FCC TEST REPORT

FOR

Shenzhen Chitongda Electronic Co., LTD.

3G alarm system

Model No.: YL-007WM3GR

Additional Model No.: Please refer to page 7

Prepared for	:	Shenzhen Chitongda Electronic Co., LTD.
Address	:	Wolfguard Building, Chitongda Group Industrial Park, No.108 of Baoshi West Road, Shiyan, Baoan District, Shenzhen, Guangdong, China
Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
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Web	:	www.LCS-cert.com
Mail	:	webmaster@LCS-cert.com
Date of receipt of test sample	:	October 11, 2017
Number of tested samples	:	2
Serial number	:	Prototype
Date of Test	:	October 11, 2017~November 28, 2017
Date of Report	:	November 28, 2017

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FCC TEST REPORT

FCC CFR 47 PART 15 Subpart B: 2016

Report Reference No. ..... :	**LCS171011001AEE**
Date Of Issue..... :	November 28, 2017
Testing Laboratory Name..... :	**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address ..... :	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure..... :	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name..... :	**Shenzhen Chitongda Electronic Co., LTD.**
Address ..... :	Wolfguard Building, Chitongda Group Industrial Park, No.108 of Baoshi West Road, Shiyan, Baoan District, Shenzhen, Guangdong, China
Test Specification	
Standard..... :	FCC CFR 47 PART 15 Subpart B: 2016, ANSI C63.4-2014
Test Report Form No. ..... :	LCSEMC-1.0
TRF Originator..... :	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF..... :	Dated 2011-03

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Test Item Description. ..... :	**3G alarm system**
Trade Mark ..... :	Wolf-Guard
Model/Type Reference ..... :	YL-007WM3GR
Ratings ..... :	DC 7.4V by Lithium ion polymer battery (500mAh) Recharge Voltage: DC 12.0V 1A or 1.2A by AC/DC Adapter
Result ..... :	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Aking Jin	Dick Su	Gavin Liang
Aking Jin/ File administrators	Dick Su/ Technique principal	Gavin Liang/ Manager

FCC -- TEST REPORT

Test Report No. : LCS171011001AEE	November 28, 2017 Date of issue

Type / Model.....	: YL-007WM3GR
EUT.....	: 3G alarm system
Applicant.....	**: Shenzhen Chitongda Electronic Co., LTD.**
Address.....	: Wolfguard Building, Chitongda Group Industrial Park, No.108 of Baoshi West Road, Shiyan, Baoan District, Shenzhen, Guangdong, China
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: Shenzhen Chitongda Electronic Co., LTD.**
Address.....	: Wolfguard Building, Chitongda Group Industrial Park, No.108 of Baoshi West Road, Shiyan, Baoan District, Shenzhen, Guangdong, China
Telephone.....	: /
Fax.....	: /
Factory.....	: **Shenzhen Chitongda Electronic Co., LTD.**
Address.....	: Wolfguard Building, Chitongda Group Industrial Park, No.108 of Baoshi West Road, Shiyan, Baoan District, Shenzhen, Guangdong, China
Telephone.....	: /
Fax.....	: /

Test Result according to the standards on page 5: **Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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Revision History

Revision	Issue Date	Revisions	Revised By
000	November 28, 2017	Initial Issue	Gavin Liang

TABLE OF CONTENTS

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1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	**Standard**	**Limits**	**Results**
Conducted disturbance at mains terminals	FCC 47 CFR Part 15 Subpart B	Class B	PASS
Radiated disturbance	FCC 47 CFR Part 15 Subpart B	Class B	PASS

1.2. Test Modes

Test mode:	
TM 1	433MHz RX .

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	3G alarm system
Model Number	:	YL-007M3FX, YL-007M3GS1, YL-007WM3GR, YL-007WM3FX, YL-007M3GR, YL-007W3G7, YL-007WM2
Model Declaration	:	PCB board, structure and internal of these model(s) are the same, So no additional models were tested.
Test Model	:	YL-007WM3GR
Hardware version	:	VER:2.0
Software version	:	3GCN_EN3GW1.0
Power Supply	:	DC 7.4V by Lithium ion polymer battery (500mAh) Recharge Voltage: DC 12.0V 1A or 1.2A by AC/DC Adapter
GSM/EDGE/GPRS Operation Frequency Band	:	GSM850/PCS1900/GPRS850/GPRS1900/EDGE850/EDGE1900
GSM/EDGE/GPRS	:	Supported GSM/GPRS/EDGE
GSM Release Version	:	R99
GSM/EDGE/GPRS Power Class	:	GSM850:Power Class 4/ PCS1900:Power Class 1
GPRS/EDGE Multi-slot Class	:	Class 12
GPRS operation mode	:	Class B
UMTS Operation Frequency Band	:	UMTS FDD Band II/V
WCDMA Release Version	:	R99
HSDPA Release Version	:	Release 8
HSUPA Release Version	:	Release 8
DC-HSUPA Release Version	:	Not Supported
Antenna Type	:	Internal Antenna
Antenna Gain	:	2.0dBi (max.) For all GSM Band 2.0dBi (max.) For all WCDMA Band
2.4G WLAN	:	Supported 802.11b/802.11g/802.11n
Operation frequency	:	IEEE 802.11b:2412-2462MHz IEEE 802.11g:2412-2462MHz IEEE 802.11n HT20:2412-2462MHz IEEE 802.11n HT40:2422-2452MHz
Modulation Type	:	IEEE 802.11b: DSSS (CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM,QPSK,BPSK)
Channel Number	:	11 Channels for WIFI 20MHz Bandwidth(802.11b/g/n-HT20) 7 Channels for WIFI 40MHz Bandwidth(802.11n-HT40)
Antenna Type	:	Internal Antenna
Antenna Gain	:	1.0dBi (Max.)
433MHz Operation frequency	:	433.92MHz
Modulation Type	:	ASK
Channel Number	:	1
Antenna Type	:	Internal Antenna
Antenna Gain	:	0dBi (Max)
RFID Operation frequency	:	125KHz
Modulation Type	:	OOK

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Channel Number	: 1
Antenna Type	: Internal Antenna
Antenna Gain	: 0dBi (Max)
Extreme temp. Tolerance	: -20°C to 40°C
Extreme vol. Limits	: 6.66 VDC to 8.14 VDC (nominal: 7.40VDC)

2.2. Description of Test Facility

FCC Registration Number. is 254912.
Industry Canada Registration Number. is 9642A-1.
ESMD Registration Number. is ARCB0108.
UL Registration Number. is 100571-492.
TUV SUD Registration Number. is SCN1081.
TUV RH Registration Number. is UA 50296516-001.
NVLAP Registration Code is 600167-0.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

2.4. Measurement Uncertainty

Test Item	Frequency Range	Expanded uncertainty (Ulab)	Expanded uncertainty (Ucispr)
Conducted Emission	(9kHz to 150kHz)	2.63 dB	4.0 dB
	(150kHz to 30MHz)	2.35 dB	3.6 dB
Radiated Emission	(9kHz to 30MHz)	3.68 dB	N/A
Radiated Emission	(30MHz to 1000MHz)	3.48 dB	5.2 dB
Radiated Emission	(above 1000MHz)	3.90 dB	N/A

(1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

(2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

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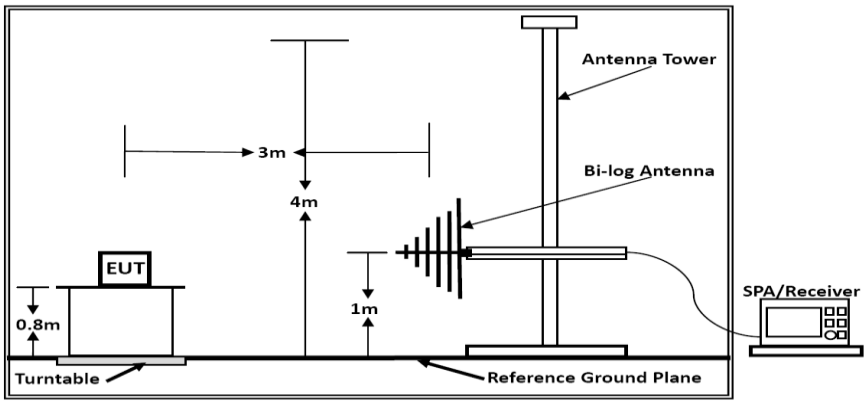
3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

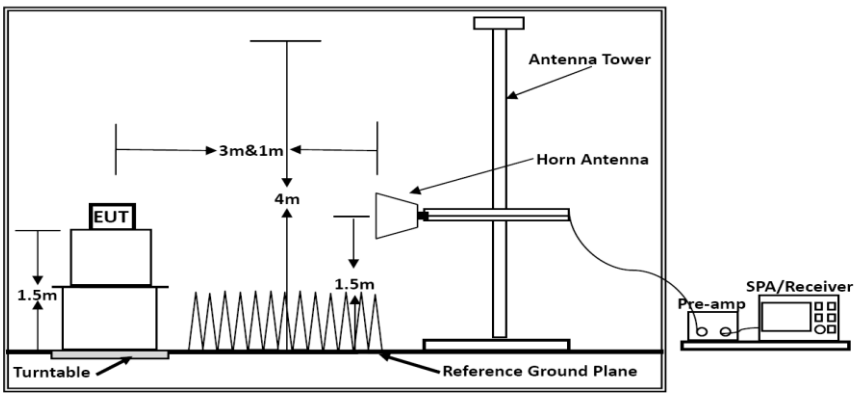
The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2017/02/03
2	EMI Test receiver	ROHDE & SCHWARZ	ESPI	101840	2017/06/17
3	Log per Antenna	SCHWARZBECK	VULB9163	9163-470	2017/06/17
4	EMI Test Software	AUDIX	E3	N/A	2017/06/17
5	Positioning Controller	MF	MF-7082	/	2017/06/17

3.2. Block Diagram of Test Setup



Below 1GHz



Above 1GHz

3.3. Radiated Emission Limit (Class B)

Limits for radiated disturbance Blow 1GHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30~88	3	100	40
88~216	3	150	43.5
216~960	3	200	46
960~1000	3	500	54
Remark：(1) Emission level (dB)μV = 20 log Emission level μV/m (2) The smaller limit shall apply at the cross point between two frequency bands. (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.			

3.4. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 4.2.

3.5.2. Let the EUT work in test mode (on) and measure it.

3.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009 on radiated emission measurement. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Below 1G:

The bandwidth of the EMI test receiver is set at 120kHz, 1000kHz.

The frequency range from 30MHz to 1000MHz is checked.

Above 1G:

The bandwidth of the EMI test receiver is set at 1MHz, 3MHz for Peak detector.

The bandwidth of the EMI test receiver is set at 1MHz, 10Hz for Average detector

The frequency range from 1GHz to 26.5GHz is checked.

3.7. Radiated Emission Noise Measurement Result

PASS.

The test data please refer to following page.

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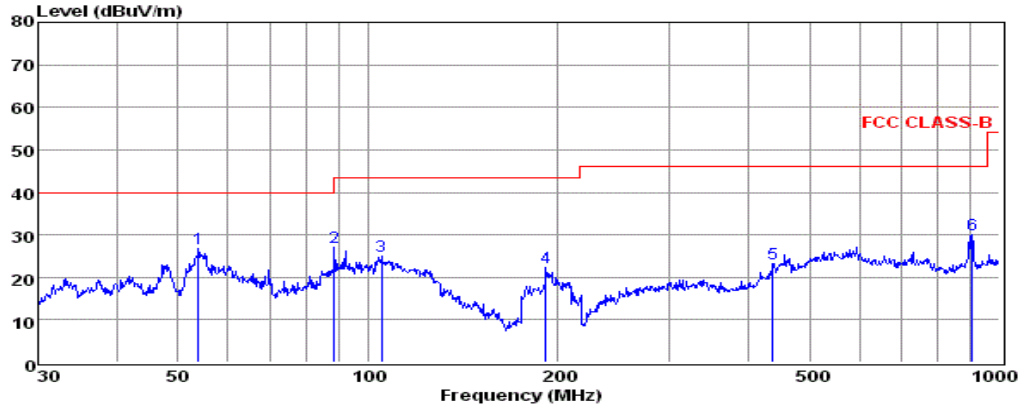
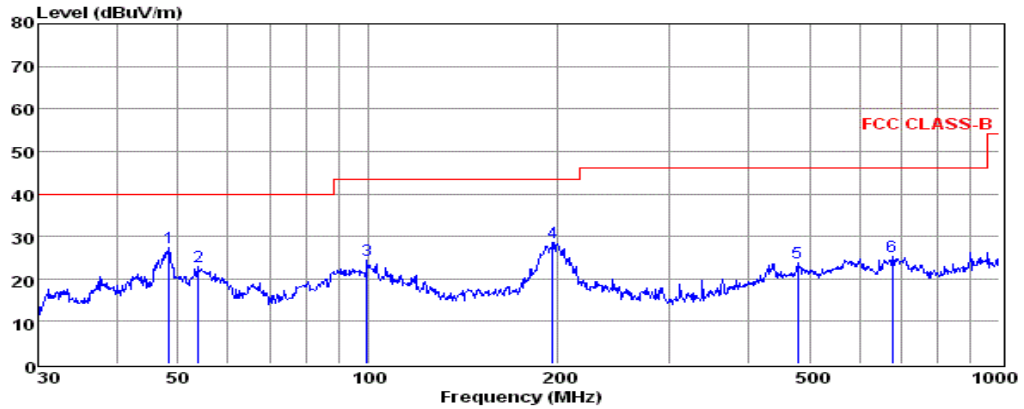


pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	53.88	13.36	0.46	13.07	26.89	40.00	-13.11	QP
2	88.34	15.07	0.68	11.37	27.12	43.50	-16.38	QP
3	104.90	11.54	0.61	12.71	24.86	43.50	-18.64	QP
4	191.07	10.78	0.86	10.56	22.20	43.50	-21.30	QP
5	437.12	6.33	1.41	15.55	23.29	46.00	-22.71	QP
6	906.48	6.83	2.03	21.13	29.99	46.00	-16.01	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported



pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	48.33	13.65	0.35	13.35	27.35	40.00	-12.65	QP
2	53.88	9.47	0.46	13.07	23.00	40.00	-17.00	QP
3	99.53	10.54	0.61	13.13	24.28	43.50	-19.22	QP
4	195.82	17.05	0.96	10.57	28.58	43.50	-14.92	QP
5	478.85	6.37	1.39	16.04	23.80	46.00	-22.20	QP
6	677.58	4.70	1.73	18.73	25.16	46.00	-20.84	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

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Test Mode: Receive	Tested by: Tom Liu
Test voltage: DC 7.4V	Test Distance: 3m
Detector Function: Peak+AV	Test Results: Pass

Polarization	Frequency MHz	Emission Level dBμV/m		Limits dBμV/m		Margin dBμV/m	
		Peak	AVG	Peak	AVG	Peak	AVG
Horizontal	1255.78	57.24	44.03	74.00	54.00	-16.76	-9.97
	2963.36	55.41	42.02	74.00	54.00	-18.59	-11.98
	4822.46	58.30	43.44	74.00	54.00	-15.70	-10.56
Vertical	1355.83	55.20	41.08	74.00	54.00	-18.80	-12.92
	3255.65	60.00	41.68	74.00	54.00	-14.00	-12.32
	5101.71	55.28	41.57	74.00	54.00	-18.72	-12.43

Notes:

1. Measuring frequencies from 9k~12.75GHz, No emission found between lowest internal used/generated frequencies to 30MHz.
2. Radiated emissions measured in frequency range from 9k~12.75GHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measure

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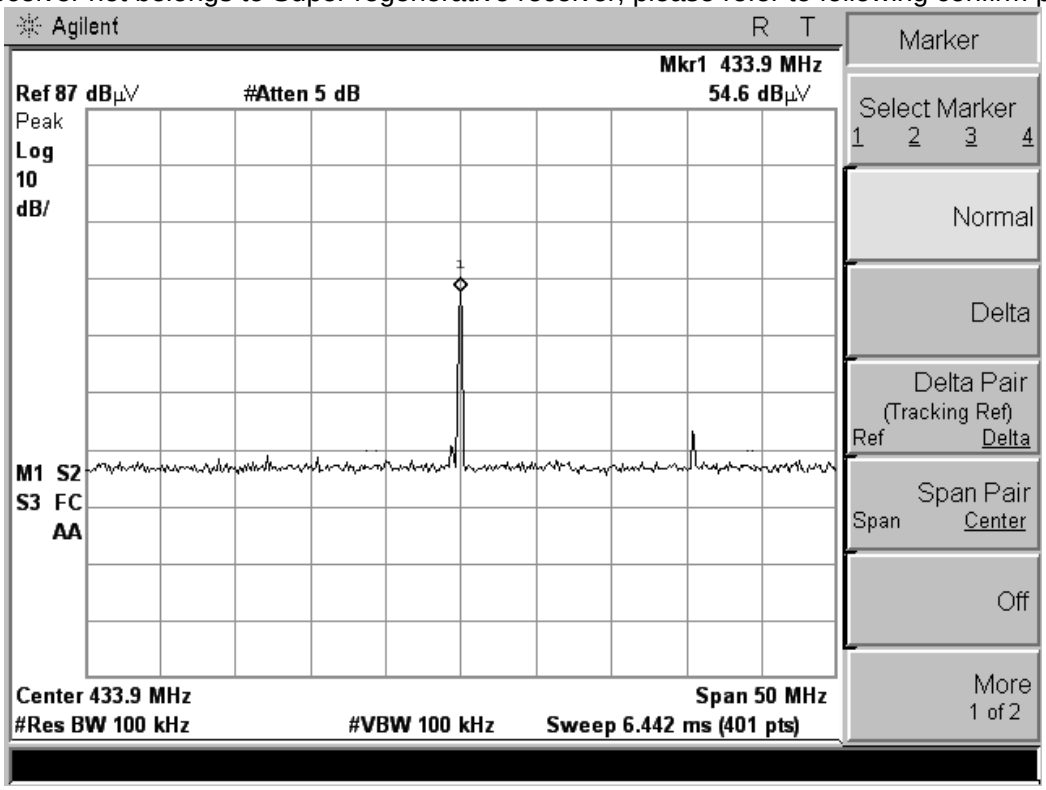
3G alarm system Type:

The receiver not belongs to Super regenerative receiver; please refer to following confirm plots.

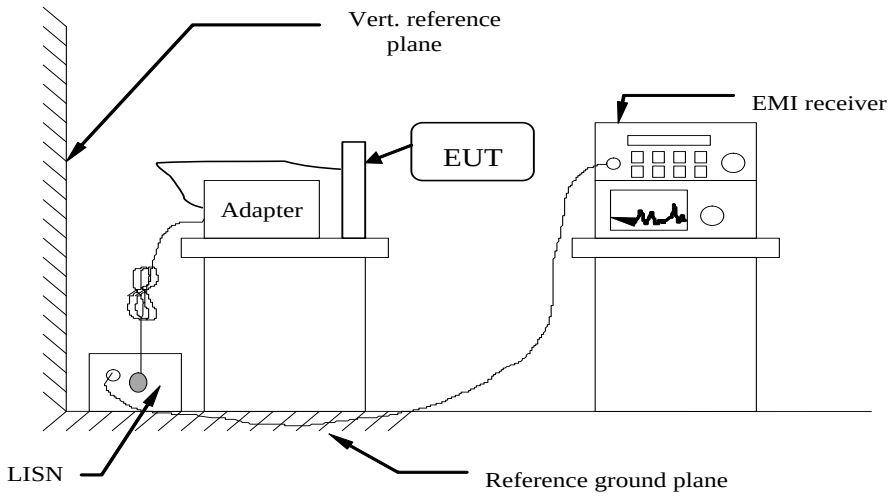


4. POWER LINE CONDUCTED EMISSIONS

4.1 Standard Applicable

Frequency (MHz)			Limit (dBμV)	
			Quasi-peak Level	Average Level
0.15	~	0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50	~	5.00	56.0	46.0
5.00	~	30.00	60.0	50.0
NOTE1-The lower limit shall apply at the transition frequencies. NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.				

4.2 Block Diagram of Test Setup



4.3 Test Results

PASS.

The test data please refer to following page.

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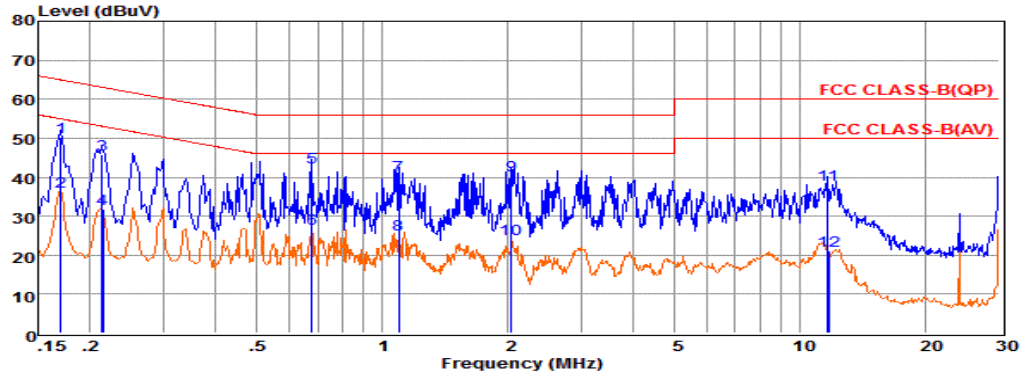
AC Conducted Emission of power adapter @ AC 120V/60Hz (worst case)

Line:

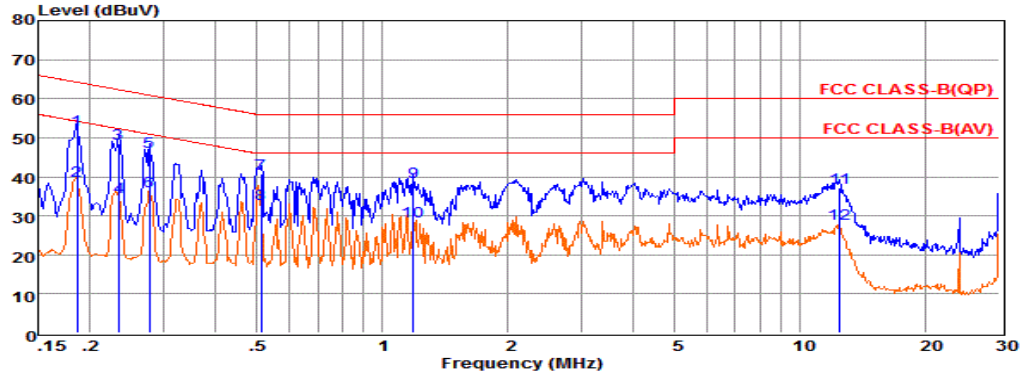


Pol: LINE

	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB
1	0.17	30.51	9.60	0.02	10.00	50.13	64.94	-14.81	QP
2	0.17	16.69	9.60	0.02	10.00	36.31	54.94	-18.63	Average
3	0.21	26.27	9.63	0.03	10.00	45.93	63.05	-17.12	QP
4	0.21	12.10	9.63	0.03	10.00	31.76	53.05	-21.29	Average
5	0.68	22.91	9.64	0.04	10.00	42.59	56.00	-13.41	QP
6	0.68	6.96	9.64	0.04	10.00	26.64	46.00	-19.36	Average
7	1.09	20.74	9.63	0.05	10.00	40.42	56.00	-15.58	QP
8	1.09	5.71	9.63	0.05	10.00	25.39	46.00	-20.61	Average
9	2.03	20.62	9.64	0.05	10.00	40.31	56.00	-15.69	QP
10	2.03	4.48	9.64	0.05	10.00	24.17	46.00	-21.83	Average
11	11.68	18.32	9.70	0.09	10.00	38.11	60.00	-21.89	QP
12	11.68	1.25	9.70	0.09	10.00	21.04	50.00	-28.96	Average

Remarks: 1. Measured = Reading +Cable Loss +Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Neutral:



Pol: NEUTRAL

	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB
1	0.19	32.42	9.62	0.02	10.00	52.06	64.20	-12.14	QP
2	0.19	19.21	9.62	0.02	10.00	38.85	54.19	-15.34	Average
3	0.23	28.85	9.60	0.03	10.00	48.48	62.30	-13.82	QP
4	0.23	15.13	9.60	0.03	10.00	34.76	52.30	-17.54	Average
5	0.28	26.88	9.60	0.03	10.00	46.51	60.90	-14.39	QP
6	0.28	16.65	9.60	0.03	10.00	36.28	50.89	-14.61	Average
7	0.51	21.09	9.62	0.04	10.00	40.75	56.00	-15.25	QP
8	0.51	13.23	9.62	0.04	10.00	32.89	46.00	-13.11	Average
9	1.18	18.91	9.63	0.05	10.00	38.59	56.00	-17.41	QP
10	1.19	8.74	9.63	0.05	10.00	28.42	46.00	-17.58	Average
11	12.45	17.43	9.73	0.09	10.00	37.25	60.00	-22.75	QP
12	12.45	8.22	9.73	0.09	10.00	28.04	50.00	-21.96	Average

Remarks: 1. Measured = Reading +Cable Loss +Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

****Note: Pre-scan all mode and recorded the worst case results in this report.*

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5. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

6. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

7. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

----------THE END OF TEST REPORT----------

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