

FCC EMC Test Report

Report No.: JYTSZ-R01-2400452

Applicant: SWAGTEK

Address of Applicant: 10205 NW 19th Street, STE 101, Miami, FL33172. USA

Equipment Under Test (EUT)

Product Name: 4G Flip Phone

Model No.: Z3L, UF3L, Bun

Trade Mark: LOGIC, UNONU, iSWAG

FCC ID: O55243724

Applicable Standards: FCC CFR Title 47 Part 15B

Date of Sample Receipt: 05 Sep., 2024

Date of Test: 06 Sep., to 27 Sep., 2024

Date of report Issued: 23 Oct., 2024

Test Result: PASS

Project by:	<u>Vieta Zhang</u>	Date:	<u>23 Oct., 2024</u>
Reviewed by:	<u>Li Wang</u>	Date:	<u>23 Oct., 2024</u>
Approved by:	<u>James Wei</u>	Date:	<u>23 Oct., 2024</u>
	Manager		

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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1 Version

Version No.	Date	Description
00	29 Sep., 2024	Original
01	23 Oct., 2024	Update Page 13

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3 General Information

3.1 Client Information

Applicant:	SWAGTEK
Address:	10205 NW 19th Street, STE 101, Miami, FL33172. USA
Manufacturer:	SWAGTEK
Address:	10205 NW 19th Street, STE 101, Miami, FL33172. USA
Factory:	SWAGTEK
Address:	10205 NW 19th Street, STE 101, Miami, FL33172. USA

3.2 General Description of E.U.T.

Product Name:	4G Flip Phone
Model No.:	Z3L, UF3L, Bun
Power Supply:	Rechargeable Li-ion Battery DC3.7V, 950mAh
AC Adapter:	Model: Z3L Input: AC100-240V, 50/60Hz, 0.2A Output: DC 5.0V, 500Ma
Remark:	Model No.: Z3L, UF3L, Bun were identical inside, the electrical circuit design, layout, components used and internal wiring, PCBA, camera, LCD, Battery cell, antenna, etc. are all the same. Z3L, UF3L, Bun only the brand logo is different, (including GB box, and GB box labels, battery label, and handheld label logos are different).
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

3.3 Test Mode

Operating Mode	Detail Description
PC mode	Keep the EUT in Downloading mode
Charging+Recording mode	Keep the EUT in Charging+Recording mode(Worst case)
Charging+Playing mode	Keep the EUT in Charging+Playing mode
FM mode	Keep the EUT in FM receiver mode

The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

3.4 Description of Test Auxiliary Equipment

Manufacturer	Description	Model	S/N	FCC ID/DoC
Lenovo	Laptop	ThinkPad T14 Gen 1	SL10Z47277	DoC
HP	Printer	HP LaserJet P1007	VNFP409729	DoC

3.5 Description of Cable Used

Cable Type	Description	Length	From	To
Detached USB Cable	Unshielding	0.8m	EUT	PC/Adapter

3.6 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Conducted Emission for LISN (9kHz ~ 150kHz)	3.57 dB
Conducted Emission for LISN (150kHz ~ 30MHz)	3.14 dB
Radiated Emission (1GHz ~ 6GHz) (3m SAC)	4.5 dB
Radiated Emission (6GHz ~ 18GHz) (3m SAC)	4.7 dB

Note: All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

3.7 Additions to, Deviations, or Exclusions from the Method

No

3.8 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

3.9 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

3.10 Test Instruments List

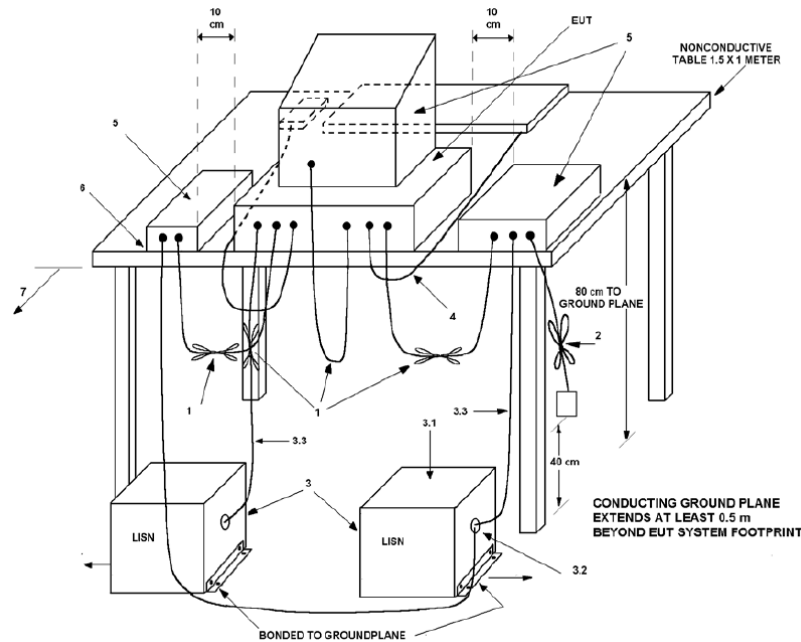
Radiated Emission(3m SAC):					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	9m*6m*6m	WXJ001-1	04-14-2021	04-13-2026
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	01-09-2024	01-08-2025
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-2	01-05-2024	01-04-2025
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXJ001-2	12-27-2023	12-26-2024
Pre-amplifier (1GHz ~ 18GHz)	SKET	LNPA_0118G-50	WXJ001-3	12-27-2023	12-26-2024
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	12-27-2023	12-26-2024
Spectrum Analyzer	Rohde & Schwarz	FSP 30	WXJ004	12-27-2023	12-26-2024
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	01-17-2024	01-16-2025
Coaxial Cable (1GHz ~ 18GHz)	JYTSZ	JYT3M-18G-NN-8M	WXG001-5	01-17-2024	01-16-2025
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Test Software	Tonscend	TS+	Version: 3.0.0.1		

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESR3	WXJ003-2	06-11-2024	06-10-2025
LISN	Schwarzbeck	NSLK 8127	QCJ001-13	12-27-2023	12-26-2024
LISN	Rohde & Schwarz	ESH3-Z5	WXJ005-1	12-27-2023	12-26-2024
LISN Coaxial Cable (9kHz ~ 30MHz)	JYTSZ	JYTCE-1G-NN-2M	WXG003-1	01-17-2024	01-16-2025
RF Switch	TOP PRECISION	RSU0301	WXG003	N/A	
Test Software	AUDIX	E3	Version: 6.110919b		

4 Measurement Setup and Procedure

4.1 Test Setup

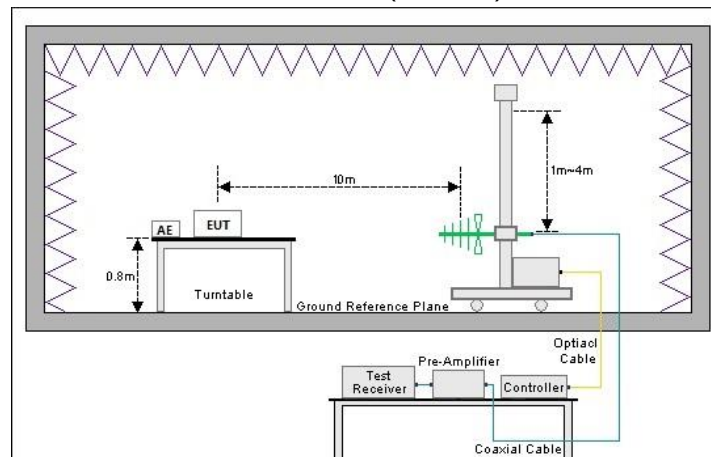
1) Conducted emission measurement:

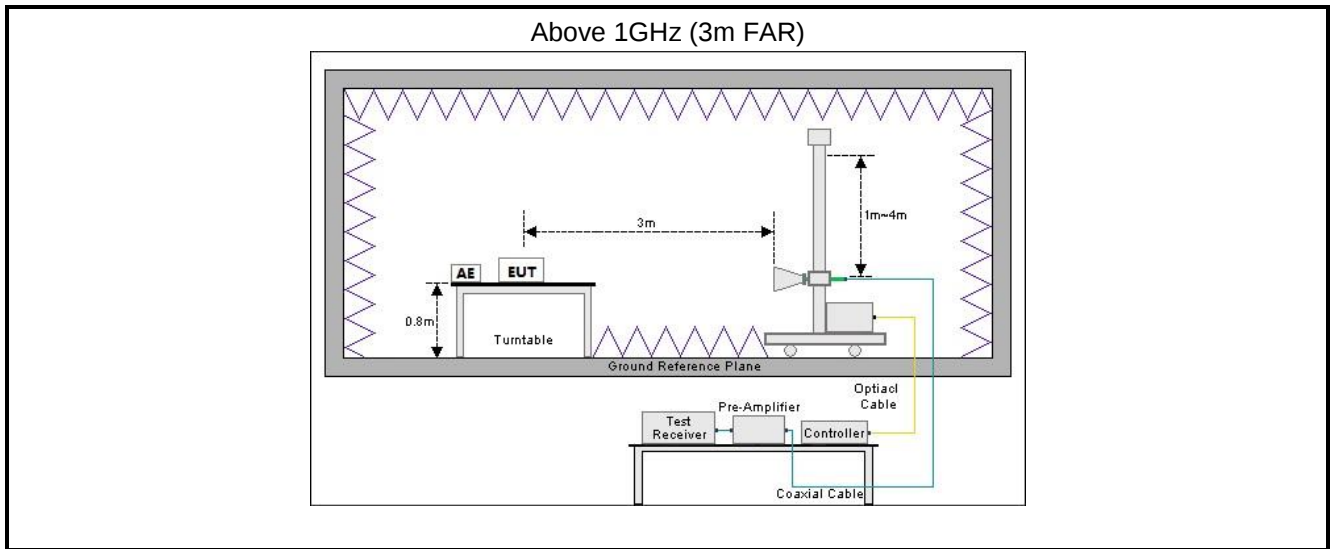


Note: The detailed descriptions please refer to Figure 8 of ANSI C63.4:2014.

2) Radiated emission measurement:

Below 1GHz (3m SAC)





4.2 Test Procedure

Test method	Test step
Conducted emission	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4 on conducted measurement.
Radiated emission	For below 1GHz: 1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 10 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested, and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. For above 1GHz: 1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested, and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.

5 Test Results

5.1 Summary

5.1.1 Clause and data summary

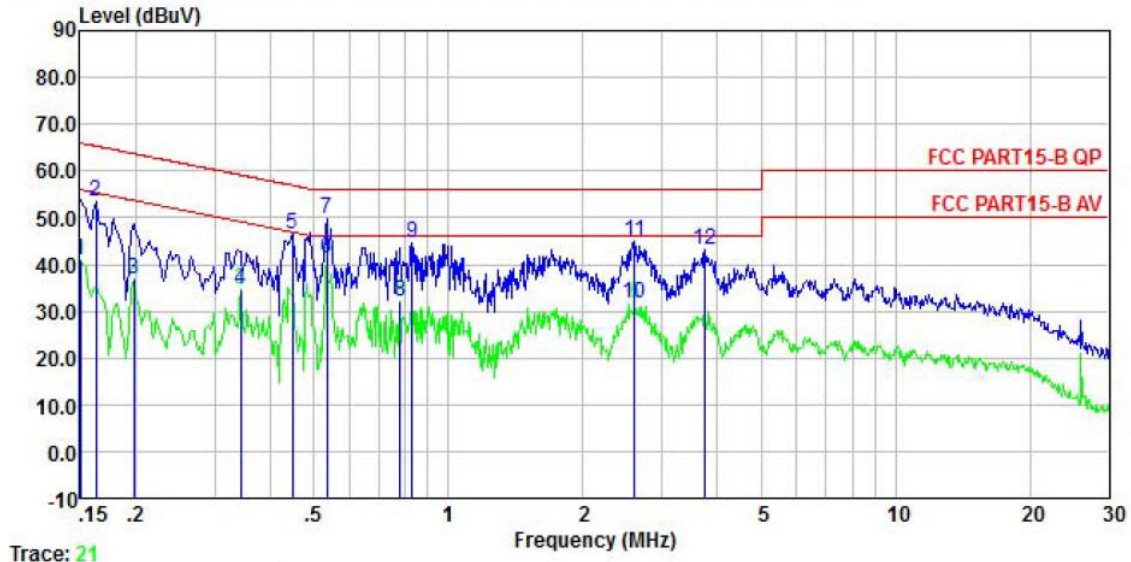
Test items	Standard clause	Test data	Result
Conducted Emission	Part 15.107	See Section 5.2	Pass
Radiated Emission	Part 15.109	See Section 5.3	Pass
Remark: 1. The EUT is a Class B digital device. 2. Pass: The EUT complies with the essential requirements in the standard. 3. N/A: Not Applicable.			
Test Method:	ANSI C63.4:2014		

5.1.2 Test Limit

Test items	Limit																													
Conducted Emission	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Class A Limit (dBμV)</th><th colspan="2">Class B Limit (dBμV)</th></tr><tr><th>Quasi-Peak</th><th>Average</th><th>Quasi-Peak</th><th>Average</th></tr><tr><td>0.15 – 0.5</td><td>79</td><td>66</td><td>66 to 56 Note 1</td><td>56 to 46 Note 1</td></tr><tr><td>0.5 – 5</td><td>73</td><td>60</td><td>56</td><td>46</td></tr><tr><td>5 – 30</td><td>73</td><td>60</td><td>60</td><td>50</td></tr></table>	Frequency (MHz)	Class A Limit (dBμV)		Class B Limit (dBμV)		Quasi-Peak	Average	Quasi-Peak	Average	0.15 – 0.5	79	66	66 to 56 Note 1	56 to 46 Note 1	0.5 – 5	73	60	56	46	5 – 30	73	60	60	50					
	Frequency (MHz)		Class A Limit (dBμV)		Class B Limit (dBμV)																									
		Quasi-Peak	Average	Quasi-Peak	Average																									
	0.15 – 0.5	79	66	66 to 56 Note 1	56 to 46 Note 1																									
	0.5 – 5	73	60	56	46																									
	5 – 30	73	60	60	50																									
Note 1: The limit level in dBμV decreases linearly with the logarithm of frequency.																														
Note 2: The more stringent limit applies at transition frequencies.																														
Radiated Emission	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Class A Limit (dBμV/m)</th><th colspan="2">Class B Limit (dBμV/m)</th></tr><tr><th>Quasi-Peak @ 3m</th><th>Quasi-Peak @ 10m</th><th>Quasi-Peak @ 3m</th><th>Quasi-Peak @ 10m</th></tr><tr><td>30 – 88</td><td>49.0</td><td>39.0</td><td>40.0</td><td>30.0</td></tr><tr><td>88 – 216</td><td>53.5</td><td>43.5</td><td>43.5</td><td>33.5</td></tr><tr><td>216 – 960</td><td>56.0</td><td>46.0</td><td>46.0</td><td>36.0</td></tr><tr><td>960 – 1000</td><td>60.0</td><td>50.0</td><td>54.0</td><td>44.0</td></tr></table>	Frequency (MHz)	Class A Limit (dBμV/m)		Class B Limit (dBμV/m)		Quasi-Peak @ 3m	Quasi-Peak @ 10m	Quasi-Peak @ 3m	Quasi-Peak @ 10m	30 – 88	49.0	39.0	40.0	30.0	88 – 216	53.5	43.5	43.5	33.5	216 – 960	56.0	46.0	46.0	36.0	960 – 1000	60.0	50.0	54.0	44.0
	Frequency (MHz)		Class A Limit (dBμV/m)		Class B Limit (dBμV/m)																									
		Quasi-Peak @ 3m	Quasi-Peak @ 10m	Quasi-Peak @ 3m	Quasi-Peak @ 10m																									
	30 – 88	49.0	39.0	40.0	30.0																									
	88 – 216	53.5	43.5	43.5	33.5																									
	216 – 960	56.0	46.0	46.0	36.0																									
	960 – 1000	60.0	50.0	54.0	44.0																									
	Note: The more stringent limit applies at transition frequencies.																													
	Frequency	Class A Limit (dBμV/m) @ 3m		Class B Limit (dBμV/m) @ 3m																										
		Average	Peake	Average	Peake																									
	Above 1 GHz	60.0	80.0	54.0	74.0																									
Note: The measurement bandwidth shall be 1 MHz or greater.																														

5.2 Conducted Emission

Product name:	4G Flip Phone	Product model:	Z3L
Test by:	Kiran Zeng	Test mode:	Charging+Recording mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz		



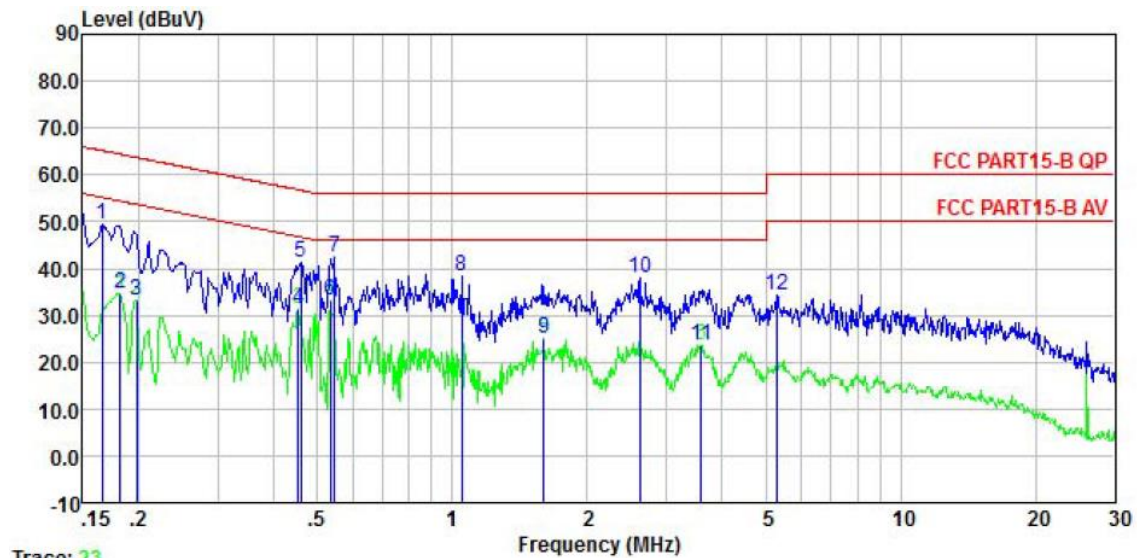
Trace: 21

	Freq	Read Level	LISN Factor	Aux Factor	Aux2 Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB	
1	0.150	30.85	0.20	0.00	9.88	0.01	40.94	56.00	-15.06	Average
2	0.162	43.51	0.20	0.00	9.88	0.01	53.60	65.34	-11.74	QP
3	0.198	26.93	0.20	0.00	9.88	0.04	37.05	53.71	-16.66	Average
4	0.343	24.53	0.20	0.00	9.88	0.02	34.63	49.13	-14.50	Average
5	0.447	36.23	0.20	0.00	9.88	0.03	46.34	56.93	-10.59	QP
6	0.535	31.36	0.20	0.00	9.88	0.03	41.47	46.00	-4.53	Average
7	0.535	39.53	0.20	0.00	9.88	0.03	49.64	56.00	-6.36	QP
8	0.779	21.99	0.20	0.00	9.88	0.03	32.10	46.00	-13.90	Average
9	0.830	34.40	0.20	0.00	9.88	0.03	44.51	56.00	-11.49	QP
10	2.608	21.42	0.20	0.00	9.88	0.12	31.62	46.00	-14.38	Average
11	2.608	34.93	0.20	0.00	9.88	0.12	45.13	56.00	-10.87	QP
12	3.759	33.12	0.20	0.00	9.89	0.08	43.29	56.00	-12.71	QP

Remark:

1. Level = Read level + LISN Factor + Cable Loss.

Product name:	4G Flip Phone	Product model:	Z3L
Test by:	Kiran Zeng	Test mode:	Charging+Recording mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz		



Trace: 23

	Freq	Read Level	LISN Factor	Aux Factor	Aux2 Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB	
1	0.166	39.25	0.20	0.00	9.88	0.01	49.34	65.16	-15.82	QP
2	0.182	24.64	0.20	0.00	9.88	0.01	34.73	54.42	-19.69	Average
3	0.198	23.12	0.20	0.00	9.88	0.04	33.24	53.71	-20.47	Average
4	0.454	21.15	0.20	0.00	9.88	0.03	31.26	46.80	-15.54	Average
5	0.459	31.13	0.20	0.00	9.88	0.03	41.24	56.71	-15.47	QP
6	0.535	23.13	0.20	0.00	9.88	0.03	33.24	46.00	-12.76	Average
7	0.546	32.31	0.20	0.00	9.88	0.03	42.42	56.00	-13.58	QP
8	1.049	28.09	0.21	0.00	9.88	0.06	38.24	56.00	-17.76	QP
9	1.602	14.61	0.27	0.00	9.88	0.16	24.92	46.00	-21.08	Average
10	2.622	27.58	0.30	0.00	9.88	0.11	37.87	56.00	-18.13	QP
11	3.584	13.39	0.30	0.00	9.89	0.08	23.66	46.00	-22.34	Average
12	5.277	24.06	0.30	0.00	9.89	0.09	34.34	60.00	-25.66	QP

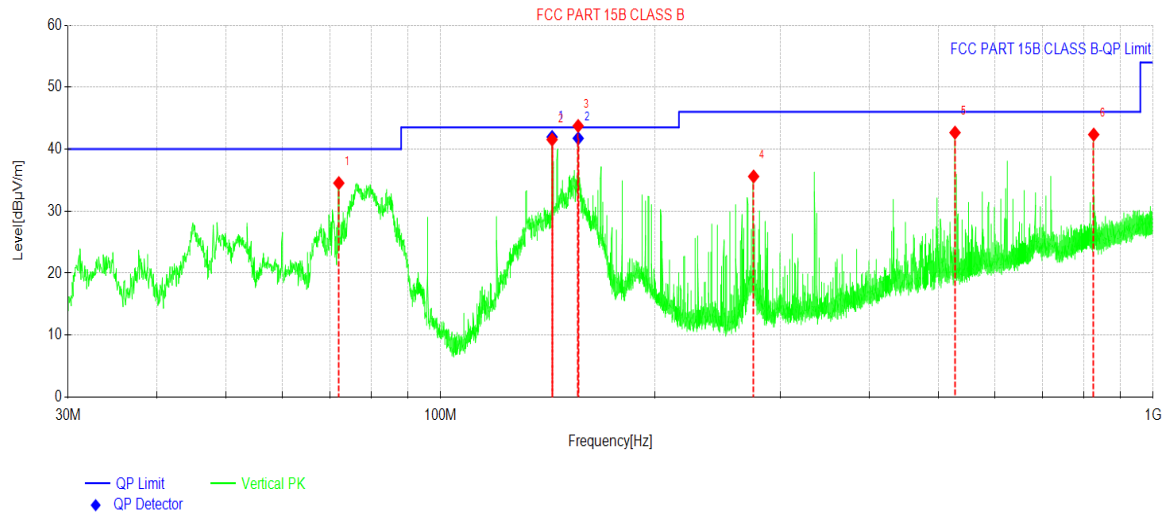
Remark:

1. Level = Read level + LISN Factor + Cable Loss.

5.3 Radiated Emission

Below 1GHz:

Product Name:	4G Flip Phone	Product Model:	Z3L
Test By:	Alan Chen	Test mode:	Charging+Recording mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	71.9546	51.51	-16.98	34.53	40.00	5.47	PK	Vertical
2	143.3502	56.03	-14.48	41.55	43.50	1.95	PK	Vertical
3	155.9608	57.63	-13.88	43.75	43.50	-0.25	PK	Vertical
4	274.9857	50.12	-14.52	35.60	46.00	10.40	PK	Vertical
5	527.3439	50.04	-7.37	42.67	46.00	3.33	PK	Vertical
6	825.6338	43.40	-1.04	42.36	46.00	3.64	PK	Vertical

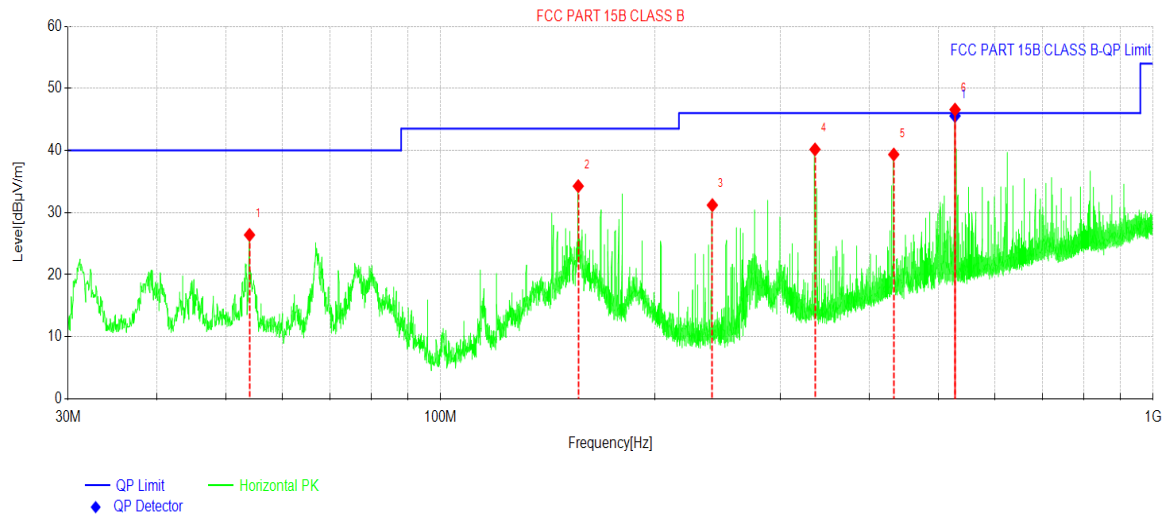
Final Data List

NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Angle [°]	Verdict
1	143.3603	56.45	-14.48	41.97	43.50	1.53	122.5	PASS
2	155.9897	55.63	-13.88	41.75	43.50	1.75	213.4	PASS

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	4G Flip Phone	Product Model:	Z3L
Test By:	Alan Chen	Test mode:	Charging+Recording mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	53.9117	40.54	-14.14	26.40	40.00	13.60	PK	Horizontal
2	156.0093	48.14	-13.88	34.26	43.50	9.24	PK	Horizontal
3	240.6460	46.94	-15.74	31.20	46.00	14.80	PK	Horizontal
4	335.3713	52.92	-12.75	40.17	46.00	5.83	PK	Horizontal
5	432.6186	48.91	-9.56	39.35	46.00	6.65	PK	Horizontal
6	527.3439	53.95	-7.37	46.58	46.00	-0.58	PK	Horizontal

Final Data List

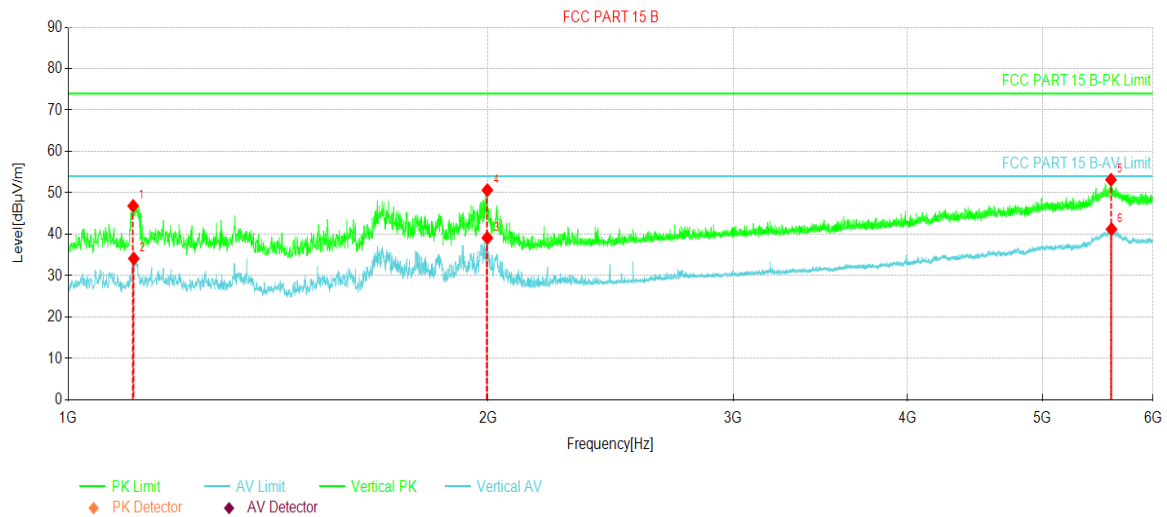
NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Angle [°]	Verdict
1	527.3511	52.94	-7.37	45.57	46.00	0.43	75.8	PASS

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Above 1GHz:

Product Name:	4G Flip Phone	Product Model:	Z3L
Test By:	Kiran Zeng	Test mode:	Charging+Recording mode
Test Frequency:	1000 MHz ~ 6000 MHz	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



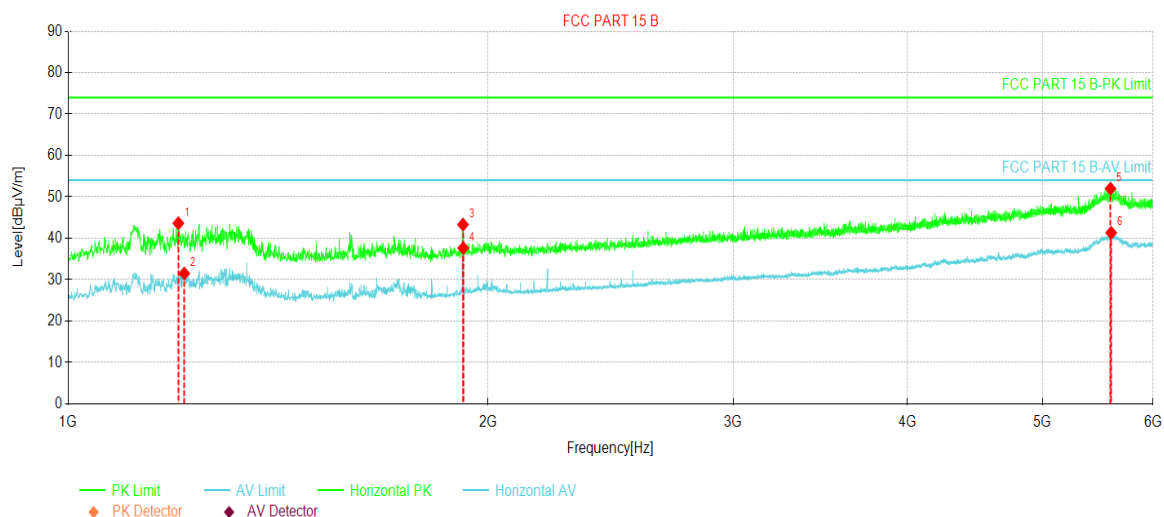
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	1113.1391	69.66	46.85	-22.81	74.00	27.15	PK	Vertical
2	1114.3893	56.94	34.13	-22.81	54.00	19.87	AV	Vertical
3	1998.2498	59.87	39.13	-20.74	54.00	14.87	AV	Vertical
4	1998.2498	71.40	50.66	-20.74	74.00	23.34	PK	Vertical
5	5598.0748	57.55	53.17	-4.38	74.00	20.83	PK	Vertical
6	5603.0754	45.60	41.22	-4.38	54.00	12.78	AV	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	4G Flip Phone	Product Model:	Z3L
Test By:	Kiran Zeng	Test mode:	Charging+Recording mode
Test Frequency:	1000 MHz ~ 6000 MHz	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	1199.3999	66.91	43.63	-23.28	74.00	30.37	PK	Horizontal
2	1211.2764	54.73	31.49	-23.24	54.00	22.51	AV	Horizontal
3	1919.4899	64.63	43.30	-21.33	74.00	30.70	PK	Horizontal
4	1920.1150	58.97	37.64	-21.33	54.00	16.36	AV	Horizontal
5	5593.0741	56.46	51.99	-4.47	74.00	22.01	PK	Horizontal
6	5599.9500	45.67	41.32	-4.35	54.00	12.68	AV	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

-----End of report-----