FCC PART 15B

MEASUREMENT AND TEST REPORT

FOR

Shanghai Ulead Technology LTD.

Room 622, Floor 1, Merchant Market Building, No.2001 North Yanggao Road,

Waigaoqiao

FCC ID: Z24-ATL

Report Concerns: Original Report	**Equipment Type:** GSM Tracker

Model:	AT Lite
Report No.:	STR11098136I-2
Test Date:	2011-09-17 to 2011-10-17
Issue Date:	2011-10-18
Tested By:	Silin Chen / Engineer
Reviewed By:	Lahm Peng / EMC Manager
Approved & Authorized By:	Jandy so / PSQ Manager

Prepared By:

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Shanghai Ulead Technology LTD.
Address of applicant:	Room 622, Floor 1, Merchant Market Building, No.2001 North Yanggao Road, Waigaoqiao
Manufacturer:	Shanghai Ulead Technology LTD.
Address of manufacturer:	Room 622, Floor 1, Merchant Market Building, No.2001 North Yanggao Road, Waigaoqiao

General Description of E.U.T

Items	Description
EUT Description:	GSM Tracker
Trade Name:	Prime
Model No.:	AT Lite
Rated Voltage:	Battery DC 3.7V
Battery:	M/N: JLFV; DC 3.7V/1300mAh
Power Adapter:	M/N:A361-0500500U; Input: 100-240V ~ 50/60Hz, 0.2A
For more information refer to the circuit diagram form and the user's manual.	

The test data is gathered from a production sample, provided by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the Shanghai Ulead Technology LTD. 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 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which results in lowering the emission/immunity, 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.

The equipment under test (EUT) was configured to measure its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the Operating Instructions.

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 Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the system components. The test software, provided by the customer, is started while the EUT is on to simulate the normal work.

1.6 Accessories Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	IBM	T22	/

1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Download Cable	1.0	UnShielded	Without Core
USB Charging Cable	1.0	Unshielded	Without Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. §15.107 (a)- CONDUCTED EMISSION

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.

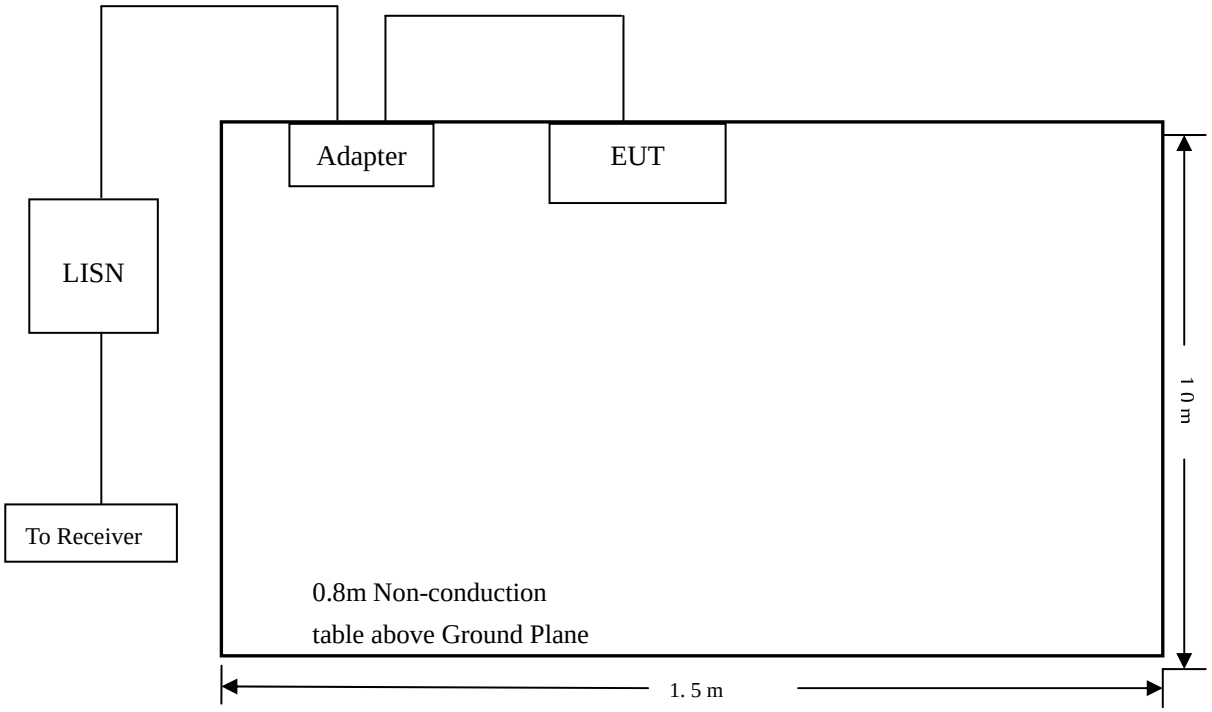
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2010-12-20	2011-12-19
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2010-12-20	2011-12-19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2010-12-20	2011-12-19

3.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.107 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.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

3.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed ..... Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth ..... 9 kHz
Quasi-Peak Adapter Mode ..... Normal

3.7 Summary of Test Results/Plots

According to the data in section 3.8, the EUT complied with the FCC Part 15B Conducted margin for a Class B device, with the *worst* margin reading of:

-9.03 dBμV at **0.330 MHz** in the **Line**, **Average** detector, 0.15-30MHz

3.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

Conducted Disturbance

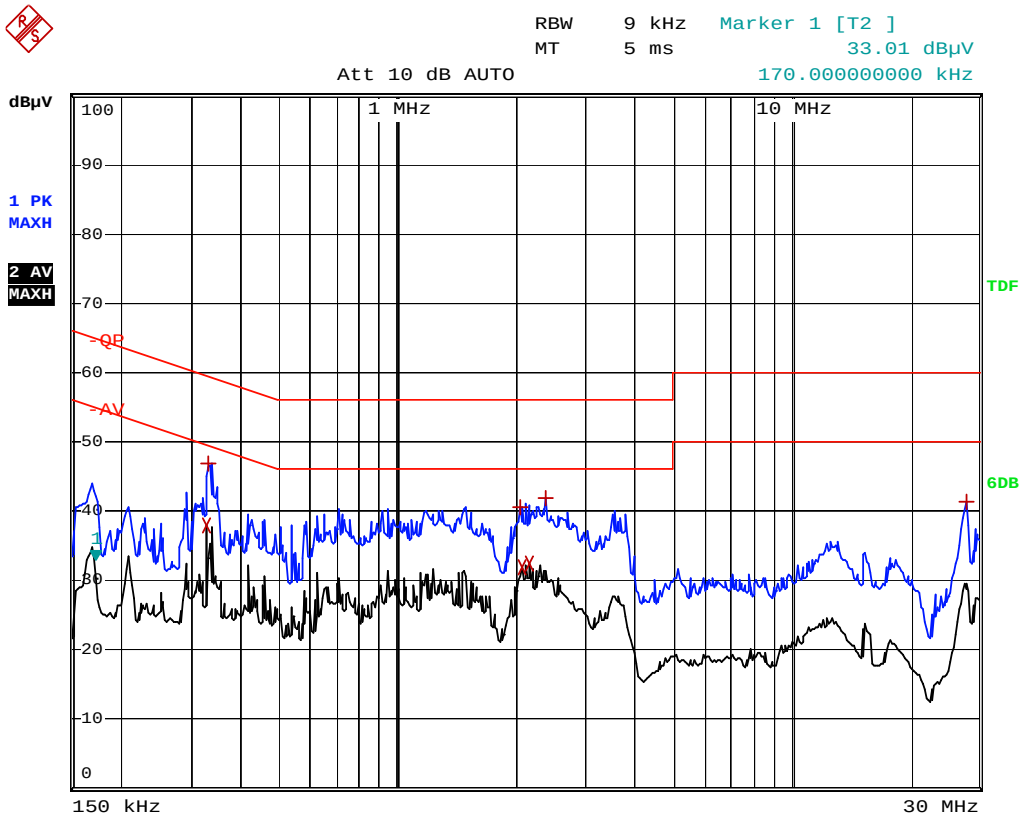
EUT: GSM Tracker

M/N: AT Lite

Operating Condition: Charging

Test Specification: N

Comment: 120V/60Hz



EDIT PEAK LIST (Prescan Results)

Trace1:	-QP
Trace2:	-AV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	326 kHz	37.94	-11.61
1 Max Peak	334 kHz	46.94	-12.40
1 Max Peak	2.054 MHz	40.58	-15.41
2 Average	2.082 MHz	31.83	-14.16
2 Average	2.17 MHz	32.33	-13.66
1 Max Peak	2.374 MHz	41.76	-14.23
1 Max Peak	27.858 MHz	41.37	-18.62

Plot of Conducted Emissions Test Data

Conducted Disturbance

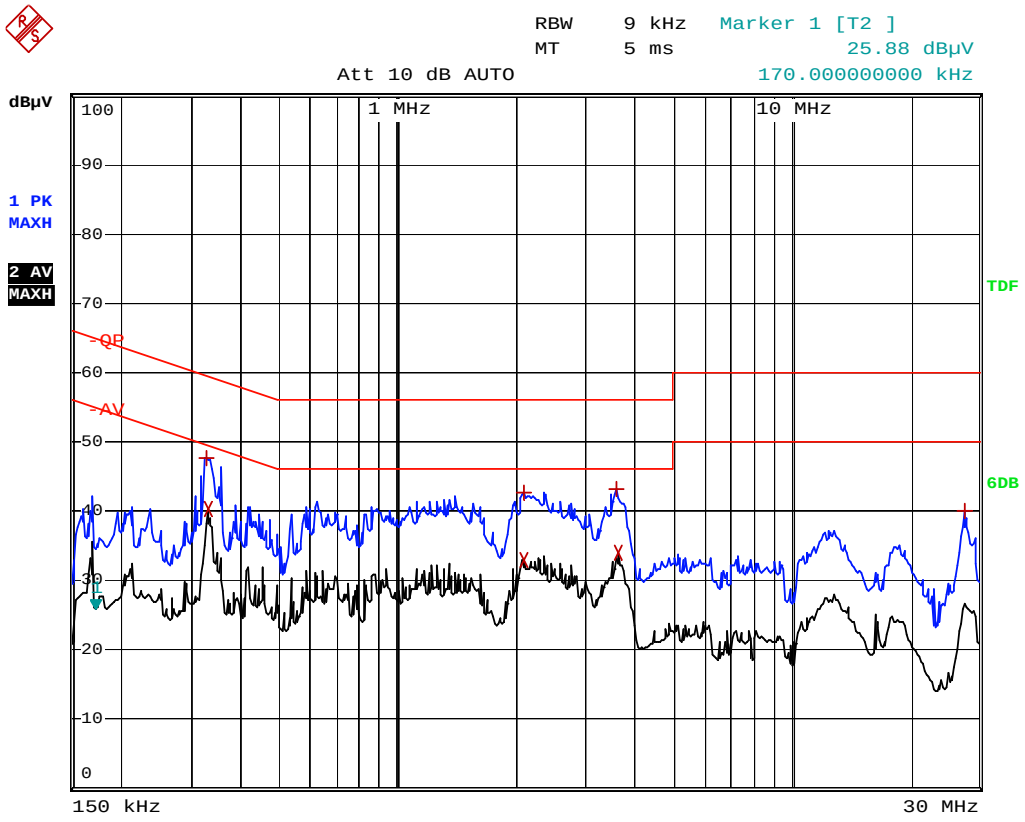
EUT: GSM Tracker

M/N: AT Lite

Operating Condition: Charging

Test Specification: L

Comment: 120V/60Hz



EDIT PEAK LIST (Prescan Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Max Peak	326 kHz	47.61	-11.93
2 Average	330 kHz	40.41	-9.03
1 Max Peak	2.102 MHz	42.63	-13.36
2 Average	2.102 MHz	32.92	-13.07
1 Max Peak	3.598 MHz	43.24	-12.75
2 Average	3.638 MHz	33.97	-12.02
1 Max Peak	27.614 MHz	40.06	-19.93

4. §15.109(a)- RADIATED EMISSION

4.1 Measurement Uncertainty

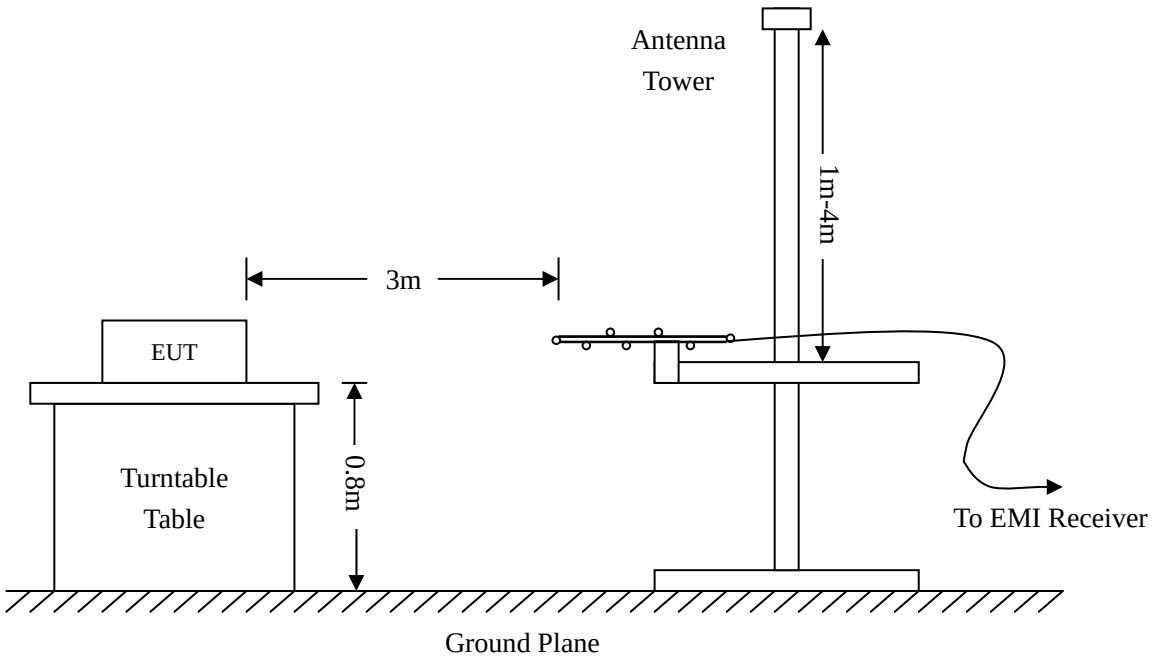
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2010-12-20	2011-12-19
EMI Test Receiver	R&S	ESVB	825471/005	2010-12-20	2011-12-19
Positioning Controller	C&C	CC-C-1F	N/A	2010-12-20	2011-12-19
RF Switch	EM	EMSW18	SW060023	2010-12-20	2011-12-19
Pre-amplifier	Agilent	8447F	3113A06717	2010-12-20	2011-12-19
Pre-amplifier	Compliance Direction	PAP-0118	24002	2010-12-20	2011-12-19
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2011-01-09	2012-01-08
Horn Antenna	ETS	3117	00086197	2011-01-09	2012-01-08
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2011-01-09	2012-01-08

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 15.205 and 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 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:

Corr. Ampl. = Indicated Reading – 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 Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15B Limit

4.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.6 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 15B Class B standards, and had the worst margin of:

-5.30 dBμV at **36.7662 MHz** in the **Vertical** polarization, **Charging** mode, **9 kHz to 1 GHz, 3Meters**

Plot of Radiation Emissions Test Data

Radiated Disturbance

EUT: GSM Tracker

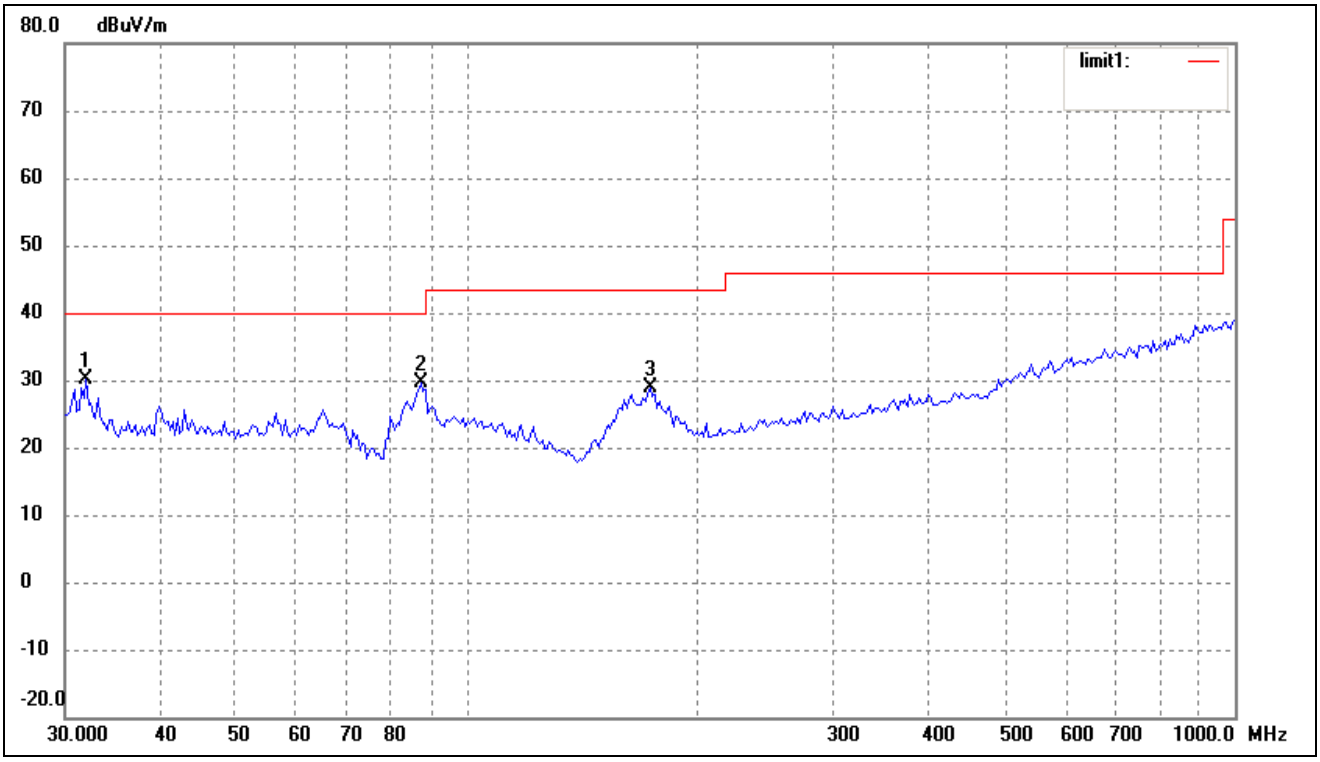
M/N: AT Lite

Operating Condition: Charging

Test Specification: Horizontal & Vertical

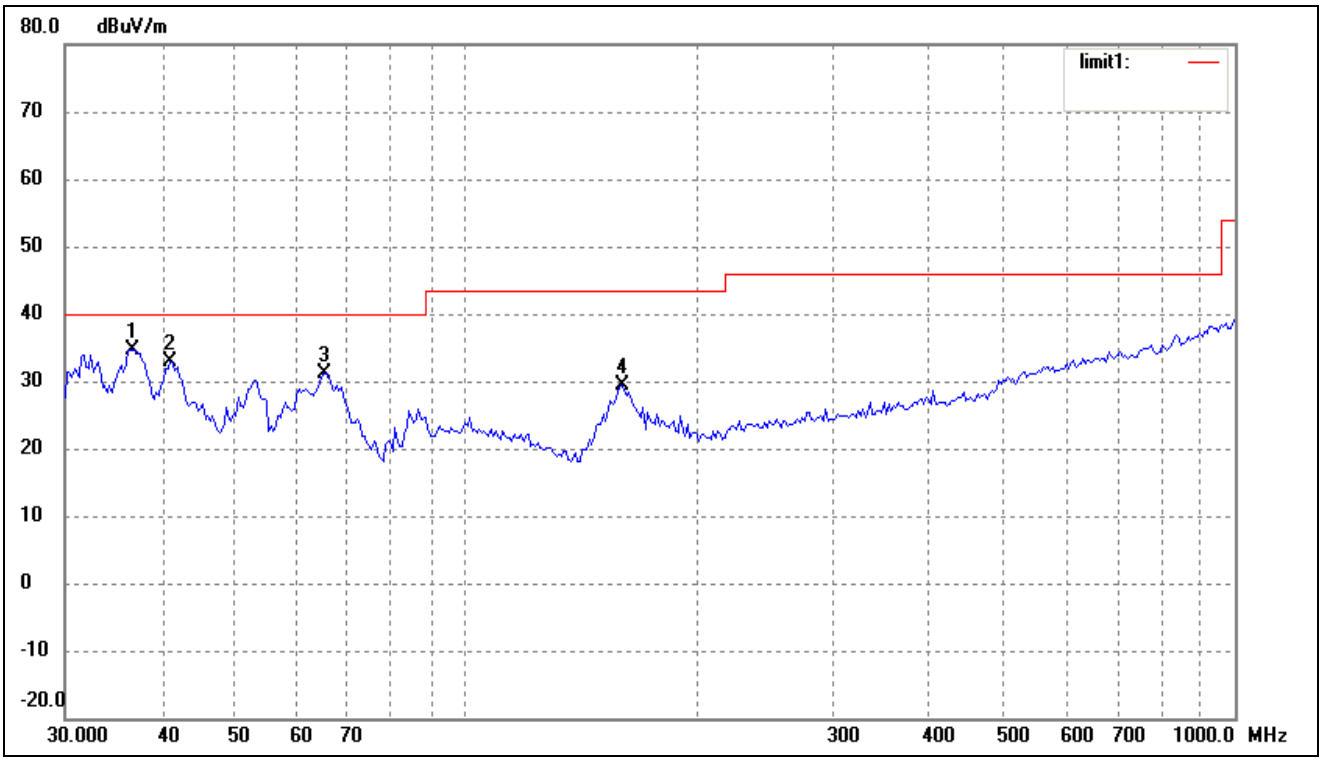
Comment: AC 120V/60Hz, DC 5V by adapter

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	31.9546	23.35	6.77	30.12	40.00	-9.88	360	100	peak
2	87.1117	23.57	6.15	29.72	40.00	-10.28	360	100	peak
3	173.2051	23.74	5.13	28.87	43.50	-14.63	360	100	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	36.7662	27.45	7.25	34.70	40.00	-5.30	360	100	peak
2	41.1320	24.79	8.16	32.95	40.00	-7.05	360	100	peak
3	65.3432	25.72	5.44	31.16	40.00	-8.84	360	100	peak
4	159.2251	24.75	4.51	29.26	43.50	-14.24	360	100	peak

Radiated Disturbance

EUT: GSM Tracker

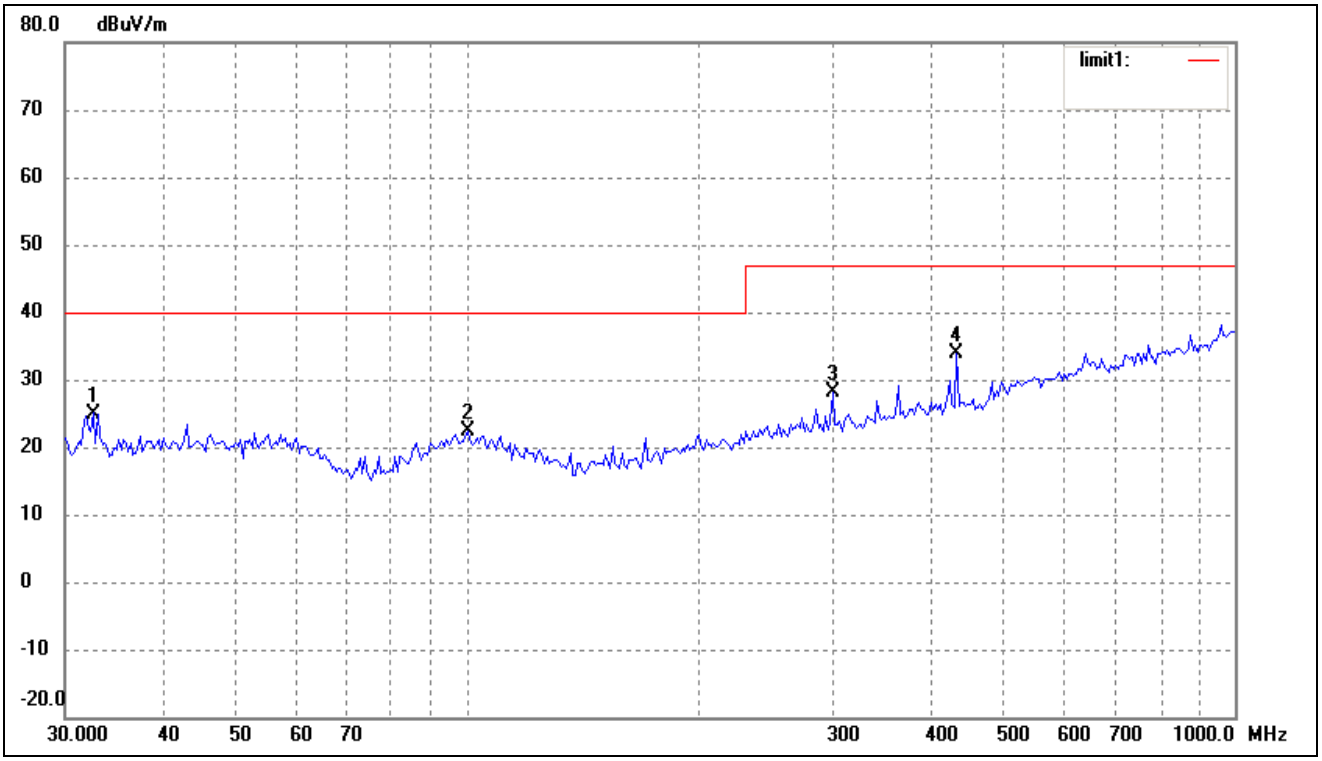
M/N: AT Lite

Operating Condition: Connect to PC

Test Specification: Horizontal & Vertical

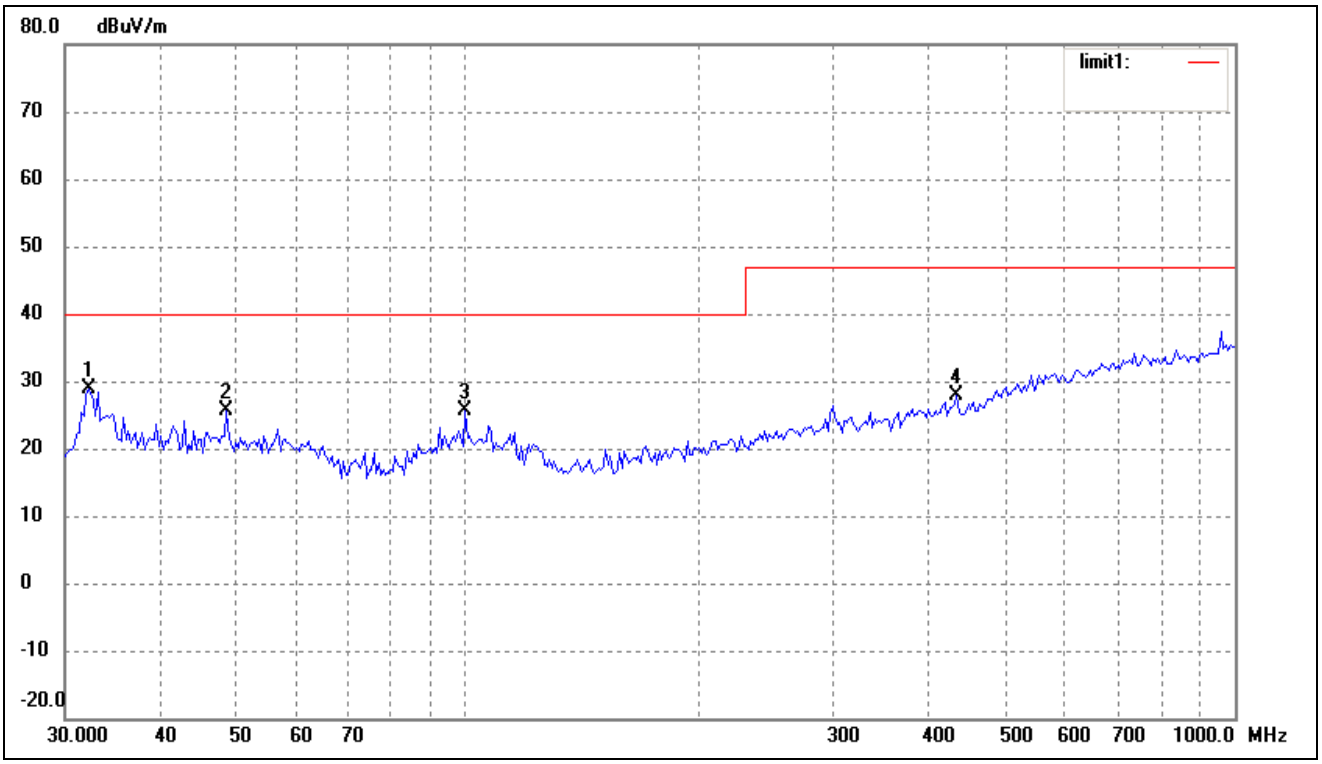
Comment: Battery DC 3.7V

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.6340	18.23	6.77	25.00	40.00	-15.00	360	100	peak
2	100.2286	13.88	8.41	22.29	40.00	-17.71	360	100	peak
3	299.3158	18.40	9.77	28.17	47.00	-18.83	360	100	peak
4	434.0651	22.00	11.93	33.93	47.00	-13.07	360	100	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.1795	22.16	6.77	28.93	40.00	-11.07	360	100	peak
2	48.6719	17.57	8.04	25.61	40.00	-14.39	360	100	peak
3	99.5281	17.24	8.40	25.64	40.00	-14.36	360	100	peak
4	434.0651	16.02	11.93	27.95	47.00	-19.05	360	100	peak

Note: The EUT was tested over frequency rang from 9kHz to 1GH for radiation emissions, emissions attenuated closely to the noise base are not reported for below 30MHz.

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