

FCC Verification Test Report

For

BEIJING SIGNS FULL JOINT TECHNOLOGY CO.,LTD

EUT Name: Desktop Flatbed Printer

Model No: A2, A3, A4, B5

Brand Name: N/A

Prepared By:

Dongguan Yaxu (AiT) Technology Limited

Date of Receipt: Jul. 09, 2017

Date of Test: Jul. 09~12, 2017

Date of Issue: Jul. 13, 2017

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Verification of Compliance

Client Information:

Applicant: BEIJING SIGNS FULL JOINT TECHNOLOGY CO.,LTD
Applicant add.: 181-1,Inter'al Garden,No.168,Fengbao Road,Fengtai
District,Beijing China

EUT Information:

EUT Name: Desktop Flatbed Printer
Model No: A2, A3, A4, B5
Brand Name: N/A

Applicable Standards: FCC Part 15 Subpart B: 2017

This device described above has been tested by Dongguan Yaxu (AiT) Technology Limited 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.

Reviewed by:



Approved by:



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2 Test Summary

Test	Test Requirement	Test Method	Criterion	Result
Mains Terminals Disturbance Voltage, 150kHz to 30MHz	FCC Part 15 Subpart B: 2017	ANSI C63.4: 2014	Limits	PASS
Radiated Emissions 30MHz to 1GHz	FCC Part 15 Subpart B: 2017	ANSI C63.4: 2014	Limits	PASS

Note: N/A

Model description:

According to the confirmation from the applicant, since the electrical circuit design, layout, and internal wiring were identical, the difference as the output power and size.

There only **A4** was tested in this report.

2.1 Measurement Uncertainty

The report uncertainty of measurement $y \pm U$, where expanded 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	Frequency Range	U , Value
1	Power Line Conducted Emission	150KHz~30MHz	1.20 dB
2	Disturbance Power Emission	30MHz~300MHz	2.96 dB
3	Radiated Emission Test	30MHz~1GHz	3.30 dB
4	Radiated Emission Test	1GHz~18GHz	3.30 dB

2.2 Test Location

All tests were performed at:

Dongguan Yaxu (AiT) Technology Limited
No.22, Jinqianling Third Street, Jitigang, Huangjiang,Dongguan, Guangdong, China
Tel.: +86.769.82020499 Fax.: +86.769.82020495

The FCC Registration No. of Dongguan Yaxu (AiT) Technology Limited is 248337.

3 Test Facility

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

.CNAS- Registration No: L6177

Dongguan Yaxu (AiT) technology Limited is accredited to ISO/IEC 17025:2005 general Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the competence of testing and calibration laboratories) on Apr. 18, 2013

.FCC- Registration No: 248337

The 3m Semi-Anechoic Chamber, 3m/10m Open Area Test Site and Shielding Room of Dongguan Yaxu (AiT) Technology Limited have been registered by Federal Communications Commission (FCC) on Aug.29, 2014.

.Industry Canada(IC)-Registration No: IC6819A

The 3m Semi-Anechoic Chamber of Dongguan Yaxu (AiT) Technology Limited have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing on Oct. 01, 2014.

3.1 Deviation from standard

None

3.2 Abnormalities from standard conditions

None

4 General Information

4.1 General Description of EUT

Manufacturer:	BEIJING SIGNS FULL JOINT TECHNOLOGY CO.,LTD
Manufacturer Address:	181-1,Inter'al Garden,No.168,Fengbao Road,Fengtai District,Beijing China
EUT Name:	Desktop Flatbed Printer
Model No:	A4
Derivative Model No:	A2, A3, B5
Brand Name:	N/A
Power Range:	AC 110~240V, 50/60Hz
Test Supply:	AC 120V/60Hz
Power Cord:	N/A
Signal Cable:	N/A

4.2 Description of Test setup

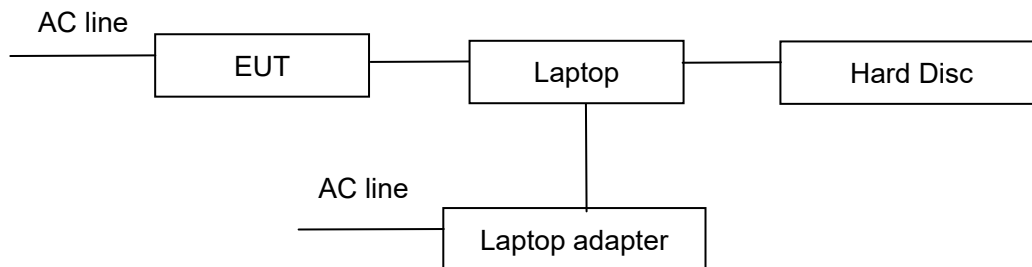
4.2.1 EUT Test Mode

Mode 1	The EUT is running.
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EUT was tested in normal configuration (Please See following Block diagram)

1. Block diagram of EUT configuration-EMI

Mode 1:



4.3 Peripheral List

No.	Equipment	Manufacturer	Model No.	Serial No.	Power cord	signal cable
1	Lap top	ASUS	N/A	X401A	X16-96072	N/A
2	AC adapter	Stos	CE	QX6.5W75100FG	N/A	N/A
3	Portable Hard Disc	ALUMINUM	CE	3.5 HDD Storage Box	06832c009	1.8m/unshielded /detachable

4.4 EUT Peripheral List

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

5 Equipments List for All Test Items

☒ Radiation Test Equipment						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Measuring Receiver	R&S	ESR	101160	2017.06.29	2018.06.28
2	Low Noise Pre Amplifier	Tsj	MLA-10K01-B01-27	1205323	2017.06.29	2018.06.28
3	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9160	9160-3206	2017.06.29	2018.06.28
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2017.06.29	2018.06.28
5	Spectrum Analyzer	ADVANTEST	R3182	150900201	2017.06.29	2018.06.28
6	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2017.06.29	2018.06.28
7	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	2017.06.29	2018.06.28

☒ Conduction Test equipment						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	Test Receiver	Rohde & Schwarz	ESCI	100124	2017.06.29	2018.06.28
2	LISN	Schaffner	MN2050D	1467	2017.06.29	2018.06.28
3	LISN	Schwarzbeck	NSLK 8127	8127-432	2017.06.29	2018.06.28
4	Test Cable	FARAD	BNC-N-NO.1	N/A	2017.06.29	2018.06.28
5	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100046	2017.06.29	2018.06.28

Note:

1. ☐ is not applicable in this Test Report. ☒ is applicable in this Test Report.

6 Emission Test Results

6.1 Mains Terminals Disturbance Voltage Measurement

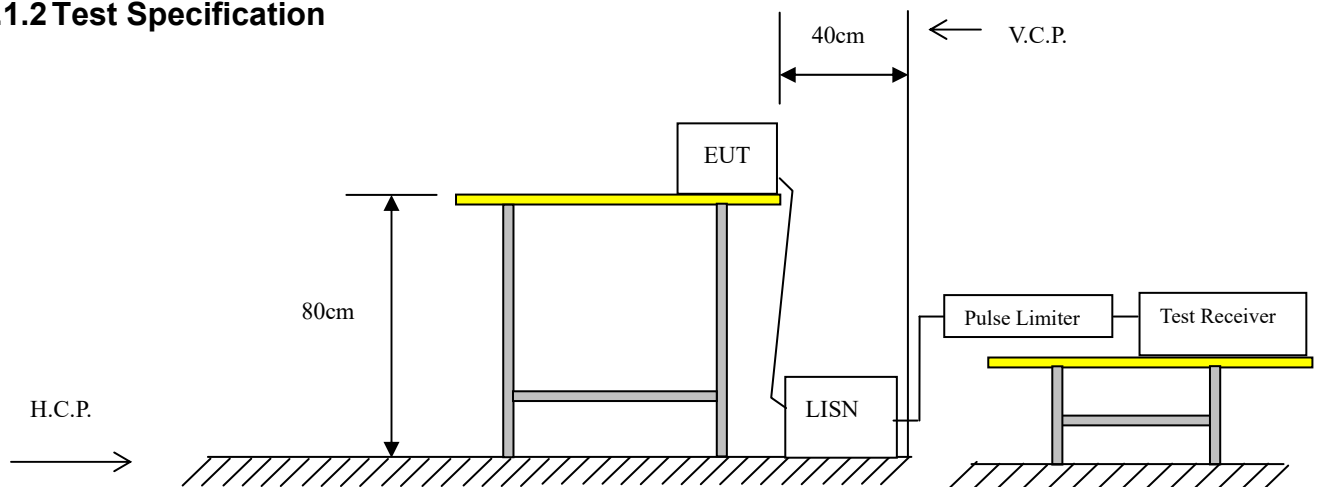
Frequency (MHz)	☐ Class A (dB μ V)		☒ Class B (dB μ V)	
	Q.P. (Quasi-Peak)	A.V. (Average)	Q.P. (Quasi-Peak)	A.V. (Average)
0.15 ~ 0.50	79	66	66 to 56	56 to 46
0.50 ~ 5.0	73	60	56	46
5.0 ~ 30	73	60	60	50

Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximized peak within 6dB of Average Limit
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6.1.1 E.U.T. Operation

Temperature:	25°C	Humidity:	54% RH	Atmospheric Pressure:	101	Kpa
Test Mode:	Mode 1					

6.1.2 Test Specification



EUT was placed upon a wooden test table 0.8m above the horizontal metal reference plane and 0.4m from the vertical ground plane, and it was connected to an AMN. The closest distance between the boundary of the EUT and the surface of the AMN is 0.8m. All peripherals were connected to another AMN, and placed at a distance of 10cm from each other. A spectrum and receiver was connected to the RF output port of the AMN. Both average and quasi-peak value were detected.

6.1.3 Measurement Data

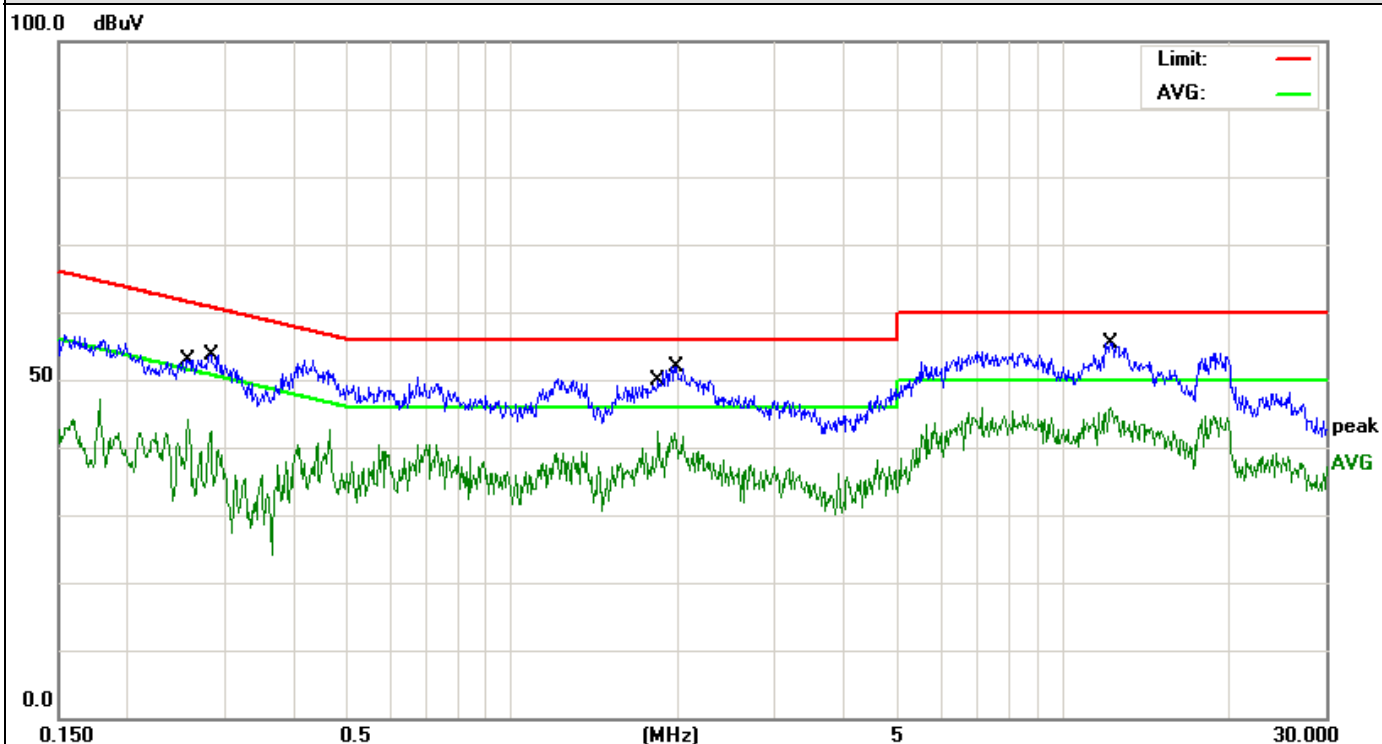
An initial pre-scan was performed on the live and neutral lines.

Quasi-peak or average measurements were performed at the frequency which maximum peak emissions were detected.

Please refer to the attached quasi-peak & average measurement data for reference.

Model: A2

Phase – L

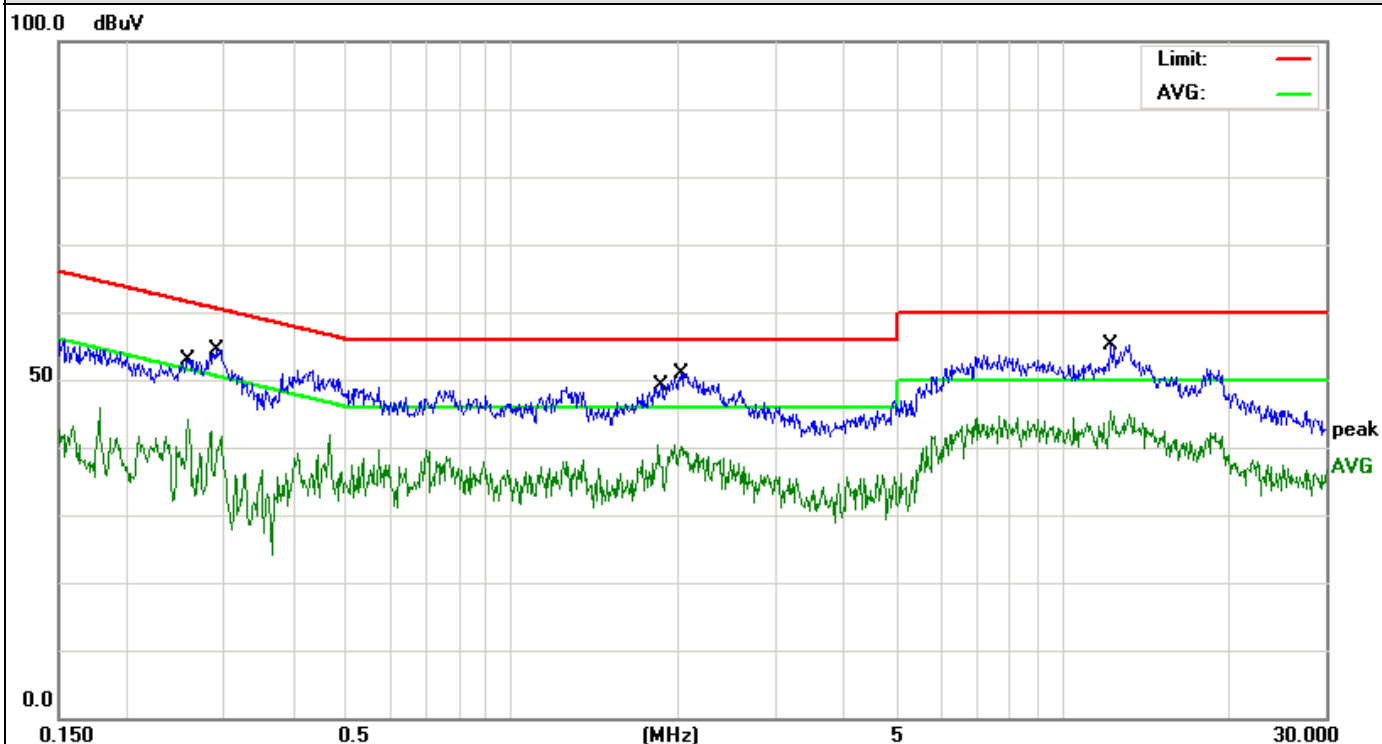


Remark: Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2580	42.34	1.84	44.18	51.49	-7.31	AVG
2		0.2832	51.97	1.68	53.65	60.72	-7.07	QP
3	*	1.8460	41.42	0.87	42.29	46.00	-3.71	AVG
4		1.9739	51.13	0.87	52.00	56.00	-4.00	QP
5		12.2418	45.16	10.34	55.50	60.00	-4.50	QP
6		12.2418	35.51	10.34	45.85	50.00	-4.15	AVG

Model: A2

Phase – N

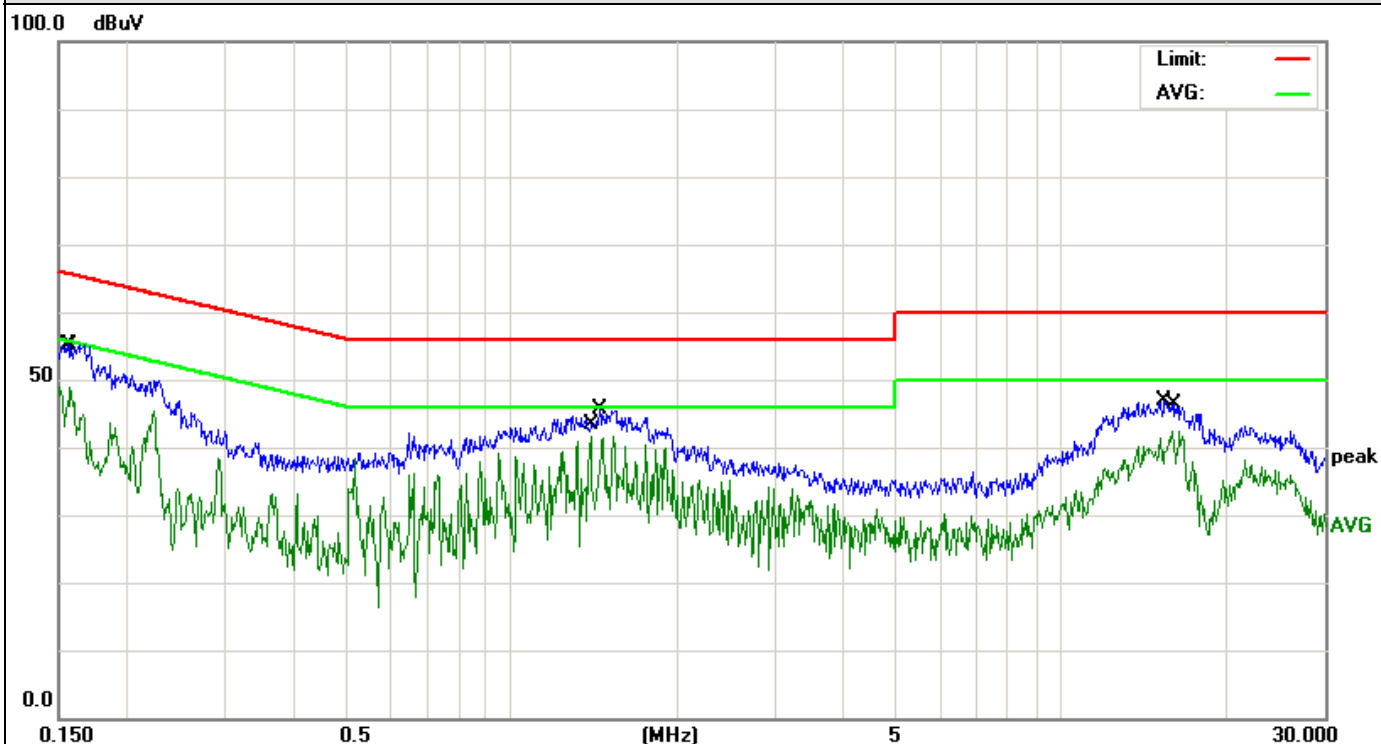


Remark: Factor = Insertion Loss + Cable Loss.

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.2580	42.34	1.84	44.18	51.49	-7.31	AVG
2	0.2898	52.92	1.48	54.40	60.53	-6.13	QP
3	1.8460	39.52	0.87	40.39	46.00	-5.61	AVG
4	2.0299	50.03	0.87	50.90	56.00	-5.10	QP
5	12.2416	44.81	10.34	55.15	60.00	-4.85	QP
6 *	12.2416	35.16	10.34	45.50	50.00	-4.50	AVG

Model: A4

Phase – L

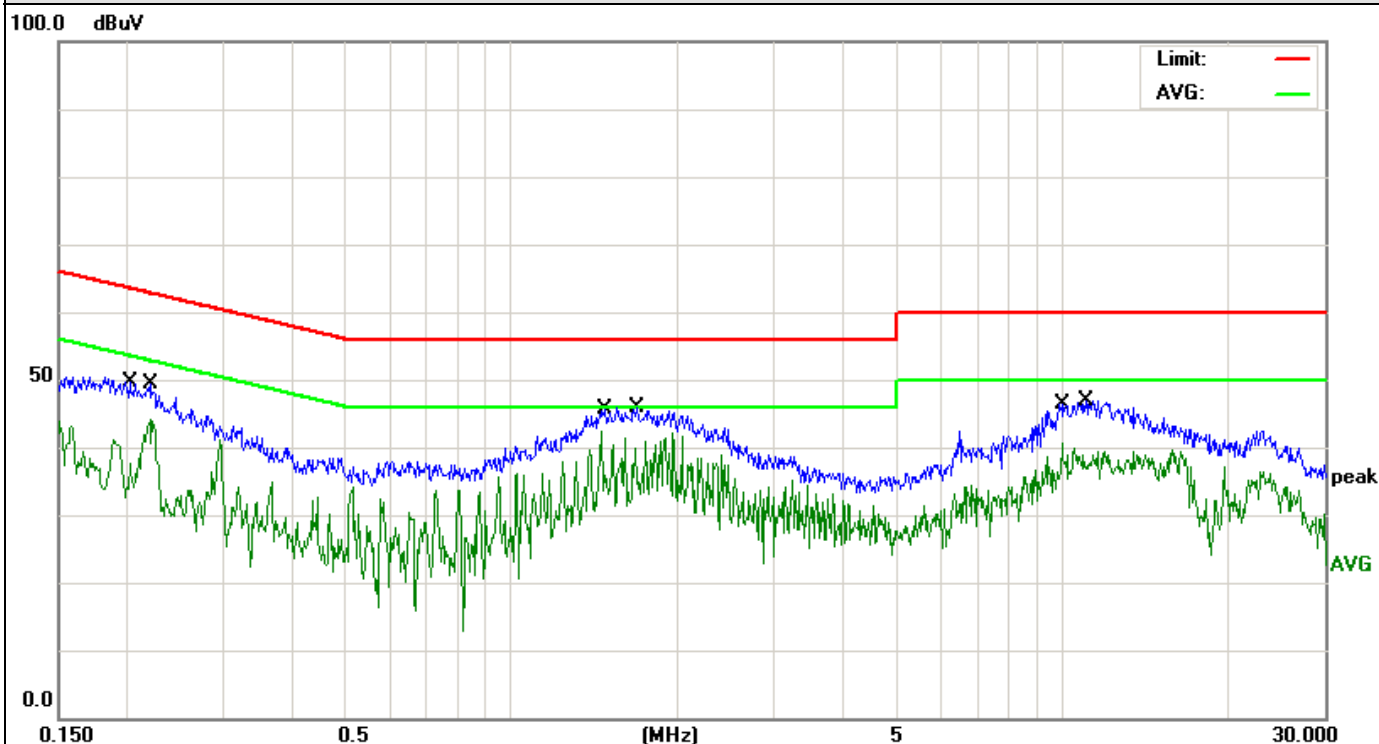


Remark: Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1555	51.97	3.28	55.25	65.70	-10.45	QP
2		0.1580	45.95	2.94	48.89	55.56	-6.67	AVG
3	*	1.3899	40.71	0.85	41.56	46.00	-4.44	AVG
4		1.4459	44.80	0.85	45.65	56.00	-10.35	QP
5		15.3538	36.53	10.47	47.00	60.00	-13.00	QP
6		15.8739	31.83	10.54	42.37	50.00	-7.63	AVG

Model: A4

Phase – N

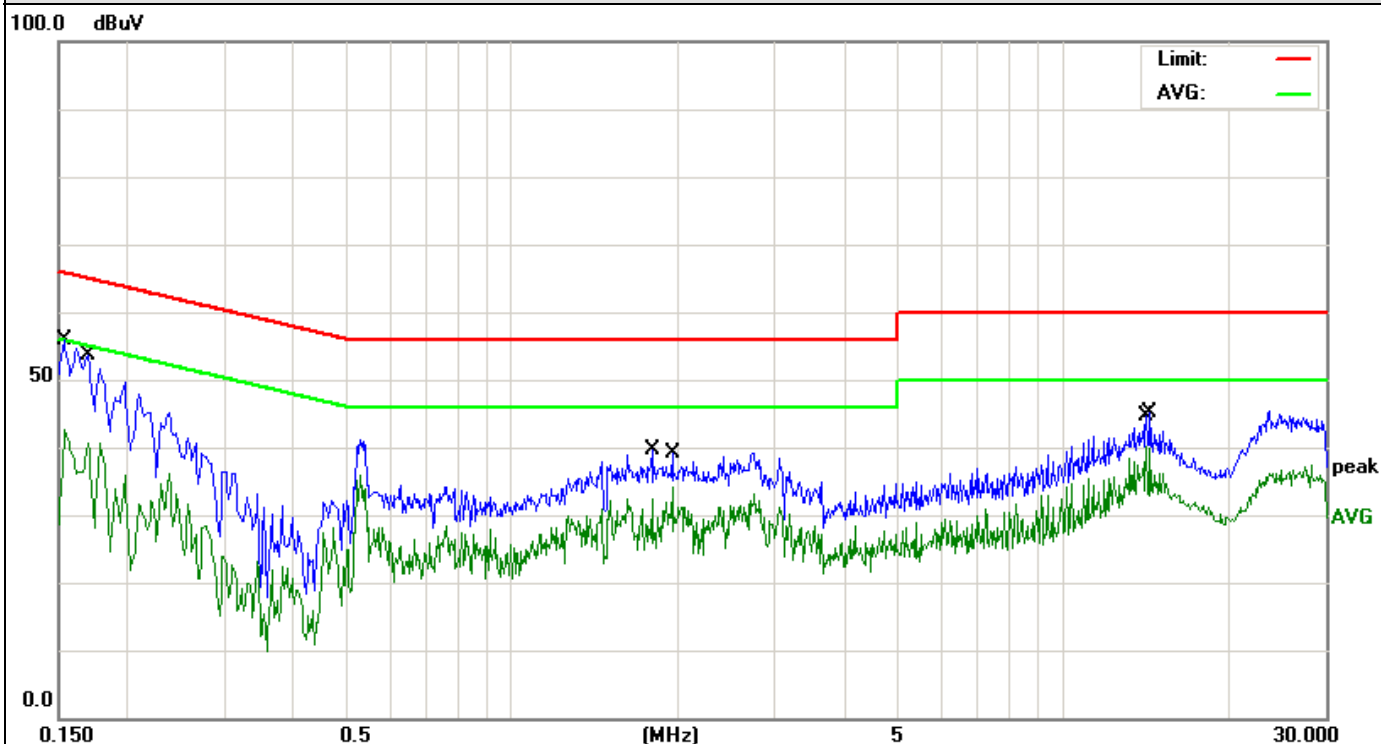


Remark: Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2020	47.57	2.08	49.65	63.52	-13.87	QP
2		0.2195	42.26	1.95	44.21	52.83	-8.62	AVG
3	*	1.4578	41.50	0.85	42.35	46.00	-3.65	AVG
4		1.6859	45.14	0.86	46.00	56.00	-10.00	QP
5		9.9778	30.40	10.24	40.64	50.00	-9.36	AVG
6		11.0219	36.67	10.33	47.00	60.00	-13.00	QP

Model: B5

Phase – L

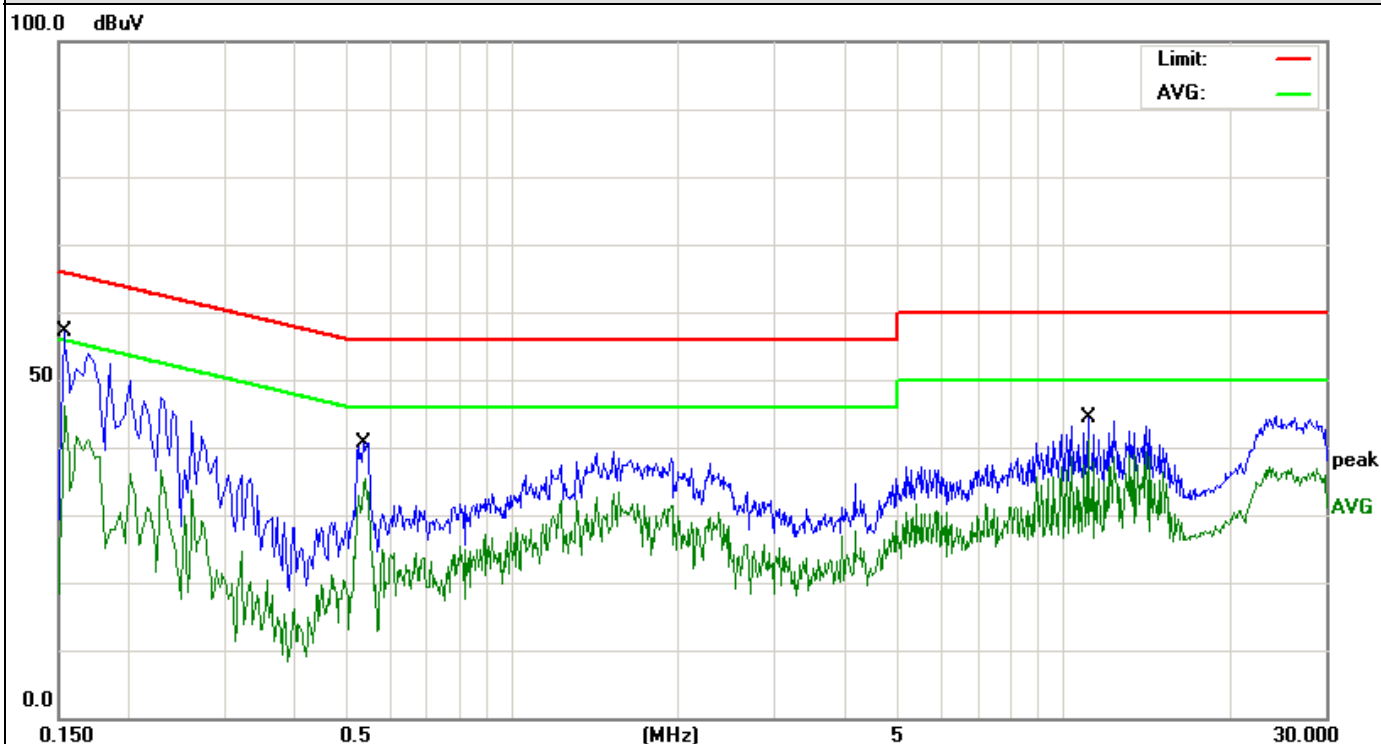


Remark: Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1539	30.77	11.84	42.61	55.78	-13.17	AVG
2		0.1700	42.03	11.55	53.58	64.96	-11.38	QP
3		1.7940	29.57	9.98	39.55	56.00	-16.45	QP
4		1.9498	24.22	9.99	34.21	46.00	-11.79	AVG
5	*	14.2097	29.78	10.39	40.17	50.00	-9.83	AVG
6		14.4298	34.66	10.40	45.06	60.00	-14.94	QP

Model: B5

Phase – N



Remark: Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1539	45.38	11.84	57.22	65.78	-8.56	QP
2		0.1539	34.36	11.84	46.20	55.78	-9.58	AVG
3		0.5349	30.65	10.00	40.65	56.00	-15.35	QP
4		0.5420	25.34	10.00	35.34	46.00	-10.66	AVG
5		11.1257	34.01	10.34	44.35	60.00	-15.65	QP
6		11.1257	30.76	10.34	41.10	50.00	-8.90	AVG

6.1.4 Test Setup Photograph

Model: A4



6.2 Radiated Emission Measurement

Limits of Radiated Emission Measurement

Frequency (MHz)	☐ Class A (10m)	☒ Class B (3m)
	Quasi-Peak dB(μ V/m)	Quasi-Peak dB(μ V/m)
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Detector:

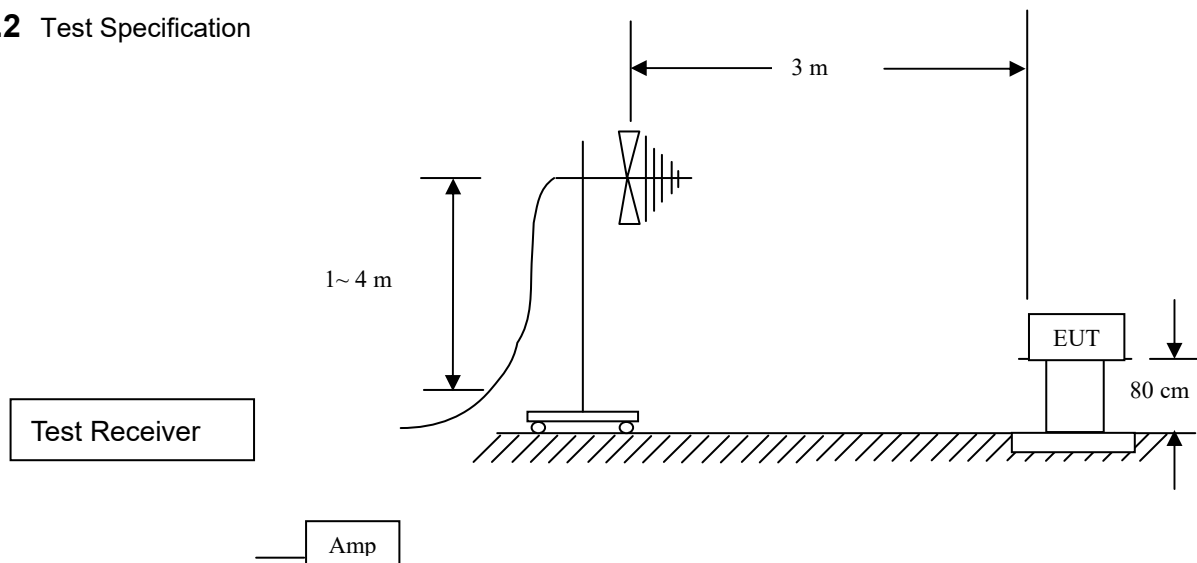
Peak for pre-scan (120kHz resolution bandwidth)

Quasi-Peak if maximum peak within 6dB of limit

6.2.1 E.U.T. Operation

Temperature:	25°C	Humidity:	55% RH	Atmospheric Pressure:	101	Kpa
Test Mode:	Mode 1					

6.2.2 Test Specification



EUT was placed upon a wooden test table which was placed on the turn table 0.8m above the horizontal metal ground plane, and operating in the mode as mentioned above. A receiving antenna was placed 3m away from the EUT. During testing, turn around the turn table and move the antenna from 1m to 4m to find the maximum field-strength reading. All peripherals were placed at a distance of 10cm between each other. Both horizontal and vertical antenna polarities were tested.

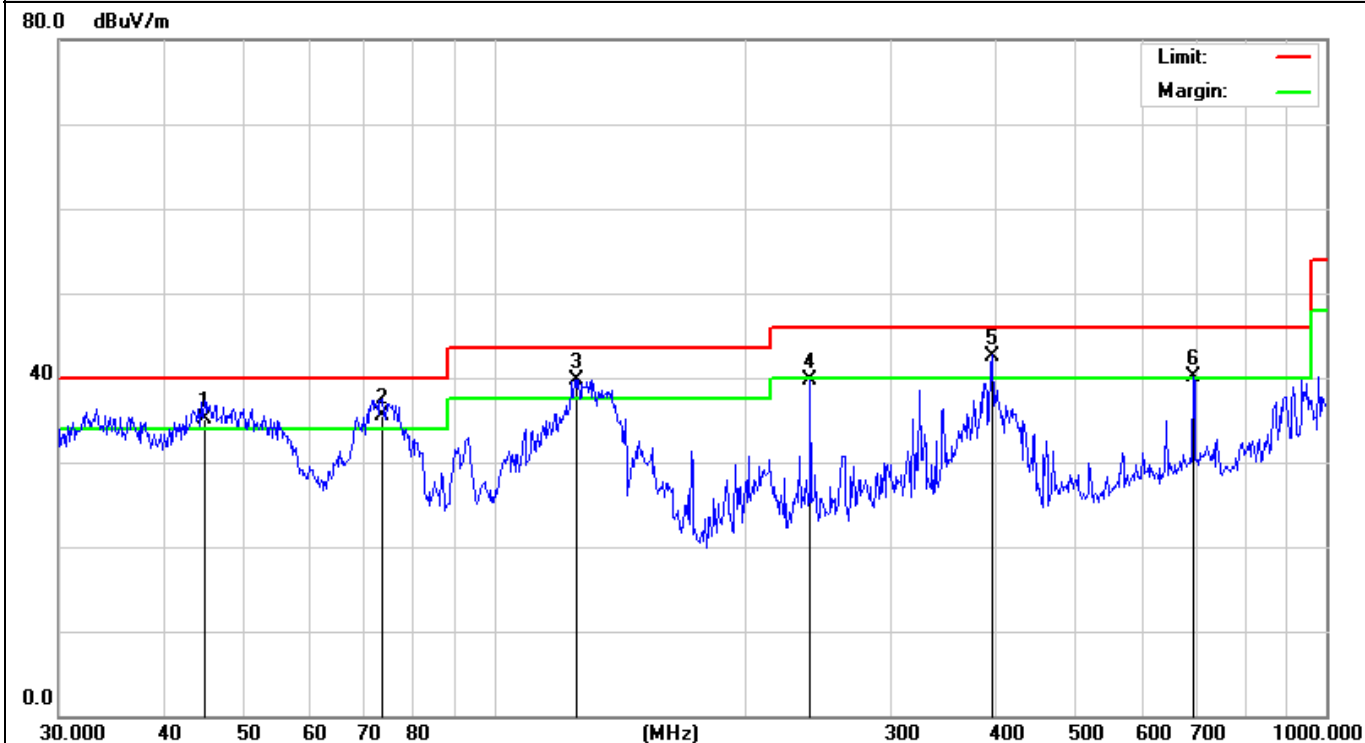
6.2.3 Measurement Data

An initial pre-scan was performed in the 3m chamber using the spectrum analyzers in peak detection mode. The EUT was measured by Biology antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

The following quasi-peak measurements were performed on the EUT.

Model: A2

Phase -Vertical

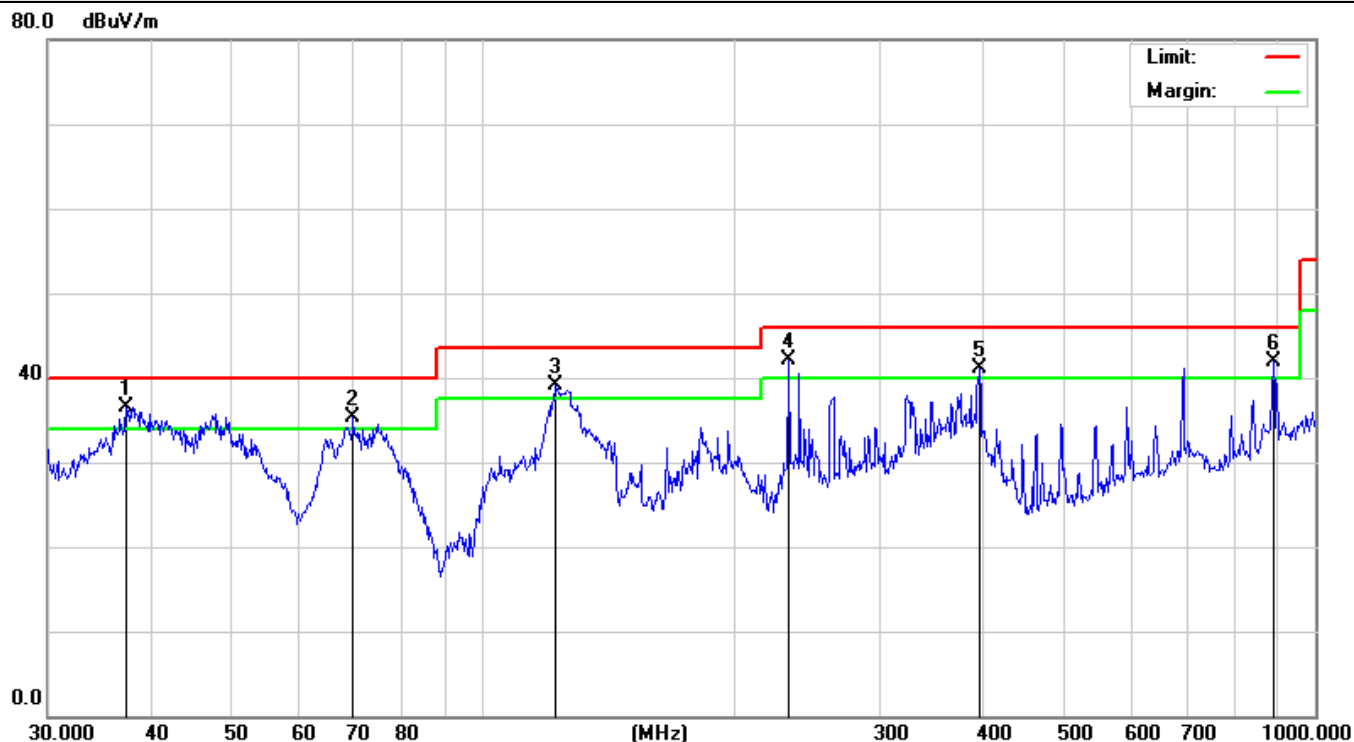


Remark: Factor = Antenna Factor + Cable Loss - Pre-amplifier.

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV/m	dBuV/m	dB	
1	!	44.9004	52.97	-17.77	35.20	40.00	-4.80	QP
2	!	73.3593	54.63	-19.13	35.50	40.00	-4.50	QP
3	!	125.8863	54.82	-15.12	39.70	43.50	-3.80	QP
4		239.9874	53.87	-14.07	39.80	46.00	-6.20	QP
5	*	397.6333	48.84	-6.24	42.60	46.00	-3.40	QP
6	!	691.9867	40.65	-0.52	40.13	46.00	-5.87	QP

Model: A2

Phase -Horizontal

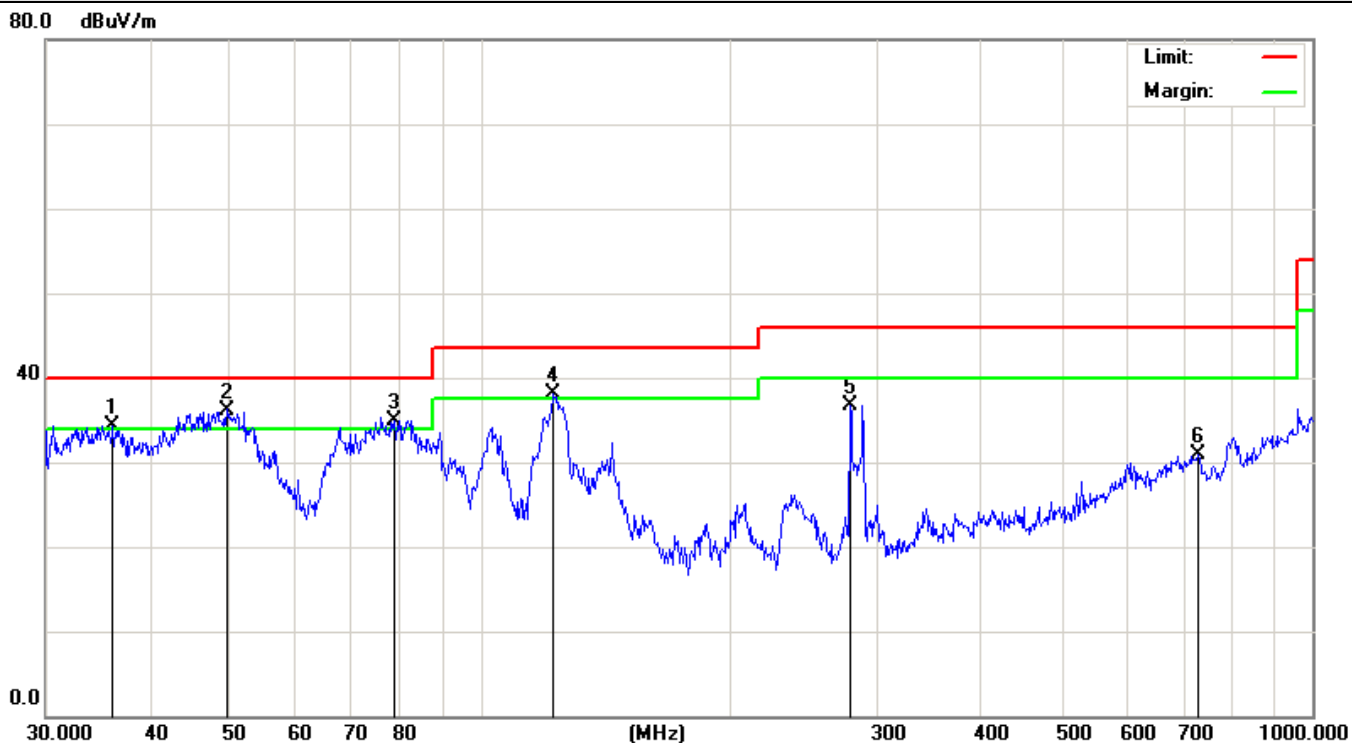


Remark: Factor = Antenna Factor + Cable Loss - Pre-amplifier.

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV/m	dBuV/m	dB	
1	*	37.2854	51.09	-14.59	36.50	40.00	-3.50	QP
2	!	69.8449	54.24	-18.94	35.30	40.00	-4.70	QP
3	!	122.4039	54.06	-15.02	39.04	43.50	-4.46	QP
4	!	233.3487	56.75	-14.74	42.01	46.00	-3.99	QP
5	!	394.8543	48.29	-7.12	41.17	46.00	-4.83	QP
6	!	890.7278	39.26	2.73	41.99	46.00	-4.01	QP

Model: A4

Phase -Vertical

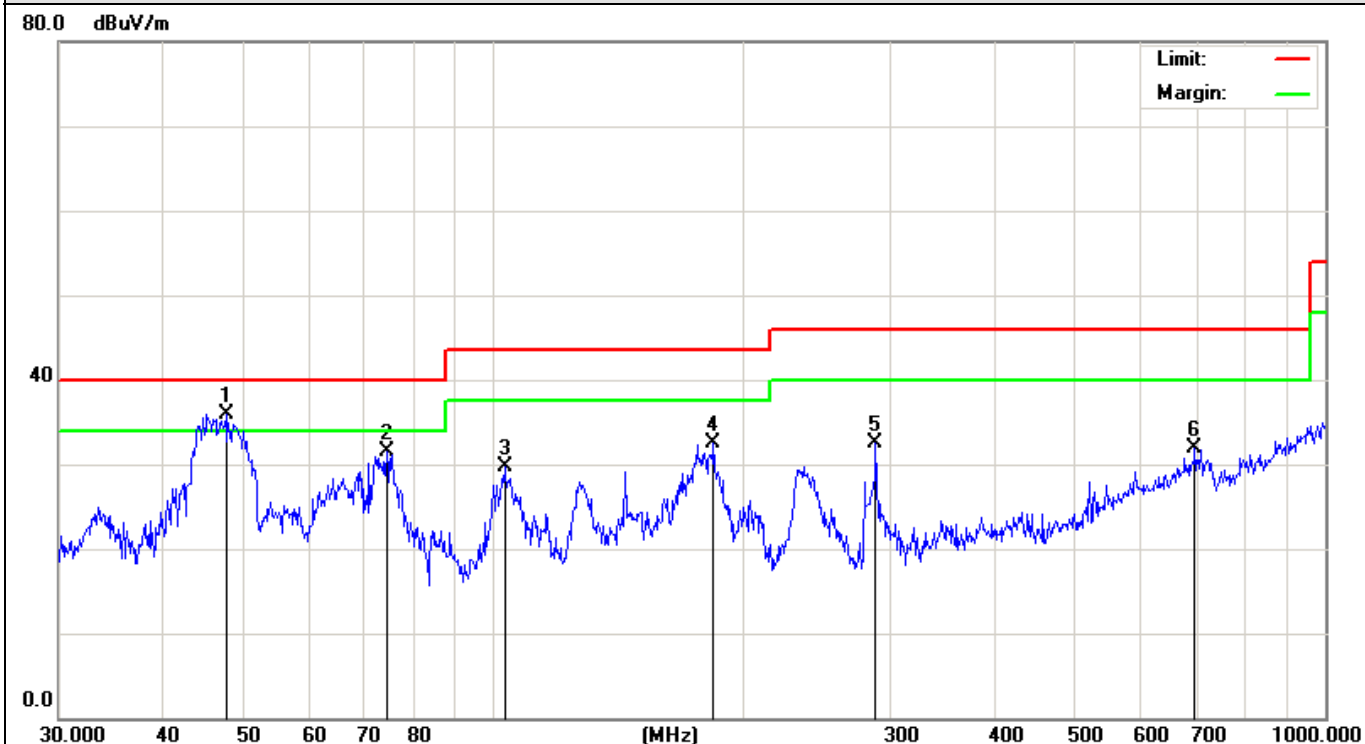


Remark: Factor = Antenna Factor + Cable Loss - Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	!	36.1272	51.16	-16.76	34.40	40.00	-5.60	QP
2	*	49.5328	54.82	-18.62	36.20	40.00	-3.80	QP
3	!	78.6888	54.12	-19.12	35.00	40.00	-5.00	QP
4	!	122.4039	53.06	-15.02	38.04	43.50	-5.46	QP
5		278.0668	48.18	-11.52	36.66	46.00	-9.34	QP
6		729.3582	31.49	-0.55	30.94	46.00	-15.06	QP

Model: A4

Phase –Horizontal

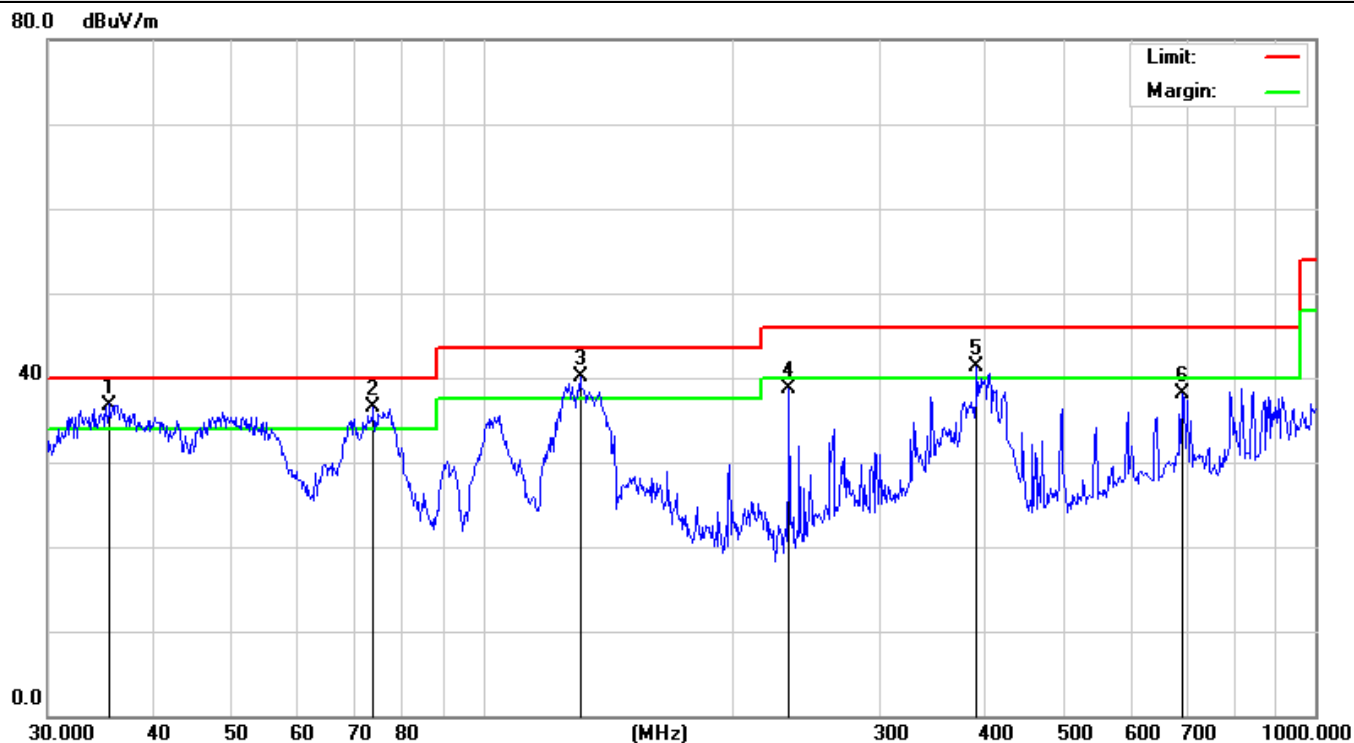


Remark: Factor = Antenna Factor + Cable Loss - Pre-amplifier.

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV/m	dBuV/m	dB	
1	*	47.6584	50.24	-14.24	36.00	40.00	-4.00	QP
2		74.3954	50.50	-18.92	31.58	40.00	-8.42	QP
3		103.0799	45.38	-15.72	29.66	43.50	-13.84	QP
4		183.8439	44.14	-11.72	32.42	43.50	-11.08	QP
5		287.9904	42.95	-10.45	32.50	46.00	-13.50	QP
6		696.8567	31.75	0.24	31.99	46.00	-14.01	QP

Model: B5

Phase -Vertical

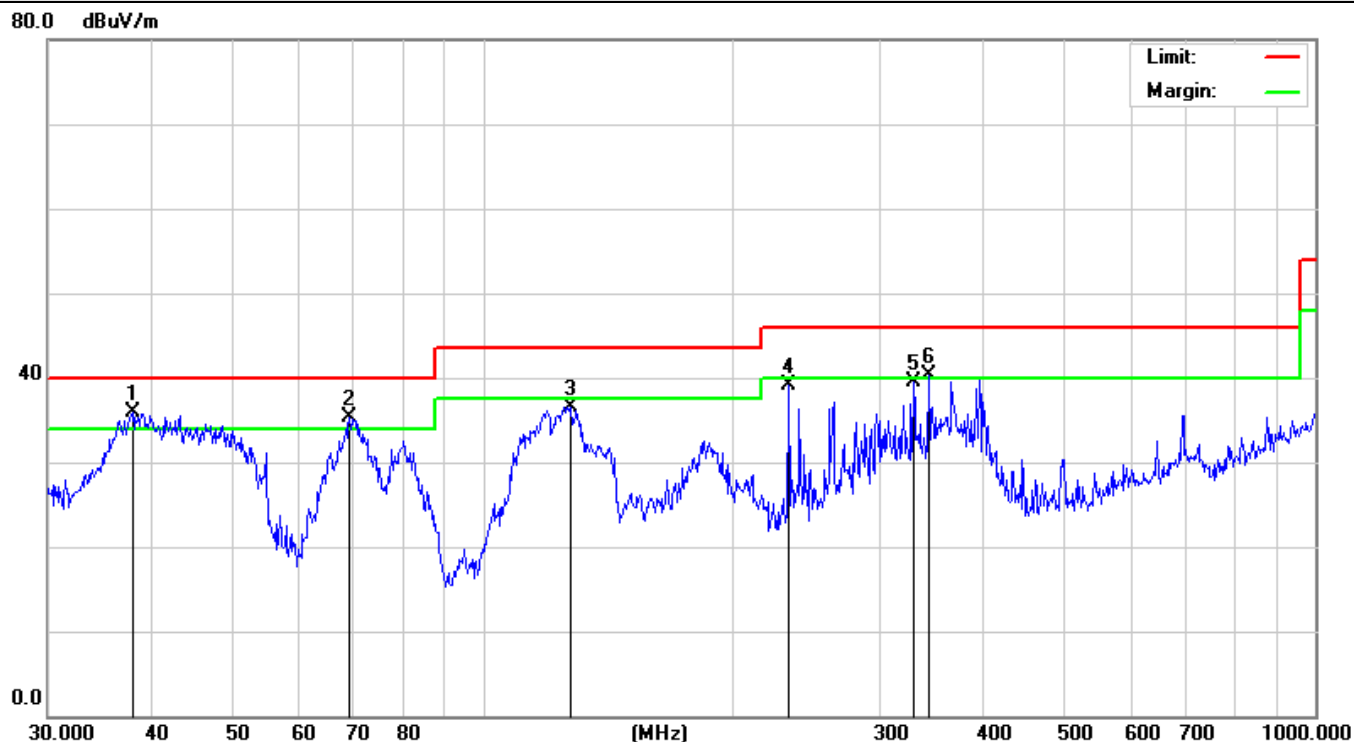


Remark: Factor = Antenna Factor + Cable Loss - Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	35.6240	53.48	-16.78	36.70	40.00	-3.30	QP
2	!	73.8756	55.65	-19.15	36.50	40.00	-3.50	QP
3	!	130.8369	55.00	-14.90	40.10	43.50	-3.40	QP
4		233.3487	53.54	-14.74	38.80	46.00	-7.20	QP
5	!	392.0951	48.38	-7.02	41.36	46.00	-4.64	QP
6		691.9867	38.62	-0.52	38.10	46.00	-7.90	QP

Model: B5

Phase –Horizontal



Remark: Factor = Antenna Factor + Cable Loss - Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	37.9450	50.45	-14.45	36.00	40.00	-4.00	QP
2	!	69.1141	53.99	-18.72	35.27	40.00	-4.73	QP
3		127.2176	51.63	-15.06	36.57	43.50	-6.93	QP
4		233.3487	53.93	-14.74	39.19	46.00	-6.81	QP
5		329.0390	48.12	-8.71	39.41	46.00	-6.59	QP
6	!	343.1800	48.71	-8.40	40.31	46.00	-5.69	QP

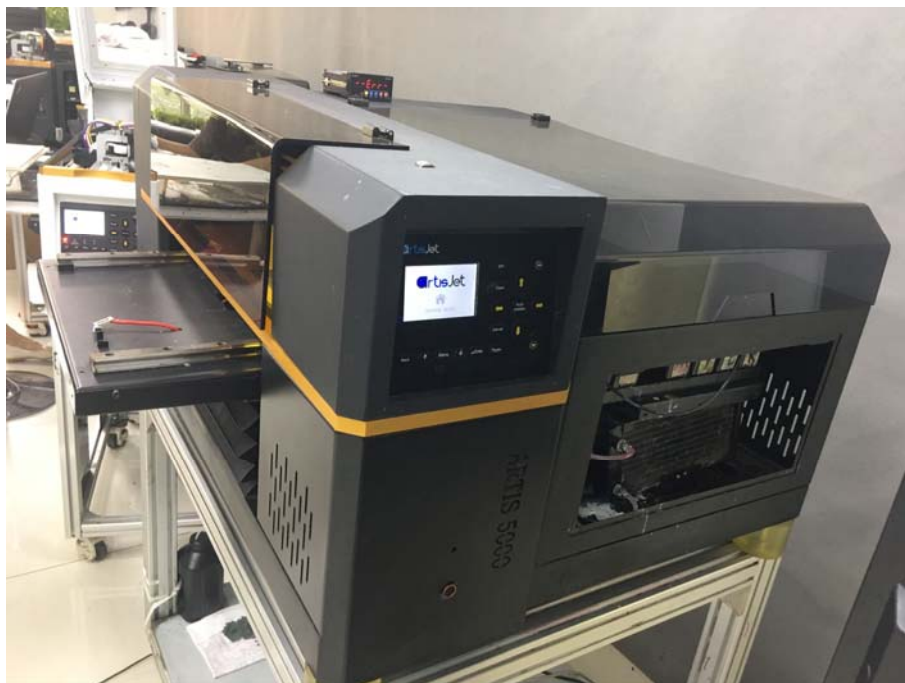
6.2.4 Test Setup photograph

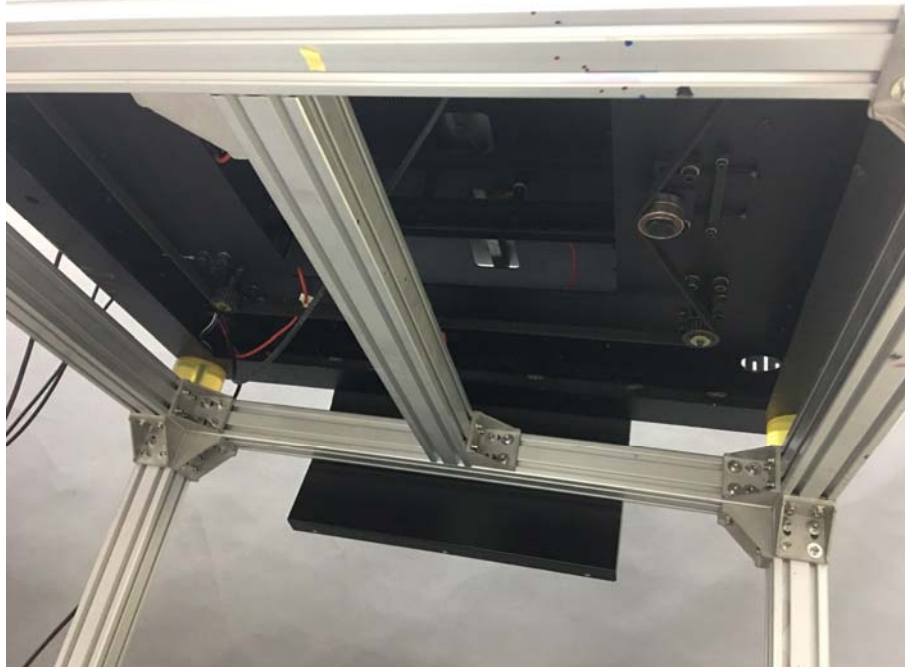
Model: A4

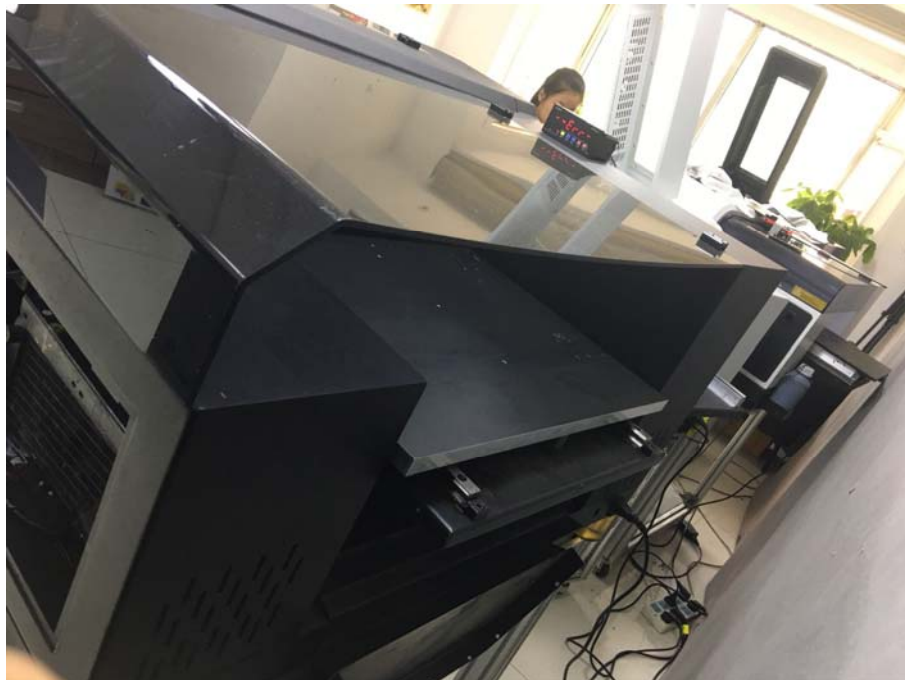
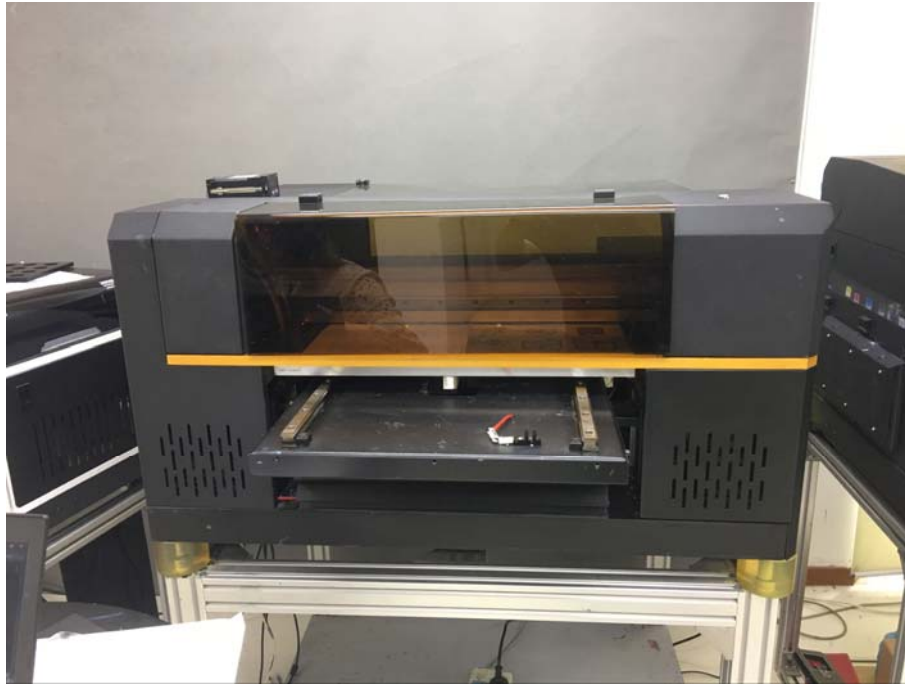


7 APPENDIX-Photographs of EUT Constructional Details

Model: A2

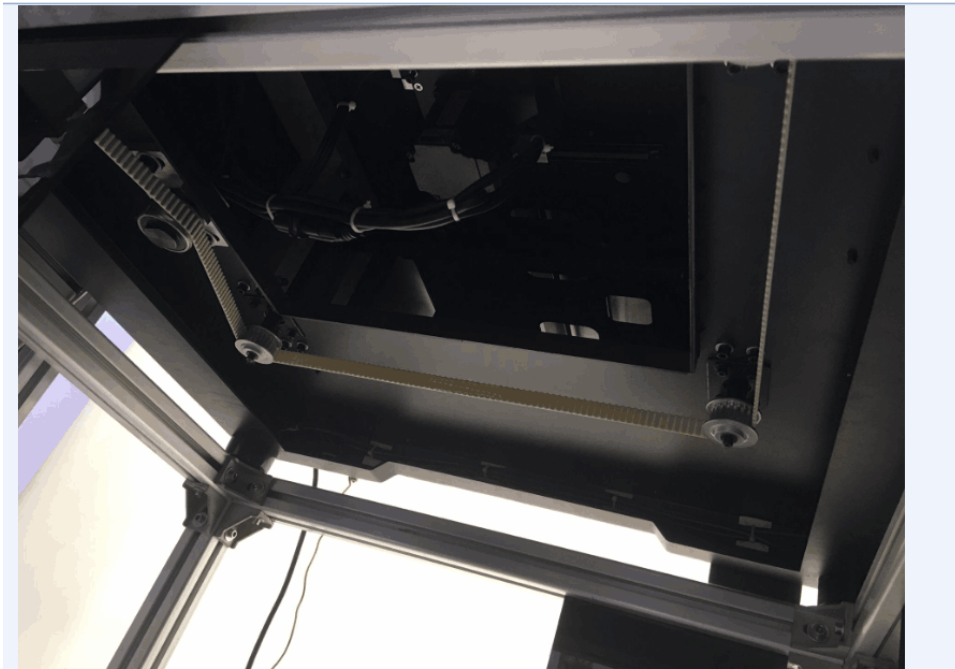






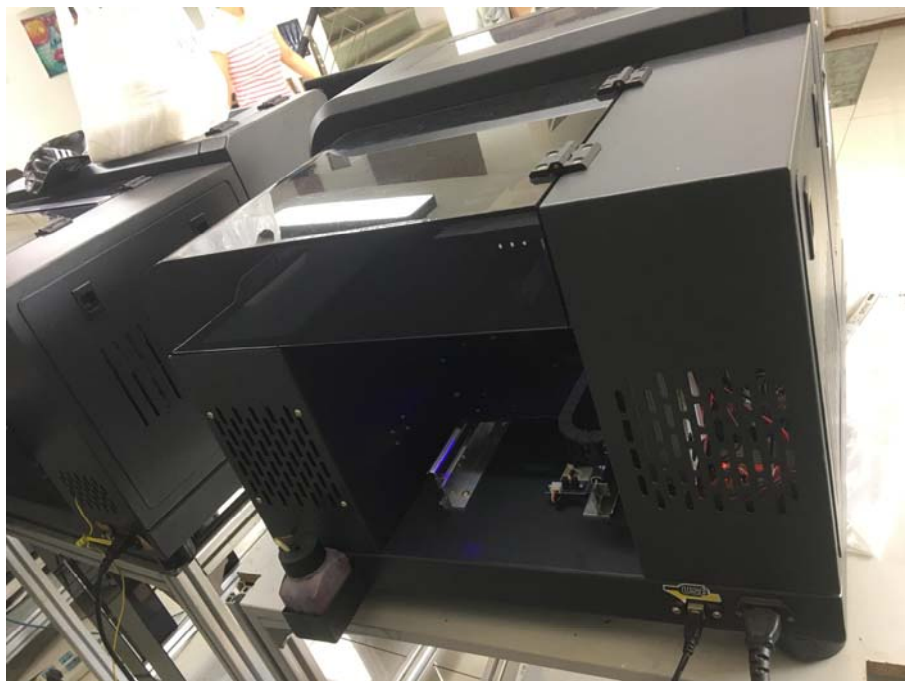
Model: B5







Model: A4





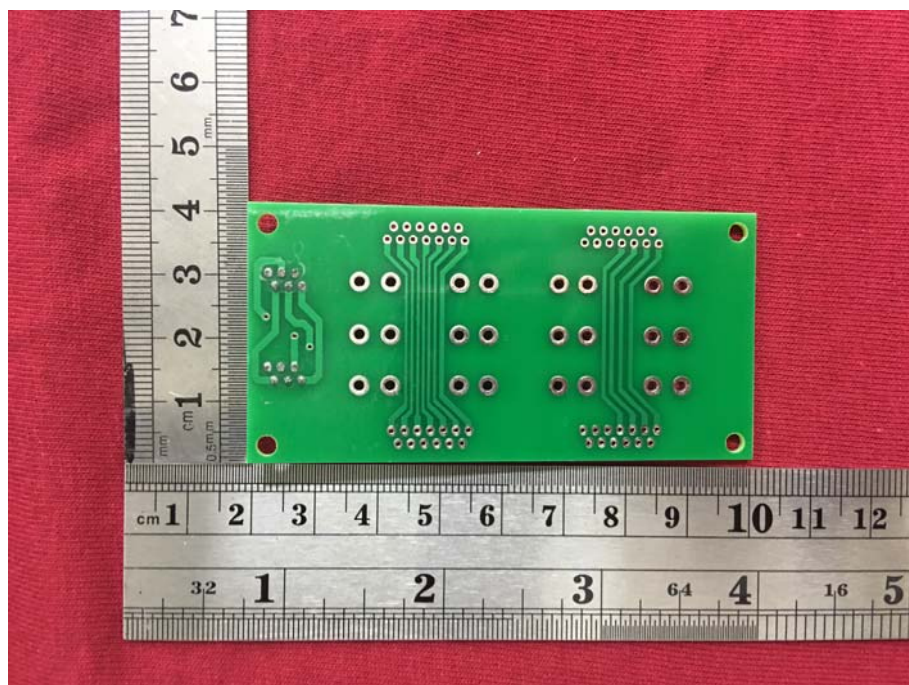


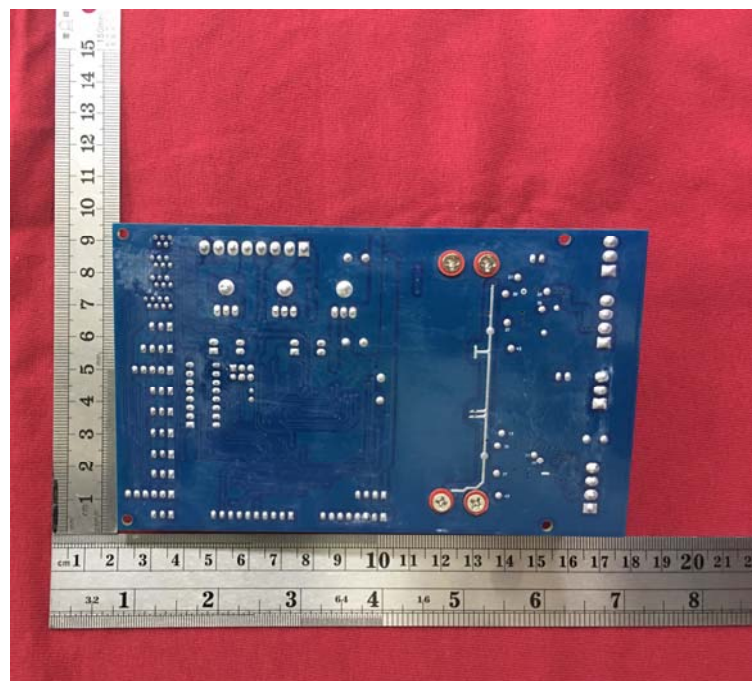
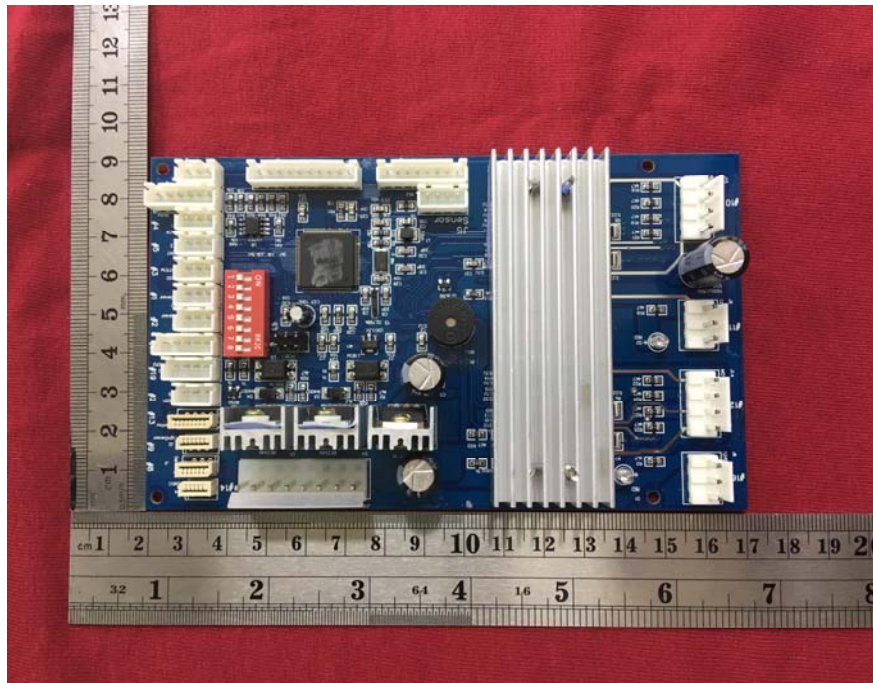


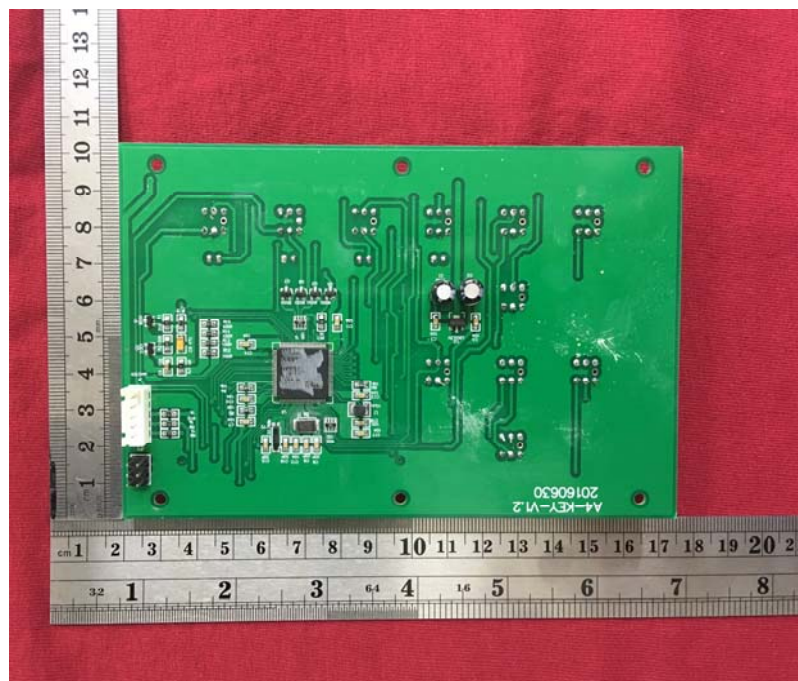
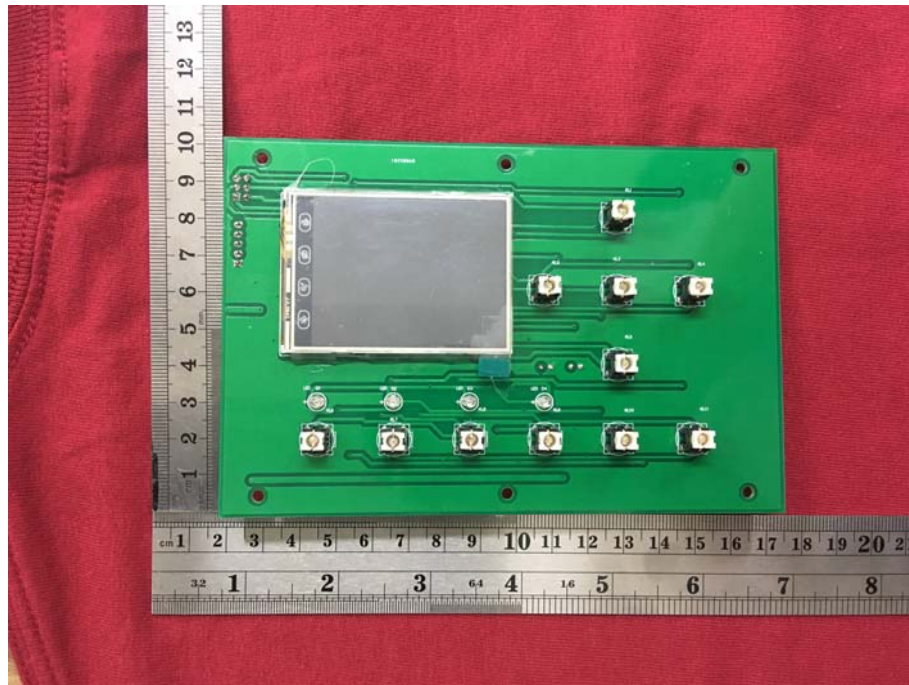
Model: A4

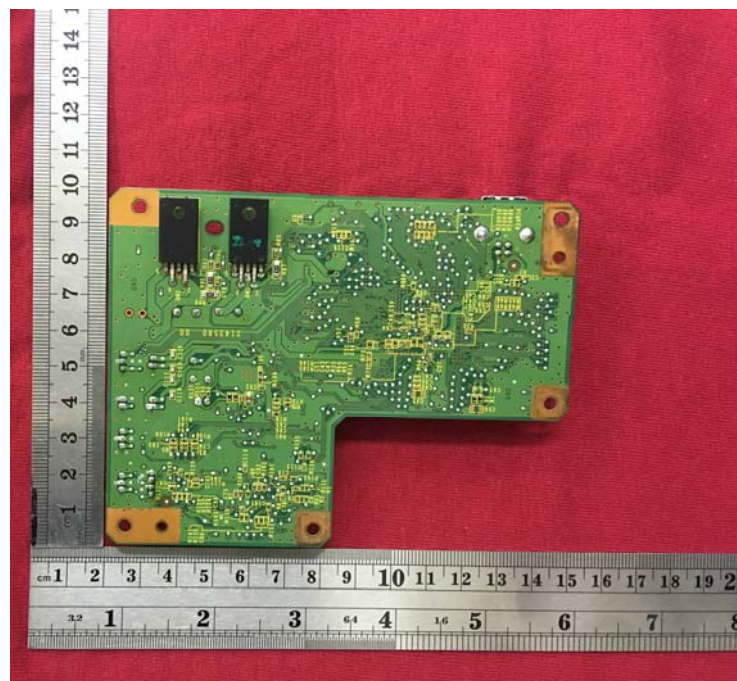
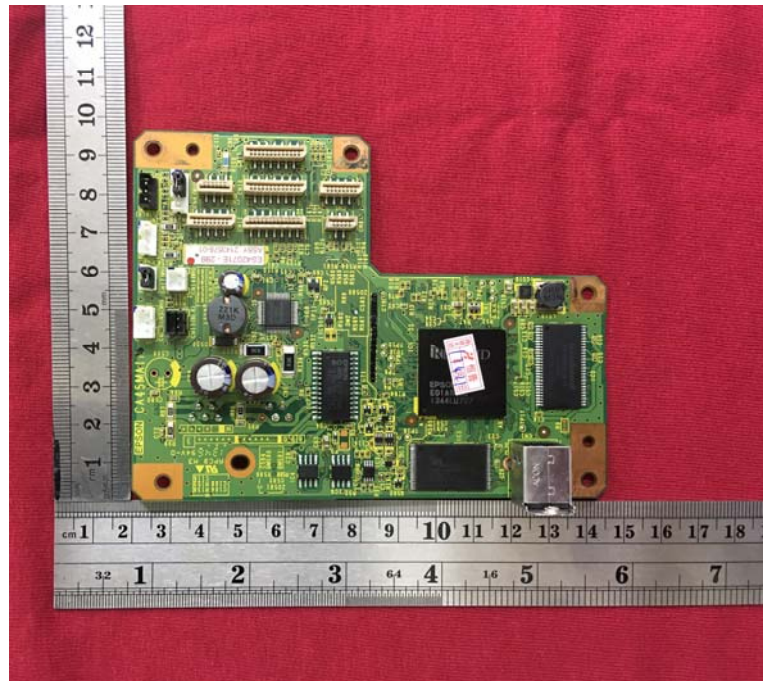












****End of Report****