TCT 通测检测
TESTING CENTRE TECHNOLOGY

TEST REPORT

Product: Security Metal Detector
Model No.: PS-300, PS-IIIC, PS-300B, PS-300C, JC330, JC1833, TS-1506, GC-1002
Trade mark: SECUSTAR
Report No.: TCT160519E014
Issued Date: May 24, 2016

Issued for:

JC SECURITY EQUIPMENT CO., LTD
Building B, YongXingLong Indusrty park, ZhangBei road, LongGang District. Shenzhen, China.

Issued By:

Shenzhen Tongce Testing Lab
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1. Test Certification

Product:	Security Metal Detector
Model No.:	PS-300, PS-IIIC, PS-300B, PS-300C, JC330, JC1833, TS-1506, GC-1002
Applicant:	JC SECURITY EQUIPMENT CO., LTD
Address:	Building B, YongXingLong Indusrty park, ZhangBei road, LongGang District. Shenzhen, China.
Manufacturer:	JC SECURITY EQUIPMENT CO., LTD
Address:	Building B, YongXingLong Indusrty park, ZhangBei road, LongGang District. Shenzhen, China.
Test Voltage:	AC 120 V/ 60 Hz
Date of Test:	May 20, 2016-May 23, 2016
Applicable Standards:	47 CFR FCC Part 15 Subpart B: 2016 ANSI C63.4: 2014

The above equipment has been tested by Shenzhen Tongce Testing Lab and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By: Jayce Qiu **Date:** ***May 23, 2016***

Jayce Qiu

Check By: **Date:** ***May 24, 2016***

Joe Zhou

Approved By: **Date:** ***May 24, 2016***

Tomsin

SHENZHEN TONGCE TESTING LAB TCT

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2. Test Result Summary

Emission		
Test Method	**Item**	**Result**
FCC 47 CFR Part 15 Subpart B	Conducted Emission at Mains Terminals	Pass
	Radiated Emission	Pass

Note:

1. Pass: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.
5. The information of measurement uncertainty is available upon the customer's request.

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3. EUT Description

Product Name:	Security Metal Detector
Model No.:	PS-300
Product Parameter:	Input: DC 12 V, 5 A
AC Line:	☐Shielded ☒Unshielded, ☒Detachable ☐Un-detachable ☐Not applicable ☒Length: 1.37 m
DC Line:	☐Shielded ☒Unshielded, ☐Detachable ☒Un-detachable ☐Not applicable ☒Length: 2 m
Control Line:	☐Shielded ☐Unshielded, ☐Detachable ☐Un-detachable ☒Not applicable ☐Length:

Model(s) List

No.	Model Number	Tested With
1	PS-300	☒
Other models	PS-IIIC, PS-300B, PS-300C, JC330, JC1833, TS-1506, GC-1002	☐

Note: PS-300 is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names. So the test data of PS-300 can represent the remaining models.

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4. Test Methodology

4.1. Decision of Final Test Mode

The EUT was tested together with the thereinafter additional components, and a configuration, which produced the worst emission levels, was selected and recorded in this report.
The following test mode(s) were assessed:

Test Mode
Mode 1: Normal Operation

4.2. EUT System Operation

1. Set up EUT with the support equipments.
2. Make sure the EUT work normally during the test.

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5. Setup of Equipment under Test

5.1. Description of Support Units

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

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5.2. Configuration of System Under Test

(EUT: Security Metal Detector)

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6. Facilities and Accreditations

6.1. Facilities

All measurement facilities used to collect the measurement data are located at TCT Lab.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

6.2. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

No.	Item	MU
1.	Temperature	±0.1℃
2.	Humidity	±1.0 %
3.	Spurious Emissions, Conducted	±3.70 dB
4.	All Emissions, Radiated	±4.50 dB

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

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7. Emission Test

7.1. Conducted Emission at Mains Terminals

7.1.1. Test Specification

Test Requirement:	FCC 47 CFR Part 15 Subpart B
Test Method:	ANSI C63.4: 2014
Frequency Range:	150 kHz to 30 MHz

7.1.2. Limits

Frequency (MHz)	Class A dB(uV)		Class B dB(uV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 – 56[a]	56 – 46[a]
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50
a. Decreases with the logarithm of the frequency				

7.1.3. Test Instruments

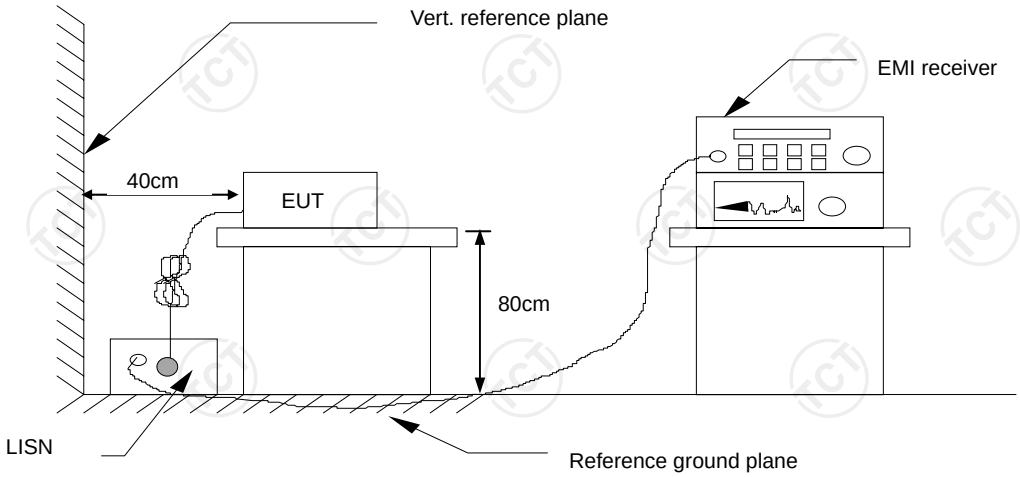
Conducted Emission Shielding Room Test Site (843)				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESCS30	100139	Sep. 11, 2016
LISN	Schwarzbeck	NSLK 8126	8126453	Sep. 16, 2016

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

7.1.4. Test Method

The AMN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane. This distance was between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the AMN. All power was connected to the system through Artificial Mains Network (AMN). Conducted voltage measurements on mains lines were made at the output of the AMN

7.1.5. Block Diagram of Test Setup



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.1.6. Test Results

Test Environment:	Temp.:	25 ℃	Humid.:	54 %	Press.:	96 kPa
Test Mode:	Mode 1					
Test Voltage:	AC 120 V/ 60 Hz					
Test Result:	Pass					

Note:
L1 = Live Line / N = Neutral Line
"---" denotes the emission level was or more than 2 dB below the Average limit, so no re-check anymore.
Freq. = Emission frequency in MHz
Reading level dB(μV) = Receiver reading
Corr. Factor (dB) = Attenuator factor + Cable loss
Level dB(μV) = Reading level dB(μV) + Corr. Factor (dB)
Limit dB(μV) = Limit stated in standard
Margin (dB) = Level dB(μV) – Limits dB(μV)
Q.P. =Quasi-Peak
AVG=Average

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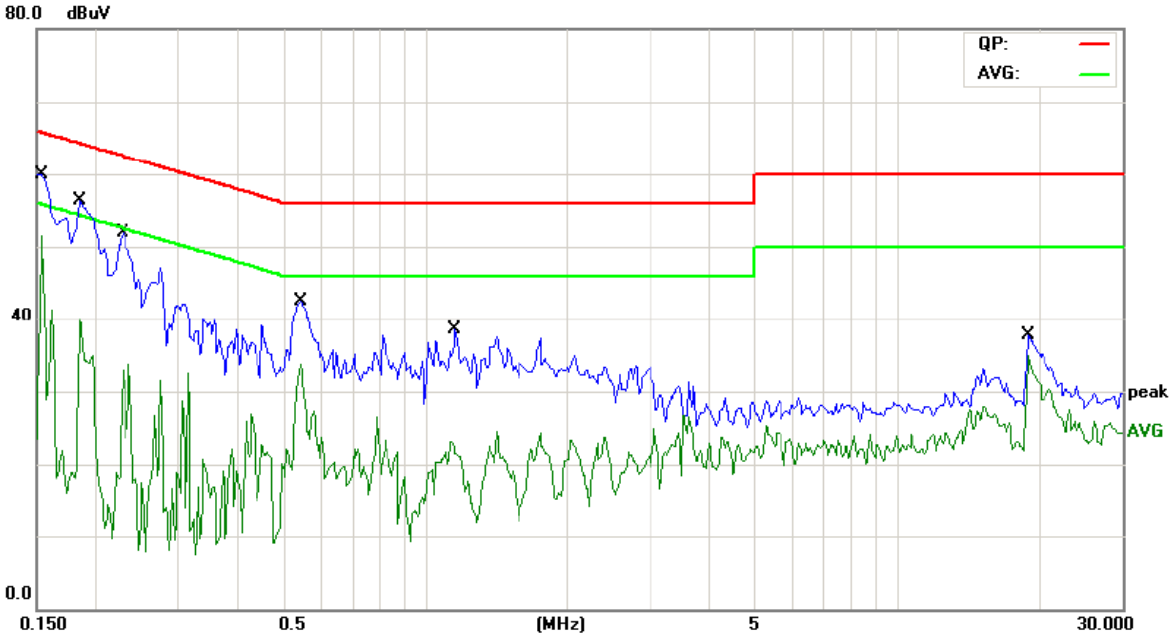
Please refer to following diagram for individual



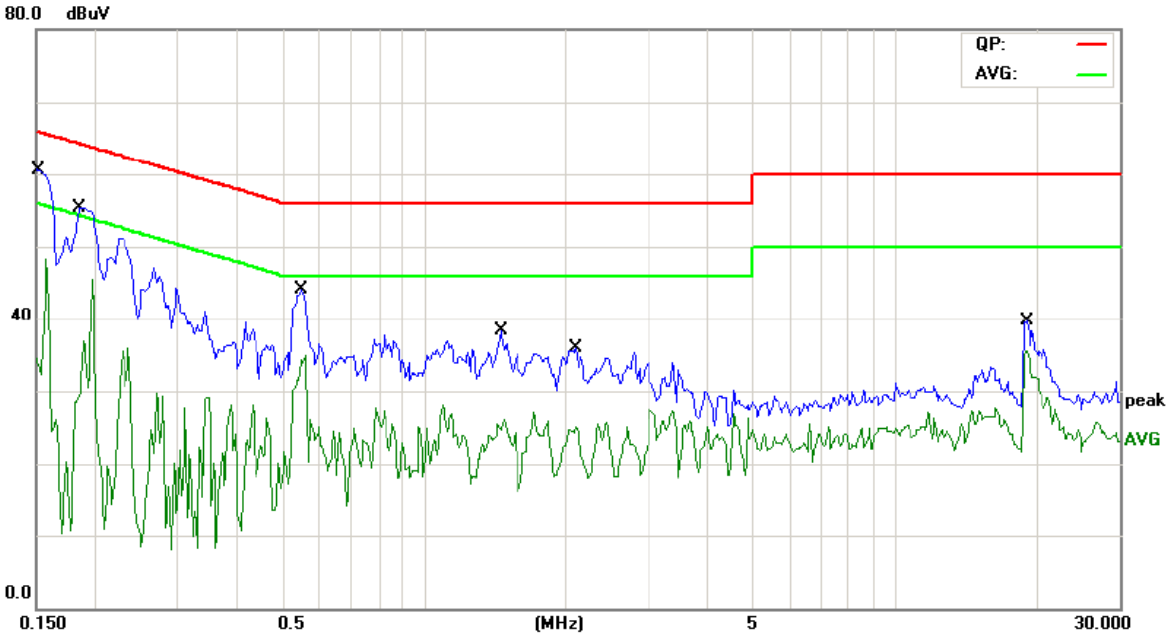
Site Chamber #2 Phase: *L1* Temperature: 25 (C)

Limit: FCC Part 15B Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 54 %

Mode: Normal Operation

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1539	46.22	11.51	57.73	65.78	-8.05	QP	
2		0.1539	31.16	11.51	42.67	55.78	-13.11	AVG	
3		0.1852	39.93	11.50	51.43	64.24	-12.81	QP	
4		0.1852	18.63	11.50	30.13	54.24	-24.11	AVG	
5		0.2281	36.10	11.47	47.57	62.52	-14.95	QP	
6		0.2281	19.96	11.47	31.43	52.52	-21.09	AVG	
7		0.5445	28.18	11.29	39.47	56.00	-16.53	QP	
8		0.5445	19.59	11.29	30.88	46.00	-15.12	AVG	
9		1.1578	17.13	11.25	28.38	56.00	-27.62	QP	
10		1.1578	7.62	11.25	18.87	46.00	-27.13	AVG	
11		18.8867	24.71	10.81	35.52	60.00	-24.48	QP	
12		18.8867	20.52	10.81	31.33	50.00	-18.67	AVG	



Site Chamber #2 Phase: N Temperature: 25 (C)

Limit: FCC Part 15B Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 54 %

Mode: Normal Operation

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1539	46.60	11.51	58.11	65.78	-7.67	QP	
2		0.1539	32.16	11.51	43.67	55.78	-12.11	AVG	
3		0.1852	40.15	11.50	51.65	64.24	-12.59	QP	
4		0.1852	19.97	11.50	31.47	54.24	-22.77	AVG	
5		0.5484	29.56	11.28	40.84	56.00	-15.16	QP	
6		0.5484	21.13	11.28	32.41	46.00	-13.59	AVG	
7		1.4508	20.02	11.41	31.43	56.00	-24.57	QP	
8		1.4508	12.03	11.41	23.44	46.00	-22.56	AVG	
9		2.0992	18.49	11.65	30.14	56.00	-25.86	QP	
10		2.0992	11.29	11.65	22.94	46.00	-23.06	AVG	
11		19.0391	23.58	10.77	34.35	60.00	-25.65	QP	
12		19.0391	19.69	10.77	30.46	50.00	-19.54	AVG	

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7.2. Radiated Emission

7.2.1. Test Specification

Test Requirement:	FCC 47 CFR Part 15 Subpart B
Test Method:	ANSI C63.4: 2014
Frequency Range:	30 MHz to 1000 MHz
Measurement Distance:	3 m
Antenna Polarization:	Horizontal & Vertical

7.2.2. Limits

Frequency (MHz)	Class A (at 3m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	49.0	40.0
88 ~ 216	53.5	43.5
216 ~ 960	56.4	46.0
960 ~ 1000	59.5	54.0

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level dB(μV/m) = 20 log Emission level (μV/m).

7.2.3. Test Instruments

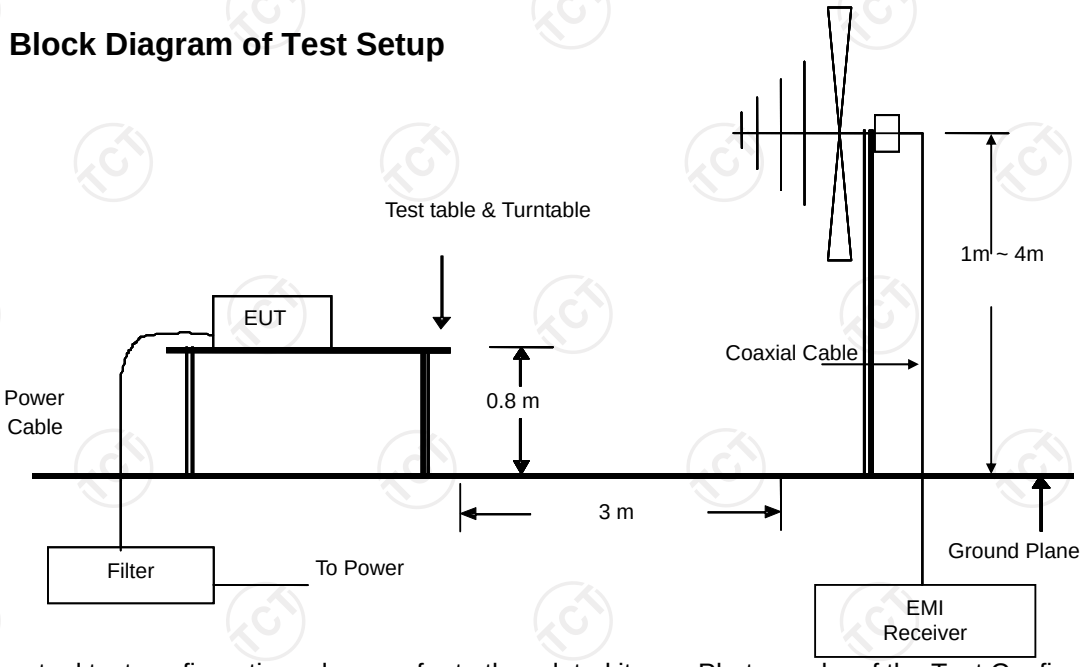
Radiated Emission Test Site (966)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESVD	100008	Sep. 11, 2016
Spectrum Analyzer	R&S	FSEM	848597-001	Sep. 11, 2016
Amplifier	HP	8447D	2727A05017	Sep. 11, 2016
Amplifier	EM	EM30265	07032613	Sep. 11, 2016
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 13, 2016
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 13, 2016

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

7.2.4. Test Method

Measurements were made in a 3-meter semi-anechoic chamber or Open Area Test Site that complies to CISPR 16. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3 meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities. Final measurements (quasi-peak) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable. Block Diagram of Test Setup.

7.2.5. Block Diagram of Test Setup



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration

7.2.6. Test Results

Test Environment:	Temp.:	25 ℃	Humid.:	54 %	Press.:	96 kPa
Test Mode:	Mode 1					
Test Voltage:	AC 120 V/ 60 Hz					
Test Result:	Pass					

Note:

Freq. = Emission frequency in MHz

Reading level dB(μV) = Receiver reading

Corr. Factor (dB) = Antenna factor + Cable loss

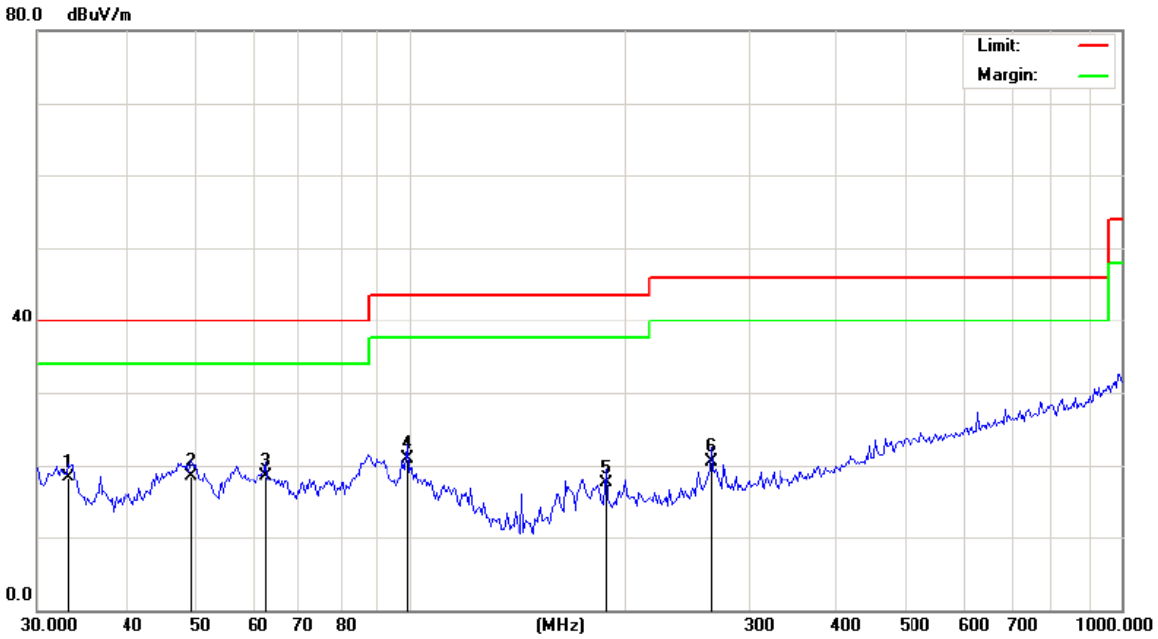
Measurement dB(μV/m) = Reading level dB(μV) + Corr. Factor (dB)

Limit dB(μV/m) = Limit stated in standard

Margin (dB) = Measurement dB(μV/m) – Limits dB(μV/m)

Q.P. =Quasi-Peak

Please refer to following diagram for individual



Site

Limit: FCC Part 15B Class B RE_3 m

Mode: Normal Operation

Note:

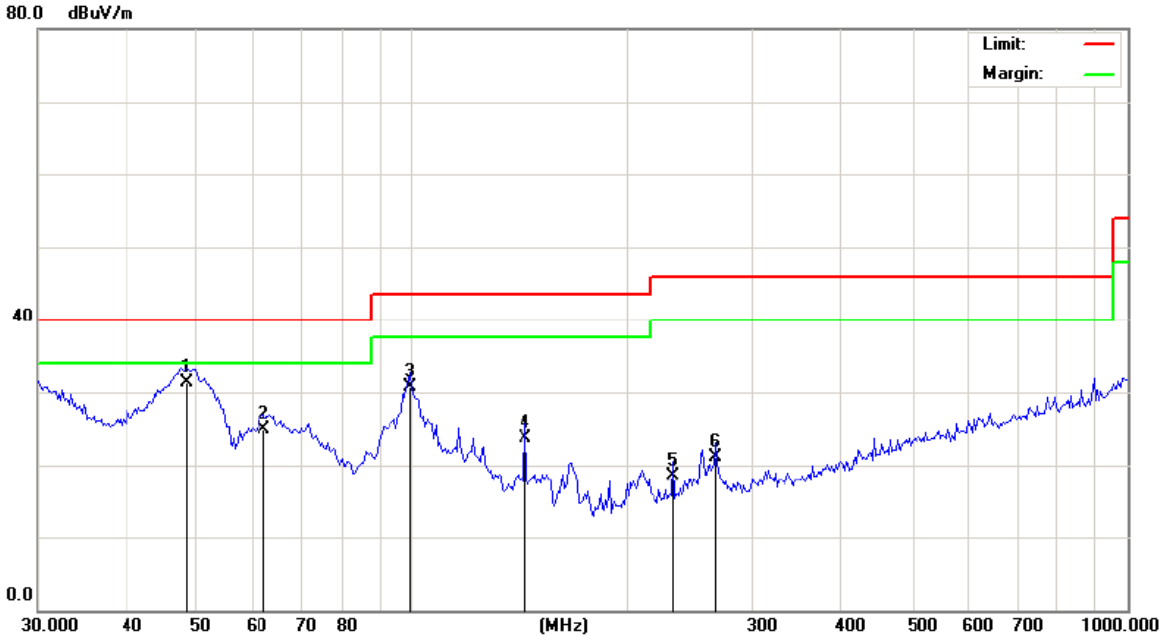
Polarization: ***Horizontal***

Power: AC 120V/60Hz

Temperature: 25

Humidity: 54 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		33.1933	31.72	-13.32	18.40	40.00	-21.60	QP		0	
2	*	49.4682	30.58	-12.06	18.52	40.00	-21.48	QP		0	
3		62.9896	32.33	-13.92	18.41	40.00	-21.59	QP		0	
4		99.3002	32.40	-11.54	20.86	43.50	-22.64	QP		0	
5		188.4380	30.07	-12.48	17.59	43.50	-25.91	QP		0	
6		265.4846	29.96	-9.43	20.53	46.00	-25.47	QP		0	



Site

Limit: FCC Part 15B Class B RE_3 m

Mode: Normal Operation

Note:

Polarization: *Vertical*

Power: AC 120V/60Hz

Temperature: 25

Humidity: 54 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	48.3686	43.45	-12.11	31.34	40.00	-8.66	QP		0	
2		61.9365	38.50	-13.53	24.97	40.00	-15.03	QP		0	
3		99.3002	42.27	-11.54	30.73	43.50	-12.77	QP		0	
4		143.8876	39.00	-15.30	23.70	43.50	-19.80	QP		0	
5		231.9890	29.02	-10.58	18.44	46.00	-27.56	QP		0	
6		265.4846	30.48	-9.43	21.05	46.00	-24.95	QP		0	

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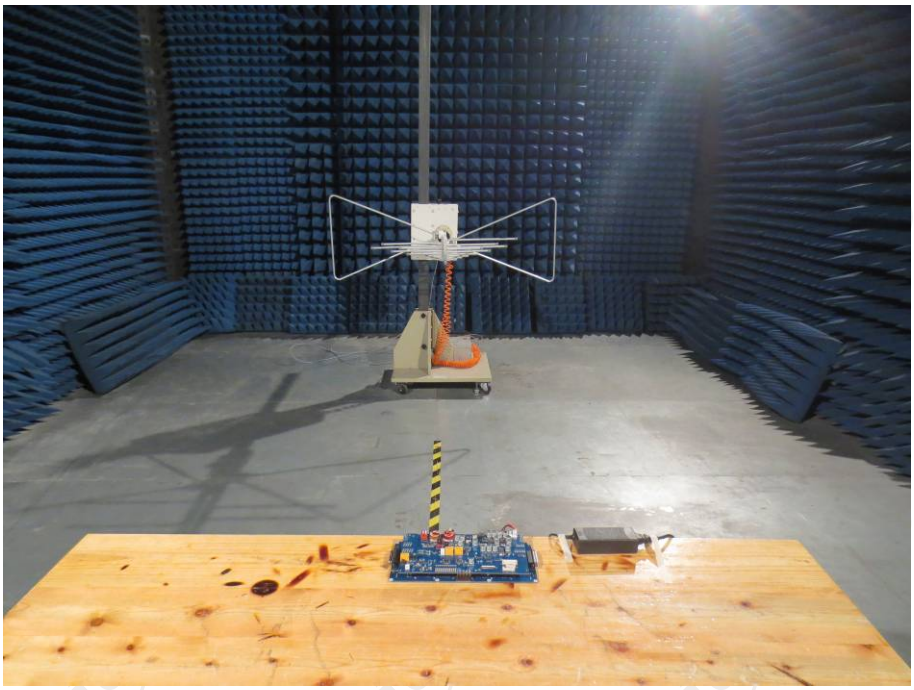
8. Photographs of Test Configuration

Conducted Emission Test View

Radiated Emission Test View



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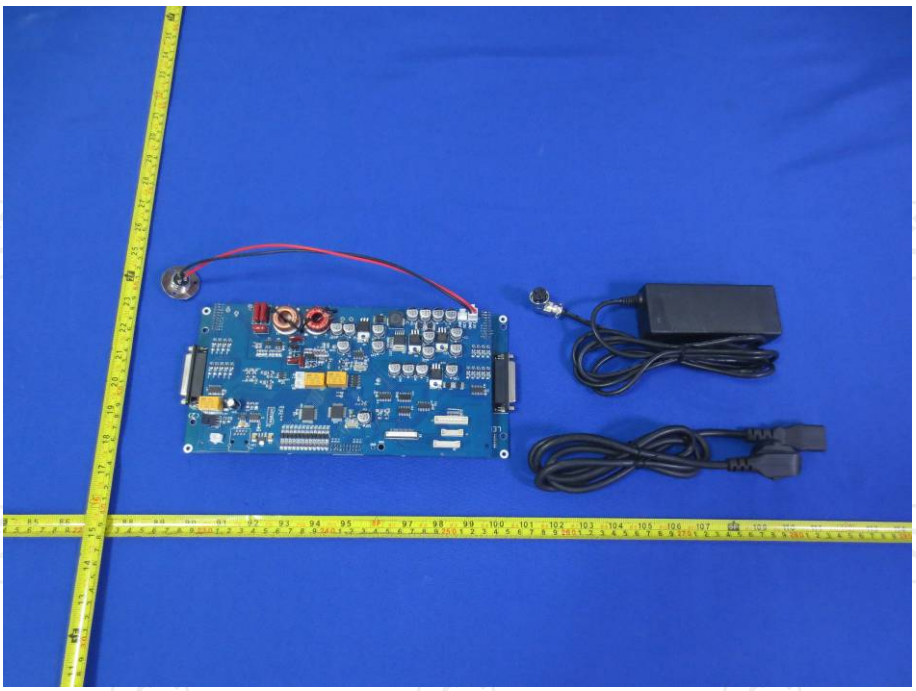
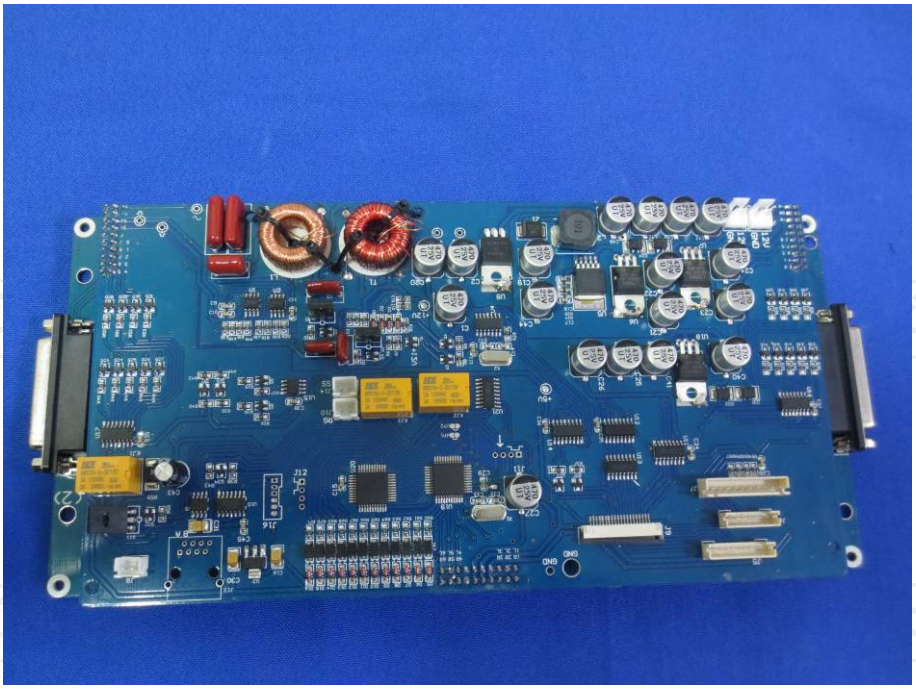
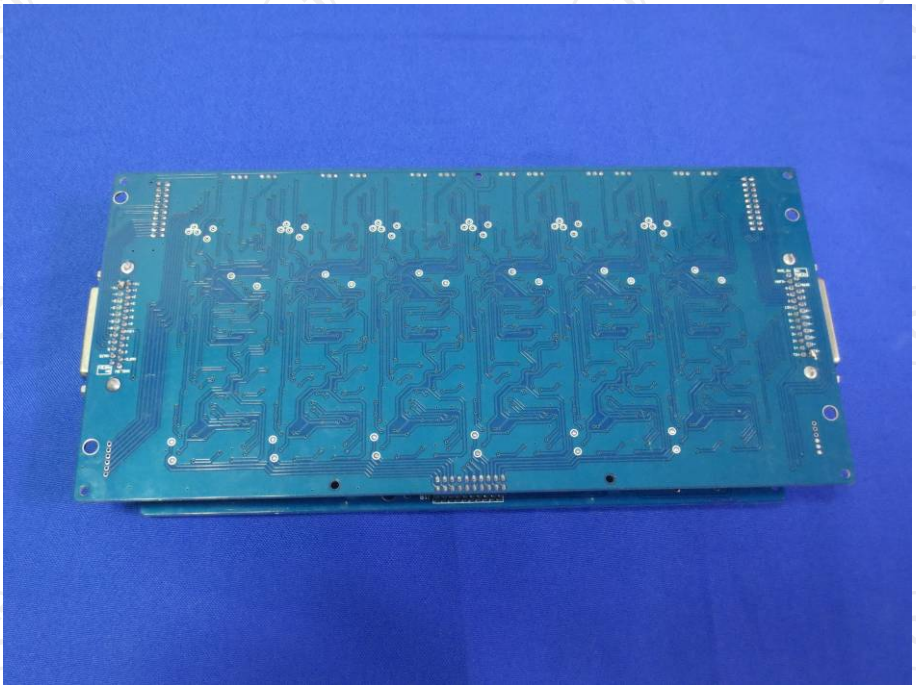
9. Photographs of EUT







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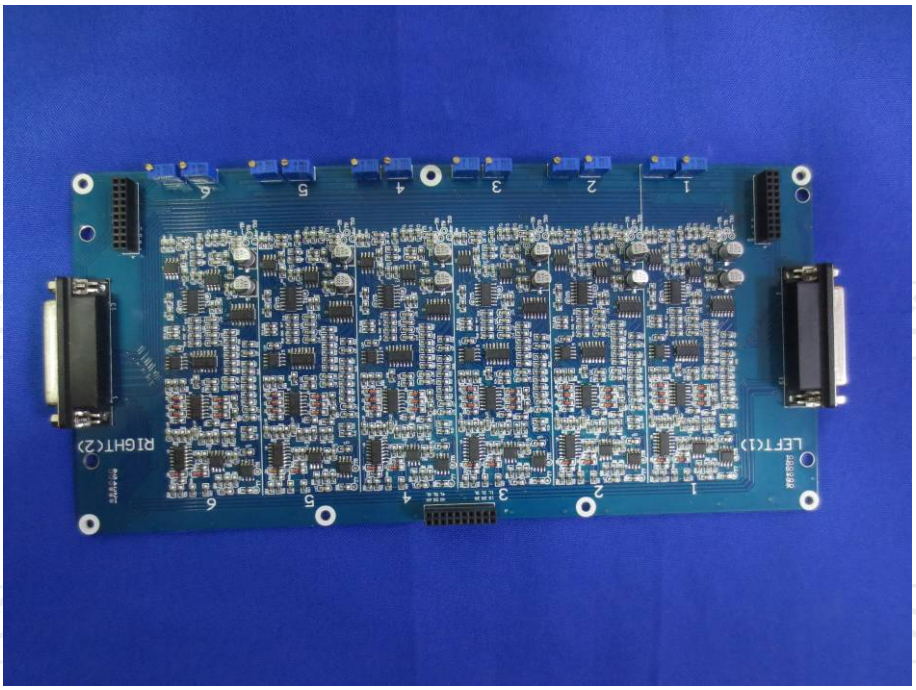
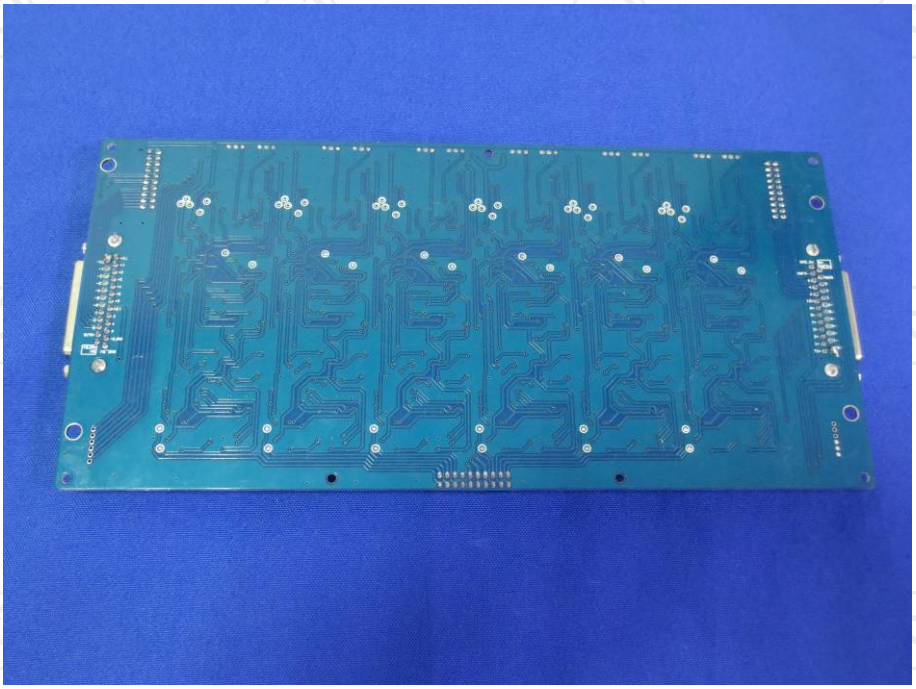
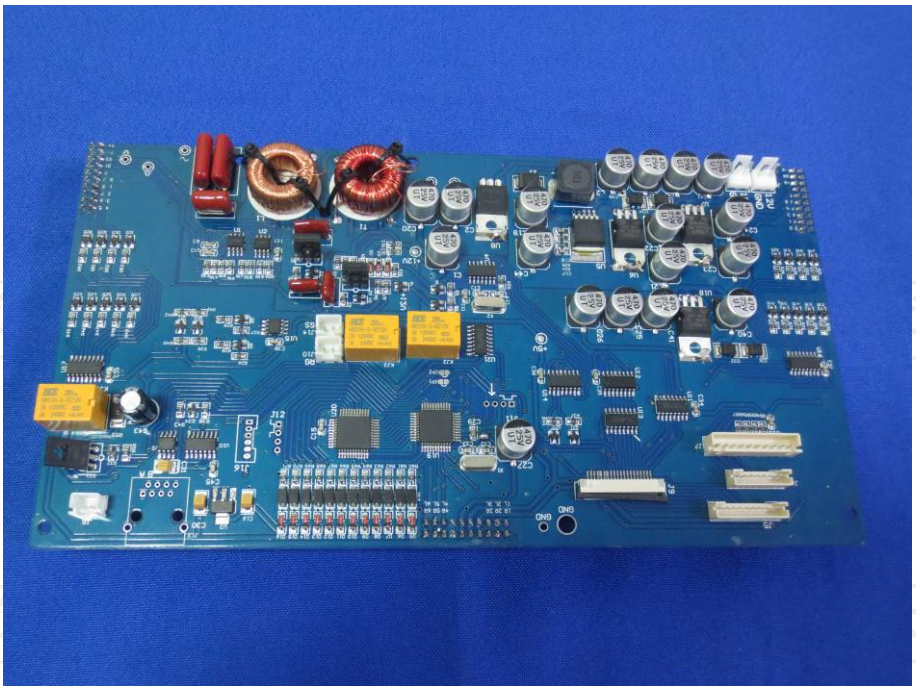
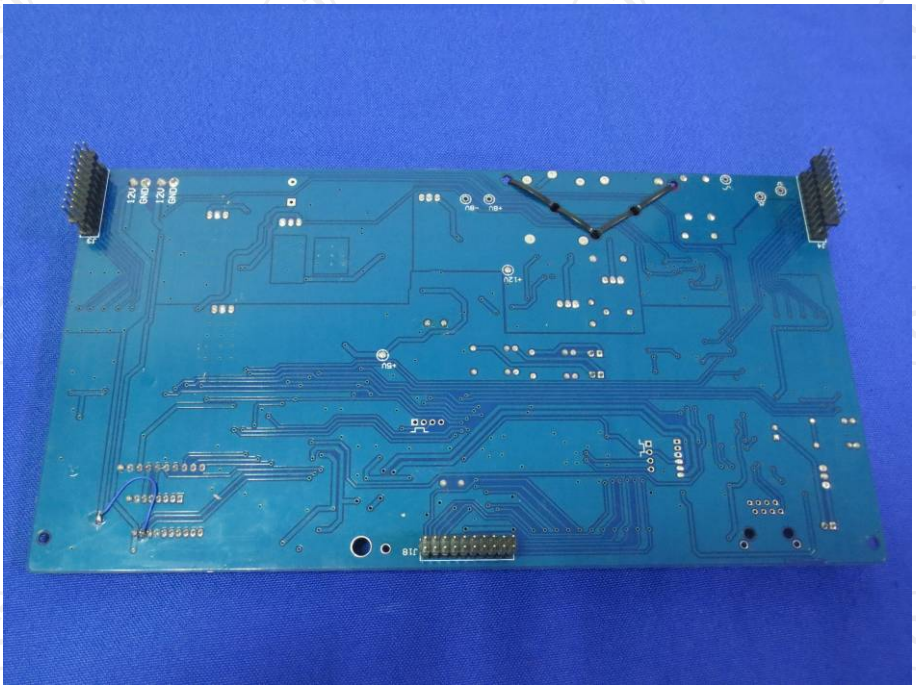

RIGHT(2)
LEFT(1)







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

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