



FCC TEST REPORT

FCC ID:2BLIO-MTSKR1905WF

Report Number.....: **ZKT-24090511151E**

Date of Test..... Sep. 05, 2024 to Sep. 11, 2024

Date of issue.....: Sep. 11, 2024

Total number of pages..... 32

Test Result: PASS

Testing Laboratory.....: Shenzhen ZKT Technology Co., Ltd.

Address: 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name: MayRC Industrial Co., Ltd.

Address: 5th Floor, NO. 310, JINGAO ROAD, PUDONG NEW DISTRICT, SHANGHAI

Manufacturer's name: MayRC Industrial Co., Ltd.

Address: 5th Floor, NO. 310, JINGAO ROAD, PUDONG NEW DISTRICT, SHANGHAI

Test specification:

Standard.....: FCC CFR Title 47 Part 15 Subpart C Section 15.249
ANSI C63.10:2013

Test procedure.....: /

Non-standard test method: N/A

Test Report Form No.....: /

Test Report Form(s) Originator.....: ZKT Testing

Master TRF: Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Product name.....: WATERPROOF REMOTE CONTROLLER

Trademark: N/A

Model/Type reference.....: MTSKR1905WF

Ratings.....: Battery: 3.7V, 420mAh,1.55Wh



Testing procedure and testing location:

Testing Laboratory.....: **Shenzhen ZKT Technology Co., Ltd.**

Address.....: 1/F, No. 101, Building B, No. 6, Tangwei Community
Industrial Avenue, Fuhai Street, Bao'an District,
Shenzhen, China

Tested by (name + signature).....: Jim Liu

Reviewer (name + signature).....: Jackson Fang

Approved (name + signature).....: Lake Xie





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1. VERSION

Report No.	Version	Description	Approved
ZKT-24090511151E	Rev.01	Initial issue of report	Sep. 11, 2024



2. TEST SUMMARY

Test procedures according to the technical standards:

FCC Part15 (15.249) , Subpart C			
Standard Section	Test Item	Result	Remark
15.203	Antenna Requirement	PASS	
15.207	AC Power Line Conducted Emission	N/A	
15.215 (c)	20dB Occupied Bandwidth	PASS	
15.209/15.249	Radiated Emission and Fundamental	PASS	
15.205/15.209	Restricted Band	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report



2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.

Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225

Designation Number: CN1299

IC Registered No.: 27033

CAB identifier: CN0110

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(9KHz-30MHz)	U=4.5dB
2	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.8dB
3	3m chamber Radiated spurious emission(1GHz-6GHz)	U=4.9dB
4	3m chamber Radiated spurious emission(6GHz-40GHz)	U=5.0dB
5	Conducted disturbance	U=3.2dB
6	RF Band Edge	U=1.68dB
7	RF Occupied Bandwidth	U=1.8MHz
8	humidity uncertainty	U=5.3%
9	Temperature uncertainty	U=0.59℃



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	WATERPROOF REMOTE CONTROLLER
Model No.:	MTSKR1905WF
Model Different.:	N/A
Serial No.:	N/A
Sample(s) Status:	Engineer sample
Channel numbers:	82
Operation Frequency:	2401MHz~2482MHz
Modulation technology:	GFSK
Antenna Type:	Catheter antenna
Antenna gain:	3.73dBi
Power supply:	Battery: 3.7V, 420mAh,1.55Wh
AC/DC Adapter:	N/A
AC/DC Adapter Mode:	N/A

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2401	18	2419	36	2437	54	2455	72	2473
1	2402	19	2420	37	2438	55	2456	73	2474
2	2403	20	2421	38	2439	56	2457	74	2475
3	2404	21	2422	39	2440	57	2458	75	2476
4	2405	22	2423	40	2441	58	2459	76	2477
5	2406	23	2424	41	2442	59	2460	77	2478
6	2407	24	2425	42	2443	60	2461	78	2479
7	2408	25	2426	43	2444	61	2462	79	2480
8	2409	26	2427	44	2445	62	2463	80	2481
9	2410	27	2428	45	2446	63	2464	81	2482
10	2411	28	2429	46	2447	64	2465		
11	2412	29	2430	47	2448	65	2466		
12	2413	30	2431	48	2449	66	2467		
13	2414	31	2432	49	2450	67	2468		
14	2415	32	2433	50	2451	68	2469		
15	2416	33	2434	51	2452	69	2470		
16	2417	34	2435	52	2453	70	2471		
17	2418	35	2436	53	2454	71	2472		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency
The lowest channel	2401MHz
The middle channel	2442MHz
The Highest channel	2482MHz

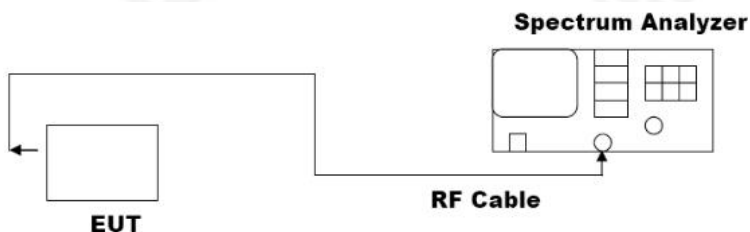


3.2 Test Setup Configuration

Operation of EUT during Conducted and Radiation testing:



Operation of EUT during RF Conducted testing:



3.3 Support Equipment

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	WATERPROOF REMOTE CONTROLLER	N/A	MTSKR1905WF	See page 8	EUT
E-2	Storage Battery	Narada	ZKT-00	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	1.0M	Car Charger

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



3.4 Test Mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	
Test Software	Secure CRT Portable
Power level setup	<0dBm



3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Conducted emissions Test

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	N/A	Nov. 14, 2023	Nov. 13, 2024
2	LISN	CYBERTEK	EM5040A	E1850400149	N/A	Nov. 02, 2023	Nov. 01, 2024
3	Test Cable	N/A	C-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
4	Test Cable	N/A	C-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
5	Test Cable	N/A	C-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
6	EMI Test Receiver	R&S	ESCI3	101393	4.42 SP3	Nov. 02, 2023	Nov. 01, 2024
7	Triple-Loop Antenna	N/A	RF300	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
8	Absorbing Clamp	DZ	ZN23201	15034	N/A	Nov. 07, 2023	Nov. 06, 2024
9	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	N/A	\	\



Radiation emissions & Radio Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY55370835	A.17.05	Nov. 02, 2023	Nov. 01, 2024
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Nov. 02, 2023	Nov. 01, 2024
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	100969	4.32	Nov. 02, 2023	Nov. 01, 2024
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	N/A	N/A	Nov. 13, 2023	Nov. 12, 2024
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Nov. 13, 2023	Nov. 12, 2024
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Nov. 13, 2023	Nov. 12, 2024
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Nov. 16, 2023	Nov. 15, 2024
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	60747	N/A	Nov. 02, 2023	Nov. 01, 2024
9	Amplifier (1GHz-26.5GHz)	HuiPu	8449B	3008A00315	N/A	Nov. 02, 2023	Nov. 01, 2024
10	Amplifier (500MHz-40GHz)	QuanJuDa	DLE-161	097	N/A	Nov. 02, 2023	Nov. 01, 2024
11	Test Cable	N/A	R-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
12	Test Cable	N/A	R-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
13	Test Cable	N/A	R-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
14	Test Cable	N/A	RF-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
15	Test Cable	N/A	RF-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
16	Test Cable	N/A	RF-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
17	ESG Signal Generator	Agilent	E4421B	N/A	B.03.84	Nov. 02, 2023	Nov. 01, 2024
18	Signal Generator	Agilent	N5182A	N/A	A.01.87	Nov. 02, 2023	Nov. 01, 2024
19	Magnetic Field Probe Tester	Narda	ELT-400	0-0344	N/A	Nov. 16, 2023	Nov. 15, 2024
20	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Nov. 02, 2023	Nov. 01, 2024
21	Power Meter	KEYSIGHT	N1912A P	N/A	A.05.00	Nov. 02, 2023	Nov. 01, 2024
22	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	\	\
23	EMC Software	Frad	EZ-EMC	Ver.EMC-CO N 3A1.1	N/A	\	\
24	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\
25	Turntable	MF	MF-7802BS	N/A	N/A	\	\
26	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\



4. EMC EMISSION TEST

4.1 Conducted emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

4.1.2 TEST PROCEDURE

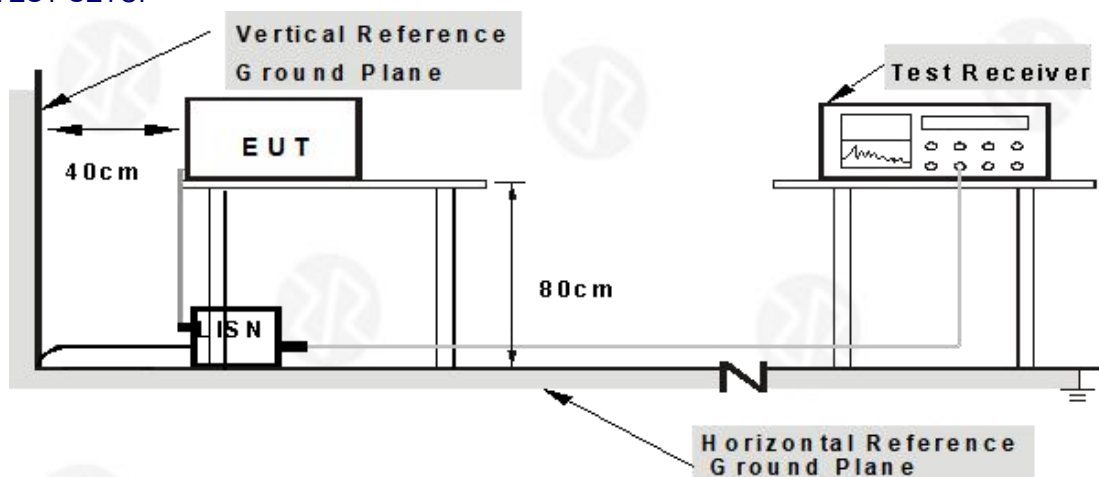
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation



4.1.4 TEST SETUP



- Note:**
- 1.Support units were connected to second LISN.
 - 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

4.1.6 Test Result

N/A

Only AC products need to test this item, DC products are not applicable.



4.2 Radiated emissions

Test Requirement:	FCC Part15 C Section 15.209/15.249				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	9kHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	MX5Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average

4.2.1 Radiated Emission Limits

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

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RADIATED EMISSION MEASUREMENT

Fundamental Frequency	Field Strength of Fundamental @3m (millivolts/meter)	Average Limit @3m (dBuV/m)	Peak Limit @3m (dBuV/m)
900-928MHz	50	94	114
2400-2483.5MHz	50	94	114
5725-5875MHz	50	94	114
24.0-24.25GHz	250	108	128

Note :

1. Average Limit (dBuV/m)=20×log[1000×Field Strength (mV/m)].
2. Peak Limit (dBuV/m)= Average Limit (dBuV/m)+20dB



4.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

- Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).
- Test the EUT in the lowest channel ,the middle channel ,the Highest channel

Note:

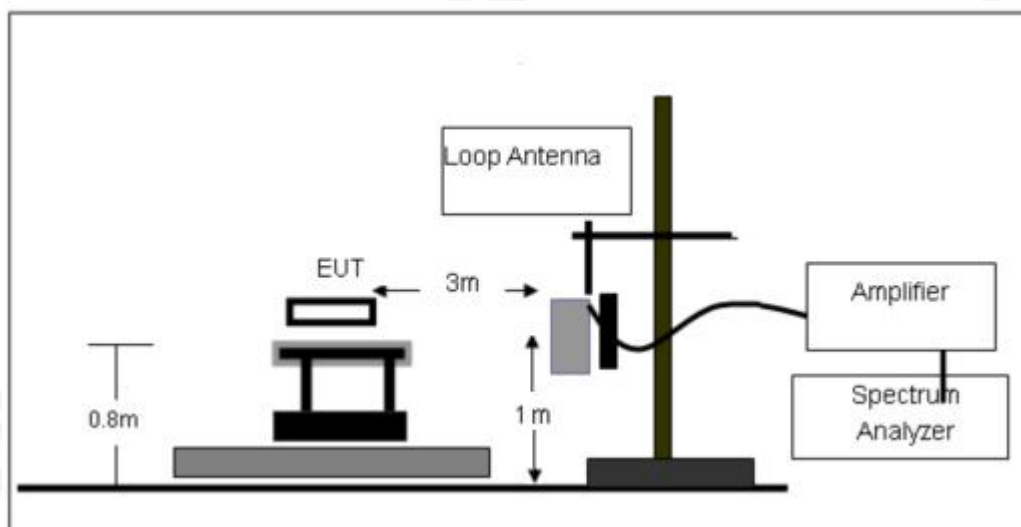
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

4.2.3 DEVIATION FROM TEST STANDARD

No deviation

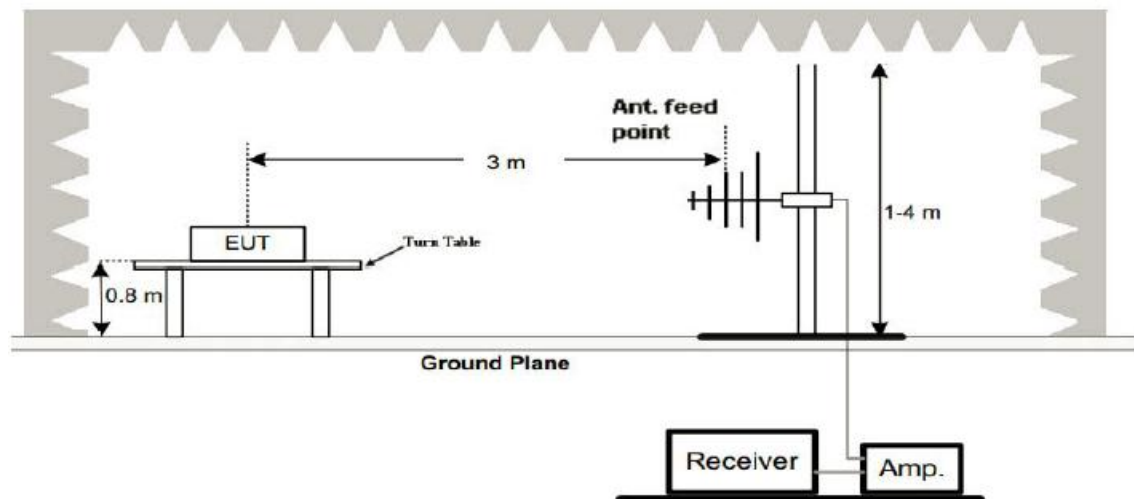
4.2.4 TEST SETUP

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

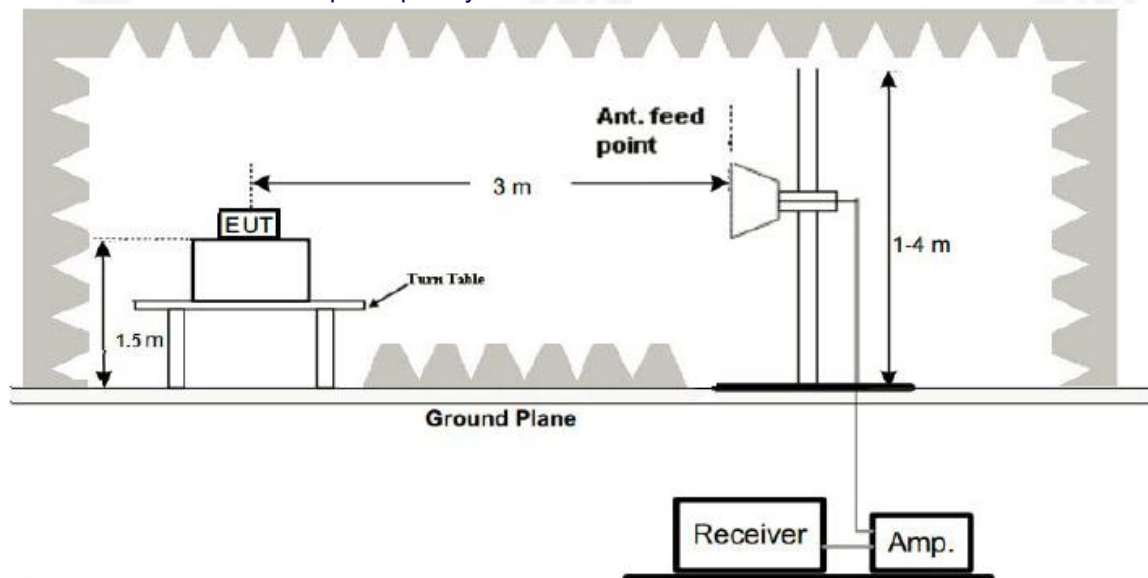




(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



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



4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.6 TEST RESULTS

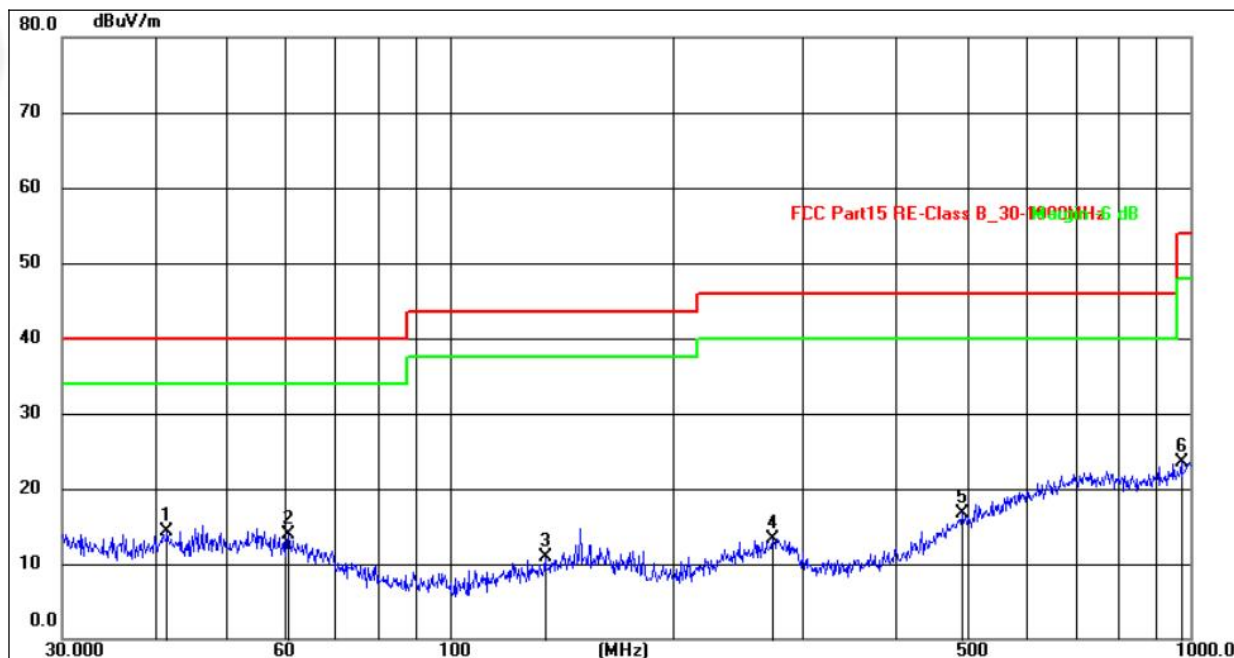
Between 9KHz – 30MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.



Between 30MHz – 1GHz

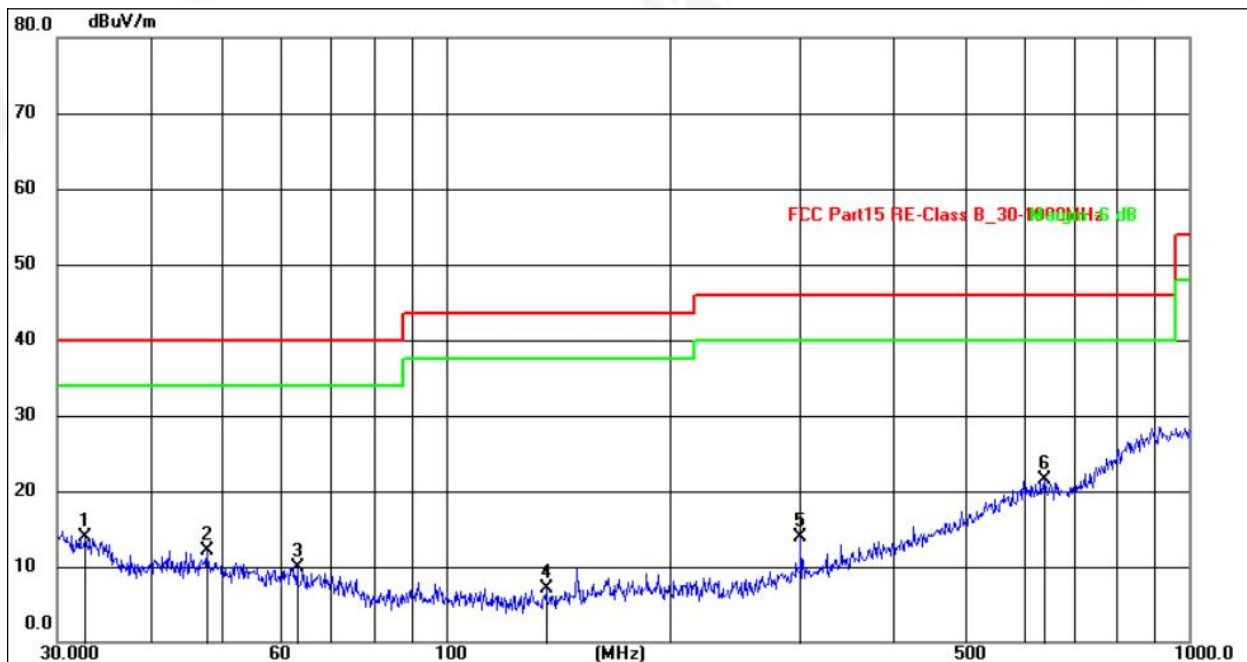
Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 3.7V	Test Channel :	2401MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	41.5670	28.42	-14.13	14.29	40.00	-25.71	QP
2	60.7043	28.26	-14.42	13.84	40.00	-26.16	QP
3	134.5591	28.19	-17.38	10.81	43.50	-32.69	QP
4	273.2340	28.10	-14.75	13.35	46.00	-32.65	QP
5	492.4685	28.77	-11.99	16.78	46.00	-29.22	QP
6	972.3373	28.97	-5.46	23.51	54.00	-30.49	QP



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 3.7V	Test Channel :	2401MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	32.7486	31.91	-17.98	13.93	40.00	-26.07	QP
2	47.6586	29.26	-17.19	12.07	40.00	-27.93	QP
3	63.0916	28.55	-18.63	9.92	40.00	-30.08	QP
4	136.4598	28.21	-21.02	7.19	43.50	-36.31	QP
5	300.3672	32.28	-18.32	13.96	46.00	-32.04	QP
6	638.3686	29.29	-7.72	21.57	46.00	-24.43	QP

Remarks:

- 1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2.The emission levels of other frequencies are very lower than the limit and not show in test report.
- 3.The test data shows only the worst case 2401MHz.



1GHz~25GHz

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:2401MHz									
V	2401.00	82.64	30.64	5.26	24.22	81.48	114.00	-32.52	PK
V	2401.00	82.11	30.64	5.26	24.22	80.95	94.00	-13.05	AV
V	4802.00	53.56	30.55	5.77	24.66	53.44	74.00	-20.56	PK
V	4802.00	43.13	30.55	5.77	24.66	43.01	54.00	-10.99	AV
V	7203.00	54.84	30.33	6.32	24.55	55.38	74.00	-18.62	PK
V	7203.00	43.62	30.33	6.32	24.55	44.16	54.00	-9.84	AV
V	9604.00	51.54	30.85	7.45	24.69	52.83	74.00	-21.17	PK
V	9604.00	43.06	30.85	7.45	24.69	44.35	54.00	-9.65	AV
V	12005.00	53.56	31.02	8.99	25.57	57.10	74.00	-16.90	PK
V	12005.00	43.00	31.02	8.99	25.57	46.54	54.00	-7.46	AV
H	2401.00	82.32	30.64	5.26	24.22	81.16	114.00	-32.84	PK
H	2401.00	81.94	30.64	5.26	24.22	80.78	94.00	-13.22	AV
H	4802.00	50.58	30.55	5.77	24.66	50.46	74.00	-23.54	PK
H	4802.00	43.19	30.55	5.77	24.66	43.07	54.00	-10.93	AV
H	7203.00	51.24	30.33	6.32	24.55	51.78	74.00	-22.22	PK
H	7203.00	43.63	30.33	6.32	24.55	44.17	54.00	-9.83	AV
H	9604.00	50.73	30.85	7.45	24.69	52.02	74.00	-21.98	PK
H	9604.00	43.32	30.85	7.45	24.69	44.61	54.00	-9.39	AV
H	12005.00	52.58	31.02	8.99	25.57	56.12	74.00	-17.88	PK
H	12005.00	43.50	31.02	8.99	25.57	47.04	54.00	-6.96	AV



Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:2442MHz									
V	2442.00	82.57	30.64	5.26	24.22	81.41	114.00	-32.59	PK
V	2442.00	82.13	30.64	5.26	24.22	80.97	94.00	-13.03	AV
V	4884.00	50.99	30.55	5.77	24.66	50.87	74.00	-23.13	PK
V	4884.00	43.45	30.55	5.77	24.66	43.33	54.00	-10.67	AV
V	7326.00	52.03	30.33	6.32	24.55	52.57	74.00	-21.43	PK
V	7326.00	43.02	30.33	6.32	24.55	43.56	54.00	-10.44	AV
V	9768.00	53.73	30.85	7.45	24.69	55.02	74.00	-18.98	PK
V	9768.00	43.24	30.85	7.45	24.69	44.53	54.00	-9.47	AV
V	12210.00	54.77	31.02	8.99	25.57	58.31	74.00	-15.69	PK
V	12210.00	43.71	31.02	8.99	25.57	47.25	54.00	-6.75	AV
H	2442.00	82.44	30.64	5.26	24.22	81.28	114.00	-32.72	PK
H	2442.00	81.96	30.64	5.26	24.22	80.80	94.00	-13.20	AV
H	4884.00	54.60	30.55	5.77	24.66	54.48	74.00	-19.52	PK
H	4884.00	43.06	30.55	5.77	24.66	42.94	54.00	-11.06	AV
H	7326.00	53.39	30.33	6.32	24.55	53.93	74.00	-20.07	PK
H	7326.00	43.37	30.33	6.32	24.55	43.91	54.00	-10.09	AV
H	9768.00	54.64	30.85	7.45	24.69	55.93	74.00	-18.07	PK
H	9768.00	43.79	30.85	7.45	24.69	45.08	54.00	-8.92	AV
H	12210.00	54.03	31.02	8.99	25.57	57.57	74.00	-16.43	PK
H	12210.00	43.29	31.02	8.99	25.57	46.83	54.00	-7.17	AV



Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-ampli fier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2482MHz									
V	2482.00	82.49	30.64	5.26	24.22	81.33	114.00	-32.67	PK
V	2482.00	82.21	30.64	5.26	24.22	81.05	94.00	-12.95	AV
V	4964.00	52.20	30.55	5.77	24.66	52.08	74.00	-21.92	PK
V	4964.00	43.57	30.55	5.77	24.66	43.45	54.00	-10.55	AV
V	7446.00	52.30	30.33	6.32	24.55	52.84	74.00	-21.16	PK
V	7446.00	43.80	30.33	6.32	24.55	44.34	54.00	-9.66	AV
V	9928.00	54.19	30.85	7.45	24.69	55.48	74.00	-18.52	PK
V	9928.00	43.01	30.85	7.45	24.69	44.30	54.00	-9.70	AV
V	12410.00	51.90	31.02	8.99	25.57	55.44	74.00	-18.56	PK
V	12410.00	43.07	31.02	8.99	25.57	46.61	54.00	-7.39	AV
H	2482.00	82.37	30.64	5.26	24.22	81.21	114.00	-32.79	PK
H	2482.00	81.92	30.64	5.26	24.22	80.76	94.00	-13.24	AV
H	4964.00	50.55	30.55	5.77	24.66	50.43	74.00	-23.57	PK
H	4964.00	43.15	30.55	5.77	24.66	43.03	54.00	-10.97	AV
H	7446.00	53.28	30.33	6.32	24.55	53.82	74.00	-20.18	PK
H	7446.00	43.55	30.33	6.32	24.55	44.09	54.00	-9.91	AV
H	9928.00	52.03	30.85	7.45	24.69	53.32	74.00	-20.68	PK
H	9928.00	43.15	30.85	7.45	24.69	44.44	54.00	-9.56	AV
H	12410.00	51.90	31.02	8.99	25.57	55.44	74.00	-18.56	PK
H	12410.00	43.05	31.02	8.99	25.57	46.59	54.00	-7.41	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



5. RADIATED BAND EMISSION MEASUREMENT

5.1 Test Requirement:

Test Requirement:	FCC Part15 C Section 15.205 and 15.209				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2390MHz to 2500MHz) data was showed.				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Average	1MHz	3MHz	Average

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	2390MHz
Stop Frequency	2500MHz
RB / VB (emission in restricted band)	1 MHz / 3 MHz for Peak, 1 MHz / 3MHz for Average

5.2 TEST PROCEDURE

Above 1GHz test procedure as below:

- a. 1. The EUT was placed on the top of a rotating table 0.8meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. 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 from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel,the Highest channel

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

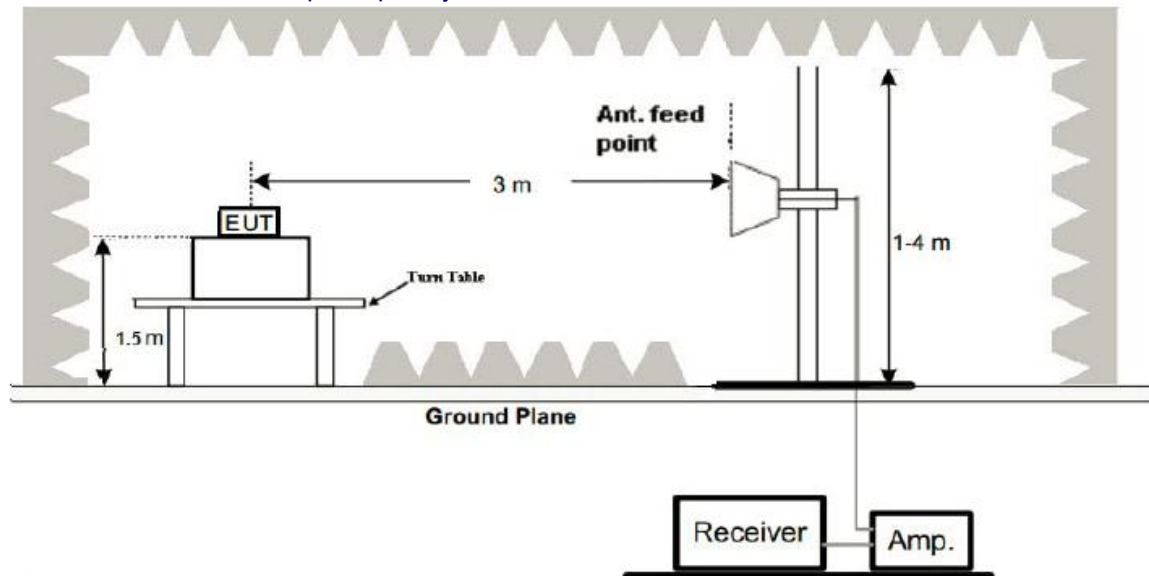


5.3 DEVIATION FROM TEST STANDARD

No deviation

5.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



5.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



5.6 TEST RESULT

Temperature	26°C	Relative Humidity:	54%
Pressure	101kPa	Test Voltage	DC 3.7V
Test Mode	2401MHz	Polarization	Horizontal

Peak Value



Average Value



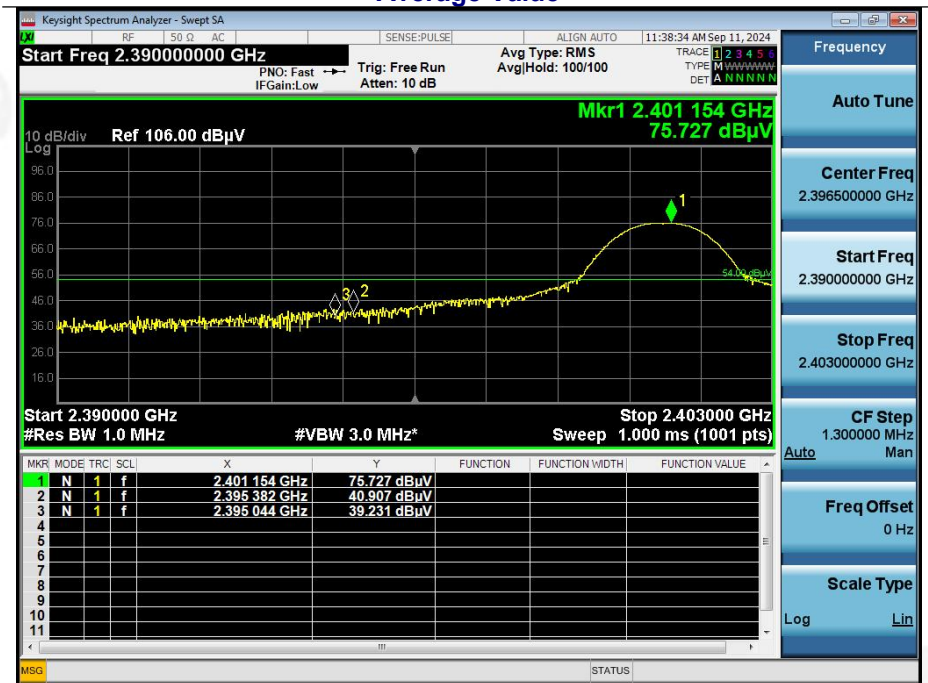


Temperature	26°C	Relative Humidity:	54%
Pressure	101kPa	Test Voltage	DC 3.7V
Test Mode	2401MHz	Polarization	Vertical

Peak Value



Average Value





Temperature	26°C	Relative Humidity:	54%
Pressure	101kPa	Test Voltage	DC 3.7V
Test Mode	2482MHz	Polarization	Horizontal

Peak Value



Average Value





Temperature	21.8°C	Relative Humidity	58%
Pressure	101kPa	Test Voltage	DC 3.7V
Test Mode	2482MHz	Polarization	Vertical

Peak Value



Average Value

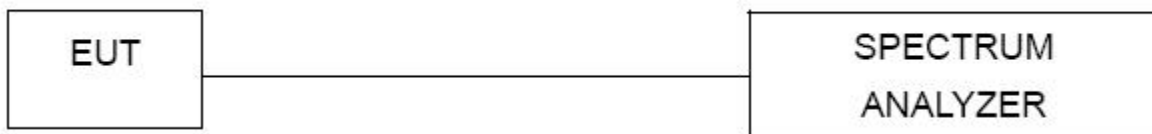




6. 20DB BANDWIDTH

Test Requirement:	FCC Part15 C Section 15.215
Test Method:	ANSI C63.10:2013

6.1 Test Setup



6.2 Limit

FCC Part15 (15.249) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.249(c)	Bandwidth	2400-2483.5	PASS

6.3 Test procedure

1. Set resolution bandwidth (RBW) = 1 ~ 5% or DTS BW, not to exceed 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. 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.

6.4 DEVIATION FROM STANDARD

No deviation.

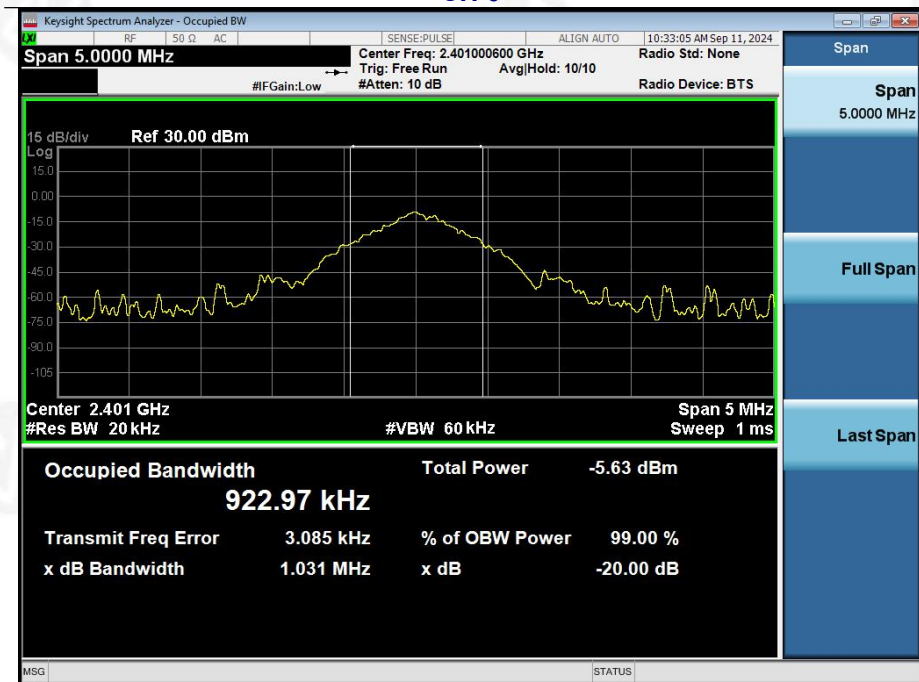
6.5 Test Result

Mode	Test channel	20dB Emission Bandwidth (MHz)	Result
GFSK	Lowest	1.031	Pass
	Middle	1.087	
	Highest	1.001	

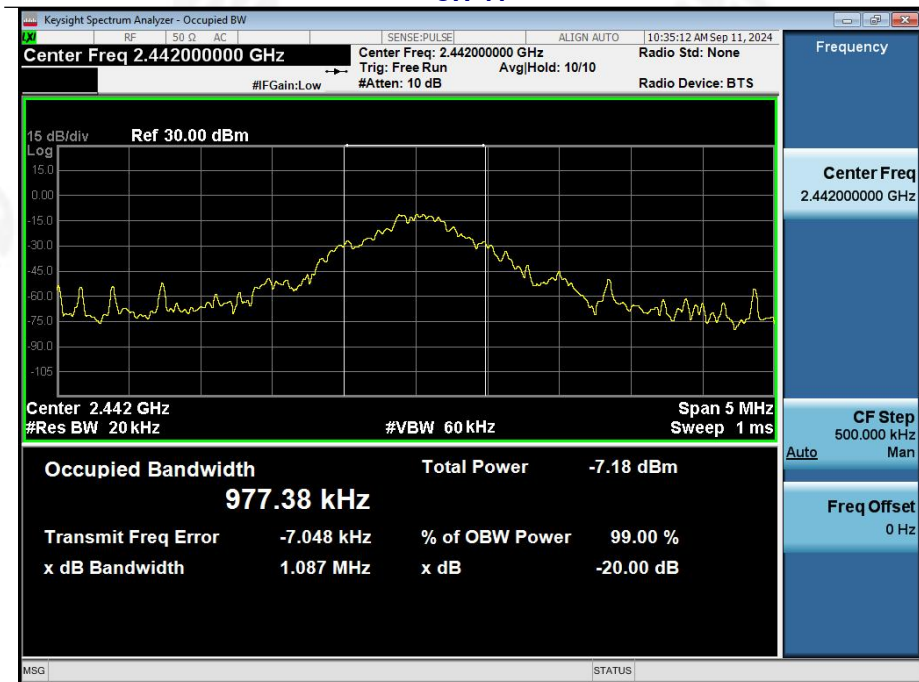


Test plots

CH 0

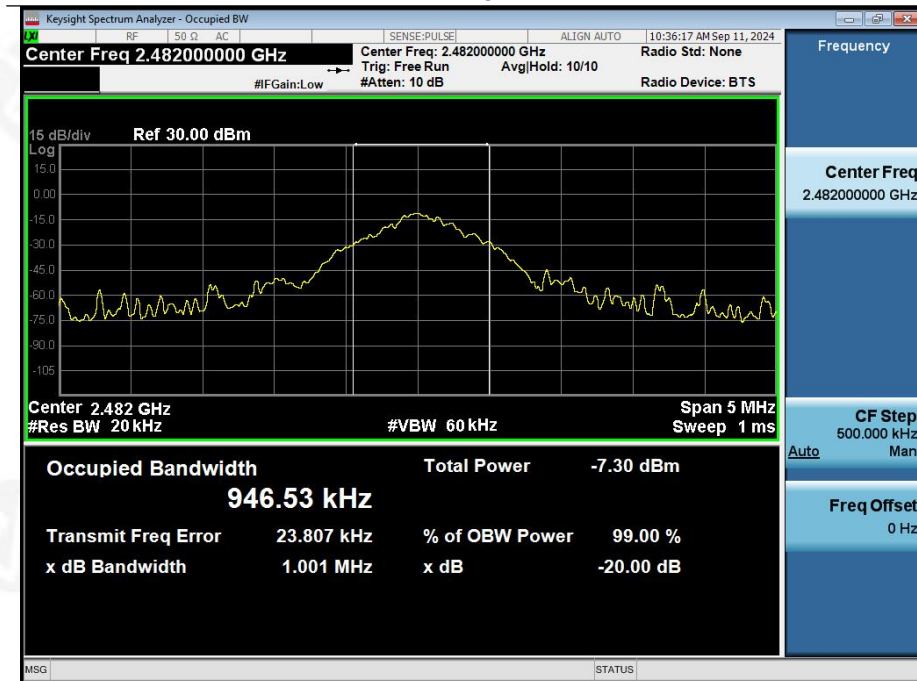


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7. Antenna Requirement

Standard requirement:	FCC Part15 C Section 15.203
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.	
EUT Antenna:	
The antenna is Catheter antenna, the best case gain of the antennas is 3.73dBi, reference to the appendix II for details	



8. Test Setup Photo

Reference to the appendix I for details.

9. EUT Constructional Details

Reference to the appendix II for details.

***** END OF REPORT *****