FCC TEST REPORT

For

Honest Technology

Module

Model No.: HT-WiFi B02

Prepared for	:	Honest Technology
Address	:	Kyung-Dong Bldg., 5F, 906-5, Jijok-Dong, Yuseong-Gu, Daejeon, South Korea
Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	:	1F., Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an District, Shenzhen, Guangdong, China
Date of receipt of test sample	:	December 15, 2014
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	December 15, 2014 - December 23, 2014
Date of Report	:	December 23, 2014

FCC TEST REPORT
FCC CFR 47 PART 15 E(15.407)

Report Reference No.	**:**	**LCS1412221112E**
Date of Issue	:	December 23, 2014
Testing Laboratory Name.....	**:**	**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address	:	1F., Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure.....	:	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name.....	**:**	**Honest Technology**
Address	:	Kyung-Dong Bldg., 5F, 906-5, Jijok-Dong, Yuseong-Gu, Daejeon, South Korea
Test Specification		
Standard	:	FCC CFR 47 PART 15 E(15.407)
Test Report Form No.....	**:**	LCSEMC-1.0
TRF Originator	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF	:	Dated 2011-03

Test Item Description.	**:**	**Module**
Trade Mark	:	HT
Model/ Type reference.....	:	HT-WiFi B02
Ratings	:	DC 5.0V,460mA
Result	:	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Jacky Li/ File administrators	Danny Huang/ Technique principal	Gavin Liang/ Manager

FCC -- TEST REPORT

Test Report No. : LCS1412221112E	December 23, 2014 Date of issue

Type / Model.....	: HT-WiFi B02
EUT.....	: Module
Applicant.....	**: Honest Technology**
Address.....	: Kyung-Dong Bldg., 5F, 906-5, Jijok-Dong, Yuseong-Gu, Daejeon, South Korea
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: Shenzhen Createk Technology Co.,Ltd**
Address.....	: 4/F,Block D,Yunsheng Industrial, Tangtou Third Industrial Shiyan Street,Baoan District,Shenzhen.GD.China.
Telephone.....	: /
Fax.....	: /
Factory.....	**: Shenzhen Createk Technology Co.,Ltd**
Address.....	: 4/F,Block D,Yunsheng Industrial, Tangtou Third Industrial Shiyan Street,Baoan District,Shenzhen.GD.China.
Telephone.....	: /
Fax.....	: /

Test Result:	**Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Module
Model Number	:	HT-WiFi B02
Power Supply	:	DC 5.0V,460mA
Frequency Range	:	5745.00-5805.00MHz
Channel Number	:	4 Channels for 5745.00-5805.00MHz
Modulation Technology	:	IEEE 802.11a: OFDM (64QAM, 16QAM,QPSK,BPSK)
Data Rates	:	IEEE 802.11a: 6-54Mbps
Antenna Gain	:	Integral antenna Chain 0: 5.0dBi(Max.) Chain 1: 5.0dBi(Max.)

1.2. Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	Certificate
Lenovo	Notebook	B470	--	DoC

1.3. External I/O Port

I/O Port Description	Quantity	Cable
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1.4. Description of Test Facility

Site Description EMC Lab. :

Accredited by CNAS, June 04, 2010
The Certificate Registration Number. is L4595.
Accredited by FCC, July 14, 2011
The Certificate Registration Number. is 899208.
Accredited by Industry Canada, May. 02, 2011
The Certificate Registration Number. is 9642A-1
Accredited by VCCI, Japan January 30, 2012
The Certificate Registration Number. is C-4260 and R-3804
Accredited by ESMD, April 24, 2012
The Certificate Registration Number. is ARCB0108.
Accredited by UL, June 11, 2012
The Certificate Registration Number. is 100571-492.
Accredited by TUV, November 21, 2012
The Certificate Registration Number. is SCN1081
Accredited by Intertek, December 21, 2012
The Certificate Registration Number. is 2011-RTL-L1-50.

1.5. Statement of The Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.6. Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Radiation Uncertainty	:	9KHz~30MHz	±3.10dB	(1)
		30MHz~200MHz	±2.96dB	(1)
		200MHz~1000MHz	±3.10dB	(1)
		1GHz~26.5GHz	±3.80dB	(1)
		26.5GHz~40GHz	±3.90dB	(1)
Conduction Uncertainty	:	150kHz~30MHz	±1.63dB	(1)
Power disturbance	:	30MHz~300MHz	±1.60dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.7. Description Of Test Modes

The EUT has been tested under operating condition.

This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.

Worst-Case data rates were utilized from preliminary testing of the Chipset, worst-case data rates used during the testing are as follows:
802.11a Mode : 6 Mbps, OFDM.

Antenna & Bandwidth

Antenna	Single (Port.1)		Two (Port.1 + Port.2)	
Bandwidth Mode	20MHz	40MHz	20MHz	40MHz
802.11a	☐	☐	☑	☐

2. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen LCS Compliance Testing Laboratory Ltd..

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to FCC's request, Test Procedure KDB789033 and KDB 6622911 are required to be used for this kind of FCC 15.407 UII device.

According to its specifications, the EUT must comply with the requirements of the Section 15.203, 15.205, 15.207, 15.209 and 15.407 under the FCC Rules Part 15 Subpart E

2.3. General Test Procedures

2.3.1 Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements of ANSI C63.4

3. SYSTEM TEST CONFIGURATION

3.1. Justification

The system was configured for testing in a continuous transmit condition.

3.2. EUT Exercise Software

N/A

3.3. Special Accessories

N/A

3.4. Block Diagram/Schematics

Please refer to the related document

3.5. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6. Test Setup

Please refer to the test setup photo.

4. SUMMARY OF TEST RESULTS

Applied Standard: FCC Part 15 Subpart E		
FCC Rules	**Description of Test**	**Result**
§15.407(a)	Maximum Conducted Output Power	Compliant
§15.407(a)	Power Spectral Density	Compliant
§15.407(e)	6dB Bandwidth	Compliant
§15.407(a)	Peak Excursion	Compliant
§15.407(b)	Radiated Emissions	Compliant
§15.407(b)	Band edge Emissions	Compliant
§15.407(g)	Frequency Stability	Note
§15.207(a)	Line Conducted Emissions	Compliant
§15.203	Antenna Requirements	Compliant
§2.1093	RF Exposure	Compliant

Note: The customer declared frequency stability is better than 20ppm which ensures that the signal remains in the allocated bands under all operational conditions stated in the user manual.

5. TEST RESULT

5.1. Maximum Conducted Output Power Measurement

5.1.1. Standard Applicable

For 5745~5805MHz

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

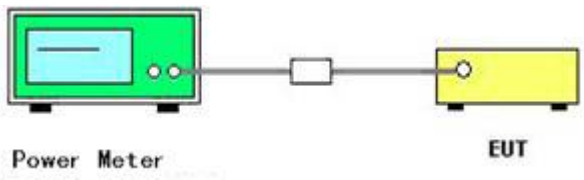
5.1.2. Measuring Instruments and Setting

Please refer to section 6 of equipments list in this report. The following table is the setting of the power meter.

5.1.3. Test Procedures

The transmitter output (antenna port) was connected to the power sensor. Read the test result from the power meter and record it.

5.1.4. Test Setup Layout



5.1.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.1.6. Test Result of Maximum Conducted Output Power

Temperature	25°C	Humidty	60%
Test Engineer	Jacky	Configurations	802.11a

802.11a

Channel	Frequency (MHz)	AV Conducted Power (dBm)		Sum Power (dBm)	Max. Limit (dBm)	Result
		Chain0	Chain1			
149	5745	17.67	16.64	20.20	30	Complies
157	5785	18.29	16.32	20.43	30	Complies
161	5805	17.98	17.42	20.72	30	Complies

5.2. Power Spectral Density Measurement

5.2.1. Standard Applicable

The power spectral density is defined as the highest level of power in dBm per MHz generated by the transmitter within the power envelope. The power spectral density limits as show follow.

Frequency range(MHz)	Power Spectral Density Limit
5725~5850	30 dBm/500kHz

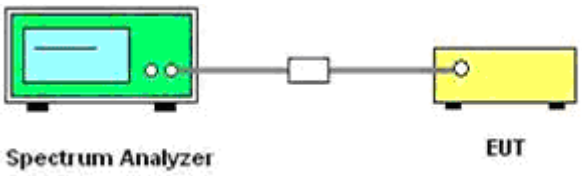
5.2.2. Measuring Instruments and Setting

Please refer to section 6 of equipments list in this report. The following table is the setting of Spectrum Analyzer.

5.2.3. Test Procedures

1. The transmitter was connected directly to a Spectrum Analyzer through a directional couple.
2. The power was monitored at the coupler port with a Spectrum Analyzer. The power level was set to the maximum level.
3. Set the RBW = 300 kHz.
4. Set the VBW ≥ 3*RBW
5. Span=Encompass the entire emissions bandwidth (EBW) of the signal
6. Detector = peak.
7. Sweep time = auto couple.
8. Trace mode = max hold.
9. Allow trace to fully stabilize.
10. Use the peak marker function to determine the maximum power level in any 1MHz band segment within the fundamental EBW.

5.2.4. Test Setup Layout



5.2.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.2.6. Test Result of Power Spectral Density

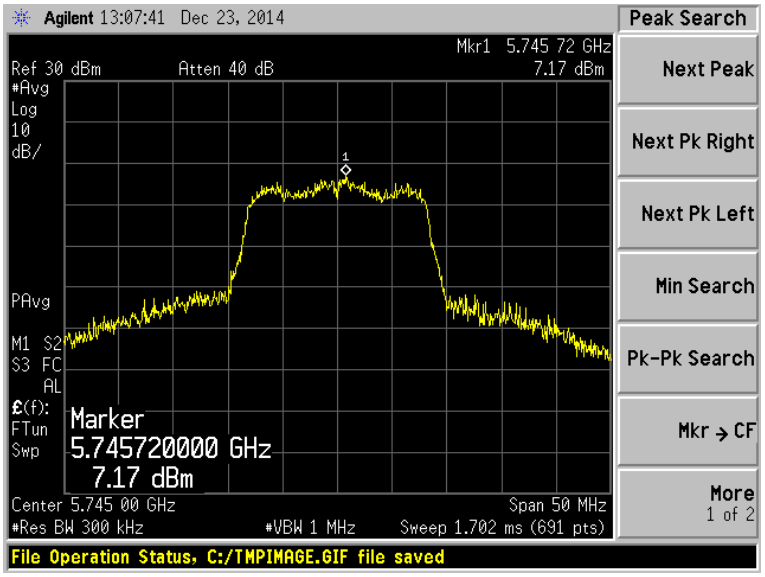
Temperature	25°C	Humidity	60%
Test Engineer	Jacky	Configurations	802.11a

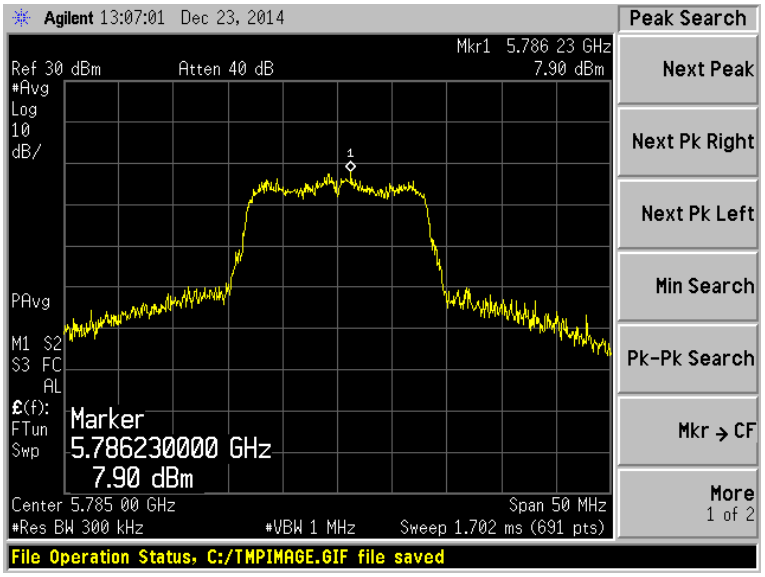
802.11a

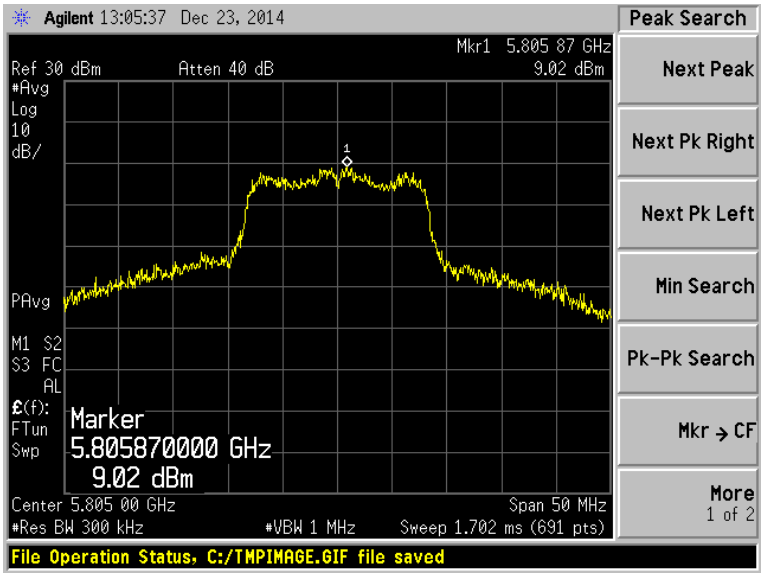
Channel	Frequency (MHz)	Power Density (dBm/300kHz)		10log(500kHz/RBW) Factor (dB)	Duty cycle factor (dB)	Sum PSD (dBm/500 kHz)	Max. Limit (dBm/500kHz)	Result
		Chain0	Chain1					
149	5745	7.17	4.33	2.22	0.17	11.55	30	Complies
157	5785	7.90	4.30	2.22	0.17	12.03	30	Complies
161	5805	9.02	5.32	2.22	0.17	13.12	30	Complies

Duty cycle factor=10log(Ton/Tperiod)=10log[1/(0.985/1.025)]dB=0.17dB

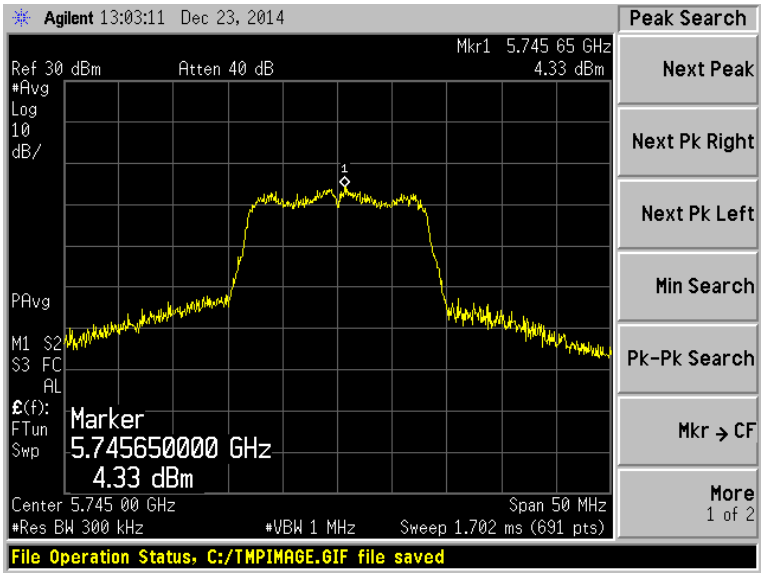
802.11a channel power density-Chain 0

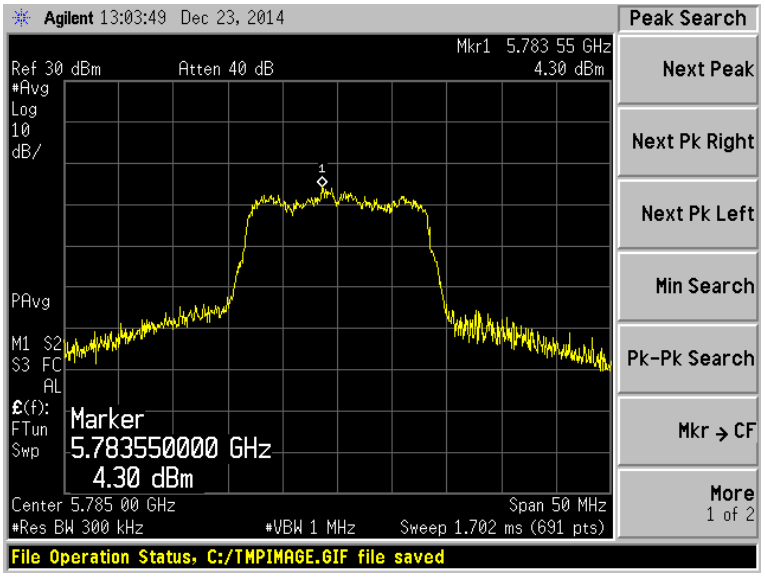


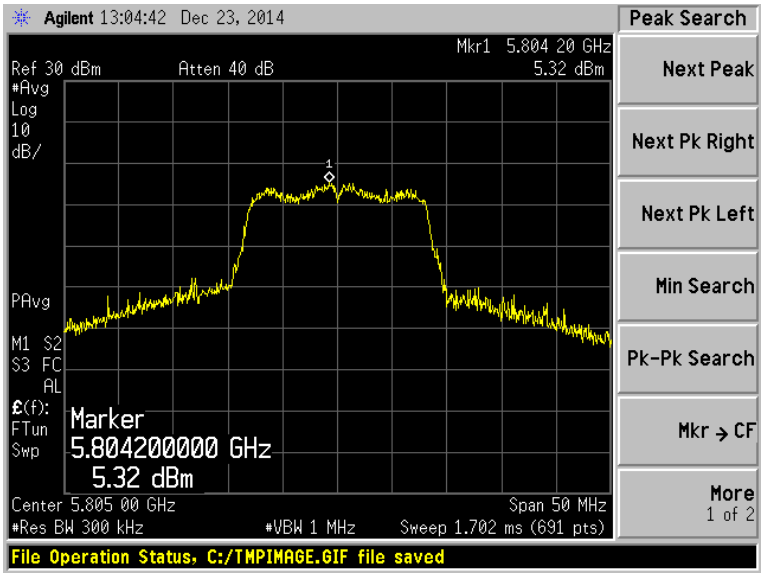




802.11a channel power density-Chain 1







5.3. 6dB Occupied Bandwidth Measurement

5.3.1. Standard Applicable

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.3.2. Measuring Instruments and Setting

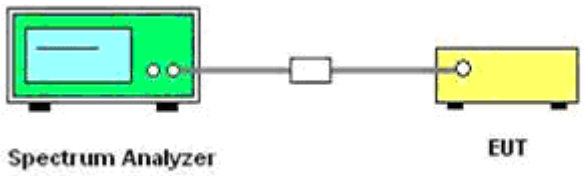
Please refer to section 6 of equipments list in this report. The following table is the setting of the Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span	> 26dB Bandwidth
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 100 kHz and the video bandwidth of 300 kHz were used.
3. Measured the spectrum width with power higher than 6dB below carrier.

5.3.4. Test Setup Layout



5.3.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.3.6. Test Result of 6dB Occupied Bandwidth

Temperature	25°C	Humidity	60%
Test Engineer	Jacky	Configurations	802.11a

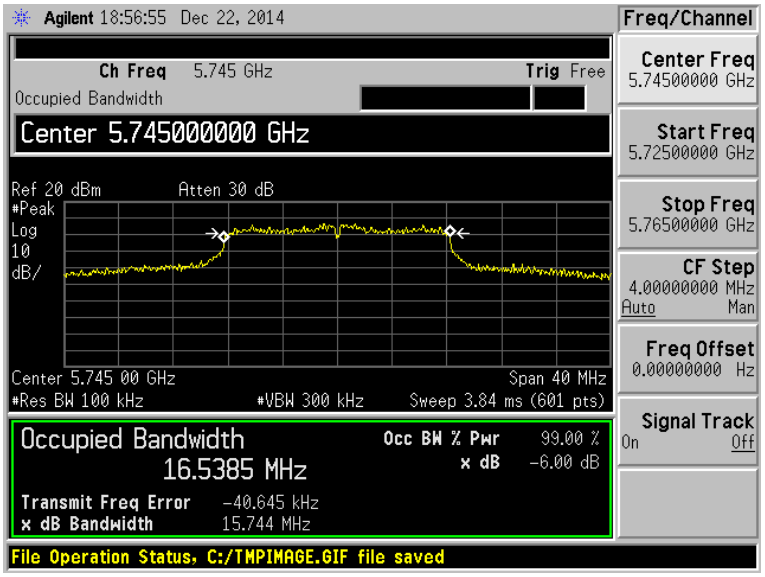
802.11a-Chain 0

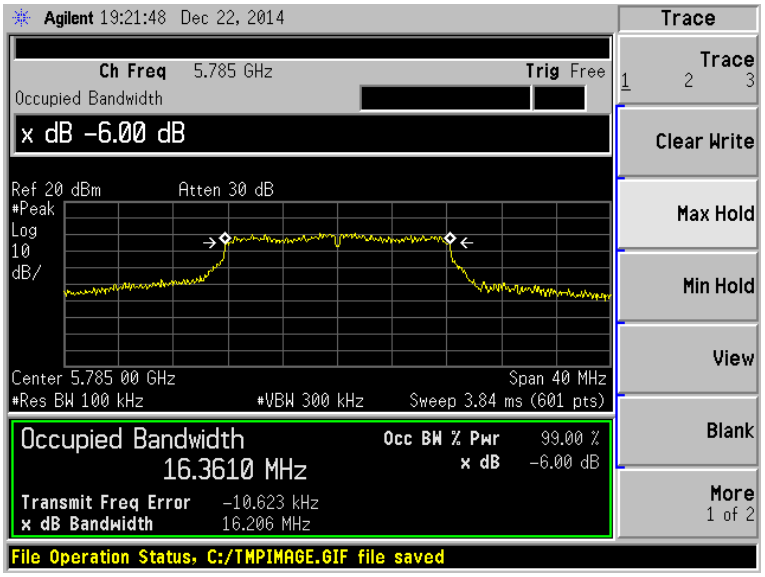
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
149	5745	15.744	0.5
157	5785	16.206	0.5
161	5805	15.469	0.5

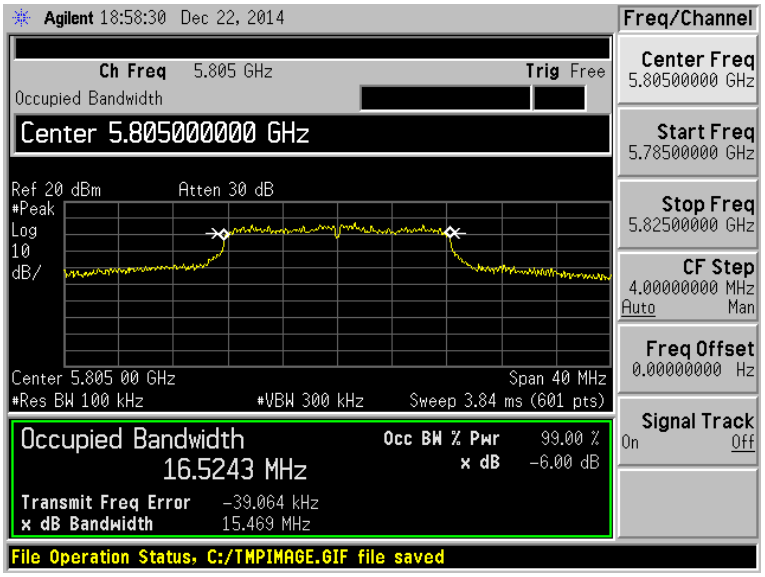
802.11a-Chain 1

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
149	5745	16.131	0.5
157	5785	16.213	0.5
161	5805	16.097	0.5

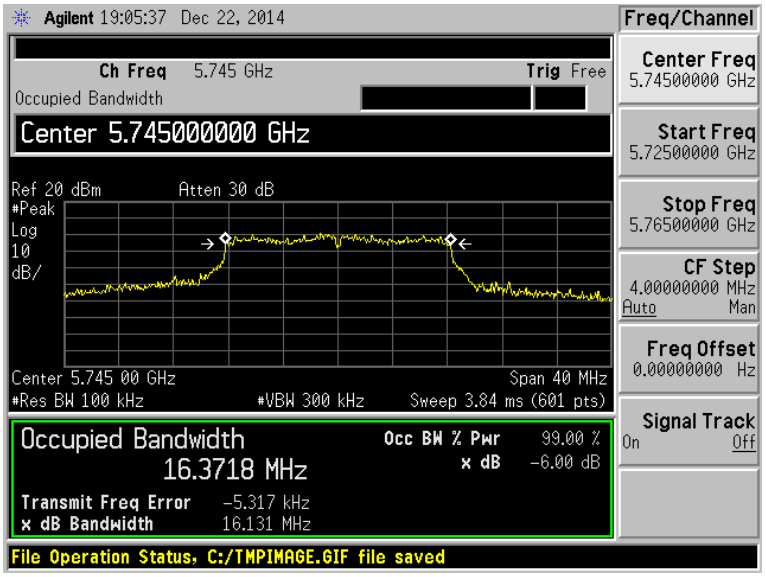
802.11a 6dB Occupied Bandwidth -Chain 0

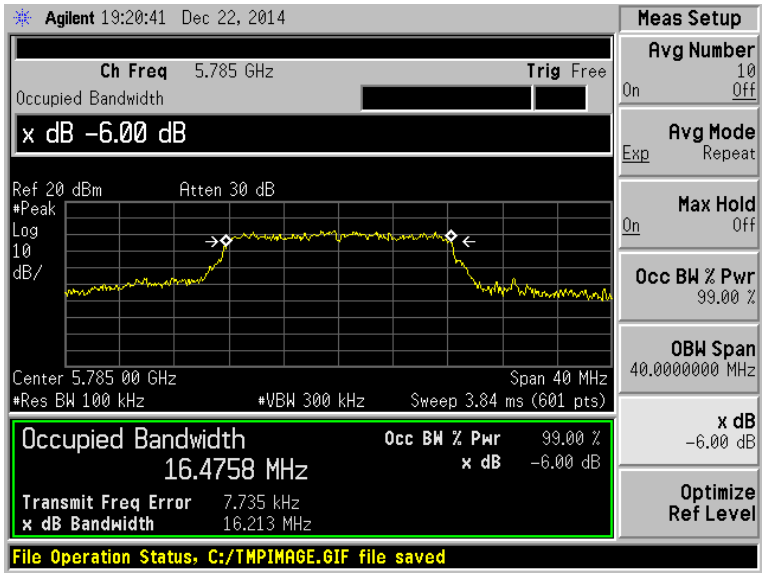


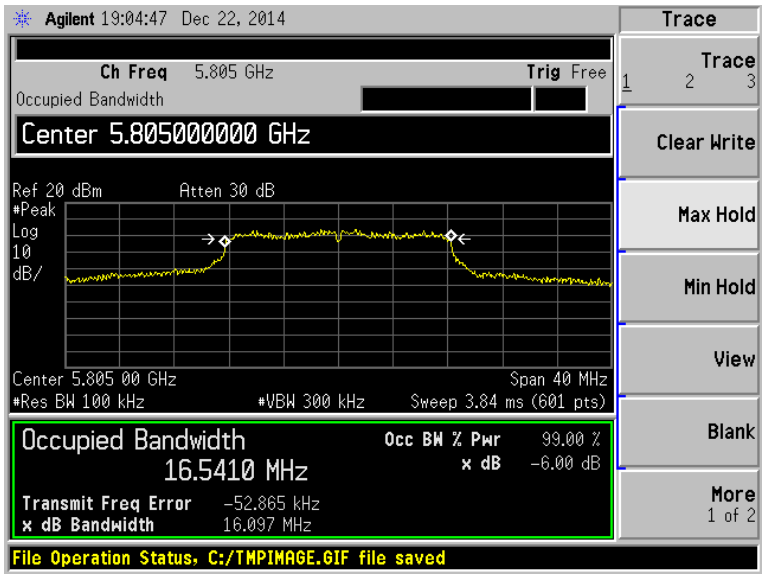




802.11a 6dB Occupied Bandwidth -Chain 1







5.4. Peak Excursion Measurement

5.4.1. Standard Applicable

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emissions bandwidth whichever is less.

5.4.2. Measuring Instruments and Setting

Please refer to section 6 of equipments list in this report. The following table is the setting of the Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1000 kHz (Peak Trace) / 1000 kHz (Average Trace)
VBW	3000 kHz (Peak Trace) / 300 kHz (Average Trace)
Detector	Peak (Peak Trace) / Sample (Average Trace)
Trace	Max Hold
Sweep Time	Auto

5.4.3. Test Procedures

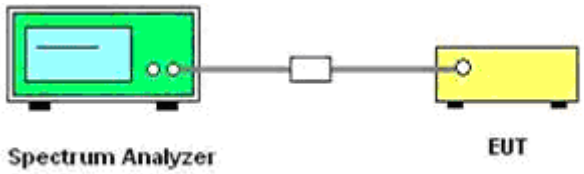
1. The transmitter output is connected to the spectrum analyzer.

2. Trace A, Set RBW =1MHz, VBW = 3MHz, Span >26dB bandwidth, Max. hold.

3. Delta Mark trace A Maximum frequency and trace B same frequency.

4. Repeat the above procedure until measurements for all frequencies were complete.

5.4.4. Test Setup Layout



5.4.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.4.6. Test Result of Peak Excursion

Temperature	25°C	Humidity	60%
Test Engineer	Jacky	Configurations	802.11a

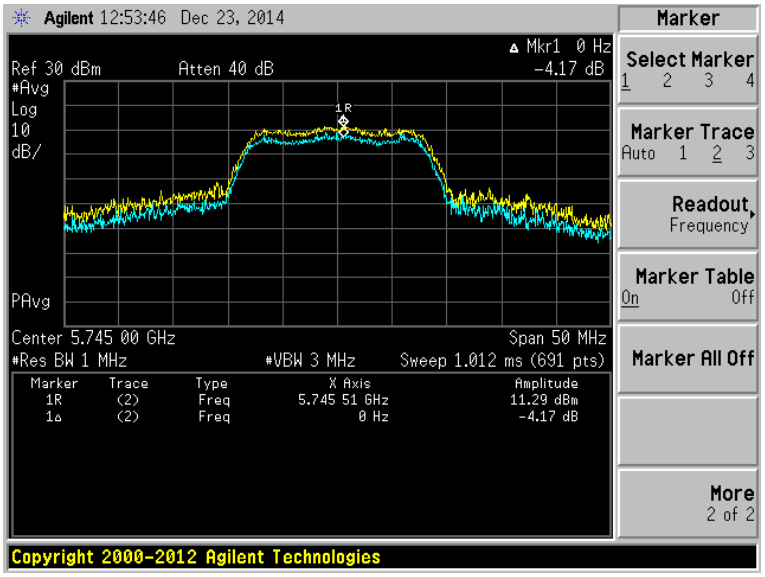
802.11a-Chain 0

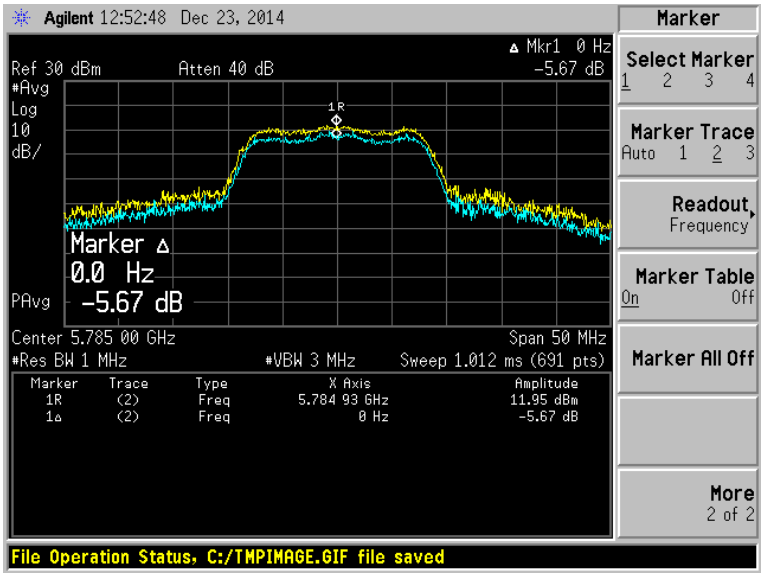
Channel	Frequency (MHz)	Peak Excursion (dB)	Max. Limit (dB)	Result
149	5745	4.17	13	Complies
157	5785	5.67	13	Complies
161	5805	4.40	13	Complies

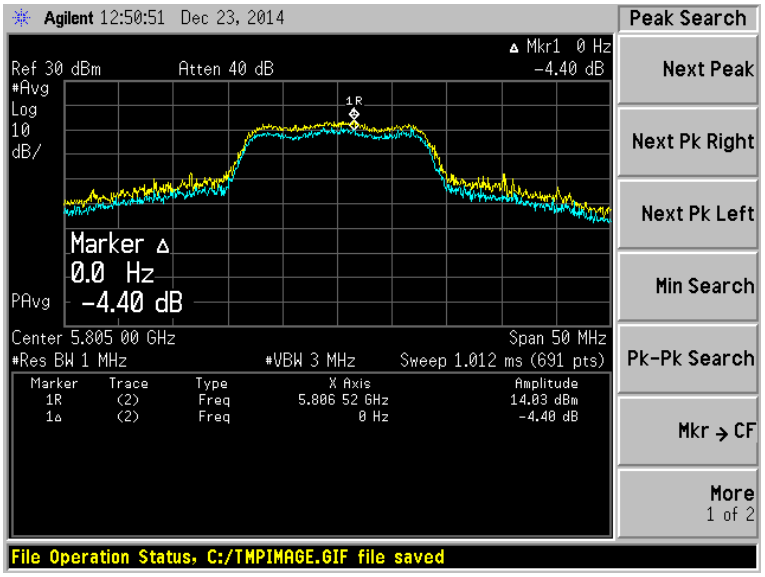
802.11a-Chain 1

Channel	Frequency (MHz)	Peak Excursion (dB)	Max. Limit (dB)	Result
149	5745	5.11	13	Complies
157	5785	3.46	13	Complies
161	5805	5.68	13	Complies

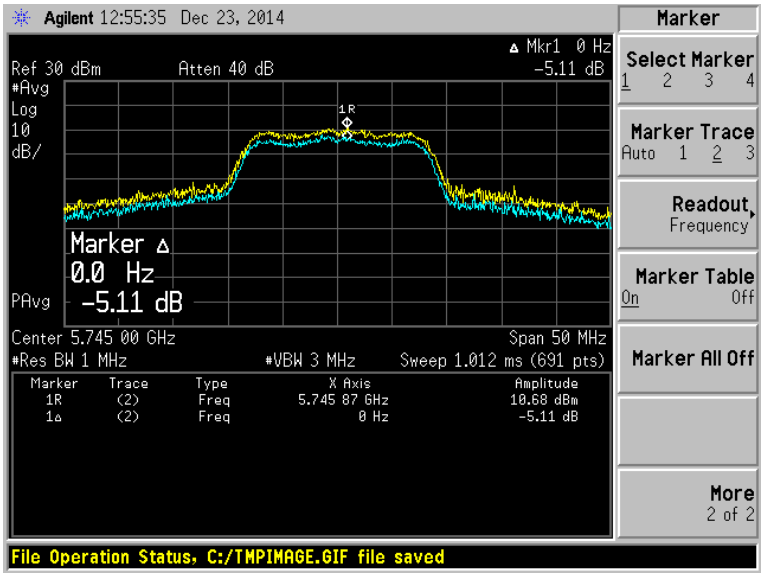
802.11a-Chain 0

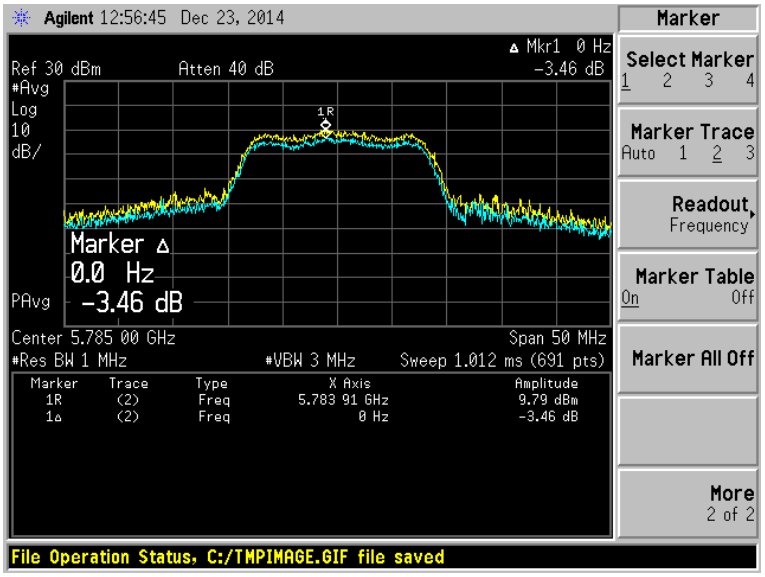


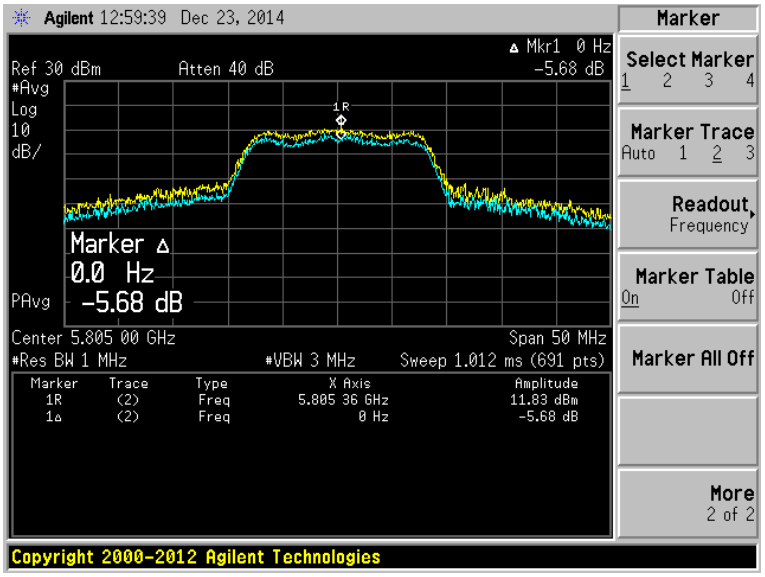




802.11a-Chain 1







5.5. Radiated Emissions Measurement

5.5.1. Standard Applicable

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBuV/m at 3m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies(MHz)	Field Strength(microvolts/meter)	Measurement Distance(meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

5.5.2. Measuring Instruments and Setting

Please refer to section 6 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 100kHz for QP

5.5.3. Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.

2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.

4. For each suspected emissions, the antenna tower was scan (from 1 m to 4 m) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading

5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.

6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.

7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

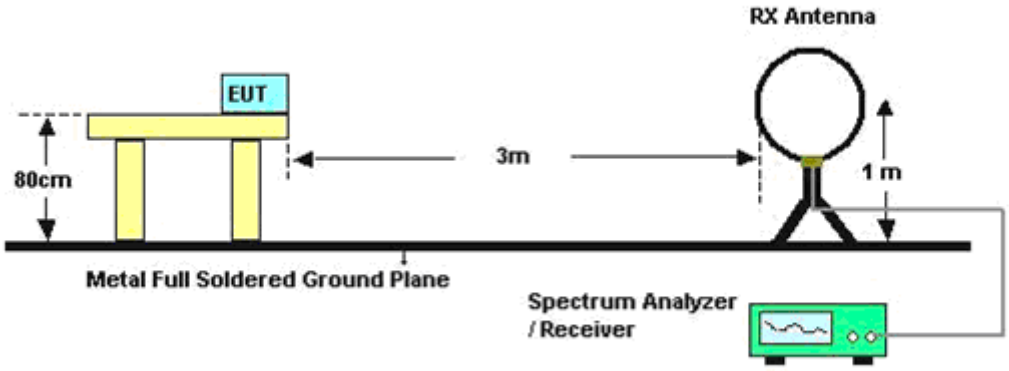
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.

9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

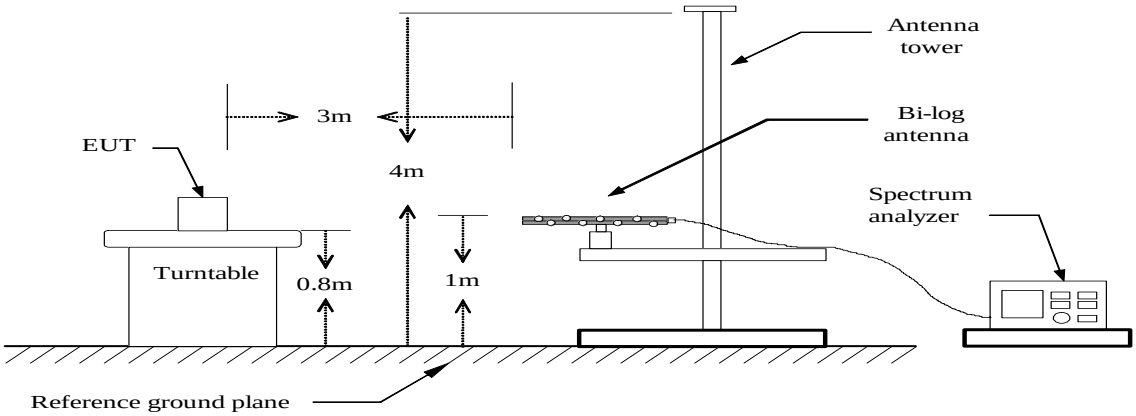
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

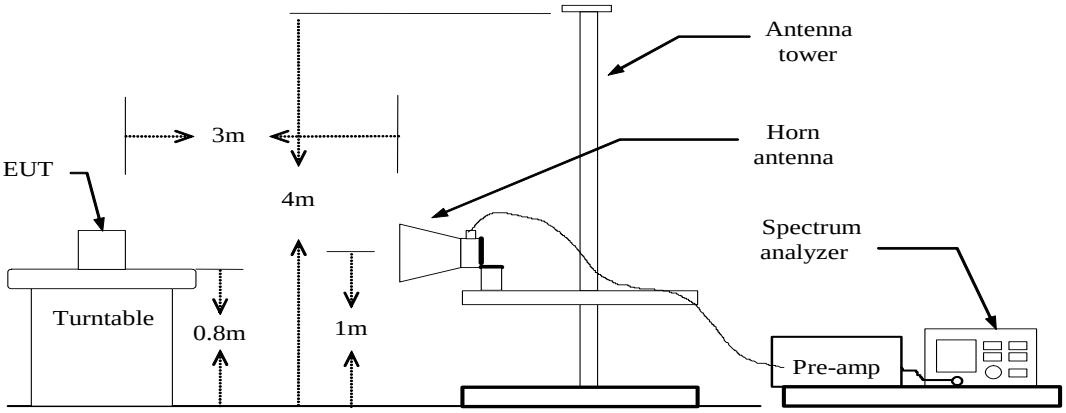
5.5.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz





Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [6 dB].

5.5.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.5.6. Results of Radiated Emissions (9kHz~30MHz)

Temperature	25℃	Humidty	60%
Test Engineer	Jacky	Configurations	802.11a

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Over Limit (dBuV)	Remark
-	-	-	-	See Note

Note:

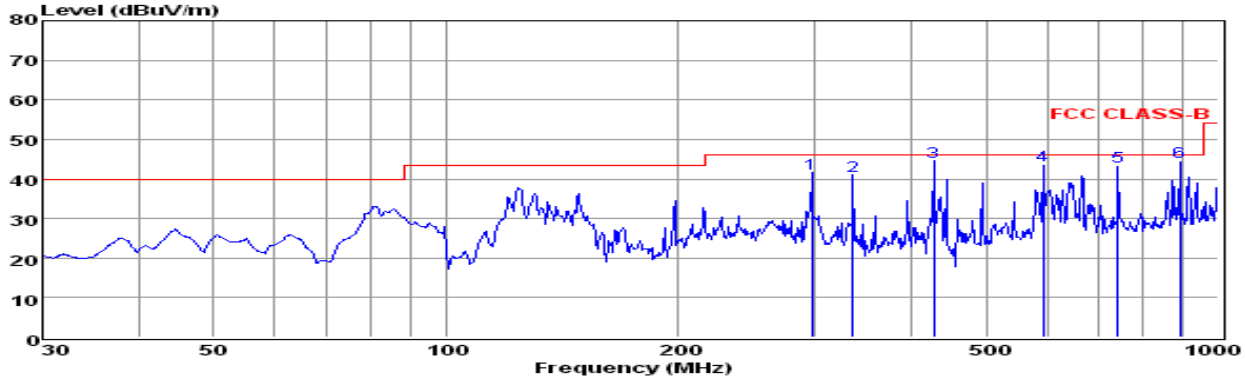
The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

5.5.7. Results of Radiated Emissions (30MHz~1GHz)

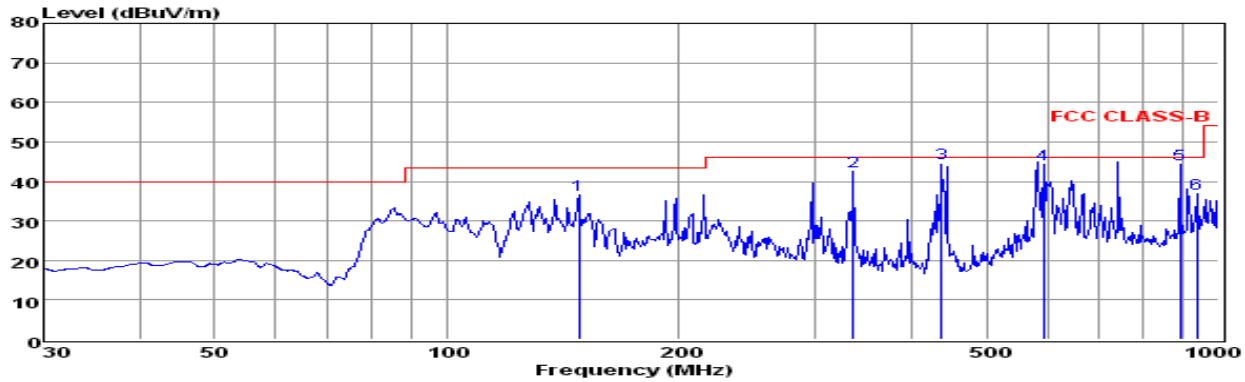
Temperature	25℃	Humidty	60%
Test Engineer	Jacky	Configurations	802.11a, 5805MHz



Env./Ins: 24℃/56%
EUT: Module
M/N: HT-WiFi B02
Power Rating: DC 5V
Test Mode: TX-5805MHz
Operator: Jacky
Memo:
pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	297.22	27.35	1.12	13.01	41.48	46.00	-4.52	QP
2	336.04	25.56	1.09	13.96	40.61	46.00	-5.39	QP
3	428.02	27.49	1.39	15.51	44.39	46.00	-1.61	QP
4	593.05	23.65	1.51	18.32	43.48	46.00	-2.52	QP
5	742.26	22.07	1.78	19.34	43.19	46.00	-2.81	QP
6	890.73	21.49	1.86	20.99	44.34	46.00	-1.66	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported



Env./Ins: 24℃/56%
EUT: Module
M/N: HT-WiFi B02
Power Rating: DC 5V
Test Mode: TX-5805MHz
Operator: Jacky
Memo:
pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	148.44	27.34	0.86	8.25	36.45	43.50	-7.05	QP
2	336.04	27.33	1.09	13.96	42.38	46.00	-3.62	QP
3	437.12	27.75	1.41	15.55	44.71	46.00	-1.29	QP
4	593.05	24.39	1.51	18.32	44.22	46.00	-1.78	QP
5	890.73	21.56	1.86	20.99	44.41	46.00	-1.59	QP
6	938.83	13.71	1.92	21.34	36.97	46.00	-9.03	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

Note:

Pre-scan all mode and recorded the worst case results(802.11a-5805MHz) in this report.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

5.5.8. Results for Radiated Emissions (Above 1GHz)

802.11a/Chain 0+Chain 1

Channel 149

Freq GHz	Read Level dBuV	Ant. Fac dB/m	Pre. Fac dB	Cab.Los dB	Correct level dBuV/m	Limit Line dBuV/m	Over limit dB	Remark	Pol/Phase
17.235	63.15	33.23	35.04	3.91	65.25	74	-8.75	Peak	Horizontal
17.235	44.36	33.23	35.04	3.91	46.46	54	-7.54	Average	Horizontal
17.235	61.74	33.23	35.04	3.91	63.84	74	-10.16	Peak	Vertical
17.235	43.58	33.23	35.04	3.91	45.68	54	-8.32	Average	Vertical

Channel 157

Freq GHz	Read Level dBuV	Ant. Fac dB/m	Pre. Fac dB	Cab.Los dB	Correct level dBuV/m	Limit Line dBuV/m	Over limit dB	Remark	Pol/Phase
17.335	63.76	33.27	35.15	3.93	65.81	74	-8.19	Peak	Horizontal
17.335	44.15	33.27	35.15	3.93	46.20	54	-7.8	Average	Horizontal
17.335	61.74	33.27	35.15	3.93	63.79	74	-10.21	Peak	Vertical
17.335	43.68	33.27	35.15	3.93	45.73	54	-8.27	Average	Vertical

Channel 161

Freq GHz	Read Level dBuV	Ant. Fac dB/m	Pre. Fac dB	Cab.Los dB	Correct level dBuV/m	Limit Line dBuV/m	Over limit dB	Remark	Pol/Phase
17.415	63.12	33.32	35.14	3.97	65.27	74	-8.73	Peak	Horizontal
17.415	44.45	33.32	35.14	3.97	46.60	54	-7.4	Average	Horizontal
17.415	61.23	33.32	35.14	3.97	63.38	74	-10.62	Peak	Vertical
17.415	43.11	33.32	35.14	3.97	45.26	54	-8.74	Average	Vertical

Notes:

1. *Measuring frequencies from 9k~40GHz, No emission found between lowest internal used/generated frequency to 30MHz.*
2. *Radiated emissions measured in frequency range from 9k~40GHz were made with an instrument using Peak detector mode.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*

5.5.9. Results for Band Edge Emissions

802.11a/Chain 0+Chain 1

Channel 149

Freq MHz	Read Level dBuV	Ant. Fac dB/m	Pre. Fac dB	Cab.Los dB	Correct level dBuV/m	Limit Line dBuV/m	Over limit dB	Remark	Pol/Phase
5715.00	44.94	33.26	35.14	3.98	47.02	68.3	-21.28	Peak	Horizontal
5715.00	31.15	33.26	35.14	3.98	33.23	48.3	-15.07	Average	Horizontal
5715.00	43.66	33.26	35.14	3.98	45.74	68.3	-22.56	Peak	Vertical
5715.00	30.50	33.26	35.14	3.98	32.58	48.3	-15.72	Average	Vertical
5725.00	52.15	33.26	35.14	3.98	54.25	78.3	-24.05	Peak	Horizontal
5725.00	37.75	33.26	35.14	3.98	39.85	58.3	-18.45	Average	Horizontal
5725.00	51.14	33.26	35.14	3.98	53.24	78.3	-25.06	Peak	Vertical
5725.00	36.42	33.26	35.14	3.98	38.52	58.3	-19.78	Average	Vertical

Channel 161

Freq MHz	Read Level dBuV	Ant. Fac dB/m	Pre. Fac dB	Cab.Los dB	Correct level dBuV/m	Limit Line dBuV/m	Over limit dB	Remark	Pol/Phase
5850.00	54.15	33.26	35.16	3.98	56.23	78.3	-22.07	Peak	Horizontal
5850.00	37.75	33.26	35.16	3.98	39.83	58.3	-18.47	Average	Horizontal
5850.00	52.14	33.26	35.16	3.98	54.22	78.3	-24.08	Peak	Vertical
5850.00	37.42	33.26	35.16	3.98	39.50	58.3	-18.8	Average	Vertical
5860.00	45.28	33.26	35.16	3.98	47.36	68.3	-20.94	Peak	Horizontal
5860.00	32.06	33.26	35.16	3.98	34.14	48.3	-14.16	Average	Horizontal
5860.00	44.66	33.26	35.16	3.98	46.74	68.3	-21.56	Peak	Vertical
5860.00	31.50	33.26	35.16	3.98	33.58	48.3	-14.72	Average	Vertical

Note: Only record the worst case in each mode.

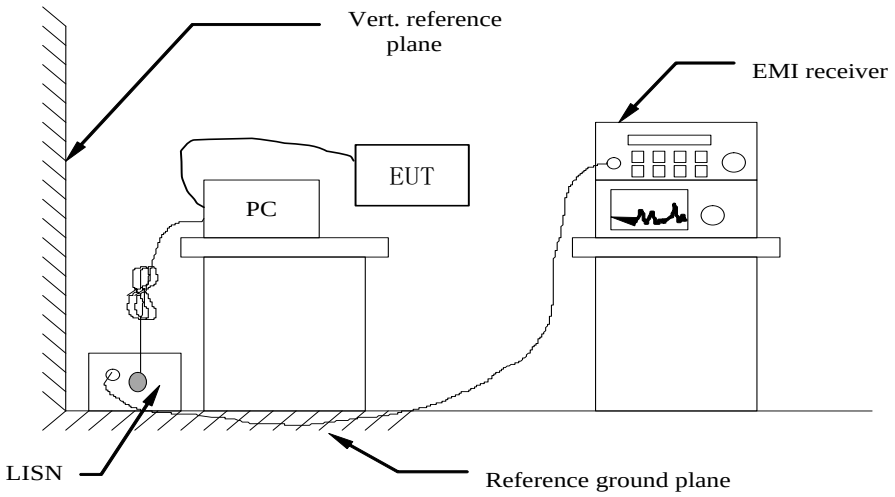
5.6. Power line conducted emissions

5.6.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

5.6.2 Block Diagram of Test Setup

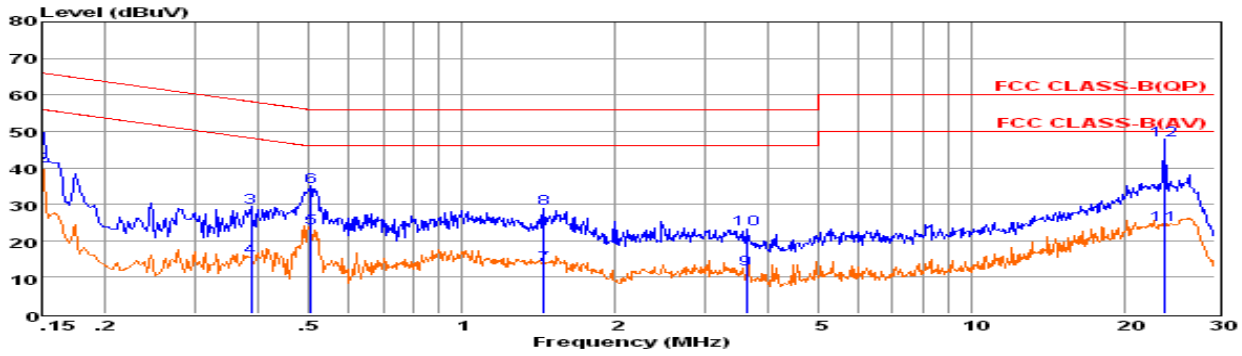


5.6.3 Test Results

PASS.

The test data please refer to following page.

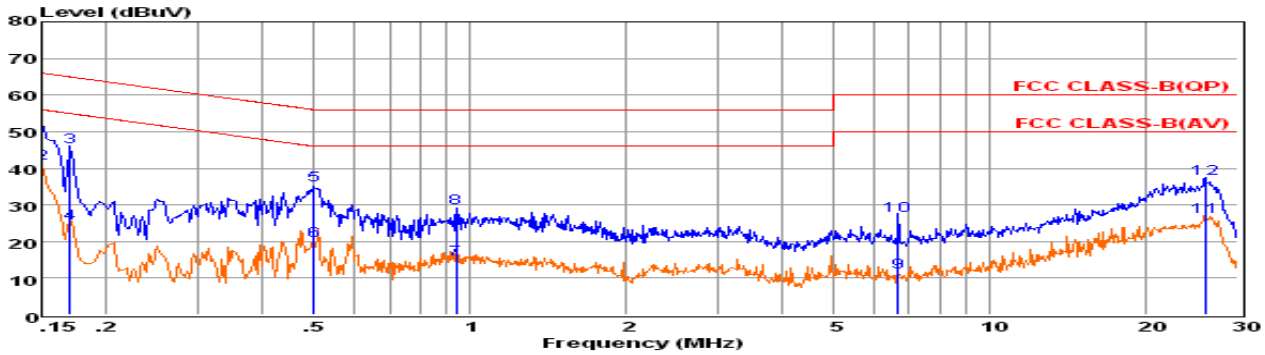
Test result for 802.11a-5805MHz




```
Env. Ins:               24*/56%
EUT:                    Module
M/N:                    HT-WiFi B02
Power Rating:           AC 230V/50Hz
Test Mode:              TX-5805MHz
Operator:               Jacky
Memo:
Pol:                    NEUTRAL
```

	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.15000	31.16	9.70	0.02	10.00	50.88	66.00	-15.12	QP
2	0.15001	20.79	9.70	0.02	10.00	40.51	56.00	-15.49	Average
3	0.38519	9.48	9.61	0.04	10.00	29.13	58.17	-29.04	QP
4	0.38520	-4.17	9.61	0.04	10.00	15.48	48.17	-32.69	Average
5	0.50469	3.85	9.62	0.04	10.00	23.51	46.00	-22.49	Average
6	0.50469	15.26	9.62	0.04	10.00	34.92	56.00	-21.08	QP
7	1.44856	-6.26	9.63	0.05	10.00	13.42	46.00	-32.58	Average
8	1.44855	9.16	9.63	0.05	10.00	28.84	56.00	-27.16	QP
9	3.62253	-7.48	9.65	0.06	10.00	12.23	46.00	-33.77	Average
10	3.62252	3.63	9.65	0.06	10.00	23.34	56.00	-32.66	QP
11	23.88785	4.49	9.82	0.13	10.00	24.44	50.00	-25.56	Average
12	23.88784	27.51	9.82	0.13	10.00	47.46	60.00	-12.54	QP

```
Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten_Fac.
         2. The emission levels that are 20dB below the official
            limit are not reported.
```




```
Env. Ins:               24*/56%
EUT:                    Module
M/N:                    HT-WiFi B02
Power Rating:           AC 230V/50Hz
Test Mode:              TX-5805MHz
Operator:               Jacky
Memo:
Pol:                    LINE
```

	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.15000	32.46	9.57	0.02	10.00	52.05	66.00	-13.95	QP
2	0.15001	21.78	9.57	0.02	10.00	41.37	56.00	-14.63	Average
3	0.17034	26.16	9.60	0.02	10.00	45.78	64.94	-19.16	QP
4	0.17035	5.46	9.60	0.02	10.00	25.08	54.94	-29.86	Average
5	0.50203	15.68	9.62	0.04	10.00	35.34	56.00	-20.66	QP
6	0.50204	0.48	9.62	0.04	10.00	20.14	46.00	-25.86	Average
7	0.94308	-4.48	9.63	0.05	10.00	15.20	46.00	-30.80	Average
8	0.94308	9.57	9.63	0.05	10.00	29.25	56.00	-26.75	QP
9	6.66247	-8.09	9.68	0.07	10.00	11.66	50.00	-38.34	Average
10	6.66237	7.36	9.68	0.07	10.00	27.11	60.00	-32.89	QP
11	26.00130	6.95	9.71	0.13	10.00	26.79	50.00	-23.21	Average
12	26.00120	17.48	9.71	0.13	10.00	37.32	60.00	-22.68	QP

```
Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten_Fac.
         2. The emission levels that are 20dB below the official
            limit are not reported.
```

****Note: Pre-scan all mode and recorded the worst case results in this report (802.11a-5805MHz).*

5.7. Antenna Requirements

5.7.1. Standard Applicable

According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

5.7.2. Antenna Connector Construction

The directional gains of antenna used for transmitting is 5.0dBi, and the antenna is connect to PCB board through the ipex connector and no consideration of replacement. Please see EUT photo for details.

5.7.3. Results: Compliance.

6. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal Date	Due Date
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	June 18, 2014	June 17, 2015
Signal analyzer	Agilent	E4448A(External mixers to 40GHz)	US44300469	9kHz~40GHz	July 16, 2014	July 15, 2015
Signal analyzer	Agilent	N9020A	MY50510140	9kHz~26.5GHz	October 27, 2014	October 27, 2015
LISN	MESS Tec	NNB-2/16Z	99079	9KHz-30MHz	June 18, 2014	June 17, 2015
LISN (Support Unit)	EMCO	3819/2NM	9703-1839	9KHz-30MHz	June 18, 2014	June 17, 2015
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9KHz-30MHz	June 18, 2014	June 17, 2015
ISN	SCHAFFNER	ISN ST08	21653	9KHz-30MHz	June 18, 2014	June 17, 2015
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30M-1GHz 3m	June 18, 2014	June 17, 2015
Amplifier	SCHAFFNER	COA9231A	18667	9kHz-2GHzz	June 18, 2014	June 17, 2015
Amplifier	Agilent	8449B	3008A02120	1GHz-26.5GHz	July 16, 2014	July 15, 2015
Amplifier	MITEQ	AMF-6F-260400	9121372	26.5GHz-40GHz	July 16, 2014	July 15, 2015
Spectrum Analyzer	Agilent	E4407B	MY41440292	9k-26.5GHz	July 16, 2014	July 15, 2015
Loop Antenna	R&S	HFH2-Z2	860004/001	9k-30MHz	June 18, 2014	June 17, 2015
By-log Antenna	SCHAFFNER	CBL 6112D	22237	30MHz-1GHz	June 10, 2014	June 09, 2015
Horn Antenna	EMCO	3115	6741	1GHz-18GHz	June 10, 2014	June 09, 2015
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz-40GHz	June 10, 2014	June 09, 2015
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz-1GHz	June 18, 2014	June 17, 2015
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1GHz-40GHz	June 18, 2014	June 17, 2015
Spectrum Meter	R&S	FSP 30	100023	9kHz-30GHz	July 16, 2014	July 15, 2015
Power Meter	R&S	NRVS	100444	DC-40GHz	June 18, 2014	June 17, 2015
Power Sensor	R&S	NRV-Z51	100458	DC-30GHz	June 18, 2014	June 17, 2015
Power Sensor	R&S	NRV-Z32	10057	30MHz-6GHz	June 18, 2014	June 17, 2015
AC Power Source	HPC	HPA-500E	HPA-9100024	AC 0~300V	June 18, 2014	June 17, 2015
DC power Soure	GW	GPC-6030D	C671845	DC 1V-60V	June 18, 2014	June 17, 2015
Temp. and Humidigy	Giant Force	GTH-225-20-S	MAB0103-00	N/A	June 18, 2014	June 17, 2015
RF CABLE-1m	JYE Bao	RG142	CB034-1m	20MHz-7GHz	June 18, 2014	June 17, 2015
RF CABLE-2m	JYE Bao	RG142	CB)35-2m	20MHz-1GHz	June 18, 2014	June 17, 2015
Vector signal Generator	R&S	SMU200A	102098	100kHz~6GHz	June 18, 2014	June 17, 2015
Signal Generator	R&S	SMR40	10016	10MHz~40GHz	July 16, 2014	July 15, 2015
Oscilloscope	Tektonix	TDS380	B016197	400MHz/2GRS	July 16, 2014	July 15, 2015

7. MANUFACTURER/ APPROVAL HOLDER DECLARATION

The following series model(s):

--	--	--	--

Belong to the tested device:

Product description : Module

Model name : HT-WiFi B02

Remark: No additional models were tested.

----------THE END OF REPORT----------