

RF TEST REPORT

FCC ID: 2AGNTNESTWPT

Test Report No.....: RF251027002-02-002

Product(s) Name.....: WPT Module

Model(s).....: Nest WPT

Trade Mark.....: AUTEL ROBOTICS

Applicant.....: Autel Robotics Co., Ltd.

Address.....: 601,701,801,901, Block B1, Nanshan iPark, No. 1001 Xueyuan Avenue,
Nanshan District, Shenzhen, Guangdong, 518055, China

Receipt Date.....: 2025.10.07

Test Date.....: 2025.10.08~2025.11.10

Issued Date.....: 2025.11.10

Standards.....: 47 CFR FCC Part 15, Subpart C(Section 15.247)
ANSI C63.10-2020

Testing Laboratory.....: Shenzhen Haiyun Standard Technical Co., Ltd.

Prepared By:	Checked By:	Approved By:	
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Table of Contents

History of this test report.....	4
1. General Information	5
1.1 Applicant.....	5
1.2 Manufacturer	5
1.3 Basic Description of Equipment Under Test.....	5
1.4 Transmit Operating Mode.....	6
2. Summary of Test Results	7
2.1 Summary of Test Items	7
2.2 Application of Standard	7
2.3 Test Instruments.....	8
2.4 Test Mode.....	9
2.5 Test Condition	10
2.6 Duty Cycle of Test Signal	10
2.7 Measurement Uncertainty	11
2.8 Test Location	11
2.9 Description of Support Units.....	11
3. Test Procedure And Results	12
3.1 AC Power Line Conducted Emission.....	12
3.1.1 Limit	12
3.1.2 Test Procedure	12
3.1.3 Test Setup	12
3.1.4 Test Result	13
3.2 Radiated Emission and Band Edge.....	15
3.2.1 Limit	15
3.2.2 Test Procedure	15
3.2.3 Test Setup	16
3.2.4 Test Result	18
3.3 Spurious Emission at Antenna Port.....	26

3.3.1	Limit	26
3.3.2	Test Procedure	26
3.3.3	Test Setup	27
3.3.4	The Result	27
3.4	6dB Bandwidth	30
3.4.1	Limit	30
3.4.2	Test Procedure	30
3.4.3	Test Setup	30
3.4.4	Test Result	31
3.5	Maximum conducted output power.....	36
3.5.1	Limit.....	36
3.5.2	Test Procedure	36
3.5.3	Test Setup	36
3.5.4	Table of Parameters of Text Software Setting.....	37
3.5.5	The Result	37
3.6	Power Spectral Density	40
3.6.1	Limit.....	40
3.6.2	Test Procedure	40
3.6.3	Test Setup	40
3.6.4	The Result	41

History of this test report

Original Report Issue Date: 2025.11.10

☒ No additional attachment

☐ Additional attachments were issued following record

Attachment No.	Issue Date	Description

1. General Information

1.1 Applicant

Autel Robotics Co., Ltd.

601,701,801,901, Block B1, Nanshan iPark, No. 1001 Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong, 518055, China

1.2 Manufacturer

Autel Robotics Co., Ltd.

601,701,801,901, Block B1, Nanshan iPark, No. 1001 Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong, 518055, China

1.3 Basic Description of Equipment Under Test

Sample No.	POC251027002-S002	
Product name	WPT Module	
Model name	Nest WPT	
Trade mark	AUTEL ROBOTICS	
Power supply	DC 48V	
Operate temperature	-35-55℃	
EUT Stage	○ Product Unit	● Final-Sample
Operating Band and Conducted Output Power (Max power)	2402MHz-2480MHz	●-9.763dBm
Product Type	DTS	
Nominal Bandwidth	2M Bandwidth	
Modulation	GFSK	
Data Rate (Mbps)	2Mbps	
Antenna gain	3.8dBi	
Antenna type	Integral antenna	

Channels

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	11	2422MHz	21	2442MHz	31	2462MHz
2	2404MHz	12	2424MHz	22	2444MHz	32	2464MHz
:	:	:	:	:	:	:	:
...	...	...	...	...	...	...	...
9	2418MHz	19	2438MHz	29	2458MHz	39	2478MHz
10	2420MHz	20	2440MHz	30	2460MHz	40	2480MHz

Test Frequency (MHz)	Frequency(MHz)		
	Lowest channel	Middle channel	Highest channel
	2402	2440	2480

1.4 Transmit Operating Mode

Transmit Operating Mode		Transmit Multiple Antennas			
☒	Operating mode 1 (single antenna)	☒	1TX		
☐	Operating mode 2 (multiple antenna, no beam forming)	☐	2TX	☐	3TX
☐	Operating mode 3 (multiple antenna, with beam forming)	☐	2TX	☐	3TX
		☐	4TX	☐	4TX

2. Summary of Test Results

2.1 Summary of Test Items

47 CFR FCC Part 15, Subpart C (Section 15.247)			
Test item	FCC Clause	Results	Remarks
AC Power Conducted Emission	15.207	Pass	Meet the requirement of the limit
Radiated Emission and Band Edge Measurement	15.205/15.209 /15.247(d)	Pass	Meet the requirement of the limit
Spurious Emission at Antenna Port	15.247(d)	Pass	Meet the requirement of the limit
6dB Bandwidth	15.247(a)(2)	Pass	Meet the requirement of the limit
Maximum Conducted Power	15.247(b)	Pass	Meet the requirement of the limit
Power Spectral Density	15.247(e)	Pass	Meet the requirement of the limit
Antenna Requirements	15.203	Compliance	Note
Note: The EUT has one Integral antenna arrangement which was permanently attached.			

2.2 Application of Standard

47 CFR FCC Part 15, Subpart C (Section 15.247)

KDB 558074 D01 15.247 Meas Guidance v05r02

ANSI C63.10-2020

2.3 Test Instruments

Radiated Emissions							
No.	Equipment	Manufacturer	Type No.	Serial No.	Inventory No.	Cal. date (yyyy/mm/dd)	Cal. Due date (yyyy/mm/dd)
1	Test receiver	Rohde&Schwarz	ESU	100184	JLE011	2025/3/1	2026/2/28
2	Log periodic antenna	Schwarzbeck	VULB 9168	1151	JLE012	2025/4/12	2026/4/11
3	Low frequency amplifier	/	LNA 0920N	2014	JLE023	2025/3/1	2026/2/28
4	High frequency amplifier	Schwarzbeck	BBV 9718	9718-284	JLE024	2025/3/1	2026/2/28
5	Horn Antenna	SCHWARZBEC K	BBHA 9120 D	02670	JLE028	2025/4/12	2026/4/11
6	Temp&Humid ity Recorder	Meideshi	JR900	/	JLE021	2025/4/15	2026/4/14
7	Horn Antenna	SCHWARZBEC K	BBHA 9170	9170#685	JLE029	2024/7/15	2027/7/14
8	Loop Antenna	SCHWARZBEC K	FMZB15 19B	00029	JLE030	2024/7/15	2027/7/14
9	Broadband preamplifier	Schwarzbeck	BBV9721	9721-019	JLE025	2025/3/1	2026/2/28
10	Test software	Farad Technology Co., Ltd	EZ-EMC Ver.TW-03A2				
RF Conducted Emission							
1	MXA Signal Analyzer	Keysight	N9021B	MY60080 169	JLE050	2025/3/1	2026/2/28
2	RF Control Unit	dsusoft	JS0806-2	21G8060 449	JLE053	2025/3/1	2026/2/28
3	power supply unit	dsusoft	JS0806-4 ADC	N/A	JLE055	2025/3/1	2026/2/28
4	VXG Signal Generator	Keysight	N5182B	MY59100 855	JLE068	2025/4/15	2026/4/14
5	EXG Analog Signal Generator	Keysight	N5173B	MY59101 282	JLE052	2025/3/1	2026/2/28
6	Wideband Radio Communicati on Tester	Rohde&Schwarz	CMW500	1201.000 2K50-116 064-Dt	JLE054	2025/3/1	2026/2/28
7	Test software	dsusoft	JS1120-3 Ver.3.2.22.0				
Conducted Emission							
1	LISN	Rohde&Schwarz	ENV216	100075	JLE002	2025/3/1	2026/2/28
2	ISN	Schwarzbeck	CATE 5 8158	#171	JLE003	2025/2/21	2026/2/20
3	Test receiver	Rohde&Schwarz	ESCI	100718	JLE010	2025/3/1	2026/2/28
4	Pulse limiter	Rohde&Schwarz	ESH3-Z2	102299	JLE047	2025/3/1	2026/2/28
5	Temp&Humid ity Recorder	Meideshi	JR900	/	JLE020	2025/4/15	2026/4/14
6	Test software	Farad Technology Co., Ltd	EZ-EMC Ver.TW-03A2				

2.4 Test Mode

Test Items	Mode	Data Rate	Channel
AC Power Conducted Emission	1	2Mbps	1/20/40
Radiated Emission and Band Edge Measurement	1	2Mbps	1/20/40
Spurious Emission at Antenna Port	1	2Mbps	1/20/40
6dB Bandwidth	1	2Mbps	1/20/40
Maximum Conducted Power	1	2Mbps	1/20/40
Power Spectral Density	1	2Mbps	1/20/40

Note: 1 .Radiated Emission below 1GHz, only worst case was recorded.

2.5 Test Condition

Applicable to	Environmental conditions	Input Power	Tested by
AC Power Conducted Emission	25.0°C, 52% RH	AC 120V/60Hz	Jason Huang
Radiated Emission and Band Edge Measurement	23.4°C, 49% RH	AC 120V/60Hz	Jason Huang
Spurious Emission at Antenna Port	23.2°C, 55% RH	DC 48V	Jason Huang
6dB Bandwidth	23.2°C, 55% RH	DC 48V	Jason Huang
Maximum Conducted Power	23.2°C, 55% RH	DC 48V	Jason Huang
Power Spectral Density	23.2°C, 55% RH	DC 48V	Jason Huang

Note: Adapter supply voltage AC 120V/60Hz.

The applicant declare the operating environment of EUT as below:

Normal conditions: DC 48V,-35-55°C

2.6 Duty Cycle of Test Signal

If duty cycle is $\geq 98\%$, duty factor is not required.

If duty cycle is $< 98\%$, duty factor shall be considered.

All the duty factor of other test mode have been considered.

Measurement Data : The detailed test data see Appendix II

2.7 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ($k=2$))

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	$\pm 102\text{kHz}$
RF power conducted	$\pm 0.243\text{dB}$
Power Spectral Density	$\pm 0.743\text{dB}$
Conducted Spurious Emission	$\pm 1.328\text{dB}$
Conducted emission(9kHz~30MHz) AC main	$\pm 2.68\text{dB}$
Radiated emission(9kHz~30MHz)	$\pm 3.50\text{dB}$
Radiated emission (30MHz~1GHz)	$\pm 4.20\text{dB}$
Radiated emission (1GHz~18GHz)	$\pm 5.10\text{dB}$
Radiated emission (18GHz~40GHz)	$\pm 5.26\text{dB}$

2.8 Test Location

Company:	Shenzhen Haiyun Standard Technical Co., Ltd.
Address:	No. 110-113, 115, 116, Block B, Jinyuan Business Building, Bao'an District, Shenzhen, China
CNAS Registration Number:	CNAS L18252
CAB identifier	CN0145
A2LA Certificate Number	6823.01
Telephone:	0755-26024411

2.9 Description of Support Units

No.	Equipment	Model	Manufacturer	Series No
1	PC	R490	ThinkPad	PF-1J9YUW

3. Test Procedure And Results

3.1 AC Power Line Conducted Emission

3.1.1 Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μ V)	Average Level dB(μ V)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

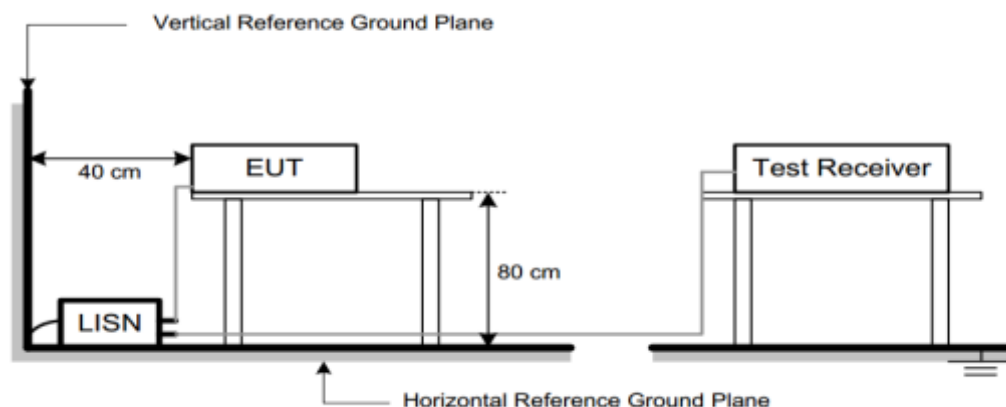
3.1.2 Test Procedure

Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☐ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme

Note: ● : Test ○ : No Test

- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

3.1.3 Test Setup



3.1.4 Test Result

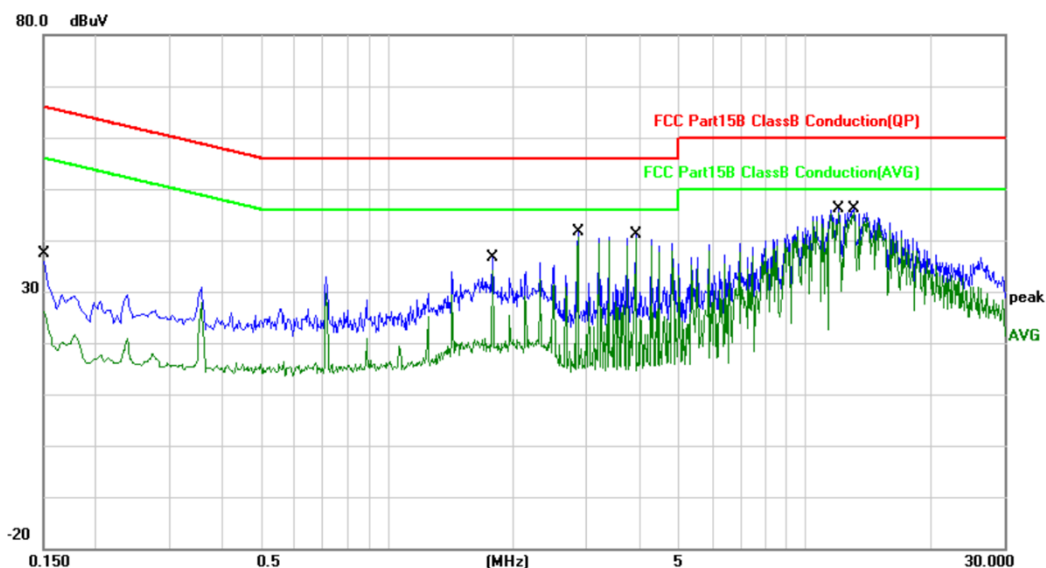
Note:

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Measurement = Reading + Correct Factor.
3. Over = Measurement – Limit

We only recorded the data of the worst mode. Please see the following:

150kHz~30MHz	Worst Case Operating Mode: Channel 1
--------------	--------------------------------------

Line

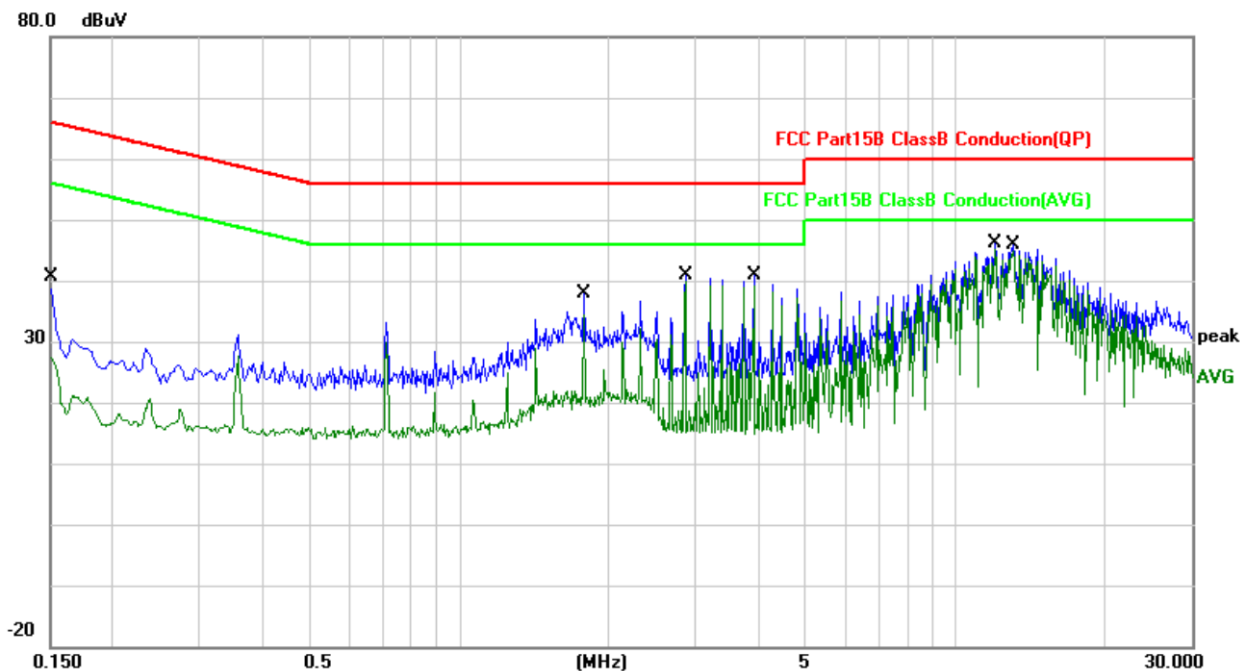


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1500	17.74	19.52	37.26	66.00	-28.74	QP
2		0.1500	7.50	19.52	27.02	56.00	-28.98	AVG
3		1.7860	17.09	19.63	36.72	56.00	-19.28	QP
4		1.7860	14.61	19.63	34.24	46.00	-11.76	AVG
5		2.8580	21.87	19.78	41.65	56.00	-14.35	QP
6		2.8580	20.74	19.78	40.52	46.00	-5.48	AVG
7		3.9300	21.27	19.84	41.11	56.00	-14.89	QP
8		3.9300	20.43	19.84	40.27	46.00	-5.73	AVG
9		12.0540	25.85	20.35	46.20	60.00	-13.80	QP
10	*	12.0540	25.07	20.35	45.42	50.00	-4.58	AVG
11		13.1260	25.67	20.42	46.09	60.00	-13.91	QP
12		13.1260	24.91	20.42	45.33	50.00	-4.67	AVG

150kHz~30MHz

Worst Case Operating Mode: Channel 1

Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1500	21.04	19.51	40.55	66.00	-25.45	QP
2		0.1500	8.15	19.51	27.66	56.00	-28.34	AVG
3		1.7860	18.25	19.64	37.89	56.00	-18.11	QP
4		1.7860	14.66	19.64	34.30	46.00	-11.70	AVG
5		2.8580	21.07	19.77	40.84	56.00	-15.16	QP
6		2.8580	20.10	19.77	39.87	46.00	-6.13	AVG
7		3.9300	20.94	19.88	40.82	56.00	-15.18	QP
8		3.9300	19.23	19.88	39.11	46.00	-6.89	AVG
9		12.0540	25.85	20.31	46.16	60.00	-13.84	QP
10	*	12.0540	24.86	20.31	45.17	50.00	-4.83	AVG
11		13.1260	25.41	20.39	45.80	60.00	-14.20	QP
12		13.1260	24.50	20.39	44.89	50.00	-5.11	AVG

3.2 Radiated Emission and Band Edge

3.2.1 Limit

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

Frequency (MHz)	Distance Meters(m)	Field Strength Limit	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 – 0.49	300	$2400/F(\text{kHz})$	-
0.490 – 1.705	30	$24000/F(\text{kHz})$	-
1.705 – 30	30	30	-
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 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

Note: (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V}/\text{m}$

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3.2.2 Test Procedure

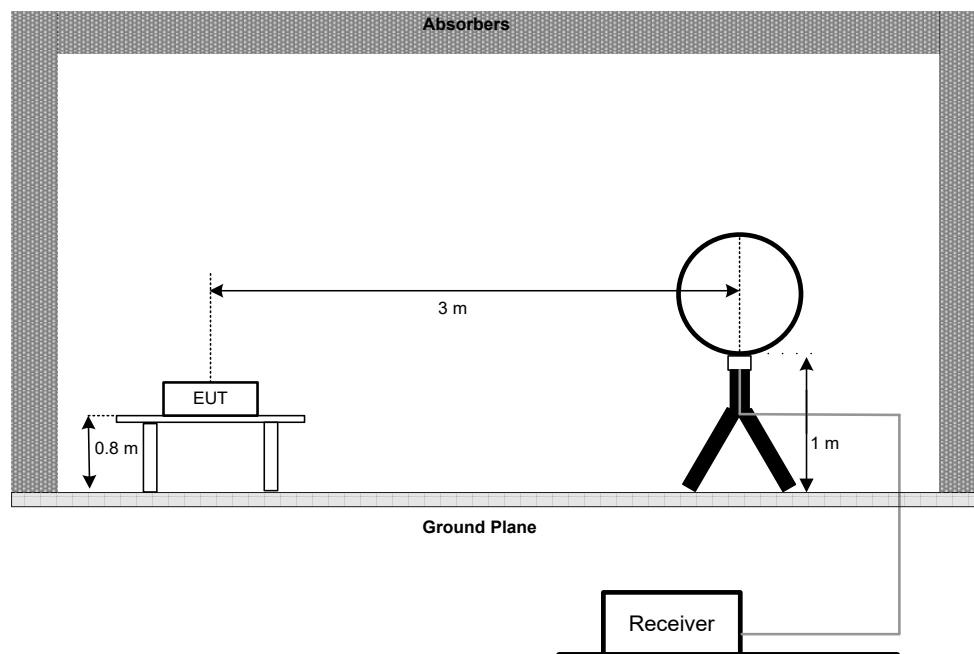
Test Method	
☐ Conducted Measurement	☒ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- The measuring distance of 3 m or 1.5m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

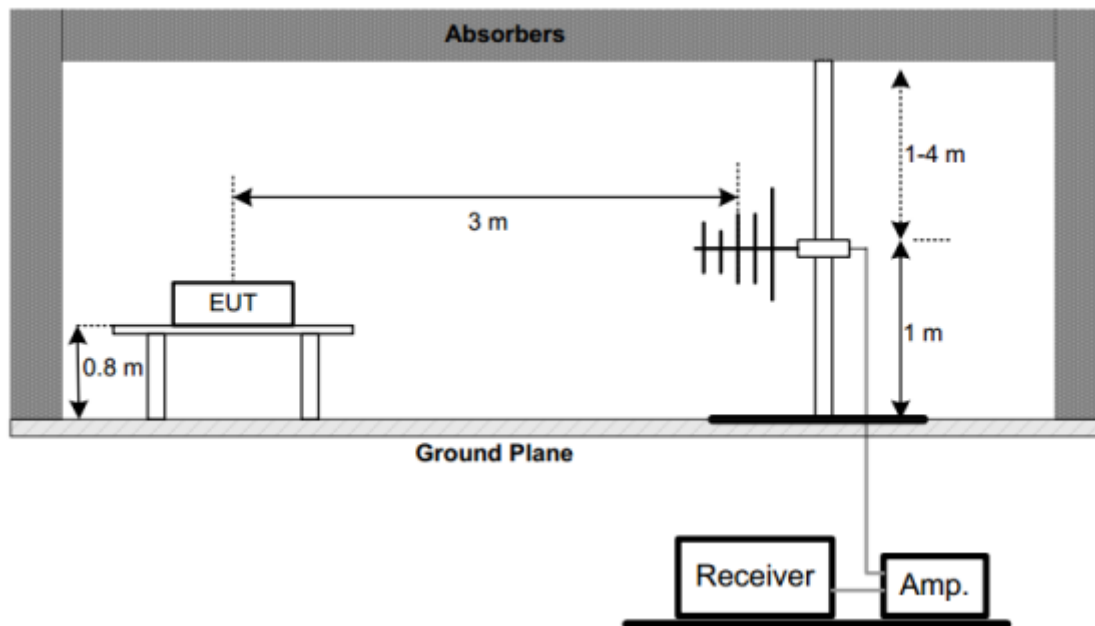
- d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e) The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f) The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g) All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1 GHz)
- h) All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- i) For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.2.3 Test Setup

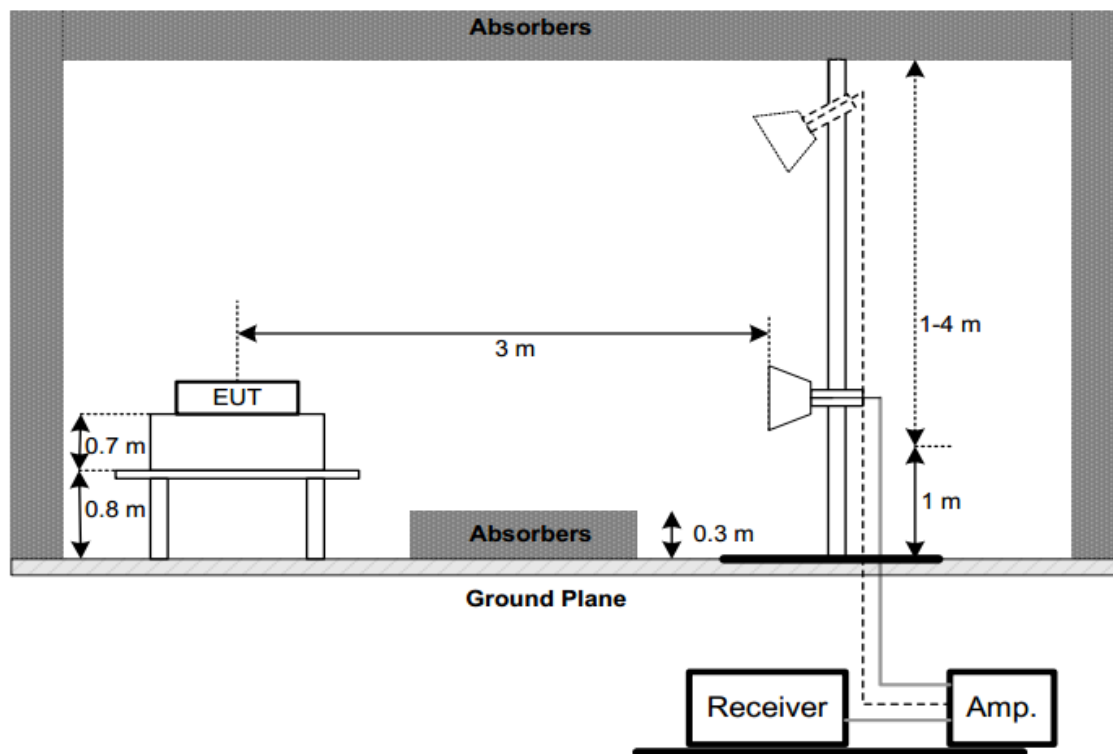
(A) Radiated Emission Test Set-Up Frequency Below 30 MHz



(B) Radiated Emission Test Set-Up Frequency 30 MHz-1000 MHz



(C) Radiated Emission Test Set-Up Frequency Above 1 GHz



3.2.4 Test Result

1) Radiated emission: 9kHz-30MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not recorded in this report.

2) Radiated emission: 30MHz-1GHz

Note:

1. Measurement = Reading + Correct Factor.
2. Over = Measurement – Limit

We only recorded the data of the worst mode. Please see the following:

Below 1GHz (30MHz~1GHz)

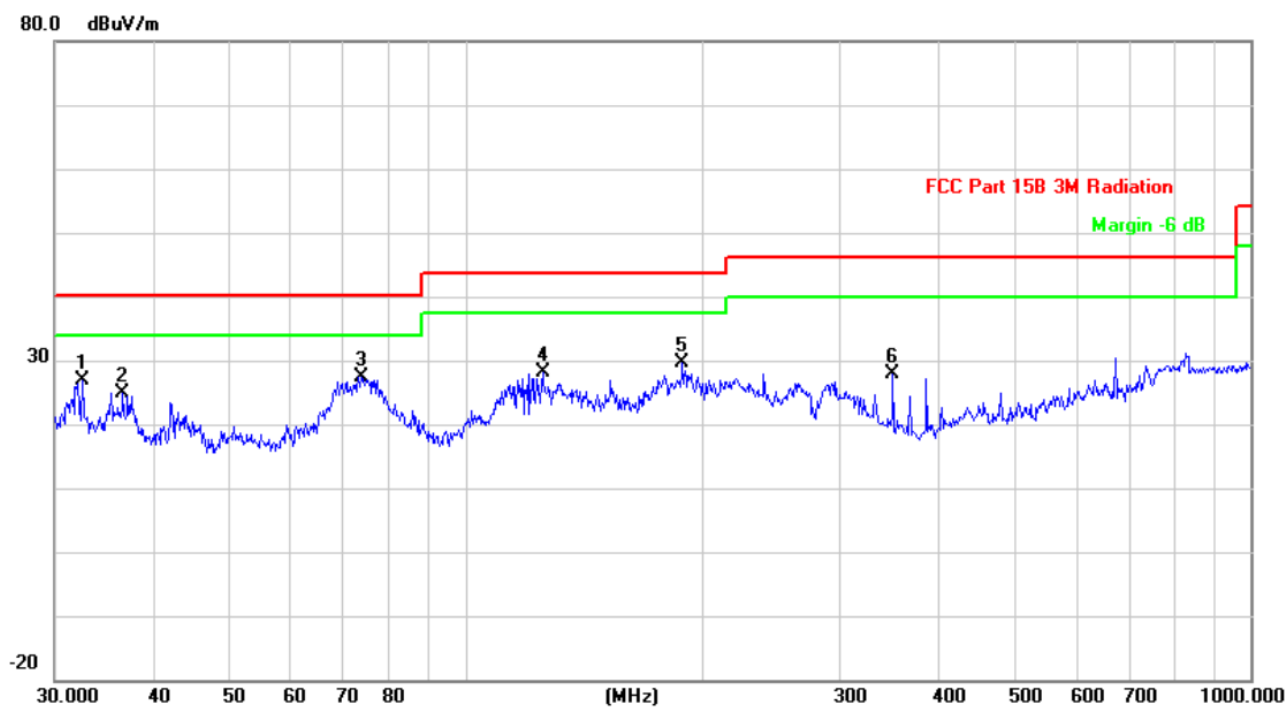
Worst Case Operating Mode: Channel 1

VERTICAL



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	40.8446	42.74	-10.42	32.32	40.00	-7.68	QP
2		99.8777	43.99	-13.85	30.14	43.50	-13.36	QP
3		141.3298	45.50	-10.39	35.11	43.50	-8.39	QP
4		170.1948	42.51	-10.76	31.75	43.50	-11.75	QP
5		278.0668	43.86	-10.91	32.95	46.00	-13.05	QP
6		308.9126	37.06	-9.62	27.44	46.00	-18.56	QP

HORIZONTAL



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		32.5198	38.24	-11.40	26.84	40.00	-13.16	QP
2		36.6375	35.34	-10.46	24.88	40.00	-15.12	QP
3	*	73.8756	41.34	-13.85	27.49	40.00	-12.51	QP
4		125.4457	38.89	-10.82	28.07	43.50	-15.43	QP
5		189.0743	42.22	-12.60	29.62	43.50	-13.88	QP
6		350.4768	37.35	-9.39	27.96	46.00	-18.04	QP

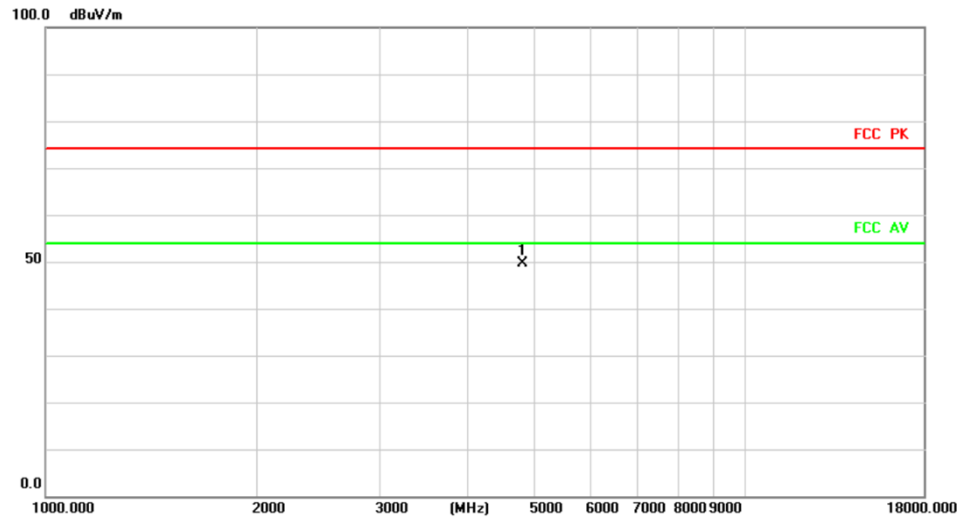
3) Radiated emission: Above 1GHz

Note:

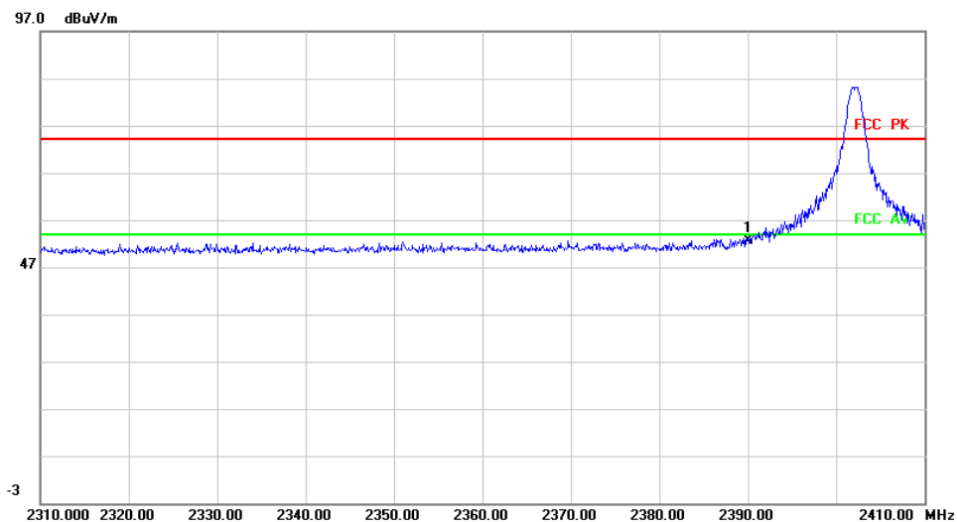
1. Measurement = Reading + Correct Factor.
2. Over = Measurement – Limit

Above 1GHz (1GHz~18GHz)	Test mode:1	Test Channel:1
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VERTICAL

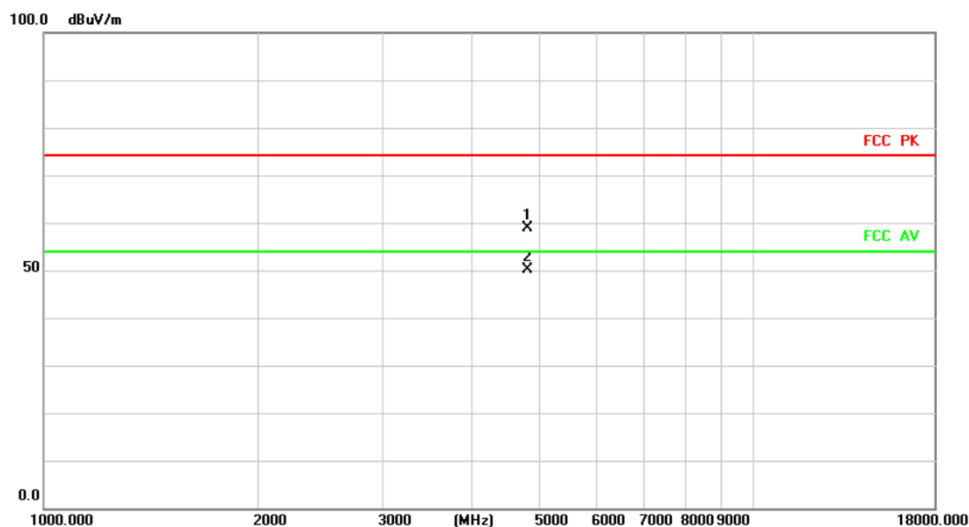


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4804.000	53.13	-3.46	49.67	74.00	-24.33	peak



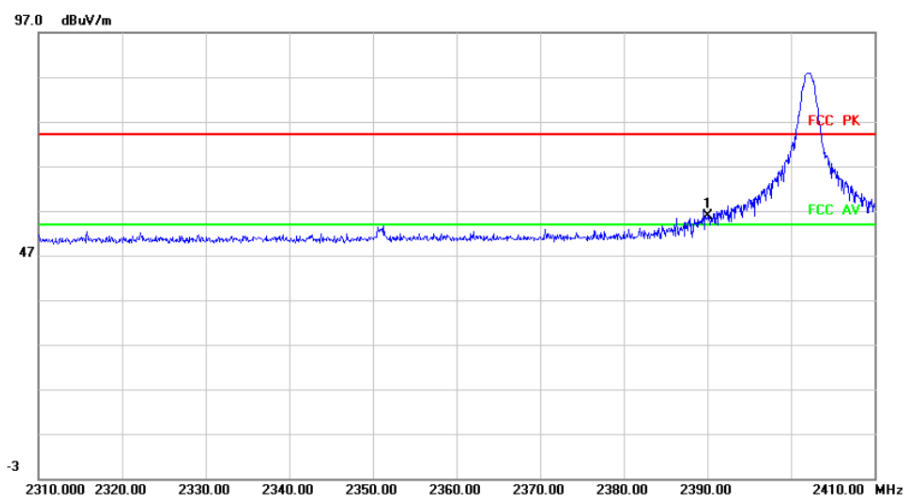
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2390.000	21.13	31.59	52.72	74.00	-21.28	peak

HORIZONTAL



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4804.000	62.22	-3.46	58.76	74.00	-15.24	peak
2 *		4804.000	53.58	-3.46	50.12	54.00	-3.88	AVG

Radiated Emission



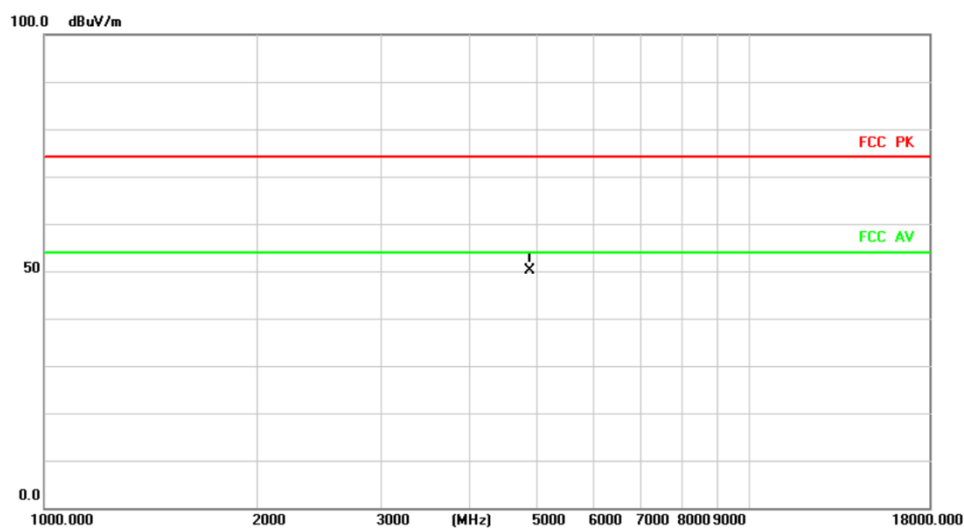
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1 *		2390.000	24.30	31.59	55.89	74.00	-18.11	peak

Above 1GHz (1GHz~18GHz)

Test mode:1.4MHz

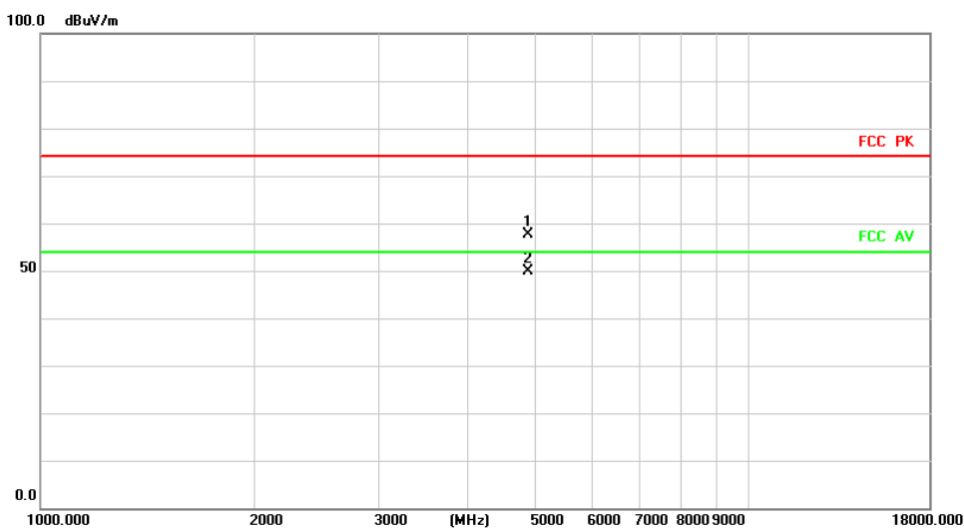
Test Channel:20

VERTICAL



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4880.000	53.65	-3.48	50.17	74.00	-23.83	peak

HORIZONTAL



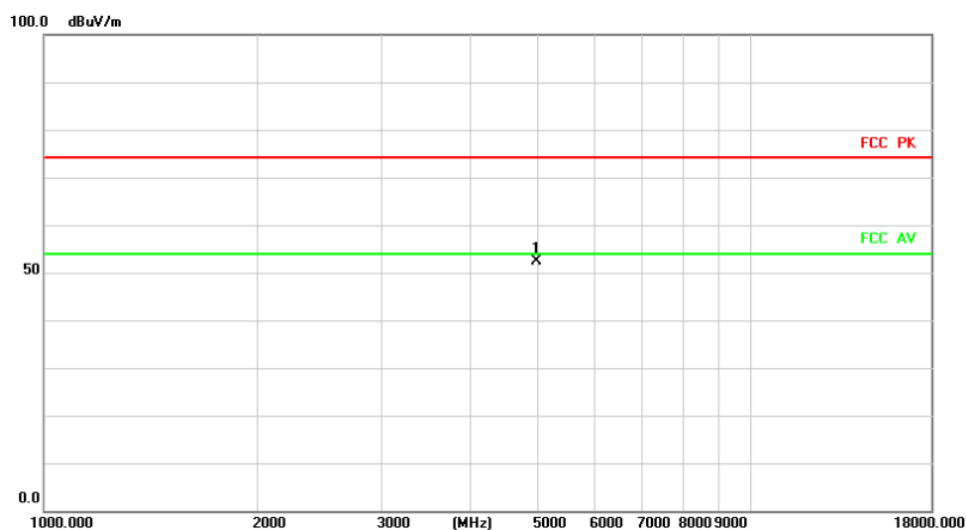
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4880.000	61.17	-3.48	57.69	74.00	-16.31	peak
2	*	4880.000	53.41	-3.48	49.93	54.00	-4.07	AVG

Above 1GHz (1GHz~18GHz)

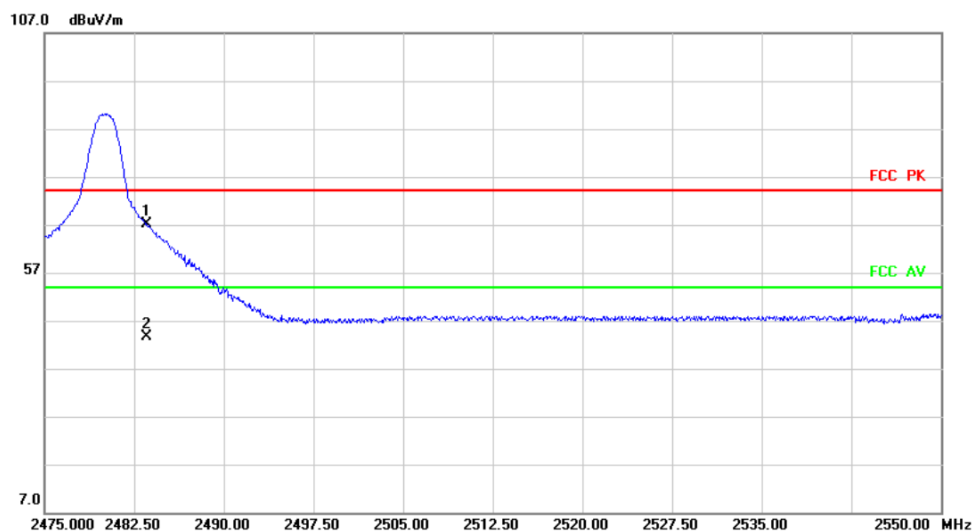
Test mode: 1.4MHz

Test Channel:40

VERTICAL

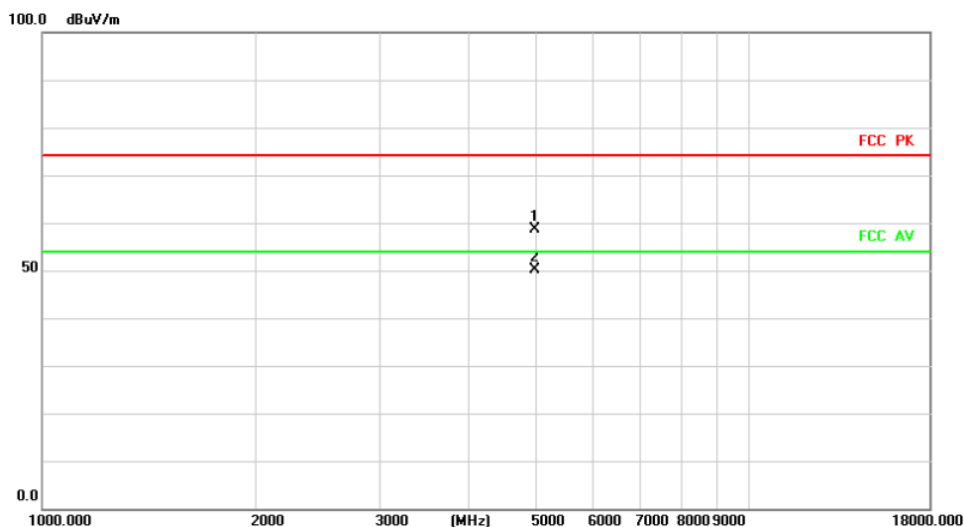


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1	*	4960.000	55.87	-3.41	52.46	74.00	-21.54 peak

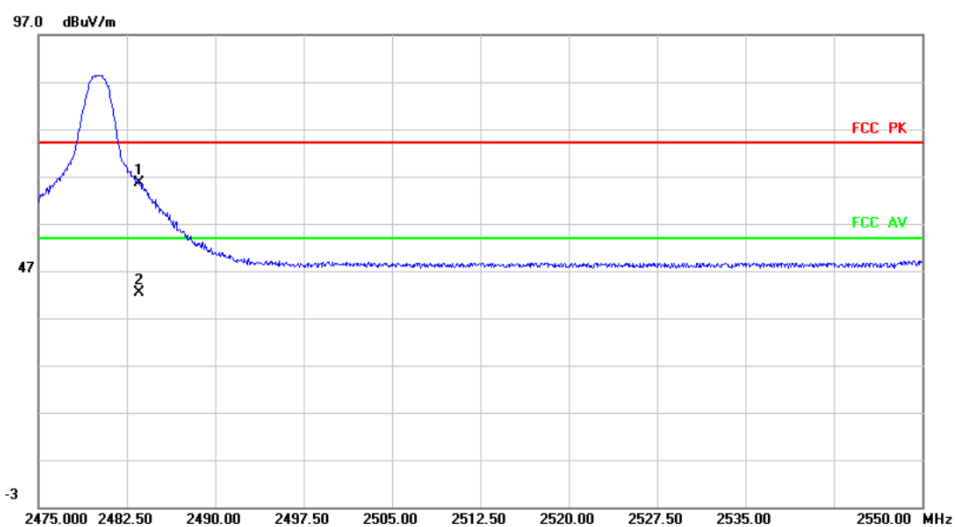


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1	*	2483.500	34.67	32.49	67.16	74.00	-6.84 peak
2		2483.500	11.14	32.49	43.63	54.00	-10.37 AVG

HORIZONTAL



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.307	62.05	-3.41	58.64	74.00	-15.36	peak
2	*	4959.307	53.64	-3.41	50.23	54.00	-3.77	AVG



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2483.500	33.04	32.49	65.53	74.00	-8.47	peak
2		2483.500	9.91	32.49	42.40	54.00	-11.60	AVG

The high frequency, which started from 18GHz to 26.5GHz, was pre-scanned and the result which was 20dB lower than the limit line was not recorded in this report.

3.3 Spurious Emission at Antenna Port

3.3.1 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 Output Power limits. If the transmitter complies with the Output 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 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)).

3.3.2 Test Procedure

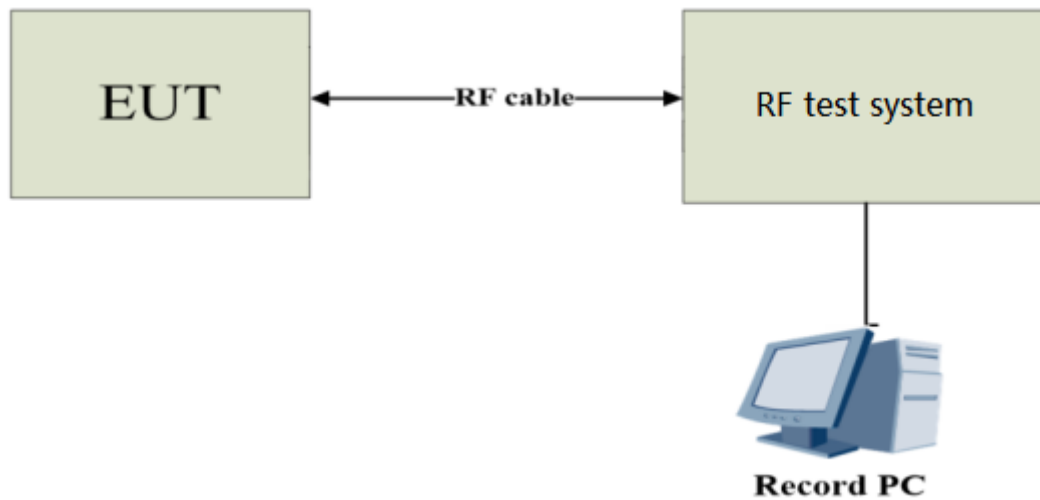
Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

a) The EUT was directly connected to the RF test system and antenna output port as show in the block diagram below.

b) Spectrum Setting as below:

Centre Frequency	The centre frequency of the channel under test
Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	25 GHz
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.3.3 Test Setup



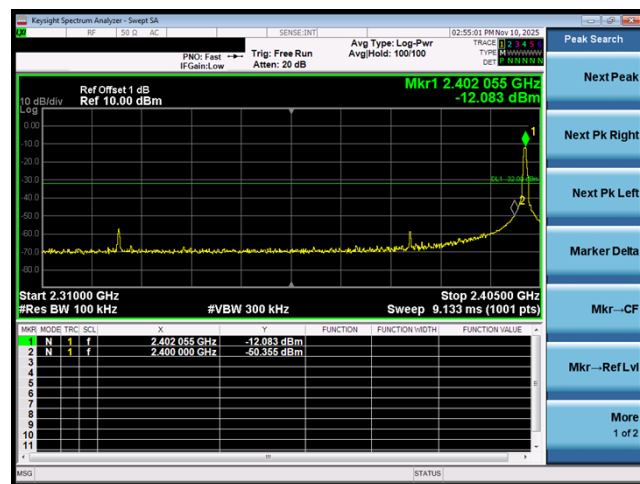
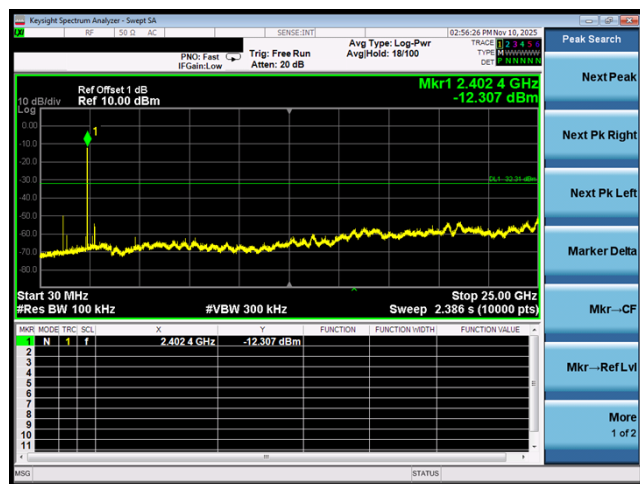
3.3.4 The Result

PASS

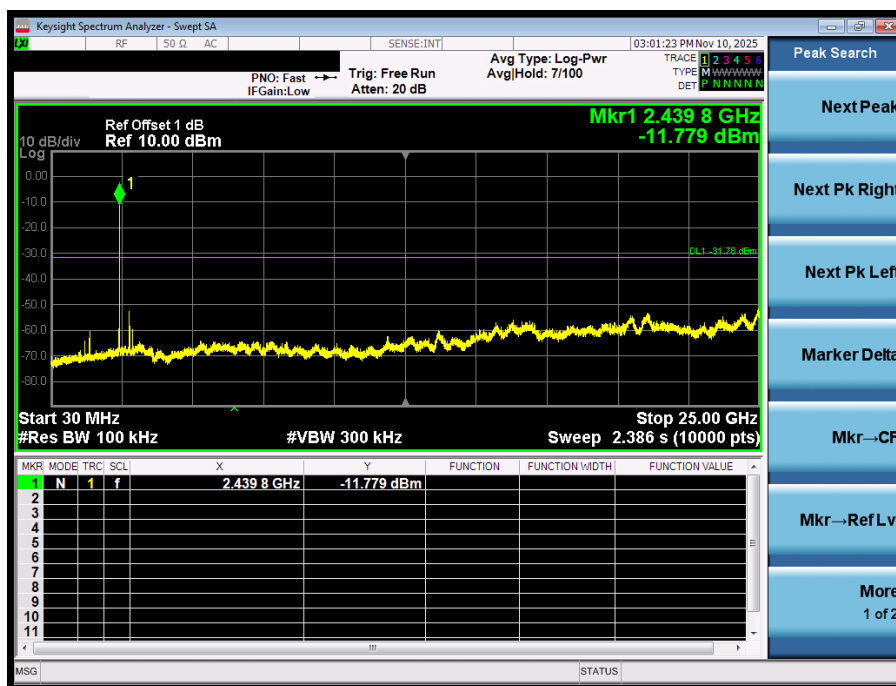
Modulation TYPE

GFSK

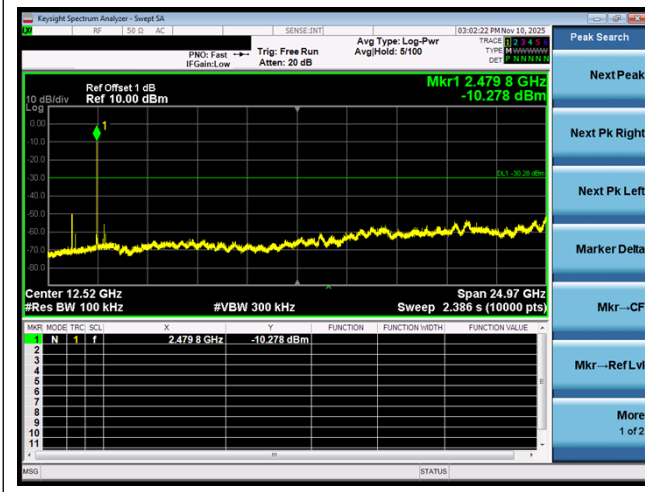
L-2402MHz



M-2440MHz



H-2480MHz



3.4 6dB Bandwidth

3.4.1 Limit

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

3.4.2 Test Procedure

Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

a) The EUT was connected to the RF test system, and the spectrum analyser is set as follow:

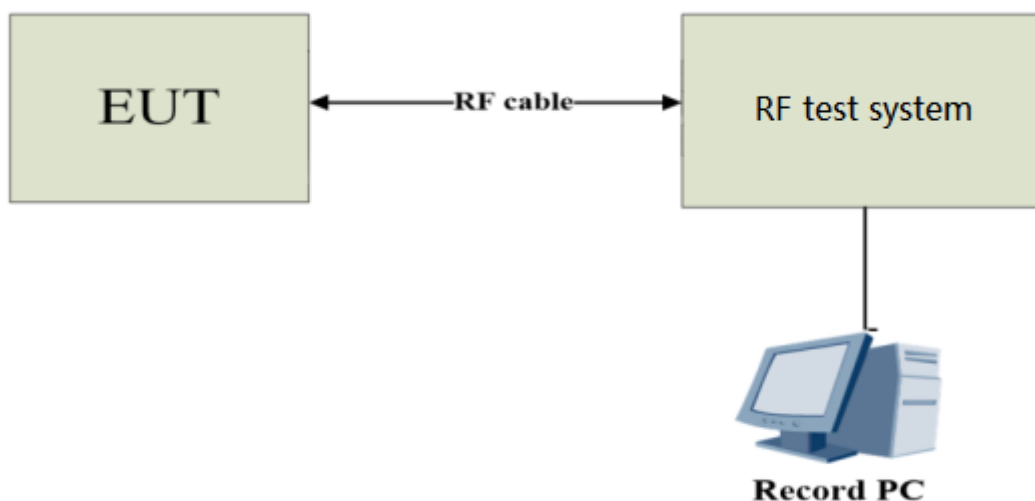
Centre Frequency	The centre frequency of the channel under test
RBW	100kHz for 6dB Bandwidth 1%~5% OBW for 99%BW
VBW	300kHz 3RBW for 99%BW
Frequency span	2x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto Couple

b) Wait for the trace to stabilize then find the peak value of the trace and place the analyser marker on this peak.

c) Use the -6dB bandwidth function of the spectrum analyser to measure the 6dB Bandwidth of the EUT. This value shall be recorded.

d) Make sure that the power envelope is sufficiently above the noise floor of the analyser to avoid the noise signals left and right from the power envelope being taken into account by this measurement.

3.4.3 Test Setup



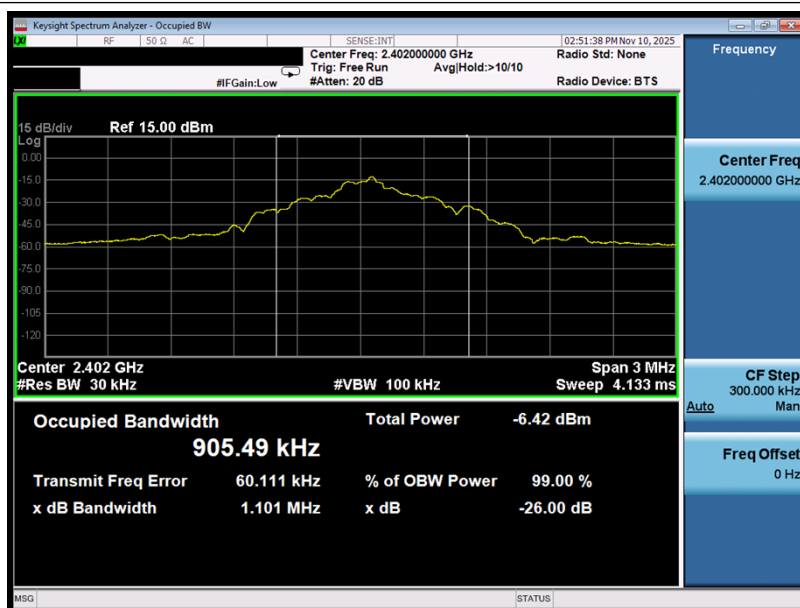
3.4.4 Test Result

Modulation TYP	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
			Result	Limit	
GFSK	2402	1	0.9055	/	Pass
	2440	1	0.9141	/	Pass
	2480	1	1.1937	/	Pass

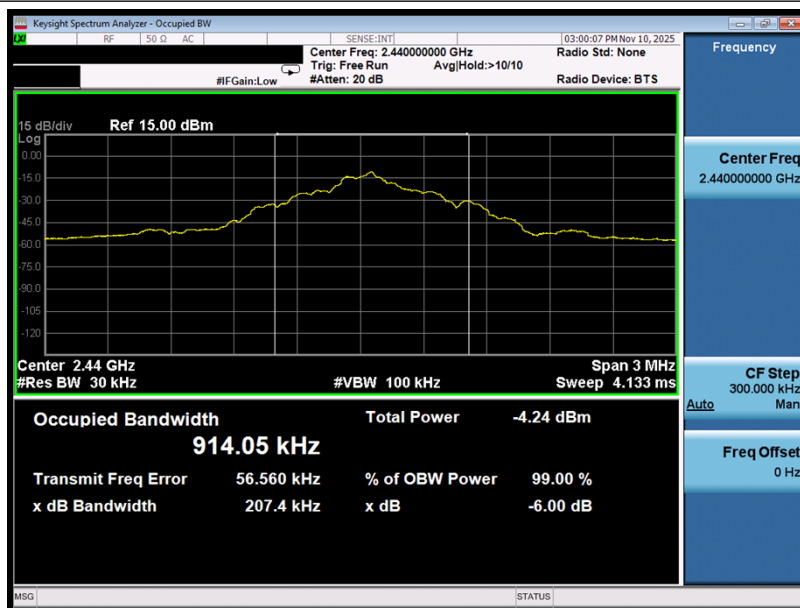
Modulation TYP	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
			Result	Limit	
GFSK	2402	1	0.5509	≥ 0.5	Pass
	2440	1	0.5844	≥ 0.5	Pass
	2480	1	0.5663	≥ 0.5	Pass

OBW

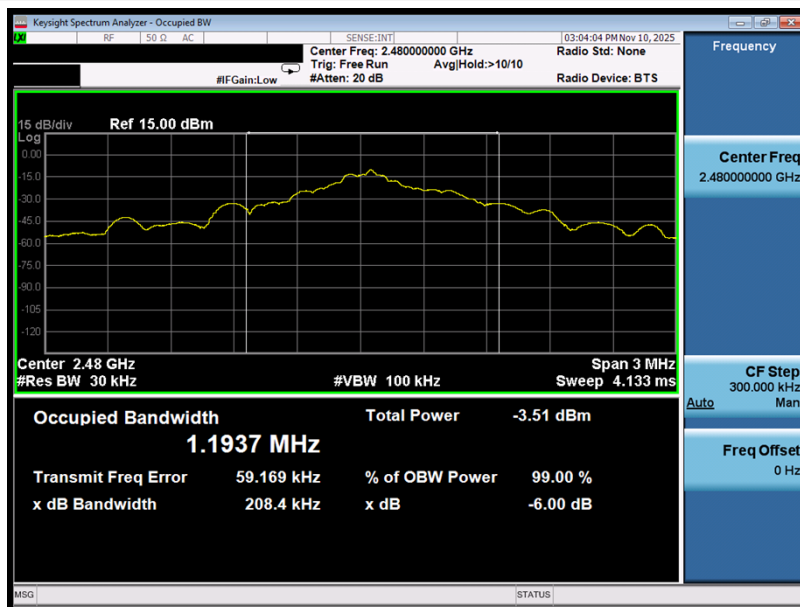
L-2402MHz



M-2440MHz



H-2480MHz

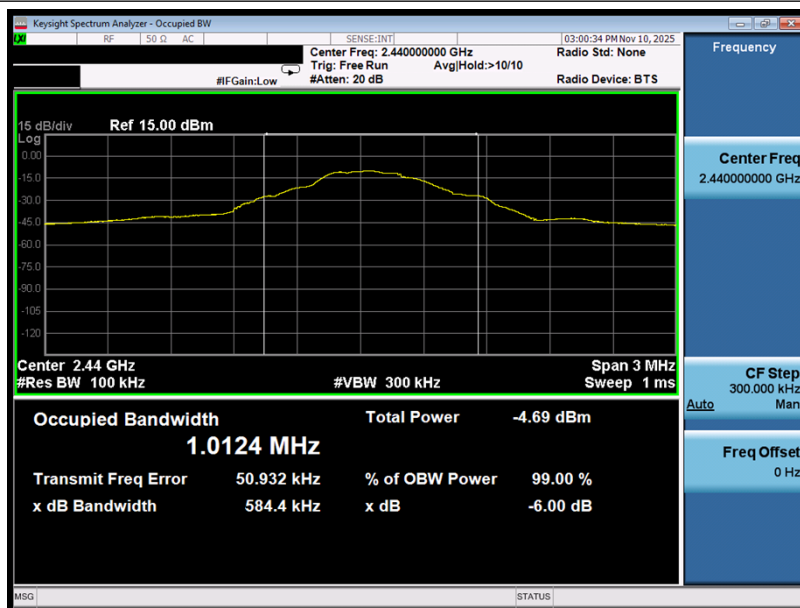


6dB BW

L-2402MHz



M-2440MHz



H-2480MHz



3.5 Maximum conducted output power

3.5.1 Limit

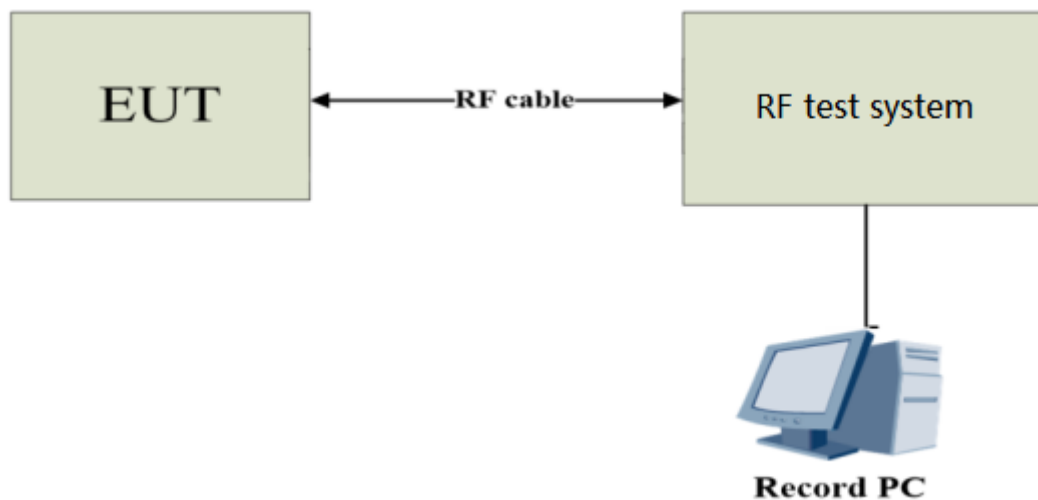
For systems using digital modulation in the 2400~2483.5MHz, The Maximum output Power shall not exceed 1W(30dBm)

3.5.2 Test Procedure

Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ● : Test ○ : No Test	

- The EUT was directly connected to the RF test system and antenna output port as show in the block diagram below.
- The maximum conducted output power was performed in accordance with method 11.9.2.3 (for average power) of ANSI C63.10-2020.

3.5.3 Test Setup



3.5.4 Table of Parameters of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

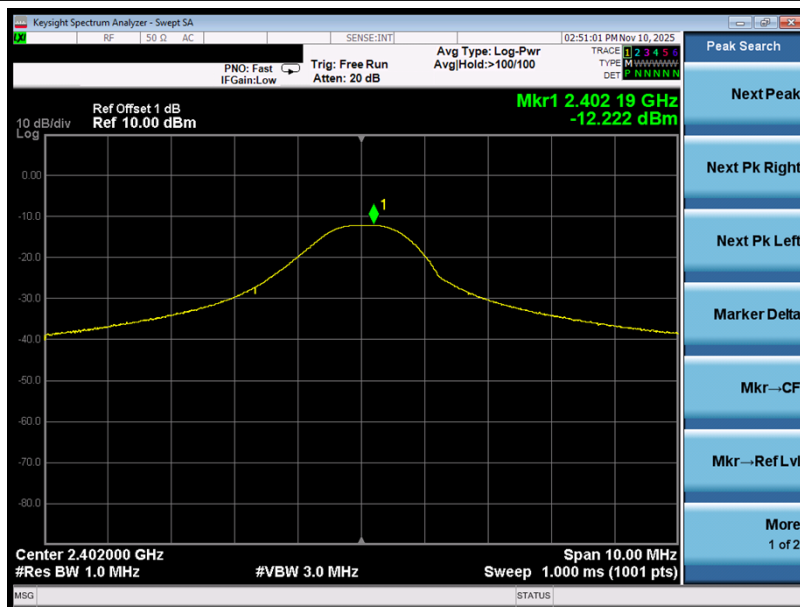
For Power setting value

Test Mode	Power Level Setting defined by Manufacturer		
Test Software Version	RRTL6.2.0		
Frequency (MHz)	2402	2440	2480
-	Default	Default	Default

3.5.5 The Result

Modulation TYPIC	Frequency (MHz)	ANT	Maximum Peak Conducted Output Power (dBm)		Verdict
			Result	Limit	
GFSK	2402	1	-12.222	<=30	Pass
	2440	1	-10.211	<=30	Pass
	2480	1	-9.763	<=30	Pass

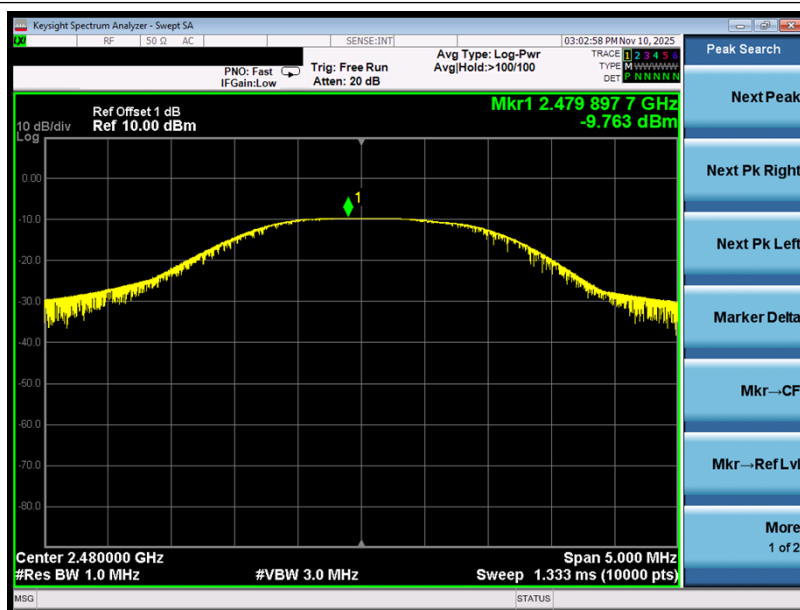
L-2402MHz



M-2440MHz



H-2480MHz



3.6 Power Spectral Density

3.6.1 Limit

For digitally modulated systems, the 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 transmitting.

3.6.2 Test Procedure

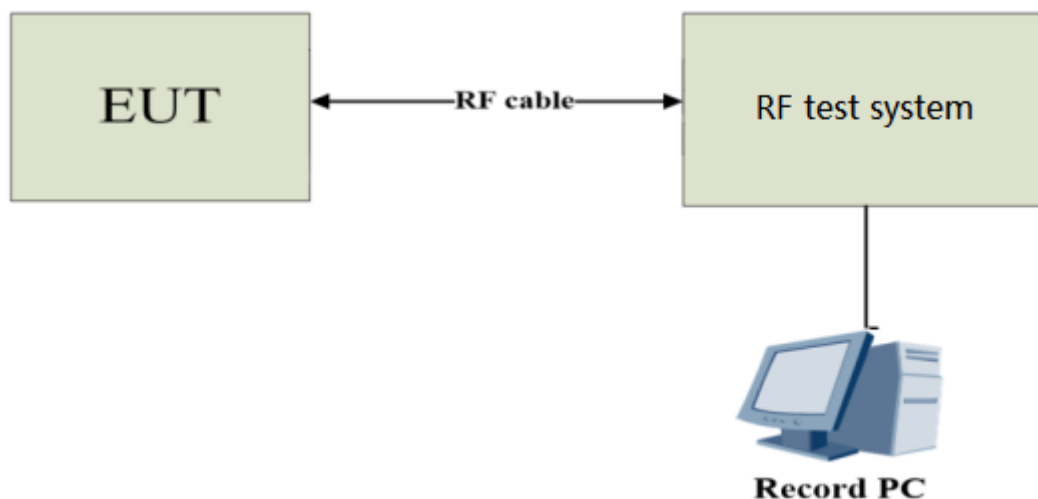
Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

a) The EUT was directly connected to the RF test system and antenna output port as show in the block diagram below.

b) Spectrum analyser settings as following:

Spectrum Parameters	Setting
Span Frequency	1.5 times the DTS bandwidth
RBW	3 kHz
VBW	10 kHz
Detector	Average
Trace	Max Hold
Sweep Time	Auto

3.6.3 Test Setup



3.6.4 The Result

Modulation TYPC	Frequency (MHz)	ANT	Maximum PSD (dBm/3kHz)		Verdict
			Result	Limit	
GFSK	2402	1	-20.732	<=8	Pass
	2440	1	-20.031	<=8	Pass
	2480	1	19.707	<=8	Pass

L-2402MHz



M-2440MHz



H-2480MHz



Statement

1. The report is invalid without the official seal or special seal of Shenzhen Haiyun Standard Technical Co., Ltd. (hereinafter referred to as the unit).
2. The report is invalid without the signature of the approver.
3. The report is invalid if altered arbitrarily.
4. The report shall not be partially copied without the written approval of the unit.
5. The reported test results are only valid for the tested samples.
6. If there is any objection to the test report, it shall be submitted to the test unit within 15 days from the date of receiving the report, and the overdue shall not be accepted.

Shenzhen Haiyun Standard Technical Co., Ltd.

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Tel: 0755-26024411

Email: service@hy-lab.cn

End of Test Report