

TEST REPORT

Product: inkBOOK Prime

Model No.: D62

Trade mark: inkBOOK

Report No.: TCT161103E020

Issued Date: Nov. 11, 2016

Issued for:

Arta Tech Pawel Horbaczewski

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Issued By:

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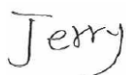
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1. Test Certification

Product:	inkBOOK Prime
Model No.:	D62
Applicant:	Arta Tech Pawel Horbaczewski
Address:	ul. Rybacka 9, 53-656 Wroclaw, Poland
Manufacturer:	Arta Tech Pawel Horbaczewski
Address:	ul. Rybacka 9, 53-656 Wroclaw, Poland
Test Voltage:	DC 5 V (Adapter Input AC 120 V/ 60 Hz) DC 5 V (PC Input AC 120 V/ 60 Hz)
Date of Test:	Nov. 08. 2016 ~ Nov. 10, 2016
Applicable Standards:	47 CFR FCC Part 15 Subpart B: 2016 ANSI C63.4: 2014
The Highest Frequency of The Internal Sources of the EUT	2.5GHz

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:



Jerry

Date:

Nov. 10, 2016

Check By:



Joe Zhou

Date:

Nov. 11, 2016

Approved By:



Tomsin

Date:

Nov. 11, 2016

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.

3. EUT Description

Product Name:	inkBOOK Prime
Model No.:	D62
Product Parameter:	DC 5 V, 1A
AC Mains:	☐ Shielded ☐ Unshielded, ☐ Detachable ☐ Un-detachable ☒ Not applicable ☐ Length:
DC Line:	☐ Shielded ☐ Unshielded, ☐ Detachable ☐ Un-detachable ☒ Not applicable ☐ Length:
Control Line:	☐ Shielded ☐ Unshielded, ☐ Detachable ☐ Un-detachable ☒ Not applicable ☐ Length:

4. Test Methodology

4.1. Decision of Final Test Mode

The EUT was tested together with the thereafter 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: Charging and SD Playing
Mode 2: Charging and Memory Playing
Mode 3: Data Transmitting

The following test mode was found to produce the highest emission level.

The Worst Test Mode		
Emission	Conducted Emission	Mode 3: Data Transmitting
	Radiated Emission	Mode 3: Data Transmitting

4.2. UT System Operation

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

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
Adapter	JD-050200	20120109075 76735	/	JD
PC	BM6620	D1PFCG0008 HP	/	ASUS
Keyboard	PK1100U	04G10418003 9DP	/	ASUS
Mouse	MOBTUO	04G12561017 0DP	/	ASUS
SD Card	SDSDU-016G	N/A	/	SanDisk

Note:

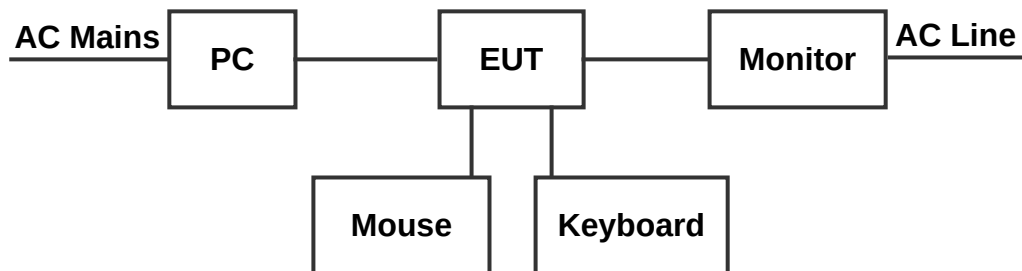
1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5.2. Configuration of System Under Test

Charging and SD Playing/ Charging and Memory Playing



Data Transmitting



(EUT: inkBOOK Prime)

6. Facilities and Accreditations

6.1. Facilities

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

FCC - Registration No.: 572331

Shenzhen Tongce Testing Lab

The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

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	$\pm 0.1^{\circ}\text{C}$
2.	Humidity	$\pm 1.0 \%$
3.	Spurious Emissions, Conducted	$\pm 2.56 \text{ dB}$
4.	All Emissions, Radiated	$\pm 4.50 \text{ dB}$

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

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

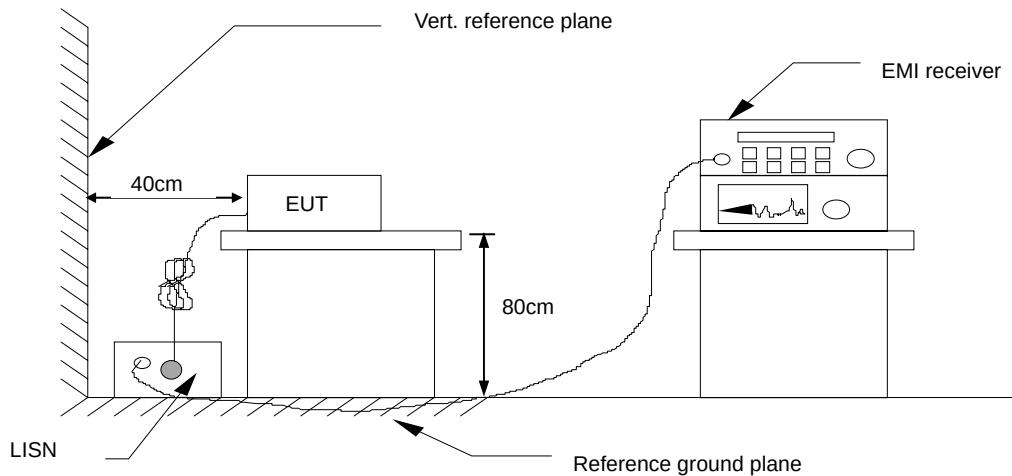
Conducted Emission Shielding Room Test Site (843)				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCS30	100139	Aug. 11, 2017
LISN	Schwarzbeck	NSLK 8126	8126453	Aug. 16, 2017

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.: 23 °C	Humid.: 54 %	Press.: 96 kPa
Test Mode:	Mode 1, Mode 2, Mode 3		
Test Voltage:	DC 5 V (Adapter Input AC 120 V/ 60 Hz) DC 5 V (PC Input AC 120 V/ 60 Hz)		
Test Result:	Pass		

Note:

L1 = Live Line / N = Neutral Line

“---” denotes the emission level was or more than 2dB 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)

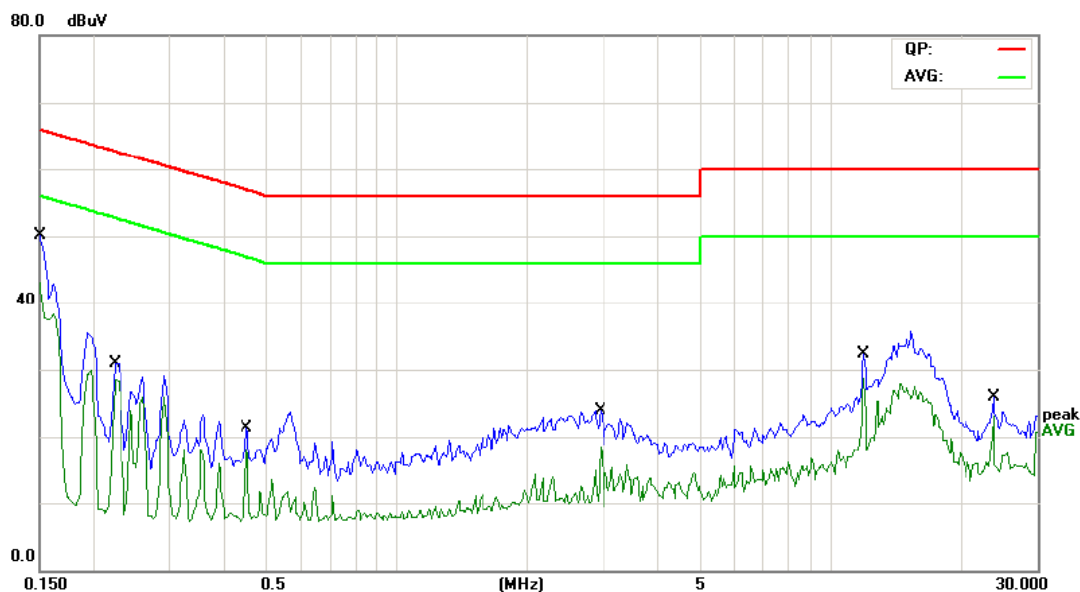
Limit dB(μV) = Limit stated in standard

Margin (dB) = Level dB(μV) – Limits dB(μV)

Q.P. =Quasi-Peak

AVG=Average

Please refer to following diagram for individual



Site Chamber #2

Phase: L1

Temperature: 23 (C)

Limit: FCC Part 15B Class B Conduction(QP)

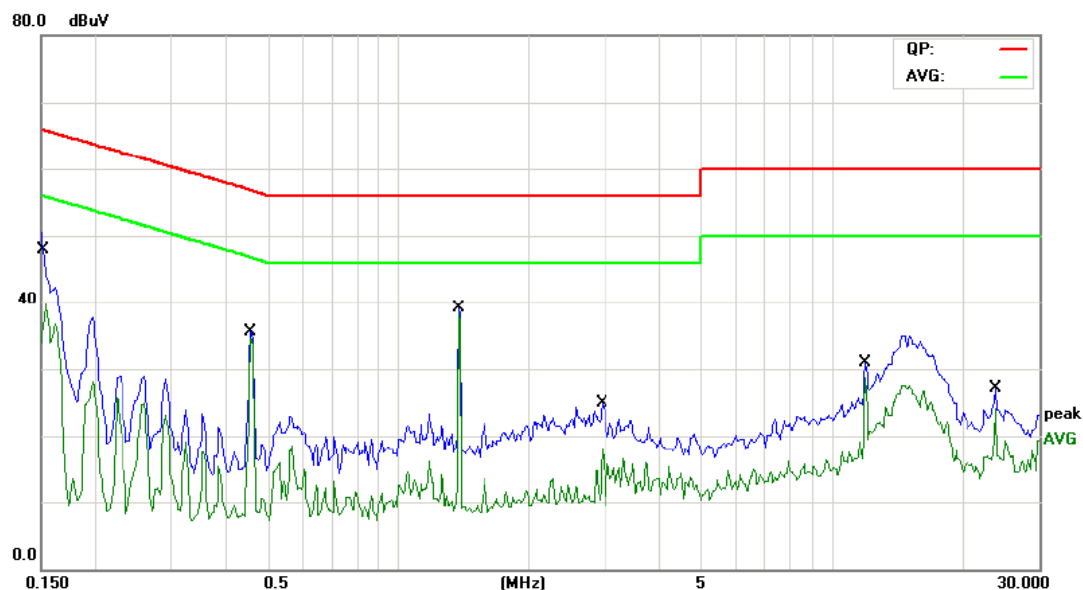
Power:

Humidity: 54 %

Mode: Data Transmitting

Note: DC 5V(PC Input AC 120V/60Hz)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	36.58	11.47	48.05	65.99	-17.94	QP	
2	*	0.1500	31.69	11.47	43.16	55.99	-12.83	AVG	
3		0.2242	17.12	11.44	28.56	62.66	-34.10	QP	
4		0.2242	17.03	11.44	28.47	52.66	-24.19	AVG	
5		0.4508	7.23	11.32	18.55	56.86	-38.31	QP	
6		0.4508	6.86	11.32	18.18	46.86	-28.68	AVG	
7		2.9586	10.02	11.35	21.37	56.00	-34.63	QP	
8		2.9586	7.07	11.35	18.42	46.00	-27.58	AVG	
9		11.9336	17.23	11.41	28.64	60.00	-31.36	QP	
10		11.9336	17.26	11.41	28.67	50.00	-21.33	AVG	
11		23.8711	10.23	10.73	20.96	60.00	-39.04	QP	
12		23.8711	12.38	10.73	23.11	50.00	-26.89	AVG	



Site Chamber #2

Phase: **N**

Temperature: 23 (C)

Limit: FCC Part 15B Class B Conduction(QP)

Power:

Humidity: 54 %

Mode: Data Transmitting

Note: DC 5V(PC Input AC 120V/60Hz)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1539	30.23	11.47	41.70	65.78	-24.08	QP	
2		0.1539	28.24	11.47	39.71	55.78	-16.07	AVG	
3		0.4586	22.02	11.32	33.34	56.72	-23.38	QP	
4		0.4586	23.22	11.32	34.54	46.72	-12.18	AVG	
5		1.3805	24.02	11.38	35.40	56.00	-20.60	QP	
6	*	1.3805	27.13	11.38	38.51	46.00	-7.49	AVG	
7		2.9547	11.12	11.35	22.47	56.00	-33.53	QP	
8		2.9547	6.71	11.35	18.06	46.00	-27.94	AVG	
9		11.9375	17.10	11.41	28.51	60.00	-31.49	QP	
10		11.9375	17.34	11.41	28.75	50.00	-21.25	AVG	
11		23.8711	14.10	10.73	24.83	60.00	-35.17	QP	
12		23.8711	13.31	10.73	24.04	50.00	-25.96	AVG	

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 $\text{dB}(\mu\text{V/m}) = 20 \log \text{Emission level } (\mu\text{V/m})$.

7.2.3. Test Instruments

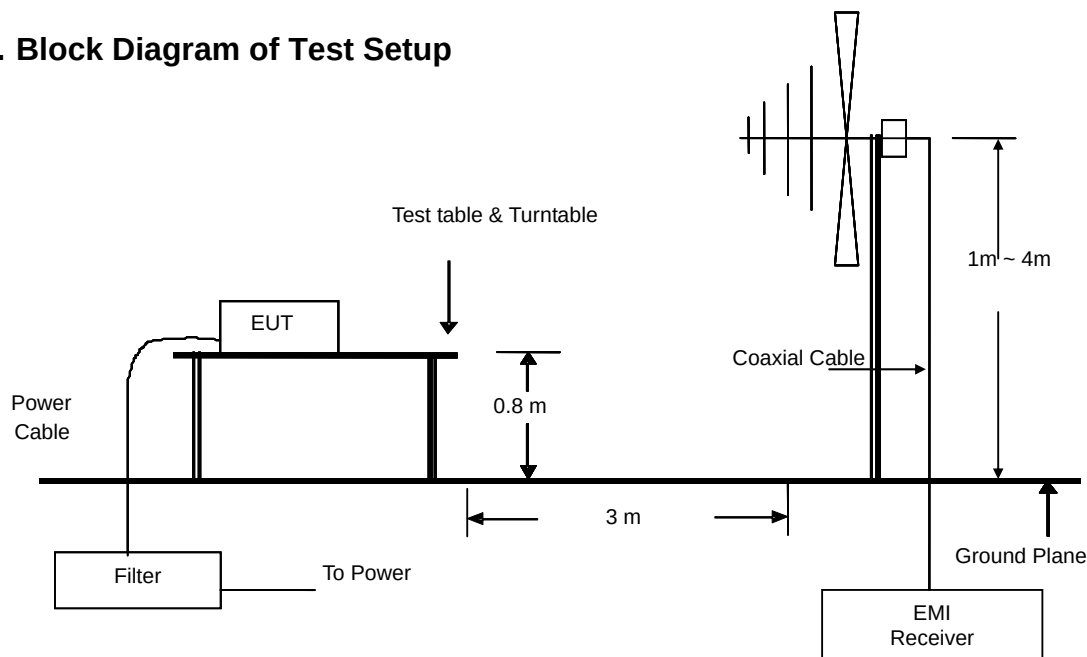
Radiated Emission Test Site (966)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESVD	100008	Aug. 11, 2017
Spectrum Analyzer	R&S	FSEM	848597-001	Aug. 11, 2017
Amplifier	HP	8447D	2727A05017	Aug. 11, 2017
Amplifier	EM	EM30265	07032613	Aug. 11, 2017
Broadband Antenna	Schwarzbeck	VULB9163	340	Aug. 13, 2017
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Aug. 13, 2017

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.: 23 °C	Humid.: 54%	Press.: 96 kPa
Test Mode:	Mode 1, Mode 2, Mode 3		
Test Voltage:	DC 5 V (Adapter Input AC 120 V/ 60 Hz) DC 5 V (PC Input 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

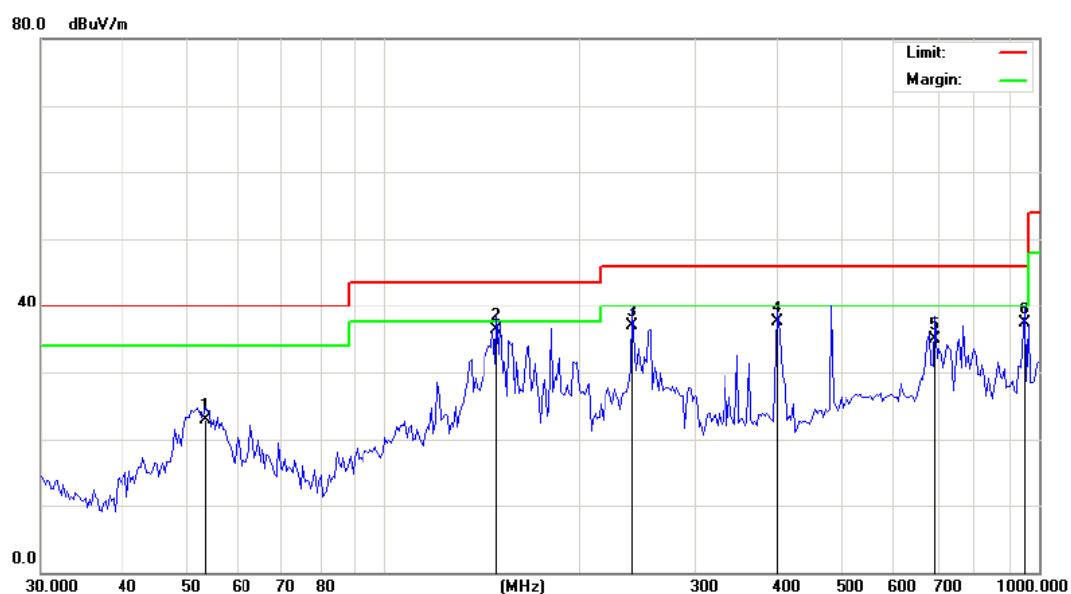
Measurement dB(μV/m) = Reading level dB(μV) + Corr. Factor (dB)

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

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

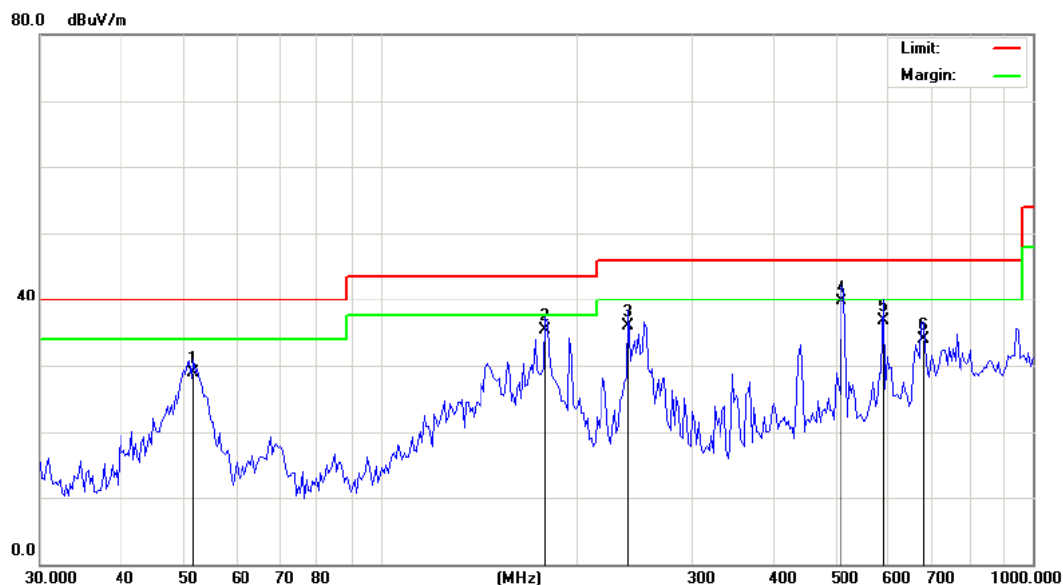
Q.P. =Quasi-Peak

Please refer to following diagram for individual



Site: Polarization: **Horizontal** Temperature: 23
 Limit: FCC Part 15B Class B RE_3 m Power: Humidity: 54 %
 Mode: Data Transmitting
 Note: DC 5V(PC Input AC 120V/60Hz)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		53.3793	32.05	-9.10	22.95	40.00	-17.05	QP	0	
2	*	148.9173	51.22	-14.90	36.32	43.50	-7.18	QP	0	
3		240.1442	45.12	-8.31	36.81	46.00	-9.19	QP	0	
4		398.2961	41.33	-3.89	37.44	46.00	-8.56	QP	0	
5		693.9101	32.55	2.29	34.84	46.00	-11.16	QP	0	
6		952.0000	31.44	5.82	37.26	46.00	-8.74	QP	0	

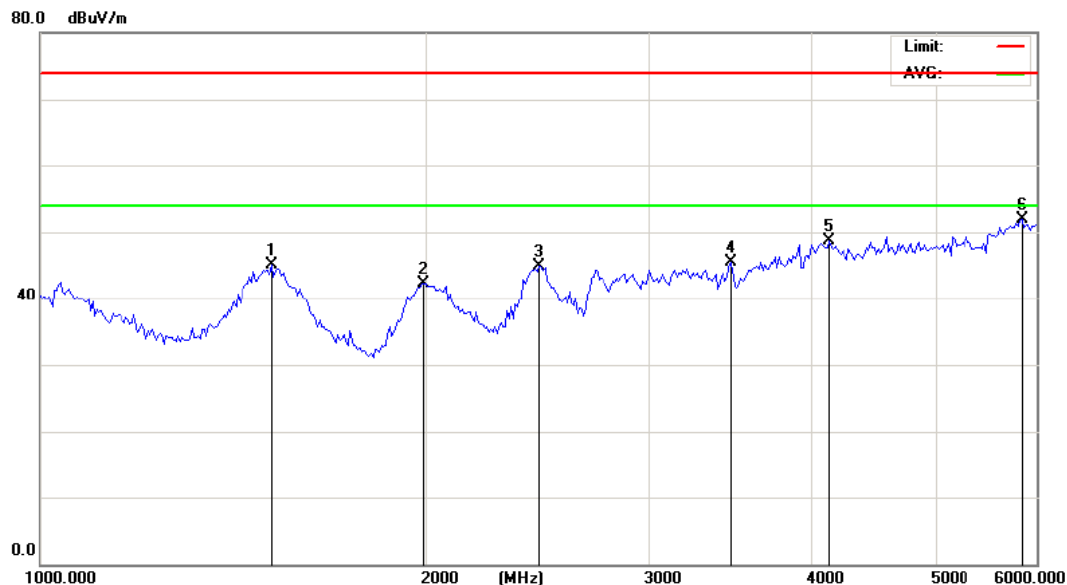


Site: Limit: FCC Part 15B Class B RE_3 m
 Mode: Data Transmitting
 Note: DC 5V(PC Input AC 120V/60Hz)

Polarization: **Vertical**
 Power:

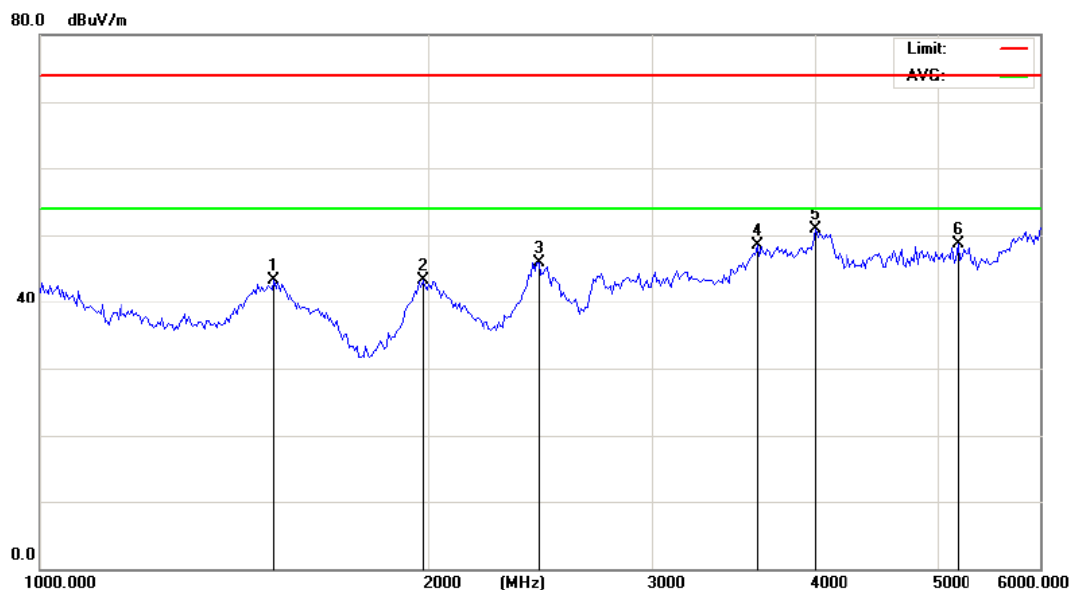
Temperature: 23
 Humidity: 54 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		51.5365	38.22	-9.34	28.88	40.00	-11.12	QP	0	
2		178.7697	48.22	-12.88	35.34	43.50	-8.16	QP	0	
3		240.1442	44.23	-8.31	35.92	46.00	-10.08	QP	0	
4	*	509.3560	41.55	-1.89	39.66	46.00	-6.34	QP	0	
5		590.3511	36.58	0.22	36.80	46.00	-9.20	QP	0	
6		679.4346	32.55	1.34	33.89	46.00	-12.11	QP	0	



Site: Polarization: **Horizontal** Temperature: 23
 Limit: FCC Part 15B Class B Above 1GHz RE(PK) Power: Humidity: 54 %
 Mode: Data Transmitting
 Note: DC 5V(PC Input AC 120V/60Hz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		1516.676	56.91	-11.77	45.14	74.00	-28.86	peak	0	
2		1992.549	52.08	-9.71	42.37	74.00	-31.63	peak	0	
3		2453.891	52.07	-7.13	44.94	74.00	-29.06	peak	0	
4		3463.856	49.88	-4.38	45.50	74.00	-28.50	peak	0	
5		4130.203	46.24	2.54	48.78	74.00	-25.22	peak	0	
6	*	5851.070	43.01	8.87	51.88	74.00	-22.12	peak	0	



Site: Polarization: **Vertical** Temperature: 23
 Limit: FCC Part 15B Class B Above 1GHz RE(PK) Power: Humidity: 54 %
 Mode: Data Transmitting
 Note: DC 5V(PC Input AC 120V/60Hz)

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1522.132	55.06	-11.78	43.28	74.00	-30.72	peak	0	
2		1985.407	53.02	-9.80	43.22	74.00	-30.78	peak	0	
3		2445.096	53.16	-7.17	45.99	74.00	-28.01	peak	0	
4		3616.370	51.20	-2.73	48.47	74.00	-25.53	peak	0	
5	*	4013.249	48.53	2.36	50.89	74.00	-23.11	peak	0	
6		5178.631	42.77	5.92	48.69	74.00	-25.31	peak	0	

8. Photographs of Test Configuration

Conducted Emission Test View



Radiated Emission Test View





9. Photographs of EUT

Refer to test report TCT161019E020

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