



PARTIAL FCC TEST REPORT (PART 27)

REPORT NO.: RF130426C21-2

MODEL NO.: MC8355

FCC ID: QYL300GOB13

RECEIVED: Apr. 26, 2013

TESTED: May 28, 2013

ISSUED: Jun. 03 , 2013

APPLICANT: Getac Technology Corporation

ADDRESS: 5F., Building A, No. 209, Sec.1, Nangang Rd.,
Nangang Dist., Taipei City 11568, Taiwan, R.O.C.

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,
New Taipei City, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

TABLE OF CONTENTS

RELEASE CONTROL RECORD	3
1 CERTIFICATION.....	4
2 SUMMARY OF TEST RESULTS	5
2.1 MEASUREMENT UNCERTAINTY	5
2.2 TEST SITE AND INSTRUMENTS.....	6
3 GENERAL INFORMATION	7
3.1 GENERAL DESCRIPTION OF EUT	7
3.2 CONFIGURATION OF SYSTEM UNDER TEST.....	8
3.3 DESCRIPTION OF SUPPORT UNITS.....	8
3.4 DESCRIPTION OF TEST MODES	9
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS.....	9
4 TEST TYPES AND RESULTS	10
4.1 OUTPUT POWER MEASUREMENT	10
4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT.....	10
4.1.2 TEST PROCEDURES.....	10
4.1.3 TEST SETUP.....	11
4.1.4 TEST RESULTS	12
5 INFORMATION ON THE TESTING LABORATORIES	13
6 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	14



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130426C21-2	Original release	Jun. 03 , 2013



1 CERTIFICATION

PRODUCT: 3G Radio Module
MODEL NO.: MC8355
BRAND: Sierra Wireless
APPLICANT: Getac Technology Corporation
TESTED: May 28, 2013
TEST SAMPLE: Identical Prototype
TEST STANDARDS: **FCC Part 27, Subpart C, L**
FCC Part 2
ANSI C63.4-2003

The above equipment (model: MC8355) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : *Vera Huang* , **DATE:** Jun. 03 , 2013

Vera Huang / Specialist

APPROVED BY : *Sam chen* , **DATE:** Jun. 03 , 2013

Sam Chen / Assistant Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

WCDMA Band 4			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
2.1046 27.50(d)(4)	Equivalent isotropically radiated power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	N/A	Refer to NOTE below.
2.1049 27.53(h)	Occupied Bandwidth	N/A	Refer to NOTE below.
27.50(d)(5)	Peak to average ratio	N/A	Refer to NOTE below.
27.53(h)	Band Edge Measurements	N/A	Refer to NOTE below.
2.1051 27.53(h)	Conducted Spurious Emissions	N/A	Refer to NOTE below.
2.1053 27.53(h)	Radiated Spurious Emissions	N/A	Refer to NOTE below.

NOTE: Test item for equivalent isotropically radiated power was performed for this report. Other testing data please refer to module (Brand: QUALCOMM, Model: Gobi3000, FCC ID: J9CGOBI3000) Report No.: 80-N2162-203 Rev B

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.2 TEST SITE AND INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Aug. 21, 2012	Aug. 20, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 17, 2012	Dec. 16, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Jan. 07, 2013	Jan. 06, 2014
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 25, 2012	Dec. 24, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 184045	980116	Dec. 28, 2012	Dec. 27, 2013
Preamplifier EMCI	EMC 330H	980112	Dec. 28, 2012	Dec. 27, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Oct. 19, 2012	Oct. 18, 2013
RF signal cable Worken	RG-213	NA	Dec. 29, 2012	Dec. 28, 2013
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 690701.
5. The IC Site Registration No. is IC 7450F-10.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	3G Radio Module
MODEL NO.	MC8355
POWER SUPPLY	For host: 19Vdc from adapter 10.8Vdc from battery
MODULATION TECHNOLOGY	QPSK, BPSK
FREQUENCY RANGE	1712.4MHz ~1752.6MHz
MAX. EIRP POWER (W)	229.09mW
ANTENNA TYPE	Fixed Internal Antenna
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to users' manual
ACCESSORY DEVICES	Refer to Note as below

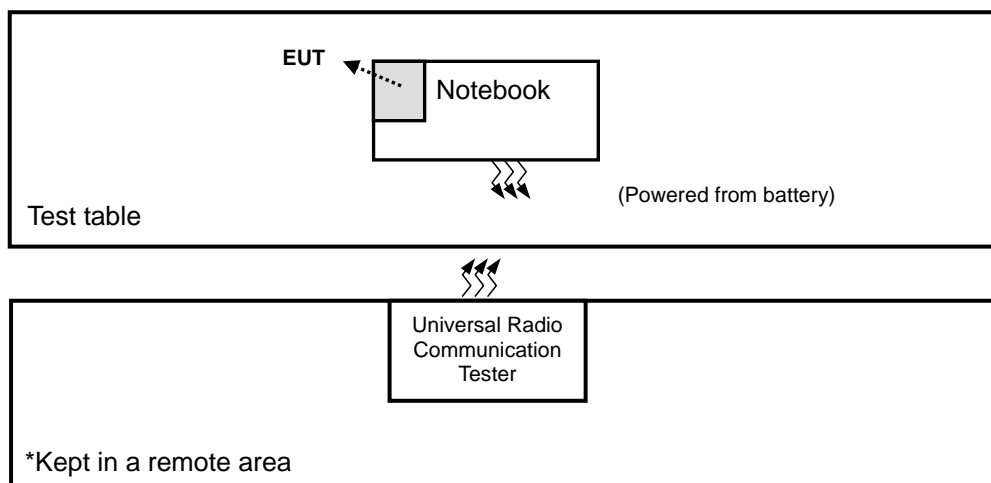
NOTE:

1. The EUT is collocated in Notebook (Brand Name: Getac, Model Name: B300).
2. The Notebook consumes power from following accessories.

No.	Product	Brand	MODEL	Description
1	AC Adapter	Delta	ADP-90CD DB	I/P: 100-240Vac, 1.5A O/P: 19Vdc, 4.74A
2	Li-ion Battery	Getac	BP3S3P2900	Rating: 10.8Vdc, 8700mAh
3	LCD Panel	Sanyo	L5S30348P01	--

3. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 CONFIGURATION OF SYSTEM UNDER TEST



3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.4 DESCRIPTION OF TEST MODES

Following channel(s) was (were) selected for the final test as listed below:

WCDMA Band 4

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
EIRP	1312 to 1513	1312, 1413, 1513	WCDMA

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	25deg. C, 59%RH	10.8Vdc	Howard Kao

3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 27

ANSI C63.4-2003

ANSI/TIA/EIA-603-C 2004

NOTE: All test items have been performed and recorded as per the above standards.

4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

4.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

- a. The EUT was placed on a turntable with 1.727 meter height in a fully anechoic chamber.
- b. The EUT was set at 4.858 meters from the receiving antenna, which was mounted on the antenna tower.
- c. The EUT was rotated along 2 axis: Theta-axis: 180 degree and Phi-axis: 360 degree, Step Size: 15 degree.
- d. The height of the receiving antenna is fixed.
- e. Taking the record of received power.
- f. A dipole antenna was used in place of the EUT for pathloss calibration with a network analyzer.
- g. The gain of the dipole antenna and the insertion loss of the connected RF cable were applied into the pathloss calibration.
- h. The maximum ERP/EIRP was calculated with received power and pathloss.
- i. $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$

P_s (dBm) : Input power to substitution antenna.

G_s (dBi or dBd) : Substitution antenna Gain.

$E_t = R_t + AF$

$E_s = R_s + AF$

AF (dB/m) : Receiver antenna factor

R_t : The highest received signal in spectrum analyzer for EUT.

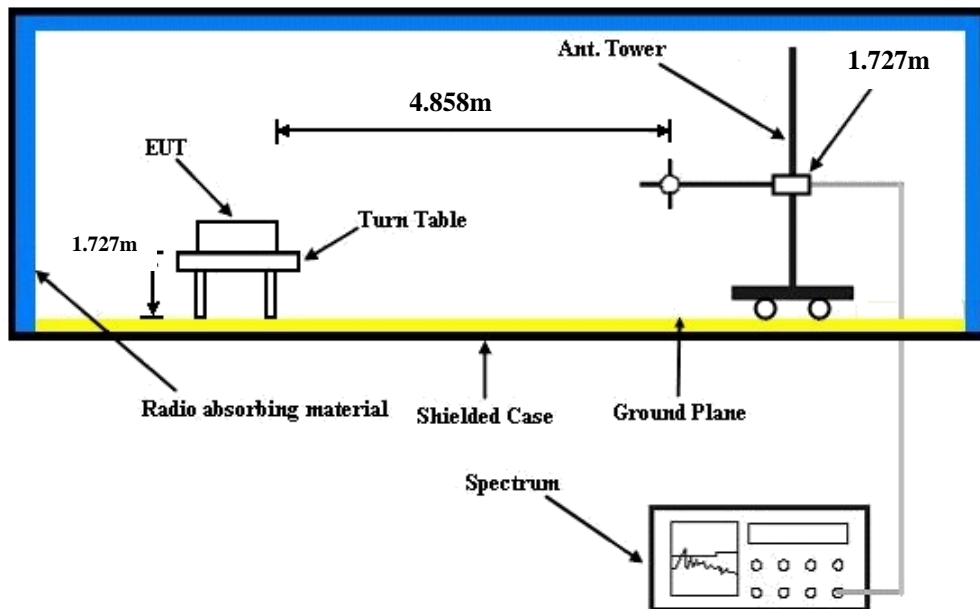
R_s : The highest received signal in spectrum analyzer for substitution antenna.

CONDUCTED POWER MEASUREMENT:

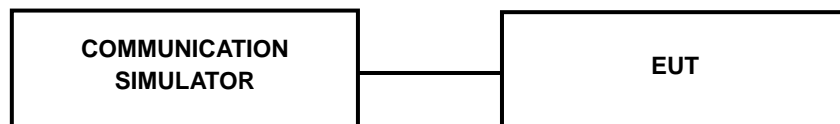
- a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 TEST SETUP

EIRP / ERP MEASUREMENT:



CONDUCTED POWER MEASUREMENT:



4.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA IV		
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	24.15	24.26	24.22
HSDPA Subtest-1	23.50	23.61	23.57
HSDPA Subtest-2	21.90	22.01	21.97
HSDPA Subtest-3	20.68	20.79	20.75
HSDPA Subtest-4	20.57	20.68	20.64
HSUPA Subtest-1	23.61	23.72	23.68
HSUPA Subtest-2	21.90	22.01	21.97
HSUPA Subtest-3	22.36	22.47	22.43
HSUPA Subtest-4	22.43	22.54	22.50
HSUPA Subtest-5	23.41	23.52	23.48

EIRP POWER (dBm)

WCDMA Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	EIRP (dBm)	EIRP (mW)
1712.4	-32.72	-51.88	0.00	1.96	21.12	129.42
1732.6	-32.98	-52.99	0.00	2.00	22.01	158.85
1752.6	-32.66	-54.28	0.00	1.98	23.60	229.09
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	EIRP (dBm)	EIRP (mW)
1712.4	-32.78	-52.13	0.00	1.96	21.31	135.21
1732.6	-33.51	-53.17	0.00	2.00	21.66	146.55
1752.6	-33.80	-54.13	0.00	1.98	22.31	170.22



5 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

6 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---