FCC RADIO TEST REPORT

FCC ID: 2AF69S805P

Product Name:	**TV BOX**
Trademark:	**N/A**
Model Name :	**S805P, S805**
Prepared For : Address :	**Golden Sunshine Technology CO.,LTD** **8th Floor ,VIA Building ,9966 shennan road, Nanshan District,Shenzhen,China**
Prepared By : Address :	**DongGuan Precise Testing Service Co., Ltd.** Building D, Baoding Technology Park, Guangming Road 2, Guangming Community, Dongcheng District, Dongguan, Guangdong, China
Test Date:	**Sep.20, 2015 ~Sep.28, 2015**
Date of Report :	**Sep.28, 2015**
Report No.:	**PT1508288127F1**

TEST RESULT CERTIFICATION

Applicant's name ..... :	Golden Sunshine Technology CO.,LTD
Address ..... :	8th Floor ,VIA Building ,9966 shennan road, Nanshan District,Shenzhen,China
Manufacture's Name ..... :	Chiptrip technology Co., Ltd.
Address ..... :	2nd Floor,NO 7,Chun Hui Logistics Park Building B，Port channel Road,Bao'an District,shenzhen

Product description

Product name..... :	TV BOX
Model and/or type reference ..... :	S805P
Serial Model ..... :	S805
Standards ..... :	FCC Part15.249
Test procedure	ANSI C63.10-2013

This device described above has been tested by PTS, 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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Testing Engineer : Juan Zeng

(Juan Zeng)

Technical Manager : Tom . Zhang

(Tom Zhang)

Authorized Signatory :

(Chris Du)

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2 Test Summary

Test Items	Test Requirement	Result
Spurious Radiated Emissions	15.205(a) 15.209 15.249(d)	PASS
Band edge Emissions	15.249(d)	PASS
Conducted Emissions	15.207	PASS
20dB Bandwidth	15.215c 15.249	PASS

3 General Information

3.1 General Description of E.U.T.

Product Name	: TV BOX
Model No.	: S805P
Serial Model	: S805
Model Difference	: All the models are the same circuit and RF module, except for the model names.
Brand Name	: N/A
Operation Frequency	: 2402MHz ~ 2480MHz,79 channels in total, separated by 1MHz
Type of Modulation	: GFSK, Pi/4DQPSK, 8DPSK
Antenna installation	: Internal antenna
Antenna Gain	: 1.25 dBi
Bluetooth version	: 3.0+EDR

3.2 Details of E.U.T.

Technical Data	: DC 5V from adapter Model: CYZ-080 5V2A; I/P: AC 100-240V 50/60Hz; O/P:DC 5V/2A

3.3 Channel List

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2402	2	2403	3	2404	4	2405
5	2406	6	2407	7	2408	8	2409
9	2410	10	2411	11	2412	12	2413
13	2414	14	2415	15	2416	16	2417
17	2418	18	2419	19	2420	20	2421
21	2422	22	2423	23	2424	24	2425
25	2426	26	2427	27	2428	28	2429
29	2430	30	2431	31	2432	32	2433
33	2434	34	2435	35	2436	36	2437
37	2438	38	2439	39	2440	40	2441
41	2442	42	2443	43	2444	44	2445
45	2446	46	2447	47	2448	48	2449
49	2450	50	2451	51	2452	52	2453
53	2454	54	2455	55	2456	56	2457
57	2458	58	2459	59	2460	60	2461
61	2462	62	2463	63	2464	64	2465
65	2466	66	2467	67	2468	68	2469
69	2470	70	2471	71	2472	72	2473
73	2474	74	2475	75	2476	76	2477
77	2478	78	2479	79	2480	-	-

3.4 Description of Support Units

No.	Equipment	Manufacturer	Model No.	Serial No.
1.	N/A	N/A	N/A	N/A

3.5 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

For Conducted & Radiated Emission	
Final Test Mode	Description
Mode 1	CH01
Mode 2	CH40
Mode 3	CH79
Mode 4	Link Mode

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

(2) Fully-charged battery is used during the test

3.6 TEST FACILITY

Dongguan Precise Testing Service Co., Ltd.

Address: Building D, Baoding Technology Park, Guangming Road 2, Dongcheng District, Dongguan, Guangdong, China

☆ CNAS Registration No.: CNAS L5772

☆ FCC Registration No.: 371540

☆ IC Registration No.: 12191A-1

3.7 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± 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	Conducted Emission Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

4 Equipment Used during Test

4.1 Equipments List

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45109572	2015.08.25	2016.08.24	1 year
2	Test Receiver	R&S	ESPI	101396	2015.08.25	2016.08.24	1 year
3	Bilog Antenna	SCHWARZBECK	VULB9160	VULB9160-3369	2015.08.25	2016.08.24	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2015.06.07	2016.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2015.06.07	2016.06.06	1 year
6	Horn Antenna	SCHWARZBECK	9120D	9120D-1275	2015.08.25	2016.08.24	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2015.07.06	2016.07.05	1 year
8	Amplifier	SCHWARZBECK	BBV9718	9718-270	2015.08.25	2016.08.24	1 year
9	Amplifier	SCHWARZBECK	BBV9743	9743-119	2015.08.25	2016.08.24	1 year
10	Loop Antenna	ARA	PLA-1030/B	1029	2015.06.08	2016.06.07	1 year
11	Power Meter	R&S	NRVS	100696	2015.07.06	2016.07.05	1 year
12	Power Sensor	R&S	URV5-Z4	0395.1619.05	2015.07.06	2016.07.05	1 year
13	RF cables	R&S	N/A	N/A	2015.07.06	2016.07.05	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101421	2015.08.25	2016.08.24	1 year
2	LISN	SCHWARZBECK	NSLK8127	812779	2015.08.25	2016.08.24	1 year
3	LISN	EMCO	Feb-16	42990	2015.08.24	2016.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2015.06.07	2016.06.06	1 year

4.2 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 10^{-6}
Bandwidth	± 1.5 x 10^{-6}
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Temperature	± 1 °C
DC Source	±0.05%
Radiated Emissions test	± 5.03 dB (Bilog antenna 30M~1000MHz)
	± 4.74 dB (Horn antenna 1000M~25000MHz)
Conducted Emissions test	3.64dB (150kHz~30MHz)

4.3 Test Equipment Calibration

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

5 Conducted Emission

Test Requirement:	FCC CFR 47 Part 15 Section 15.207
Test Method:	ANSI C63.10:2013
Test Result:	PASS
Frequency Range:	150 kHz to 30 MHz
Class:	Class B
Limit:	66-56 dBμV between 0.15 MHz & 0.5 MHz 56 dBμV between 0.5 MHz & 5MHz 60 dBμV between 5 MHz & 30MHz
Detector:	Peak for pre-scan (9 kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit

5.1 E.U.T. Operation

Operating Environment:

Temperature: 25.5 °C

Humidity: 51 % RH

Atmospheric Pressure: 1012 mbar

Voltage: AC 120V/60Hz

EUT Operation:

The pre-test was performed in Bluetooth linking, and the data were shown as follow.

The EUT was tested according to ANSI C63.10:2013. The frequency spectrum from 150 kHz to 30MHz was investigated.

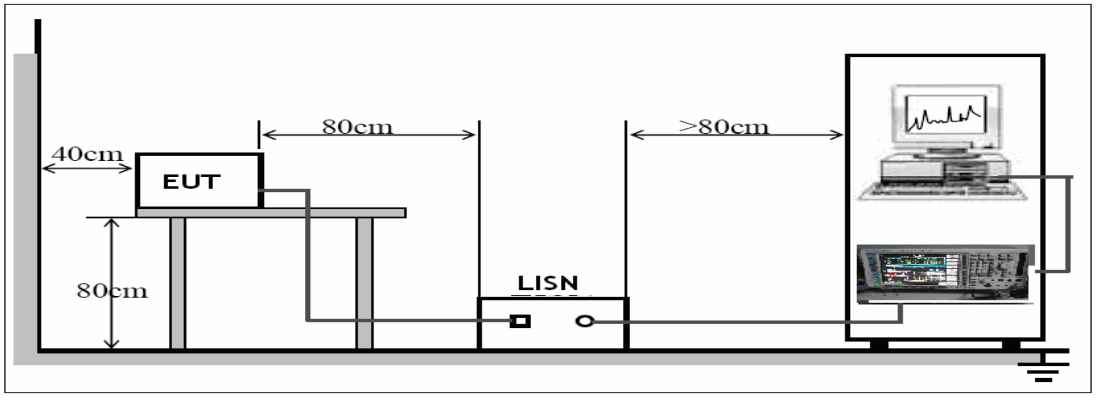
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

The EUT was in transmitting mode, The worst mode was GFSK low channel, the data was recording in the report.

We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

5.2 EUT Setup

The EUT was placed on the test table in shielding room.



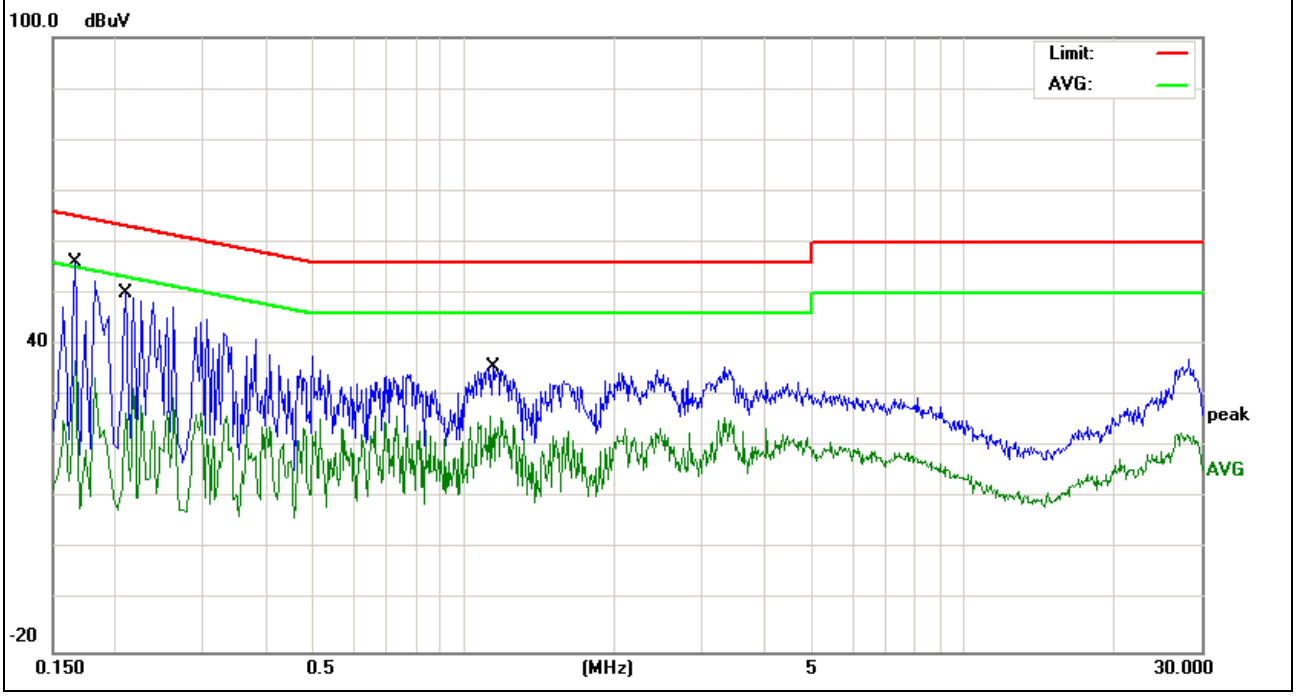
5.3 Conducted Emission Test Result

EUT：	TV BOX	Model Name. ：	S805P
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase :	L
Test Voltage ：	AC 120V/60Hz	Test Mode：	Mode 4

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
0.1660	46.37	9.81	56.18	65.15	-8.97	QP
0.2100	40.14	9.78	49.92	63.20	-13.28	QP
1.1340	25.44	10.16	35.60	56.00	-20.40	QP
0.1660	27.16	9.81	36.97	55.15	-18.18	AVG
0.2100	19.95	9.78	29.73	53.20	-23.47	AVG
1.1340	15.76	10.16	25.92	46.00	-20.08	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

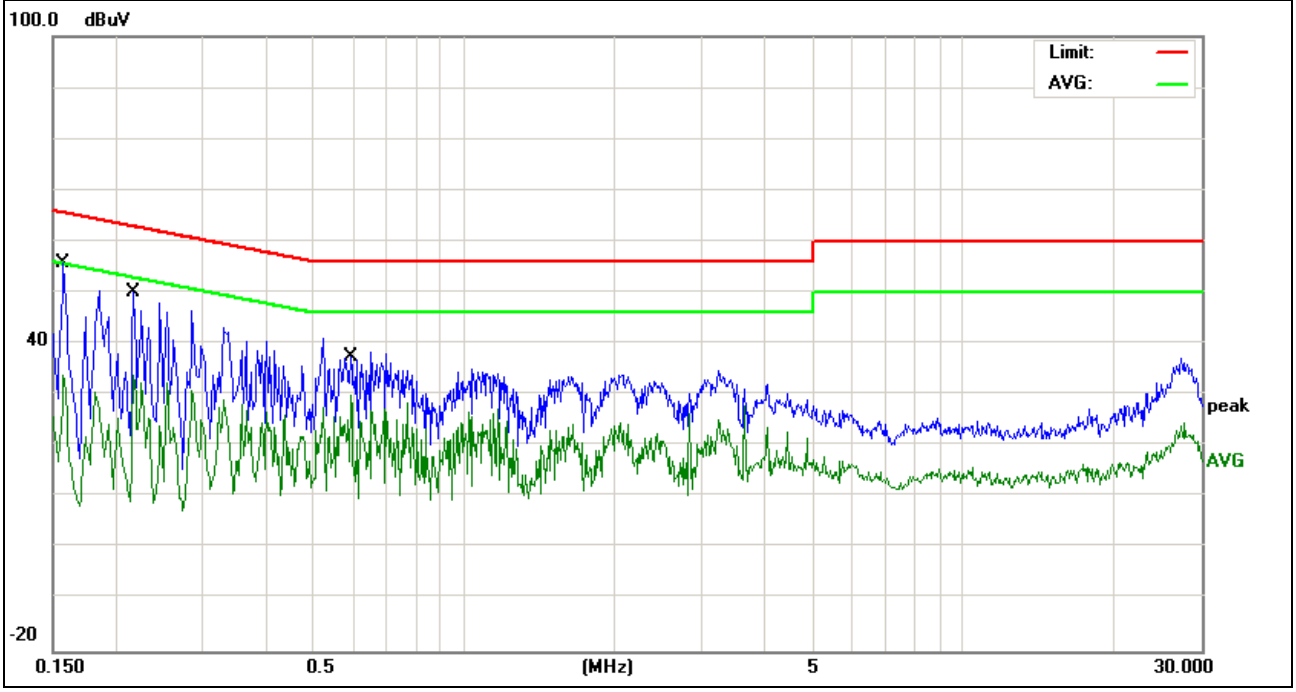


EUT：	TV BOX	Model Name. ：	S805P
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase :	N
Test Voltage ：	AC120V/60Hz	Test Mode：	Mode 4

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
0.2180	39.92	10.20	50.12	62.89	-12.77	QP
0.1580	45.93	9.88	55.81	65.56	-9.75	QP
0.5940	30.74	10.22	40.96	56.00	-15.04	QP
0.1580	24.07	9.88	33.95	55.56	-21.61	AVG
0.2180	22.37	10.20	32.57	52.89	-20.32	AVG
0.5940	19.84	10.22	30.06	46.00	-15.94	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



6 Spurious Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.249

Test Method: DA 00-705

Test Result: PASS

Measurement Distance: 3m

Limit:

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

6.1 EUT Operation :

Operating Environment:

Temperature: 25.5 °C

Humidity: 51 % RH

Atmospheric Pressure:1010 mbar

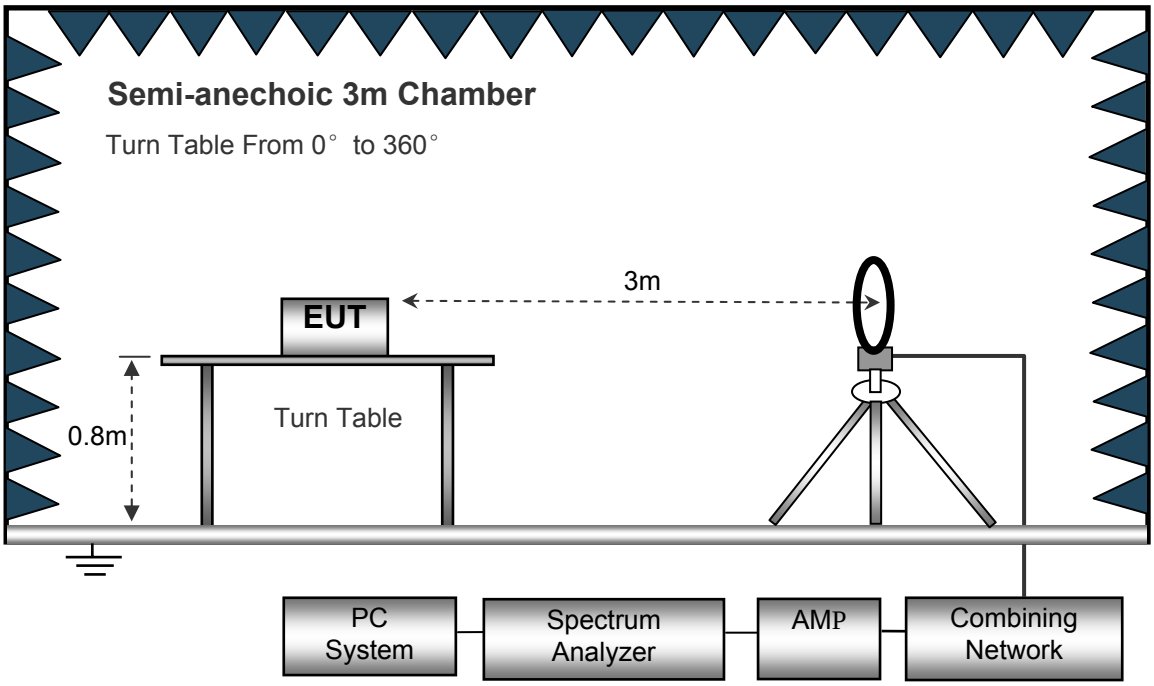
Voltage: AC 120V/60Hz

Operation Mode:

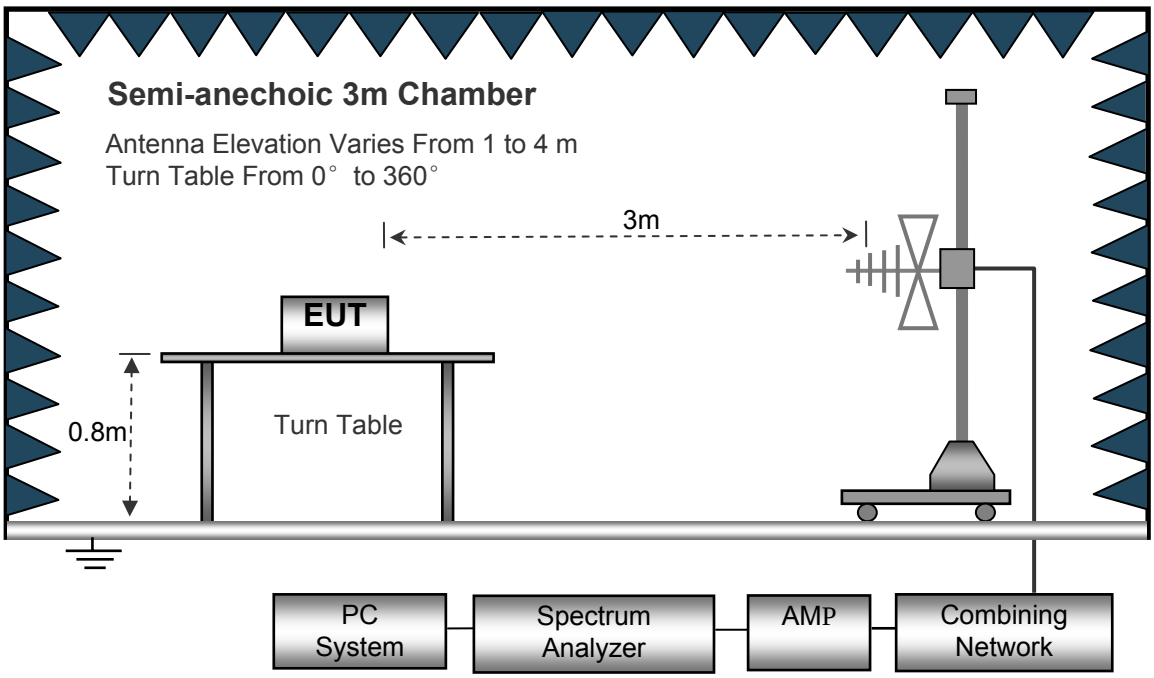
The EUT was tested in transmitting mode, and the data were shown as follow.

6.2 Test Setup

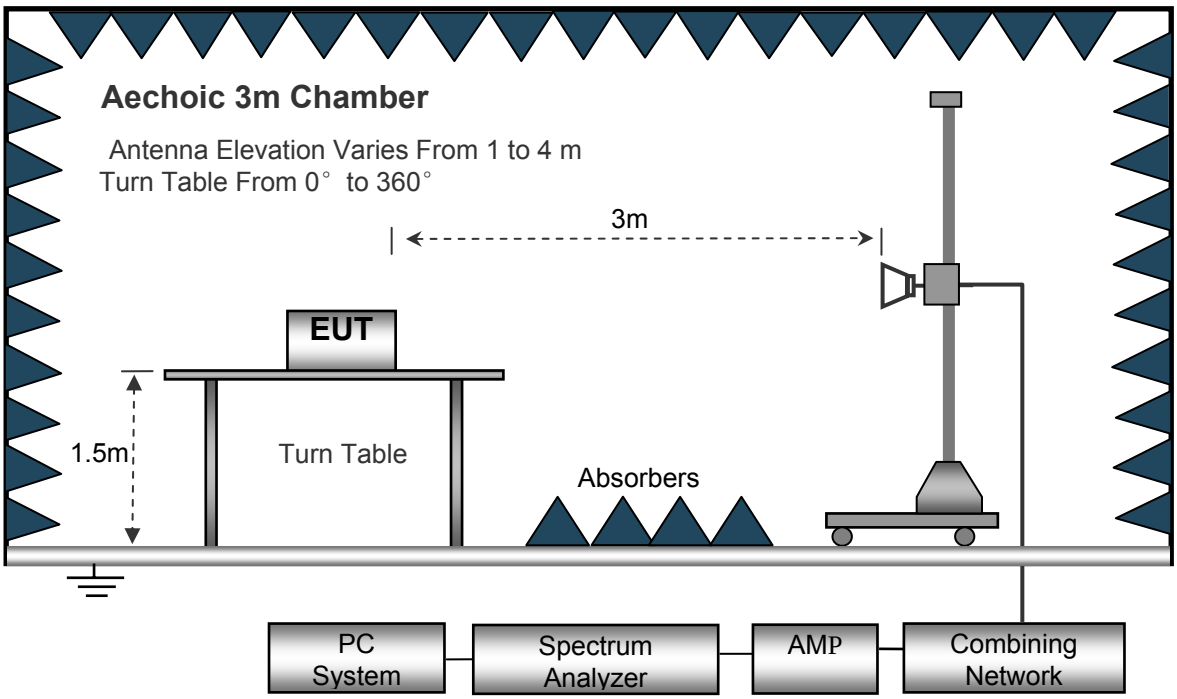
The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10:2013.
The test setup for emission measurement below 30MHz.



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



The test setup for emission measurement above 1 GHz.



6.3 Spectrum Analyzer Setup

According to FCC Part15 Rules, the system was tested 9kHz to 25000MHz.

Below 30MHz

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

Resolution Bandwidth..... 10kHz

30MHz ~ 1GHz

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

Above 1GHz

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

6.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

6.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Limit

6.6 Summary of Test Results

Test Frequency: Below 30MHz

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

Test Frequency: 30MHz ~ 18GHz

Test mode: transmitting

Test Frequency: 18~25GHz

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

We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the repo rt.

All the modulation modes were tested, the data of the worst mode were recorded in the following pages.

6.1.1 TEST RESULTS (Between 9KHz – 30 MHz)

EUT:	TV BOX	Model Name. :	Z4
Temperature:	20 ℃	Relative Humidtity:	48%
Pressure:	1010 hPa	Test Voltage :	AC120V/60Hz
Test Mode :	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

6.1.2 TEST RESULTS (Between 30MHz – 1GHz)

EUT：	TV BOX	Model Name ：	Z4
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX		

	Freq.	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
					Height	Polar			Limit	Result
	(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	
GFSK Lower Channel 2402MHz	46.57	14.06	QP	24	2.8	H	16.31	30.37	40.00	Pass
	87.63	15.57	QP	74	2.3	H	16.59	32.16	40.00	Pass
	109.31	15.29	QP	59	1.8	H	17.11	32.40	43.50	Pass
	343.47	17.31	QP	33	2.9	H	17.52	34.83	43.50	Pass
	418.52	16.42	QP	48	3.7	H	17.47	33.89	46.00	Pass
	611.24	15.06	QP	74	4.0	H	17.52	32.58	46.00	Pass
	54.27	17.43	QP	63	1.1	V	16.61	34.04	40.00	Pass
	110.24	18.16	QP	152	1.5	V	16.17	34.33	43.50	Pass
	185.02	16.25	QP	257	1.0	V	16.71	32.96	43.50	Pass
	288.47	18.32	QP	16	1.1	V	17.15	35.47	43.50	Pass
	526.53	15.61	QP	34	1.7	V	17.86	33.47	46.00	Pass
	803.26	16.02	QP	178	1.5	V	17.97	33.99	46.00	Pass

	Freq.	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
					Height	Polar			Limit	Result
	(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	
GFSK Lower Channel 2402MHz	2402.00	102.35	PK	36	2.2	H	1.31	103.66	114.00	Pass
	2402.00	88.24	Ave	36	2.2	H	1.31	89.55	94.00	Pass
	4804.00	57.26	PK	42	2.3	H	-1.06	56.20	74.00	Pass
	4804.00	48.35	Ave	42	2.3	H	-1.06	47.29	54.00	Pass
	2402.00	101.29	PK	0	1.3	V	1.31	102.60	114.00	Pass
	2402.00	87.53	Ave	0	1.3	V	1.31	88.84	94.00	Pass
	4804.00	58.27	PK	91	1.4	V	-1.06	57.21	74.00	Pass
	4804.00	46.87	Ave	91	1.4	V	-1.06	45.81	54.00	Pass
GFSK Middle Channel 2441MHz	2441.00	102.21	PK	43	2.7	H	0.85	103.06	114.00	Pass
	2441.00	87.78	Ave	43	2.7	H	0.85	88.63	94.00	Pass
	4882.00	54.12	PK	57	1.0	H	-0.62	53.50	74.00	Pass
	4882.00	43.36	Ave	57	1.0	H	-0.62	42.74	54.00	Pass
	2441.00	102.12	PK	62	1.5	V	0.85	102.97	114.00	Pass
	2441.00	87.16	Ave	62	1.5	V	0.85	88.01	94.00	Pass
	4882.00	55.03	PK	1	1.0	V	-0.62	54.41	74.00	Pass
	4882.00	44.43	Ave	1	1.0	V	-0.62	43.81	54.00	Pass
GFSK Upper Channel 2480MHz	2480.00	102.42	PK	24	2.1	H	0.53	102.95	114.00	Pass
	2480.00	87.86	Ave	24	2.1	H	0.53	88.39	94.00	Pass
	4960.00	52.26	PK	88	3.5	H	-0.24	52.02	74.00	Pass
	4960.00	43.26	Ave	88	3.5	H	-0.24	43.02	54.00	Pass
	2480.00	101.58	PK	124	1.0	V	0.53	102.11	114.00	Pass
	2480.00	87.13	Ave	124	1.0	V	0.53	87.66	94.00	Pass
	4960.00	54.42	PK	163	1.5	V	-0.24	54.18	74.00	Pass
	4960.00	43.47	Ave	163	1.5	V	-0.24	43.23	54.00	Pass

	Freq.	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
					Height	Polar			Limit	Margin
	(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
PI/4 DPSK Lower Channel 2402MHz	2402.00	102.42	PK	158	2.8	H	1.31	103.73	114.00	Pass
	2402.00	87.53	Ave	158	2.8	H	1.31	88.84	94.00	Pass
	4804.00	55.12	PK	47	1.5	H	-1.06	54.06	74.00	Pass
	4804.00	44.25	Ave	47	1.5	H	-1.06	43.19	54.00	Pass
	2402.00	101.53	PK	63	1.1	V	1.31	102.84	114.00	Pass
	2402.00	87.38	Ave	63	1.1	V	1.31	88.69	94.00	Pass
	4804.00	54.42	PK	157	1.4	V	-1.06	53.36	74.00	Pass
	4804.00	44.06	Ave	157	1.4	V	-1.06	43.00	54.00	Pass
PI/4 DPSK Middle Channel 2441MHz	2441.00	102.16	PK	93	2.5	H	0.85	103.01	114.00	Pass
	2441.00	87.26	Ave	93	2.5	H	0.85	88.11	94.00	Pass
	4882.00	54.53	PK	55	1.1	H	-0.62	53.91	74.00	Pass
	4882.00	44.21	Ave	55	1.2	H	-0.62	43.59	54.00	Pass
	2441.00	102.06	PK	91	2.7	V	0.85	102.91	114.00	Pass
	2441.00	87.42	Ave	91	2.7	V	0.85	88.27	94.00	Pass
	4882.00	53.23	PK	126	1.1	V	-0.62	52.61	74.00	Pass
	4882.00	44.27	Ave	126	1.1	V	-0.62	43.65	54.00	Pass
PI/4 DPSK Upper Channel 2480MHz	2480.00	101.43	PK	252	1.2	H	0.53	101.96	114.00	Pass
	2480.00	84.26	Ave	252	1.2	H	0.53	84.79	94.00	Pass
	4960.00	54.03	PK	178	1.1	H	-0.24	53.79	74.00	Pass
	4960.00	44.27	Ave	178	1.1	H	-0.24	44.03	54.00	Pass
	2480.00	102.26	PK	24	1.5	V	0.53	102.79	114.00	Pass
	2480.00	88.01	Ave	24	1.5	V	0.53	88.54	94.00	Pass
	4960.00	54.26	PK	122	1.7	V	-0.24	54.02	74.00	Pass
	4960.00	44.33	Ave	122	1.7	V	-0.24	44.09	54.00	Pass

	Freq.	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
					Height	Polar			Limit	Margin
	(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
8DPSK Lower Channel 2402MHz	2402.00	101.24	PK	186	1.8	H	1.31	102.55	114.00	Pass
	2402.00	87.29	Ave	186	1.8	H	1.31	88.60	94.00	Pass
	4804.00	53.54	PK	66	1.1	H	-1.06	52.48	74.00	Pass
	4804.00	44.21	Ave	66	1.1	H	-1.06	43.15	54.00	Pass
	2402.00	102.21	PK	58	1.5	V	1.31	103.52	114.00	Pass
	2402.00	88.43	Ave	58	1.5	V	1.31	89.74	94.00	Pass
	4804.00	55.06	PK	193	1.1	V	-1.06	54.00	74.00	Pass
	4804.00	45.43	Ave	193	1.1	V	-1.06	44.37	54.00	Pass
8DPSK Middle Channel 2441MHz	2441.00	102.42	PK	26	2.1	H	0.85	103.27	114.00	Pass
	2441.00	87.47	Ave	26	2.1	H	0.85	88.32	94.00	Pass
	4882.00	54.62	PK	178	1.7	H	-0.62	54.00	74.00	Pass
	4882.00	46.31	Ave	178	1.7	H	-0.62	45.69	54.00	Pass
	2441.00	102.28	PK	22	1.2	V	0.85	103.13	114.00	Pass
	2441.00	87.11	Ave	22	1.2	V	0.85	87.96	94.00	Pass
	4882.00	53.24	PK	63	1.1	V	-0.62	52.62	74.00	Pass
	4882.00	42.74	Ave	63	1.1	V	-0.62	42.12	54.00	Pass
8DPSK Upper Channel 2480MHz	2480.00	102.53	PK	38	2.5	H	0.53	103.06	114.00	Pass
	2480.00	87.42	Ave	38	2.5	H	0.53	87.95	94.00	Pass
	4960.00	54.21	PK	174	3.1	H	-0.24	53.97	74.00	Pass
	4960.00	43.62	Ave	174	3.1	H	-0.24	43.38	54.00	Pass
	2480.00	102.42	PK	112	1.2	V	0.53	102.95	114.00	Pass
	2480.00	87.26	Ave	112	1.2	V	0.53	87.79	94.00	Pass
	4960.00	53.25	PK	137	1.1	V	-0.24	53.01	74.00	Pass
	4960.00	42.57	Ave	137	1.1	V	-0.24	42.33	54.00	Pass

Note: Other harmonics emissions are lower than 20dB below the allowable limit.

7 Band Edge Measurement

Test Requirement:	Section 15.249(d) 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)).
Test Method:	DA 00-705
Limit:	40.0 dBuV/m between 30MHz & 88MHz; 43.5 dBuV/m between 88MHz & 216MHz; 46.0 dBuV/m between 216MHz & 960MHz; 54.0 dBuV/m above 960MHz. 74.0 dBuV/m for peak above 1GHz 54.0 dBuV/m for AVG above 1GHz

7.1 Test Procedure

1. The EUT was placed on a turntable which is 0.8m above ground plane

2. Measurement Distance is 3m

3. Detector: For Peak value:
RBW = 1 MHz for f ≥ 1 GHz
VBW ≥ RBW; Sweep = auto
Detector function = peak
Trace = max hold
For AVG value:
RBW = 1 MHz for f ≥ 1 GHz
VBW = 10Hz; Sweep = auto
Detector function = AVG
Trace = max hold

4. Continuous transmitting

7.2 Test Result:

Test result shown as follows:

GFSK

	Frequency (MHz)	Antenna polarization (H/V)	Test Frequency (MHz)	Emission (dBuV/m)	Band edge Limit (dBuV/m)		Result
				PK	PK	AV	Pass
Hopping	<2400	H	2386.23	49.58	74.00	54.00	Pass
	<2400	V	2389.26	49.52	74.00	54.00	Pass
	>2483.5	H	2488.59	50.03	74.00	54.00	Pass
	>2483.5	V	2486.24	50.68	74.00	54.00	Pass
Unhopping	<2400	H	2387.59	49.97	74.00	54.00	Pass
	<2400	V	2381.22	50.03	74.00	54.00	Pass
	>2483.5	H	2486.31	50.94	74.00	54.00	Pass
	>2483.5	V	2487.28	50.39	74.00	54.00	Pass

PI/4 DPSK

	Frequency (MHz)	Antenna polarization (H/V)	Test Frequency (MHz)	Emission (dBuV/m)	Band edge Limit (dBuV/m)		Result
				PK	PK	AV	Pass
Hopping	<2400	H	2384.36	50.47	74.00	54.00	Pass
	<2400	V	2386.21	50.62	74.00	54.00	Pass
	>2483.5	H	2487.26	50.06	74.00	54.00	Pass
	>2483.5	V	2486.87	50.31	74.00	54.00	Pass
Unhopping	<2400	H	2393.12	49.87	74.00	54.00	Pass
	<2400	V	2394.01	49.39	74.00	54.00	Pass
	>2483.5	H	2486.17	50.06	74.00	54.00	Pass
	>2483.5	V	2486.84	50.11	74.00	54.00	Pass

8-DPSK

	Frequency (MHz)	Antenna polarization (H/V)	Test Frequency (MHz)	Emission (dBuV/m)	Band edge Limit (dBuV/m)		Result
				PK	PK	AV	Pass
Hopping	<2400	H	2392.15	50.62	74.00	54.00	Pass
	<2400	V	2393.35	50.34	74.00	54.00	Pass
	>2483.5	H	2486.12	49.95	74.00	54.00	Pass
	>2483.5	V	2486.54	50.03	74.00	54.00	Pass
Unhopping	<2400	H	2389.57	50.23	74.00	54.00	Pass
	<2400	V	2391.24	50.37	74.00	54.00	Pass
	>2483.5	H	2486.58	49.87	74.00	54.00	Pass
	>2483.5	V	2488.48	49.85	74.00	54.00	Pass

8 20 dB Bandwidth Measurement

Test Requirement: FCC CFR47 Part 15 Section 15.249

Test Method: DA 00-705

Test Mode: Test in fixing operating frequency at low, Middle, high channel.

8.1 Test Procedure:

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

2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

8.2 Test Result:

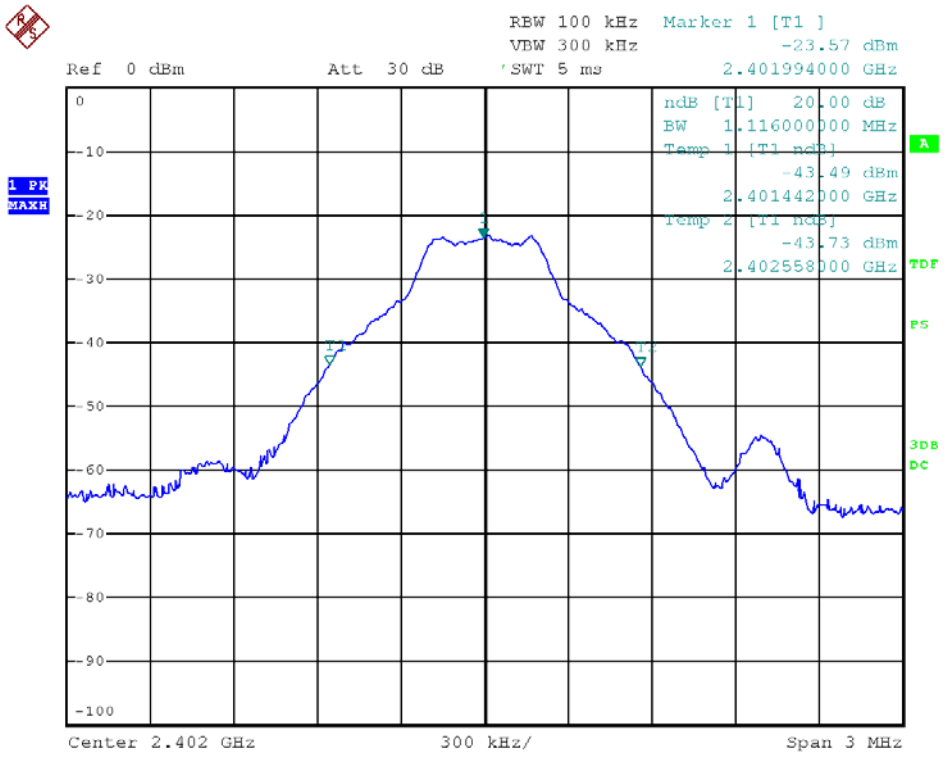
Modulation	Test Channel	Bandwidth(MHz)
GFSK	Lower	0.825
	Middle	0.833
	Upper	0.825
Pi/4DQPSK	Lower	1.087
	Middle	1.087
	Upper	1.096
8DPSK	Lower	1.116
	Middle	1.116
	Upper	1.122

For pretest, the worst mode was 8DPSK, the data only show the 8DPSK mode.

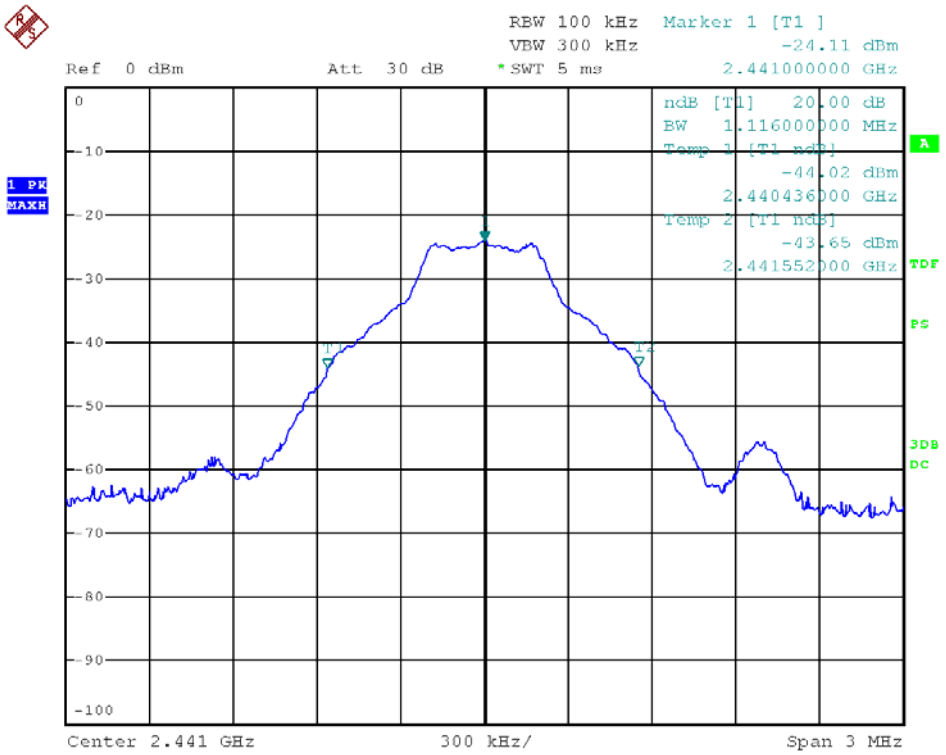
Test result plot as follows:

Modulation: 8DPSK

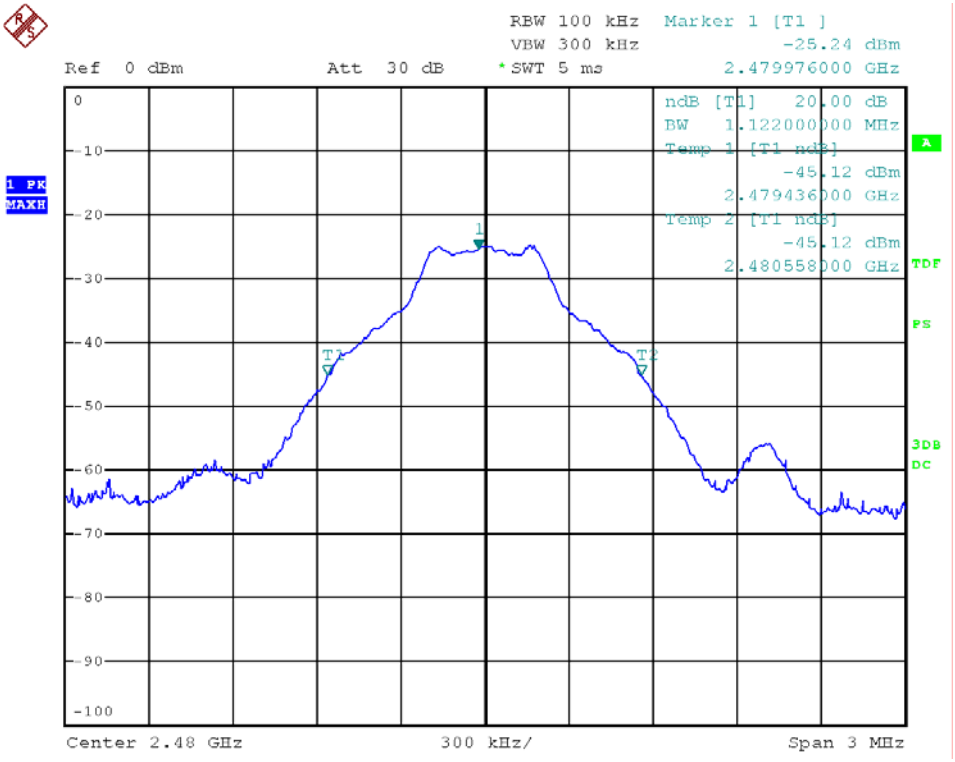
Lower Channel



Middle Channel



Upper Channel

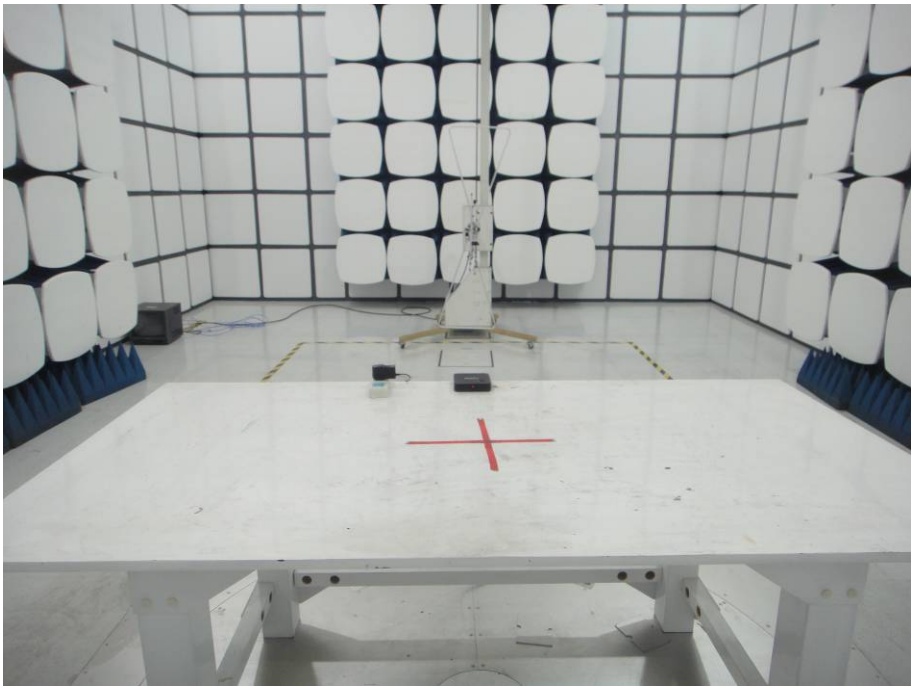


9 Antenna Requirement

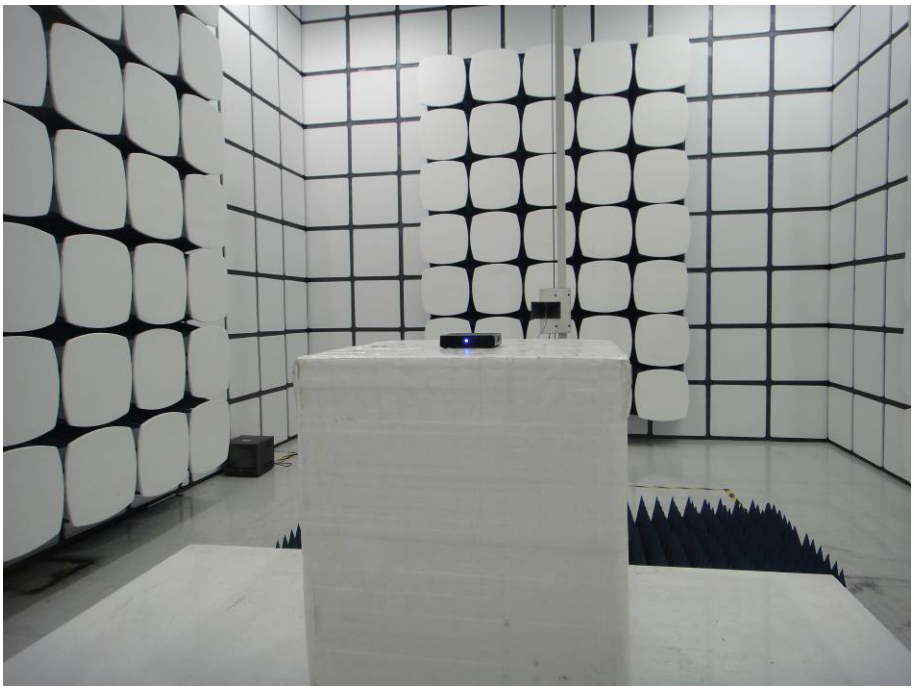
According to the FCC Part 15 Paragraph 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. This product has a internal antenna, fulfill the requirement of this section.

10 EUT TEST PHOTO

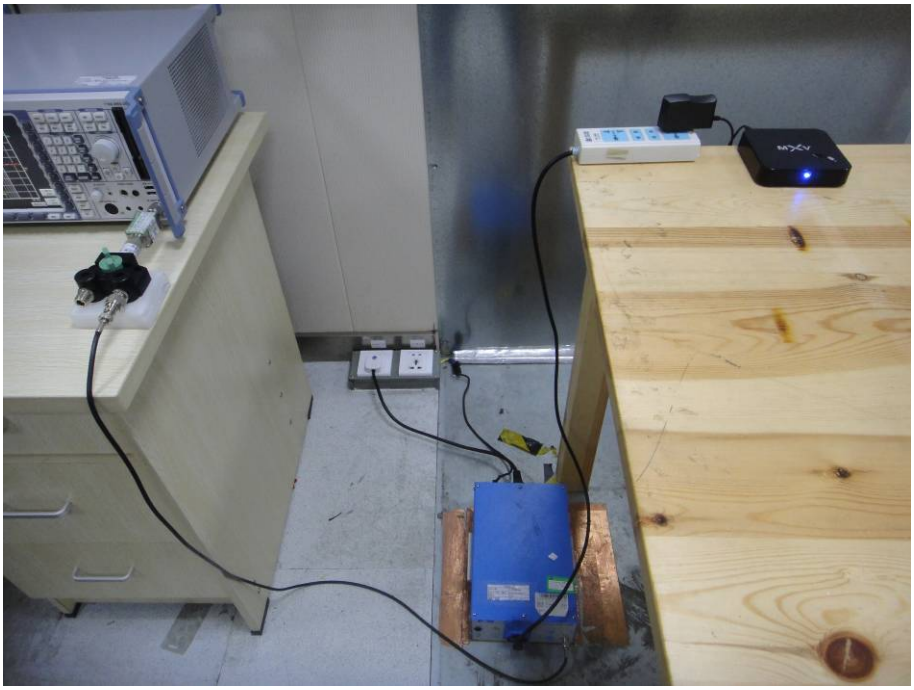
Radiated Measurement Photos



Radiated Measurement Photos



Conducted Measurement Photos



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