

FCC TEST REPORT

**Test report
On Behalf of
Shenzhen Sourceway Technology Co., LTD.
For
Receiver
Model No.: MX01**

FCC ID: 2AKFF21946R

Prepared for : Shenzhen Sourceway Technology Co., LTD.
5/F, Tower B, WDL Business Building, No.194 Meilong Road,
Longhua District, Shenzhen, P.R.China

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Date of Test: March 02, 2017 ~ March 09, 2017

Date of Report: March 09, 2017

Report Number: UNI1700302052-E

TEST RESULT CERTIFICATION

Applicant's name : Shenzhen Sourceway Technology Co., LTD.
Address : 5/F, Tower B, WDL Business Building, No.194 Meilong Road,
Longhua District, Shenzhen, P.R.China
Manufacturer's Name : Dongguan Boyye Industrial Co., LTD.
Address : #36 Shengye Road, North District of Tianmei Park,
Huangjiang Town, Dongguan, Guangdong, China

Product description

Product name : Receiver
Trade Mark..... : Trust
Model and/or type reference : MX01

Standards : FCC Part 15 Subpart B
ANSI C63.4: 2014

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Date of Test

Date (s) of performance of tests : March 02, 2017 ~ March 09, 2017

Date of Issue..... : March 09, 2017

Test Result..... : **Pass**

Testing Engineer :



(Eric Xie)

Technical Manager :



(Dora Qin)

Authorized Signatory :



(Kait Chen)

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part 15 Subpart B ANSI C63.4:2014	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report
- (2) For client's request and manual description, the test will not be executed.

1.1 TEST FACILITY

Test Firm : Dongguan Dongdian Testing Service Co., Ltd
 Certificated by FCC, Registration No.: 270092
 Address : No.17 Zongbu road 2, Songshan Lake Sci&Tech Park, DongGuan
 City, Guangdong province, 523808 China

1.2 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** %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U · (dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U · (dB)	NOTE
A01	ANSI	30MHz ~ 1000MHz	4.7	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Receiver	
Model Name	MX01	
Serial No	N/A	
Model Difference	N/A	
FCC ID:	2AKFF21946R	
Product Description	The EUT is a Receiver.	
	Operating frequency:	N/A
	Connecting I/O port:	N/A
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Power Source	DC Voltage	
Power Rating	DC5V, 0.5A With Laptop	

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

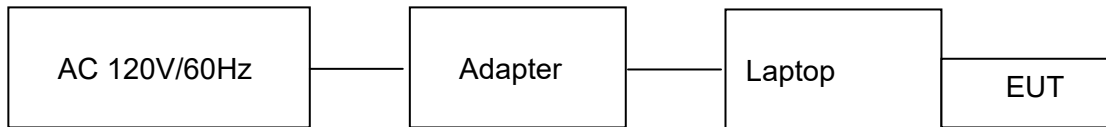
Pretest Mode	Description
Mode 1	Running

For Conducted Test	
Final Test Mode	Description
Mode 1	Running

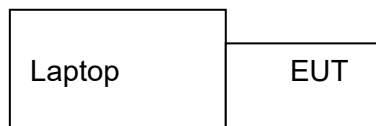
For Radiated Test	
Final Test Mode	Description
Mode 1	Running

2.3 DESCRIPTION OF TEST SETUP

Operation of EUT during conducted testing:



Operation of EUT during Radiated testing



2.4 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Dec. 19, 2016	1 Year
2.	LISN	SchwarzBeck	NSLK 8126	8126377	Dec. 19, 2016	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Dec. 19, 2016	1 Year
4.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
5.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Dec. 19, 2016	1 Year
6.	Trilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Dec. 19, 2016	1 Year
7.	Pre-amplifier	Compliance Direction	PAP-0203	22008	Dec. 19, 2016	1 Year
8.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
9.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Dec. 19, 2016	1 Year
10.	LISN	SchwarzBeck	NSLK 8126	8126377	Dec. 19, 2016	1 Year
11.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Dec. 19, 2016	1 Year
12.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
13.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Dec. 19, 2016	1 Year
14.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Dec. 19, 2016	1 Year
15.	LISN	SchwarzBeck	NSLK 8126	8126377	Dec. 19, 2016	1 Year
16.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Dec. 19, 2016	1 Year
17.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
18.	Programmable AC Power source	SOPH POWER	PAG-1050	630250	Dec. 19, 2016	1 Year
19.	Harmonic and Flicker Analyzer	LAPLACE	AC2000A	272629	Dec. 19, 2016	1 Year
20.	Harmonic and Flicker Test Software AC 2000A	LAPLACE	N/A	N/A	N/A	N/A
21.	ESD Simulators	KIKUSUI	KES4021	LJ003477	Dec. 19, 2016	1 Year
22.	EFT Generator	EMPEK	EFT-4040B	0430928N	Dec. 19, 2016	1 Year
23.	Shielding Room	ChangZhou ZhongYu	JB88	SEL0166	Dec. 19, 2016	1 Year
24.	Signal Generator 9KHz~2.2GHz	R&S	SML02	SEL0143	Dec. 19, 2016	1 Year
25.	Signal Generator 9KHz~1.1GHz	R&S	SML01	SEL0135	Dec. 19, 2016	1 Year
26.	Power Meter	R&S	NRVS	SEL0144	Dec. 19, 2016	1 Year
27.	RF Level Meter	/	URV35	SEL0137	Dec. 19, 2016	1 Year

28.	Audio Analyzer	R&S	UPL	SEL0136	Dec. 19, 2016	1 Year
29.	RF-Amplifier 150KHz~150MHz	BONN Elektronik	BSA1515-25	SEL0157	Dec. 19, 2016	1 Year
30.	Stripline Test Cell	Erika Fiedler	VDE0872	SEL0167	N/A	N/A
31.	TV Test Transmitter	R&S	SFM	SEL0159	Dec. 19, 2016	1 Year
32.	TV Generator PAL	R&S	SGPF	SEL0138	Dec. 19, 2016	1 Year
33.	TV Generator Ntsc	R&S	SGMF	SEL0140	Dec. 19, 2016	1 Year
34.	TV Generator Secam	R&S	SGSF	SEL0139	Dec. 19, 2016	1 Year
35.	TV Test Transmitter 0.3MHz~3300MHz	R&S	SFQ	SEL0142	Dec. 19, 2016	1 Year
36.	MPEG2 Measurement Generator	R&S	DVG	SEL0141	Dec. 19, 2016	1 Year
37.	Spectrum Analyzer	R&S	FSP	SEL0177	Dec. 19, 2016	1 Year
38.	Matching	R&S	RAM	SEL0146	N/A	N/A
39.	Matching	R&S	RAM	SEL0148	N/A	N/A
40.	Absorbing Clamp	R&S	MDS21	SEL0158	Dec. 19, 2016	1 Year
41.	Coupling Set	Erika Fiedler	Rco, Rci, MC, AC, LC	SEL0149	N/A	N/A
42.	Filters	Erika Fiedler	Sr, LBS	SEL0150	N/A	N/A
43.	Matching Network	Erika Fiedler	MN, T1	SEL0151	N/A	N/A
44.	Fully Anechoic Room	ChangZhou ZhongYu	854	SEL0169	Dec. 19, 2016	1 Year
45.	Signal Generator	R&S	SML03	SEL0068	Dec. 19, 2016	1 Year
46.	RF-Amplifier 30M~1GHz	Amplifier Reasearch	250W1000A	SEL0066	Dec. 19, 2016	1 Year
47.	RF-Amplifier 0.8~3.0GHz	Amplifier Reasearch	60S1G3	SEL0065	Dec. 19, 2016	1 Year
48.	Power Meter	R&S	NRVD	SEL0069	Dec. 19, 2016	1 Year
49.	Power Sensor	R&S	URV5-Z2	SEL0071	Dec. 19, 2016	1 Year
50.	Power Sensor	R&S	URV5-Z2	SEL0072	Dec. 19, 2016	1 Year
51.	Software EMC32	R&S	EMC32-S	SEL0082	N/A	N/A
52.	Log-periodic Antenna	Amplifier Reasearch	AT1080	SEL0073	N/A	N/A
53.	Antenna Tripod	Amplifier Reasearch	TP1000A	SEL0074	N/A	N/A
54.	High Gain Horn Antenna(0.8-5G Hz)	Amplifier Reasearch	AT4002A	SEL0075	N/A	N/A
55.	Laptop	DELL	INS14PD-25 48B	14-7000	N/A	N/A

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

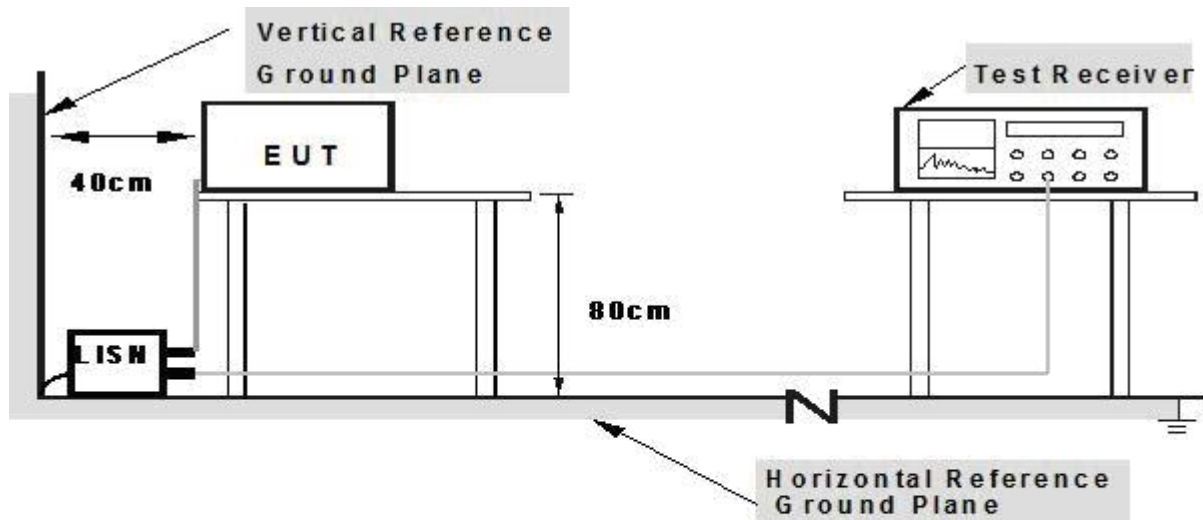
The following table is the setting of the Receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

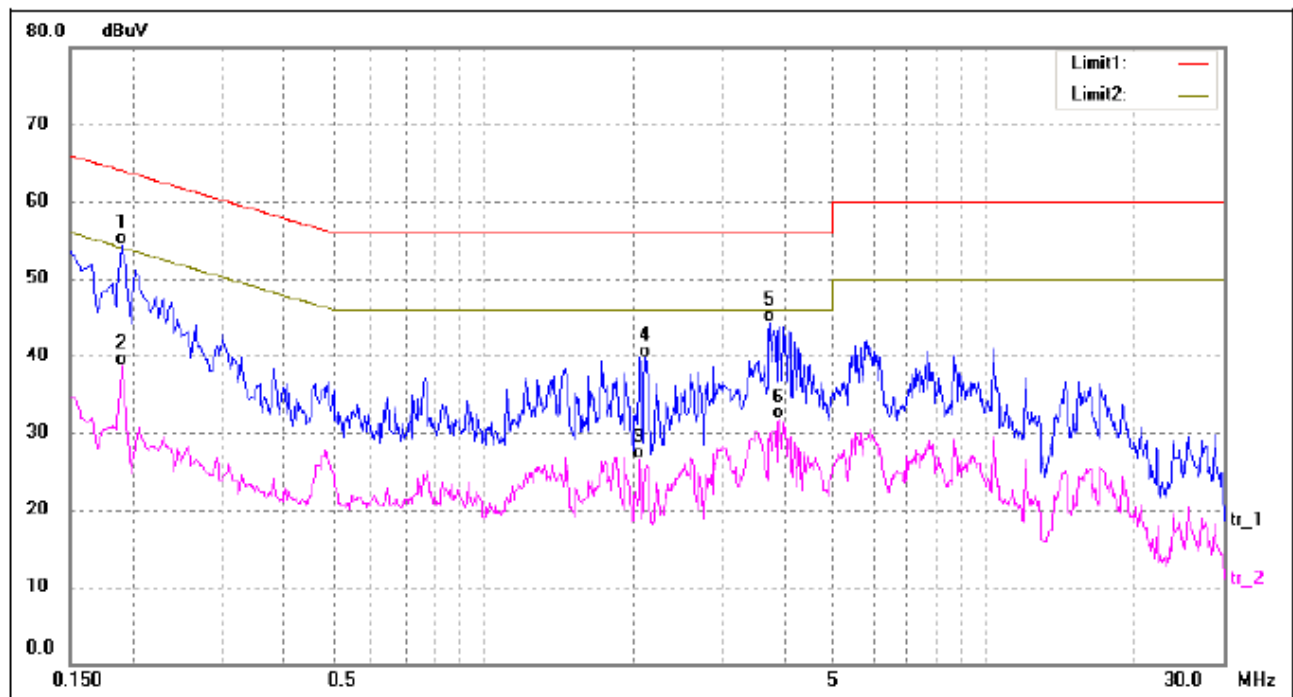
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

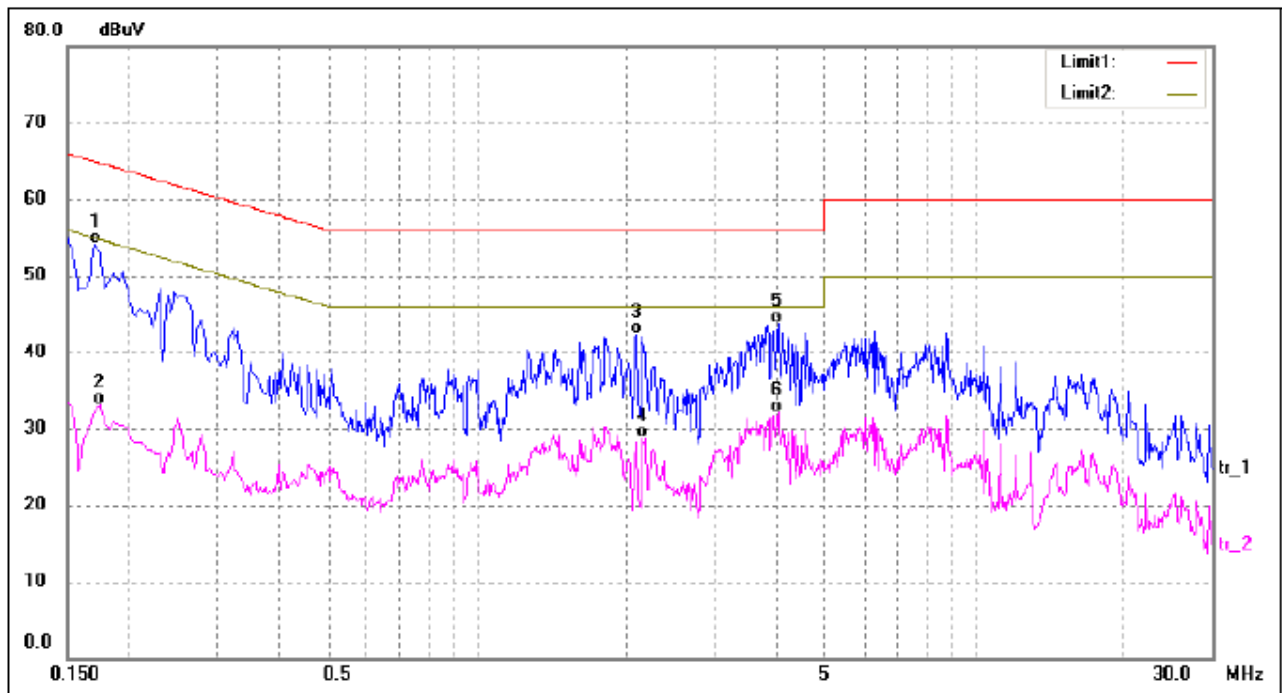
3.1.5 TEST RESULTS

EUT :	Receiver	Model Name. :	MX01
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2017-03-06
Test Mode :	Running	Phase :	L
Test Voltage :	120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1900	44.48	9.81	54.29	64.04	-9.75	QP
2	0.1900	28.83	9.81	38.64	54.04	-15.40	AVG
3	2.0500	16.86	9.73	26.59	46.00	-19.41	AVG
4	2.1100	30.04	9.73	39.77	56.00	-16.23	QP
5	3.7220	34.54	9.69	44.23	56.00	-11.77	QP
6	3.8820	21.94	9.69	31.63	46.00	-14.37	AVG

EUT :	Receiver	Model Name. :	MX01
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2017-03-06
Test Mode :	Running	Phase :	N
Test Voltage :	120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1700	44.36	9.83	54.19	64.96	-10.77	QP
2	0.1740	23.34	9.83	33.17	54.77	-21.60	AVG
3	2.0860	32.49	9.73	42.22	56.00	-13.78	QP
4	2.1460	18.90	9.73	28.63	46.00	-17.37	AVG
5	4.0220	34.00	9.68	43.68	56.00	-12.32	QP
6	4.0220	22.47	9.68	32.15	46.00	-13.85	AVG

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/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

Notes:

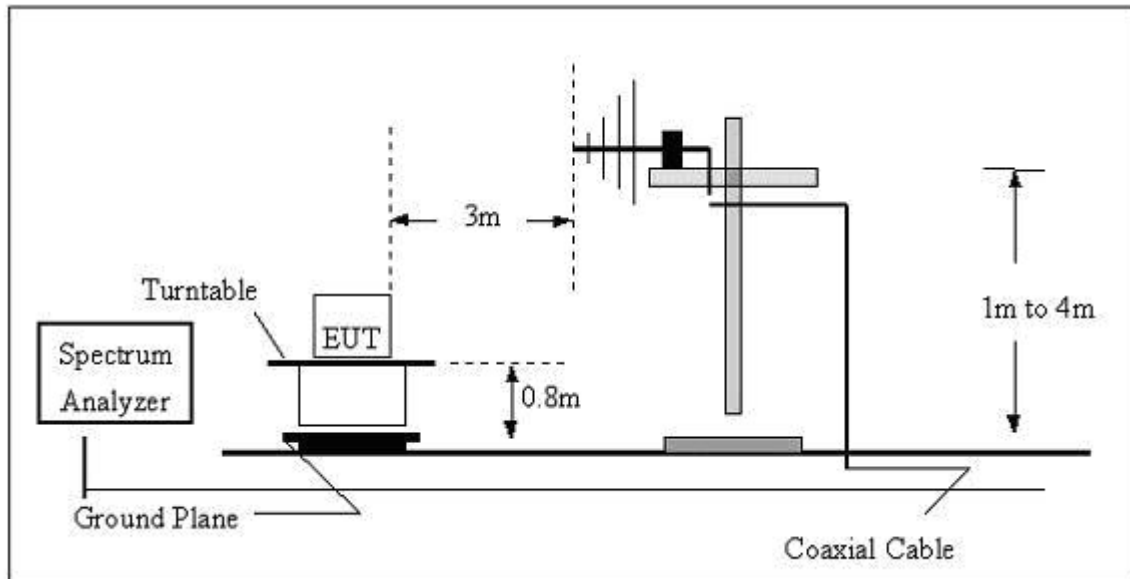
- (1) The limit for radiated test was performed according to as following:
FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

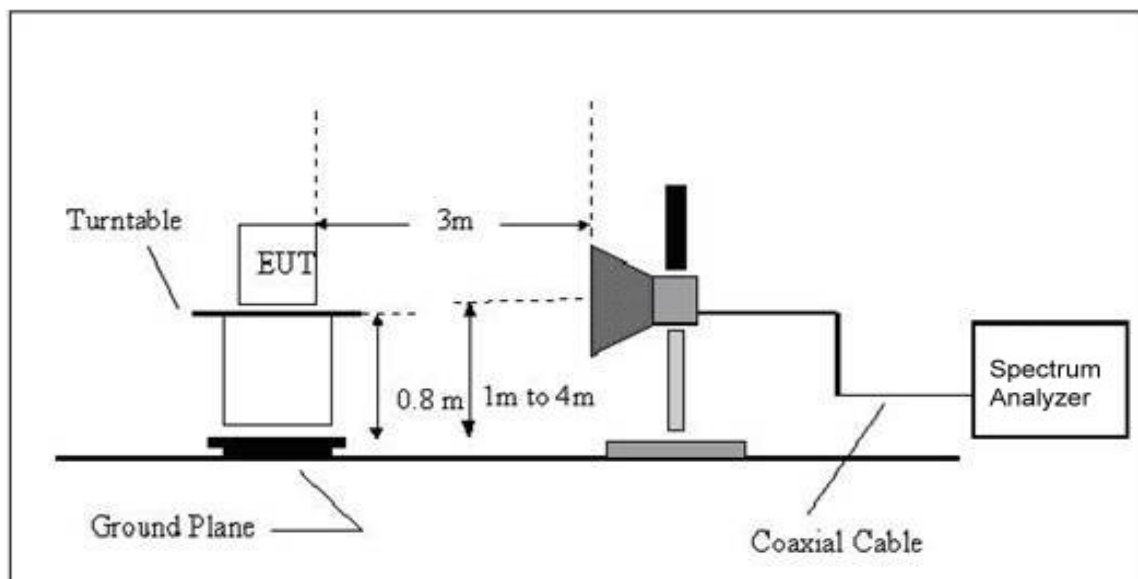
- a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz

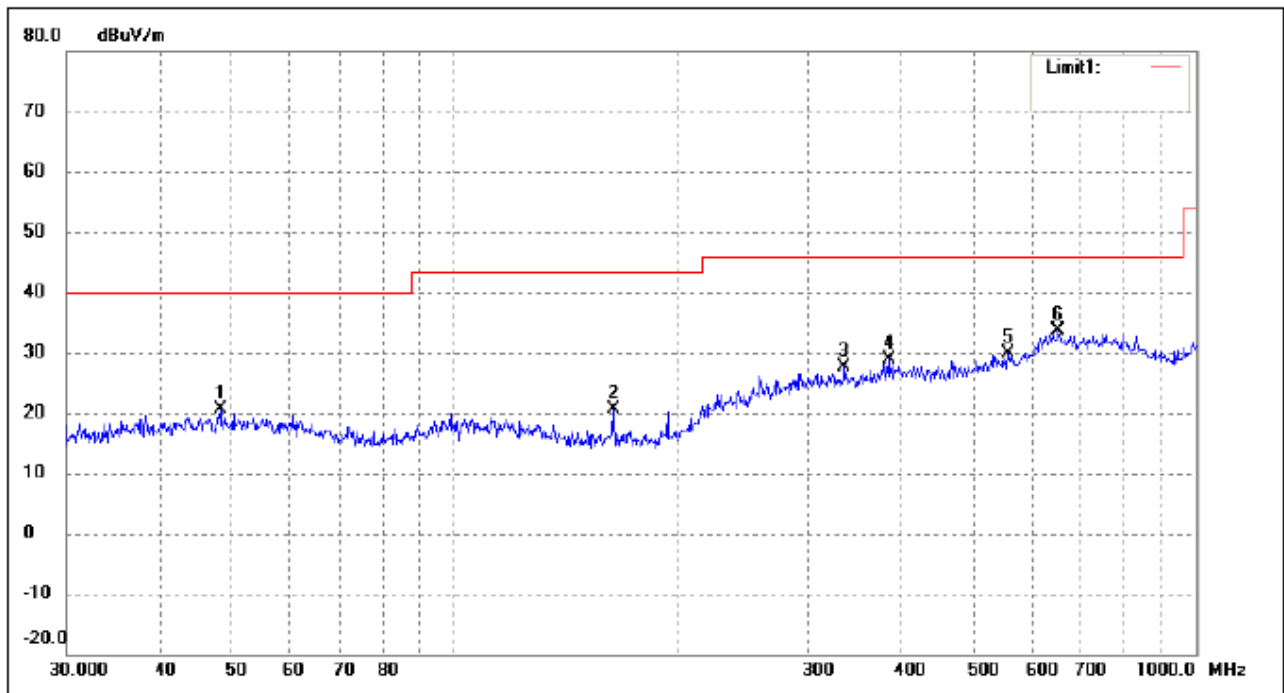


3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

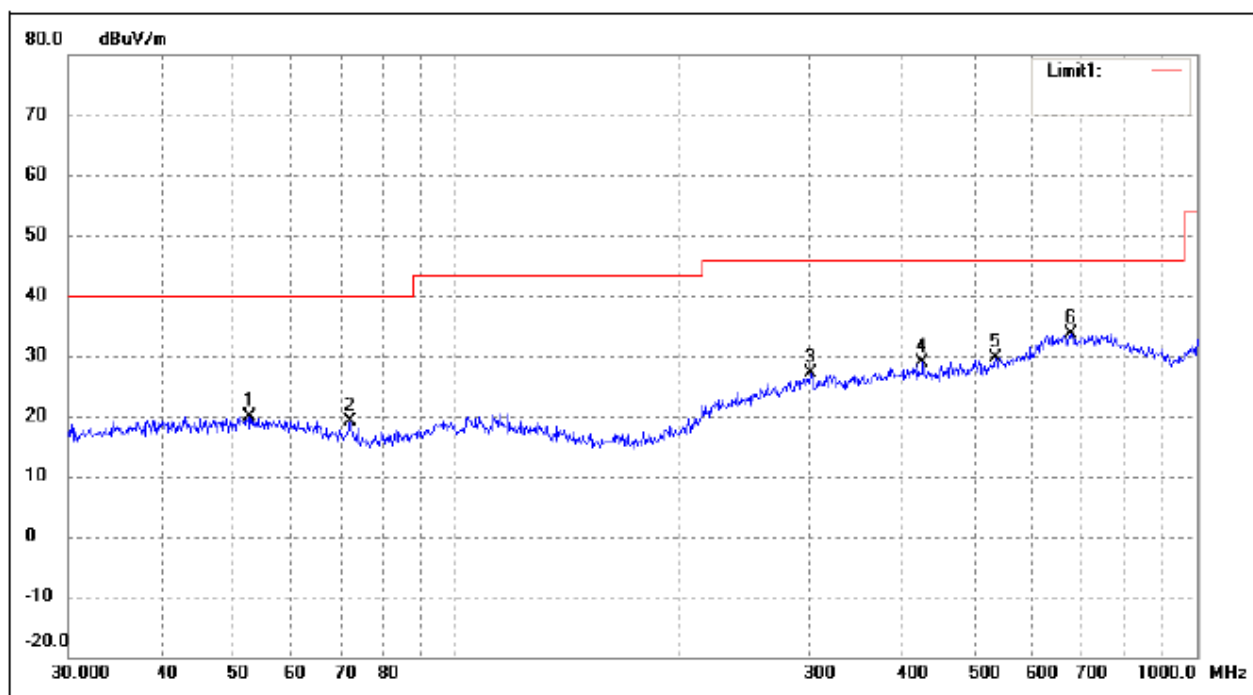
3.2.5 TEST RESULTS

EUT :	Receiver	Model Name :	MX01
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2017-03-07
Test Mode :	Running	Polarization :	Horizontal
Test Power :	120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	48.3318	15.72	4.96	20.68	40.00	-19.32	52	100	peak
2	163.7549	18.09	2.44	20.53	43.50	-22.97	88	100	peak
3	336.0351	16.08	11.48	27.56	46.00	-18.44	136	100	peak
4	385.2805	16.91	12.03	28.94	46.00	-17.06	129	100	peak
5	558.7301	15.89	14.01	29.90	46.00	-16.10	185	100	peak
6	651.9416	15.85	17.77	33.62	46.00	-12.38	216	100	peak

EUT :	Receiver	Model Name :	MX01
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2017-03-07
Test Mode :	Running	Polarization :	Vertical
Test Power :	120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	52.5753	14.88	5.05	19.93	40.00	-20.07	36	100	peak
2	72.0843	16.39	2.62	19.01	40.00	-20.99	59	100	peak
3	301.4224	15.12	11.94	27.06	46.00	-18.94	164	100	peak
4	426.5210	16.87	12.08	28.95	46.00	-17.05	90	100	peak
5	535.7073	15.91	13.82	29.73	46.00	-16.27	253	100	peak
6	677.5798	14.97	18.55	33.52	46.00	-12.48	167	100	peak

3.2.6 TEST RESULTS(Above 1GHz)

EUT :	Receiver	Model Name :	MX01
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	N/A
Test Mode :	N/A		
Test Power :	N/A		

Note:

- 1) N/A - denotes test is not applicable in this test report
- 2) There was not any unintentional transmission in standby mode

4. EUT TEST PHOTO

Radiated Measurement Photos



Conducted Measurement Photos

