

TEST REPORT

FCC ID: 2ADVBS70

Product: Sports camera

Model No.: S70, S80, S90

Trade mark:



Report No.: TCT151015E006

Issued Date: Oct. 22, 2015

Issued for:

Shenzhen Anytek Information Technology Co., Ltd
5-6F, De Bao Li Industrial Park, Innovation Industrial Area, Longgang
District, Shenzhen, China

Issued By:

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1. Test Certification

Product:	Sports camera
Model No.:	S70, S80, S90
Applicant:	Shenzhen Anytek Information Technology Co., Ltd
Address:	5-6F, De Bao Li Industrial Park, Innovation Industrial Area, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen Anytek Information Technology Co., Ltd
Address:	5-6F, De Bao Li Industrial Park, Innovation Industrial Area, Longgang District, Shenzhen, China
Test Voltage:	DC 5 V(PC Input AC 120 V/ 60 Hz), DC 3.7 V
Date of Test:	Oct. 19, 2015-Oct. 21, 2015
Applicable Standards:	47 CFR FCC Part 15 Subpart B: 2014 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: Derek Cai

Derek Cai

Date: Oct. 21, 2015Check By: Davis Zhou

Davis Zhou

Date: Oct. 22, 2015Approved By: Tomsin

Tomsin

Date: Oct. 22, 2015

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:	Sports camera
Model No.:	S70
Product Parameter:	DC 5 V
Highest Frequency:	507MHz
AC Line(PC):	☐ Shielded ☒ Unshielded, ☒ Detachable ☐ Un-detachable ☐ No applicable ☒ Length: 1.2 m
AC Line(Monitor):	☐ Shielded ☒ Unshielded, ☒ Detachable ☐ Un-detachable ☐ No applicable ☒ Length: 1.2 m
AC Line(Printer):	☐ Shielded ☒ Unshielded, ☒ Detachable ☐ Un-detachable ☐ No applicable ☒ Length: 1.2 m
VGA Line	☐ Shielded ☒ Unshielded, ☒ Detachable ☐ Un-detachable ☐ No applicable ☒ Length: 1.0 m
USB Line(EUT to PC)	☐ Shielded ☒ Unshielded, ☒ Detachable ☐ Un-detachable ☐ No applicable ☒ Length: 0.8 m
USB Line (Printer to PC)	☐ Shielded ☒ Unshielded, ☒ Detachable ☐ Un-detachable ☐ No applicable ☒ Length: 1 m
USB Line(Mouse)	☐ Shielded ☒ Unshielded, ☒ Detachable ☐ Un-detachable ☐ No applicable ☒ Length: 1 m
USB Line(Keyboard)	☐ Shielded ☒ Unshielded, ☒ Detachable ☐ Un-detachable ☐ No applicable ☒ Length: 1 m

Model(s) List

No.	Model Number	Tested With
1	S70	☒
Other models	S80, S90	☐

Note: S70 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 S70 can represent the remaining models.

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: Data Transmitting Mode
Mode 2: Camera Recording Mode
Mode 3: HDMI Mode

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

The Worst Test Mode		
Emission	Conducted Emission	Mode 1: Data Communicate with PC Mode
	Radiated Emission	Mode 1: Data Communicate with PC Mode

4.2. EUT 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

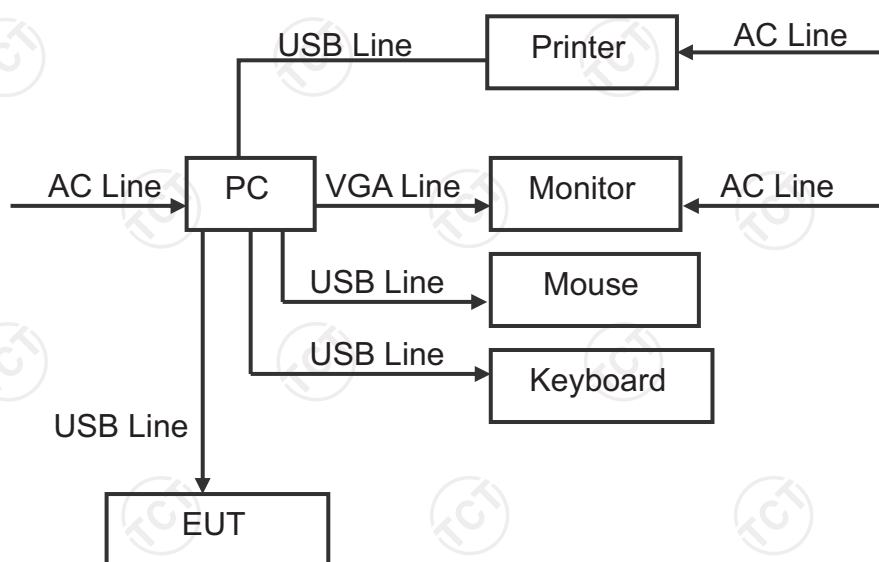
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
PC	BM6620	D1PFCG0008HP	DOC	ASUS
Monitor	VX239	VX239H	DOC	ASUS
Keyboard	PK1100U	04G104180039DP	DOC	ASUS
Mouse	MOBTUO	04G125610170DP	DOC	ASUS
Printer	L11121E	MQCA712843	DOC	Canon

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: Sports camera)

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.

- IC - Registration No.: 10668A-1

The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

- CNAS - Registration No.: CNAS L6165

Shenzhen TCT Testing Technology Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6165.

6.2. Location

Shenzhen Tongce Testing Lab

Address: 1F, Leinuo Watch Building, Fuyong Town, Baoan Dist, Shenzhen, China

Tel: 86-755-36638142

6.3. Measurement Uncertainty

The reported 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	MU
1	Conducted Emission	$\pm 2.56\text{dB}$
2	RF power, conducted	$\pm 0.12\text{dB}$
3	Spurious emissions, conducted	$\pm 0.11\text{dB}$
4	All emissions, radiated(<1G)	$\pm 3.92\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.28\text{dB}$
6	Temperature	$\pm 0.1^{\circ}\text{C}$
7	Humidity	$\pm 1.0\%$

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 B dB(uV)	
	Quasi-peak	Average
0.15 - 0.5	66 – 56 ^a	56 – 46 ^a
0.50 - 5.0	56	46
5.0 - 30.0	60	50

a. Decreases with the logarithm of the frequency

7.1.3. Test Instruments

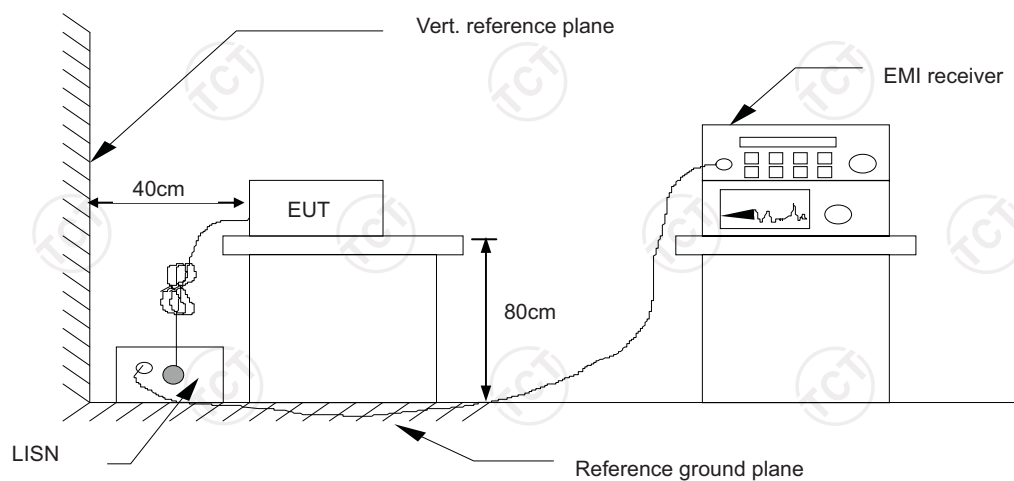
Conducted Emission Shielding Room Test Site (843)				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCS30	100139	Sep. 16, 2016
LISN	Schwarzbeck	NSLK 8126	8126453	Sep. 29, 2016
LISN	AFJ	LS16C	16010947251	Sep. 29, 2016
Coaxial cable	TCT	CE-05	N/A	Sep.15, 2016

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

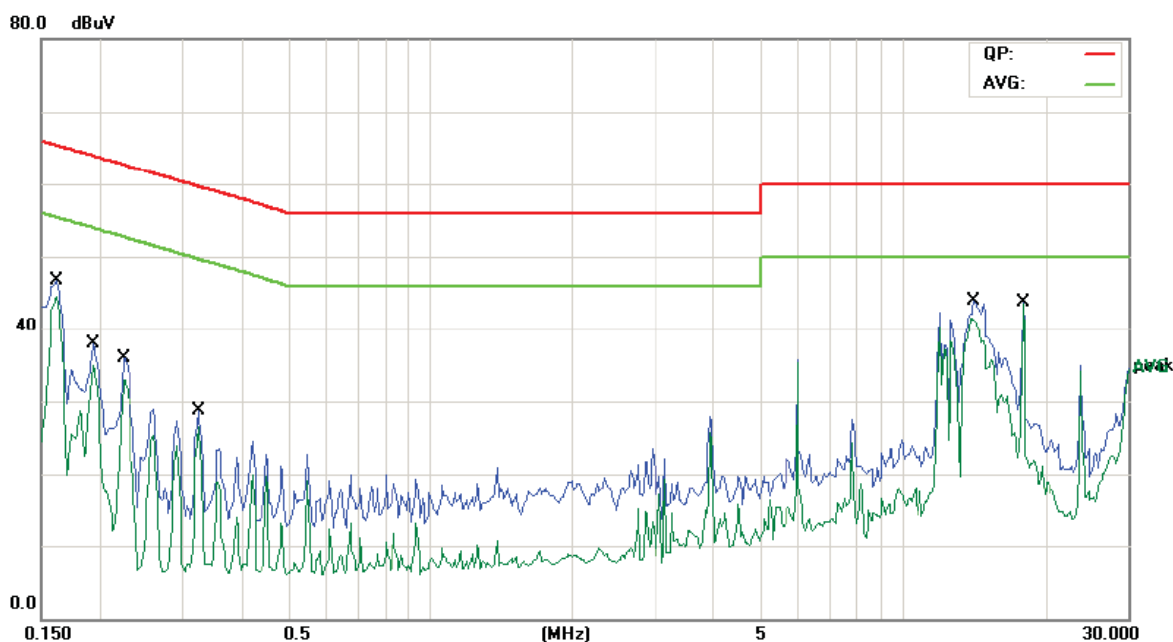
Limit dB(μV) = Limit stated in standard

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)

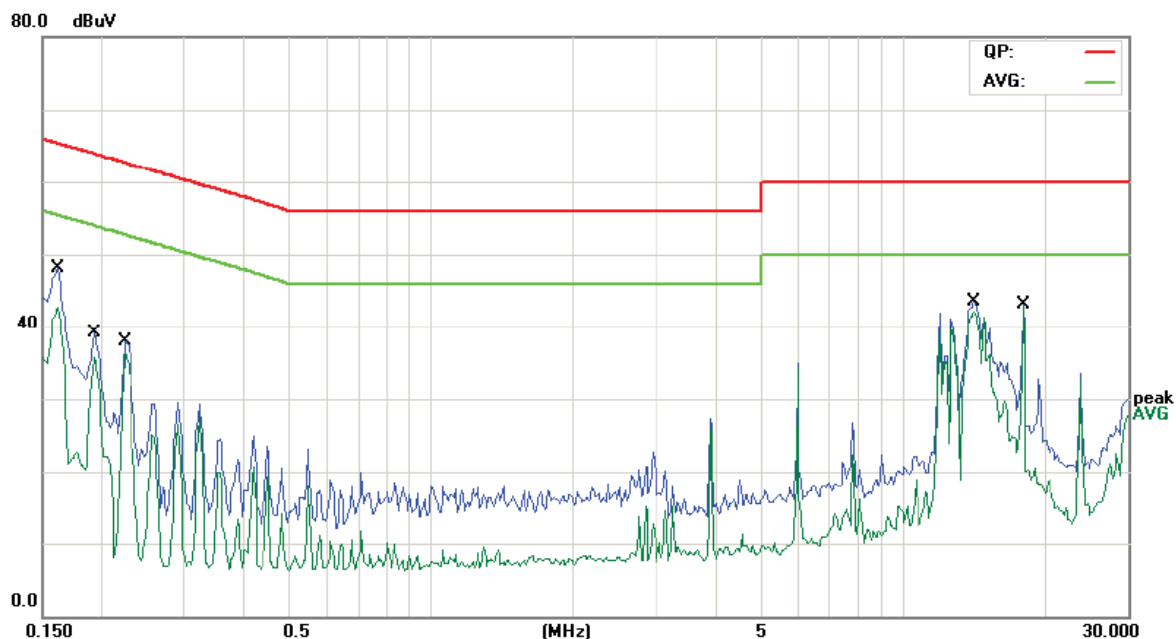
Power:

Humidity: 54 %

Mode: Data Transmtting

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		0.1617	33.64	11.49	45.13	65.37	-20.24	QP	
2		0.1617	32.74	11.49	44.23	55.37	-11.14	AVG	
3		0.1945	24.38	11.46	35.84	63.84	-28.00	QP	
4		0.1945	23.20	11.46	34.66	53.84	-19.18	AVG	
5		0.2242	23.08	11.45	34.53	62.66	-28.13	QP	
6		0.2242	22.38	11.45	33.83	52.66	-18.83	AVG	
7		0.3219	16.02	11.40	27.42	59.66	-32.24	QP	
8		0.3219	15.60	11.40	27.00	49.66	-22.66	AVG	
9		14.1719	29.67	11.55	41.22	60.00	-18.78	QP	
10		14.1719	22.09	11.55	33.64	50.00	-16.36	AVG	
11		18.0000	32.40	10.98	43.38	60.00	-16.62	QP	
12	*	18.0000	31.66	10.98	42.64	50.00	-7.36	AVG	



Site Chamber #2

Phase: **N**

Temperature: 23 (C)

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

Power:

Humidity: 54 %

Mode: Data Transmtting

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		0.1617	34.58	11.49	46.07	65.37	-19.30	QP	
2		0.1617	33.34	11.49	44.83	55.37	-10.54	AVG	
3		0.1930	24.61	11.46	36.07	63.90	-27.83	QP	
4		0.1930	23.67	11.46	35.13	53.90	-18.77	AVG	
5		0.2242	25.28	11.45	36.73	62.66	-25.93	QP	
6		0.2242	24.73	11.45	36.18	52.66	-16.48	AVG	
7		14.1680	28.63	11.54	40.17	60.00	-19.83	QP	
8		14.1680	21.26	11.54	32.80	50.00	-17.20	AVG	
9		18.0000	31.47	10.98	42.45	60.00	-17.55	QP	
10	*	18.0000	30.72	10.98	41.70	50.00	-8.30	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 5000 MHz
Measurement Distance:	3 m
Antenna Polarization:	Horizontal & Vertical

7.2.2. Limits

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

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level $\text{dB}(\mu\text{V}/\text{m}) = 20 \log \text{Emission level } (\mu\text{V}/\text{m})$.

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. 16, 2016
Spectrum Analyzer	R&S	FSEM	848597-001	Sep. 16, 2016
Amplifier	HP	8447D	2727A05017	Sep. 16, 2016
Amplifier	EM	EM30265	07032613	Sep. 16, 2016
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 17, 2016
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 17, 2016
Antenna Mater	CCS	CC-A-4M	N/A	Sep.15 , 2016
Coaxial cable	TCT	RE-low-01	N/A	Sep.15 , 2016

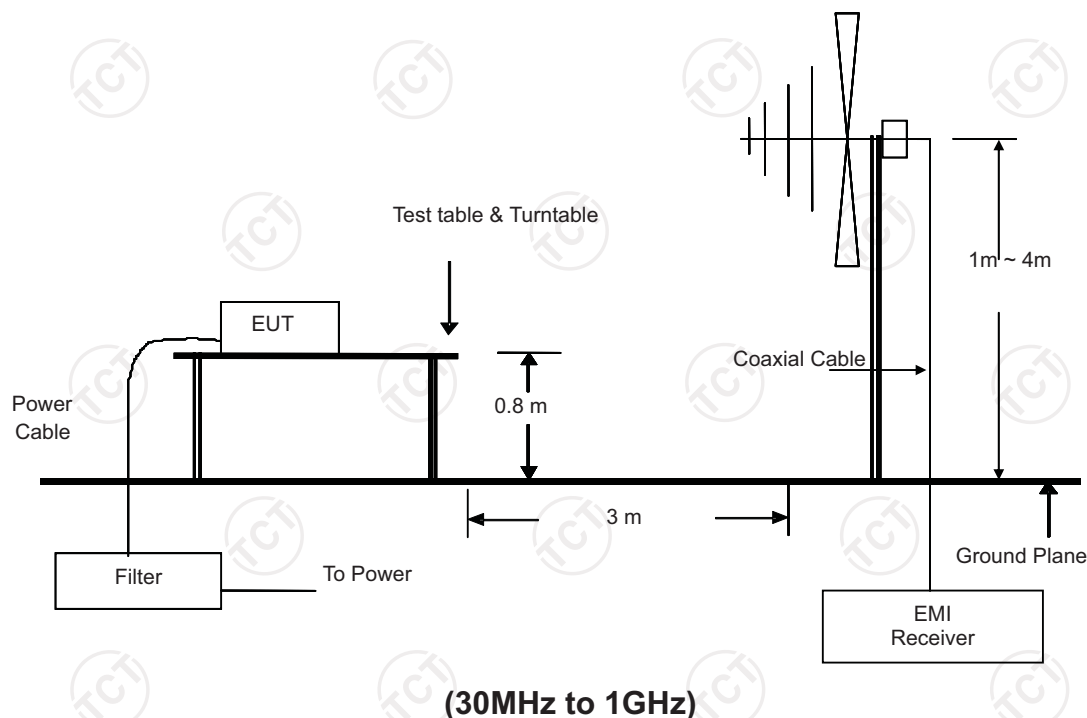
Coaxial cable	TCT	RE-high-02	N/A	Sep.15 , 2016
Coaxial cable	TCT	RE-low-03	N/A	Sep.15 , 2016
Coaxial cable	TCT	RE-high-04	N/A	Sep.15 , 2016

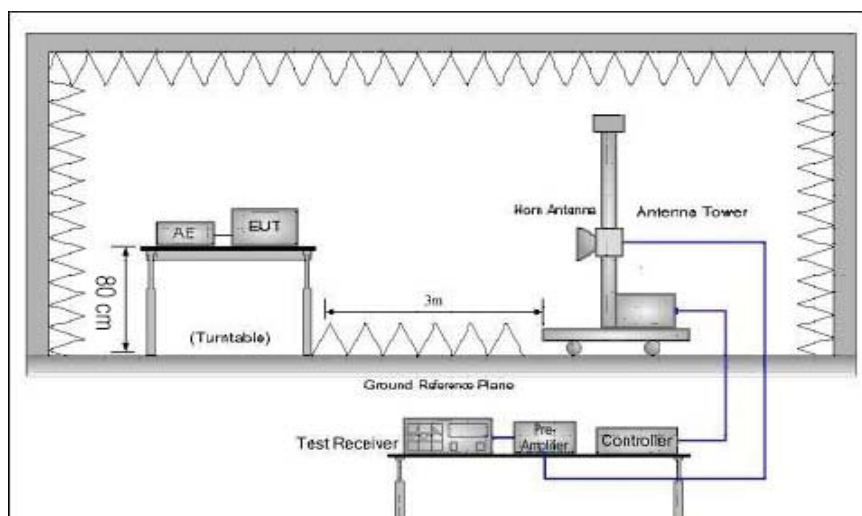
Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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





(Above 1GHz)

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		
Test Voltage:	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

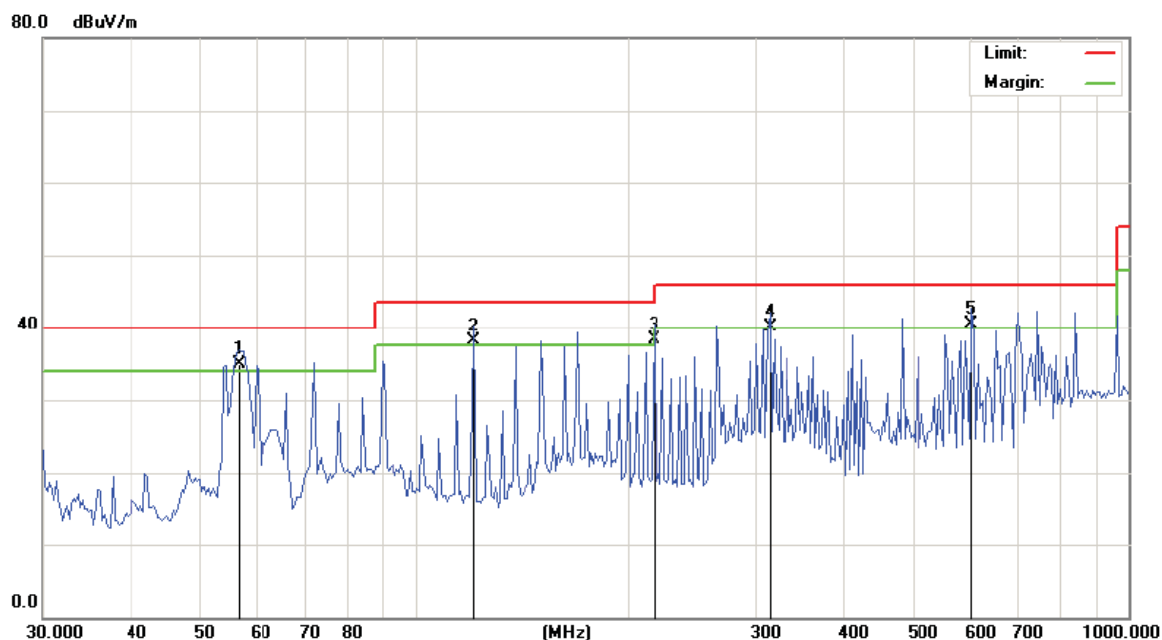
Measurement dB(μV/m) = Reading level dB(μV) + Corr. Factor (dB)

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

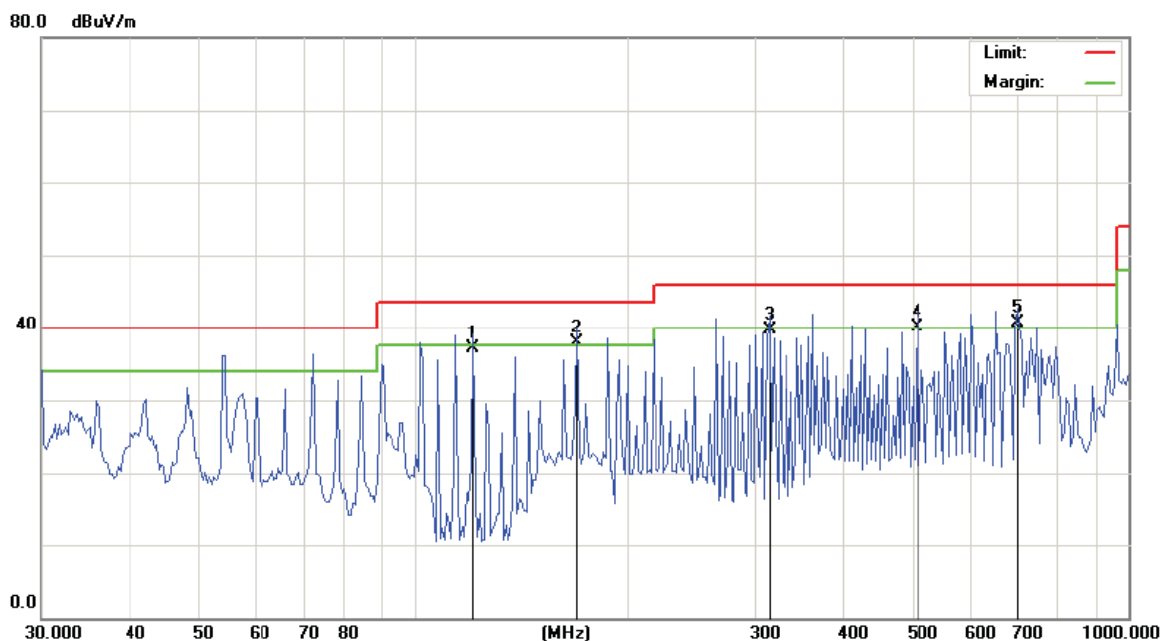
Power:

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	*	56.4662	47.40	-12.53	34.87	40.00	-5.13	QP	0	
2	!	120.6118	51.90	-13.74	38.16	43.50	-5.34	QP	0	
3		216.1195	49.50	-11.12	38.38	46.00	-7.62	QP	0	
4	!	313.6482	48.10	-7.96	40.14	46.00	-5.86	QP	0	
5	!	602.9287	42.40	-1.87	40.53	46.00	-5.47	QP	0	



Site

Polarization: **Vertical**

Temperature: 23

Limit: FCC Part 15B Class B RE_3 m

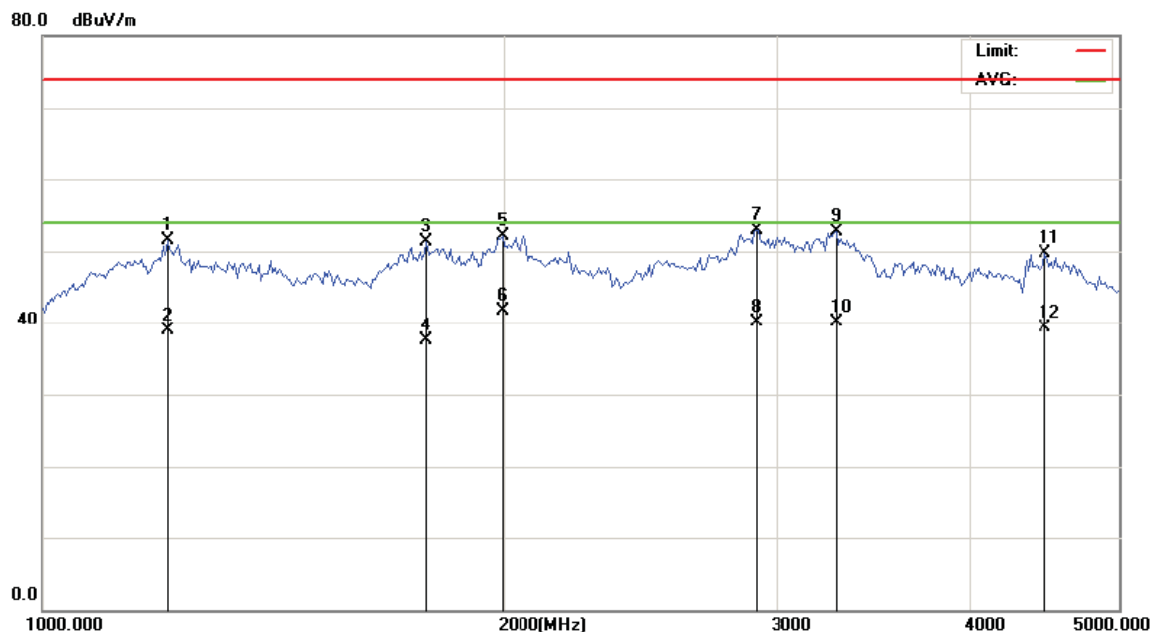
Power:

Humidity: 54 %

Mode: Data Transmitting

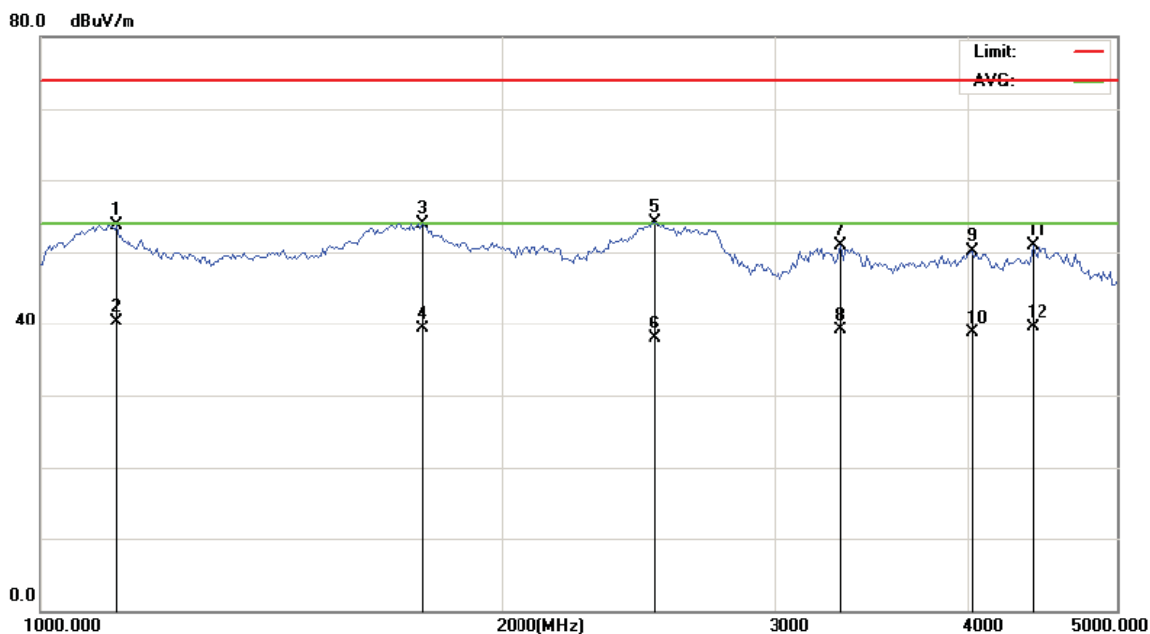
Note: DC 5V (PC Input AC 120V/60Hz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		120.6118	50.90	-13.74	37.16	43.50	-6.34	QP		0
2	!	168.9970	51.80	-13.83	37.97	43.50	-5.53	QP		0
3		313.6482	47.70	-7.96	39.74	46.00	-6.26	QP		0
4	!	505.7891	43.10	-2.92	40.18	46.00	-5.82	QP		0
5	*	698.8034	40.50	0.11	40.61	46.00	-5.39	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. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		1205.710	51.51	0.00	51.51	74.00	-22.49	peak	0	
2		1205.710	38.90	0.00	38.90	54.00	-15.10	AVG	0	
3		1775.546	51.29	0.00	51.29	74.00	-22.71	peak	0	
4		1775.546	37.60	0.00	37.60	54.00	-16.40	AVG	0	
5		1987.733	52.19	0.00	52.19	74.00	-21.81	peak	0	
6	*	1987.733	41.70	0.00	41.70	54.00	-12.30	AVG	0	
7		2908.342	52.86	0.00	52.86	74.00	-21.14	peak	0	
8		2908.342	40.10	0.00	40.10	54.00	-13.90	AVG	0	
9		3276.973	52.62	0.00	52.62	74.00	-21.38	peak	0	
10		3276.973	40.10	0.00	40.10	54.00	-13.90	AVG	0	
11		4480.689	49.73	0.00	49.73	74.00	-24.27	peak	0	
12		4480.689	39.40	0.00	39.40	54.00	-14.60	AVG	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	
							Detector		degree	Comment
1		1119.505	53.66	0.00	53.66	74.00	-20.34	peak	0	
2	*	1119.505	40.40	0.00	40.40	54.00	-13.60	AVG	0	
3		1769.829	53.88	0.00	53.88	74.00	-20.12	peak	0	
4		1769.829	39.30	0.00	39.30	54.00	-14.70	AVG	0	
5		2507.329	54.05	0.00	54.05	74.00	-19.95	peak	0	
6		2507.329	37.90	0.00	37.90	54.00	-16.10	AVG	0	
7		3308.835	51.00	0.00	51.00	74.00	-23.00	peak	0	
8		3308.835	39.10	0.00	39.10	54.00	-14.90	AVG	0	
9		4028.286	50.08	0.00	50.08	74.00	-23.92	peak	0	
10		4028.286	38.80	0.00	38.80	54.00	-15.20	AVG	0	
11		4409.010	50.84	0.00	50.84	74.00	-23.16	peak	0	
12		4409.010	39.60	0.00	39.60	54.00	-14.40	AVG	0	

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