



<b>Prüfbericht-Nr.:</b> <i>Test report no.:</i>	60376695 001	<b>Auftrags-Nr.:</b> <i>Order no.:</i>	238114490	Seite 1 von 28 <i>Page 1 of 28</i>
<b>Kunden-Referenz-Nr.:</b> <i>Client reference no.:</i>	N/A	<b>Auftragsdatum:</b> <i>Order date:</i>	10-Jan-2020	
<b>Auftraggeber:</b> <i>Client:</i>	Pamex Inc. PAMEX INC, 4680 VINITA CT, CHINO, CA, 91710, UNITED STATES			
<b>Prüfgegenstand:</b> <i>Test item:</i>	Enkore			
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type no.:</i>	KE1-INP35A, KE1-D7P1A			
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	FCC Part 15C Test report (WiFi 2.4GHz)			
<b>Prüfgrundlage:</b> <i>Test specification:</i>	FCC 47CFR Part 15: Subpart C Section 15.247			
<b>Wareneingangsdatum:</b> <i>Date of sample receipt:</i>	03-Jun-2020			
<b>Prüfmuster-Nr.:</b> <i>Test sample no.:</i>	A002839446-001 A002839446-002			
<b>Prüfzeitraum:</b> <i>Testing period:</i>	09-Jun-2020 – 12-Jun-2020			
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	EMC/RF Laboratory Taipei			
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	Taipei Testing Laboratories			
<b>Prüfergebnis*:</b> <i>Test result*:</i>	Pass			
<b>überprüft von:</b> <i>reviewed by:</i>		<b>genehmigt von</b> <i>authorized by:</i>		
<b>Datum:</b> 22-Jun-2020 <i>Date:</i>	Mars Y.J. Lin	<b>Datum:</b> 22-Jun-2020 <i>Date:</i>	Ryan W.T. Chen	
<b>Stellung / Position:</b>	Project Engineer	<b>Stellung / Position:</b>	Project Manager	
<b>Sonstiges / Other:</b>	KE1-INP35A, KE1-D7P1A use the same parts and RF chip, only the appearance of the door handle is different, the measurement is directly carried out with the worst model. After evaluation, KE1-INP35A is the worst model.			
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend N/A = nicht anwendbar	4 = ausreichend N/T = nicht getestet
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory N/A = not applicable	4 = sufficient N/T = not tested
<b>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.</b> <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>				

V05

## TEST SUMMARY

Report Section	FCC Clause	Test Item	Result
5.1.1	15.247(b) & 15.203	Antenna Requirement	Pass
5.1.2	15.247(b)	Peak Output Power	Pass
5.1.3	15.247(a)(2)	6 dB Bandwidth	Pass
5.1.3	2.1049	99% Occupied Bandwidth	Pass
5.1.4	15.247(e)	Power Spectral Density	Pass
5.1.5	15.247(d)	Conducted Spurious Emissions and Band Edges	Pass
5.1.6	15.247(d) & 15.205 & 15.209	Radiated Spurious Emissions and Band Edges	Pass
6.1	2.1091	RF Exposure Compliance	Pass

**Note:** Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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**APPENDIX A - TEST RESULT OF CONDUCTED**

**APPENDIX B - TEST RESULT OF RADIATED SPURIOUS EMISSIONS**

**APPENDIX C - PHOTO DOCUMENTATION\_TEST SETUP PHOTO**

**APPENDIX D - PHOTO DOCUMENTATION\_EUT PHOTO**

**Prüfbericht - Nr.: 60376695 001**  
Test Report No.**Seite 5 von 28**  
Page 5 of 28**HISTORY OF THIS TEST REPORT**

Report No.	Description	Date Issued
60376695 001	Original Release	22-Jun-2020

## 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 - Test Result of Conducted**

**Appendix B - Test Result of Radiated Spurious Emissions**

**Appendix C - Photo Documentation\_Test Setup Photo**  
(File Name: 60376695 001 Appendix C)

**Appendix D - Photo Documentation\_EUT Photo**  
(File Name: 60376695 001 Appendix D)

### Applied Standard and Test Levels

Radio
FCC CFR47 Part 15: Subpart C Section 15.247
FCC CFR47 Part 2: Subpart J Section 2.1091
ANSI C63.10:2013
KDB 558074 D01 15.247 Meas Guidance v05r02

### 1.2 Decision Rule of Conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard.

## 2. Test Sites

### 2.1 Test Laboratory

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.  
Taipei City 105  
Taiwan (R.O.C.)

### 2.2 Test Facility

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.  
Taipei City 105  
Taiwan (R.O.C.)  
(Mains Conducted Emission)  
FCC Registration No.: 180491  
ISED Registration No.: 9465A

No.458-18, Sec. 2, Fenliao Rd., Linkou Dist.,  
New Taipei City 244  
Taiwan (R.O.C.)  
(Conducted Test & Radiated Spurious Emissions)  
FCC Registration No.: 226631  
ISED Registration No.: 25563



## 2.3 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. 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 are:

### Emission Measurement Uncertainty

Parameter	Uncertainty
RF power, conducted	± 1.5 dB
Adjacent channel power	± 3 dB
Radiated emission of transmitter, valid up to 26 GHz	± 6 dB
Radiated emission of receiver, valid up to 26 GHz	± 6 dB
Temperature	± 2 °C
Humidity	± 10 %



### 3. General Product Information

#### 3.1 Product Function and Intended Use

The EUT is an Enkore. It contains a WLAN compatible module enabling the user to communicate data through a Wireless interface.

For details refer to the User Guide, Data Sheet and Circuit Diagram.

#### 3.2 System Details and Ratings

##### Basic Information of EUT

Item	EUT information
Kind of Equipment/Test Item	Enkore
Type Identification	KE1-INP35A, KE1-D7P1A
FCC ID	2AQ8A-KE1-DNI-A

##### Technical Specification of EUT

Item	EUT information
Operating Frequency	2412 MHz ~ 2462 MHz
Channel Spacing	5 MHz
Channel number	802.11b/g/n HT20: 11
Data Rate	802.11b: 11.0 / 5.5 / 2.0 / 1.0 Mbps 802.11g: 54.0 / 48.0 / 36.0 / 24.0 / 18.0 / 12.0 / 9.0 / 6.0 Mbps 802.11n: up to MCS7
Operation Voltage	6 Vdc
Modulation	DSSS (DBPSK, DQPSK, CCK) OFDM (BPSK, QPSK, 16QAM, 64QAM)
Maximum Output Power (mW)	802.11b: 33.04 802.11g: 66.53 802.11n HT20: 66.99
Antenna Information	Refer to 5.1.1
Accessory Device	Refer to 4.4

Note:

- All models are listed as below.

Product Name	Type Identification	Difference
Enkore	KE1-INP35A	With Handle
	KE1-D7P1A	Without Handle

### **3.3 Noise Generating and Noise Suppressing Parts**

Refer to the Circuit Diagram.

### **3.4 Submitted Documents**

- Circuit Diagram
- Instruction Manual
- Rating Label
- Technical Description

## 4. Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

The test modes were adapted accordingly in reference to the instructions for use.

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output expected by the customer and is going to be fixed on the firmware of the final end product.

#### Table for Parameters of Test Software Setting

802.11b		802.11g		802.11n HT20	
Channel	Power Setting	Channel	Power Setting	Channel	Power Setting
1	0	1	0	1	0
6	1	6	0	6	0
11	0	11	0	11	0

### 4.2 Carrier Frequency and Channel

802.11b, 802.11g and 802.11n HT20:

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		

### 4.3 Test Operation and Test Software

Setup for testing: Test samples are provided with a USB interface which makes it possible to control them through a test software installed on a notebook computer.

This software was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed as below.

Test Software	CC3100_CC3200_RadioTool-1.2-windows-installer
---------------	---

The samples were used as follows:

A002839446-001

A002839446-002

Full test was applied on all test modes, but only worst case was shown.

The EUT provide one transmitter and receiver.

Modulation Mode	Tx Function
802.11b	1TX
802.11g	1TX
802.11n HT20	1TX

EUT Configure Mode	Applicable To				Description
	Antenna Port Conducted Measurement	Radiated Spurious Emissions above 1 GHz	Radiated Spurious Emissions below 1 GHz	Mains Conducted Emission	
-	√	√	√	-	-

Note: "-" means no effect.

#### Antenna Port Conducted Measurement

Pre-Scan full test was applied on all test modes, but only worst case was shown.

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	1.0
-	802.11g	1 to 11	1, 6, 11	6.0
-	802.11n HT20	1 to 11	1, 6, 11	MCS0

#### Radiated Spurious Emissions (Above 1 GHz)

Pre-Scan full test was applied on all test modes, but only worst case was shown.

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	1.0
-	802.11g	1 to 11	1, 6, 11	6.0
-	802.11n HT20	1 to 11	1, 6, 11	MCS0

#### Radiated Spurious Emissions (Below 1 GHz)

Pre-Scan full test was applied on all test modes, but only worst case was shown.

Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11b	1 to 11	11	1.0

#### Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Conducted Measurement	22-26 °C	50-65 %	Stanislas Charles
Radiated Spurious Emissions above 1 GHz	22-26 °C	50-65 %	Simon Tsai
Radiated Spurious Emissions below 1 GHz	22-26 °C	50-65 %	Simon Tsai

## 4.4 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

### Accessory of EUT

N/A

### Support Unit

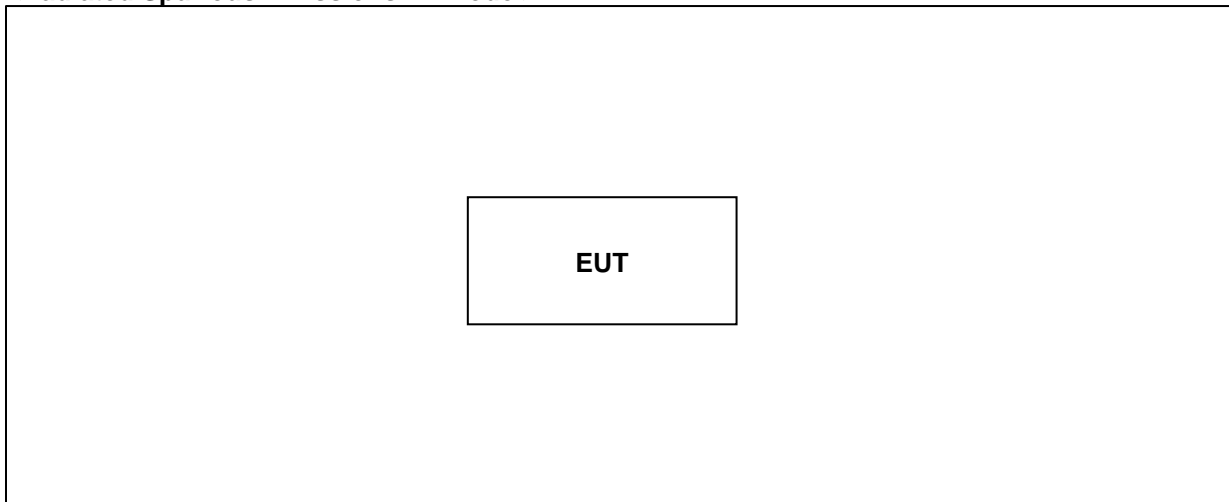
Description	Manufacturer	Model No.	Serial No.
Notebook	Lenovo	TP00048A	PB-0F8B2

## 4.5 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

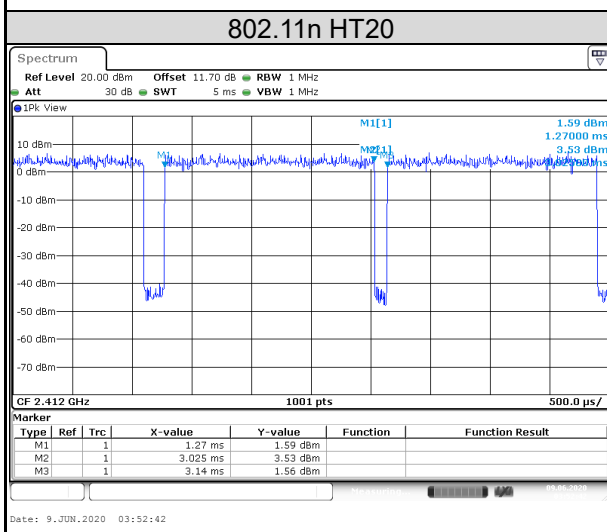
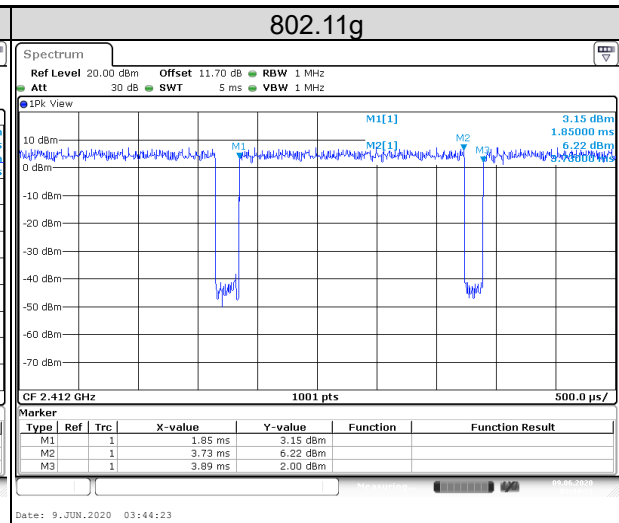
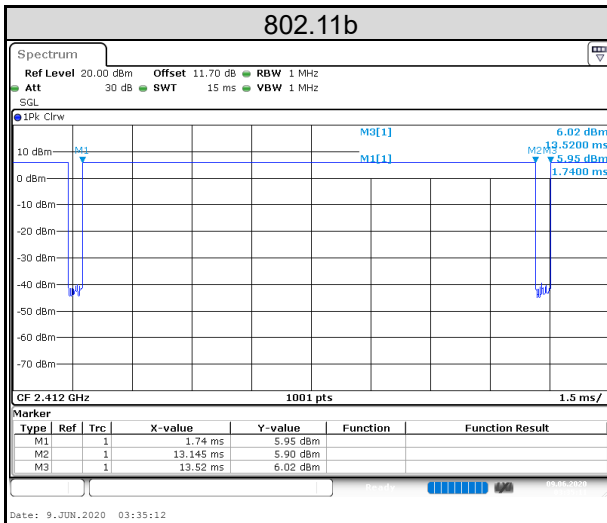
## 4.6 Test Setup Diagram

<Radiated Spurious Emissions Tx mode >



## 4.7 Duty Cycle of Test Signal

Mode	On + Off Time (ms)	On Time (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11b	11.78	11.405	96.82	0.14
802.11g	2.04	1.88	92.16	0.35
802.11n HT20	1.87	1.755	93.85	0.28



## 5. Test Results

### 5.1 Transmitter Requirement & Test Suites

#### 5.1.1 Antenna Requirement

**Requirement** Use of approved antennas only

According to the manufacturer declaration, the EUT has an antenna with a directional gain of 3.3 dBi. The antenna is a printed PCB trace with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.

Refer to EUT photo for details.



### 5.1.2 Peak Output Power

**Limit** 1 watt

**Kind of Test Site** Shielded room

**Test Setup**



**Test Instruments**

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Power Meter	Anritsu	ML2495A	1901008	2020/4/6	2021/4/5
Power Sensor	Anritsu	MA2411B	1725269	2020/4/7	2021/4/6

**Test Procedures**

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

**Test Result**
**Peak Output Power**
**<802.11b>**

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (dBm)
		(dBm)	(mW)	
1	2412	14.51	28.25	30
6	2437	15.19	33.04	30
11	2462	14.84	30.48	30

**<802.11g>**

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (dBm)
		(dBm)	(mW)	
1	2412	18.10	64.57	30
6	2437	18.23	66.53	30
11	2462	18.05	63.83	30

**<802.11n HT20>**

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (dBm)
		(dBm)	(mW)	
1	2412	18.09	64.42	30
6	2437	18.26	66.99	30
11	2462	17.99	62.95	30

**Average Power**
**<802.11b>**

Channel	Channel Frequency (MHz)	Average Power	
		(dBm)	(mW)
1	2412	12.40	17.38
6	2437	13.14	20.61
11	2462	12.81	19.10

**<802.11g>**

Channel	Channel Frequency (MHz)	Average Power	
		(dBm)	(mW)
1	2412	12.05	16.03
6	2437	13.44	22.08
11	2462	12.03	15.96

**<802.11n HT20>**

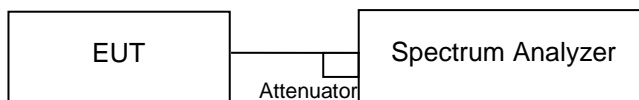
Channel	Channel Frequency (MHz)	Average Power	
		(dBm)	(mW)
1	2412	11.24	13.30
6	2437	13.26	21.18
11	2462	11.13	12.97

### 5.1.3 6dB Bandwidth and 99% Occupied Bandwidth

**Limit** The minimum 6dB bandwidth shall be at least 500 kHz.

**Kind of Test Site** Shielded room

#### Test Setup



#### Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV40	101512	2020/2/18	2021/2/17
Temp/Humidity Meter	testo	testo 608-H1	45197160/903	2019/8/7	2020/8/6

#### Test Procedure

- Set resolution bandwidth (RBW) = 100 kHz
- Set the video bandwidth (VBW)  $\geq 3 \times$  RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
- For 99% occupied bandwidth measurement, the transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to PEAK. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

#### Test Results

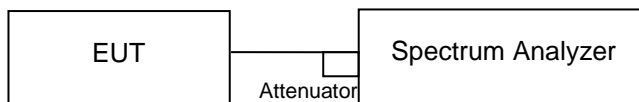
Please refer to Appendix A.

### 5.1.4 Power Spectral Density

**Limit**

The power spectral density shall not be greater than 8 dBm in any 3 kHz band.

**Kind of Test Site**                      Shielded room

**Test Setup**

**Test Instruments**

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV40	101512	2020/2/18	2021/2/17
Temp/Humidity Meter	testo	testo 608-H1	45197160/903	2019/8/7	2020/8/6

**Test Procedure**

- a. Set analyzer center frequency to DTS channel center frequency.
- b. Set the span to 1.5 times the DTS bandwidth.
- c. Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- d. Set the VBW  $\geq 3 \times \text{RBW}$ .
- e. Detector = peak.
- f. Sweep time = auto couple.
- g. Trace mode = max hold.
- h. Allow trace to fully stabilize.
- i. Use the peak marker function to determine the maximum amplitude level within the RBW.

**Test Results**

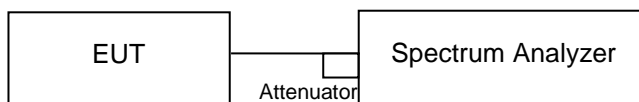
Please refer to Appendix A.

### 5.1.5 Conducted Spurious Emissions and Frequency Band Edges measured in 100kHz Bandwidth

**Limit**

20dB (below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.)

**Kind of Test Site**                      Shielded room

**Test Setup**

**Test Instruments**

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV40	101512	2020/2/18	2021/2/17
Temp/Humidity Meter	testo	testo 608-H1	45197160/903	2019/8/7	2020/8/6

**Test Procedure**

Measurement procedure REF

1. Set the RBW = 100 kHz.
2. Set the VBW  $\geq$  300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

Measurement procedure OOBE

1. Set RBW = 100 kHz.
2. Set VBW  $\geq$  300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

**Test Results**

Please refer to Appendix A.

### 5.1.6 Radiated Spurious Emissions and Band Edges

#### Limit

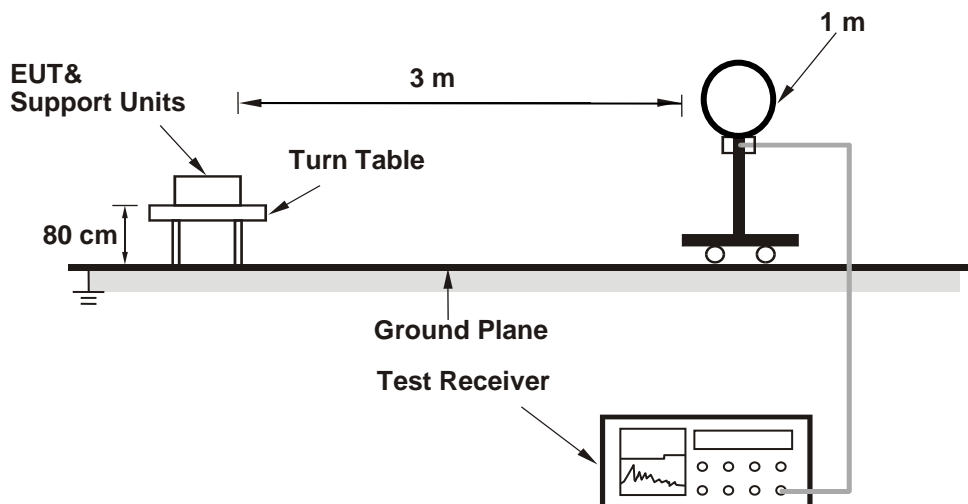
Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).

Emissions radiated outside the restricted and authorized frequency bands must either comply with the radiated emission limits specified for the restricted bands or in §15.247(d).

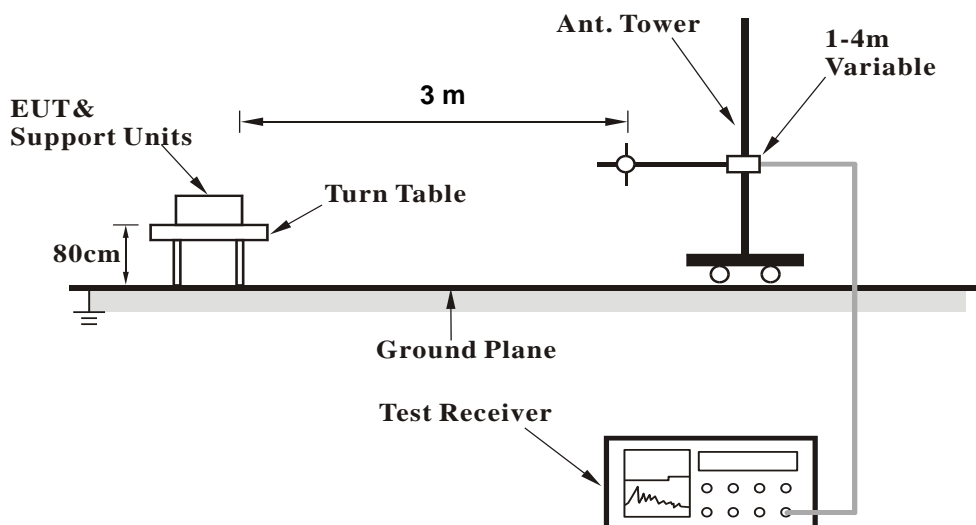
**Kind of Test Site**                      3m Semi-Anechoic Chamber

#### Test Setup

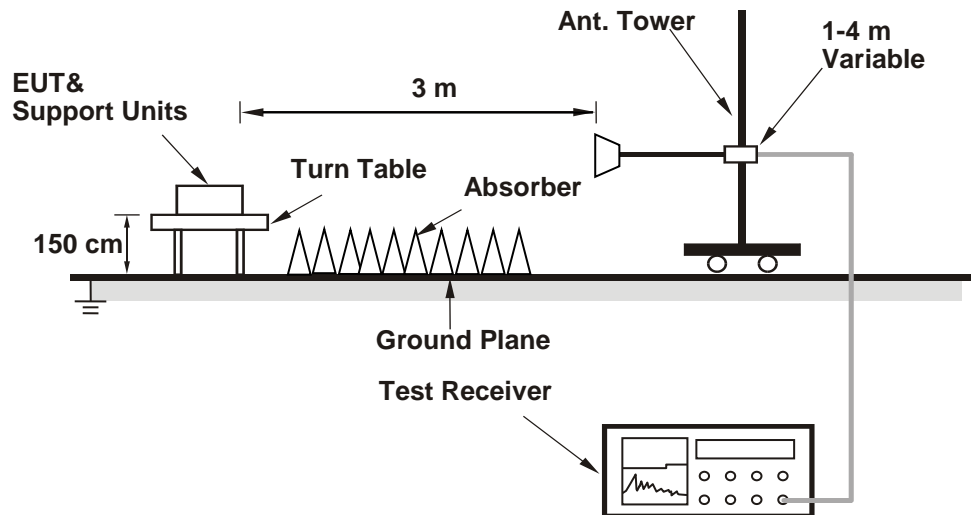
<Radiated Emissions below 30 MHz>



<Radiated Emissions 30 MHz to 1 GHz>



## &lt;Radiated Emissions above 1 GHz&gt;



For the actual test configuration, please refer to the attached file (Test Setup Photo).



**Test Instruments**

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV40	101508	2020/3/16	2021/3/15
Receiver	R&S	ESR7	102108	2020/3/16	2021/3/15
Bilog Antenna	SCHWARZBECK	VULB-9168	00951	2020/2/14	2021/2/12
Horn Antenna	ETS-Lindgren	3117	00218930	2019/12/6	2020/12/4
LF-AMP	Agilent	8447D	2944A10772	2020/2/11	2021/2/9
HF-AMP + AC source	EMCI	EMC051845SE	980633	2020/2/17	2021/2/15
HF-AMP + AC source	EMCI	EMC184045SE	980657	2020/2/17	2021/2/15
Horn Antenna	SCHWARZBECK	BBHA 9170	00887	2020/4/10	2021/4/10
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104EA	800056/4EA	2020/3/25	2021/3/25
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104	804680/4	2020/3/25	2021/3/25
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104	MY37202/4	2020/3/25	2021/3/25
Microwave Cable	HUBER+SUHNER	SUCOFLEX 102EA	800898/2EA	2020/4/22	2021/4/22
Microwave Cable	HUBER+SUHNER	SUCOFLEX 102EA	800901/2EA	2020/4/22	2021/4/22
Microwave Cable	HUBER+SUHNER	SUCOFLEX 102EA	801027/2EA	2020/4/22	2021/4/22
Temp/Humidity Meter	testo	testo 608-H1	45197168/903	2019/8/7	2020/8/5

**Test Procedures****For Radiated Emissions below 30 MHz**

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

**Note:** The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.

**For Radiated Emissions above 30 MHz**

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

**Note:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98 %) or 10 Hz (Duty cycle  $\geq 98$  %) for Average detection (AV) at frequency above 1 GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The Radiated Emissions testing was performed in the X, Y and Z axis orientation. The worst-case Axis orientation is recorded in this test report.

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*Test Report No.*

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**Test Results**

Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)

Level (dBuV/m) = Reading (dBuV) + Factor (dB/m)

Please refer to Appendix B.

## 6. Safety Human Exposure

### 6.1 RF Exposure Compliance

#### 6.1.1 Power Density

##### Results

Separation distance is more than 20 cm, thus mobile device exposure limits can be applied.

##### Maximum Exposure:

Power to Antenna (mW)	66.99 mW
Power to Antenna (dBm)	18.3 dBm
Antenna Gain	3.3 dBi
Power+Ant Gain	143.2 mW
Distance	20 cm
S=	0.028 mW/cm <sup>2</sup>

Limit: 1 mW/cm<sup>2</sup>

##### Limit

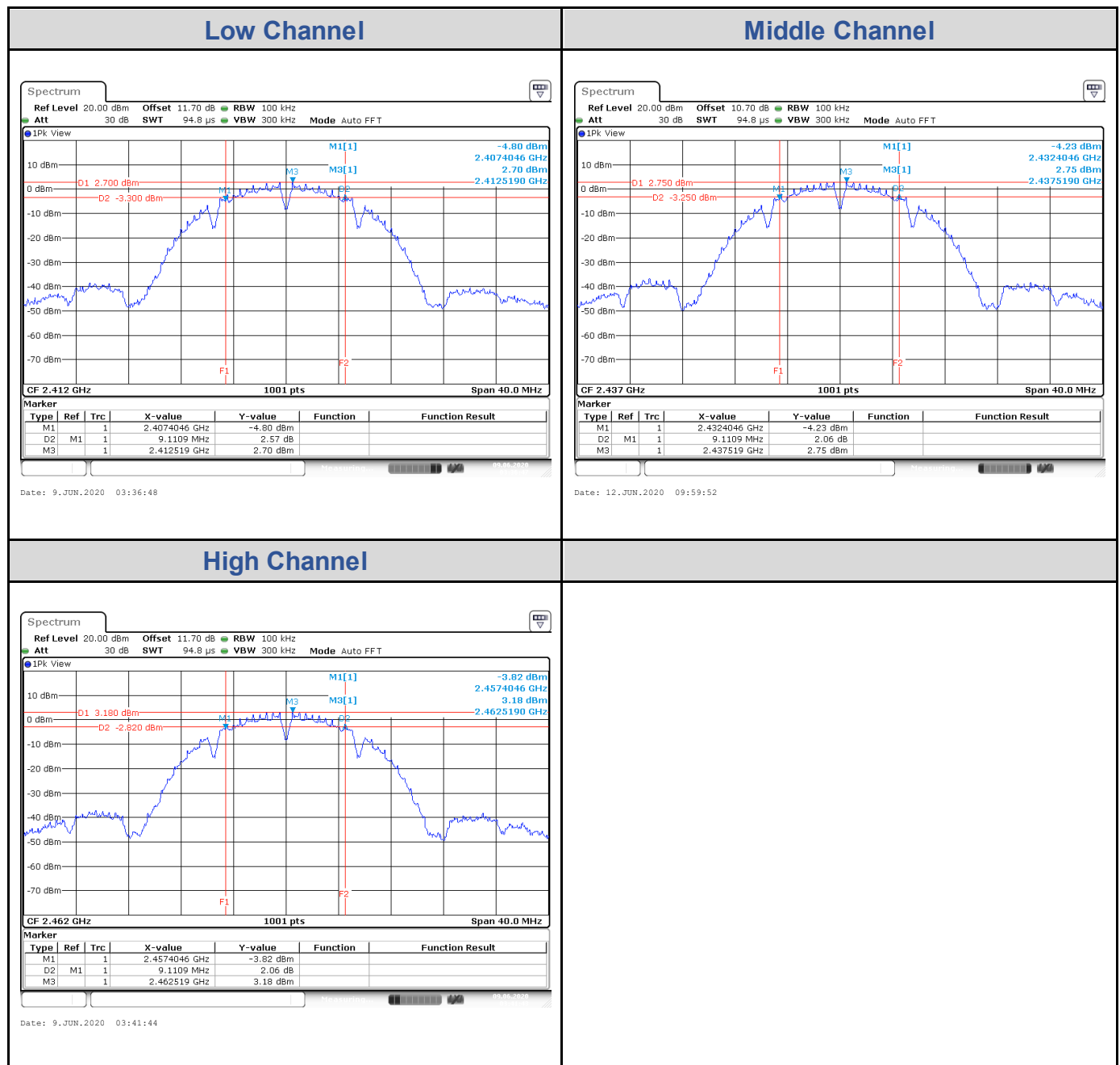
0.3-1.34 MHz	(100) mW/cm <sup>2</sup>
1.34-30 MHz	(180/f <sup>2</sup> ) mW/cm <sup>2</sup>
30-300 MHz	0.2 mW/cm <sup>2</sup>
300-1500 MHz	f/1500 mW/cm <sup>2</sup>
1500-100,000 MHz	1.0 mW/cm <sup>2</sup>

## Appendix A: Test Results of Conducted Test

### Test Result of 6 dB Bandwidth

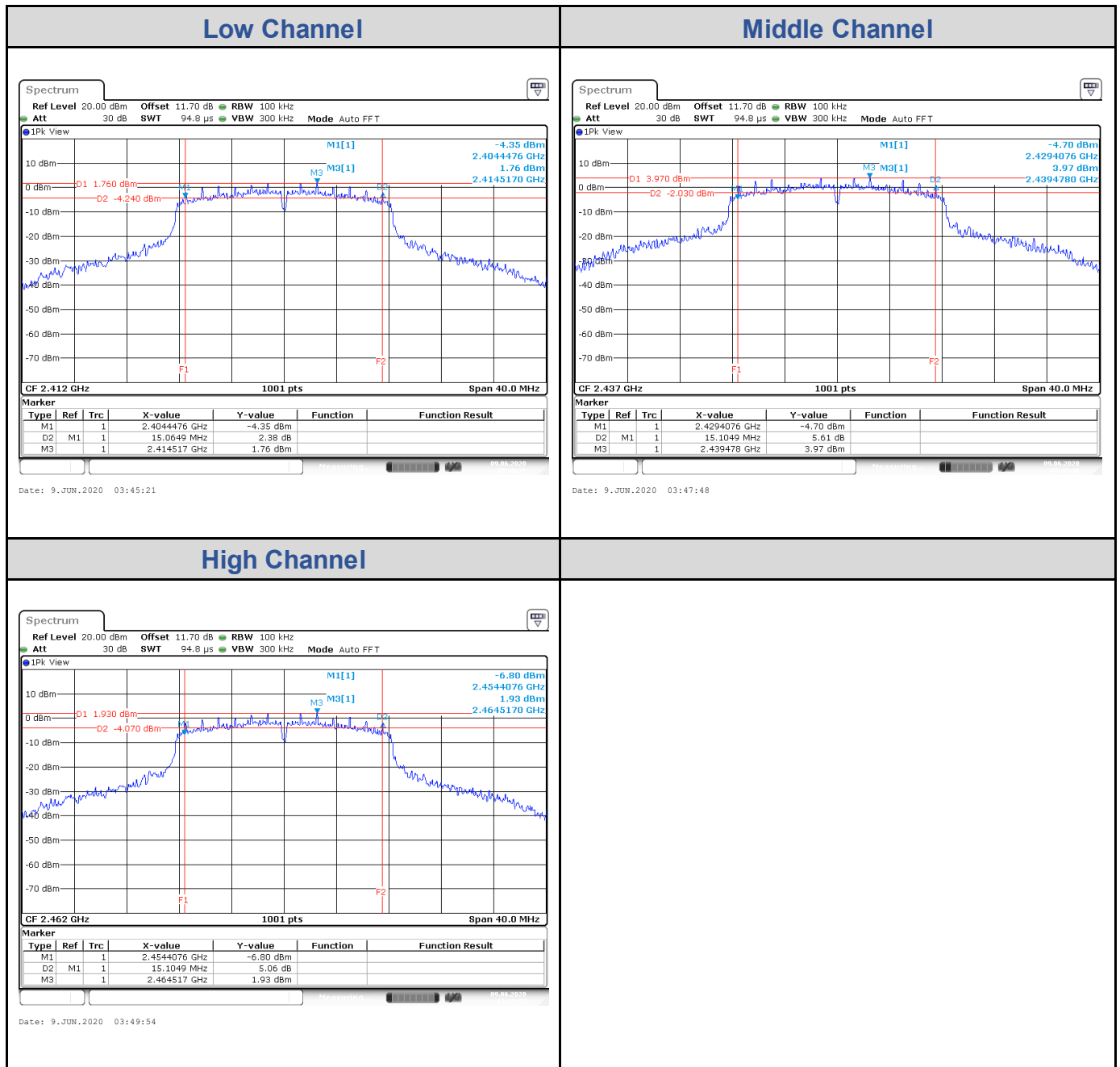
#### 802.11b

Channel	Channel Frequency (MHz)	6 dB Bandwidth (kHz)	Limit (kHz)	Result
Low Channel	2412	9110.90	500	Pass
Middle Channel	2437	9110.90	500	Pass
High Channel	2462	9110.90	500	Pass



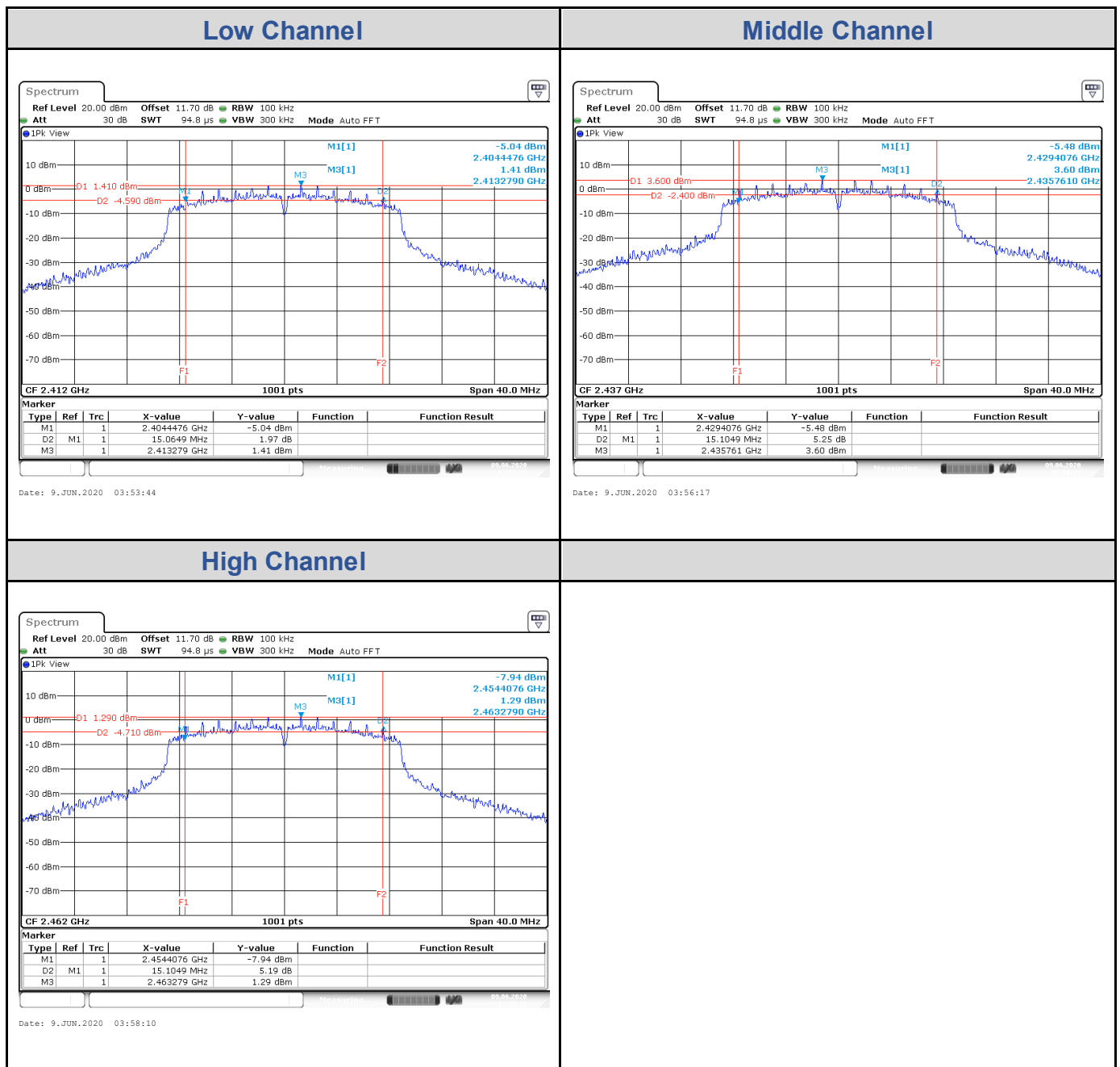
**802.11g**

Channel	Channel Frequency (MHz)	6 dB Bandwidth (kHz)	Limit (kHz)	Result
Low Channel	2412	15064.90	500	Pass
Middle Channel	2437	15104.90	500	Pass
High Channel	2462	15104.90	500	Pass



**802.11n HT20**

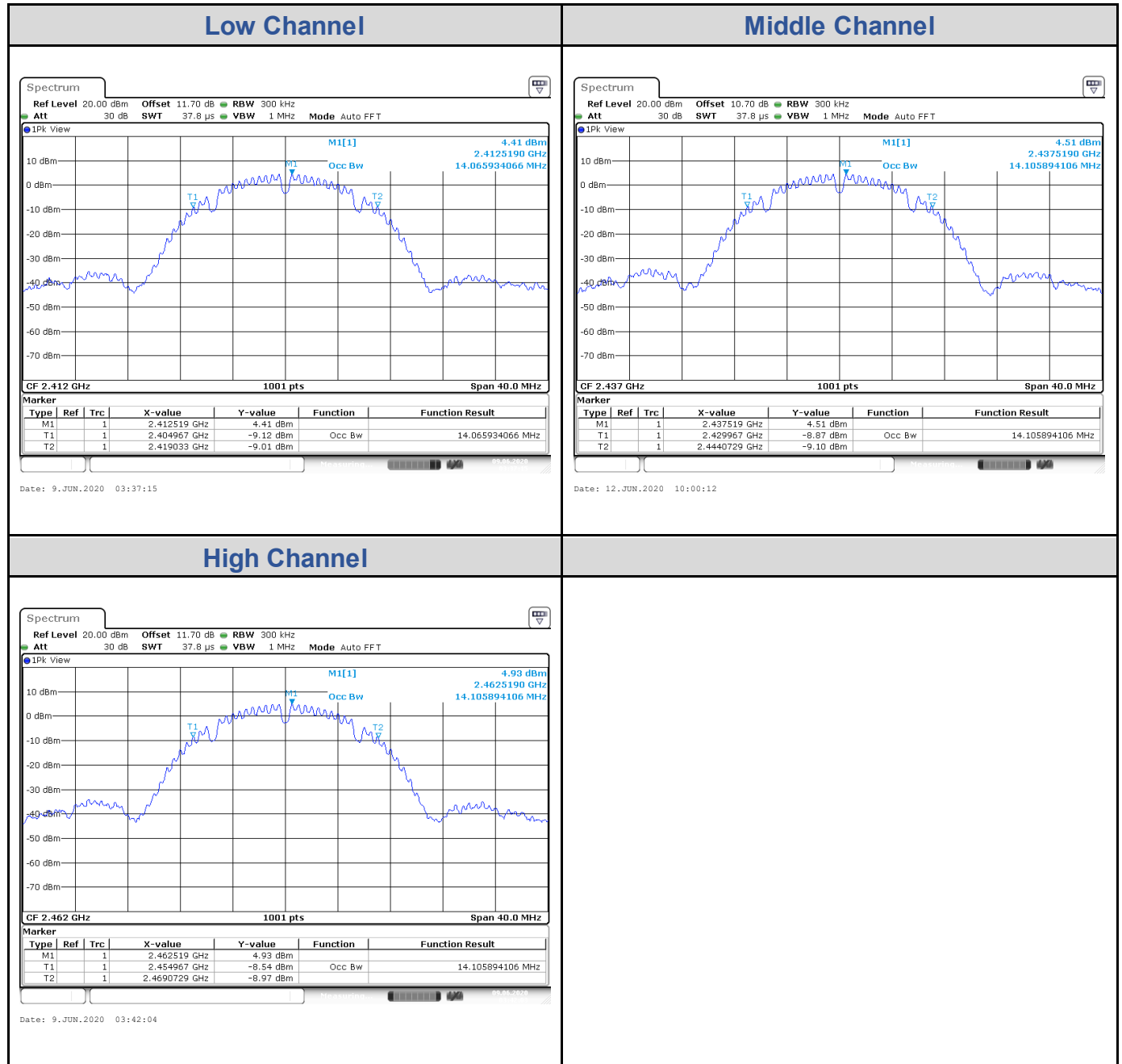
Channel	Channel Frequency (MHz)	6 dB Bandwidth (kHz)	Limit (kHz)	Result
Low Channel	2412	15064.90	500	Pass
Middle Channel	2437	15104.90	500	Pass
High Channel	2462	15104.90	500	Pass



## Test Result of 99% Occupied Bandwidth

### 802.11b

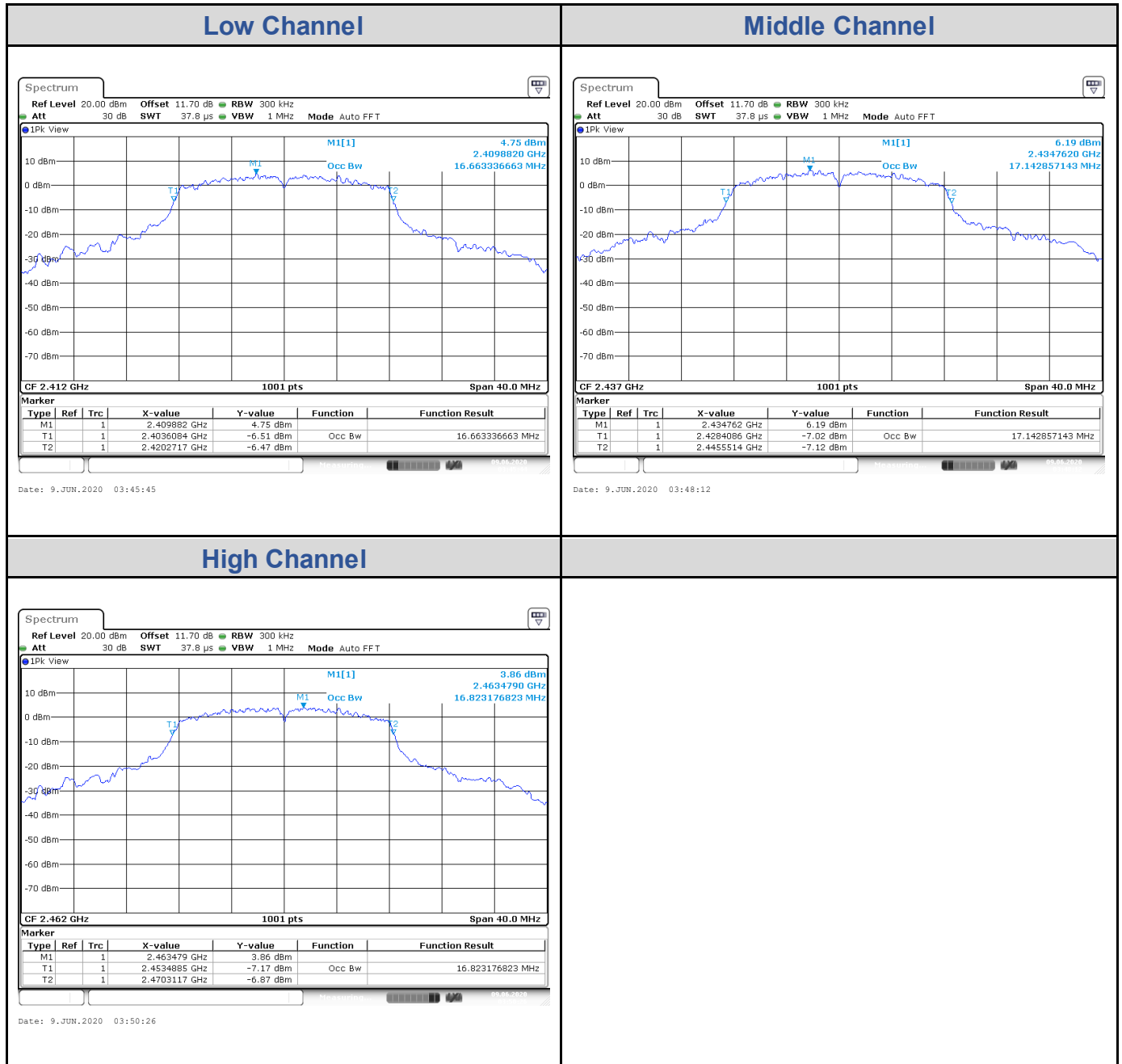
Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)
Low Channel	2412	14065.93
Middle Channel	2437	14105.89
High Channel	2462	14105.89





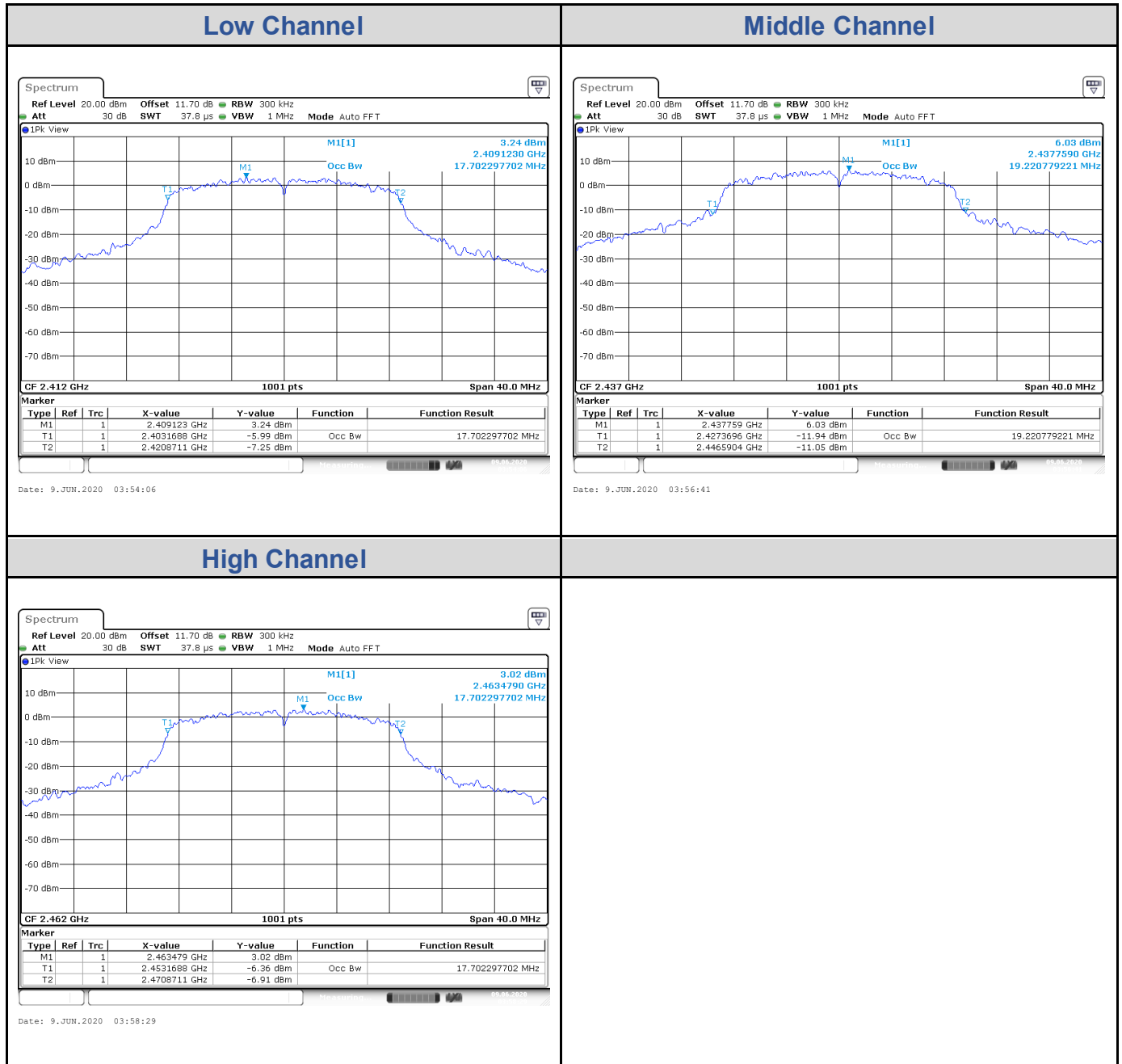
**802.11g**

Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)
Low Channel	2412	16663.34
Middle Channel	2437	17142.86
High Channel	2462	16823.18



**802.11n HT20**

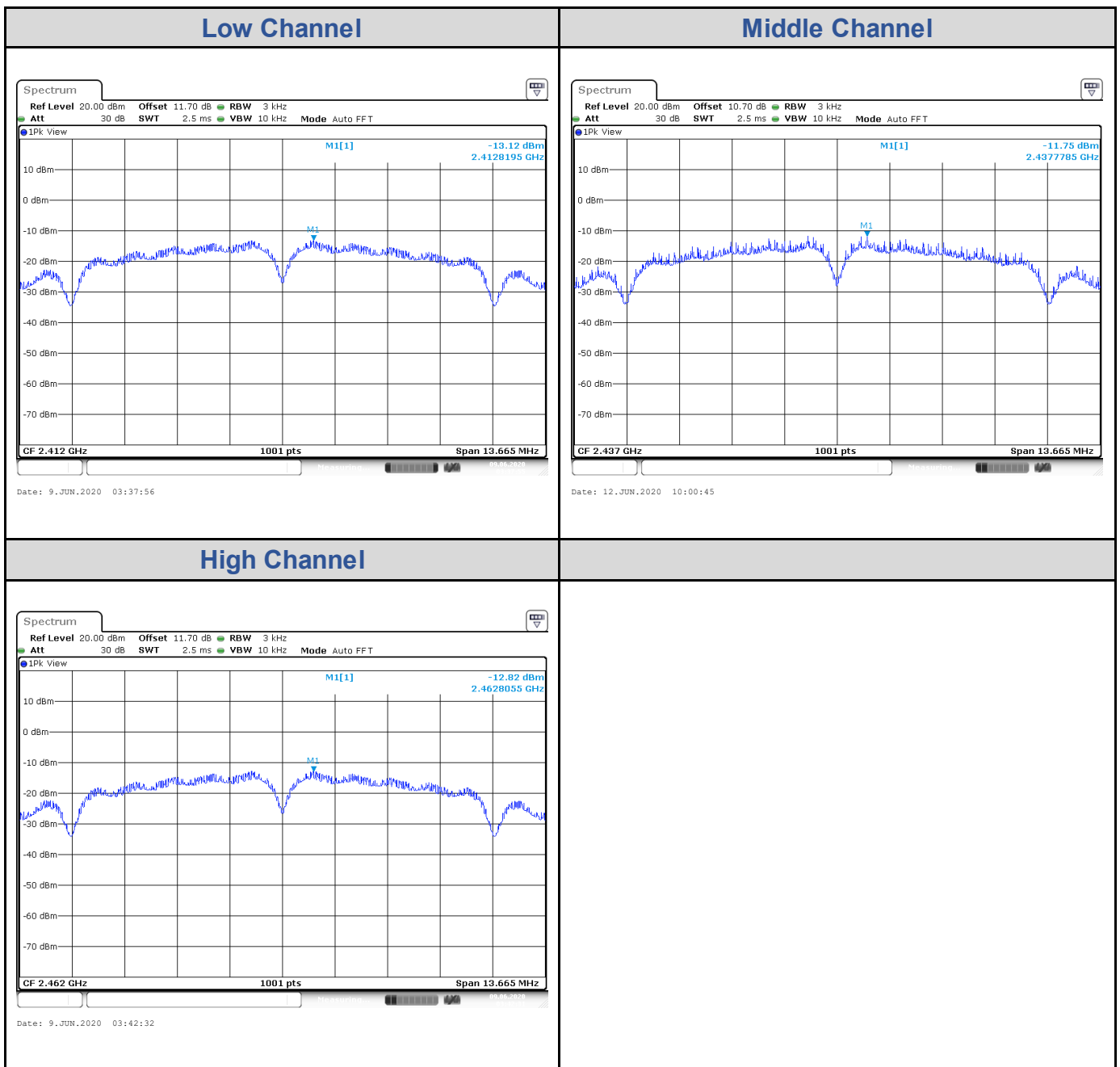
Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)
Low Channel	2412	17702.30
Middle Channel	2437	19220.78
High Channel	2462	17702.30



## Test Result of Power Spectral Density

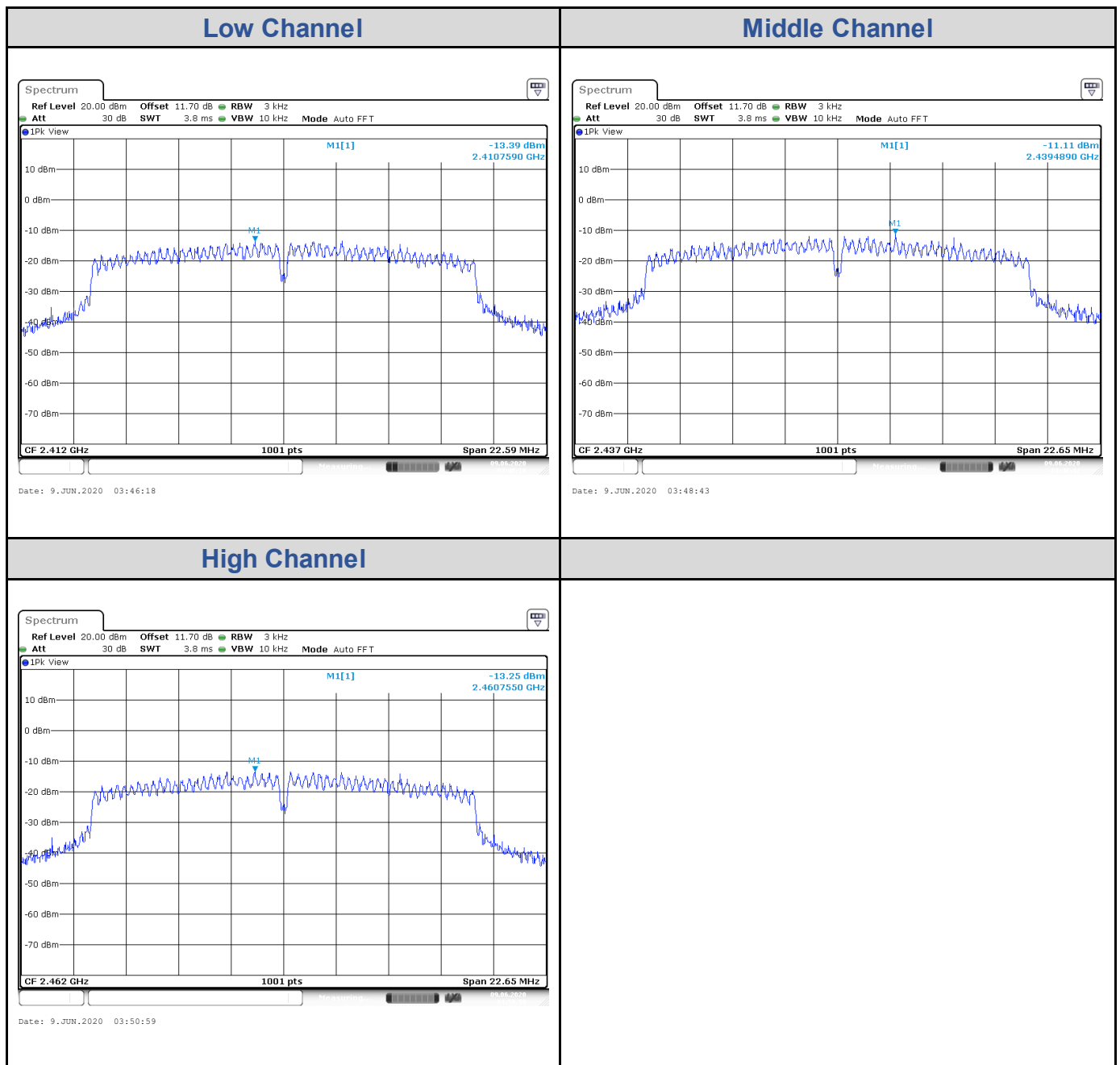
### 802.11b

Channel	Channel Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm/3kHz)
Low Channel	2412	-13.12	8
Middle Channel	2437	-11.75	8
High Channel	2462	-12.82	8



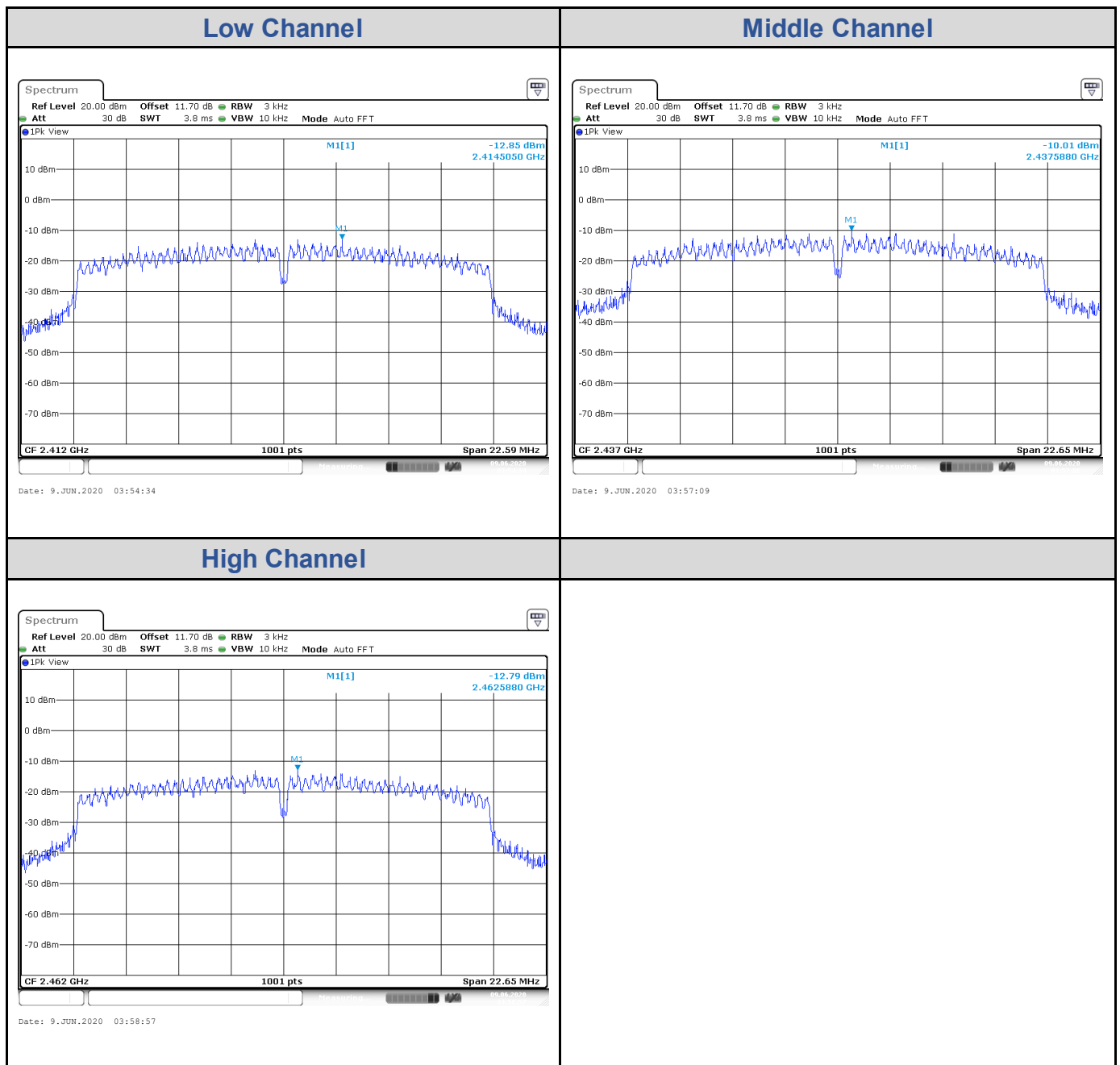
**802.11g**

Channel	Channel Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm/3kHz)
Low Channel	2412	-13.39	8
Middle Channel	2437	-11.11	8
High Channel	2462	-13.25	8



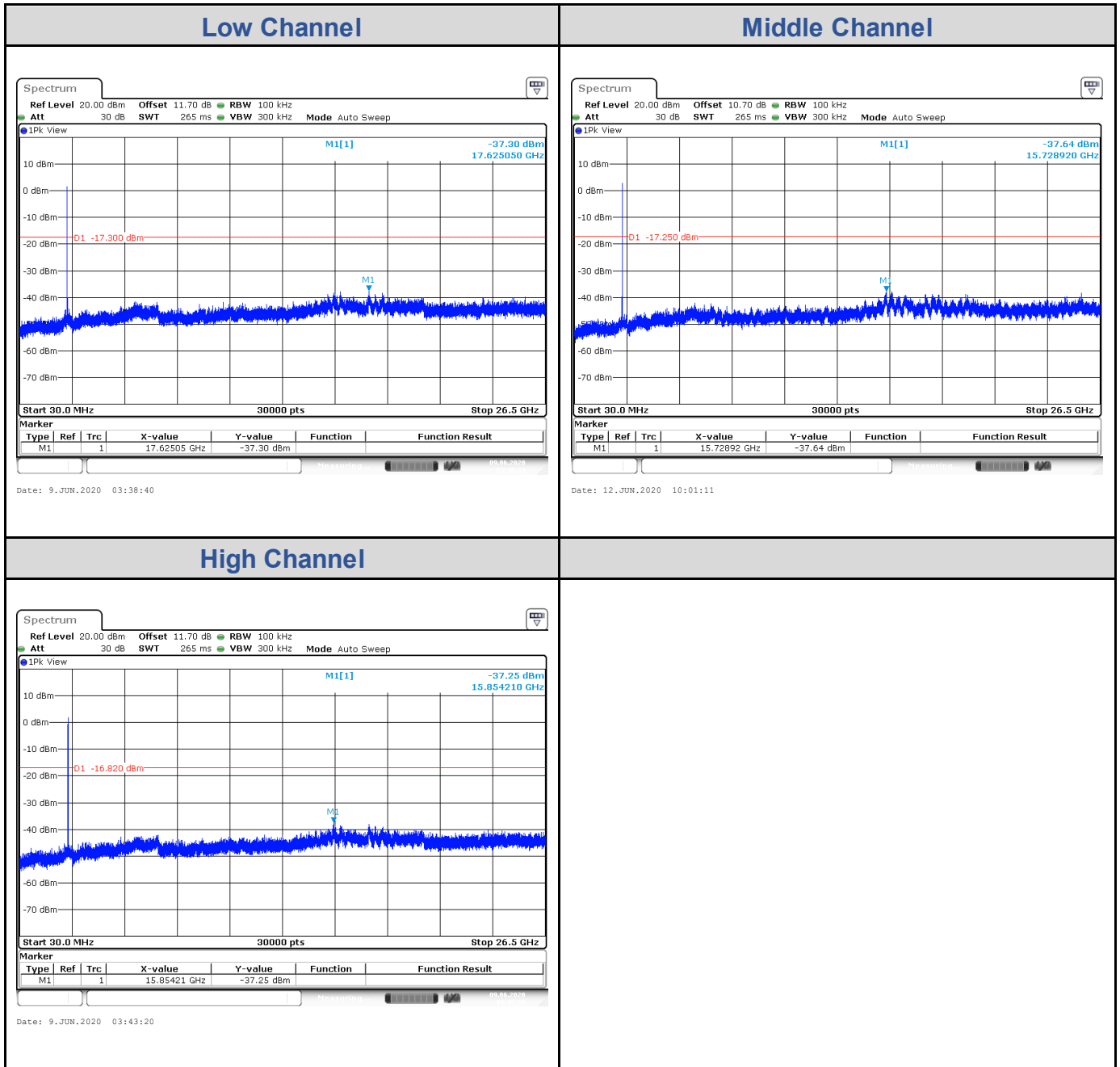
**802.11n HT20**

Channel	Channel Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm/3kHz)
Low Channel	2412	-12.85	8
Middle Channel	2437	-10.01	8
High Channel	2462	-12.79	8

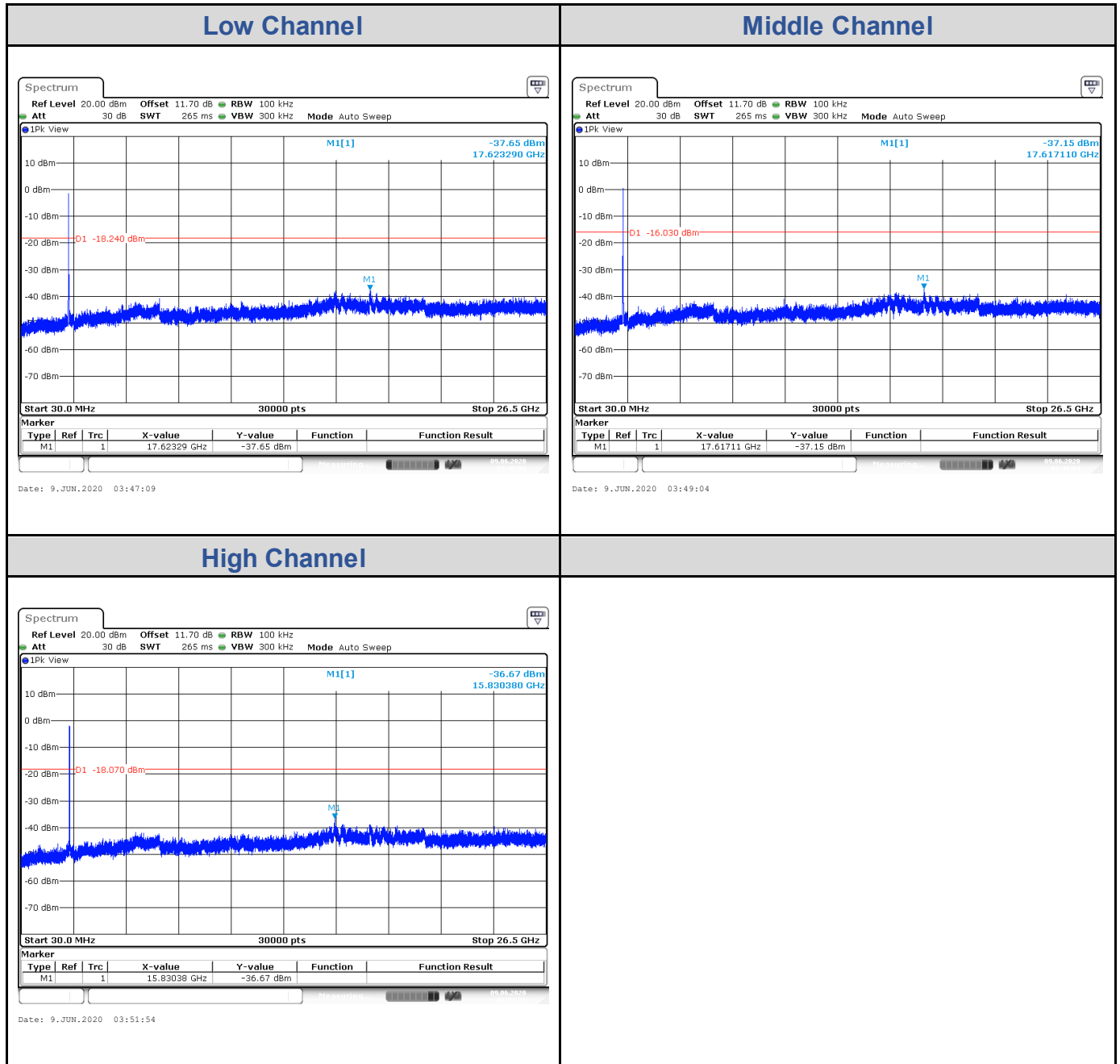


## Test Result of Conducted Spurious Emissions

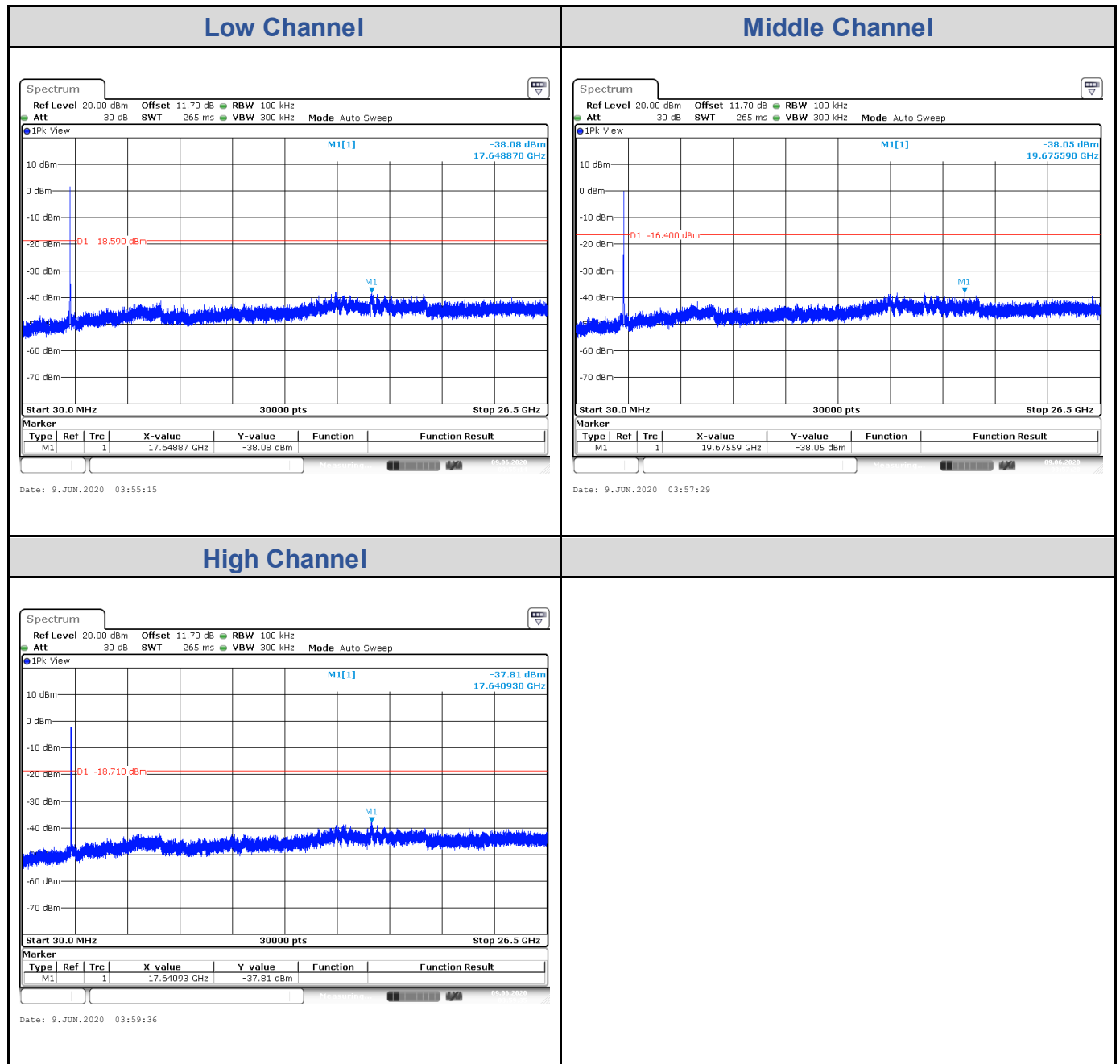
802.11b



802.11g



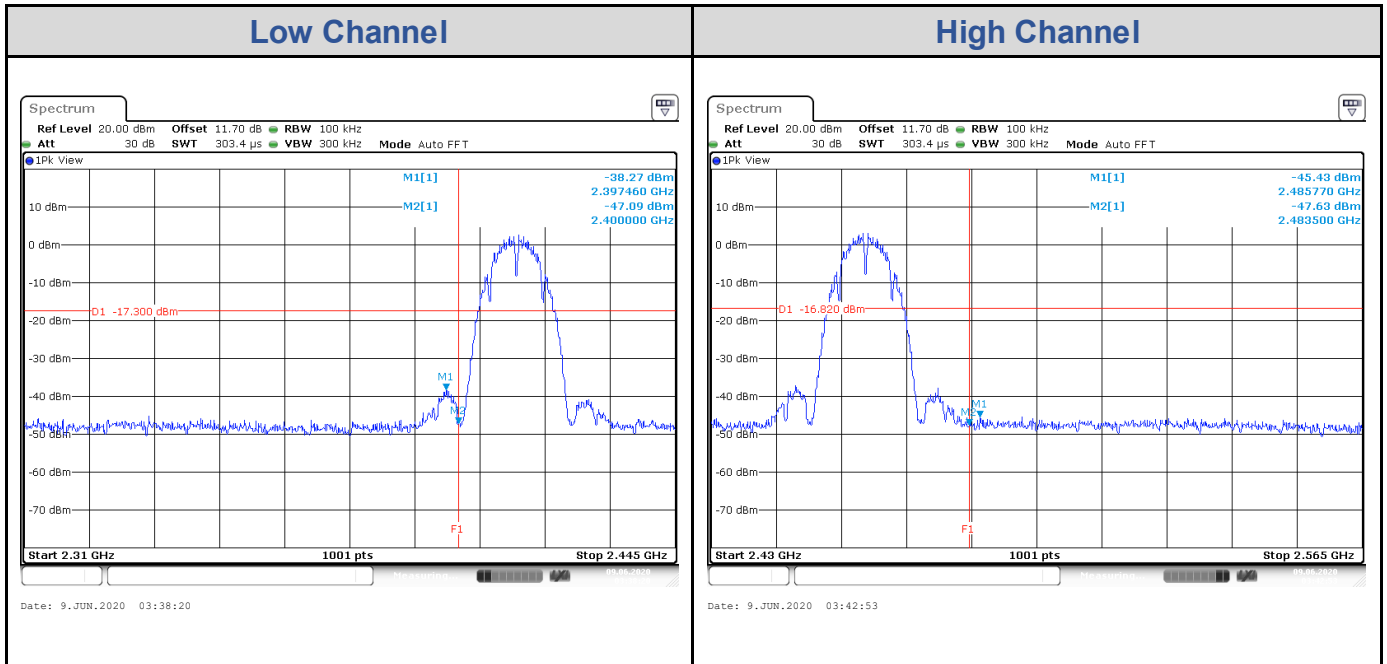
802.11n HT20



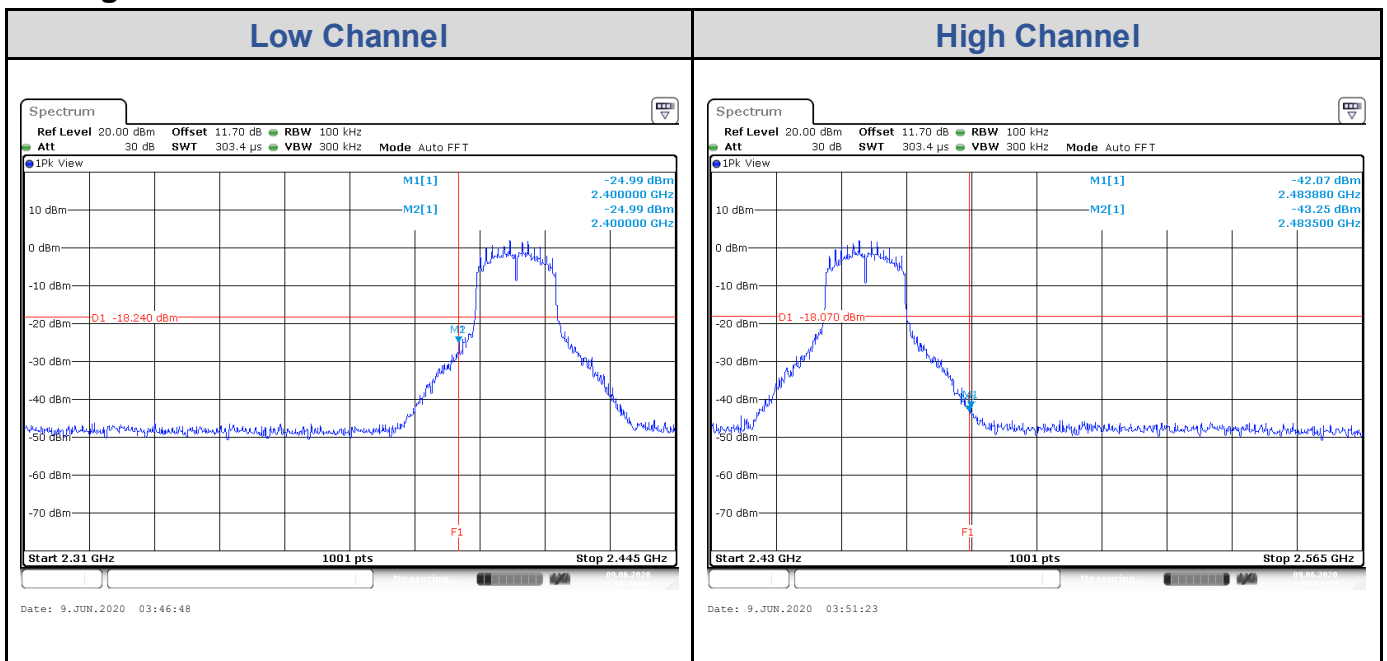


## Test Result of Conducted Bandedge, Tx Mode

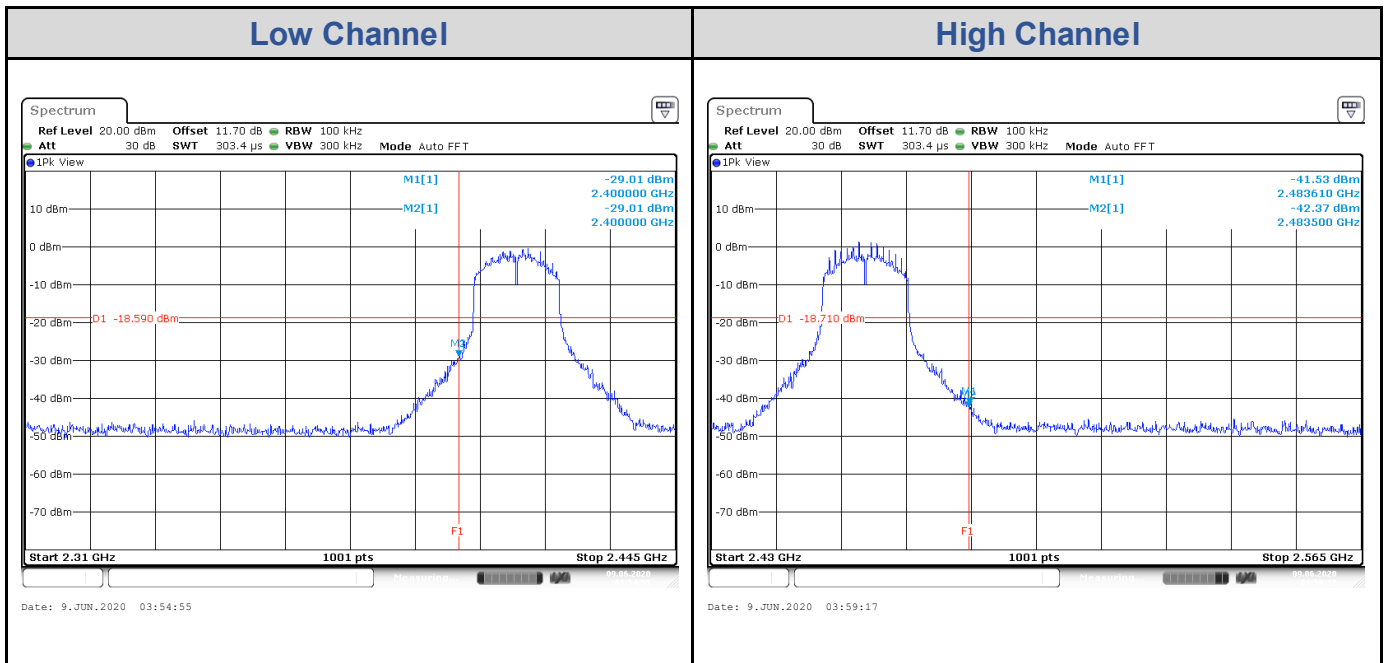
### 802.11b



### 802.11g



802.11n HT20



## Appendix B: Test Results of Radiated Spurious Emissions

### Band Edges, 2.35GHz ~ 2.5GHz

802.11b

#### Low Channel (Horizontal) Peak

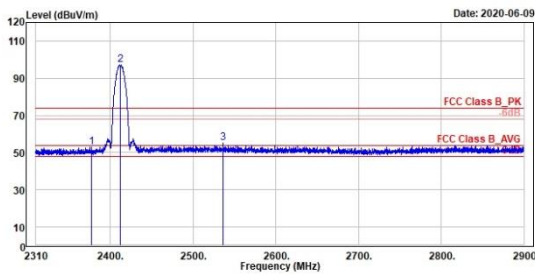
#### Low Channel (Vertical) Peak



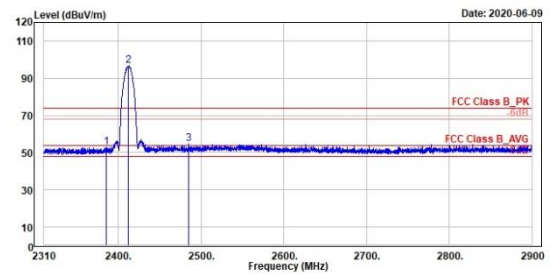
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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	Pol/Phase	Note
1	2377.38	52.03	15.54	37.29	74.00	-21.17	213	199	Peak	Horizontal	
2 *	2412.00	97.18	59.78	37.40	74.00	23.18	213	199	Peak	Horizontal	
3	2536.32	55.22	17.45	37.77	74.00	-18.78	213	199	Peak	Horizontal	

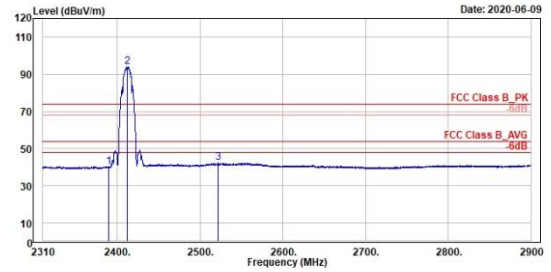
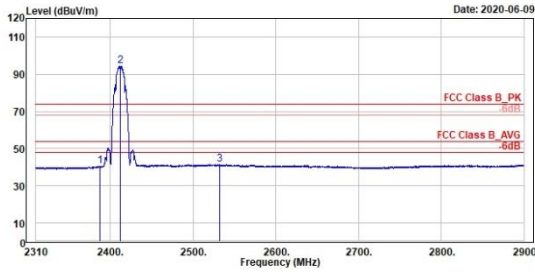


Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	Pol/Phase	Note
1	2385.52	52.05	15.53	37.32	74.00	-21.15	306	224	Peak	Vertical	
2 *	2412.00	96.51	59.11	37.40	74.00	22.51	306	224	Peak	Vertical	
3	2485.35	54.71	17.15	37.56	74.00	-19.29	306	224	Peak	Vertical	

802.11b

Low Channel (Horizontal) Average

Low Channel (Vertical) Average



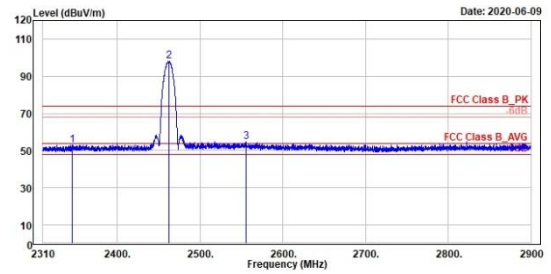
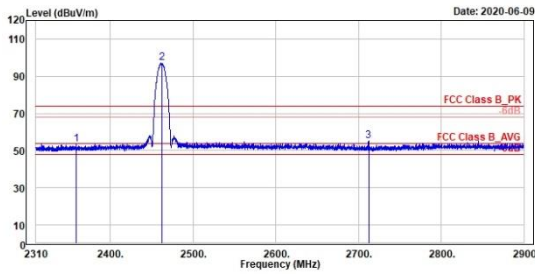
Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2387.88	48.58	3.17	37.33	54.00	-13.58	213	199 Average	Horizontal
2 *	2412.00	94.62	57.22	37.40	54.00	40.62	213	199 Average	Horizontal
3	2532.31	41.48	3.73	37.75	54.00	-12.52	213	199 Average	Horizontal

Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2389.77	48.24	2.91	37.33	54.00	-13.76	386	224 Average	Vertical
2 *	2412.00	93.92	56.52	37.40	54.00	39.92	386	224 Average	Vertical
3	2522.16	42.25	4.56	37.69	54.00	-11.75	386	224 Average	Vertical

802.11b

High Channel (Horizontal) Peak

High Channel (Vertical) Peak



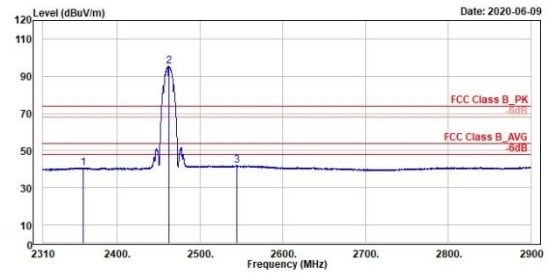
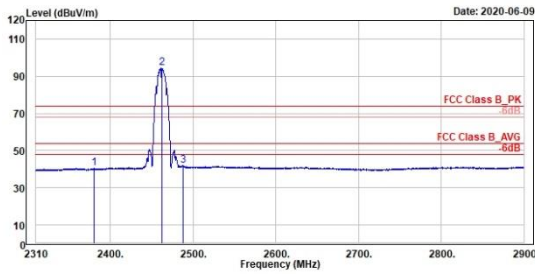
Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	cm	deg			
1	2359.09	53.55	16.31	37.24	74.00	-20.45	209	200	Peak	Horizontal	
2 *	2462.00	96.99	59.45	37.54	74.00	22.99	209	200	Peak	Horizontal	
3	2712.26	55.05	17.24	37.81	74.00	-18.95	209	200	Peak	Horizontal	

Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	cm	deg			
1	2345.07	53.14	15.95	37.19	74.00	-20.86	304	228	Peak	Vertical	
2 *	2462.00	97.99	60.45	37.54	74.00	23.99	304	228	Peak	Vertical	
3	2555.68	54.79	16.94	37.85	74.00	-19.21	304	228	Peak	Vertical	

802.11b

High Channel (Horizontal) Average

High Channel (Vertical) Average



Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2380.68	40.44	3.14	37.30	54.00	-13.56	209	200	Average	Horizontal	
2 *	2462.00	94.40	56.66	37.54	54.00	40.40	209	200	Average	Horizontal	
3	2488.06	41.78	4.21	37.57	54.00	-12.22	209	200	Average	Horizontal	

Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2358.05	40.03	3.59	37.24	54.00	-13.17	304	228	Average	Vertical	
2 *	2462.00	95.38	57.04	37.54	54.00	41.38	304	228	Average	Vertical	
3	2544.11	41.98	4.17	37.81	54.00	-12.02	304	228	Average	Vertical	

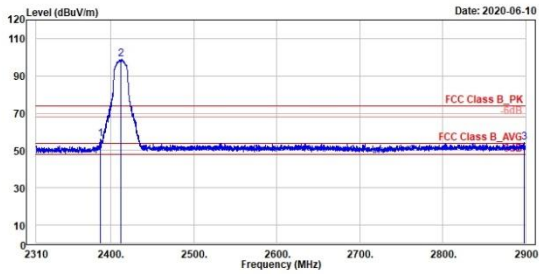
802.11g

Low Channel (Horizontal) Peak

Low Channel (Vertical) Peak



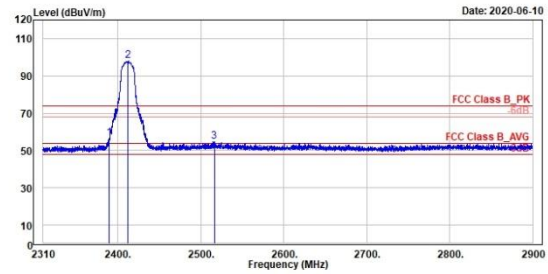
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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	Pol/Phase	Note
1	2387.17	56.26	18.94	37.32	74.00	-17.74	289	196	Peak	Horizontal	
2 *	2412.00	99.87	61.47	37.40	74.00	24.87	289	196	Peak	Horizontal	
3	2898.47	54.12	15.81	38.31	74.00	-19.88	289	196	Peak	Horizontal	



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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	Pol/Phase	Note
1	2389.53	56.80	19.47	37.33	74.00	-17.20	310	237	Peak	Vertical	
2 *	2412.00	99.84	60.64	37.40	74.00	24.04	310	237	Peak	Vertical	
3	2516.26	54.76	17.09	37.67	74.00	-19.24	310	237	Peak	Vertical	

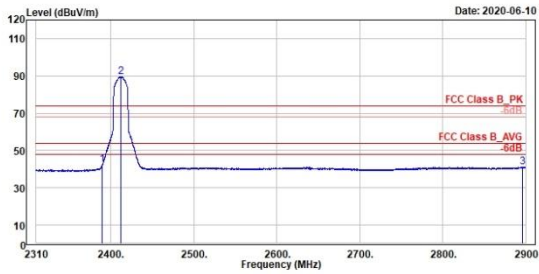
802.11g

Low Channel (Horizontal) Average

Low Channel (Vertical) Average



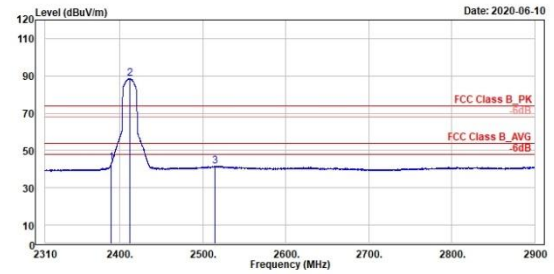
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Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2398.00	42.64	5.31	37.33	54.00	-11.36	289	196 Average	Horizontal
2 *	2412.00	89.53	52.13	37.40	54.00	35.53	289	196 Average	Horizontal
3	2896.11	41.14	2.84	38.30	54.00	-12.86	289	196 Average	Horizontal



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Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2398.00	43.43	6.10	37.33	54.00	-10.57	310	237 Average	Vertical
2 *	2412.00	88.71	51.31	37.40	54.00	34.71	310	237 Average	Vertical
3	2514.38	41.73	4.07	37.66	54.00	-12.27	310	237 Average	Vertical



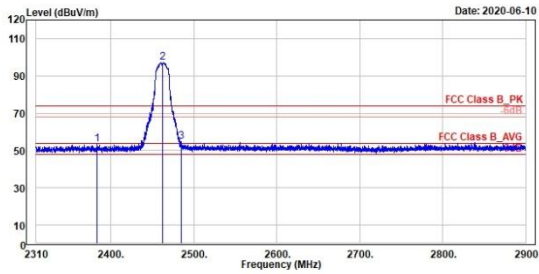
802.11g

High Channel (Horizontal) Peak

High Channel (Vertical) Peak



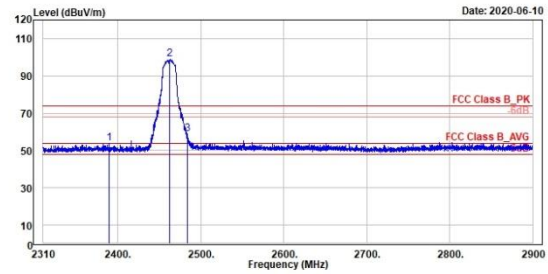
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Tel: +886-2172-1000 Fax: +886-2172-1322



Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	Pol/Phase	Note
1	2383.63	53.23	15.91	37.32	74.00	-20.77	167	192	Peak	Horizontal	
2 *	2462.00	97.18	59.64	37.54	74.00	23.18	167	192	Peak	Horizontal	
3	2485.23	54.67	17.11	37.56	74.00	-19.33	167	192	Peak	Horizontal	



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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	Pol/Phase	Note
1	2389.77	53.89	16.56	37.33	74.00	-20.11	354	267	Peak	Vertical	
2 *	2462.00	99.79	61.25	37.54	74.00	24.79	354	267	Peak	Vertical	
3	2483.50	58.99	21.43	37.56	74.00	-15.01	354	267	Peak	Vertical	

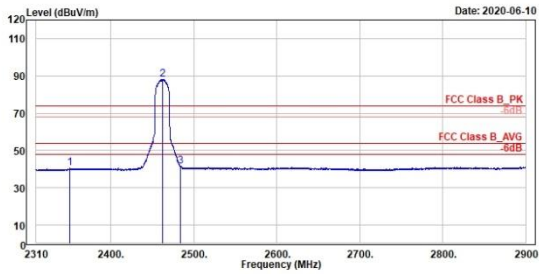
802.11g

High Channel (Horizontal) Average

High Channel (Vertical) Average



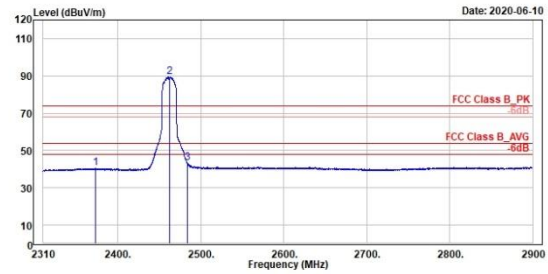
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Tel: +886-2172-1000 Fax: +886-2172-1322



Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2358.24	48.45	3.24	37.21	54.00	-13.55	167	192 Average	Horizontal
2 *	2462.00	89.16	50.62	37.54	54.00	34.16	167	192 Average	Horizontal
3	2483.70	41.63	4.07	37.56	54.00	-12.37	167	192 Average	Horizontal



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Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2372.89	48.40	3.12	37.28	54.00	-13.60	354	267 Average	Vertical
2 *	2462.00	89.41	51.87	37.54	54.00	35.41	354	267 Average	Vertical
3	2483.50	43.52	5.96	37.56	54.00	-10.48	354	267 Average	Vertical

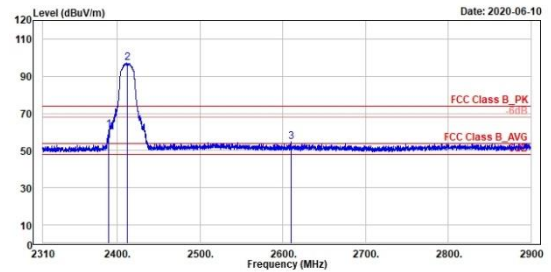
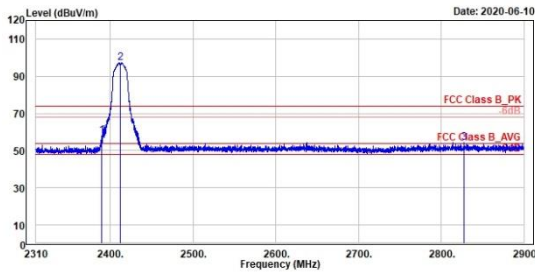
802.11n HT20

Low Channel (Horizontal) Peak

Low Channel (Vertical) Peak

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Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Level Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	Pol/Phase	Note
1	2389.89	57.82	28.49	37.33	74.00	-16.18	289	195	Peak	Horizontal	
2 *	2412.00	97.38	59.99	37.40	74.00	23.39	289	195	Peak	Horizontal	
3	2827.55	54.29	16.29	38.00	74.00	-19.71	289	195	Peak	Horizontal	

Peak	Freq (MHz)	Level (dBuV/m)	Read Level (dBuV)	Level Factor (dB/m)	Limit Line (dBuV/m)	Over Limit (dB)	APos (cm)	TPos (deg)	Remark	Pol/Phase	Note
1	2389.65	61.19	23.86	37.33	74.00	-12.81	386	235	Peak	Vertical	
2 *	2412.00	96.99	59.59	37.40	74.00	22.99	386	235	Peak	Vertical	
3	2609.72	54.66	16.70	37.96	74.00	-19.34	386	235	Peak	Vertical	

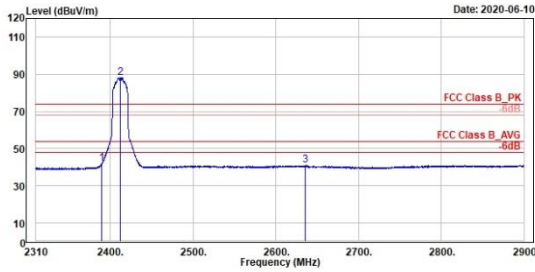
802.11n HT20

Low Channel (Horizontal) Average

Low Channel (Vertical) Average



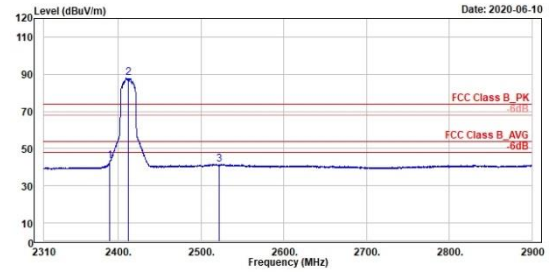
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Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
Level	Line	Limit					
Factor							
dBuV	dBuV/m	dB	cm	deg			
42.18	54.00	-11.90	289	195	Average	Horizontal	
88.00	54.00	34.00	289	195	Average	Horizontal	
41.18	54.00	-12.82	289	195	Average	Horizontal	



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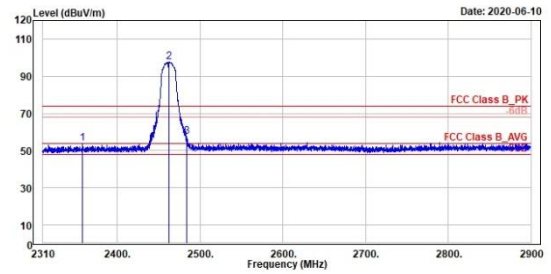
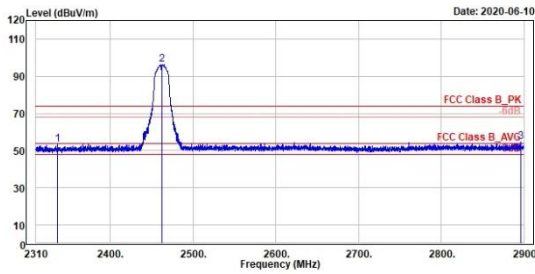


Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
Level	Line	Limit					
Factor							
dBuV	dBuV/m	dB	cm	deg			
43.19	54.00	-10.81	386	235	Average	Vertical	
87.83	54.00	33.83	386	235	Average	Vertical	
41.52	54.00	-12.48	386	235	Average	Vertical	

802.11n HT20

High Channel (Horizontal) Peak

High Channel (Vertical) Peak



Peak	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2335.96	53.37	16.21	37.16	74.00	-20.63	167	192	Peak	Horizontal		
2 *	2462.00	96.15	58.61	37.54	74.00	22.15	167	192	Peak	Horizontal		
3	2895.99	54.76	16.46	38.30	74.00	-19.24	167	192	Peak	Horizontal		

Peak	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2358.14	53.64	16.40	37.24	74.00	-20.36	356	267	Peak	Vertical		
2 *	2462.00	97.60	60.06	37.54	74.00	23.60	356	267	Peak	Vertical		
3	2483.50	57.33	19.77	37.56	74.00	-16.67	356	267	Peak	Vertical		

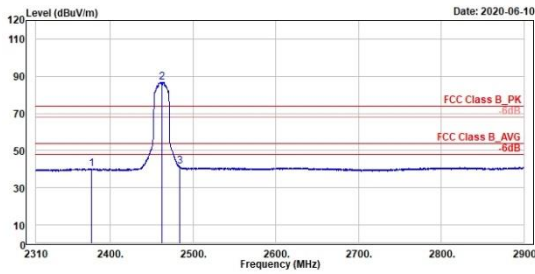
802.11n HT20

High Channel (Horizontal) Average

High Channel (Vertical) Average



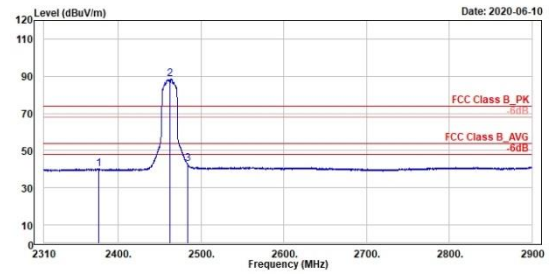
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Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2377.58	40.16	2.87	37.29	54.00	-13.84	167	192	Average	Horizontal	
2 *	2462.00	86.84	49.39	37.54	54.00	32.84	167	192	Average	Horizontal	
3	2483.70	41.39	3.83	37.56	54.00	-12.61	167	192	Average	Horizontal	



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Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2375.96	40.16	2.87	37.29	54.00	-13.84	356	267	Average	Vertical	
2 *	2462.00	88.43	50.89	37.54	54.00	34.43	356	267	Average	Vertical	
3	2483.58	42.84	5.28	37.56	54.00	-11.16	356	267	Average	Vertical	

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

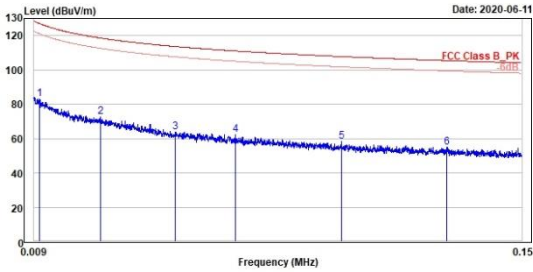
802.11b

High Channel 9kHz~150kHz

High Channel 150kHz~30MHz



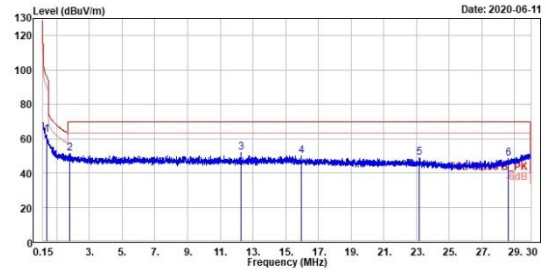
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Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	83.22	4.81	78.41	127.82	-43.88	100	229 QP	vertical	
2	83.73	1.68	71.05	118.55	-45.82	100	22 QP	vertical	
3	63.82	-1.25	65.07	113.63	-49.81	100	122 QP	vertical	
4	62.46	-0.25	62.71	111.84	-48.58	100	84 QP	vertical	
5	58.18	-1.40	59.58	107.78	-49.68	100	180 QP	vertical	
6	54.94	-2.66	57.60	105.43	-50.49	100	273 QP	vertical	



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Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	62.19	13.66	48.53	95.74	-33.55	100	150 QP	vertical	
2	51.25	12.25	39.00	69.50	-18.25	100	357 QP	vertical	
3	51.00	14.46	37.34	69.50	-17.70	100	180 QP	vertical	
4	50.00	12.46	37.54	69.50	-19.50	100	10 QP	vertical	
5	49.09	13.65	35.44	69.50	-20.41	100	229 QP	vertical	
6	48.56	12.12	36.44	69.50	-20.94	100	360 QP	vertical	

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

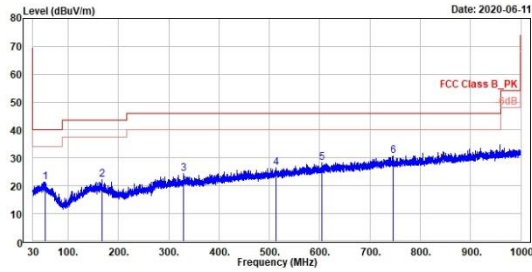
802.11b

High Channel (Horizontal)

High Channel (Vertical)



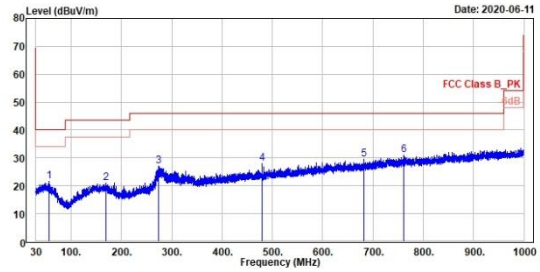
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Freq	Level	Read	Limit	Over	Apos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	54.74	21.34	28.98	-7.64	48.00	-18.66	300	286 QP	horizontal
2	166.96	22.08	29.38	-7.22	43.50	-21.42	300	311 QP	horizontal
3	338.12	24.29	30.11	-5.82	46.00	-21.71	300	368 QP	horizontal
4	512.67	26.59	29.51	-2.92	46.00	-19.41	100	44 QP	horizontal
5	684.82	28.48	29.56	-1.16	46.00	-17.60	200	312 QP	horizontal
6	746.85	30.77	29.73	1.04	46.00	-15.23	100	3 QP	horizontal



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Freq	Level	Read	Limit	Over	Apos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	55.88	21.64	29.37	-7.73	48.00	-18.36	242	8 QP	vertical
2	169.78	21.07	28.34	-7.27	43.50	-22.43	180	171 QP	vertical
3	274.54	27.08	34.28	-7.20	46.00	-18.92	200	71 QP	vertical
4	479.98	27.98	31.58	-3.59	46.00	-18.01	100	46 QP	vertical
5	682.33	29.53	29.68	-0.15	46.00	-16.47	400	243 QP	vertical
6	762.06	30.96	29.63	1.33	46.00	-15.04	300	141 QP	vertical





802.11b

Middle Channel (Horizontal)

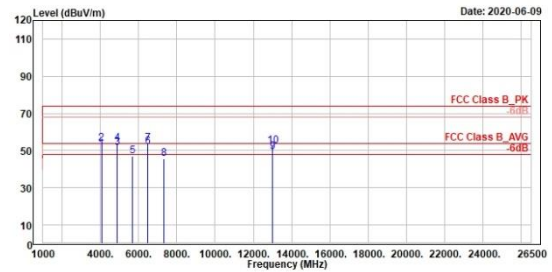
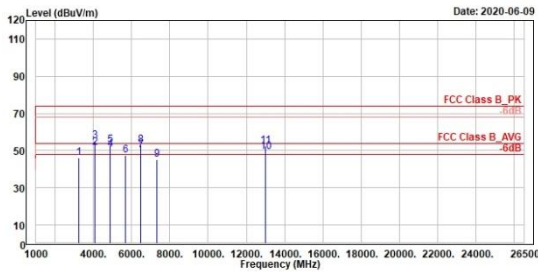
Middle Channel (Vertical)



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Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	3249.00	45.96	58.42	-12.46	74.00	-26.04	232	111 Peak	horizontal
2	4063.00	51.50	63.05	-11.55	54.00	-2.50	140	238 Average	horizontal
3	4063.00	55.00	66.55	-11.55	74.00	-19.00	140	238 Peak	horizontal
4	4874.00	50.64	60.69	-10.05	54.00	-3.36	278	202 Average	horizontal
5	4874.00	52.82	62.87	-10.05	74.00	-21.18	278	202 Peak	horizontal
6	5687.00	47.57	56.46	-8.89	74.00	-26.43	400	200 Peak	horizontal
7	6499.00	50.42	58.73	-8.31	54.00	-3.58	216	262 Average	horizontal
8	6499.00	52.85	61.16	-8.31	74.00	-21.15	216	262 Peak	horizontal
9	7311.00	45.19	52.95	-7.76	74.00	-28.81	200	224 Peak	horizontal
10	12998.00	49.18	48.88	0.30	54.00	-4.82	200	281 Average	horizontal
11	12998.00	52.50	52.20	0.30	74.00	-21.50	200	281 Peak	horizontal

Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	4861.00	50.64	62.19	-11.55	54.00	-3.36	118	273 Average	vertical
2	4861.00	53.96	65.51	-11.55	74.00	-20.04	118	273 Peak	vertical
3	4874.00	51.43	61.48	-10.05	54.00	-2.57	178	267 Average	vertical
4	4874.00	53.70	63.75	-10.05	74.00	-20.30	178	267 Peak	vertical
5	5687.00	46.98	55.87	-8.89	74.00	-27.02	200	255 Peak	vertical
6	6499.00	51.09	60.20	-8.31	54.00	-2.11	200	297 Average	vertical
7	6499.00	53.71	62.02	-8.31	74.00	-20.29	200	297 Peak	vertical
8	7311.00	45.65	53.41	-7.76	74.00	-28.35	200	188 Peak	vertical
9	12998.00	49.30	49.00	0.30	54.00	-4.70	300	304 Average	vertical
10	12998.00	52.32	52.02	0.30	74.00	-21.68	300	304 Peak	vertical

802.11b

High Channel (Horizontal)

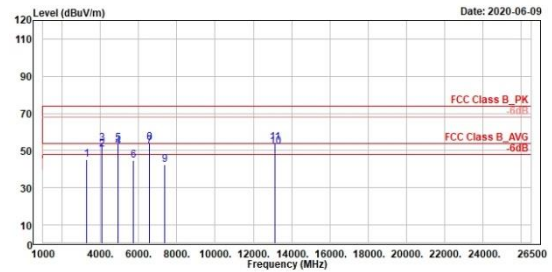
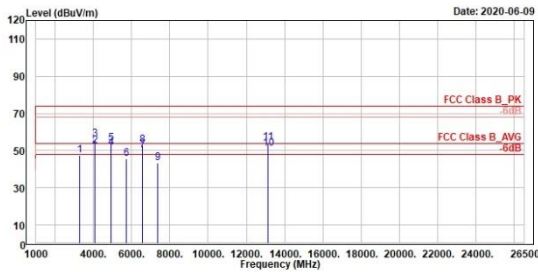
High Channel (Vertical)



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Peak	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	3282.00	47.60	60.15	-12.55	74.00	-26.40	200	302	Peak	horizontal		
2	4104.00	52.59	63.96	-11.37	54.00	-1.41	148	246	Average	horizontal		
3	4104.00	56.08	67.45	-11.37	74.00	-17.92	148	246	Peak	horizontal		
4	4924.00	51.36	61.24	-9.88	54.00	-2.64	267	191	Average	horizontal		
5	4924.00	53.62	63.50	-9.88	74.00	-20.38	267	191	Peak	horizontal		
6	5744.00	45.48	54.36	-8.88	74.00	-28.52	400	218	Peak	horizontal		
7	6565.00	50.15	58.26	-8.11	54.00	-3.85	207	264	Average	horizontal		
8	6565.00	52.75	60.86	-8.11	74.00	-21.25	207	264	Peak	horizontal		
9	7386.00	43.16	50.86	-7.70	74.00	-30.84	400	224	Peak	horizontal		
10	13130.00	51.07	50.86	0.21	54.00	-2.93	201	277	Average	horizontal		
11	13130.00	54.15	53.94	0.21	74.00	-19.85	201	277	Peak	horizontal		

Peak	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	3283.00	45.18	57.72	-12.54	74.00	-28.82	132	115	Peak	vertical		
2	4104.00	50.83	62.20	-11.37	54.00	-3.17	335	261	Average	vertical		
3	4104.00	54.03	65.40	-11.37	74.00	-19.97	335	261	Peak	vertical		
4	4924.00	52.00	61.88	-9.88	54.00	-2.00	157	266	Average	vertical		
5	4924.00	53.86	63.74	-9.88	74.00	-20.14	157	266	Peak	vertical		
6	5744.00	44.53	53.41	-8.88	74.00	-29.47	300	232	Peak	vertical		
7	6565.00	52.56	60.67	-8.11	54.00	-1.44	183	298	Average	vertical		
8	6565.00	54.32	62.43	-8.11	74.00	-19.68	183	298	Peak	vertical		
9	7386.00	42.40	50.10	-7.70	74.00	-31.60	100	280	Peak	vertical		
10	13130.00	51.98	51.77	0.21	54.00	-2.02	198	287	Average	vertical		
11	13130.00	54.51	54.30	0.21	74.00	-19.49	198	287	Peak	vertical		

802.11g

Low Channel (Horizontal)

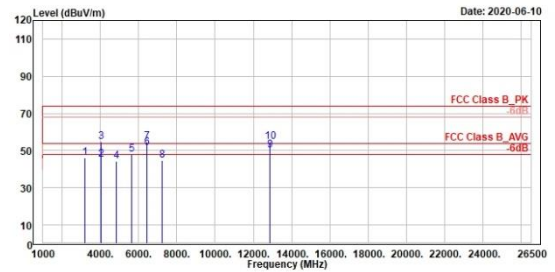
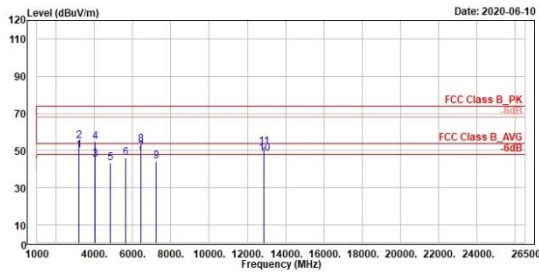
Low Channel (Vertical)



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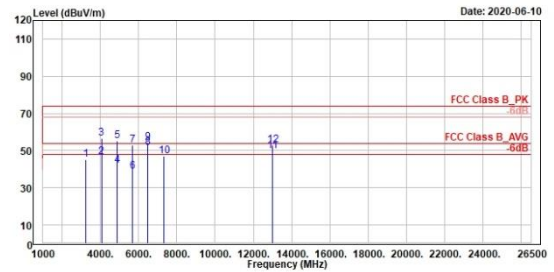
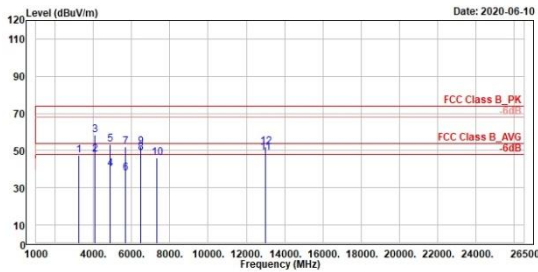
Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	3216.00	50.34	62.70	-12.44	54.00	-3.66	115	262 Average	horizontal
2	3216.00	55.02	67.46	-12.44	74.00	-18.98	115	262 Peak	horizontal
3	4019.00	44.98	56.54	-11.56	54.00	-9.02	201	221 Average	horizontal
4	4019.00	54.58	66.14	-11.56	74.00	-19.42	201	221 Peak	horizontal
5	4824.00	43.47	53.61	-10.14	74.00	-30.53	200	223 Peak	horizontal
6	5628.00	46.13	55.21	-9.08	74.00	-27.87	300	231 Peak	horizontal
7	6432.00	49.33	57.40	-8.07	54.00	-4.67	273	253 Average	horizontal
8	6432.00	53.24	61.31	-8.07	74.00	-20.76	273	253 Peak	horizontal
9	7236.00	44.33	52.11	-7.78	74.00	-29.67	302	255 Peak	horizontal
10	12864.00	48.39	48.06	0.33	54.00	-5.61	396	229 Average	horizontal
11	12864.00	52.24	51.91	0.33	74.00	-21.76	396	229 Peak	horizontal

Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	3216.00	46.30	58.74	-12.44	74.00	-27.70	200	290 Peak	vertical
2	4021.00	45.22	56.78	-11.56	54.00	-8.78	234	295 Average	vertical
3	4021.00	54.95	66.51	-11.56	74.00	-19.05	234	295 Peak	vertical
4	4824.00	44.28	54.42	-10.14	74.00	-29.72	200	276 Peak	vertical
5	5628.00	47.83	56.91	-9.08	74.00	-26.17	400	331 Peak	vertical
6	6432.00	51.44	59.51	-8.07	54.00	-2.56	126	297 Average	vertical
7	6432.00	54.57	62.64	-8.07	74.00	-19.43	126	297 Peak	vertical
8	7236.00	44.91	52.69	-7.78	74.00	-29.09	100	294 Peak	vertical
9	12864.00	50.35	50.02	0.33	54.00	-3.65	303	297 Average	vertical
10	12864.00	54.69	54.36	0.33	74.00	-19.31	303	297 Peak	vertical

802.11g

Middle Channel (Horizontal)

Middle Channel (Vertical)



Peak	Freq	Level	Read Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	3249.00	47.60	68.06	-12.46	74.00	-26.40	200	320	Peak	horizontal	
2	4064.00	47.84	59.37	-11.53	54.00	-6.16	186	228	Average	horizontal	
3	4064.00	58.44	69.97	-11.53	74.00	-15.56	186	228	Peak	horizontal	
4	4874.00	40.21	50.26	-10.05	54.00	-13.79	243	211	Average	horizontal	
5	4874.00	53.16	63.21	-10.05	74.00	-20.84	243	211	Peak	horizontal	
6	5687.00	37.89	46.70	-8.89	54.00	-16.11	226	266	Average	horizontal	
7	5687.00	52.22	61.11	-8.89	74.00	-21.78	226	266	Peak	horizontal	
8	6499.00	48.85	57.16	-8.31	54.00	-5.15	300	229	Average	horizontal	
9	6499.00	52.19	60.50	-8.31	74.00	-21.81	300	229	Peak	horizontal	
10	7308.00	45.88	53.64	-7.76	74.00	-28.12	211	281	Peak	horizontal	
11	12998.00	48.75	48.45	0.30	54.00	-5.25	291	209	Average	horizontal	
12	12998.00	51.96	51.66	0.30	74.00	-22.04	291	209	Peak	horizontal	

Peak	Freq	Level	Read Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	3249.00	45.07	57.53	-12.46	74.00	-26.93	200	255	Peak	vertical	
2	4060.00	46.60	58.15	-11.55	54.00	-7.40	217	290	Average	vertical	
3	4060.00	56.45	68.00	-11.55	74.00	-17.55	217	290	Peak	vertical	
4	4874.00	42.15	52.20	-10.05	54.00	-11.85	184	268	Average	vertical	
5	4874.00	55.13	65.18	-10.05	74.00	-18.87	184	268	Peak	vertical	
6	5680.00	38.70	47.66	-8.96	54.00	-15.30	282	332	Average	vertical	
7	5680.00	53.04	62.00	-8.96	74.00	-20.96	282	332	Peak	vertical	
8	6499.00	51.79	60.10	-8.31	54.00	-2.21	201	299	Average	vertical	
9	6499.00	54.30	62.61	-8.31	74.00	-19.70	201	299	Peak	vertical	
10	7313.00	46.85	54.62	-7.77	74.00	-27.15	215	203	Peak	vertical	
11	12998.00	49.58	49.28	0.30	54.00	-4.42	300	304	Average	vertical	
12	12998.00	52.79	52.49	0.30	74.00	-21.21	300	304	Peak	vertical	

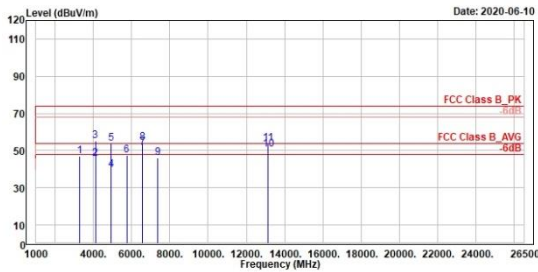
802.11g

High Channel (Horizontal)

High Channel (Vertical)



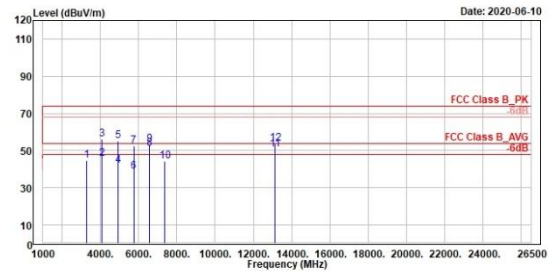
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Freq	Level	Read	Level	Factor	Limit	Over	Apos	Tpos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	3283.00	46.92	59.46	-12.54	74.00	-27.08	200	300	Peak	horizontal	
2	4186.00	45.72	57.09	-11.37	54.00	-8.28	181	229	Average	horizontal	
3	4186.00	55.28	66.65	-11.37	74.00	-18.72	181	229	Peak	horizontal	
4	4924.00	39.70	49.58	-9.88	54.00	-14.30	289	199	Average	horizontal	
5	4924.00	53.82	63.70	-9.88	74.00	-20.18	289	199	Peak	horizontal	
6	5746.00	47.50	56.37	-8.87	74.00	-26.50	400	216	Peak	horizontal	
7	5655.00	51.42	59.53	-8.11	54.00	-2.58	202	274	Average	horizontal	
8	6565.00	54.15	62.26	-8.11	74.00	-19.85	202	274	Peak	horizontal	
9	7386.00	46.16	53.86	-7.70	74.00	-27.84	400	230	Peak	horizontal	
10	13131.00	50.69	50.48	0.21	54.00	-3.31	209	276	Average	horizontal	
11	13131.00	53.98	53.77	0.21	74.00	-20.02	209	276	Peak	horizontal	



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Freq	Level	Read	Level	Factor	Limit	Over	Apos	Tpos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	3283.00	44.83	57.38	-12.55	74.00	-29.17	200	238	Peak	vertical	
2	4182.00	45.72	57.09	-11.37	54.00	-8.28	212	293	Average	vertical	
3	4182.00	56.08	67.45	-11.37	74.00	-17.92	212	293	Peak	vertical	
4	4924.00	41.94	51.82	-9.88	54.00	-12.06	210	251	Average	vertical	
5	4924.00	55.14	65.02	-9.88	74.00	-18.86	210	251	Peak	vertical	
6	5747.00	38.74	47.61	-8.87	54.00	-15.26	300	294	Average	vertical	
7	5747.00	52.42	61.29	-8.87	74.00	-21.58	300	294	Peak	vertical	
8	6565.00	51.29	59.40	-8.11	54.00	-2.71	205	319	Average	vertical	
9	6565.00	53.48	61.59	-8.11	74.00	-20.52	205	319	Peak	vertical	
10	7386.00	44.31	52.01	-7.70	74.00	-29.69	200	265	Peak	vertical	
11	13131.00	50.85	50.64	0.21	54.00	-3.15	209	296	Average	vertical	
12	13131.00	54.01	53.80	0.21	74.00	-19.99	289	296	Peak	vertical	

802.11n HT20

Low Channel (Horizontal)

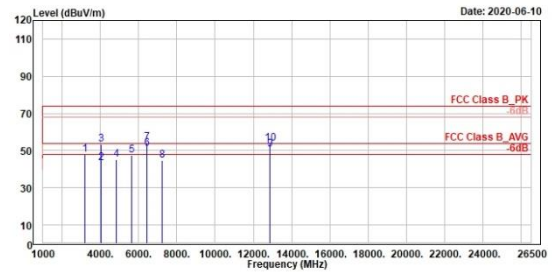
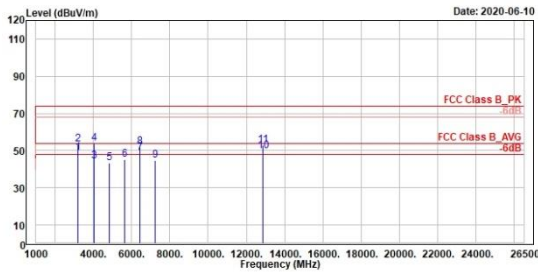
Low Channel (Vertical)



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Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	3216.00	48.00	61.24	-12.44	54.00	-5.20	201	300	Average	horizontal	
2	3216.00	53.37	65.81	-12.44	74.00	-20.63	201	300	Peak	horizontal	
3	4019.00	44.24	55.80	-11.56	54.00	-9.76	202	220	Average	horizontal	
4	4019.00	53.92	65.48	-11.56	74.00	-20.00	202	220	Peak	horizontal	
5	4824.00	43.45	53.59	-10.14	74.00	-30.55	100	210	Peak	horizontal	
6	5626.00	45.39	54.46	-9.07	74.00	-28.61	300	220	Peak	horizontal	
7	6432.00	48.05	57.02	-8.07	54.00	-5.05	300	257	Average	horizontal	
8	6432.00	52.14	60.21	-8.07	74.00	-21.86	300	257	Peak	horizontal	
9	7236.00	44.58	52.36	-7.78	74.00	-29.42	200	257	Peak	horizontal	
10	12865.00	49.67	49.35	0.32	54.00	-4.33	206	282	Average	horizontal	
11	12865.00	53.08	52.76	0.32	74.00	-20.92	206	282	Peak	horizontal	

Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	3216.00	47.77	60.21	-12.44	74.00	-26.23	200	262	Peak	vertical	
2	4019.00	43.34	54.90	-11.56	54.00	-10.66	259	292	Average	vertical	
3	4019.00	53.35	64.91	-11.56	74.00	-20.65	259	292	Peak	vertical	
4	4824.00	45.10	55.24	-10.14	74.00	-28.90	200	301	Peak	vertical	
5	5626.00	47.40	56.48	-9.08	74.00	-26.60	400	311	Peak	vertical	
6	6432.00	51.27	59.34	-8.07	54.00	-2.73	114	301	Average	vertical	
7	6432.00	54.33	62.40	-8.07	74.00	-19.67	114	301	Peak	vertical	
8	7232.00	44.56	52.33	-7.77	74.00	-29.44	100	275	Peak	vertical	
9	12864.00	50.69	50.36	0.33	54.00	-3.31	320	303	Average	vertical	
10	12864.00	53.80	53.47	0.33	74.00	-20.20	320	303	Peak	vertical	

802.11n HT20

Middle Channel (Horizontal)

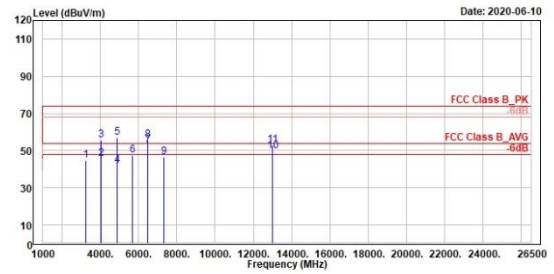
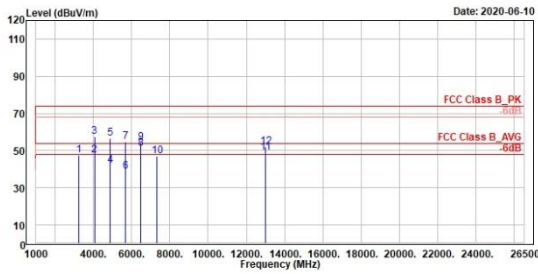
Middle Channel (Vertical)



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Freq	Level	Read	Level	Factor	Limit	Over	Apos	Tpos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	3249.00	47.61	68.07	-12.46	74.00	-26.39	200	306	Peak	horizontal	
2	4061.00	47.60	59.15	-11.55	54.00	-6.40	194	221	Average	horizontal	
3	4061.00	57.44	68.99	-11.55	74.00	-16.56	194	221	Peak	horizontal	
4	4874.00	41.88	51.93	-10.05	54.00	-12.12	200	203	Average	horizontal	
5	4874.00	56.45	66.50	-10.05	74.00	-17.55	200	203	Peak	horizontal	
6	5685.00	38.68	47.50	-8.91	54.00	-15.32	360	256	Average	horizontal	
7	5685.00	54.68	63.59	-8.91	74.00	-19.32	368	256	Peak	horizontal	
8	6499.00	50.97	59.28	-8.31	54.00	-3.03	272	245	Average	horizontal	
9	6499.00	54.22	62.53	-8.31	74.00	-19.78	272	245	Peak	horizontal	
10	7311.00	46.93	54.69	-7.76	74.00	-27.07	200	232	Peak	horizontal	
11	12998.00	48.78	48.48	0.30	54.00	-5.22	293	209	Average	horizontal	
12	12998.00	51.05	51.65	0.30	74.00	-22.05	293	209	Peak	horizontal	

Freq	Level	Read	Level	Factor	Limit	Over	Apos	Tpos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	3249.00	44.56	57.02	-12.46	74.00	-29.44	200	272	Peak	vertical	
2	4061.00	45.78	57.34	-11.56	54.00	-8.22	117	272	Average	vertical	
3	4061.00	55.78	67.34	-11.56	74.00	-18.22	117	272	Peak	vertical	
4	4874.00	42.07	52.12	-10.05	54.00	-11.93	184	258	Average	vertical	
5	4874.00	56.97	67.02	-10.05	74.00	-17.03	184	258	Peak	vertical	
6	5685.00	47.44	56.40	-8.96	74.00	-26.56	400	311	Peak	vertical	
7	6499.00	52.88	61.19	-8.31	54.00	-1.12	128	292	Average	vertical	
8	6499.00	55.59	63.90	-8.31	74.00	-18.41	128	292	Peak	vertical	
9	7311.00	46.62	54.38	-7.76	74.00	-27.38	203	301	Peak	vertical	
10	12998.00	49.88	49.58	0.30	54.00	-4.12	301	304	Average	vertical	
11	12998.00	52.79	52.49	0.30	74.00	-21.21	301	304	Peak	vertical	

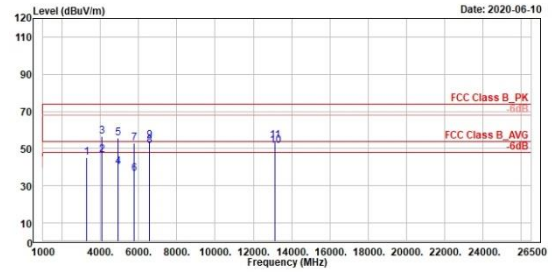
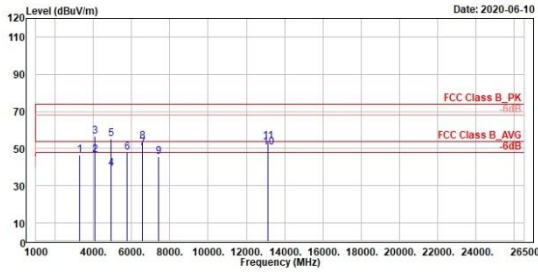


**802.11n HT20**
**High Channel (Horizontal)**
**High Channel (Vertical)**


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Peak	Freq	Level	Read	Level	Factor	Limit	Over	Apos	Tpos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	cm	deg			
1	3282.00	46.34	58.09	-12.55	74.00	-27.66	200	298	Peak	horizontal		
2	4100.00	46.53	57.90	-11.37	54.00	-7.47	384	222	Average	horizontal		
3	4100.00	56.41	67.78	-11.37	74.00	-17.59	384	222	Peak	horizontal		
4	4924.00	39.36	49.24	-9.88	54.00	-14.64	276	211	Average	horizontal		
5	4924.00	55.36	65.24	-9.88	74.00	-18.64	276	211	Peak	horizontal		
6	5756.00	47.99	56.05	-8.06	74.00	-26.01	400	218	Peak	horizontal		
7	6565.00	50.39	58.50	-8.11	54.00	-3.61	223	269	Average	horizontal		
8	6565.00	53.85	61.96	-8.11	74.00	-20.15	223	269	Peak	horizontal		
9	7393.00	45.53	53.19	-7.66	74.00	-28.47	211	296	Peak	horizontal		
10	13131.00	50.83	50.62	0.21	54.00	-3.17	200	277	Average	horizontal		
11	13131.00	53.74	53.53	0.21	74.00	-20.26	200	277	Peak	horizontal		

Peak	Freq	Level	Read	Level	Factor	Limit	Over	Apos	Tpos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	cm	deg			
1	3283.00	45.07	57.61	-12.54	74.00	-28.93	200	238	Peak	vertical		
2	4104.00	46.75	58.12	-11.37	54.00	-7.25	335	259	Average	vertical		
3	4104.00	56.50	67.87	-11.37	74.00	-17.50	335	259	Peak	vertical		
4	4924.00	40.27	50.15	-9.88	54.00	-13.73	176	255	Average	vertical		
5	4924.00	55.70	65.58	-9.88	74.00	-18.30	176	255	Peak	vertical		
6	5748.00	36.50	45.38	-8.88	54.00	-17.50	300	285	Average	vertical		
7	5748.00	53.13	62.01	-8.88	74.00	-20.87	300	286	Peak	vertical		
8	6565.00	51.57	59.68	-8.11	54.00	-2.43	196	326	Average	vertical		
9	6565.00	54.13	62.24	-8.11	74.00	-19.87	196	326	Peak	vertical		
10	13131.00	51.64	51.43	0.21	54.00	-2.36	200	294	Average	vertical		
11	13131.00	54.28	54.07	0.21	74.00	-19.72	200	294	Peak	vertical		