



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: 2AH25T2SL

Report Type: Original Report	Product Type: POS System
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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 letter
Power Supply:	DC 24 V 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:Chain0:0.19 dBi, Chain1: 0.66 dBi BLE: L1563: 2.19 dBi; L1573: 0.19dBi

Adapter1 Information (L1563/L1562/L1561) :

Model: CYSE65-240250

Input: AC 100-240V 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 for full test and L1573 for Spurious Emissions & AC Line Conducted Emissions test.

**All measurement and test data in this report was gathered from production sample serial number:*

20200804001(L1563)/20200804002(L1573) (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: 2AH25T2SL
FCC Part 15.407 NII submissions with FCC ID: 2AH25T2SL
FCC Part 22H24E27 PCB submissions with FCC ID: 2AH25T2SL
FCC Part 15B JAB submissions with FCC ID: 2AH25T2SL

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°C
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: QRCT 3

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

Mode	Data Rate	Power Level	
		Chain0	Chain1
802.11b	1 Mbps	21	22
802.11g	6 Mbps	16	16
802.11n-HT20	MCS0	12	12
802.11n-HT40	MCS0	8	8
BLE	1Mbps	Default	/
	2Mbps	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.

For Radiated Test:

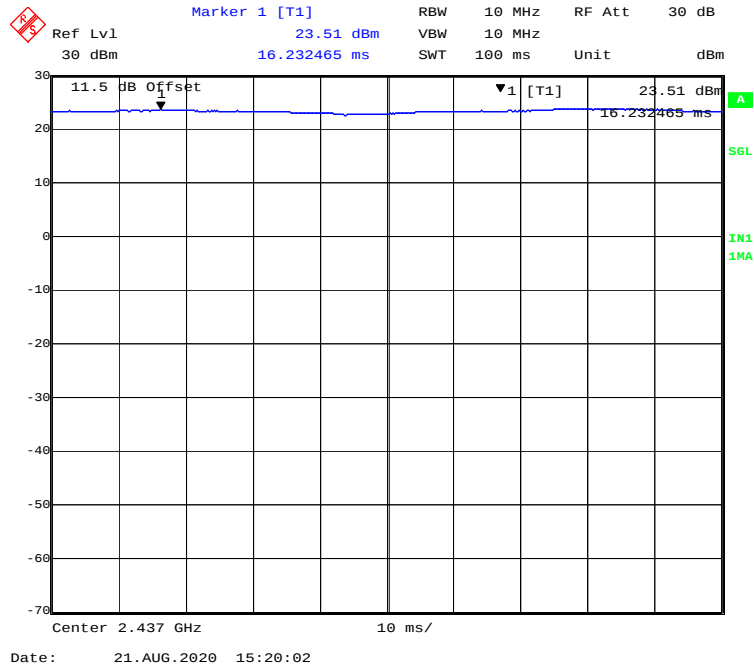
802.11b & 802.11g, SISO for each transmit chain

802.11n: MIMO for two transmit chains

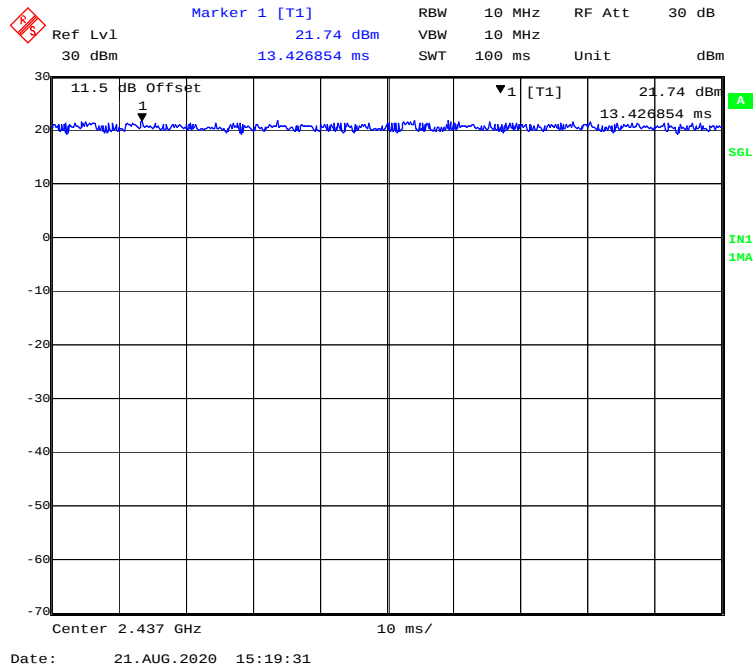
Chain0:

Duty Cycle:

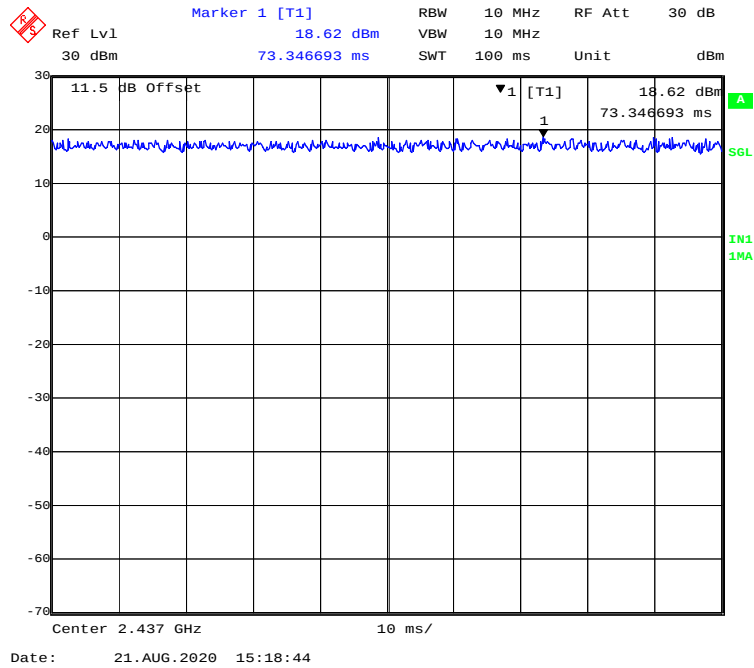
802.11b Mode Middle Channel



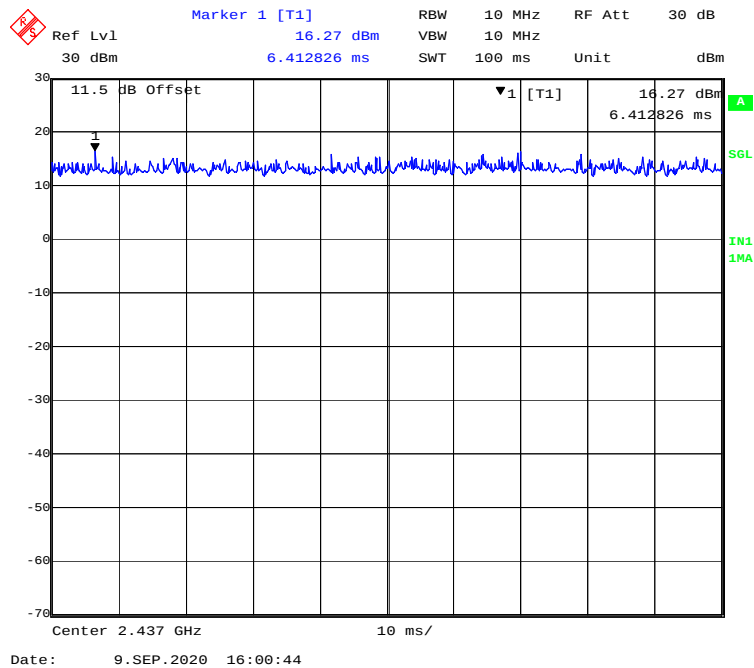
802.11g Mode Middle Channel



802.11n-HT20 Mode Middle Channel



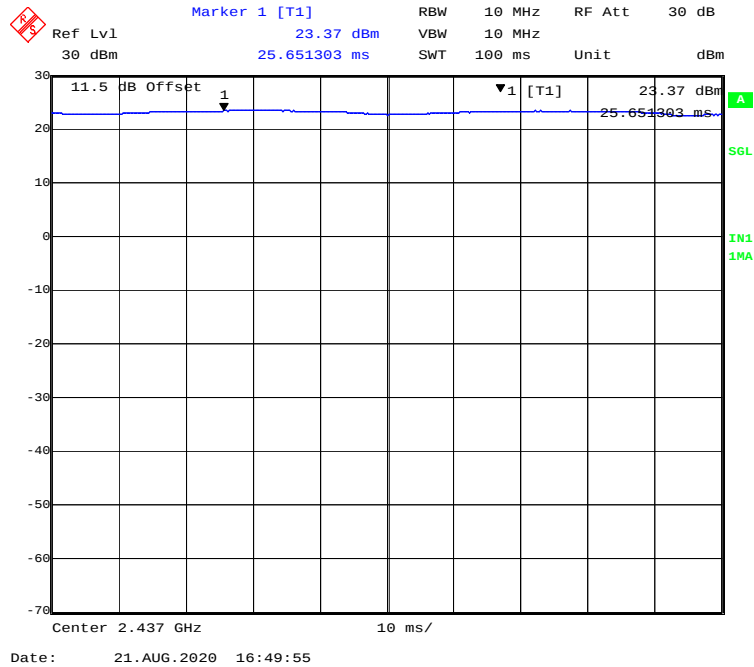
802.11n-HT40 Mode Middle Channel



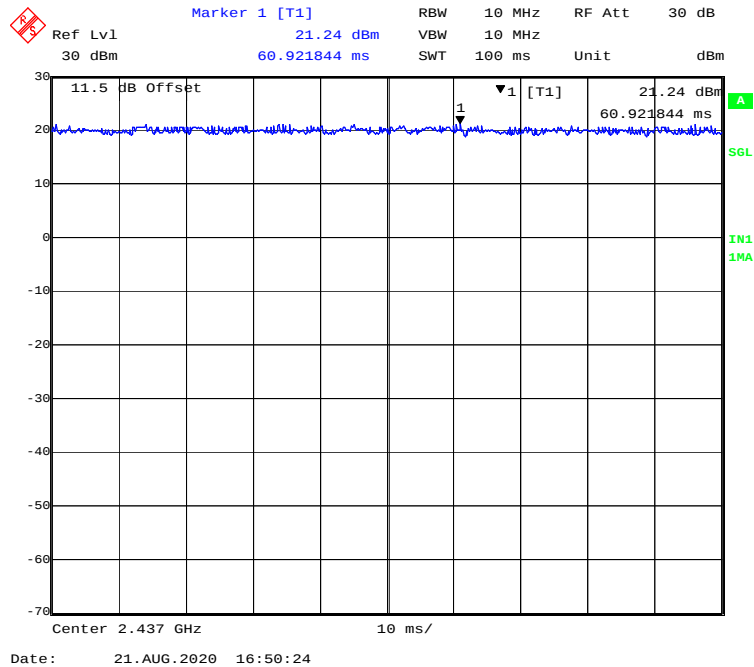
Chain1:

Duty Cycle:

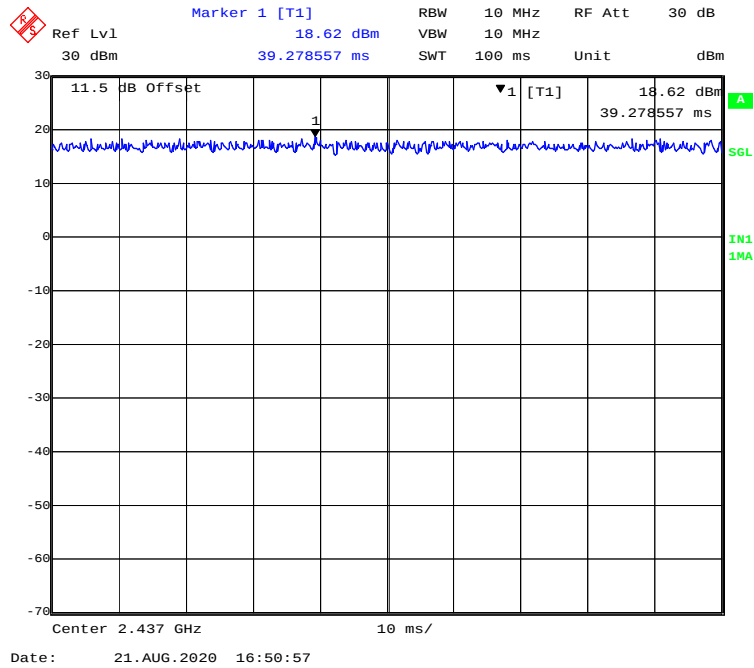
802.11b Mode Middle Channel



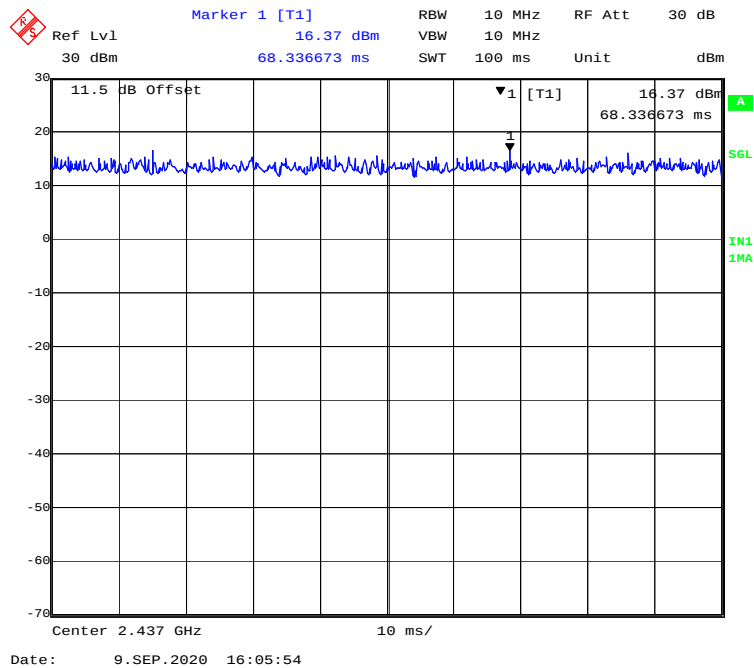
802.11g Mode Middle Channel



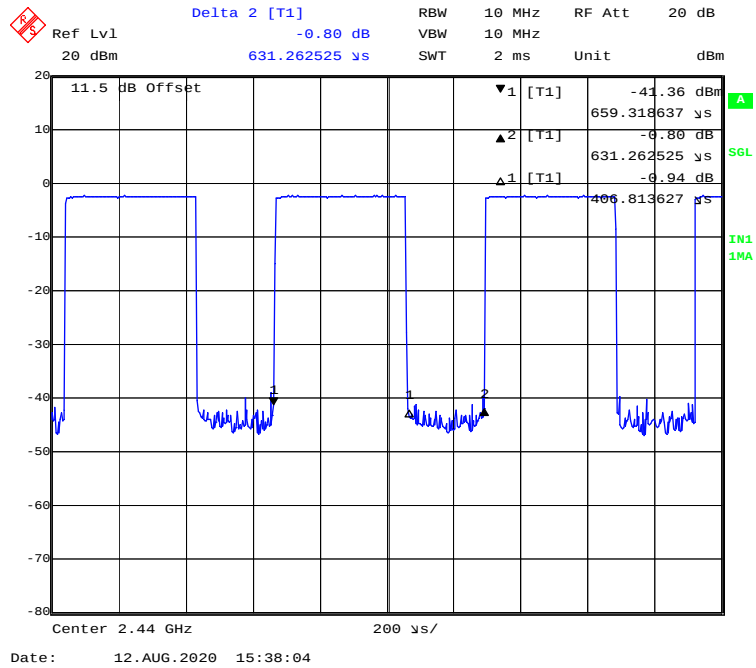
802.11n-HT20 Mode Middle Channel



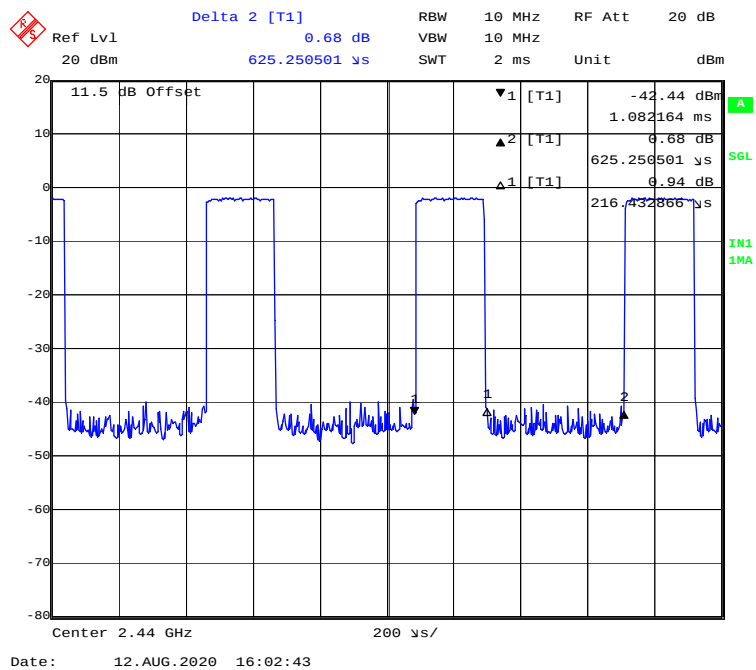
802.11n-HT40 Mode Middle Channel



BLE(1Mbps) Mode Middle Channel



BLE(2Mbps) Mode Middle Channel



Mode	Duty Cycle (%)	T(ms)	1/T(kHz)	10log(1/x)
802.11b(Chain0)	100.00	/	/	0.00
802.11b(Chain1)	100.00	/	/	0.00
802.11g(Chain0)	100.00	/	/	0.00
802.11g(Chain1)	100.00	/	/	0.00
802.11n-HT20(Chain0)	100.00	/	/	0.00
802.11n-HT20(Chain1)	100.00	/	/	0.00
802.11n-HT40(Chain0)	100.00	/	/	0.00
802.11n-HT40(Chain1)	100.00	/	/	0.00
BLE (1Mbps)	64.44	0.407	2.46	1.91
BLE (2Mbps)	34.62	0.216	4.62	4.61

Note: “x” means the Duty Cycle.

Support Equipment List and Details

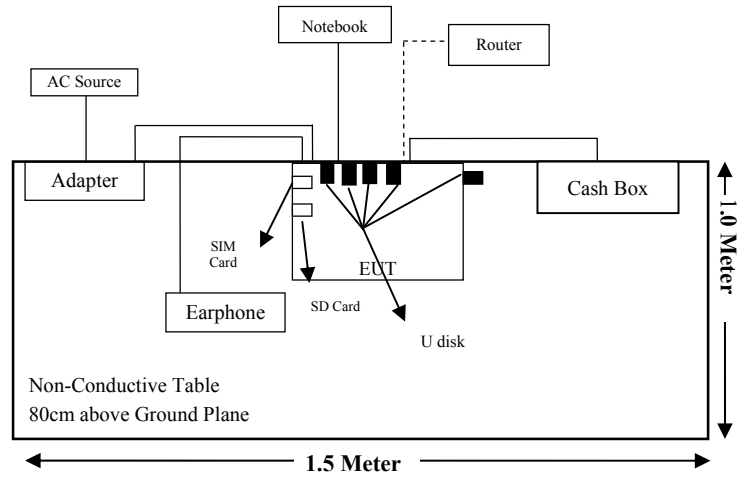
Manufacturer	Description	Model	Serial Number
BOLD	Earphone	/	/
Lenovo	U disk	T180	0A1266865200521
Shanghai Sunmi	Cash Box	/	/
TP-LINK	Router	TL-WDR5620	1188431022424
DELL	Notebook	015K3N	00190-098-766-241
Shanghai Sunmi	Serial Printer	/	/
/	SIM Card	/	/
Sandisk	SD Card	16G	/

External I/O Cable

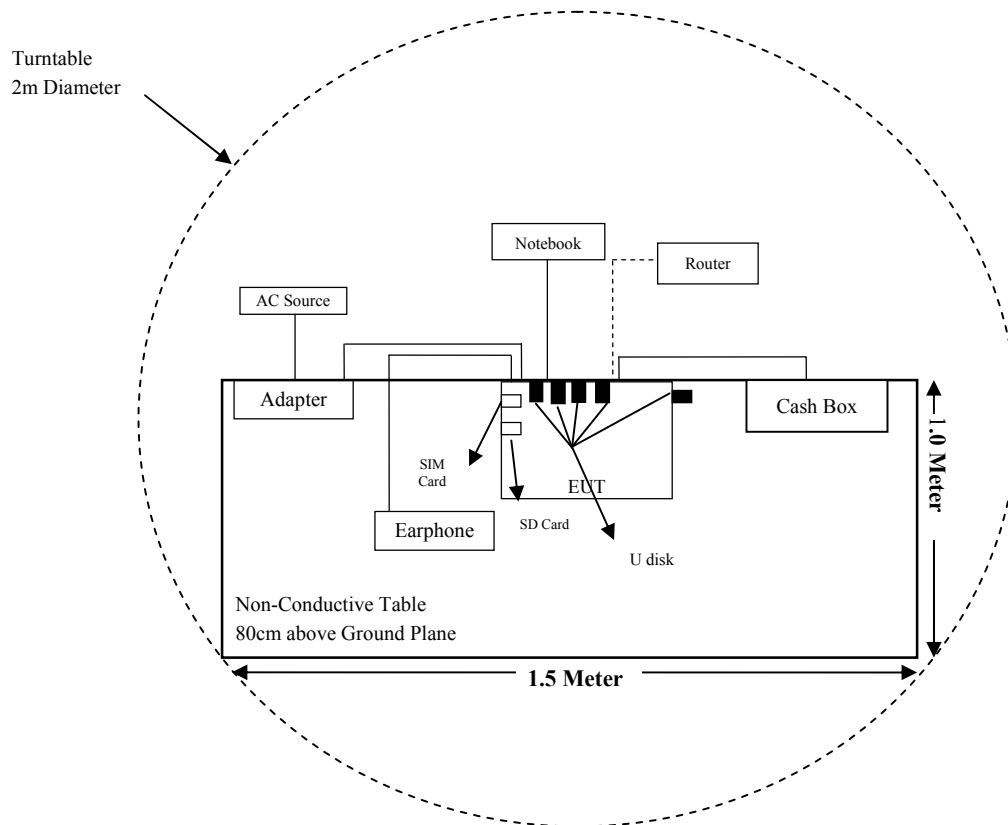
Cable Description	Length (m)	From Port	To
RJ45 Cable	10.0	EUT	Notebook
Audio cable	1.0	EUT	Earphone
RJ11 cable	1.0	EUT	Cash Box
Power cable1	1.2	EUT	Adapter
Power cable2	1.2	Adapter	AC Source

Block Diagram of Test Setup

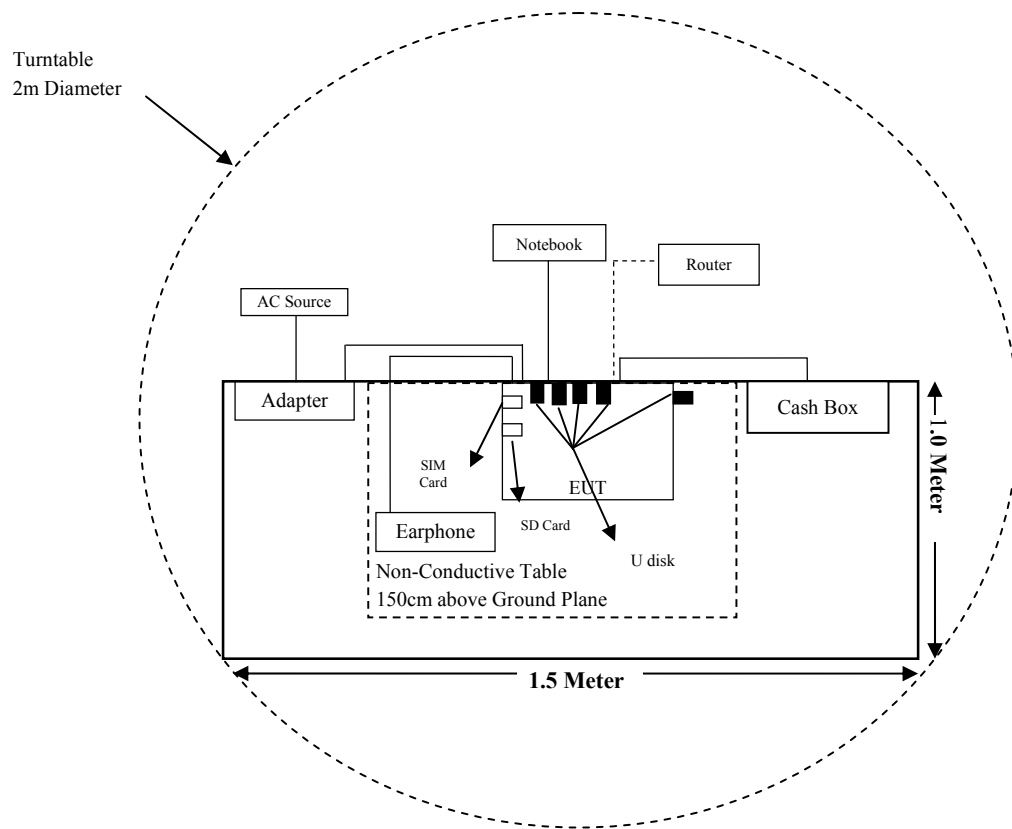
For Conducted Emissions:



For Radiated Emissions(Below 1GHz)



For Radiated Emissions(Above 1GHz)



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§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	EMI Test Receiver	ESIB26	100146	2019-12-14	2020-12-13
Narda	Attenuator	10dB	010	2020-08-15	2021-08-14
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	Sunmi C01	C01	Each Time	/
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K03-101746-zn	2019-12-14	2020-12-13
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/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

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

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

Calculated Data:**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	25.00	251.19	20	0.0829	1.0
802.11g		2.19	1.66	24.00	100.00	20	0.0330	1.0
802.11n-HT20		2.19	1.66	20.00	79.43	20	0.0262	1.0
802.11n-HT40	2422-2452	2.19	1.66	19.00	316.23	20	0.1044	1.0
BLE(1Mbps)	2402-2480	2.19	1.66	-0.50	0.89	20	0.0003	1.0
BLE(2Mbps)	2402-2480	2.19	1.66	-0.50	0.89	20	0.0003	1.0
BT	2402-2480	2.19	1.66	10.00	10.00	20	0.0033	1.0

GSM:

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)			
GPRS 850	824-849	1.46	1.40	27.50	562.34	20	0.1566	0.55
EGPRS 850	824-849	1.46	1.40	19.74	94.19	20	0.0262	0.55
GPRS 1900	1850-1910	2.23	1.67	23.50	223.87	20	0.0744	1.00
EGPRS 1900	1850-1910	2.23	1.67	20.24	105.68	20	0.0351	1.00

Note 1:

GPRS 850: Tune-up maximum output power with 1 slot is 33.50 dBm, 2 slots is 33.00 dBm, 3 slots is 31.50 dBm, 4 slots is 30.50 dBm, so the tune-up time based Ave. power compared to slotted Ave. power is 27.50dBm.

EGPRS 850: Tune-up maximum output power with 1 slot is 27.00 dBm, 2 slots is 25.50 dBm, 3 slots is 24.00 dBm, 4 slots is 22.50 dBm, so the tune-up time based Ave. power compared to slotted Ave. power is 19.74dBm.

GPRS 1900: Tune-up maximum output power with 1 slot is 29.50 dBm, 2 slots is 28.50 dBm, 3 slots is 27.50 dBm, 4 slots is 26.50 dBm, so the tune-up time based Ave. power compared to slotted Ave. power is 23.50 dBm.

EGPRS 1900: Tune-up maximum output power with 1 slot is 26.50 dBm, 2 slots is 25.50 dBm, 3 slots is 24.50 dBm, 4 slots is 22.50 dBm, so the tune-up time based Ave. power compared to slotted Ave. power is 20.24 dBm.

Number of Time slot	1	2	3	4
Duty Cycle	1:8	1:4	1:2.66	1:2
Time based Ave. power compared to slotted Ave. power	-9 dB	-6 dB	-4.26 dB	-3 dB

5G Wi-Fi/WCDMA/LTE:

Mode	Frequency Range (MHz)	Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
802.11a	5150~5250	0.05	1.01	18.50	70.79	20	0.0142	1.0
	5725~5850	0.05	1.01	19.00	79.43	20	0.0160	1.0
802.11ac20	5150~5250	0.05	1.01	21.00	125.89	20	0.0253	1.0
	5725~5850	0.05	1.01	22.00	158.49	20	0.0318	1.0
802.11n20	5150~5250	0.05	1.01	21.50	141.25	20	0.0284	1.0
	5725~5850	0.05	1.01	22.00	158.49	20	0.0318	1.0
802.11ac40	5150~5250	0.05	1.01	15.50	35.48	20	0.0071	1.0
	5725~5850	0.05	1.01	21.00	125.89	20	0.0253	1.0
802.11n40	5150~5250	0.05	1.01	15.50	35.48	20	0.0071	1.0
	5725~5850	0.05	1.01	22.00	158.49	20	0.0318	1.0
802.11ac80	5150~5250	0.05	1.01	11.00	12.59	20	0.0025	1.0
	5725~5850	0.05	1.01	21.50	141.25	20	0.0284	1.0
WCDMA Band II	1850-1910	2.23	1.67	22.50	177.83	20	0.0591	1.0
WCDMA Band V	824-849	1.46	1.40	22.50	177.83	20	0.0495	0.55
LTE Band 2	1850-1910	2.23	1.67	23.50	223.87	20	0.0744	1.0
LTE Band 4	1710-1755	2.23	1.67	23.00	199.53	20	0.0663	1.0
LTE Band 5	824-849	1.46	1.40	23.00	199.53	20	0.0556	0.55
LTE Band 7	2500-2570	2.03	1.60	22.50	177.83	20	0.0566	1.0
LTE Band 38	2570-2620	2.03	1.60	22.50	177.83	20	0.0566	1.0
LTE Band 40 Lower	2305-2315	2.03	1.60	22.50	177.83	20	0.0566	1.0
LTE Band 40 Upperr	2350-2360	2.03	1.60	22.50	177.83	20	0.0566	1.0
LTE Band 41	2555-2655	2.03	1.60	22.50	177.83	20	0.0566	1.0

Note:

1. For the above tune up power were declared by the manufacturer.
2. Wi-Fi and BT/BLE cannot 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
4. Wi-Fi & GPRS/WCDMA/LTE or BT/BLE & GPRS/WCDMA/LTE can transmit simultaneously; the worst condition is 2.4G Wi-Fi & GPRS 850 as below:

$$\sum_i \frac{S_i}{S_{Limit,i}} = 0.0829/1.00 + 0.1566/0.55 = 0.3676 < 1.0$$

Conclusion: The device meets MPE at distance 20cm.

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	0.66	1.16	25.00	316.23	20	0.0730	1.0
802.11g		0.66	1.16	24.00	251.19	20	0.0580	1.0
802.11n-HT20		0.66	1.16	20.00	100.00	20	0.0231	1.0
802.11n-HT40	2422-2452	0.66	1.16	19.00	79.43	20	0.0183	1.0
BLE(1Mbps)	2402-2480	0.19	1.04	-0.50	0.89	20	0.0002	1.0
BLE(2Mbps)	2402-2480	0.19	1.04	-0.50	0.89	20	0.0002	1.0
BT	2402-2480	0.19	1.04	10.00	10.00	20	0.0021	1.0

GSM:

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)			
GPRS 850	824-849	1.24	1.33	27.50	562.34	20	0.1488	0.55
EGPRS 850	824-849	1.24	1.33	19.74	94.19	20	0.0249	0.55
GPRS 1900	1850-1910	1.22	1.32	23.50	223.87	20	0.0588	1.00
EGPRS 1900	1850-1910	1.22	1.32	20.24	105.68	20	0.0277	1.00

Note 1:

GPRS 850: Tune-up maximum output power with 1 slot is 33.50 dBm, 2 slots is 33.00 dBm, 3 slots is 31.50 dBm, 4 slots is 30.50 dBm, so the tune-up time based Ave. power compared to slotted Ave. power is 27.50dBm.

EGPRS 850: Tune-up maximum output power with 1 slot is 27.00 dBm, 2 slots is 25.50 dBm, 3 slots is 24.00 dBm, 4 slots is 22.50 dBm, so the tune-up time based Ave. power compared to slotted Ave. power is 19.74dBm.

GPRS 1900: Tune-up maximum output power with 1 slot is 29.50 dBm, 2 slots is 28.50 dBm, 3 slots is 27.50 dBm, 4 slots is 26.50 dBm, so the tune-up time based Ave. power compared to slotted Ave. power is 23.50 dBm.

EGPRS 1900: Tune-up maximum output power with 1 slot is 26.50 dBm, 2 slots is 25.50 dBm, 3 slots is 24.50 dBm, 4 slots is 22.50 dBm, so the tune-up time based Ave. power compared to slotted Ave. power is 20.24 dBm.

Number of Time slot	1	2	3	4
Duty Cycle	1:8	1:4	1:2.66	1:2
Time based Ave. power compared to slotted Ave. power	-9 dB	-6 dB	-4.26 dB	-3 dB

5G Wi-Fi/WCDMA/LTE:

Mode	Frequency Range (MHz)	Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
802.11a	5150~5250	1.57	1.44	18.50	70.79	20	0.0203	1.0
	5725~5850	-0.79	0.83	19.00	79.43	20	0.0131	1.0
802.11ac20	5150~5250	1.57	1.44	21.00	125.89	20	0.0361	1.0
	5725~5850	-0.79	0.83	22.00	158.49	20	0.0262	1.0
802.11n20	5150~5250	1.57	1.44	21.50	141.25	20	0.0405	1.0
	5725~5850	-0.79	0.83	22.00	158.49	20	0.0262	1.0
802.11ac40	5150~5250	1.57	1.44	15.50	35.48	20	0.0102	1.0
	5725~5850	-0.79	0.83	21.00	125.89	20	0.0208	1.0
802.11n40	5150~5250	1.57	1.44	15.50	35.48	20	0.0102	1.0
	5725~5850	-0.79	0.83	22.00	158.49	20	0.0262	1.0
802.11ac80	5150~5250	1.57	1.44	11.00	12.59	20	0.0036	1.0
	5725~5850	-0.79	0.83	21.50	141.25	20	0.0233	1.0
WCDMA Band II	1850-1910	1.22	1.32	22.50	177.83	20	0.0467	1.0
WCDMA Band V	824-849	1.24	1.33	22.50	177.83	20	0.0470	0.55
LTE Band 2	1850-1910	1.22	1.32	23.50	223.87	20	0.0588	1.0
LTE Band 4	1710-1755	2.19	1.66	23.00	199.53	20	0.0659	1.0
LTE Band 5	824-849	1.24	1.33	23.00	199.53	20	0.0528	0.55
LTE Band 7	2500-2570	2.17	1.65	22.50	177.83	20	0.0584	1.0
LTE Band 38	2570-2620	1.47	1.40	22.50	177.83	20	0.0495	1.0
LTE Band 40 Lower	2305-2315	2.06	1.61	22.50	177.83	20	0.0570	1.0
LTE Band 40 Upperr	2350-2360	2.49	1.77	22.50	177.83	20	0.0626	1.0
LTE Band 41	2555-2655	1.47	1.40	22.50	177.83	20	0.0495	1.0

Note:

1. For the above tune up power were declared by the manufacturer.
2. Wi-Fi and BT/BLE cannot 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
4. Wi-Fi & GPRS/WCDMA/LTE or BT/BLE & GPRS/WCDMA/LTE can transmit simultaneously; the worst condition is 2.4G Wi-Fi & GPRS 850 as below:

$$\sum_i \frac{S_i}{S_{Limit,i}} = 0.0730/1.00 + 0.1488/0.55 = 0.3436 < 1.0$$

Conclusion: The device meets MPE at distance 20cm.

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 tow internal PCB antennas for 2.4G Wi-Fi which the each antenna gain is 2.19 dBi, and has an internal PCB antennas for BLE which the antenna gain is 2.19 dBi, fulfill the requirement of this section; The EUT (model: L1573) has two internal PCB antennas for 2.4G Wi-Fi which the antenna gains are 0.19 dBi of chain0 and 0.66 dBi of chain1, and has an internal PCB antennas for BLE which the antenna gain is 0.66 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

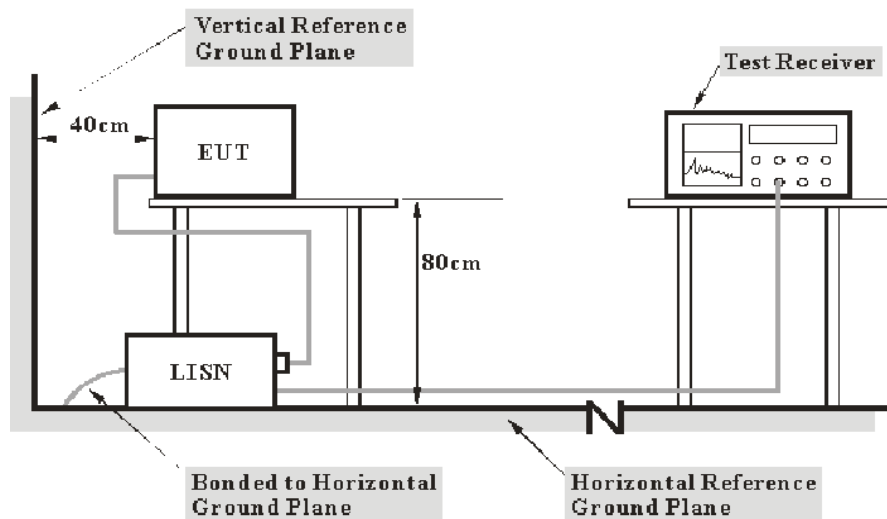
Result: Compliant.

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.

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

Factor & Over Limit Calculation

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

$$\text{Factor (dB)} = \text{LISN VDF (dB)} + \text{Cable Loss (dB)} + \text{Attenuator (dB)}$$

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:

$$\text{Over Limit (dB)} = \text{Read level (dB}\mu\text{V)} + \text{Factor (dB)} - \text{Limit (dB}\mu\text{V)}$$

Test Results Summary

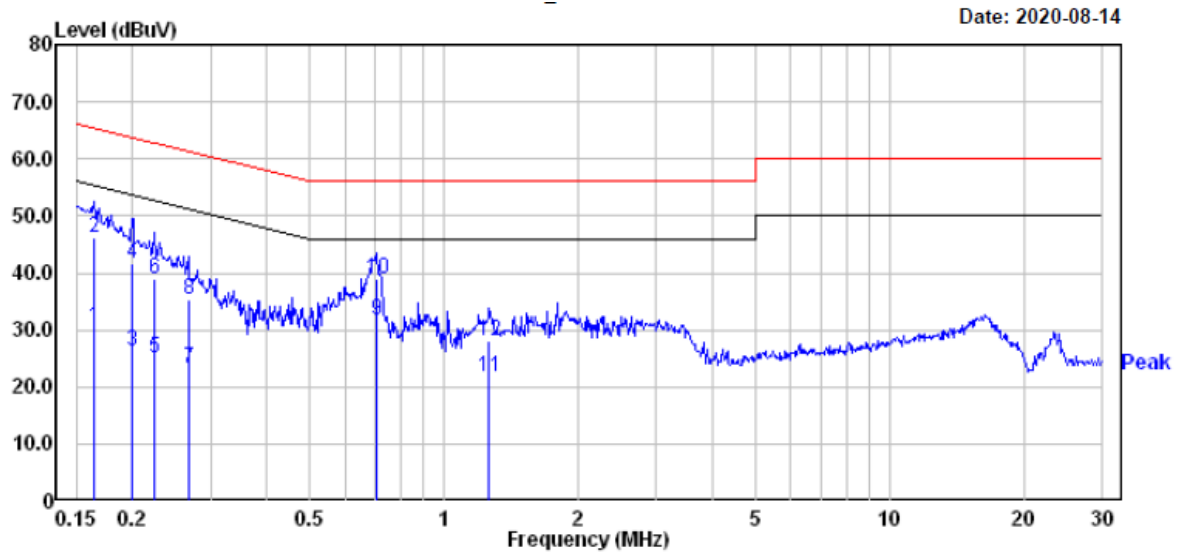
According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

Test Data**Environmental Conditions**

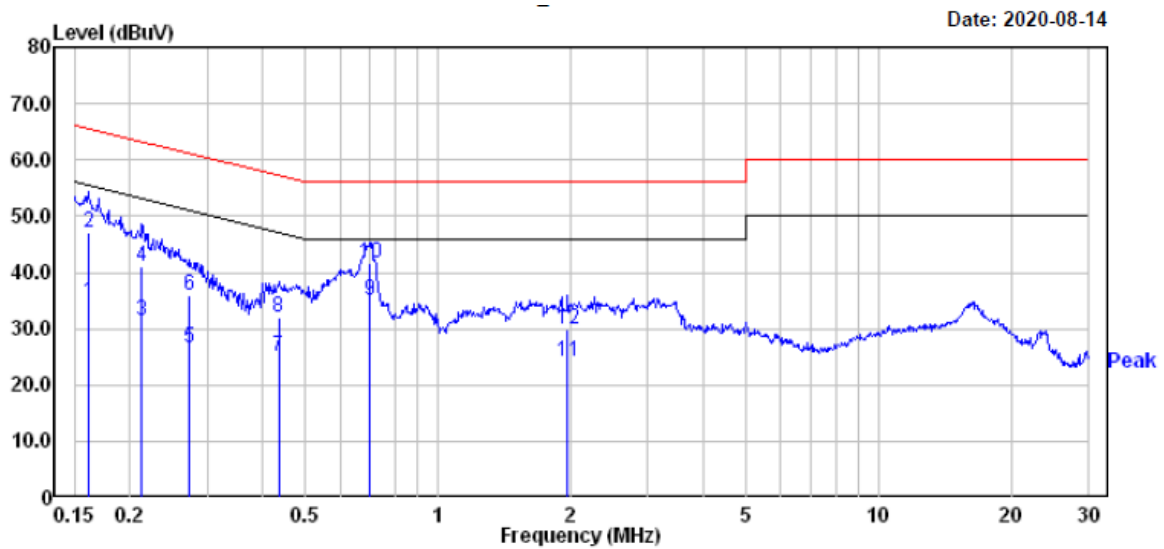
Temperature:	24.6 °C~25 °C
Relative Humidity:	49 %~50 %
ATM Pressure:	101.2 kPa ~101.5 kPa

The testing was performed by CK Huang from 2020-08-14 to 2020-09-03.

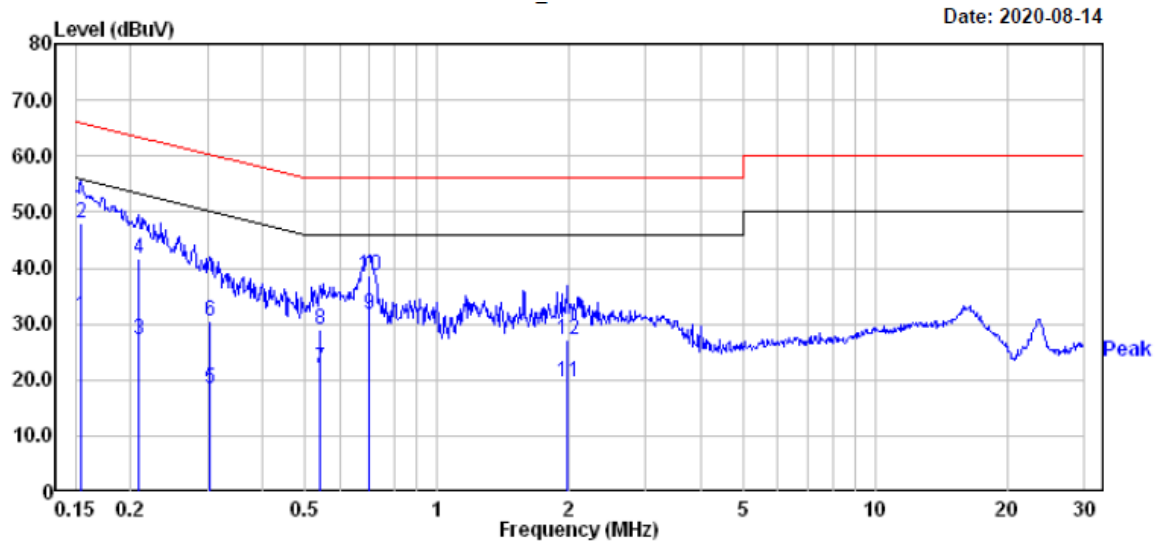
Test Result: Compliant.

Model: L1563**For Wi-Fi Mode:***EUT operation mode: Transmitting in 802.11b mode 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	0.164	10.70	19.83	30.53	55.25	-24.72	Average
2	0.164	26.40	19.83	46.23	65.25	-19.02	QP
3	0.200	6.40	19.82	26.22	53.62	-27.40	Average
4	0.200	21.80	19.82	41.62	63.62	-22.00	QP
5	0.223	5.30	19.82	25.12	52.70	-27.58	Average
6	0.223	19.20	19.82	39.02	62.70	-23.68	QP
7	0.267	3.30	19.82	23.12	51.20	-28.08	Average
8	0.267	15.50	19.82	35.32	61.20	-25.88	QP
9	0.705	12.00	19.75	31.75	46.00	-14.25	Average
10	0.705	19.20	19.75	38.95	56.00	-17.05	QP
11	1.262	1.80	19.82	21.62	46.00	-24.38	Average
12	1.262	8.20	19.82	28.02	56.00	-27.98	QP

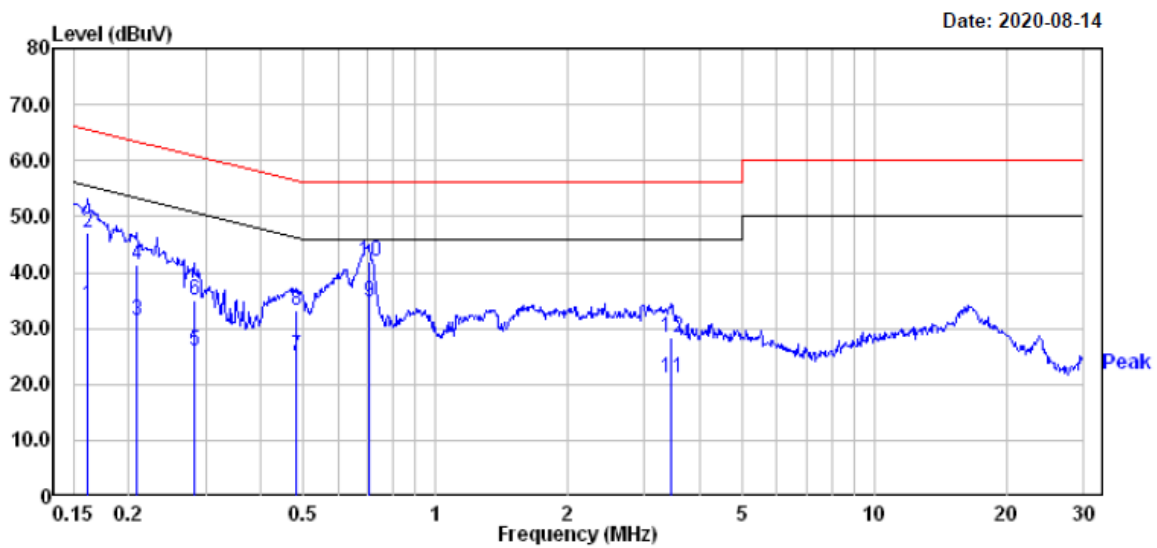
AC 120V/60 Hz, Neutral

	Freq	Read		Level	Limit	Over	
	MHz	Level	Factor	dBuV	Line	Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.161	15.00	19.83	34.83	55.43	-20.60	Average
2	0.161	27.30	19.83	47.13	65.43	-18.30	QP
3	0.213	11.50	19.82	31.32	53.10	-21.78	Average
4	0.213	21.20	19.82	41.02	63.10	-22.08	QP
5	0.273	6.70	19.82	26.52	51.03	-24.51	Average
6	0.273	16.00	19.82	35.82	61.03	-25.21	QP
7	0.435	5.40	19.75	25.15	47.15	-22.00	Average
8	0.435	12.20	19.75	31.95	57.15	-25.20	QP
9	0.701	15.20	19.75	34.95	46.00	-11.05	Average
10	0.701	22.00	19.75	41.75	56.00	-14.25	QP
11	1.970	4.40	19.83	24.23	46.00	-21.77	Average
12	1.970	10.20	19.83	30.03	56.00	-25.97	QP

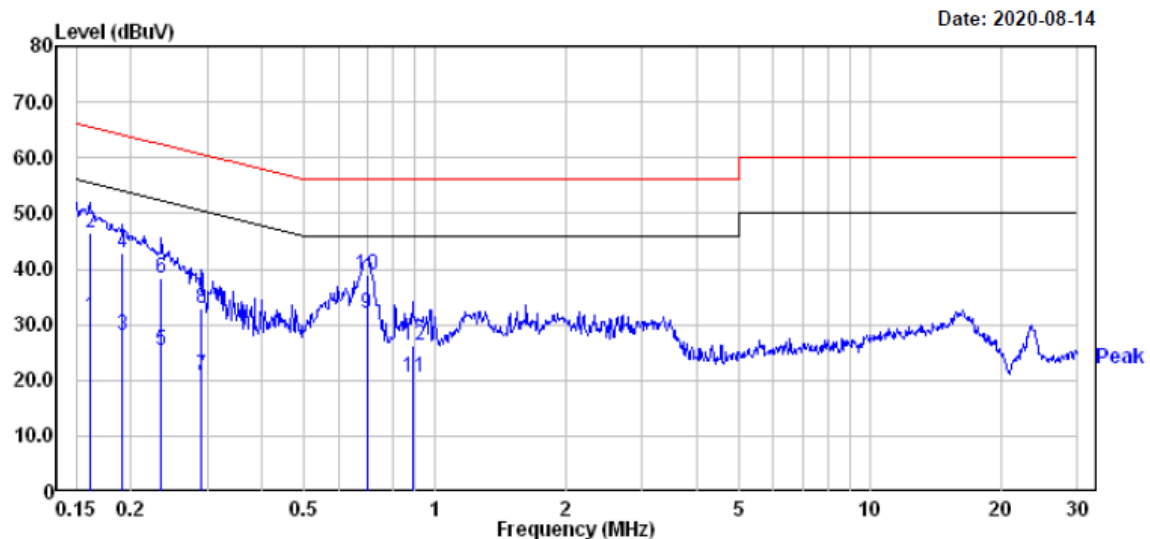
For BLE Mode:**Data rate: 1Mbps***EUT operation mode: Transmitting in high channel (worst case)***AC 120V/60 Hz, Line**

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.155	11.70	19.82	31.52	55.74	-24.22	Average
2	0.155	28.30	19.82	48.12	65.74	-17.62	QP
3	0.208	7.50	19.82	27.32	53.27	-25.95	Average
4	0.208	21.70	19.82	41.52	63.27	-21.75	QP
5	0.303	-1.51	19.83	18.32	50.15	-31.83	Average
6	0.303	10.69	19.83	30.52	60.15	-29.63	QP
7	0.541	2.41	19.75	22.16	46.00	-23.84	Average
8	0.541	9.11	19.75	28.86	56.00	-27.14	QP
9	0.701	12.00	19.75	31.75	46.00	-14.25	Average
10	0.701	18.80	19.75	38.55	56.00	-17.45	QP
11	1.980	-0.30	19.83	19.53	46.00	-26.47	Average
12	1.980	7.30	19.83	27.13	56.00	-28.87	QP

AC 120V/60 Hz, Neutral



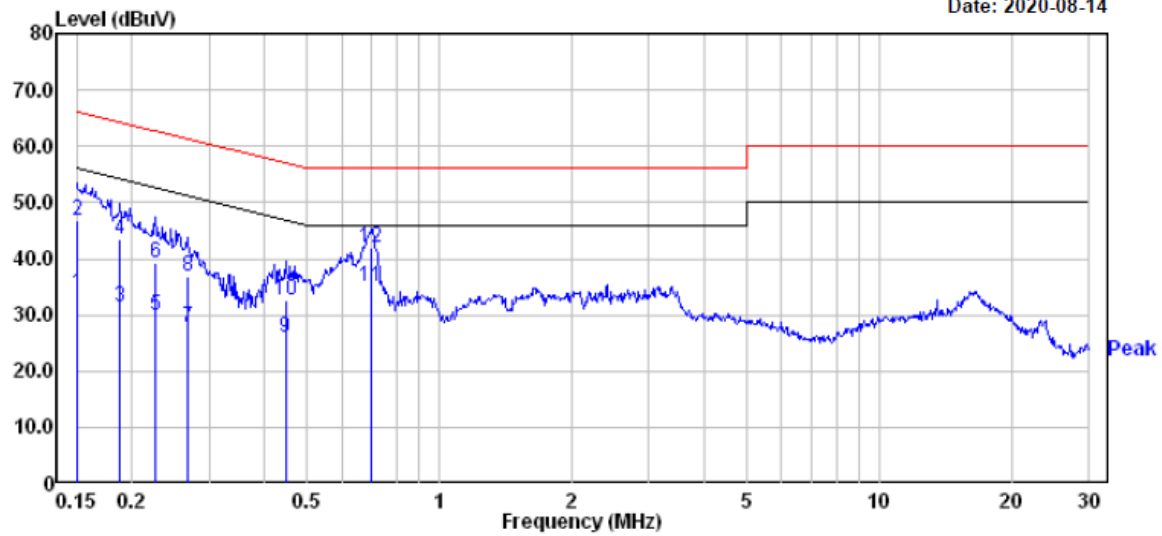
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.162	14.40	19.83	34.23	55.38	-21.15	Average
2	0.162	27.20	19.83	47.03	65.38	-18.35	QP
3	0.208	11.60	19.82	31.42	53.27	-21.85	Average
4	0.208	21.50	19.82	41.32	63.27	-21.95	QP
5	0.282	6.00	19.82	25.82	50.76	-24.94	Average
6	0.282	15.20	19.82	35.02	60.76	-25.74	QP
7	0.481	5.40	19.76	25.16	46.32	-21.16	Average
8	0.481	13.40	19.76	33.16	56.32	-23.16	QP
9	0.705	14.90	19.75	34.65	46.00	-11.35	Average
10	0.705	22.30	19.75	42.05	56.00	-13.95	QP
11	3.454	1.70	19.46	21.16	46.00	-24.84	Average
12	3.454	8.80	19.46	28.26	56.00	-27.74	QP

Data rate: 2Mbps*EUT operation mode: Transmitting in high channel (worst case)***AC 120V/60 Hz, Line**

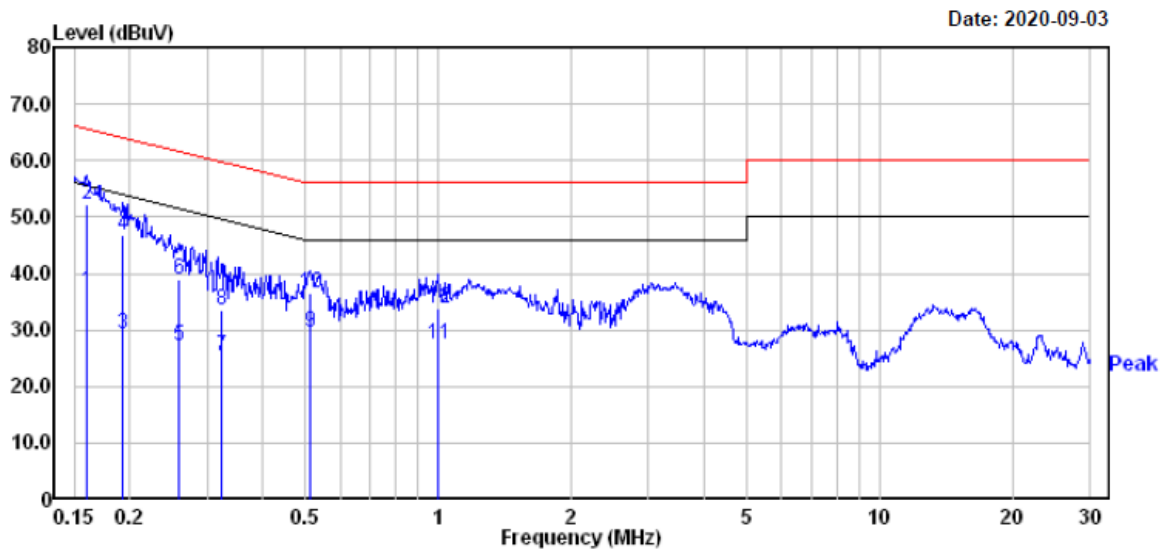
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.161	11.60	19.83	31.43	55.43	-24.00	Average
2	0.161	26.70	19.83	46.53	65.43	-18.90	QP
3	0.191	8.40	19.82	28.22	53.98	-25.76	Average
4	0.191	23.10	19.82	42.92	63.98	-21.06	QP
5	0.235	5.60	19.82	25.42	52.26	-26.84	Average
6	0.235	18.60	19.82	38.42	62.26	-23.84	QP
7	0.291	0.90	19.82	20.72	50.50	-29.78	Average
8	0.291	13.00	19.82	32.82	60.50	-27.68	QP
9	0.697	12.20	19.75	31.95	46.00	-14.05	Average
10	0.697	19.30	19.75	39.05	56.00	-16.95	QP
11	0.890	0.79	19.73	20.52	46.00	-25.48	Average
12	0.890	6.49	19.73	26.22	56.00	-29.78	QP

AC 120V/60 Hz, Neutral

Date: 2020-08-14

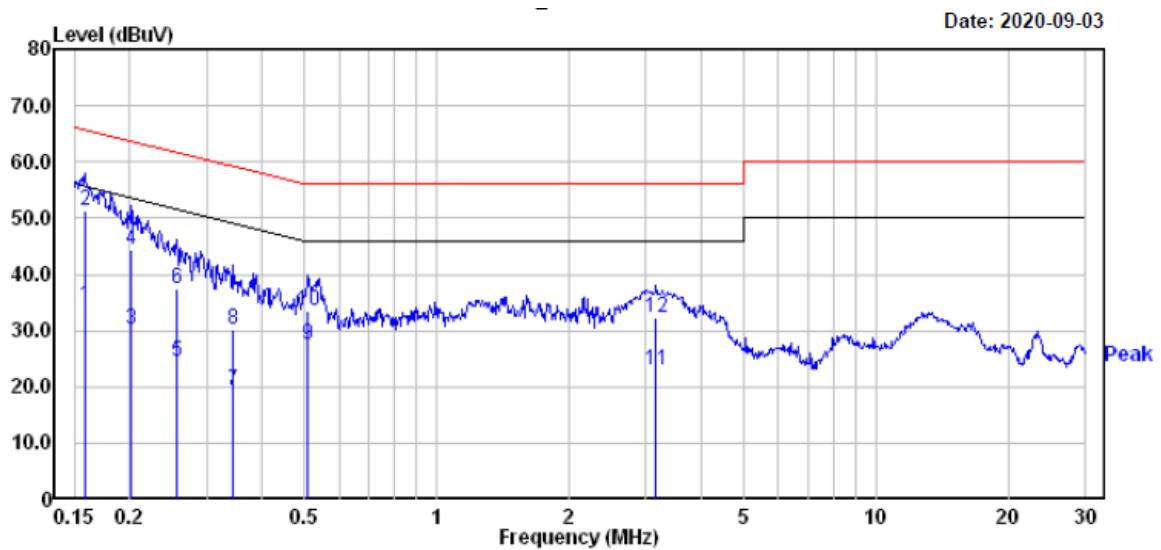


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.150	14.00	19.82	33.82	56.00	-22.18	Average
2	0.150	27.00	19.82	46.82	66.00	-19.18	QP
3	0.188	11.51	19.82	31.33	54.11	-22.78	Average
4	0.188	23.71	19.82	43.53	64.11	-20.58	QP
5	0.227	10.10	19.82	29.92	52.57	-22.65	Average
6	0.227	19.30	19.82	39.12	62.57	-23.45	QP
7	0.267	8.10	19.82	27.92	51.20	-23.28	Average
8	0.267	17.00	19.82	36.82	61.20	-24.38	QP
9	0.447	6.10	19.75	25.85	46.93	-21.08	Average
10	0.447	12.80	19.75	32.55	56.93	-24.38	QP
11	0.697	15.30	19.75	35.05	46.00	-10.95	Average
12	0.697	22.30	19.75	42.05	56.00	-13.95	QP

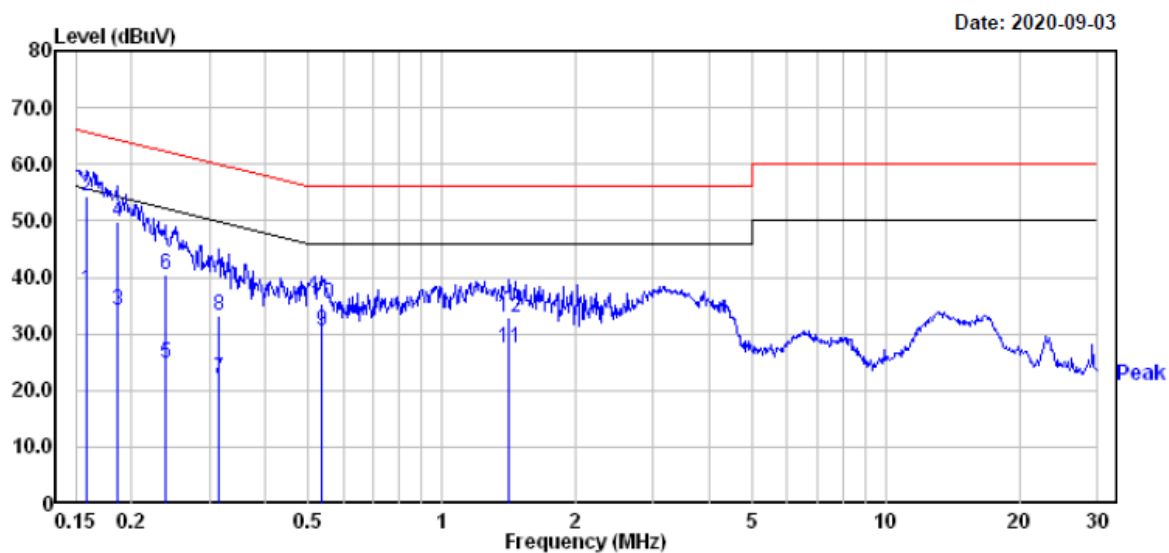
Model: L1573**For Wi-Fi Mode:***EUT operation mode: Transmitting in 802.11b mode low channel (worst case)***AC 120V/60 Hz, Line**

		Read		Limit	Over	
	Freq	Level	Factor	Level	Line	Limit Remark
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.160	17.00	19.83	36.83	55.47	-18.64 Average
2	0.160	32.50	19.83	52.33	65.47	-13.14 QP
3	0.193	9.50	19.82	29.32	53.89	-24.57 Average
4	0.193	27.10	19.82	46.92	63.89	-16.97 QP
5	0.258	7.20	19.82	27.02	51.51	-24.49 Average
6	0.258	19.10	19.82	38.92	61.51	-22.59 QP
7	0.323	5.60	19.82	25.42	49.62	-24.20 Average
8	0.323	13.70	19.82	33.52	59.62	-26.10 QP
9	0.513	9.90	19.76	29.66	46.00	-16.34 Average
10	0.513	16.80	19.76	36.56	56.00	-19.44 QP
11	1.000	7.70	19.82	27.52	46.00	-18.48 Average
12	1.000	14.10	19.82	33.92	56.00	-22.08 QP

AC 120V/60 Hz, Neutral

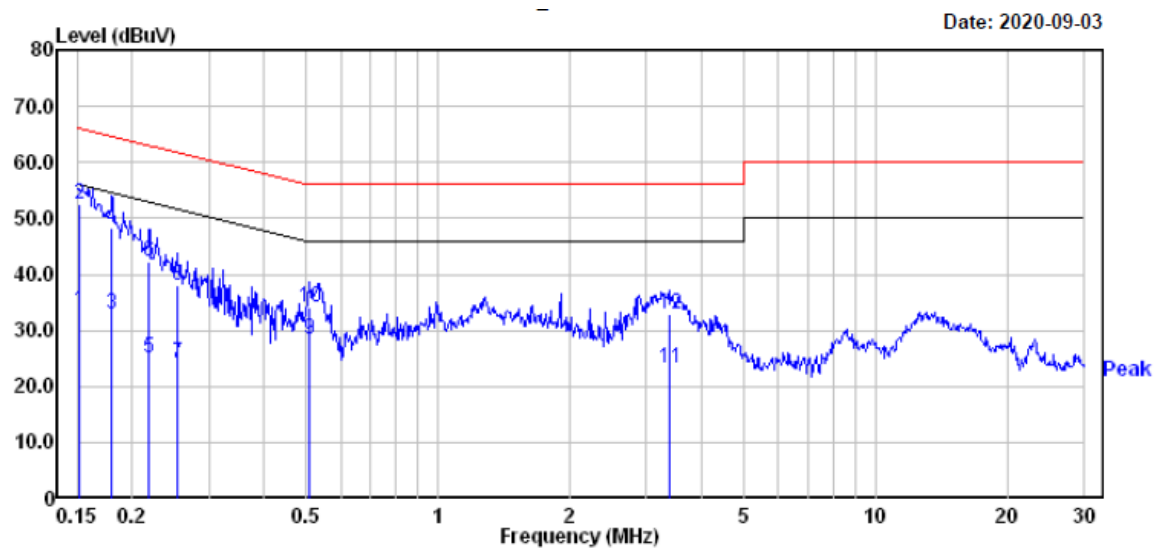


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	14.70	19.82	34.52	55.56	-21.04	Average
2	0.158	31.40	19.82	51.22	65.56	-14.34	QP
3	0.202	10.30	19.82	30.12	53.54	-23.42	Average
4	0.202	24.50	19.82	44.32	63.54	-19.22	QP
5	0.256	4.60	19.82	24.42	51.56	-27.14	Average
6	0.256	17.70	19.82	37.52	61.56	-24.04	QP
7	0.345	-0.60	19.81	19.21	49.09	-29.88	Average
8	0.345	10.30	19.81	30.11	59.09	-28.98	QP
9	0.510	7.70	19.76	27.46	46.00	-18.54	Average
10	0.510	13.80	19.76	33.56	56.00	-22.44	QP
11	3.156	3.50	19.46	22.96	46.00	-23.04	Average
12	3.156	12.80	19.46	32.26	56.00	-23.74	QP

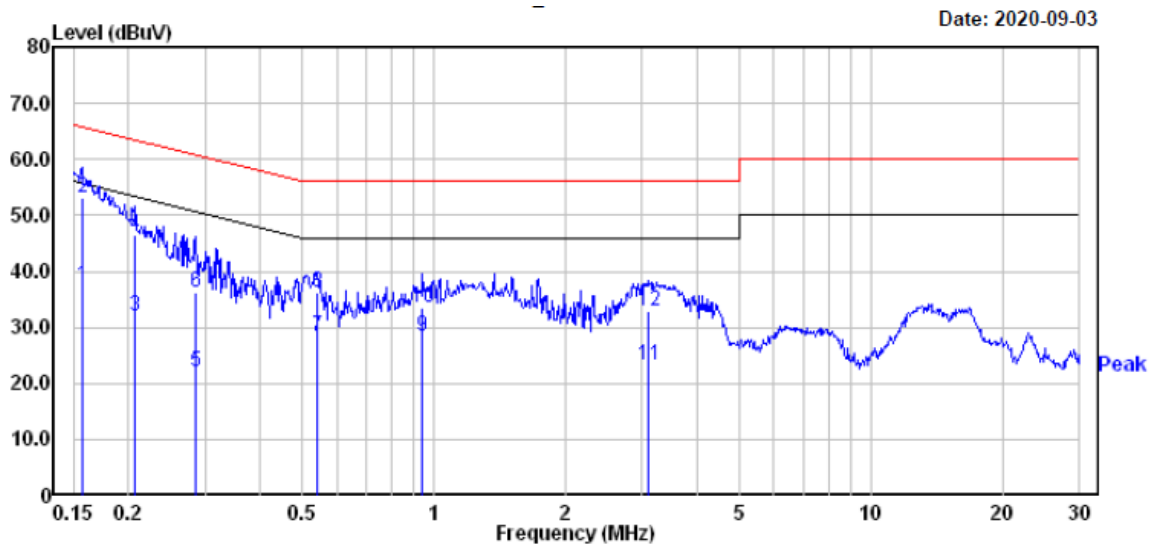
For BLE Mode:**Data rate: 1Mbps***EUT operation mode: Transmitting in high channel (worst case)***AC 120V/60 Hz, Line**

		Read			Limit	Over	
	Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.159	17.90	19.82	37.72	55.52	-17.80	Average
2	0.159	34.50	19.82	54.32	65.52	-11.20	QP
3	0.185	14.31	19.82	34.13	54.24	-20.11	Average
4	0.185	30.01	19.82	49.83	64.24	-14.41	QP
5	0.238	5.00	19.82	24.82	52.17	-27.35	Average
6	0.238	20.50	19.82	40.32	62.17	-21.85	QP
7	0.315	2.10	19.82	21.92	49.84	-27.92	Average
8	0.315	13.30	19.82	33.12	59.84	-26.72	QP
9	0.535	10.81	19.75	30.56	46.00	-15.44	Average
10	0.535	15.61	19.75	35.36	56.00	-20.64	QP
11	1.418	7.71	19.83	27.54	46.00	-18.46	Average
12	1.418	13.01	19.83	32.84	56.00	-23.16	QP

AC 120V/60 Hz, Neutral



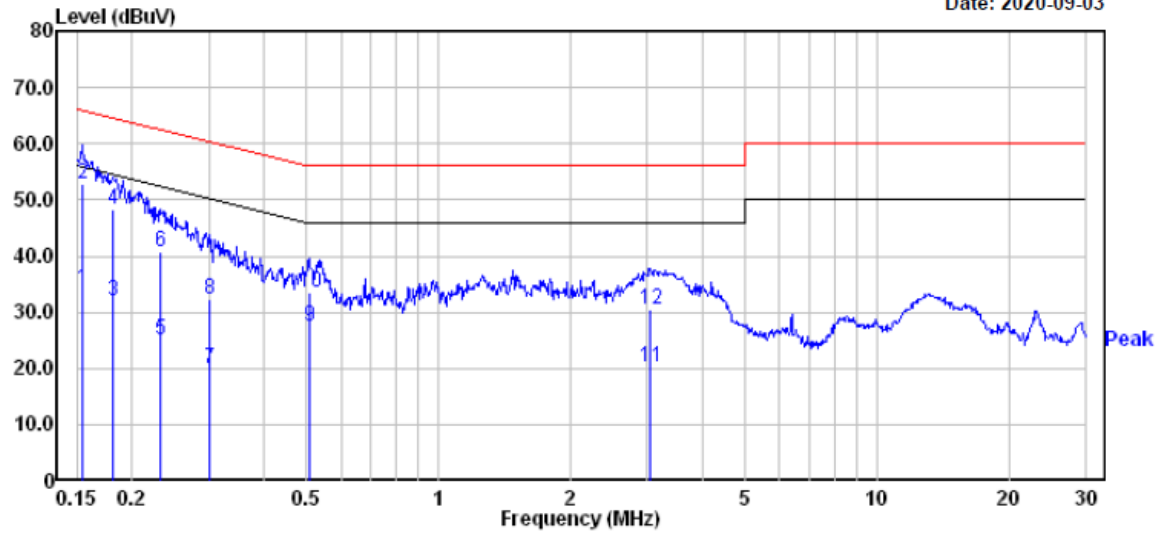
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.152	13.60	19.82	33.42	55.91	-22.49	Average
2	0.152	32.80	19.82	52.62	65.91	-13.29	QP
3	0.180	13.00	19.83	32.83	54.50	-21.67	Average
4	0.180	28.60	19.83	48.43	64.50	-16.07	QP
5	0.219	5.20	19.82	25.02	52.88	-27.86	Average
6	0.219	22.30	19.82	42.12	62.88	-20.76	QP
7	0.253	4.20	19.82	24.02	51.64	-27.62	Average
8	0.253	18.10	19.82	37.92	61.64	-23.72	QP
9	0.510	8.50	19.76	28.26	46.00	-17.74	Average
10	0.510	14.40	19.76	34.16	56.00	-21.84	QP
11	3.399	3.70	19.46	23.16	46.00	-22.84	Average
12	3.399	13.40	19.46	32.86	56.00	-23.14	QP

Data rate: 2Mbps*EUT operation mode: Transmitting in high channel (worst case)***AC 120V/60 Hz, Line**

		Read		Limit	Over	
	Freq	Level	Factor	Level	Line	Limit Remark
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.156	17.70	19.82	37.52	55.65	-18.13 Average
2	0.156	33.20	19.82	53.02	65.65	-12.63 QP
3	0.206	12.10	19.82	31.92	53.36	-21.44 Average
4	0.206	26.60	19.82	46.42	63.36	-16.94 QP
5	0.285	2.20	19.82	22.02	50.68	-28.66 Average
6	0.285	16.30	19.82	36.12	60.68	-24.56 QP
7	0.541	8.71	19.75	28.46	46.00	-17.54 Average
8	0.541	16.61	19.75	36.36	56.00	-19.64 QP
9	0.943	8.50	19.77	28.27	46.00	-17.73 Average
10	0.943	13.80	19.77	33.57	56.00	-22.43 QP
11	3.107	3.80	19.46	23.26	46.00	-22.74 Average
12	3.107	13.50	19.46	32.96	56.00	-23.04 QP

AC 120V/60 Hz, Neutral

Date: 2020-09-03

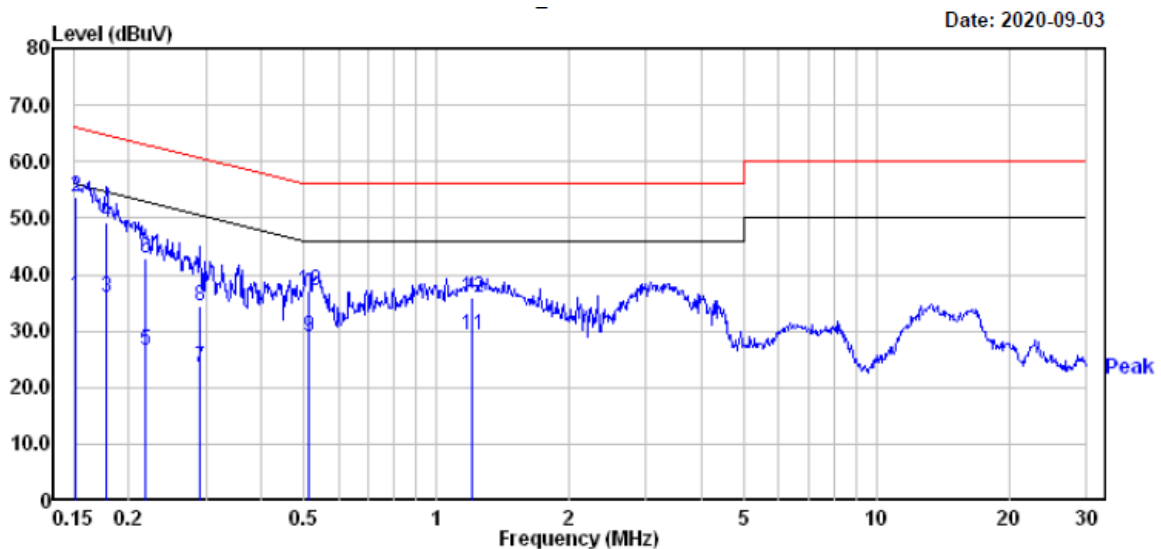


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.154	14.40	19.82	34.22	55.78	-21.56	Average
2	0.154	33.00	19.82	52.82	65.78	-12.96	QP
3	0.181	12.30	19.83	32.13	54.46	-22.33	Average
4	0.181	28.60	19.83	48.43	64.46	-16.03	QP
5	0.232	5.10	19.82	24.92	52.39	-27.47	Average
6	0.232	21.00	19.82	40.82	62.39	-21.57	QP
7	0.302	0.09	19.83	19.92	50.19	-30.27	Average
8	0.302	12.39	19.83	32.22	60.19	-27.97	QP
9	0.507	7.80	19.76	27.56	46.00	-18.44	Average
10	0.507	13.70	19.76	33.46	56.00	-22.54	QP
11	3.041	0.70	19.46	20.16	46.00	-25.84	Average
12	3.041	10.90	19.46	30.36	56.00	-25.64	QP

Transmitting simultaneously test of model: L1573:

EUT operation mode: Transmitting simultaneously with 802.11b mode low channel and GPRS 850 middle channel (worst case)

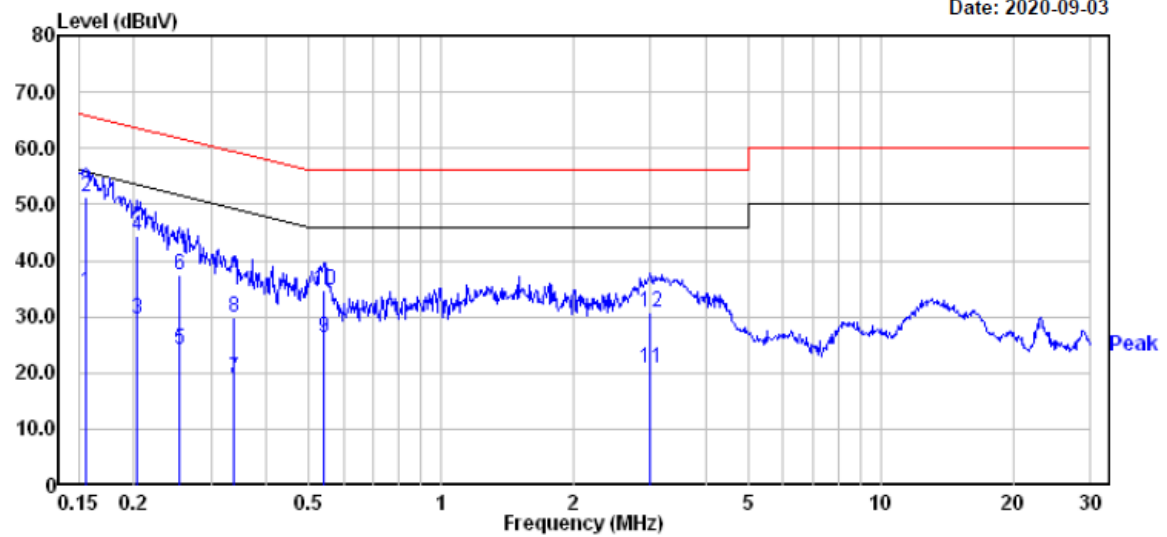
AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.152	16.50	19.82	36.32	55.91	-19.59	Average
2	0.152	33.90	19.82	53.72	65.91	-12.19	QP
3	0.178	16.00	19.83	35.83	54.59	-18.76	Average
4	0.178	29.50	19.83	49.33	64.59	-15.26	QP
5	0.219	6.70	19.82	26.52	52.88	-26.36	Average
6	0.219	23.00	19.82	42.82	62.88	-20.06	QP
7	0.291	3.70	19.82	23.52	50.50	-26.98	Average
8	0.291	14.60	19.82	34.42	60.50	-26.08	QP
9	0.513	9.20	19.76	28.96	46.00	-17.04	Average
10	0.513	17.30	19.76	37.06	56.00	-18.94	QP
11	1.203	9.50	19.81	29.31	46.00	-16.69	Average
12	1.203	16.00	19.81	35.81	56.00	-20.19	QP

AC 120V/60 Hz, Neutral

Date: 2020-09-03



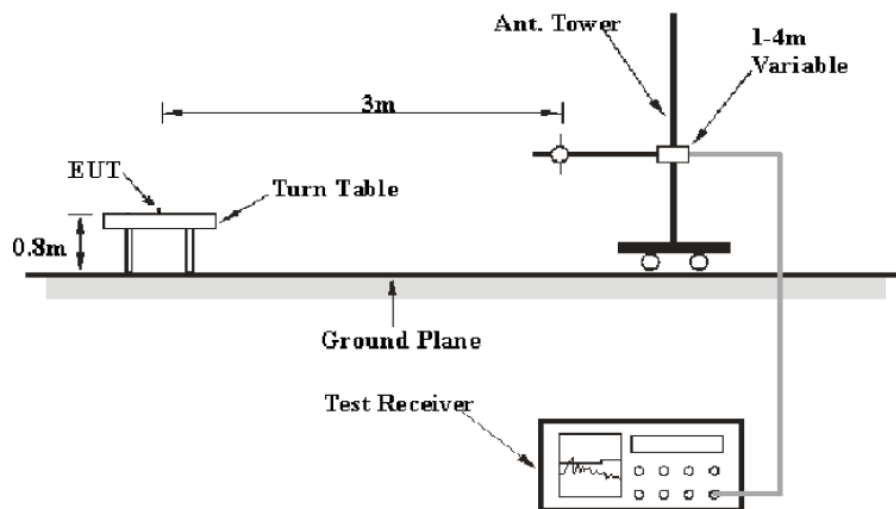
		Read		Limit	Over	
	Freq	Level	Factor	Level	Line	Limit Remark
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.156	14.50	19.82	34.32	55.69	-21.37 Average
2	0.156	31.60	19.82	51.42	65.69	-14.27 QP
3	0.203	9.90	19.82	29.72	53.49	-23.77 Average
4	0.203	24.70	19.82	44.52	63.49	-18.97 QP
5	0.253	4.40	19.82	24.22	51.64	-27.42 Average
6	0.253	17.60	19.82	37.42	61.64	-24.22 QP
7	0.337	-0.70	19.81	19.11	49.27	-30.16 Average
8	0.337	10.20	19.81	30.01	59.27	-29.26 QP
9	0.541	6.61	19.75	26.36	46.00	-19.64 Average
10	0.541	14.91	19.75	34.66	56.00	-21.34 QP
11	2.993	1.40	19.46	20.86	46.00	-25.14 Average
12	2.993	11.20	19.46	30.66	56.00	-25.34 QP

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

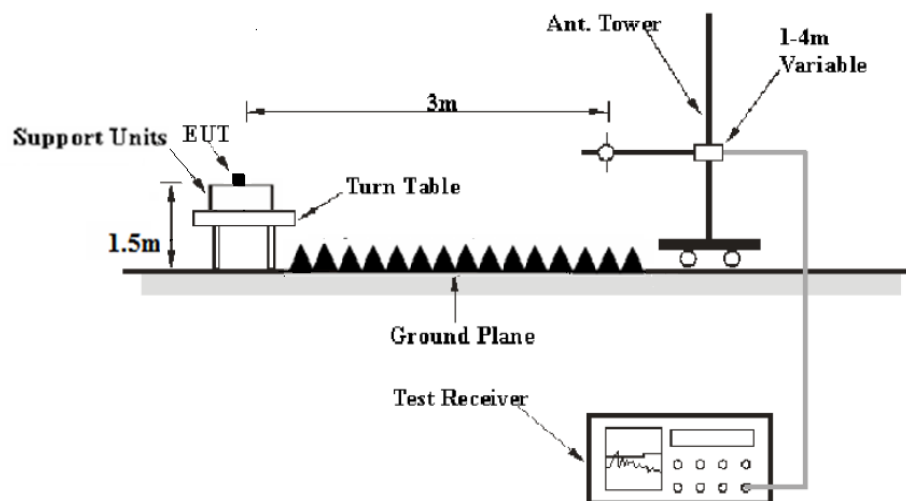
FCC §15.247 (d); §15.209; §15.205;

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.

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

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 (dB μ V/m) = Meter Reading (dB μ V) + 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 (dB μ V/m) - Corrected Amplitude (dB μ V/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:	24.1~25.5 °C
Relative Humidity:	50~52 %
ATM Pressure:	101.1~101.5 kPa

The testing was performed by CK Huang from 2020-08-15 to 2020-11-05.

Test Result: Compliant.

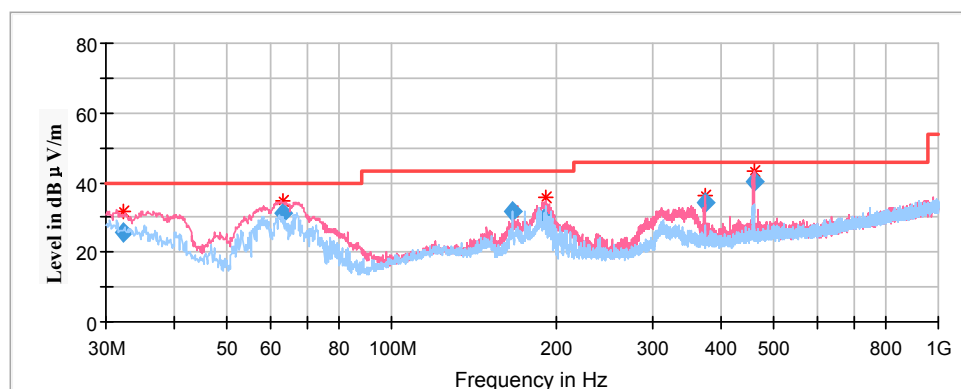
EUT operation mode: Transmitting

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 **low channel of 802.11b 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)				
32.35	25.45	100.0	V	331.0	-6.0	40.00	14.55
63.26	31.38	100.0	V	353.0	-18.2	40.00	8.62
166.35	31.58	200.0	H	93.0	-13.5	43.50	11.92
191.67	30.34	200.0	V	16.0	-13.3	43.50	13.16
374.25	34.41	100.0	V	21.0	-9.2	46.00	11.59
459.49	40.01	100.0	V	21.0	-7.1	46.00	5.99

Chain 0:**1GHz-18GHz:****802.11b Mode:**

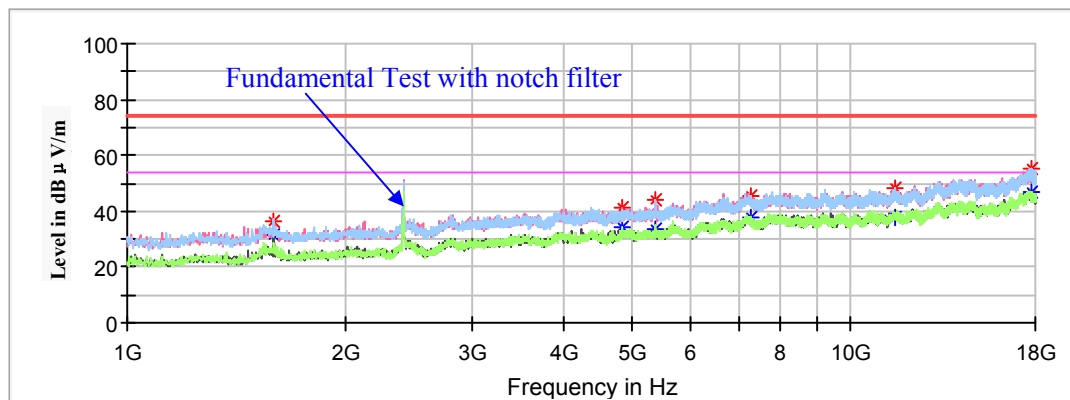
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

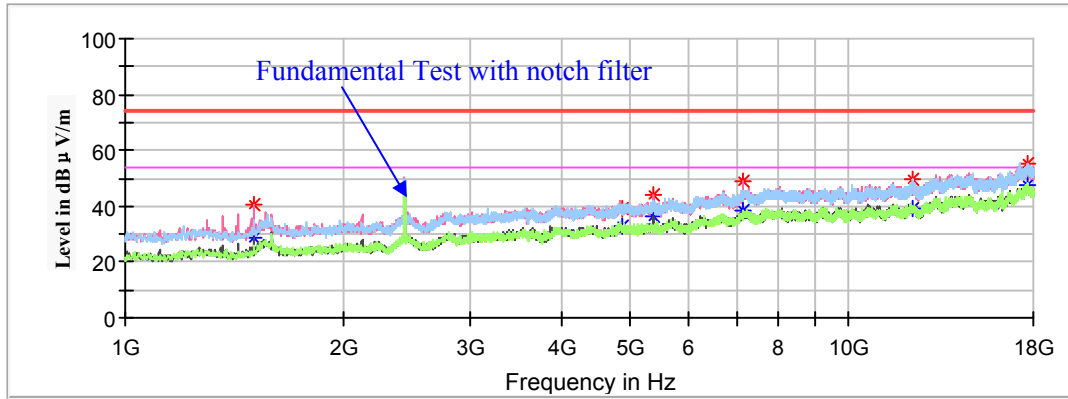
Full Spectrum



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)				
1596.70	36.23	---	150.0	V	256.0	-16.0	74.00	37.77
1596.70	---	31.66	150.0	V	256.0	-16.0	54.00	22.34
4824.00	41.34	---	150.0	V	317.0	-5.5	74.00	32.66
4824.00	---	34.10	150.0	V	317.0	-5.5	54.00	19.90
5375.80	43.97	---	150.0	H	83.0	-4.2	74.00	30.03
5375.80	---	33.89	150.0	H	83.0	-4.2	54.00	20.11
7269.60	---	37.84	150.0	V	298.0	0.5	54.00	16.16
7269.60	45.76	---	150.0	V	298.0	0.5	74.00	28.24
11489.00	---	38.00	150.0	H	145.0	2.8	54.00	16.00
11489.00	48.12	---	150.0	H	145.0	2.8	74.00	25.88
17816.40	---	46.51	150.0	H	305.0	8.8	54.00	7.49
17816.40	55.18	---	150.0	H	305.0	8.8	74.00	18.82

Middle Channel: 2437MHz

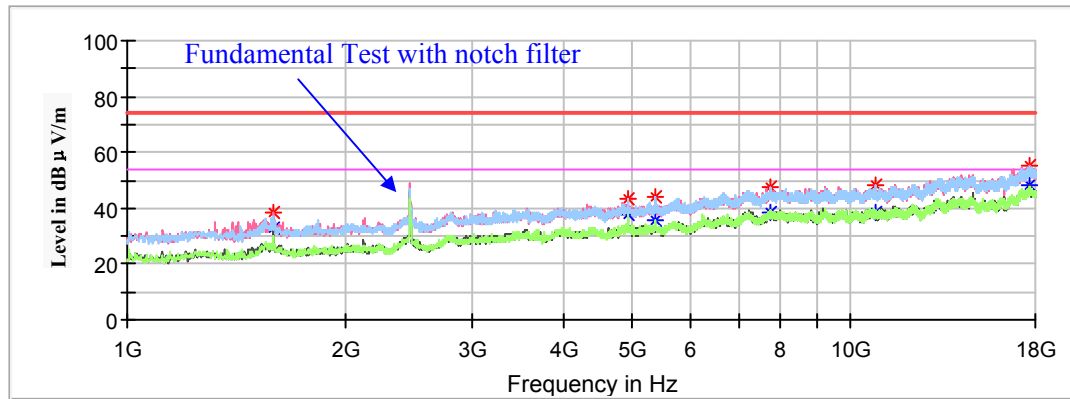
Full Spectrum



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)				
1503.20	40.35	---	150.0	V	244.0	-16.3	74.00	33.65
1503.20	---	28.39	150.0	V	244.0	-16.3	54.00	25.61
4874.00	---	33.18	150.0	H	4.0	-5.4	54.00	20.82
4874.00	39.08	---	150.0	H	4.0	-5.4	74.00	34.92
5362.20	43.92	---	150.0	V	0.0	-4.3	74.00	30.08
5362.20	---	36.54	150.0	V	0.0	-4.3	54.00	17.46
7160.80	48.66	---	150.0	V	206.0	0.3	74.00	25.34
7160.80	---	38.59	150.0	V	206.0	0.3	54.00	15.41
12235.30	49.59	---	150.0	H	257.0	3.4	74.00	24.41
12235.30	---	38.87	150.0	H	257.0	3.4	54.00	15.13
17663.40	---	47.75	150.0	H	205.0	8.9	54.00	6.25
17663.40	55.39	---	150.0	H	205.0	8.9	74.00	18.61

High Channel: 2462MHz

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)				
1593.30	---	32.78	200.0	V	3.0	-16.0	54.00	21.22
1595.00	38.37	---	200.0	V	243.0	-16.0	74.00	35.63
4924.00	---	37.51	150.0	H	292.0	-5.3	54.00	16.49
4924.00	43.59	---	150.0	H	292.0	-5.3	74.00	30.41
5367.30	---	35.75	150.0	H	65.0	-4.2	54.00	18.25
5370.70	44.05	---	150.0	H	27.0	-4.2	74.00	29.95
7766.00	---	38.13	200.0	H	147.0	1.4	54.00	15.87
7766.00	47.63	---	150.0	H	65.0	1.4	74.00	26.37
10837.90	---	38.51	200.0	H	292.0	2.7	54.00	15.49
10837.90	48.07	---	200.0	H	292.0	2.7	74.00	25.93
17660.00	---	48.07	150.0	V	193.0	8.9	54.00	5.93
17680.40	55.03	---	150.0	V	112.0	8.9	74.00	18.97

802.11g Mode:

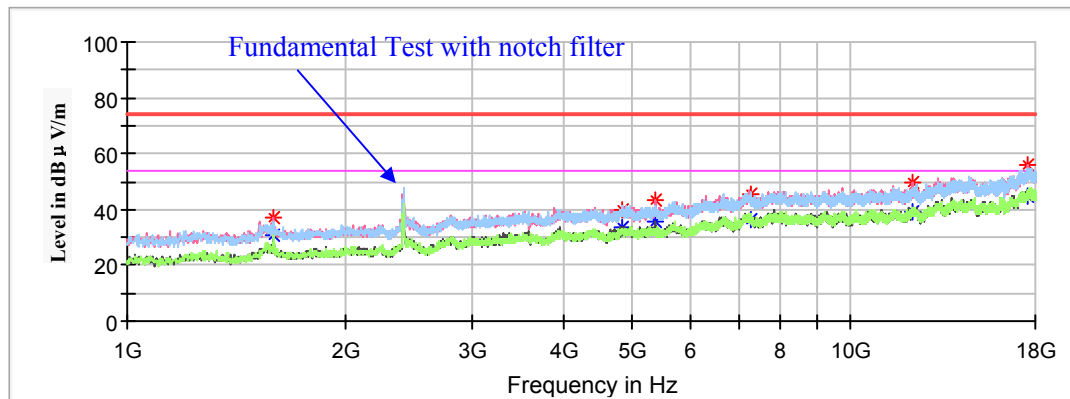
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

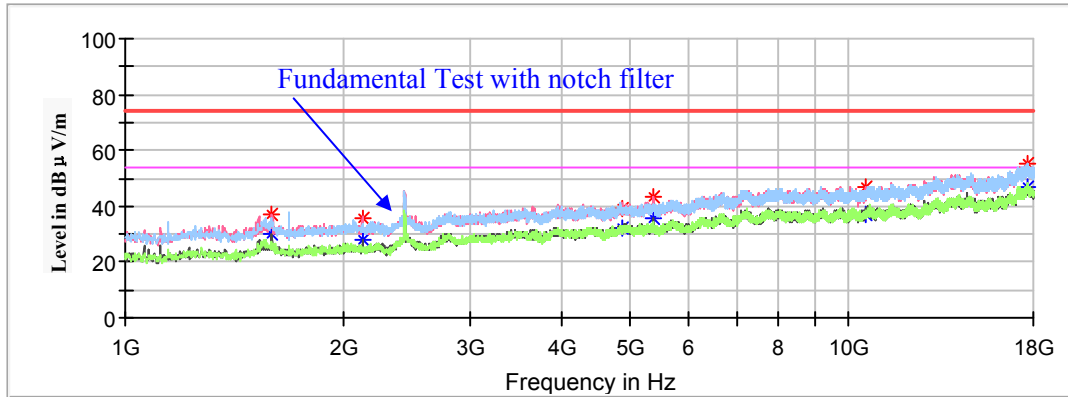
Full Spectrum



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)				
1595.00	37.27	---	150.0	H	177.0	-16.0	74.00	36.73
1596.70	---	30.89	150.0	H	177.0	-16.0	54.00	23.11
4824.00	39.85	---	150.0	V	50.0	-5.5	74.00	34.15
4824.00	---	33.47	150.0	V	50.0	-5.5	54.00	20.53
5370.70	---	36.00	150.0	V	0.0	-4.2	54.00	18.00
5370.70	43.59	---	150.0	V	0.0	-4.2	74.00	30.41
7283.20	---	36.55	150.0	V	25.0	0.6	54.00	17.45
7283.20	45.80	---	150.0	V	25.0	0.6	74.00	28.20
12141.80	---	39.30	150.0	V	122.0	3.6	54.00	14.70
12141.80	49.96	---	150.0	V	122.0	3.6	74.00	24.04
17539.30	55.60	---	150.0	V	0.0	8.9	74.00	18.40
17539.30	---	44.49	150.0	V	0.0	8.9	54.00	9.51

Middle Channel: 2437MHz

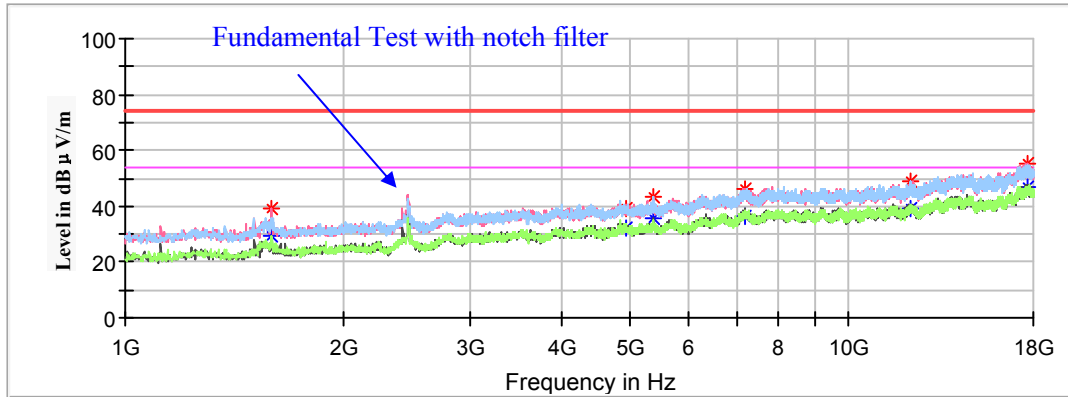
Full Spectrum



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)				
1596.70	37.28	---	150.0	V	234.0	-16.0	74.00	36.72
1596.70	---	30.06	150.0	V	234.0	-16.0	54.00	23.94
2130.50	35.89	---	150.0	V	254.0	-13.9	74.00	38.11
2130.50	---	27.75	150.0	V	254.0	-13.9	54.00	26.25
4874.00	39.28	---	150.0	V	353.0	-5.4	74.00	34.72
4874.00	---	31.84	150.0	V	353.0	-5.4	54.00	22.16
5363.90	43.45	---	150.0	V	0.0	-4.3	74.00	30.55
5363.90	---	35.40	150.0	V	0.0	-4.3	54.00	18.60
10555.70	---	37.06	150.0	V	234.0	2.4	54.00	16.94
10555.70	46.96	---	150.0	V	234.0	2.4	74.00	27.04
17663.40	---	46.61	150.0	H	85.0	8.9	54.00	7.39
17663.40	55.49	---	150.0	H	85.0	8.9	74.00	18.51

High Channel: 2462MHz

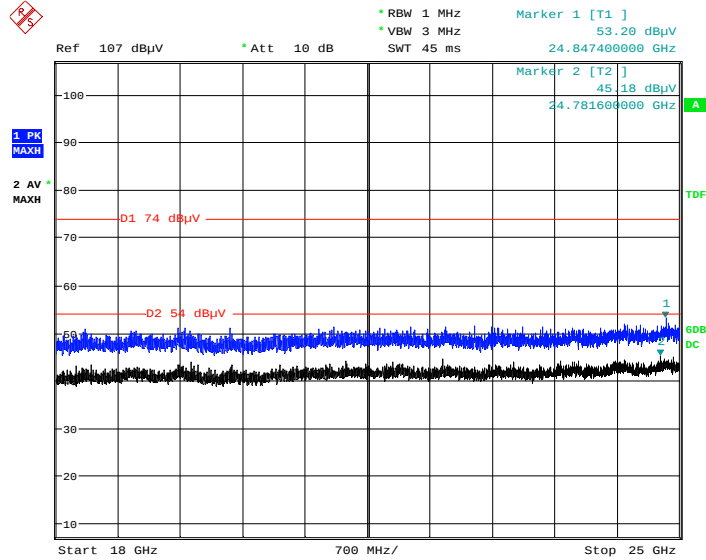
Full Spectrum



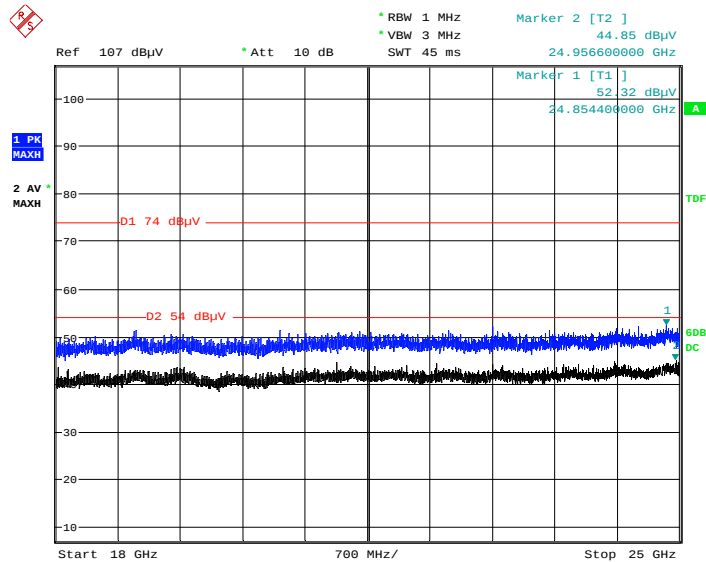
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.60	---	29.20	150.0	V	237.0	-16.0	54.00	24.80
1593.30	39.38	---	150.0	V	237.0	-16.0	74.00	34.62
4924.00	39.37	---	150.0	H	84.0	-5.3	74.00	34.63
4924.00	---	32.08	150.0	H	84.0	-5.3	54.00	21.92
5360.50	---	35.66	150.0	V	2.0	-4.3	54.00	18.34
5372.40	43.64	---	150.0	V	2.0	-4.2	74.00	30.36
7177.80	---	36.69	150.0	V	177.0	0.3	54.00	17.31
7177.80	46.12	---	150.0	V	177.0	0.3	74.00	27.88
12165.60	---	38.82	150.0	H	125.0	3.5	54.00	15.18
12165.60	48.61	---	150.0	H	125.0	3.5	74.00	25.39
17699.10	---	47.14	150.0	V	237.0	8.9	54.00	6.86
17699.10	55.41	---	150.0	V	237.0	8.9	74.00	18.59

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 **low channel of 802.11b mode in Z-axis of orientation** was recorded

Horizontal

Date: 15.AUG.2020 02:16:33

Vertical

Date: 15.AUG.2020 02:30:15

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)

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	---	49.14	150.0	V	24.0	-2.9	54.00	4.86
2390.00	52.03	---	150.0	V	24.0	-2.9	74.00	21.97
High Channel: 2462MHz								
2483.50	---	47.88	150.0	V	59.0	-2.5	54.00	6.12
2483.50	51.28	---	150.0	V	59.0	-2.5	74.00	22.72

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	55.23	---	150.0	V	23.0	-2.9	74.00	18.77
2390.00	---	51.86	150.0	V	23.0	-2.9	54.00	2.14
High Channel: 2462MHz								
2483.50	59.41	---	150.0	V	40.0	-2.5	74.00	14.59
2483.50	---	51.19	150.0	V	40.0	-2.5	54.00	2.81

Chain 1:**1GHz-18GHz:****802.11b Mode:**

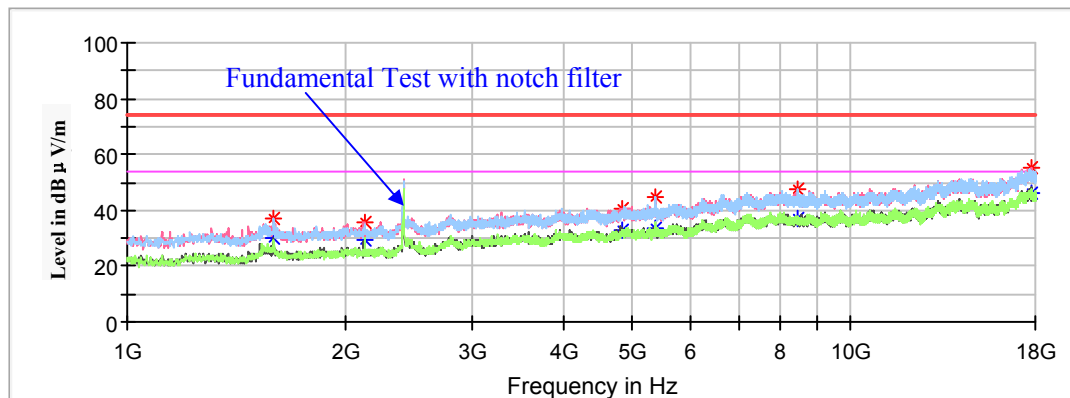
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

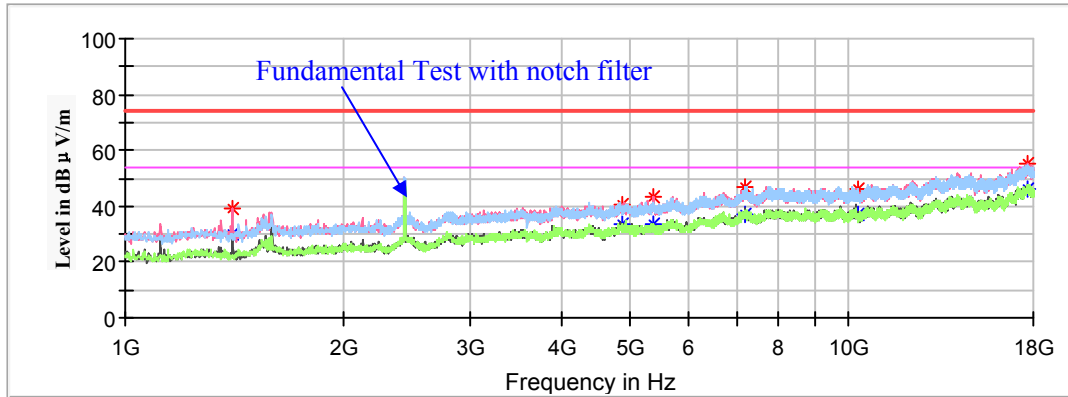
Full Spectrum



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)				
1591.60	37.18	---	150.0	V	111.0	-16.0	74.00	36.82
1591.60	---	29.75	150.0	V	111.0	-16.0	54.00	24.25
2125.40	35.76	---	150.0	V	257.0	-14.0	74.00	38.24
2125.40	---	29.04	150.0	V	257.0	-14.0	54.00	24.96
4824.00	40.53	---	150.0	V	278.0	-5.5	74.00	33.47
4824.00	---	32.73	150.0	V	278.0	-5.5	54.00	21.27
5360.50	45.10	---	150.0	V	359.0	-4.3	74.00	28.90
5360.50	---	33.46	150.0	V	359.0	-4.3	54.00	20.54
8469.80	---	37.19	150.0	H	6.0	1.4	54.00	16.81
8469.80	47.29	---	150.0	H	6.0	1.4	74.00	26.71
17777.30	---	46.23	150.0	H	43.0	8.8	54.00	7.77
17777.30	54.90	---	150.0	H	43.0	8.8	74.00	19.10

Middle Channel: 2437MHz

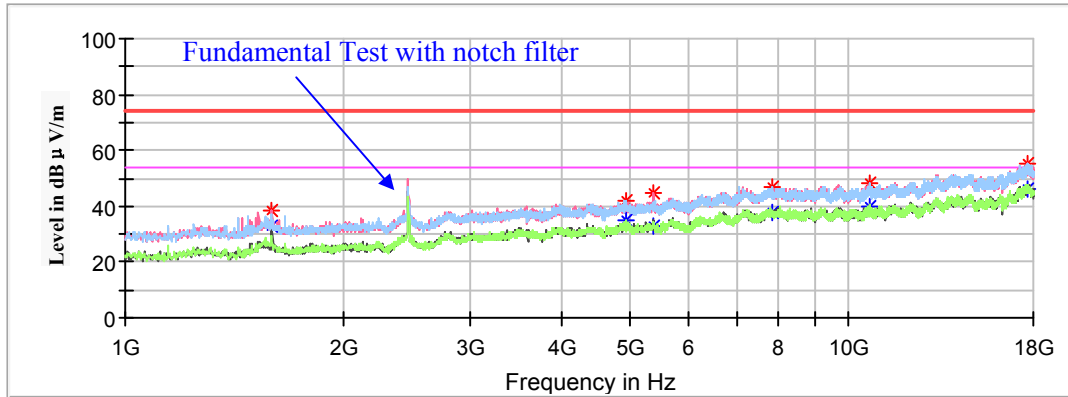
Full Spectrum



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)				
1404.60	39.12	---	150.0	V	257.0	-16.9	74.00	34.88
1404.60	---	29.76	150.0	V	257.0	-16.9	54.00	24.24
4874.00	---	33.65	150.0	V	231.0	-5.4	54.00	20.35
4874.00	40.29	---	150.0	V	231.0	-5.4	74.00	33.71
5360.50	43.70	---	150.0	V	320.0	-4.3	74.00	30.30
5360.50	---	33.49	150.0	V	320.0	-4.3	54.00	20.51
7196.50	46.61	---	150.0	H	0.0	0.4	74.00	27.39
7198.20	---	37.31	150.0	H	0.0	0.4	54.00	16.69
10270.10	46.50	---	150.0	H	244.0	2.1	74.00	27.50
10270.10	---	36.93	150.0	H	244.0	2.1	54.00	17.07
17717.80	---	46.13	150.0	V	15.0	8.9	54.00	7.87
17717.80	55.36	---	150.0	V	15.0	8.9	74.00	18.64

High Channel: 2462MHz

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)				
1596.70	38.45	---	150.0	V	257.0	-16.0	74.00	35.55
1596.70	---	33.11	150.0	V	257.0	-16.0	54.00	20.89
4924.00	41.77	---	150.0	H	334.0	-5.3	74.00	32.23
4924.00	---	34.62	150.0	H	334.0	-5.3	54.00	19.38
5369.00	44.99	---	150.0	V	6.0	-4.2	74.00	29.01
5369.00	---	32.82	150.0	V	6.0	-4.2	54.00	21.18
7818.70	---	37.89	200.0	V	50.0	1.5	54.00	16.11
7818.70	46.79	---	200.0	V	50.0	1.5	74.00	27.21
10713.80	---	39.71	150.0	V	192.0	2.6	54.00	14.29
10713.80	48.27	---	150.0	V	192.0	2.6	74.00	25.73
17639.60	---	46.44	150.0	H	334.0	8.9	54.00	7.56
17639.60	55.11	---	150.0	H	334.0	8.9	74.00	18.89

802.11g Mode:

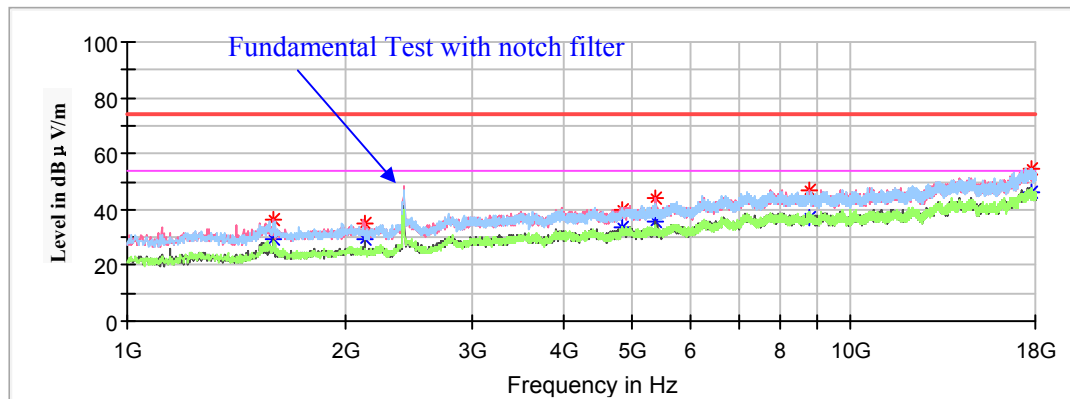
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

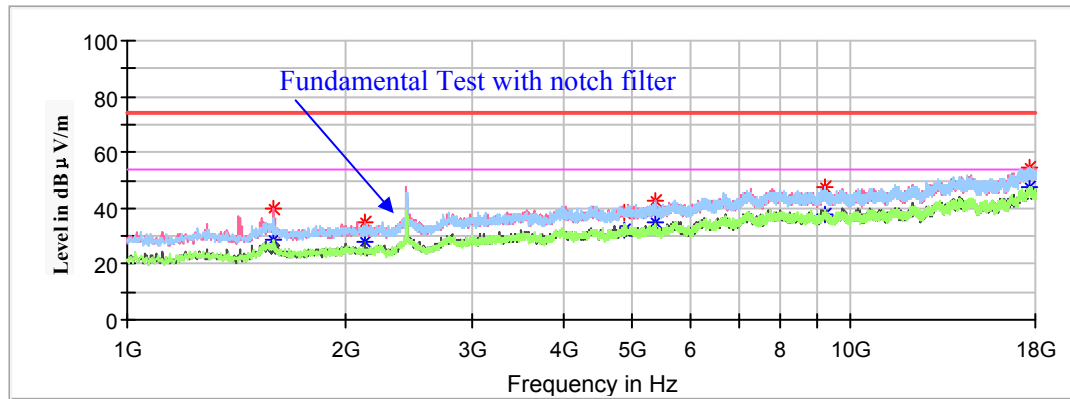
Full Spectrum



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)				
1593.30	---	29.51	150.0	V	258.0	-16.0	54.00	24.49
1593.30	36.25	---	150.0	V	258.0	-16.0	74.00	37.75
2130.50	35.16	---	150.0	V	278.0	-13.9	74.00	38.84
2130.50	---	29.20	150.0	V	278.0	-13.9	54.00	24.80
4824.00	---	33.29	150.0	V	197.0	-5.5	54.00	20.71
4824.00	39.79	---	150.0	V	197.0	-5.5	74.00	34.21
5358.80	43.95	---	150.0	V	0.0	-4.3	74.00	30.05
5358.80	---	35.49	150.0	V	0.0	-4.3	54.00	18.51
8750.30	---	37.23	150.0	V	359.0	1.6	54.00	16.77
8750.30	46.69	---	150.0	V	359.0	1.6	74.00	27.31
17741.60	---	46.39	150.0	H	288.0	8.8	54.00	7.61
17741.60	54.72	---	150.0	H	288.0	8.8	74.00	19.28

Middle Channel: 2437MHz

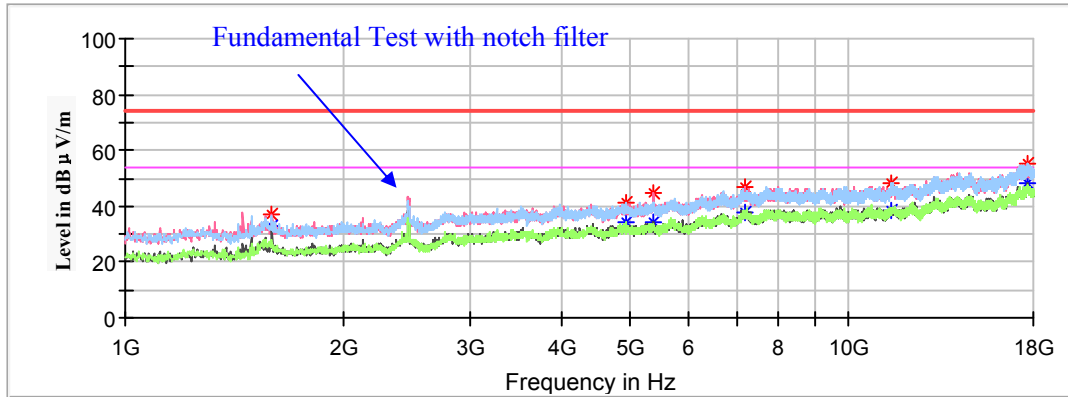
Full Spectrum



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)				
1595.00	39.68	---	150.0	V	15.0	-16.0	74.00	34.32
1595.00	---	28.68	150.0	V	15.0	-16.0	54.00	25.32
2127.10	34.97	---	150.0	V	246.0	-13.9	74.00	39.03
2127.10	---	27.79	150.0	V	246.0	-13.9	54.00	26.21
4874.00	---	32.35	150.0	V	0.0	-5.4	54.00	21.65
4874.00	38.66	---	150.0	V	0.0	-5.4	74.00	35.34
5370.70	---	34.69	150.0	V	2.0	-4.2	54.00	19.31
5370.70	42.87	---	150.0	V	2.0	-4.2	74.00	31.13
9199.10	47.33	---	150.0	H	33.0	2.0	74.00	26.67
9199.10	---	37.70	150.0	H	33.0	2.0	54.00	16.30
17705.90	54.83	---	150.0	V	266.0	8.9	74.00	19.17
17705.90	---	47.41	150.0	V	266.0	8.9	54.00	6.59

High Channel: 2462MHz

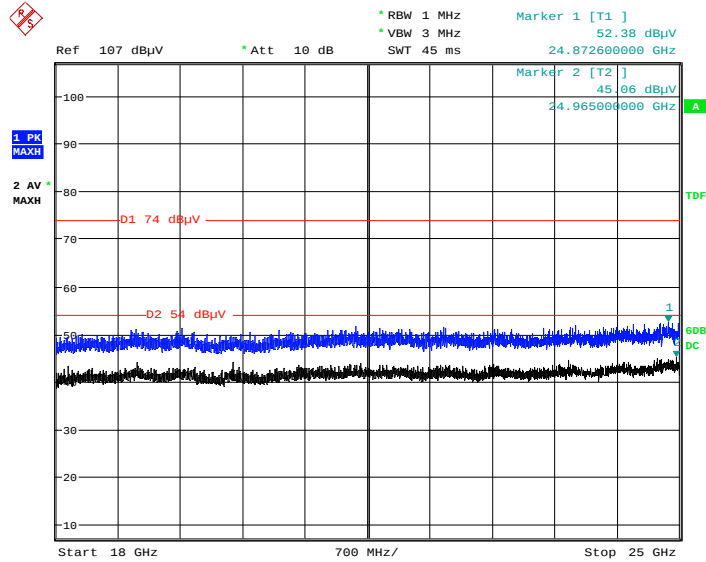
Full Spectrum



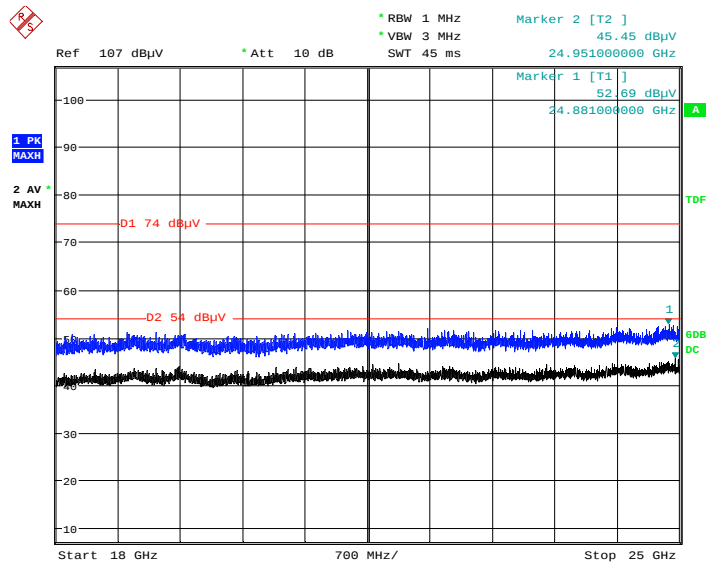
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1596.70	---	32.64	150.0	V	227.0	-16.0	54.00	21.36
1596.70	37.34	---	150.0	V	227.0	-16.0	74.00	36.66
4924.00	---	34.11	150.0	H	238.0	-5.3	54.00	19.89
4924.00	40.92	---	150.0	H	238.0	-5.3	74.00	33.08
5365.60	---	34.27	150.0	V	8.0	-4.3	54.00	19.73
5365.60	44.49	---	150.0	V	8.0	-4.3	74.00	29.51
7208.40	---	37.58	150.0	H	0.0	0.4	54.00	16.42
7208.40	46.61	---	150.0	H	0.0	0.4	74.00	27.39
11448.20	---	38.23	150.0	H	45.0	2.8	54.00	15.77
11448.20	48.48	---	150.0	H	45.0	2.8	74.00	25.52
17653.20	---	47.94	150.0	V	143.0	8.9	54.00	6.06
17653.20	55.07	---	150.0	V	143.0	8.9	74.00	18.93

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 **low channel of 802.11b mode in Z-axis of orientation** was recorded

Horizontal

Date: 15.AUG.2020 02:42:37

Vertical

Date: 15.AUG.2020 02:57:09

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)

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	---	46.29	150.0	V	208.0	-2.9	54.00	7.71
2390.00	53.84	---	150.0	V	208.0	-2.9	74.00	20.16
High Channel: 2462MHz								
2483.50	52.99	---	150.0	V	231.0	-2.5	74.00	21.01
2483.50	---	48.91	150.0	V	231.0	-2.5	54.00	5.09

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	61.67	---	150.0	V	258.0	-2.9	74.00	12.33
2390.00	---	52.00	150.0	V	258.0	-2.9	54.00	2.00
High Channel: 2462MHz								
2483.50	55.69	---	150.0	V	239.0	-2.5	74.00	18.31
2483.50	---	50.97	150.0	V	239.0	-2.5	54.00	3.03

Chain 0 + Chain 1:**802.11n-HT20 Mode:**

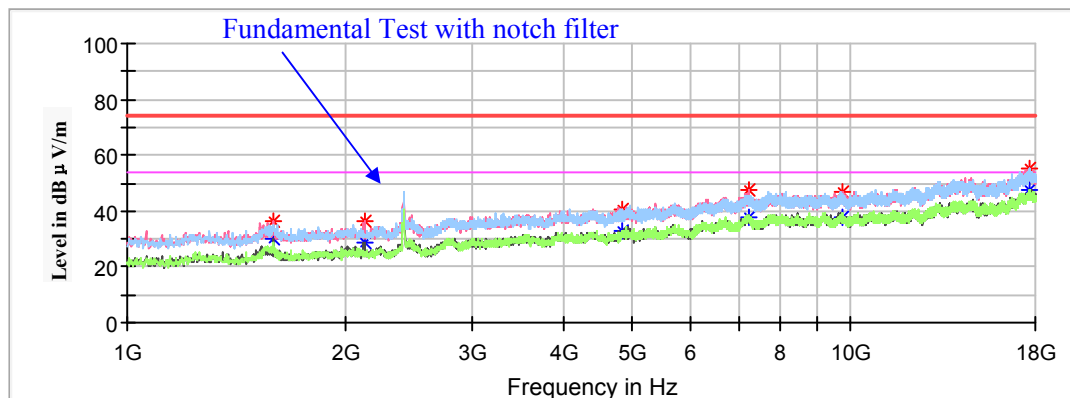
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

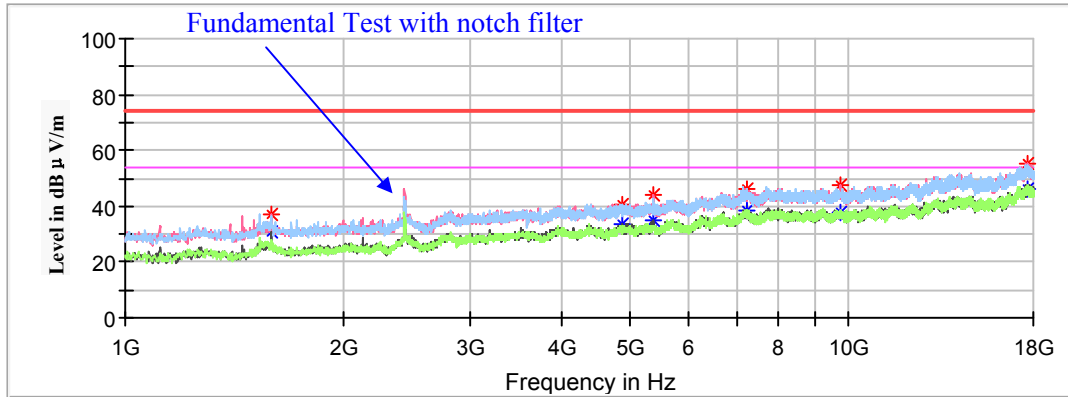
Full Spectrum



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)				
1595.00	---	29.90	150.0	V	65.0	-16.0	54.00	24.10
1595.00	36.49	---	150.0	V	65.0	-16.0	74.00	37.51
2130.50	---	29.01	150.0	V	249.0	-13.9	54.00	24.99
2130.50	36.47	---	150.0	V	249.0	-13.9	74.00	37.53
4824.00	40.22	---	150.0	H	121.0	-5.6	74.00	33.78
4824.00	---	32.68	150.0	H	121.0	-5.6	54.00	21.32
7247.50	---	37.68	150.0	V	346.0	0.5	54.00	16.32
7247.50	47.72	---	150.0	V	346.0	0.5	74.00	26.28
9714.20	---	37.48	150.0	V	319.0	2.0	54.00	16.52
9714.20	46.62	---	150.0	V	319.0	2.0	74.00	27.38
17705.90	---	47.63	150.0	H	100.0	8.9	54.00	6.37
17705.90	55.04	---	150.0	H	100.0	8.9	74.00	18.96

Middle Channel: 2437MHz

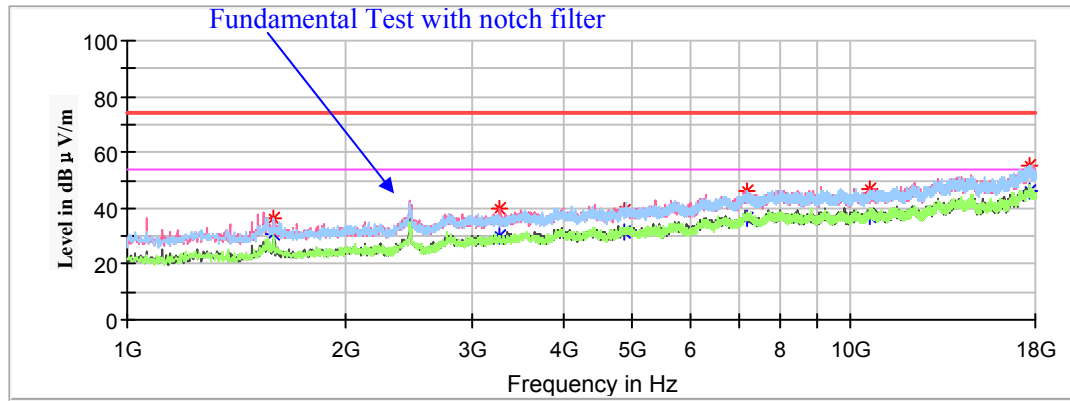
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1595.00	36.93	---	150.0	V	235.0	-16.0	74.00	37.07
1595.00	---	30.77	150.0	V	235.0	-16.0	54.00	23.23
4874.00	40.58	---	150.0	H	166.0	-5.4	74.00	33.42
4874.00	---	33.38	150.0	H	166.0	-5.4	54.00	20.62
5362.20	44.07	---	150.0	V	358.0	-4.3	74.00	29.93
5362.20	---	35.08	150.0	V	358.0	-4.3	54.00	18.92
7218.60	---	38.61	150.0	H	64.0	0.4	54.00	15.39
7218.60	46.36	---	150.0	H	64.0	0.4	74.00	27.64
9736.30	---	37.90	150.0	V	276.0	2.0	54.00	16.10
9736.30	47.68	---	150.0	V	276.0	2.0	74.00	26.32
17719.50	---	45.97	150.0	V	72.0	8.9	54.00	8.03
17719.50	55.24	---	150.0	V	72.0	8.9	74.00	18.76

High Channel : 2462MHz

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)				
1596.70	36.09	---	150.0	H	277.0	-16.0	74.00	37.91
1596.70	---	30.49	150.0	H	277.0	-16.0	54.00	23.51
3279.70	---	30.28	150.0	V	254.0	-9.4	54.00	23.72
3279.70	40.07	---	150.0	V	254.0	-9.4	74.00	33.93
4924.00	---	31.26	150.0	H	295.0	-5.4	54.00	22.74
4924.00	39.46	---	150.0	H	295.0	-5.4	74.00	34.54
7208.40	---	36.50	150.0	V	295.0	0.4	54.00	17.50
7208.40	46.10	---	150.0	V	295.0	0.4	74.00	27.90
10611.80	---	37.37	150.0	V	344.0	2.4	54.00	16.63
10611.80	46.85	---	150.0	V	344.0	2.4	74.00	27.15
17626.00	---	45.87	150.0	H	352.0	8.9	54.00	8.13
17626.00	55.35	---	150.0	H	352.0	8.9	74.00	18.65

802.11n-HT40 Mode:

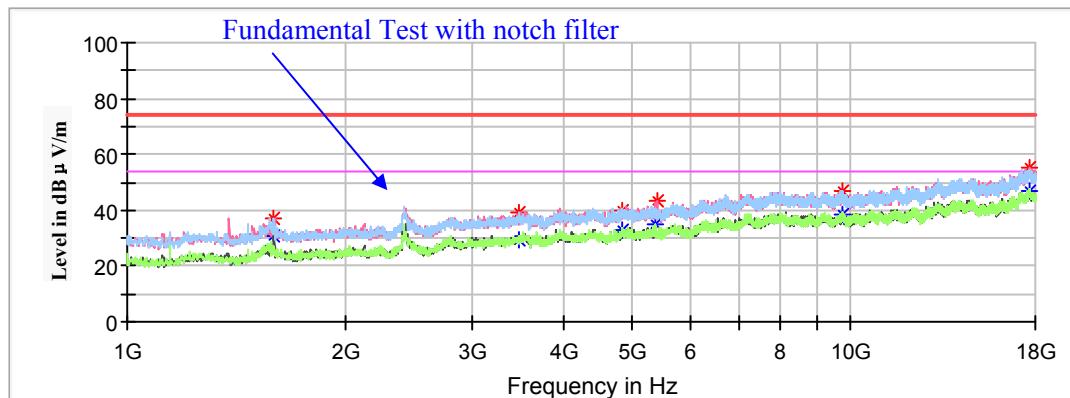
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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 (dB μ V /m) = Corrected Factor (dB/m) + Reading (dB μ V)
 Margin (dB) = Limit (dB μ V/m) – Corrected Amplitude (dB μ V /m)

Low Channel : 2422MHz

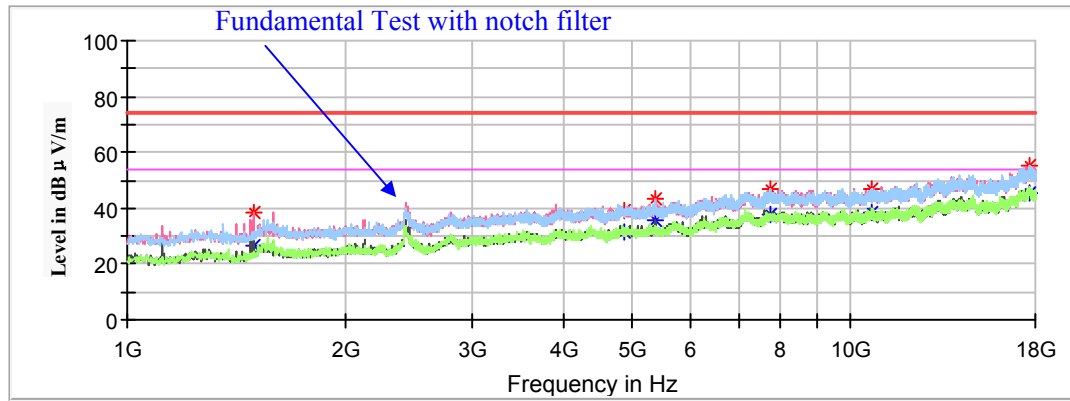
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1596.70	37.11	---	150.0	H	104.0	-16.0	74.00	36.89
1596.70	---	30.70	150.0	H	104.0	-16.0	54.00	23.30
3478.60	---	29.62	150.0	H	2.0	-8.9	54.00	24.38
3478.60	39.30	---	150.0	H	2.0	-8.9	74.00	34.70
4844.00	---	32.87	150.0	V	0.0	-5.5	54.00	21.13
4844.00	39.81	---	150.0	V	0.0	-5.5	74.00	34.19
5382.60	---	34.63	150.0	H	84.0	-4.2	54.00	19.37
5382.60	43.02	---	150.0	H	84.0	-4.2	74.00	30.98
9738.00	---	38.59	150.0	V	353.0	2.0	54.00	15.41
9738.00	46.92	---	150.0	V	353.0	2.0	74.00	27.08
17675.30	---	46.51	150.0	V	353.0	8.9	54.00	7.49
17675.30	55.47	---	150.0	V	353.0	8.9	74.00	18.53

Middle Channel: 2437MHz

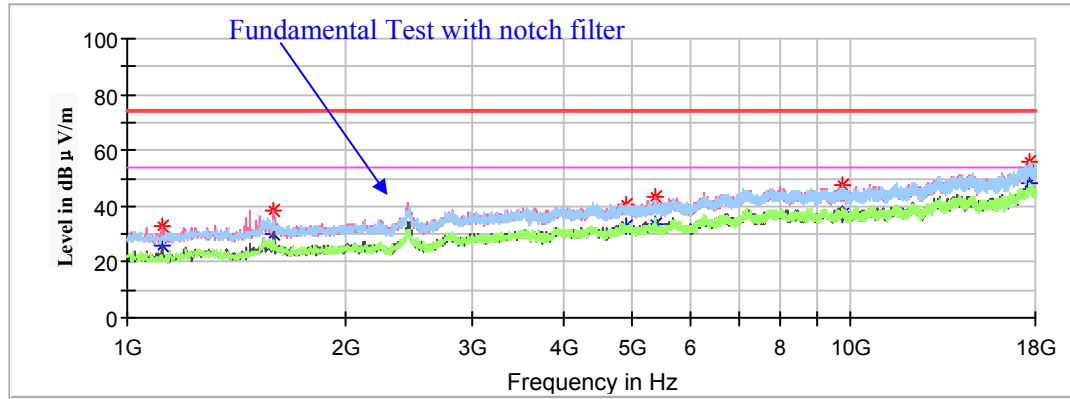
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1498.10	38.25	---	150.0	V	264.0	-16.4	74.00	35.75
1498.10	---	26.29	150.0	V	264.0	-16.4	54.00	27.71
4874.00	39.28	---	150.0	V	264.0	-5.4	74.00	34.72
4874.00	---	31.31	150.0	V	264.0	-5.4	54.00	22.69
5379.20	43.61	---	150.0	V	0.0	-4.2	74.00	30.39
5379.20	---	35.64	150.0	V	0.0	-4.2	54.00	18.36
7754.10	---	38.06	150.0	H	167.0	1.4	54.00	15.94
7754.10	46.59	---	150.0	H	167.0	1.4	74.00	27.41
10707.00	---	38.29	150.0	V	77.0	2.6	54.00	15.71
10707.00	47.14	---	150.0	V	77.0	2.6	74.00	26.86
17661.70	---	45.76	150.0	H	188.0	8.9	54.00	8.24
17661.70	55.27	---	150.0	H	188.0	8.9	74.00	18.73

High Channel : 2452MHz

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)				
1115.60	---	26.03	150.0	V	3.0	-18.4	54.00	27.97
1115.60	32.59	---	150.0	V	3.0	-18.4	74.00	41.41
1591.60	---	30.27	150.0	V	259.0	-16.0	54.00	23.73
1591.60	38.38	---	150.0	V	259.0	-16.0	74.00	35.62
4904.00	---	32.94	150.0	V	279.0	-5.4	54.00	21.06
4904.00	40.34	---	150.0	V	279.0	-5.4	74.00	33.66
5357.10	---	33.70	150.0	V	3.0	-4.3	54.00	20.30
5357.10	43.05	---	150.0	V	3.0	-4.3	74.00	30.95
9717.60	---	37.16	150.0	H	235.0	2.0	54.00	16.84
9717.60	47.52	---	150.0	H	235.0	2.0	74.00	26.48
17692.30	---	48.03	150.0	H	6.0	8.9	54.00	5.97
17692.30	56.00	---	150.0	H	6.0	8.9	74.00	18.00

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

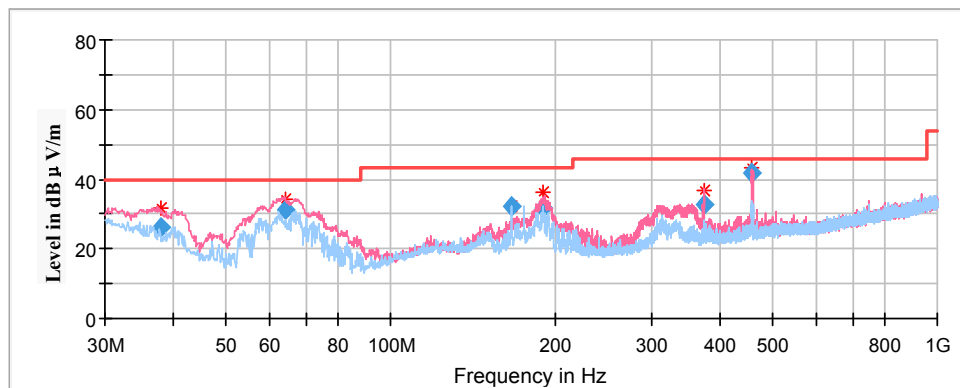
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 2412MHz								
2390.00	---	50.84	150.0	V	260.0	-2.9	54.00	3.16
2390.00	60.50	---	150.0	V	260.0	-2.9	74.00	13.50
High Channel: 2462MHz								
2483.50	---	46.68	150.0	V	44.0	-2.5	54.00	7.32
2483.50	50.34	---	150.0	V	44.0	-2.5	74.00	23.66

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	57.19	---	150.0	V	211.0	-2.9	74.00	16.81
2390.00	---	50.66	150.0	V	211.0	-2.9	54.00	3.34
High Channel: 2452MHz								
2483.50	---	51.60	150.0	V	260.0	-2.5	54.00	2.40
2483.50	54.93	---	150.0	V	260.0	-2.5	74.00	19.07

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 **high** 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)				
38.05	26.05	100.0	V	280.0	-9.9	40.00	13.95
64.08	30.96	100.0	V	13.0	-18.1	40.00	9.04
166.34	32.00	200.0	H	82.0	-13.5	43.50	11.50
190.25	31.53	200.0	V	19.0	-13.4	43.50	11.97
374.21	32.84	100.0	V	0.0	-9.2	46.00	13.16
457.49	41.80	100.0	V	359.0	-7.2	46.00	4.20

1GHz-18GHz

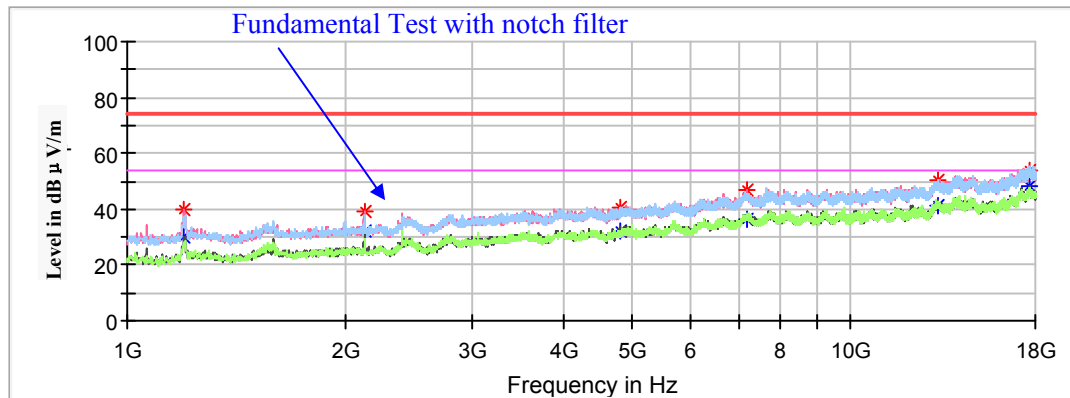
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

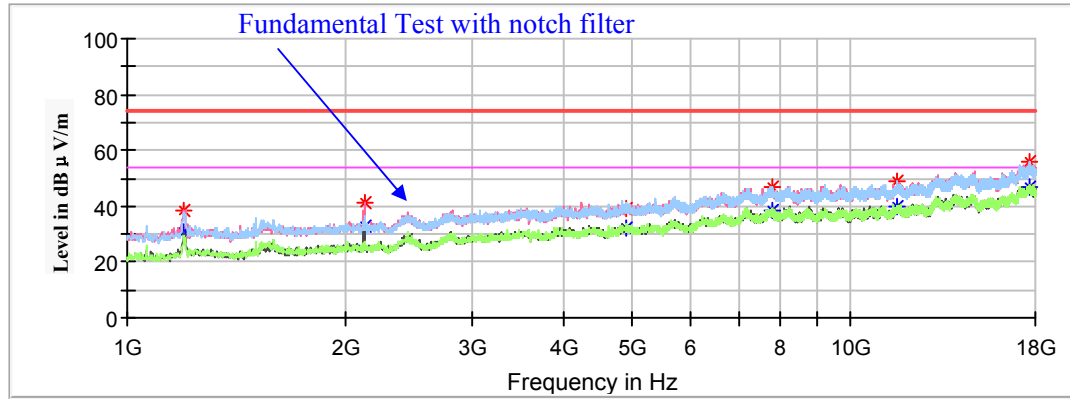
Full Spectrum



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)				
1200.60	---	30.14	200.0	V	89.0	-18.0	54.00	23.86
1200.60	39.61	---	200.0	V	89.0	-18.0	74.00	34.39
2128.80	---	32.00	150.0	V	233.0	-13.9	54.00	22.00
2128.80	38.85	---	150.0	V	233.0	-13.9	74.00	35.15
4804.00	---	32.32	150.0	V	0.0	-5.6	54.00	21.68
4804.00	40.70	---	150.0	V	0.0	-5.6	74.00	33.30
7193.10	46.89	---	200.0	V	3.0	0.4	74.00	27.11
7193.10	---	36.70	200.0	V	3.0	0.4	54.00	17.30
13172.00	---	41.41	150.0	V	284.0	5.4	54.00	12.59
13172.00	50.58	---	150.0	V	284.0	5.4	74.00	23.42
17671.90	53.50	---	150.0	V	182.0	8.9	74.00	20.50
17673.60	---	47.94	150.0	V	182.0	8.9	54.00	6.06

Middle Channel: 2440MHz

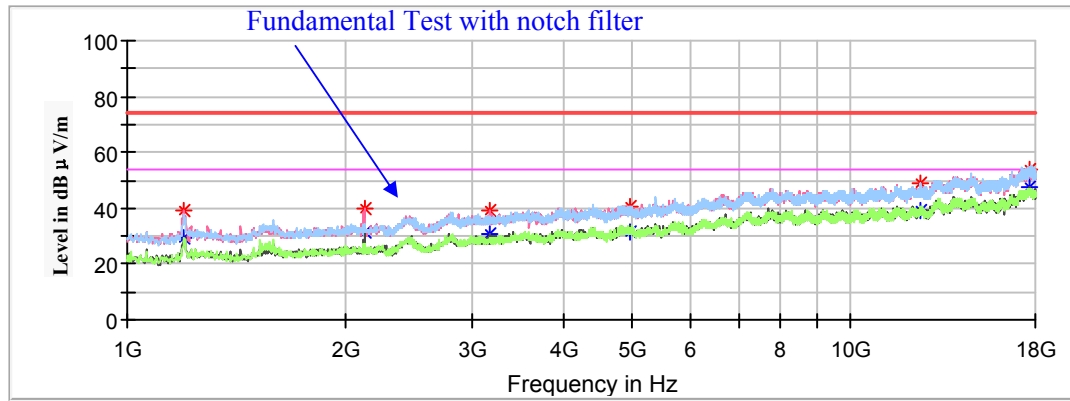
Full Spectrum



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)				
1200.60	---	30.42	150.0	V	129.0	-18.0	54.00	23.58
1200.60	38.80	---	150.0	V	129.0	-18.0	74.00	35.20
2130.50	41.06	---	150.0	V	233.0	-13.9	74.00	32.94
2130.50	---	32.96	150.0	V	233.0	-13.9	54.00	21.04
4880.00	---	32.45	200.0	V	358.0	-5.4	54.00	21.55
4880.00	39.10	---	200.0	V	358.0	-5.4	74.00	34.90
7777.90	47.04	---	150.0	H	21.0	1.5	74.00	26.96
7777.90	---	38.44	150.0	H	21.0	1.5	54.00	15.56
11567.20	---	39.64	150.0	H	21.0	2.9	54.00	14.36
11567.20	48.88	---	150.0	H	21.0	2.9	74.00	25.12
17711.00	---	46.77	200.0	V	110.0	8.9	54.00	7.23
17711.00	55.67	---	200.0	V	110.0	8.9	74.00	18.33

High Channel: 2480MHz

Full Spectrum

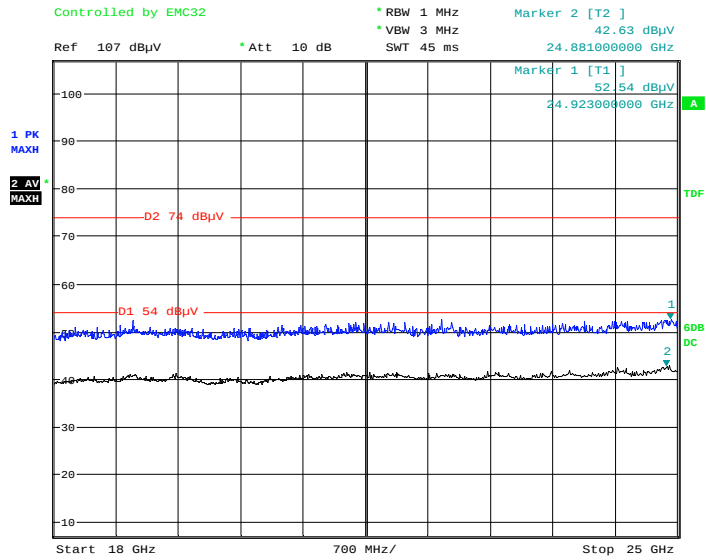


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1197.20	---	29.16	200.0	V	84.0	-18.0	54.00	24.84
1197.20	39.29	---	200.0	V	84.0	-18.0	74.00	34.71
2128.80	40.04	---	200.0	V	178.0	-13.9	74.00	33.96
2128.80	---	31.68	200.0	V	178.0	-13.9	54.00	22.32
3172.60	---	31.05	200.0	V	96.0	-9.7	54.00	22.95
3172.60	39.12	---	200.0	V	96.0	-9.7	74.00	34.88
4960.00	---	31.24	150.0	H	192.0	-5.3	54.00	22.76
4960.00	40.48	---	150.0	H	192.0	-5.3	74.00	33.52
12447.80	---	39.06	150.0	V	0.0	3.0	54.00	14.94
12447.80	48.97	---	150.0	V	0.0	3.0	74.00	25.03
17711.00	54.00	---	200.0	V	0.0	8.9	74.00	20.00
17711.00	---	47.49	200.0	V	0.0	8.9	54.00	6.51

18GHz-25GHz

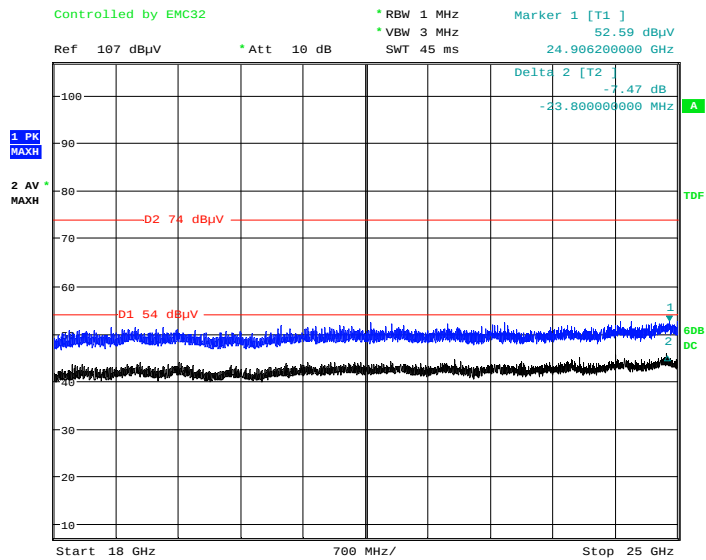
(The worst case **high channel of operation in the Z axis of orientation** was recorded)

Horizontal



Date: 5.NOV.2020 23:23:41

Vertical



Date: 10.AUG.2020 18:46:17

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)

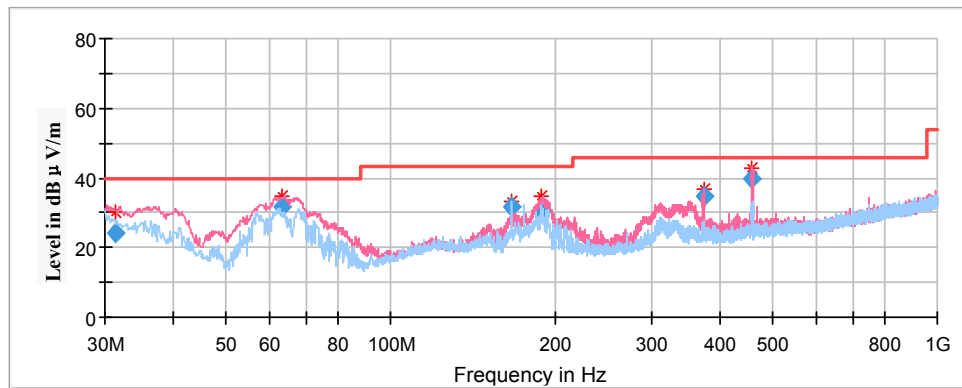
Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)

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	41.93	---	150.0	V	299.0	-2.9	74.00	32.07
2390.00	---	37.07	150.0	V	299.0	-2.9	54.00	16.93
High Channel: 2480MHz								
2483.50	44.53	---	200.0	H	236.0	-2.5	74.00	29.47
2483.50	---	38.70	200.0	H	236.0	-2.5	54.00	15.30

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 **high** 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)				
31.39	24.18	200.0	V	277.0	-5.3	40.00	15.82
63.27	31.53	100.0	V	314.0	-18.2	40.00	8.47
166.33	31.92	200.0	H	72.0	-13.5	43.50	11.58
188.83	30.36	200.0	V	3.0	-13.5	43.50	13.14
374.24	34.68	100.0	V	8.0	-9.2	46.00	11.32
457.42	39.80	100.0	V	2.0	-7.2	46.00	6.20

1GHz-18GHz

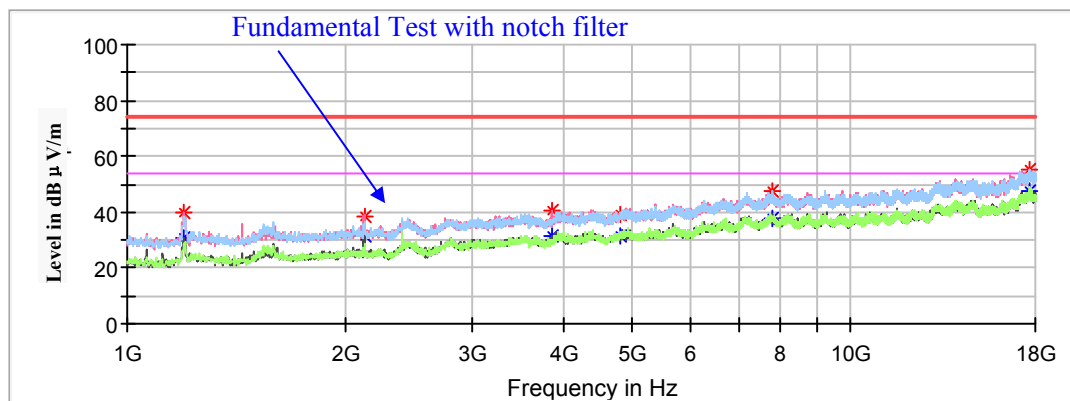
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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 (dB μ V/m) = Corrected Factor (dB/m) + Reading (dB μ V)
 Margin (dB) = Limit (dB μ V/m) – Corrected Amplitude (dB μ V/m)

Low Channel: 2402MHz

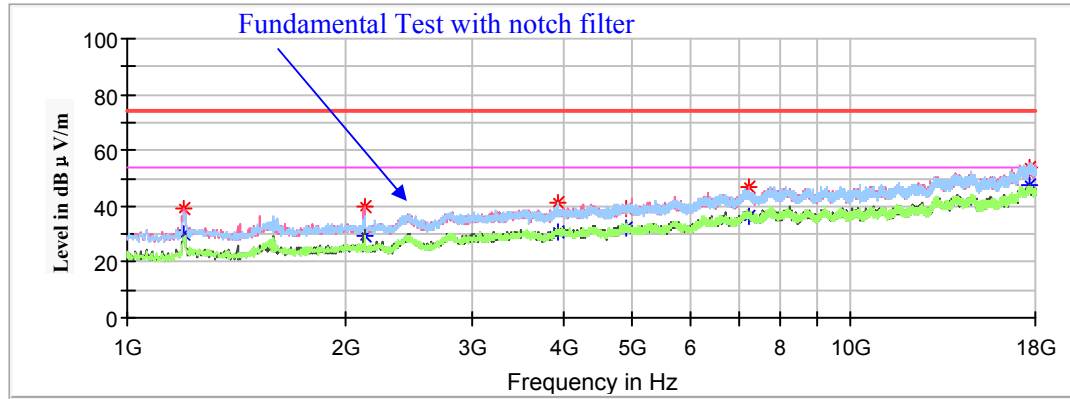
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1198.90	40.16	---	150.0	V	128.0	-18.0	74.00	33.84
1198.90	---	30.68	150.0	V	128.0	-18.0	54.00	23.32
2130.50	38.68	---	150.0	V	231.0	-13.9	74.00	35.32
2130.50	---	31.46	150.0	V	231.0	-13.9	54.00	22.54
3854.30	40.23	---	150.0	V	49.0	-7.5	74.00	33.77
3854.30	---	31.18	150.0	V	49.0	-7.5	54.00	22.82
4804.00	---	31.48	200.0	V	204.0	-5.6	54.00	22.52
4804.00	39.29	---	200.0	V	204.0	-5.6	74.00	34.71
7793.20	---	38.04	200.0	H	266.0	1.5	54.00	15.96
7793.20	47.61	---	200.0	H	266.0	1.5	74.00	26.39
17648.10	55.43	---	150.0	H	211.0	8.9	74.00	18.57
17648.10	---	47.58	150.0	H	211.0	8.9	54.00	6.42

Middle Channel: 2440MHz

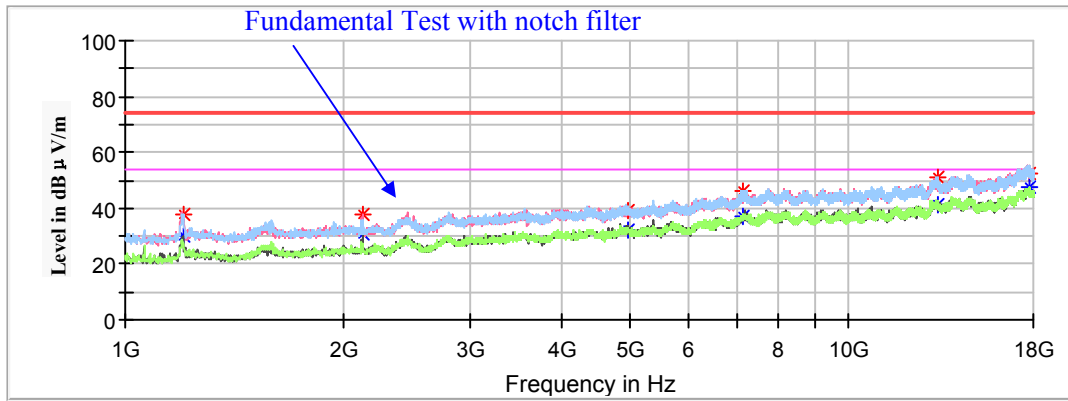
Full Spectrum



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)				
1198.90	39.20	---	150.0	V	129.0	-18.0	74.00	34.80
1198.90	---	30.32	150.0	V	129.0	-18.0	54.00	23.68
2125.40	---	29.29	150.0	V	173.0	-14.0	54.00	24.71
2125.40	39.52	---	150.0	V	173.0	-14.0	74.00	34.48
3927.40	---	30.88	200.0	H	359.0	-7.3	54.00	23.12
3927.40	41.07	---	200.0	H	359.0	-7.3	74.00	32.93
4880.00	39.18	---	200.0	V	21.0	-5.4	74.00	34.82
4880.00	---	32.50	200.0	V	21.0	-5.4	54.00	21.50
7249.20	---	36.66	150.0	H	45.0	0.5	54.00	17.34
7249.20	47.18	---	150.0	H	45.0	0.5	74.00	26.82
17702.50	53.94	---	150.0	V	2.0	8.9	74.00	20.06
17702.50	---	47.49	150.0	V	2.0	8.9	54.00	6.51

High Channel: 2480MHz

Full Spectrum

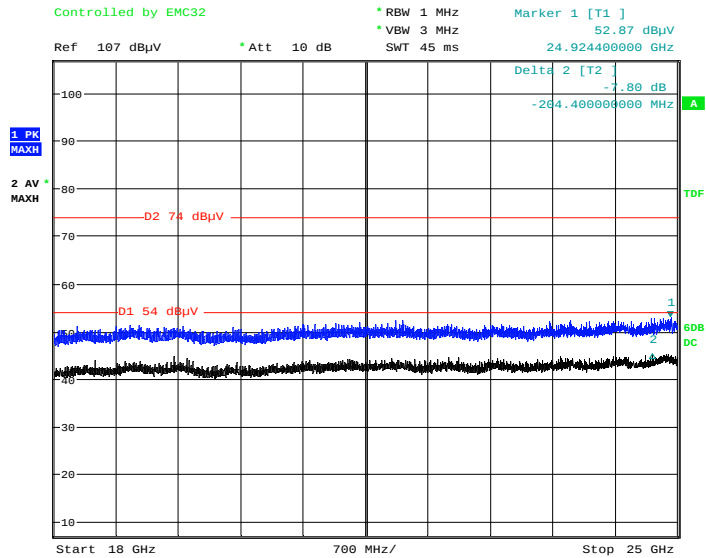


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1202.30	---	29.93	150.0	V	130.0	-18.0	54.00	24.07
1204.00	37.99	---	150.0	V	130.0	-18.0	74.00	36.01
2128.80	37.85	---	200.0	V	191.0	-13.9	74.00	36.15
2128.80	---	30.88	200.0	V	191.0	-13.9	54.00	23.12
4960.00	---	32.23	150.0	H	0.0	-5.3	54.00	21.77
4960.00	39.11	---	150.0	H	0.0	-5.3	74.00	34.89
7137.00	---	37.39	200.0	V	97.0	0.2	54.00	16.61
7137.00	46.47	---	200.0	V	97.0	0.2	74.00	27.53
13246.80	---	41.50	200.0	H	326.0	5.4	54.00	12.50
13246.80	51.08	---	200.0	H	326.0	5.4	74.00	22.92
17760.30	52.73	---	150.0	V	323.0	8.8	74.00	21.27
17760.30	---	47.33	150.0	V	323.0	8.8	54.00	6.67

18GHz-25GHz

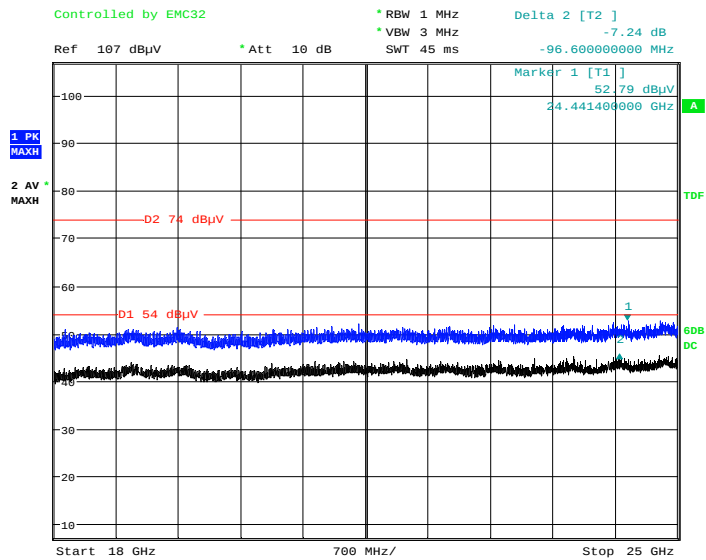
(The worst case **high channel of operation in the Z axis of orientation** was recorded)

Horizontal



Date: 10.AUG.2020 18:48:52

Vertical



Date: 10.AUG.2020 18:49:59

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)

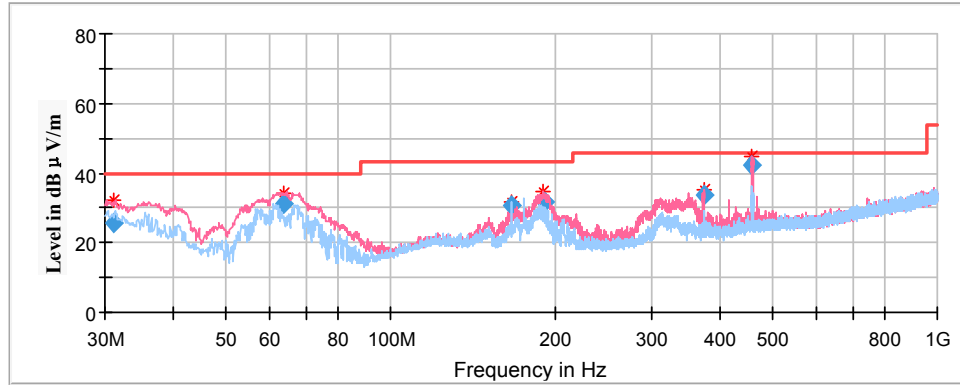
Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)

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	43.59	---	200.0	V	144.0	-2.9	74.00	30.41
2390.00	---	37.35	200.0	V	144.0	-2.9	54.00	16.65
High Channel: 2480MHz								
2483.50	43.10	---	150.0	H	83.0	-2.5	74.00	30.90
2483.50	---	37.35	150.0	H	83.0	-2.5	54.00	16.65

Transmitting simultaneously test:

Pre-Scan with Transmitting simultaneously modes of operation in the X,Y and Z axes of orientation, the worst case low channel of 802.11b mode and GPRS1900 middle channel in Z-axis of orientation was recorded

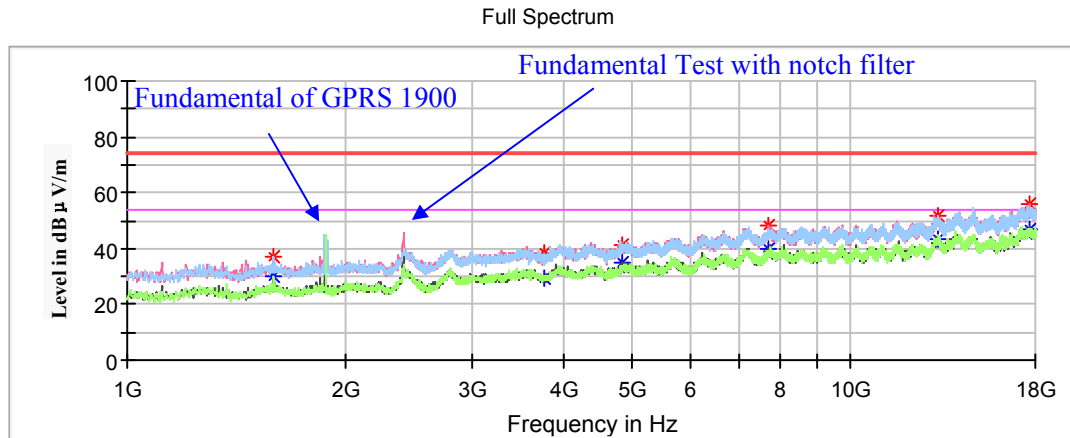
30MHz-1GHz:

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)				
31.24	25.54	100.0	V	8.0	-5.2	40.00	14.46
63.91	31.26	100.0	V	315.0	-18.1	40.00	8.74
166.35	30.88	200.0	H	61.0	-13.5	43.50	12.62
191.09	31.59	200.0	V	32.0	-13.4	43.50	11.91
374.28	33.86	100.0	V	0.0	-9.2	46.00	12.14
457.51	42.18	100.0	V	8.0	-7.2	46.00	3.82

1GHz -18GHz:

Note:

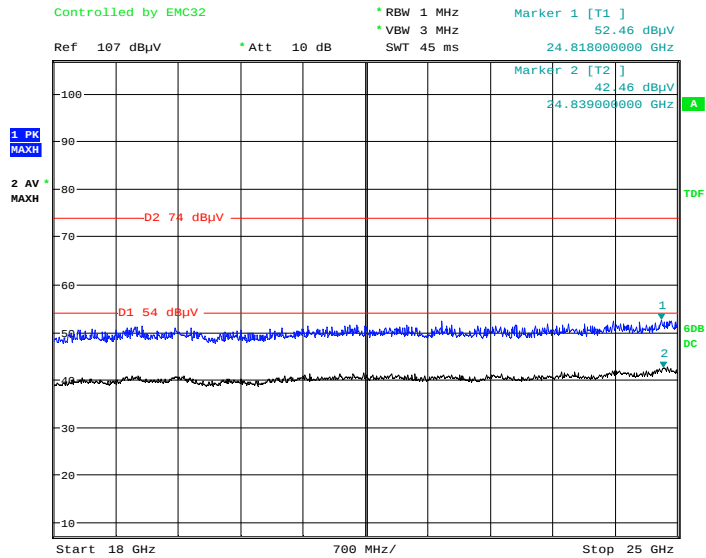
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
 Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
 Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)



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)				
1596.70	---	30.12	150.0	H	40.0	-16.0	54.00	23.88
1596.70	37.20	---	150.0	H	40.0	-16.0	74.00	36.80
3764.20	---	29.18	150.0	V	135.0	-7.9	54.00	24.82
3764.20	38.60	---	150.0	V	135.0	-7.9	74.00	35.40
4824.00	---	34.67	150.0	V	0.0	-5.5	54.00	19.33
4824.00	41.14	---	150.0	V	0.0	-5.5	74.00	32.86
7709.90	---	39.54	150.0	V	262.0	1.4	54.00	14.46
7709.90	48.11	---	150.0	V	262.0	1.4	74.00	25.89
13200.90	---	43.46	150.0	H	16.0	5.4	54.00	10.54
13202.60	51.83	---	150.0	H	16.0	5.4	74.00	22.17
17680.40	---	46.68	150.0	V	108.0	8.9	54.00	7.32
17680.40	55.60	---	150.0	V	108.0	8.9	74.00	18.40

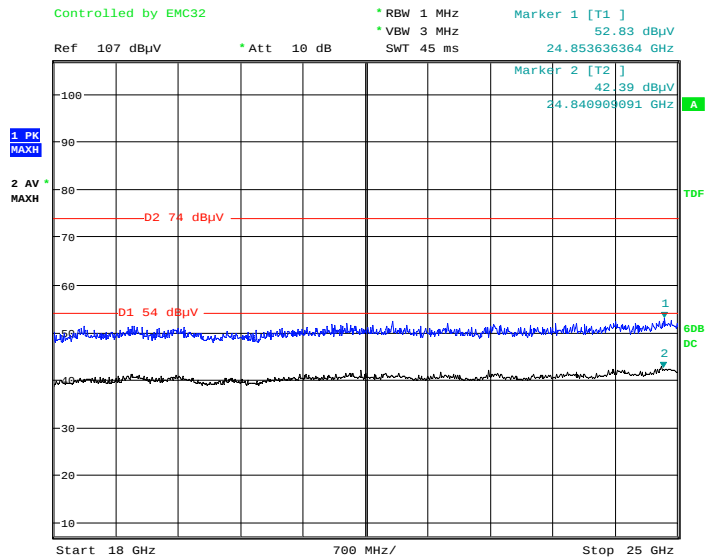
18GHz-25GHz

Horizontal



Date: 4.SEP.2020 17:51:42

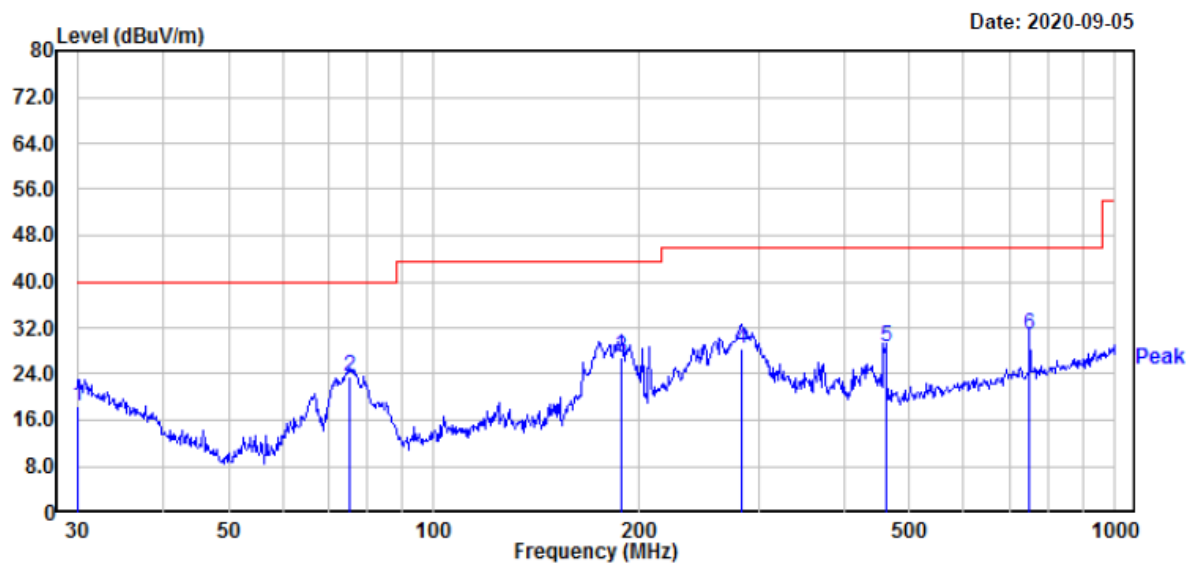
Vertical



Date: 4.SEP.2020 17:29:43

Model: L1573**For Wi-Fi Mode:****Spurious Emission Test:
30MHz-1GHz:****Horizontal:**

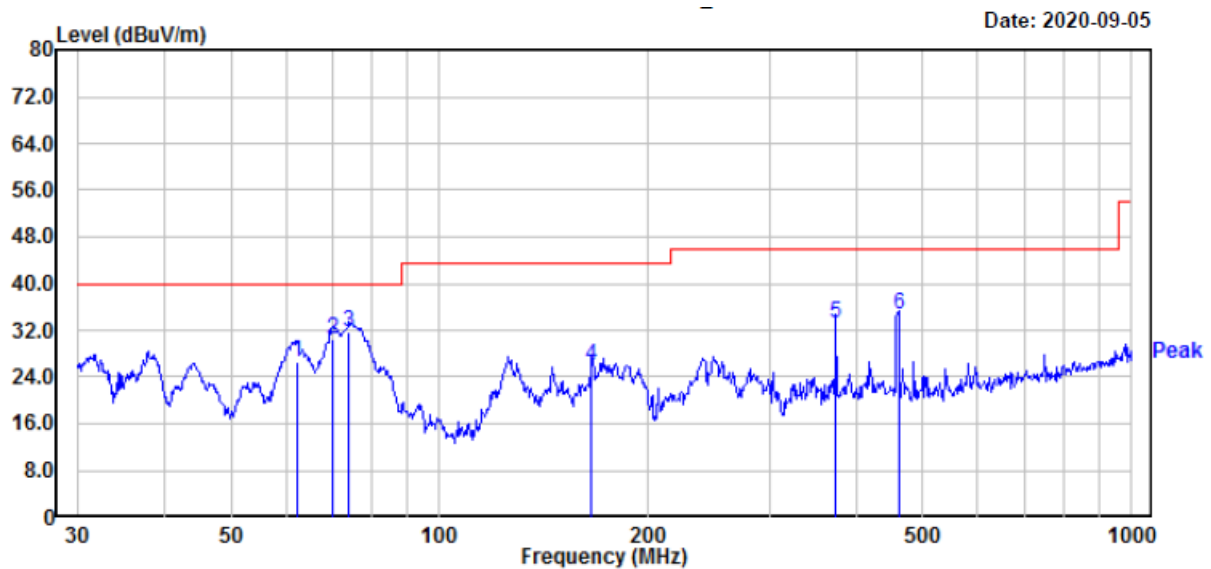
(Pre-Scan with 802.11b, 802.11g, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case **low channel of 802.11b Mode in Z-axis of orientation** was recorded)



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	30.00	21.50	-3.13	18.37	40.00	-21.63	100	360	QP
2	75.18	40.69	-17.03	23.66	40.00	-16.34	100	360	QP
3	189.07	39.30	-12.36	26.94	43.50	-16.56	100	280	QP
4	282.99	38.90	-10.53	28.37	46.00	-17.63	100	316	QP
5	460.73	35.10	-6.38	28.72	46.00	-17.28	100	82	QP
6	750.11	32.30	-1.37	30.93	46.00	-15.07	100	38	QP

Vertical:

(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 **low channel of 802.11b Mode in Z-axis of orientation** was recorded.)



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	62.21	44.00	-17.41	26.59	40.00	-13.41	100	271	QP
2	70.09	47.30	-16.89	30.41	40.00	-9.59	100	332	QP
3	74.14	48.80	-17.01	31.79	40.00	-8.21	100	265	QP
4	166.07	38.19	-12.33	25.86	43.50	-17.64	100	43	QP
5	374.62	41.70	-8.41	33.29	46.00	-12.71	100	6	QP
6	460.73	41.00	-6.38	34.62	46.00	-11.38	100	345	QP

Note:

- 1) Factor (dB) = Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)
- 2) Over Limit (dB) = Read level (dBuV) + Factor (dB) - Limit (dBuV)

Chain 0:**1GHz-18GHz:****802.11b Mode:**

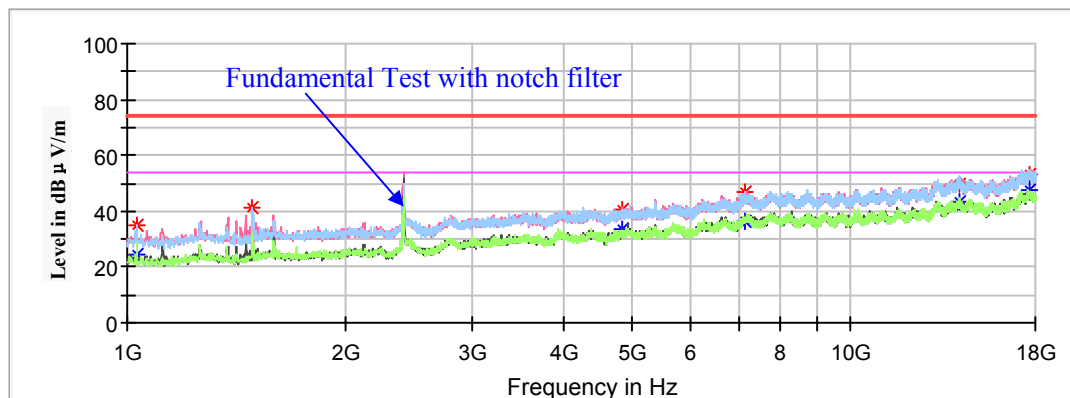
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

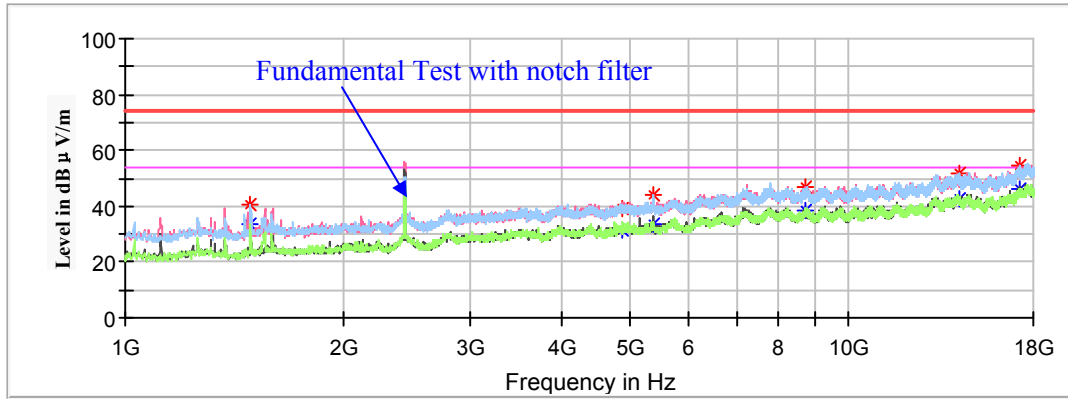
Full Spectrum



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)				
1032.30	---	24.42	150.0	H	313.0	-18.9	54.00	29.58
1032.30	34.85	---	150.0	H	313.0	-18.9	74.00	39.15
1487.90	41.15	---	150.0	H	326.0	-16.4	74.00	32.85
1487.90	---	31.31	150.0	H	326.0	-16.4	54.00	22.69
4824.00	40.23	---	200.0	V	31.0	-5.5	74.00	33.77
4824.00	---	33.39	200.0	V	31.0	-5.5	54.00	20.61
7138.70	---	36.58	150.0	H	86.0	0.2	54.00	17.42
7138.70	47.18	---	150.0	H	86.0	0.2	74.00	26.82
14130.80	49.86	---	200.0	H	329.0	6.2	74.00	24.14
14130.80	---	43.64	200.0	H	329.0	6.2	54.00	10.36
17716.10	53.37	---	200.0	V	86.0	8.9	74.00	20.63
17716.10	---	47.45	200.0	V	86.0	8.9	54.00	6.55

Middle Channel: 2437MHz

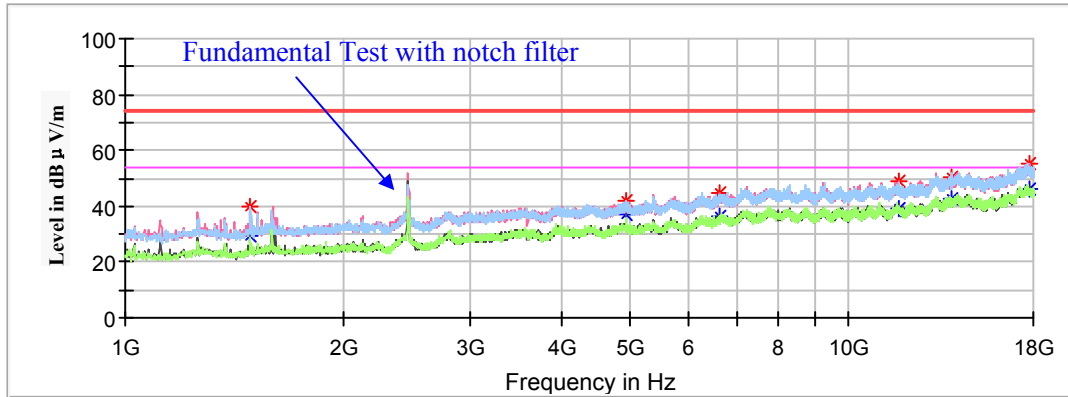
Full Spectrum



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)				
1491.30	---	33.61	150.0	H	324.0	-16.4	54.00	20.39
1491.30	40.29	---	150.0	H	324.0	-16.4	74.00	33.71
4874.00	---	31.30	200.0	V	195.0	-5.4	54.00	22.70
4874.00	39.16	---	200.0	V	195.0	-5.4	74.00	34.84
5367.30	---	33.50	150.0	V	247.0	-4.2	54.00	20.50
5369.00	44.34	---	150.0	V	247.0	-4.2	74.00	29.66
8729.90	---	38.69	200.0	H	308.0	1.6	54.00	15.31
8729.90	46.75	---	200.0	H	308.0	1.6	74.00	27.25
14193.70	51.52	---	200.0	V	277.0	6.3	74.00	22.48
14197.10	---	42.98	200.0	V	277.0	6.3	54.00	11.02
17224.80	54.56	---	200.0	H	340.0	7.9	74.00	19.44
17224.50	---	45.96	200.0	H	340.0	7.9	54.00	8.04

High Channel: 2462MHz

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)				
1489.60	---	29.04	200.0	V	258.0	-16.4	54.00	24.96
1489.60	40.21	---	200.0	V	258.0	-16.4	74.00	33.79
4924.00	---	36.73	150.0	V	247.0	-5.3	54.00	17.27
4924.00	42.13	---	150.0	V	247.0	-5.3	74.00	31.87
6613.40	44.56	---	150.0	H	0.0	-0.9	74.00	29.44
6615.10	---	36.37	150.0	H	0.0	-0.9	54.00	17.63
11728.70	---	39.03	200.0	V	133.0	3.3	54.00	14.97
11728.70	48.62	---	200.0	V	133.0	3.3	74.00	25.38
13892.80	50.30	---	150.0	V	357.0	6.0	74.00	23.70
13896.20	---	42.40	150.0	V	357.0	6.0	54.00	11.60
17785.80	---	46.30	200.0	V	195.0	8.8	54.00	7.70
17785.80	55.46	---	200.0	V	195.0	8.8	74.00	18.54

802.11g Mode:

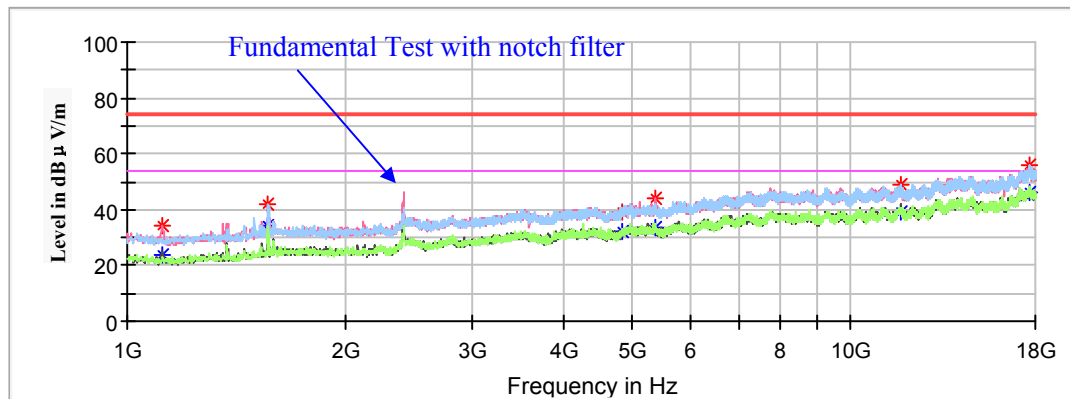
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

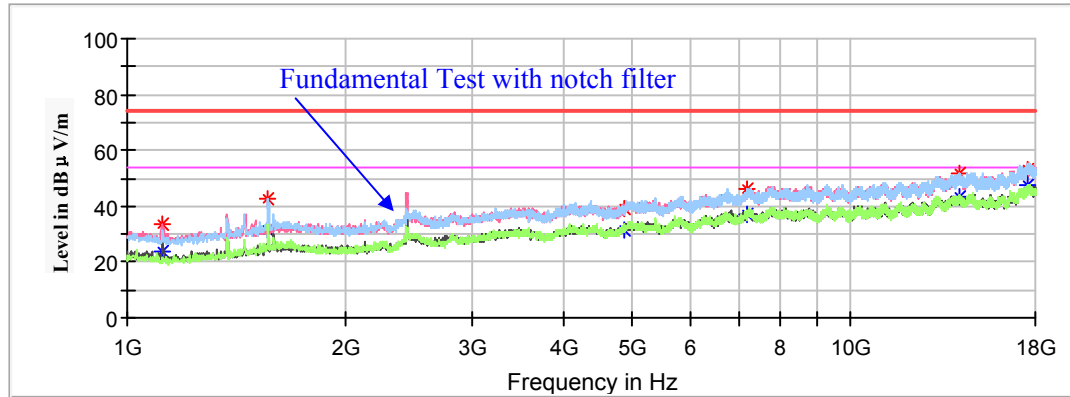
Full Spectrum



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)				
1117.30	---	23.66	200.0	V	13.0	-18.4	54.00	30.34
1117.30	34.26	---	200.0	V	13.0	-18.4	74.00	39.74
1567.80	41.81	---	150.0	H	317.0	-16.1	74.00	32.19
1567.80	---	34.56	150.0	H	317.0	-16.1	54.00	19.44
4824.00	39.22	---	200.0	H	325.0	-5.5	74.00	34.78
4824.00	---	32.21	200.0	H	325.0	-5.5	54.00	21.79
5379.20	---	33.54	150.0	V	255.0	-4.2	54.00	20.46
5379.20	44.03	---	150.0	V	255.0	-4.2	74.00	29.97
11761.00	---	39.28	200.0	V	345.0	3.3	54.00	14.72
11761.00	48.98	---	200.0	V	345.0	3.3	74.00	25.02
17716.10	---	46.00	150.0	H	89.0	8.9	54.00	8.00
17716.10	55.61	---	150.0	H	89.0	8.9	74.00	18.39

Middle Channel: 2437MHz

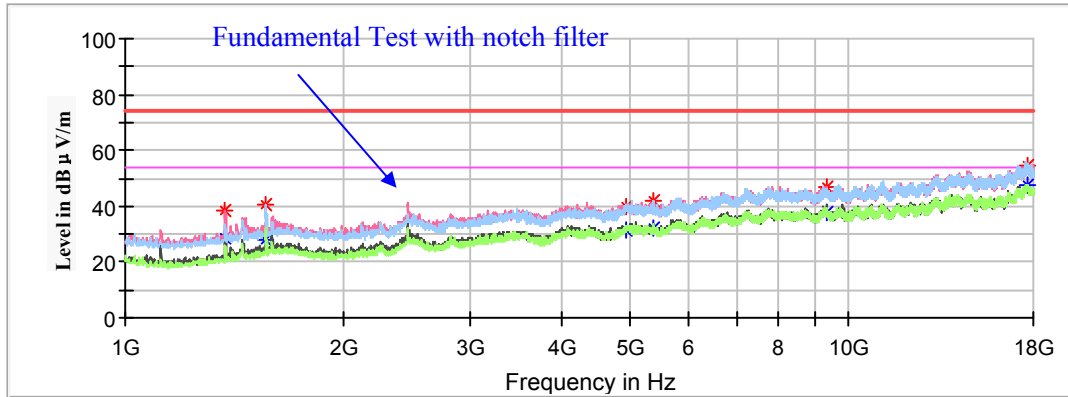
Full Spectrum



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)				
1115.60	---	23.48	150.0	V	357.0	-18.4	54.00	30.52
1115.60	33.68	---	150.0	V	357.0	-18.4	74.00	40.32
1566.10	---	31.48	150.0	H	324.0	-16.1	54.00	22.52
1566.10	42.79	---	150.0	H	324.0	-16.1	74.00	31.21
4874.00	---	31.71	150.0	V	326.0	-5.4	54.00	22.29
4874.00	38.86	---	150.0	V	326.0	-5.4	74.00	35.14
7196.50	46.26	---	200.0	H	226.0	0.4	74.00	27.74
7196.50	---	37.35	200.0	H	226.0	0.4	54.00	16.65
14144.40	52.03	---	150.0	V	102.0	6.3	74.00	21.97
14144.40	---	43.08	150.0	V	102.0	6.3	54.00	10.92
17573.30	53.25	---	150.0	H	7.0	8.9	74.00	20.75
17573.30	---	47.67	150.0	H	7.0	8.9	54.00	6.33

High Channel: 2462MHz

Full Spectrum

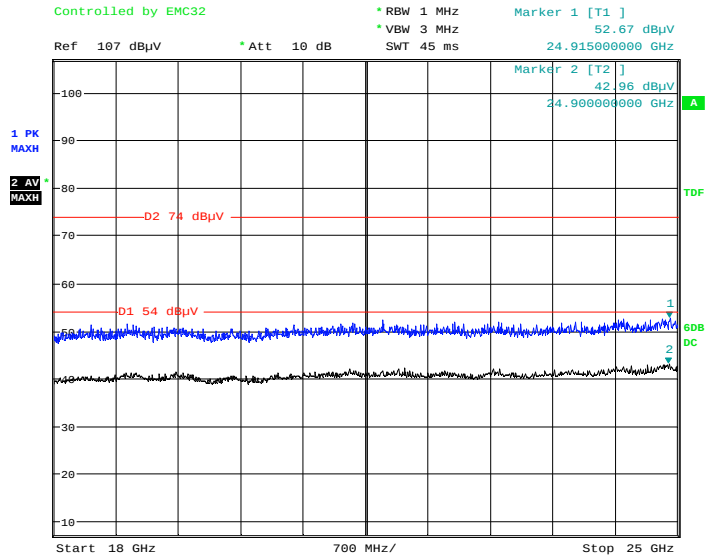


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1375.70	---	28.72	200.0	V	113.0	-17.0	54.00	25.28
1375.70	38.77	---	200.0	V	113.0	-17.0	74.00	35.23
1566.10	---	28.01	150.0	H	324.0	-16.1	54.00	25.99
1566.10	40.26	---	150.0	H	324.0	-16.1	74.00	33.74
4924.00	39.80	---	200.0	H	294.0	-5.3	74.00	34.20
4924.00	---	31.65	200.0	H	294.0	-5.3	54.00	22.35
5363.90	---	32.36	150.0	H	259.0	-4.3	54.00	21.64
5363.90	42.30	---	150.0	H	259.0	-4.3	74.00	31.70
9328.30	---	37.45	200.0	V	324.0	2.0	54.00	16.55
9328.30	46.97	---	200.0	V	324.0	2.0	74.00	27.03
17675.30	54.53	---	150.0	V	298.0	8.9	74.00	19.47
17675.30	---	47.85	150.0	V	298.0	8.9	54.00	6.15

18GHz-25GHz:

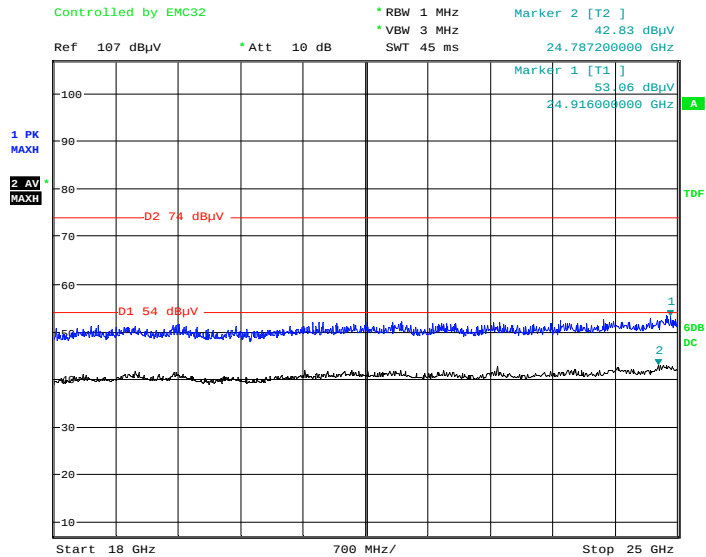
Pre-scan with 802.11b, 802.11g, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case **low channel of 802.11b mode in Z-axis of orientation** was recorded

Horizontal



Date: 20.AUG.2020 22:23:14

Vertical



Date: 20.AUG.2020 22:30:31

Restricted Bands Emissions Test:

Note:

1. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)

Corrected Amplitude (dB μ V/m) = Corrected Factor (dB/m) + Reading (dB μ V)Margin (dB) = Limit (dB μ V/m) – Corrected Amplitude (dB μ V/m)**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	48.51	---	200.0	V	237.0	-2.9	74.00	25.49
2390.00	---	44.95	200.0	V	237.0	-2.9	54.00	9.05
High Channel: 2462MHz								
2483.50	48.98	---	200.0	V	45.0	-2.5	74.00	25.02
2483.50	---	46.30	200.0	V	45.0	-2.5	54.00	7.70

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	57.47	---	150.0	V	97.0	-2.9	74.00	16.53
2390.00	---	49.71	150.0	V	97.0	-2.9	54.00	4.29
High Channel: 2462MHz								
2483.50	59.62	---	150.0	V	75.0	-2.5	74.00	14.38
2483.50	---	50.51	150.0	V	75.0	-2.5	54.00	3.49

Chain 1:**1GHz-18GHz:****802.11b Mode:**

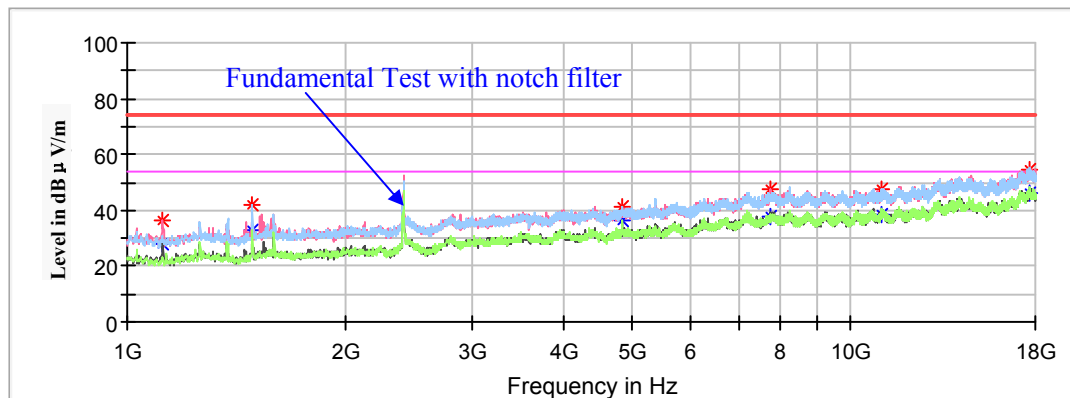
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

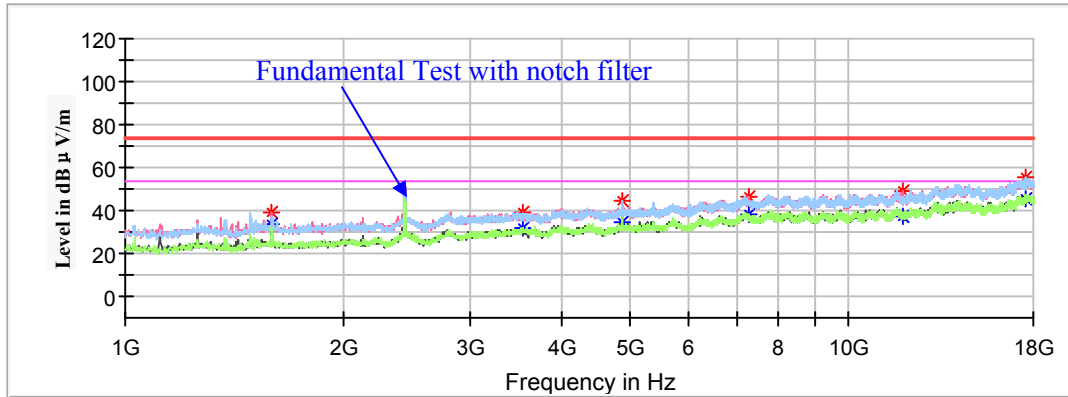
Full Spectrum



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)				
1117.30	---	27.64	150.0	V	359.0	-18.4	54.00	26.36
1117.30	36.42	---	150.0	V	359.0	-18.4	74.00	37.58
1489.60	---	32.99	150.0	H	335.0	-16.4	54.00	21.01
1489.60	42.22	---	150.0	H	335.0	-16.4	74.00	31.78
4824.00	---	36.62	200.0	H	143.0	-5.5	54.00	17.38
4824.00	41.41	---	200.0	H	143.0	-5.5	74.00	32.59
7738.80	---	37.78	200.0	V	43.0	1.4	54.00	16.22
7738.80	47.74	---	200.0	V	43.0	1.4	74.00	26.26
11060.60	---	38.62	150.0	V	355.0	2.9	54.00	15.38
11060.60	47.68	---	150.0	V	355.0	2.9	74.00	26.32
17687.20	---	46.30	150.0	V	8.0	8.9	54.00	7.70
17687.20	54.48	---	150.0	V	8.0	8.9	74.00	19.52

Middle Channel: 2437MHz

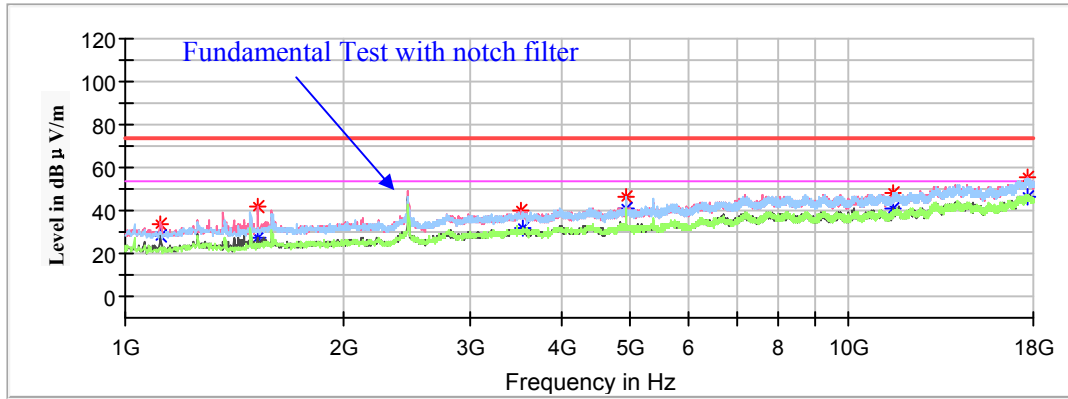
Full Spectrum



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)				
1596.70	---	33.36	200.0	V	239.0	-16.0	54.00	20.64
1596.70	39.06	---	200.0	V	239.0	-16.0	74.00	34.94
3536.40	39.50	---	150.0	H	73.0	-8.7	74.00	34.50
3539.80	---	31.85	150.0	H	73.0	-8.7	54.00	22.15
4874.00	---	34.27	200.0	V	239.0	-5.4	54.00	19.73
4874.00	44.73	---	200.0	V	239.0	-5.4	74.00	29.27
7257.70	---	38.29	150.0	V	165.0	0.5	54.00	15.71
7262.80	46.15	---	150.0	V	165.0	0.5	74.00	27.85
11900.40	---	37.52	150.0	V	357.0	3.6	54.00	16.48
11900.40	48.82	---	150.0	V	357.0	3.6	74.00	25.18
17522.30	55.23	---	200.0	H	65.0	8.9	74.00	18.77
17522.70	---	45.58	200.0	H	65.0	8.9	54.00	8.42

High Channel: 2462MHz

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)				
1119.00	---	28.36	150.0	V	0.0	-18.4	54.00	25.64
1120.70	34.04	---	150.0	V	0.0	-18.4	74.00	39.96
1525.30	---	27.01	200.0	V	154.0	-16.3	54.00	26.99
1525.30	42.01	---	200.0	V	154.0	-16.3	74.00	31.99
3526.20	40.15	---	200.0	V	310.0	-8.7	74.00	33.85
3534.70	---	31.67	200.0	V	310.0	-8.7	54.00	22.33
4924.00	---	40.74	200.0	H	307.0	-5.3	54.00	13.26
4924.00	46.67	---	200.0	H	307.0	-5.3	74.00	27.33
11546.80	48.53	---	150.0	V	36.0	2.9	74.00	25.47
11550.20	---	40.87	150.0	V	36.0	2.9	54.00	13.13
17712.70	55.63	---	200.0	H	339.0	8.9	74.00	18.37
17712.80	---	46.69	200.0	H	339.0	8.9	54.00	7.31

802.11g Mode:

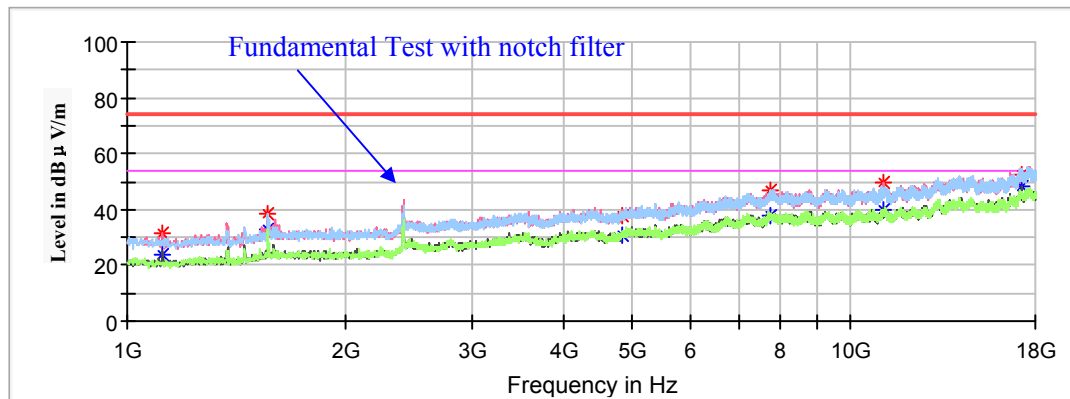
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

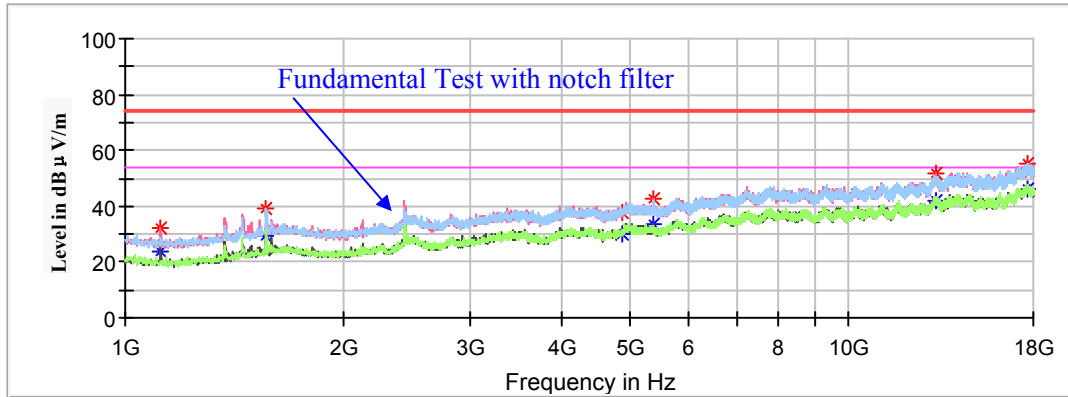
Full Spectrum



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)				
1117.30	---	23.77	150.0	V	0.0	-18.4	54.00	30.23
1117.30	31.42	---	150.0	V	0.0	-18.4	74.00	42.58
1562.70	38.44	---	200.0	H	82.0	-16.1	74.00	35.56
1562.70	---	32.79	200.0	H	82.0	-16.1	54.00	21.21
4824.00	---	30.93	200.0	H	353.0	-5.5	54.00	23.07
4824.00	37.59	---	200.0	H	353.0	-5.5	74.00	36.41
7720.10	---	37.60	150.0	V	266.0	1.4	54.00	16.40
7720.10	46.70	---	150.0	V	266.0	1.4	74.00	27.30
11130.30	---	39.58	150.0	H	325.0	2.9	54.00	14.42
11130.30	49.75	---	150.0	H	325.0	2.9	74.00	24.25
17212.90	---	48.07	200.0	V	323.0	7.9	54.00	5.93
17212.90	52.59	---	200.0	V	323.0	7.9	74.00	21.41

Middle Channel: 2437MHz

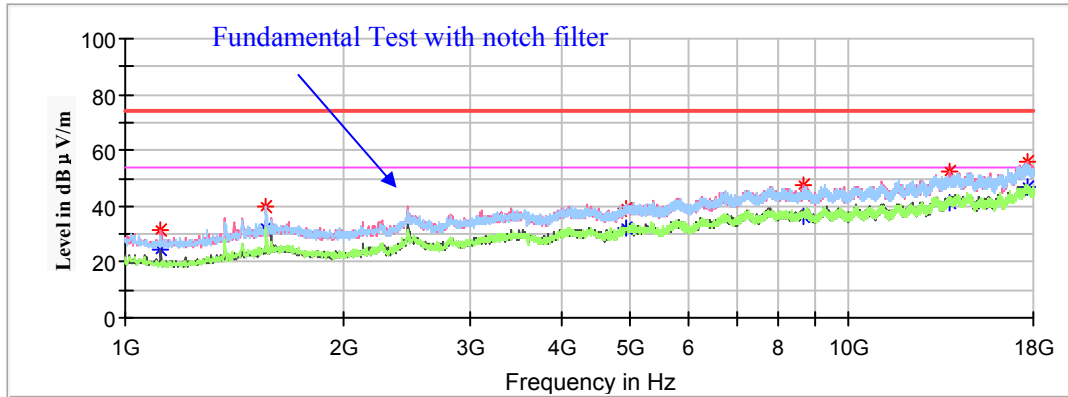
Full Spectrum



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)				
1117.30	---	23.95	150.0	V	2.0	-18.4	54.00	30.05
1117.30	32.44	---	150.0	V	2.0	-18.4	74.00	41.56
1564.40	39.19	---	200.0	H	308.0	-16.1	74.00	34.81
1564.40	---	29.05	200.0	H	308.0	-16.1	54.00	24.95
4874.00	37.88	---	150.0	H	155.0	-5.4	74.00	36.12
4874.00	---	30.42	150.0	H	155.0	-5.4	54.00	23.58
5369.00	---	33.86	150.0	V	315.0	-4.2	54.00	20.14
5369.00	42.85	---	150.0	V	315.0	-4.2	74.00	31.15
13183.90	---	42.04	200.0	H	206.0	5.4	54.00	11.96
13183.90	51.57	---	200.0	H	206.0	5.4	74.00	22.43
17624.30	---	45.89	150.0	H	4.0	8.9	54.00	8.11
17624.30	55.13	---	150.0	H	4.0	8.9	74.00	18.87

High Channel: 2462MHz

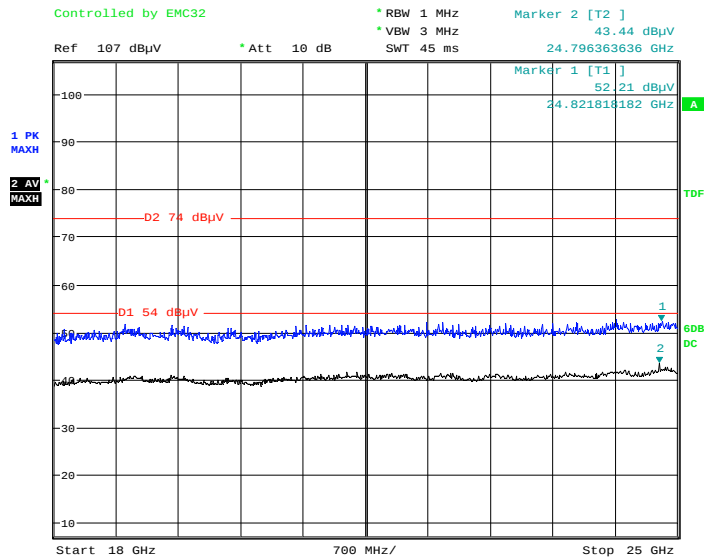
Full Spectrum



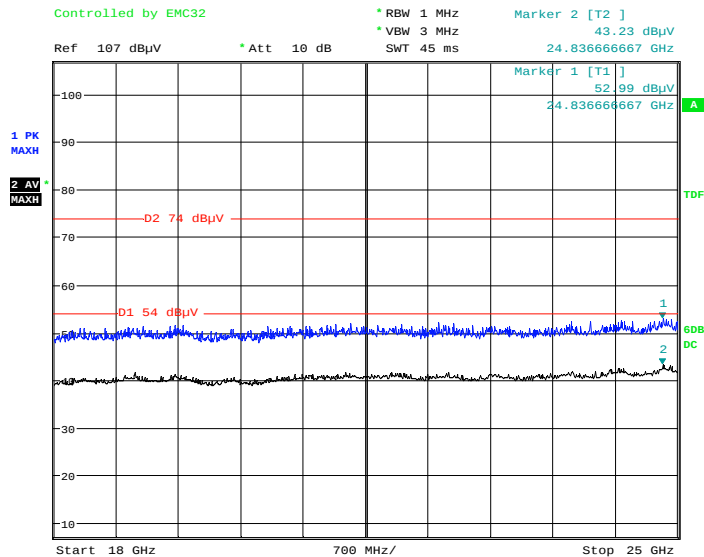
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1120.70	---	24.22	150.0	V	0.0	-18.4	54.00	29.78
1120.70	31.52	---	150.0	V	0.0	-18.4	74.00	42.48
1566.10	39.52	---	150.0	H	324.0	-16.1	74.00	34.48
1566.10	---	31.84	150.0	H	324.0	-16.1	54.00	22.16
4924.00	---	31.92	200.0	V	0.0	-5.3	54.00	22.08
4924.00	39.09	---	200.0	V	0.0	-5.3	74.00	34.91
8646.60	---	36.65	150.0	H	0.0	1.5	54.00	17.35
8646.60	47.54	---	150.0	H	0.0	1.5	74.00	26.46
13814.60	---	41.57	150.0	V	59.0	6.0	54.00	12.43
13814.60	52.73	---	150.0	V	59.0	6.0	74.00	21.27
17629.40	55.62	---	200.0	V	52.0	8.9	74.00	18.38
17629.40	---	46.77	200.0	V	52.0	8.9	54.00	7.23

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 **low channel of 802.11b mode in Z-axis of orientation** was recorded

Horizontal

Date: 20.AUG.2020 22:37:59

Vertical

Date: 20.AUG.2020 22:48:05

Restricted Bands Emissions Test:

Note:

1. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)

Corrected Amplitude (dB μ V/m) = Corrected Factor (dB/m) + Reading (dB μ V)Margin (dB) = Limit (dB μ V/m) – Corrected Amplitude (dB μ V/m)**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	45.47	---	150.0	H	349.0	-2.9	74.00	28.53
2390.00	---	43.16	150.0	H	349.0	-2.9	54.00	10.84
High Channel: 2462MHz								
2483.50	47.48	---	200.0	V	75.0	-2.5	74.00	26.52
2483.50	---	45.43	200.0	V	75.0	-2.5	54.00	8.57

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	55.06	---	200.0	V	77.0	-2.9	74.00	18.94
2390.00	---	50.46	200.0	V	77.0	-2.9	54.00	3.54
High Channel: 2462MHz								
2483.50	55.13	---	200.0	V	75.0	-2.5	74.00	18.87
2483.50	---	48.90	200.0	V	75.0	-2.5	54.00	5.10

Chain 0 + Chain 1:**802.11n-HT20 Mode:**

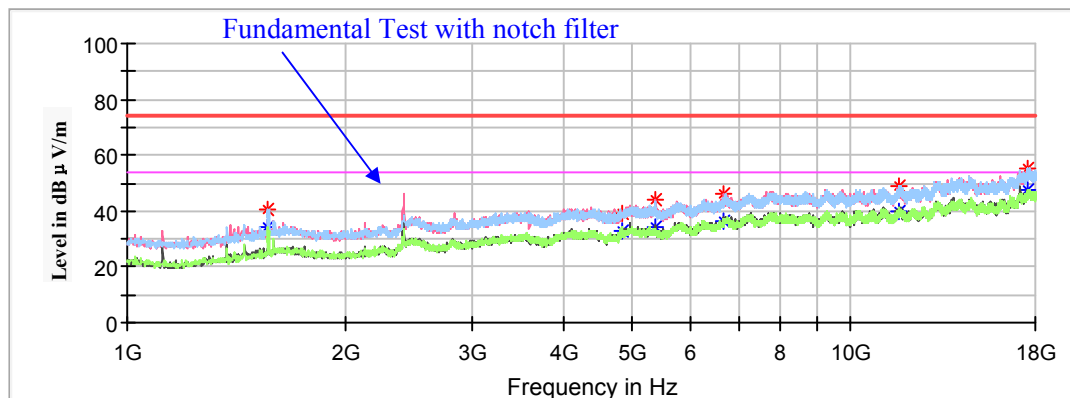
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

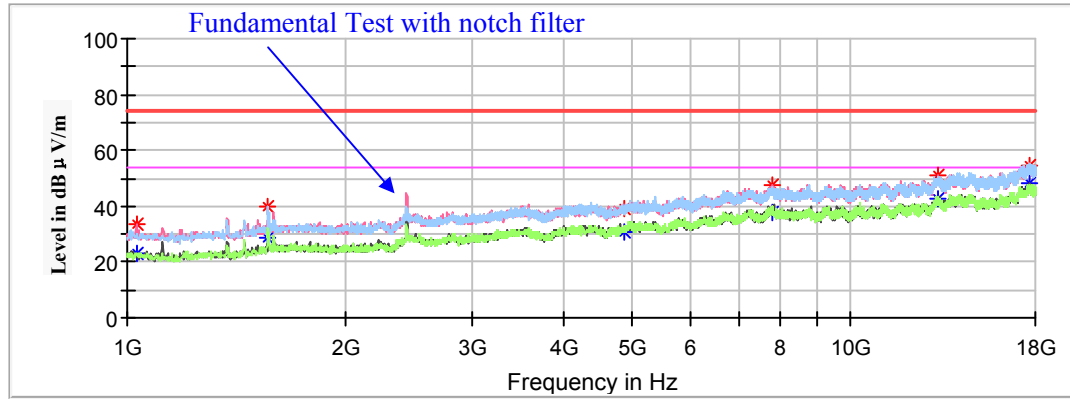
Full Spectrum



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)				
1562.70	40.24	---	200.0	H	309.0	-16.1	74.00	33.76
1562.70	---	34.35	200.0	H	309.0	-16.1	54.00	19.65
4824.00	38.89	---	150.0	H	165.0	-5.5	74.00	35.11
4824.00	---	32.61	150.0	H	165.0	-5.5	54.00	21.39
5365.60	---	34.48	200.0	V	279.0	-4.3	54.00	19.52
5365.60	44.38	---	200.0	V	279.0	-4.3	74.00	29.62
6691.60	---	36.09	200.0	V	4.0	-0.8	54.00	17.91
6691.60	45.91	---	200.0	V	4.0	-0.8	74.00	28.09
11640.30	49.18	---	200.0	H	50.0	3.1	74.00	24.82
11643.70	---	40.02	200.0	H	50.0	3.1	54.00	13.98
17610.70	55.54	---	150.0	V	101.0	8.9	74.00	18.46
17610.70	---	47.21	150.0	V	101.0	8.9	54.00	6.79

Middle Channel: 2437MHz

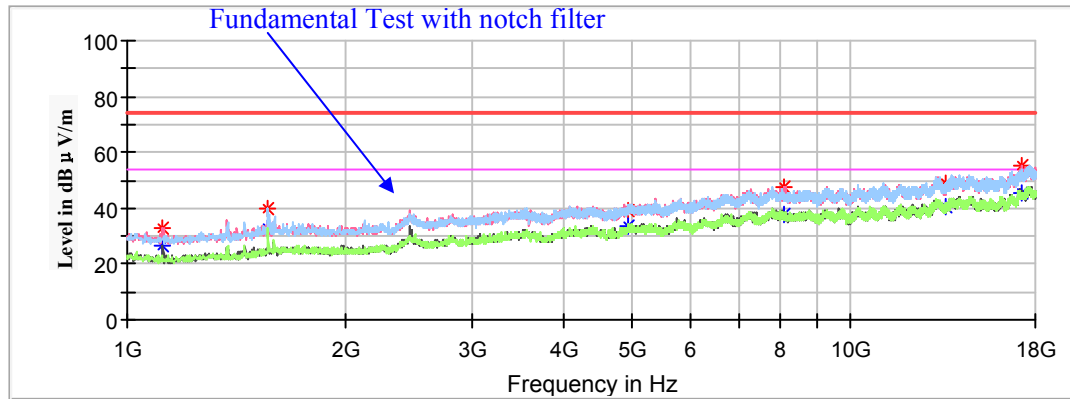
Full Spectrum



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)				
1028.90	33.76	---	150.0	V	0.0	-18.9	74.00	40.24
1028.90	---	23.09	150.0	V	0.0	-18.9	54.00	30.91
1564.40	39.98	---	200.0	H	331.0	-16.1	74.00	34.02
1564.40	---	28.47	200.0	H	331.0	-16.1	54.00	25.53
4874.00	38.86	---	150.0	V	25.0	-5.4	74.00	35.14
4874.00	---	31.09	150.0	V	25.0	-5.4	54.00	22.91
7794.90	47.31	---	200.0	V	64.0	1.5	74.00	26.69
7794.90	---	37.54	200.0	V	64.0	1.5	54.00	16.46
13200.90	51.09	---	150.0	V	123.0	5.4	74.00	22.91
13200.90	---	42.72	150.0	V	123.0	5.4	54.00	11.28
17673.60	---	48.02	150.0	V	37.0	8.9	54.00	5.98
17673.60	54.83	---	150.0	V	37.0	8.9	74.00	19.17

High Channel : 2462MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1119.00	---	26.69	150.0	V	0.0	-18.4	54.00	27.31
1119.00	32.93	---	150.0	V	0.0	-18.4	74.00	41.07
1562.70	---	32.77	150.0	H	310.0	-16.1	54.00	21.23
1562.70	40.21	---	150.0	H	310.0	-16.1	74.00	33.79
4924.00	---	33.52	200.0	H	350.0	-5.3	54.00	20.48
4924.00	39.10	---	200.0	H	350.0	-5.3	74.00	34.90
8082.20	---	37.56	150.0	V	256.0	1.7	54.00	16.44
8082.20	47.44	---	150.0	V	256.0	1.7	74.00	26.56
13561.30	---	40.40	200.0	V	34.0	5.7	54.00	13.60
13561.30	49.26	---	200.0	V	34.0	5.7	74.00	24.74
17219.70	---	45.38	150.0	V	90.0	7.9	54.00	8.62
17219.70	55.16	---	150.0	V	90.0	7.9	74.00	18.84

802.11n-HT40 Mode:

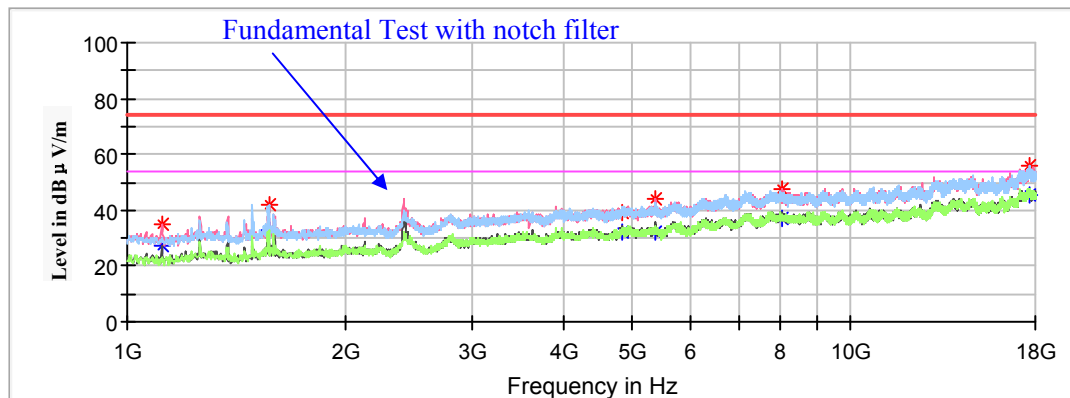
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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 (dB μ V /m) = Corrected Factor (dB/m) + Reading (dB μ V)
 Margin (dB) = Limit (dB μ V/m) – Corrected Amplitude (dB μ V /m)

Low Channel : 2422MHz

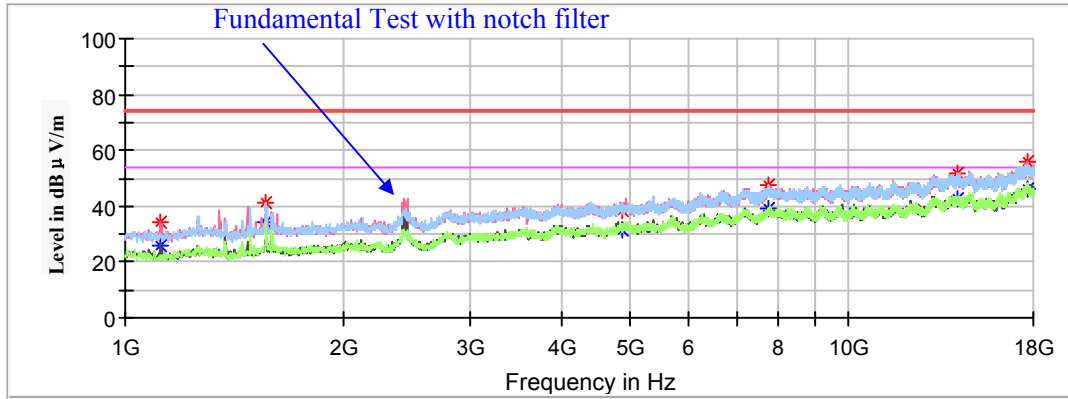
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1115.60	---	27.33	150.0	V	7.0	-18.4	54.00	26.67
1115.60	34.90	---	150.0	V	7.0	-18.4	74.00	39.10
1569.50	---	32.80	200.0	H	315.0	-16.1	54.00	21.20
1569.50	42.12	---	200.0	H	315.0	-16.1	74.00	31.88
4844.00	---	32.00	150.0	V	307.0	-5.5	54.00	22.00
4844.00	39.34	---	150.0	V	307.0	-5.5	74.00	34.66
5374.10	---	32.42	150.0	V	266.0	-4.2	54.00	21.58
5374.10	44.33	---	150.0	V	266.0	-4.2	74.00	29.67
8026.10	---	37.10	200.0	V	74.0	1.8	54.00	16.90
8026.10	47.59	---	200.0	V	74.0	1.8	74.00	26.41
17692.30	---	45.79	150.0	H	84.0	8.9	54.00	8.21
17692.30	55.67	---	150.0	H	84.0	8.9	74.00	18.33

Middle Channel: 2437MHz

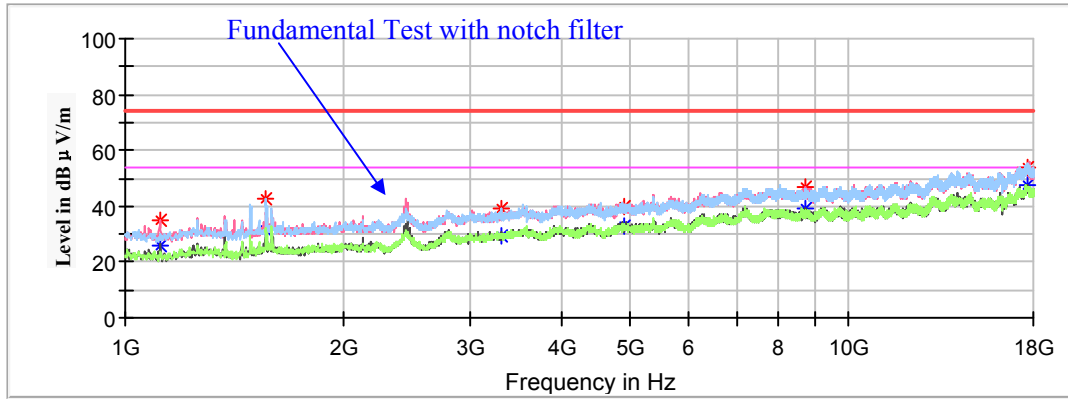
Full Spectrum



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)				
1119.00	34.26	---	150.0	V	0.0	-18.4	74.00	39.74
1119.00	---	25.78	150.0	V	0.0	-18.4	54.00	28.22
1564.40	41.21	---	150.0	H	336.0	-16.1	74.00	32.79
1564.40	---	34.58	150.0	H	336.0	-16.1	54.00	19.42
4874.00	38.76	---	200.0	H	35.0	-5.4	74.00	35.24
4874.00	---	31.61	200.0	H	35.0	-5.4	54.00	22.39
7726.90	---	38.84	200.0	H	265.0	1.4	54.00	15.16
7726.90	47.24	---	200.0	H	265.0	1.4	74.00	26.76
14161.40	---	42.84	200.0	V	187.0	6.3	54.00	11.16
14161.40	51.83	---	200.0	V	187.0	6.3	74.00	22.17
17654.90	55.61	---	150.0	V	0.0	8.9	74.00	18.39
17654.90	---	45.95	150.0	V	0.0	8.9	54.00	8.05

High Channel : 2452MHz

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)				
1117.30	---	25.91	150.0	V	15.0	-18.4	54.00	28.09
1117.30	34.92	---	150.0	V	15.0	-18.4	74.00	39.08
1561.00	---	31.37	150.0	H	331.0	-16.1	54.00	22.63
1561.00	42.37	---	150.0	H	331.0	-16.1	74.00	31.63
3310.30	---	29.41	150.0	H	65.0	-9.3	54.00	24.59
3310.30	39.35	---	150.0	H	65.0	-9.3	74.00	34.65
4904.00	---	32.82	200.0	H	332.0	-5.4	54.00	21.18
4904.00	39.75	---	200.0	H	332.0	-5.4	74.00	34.25
8712.90	---	39.01	200.0	V	7.0	1.6	54.00	14.99
8712.90	47.02	---	200.0	V	7.0	1.6	74.00	26.98
17712.70	53.66	---	200.0	H	353.0	8.9	74.00	20.34
17712.70	---	47.54	200.0	H	353.0	8.9	54.00	6.46

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

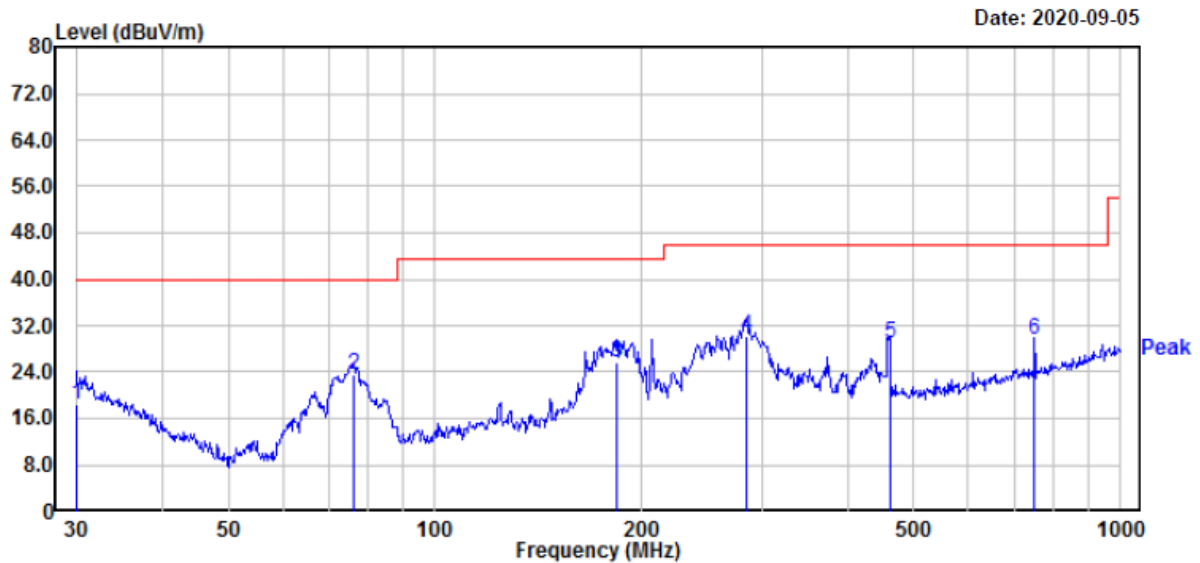
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
Low Channel: 2412MHz								
2390.00	49.08	---	150.0	V	32.0	-2.9	74.00	24.92
2390.00	---	45.64	150.0	V	32.0	-2.9	54.00	8.36
High Channel: 2462MHz								
2483.50	54.80	---	200.0	V	76.0	-2.5	74.00	19.20
2483.50	---	46.88	200.0	V	76.0	-2.5	54.00	7.12

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	---	49.37	150.0	V	105.0	-2.9	54.00	4.63
2390.00	53.56	---	150.0	V	105.0	-2.9	74.00	20.44
High Channel: 2452MHz								
2483.50	52.49	---	150.0	V	96.0	-2.5	74.00	21.51
2483.50	---	47.70	150.0	V	96.0	-2.5	54.00	6.30

For BLE(1Mbps) Mode:**Spurious Emission Test:
30MHz-1GHz:****Horizontal:**

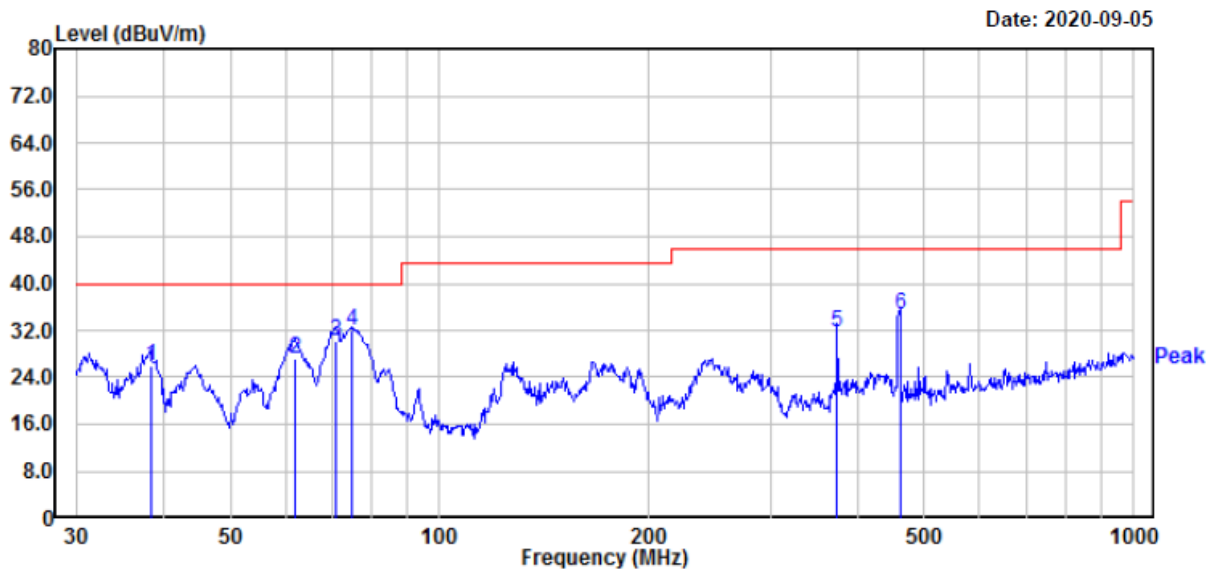
(Pre-scan with low, middle and high channels of operation in the X,Y and Z axes of orientation, the worst case **high channel of operation in the Z axis of orientation** was recorded)



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	30.00	21.50	-3.13	18.37	40.00	-21.63	100	19	QP
2	76.24	40.60	-17.06	23.54	40.00	-16.46	100	360	QP
3	184.49	38.51	-12.70	25.81	43.50	-17.69	100	278	QP
4	284.98	40.70	-10.50	30.20	46.00	-15.80	100	303	QP
5	460.73	35.40	-6.38	29.02	46.00	-16.98	100	89	QP
6	750.11	31.00	-1.37	29.63	46.00	-16.37	100	348	QP

Vertical:

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



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	38.35	36.00	-10.07	25.93	40.00	-14.07	100	358	QP
2	62.00	44.49	-17.42	27.07	40.00	-12.93	100	293	QP
3	70.83	47.10	-16.91	30.19	40.00	-9.81	100	326	QP
4	74.66	49.01	-17.03	31.98	40.00	-8.02	100	306	QP
5	374.62	40.10	-8.41	31.69	46.00	-14.31	100	25	QP
6	460.73	41.20	-6.38	34.82	46.00	-11.18	100	344	QP

Note:

- 1) Factor (dB) = Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)
- 2) Over Limit (dB) = Read level (dBμV) + Factor (dB) - Limit (dBμV)

1GHz-18GHz

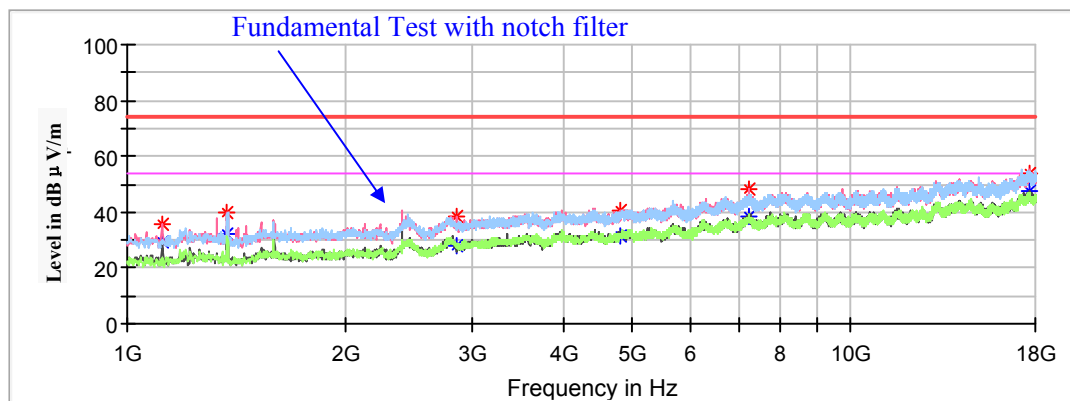
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

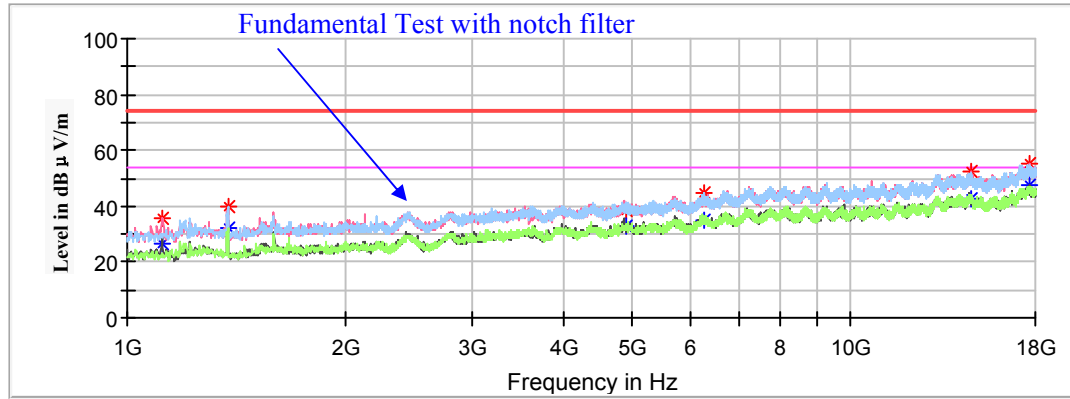
Full Spectrum



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)				
1117.30	---	29.28	150.0	V	0.0	-18.4	54.00	24.72
1117.30	35.42	---	150.0	V	0.0	-18.4	74.00	38.58
1375.70	---	32.44	150.0	V	174.0	-17.0	54.00	21.56
1375.70	39.66	---	150.0	V	174.0	-17.0	74.00	34.34
2859.80	---	27.97	200.0	V	2.0	-10.8	54.00	26.03
2859.80	38.62	---	200.0	V	2.0	-10.8	74.00	35.38
4804.00	---	31.58	150.0	V	252.0	-5.6	54.00	22.42
4804.00	40.27	---	150.0	V	252.0	-5.6	74.00	33.73
7222.00	---	38.12	200.0	V	8.0	0.4	54.00	15.88
7222.00	48.02	---	200.0	V	8.0	0.4	74.00	25.98
17622.60	53.54	---	150.0	V	134.0	8.9	74.00	20.46
17622.60	---	47.36	150.0	V	134.0	8.9	54.00	6.64

Middle Channel: 2440MHz

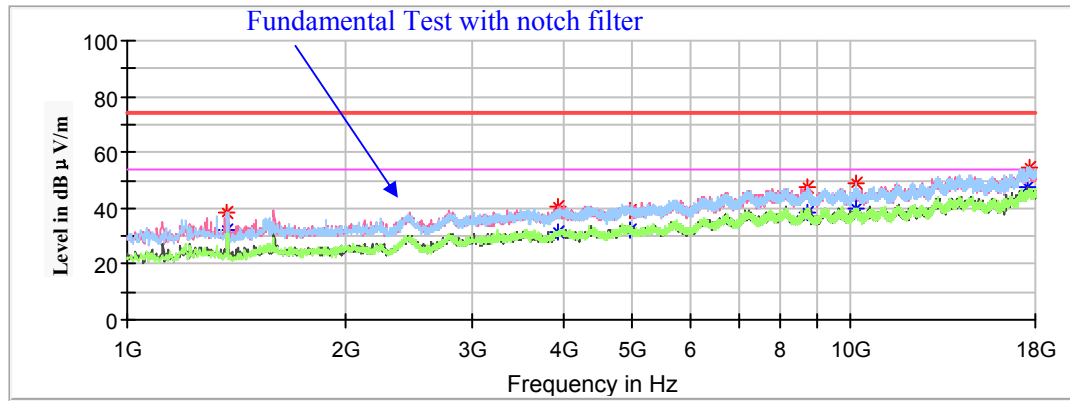
Full Spectrum



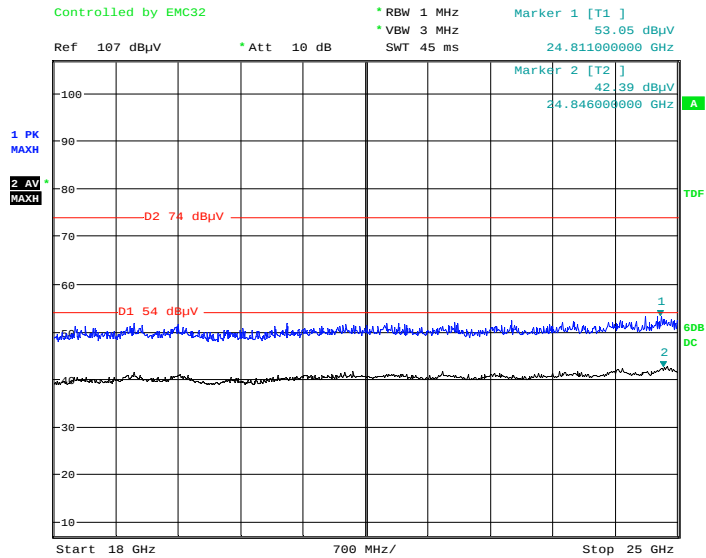
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1119.00	---	26.30	150.0	V	2.0	-18.4	54.00	27.70
1120.70	35.92	---	150.0	V	2.0	-18.4	74.00	38.08
1377.40	39.76	---	150.0	H	33.0	-17.0	74.00	34.24
1377.40	---	32.42	150.0	H	33.0	-17.0	54.00	21.58
4880.00	38.22	---	200.0	V	326.0	-5.4	74.00	35.78
4880.00	---	33.15	200.0	V	326.0	-5.4	54.00	20.85
6259.80	---	34.97	150.0	H	45.0	-2.1	54.00	19.03
6259.80	44.67	---	150.0	H	45.0	-2.1	74.00	29.33
14671.40	52.38	---	200.0	V	25.0	6.0	74.00	21.62
14671.40	---	42.85	200.0	V	25.0	6.0	54.00	11.15
17675.30	55.42	---	150.0	V	249.0	8.9	74.00	18.58
17675.30	---	47.44	150.0	V	249.0	8.9	54.00	6.56

High Channel: 2480MHz

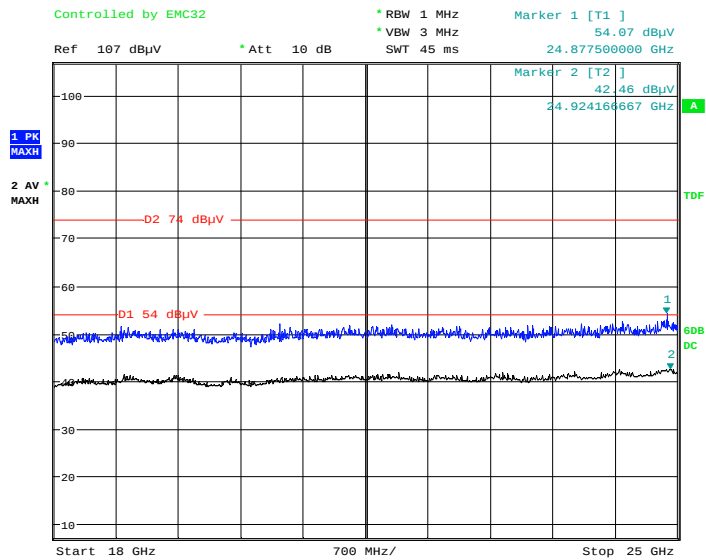
Full Spectrum



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)				
1374.00	38.59	---	200.0	H	34.0	-17.0	74.00	35.41
1375.70	---	32.08	200.0	H	34.0	-17.0	54.00	21.92
3934.20	---	31.46	150.0	H	166.0	-7.2	54.00	22.54
3934.20	40.88	---	150.0	H	166.0	-7.2	74.00	33.12
4960.00	---	31.90	150.0	V	353.0	-5.3	54.00	22.10
4960.00	38.93	---	150.0	V	353.0	-5.3	74.00	35.07
8707.80	---	38.74	200.0	H	4.0	1.6	54.00	15.26
8707.80	47.46	---	200.0	H	4.0	1.6	74.00	26.54
10188.50	---	39.55	150.0	H	102.0	2.1	54.00	14.45
10188.50	49.22	---	150.0	H	102.0	2.1	74.00	24.78
17588.60	---	47.38	200.0	V	167.0	8.9	54.00	6.62
17692.30	54.79	---	200.0	V	167.0	8.9	74.00	19.21

18GHz-25GHz*(The worst case high channel of operation in the Z axis of orientation was recorded)***Horizontal**

Date: 5.NOV.2020 23:26:23

Vertical

Date: 25.AUG.2020 18:58:18

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)

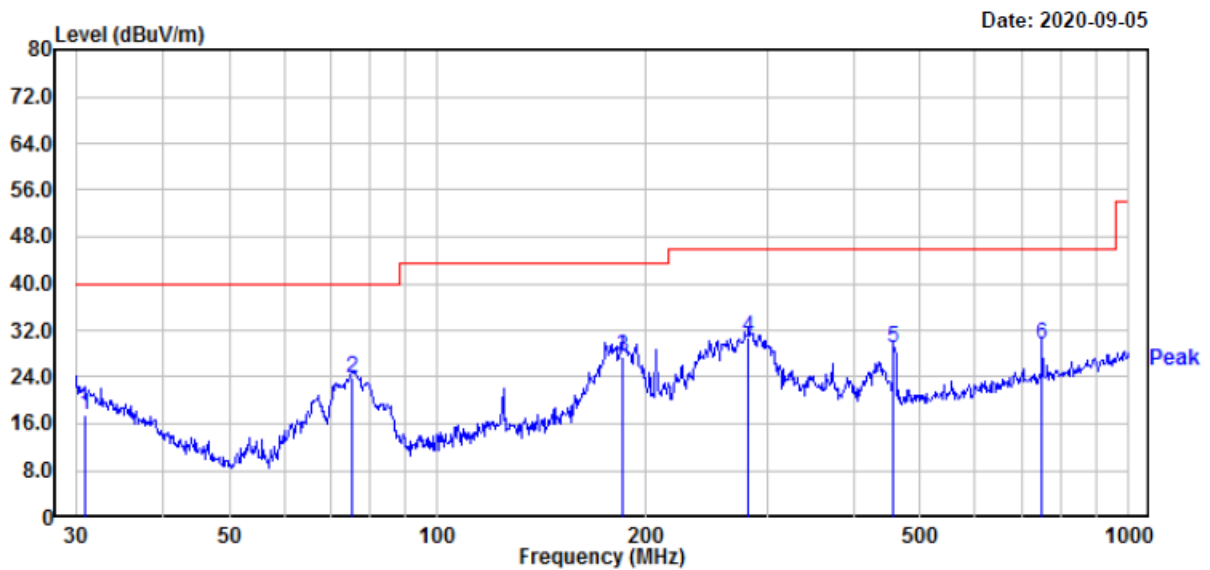
Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)

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	46.94	---	150.0	V	182.0	-2.9	74.00	27.06
2390.00	---	42.52	150.0	V	182.0	-2.9	54.00	11.48
High Channel: 2480MHz								
2483.50	47.54	---	200.0	H	69.0	-2.5	74.00	26.46
2483.50	---	43.10	200.0	H	69.0	-2.5	54.00	10.90

For BLE(2Mbps) Mode:**Spurious Emission Test:
30MHz-1GHz:****Horizontal:**

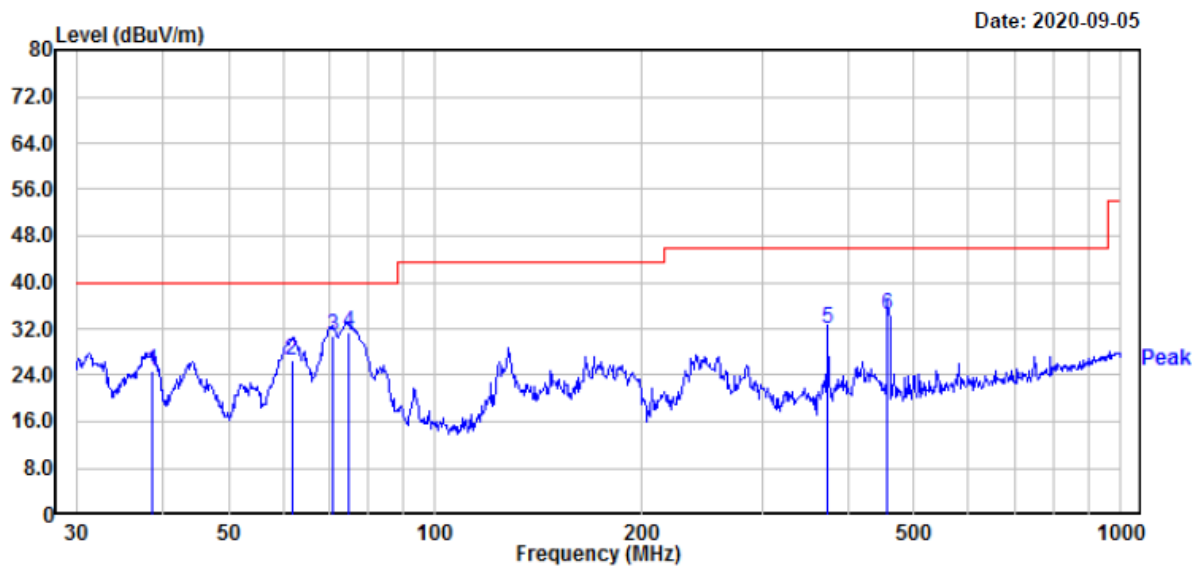
(Pre-scan with low, middle and high channels of operation in the X,Y and Z axes of orientation, the worst case **high** channel of operation in the Z axis of orientation was recorded)



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	30.85	21.40	-3.84	17.56	40.00	-22.44	100	148	QP
2	75.18	40.79	-17.03	23.76	40.00	-16.24	100	354	QP
3	185.14	40.00	-12.64	27.36	43.50	-16.14	100	290	QP
4	282.00	41.40	-10.55	30.85	46.00	-15.15	100	335	QP
5	457.51	35.40	-6.45	28.95	46.00	-17.05	100	80	QP
6	750.11	31.00	-1.37	29.63	46.00	-16.37	100	36	QP

Vertical:

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



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	APos	TPos	Remark
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	deg	
1	38.62	35.00	-10.29	24.71	40.00	-15.29	100	20	QP
2	61.78	43.99	-17.43	26.56	40.00	-13.44	100	359	QP
3	70.83	47.60	-16.91	30.69	40.00	-9.31	100	299	QP
4	74.92	48.41	-17.04	31.37	40.00	-8.63	100	319	QP
5	374.62	40.30	-8.41	31.89	46.00	-14.11	100	360	QP
6	457.51	41.00	-6.45	34.55	46.00	-11.45	100	346	QP

Note:

- 1) Factor (dB) = Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)
- 2) Over Limit (dB) = Read level (dBuV) + Factor (dB) - Limit (dBuV)

1GHz-18GHz

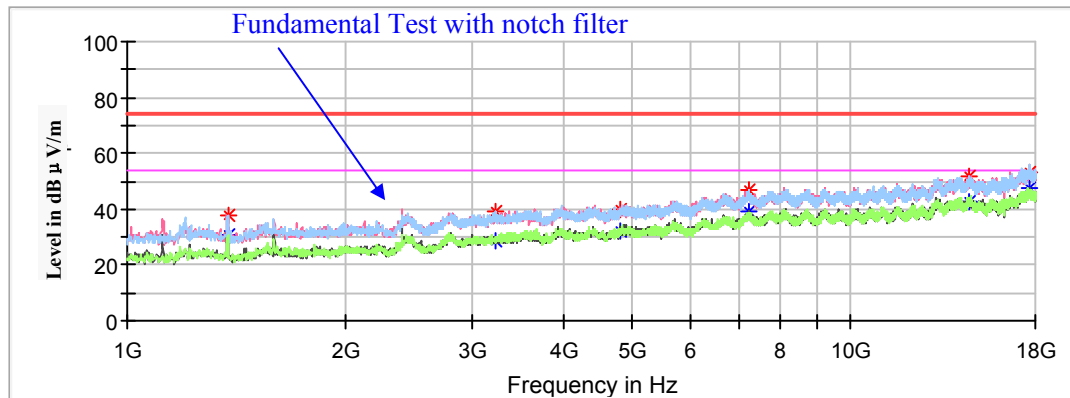
(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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 (dB μ V/m) = Corrected Factor (dB/m) + Reading (dB μ V)
 Margin (dB) = Limit (dB μ V/m) – Corrected Amplitude (dB μ V/m)

Low Channel: 2402MHz

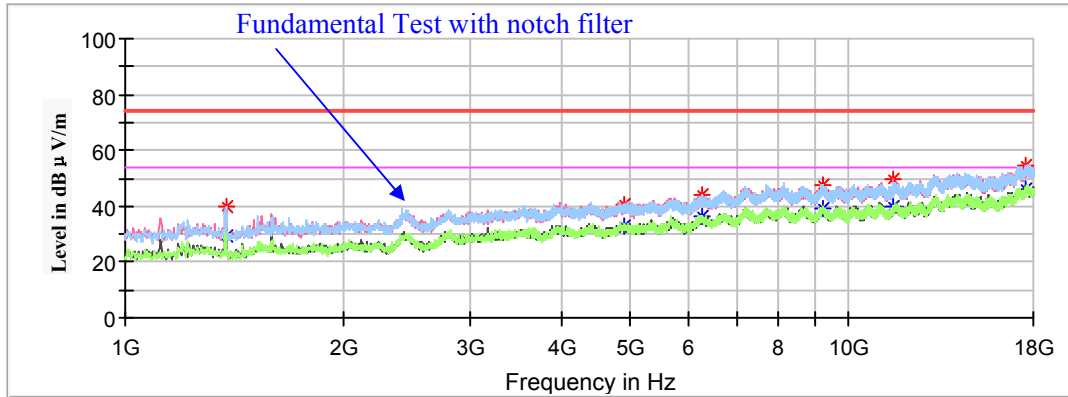
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1377.40	---	31.05	200.0	H	40.0	-17.0	54.00	22.95
1377.40	38.10	---	200.0	H	40.0	-17.0	74.00	35.90
3237.20	---	28.89	150.0	H	66.0	-9.5	54.00	25.11
3237.20	39.25	---	150.0	H	66.0	-9.5	74.00	34.75
4804.00	---	32.44	150.0	V	206.0	-5.6	54.00	21.56
4804.00	39.87	---	150.0	V	206.0	-5.6	74.00	34.13
7223.70	---	38.97	200.0	V	181.0	0.4	54.00	15.03
7223.70	46.72	---	200.0	V	181.0	0.4	74.00	27.28
14549.00	---	42.48	150.0	H	324.0	6.4	54.00	11.52
14549.00	52.00	---	150.0	H	324.0	6.4	74.00	22.00
17641.30	53.24	---	150.0	H	142.0	8.9	74.00	20.76
17641.30	---	47.43	150.0	H	142.0	8.9	54.00	6.57

Middle Channel: 2440MHz

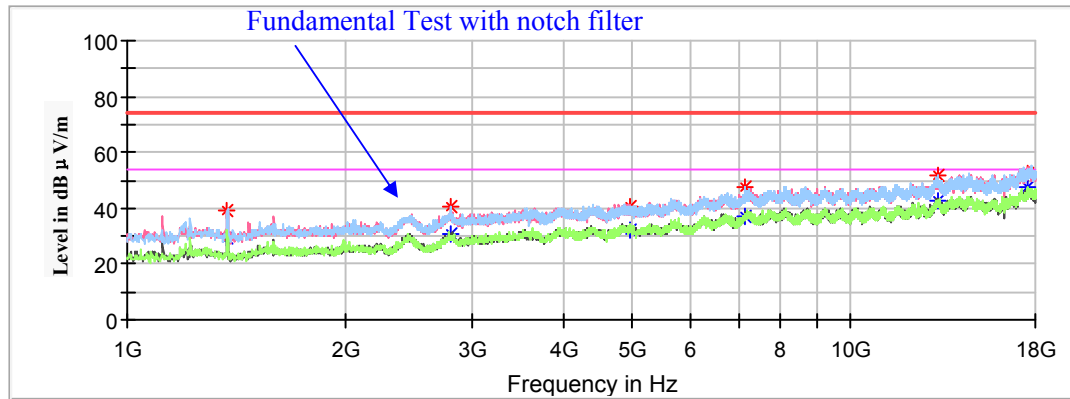
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1377.40	---	29.42	200.0	V	221.0	-17.0	54.00	24.58
1377.40	40.00	---	200.0	V	221.0	-17.0	74.00	34.00
4880.00	---	32.89	150.0	H	335.0	-5.4	54.00	21.11
4880.00	40.32	---	150.0	H	335.0	-5.4	74.00	33.68
6275.10	44.19	---	200.0	V	183.0	-2.0	74.00	29.81
6275.10	---	36.71	200.0	V	183.0	-2.0	54.00	17.29
9209.30	---	39.19	150.0	H	33.0	2.0	54.00	14.81
9211.00	47.69	---	150.0	H	33.0	2.0	74.00	26.31
11550.20	49.31	---	200.0	V	347.0	2.9	74.00	24.69
11550.20	---	39.90	200.0	V	347.0	2.9	54.00	14.10
17575.00	---	45.97	150.0	V	260.0	8.9	54.00	8.03
17575.00	54.76	---	150.0	V	260.0	8.9	74.00	19.24

High Channel: 2480MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dB μ V/m)	Margin (dB)
	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Height (cm)	Polar (H/V)				
1375.70	---	29.50	200.0	V	186.0	-17.0	54.00	24.50
1375.70	39.08	---	200.0	V	186.0	-17.0	74.00	34.92
2796.90	---	30.76	150.0	V	134.0	-11.0	54.00	23.24
2796.90	40.25	---	150.0	V	134.0	-11.0	74.00	33.75
4960.00	40.40	---	200.0	H	89.0	-5.3	74.00	33.60
4960.00	---	32.32	200.0	H	89.0	-5.3	54.00	21.68
7162.50	---	37.20	150.0	H	115.0	0.3	54.00	16.80
7162.50	47.68	---	150.0	H	115.0	0.3	74.00	26.32
13204.30	---	42.36	150.0	V	211.0	5.4	54.00	11.64
13204.30	51.53	---	150.0	V	211.0	5.4	74.00	22.47
17598.80	52.42	---	200.0	H	257.0	8.9	74.00	21.58
17598.80	---	47.34	200.0	H	257.0	8.9	54.00	6.66

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)

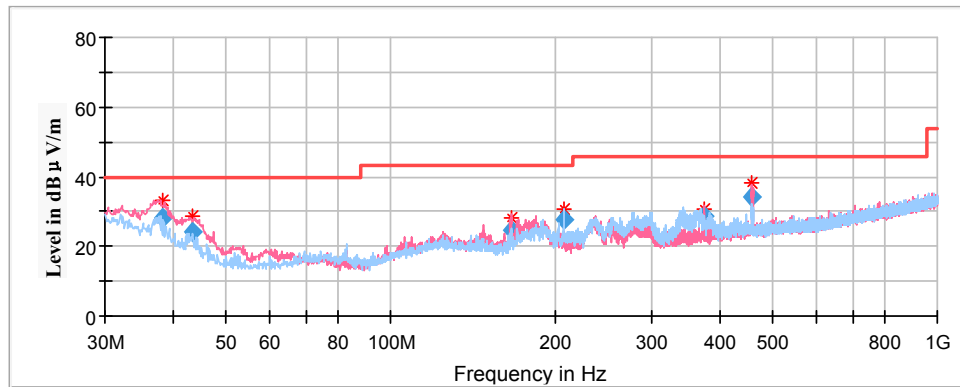
Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

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	48.29	---	200.0	H	105.0	-2.9	74.00	25.71
2390.00	---	42.42	200.0	H	105.0	-2.9	54.00	11.58
High Channel: 2480MHz								
2483.50	47.09	---	150.0	H	29.0	-2.5	74.00	26.91
2483.50	---	43.71	150.0	H	29.0	-2.5	54.00	10.29

Transmitting simultaneously test:

Pre-Scan with Transmitting simultaneously modes of operation in the X,Y and Z axes of orientation, the worst case low channel of 802.11b mode and GPRS1900 middle channel in Z-axis of orientation was recorded

30MHz-1GHz:

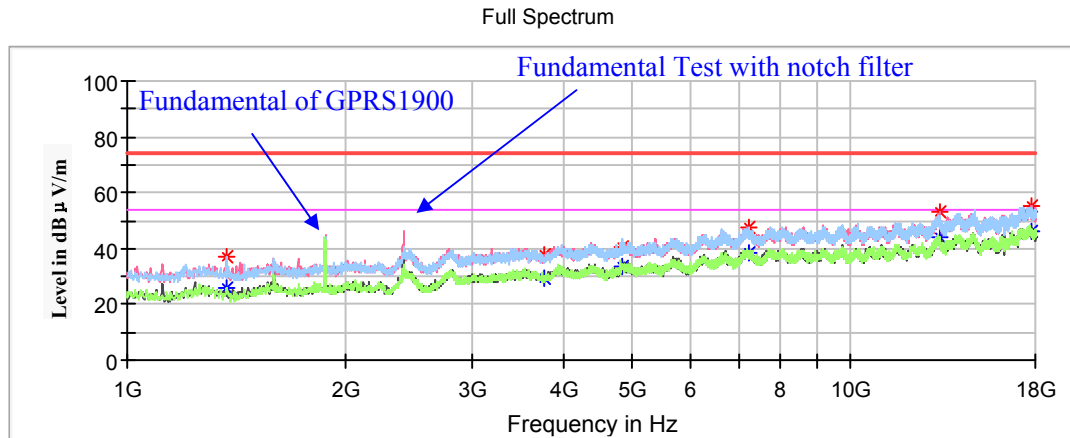


Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	Quasi-peak (dBμV/m)	Height (cm)	Polar (H/V)				
38.30	28.39	100.0	V	158.0	-10.0	40.00	11.61
43.54	23.90	100.0	V	285.0	-13.6	40.00	16.10
166.20	24.64	100.0	V	105.0	-13.5	43.50	18.86
207.91	27.83	100.0	H	249.0	-12.7	43.50	15.67
374.29	28.89	200.0	V	30.0	-9.2	46.00	17.11
457.57	34.38	100.0	V	163.0	-7.2	46.00	11.62

1GHz -18GHz:

Note:

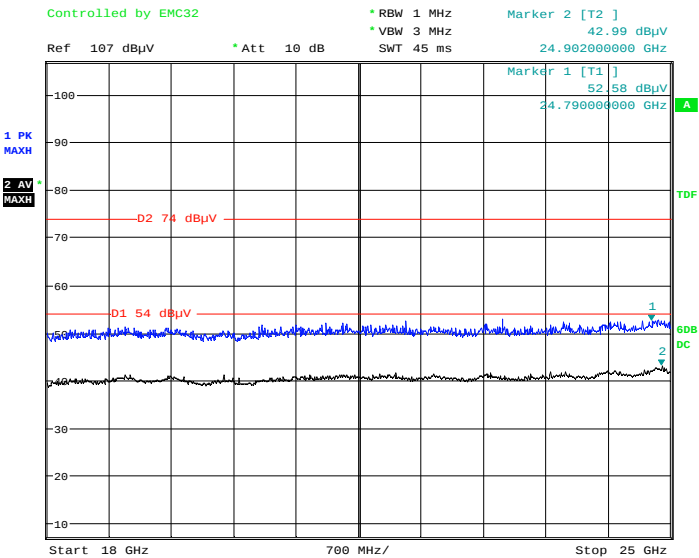
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
 Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
 Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)



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)				
1372.30	36.78	---	150.0	H	297.0	-17.1	74.00	37.22
1372.30	---	25.62	150.0	H	297.0	-17.1	54.00	28.38
3760.80	37.77	---	150.0	V	276.0	-7.9	74.00	36.23
3760.80	---	29.68	150.0	V	276.0	-7.9	54.00	24.32
4824.00	40.27	---	150.0	H	1.0	-5.5	74.00	33.73
4824.00	---	33.35	150.0	H	1.0	-5.5	54.00	20.65
7236.00	---	38.76	150.0	V	289.0	0.4	54.00	15.24
7236.00	47.77	---	150.0	V	289.0	0.4	74.00	26.23
13246.80	52.85	---	150.0	H	1.0	5.4	74.00	21.15
13248.50	---	43.81	150.0	H	1.0	5.4	54.00	10.19
17726.30	55.40	---	150.0	V	289.0	8.8	74.00	18.60
17726.30	---	46.11	150.0	V	289.0	8.8	54.00	7.89

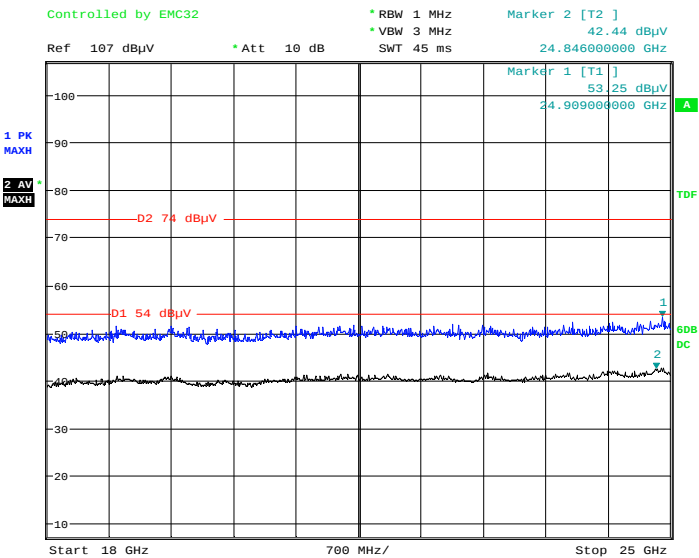
18GHz-25GHz

Horizontal

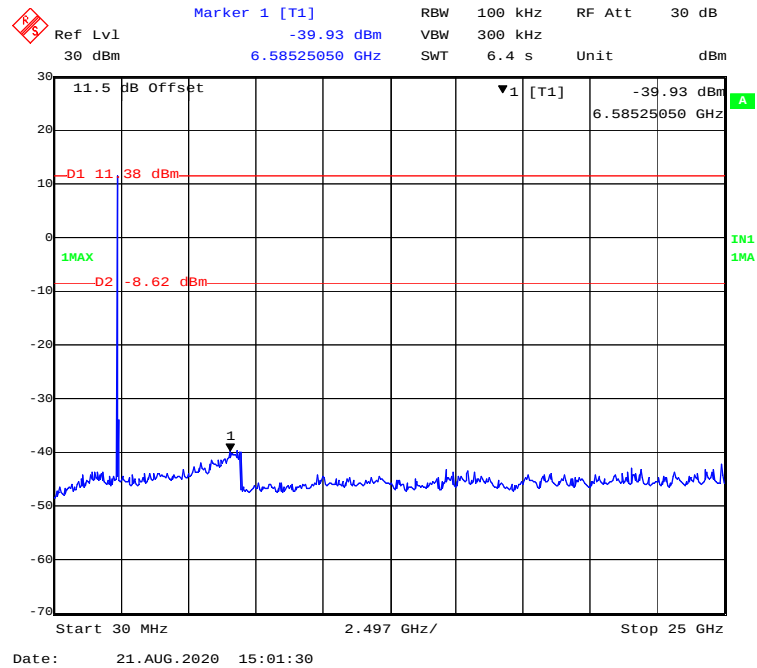
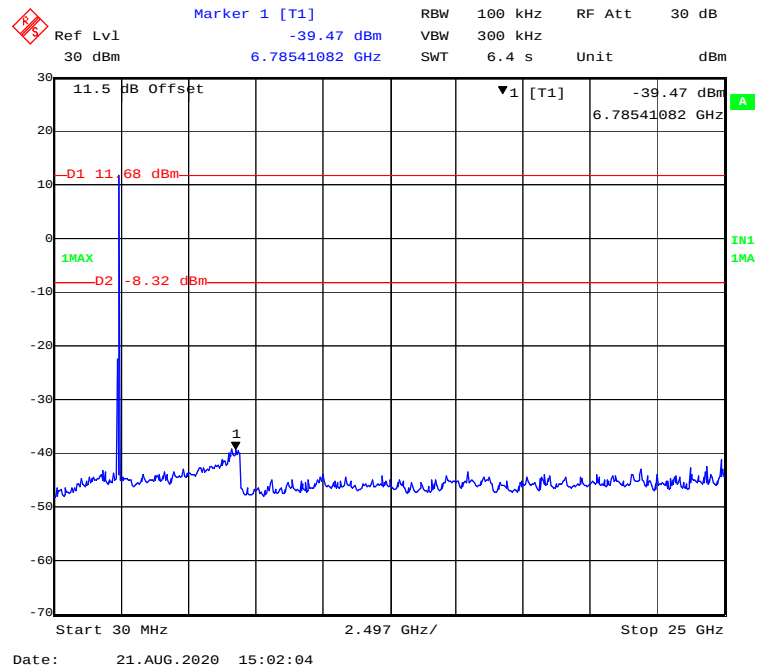


Date: 27.OCT.2020 14:28:53

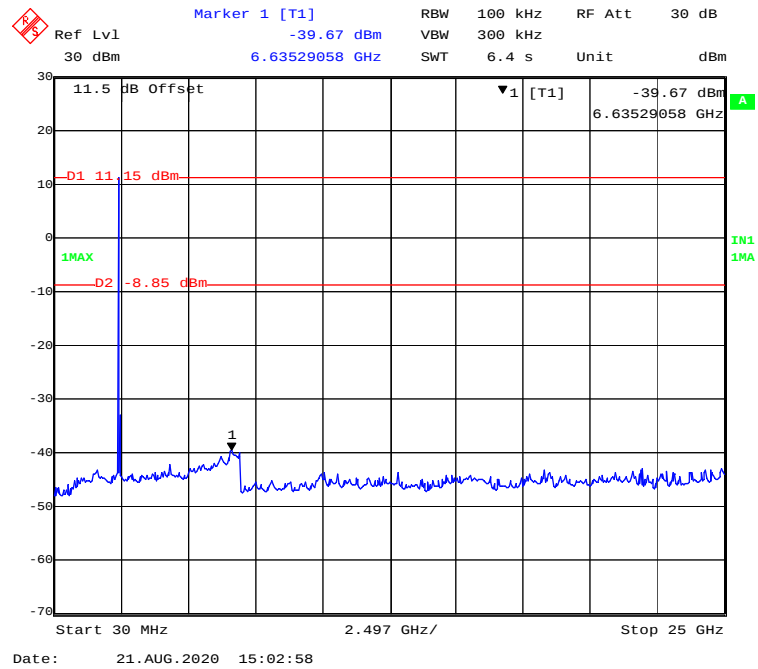
Vertical



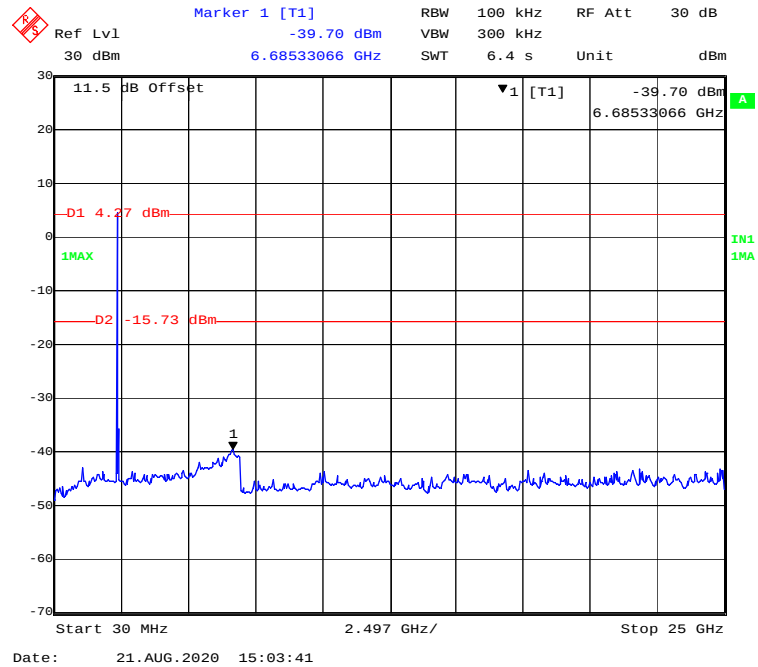
Date: 27.OCT.2020 14:25:07

Conducted Spurious Emissions at Antenna Port**Chain0****802.11b Mode Low Channel****802.11b Mode Middle Channel**

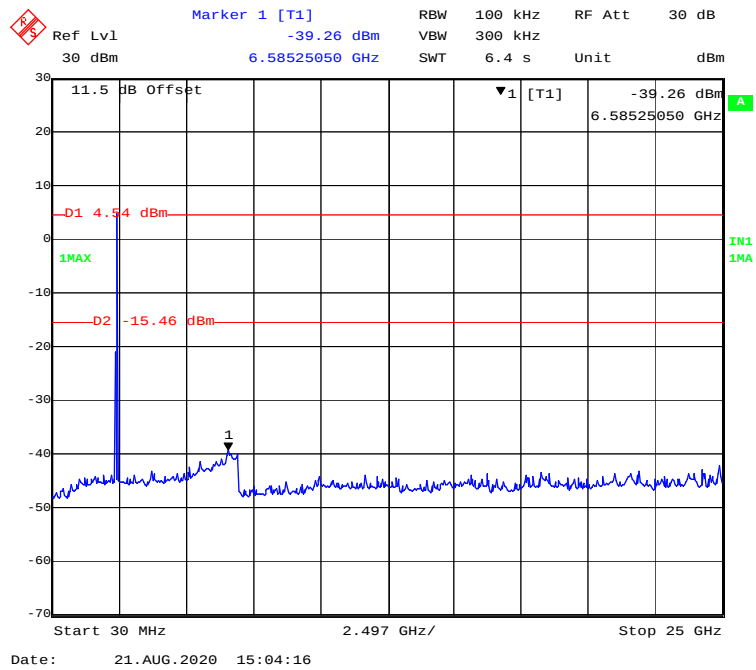
802.11b Mode High Channel



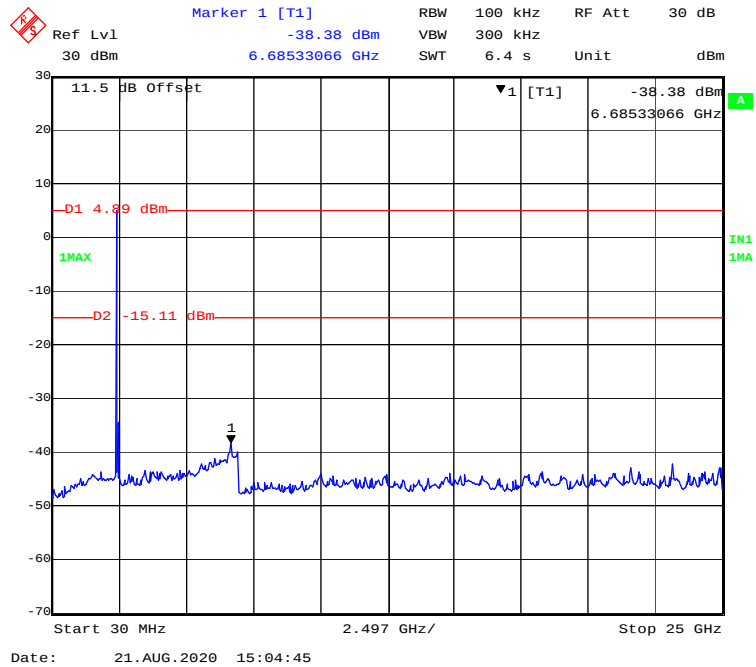
802.11g Mode Low Channel



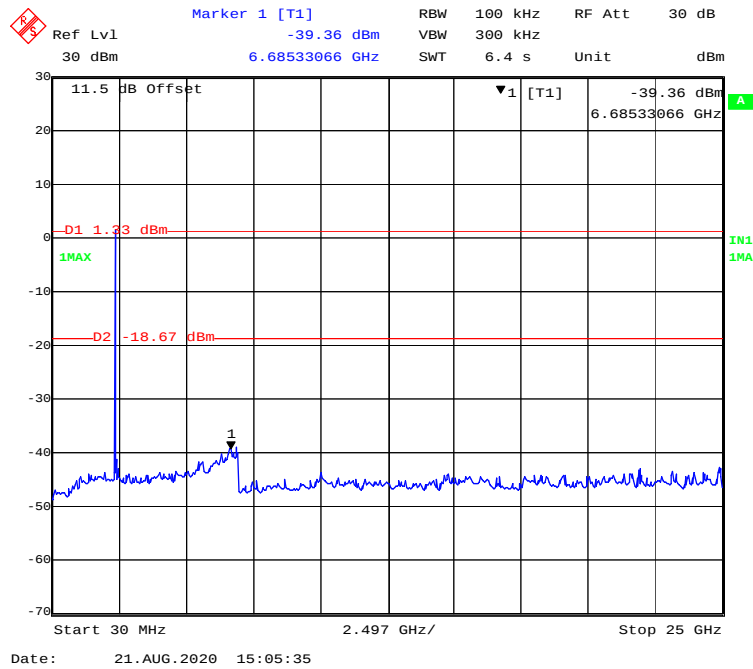
802.11g Mode Middle Channel



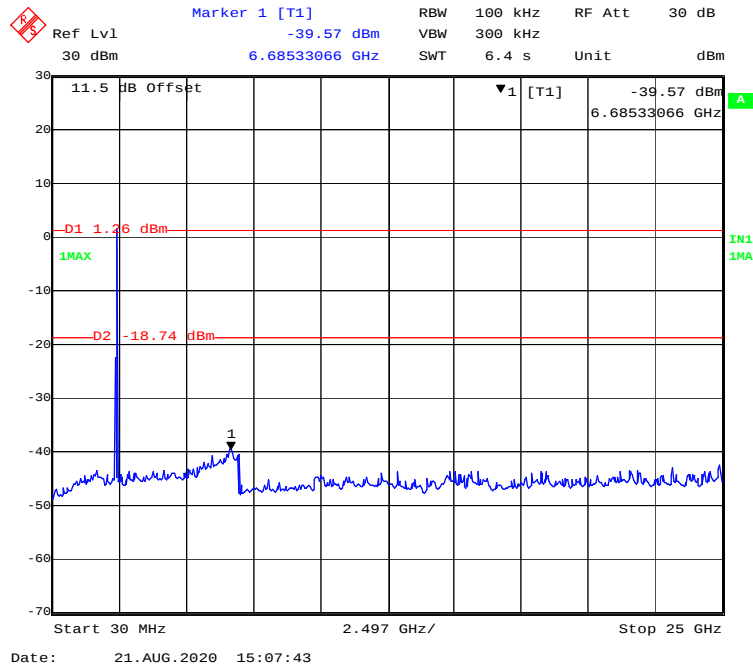
802.11g Mode High Channel



802.11n-HT20 Mode Low Channel



802.11n-HT20 Mode Middle Channel



Marker 1 [T1]
 Ref Lvl -39.30 dBm
 RBW 100 kHz
 RF Att 30 dB
 30 dBm
 6.68533066 GHz
 SWT 6.4 s
 Unit dBm

11.5 dB Offset
 ▼ 1 [T1]
 -39.30 dBm
 6.68533066 GHz

D1 1.39 dBm
 1MAX
 D2 -18.61 dBm
 1

Start 30 MHz
 2.497 GHz/
 Stop 25 GHz

Date: 21.AUG.2020 15:08:14

Marker 1 [T1]
 -49.51 dBm
 6.73537074 GHz

RBW 100 kHz RF Att 20 dB
 Ref Lvl 20 dBm Unit dBm
 VBW 300 kHz
 SWT 6.4 s

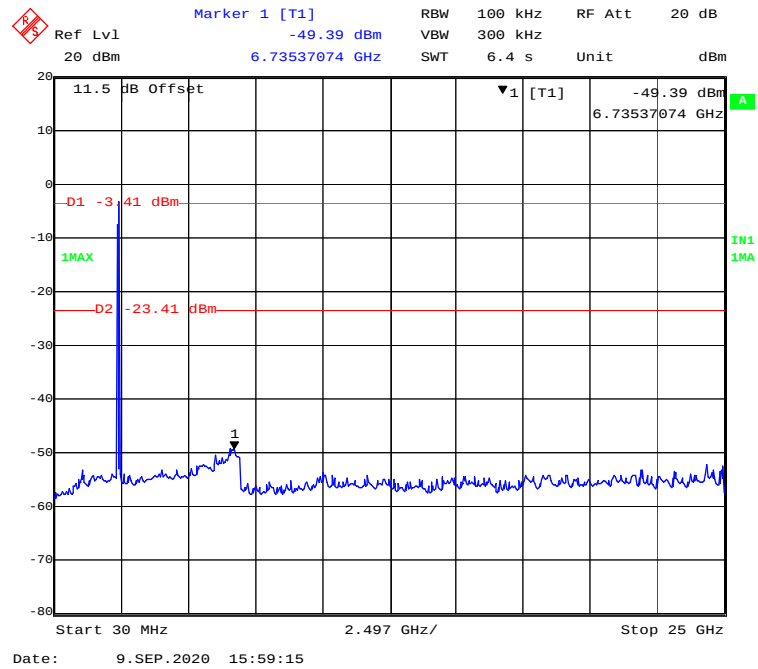
11.5 dB Offset
 ▼1 [T1]
 -49.51 dBm
 6.73537074 GHz

-D1 -5.38 dBm
 1MAX
 -D2 -25.38 dBm
 IN1
 1MAX

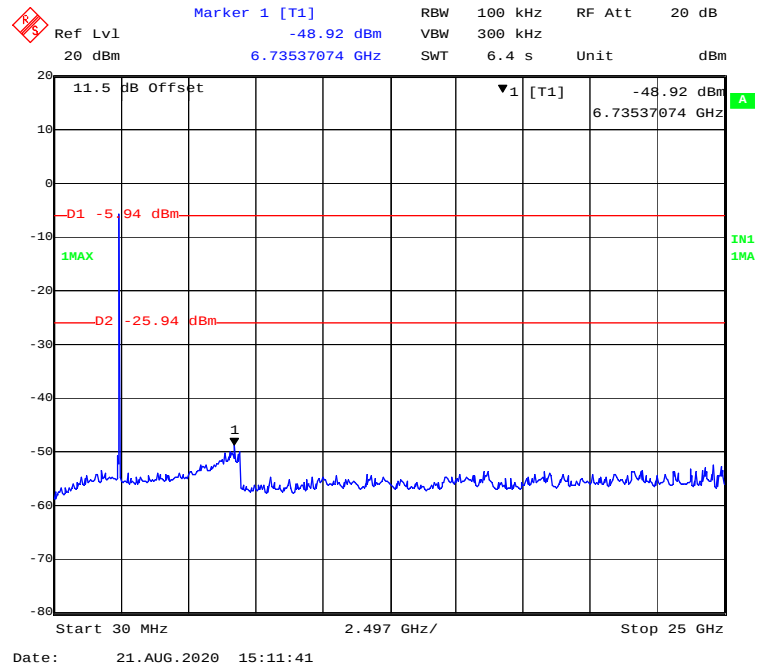
Start 30 MHz 2.497 GHz/ Stop 25 GHz

Date: 21.AUG.2020 15:10:04

802.11n-HT40 Mode Middle Channel

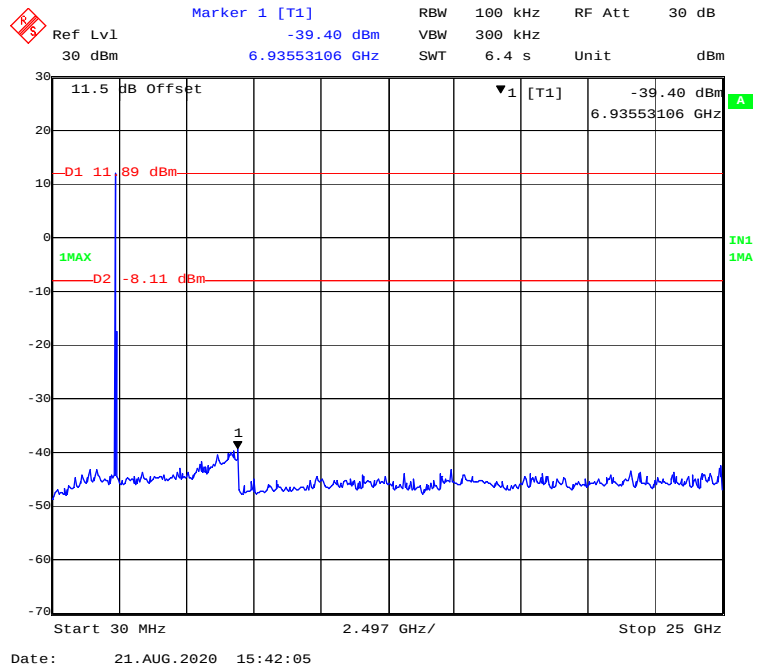


802.11n-HT40 Mode High Channel

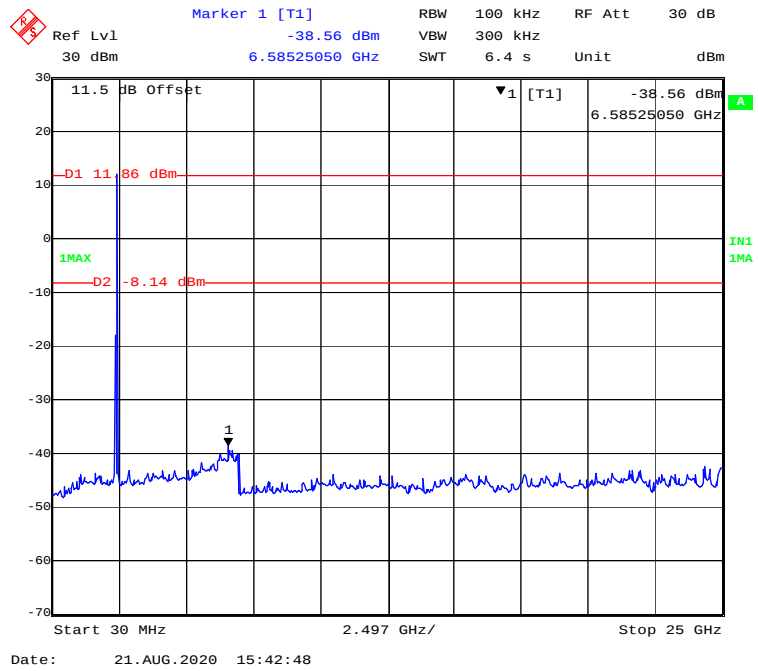


Chain1

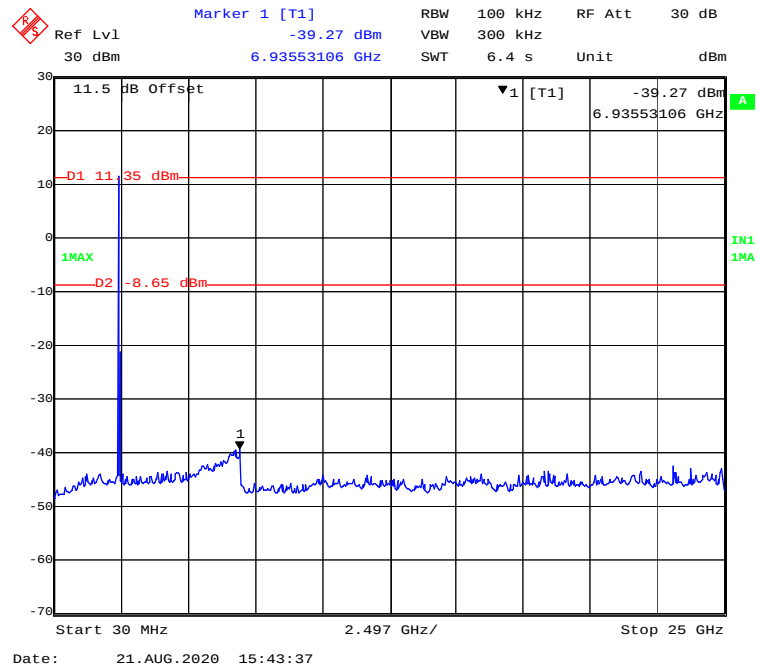
802.11b Mode Low Channel



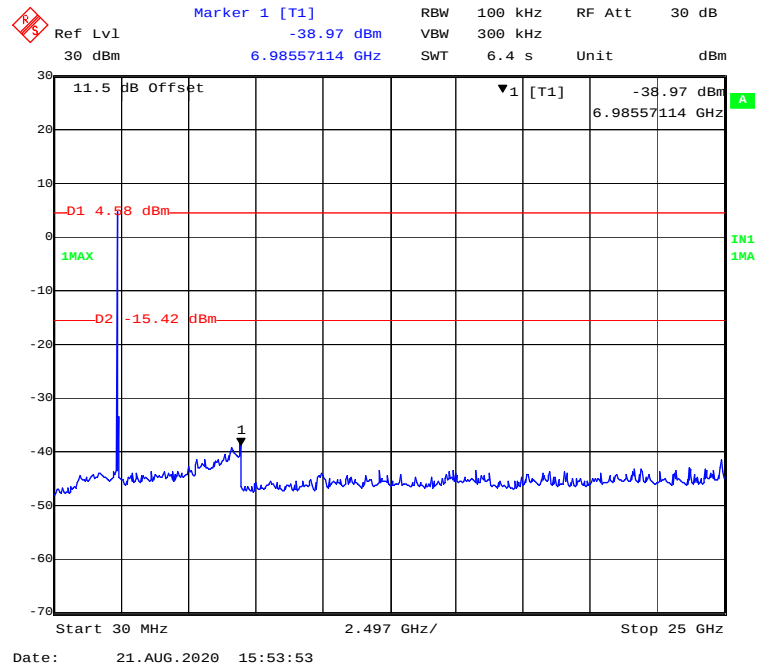
802.11b Mode Middle Channel



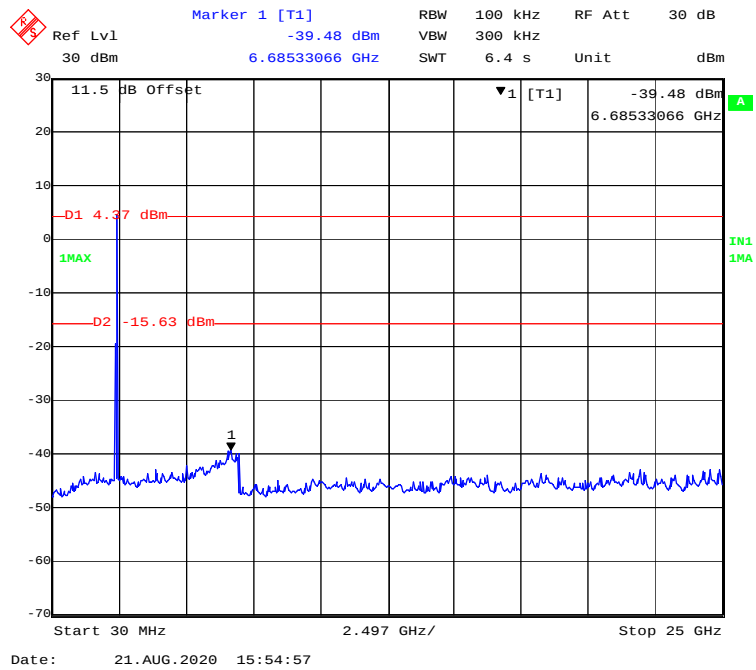
802.11b Mode High Channel



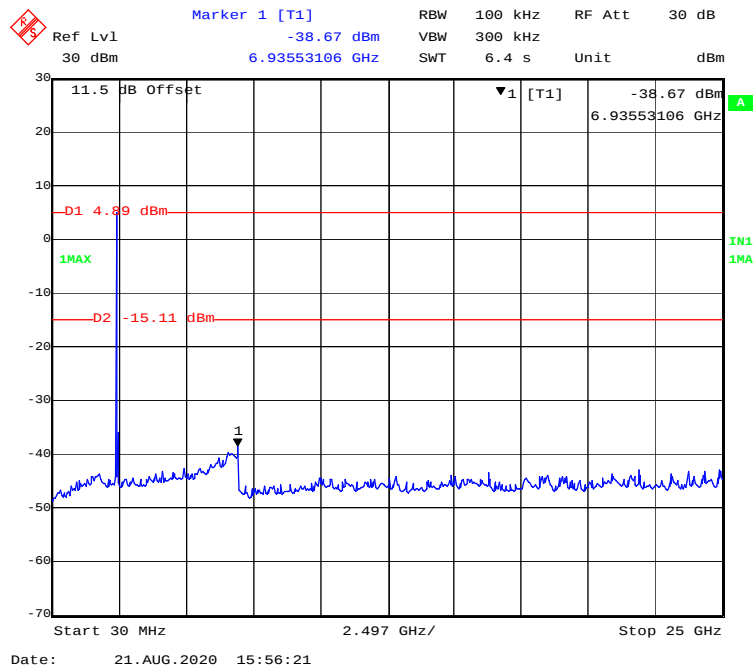
802.11g Mode Low Channel



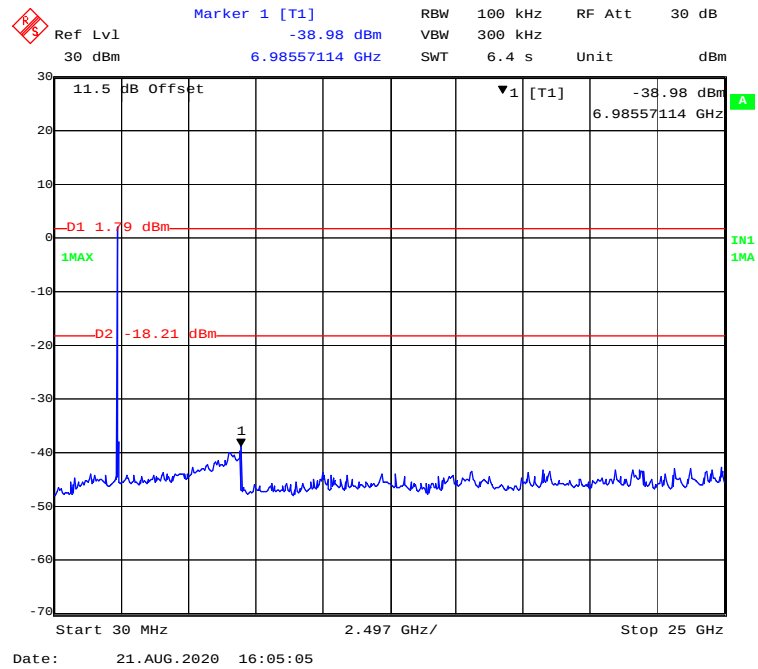
802.11g Mode Middle Channel



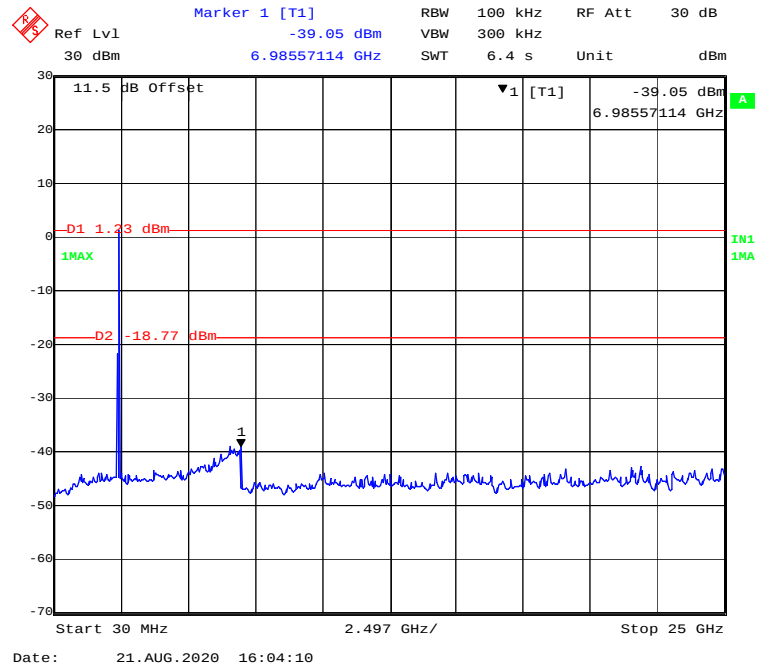
802.11g Mode High Channel



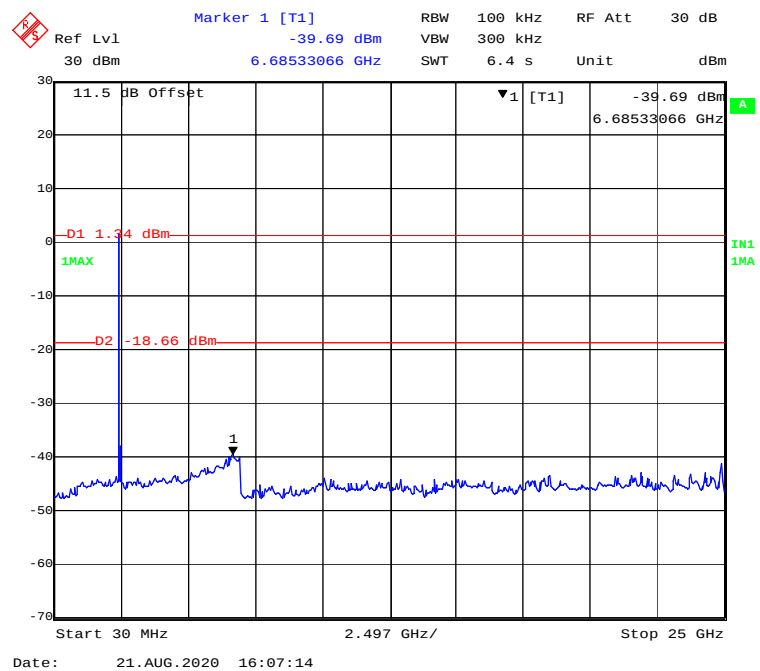
802.11n-HT20 Mode Low Channel



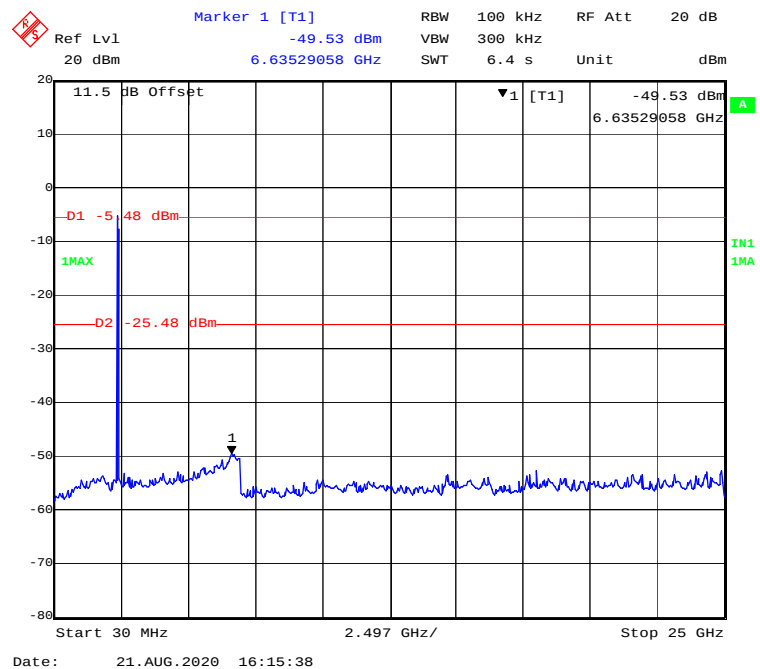
802.11n-HT20 Mode Middle Channel



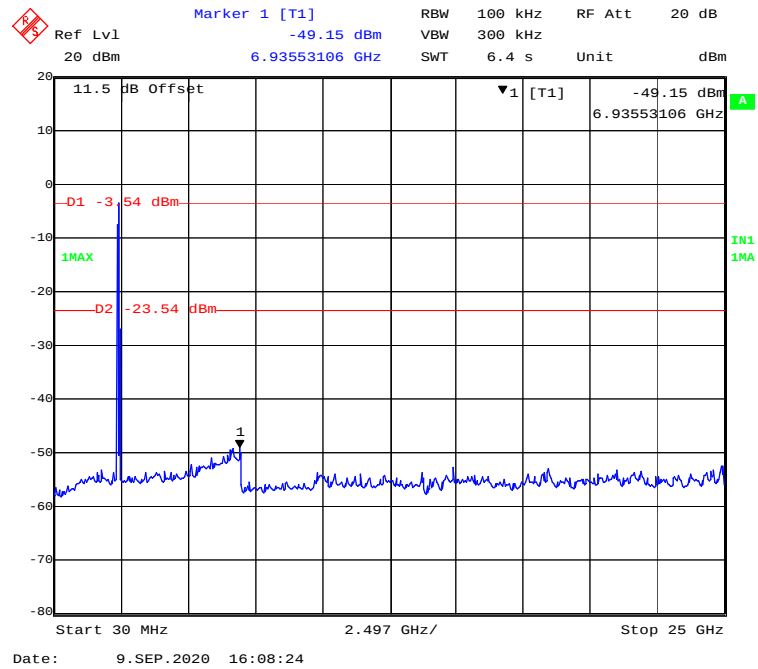
802.11n-HT20 Mode High Channel



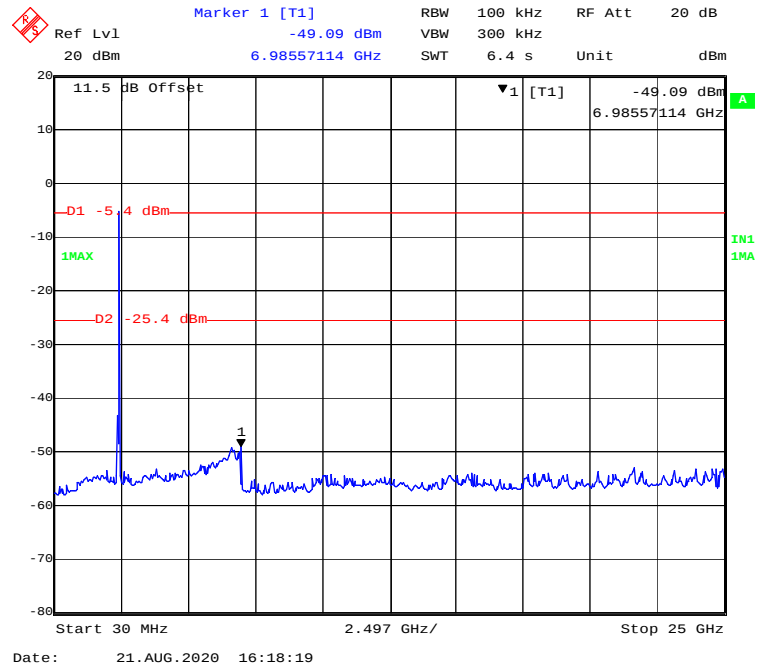
802.11n-HT40 Mode Low Channel



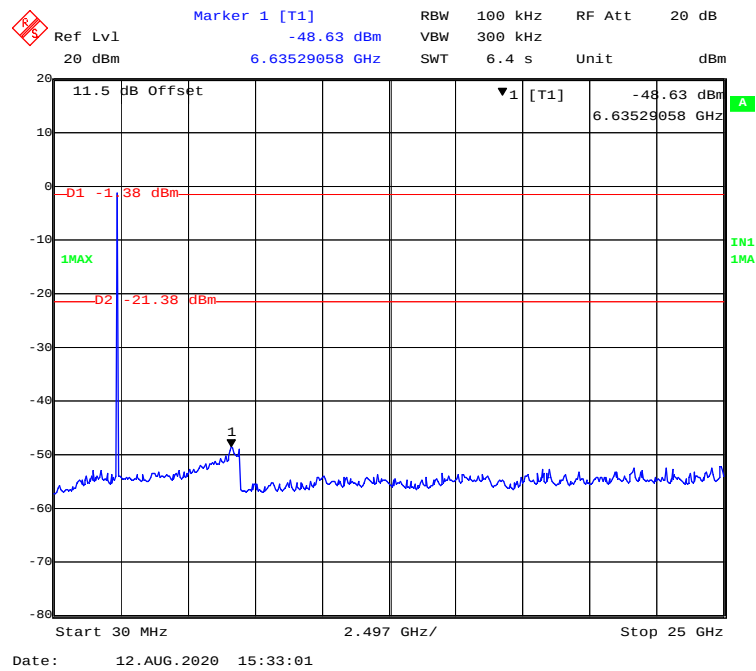
802.11n-HT40 Mode Middle Channel



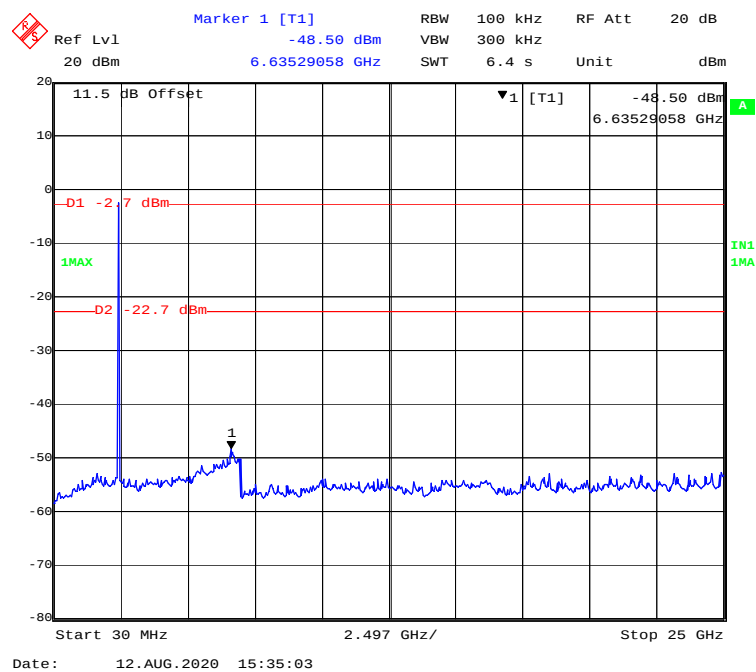
802.11n-HT40 Mode High Channel



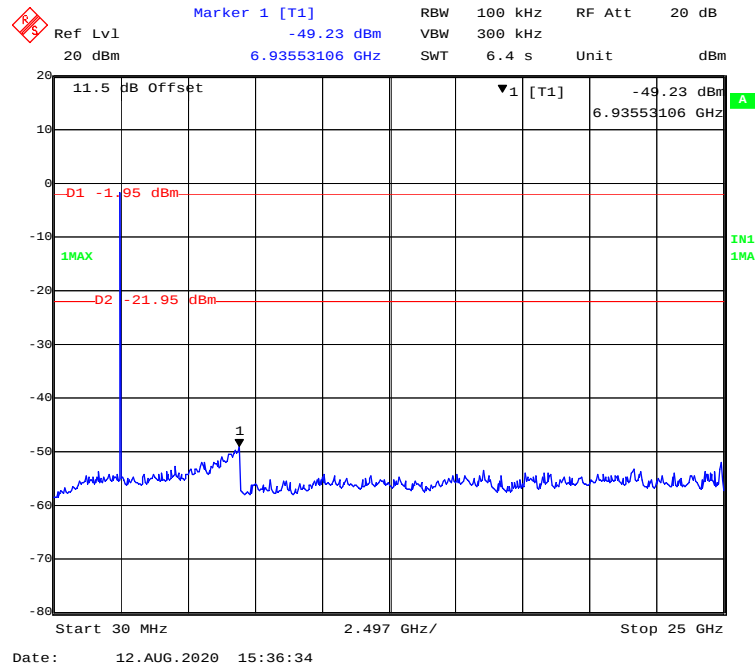
BLE(1Mbps) Mode Low Channel



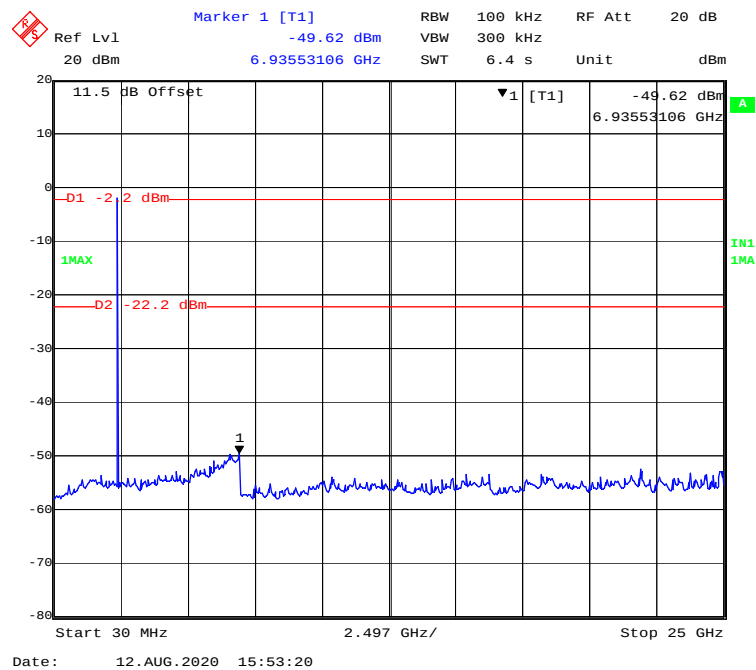
BLE(1Mbps) Mode Middle Channel



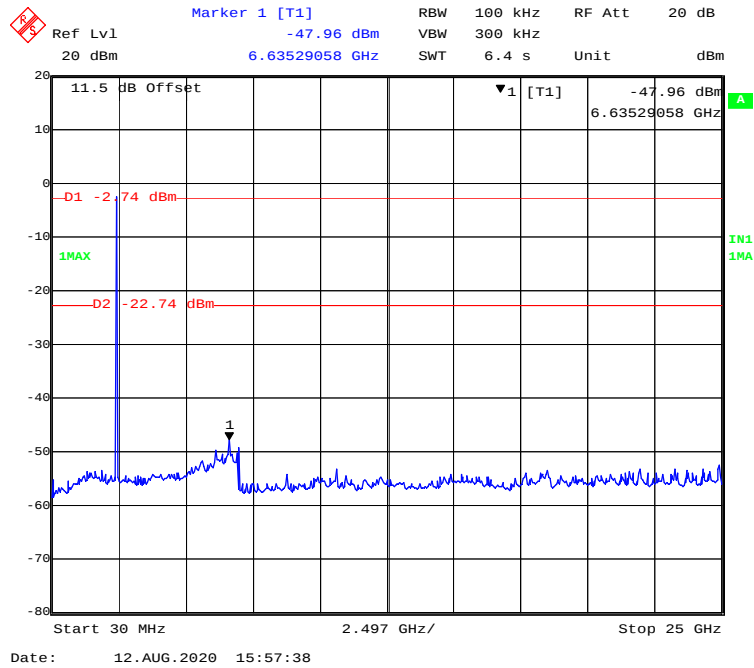
BLE(1Mbps) Mode High Channel



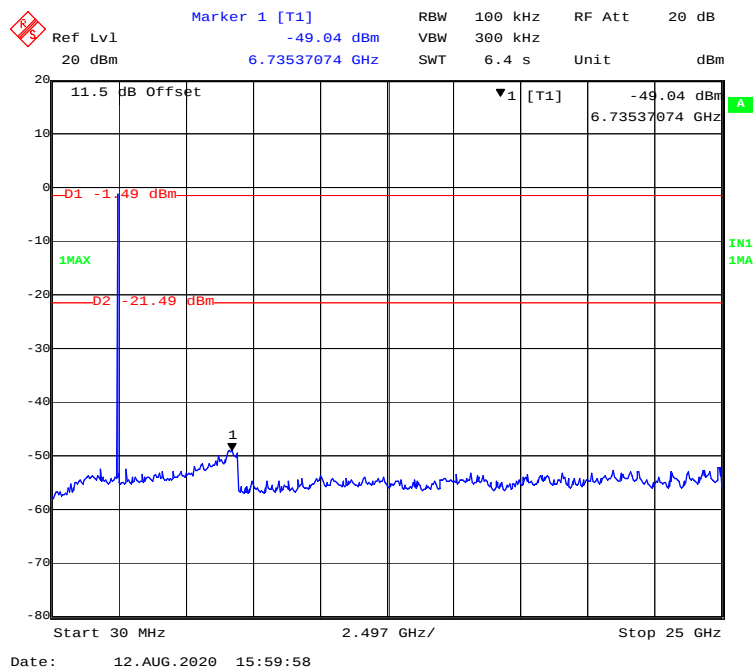
BLE(2Mbps) Mode Low Channel



BLE(2Mbps) Mode Middle Channel



BLE(2Mbps) Mode High Channel



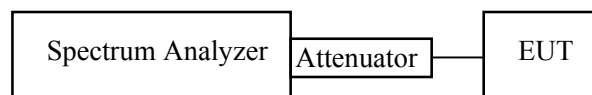
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH**Applicable Standard**

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) $\geq 3 \times$ 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:	24.6 °C~25 °C
Relative Humidity:	49 %~50 %
ATM Pressure:	101.1kPa ~101.2kPa

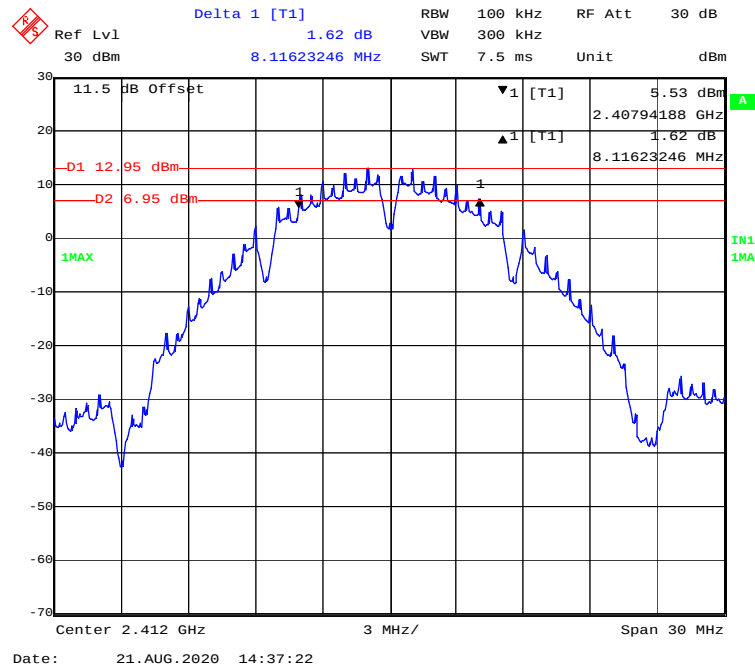
The testing was performed by CK Huang from 2020-08-12 to 2020-09-09.

Test Result: Compliant.

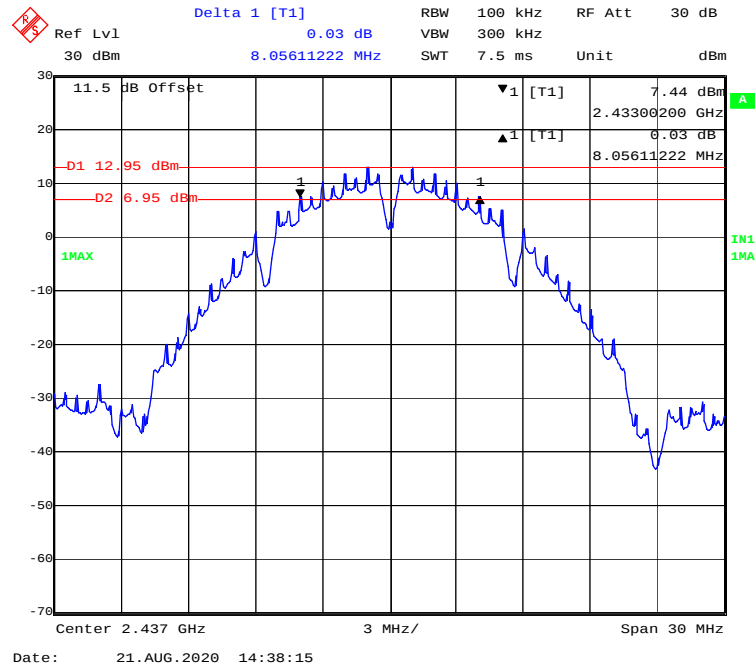
EUT operation mode: Transmitting

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)		Limit (MHz)
		Chain0	Chain1	
802.11b Mode				
Low	2412	8.116	10.040	≥0.5
Middle	2437	8.056	9.018	≥0.5
High	2462	8.116	9.078	≥0.5
802.11g Mode				
Low	2412	15.511	15.391	≥0.5
Middle	2437	15.691	15.631	≥0.5
High	2462	15.511	15.391	≥0.5
802.11n-HT20 Mode				
Low	2412	15.511	15.451	≥0.5
Middle	2437	16.834	15.992	≥0.5
High	2462	15.932	15.511	≥0.5
802.11n-HT40 Mode				
Low	2422	35.832	35.591	≥0.5
Middle	2437	36.313	36.433	≥0.5
High	2452	35.351	35.591	≥0.5
BLE(1Mbps) Mode				
Low	2402	0.727	/	≥0.5
Middle	2440	0.727	/	≥0.5
High	2480	0.721	/	≥0.5
BLE(2Mbps) Mode				
Low	2402	1.178	/	≥0.5
Middle	2440	1.238	/	≥0.5
High	2480	1.178	/	≥0.5

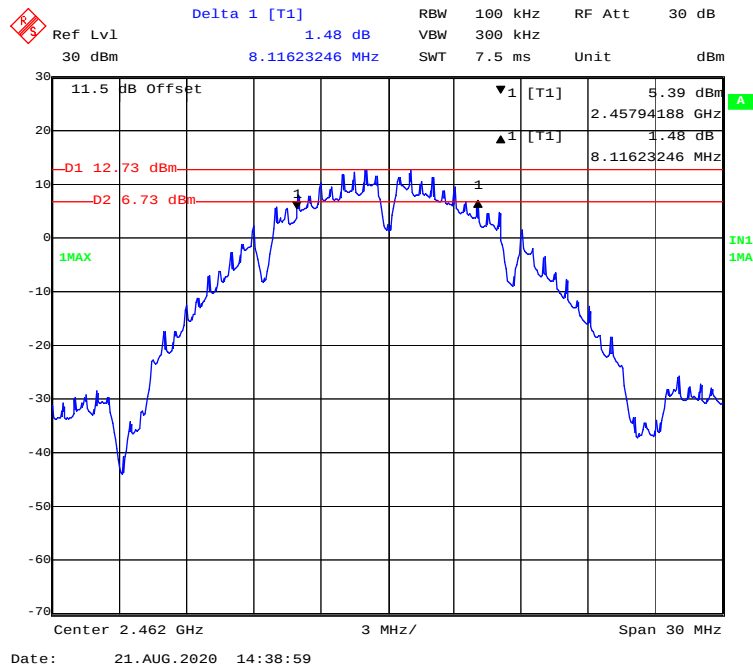
802.11b Mode Low Channel (Chain0)



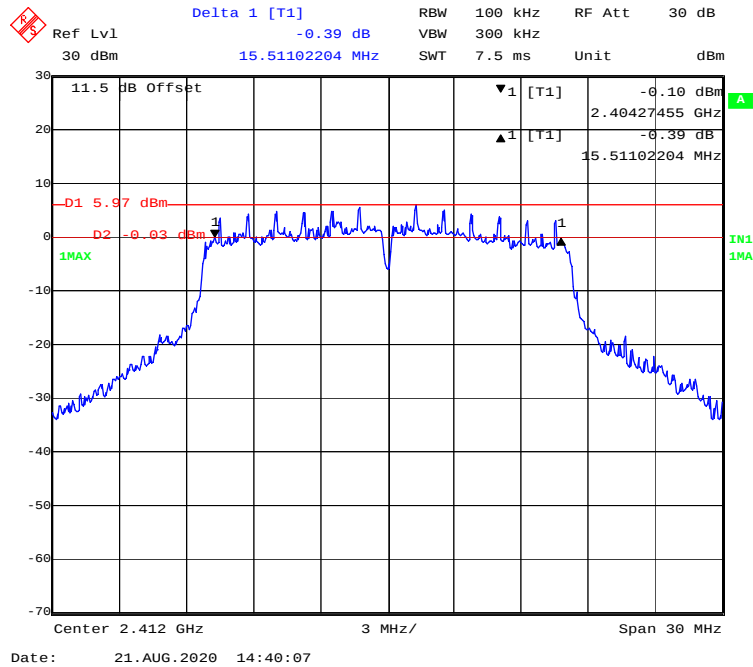
802.11b Mode Middle Channel (Chain0)



802.11b Mode High Channel (Chain0)



802.11g Mode Low Channel (Chain0)



Delta 1 [T1]

Ref Lvl 30 dBm

0.05 dB

15.69138277 MHz

RBW 100 kHz

VBW 300 kHz

SWT 7.5 ms

RF Att 30 dB

Unit dBm

11.5 dB Offset

▼1 [T1] -6.13 dBm

▲1 [T1] 0.05 dB

2.42927455 GHz

15.69138277 MHz

D1 5.63 dBm

D2 0.37 dBm

1MAX

IN1

1MA

Center 2.437 GHz

3 MHz/

Span 30 MHz

Date: 21.AUG.2020 14:41:02

Delta 1 [T1] 1.55 dB

RBW 100 kHz RF Att 30 dB

Ref Lvl 30 dBm VBW 300 kHz

SWT 7.5 ms Unit dBm

11.5 dB Offset

▼1 [T1] 0.09 dBm

▲1 [T1] 1.55 dB

2.45409419 GHz

15.51102204 MHz

—D1 5.7 dBm

—D2 0.3 dBm

1MAX

1

1

IN1

1MA

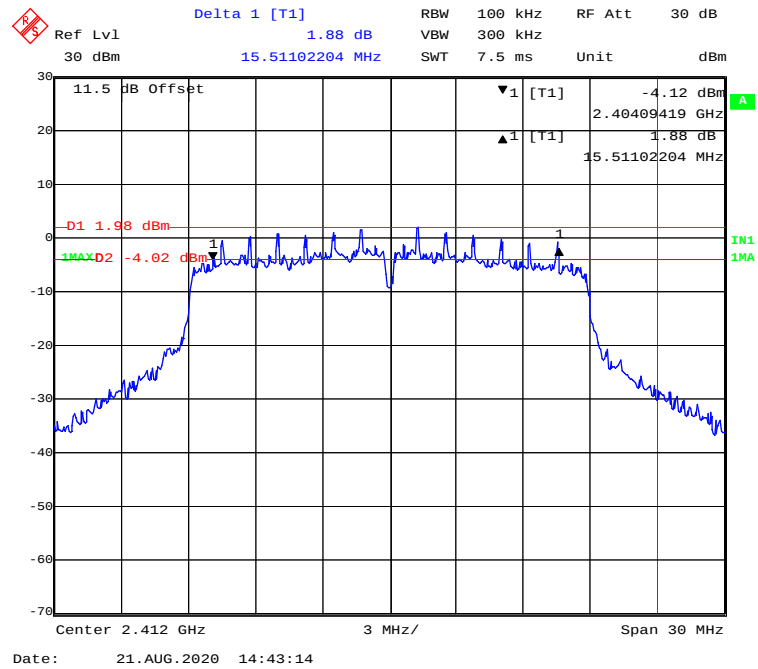
Center 2.462 GHz

3 MHz/

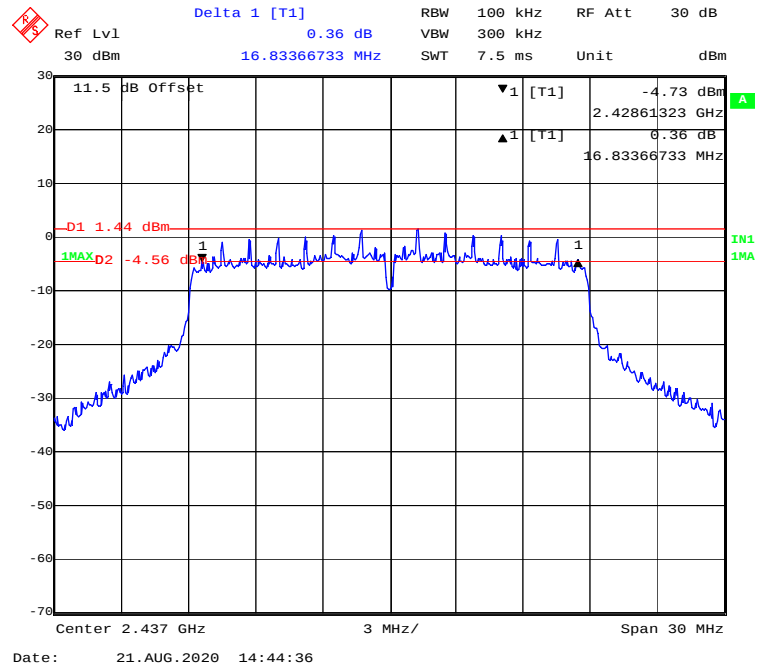
Span 30 MHz

Date: 21.AUG.2020 14:42:03

802.11n-HT20 Mode Low Channel (Chain0)



802.11n-HT20 Mode Middle Channel (Chain0)



Delta 1 [T1]

Ref Lvl 2.27 dB

30 dBm 15.93186373 MHz

RBW 100 kHz RF Att 30 dB

VBW 300 kHz

SWT 7.5 ms Unit dBm

11.5 dB Offset

▼1 [T1] -4.74 dBm

▲1 [T1] 2.27 dB

15.93186373 MHz

D1 1.39 dBm

1

IMAX D2 -4.61 dBm

IN1

1MA

Center 2.462 GHz

3 MHz/

Span 30 MHz

Date: 21.AUG.2020 14:45:28

Delta 1 [T1]

Ref Lvl -1.49 dB

20 dBm 35.83166333 MHz

RBW 100 kHz RF Att 20 dB

SWT 15 ms Unit dBm

11.5 dB Offset

▼1 [T1] -11.91 dBm

▲1 [T1] -1.49 dB

35.83166333 MHz

-D1 -5.6 dBm

D2 -11.6 dBm

1MAX

IN1

1MA

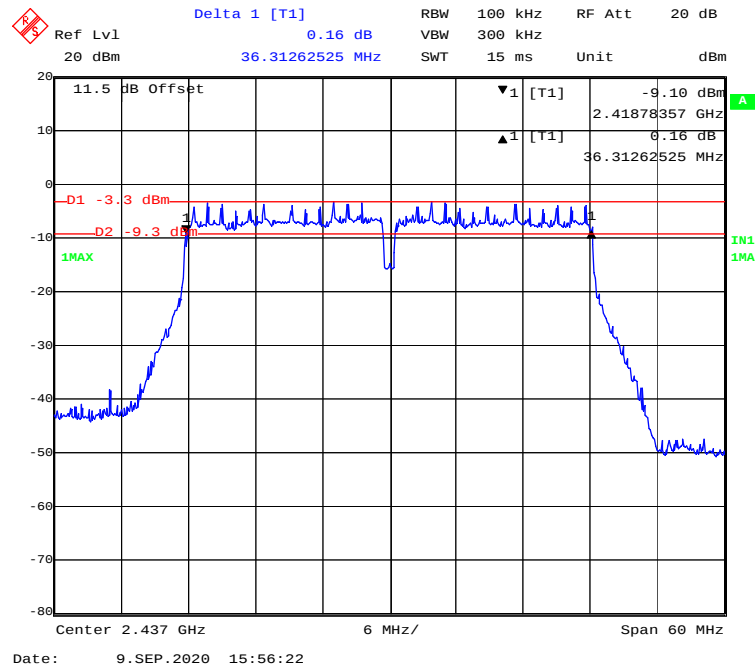
Center 2.422 GHz

6 MHz/

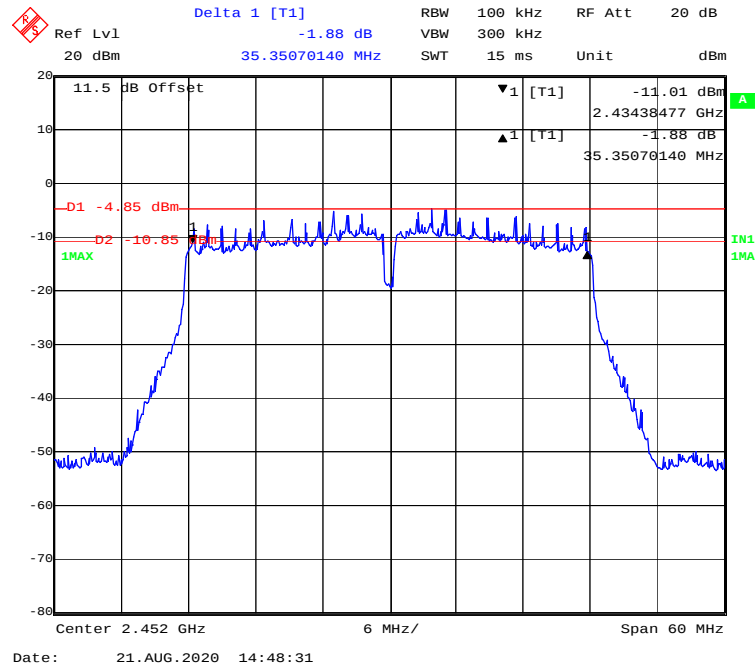
Span 60 MHz

Date: 21.AUG.2020 14:46:54

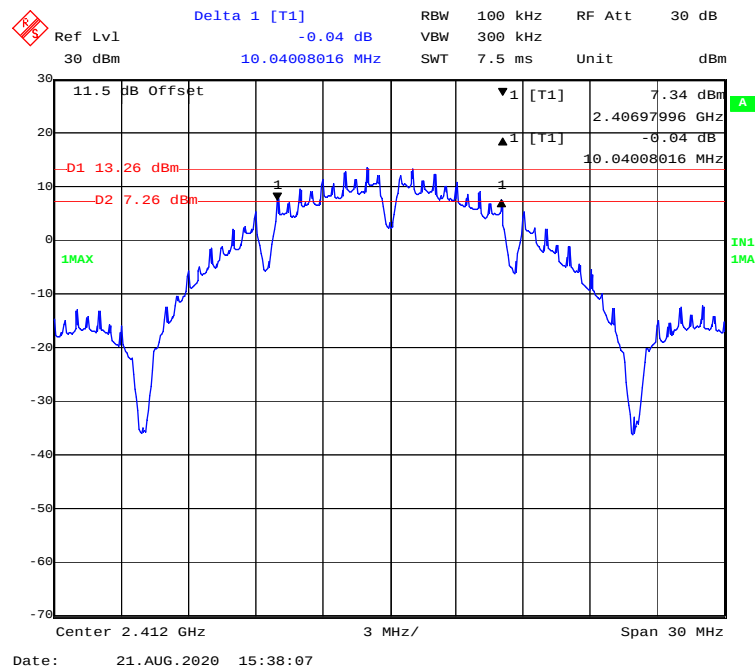
802.11n-HT40 Mode Middle Channel (Chain0)



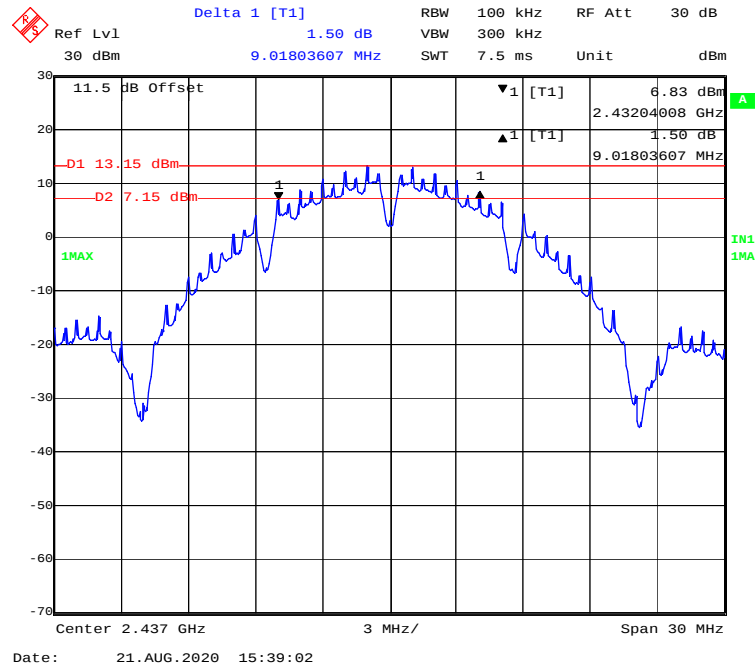
802.11n-HT40 Mode High Channel (Chain0)



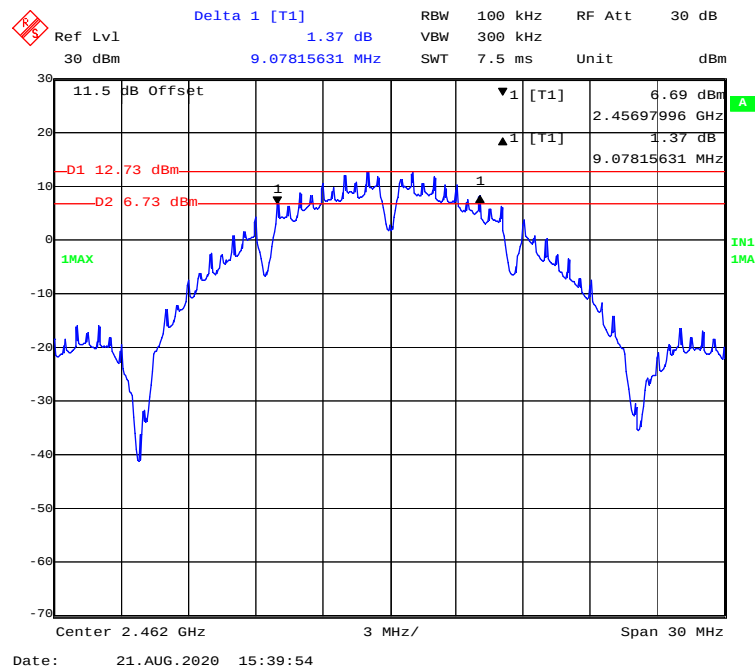
802.11b Mode Low Channel (Chain1)



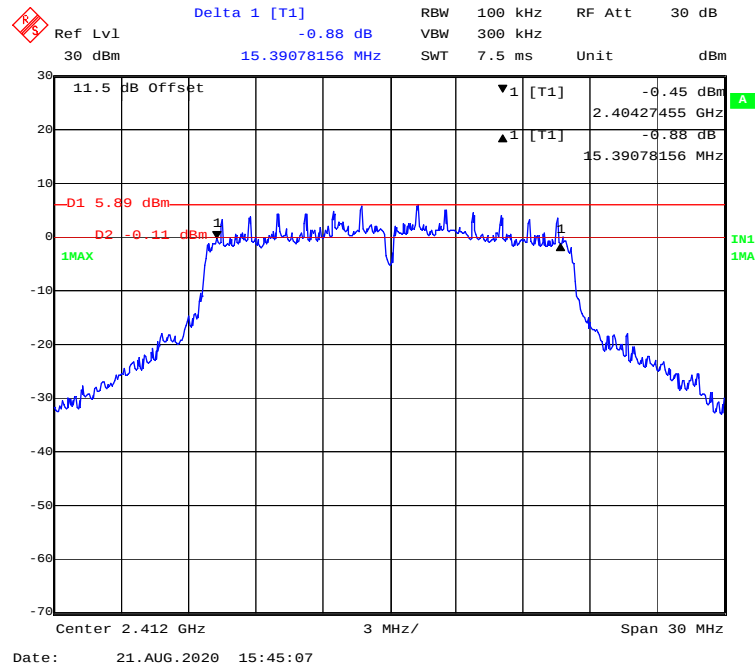
802.11b Mode Middle Channel (Chain1)



802.11b Mode High Channel (Chain1)



802.11g Mode Low Channel (Chain1)



Delta 1 [T1]

Ref Lvl 0.29 dB

RBW 100 kHz

RF Att 30 dB

30 dBm

15.63126253 MHz

SWT 7.5 ms

Unit dBm

11.5 dB Offset

-0.33 dBm

2.42915431 GHz

0.29 dB

15.63126253 MHz

D1 5.48 dBm

D2 0.52 dBm

1MAX

IN1 1MA

Center 2.437 GHz

3 MHz/

Span 30 MHz

Date: 21.AUG.2020 15:47:00

Delta 1 [T1] RBW 100 kHz RF Att 30 dB
 Ref Lvl -1.18 dB VBW 300 kHz
 30 dBm 15.39078156 MHz SWT 7.5 ms Unit dBm

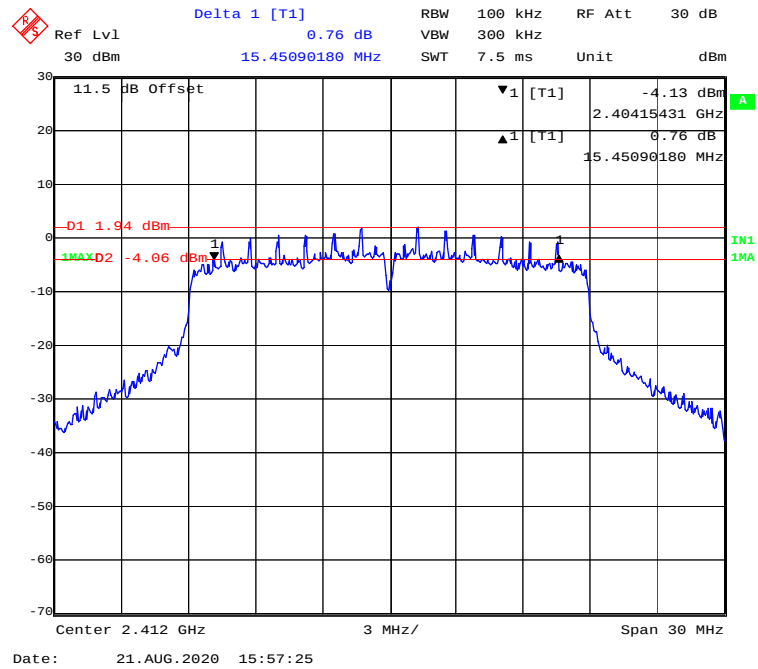
11.5 dB Offset ▼1 [T1] -0.46 dBm
 2.45427455 GHz ▲1 [T1] -1.18 dB
 15.39078156 MHz

-D1 5.71 dBm
 D2 0.29 dBm
 1MAX
 IN1 1MA

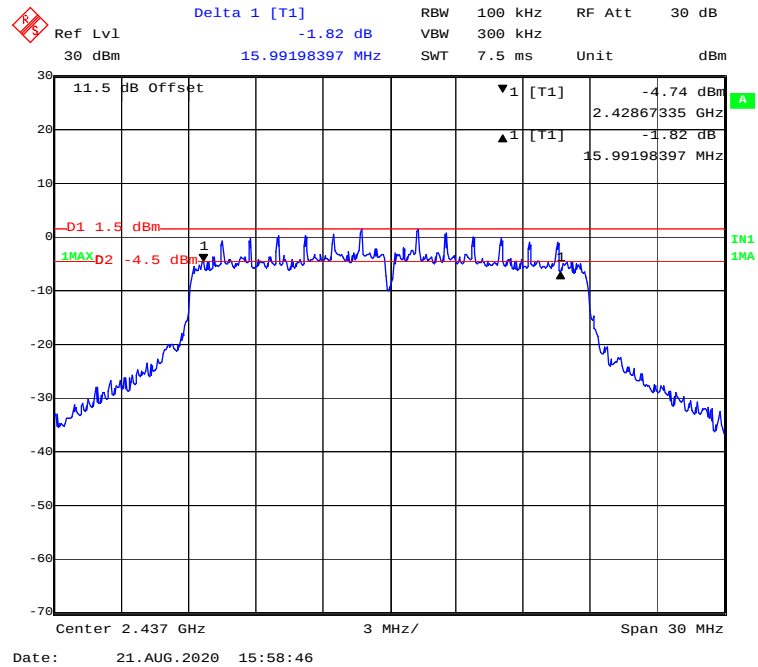
Center 2.462 GHz 3 MHz/ Span 30 MHz

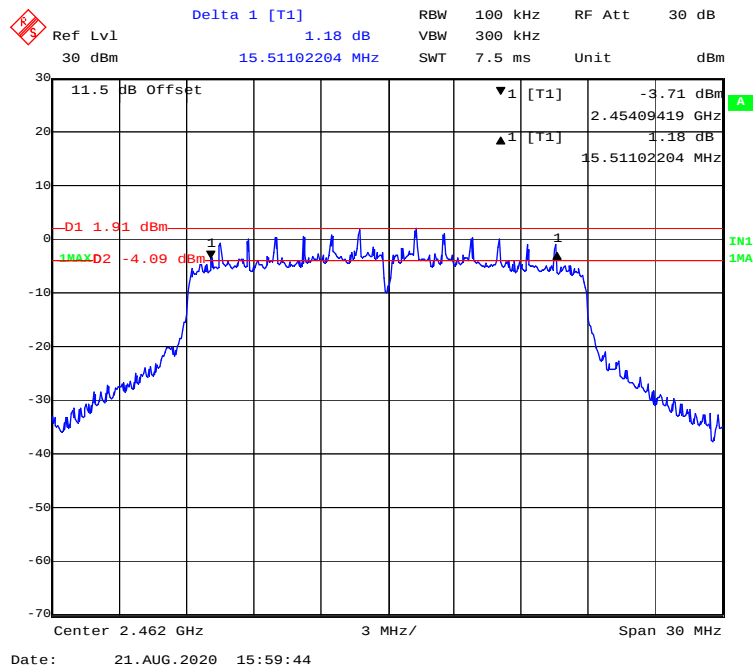
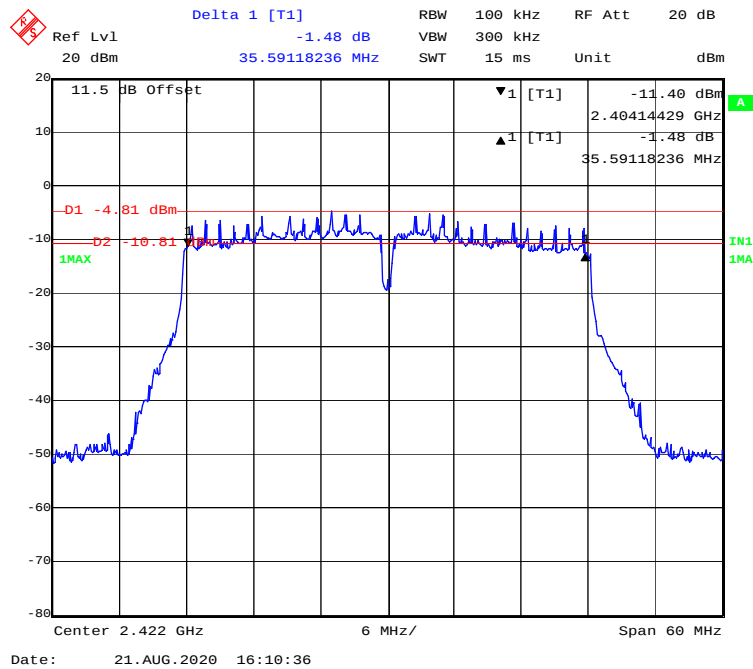
Date: 21.AUG.2020 15:48:23

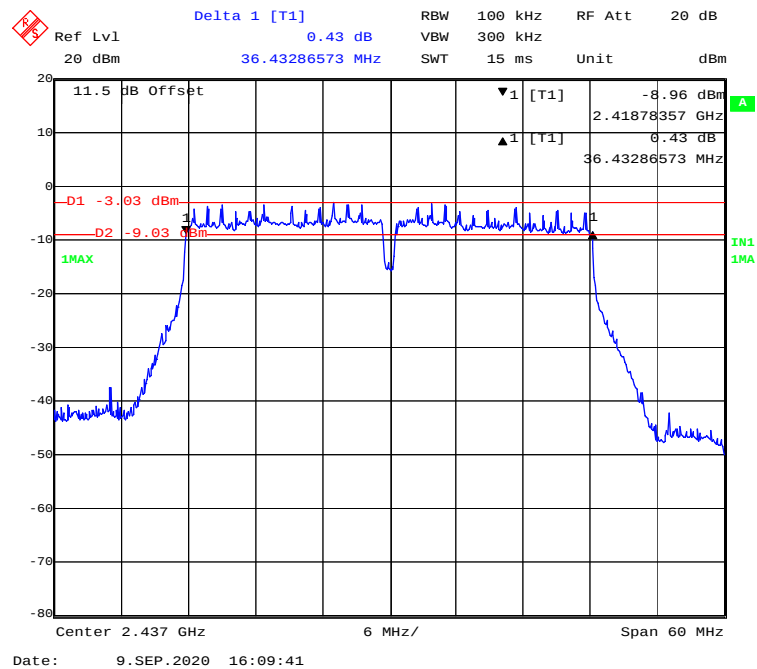
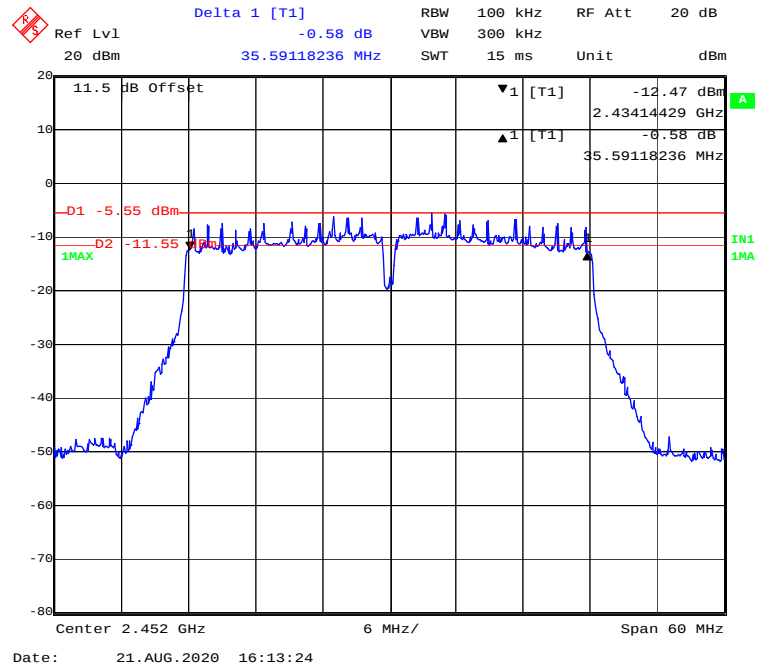
802.11n-HT20 Mode Low Channel (Chain1)

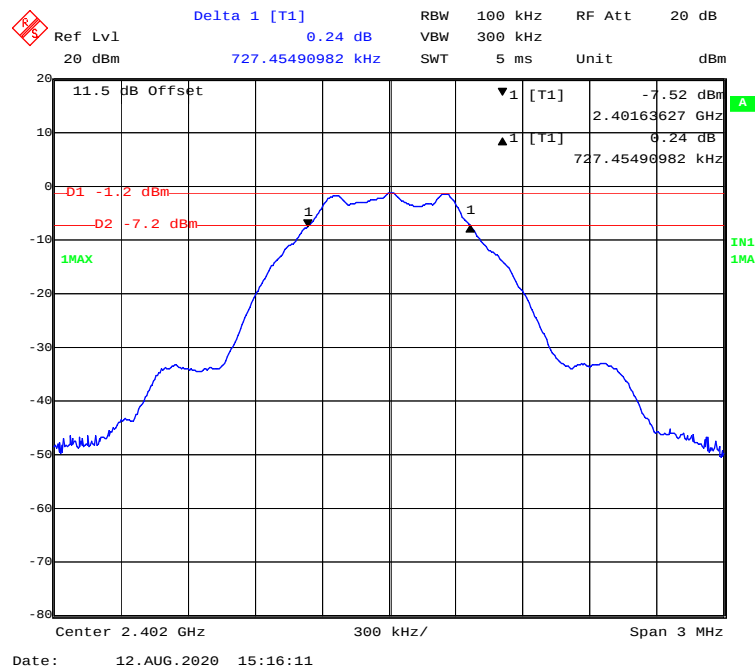
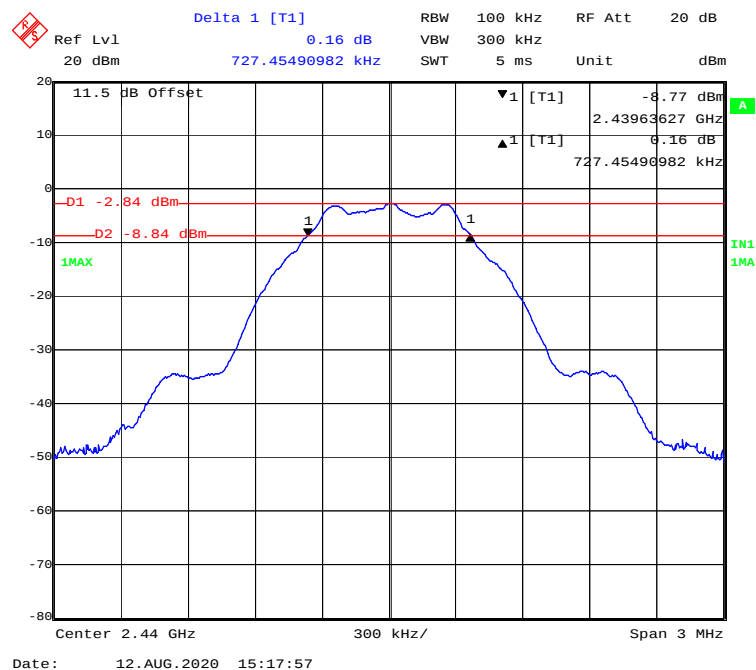


802.11n-HT20 Mode Middle Channel (Chain1)



802.11n-HT20 Mode High Channel (Chain1)**802.11n-HT40 Mode Low Channel (Chain1)**

802.11n-HT40 Mode Middle Channel (Chain1)**802.11n-HT40 Mode High Channel (Chain1)**

BLE(1Mbps) Mode Low Channel**BLE(1Mbps) Mode Middle Channel**

Delta 1 [T1]

Ref Lvl -0.01 dB RBW 100 kHz RF Att 20 dB
 20 dBm 721.44288577 kHz SWT 5 ms Unit dBm

11.5 dB Offset

▼1 [T1] -7.12 dBm
 ▲1 [T1] 2.47964228 GHz
 721.44288577 kHz

-D1 -1.26 dBm
 -D2 -7.26 dBm

1MAX

Center 2.48 GHz 300 kHz/ Span 3 MHz

Date: 12.AUG.2020 15:28:52

Delta 1 [T1] -0.04 dB

RBW 100 kHz V BW 300 kHz SWT 5 ms Unit dBm

Ref Lvl 20 dBm

11.5 dB Offset

▼1 [T1] -7.26 dBm

▲1 [T1] -0.04 dB

2.401683 GHz

1.17835671 MHz

-D1 -1.34 dBm

-D2 -7.34 dBm

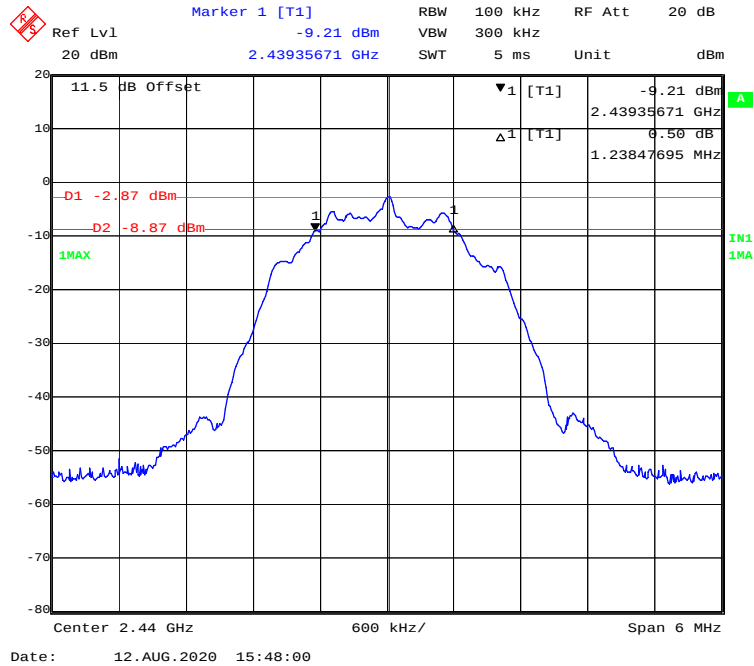
1MAX

IN1 1MA

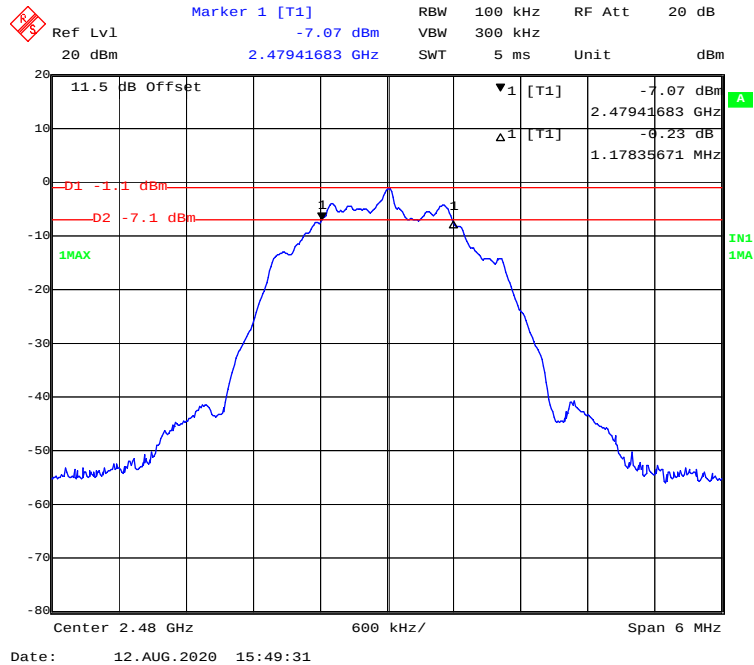
Center 2.402 GHz 600 kHz/ Span 6 MHz

Date: 12.AUG.2020 15:46:06

BLE(2Mbps) Mode Middle Channel



BLE(2Mbps) Mode High Channel



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

Applicable Standard

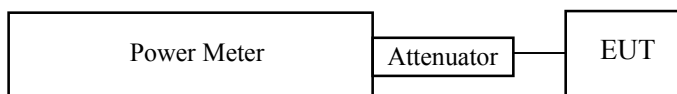
According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, Compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted 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

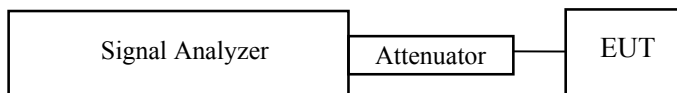
The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.



For BLE:

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

1. Set the RBW $\geq$ DTS bandwidth.
2. Set VBW $\geq 3 \times$ RBW.
3. Set span $\geq 3 \times$ 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:	23.1-24.6 °C
Relative Humidity:	45-51%
ATM Pressure:	101.1-101.6 kPa

The testing was performed by CK Huang from 2020-08-12 to 2020-11-05.

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	24.25	24.70	/	30	Pass
	Middle	2437	24.19	24.13	/	30	Pass
	High	2462	23.94	23.93	/	30	Pass
802.11g	Low	2412	23.61	23.09	/	30	Pass
	Middle	2437	23.74	23.10	/	30	Pass
	High	2462	23.71	22.97	/	30	Pass
802.11n-HT20	Low	2412	19.73	19.71	22.73	30	Pass
	Middle	2437	19.61	19.46	22.55	30	Pass
	High	2462	19.39	19.61	22.51	30	Pass
802.11n-HT40	Low	2422	16.86	16.89	19.89	30	Pass
	Middle	2437	18.81	18.35	21.60	30	Pass
	High	2452	16.75	16.01	19.41	30	Pass

Note: The total output power = $10 \cdot \log(10^{\text{Chain0}/10} + 10^{\text{Chain1}/10})$

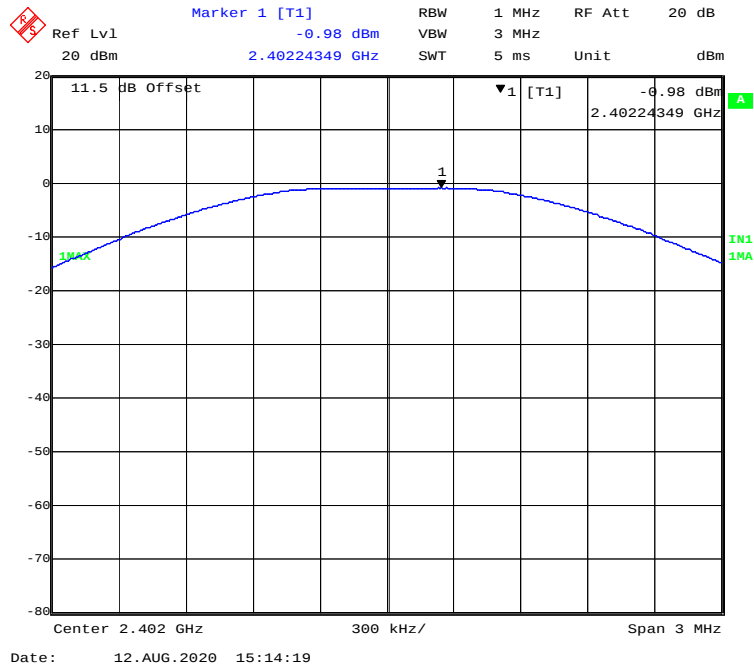
The maximum antenna gain is 2.19dBi, the device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices:

Array Gain = 0 dB (i.e., no array gain) for $N_{\text{ANT}} \leq 4$;

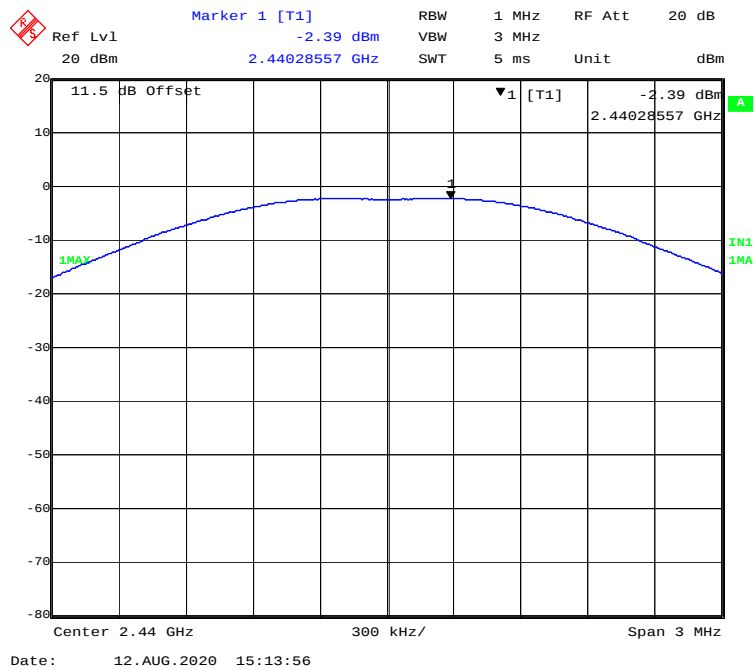
So: Directional gain = $G_{\text{ANT}} + \text{Array Gain} = 2.19\text{dBi} < 6\text{dBi}$, no RF out power limit was reduced.

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Limit (dBm)	Result
BLE (1Mbps) Mode				
Low	2402	-0.98	30	Pass
Middle	2440	-2.39	30	Pass
High	2480	-0.92	30	Pass
BLE (2Mbps) Mode				
Low	2402	-1.18	30	Pass
Middle	2440	-2.47	30	Pass
High	2480	-0.94	30	Pass

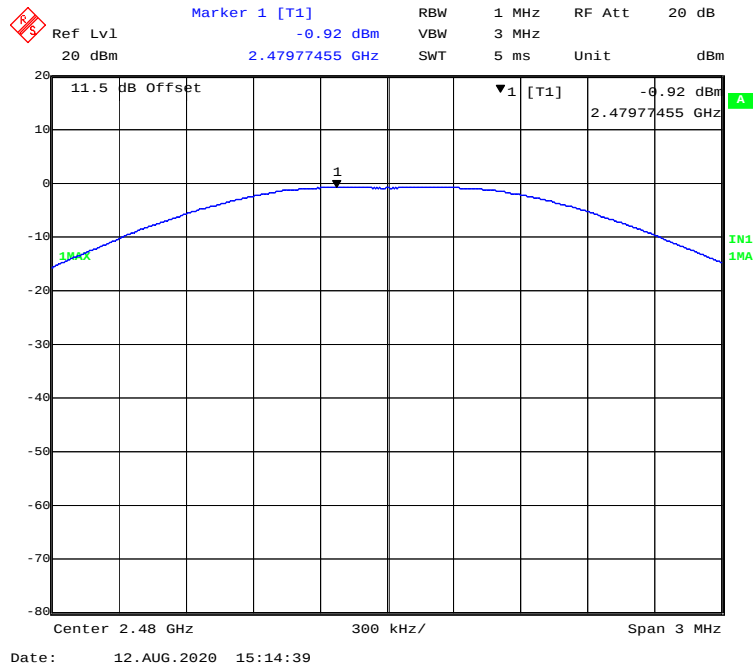
BLE(1Mbps) Mode Low Channel



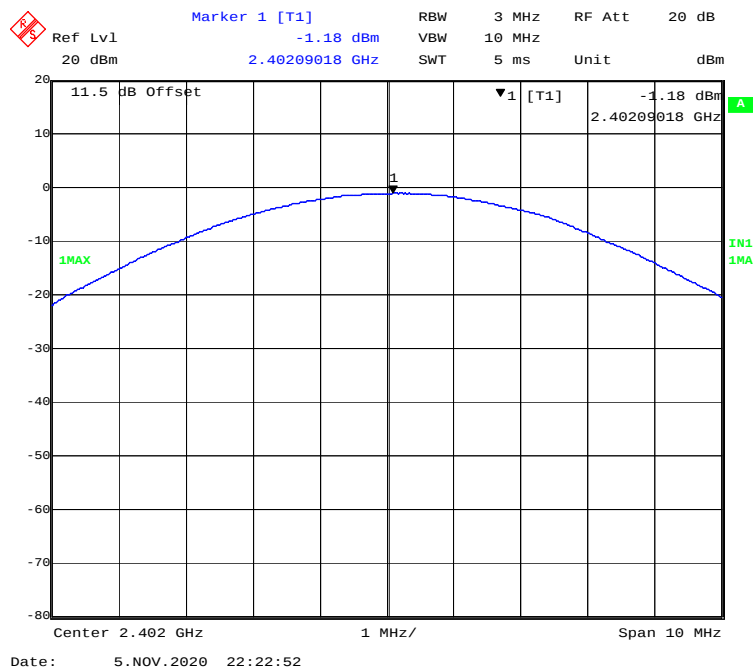
BLE(1Mbps) Mode Middle Channel



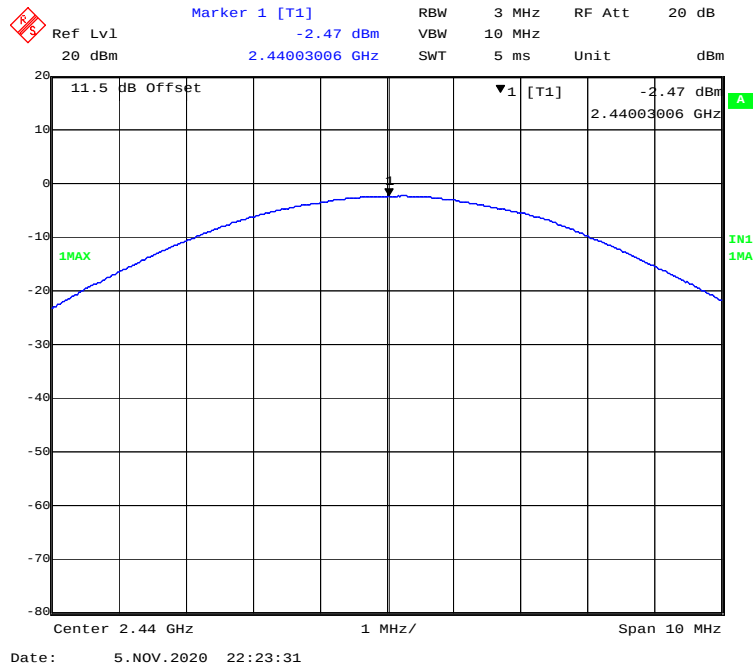
BLE(1Mbps) Mode High Channel



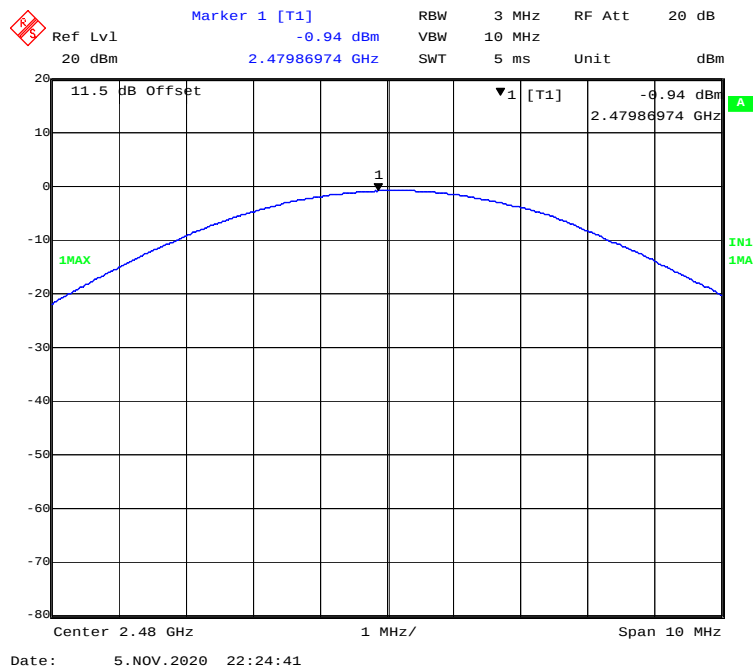
BLE(2Mbps) Mode Low Channel



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

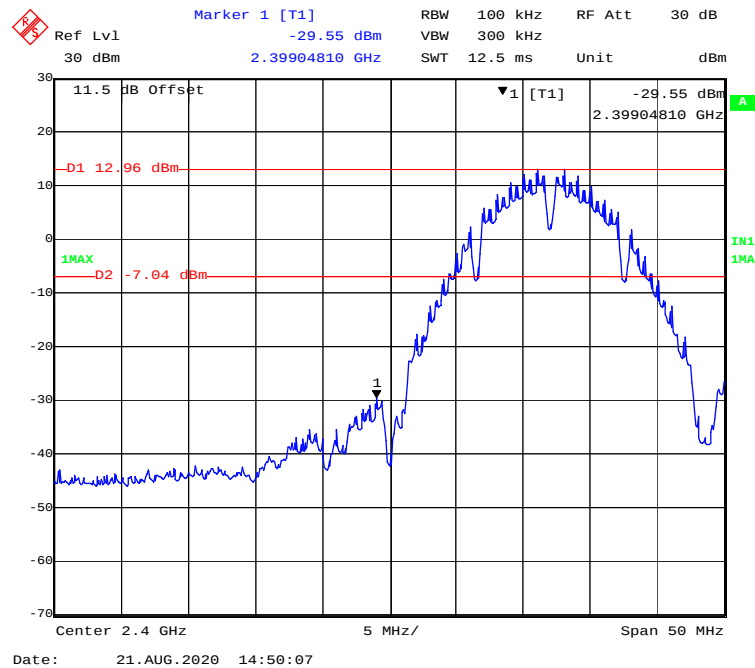
Temperature:	24.6 °C~25 °C
Relative Humidity:	49 %~50 %
ATM Pressure:	101.1kPa~101.2kPa

The testing was performed by CK Huang from 2020-08-12 to 2020-08-21.

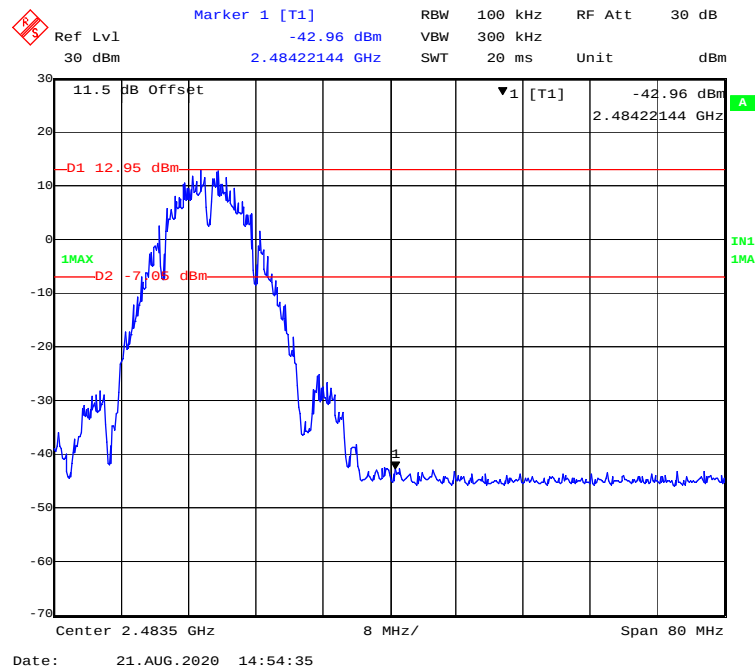
Test Result: Compliant.

EUT operation mode: Transmitting

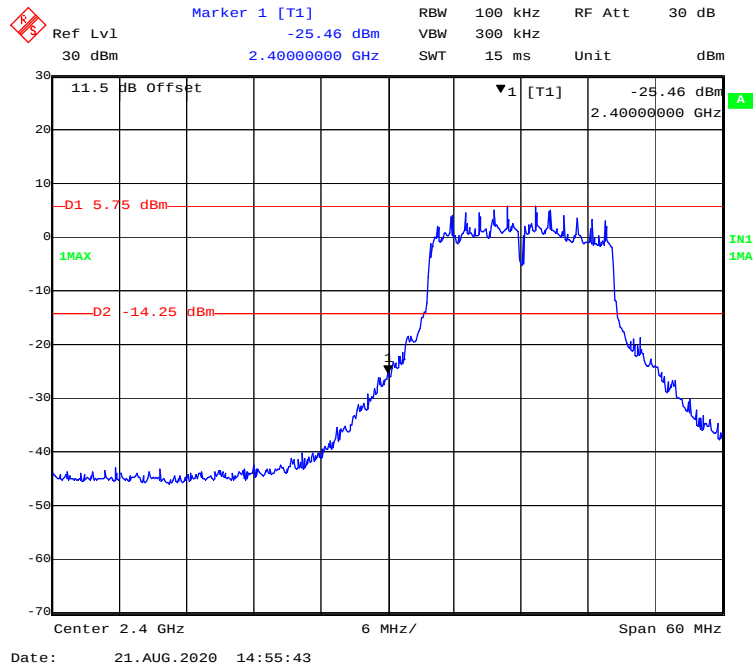
802.11b Mode Left Side (Chain0)



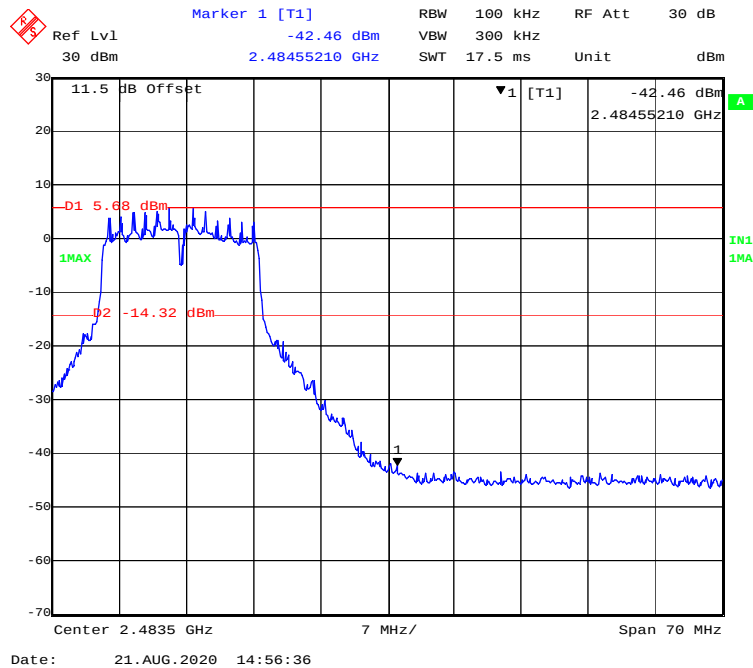
802.11b Mode Right Side (Chain0)



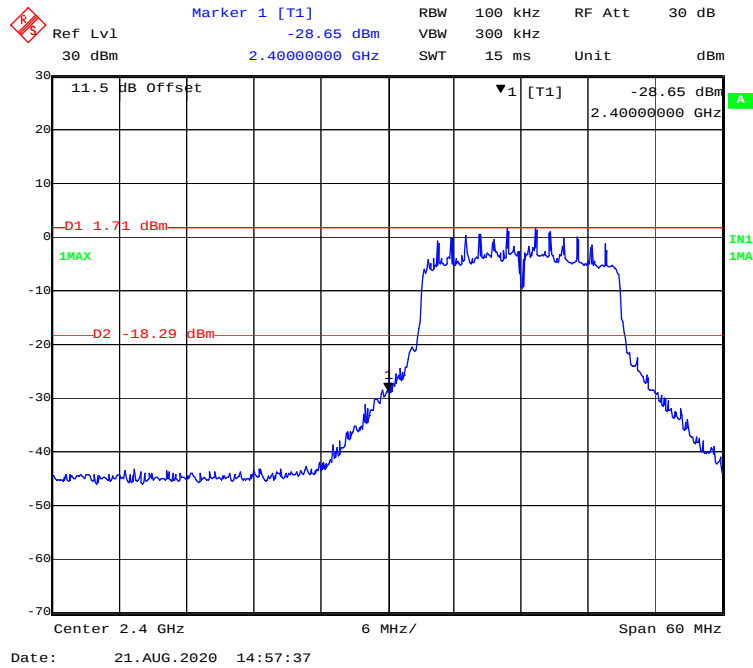
802.11g Mode Left Side (Chain0)



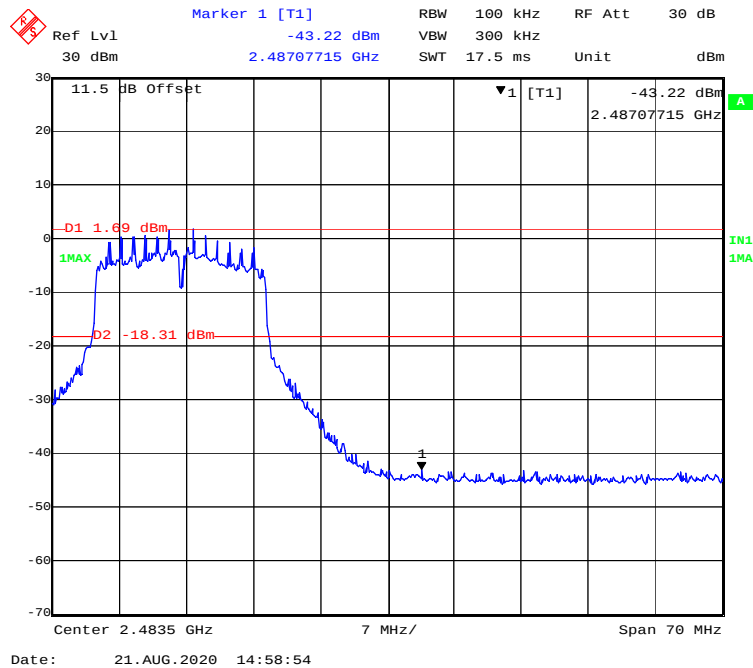
802.11g Mode Right Side (Chain0)



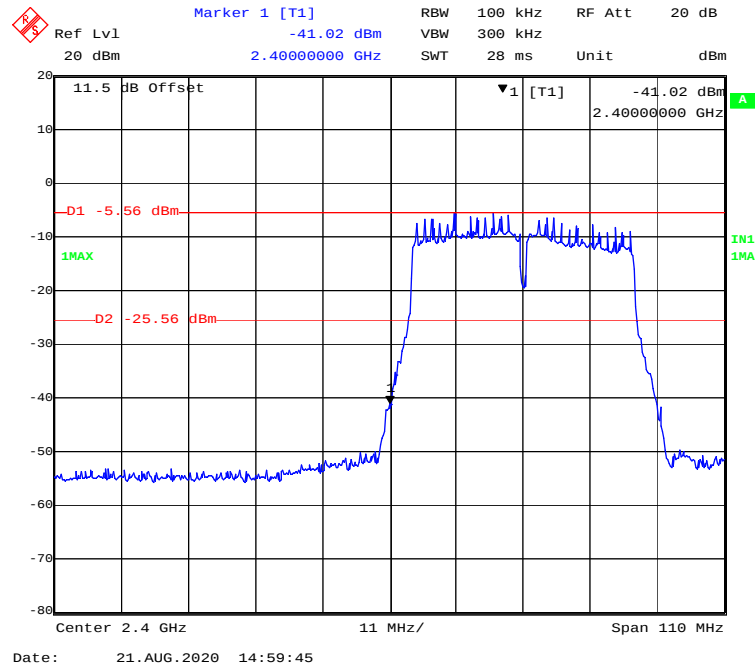
802.11n-HT20 Mode Left Side (Chain0)



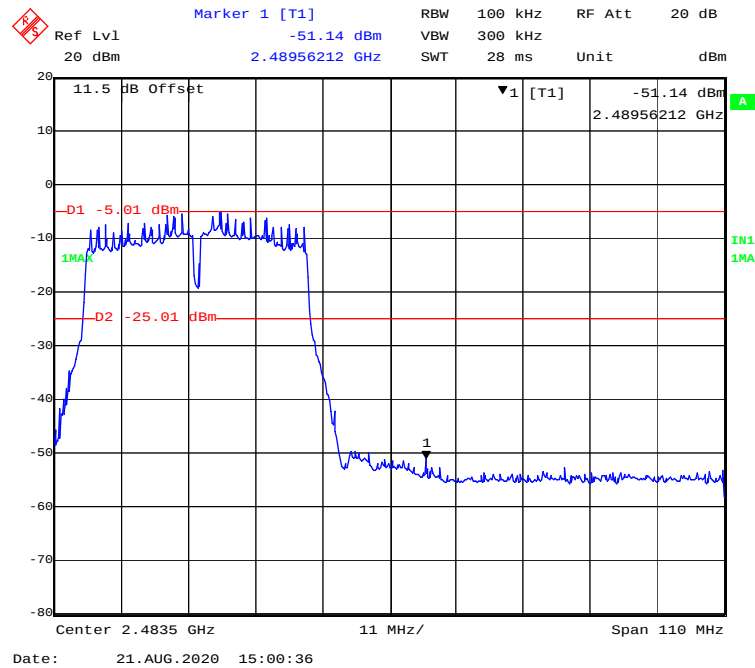
802.11n-HT20 Mode Right Side (Chain0)



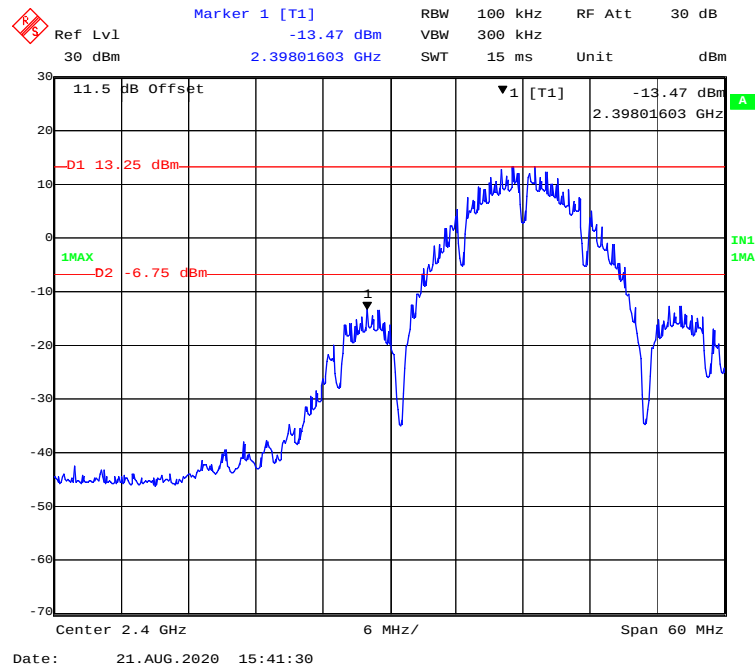
802.11n-HT40 Mode Left Side (Chain0)



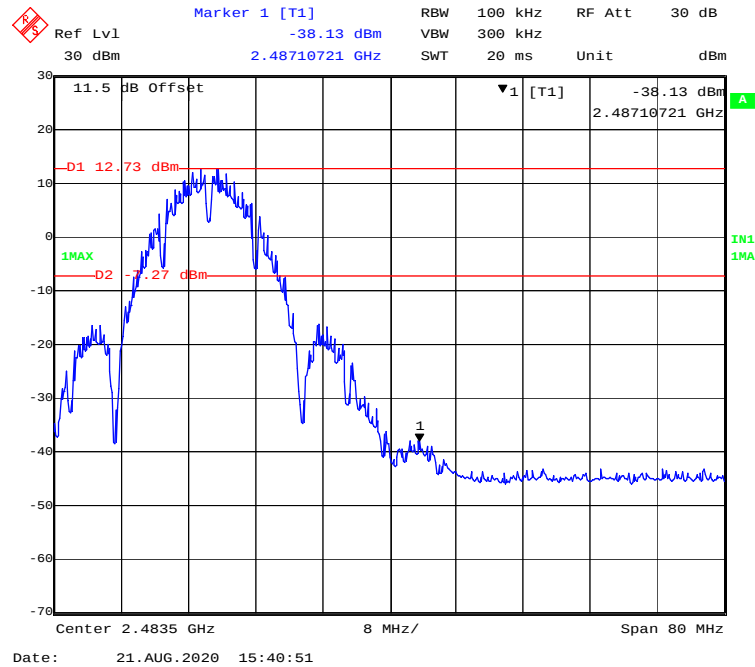
802.11n-HT40 Mode Right Side (Chain0)



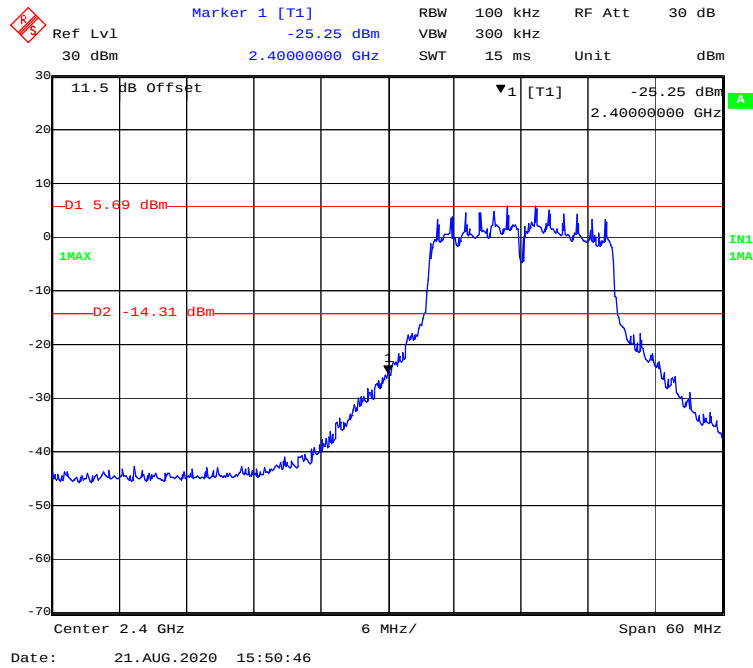
802.11b Mode Left Side (Chain1)



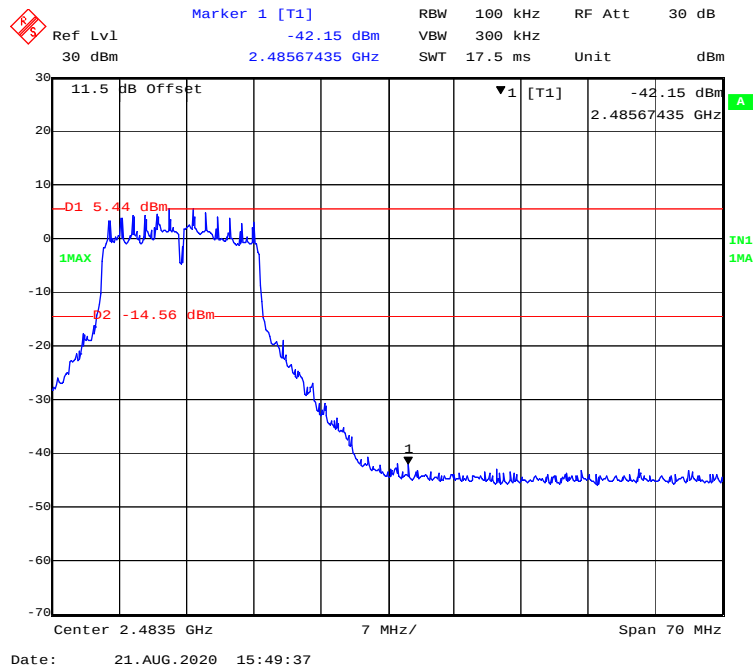
802.11b Mode Right Side (Chain1)



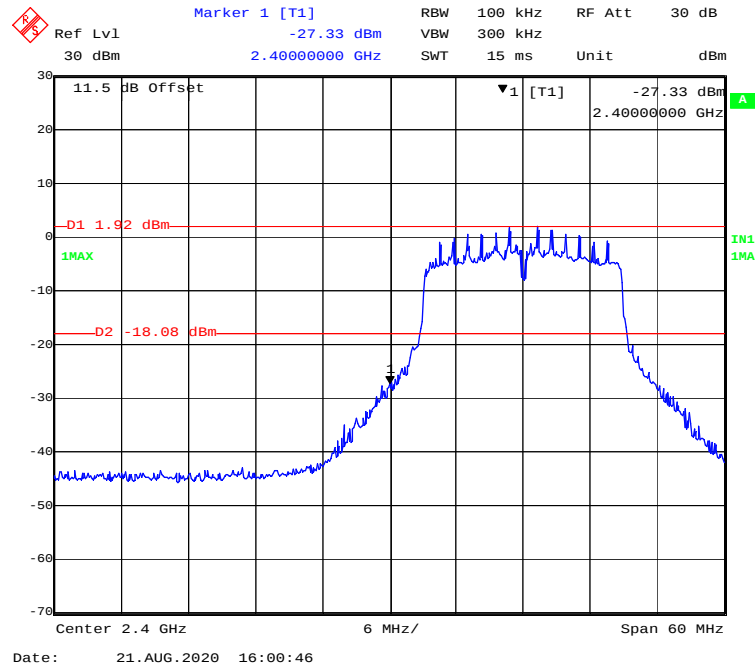
802.11g Mode Left Side (Chain1)



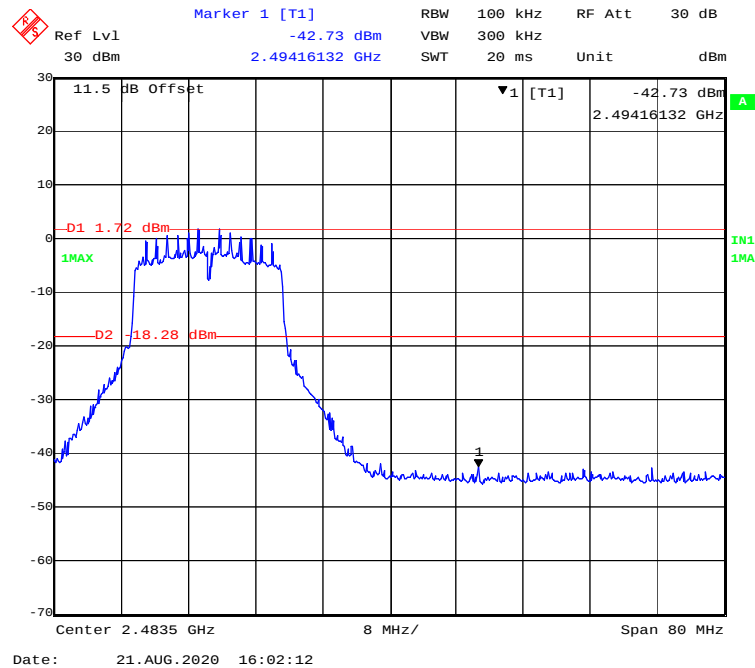
802.11g Mode Right Side (Chain1)



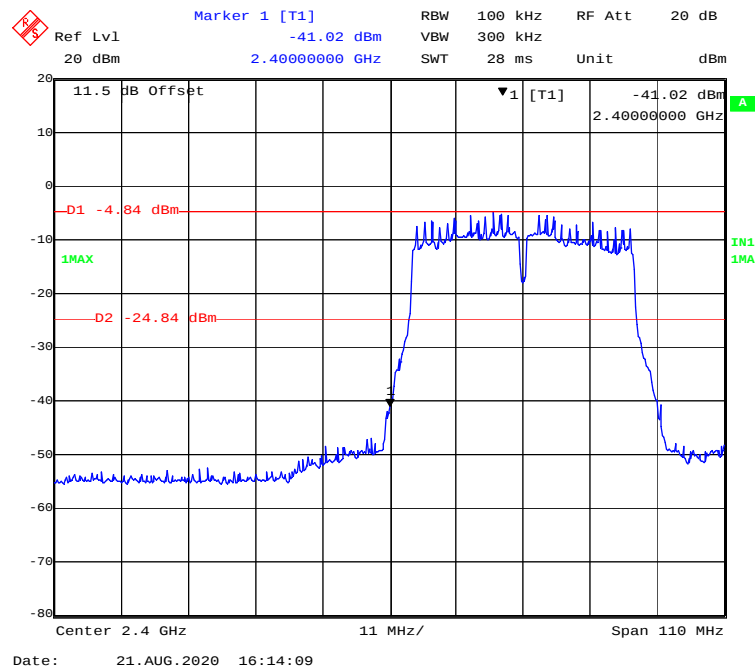
802.11n-HT20 Mode Left Side (Chain1)



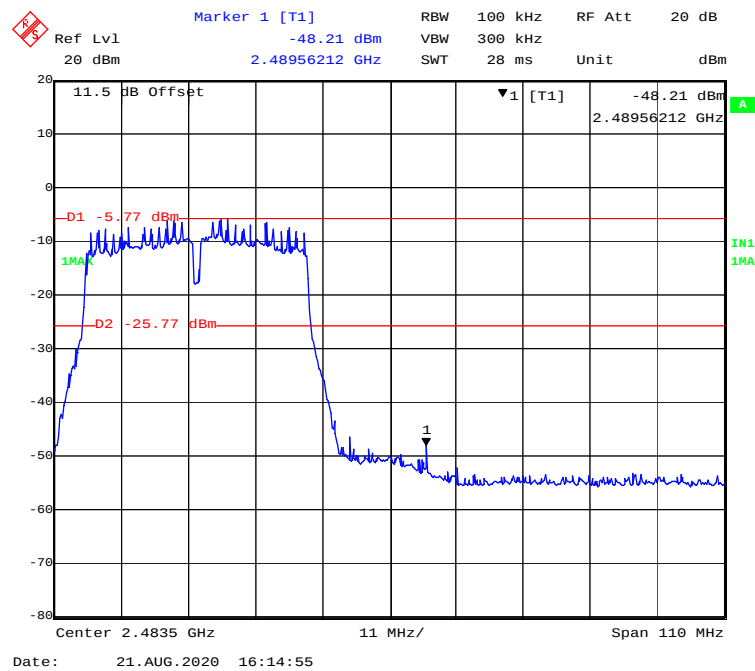
802.11n-HT20 Mode Right Side (Chain1)



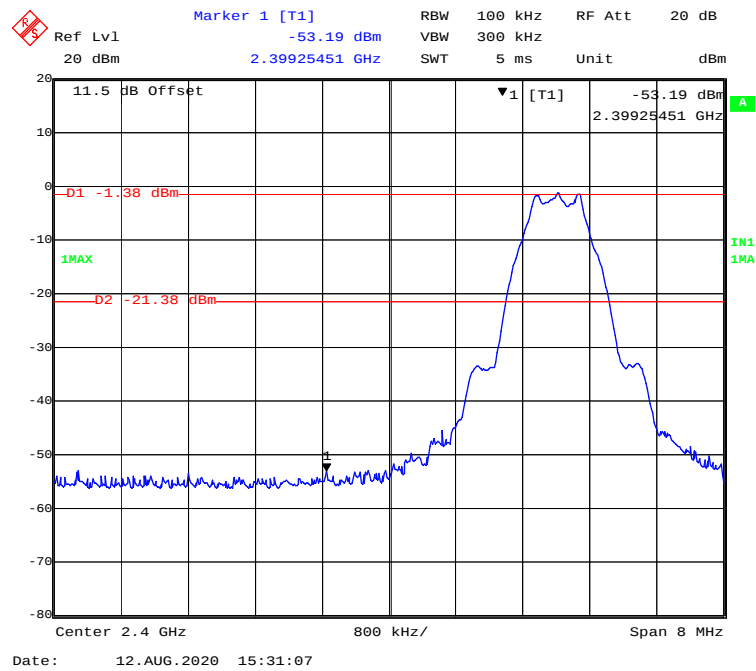
802.11n-HT40 Mode Left Side (Chain1)



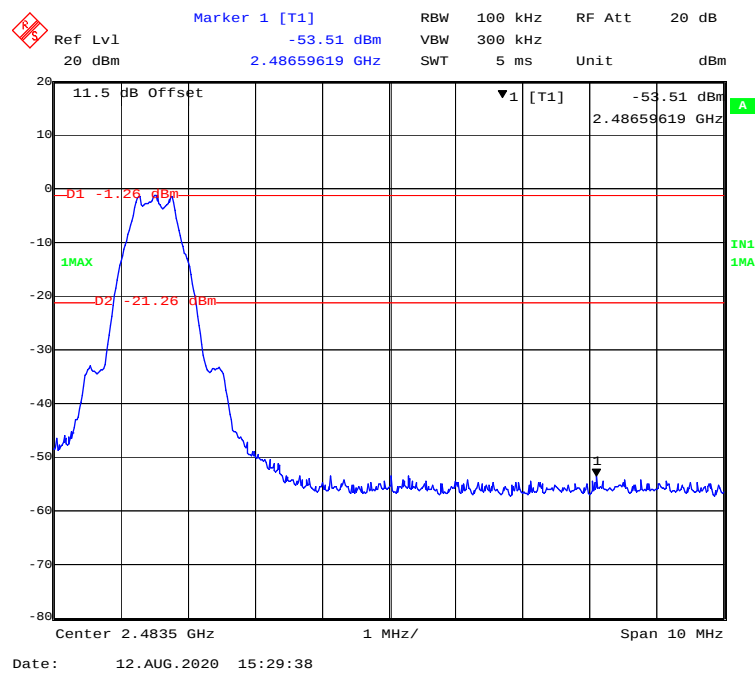
802.11n-HT40 Mode Right Side (Chain1)



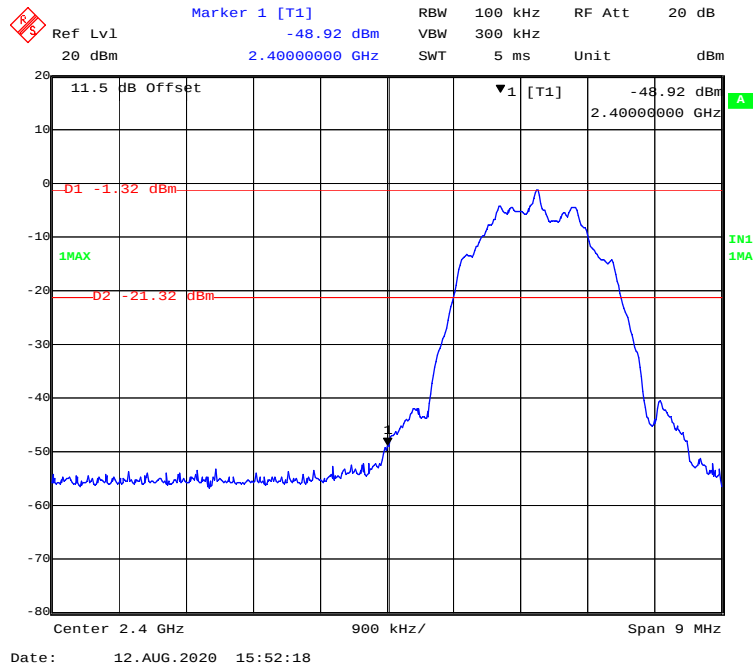
BLE (1Mbps) Mode Left Side



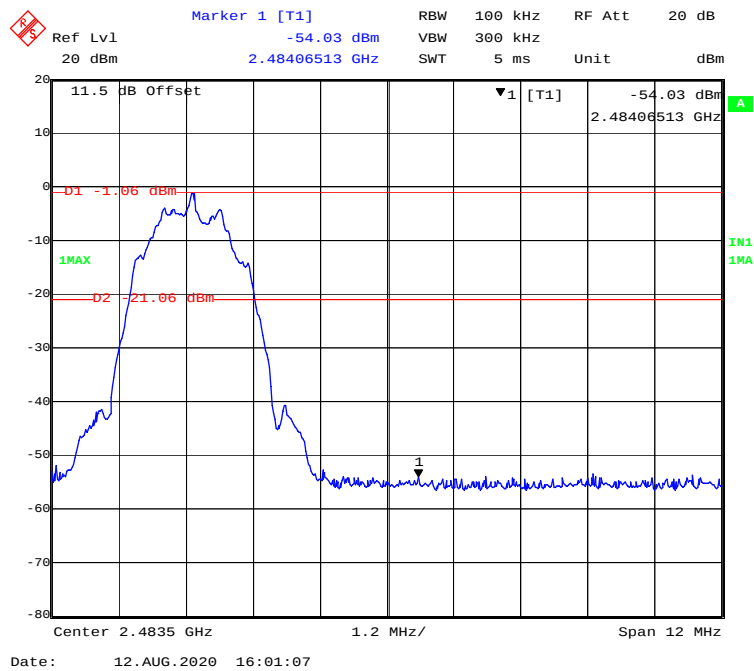
BLE (1Mbps) Mode Right Side



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: $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$.
2. Set the VBW $\geq [3 \times \text{RBW}]$.
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:	24.6 °C~25 °C
Relative Humidity:	49 %~50 %
ATM Pressure:	101.1kPa~101.1kPa

The testing was performed by CK Huang from 2020-08-12 to 2020-09-09.

Test Result: Compliant.

Channel	Frequency (MHz)	PSD (dBm/3kHz)			Limit (dBm/3kHz)
		Chain0	Chain1	Total	
802.11b Mode					
Low	2412	-4.00	-3.83	/	≤ 8
Middle	2437	-3.89	-3.89	/	≤ 8
High	2462	-4.78	-4.31	/	≤ 8
802.11g Mode					
Low	2412	-11.27	-12.44	/	≤ 8
Middle	2437	-11.64	-12.36	/	≤ 8
High	2462	-11.98	-11.63	/	≤ 8
802.11n-HT20 mode					
Low	2412	-14.55	-15.51	-11.99	≤ 8
Middle	2437	-15.85	-15.43	-12.62	≤8
High	2462	-15.89	-15.51	-12.69	≤8
802.11n-HT40 Mode					
Low	2422	-21.84	-21.49	-18.65	≤8
Middle	2437	-18.01	-18.10	-15.04	≤8
High	2452	-21.31	-22.44	-18.83	≤8

Note:

The total PSD = $10 \cdot \log(10^{\text{Chain0/10}} + 10^{\text{Chain1/10}})$

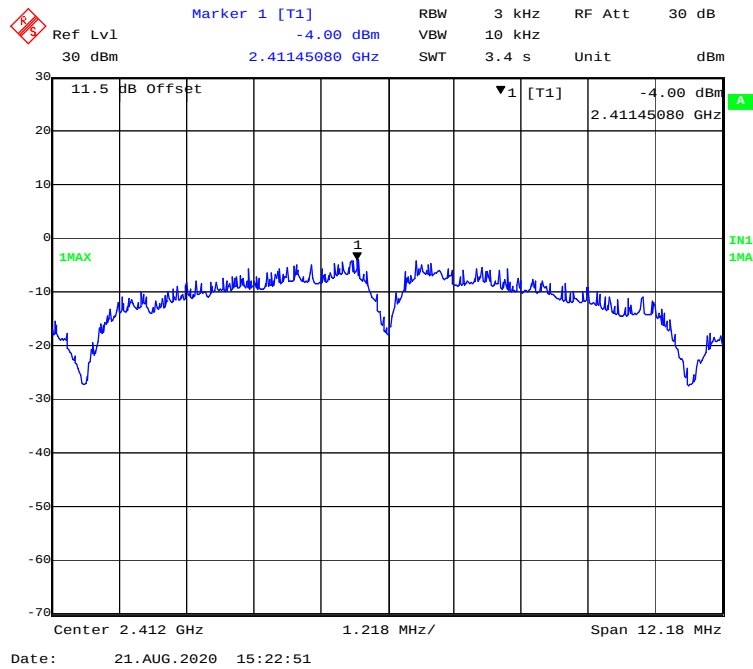
The maximum antenna gain is 2.19 dBi. The device employed Cyclic Delay Diversity (CDD) for 802.11MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:

Array Gain = $10 \cdot \log(N_{\text{ANT}}/N_{\text{SS}})$ dB.

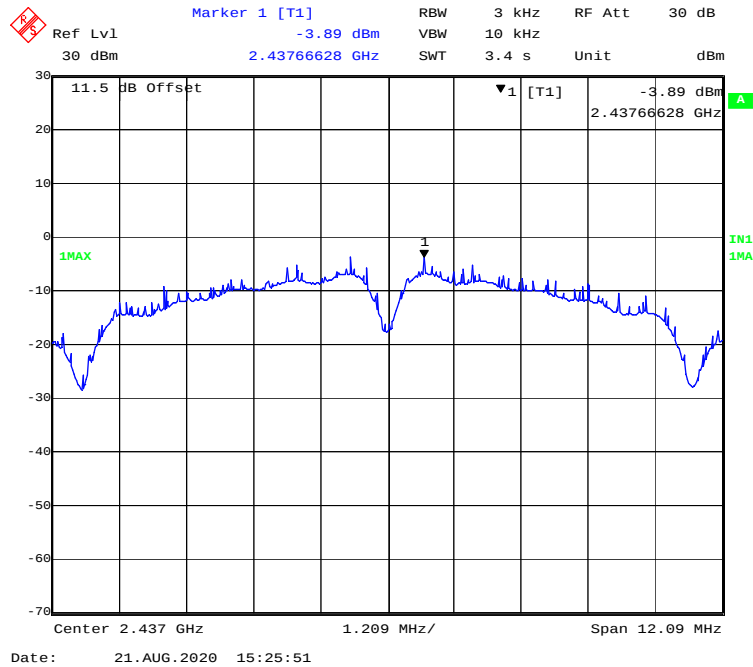
So: Directional gain = GANT + Array Gain = 2.19 + $10 \cdot \log(2/1)$ = 5.19dBi, no power spectral density limit was reduced

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
BLE (1Mbps) mode			
Low	2402	-16.04	≤ 8
Middle	2440	-17.50	≤ 8
High	2480	-15.94	≤ 8
BLE (2Mbps) mode			
Low	2402	-19.67	≤ 8
Middle	2440	-20.99	≤ 8
High	2480	-19.52	≤ 8

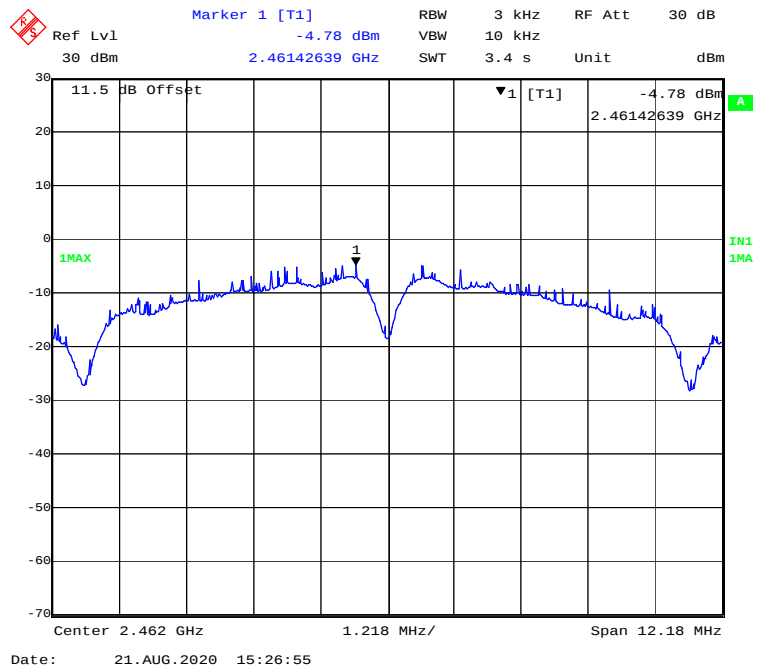
802.11b Mode Low Channel (Chain0)



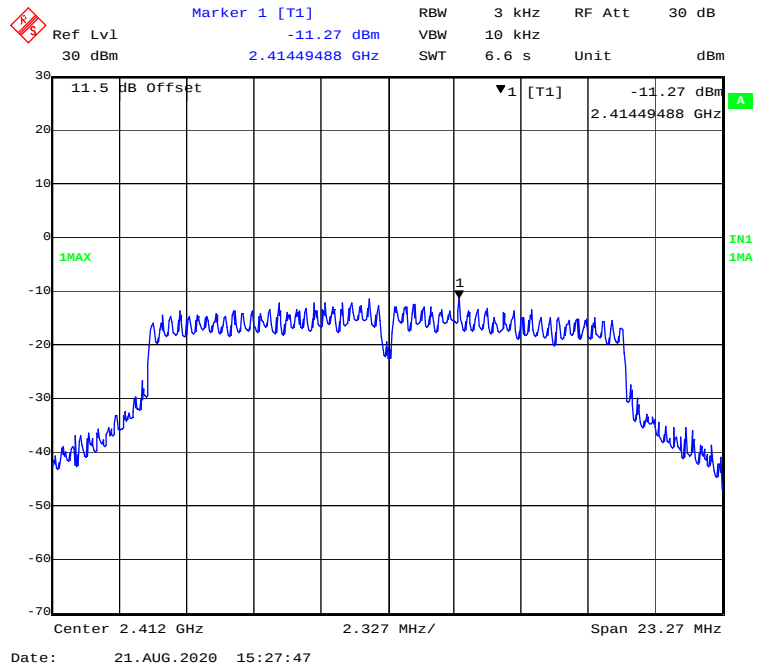
802.11b Mode Middle Channel (Chain0)



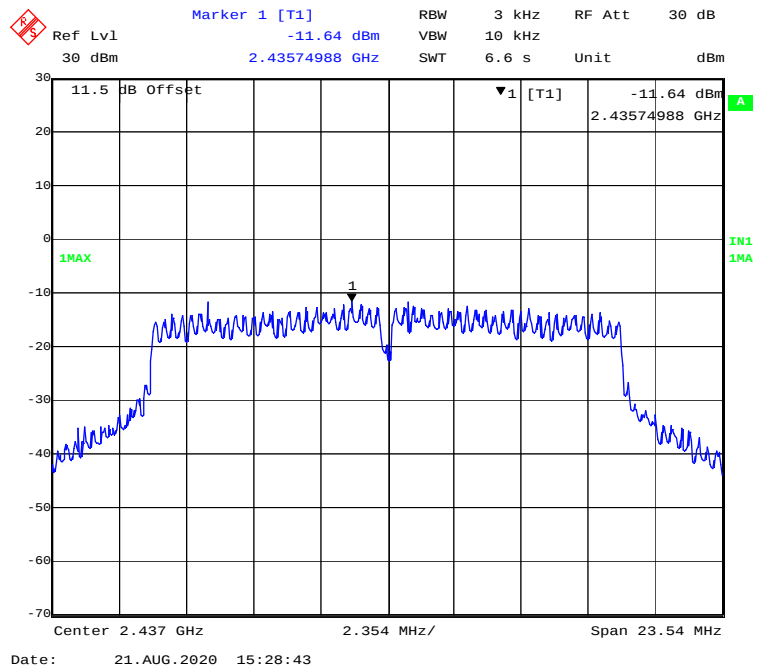
802.11b Mode High Channel (Chain0)



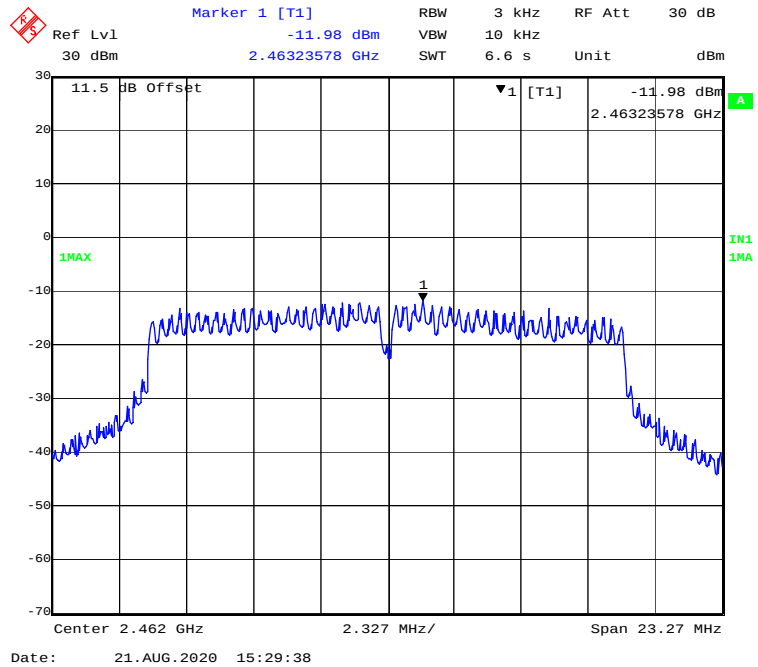
802.11g Mode Low Channel (Chain0)



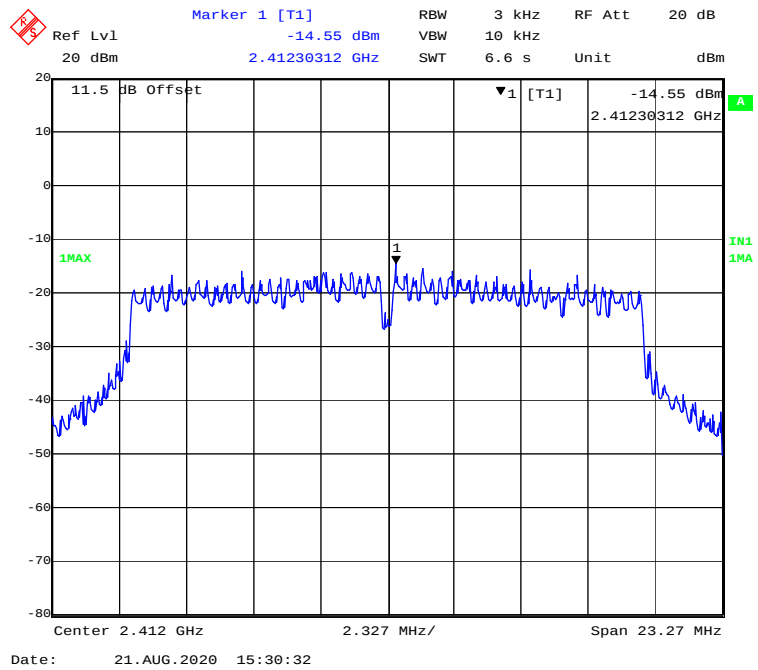
802.11g Mode Middle Channel (Chain0)



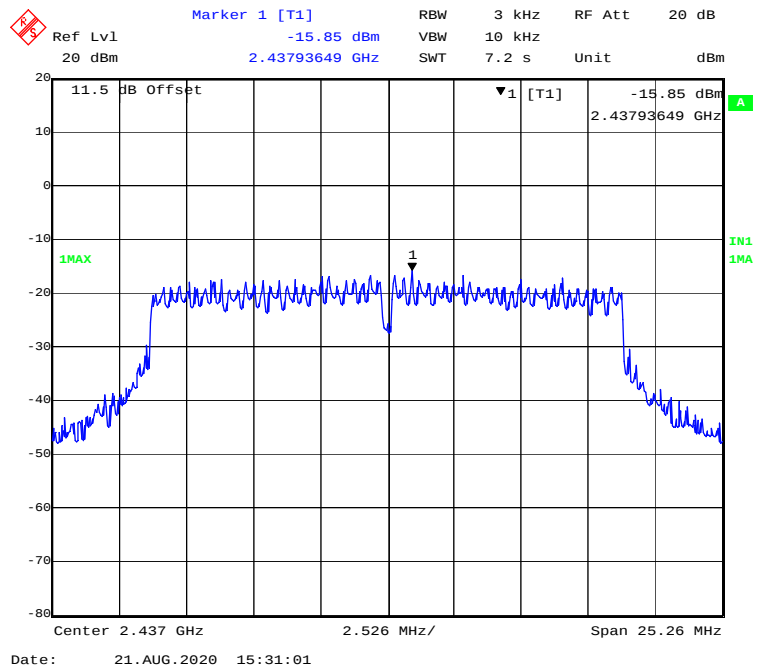
802.11g Mode High Channel (Chain0)



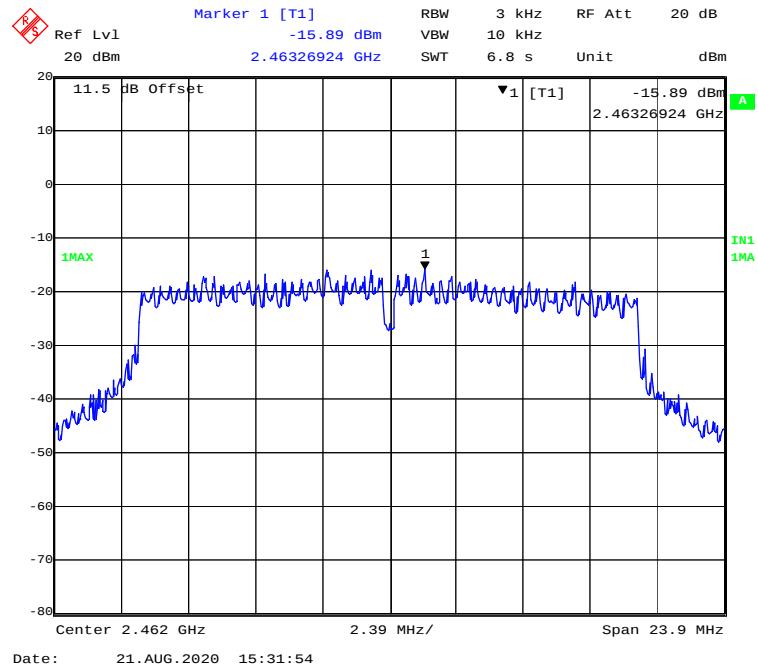
802.11n-HT20 Mode Low Channel (Chain0)



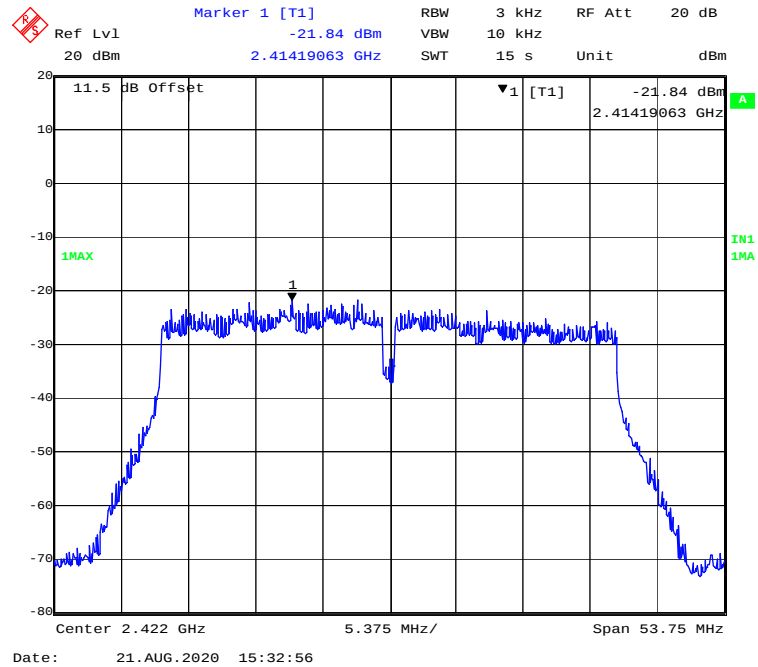
802.11n-HT20 Mode Middle Channel (Chain0)



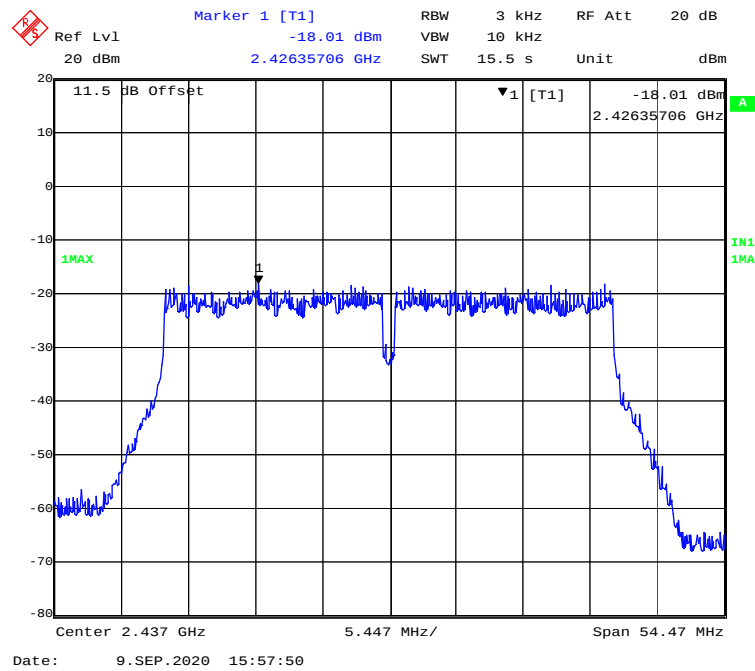
802.11n-HT20 Mode High Channel (Chain0)



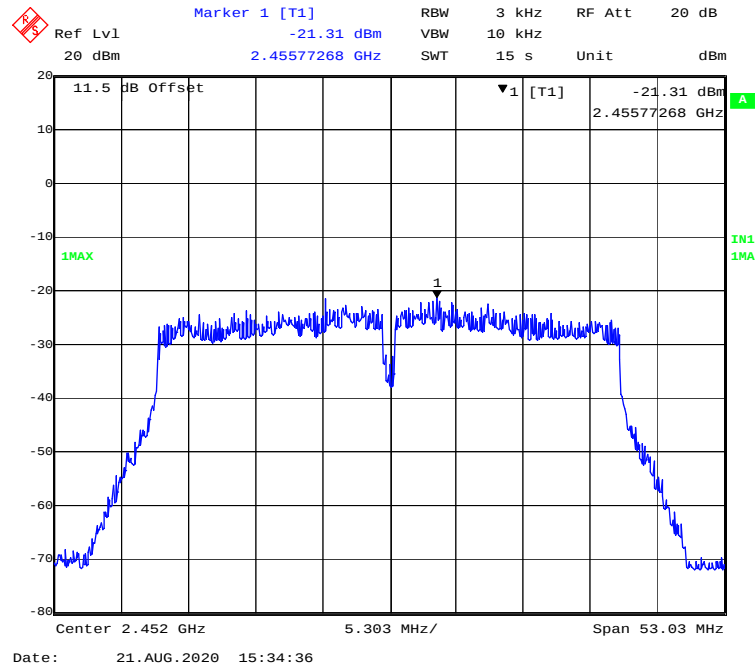
802.11n-HT40 Mode Low Channel (Chain0)



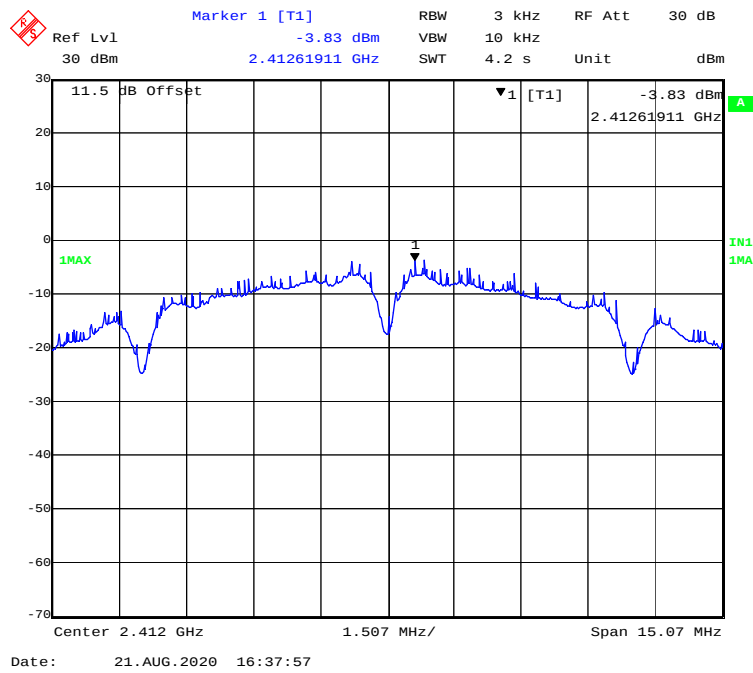
802.11n-HT40 Mode Middle Channel (Chain0)



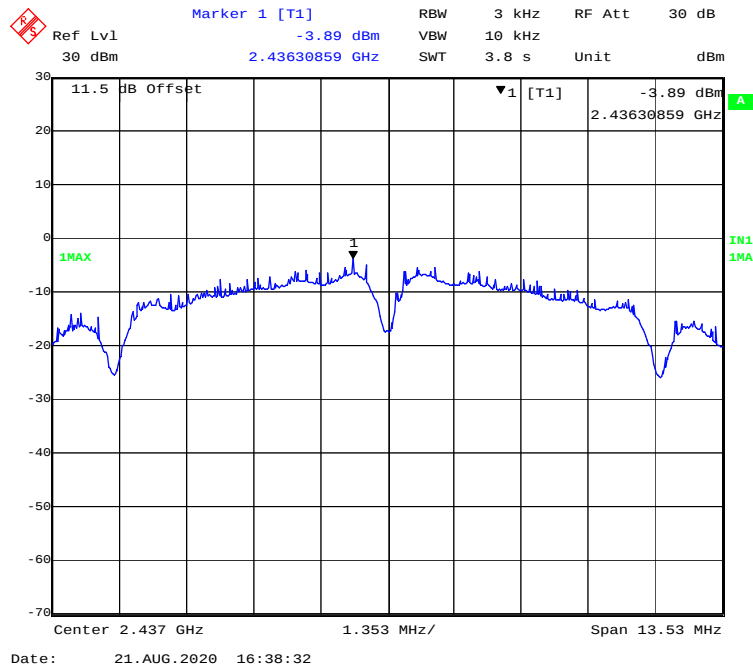
802.11n-HT40 Mode High Channel (Chain0)



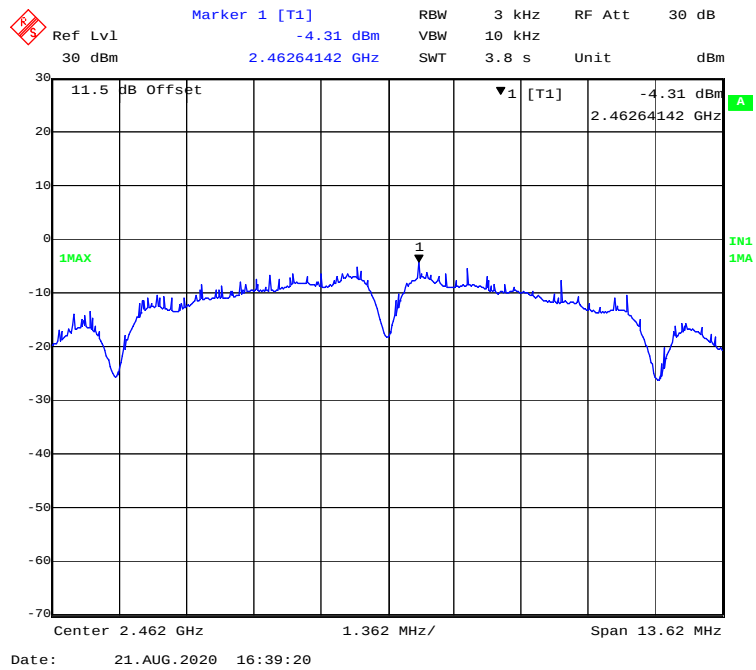
802.11b Mode Low Channel (Chain1)



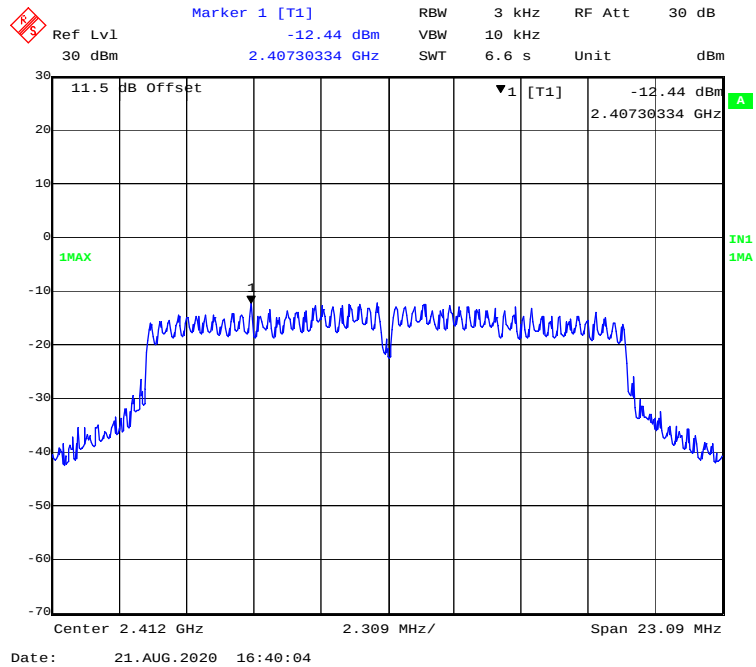
802.11b Mode Middle Channel (Chain1)



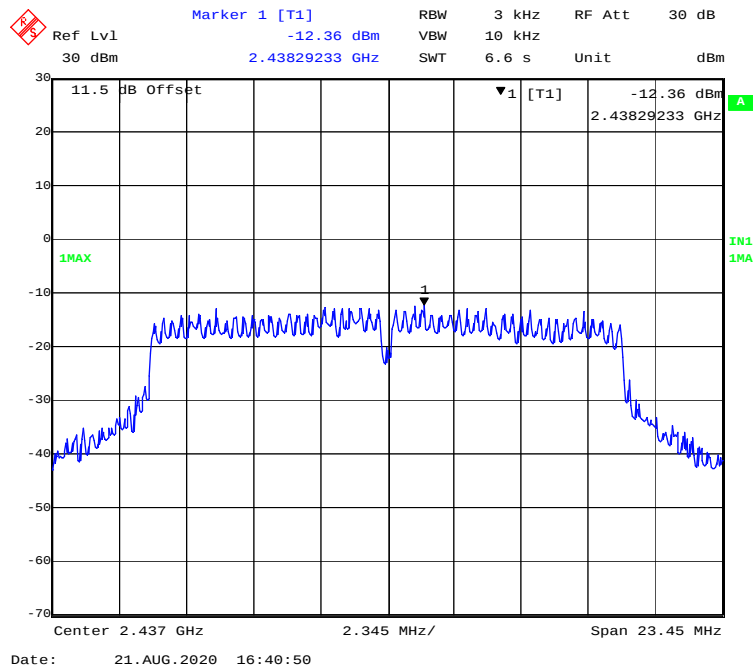
802.11b Mode High Channel (Chain1)



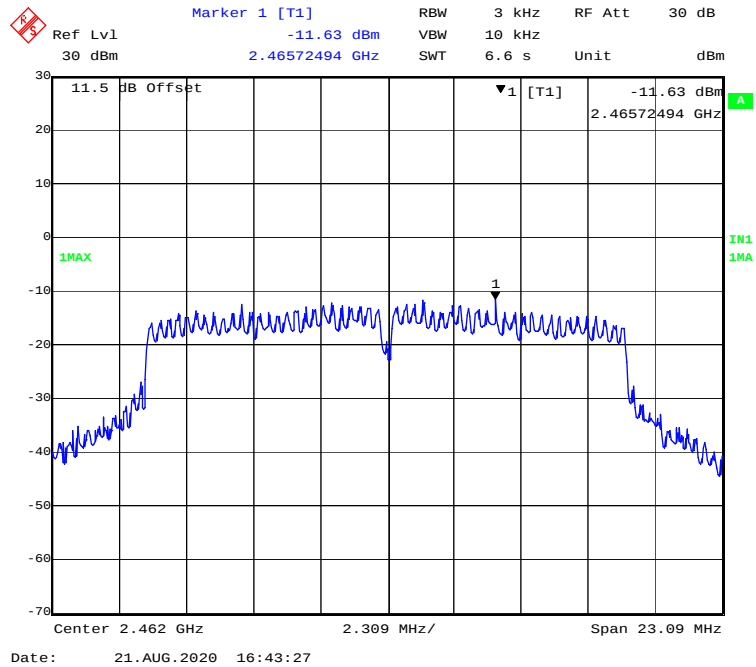
802.11g Mode Low Channel (Chain1)



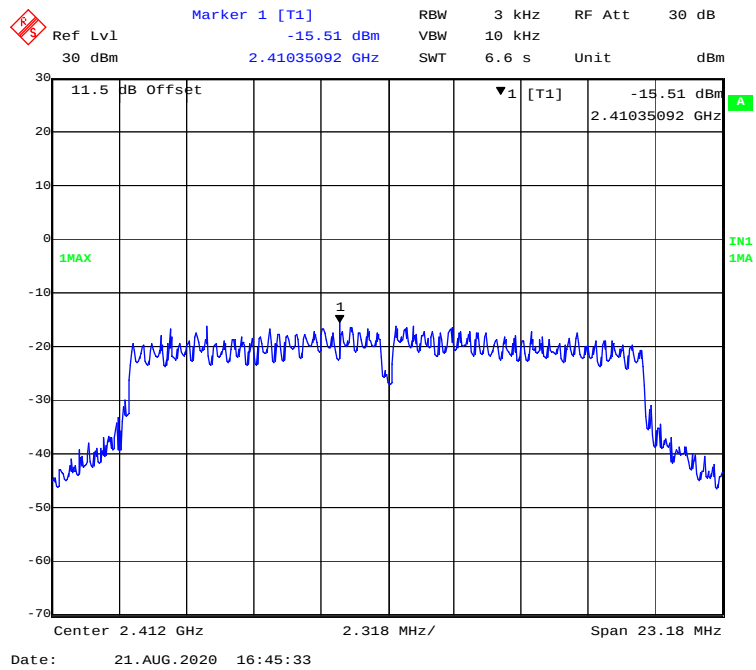
802.11g Mode Middle Channel (Chain1)



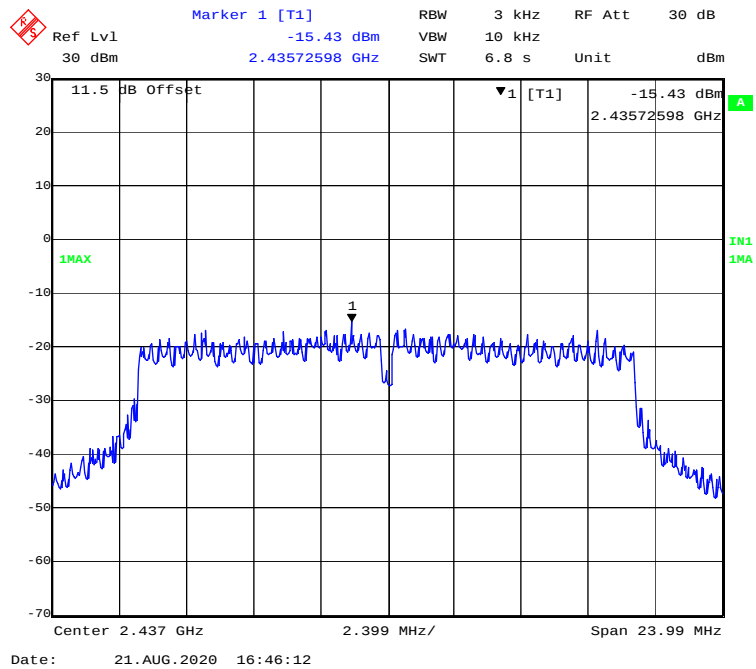
802.11g Mode High Channel (Chain1)

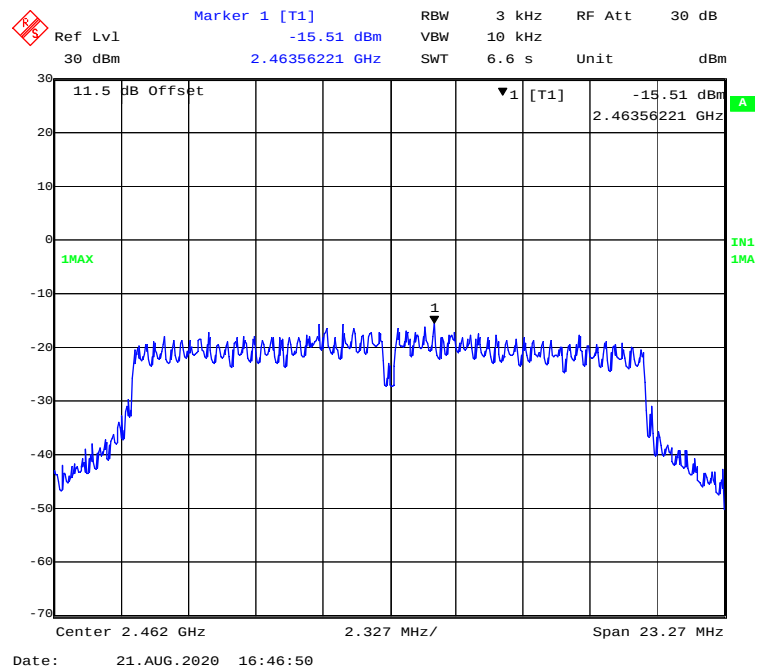
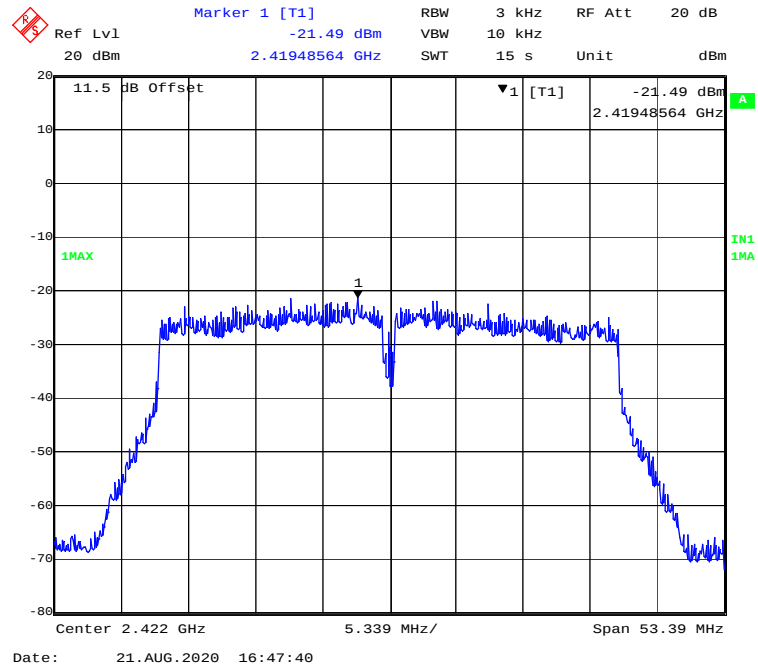


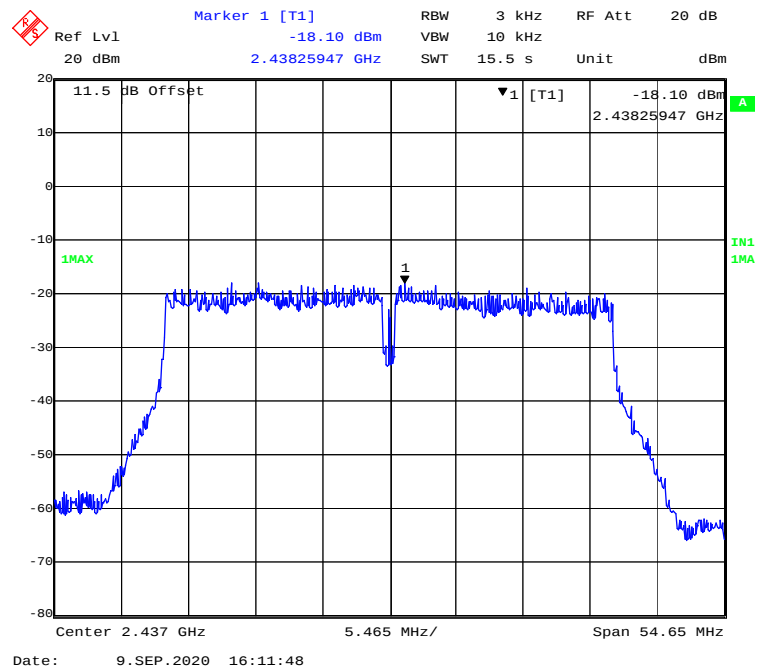
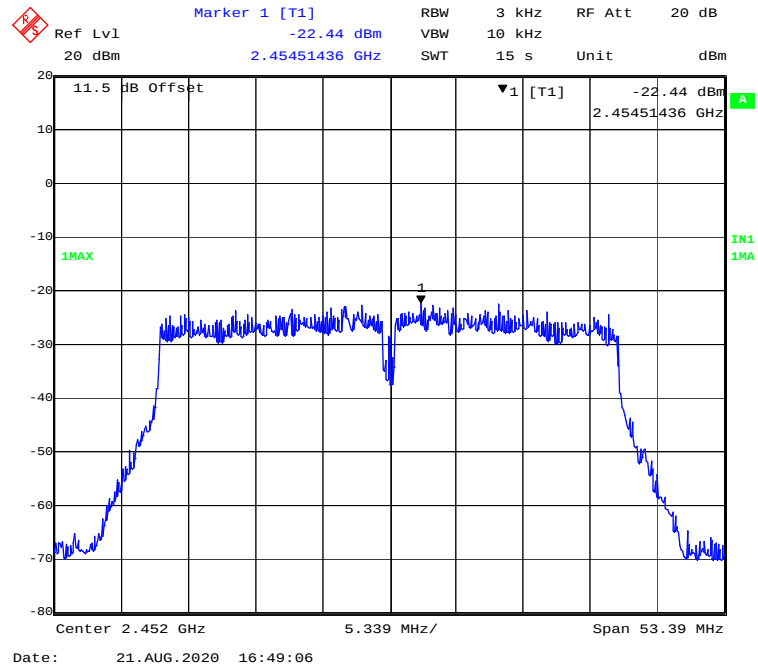
802.11n-HT20 Mode Low Channel (Chain1)



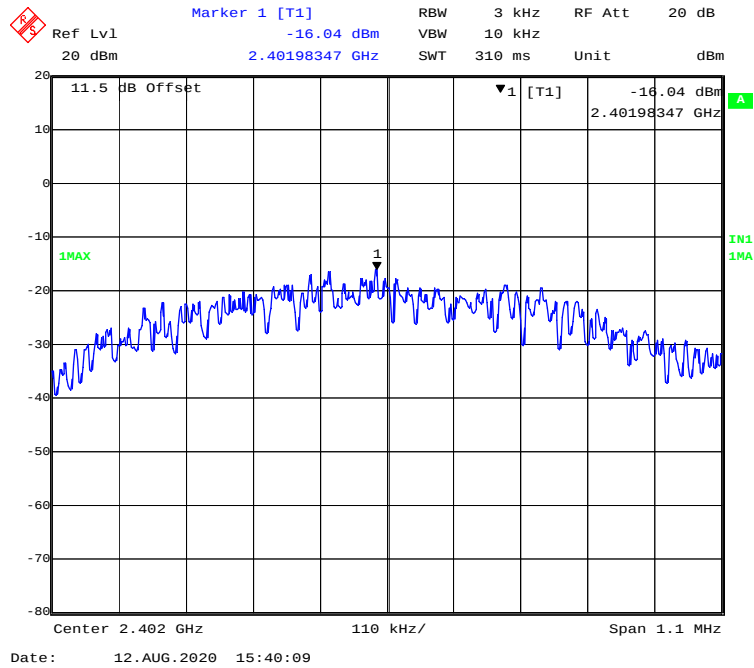
802.11n-HT20 Mode Middle Channel (Chain1)



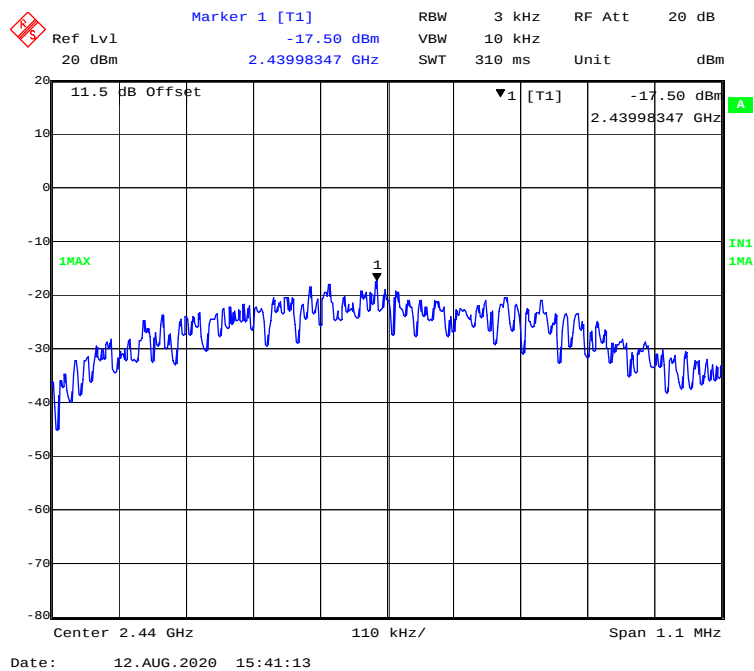
802.11n-HT20 Mode High Channel (Chain1)**802.11n-HT40 Mode Low Channel (Chain1)**

802.11n-HT40 Mode Middle Channel (Chain1)**802.11n-HT40 Mode High Channel (Chain1)**

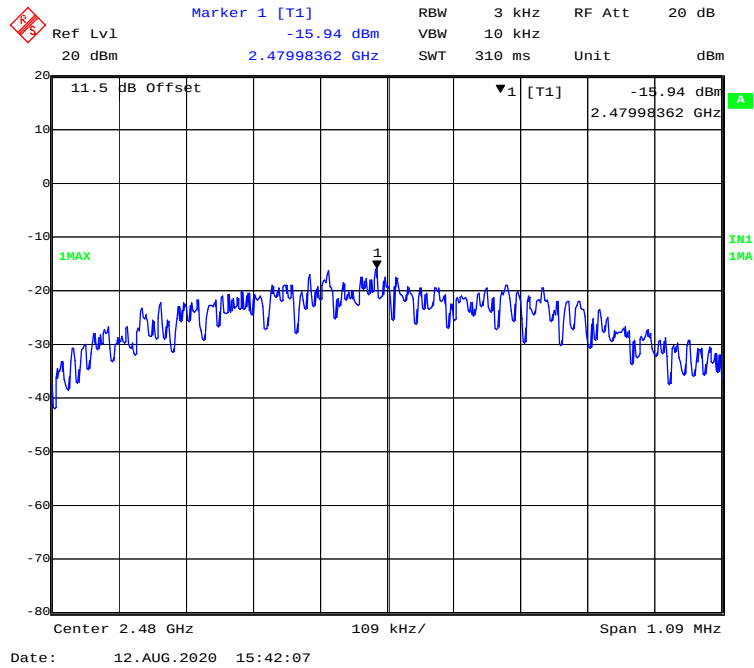
BLE(1Mbps) Mode Low Channel



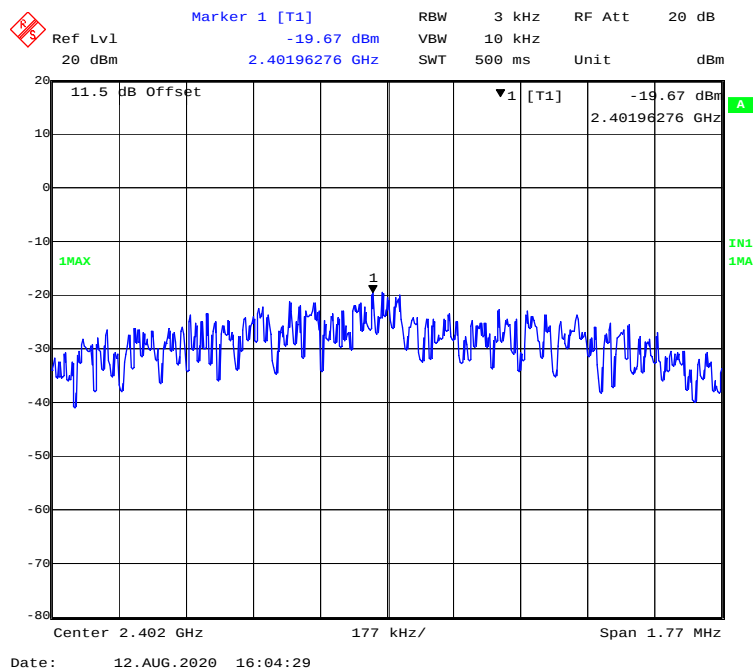
BLE(1Mbps) Mode Middle Channel



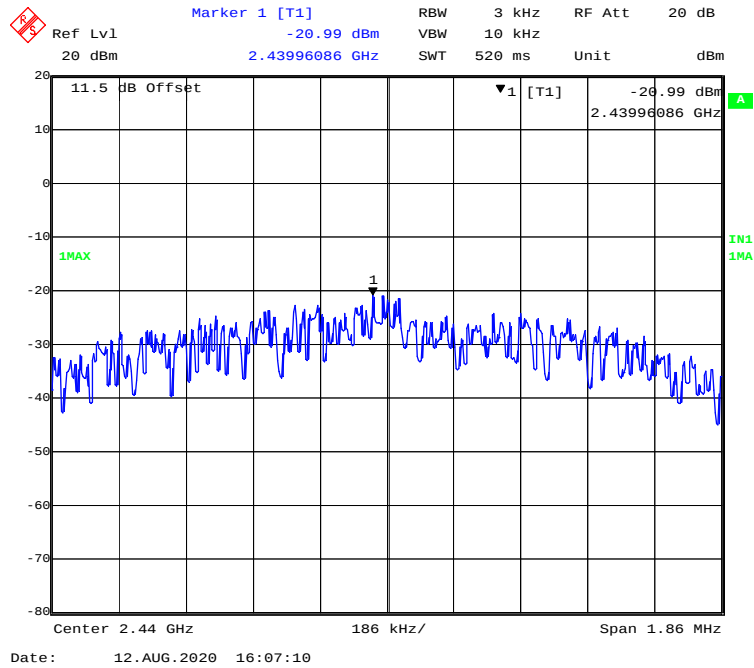
BLE(1Mbps) Mode High Channel



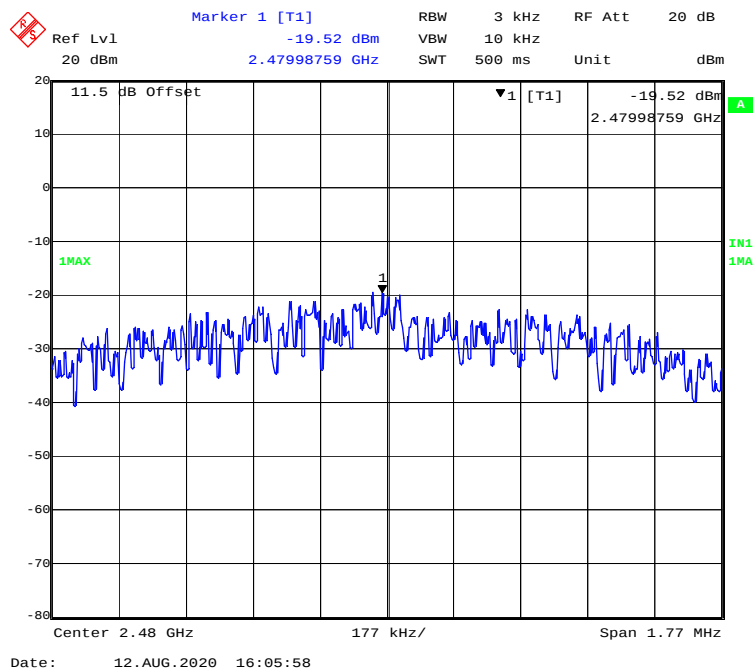
BLE(2Mbps) Mode Low Channel



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.
- 5: This report cannot be reproduced except in full, without prior written approval of the Company.
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******* END OF REPORT *******