



FCC TEST REPORT

ShenZhen XUNWEIJIA Technology Development LTD

USB Receiver

Test Model: K031B

Additional Model No.: K033, K026, K030, K031

Prepared for	:	ShenZhen XUNWEIJIA Technology Development LTD
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Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample	:	December 15, 2020
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	December 15, 2020 ~ December 16, 2020
Date of Report	:	December 18, 2020





FCC TEST REPORT

FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4 -2014

Report Reference No. : LCS201201173AE

Date Of Issue..... : December 18, 2020

Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.Address..... : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park
Yabianxueziwei, Shajing Street, Baoan District, Shenzhen,
518000, ChinaTesting Location/ Procedure.... : Full application of Harmonised standards ■
Partial application of Harmonised standards □
Other standard testing method □**Applicant's Name..... : ShenZhen XUNWEIJIA Technology Development LTD**Address..... : Room1103A, Jinhua building, Gaofeng road, Dalang,
longhua new district, Baoan, Shenzhen, China**Test Specification**

Standard..... : FCC 47 CFR Part 15 Subpart B, Class B, 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..... : USB Receiver

Trade Mark..... : FIFINE

Test Model..... : K031B

Ratings..... : Input: DC 5V, 90-100mA

Result : Positive**Compiled by:**

Jack Liu/ Administrators

Supervised by:

Jin Wang/ Technique principal

Approved by:

Gavin Liang/ Manager



FCC -- TEST REPORT

Test Report No. : LCS201201173AEDecember 18, 2020
Date of issue

Test Model..... : K031B

EUT..... : USB Receiver

Applicant..... : ShenZhen XUNWEIJIA Technology Development LTDAddress..... : Room1103A, Jinhua building, Gaofeng road, Dalang,
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longhua new district, Baoan, Shenzhen, China

Telephone..... : /

Fax..... : /

Test Result according to the standards on page 6: **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.

Revision History



Revision	Issue Date	Revisions	Revised By
000	December 18, 2020	Initial Issue	Gavin Liang



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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, ANSI C63.4 -2014	Class B	PASS
Radiated disturbance	FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4 -2014	Class B	PASS

N/A is an abbreviation for Not Applicable.

Test mode:		
Mode	USB	Record



2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : USB Receiver

Trade Mark : FIFINE

Test Model : K031B

Additional Model : K033, K026, K030, K031

Note:For example, the wireless microphone model is called 1,2,3,4,5,6....

A receiver has only one K031B,the wireless microphone model 1 and receiver are used and shipped together and new model name is A, microphone model 2 and receiver are used the new model is B, microphone model 3 and receiver,are used the new model is the C.....

Model Declaration : PCB board, structure and internal of these model(s) are the same, So no additional models were tested

Power Supply : Input: DC 5V, 90-100mA

EUT Clock Frequency : $\leq 108\text{MHz}$

2.2. Support Equipment List

Name	Manufacturers	M/N	S/N
PC	Lenovo	WB0202140H	WB05067151

2.3. Description of Test Facility

Site Description

EMC Lab. : NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.



2.4. 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.

2.5. Measurement Uncertainty

Test	Parameters	Expanded Uncertainty (U_{lab})	Expanded Uncertainty (U_{cisp})
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.63 dB ± 2.35 dB	± 3.8 dB ± 3.4 dB
Power Disturbance	Level accuracy (30MHz to 300MHz)	± 2.90 dB	± 4.5 dB
Electromagnetic Radiated Emission (3-loop)	Level accuracy (9kHz to 30MHz)	± 3.60 dB	± 3.3 dB
Radiated Emission	Level accuracy (9kHz to 30MHz)	± 3.68 dB	N/A
Radiated Emission	Level accuracy (30MHz to 1000MHz)	± 3.48 dB	± 5.3 dB
Radiated Emission	Level accuracy (above 1000MHz)	± 3.90 dB	± 5.2 dB
Mains Harmonic	Voltage	$\pm 0.510\%$	N/A
Voltage Fluctuations & Flicker	Voltage	$\pm 0.510\%$	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%.



3. TEST RESULTS

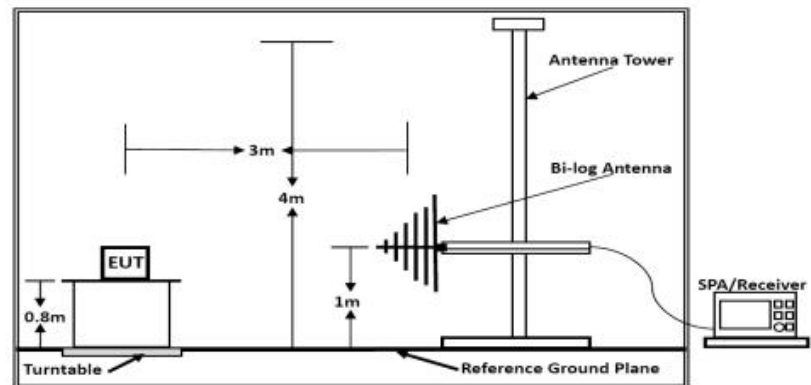
3.1. Radiated Emission Measurement

3.1.1. Test Equipment

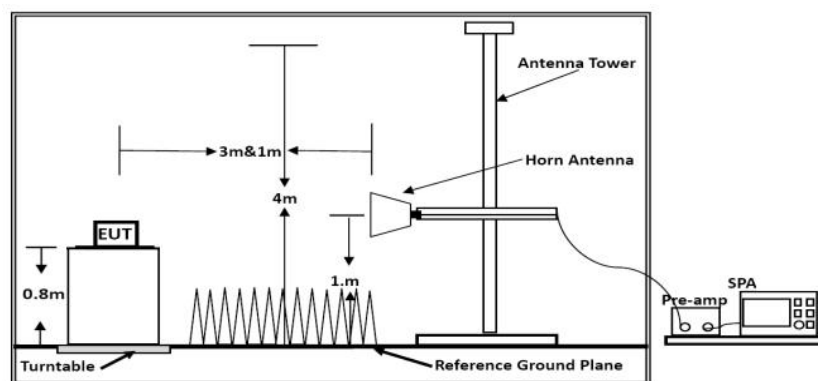
The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	EZ	EZ-EMC	/	N/A	N/A
2	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2018-07-26	2021-07-25
3	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2018-07-02	2021-07-01
4	EMI Test Receiver	R&S	ESR 7	101181	2020-06-22	2021-06-21
5	Broadband Preamplifier	/	BP-01M18G	P190501	2020-06-22	2021-06-21

3.1.2. Block Diagram of Test Setup



Below 1GHz



Above 1GHz



3.1.3. Radiated Emission Limit (Class B)

Limits for Radiated Disturbance Below 1GHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
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 $(\text{dB})\mu\text{V} = 20 \log$ Emission level $\mu\text{V/m}$

(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.

Limits for Radiated Emission Above 1GHz

Frequency (MHz)	Distance (Meters)	Peak Limit ($\text{dB}\mu\text{V/m}$)	Average Limit ($\text{dB}\mu\text{V/m}$)
Above 1000	3	74	54

***Note: The lower limit applies at the transition frequency.

3.1.4. 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.

3.1.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 3.2.

3.5.2. Let the EUT work in test Mode (Mode 1) and measure it.

3.1.6. 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.

The bandwidth of the EMI test receiver is set at 120kHz, 300kHz.

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

The frequency range from 1GHz to the frequency which about 5th carrier harmonic or 6GHz is checked.

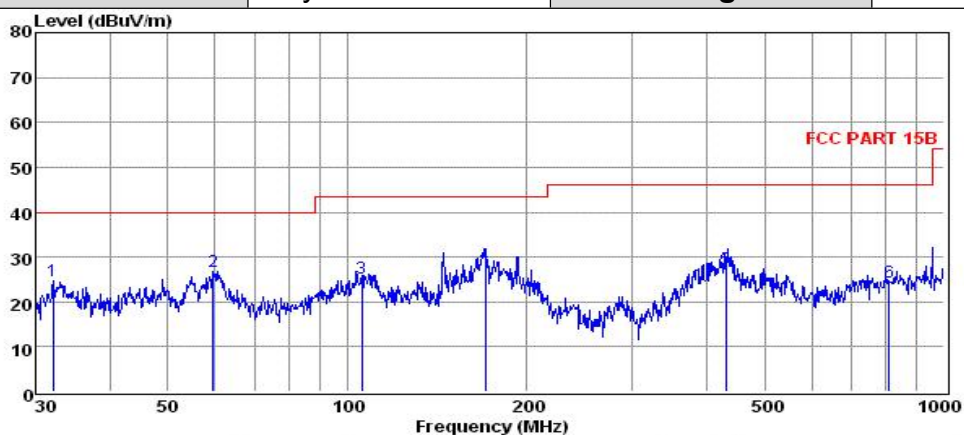
3.1.7. Test Results

PASS.

The test result please refer to the next page.



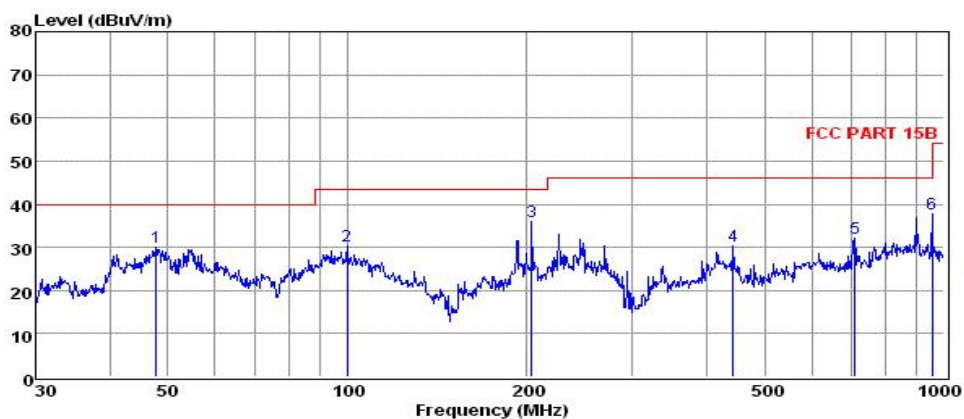
Test Model	K031B	Test Mode	Mode 1
Environmental Conditions	22.6°C, 53.6% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	Kay Hu	Test Voltage	DC 5V



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	32.07	11.88	0.37	12.32	24.57	40.00	-15.43	QP
2	59.44	13.62	0.49	12.73	26.84	40.00	-13.16	QP
3	105.64	11.91	0.61	12.65	25.17	43.50	-18.33	QP
4	170.19	18.62	0.80	8.98	28.40	43.50	-15.10	QP
5	431.03	10.58	1.28	15.52	27.38	46.00	-18.62	QP
6	810.27	2.63	1.71	20.17	24.51	46.00	-21.49	QP

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

Test Model	K031B	Test Mode	Mode 1
Environmental Conditions	22.6°C, 53.6% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	Kay Hu	Test Voltage	DC 5V



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	47.83	16.45	0.35	13.38	30.18	40.00	-9.82	QP
2	99.88	16.61	0.60	13.15	30.36	43.50	-13.14	QP
3	203.52	24.36	0.82	10.68	35.86	43.50	-7.64	QP
4	443.29	13.66	1.25	15.56	30.47	46.00	-15.53	QP
5	709.18	11.52	1.73	18.92	32.17	46.00	-13.83	QP
6	955.44	14.35	1.89	21.45	37.69	46.00	-8.31	QP

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

Note: Pre-Scan all mode, Thus record worse case mode result in this report.



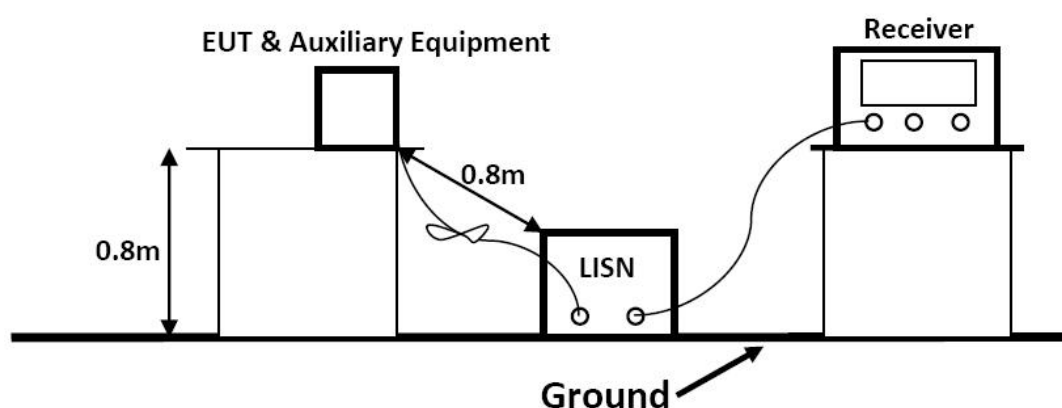
3.2. Power Line Conducted Emission Measurement

3.2.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	EZ	EZ-EMC	/	N/A	N/A
2	EMI Test Receiver	R&S	ESPI	101840	2020-06-10	2021-06-09
3	Artificial Mains	R&S	ENV216	101288	2020-06-11	2021-06-10
4	10dB Attenuator	SCHWARZBEC K	MTS-IMP-136	261115-001-003 2	2020-06-10	2021-06-09

3.2.2. Block Diagram of Test Setup



3.2.3. Test Standard

Power Line Conducted Emission Limits (Class B)

Frequency (MHz)			Limit (dB μ V)	
			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.

3.2.4. EUT Configuration on Test

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.



3.2.5. Operating Condition of EUT

3.1.5.1. Setup the EUT as shown on Section 3.1.2

3.1.5.2. Turn on the power of all equipments.

3.1.5.3. Let the EUT work in measuring Mode 1 and measure it.

3.2.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2014 on Conducted Emission Measurement.

The bandwidth of the test receiver is set at 9kHz.

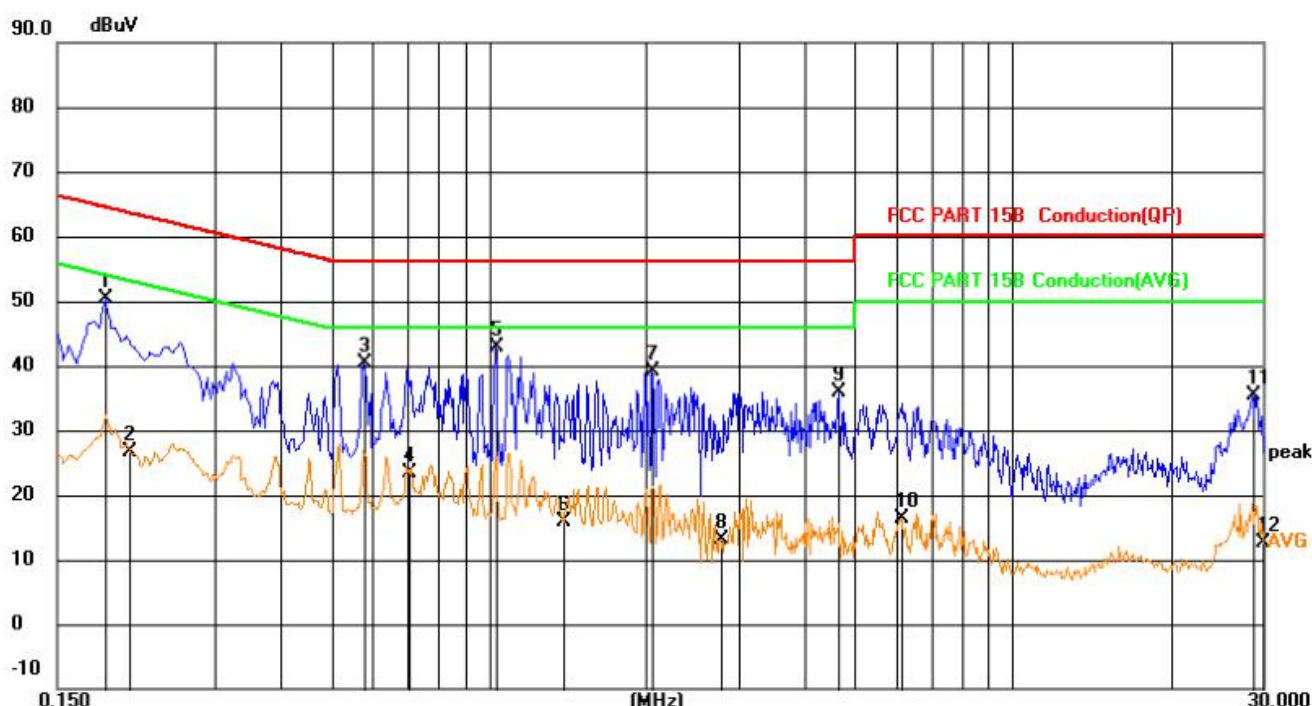
The frequency range from 150kHz to 30MHz is investigated

3.2.7. Test Results

PASS

AC Conducted Emission of power adapter @ AC 120V/60Hz

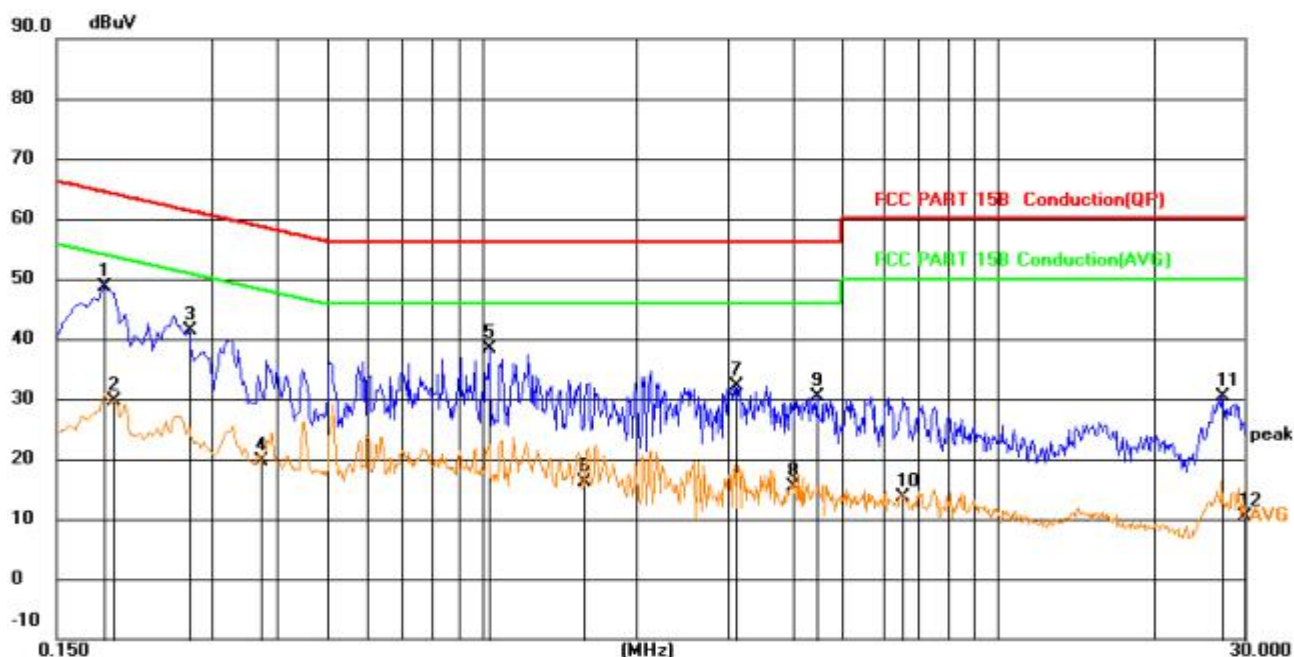
Line





No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1860	31.30	19.17	50.47	64.21	-13.74	QP	
2		0.2072	7.52	19.19	26.71	53.32	-26.61	AVG	
3		0.5775	21.13	19.30	40.43	56.00	-15.57	QP	
4		0.7080	4.17	19.29	23.46	46.00	-22.54	AVG	
5	*	1.0275	23.74	19.26	43.00	56.00	-13.00	QP	
6		1.3920	-3.50	19.32	15.82	46.00	-30.18	AVG	
7		2.0535	19.74	19.41	39.15	56.00	-16.85	QP	
8		2.7735	-6.30	19.46	13.16	46.00	-32.84	AVG	
9		4.6635	16.38	19.49	35.87	56.00	-20.13	QP	
10		6.1035	-3.15	19.54	16.39	50.00	-33.61	AVG	
11		28.6845	15.30	20.14	35.44	60.00	-24.56	QP	
12		30.0000	-7.41	20.09	12.68	50.00	-37.32	AVG	

Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1	*	0.1860	29.58	19.17	48.75	64.21	-15.46	QP	
2		0.1934	10.47	19.17	29.64	53.89	-24.25	AVG	
3		0.2714	22.17	19.25	41.42	61.07	-19.65	QP	
4		0.3751	0.31	19.31	19.62	48.39	-28.77	AVG	
5		1.0320	19.15	19.25	38.40	56.00	-17.60	QP	
6		1.5765	-3.16	19.34	16.18	46.00	-29.82	AVG	
7		3.0930	12.68	19.46	32.14	56.00	-23.86	QP	
8		3.9885	-3.96	19.46	15.50	46.00	-30.50	AVG	
9		4.4699	11.03	19.47	30.50	56.00	-25.50	QP	
10		6.5220	-6.01	19.55	13.54	50.00	-36.46	AVG	
11		27.1590	10.22	20.10	30.32	60.00	-29.68	QP	
12		30.0000	-9.73	20.14	10.41	50.00	-39.59	AVG	



4. PHOTOGRAPHS OF TEST SETUP

Please refer to separated files Appendix A for Test Setup Photographs

5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Please refer to separated files Appendix B for External Photos of EUT

Please refer to separated files Appendix C for Internal Photos of EUT

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