

FCC TEST REPORT
for
Guangxi Jiaway Technology Corporation Limited
Projection player
Model No.: See Chapter 1.5 for model list

Prepared for : Guangxi Jiaway Technology Corporation Limited
Address : Building 5, China-Asean Enterprise headquarters base(Phase 2),
No.3 of Headquarters road, Nanning, China

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited
Address : 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road,
Nanshan District, Shenzhen, Guangdong, China
Tel: (86) 755-26066544
Fax: (86) 755-26014772

Report Number : R011508547I
Date of Test : Aug. 18~ Oct. 13, 2015
Date of Report : Oct. 14, 2015

TABLE OF CONTENT

Description

Page

Test Report

1. GENERAL INFORMATION.....	4
1.1. Description of Device (EUT).....	4
1.2. Auxiliary Equipment Used during Test.....	5
1.3. Description of Test Facility.....	5
1.4. Measurement Uncertainty.....	5
1.5. Model list.....	6
2. TEST METHODOLOGY.....	7
2.1. Summary of Test Results.....	7
2.2. Description of Test Modes.....	7
2.3. List of channels:.....	8
3. CONDUCTED EMISSION TEST.....	9
3.1. Block Diagram of Test Setup.....	9
3.2. Power Line Conducted Emission Measurement Limits (15.207).....	9
3.3. Configuration of EUT on Measurement.....	9
3.4. Operating Condition of EUT.....	9
3.5. Test Procedure.....	10
3.6. Test equipment.....	10
3.7. Power Line Conducted Emission Measurement Results.....	10
4. FCC PART 15.247 REQUIREMENTS FOR DSSS & OFDM MODULATION.....	15
4.1 Test Setup.....	15
4.2 6dB Bandwidth.....	15
4.3. Maximum Output Power Test.....	23
4.4. Band Edges Measurement.....	27
4.5. Peak Power Spectral Density.....	63
4.6. Radiated Emissions.....	67
5. ANTENNA APPLICATION.....	78
5.1. Antenna requirement.....	78
5.2. Result.....	78
6. PHOTOGRAPH.....	79
6.1. Photo of Conducted Emission Measurement.....	79
6.2. Photo of Radiation Emission Test.....	79
APPENDIX I (EXTERNAL PHOTOS).....	81
APPENDIX II (INTERNAL PHOTOS).....	85

TEST REPORT

Applicant : Guangxi Jiaway Technology Corporation Limited
Manufacturer : Guangxi Jiaway Technology Corporation Limited
EUT : Projection player
Model No. : See Chapter 1.5 for model list
Serial No. : N.A.
Trade Mark : **Haiway**
Rating : DC 5V, 2.5A

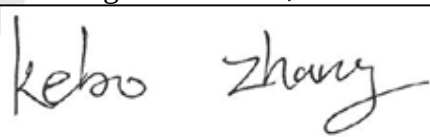
Measurement Procedure Used:
FCC Part15 Subpart C 2015, Paragraph 15.247

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Aug. 18~ Oct. 13, 2015

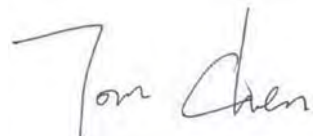
Prepared by :


(Tested Engineer / Kebo Zhang)

Reviewer :


(Project Manager / Amy Ding)

Approved & Authorized Signer :


(Manager / Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	: Projection player
Model Number	: See Chapter 1.5 for model list (Note: All samples are the same except the model number and colour, so we prepare “H3000” for test only.)
Test Power Supply	: AC 120V, 60Hz and AC 240V, 60Hz for adapter
Adapter	: Input: AC 100-240V, 50/60Hz, 0.4A Output: DC 5V, 2.5A
RF Transmission Frequency	: 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)) 2422MHz~2452MHz (802.11n(HT40))
Channels	: 11 For (802.11b/802.11g/802.11n(HT20)) 7 For (802.11n(HT40))
Modulation	802.11b CCK; 802.11g OFDM; 802.11n MCS
Antenna Gain:	: 2dBi
Applicant Address	: Guangxi Jiaway Technology Corporation Limited Building 5, China-Asean Enterprise headquarters base(Phase 2), No.3 of Headquarters road, Nanning, China
Manufacturer Address	: Guangxi Jiaway Technology Corporation Limited Building 5, China-Asean Enterprise headquarters base(Phase 2), No.3 of Headquarters road, Nanning, China
Factory Address	: Guangxi Jiaway Technology Corporation Limited Building 5, China-Asean Enterprise headquarters base(Phase 2), No.3 of Headquarters road, Nanning, China
Date of receipt	: Aug. 18, 2015
Date of Test	: Aug. 18~ Oct. 13, 2015

1.2. Auxiliary Equipment Used during Test

N/A

1.3. Description of Test Facility

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

CNAS - LAB Code: L3503

Shenzhen Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

FCC-Registration No.: 752021

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, July 10, 2013.

IC-Registration No.: 8058A-1

Shenzhen Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A, February 22, 2013.

Test Location

All Emissions tests were performed at
Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

1.4. Measurement Uncertainty

Radiation Uncertainty : Ur = 4.1 dB (Horizontal)
Ur = 4.3 dB (Vertical)

Conduction Uncertainty : Uc = 3.4dB

1.5. Model list

Model No.:

H1000, H2000, H3000, H4000, H5000, H6000, H7000, H8000, H9000, H1000+, H2000+, H3000+, H4000+, H5000+, H6000+, H7000+, H8000+, H9000+, S1000, S2000, S3000, S4000, S5000, S6000, S7000, S8000, S9000, I1000, I2000, I3000, I4000, I5000, I6000, I7000, I8000, I9000, BP220, BP221, BP222, BP223, BP224, BP225, BP226, BP227, BP228, BP229, BP220J, BP221J, BP222J, BP223J, BP224J, BP225J, BP226J, BP227J, BP228J, BP229J, PA01, PA02, PA03, PA04, PA05, PA06, PA07, PA08, PA09, PA01 PLUS, PA02 PLUS, PA03 PLUS, PA04 PLUS, PA05 PLUS, PA06 PLUS, PA07 PLUS, PA08 PLUS, PA09 PLUS, PA01 PRO, PA02 PRO, PA03 PRO, PA04 PRO, PA05 PRO, PA06 PRO, PA07 PRO, PA08 PRO, PA09 PRO, PA01S, PA02S, PA03S, PA04S, PA05S, PA06S, PA07S, PA08S, PA09S, D100, D200, D300, D400, D500, D600, D700, D800, D900, H10, H20, H30, H40, H50, H60, H70, H80, H90, H1000 PLUS, H2000 PLUS, H3000 PLUS, H4000 PLUS, H5000 PLUS, H6000 PLUS, H7000 PLUS, H8000 PLUS, H9000 PLUS, AN10, AN20, AN30, AN40, AN50, AN60, AN70, AN80, AN90, Q10, Q20, Q30, Q40, Q50, Q60, Q70, Q80, Q90, H3000A

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC Part 15, Paragraph 15.247.

2.1. Summary of Test Results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107, 15.207	Conducted Emission Test	PASS	Complies
FCC Part 15, Paragraph 15.247(b)(1)	Maximum Output Power	PASS	Complies
FCC Part 15, Paragraph 15.247(a)(2)	6dB Bandwidth	PASS	Complies
FCC Part 15, Paragraph 15.247(c)	100kHz Bandwidth of Frequency Band Edges	PASS	Complies
FCC Part 15, Paragraph 15.209(a)(f)	Spurious Emission	PASS	Complies
FCC Part 15, Paragraph 15.247(a)(1)	Frequency Separation	-	N/A
FCC Part 15, Paragraph 15.247(a)(1)(iii)	Number of Hopping Frequency	-	N/A
FCC Part 15, Paragraph 15.247(a)(1)(iii)	Time of Occupancy	-	N/A
FCC Part 15, Paragraph 15.247(c)	Peak Power Density	PASS	Complies

2.2. Description of Test Modes

The EUT has been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

IEEE802.11b: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 1 Mbps lowest data rate (worst case) are chosen for the final testing.

IEEE802.11g: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 6 Mbps lowest data rate (the worst case) are chosen for the final testing.

IEEE802.11n (HT20): Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with MCS 0 Mbps lowest data rate (the worst case) are chosen for the final testing.

IEEE802.11n (HT40): Channel 3(2422MHz), Channel 6(2437MHz) and Channel 9(2452MHz) with MCS 0 Mbps lowest data rate (the worst case) are chosen for the final testing.

2.3. List of channels:

√ - available

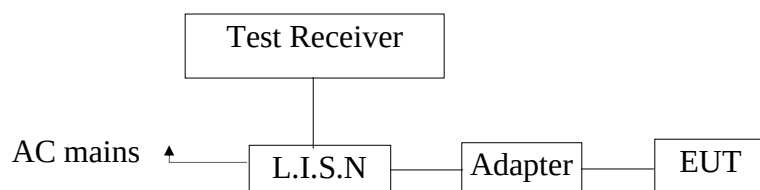
X - tested

Number	Frequency(MHz)		802.11 b/g/n (HT20)	802.11 b/g/n (HT40)
1	2412	√	X	
2	2417	√		
3	2422	√		X
4	2427	√		
5	2432	√		
6	2437	√	X	X
7	2442	√		
8	2447	√		
9	2452	√		X
10	2457	√		
11	2462	√	X	

3. Conducted Emission Test

3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



3.2. Power Line Conducted Emission Measurement Limits (15.207)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4. Operating Condition of EUT

3.4.1. Setup the EUT and simulator as shown as Section 3.1.

3.4.2. Turn on the power of all equipment.

3.4.3. Let the EUT work in test mode (WiFi Playing) and measure it.

3.5. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test results are reported on Section 3.6.

3.6. Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	100055	Apr. 17, 2015	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 17, 2015	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 17, 2015	1 Year

3.7. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150KHz to 30 MHz is investigated.

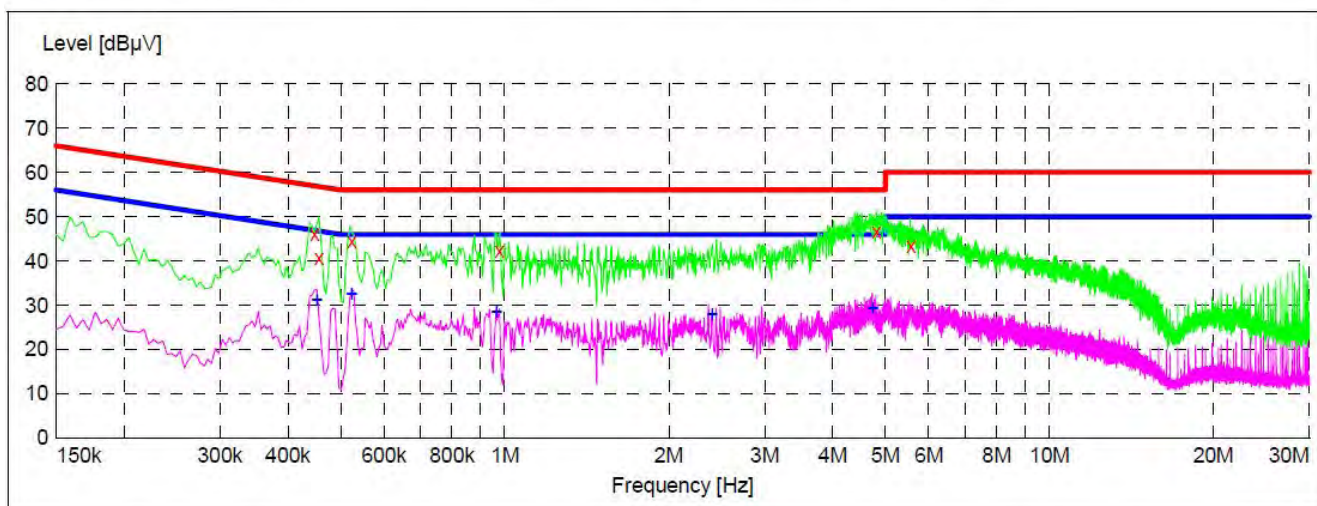
Please refer the following pages.

CONDUCTED EMISSION TEST DATA

Test Site: 1# Shielded Room
Operating Condition: WiFi Playing
Test Specification: AC 120V, 60Hz for adapter
Comment: Live Line
Tem.:25°C Hum.:50%

SCAN TABLE: "Voltage (150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages



Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.447000	46.00	20.1	57	10.9	QP	L1	GND
0.456000	40.70	20.1	57	16.1	QP	L1	GND
0.523500	44.60	20.1	56	11.4	QP	L1	GND
0.978000	42.50	20.2	56	13.5	QP	L1	GND
4.811500	46.60	20.5	56	9.4	QP	L1	GND
5.567500	43.40	20.5	60	16.6	QP	L1	GND

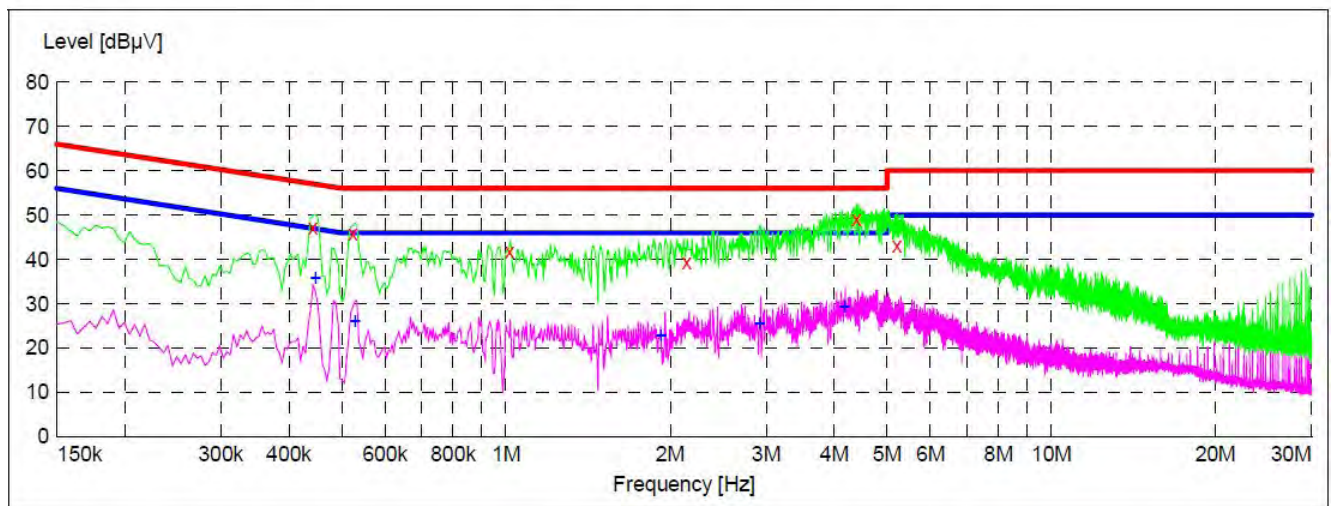
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.451500	31.30	20.1	47	15.5	AV	L1	GND
0.523500	32.50	20.1	46	13.5	AV	L1	GND
0.964500	28.50	20.2	46	17.5	AV	L1	GND
2.399500	27.90	20.3	46	18.1	AV	L1	GND
4.730500	29.50	20.5	46	16.5	AV	L1	GND

CONDUCTED EMISSION TEST DATA

Test Site: 1# Shielded Room
Operating Condition: WiFi Playing
Test Specification: AC 120V, 60Hz for adapter
Comment: Neutral Line
Tem.:25°C Hum.:50%

SCAN TABLE: "Voltage (150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages



Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.442500	47.30	20.1	57	9.7	QP	N	GND
0.523500	45.90	20.1	56	10.1	QP	N	GND
1.013500	41.80	20.2	56	14.2	QP	N	GND
2.143000	39.30	20.3	56	16.7	QP	N	GND
4.393000	49.00	20.5	56	7.0	QP	N	GND
5.207500	43.20	20.5	60	16.8	QP	N	GND

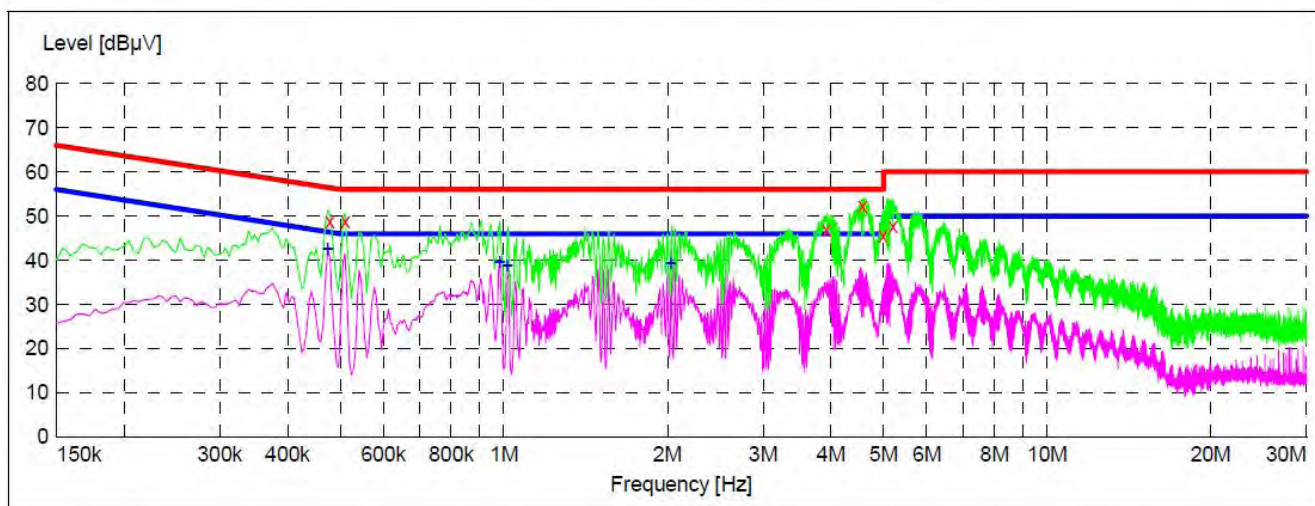
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.447000	35.80	20.1	47	11.1	AV	N	GND
0.528000	26.10	20.1	46	19.9	AV	N	GND
1.922500	23.00	20.3	46	23.0	AV	N	GND
2.917000	25.50	20.4	46	20.5	AV	N	GND
4.172500	29.20	20.5	46	16.8	AV	N	GND

CONDUCTED EMISSION TEST DATA

Test Site: 1# Shielded Room
Operating Condition: WiFi Playing
Test Specification: AC 240V, 60Hz for adapter
Comment: Live Line
Tem.:25°C Hum.:50%

SCAN TABLE: "Voltage (150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages



Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.478500	48.80	20.1	56	7.6	QP	L1	GND
0.510000	48.90	20.1	56	7.1	QP	L1	GND
3.920500	46.90	20.4	56	9.1	QP	L1	GND
4.573000	52.40	20.5	56	3.6	QP	L1	GND
4.982500	45.60	20.5	56	10.4	QP	L1	GND
5.198500	47.70	20.5	60	12.3	QP	L1	GND

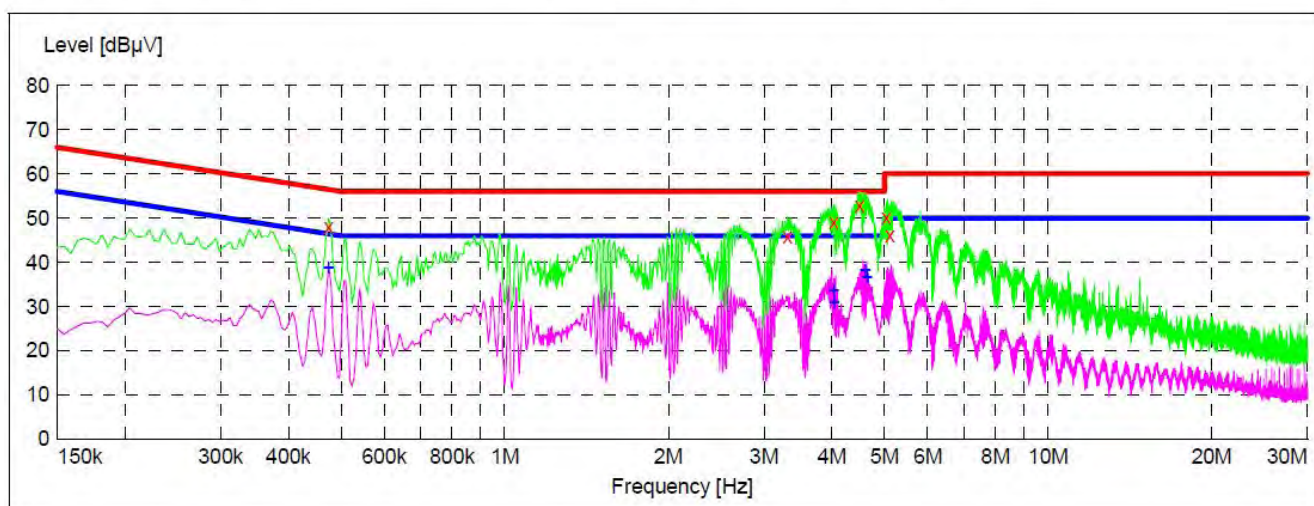
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.474000	42.70	20.1	46	3.7	AV	L1	GND
0.982500	39.70	20.2	46	6.3	AV	L1	GND
1.013500	38.80	20.2	46	7.2	AV	L1	GND
2.030500	39.30	20.3	46	6.7	AV	L1	GND

CONDUCTED EMISSION TEST DATA

Test Site: 1# Shielded Room
Operating Condition: WiFi Playing
Test Specification: AC 240V, 60Hz for adapter
Comment: Neutral Line
Tem.:25°C Hum.:50%

SCAN TABLE: "Voltage (150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages

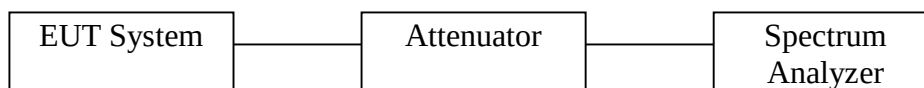


Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.474000	48.10	20.1	56	8.3	QP	N	GND
3.313000	45.80	20.4	56	10.2	QP	N	GND
4.033000	49.30	20.5	56	6.7	QP	N	GND
4.501000	52.90	20.5	56	3.1	QP	N	GND
5.036500	50.20	20.5	60	9.8	QP	N	GND
5.117500	46.20	20.5	60	13.8	QP	N	GND

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.474000	38.90	20.1	46	7.5	AV	N	GND
4.019500	33.70	20.5	46	12.3	AV	N	GND
4.028500	31.00	20.5	46	15.0	AV	N	GND
4.600000	38.20	20.5	46	7.8	AV	N	GND
4.631500	36.60	20.5	46	9.4	AV	N	GND

4. FCC Part 15.247 Requirements for DSSS & OFDM Modulation

4.1 Test Setup



4.2 6dB Bandwidth

a. Limit

For the direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz.

b. Test Procedure

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as:
RBW = 100kHz, VBW $\geq 3 \times$ RBW = 300kHz,
Detector= Peak
Trace mode= Max hold.
Sweep- auto couple.
4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

20dB Bandwidth:

C63.10

Occupied Bandwidth (OBW=20dB Bandwidth)

1. Set RBW=1%~5% OBW
2. Set the VBW $\geq 3 \times$ RBW
3. Set the span range between 2 times and 5 times of the OBW
4. Sweep Time= Auto
Detector= Peak
Trace= Max hold
5. Once the reference level is established, the equipment is conditioned with typical modulating signals to produce the worst case (i.e. the widest) bandwidth. Unless otherwise specified for an unlicensed wireless device, measure the bandwidth at the -20dB levels with respect to the reference level.

c. Test Setup See 4.1

d. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 17, 2015	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 17, 2015	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 17, 2015	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 20, 2015	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 20, 2015	1 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 17, 2015	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
8	Power Sensor	DAER	RPR3006W	15I00041SN046	Jun 30, 2015	1 Year
9	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Jun 30, 2015	1 Year
10	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Jun 30, 2015	1 Year
11	Signal Generator	Agilent	E4421B	MY41000743	Jun 30, 2015	1 Year
12	DC Power supply	IV	IV-8080	YQSB0096	Jun 30, 2015	1 Year
13	TEMP&HUMI PROGRAMMABLE CHAMBER	Bell Group	BE-THK-150M8	SE-0137	Mar 16, 2015	1 Year

e. Test Results

Pass.

f. Test Data**6dB Bandwidth**

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	10.02	>500	Pass
Mid	2437	10.01		Pass
High	2462	10.01		Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	15.45	>500	Pass
Mid	2437	15.64		Pass
High	2462	15.34		Pass

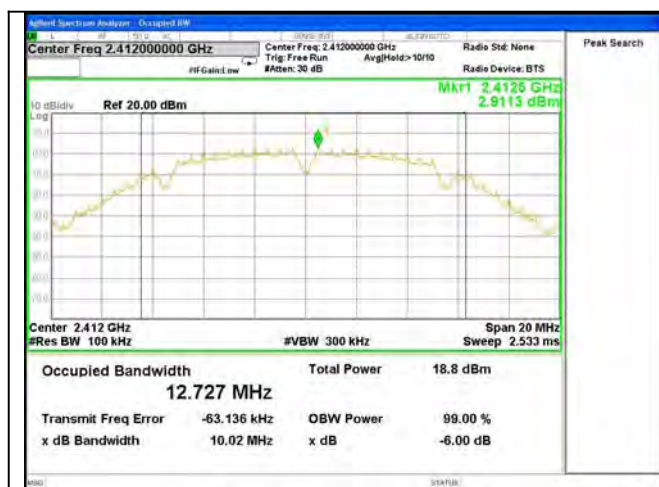
Test mode: IEEE 802.11n (HT20)

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2412	15.69	>500	Pass
Mid	2437	16.07		Pass
High	2462	15.13		Pass

Test mode: IEEE 802.11n (HT40)

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Results
Low	2422	35.16	>500	Pass
Mid	2437	35.17		Pass
High	2452	35.17		Pass

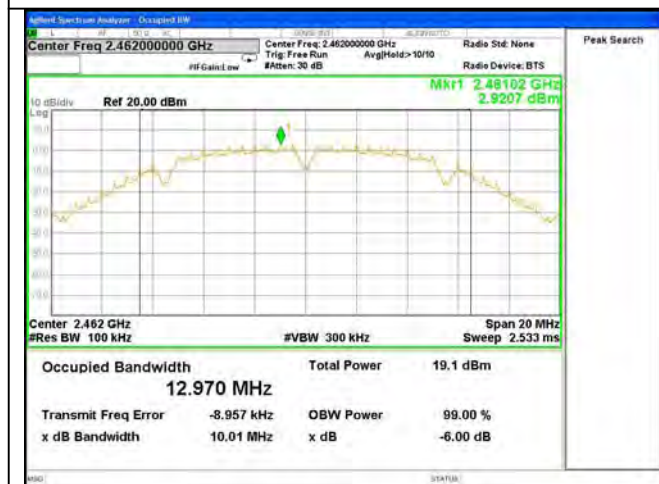
Test Plots See the following page.



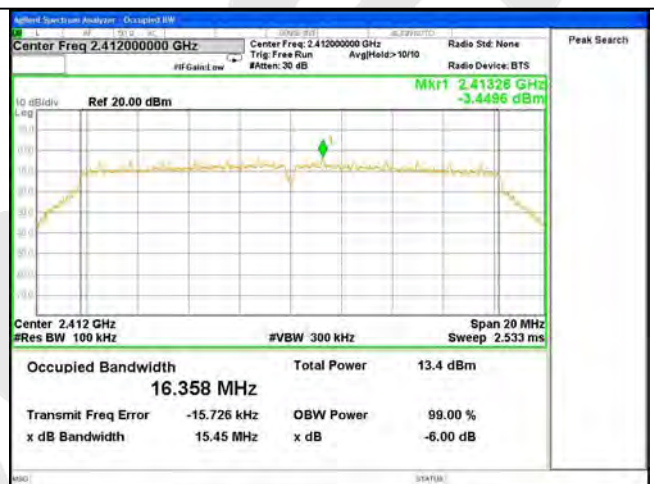
Test Mode: 802.11b---Low



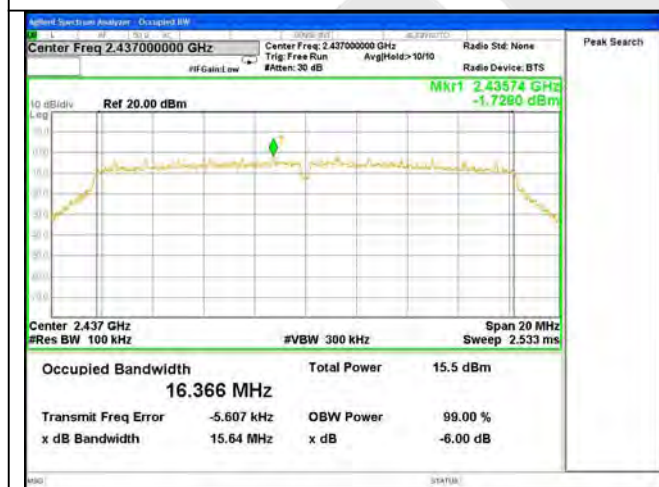
Test Mode: 802.11b---Mid



Test Mode: 802.11b---High



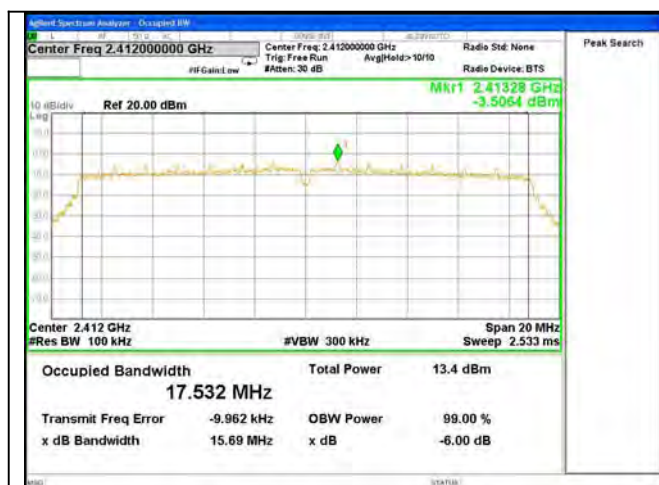
Test Mode: 802.11g---Low



Test Mode: 802.11g---Mid



Test Mode: 802.11g---High



Test Mode: 802.11n20---Low



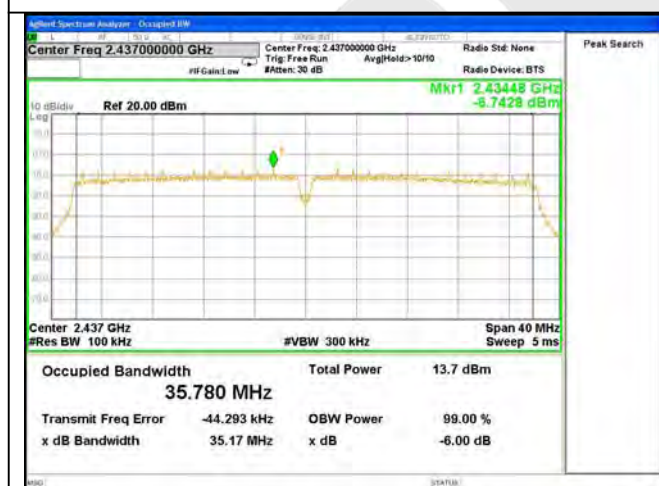
Test Mode: 802.11n20---Mid



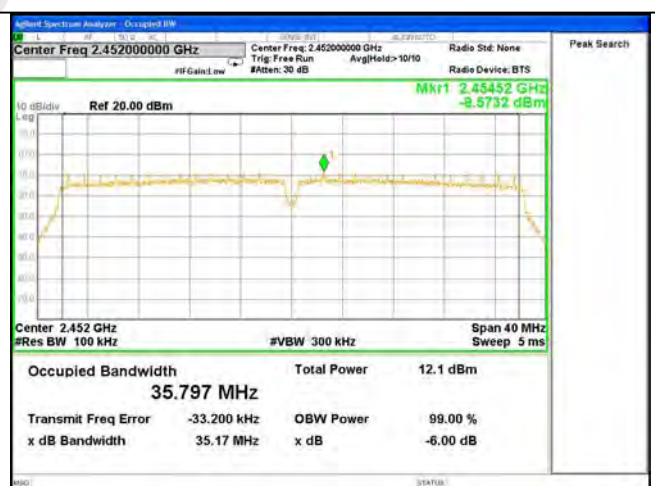
Test Mode: 802.11n20---High



Test Mode: 802.11n40---Low



Test Mode: 802.11n40---Mid



Test Mode: 802.11n40---High

20dB Bandwidth

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (MHz)	Results
Low	2412	14.72	Pass
Mid	2437	15.09	Pass
High	2462	15.17	Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (MHz)	Results
Low	2412	18.63	Pass
Mid	2437	18.92	Pass
High	2462	18.82	Pass

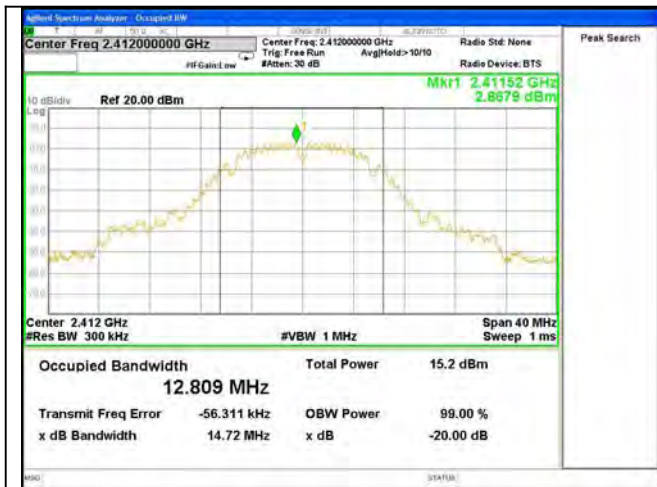
Test mode: IEEE 802.11n (HT20)

Channel	Frequency (MHz)	Bandwidth (MHz)	Results
Low	2412	19.16	Pass
Mid	2437	19.24	Pass
High	2462	19.27	Pass

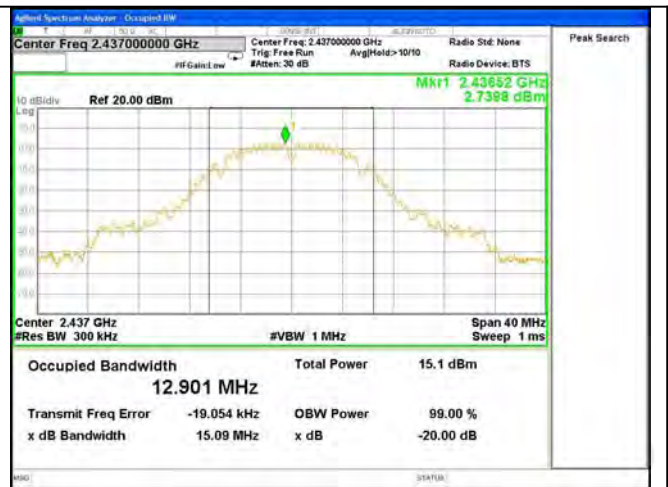
Test mode: IEEE 802.11n (HT40)

Channel	Frequency (MHz)	Bandwidth (MHz)	Results
Low	2422	37.13	Pass
Mid	2437	37.12	Pass
High	2452	37.08	Pass

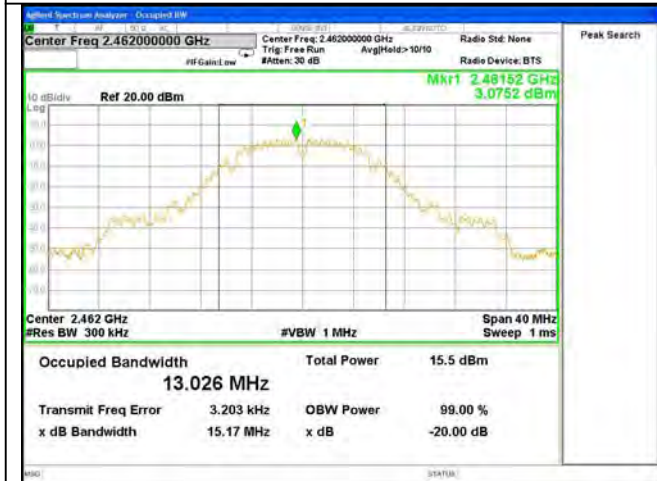
Test Plots See the following page.



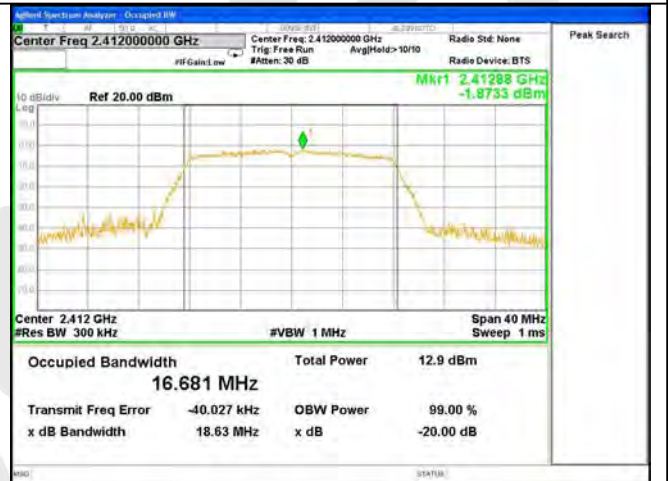
Test Mode: 802.11b---Low



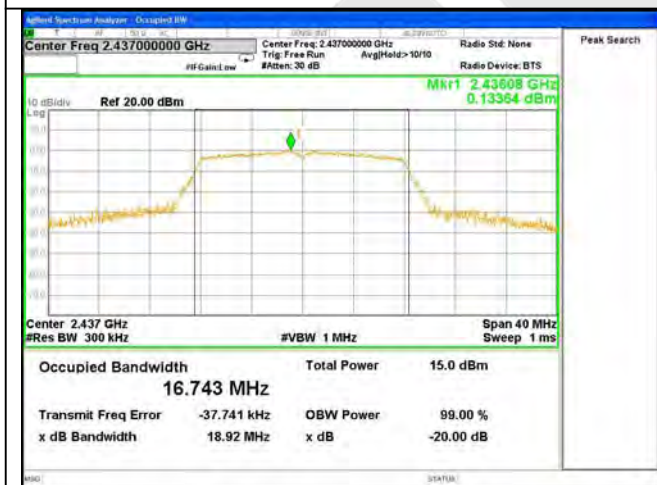
Test Mode: 802.11b---Mid



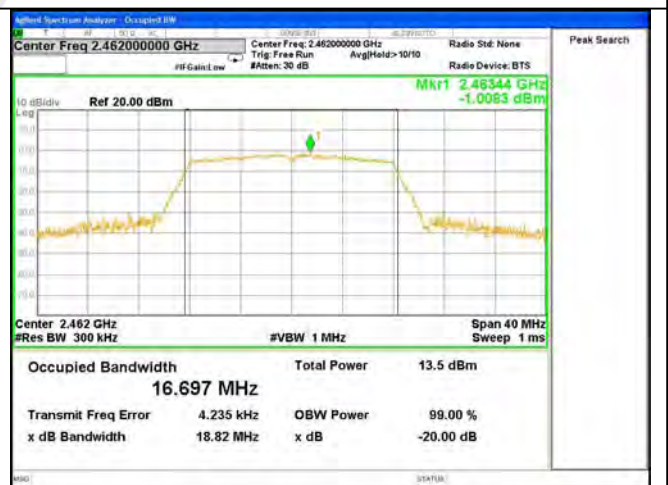
Test Mode: 802.11b---High



Test Mode: 802.11g---Low



Test Mode: 802.11g---Mid



Test Mode: 802.11g---High



Test Mode: 802.11n20---Low



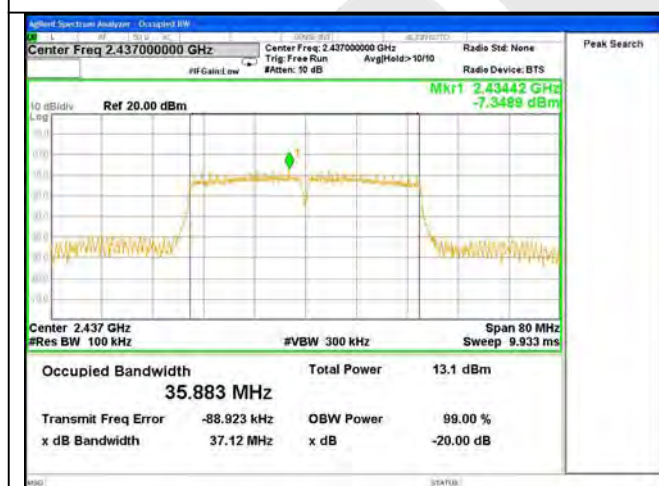
Test Mode: 802.11n20---Mid



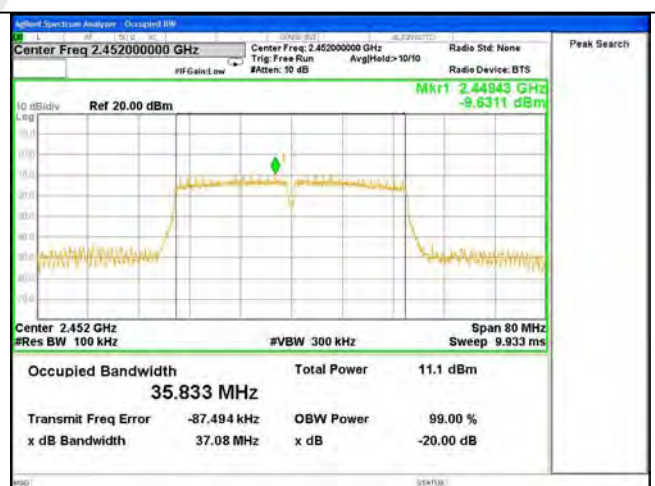
Test Mode: 802.11n20---High



Test Mode: 802.11n40---Low



Test Mode: 802.11n40---Mid



Test Mode: 802.11n40---High

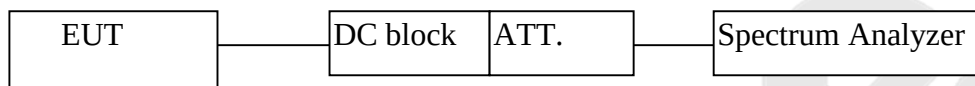
4.3. Maximum Output Power Test

a. Limit

The maximum output power of the intentional radiator shall not exceed the following:

1. For systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 watt (30dBm).
2. Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antenna of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

b. Configuration of Measurement



c. Data Rates

IEEE802.11b: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 1 Mbps data rate (worst case) are chosen for the final testing.

IEEE802.11g: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 6 Mbps data rate (the worst case) are chosen for the final testing.

IEEE802.11n (HT20: Channel 1(2412MHz), Channel 6(2437MHz) and Channel 11(2462MHz) with 6.5Mbps data rate (the worst case) are chosen for the final testing.

IEEE802.11n (HT40: Channel 3(2422MHz), Channel 6(2437MHz) and Channel 9(2452MHz) with 13.5Mbps data rate (the worst case) are chosen for the final testing.

d. Test Procedure

This test was according the kDB 558074 9.2.2:

1. Set span to at least 1.5 times the OBW.
2. Set the RBW =1~5% of the OBW, not to exceed 1MHz.
3. Set VBW $\geq 3 \times$ RBW.
4. Detector = Average.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

e. Test Equipment

Same as the equipment listed in 4.2.

f. Test Results

Pass.

g. Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Maximum transmit power	Limit		Result
		(dBm)	(dBm)	(watts)	
Low	2412	15.34	30	1	Pass
Mid	2437	15.21			Pass
High	2462	15.59			Pass

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Maximum transmit power	Limit		Result
		(dBm)	(dBm)	(watts)	
Low	2412	13.08	30	1	Pass
Mid	2437	15.37			Pass
High	2462	13.89			Pass

Test mode: IEEE 802.11n (HT20)

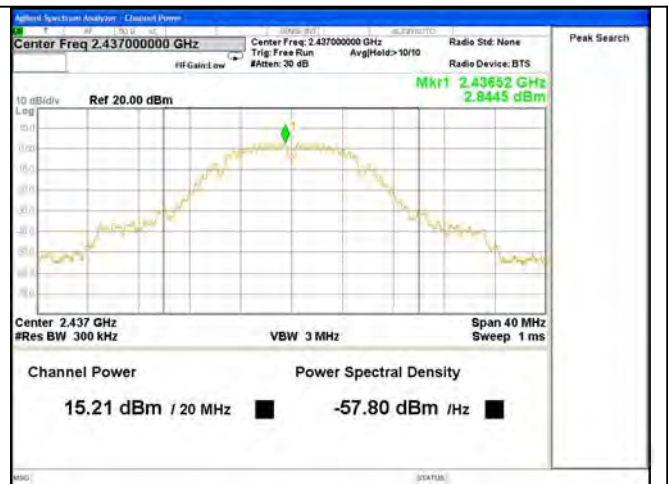
Channel	Frequency (MHz)	Maximum transmit power	Limit		Result
		(dBm)	(dBm)	(watts)	
Low	2412	13.20	30	1	Pass
Mid	2437	15.16			Pass
High	2462	13.80			Pass

Test mode: IEEE 802.11n (HT40)

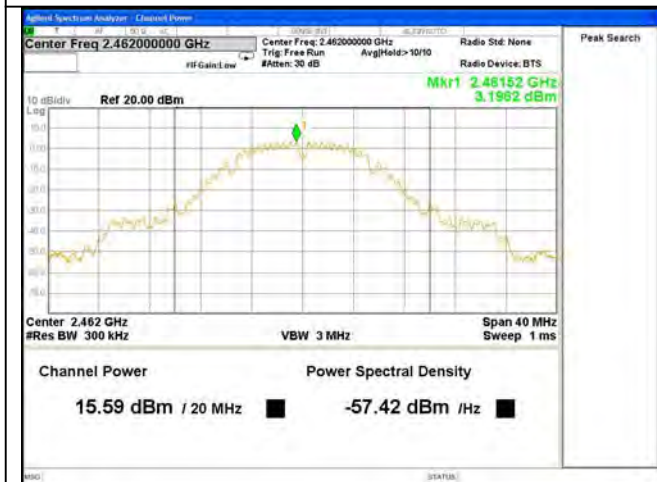
Channel	Frequency (MHz)	Maximum transmit power	Limit		Result
		(dBm)	(dBm)	(watts)	
Low	2422	11.99	30	1	Pass
Mid	2437	14.16			Pass
High	2452	12.26			Pass



Test Mode: 802.11b---Low



Test Mode: 802.11b---Mid



Test Mode: 802.11b---High



Test Mode: 802.11g---Low



Test Mode: 802.11g---Mid



Test Mode: 802.11g---High



Test Mode: 802.11n20---Low



Test Mode: 802.11n20---Mid



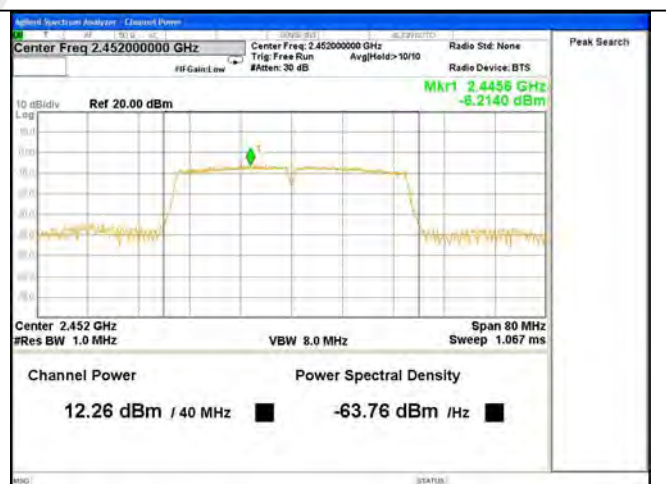
Test Mode: 802.11n20---High



Test Mode: 802.11n40---Low



Test Mode: 802.11n40---Mid



Test Mode: 802.11n40---High

4.4. Band Edges Measurement

a. Limit

According to §15.247(c), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

b. Test Procedure

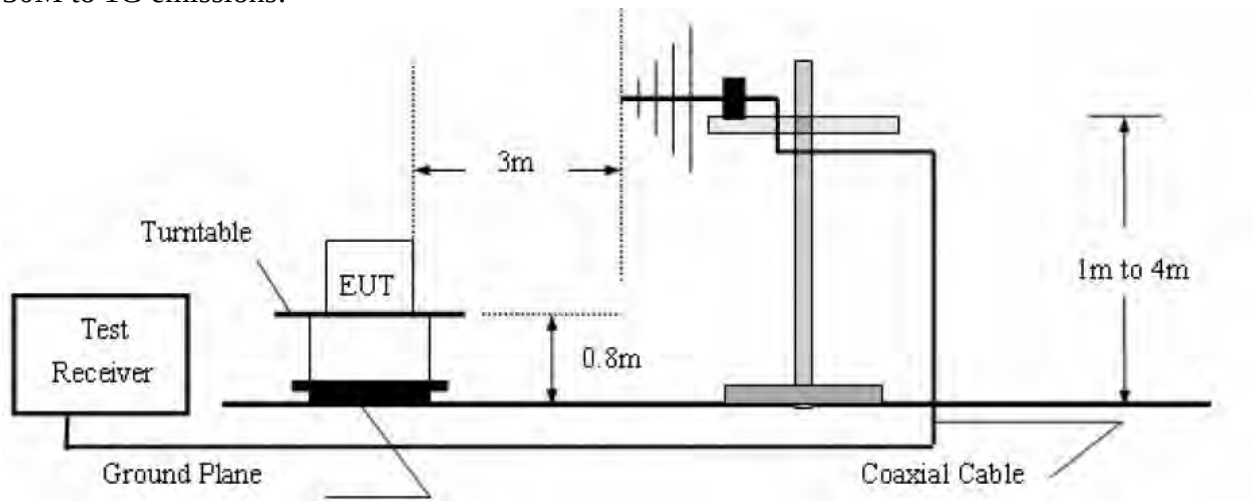
1. Conducted Method:

- 1) Set RBW=100KHz, VBW=300KHz
- 2) Detector=peak
- 3) Sweep time= auto
- 4) Trace mode=max hold.

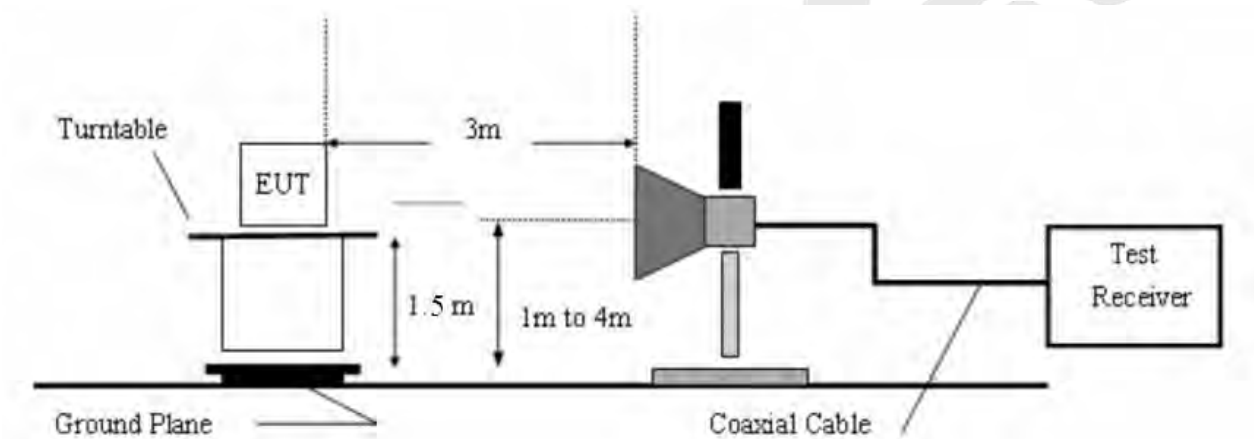
2. Radiated Method:

- 1) For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane. The EUT is tested in 9*6*6 Chamber.
For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane. The EUT is tested in 9*6*6 Chamber.
- 2) The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4) Peak detector: RBW=1MHz, VBW=3MHz, SWT=AUTO
Average detector: RBW=1MHz, VBW=10Hz, SWT=AUTO
The EUT is tested in 9*6*6 Chamber.
- 5) Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

30M to 1G emissions:



1G to 40G emissions:



c. Test Equipment

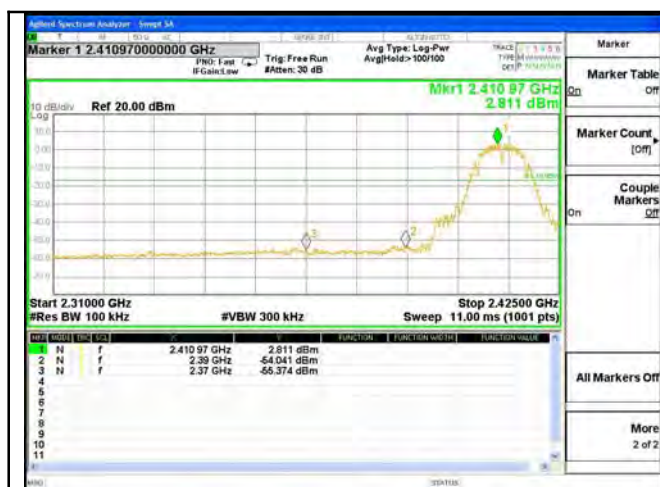
Same as the equipment listed in 4.2.

d. Test Results

Pass.

e. Test Plots

See the following page.



Test Mode: 802.11b---Low



Test Mode: 802.11b---High



Test Mode: 802.11g---Low



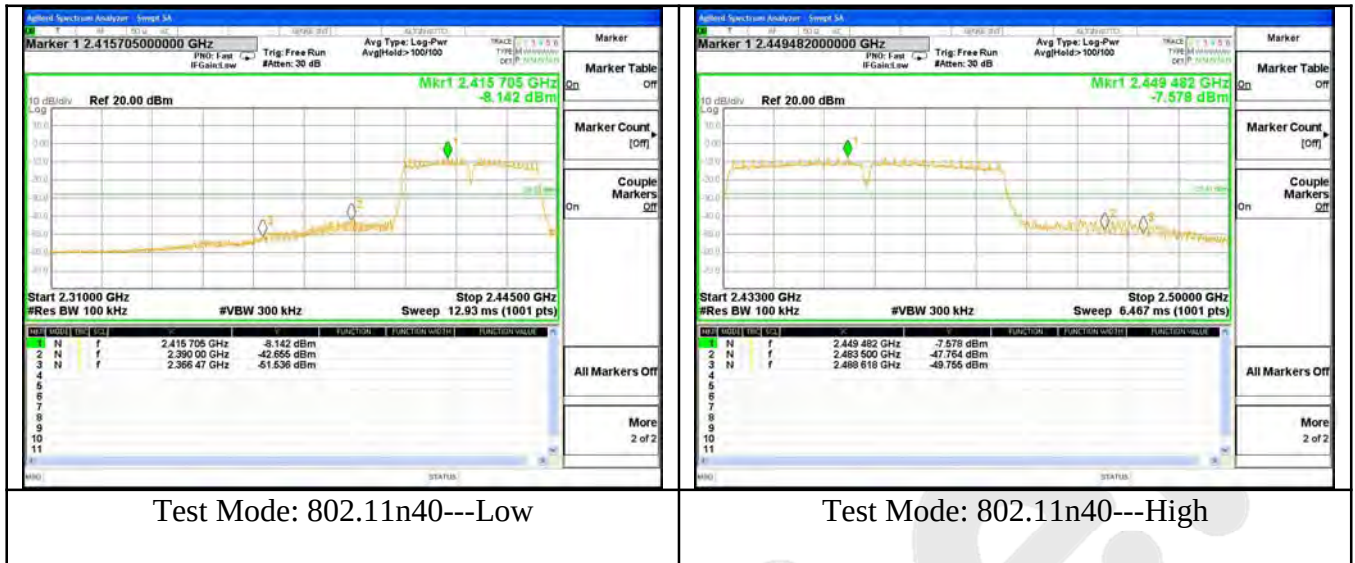
Test Mode: 802.11g---High



Test Mode: 802.11n20---Low



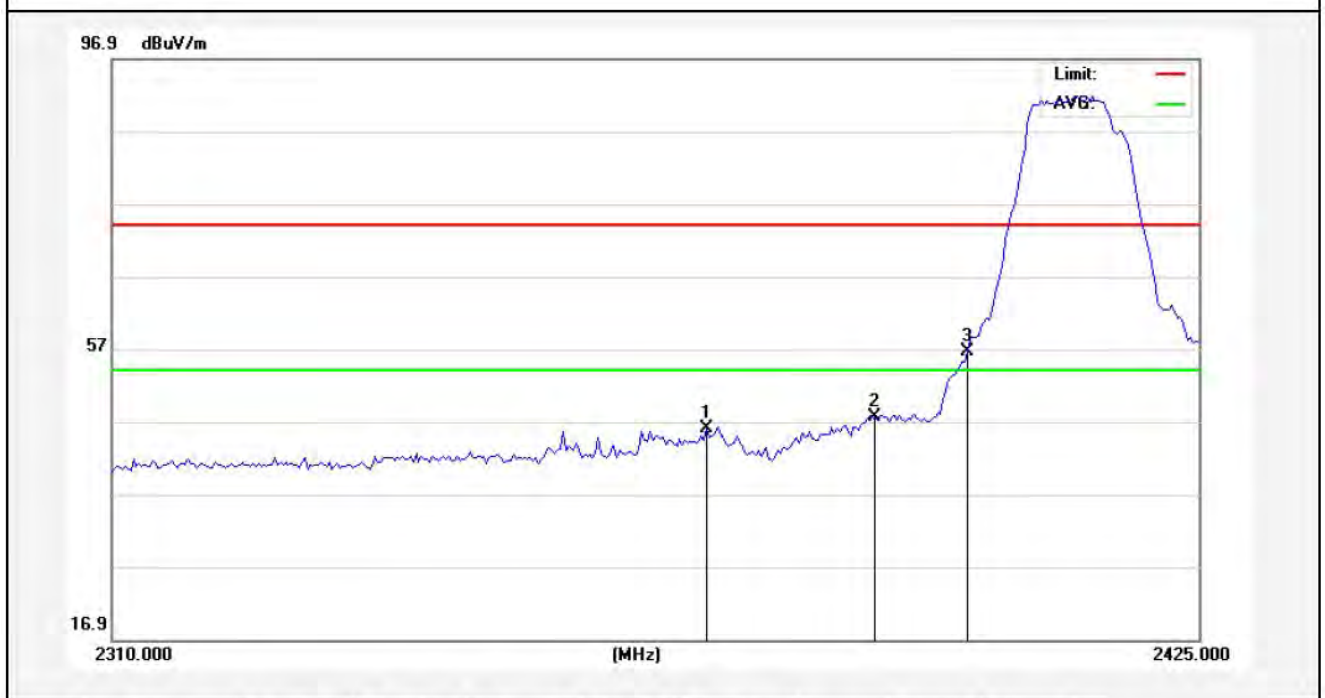
Test Mode: 802.11n20---High



Test Mode: 802.11b

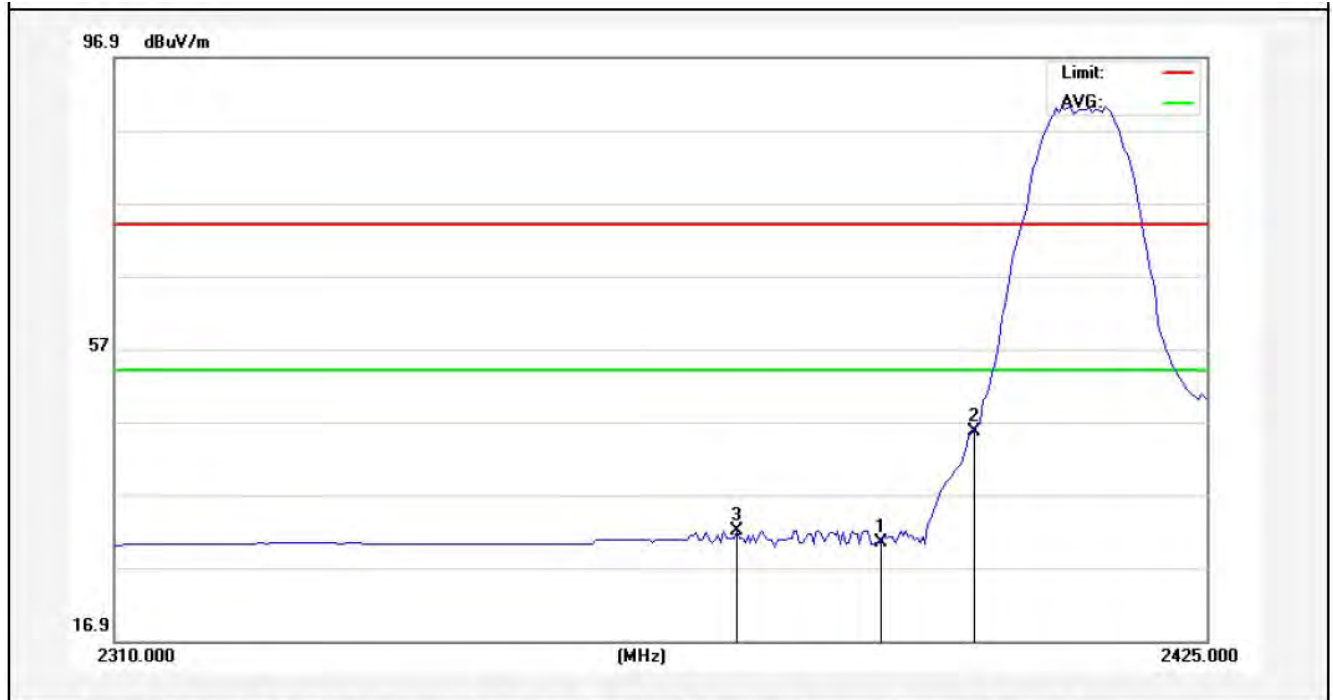
2412MHz

Horizontal-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2372.387	48.53	-2.55	45.98	74.00	-28.02	peak			
2	2390.000	50.18	-2.51	47.67	74.00	-26.33	peak			
3	2400.000	59.00	-2.49	56.51	74.00	-17.49	peak			

Horizontal-AV:

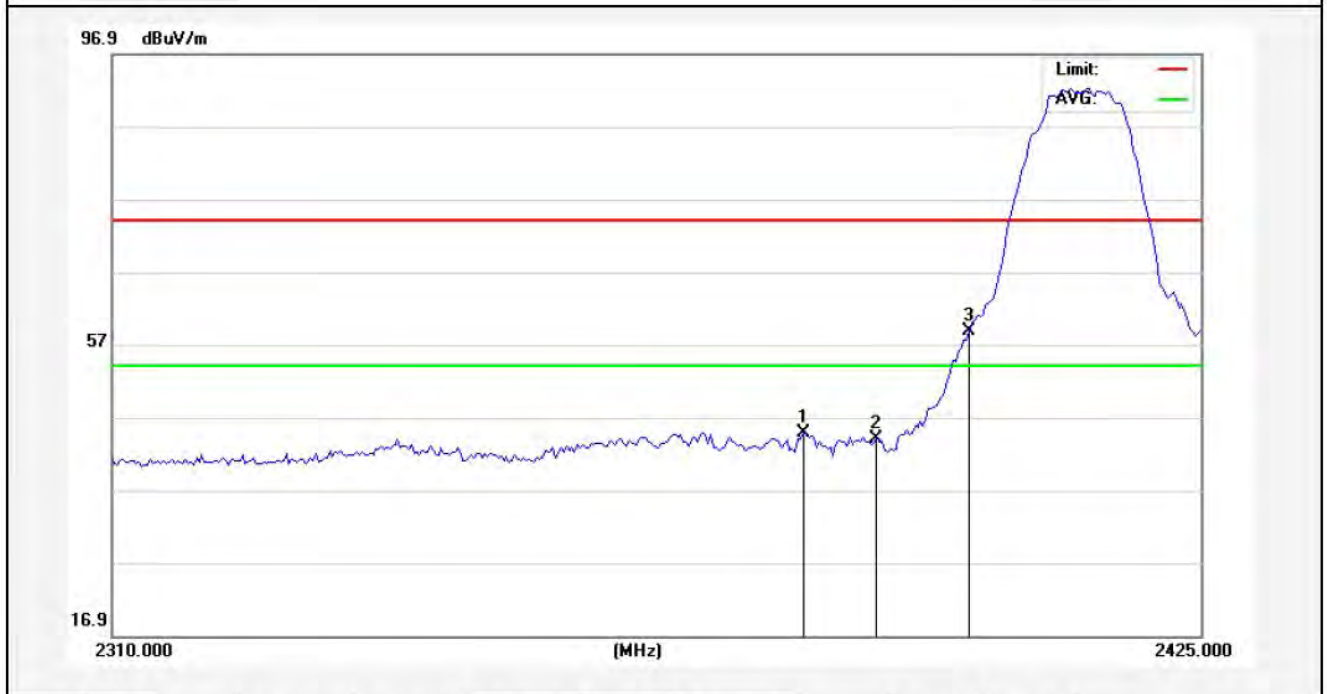


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	32.95	-2.51	30.44	54.00	-23.56	AVG			
2	2400.000	48.19	-2.49	45.70	54.00	-8.30	AVG			
3	2374.975	34.48	-2.55	31.93	54.00	-22.07	AVG			

Test Mode: 802.11b

2412MHz

Vertical-PEAK:



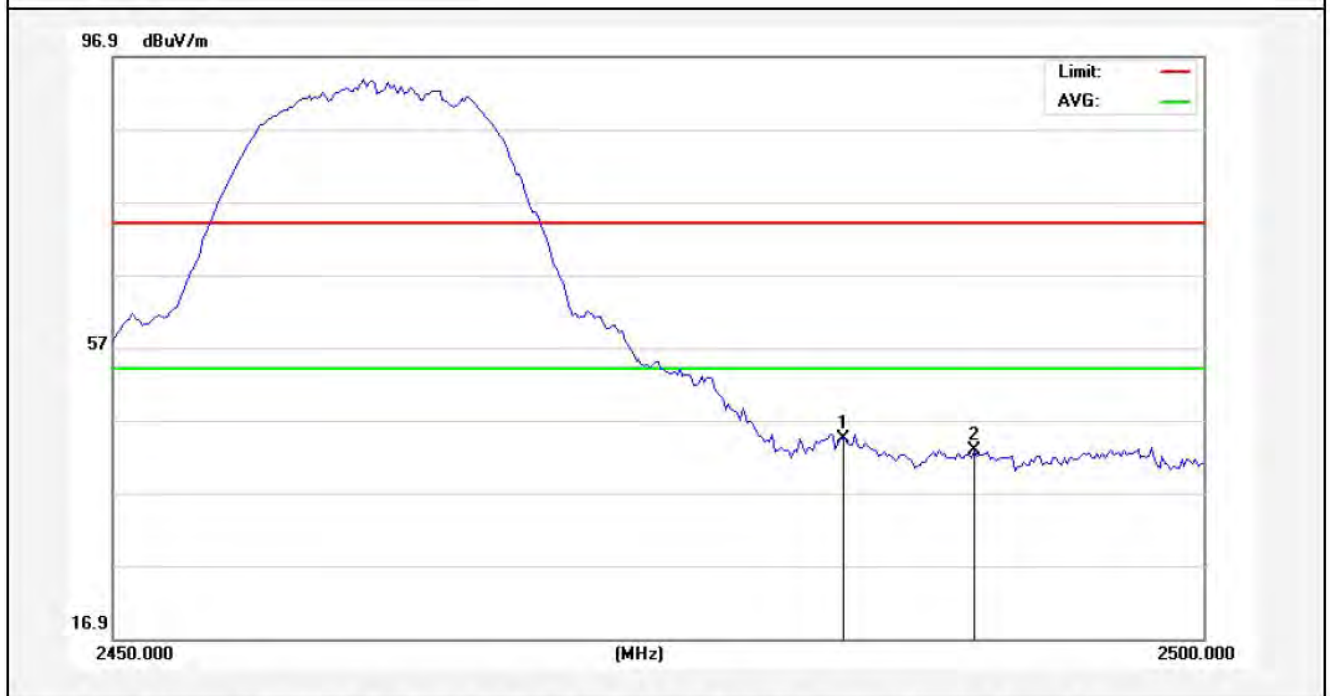
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2382.450	47.36	-2.53	44.83	74.00	-29.17	peak			
2	2390.000	46.61	-2.51	44.10	74.00	-29.90	peak			
3	2400.000	61.33	-2.49	58.84	74.00	-15.16	peak			

Vertical-AV:



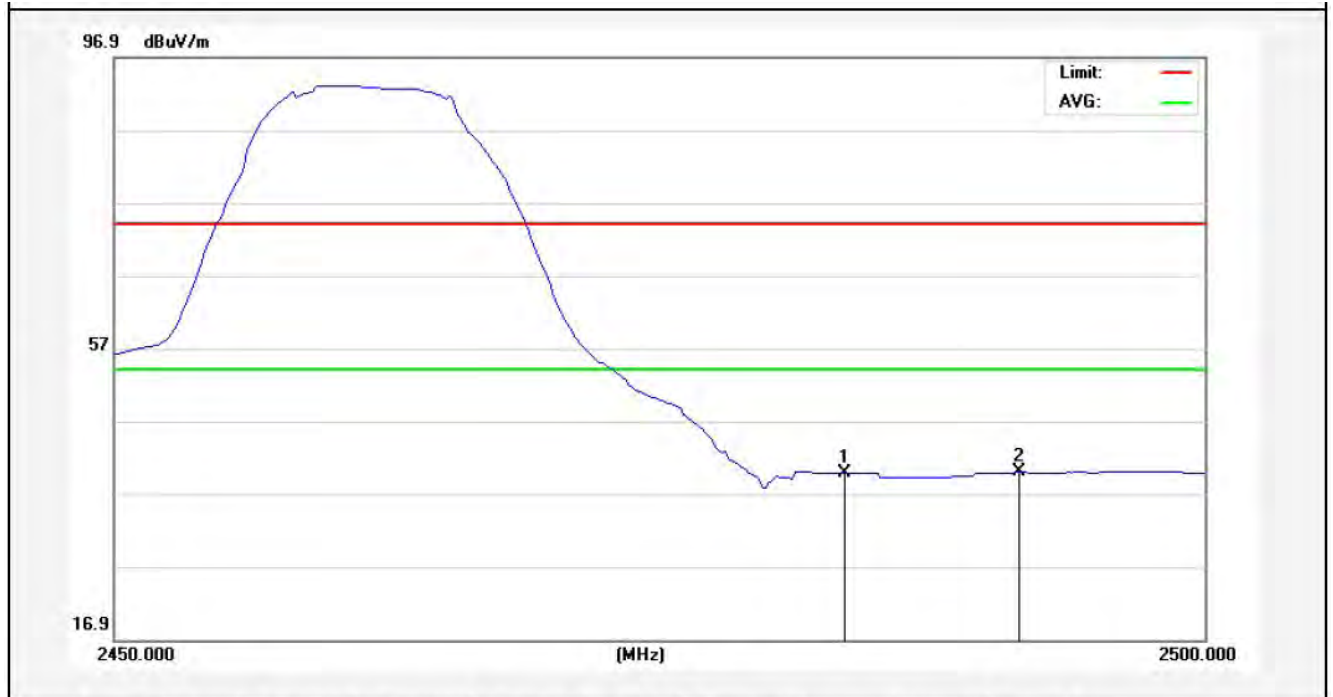
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2386.188	34.64	-2.52	32.12	54.00	-21.88	AVG			
2	2390.000	34.63	-2.51	32.12	54.00	-21.88	AVG			
3	2400.000	48.50	-2.49	46.01	54.00	-7.99	AVG			

Test Mode: 802.11b
2462MHz
Horizontal-PEAK:



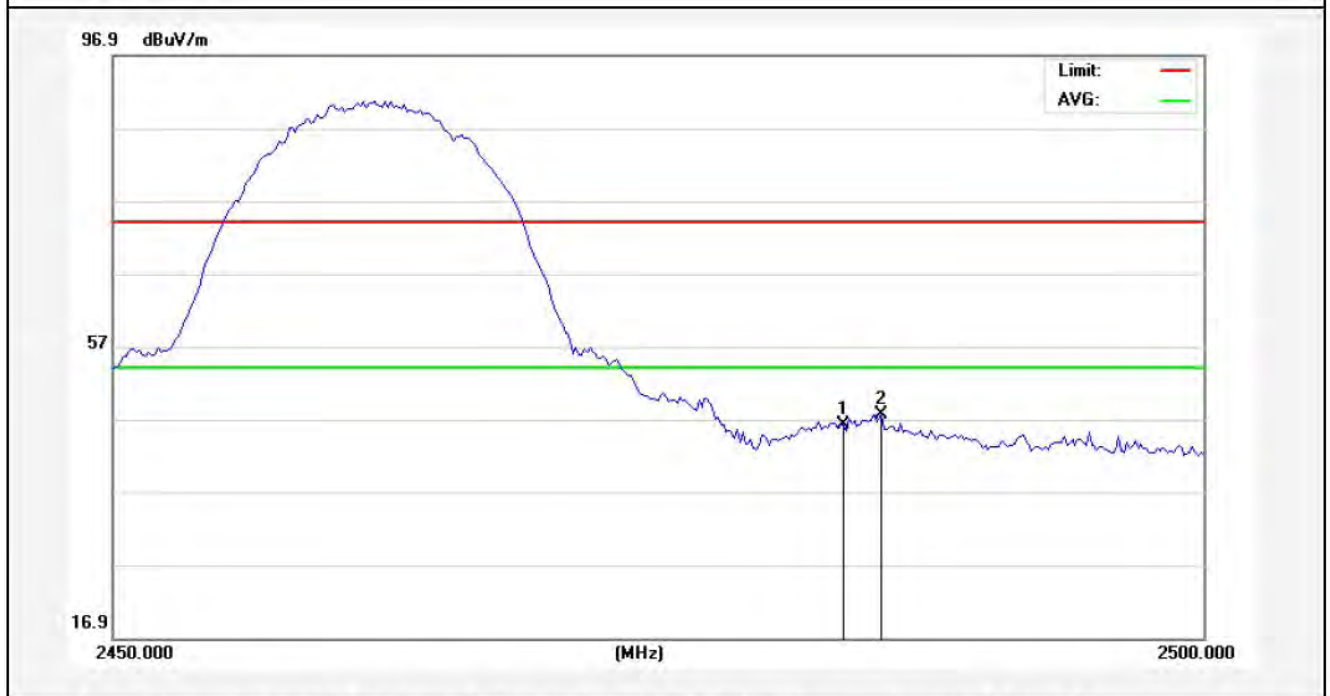
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	46.72	-2.31	44.41	74.00	-29.59	peak			
2	2489.500	45.12	-2.29	42.83	74.00	-31.17	peak			

Horizontal-AV:



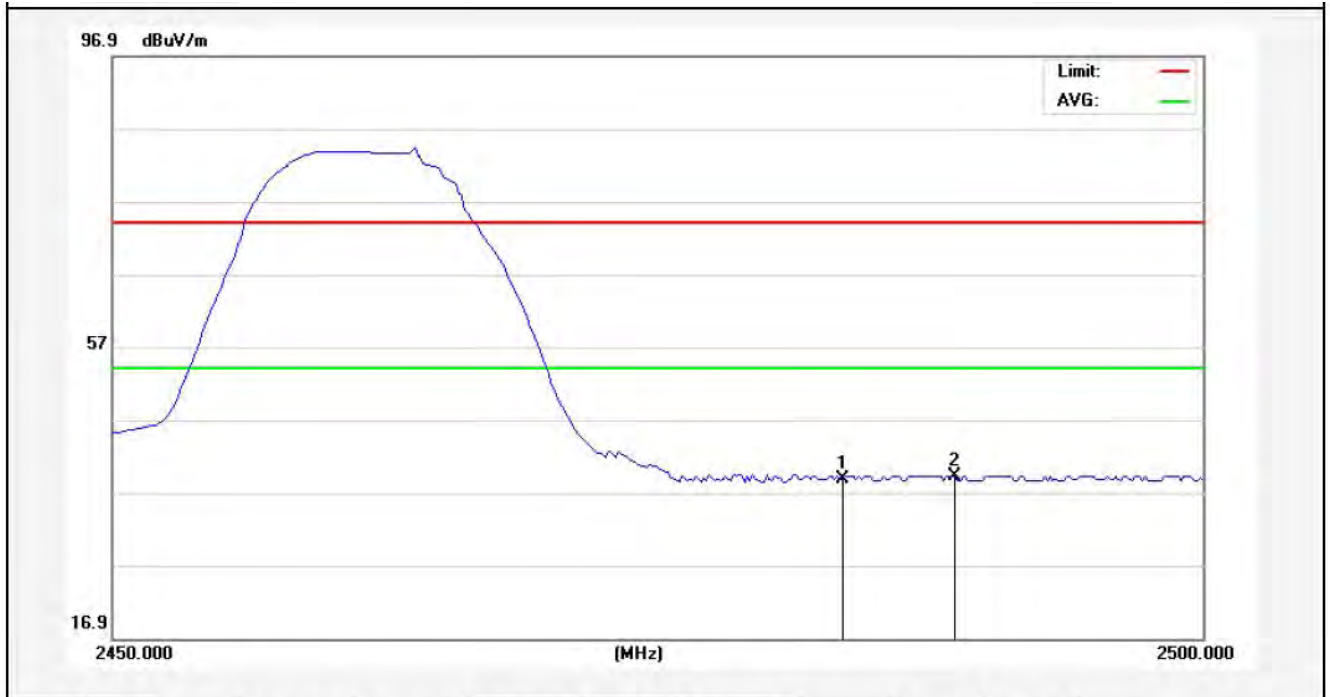
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	42.11	-2.31	39.80	54.00	-14.20	AVG			
2	2491.500	42.21	-2.29	39.92	54.00	-14.08	AVG			

Test Mode: 802.11b
2462MHz
Vertical-PEAK:



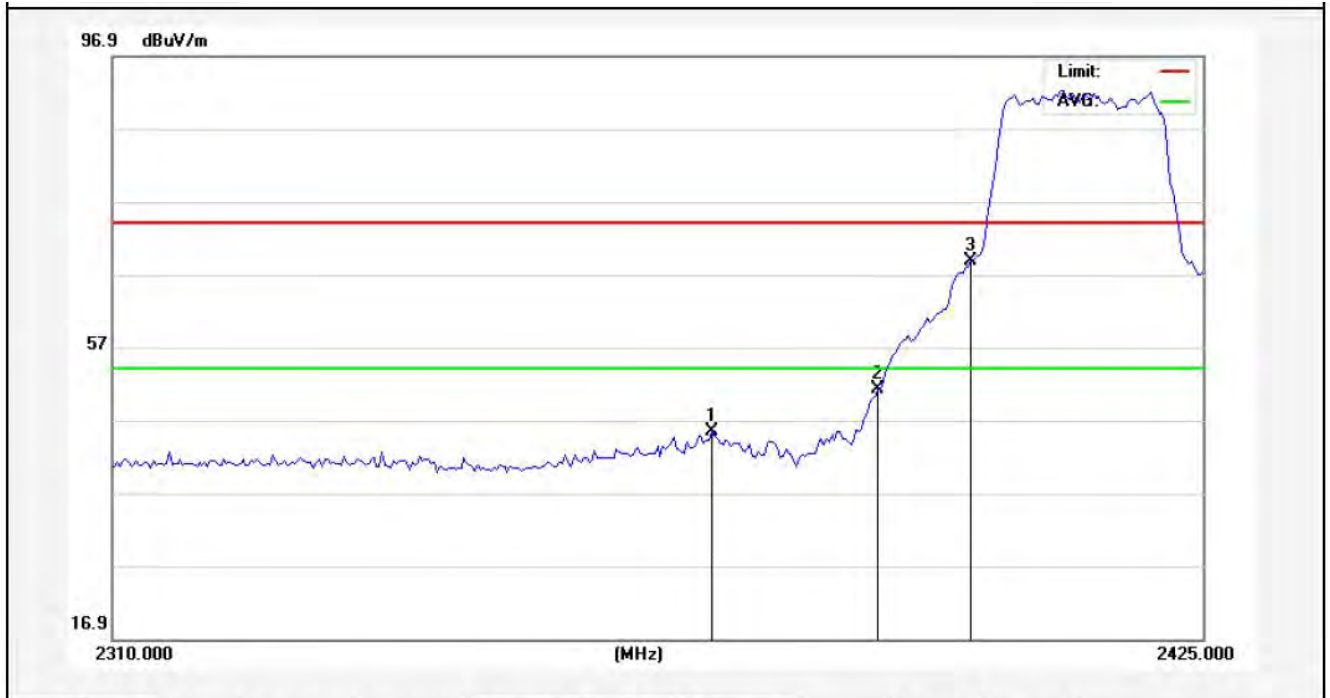
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	48.46	-2.31	46.15	74.00	-27.85	peak			
2	2485.250	49.99	-2.30	47.69	74.00	-26.31	peak			

Vertical-AV:



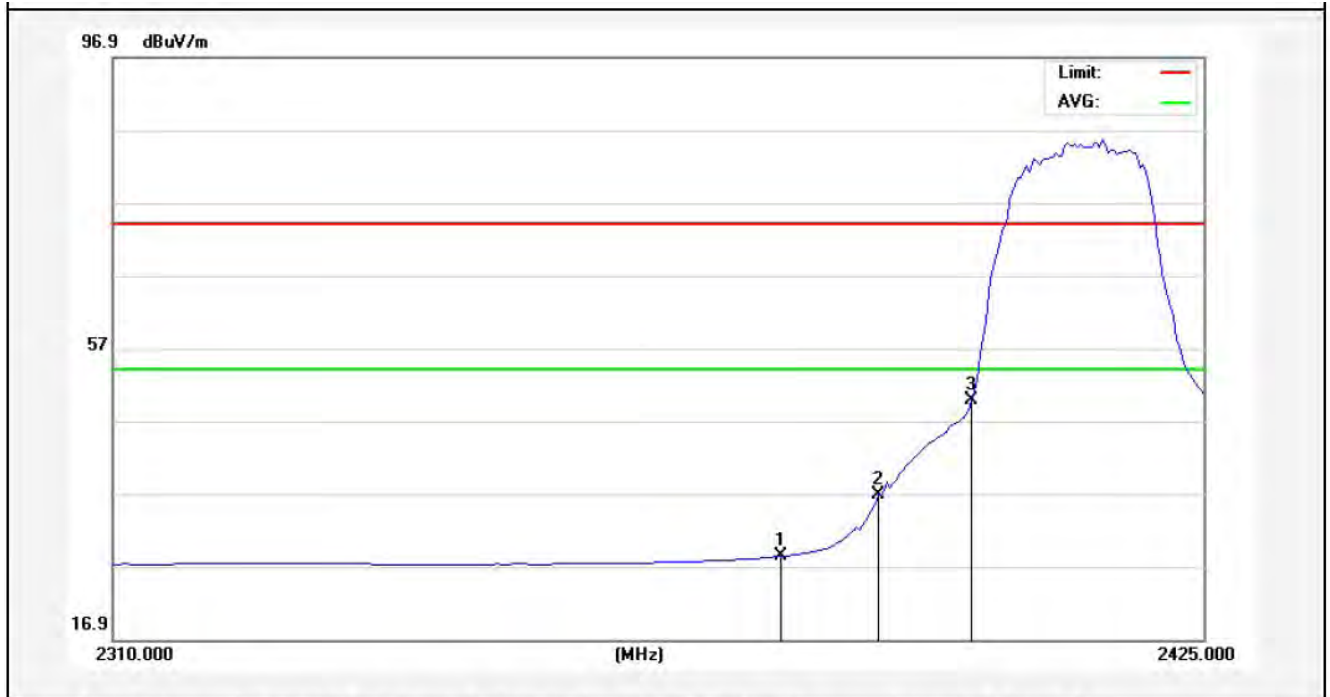
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	41.03	-2.31	38.72	54.00	-15.28	AVG			
2	2488.625	41.49	-2.30	39.19	54.00	-14.81	AVG			

Test Mode: 802.11g
2412MHz
Horizontal-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2372.675	47.94	-2.55	45.39	74.00	-28.61	peak			
2	2390.000	53.64	-2.51	51.13	74.00	-22.87	peak			
3	2400.000	71.36	-2.49	68.87	74.00	-5.13	peak			

Horizontal-AV:



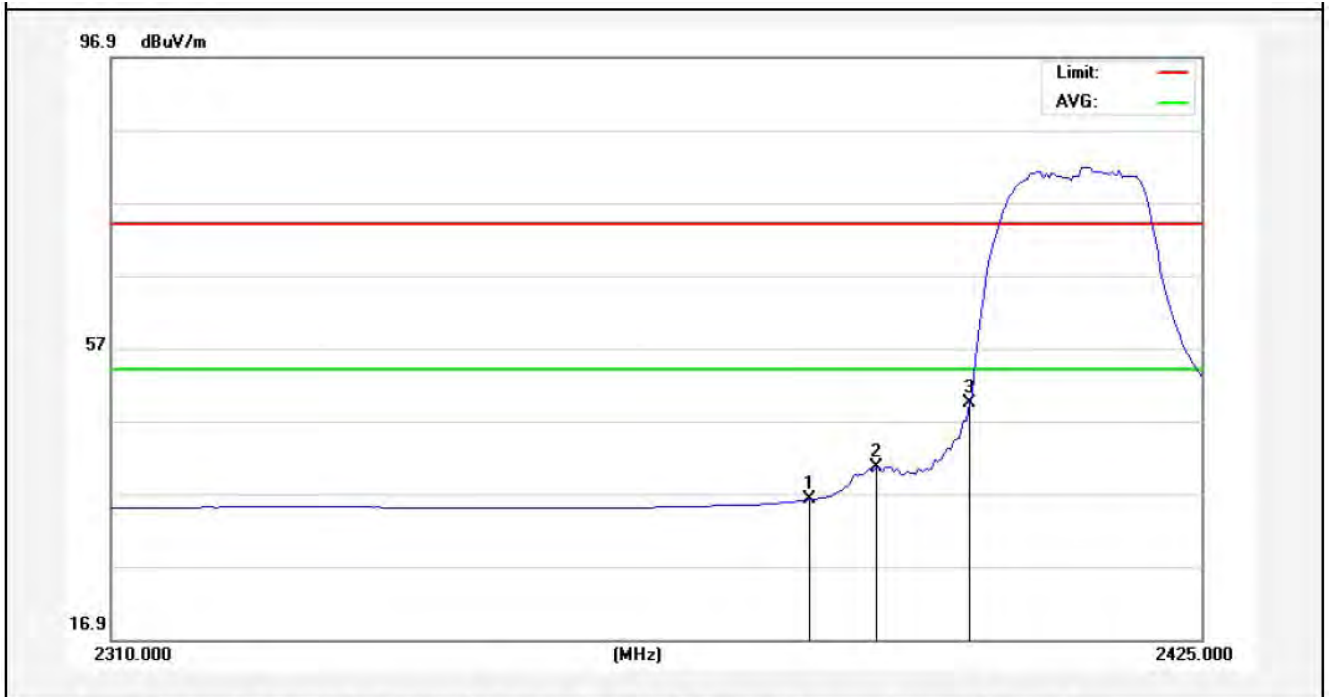
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2379.863	30.93	-2.54	28.39	54.00	-25.61	AVG			
2	2390.000	39.31	-2.51	36.80	54.00	-17.20	AVG			
3	2400.000	52.31	-2.49	49.82	54.00	-4.18	AVG			

Test Mode: 802.11g
2412MHz
Vertical-PEAK:



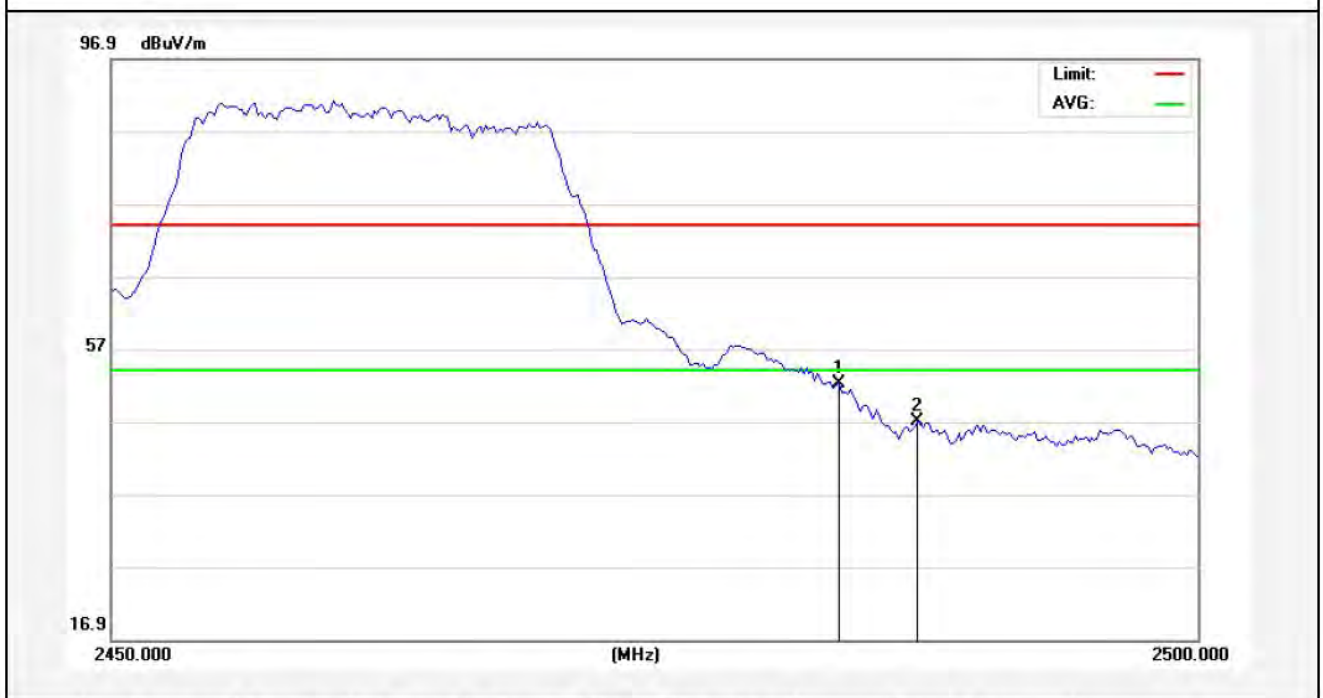
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2379.287	50.26	-2.54	47.72	74.00	-26.28	peak			
2	2390.000	56.91	-2.51	54.40	74.00	-19.60	peak			
3	2400.000	67.68	-2.49	65.19	74.00	-8.81	peak			

Vertical-AV:

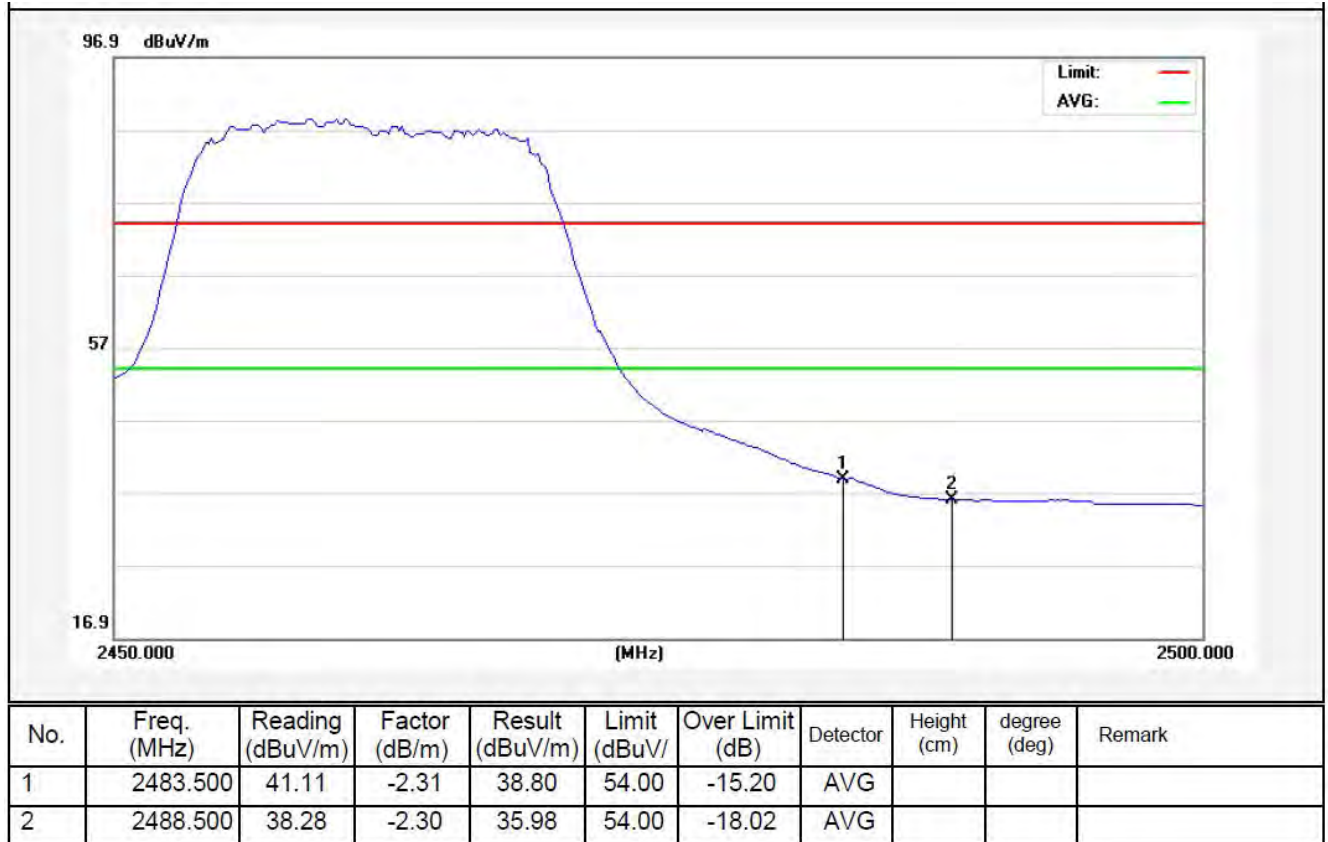


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2383.025	38.65	-2.53	36.12	54.00	-17.88	AVG			
2	2390.000	43.07	-2.51	40.56	54.00	-13.44	AVG			
3	2400.000	51.89	-2.49	49.40	54.00	-4.60	AVG			

Test Mode: 802.11g
2462MHz
Horizontal-PEAK:



Horizontal-AV:

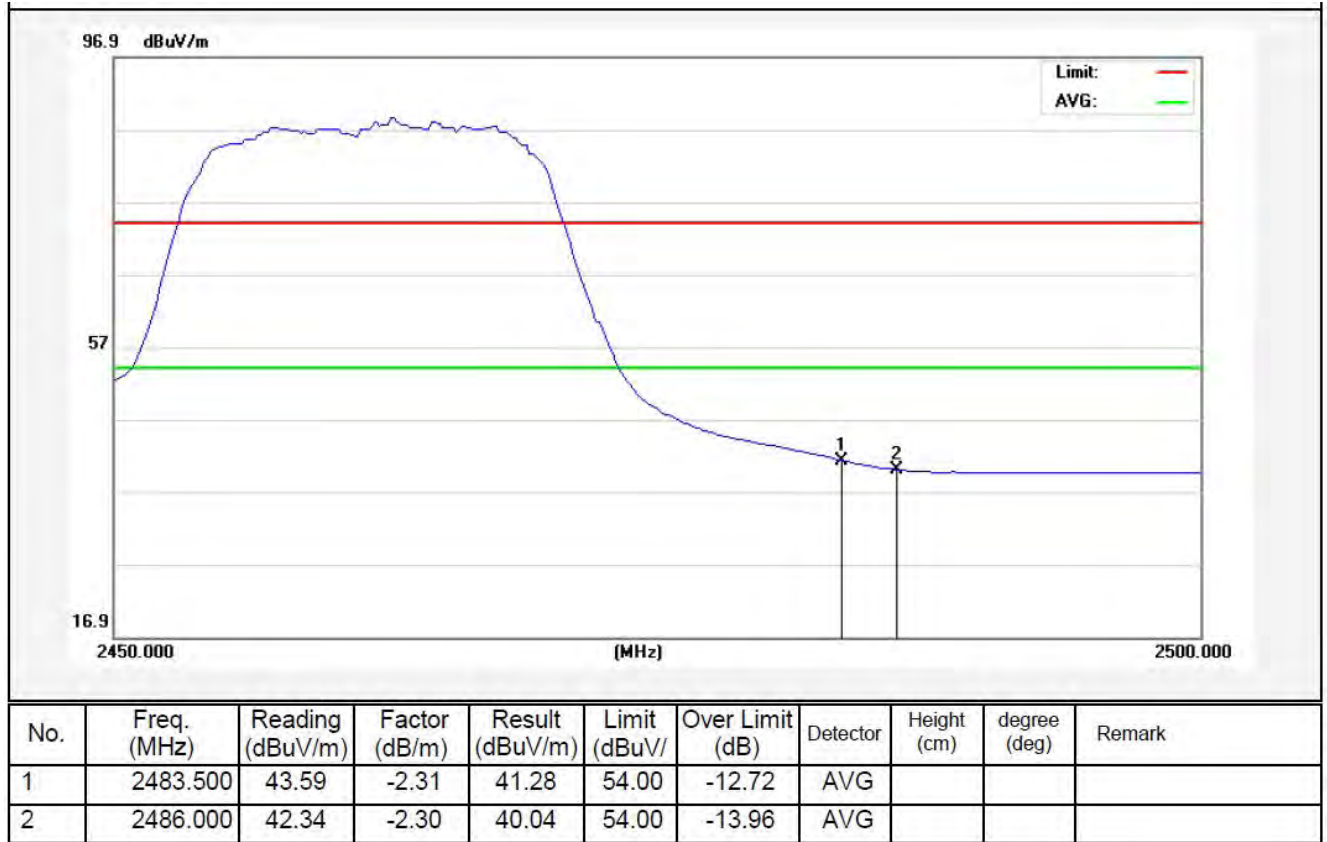


Test Mode: 802.11g
2462MHz
Vertical-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	47.22	-2.31	44.91	74.00	-29.09	peak			
2	2490.875	47.23	-2.29	44.94	74.00	-29.06	peak			

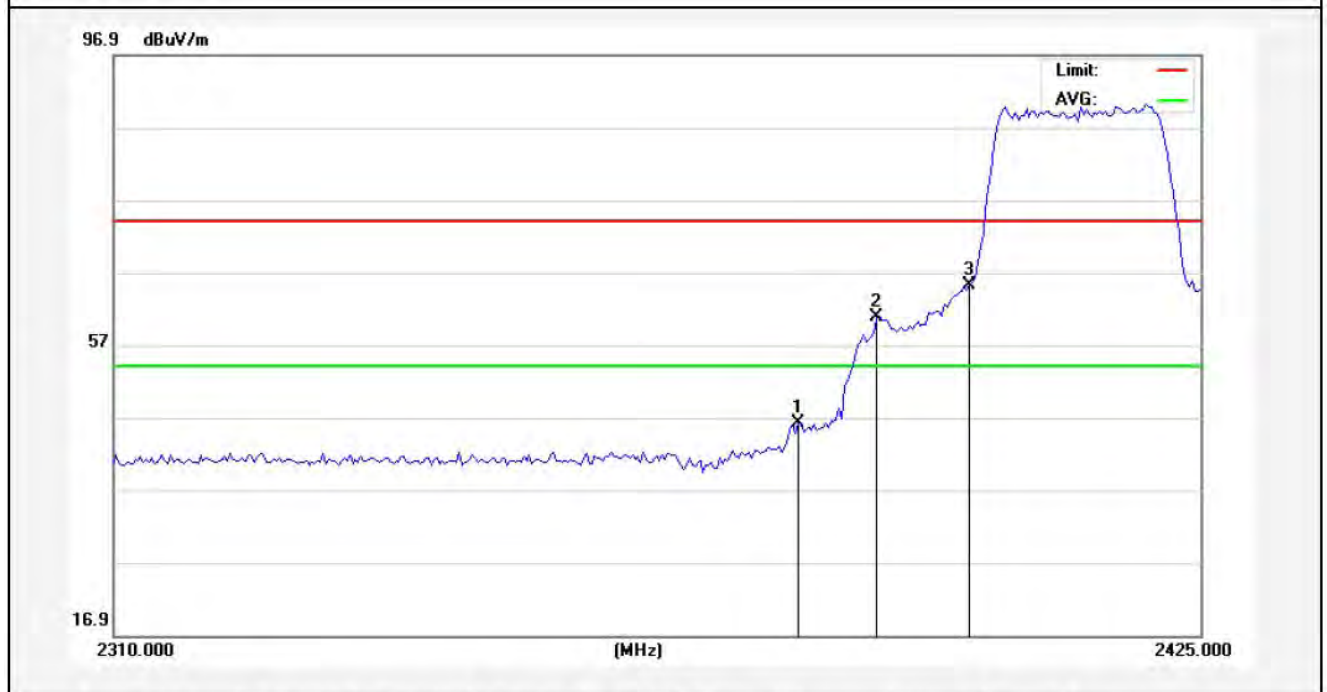
Vertical-AV:



Test Mode: 802.11n (HT20)

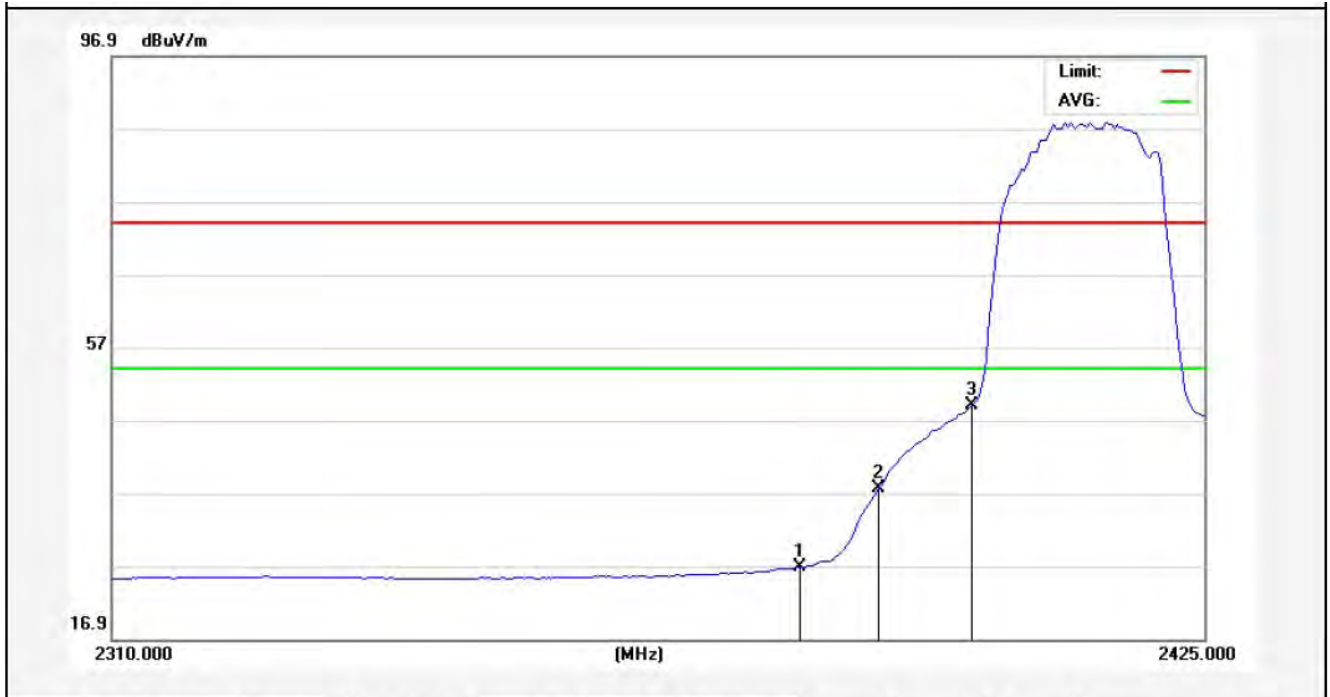
2412MHz

Horizontal-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2381.875	48.76	-2.53	46.23	74.00	-27.77	peak			
2	2390.000	63.32	-2.51	60.81	74.00	-13.19	peak			
3	2400.000	67.72	-2.49	65.23	74.00	-8.77	peak			

Horizontal-AV:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2381.875	29.35	-2.53	26.82	54.00	-27.18	AVG			
2	2390.000	40.07	-2.51	37.56	54.00	-16.44	AVG			
3	2400.000	51.42	-2.49	48.93	54.00	-5.07	AVG			

Test Mode: 802.11n (HT20)

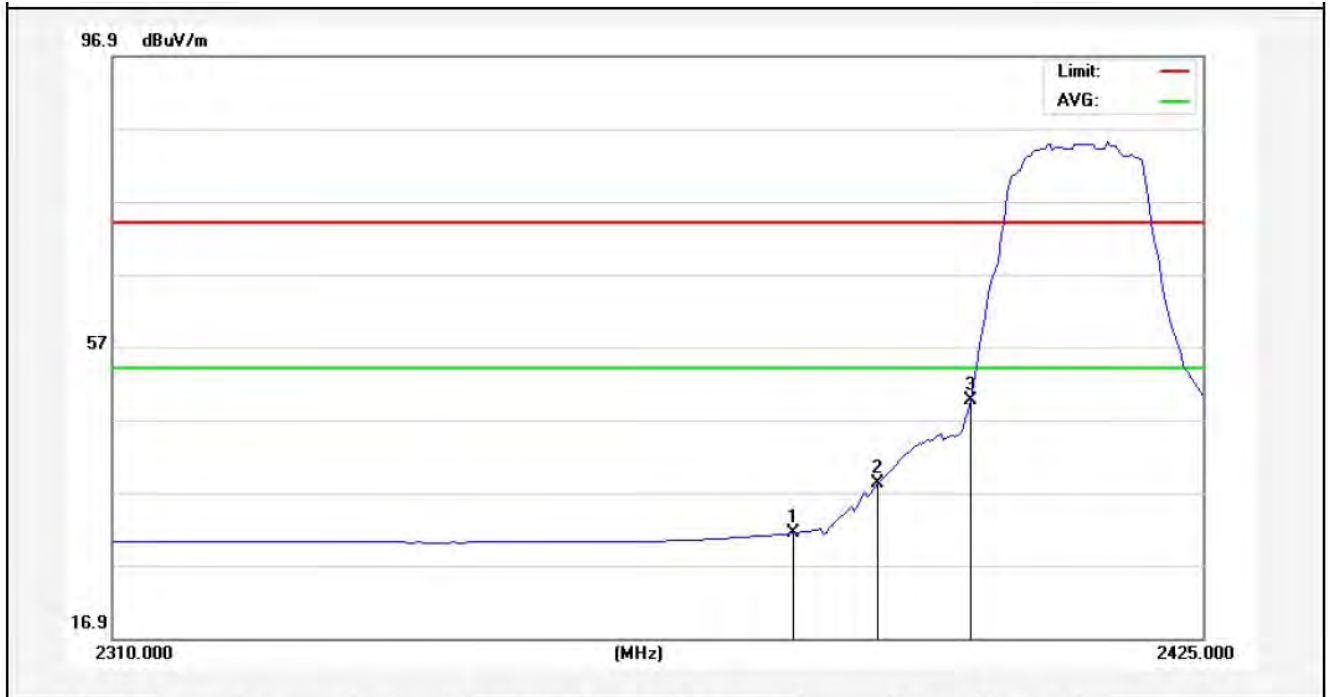
2412MHz

Vertical-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2379.863	48.82	-2.54	46.28	74.00	-27.72	peak			
2	2390.000	53.11	-2.51	50.60	74.00	-23.40	peak			
3	2400.000	63.69	-2.49	61.20	74.00	-12.80	peak			

Vertical-AV:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2381.300	33.89	-2.53	31.36	54.00	-22.64	AVG			
2	2390.000	40.66	-2.51	38.15	54.00	-15.85	AVG			
3	2400.000	52.09	-2.49	49.60	54.00	-4.40	AVG			

Test Mode: 802.11n (HT20)

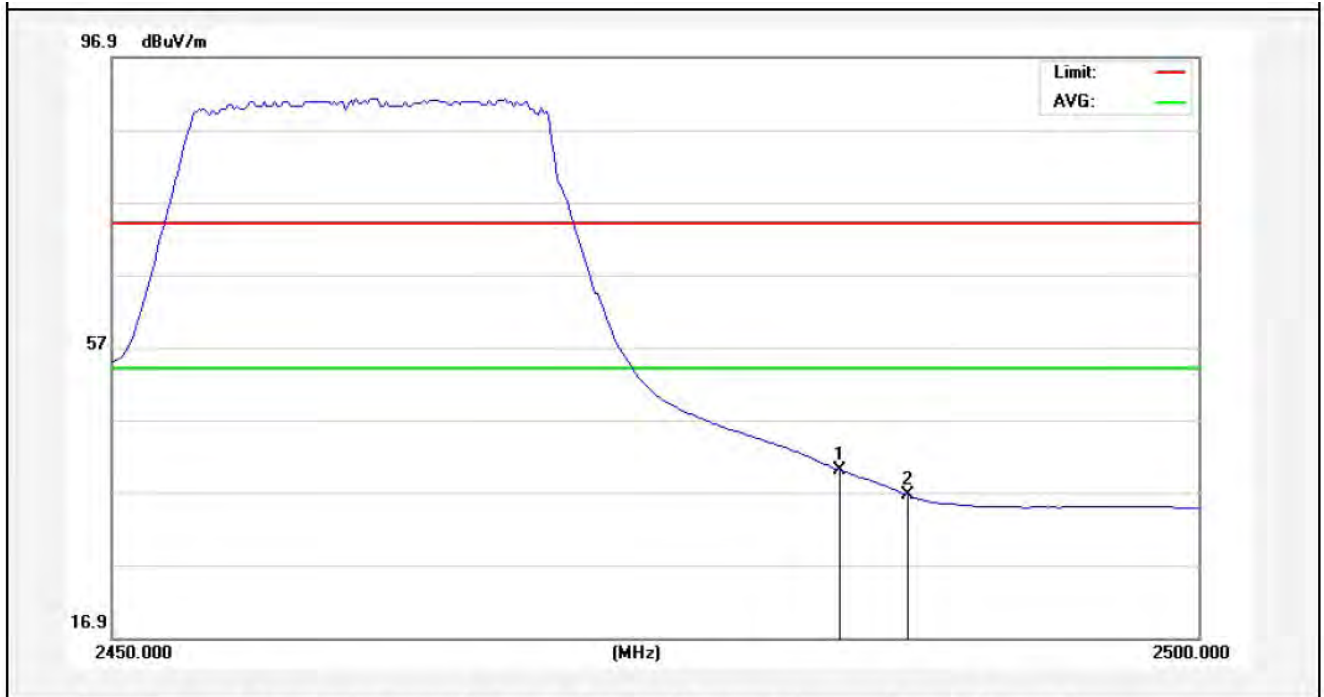
2462MHz

Horizontal-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	61.60	-2.31	59.29	74.00	-14.71	peak			
2	2492.375	48.30	-2.29	46.01	74.00	-27.99	peak			

Horizontal-AV:

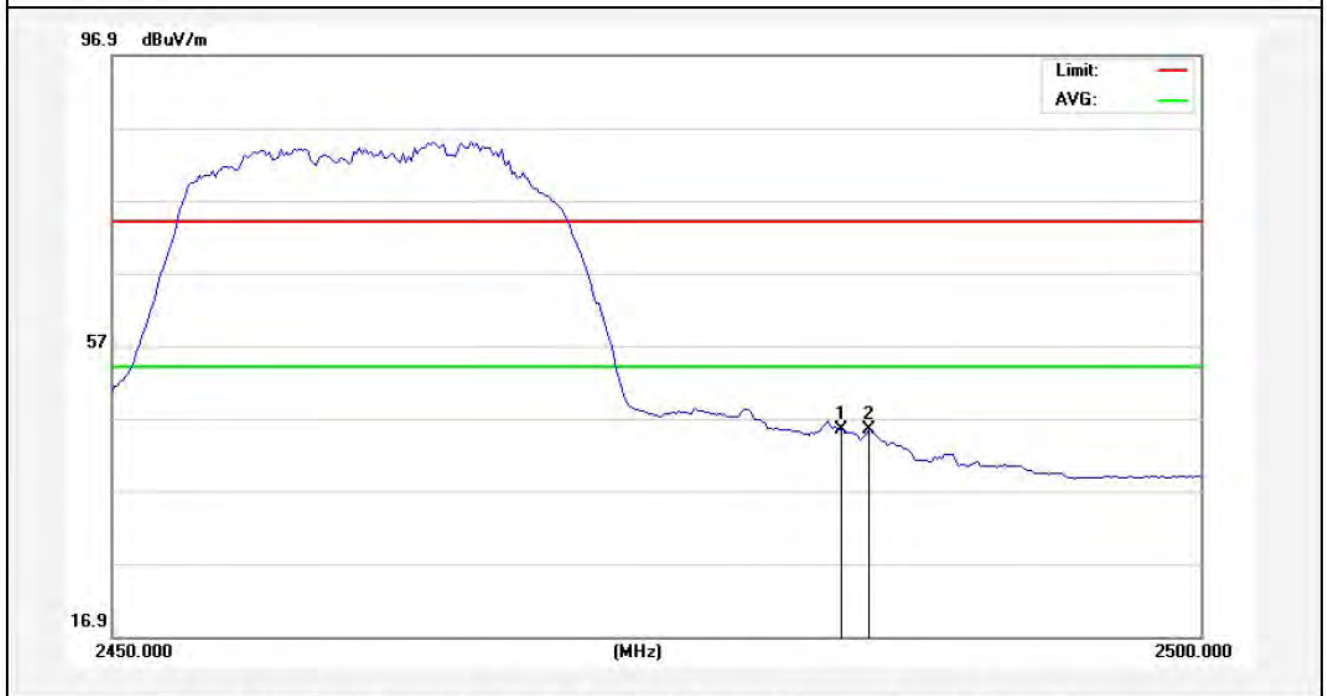


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	42.26	-2.31	39.95	54.00	-14.05	AVG			
2	2486.625	38.89	-2.30	36.59	54.00	-17.41	AVG			

Test Mode: 802.11n (HT20)

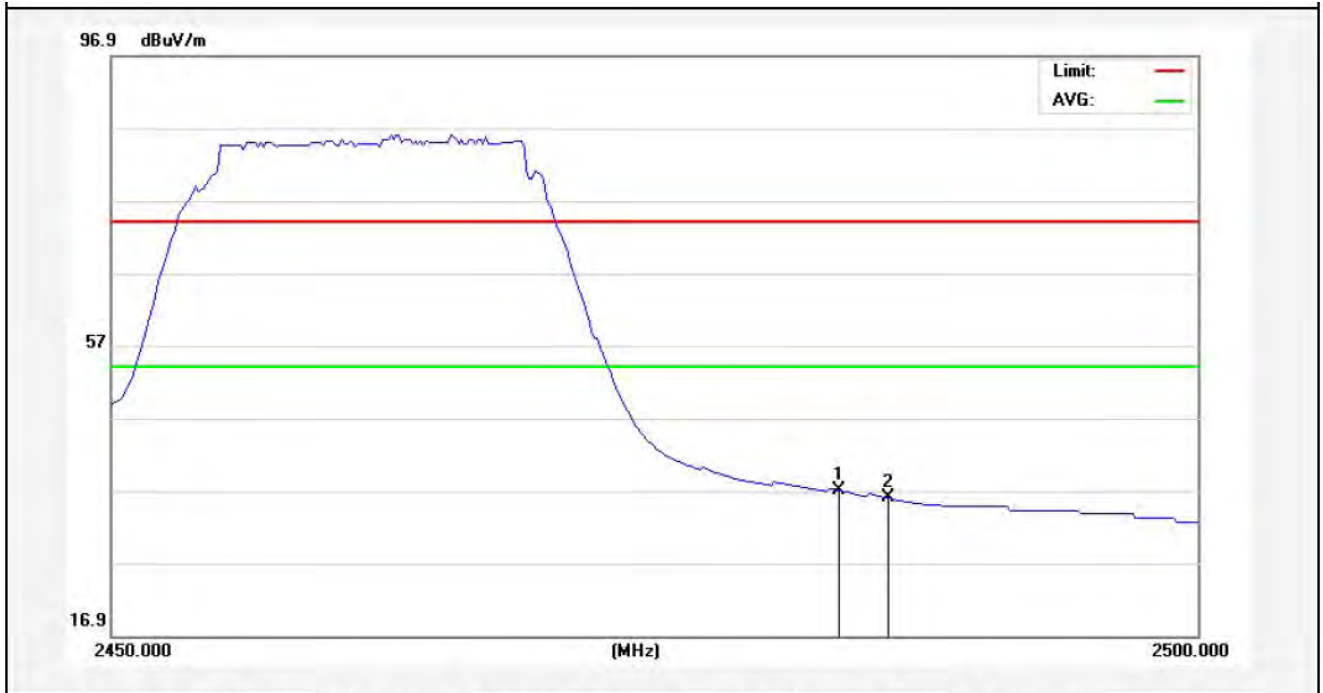
2462MHz

Vertical-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	47.68	-2.31	45.37	74.00	-28.63	peak			
2	2484.750	47.78	-2.30	45.48	74.00	-28.52	peak			

Vertical-AV:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	39.26	-2.31	36.95	54.00	-17.05	AVG			
2	2485.750	38.21	-2.30	35.91	54.00	-18.09	AVG			

Test Mode: 802.11n (HT40)

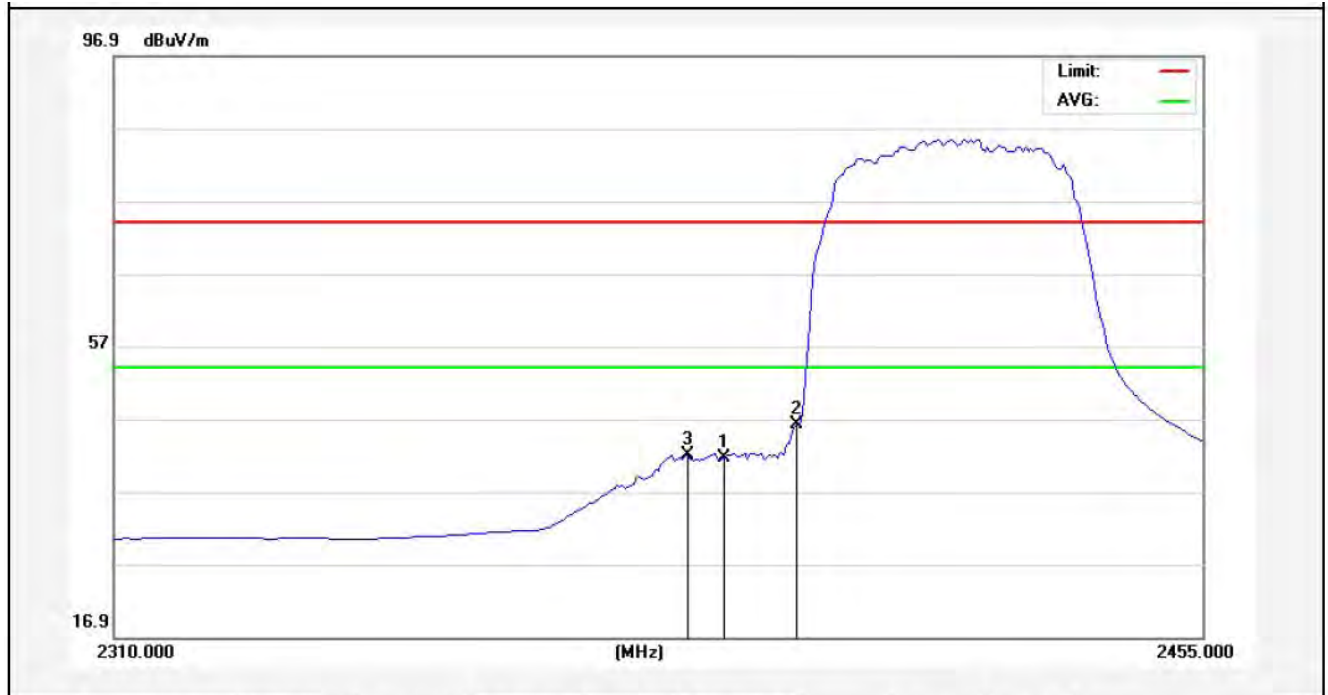
2422MHz

Horizontal-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2379.238	62.49	-2.54	59.95	74.00	-14.05	peak			
2	2390.000	66.61	-2.51	64.10	74.00	-9.90	peak			
3	2400.000	68.14	-2.49	65.65	74.00	-8.35	peak			

Horizontal-AV:

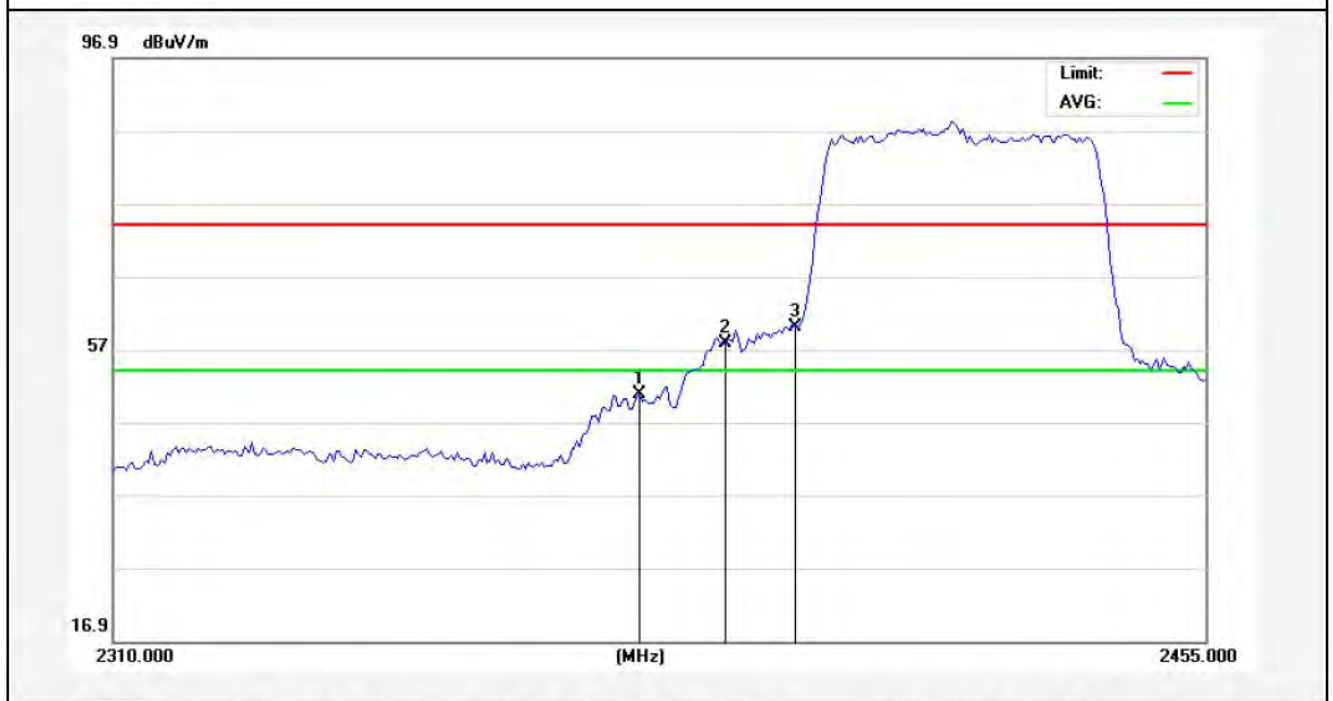


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	44.11	-2.51	41.60	54.00	-12.40	AVG			
2	2400.000	48.68	-2.49	46.19	54.00	-7.81	AVG			
3	2385.400	44.62	-2.52	42.10	54.00	-11.90	AVG			

Test Mode: 802.11n (HT40)

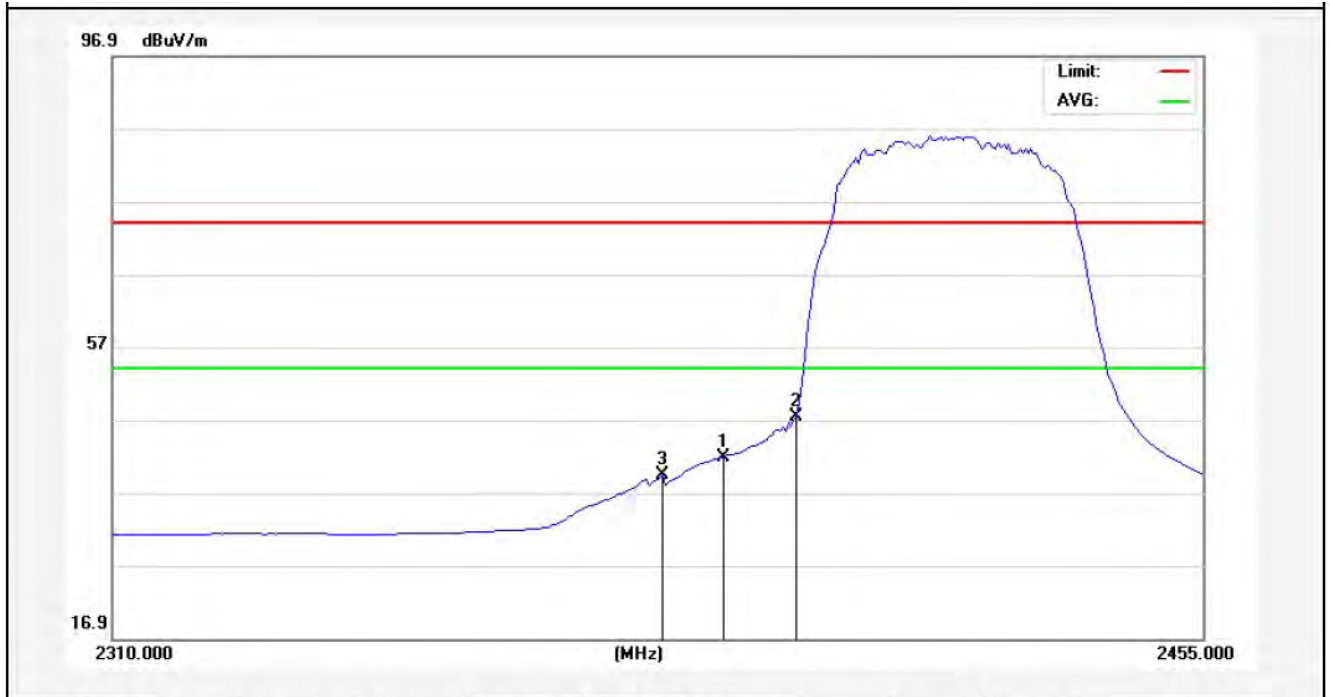
2422MHz

Vertical-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2378.875	53.28	-2.54	50.74	74.00	-23.26	peak			
2	2390.000	60.28	-2.51	57.77	74.00	-16.23	peak			
3	2400.000	62.48	-2.49	59.99	74.00	-14.01	peak			

Vertical-AV:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2390.000	44.35	-2.51	41.84	54.00	-12.16	AVG			
2	2400.000	49.93	-2.49	47.44	54.00	-6.56	AVG			
3	2382.137	41.84	-2.53	39.31	54.00	-14.69	AVG			

Test Mode: 802.11n (HT40)

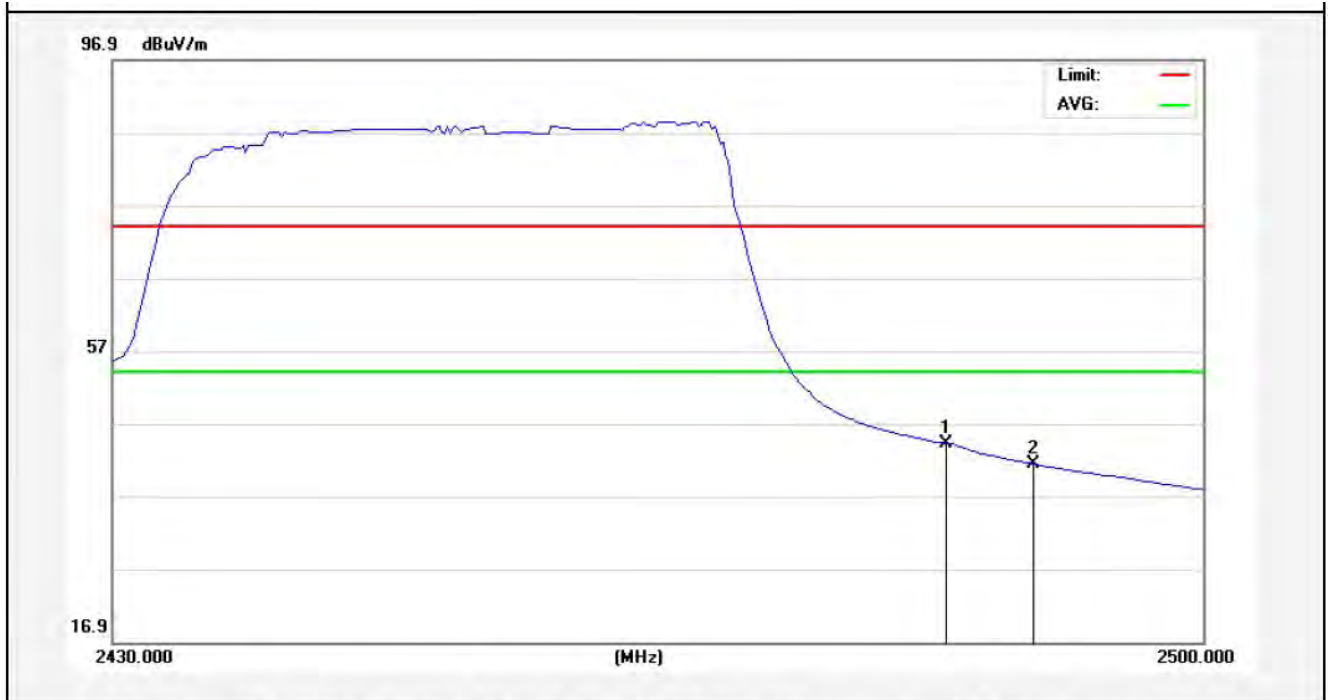
2452MHz

Horizontal-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	52.57	-2.31	50.26	74.00	-23.74	peak			
2	2488.275	52.79	-2.30	50.49	74.00	-23.51	peak			

Horizontal-AV:

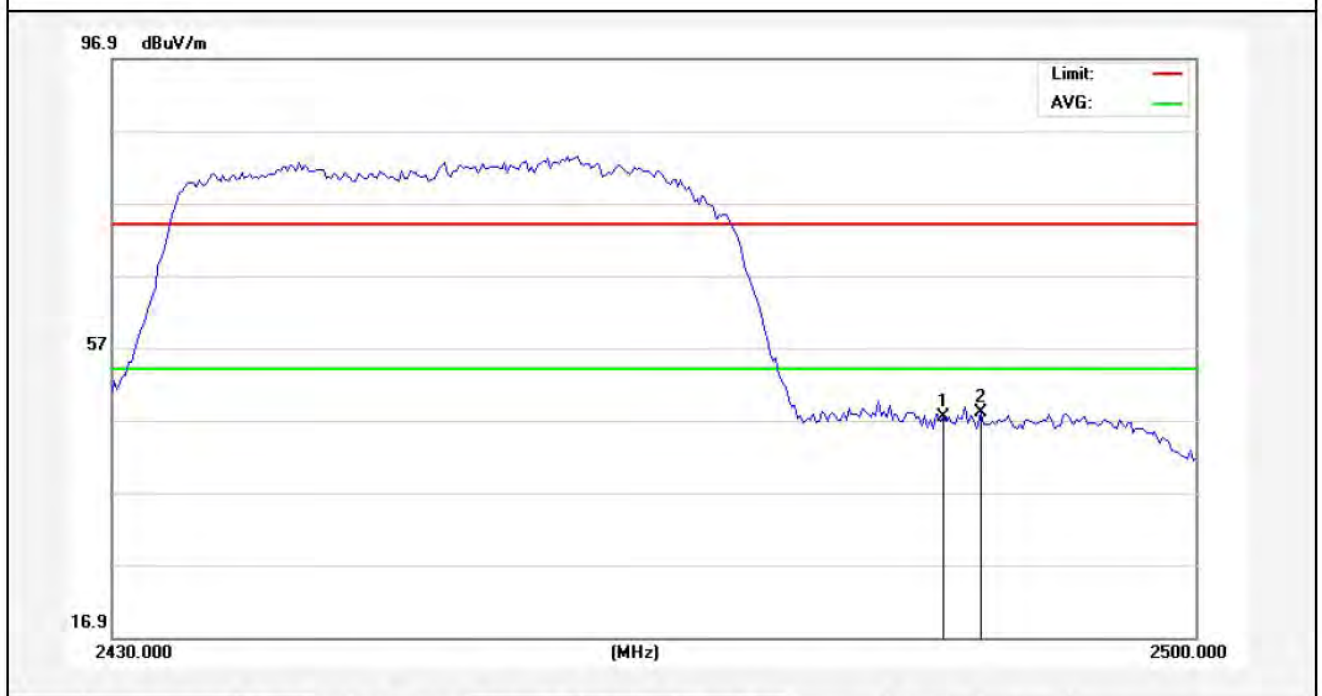


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	46.49	-2.31	44.18	54.00	-9.82	AVG			
2	2489.150	43.67	-2.29	41.38	54.00	-12.62	AVG			

Test Mode: 802.11n (HT40)

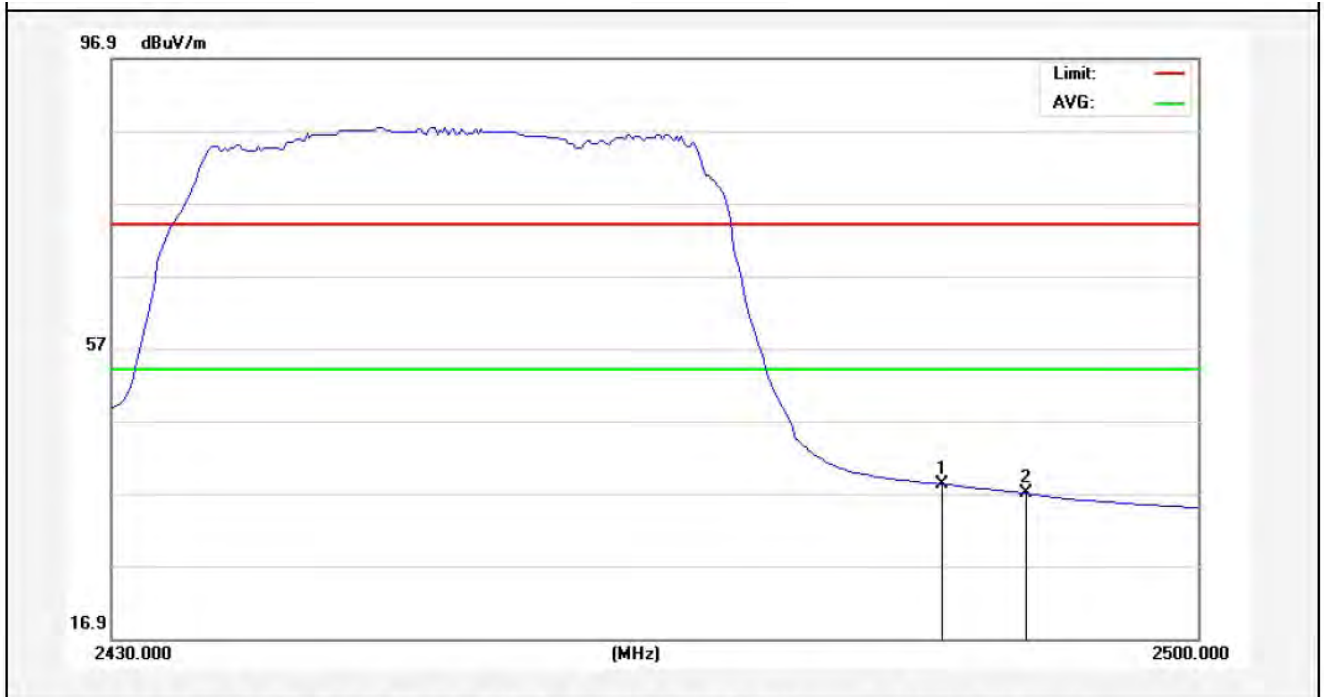
2452MHz

Vertical-PEAK:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	49.78	-2.31	47.47	74.00	-26.53	peak			
2	2486.175	50.24	-2.30	47.94	74.00	-26.06	peak			

Vertical-AV:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	2483.500	40.56	-2.31	38.25	54.00	-15.75	AVG			
2	2488.975	39.20	-2.29	36.91	54.00	-17.09	AVG			

4.5. Peak Power Spectral Density

a. Limit

1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

b. Test Procedure

1. Place the EUT on the table and set it in transmitting mode. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, Span = 1.5 times DTS BW, Sweep=500s
3. Record the max. reading.
4. Repeat the above procedure until the measurements for all frequencies are completed.

c. Test Equipment

Same as the equipment listed in 4.2.

d. Test Setup

See 4.1

e. Test Results

Pass

f. Test Data

Please refer to the following data.

g. Test Plot

 See the following pages

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	PPSD (dBm/3KHz)	Σ PPSD (dBm/3KHz)	Limit (dBm)	Result
Low	2412	-10.540	-	8.00	Pass
Mid	2437	-11.377	-		Pass
High	2462	-10.666	-		Pass

Test mode: IEEE 802.11g

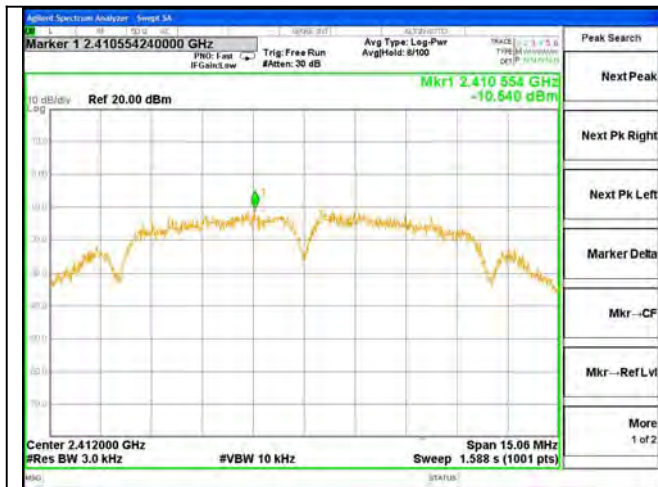
Channel	Frequency (MHz)	PPSD (dBm)	Σ PPSD (dBm)	Limit (dBm)	Result
Low	2412	-17.109	-	8.00	Pass
Mid	2437	-15.224	-		Pass
High	2462	-16.142	-		Pass

Test mode: IEEE 802.11n (HT20)

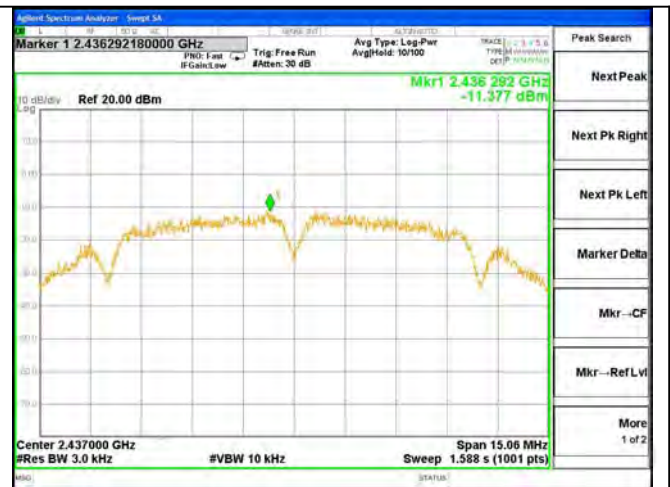
Channel	Frequency (MHz)	PPSD (dBm/3KHz)	Σ PPSD (dBm/3KHz)	Limit (dBm)	Result
Low	2412	-17.216	-	8.00	Pass
Mid	2437	-15.040	-		Pass
High	2462	-15.781	-		Pass

Test mode: IEEE 802.11n (HT40)

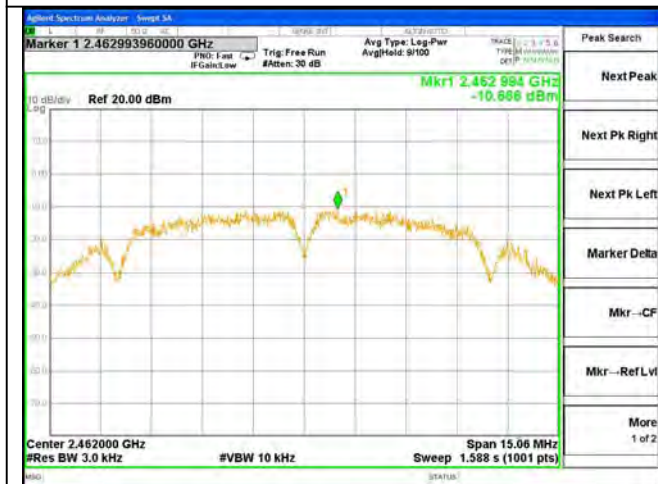
Channel	Frequency (MHz)	PPSD (dBm/3KHz)	Σ PPSD (dBm/3KHz)	Limit (dBm)	Result
Low	2422	-22.919	-	8.00	Pass
Mid	2437	-20.472	-		Pass
High	2452	-21.018	-		Pass



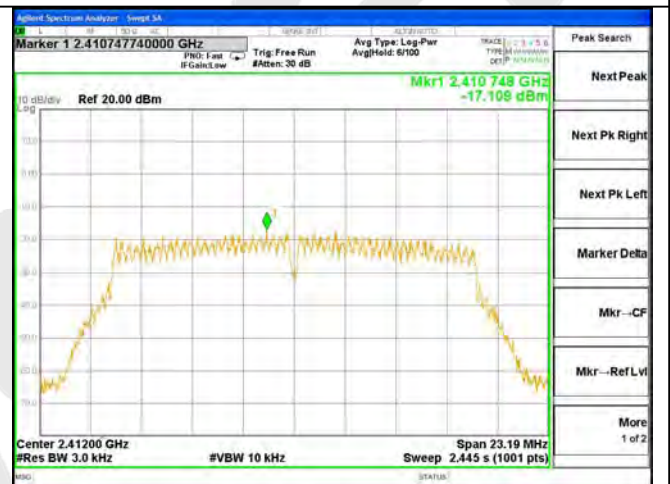
Test Mode: 802.11b---Low



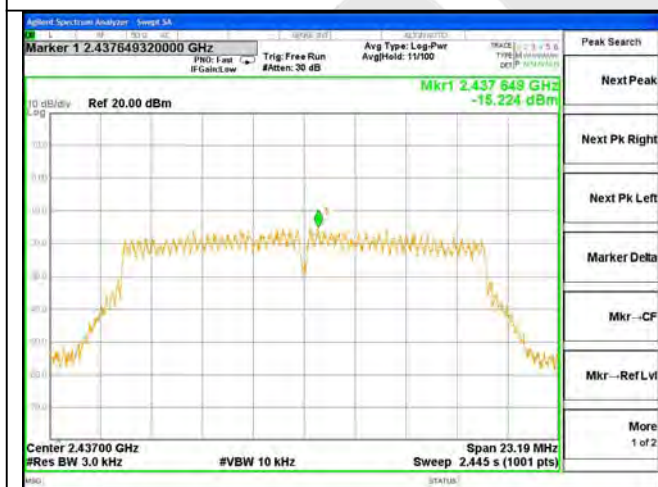
Test Mode: 802.11b---Mid



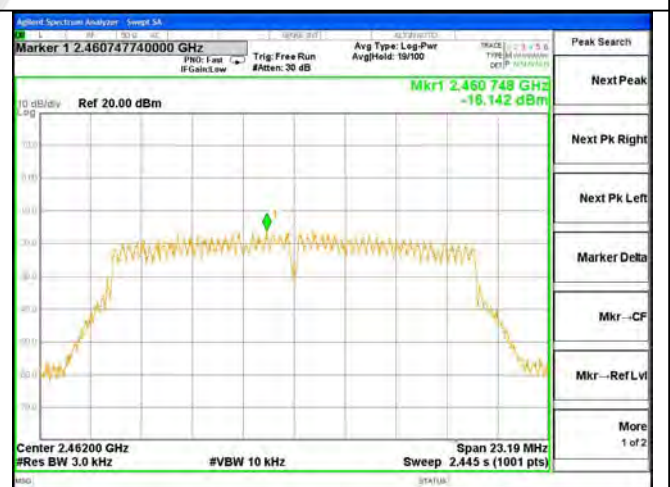
Test Mode: 802.11b---High



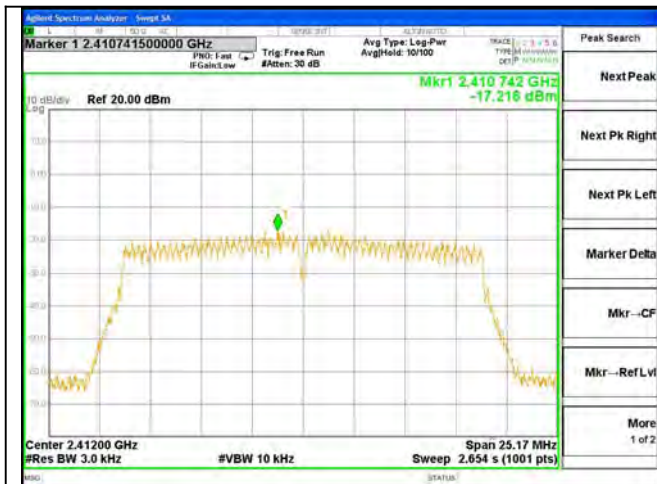
Test Mode: 802.11g---Low



Test Mode: 802.11g---Mid



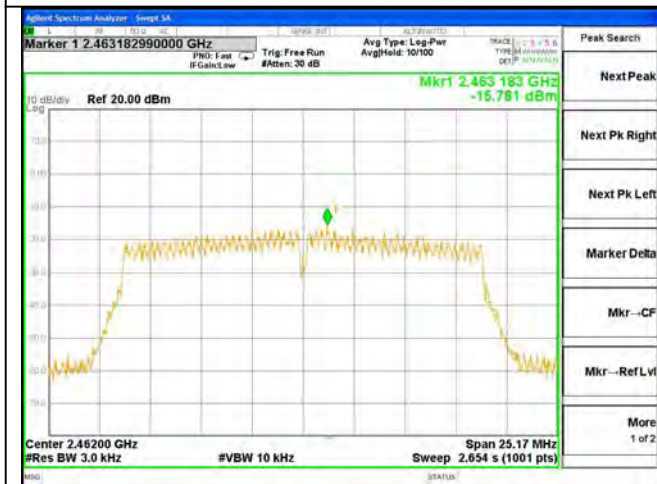
Test Mode: 802.11g---High



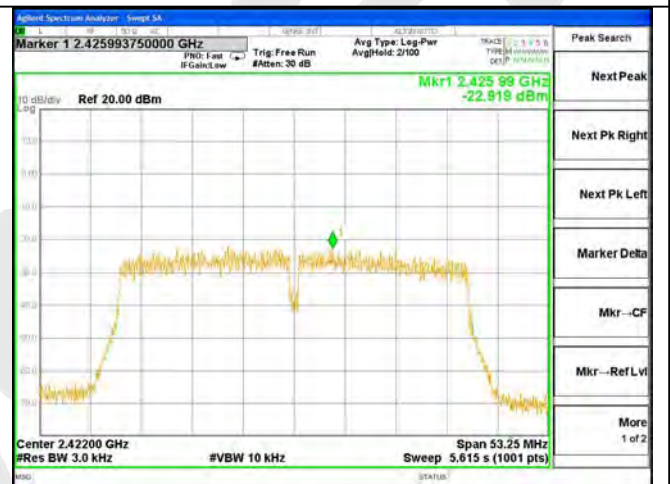
Test Mode: 802.11n20---Low



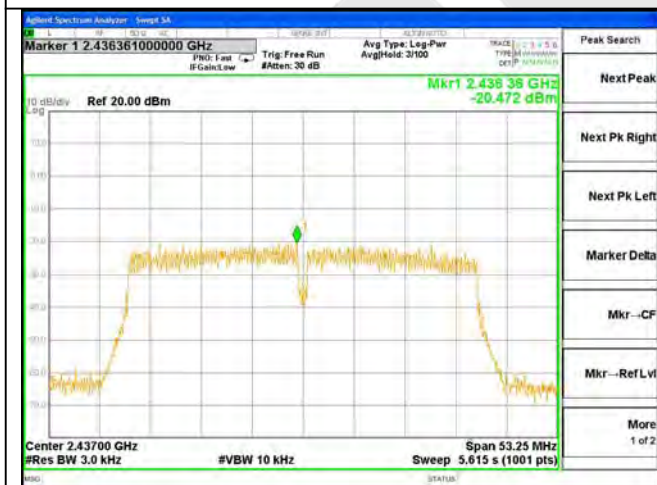
Test Mode: 802.11n20---Mid



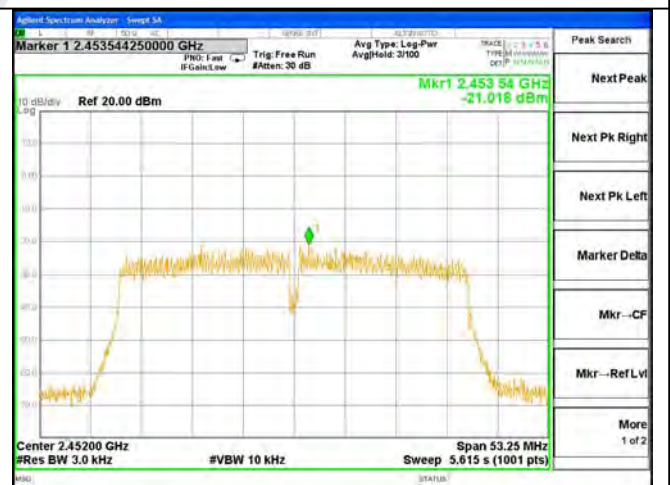
Test Mode: 802.11n20---High



Test Mode: 802.11n40---Low



Test Mode: 802.11n40---Mid



Test Mode: 802.11n40---High

4.6. Radiated Emissions

4.6.1.1. Test Limits (< 30 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30

4.6.1.2. Test Limits ($\geq$ 30 MHz)

FIELD STRENGTH of Fundamental: @3M	FIELD STRENGTH of Harmonics	S15.209 30 - 88 MHz	40 dBuV/m
902-928 MHz		88 - 216 MHz	43.5
2.4-2.4835 GHz		216 - 960 MHz	46
94 dBuV/m @3m	54 dBuV/m @3m	ABOVE 960 MHz	54dBuV/m

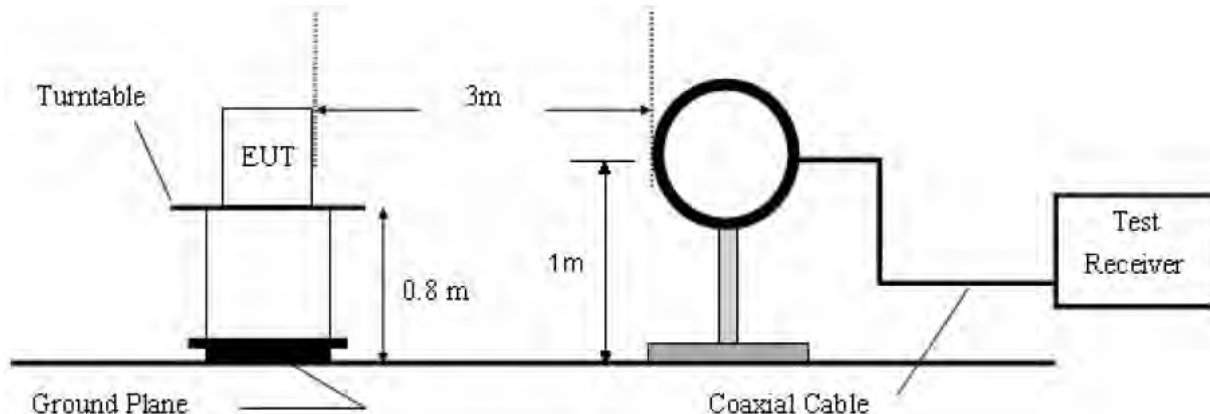
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the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

Test Equipment

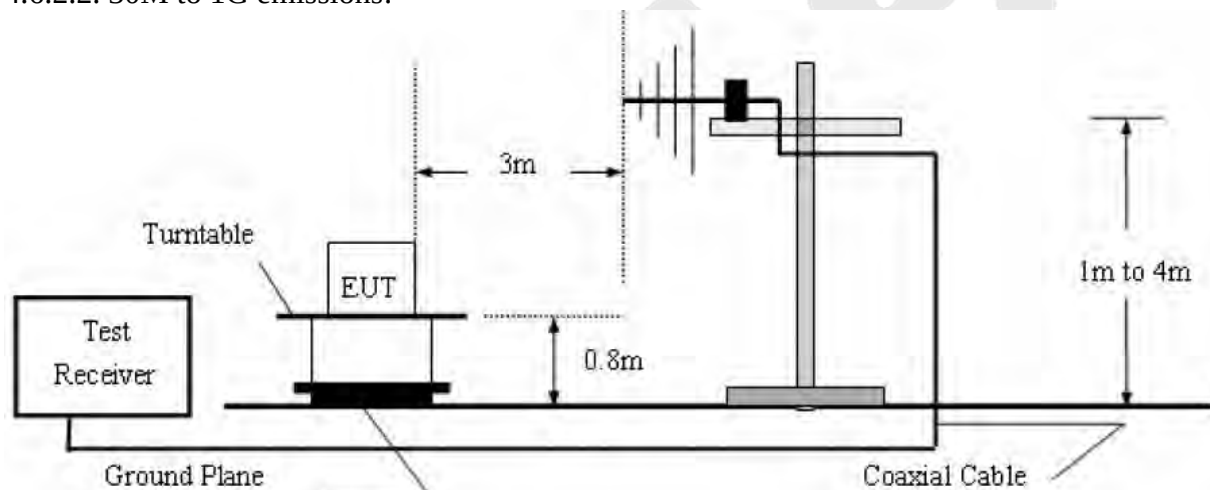
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Apr. 17, 2015	1 Year
2.	Preamplifier	Instruments corporation	EMC011830	980100	Apr. 17, 2015	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Apr. 17, 2015	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Apr. 20, 2015	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 20, 2015	1 Year
6.	Pre-amplifier	SONOMA	310N	186860	Apr. 17, 2015	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
8	Power Sensor	DAER	RPR3006W	15I00041SN046	Jun 30, 2015	1 Year
9	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Jun 30, 2015	1 Year
10	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Jun 30, 2015	1 Year
11	Signal Generator	Agilent	E4421B	MY41000743	Jun 30, 2015	1 Year
12	DC Power supply	IV	IV-8080	YQSB0096	Jun 30, 2015	1 Year
13	TEMP&HUMI PROGRAMMABLE CHAMBER	Bell Group	BE-THK-15 0M8	SE-0137	Mar 16, 2015	1 Year

4.6.2. Test Configuration:

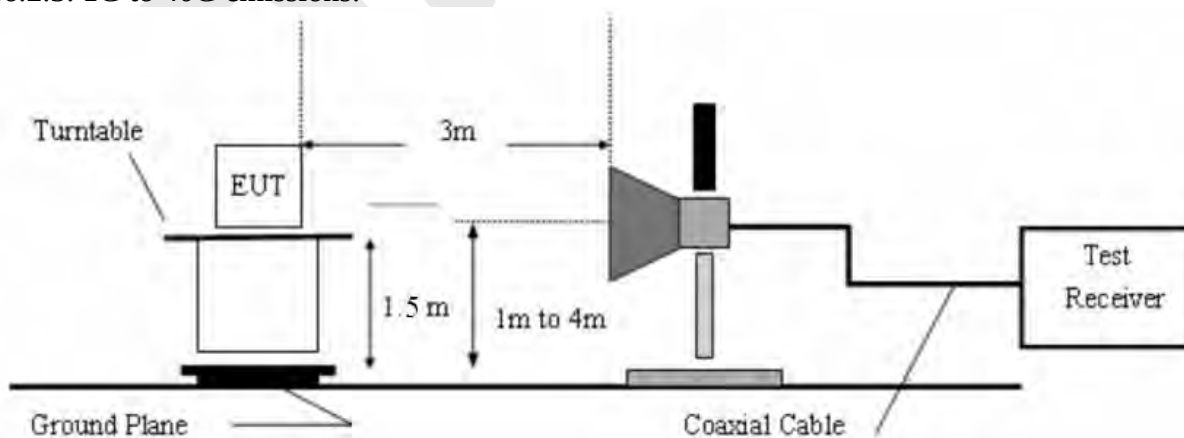
4.6.2.1. 9k to 30MHz emissions:



4.6.2.2. 30M to 1G emissions:



4.6.2.3. 1G to 40G emissions:



4.6.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.
For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.
The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower.
The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Measurements are made on 9KHz to 30MHz and 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

All readings from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All reading are above 1GHz, peak & average values with a resolution bandwidth of 1MHz.

The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

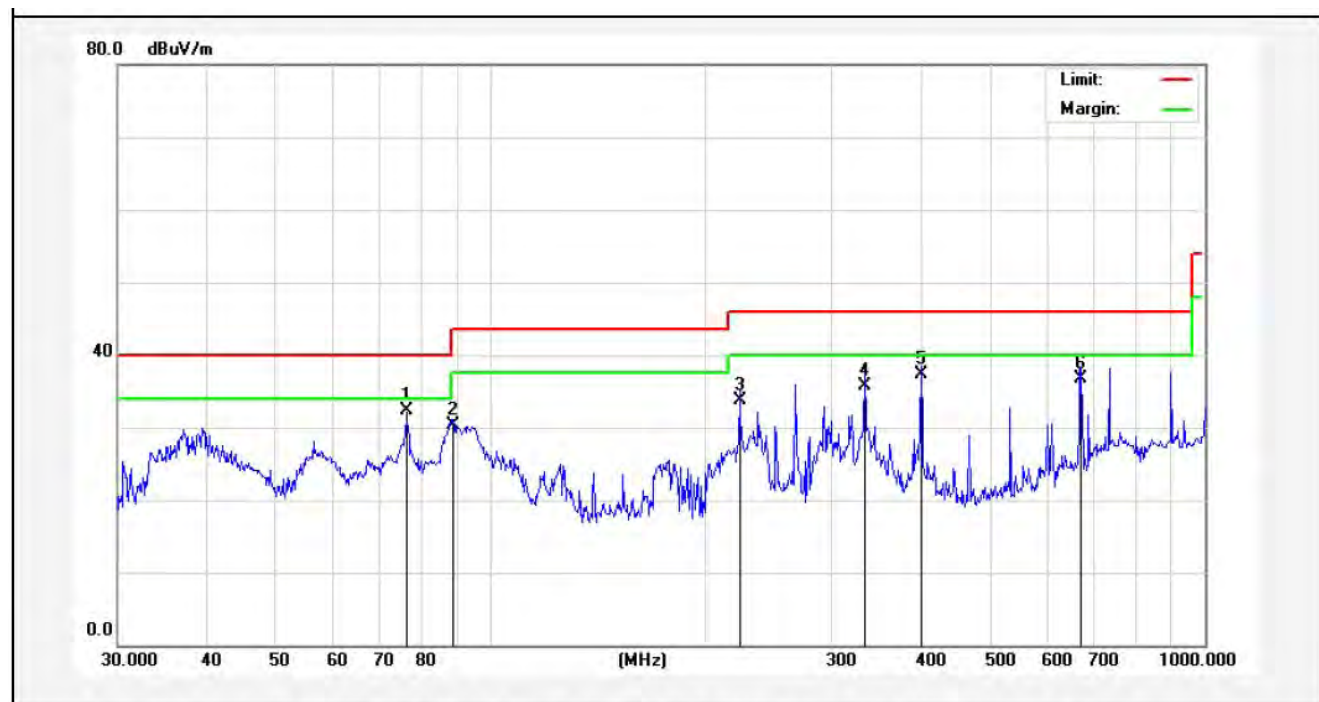
The test results are listed in Section 4.6.4.

4.6.4. Test Results

Please refer to the following pages. Only the worst case (x orientation).

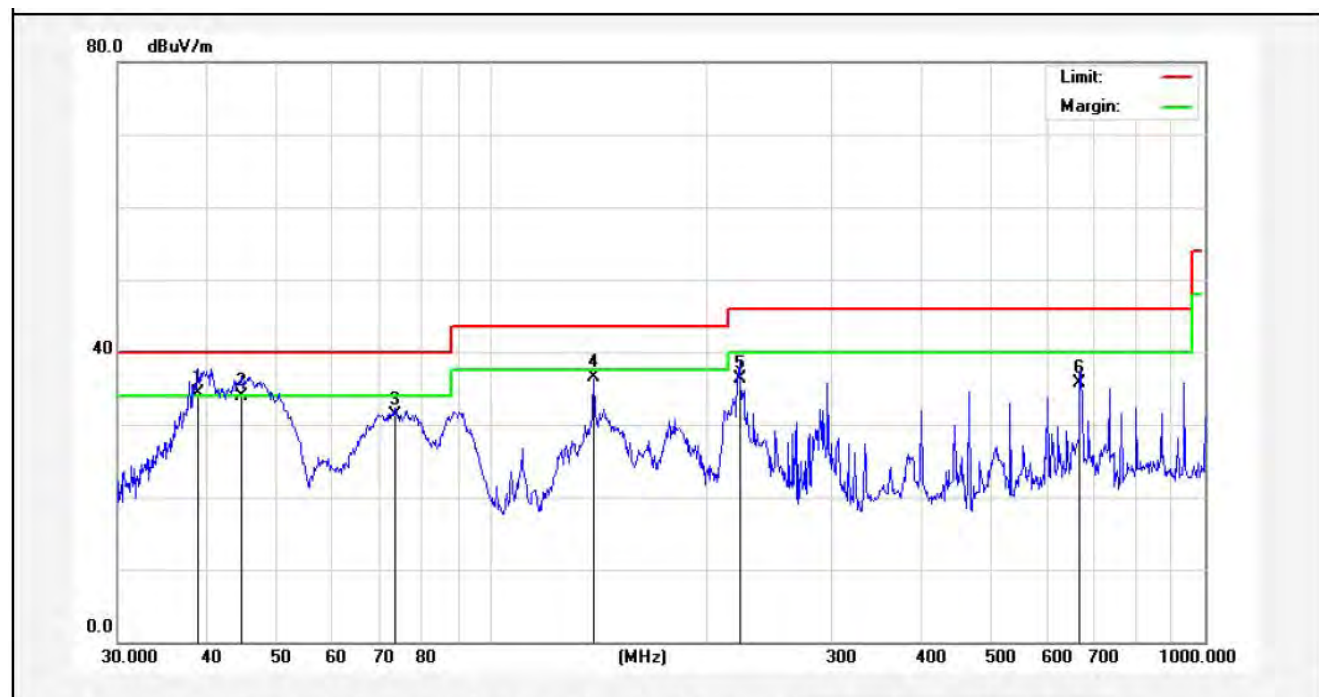
The test results of above 18000MHz are attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Job No.:	011508547I	Polarization:	Horizontal
Standard:	(RE)FCC PART15 C _3m	Power Source:	AC 120V, 60Hz for adapter
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3(C)/55%RH
Test Mode:	WiFi Playing	Distance:	3m



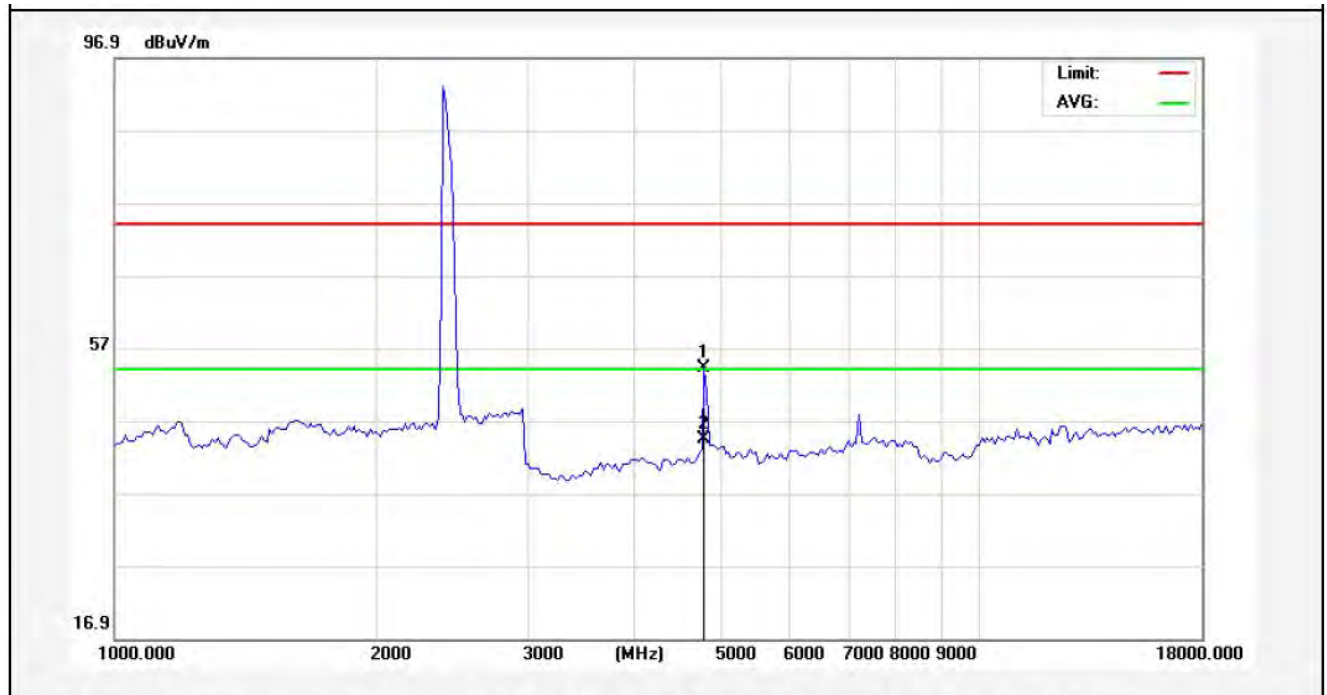
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	76.2442	53.31	-20.94	32.37	40.00	-7.63	QP	300	0	
2	88.6524	52.43	-22.20	30.23	43.50	-13.27	QP	300	360	
3	222.9501	53.49	-19.82	33.67	46.00	-12.33	QP	300	0	
4	333.6865	50.30	-14.61	35.69	46.00	-10.31	QP	300	360	
5	400.4318	50.20	-12.86	37.34	46.00	-8.66	QP	300	0	
6	670.4891	46.07	-9.29	36.78	46.00	-9.22	QP	300	360	

Job No.:	011508547I	Polarization:	Vertical
Standard:	(RE)FCC PART15 C _3m	Power Source:	AC 120V, 60Hz for adapter
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3(C)/55%RH
Test Mode:	WiFi Playing	Distance:	3m



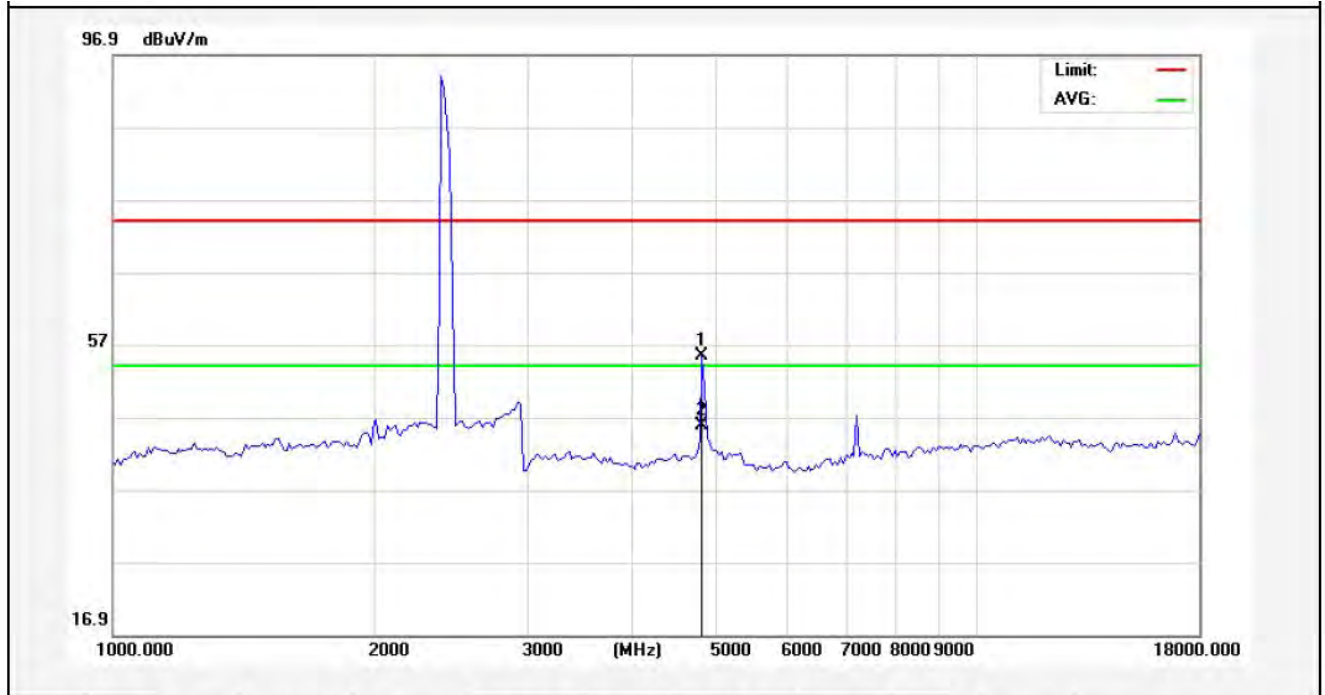
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	38.8878	45.60	-11.24	34.36	40.00	-5.64	QP	100	0	
2	44.7433	46.15	-12.23	33.92	40.00	-6.08	QP	100	360	
3	73.3593	51.65	-20.28	31.37	40.00	-8.63	QP	100	0	
4	139.3610	54.86	-18.44	36.42	43.50	-7.08	QP	100	360	
5	222.9501	51.31	-14.97	36.34	46.00	-9.66	QP	100	0	
6	668.1422	44.38	-8.71	35.67	46.00	-10.33	QP	100	360	

Job No.:	011508547I	Polarization:	Horizontal
Standard:	(RE)FCC PART15 C _3m	Power Source:	AC 120V, 60Hz for adapter
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3(C)/55%RH
Note:	802.11b(2412MHz)	Distance:	3m



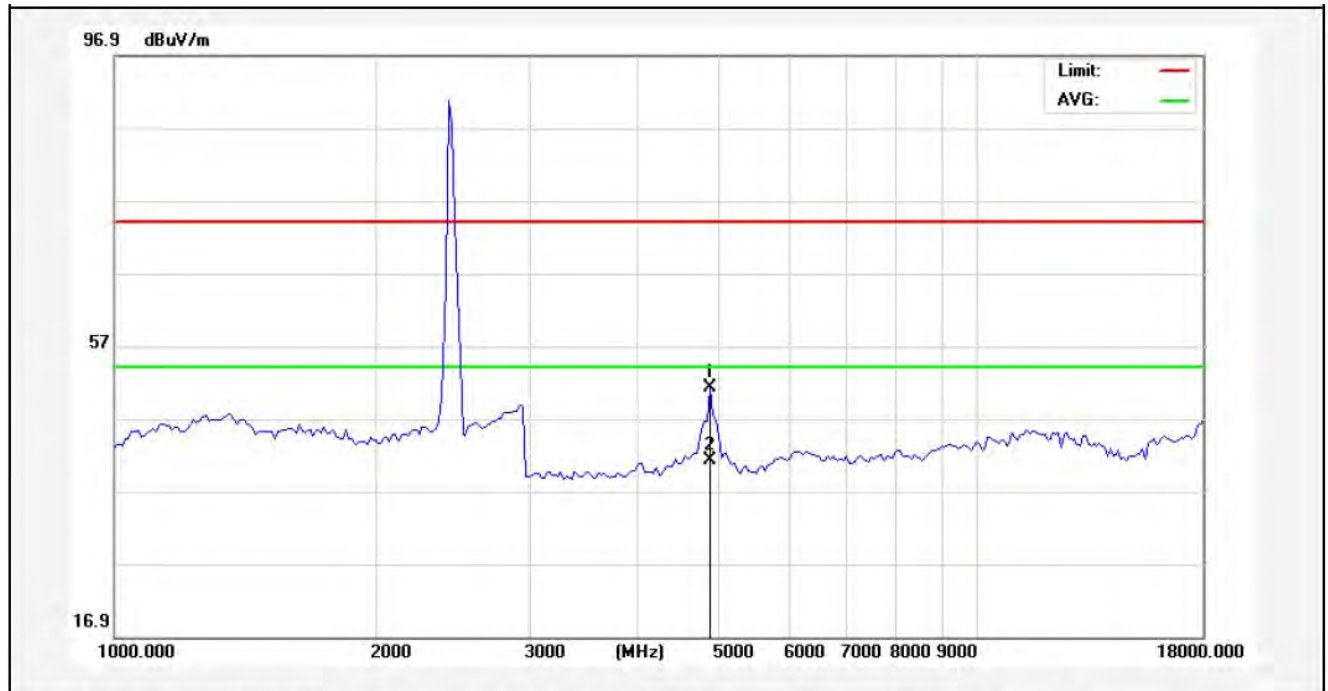
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4825.000	50.79	3.34	54.13	74.00	-19.87	peak			
2	4825.000	41.02	3.34	44.36	54.00	-9.64	AVG			

Job No.:	011508547I	Polarization:	Vertical
Standard:	(RE)FCC PART15 C_3m	Power Source:	AC 120V, 60Hz for adapter
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3(C)/55%RH
Note:	802.11b(2412MHz)	Distance:	3m



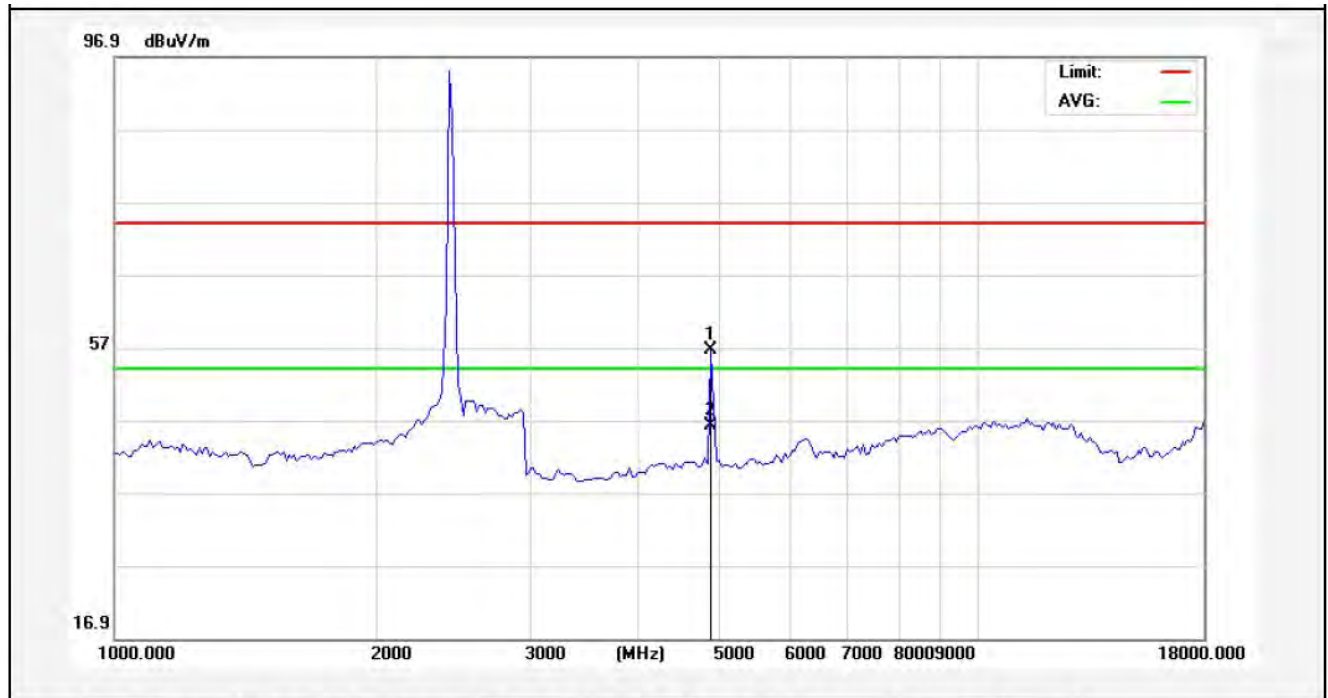
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4825.000	52.04	3.34	55.38	74.00	-18.62	peak			
2	4825.000	42.40	3.34	45.74	54.00	-8.26	AVG			

Job No.:	0115085471	Polarization:	Horizontal
Standard:	(RE)FCC PART15 C _3m	Power Source:	AC 120V, 60Hz for adapter
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3(C)/55%RH
Note:	802.11b(2437MHz)	Distance:	3m



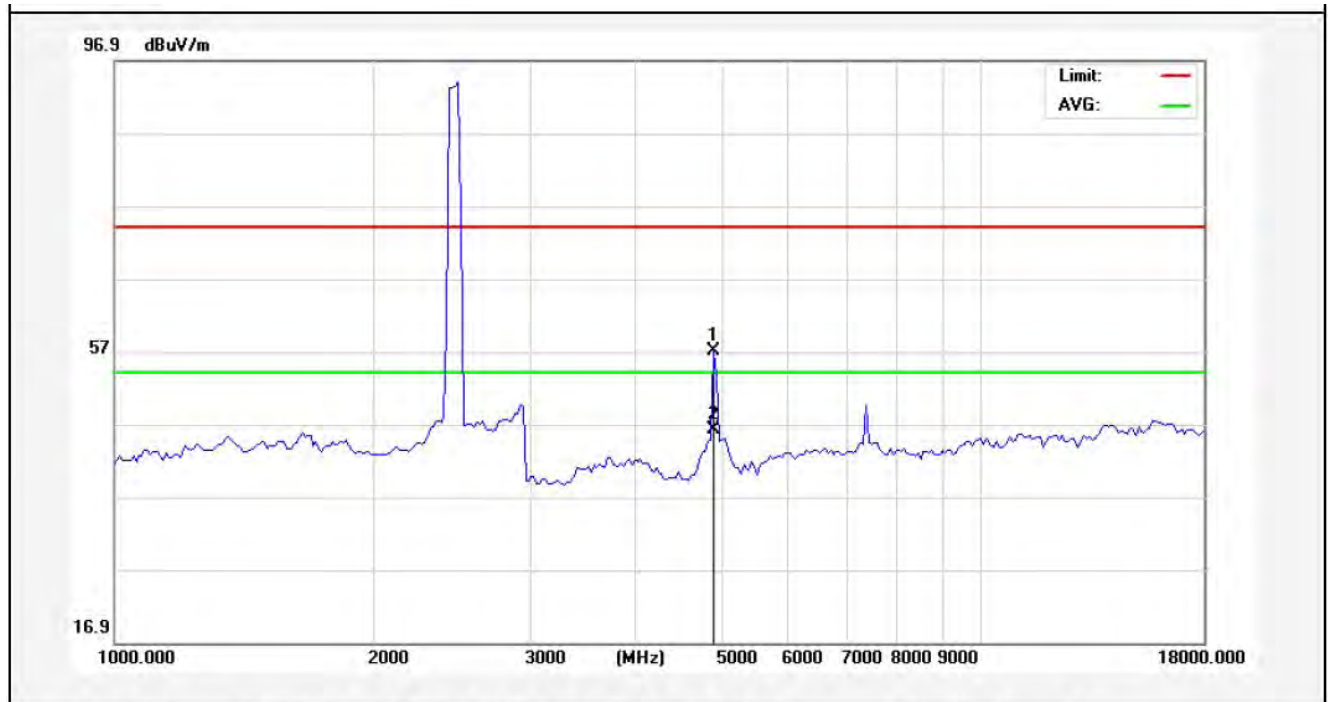
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4867.500	47.70	3.41	51.11	74.00	-22.89	peak			
2	4867.500	37.79	3.41	41.20	54.00	-12.80	AVG			

Job No.:	011508547I	Polarization:	Vertical
Standard:	(RE)FCC PART15 C _3m	Power Source:	AC 120V, 60Hz for adapter
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3(C)/55 %RH
Note:	802.11b(2437MHz)	Distance:	3m



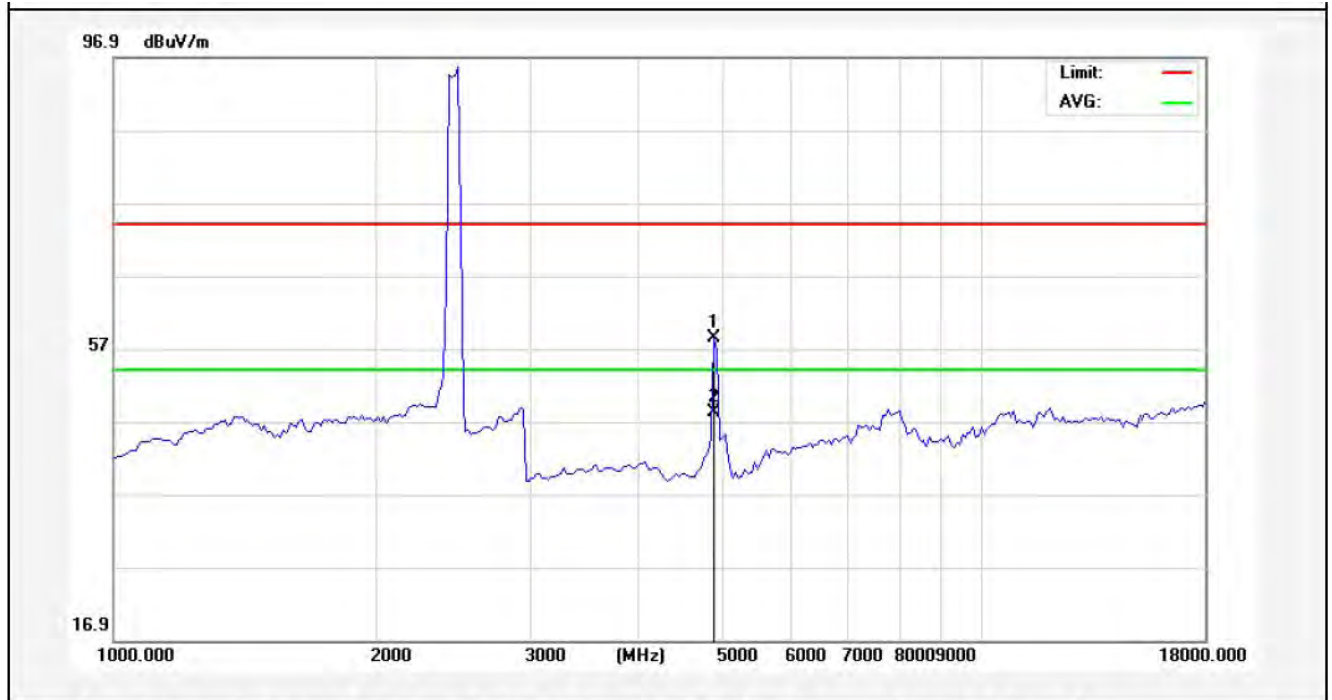
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4867.500	53.13	3.41	56.54	74.00	-17.46	peak			
2	4867.500	42.79	3.41	46.20	54.00	-7.80	AVG			

Job No.:	011508547I	Polarization:	Horizontal
Standard:	(RE)FCC PART15 C _3m	Power Source:	AC 120V, 60Hz for adapter
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3(C)/55%RH
Note:	802.11b(2462MHz)	Distance:	3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4910.000	53.50	3.49	56.99	74.00	-17.01	peak			
2	4910.000	42.79	3.49	46.28	54.00	-7.72	AVG			

Job No.:	011508547I	Polarization:	Vertical
Standard:	(RE)FCC PART15 C _3m	Power Source:	AC 120V, 60Hz for adapter
Test item:	Radiation Test	Temp.(C)/Hum.(%RH):	24.3(C)/55%RH
Note:	802.11b(2462MHz)	Distance:	3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	4910.000	54.83	3.49	58.32	74.00	-15.68	peak			
2	4910.000	44.80	3.49	48.29	54.00	-5.71	AVG			

5. ANTENNA APPLICATION

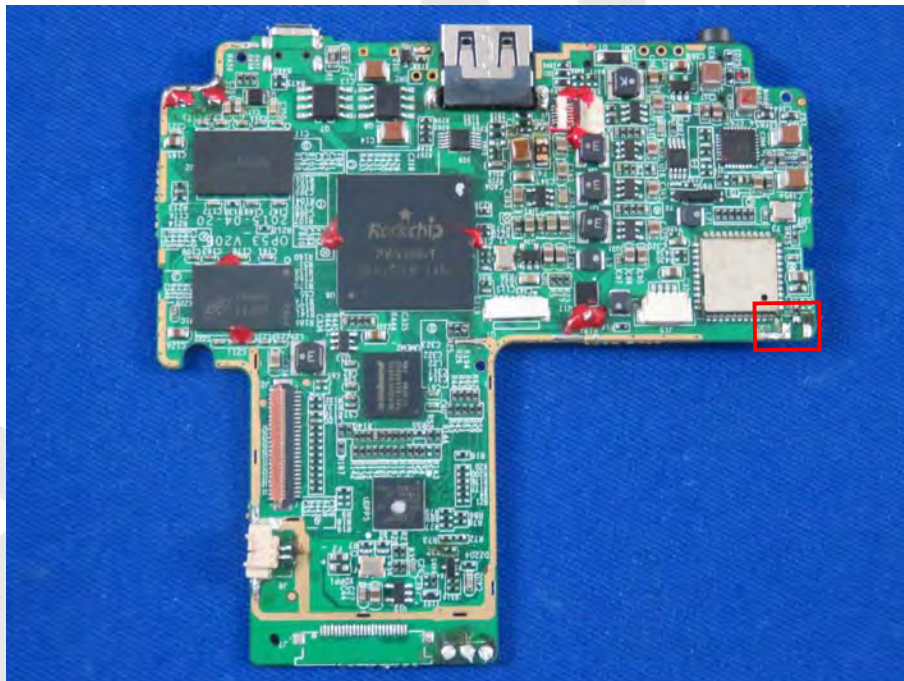
5.1. Antenna requirement

The EUT'S antenna is met the requirement of FCC part 15C section 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

5.2. Result

The EUT's antenna used a Integrated antenna which is permanently attached, The antenna's gain is 2dBi and meets the requirement.

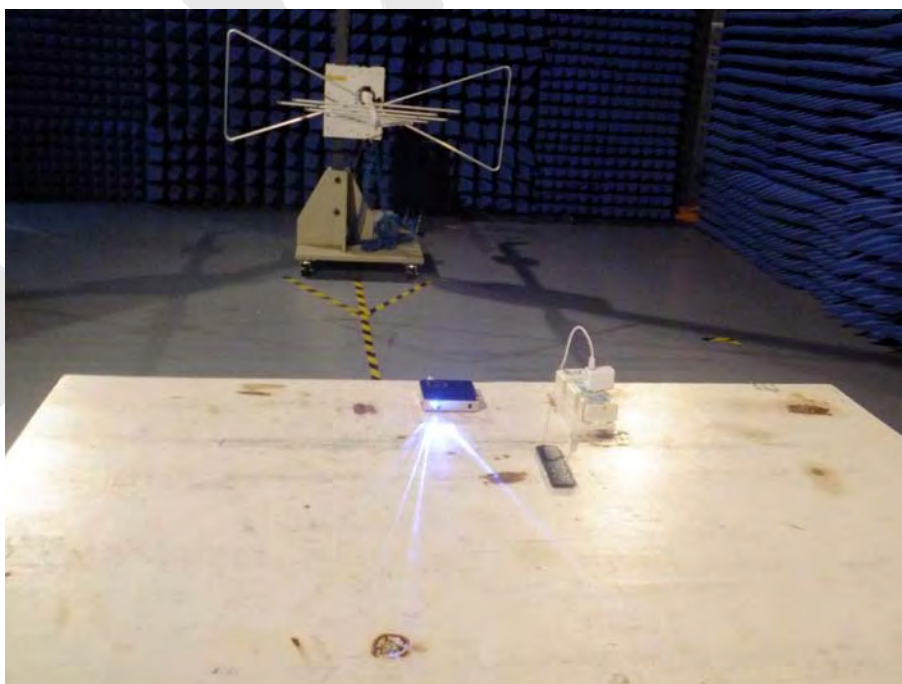


6. PHOTOGRAPH

6.1. Photo of Conducted Emission Measurement



6.2. Photo of Radiation Emission Test





APPENDIX I (EXTERNAL PHOTOS)

Figure 1
The EUT-Overall View



Figure 2
The EUT-Top View

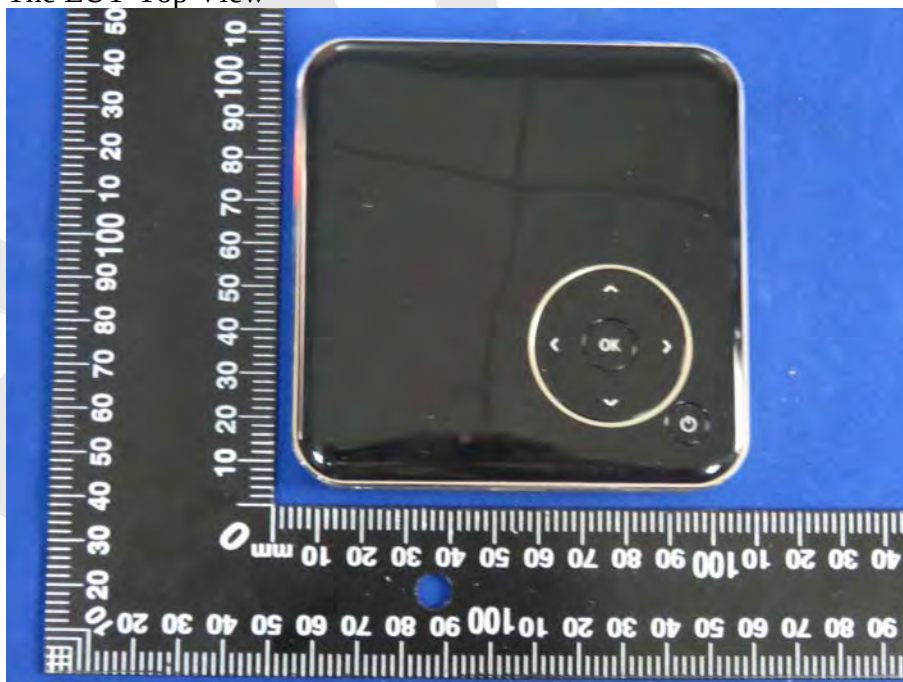


Figure 3
The EUT-Bottom View



Figure 4
The EUT-Front View

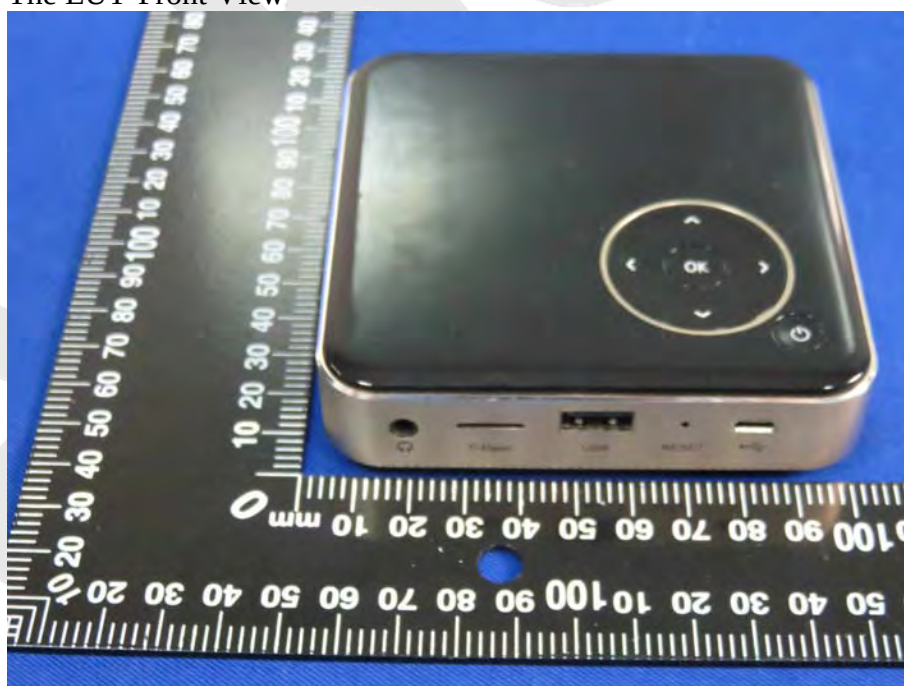


Figure 5
The EUT-Back View

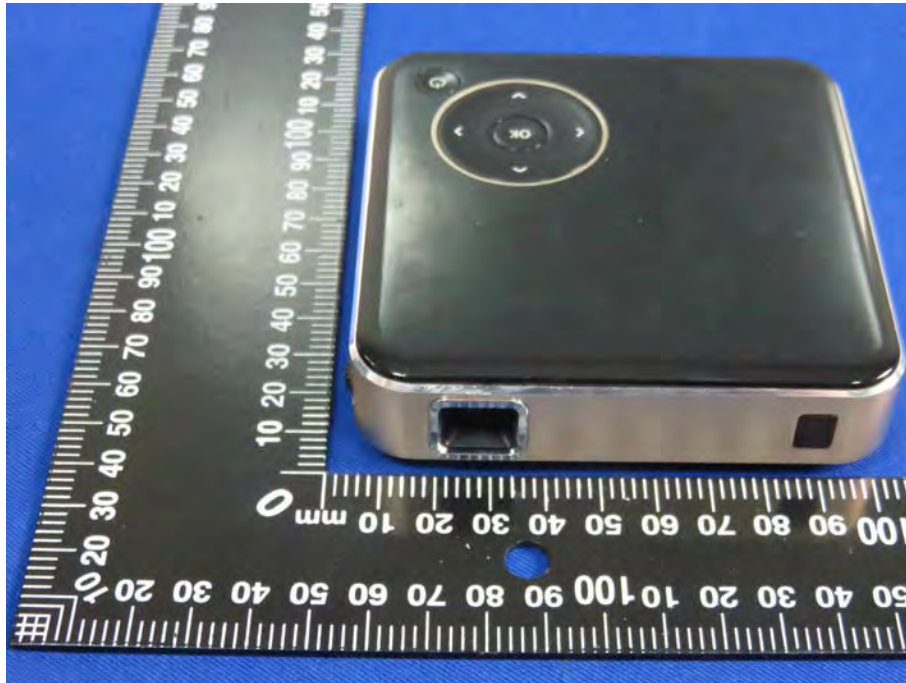


Figure 6
The EUT-Right View

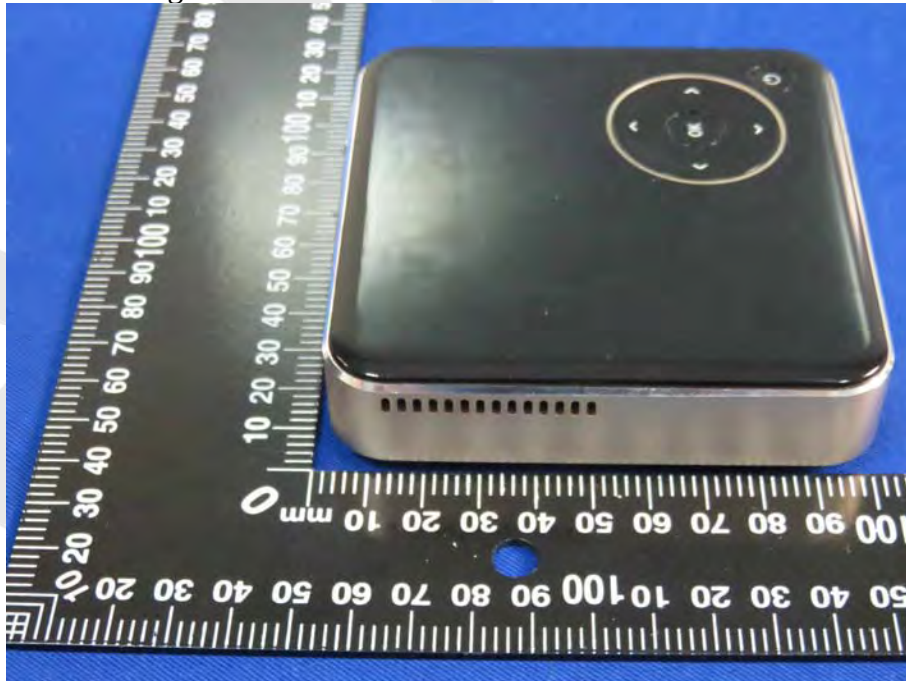


Figure 7
The EUT-Left View



APPENDIX II (INTERNAL PHOTOS)

Figure 8
The EUT-Inside View

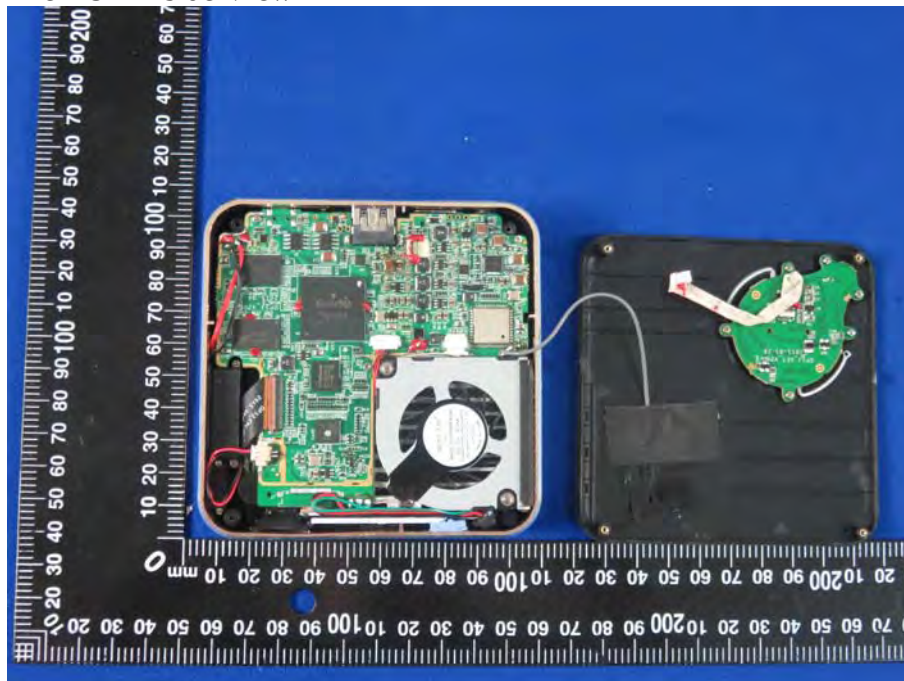


Figure 9
The EUT-Inside View

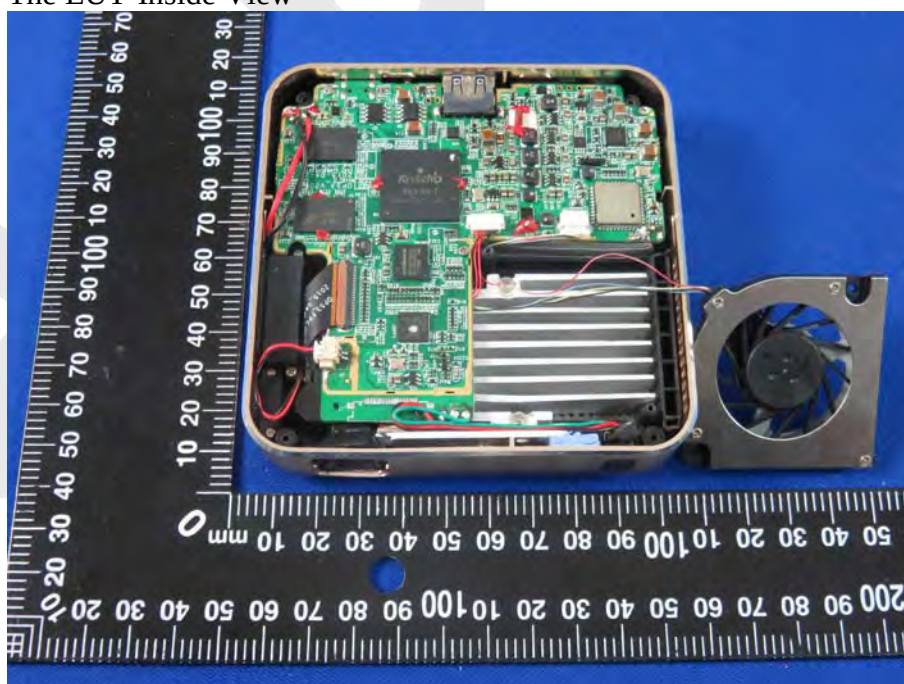


Figure 10
The EUT-Inside View

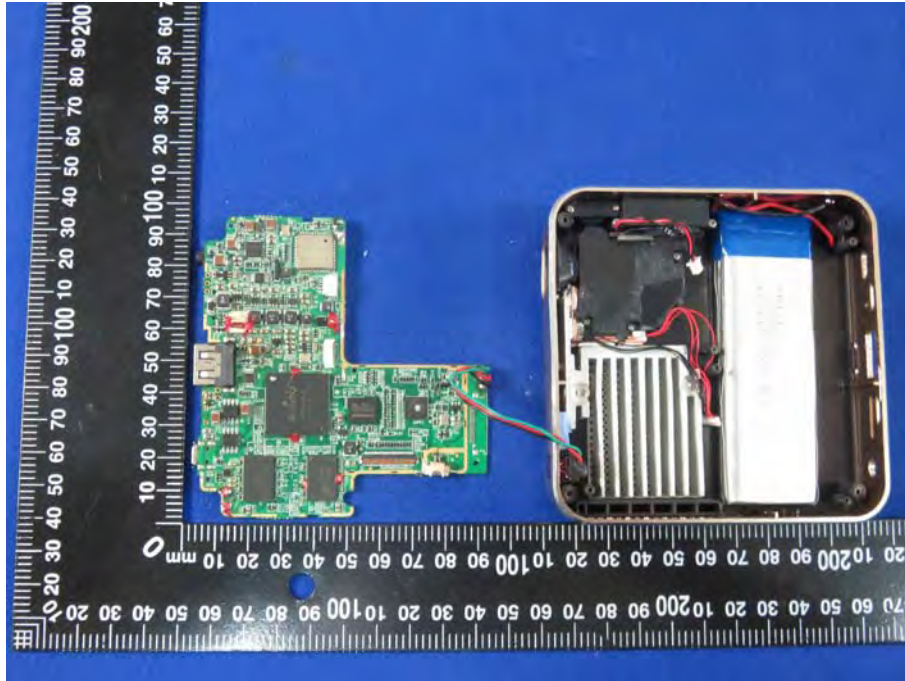


Figure 11
PCB of the EUT-Front View

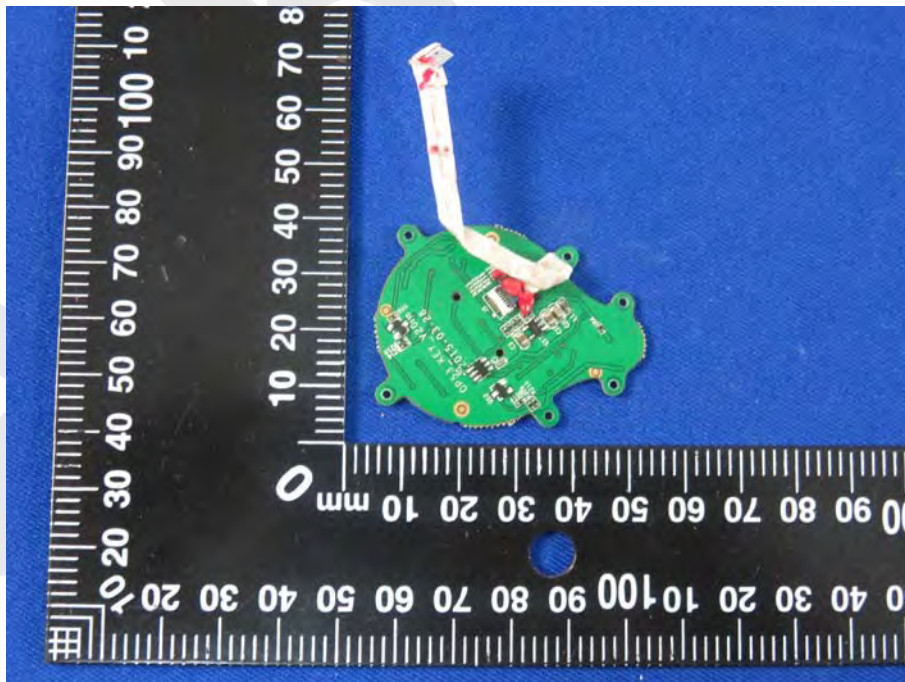


Figure 12
PCB of the EUT-Back View

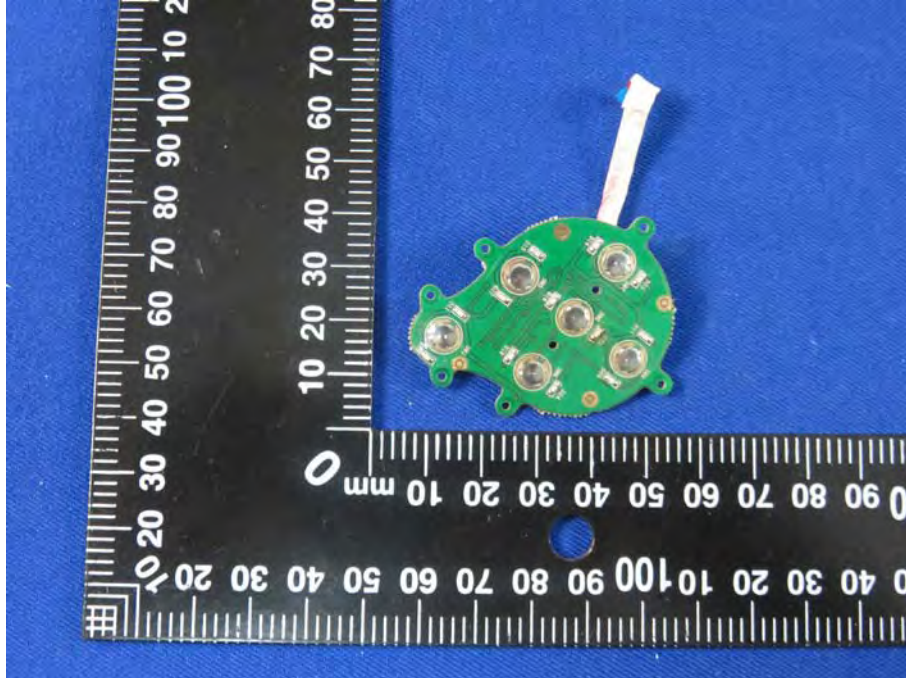


Figure 13
PCB of the EUT-Front View

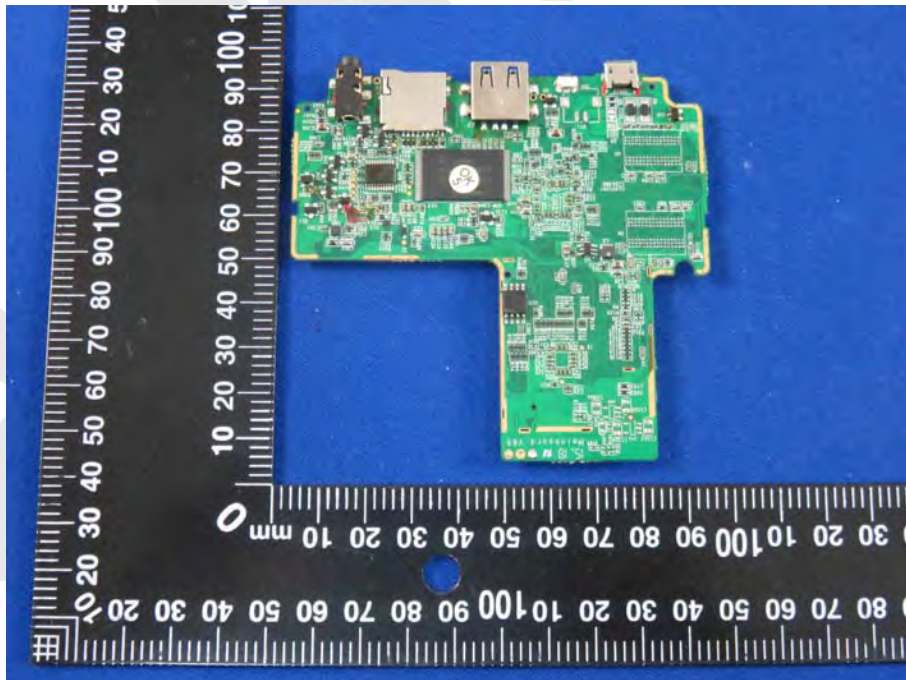


Figure 14
PCB of the EUT-Back View

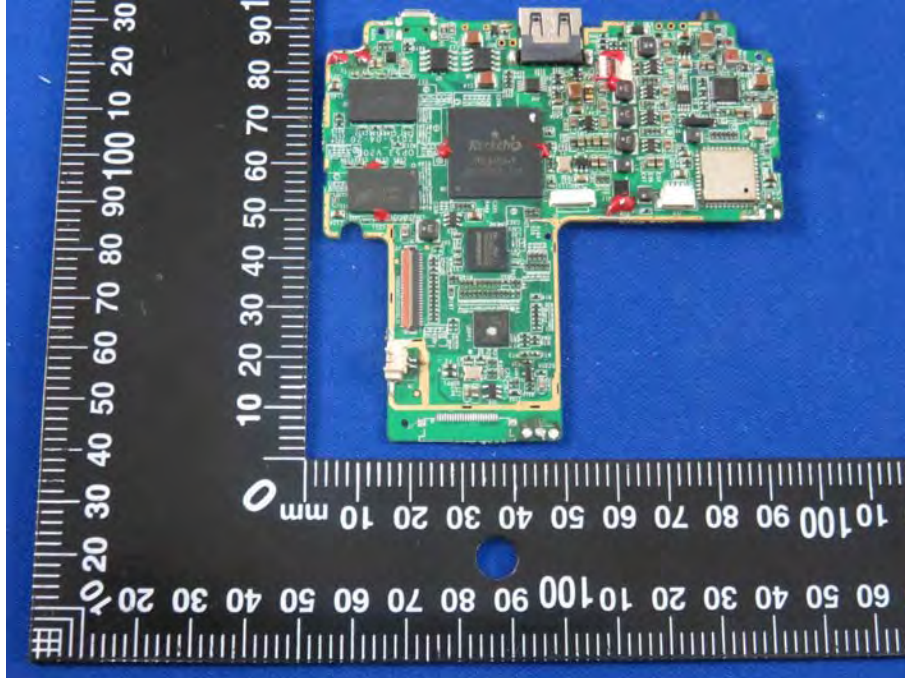


Figure 15
PCB of the EUT-Front View

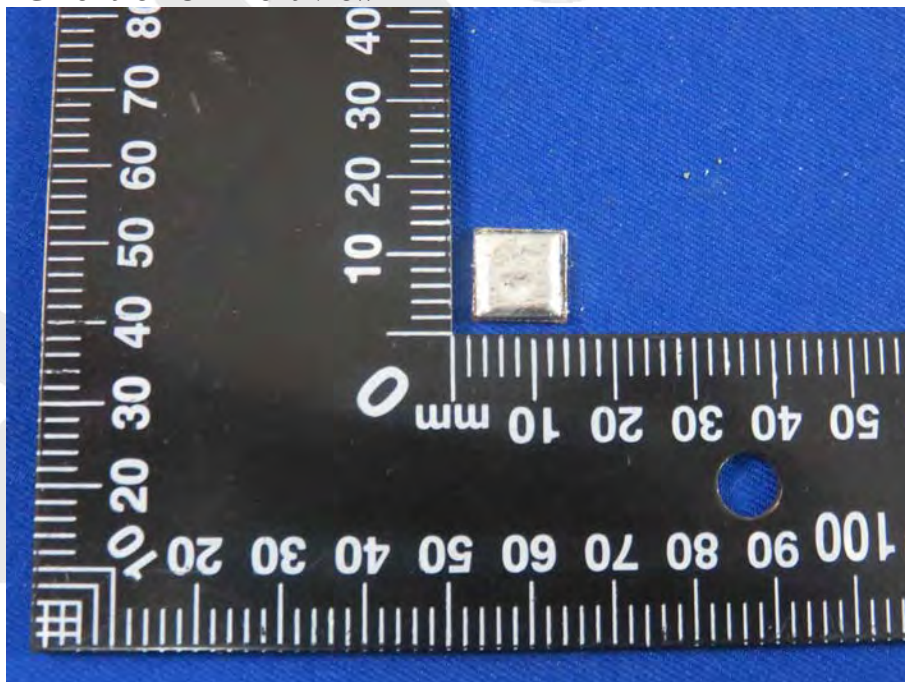


Figure 16
PCB of the EUT-Front View

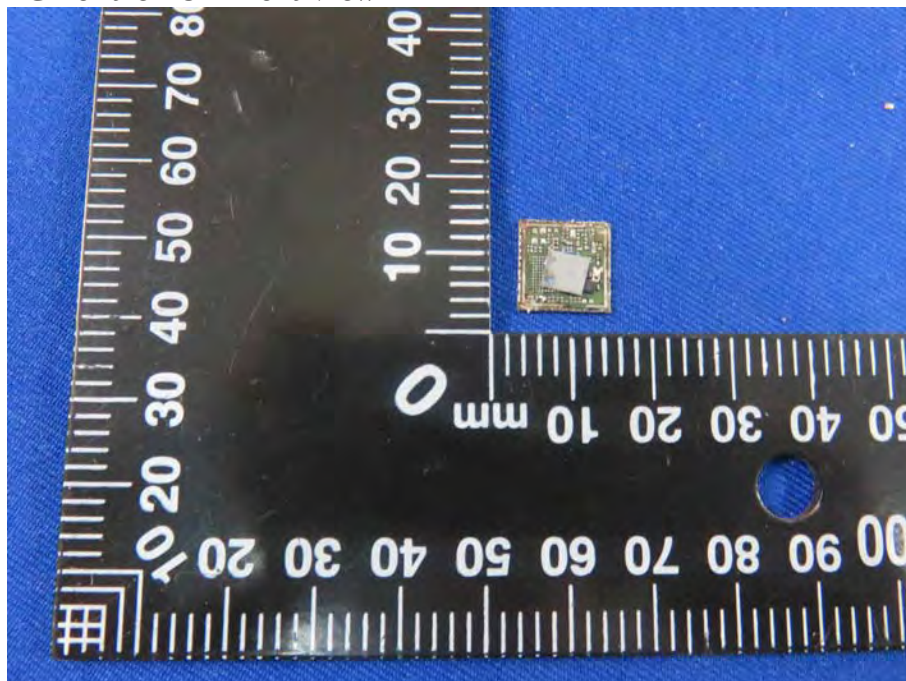


Figure 17
PCB of the EUT-Back View

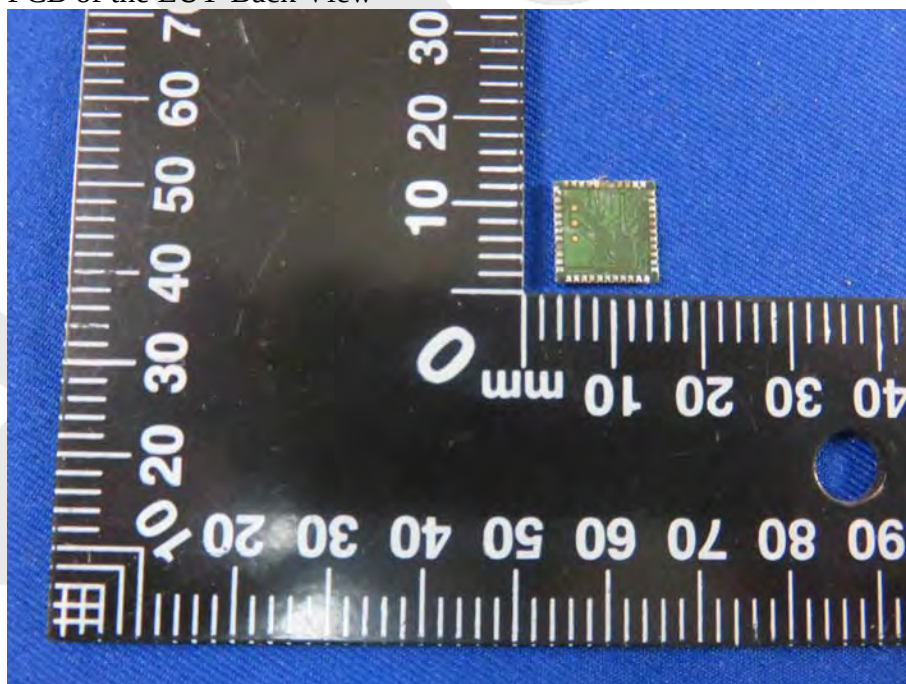


Figure 18
PCB of the EUT-Front View

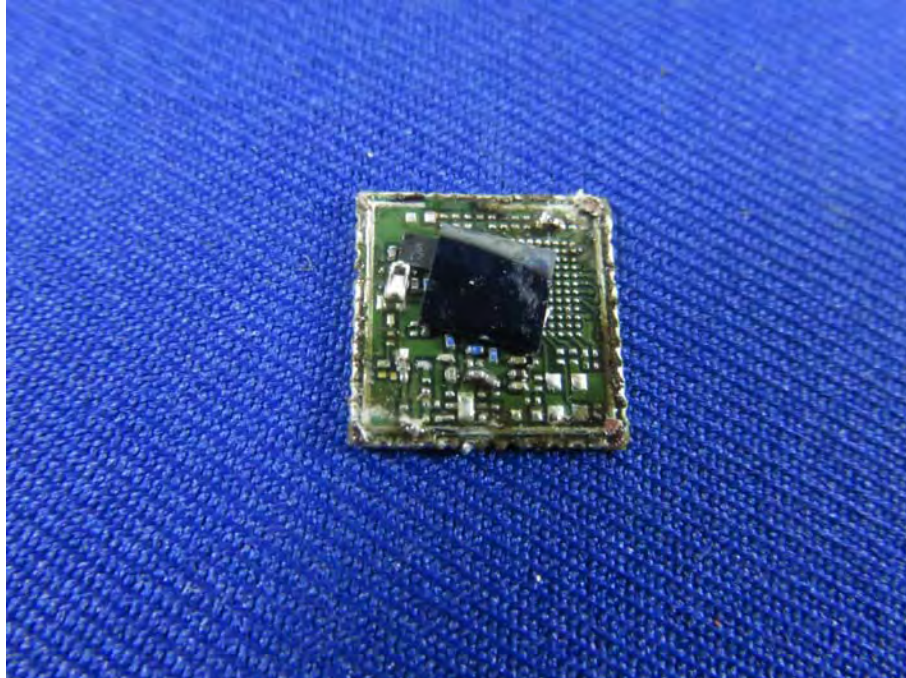


Figure 19
PCB of the EUT-BackView

