

FCC PART 15 CLASS B

EMI MEASUREMENT AND TEST REPORT

For

Hangzhou Tuolima Network Technologies Co., Ltd.

608, Zhejiang Enterprise Center, 555 Wensan Road, Hangzhou, China

FCC ID: XYWGSM

Dec.12, 2009

This Report Concerns: Original Report		Equipment Type : GSM Voice Modem	
Test Engineer:		Eric Li 	
Report No.:		BST09113832410R-3	
Receive EUT Date/Test Date:		Dec.02,2009/ Dec.02-12,2009	
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1. GENERAL INFORMATION

1.1. Report information

1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BST approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BST in any way guarantees the later performance of the product/equipment.

1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, BST therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BST, unless the applicant has authorized BST in writing to do so.

Test Facility -

The test site used to collect the radiated data is located on the address of emitel (Shenzhen) Limited

(FCC Registered Test Site Number: 746887) on

Building 2, 171 Meihua Road, Futian District, Shenzhen, 518049 China

The Test Site is constructed and calibrated to meet the FCC requirements.

1.2. Measurement Uncertainty

Available upon request.

1.3. Test Methodology

All measurements contained in this report were conducted with ANSI C63.4.

2. PRODUCT DESCRIPTION

2.1. EUT Description

Description : GSM Voice Modem

Applicant : Hangzhou Tuolima Network Technologies Co., Ltd.
608, Zhejiang Enterprise Center, 555 Wensan Road,
Hangzhou, China

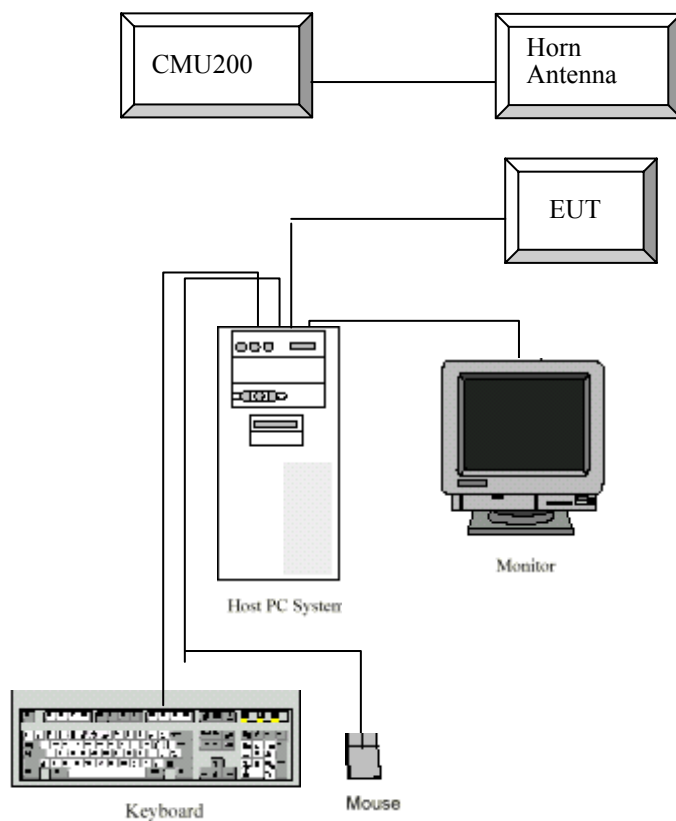
Model Number : GSM Voice Modem

Additional Information

Frequency : 1850.2MHZ-1909.8MHZ

Power Supply : DC5V(PC)

2.2. Block Diagram of EUT Configuration



2.3. Test Conditions

Temperature: 23~25

Relative Humidity: 55~63 %

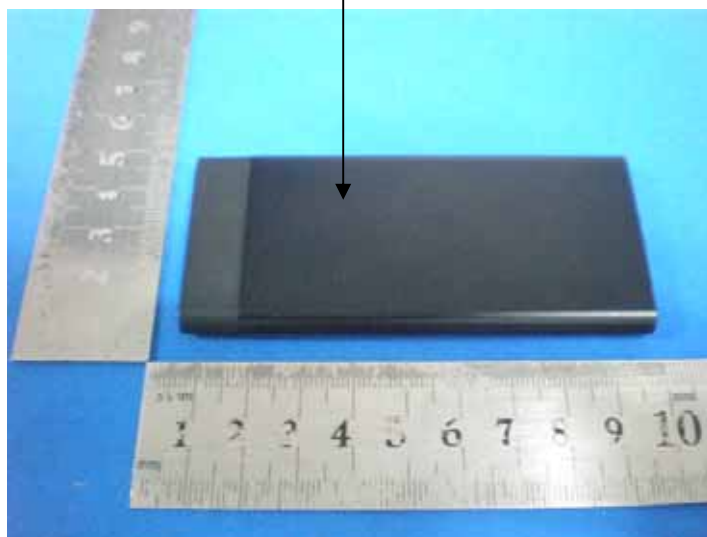
3. FCC ID LABEL

FCC ID: XYWGSM

:

Label Location on EUT

EUT Bottom View/ FCC ID Label Location



4. TEST RESULTS SUMMARY

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Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

Remark: "N/A" means "Not applicable."

5. MODIFICATIONS

No modification was made.

6. TEST EQUIPMENT USED

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052604	2009-09-25	2010-09-25
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2009-03-11	2010-03-11
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2009-05-09	2010-05-09
HP	Preamplifier	8449B	3008A00277	2009-09-29	2010-09-29
HP	Signal Generator	HP8657A	2849U00982	2009-10-16	2010-10-16
HP	Amplifier	HP8447D	2944A09795	2009-11-15	2010-11-15
Giga-tronics	Signal Generator	1026	270801	2009-09-29	2010-09-29
COM POWER	Dipole Antenna	AD-100	041000	2009-09-25	2010-09-25
A.H. System	Horn Antenna	SAS-200/571	135	2009-05-17	2010-05-17
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	1100.0008.02	2009-06-21	2010-06-21
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2009-10-16	2010-10-16
WUHUAN	Temperature & Humidity Chamber	HTP205	20021115	2008-12-28	2009-12-28

7. CONDUCTED EMISSION TEST

7.1. Applicable Standard

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Frequency range (MHz)	Conducted Limit (dBμV), Class B digital device	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

7.2. Test Procedure

- The EUT was placed on a 0.8m high insulating table and kept 0.4 meters from the conducting wall of shielded room.
- The EUT was connected to the power mains through a line impedance stabilization network (LISN). The LISN provide 50Ω/50μH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched using CISPR Quasi-Peak and Average detector.

7.3. Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

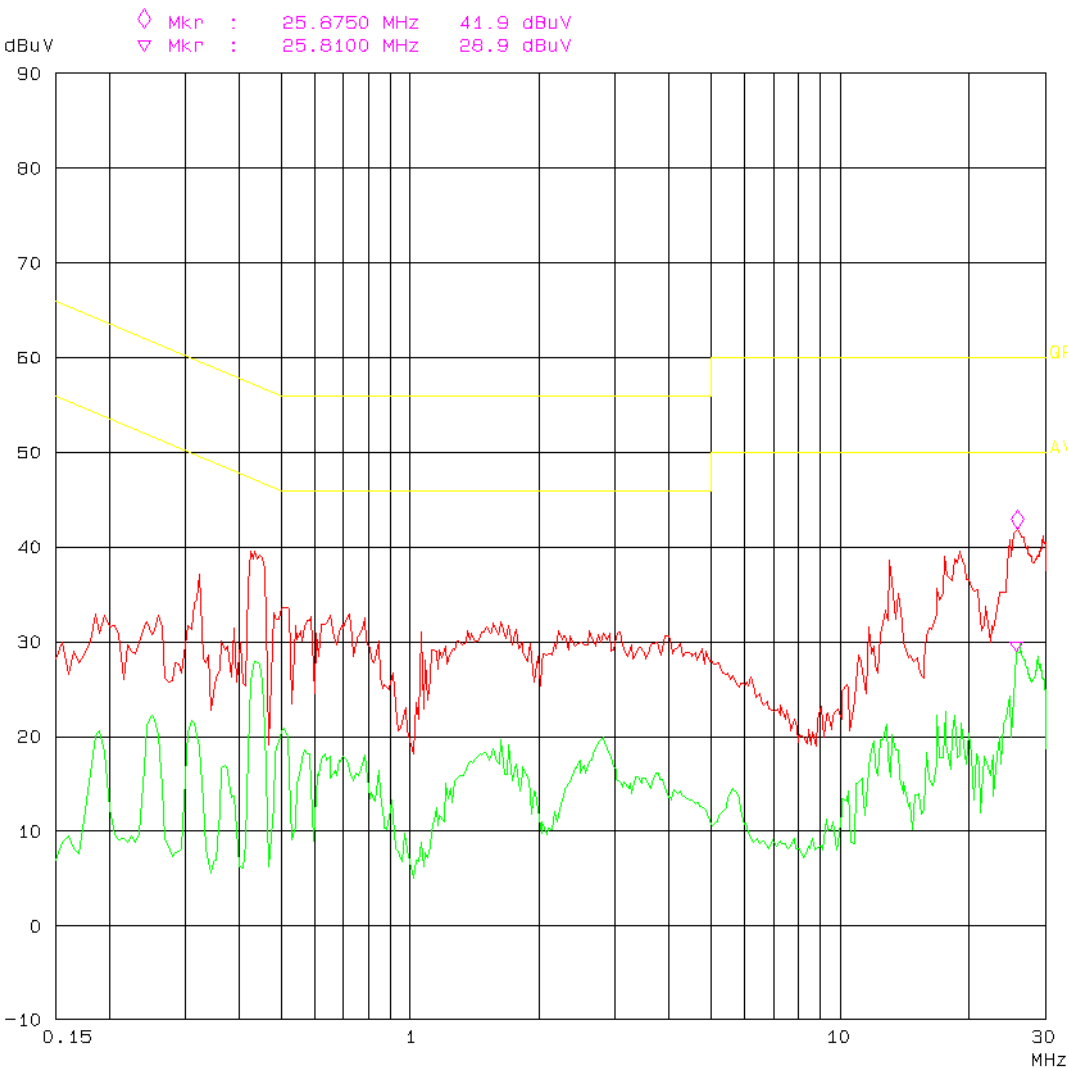
Test Mode: Operating

Line Conducted Emissions				FCC PART 15 B	
Frequency (MHz)	Amplitude (dBμV)	Detector (QP/AV)	Conductor (Line/Neutral)	Limit (dBμV)	Margin (dB)
26.235	52.10	QP	Neutral	60.00	7.90
0.435	40.30	QP	Neutral	57.20	16.90
0.435	39.60	QP	Line	57.20	17.60
25.875	41.90	QP	Line	60.00	18.10
0.435	28.00	AV	Line	47.20	19.20
0.435	27.50	AV	Neutral	47.20	19.70
3.720	36.20	QP	Neutral	56.00	19.80
13.145	39.90	QP	Neutral	60.00	20.10
25.810	28.90	AV	Line	50.00	21.10
26.235	28.80	AV	Neutral	50.00	21.20
13.085	38.60	QP	Line	60.00	21.40
0.305	38.10	QP	Neutral	60.10	22.00
0.720	33.90	QP	Neutral	56.00	22.10
0.325	37.10	QP	Line	59.60	22.50
0.645	32.40	QP	Line	56.00	23.60
2.810	30.90	QP	Line	56.00	25.10
2.815	19.90	AV	Line	46.00	26.10
3.725	19.30	AV	Neutral	46.00	26.70
0.650	17.80	AV	Line	46.00	28.20
0.305	21.10	AV	Neutral	50.10	29.00
0.720	15.50	AV	Neutral	46.00	30.50
13.145	19.50	AV	Neutral	50.00	30.50
0.325	18.80	AV	Line	49.60	30.80
13.145	15.60	AV	Line	50.00	34.40

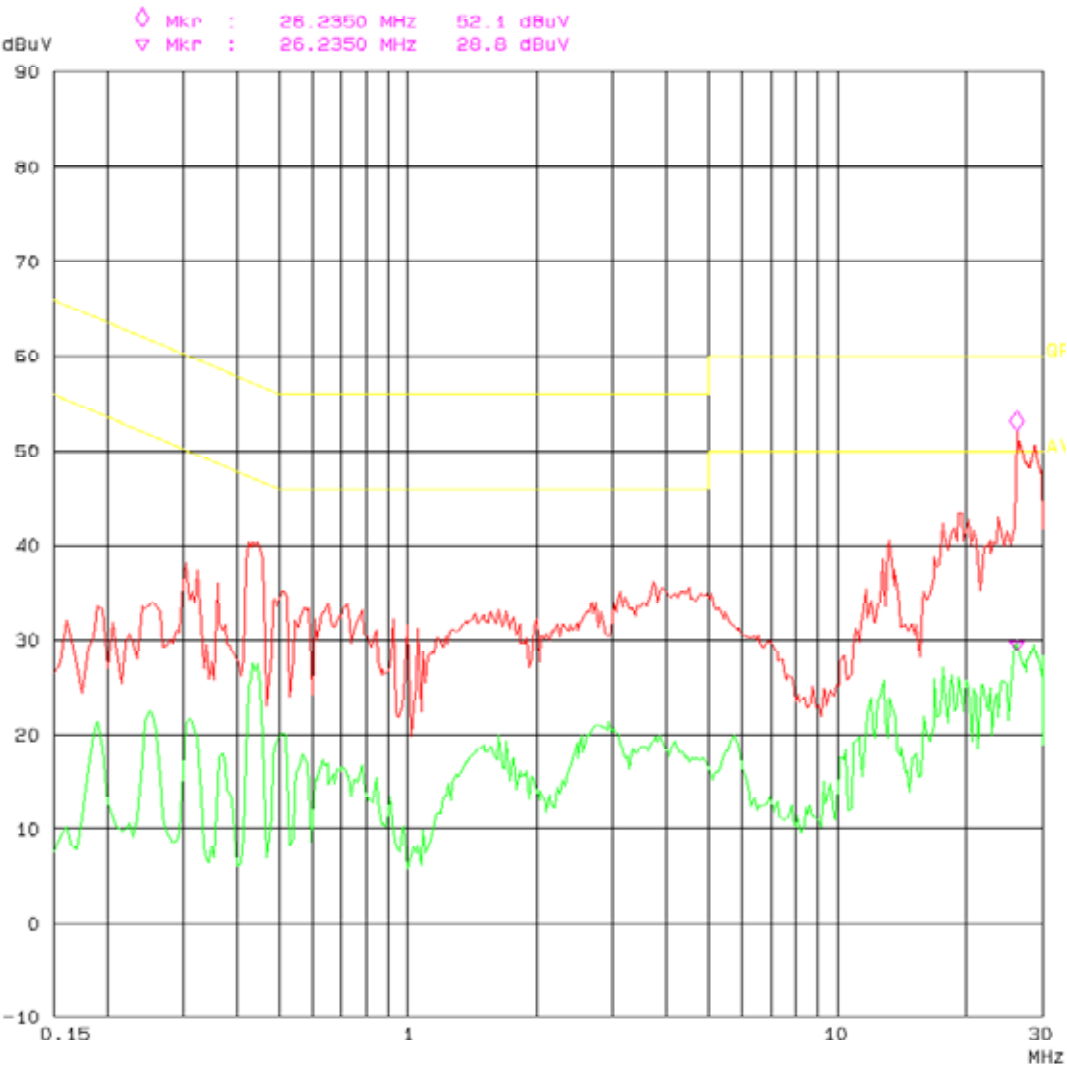
7.4. Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference.

Line:



Neutral:

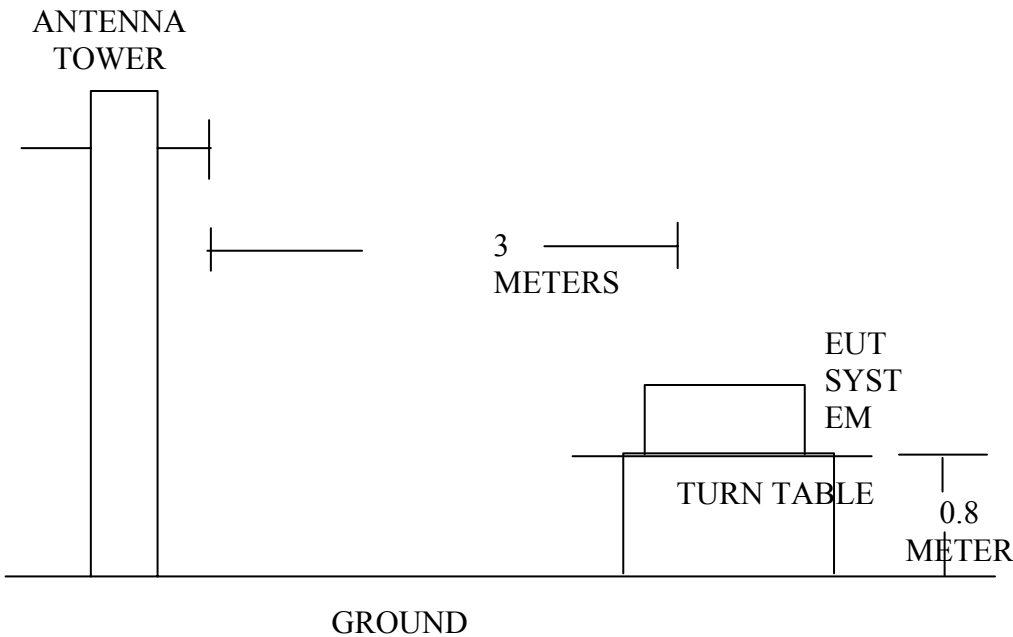


8. **RADIATED EMISSION MEASUREMENT**

8.1. **Applicable Standards**

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8.2. **Test Setup Diagram**



8.3. **Radiated Emission Limit(Class B)**

FREQUEN CY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBμV/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

Note:(1) The smaller limit shall apply at the edge between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or system.

8.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the Commission requirements and operating regulations in a manner which tends to maximize Its emission characteristics in normal application.

8.5. Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

The bandwidth setting on the test receiver (R&S TEST RECEIVER ESCI) is 120 KHz. The EUT is tested in Anechoic Chamber. The frequency range from 30MHz to 1000 MHz is checked.

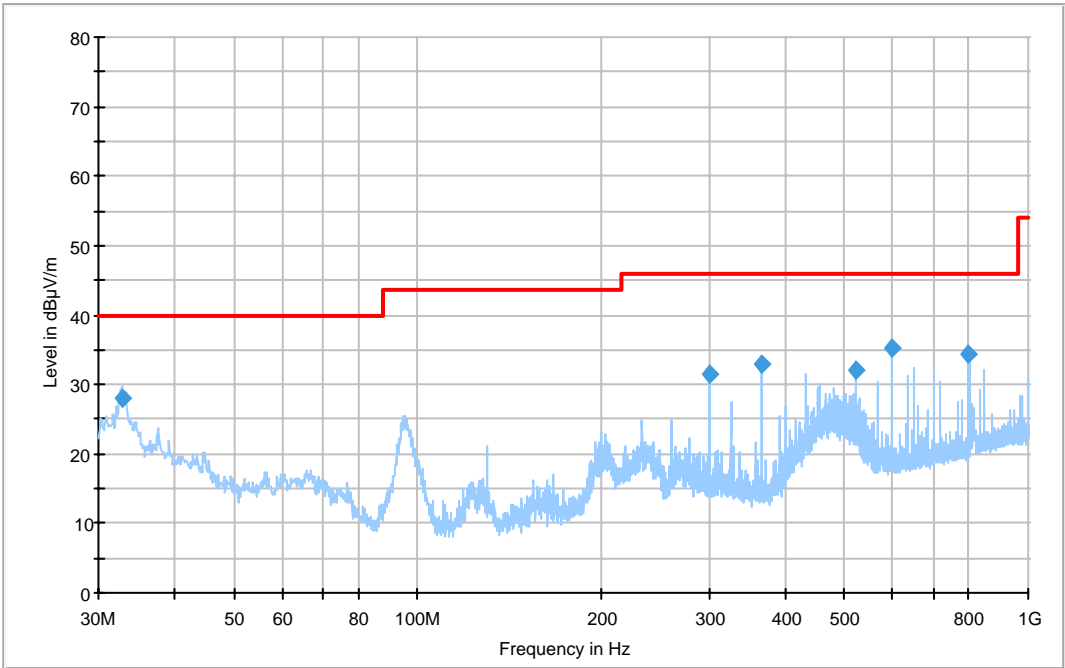
8.6. Test Data

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

Test Result:

PASS

Test Mode: operating (worse case mode)



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Ant. Height (cm)	Ant. Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
600.078200	35.3	104.0	V	3.0	-8.7	46.0	10.7
800.140775	34.5	129.0	V	196.0	-5.4	46.0	11.5
32.893900	28.1	107.0	V	198.0	-10.5	40.0	11.9
366.718675	33.0	174.0	V	0.0	-12.9	46.0	13.0
521.176850	32.2	132.0	V	334.0	-10.2	46.0	13.8
300.023750	31.5	249.0	H	218.0	-3.6	46.0	14.5