

# RF Exposure Evaluation Declaration

Product Name : WIRELESS-G 30DBM  
NETWORK MINI PCI ADAPTER  
Model No. : IWAVEPORT WLM54GP30  
FCC ID : TK4-08-WLM54GP30

Applicant : Compex Systems Pte Ltd

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

Date of Receipt : 2008/04/14

Issued Date : 2008/06/17

Report No. : 084S050-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.

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# Test Report Certification

Issued Date : 2008/06/17  
 Report No. : 084S050-RF-US



Product Name : WIRELESS-G 30DBM 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  
 Address : 135 Joo Seng Road, #08-01 PM Industrial Building  
 Singapore 368363  
 Model No. : IWAVEPORT WLM54GP30  
 FCC ID : TK4-08-WLM54GP30  
 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

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Approved By : Murphy Wang  
 ( 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:

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

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 :

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 TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com



### LinKou Testing Laboratory :

No. 5, 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 :

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 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 <sup>2</sup> )	Average Time (Minutes)
<b>(A) Limits for Occupational/ Control Exposures</b>				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
<b>(B) Limits for General Population/ Uncontrolled Exposures</b>				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

**Friis Formula**

Friis transmission formula:  $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd is the limit of MPE, 1 mW/cm<sup>2</sup>. 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-G 30DBM NETWORK MINI PCI ADAPTER
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-3
Test Mode	:	Mode 1: Transmitter by 802.11b

### Antenna Gain:

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 dBi or 1.58 dBi 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 <sup>2</sup> )
01	2412.00	776.2471	0.244754
06	2437.00	847.2274	0.267135
11	2462.00	703.0723	0.221682

### 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/cm<sup>2</sup>.

Product	:	WIRELESS-G 30DBM NETWORK MINI PCI ADAPTER
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-3
Test Mode	:	Mode 2: Transmitter by 802.11g

**Antenna Gain:**

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 dBi or 1.58 dBi 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 <sup>2</sup> )
01	2412.00	414.9540	0.130837
06	2437.00	845.2788	0.266520
11	2462.00	436.5158	0.137636

**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/cm<sup>2</sup>.