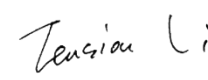


Test Report Number:	LCZE24110076	Total Page(s): 43
Applicant Name:	ZHONGSHAN WEIHUA LIGHTING TECHNOLOGY CO., LTD	
Applicant Address:	No.13 YOUNG YI 2RD HENGLAN TOWN, ZHONGSHAN CITY, GUANGDONG PROVINCE CHINA	
Test item:	SMART OUTDOOR WALL LIGHT	
Model / Type Reference:	60000149, 0501-WT-TY, 60000150, 0415S-WD-TY, 60000151, 0288-WD-TY, 60000152, 2079-TY	
FCC ID:	2A7H8-60000XXX	
Date of Issue:	2025-01-08	
Testing Laboratory:	LCTECH Guangdong Testing Services Co., Ltd. 2/F., Technology and Enterprise Development Center, Guangyuan Road, Xiaolan, Zhongshan, Guangdong, China	
Test Specification:	FCC 47 CFR Part 15 Subpart C: Section 15.247	
Test Result:	Passed	
Compiled by:	Reviewed by:	
2025-01-08 Rex He 	2025-01-08 Tension Li 	
<i>Date</i> <i>Name</i> <i>Signature</i>	<i>Date</i> <i>Name</i> <i>Signature</i>	
Remark: N/A		
The duplication of this report or parts of it and its use for advertising purposes is only allowed with permission of the testing laboratory. This report contains the result of the examination of the product sample submitted by the applicant. A general statement concerning the quality of the products from the series manufacture cannot be derived therefore.		

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1 Summary of Test Results

Description of Test Item	Standard	Result
Antenna Requirement	FCC Part 15 Subpart C: 15.203/247(c)	PASS
AC Power Line Conducted Emission	FCC Part 15 Subpart C: 15.207	PASS
Conducted Peak Output Power	FCC Part 15 Subpart C: 15.247(b)	PASS
6 dB Bandwidth	FCC Part 15 Subpart C: 15.247(a)(2)(iii)	PASS
Power Spectral Density	FCC Part 15 Subpart C: 15.247(e)	PASS
Band Edge	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10 :2009	PASS
Spurious Emission	FCC Part 15: 15.247(d)	PASS
Note: N/A is an abbreviation for Not Applicable,		

Test Standard Used: 47 CFR Part 15 Subpart C: Section 15.247

Test procedure used: ANSI C63.10:2020

2 General test information

2.1 Description of EUT

Product Name	: SMART OUTDOOR WALL LIGHT
Model Number	: 60000149, 0501-WT-TY, 60000150, 0415S-WD-TY, 60000151, 0288-WD-TY, 60000152, 2079-TY
EUT function description	: Please reference user manual of this device
Power supply	: 120Vac, 60Hz
FCC ID	: 2A7H8-60000XXX
Radio Specification	: WLAN 2.4GH 802.11b/g/n HT20
Operation frequency	: 2412MHz -2462MHz
Modulation	: 802.11b: CCK Mode 11M : 802.11g: OFDM Mode 54M : 802.11n: OFDM Mode MCS7(HT20)
Data rate	: 1Mbps
Antenna Type	: PCB antenna
Antenna Gain	: 2.21dBi

Remark:The device meets the requirements stated within Parts 15.247(g)&(h) in that they were Developed under the Bluetooth protocol and operate as a true frequency hopping system.The device does not have the ability to be coordinated with other FHSS systems in an effort to avoid the simultaneous occupancy of individual hopping frequencies by multiple transmitters.

According to the declaration from the applicant, this report covers the model as below: 60000149, 0501-WT-TY, 60000150, 0415S-WD-TY, 60000151, 0288-WD-TY, 60000152, 2079-TY. These models have the same RF Chip, PCB layout, components, antenna and appearance, only the model name is different, only for different sales methods Therefore only one model 60000150 was fully tested in the report.

2.2 Operation channel list

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

2.3 Test channel list

Channel	Frequency (MHz)
1	2412
6	2437
11	2462

2.4 Testing

Date of receipt of test item : 2024-11-25 to 2024-12-16

Date (s) of performance of tests : 2024-12-26 to 2025-01-07

2.5 Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	15-35°C
Humidity range:	20-75%
Pressure range:	98-101kPa

2.6 Test laboratory

LCTECH Guangdong Testing Services Co., Ltd.

Add: 2/F., Technology and Enterprise Development Center, Guangyuan Road, Xiaolan, Zhongshan, Guangdong, China

Test Sites: 1/F., Building I, Technology and Enterprise Development Center, Guangyuan Road, Xiaolan, Zhongshan, Guangdong, China

2.7 Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	3.74dB
Uncertainty for Radiation Emission test(30MHZ-1GHZ)	4.92dB
Uncertainty for Radiation Emission test (Above 1GHz)	4.23dB

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

3 Equipment list

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
Radiated Emission (30 MHz–1000 MHz)						☒
1	EMI Test Receiver	R&S	ESCI 7	100965	2024-06-26	2025-06-25
2	Log-periodic Dipole Antenna	Schwarzbeck	VULB 9162	058	2022-07-03	2025-07-02
3	3m Semi-anechoic	Zhongshuo Electronics	9mx6mx6m	N/A	2024-12-17	2027-12-16
4	RF Cable	R&S	R01	10403	2024-12-09	2025-12-08
5	EMI Test Software	AUDIX	E3	Version No: 6.111221a	N/A	N/A
Disturbance Voltage						☒
6	EMI Test Receiver	Rohde&Schwarz	ESCI	100939	2024-12-09	2025-12-08
7	Artificial Mains Network	Rohde&Schwarz	ENV216	3560655012	2024-12-09	2025-12-08
8	Shield Room	Rongxiang	8X5X3.5	992276296	2022-07-01	2025-06-30
9	Conducted Emission Test Software	FALA	EZ-EMC	Version No: LCTECH-03A	N/A	N/A
Radiated Emission (Above 1 GHz)						☒
10	EMI Test Receiver	R&S	ESCI 7	100965	2024-06-26	2025-06-25
11	Log-periodic Dipole Antenna	Schwarzbeck	VULB 9162	058	2022-07-03	2025-07-02
12	3m Semi-anechoic	Zhongshuo Electronics	9mx6mx6m	N/A	2024-12-17	2027-12-16
13	RF Cable	R&S	R01	10403	2024-12-09	2025-12-08
14	CDNE	KeHuan	KH3663E	36630822	2024-06-26	2025-06-25
15	Doppelsteg Breitband Hornantenne Double Ridge Broadband Horn	Schwarzbeck	BBHA 9120 D	N/A	2024-12-11	2025-12-10
16	Signal Analyzer	Keysight	N9020A	SER MY52220373	2024-12-09	2025-12-08
17	Pre-amplifier	sinancidian	COP-01G18G-45dB	N/A	2024-12-09	2025-12-08

4 Test Results

4.1 Antenna requirement

Standard requirement:

15.203 requirement:

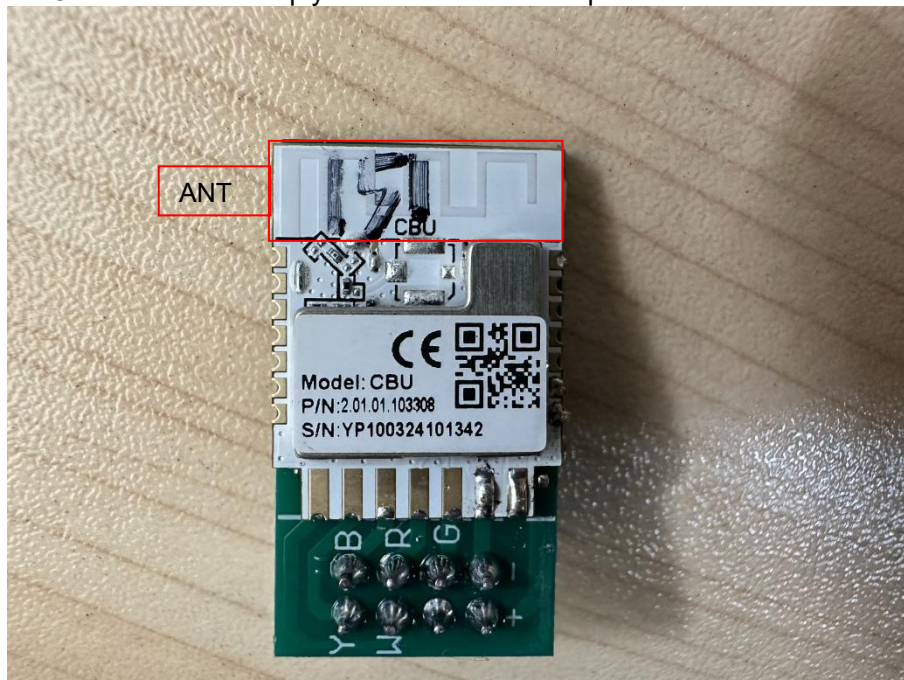
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

The antenna is PCB antenna. It comply with the standard requirement.



4.2 AC Power Line Conducted Emission

Results:

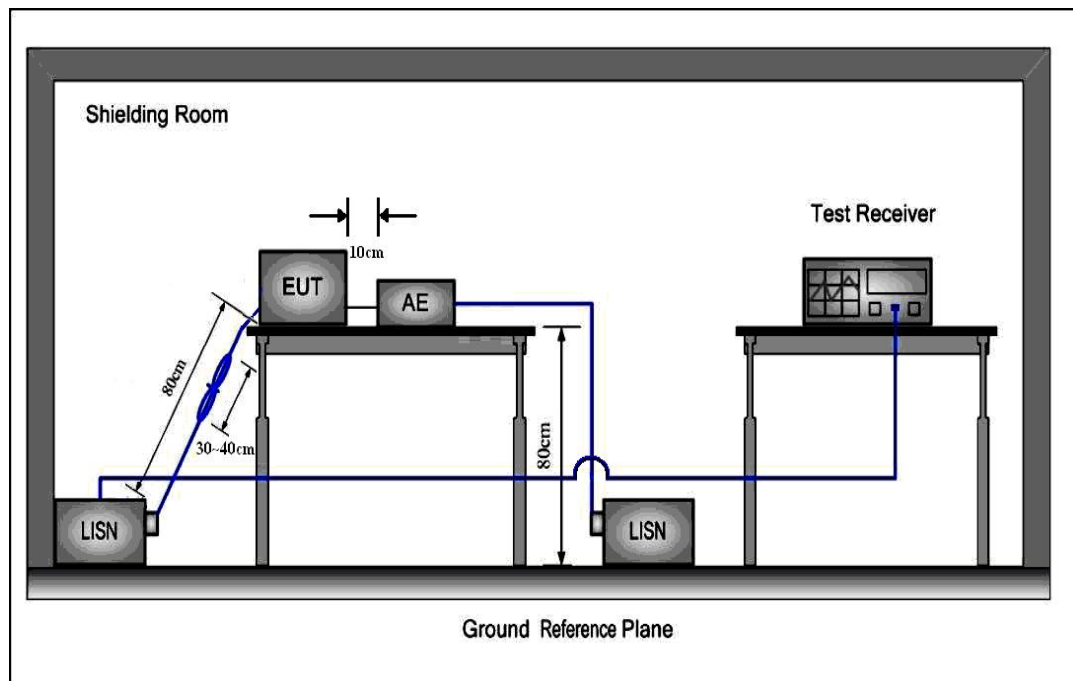
Pass

Date of testing : Dec 26, 2024
 Test procedure : ANSI C63.10 Clause 6.2
 Frequency range : 0.15- 30MHz
 Kind of test site : shielded room
 Limits : CFR Title 47 Part 15 Subpart C: Section 15.207

Test setup

Artificial Hand : Not applied
 Earthing : Applied
 Temperature : 25°C
 Humidity : 57%
 Air pressure : 101KPA

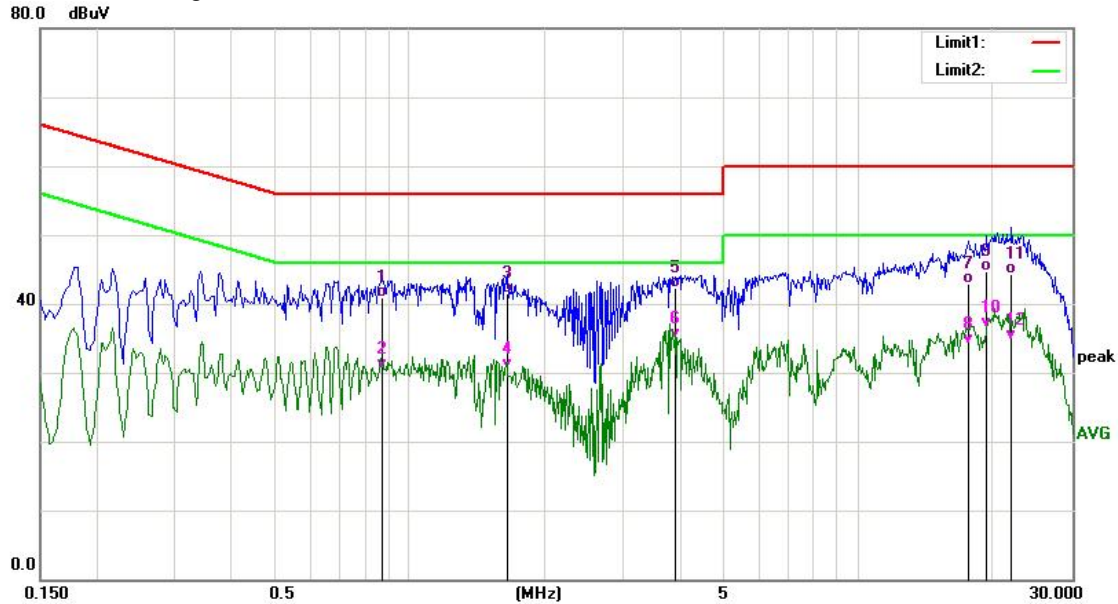
Test Connection Diagram



Test Data for model 60000150 Power Source :120Vac, 60Hz

Terminal under Test: Live Line

Pre-scan all test modes, found worst case at 2462MHz, and so only show the test result of 2462MHz, Peak and Average Scan:

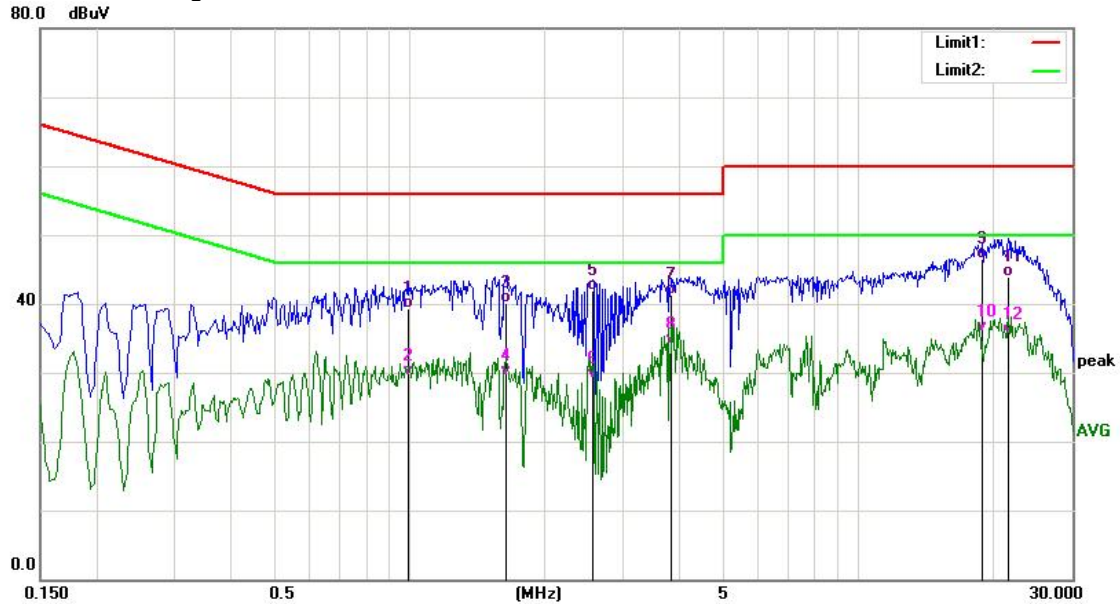


Quasi-peak and Average measurement:

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.8700	30.77	10.20	40.97	56.00	-15.03	QP
2	0.8700	20.21	10.20	30.41	46.00	-15.59	AVG
3	1.6460	31.35	10.10	41.45	56.00	-14.55	QP
4	1.6460	20.38	10.10	30.48	46.00	-15.52	AVG
5	3.9140	31.75	10.48	42.23	56.00	-13.77	QP
6	3.9140	24.38	10.48	34.86	46.00	-11.14	AVG
7	17.4980	31.94	10.92	42.86	60.00	-17.14	QP
8	17.4980	23.09	10.92	34.01	50.00	-15.99	AVG
9	19.4100	33.76	11.04	44.80	60.00	-15.20	QP
10	19.4100	25.46	11.04	36.50	50.00	-13.50	AVG
11	22.0420	32.83	11.48	44.31	60.00	-15.69	QP
12	22.0420	23.22	11.48	34.70	50.00	-15.30	AVG

Terminal under Test: Neutral Line

Peak and Average Scan:

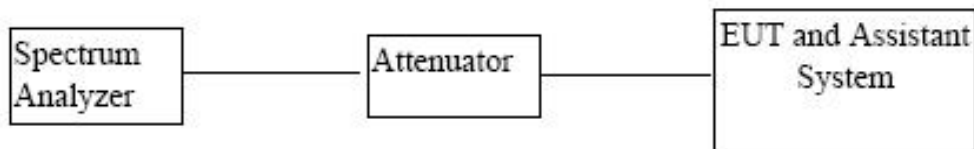


Quasi-peak and Average measurement:

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.9940	29.18	10.22	39.40	56.00	-16.60	QP
2	0.9940	19.36	10.22	29.58	46.00	-16.42	AVG
3	1.6380	30.02	10.10	40.12	56.00	-15.88	QP
4	1.6380	19.48	10.10	29.58	46.00	-16.42	AVG
5	2.5620	31.74	10.16	41.90	56.00	-14.10	QP
6	2.5620	18.94	10.16	29.10	46.00	-16.90	AVG
7	3.8260	30.84	10.46	41.30	56.00	-14.70	QP
8	3.8260	23.64	10.46	34.10	46.00	-11.90	AVG
9	18.8700	35.48	11.00	46.48	60.00	-13.52	QP
10	18.8700	24.90	11.00	35.90	50.00	-14.10	AVG
11	21.6700	32.42	11.41	43.83	60.00	-16.17	QP
12	21.6700	24.19	11.41	35.60	50.00	-14.40	AVG

4.3 Conducted Peak Output Power

Test Connection Diagram



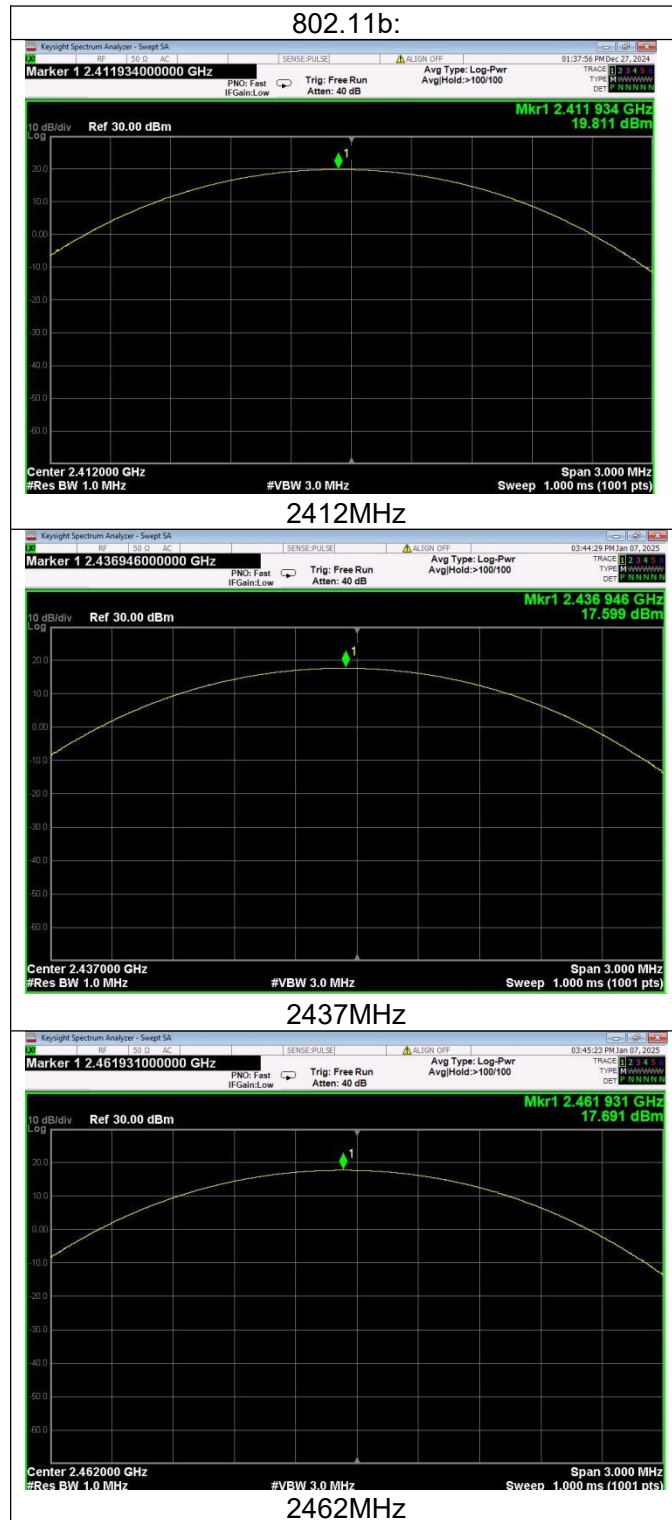
Test Procedure

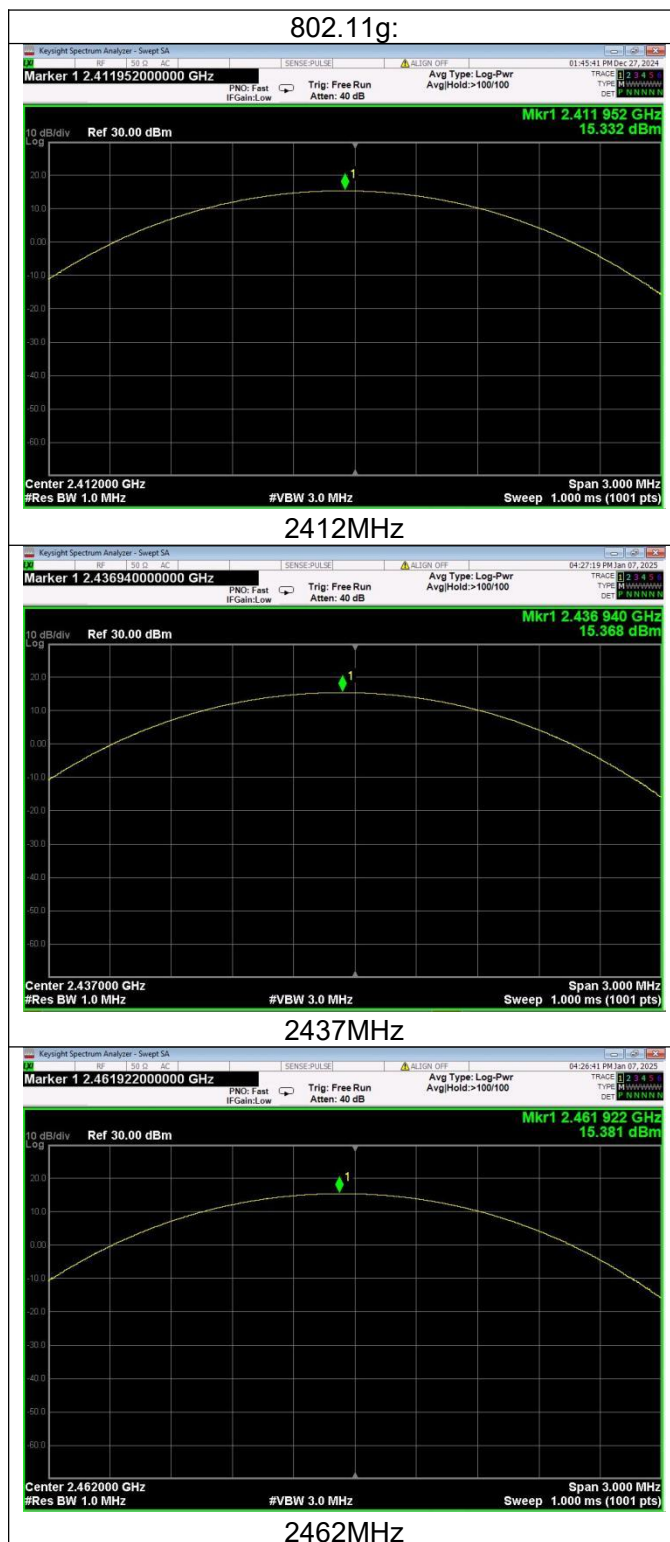
- (1) Configure EUT and assistant system according clause 2.3 and 3.2
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable.
- (3) Configure EUT work in test mode as stated in clause 2.3.
- (4) Measure the maximum output power of EUT by spectrum analyzer with PK detector and RBW=2MHz(above 20dB bandwidth of measured signal), VBW=3MHz

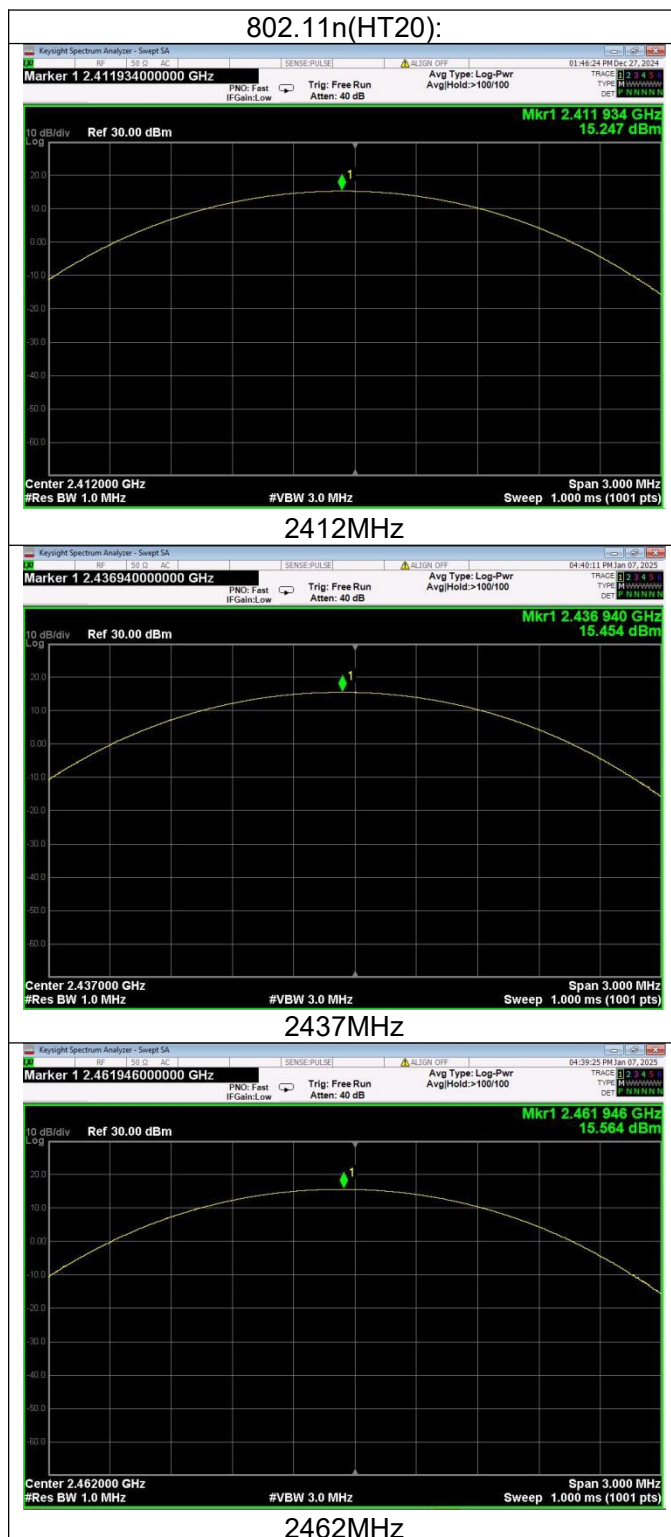
Note: The attenuator loss was inputted into spectrum analyzer as amplitude offset.

Test Result:

Test Mode	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Limit (dBm)	Verdict
802.11b	2412	19.811	≤30	PASS
	2437	17.599	≤30	PASS
	2462	17.691	≤30	PASS
802.11g	2412	15.332	≤30	PASS
	2437	15.368	≤30	PASS
	2462	15.381	≤30	PASS
802.11n(HT20)	2412	15.247	≤30	PASS
	2437	15.454	≤30	PASS
	2462	15.564	≤30	PASS





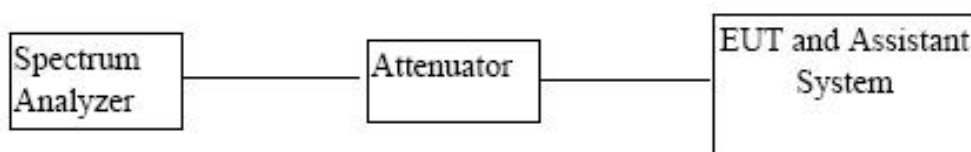


4.4 6 dB Bandwidth

Limit:

Frequency range (MHz)	Standard requirement	Limit
2402-2480	FCC Part 15 Subpart C: 15.247(a)(2)(iii)	$\geq 500\text{kHz}$

Test setup:



Test procedure:

Set the spectrum analyzer:

- Set RBW = 100 kHz
- Set the VBW $\geq [3 \times \text{RBW}]$
- Detector = peak.
- Trace mode = max hold.
- Sweep = auto couple
- Allow the trace to stabilize.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
- Span = $2 \times \text{BW} \sim 5 \times \text{BW}$

Test results:

Test Mode	Frequency (MHz)	Measured 6dB bandwidth (MHz)	Limit	Result
802.11b	2412	11.17	$\geq 500\text{kHz}$	Pass
	2437	11.13	$\geq 500\text{kHz}$	Pass
	2462	11.11	$\geq 500\text{kHz}$	Pass
802.11g	2412	16.32	$\geq 500\text{kHz}$	Pass
	2437	16.32	$\geq 500\text{kHz}$	Pass
	2462	16.31	$\geq 500\text{kHz}$	Pass
802.11n(HT20)	2412	16.54	$\geq 500\text{kHz}$	Pass
	2437	16.87	$\geq 500\text{kHz}$	Pass
	2462	16.75	$\geq 500\text{kHz}$	Pass





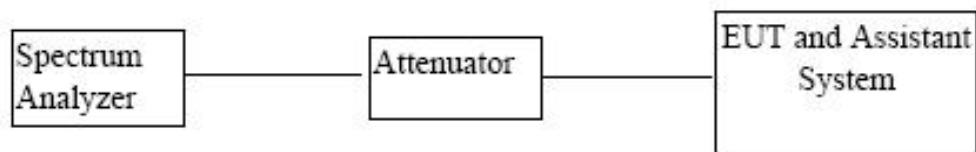


4.5 Power Spectral Density

Limit:

Frequency range (MHz)	Standard requirement	Limit
2402-2480	FCC Part 15 Subpart C: 15.247(e)	8 dbm (in any 3kHz)

Test setup:



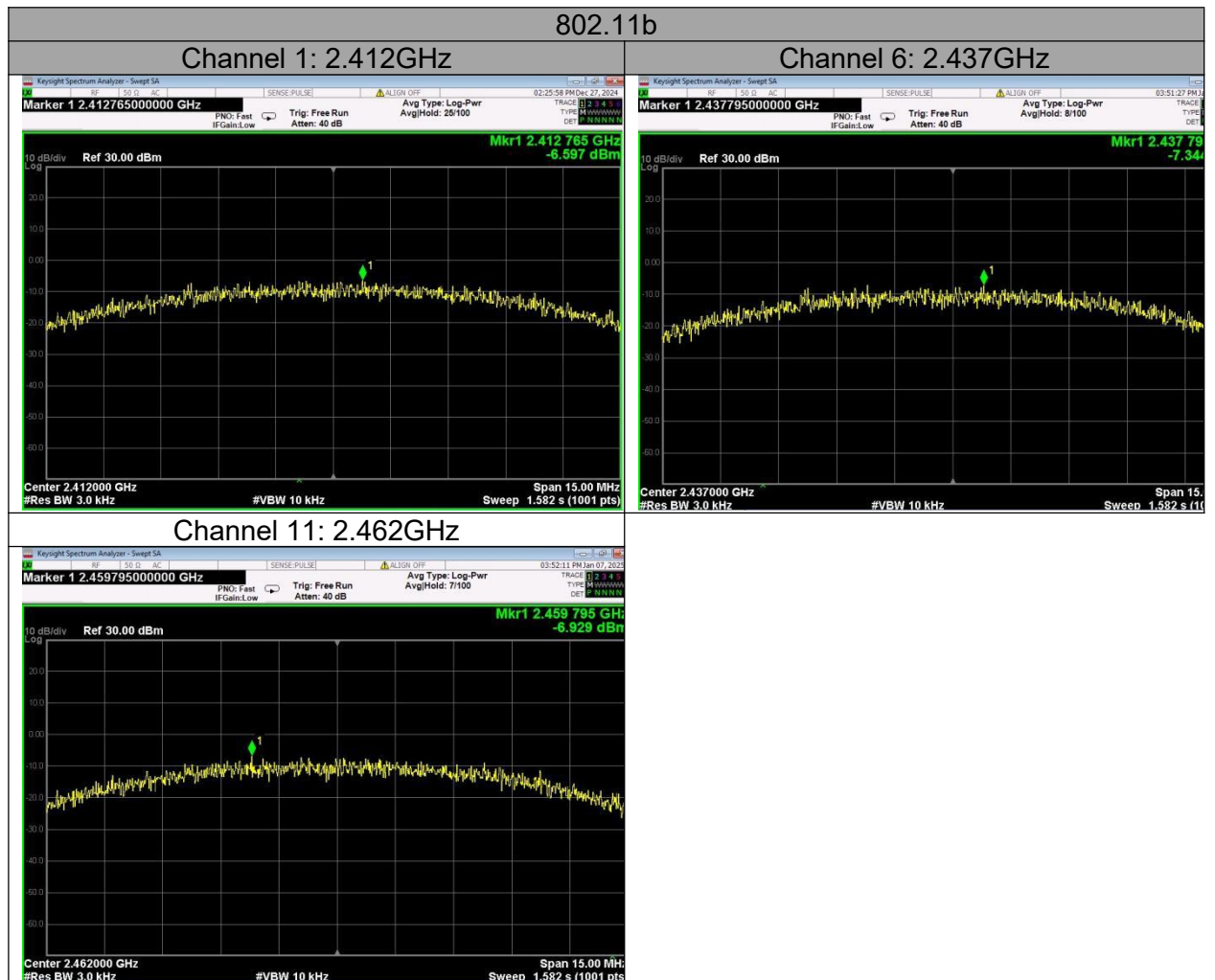
Test procedure:

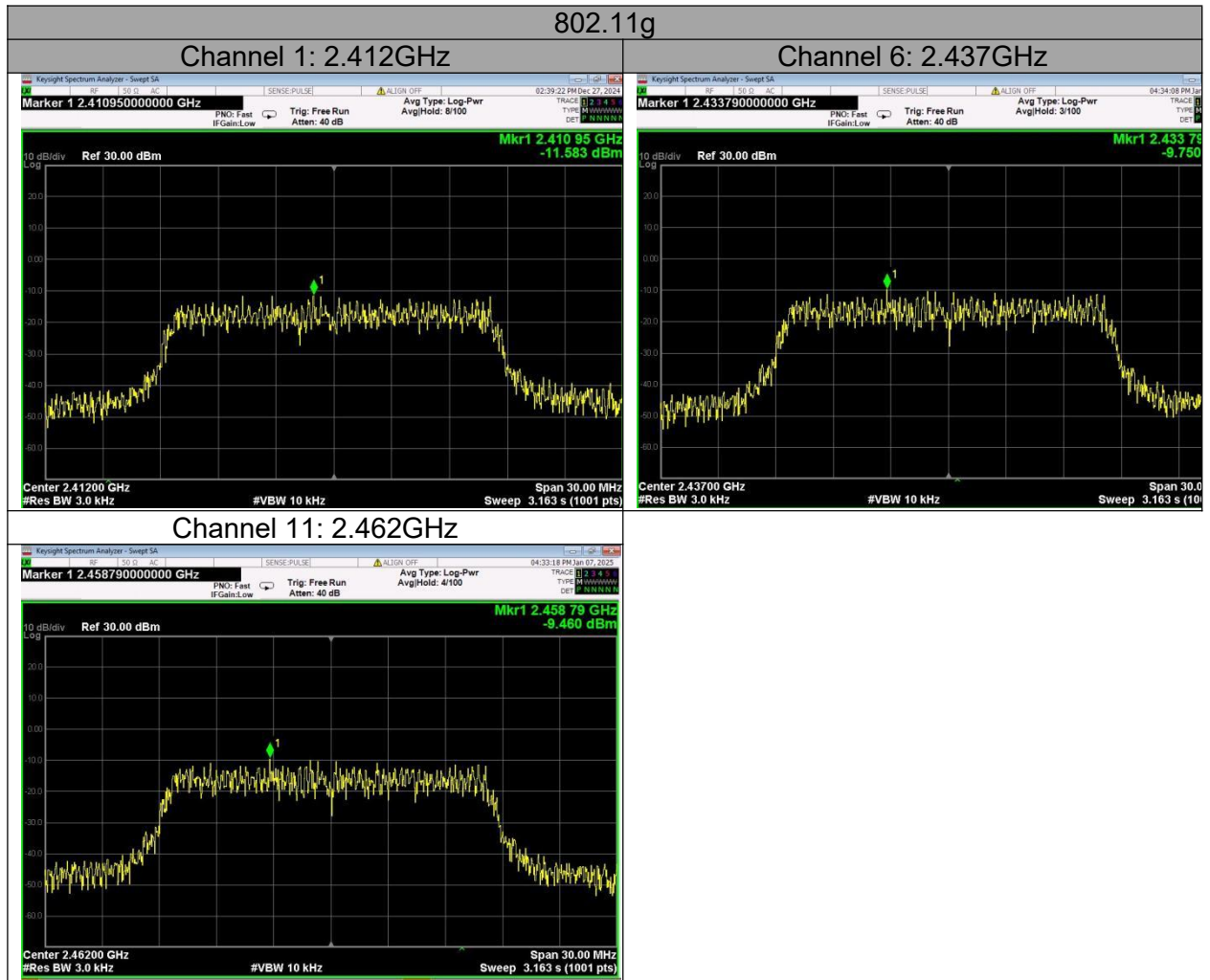
Set the spectrum analyzer:

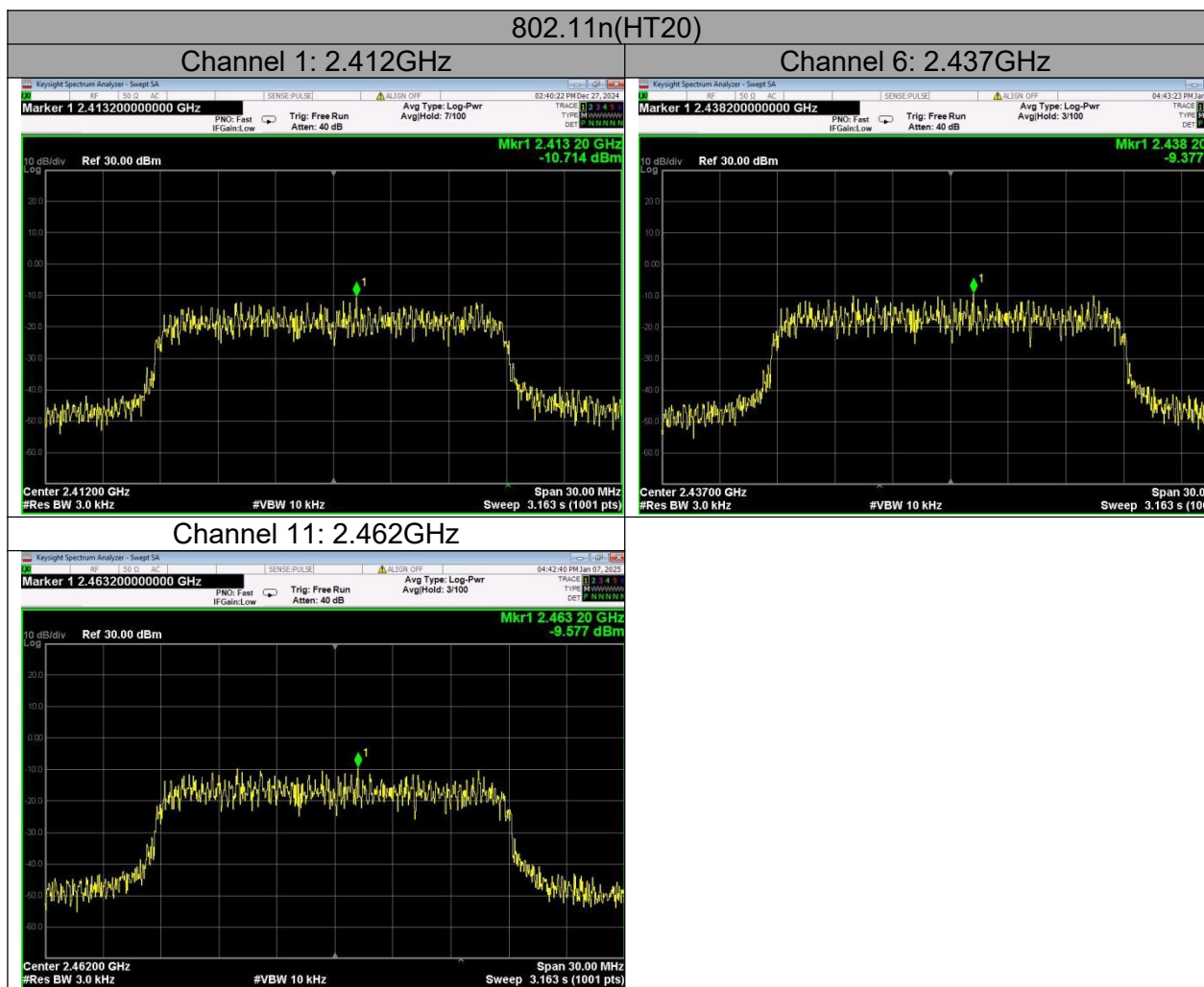
- Set analyzer center frequency to DTS channel center frequency.
- Set the span= $1.5 \times \text{DTS bandwidth}$.
- Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

Test results:

Test Mode	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
802.11b	2412	-6.597	8	Pass
	2437	-7.344	8	Pass
	2462	-6.929	8	Pass
802.11g	2412	-11.583	8	Pass
	2437	-9.750	8	Pass
	2462	-9.460	8	Pass
802.11n(HT20)	2412	-10.714	8	Pass
	2437	-9.377	8	Pass
	2462	-9.577	8	Pass





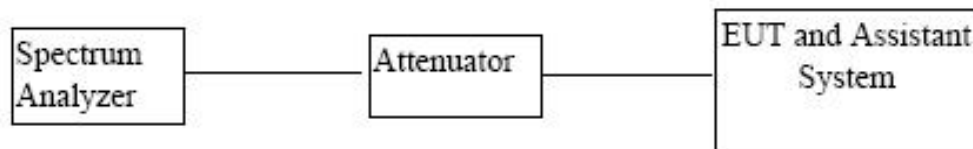


4.6 Band Edge

Limit:

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.

Test setup:

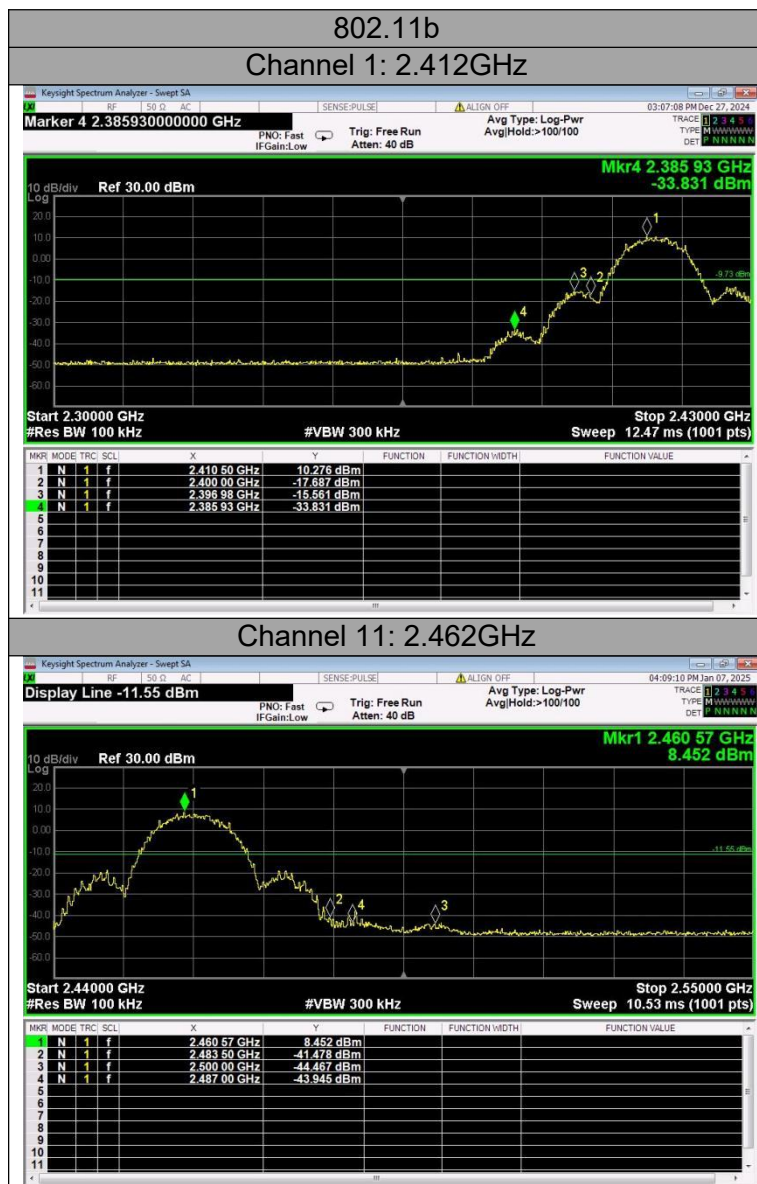


Test procedure:

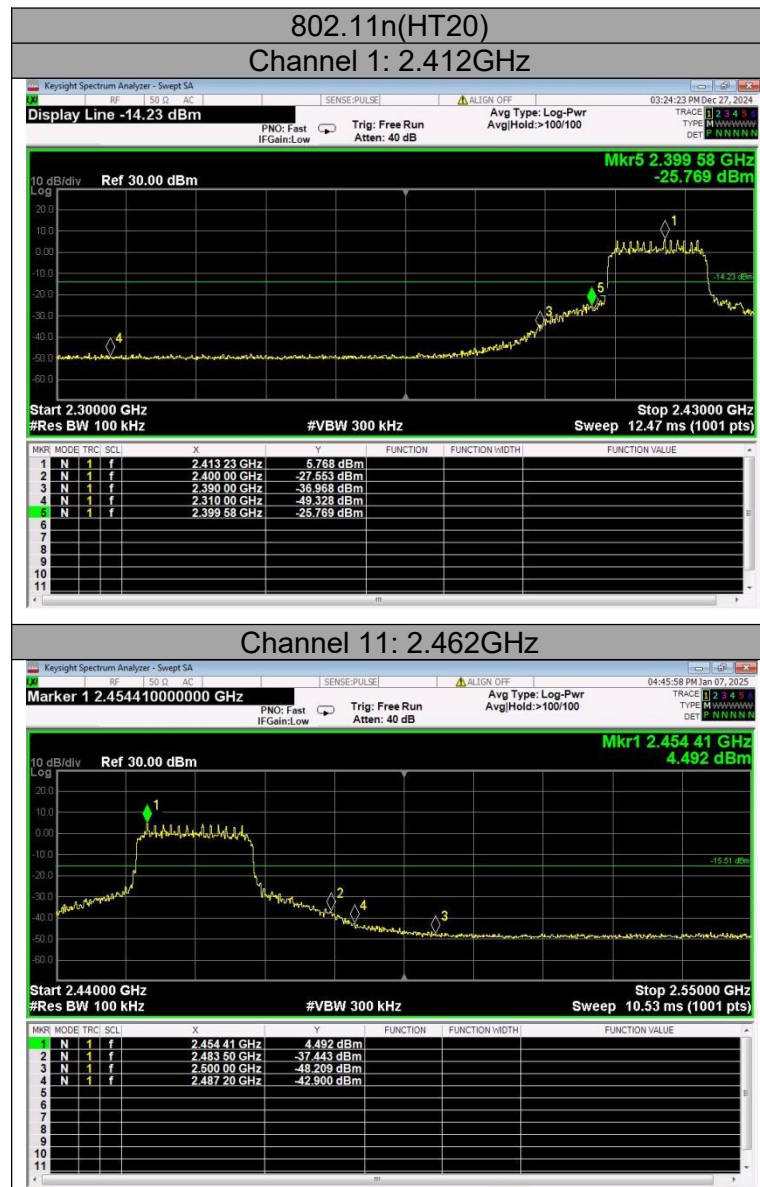
Set the spectrum analyzer:

- Set analyzer center frequency to DTS channel center frequency.
- Set the span= $1.5 \times$ DTS bandwidth.
- Set the RBW = 100 kHz.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

Test results:





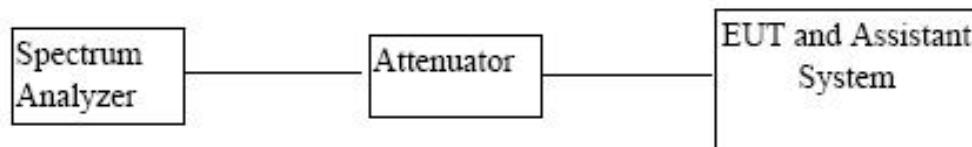


4.7 Spurious RF conducted emissions

Limit:

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.

Test setup:

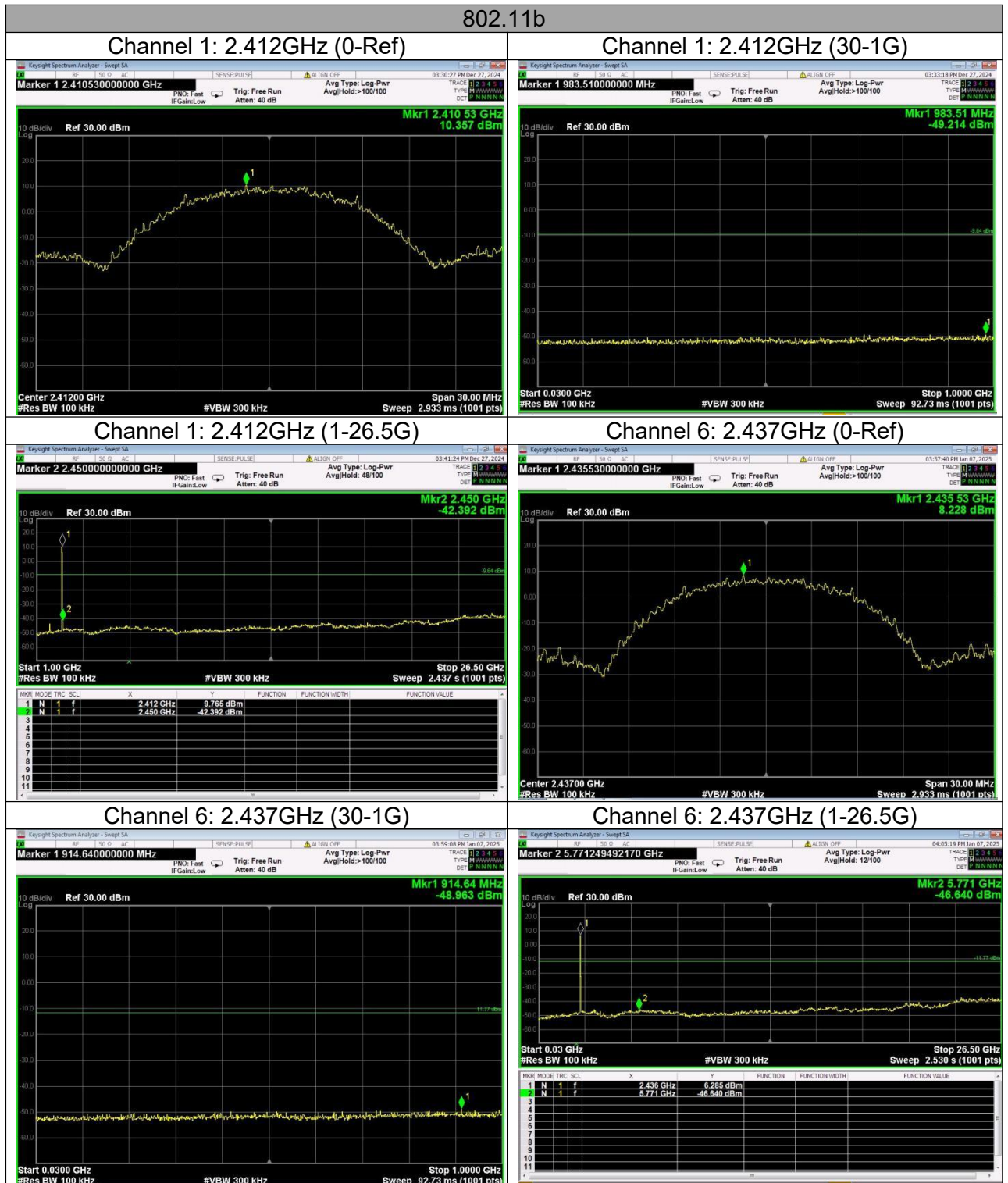


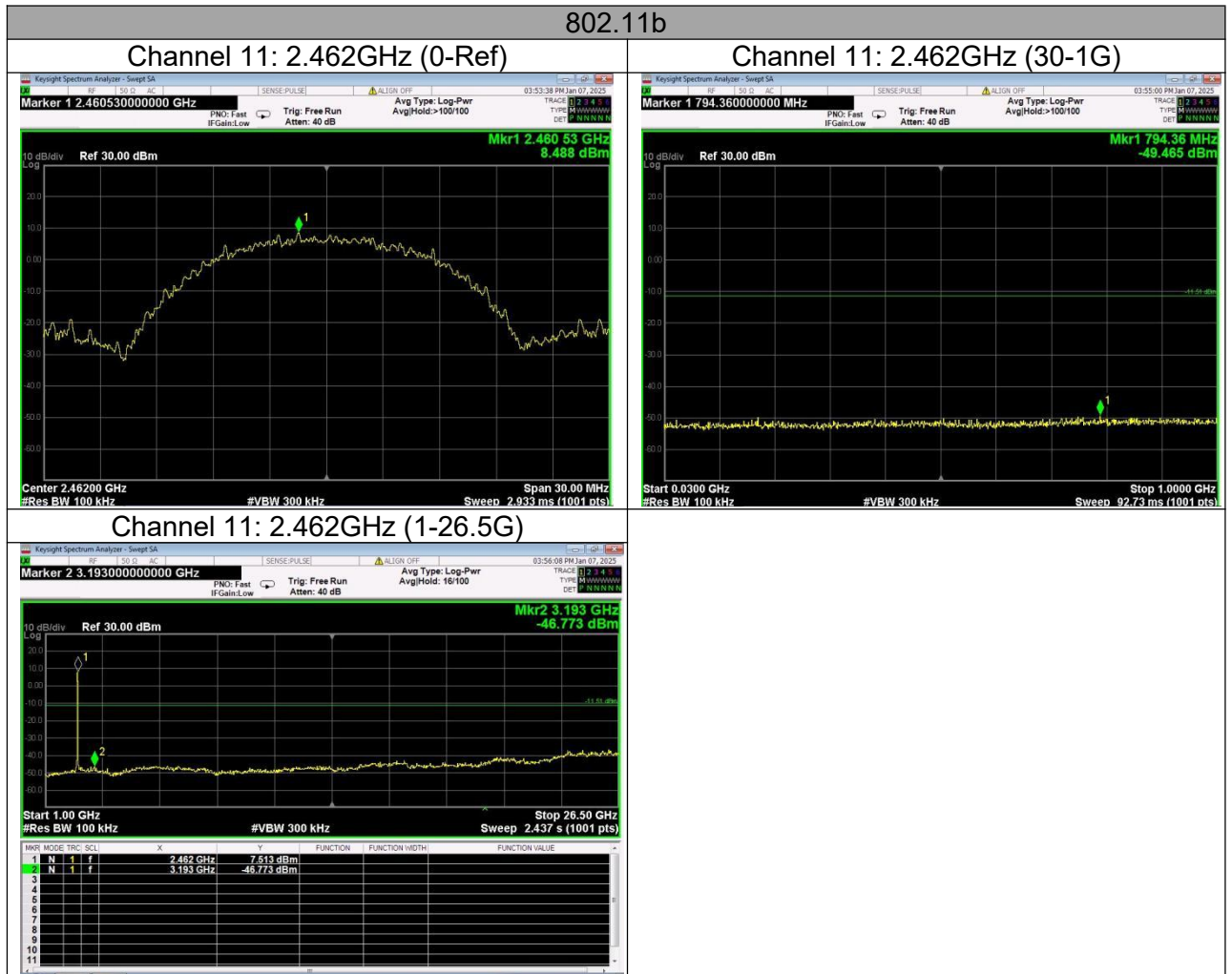
Test procedure:

Set the spectrum analyzer:

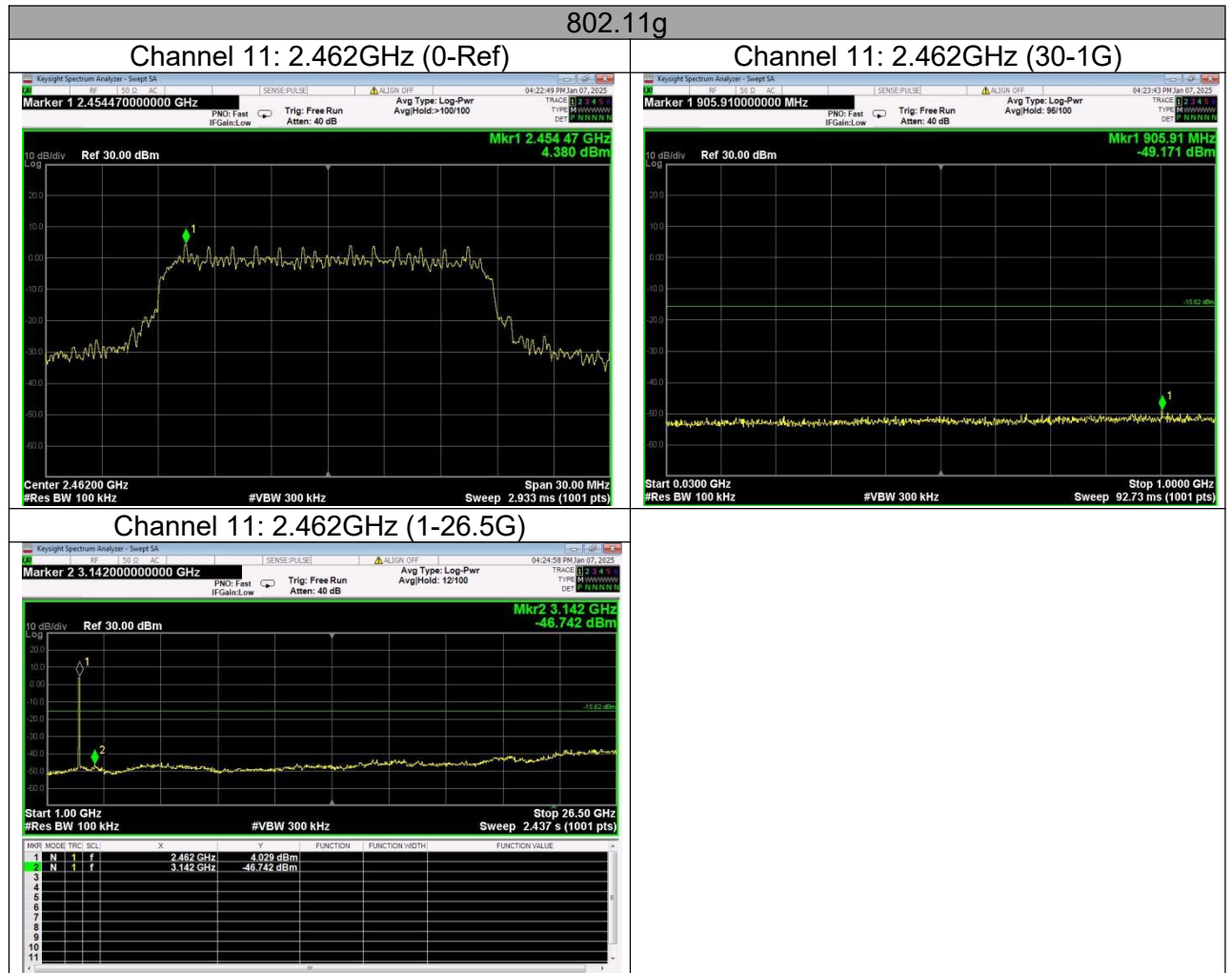
- Set analyzer center frequency to DTS channel center frequency.
- Set the span= $1.5 \times \text{DTS bandwidth}$.
- Set the RBW = 100 kHz.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

Test results:



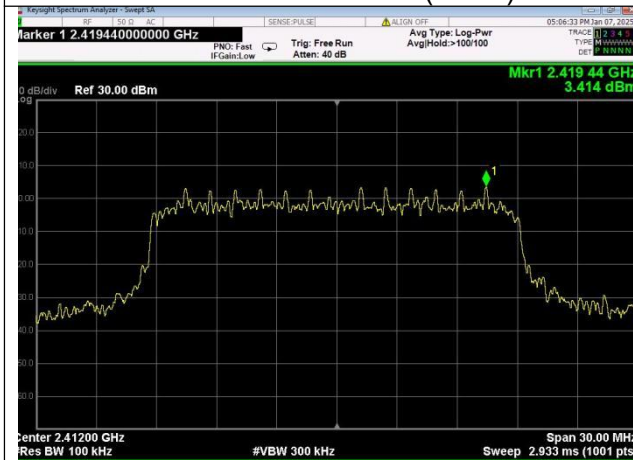






802.11n(HT20)

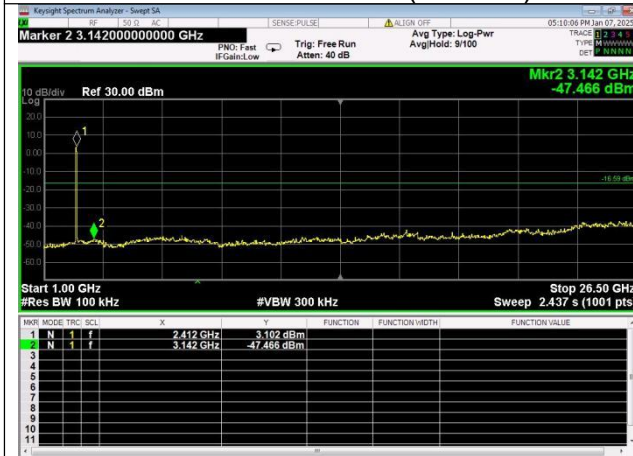
Channel 1: 2.412GHz (0-Ref)



Channel 1: 2.412GHz (30-1G)



Channel 1: 2.412GHz (1-26.5G)



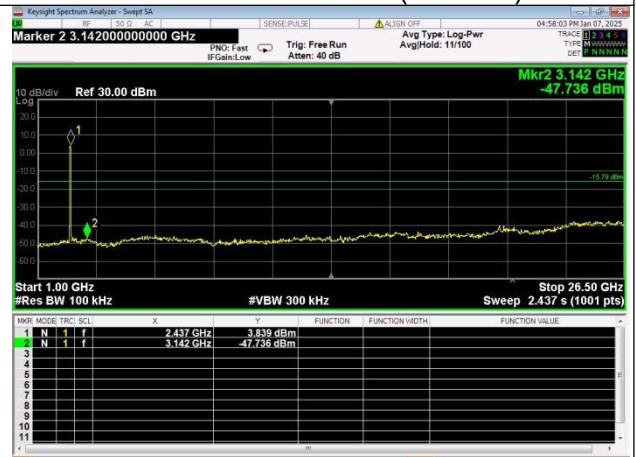
Channel 6: 2.437GHz (0-Ref)

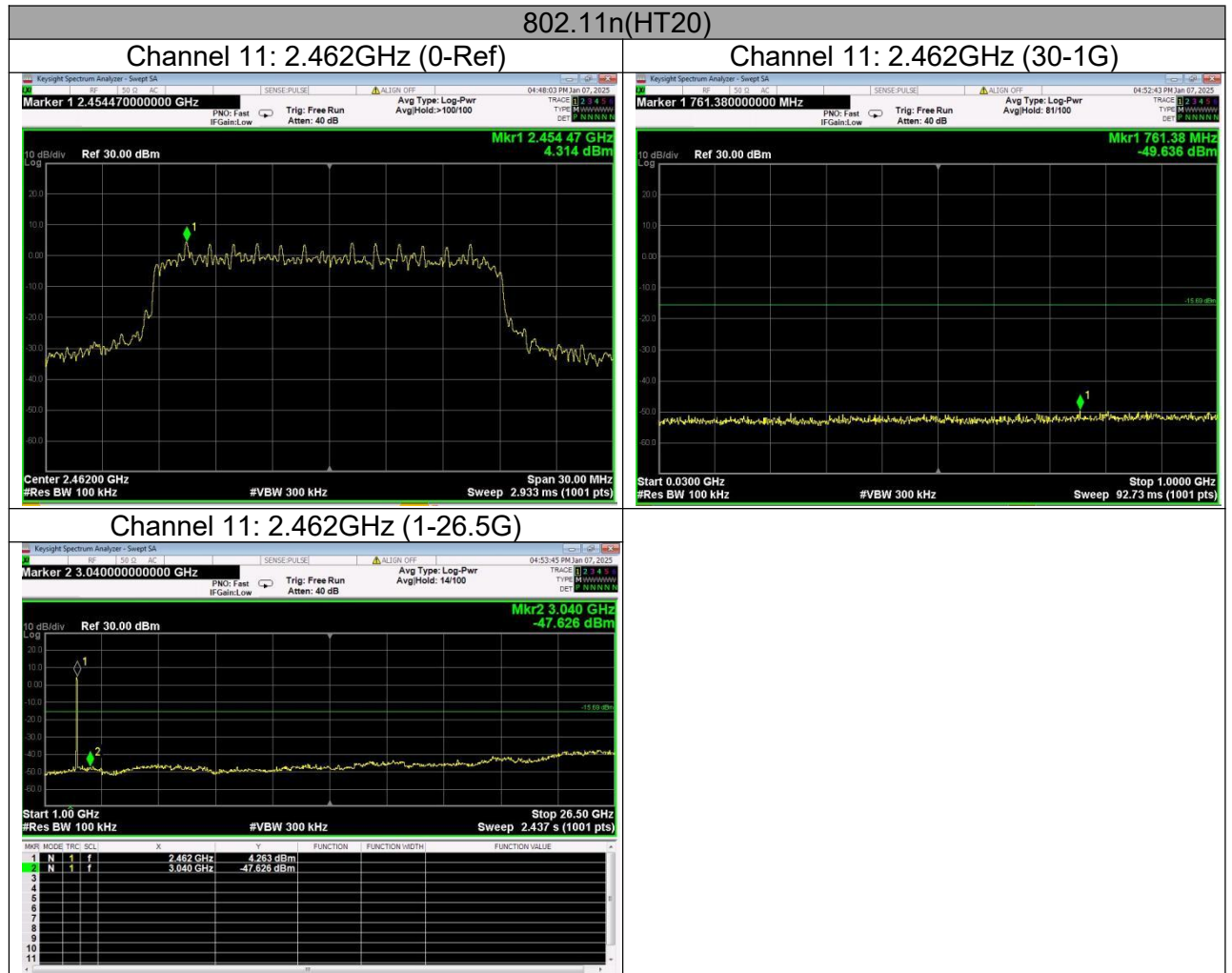


Channel 6: 2.437GHz (30-1G)



Channel 6: 2.437GHz (1-26.5G)

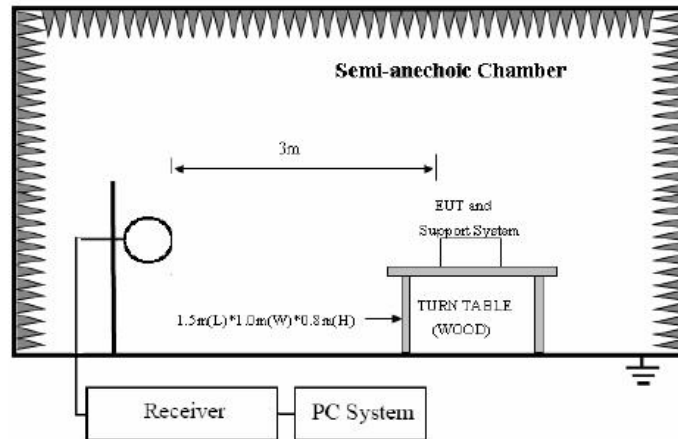




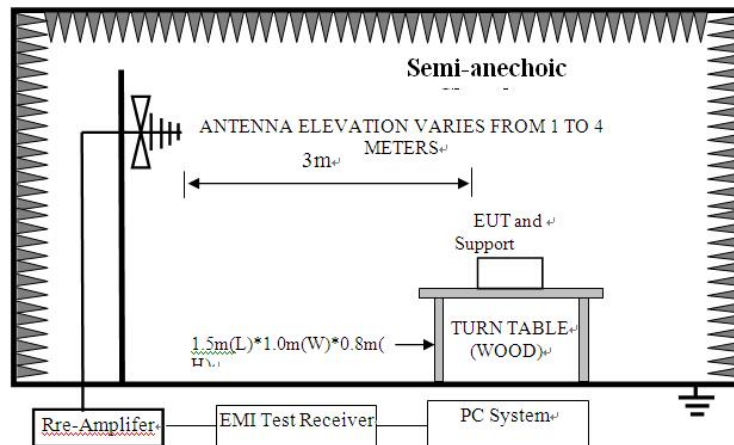
4.8 Spurious Radiated emission

Test setup:

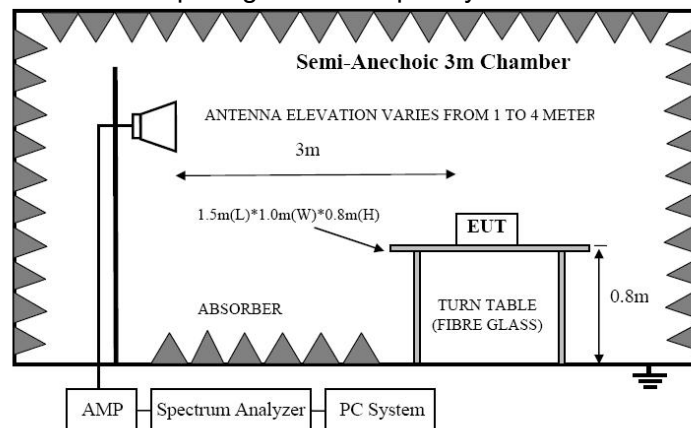
In 3m Anechoic Chamber Test Setup Diagram for 9KHz-30MHz



In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

Limit

FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(2)
13.36 - 13.41			

FCC 15.209 Limit.

Frequency (MHz)	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		uV/m	dB(uV)/m
0.009 ~ 0.490	300	2400/F(KHz) 67.6	20log(F)
0.490 ~ 1.705	30	24000/F(KHz) 87.6	20log(F)
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Note: (1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90KHz, 110-490KHz and above 1000MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$\text{Limit}_{3m}(\text{dBuV/m}) = \text{Limit}_{30m}(\text{dBuV/m}) + 40\text{Log}(30m/3m)$$

Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

Test Procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.
- (2) Setup EUT and assistant system according clause 2.3 and 8.2
- (3) Test antenna was located 3m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used
9KHz-30MHz	Active Loop antenna
30MHz-1GHz	Trilog Broadband Antenna
1GHz-18GHz	Double Ridged Horn Antenna(1GHz-18GHz)
18GHz-40GHz	Horn Antenna(18GHz-40GHz)

According ANSI C63.10:2009 clause 6.4.4.2 and 6.5.3, for measurements below 30 MHz, the loop antenna was positioned with its plane vertical from the EUT and rotated about its vertical axis for maximum response at each azimuth position around the EUT. And the loop antenna also be positioned with its plane horizontal at the specified distance from the EUT. The center of the loop is 1 m above the ground. For measurement above 30MHz, the Trilog Broadband Antenna or Horn Antenna was located 3m from EUT,Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

- (4) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiatedemissions from 9KHz to 25GHz:
 - (a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1m to 4m(Except loop antenna, it's fixed 1m above ground.)
 - (b) Change work frequency or channel of device if practicable.
 - (c) Change modulation type of device if practicable.
 - (d) Change power supply range from 85% to 115% of the rated supply voltage
 - (e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produceshighest emissions.Spectrum frequency from 9KHz to 25GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 18GHz to 25GHz, so below final test was performed with frequency range from 9KHz to 18GHz.

(5) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2009 on Radiated Emission test.

(6) The emissions from 9KHz to 1GHz were measured based on CISPR QP detector except for the frequency bands 9-90KHz, 110-490KHz, for emissions from 9KHz-90KHz, 110KHz-490KHz and above 1GHz were measured based on average detector, for emissions above 1GHz, peak emissions also be measured and need comply with Peak limit.

(7) The emissions from 9KHz to 1GHz, QP or average values were measured with EMI receiver with below RBW

Frequency Band	RBW
9KHz-150KHz	200Hz
150KHz-30MHz	9KHz
30MHz-1GHz	120KHz

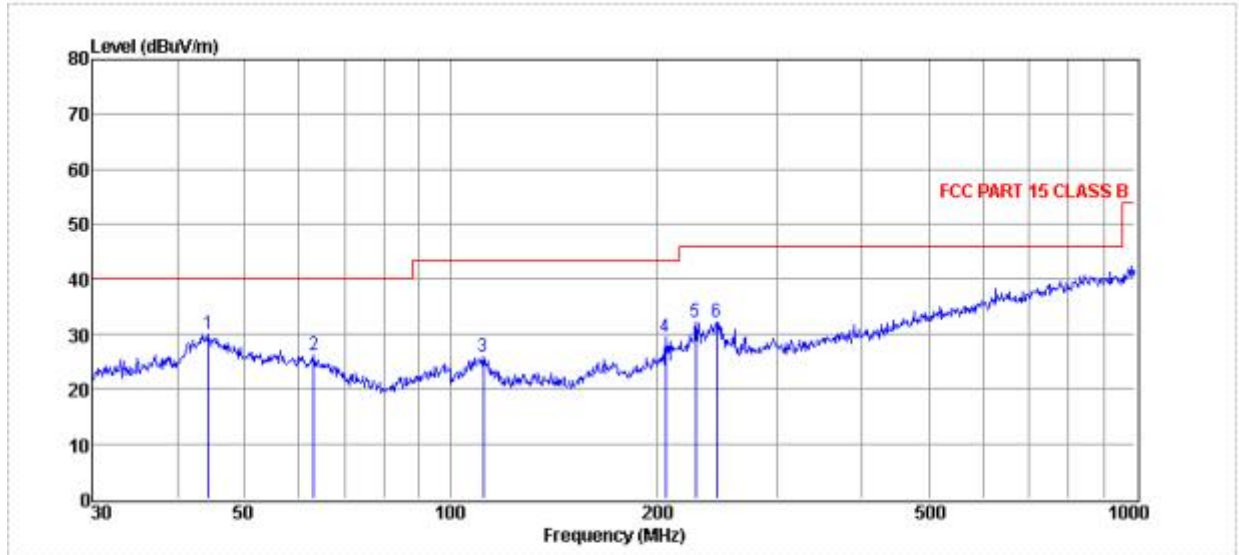
(8) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RBW is set at 1MHz, VBW is set at 10Hz for Average measure(according ANSI C63.10:2009 clause 4.2.3.2.3 procedure for average measure). Both PK and AV level test, PK detector is used.

Test result:

Pre-scan all test modes, found worst case at 2480MHz 802.11g, and so only show the test result of 2480MHz 802.11g,

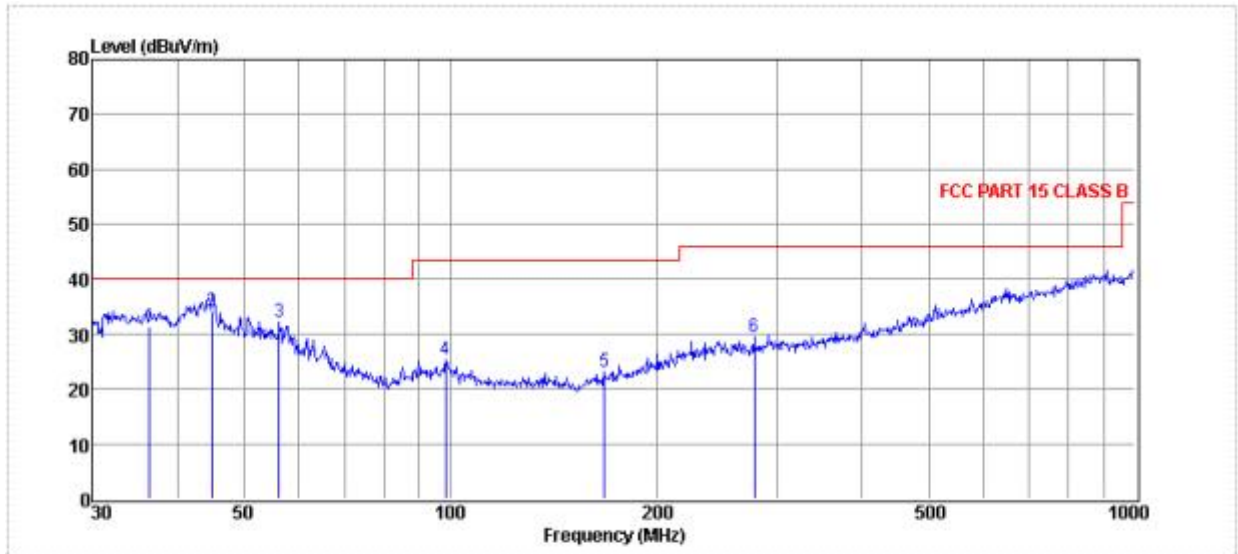
Below 1G:

Horizontal:



Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		
1	44.28	12.58	16.77	0.00	0.68	30.03	40.00	-9.97	Peak	HORIZONTAL
2	63.09	13.48	11.96	0.00	0.66	26.10	40.00	-13.90	Peak	HORIZONTAL
3	111.74	12.79	11.86	0.00	1.08	25.73	43.50	-17.77	Peak	HORIZONTAL
4	206.40	16.82	10.89	0.00	1.64	29.35	43.50	-14.15	Peak	HORIZONTAL
5	228.49	18.72	11.74	0.00	1.67	32.13	46.00	-13.87	Peak	HORIZONTAL
6	245.09	17.91	12.40	0.00	1.91	32.22	46.00	-13.78	Peak	HORIZONTAL

Vertical:



Item	Freq	Read Level	Antenna Factor	PRM Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector	Polarization
(Mark)	(MHz)	(dBμV)	(dB/m)	dB	dB	(dBμV/m)	(dBμV/m)	(dB)		
1	36.38	18.89	11.88	0.00	0.62	31.39	40.00	-8.61	QP	VERTICAL
2	44.90	16.83	16.49	0.00	0.67	33.99	40.00	-6.01	QP	VERTICAL
3	56.20	17.24	14.28	0.00	0.69	32.21	40.00	-7.79	Peak	VERTICAL
4	98.49	14.39	10.20	0.00	0.83	25.42	43.50	-18.08	Peak	VERTICAL
5	167.82	13.18	8.47	0.00	1.40	23.05	43.50	-20.45	Peak	VERTICAL
6	278.07	14.13	13.36	0.00	2.01	29.50	46.00	-16.50	Peak	VERTICAL

Above 1G:

802.11b:

2412MHz:

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polari zation
1	2241	49.84	27.19	53.98	4.28	27.33	54.00	-26.67	Average	H
2	2241	59.84	27.19	53.98	4.28	37.33	74.00	-36.67	Peak	H
3	4876	47.49	32.56	53.28	5.00	31.77	54.00	-22.23	Average	H
4	4876	57.49	32.56	53.28	5.00	41.77	74.00	-32.23	Peak	H
5	2309	49.40	27.34	53.97	4.35	27.12	54.00	-26.88	Average	V
6	2309	59.40	27.34	53.97	4.35	37.12	74.00	-36.88	Peak	V
7	4859	48.45	32.52	53.29	5.00	32.68	54.00	-21.32	Average	V
8	4859	58.45	32.52	53.29	5.00	42.68	74.00	-31.32	Peak	V

2437MHz:

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polari zation
1	4961	47.47	32.78	53.24	5.00	32.01	54.00	-21.99	Average	H
2	4961	57.47	32.78	53.24	5.00	42.01	74.00	-31.99	Peak	H
3	4944	47.09	32.74	53.25	5.00	31.58	54.00	-22.42	Average	V
4	4944	57.09	32.74	53.25	5.00	41.58	74.00	-32.42	Peak	V

2462MHz:

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polari zation
1	2700	49.31	28.41	53.93	4.74	28.53	54.00	-25.47	Average	H
2	2700	59.31	28.41	53.93	4.74	38.53	74.00	-35.47	Peak	H
3	4910	46.74	32.65	53.26	5.00	31.13	54.00	-22.87	Average	H
4	4910	56.74	32.65	53.26	5.00	41.13	74.00	-32.87	Peak	H
5	2819	48.73	28.78	53.92	4.85	28.44	54.00	-25.56	Average	V
6	2819	58.73	28.78	53.92	4.85	38.44	74.00	-35.56	Peak	V
7	4927	47.09	32.69	53.26	5.00	31.52	54.00	-22.48	Average	V
8	4927	57.09	32.69	53.26	5.00	41.52	74.00	-32.48	Peak	V

802.11g:
2412MHz:

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2309	47.67	27.34	53.97	4.35	25.39	54.00	-28.61	Average	H
2	2309	57.67	27.34	53.97	4.35	35.39	74.00	-38.61	Peak	H
3	4859	46.27	32.52	53.29	5.00	30.50	54.00	-23.50	Average	H
4	4859	56.27	32.52	53.29	5.00	40.50	74.00	-33.50	Peak	H
5	2190	49.31	27.07	53.98	4.22	26.62	54.00	-27.38	Average	V
6	2190	59.31	27.07	53.98	4.22	36.62	74.00	-37.38	Peak	V
7	4859	46.52	32.52	53.29	5.00	30.75	54.00	-23.25	Average	V
8	4859	56.52	32.52	53.29	5.00	40.75	74.00	-33.25	Peak	V

2437MHz:

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	4978	46.62	32.82	53.23	5.00	31.21	54.00	-22.79	Average	H
2	4978	56.62	32.82	53.23	5.00	41.21	74.00	-32.79	Peak	H
3	4910	47.34	32.65	53.26	5.00	31.73	54.00	-22.27	Average	V
4	4910	57.34	32.65	53.26	5.00	41.73	74.00	-32.27	Peak	V

2462MHz:

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2734	49.63	28.51	53.93	4.77	28.98	54.00	-25.02	Average	H
2	2734	59.63	28.51	53.93	4.77	38.98	74.00	-35.02	Peak	H
3	4944	46.50	32.74	53.25	5.00	30.99	54.00	-23.01	Average	H
4	4944	56.50	32.74	53.25	5.00	40.99	74.00	-33.01	Peak	H
5	2751	48.85	28.57	53.92	4.79	28.29	54.00	-25.71	Average	V
6	2751	58.85	28.57	53.92	4.79	38.29	74.00	-35.71	Peak	V
7	4910	47.12	32.65	53.26	5.00	31.51	54.00	-22.49	Average	V
8	4910	57.12	32.65	53.26	5.00	41.51	74.00	-32.49	Peak	V

802.11n(HT20):
2412MHz:

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2054	50.62	26.76	53.99	4.07	27.46	54.00	-26.54	Average	H
2	2054	60.62	26.76	53.99	4.07	37.46	74.00	-36.54	Peak	H
3	4842	47.85	32.47	53.30	5.00	32.02	54.00	-21.98	Average	H
4	4842	57.85	32.47	53.30	5.00	42.02	74.00	-31.98	Peak	H
5	2207	48.61	27.11	53.98	4.24	25.98	54.00	-28.02	Average	V
6	2207	58.61	27.11	53.98	4.24	35.98	74.00	-38.02	Peak	V
7	4842	48.21	32.47	53.30	5.00	32.38	54.00	-21.62	Average	V
8	4842	58.21	32.47	53.30	5.00	42.38	74.00	-31.62	Peak	V

2437MHz:

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	4910	48.33	32.65	53.26	5.00	32.72	54.00	-21.28	Average	H
2	4910	58.33	32.65	53.26	5.00	42.72	74.00	-31.28	Peak	H
3	4978	47.69	32.82	53.23	5.00	32.28	54.00	-21.72	Average	V
4	4978	57.69	32.82	53.23	5.00	42.28	74.00	-31.72	Peak	V

2462MHz:

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss dB	Result Level (dBμV/m)	Limit Line (dBμV/m)	Over Limit (dB)	Detector	Polarization
1	2921	48.67	29.10	53.91	4.93	28.79	54.00	-25.21	Average	H
2	2921	58.67	29.10	53.91	4.93	38.79	74.00	-35.21	Peak	H
3	4927	47.27	32.69	53.26	5.00	31.70	54.00	-22.30	Average	H
4	4927	57.27	32.69	53.26	5.00	41.70	74.00	-32.30	Peak	H
5	2751	48.57	28.57	53.92	4.79	28.01	54.00	-25.99	Average	V
6	2751	58.57	28.57	53.92	4.79	38.01	74.00	-35.99	Peak	V
7	4910	47.57	32.65	53.26	5.00	31.96	54.00	-22.04	Average	V
8	4910	57.57	32.65	53.26	5.00	41.96	74.00	-32.04	Peak	V

5 Test Setup Photo

Refer to <Setup Photos>

6 Test Setup of EUT

Refer to <External Photos and Internal Photos>

-----End of test report-----