Quectel Wireless Solutions Company Limited

GSM/GPRS Module

Main Model:M35

May 22, 2012

Report No.: 12050041-FCC-R2

(This report supersedes NONE)

Modifications made to the product : None

This Test Report is Issued Under the Authority of:		
Back Huang	Alex Liu	
Back Huang **Compliance Engineer**	**Alex Liu** **Technical Manager**	

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Test result presented in this test report is applicable to the representative sample only.

RF Exposure Report

To: FCC 2.1091: 2012

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Laboratory Introduction

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Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC , RF/Wireless , Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless , Telecom
Taiwan	BSMI , NCC , NIST	EMC, RF, Telecom , Safety
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom
Australia	NATA, NIST	EMC, RF, Telecom , Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom , Safety

Accreditations for Product Certifications

Country/Region	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC , RF , Telecom
Canada	IC FCB , NIST	EMC , RF , Telecom
Singapore	iDA, NIST	EMC , RF , Telecom
EU	NB	EMC & R&TTE Directive
Japan	MIC, (RCB 208)	RF , Telecom
Hong Kong	OFTA (US002)	RF , Telecom

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1. EXECUTIVE SUMMARY & EUT INFORMATION

The purpose of this test programme was to demonstrate compliance of the Quectel Wireless Solutions Company Limited, GSM/GPRS Module and model: M35 against the current Stipulated Standards. The GSM/GPRS Module has demonstrated compliance with the FCC 2.1091: 2012.

EUT Information

EUT Description	:	**GSM/GPRS Module**
Model	:	**M35**
Antenna Gain	:	**GSM 850: 1.5 dBi** **PCS 1900: 1.5 dBi**
Input Power	:	**SWITCHING POWER SUPPLY** **MODEL: P-050B** **INPUT: 100V-240V, 50/60Hz, 0.3A** **OUTPUT: 5.0V-2.0A** **P/N: B2152-1116**
Maximum Conducted Peak Power to Antenna	:	**GSM850: 32.78 dBm** **PCS1900: 29.19 dBm**
Maximum Radiated ERP/EIRP	:	**GSM850: 27.48 dBm / ERP** **PCS1900: 26.46 dBm / EIRP**
Classification Per Stipulated Test Standard	:	**FCC 2.1091: 2012**

Main Model	Revision Number	Report Number	Description of Revision	Date of Revision
M95	0	12050015-FCC-R2-V1	Original Report	March 10, 2012
M35	1	12050041-FCC-R2	Amended Report	May 22, 2012

Note: This is the amended report application (12050041-FCC-R2) of the device, the original submission (12050015-FCC-R2-V1) was granted on March 10, 2012. The difference between the original device and the current one was as following the detail information:

The difference of these two models is for different model names

All above were explained in the attached Declaration Letter. Based on the letter the difference between them will not affect all test items.

2. TECHNICAL DETAILS

Purpose	**Compliance testing of GSM/GPRS Module with stipulated standard**
Applicant / Client	**Quectel Wireless Solutions Company Limited Room 501, Building 13, No.99 TianZhou Road,Xuhui District, Shanghai**
Manufacturer	**Quectel Wireless Solutions Company Limited Room 501, Building 13, No.99 TianZhou Road,Xuhui District, Shanghai**
Laboratory performing the tests	**SIEMIC Nanjing (China) Laboratories NO.2-1,Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel:+86(25)86730128/86730129 Fax:+86(25)86730127 Email:info@siemic.com**
Test report reference number	**12050041-FCC-R2**
Date EUT received	**February 20, 2012**
Standard applied	**FCC 2.1091: 2012**
Dates of test	**March 5 to March 7, 2012**
No of Units	**#1**
Equipment Category	**PCE**
Trade Name	**Quectel**
RF Operating Frequency (ies)	**GSM850 TX : 824.2 ~ 848.8 MHz; RX : 869.2 ~ 893.8 MHz PCS1900 TX : 1850.2 ~ 1909.8 MHz; RX : 1930.2 ~ 1989.8 MHz**
Number of Channels	**300CH (PCS1900) and 125CH (GSM850)**
Modulation	**GSM / GPRS: GMSK**
GPRS Multi-slot class	**8/10/12**
FCC ID	**XMR201202M35**

3. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FCC §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

Test Data

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

GSM 850
Maximum peak output power at antenna input terminal: 32.78 (dBm)
Maximum peak output power at antenna input terminal: 1896.71 (mW)

Prediction distance: >20 (cm)
Predication frequency: 824.2 (MHz)
Antenna Gain (typical): 1.5 (dBi)
Antenna Gain (typical): 1.413 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.533 (mW/cm2)
MPE limit for general population exposure at prediction frequency: 0.549 (mW/cm2)

0.533 (mW/cm2) < 0.549 (mW/cm2)

PCS 1900

Maximum peak output power at antenna input terminal: 29.19 (dBm)
Maximum peak output power at antenna input terminal: 829.85 (mW)

Prediction distance: >20 (cm)
Predication frequency: 1909.8 (MHz)
Antenna Gain (typical): 1.5 (dBi)
Antenna Gain (typical): 1.413 (numeric)

The worst case is power density at predication frequency at 20 cm: 0.233 (mW/cm2)
MPE limit for general population exposure at prediction frequency: 1 (mW/cm2)

0.233 (mW/cm2) < 1 (mW/cm2)

Result: Pass

Annex A DECLARATION OF SIMILARITY

Quectel Wireless Solutions Co., Ltd

To SIEMIC Inc
2206 Ringwood Ave
San Jose , CA 95131

Statement

We Quectel Wireless Solutions Co., Ltd agree Quectel M35 to use below information on file to apply a multiple-listing certification.

Name: GSM/GPRS Module
Model number: M95
Multiple listing model number: M35

We hereby state that these models are identical in interior structure, electrical circuits and components, and just model names are different for the marketing requirement.
Your assistance on this matter is highly appreciated.

Sincerely,
Name: Johnny Xiang
Title: Manager
Signature: Johnny Xiang