Unil@b Page 1 of 22

FCC Part 15 Subpart C Test Report for NFC

Product Name : Android Moblie Data Terminal

Model Name : MX-5050-1D, MX-5050-2D,

MX-5050-EX

Prepared for:

Mexxen Technology(ShangHai)INC. Unit B,12F,Building 11,No. 518,xinzhuan Rd., Songjiang District,Shanghai,China

TEL: +86-21-64955599 FAX: +86-21-64959598

Prepared by:

Unilab (Shanghai) Co., Ltd FCC 2.948 register number is 714465 No.1350, Lianxi Rd. Pudong New District, Shanghai, China

> TEL: +86-21-50275125 FAX: +86-21-50275126

Report Number : UL32220150710FCC009-2

Date of Report : 08-17-2015

Date of Test : 07-17-2015~08-17-2015

Notes:

The test results only relate to these samples which have been tested. Partly using this report will not be admitted unless been allowed by Unilab. Unilab is only responsible for the complete report with the reported stamp of Unilab.

Unilab(Shanghai) Co.,Ltd.

Report No.: UL32220150710FCC009-2



Applicant: Mexxen Technology(ShangHai)INC.

Unit B,12F,Building 11,No. 518,xinzhuan Rd., Songjiang

District, Shanghai, China

Manufacturer: Mexxen Technology(ShangHai)INC.

Unit B,12F,Building 11,No. 518,xinzhuan Rd., Songjiang

District, Shanghai, China

Product Name: Android Moblie Data Terminal

Brand Name: MEXXEN

Model Name: MX-5050-1D

Model Description: See Part1.1 Note.

FCC ID: 2ADXO-MX-5050

Serial Number: N/A

EUT Voltage: AC input: AC 100~240V 50/60Hz 0.4A

Output: 5V 2A

Date of Receipt: 07-10-2015

Date of Test: 07-17-2015~08-17-2015

Test Standard: FCC CFR Tile 47 Part 15 Subpart C

ANSI C 63.4: 2009

Test Result: PASS

Prepared by :

(Technical Engineer: Jeffrey Wang)

Reviewed by: Forest cao

(Senior Engineer: Forest Cao)

Approved by :

(Supervisor: Eva Wang)



TABLE OF CONTENTS

1	CENE	RAL INFORMATION	1
١.		EUT DESCRIPTION	
		TEST MODE	
2		METHODOLOGY	
۷.		EUT CONFIGURATION	
		EUT EXERCISE	
		GENERAL TEST PROCEDURES	
		FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS	
3		VIACL SUMMARY	
0.		SUMMARY OF STANDARDS AND TEST RESULTS	
		TEST UNCERTAINTY	
		TEST EQUIPMENT LIST	
		TEST FACILITY	
		TEST SETUP CONFIGURATION	
4.		BANDWIDTH	
		TEST SETUP	
		LIMITS	
		TEST PROCEDURE	
		TEST RESULTS	
5.	IN-BAI	ND EMISSION (RADIATION)	9
		TEST SETUP	
	5.2	LIMITS	9
	5.3	TEST PROCEDURE	9
	5.4	ResultS & Performance	. 10
6.	OUT-C	PF-BAND EMISSION (RADIATION)	. 12
	6.1	TEST SETUP	. 12
	6.2	LIMITS	. 12
		TEST PROCEDURE	
	6.4	RESULTS & PERFORMANCE	. 14
7.	- •	UENCY STABILITY	
		TEST SETUP	
		LIMITS	
		TEST PROCEDURE	
		RESULTS & PERFORMANCE	
8.		WER LINE CONDUCTED EMISSIONS	
		TEST SETUP	
		LIMITS	
		TEST PROCEDURE	
		RESULTS & PERFORMANCE	
		1 PHOTOGRAPHS OF TEST SETUP	
API	PENDIX	2 PHOTOGRAPHS OF EUT	. 22

1. GENERAL INFORMATION

1.1 EUT DESCRIPTION

Product Name:	Android Moblie Data Terminal				
Model Name:	MX-5050-1D				
Hardware Version:	V3.0				
Software Version:	GST_A82_M30_3110955E_MUL_V02_2015 0619				
RF Exposure	Uncontrolled				
Environment:					
NFC					
Frequency Range:	13.56MHz				
Type of Modulation:	ASK				
Antenna Type:	Internal				
Component					
AC Adapter:	Input: AC 100-240V 50/60Hz 0.4A				
	Output: DC 5V 2A				

Note: We Mexxen Technology(ShangHai)INC.hereby declaration that the Model MX-5050-1D,MX-5050-2D,and Model MX-5050-EX, have the same PCBA design, and same accessories;And no any other difference except for model name.

1.2 TEST MODE

Unilab has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode :	
Mode 1: NFC TX	

Note:1. TX means Transmitte(continuously transmitting).

2. For the radiated emission test, every axis (X, Y, Z) was verified, and show the worst esult on this report.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.225.

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.

2.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4: 2009 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. 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 13.1.4.1 of ANSI C63.4: 2009.

2.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110 10.495 - 0.505 2.1735 - 2.1905 4.125 - 4.128 4.17725 - 4.17775 4.20725 - 4.20775 6.215 - 6.218 6.26775 - 6.26825 6.31175 - 6.31225 8.291 - 8.294 8.362 - 8.366 8.37625 - 8.38675 8.41425 - 8.41475 12.29 - 12.293 12.51975 - 12.52025	16.42 - 16.423 16.69475 - 16.69525 16.80425 - 16.80475 25.5 - 25.67 37.5 - 38.25 73 - 74.6 74.8 - 75.2 108 - 121.94 123 - 138 149.9 - 150.05 156.52475 - 156.52525 156.7 - 156.9 162.0125 - 167.17 167.72 - 173.2 240 - 285	399.9 - 410 608 - 614 960 - 1240 1300 - 1427 1435 - 1626.5 1645.5 - 1646.5 1660 - 1710 1718.8 - 1722.2 2200 - 2300 2310 - 2390 2483.5 - 2500 2655 - 2900 3260 - 3267 3332 - 3339 3345.8 - 3358	4.5 - 5.15 5.35 - 5.46 7.25 - 7.75 8.025 - 8.5 9.0 - 9.2 9.3 - 9.5 10.6 - 12.7 13.25 - 13.4 14.47 - 14.5 15.35 - 16.2 17.7 - 21.4 22.01 - 23.12 23.6 - 24.0 31.2 - 31.8 36.43 - 36.5
12.57675 - 12.57725 13.36 - 13.41	322 - 335.4	3600 - 4400	(2)

- 1 Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
- 2 Above 38.6
- (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

3. TECHNIACL SUMMARY

3.1 SUMMARY OF STANDARDS AND TEST RESULTS

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

Test Item	FCC	Result
20 dB bandwidth	§2.1049	Р
In-Band Emissions	§15.225 (a) (b) (c)	Р
Out-Of-Band Emissions	§15.225 (d) §15.209 (a)	Р
Frequency Stability	§15.225 (e)	Р
AC Power Line Conducted Emissions	§15.207 (a)	Р

Note: P means pass, F means failure, N/A means not applicable

3.2 TEST UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Value (dB)
Conducted disturbance	3.4
Radiated disturbance	4.2

3.3 TEST EQUIPMENT LIST

Equipment	Manufacturer	Model	Serial No.	Due Date
Receiver	Agilent	N9038A	MY51210142	11/11/2015
Loop Antenna	Schwarzbeck	FMZB1519	1519-020	03/25/2016
LISN	R&S	ENV216	100069	07/27/2016
3m Chamber & Accessory Equipment	ETS-LINDGREN	FACT-3	CT-0000336	11/26/2017
DC Power Supply	Agilent	6612C	MY43002989	03/02/2016
Temperature Chamber	WEISS	DU/20/40	58226017340050	12/01/2016
Biconilog Antenna	Schwarzbeck	VULB 9160	3316	09/19/2016

3.4 TEST FACILITY

All test facilities used to collect the test data are located at No. 1350, Lianxi Rd. Pudong New District, Shanghai, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4: 2009, CISPR 16-1-1 and other equivalent standards. The laboratory is compliance with the requirements of the ISO/IEC/E 17025.

3.5 TEST SETUP CONFIGURATION

The information contained within this report is intended to show verification of compliance of the EUT to the requirements of CFR 47 FCC Part 15.247. Unilab has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report.

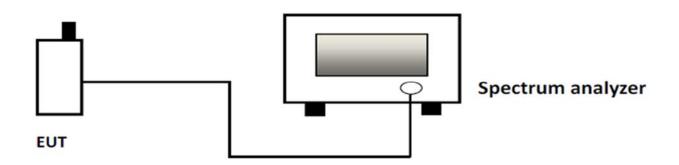
Unilab(Shanghai) Co.,Ltd.

Report No.: UL32220150710FCC009-2

Unilab Page 7 of 22

4. 20DB BANDWIDTH

4.1 TEST SETUP



4.2 LIMITS

The 20dB bandwidth of the emissions in the band 13.553MHz~13.567MHz.

4.3 TEST PROCEDURE

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a channel

RBW ≥ 1% of the 20 dB bandwidth

VBW ≥ RBW

Sweep = auto

Detector function = peak

Trace = max hold

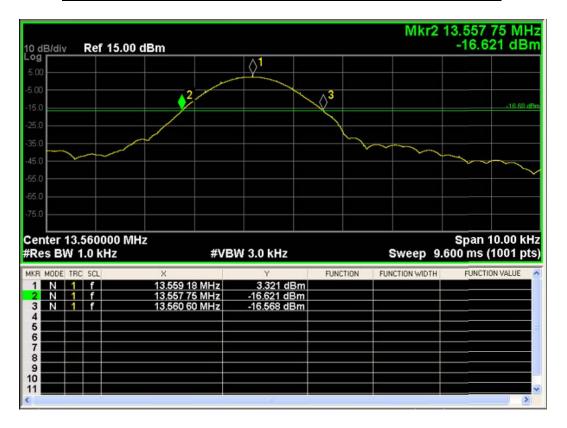
The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission.

Unilab(Shanghai) Co.,Ltd. Report No.: UL32220150710FCC009-2



4.4 TEST RESULTS

Channel	20dB bandwidth (MHz)
13.56MHz	0.00285



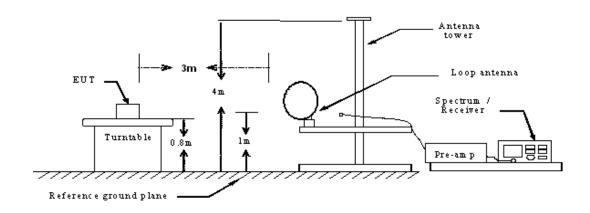
 F_{low} =13.55775MHz(>13.553MHz);

F_{high}=13.56060MHz(<13.567MHz);

20dB bandwidth=13.56060-13.55775=0.00285MHz.

5. IN-BAND EMISSION (RADIATION)

5.1 TEST SETUP



5.2 LIMITS

Frequency (MHz)	Limits(uV/m) At 30m	Limits(dBuV/m) At 3m
13.110-13.4	106	80.5
13.410-13.5	334	90.5
13.553-13.5	15848	124
13.567-13.7	334	90.5
13.710-14.0	106	80.5

Notes: the calculate formula for below 30MHz

L2 = 20lg (L1) + 40lg (d1/d2)

L2: is the specified limit in dB microvolts per metre at distance d2. L1: is the specified limit in microvolts per metre at distance d1. For For example:

L1 = 106 (μ V/m), d1 = 30 (m), d2 = 3 (m), so L2 as follows: 20lg(106) +40lg(30/3) = 80.5(dB μ V/m)

5.3 TEST PROCEDURE

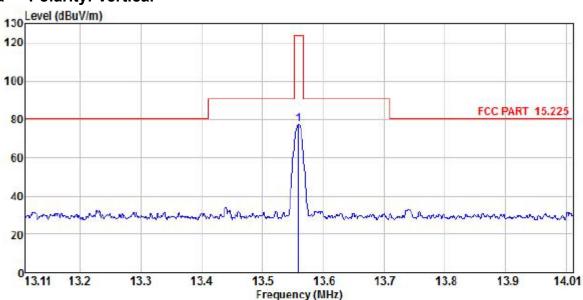
Spurious emissions from the EUT are measured in the frequency range of 13.11MHz to 14.01 MHz using a tuned receiver and a shielded loop antenna. The antenna was positioned 3 meters horizontally from the EUT. The RBW of the spectrum analyzer is set 9KHz. Measurements have been made in all three orthogonal axes and the shielded loop antenna was rotated to locate the maximum of the emissions. The emission limits are based on measurements employing a CISPR quasi-peak detector.



5.4 ResultS & Performance

Test mode: Mode 1

Antenna Polarity: Vertical



Site : chamber

Condition : FCC PART 15.225 3m FMZB 1519 VERTICAL

EUT :

Model Name :

Temp/Humi : 23 °C / 54 % Power Rating: AC 120V / 60Hz

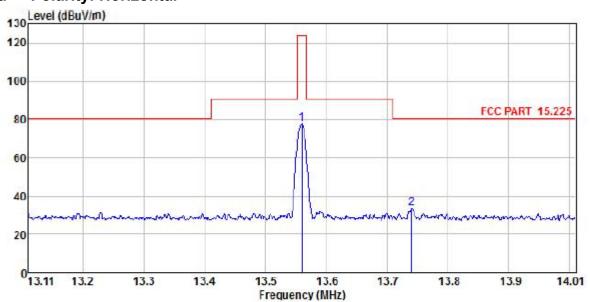
Mode : NFC TX

Memo :



Test mode: Mode 1

Antenna Polarity: Horizontal



Site : chamber

Condition : FCC PART 15.225 3m FMZB 1519 HORIZONTAL

EUT : Model Name :

Temp/Humi : 23 °C / 54 % Power Rating: AC 120V / 60Hz

Mode : NFC TX

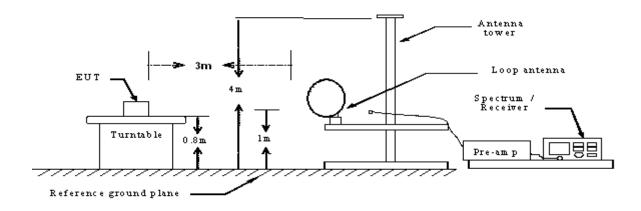
Memo

	Freq		Antenna Factor				Limit Line		Remark
10		dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 pp	13.56	57.38	19.51	0.95	0.00	77.84	124.00	-46.16	Peak
2	13.74	12.91	19.52	0.95	0.00	33.38	80.50	-47.12	Peak

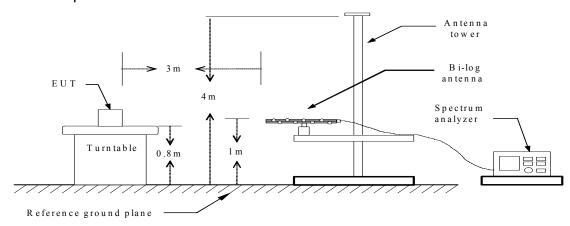
6. OUT-OF-BAND EMISSION (RADIATION)

6.1 TEST SETUP

Radiated Spurious Measurement: below 30MHz



Radiated Spurious Measurement: below 1GHz



6.2 LIMITS

Frequency (MHz)	Limits (uV/m)	Measurement Distance (Meters)	Limits(dBu√/m) at 3m
0.009-0.490	2400/F(KHz)	300	128.5~93.80
0.490-1.705	24000/F(KHz)	30	73.80~63.00
1.705-30.0	30	30	69.5
30~88	100	3	40
88~216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

Notes: the calculate formula for below 30MHz

L2 = 20lg (L1) + 40lg (d1/d2)

L2: is the specified limit in dB microvolts per metre at distance d2.

L1: is the specified limit in microvolts per metre at distance d1.

For example:

L1 = 2400/9 (μ V/m), d1 = 300 (m), d2 = 3 (m), so L2 as follows:

 $20lg (2400/9) + 40lg(300/3) = 128.5(dB\mu V/m)$

Unilab(Shanghai) Co.,Ltd.

Report No.: UL32220150710FCC009-2



6.3 TEST PROCEDURE

Radiated Emission (9 kHz - 30 MHz):

Spurious emissions from the EUT are measured in the frequency range of 9 kHz to 30 MHz using a tuned receiver and a shielded loop antenna. The antenna was positioned 3 meters horizontally from the EUT. The RBW of the spectrum analyzer is set to 200Hz (measured frequency range was 9KHz~150KHz) or 9KHz (measured frequency range was 150KHz~30MHz). Measurements have been made in all three orthogonal axes and the shielded loop antenna was rotated to locate the maximum of the emissions. The emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz (these two bands employing a average detector).

Radiated Emission (30 MHz - 1000 MHz):

According to description of ANSI C63.4: 2009 sec.13.4, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at distance that specified for compliance the measurement to determine emission characteristics of the EUT. The EUT configuration (in X, Y and Z axis), cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated measurements. The measurement is carried out using a spectrum analyzer or receiver. The Quasi-peak detector is used and RBW is set to 120kHz. The antenna height and turn table rotation is adjusted until the maximum power value is founded on spectrum analyzer or receiver.

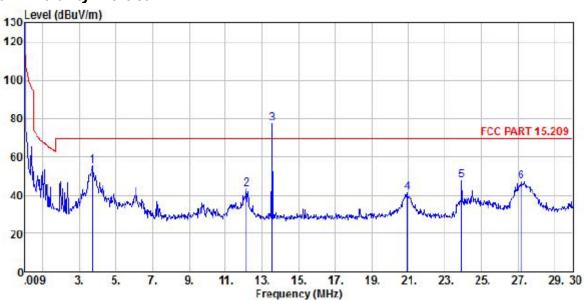


6.4 RESULTS & PERFORMANCE

From 9KHz to 30MHz:

Test mode: Mode 1

Antenna Polarity: Vertical



Site : chamber

Condition : FCC PART 15.209 3m FMZB 1519 VERTICAL

EUT : Model Name :

Temp/Humi : 23 ℃ / 54 % Power Rating: AC 120V / 60Hz

Mode : NFC TX

Memo :

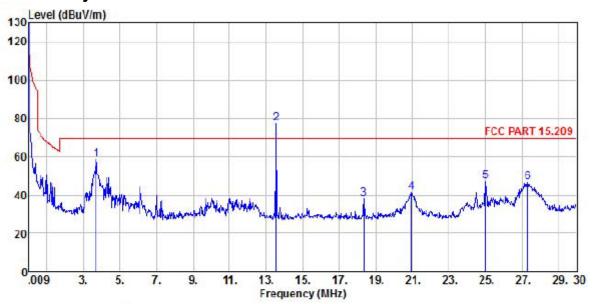
		ReadA	Antenna	Cable	Preamp		Limit	Over	
	Freq		Factor						
20	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	\$
1	3.73	35.62	19.18	0.41	0.00	55.21	69.50	-14.29	Peak
2	12.16	22.99	19.48	0.86	0.00	43.33	69.50	-26.17	Peak
3 pp	13.56	56.87	19.51	0.95	0.00	77.33	69.50	7.83	Peak
4	20.94	19.85	19.61	1.51	0.00	41.07	69.50	-28.43	Peak
5	23.91	25.99	19.59	1.93	0.00	47.51	69.50	-21.99	Peak
6	27.18	25.60	19.58	2.05	0.00	47.23	69.50	-22.27	Peak

Note: 13.56 MHz was fundamental signal which can be ignored.



Test mode: Mode 1

Antenna Polarity: Horizontal



Site : chamber

Condition : FCC PART 15.209 3m FMZB 1519 HORIZONTAL

EUT : Model Name :

Temp/Humi : 23 $^{\circ}\mathbb{C}$ / 54 % Power Rating: AC 120V / 60Hz

Mode : NFC TX

Memo :

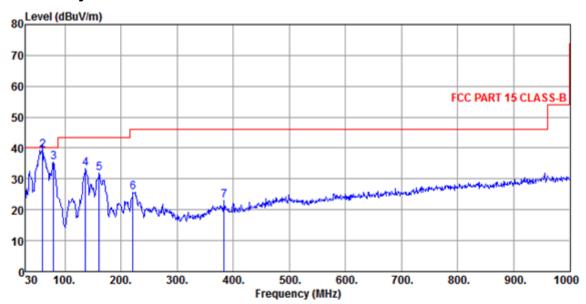
		ReadAntenna		Cable Prea	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
207	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	A.
1	3.70	38.77	19.19	0.41	0.00	58.37	69.50	-11.13	Peak
2 pp	13.56	56.83	19.51	0.95	0.00	77.29	69.50	7.79	Peak
3	18.36	17.02	19.60	1.36	0.00	37.98	69.50	-31.52	Peak
4	20.94	19.98	19.61	1.51	0.00	41.20	69.50	-28.30	Peak
5	25.02	25.51	19.59	1.98	0.00	47.08	69.50	-22.42	Peak
6	27.33	24.81	19.58	2.07	0.00	45.45	69.50	-23.04	Peak

Note: 13.56 MHz was fundamental signal which can be ignored.



From 30MHz-1GHz
Test mode: Mode 1

Antenna Polarity: Vertical



Site : chamber

Condition : FCC PART 15 CLASS-B 3m VULB9160 VERTICAL

EUT : Model Name :

Temp/Humi : 23 ℃ / 54 % Power Rating: AC 120V/60HZ

Mode : NFC TX

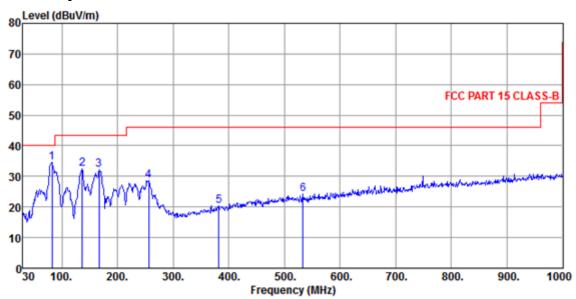
Memo

		ReadA	ntenna	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
_									
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
	FO 30	22.05	40.50	4 04	0.00	27.47	40.00	0.50	00
1 qp	59.32	23.85	12.58	1.04	0.00	37.47	40.00	-2.53	QР
2 pp	60.07	25.53	12.67	1.05	0.00	39.25	40.00	-0.75	Peak
3	79.47	25.43	8.77	1.09	0.00	35.29	40.00	-4.71	Peak
4	136.70	18.43	13.21	1.62	0.00	33.26	43.50	-10.24	Peak
5	160.95	16.35	13.77	1.69	0.00	31.81	43.50	-11.69	Peak
6	221.09	12.69	10.76	2.11	0.00	25.56	46.00	-20.44	Peak
7	384.05	5.21	14.97	2.74	0.00	22.92	46.00	-23.08	Peak



Test mode: Mode 1

Antenna Polarity: Horizontal



Site : chamber

Condition : FCC PART 15 CLASS-B 3m VULB9160 HORIZONTAL

EUT : Model Name :

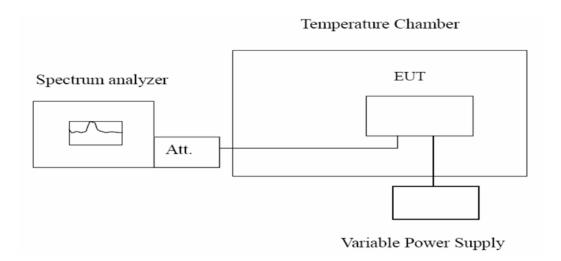
Temp/Humi : 23 ℃ / 54 % Power Rating: AC 120V/60HZ Mode : NFC TX

Memo :

	Freq		ntenna Factor				Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 pp	82.38	24.77	8.73	1.09	0.00		40.00		
2	136.70	17.71	13.21	1.62	0.00	32.54	43.50	-10.96	Peak
3	166.77	16.98	13.44	1.79	0.00	32.21	43.50	-11.29	Peak
4	256.01	14.49	12.05	2.17	0.00	28.71	46.00	-17.29	Peak
5	382.11	2.63	14.92	2.75	0.00	20.30	46.00	-25.70	Peak
6	533.43	3.66	17.54	3.13	0.00	24.33	46.00	-21.67	Peak

7. FREQUENCY STABILITY

7.1 TEST SETUP



7.2 LIMITS

The frequency tolerance of the carrier signal shall be maintained within operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

7.3 TEST PROCEDURE

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of emission

RBW = 1KHz;VBW = 3KHz;Sweep = auto;Detector function = peak;Trace = max hold

Frequency Stability Under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer **RBW** low enough to obtain the desired frequency resolution and measure EUT operating frequency as reference frequency.Turn EUT off and set the

chamber temperature to -20 $^{\circ}$ C . After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10 $^{\circ}$ C increased per stage until the highest temperature of +50 $^{\circ}$ C reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20 $^{\circ}$ C $^{\circ}$. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.Reduce the input voltage to specify extreme voltage variation (_ 15%) and endpoint, record the maximum

frequency change.

Unilab(Shanghai) Co.,Ltd. Report No.: UL32220150710FCC009-2



7.4 RESULTS & PERFORMANCE

Frequency Stability under Temperature

Voltage=3.8V

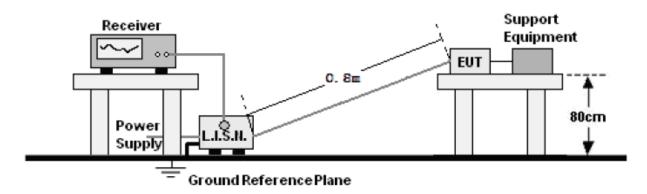
Temperature	Measurement	Deviation	Limit
Interval(°C)	Frequency(MHz)	(MHz)	(MHz)
-20	13.56025	0.00025	± 0.1356
-10	13.56033	0.00033	±0.1356
0	13.56047	0.00047	±0.1356
10	13.56068	0.00068	±0.1356
20	13.56011	0.00011	±0.1356
30	13.56061	0.00061	±0.1356
40	13.56028	0.00028	±0.1356
50	13.56035	0.00035	±0.1356

Frequency Stability under Voltage Temperature=20 $\,^{\circ}\mathrm{C}$

DC Voltage	Measurement	Deviation	Limit
(V)	Frequency(MHz)	(MHz)	(MHz)
3.2	13.56024	0.00024	\pm 0.1356
3.8	13.56055	0.00055	\pm 0.1356
4.4	13.56039	0.00039	\pm 0.1356

8. AC POWER LINE CONDUCTED EMISSIONS

8.1 TEST SETUP



8.2 LIMITS

Frequency range	Limits dB(μV)	
(MHz)	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

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

8.3 TEST PROCEDURE

According to description of ANSI C63.4: 2009 sec.13.3, the AC power line preliminary conducted emissions measurements were carried out. The preliminary conducted measurements were performed using the spectrum analyzer to observe the emission characteristics of the EUT. The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for final AC power line conducted emissions measurements. The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The EUT is connected to LISN and LISN is connected to the reference ground. All other supplemental devices are connected with EUT through other LISN. The distance between EUT and LISN is 80cm. A radio link is established between EUT and the tester. The output power of the EUT is controlled by the tester and driven to maximum value. An initial pre-scan was performed on the live L line and neutral line with peak detector (9kHz RBW). Both average detector and qausi-peak detector are performed at the frequencies with maximized peak emission.

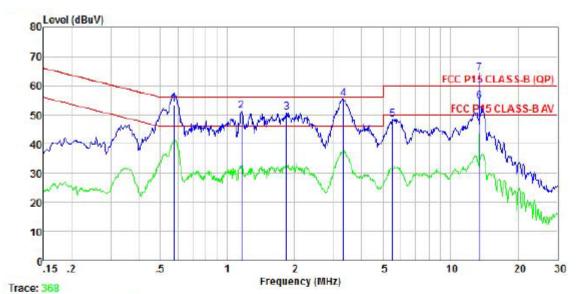
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.



8.4 RESULTS & PERFORMANCE

Test Mode:mode 1

LISN: LINE



Site : chamber

Condition : FCC P15 CLASS-B (QP) ENV216(N)-20120730 NEUTRAL

EUT : Model Name :

Temp/Humi : 23 ℃ / 54 % Power Rating: AC 120V/60HZ Mode : 802.11g CH1

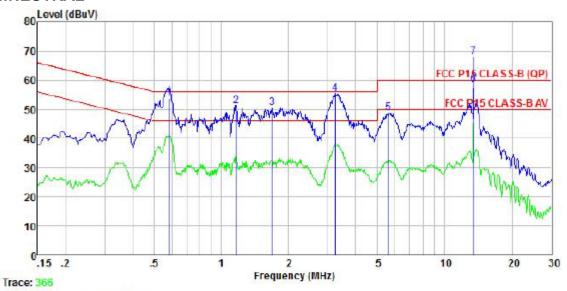
Memo :

imit Ove Line Limi dBuV d	t Remark
dBuV d	<u> </u>
6.00 -2.5	5 QP
6.00 -4.6	1 Peak
6.00 -5.2	4 Peak
6.00 -0.5	1 Peak
0.00 -11.5	4 Peak
0.00 4.5	4 Average
9 99 1 2	1 Peak
6	5.00 -4.6 5.00 -5.2 5.00 -0.5 0.00 -11.5

Note: Point "6&7" was fundamental signal which can be ignored.



Test Mode:mode 1 LISN:NEUTRAL



Site : chamber

Condition : FCC P15 CLASS-B (QP) ENV216(N)-20120730 NEUTRAL

EUT : Model Name :

Temp/Humi : 23 ℃ / 54 % Power Rating: AC 120V/60HZ

Mode : NFC Memo :

	Freq	Read Level			Preamp Factor		Limit Line		Remark
-	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1 qp	0.59	43.17	10.36	0.11	0.00	53.64	56.00	-2.36	QP
2	1.17	40.70	10.31	0.14	0.00	51.15	56.00	-4.85	Peak
3	1.69	39.87	10.31	0.15	0.00	50.33	56.00	-5.67	Peak
4	3.24	44.81	10.32	0.15	0.00	55.28	56.00	-0.72	Peak
5	5.62	38.14	10.33	0.20	0.00	48.67	60.00	-11.33	Peak
6 pp	13.56	47.72	10.52	0.24	0.00	58.48	50.00	8.48	Average
7 pk	13.56	57.11	10.52	0.24	0.00	67.87	60.00	7.87	Peak

Note: Points "6&7" were fundamental signal which can be ignored.

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

Please refer to the file named "Part 15C Setup Photos".

APPENDIX 2 PHOTOGRAPHS OF EUT

Please refer to the two files named "EUT External Photos" and "EUT Internal Photos".

---End of the report----