TCT 通测检测
TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID: 2AIRM-X4K

Product: Sport DV

Model No.: X4K

Additional Model No.: N/A

Trade Mark: INTOVA

Report No.: TCT171102E025

Issued Date: Nov. 07, 2017

Issued for:

Industrial Revolution
5835 Segale Park Dr. c, Tukwila, WA 98188, United States

Issued By:

Shenzhen Tongce Testing Lab.
1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China
TEL: +86-755-27673339
FAX: +86-755-27673332

Note: *This report shall not be reproduced except in full, without the written approval of Shenzhen Tongce Testing Lab. This document may be altered or revised by Shenzhen Tongce Testing Lab. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.*

TABLE OF CONTENTS

1. Test Certification 3
2. Test Result Summary 4
3. EUT Description 5
4. Genera Information 7
4.1. Test environment and mode 7
4.2. Description of Support Units 7
5. Facilities and Accreditations 10
5.1. Facilities 10
5.2. Location 10
5.3. Measurement Uncertainty 10
6. Test Results and Measurement Data 11
6.1. Antenna requirement 11
6.2. Conducted Emission 12
6.3. Emission Bandwidth 18
6.4. Power Spectral Density 24
6.5. Conducted Band Edge and Spurious Emission Measurement 30
6.6. Radiated Spurious Emission Measurement 40
Appendix A: Photographs of Test Setup
Appendix B: Photographs of EUT

1. Test Certification

Product:	Sport DV
Model No.:	X4K
Additional Model No.:	N/A
Trade Mark:	**INTOVA**
Applicant:	Industrial Revolution
Address:	5835 Segale Park Dr. c, Tukwila, WA 98188, United States
Manufacturer:	Shenzhen Hisco Technology Ltd
Address:	Room 1206-1207, 12/F, CaiYue Building, No.24, LiuXian Avenue, LongHua District, Shenzhen, China
Date of Test:	Nov. 03 - 06, 2017
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247 KDB 558074 D01 DTS Meas Guidance v04

The above equipment has been tested by Shenzhen Tongce Testing Lab. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By: Beryl Zhao **Date:** ***Nov. 06, 2017***

Beryl Zhao

Reviewed By: **Date:** ***Nov. 07, 2017***

Approved By: **Date:** ***Nov. 07, 2017***

Tomsin

SHENZHEN TONGCE TESTING LAB TCT

2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203/§15.247 (c)	PASS
AC Power Line Conducted Emission	§15.207	PASS
Conducted Peak Output Power	§15.247 (b)(3) §2.1046	PASS
6dB Emission Bandwidth	§15.247 (a)(2) §2.1049	PASS
Power Spectral Density	§15.247 (e)	PASS
Band Edge	1§5.247(d) §2.1051, §2.1057	PASS
Spurious Emission	§15.205/§15.209 §2.1053, §2.1057	PASS

Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

3. EUT Description

Product:	Sport DV
Model No.:	X4K
Additional Model No.:	N/A
Trade Mark:	**INTOVA**
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)) 2422MHz~2452MHz (802.11n(HT40))
Channel Separation:	5MHz
Number of Channel:	11 for 802.11b/802.11g/802.11n(HT20) 7 for 802.11n(HT40)
Modulation Technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Modulation Technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Data speed (IEEE 802.11n):	Up to 150Mbps
Antenna Type:	Integral antenna
Antenna Gain:	0dBi (declare by Applicant)
Power supply:	Li-ion polymer Battery pack: DC 3.7V, 1600mAh, 5.92Wh

Operation Frequency each of channel For 802.11b/g/n(HT20)

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

Operation Frequency each of channel For 802.11n (HT40)

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
--	--	4	2427MHz	7	2442MHz	--	--
--	--	5	2432MHz	8	2447MHz	--	--
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

802.11b/802.11g/802.11n (HT20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The Highest channel	2462MHz

802.11n (HT40)

Channel	Frequency
The lowest channel	2422MHz
The middle channel	2437MHz
The Highest channel	2452MHz

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

4. Genera Information

4.1. Test environment and mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 98.46%)
The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. For the full battery state and The output power to the maximum state.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:	
Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.	
Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	6.5Mbps
802.11n(H40)	13.5Mbps
Final Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation
1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive. 2.According to ANSI C63.10 standards, the test results are both the “worst case” and	

"worst setup" 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20), 13.5Mbps for 802.11(H40). Duty cycle setting during the transmission is 98.5% with maximum power setting for all modulations.

4.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

5. Facilities and Accreditations

5.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098
  Shenzhen Tongce Testing Lab
  The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.
- IC - Registration No.: 10668A-1
  The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

5.2. Location

Shenzhen Tongce Testing Lab
Address: 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China
TEL: +86-755-27673339

5.3. Measurement Uncertainty

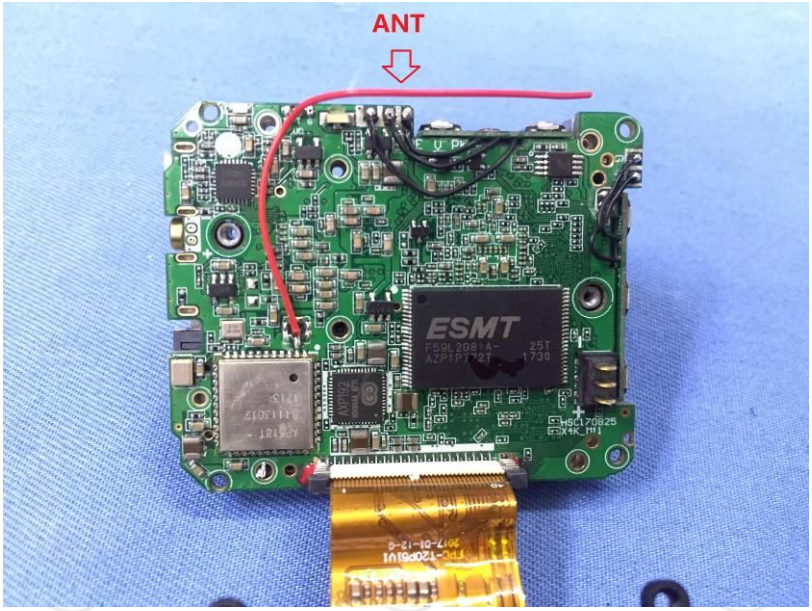
The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	±2.56dB
2	RF power, conducted	±0.12dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.92dB
5	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%

6. Test Results and Measurement Data

6.1. Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
E.U.T Antenna:	
The WIFI antenna is integral antenna which permanently attached, and the best case gain of the antenna is 0dBi.	



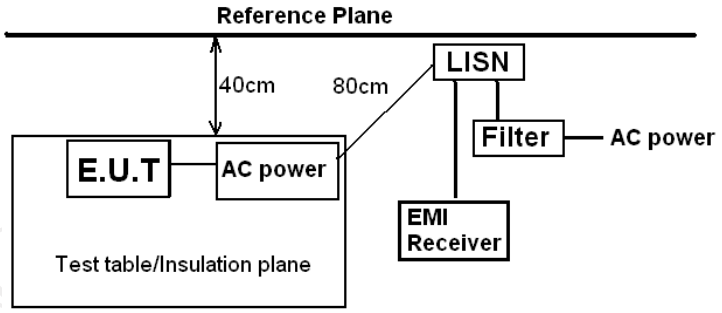
6.2. Conducted Emission

6.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Frequency Range:	150 kHz to 30 MHz
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto
Limits:	

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Test Setup:



Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

Test Mode:	Charging + transmitting with modulation
Test Procedure:	1. The E.U.T is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. 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 C63.10: 2013 on conducted measurement.
Test Result:	PASS

6.2.2. Test Instruments

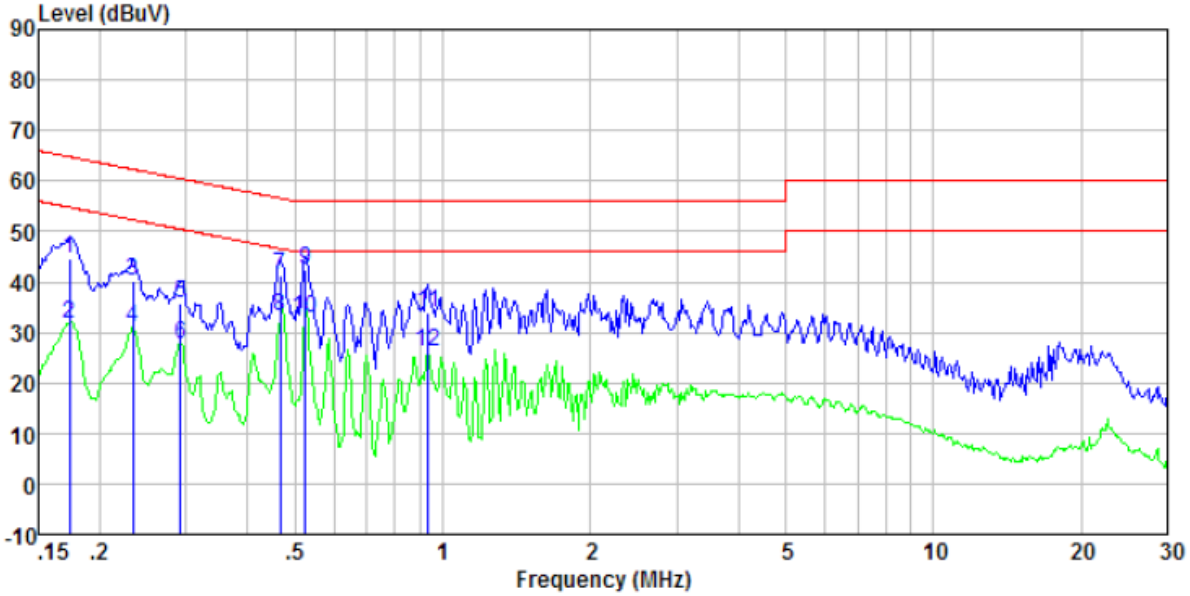
Conducted Emission Shielding Room Test Site (843)				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Test Receiver	R&S	ESPI	101401	Jun. 12, 2018
LISN	Schwarzbeck	NSLK 8126	8126453	Sep. 27, 2018
Coax cable (9KHz-30MHz)	TCT	CE-05	N/A	Sep. 27, 2018
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

6.2.3. Test data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)

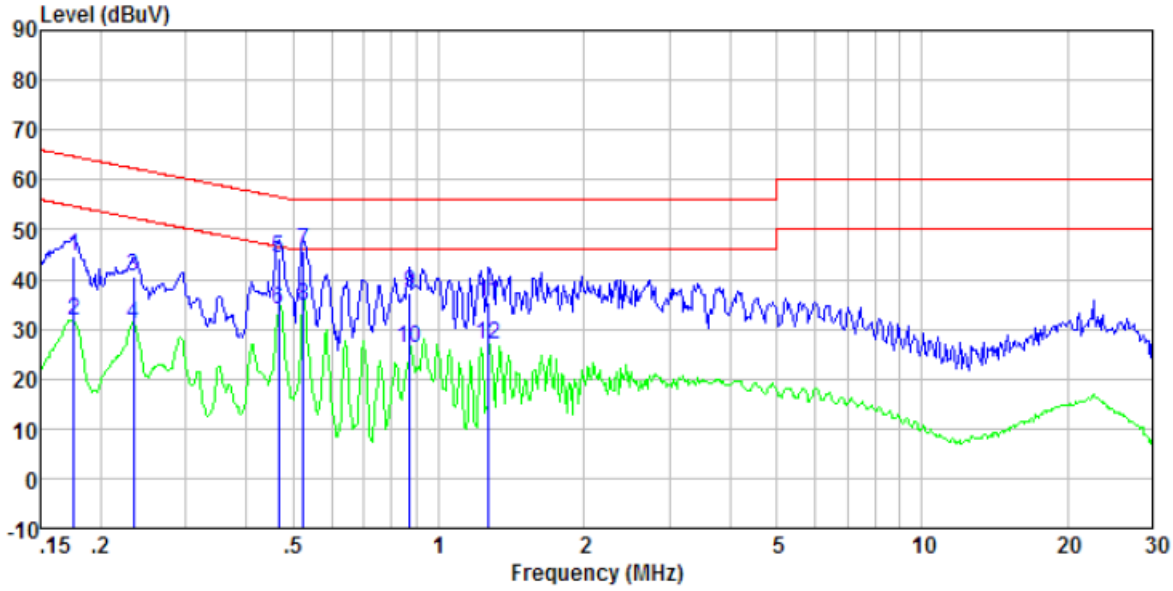


Freq MHz	Reading level dBuV	1ISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.174	44.10	0.42	0.13	44.65	64.77	-20.12	QP
0.174	31.16	0.42	0.13	31.71	54.77	-23.06	Average
0.234	39.63	0.43	0.12	40.18	62.30	-22.12	QP
0.234	30.31	0.43	0.12	30.86	52.30	-21.44	Average
0.292	35.07	0.44	0.10	35.61	60.46	-24.85	QP
0.292	27.25	0.44	0.10	27.79	50.46	-22.67	Average
0.466	40.76	0.39	0.11	41.26	56.58	-15.32	QP
0.466	32.78	0.39	0.11	33.28	46.58	-13.30	Average
0.524	41.84	0.36	0.11	42.31	56.00	-13.69	QP
0.524	32.17	0.36	0.11	32.64	46.00	-13.36	Average
0.933	33.69	0.25	0.13	34.07	56.00	-21.93	QP
0.933	25.65	0.25	0.13	26.03	46.00	-19.97	Average

Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss*
4. *If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.*

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.176	43.93	0.41	0.13	44.47	64.68	-20.21	QP
0.176	31.09	0.41	0.13	31.63	54.68	-23.05	Average
0.234	39.89	0.42	0.12	40.43	62.30	-21.87	QP
0.234	30.47	0.42	0.12	31.01	52.30	-21.29	Average
0.466	43.80	0.37	0.11	44.28	56.58	-12.30	QP
0.466	33.31	0.37	0.11	33.79	46.58	-12.79	Average
0.524	45.15	0.34	0.11	45.60	56.00	-10.40	QP
0.524	34.05	0.34	0.11	34.50	46.00	-11.50	Average
0.871	37.00	0.22	0.13	37.35	56.00	-18.65	QP
0.871	25.73	0.22	0.13	26.08	46.00	-19.92	Average
1.269	34.98	0.21	0.13	35.32	56.00	-20.68	QP
1.269	26.55	0.21	0.13	26.89	46.00	-19.11	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.

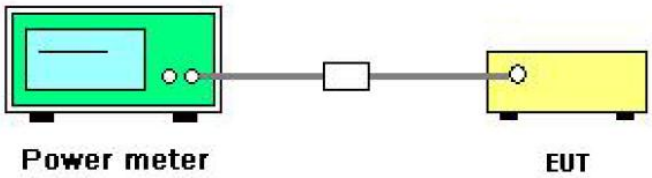
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3. Final Level =Receiver Read level + LISN Factor + Cable Loss

4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

6.2.4. Maximum Conducted (Average) Output Power

6.2.5. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB 558074
Limit:	30dBm
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04. 2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Measure the Peak output power and record the results in the test report.
Test Result:	PASS

6.2.6. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	Anritsu	ML2495A	1005002	Sep. 27, 2018
Pulse Power Senor	Anritsu	MA2411B	0917070	Sep. 27, 2018
RF Cable (9KHz-26.5GHz)	TCT	RE-06	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-01	N/A	Sep. 27, 2018

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

6.2.7. Test Data

802.11b mode			
Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result
Lowest	7.05	30.00	PASS
Middle	7.00	30.00	PASS
Highest	6.89	30.00	PASS

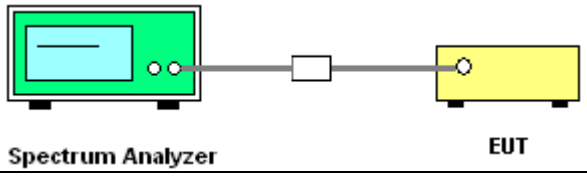
802.11g mode			
Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result
Lowest	6.94	30.00	PASS
Middle	6.56	30.00	PASS
Highest	6.60	30.00	PASS

802.11n(H20) mode			
Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result
Lowest	6.54	30.00	PASS
Middle	6.40	30.00	PASS
Highest	6.54	30.00	PASS

802.11n(H40) mode			
Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result
Lowest	4.41	30.00	PASS
Middle	4.42	30.00	PASS
Highest	4.56	30.00	PASS

6.3. Emission Bandwidth

6.3.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB 558074
Limit:	>500kHz
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz. 4. Measure and record the results in the test report.
Test Result:	PASS

6.3.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep. 27, 2018
RF Cable (9KHz-26.5GHz)	TCT	RE-06	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-01	N/A	Sep. 27, 2018

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

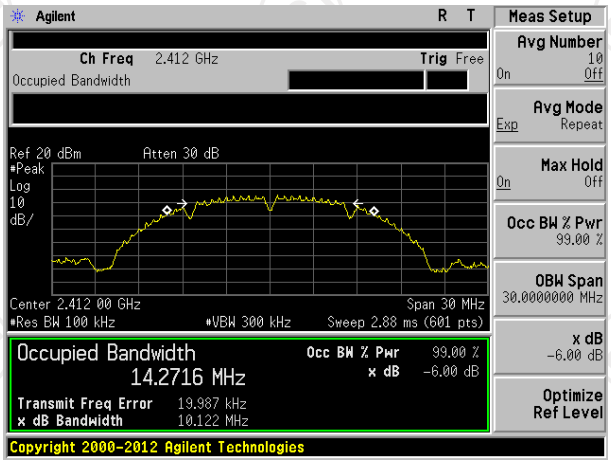
6.3.3. Test data

Test channel	6dB Emission Bandwidth (MHz)			
	802.11b	802.11g	802.11n(H20)	802.11n(H40)
Lowest	10.122	16.387	17.640	36.185
Middle	10.069	16.415	17.664	36.122
Highest	10.081	16.405	17.612	36.127
Limit:	>500k			
Test Result:	PASS			

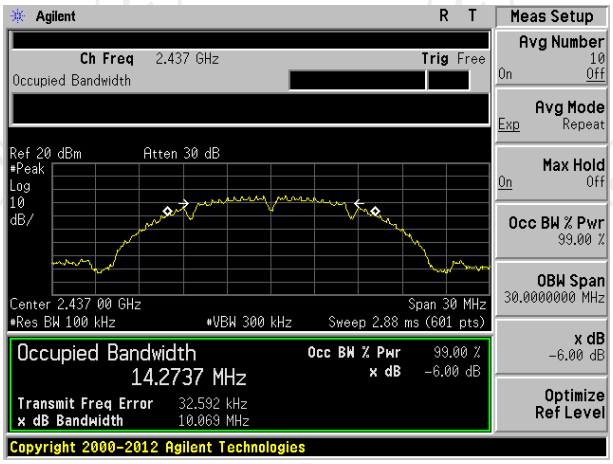
Test plots as follows:

802.11b Modulation

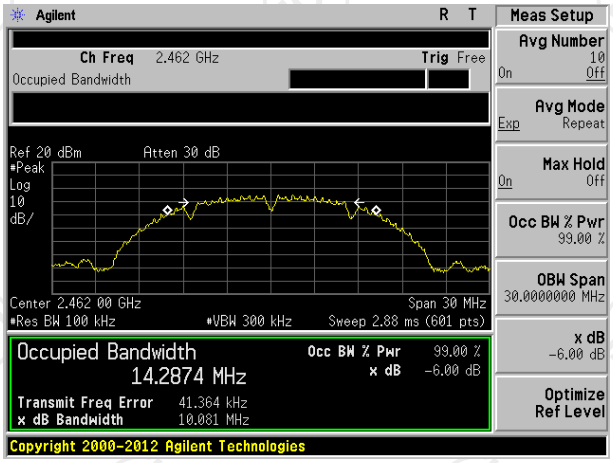
Lowest channel



Middle channel

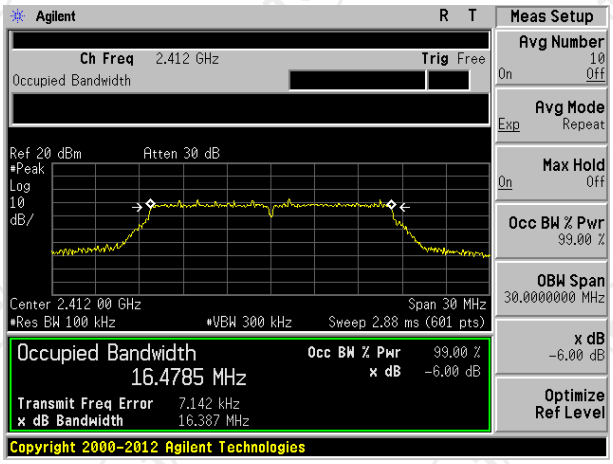


Highest channel

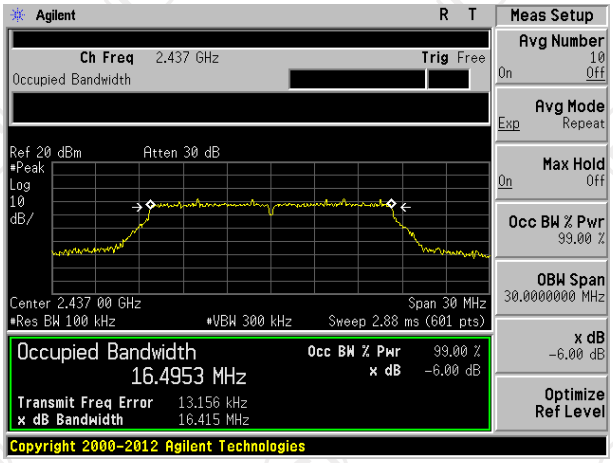


802.11g Modulation

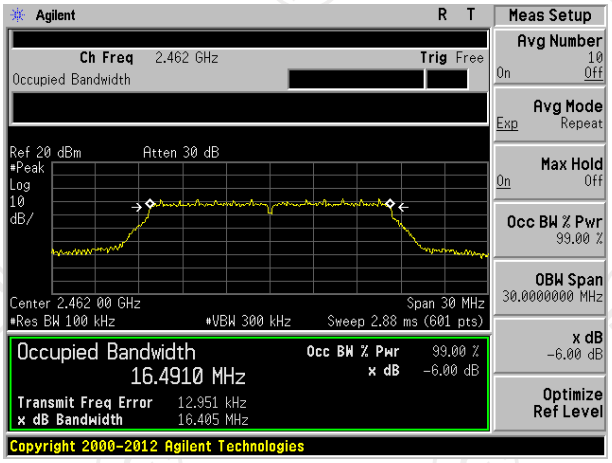
Lowest channel



Middle channel

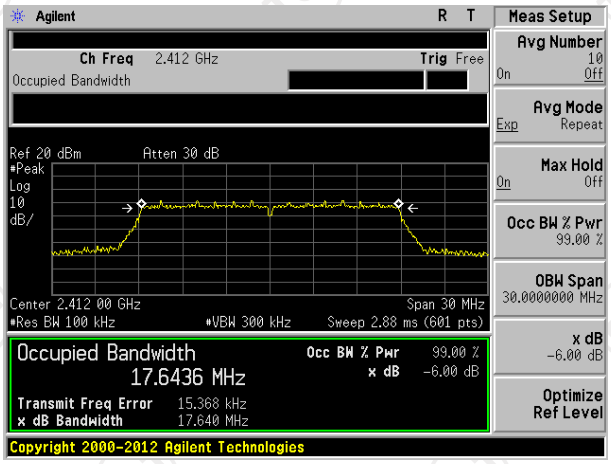


Highest channel

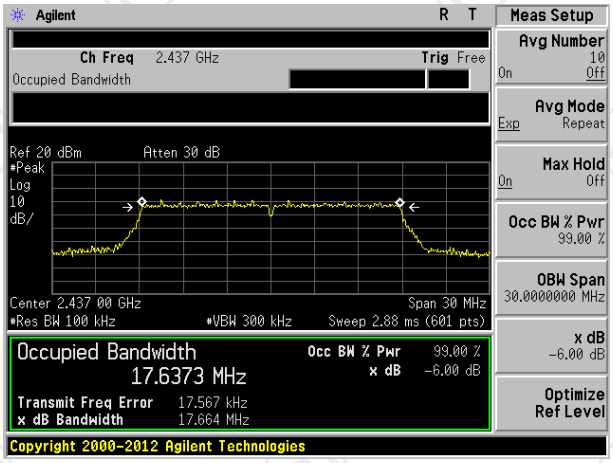


802.11n (HT20) Modulation

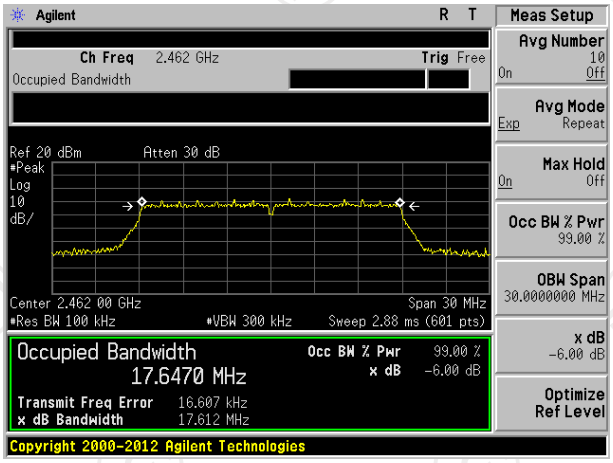
Lowest channel



Middle channel

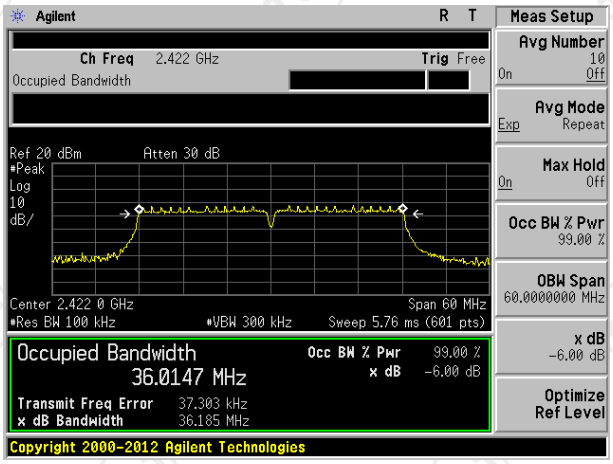


Highest channel

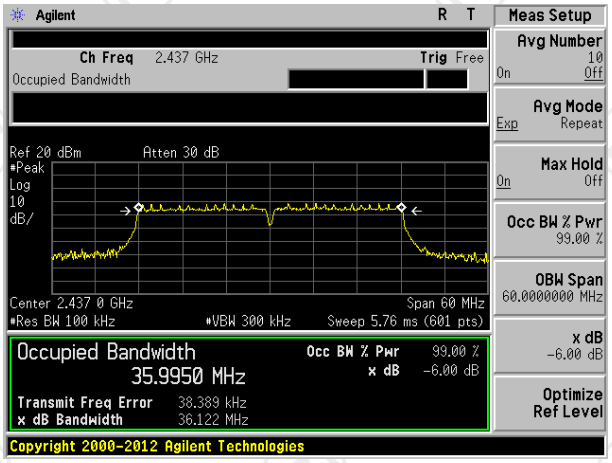


802.11n (HT40) Modulation

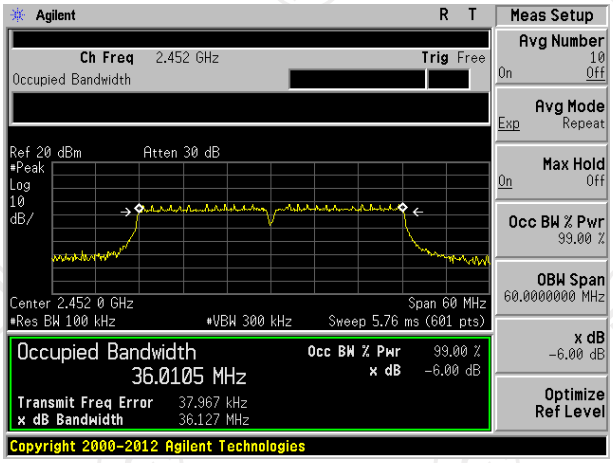
Lowest channel



Middle channel

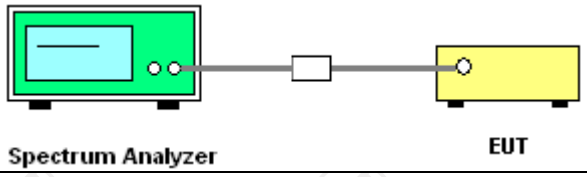


Highest channel



6.4. Power Spectral Density

6.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB 558074
Limit:	The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows Measurement Procedure 10.3 Method AVGPSD of FCC KDB Publication No.558074 D01 DTS Meas. Guidance v04 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. Set the span to at least 1.5 times the OBW. 5. Detector = RMS, Sweep time = auto couple. 6. Employ trace averaging (RMS) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level. 6. Measure and record the results in the test report.
Test Result:	PASS

6.4.2. Test Instruments

RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep. 27, 2018
RF Cable (9KHz-26.5GHz)	TCT	RE-06	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-01	N/A	Sep. 27, 2018

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

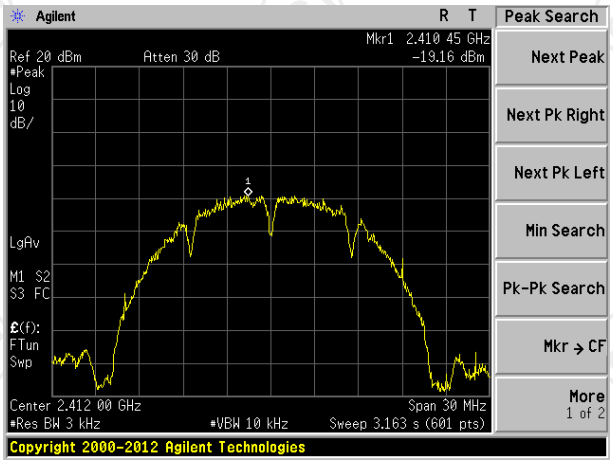
6.4.3. Test data

Test channel	PK Power Spectral Density (dBm/3kHz)			
	802.11b	802.11g	802.11n(H20)	802.11n(H40)
Lowest	-19.16	-21.46	-21.76	-27.58
Middle	-19.05	-21.12	-22.08	-26.08
Highest	-18.92	-22.47	-22.80	-26.59
Limit:	8dBm/3kHz			
Test Result:	PASS			

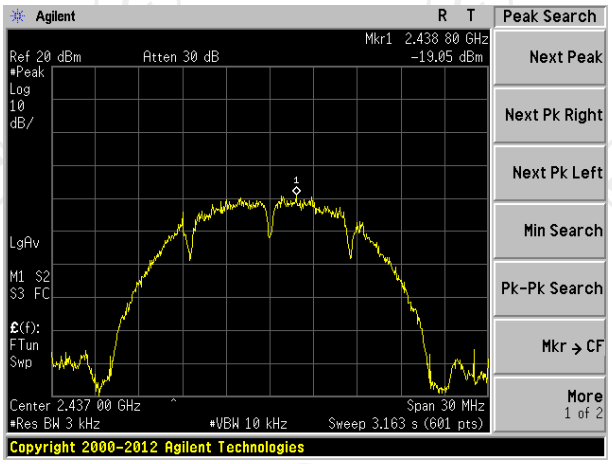
Test plots as follows:

802.11b Modulation

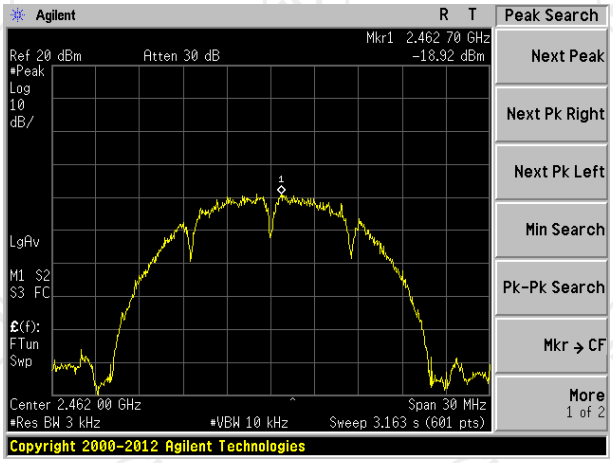
Lowest channel



Middle channel

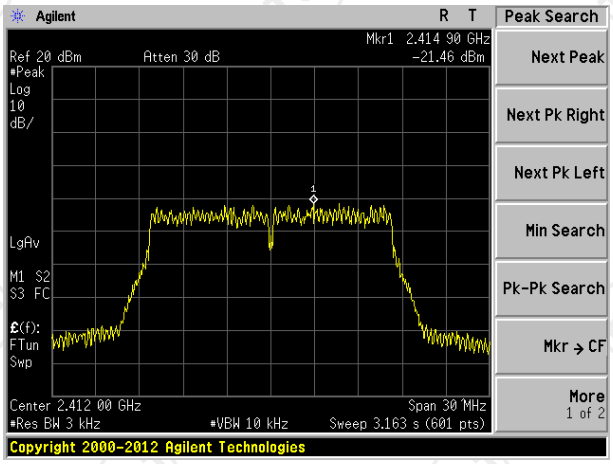


Highest channel

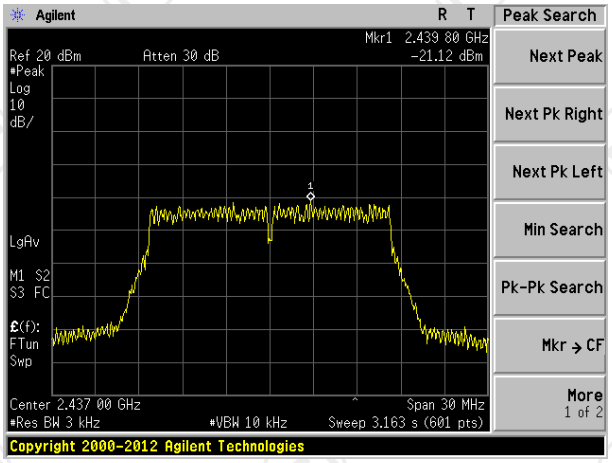


802.11g Modulation

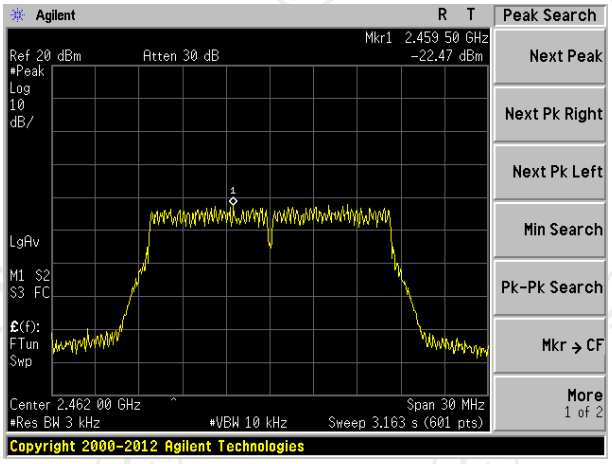
Lowest channel



Middle channel

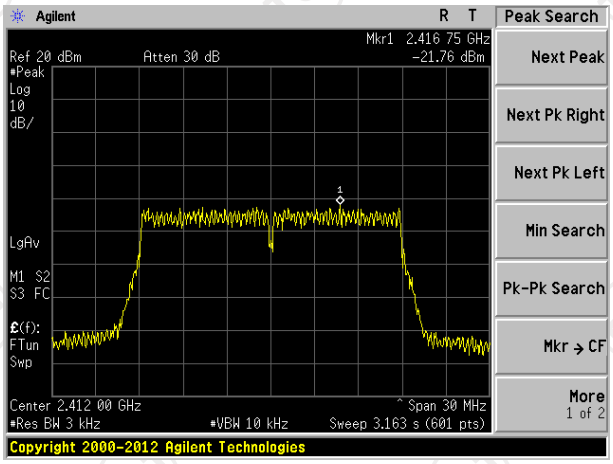


Highest channel

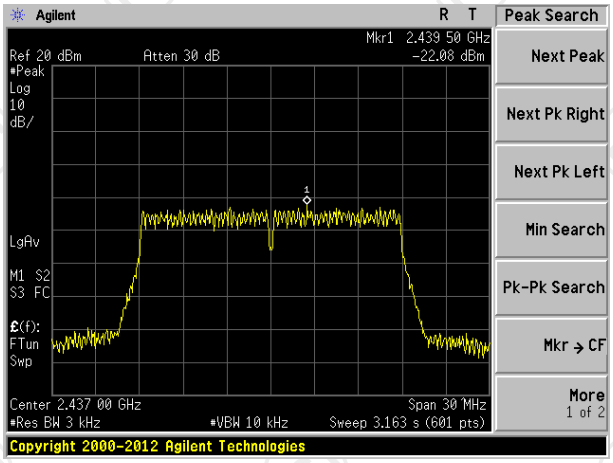


802.11n (HT20) Modulation

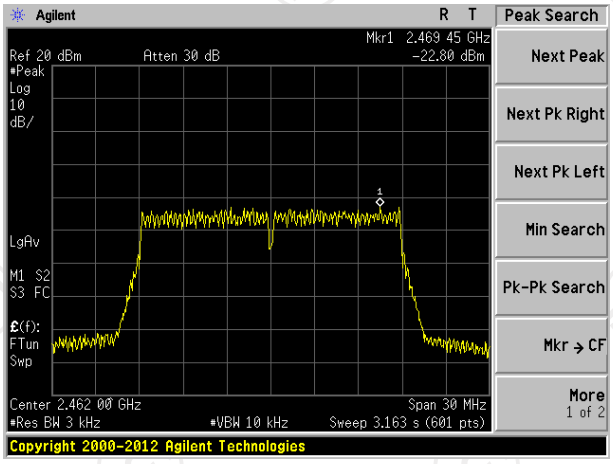
Lowest channel



Middle channel

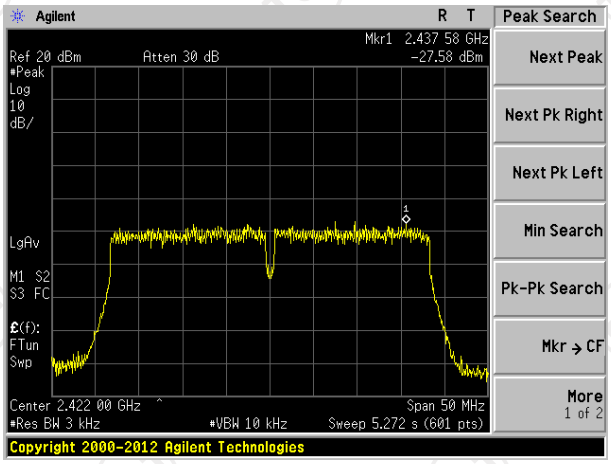


Highest channel

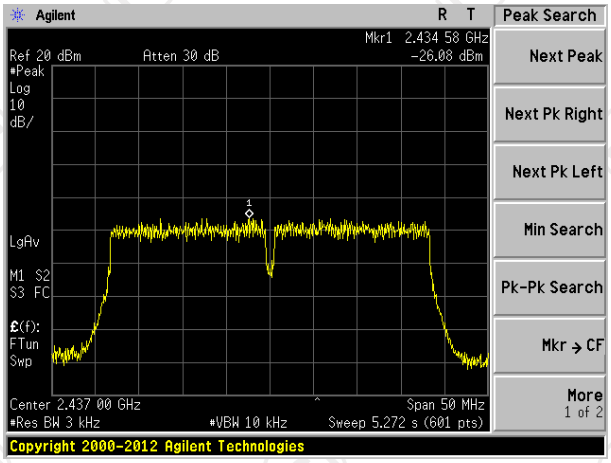


802.11n (HT40) Modulation

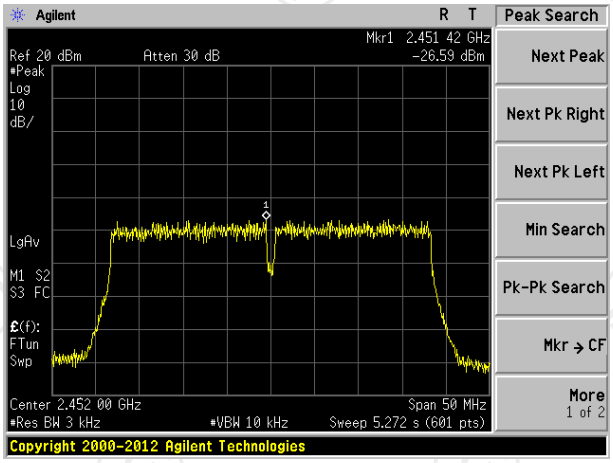
Lowest channel



Middle channel

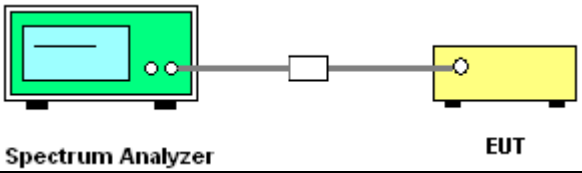


Highest channel



6.5. Conducted Band Edge and Spurious Emission Measurement

6.5.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074
Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and 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).
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04. 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. 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 per 15.247(d). 5. Measure and record the results in the test report. 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Test Result:	PASS

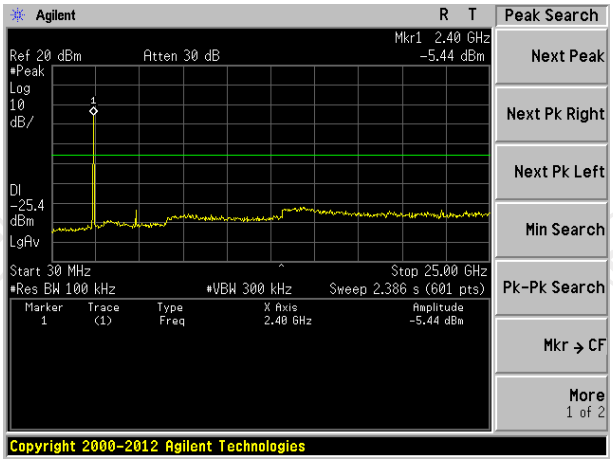
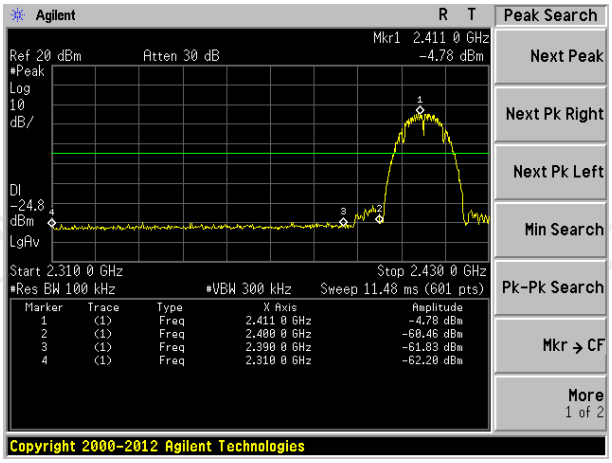
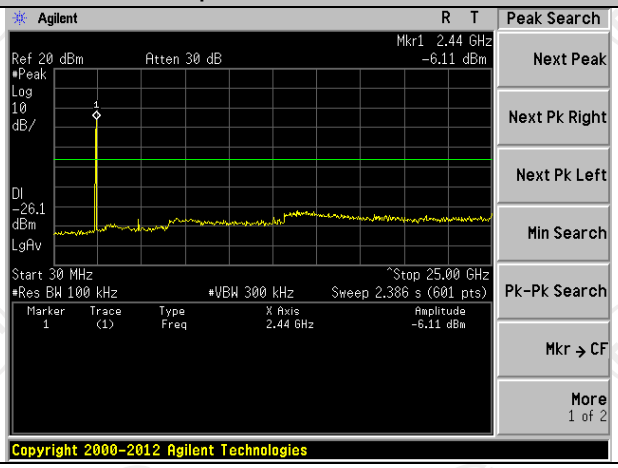
6.5.2. Test Instruments

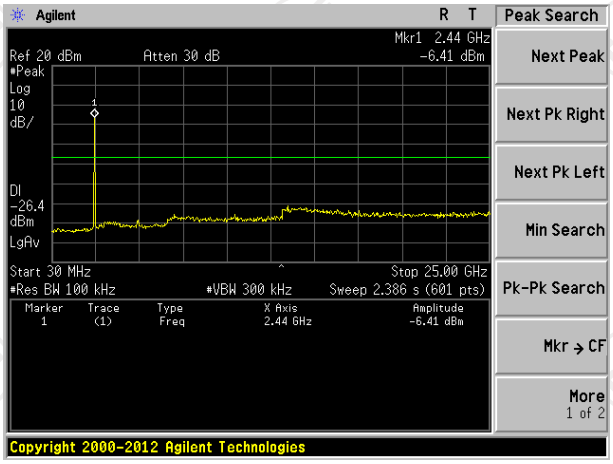
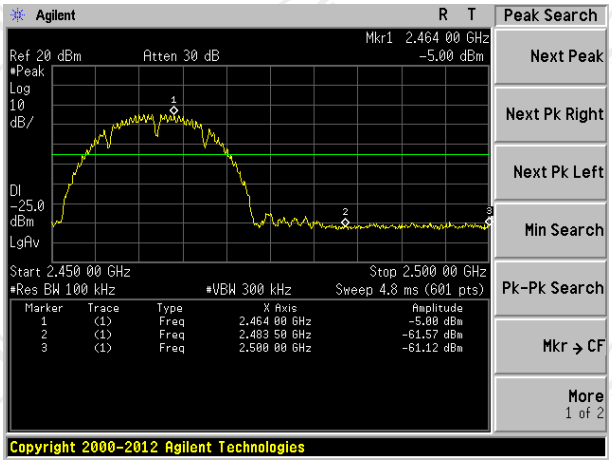
RF Test Room				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep. 27, 2018
Spectrum Analyzer	ROHDE&SCHWARZ	FSQ	200061	Sep. 27, 2018
RF Cable (9KHz-26.5GHz)	TCT	RE-06	N/A	Sep. 27, 2018
Antenna Connector	TCT	RFC-01	N/A	Sep. 27, 2018

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

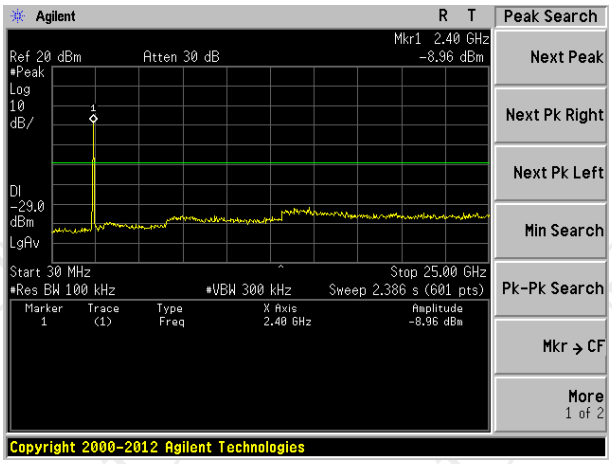
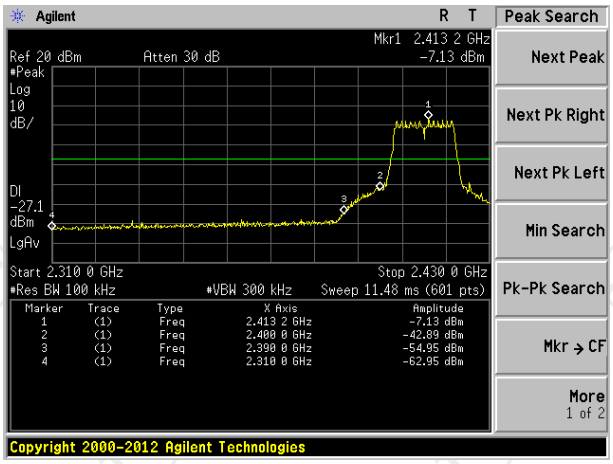
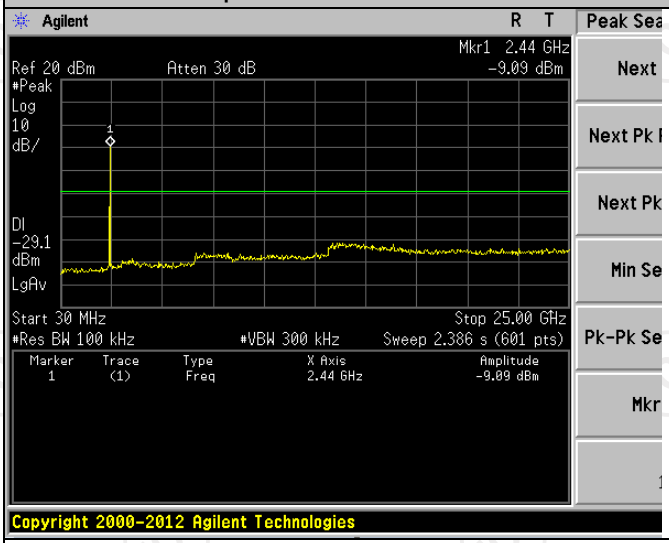
6.5.3. Test Data

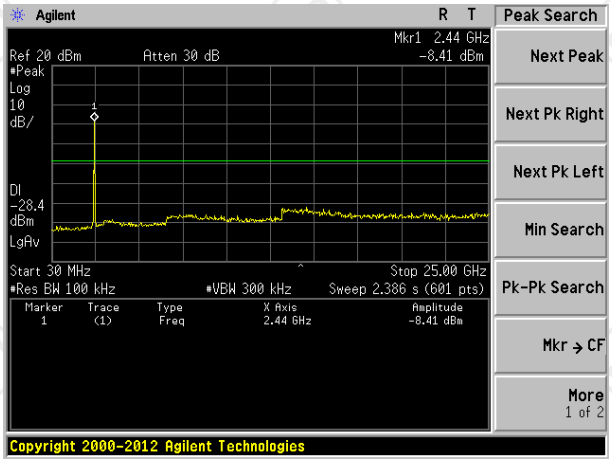
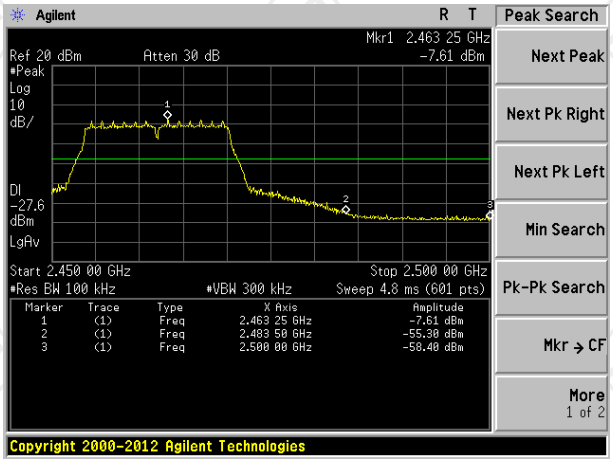
802.11b Modulation

Spurious emission	Band Edge
	
Lowest Channel	
Spurious emission	
	
Middle Channel	

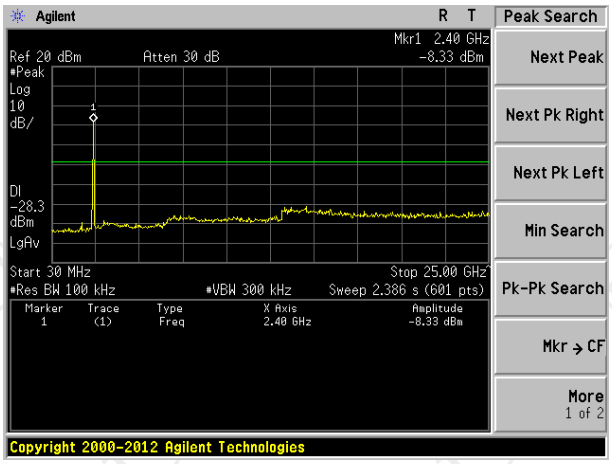
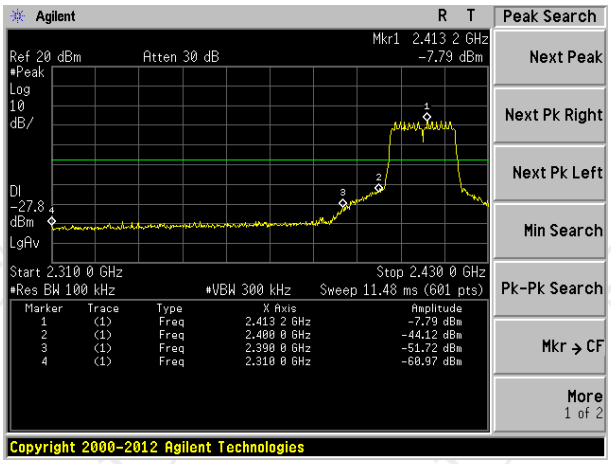
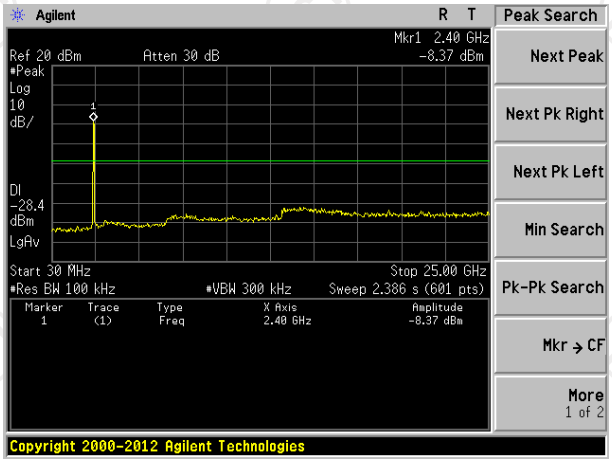
Spurious emission	Band Edge
	
Highest Channel	

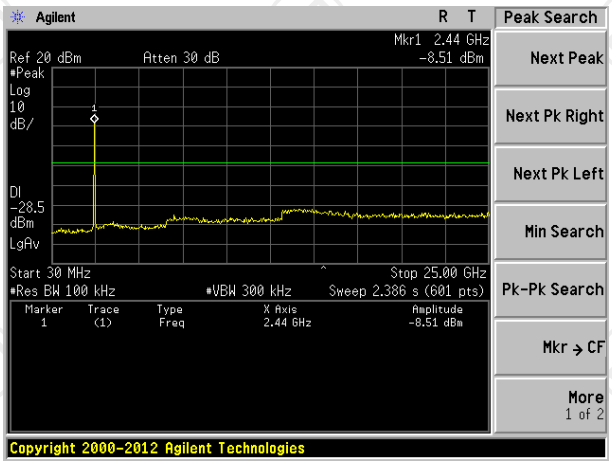
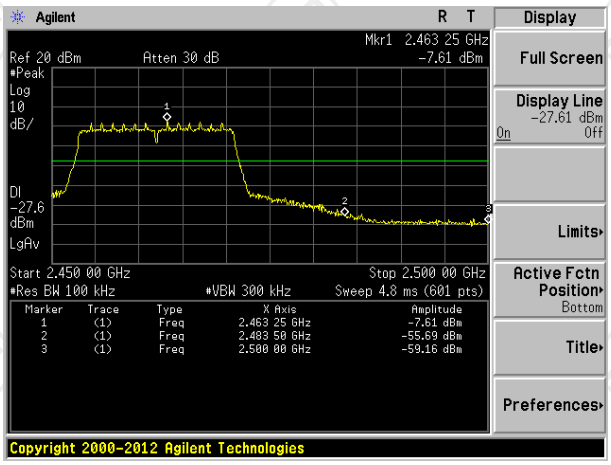
802.11g Modulation

Spurious emission	Band Edge
	
Lowest Channel	
Spurious emission	
	
Middle Channel	

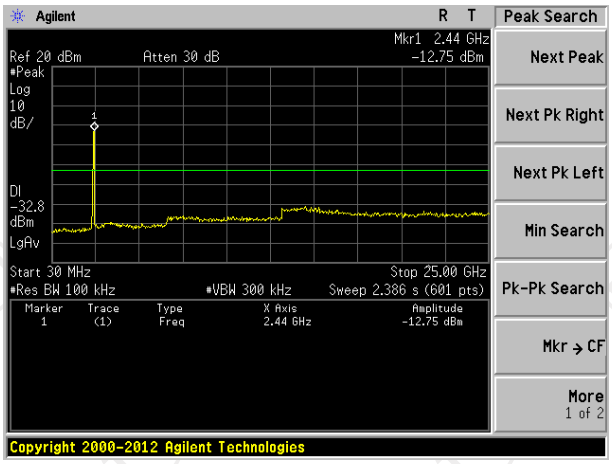
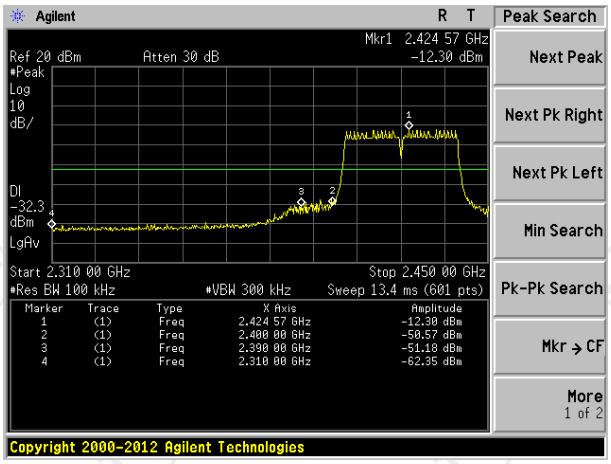
Spurious emission	Band Edge
	
Highest Channel	

802.11n (HT20) Modulation

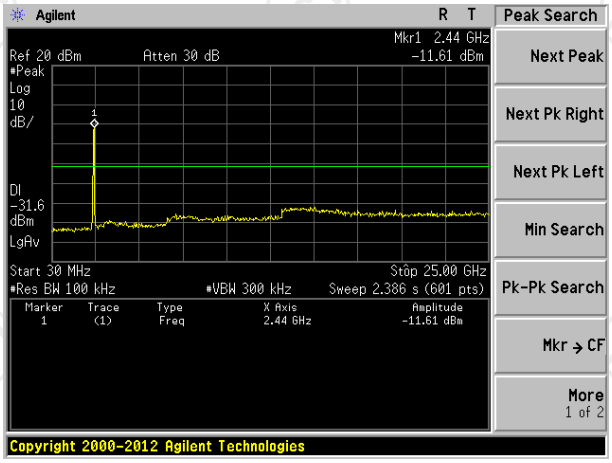
Spurious emission	Band Edge
	
Lowest Channel	
Spurious emission	
	
Middle Channel	

Spurious emission	Band Edge
	
Highest Channel	

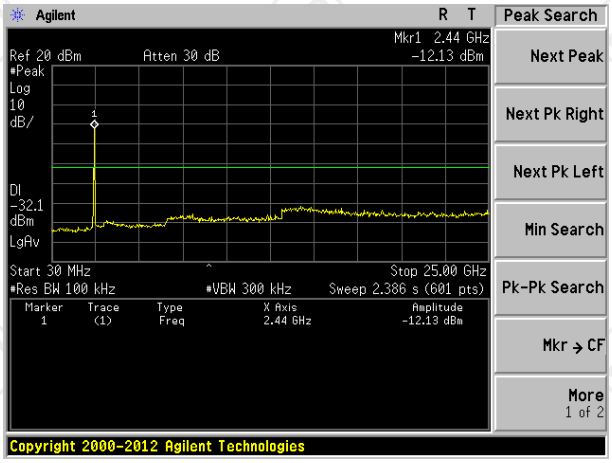
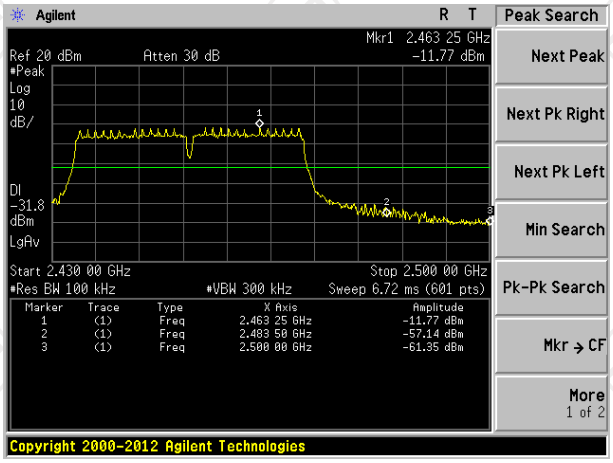
802.11n (HT40) Modulation

Spurious emission	Band Edge
	

Lowest Channel

Spurious emission	
	

Middle Channel

Spurious emission	Band Edge
	
Highest Channel	

6.6. Radiated Spurious Emission Measurement

6.6.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10: 2013
Frequency Range:	9 kHz to 25 GHz
Measurement Distance:	3 m
Antenna Polarization:	Horizontal & Vertical
Operation mode:	Transmitting mode with modulation

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

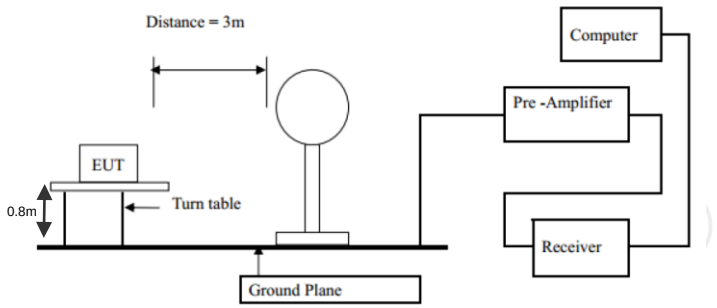
Limit:

Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)
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

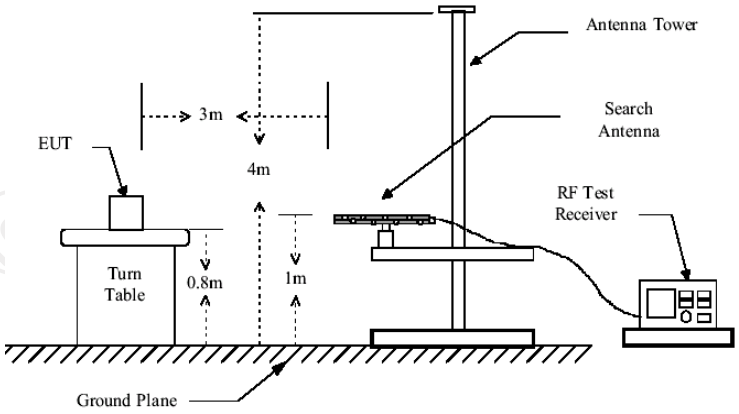
Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)	Detector
Above 1GHz	500	3	Average
	5000	3	Peak

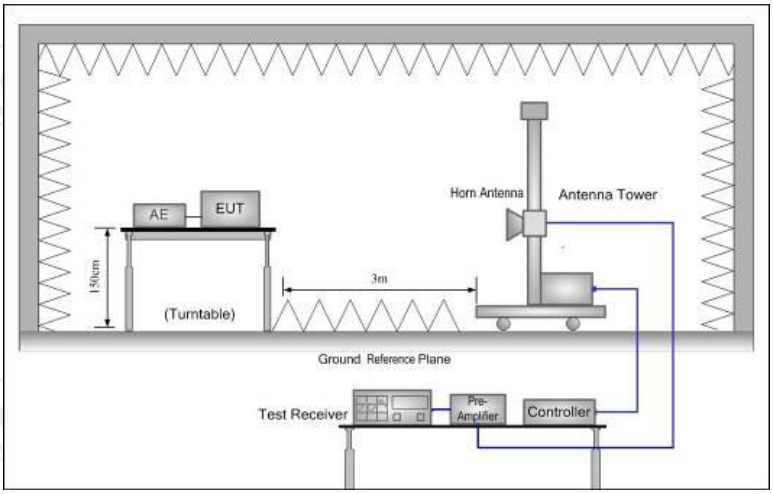
Test setup:

For radiated emissions below 30MHz



30MHz to 1GHz

<table>
<tr>
<td></td>
<td>


Above 1GHz


</td>
</tr>
<tr>
<td>Test Procedure:</td>
<td>1. For the radiated emission test below 1GHz:
The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level.
For the radiated emission test above 1GHz:
Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for</td>
</tr>
</table>

	receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 4. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. 5. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for f < 1 GHz; VBW⩾RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f ⩾ 1 GHz for peak measurement. For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW ⩾1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test results:	PASS

6.6.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Test Receiver	ROHDE&SCHWARZ	ESVD	100008	Sep. 27, 2018
Spectrum Analyzer	ROHDE&SCHWARZ	FSQ	200061	Sep. 27, 2018
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Sep. 27, 2018
Pre-amplifier	HP	8447D	2727A05017	Sep. 27, 2018
Loop antenna	ZHINAN	ZN30900A	12024	Sep. 27, 2018
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 27, 2018
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 27, 2018
Horn Antenna	Schwarzbeck	BBH 9170	582	Jun. 07, 2018
Antenna Mast	Keleto	CC-A-4M	N/A	N/A
Coax cable (9KHz-1GHz)	TCT	RE-low-01	N/A	Sep. 27, 2018
Coax cable (9KHz-40GHz)	TCT	RE-high-02	N/A	Sep. 27, 2018
Coax cable (9KHz-1GHz)	TCT	RE-low-03	N/A	Sep. 27, 2018
Coax cable (9KHz-40GHz)	TCT	RE-high-04	N/A	Sep. 27, 2018
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

6.6.3. Test Data

Please refer to following diagram for individual
Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
100.23	28.18	12.10	1.19	29.70	11.77	43.50	-31.73	Vertical
234.17	36.05	11.36	2.04	29.52	19.93	46.00	-26.07	Vertical
287.99	52.52	13.11	2.31	29.92	38.02	46.00	-7.98	Vertical
480.53	39.01	17.14	3.22	29.34	30.03	46.00	-15.97	Vertical
739.66	38.23	20.39	4.24	29.20	33.66	46.00	-12.34	Vertical
897.00	39.75	22.17	4.83	29.10	37.65	46.00	-8.35	Vertical
197.89	38.19	10.20	1.83	29.21	21.01	43.50	-22.49	Horizontal
234.17	44.94	11.36	2.04	29.52	28.82	46.00	-17.18	Horizontal
287.99	53.20	13.11	2.31	29.92	38.70	46.00	-7.30	Horizontal
480.53	46.32	17.14	3.22	29.34	37.34	46.00	-8.66	Horizontal
701.76	44.37	19.80	4.09	29.20	39.06	46.00	-6.94	Horizontal
848.06	39.81	21.72	4.65	29.15	37.03	46.00	-8.97	Horizontal

Test Result of Radiated Spurious at Band edges

Test mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	51.93	27.59	5.38	34.01	50.89	74.00	-23.11	Horizontal
2400.00	61.04	27.58	5.39	34.01	60.00	74.00	-14.00	Horizontal
2390.00	53.63	27.59	5.38	34.01	52.59	74.00	-21.41	Vertical
2400.00	62.91	27.58	5.39	34.01	61.87	74.00	-12.13	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	38.61	27.59	5.38	34.01	37.57	54.00	-16.43	Horizontal
2400.00	46.93	27.58	5.39	34.01	45.89	54.00	-8.11	Horizontal
2390.00	40.45	27.59	5.38	34.01	39.41	54.00	-14.59	Vertical
2400.00	48.08	27.58	5.39	34.01	47.04	54.00	-6.96	Vertical

Test mode:	802.11b	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	52.71	27.53	5.47	33.92	51.79	74.00	-22.21	Horizontal
2500.00	48.44	27.55	5.49	29.93	51.55	74.00	-22.45	Horizontal
2483.50	55.02	27.53	5.47	33.92	54.10	74.00	-19.90	Vertical
2500.00	51.01	27.55	5.49	29.93	54.12	74.00	-19.88	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	39.02	27.53	5.47	33.92	38.10	54.00	-15.90	Horizontal
2500.00	35.07	27.55	5.49	29.93	38.18	54.00	-15.82	Horizontal
2483.50	40.99	27.53	5.47	33.92	40.07	54.00	-13.93	Vertical
2500.00	36.96	27.55	5.49	29.93	40.07	54.00	-13.93	Vertical

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*

Test mode:	802.11g	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	50.25	27.59	5.38	34.01	49.21	74.00	-24.79	Horizontal
2400.00	58.80	27.58	5.39	34.01	57.76	74.00	-16.24	Horizontal
2390.00	51.84	27.59	5.38	34.01	50.80	74.00	-23.20	Vertical
2400.00	60.22	27.58	5.39	34.01	59.18	74.00	-14.82	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	37.42	27.59	5.38	34.01	36.38	54.00	-17.62	Horizontal
2400.00	45.56	27.58	5.39	34.01	44.52	54.00	-9.48	Horizontal
2390.00	39.12	27.59	5.38	34.01	38.08	54.00	-15.92	Vertical
2400.00	46.58	27.58	5.39	34.01	45.54	54.00	-8.46	Vertical

Test mode:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	50.31	27.53	5.47	33.92	49.39	74.00	-24.61	Horizontal
2500.00	46.58	27.55	5.49	29.93	49.69	74.00	-24.31	Horizontal
2483.50	52.28	27.53	5.47	33.92	51.36	74.00	-22.64	Vertical
2500.00	48.83	27.55	5.49	29.93	51.94	74.00	-22.06	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.57	27.53	5.47	33.92	36.65	54.00	-17.35	Horizontal
2500.00	33.94	27.55	5.49	29.93	37.05	54.00	-16.95	Horizontal
2483.50	39.39	27.53	5.47	33.92	38.47	54.00	-15.53	Vertical
2500.00	35.76	27.55	5.49	29.93	38.87	54.00	-15.13	Vertical

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*

Test mode:	802.11n(HT20)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	50.34	27.59	5.38	34.01	49.30	74.00	-24.70	Horizontal
2400.00	58.91	27.58	5.39	34.01	57.87	74.00	-16.13	Horizontal
2390.00	51.93	27.59	5.38	34.01	50.89	74.00	-23.11	Vertical
2400.00	60.36	27.58	5.39	34.01	59.32	74.00	-14.68	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	37.48	27.59	5.38	34.01	36.44	54.00	-17.56	Horizontal
2400.00	45.63	27.58	5.39	34.01	44.59	54.00	-9.41	Horizontal
2390.00	39.19	27.59	5.38	34.01	38.15	54.00	-15.85	Vertical
2400.00	46.66	27.58	5.39	34.01	45.62	54.00	-8.38	Vertical

Test mode:	802.11n(HT20)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	50.44	27.53	5.47	33.92	49.52	74.00	-24.48	Horizontal
2500.00	46.68	27.55	5.49	29.93	49.79	74.00	-24.21	Horizontal
2483.50	52.43	27.53	5.47	33.92	51.51	74.00	-22.49	Vertical
2500.00	48.95	27.55	5.49	29.93	52.06	74.00	-21.94	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	37.65	27.53	5.47	33.92	36.73	54.00	-17.27	Horizontal
2500.00	34.00	27.55	5.49	29.93	37.11	54.00	-16.89	Horizontal
2483.50	39.48	27.53	5.47	33.92	38.56	54.00	-15.44	Vertical
2500.00	35.83	27.55	5.49	29.93	38.94	54.00	-15.06	Vertical

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*

Test mode:	802.11n(HT40)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	49.47	27.59	5.38	34.01	48.43	74.00	-25.57	Horizontal
2400.00	57.75	27.58	5.39	34.01	56.71	74.00	-17.29	Horizontal
2390.00	51.00	27.59	5.38	34.01	49.96	74.00	-24.04	Vertical
2400.00	58.96	27.58	5.39	34.01	57.92	74.00	-16.08	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	36.86	27.59	5.38	34.01	35.82	54.00	-18.18	Horizontal
2400.00	44.92	27.58	5.39	34.01	43.88	54.00	-10.12	Horizontal
2390.00	38.50	27.59	5.38	34.01	37.46	54.00	-16.54	Vertical
2400.00	45.87	27.58	5.39	34.01	44.83	54.00	-9.17	Vertical

Test mode:	802.11n(HT40)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	49.19	27.53	5.47	33.92	48.27	74.00	-25.73	Horizontal
2500.00	45.71	27.55	5.49	29.93	48.82	74.00	-25.18	Horizontal
2483.50	51.00	27.53	5.47	33.92	50.08	74.00	-23.92	Vertical
2500.00	47.81	27.55	5.49	29.93	50.92	74.00	-23.08	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	36.89	27.53	5.47	33.92	35.97	54.00	-18.03	Horizontal
2500.00	33.41	27.55	5.49	29.93	36.52	54.00	-17.48	Horizontal
2483.50	38.64	27.53	5.47	33.92	37.72	54.00	-16.28	Vertical
2500.00	35.20	27.55	5.49	29.93	38.31	54.00	-15.69	Vertical

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*

Above 1GHz

■

Test mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	39.77	31.79	8.62	32.10	48.08	74.00	-25.92	Vertical
7236.00	33.89	36.19	11.68	31.97	49.79	74.00	-24.21	Vertical
9648.00	32.48	38.07	14.16	31.56	53.15	74.00	-20.85	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	38.52	31.79	8.62	32.10	46.83	74.00	-27.17	Horizontal
7236.00	33.68	36.19	11.68	31.97	49.58	74.00	-24.42	Horizontal
9648.00	32.07	38.07	14.16	31.56	52.74	74.00	-21.26	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	28.90	31.79	8.62	32.10	37.21	54.00	-16.79	Vertical
7236.00	22.77	36.19	11.68	31.97	38.67	54.00	-15.33	Vertical
9648.00	22.83	38.07	14.16	31.56	43.50	54.00	-10.50	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	28.09	31.79	8.62	32.10	36.40	54.00	-17.60	Horizontal
7236.00	22.27	36.19	11.68	31.97	38.17	54.00	-15.83	Horizontal
9648.00	21.83	38.07	14.16	31.56	42.50	54.00	-11.50	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBμV/m)- limit (dBμV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11b	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	38.92	31.85	8.66	32.12	47.31	74.00	-26.69	Vertical
7311.00	34.02	36.37	11.71	31.91	50.19	74.00	-23.81	Vertical
9748.00	33.54	38.27	14.25	31.56	54.50	74.00	-19.50	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	39.46	31.85	8.66	32.12	47.85	74.00	-26.15	Horizontal
7311.00	32.69	36.37	11.71	31.91	48.86	74.00	-25.14	Horizontal
9748.00	33.44	38.27	14.25	31.56	54.40	74.00	-19.60	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	29.80	31.85	8.66	32.12	38.19	54.00	-15.81	Vertical
7311.00	22.34	36.37	11.71	31.91	38.51	54.00	-15.49	Vertical
9748.00	22.80	38.27	14.25	31.56	43.76	54.00	-10.24	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	29.60	31.85	8.66	32.12	37.99	54.00	-16.01	Horizontal
7311.00	21.79	36.37	11.71	31.91	37.96	54.00	-16.04	Horizontal
9748.00	23.16	38.27	14.25	31.56	44.12	54.00	-9.88	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBμV/m)- limit (dBμV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11b	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	44.14	31.90	8.70	32.15	52.59	74.00	-21.41	Vertical
7386.00	34.49	36.49	11.76	31.83	50.91	74.00	-23.09	Vertical
9848.00	36.69	38.62	14.31	31.77	57.85	74.00	-16.15	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	43.56	31.90	8.70	32.15	52.01	74.00	-21.99	Horizontal
7386.00	33.45	36.49	11.76	31.83	49.87	74.00	-24.13	Horizontal
9848.00	32.89	38.62	14.31	31.77	54.05	74.00	-19.95	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	35.11	31.90	8.70	32.15	43.56	54.00	-10.44	Vertical
7386.00	24.43	36.49	11.76	31.83	40.85	54.00	-13.15	Vertical
9848.00	25.21	38.62	14.31	31.77	46.37	54.00	-7.63	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	33.96	31.90	8.70	32.15	42.41	54.00	-11.59	Horizontal
7386.00	22.86	36.49	11.76	31.83	39.28	54.00	-14.72	Horizontal
9848.00	22.16	38.62	14.31	31.77	43.32	54.00	-10.68	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBμV/m)- limit (dBμV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11g	Test channel:	lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	39.18	31.79	8.62	32.10	47.49	74.00	-26.51	Vertical
7236.00	33.51	36.19	11.68	31.97	49.41	74.00	-24.59	Vertical
9648.00	32.21	38.07	14.16	31.56	52.88	74.00	-21.12	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	38.02	31.79	8.62	32.10	46.33	74.00	-27.67	Horizontal
7236.00	33.35	36.19	11.68	31.97	49.25	74.00	-24.75	Horizontal
9648.00	31.83	38.07	14.16	31.56	52.50	74.00	-21.50	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	28.35	31.79	8.62	32.10	36.66	54.00	-17.34	Vertical
7236.00	22.40	36.19	11.68	31.97	38.30	54.00	-15.70	Vertical
9648.00	22.58	38.07	14.16	31.56	43.25	54.00	-10.75	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertica
4824.00	27.62	31.79	8.62	32.10	35.93	54.00	-18.07	Horizontal
7236.00	21.95	36.19	11.68	31.97	37.85	54.00	-16.15	Horizontal
9648.00	21.59	38.07	14.16	31.56	42.26	54.00	-11.74	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11g	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	38.43	31.85	8.66	32.12	46.82	74.00	-27.18	Vertical
7311.00	33.71	36.37	11.71	31.91	49.88	74.00	-24.12	Vertical
9748.00	33.32	38.27	14.25	31.56	54.28	74.00	-19.72	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	39.05	31.85	8.66	32.12	47.44	74.00	-26.56	Horizontal
7311.00	32.42	36.37	11.71	31.91	48.59	74.00	-25.41	Horizontal
9748.00	33.24	38.27	14.25	31.56	54.20	74.00	-19.80	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	29.35	31.85	8.66	32.12	37.74	54.00	-16.26	Vertical
7311.00	22.04	36.37	11.71	31.91	38.21	54.00	-15.79	Vertical
9748.00	22.59	38.27	14.25	31.56	43.55	54.00	-10.45	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	29.21	31.85	8.66	32.12	37.60	54.00	-16.40	Horizontal
7311.00	21.52	36.37	11.71	31.91	37.69	54.00	-16.31	Horizontal
9748.00	22.97	38.27	14.25	31.56	43.93	54.00	-10.07	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBμV/m)- limit (dBμV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	43.29	31.90	8.70	32.15	51.74	74.00	-22.26	Vertical
7386.00	33.96	36.49	11.76	31.83	50.38	74.00	-23.62	Vertical
9848.00	36.31	38.62	14.31	31.77	57.47	74.00	-16.53	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	42.84	31.90	8.70	32.15	51.29	74.00	-22.71	Horizontal
7386.00	32.99	36.49	11.76	31.83	49.41	74.00	-24.59	Horizontal
9848.00	32.54	38.62	14.31	31.77	53.70	74.00	-20.30	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	34.33	31.90	8.70	32.15	42.78	54.00	-11.22	Vertical
7386.00	23.91	36.49	11.76	31.83	40.33	54.00	-13.67	Vertical
9848.00	24.84	38.62	14.31	31.77	46.00	54.00	-8.00	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	33.29	31.90	8.70	32.15	41.74	54.00	-12.26	Horizontal
7386.00	22.40	36.49	11.76	31.83	38.82	54.00	-15.18	Horizontal
9848.00	21.82	38.62	14.31	31.77	42.98	54.00	-11.02	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11n(HT20)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	39.11	31.79	8.62	32.10	47.42	74.00	-26.58	Vertical
7236.00	33.47	36.19	11.68	31.97	49.37	74.00	-24.63	Vertical
9648.00	32.18	38.07	14.16	31.56	52.85	74.00	-21.15	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	37.97	31.79	8.62	32.10	46.28	74.00	-27.72	Horizontal
7236.00	33.32	36.19	11.68	31.97	49.22	74.00	-24.78	Horizontal
9648.00	31.80	38.07	14.16	31.56	52.47	74.00	-21.53	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	28.29	31.79	8.62	32.10	36.60	54.00	-17.40	Vertical
7236.00	22.37	36.19	11.68	31.97	38.27	54.00	-15.73	Vertical
9648.00	22.55	38.07	14.16	31.56	43.22	54.00	-10.78	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	27.57	31.79	8.62	32.10	35.88	54.00	-18.12	Horizontal
7236.00	21.92	36.19	11.68	31.97	37.82	54.00	-16.18	Horizontal
9648.00	21.57	38.07	14.16	31.56	42.24	54.00	-11.76	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11n(HT20)	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	38.38	31.85	8.66	32.12	46.77	74.00	-27.23	Vertical
7311.00	33.67	36.37	11.71	31.91	49.84	74.00	-24.16	Vertical
9748.00	33.29	38.27	14.25	31.56	54.25	74.00	-19.75	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	39.01	31.85	8.66	32.12	47.40	74.00	-26.60	Horizontal
7311.00	32.39	36.37	11.71	31.91	48.56	74.00	-25.44	Horizontal
9748.00	33.22	38.27	14.25	31.56	54.18	74.00	-19.82	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	29.30	31.85	8.66	32.12	37.69	54.00	-16.31	Vertical
7311.00	22.01	36.37	11.71	31.91	38.18	54.00	-15.82	Vertical
9748.00	22.56	38.27	14.25	31.56	43.52	54.00	-10.48	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	29.17	31.85	8.66	32.12	37.56	54.00	-16.44	Horizontal
7311.00	21.50	36.37	11.71	31.91	37.67	54.00	-16.33	Horizontal
9748.00	22.94	38.27	14.25	31.56	43.90	54.00	-10.10	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11n(HT20)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	43.20	31.90	8.70	32.15	51.65	74.00	-22.35	Vertical
7386.00	33.90	36.49	11.76	31.83	50.32	74.00	-23.68	Vertical
9848.00	36.27	38.62	14.31	31.77	57.43	74.00	-16.57	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	42.77	31.90	8.70	32.15	51.22	74.00	-22.78	Horizontal
7386.00	32.94	36.49	11.76	31.83	49.36	74.00	-24.64	Horizontal
9848.00	32.50	38.62	14.31	31.77	53.66	74.00	-20.34	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	34.25	31.90	8.70	32.15	42.70	54.00	-11.30	Vertical
7386.00	23.86	36.49	11.76	31.83	40.28	54.00	-13.72	Vertical
9848.00	24.80	38.62	14.31	31.77	45.96	54.00	-8.04	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	33.22	31.90	8.70	32.15	41.67	54.00	-12.33	Horizontal
7386.00	22.35	36.49	11.76	31.83	38.77	54.00	-15.23	Horizontal
9848.00	21.78	38.62	14.31	31.77	42.94	54.00	-11.06	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11n(HT40)	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	38.54	31.81	8.63	32.11	46.87	74.00	-27.13	Vertical
7266.00	33.11	36.28	11.69	31.94	49.14	74.00	-24.86	Vertical
9688.00	31.92	38.13	14.21	31.52	52.74	74.00	-21.26	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4844.00	37.48	31.81	8.63	32.11	45.81	74.00	-28.19	Horizontal
7266.00	33.00	36.28	11.69	31.94	49.03	74.00	-24.97	Horizontal
9688.00	31.56	38.13	14.21	31.52	52.38	74.00	-21.62	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4844.00	27.76	31.81	8.63	32.11	36.09	54.00	-17.91	Vertical
7266.00	22.01	36.28	11.69	31.94	38.04	54.00	-15.96	Vertical
9688.00	22.30	38.13	14.21	31.52	43.12	54.00	-10.88	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4844.00	27.11	31.81	8.63	32.11	35.44	54.00	-18.56	Horizontal
7266.00	21.61	36.28	11.69	31.94	37.64	54.00	-16.36	Horizontal
9688.00	21.33	38.13	14.21	31.52	42.15	54.00	-11.85	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11n(HT40)	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	37.90	31.85	8.66	32.12	46.29	74.00	-27.71	Vertical
7311.00	33.37	36.37	11.71	31.91	49.54	74.00	-24.46	Vertical
9748.00	33.08	38.27	14.25	31.56	54.04	74.00	-19.96	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	38.60	31.85	8.66	32.12	46.99	74.00	-27.01	Horizontal
7311.00	32.13	36.37	11.71	31.91	48.30	74.00	-25.70	Horizontal
9748.00	33.02	38.27	14.25	31.56	53.98	74.00	-20.02	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	28.86	31.85	8.66	32.12	37.25	54.00	-16.75	Vertical
7311.00	21.72	36.37	11.71	31.91	37.89	54.00	-16.11	Vertical
9748.00	22.35	38.27	14.25	31.56	43.31	54.00	-10.69	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	28.79	31.85	8.66	32.12	37.18	54.00	-16.82	Horizontal
7311.00	21.24	36.37	11.71	31.91	37.41	54.00	-16.59	Horizontal
9748.00	22.75	38.27	14.25	31.56	43.71	54.00	-10.29	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Test mode:	802.11n(HT40)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	42.37	31.88	8.68	32.13	50.80	74.00	-23.20	Vertical
7356.00	33.38	36.45	11.75	31.86	49.72	74.00	-24.28	Vertical
9808.00	35.90	38.43	14.29	31.68	56.94	74.00	-17.06	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4904.00	42.07	31.88	8.68	32.13	50.50	74.00	-23.50	Horizontal
7356.00	32.48	36.45	11.75	31.86	48.82	74.00	-25.18	Horizontal
9808.00	32.15	38.43	14.29	31.68	53.19	74.00	-20.81	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal

Average value:

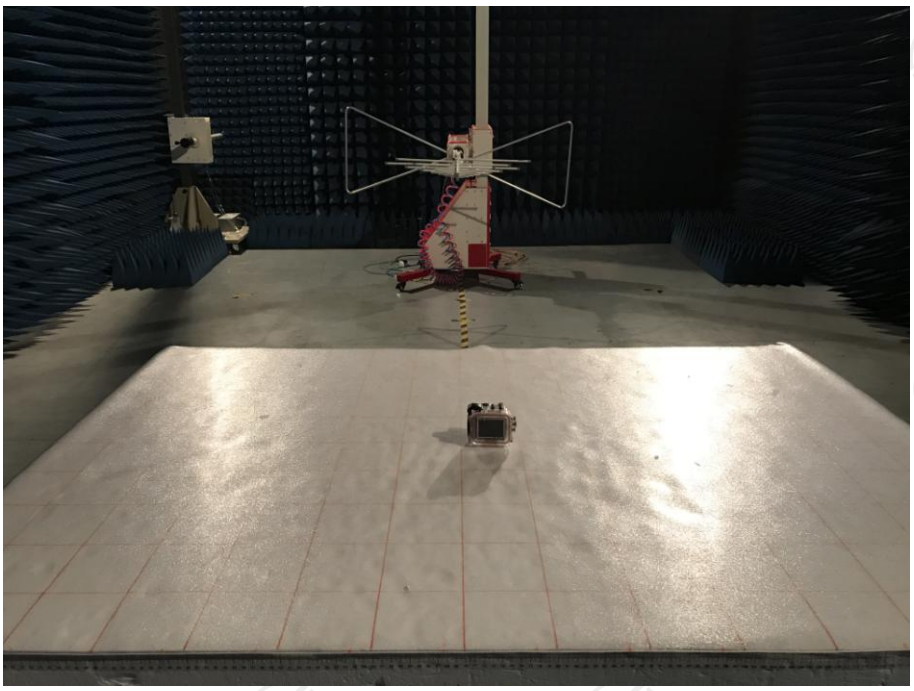
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	33.48	31.88	8.68	32.13	41.91	54.00	-12.09	Vertical
7356.00	23.35	36.45	11.75	31.86	39.69	54.00	-14.31	Vertical
9808.00	24.44	38.43	14.29	31.68	45.48	54.00	-8.52	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4904.00	32.56	31.88	8.68	32.13	40.99	54.00	-13.01	Horizontal
7356.00	21.91	36.45	11.75	31.86	38.25	54.00	-15.75	Horizontal
9808.00	21.45	38.43	14.29	31.68	42.49	54.00	-11.51	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

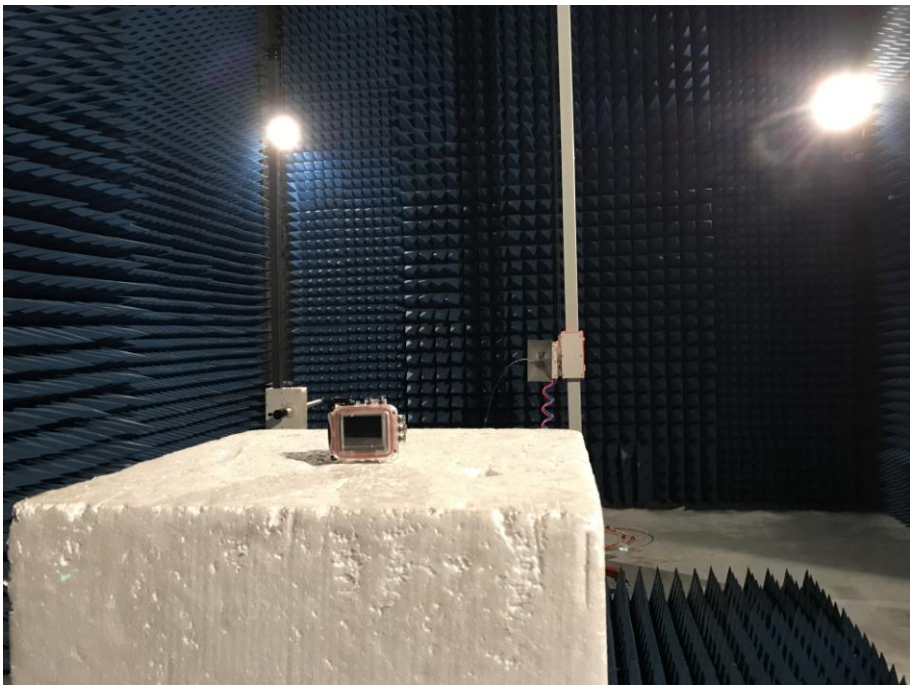
Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (dBµV/m)- limit (dBµV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown " * "in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*

Appendix A: Photographs of Test Setup

Product: Sport DV
Model: X4K
Radiated Emission

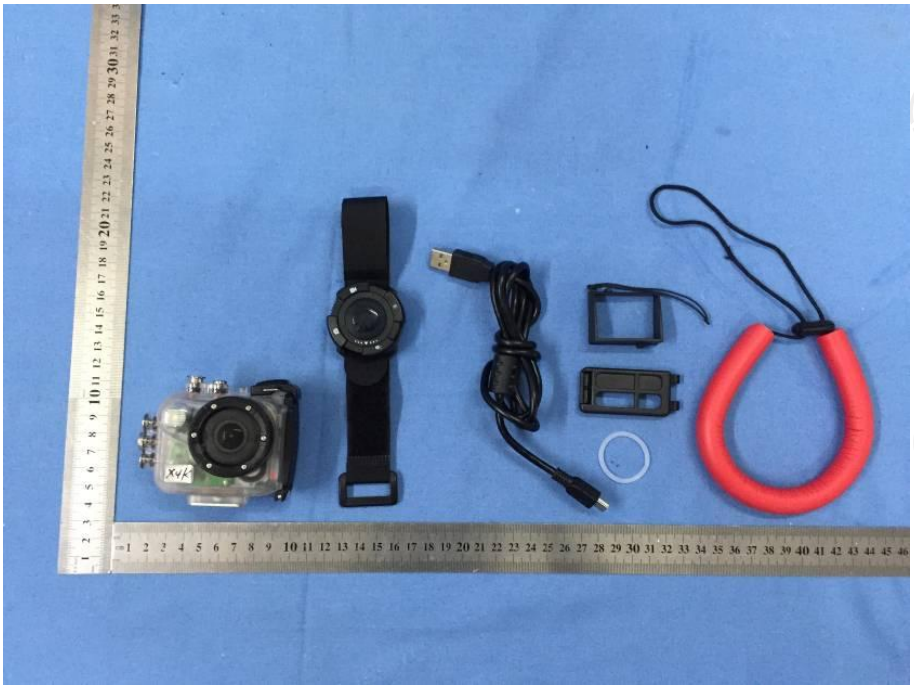


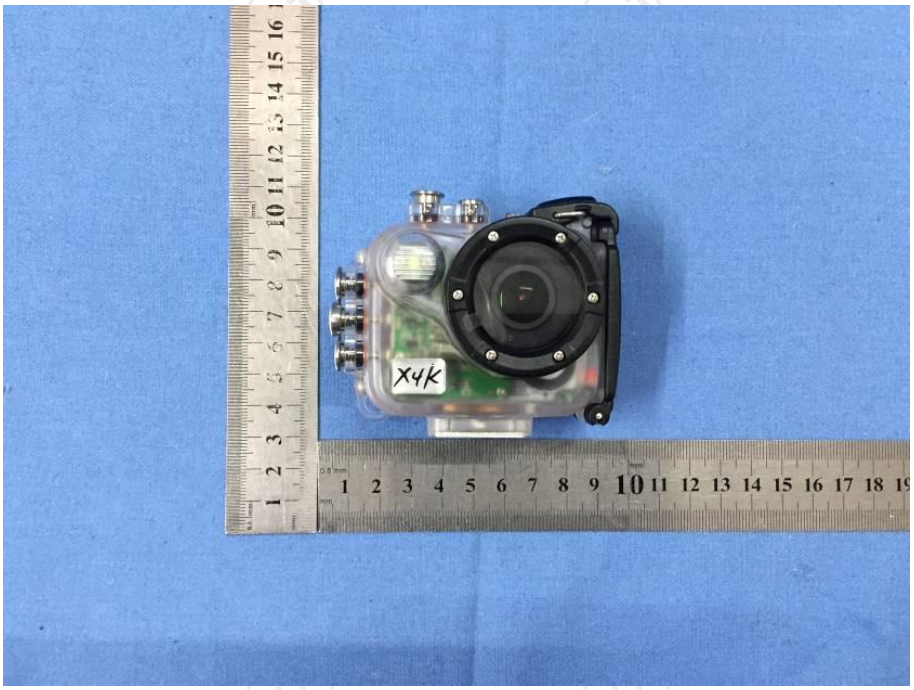


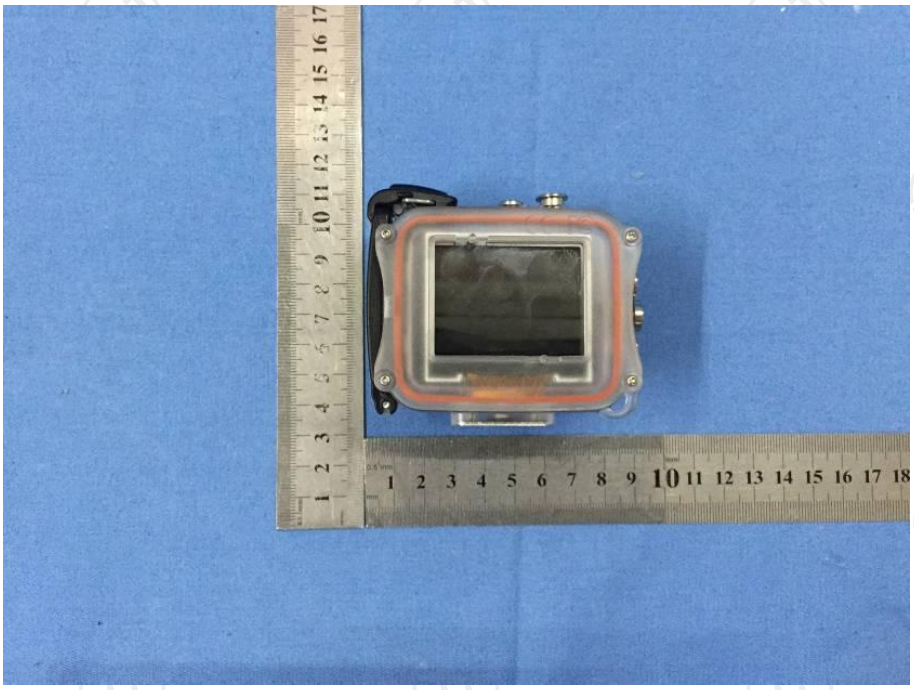
Conducted Emission

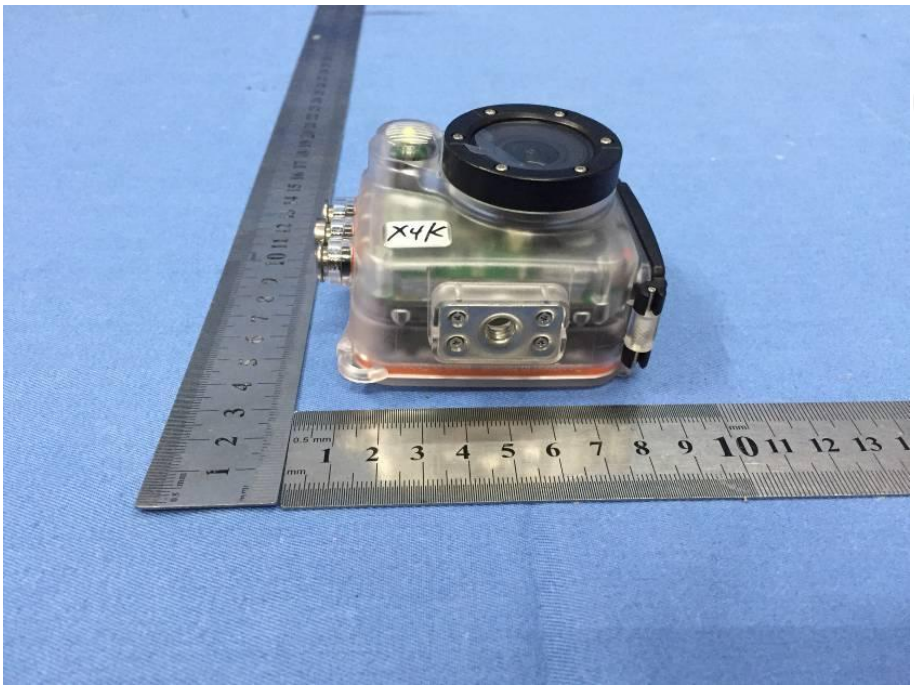
Appendix B: Photographs of EUT

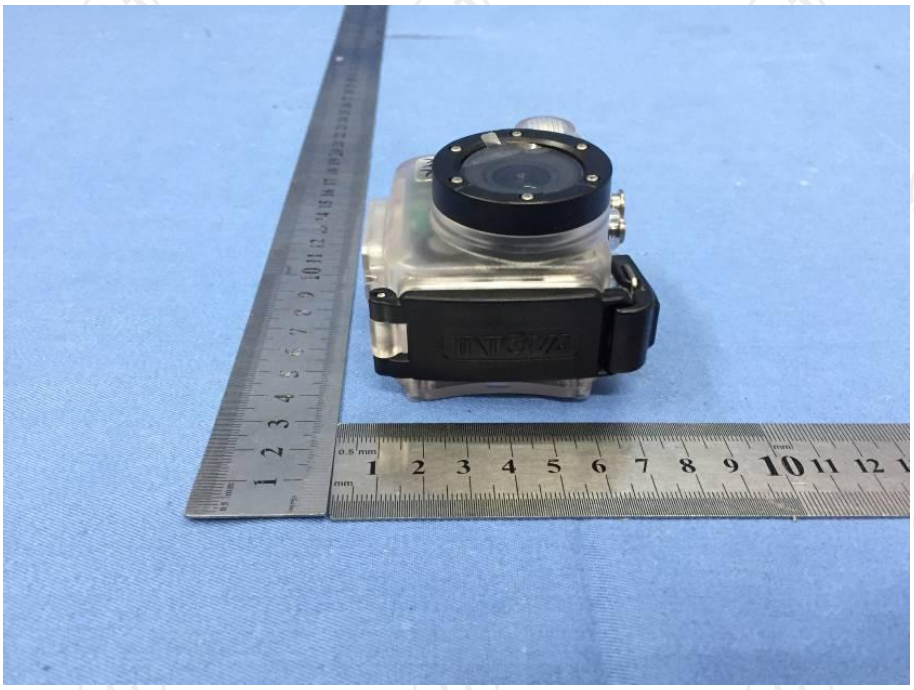
Product: Sport DV
Model: X4K
External Photos

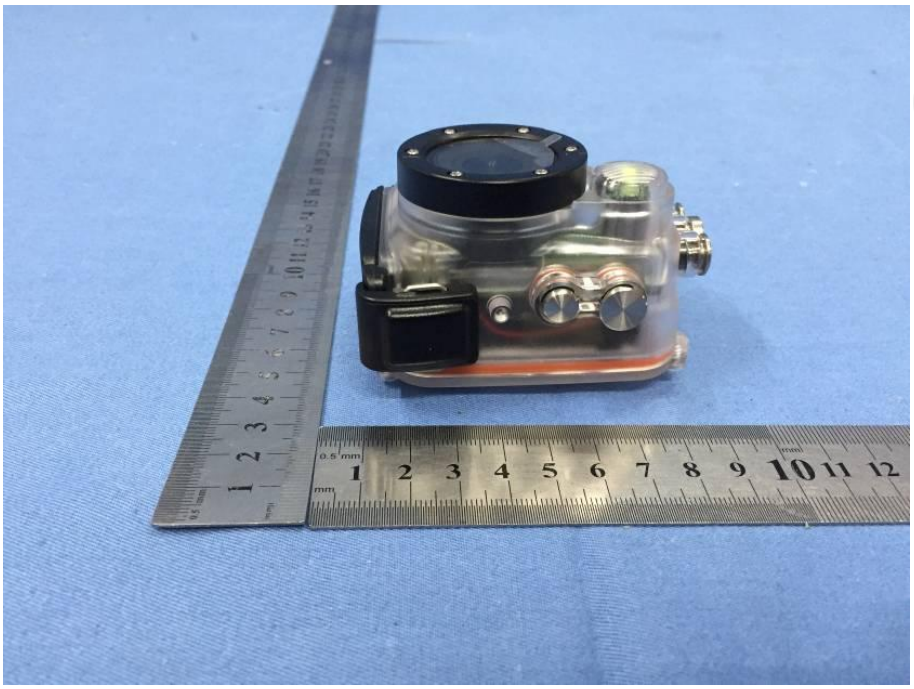


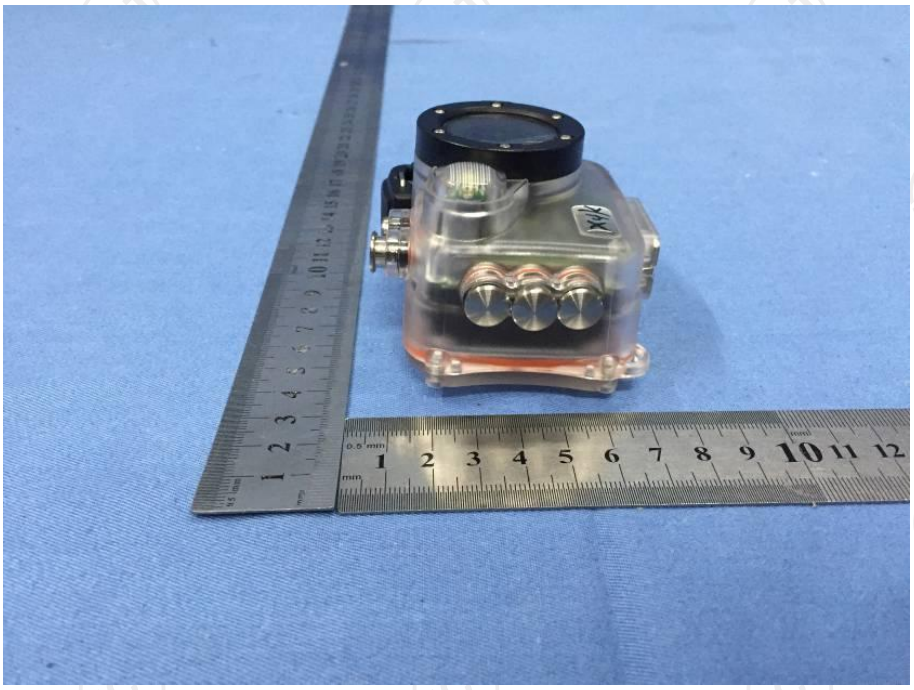


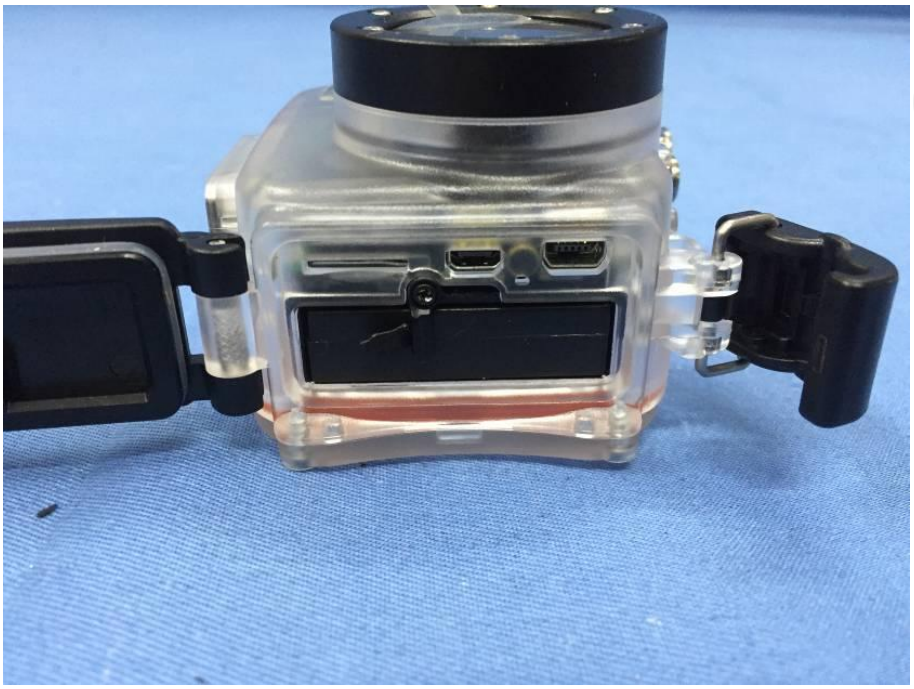



X4K

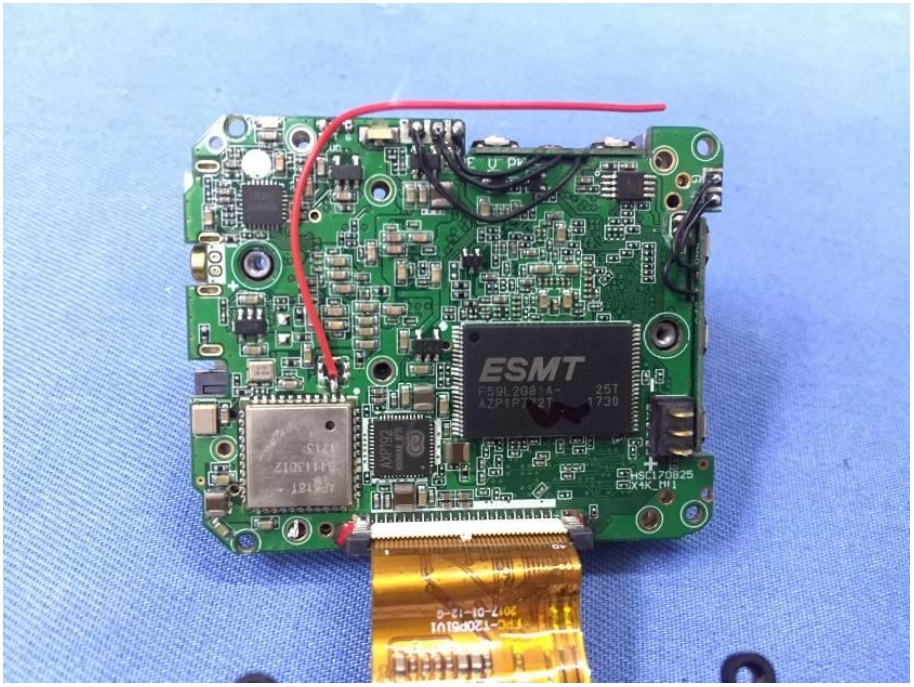




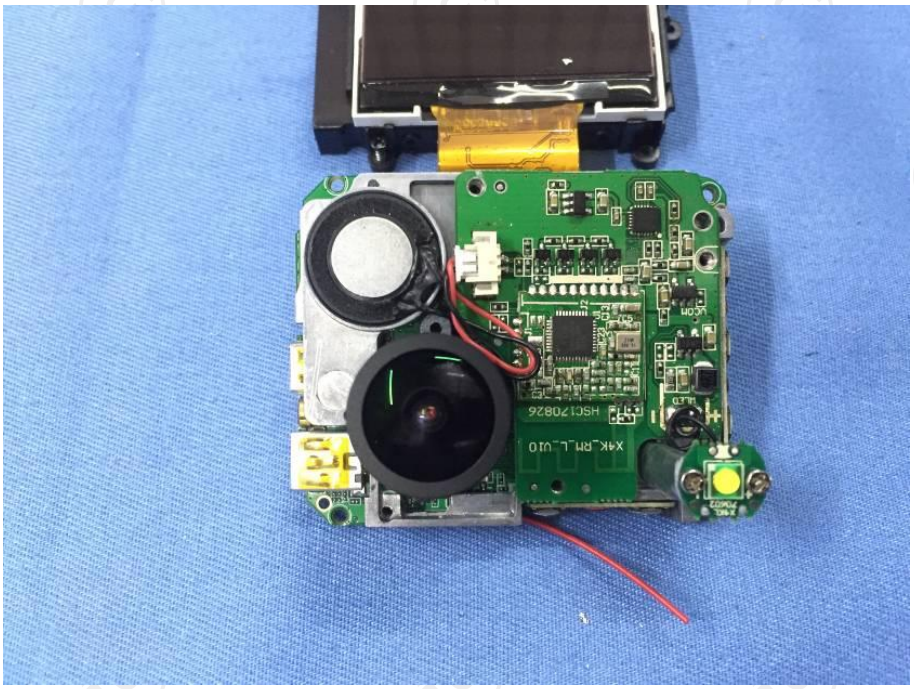


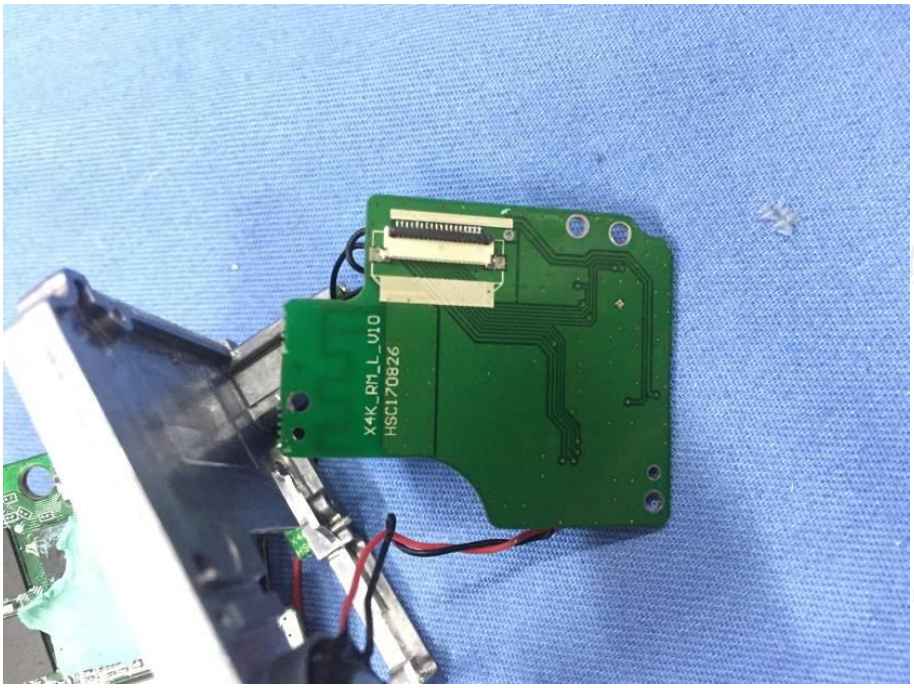


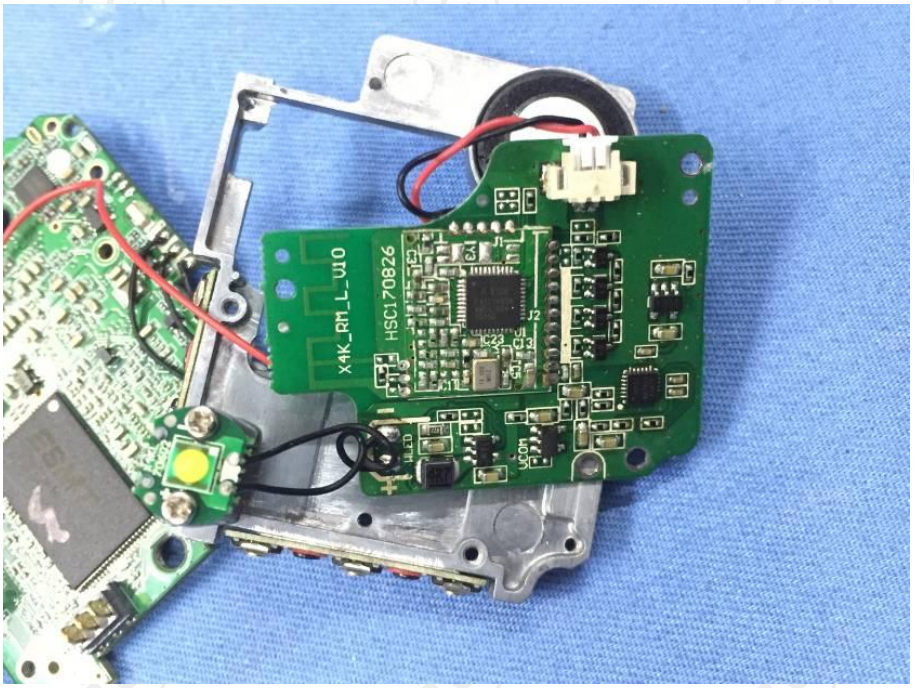
Product: Sport DV
Model: X4K
Internal Photos

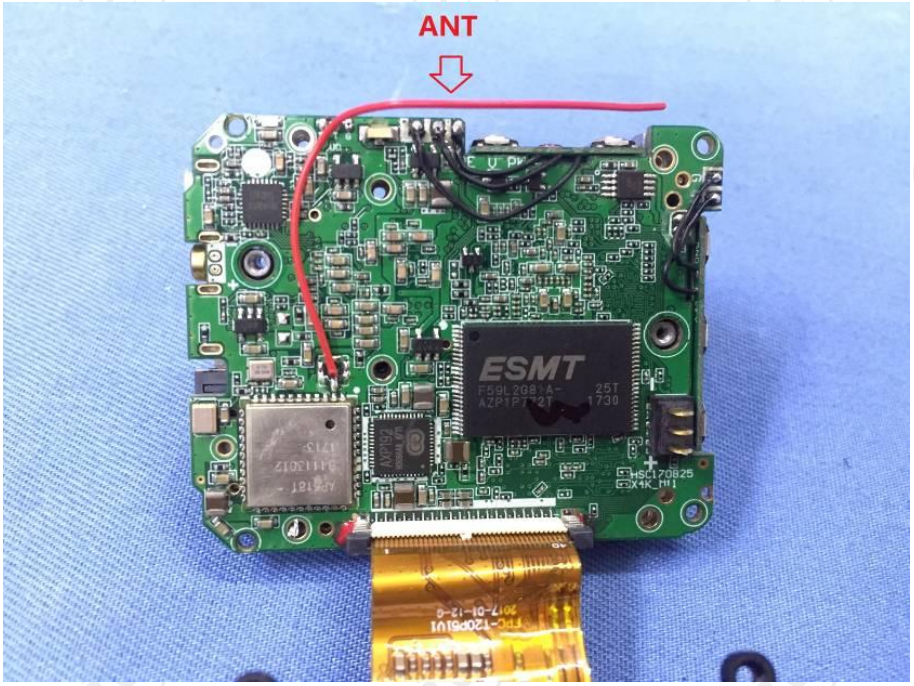


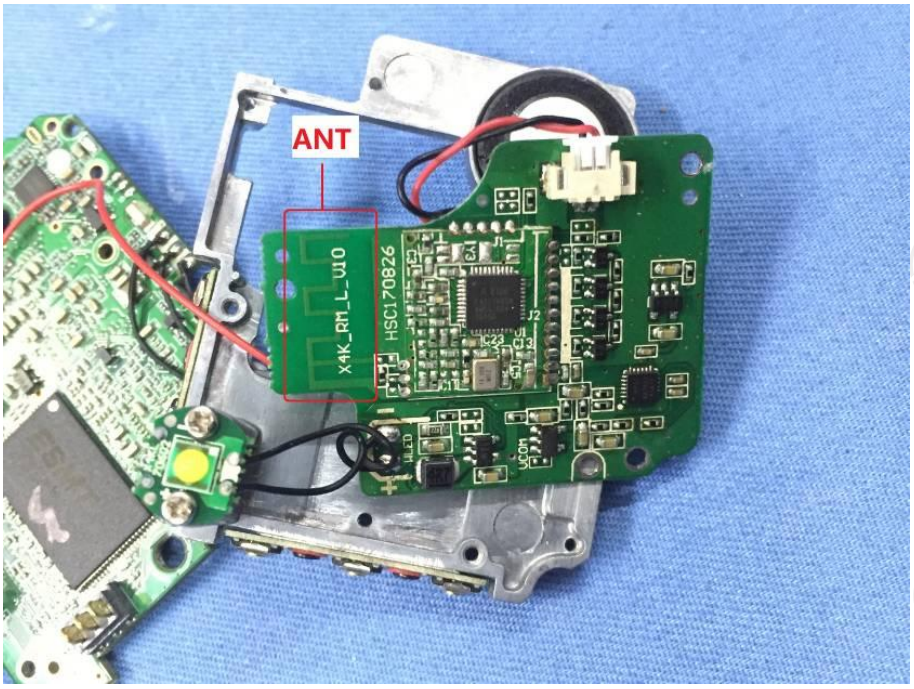
ESMT




X4K_RM_L_V10
HSC170826


X4K_RM_L_V10
HSC170826


ANT
ESMT



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