

FCC 47 CFR PART 15 SUBPART B

TEST REPORT

For

GSM GLOBE.COM INC

2G Mobile Phone

Test Model: Z1

List Model No.: Z1 Roma, Z1 Roma Jr, Z1 Porto, Z1 Plus, Z1 Pro

Prepared for : GSM GLOBE.COM INC
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Serial number : Prototype
Date of Test : August 06, 2018~August 07, 2018
Date of Report : August 15, 2018

**FCC TEST REPORT
FCC 47 CFR PART 15 SUBPART B**

Report Reference No. : LCS180627112AED

Date of Issue..... : August 15, 2018

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 : GSM GLOBE.COM INC

Address..... : 134 N.E 1 Street, Miami, Florida, United States 33132

Test Specification

Standard..... : FCC 47 CFR Part 15 Subpart 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..... : 2G Mobile Phone

Trade Mark..... : GOL

Test Model..... : Z1

Ratings : DC 3.7V by Rechargeable Li-ion Battery(800mAh)
 Recharged by DC 5V/500mA Travel Charger

Result : Positive

Compiled by:



Leo Lee/ Administrators

Supervised by:



Calvin Weng/ Technique principal

Approved by:



Gavin Liang/ Manager

Revision History

Revision	Issue Date	Revisions	Revised By
000	August 15, 2018	Initial Issue	Gavin Liang

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1. SUMMARY 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
Conducted disturbance at Antenna terminals	FCC 47 CFR Part 15 Subpart B	-----	N/A
***Note: N/A is an abbreviation for Not Applicable.			

Description of Test Mode(s)		
Mode 1	Playing music mode	Pre-scan
Mode 2	Camera mode	Pre-scan
Mode 3	FM(RX) mode	Pre-scan
Mode 4	Exchange data with PC mode	Record
***Note: All test modes were tested, but we only recorded the worst case in this report.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	: 2G Mobile Phone
Model Number	: Z1, Z1 Roma, Z1 Roma Jr, Z1 Porto, Z1 Plus, Z1 Pro
Model Declaration	: PCB board, structure and internal of these model(s) are the same, only model name and shell colors is different for these models.
Test Model	: Z1
Power Supply	: DC 3.7V by Rechargeable Li-ion Battery(800mAh) Recharged by DC 5V/500mA Travel Charger
Hardware Version	: HY220-MB-V1.2
Software Version	: HY20B_HY220G_GOL_31E_PA_V02_20180626
Highest Operating Frequency	: 2480MHz

2.2. External I/O

I/O Port Description	Quantity	Cable
USB Port	1	N/A
Earphone Jack	1	N/A

2.3. Support Equipment List

Manufacturer	Description	Model	Serial Number	Certificate
Lenovo	PC	B470	--	DOC
Lenovo	AC/DC ADAPTER	ADP-90DDB	--	DOC
SHENZHEN GUANGYUANSH ENG TECHNOLOGY CO.,LTD	Travel Charger	Z1	--	VOC

2.4. 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.

2.5. 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.

2.6. Measurement Uncertainty

Test	Parameters	Expanded uncertainty (U_{lab})	Expanded uncertainty (U_{cispr})
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.63 dB ± 2.35 dB	± 4.0 dB ± 3.6 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	± 2.63 dB
Radiated Emission	Level accuracy (9kHz to 30MHz)	± 3.68 dB	± 2.63 dB
Radiated Emission	Level accuracy (30MHz to 1000MHz)	± 3.48 dB	± 2.63 dB
Radiated Emission	Level accuracy (above 1000MHz)	± 3.90 dB	N/A
Mains Harmonic	Voltage	$\pm 0.510\%$	N/A
Voltage Fluctuations & Flicker	Voltage	$\pm 0.510\%$	N/A
EMF	/	$\pm 21.59\%$	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%.			

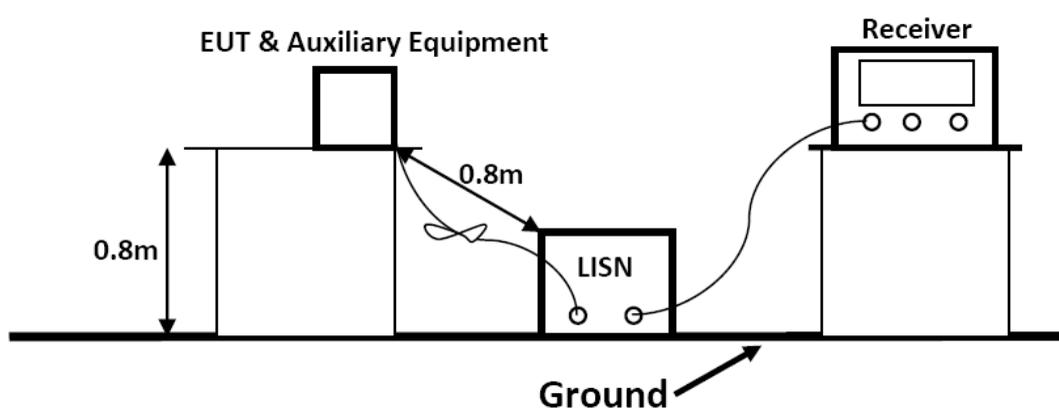
3. POWER LINE CONDUCTED EMISSION MEASUREMENT

3.1. Test Equipment

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

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESR 7	101181	2018-06-16
2	10dB Attenuator	SCHWARZBECK	MTS-IMP136	261115-001-0032	2018-06-16
3	Artificial Mains	ROHDE & SCHWARZ	ENV216	101288	2018-06-16
4	EMI Test Software	AUDIX	E3	N/A	N/A
5	ISN	SCHWARZBECK	NTFM 8158	NTFM 8158 0120	2018-06-16

3.2. Block Diagram of Test Setup



3.3. 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.

3.4. 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.

3.5. Operating Condition of EUT

- 1) Setup the EUT as shown on Section 3.2
- 2) Turn on the power of all equipments.
- 3) Let the EUT work in measuring mode and measure it.

3.6. 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.

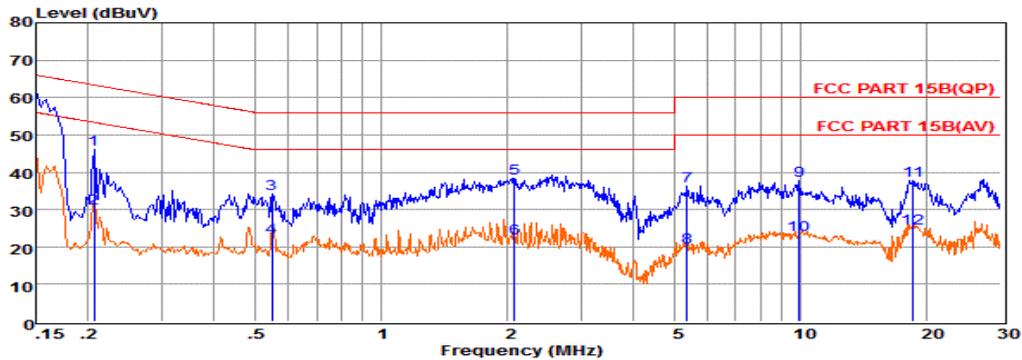
3.7. Test Results

PASS.

Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded worst case.

The test result please refer to the next page.

Model No.	Z1	Test Mode(Worst Case)	Mode 4
Environmental Conditions	23.2°C, 52.3% RH	Test Engineer	Mina Xu
Pol.	Line	Test Voltage	AC 120V/60Hz

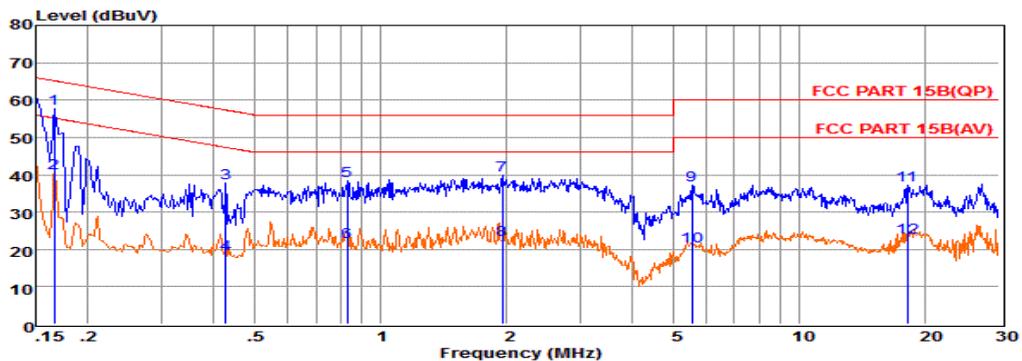


Pol: LINE

	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.21	26.41	9.63	0.03	10.00	46.07	63.36	-17.29	QP
2	0.21	10.71	9.63	0.03	10.00	30.37	53.36	-22.99	Average
3	0.55	14.56	9.63	0.04	10.00	34.23	56.00	-21.77	QP
4	0.55	3.03	9.63	0.04	10.00	22.70	46.00	-23.30	Average
5	2.08	18.76	9.64	0.05	10.00	38.45	56.00	-17.55	QP
6	2.08	2.65	9.64	0.05	10.00	22.34	46.00	-23.66	Average
7	5.36	16.69	9.66	0.06	10.00	36.41	60.00	-23.59	QP
8	5.36	0.18	9.66	0.06	10.00	19.90	50.00	-30.10	Average
9	9.91	17.92	9.69	0.08	10.00	37.69	60.00	-22.31	QP
10	9.91	3.53	9.69	0.08	10.00	23.30	50.00	-26.70	Average
11	18.52	17.86	9.75	0.11	10.00	37.72	60.00	-22.28	QP
12	18.52	5.16	9.75	0.11	10.00	25.02	50.00	-24.98	Average

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

Model No.	Z1	Test Mode(Worst Case)	Mode 4
Environmental Conditions	23.2°C, 52.3% RH	Test Engineer	Mina Xu
Pol.	Neutral	Test Voltage	AC 120V/60Hz



Pol: NEUTRAL

	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.17	37.91	9.66	0.02	10.00	57.59	65.16	-7.57	QP
2	0.17	20.68	9.66	0.02	10.00	40.36	55.16	-14.80	Average
3	0.43	18.23	9.61	0.04	10.00	37.88	57.33	-19.45	QP
4	0.43	-0.93	9.61	0.04	10.00	18.72	47.33	-28.61	Average
5	0.83	18.71	9.63	0.04	10.00	38.38	56.00	-17.62	QP
6	0.83	2.43	9.63	0.04	10.00	22.10	46.00	-23.90	Average
7	1.95	20.16	9.63	0.05	10.00	39.84	56.00	-16.16	QP
8	1.95	2.86	9.63	0.05	10.00	22.54	46.00	-23.46	Average
9	5.53	17.35	9.67	0.06	10.00	37.08	60.00	-22.92	QP
10	5.54	1.14	9.67	0.06	10.00	20.87	50.00	-29.13	Average
11	18.14	17.31	9.81	0.11	10.00	37.23	60.00	-22.77	QP
12	18.14	3.35	9.81	0.11	10.00	23.27	50.00	-26.73	Average

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

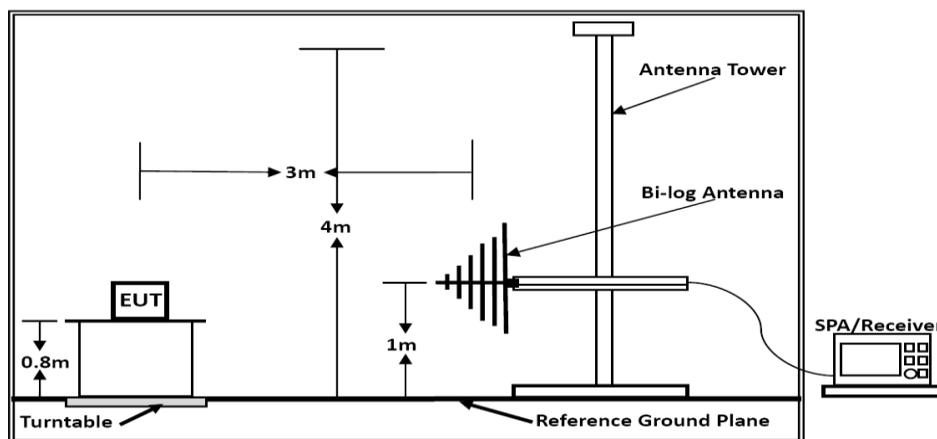
4. RADIATED EMISSION MEASUREMENT

4.1. Test Equipment

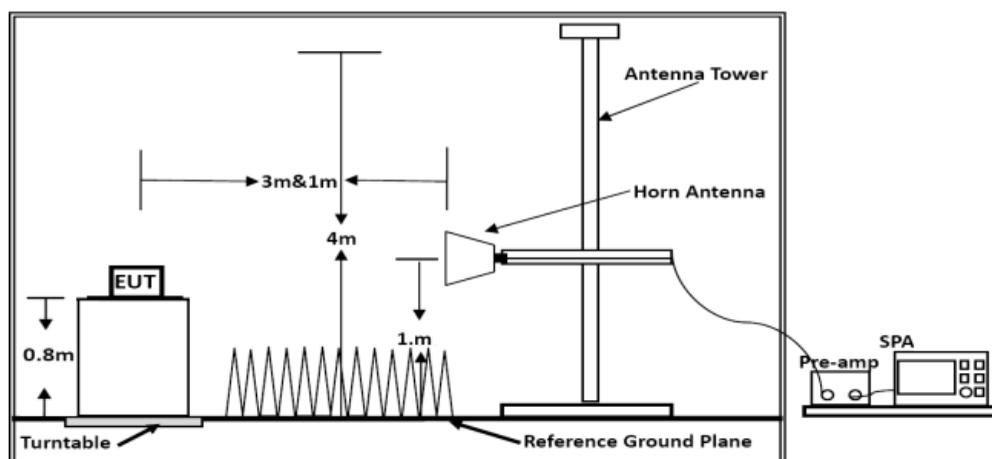
The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2018-06-16
2	EMI Test Receiver	ROHDE & SCHWARZ	ESR 7	101181	2018-06-16
3	EMI Test Software	AUDIX	E3	N/A	2018-06-16
4	Positioning Controller	MF	MF-7082	/	2018-06-16
5	AMPLIFIER	QuieTek	QTK-A2525G	CHM10809065	2017-11-17
6	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00005	2018-06-22
7	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2018-05-01
8	Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1925	2018-07-02
9	RF Cable-R03m	Jye Bao	RG142	CB021	2018-06-16
10	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2018-06-16

4.2. Block Diagram of Test Setup



Below 1GHz



Above 1GHz

4.3. Test Standard

Radiated Emission Limit (Class B)			
Frequency (MHz)	Measure Distance (Meter)	Field Strengths Limit	
		($\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)
33 ~ 88	3	100	40
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46
960 ~ 1000	3	500	54
Above 1000	3	500	54

Remark:

(1) Emission level ($\text{dB}\mu\text{V/m}$) = $20 * \log(\text{Emission level } \mu\text{V/m})$

(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.

4.4. EUT Configuration on Test

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.

4.5. Operating Condition of EUT

- 1) Setup the EUT as shown on Section 4.2
- 2) Turn on the power of all equipments.
- 3) Let the EUT work in measuring mode and measure it.

4.6. 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 C63.4-2014 on radiated emission measurement.

The bandwidth of the EMI test receiver is set at $\text{RBW/VBW}=120\text{kHz}/1000\text{kHz}$.

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

The bandwidth of the Spectrum analyzer is set at $\text{RBW/VBW}=1\text{MHz}/3\text{MHz}$.

The frequency range from 1GHz to the frequency which about 5th carrier harmonic or 40GHz is checked.

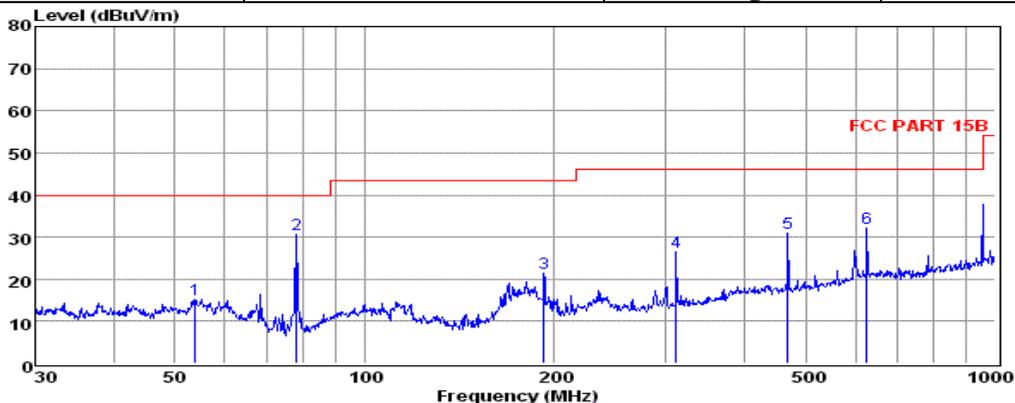
4.7. Test Results

PASS.

Note: The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

The test result please refer to the next page.

Model No.	Z1	Test Mode	Mode 4
Environmental Conditions	24.1°C, 53.6% RH	Detector Function	Quasi-peak
Pol.	Vertical	Distance	3m
Test Engineer	Mina Xu	Test Voltage	AC 120V/60Hz

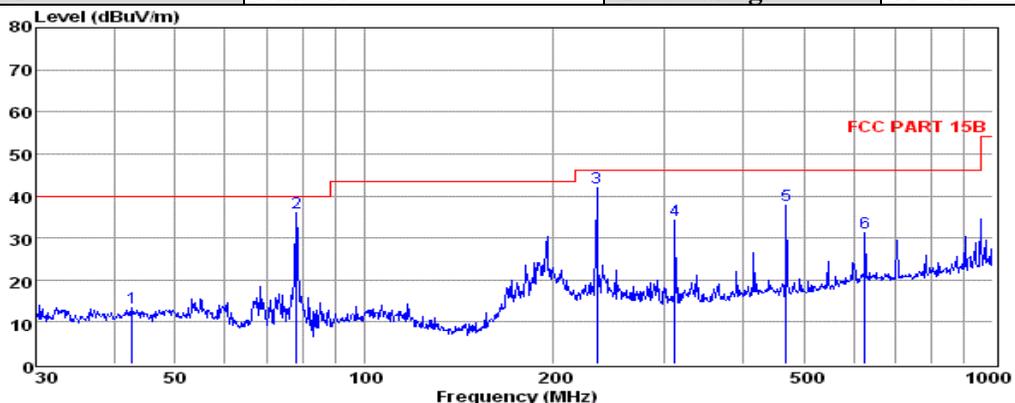


pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	53.88	1.59	0.46	13.07	15.12	40.00	-24.88	QP
2	77.87	22.07	0.47	8.22	30.76	40.00	-9.24	QP
3	192.42	10.08	0.76	10.56	21.40	43.50	-22.10	QP
4	312.18	12.13	1.09	13.22	26.44	46.00	-19.56	QP
5	468.88	13.72	1.38	15.80	30.90	46.00	-15.10	QP
6	625.08	11.96	1.49	18.54	31.99	46.00	-14.01	QP

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

Model No.	Z1	Test Mode	Mode 4
Environmental Conditions	24.1°C, 53.6% RH	Detector Function	Quasi-peak
Pol.	Horizontal	Distance	3m
Test Engineer	Mina Xu	Test Voltage	AC 120V/60Hz



pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	42.75	-0.77	0.50	13.56	13.29	40.00	-26.71	QP
2	77.87	27.42	0.47	8.22	36.11	40.00	-3.89	QP
3	234.17	29.13	0.87	11.83	41.83	46.00	-4.17	QP
4	312.18	19.98	1.09	13.22	34.29	46.00	-11.71	QP
5	468.88	20.45	1.38	15.80	37.63	46.00	-8.37	QP
6	625.08	11.20	1.49	18.54	31.23	46.00	-14.77	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 Mode: Mode 4 (Above 1GHz)				Tested by: Mina Xu			
Test Voltage: AC 120V/60Hz				Test Distance: 3m			
Detector Function: Peak + AV				Test Results: Passed			
Polarization	Frequency (MHz)	Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)	
Horizontal	1266.58	54.83	33.39	74.00	54.00	-19.17	-20.61
	1863.35	48.15	31.88	74.00	54.00	-25.85	-22.12
	2115.26	55.17	31.09	74.00	54.00	-18.83	-22.91
	3298.59	50.21	38.70	74.00	54.00	-23.79	-15.30
	4412.62	51.39	35.36	74.00	54.00	-22.61	-18.64
	5876.22	57.10	33.70	74.00	54.00	-16.90	-20.30
Vertical	1267.40	54.84	33.83	74.00	54.00	-19.16	-20.17
	1862.77	48.92	32.05	74.00	54.00	-25.08	-21.95
	2115.95	54.23	31.95	74.00	54.00	-19.77	-22.05
	3297.96	50.90	39.03	74.00	54.00	-23.10	-14.97
	4413.44	52.14	34.61	74.00	54.00	-21.86	-19.39
	5875.38	58.10	33.43	74.00	54.00	-15.90	-20.57

1. Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2. Measurements above show only up to 6 maximum emissions noted.

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 measured.

5. PHOTOGRAPHS OF TEST SETUP

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

6. PHOTOGRAPHS OF THE EUT

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

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