



FCC TEST REPORT

FCC ID: 2ANYC-CS8501

Product	:	Barcode Scanner
Model Name	:	CS7501
Brand	:	NETUM,NetumScan
Report No.	:	PTC25091716601E-FC01
Prepared for		
Guangzhou Netum Electronic Technology Co., Ltd.		
Building1,No.51 Xiangshan Avenue, Ningxi Street, ZengCheng District, Guangzhou, China		
Prepared by		
Precise Testing & Certification Co., Ltd.		
Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China		



1 TEST RESULT CERTIFICATION

Applicant's name : Guangzhou Netum Electronic Technology Co., Ltd.
Address : Building1, No.51 Xiangshan Avenue, Ningxi Street, ZengCheng District, Guangzhou, China
Manufacture's name : Guangzhou Netum Electronic Technology Co., Ltd.
Address : Building1, No.51 Xiangshan Avenue, Ningxi Street, ZengCheng District, Guangzhou, China
Product name : Barcode Scanner
Model name : CS7501
Standards : FCC Part15 Subpart C, Paragraph 15.249
Test procedure : ANSI C63.10-2020
Test Date : June 10, 2025 to September 16, 2025
Date of Issue : September 16, 2025
Test Result : Pass

This device described above has been tested by PTC, 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.

This report shall not be reproduced except in full, without the written approval of PTC, this document may be altered or revised by PTC, personal only, and shall be noted in the revision of the document.

Test Engineer:

A handwritten signature in black ink, appearing to read 'Jack Zhou'.

Jack Zhou / Engineer

Technical Manager:

A handwritten signature in black ink, appearing to read 'Simon Pu'.

Simon Pu / Manager



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2 Test Summary

Standard Section	Test Item	Result
15.203	Antenna Requirement	PASS
15.207	Conducted Emission	PASS
15.249	Radiated Emission	PASS
15.215(c)	20dB Bandwidth	PASS
15.249(d)	Band Edge	PASS
Remark: "N/A" is an abbreviation for Not Applicable.		

Remark:N/A

2.1 Test Site

Precise Testing & Certification Co., Ltd.

Address: Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

FCC Registration Number: 790290

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A

FCC Designation Number: CN1219



3 General Information

3.1 General Description of E.U.T.

Product Name	:	Barcode Scanner
Model name	:	CS7501
Serial model	:	CS1000, CS2000, CS3000, CS7401, CS7501, CS8301, CS8501, CS9000, CS9501, CS9701, CS9901
Differences Description	:	Only the model names are different.
Specification	:	2.4G
Operating frequency	:	2407-2478MHz
Modulation	:	GFSK
Number of Channel	:	60 channels
Antenna installation	:	FPC antenna
Antenna Gain	:	2 dBi
Power supply	:	Input: DC 5V Battery: Model:803040 Rated Voltage: 3.7V Rated Capacity:2000mAh
Hardware Version	:	N/A
Software Version	:	N/A



3.2 Channel List

The EUT has been tested under its typical operating condition. Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting. Only the worst case data were reported.

The EUT has been associated with peripherals pursuant to ANSI C63.10-2020 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The details of test channels and bandwidth were for RF conductive measurement.

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



4 Equipment During Test

4.1 Equipments List

RF Conducted Test

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
MXG Signal Analyzer	Agilent	N9020A	SER MY5111038	10Hz-26.5GHz	Aug. 15, 2024	1 Year
MXG Signal Analyzer	Agilent	N9020A	SER MY5111038	10Hz-26.5GHz	Aug. 14, 2025	1 Year
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Aug. 15, 2024	1 Year
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Aug. 14, 2025	1 Year
Power Meter	Anritsu	ML2495A	0949003	300MHz-40GHz	Aug. 15, 2024	1 Year
Power Meter	Anritsu	ML2495A	0949003	300MHz-40GHz	Aug. 14, 2025	1 Year
Power Sensor	Anritsu	MA2411B	0917017	300MHz-40GHz	Aug. 15, 2024	1 Year
Power Sensor	Anritsu	MA2411B	0917017	300MHz-40GHz	Aug. 14, 2025	1 Year
DC power Supply	Agilent	E3642A	MY52420017	0-8V,5A/0-20 ,2.5A	Aug. 15, 2024	1 Year
DC power Supply	Agilent	E3642A	MY52420017	0-8V,5A/0-20 ,2.5A	Aug. 14, 2025	1 Year
Humidity Chamber	AISRY	ASR-HW2-1000	20230926003	-40°C -150°C	Feb. 23 ,2025	1Year
Test S/W	Tonscend	JS1120-3	/	/	/	/

Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
EMI Test Receiver	Rohde&Schwarz	ESPI7	101671	9KHz-7GHz	Aug. 15, 2024	1 Year
EMI Test Receiver	Rohde&Schwarz	ESPI7	101671	9KHz-7GHz	Aug. 14, 2025	1 Year
Loop Antenna	Schwarzbeck	FMZB 1519	192	9 KHz -30MHz	Nov. 28, 2024	1 Year
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	25MHz-2GHz	Sep. 10, 2024	1 Year



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Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	9KHz-1GHz	Mar. 21, 2025	1 Year
Cable	IMRO	AK-9515E(9m)	Cable-L	9KHz-3GHz	Aug. 15, 2024	1 Year
Cable	IMRO	AK-9515E(9m)	Cable-L	9KHz-3GHz	Aug. 14, 2025	1 Year
Spectrum Analyzer	Rohde&Schwarz	FSV40	6625-01-588-5515	9KHz-40GHz	Aug. 15, 2024	1 Year
Spectrum Analyzer	Rohde&Schwarz	FSV40	6625-01-588-5515	9KHz-40GHz	Aug. 14, 2025	1 Year
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1246	1GHz-18GHz	Dec. 12, 2024	1 Year
Power Amplifier	ZHINAN	ZN3380C	15002	1GHz-26.5GHz	Aug. 15, 2024	1 Year
Power Amplifier	ZHINAN	ZN3380C	15002	1GHz-26.5GHz	Aug. 14, 2025	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	9170-1066	15GHz-40GHz	Jun. 24, 2024	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	9170-1066	15GHz-40GHz	Jun. 24, 2025	1 Year
Amplifier	SCHWARZBECK	BBV 9721	9721-205	18GHz-40GHz	Jun. 23, 2024	1 Year
Amplifier	SCHWARZBECK	BBV 9721	9721-205	18GHz-40GHz	Jun. 23, 2025	1 Year
Cable	H+S	CBL-26	N/A	1GHz-26.5GHz	Aug. 15, 2024	1 Year
Power Amplifier	ZHINAN	ZN3380C	15002	1GHz-26.5GHz	Aug. 14, 2025	1 Year
RF Cable	R&S	R204	R21X	1GHz-40GHz	Aug. 15, 2024	1 Year
RF Cable	R&S	R204	R21X	1GHz-40GHz	Aug. 14, 2025	1 Year
Test S/W	Tonscend	TS+	/	/	/	/

Conducted Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Date	Calibration Interval
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EMI Test Receiver	Rohde&Schwarz	ESCI3	101417	9KHz-3GHz	Aug. 15, 2024	1 Year
EMI Test Receiver	Rohde&Schwarz	ESCI3	101417	9KHz-3GHz	Aug. 14, 2025	1 Year
Artificial Mains Network	Rohde&Schwarz	ENV216	102453	9KHz-300MHz	Oct. 30, 2024	1 Year
Artificial Mains Network	Rohde&Schwarz	ENV216	101342	9KHz-300MHz	Oct. 30, 2024	1 Year
Limiter	R&S	ESH3-Z2	0357.8810.54-102808-NB	0Hz-30MHz	Aug. 15, 2024	1 Year
Limiter	R&S	ESH3-Z2	0357.8810.54-102808-NB	0Hz-30MHz	Aug. 14, 2025	1 Year
RF Switch	DIAMOND ANTENNA	CX-210	/	0.09MHz-6GHz	Mar. 21,2025	1 Year
Test S/W	Tonscend	JS32-CE	/	/	/	/



4.2 Measurement Uncertainty

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

Parameter	Uncertainty
RF output power, conducted	$\pm 1.0\text{dB}$
Power Spectral Density, conducted	$\pm 2.2\text{dB}$
Radio Frequency	$\pm 1 \times 10^{-6}$
Bandwidth	$\pm 1.5 \times 10^{-6}$
Time	$\pm 2\%$
Duty Cycle	$\pm 2\%$
Temperature	$\pm 1^\circ\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 3\%$
Conducted Emissions (150kHz~30MHz)	$\pm 3.64\text{dB}$
Radiated Emission(30MHz~1GHz)	$\pm 5.03\text{dB}$
Radiated Emission(1GHz~25GHz)	$\pm 4.74\text{dB}$
Radiated Emission(9KHz~30MHz)	$\pm 3.15\text{dB}$

4.3 Description of Support Units

Equipment	Model No.	Series No.
Adapter	Model: PS65B050Y3000S	N/A

5 Conducted Emission

Test Requirement	: FCC CFR 47 Part 15 Section 15.207
Test Method	: ANSI C63.10-2020
Test Result	: PASS
Frequency Range	: 150kHz to 30MHz
Class/Severity	: Class B

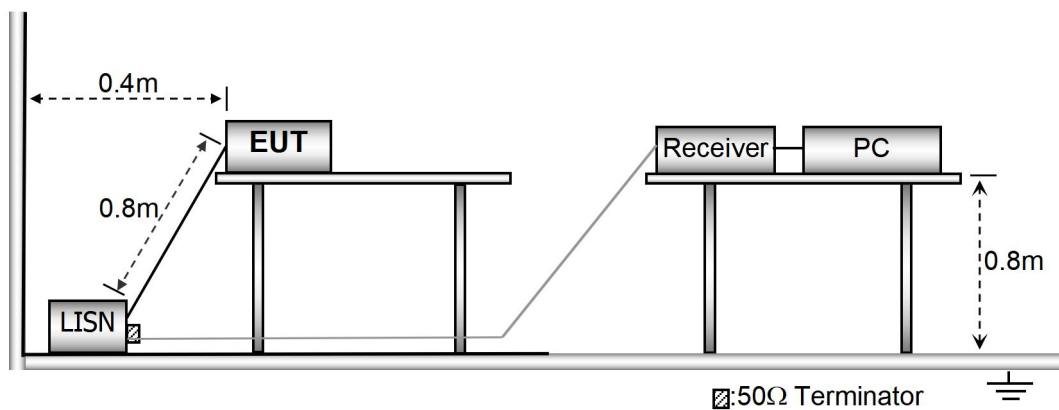
5.1 E.U.T. Operation

Operating Environment :

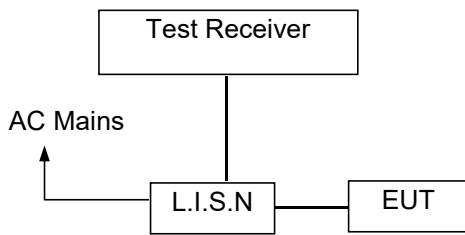
Temperature	: 25.5 °C
Humidity	: 51 % RH
Atmospheric Pressure	: 101.2kPa

5.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10-2020.



5.3 Test SET-UP (Block Diagram of Configuration)



5.4 Measurement Procedure

1. Place the EUT on a non-conductive tabletop at a height of 80 cm. A vertical conductive shielding wall is located 40 cm behind the EUT.
2. The excess length of the power cord between the EUT and the LISN receptacle (or ac power receptacle where a LISN cannot be used), or an adapter or extension cord connected to and measured with the LISN shall be folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
3. EUT shall be placed at a distance of 80 cm from the LISN (or power receptacle where a LISN cannot be used) and connected thereto by a power lead or appropriate connection no more than 1 m long.
4. The equipment shall be arranged and installed in compliance with the standards, and operated in a manner that maximizes its emission characteristics in normal applications, with the six highest points on the waveform recorded.

5.5 Conducted Emission Limit

Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:

1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

**5.6 Measurement Receiver Parameters:**

Receiver Parameters	Setting
Start Frequency	150kHz
Stop Frequency	30MHz
IF Bandwidth	9 kHz

5.7 Conducted Emission Test Result

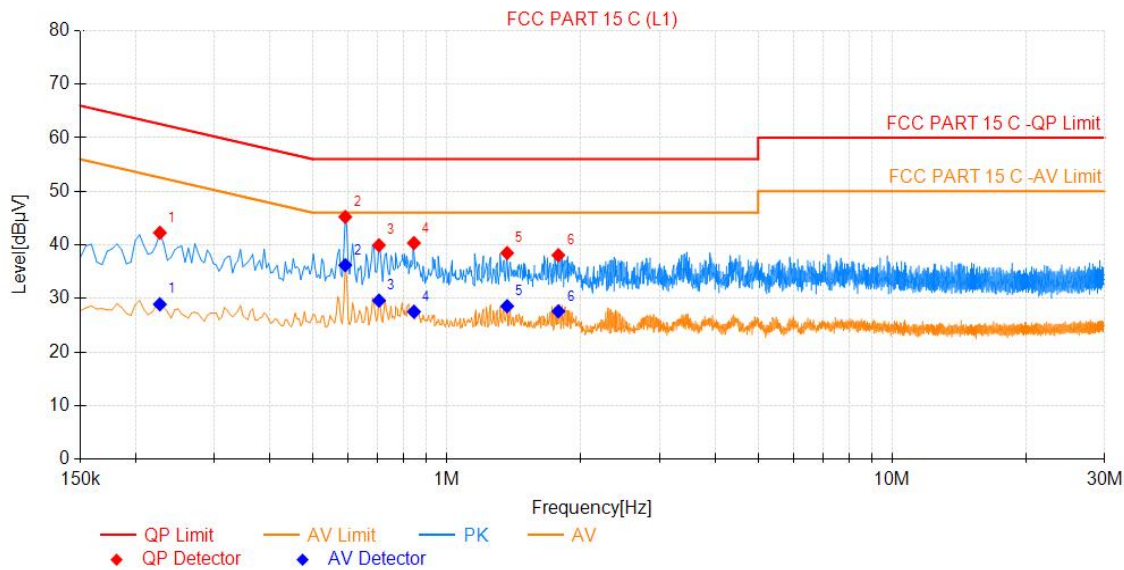
Pass.

All the modulation modes were tested the data of the worst mode (AC 120V/60Hz, GFSK TX 2407MHz) are recorded in the following pages and the others modulation methods do not exceed the limits.



Line-AC 120V/60Hz

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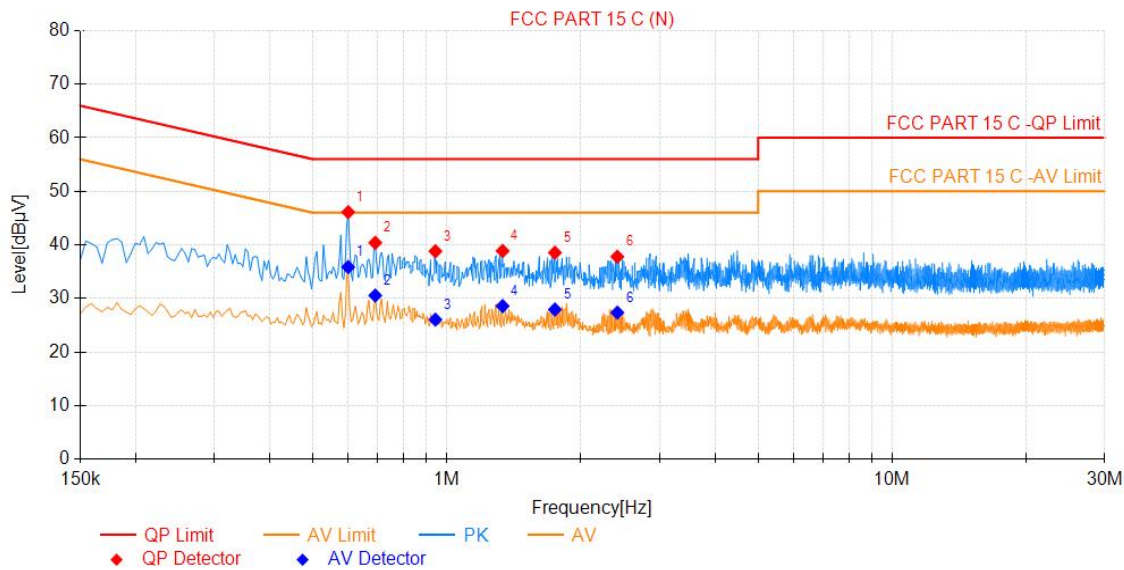
Final Data List

NO.	Freq. [MHz]	QP Reading	Factor [dB]	QP Value	QP Limit	QP Margin	AV Reading	AV Value	AV Limit	AV Margin	Verdict
1	0.227	22.78	19.48	42.26	62.58	20.32	9.42	28.90	52.58	23.68	PASS
2	0.591	25.51	19.71	45.22	56.00	10.78	16.50	36.21	46.00	9.79	PASS
3	0.704	20.29	19.64	39.93	56.00	16.07	9.96	29.60	46.00	16.40	PASS
4	0.843	20.77	19.57	40.34	56.00	15.66	7.95	27.52	46.00	18.48	PASS
5	1.365	18.87	19.61	38.48	56.00	17.52	8.93	28.54	46.00	17.46	PASS
6	1.779	18.61	19.47	38.08	56.00	17.92	8.12	27.59	46.00	18.41	PASS



Neutral-AC 120V/60Hz

Report No.: PTC25091716601E-FC01



Final Data List

NO.	Freq. [MHz]	QP Reading	Factor [dB]	QP Value	QP Limit	QP Margin	AV Reading	AV Value	AV Limit	AV Margin	Verdict
1	0.600	26.34	19.78	46.12	56.00	9.88	16.08	35.86	46.00	10.14	PASS
2	0.690	20.71	19.69	40.40	56.00	15.60	10.85	30.54	46.00	15.46	PASS
3	0.942	19.27	19.54	38.81	56.00	17.19	6.51	26.05	46.00	19.95	PASS
4	1.334	19.23	19.64	38.87	56.00	17.13	8.93	28.57	46.00	17.43	PASS
5	1.748	19.08	19.47	38.55	56.00	17.45	8.46	27.93	46.00	18.07	PASS
6	2.414	18.36	19.43	37.79	56.00	18.21	7.92	27.35	46.00	18.65	PASS

6 Radiated Emission and Band Edge

6.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.209 and 15.205				
Test Limit	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz~1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz~30MHz	30	-	-	30
	30MHz~88MHz	100	40.0	Quasi-peak	3
	88MHz~216MHz	150	43.5	Quasi-peak	3
	216MHz~960MHz	200	46.0	Quasi-peak	3
	960MHz~1000MHz	500	54.0	Quasi-peak	3
	Above 1000MHz	500	54.0	Average	3
		-	74.0	Peak	3

Remark:

(1)The lower limit shall apply at the transition frequency.

(2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Test Standard	FCC Part15 C Section 15.249					
Test Limit	Frequency (MHz)	Field Strength of fundamental (millivolts /meter)	Field Strength of Harmonics (microvolts/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	2400~2483.5	50	-	114.0	Peak	3
	2400~2483.5	50	-	94.0	Average	3
	2400~2483.5	-	500	74.0	Peak	3
	2400~2483.5	-	500	54.0	Average	3

Remark:

(1) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

6.2 Test Setup

Figure 1. Below 30MHz

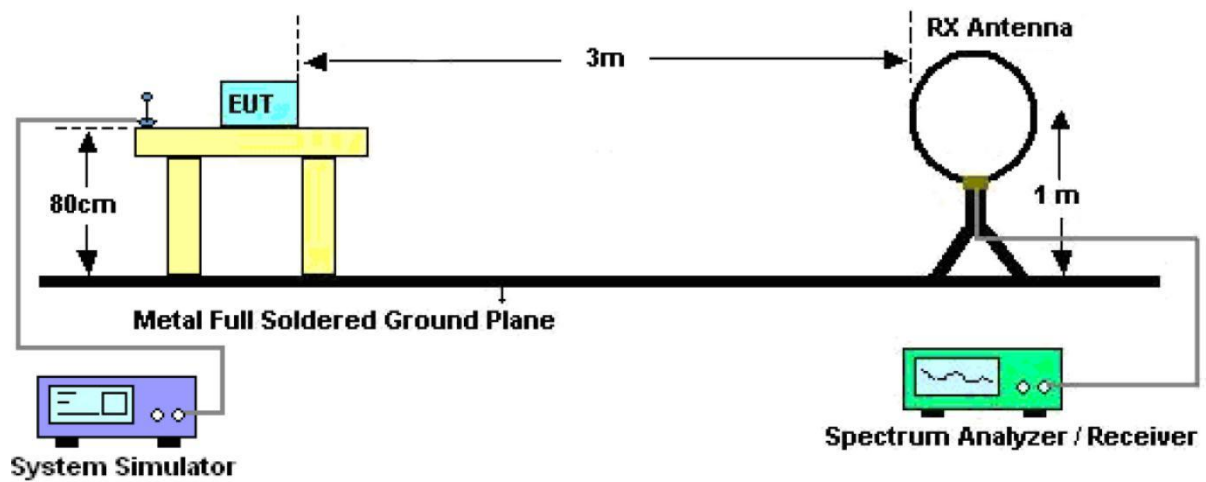


Figure 2. 30MHz to 1GHz

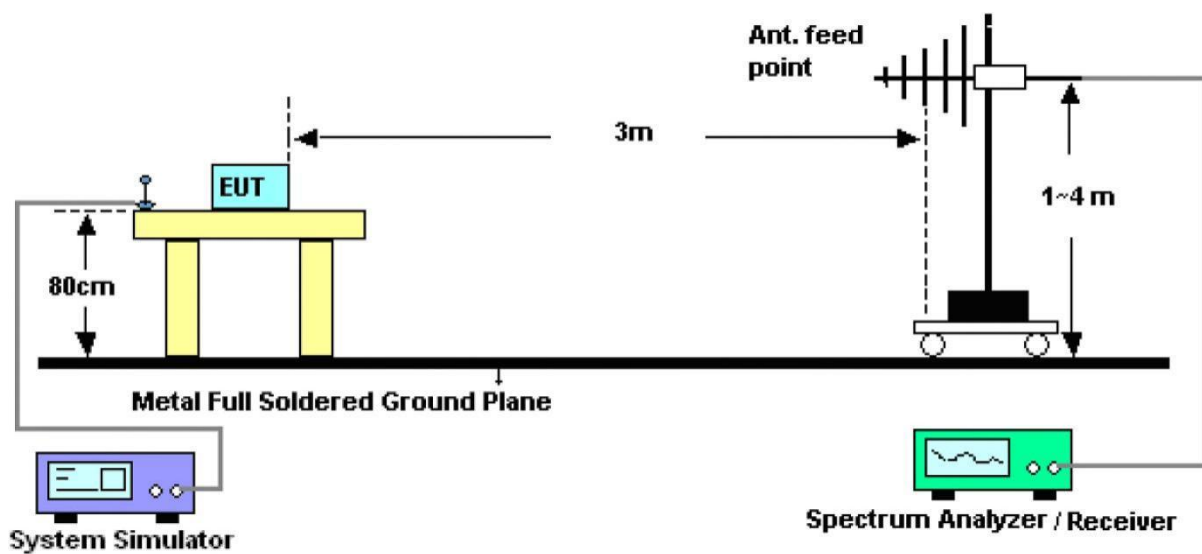
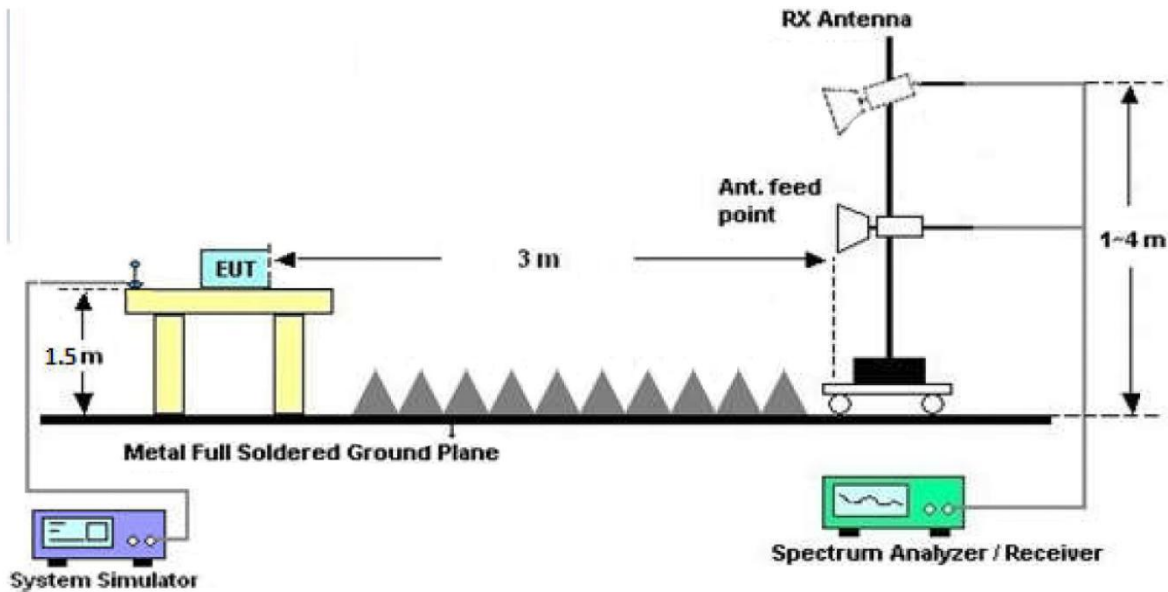


Figure 3. Above 1 GHz



6.3 Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.

For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

For 9kHz to 150kHz, Set the spectrum analyzer as:

RBW = 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.



For 150kHz to 30MHz, Set the spectrum analyzer as:

RBW = 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:

RBW = 100kHz, VBW =300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

.

For above 1GHz,Set the spectrum analyzer as:

RBW =1MHz, VBW =1MHz, Detector= Peak, Trace mode= Max hold, Sweep- auto couple.

RBW =1MHz, VBW =10Hz, Detector= Average, Trace mode= Max hold, Sweep- auto couple.

6.4 Test Data

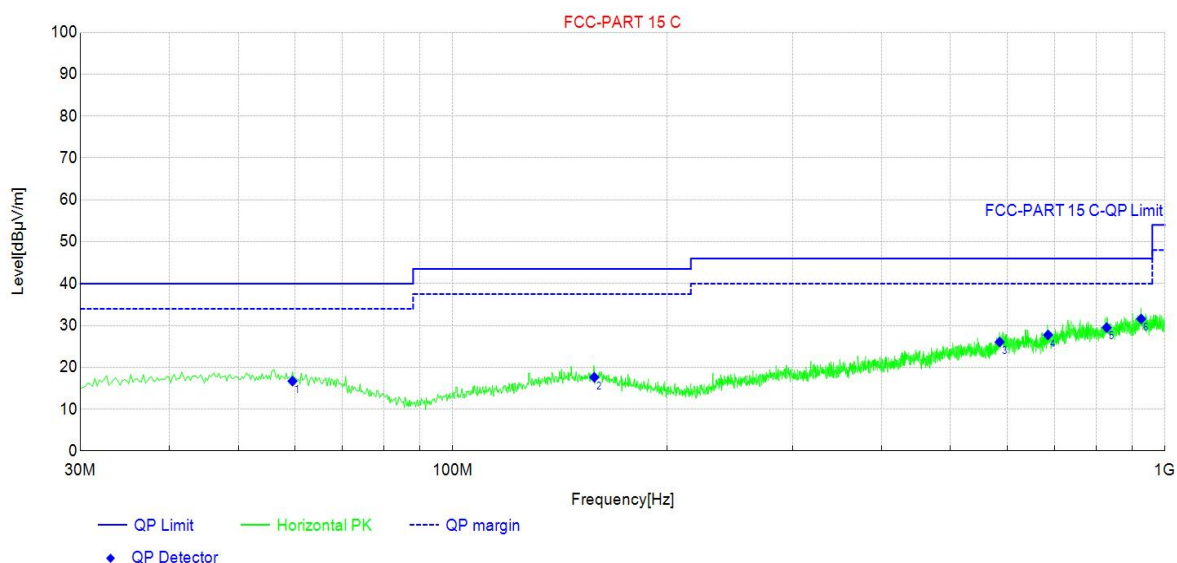
PASS

During the test, Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis is the worst case.

During the test, pre-scan all the modes, only the worst case is recorded in the report.



Antenna Polarization: Horizontal



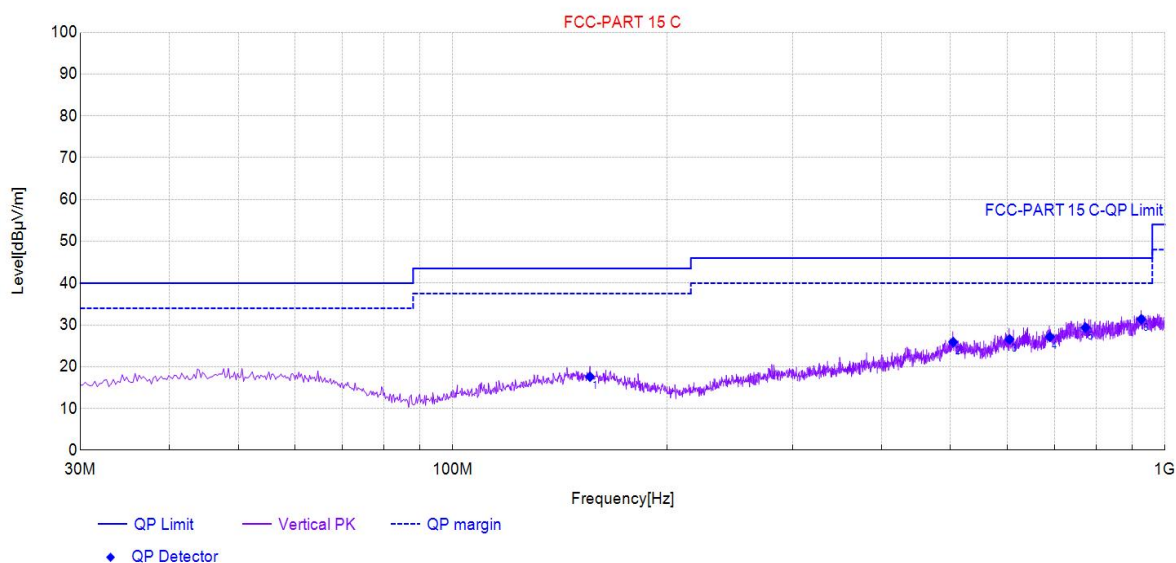
Final Data List[QP]

NO.	Freq. [MHz]	QP Reading [dBμV]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity	Verdict
1	59.59	27.03	-10.30	16.73	40.00	23.27	Horizontal	PASS
2	158.04	27.21	-9.58	17.63	43.50	25.87	Horizontal	PASS
3	586.05	27.61	-1.55	26.06	46.00	19.94	Horizontal	PASS
4	685.24	27.95	-0.20	27.75	46.00	18.25	Horizontal	PASS
5	828.31	27.9	1.60	29.50	46.00	16.50	Horizontal	PASS
6	925.80	27.9	3.67	31.57	46.00	14.43	Horizontal	PASS

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor



Antenna Polarization: Vertical



Final Data List[QP]

NO.	Freq. [MHz]	QP Reading [dBμV]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity	Verdict
1	155.86	27.13	-9.52	17.61	43.50	25.89	Vertical	PASS
2	504.33	29.47	-3.56	25.91	46.00	20.09	Vertical	PASS
3	604.97	28.12	-1.57	26.55	46.00	19.45	Vertical	PASS
4	689.36	27.58	-0.43	27.15	46.00	18.85	Vertical	PASS
5	773.26	28.13	1.21	29.34	46.00	16.66	Vertical	PASS
6	926.28	27.74	3.63	31.37	46.00	14.63	Vertical	PASS

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor



Test Frequency 1GHz-25GHz

Test Mode: 2407MHz									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
2407	92.04	31.12	2.18	35.33	90.01	114	-23.99	V	Peak
2407	83.13	31.12	2.18	35.33	81.50	94	-12.50	V	AVG
4814	48.48	34.01	2.58	34.65	50.42	74	-23.58	V	Peak
4814	37.88	34.01	2.58	34.65	40.21	54	-13.79	V	AVG
7221	46.76	36.16	2.97	35.07	50.82	74	-23.18	V	Peak
7221	35.72	36.16	2.97	35.07	36.81	54	-17.19	V	AVG
2407	94.32	31.12	2.18	35.33	92.29	114	-21.71	H	Peak
2407	84.79	31.12	2.18	35.33	83.16	94	-10.84	H	AVG
4814	48.91	34.01	2.58	34.65	50.85	74	-23.15	H	Peak
4814	36.43	34.01	2.58	34.65	38.76	54	-15.24	H	AVG
7221	46.65	36.16	2.97	35.07	50.71	74	-23.29	H	Peak
7221	36.84	36.16	2.97	35.07	37.93	54	-16.07	H	AVG



Test Mode: 2440MHz									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
2440	94.19	31.12	2.2	34.51	93.00	114	-21.00	V	Peak
2440	82.68	31.22	2.2	34.51	81.59	94	-12.41	V	AVG
4880	48.92	34.98	2.49	34.14	52.25	74	-21.75	V	Peak
4880	37.93	34.98	2.49	34.14	41.26	54	-12.74	V	AVG
7320	47.74	36.01	3.01	34.56	52.20	74	-21.80	V	Peak
7320	36.90	36.01	3.01	34.56	41.36	54	-12.64	V	AVG
2440	92.58	31.12	2.2	34.51	91.39	114	-22.61	H	Peak
2440	83.70	31.12	2.2	34.51	82.51	94	-11.49	H	AVG
4880	48.82	34.98	2.49	34.14	52.15	74	-21.85	H	Peak
4880	37.70	34.98	2.49	34.14	41.03	54	-12.97	H	AVG
7320	46.51	36.01	3.01	34.56	50.97	74	-23.03	H	Peak
7320	36.59	36.01	3.01	34.56	41.05	54	-12.95	H	AVG



Test Mode: 2478MHz									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector
2478	92.44	31.65	2.23	36.07	90.25	114	-23.75	V	Peak
2478	82.69	31.65	2.23	36.07	80.50	94	-13.50	V	AVG
4956	48.40	35.06	2.6	34.93	51.13	74	-22.87	V	Peak
4956	36.10	35.06	2.6	34.93	38.83	54	-15.17	V	AVG
7434	46.40	36.19	3.12	35.11	50.60	74	-23.40	V	Peak
7434	35.84	36.19	3.12	35.11	40.04	54	-13.96	V	AVG
2478	92.05	31.65	2.23	36.07	89.86	114	-24.14	H	Peak
2478	83.60	31.65	2.23	36.07	81.41	94	-12.59	H	AVG
4956	48.80	35.06	2.6	34.93	51.53	74	-22.47	H	Peak
4956	36.63	35.06	2.6	34.93	39.36	54	-14.64	H	AVG
7434	47.95	36.19	3.12	35.11	52.15	74	-21.85	H	Peak
7434	35.75	36.19	3.12	35.11	39.95	54	-14.05	H	AVG

Note: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Reading + Factor

Margin=Emission Level-Limit



Spurious Emission in Restricted Band 2483.5-2500MHz

Test Mode: Low Channel 2408MHz									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Polarity H/V	Test Value
2390	40.61	29.15	3.41	34.01	39.16	74	-34.84	H	Peak
2400	57.57	29.16	3.43	34.01	56.15	74	-17.85	H	Peak
2390	40.07	29.15	3.41	34.01	38.62	74	-35.38	V	Peak
2400	57.26	29.16	3.43	34.01	55.84	74	-18.16	V	Peak
2390	34.90	29.15	3.41	34.01	33.45	54	-20.55	H	AV
2400	40.30	29.16	3.43	34.01	38.88	54	-15.12	H	AV
2390	36.16	29.15	3.41	34.01	34.71	54	-19.29	V	AV
2400	44.43	29.16	3.43	34.01	43.01	54	-10.99	V	AV

Test Mode: High Channel 2475MHz									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Polarity H/V	Test Value
2483.5	47.50	29.28	3.53	34.03	46.28	74	-27.72	H	Peak
2500	41.33	29.30	3.56	34.03	40.16	74	-33.84	H	Peak
2483.5	48.20	29.28	3.53	34.03	46.98	74	-27.02	V	Peak
2500	41.24	29.30	3.56	34.03	40.07	74	-33.93	V	Peak
2483.5	38.64	29.28	3.53	34.03	37.42	54	-16.58	H	AV
2500	33.85	29.30	3.56	34.03	32.68	54	-21.32	H	AV
2483.5	39.88	29.28	3.53	34.03	38.66	54	-15.34	V	AV
2500	32.22	29.30	3.56	34.03	31.05	54	-22.95	V	AV

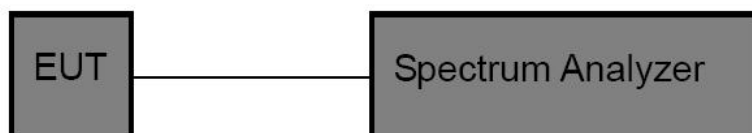


7 20dB Bandwidth Test

7.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.249
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7.2 Test Setup



7.3 Test Procedure

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as:
RBW = 30kHz, VBW $\geq$ 3*RBW =100kHz,
Detector= Average
Trace mode= Max hold.
Sweep- auto couple.
4. Mark the peak frequency and –20dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

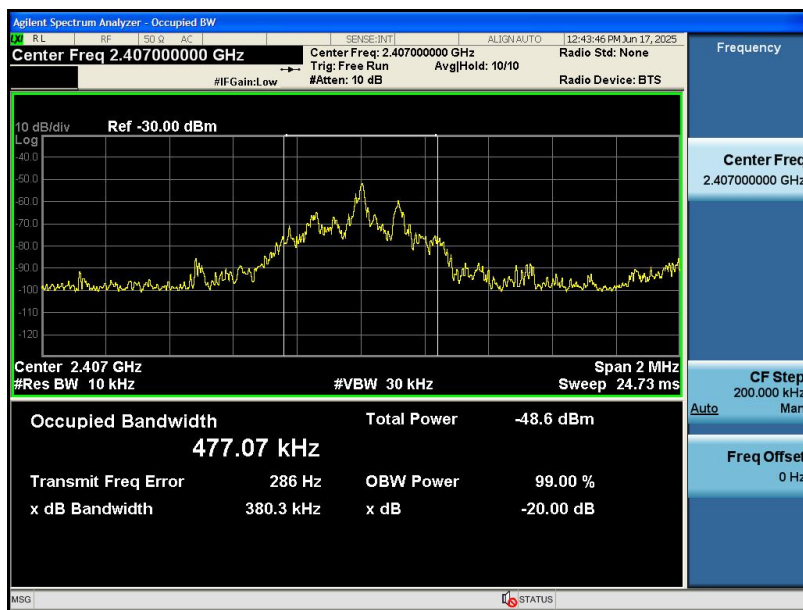


7.4 Test Data

Test Item	:	20dB Bandwidth	Test Mode	:	TX
Test Voltage	:	DC 3V	Temperature	:	22.4°C
Test Result	:	PASS	Humidity	:	55%RH

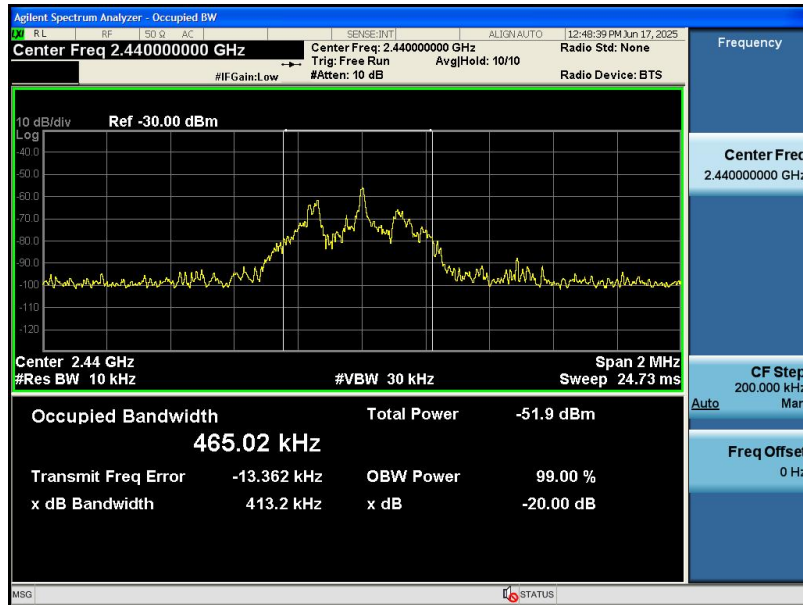
Frequency (MHz)	Bandwidth (MHz)	Result
2407MHz	0.3803	PASS
2440MHz	0.4132	PASS
2478MHz	0.4003	PASS

2407MHz

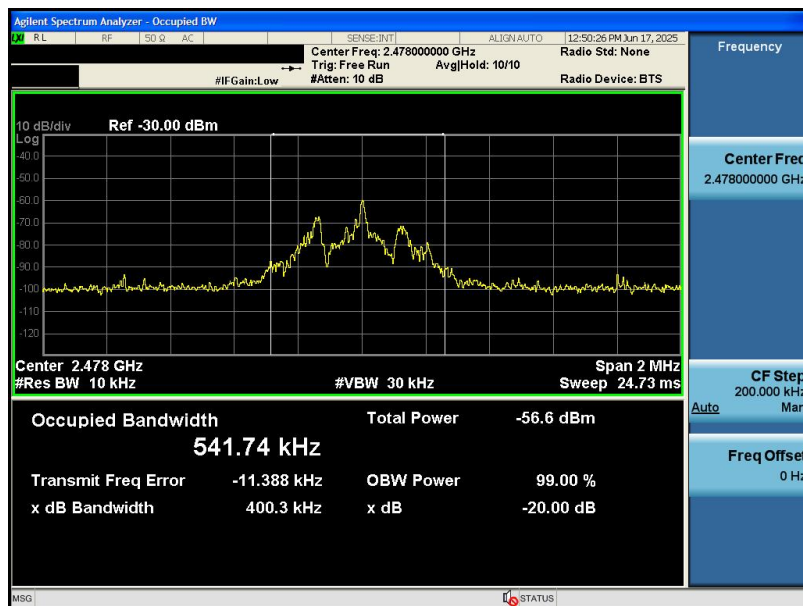




2440MHz



2478MHz





8 Antenna Requirement

8.1 Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203
Requirement	1) 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.

8.2 Antenna Connected Construction

The antenna is FPC antenna which permanently attached. It complies with the standard requirement.

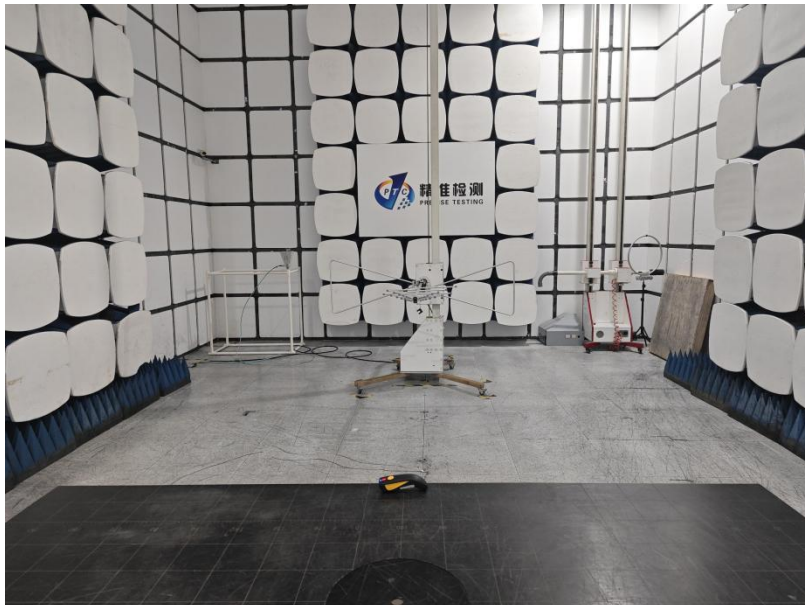
9 APPENDIX I -- TEST SETUP PHOTOGRAPH

Conducted Emission



Radiated Spurious Emissions

Test Frequency From 30MHz-1GHz



Test frequency from Above 1GHz

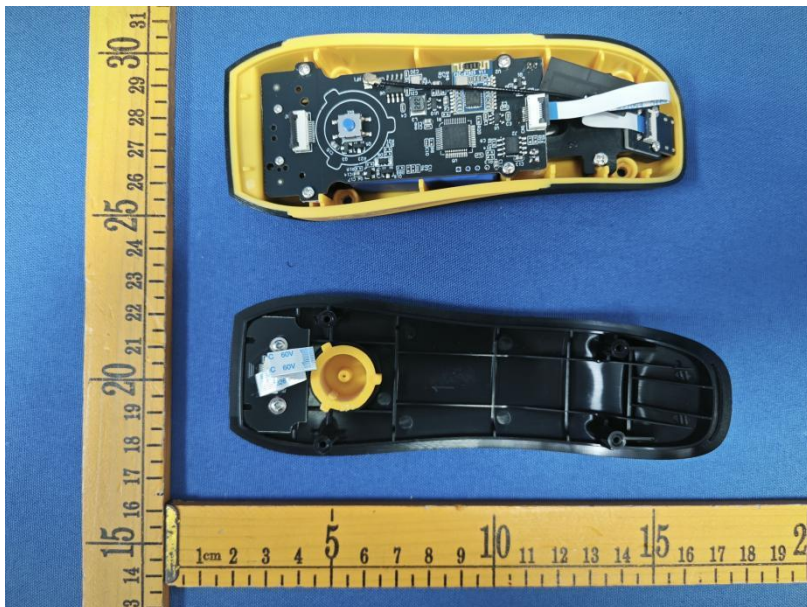


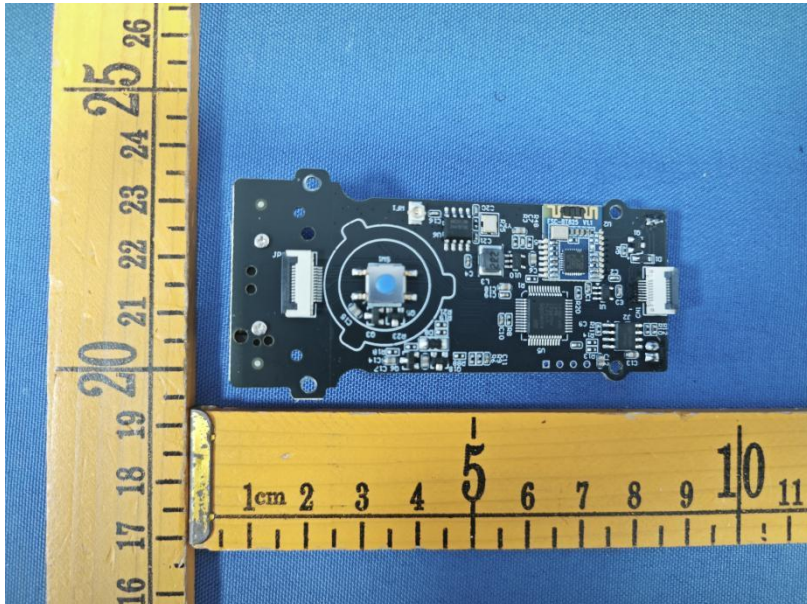
10 APPENDIX II -- EUT PHOTOGRAPH

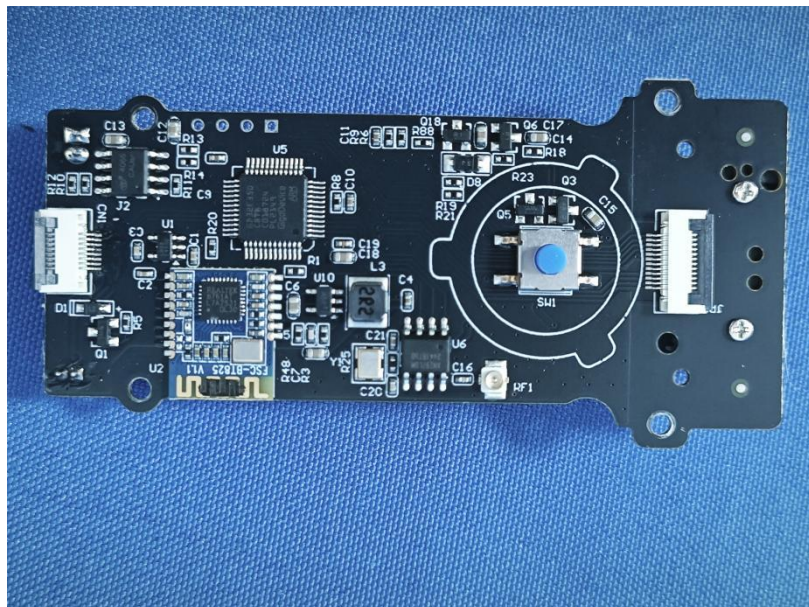
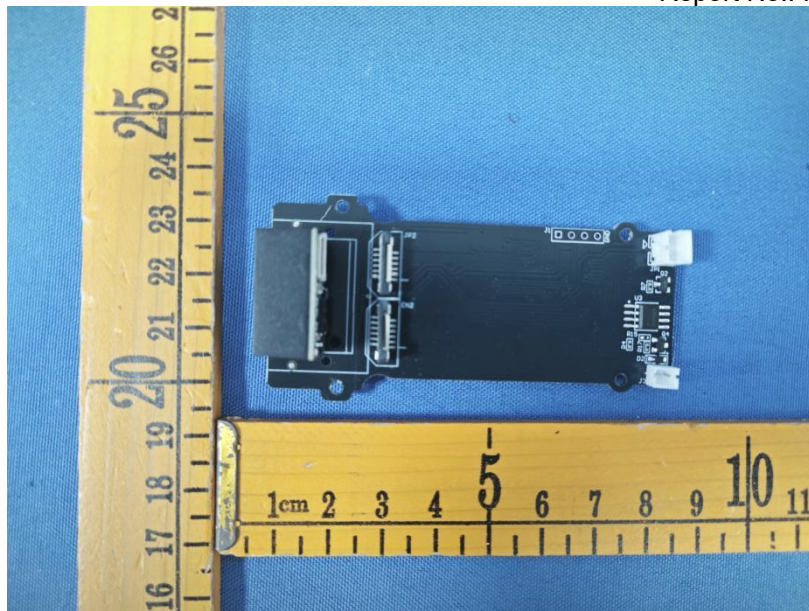


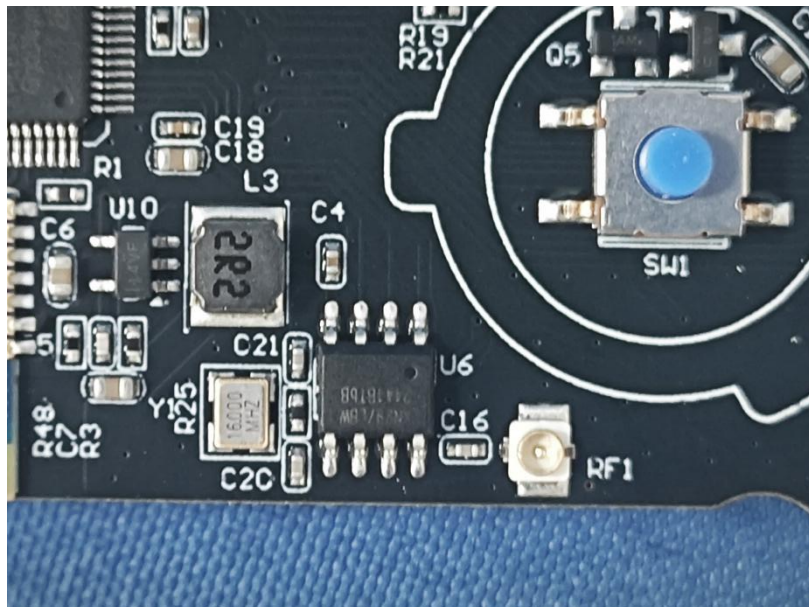
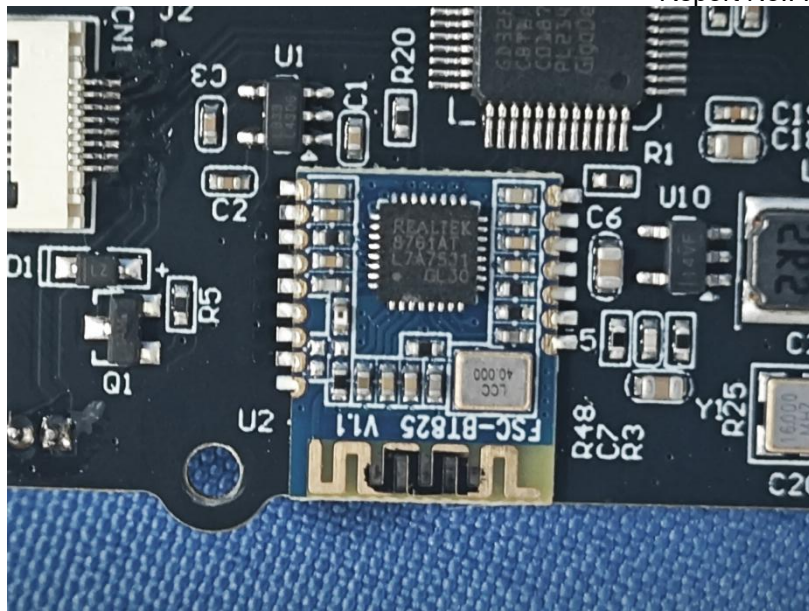


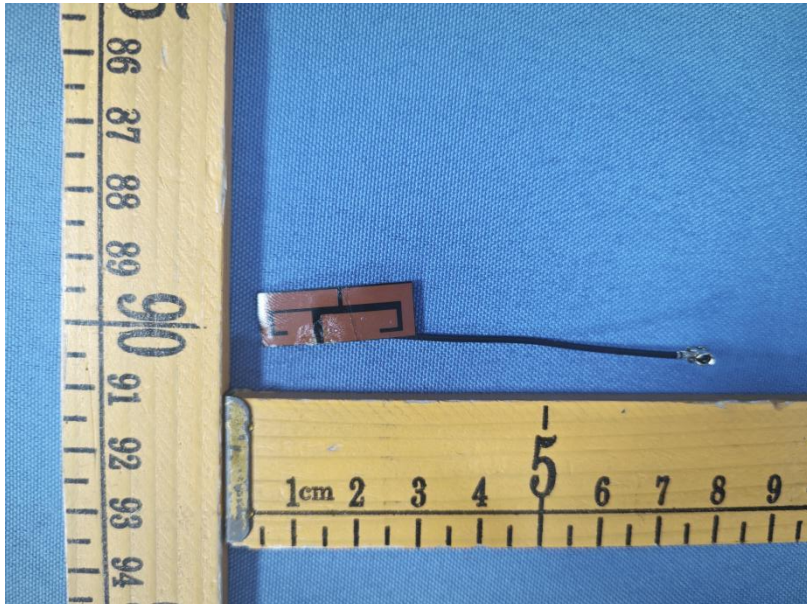
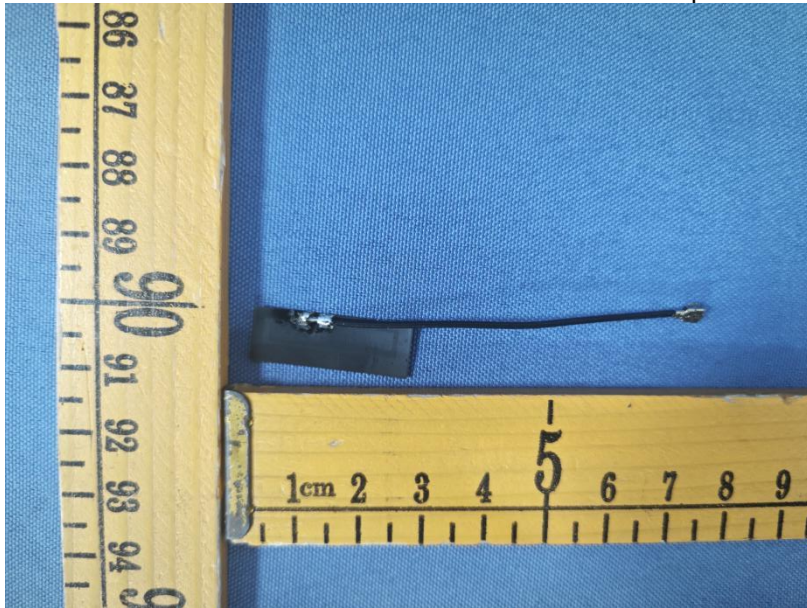


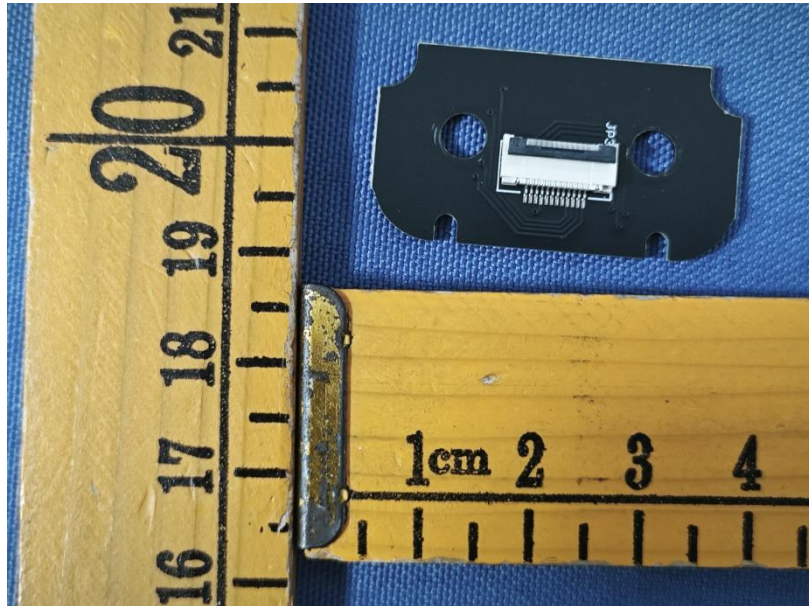
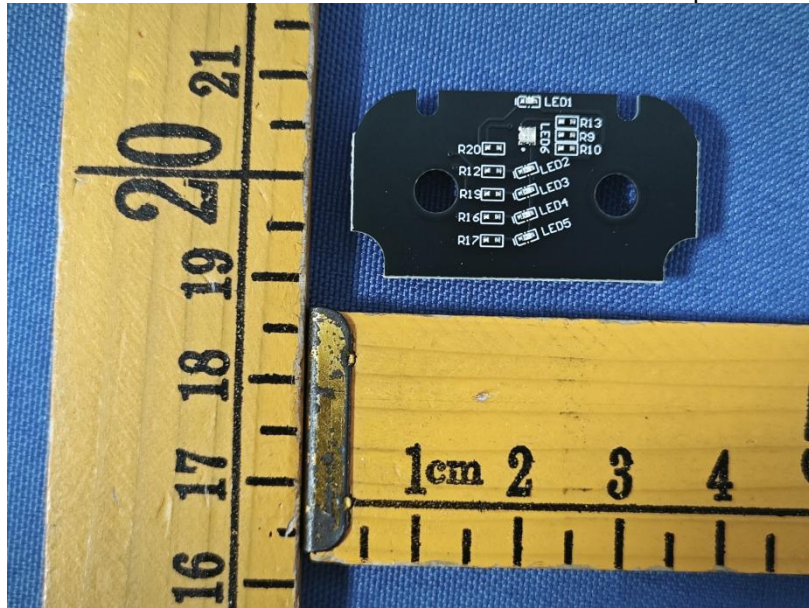


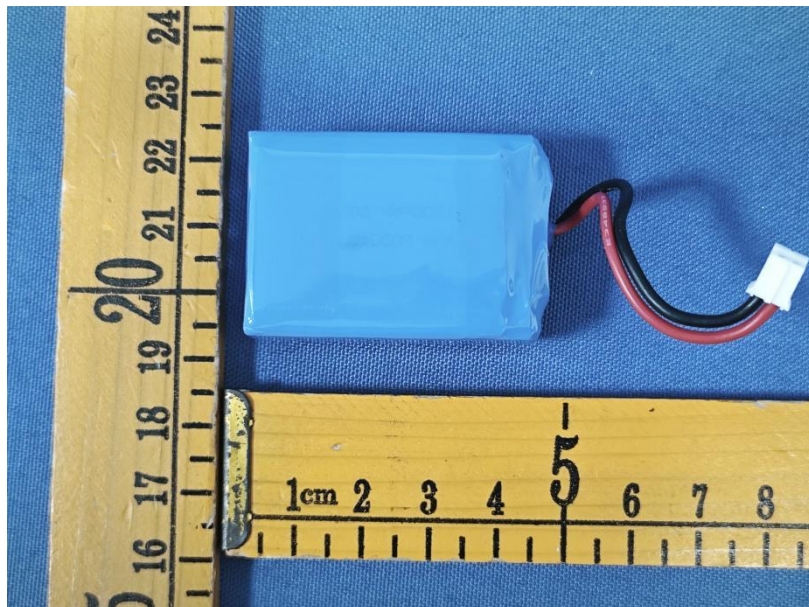
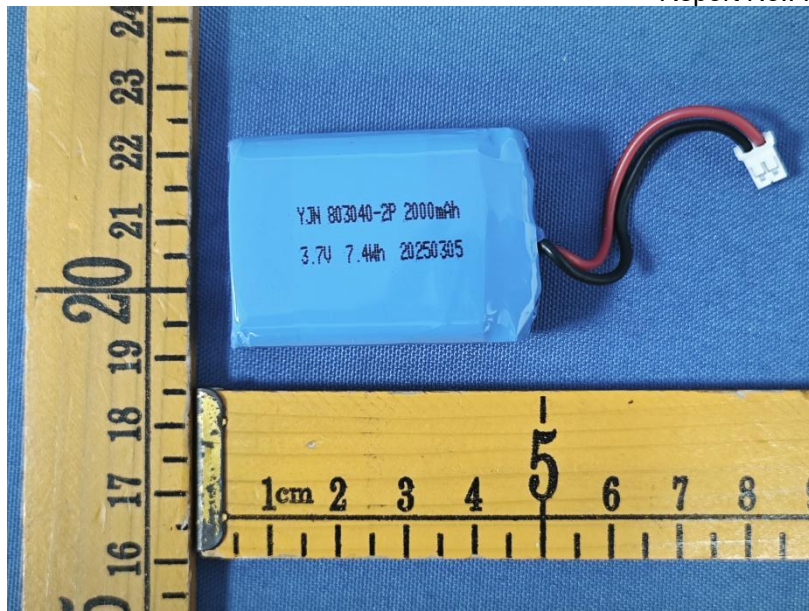












*****THE END REPORT*****