

FCC 47 CFR PART 15 SUBPART B TEST REPORT

For

Applicant: verykool USA INC.

Address: 4350 Executive Dr. #100,San Diego, CA 92121

Product Name: Mobile Phone

Model Name: i123M

Brand Name: verykool

FCC ID: WA6I123M

Report No.: DPH120829F01

Date of Issue: September 03, 2012

Issued by: Super Test Service Technology Co., Ltd.

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Revision History				
Issue	Date	Reason for Revision		
1.0	September 03, 2012	First edition		

1. VERIFICATION OF CONFORMITY

Equipment Under Test:	Mobile Phone
Brand Name:	verykool
Model Number:	i123M
Series Model Name:	N/A
Difference description:	N/A
FCC ID:	WA6I123M
Applicant:	verykool USA INC.
	4350 Executive Dr. #100,San Diego, CA 92121
Manufacturer:	Shenzhen Ginwave Technologies Ltd.
	4/F, R2-A, High-Tech Industrial Park, Shenzhen 518057, China
Technical Standards:	47 CFR Part 15 Subpart B
File Number:	DPH120829F01
Date of test:	August 27 ~ September 03, 2012
Deviation:	None
Condition of Test Sample:	Normal
Test Result:	PASS

The above equipment was tested by STS. For compliance with the requirement set forth in FCC Part 15 and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Tested by (+ signature):

Rex Luo

Rex Luo Test Engineer

Approved by (+ signature):

Joe Jia

Joe Jia Manager

2. GENERAL INFORMATION

2.1 PRODUCT INFORMATION

EUI123M- Mobile Phone			
Description:	Mobile Phone		
Brand Name:	verykool		
Model Name:	i123M		
Hardware Version:	GW-MG21M_V3.0		
Software Version:	MOVI-W10D_B03-S01_V01_20120814		
Freework	Tx: 824.2-848.8 MHz 1850.2-1909.8 MHz		
Frequency:	Rx: 849.2-893.8 MHz 1930.2-1989.8 MHz		
Ancillary Equipment – Powe	r Supply		
Description:	Travel Charger		
Model Name:	NBT-050B-B050UA		
Brand Name:	Verykool		
Rated Input:	AC 100-240V, 50/60Hz, 0.2A		
Rated Output:	DC 5V, 500mA		
Length USB cable:	1.0m		
Ancillary Equipment – Batte	ry		
Description:	Lithium-ion Battery		
Model Name:	423450AR		
Brand Name:	Verykool		
Capacitance:	600 mAh		
Rated Voltage:	3.7V		
Charge Limit:	4.2V		

NOTE:

- The EUT is a model of Portable Mobile Station (MS). It consists of hand telephone set, Lithium battery, USB cable, headphone and Charger as listed above.
- 2. Please refer to Appendix 2 for the photographs of the EUT. For a more detailed features description about the EUT, please refer to User's Manual.

2.2 OBJECTIVE

Perform FCC Part 15 Subpart B tests for FCC Marking.

2.3 TEST STANDARDS AND RESULTS

Test items and the results are as bellow:

EMISSION					
Standard		ltem	Result	Remarks	
FCC 47 CFR Part 15 Subpart B	§15.107	Conducted Emission	PASS	Meet Class B limit	
(10-1-05 Edition)	§15.109	Radiated Emission	PASS	Meet Class B limit	

Note: 1. The test result judgment is decided by the limit of measurement standard 2. The information of measurement uncertainty is available upon the customer's request.

2.4 ENVIRONMENTAL CONDITIONS

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35°C
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

3. TEST FACILITY

3.1 TEST FACILITY

Test Site:	Most Technology Service Co., Ltd.
Location:	No.5, Langshan 2 nd Rd., North Hi-Tech Industrial park, Nanshan, Shenzhen, Guangdong ,China
Description:	There is one 3m semi-anechoic an area test sites and two line conducted labs for
	final test. The Open Area Test Sites and the Line Conducted labs are constructed
	and calibrated to meet the FCC requirements in documents ANSI C63.4:2009 and
	CISPR 16 requirements. The FCC Registration Number is 490827.
	The CNAS Registration Number is CNAS L3573.
Site Filing:	The site description is on file with the Federal Communications
	Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
Instrument	All measuring equipment is in accord with ANSI C63.4:2009 and CISPR 16
Tolerance:	requirements that meet industry regulatory agency and accreditation agency
	requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted
	Emission, one in vertical and the other in horizontal. The dimensions of these
	ground planes are as below. The vertical ground plane was placed distancing 40
	cm to the rear of the wooden test table on where the EUT and the support
	equipment were placed during test. The horizontal ground plane projected 50 cm
	beyond the footprint of the EUT system and distanced 80 cm to the wooden test
	table. For Radiated Emission Test, one horizontal conductive ground plane
	extended at least 1m beyond the periphery of the EUT and the largest measuring
	antenna, and covered the entire area between the EUT and the antenna. It has no
	holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength
	at the highest frequency of measurement up to 1GHz.

3.2 GENERAL TEST PROCEDURES

EUT Function and Test Mode

The EUT has been tested under normal operating (TX) and standby (RX) condition.

Based on client request, all normal using modes of the normal function were tested but only the worst test data of the worst mode is reported by this report.

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.

3.3 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:

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 using measurement. The provisions in Section 15.35 apply to these measurements.

4. SETUP OF EQUIPMENT UNDER TEST

4.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

4.2 SUPPORT EQUIPMENT

Device Type	Brand	Model	FCC ID	Series No.	Data Cable	Power Cord
Notebook	Lenovo	B460	N/A	WB03928113	1.6m Un-shielding	2.5m Un-shielding
Mouse	Lenovo	M-UAE96	N/A	E-C011-05-3735(B)	1.6m Un-shielding	
Keyboard	LONGSEN	N/A	N/A	N/A	1.6m Un-shielding	
Monitor	ASUS	VH232H DVT	N/A	LE23Z5-617-929034 HDMI Cable		2.5m Un-shielding

Remark:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.3 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at MOST for testing. The equipment conforms to the CISPR 16-1 / ANSI C63.2 Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10 kHz to 1.0 GHz or above.

No.	Equipment	Manufacturer	Model No.	S/N	Calibration due date
1	Test Receiver	Rohde & Schwarz	ESCI	100492	2013/4/21
2	L.I.S.N.	Rohde & Schwarz	ENV216	100093	2013/4/21
3	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2013/3/14
4	Terminator	Hubersuhner	50Ω	No.1	2013/3/14
5	RF Cable	SchwarzBeck	N/A	No.1	N/A
6	Test Receiver	Rohde & Schwarz	ESPI	101202	2013/4/21
7	Test Antenna – Horn	Schwarzbeck	BBHA 9120C		2013/3/14

8	Test Antenna – Bi-Log	Schwarzbeck	VULB 9163		2013/3/14
9	Cable	Resenberger	N/A	NO.1	N/A
10	Cable	SchwarzBeck	N/A	NO.2	N/A
11	Cable	SchwarzBeck	N/A	NO.3	N/A
12	Signal Generator	IFR	2032	203002/100	2013/5421
13	Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU200	0304789	2013/4/21
14	Telecommunication Antenna	European Antennas	PSA 75301R/170	0304213	2013/03/14
15	Spectrum Analyzer	Agilent	4408B	MY41440460	2013/4/21
16	Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2013/4/15

NOTE: Equipments listed above have been calibrated and are in the period of validation.

5. 47 CFR PART 15B REQUIREMENTS

5.1 GENERAL INFORMATION

EUT Function and Test Mode

Mode 1: Idle Mode

The MS was registered to the base station simulator but no call was set up.

The EUT configuration of the emission test was **MS + Battery+ Charger**.

Mode 2: Call Mode

Before the measurement, the lithium battery was completely discharge.

During the measurement, the lithium battery and the charger were installed, and the MS were in charging state. A communication link was established between the MS and a System Simulator (SS). The MS operated at GSM 850/1900MHz mid ARFCN and maximum output power.

The EUT configuration of the emission test was **MS + Battery+ Charger.**

Mode 3: MP3/MP4 Mode

During the test, the MS was playing the MP3/MP4 function continuously.

The EUT configuration of the emission test was **MS + Battery + Charger.**

Mode 4: FM Mode

During the test, the MS was playing the FM function continuously.

The EUT configuration of the emission test was **MS + Battery + Earphone.**

Mode 5: USB Mode

During the test, the MS was connected with the notebook and made the data transmission function continuously.

The EUT configuration of the emission test was MS + Battery + USB Cable + Notebook + Mouse

+Monitor + Keyboard.

Note: Due to the different configuration and test, in this list only some worse mode. The worst test data of the worse mode is reported by this report.

6. LINE CONDUCTED EMISSION TEST

6.1 LIMITS OF LINE CONDUCTED EMISSION TEST

Fraguanay	Maximum RF Line Voltage			
Frequency	Q.P.(dBuV)	Average(dBuV)		
150kHz-500kHz	66-56	56-46		
500kHz-5MHz	56	46		
5MHz-30MHz	60	50		

**Note: 1. The lower limit shall apply at the transition frequency.

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

6.2 BLOCK DIAGRAM OF TEST SETUP



6.3 PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per FCC Part 15 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per FCC Part 15.
- 3) All I/O cables were positioned to simulate typical actual usage as per FCC Part 15.
- 4) The EUT received DC 5V by AC/DC adapter which through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5) All support equipments received power from a second LISN supplying power of AC 120V/60Hz, if any.
- 6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.

- 7) Analyzer / Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.
- 8) During the above scans, the emissions were maximized by cable manipulation.

9) The following test mode(s) were scanned during the preliminary test:

Preliminary Conducted Emission Test					
Frequency Range Inv	vestigated	150KHz To 30 MHz			
Mode of operation	Date	Report No. Data# Wo			
Idle Mode	2012-09-01	DPH120829F01	i123M_1_(L, N)		
Call Mode	2012-09-01	DPH120829F01	i123M_2_(L, N)		
MP3/MP4 Mode	2012-09-01	DPH120829F01	i123M_3_(L, N)		
FM Mode	2012-09-01	DPH120829F01	i123M_4_(L, N)		
USB Mode	2012-09-01	DPH120829F01	i123M_5_(L, N)		

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

6.4 FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

EUT and support equipment was set up on the test bench as per step 9 of the preliminary test.

A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

The test data of the worst case condition(s) was reported on the Summary Data page.



6.5 TEST RESULT OF LINE CONDUCTED EMISSION TEST

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.2860	38.08	11.43	49.51	60.64	-11.13	peak	
2	0.9740	29.55	10.00	39.55	56.00	-16.45	peak	
3	3.8100	33.59	10.81	44.40	56.00	-11.60	peak	
4	6.9220	22.56	10.85	33.41	60.00	-26.59	peak	
5	11.7420	23.56	9.00	32.56	60.00	-27.44	peak	
6	14.3420	36.92	9.00	45.92	60.00	-14.08	peak	



No. M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1700	43.20	10.20	53.40	64.96	-11.56	peak	
2	0.4620	33.23	10.25	43.48	56.66	-13.18	peak	
3	3.9300	28.69	10.93	39.62	56.00	-16.38	peak	
4	7.0380	23.70	10.78	34.48	60.00	-25.52	peak	
5	11.8260	29.84	9.00	38.84	60.00	-21.16	peak	
6	13.8620	37.80	9.00	46.80	60.00	-13.20	peak	

7. RADIATED EMISSION TEST

7.1 LIMITS OF RADIATED DISTURBANCES AT 3M DISTANCES FOR CLASS B

According to FCC section 15.109, except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (µV/m)	Measurement Distance (m)
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

NOTE:

- 1. Field Strength (dBµV/m) = 20*log[Field Strength (Mv/m)].
- 2. In the emission tables above, the tighter limit applies at the band edges.

7.2 TEST DESCRIPTION

Test Setup:



The EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz AC mains supply. The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading. During the measurement, the EUT is activated and transmitting with the other Bluetooth device (Supply by the Applicant) during the test.

For the Test Antenna:

(a) In the frequency range of 9 kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.

(b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

Preliminary Radiated Emission Test										
Frequency	y Range Investig	30 MHz TO 1000 MHz								
Mode of operation	Date	Report No.	Data#	Worst Mode						
Idle Mode	2012-09-01	DPH120829F01	i123M_1_(H, V)							
Call Mode	2012-09-01	DPH120829F01	i123M_2_(H, V)							
MP3/MP4 Mode	2012-09-01	DPH120829F01	i123M_4_(H, V)							
FM Mode	2012-09-01	DPH120829F01	i123M_5_(H, V)							
USB Mode	2012-09-01	DPH120829F01	i123M_6_(H, V)							

7.3 TEST RESULT

Form 9 KHz to 30MHz:

Freq.	Ant. Pol	Peak	Ant. / CL		Peak	Peak	
(MHz)	H/V	Reading	CF	Actual FS	Limit	Margin	
		(dBuV)	(dB)	Peak	(dBuV/m)	(dB)	
				(dBuV/m)			
	Н						
	Н						
	Н						
N/A						>20	
	V						
	V						
	V						
N/A						>20	

-Note: No test data was detected in below 30MHz.



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	35.8200	10.64	20.27	30.91	40.00	-9.09	peak			
2		98.8700	17.97	12.94	30.91	43.50	-12.59	peak			
3		122.1500	12.26	17.59	29.85	43.50	-13.65	peak			
4	:	268.6200	8.74	18.72	27.46	46.00	-18.54	peak			
5		489.7800	5.19	21.70	26.89	46.00	-19.11	peak			
6		533.4300	8.69	22.20	30.89	46.00	-15.11	peak			



No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		98.8700	17.45	12.94	30.39	43.50	-13.11	peak			
2	*	120.2100	16.01	17.51	33.52	43.50	-9.98	peak			
3		180.3500	14.48	16.69	31.17	43.50	-12.33	peak			
4		197.8100	12.26	17.16	29.42	43.50	-14.08	peak			
5		298.6900	10.13	19.30	29.43	46.00	-16.57	peak			
6		418.9700	11.66	19.89	31.55	46.00	-14.45	peak			

*:Maximum data x:Over limit !:over margin

Operation Mode: USB Mode						Test Date:	: Se	p. 01, 2012		
Tempe	erature:	24	°C			Humidity:	70	% RH		
Freq.	Ant. Pol	Peak	AV	Ant./CL	Actu	al Ea	Peak	AV	Peak	AV
(MHz)	H/V	Reading	Reading	CF	Actual FS		Limit	Limit	Margin	Margin
		(dBuV)	(dBuV)	(dB)	Peak AV		(dBuV/m)	(dBuV/m)	(dB)	(dB)
					(dBuV/m)	(dBuV/m)				
1437.18	Н	47.11	28.63	13.52	60.63	42.15	70.00	50.00	-9.37	-7.85
1624.62	Н	45.64	26.39	14.83	60.47	41.22	70.00	50.00	-9.53	-8.78
N/A										>20
1437.18	V	47.07	27.23	13.52	60.59	40.75	70.00	50.00	-9.41	-9.25
1624.62	V	45.16	25.71	14.83	59.99	40.54	70.00	50.00	-10.01	-9.46
N/A										>20

The worst test data above 1 GHz was showed as the follow:

Notes:

- 1. Measuring frequencies from 1 GHz to 6GHz.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 3. The frequency that above 3GHz is mainly from the environment noise.

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

FCC ID: WA6I123M

Report No.: DPH120829F01





APPENDIX 2 PHOTOGRAPHS OF EUT



BACK VIEW OF SAMPLE



FCC ID: WA6I123M



RIGHT VIEW OF SAMPLE





DOWN VIEW OF SAMPLE





PHOTO OF HEADPHONE



FCC ID: WA6I123M



PHOTO OF USB CABLE





INTERNAL PHOTO OF SAMPLE -2





INTERNAL PHOTO OF SAMPLE - 4





INTERNAL PHOTO OF SAMPLE - 6





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