

FCC REPORT

Applicant: Enping AKB Electronics Technology Co.,Ltd.

Address of Applicant: No.2 factory building, South Suburb Industrial Area, Enping City, Guangdong, China

Manufacturer: Enping AKB Electronics Technology Co.,Ltd.

Address of Manufacturer: No.2 factory building, South Suburb Industrial Area, Enping City, Guangdong, China

Equipment Under Test (EUT)

Product Name: Wireless Monitor Systems

Model No.: PTM-10, PTM-20, PTM-30, PTM-40, PTM-50, PTM-60, PTM-70, PTM-80, DM-900, DM-910, DM-920, DM-930, DM-940, DM-950, DM-960, DM-970, DM-980, DM-990

Trade Mark: N/A

FCC ID: 2AQ56PTM-10

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249

Date of sample receipt: September 13, 2018

Date of Test: September 13-27, 2018

Date of report issued: September 27, 2018

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Lo

Laboratory Manager

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2 Version

Version No.	Date	Description
00	September 27, 2018	Original

Prepared By:

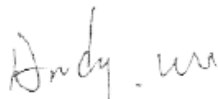


Date:

September 27, 2018

Project Engineer

Check By:



Date:

September 27, 2018

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Remark: Test according to ANSI C63.10: 2013.

Pass: The EUT complies with the essential requirements in the standard.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	$\pm 4.34\text{dB}$	(1)
Radiated Emission	30MHz ~ 1000MHz	$\pm 4.24\text{dB}$	(1)
Radiated Emission	1GHz ~ 26.5GHz	$\pm 4.68\text{dB}$	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	$\pm 3.45\text{dB}$	(1)

Note (1): The measurement uncertainty is for coverage factor of $k=2$ and a level of confidence of 95%.

5 General Information

5.1 General Description of EUT

Product Name:	Wireless Monitor Systems
Model No.:	PTM-10, PTM-20, PTM-30, PTM-40, PTM-50, PTM-60, PTM-70, PTM-80, DM-900, DM-910, DM-920, DM-930, DM-940, DM-950, DM-960, DM-970, DM-980, DM-990
Test sample(s) ID:	GTS201809000074-1
Sample(s) Status	Engineered sample
Hardware Version:	HV1.0
Software Version:	SV1.0
Operation Frequency:	902.3-927.7MHz
Channel numbers:	89
Modulation type:	GFSK
Antenna Type:	External dipole antenna
Antenna gain:	2.0dBi
Power supply:	DC12-18V 300mA from adapter, AC120V/60Hz for adapter.

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	902.3	24	911.65	47	914.875	70	918.775
2	905.6	25	911.85	48	915	71	918.8
3	905.9	26	911.95	49	915.275	72	918.9
4	906.25	27	911.975	50	915.325	73	919.1
5	906.4	28	912	51	915.4	74	919.4
6	906.475	29	912.1	52	915.575	75	919.775
7	906.925	30	912.25	53	915.8	76	920.275
8	907.05	31	912.4	54	916.05	77	921.1
9	907.1	32	912.425	55	916.2	78	921.4
10	907.95	33	912.65	56	916.475	79	921.5
11	908.025	34	913.05	57	916.5	80	921.6
12	908.125	35	913.3	58	916.55	81	921.65
13	908.65	36	913.5	59	916.625	82	922.2
14	908.8	37	913.525	60	916.7	83	922.6
15	909.275	38	913.55	61	916.725	84	923.35
16	909.325	39	913.725	62	917.35	85	924.3
17	909.825	40	913.8	63	917.4	86	924.5
18	909.85	41	914.125	64	917.625	87	924.75
19	910.75	42	914.2	65	917.575	88	924.775
20	910.8	43	914.275	66	917.9	89	927.7
21	910.9	44	914.3	67	918.175		
22	911.2	45	914.6	68	918.45		
23	911.425	46	914.7	69	918.5		

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:

Channel	Frequency
The lowest channel	902.3
The middle channel	914.6
The Highest channel	927.7

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
<i>Remark: During the test, the dutycycle >98%, 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.</i>	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	88.38	89.62	87.45

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
APPLE	USB Charger	A1399	N/A

5.4 Test Facility

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

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 381383, January 08, 2018.

- **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 27 2018	June. 26 2019
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 27 2018	June. 26 2019
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June. 27 2018	June. 26 2019
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 27 2018	June. 26 2019
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 27 2018	June. 26 2019
9	Coaxial Cable	GTS	N/A	GTS211	June. 27 2018	June. 26 2019
10	Coaxial cable	GTS	N/A	GTS210	June. 27 2018	June. 26 2019
11	Coaxial Cable	GTS	N/A	GTS212	June. 27 2018	June. 26 2019
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 27 2018	June. 26 2019
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June. 27 2018	June. 26 2019
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 27 2018	June. 26 2019
15	Band filter	Amindeon	82346	GTS219	June. 27 2018	June. 26 2019
16	Power Meter	Anritsu	ML2495A	GTS540	June. 27 2018	June. 26 2019
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 27 2018	June. 26 2019
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS588	June. 27 2018	June. 26 2019
19	Splitter	Agilent	11636B	GTS237	June. 27 2018	June. 26 2019
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 27 2018	June. 26 2019

Conducted:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 27 2018	June. 26 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 27 2018	June. 26 2019
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 27 2018	June. 26 2019
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 27 2018	June. 26 2019
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 27 2018	June. 26 2019
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 27 2018	June. 26 2019
8	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
9	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 27 2018	June. 26 2019

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 27 2018	June. 26 2019
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 27 2018	June. 26 2019
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 27 2018	June. 26 2019
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 27 2018	June. 26 2019

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	June 27 2018	June 26 2019

7 Test results and Measurement Data

7.1 Antenna requirement

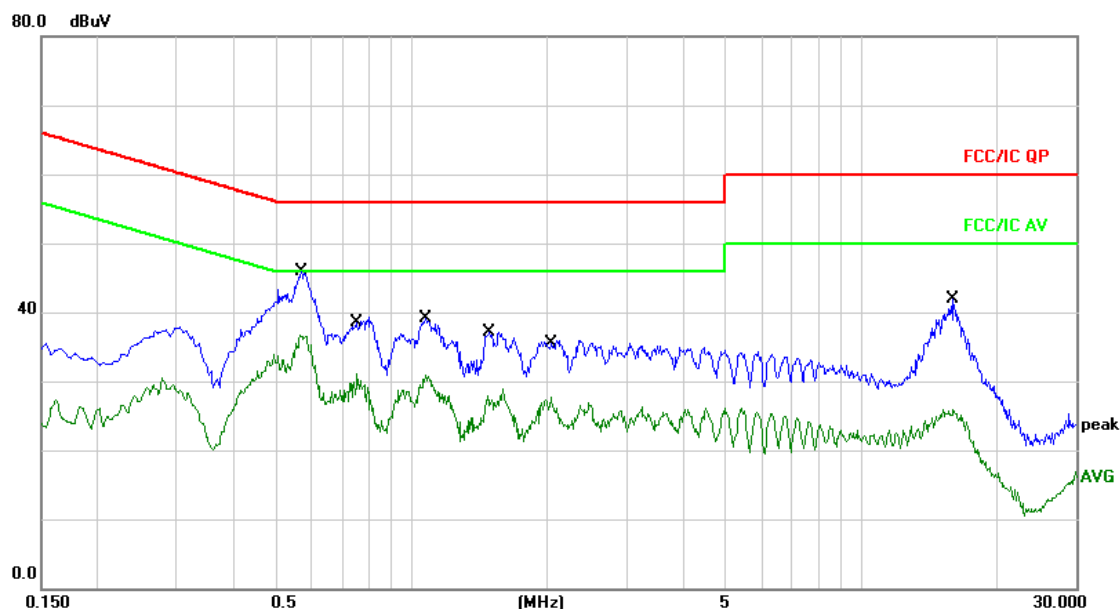
Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling 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: <i>The antenna is external dipole antenna, the best case gain of the antenna is 2.0dBi.</i> <i>Note: The transmitter was used a unique coupling with the antenna, and it's complied with the requirements of section 15.203: antenna requirement.</i>	
	

7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207																
Test Method:	ANSI C63.10:2013																
Test Frequency Range:	150KHz to 30MHz																
Class / Severity:	Class B																
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto																
Limit:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table> * Decreases with the logarithm of the frequency.			Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)																
	Quasi-peak	Average															
0.15-0.5	66 to 56*	56 to 46*															
0.5-5	56	46															
5-30	60	50															
Test setup:	Reference Plane <i>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</i>																
Test procedure:	1. The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.																
Test Instruments:	Refer to section 6.0 for details																
Test mode:	Refer to section 5.2 for details																
Test voltage:	AC120V 60Hz																
Test results:	Pass																

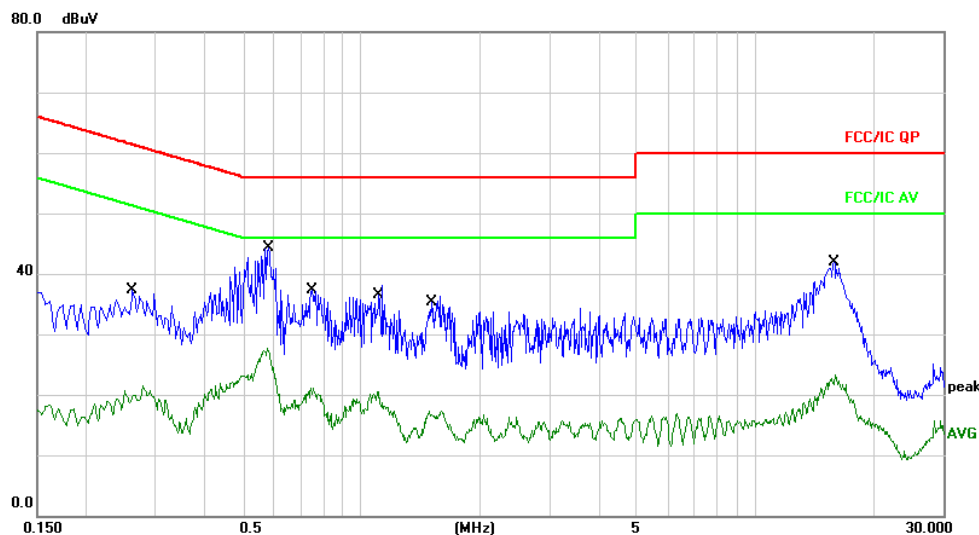
Measurement data

Mode:	Transmitting mode	Test by:	Bill
Temp./Hum.(%RH):	26°C/56%RH	Probe:	Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.5660	36.29	9.68	45.97	56.00	-10.03	QP	
2	*	0.5660	26.92	9.68	36.60	46.00	-9.40	AVG	
3		0.7580	29.56	9.68	39.24	56.00	-16.76	QP	
4		0.7580	21.39	9.68	31.07	46.00	-14.93	AVG	
5		1.0740	29.39	9.69	39.08	56.00	-16.92	QP	
6		1.0740	21.23	9.69	30.92	46.00	-15.08	AVG	
7		1.4900	27.39	9.70	37.09	56.00	-18.91	QP	
8		1.4900	19.19	9.70	28.89	46.00	-17.11	AVG	
9		2.0340	26.21	9.71	35.92	56.00	-20.08	QP	
10		2.0340	17.94	9.71	27.65	46.00	-18.35	AVG	
11		15.9820	32.07	9.87	41.94	60.00	-18.06	QP	
12		15.9820	16.04	9.87	25.91	50.00	-24.09	AVG	

Mode:	Transmitting mode	Test by:	Bill
Temp./Hum.(%H):	26°C/56%RH	Probe:	Neutral

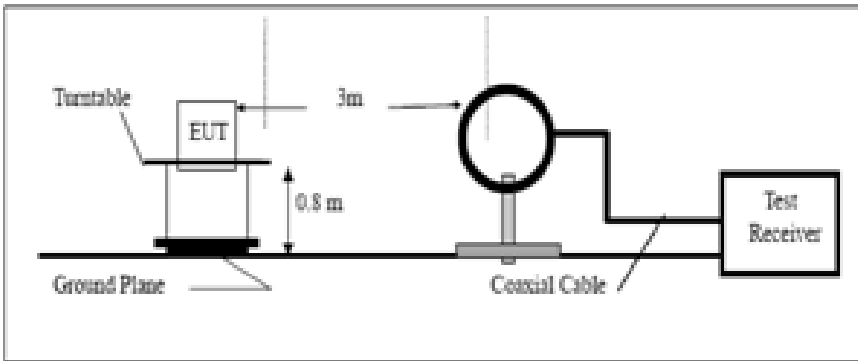


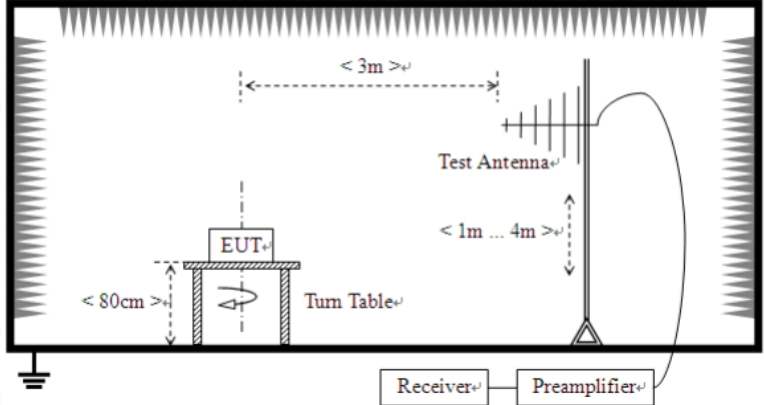
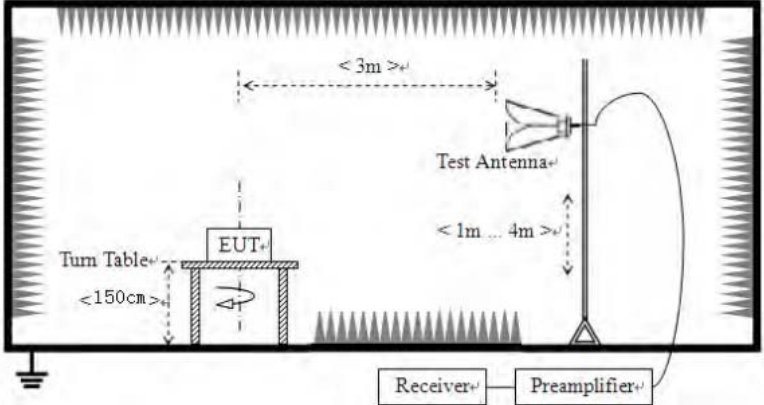
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.2620	27.59	9.66	37.25	61.36	-24.11	QP	
2	0.2620	11.81	9.66	21.47	51.36	-29.89	AVG	
3 *	0.5780	34.52	9.68	44.20	56.00	-11.80	QP	
4	0.5780	18.02	9.68	27.70	46.00	-18.30	AVG	
5	0.7500	27.54	9.68	37.22	56.00	-18.78	QP	
6	0.7500	11.50	9.68	21.18	46.00	-24.82	AVG	
7	1.1060	28.36	9.69	38.05	56.00	-17.95	QP	
8	1.1060	10.86	9.69	20.55	46.00	-25.45	AVG	
9	1.4900	26.53	9.70	36.23	56.00	-19.77	QP	
10	1.4900	7.64	9.70	17.34	46.00	-28.66	AVG	
11	15.8580	31.97	9.87	41.84	60.00	-18.16	QP	
12	15.8580	13.34	9.87	23.21	50.00	-26.79	AVG	

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	9kHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	9kHz-150kHz	Quasi-peak	200Hz	300Hz	Quasi-peak Value
	150kHz-30MHz	Quasi-peak	9kHz	10kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Peak		1MHz	10Hz	Average Value	
Limit: (Field strength of the fundamental signal)	Frequency		Limit (dBuV/m @3m)		Remark
	902-928MHz		94.00		Average Value
			114.00		Peak Value
Limit: (Spurious Emissions)	Frequency		Limit (uV/m)		Remark
	0.009MHz-0.490MHz		2400/F(kHz) @300m		Quasi-peak Value
	0.490MHz-1.705MHz		24000/F(kHz) @30m		Quasi-peak Value
	1.705MHz-30.0MHz		30 @30m		Quasi-peak Value
	30MHz-88MHz		100 @3m		Quasi-peak Value
	88MHz-216MHz		150 @3m		Quasi-peak Value
	216MHz-960MHz		200 @3m		Quasi-peak Value
	960MHz-1GHz		500 @3m		Quasi-peak Value
	Above 1GHz		500 @3m		Average Value
5000 @3m			Peak Value		
Limit: (band edge)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test setup:	Below 1GHz 				

	 Above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. 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.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test voltage:	AC120V 60Hz

Test results:	Pass
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Measurement data:

7.3.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
902.3	86.85	31.88	8.68	32.13	95.28	114.00	-18.72	Vertical
902.3	76.24	36.45	11.75	31.86	92.58	114.00	-21.42	Horizontal
914.6	84.50	38.43	14.29	31.68	105.54	114.00	-8.46	Vertical
914.6	74.63	27.55	5.49	29.93	77.74	114.00	-36.26	Horizontal
927.7	93.72	27.59	5.38	34.01	92.68	114.00	-21.32	Vertical
927.7	87.36	27.58	5.39	34.01	86.32	114.00	-27.68	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
902.3	74.92	31.88	8.68	32.13	83.35	94.00	-10.65	Vertical
902.3	63.74	36.45	11.75	31.86	80.08	94.00	-13.92	Horizontal
914.6	64.55	38.43	14.29	31.68	85.59	94.00	-8.41	Vertical
914.6	60.9	27.55	5.49	29.93	64.01	94.00	-29.99	Horizontal
927.7	81.75	27.59	5.38	34.01	80.71	94.00	-13.29	Vertical
927.7	76.51	27.58	5.39	34.01	75.47	94.00	-18.53	Horizontal

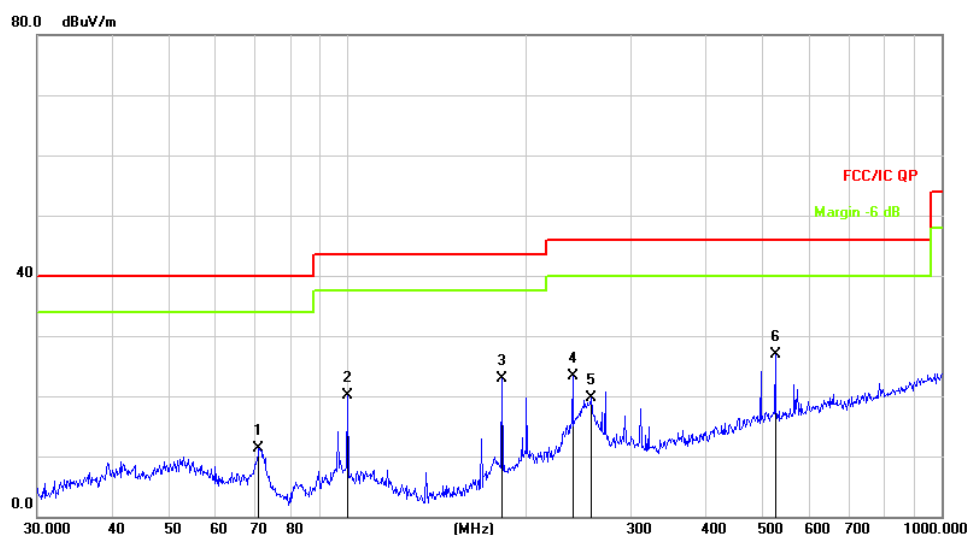
7.3.2 Spurious emissions

■ Below 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), the test result no need to reported.

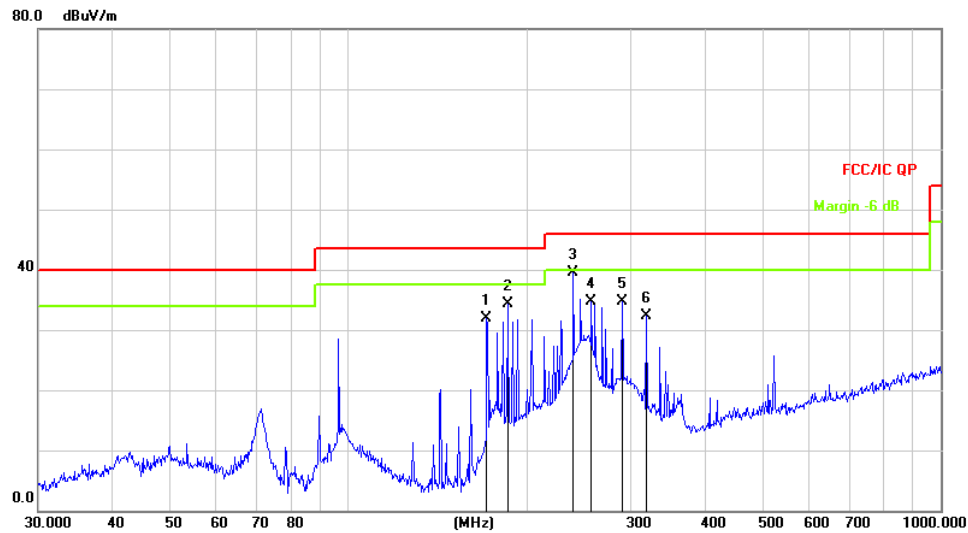
■ Below 1GHz

Mode:	Transmitting mode	Test by:	Bill
Temp./Hum.(%RH):	26°C/56%RH	Polarization:	Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		70.8315	30.47	-19.19	11.28	40.00	-28.72	QP
2		99.8777	36.56	-16.51	20.05	43.50	-23.45	QP
3		181.9202	40.50	-17.57	22.93	43.50	-20.57	QP
4		239.1473	37.47	-14.16	23.31	46.00	-22.69	QP
5		257.4222	33.16	-13.49	19.67	46.00	-26.33	QP
6	*	524.5541	33.53	-6.59	26.94	46.00	-19.06	QP

Mode:	Transmitting mode	Test by:	Bill
Temp./Hum.(%H):	26°C/56%RH	Polarization:	Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		171.3926	50.35	-18.40	31.95	43.50	-11.55	QP
2		185.7882	51.52	-17.18	34.34	43.50	-9.16	QP
3	*	239.9874	53.63	-14.12	39.51	46.00	-6.49	QP
4		257.4222	48.29	-13.49	34.80	46.00	-11.20	QP
5		290.0172	47.05	-12.32	34.73	46.00	-11.27	QP
6		318.8170	43.98	-11.68	32.30	46.00	-13.70	QP

■ Above 1GHz

Test channel:	Lowest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1804.6	38.67	31.78	8.60	32.09	46.96	74.00	-27.04	Vertical
2706.9	33.14	36.15	11.65	32.00	48.94	74.00	-25.06	Vertical
3609.2	32.35	37.95	14.14	31.62	52.82	74.00	-21.18	Vertical
	*					74.00		Vertical
	*					74.00		Vertical
1804.6	35.44	31.78	8.60	32.09	43.73	74.00	-30.27	Horizontal
2706.9	31.75	36.15	11.65	32.00	47.55	74.00	-26.45	Horizontal
3609.2	29.68	37.95	14.14	31.62	50.15	74.00	-23.85	Horizontal
	*					74.00		Horizontal
	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1804.6	28.92	31.78	8.60	32.09	37.21	54.00	-16.79	Vertical
2706.9	21.17	36.15	11.65	32.00	36.97	54.00	-17.03	Vertical
3609.2	19.65	37.95	14.14	31.62	40.12	54.00	-13.88	Vertical
	*					54.00		Vertical
	*					54.00		Vertical
1804.6	24.68	31.78	8.60	32.09	32.97	54.00	-21.03	Horizontal
2706.9	19.93	36.15	11.65	32.00	35.73	54.00	-18.27	Horizontal
3609.2	17.26	37.95	14.14	31.62	37.73	54.00	-16.27	Horizontal
	*					54.00		Horizontal
	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Middle
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1829.2	38.29	31.85	8.67	32.12	46.69	74.00	-27.31	Vertical
2743.8	31.17	36.37	11.72	31.89	47.37	74.00	-26.63	Vertical
3658.4	27.35	38.35	14.25	31.62	48.33	74.00	-25.67	Vertical
	*					74.00		Vertical
	*					74.00		Vertical
1829.2	34.63	31.85	8.67	32.12	43.03	74.00	-30.97	Horizontal
2743.8	29.11	36.37	11.72	31.89	45.31	74.00	-28.69	Horizontal
3658.4	26.74	38.35	14.25	31.62	47.72	74.00	-26.28	Horizontal
	*					74.00		Horizontal
	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1829.2	27.54	31.85	8.67	32.12	35.94	54.00	-18.06	Vertical
2743.8	21.89	36.37	11.72	31.89	38.09	54.00	-15.91	Vertical
3658.4	19.27	38.35	14.25	31.62	40.25	54.00	-13.75	Vertical
	*					54.00		Vertical
	*					54.00		Vertical
1829.2	24.42	31.85	8.67	32.12	32.82	54.00	-21.18	Horizontal
2743.8	19.66	36.37	11.72	31.89	35.86	54.00	-18.14	Horizontal
3658.4	17.31	38.35	14.25	31.62	38.29	54.00	-15.71	Horizontal
	*					54.00		Horizontal
	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Highest
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1855.4	38.06	31.93	8.73	32.16	46.56	74.00	-27.44	Vertical
2783.1	31.42	36.59	11.79	31.78	48.02	74.00	-25.98	Vertical
3710.8	29.53	38.81	14.38	31.88	50.84	74.00	-23.16	Vertical
	*					74.00		Vertical
	*					74.00		Vertical
1855.4	34.17	31.93	8.73	32.16	42.67	74.00	-31.33	Horizontal
2783.1	29.96	36.59	11.79	31.78	46.56	74.00	-27.44	Horizontal
3710.8	27.18	38.81	14.38	31.88	48.49	74.00	-25.51	Horizontal
	*					74.00		Horizontal
	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1855.4	27.75	31.93	8.73	32.16	36.25	54.00	-17.75	Vertical
2783.1	21.43	36.59	11.79	31.78	38.03	54.00	-15.97	Vertical
3710.8	19.96	38.81	14.38	31.88	41.27	54.00	-12.73	Vertical
	*					54.00		Vertical
	*					54.00		Vertical
1855.4	24.53	31.93	8.73	32.16	33.03	54.00	-20.97	Horizontal
2783.1	19.27	36.59	11.79	31.78	35.87	54.00	-18.13	Horizontal
3710.8	17.65	38.81	14.38	31.88	38.96	54.00	-15.04	Horizontal
	*					54.00		Horizontal
	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*”, means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

7.3.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel
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QP value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
902	48.41	27.59	5.38	34.01	47.37	74.00	-26.63	Horizontal
928	55.32	27.58	5.39	34.01	54.28	74.00	-19.72	Horizontal
902	50.68	27.59	5.38	34.01	49.64	74.00	-24.36	Vertical
928	54.26	27.58	5.39	34.01	53.22	74.00	-20.78	Vertical

Test channel:	Highest channel
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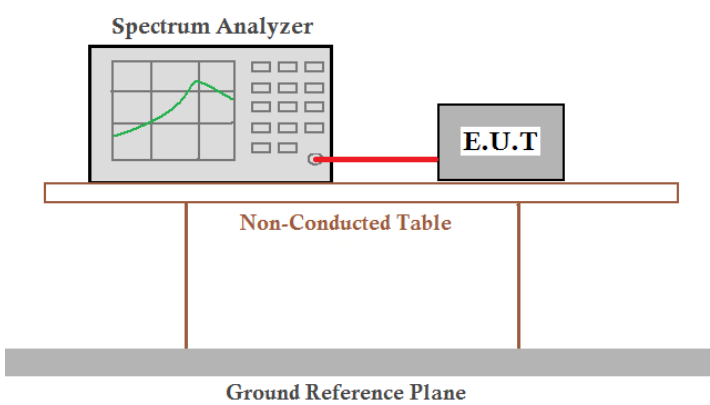
QP value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
902	38.92	27.59	5.38	34.01	37.88	54.00	-16.12	Horizontal
928	45.53	27.58	5.39	34.01	44.49	54.00	-9.51	Horizontal
902	39.27	27.59	5.38	34.01	38.23	54.00	-15.77	Vertical
928	45.08	27.58	5.39	34.01	44.04	54.00	-9.96	Vertical

Remark:

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

7.4 20dB Occupy Bandwidth

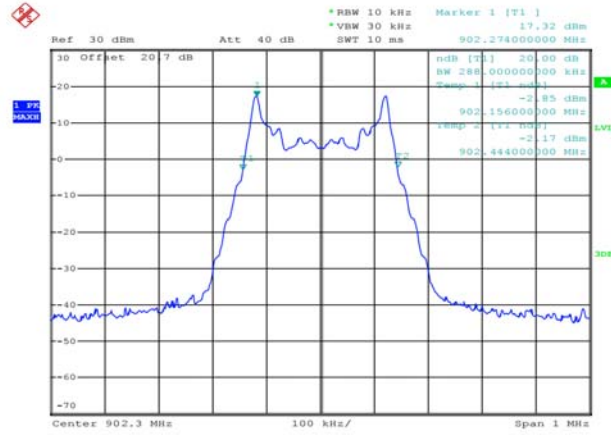
Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 902MHz~928MHz
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

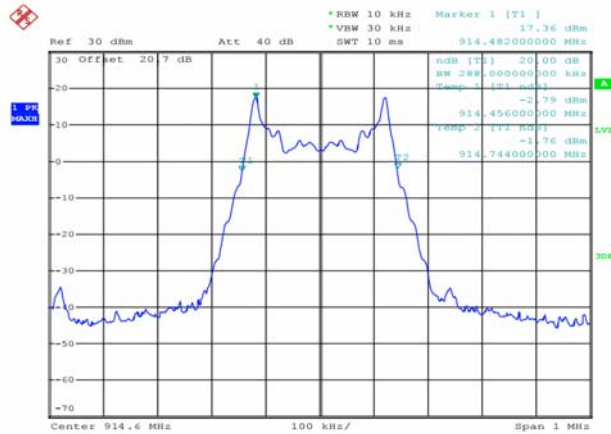
Test channel	20dB bandwidth(MHz)	Result
Lowest	0.288	Pass
Middle	0.288	Pass
Highest	0.288	Pass

Test plot as follows:

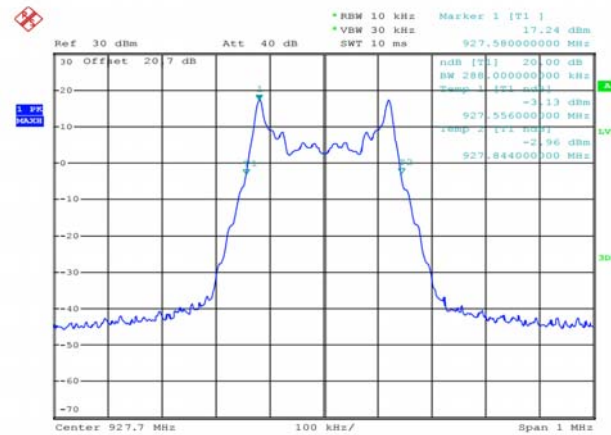
Lowest channel



Middle channel

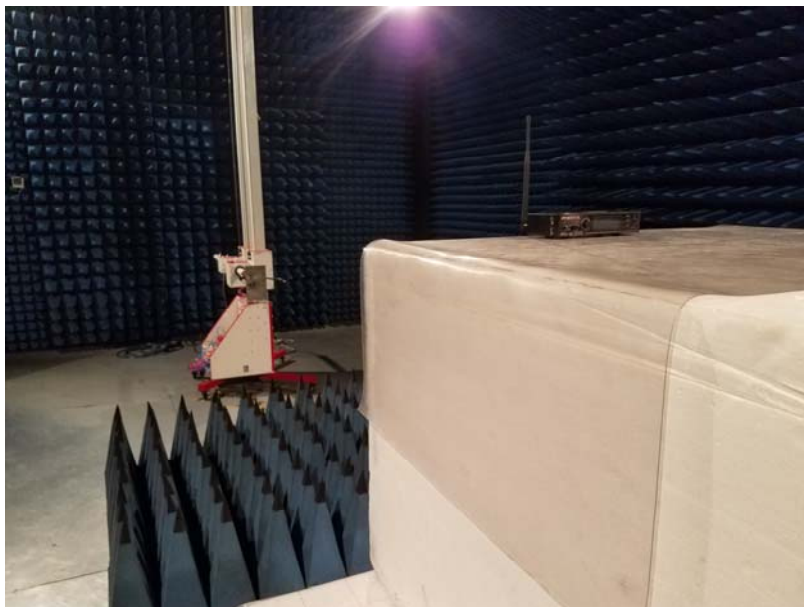
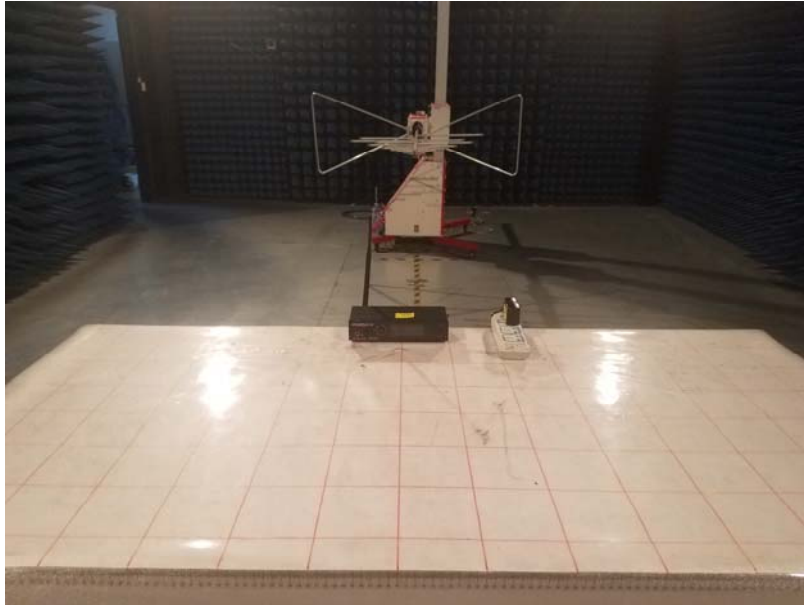


Highest channel



8 Test Setup Photo

Radiated Emission



Conducted Emission



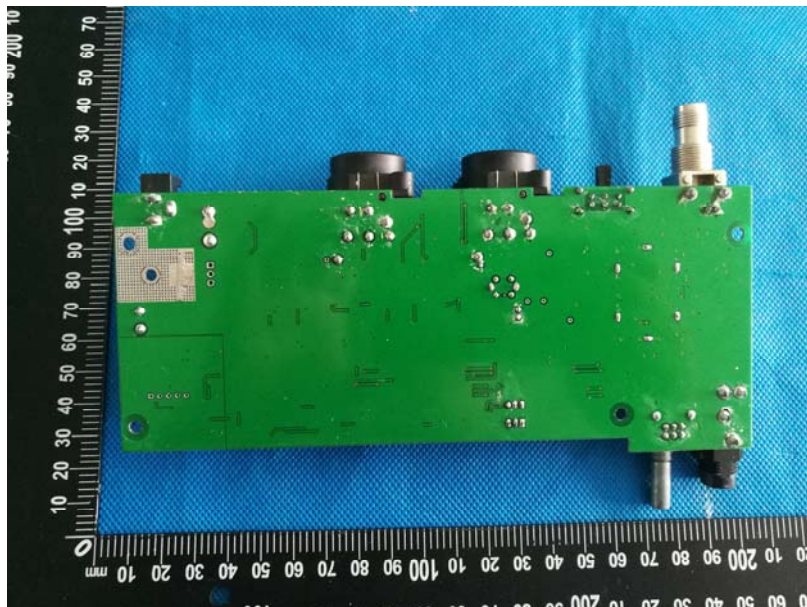
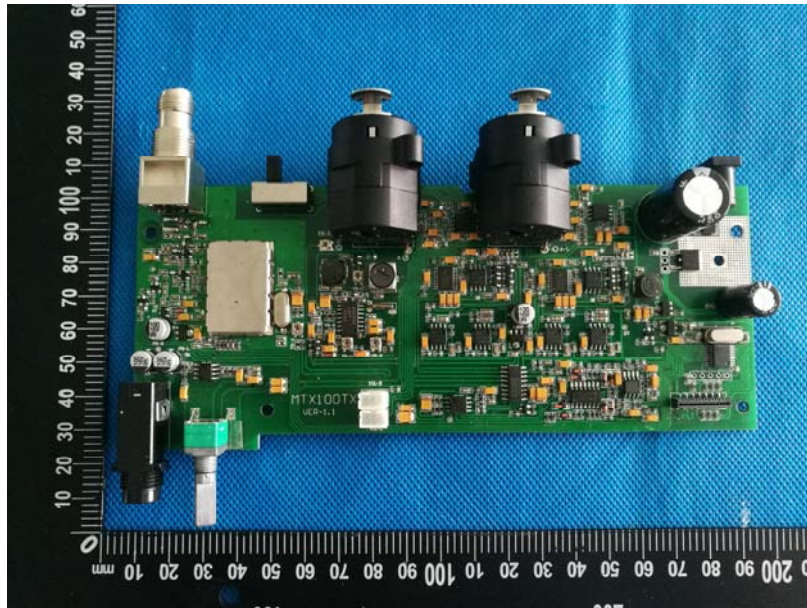
9 EUT Constructional Details

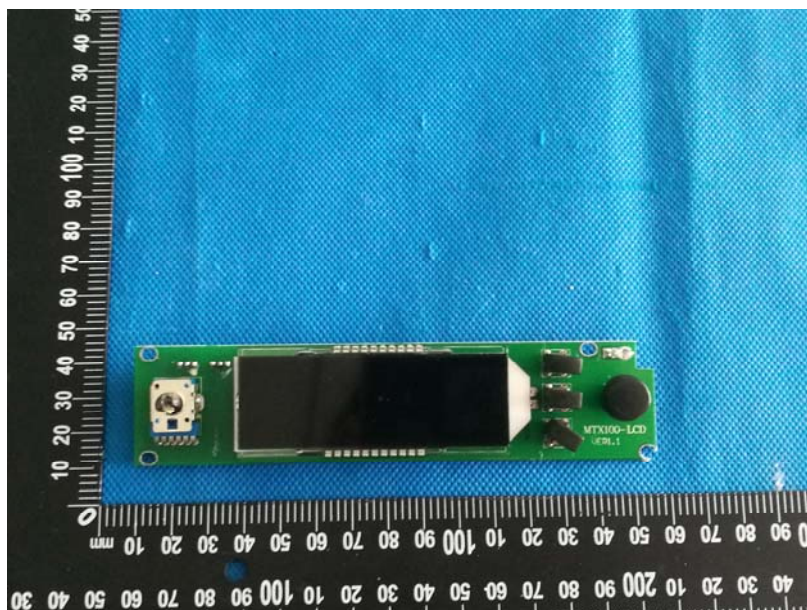
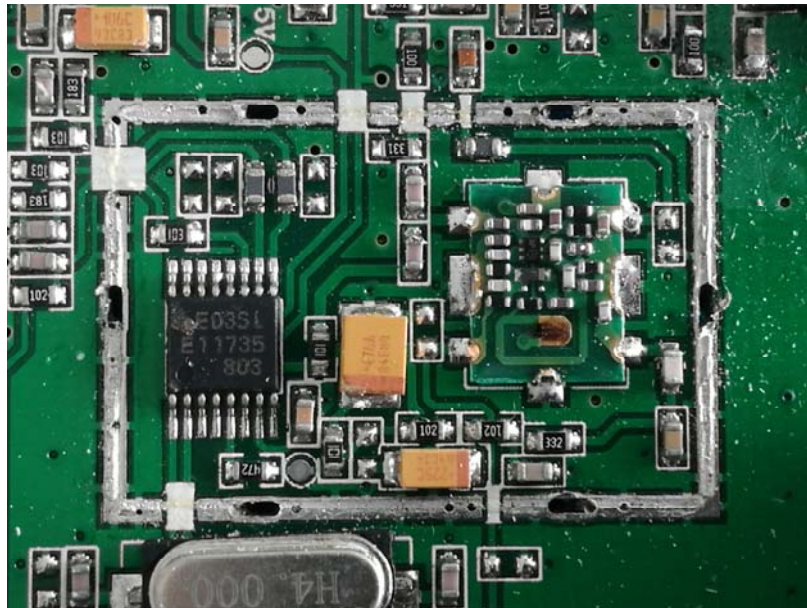


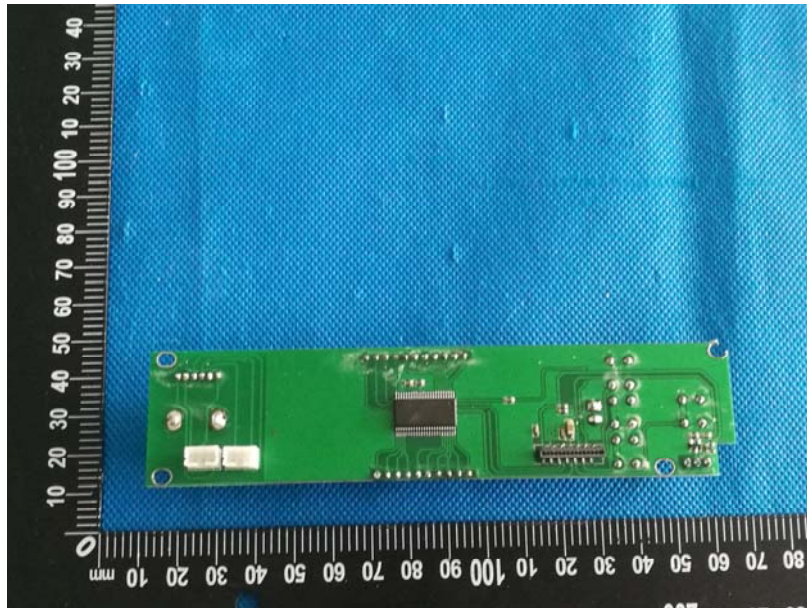












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