# FCC Test Report

Product Name	Multimedia device with Bluetooth and WLAN
Model No	AIVI2SBXM
FCC ID.	2AUXS-AIVI2SBXM

Applicant	Robert Bosch GmbH
Address	Robert-Bosch-Strasse 200 Hildesheim, 31139 Germany

Date of Receipt	Sep. 21, 2020				
Issue Date	Oct. 30, 2020				
Report No.	2090718R-E3032110118				
Report Version	V1.0				
TAFF Testing Laboratory 3023					

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.



# Test Report

Issue Date: Oct. 30, 2020 Report No.: 2090718R-E3032110118



1				
Product Name	Multimedia device with Bluetooth and WLAN			
Applicant	Robert Bosch GmbH			
Address	Robert-Bosch-Strasse 200 Hildesheim, 31139 Germany			
Manufacturer	Robert Bosch GmbH			
Model No.	AIVI2SBXM			
FCC ID.	2AUXS-AIVI2SBXM			
EUT Rated Voltage	DC 12V (Power by battery)			
EUT Test Voltage	DC 12V (Power by battery)			
Trade Name	Bosch			
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C			
	ANSI C63.4: 2014, ANSI C63.10: 2013			
Test Result	Complied			
Documented By	Jinn Chen			
	(Senior Adm. Specialist / Jinn Chen)			
Tested By	Yulin Chen			
	(Senior Engineer / Yulin Chen)			
Approved By	Hond			

(Director / Vincent Lin)



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# DEKRA

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# **Revision History**

Report No.	Version	Description	Issued Date
2090718R-E3032110118	V1.0	Initial issue of report.	2020-10-30



#### 1. GENERAL INFORMATION

#### **1.1. EUT Description**

Product Name	Multimedia device with Bluetooth and WLAN			
Trade Name	Bosch			
Model No.	AIVI2SBXM			
FCC ID.	2AUXS-AIVI2SBXM			
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW, 2422-2462MHz for 802.11n-40MHz			
Number of Channels	802.11b/g/n-20MHz: 11, 802.11n-40MHz: 9			
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 150Mbps			
Channel separation	802.11b/g/n: 5 MHz			
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK)			
	802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)			
Antenna Type	Metal Plate Antenna			
Antenna Gain	Refer to the table "Antenna List"			
Channel Control	Auto			

#### Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	NISSEI ELECTRIC	N/A	Metal Plate Antenna	-0.54dBi for 2.4GHz
	CO.,LTD.			

Note: The antenna of EUT is conforming to FCC 15.203.



802.11b/g/n-20MHz Center Frequency of Each Channel:

-							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		
802.11n-40M	Hz Center Fr	equency of Ead	ch Channel:				
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 03:	2422 MHz	Channel 04:	2427 MHz	Channel 05:	2432 MHz	Channel 06:	2437 MHz
Channel 07:	2442 MHz	Channel 08:	2447 MHz	Channel 09:	2452 MHz		

- 1. The EUT is a Multimedia device with Bluetooth and WLAN with built-in WLAN (802.11a/b/g/n/ac) with Bluetooth V4.2 \ V2.1+EDR transceiver, this report for 2.4GHz WLAN.
- 2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
- 3. These tests are conducted on a sample for the purpose of demonstrating compliance of transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
- 4. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance of transmitter with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n-20MBW 7.2Mbps)
	Mode 4: Transmit (802.11n-40MBW 15Mbps)

#### **1.2.** Tested System Details

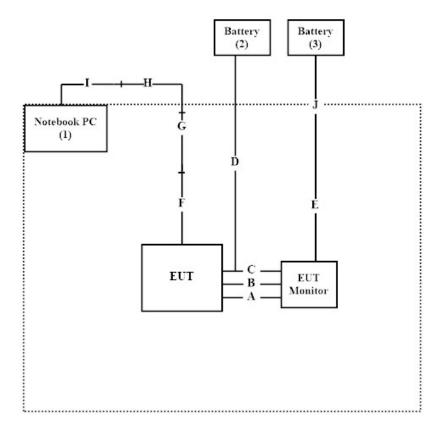
The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	P62G	229FJC2	N/A
2	Battery	YUASA	55B24L-CMF II	N/A	N/A
3	Battery	YUASA	55D23L-SMF	N/A	N/A

Sig	nal Cable Type	Signal cable Description	
А	Orange connector Cable	Non-shielded, 1.8m	
В	Green connector Cable	Non-shielded, 2m	
С	Signal Cable	Non-shielded, 1m	
D	Power Cable	Non-shielded, 1m	
Е	Power Cable	Non-shielded, 1m	
F	USB to mini USB Cable	Non-shielded, 0.2m	
G	USB to LAN Cable	Non-shielded, 0.2m	
Н	LAN Cable	Shielded, 1m	
Ι	USB to LAN Cable	Non-shielded, 0.2m	
J	Power Cable	Non-shielded, 1m	



#### **1.3.** Configuration of Tested System



#### **1.4. EUT Exercise Software**

- 1. Setup the EUT as shown in Section 1.4.
- 2. Execute software "Dut labtool 2.0.0.89" on the EUT.
- 3. Configure the test mode, the test channel, and the data rate.
- 4. Press "OK" to start the continuous Transmit.
- 5. Verify that the EUT works properly.



## **1.5.** Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
	Temperature (°C)	10~40 °C	23.2°C
Radiated Emission	Humidity (%RH)	10~90 %	72%
	Temperature (°C)	10~40 °C	22°C
Conductive	Humidity (%RH)	10~90 %	55%

USA	:	FCC Registration Number: TW0023
Canada	:	IC Registration Number: 25880

Site Description	:	Accredited by TAF Accredited Number: 3023
Test Laboratory	:	DEKRA Testing and Certification Co., Ltd
Address	:	No.159, Sec. 2, Wenhua 1st Rd., Linkou Dist.,
		New Taipei City 24457, Taiwan, R.O.C.
Phone number	:	886-2-2602-7968
Fax number	:	866-2-2602-3286
Email address	:	info.tw@dekra.com
Website	:	http://www.dekra.com.tw

#### **1.6.** List of Test Item and Equipment

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
Х	EMI Test Receiver	R&S	ESR7	101601	2020.05.28	2021.05.27
Х	Two-Line V-Network	R&S	ENV216	101306	2020.03.25	2021.03.24
Х	Two-Line V-Network	R&S	ENV216	101307	2020.04.17	2021.04.16
Х	Coaxial Cable	DEKRA	RG400_BNC	RF001	2020.05.24	2021.05.23

#### For Conduction measurements /ASR1

Note:

- 1. All equipments are calibrated every one year.
- 2. The test instruments marked with "X" are used to measure the final test results.
- 3. Test Software version : DEKRA Testing System V1.2

#### For Conducted measurements /ASR2

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
Х	Spectrum Analyzer	R&S	FSV30	103466	2019.12.16	2020.12.15
Х	Peak Power Analyzer	KEYSIGHT	8900B	MY51000539	2020.05.13	2021.05.12
Х	Power Sensor	KEYSIGHT	N1923A	MY59240002	2020.05.22	2021.05.21
Х	Power Sensor	KEYSIGHT	N1923A	MY59240003	2020.05.22	2021.05.21

Note:

- 1. All equipments are calibrated every one year.
- 2. The test instruments marked with "X" are used to measure the final test results.
- 3. Test Software version : DEKRA Conduction Test System V9.0.5.

#### For Radiated measurements /ACB1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
Х	Loop Antenna	AMETEK	HLA6121	49611	2020.03.16	2021.03.15
Х	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-953	2020.01.03	2021.01.02
Х	Horn Antenna	ETS-Lindgren	3117	00203800	2019.12.12	2020.12.11
Х	Horn Antenna	Com-Power	AH-840	101087	2020.06.08	2021.06.07
Х	Pre-Amplifier	EMCI	EMC001330	980316	2020.06.23	2021.06.22
Х	Pre-Amplifier	EMCI	EMC051835SE	980311	2020.06.23	2021.06.22
Х	Pre-Amplifier	EMCI	EMC05820SE	980310	2020.06.24	2021.06.23
Х	Pre-Amplifier	EMCI	EMC184045SE	980314	2020.06.10	2021.06.09
Х	Filter	MICRO TRONICS	BRM50702	G251	2020.09.17	2021.09.16
	Filter	MICRO TRONICS	BRM50716	G188	2020.09.17	2021.09.16
Х	EMI Test Receiver	R&S	ESR7	101602	2019.12.16	2020.12.15
Х	Spectrum Analyzer	R&S	FSV40	101148	2020.03.16	2021.03.15
Х	Coaxial Cable	SUHNER	SUCOFLEX 106	RF002	2020.07.03	2021.07.02
Х	Mircoflex Cable	HUBER SUHNER	SUCOFLEX 102	MY3381/2	2020.06.10	2021.06.09

Note:

1. All equipments are calibrated every one year.

- 2. The test instruments marked with "X" are used to measure the final test results.
- 3. Test Software version : DEKRA Testing System V1.2

#### 1.7. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document, and is described in each test chapter of this report.

The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

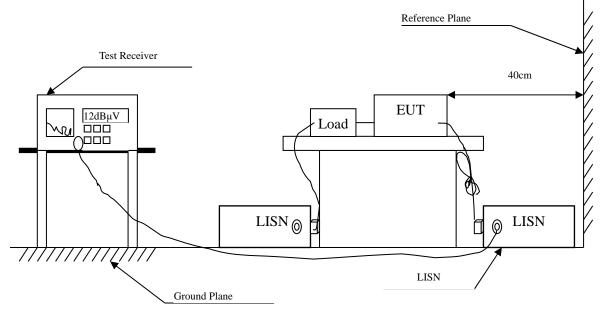
Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	Uncertainty				
Peak Power Output±0.91 dB					
De l'ete d Decision	Under 1GHz	Under 1GHz			
Radiated Emission	±4.06 dB	±4.06 dB			
RF Antenna Conducted Test	±2.53 dB				
DendEder	Under 1GHz	Under 1GHz			
Band Edge	±4.06 dB	±4.06 dB			
6dB Bandwidth	±682.83 Hz				
Power Density ±2.53 dB					
Duty Cycle	±2.31 ms				



#### 2. Conducted Emission

#### 2.1. Test Setup



#### 2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBμV) Limit								
Frequency	Limits							
MHz	QP	AVG						
0.15 - 0.50	66-56	56-46						
0.50-5.0	56	46						
5.0 - 30	60	50						

#### 2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

#### 2.4. Uncertainty

± 2.35 dB



#### 2.5. Test Result of Conducted Emission

Owing to the EUT use battery supply voltage, this test item is not performed.



#### 3. Peak Power Output

#### 3.1. Test Setup



#### 3.2. Limits

The maximum peak power shall be less 1 Watt.

#### **3.3.** Test Procedure

The EUT was tested according to C63.10:2013 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using C63.10:2013 Section 11.9.1.3 PKPM1 Peak power meter method. The maximum average conducted output power using C63.10:2013 Section 11.9.2.3 Measurement using a power meter (PM). (Measurement using a gated RF average-reading power meter).

### **3.4.** Test Result of Peak Power Output

Product	:	Multimedia device with Bluetooth and WLAN
Test Item	:	Peak Power Output Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)
Test Date	:	2020/10/15

Channel No	Frequency	For d	•	e Power ata Rate (N	Ibps)	Peak Power	Required	Derrelt
Channel No	(MHz)	1	2	5.5	11	1	Limit	Result
			Measu					
01	2412	13.86				16.71	<30dBm	Pass
06	2437	13.93	14.82	14.75	14.7	17.02	<30dBm	Pass
11	2462	13.9				16.89	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Peak Power Output Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps)
- Test Date :
  - : 2020/10/15

	Enggyonay		Average PowerPeakFor different Data Rate (Mbps)Power									
Channel No	Frequency (MHz)	6	9	12	18	24	36	48	54	6	Required Limit	Result
			Measurement Level (dBm)									
01	2412	10.71								19.03	<30dBm	Pass
06	2437	10.64	10.59	10.52	10.48	10.43	10.37	10.33	10.29	18.99	<30dBm	Pass
11	2462	10.88								20.19	<30dBm	Pass

Note: Peak Power Output Value = Reading value on power meter + cable loss



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Peak Power Output Data
- Test Mode
  - e : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)
- Test Date :

2020/10/15

		Average Power For different Data Rate							Peak Power			
Channel No	Frequency (MHz)	7.2	14.4		28.9	43.3	57.8	65	72.2	7.2	Required Limit	Result
				Ν	Aeasure	ement L	level (d	lBm)				
01	2412	10.76							-	18.92	<30dBm	Pass
06	2437	10.77	10.71	10.67	10.62	10.58	10.54	10.48	10.42	19.95	<30dBm	Pass
11	2462	10.55								19.69	<30dBm	Pass

Note: Peak Power Output Value = Reading value on power meter + cable loss



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Peak Power Output Data
- Test Mode
- : Mode 4: Transmit (802.11n-40MBW 15Mbps)
- Test Date : 2020/10/15

			Average Power						Peak			
	Engguener			For	differer	nt Data	Rate			Power	Dequined	
Channel No	Frequency (MHz)	15	30	45	60	90	120	135	150	15	Required Limit	Result
	Measurement Level (dBm)											
03	2422	10.82								19.33	<30dBm	Pass
06	2437	10.73	10.69	10.62	10.56	10.53	10.49	10.42	10.38	19.19	<30dBm	Pass
09	2452	10.53				-				19.16	<30dBm	Pass

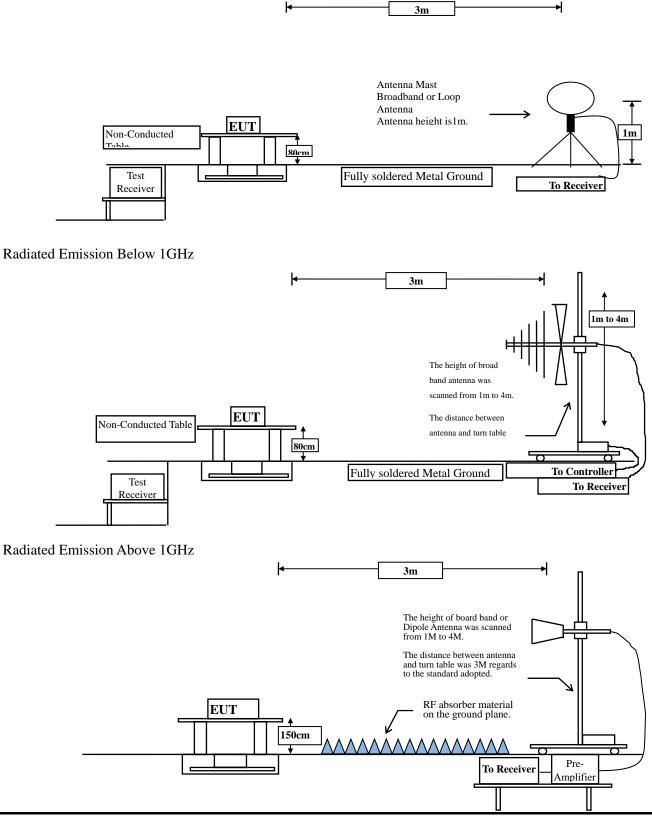
Note: Peak Power Output Value = Reading value on power meter + cable loss



#### 4. Radiated Emission

#### 4.1. Test Setup

Radiated Emission Under 30MHz



#### 4.2. Limits

#### ➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15	FCC Part 15 Subpart C Paragraph 15.209 Limits						
Frequency MHz	Field strength	Measurement distance					
	(microvolts/meter)	(meter)					
0.009-0.490	2400/F(kHz)	300					
0.490-1.705	24000/F(kHz)	30					
1.705-30	30	30					
30-88	100	3					
88-216	150	3					
216-960	200	3					
Above 960	500	3					

Remarks:

- ks: 1. RF Voltage (dBuV) =  $20 \log \text{RF}$  Voltage (uV)
  - 2. In the Above Table, the tighter limit applies at the band edges.
  - 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

#### 4.3. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to C63.10:2013 Section 11.12.1 for compliance to FCC 47CFR 15.247 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna. The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

#### **RBW and VBW Parameter setting:**

According to C63.10 Section 11.12.2.4 Peak measurement procedure.

RBW = as specified in Table 1.

VBW  $\geq$  3 x RBW.

Table 1 — RBW	as a	function	of frequency	

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

According to C63.10 Section 11.12.2.5 Average measurement procedure.

RBW = 1MHz.

VBW = 10Hz, when duty cycle  $\ge$  98 %

VBW  $\geq$  1/T, when duty cycle < 98 %

( T refers to the minimum transmission duration over which the transmitter is on and is

	1			1 /
2.4GHz band	Duty Cycle	Т	1/T	VBW
	(%)	(ms)	(Hz)	(Hz)
802.11 b	100.00	1.0000	1000	10
802.11 g	98.63	3.1304	319	10
802.11 n20	100.00	1.0000	1000	10
802.11 n40	98.65	4.7609	210	10

transmitting at its maximum power control level for the tested mode of operation.)

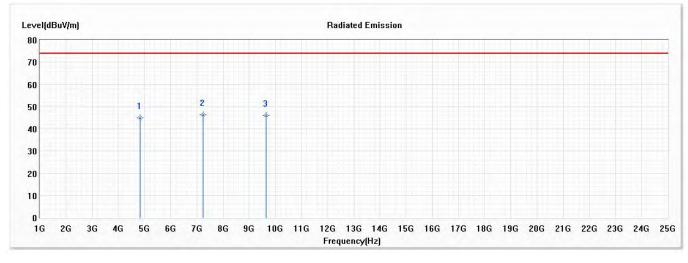
Note: Duty Cycle Refer to Section 9



#### 4.4. Test Result of Radiated Emission

Product	:	Multimedia device with Bluetooth and WLAN
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date	:	2020/10/16

#### Horizontal



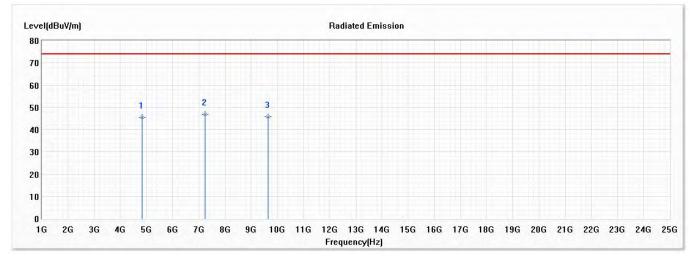
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4824.000	44.87	74.00	-29.13	49.03	-4.16	РК
* 2	7236.000	46.27	74.00	-27.73	46.95	-0.68	РК
3	9648.000	46.13	74.00	-27.87	44.41	1.72	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
- Test Date : 2020/10/16

#### Vertical



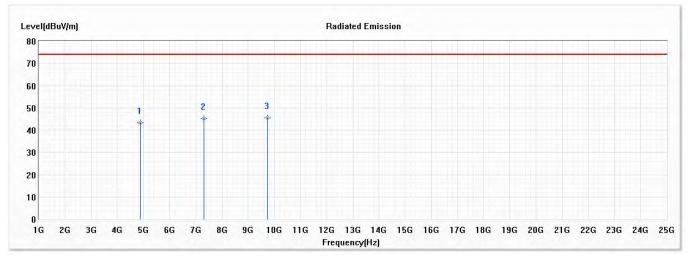
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4824.000	45.52	74.00	-28.48	49.68	-4.16	РК
* 2	7236.000	46.85	74.00	-27.15	47.53	-0.68	РК
3	9648.000	45.73	74.00	-28.27	44.01	1.72	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

#### Horizontal



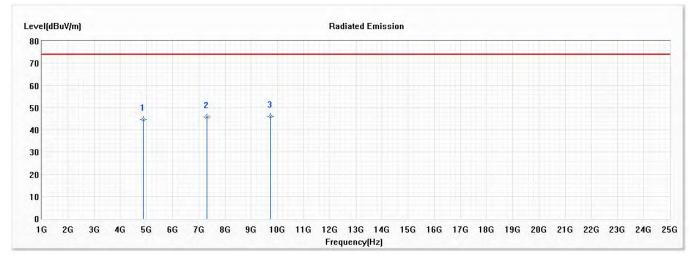
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4874.000	43.30	74.00	-30.70	47.58	-4.28	РК
2	7311.000	45.32	74.00	-28.68	46.01	-0.69	РК
* 3	9748.000	45.42	74.00	-28.58	43.55	1.87	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)
- Test Date : 2020/10/16

#### Vertical



No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4874.000	44.66	74.00	-29.34	48.94	-4.28	РК
2	7311.000	45.83	74.00	-28.17	46.52	-0.69	РК
* 3	9748.000	46.08	74.00	-27.92	44.21	1.87	РК

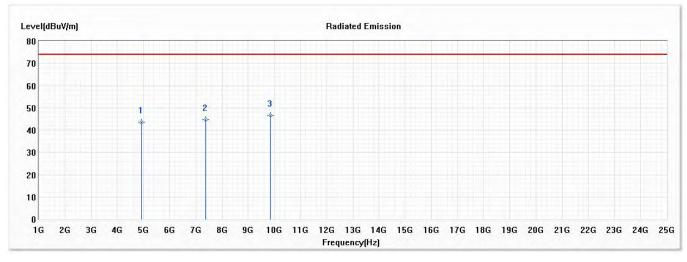
- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)
- Test Date : 2020/10/16

#### Horizontal



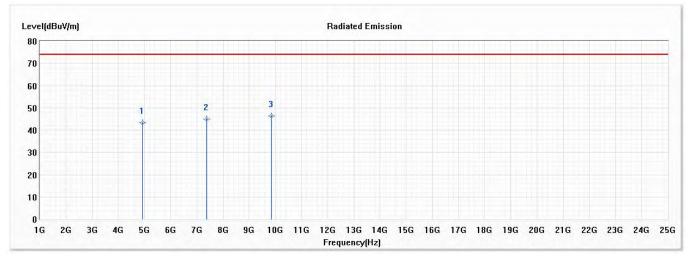
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4924.000	43.63	74.00	-30.37	47.79	-4.16	РК
2	7386.000	44.71	74.00	-29.29	45.34	-0.63	РК
* 3	9848.000	46.68	74.00	-27.32	44.44	2.24	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)
- Test Date : 2020/10/16

#### Vertical



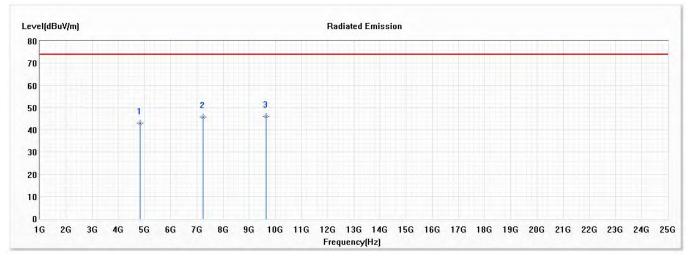
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4924.000	43.33	74.00	-30.67	47.49	-4.16	РК
2	7386.000	44.88	74.00	-29.12	45.51	-0.63	РК
* 3	9848.000	46.26	74.00	-27.74	44.02	2.24	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

#### Horizontal



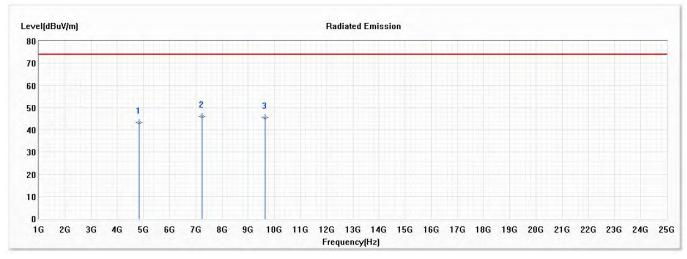
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4824.000	43.14	74.00	-30.86	47.30	-4.16	РК
2	7236.000	45.78	74.00	-28.22	46.46	-0.68	РК
* 3	9648.000	46.04	74.00	-27.96	44.32	1.72	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

#### Vertical



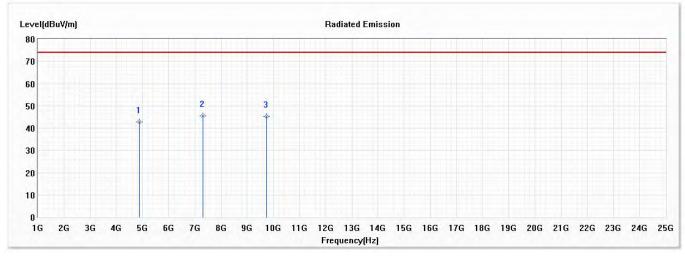
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4824.000	43.43	74.00	-30.57	47.59	-4.16	РК
* 2	7236.000	46.02	74.00	-27.98	46.70	-0.68	РК
3	9648.000	45.62	74.00	-28.38	43.90	1.72	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

#### Horizontal



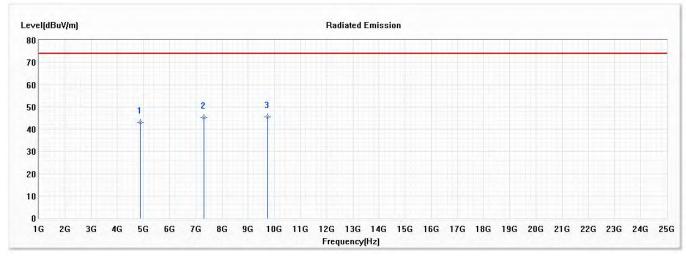
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4874.000	42.87	74.00	-31.13	47.15	-4.28	РК
* 2	7311.000	45.42	74.00	-28.58	46.11	-0.69	РК
3	9748.000	45.22	74.00	-28.78	43.35	1.87	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

#### Vertical



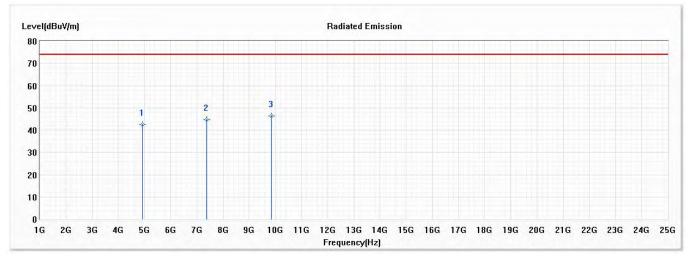
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4874.000	42.98	74.00	-31.02	47.26	-4.28	РК
2	7311.000	45.14	74.00	-28.86	45.83	-0.69	РК
* 3	9748.000	45.58	74.00	-28.42	43.71	1.87	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

#### Horizontal



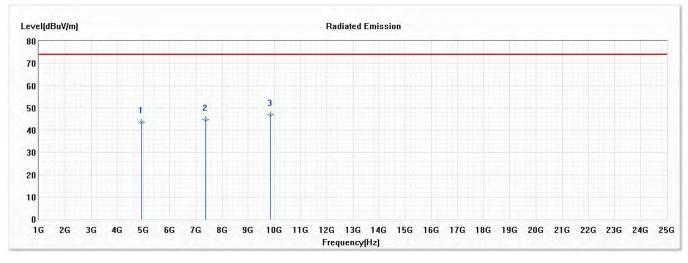
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4924.000	42.62	74.00	-31.38	46.78	-4.16	РК
2	7386.000	44.75	74.00	-29.25	45.38	-0.63	РК
* 3	9848.000	46.40	74.00	-27.60	44.16	2.24	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

#### Vertical



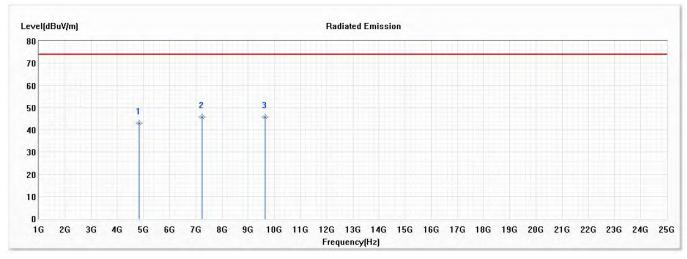
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4924.000	43.56	74.00	-30.44	47.72	-4.16	РК
2	7386.000	44.70	74.00	-29.30	45.33	-0.63	РК
* 3	9848.000	46.84	74.00	-27.16	44.60	2.24	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)(2412MHz)

#### Horizontal



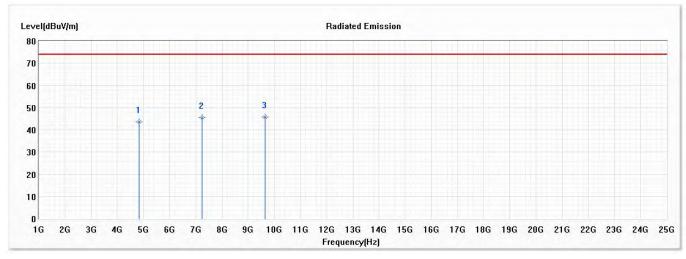
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4824.000	43.00	74.00	-31.00	47.16	-4.16	РК
2	7236.000	45.75	74.00	-28.25	46.43	-0.68	РК
* 3	9648.000	45.93	74.00	-28.07	44.21	1.72	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)(2412MHz)

### Vertical



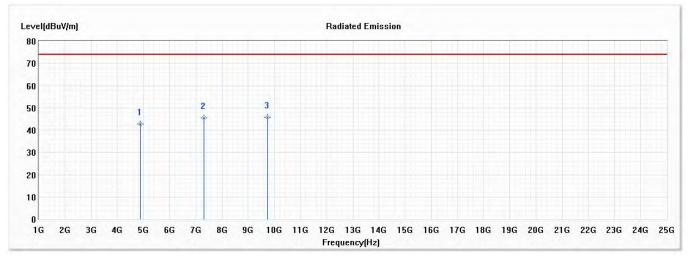
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4824.000	43.54	74.00	-30.46	47.70	-4.16	РК
2	7236.000	45.60	74.00	-28.40	46.28	-0.68	РК
* 3	9648.000	45.92	74.00	-28.08	44.20	1.72	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2437 MHz)

#### Horizontal



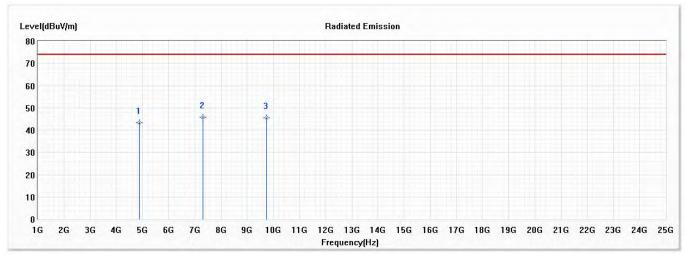
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4874.000	42.66	74.00	-31.34	46.94	-4.28	РК
2	7311.000	45.51	74.00	-28.49	46.20	-0.69	РК
* 3	9748.000	45.66	74.00	-28.34	43.79	1.87	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2437 MHz)

#### Vertical



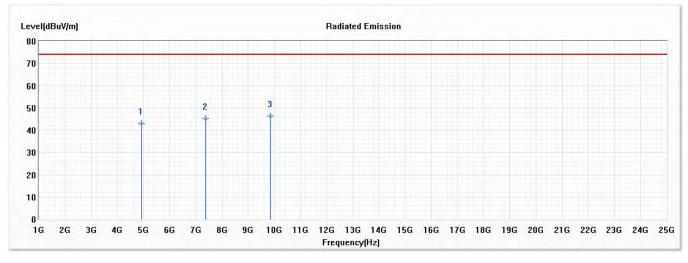
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4874.000	43.44	74.00	-30.56	47.72	-4.28	РК
* 2	7311.000	45.71	74.00	-28.29	46.40	-0.69	РК
3	9748.000	45.47	74.00	-28.53	43.60	1.87	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462 MHz)
- Test Date : 2020/10/16



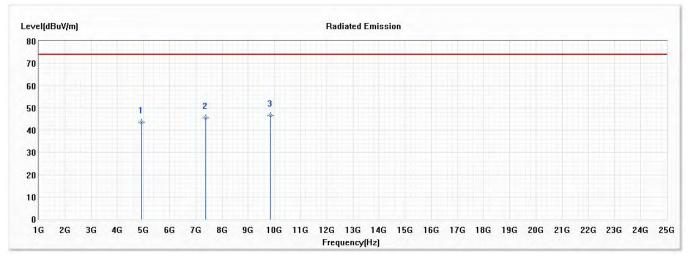
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4924.000	43.16	74.00	-30.84	47.32	-4.16	РК
2	7386.000	45.14	74.00	-28.86	45.77	-0.63	РК
* 3	9848.000	46.42	74.00	-27.58	44.18	2.24	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product	:	Multimedia device with Bluetooth and WLAN	

- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462 MHz)
- Test Date : 2020/10/16



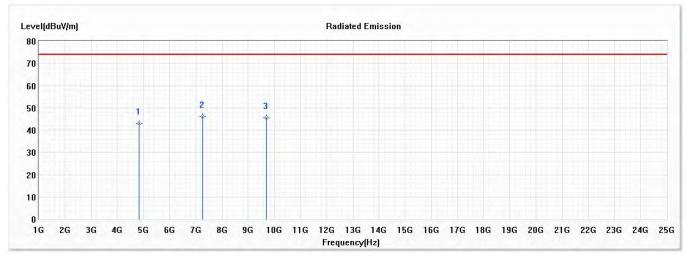
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4924.000	43.70	74.00	-30.30	47.86	-4.16	РК
2	7386.000	45.51	74.00	-28.49	46.14	-0.63	РК
* 3	9848.000	46.62	74.00	-27.38	44.38	2.24	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2422 MHz)
- Test Date : 2020/10/16



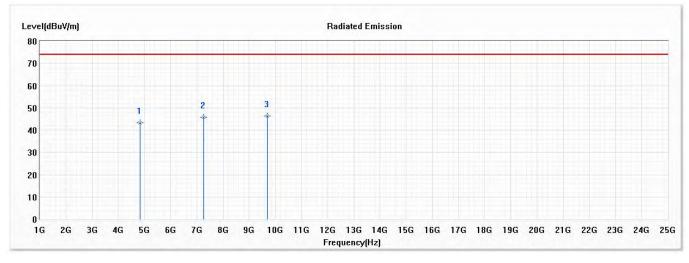
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4844.000	43.06	74.00	-30.94	47.17	-4.11	РК
* 2	7266.000	46.09	74.00	-27.91	46.83	-0.74	РК
3	9688.000	45.46	74.00	-28.54	43.75	1.71	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2422 MHz)
- Test Date : 2020/10/16



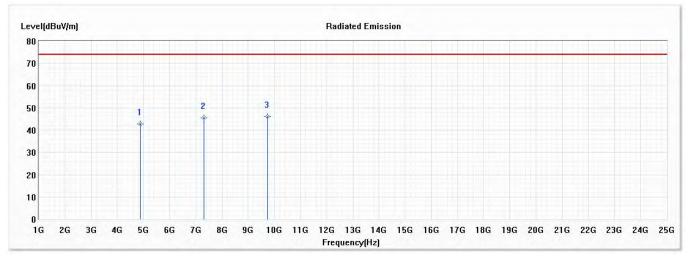
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4844.000	43.44	74.00	-30.56	47.55	-4.11	РК
2	7266.000	45.86	74.00	-28.14	46.60	-0.74	РК
* 3	9688.000	46.37	74.00	-27.63	44.66	1.71	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2437 MHz)
- Test Date : 2020/10/16



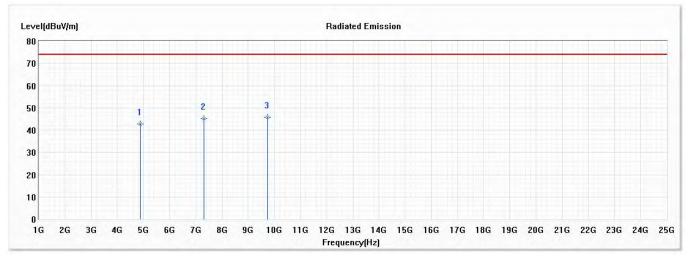
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4874.000	42.67	74.00	-31.33	46.95	-4.28	РК
2	7311.000	45.41	74.00	-28.59	46.10	-0.69	РК
* 3	9748.000	46.13	74.00	-27.87	44.26	1.87	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2437 MHz)
- Test Date : 2020/10/16



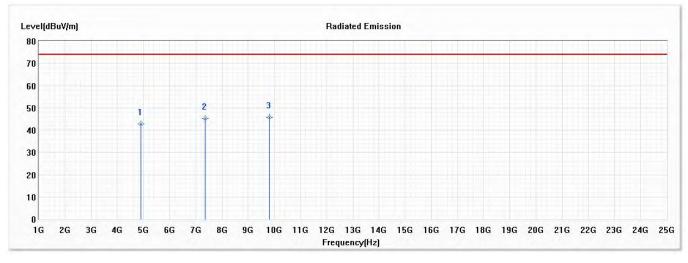
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4874.000	42.85	74.00	-31.15	47.13	-4.28	РК
2	7311.000	45.27	74.00	-28.73	45.96	-0.69	РК
* 3	9748.000	45.92	74.00	-28.08	44.05	1.87	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2452 MHz)
- Test Date : 2020/10/16



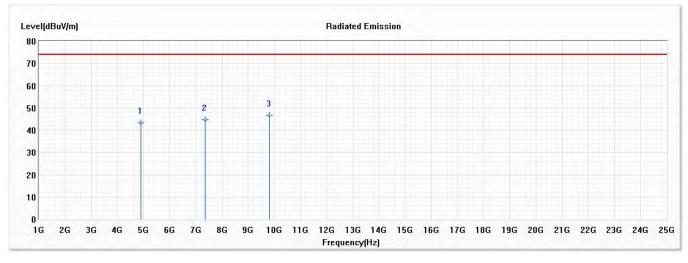
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4904.000	42.65	74.00	-31.35	46.93	-4.28	РК
2	7356.000	45.11	74.00	-28.89	45.81	-0.70	РК
* 3	9808.000	45.68	74.00	-28.32	43.81	1.87	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : Harmonic Radiated Emission Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2452 MHz)
- Test Date : 2020/10/16



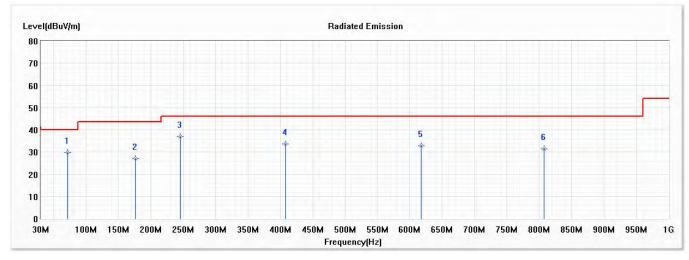
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	4904.000	43.21	74.00	-30.79	47.49	-4.28	РК
2	7356.000	44.67	74.00	-29.33	45.37	-0.70	РК
* 3	9808.000	46.64	74.00	-27.36	44.77	1.87	РК

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The average measurement was not performed when the peak measured data under the limit of average detection.
- 5. The emission levels of other frequencies are very lower than the limit and not show in test report.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : General Radiated Emission Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)

#### Horizontal

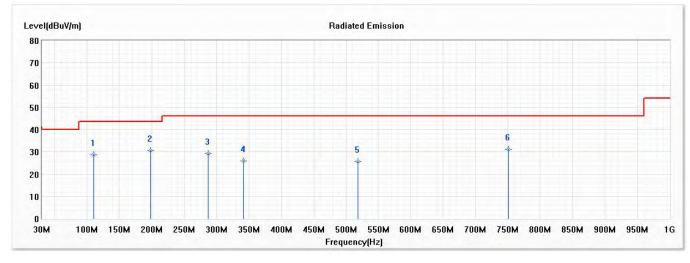


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	71.710	29.75	40.00	-10.25	42.92	-13.17	QP
2	176.470	26.96	43.50	-16.54	37.94	-10.98	QP
* 3	245.340	36.97	46.00	-9.03	47.89	-10.92	QP
4	407.330	33.61	46.00	-12.39	40.02	-6.41	QP
5	617.820	32.90	46.00	-13.10	34.94	-2.04	QP
6	806.970	31.33	46.00	-14.67	30.69	0.64	QP

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. No emission found between lowest internal used/generated frequency to 30MHz.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : General Radiated Emission Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)
- Test Date : 2020/10/23

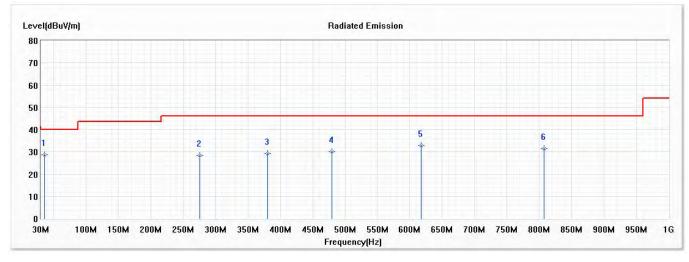


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	110.510	28.73	43.50	-14.77	42.43	-13.70	QP
* 2	197.810	30.59	43.50	-12.91	42.76	-12.17	QP
3	287.050	29.35	46.00	-16.65	38.60	-9.25	QP
4	341.370	25.82	46.00	-20.18	33.63	-7.81	QP
5	517.910	25.76	46.00	-20.24	29.63	-3.87	QP
6	750.710	31.07	46.00	-14.93	31.03	0.04	QP

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. No emission found between lowest internal used/generated frequency to 30MHz.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : General Radiated Emission Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)
- Test Date : 2020/10/23

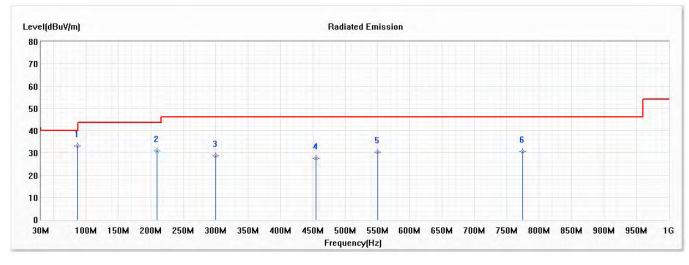


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
* 1	35.820	28.70	40.00	-11.30	40.05	-11.35	QP
2	275.410	28.53	46.00	-17.47	38.12	-9.59	QP
3	380.170	29.30	46.00	-16.70	36.09	-6.79	QP
4	479.110	29.99	46.00	-16.01	34.55	-4.56	QP
5	617.820	32.90	46.00	-13.10	34.94	-2.04	QP
6	806.970	31.33	46.00	-14.67	30.69	0.64	QP

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. No emission found between lowest internal used/generated frequency to 30MHz.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : General Radiated Emission Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)
- Test Date : 2020/10/23



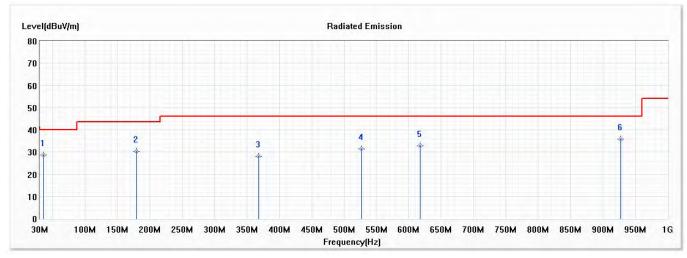
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
* 1	86.260	33.21	40.00	-6.79	49.24	-16.03	QP
2	209.450	30.86	43.50	-12.64	43.10	-12.24	QP
3	299.660	28.64	46.00	-17.36	37.65	-9.01	QP
4	454.860	27.72	46.00	-18.28	32.86	-5.14	QP
5	550.890	30.23	46.00	-15.77	33.80	-3.57	QP
6	773.990	30.59	46.00	-15.41	30.25	0.34	QP

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. No emission found between lowest internal used/generated frequency to 30MHz.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : General Radiated Emission Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)(2437 MHz)

### Horizontal



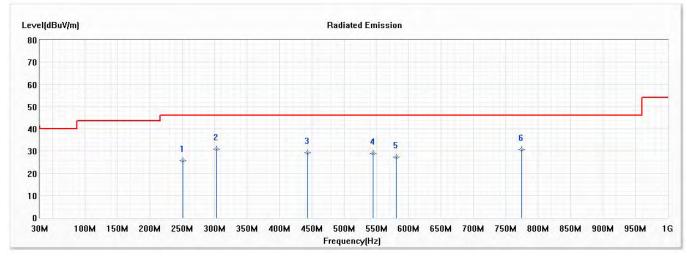
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	35.820	28.70	40.00	-11.30	40.05	-11.35	QP
2	179.380	30.43	43.50	-13.07	41.70	-11.27	QP
3	368.530	28.20	46.00	-17.80	35.29	-7.09	QP
4	526.640	31.32	46.00	-14.68	35.17	-3.85	QP
5	617.820	32.90	46.00	-13.10	34.94	-2.04	QP
* 6	927.250	35.95	46.00	-10.05	33.97	1.98	QP

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. No emission found between lowest internal used/generated frequency to 30MHz.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : General Radiated Emission Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)(2437 MHz)

### Vertical



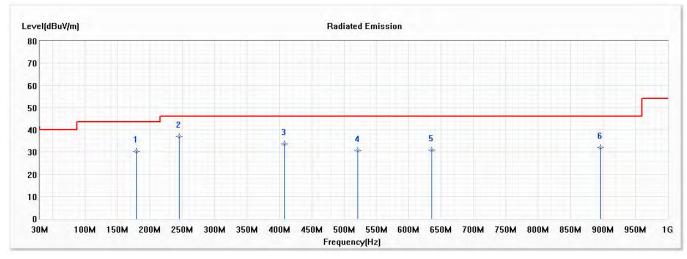
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	251.160	25.58	46.00	-20.42	36.37	-10.79	QP
* 2	302.570	30.77	46.00	-15.23	39.66	-8.89	QP
3	443.220	29.21	46.00	-16.79	34.74	-5.53	QP
4	545.070	29.07	46.00	-16.93	32.66	-3.59	QP
5	580.960	27.42	46.00	-18.58	30.27	-2.85	QP
6	773.990	30.59	46.00	-15.41	30.25	0.34	QP

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. No emission found between lowest internal used/generated frequency to 30MHz.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : General Radiated Emission Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps)(2437 MHz)

### Horizontal



No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	179.380	30.43	43.50	-13.07	41.70	-11.27	QP
* 2	245.340	36.97	46.00	-9.03	47.89	-10.92	QP
3	407.330	33.61	46.00	-12.39	40.02	-6.41	QP
4	520.820	30.73	46.00	-15.27	34.53	-3.80	QP
5	635.280	30.84	46.00	-15.16	32.69	-1.85	QP
6	896.210	32.13	46.00	-13.87	30.36	1.77	QP

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. No emission found between lowest internal used/generated frequency to 30MHz.

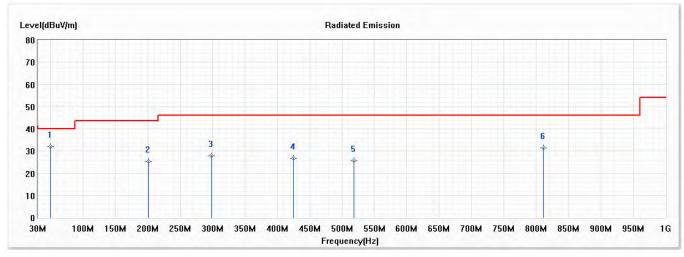


- Product : Multimedia device with Bluetooth and WLAN
- Test Item : General Radiated Emission Data

2020/10/23

- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps)(2437 MHz)
- Test Date :

### Vertical



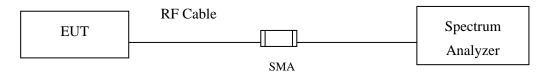
No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
* 1	49.400	32.07	40.00	-7.93	42.22	-10.15	QP
2	200.720	25.50	43.50	-18.00	37.71	-12.21	QP
3	298.690	27.83	46.00	-18.17	36.88	-9.05	QP
4	424.790	26.71	46.00	-19.29	32.64	-5.93	QP
5	517.910	25.76	46.00	-20.24	29.63	-3.87	QP
6	810.850	31.48	46.00	-14.52	30.76	0.72	QP

- 1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 4. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 5. No emission found between lowest internal used/generated frequency to 30MHz.

# 5. **RF** antenna conducted test

### 5.1. Test Setup

#### **RF** antenna Conducted Measurement:



# 5.2. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

## 5.3. Test Procedure

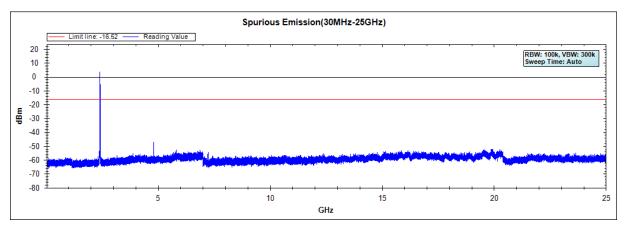
The EUT was tested according to C63.10:2013 Section 11.11 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

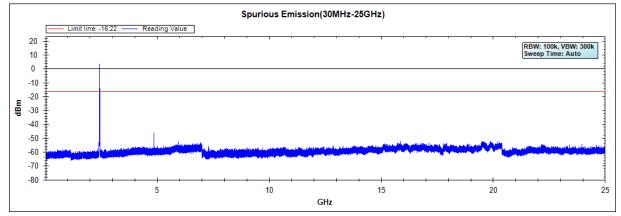
# 5.4. Test Result of RF antenna conducted test

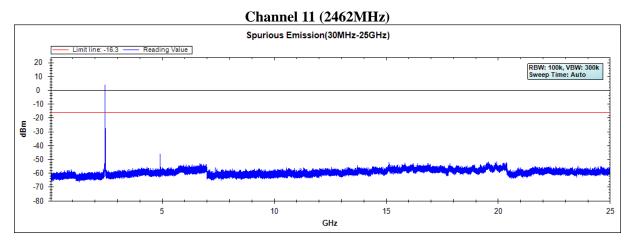
Product	:	Multimedia device with Bluetooth and WLAN
Test Item	:	RF antenna conducted test
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)
Test Date	:	2020/10/14

#### Channel 01 (2412MHz)



#### Channel 06 (2437MHz)

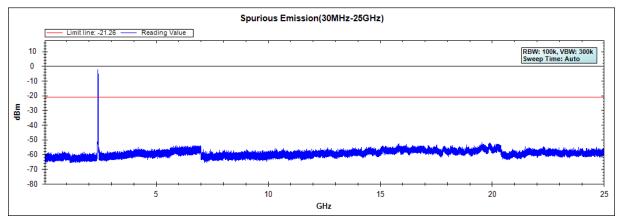


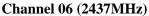


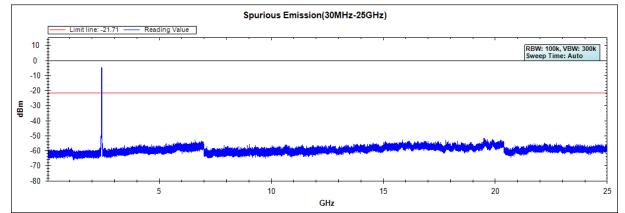


- Product : Multimedia device with Bluetooth and WLAN
- Test Item : RF Antenna Conducted Spurious
- Test Mode : Mode 2: Transmit (802.11g 6Mbps)

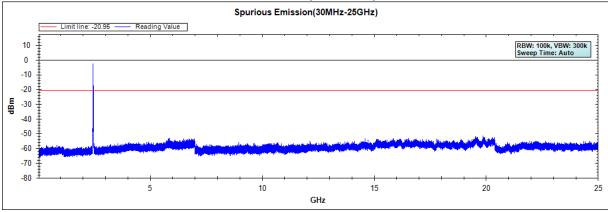
### Channel 01 (2412MHz)





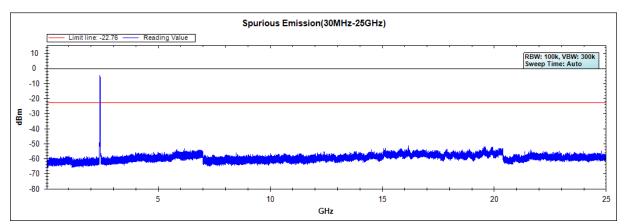


### Channel 11 (2462MHz)

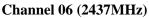


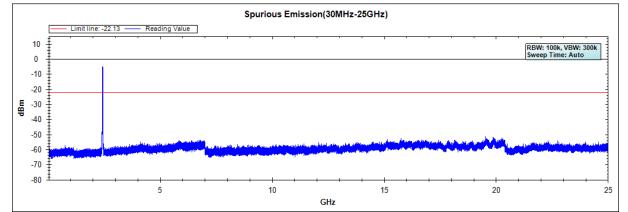


- Product : Multimedia device with Bluetooth and WLAN
- Test Item : RF Antenna Conducted Spurious
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)

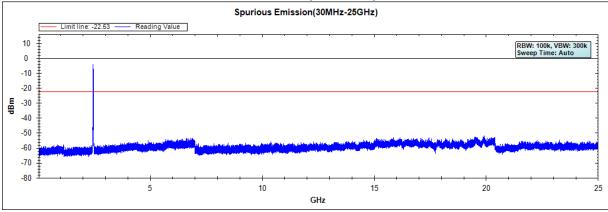


### Channel 01 (2412MHz)



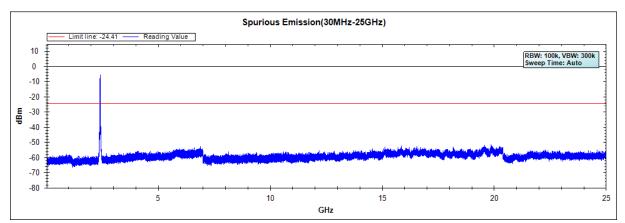


### Channel 11 (2462MHz)

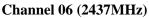


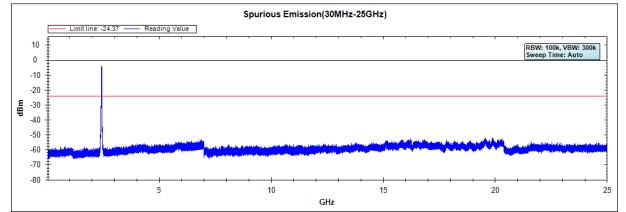


- Product : Multimedia device with Bluetooth and WLAN
- Test Item : RF Antenna Conducted Spurious
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps)

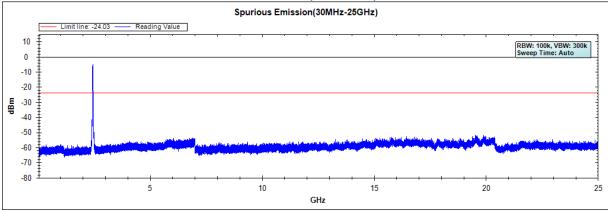


#### Channel 03 (2422MHz)





#### Channel 09 (2452MHz)

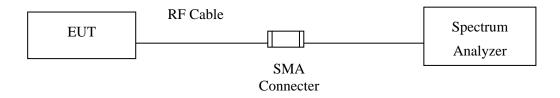




# 6. Band Edge

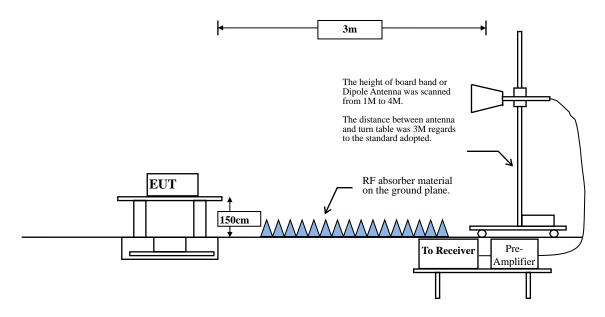
# 6.1. Test Setup

### **RF** Conducted Measurement



### **RF Radiated Measurement:**

#### Above 1GHz



# 6.2. Limits

According to FCC Section 15.247(d). In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

# 6.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to C63.10:2013 Section 11.12.1 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.

### **RBW and VBW Parameter setting:**

According to C63.10 Section 11.12.2.4 Peak measurement procedure.

RBW = as specified in Table 1.

VBW  $\geq$  3 x RBW.

Table 1 — RBW as a function of frequency	
------------------------------------------	--

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

According to C63.10 Section 11.12.2.5 Average measurement procedure.

RBW = 1MHz.

VBW = 10Hz, when duty cycle  $\ge$  98 %

VBW  $\geq$  1/T, when duty cycle < 98 %

( T refers to the minimum transmission duration over which the transmitter is on and is

automatical and the manimum power control to of the tested mode of operation.)										
2.4GHz band	Duty Cycle	Т	1/T	VBW						
	(%)	(ms)	(Hz)	(Hz)						
802.11b	100.00	1.0000	1000	10						
802.11g	98.63	3.1304	319	10						
802.11n20	100.00	1.0000	1000	10						
802.11n40	98.65	4.7609	210	10						

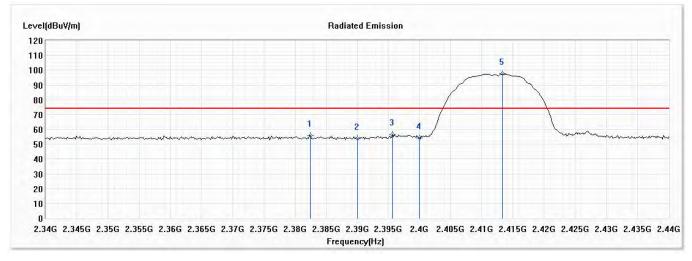
transmitting at its maximum power control level for the tested mode of operation.)

Note: Duty Cycle Refer to Section 9

### 6.4. Test Result of Band Edge

Product	:	Multimedia device with Bluetooth and WLAN
Test Item	:	Band Edge Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
Test Date	:	2020/10/16

### Horizontal



No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2382.464	55.97	74.00	-18.03	44.28	11.69	РК
2	2390.000	53.77	74.00	-20.23	42.05	11.72	РК
3	2395.652	56.79			45.03	11.76	РК
4	2400.000	54.25			42.47	11.78	РК
5	2413.333	97.45			85.55	11.90	РК

Note:

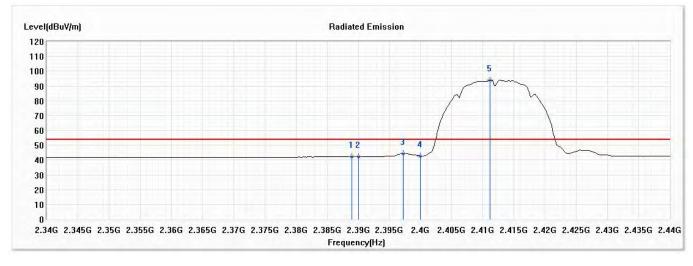
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.

2. Measurement Level = Reading Level + Correct Factor.

3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
- Test Date : 2020/10/16

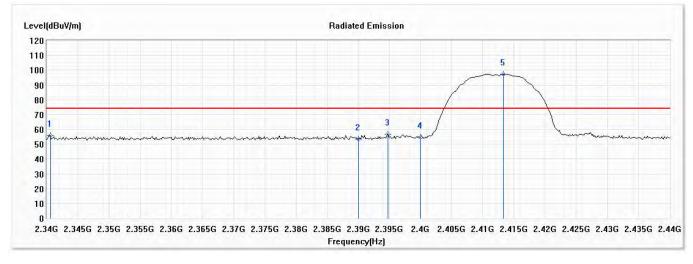


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2388.986	42.09	54.00	-11.91	30.37	11.72	AV
2	2390.000	42.05	54.00	-11.95	30.33	11.72	AV
3	2397.246	44.35			32.58	11.77	AV
4	2400.000	42.68			30.90	11.78	AV
5	2411.159	93.89			82.01	11.88	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
- Test Date : 2020/10/16

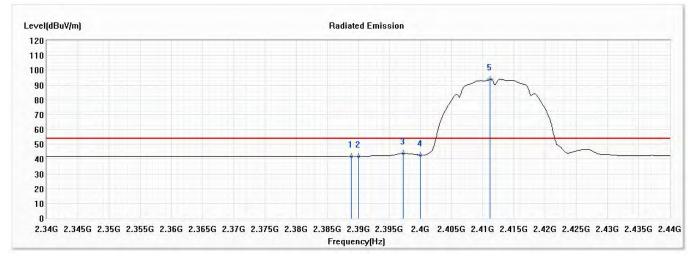


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2340.580	55.89	74.00	-18.11	44.37	11.52	РК
2	2390.000	53.54	74.00	-20.46	41.82	11.72	РК
3	2394.783	56.60			44.84	11.76	РК
4	2400.000	54.54			42.76	11.78	РК
5	2413.333	97.37			85.47	11.90	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)
- Test Date : 2020/10/16

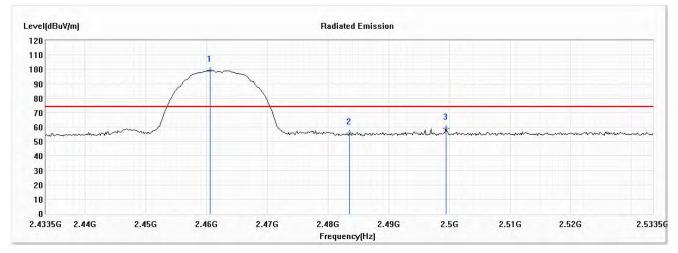


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2388.841	41.98	54.00	-12.02	30.26	11.72	AV
2	2390.000	41.93	54.00	-12.07	30.21	11.72	AV
3	2397.246	43.83			32.06	11.77	AV
4	2400.000	42.53			30.75	11.78	AV
5	2411.159	93.78			81.90	11.88	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
- Test Date : 2020/10/16

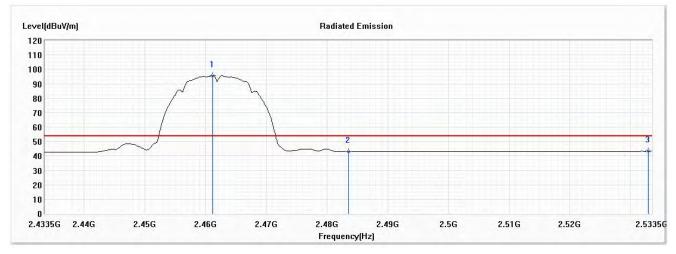


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2460.601	99.20			86.89	12.31	РК
2	2483.500	55.74	74.00	-18.26	43.27	12.47	РК
3	2499.442	58.97	74.00	-15.03	46.39	12.58	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
- Test Date : 2020/10/16

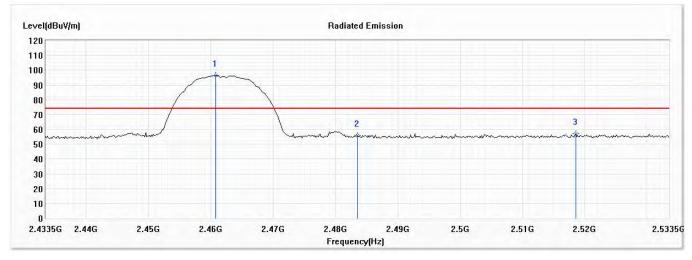


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2461.181	95.76			83.44	12.32	AV
2	2483.500	42.92	54.00	-11.08	30.45	12.47	AV
3	2532.920	43.26	54.00	-10.74	30.56	12.70	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
- Test Date : 2020/10/16

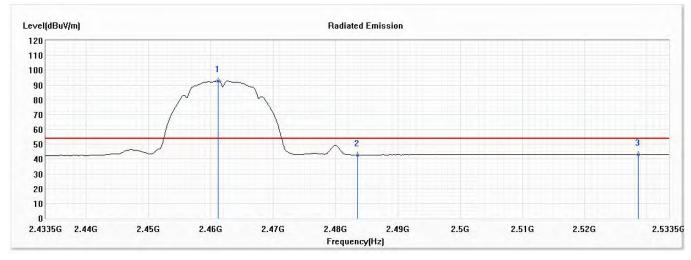


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2460.746	96.26			83.95	12.31	РК
2	2483.500	55.66	74.00	-18.34	43.19	12.47	РК
3	2518.572	57.05	74.00	-16.95	44.40	12.65	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)
- Test Date : 2020/10/16

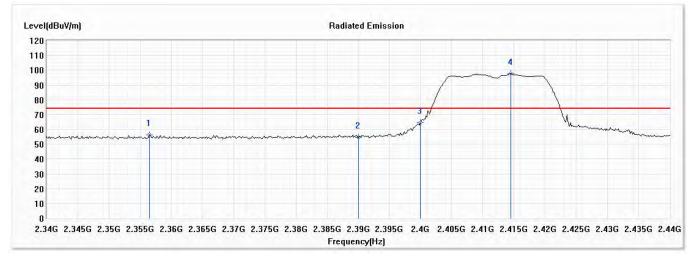


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2461.181	92.85			80.53	12.32	AV
2	2483.500	42.81	54.00	-11.19	30.34	12.47	AV
3	2528.572	43.11	54.00	-10.89	30.42	12.69	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
- Test Date : 2020/10/16

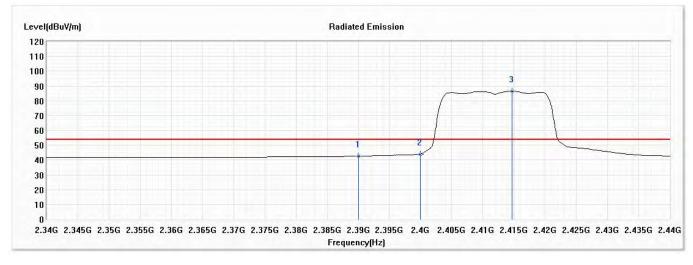


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2356.522	56.19	74.00	-17.81	44.65	11.54	РК
2	2390.000	54.78	74.00	-19.22	43.06	11.72	РК
3	2400.000	64.58			52.80	11.78	РК
4	2414.493	97.68			85.77	11.91	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
- Test Date : 2020/10/16

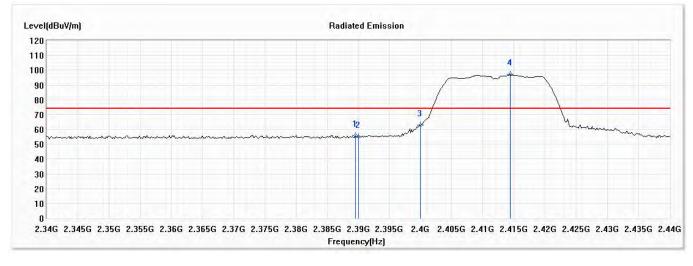


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2390.000	42.62	54.00	-11.38	30.90	11.72	AV
2	2400.000	44.06			32.28	11.78	AV
3	2414.638	86.46			74.55	11.91	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
- Test Date : 2020/10/16

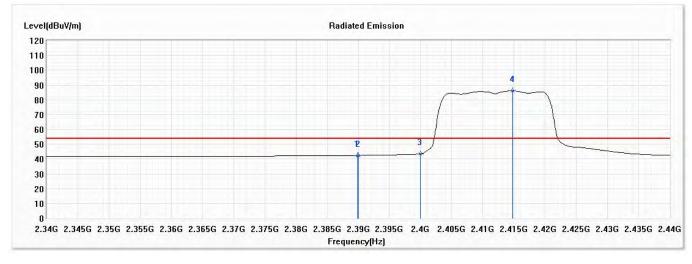


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2389.565	55.97	74.00	-18.03	44.25	11.72	РК
2	2390.000	55.09	74.00	-18.91	43.37	11.72	РК
3	2400.000	63.02			51.24	11.78	РК
4	2414.348	97.12			85.22	11.90	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)
- Test Date : 2020/10/16

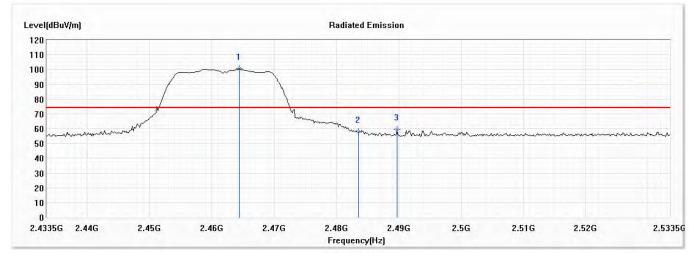


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2389.855	42.35	54.00	-11.65	30.63	11.72	AV
2	2390.000	42.34	54.00	-11.66	30.62	11.72	AV
3	2400.000	43.48			31.70	11.78	AV
4	2414.783	85.99			74.08	11.91	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
- Test Date : 2020/10/16

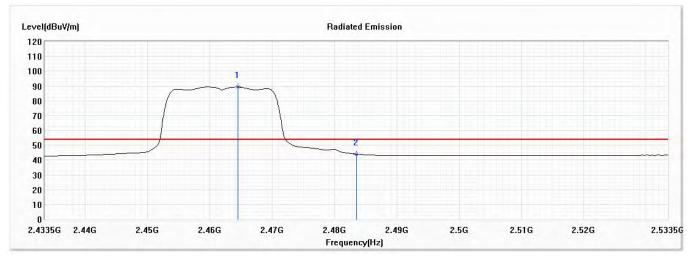


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2464.370	100.39			88.05	12.34	РК
2	2483.500	58.01	74.00	-15.99	45.54	12.47	РК
3	2489.732	59.45	74.00	-14.55	46.93	12.52	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
- Test Date : 2020/10/16

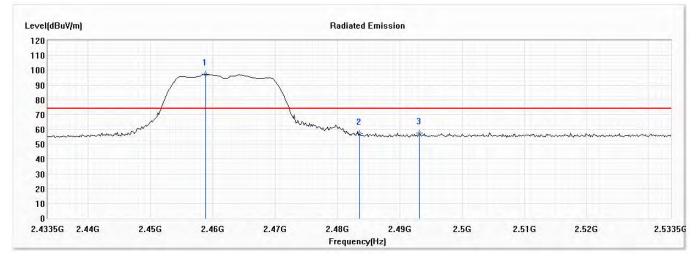


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2464.514	89.24			76.90	12.34	AV
2	2483.500	44.05	54.00	-9.95	31.58	12.47	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
- Test Date : 2020/10/16

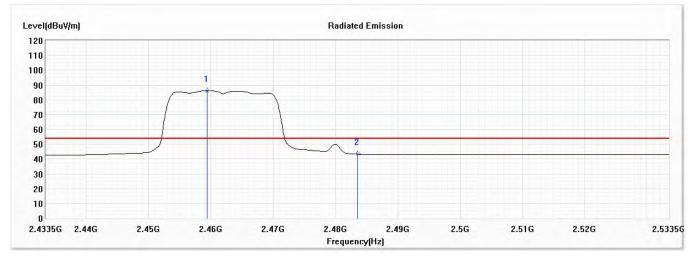


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2458.862	97.27			84.98	12.29	РК
2	2483.500	57.05	74.00	-16.95	44.58	12.47	РК
3	2493.210	57.64	74.00	-16.36	45.10	12.54	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)
- Test Date : 2020/10/16

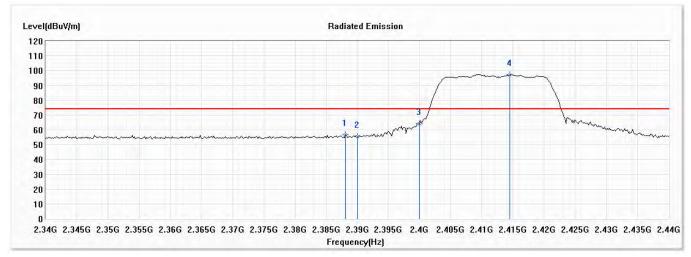


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2459.442	86.25			73.94	12.31	AV
2	2483.500	43.28	54.00	-10.72	30.81	12.47	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2412MHz)
- Test Date : 2020/10/16

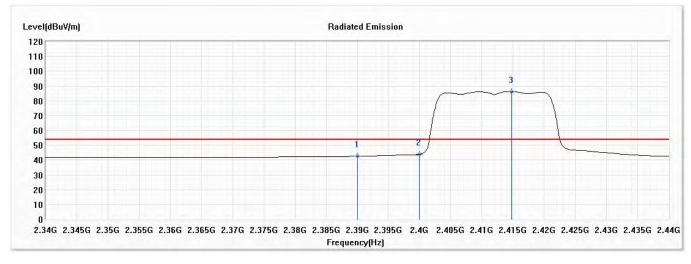


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2388.116	56.52	74.00	-17.48	44.81	11.71	РК
2	2390.000	55.41	74.00	-18.59	43.69	11.72	РК
3	2400.000	63.97			52.19	11.78	РК
4	2414.493	97.33			85.42	11.91	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2412MHz)
- Test Date : 2020/10/16

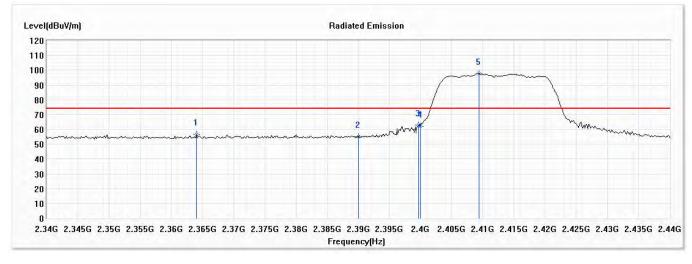


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2390.000	42.51	54.00	-11.49	30.79	11.72	AV
2	2400.000	43.74			31.96	11.78	AV
3	2414.783	86.23			74.32	11.91	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2412MHz)
- Test Date : 2020/10/16

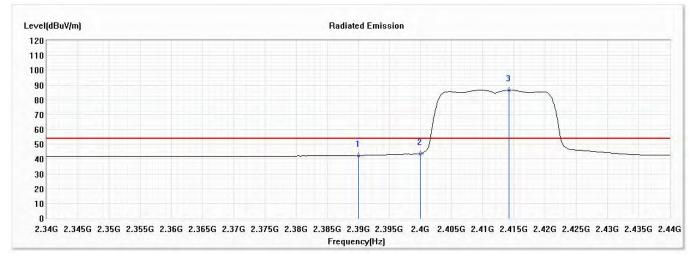


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2364.058	56.73	74.00	-17.27	45.15	11.58	РК
2	2390.000	54.85	74.00	-19.15	43.13	11.72	РК
3	2399.710	63.06			51.28	11.78	РК
4	2400.000	62.08			50.30	11.78	РК
5	2409.420	97.68			85.81	11.87	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2412MHz)
- Test Date : 2020/10/16

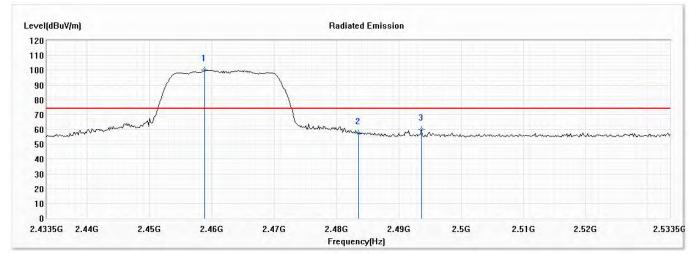


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2390.000	42.35	54.00	-11.65	30.63	11.72	AV
2	2400.000	43.63			31.85	11.78	AV
3	2414.203	86.51			74.61	11.90	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462MHz)
- Test Date : 2020/10/16

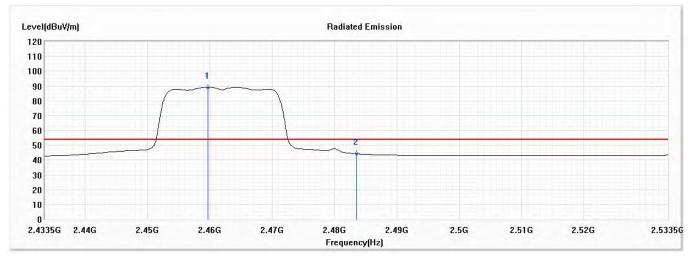


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2458.862	100.05			87.76	12.29	РК
2	2483.500	57.36	74.00	-16.64	44.89	12.47	РК
3	2493.645	59.89	74.00	-14.11	47.35	12.54	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462MHz)
- Test Date : 2020/10/16

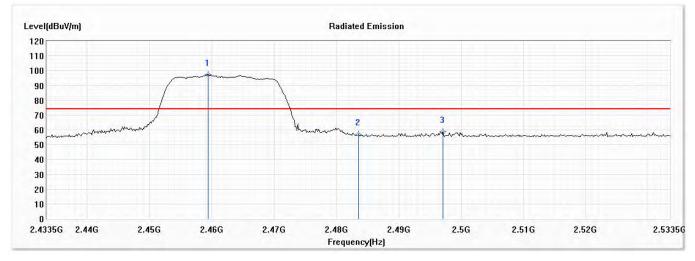


No	Frequency	Emission Level Limit		Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2459.732	89.06			76.75	12.31	AV
2	2483.500	44.28	54.00	-9.72	31.81	12.47	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462MHz)
- Test Date : 2020/10/16

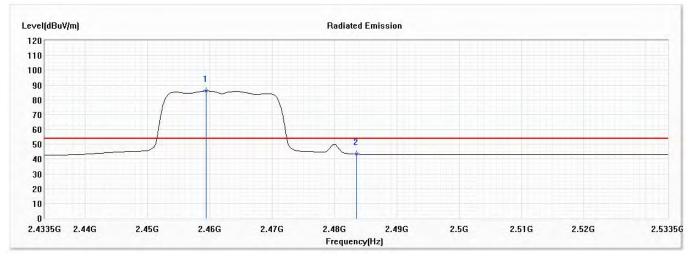


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2459.442	97.12			84.81	12.31	РК
2	2483.500	57.06	74.00	-16.94	44.59	12.47	РК
3	2497.123	58.56	74.00	-15.44	46.00	12.56	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps) (2462MHz)
- Test Date : 2020/10/16

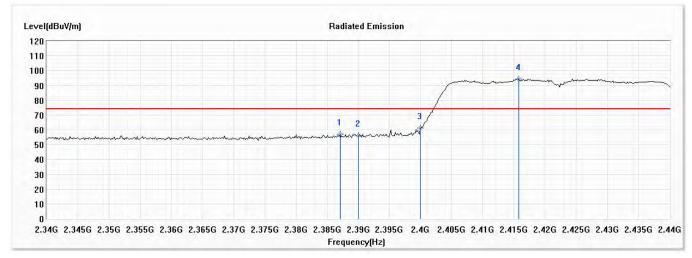


No	Frequency	Emission Level Limit		Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2459.442	85.93			73.62	12.31	AV
2	2483.500	43.27	54.00	-10.73	30.80	12.47	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2422MHz)
- Test Date : 2020/10/16

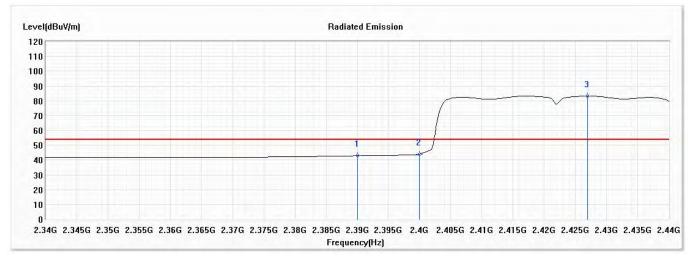


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2387.101	57.07	74.00	-16.93	45.36	11.71	РК
2	2390.000	56.45	74.00	-17.55	44.73	11.72	РК
3	2400.000	61.38			49.60	11.78	РК
4	2415.797	94.37			82.44	11.93	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2422MHz)
- Test Date : 2020/10/16

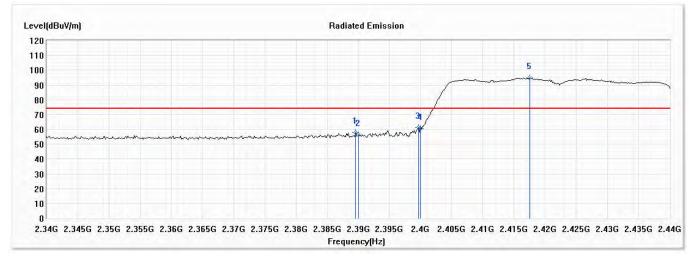


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2390.000	42.85	54.00	-11.15	31.13	11.72	AV
2	2400.000	44.02			32.24	11.78	AV
3	2426.957	83.19			71.15	12.04	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2422MHz)
- Test Date : 2020/10/16

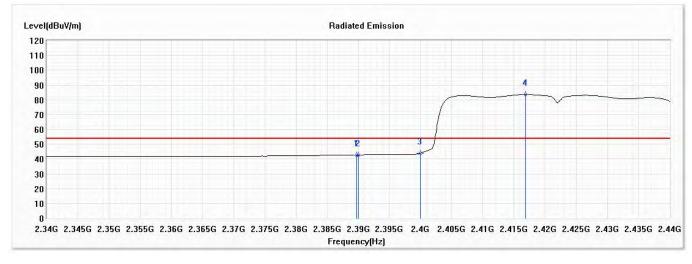


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2389.565	57.77	74.00	-16.23	46.05	11.72	РК
2	2390.000	56.34	74.00	-17.66	44.62	11.72	РК
3	2399.710	61.34			49.56	11.78	РК
4	2400.000	60.53			48.75	11.78	РК
5	2417.536	94.72			82.78	11.94	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2422MHz)
- Test Date : 2020/10/16

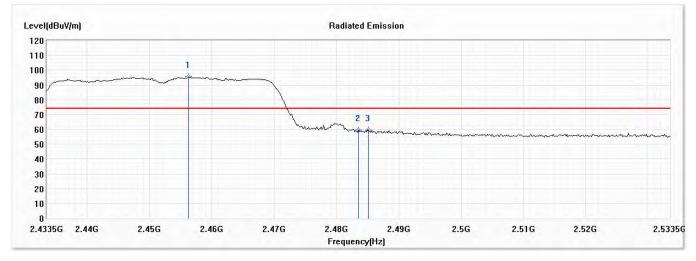


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2389.710	42.76	54.00	-11.24	31.04	11.72	AV
2	2390.000	42.74	54.00	-11.26	31.02	11.72	AV
3	2400.000	43.89			32.11	11.78	AV
4	2416.812	83.57			71.64	11.93	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2452MHz)
- Test Date : 2020/10/16

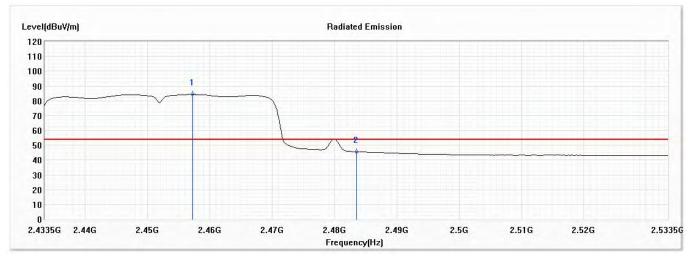


No	Frequency	Emission Level Limit		Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2456.254	95.41			83.13	12.28	РК
2	2483.500	59.46	74.00	-14.54	46.99	12.47	РК
3	2485.094	59.66	74.00	-14.34	47.17	12.49	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2452MHz)
- Test Date : 2020/10/16

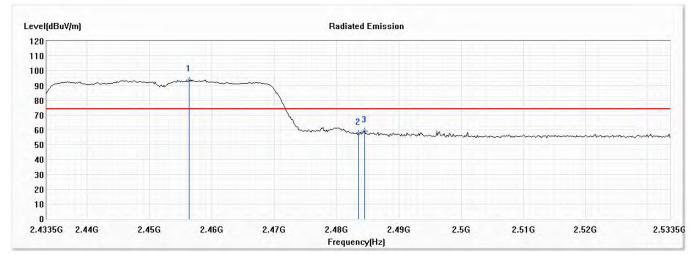


No	Frequency	Emission Level Limit		Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2457.268	84.31			72.03	12.28	AV
2	2483.500	45.52	54.00	-8.48	33.05	12.47	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2452MHz)
- Test Date : 2020/10/16

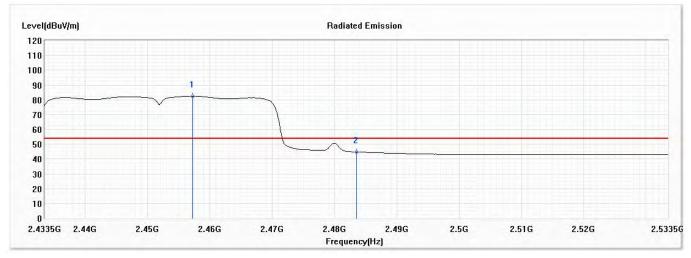


No	Frequency	Emission Level	Limit	Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2456.399	93.65			81.37	12.28	РК
2	2483.500	57.46	74.00	-16.54	44.99	12.47	РК
3	2484.514	59.26	74.00	-14.74	46.77	12.49	РК

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.



- Product : Multimedia device with Bluetooth and WLAN
- Test Item : Band Edge Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps) (2452MHz)
- Test Date : 2020/10/16

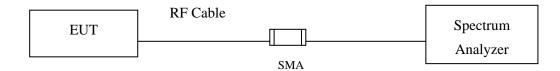


No	Frequency	Emission Level Limit		Margin	Reading Level	Correct Factor	Detector
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	Туре
1	2457.268	82.44			70.16	12.28	AV
2	2483.500	44.75	54.00	-9.25	32.28	12.47	AV

- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Measurement Level = Reading Level + Correct Factor.
- 3. The average measurement was not performed when the peak measured data under the limit of average detection.

### 7. 6dB Bandwidth

### 7.1. Test Setup



### 7.2. Limits

The minimum bandwidth shall be at least 500 kHz.

### 7.3. Test Procedure

The EUT was setup according to ANSI C63.4, 2014; tested according to ANSI C63.10 Section 11.8 for compliance to FCC 47CFR 15.247 requirements.

## 7.4. Test Result of 6dB Bandwidth

Product	:	Multimedia device with Bluetooth and WLAN
Test Item	:	6dB Bandwidth Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	10200	>500	Pass
06	2437	10150	>500	Pass
11	2462	10200	>500	Pass

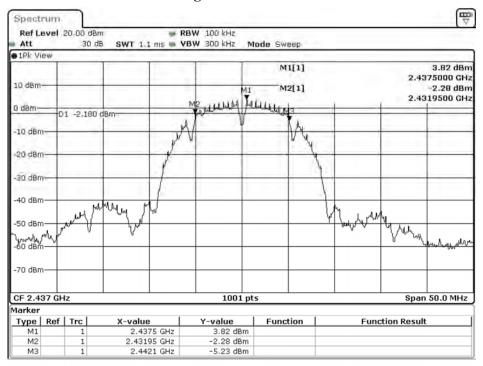
Att	-	30 d	B SWT 1.1 ms	VBW 300 kHz	Mode Sweep		
10 dBm	Ι			MALLULA	M1[1]	1	3.23 dBn 2.4134990 GH -5.33 dBn 2.4069000 GH
		1 -2.770	dBm	Mannan	- Saction 1		
-10 dBm	1			1 <sup>2</sup> V	VY		
-20 dBr			1			(	
-30 dBm	-			-		1	
-40 dBm	+					1	
-50 dBr		wy M	Muy Mr			Murr	ħ.,
1-50 dBH	.J. 64°	rur V	V**				Mr. Maringer
-70 dBm	-			_			
CF 2.4	12 GH	łz		1001	pts		Span 50.0 MHz
1arker							
Туре	Ref	Trc	X-value	Y-value	Function	Fun	ction Result
M1		1	2.413499 GHz	3.23 dBr			
M2 M3		1	2.4069 GHz 2.4171 GHz				

### Figure Channel 01:

Date: 14.OCT.2020 15:02:11

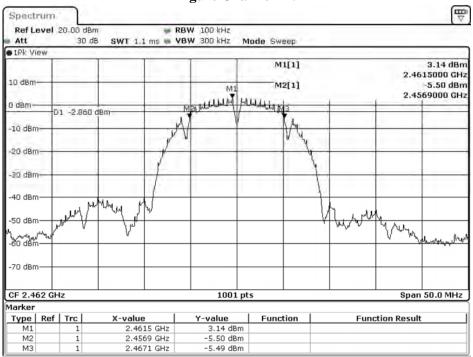


**Figure Channel 06:** 



Date: 14.OCT.2020 15:05:31

**Figure Channel 11:** 



Date: 14.OCT.2020 15:09:06



Product	:	Multimedia device with Bluetooth and WLAN
Test Item	:	6dB Bandwidth Data
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	16500	>500	Pass
06	2437	16500	>500	Pass
11	2462	16450	>500	Pass

### Figure Channel 01:

Att	ew	30 /	DB SWT 1.1	ms 🗰 V	BW 300 kHz	Mode Sw	eep			
10 dBm	T				M1		1[1] 2[1]			-2.47 dBm 107510 GH; -8.84 dBm 037500 GH;
0 dBm-	0	1 -8.470	dBm	Maruh	annaharanty	ppresenter	EMinutaria			
-10 dBm	7	1		1		-				
-20 dBn		_					1	-		
.30 dBm	-			1 de la compañía de la	-		1	V	-	
-40 dBm		and they	warnwinwar					hullowith	Mulumanan	
-SU aBr	Salagere	illo I							- Porton	a though the
-60 dBr	<del>י –</del> י									
-70 dBm	+									
CF 2.4	12 GH	z			1001	l pts			Spar	n 50.0 MHz
Marker	Def	Trc	X-value		Y-value	Func	tion	E	ction Resul	
Type M1	Ker	1	2.4107		-2.47 dB		cion	Fun	ction kesul	ι
M2		1		75 GHz	-8.84 dB					
M3		1		25 GHz	-8.74 dB	sm				

Date: 14.OCT.2020 15:12:27



Figure Channel 06:

Att		20.00 dBr 30 d		1 m 1 m	BW 100 kHz BW 300 kHz M	node Sw	еер			
D 1Pk Vi	ew									
10 dBm						M		-2.27 dBm 2.4444930 GHz -9.03 dBm 2.4287500 GHz		
0 dBm-		1.1.1		Maur	ulush marine a	Beathanh	MI			
-10 dBm	0	1 -8.270	dBm	- Prover	Torthogan a second to	and the indefect	Mar Moor		1	-
-20 dBm	-	-		/				-	-	
-30 dBm	-	_	-	/	-	_		4		
-40 dBm	_		1					"L'inspalensing	Mallhead	
			Mannahar						nooflingentation	Wallans.
-SU allo	-	pallation e - 1								"Harden
-60 dBm					+					
-70 dBm	-									
CF 2.4		-			1001 p					50.0 MHz
darker	37 GH	2			1001 p	LS			shar	1 30.0 MHZ
Type	Ref	Trc	X-value	.	Y-value	Func	tion	Fun	ction Result	t
M1		1	2.4444		-2.27 dBm					
M2		1	2.428	75 GHz	-9.03 dBm					
M3		1	2 445	25 GHz	-8.95 dBm					

Date: 14.OCT.2020 15:15:53

Figure Channel 11:

Spectr	um									E	
Ref Le	vel	20.00 di 30		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3W 100 kHz 3W 300 kHz	Mode Sw	eep				
• 1Pk Vie	ew/										
10 dBm-				M1[1] M2[1]					-1.86 dBm 2.4607510 GHz -7.88 dBm 2.4538000 GHz		
0 dBm-		1 7 96	2 dBm	MELW	whentwelment	perturiation	Induriby3		1		
-10 dBm	-	1 -7.86	J UBIT	1					1		
-20 dBm	-			1		-			1		
-30 dBm	+		-	ŧ	-			4	-		
-40 dBm	+		AMerilyan			_		Langeron	hpulluhumhuu		
-50,dBhh	haven	MANNAN	N WWW MANN							Warwsmight white	
-60 dBm	+										
-70 dBm	+										
CF 2.46	2 GH	Iz			1001	pts			Span	50.0 MHz	
Marker	Def	Tun	¥	1	V .uslu-	1 5	•! 1	<b>F</b>	ation Decisio	1	
Type M1	Ref	Trc 1	2.46075		<u>Y-value</u> -1.86 dB	Func		Fun	iction Result		
M2		1		38 GHz	-7.88 dB						
M3		1	2.4702		-8.54 dB						

Date: 14.OCT.2020 15:19:17



Floduct . Multimedia device with Bluetooth and WLAN	Product	:	Multimedia device with Bluetooth and WLAN
-----------------------------------------------------	---------	---	-------------------------------------------

- Test Item : 6dB Bandwidth Data
- Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	17650	>500	Pass
06	2437	17600	>500	Pass
11	2462	17700	>500	Pass

### Figure Channel 01:

Spectr	rum									E
Ref Le Att	evel :	20.00 d 30		1.00	3W 100 kHz 3W 300 kHz	Mode Sw	евр			
D 1Pk Vie	ew									
10 dBm-					M1		1[1] 2[1]	-2.69 dBm 2.4107510 GHz -8.71 dBm 2.4032000 GHz		
0 dBm-	0	1 -8.69	0 dBm	M2 Jundam	adrealownerly	phenological and	wannundam3			
-20 dBm				1						
-30 dBm	-	_	/	ſ	-	_	1	*		
-40 dBm		a Abas	manum					Warmuland	were working	Jacho
		DIN FORMU								KITTER IN COLORADIAN
-60 dBm										
-70 dBm										
CF 2.41	12 ĠH	z			1001	pts			Span	50.0 MHz
Marker						1 -				
Туре	Ref		X-value	1.0115	<u>Y-value</u> -2.69 dB	Func	tion	Fun	ction Result	
M1 M2		1	2.41075		-2.69 dB -8.71 dB					
1712		1	2.4208		-11.00 dB					

Date: 14.OCT.2020 15:22:49



### Figure Channel 06:

Spect	rum									
Ref Lo Att	evel :	20.00 dBi 30 d		1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m	3W 100 kHz BW 300 kHz	Mode SW	еер			
• IPk Vi	ew					· · · · · · · · · · · · · · · · · · ·				
10 dBm	-					M	-1.40 dBm 2.4394980 GHz -7.67 dBm 2.4282000 GHz			
0 dBm-	-	1 -7.400		Manunal	and an and so	-	Linnathing	3		
-10 dBm		1 -/.400	UDUI	1		-				
-20 dBm		_	-	1			-	1	-	
-30 dBm	-		+ +	1	-	-	-	4	-	
-40 dBm	+		A				1	human	Ana have	
-50,den	per la per	ուրիստեր	nadhanalan						anan kananana	Mary Mary Mary
-60 dBm										· ·
-70 dBm	+									
CF 2.4	37 GH	z			1001	pts			Spar	n 50.0 MHz
Marker				,						
Туре	Ref		X-value	0.011-	Y-value	Func	tion	Fu	nction Resul	t
M1 M2		1	2.43949		-1.40 dB -7.67 dB					
M2 M3		1	2.428		-7.57 dB					

Date: 14.OCT.2020 15:27:33

### Figure Channel 11:

Att		30	dB SWT 1.	1 ms 🖷 VE	SW 300 kHz	Mode Sw	еер			
10 dBm	2W						1[1] 2[1]			-2.00 dBm 44980 GHz 10.27 dBm 31500 GHz
0 dBm-	D	1 -8.00	0 dBm	mandaule	al work the down	water	Enerthanite			
-20 dBm										
-30 dBm	-	_	-	f	-					
-40 dBm -50 ൽൺ	adado	y.mhen	addelladarian					"hubblest	withten	Whenwender
-60 dBm										
-70 dBm	+									
CF 2.46	52 GH	z			1001	l pts			Span	50.0 MHz
Marker Type	Ref	Tre	X-valu	a	Y-value	Func	tion	Eupr	tion Result	•
M1		1		98 GHz	-2.00 dE			, and	Alon Result	
M2		1		15 GHz	-10.27 de					
M3		1	2 470	85 GHz	-10.11 da	lm				

Date: 14.OCT.2020 15:30:57



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : 6dB Bandwidth Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
03	2422	35800	>500	Pass
06	2437	35800	>500	Pass
09	2452	35800	>500	Pass

### Figure Channel 03:

	ew									
10 dBm						M1[1] M2[1]				-4.22 dBm 70000 GHz 10.39 dBm 41000 GHz
0 dBm-	- 01	1 -10,220	dBm	MELLihur	hand had been and had been a start of the second	mi hilderlight	hallahal	1	1	
-20 dBn			-							
-30 dBm		-		1						
40 dBm		Haliperaphiers	Webrowser					wheet-enjolow	bitter out of the the the provided of the second	hundred the state
-60 dBr										- alto
-70 dBr	-									
CF 2.4	22 GH	z			1001	pts			Span 1	100.0 MHz
1arker	0-61					1 5	N 1			
Type M1	Ref	1	X-value	27 GHz	-4.22 dBr	Func	tion	Fun	ction Result	
M2		1		41 GHz	-10.39 dBr					
M3		1		99 GHz	-10.38 dBr					

Date: 14.OCT.2020 15:34:19



### Figure Channel 06:

Spectr	um										
	vel	20.00			100 kHz	5-075-C					
Att	1	30	dB SWT 1	ms 🖷 VBW	300 kHz	Mode Swee	ab.				
• 1Pk Vie	2W/										
10 dBm-						M1[1] M2[1]			-4.34 dBm 2.4420900 GHz -10.66 dBm 2.4191000 GHz		
0 dBm-				MEdickidadu	ushily helpel	mi hubble	LLLUB			1.0.1	
-10 dBm	D	1 -10.3	340 dBm		all and a start of the start of	Willings Bur G	a hale ball				
-20 dBm		-	-	+	-	1		-			
-30 dBm	-		-	1	-		1				
-40 dBm	haraadd	pagalithetan	kaleedelije bloghend					Whenthe goldent	uppenlywytrywymfhitt	Hundfugering	
-60 dBm	_									Jonalan.	
-70 dBm	+										
CF 2.43	17 GH	lz			1001	L pts			Span :	100.0 MHz	
Marker											
	Ref	Trc	X-value		Y-value	Func	tion	Fun	ction Result	1	
M1 M2		1		09 GHz	-4.34 dB						
M2 M3		1		91 GHz 49 GHz	-10.55 dB						
			2.10	1.0 40.16	20100 00						

Date: 14.OCT.2020 15:37:39

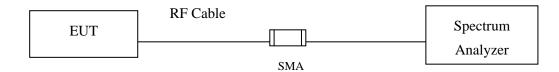
### Figure Channel 09:

Ref Le	vel :				V 100 kHz					
Att	- We	31	dB SWT 1	ns 🗰 VB)	W 300 kHz M	<b>1ode</b> Swee	ip.			_
10 dBm-						м	1[1] 2[1]		2.45	-3.81 dBm 70000 GHz 10.21 dBm 41000 GHz
0 dBm-	0	1 -9.8	10 dBm-	MZahahaya	hardestablished	public hold	al had all 13			
-20 dBm			-							
-30 dBm	-			/						
-40 dBm	holshol	Newbertunk	aanoordhtytweeter <sup>y</sup>					""""""""""""""""""""""""""""""""""""""	enflorververververververververververververver	hran alwaydd felafar
-60 dBm										
-70 dBm	+									
CF 2.45	52 GH	z		I	1001	pts	1	1	Span 1	LOO.0 MHz
Marker	0-6	I		1		1 5		-		
Type M1	Ref	1	X-value	57 GHz	<u>Y-value</u> -3.81 dB	Func	tion	Fund	tion Result	
M2		1		41 GHz	-10.21 dB					
M3		1		99 GHz	-10.12 dB					

Date: 14.OCT.2020 15:41:03

### 8. **Power Density**

### 8.1. Test Setup



### 8.2. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

### 8.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The maximum power spectral density using C63.10 Section 11.10.2 Method PKPSD (peak PSD)

# 8.4. Test Result of Power Density

Product	:	Multimedia device with Bluetooth and WLAN
Test Item	:	Power Density Data
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	3.480	$\leq$ 8dBm	Pass
06	2437	3.780	$\leq$ 8dBm	Pass
11	2462	3.700	$\leq$ 8dBm	Pass

RefLevel 20.00 dBm Att 30 dB SWT 1 ms	RBW 100 kHz	
IPk View	VBW 300 kHz Mode Sweep	
	M1[1]	3.48 dBm 2.4124890 GHz
10 dBm-	M1	
) dBm Anthertonto		Andrey
-10 gBm	W I	And
20 dBm		w wy
-30 dBm		
-40 dBm		
-50 dBm		
-60 dBm		
-70 dBm		

Date: 14.OCT.2020 15:02:34



#### **Figure Channel 06:**

1PR View	1	1 1	_	1 .				
					41[1]		2.43	3.78 dBn 375015 GH:
10 dBm		1		M1	1			-
0 dBm	portuntonton	h. A And	na	M1 June	And A.	0.0.0		
dBm	portration	Charles Close	1	1	and detty and	intertal	m	
10 dBm	-			M	-		12	man .
W W							W	when
20 dBm-	-							
30 dBm		the tree to						
40 dBm								
50 dBm								
60 dBm								
70 dBm								

Date: 14.OCT.2020 15:05:54

₽ Spectrum RBW 100 kHz
SWT 1 ms
VBW 300 kHz Ref Level 20.00 dBm 30 dB Att Mode Sweep • IPR View 3.70 dBm 2.4614960 GHz M1[1] 10 dBm MI 0 dBm had 1. -10 dBmA 20 -20 dBm -30 dBm--40 dBm -50 dBm--60 dBm -70 dBm 1001 pts Span 15.3 MHz CF 2.462 GHz Date: 14.OCT.2020 15:09:29

Figure Channel 11:



Product :	Multimedia device with Bluetooth and WLAN
-----------	-------------------------------------------

- Test Item : Power Density Data
- Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	-1.260	$\leq$ 8dBm	Pass
06	2437	-1.710	$\leq$ 8dBm	Pass
11	2462	-0.950	$\leq$ 8dBm	Pass

#### Spectrum RBW 100 kHz SWT 1 ms VBW 300 kHz Ref Level 20.00 dBm Att 30 dB Mode Sweep • IPR View -1.26 dBm 2.4144730 GHz M1[1] 10 dBm M 0 dBm mention mentment mantimamler unal mandman line ling -10 dBm -20 dBm -30 dBm hundr. 40 dB MAY -50 dBm -60 dBm--70 dBm CF 2.412 GHz 1001 pts Span 24.75 MHz

### Figure Channel 01:

Date: 14.OCT.2020 15:12:49



#### Figure Channel 06:

1Pk Yiew			M1	[1]		-1.71 dBm		
10 dBm							2.43	94730 GH
0 dBm	-			MI				
-10 dBm	monthermaling	Ungalowing	manslowing	un the lay much	many	Inumlimen	ling	
-20 dBm	N						4	
-30 dBm	-		1	-		_	and they	h
-40 dBm								mange
-50 dBm								
-60 dBm								
-70 dBm								

Date: 14.OCT.2020 15:16:15

₿ Spectrum RBW 100 kHz
SWT 1 ms
VBW 300 kHz Ref Level 20.00 dBm 30 dB Att Mode Sweep • IPR View -0.95 dBm 2.4644895 GHz M1[1] 10 dBm 0 dBm in the alway for an internal the metallar -10 dBm -20 dBm--30 dBm--40 dBp hourst -50 dBm--60 dBm -70 dBm CF 2.462 GHz 1001 pts Span 24.675 MHz Date: 14.OCT.2020 15:19:38

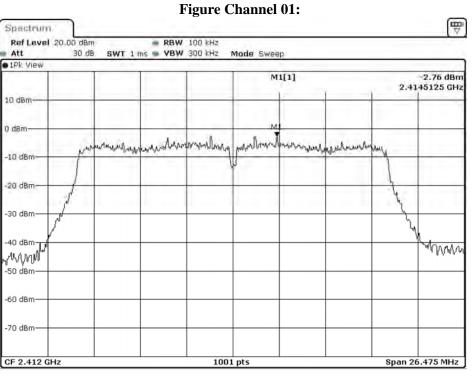
Figure Channel 11:



Product	:	Multimedia device with Bluetooth and WLAN
Test Item	:	Power Density Data

Test Mode : Mode 3: Transmit (802.11n-20MBW 7.2Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2412	-2.760	$\leq$ 8dBm	Pass
06	2437	-2.130	$\leq$ 8dBm	Pass
11	2462	-2.530	$\leq 8 dBm$	Pass



Date: 14.OCT.2020 15:23:10



### **Figure Channel 06:**

Ref Level 20. Att 1Pk View		= RBW 1 ms = VBW	100 kHz 300 kHz 1	<b>Node</b> Swee	ep.			_
THE YIEW				м	1(1)		2.44	-2.13 dBm 45160 GHz
10 dBm			-		ř ·	-		
0 dBm	-					MI	-	
-10 dBm	providence	moulinumlians	homenun	mannen	hardback	manumph	ing	
-20 dBm	/						-l_	
-30 dBm	C	alle se l			1		J.	
-40 dBm							7	L A. H.
1\/\ <sup>M</sup> Vy4Jw <sup>w</sup> -50 dBm———								"UNVPUTA
-60 dBm								
-70 dBm								
CF 2.437 GHz			1001	pts	I		Span	26.4 MHz

Date: 14.OCT.2020 15:27:54

₿ Spectrum RBW 100 kHz
SWT 1 ms
VBW 300 kHz Ref Level 20.00 dBm 30 dB Att Mode Sweep • IPR View -2.53 dBm 2.4607270 GHz M1[1] 10 dBm MI 0 dBm mannandman apalaman hunde muchla un her man -10 dBm -20 dBm--30 dBm-HAMAR -40 dBm--50 dBm--60 dBm -70 dBm 1001 pts CF 2.462 GHz Span 26.55 MHz Date: 14.OCT.2020 15:31:19

Figure Channel 11:



Product	:	Multimedia device with Bluetooth and WLAN

- Test Item : Power Density Data
- Test Mode : Mode 4: Transmit (802.11n-40MBW 15Mbps)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
03	2422	-4.410	$\leq$ 8dBm	Pass
06	2437	-4.370	$\leq$ 8dBm	Pass
09	2452	-4.030	$\leq$ 8dBm	Pass

### Figure Channel 03:

Att 1Pk View	30 dE	SWT 1.1	ms 🖷 VB	W 300 kHz	Mode Sw	еер			_
TEK YIEW			2.2		м	1(1)		2.4	-4.41 dBn 170110 GH
10 dBm						1			-
) dBm	-			MI			-		
10 dBm	dur	boolensheetend	montralicity	almolasselessing	percellisteral	whichereling	any also also dawlow	hudy	
20 dBm								1	
30 dBm	la l		in in the					<u> </u>	
40 dBm	/							h,	Wanghundy
50 dBm									
60 dBm									
70 dBm-									

Date: 14.OCT.2020 15:34:41



#### **Figure Channel 06:**

1PR View		1			1				-4.37 dBr
						1[1]		2.44	19890 GH
10 dBm					-	1			-
0 dBm					M				
	1.6.1	1.1.1	114	darshe dramen	multistight	1	the first when have	1.1	
-10 dBm	physical	W Bert Miller Martin	your ann	and and all all all all all all all all all al	Manarana	town which will	all all and an and	willy	
-20 dBm					J				
	J							1	
-30 dBm	pf							Y.	
40 dBm									-
									poly polythyper
-50 dBm									
-60 dBm									
-70 dBm									

Date: 14.OCT.2020 15:38:01

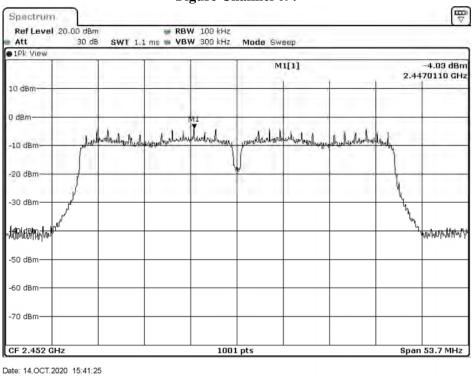
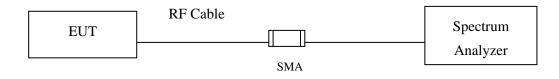


Figure Channel 09:

### 9. Duty Cycle

### 9.1. Test Setup



### 9.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to ANSI C63.10 2013 for compliance to FCC 47CFR 15.247 requirements.



### 9.3. Test Result of Duty Cycle

Product	:	Multimedia device with Bluetooth and WLAN
Test Item	:	Duty Cycle
Test Mode	:	Transmit

Duty Cycle Formula:

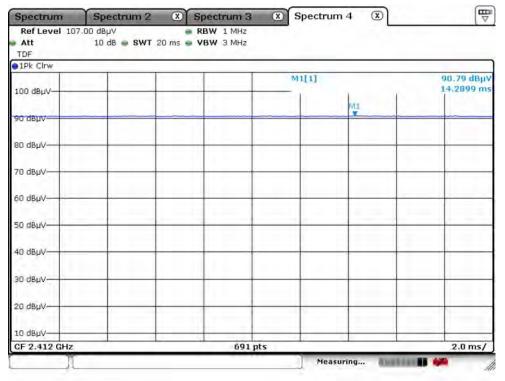
Duty Cycle = Ton / (Ton + Toff)

Duty Factor = 10 Log (1/Duty Cycle)

Results:

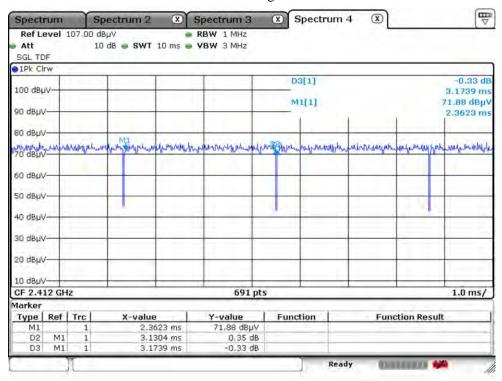
2.4GHz band	Ton	Ton + Toff	Duty Cycle	Duty Factor
	(ms)	(ms)	(%)	(dB)
802.11b	1.0000	1.0000	100.00	0.00
802.11g	3.1304	3.1739	98.63	0.06
802.11n20	1.0000	1.0000	100.00	0.00
802.11n40	4.7609	4.8261	98.65	0.06

#### 802.11b





802.11g

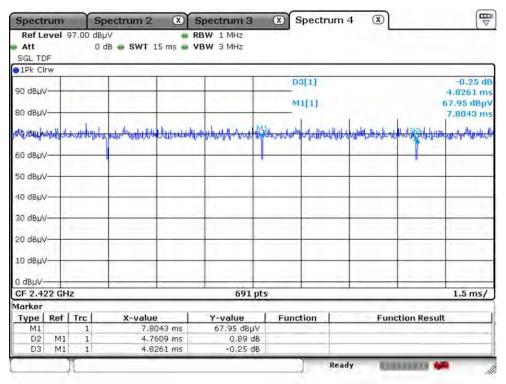


802.11n20

Ref Level 10 Att SGL TDF	the second se	■ RBW 1 M 20 ms ■ VBW 3 M			
91Pk Clrw					inner
100 dBµV			M1[1]	T T	76.66 dBµ\ 19.3333 ms
90 dBµV			_	-	
80 dBµV					MI
приминикальные 70 двру	polerminetermeter	aladuranaanaahahanaba	manushallownproduction	uniter and a superior	with when the remainder
60 dBµV					
50 dBµV			-	-	
40 dBµV					
			_	-	
30 dBµV					
40 dBµV 30 dBµV 20 dBµV 10 dBµV CF 2.412 GHz			591 pts		2.0 ms/



802.11n40





## **10.** EMI Reduction Method During Compliance Testing

No modification was made during testing.