RF Exposure Evaluation Declaration

Product Name: AirPcap Nx

Model No. : APC-NX

FCC ID : VHL-AIRPCAP-NX

Applicant: CACE Technologies, Inc.

Address: 1949 5th Street, Suite 103, Davis, CA 95616 USA

Date of Receipt: Sep. 16, 2010

Issued Date : Oct. 25, 2010

Report No. : 109S022R-RF-US

Report Version: V1.0

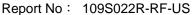
The test results relate only to the samples tested.

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 TAF, 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: Oct. 25, 2010 Report No.: 109S022R-RF-US

QuieTek

Product Name AirPcap Nx

Applicant CACE Technologies, Inc.

1949 5th Street, Suite 103, Davis, CA 95616 USA Address

Manufacturer CACE Technologies, Inc.

Address 1949 5th Street, Suite 103, Davis, CA 95616 USA

APC-NX Model No.

FCC ID **VHL-AIRPCAP-NX**

DC 5V **EUT Voltage**

Trade Name **CACE Technologies**

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 heeren

(Engineering Manager: Dream Cao)



Report No: 109S022R-RF-US

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/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C. : BSMI, NCC, TAF

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://www.quietek.com/tw/ctg/cts/accreditations.htm
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:+886-3-592-8859 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 (China) Testing Laboratory:









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/cm2)	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: Pd = (Pout*G)/(4*pi*r2)

Where

Pd = power density in mW/cm2

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 id 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	:	AirPcap Nx	
Test Item	:	RF Exposure Evaluation	
Test Site	:	AC-6	

Antenna Gain:

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 5dBi for 2.4GHz.

Output Power into Antenna & RF Exposure Evaluation Distance:

Test Mode	Frequency Band (MHz)	Maximum Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
802.11b/g/n(20MHz)	2412 - 2462	460.2566	0.289555
802.11n(40MHz)	2422 - 2452	414.9540	0.261054