TEST REPORT

Reference No......	:	WTD15S1035221E
FCC ID.....	:	2AF9L-CBS003
Applicant.....	:	Shen Zhen CosBeauty Co., Ltd.
Address.....	:	21F, NO.2388, Hou Hai Road, NanShan, Shenzhen, China.
Manufacturer	:	The same as above
Address.....	:	The same as above
Product Name.....	:	aiDirect Pro Smart Skin Analyzer
Model No.....	:	CB-S003
Standards.....	:	FCC CFR47 Part 15 Section 15.247:2015
Date of Receipt sample.....	:	Oct. 14, 2015
Date of Test.....	:	Oct. 15, 2015 – Apr. 11, 2016
Date of Issue.....	:	May 09, 2016
Test Result.....	:	**Pass ***

*Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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Compiled by:

Zero Zhou / Test Engineer

Approved by:

Philo Zhong / Manager

2 Test Summary

Test Items	Test Requirement	Result
Radiated Emissions	15.205(a) 15.209(a)	PASS
Conducted Emissions	15.207(a)	PASS
Bandwidth	15.247(a)(2)	PASS
Maximum Peak Output Power	15.247(b)(3),(4)	PASS
Power Spectral Density	15.247(e)	PASS
Band Edge	15.247(d)	PASS
Antenna Requirement	15.203	PASS
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	PASS

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4 General Information

4.1 General Description of E.U.T.

Product Name: : aiDirect Pro Smart Skin Analyzer

Model No.: : CB-S003

Model Difference: : N/A

Operation Frequency: : 2412-2462MHz for 802.11b/g/n-HT20
2422-2452MHz for 802.11n-HT40

The lowest oscillator: :32.768KHz

Antenna Gain: :1.5dBi

Type of modulation: : IEEE 802.11b (CCK/QPSK/BPSK,11Mbps max.)
IEEE 802.11g (BPSK/QPSK/16QAM/64QAM,54Mbps max.)
IEEE 802.11n (BPSK/QPSK/16QAM/64QAM,HT20:108Mbps max., HT40:150Mbps max.)

4.2 Details of E.U.T.

Technical Data :Battery DC 3.7V, 500mAh
DC 5V, 1A by adapter
(Adapter Input: 100-240V~50/60Hz, 0.2A Output: DC 5V, 1A
Model: BX-0501000 by CosBeauty)

4.3 Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	2	2417	3	2422	4	2427
5	2432	6	2437	7	2442	8	2447
9	2452	10	2457	11	2462	12	-

4.4 Test Mode

Table 1 Tests Carried Out Under FCC part 15.247

Test Items	Mode	Data Rate	Channel	TX/RX
Maximum conducted (average) output power	802.11b	11 Mbps	1/6/11	TX
	802.11g	54 Mbps	1/6/11	TX
	802.11n HT20	108 Mbps	1/6/11	TX
	802.11n HT40	150 Mbps	3/6/9	TX
Power Spectral Density	802.11b	11 Mbps	1/6/11	TX
	802.11g	54 Mbps	1/6/11	TX
	802.11n HT20	108 Mbps	1/6/11	TX
	802.11n HT40	150 Mbps	3/6/9	TX
Band Edge	802.11b	11 Mbps	1/11	TX
	802.11g	54 Mbps	1/11	TX
	802.11n HT20	108 Mbps	1/11	TX
	802.11n HT40	150 Mbps	3/9	TX

Bandwidth	802.11b	11 Mbps	1/6/11	TX
	802.11g	54 Mbps	1/6/11	TX
	802.11n HT20	108 Mbps	1/6/11	TX
	802.11n HT40	150 Mbps	3/6/9	TX
Transmitter Spurious Emissions	802.11b	11 Mbps	1/6/11	TX
	802.11g	54 Mbps	1/6/11	TX
	802.11n HT20	108 Mbps	1/6/11	TX
	802.11n HT40	150 Mbps	3/6/9	TX

Note :Parameters set by test software during channel & power tests, the software provided by the customer was used to set the operating channels as well as the output power level. The RF output power set is the power expected by the manufacturer and is going to be fixed on the firmware of the final product .

4.5 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A-1**

  Waltek Services(Shenzhen) Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A-1, October 15, 2015.

- **FCC Test Site 1#– Registration No.: 880581**

  Waltek Services(Shenzhen) Co., Ltd. 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 880581, April 29, 2014.

- **FCC Test Site 2#– Registration No.: 328995**

  Waltek Services(Shenzhen) Co., Ltd. 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 328995, December 3, 2014.

5 Equipment Used during Test

5.1 Equipments List

Conducted Emissions Test Site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	100947	Sep.15,2015	Sep.14,2016
2.	LISN	R&S	ENV216	101215	Sep.15,2015	Sep.14,2016
3.	Cable	Top	TYPE16(3.5M)	-	Sep.15,2015	Sep.14,2016
Conducted Emissions Test Site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	101155	Sep.15,2015	Sep.14,2016
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Sep.15,2015	Sep.14,2016
3.	Limiter	York	MTS-IMP-136	261115-001-0024	Sep.15,2015	Sep.14,2016
4.	Cable	LARGE	RF300	-	Sep.15,2015	Sep.14,2016
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	EMC Analyzer	Agilent	E7405A	MY45114943	Sep.15,2015	Sep.14,2016
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	Sep.15,2015	Sep.14,2016
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	Sep.15,2015	Sep.14,2016
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	Sep.15,2015	Sep.14,2016
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Apr.19,2015	Apr.18,2016
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	Apr.19,2015	Apr.18,2016
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Sep.15,2015	Sep.14,2016
8	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	Sep.15,2015	Sep.14,2016
3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No**	**Last Calibration Date**	**Calibration Due Date**
1	Test Receiver	R&S	ESCI	101296	Sep.15,2015	Sep.14,2016
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	Sep.15,2015	Sep.14,2016
3	Amplifier	Compliance pirection systems inc	PAP-0203	22024	Sep.15,2015	Sep.14,2016
4	Cable	HUBER+SUHNER	CBL2	525178	Sep.15,2015	Sep.14,2016

RF Conducted Testing						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	Sep.15,2015	Sep.14,2016
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	Sep.15,2015	Sep.14,2016
3.	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	Sep.15,2015	Sep.14,2016

5.2 Measurement Uncertainty

Parameter	**Uncertainty**
Radio Frequency	± 1 x 10^{-6}
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious Emissions test	± 5.03 dB (Bilog antenna 30M~1000MHz)
	± 4.74 dB (Horn antenna 1000M~25000MHz)
Conducted Spurious Emissions test	± 3.64 dB (AC mains 150KHz~30MHz)

5.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

6 Conducted Emission

Test Requirement:	FCC CFR 47 Part 15 Section 15.207
Test Method:	ANSI C63.10:2013
Test Result:	PASS
Frequency Range:	150kHz to 30MHz
Class/Severity:	Class B
Limit:	66-56 dBμV between 0.15MHz & 0.5MHz
	56 dBμV between 0.5MHz & 5MHz
	60 dBμV between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)

6.1 E.U.T. Operation

Operating Environment **:**

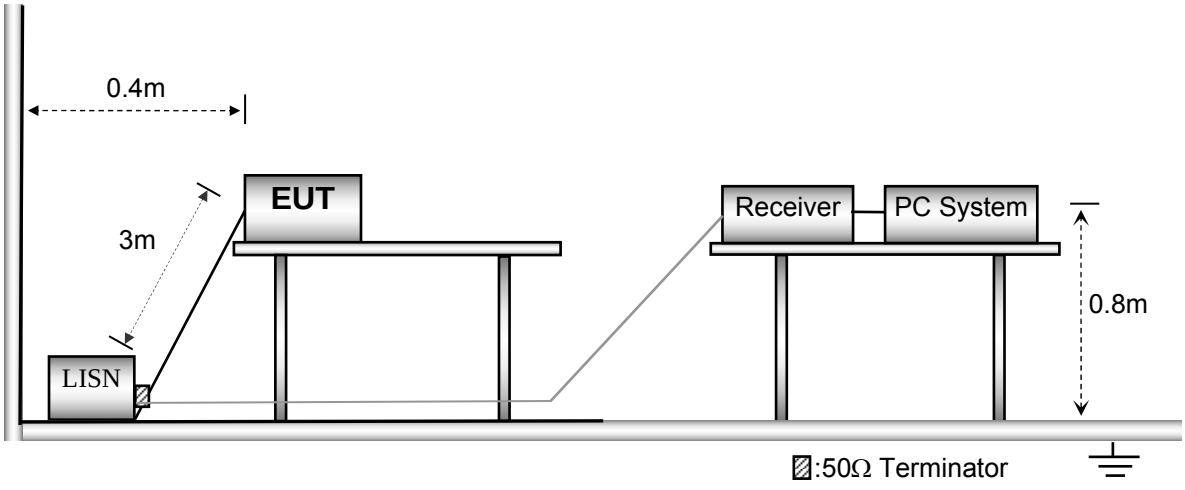
Temperature:	25.5 °C
Humidity:	51 % RH
Atmospheric Pressure:	101.2kPa

EUT Operation **:**

The test was performed in Transmitting mode, the test data were shown in the report.

6.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.

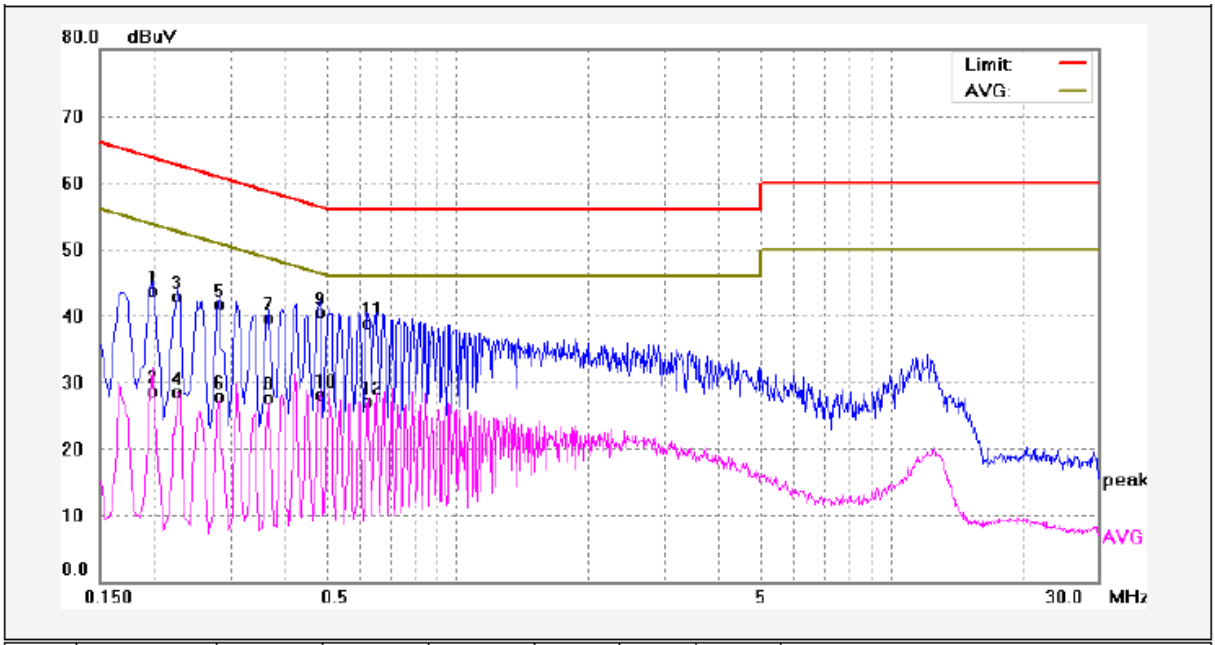


6.3 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

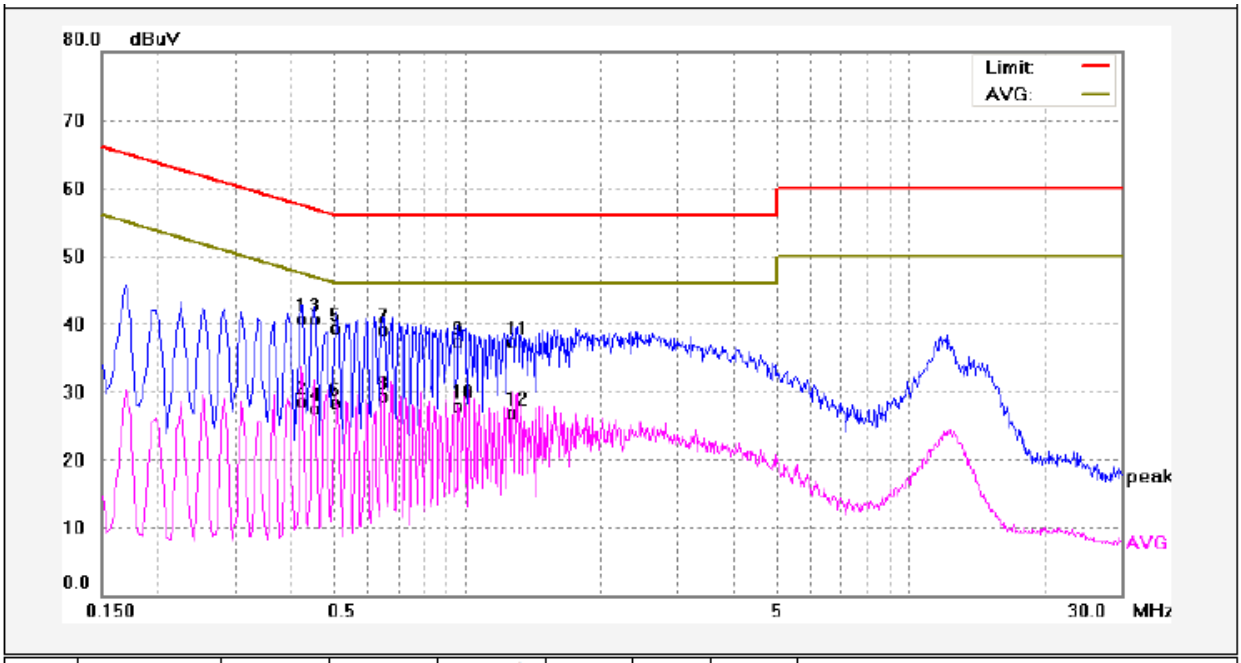
6.4 Conducted Emission Test Result

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1980	33.62	10.15	43.77	63.69	-19.92	QP	
2	0.1980	18.65	10.15	28.80	53.69	-24.89	AVG	
3	0.2260	32.83	10.15	42.98	62.59	-19.61	QP	
4	0.2260	18.40	10.15	28.55	52.59	-24.04	AVG	
5	0.2819	31.53	10.16	41.69	60.76	-19.07	QP	
6	0.2819	17.82	10.16	27.98	50.76	-22.78	AVG	
7	0.3660	29.61	10.17	39.78	58.59	-18.81	QP	
8	0.3660	17.49	10.17	27.66	48.59	-20.93	AVG	
9	0.4820	30.37	10.19	40.56	56.30	-15.74	QP	
10	0.4820	18.00	10.19	28.19	46.30	-18.11	AVG	
11	0.6180	28.61	10.20	38.81	56.00	-17.19	QP	
12	0.6180	16.97	10.20	27.17	46.00	-18.83	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.4260	30.52	10.18	40.70	57.33	-16.63	QP	
2	0.4260	18.34	10.18	28.52	47.33	-18.81	AVG	
3	0.4540	30.47	10.18	40.65	56.80	-16.15	QP	
4	0.4540	17.35	10.18	27.53	46.80	-19.27	AVG	
5	0.5100	29.07	10.19	39.26	56.00	-16.74	QP	
6	0.5100	18.06	10.19	28.25	46.00	-17.75	AVG	
7	0.6460	28.86	10.20	39.06	56.00	-16.94	QP	
8	0.6460	19.06	10.20	29.26	46.00	-16.74	AVG	
9	0.9580	27.09	10.22	37.31	56.00	-18.69	QP	
10	0.9580	17.75	10.22	27.97	46.00	-18.03	AVG	
11	1.2660	27.05	10.23	37.28	56.00	-18.72	QP	
12	1.2660	16.72	10.23	26.95	46.00	-19.05	AVG	

7 Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05 & ANSI C63.10:2013

Test Result: PASS

Measurement Distance: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

7.1 EUT Operation

Operating Environment:

Temperature: 25.5 °C

Humidity: 51 % RH

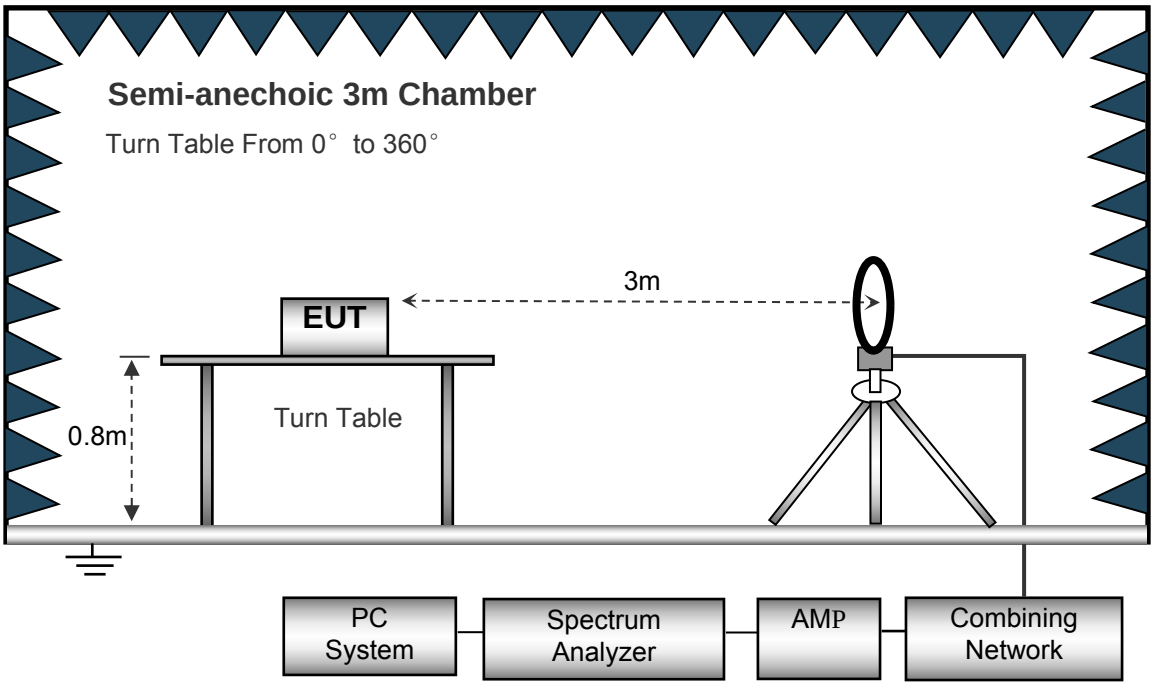
Atmospheric Pressure: 1016 mbar

EUT Operation:

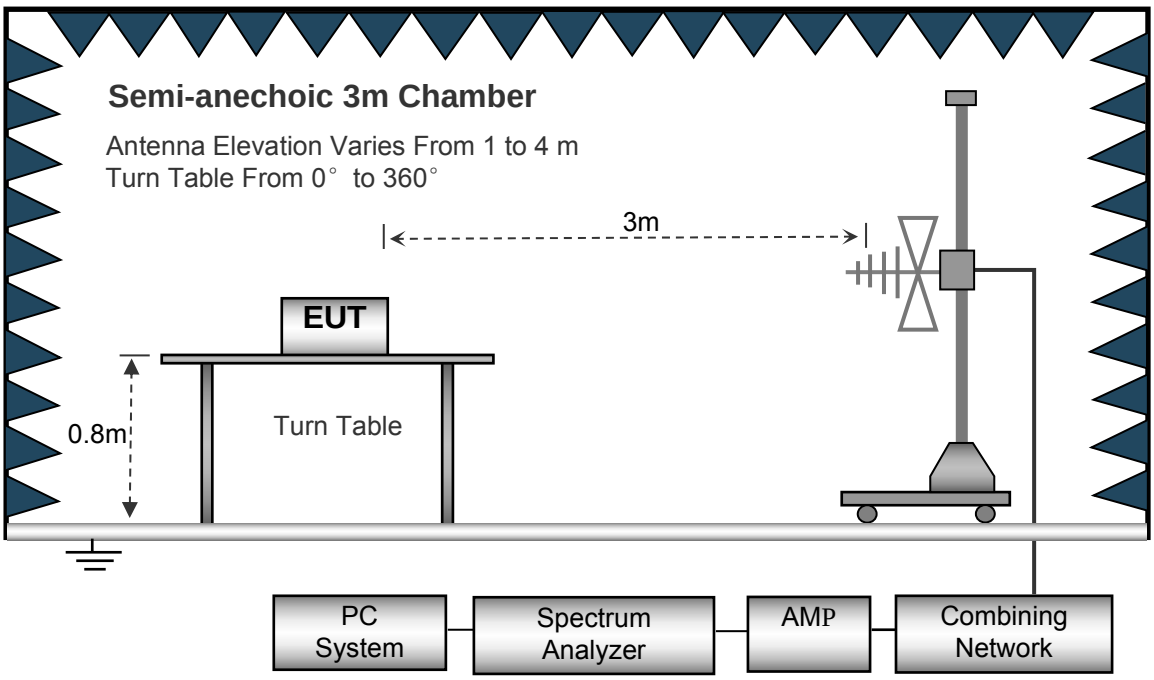
The test was performed in transmitting mode, the test data were shown in the report.

7.2 Test Setup

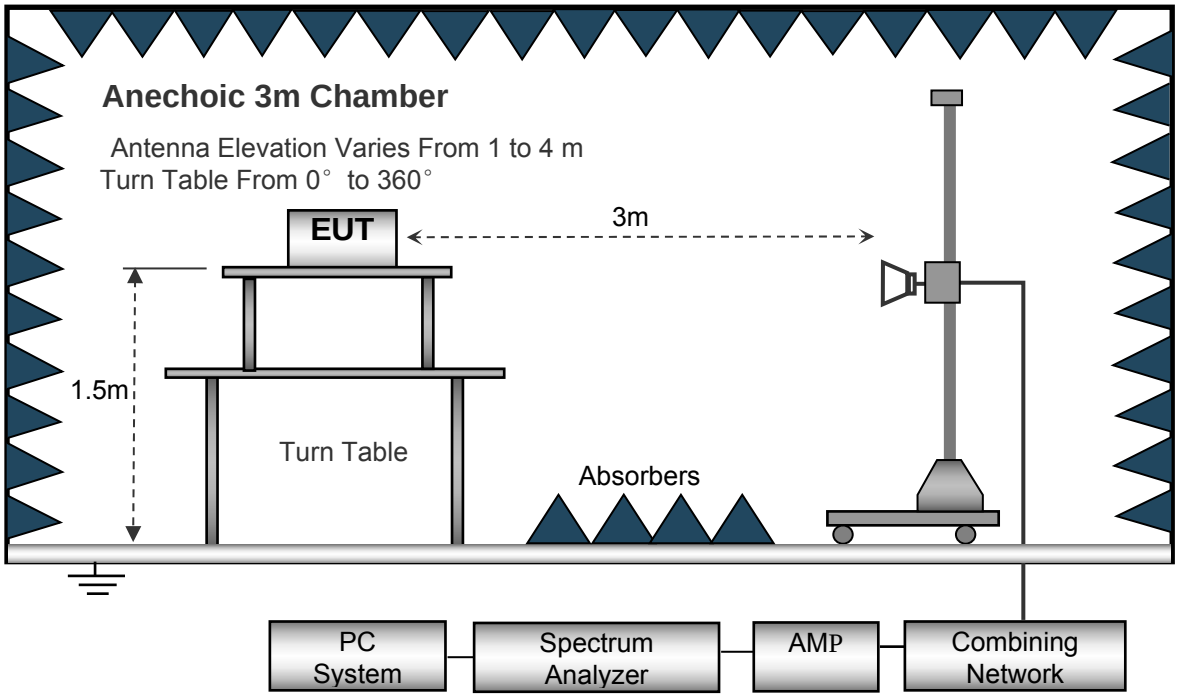
The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013.
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



7.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed..... Auto
IF Bandwidth.....10kHz
Video Bandwidth..... 10kHz

Resolution Bandwidth..... 10kHz

30MHz ~ 1GHz

Sweep Speed..... Auto
Detector..... PK
Resolution Bandwidth.....100kHz
Video Bandwidth..... 300kHz

Above 1GHz

Sweep Speed..... Auto
Detector..... PK
Resolution Bandwidth.....1MHz
Video Bandwidth..... 3MHz
Detector..... Ave.
Resolution Bandwidth.....1MHz
Video Bandwidth..... 10Hz

7.4 Test Procedure

1. The EUT is placed on a turntable. For below 1GHz, the EUT is 0.8m above ground plane;
For above1GHz, the EUT is 1.5m above ground plane.
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 moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

7.5 Summary of Test Results

Test Frequency: 32.768KHz~ 30MHz

The measurements were more than 20 dB below the limit and not reported.

Test Frequency: 30MHz ~ 18GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11b: Low Channel 2412MHz									
225.66	42.17	QP	14	1.7	H	-11.62	30.55	46.00	-15.45
225.66	35.92	QP	146	1.1	V	-11.62	24.30	46.00	-21.70
4824.00	51.04	PK	7	1.7	V	-1.06	49.98	74.00	-24.02
4824.00	47.17	Ave	7	1.7	V	-1.06	46.11	54.00	-7.89
7236.00	43.95	PK	93	1.7	H	1.33	45.28	74.00	-28.72
7236.00	39.95	Ave	93	1.7	H	1.33	41.28	54.00	-12.72
2345.49	46.31	PK	41	1.3	V	-13.19	33.12	74.00	-40.88
2345.49	38.23	Ave	41	1.3	V	-13.19	25.04	54.00	-28.96
2385.26	42.80	PK	205	1.7	H	-13.14	29.66	74.00	-44.34
2385.26	38.57	Ave	205	1.7	H	-13.14	25.43	54.00	-28.57
2497.66	42.22	PK	206	1.2	V	-13.08	29.14	74.00	-44.86
2497.66	36.96	Ave	206	1.2	V	-13.08	23.88	54.00	-30.12

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11b: Middle Channel 2437MHz									
225.66	41.50	QP	353	1.8	H	-11.62	29.88	46.00	-16.12
225.66	35.16	QP	327	2.0	V	-11.62	23.54	46.00	-22.46
4874.00	50.56	PK	78	1.9	V	-0.62	49.94	74.00	-24.06
4874.00	44.82	Ave	78	1.9	V	-0.62	44.20	54.00	-9.80
7311.00	41.66	PK	173	1.5	H	2.21	43.87	74.00	-30.13
7311.00	41.25	Ave	173	1.5	H	2.21	43.46	54.00	-10.54
2336.62	45.28	PK	255	1.6	V	-13.19	32.09	74.00	-41.91
2336.62	37.88	Ave	255	1.6	V	-13.19	24.69	54.00	-29.31
2358.20	43.81	PK	113	1.6	H	-13.14	30.67	74.00	-43.33
2358.20	36.53	Ave	113	1.6	H	-13.14	23.39	54.00	-30.61
2499.67	42.73	PK	331	1.7	V	-13.08	29.65	74.00	-44.35
2499.67	37.04	Ave	331	1.7	V	-13.08	23.96	54.00	-30.04

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11b: High Channel 2462MHz									
225.66	42.76	QP	143	1.9	H	-11.62	31.14	46.00	-14.86
225.66	36.16	QP	231	1.7	V	-11.62	24.54	46.00	-21.46
4924.00	49.16	PK	150	1.8	V	-0.24	48.92	74.00	-25.08
4924.00	44.74	Ave	150	1.8	V	-0.24	44.50	54.00	-9.50
7386.00	42.12	PK	172	1.6	H	2.84	44.96	74.00	-29.04
7386.00	41.21	Ave	172	1.6	H	2.84	44.05	54.00	-9.95
2317.28	45.96	PK	96	1.2	V	-13.19	32.77	74.00	-41.23
2317.28	37.56	Ave	96	1.2	V	-13.19	24.37	54.00	-29.63
2361.33	44.43	PK	189	1.9	H	-13.14	31.29	74.00	-42.71
2361.33	38.57	Ave	189	1.9	H	-13.14	25.43	54.00	-28.57
2491.51	43.99	PK	177	1.3	V	-13.08	30.91	74.00	-43.09
2491.51	38.45	Ave	177	1.3	V	-13.08	25.37	54.00	-28.63

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11g: Low Channel 2412MHz									
225.66	43.17	QP	243	1.5	H	-11.62	31.55	46.00	-14.45
225.66	36.64	QP	295	1.6	V	-11.62	25.02	46.00	-20.98
4824.00	49.55	PK	282	1.9	V	-1.06	48.49	74.00	-25.51
4824.00	43.88	Ave	282	1.9	V	-1.06	42.82	54.00	-11.18
7236.00	43.19	PK	75	1.6	H	1.33	44.52	74.00	-29.48
7236.00	42.12	Ave	75	1.6	H	1.33	43.45	54.00	-10.55
2348.32	45.76	PK	116	1.9	V	-13.19	32.57	74.00	-41.43
2348.32	38.99	Ave	116	1.9	V	-13.19	25.80	54.00	-28.20
2354.94	44.43	PK	35	1.6	H	-13.14	31.29	74.00	-42.71
2354.94	36.29	Ave	35	1.6	H	-13.14	23.15	54.00	-30.85
2494.42	42.40	PK	16	1.2	V	-13.08	29.32	74.00	-44.68
2494.42	36.82	Ave	16	1.2	V	-13.08	23.74	54.00	-30.26

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11g: Middle Channel 2437MHz									
225.66	42.14	QP	316	1.2	H	-11.62	30.52	46.00	-15.48
225.66	35.69	QP	337	1.4	V	-11.62	24.07	46.00	-21.93
4874.00	50.96	PK	150	1.3	V	-0.62	50.34	74.00	-23.66
4874.00	44.53	Ave	150	1.3	V	-0.62	43.91	54.00	-10.09
7311.00	43.06	PK	306	1.7	H	2.21	45.27	74.00	-28.73
7311.00	41.77	Ave	306	1.7	H	2.21	43.98	54.00	-10.02
2316.54	46.48	PK	355	1.6	V	-13.19	33.29	74.00	-40.71
2316.54	38.14	Ave	355	1.6	V	-13.19	24.95	54.00	-29.05
2352.71	43.13	PK	317	1.1	H	-13.14	29.99	74.00	-44.01
2352.71	38.98	Ave	317	1.1	H	-13.14	25.84	54.00	-28.16
2489.65	44.73	PK	16	2.0	V	-13.08	31.65	74.00	-42.35
2489.65	37.22	Ave	16	2.0	V	-13.08	24.14	54.00	-29.86

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11g: High Channel 2462MHz									
225.66	42.28	QP	85	1.5	H	-11.62	30.66	46.00	-15.34
225.66	34.35	QP	23	1.1	V	-11.62	22.73	46.00	-23.27
4924.00	52.03	PK	155	1.1	V	-0.24	51.79	74.00	-22.21
4924.00	43.36	Ave	155	1.1	V	-0.24	43.12	54.00	-10.88
7386.00	44.54	PK	103	1.4	H	2.84	47.38	74.00	-26.62
7386.00	42.11	Ave	103	1.4	H	2.84	44.95	54.00	-9.05
2336.87	45.56	PK	259	1.4	V	-13.19	32.37	74.00	-41.63
2336.87	39.44	Ave	259	1.4	V	-13.19	26.25	54.00	-27.75
2357.60	44.09	PK	121	1.1	H	-13.14	30.95	74.00	-43.05
2357.60	37.23	Ave	121	1.1	H	-13.14	24.09	54.00	-29.91
2499.83	44.62	PK	181	1.2	V	-13.08	31.54	74.00	-42.46
2499.83	36.62	Ave	181	1.2	V	-13.08	23.54	54.00	-30.46

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11 n20: Low Channel 2412MHz									
225.66	42.13	QP	34	1.1	H	-11.62	30.51	46.00	-15.49
225.66	34.16	QP	46	1.1	V	-11.62	22.54	46.00	-23.46
4924.00	52.21	PK	146	1.7	V	-0.24	51.97	74.00	-22.03
4924.00	40.95	Ave	146	1.7	V	-0.24	40.71	54.00	-13.29
7386.00	42.02	PK	161	1.1	H	2.84	44.86	74.00	-29.14
7386.00	42.28	Ave	161	1.1	H	2.84	45.12	54.00	-8.88
2311.66	46.45	PK	72	1.6	V	-13.19	33.26	74.00	-40.74
2311.66	38.60	Ave	72	1.6	V	-13.19	25.41	54.00	-28.59
2360.93	43.09	PK	120	1.6	H	-13.14	29.95	74.00	-44.05
2360.93	38.83	Ave	120	1.6	H	-13.14	25.69	54.00	-28.31
2484.88	44.36	PK	280	2.0	V	-13.08	31.28	74.00	-42.72
2484.88	36.09	Ave	280	2.0	V	-13.08	23.01	54.00	-30.99

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11 n20: Middle Channel 2437MHz									
225.66	42.73	QP	38	1.7	H	-11.62	31.11	46.00	-14.89
225.66	33.45	QP	125	1.1	V	-11.62	21.83	46.00	-24.17
4874.00	52.33	PK	357	1.5	V	-0.62	51.71	74.00	-22.29
4874.00	41.34	Ave	357	1.5	V	-0.62	40.72	54.00	-13.28
7311.00	42.16	PK	174	1.9	H	2.21	44.37	74.00	-29.63
7311.00	42.07	Ave	174	1.9	H	2.21	44.28	54.00	-9.72
2343.34	45.95	PK	95	1.5	V	-13.19	32.76	74.00	-41.24
2343.34	38.81	Ave	95	1.5	V	-13.19	25.62	54.00	-28.38
2364.91	43.75	PK	130	1.6	H	-13.14	30.61	74.00	-43.39
2364.91	36.50	Ave	130	1.6	H	-13.14	23.36	54.00	-30.64
2493.00	43.11	PK	106	1.2	V	-13.08	30.03	74.00	-43.97
2493.00	37.77	Ave	106	1.2	V	-13.08	24.69	54.00	-29.31

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11 n20: High Channel 2462MHz									
225.66	42.13	QP	34	1.1	H	-11.62	30.51	46.00	-15.49
225.66	34.16	QP	46	1.1	V	-11.62	22.54	46.00	-23.46
4924.00	52.21	PK	146	1.7	V	-0.24	51.97	74.00	-22.03
4924.00	40.95	Ave	146	1.7	V	-0.24	40.71	54.00	-13.29
7386.00	42.02	PK	161	1.1	H	2.84	44.86	74.00	-29.14
7386.00	42.28	Ave	161	1.1	H	2.84	45.12	54.00	-8.88
2311.66	46.45	PK	72	1.6	V	-13.19	33.26	74.00	-40.74
2311.66	38.60	Ave	72	1.6	V	-13.19	25.41	54.00	-28.59
2360.93	43.09	PK	120	1.6	H	-13.14	29.95	74.00	-44.05
2360.93	38.83	Ave	120	1.6	H	-13.14	25.69	54.00	-28.31
2484.88	44.36	PK	280	2.0	V	-13.08	31.28	74.00	-42.72
2484.88	36.09	Ave	280	2.0	V	-13.08	23.01	54.00	-30.99

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11 N40: Low Channel 2422MHz									
229.66	42.96	QP	68	1.1	H	-11.62	29.34	46.00	-16.66
229.66	39.35	QP	335	1.5	V	-11.62	22.73	46.00	-23.27
4844.00	50.39	PK	161	1.4	V	-1.06	48.33	74.00	-25.67
4844.00	39.98	Ave	161	1.4	V	-1.06	36.92	54.00	-17.08
7266.00	450.71	PK	113	1.1	H	1.33	42.04	74.00	-31.96
7266.00	40.66	Ave	113	1.1	H	1.33	41.99	54.00	-12.01
2320.25	45.09	PK	243	1.2	V	-13.19	31.90	74.00	-42.10
2320.25	37.84	Ave	243	1.2	V	-13.19	24.65	54.00	-29.35
2389.52	43.47	PK	331	1.6	H	-13.14	30.33	74.00	-43.67
2389.52	36.50	Ave	331	1.6	H	-13.14	23.36	54.00	-30.64
2499.40	43.42	PK	201	1.0	V	-13.08	30.34	74.00	-43.66
2499.40	37.04	Ave	201	1.0	V	-13.08	23.96	54.00	-30.04

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11 N40: Middle Channel 2437MHz									
225.66	43.28	QP	62	1.3	H	-11.62	29.66	46.00	-16.34
225.66	36.94	QP	148	1.4	V	-11.62	22.32	46.00	-23.68
4874.00	50.75	PK	5	1.0	V	-0.62	49.13	74.00	-24.87
4874.00	39.59	Ave	5	1.0	V	-0.62	37.97	54.00	-16.03
7311.00	43.38	PK	252	1.7	H	2.21	42.59	74.00	-31.41
7311.00	43.50	Ave	252	1.7	H	2.21	42.71	54.00	-11.29
2320.91	46.36	PK	177	1.7	V	-13.19	33.17	74.00	-40.83
2320.91	37.75	Ave	177	1.7	V	-13.19	24.56	54.00	-29.44
2377.79	43.76	PK	349	1.3	H	-13.14	30.62	74.00	-43.38
2377.79	38.96	Ave	349	1.3	H	-13.14	25.82	54.00	-28.18
2486.59	44.55	PK	104	1.8	V	-13.08	31.47	74.00	-42.53
2486.59	37.71	Ave	104	1.8	V	-13.08	24.63	54.00	-29.37

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
11 N40: High Channel 2452MHz									
225.66	4661	QP	180	1.6	H	-11.62	29.99	46.00	-16.01
225.66	36.31	QP	346	1.5	V	-11.62	21.69	46.00	-24.31
4904.00	50.40	PK	34	1.4	V	-0.24	49.16	74.00	-24.84
4904.00	39.97	Ave	34	1.4	V	-0.24	37.73	54.00	-16.27
7356.00	46.26	PK	47	1.6	H	2.84	43.10	74.00	-30.90
7356.00	45.80	Ave	47	1.6	H	2.84	43.64	54.00	-10.36
2325.47	45.77	PK	181	1.6	V	-13.19	32.58	74.00	-41.42
2325.47	37.63	Ave	181	1.6	V	-13.19	24.44	54.00	-29.56
2381.16	44.02	PK	117	1.9	H	-13.14	30.88	74.00	-43.12
2381.16	38.79	Ave	117	1.9	H	-13.14	25.65	54.00	-28.35
2485.27	43.40	PK	181	1.5	V	-13.08	30.32	74.00	-43.68
2485.27	36.88	Ave	181	1.5	V	-13.08	23.80	54.00	-30.20

Test Frequency: 18GHz~25GHz

The measurements were more than 20 dB below the limit and not reported

8 Band Edge Measurement

Test Requirement:	FCC CFR47 Part 15 Section 15.247
Test Method:	558074 D01 DTS Meas Guidance v03r05 April 08, 2016
Test Limit:	Regulation 15.247 (d),In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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) (see §15.205(c)).
Test Mode:	Transmitting

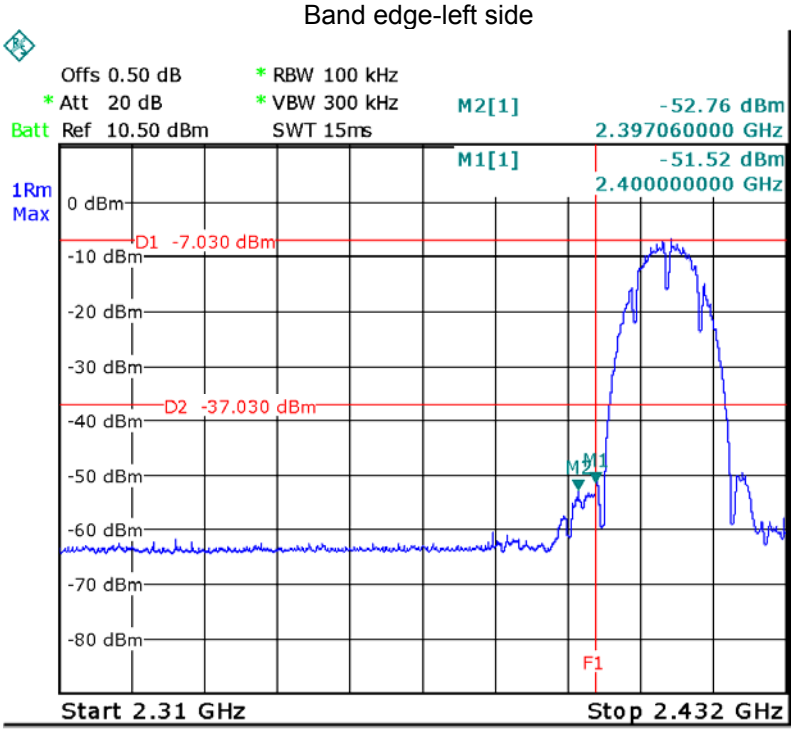
8.1 Test Produce

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

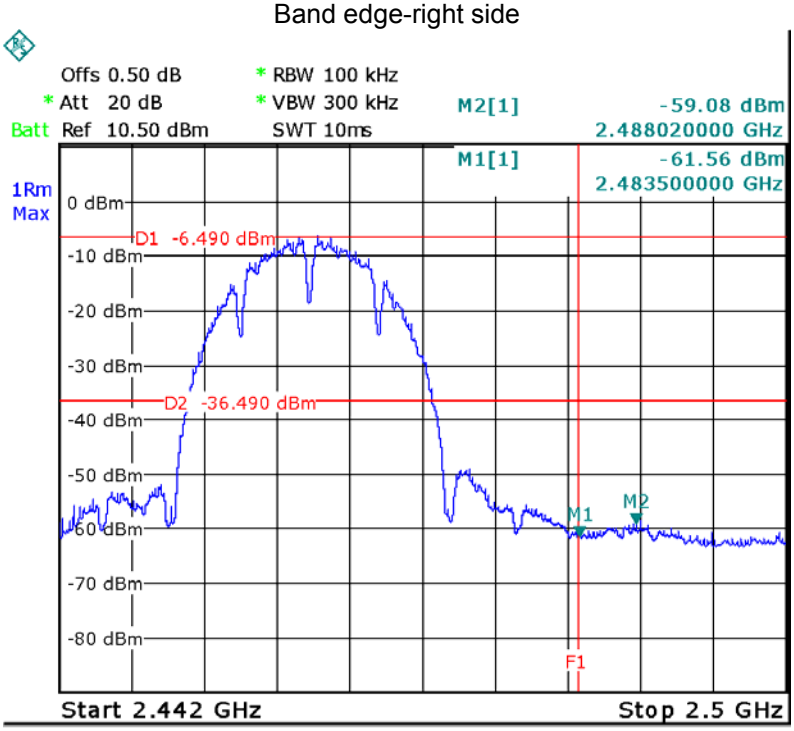
8.2 Test Result

11b

Band edge-left side

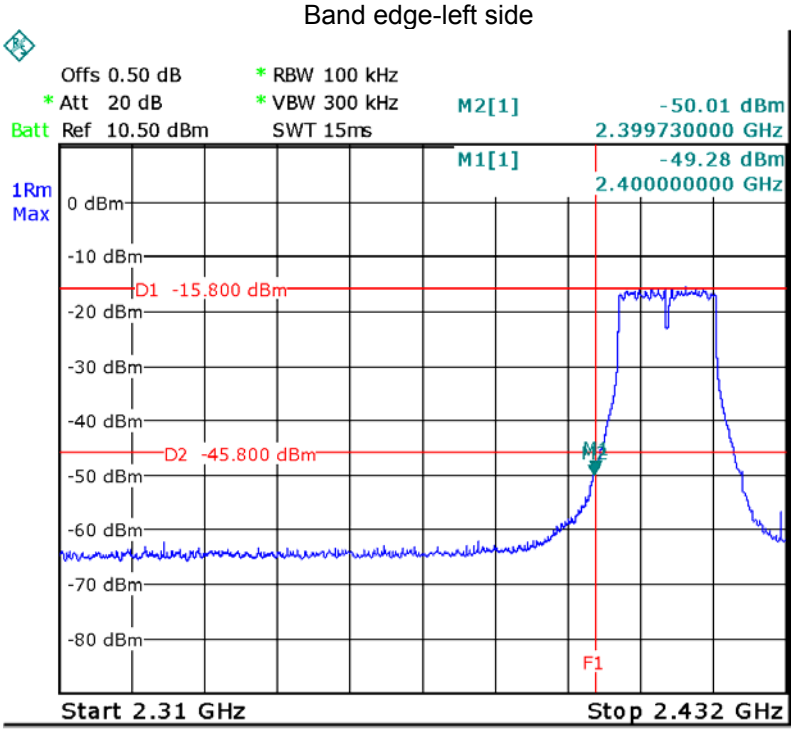


Band edge-right side

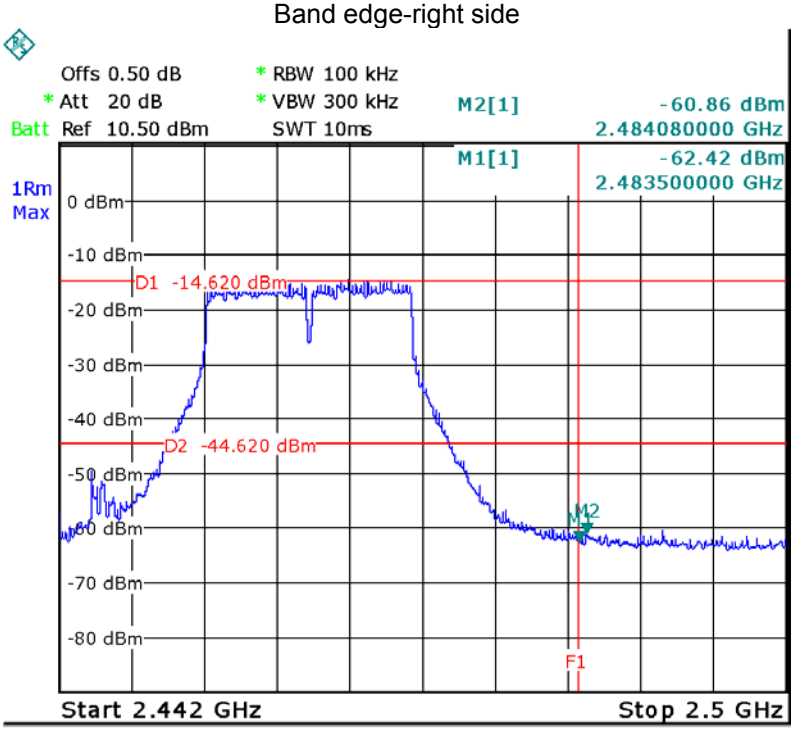


11g

Band edge-left side

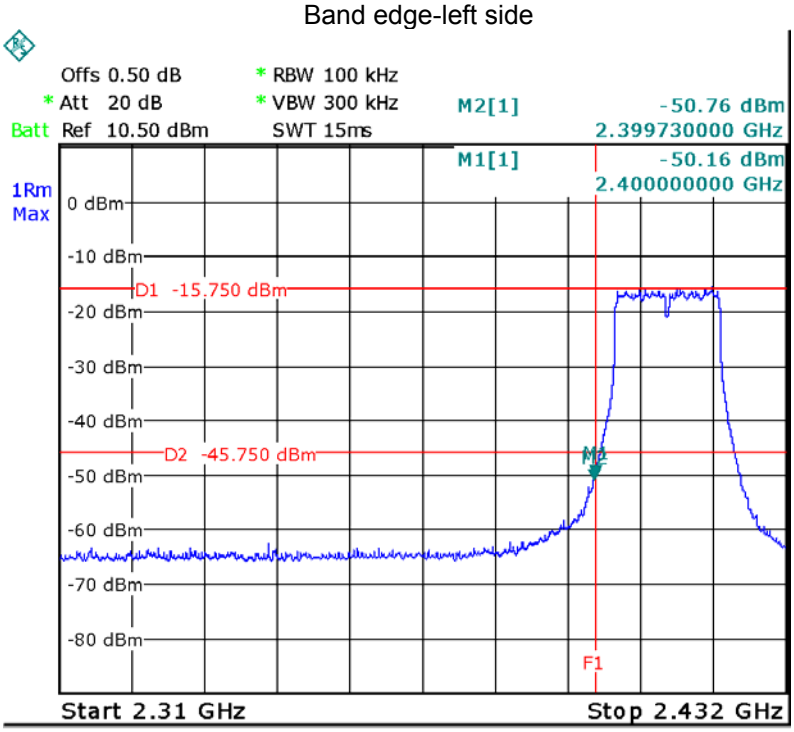


Band edge-right side

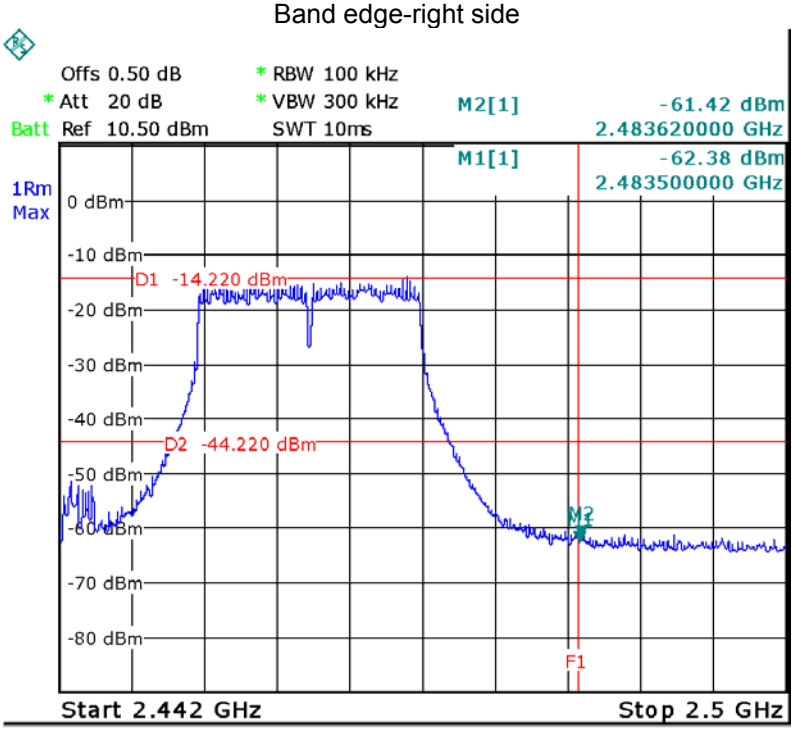


11 N20

Band edge-left side

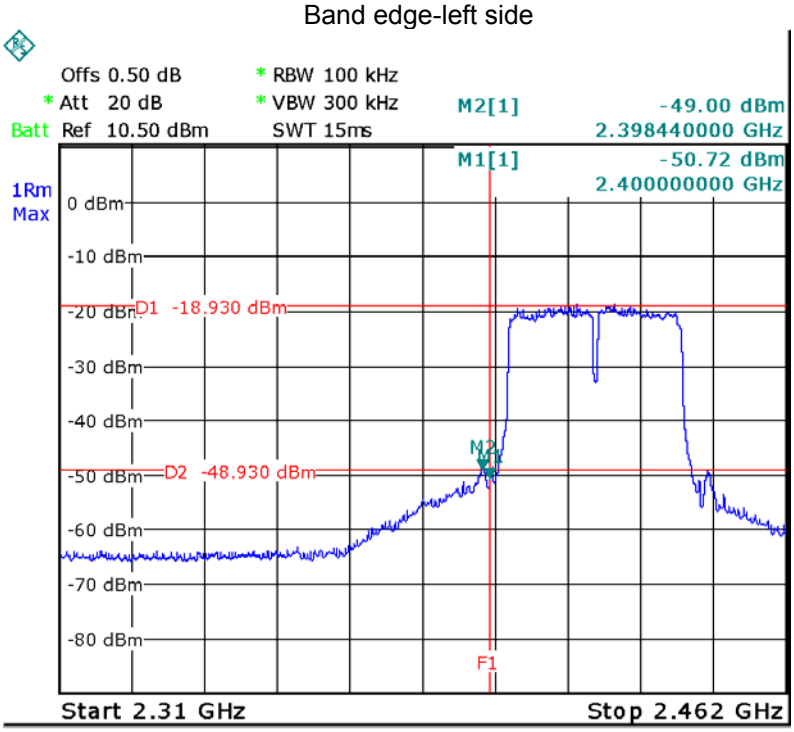


Band edge-right side

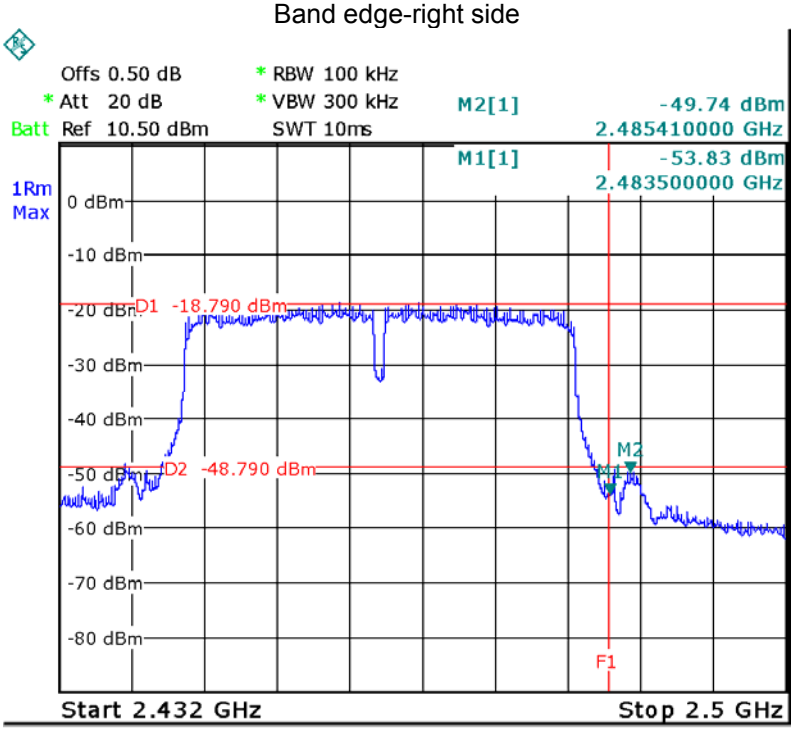


11 N40

Band edge-left side



Band edge-right side



9 Bandwidth Measurement

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05 April 08, 2016

9.1 Test Procedure

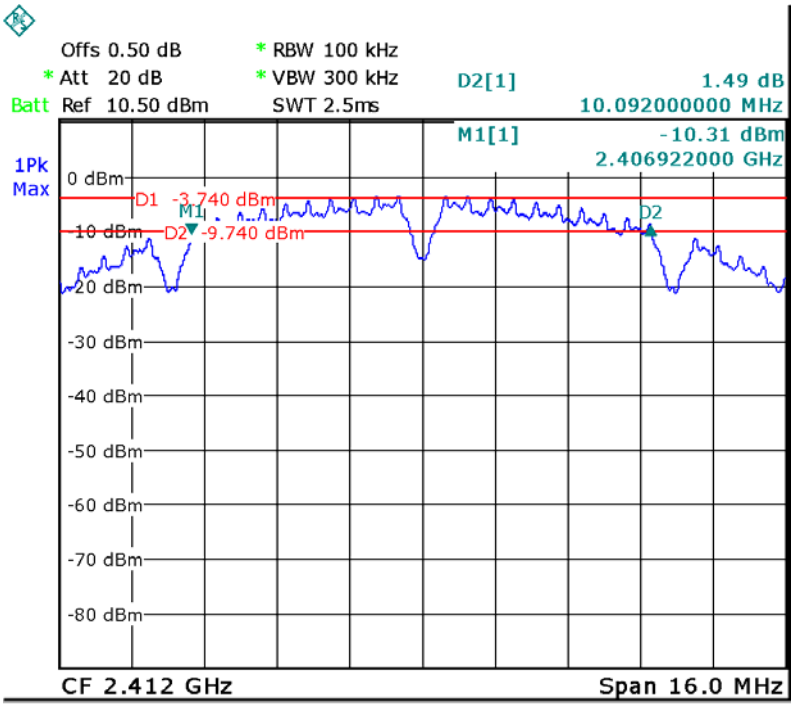
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

9.2 Test Result:

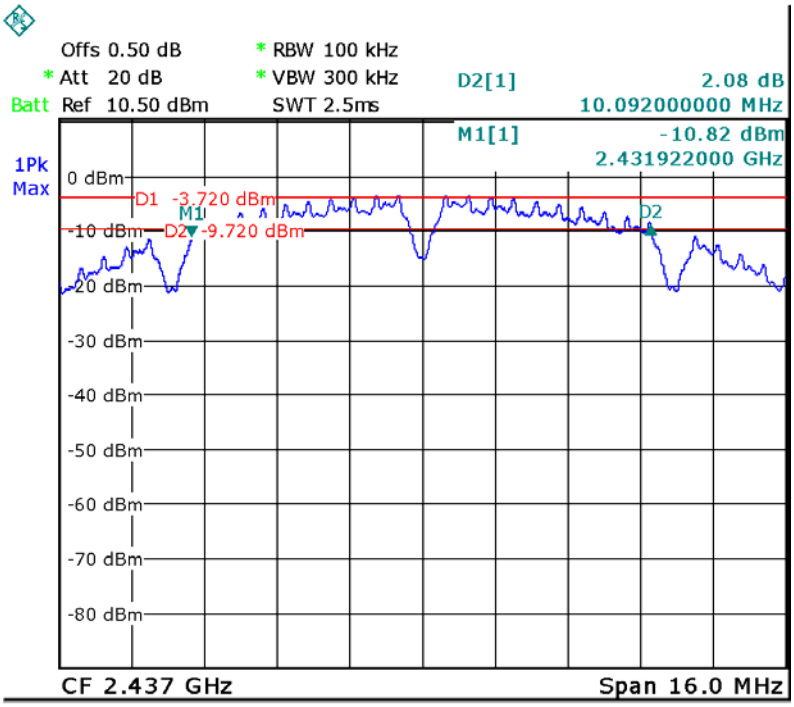
Operation mode	Bandwidth (MHz)		
TX 11b	Channel 1	Channel 6	Channel 11
	10.092	10.092	10.092
TX 11g	Channel 1	Channel 6	Channel 11
	16.567	16.567	16.567
TX 11n HT20	Channel 1	Channel 6	Channel 11
	17.838	17.838	17.838
TX 11n HT40	Channel 3	Channel 6	Channel 9
	36.450	36.450	36.450

Test result plot as follows:

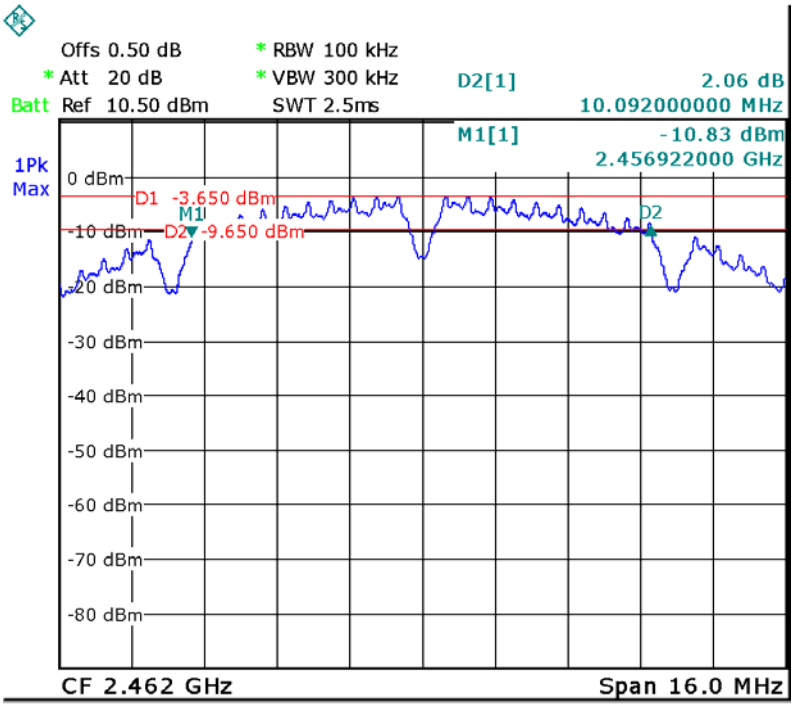
Mode: TX 11b channel 1



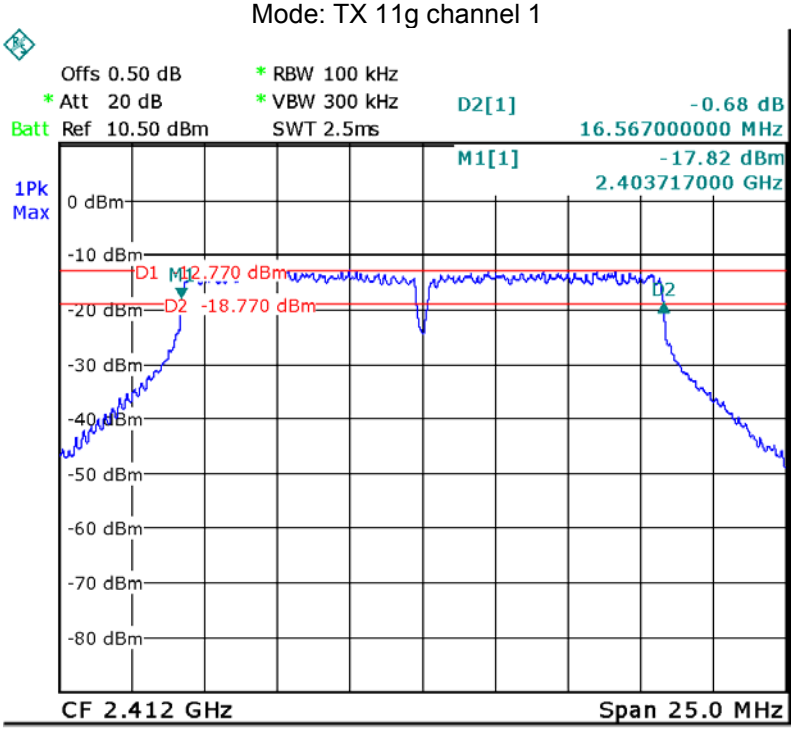
Mode: TX 11b channel 6



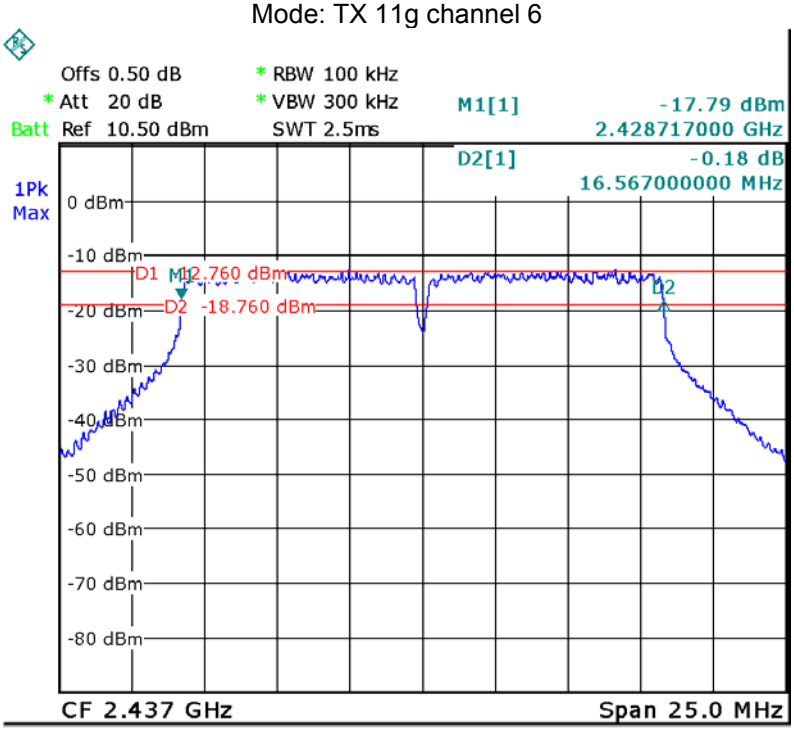
Mode: TX 11b channel 11



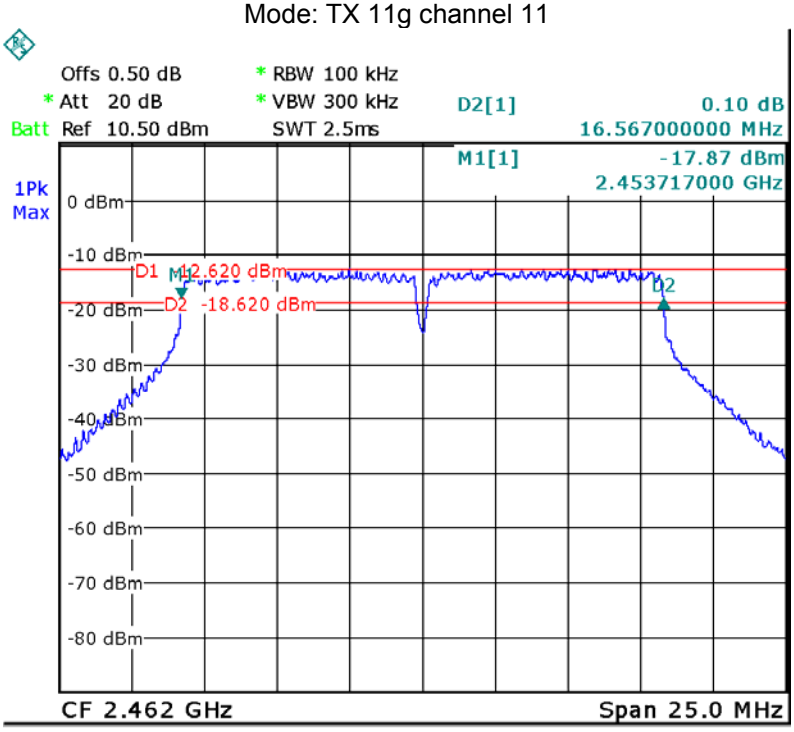
Mode: TX 11g channel 1



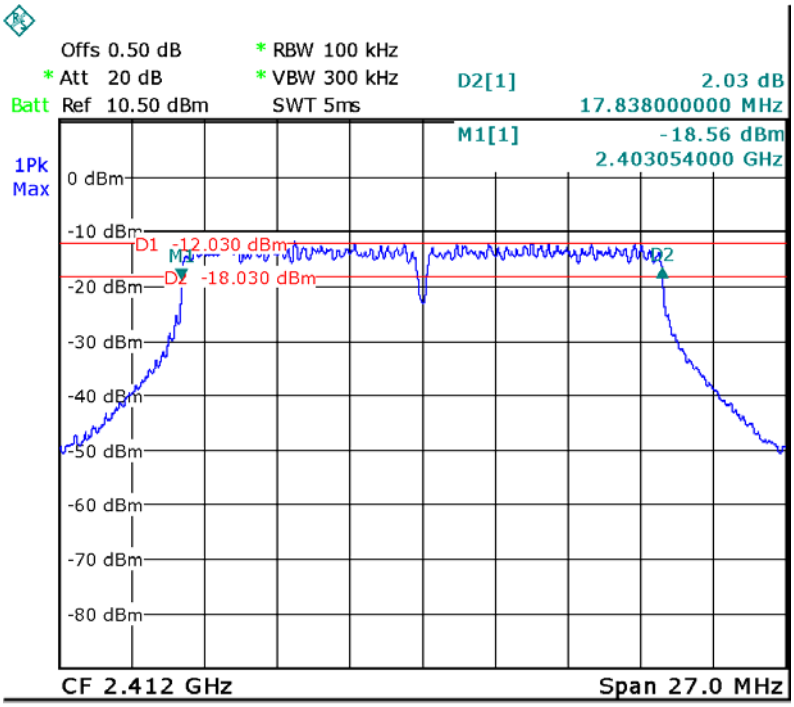
Mode: TX 11g channel 6



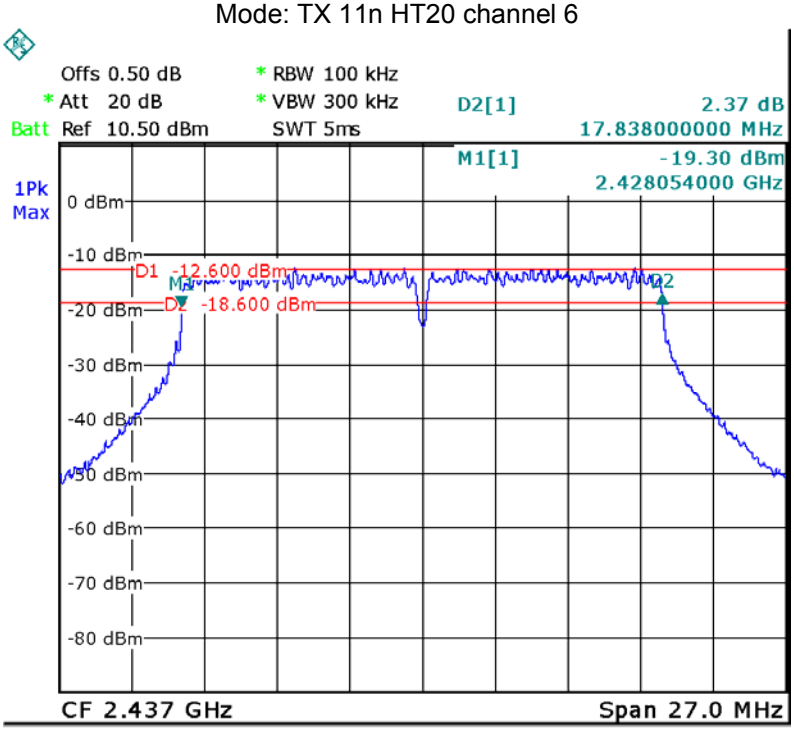
Mode: TX 11g channel 11



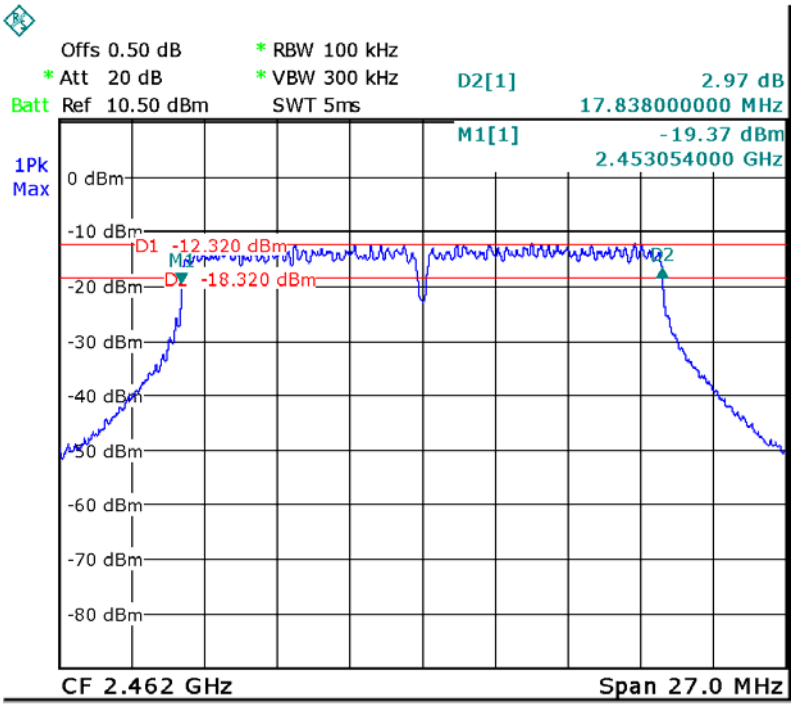
Mode: TX 11n HT20 channel 1



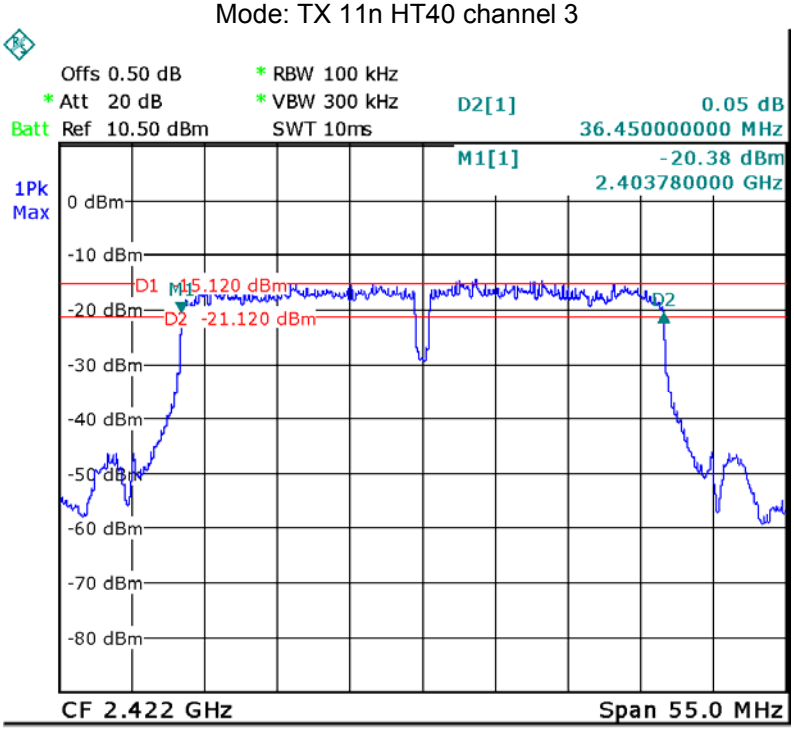
Mode: TX 11n HT20 channel 6



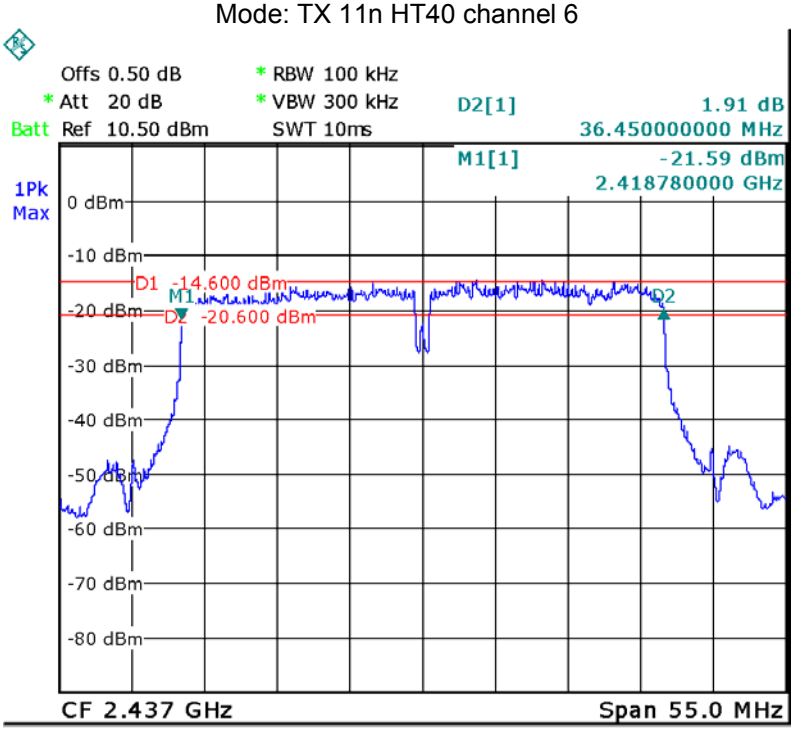
Mode: TX 11n HT20 channel 11



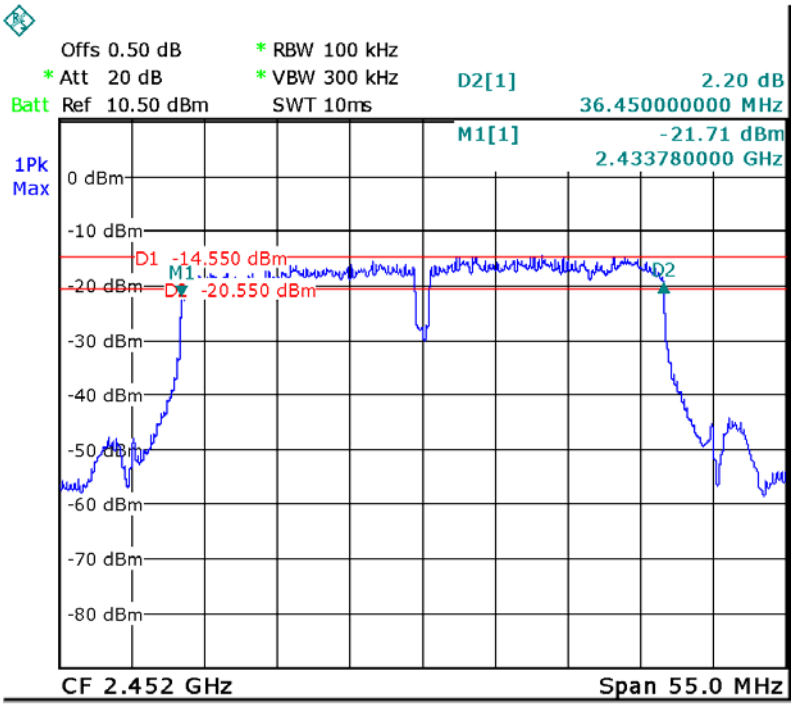
Mode: TX 11n HT40 channel 3



Mode: TX 11n HT40 channel 6



Mode: TX 11n HT40 channel 9



10 Maximum conducted (average) output power

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05 April 08, 2016

10.1 Test Procedure

558074 D01 DTS Meas Guidance v03r05 April 08, 2016 section 9.2.2

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 1MHz. VBW = 3MHz. Sweep = auto; Detector Function =RMS, Set the span to at least 1.5 times the 6 dB bandwidth.

3. Keep the EUT in transmitting at lowest, Middle and highest channel individually. Record the max value.

10.2 Test Result

Test mode :TX 11b		
Maximum conducted(average) output power (dBm)		
2412MHz	2437MHz	2462MHz
9.28	9.21	9.20
Limit: 1W/30dBm		

Test mode :TX 11g		
Maximum conducted(average) output power (dBm)		
2412MHz	2437MHz	2462MHz
9.46	9.28	9.45
Limit: 1W/30dBm		

Test mode :TX 11n HT20		
Maximum conducted(average) output power (dBm)		
2412MHz	2437MHz	2462MHz
9.46	9.36	9.27
Limit: 1W/30dBm		

Test mode :TX 11n HT40		
Maximum conducted(average) output power (dBm)		
2422MHz	2437MHz	2452MHz
9.52	9.47	9.46
Limit: 1W/30dBm		

11 Power Spectral density

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05 April 08, 2016

11.1 Test Procedure

558074 D01 DTS Meas Guidance v03r05 April 08, 2016 section 10.2

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 3kHz. VBW = 10kHz , Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

11.2 Test Result

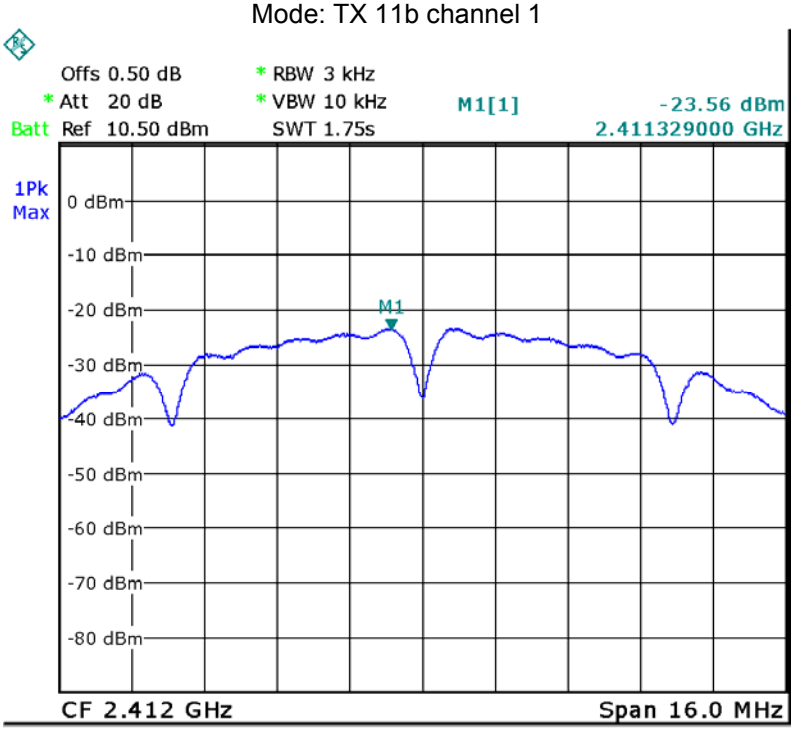
Test mode :TX 11b		
Power Spectral density		
2412MHz	2437MHz	2462MHz
-23.56	-26.76	-23.81
Limit: 8dBm per 3kHz		

Test mode :TX 11g		
Power Spectral density		
2412MHz	2437MHz	2462MHz
-27.22	-27.26	-27.03
Limit: 8dBm per 3kHz		

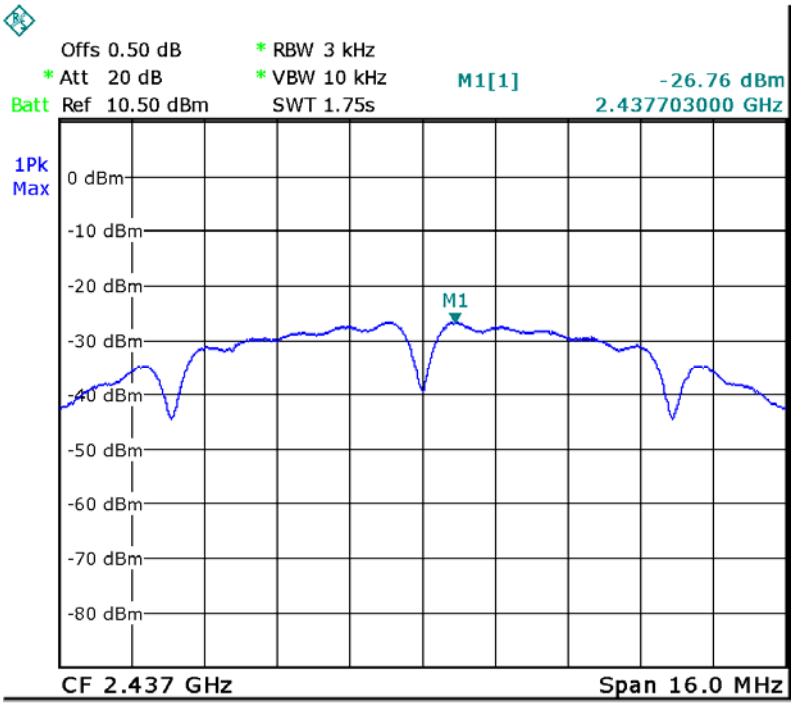
Test mode :TX 11n HT20		
Power Spectral density		
2412MHz	2437MHz	2462MHz
-26.18	-26.26	-25.86
Limit: 8dBm per 3kHz		

Test mode :TX 11n HT40		
Power Spectral density		
2422MHz	2437MHz	2452MHz
-28.99	-26.44	-24.39
Limit: 8dBm per 3kHz		

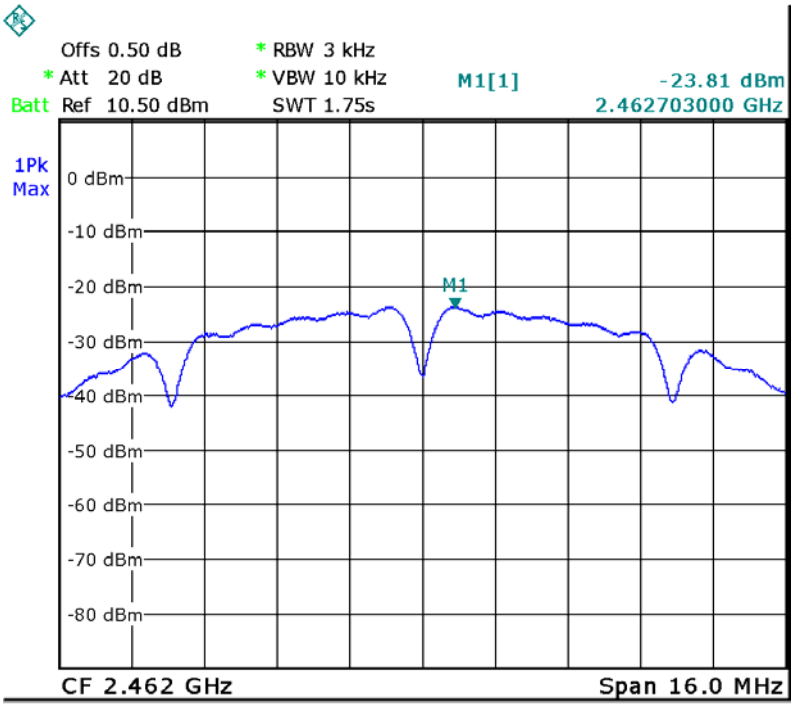
Mode: TX 11b channel 1



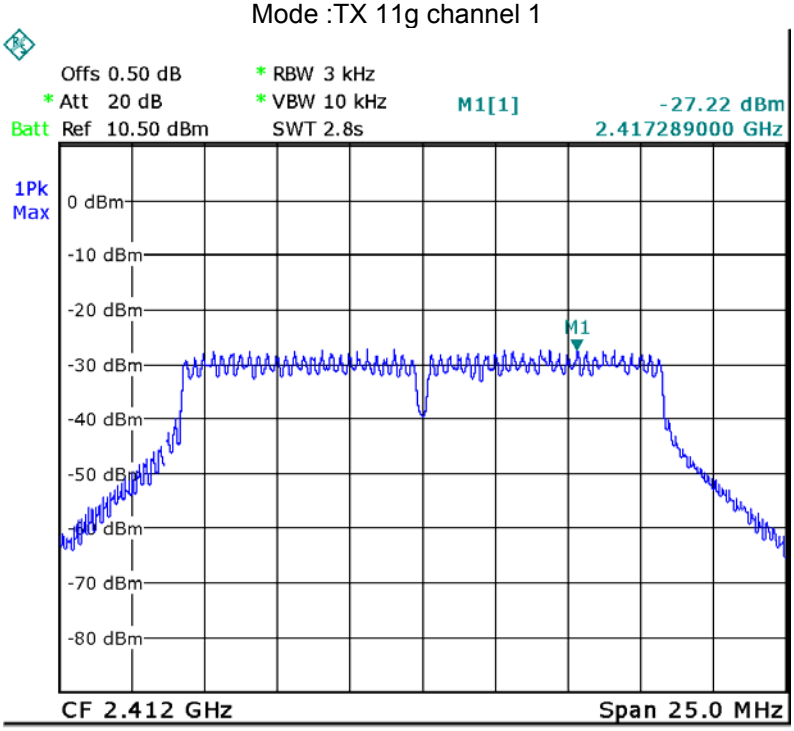
Mode: TX 11b channel 6



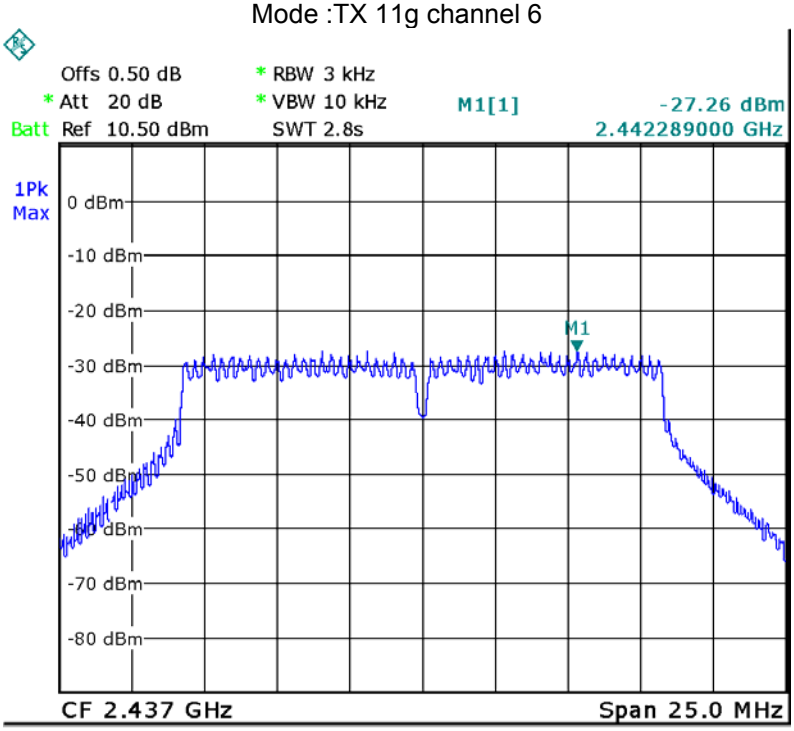
Mode: TX 11b channel 11



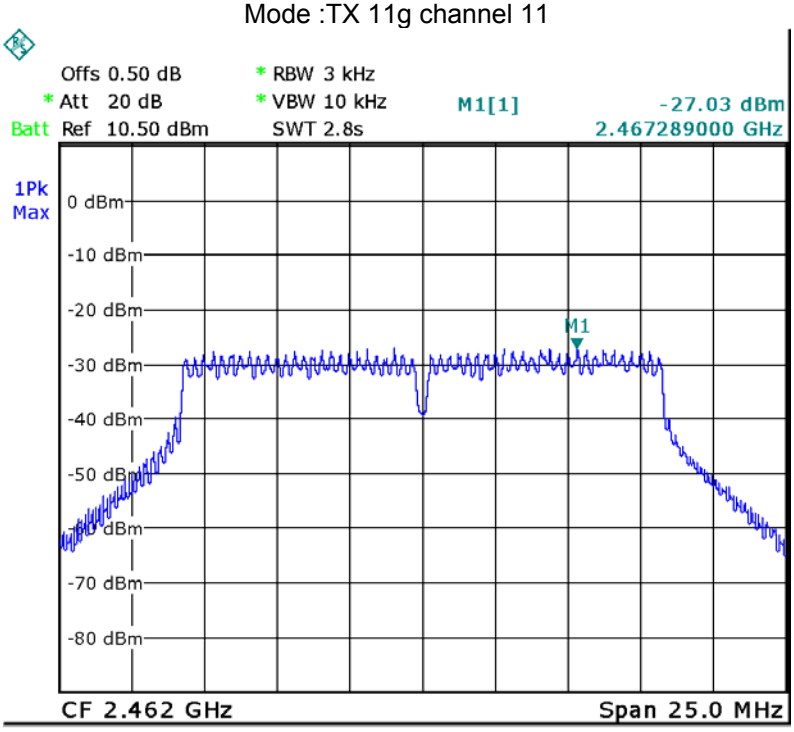
Mode :TX 11g channel 1



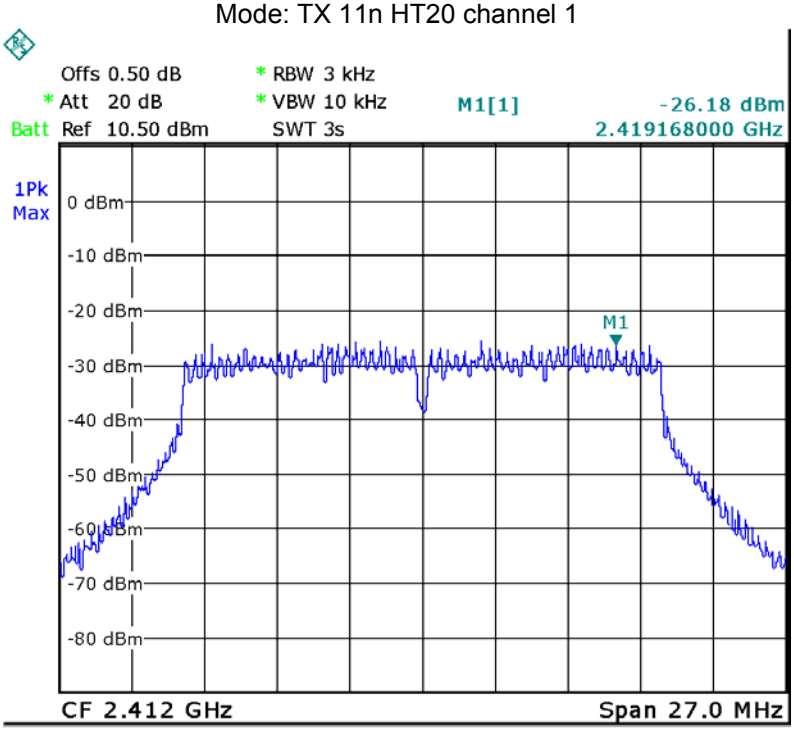
Mode :TX 11g channel 6



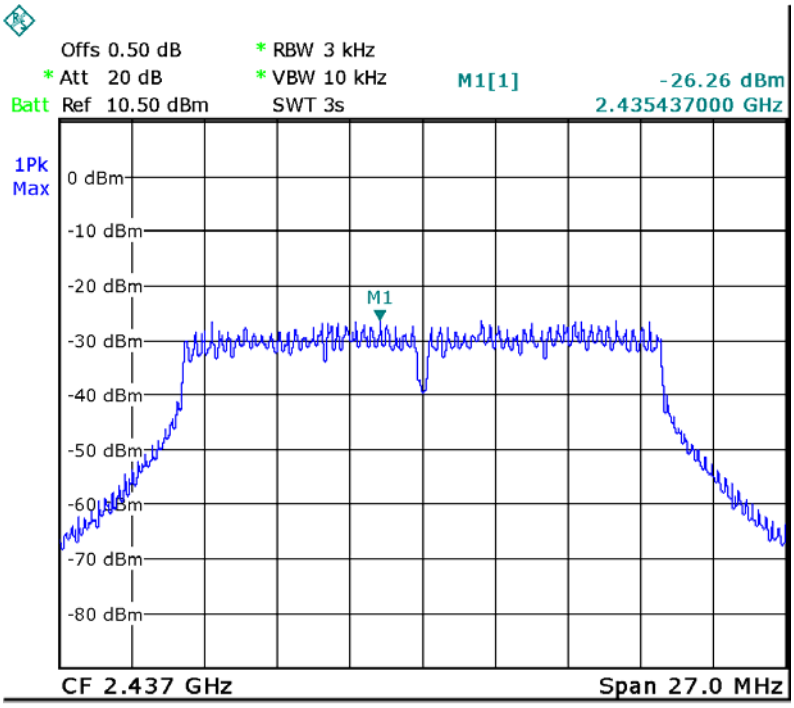
Mode :TX 11g channel 11



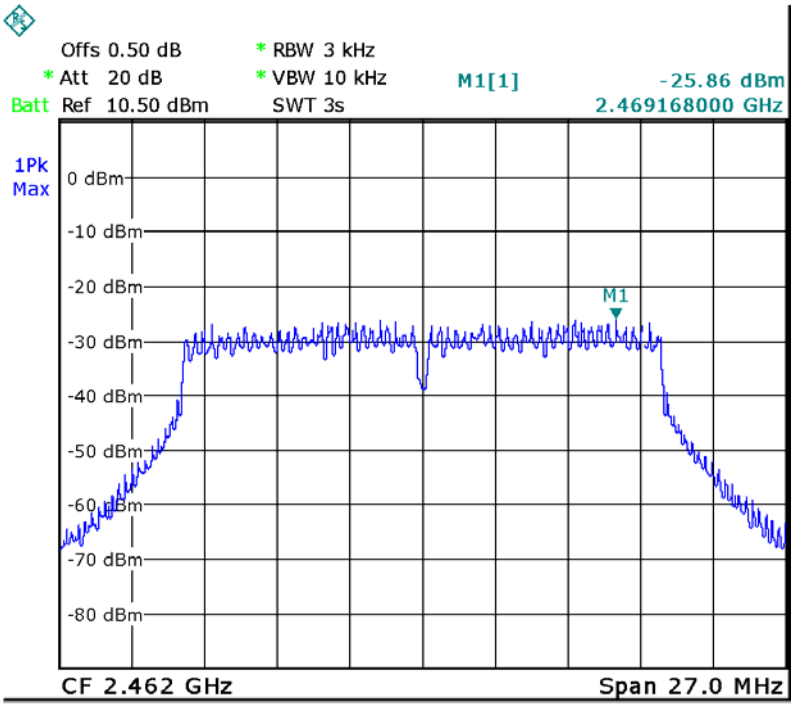
Mode: TX 11n HT20 channel 1



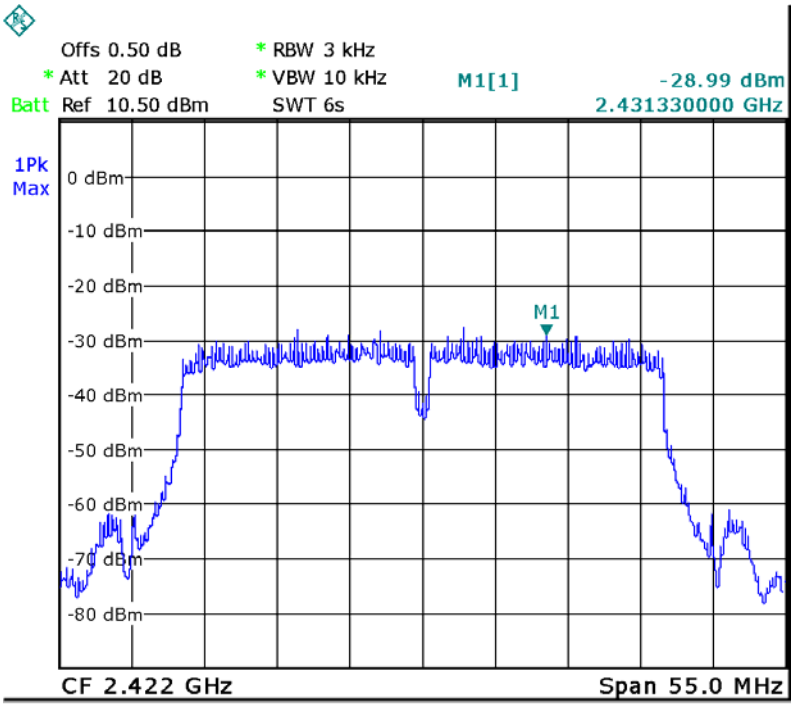
Mode: TX 11n HT20 channel 6



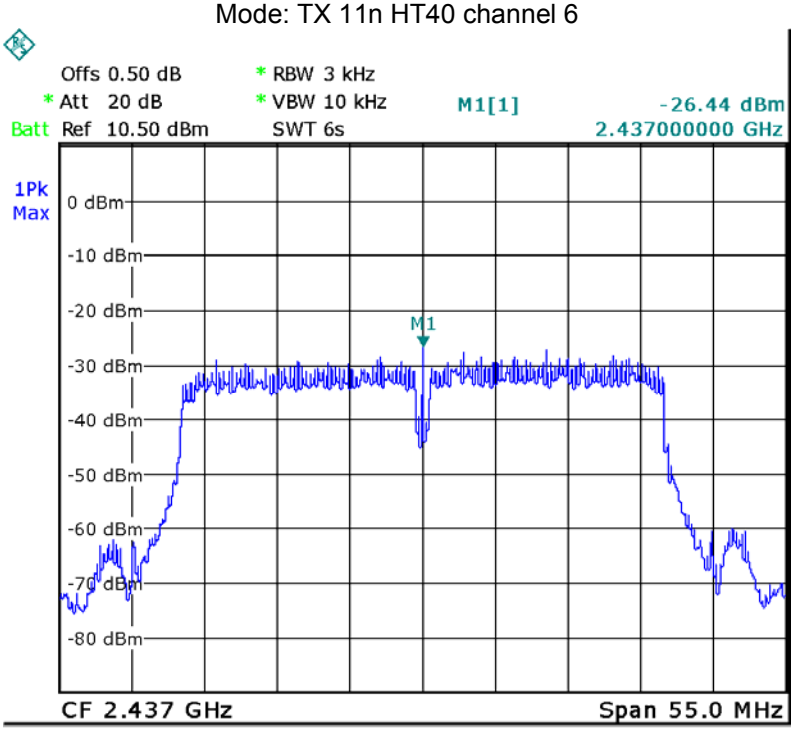
Mode: TX 11n HT20 channel 11



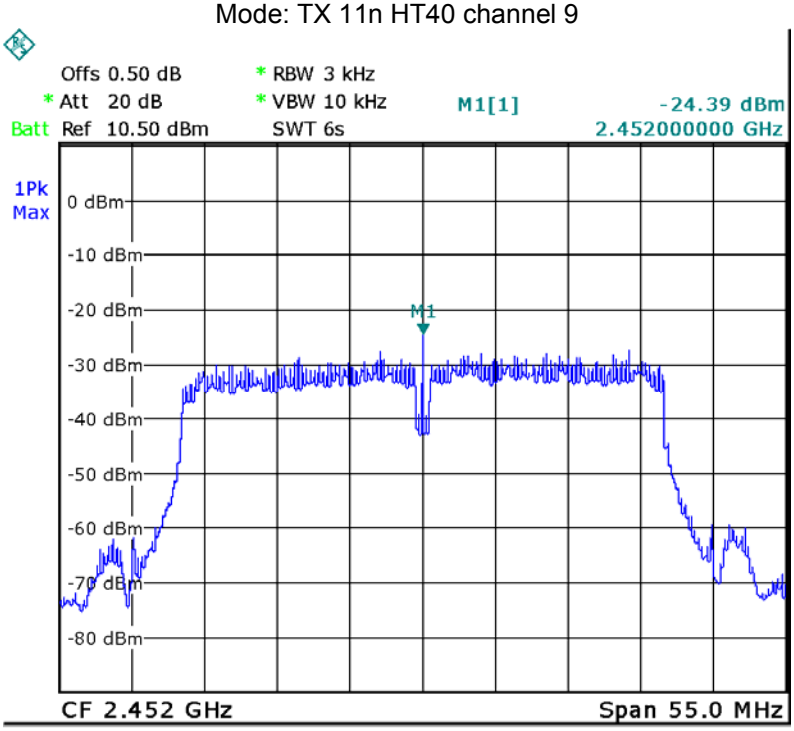
Mode: TX 11n HT40 channel 3



Mode: TX 11n HT40 channel 6



Mode: TX 11n HT40 channel 9



12 Antenna Requirement

According to the FCC Part 15 Paragraph 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.This product has a PCB printed antenna, fulfill the requirement of this section.

13 RF Exposure

Test Requirement: FCC Part 1.1307

Evaluation Method FCC Part 2.1093 & 447498 D01 General RF Exposure Guidance v06

13.1 Requirements

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [√ f(GHz)] ≤3.0 for 1-g SAR and ≤7.5 for 10-g extremity SAR where

1. f(GHz) is the RF channel transmit frequency in GHz
2. Power and distance are rounded to the nearest mW and mm before calculation
3. The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

13.2 The procedures / limit

Source-based time-averaged maximum conducted output power(dBm)	Source-based time-averaged maximum conducted output power(mW)	Minimum test separation distance required for the exposure conditions (mm)	SAR Test Exclusion Thresholds(mW)
9.52	8.95	5	9.042

Remark:

Calculation formula: Source-based time-averaged maximum conducted output power(mW) =10^[Source-based time-averaged maximum conducted output power(dBm)/10]

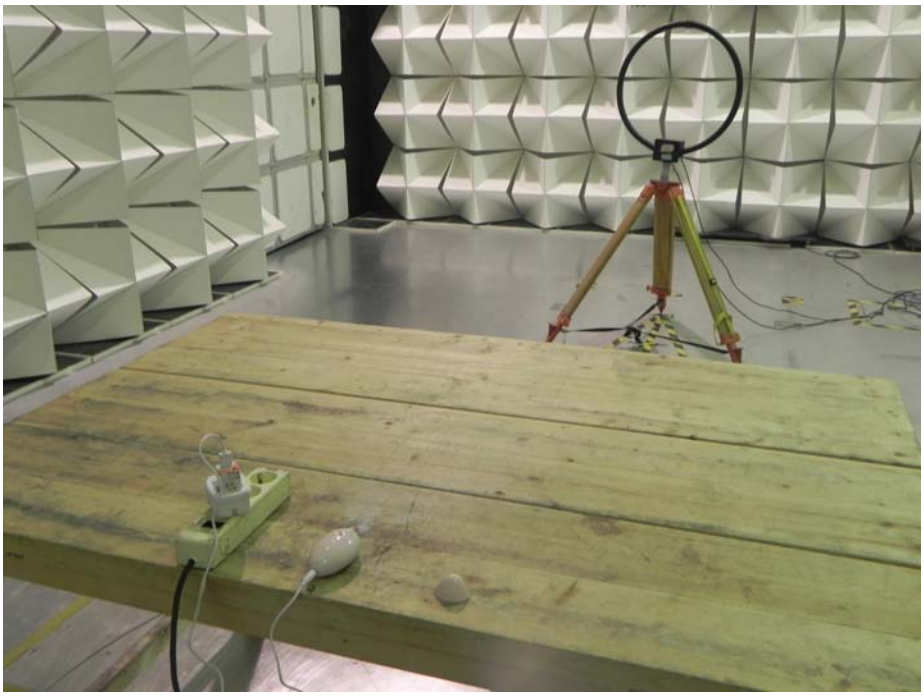
For frequency in 2.412GHz: SAR Test Exlusion Thresholds≤3.0 / [√f(GHz)] *(min. test separation distance, mm)=3.0/(√2.412) *5=9.659 mW

For frequency in 2.462GHz: SAR Test Exlusion Thresholds≤3.0 / [√f(GHz)] *(min. test separation distance, mm)=3.0/(√2.462) *5=9.042 mW

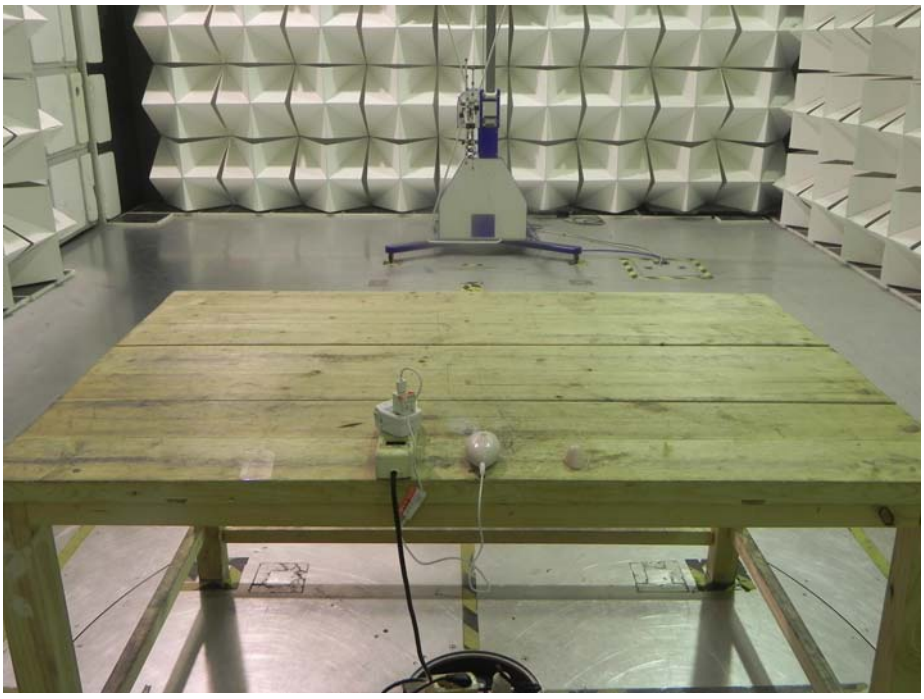
14 Photographs –Model CB-S003 Test Setup Photos

14.1 Photograph – Radiated Emission

Test frequency 32.768KHz to 30MHz Test Site 2#



Test frequency from 30MHz to 1GHz Test Site 2#



Test frequency above 1GHz Test Site 1#

14.2 Photograph – Conducted Emission Test Setup at Test Site 1#

15 Photographs - Constructional Details

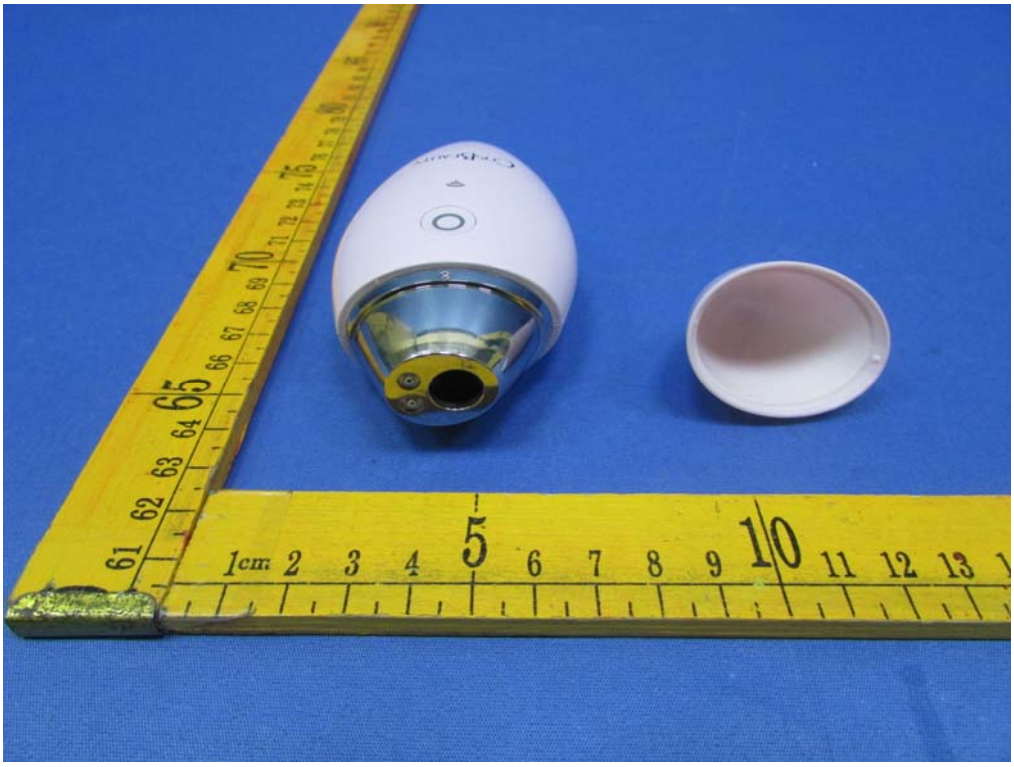
15.1 Model CB-S003- External Photos

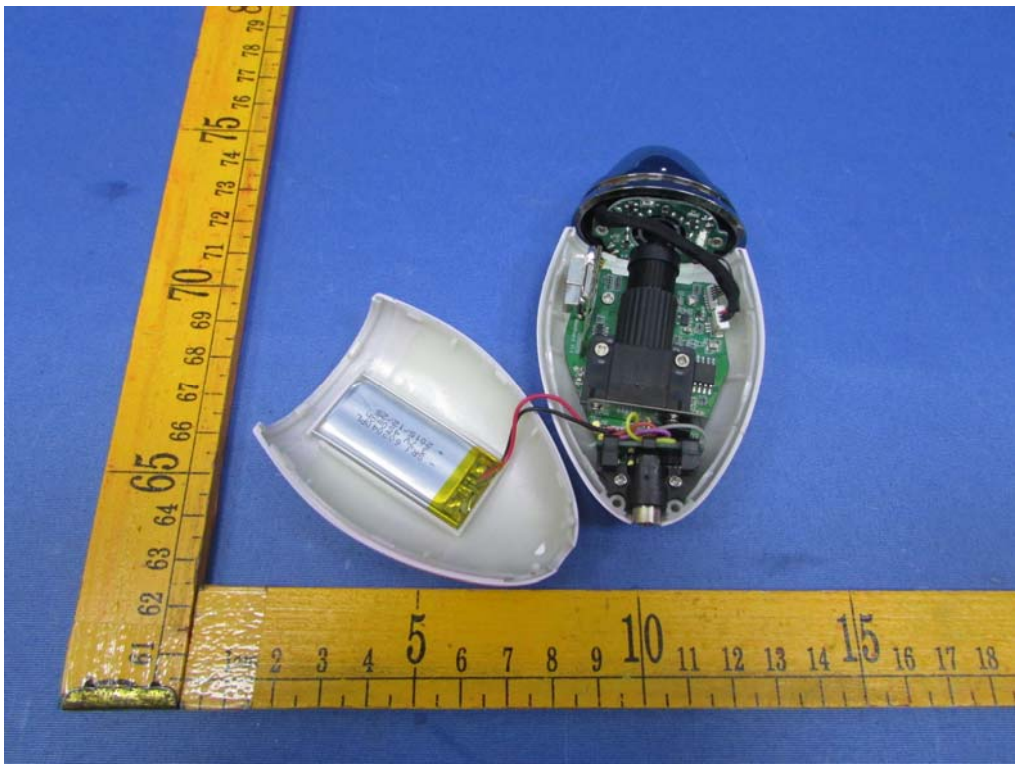

CosBeauty

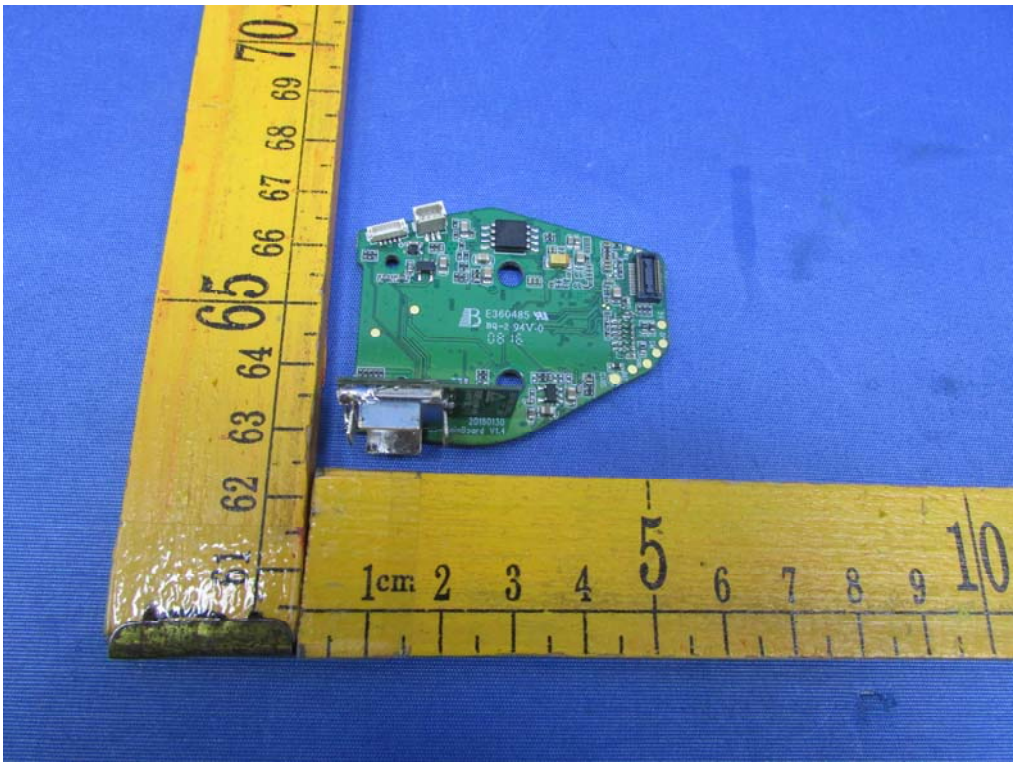

POWER ADAPTER

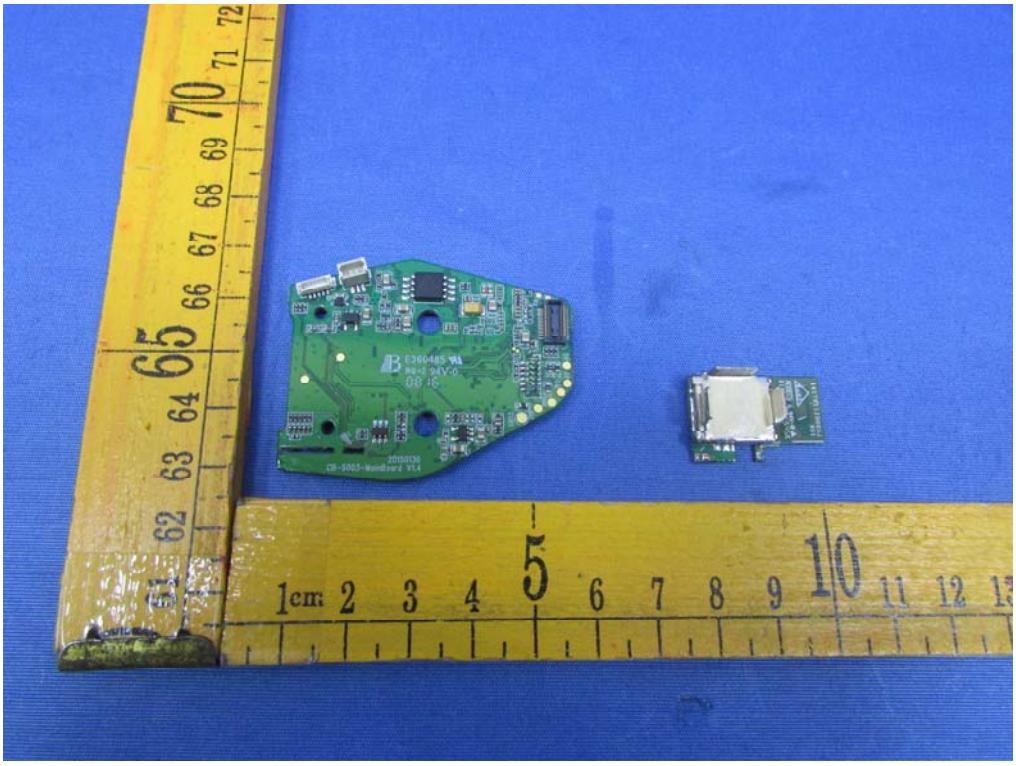

POWER ADAPTER
Input: AC100-240V
50/60Hz 0.2A
Output: DC5V 1A
Made in China

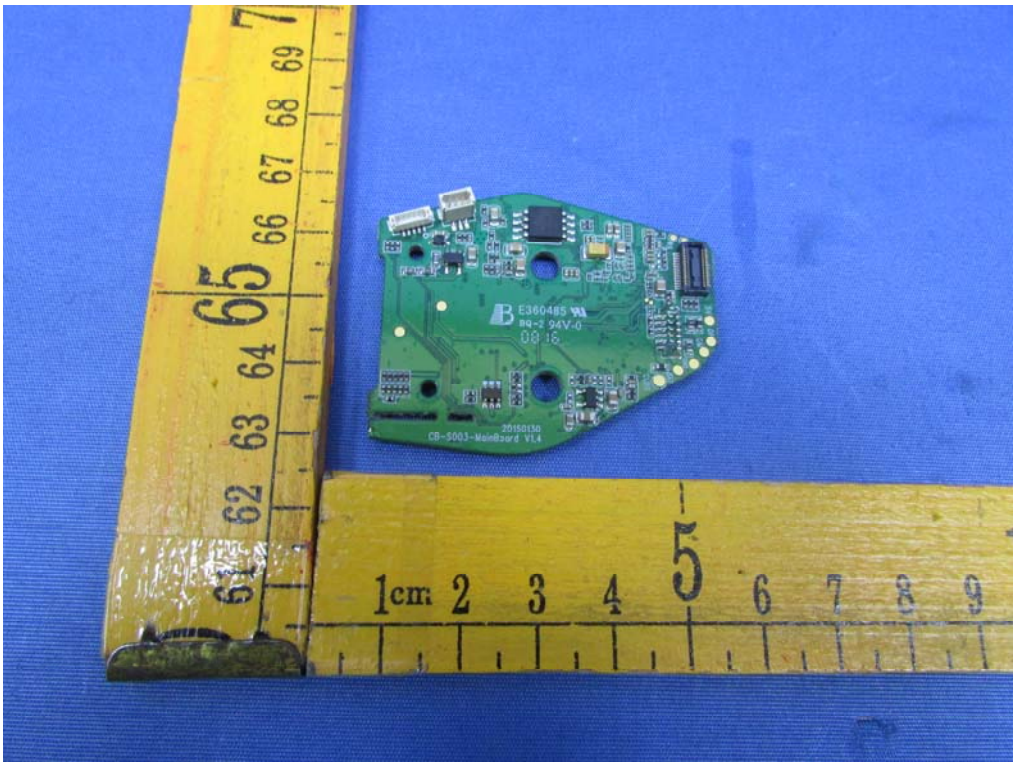
15.2 Model CB-S003 – Internal Photos

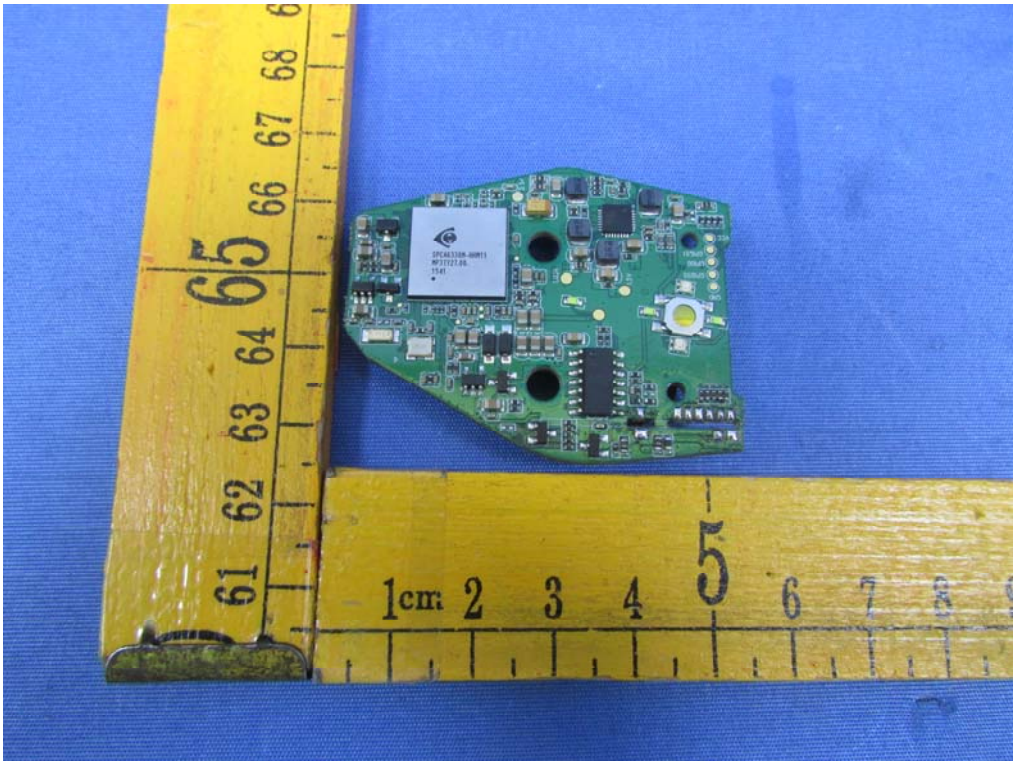


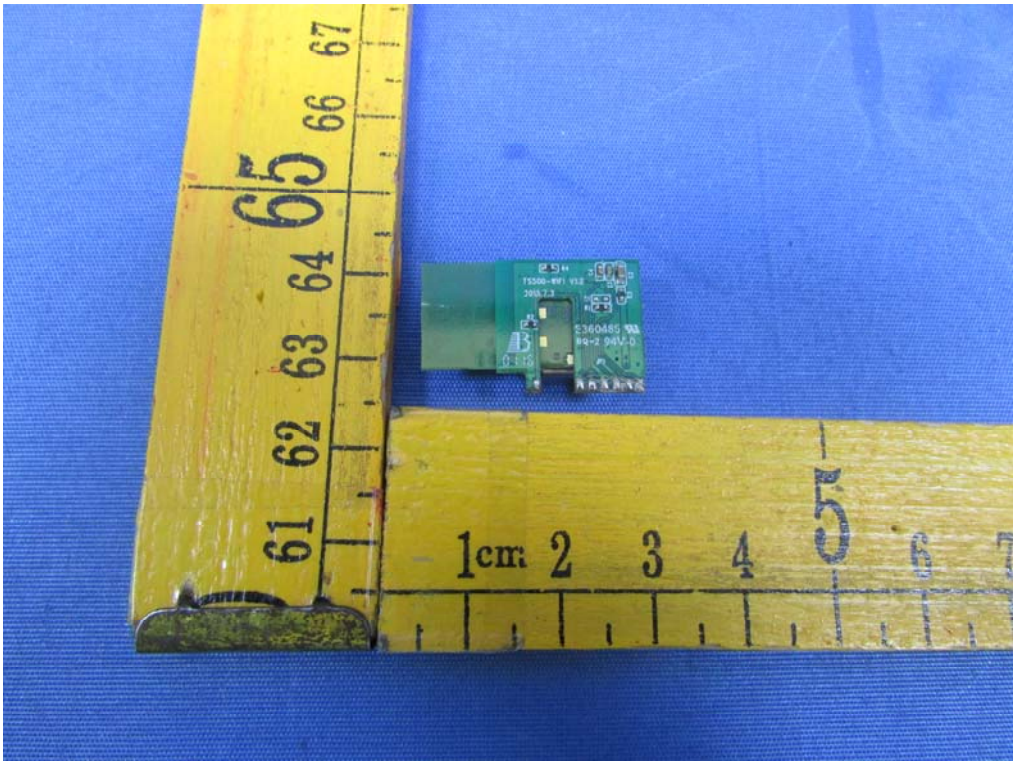


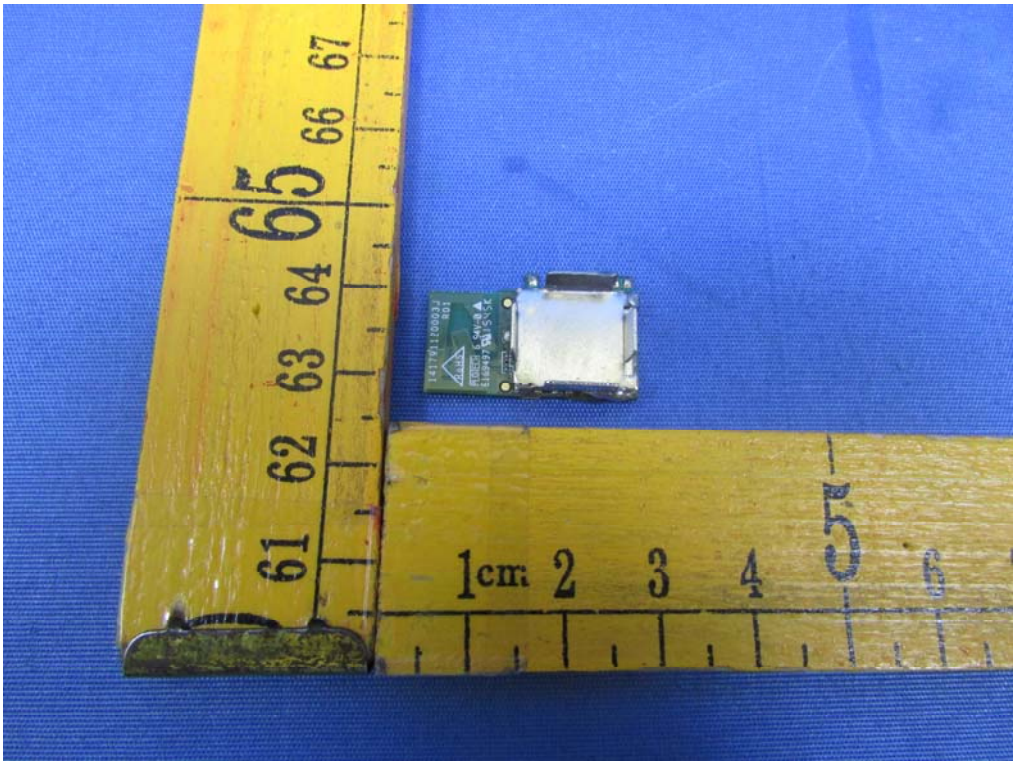


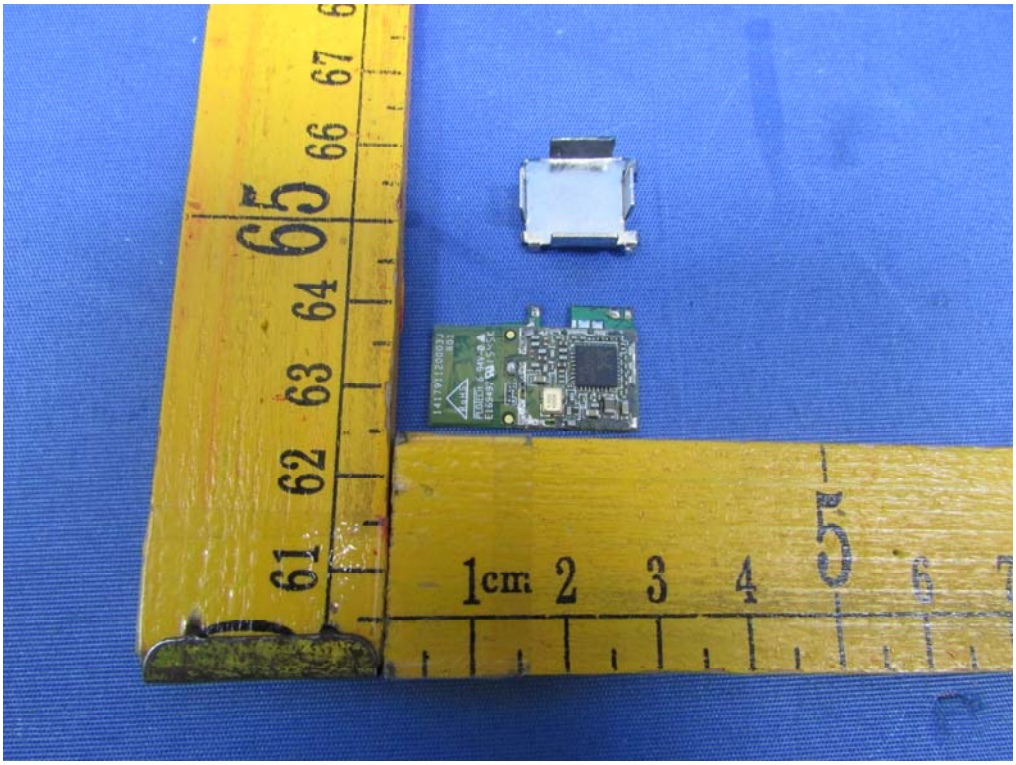


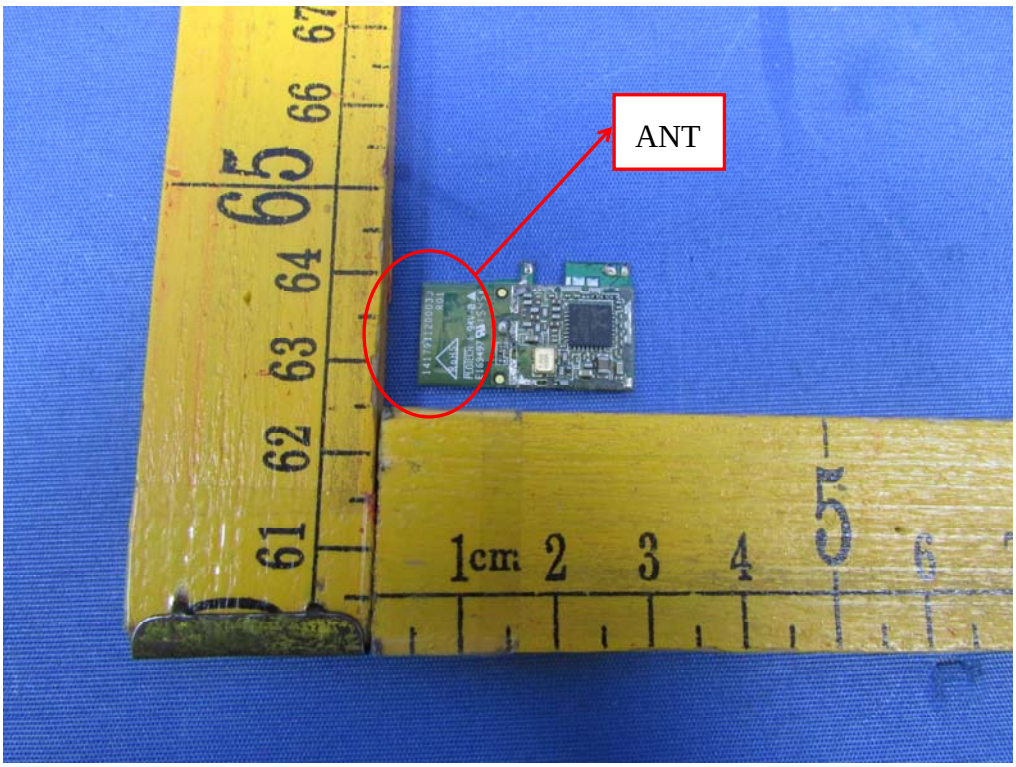

E360485
94V-0
20150130
CB-5003-MainBoard V1.4
1cm 2 3 4 5 6 7 8 9

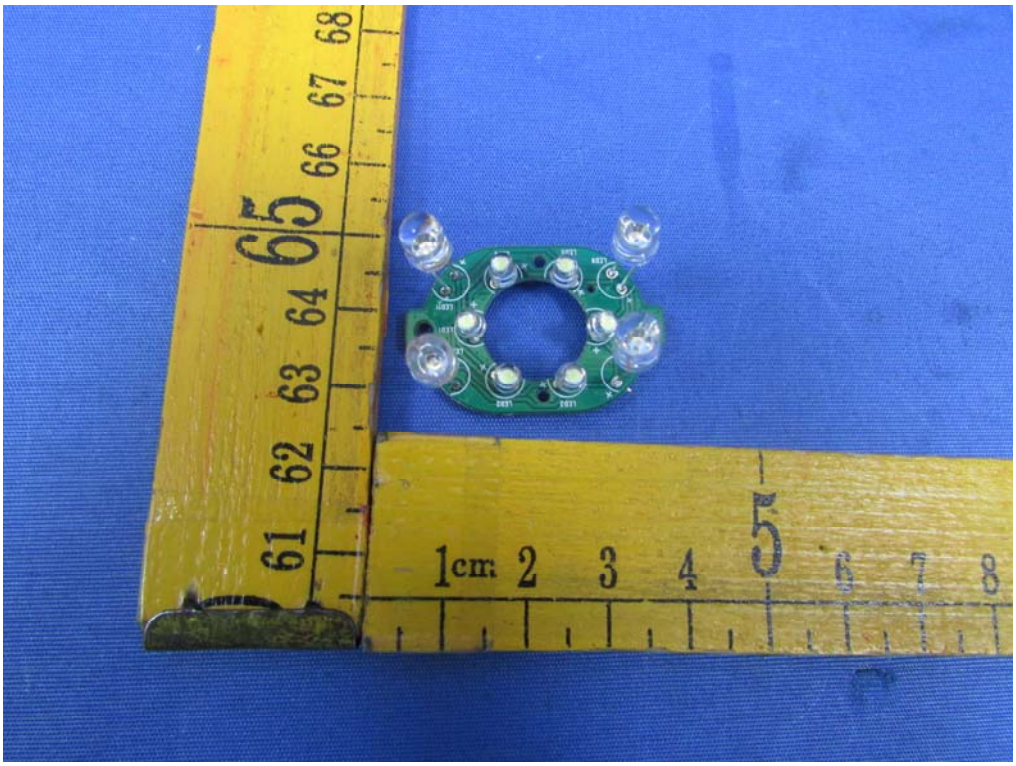

1cm 2 3 4 5 6 7 8

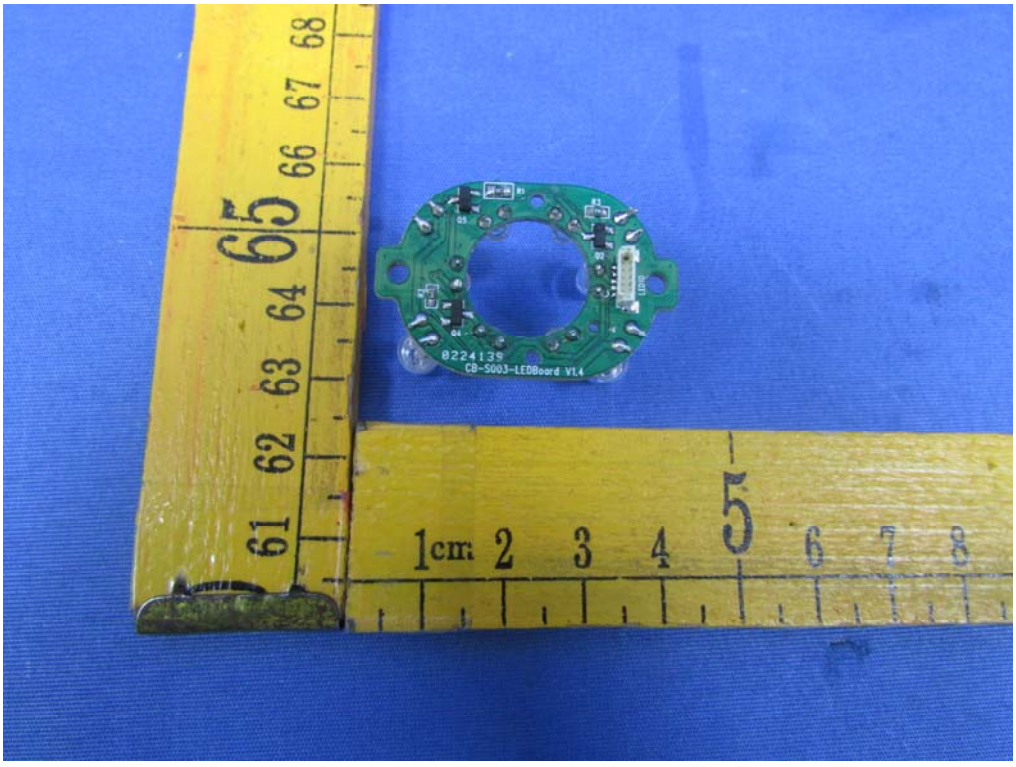

67
66
65
64
63
62
61
1cm
2
3
4
5

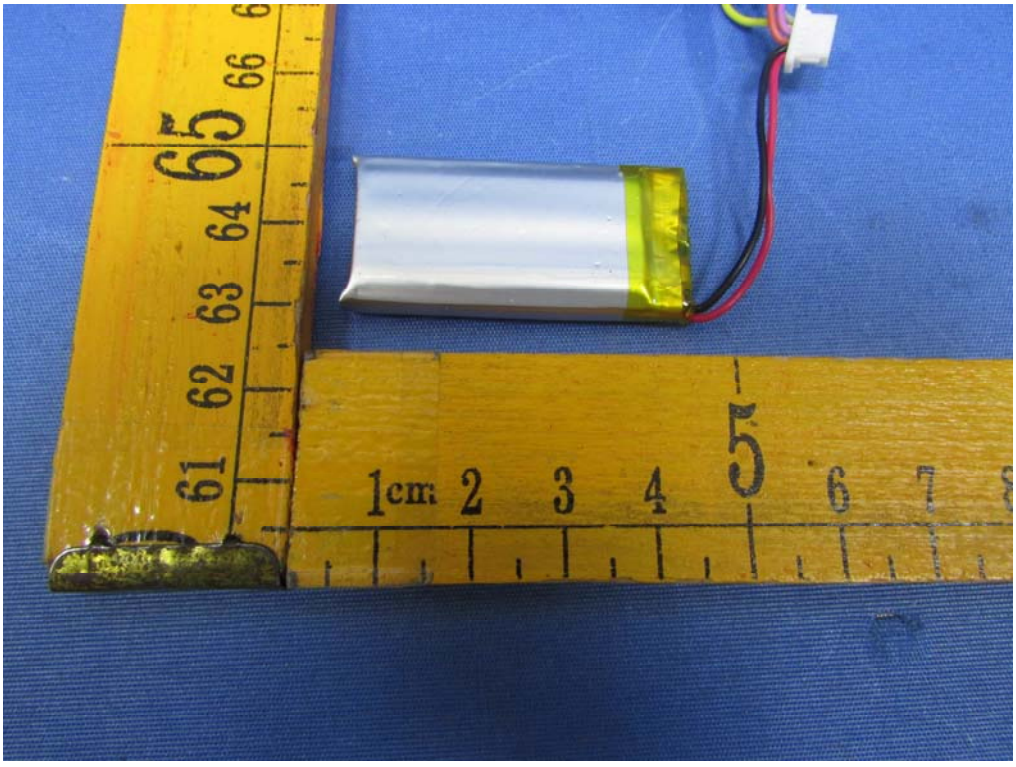

67
66
65
64
63
62
61
1cm
2
3
4
5


1cm 2 3 4 5


ANT
1cm 2 3 4 5




8224139
CB-S003-LEDBoard V1.4



======End of Report======