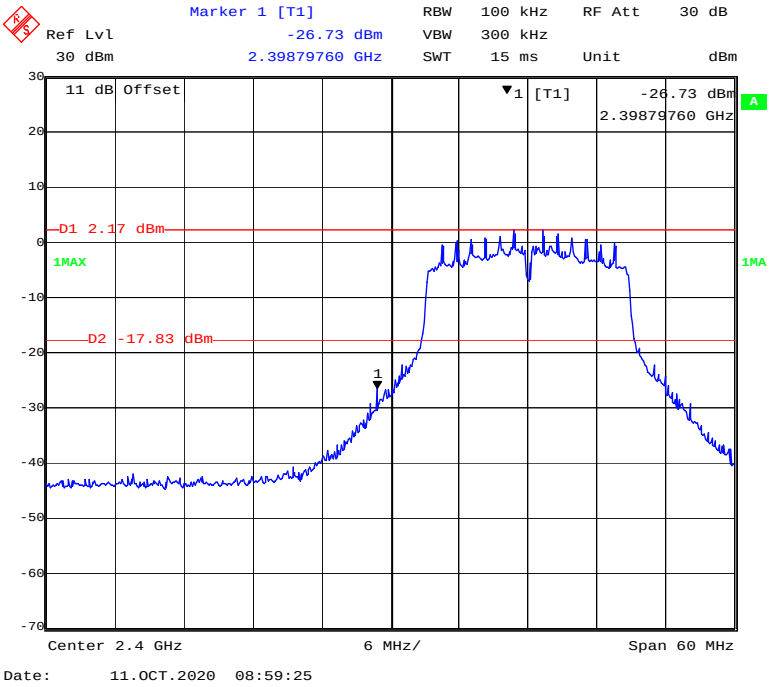
802.11g Mode Left Side



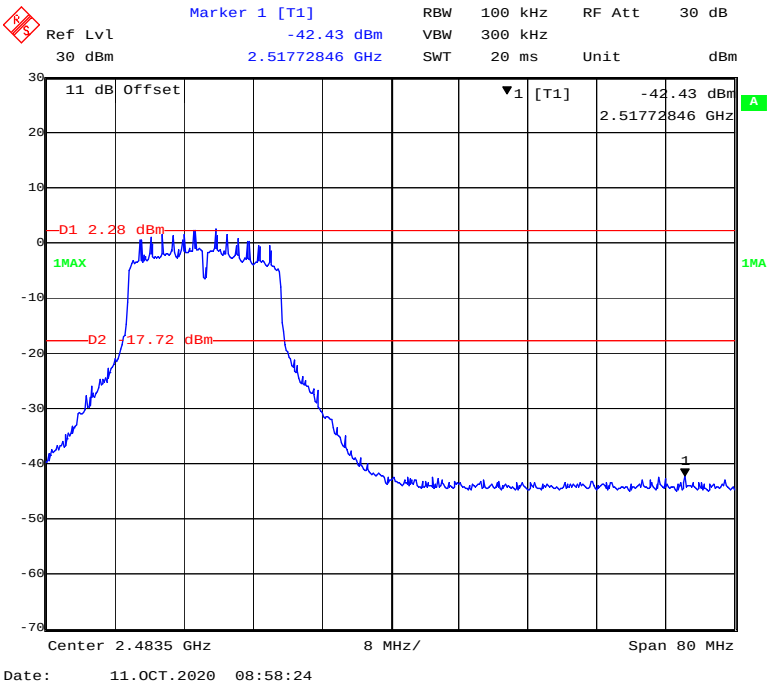
802.11g Mode Right Side



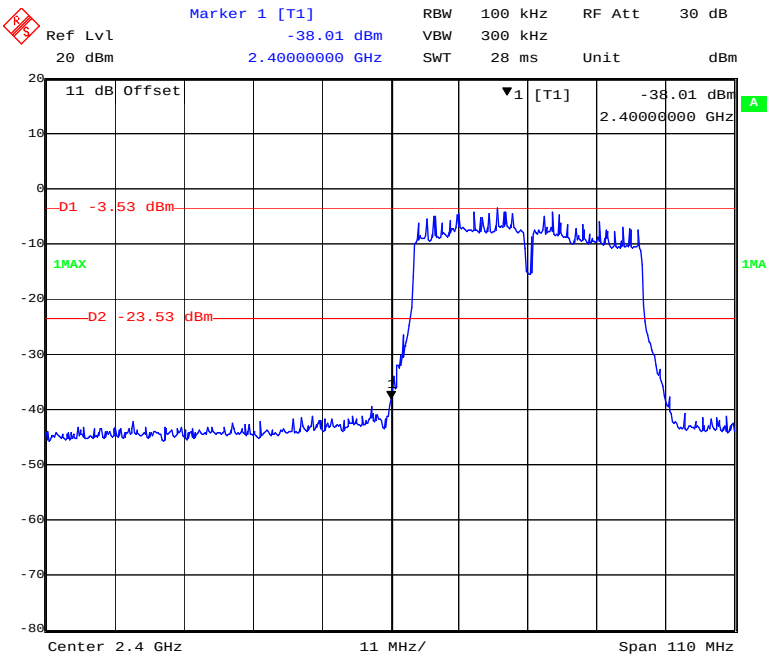
802.11n-HT20 Mode Left Side



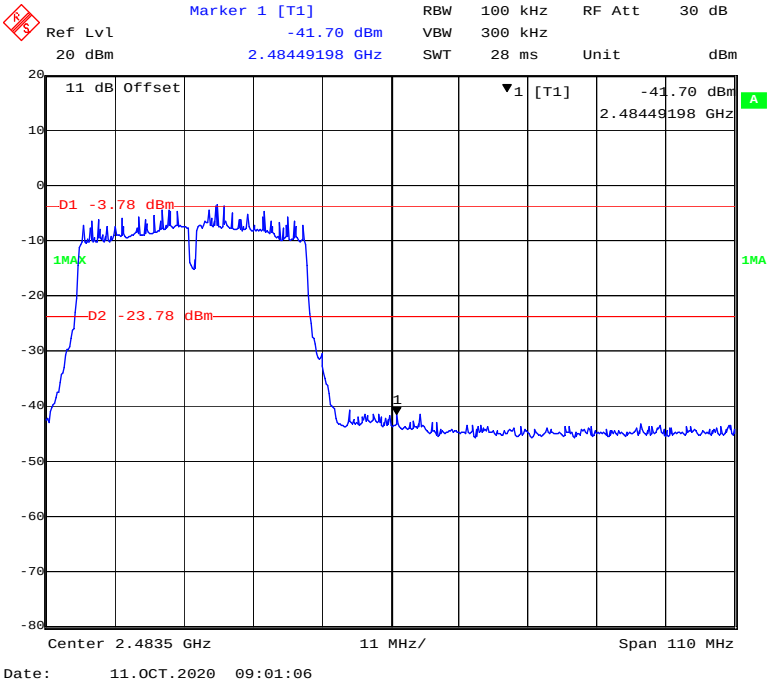
802.11n-HT20 Mode Right Side



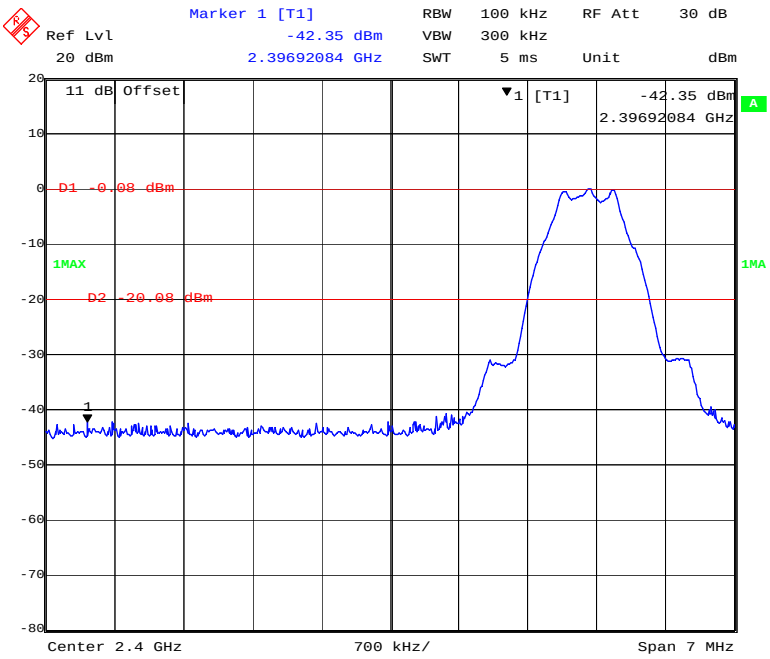
802.11n-HT40 Mode Left Side



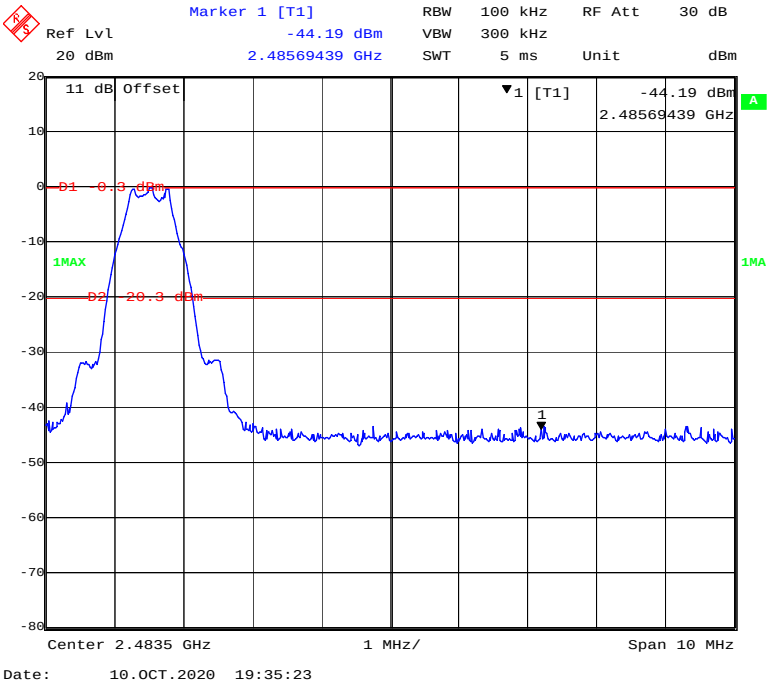
802.11n-HT40 Mode Right Side



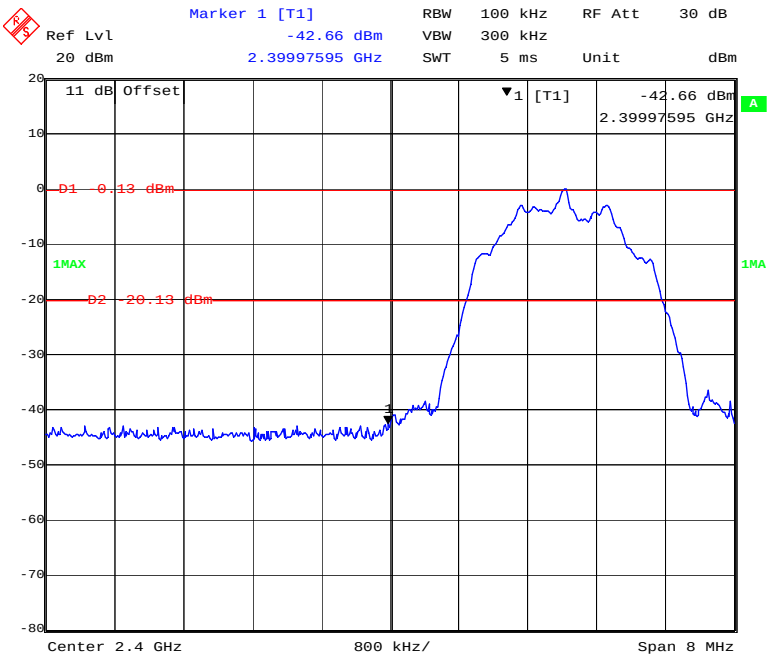
BLE (1Mbps) Mode Left Side



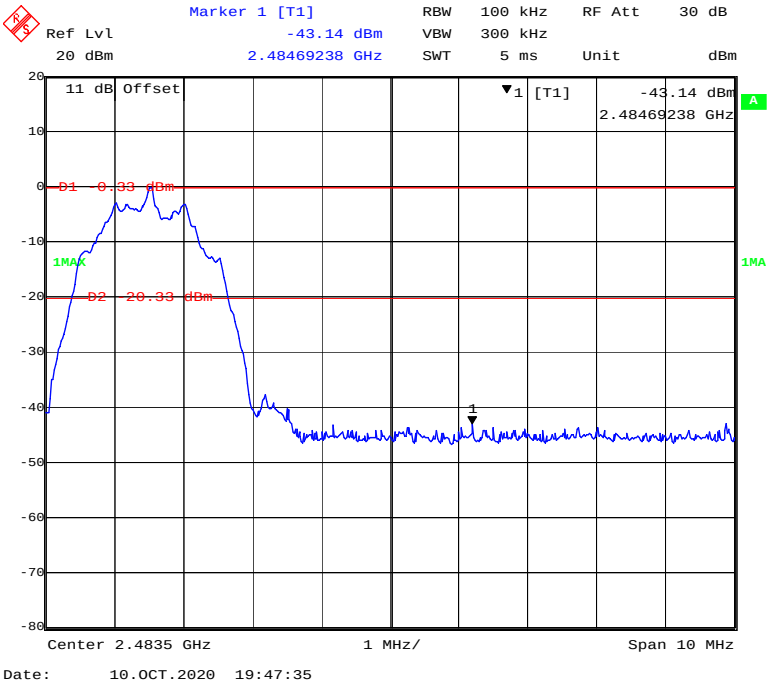
BLE (1Mbps) Mode Right Side



BLE (2Mbps) Mode Left Side



BLE (2Mbps) Mode Right Side



FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

According to ANSI C63.10-2013 sub-clause 11.10.2

The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:

1. Set the RBW to: 3kHz≤ RBW≤100 kHz.
2. Set the VBW ≥ [3xRBW].
3. Set the span to 1.5 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level within the RBW.
9. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

Test Data

Environmental Conditions

Temperature:	24.3-25.1 ℃
Relative Humidity:	46-50 %
ATM Pressure:	101.1-101.3 kPa

The testing was performed by CK Huang from 2020-10-10 to 2020-10-11.

Test Result: Compliant.

EUT operation mode: Transmitting

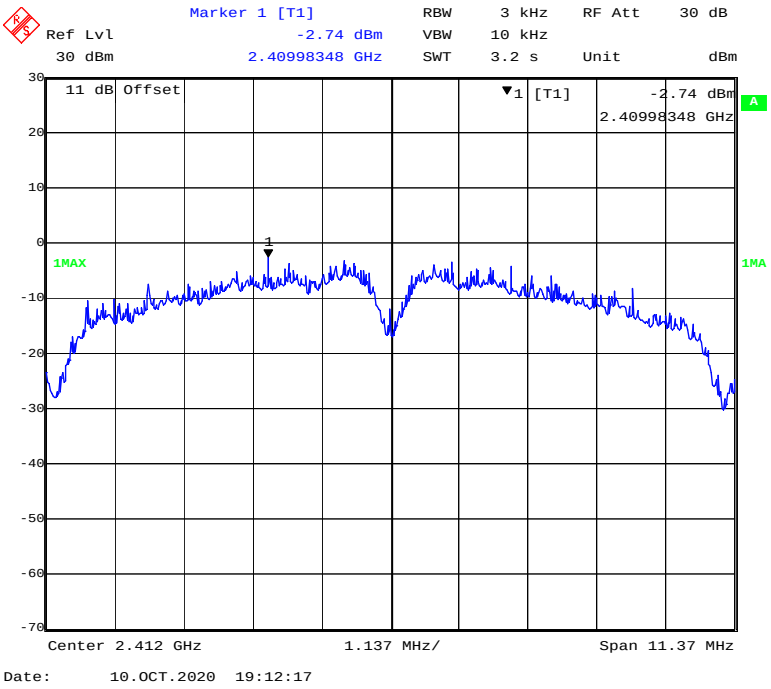
Channel	Frequency (MHz)	PSD (dBm/3kHz)			Limit (dBm/3kHz)
		Chain0	Chain1	Total	
802.11b Mode					
Low	2412	-2.74	-1.99	/	⩽ 8
Middle	2437	-2.98	-2.41	/	⩽ 8
High	2462	-3.21	-3.23	/	⩽ 8
802.11g Mode					
Low	2412	-9.99	-11.66	/	⩽ 8
Middle	2437	-10.41	-12.21	/	⩽ 8
High	2462	-9.94	-11.38	/	⩽ 8
802.11n-HT20 mode					
Low	2412	-13.06	-13.69	-10.35	⩽ 8
Middle	2437	-13.27	-14.51	-10.84	⩽8
High	2462	-13.04	-13.25	-10.13	⩽8
802.11n-HT40 Mode					
Low	2422	-18.73	-18.82	-15.76	⩽8
Middle	2437	-16.98	-17.95	-14.43	⩽8
High	2452	-19.06	-18.43	-15.72	⩽8

Note:
The total PSD=10*Log (10^ (Chain0/10) +10^ (Chain1/10))
The maximum antenna gain is 2.19 dBi. The device employed Cyclic Delay Diversity (CDD) for 802.11MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:
Array Gain = 10* log (N_{ANT}/N_{SS}) dB.
So: Directional gain = GANT + Array Gain = 2.19 +10*log (2/1) =5.19dBi, no power spectral density limit was reduced

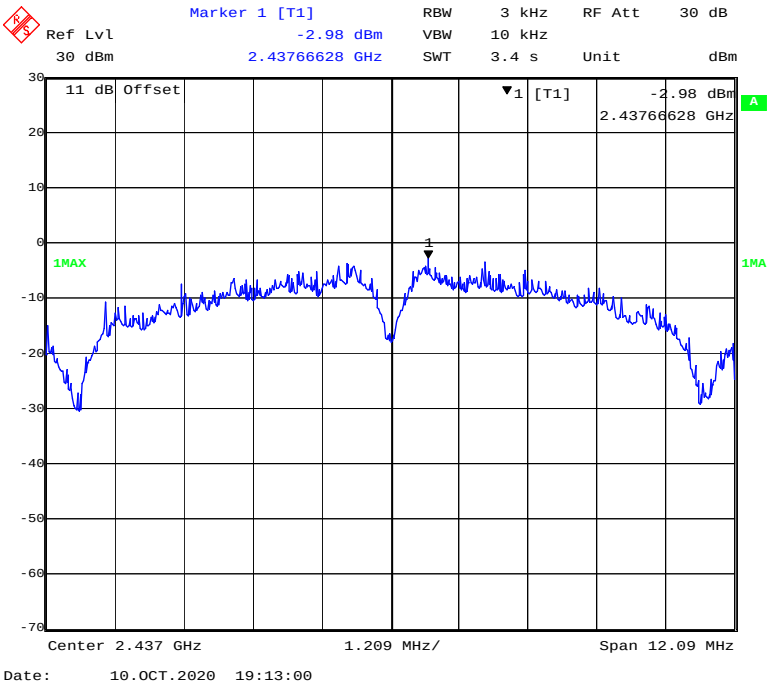
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
BLE (1Mbps) mode			
Low	2402	-14.56	≤8
Middle	2440	-16.43	≤8
High	2480	-14.79	≤8
BLE (2Mbps) mode			
Low	2402	-18.25	≤8
Middle	2440	-20.14	≤8
High	2480	-18.52	≤8

Chain0

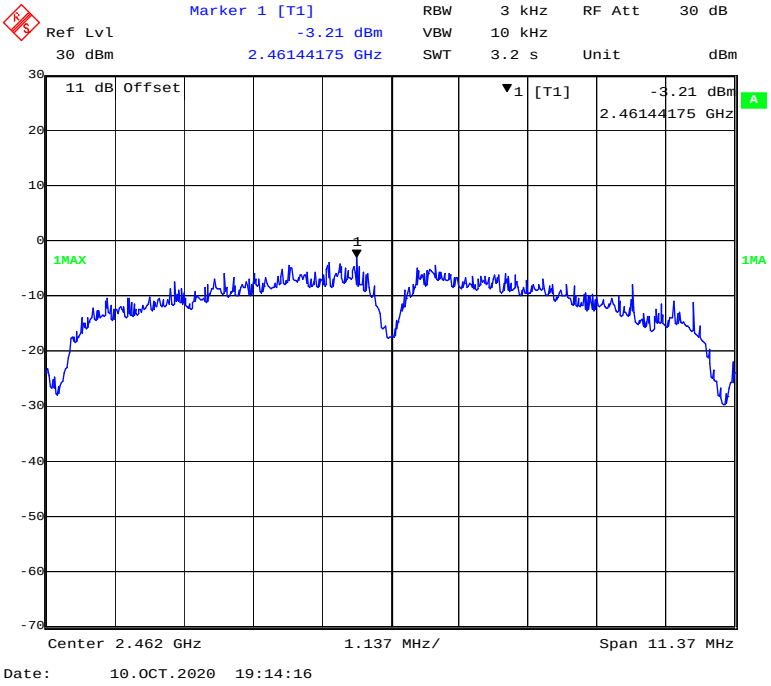
802.11b Mode Low Channel



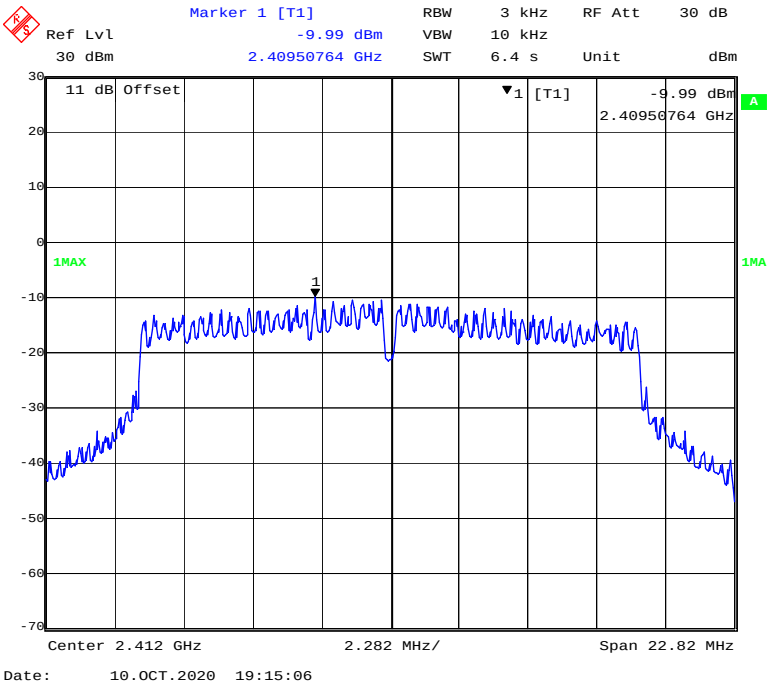
802.11b Mode Middle Channel



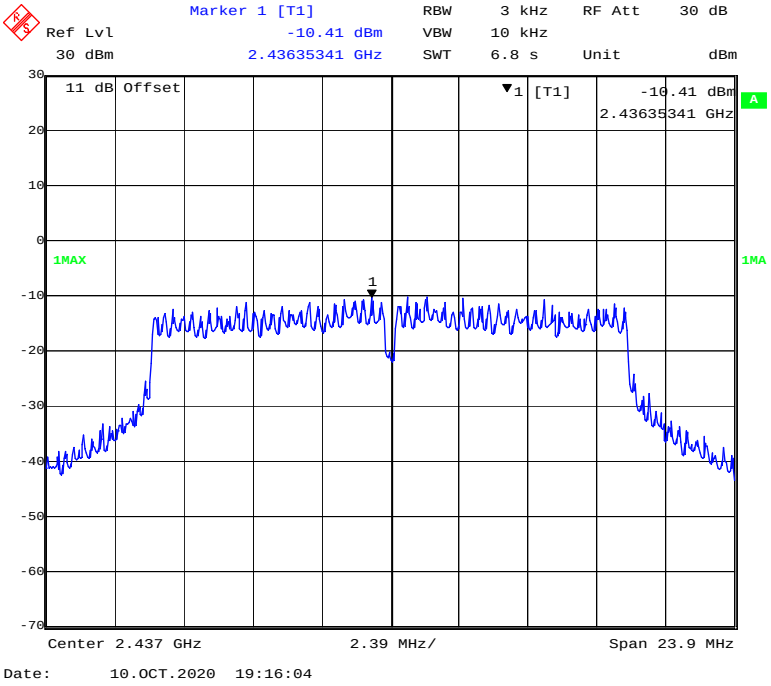
802.11b Mode High Channel



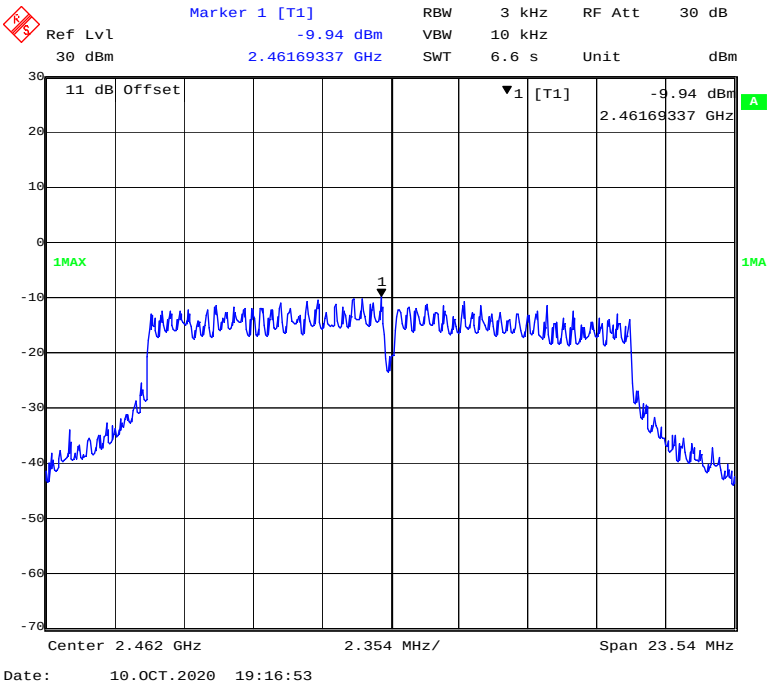
802.11g Mode Low Channel



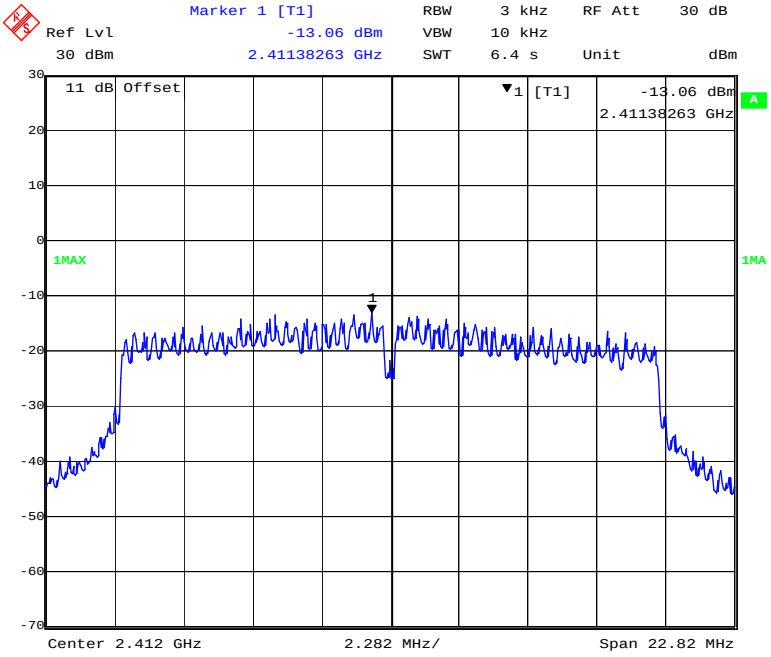
802.11g Mode Middle Channel



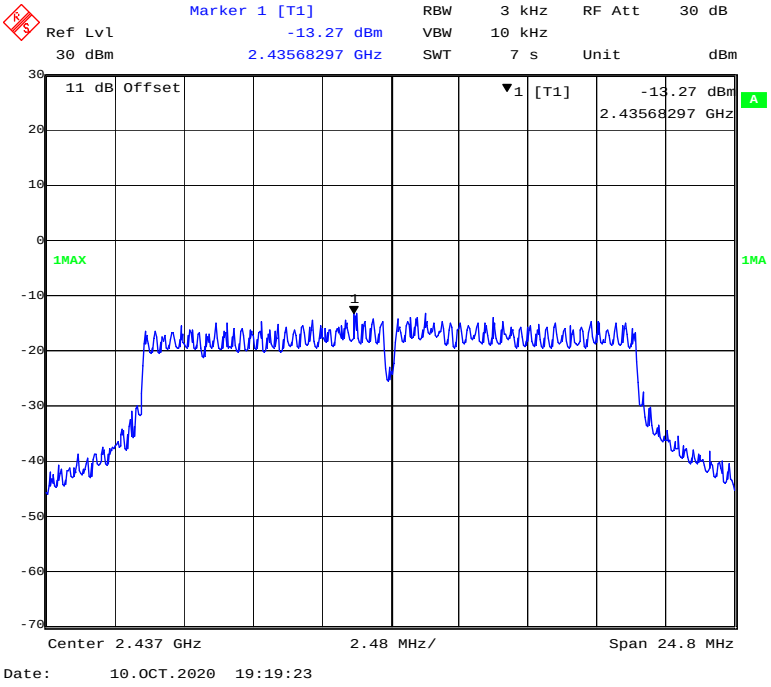
802.11g Mode High Channel



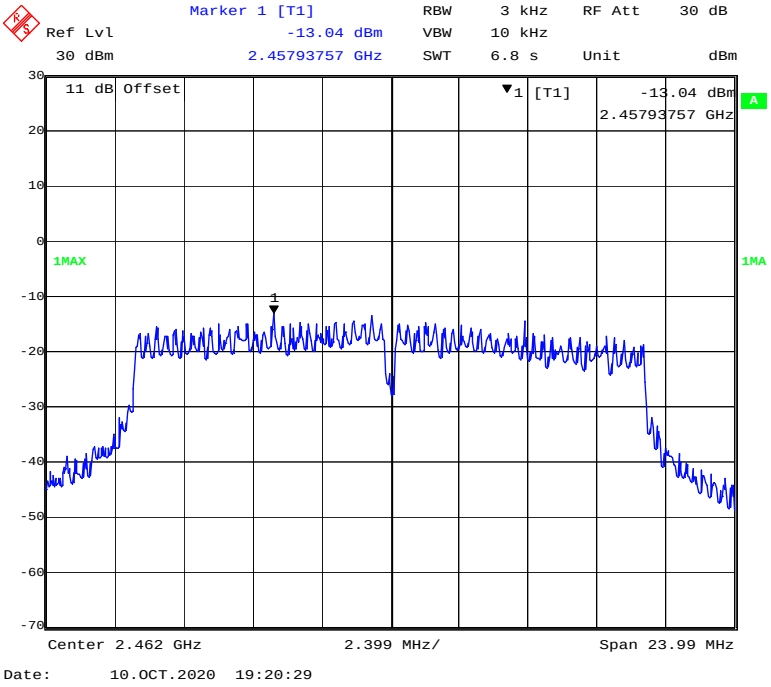
802.11n-HT20 Mode Low Channel



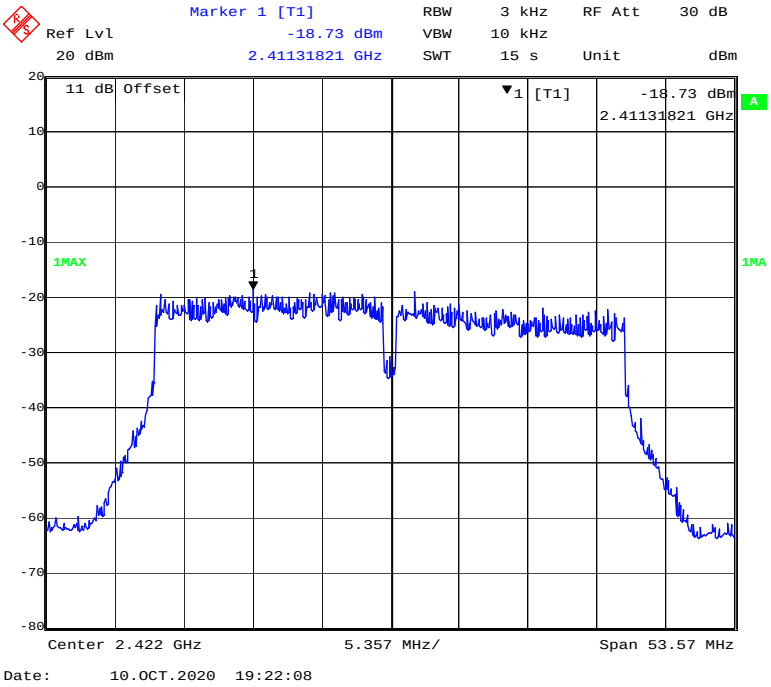
802.11n-HT20 Mode Middle Channel



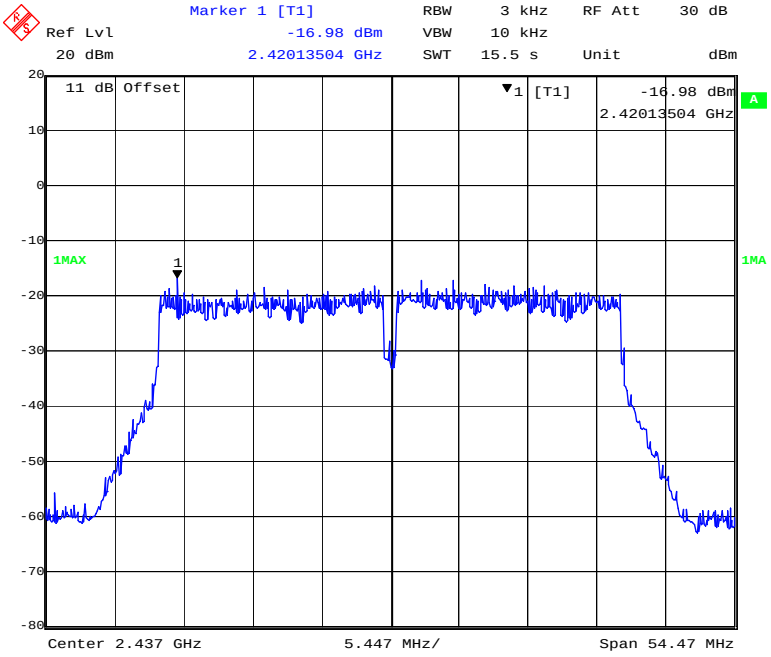
802.11n-HT20 Mode High Channel



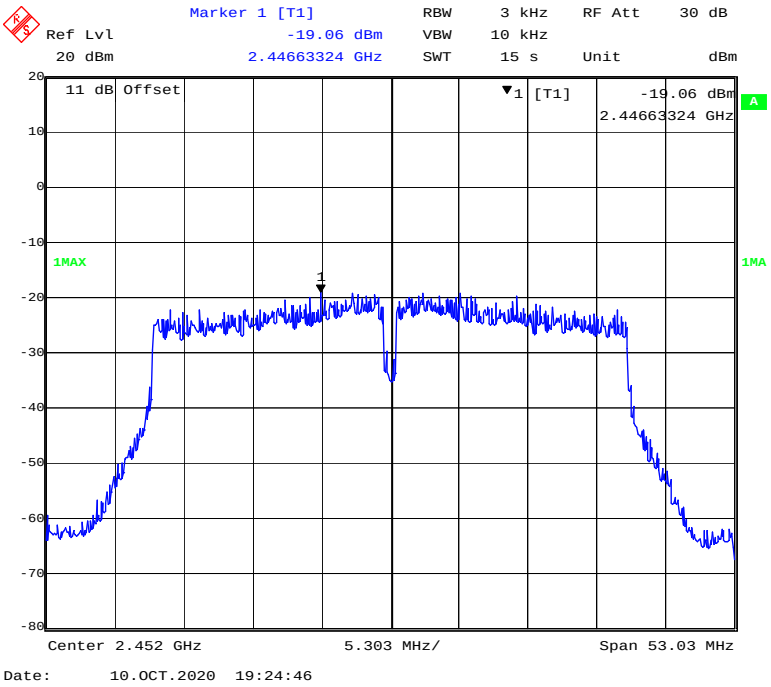
802.11n-HT40 Mode Low Channel



802.11n-HT40 Mode Middle Channel

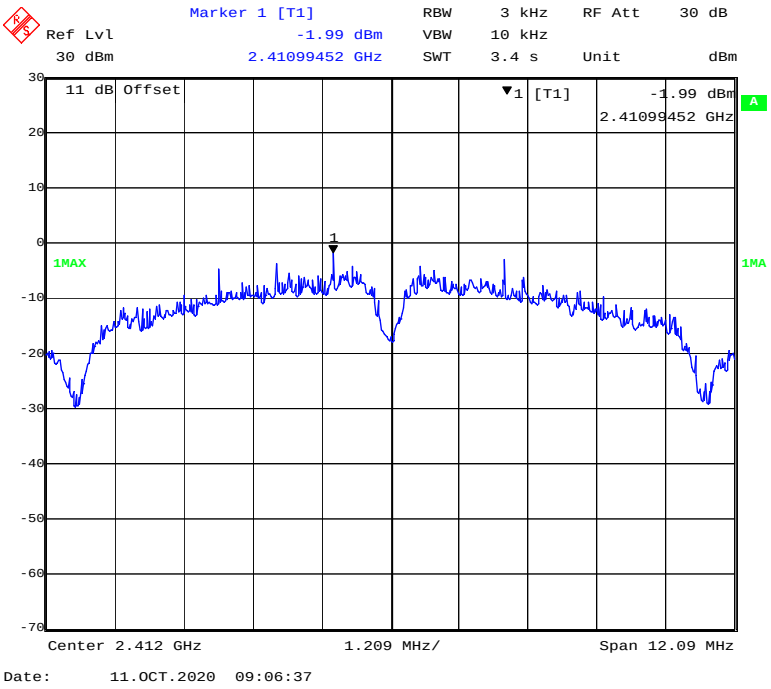


802.11n-HT40 Mode High Channel

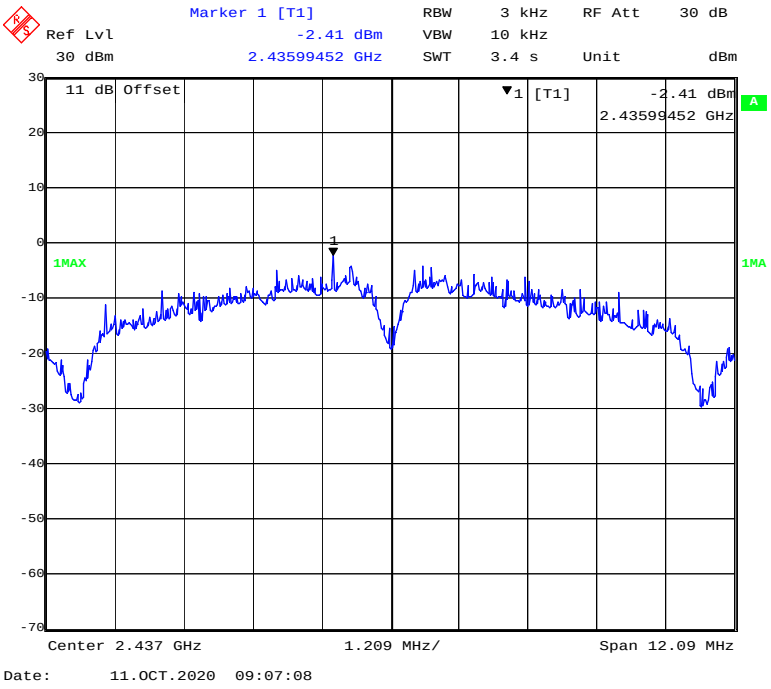


Chain1

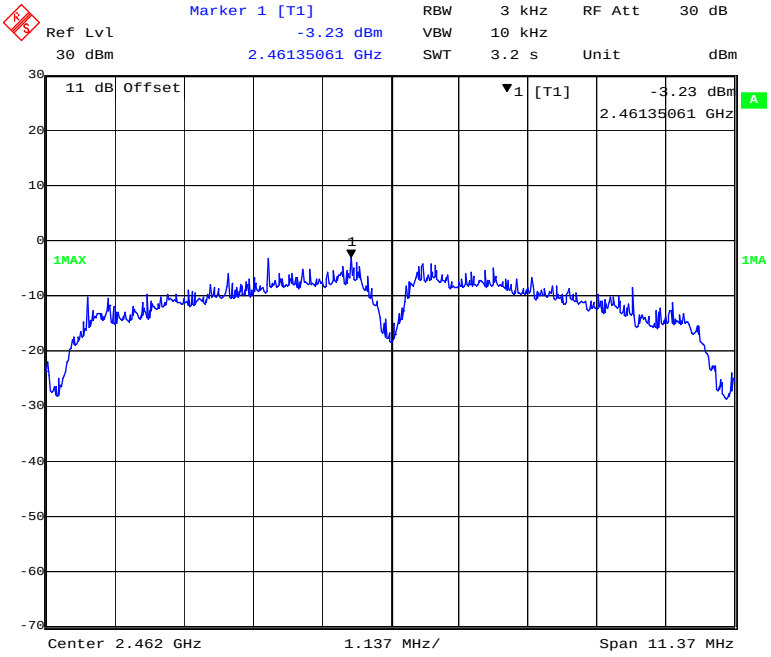
802.11b Mode Low Channel



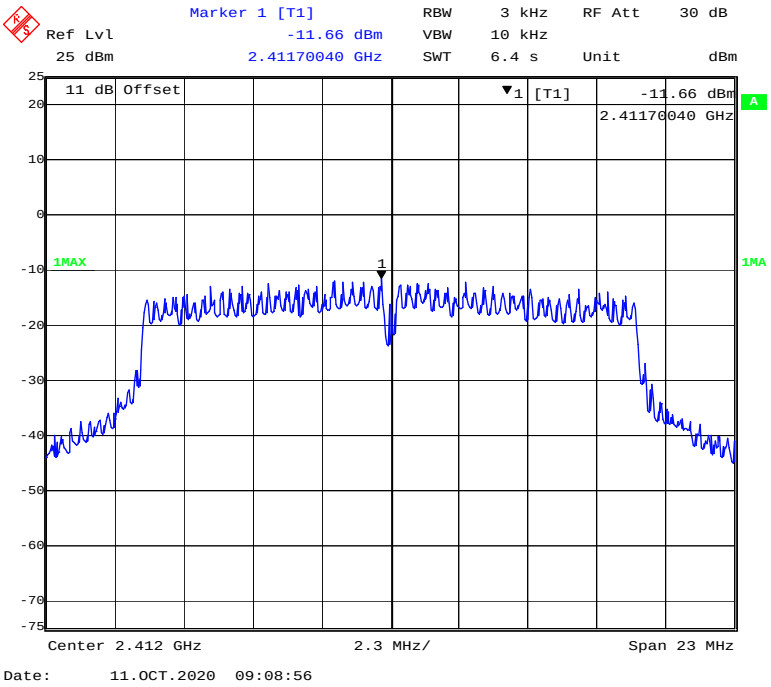
802.11b Mode Middle Channel



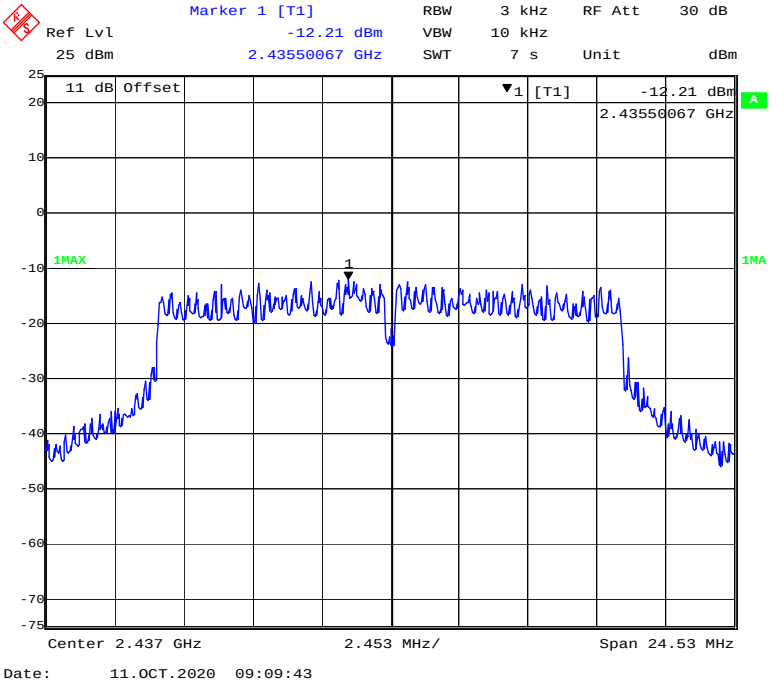
802.11b Mode High Channel



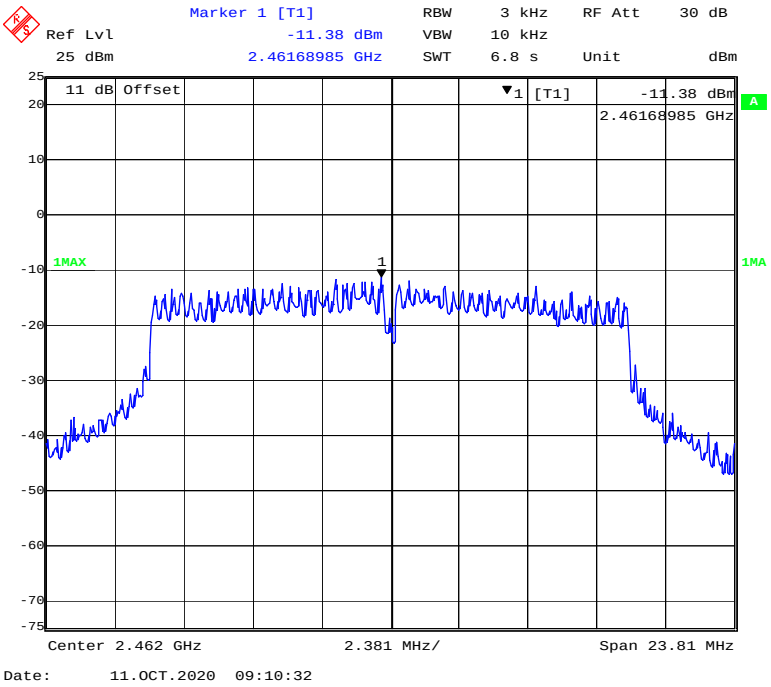
802.11g Mode Low Channel



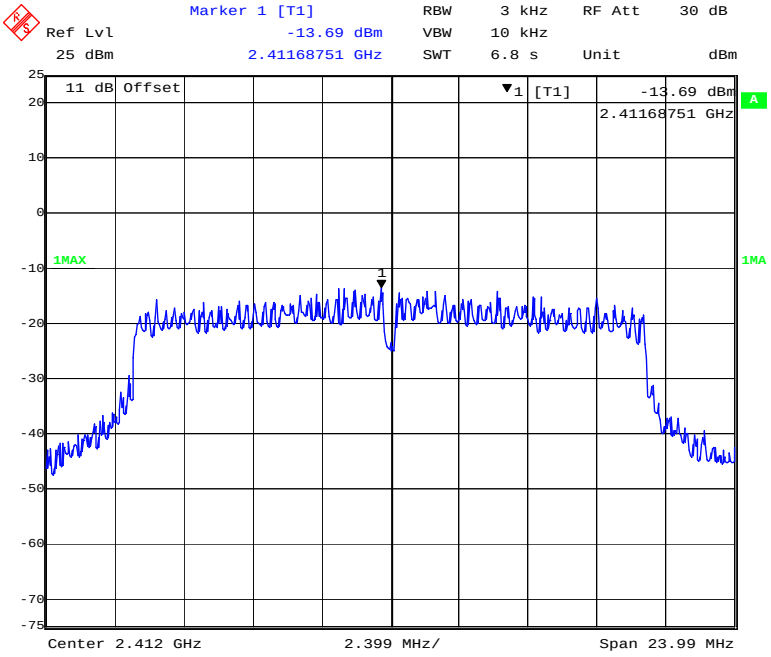
802.11g Mode Middle Channel



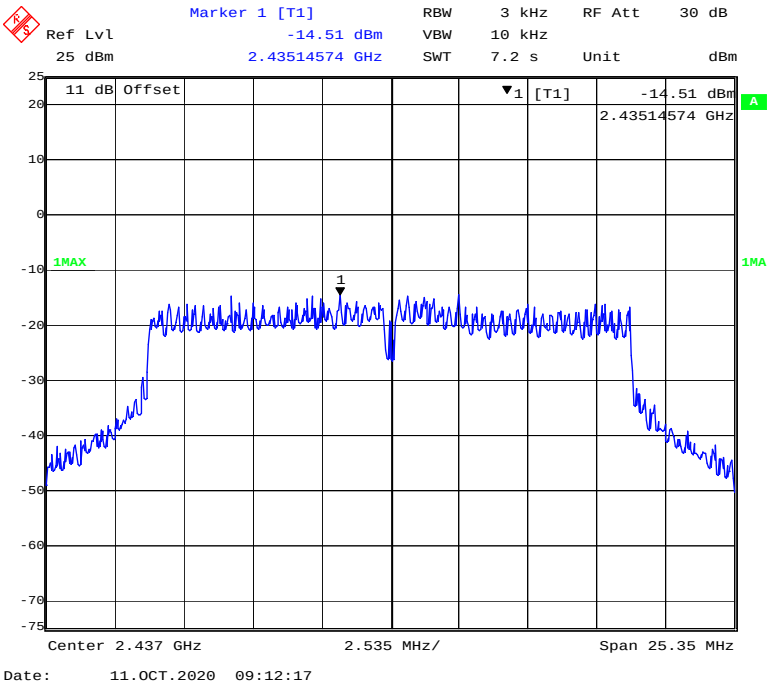
802.11g Mode High Channel



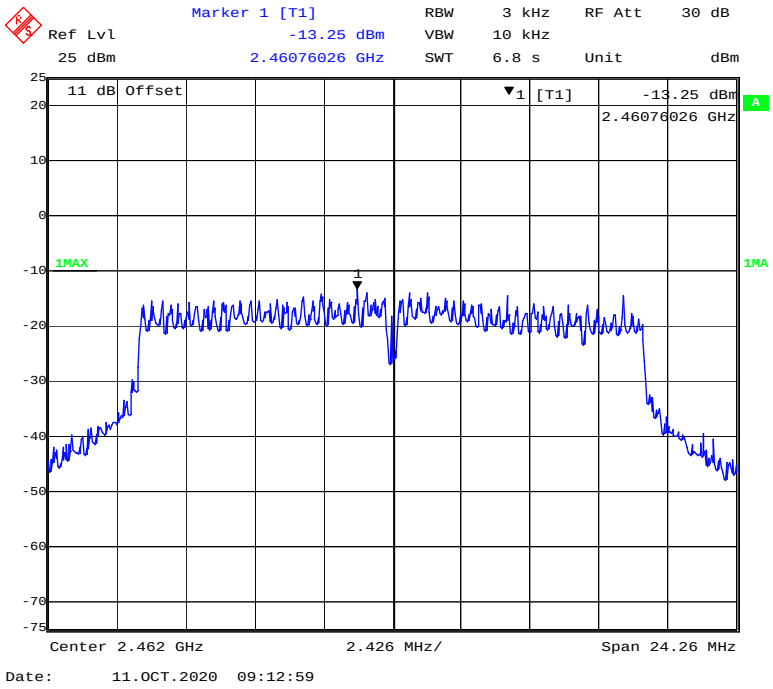
802.11n-HT20 Mode Low Channel



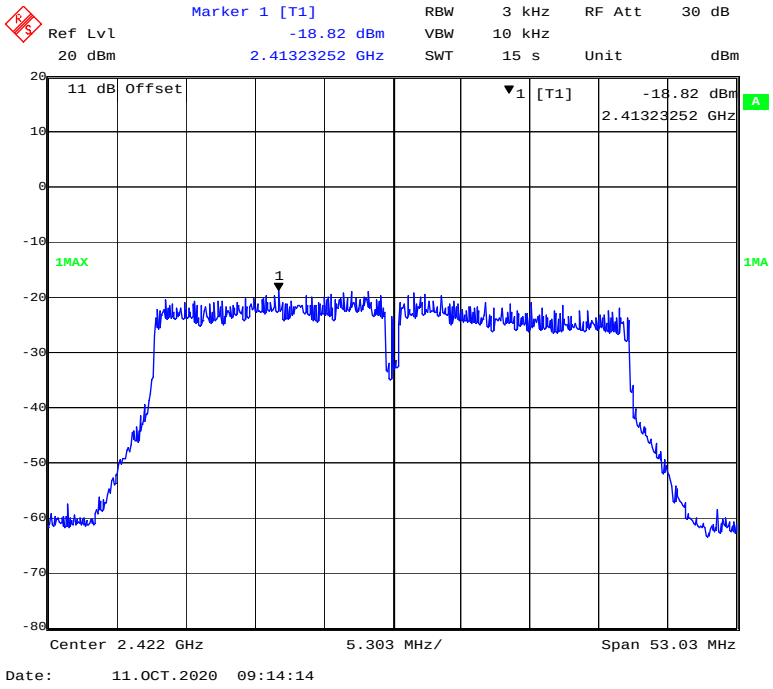
802.11n-HT20 Mode Middle Channel



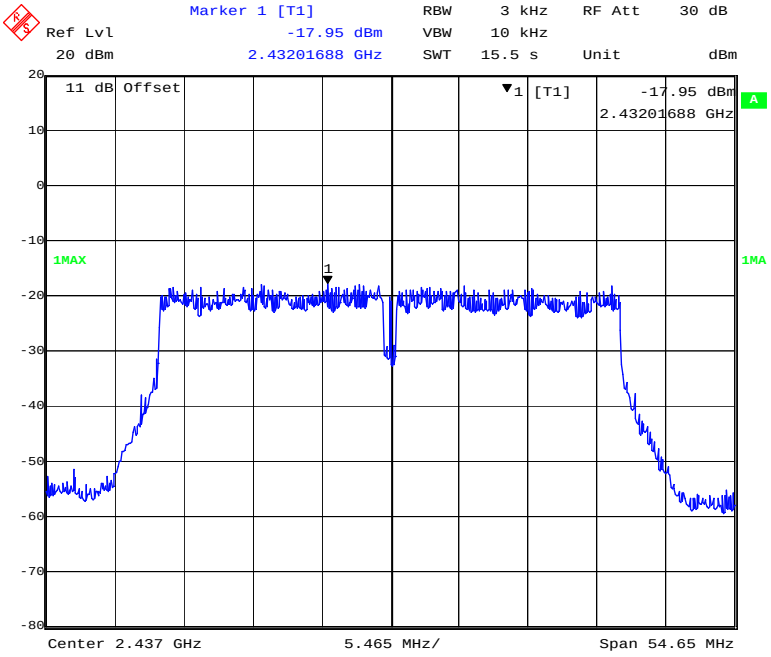
802.11n-HT20 Mode High Channel



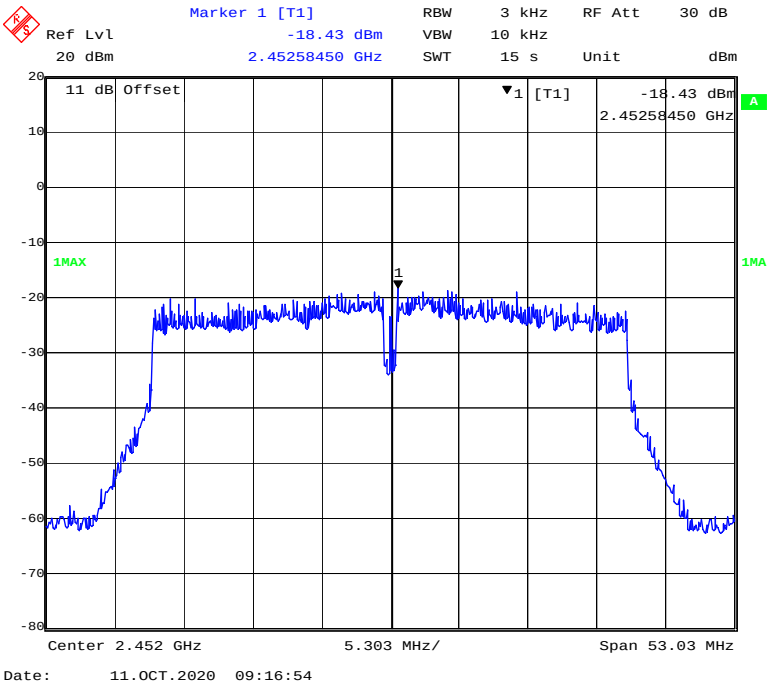
802.11n-HT40 Mode Low Channel



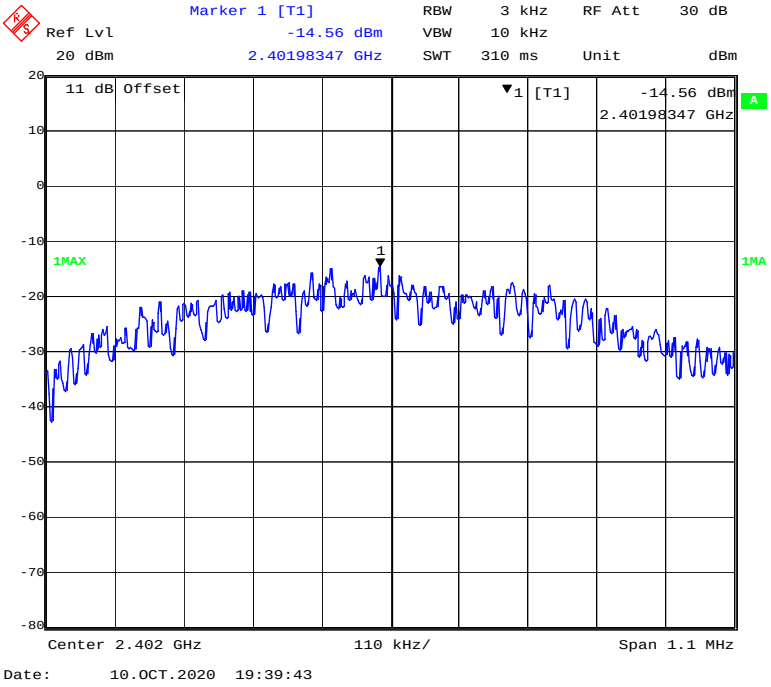
802.11n-HT40 Mode Middle Channel



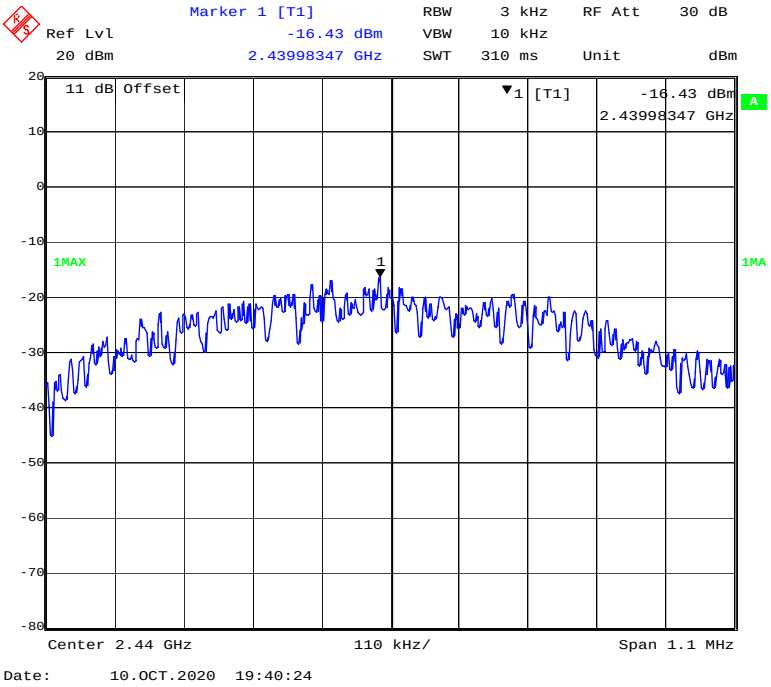
802.11n-HT40 Mode High Channel



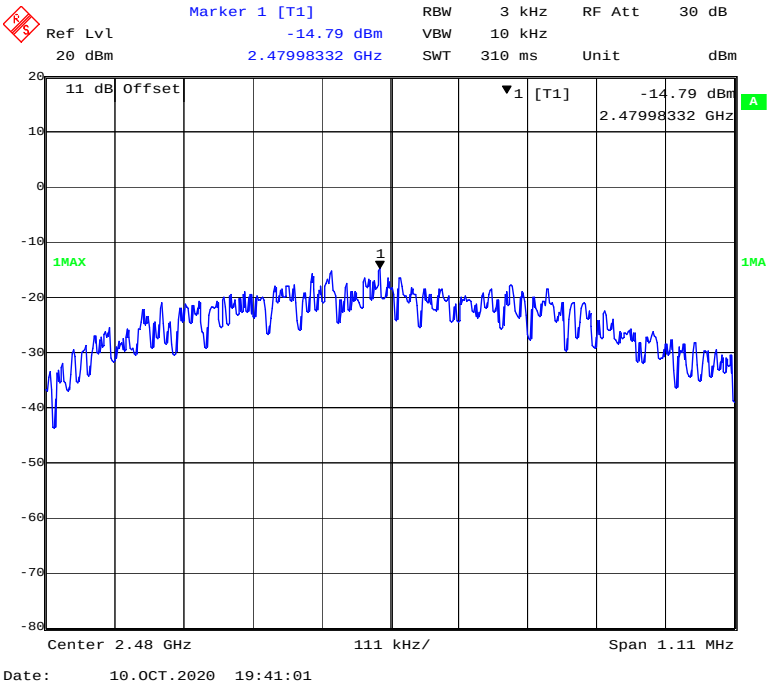
BLE (1Mbps) Mode Low Channel



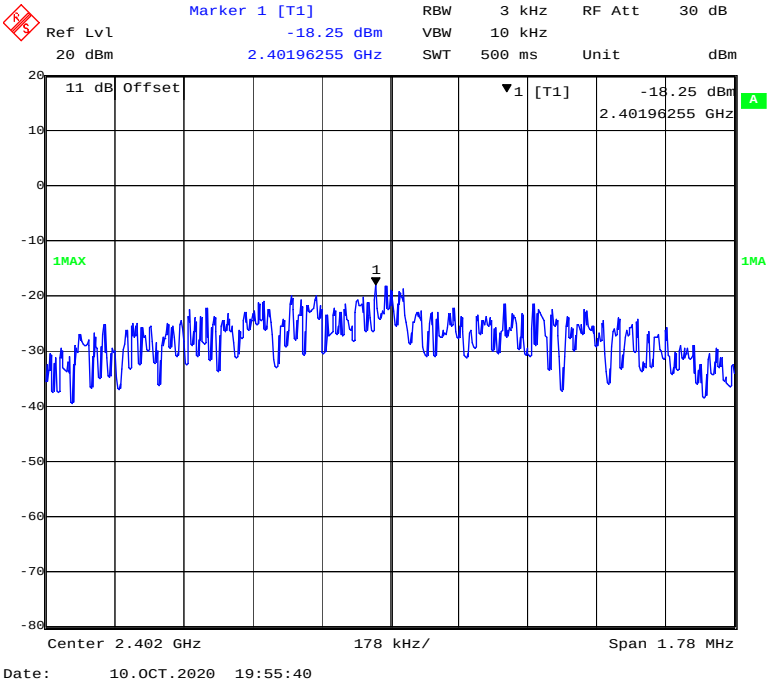
BLE (1Mbps) Mode Middle Channel



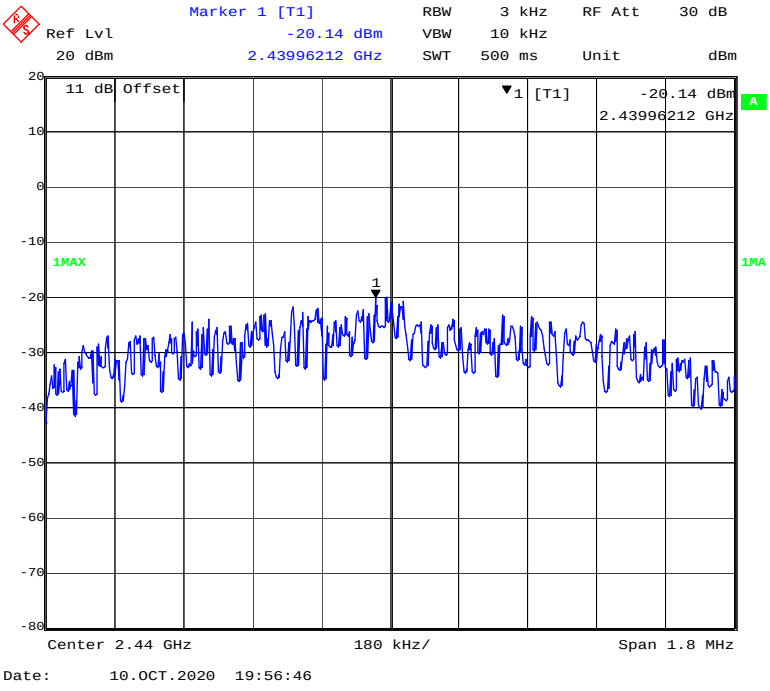
BLE (1Mbps) Mode High Channel



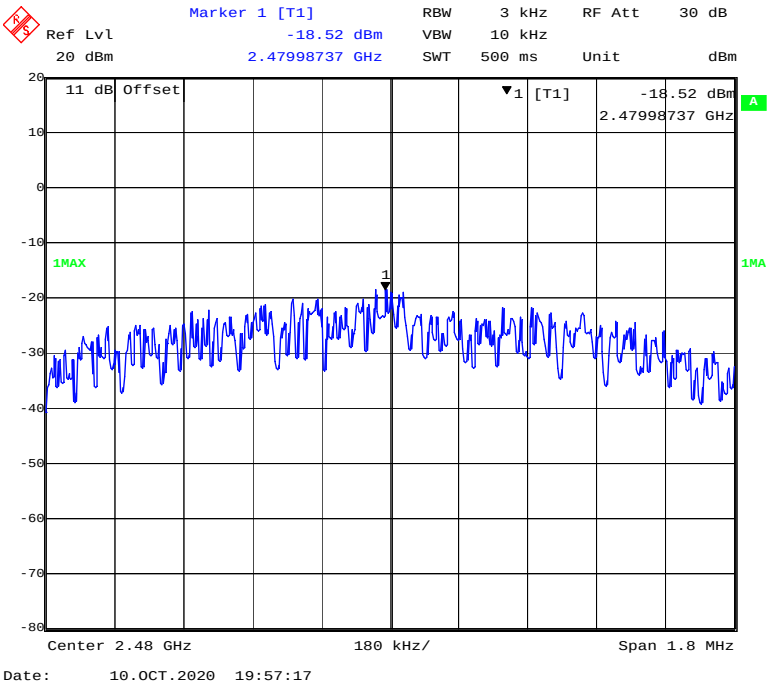
BLE (2Mbps) Mode Low Channel



BLE (2Mbps) Mode Middle Channel



BLE (2Mbps) Mode High Channel



Declarations

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

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

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

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

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