

FCC TEST REPORT

FOR

Shenzhen KingBoard Technology Co., Ltd.

FM transmitter

Model No.: KF-100

Additional Model No.: Please refer to page 5.

Prepared for : Shenzhen KingBoard Technology Co., Ltd.
Address : Bldg. A, Dakanglong Industry Zone Dabuxiang, Guanlan

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

Date of receipt of test sample : December 15, 2015
Number of tested samples : 1
Serial number : Prototype
Date of Test : December 15, 2015 - December 24, 2015
Date of Report : December 24, 2015

FCC TEST REPORT
FCC CFR 47 PART 15.239(2015)

Report Reference No. : **LCS1512151255E**
Date of Issue : December 24, 2015

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 KingBoard Technology Co., Ltd.**
Address : Bldg. A, Dakanglong Industry Zone Dabuxiang, Guanlan

Test Specification
Standard : FCC CFR 47 Part 15.239(2015)
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. : **FM transmitter**
Trade Mark : N/A
Model/ Type reference..... : KF-100
Ratings : DC 5V
Result : **Positive**

Compiled by:



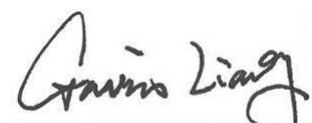
Kyle Yin/ File administrators

Supervised by:



Glin Lu/ Technique principal

Approved by:



Gavin Liang/ Manager

FCC -- TEST REPORT

Test Report No. : LCS1512151255E	<u>December 24, 2015</u> Date of issue
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Type / Model..... : KF-100 EUT..... : FM transmitter
Applicant..... : Shenzhen KingBoard Technology Co., Ltd. Address..... : Bldg. A, Dakanglong Industry Zone Dabuxiang, Guanlan Telephone..... : / Fax..... : /
Manufacturer..... : Shenzhen KingBoard Technology Co., Ltd. Address..... : Bldg. A, Dakanglong Industry Zone Dabuxiang, Guanlan Telephone..... : / Fax..... : /
Factory..... : Shenzhen KingBoard Technology Co., Ltd. Address..... : Bldg. A, Dakanglong Industry Zone Dabuxiang, Guanlan Telephone..... : / Fax..... : /

Test Result	Positive
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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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1. GENERAL INFORMATION

1.1 Description of Device (EUT)

EUT ; Fm transmitter

Model No. : KF-100

Frequency Range : 88.1~107.9MHz

Channel number : 199

Channel Spacing : 100KHz

Channel frequency : 88.1~107.9MHz(Channel Number: 199,
Channel Frequency=88.1+0.1(K-1), K=1, 2, 3199)

Modulation Type : FM

Antenna Gain : Internal antenna, 0dBi(Max.)

Input Voltage : DC 5V

Additional models No.			
KF-100	KLM-01	--	--
<i>Remark: PCB board, structure and internal of these model(s) are the same, So no additional models were tested.</i>			

1.2 Support equipment List

Manufacturer	Description	Model	Serial Number	Certificate
Lenovo	AC/DC ADAPTER	ADP-90DDB	--	DOC
Lenovo	PC	B470	--	DOC
Shenzhen KingBoard Technology Co., Ltd.	Car charger	KF-100	--	VOC
MEIZU	Smartphone	MX4 PRO	--	DOC

1.3 External I/O Cable

I/O Port Description	Quantity	Cable
USB	1	0.1m
AUX	1	0.1m

1.4 Description of Test Facility

Site Description

EMC Lab. : CNAS Registration Number. is L4595.
 FCC Registration Number. is 899208.
 Industry Canada Registration Number. is 9642A-1.
 VCCI Registration Number. is C-4260 and R-3804.
 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

1.5 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.

1.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Radiation Uncertainty	9KHz~30MHz	± 3.10dB	(1)
	30MHz~200MHz	± 2.96dB	(1)
	200MHz~1000MHz	± 3.10dB	(1)
	1GHz~26.5GHz	± 3.80dB	(1)
	26.5GHz~40GHz	± 3.90dB	(1)
Conduction Uncertainty	150kHz~30MHz	± 1.63dB	(1)
Power disturbance	30MHz~300MHz	± 1.60dB	(1)

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

1.7 Description Of Test Modes

The FM Transmitter is powered by a battery which is DC 5V. In the audio port and MIC port give a 2.5 kHz tone at a level 16 dB higher than that required to produce a frequency deviation of +/-37.5KHz kHz and make it works in TX mode(88.1MHz, 98.1MHz and 107.9MHz).

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR PART 15C 15.207, 15.209 and 15.239.

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209, 15.239 under the FCC Rules Part 15 Subpart C and RSS-210.

2.3 General Test Procedures

2.3.1 Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table 0.8 meter above ground for below 1GHz and 1.5m for above 1GHz. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of ANSI C63.10-2013

3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a continuous transmit condition.

3.2 EUT Exercise Software

N/A.

3.3 Special Accessories

N/A.

3.4 Block Diagram/Schematics

Please refer to the related document.

3.5 Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6 Test Setup

Please refer to the test setup photo.

4. SUMMARY OF TEST RESULTS

Applied Standard: FCC Part 15 Subpart C		
FCC Rules	Description of Test	Result
§15.239(a)	Conducted Bandwidth Test	Compliant
§15.239(b)&(c)	Radiated &Bandwidth Emissions Test	Compliant
§15.203	Antenna Requirements	Compliant
§15.207 (a)	Conducted Emission Test	Compliant

5. SUMMARY OF TEST EQUIPMENT

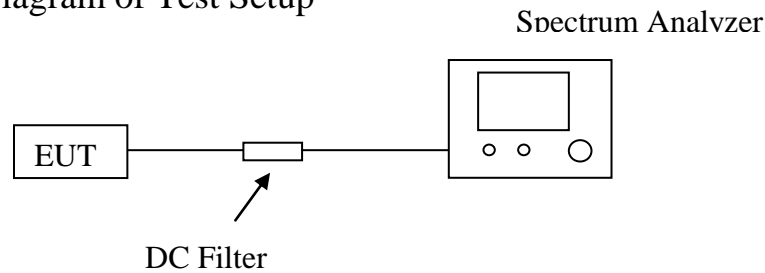
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	Spectrum Analyzer	Agilent	E4407B	MY41440292	2015-06-16	2016-06-15
2	Signal analyzer	Agilent	E4448A(External mixers to 40GHz)	US44300469	2015-06-16	2016-06-15
3	RF Cable	Hubersuhne	Sucoflex104	FP2RX2	2015-06-18	2016-06-17
4	DC Filter	MPE	23872C	N/A	2015-06-18	2016-06-17
5	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2015-06-18	2016-06-17
6	Amplifier	SCHAFFNER	COA9231A	18667	2015-06-18	2016-06-17
7	Amplifier	Agilent	8449B	3008A02120	2015-06-16	2016-06-15
8	Amplifier	MITEQ	AMF-6F-260400	9121372	2015-06-16	2016-06-15
9	Spectrum Analyzer	Agilent	E4407B	MY41440292	2015-06-16	2016-06-15
10	Signal analyzer	Agilent	E4448A(External mixers to 40GHz)	US44300469	2015-06-16	2016-06-15
11	Loop Antenna	R&S	HFH2-Z2	860004/001	2015-06-18	2016-06-17
12	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2015-06-10	2016-06-09
13	Horn Antenna	EMCO	3115	6741	2015-06-10	2016-06-09
14	Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	2015-06-10	2016-06-09
15	RF Cable-R03m	Jye Bao	RG142	CB021	2015-06-18	2016-06-17
16	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2015-06-18	2016-06-17
17	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2015/06/18	2016/06/17
18	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	101840	2015/06/18	2016/06/17
19	Artificial Mains	ROHDE & SCHWARZ	ENV216	101288	2015/06/19	2016/06/18
20	EMI Test Software	AUDIX	E3	N/A	2015/06/18	2016/06/17

6. BANDWIDTH MEASUREMENT

6.1 Limit

According to §15.239 (a) Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

6.2 Block Diagram of Test Setup



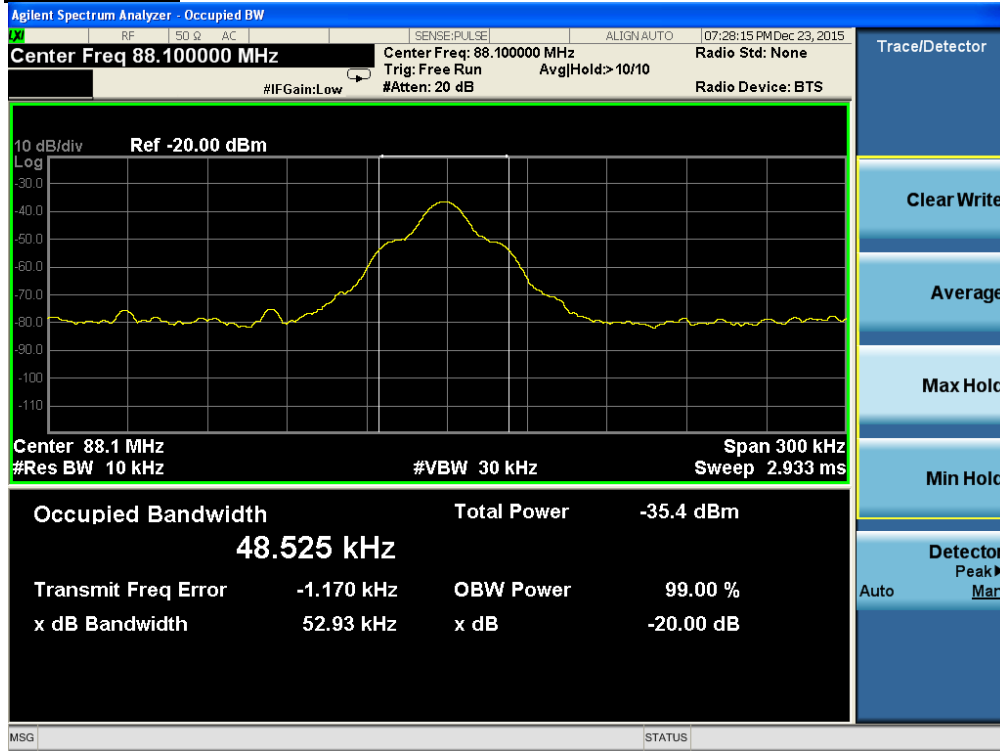
6.3 Test Procedure

- A. Span = approximately 2 to 3 times the bandwidth, centered on a hopping channel.
- B. RBW \geq 1% of the bandwidth, VBW \geq RBW.
- C. Detector function = peak.
- D. Trace = max hold.

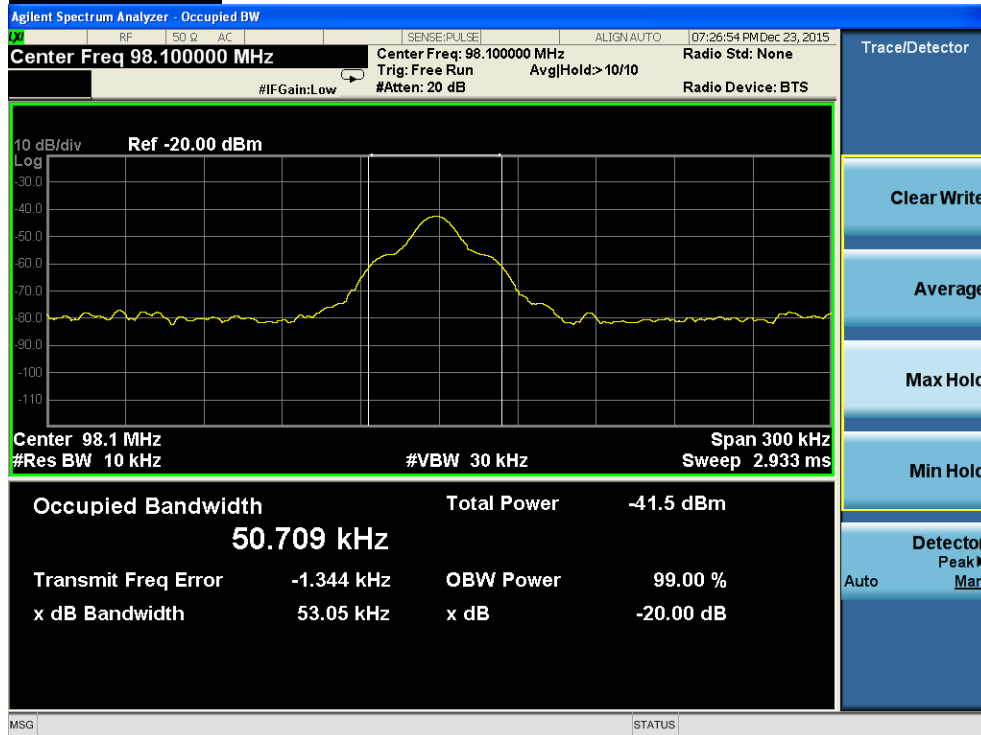
6.4 Test Results

Frequency (MHz)	Bandwidth (KHz)	Limit (KHz)	Conclusion
88.1	52.93	200	Pass
98.1	53.05	200	Pass
107.9	56.60	200	Pass

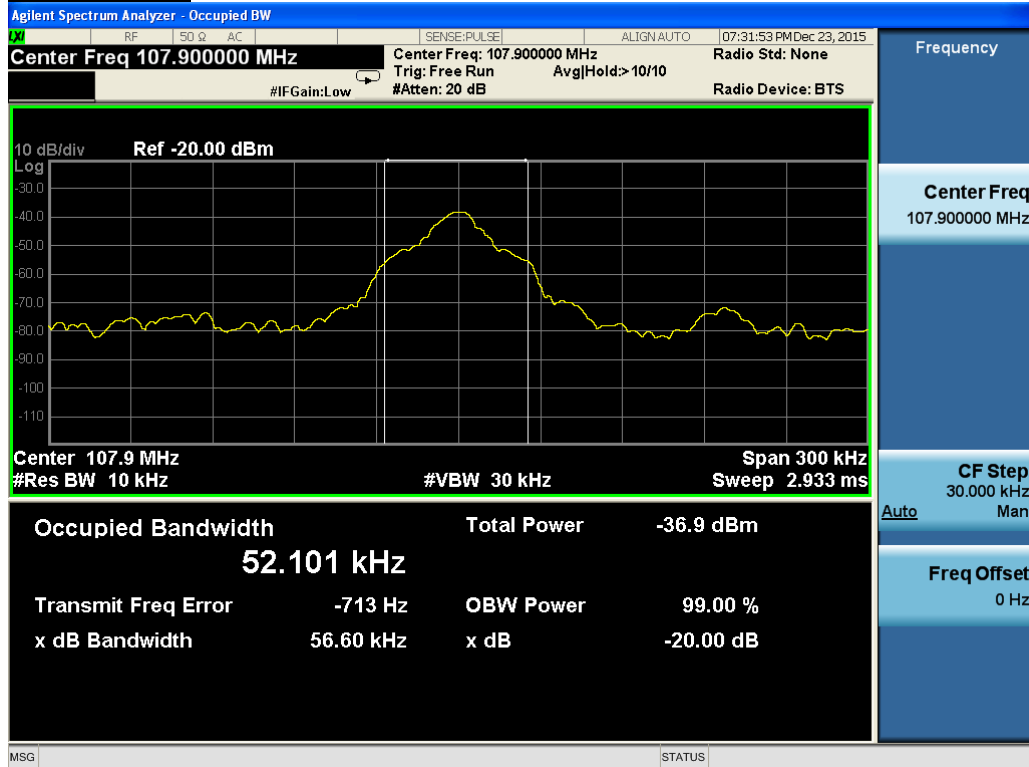
Low channel



Middle channel



High channel



7. RADIATED AND BANDWIDTH MEASUREMENT

7.1 Limit

Radiated Emission Limit 30~1000MHz

Frequency (MHz)	Distances (Meters)	Field Strength LiMIT	
		μ V/m	dB(μ V)/m
30~88	3	100	40.0
80~108		250	48.0(Average) 68.0(Peak)
88~216		150	43.5
216~960		200	46.0
960~1000		500	54.0

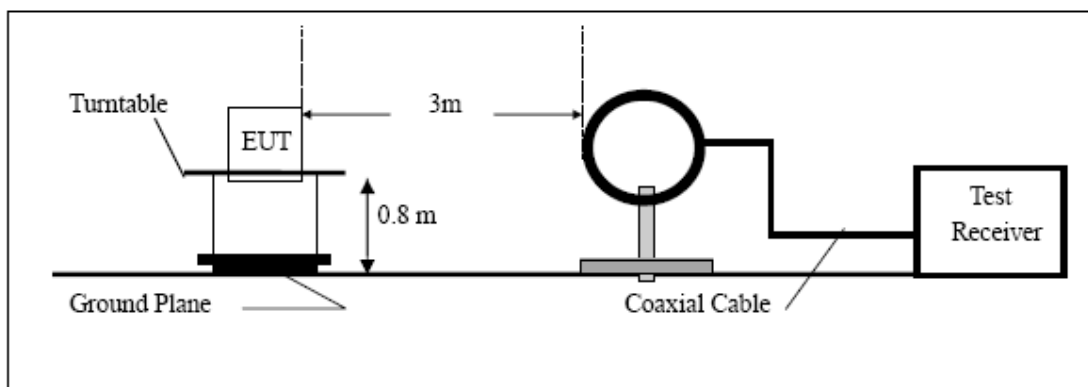
Remark : (1) Emission level dB μ V = 20 log Emission level μ V/m

- (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.

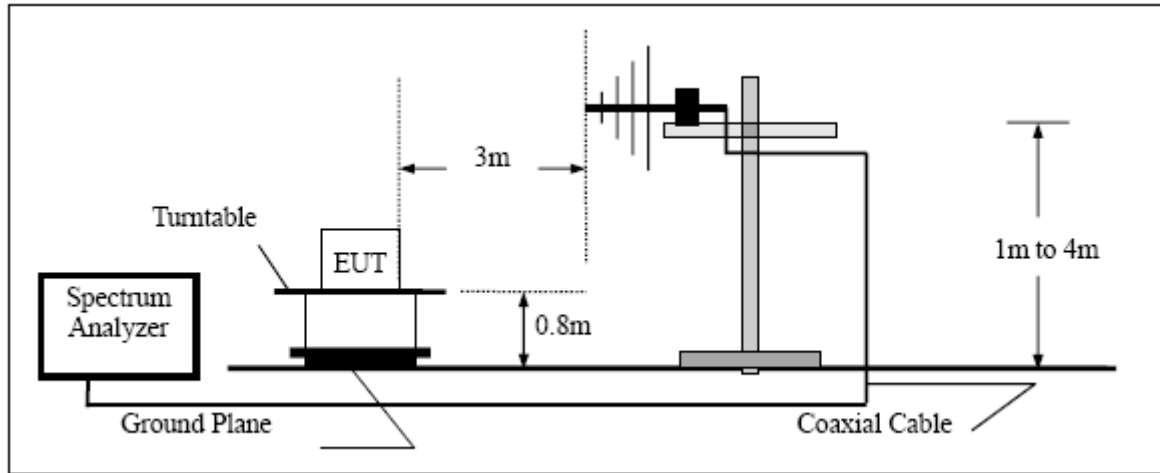
The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in Section 15.35 for limiting peak emissions apply.

The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed the general radiated emission limits in Section 15.209.

7.2 Block Diagram of Test Setup



Below 30MHz



30-1000MHz

7.3 Instruments Setting

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	30 MHz
Stop Frequency	1000 MHz
RB / VB (Emission in restricted band)	120KHz / 1MHz for Peak, 120 KHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	120KHz / 1MHz for Peak, 120 KHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 100kHz for QP

7.4 Test Procedures

1) Sequence of testing 9 kHz to 30 MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0 ° to 315 ° using 45 ° steps.
- The antenna height is 0.8 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0 ° to 360 °) and by rotating the elevation axes (0 ° to 360 °).
- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

2) Sequence of testing 30 MHz to 1 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Premeasurement:

- The turntable rotates from 0 ° to 315 ° using 45 ° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 to 3 meter.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

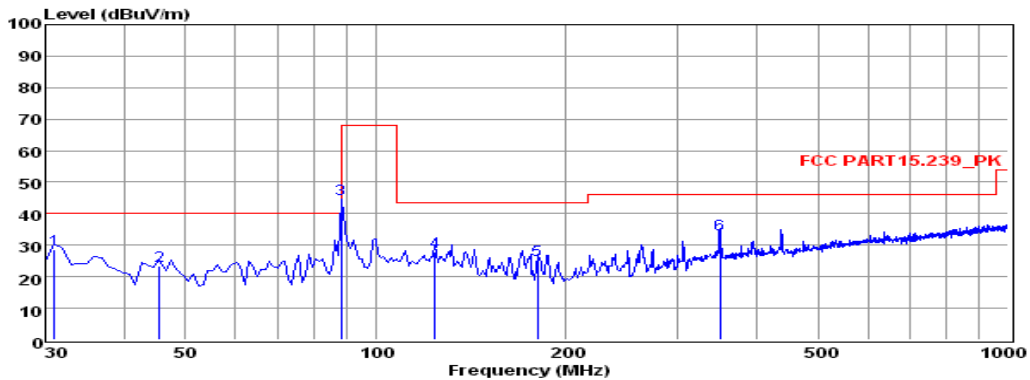
7.5 Results for Radiated Emissions

PASS.

Only record the worst test result in this report.

The test data please refer to following page:

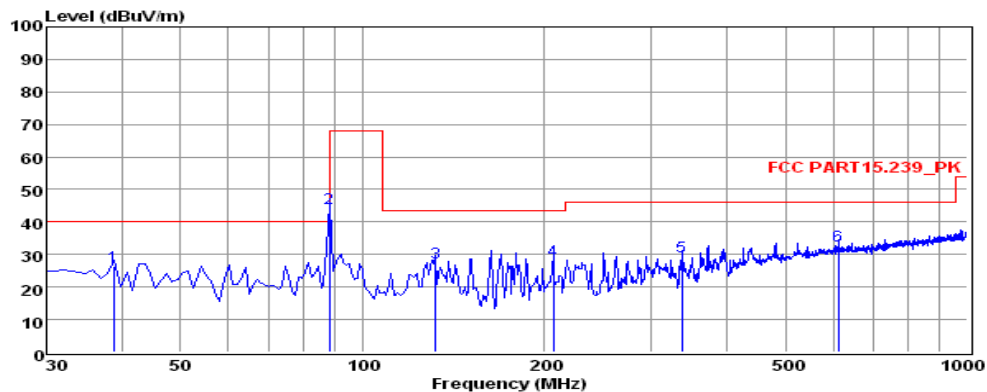
A. Fundamental and Harmonics Radiated Emission Data



Env./Ins: 24°C/56%
 EUT: Fm transmitter
 M/N: KF-100
 Power Rating: DC 5.0V
 Test Mode: TX-88.1
 Operator: KYLE
 Memo:
 pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	30.97	15.87	0.39	12.32	28.58	40.00	-11.42	QP
2	45.52	9.32	0.41	13.52	23.25	40.00	-16.75	QP
3	88.10	32.48	0.68	11.30	44.46	68.00	-23.54	QP
4	124.09	17.47	0.71	9.85	28.03	43.50	-15.47	QP
5	180.35	14.59	0.89	9.71	25.19	43.50	-18.31	QP
6	350.10	18.00	1.15	14.28	33.43	46.00	-12.57	QP

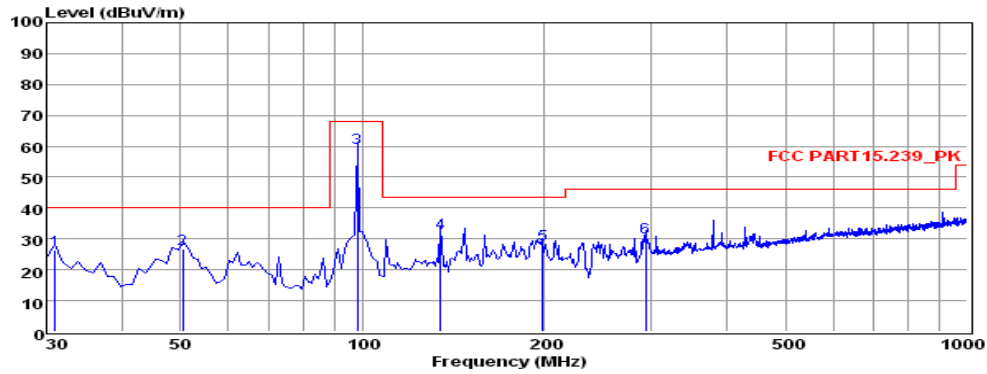
Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that ate 20db blow the official limit are not reported



Env./Ins: 24°C/56%
 EUT: Fm transmitter
 M/N: KF-100
 Power Rating: DC 5.0V
 Test Mode: TX-88.1
 Operator: Kyle
 Memo:
 pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	38.73	12.59	0.38	13.25	26.22	40.00	-13.78	QP
2	88.10	32.14	0.68	11.33	44.15	68.00	-23.85	QP
3	131.85	18.13	0.76	8.79	27.68	43.50	-15.82	QP
4	206.54	16.56	0.99	10.78	28.33	43.50	-15.17	QP
5	337.49	14.04	1.16	14.02	29.22	46.00	-16.78	QP
6	612.97	12.62	1.59	18.50	32.71	46.00	-13.29	QP

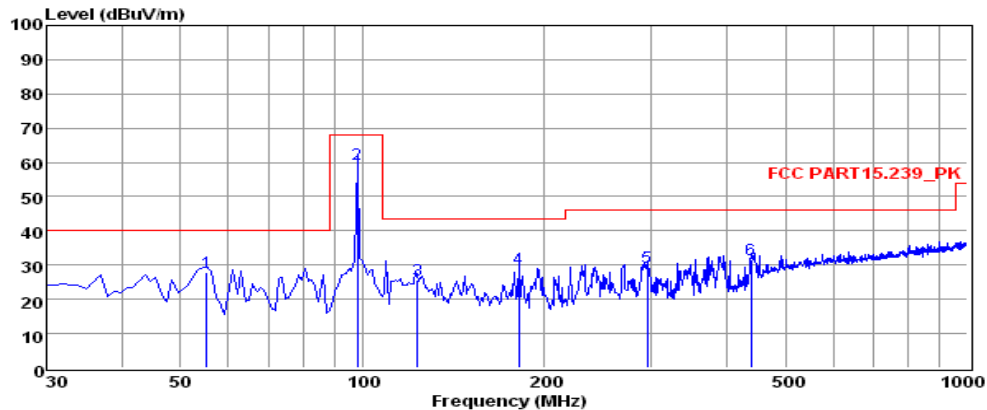
Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that ate 20db blow the official limit are not reported



Env./Ins: 24°C/56%
 EUT: Fm transmitter
 M/N: KF-100
 Power Rating: DC 5.0V
 Test Mode: TX-98
 Operator: KYLE
 Memo:
 pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	30.97	13.64	0.39	12.32	26.35	40.00	-13.65	QP
2	50.37	13.16	0.54	13.23	26.93	40.00	-13.07	QP
3	98.00	45.84	0.61	13.03	59.48	68.00	-8.52	QP
4	134.76	22.74	0.74	8.58	32.06	43.50	-11.44	QP
5	198.78	16.87	0.84	10.57	28.28	43.50	-15.22	QP
6	293.84	16.63	1.08	12.94	30.65	46.00	-15.35	QP

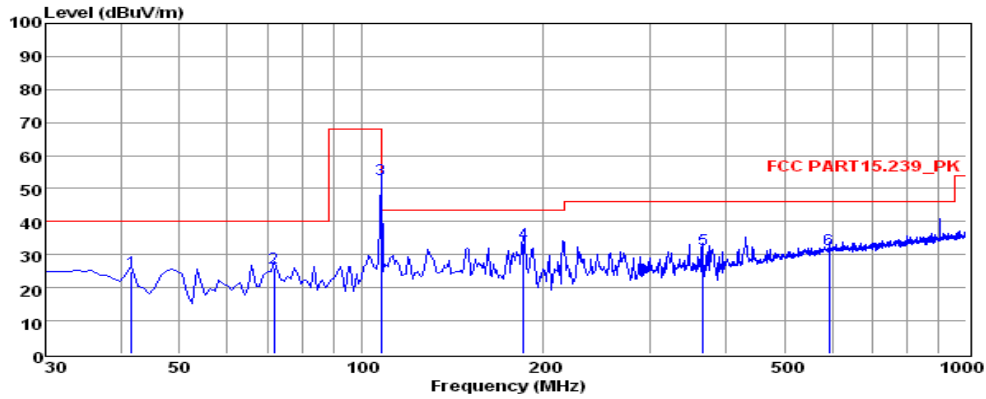
Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that ate 20db blow the official limit are not reported



Env./Ins: 24°C/56%
 EUT: Fm transmitter
 M/N: KF-100
 Power Rating: DC 5.0V
 Test Mode: TX-98
 Operator: KYLE
 Memo:
 pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	55.22	14.26	0.46	13.01	27.73	40.00	-12.27	QP
2	98.00	45.98	0.61	13.03	59.62	68.00	-8.38	QP
3	123.12	14.95	0.70	10.00	25.65	43.50	-17.85	QP
4	181.32	18.14	0.89	9.80	28.83	43.50	-14.67	QP
5	295.78	15.22	1.08	12.98	29.28	46.00	-16.72	QP
6	438.37	14.53	1.41	15.55	31.49	46.00	-14.51	QP

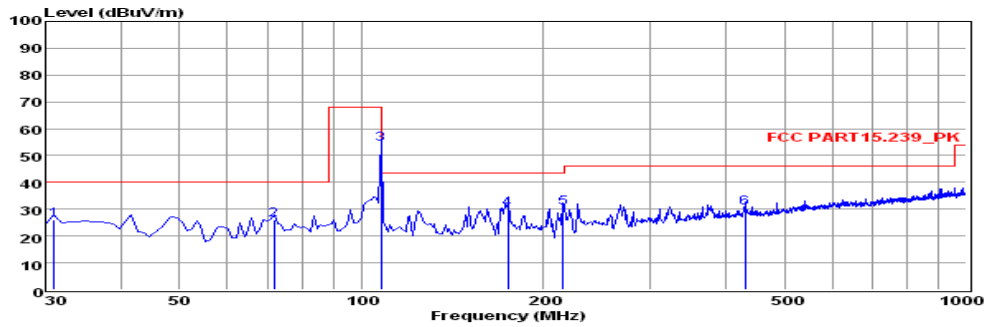
Note: 1. All readings are Quasi-peak values.
 2. Measured= Reading + Antenna Factor + Cable Loss
 3. The emission that ate 20db blow the official limit are not reported



Env./Ins: 24°C/56%
 EUT: Fm transmitter
 M/N: KF-100
 Power Rating: DC 5.0V
 Test Mode: TX-107.9
 Operator: KYLE
 Memo:
 pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	41.64	10.83	0.50	13.57	24.90	40.00	-15.10	QP
2	71.71	16.96	0.55	8.36	25.87	40.00	-14.13	QP
3	107.90	39.62	0.68	12.47	52.77	68.00	-15.23	QP
4	185.20	22.55	0.70	10.14	33.39	43.50	-10.11	QP
5	366.59	15.85	1.14	14.48	31.47	46.00	-14.53	QP
6	593.57	11.87	1.51	18.33	31.71	46.00	-14.29	QP

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



Env./Ins: 24°C/56%
 EUT: Fm transmitter
 M/N: KF-100
 Power Rating: DC 5.0V
 Test Mode: TX-107.9
 Operator: KYLE
 Memo:
 pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	30.97	13.30	0.39	12.32	26.01	40.00	-13.99	QP
2	71.71	17.06	0.55	8.36	25.97	40.00	-14.03	QP
3	107.90	40.94	0.68	12.47	54.09	68.00	-13.91	QP
4	174.53	20.22	0.73	9.29	30.24	43.50	-13.26	QP
5	215.27	18.49	0.95	11.05	30.49	43.50	-13.01	QP
6	430.61	13.82	1.28	15.52	30.62	46.00	-15.38	QP

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

Note: The result below 30MHz and above 1GHz is too low so there is no record. The test setup show in the test setup photograph is the worst case.

B. Band Edge Data*FM 88.1MHz*

Freq. (MHz)	Ant. Pol. (H/V)	Emission Level (dBuV)	Limit 3m(dBuV/m)	Margin	Note
86.559	H	9.20	40	-30.80	QP
88.0000	H	36.90	40	-3.10	OP
88.2000	H	36.72	43.5	-6.78	OP
89.7840	H	9.20	43.5	-34.30	OP
86.1765	V	9.20	40	-30.80	OP
88.0000	V	36.68	40	-3.32	OP
88.2000	V	36.54	43.5	-6.96	OP
88.7840	V	8.99	43.5	-34.51	OP

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.239

Note: (1) All Readings are Peak Value.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

FM 107.9MHz

Freq. (MHz)	Ant. Pol. (H/V)	Emission Level (dBuV)	Limit 3m(dBuV/m)	Margin	Note
106.7490	H	8.00	43.5	-35.50	QP
107.8000	H	39.10	43.5	-4.40	OP
108.0000	H	39.00	43.5	-4.50	OP
108.8549	H	8.00	43.5	-35.50	OP
106.1120	V	7.90	43.5	-35.60.	OP
107.8000	V	37.00	43.5	-6.50	OP
108.0000	V	34.59	43.5	-8.91	OP
108.9220	V	7.88	43.5	-34.70	OP

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.239

Note: (1) All Readings are Peak Value.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

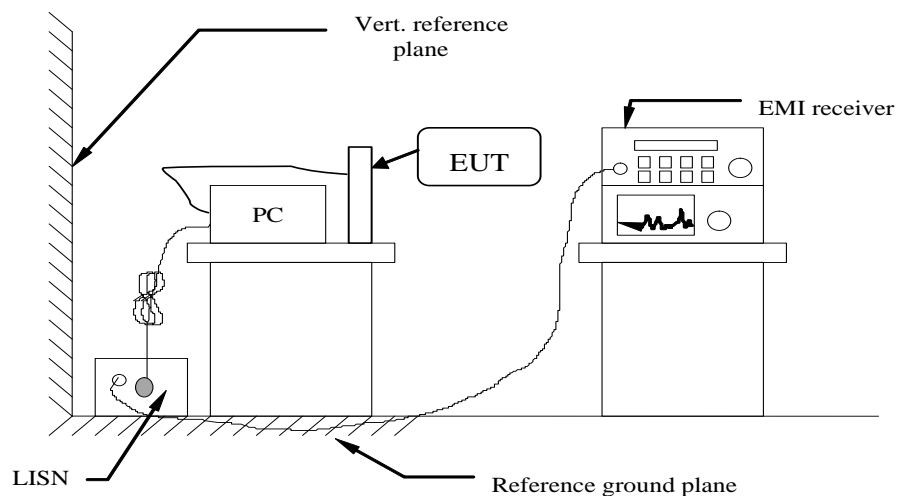
8. POWER LINE CONDUCTED EMISSIONS

8.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

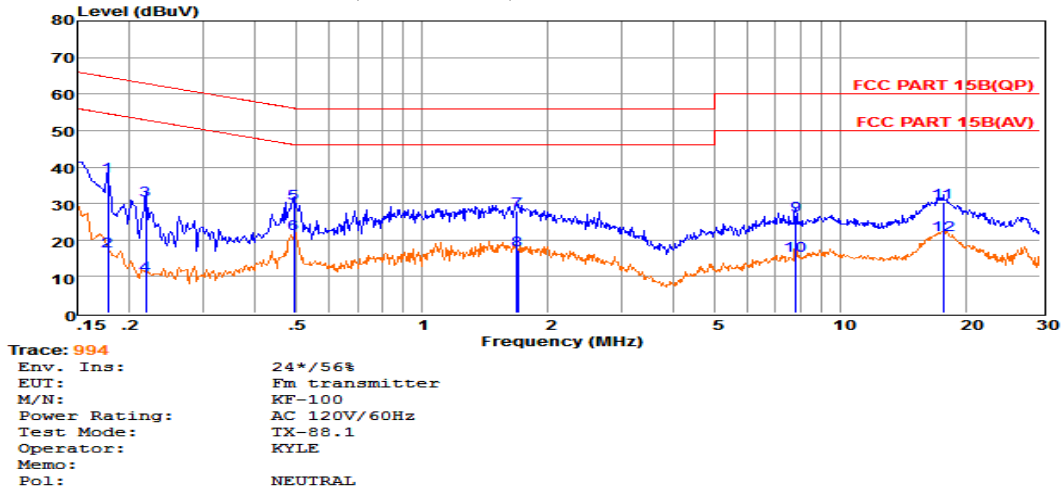
8.2 Block Diagram of Test Setup



8.3 Test Results

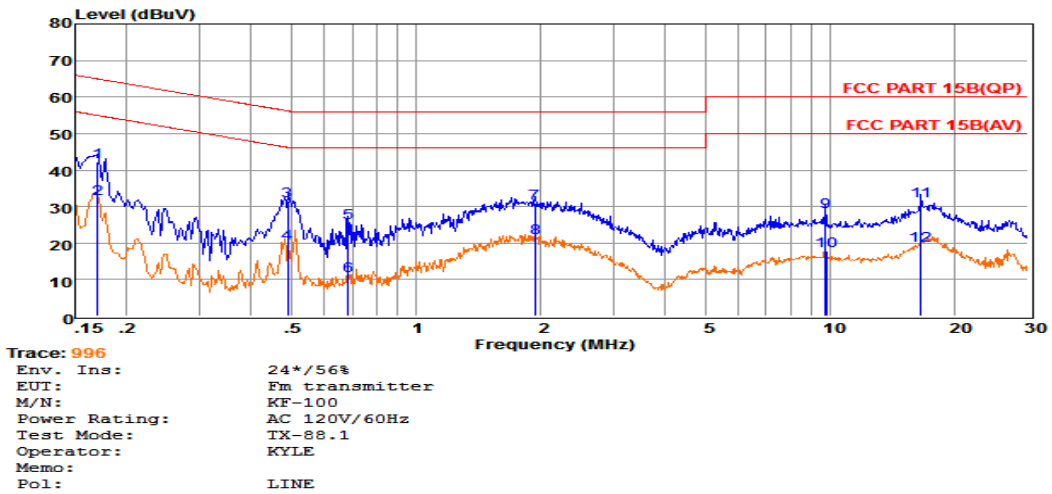
PASS.

Test result Low Channel(120V/60Hz)



Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1 0.17772	17.74	9.64	0.02	10.00	37.40	64.59	-27.19	QP
2 0.17782	-2.75	9.63	0.02	10.00	16.90	54.59	-37.69	Average
3 0.21851	11.27	9.59	0.03	10.00	30.89	62.88	-31.99	QP
4 0.21861	-9.36	9.59	0.03	10.00	10.26	52.87	-42.61	Average
5 0.49411	10.25	9.62	0.04	10.00	29.91	56.10	-26.19	QP
6 0.49421	2.14	9.62	0.04	10.00	21.80	46.10	-24.30	Average
7 1.68913	8.31	9.63	0.05	10.00	27.99	56.00	-28.01	QP
8 1.69013	-2.32	9.63	0.05	10.00	17.36	46.00	-28.64	Average
9 7.81016	6.96	9.70	0.07	10.00	26.73	60.00	-33.27	QP
10 7.81116	-3.92	9.70	0.07	10.00	15.85	50.00	-34.15	Average
11 117.56779	10.46	9.79	0.11	10.00	30.36	60.00	-29.64	QP
12 117.56879	1.44	9.79	0.11	10.00	21.34	50.00	-28.66	Average

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

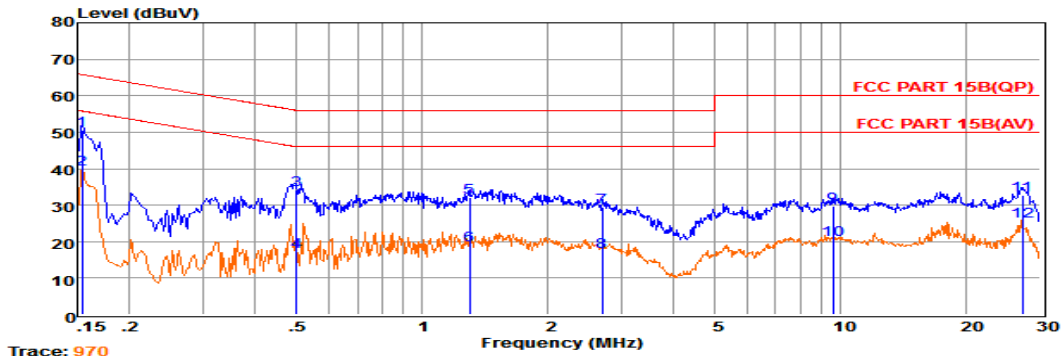


Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1 0.17034	22.72	9.60	0.02	10.00	42.34	64.94	-22.60	QP
2 0.17044	12.37	9.60	0.02	10.00	31.99	54.94	-22.95	Average
3 0.48890	11.92	9.62	0.04	10.00	31.58	56.19	-24.61	QP
4 0.48900	0.19	9.62	0.04	10.00	19.85	46.18	-26.33	Average
5 0.68626	5.83	9.64	0.04	10.00	25.51	56.00	-30.49	QP
6 0.68636	-8.65	9.64	0.04	10.00	11.03	46.00	-34.97	Average
7 1.93860	11.10	9.64	0.05	10.00	30.79	56.00	-25.21	QP
8 1.93960	1.65	9.64	0.05	10.00	21.34	46.00	-24.66	Average
9 9.75670	8.92	9.69	0.08	10.00	28.69	60.00	-31.31	QP
10 9.75770	-2.04	9.69	0.08	10.00	17.73	50.00	-32.27	Average
11 116.57318	11.58	9.73	0.11	10.00	31.42	60.00	-28.58	QP
12 116.57418	-0.57	9.73	0.11	10.00	19.27	50.00	-30.73	Average

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

Note: Only record the worst result.

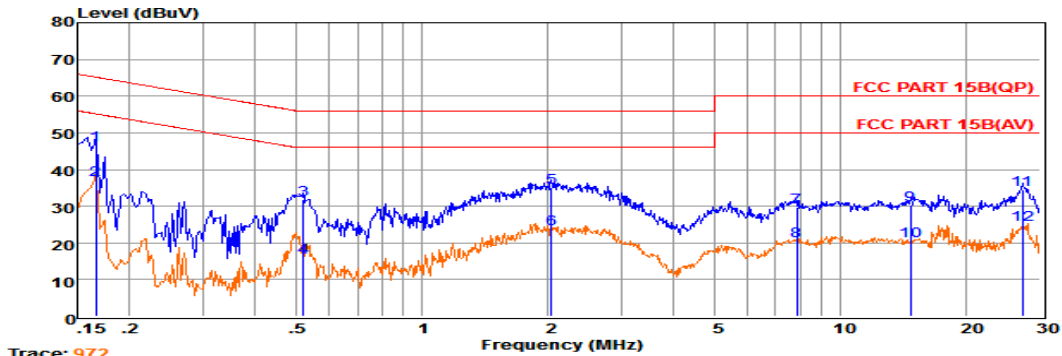
240V/60Hz



Trace: 970
 Env. Ins: 24*/56%
 EUT: Fm transmitter
 M/N: KF-100
 Power Rating: AC 240V/60Hz
 Test Mode: TX-88.1
 Operator: KYLE
 Memo:
 Pol: NEUTRAL

	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.15403	30.99	9.69	0.02	10.00	50.70	65.78	-15.08	QP
2	0.15413	20.01	9.69	0.02	10.00	39.72	55.77	-16.05	Average
3	0.50203	14.46	9.62	0.04	10.00	34.12	56.00	-21.88	QP
4	0.50213	-2.41	9.62	0.04	10.00	17.25	46.00	-28.75	Average
5	1.29602	12.51	9.63	0.05	10.00	32.19	56.00	-23.81	QP
6	1.29702	-0.58	9.63	0.05	10.00	19.10	46.00	-26.90	Average
7	2.69248	9.78	9.64	0.05	10.00	29.47	56.00	-26.53	QP
8	2.69348	-2.37	9.64	0.05	10.00	17.32	46.00	-28.68	Average
9	9.60284	10.02	9.72	0.08	10.00	29.82	60.00	-30.18	QP
10	9.60384	0.78	9.72	0.08	10.00	20.58	50.00	-29.42	Average
11	1127.27110	12.88	9.83	0.13	10.00	32.84	60.00	-27.16	QP
12	1227.27210	5.63	9.83	0.13	10.00	25.59	50.00	-24.41	Average

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



Trace: 972
 Env. Ins: 24*/56%
 EUT: Fm transmitter
 M/N: KF-100
 Power Rating: AC 240V/60Hz
 Test Mode: TX-88.1
 Operator: KYLE
 Memo:
 Pol: LINE

	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.16589	27.22	9.59	0.02	10.00	46.83	65.16	-18.33	QP
2	0.16599	17.70	9.59	0.02	10.00	37.31	55.16	-17.85	Average
3	0.52099	12.04	9.62	0.04	10.00	31.70	56.00	-24.30	QP
4	0.52109	-3.62	9.62	0.04	10.00	16.04	46.00	-29.96	Average
5	2.03328	15.40	9.64	0.05	10.00	35.09	56.00	-20.91	QP
6	2.03428	4.01	9.64	0.05	10.00	23.70	46.00	-22.30	Average
7	7.85165	9.87	9.68	0.07	10.00	29.62	60.00	-30.38	QP
8	7.85265	0.74	9.68	0.07	10.00	20.49	50.00	-29.51	Average
9	14.67176	10.59	9.71	0.10	10.00	30.40	60.00	-29.60	QP
10	1014.67276	0.69	9.71	0.10	10.00	20.50	50.00	-29.50	Average
11	1127.27110	14.57	9.71	0.13	10.00	34.41	60.00	-25.59	QP
12	1227.27210	5.12	9.71	0.13	10.00	24.96	50.00	-25.04	Average

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

9. ANTENNA REQUIREMENT

9.1 Standard Applicable

According to antenna requirement of §15.203.

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be re-placed by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

9.2 Antenna Connected Construction

7.2.1. Standard Applicable

According to § 15.203 & RSS-Gen, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

7.2.2. Antenna Connector Construction

The directional gains of antenna used for transmitting is 0dBi, and the antenna is connect to PCB board and no consideration of replacement. Please see EUT photo for details.

7.2.3. Results: Compliance.

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