
FCC Test Report

Report No.: AGC05U110704F1

FCC ID : ZGRTORNADO

**PRODUCT
DESIGNATION** : GSM Mobile Phone

BRAND NAME : Ice Mobile

MODEL NAME : Tornado II

CLIENT : Dynamics Hong Kong Limited

DATE OF ISSUE : Aug. 23, 2011

STANDARD(S) : FCC Part 15 Rules

Attestation of Global Compliance Co., Ltd.

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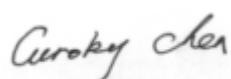
1. VERIFICATION OF COMPLIANCE

| | |
|---------------------------|-------------------------------------------------------------------------------------------------------------------|
| Applicant: | Dynamics Hong Kong Limited Room A4,3/F,Friend's House ,No.6A Carnarvon Road,Tsim Sha Tsui,Kowloon,Hong Kong |
| Manufacturer: | Dynamics Hong Kong Limited Room A4,3/F,Friend's House ,No.6A Carnarvon Road,Tsim Sha Tsui,Kowloon,Hong Kong |
| Product Designation: | GSM Mobile Phone |
| Brand name: | Ice Mobile |
| Model Name: | Tornado II |
| FCC ID: | ZGRTORNADO |
| Measurement Procedure: | ANSI C63.4: 2003 |
| File Number: | AGC05U110704F1 |
| Date of test: | Aug. 20, 2011 to Aug. 21, 2011 |
| Deviation: | None |
| Condition of Test Sample: | Normal |

The above equipment was tested by Attestation Of Global Compliance Co., Ltd. for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, the measurement procedure according to ANSI C63.4:2003. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

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

Tested By :



Curoky Chen Aug. 23, 2011

Review By :



Forrest Lei Aug. 23, 2011

Approved By:



Solger Zhang Aug. 23, 2011

2. PRODUCT INFORMATION

Housing Type: Plastic and metal
EUT Rating Voltage: DC 3.7V by battery(or Charged by adapter)
Adapter Input AC100~240V,50/60Hz
Adapter Output DC5V±0.2V,500mA

I/O Port Information (Applicable Not Applicable)

| I/O Port of EUT | | | |
|-----------------|------|------------------|-------------|
| I/O Port Type | Q'TY | Cable | Tested with |
| USB port | 1 | 0.8m, unshielded | 1 |
| earphone | 1 | 1.2m, unshielded | N/A |

3. TEST FACILITY

| | |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Facility | Attestation of Global Compliance Co., Ltd. |
| Location: | 1F, No.2 Building, Huafeng No.1 Technical, Industrial Park, Sanwei, Xixiang, Baoan District, Shenzhen, China |
| Description: | The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2003. |
| Site Filing: | The FCC Registration Number is 259865 |
| Instrument Tolerance: | All measuring equipment is in accord with ANSI C63.4 requirements that meet industry regulatory agency and accreditation agency requirement. |

4. SUPPORT EQUIPMENT LIST

| Device Type | Manufacturer | Model Name | Serial No. | Data Cable | Power Cable |
|-------------|--------------|------------|------------|------------|--------------------|
| PC | Lenovo | SL410K | N/A | N/A | 1.5m unshielded |

**Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

5. SYSTEM DESCRIPTION

EUT test procedure:

1. Connect EUT and peripheral devices.
2. Power on the EUT, EUT begins to work.
3. Make sure the EUT operates normally during the test.

Test Mode

1. USB connection for date transferring with PC
2. Charging by adapter.

6 SUMMARY OF TEST RESULTS

| FCC Rules | Description Of Test | Result |
|-----------|---------------------|-----------|
| §15.107 | Conduction Emission | Compliant |
| §15.109 | Radiated Emission | Compliant |

7. FCC LINE CONDUCTED EMISSION TEST

7.1. TEST EQUIPMENT OF LINE CONDUCTED EMISSION TEST

| Description | Manufacturer | Model | Identifier | Cal. Date | Cal. Due |
|-------------------|--------------|--------|------------|------------|------------|
| Spectrum Analyzer | Agilent | E4440A | N/A | 06/27/2011 | 06/26/2012 |
| EMI Test Receiver | H.P. | 8546A | N/A | 06/27/2011 | 06/26/2012 |
| LISN | EMCO | 3825/2 | N/A | 06/27/2011 | 06/26/2012 |

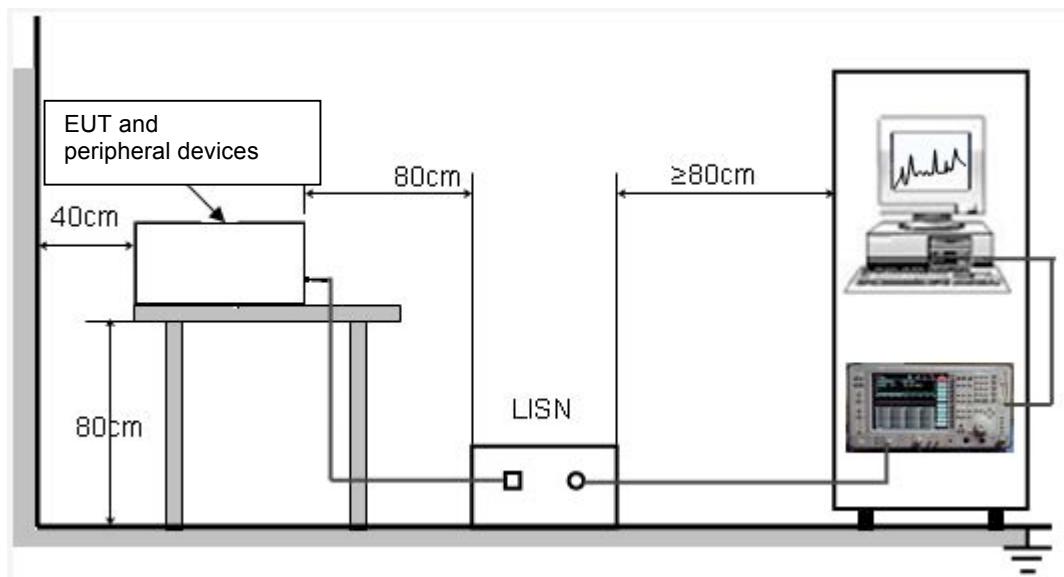
7.2 .LIMITS OF LINE CONDUCTED EMISSION TEST

| Frequency | Maximum RF Line Voltage | |
|---------------|-------------------------|----------------|
| | 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

7.3. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST

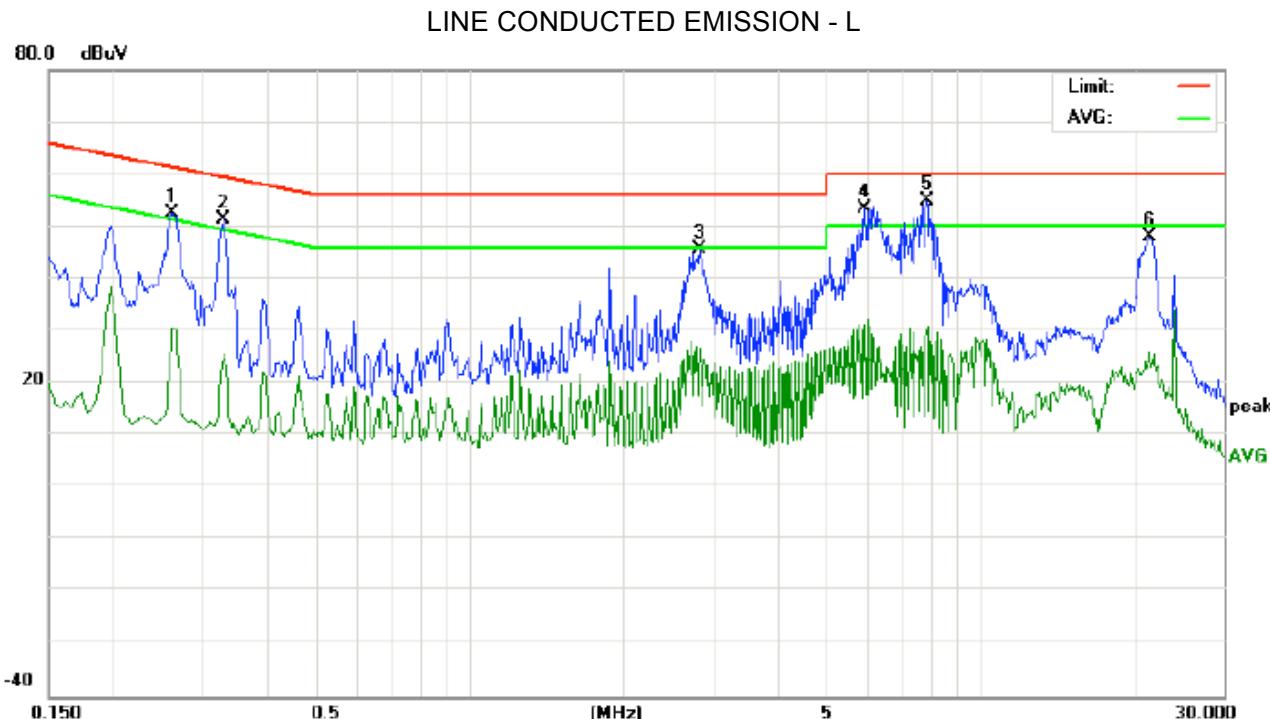


7.4. procedure of line conducted emission test

- 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 ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a 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 ANSI C63.4.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4) The EUT received DC 5V power by PC which received 120V/60Hz power from socket under the turntable through a LISN.
- 5) 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.
- 6) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 7) During the above scans, the emissions were maximized by cable manipulation.
- 8) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.
- 9) 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.

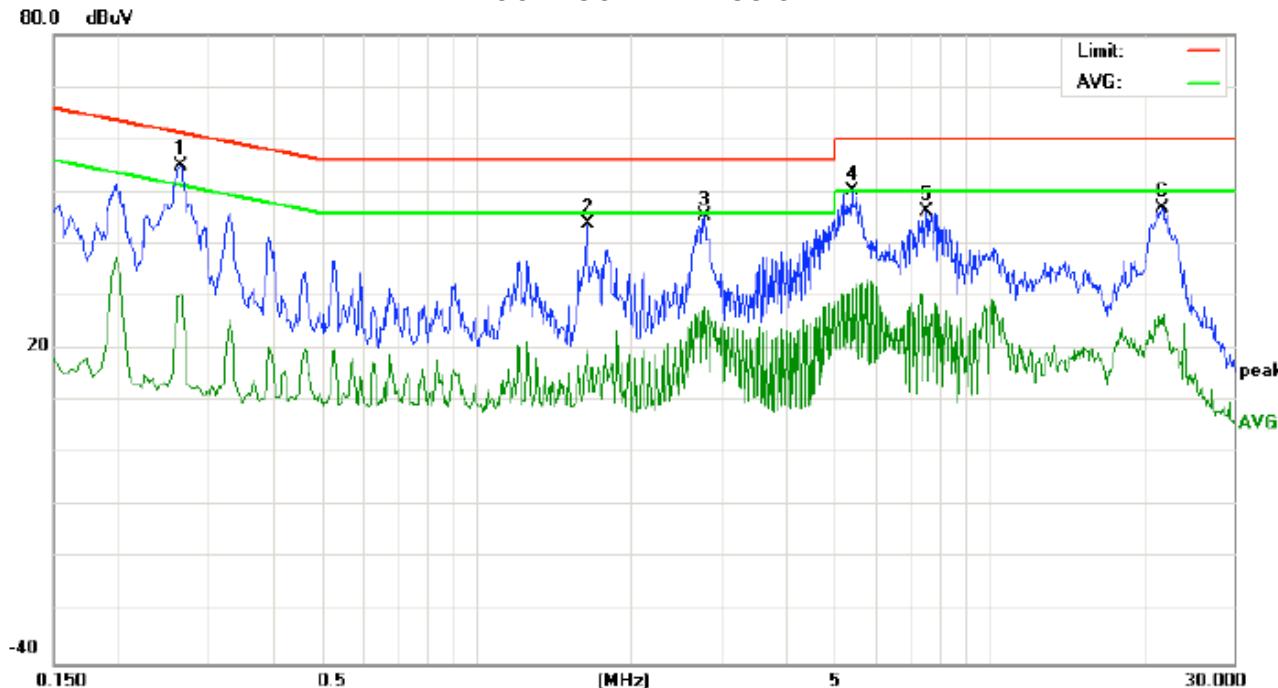
7.5 TEST RESULT OF LINE CONDUCTED EMISSION TEST



Site: Conduction Phase: L1 Temperature: 26
 Limit: FCC Class B Conduction(QP) Power: Humidity: 60 %
 EUT: GSM Mobile Phone
 M/N: Tornado II
 Mode: USB
 Note:

| No. | Freq. (MHz) | Reading_Level (dBuV) | | | Correct Factor | Measurement (dBuV) | | | Limit (dBuV) | | Margin (dB) | | P/F | Comment |
|-----|----------------|-------------------------|----|-------|-------------------|-----------------------|----|-------|-----------------|-------|----------------|--------|-----|---------|
| | | Peak | QP | AVG | | Peak | QP | AVG | QP | AVG | QP | AVG | | |
| 1 | 0.2620 | 42.36 | | 20.36 | 10.27 | 52.63 | | 30.63 | 61.36 | 51.36 | -8.73 | -20.73 | P | |
| 2 | 0.3300 | 40.93 | | 15.39 | 10.30 | 51.23 | | 25.69 | 59.45 | 49.45 | -8.22 | -23.76 | P | |
| 3 | 2.8340 | 35.24 | | 16.30 | 10.51 | 45.75 | | 26.81 | 56.00 | 46.00 | -10.25 | -19.19 | P | |
| 4 | 5.9378 | 43.29 | | 21.04 | 10.28 | 53.57 | | 31.32 | 60.00 | 50.00 | -6.43 | -18.68 | P | |
| 5 | 7.8539 | 44.51 | | 19.27 | 10.34 | 54.85 | | 29.61 | 60.00 | 50.00 | -5.15 | -20.39 | P | |
| 6 | 21.5820 | 37.88 | | 14.64 | 10.12 | 48.00 | | 24.76 | 60.00 | 50.00 | -12.00 | -25.24 | P | |

LINE CONDUCTED EMISSION – N



Site: Conduction Phase: **N** Temperature: 26
 Limit: FCC Class B Conduction(QP) Power: Humidity: 60 %
 EUT: GSM Mobile Phone
 M/N: Tornado II
 Mode: USB
 Note:

| No. | Freq. (MHz) | Reading_Level (dBuV) | | | Correct Factor | Measurement (dBuV) | | | Limit (dBuV) | | Margin (dB) | | P/F | Comment |
|-----|----------------|-------------------------|----|-------|-------------------|-----------------------|----|-------|-----------------|-------|----------------|--------|-----|---------|
| | | Peak | QP | AVG | | Peak | QP | AVG | QP | AVG | QP | AVG | | |
| 1 | 0.2644 | 44.64 | | 19.98 | 10.28 | 54.92 | | 30.26 | 61.29 | 51.29 | -6.37 | -21.03 | P | |
| 2 | 1.6451 | 33.43 | | 9.58 | 10.33 | 43.76 | | 19.91 | 56.00 | 46.00 | -12.24 | -26.09 | P | |
| 3 | 2.7820 | 34.74 | | 17.53 | 10.50 | 45.24 | | 28.03 | 56.00 | 46.00 | -10.76 | -17.97 | P | |
| 4 | 5.4138 | 39.83 | | 21.22 | 10.25 | 50.08 | | 31.47 | 60.00 | 50.00 | -9.92 | -18.53 | P | |
| 5 | 7.5259 | 35.94 | | 16.03 | 10.33 | 46.27 | | 26.36 | 60.00 | 50.00 | -13.73 | -23.64 | P | |
| 6 | 21.7300 | 36.64 | | 14.80 | 10.12 | 46.76 | | 24.92 | 60.00 | 50.00 | -13.24 | -25.08 | P | |

8. FCC RADIATED EMISSION TEST

8.1. TEST EQUIPMENT OF RADIATED EMISSION

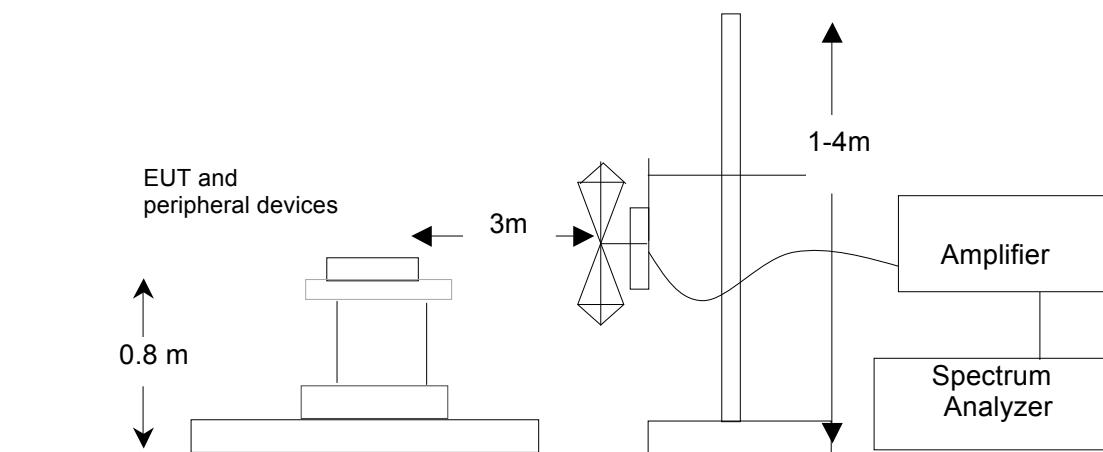
| Description | Manufacturer | Model | Identifier | Cal. Date | Cal. Due |
|------------------------------|--------------|-------------|-------------|------------|------------|
| PSA SERIES SPECTRUM ANALYZER | AGILENT | E4440A | US41421290 | 06/27/2011 | 06/26/2012 |
| ANTENNA | A.H. | SAS-521-4 | 128 | 06/27/2011 | 06/26/2012 |
| HORN ANTENNA | EM | EM-AH-10180 | N/A | 06/27/2011 | 06/26/2012 |
| AMPLIFIER | EM | EM30180 | 0607030 | 06/27/2011 | 06/26/2012 |
| POSITIONING CONTROLLER | MF | MF-7802 | MF780208147 | 06/27/2011 | 06/26/2012 |

8.2. LIMITS OF RADIATED EMISSION TEST

| Frequency (MHz) | Distance (m) | Maximum Field Strength Limit (dBuV/m/ Q.P.) |
|-----------------|--------------|---------------------------------------------|
| 30~88 | 3 | 40.0 |
| 88~216 | 3 | 43.5 |
| 216~960 | 3 | 46.0 |
| Above 960 | 3 | 54.0 |

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

8.3 BLOCK DIAGRAM OF RADIATED EMISSION TEST



8.4 PROCEDURE OF RADIATED 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 turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (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 ANSI C63.4.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4) The EUT received DC 5V by PC which received 120V/60Hz power from socket under the turntable through a LISN.
- 5) The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- 6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- 7) The test mode(s) were scanned during the test.
- 8) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.

8.5 TEST RESULT OF RADIATED EMISSION TEST

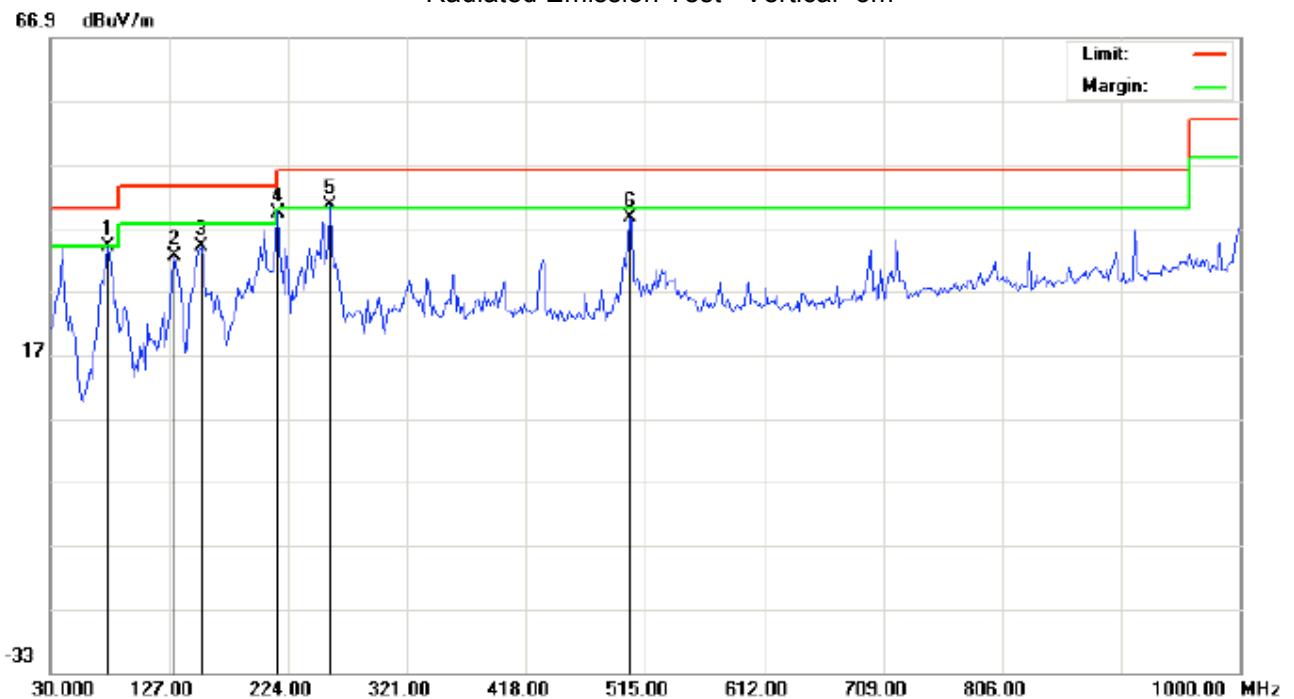
Radiated Emission Test –Horizontal -3m



Site: site #1 Polarization: *Horizontal* Temperature: 26
 Limit: FCC Class B 3M Radiation Power: Humidity: 60 %
 EUT: GSM Mobile Phone Distance: 3m
 M/N: Tornado II
 Mode: USB
 Note:

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | * | 83.3499 | 21.58 | 13.23 | 34.81 | 40.00 | -5.19 | peak | | | |
| 2 | ! | 191.6665 | 24.42 | 13.61 | 38.03 | 43.50 | -5.47 | peak | | | |
| 3 | | 236.9333 | 23.10 | 16.70 | 39.80 | 46.00 | -6.20 | peak | | | |
| 4 | | 266.0332 | 22.94 | 17.02 | 39.96 | 46.00 | -6.04 | peak | | | |
| 5 | | 366.2667 | 16.63 | 19.15 | 35.78 | 46.00 | -10.22 | peak | | | |
| 6 | | 479.4331 | 15.01 | 21.67 | 36.68 | 46.00 | -9.32 | peak | | | |

Radiated Emission Test –Vertical -3m



Site: site #1

Polarization: **Vertical**

Temperature: 26

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT: GSM Mobile Phone

Distance: 3m

M/N: Tornado II

Mode: USB

Note:-

| No. | Mk | Freq. | Reading | Factor | Measurement | Limit | Over | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
| | | MHz | dBuV | dB/m | dBuV/m | dBuV/m | dB | | cm | degree | |
| 1 | | 76.8833 | 35.26 | -1.30 | 33.96 | 40.00 | -6.04 | peak | | | |
| 2 | | 131.8497 | 16.70 | 15.82 | 32.52 | 43.50 | -10.98 | peak | | | |
| 3 | | 152.8667 | 16.31 | 17.64 | 33.95 | 43.50 | -9.55 | peak | | | |
| 4 | * | 215.9165 | 24.84 | 14.56 | 39.40 | 43.50 | -4.10 | peak | | | |
| 5 | ! | 257.9499 | 23.24 | 17.23 | 40.47 | 46.00 | -5.53 | peak | | | |
| 6 | | 502.0667 | 15.62 | 22.99 | 38.61 | 46.00 | -7.39 | peak | | | |

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

FCC LINE CONDUCTED EMISSION TEST SETUP



FCC RADIATED EMISSION TEST SETUP



APPENDIX 2 PHOTOGRAPHS OF EUT

TOP VIEW OF SAMPLE



BOTTOM VIEW OF SAMPLE



LEFT VIEW OF SAMPLE



RIGHT VIEW OF SAMPLE



FRONT VIEW OF SAMPLE



BACK VEIW OF SAMPLE



ALL VIEW OF SAMPLE



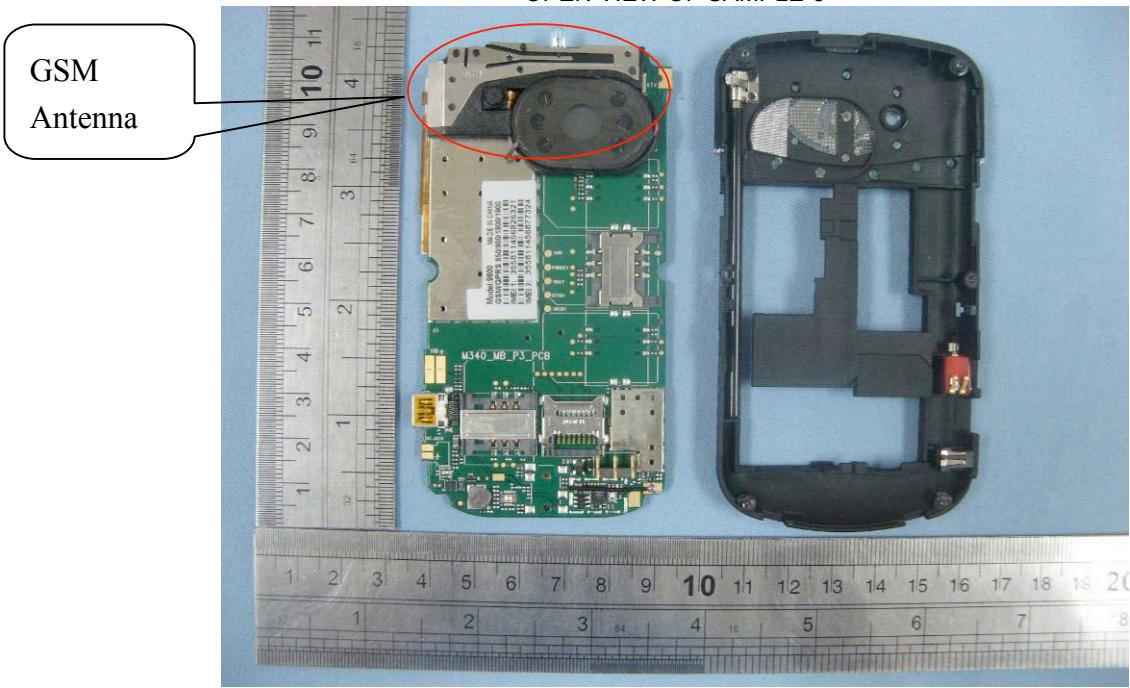
OPEN VIEW OF SAMPLE-1



OPEN VIEW OF SAMPLE-2



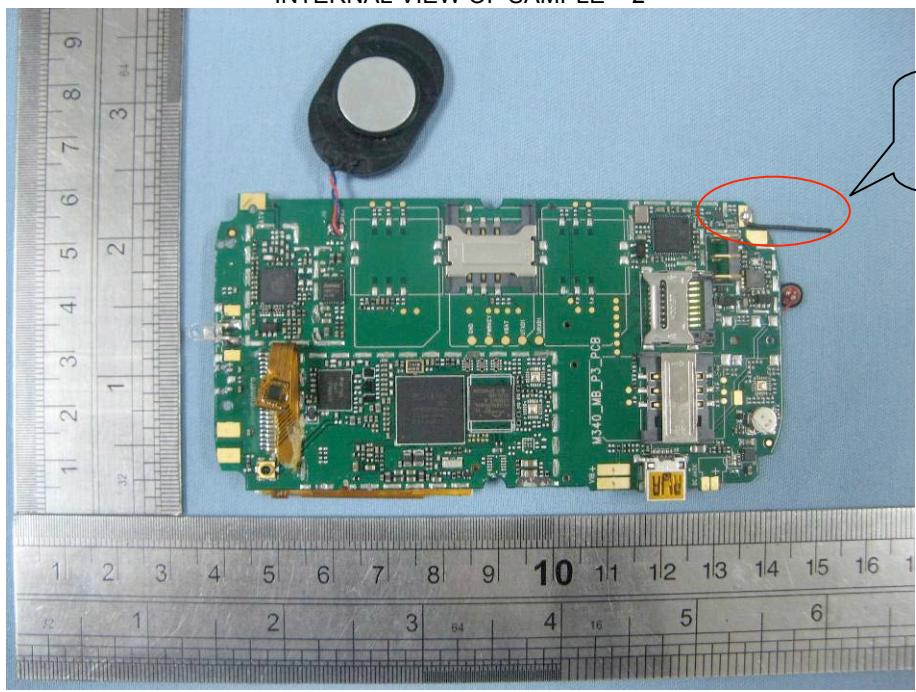
OPEN VIEW OF SAMPLE-3



INTERNAL VIEW OF SAMPLE – 1



INTERNAL VIEW OF SAMPLE – 2



----END OF REPORT----