

RF Exposure Evaluation Declaration

Product Name : Wireless-AG 23dBm Network Mini PCI Adapter

Model No. : IWAVEPORT WLM54AGP23

FCC ID : TK4-07-WLM54AGP23

Applicant : Compex Systems Pte Ltd.

Address : 135 Joo Seng Road, #08-01 PM Industrial Building
Singapore 368363

Date of Receipt : 2007/06/15

Issued Date : 2007/10/26

Report No. : 076S046-RF-US

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by CNLA, NVLAP, NIST or any agency of the Government.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Test Report Certification

Issued Date : 2007/10/26
Report No. : 076S046-RF-US



Product Name : Wireless-AG 23dBm Network Mini PCI Adapter
Applicant : Compex Systems Pte Ltd.
Address : 135 Joo Seng Road, #08-01 PM Industrial Building
Singapore 368363
Manufacturer : Compex Systems Pte Ltd.
Model No. : IWAVEPORT WLM54AGP23
FCC ID : TK4-07-WLM54AGP23
Rated Voltage : AC 120V/60Hz
EUT Voltage : DC 3.3V
Trade Name : Compex
Applicable Standard : FCC OET 65
Test Result : Complied
Performed Location : SuZhou EMC laboratory
No.99 Hongye Rd., Suzhou Industrial Park Loufeng
Hi-Tech Development Zone., SuZhou, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Registration Number: 800392

Documented By : 
(Any Liu)

Reviewed By : 
(Dream Cao)

Approved By : 
(Murphy Wang)

Laboratory Information

We , **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited by the following accreditation Bodies in compliance with ISO 17025, EN 45001 and Guide 25:

Taiwan R.O.C.	: BSMI, DGT, CNLA
Germany	: TUV Rheinland
Norway	: Nemko, DNV
USA	: FCC, NVLAP
Japan	: VCCI

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :

No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.

TEL:+886-3-592-8858 / FAX:+886-3-592-8859

E-Mail : service@quietek.com



LinKou Testing Laboratory :

No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan, R.O.C.

TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789

E-Mail : service@quietek.com



Suzhou Testing Laboratory :

No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., SuZhou, China

TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098

E-Mail : service@quietek.com



1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	Wireless-AG 23dBm Network Mini PCI Adapter
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmitter by 802.11a

Antenna Gain:

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2 dBi or 1.58 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Channel	Channel Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)
01	5260	166.3413	0.052448
03	5300	170.2159	0.053670
04	5320	152.4053	0.048054
05	5500	156.6751	0.049400
10	5600	149.9685	0.047286
15	5700	128.5287	0.040526
16	5745	132.1296	0.041661
18	5785	132.1296	0.041661
19	5805	129.1219	0.040713

Note:

The power density Pd (4th column) at a distance of 20 cm calculated from the Friis transmission formula is far below the limit of 1 mW/cm².