TEST REPORT

REPORT NUMBER: I12GL9630-FCC-PART15B

ON

Type of Equipment: LTE PCI-e Module
Type of Designation: LP15
Manufacturer: Asia Telco Technologies Co.

ACCORDING TO
Part 15B: Radio Frequency Devices, Oct 1, 2011

China Telecommunication Technology Labs.

Month date, year
Mar 14, 2012

Signature

He Guili
Director

FCC ID:	J26-4859300114
Report Date:	2012-11-23

Test Firm Name:	China Telecommunication Technology Labs
Registration Number:	840587

Statement

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 15B. The sample tested was found to comply with the requirements defined in the applied rules.

CONTENTS

1 General Information

1.1 Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 15B.

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviation from, additions to, or exclusions from the test specifications have been made. See Annex C.

China Telecommunication Technology Labs. (CTTL) authorizes the applicant or manufacturer (see section 1.4) to reproduce this report provided, and the test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CTTL Mr. He Guili.

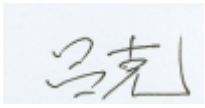
Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. CTTL accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

1.2 Testers

Name: Lu Ke

Position: Engineer

Department: Department of EMC test

Signature: 

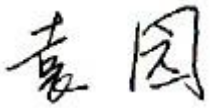
Editor of this test report:

Name: Pan Yang

Position: Engineer

Department: Department of EMC test

Date: 2012-03-14

Signature: 

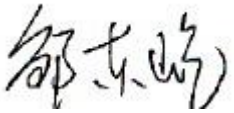
Technical responsibility for area of testing:

Name: Zou Dongyi

Position: Manager

Department: Department of EMC test

Date: 2012-03-14

Signature: 

1.3 Testing Laboratory information

1.3.1 Location

Name:	China Telecommunication Technology Labs.
Address:	No. 11, Yue Tan Nan Jie, Xi Cheng District BEIJING P. R. CHINA, 100083
Tel:	+86 10 68094053
Fax:	+86 10 68011404
Email:	emc@chinattl.com

1.3.2 Details of accreditation status

Accredited by:	China National Accreditation Service for Conformity Assessment (CNAS)
Registration number:	CNAS Registration No. CNAS L0570
Standard:	ISO/IEC 17025:2005

1.3.3 Test location, where different from section 1.3.1

Name:	------
Street:	------
City:	------
Country:	------
Telephone:	------
Fax:	------
Postcode:	------

1.4 Details of applicant or manufacturer

1.4.1 Applicant

Name:	CalAmp Wireless Networks
Address:	299 Johnson Avenue, Suite 110 , Waseca MN, 56093-0833, USA
Country:	USA
Telephone:	001-507-833-6709
Fax:	001-507-833-6758
Contact:	Allen Frederick
Telephone:	001-507-833-6709
Email:	--

1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name:	Asia Telco Technologies Co.
Address:	#289 Bisheng Road,Buiding-8,3F,Zhangjiang Hi-Tech Park,Pudong,Shanghai 201204,China

1.4.3 Manufactory (if different from applicant in section 1.4.1)

Name:

Address:

2 Test Item

2.1 General Information

Manufacturer:	LTE PCI-e Module
Model Name:	LP15
Product Name	PCI e-Module
Serial Number:	--
Production Status:	Product
Receipt date of test item:	2012-10-17

2.2 Outline of EUT

EUT is a PCI e-Module. It supports LTE mode, with the frequency range of 788 MHz to 798 MHz for LTE Band 14. Its modulation type is QPSK and 16QAM.

2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	LTE PCI-e Module	Asia Telco Technologies Co.	LP15	--	None
B	Computer	HP	--	--	by test lab
C	Monitor	HP	LP2001	--	by test lab
D	Mouse	HP	--	--	by test lab
E	Keyboard	HP	--	--	by test lab
F	Printer	HP	C6414A	--	by test lab

2.5 Other Information

Version of hardware and software:

HW Version: --

SW Version: --

2.6 EUT Photographs

See external and internal photo of Annex A and B.

3 Summary of Test Results

A brief summary of the tests carried out is shown as following.

Specification Clause	Name of Test	Result
15.109	Radiated Emission	Pass
15.107	Conducted Emission	Pass
Note: The EUT complies with the requirements of the Class B digital devices.		

4 Test Results

4.1 Radiated Emission

Specifications:	15.109, ANSI C63.4-2003
Date of Tests	2012-11-22
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Operation Mode	Transfer data
Test Results:	Pass

Test equipment Used:

Asset Number	Description	Manufacturer	Model Number	Serial Number	Cal Due	State
7805	EMI Test Receiver	R/S	ESIB26	100211	2013-01-10	Normal
7330	Ultra Broadband Antenna	SCHWARZBECK	VULB 9160	--	2013-11-24	Normal
7330	Double-Ridged Horn Antenna	R/S	HF906	100037	2013-01-24	Normal
713	Fully-Anechoic Chamber	ETS	11.8m×6.5m×6.3m	--	2013-11-16	Normal

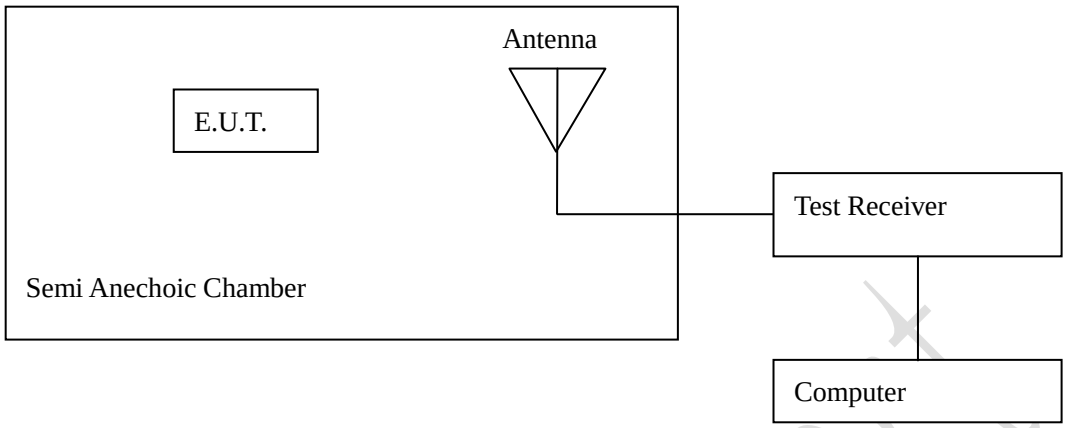
Limit Level Construction:
According to Part 15.109(a).

Limits

Frequency [MHz]	Field Strength [μ V/m]	Field Strength [dBμ V/m]	Measurement distance [m]
30 -88	100	40.0	3
88-216	150	43.5	3
216 – 960	200	46.0	3
Above 960	500	54.0	3

Note: The tighter limit applies at the band edges.

Test Configuration



The measuring distance between E.U.T and antenna is 3m.

Test Setup:

The EUT was placed in an anechoic chamber, see figure RE. The EUT is tested as tabletop EUT. The EUT is positioned on an 80cm height wood table.
The EUT is used as the peripheral equipment of the PC.
The setup is according to Figure 11a of ANSI C63.4-2003.

Figure RE

Test Method

During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. The measurement was done by the automated test system.

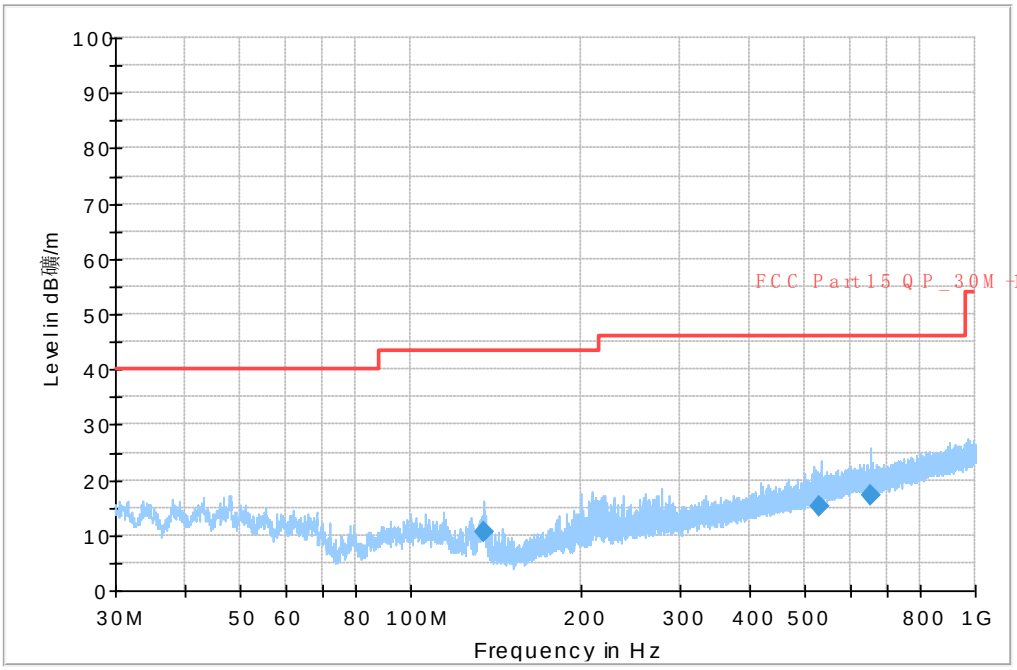
RBW:100kHz

Test Data:

Frequency [MHz]	Level [dBμV/m]	Limit [dBμV/m]	Antenna Height [cm]	Turntable Azimuth [degree]	Antenna Polarisation (V/H)
134.88878	10.7	43.5	100	225	V
531.57372	15.3	46	100	90	H
651.50776	17.1	46	100	278	V
Remarks: --					

Remark: The test result is the worst case.

Graphical Results:



Graphical results

4.2 Conducted Emission

Specifications:	15.107, ANSI C63.4-2003
Date of Tests	2012-11-22
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Operation Mode	Transfer data
Test Results:	Pass

Test equipment Used:

Asset Number	Description	Manufacturer	Model Number	Serial Number	Cal Due	State
7330	EMI Test Receiver	R/S	ESI40	839283/007	2012-02-15	Normal
7330	Artificial Mains Network	R/S	ESH2-Z5	837480/002	2013-04-06	Normal
714	Shielding Room	ETS	--	19003	2013-11-15	Normal

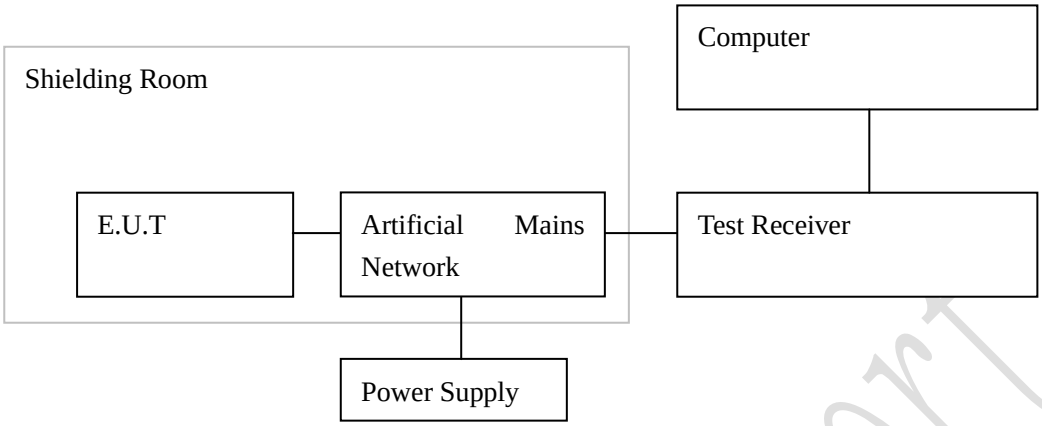
Limit Level Construction:
According to Part 15.107 (a)

Limits for Conducted Emission

Frequency of Emission [MHz]	Conducted limit [dBμV]	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

Test Configuration



Test Setup:

The EUT was placed in a shielding room, see figure CE. The EUT is positioned on an 80cm height wood table. The EUT is used as the peripheral equipment of the PC.

The setup is according to Figure 10a of ANSI C63.4-2003.

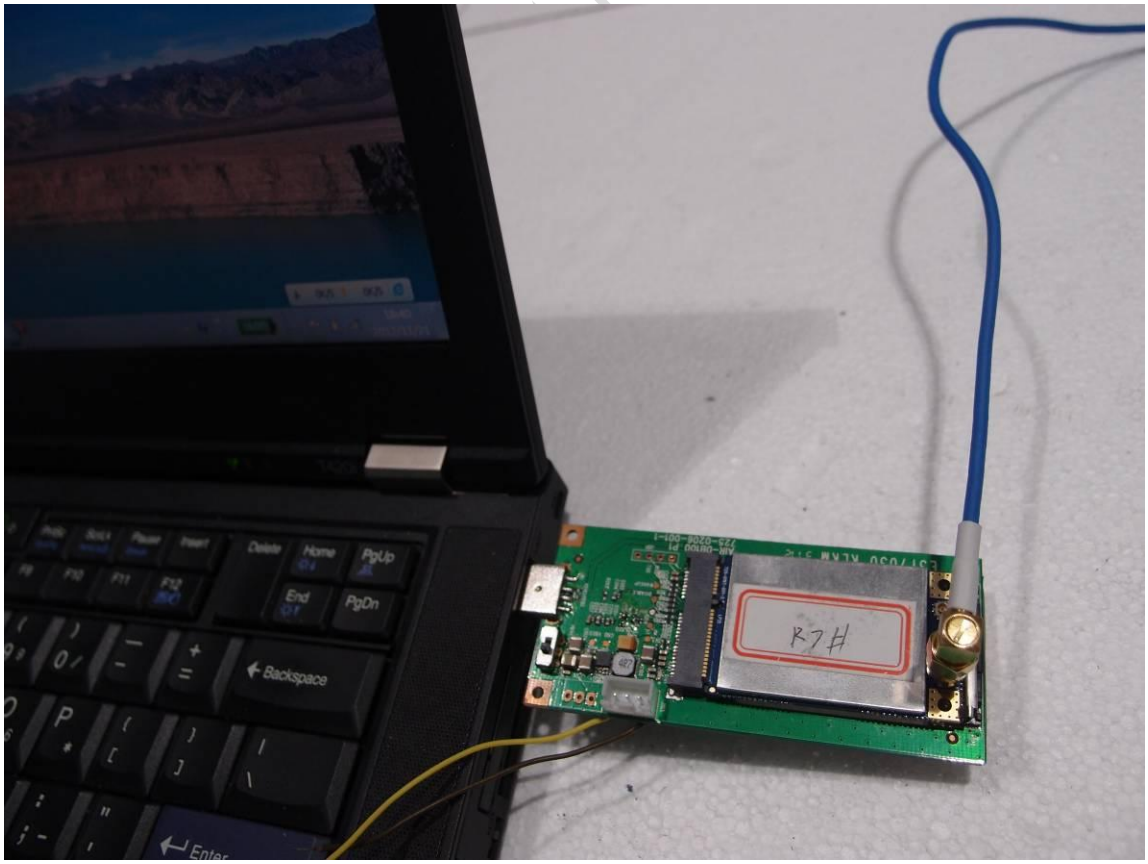


Figure CE

Test Method:

During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. The AC power line of the Notebook was connected to the artificial mains network then to EMI receiver. The measurement was done by the automated test system.

RBW: 9kHz

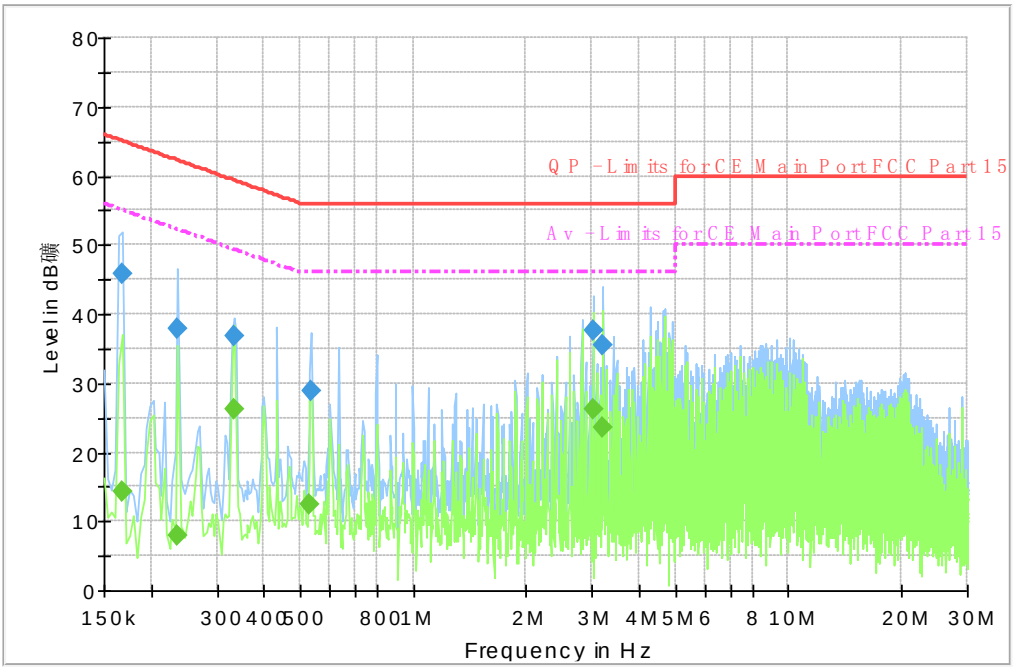
Line L:

Detector (QP/AV)	Frequency (MHz)	Level (dBμV)	Transducer (dB)	Limit (dB)	PE
QP	0.168656	45.9	10.2	65	GND
QP	0.235819	37.9	10	62.2	GND
QP	0.332831	36.9	10.1	59.4	GND
QP	0.534319	29	10.1	56	GND
QP	3.0156	37.7	9.8	56	GND
QP	3.209625	35.5	9.8	56	GND
Remarks: The test result is the worst case.					

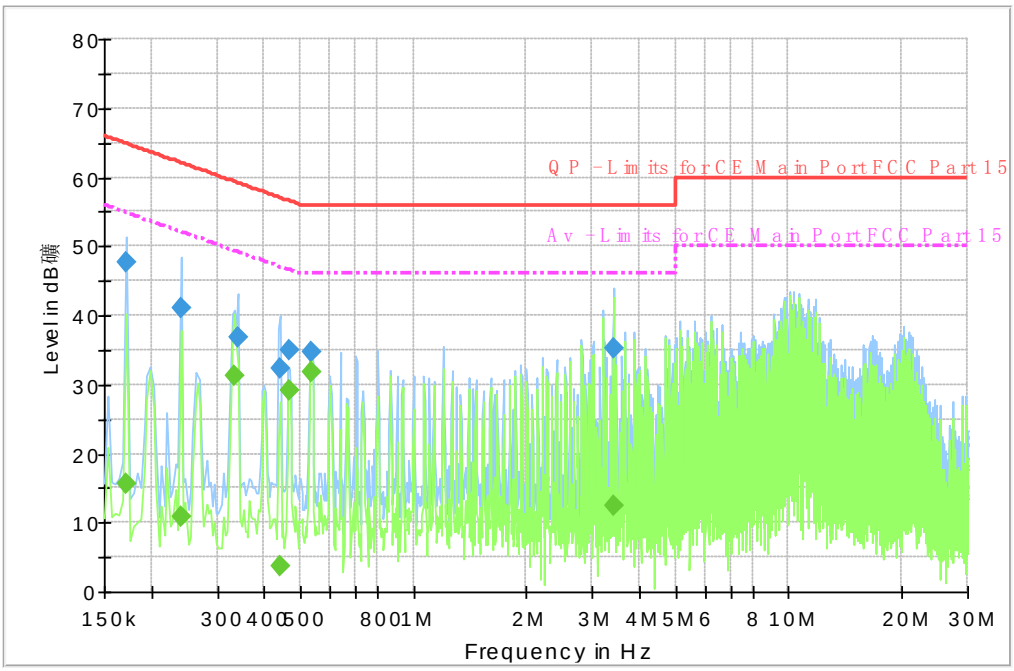
Line N:

Detector (QP/AV)	Frequency (MHz)	Level (dBμV)	Transducer (dB)	Limit (dB)	PE
QP	0.23955	41.2	9.9	62.1	GND
QP	0.340294	36.8	10	59.2	GND
QP	0.441038	32.3	10.1	57	GND
QP	0.467156	35	10.1	56.6	GND
QP	0.534319	34.8	10.1	56	GND
QP	3.407381	35.1	9.8	56	GND
Remarks: The test result is the worst case.					

Graphical results:



CE graphical results(LINE L)



CE graphical results(LINE N)

ANNEX C Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

The End of this Report