

FCC Part 15B Measurement and Test Report

For

Verykool USA Inc

3636 Nobel Drive, Suite 325, San Diego, CA 92122 USA

FCC ID: WA6I128

Test Rule(s):	<u>FCC Part 15 Subpart B</u>	
Product Description:	<u>Mobile Phone</u>	
Tested Model:	<u>i128</u>	
Report No.:	<u>STR13098090I-3</u>	
Tested Date:	<u>2013-09-09 to 2013-09-18</u>	
Issued Date:	<u>2013-09-23</u>	
Tested By:	<u>Susan Su / Engineer</u>	<i>Susan Su</i>
Reviewed By:	<u>Lahm Peng / EMC Manager</u>	<i>Lahm peng</i>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Verykool USA Inc
 Address of applicant: 3636 Nobel Drive, Suite 325, San Diego, CA 922122 USA
 Manufacturer: ShenZhen Ginwave Technologies Ltd
 Address of manufacturer: Room 913 Software building, GaoXin M.1st Ave, Nanshan, Shenzhen, China

General Description of EUT	
Product Name:	Mobile Phone
Trade Name:	Verykool
Model No.:	I128
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.7V; Adapter DC 5V charging
Rated Current:	/
Rated Power:	/
Power Adapter Model:	NBT-004A-099C (Input: AC100-240V, 0.15A; Output: DC5V, 500mA)
Lowest Internal Frequency:	26MHz
Speed of Processor:	350MHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the Verykool USA Inc in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

- **FCC – Registration No.: 994117**

SEM.Test Compliance Services Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**

The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Charging & Playing	/
TM2	Downloading	Test software: CT3
TM3	/	/
TM4	/	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Power Cable	1.3	Unshielded	Without Core
Earphone Cable	1.5	Unshielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E23	EB12648265

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.2	Shielded	Without Core

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.107 (a)	Conducted Emissions	Compliant
§ 15.109 (a)	Radiated Emissions	Compliant

N/A: not applicable

3. Conducted Emissions

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

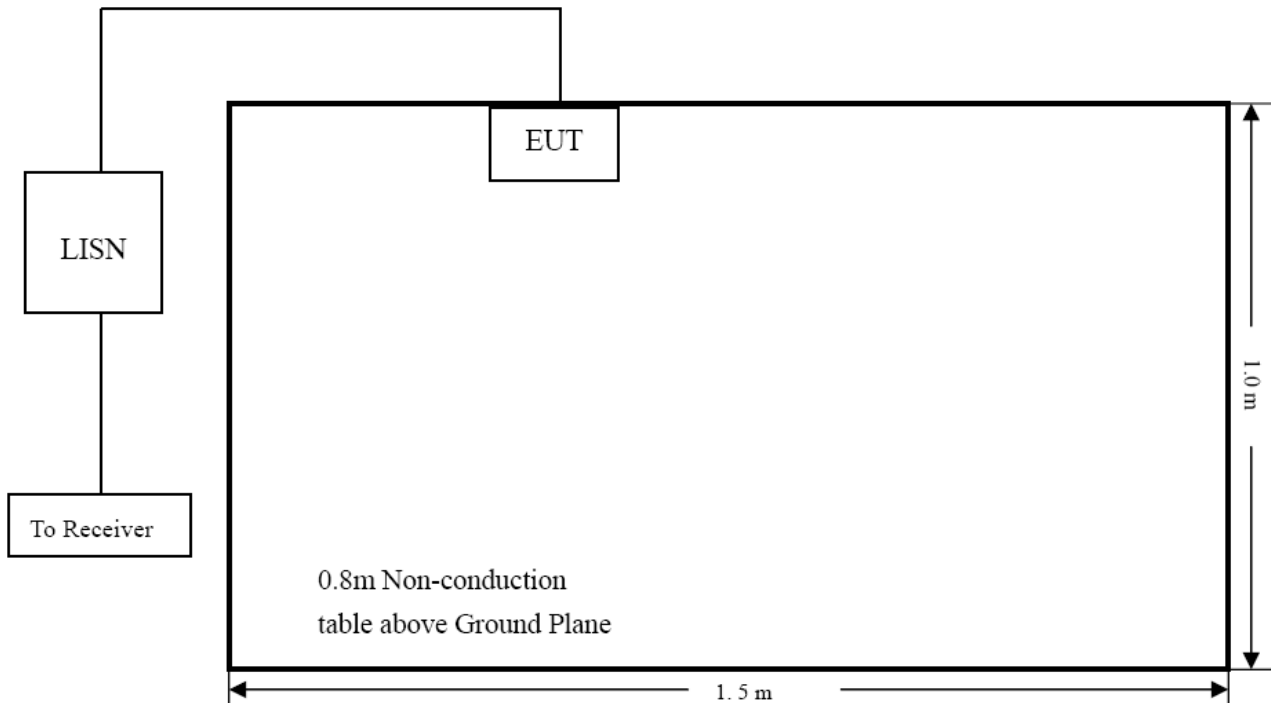
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2013-05-07	2014-05-06
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2013-05-07	2014-05-06
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2013-05-07	2014-05-06

3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

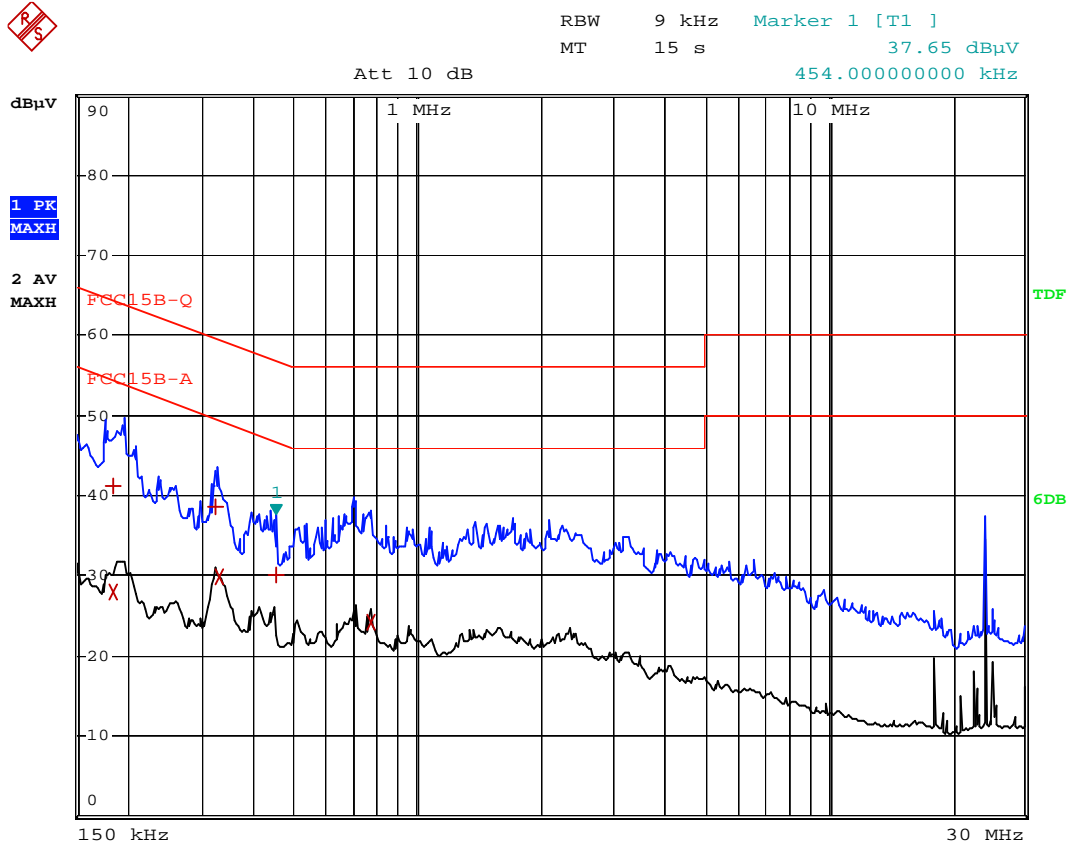
-17.74 dB at **0.322 MHz** in the **Line, Average** detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

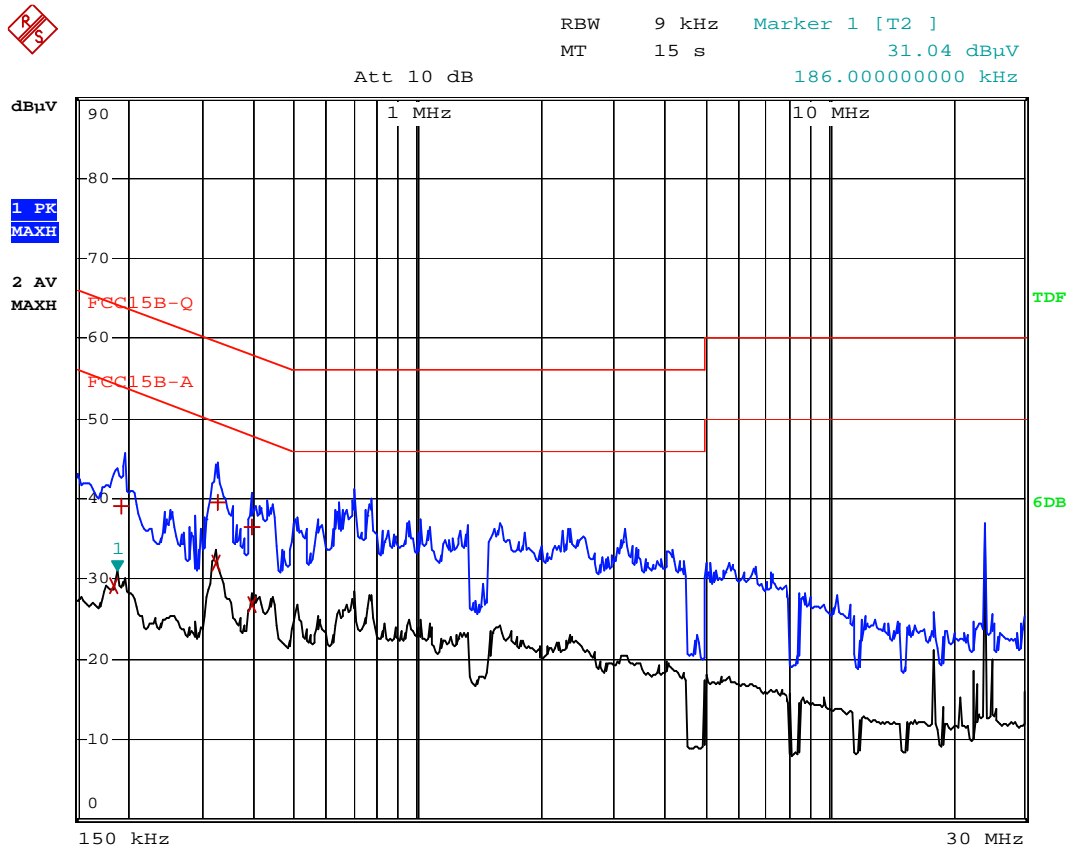
EUT: *Mobile Phone*
 Tested Model: *i128*
 Operating Condition: *TM1*
 Comment: *AC 120V/60Hz; Adapter DC 5V*

Test Specification: *Neutral*



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC15B-Q		
Trace2:	FCC15B-A		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	186 kHz	41.18	-23.02
2 Average	186 kHz	27.94	-26.26
1 Quasi Peak	322 kHz	38.60	-21.04
2 Average	330 kHz	29.87	-19.57
1 Quasi Peak	454 kHz	30.18	-26.62
2 Average	774 kHz	24.19	-21.80

Test Specification: Line



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	FCC15B-Q		
Trace2:	FCC15B-A		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	186 kHz	29.14	-25.06
1 Quasi Peak	194 kHz	39.06	-24.79
2 Average	322 kHz	31.91	-17.74
1 Quasi Peak	326 kHz	39.64	-19.90
2 Average	394 kHz	26.89	-21.08
1 Quasi Peak	394 kHz	36.57	-21.40

4. Radiated Emissions

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

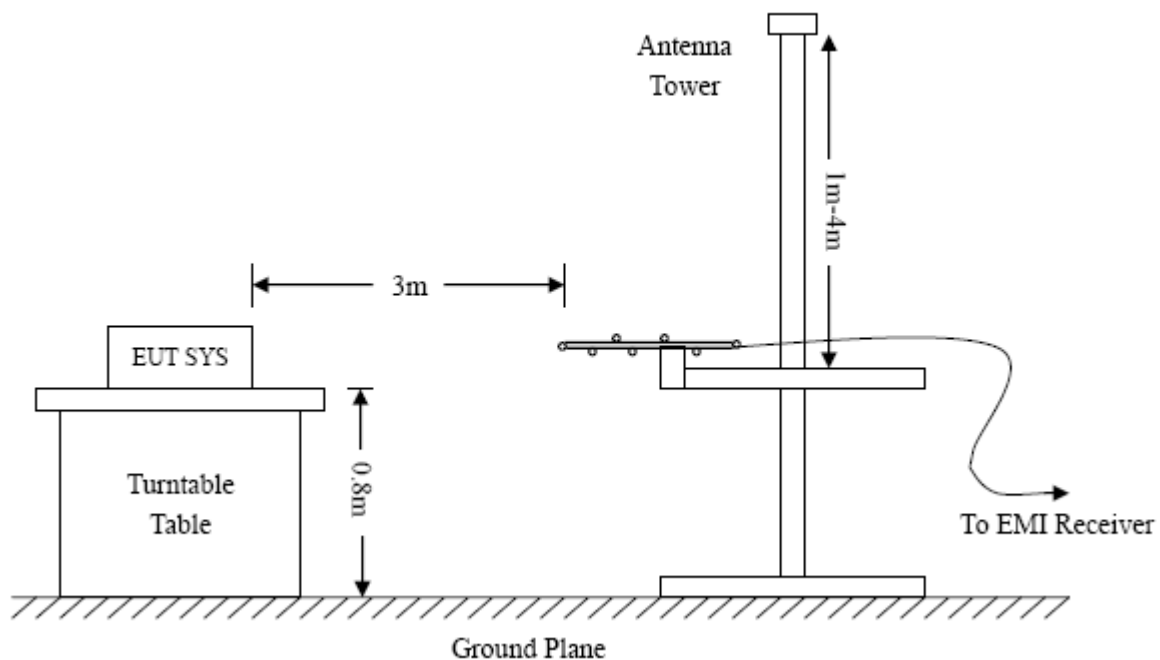
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-04-20	2014-04-19
Horn Antenna	ETS	3117	00086197	2013-04-20	2014-04-19
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2013-04-20	2014-04-19

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



4.4 Test Receiver Setup

Frequency :9kHz-30MHz
 RBW=10KHz,
 VBW =30KHz
 Sweep time= Auto
 Trace = max hold
 Detector function = peak

Frequency :30MHz-1GHz
 RBW=120KHz,
 VBW=300KHz
 Sweep time= Auto
 Trace = max hold
 Detector function = peak, QP

Frequency :Above 1GHz
 RBW=1MHz,
 VBW=3MHz(Peak), 10Hz(AV)
 Sweep time= Auto
 Trace = max hold
 Detector function = peak, AV

4.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

4.6 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.7 Summary of Test Results/Plots

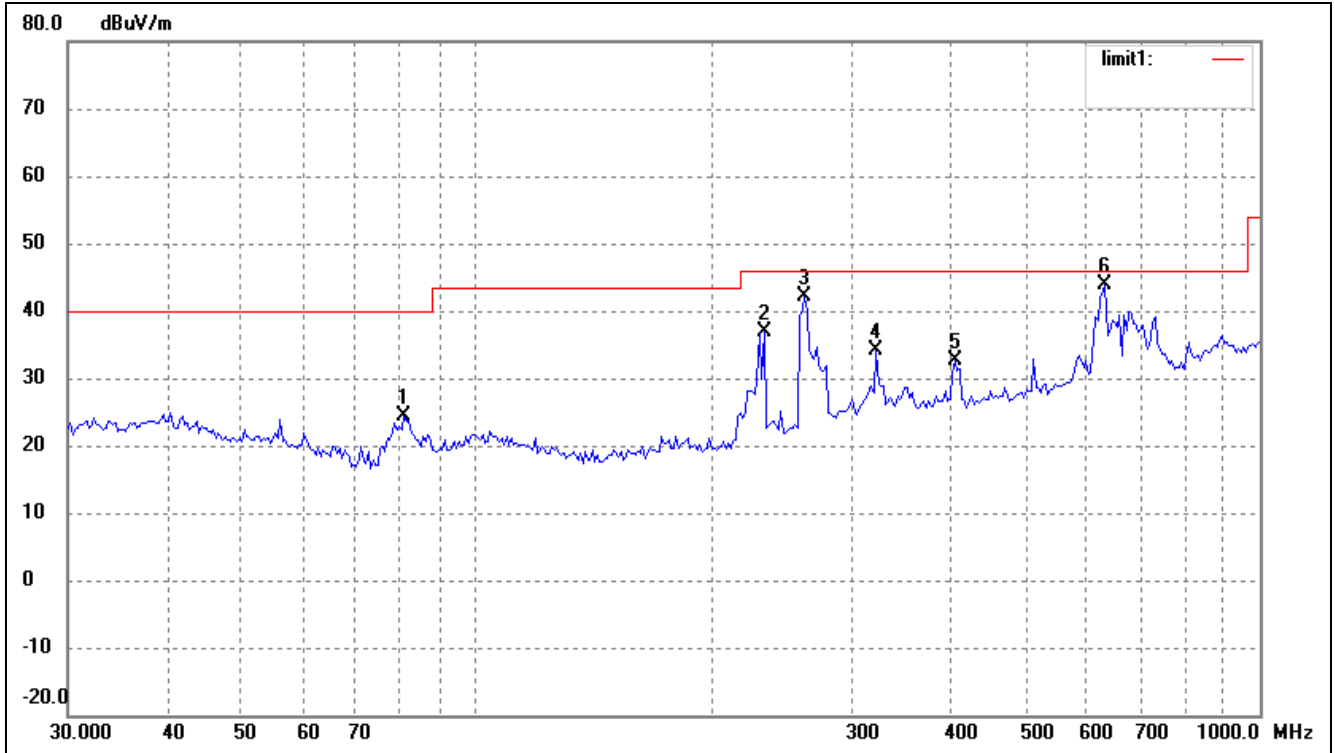
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-2.05 dB at 633.9073 MHz in the Horizontal polarization, TM2, 9 kHz to 1 GHz, 3Meters

Plot of Radiated Emissions Test Data

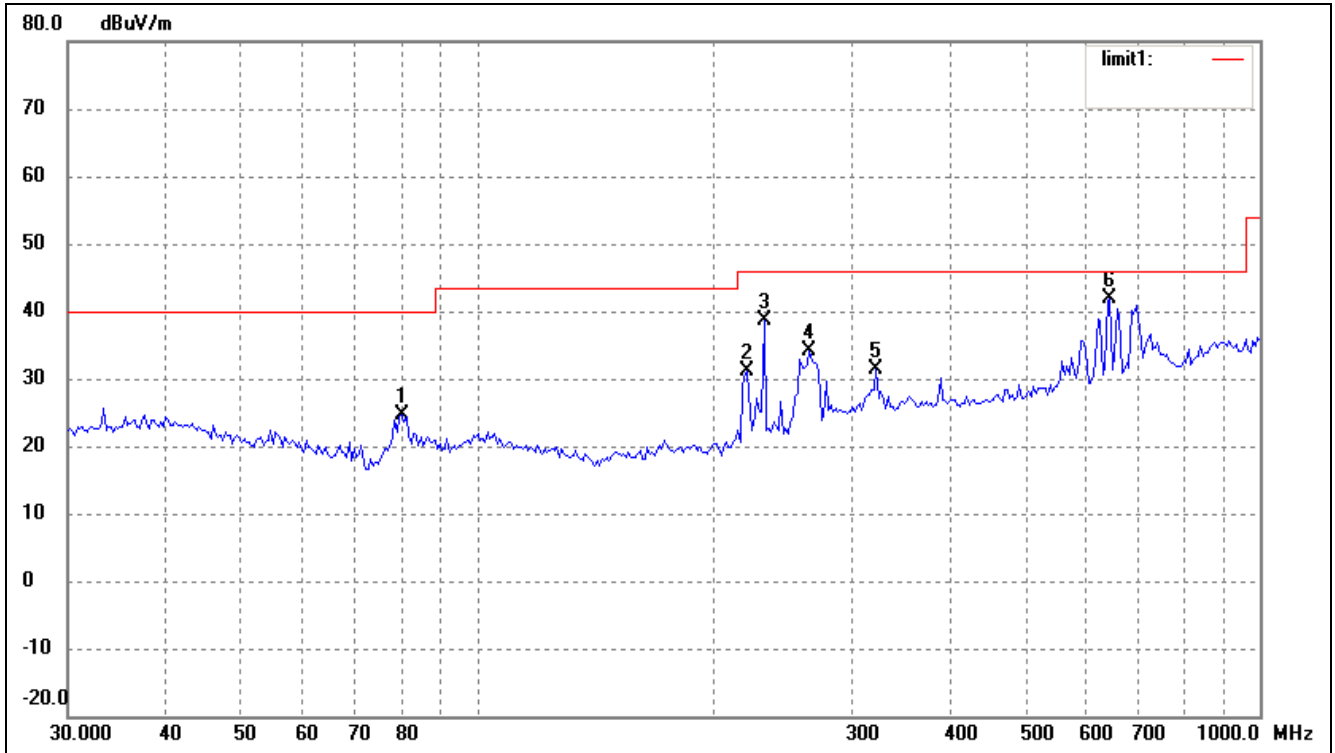
EUT: *Mobile Phone*
 Tested Model: *i128*
 Operating Condition: *TM1*
 Comment: *AC 120V/60Hz; Adapter DC 5V*

 Test Specification: *Horizontal*



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	80.6442	22.57	1.85	24.42	40.00	-15.58	125	100	peak
2	232.5318	30.29	6.59	36.88	46.00	-9.12	34	100	peak
3	261.9753	34.20	7.86	42.06	46.00	-3.94	157	100	peak
4	323.3204	23.71	10.41	34.12	46.00	-11.88	225	100	peak
5	407.5145	21.30	11.22	32.52	46.00	-13.48	37	100	peak
6	633.9073	29.18	14.77	43.95	46.00	-2.05	126	100	peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	80.0806	22.92	1.69	24.61	40.00	-15.39	360	100	peak
2	221.3921	25.06	6.00	31.06	46.00	-14.94	24	100	peak
3	232.5318	31.98	6.59	38.57	46.00	-7.43	154	100	peak
4	265.6757	25.99	8.15	34.14	46.00	-11.86	41	100	peak
5	323.3204	20.86	10.41	31.27	46.00	-14.73	124	100	peak
6	642.8613	26.75	15.14	41.89	46.00	-4.11	87	100	peak

Plot of Radiated Emissions Test Data

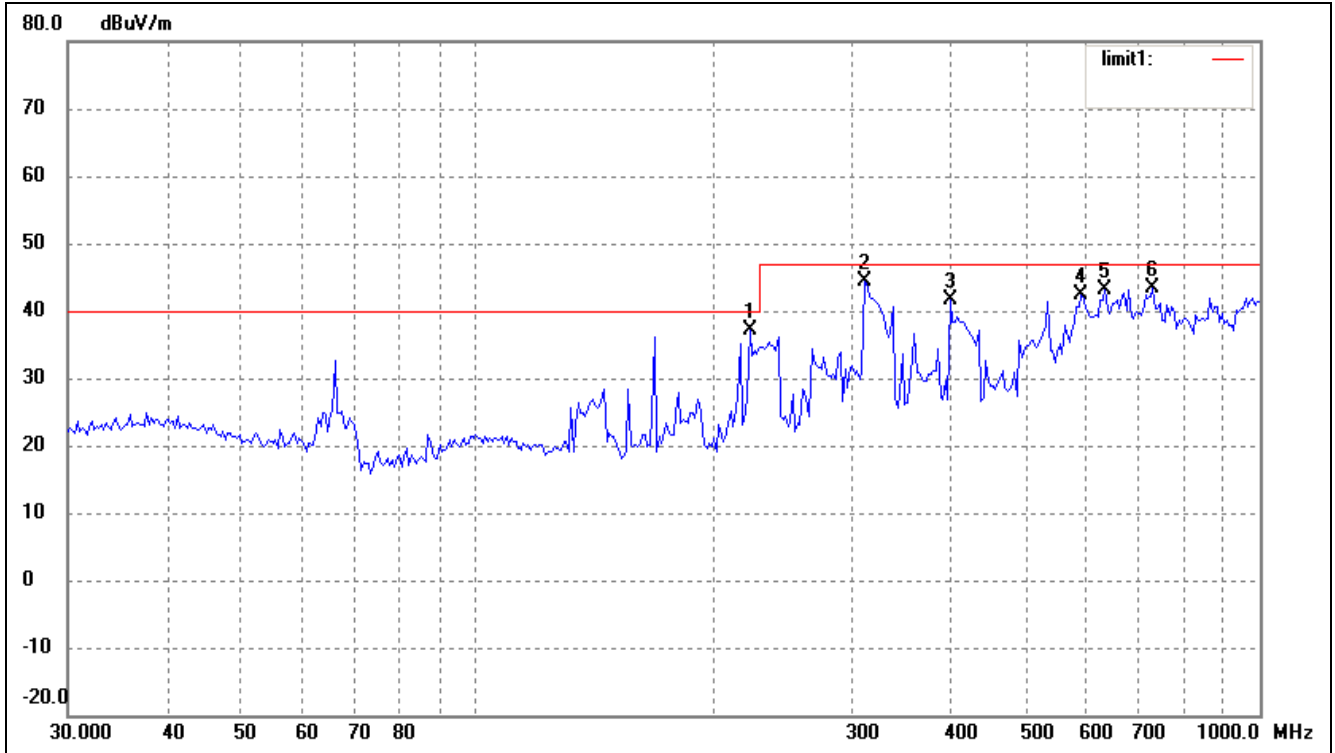
EUT: *Mobile Phone*

Tested Model: *i128*

Operating Condition: *TM2*

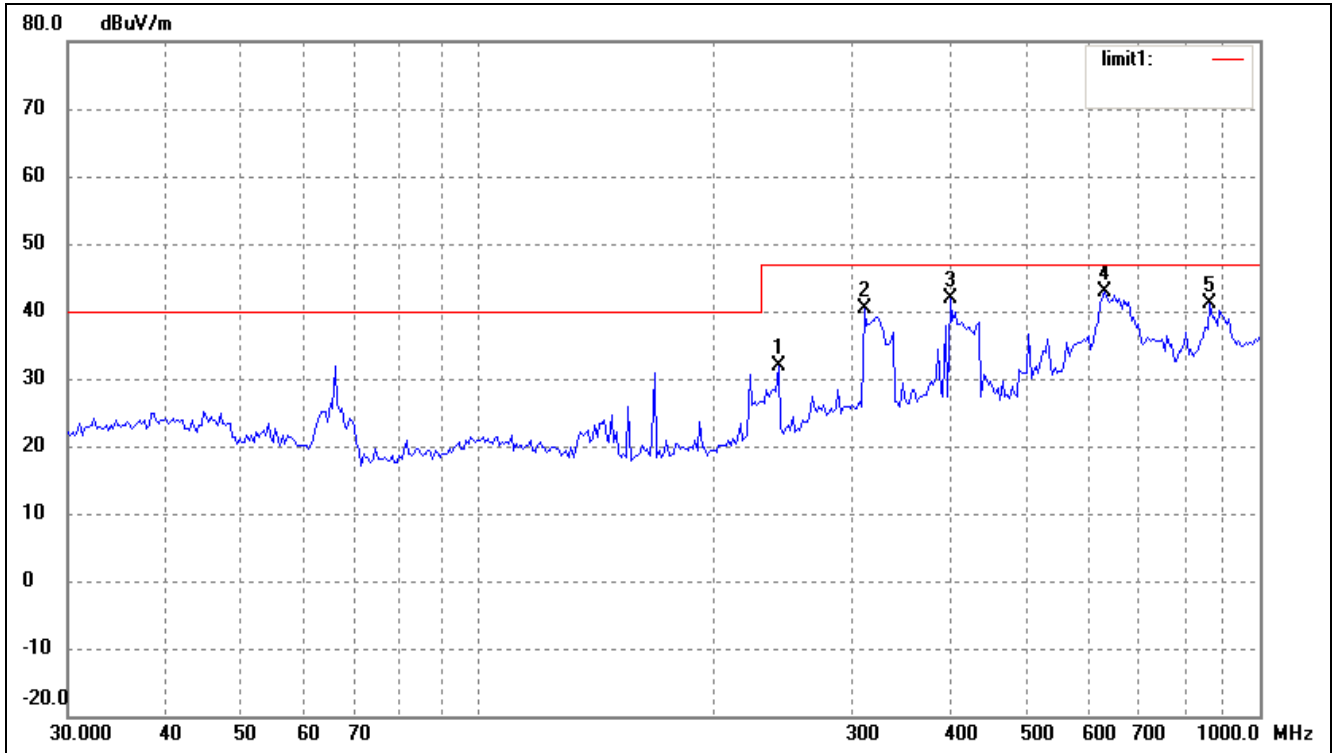
Comment: *USB 5V*

Test Specification: *Horizontal*



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	222.9502	31.01	6.08	37.09	40.00	-2.91	325	100	peak
2	312.1794	34.12	10.36	44.48	47.00	-2.52	14	100	peak
3	401.8385	30.20	11.47	41.67	47.00	-5.33	127	100	peak
4	590.9737	27.77	14.50	42.27	47.00	-4.73	125	100	peak
5	633.9073	28.40	14.77	43.17	47.00	-3.83	22	100	peak
6	729.3583	26.15	17.31	43.46	47.00	-3.54	144	100	peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	242.5253	24.89	7.08	31.97	47.00	-15.03	125	100	peak
2	312.1794	30.12	10.36	40.48	47.00	-6.52	97	100	peak
3	401.8385	30.51	11.47	41.98	47.00	-5.02	125	100	peak
4	633.9073	28.14	14.77	42.91	47.00	-4.09	47	100	peak
5	863.0562	22.81	18.27	41.08	47.00	-5.92	125	100	peak

The measurements greater than 20dB below the limit from 9kHz to 30MHz and test data are not provided.

***** END OF REPORT *****