

FCC TEST REPORT

For

PIXEL ENTERPRISE LIMITED

LED photography light

Model No.: P50, S50, D50, I50

Prepared For : **PIXEL ENTERPRISE LIMITED**
Address : **NO255, Jinlang South Road, Dalang Town, Dongguan, Guangdong, China 523000**


Prepared By : **Shenzhen Anbotek Compliance Laboratory Limited**
Address : **1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102**
Tel: (86) 755-26066440 Fax: (86) 755-26014772

Report Number : **SZAWW181030019-01**
Date of Receipt : **Oct. 10, 2018**
Date of Test : **Oct. 10~Nov. 15, 2018**
Date of Report : **Nov. 15, 2018**

Contents

1. General Information.....	4
1.1. Client Information.....	4
1.2. Description of Device (EUT).....	4
1.3. Auxiliary Equipment Used During Test.....	4
1.4. Description of Test Modes.....	5
1.5. List of Channels.....	6
1.6. Description of Test Setup.....	7
1.7. Test Equipment List.....	8
1.8. Description of Test Facility.....	9
2. Summary of Test Results.....	10
3. Conducted Emission Test.....	11
3.1. Test Standard and Limit.....	11
3.2. Test Setup.....	11
3.3. Test Procedure.....	11
3.4. Test Data.....	11
4. Radiated Emission and Band Edge.....	16
4.1. Test Standard and Limit.....	16
4.2. Test Setup.....	16
4.3. Test Procedure.....	18
4.4. Test Data.....	18
5. 20dB Bandwidth Test.....	28
5.1. Test Standard and Limit.....	28
5.2. Test Setup.....	28
5.3. Test Procedure.....	28
5.4. Test Data.....	28
6. Antenna Requirement.....	31
6.1. Test Standard and Requirement.....	31
6.2. Antenna Connected Construction.....	31
APPENDIX I -- TEST SETUP PHOTOGRAPH.....	32
APPENDIX II -- EXTERNAL PHOTOGRAPH.....	34
APPENDIX III -- INTERNAL PHOTOGRAPH.....	40

TEST REPORT

Applicant : PIXEL ENTERPRISE LIMITED
Manufacturer : PIXEL ENTERPRISE LIMITED
Product Name : LED photography light
Model No. : P50, S50, D50, I50
Trade Mark : **Dazzne IVISii**  **Switti**
Rating(s) : Input: DC 15V, 4.0A
(Via adapter AC 100-240V, 50~60Hz, 1.5A)
Test Standard(s) : **FCC Part15 Subpart C, Paragraph 15.249**
Test Method(s) : **ANSI C63.10: 2013**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test

Oct. 10~Nov. 15, 2018

Prepared By



Oliay Yang

(Engineer / Oliay Yang)

Reviewer

Snowy Meng

(Supervisor / Snowy Meng)

Approved & Authorized Signer

Sally Zhang


(Manager / Sally Zhang)

1. General Information

1.1. Client Information

Applicant	:	PIXEL ENTERPRISE LIMITED
Address	:	NO255, Jinlang South Road, Dalang Town, Dongguan, Guangdong, China 523000
Manufacturer	:	PIXEL ENTERPRISE LIMITED
Address	:	NO255, Jinlang South Road, Dalang Town, Dongguan, Guangdong, China 523000
Factory	:	PIXEL ENTERPRISE LIMITED
Address	:	NO255, Jinlang South Road, Dalang Town, Dongguan, Guangdong, China 523000

1.2. Description of Device (EUT)

Product Name	:	LED photography light
Model No.	:	P50, S50, D50, I50 (Note: All samples are the same except the appearance and size, so we prepare "P50" for test only.)
Trade Mark	:	Dazzne IVSii  Switti
Test Power Supply	:	AC 240V, 60Hz for adapter/ AC 120V, 60Hz for adapter
Product Description	Operation Frequency:	2405-2475.5MHz
	Number of Channel:	48 Channels
	Modulation Type:	GFSK
	Antenna Type:	PCB Antenna
	Antenna Gain(Peak):	1 dBi
Remark: 1)For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

Adapter	:	MODEL: BX-1504000 INPUT: 100-240V~ 50~60Hz, 1.5A OUTPUT: DC 15V, 4.0A
---------	---	---

1.4. 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.

Pretest Mode	Description
Mode 1	Keeping TX mode
Mode 2	CH01
Mode 3	CH24
Mode 4	CH48

For Conducted Emission	
Final Test Mode	Description
Mode 1	Keeping TX mode

For Radiated Emission	
Final Test Mode	Description
Mode 2	CH01
Mode 3	CH24
Mode 4	CH48

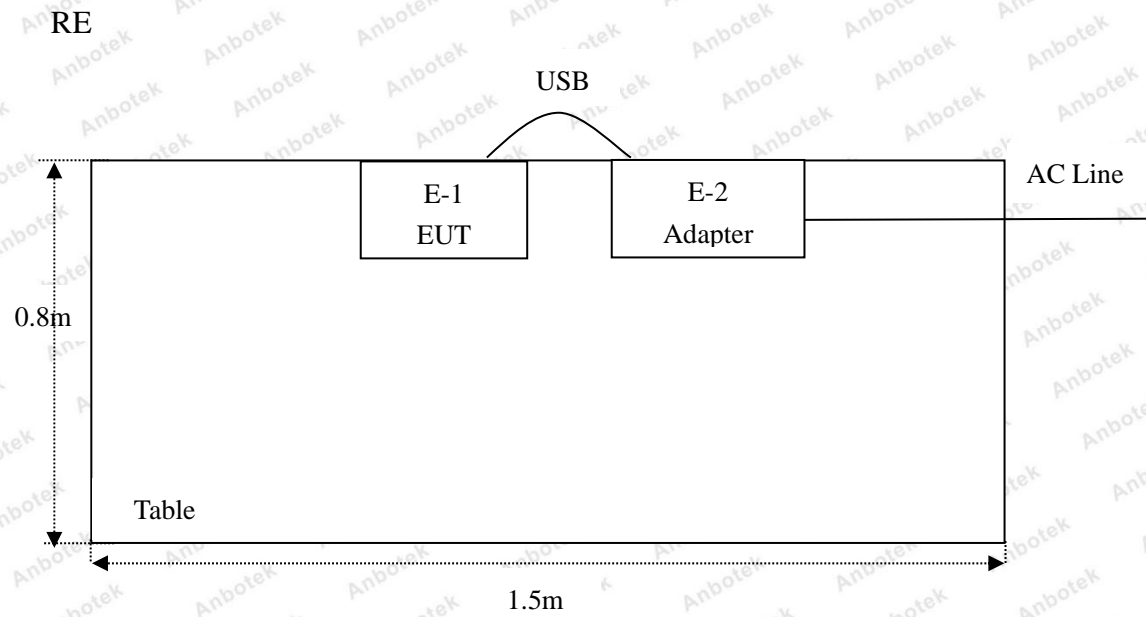
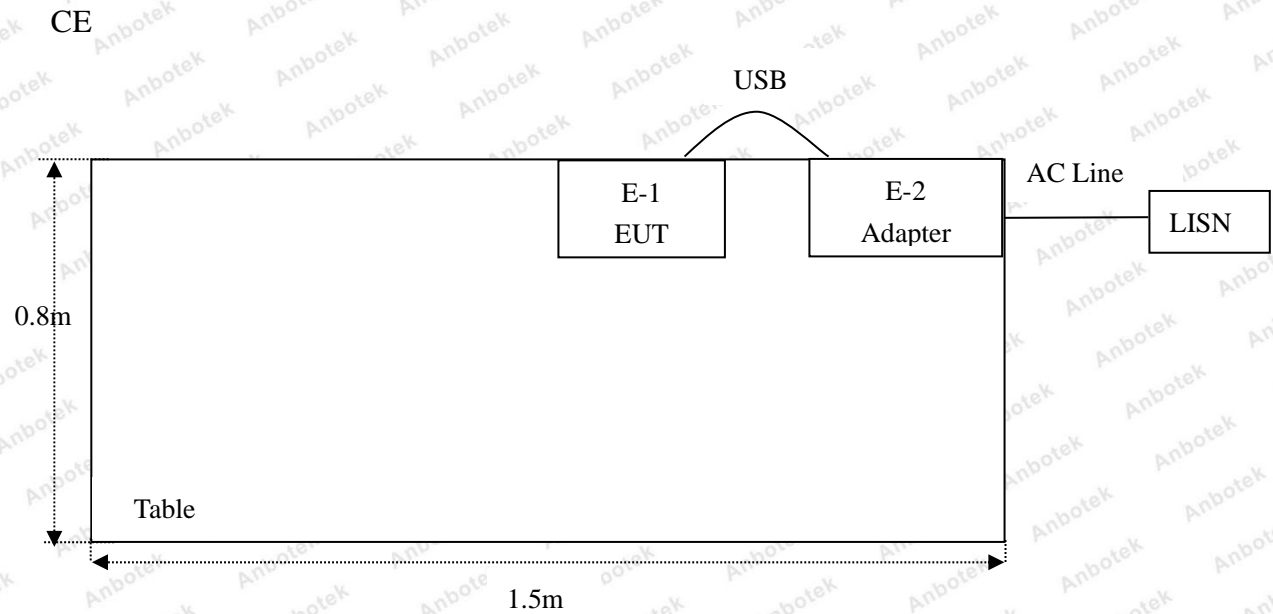
Note:

1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.
2. EUT built-in battery-powered, fully-charged battery use of the test battery.

1.5. List of Channels

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2405	11	2420	21	2435	31	2450	41	2465
2	2406.5	12	2421.5	22	2436.5	32	2451.5	42	2466.5
3	2408	13	2423	23	2438	33	2453	43	2468
4	2409.5	14	2424.5	24	2439.5	34	2454.5	44	2469.5
5	2411	15	2426	25	2441	35	2456	45	2471
6	2412.5	16	2427.5	26	2442.5	36	2457.5	46	2472.5
7	2414	17	2429	27	2444	37	2459	47	2474
8	2415.5	18	2430.5	28	2445.5	38	2460.5	48	2475.5
9	2417	19	2432	29	2447	39	2462	49	
10	2418.5	20	2433.5	30	2448.5	40	2463.5	50	

1.6. Description of Test Setup



1.7. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Nov. 05, 2018	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESPI3	101604	Nov. 05, 2018	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Nov. 05, 2018	1 Year
4.	Spectrum Analysis	Agilent	E4407B	US39390582	Nov. 05, 2018	1 Year
5.	MAX Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
6.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Nov. 05, 2018	1 Year
7.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 19, 2018	1 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 19, 2018	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Nov. 19, 2018	1 Year
10.	Horn Antenna	A-INFO	LB-180400-K F	J211060628	Nov. 20, 2018	1 Year
11.	Pre-amplifier	SONOMA	310N	186860	Nov. 05, 2018	1 Year
12.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
13.	RF Test Control System	YIHENG	YH3000	2017430	Nov. 05, 2018	1 Year
14.	Power Sensor	DAER	RPR3006W	15I00041SN045	Nov. 05, 2018	1 Year
15.	Power Sensor	DAER	RPR3006W	15I00041SN046	Nov. 05, 2018	1 Year
16.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
17.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 05, 2018	1 Year
18.	Signal Generator	Agilent	E4421B	MY41000743	Nov. 05, 2018	1 Year
19.	DC Power Supply	IVYTECH	IV3605	1804D360510	Apr. 02, 2018	1 Year
20.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Nov. 01, 2018	1 Year

1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111, July 31, 2017.

ISED-Registration No.: 8058A-1

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A-1, June 13, 2016.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102

2. Summary of Test Results

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(c)	Band Edge	PASS
Remark: "N/A" is an abbreviation for Not Applicable.		

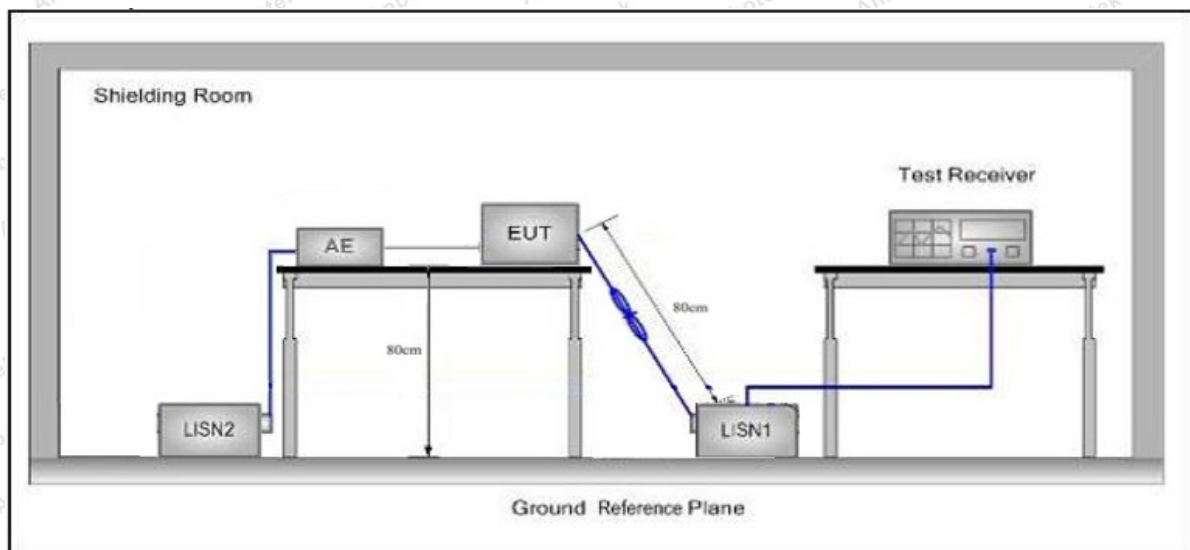
3. Conducted Emission Test

3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207		
Test Limit	Frequency	Maximum RF Line Voltage (dBuV)	
		Quasi-peak Level	Average Level
	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	46
5MHz~30MHz	60	50	

Remark: (1) *Decreasing linearly with logarithm of the frequency.
(2) The lower limit shall apply at the transition frequency.

3.2. Test Setup



3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10-2013 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

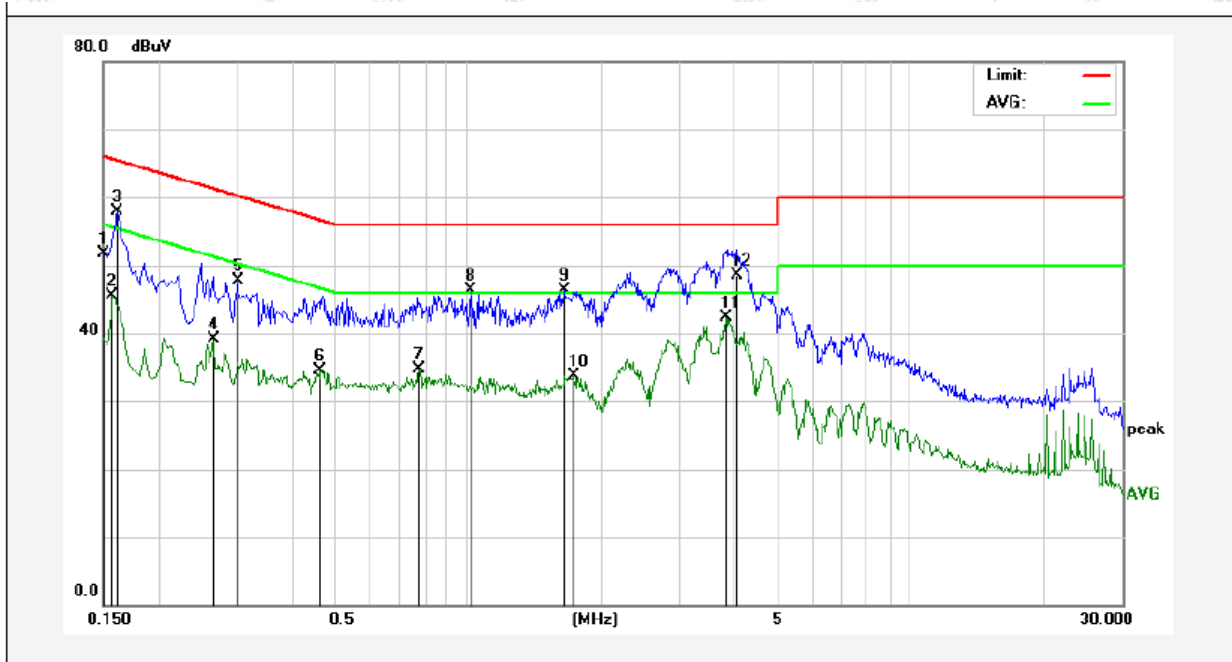
The frequency range from 150kHz to 30MHz is checked.

3.4. Test Data

Please to see the following pages.

Conducted Emission Test Data

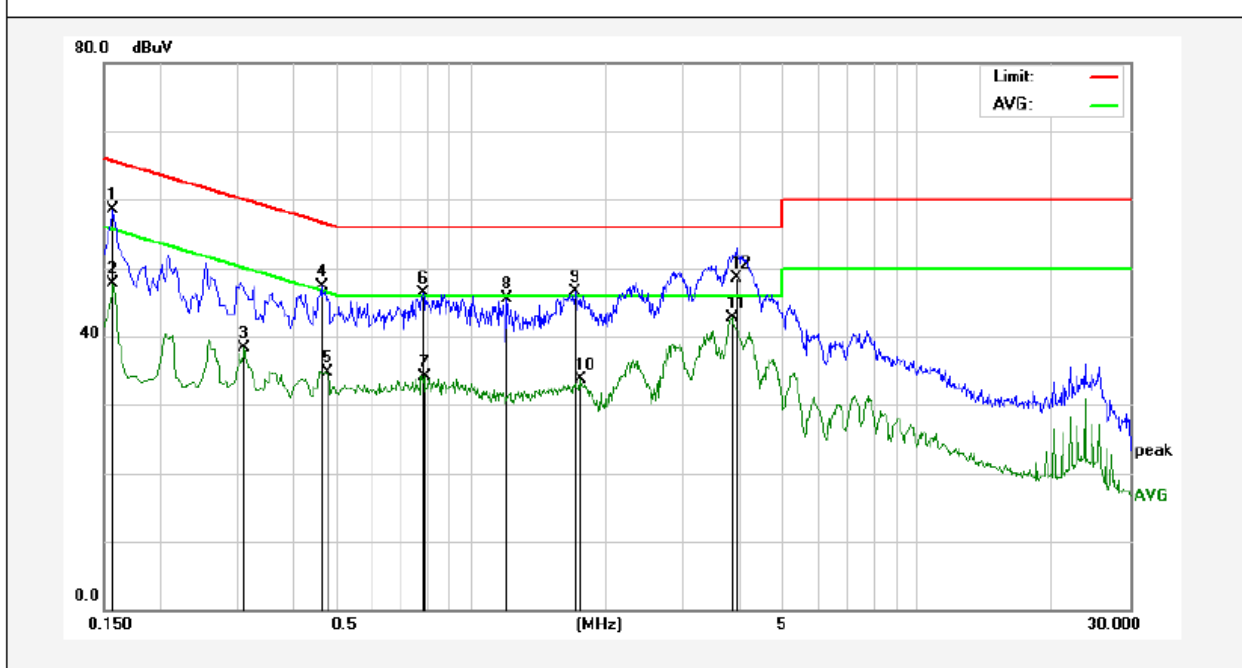
Test Site: 1# Shielded Room
 Operating Condition: Keeping TX Mode
 Test Specification: AC 240V, 60Hz for adapter
 Comment: Live Line
 Tem.: 25.4°C Hum.: 54%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1499	33.82	17.90	51.72	66.00	-14.28	QP	
2	0.1580	27.64	17.90	45.54	55.56	-10.02	AVG	
3	0.1620	40.09	17.90	57.99	65.36	-7.37	QP	
4	0.2660	21.17	17.89	39.06	51.24	-12.18	AVG	
5	0.3019	29.78	17.89	47.67	60.19	-12.52	QP	
6	0.4660	16.51	17.96	34.47	46.58	-12.11	AVG	
7	0.7780	16.58	18.06	34.64	46.00	-11.36	AVG	
8	1.0140	28.28	18.12	46.40	56.00	-9.60	QP	
9	1.6616	28.11	18.13	46.24	56.00	-9.76	QP	
10	1.7419	15.52	18.13	33.65	46.00	-12.35	AVG	
11	3.8260	24.18	18.18	42.36	46.00	-3.64	AVG	
12	4.0499	30.34	18.18	48.52	56.00	-7.48	QP	

Conducted Emission Test Data

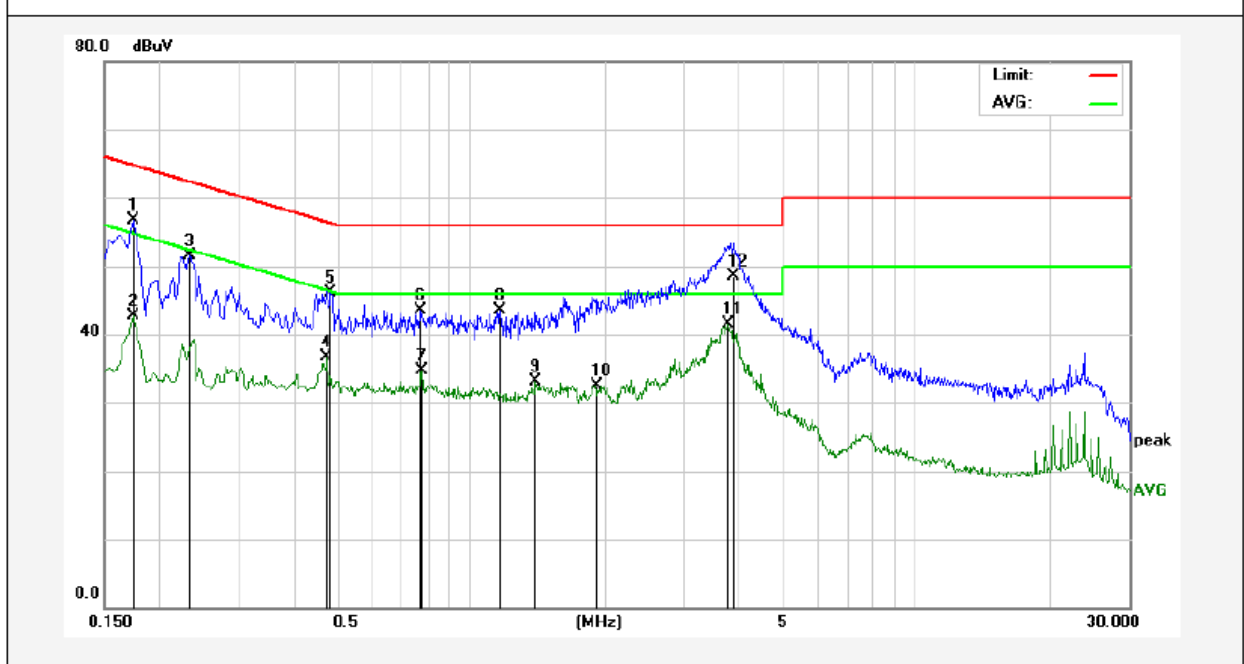
Test Site: 1# Shielded Room
 Operating Condition: Keeping TX Mode
 Test Specification: AC 240V, 60Hz for adapter
 Comment: Neutral Line
 Tem.: 25.4°C Hum.: 54%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1580	40.51	17.90	58.41	65.56	-7.15	QP	
2	0.1580	29.76	17.90	47.66	55.56	-7.90	AVG	
3	0.3099	20.46	17.89	38.35	49.97	-11.62	AVG	
4	0.4620	29.25	17.96	47.21	56.66	-9.45	QP	
5	0.4778	16.79	17.97	34.76	46.38	-11.62	AVG	
6	0.7820	28.17	18.06	46.23	56.00	-9.77	QP	
7	0.7860	16.12	18.06	34.18	46.00	-11.82	AVG	
8	1.2056	27.29	18.12	45.41	56.00	-10.59	QP	
9	1.7096	28.40	18.13	46.53	56.00	-9.47	QP	
10	1.7620	15.51	18.14	33.65	46.00	-12.35	AVG	
11	3.8420	24.45	18.18	42.63	46.00	-3.37	AVG	
12	3.9620	30.33	18.18	48.51	56.00	-7.49	QP	

Conducted Emission Test Data

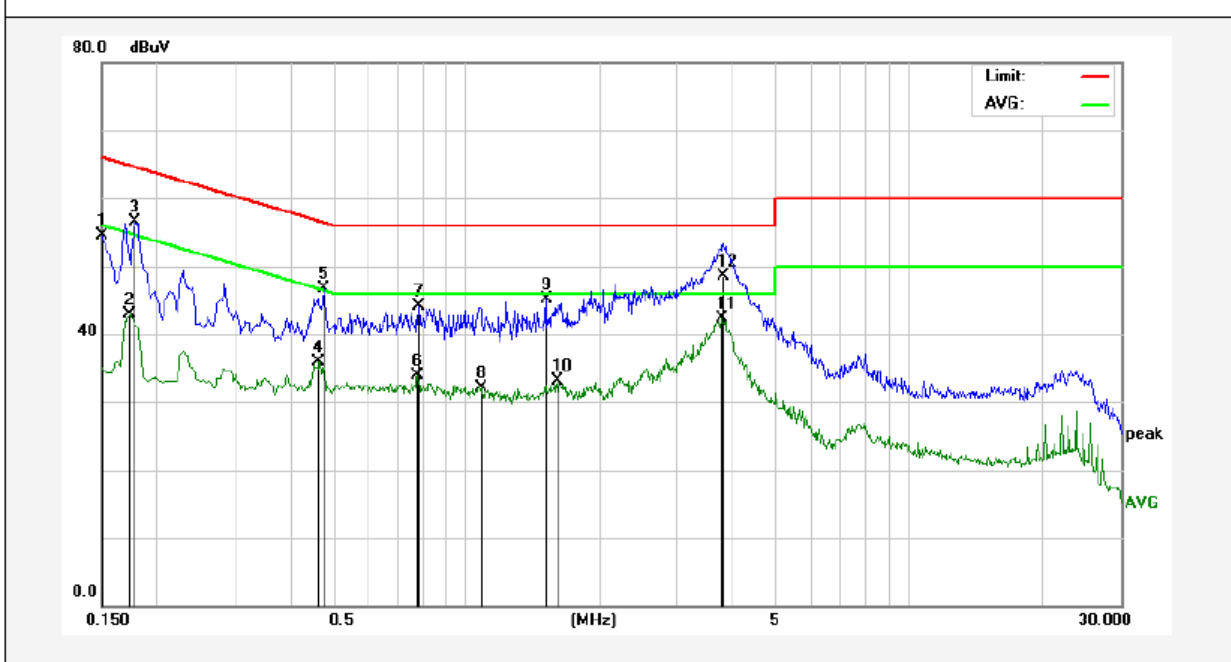
Test Site: 1# Shielded Room
 Operating Condition: Keeping TX Mode
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Live Line
 Tem.: 25.4°C Hum.: 54%



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Over Limit (dB)	Detector	Remark
1	0.1737	38.77	17.90	56.67	64.78	-8.11	QP	
2	0.1737	24.75	17.90	42.65	54.78	-12.13	AVG	
3	0.2340	33.63	17.89	51.52	62.30	-10.78	QP	
4	0.4737	18.82	17.97	36.79	46.45	-9.66	AVG	
5	0.4858	28.12	17.97	46.09	56.24	-10.15	QP	
6	0.7740	25.42	18.06	43.48	56.00	-12.52	QP	
7	0.7780	16.70	18.06	34.76	46.00	-11.24	AVG	
8	1.1616	25.35	18.12	43.47	56.00	-12.53	QP	
9	1.4015	14.97	18.13	33.10	46.00	-12.90	AVG	
10	1.9056	14.44	18.14	32.58	46.00	-13.42	AVG	
11	3.7820	23.30	18.18	41.48	46.00	-4.52	AVG	
12	3.8900	30.33	18.18	48.51	56.00	-7.49	QP	

Conducted Emission Test Data

Test Site: 1# Shielded Room
 Operating Condition: Keeping TX Mode
 Test Specification: AC 120V, 60Hz for adapter
 Comment: Neutral Line
 Tem.: 25.4°C Hum.: 54%



No.	Freq. (MHz)	Reading (dBUV)	Factor (dB)	Result (dBUV)	Limit dBUV	Over Limit (dB)	Detector	Remark
1	0.1499	36.51	17.90	54.41	66.00	-11.59	QP	
2	0.1737	25.02	17.90	42.92	54.78	-11.86	AVG	
3	0.1779	38.53	17.90	56.43	64.58	-8.15	QP	
4	0.4660	17.98	17.96	35.94	46.58	-10.64	AVG	
5	0.4778	28.68	17.97	46.65	56.38	-9.73	QP	
6	0.7780	15.89	18.06	33.95	46.00	-12.05	AVG	
7	0.7820	25.96	18.06	44.02	56.00	-11.98	QP	
8	1.0820	13.93	18.12	32.05	46.00	-13.95	AVG	
9	1.5180	26.90	18.13	45.03	56.00	-10.97	QP	
10	1.6100	14.92	18.13	33.05	46.00	-12.95	AVG	
11	3.7740	24.09	18.18	42.27	46.00	-3.73	AVG	
12	3.8060	30.33	18.18	48.51	56.00	-7.49	QP	

4. Radiated Emission and Band Edge

4.1. 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	
			54.0	Average	3	
	Above 1000MHz	-	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.

4.2. Test Setup

Figure 1. Below 30MHz

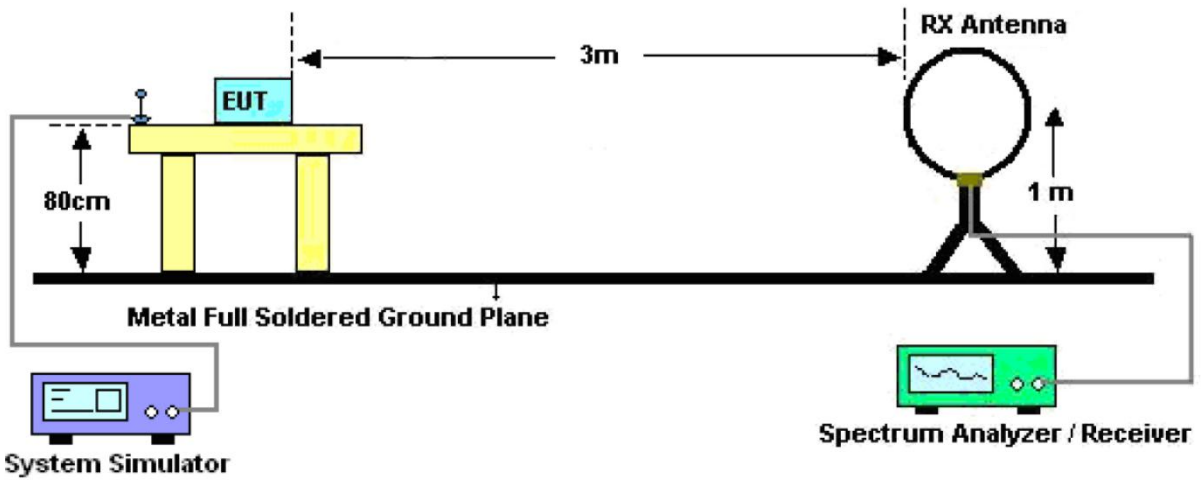


Figure 2. 30MHz to 1GHz

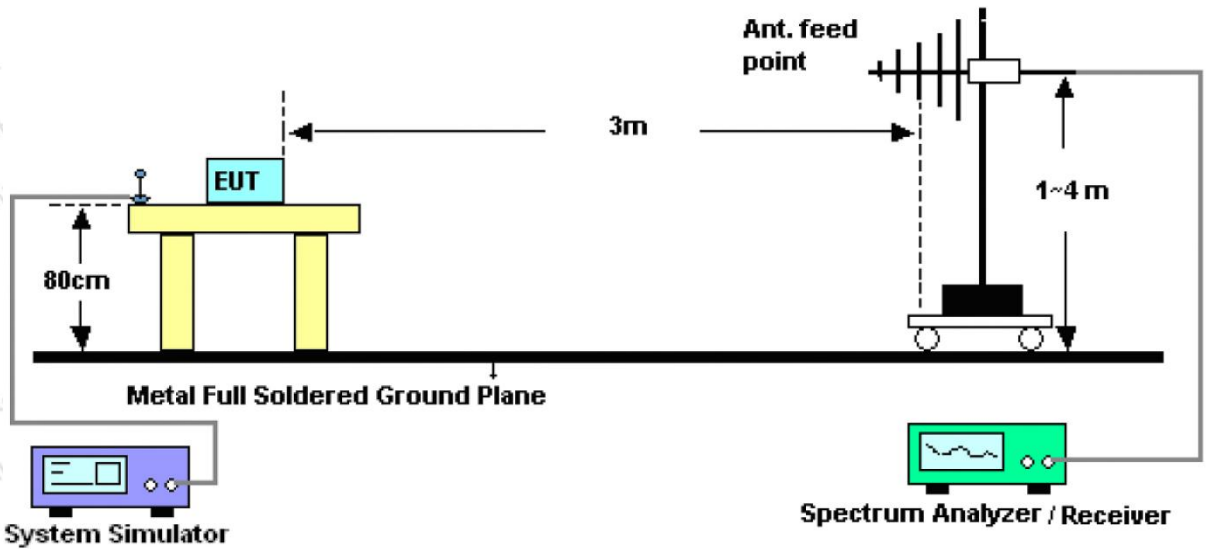
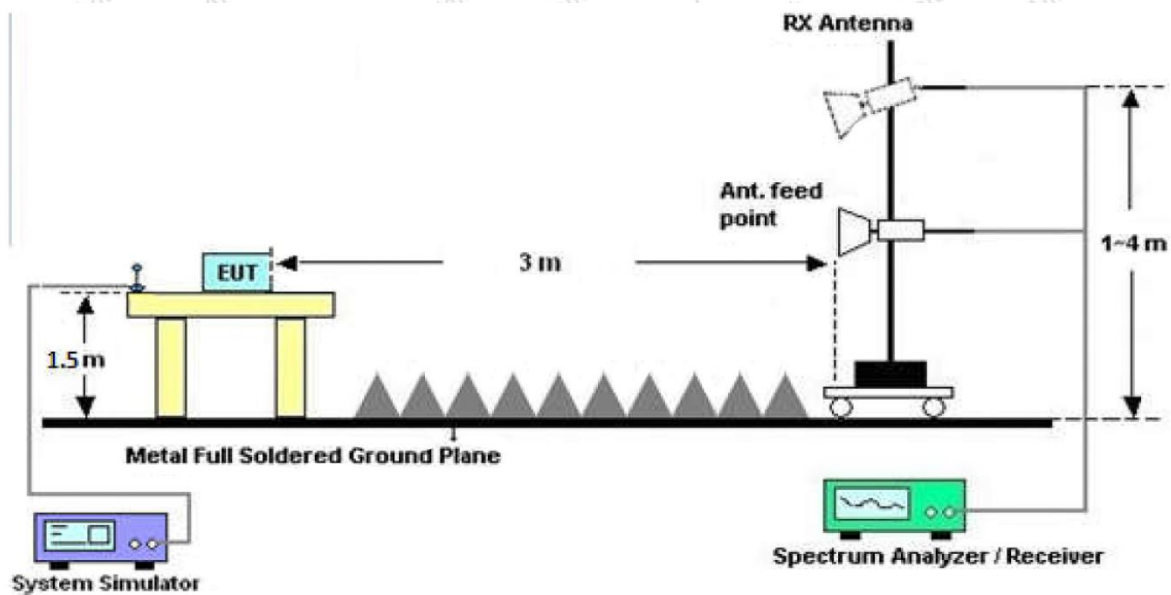


Figure 3. Above 1 GHz



4.3. 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.

4.4. Test Data

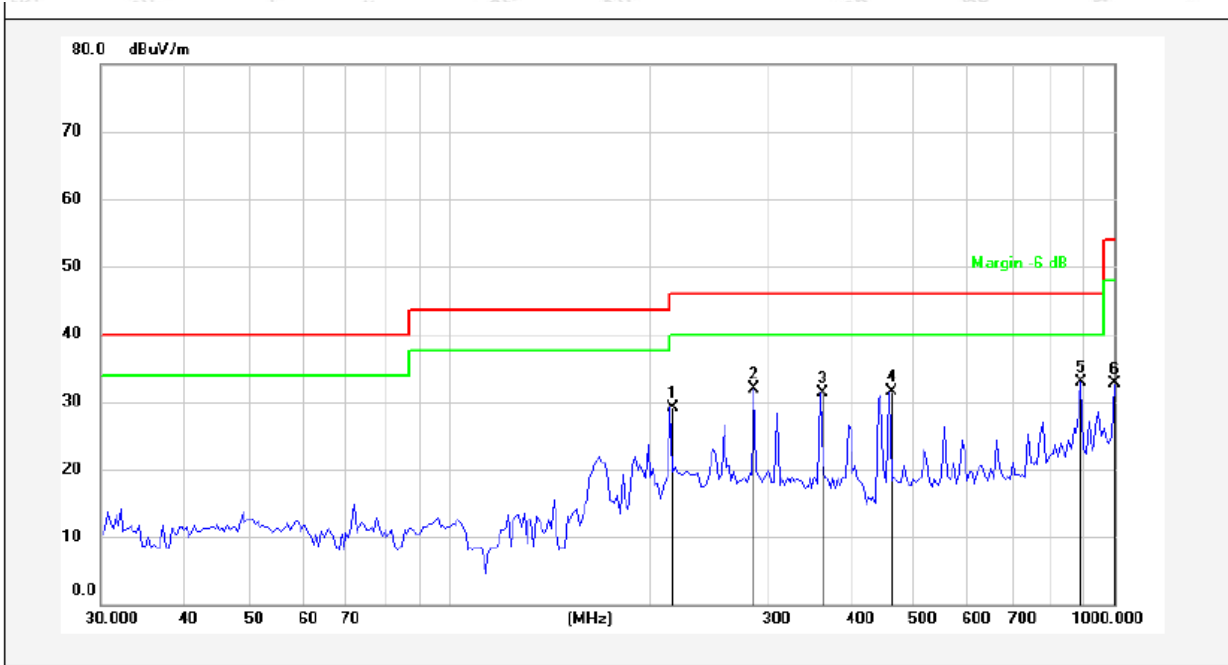
PASS

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.

The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Test Results (30~1000MHz)

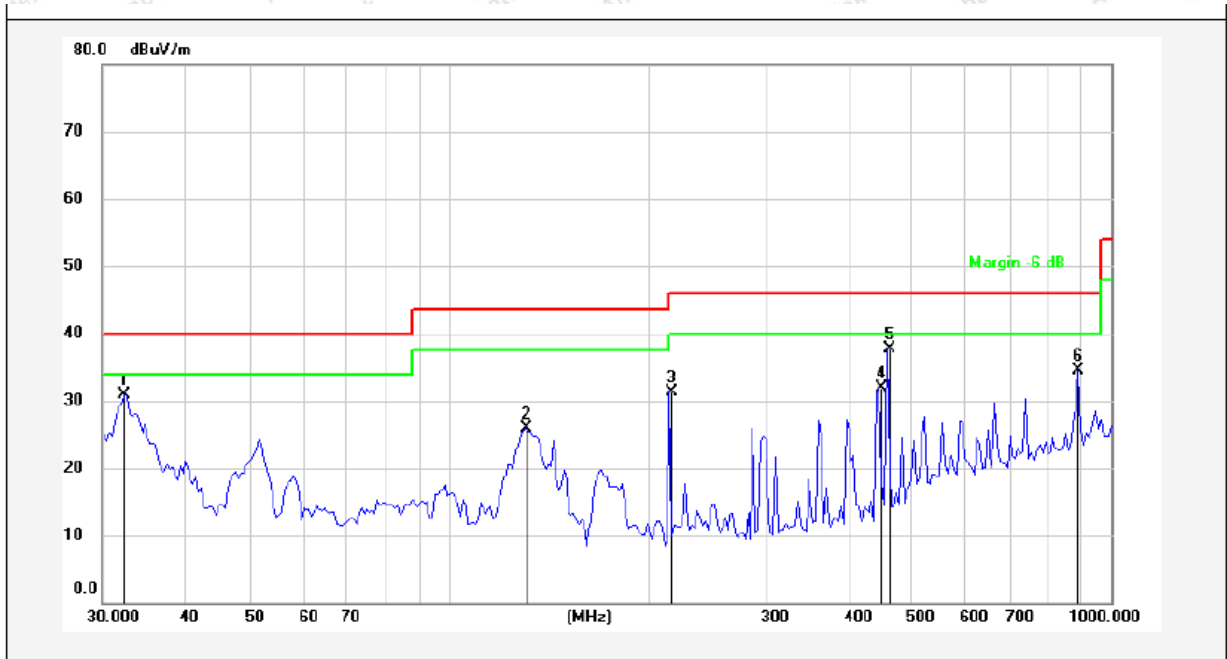
Job No.: SZAWW181030019-01 Temp.(°C)/Hum.(%RH): 23.2°C/53.4%RH
 Standard: FCC PART 15C Power Source: AC 240V, 60Hz for adapter
 Test Mode: TX Mode Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor ()	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	215.6456	44.90	-15.70	29.20	43.50	-14.30	QP	300	0	
2	287.9904	45.77	-13.85	31.92	46.00	-14.08	QP	300	152	
3	361.7139	43.49	-12.23	31.26	46.00	-14.74	QP	300	165	
4	458.3102	41.99	-10.42	31.57	46.00	-14.43	QP	300	256	
5	892.2907	36.32	-3.44	32.88	46.00	-13.12	QP	300	289	
6	1000.0000	35.08	-2.31	32.77	54.00	-21.23	QP	300	360	

Test Results (30~1000MHz)

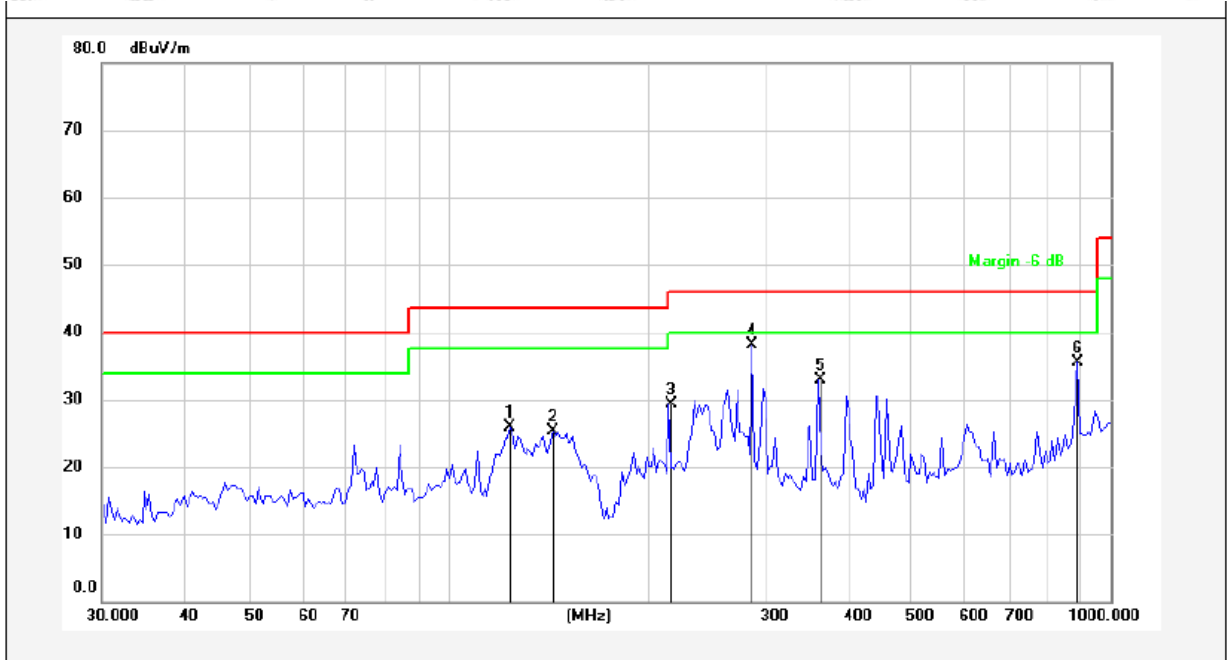
Job No.: SZAWW181030019-01 Temp.(°C)/Hum.(%RH): 23.2°C/53.4%RH
 Standard: FCC PART 15C Power Source: AC 240V, 60Hz for adapter
 Test Mode: TX Mode Polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor ()	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	32.4628	48.60	-17.72	30.88	40.00	-9.12	QP	300	0	
2	130.8369	45.71	-19.80	25.91	43.50	-17.59	QP	300	154	
3	215.6456	46.99	-15.70	31.29	43.50	-12.21	QP	300	256	
4	446.4141	42.57	-10.63	31.94	46.00	-14.06	QP	300	302	
5	458.3102	48.17	-10.42	37.75	46.00	-8.25	QP	300	333	
6	892.2907	37.96	-3.44	34.52	46.00	-11.48	QP	300	360	

Test Results (30~1000MHz)

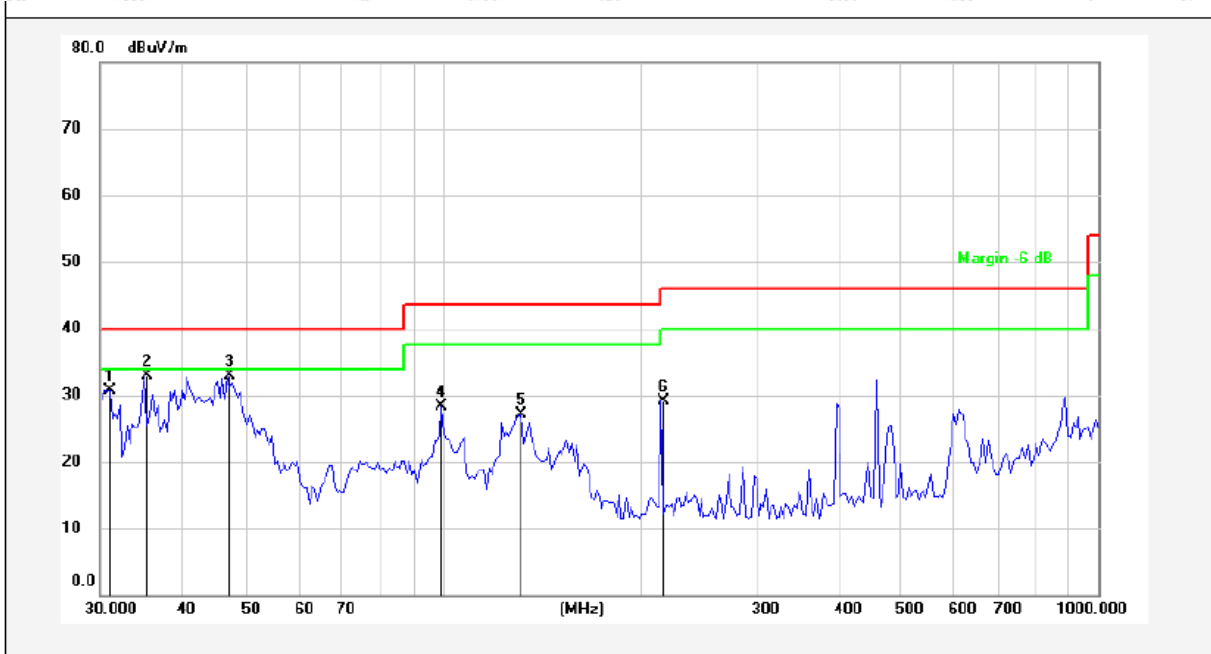
Job No.: SZAWW181030019-01 Temp.(°C)/Hum.(%RH): 23.2°C/53.4%RH
 Standard: FCC PART 15C Power Source: AC 120V, 60Hz for adapter
 Test Mode: TX Mode Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor ()	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	124.1329	44.76	-18.90	25.86	43.50	-17.64	QP	300	0	
2	144.0817	45.39	-20.03	25.36	43.50	-18.14	QP	300	154	
3	215.6456	45.08	-15.70	29.38	43.50	-14.12	QP	300	165	
4	287.9904	51.95	-13.85	38.10	46.00	-7.90	QP	300	245	
5	361.7139	45.06	-12.23	32.83	46.00	-13.17	QP	300	234	
6	892.2907	39.04	-3.44	35.60	46.00	-10.40	QP	300	360	

Test Results (30~1000MHz)

Job No.: SZAWW181030019-01 Temp.(°C)/Hum.(%RH): 23.2°C/53.4%RH
 Standard: FCC PART 15C Power Source: AC 120V, 60Hz for adapter
 Test Mode: TX Mode Polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor ()	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	31.0703	48.50	-17.82	30.68	40.00	-9.32	QP	300	0	
2	35.1278	50.36	-17.51	32.85	40.00	-7.15	QP	300	12	
3	46.9125	47.92	-14.92	33.00	40.00	-7.00	QP	300	123	
4	99.7026	45.03	-16.72	28.31	43.50	-15.19	QP	300	128	
5	131.9889	46.95	-19.85	27.10	43.50	-16.40	QP	300	224	
6	215.6456	44.79	-15.70	29.09	43.50	-14.41	QP	300	360	

Test Results (1GHz-25GHz)

Test Mode: CH01 (Low channel)									
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
2405.0000	94.25	31.21	2.17	35.30	92.33	114.00	-21.67	V	Peak
2405.0000	87.54	31.21	2.17	35.30	85.62	94.00	-8.38	V	AVG
4810.0000	50.22	34.01	2.56	34.71	52.08	74.00	-21.92	V	Peak
4810.0000	45.62	34.01	2.56	34.71	47.48	54.00	-6.52	V	AVG
7215.0000	42.65	36.16	2.98	35.15	46.64	74.00	-27.36	V	Peak
7215.0000	36.21	36.16	2.98	35.15	40.20	54.00	-13.80	V	AVG
9620.0000	*								
12025.0000	*								
14430.0000	*								
16835.0000	*								
2405.0000	94.55	31.21	2.17	35.30	92.63	114.00	-21.37	H	Peak
2405.0000	82.62	31.21	2.17	35.30	80.70	94.00	-13.30	H	AVG
4810.0000	46.58	34.01	2.56	34.71	48.44	74.00	-25.56	H	Peak
4810.0000	41.25	34.01	2.56	34.71	43.11	54.00	-10.89	H	AVG
7215.0000	40.22	36.16	2.98	35.15	44.21	74.00	-29.79	H	Peak
7215.0000	35.68	36.16	2.98	35.15	39.67	54.00	-14.33	H	AVG
9620.0000	*								
12025.0000	*								
14430.0000	*								
16835.0000	*								

Note:

1. Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Test Mode: CH24 (Middle channel)									
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
2439.5000	91.65	31.12	2.20	34.51	90.46	114.00	-23.54	V	Peak
2439.5000	81.54	31.22	2.20	34.51	80.45	94.00	-13.55	V	AVG
4879.0000	56.99	34.98	2.49	34.14	60.32	74.00	-13.68	V	Peak
4879.0000	43.89	34.98	2.49	34.14	47.22	54.00	-6.78	V	AVG
7318.5000	41.00	36.01	3.01	34.56	45.46	74.00	-28.54	V	Peak
7318.5000	35.87	36.01	3.01	34.56	40.33	54.00	-13.67	V	AVG
9758.0000	*								
12197.5000	*								
14637.0000	*								
17076.5000	*								
2439.5000	91.58	31.12	2.20	34.51	90.39	114.00	-23.61	H	Peak
2439.5000	80.66	31.12	2.20	34.51	79.47	94.00	-14.53	H	AVG
4879.0000	44.69	34.98	2.49	34.14	48.02	74.00	-25.98	H	Peak
4879.0000	42.87	34.98	2.49	34.14	46.20	54.00	-7.80	H	AVG
7318.5000	44.85	36.01	3.01	34.56	49.31	74.00	-24.69	H	Peak
7318.5000	36.55	36.01	3.01	34.56	41.01	54.00	-12.99	H	AVG
9758.0000	*								
12197.5000	*								
14637.0000	*								
17076.5000	*								

Note:

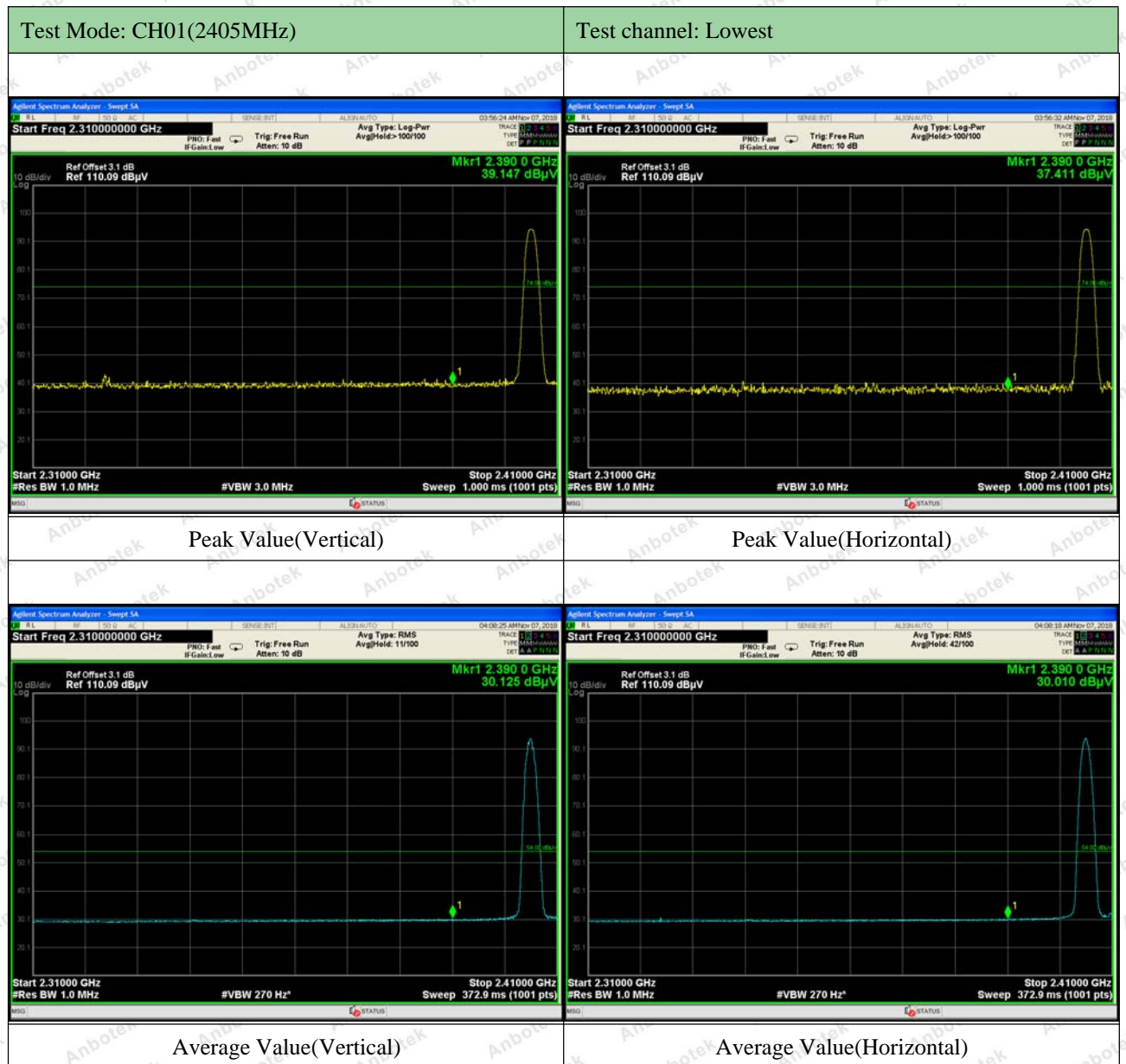
1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Test Mode: CH48 (High channel)									
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
247.5000	92.84	31.64	2.18	35.89	90.77	114.00	-23.23	V	Peak
247.5000	88.95	31.64	2.18	35.89	86.88	94.00	-7.12	V	AVG
495.0000	55.87	35.10	2.52	34.87	58.62	74.00	-15.38	V	Peak
495.0000	41.36	35.10	2.52	34.87	44.11	54.00	-9.89	V	AVG
742.5000	37.98	36.18	3.18	34.96	42.38	74.00	-31.62	V	Peak
742.5000	33.54	36.18	3.18	34.96	37.94	54.00	-16.06	V	AVG
990.0000	*								
1237.5000	*								
1485.0000	*								
1732.5000	*								
2470.0000	95.32	31.64	2.18	35.89	93.25	114.00	-20.75	H	Peak
2470.0000	80.23	31.64	2.18	35.89	78.16	94.00	-15.84	H	AVG
4940.0000	50.25	35.10	2.52	34.87	53.00	74.00	-21.00	H	Peak
4940.0000	42.69	35.10	2.52	34.87	45.44	54.00	-8.56	H	AVG
7410.0000	44.58	36.18	3.18	34.96	48.98	74.00	-25.02	H	Peak
7410.0000	35.47	36.18	3.18	34.96	39.87	54.00	-14.13	H	AVG
9880.0000	*								
12350.0000	*								
14820.0000	*								
17290.0000	*								

Note:

1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Radiated Band Edge:



Test Mode: CH48(2475.5MHz)	Test channel: Highest
Peak Value(Vertical)	Peak Value(Horizontal)
Average Value(Vertical)	Average Value(Horizontal)

Remark:

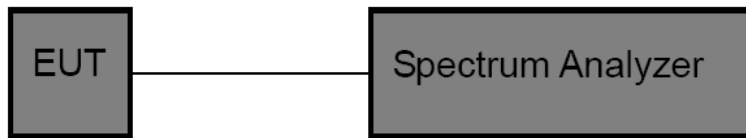
1. Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

5. 20dB Bandwidth Test

5.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.249
---------------	-----------------------------

5.2. Test Setup



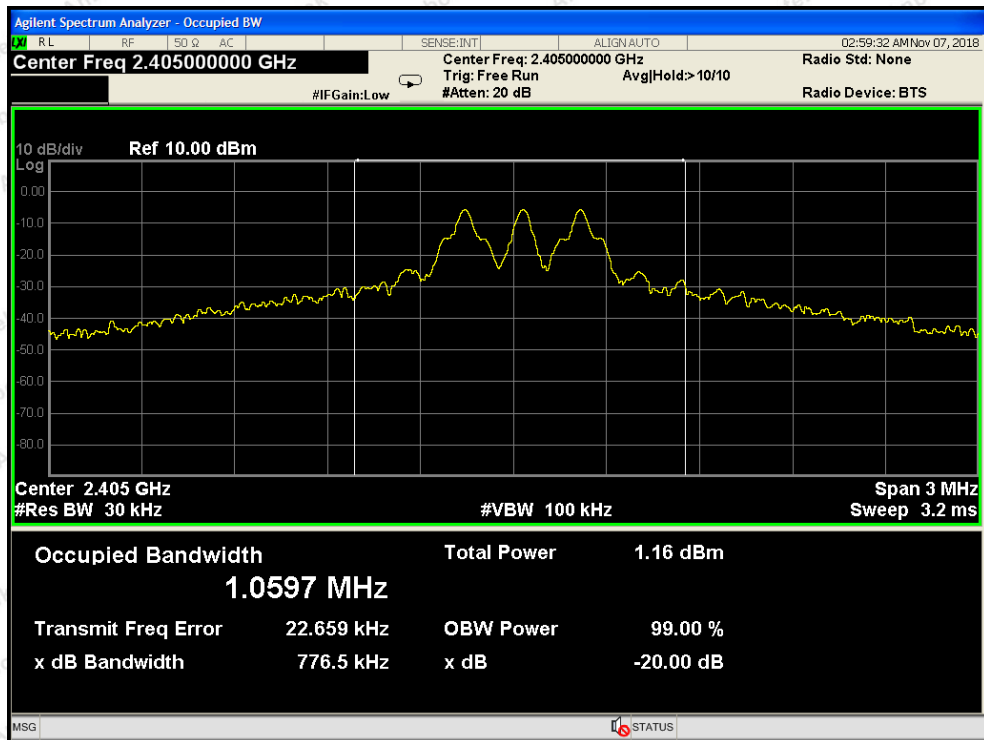
5.3. Test Procedure

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

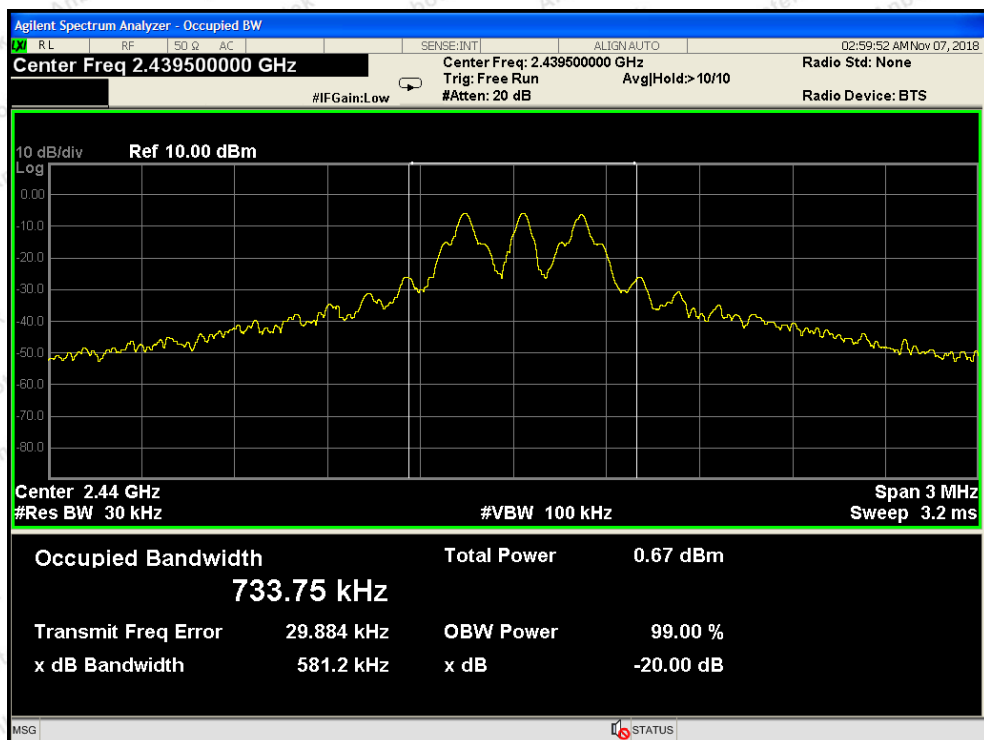
5.4. Test Data

Test Item	: 20dB Bandwidth	Test Mode	: TX Mode
Test Voltage	: AC 120V, 60Hz for adapter	Temperature	: 24°C
Test Result	: PASS	Humidity	: 55%RH

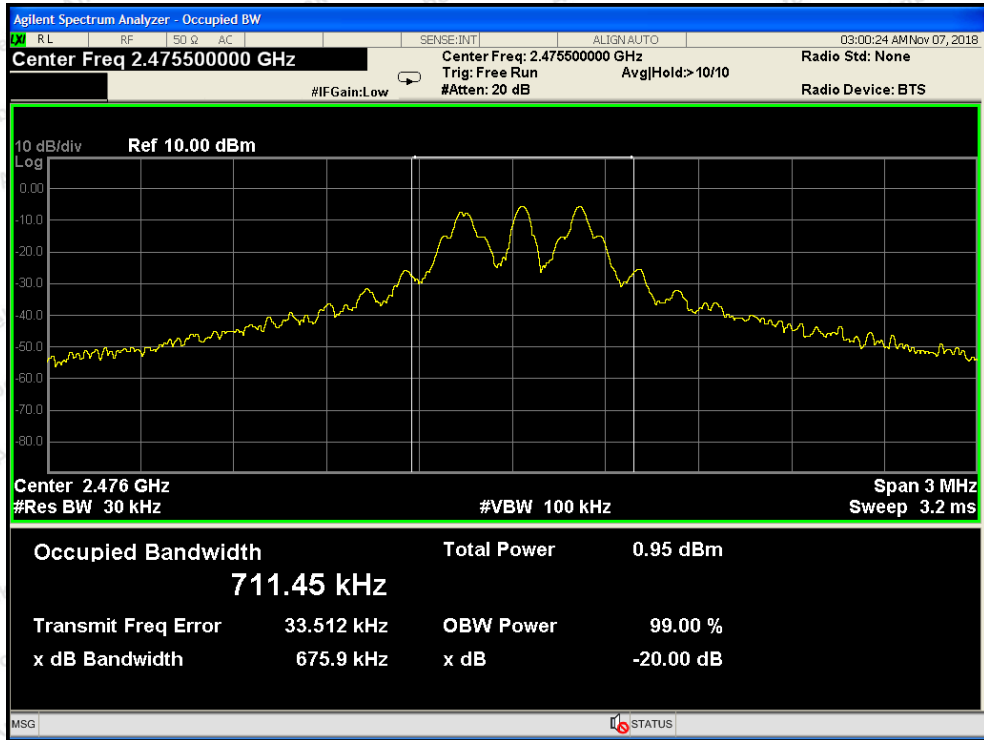
Frequency (MHz)	Bandwidth (kHz)	Result
2405MHZ	776.5	PASS
2439.5MHZ	581.2	PASS
2475.5MHZ	675.9	PASS



Test Mode: Low



Test Mode: Middle



Test Mode: High

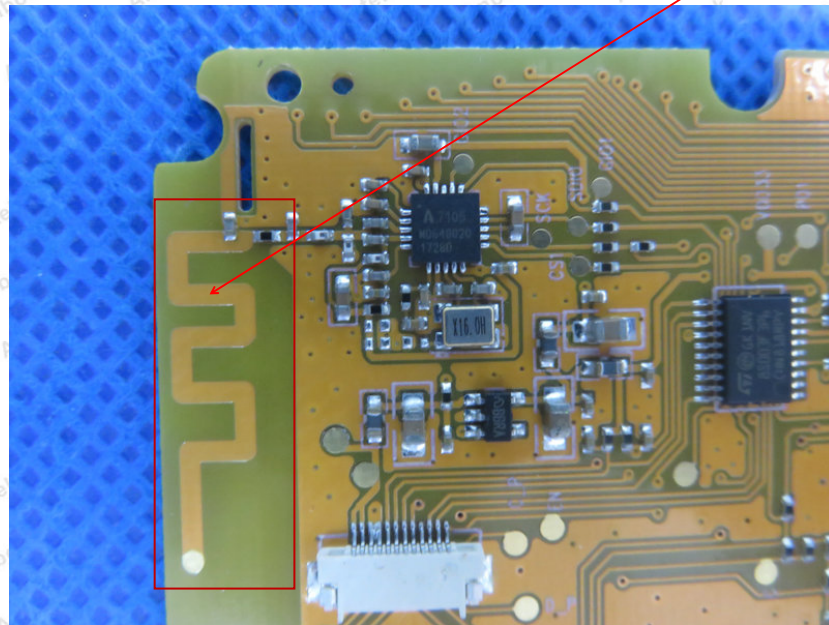
6. Antenna Requirement

6.1. 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.

6.2. Antenna Connected Construction

The antenna is a PCB Antenna which permanently attached, and the best case gain of the antenna is 1 dBi. It complies with the standard requirement.

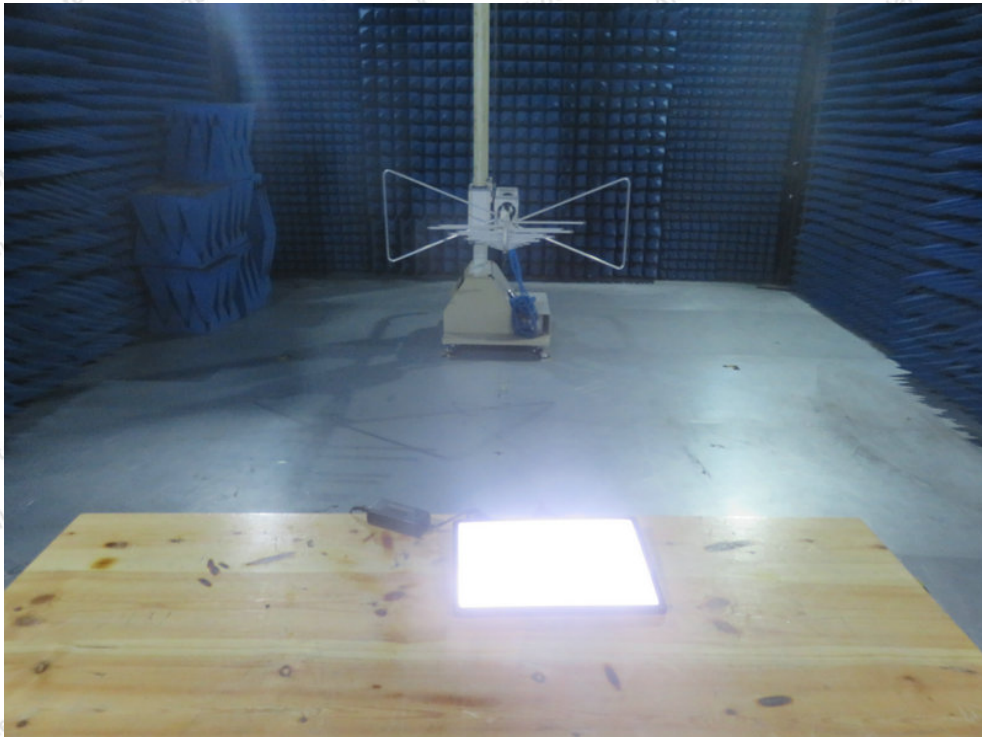


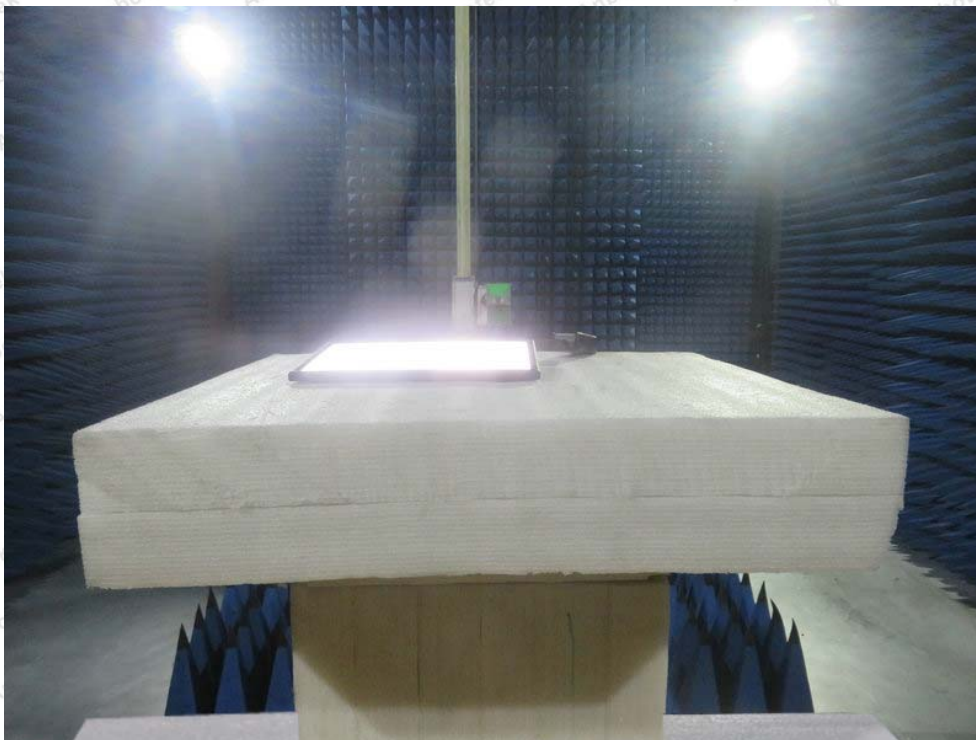
APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Power Line Conducted Emission Test



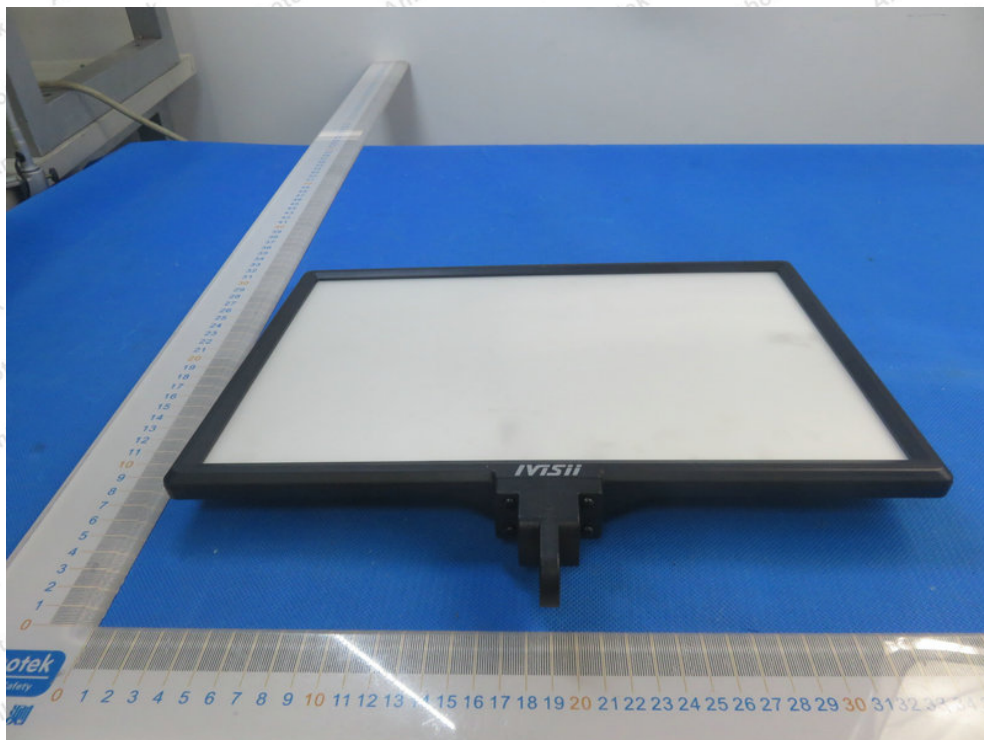
Photo of Radiation Emission Test

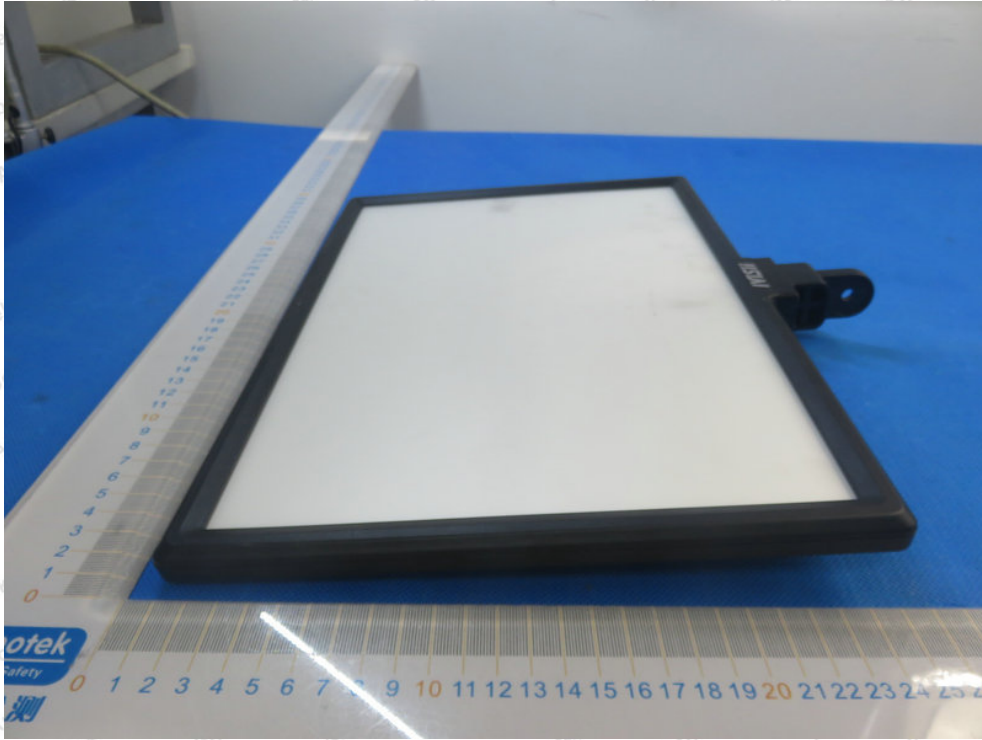


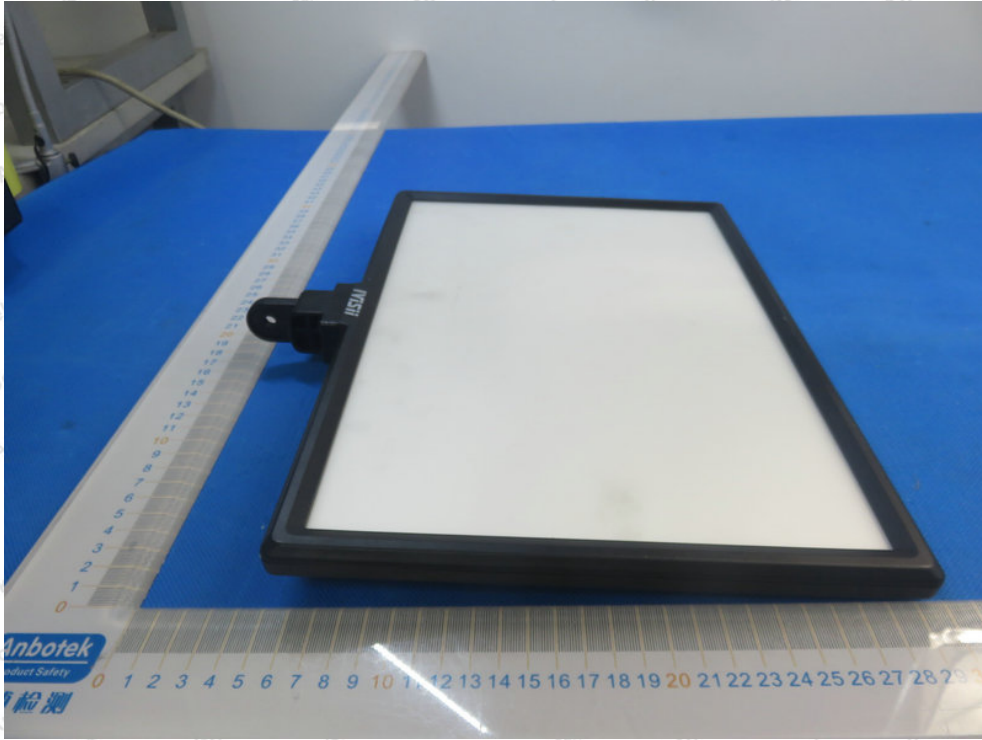


APPENDIX II -- EXTERNAL PHOTOGRAPH









Model: P50



Model: S50



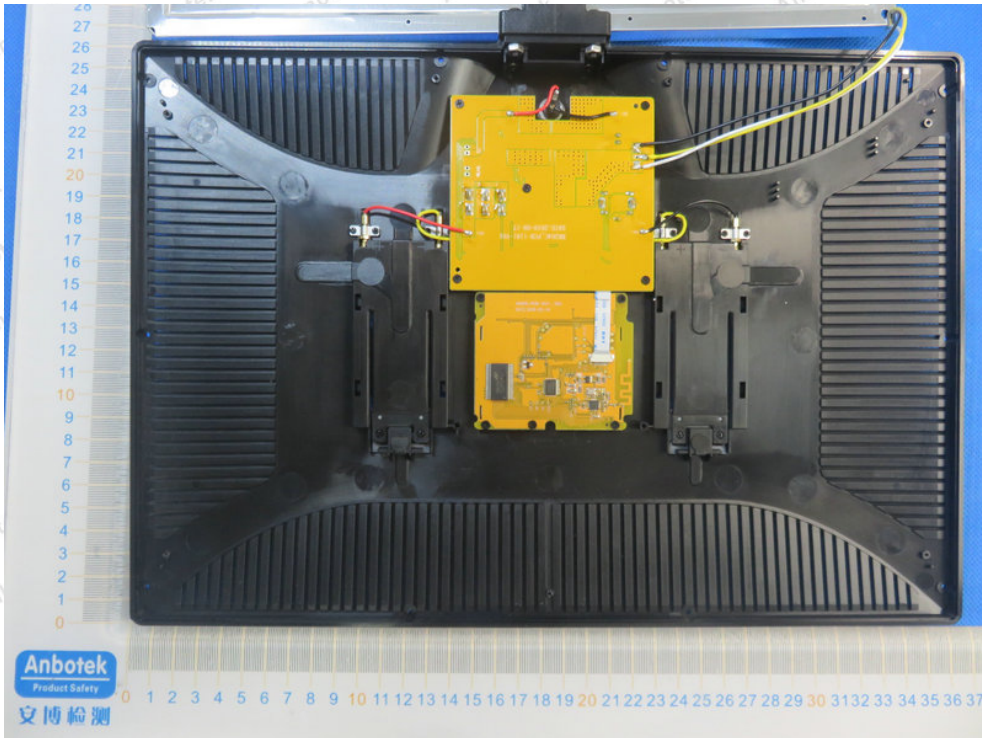
Model: D50

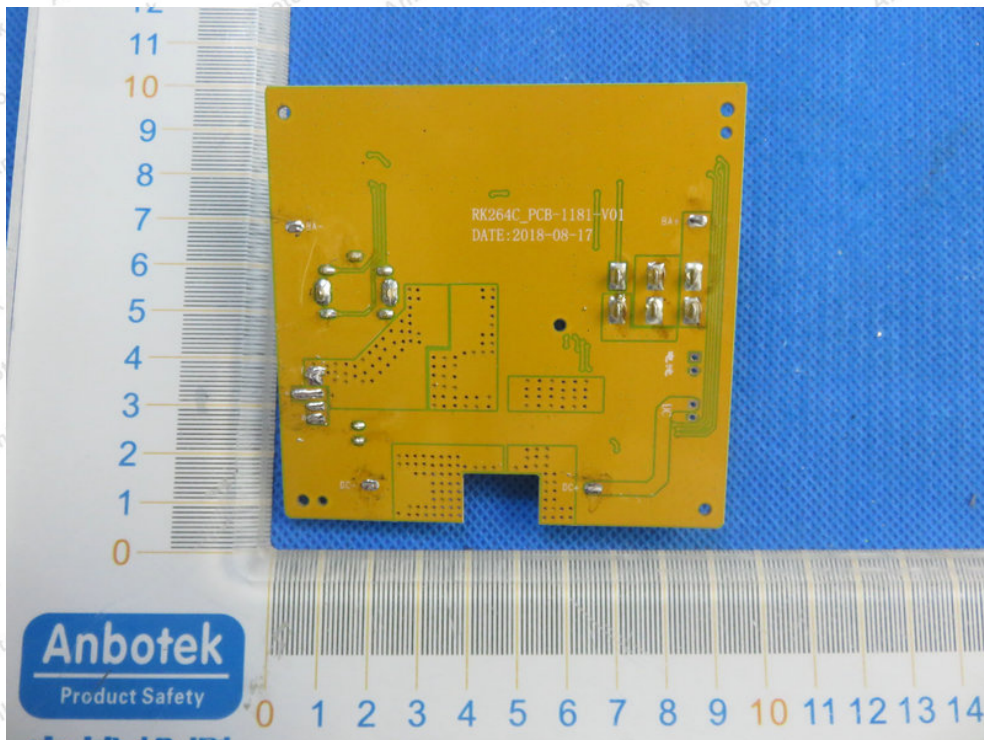
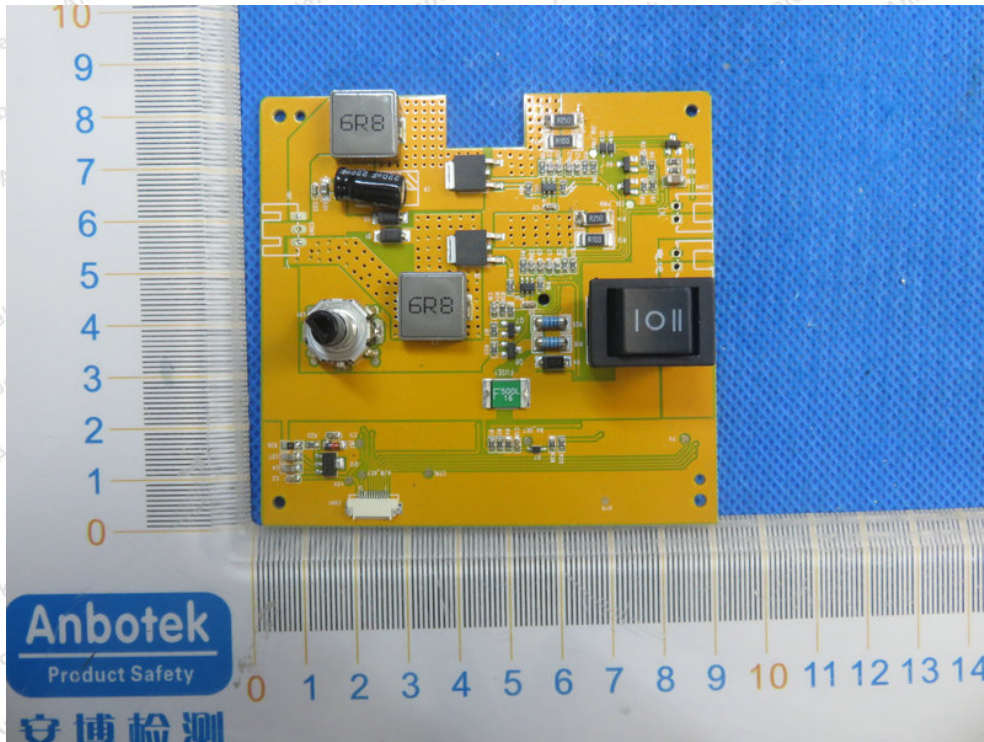


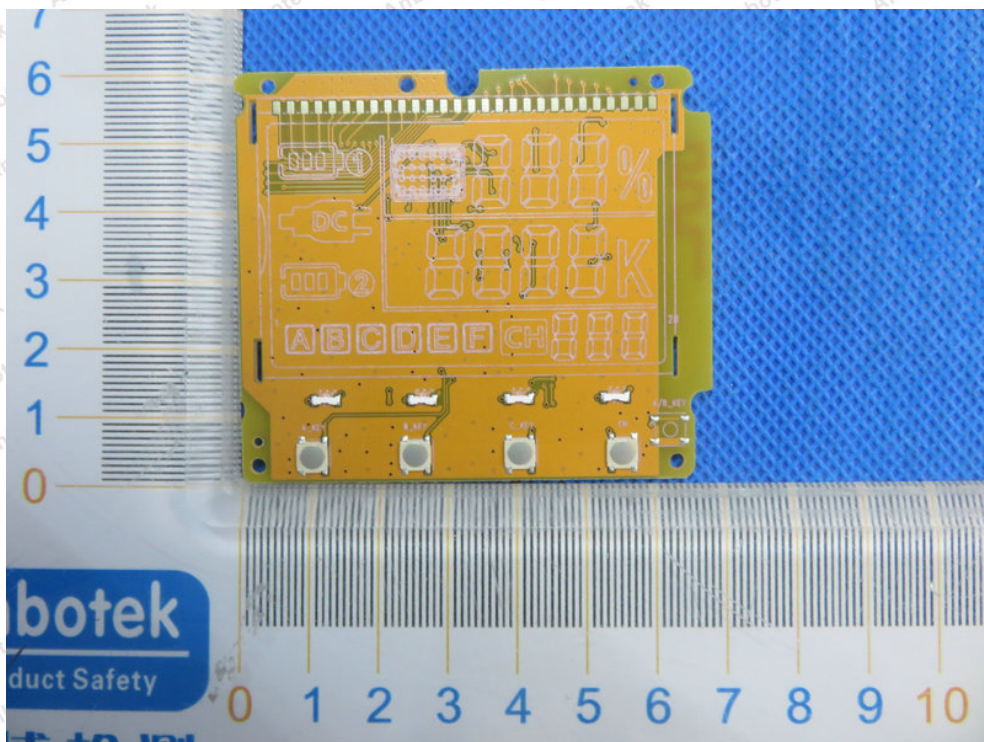
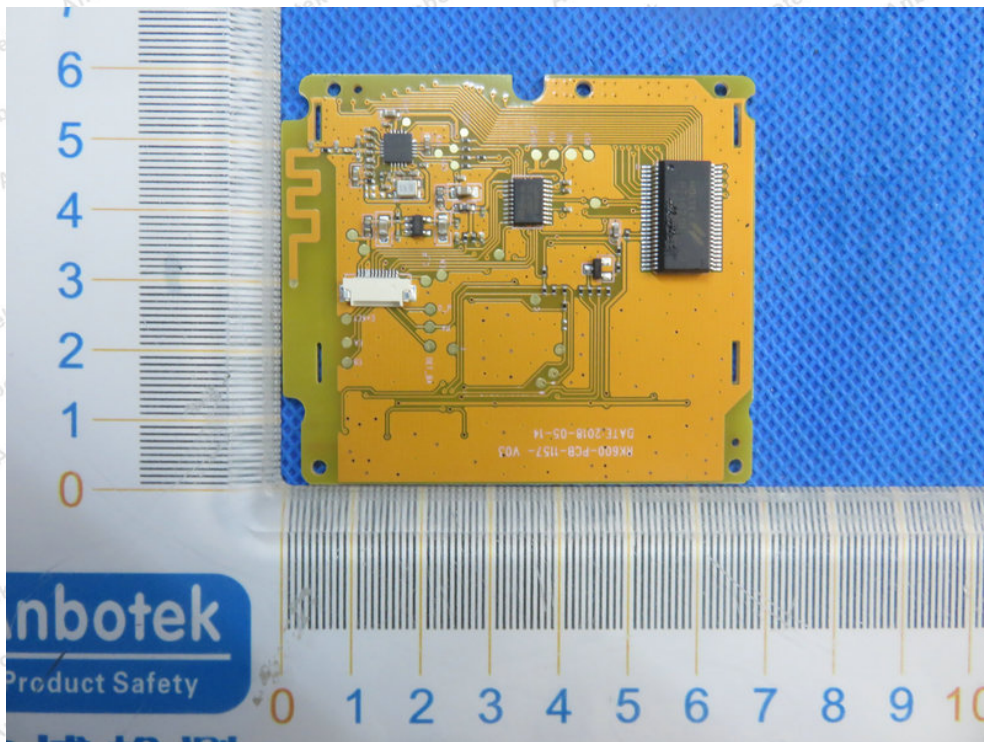
Model: I50

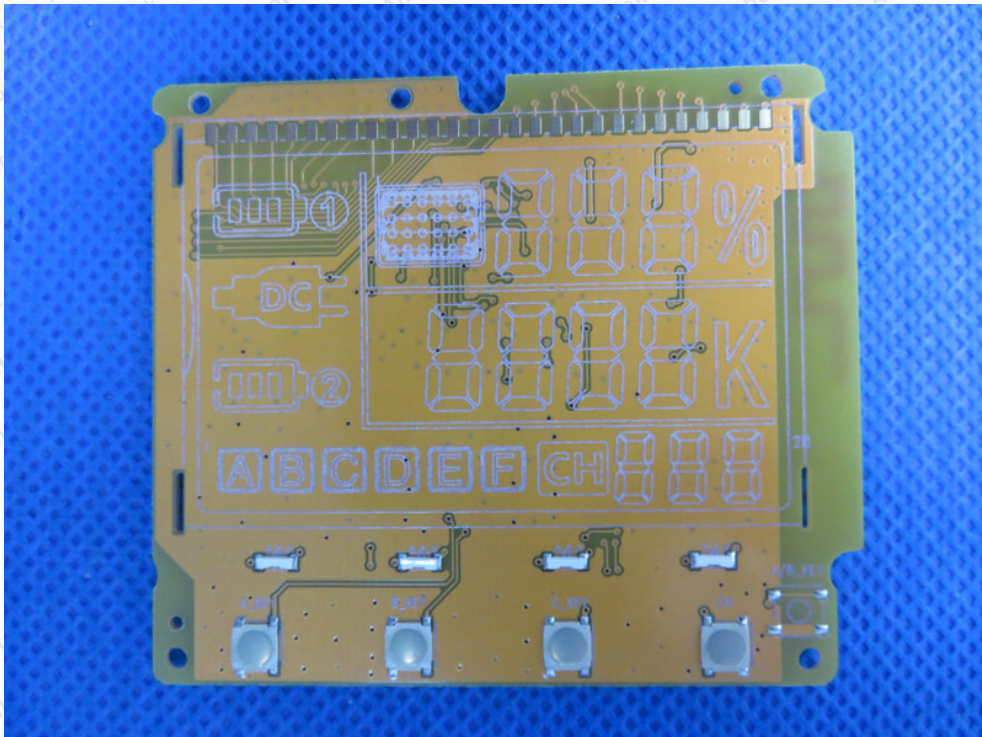
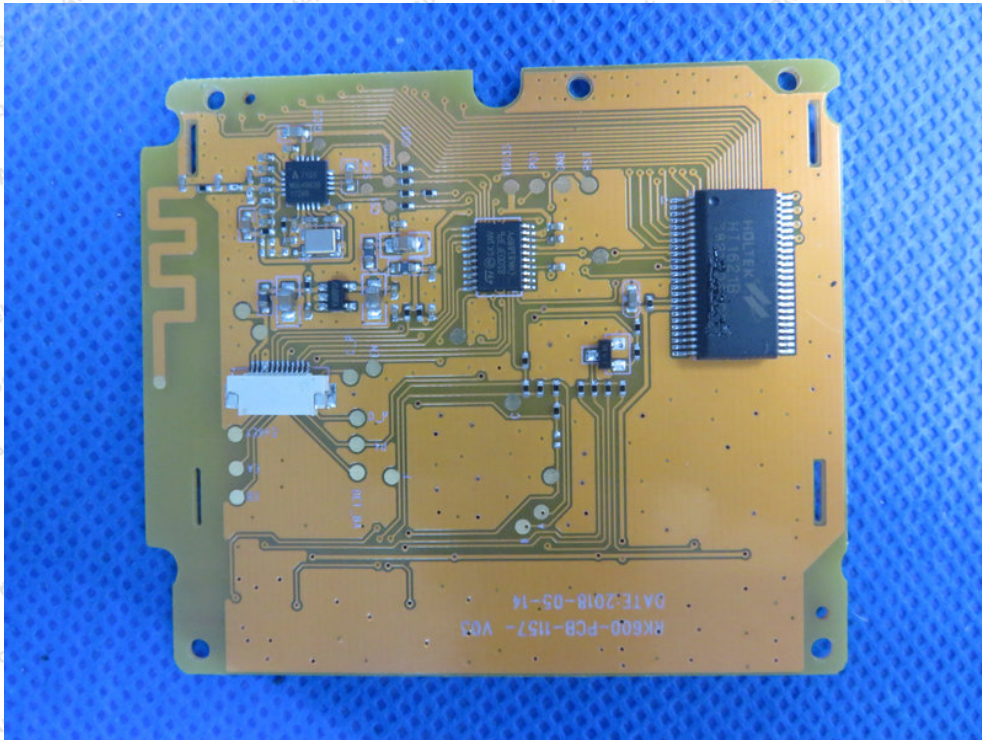


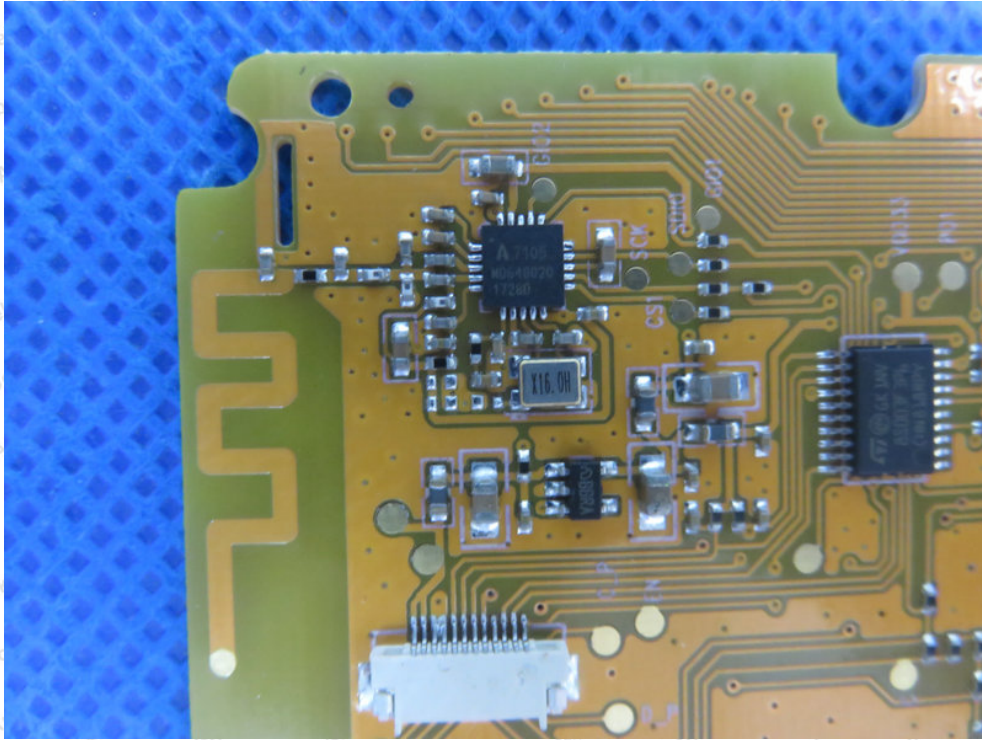
APPENDIX III -- INTERNAL PHOTOGRAPH











----- End of Report -----