

Prüfbericht-Nr.: <i>Test report no.:</i>	60417370 002	Auftrags-Nr.: <i>Order no.:</i>	168280909	Seite 1 von 23 <i>Page 1 of 23</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2020-09-01	
Auftraggeber: <i>Client:</i>	Edifier International Limited P.O. Box 6264 General Post Office Hong Kong			
Prüfgegenstand: <i>Test item:</i>	Smart Home Speaker			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	MS30A (Trademark: EDIFIER)			
Auftrags-Inhalt: <i>Order content:</i>	FCC and IC approval			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 RSS-247 Issue 2 February 2017 CFR47 FCC Part 15: Subpart C Section 15.207 RSS-Gen Issue 5 March 2019 CFR47 FCC Part 15: Subpart C Section 15.209 RSS-102 Issue 5 March 2015			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2020-09-04	Please refer to photo documents		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A002902677-001 to 003			
Prüfzeitraum: <i>Testing period:</i>	2020-09-10 – 2020-09-29			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	genehmigt von: <i>authorized by:</i>			
Datum: <i>Date:</i> 2021-01-21	 Signed by: Alex Lan		 Signed by: Winnie Hou	
Stellung / Position	Senior Project Engineer	Ausstellungsdatum: <i>Issue date:</i> 2021-01-21	Department Manager	
Sonstiges / Other:				
FCC ID: Z9G-EDF85 IC: 10004A-EDF85 HVIN: MS30A				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged:</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 99%dB BANDWIDTH

RESULT: Pass

5.1.5 6dB BANDWIDTH

RESULT: Pass

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.8 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of Conducted Testing

Appendix C: Test Results of Radiated Testing and conducted emission on AC mains

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

FCC Registration No.: 694916

IC Registration No.: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radiated Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR7	102022	2020-08-19
Bilog Antenna	TESEQ	CBL6112D	51321	2020-08-29
Conducted Emissions				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102428	2020-08-19
Artificial Mains Network	R&S	ENV216	102333	2020-08-19
Radio Spectrum Testing				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Wireless Connectivity Tester	Rohde & Schwarz	CMW270	101375	2021-08-30
Signal Analyzer	Rohde & Schwarz	FSV 40	101441	2021-08-30
Vector Signal Generator	Rohde & Schwarz	SMBV100A	263301	2021-08-30
Signal Generator	Rohde & Schwarz	SMB100A	115186	2021-08-30
OSP	Rohde & Schwarz	OSP 150	101017	2020-12-20
Control PC	DELL	OptiPlex 7050	FTJZ9P2	N/A
Test Software	Rohde & Schwarz	WMS32 (V10.40.10)	N/A	N/A
Power Meter	Rohde & Schwarz	NRP2	107105	2020-12-20
Wideband Power Sensor	Rohde & Schwarz	NRP-Z81	105350	2020-12-20
Unwanted Emission Testing				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Signal Generator	Rohde & Schwarz	SMB100A	180840	2021-08-30
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	165339	2021-08-30
Signal Analyzer	Rohde & Schwarz	FSV 40	101440	2021-08-30
System Controller Interface	Rohde & Schwarz	SCI-100	S10010036	N/A
Filterbank	Rohde & Schwarz	CDMA	100751	2021-08-30
Filterbank	Rohde & Schwarz	GSM	100811	2021-08-30
OSP	Rohde & Schwarz	OSP 120	102041	N/A
OSP	Rohde & Schwarz	OSP 150	101385	N/A
Pre-amplifier	Rohde & Schwarz	SCU08F1	08320030	2021-08-30
Amplifier	Rohde & Schwarz	SCU-18F	180079	2021-08-30
Amplifier	Rohde & Schwarz	SCU40A	100450	2021-09-03
Trilog Broadband Antenna (30 MHz - 1 GHz)	Schwarzbeck	VULB9162	192	2021-09-02
Double-Ridged	ETS-LINDGREN	3117	00218719	2021-09-02

Antenna (1 -18 GHz)				
Wideband Ridged Horn Antenna (12-18 GHz)	Steatite	QMS-00208	18312	2021-09-02
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19066	2021-09-02
Biconical Broadband Antenna (30 MHz - 1 GHz)	Schwarzbeck	VUBA 9117	357	2021-09-02
Double Ridged Broadband Horn Antenna (1 – 18 GHz)	Schwarzbeck	BBHA 9120 D	01760	2021-09-02
Broadband Horn Antenna (15 – 40 GHz)	Schwarzbeck	BBHA 9170	00862	2021-09-02
Test software	Rohde & Schwarz	EMC32 (V10.40.00)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NW9P2	N/A
Conducted Emissions				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102428	2021-08-19
Artificial Mains Network	R&S	ENV216	102333	2021-08-19

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Item		Extended Uncertainty
Conducted Emission		± 2.74 dB
Radiated Emission (30-1000MHz)	Field strength (dB μ V/m)	4.27dB
Radiated Emission (above 1000MHz)	Field strength (dB μ V/m)	4.46dB
Radio Spectrum		± 1.5 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B & C of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at East of F/1, F/2 - F/4, Building 1, Cybio Technology Building, No. 6 Langshan No. 2 Road, North Hi-tech Industry Park, Nanshan District, Shenzhen, P.R. China, P. R. China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Smart Home Speaker which supports Bluetooth 5.0 (BDR&EDR) and 2.4GHz Wi-Fi technologies.

According to declaration of applicant, the Bluetooth and Wi-Fi can't transmitting simultaneously.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	Smart Home Speaker
Type Designation	MS30A
Trade Mark	EDIFIER
FCC ID	Z9G-EDF85
IC	10004A-EDF85
HVIN	MS30A
Operating Voltage	DC 5V, 2A via MicroUSB interface for charging DC 3.7V, 2500mAh
Testing Voltage	DC 3.7V

Technical Specification of Wi-Fi 802.11 b/g/n	
Operating Frequency	2412 - 2462 MHz for 802.11b/g/n(HT20) 2422 - 2452 MHz for 802.11n(HT40)
Type of Modulation	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 for 802.11n
Channel Number	11 channels for 802.11b/g/n(HT20) 7 channels for 802.11n(HT40)
Channel Separation	5 MHz
Antenna Type	Integral Antenna
Max. Antenna Gain	3.22 dBi
Technical Specification of Bluetooth	
Technical Specification	Value
Operating Frequency	2402 - 2480 MHz
Type of Modulation	GFSK, $\pi/4$ DQPSK, 8DPSK
Channel Number	BDR & EDR mode:79 channels
Channel Separation	BDR & EDR mode:1MHz
Wireless Technology	Bluetooth 5.0
Antenna Type	Integral Antenna
Max. Antenna Gain	2.59 dBi

Table 3: RF Channel and Frequency of Wi-Fi 802.11 b/g/n

RF Channel	802.11 b/g/n(HT20)	802.11 n(HT40)
	Frequency (MHz)	Frequency (MHz)
01	2412	/
02	2417	/
03	2422	2422
04	2427	2427
05	2432	2432
06	2437	2437
07	2442	2442
08	2447	2447
09	2452	2452
10	2457	/
11	2462	/

Table 4: RF Channel and Frequency of Bluetooth Low Energy

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	2402.00	20	2422.00	40	2442.00	60	2462.00
01	2403.00	21	2423.00	41	2443.00	61	2463.00
02	2404.00	22	2424.00	42	2444.00	62	2464.00
03	2405.00	23	2425.00	43	2445.00	63	2465.00
04	2406.00	24	2426.00	44	2446.00	64	2466.00
05	2407.00	25	2427.00	45	2447.00	65	2467.00
06	2408.00	26	2428.00	46	2448.00	66	2468.00
07	2409.00	27	2429.00	47	2449.00	67	2469.00
08	2410.00	28	2430.00	48	2450.00	68	2470.00
09	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	2480.00
19	2421.00	39	2441.00	59	2461.00	--	--

3.3 Independent Operation Modes

The basic operation modes are:

- A. On
 - 1. Wi-Fi transmitting mode
 - 1) Low Channel
 - 2) Middle Channel
 - 3) High Channel
- B. On, Wi-Fi connecting mode
- C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- | | |
|----------------------------------|------------------|
| - Application Form | - Photo Document |
| - Block Diagram | - Schematics |
| - FCC/IC Label and Location Info | - User Manual |
| - Operation Description | |

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.

4.3 Special Accessories and Auxiliary Equipment

Table 5: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N
Mobile Phone	HTC	D626w	N/A
Notebook	Lenovo	ThinkPad X260	N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

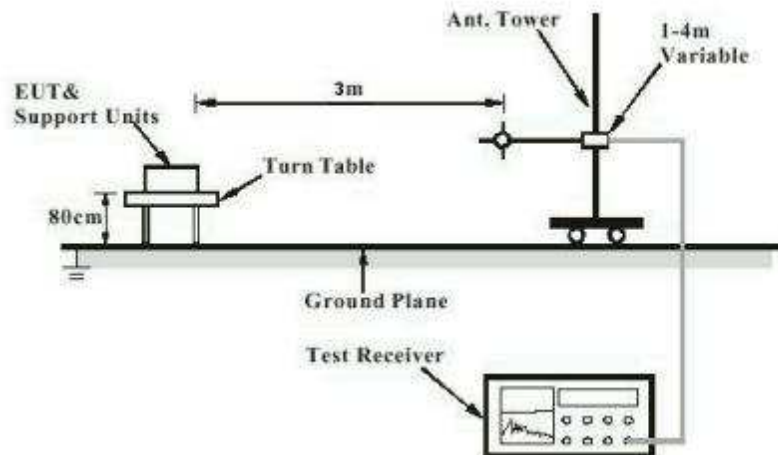


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

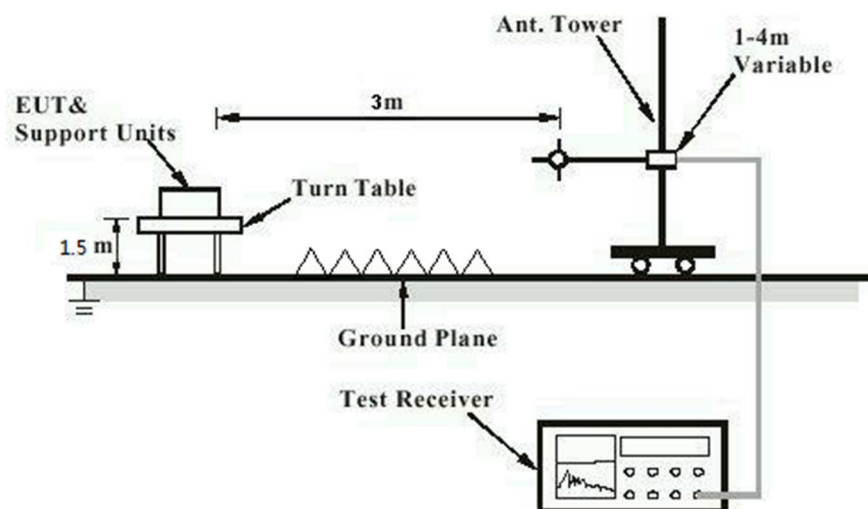


Diagram of Measurement Configuration for Mains Conduction Measurement

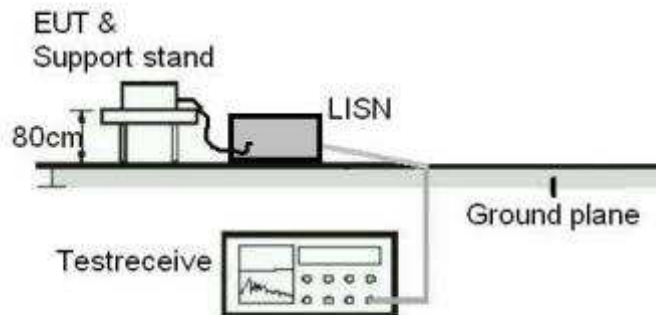
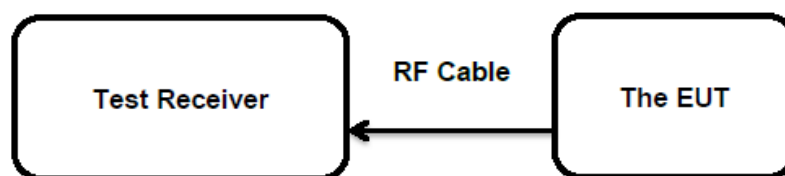


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard	:	FCC Part 15.247(b)(4) and Part 15.203
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 3.22 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT:
Pass
Test Specification

Test standard	: FCC Part 15.247(b)(3)
	: RSS-247 Clause 5.4(2)&(4)
Basic standard	: ANSI C63.10: 2013
Limits	: < 1 Watt (Maximum Conducted Peak Power)
	: e.i.r.p. <4W
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 21.09.2020
Input voltage	: DC 3.7V
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

For details refer to following test result.

Table 6: Test Result of Maximum Peak Conducted Output Power, Wi-Fi 802.11 b/g/n

Mode	802.11b			802.11g		
Data Rate	1Mbps			6Mbps		
Channel	1	6	11	1	6	11
Frequency (MHz)	2412	2437	2462	2412	2437	2462
Peak. Power (dBm)	20.9	20.9	20.2	18.1	17.8	17.2
Mode	802.11n HT20			802.11n HT40		
Data Rate	MCS0 6.5Mbps			MCS0 13.5Mbps		
Channel	1	6	11	3	6	9
Frequency(MHz)	2412	2437	2462	2422	2437	2452
Peak. Power (dBm)	17.6	17.4	17.2	17.2	16.9	16.2

Note: The cable loss is taken into account in results and the e.i.r.p. is 24.12 dBm less than 4W (36 dBm).

5.1.3 Conducted Power Spectral Density

RESULT:
Pass
Test Specification

Test standard : FCC Part 15.247(e)
 : RSS-247 Clause 5.2(2)
 Basic standard : ANSI C63.10: 2013
 Limits : 8 dBm / 3kHz
 Kind of test site : Shielded Room

Test Setup

Date of testing : 10.09.2020
 Input voltage : DC 3.7V
 Operation mode : A
 Test channel : Low / Middle / High
 Ambient temperature : 25 °C
 Relative humidity : 56 %
 Atmospheric pressure : 101 kPa

For details refer to following test result.

Table 7: Test Result of Power Spectral Density

Test Mode	Data Rate	Frequency (MHz)	Measured Peak Power Spectral Density (dBm/3KHz)
802.11b	1 Mbps	2412	7.16
		2437	7.40
		2462	7.82
802.11g	6 Mbps	2412	-15.03
		2437	-15.59
		2462	-15.21
802.11n (HT20)	MCS0	2412	-14.72
		2437	-15.30
		2462	-14.44
802.11n (HT40)	MCS0	2422	-14.89
		2437	-15.73
		2452	-15.62
Maximum Measured Value			7.82

Note: The cable loss is taken into account in results.

For the measurement records, refer to the appendix B.

5.1.4 99%dB Bandwidth

RESULT:
Pass
Test Specification

Test standard : RSS-Gen clause 6.7
 Basic standard : ANSI C63.10: 2013
 Kind of test site : Shielded Room

Test Setup

Date of testing : 10.09.2020
 Input voltage : DC 3.7V
 Operation mode : A
 Test channel : Low / Middle / High
 Ambient temperature : 25 °C
 Relative humidity : 56 %
 Atmospheric pressure : 101 kPa

Table 8: Test Result of 99% Bandwidth

Test Mode	Data Rate	Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)
802.11b	1 Mbps	2412	15.00	/
		2437	15.00	
		2462	14.90	
802.11g	6 Mbps	2412	16.40	
		2437	16.40	
		2462	16.50	
802.11n (HT20)	MCS0	2412	17.50	
		2437	17.50	
		2462	17.50	
802.11n (HT40)	MCS0	2422	36.25	
		2437	36.25	
		2452	36.25	
Minimum Measured Value			14.90	

For the measurement records, refer to the appendix B.

5.1.5 6dB Bandwidth

RESULT:
Pass
Test Specification

Test standard	:	FCC Part 15.247(a)(2)
	:	RSS-247 Clause 5.2(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	> 500 KHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	10.09.2020
Input voltage	:	DC 3.7V
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

Table 9: Test Result of 6dB Bandwidth

Test Mode	Data Rate	Frequency (MHz)	-6dB Bandwidth (MHz)	Limit (kHz)
802.11b	1 Mbps	2412	10.15	> 500
		2437	10.15	
		2462	10.15	
802.11g	6 Mbps	2412	15.20	
		2437	15.20	
		2462	15.20	
802.11n (HT20)	MCS0	2412	16.10	
		2437	15.75	
		2462	16.10	
802.11n (HT40)	MCS0	2422	35.15	
		2437	35.15	
		2452	35.20	
Minimum Measured Value			10.15	

For the measurement records, refer to the appendix B.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 10.09.2020
Input voltage	: DC 3.7V
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix B.

5.1.7 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3 & 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 4 & Table 5
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 15.09.2020 - 21.09.2020
Input voltage	: DC 3.7V
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 22°C
Relative humidity	: 50 %
Atmospheric pressure	: 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix C.

5.1.8 Conducted Emission on AC Mains

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	: ANSI C63.10: 2013
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a) RSS-Gen Table 4
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 29.09.2020
Input voltage	: AC 120V, 60Hz
Operation mode	: B
Earthing	: Not connected
Ambient temperature	: 24 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix C.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

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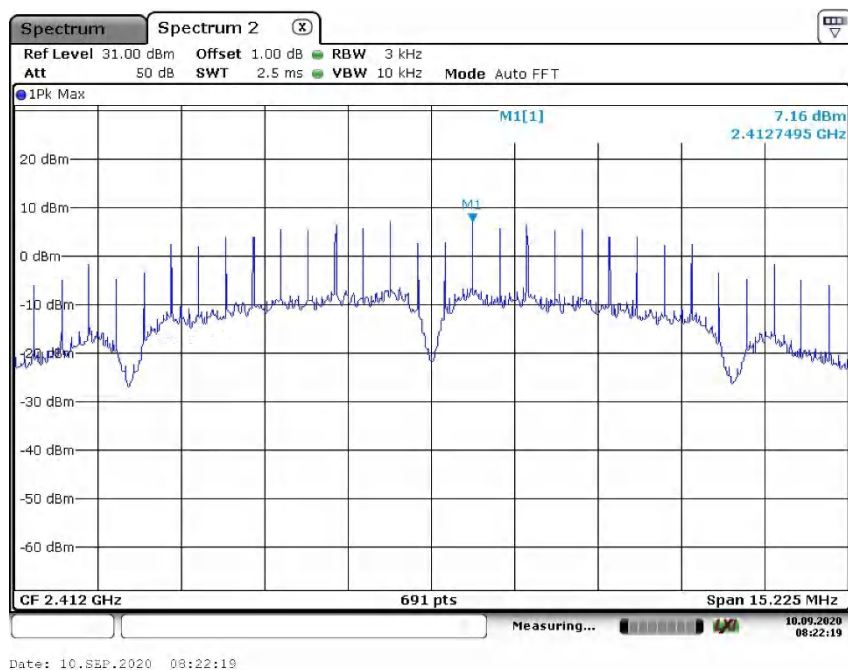
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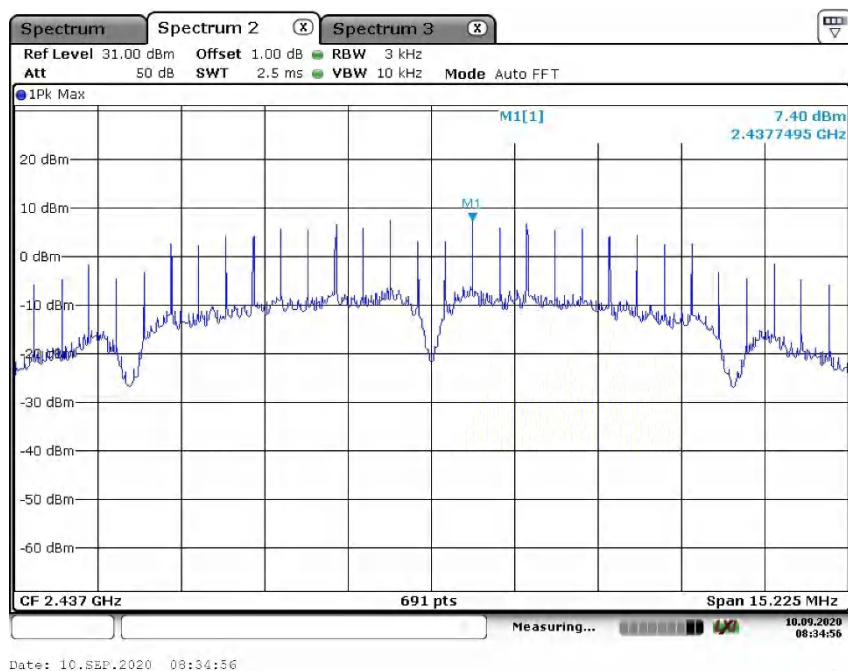
Appendix B.1: Conducted Power Spectral Density

Wi-Fi 802.11 b mode, 1 Mbps

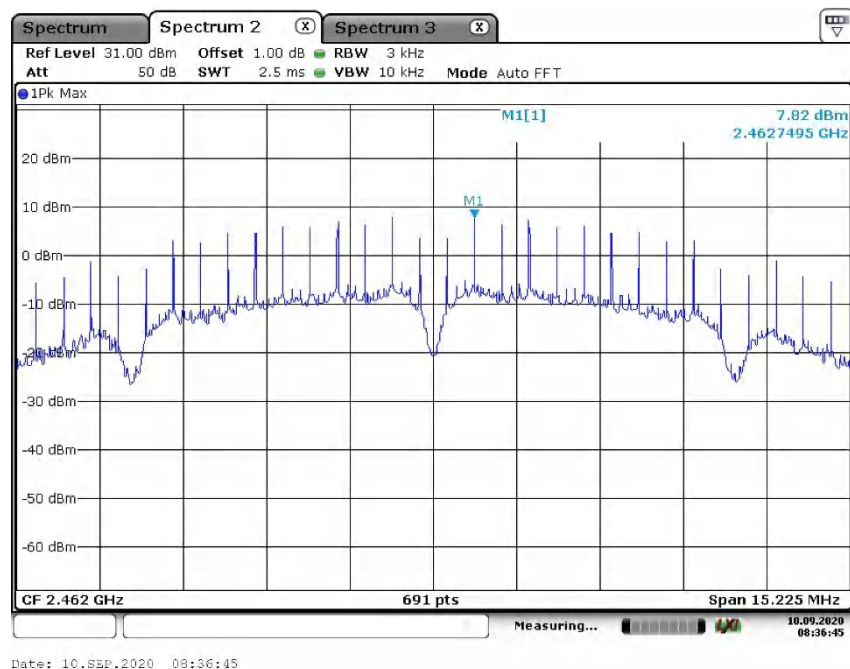
Low Channel



Middle Channel

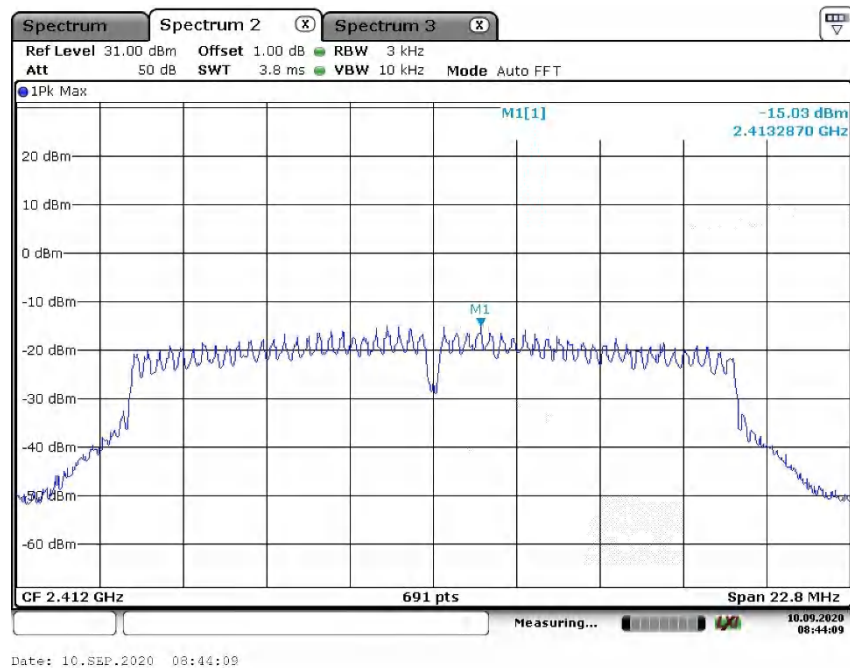


High Channel

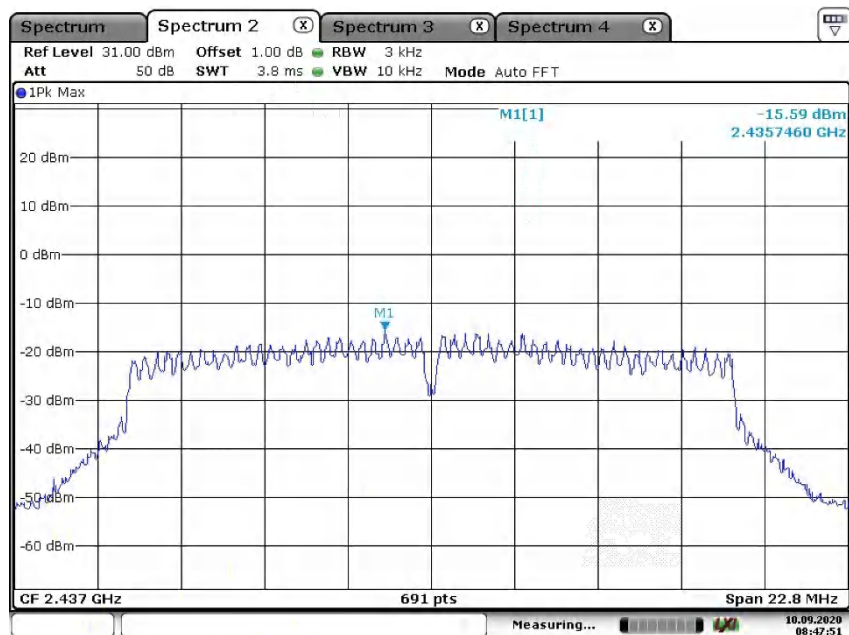


Wi-Fi 802.11 g mode, 6 Mbps

Low Channel

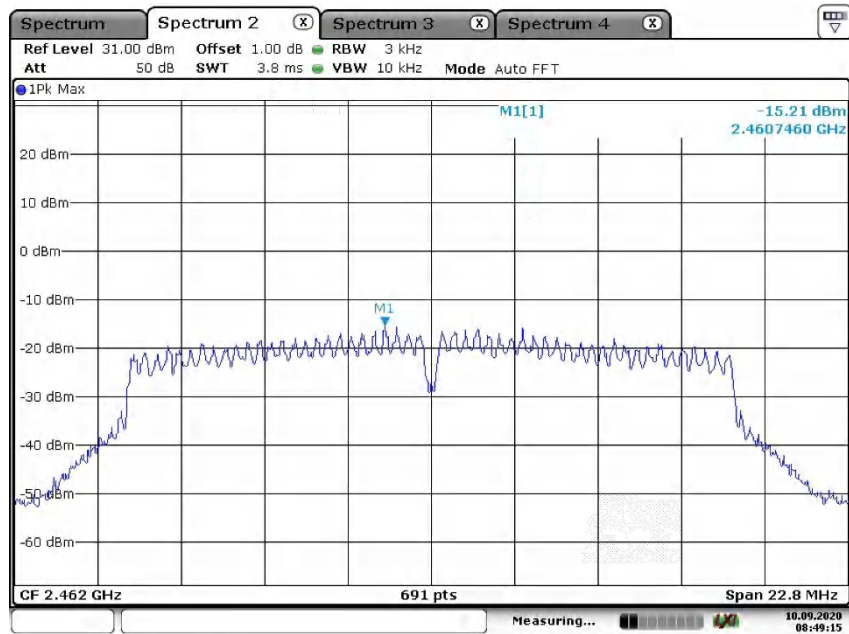


Middle Channel



Date: 10.SEP.2020 08:47:52

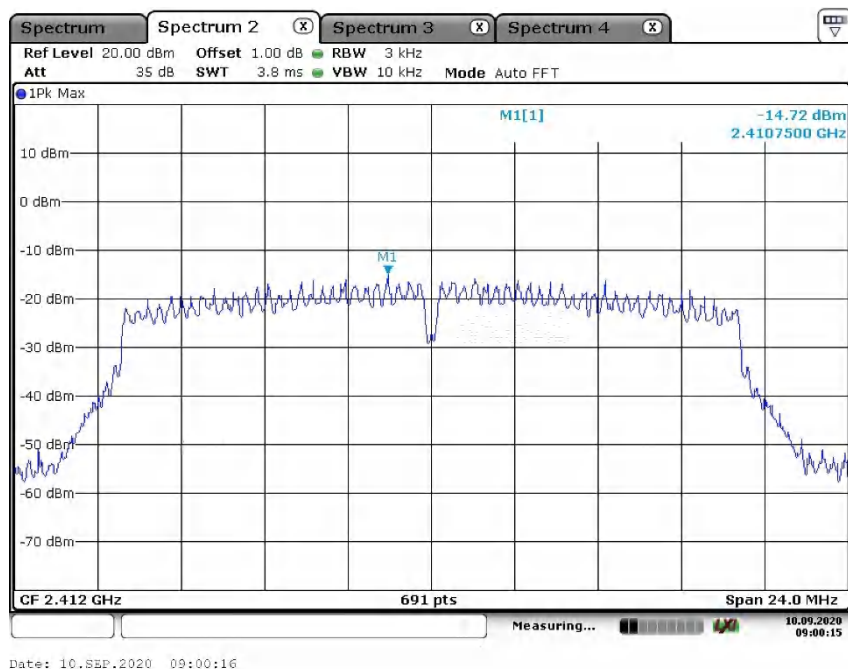
High Channel



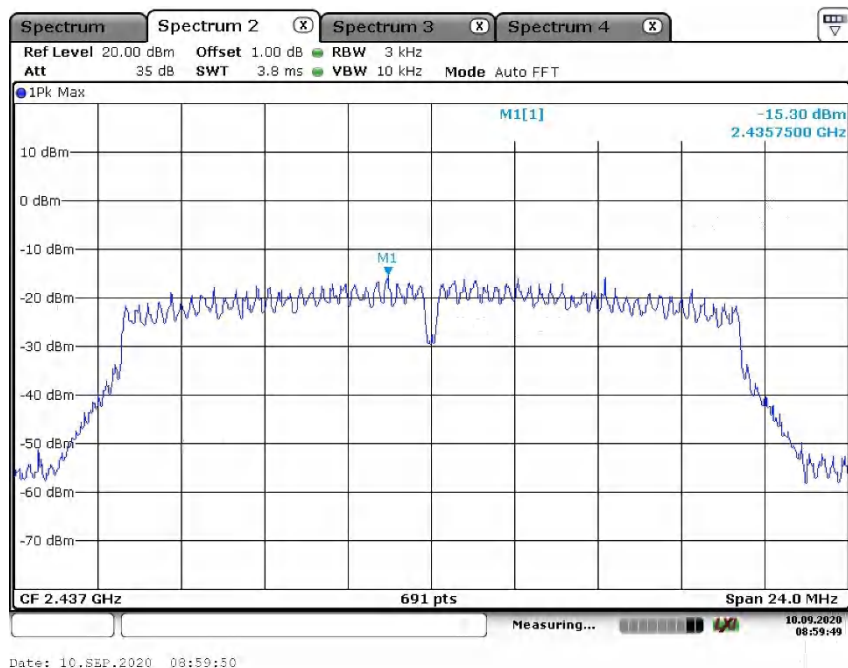
Date: 10.SEP.2020 08:49:15

Wi-Fi 802.11 n(HT20) mode, MCS0

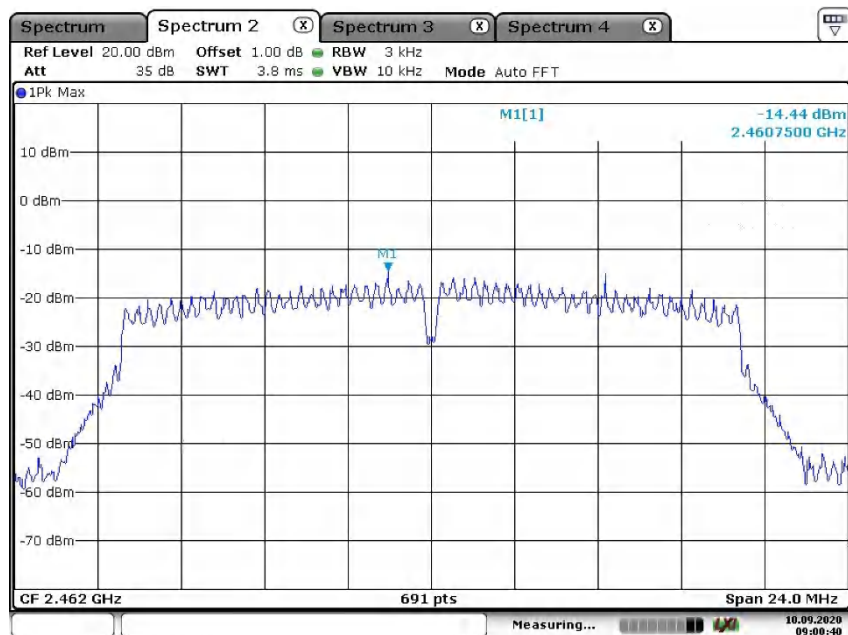
Low Channel



Middle Channel



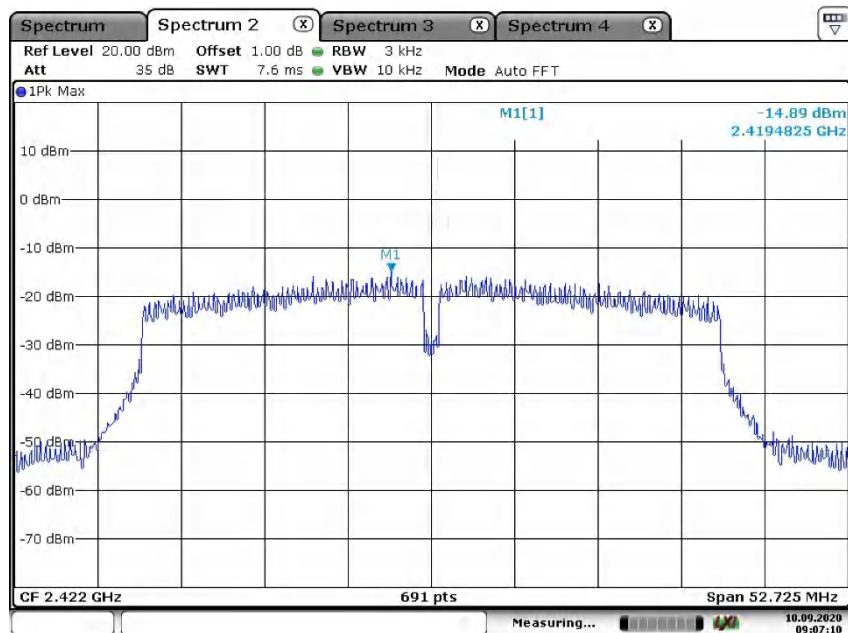
High Channel



Date: 10.SEP.2020 09:00:41

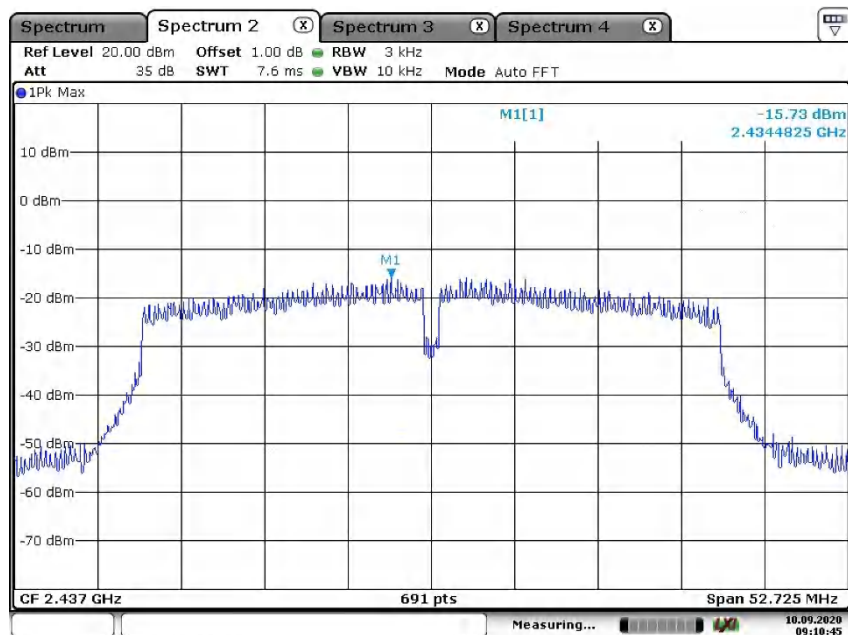
Wi-Fi 802.11 n(HT40) mode, MCS0

Low Channel



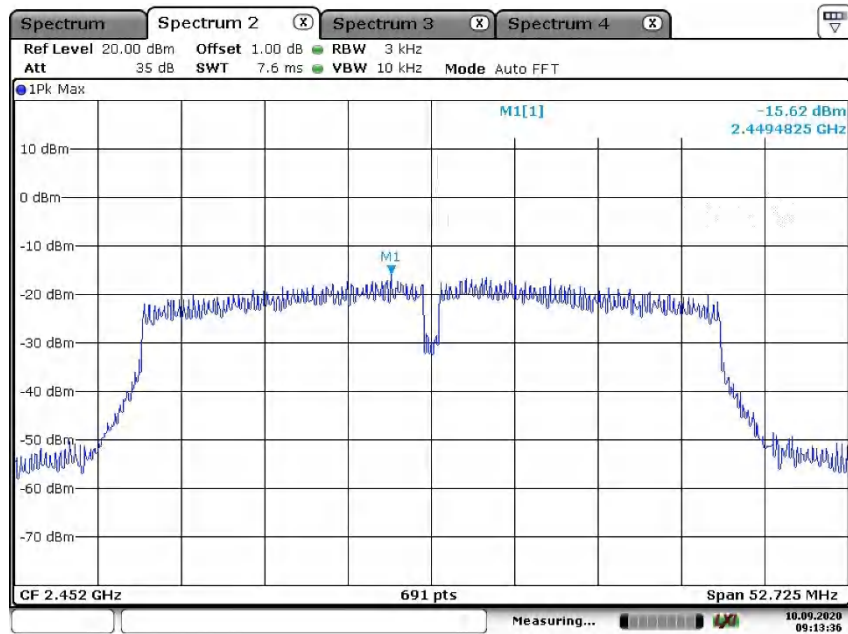
Date: 10.SEP.2020 09:07:11

Middle Channel



Date: 10.SEP.2020 09:10:45

High Channel



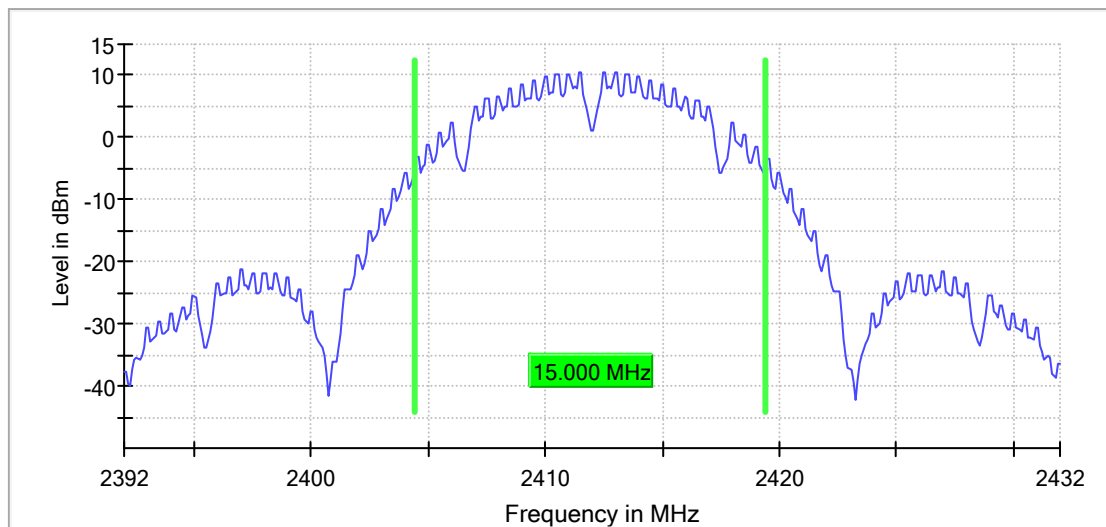
Date: 10.SEP.2020 09:13:37

Appendix B.2: 99% Bandwidth

Wi-Fi 802.11 b mode, 1 Mbps

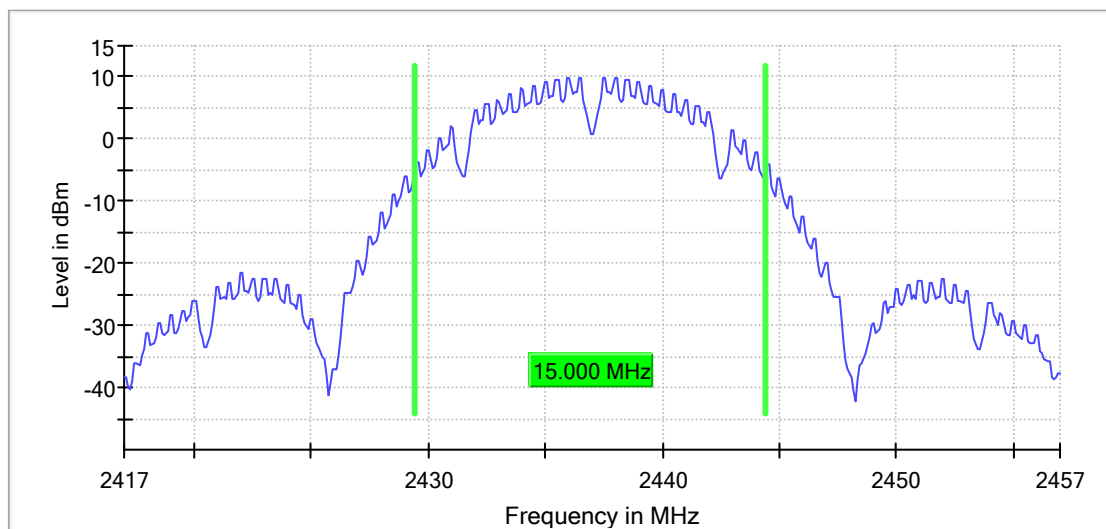
Low Channel
RBW=300KHz, VBW=1MHz

99 % Bandwidth

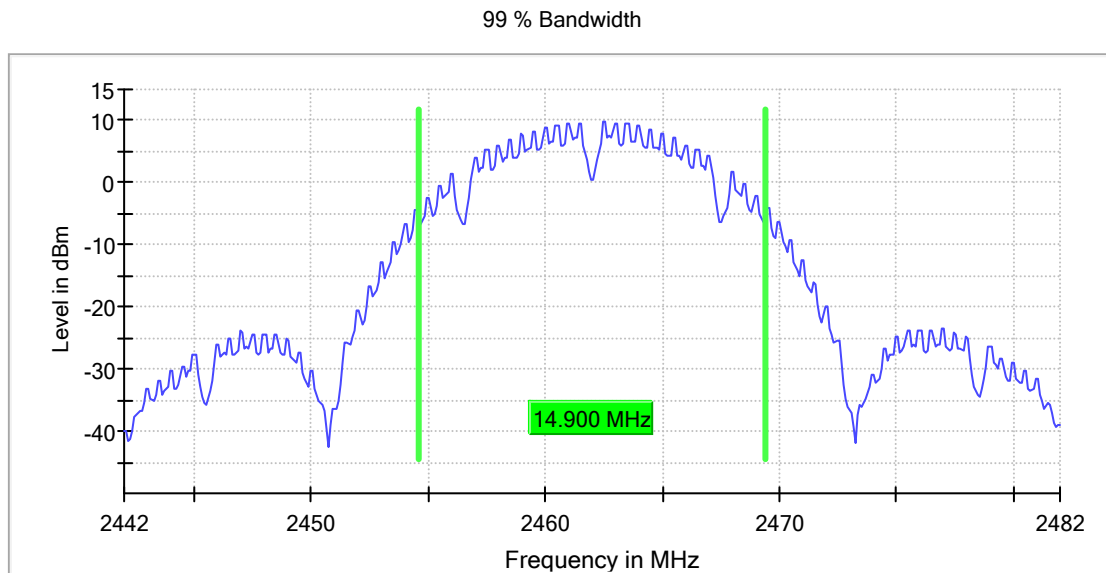


Middle Channel
RBW=300KHz, VBW=1MHz

99 % Bandwidth

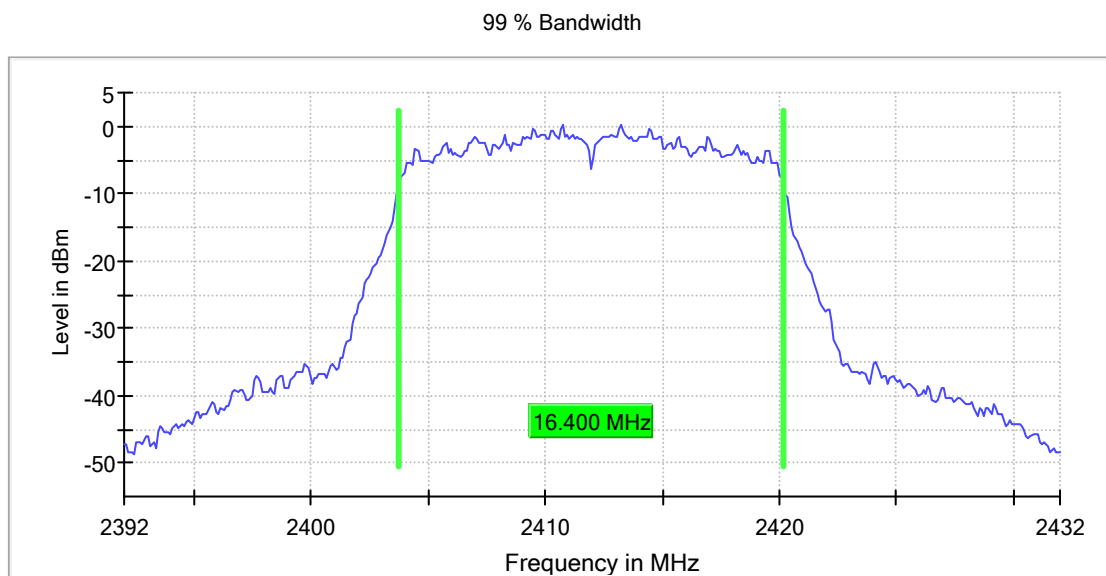


High Channel
RBW=300KHz, VBW=1MHz



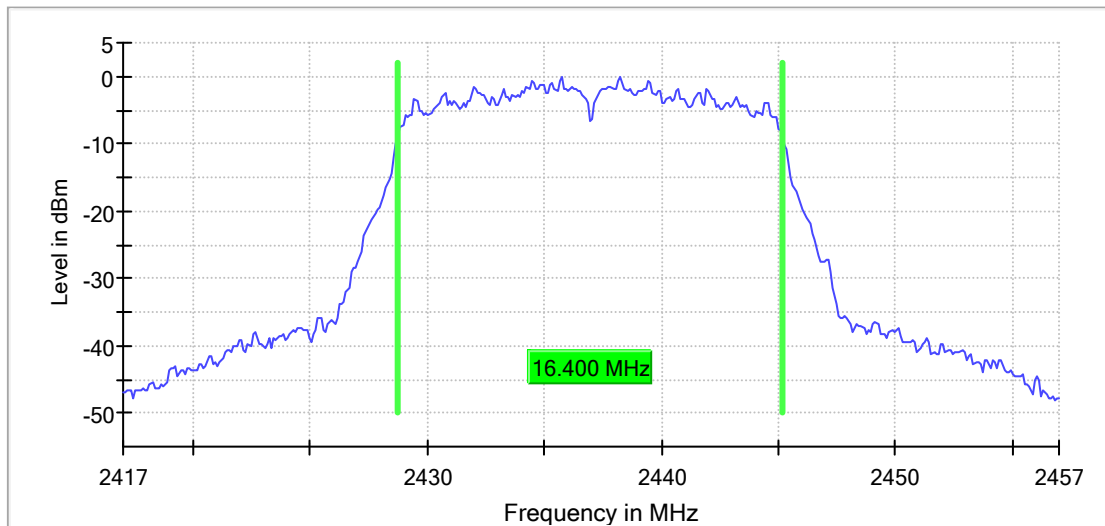
Wi-Fi 802.11 g mode, 6 Mbps

Low Channel
RBW=300KHz, VBW=1MHz



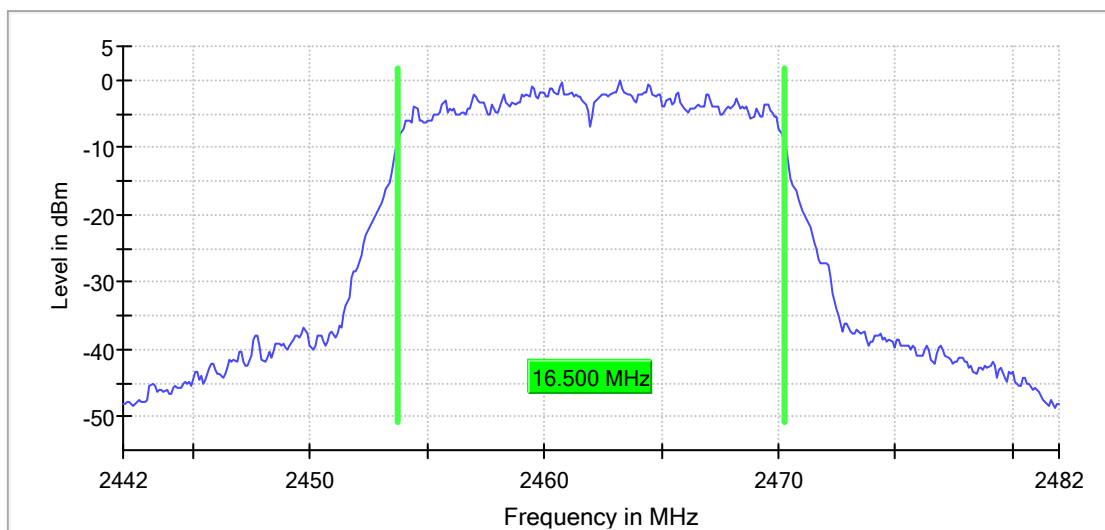
Middle Channel
RBW=300KHz, VBW=1MHz

99 % Bandwidth



High Channel
RBW=300KHz, VBW=1MHz

99 % Bandwidth

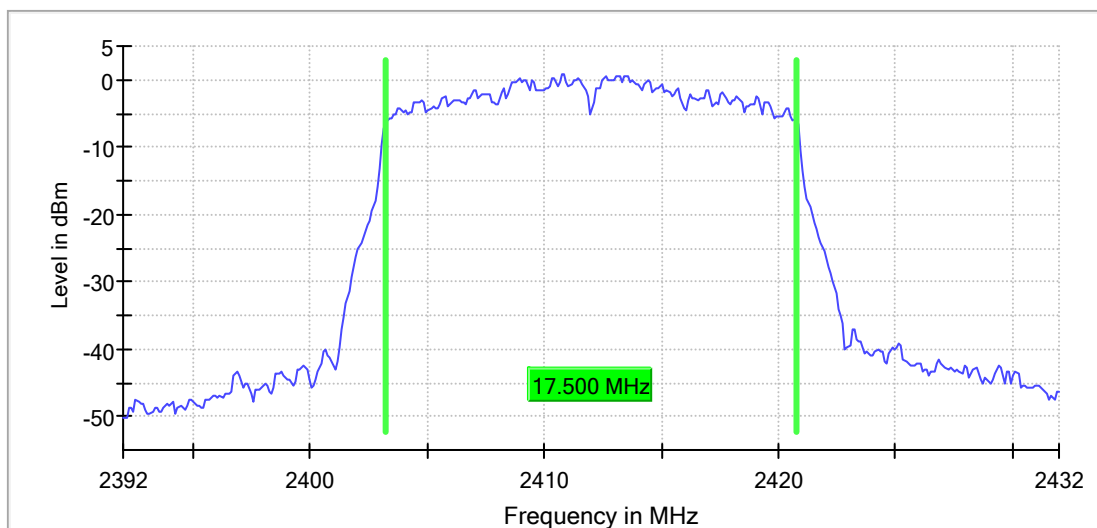


Wi-Fi 802.11 n(HT20) mode, MCS0

Low Channel

RBW=300KHz, VBW=1MHz

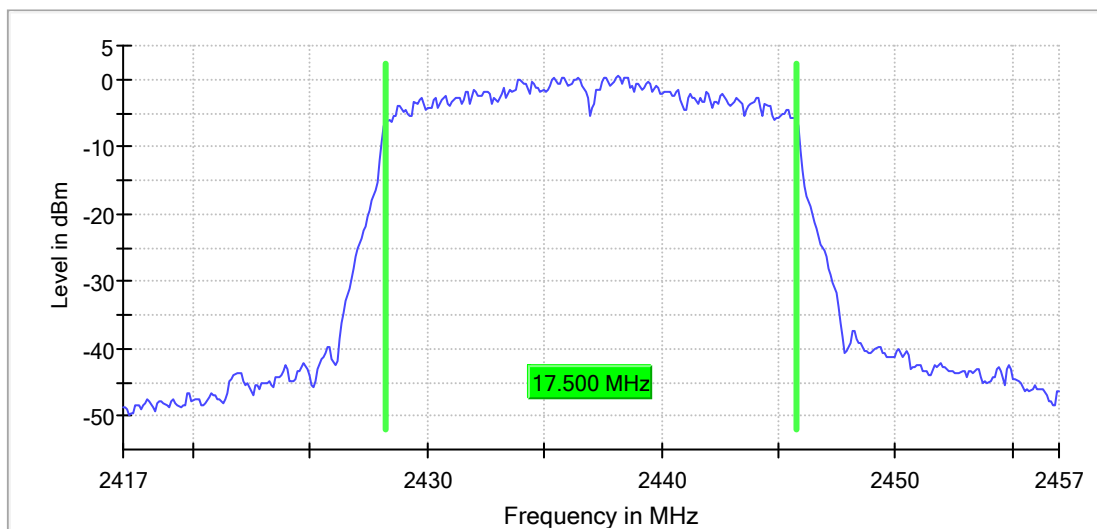
99 % Bandwidth



Middle Channel

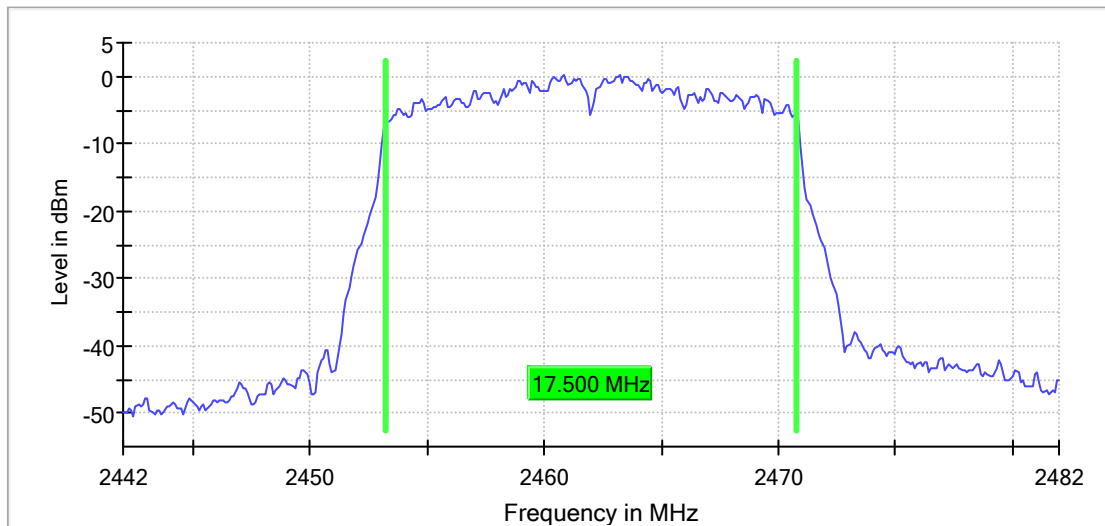
RBW=300KHz, VBW=1MHz

99 % Bandwidth



High Channel
RBW=300KHz, VBW=1MHz

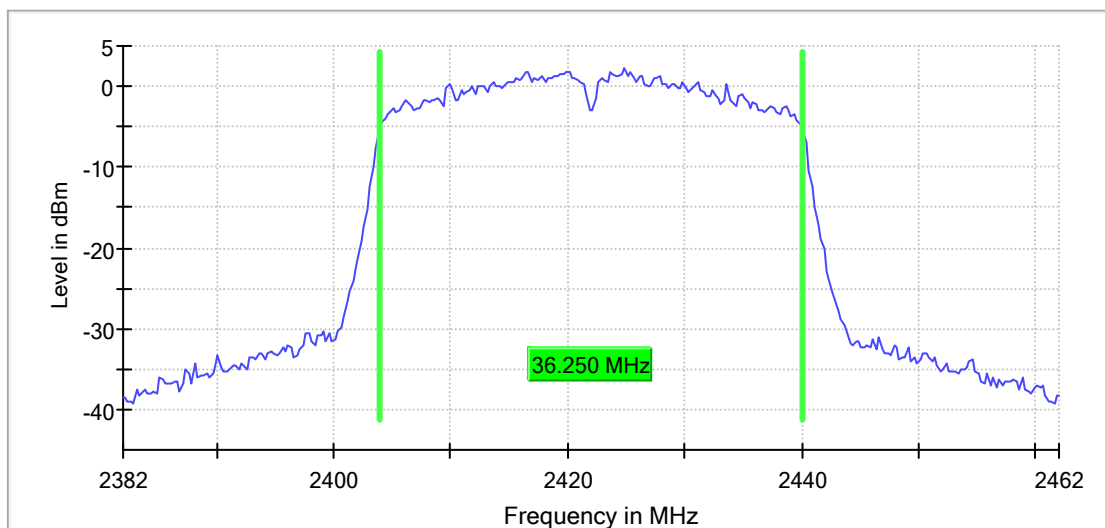
99 % Bandwidth



Wi-Fi 802.11 n(HT40) mode, MCS0

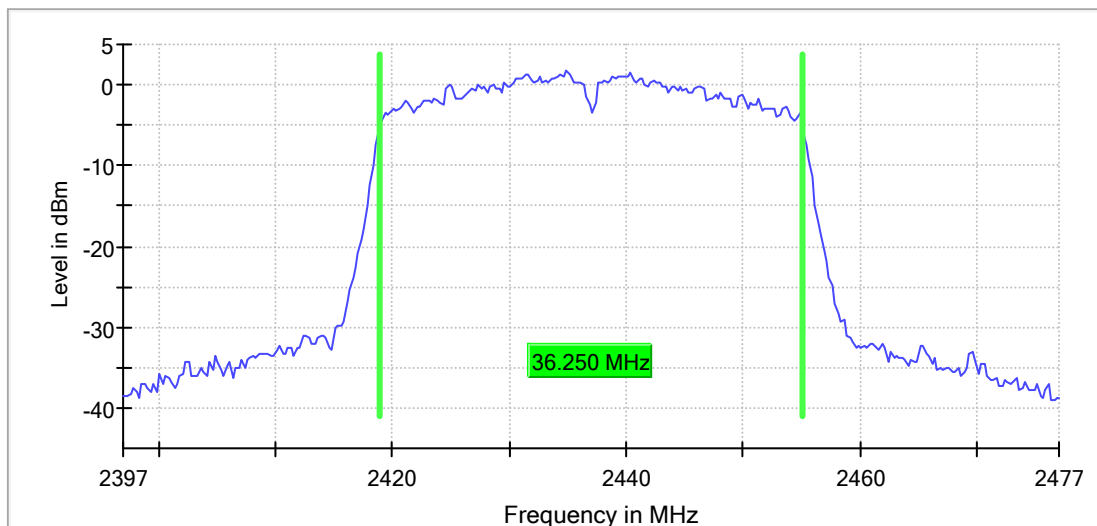
Low Channel
RBW=500KHz, VBW=2MHz

99 % Bandwidth



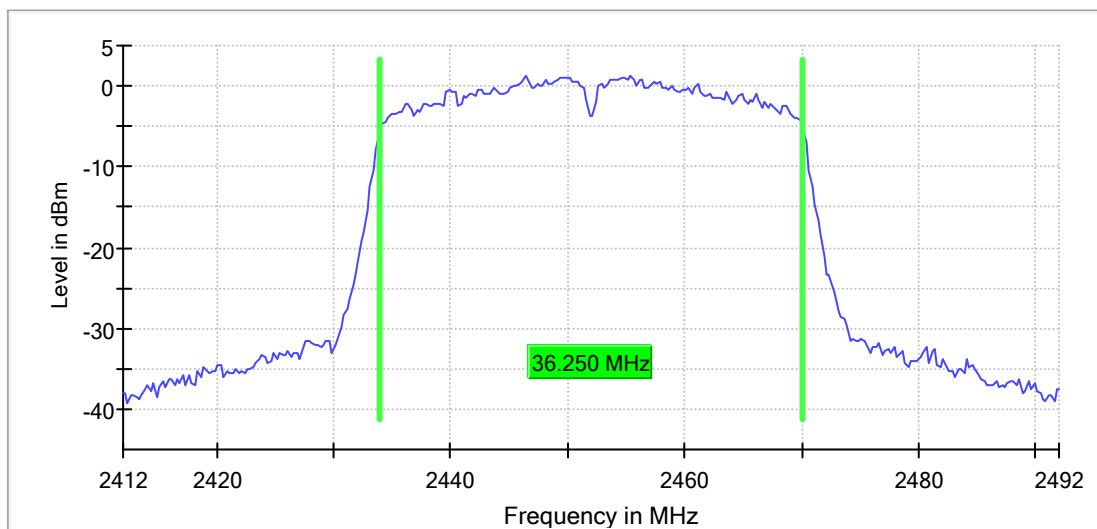
Middle Channel
RBW=500KHz, VBW=2MHz

99 % Bandwidth



High Channel
RBW=500KHz, VBW=2MHz

99 % Bandwidth

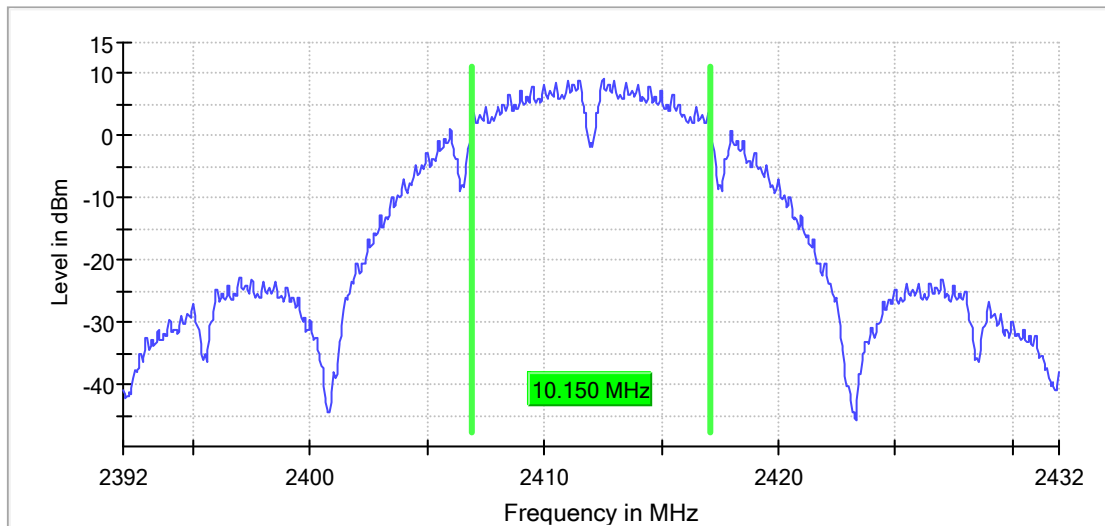


Appendix B.3: 6dB Bandwidth

Wi-Fi 802.11 b mode, 1 Mbps

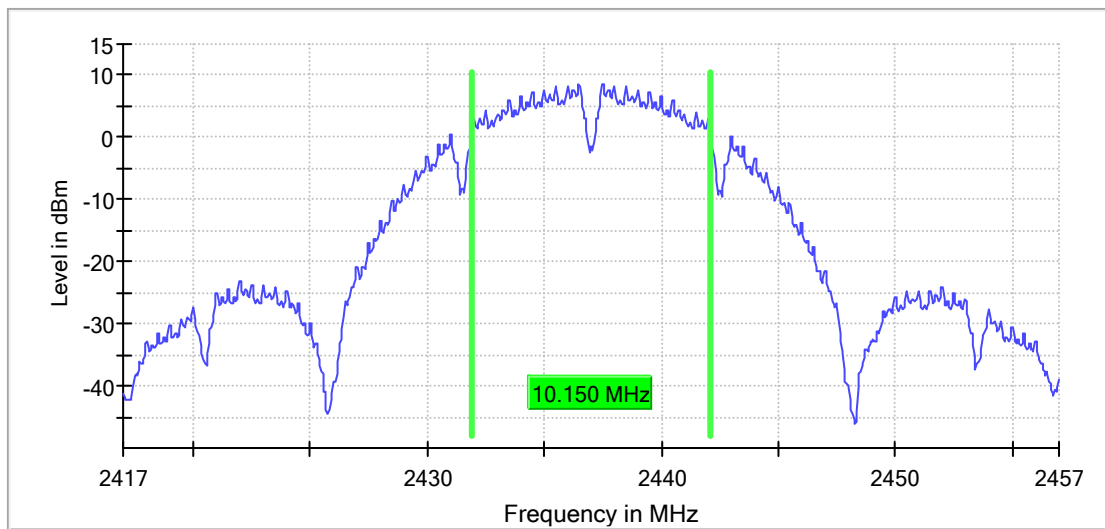
Low Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



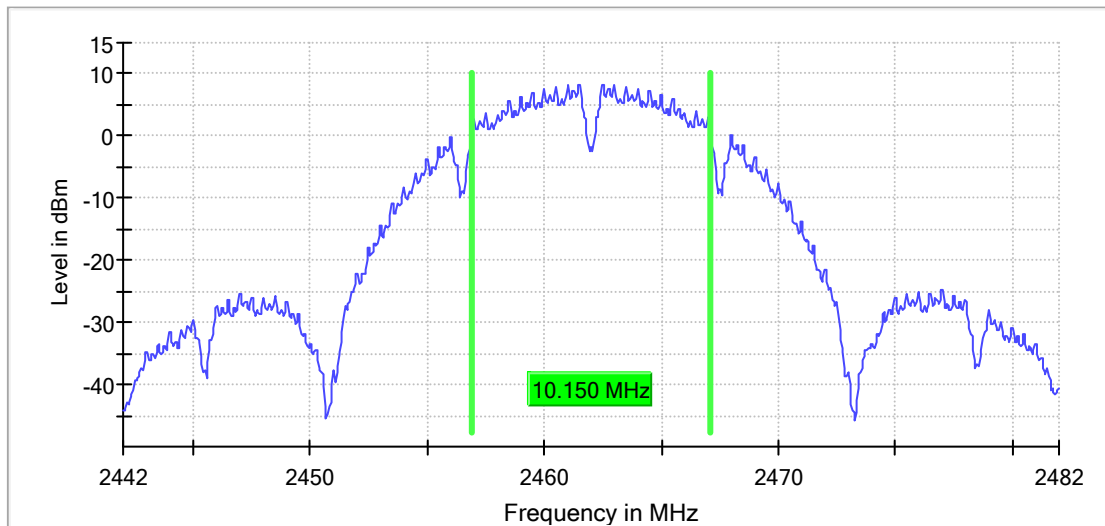
Middle Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



High Channel
RBW=100KHz, VBW=300KHz

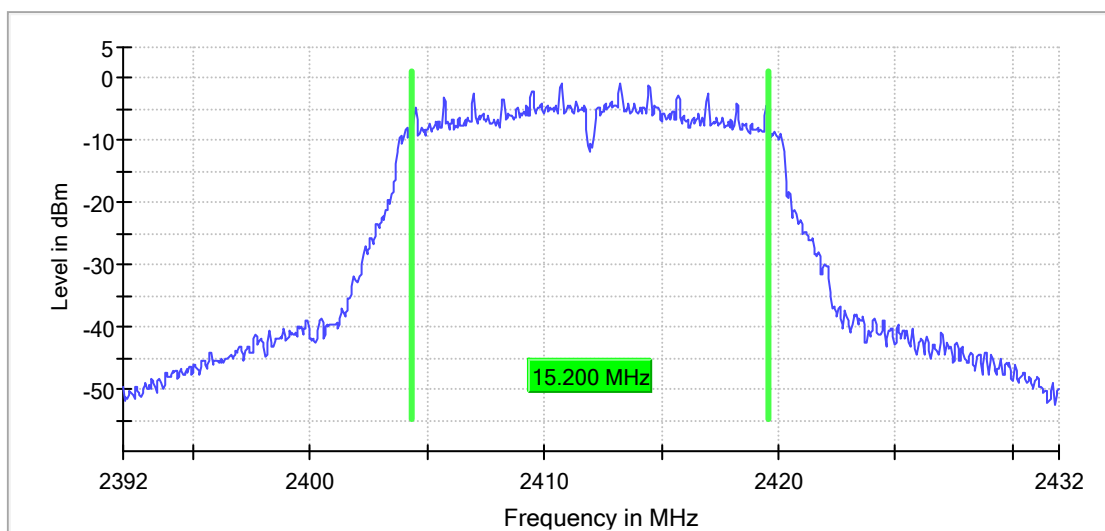
6 dB Bandwidth



Wi-Fi 802.11 g mode, 6 Mbps

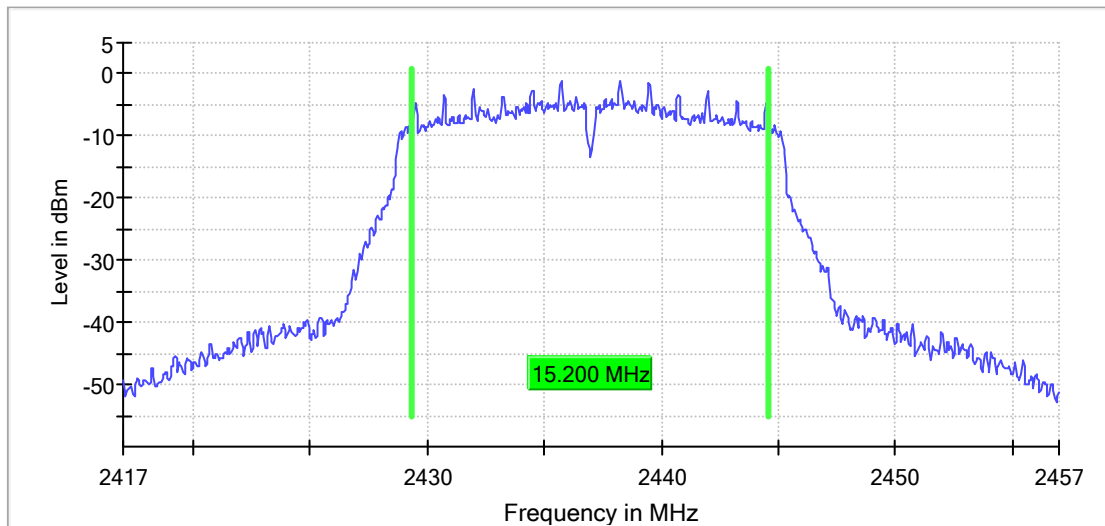
Low Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



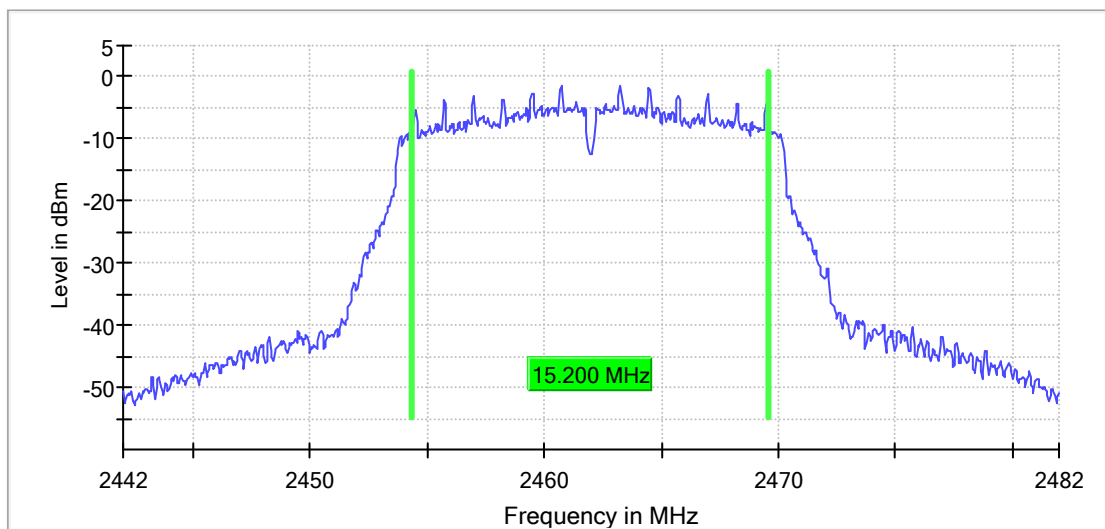
Middle Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



High Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth

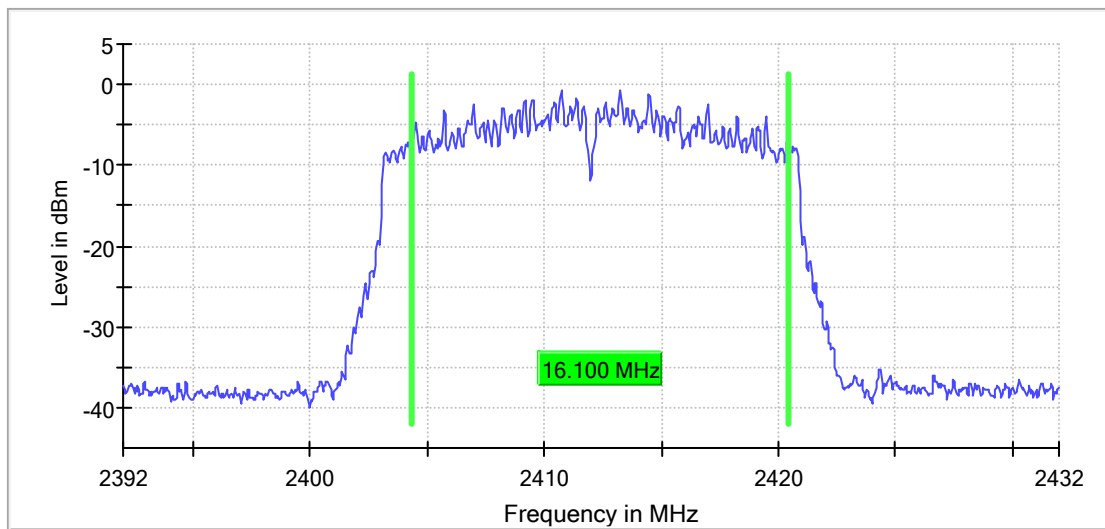


Wi-Fi 802.11 n(HT20) mode, MCS0

Low Channel

RBW=100KHz, VBW=300KHz

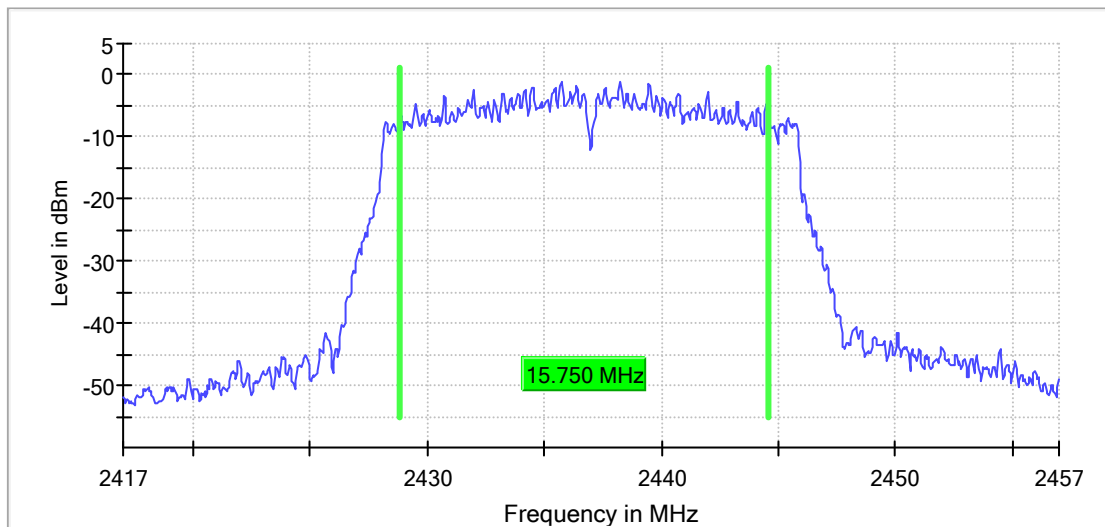
6 dB Bandwidth



Middle Channel

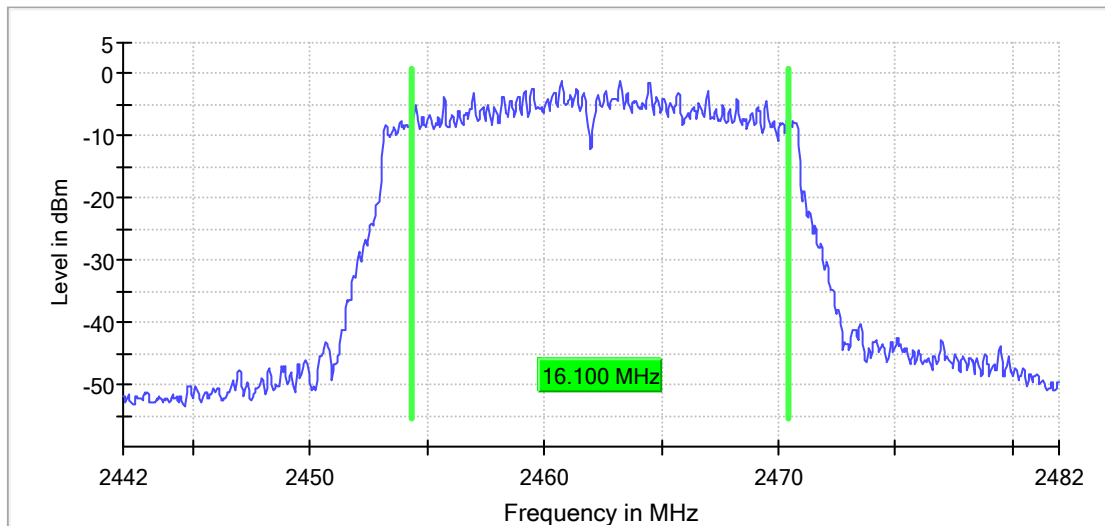
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



High Channel
RBW=100KHz, VBW=300KHz

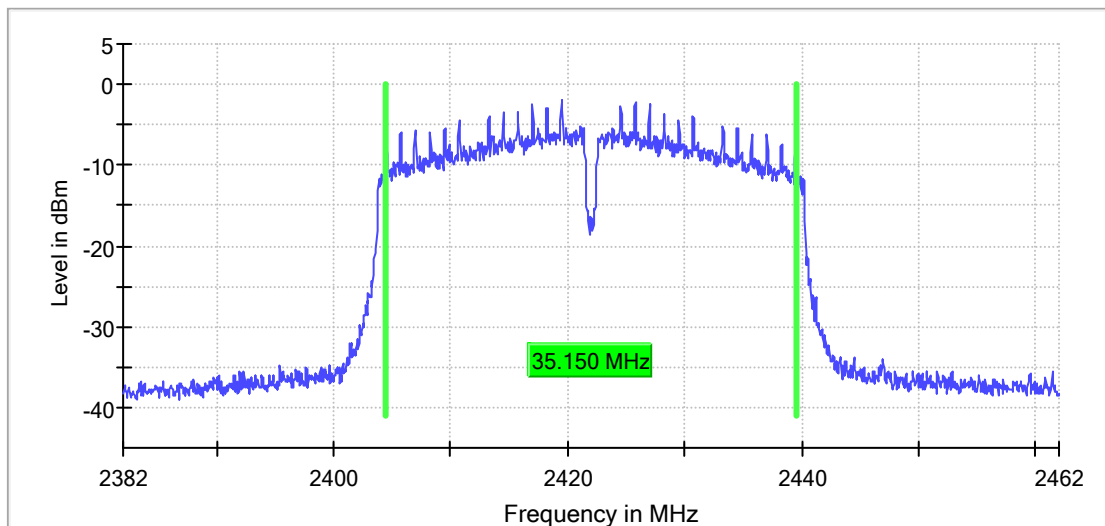
6 dB Bandwidth



Wi-Fi 802.11 n(HT40) mode, MCS0

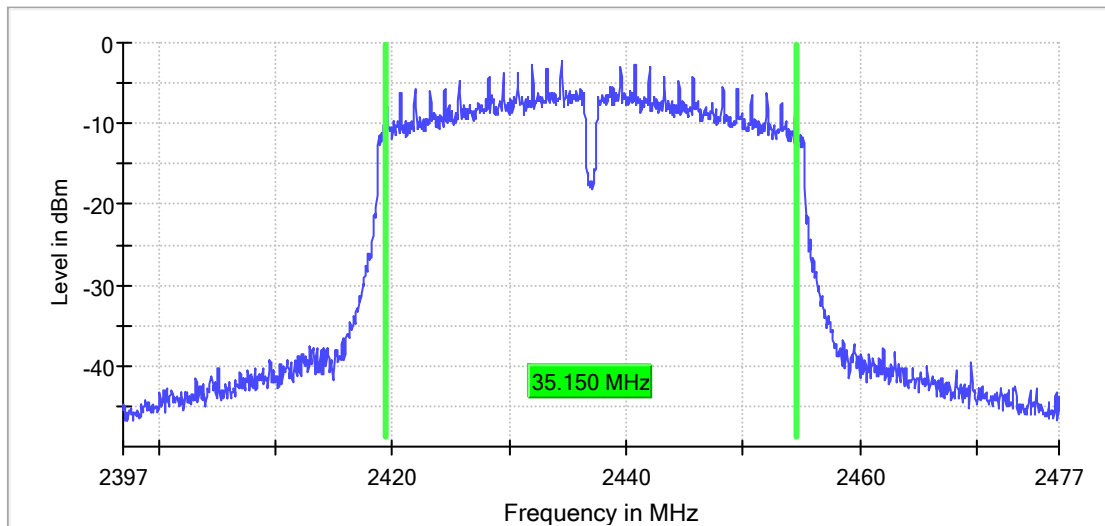
Low Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



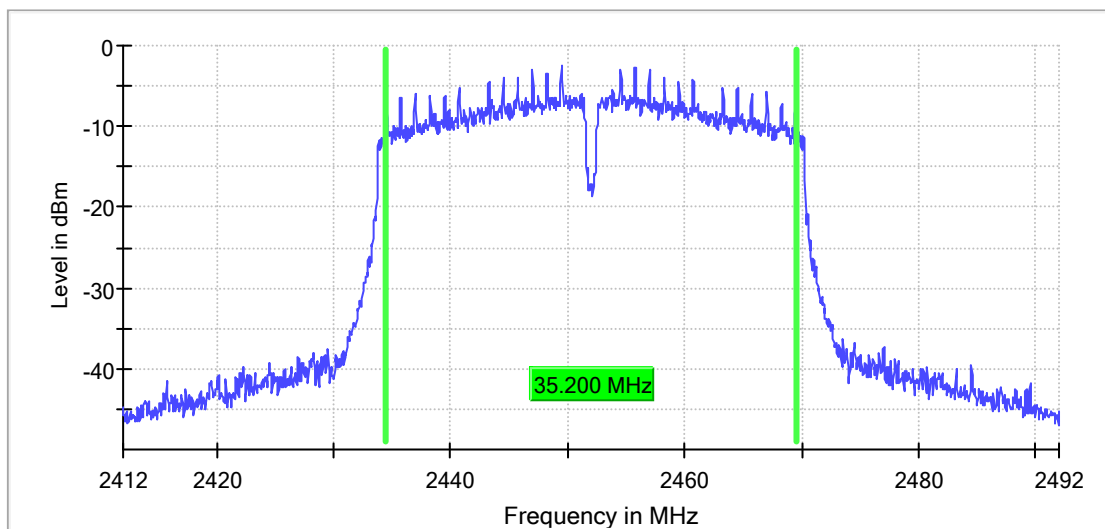
Middle Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth



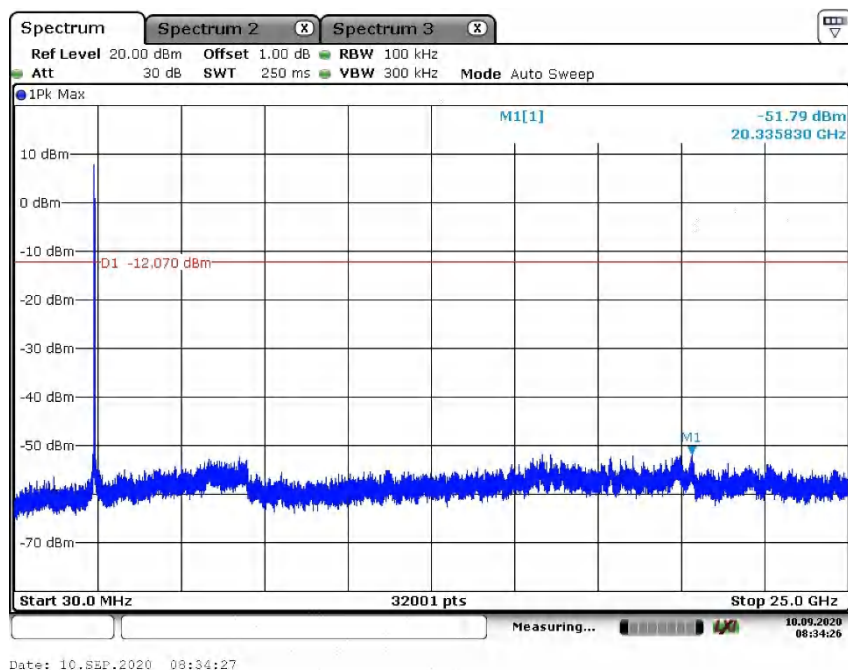
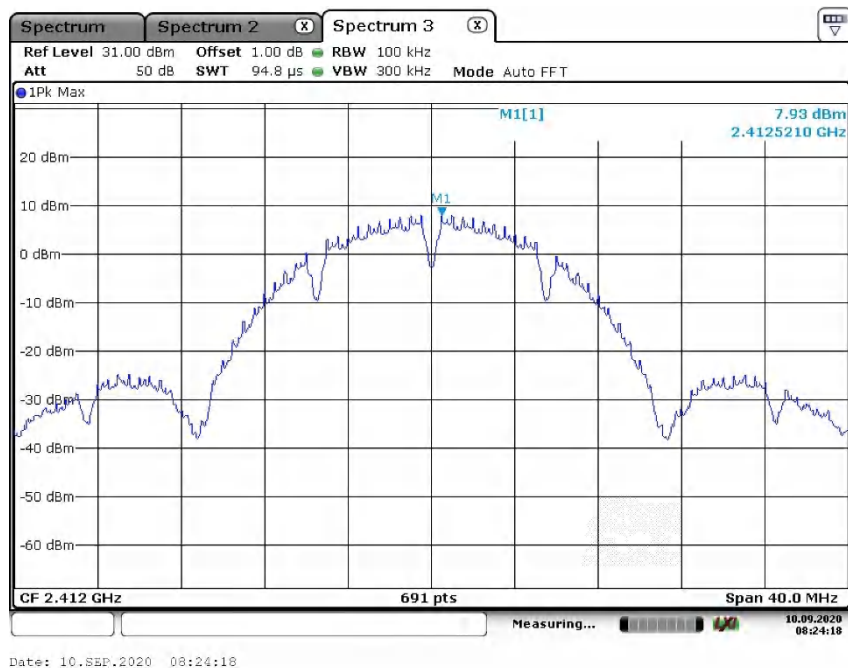
High Channel
RBW=100KHz, VBW=300KHz

6 dB Bandwidth

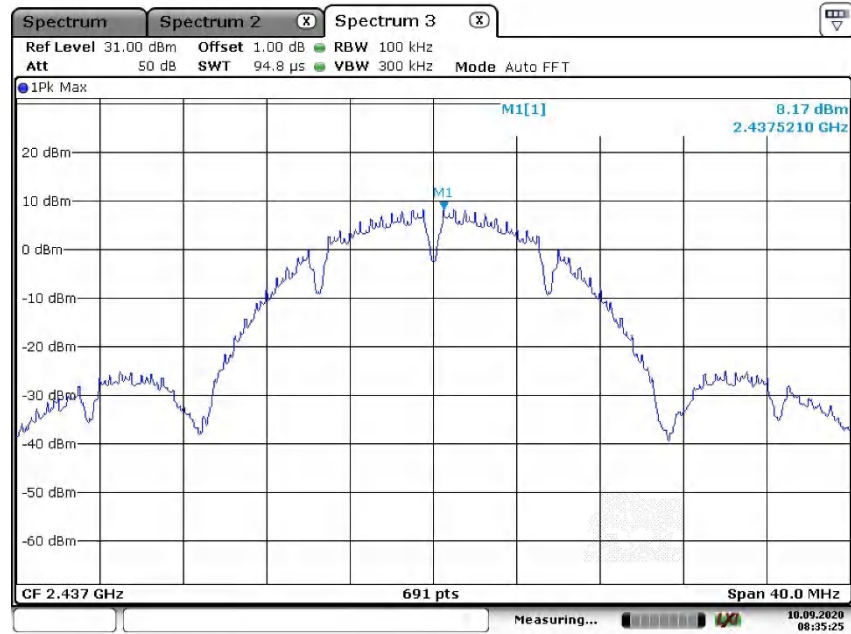


Appendix B.4: Conducted Spurious Emissions Measured in 100 kHz Bandwidth

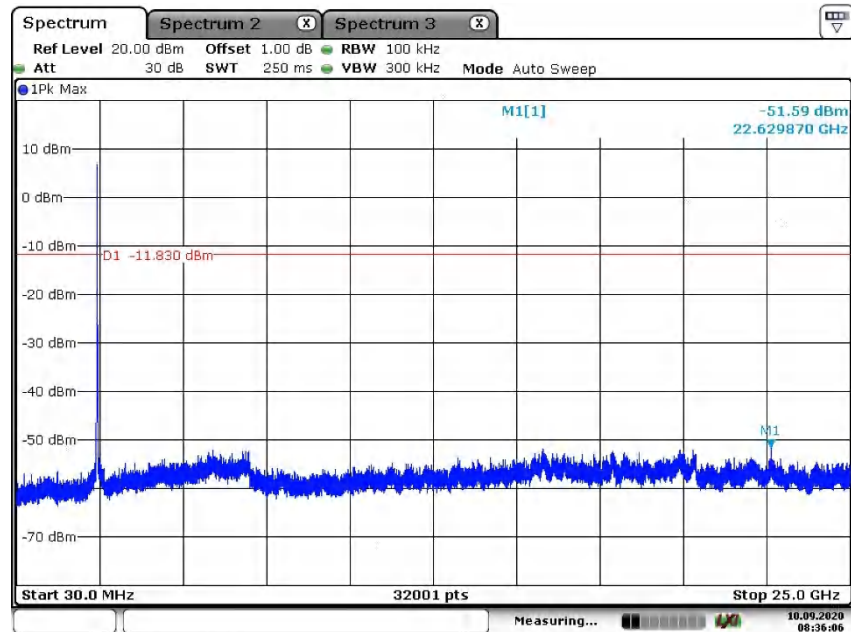
Wi-Fi 802.11 b mode, 1 Mbps Low Channel



Middle Channel

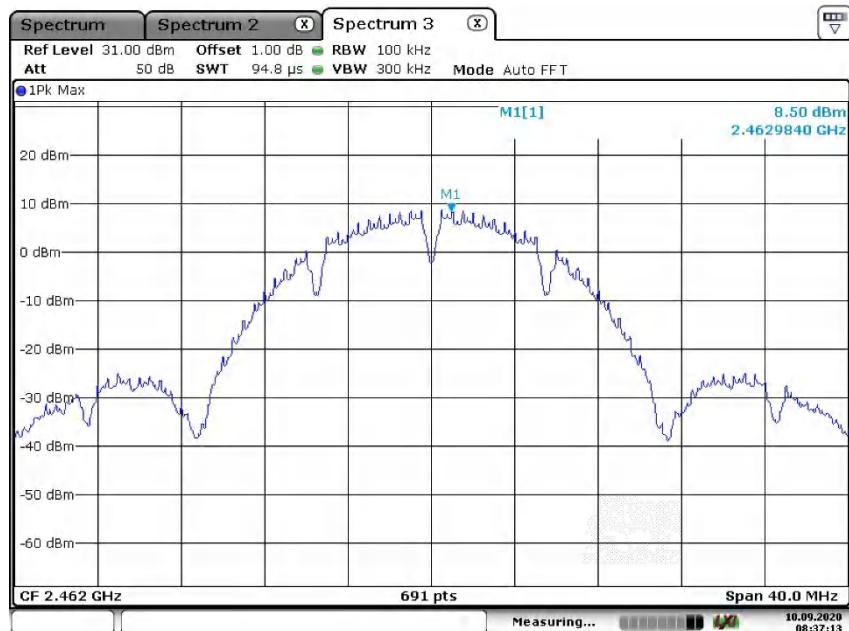


Date: 10.SEP.2020 08:35:26

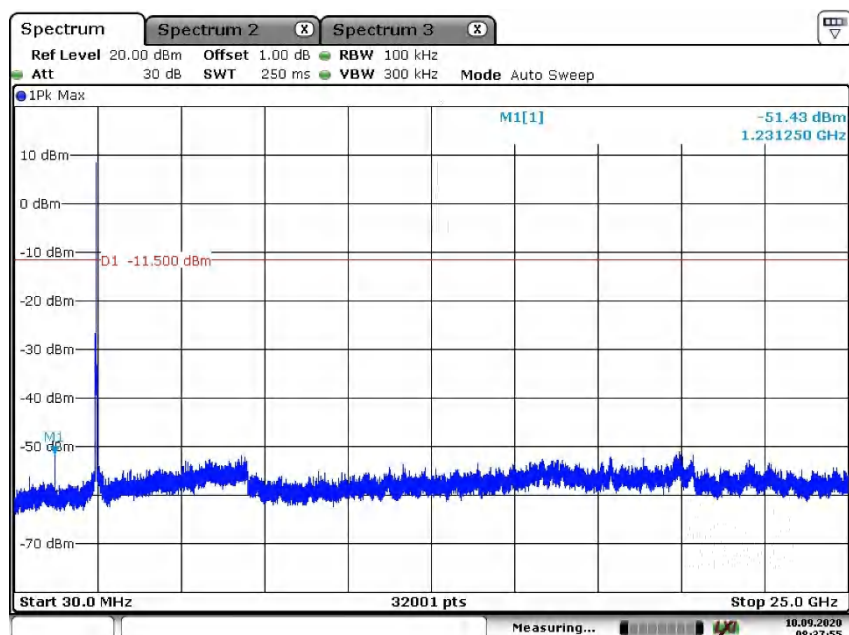


Date: 10.SEP.2020 08:36:07

High Channel

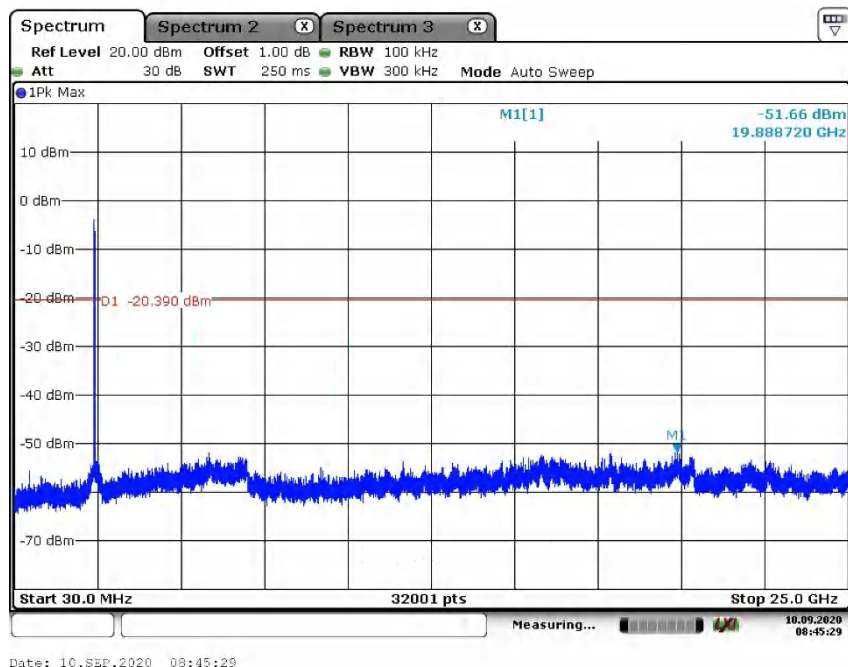
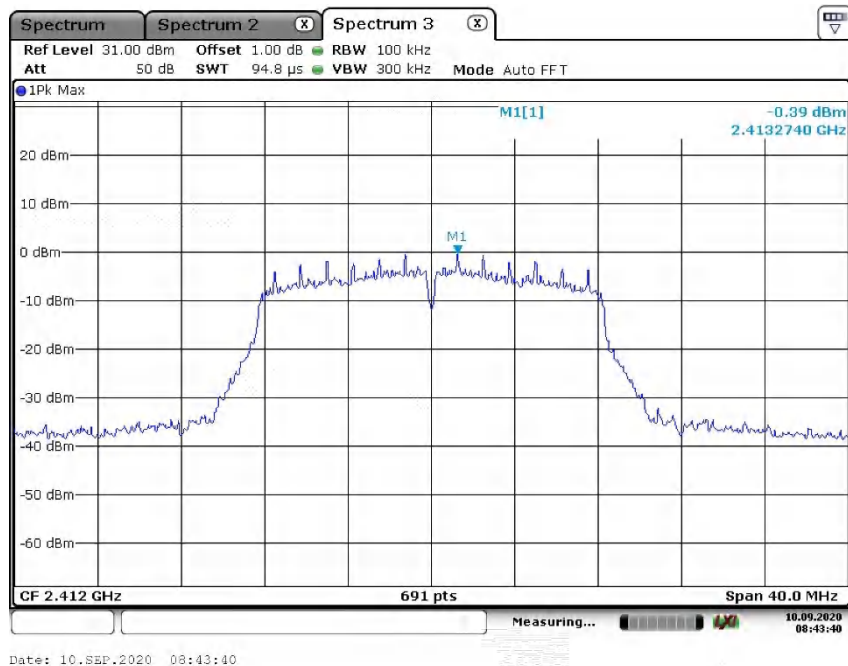


Date: 10.SEP.2020 08:37:13

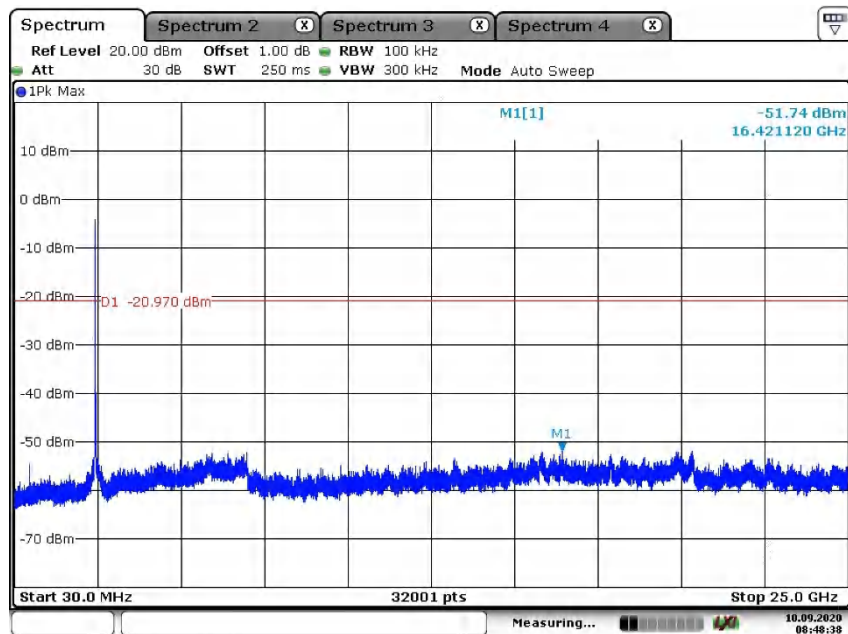
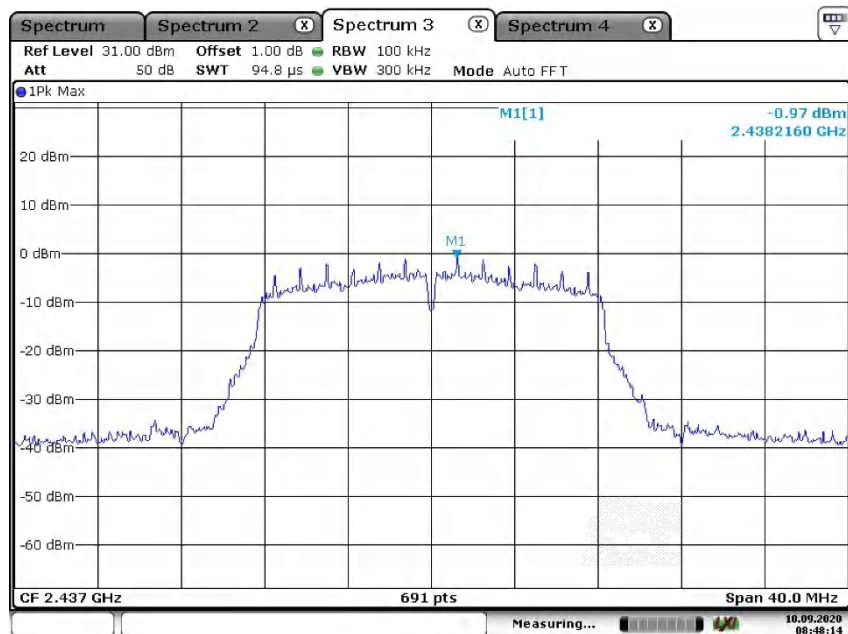


Date: 10.SEP.2020 08:37:55

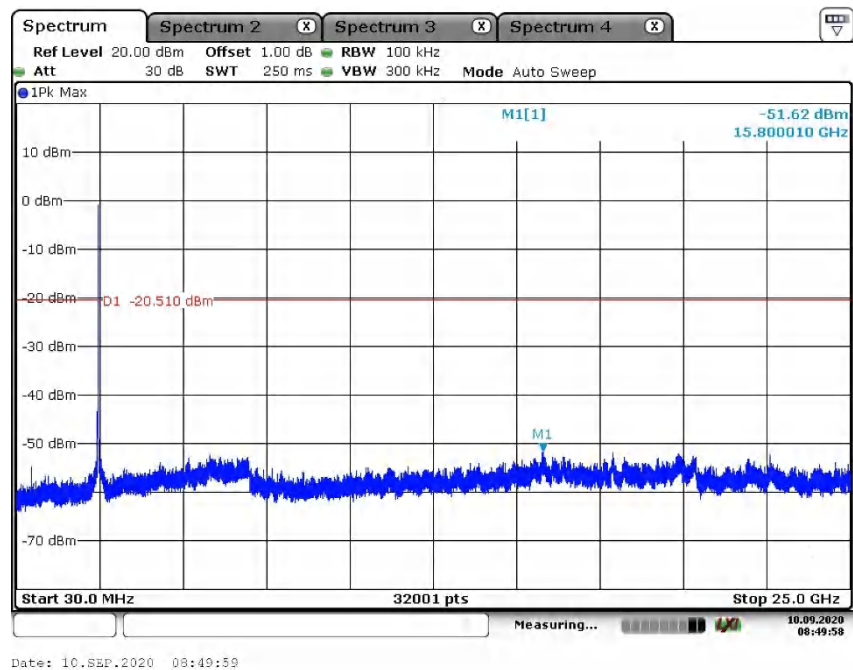
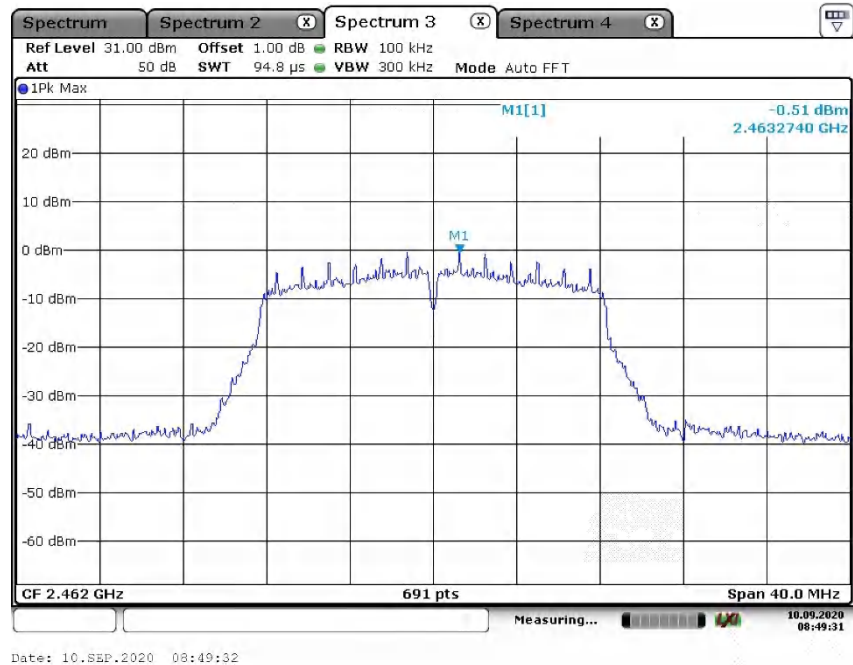
Wi-Fi 802.11 g mode, 6 Mbps
Low Channel



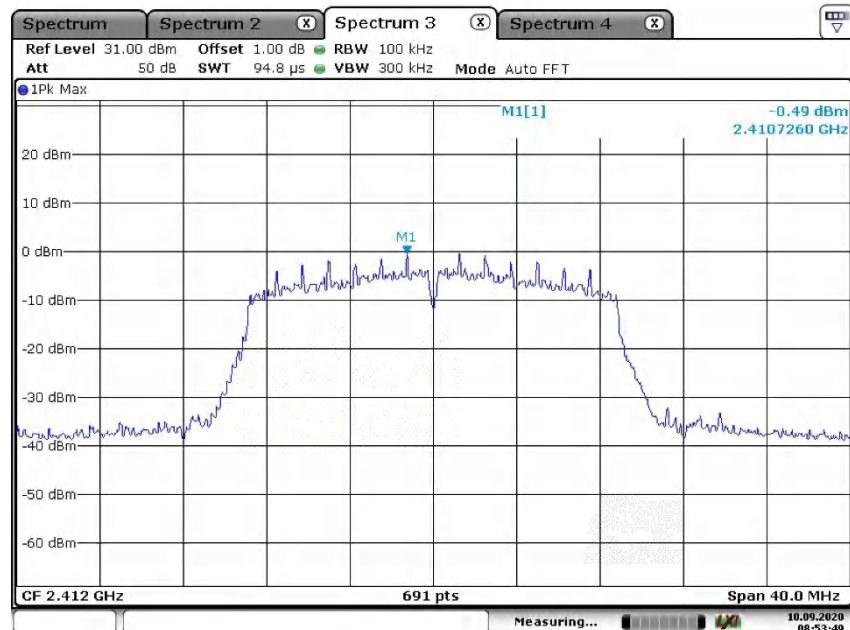
Middle Channel



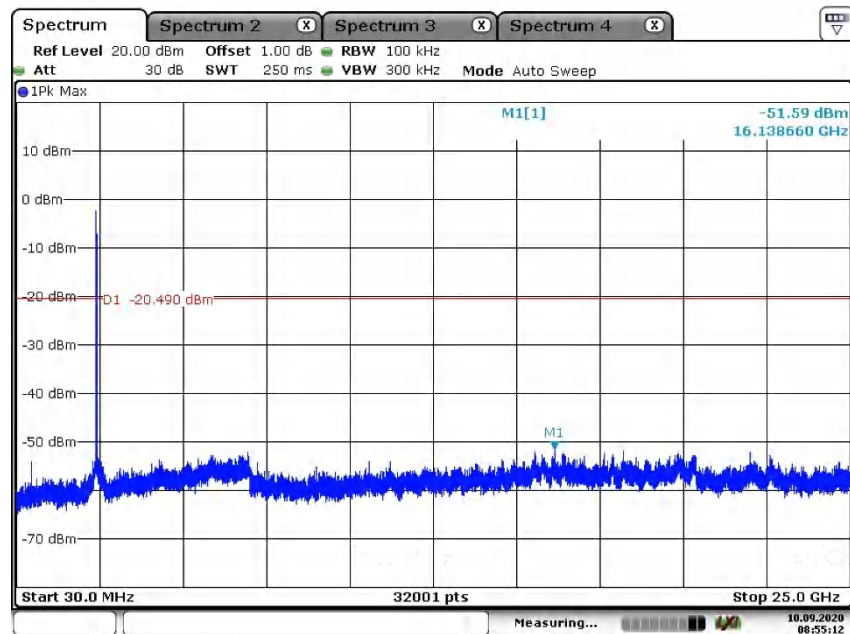
High Channel



Wi-Fi 802.11 n(HT20) mode, MCS0
Low Channel

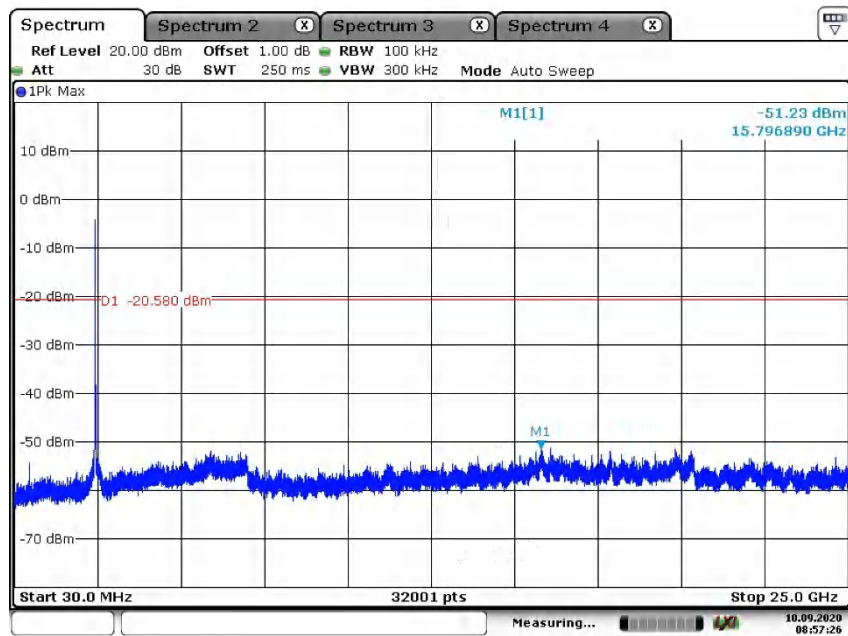
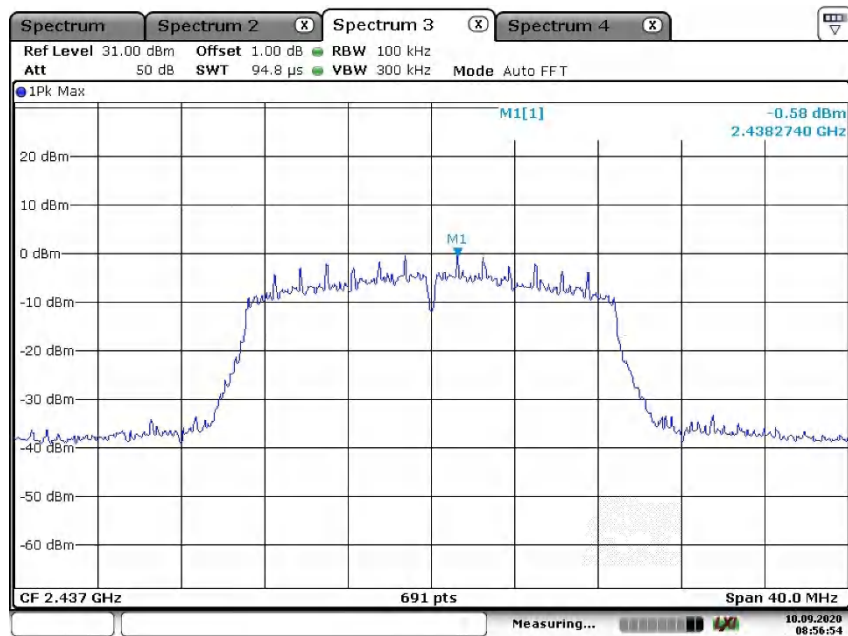


Date: 10.SEP.2020 08:53:50

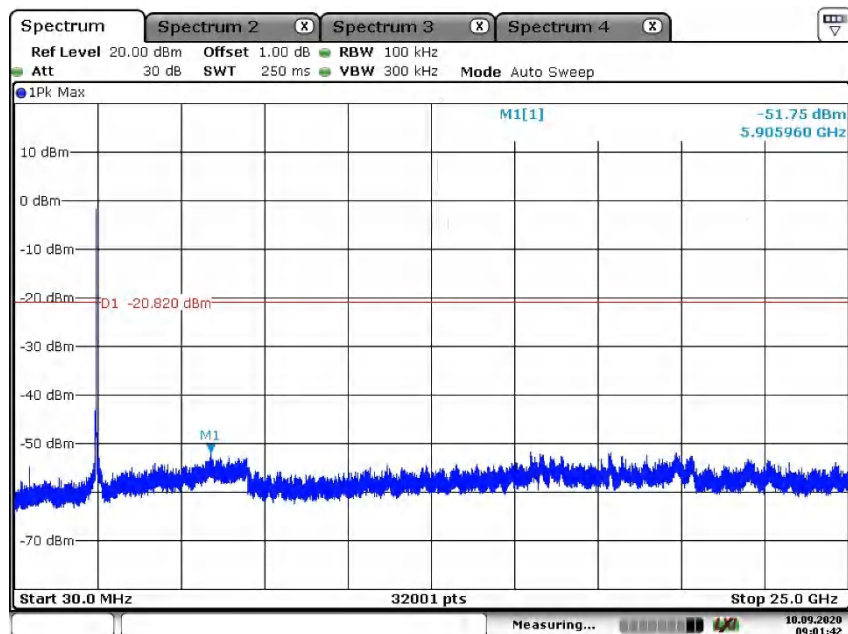
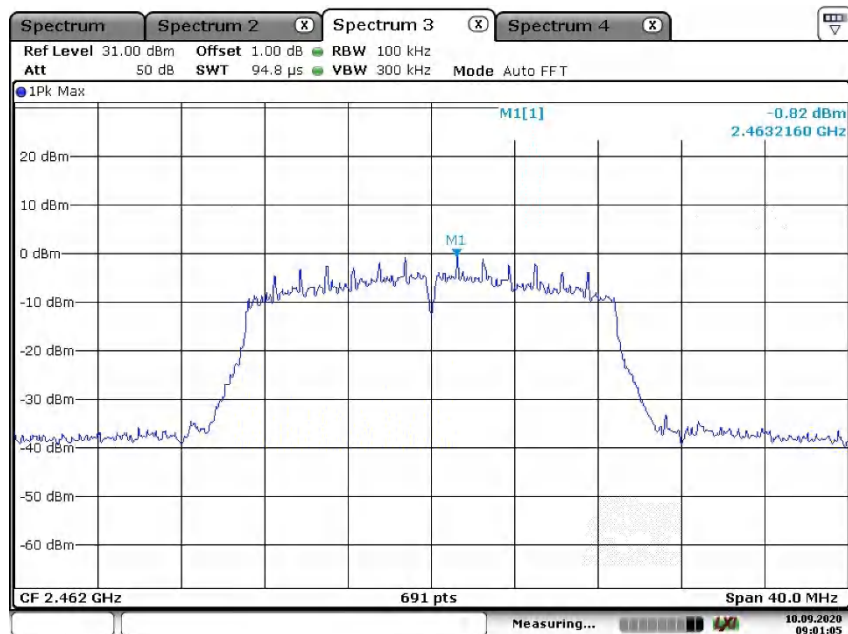


Date: 10.SEP.2020 08:55:13

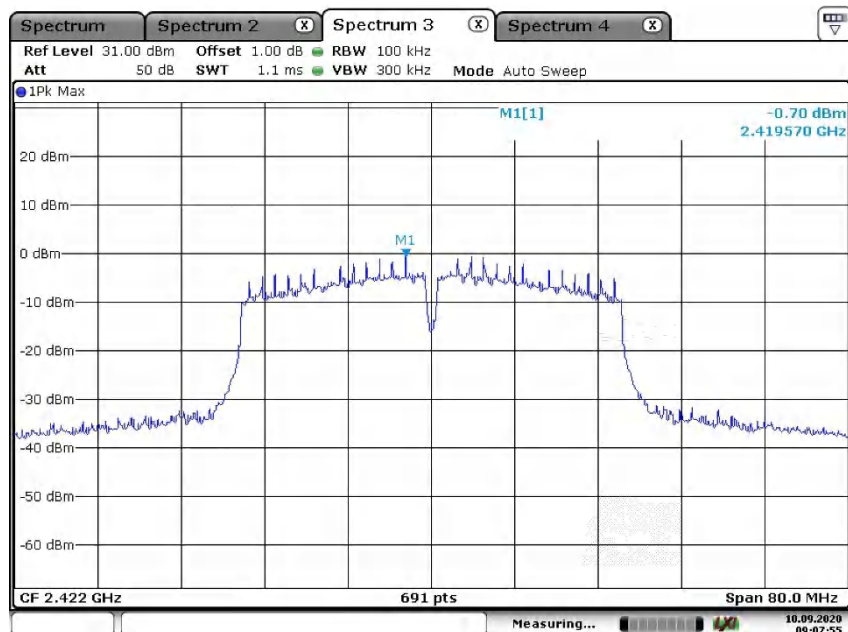
Middle Channel



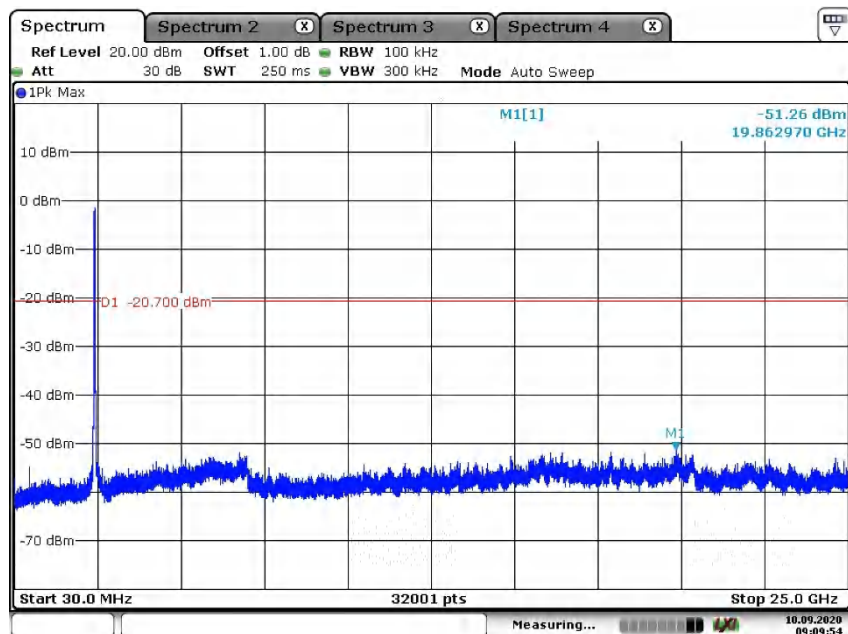
High Channel



Wi-Fi 802.11 n(HT40) mode, MCS0
Low Channel

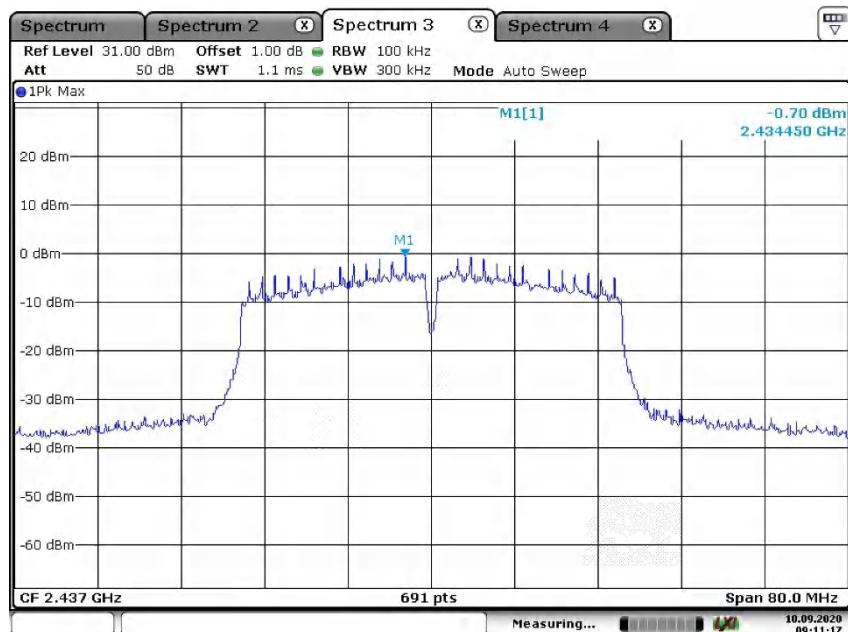


Date: 10.SEP.2020 09:07:55

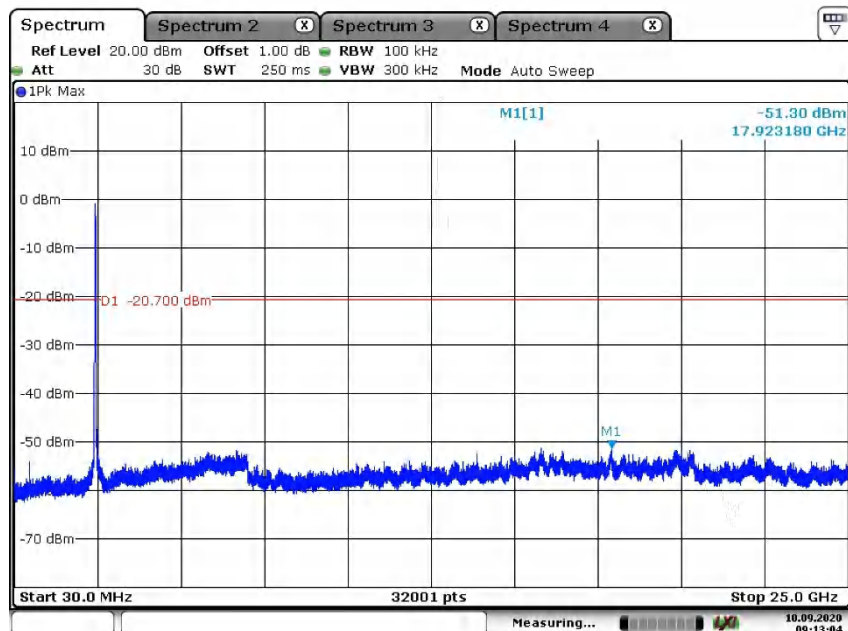


Date: 10.SEP.2020 09:09:54

Middle Channel

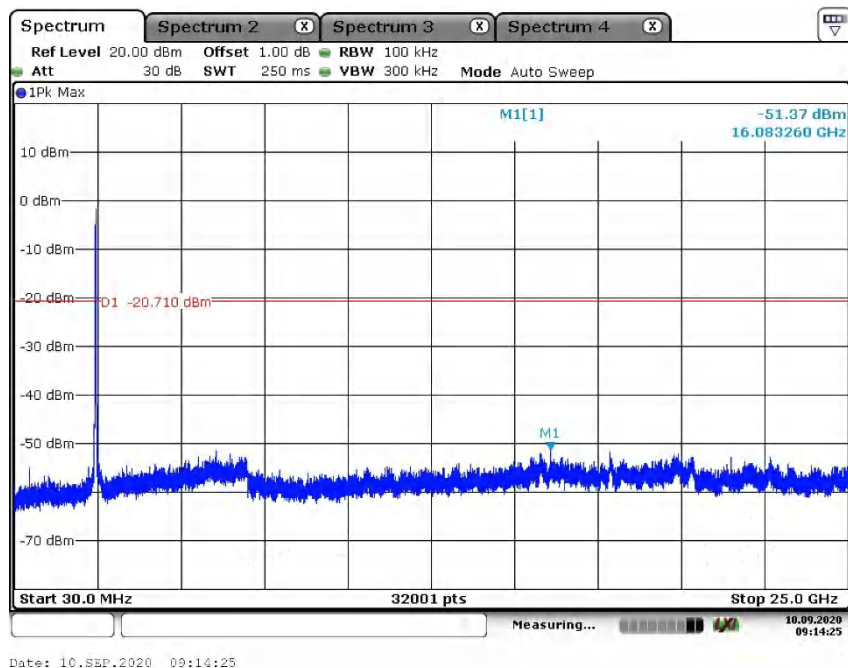
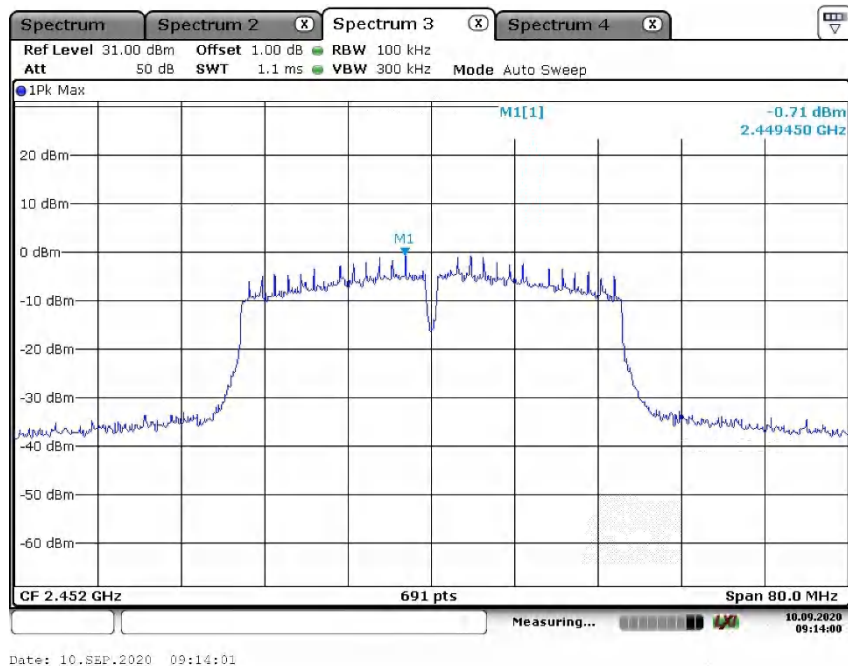


Date: 10.SEP.2020 09:11:17



Date: 10.SEP.2020 09:13:05

High Channel



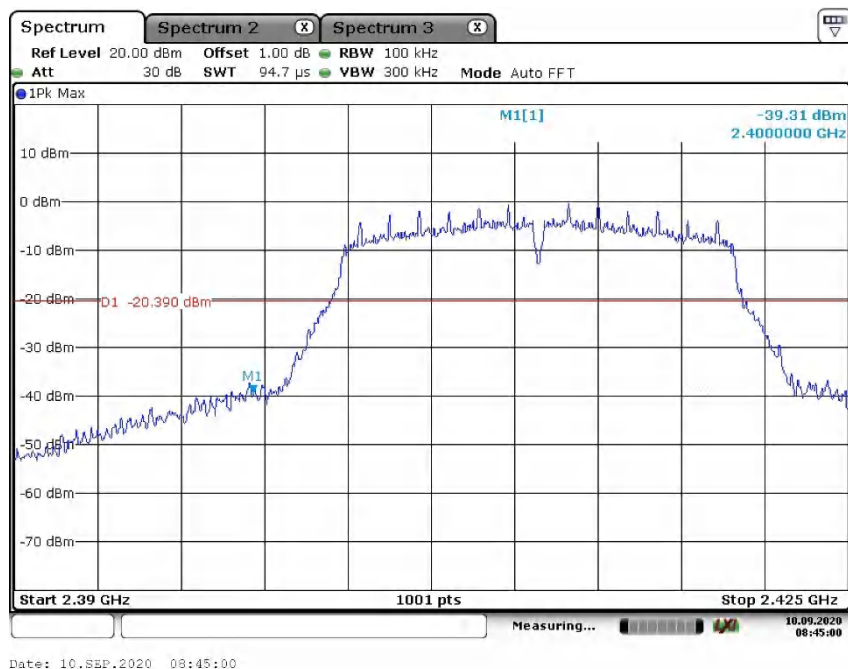
Wi-Fi 802.11 b mode, Band Edge
Low Channel



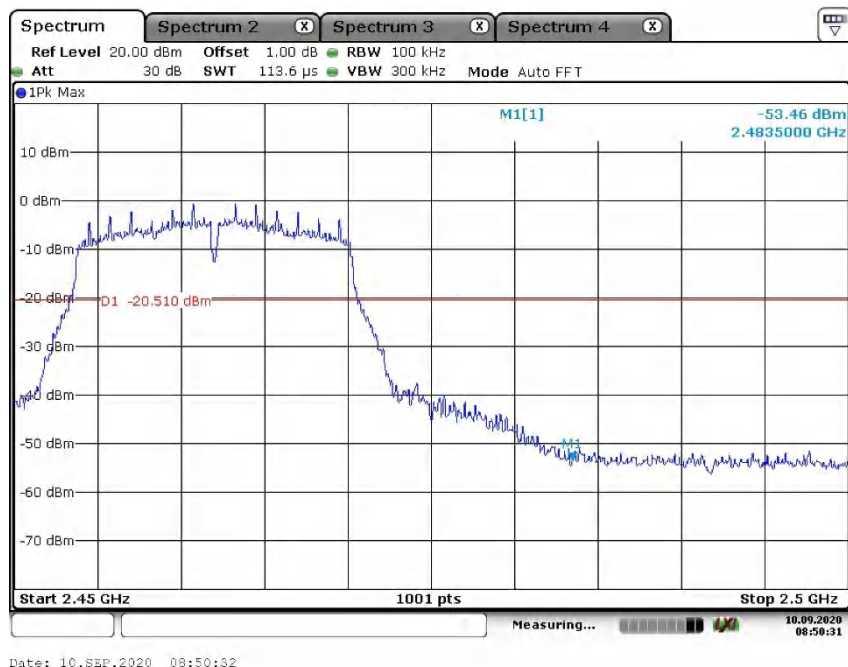
High Channel



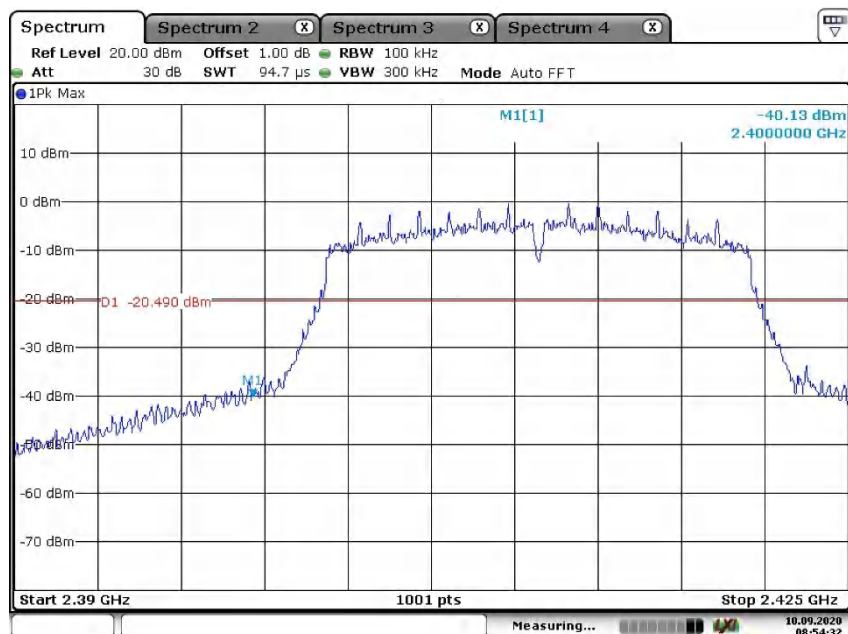
Wi-Fi 802.11 g mode, Band Edge Low Channel



High Channel

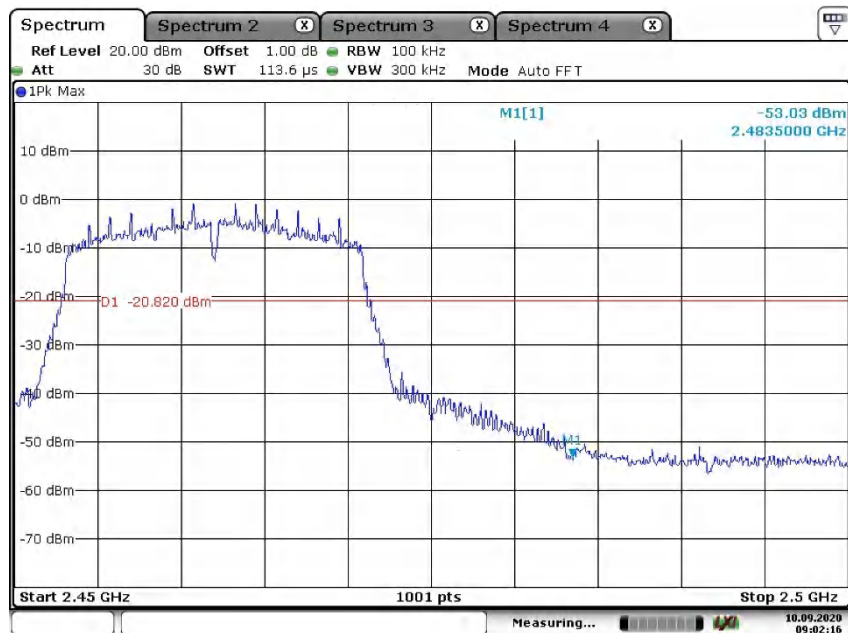


Wi-Fi 802.11 n(HT20) mode, Band Edge
Low Channel



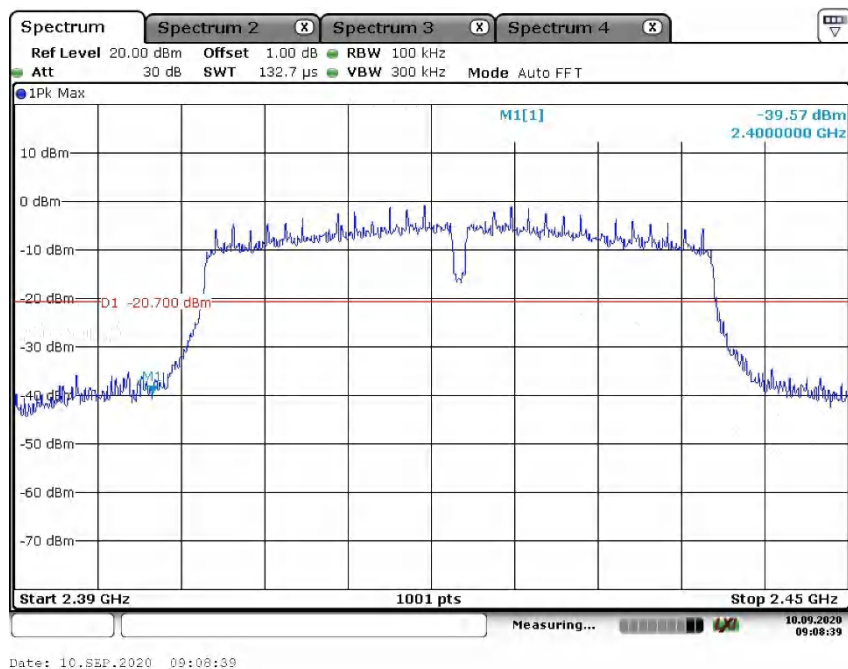
Date: 10.SEP.2020 08:54:33

High Channel

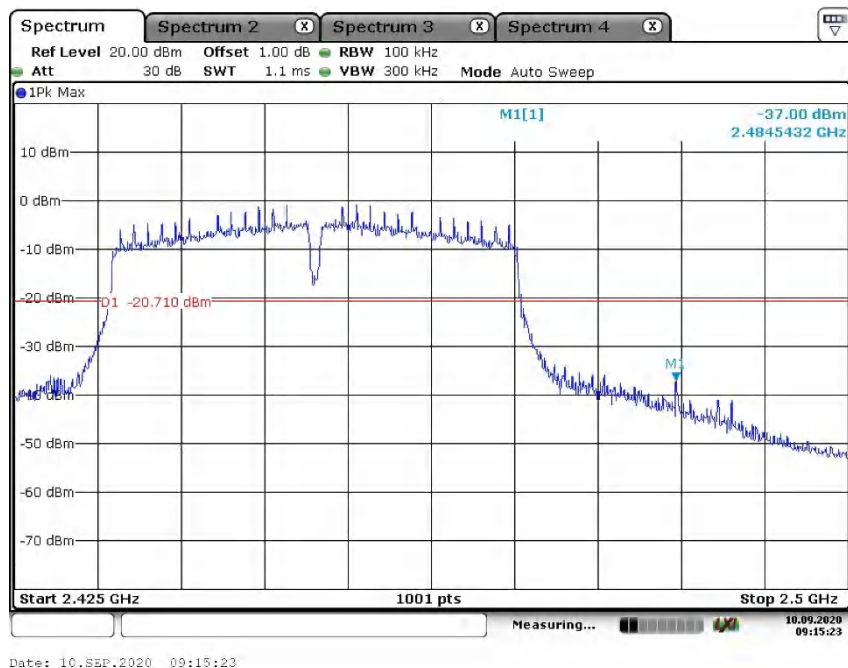


Date: 10.SEP.2020 09:02:17

Wi-Fi 802.11 n(HT40) mode, Band Edge
Low Channel



High Channel



Appendix C: Test Results of Radiated Testing

APPENDIX C: TEST RESULTS OF RADIATED TESTING	1
APPENDIX C.1: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS	2
<i>Wi-Fi 802.11 b mode, 1 Mbps</i>	2
<i>Wi-Fi 802.11 g mode, 6Mbps</i>	12
<i>Wi-Fi 802.11 n(HT20) mode, MCS0</i>	18
<i>Wi-Fi 802.11 n(HT40) mode, MCS0</i>	24
APPENDIX C.2: TEST RESULTS OF RADIATED EMISSIONS IN RESTRICTED BANDS	30
<i>Wi-Fi 802.11 b mode, 1 Mbps</i>	30
<i>Wi-Fi 802.11 g mode, 6 Mbps</i>	34
<i>Wi-Fi 802.11 n(HT20) mode, MCS0</i>	38
<i>Wi-Fi 802.11 n(HT40) mode, MCS0</i>	42
APPENDIX C.3: TEST RESULTS OF CONDUCTED EMISSION ON AC MAINS	46

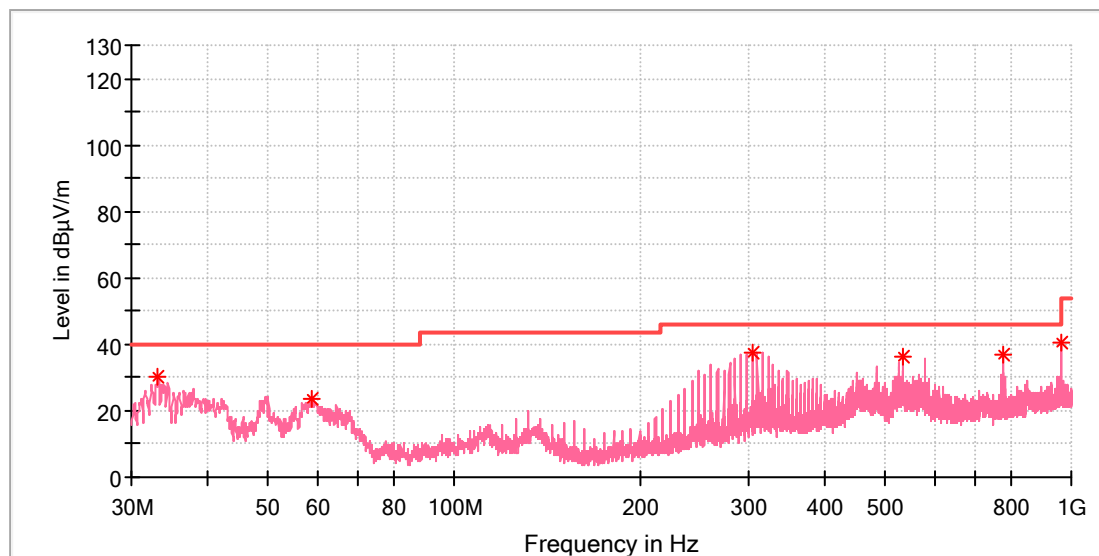
Note 1: Testing was carried out within frequency range 9 kHz to the tenth harmonics. The measurement results below 30MHz and above 18GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

Appendix C.1: Test Results of Radiated Spurious Emissions

Wi-Fi 802.11 b mode, 1 Mbps
30MHz - 18GHz

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

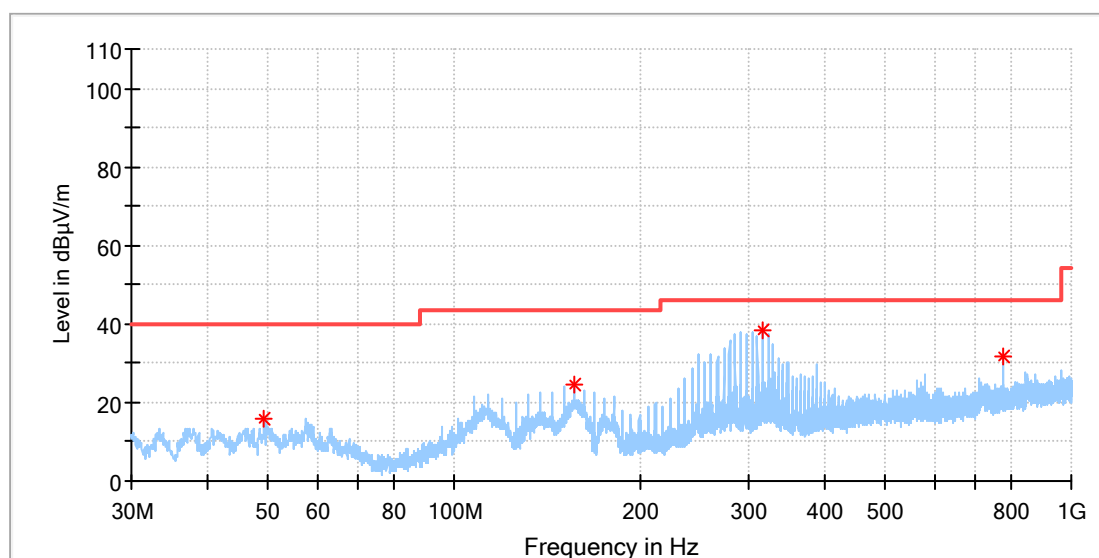


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
33.104000	30.32	---	40.00	9.68	100.0	V	5.0	-22.8
58.857500	23.85	---	40.00	16.15	100.0	V	207.0	-19.2
304.122000	37.27	---	46.00	8.73	100.0	V	0.0	-16.5
532.169000	36.01	---	46.00	9.99	100.0	V	197.0	-11.6
773.311000	36.95	---	46.00	9.05	100.0	V	289.0	-7.2
966.680500	40.25	---	54.00	13.75	100.0	V	81.0	-4.6

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_Low CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

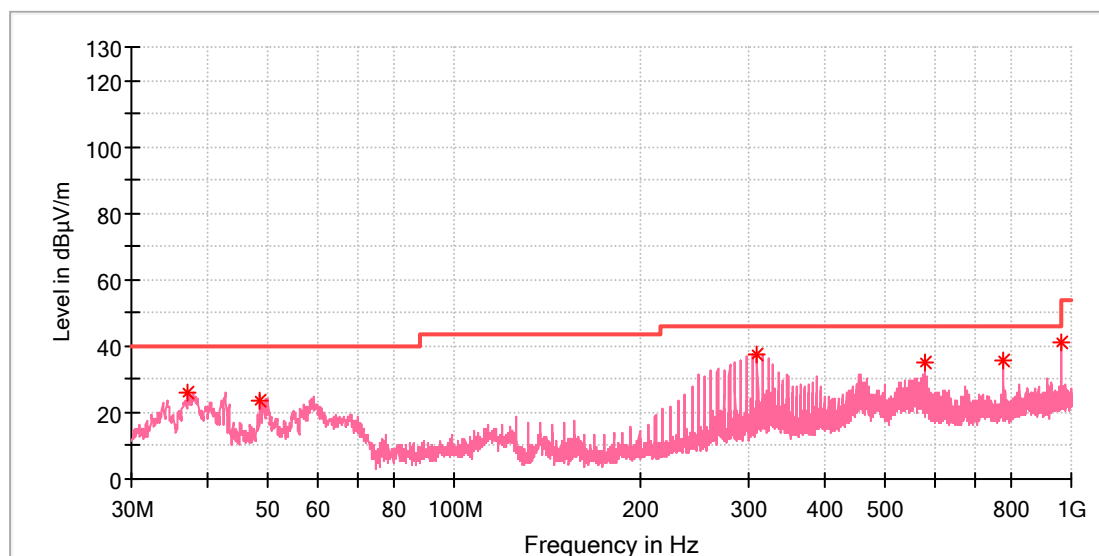


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.303000	15.91	---	40.00	24.09	100.0	H	121.0	-18.6
156.633500	24.35	---	43.50	19.15	100.0	H	189.0	-22.2
316.392500	38.51	---	46.00	7.49	100.0	H	290.0	-16.2
773.359500	31.57	---	46.00	14.43	100.0	H	179.0	-7.2

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_High CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

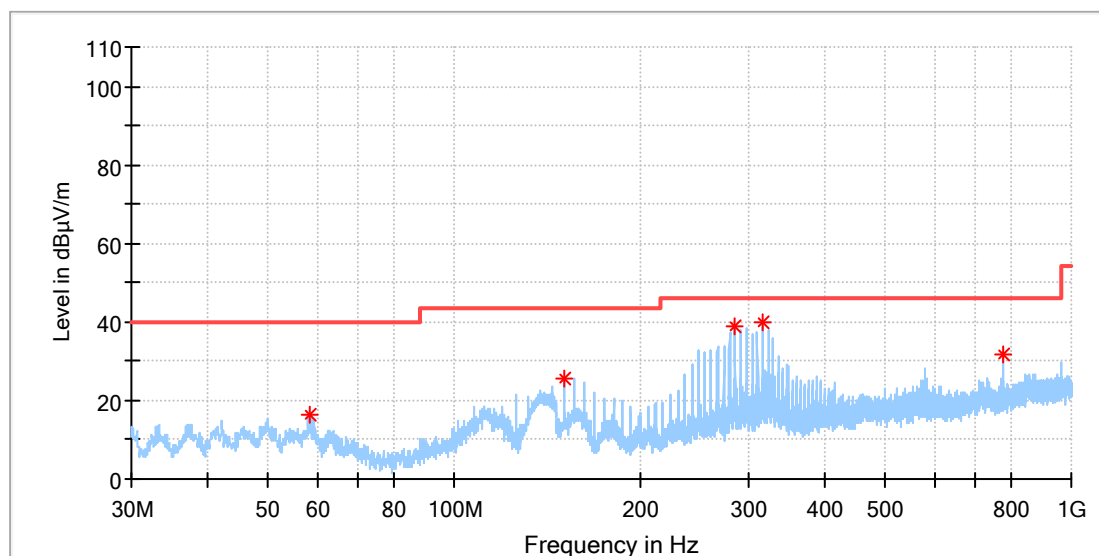


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
36.984000	26.00	---	40.00	14.00	100.0	V	101.0	-21.5
48.478500	23.48	---	40.00	16.52	100.0	V	328.0	-18.7
310.281500	37.28	---	46.00	8.72	100.0	V	348.0	-16.4
579.990000	34.93	---	46.00	11.07	100.0	V	299.0	-10.6
773.311000	35.85	---	46.00	10.15	100.0	V	281.0	-7.2
966.680500	41.01	---	54.00	12.99	100.0	V	328.0	-4.6

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_High CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

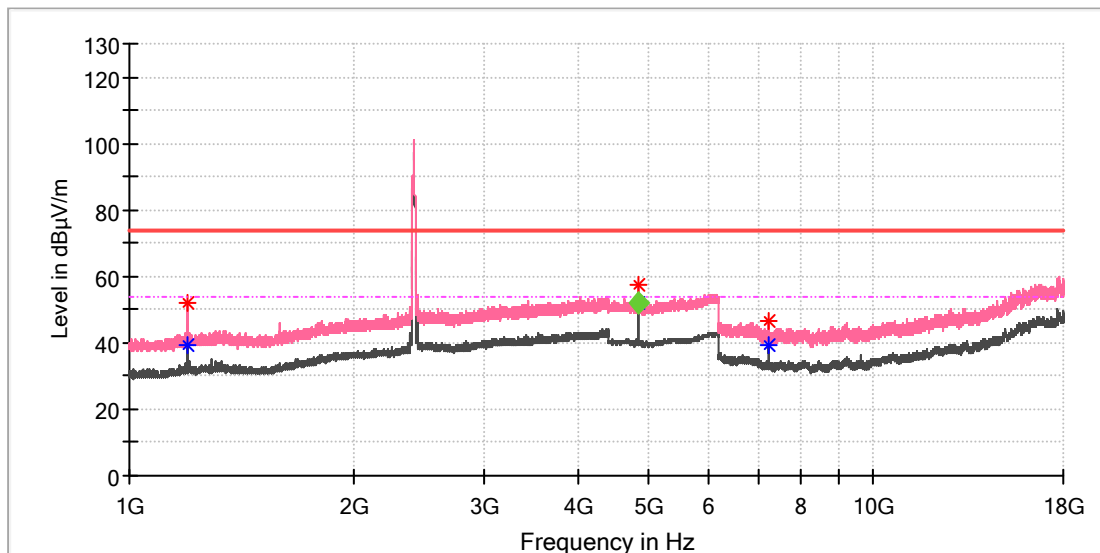
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
58.275500	16.22	---	40.00	23.78	100.0	H	57.0	-19.1
150.522500	25.37	---	43.50	18.13	100.0	H	151.0	-22.5
285.692000	39.12	---	46.00	6.88	100.0	H	161.0	-17.0
316.392500	39.94	---	46.00	6.06	100.0	H	311.0	-16.2
773.311000	31.97	---	46.00	14.03	100.0	H	46.0	-7.2

Produkte
Products

1GHz - 18GHz

EUT Information

EUT Name: Smart Home Speaker
Model: MS30A
Test Mode: WiFi 2.4G_11b_Low CH
Test Voltage:: Battery
Remark: Temp 23 Humi:55%
Test Standard: FCC 15.247
Tested By: Kei Zhang
Reviewed By: Terry Yin



Critical_Freqs

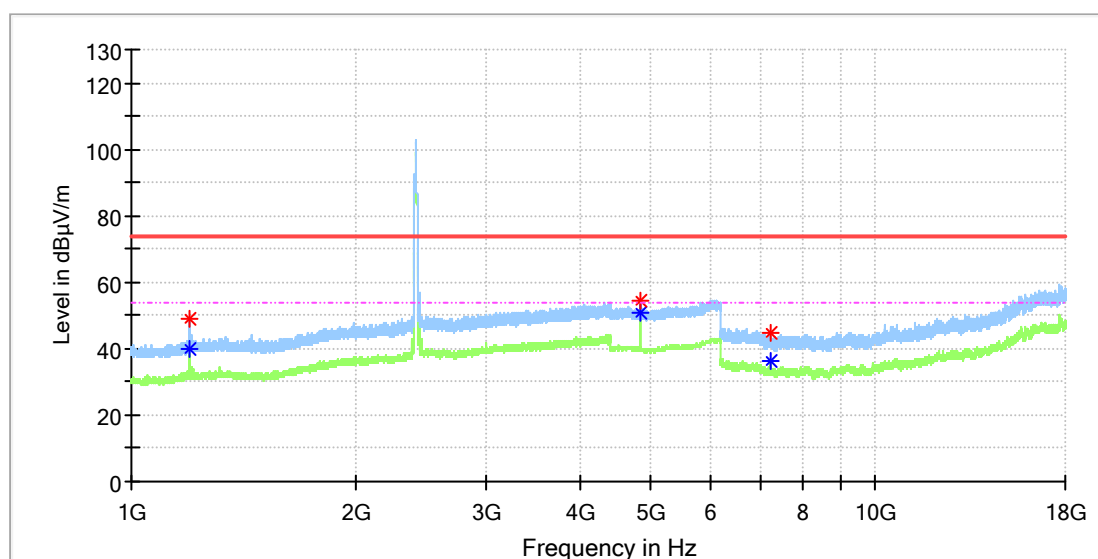
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1198.475000	52.02	---	74.00	21.98	100.0	V	251.0	1.1
1198.475000	---	39.47	54.00	14.53	100.0	V	251.0	1.1
4823.975000	57.28	---	74.00	16.72	100.0	V	171.0	13.5
7234.466667	46.29	---	74.00	27.71	100.0	V	20.0	8.6
7236.925000	---	39.39	54.00	14.61	100.0	V	119.0	8.6

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4824.050000	---	51.75	54.00	2.25	100.0	V	161.0	13.5

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11b_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

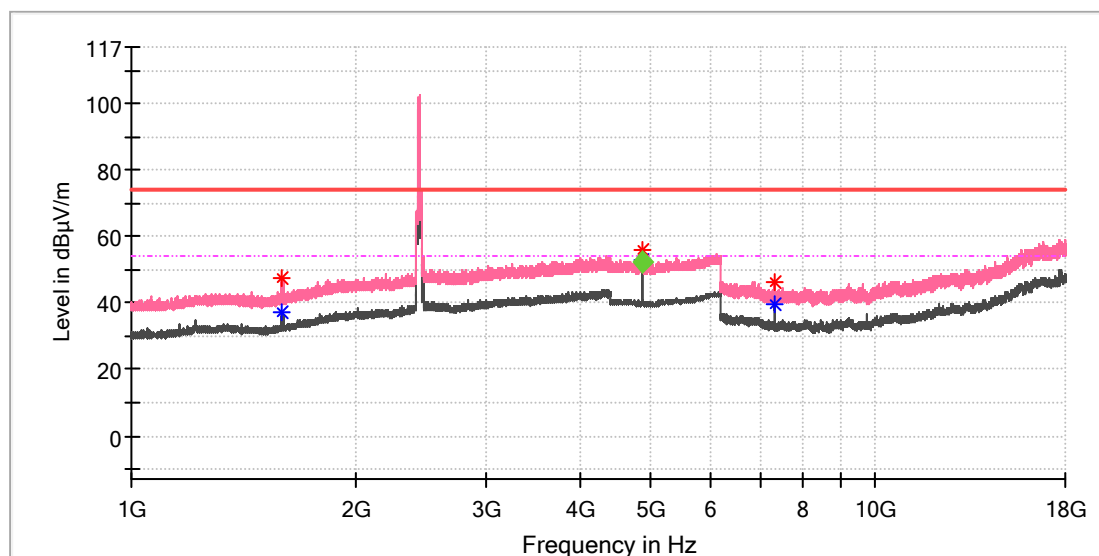


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1195.075000	48.82	---	74.00	25.18	100.0	H	177.0	1.1
1195.075000	---	39.73	54.00	14.27	100.0	H	177.0	1.1
4824.000000	---	50.71	54.00	3.29	100.0	H	91.0	13.5
4824.500000	54.37	---	74.00	19.63	100.0	H	91.0	13.5
7234.958333	---	36.38	54.00	17.62	100.0	H	315.0	8.6
7236.433333	44.98	---	74.00	29.02	100.0	H	315.0	8.6

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11b_Mid CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

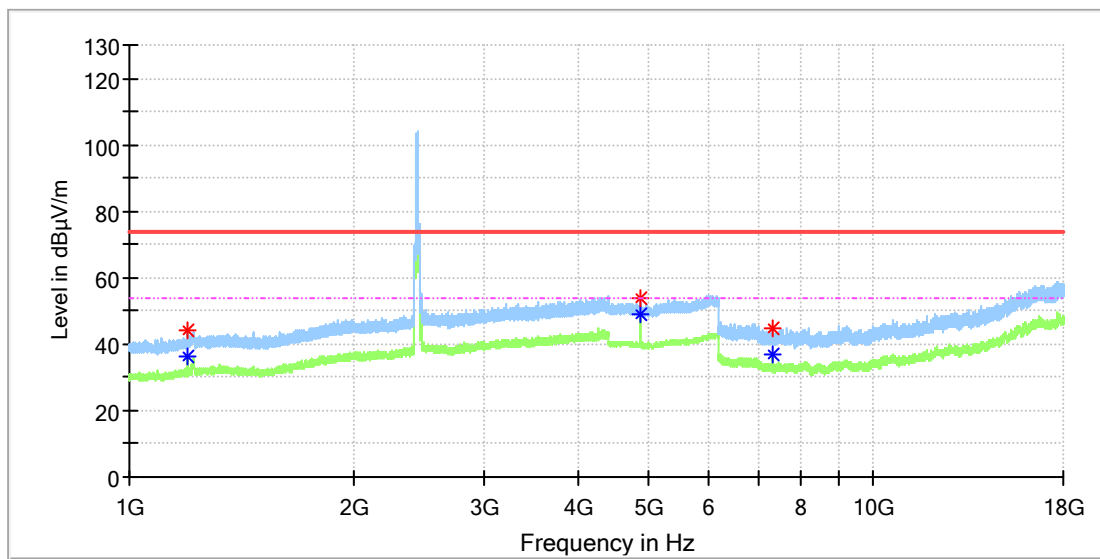


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1593.087500	---	37.07	54.00	16.93	100.0	V	267.0	2.0
1593.300000	47.35	---	74.00	26.65	100.0	V	267.0	2.0
4874.116667	---	52.38	54.00	1.62	100.0	V	202.0	13.4
4874.158333	56.05	---	74.00	17.95	100.0	V	198.0	13.4
7309.691667	---	39.68	54.00	14.32	100.0	V	25.0	8.2
7315.591667	46.04	---	74.00	27.96	100.0	V	98.0	8.2

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11b_Mid CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

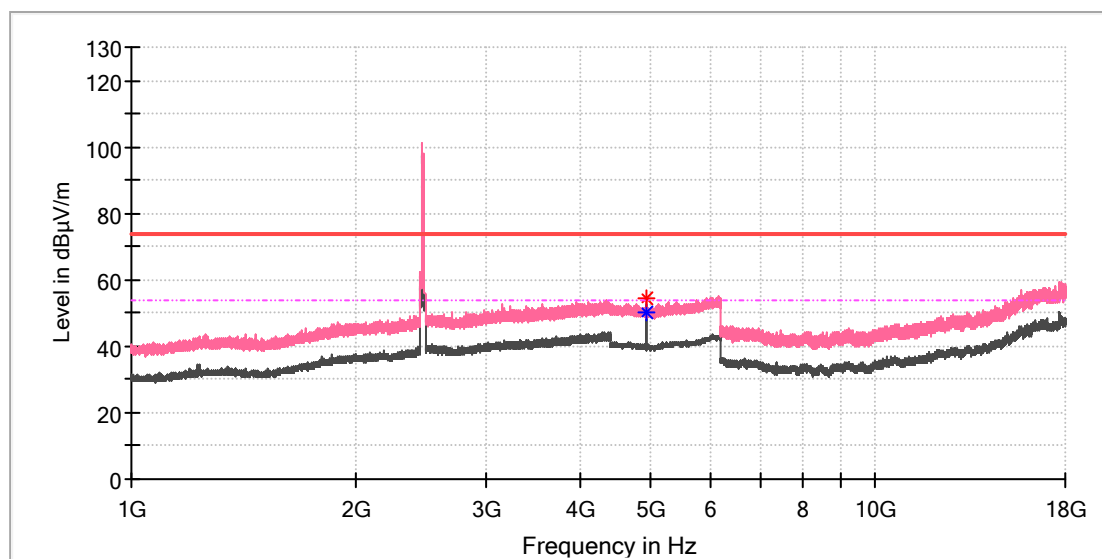


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1197.837500	44.29	---	74.00	29.71	100.0	H	82.0	1.1
1197.837500	---	36.16	54.00	17.84	100.0	H	82.0	1.1
4874.000000	54.01	---	74.00	19.99	100.0	H	279.0	13.4
4874.000000	---	48.99	54.00	5.01	100.0	H	279.0	13.4
7309.691667	44.72	---	74.00	29.28	100.0	H	313.0	8.2
7309.691667	---	37.01	54.00	17.00	100.0	H	313.0	8.2

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11b_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

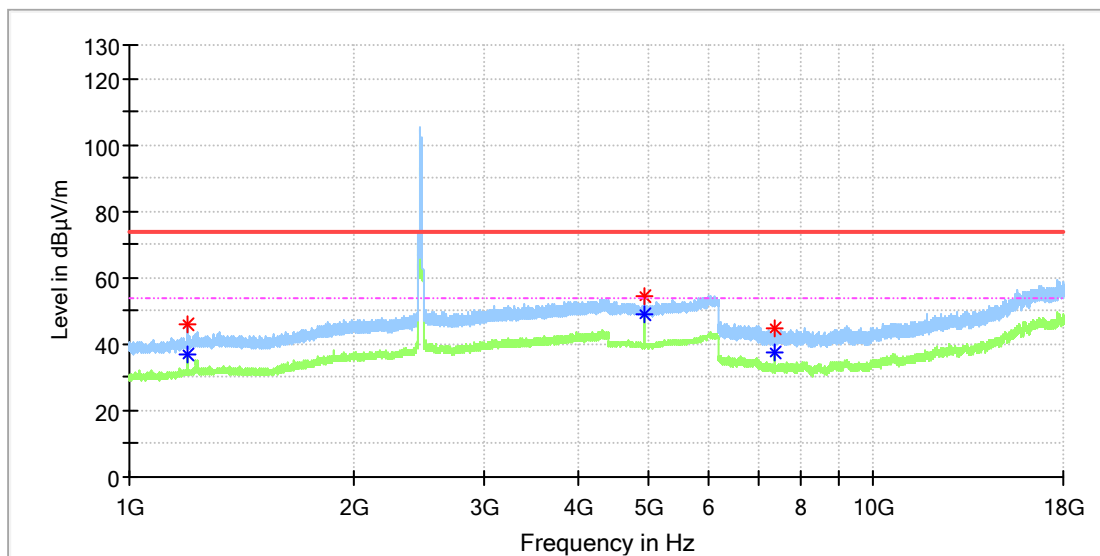


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4924.000000	54.37	---	74.00	19.63	100.0	V	154.0	13.3
4924.000000	---	50.17	54.00	3.83	100.0	V	154.0	13.3

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11b_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



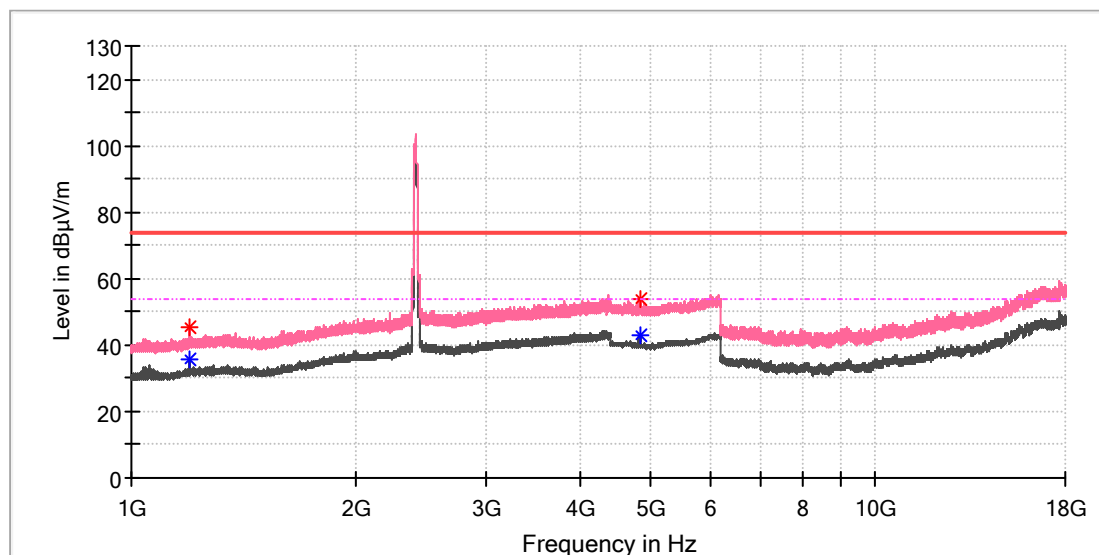
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1195.500000	---	36.98	54.00	17.02	100.0	H	213.0	1.1
1195.500000	46.03	---	74.00	27.97	100.0	H	213.0	1.1
4924.000000	54.19	---	74.00	19.81	100.0	H	236.0	13.3
4924.000000	---	48.73	54.00	5.27	100.0	H	236.0	13.3
7385.900000	44.64	---	74.00	29.36	100.0	H	305.0	8.2
7386.883333	---	37.21	54.00	16.79	100.0	H	305.0	8.2

Wi-Fi 802.11 g mode, 6Mbps
1GHz - 18GHz

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11g_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

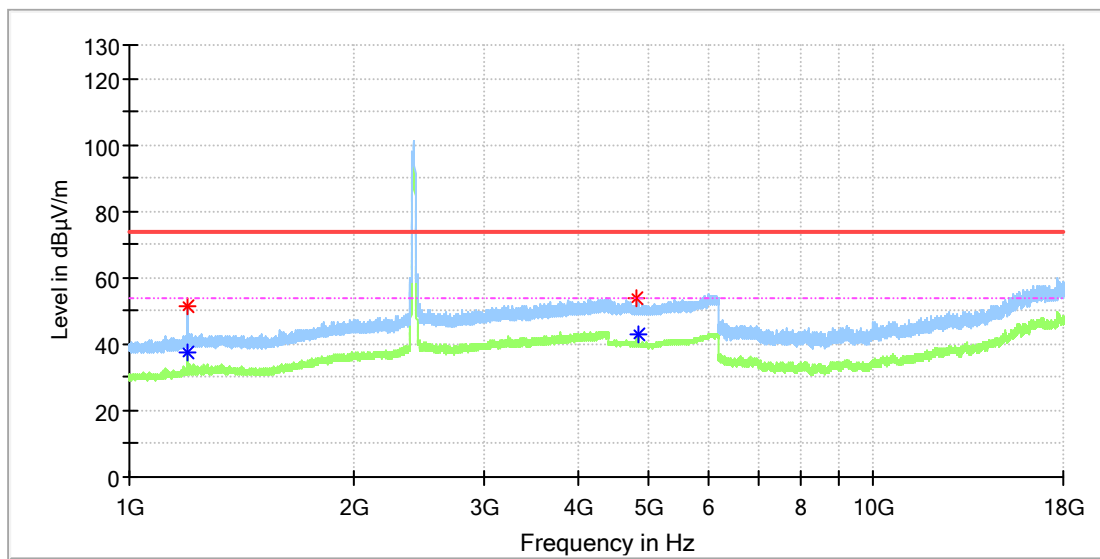


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1195.712500	---	35.87	54.00	18.13	100.0	V	100.0	1.1
1197.625000	45.53	---	74.00	28.47	100.0	V	138.0	1.1
4821.000000	---	42.82	54.00	11.18	100.0	V	196.0	13.5
4823.500000	53.98	---	74.00	20.02	100.0	V	87.0	13.5

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11g_Low CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

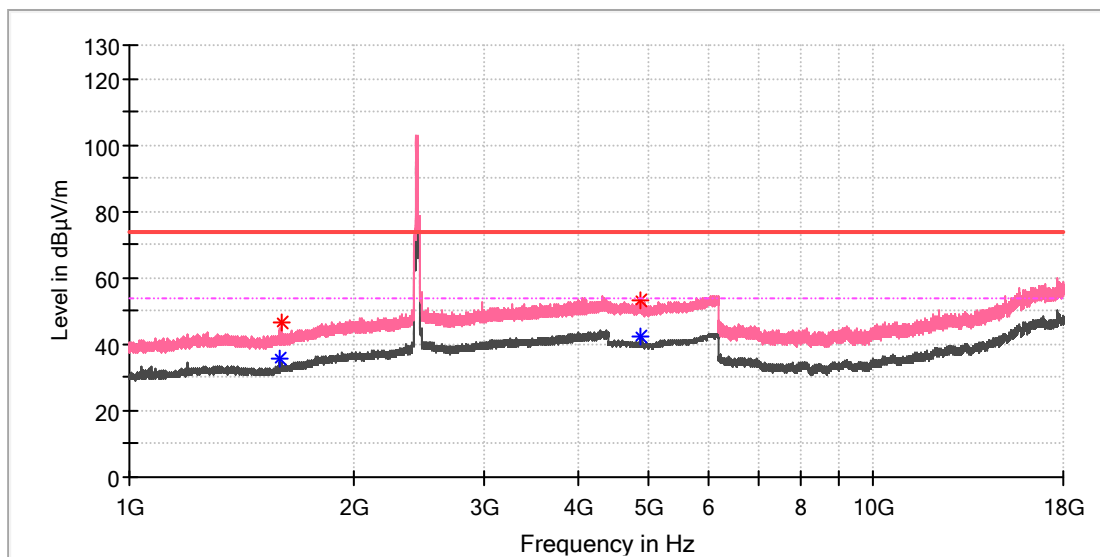


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1197.200000	51.32	---	74.00	22.68	100.0	H	154.0	1.1
1197.200000	---	37.21	54.00	16.79	100.0	H	154.0	1.1
4817.500000	54.00	---	74.00	20.00	100.0	H	325.0	13.5
4818.500000	---	42.91	54.00	11.09	100.0	H	254.0	13.5

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11g_Mid CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

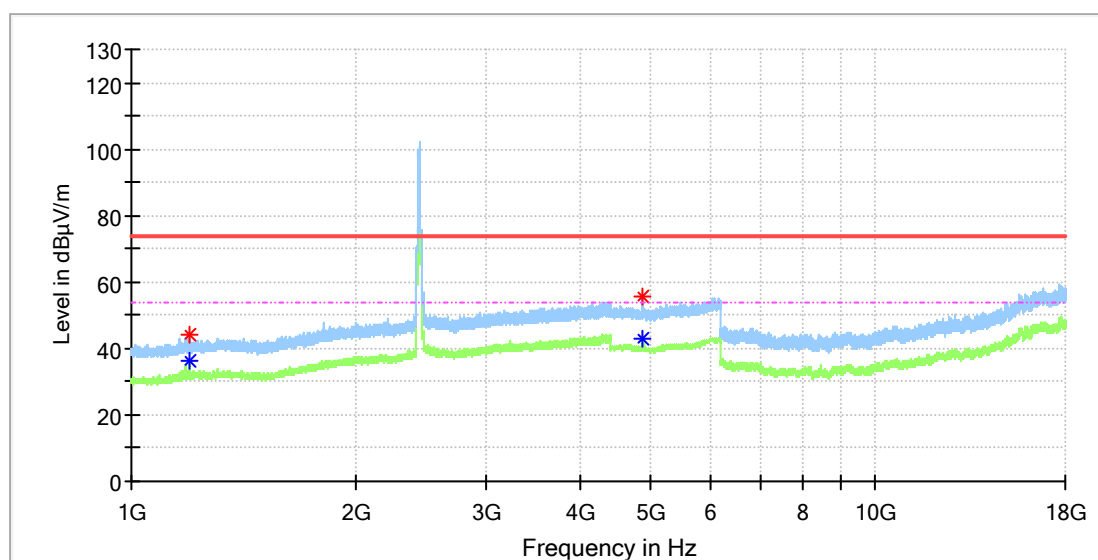


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1592.875000	---	35.84	54.00	18.16	100.0	V	43.0	2.0
1600.100000	46.33	---	74.00	27.67	100.0	V	301.0	2.1
4867.000000	52.95	---	74.00	21.05	100.0	V	113.0	13.4
4873.500000	---	42.25	54.00	11.75	100.0	V	78.0	13.4

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11g_Mid CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

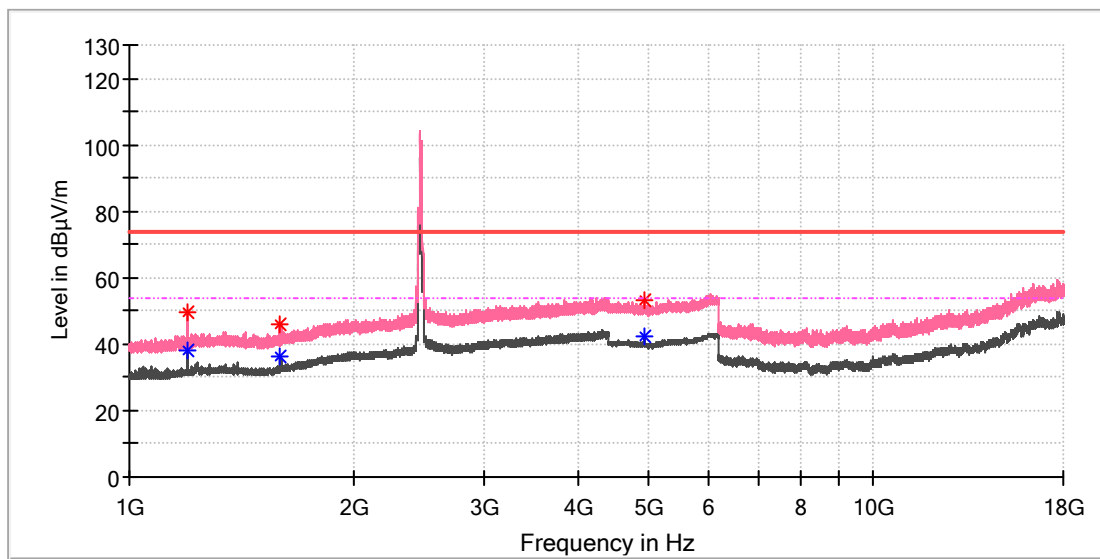


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1196.562500	---	36.02	54.00	17.98	100.0	H	73.0	1.1
1200.387500	43.95	---	74.00	30.05	100.0	H	263.0	1.1
4871.000000	---	43.07	54.00	10.93	100.0	H	256.0	13.4
4875.500000	55.38	---	74.00	18.62	100.0	H	322.0	13.4

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11g_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

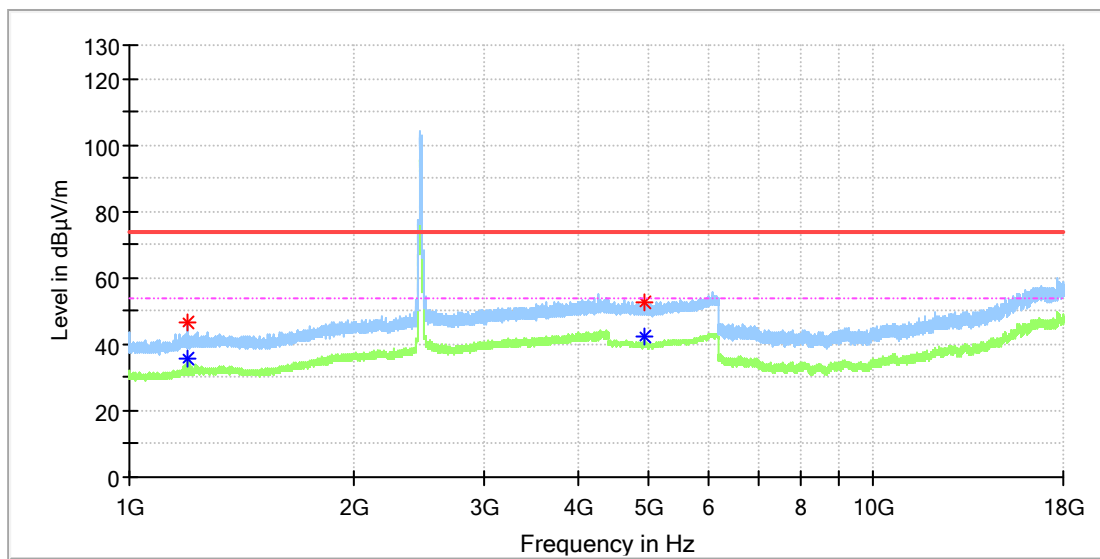


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1198.262500	49.69	---	74.00	24.31	100.0	V	250.0	1.1
1198.262500	---	38.20	54.00	15.80	100.0	V	250.0	1.1
1596.700000	46.05	---	74.00	27.95	100.0	V	260.0	2.1
1597.125000	---	35.98	54.00	18.02	100.0	V	250.0	2.1
4917.500000	53.31	---	74.00	20.69	100.0	V	190.0	13.3
4923.000000	---	42.38	54.00	11.62	100.0	V	99.0	13.3

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11g_High CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



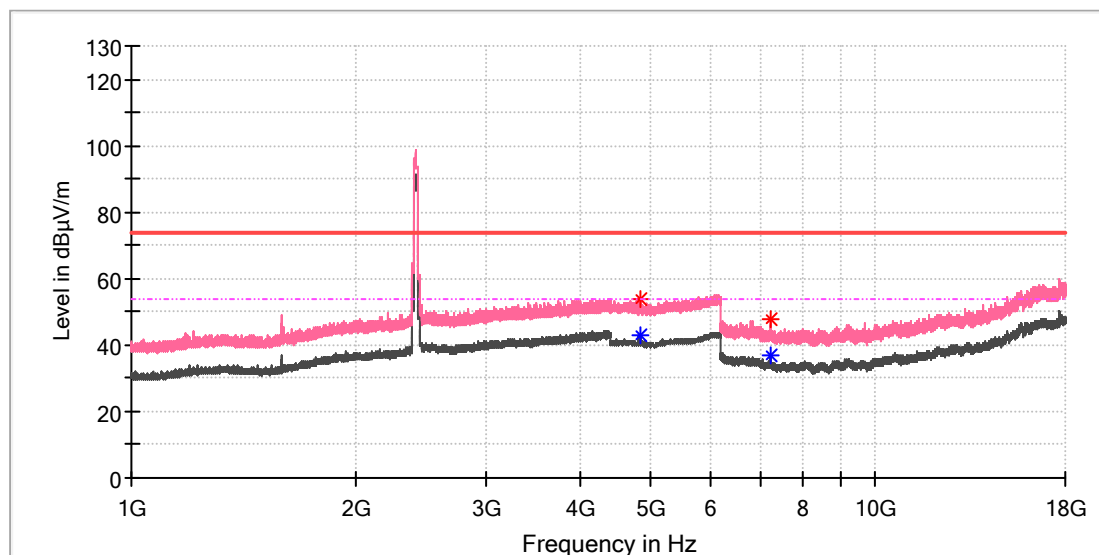
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1195.075000	---	35.72	54.00	18.28	100.0	H	206.0	1.1
1195.287500	46.69	---	74.00	27.31	100.0	H	194.0	1.1
4921.500000	---	42.62	54.00	11.38	100.0	H	262.0	13.3
4923.000000	52.55	---	74.00	21.45	100.0	H	262.0	13.3

Wi-Fi 802.11 n(HT20) mode, MCS0
1GHz - 18GHz

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_20M_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

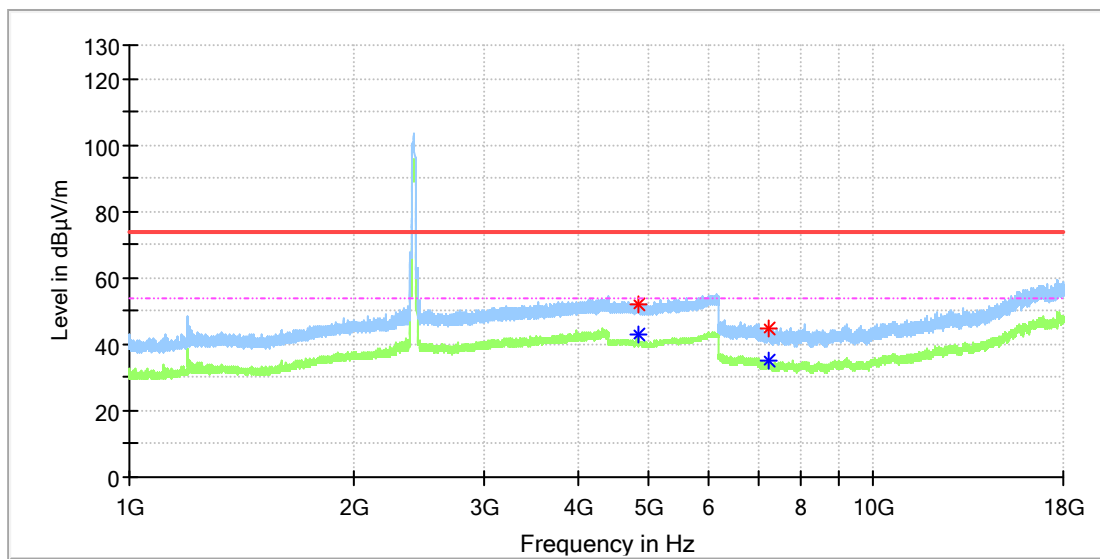


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4819.500000	---	43.02	54.00	10.98	100.0	V	138.0	13.5
4820.500000	54.00	---	74.00	20.00	100.0	V	138.0	13.5
7238.400000	47.70	---	74.00	26.30	100.0	V	175.0	8.6
7238.400000	---	36.70	54.00	17.30	100.0	V	175.0	8.6

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11n_20M_Low CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

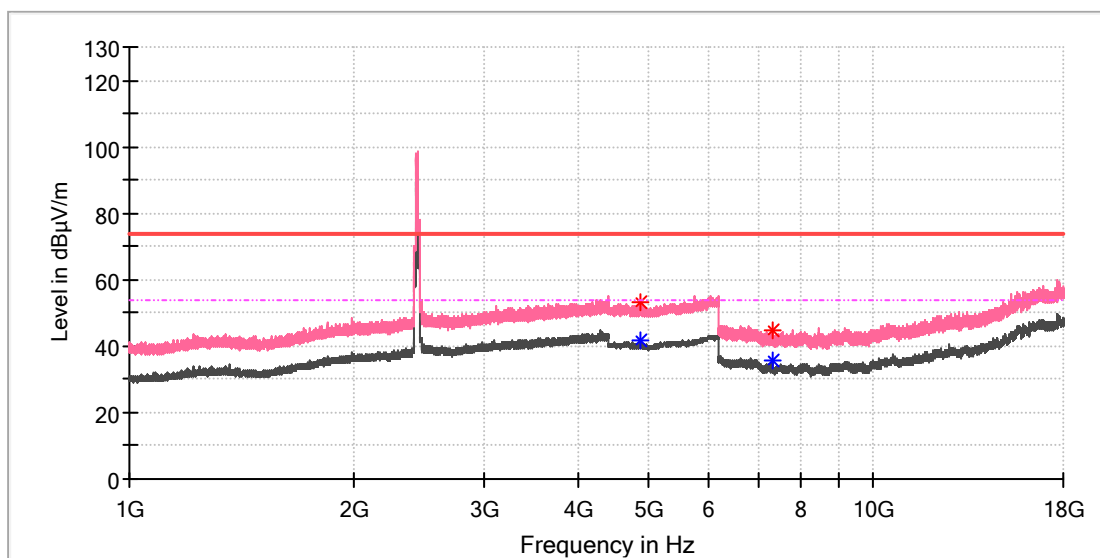


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4821.500000	---	42.70	54.00	11.30	100.0	H	254.0	13.5
4826.000000	52.16	---	74.00	21.84	100.0	H	254.0	13.5
7233.483333	---	35.29	54.00	18.71	100.0	H	149.0	8.6
7238.400000	44.95	---	74.00	29.05	100.0	H	149.0	8.6

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_20M_Mid CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

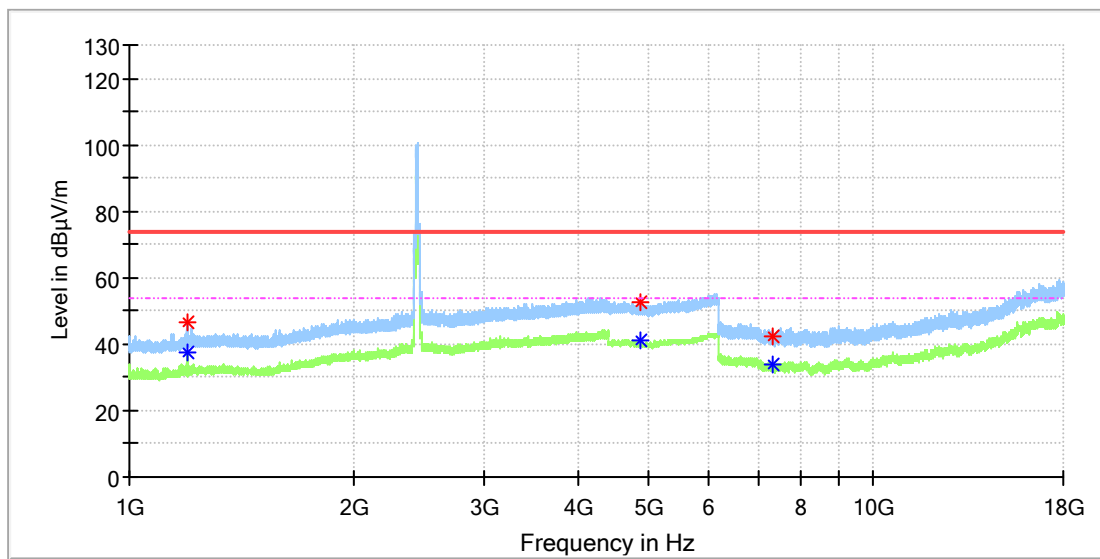


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4874.000000	53.17	---	74.00	20.83	100.0	V	144.0	13.4
4874.500000	---	41.80	54.00	12.20	100.0	V	187.0	13.4
7315.591667	44.93	---	74.00	29.07	100.0	V	288.0	8.2
7317.558333	---	35.41	54.00	18.59	100.0	V	216.0	8.2

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_20M_Mid CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

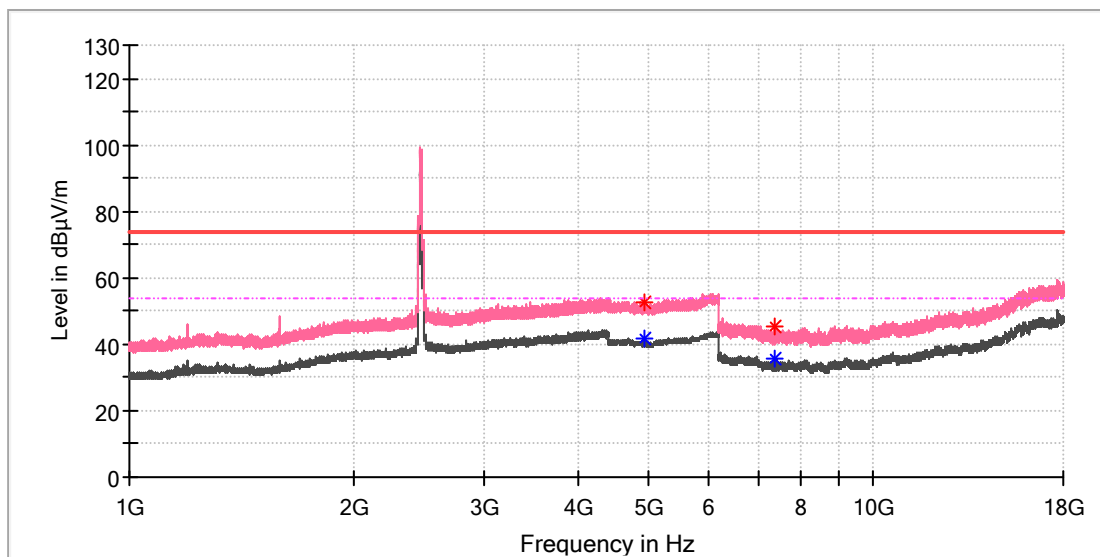


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1199.750000	46.85	---	74.00	27.15	100.0	H	205.0	1.1
1199.750000	---	37.71	54.00	16.29	100.0	H	205.0	1.1
4871.000000	---	41.30	54.00	12.70	100.0	H	0.0	13.4
4876.500000	52.45	---	74.00	21.55	100.0	H	131.0	13.4
7313.133333	42.49	---	74.00	31.51	100.0	H	204.0	8.2
7313.625000	---	33.89	54.00	20.11	100.0	H	147.0	8.2

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11n_20M_High CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

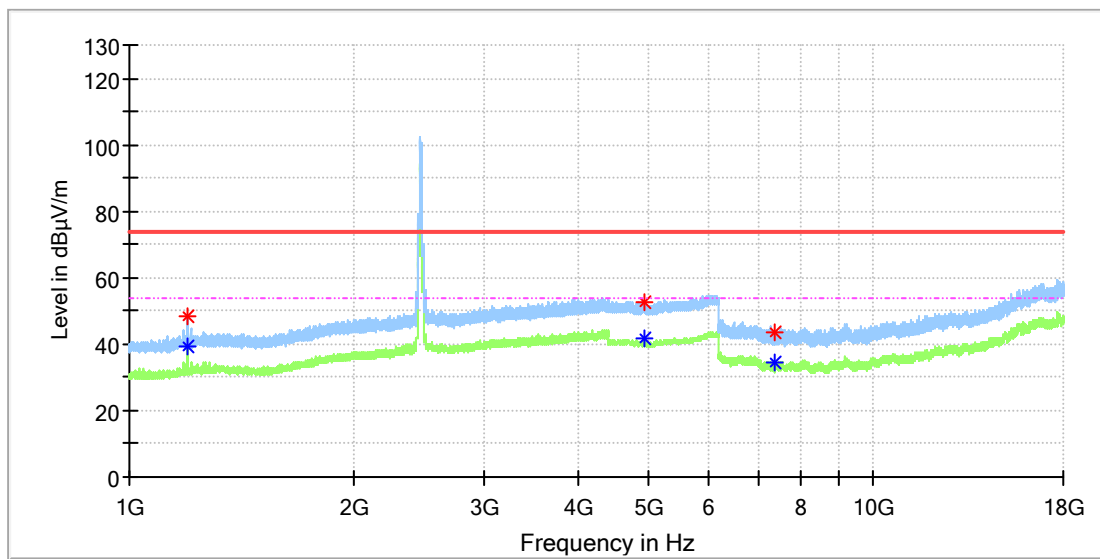


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4919.500000	---	41.92	54.00	12.08	100.0	V	189.0	13.3
4920.500000	52.37	---	74.00	21.63	100.0	V	189.0	13.3
7383.933333	---	35.97	54.00	18.03	100.0	V	179.0	8.2
7388.358333	45.20	---	74.00	28.80	100.0	V	165.0	8.2

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_20M_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



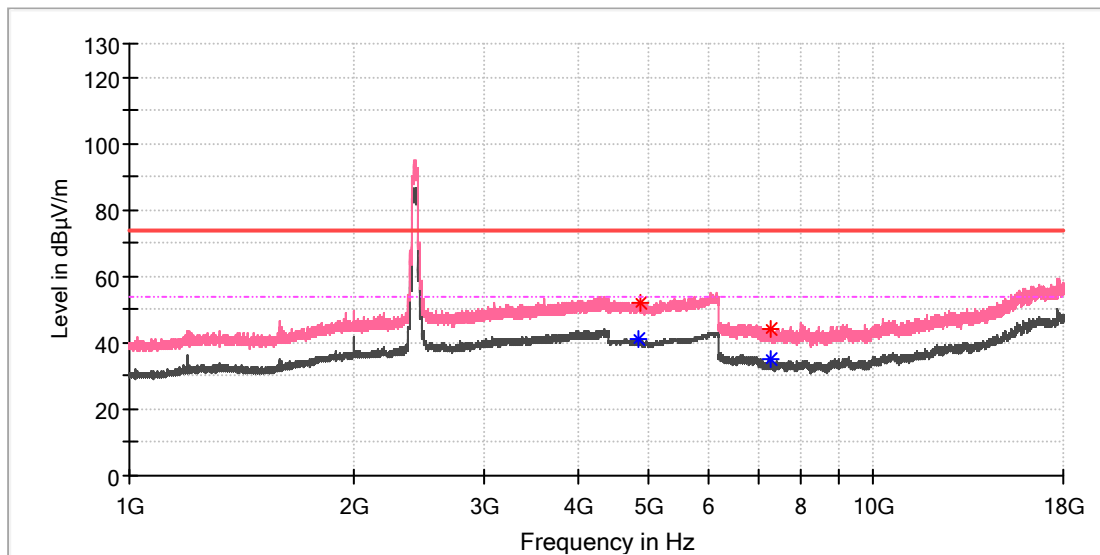
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1195.500000	---	39.16	54.00	14.84	100.0	H	281.0	1.1
1196.562500	48.38	---	74.00	25.62	100.0	H	281.0	1.1
4919.500000	52.74	---	74.00	21.26	100.0	H	127.0	13.3
4923.500000	---	41.59	54.00	12.41	100.0	H	119.0	13.3
7383.933333	43.65	---	74.00	30.35	100.0	H	67.0	8.2
7384.916667	---	34.39	54.00	19.61	100.0	H	200.0	8.2

Wi-Fi 802.11 n(HT40) mode, MCS0
1GHz - 18GHz

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_40M_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

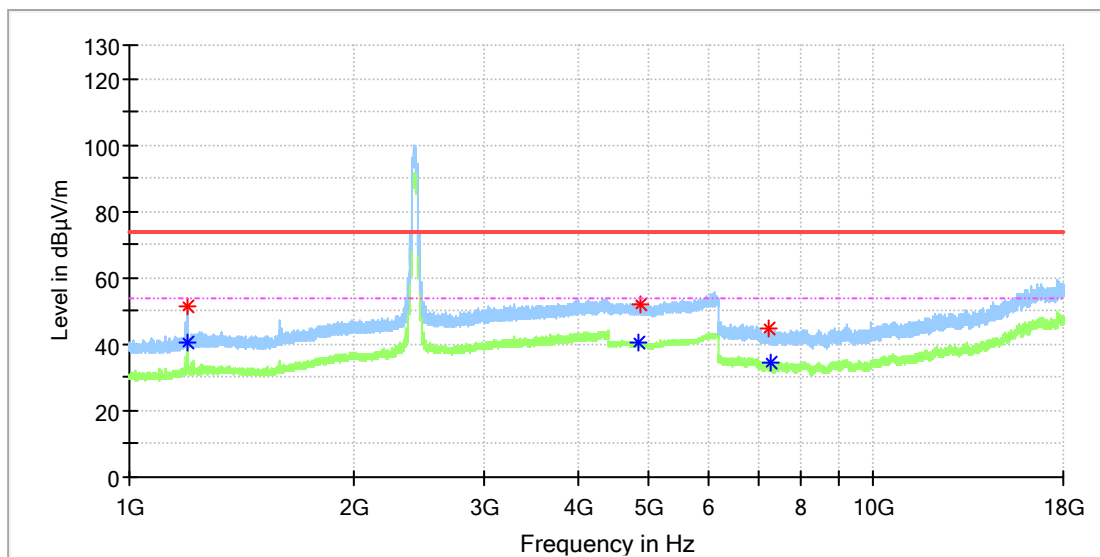


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4845.500000	---	41.03	54.00	12.97	100.0	V	276.0	13.4
4854.000000	51.83	---	74.00	22.17	100.0	V	47.0	13.4
7261.508333	---	34.84	54.00	19.16	100.0	V	175.0	8.5
7273.308333	44.03	---	74.00	29.97	100.0	V	333.0	8.4

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11n_40M_Low CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

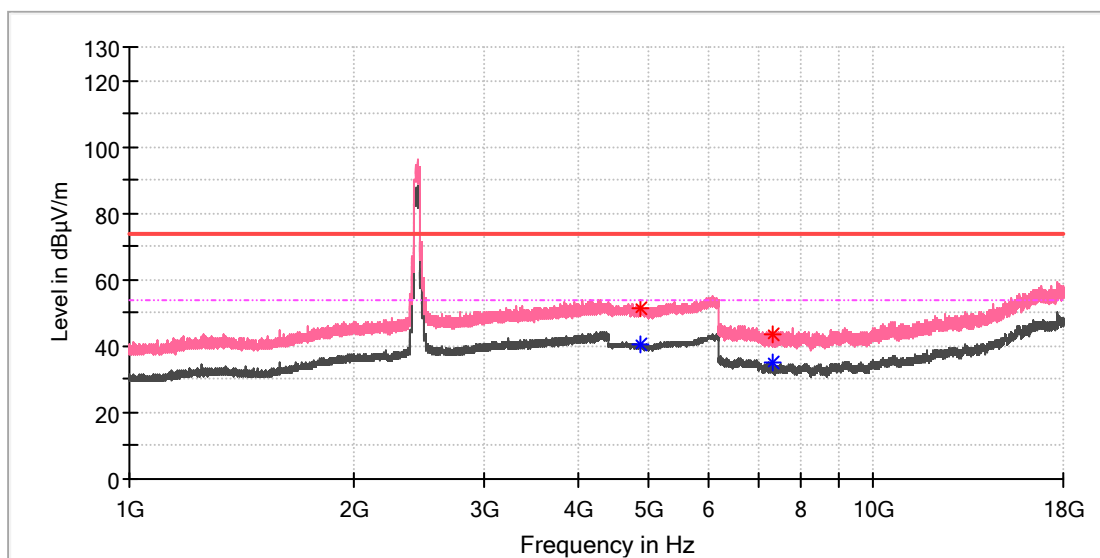


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1195.500000	---	40.75	54.00	13.25	100.0	H	226.0	1.1
1198.262500	51.22	---	74.00	22.78	100.0	H	303.0	1.1
4844.500000	---	40.65	54.00	13.35	100.0	H	237.0	13.4
4851.500000	51.92	---	74.00	22.08	100.0	H	39.0	13.4
7248.233333	44.74	---	74.00	29.26	100.0	H	92.0	8.5
7262.983333	---	34.29	54.00	19.71	100.0	H	163.0	8.5

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_40M_Mid CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

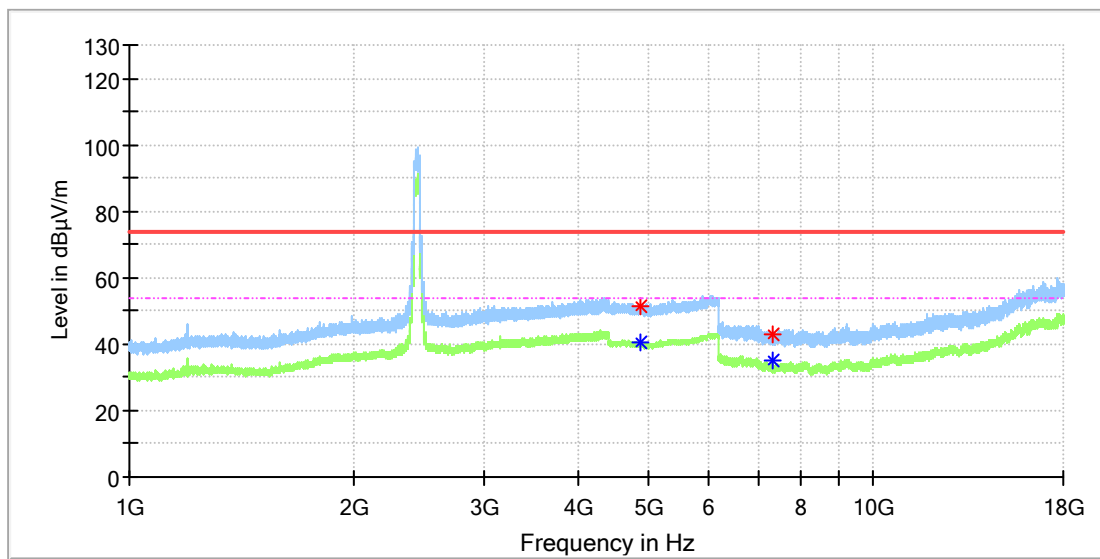


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4872.500000	51.26	---	74.00	22.74	100.0	V	267.0	13.4
4874.000000	---	40.70	54.00	13.30	100.0	V	187.0	13.4
7301.825000	---	35.29	54.00	18.71	100.0	V	157.0	8.3
7310.183333	43.68	---	74.00	30.32	100.0	V	187.0	8.2

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_40M_Mid CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

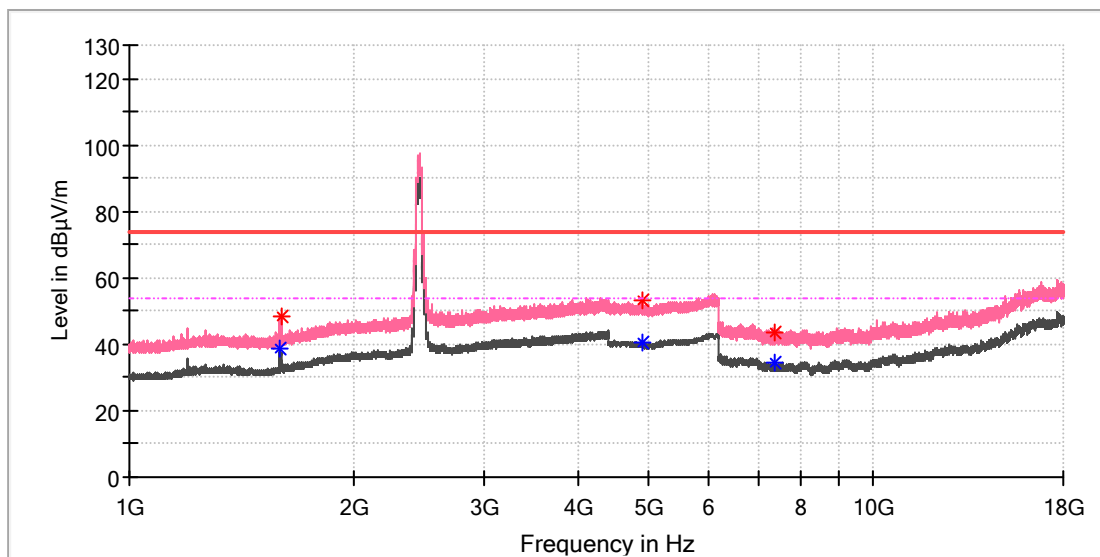


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4869.000000	51.12	---	74.00	22.88	100.0	H	2.0	13.4
4875.500000	---	40.49	54.00	13.51	100.0	H	219.0	13.4
7300.841667	---	34.84	54.00	19.16	100.0	H	149.0	8.3
7323.458333	43.14	---	74.00	30.86	100.0	H	91.0	8.2

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_40M_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

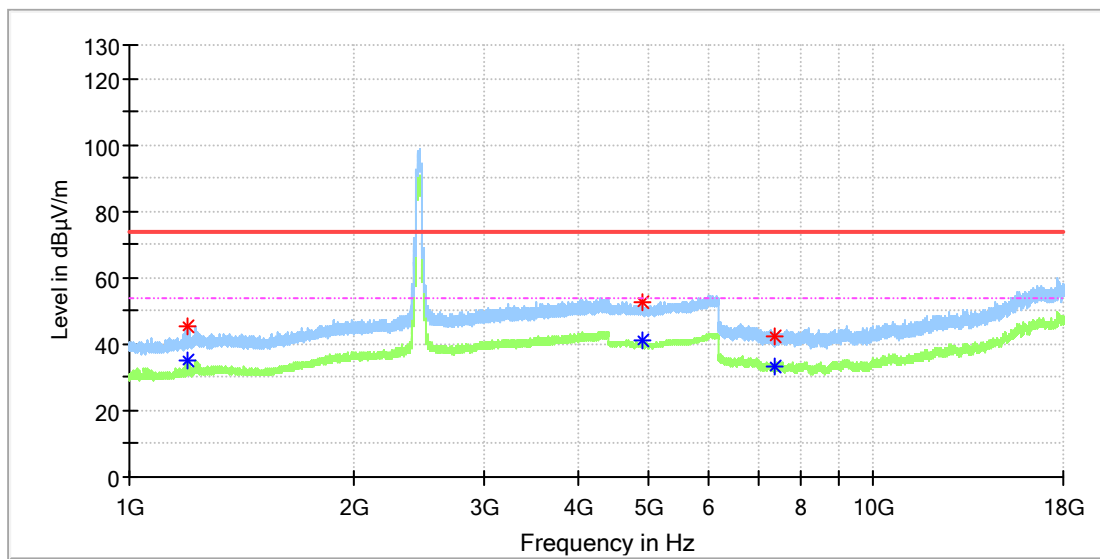


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1596.487500	---	38.59	54.00	15.41	100.0	V	248.0	2.1
1597.550000	48.26	---	74.00	25.74	100.0	V	248.0	2.1
4897.500000	53.28	---	74.00	20.72	100.0	V	186.0	13.3
4903.500000	---	40.75	54.00	13.25	100.0	V	200.0	13.3
7360.333333	43.35	---	74.00	30.65	100.0	V	217.0	8.1
7365.250000	---	34.37	54.00	19.63	100.0	V	217.0	8.2

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_40M_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical Freqs

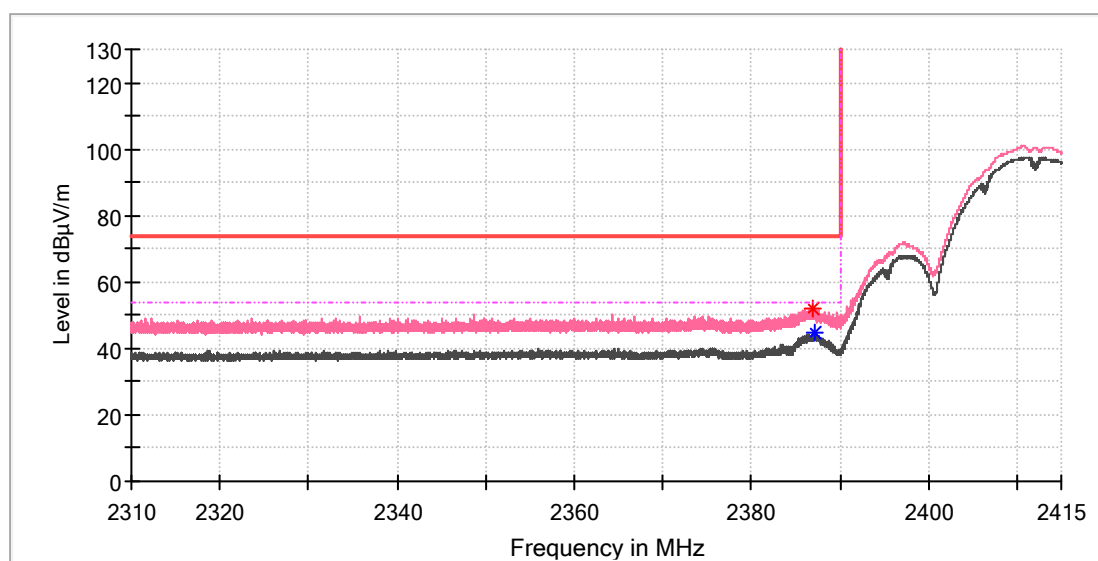
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1194.862500	45.30	---	74.00	28.70	100.0	H	143.0	1.1
1195.500000	---	35.37	54.00	18.63	100.0	H	143.0	1.1
4895.000000	52.52	---	74.00	21.48	100.0	H	260.0	13.3
4897.000000	---	41.01	54.00	12.99	100.0	H	233.0	13.3
7356.891667	42.49	---	74.00	31.51	100.0	H	144.0	8.1
7356.891667	---	33.33	54.00	20.67	100.0	H	144.0	8.1

Appendix C.2: Test Results of Radiated Emissions in Restricted Bands

Wi-Fi 802.11 b mode, 1 Mbps
Low channel

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11b_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

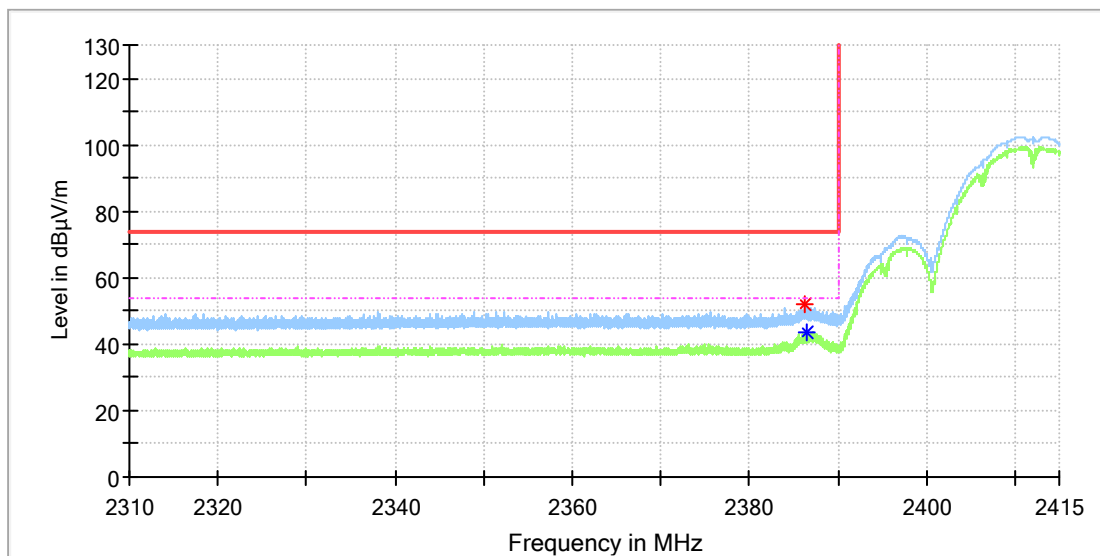


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2387.010938	51.76	---	74.00	22.24	100.0	V	321.0	7.0
2387.181563	---	44.70	54.00	9.30	100.0	V	333.0	7.0

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11b_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



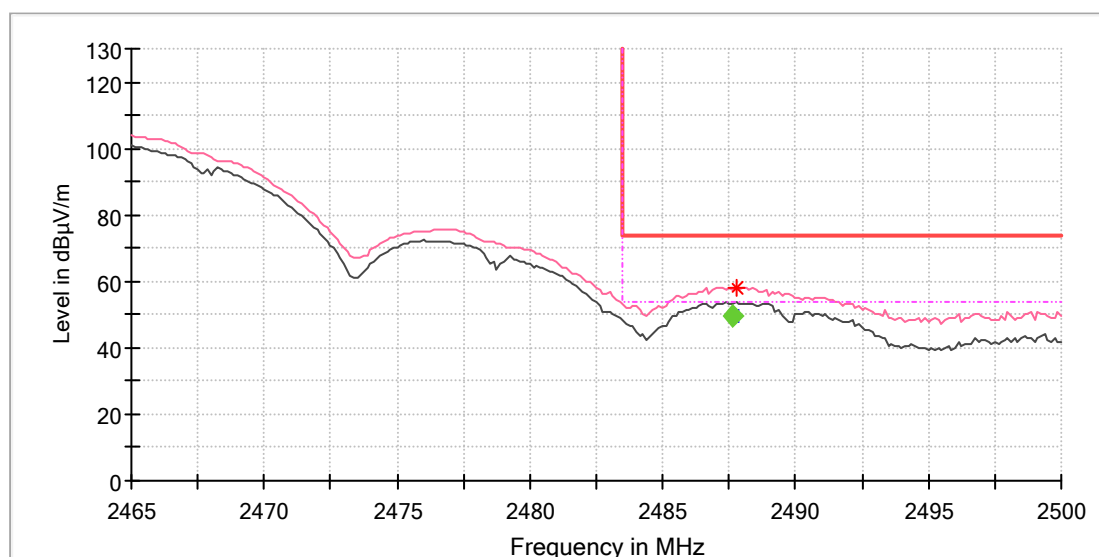
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2386.328438	52.21	---	74.00	21.79	100.0	H	199.0	7.0
2386.505625	---	43.48	54.00	10.52	100.0	H	199.0	7.0

High channel

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11b_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

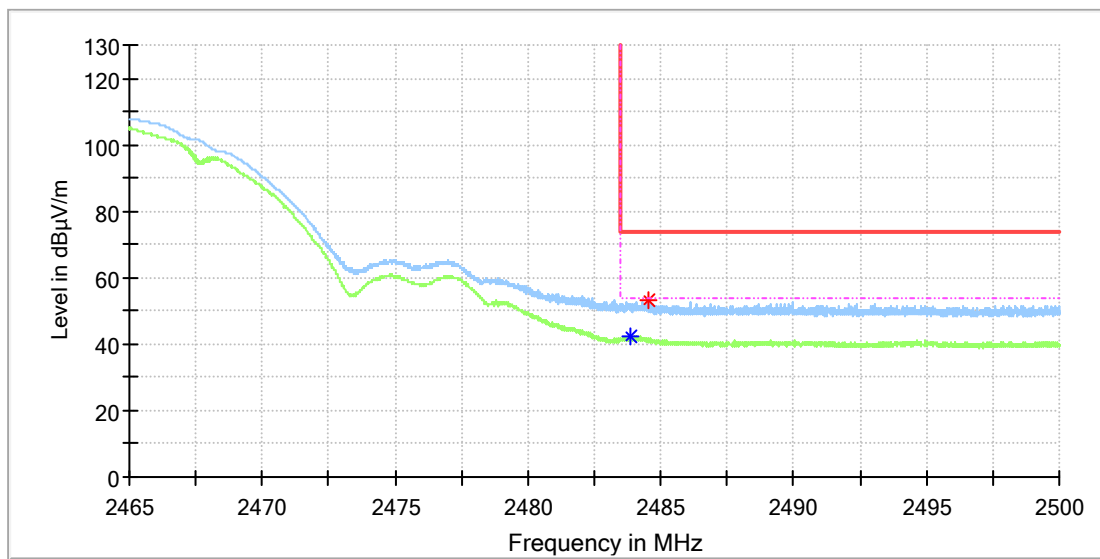


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2487.633750	---	49.59	54.00	4.41	100.0	V	241.0	7.4
2487.750000	58.13	---	74.00	15.87	100.0	V	252.0	7.4

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11b_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



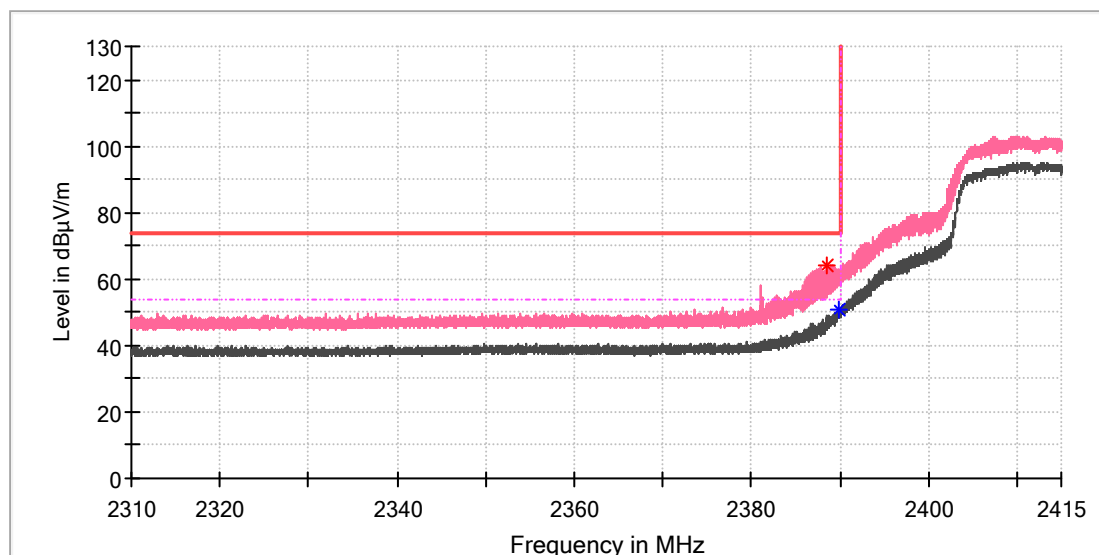
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.858824	---	42.36	54.00	11.64	100.0	H	346.0	7.4
2484.563971	53.16	---	74.00	20.84	100.0	H	359.0	7.4

**Wi-Fi 802.11 g mode, 6 Mbps
Low channel**

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11g_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

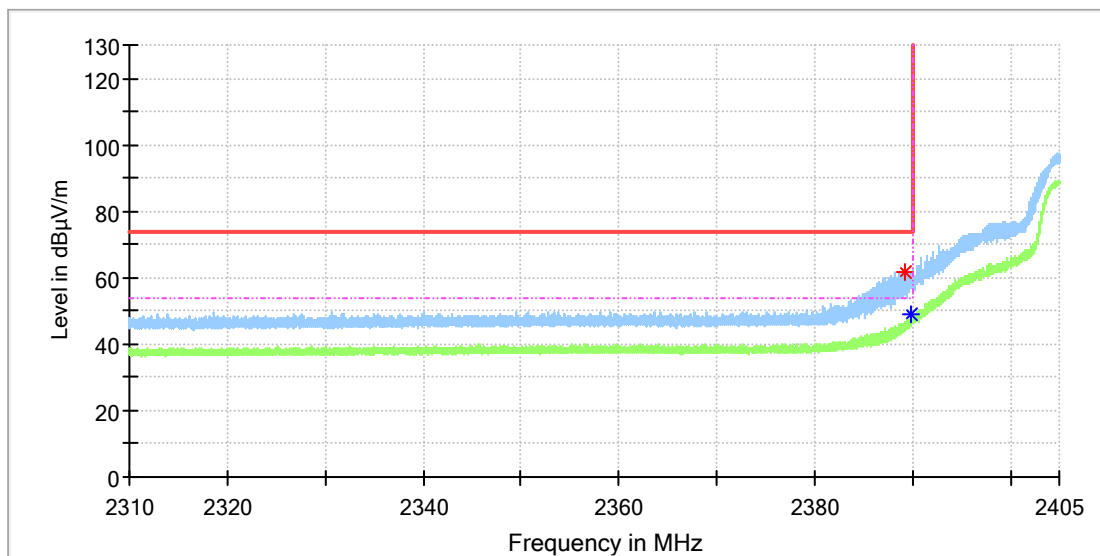


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2388.454688	64.24	---	74.00	9.76	100.0	V	274.0	7.0
2389.911563	---	50.78	54.00	3.22	100.0	V	248.0	7.0

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WiFi 2.4G_11g_Low CH
 Test Voltage:: Battery
 Remark: Temp 23 Humi:55%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



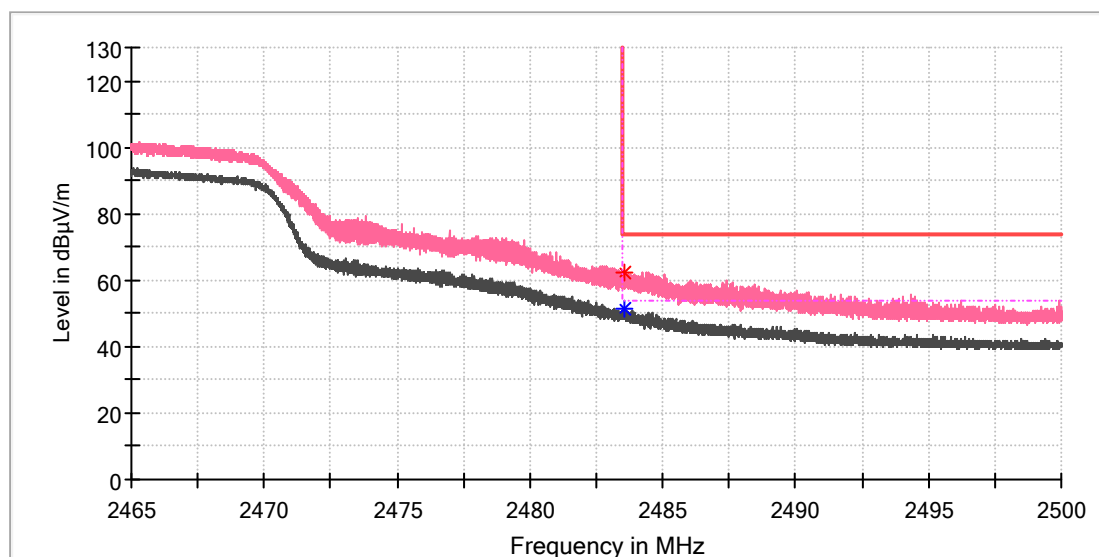
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.295313	61.75	---	74.00	12.25	100.0	H	234.0	7.0
2389.805938	---	48.87	54.00	5.13	100.0	H	354.0	7.0

High channel

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11g_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

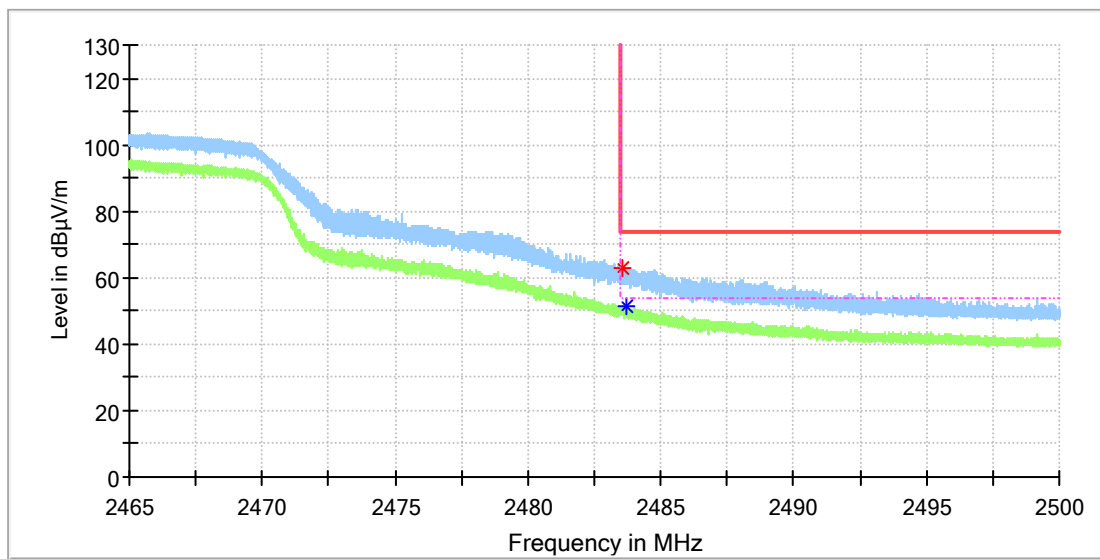


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.525938	62.44	---	74.00	11.56	100.0	V	98.0	7.4
2483.539063	---	51.17	54.00	2.83	100.0	V	98.0	7.4

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11g_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

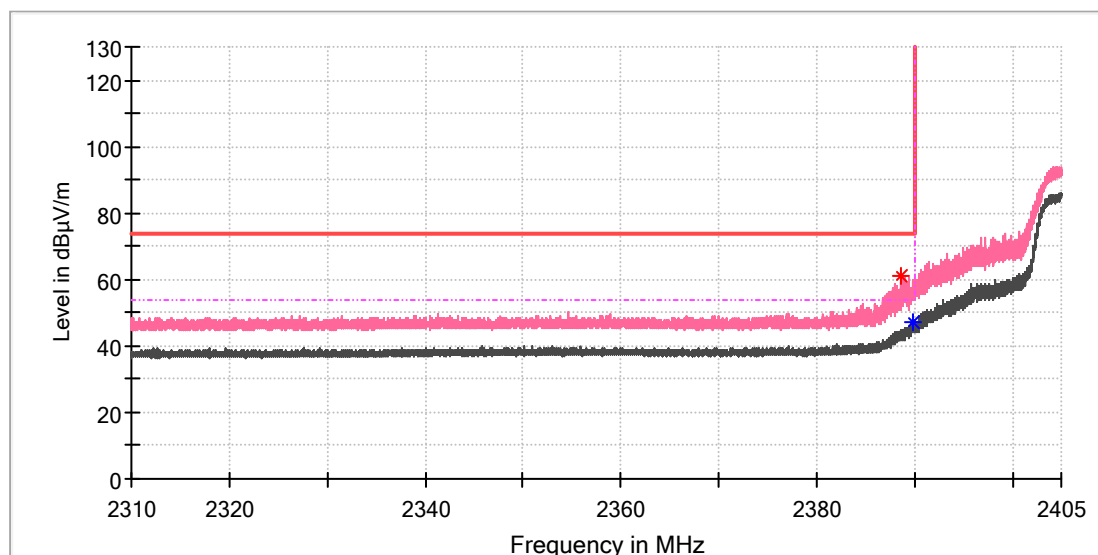


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.539063	62.96	---	74.00	11.04	100.0	H	277.0	7.4
2483.711875	---	51.10	54.00	2.90	100.0	H	277.0	7.4

Wi-Fi 802.11 n(HT20) mode, MCS0
Low channel
EUT Information

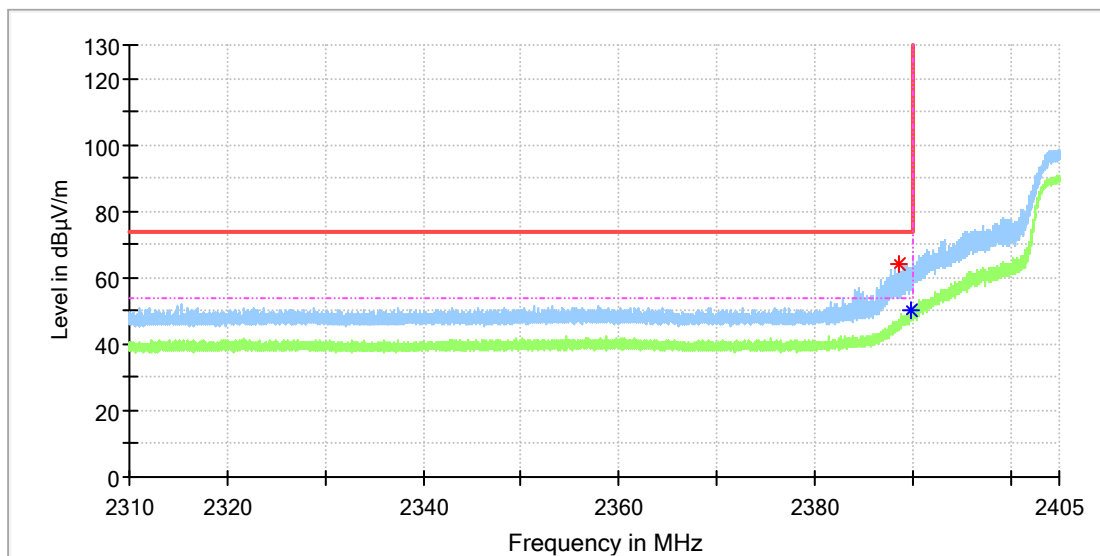
EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_20M_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2388.582813	60.89	---	74.00	13.11	100.0	V	130.0	7.0
2389.823750	---	47.24	54.00	6.76	100.0	V	341.0	7.0

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_20M_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



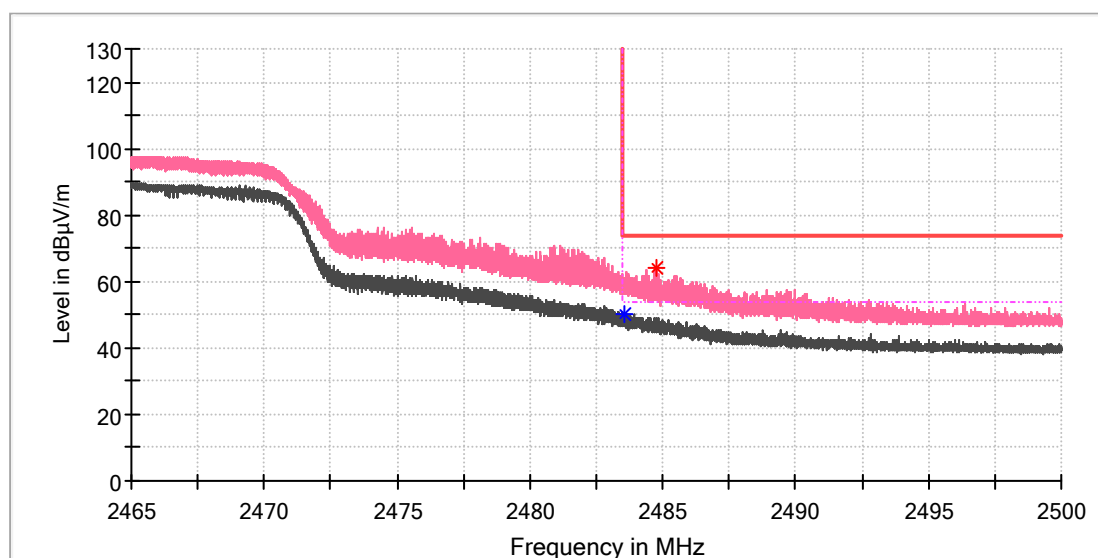
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2388.648125	64.30	---	74.00	9.70	100.0	H	189.0	7.0
2389.788125	---	50.07	54.00	3.93	100.0	H	213.0	7.0

High channel

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_20M_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

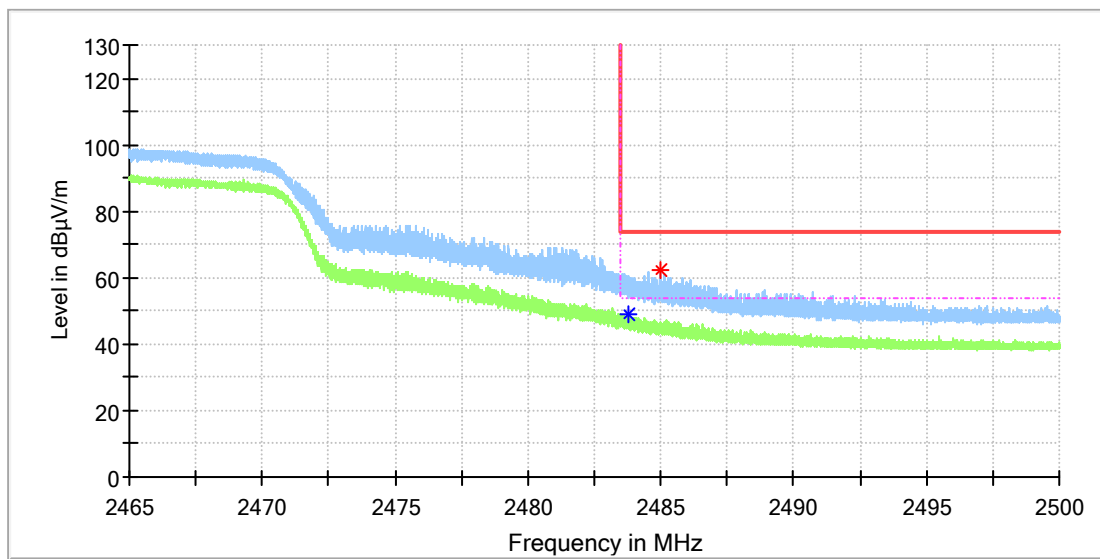


Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.554375	---	50.35	54.00	3.65	100.0	V	36.0	7.4
2484.794688	64.24	---	74.00	9.76	100.0	V	36.0	7.4

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_20M_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



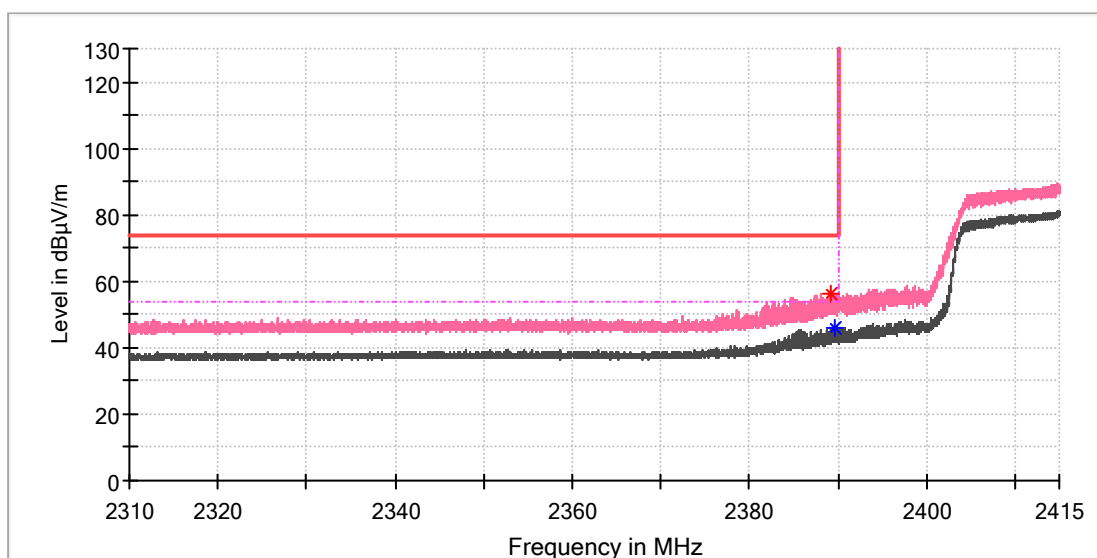
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.751250	---	48.72	54.00	5.28	100.0	H	208.0	7.4
2484.952188	62.03	---	74.00	11.97	100.0	H	164.0	7.4

Wi-Fi 802.11 n(HT40) mode, MCS0
Low channel

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_40M_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

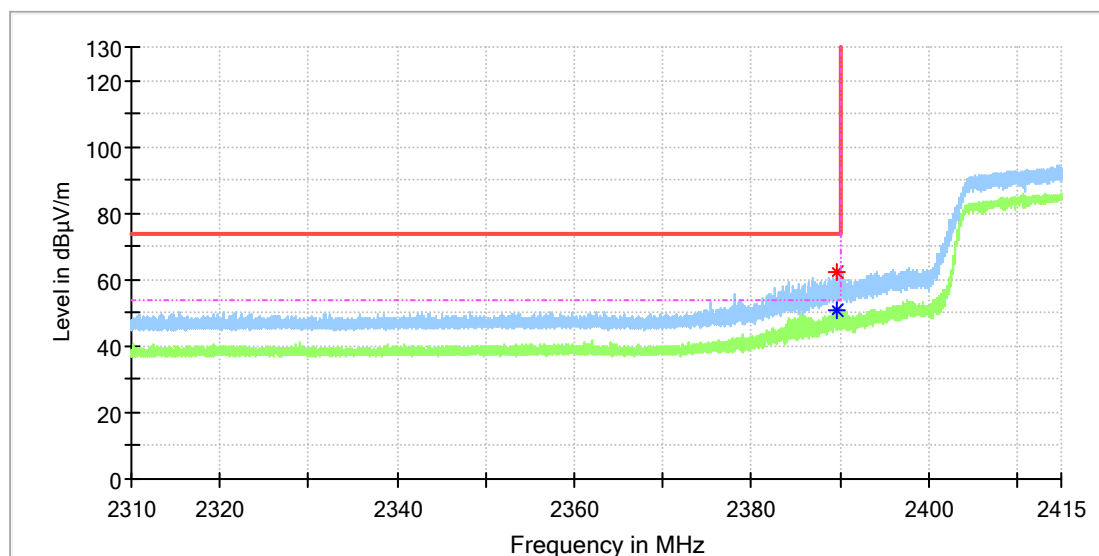


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.143750	56.46	---	74.00	17.54	100.0	V	131.0	7.0
2389.603125	---	46.19	54.00	7.81	100.0	V	220.0	7.0

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_40M_Low CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



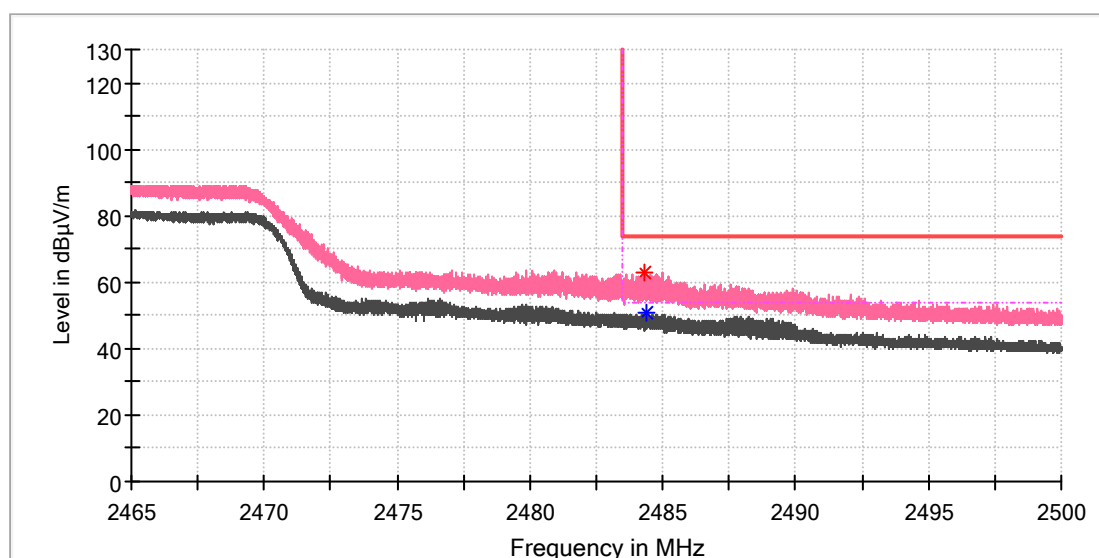
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2389.662188	62.15	---	74.00	11.85	100.0	H	189.0	7.0
2389.767188	---	50.84	54.00	3.16	100.0	H	189.0	7.0

High channel

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_40M_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

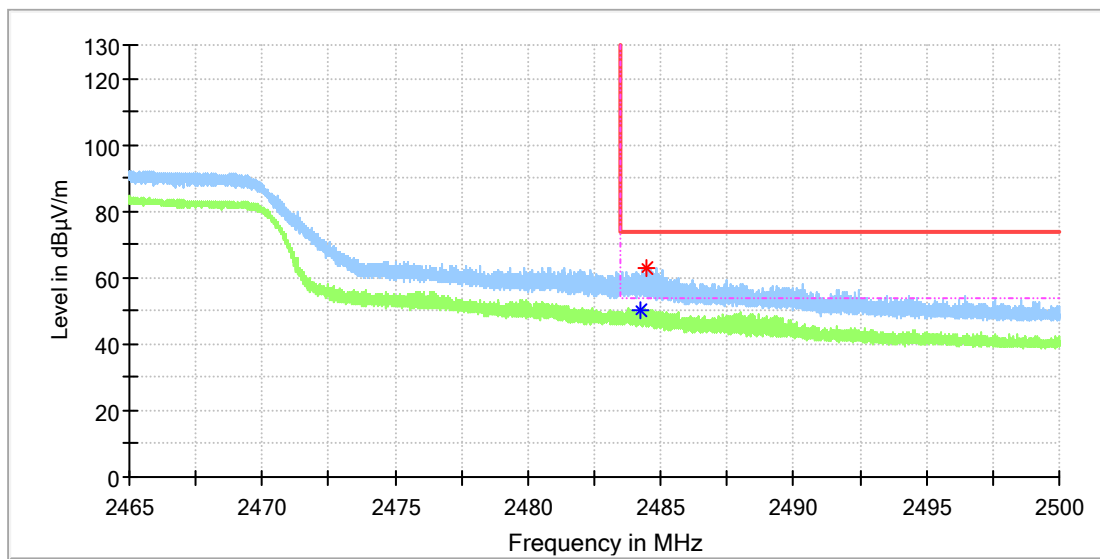


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.285000	63.17	---	74.00	10.83	100.0	V	31.0	7.4
2484.400938	---	50.66	54.00	3.34	100.0	V	228.0	7.4

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WiFi 2.4G_11n_40M_High CH
Test Voltage::	Battery
Remark:	Temp 23 Humi:55%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



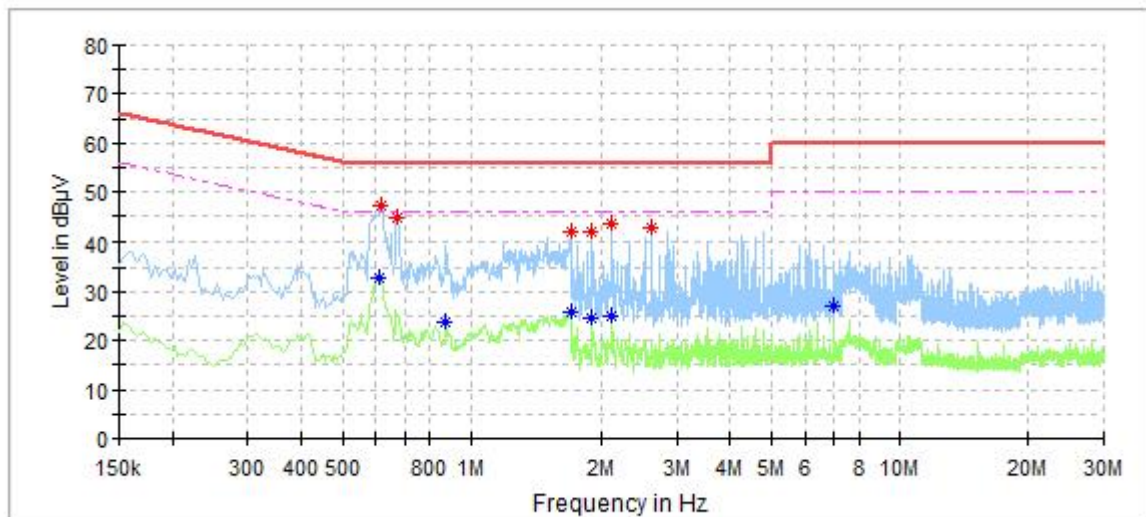
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.271875	---	50.28	54.00	3.72	100.0	H	162.0	7.4
2484.449063	63.17	---	74.00	10.83	100.0	H	162.0	7.4

Appendix C.3: Test Results of Conducted Emission on AC Mains

EUT Information

EUT Name:	Smart Home Speaker
Model:	MS30A
Test Mode:	WIFI playing
Test Voltage:	AC 120V/60Hz
Test By:	Tom Guo
Review By:	Gary Chen
Remark:	

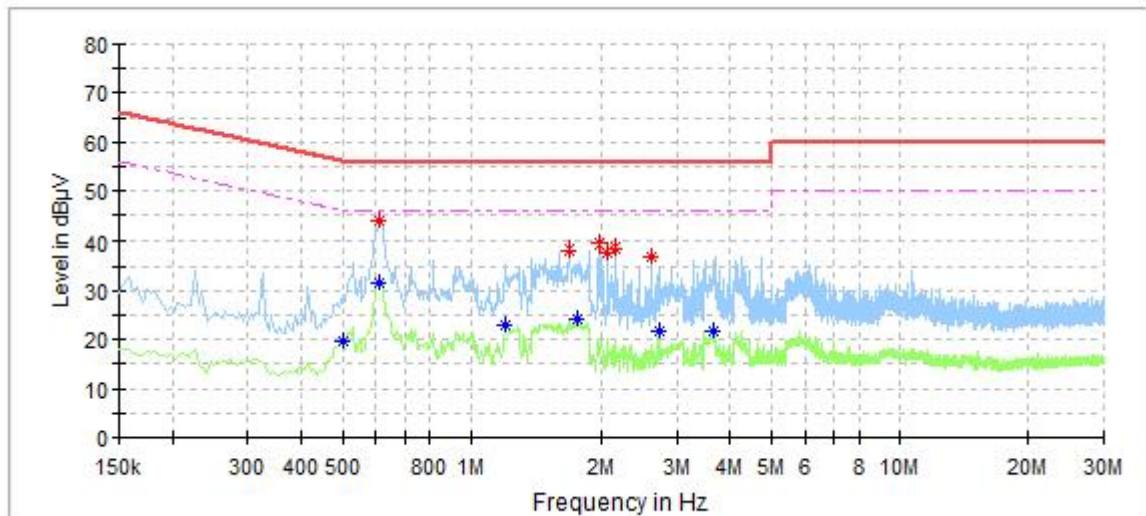


Critical Freqs

Frequency (MHz)	MaxPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.608000	---	32.95	46.00	13.05	L1	9.7
0.616000	47.10	---	56.00	8.90	L1	9.7
0.672000	44.75	---	56.00	11.25	L1	9.7
0.872000	---	23.60	46.00	22.40	L1	9.7
1.692000	41.79	---	56.00	14.21	L1	9.7
1.692000	---	25.93	46.00	20.07	L1	9.7
1.900000	41.77	---	56.00	14.23	L1	9.7
1.904000	---	24.75	46.00	21.25	L1	9.7
2.112000	---	25.17	46.00	20.83	L1	9.7
2.112000	43.63	---	56.00	12.37	L1	9.7
2.628000	42.52	---	56.00	13.48	L1	9.8
6.996000	---	27.14	50.00	22.86	L1	10.0

EUT Information

EUT Name: Smart Home Speaker
 Model: MS30A
 Test Mode: WIFI playing
 Test Voltage: AC 120V/60Hz
 Test By: Tom Guo
 Review By: Gary Chen
 Remark:



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.500000	---	19.88	46.00	26.12	N	9.7
0.608000	---	31.42	46.00	14.58	N	9.7
0.612000	44.04	---	56.00	11.96	N	9.7
1.200000	---	23.16	46.00	22.84	N	9.7
1.676000	38.23	---	56.00	17.77	N	9.7
1.752000	---	24.37	46.00	21.63	N	9.7
1.984000	39.19	---	56.00	16.81	N	9.7
2.064000	37.59	---	56.00	18.41	N	9.7
2.160000	38.39	---	56.00	17.61	N	9.7
2.620000	37.08	---	56.00	18.92	N	9.8
2.720000	---	21.74	46.00	24.26	N	9.8
3.676000	---	21.73	46.00	24.27	N	9.8