

RADIO FREQUENCY RADIATION EXPOSURE REPORT

Mobiles /Fixed Base Station Maximum Permissible Exposure (MPE)

OF

Product Name: 14dBi High Power Wireless Outdoor PoE Access Point

Brand Name: TRENDnet

Model Name: TEW-455APBO

Model Different: N/A

FCC ID: XU8TEW455APBOV2

Report No.: ER/2009/50032-05

Issue Date: Jan 19, 2010

Prepared for: TRENDNET, INC.
20675 Manhattan Place, Torrance, CA 90501, USA

Prepared by: SGS Taiwan Ltd.
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VERIFICATION OF COMPLIANCE

Applicant: TRENDNET, INC.
20675 Manhattan Place, Torrance, CA 90501, USA

Product Name: 14dBi High Power Wireless Outdoor PoE Access Point

Brand Name: TRENDnet

FCC ID: XU8TEW455APBOV2

Model No.: TEW-455APBO

Model Difference: Please refer to page 5 for detail

File Number: ER/2009/50032-05

Date of test: Sep. 01, 2009 ~ Sep. 01, 2009

Date of EUT Received: Sep. 01, 2009

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd., Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091 and RSS102.

The test results of this report relate only to the tested sample identified in this report.

Test By: Brian Chang **Date** Jan 19, 2010

Brian Chang / Engineer

Prepared By: Gloria Huang **Date** Jan 19, 2010

Gloria Huang / Clerk

Approved By: Jim Chang **Date** Jan 19, 2010

Jim Chang / Supervisor

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Report Version

Version No.	Date	Description
00	Jan 19, 2010	Initial creation of document

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Table of Contents

1. GENERAL INFORMATION.....	5
1.1 STANDARD APPLICABLE.....	6
1.2 MAXIMUM PERMISSIBLE EXPOSURE (MPE) EVALUATION	7
APPENDIX 1 PHOTOGRPHS OF EUT	8

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1. GENERAL INFORMATION

General:

Product Name	14dBi High Power Wireless Outdoor PoE Access Point	
Brand Name	TRENDnet	
Model Name	TEW-455APBO	
Model Difference	N/A	
Power Supply	48V dc by AC/DC power adapter	
	Adapter:	1. Model No.: A5-20S48V 2. Model No.: SA06-20S48-V

WLAN:

Frequency Range:	2412 – 2462 MHz
Channel number:	11 channels
Max. Output Power:	Patch 1 Internal Antenna 802.11 b: 26.85 dBm (Peak) 802.11 g: 24.15 dBm (Peak)
Modulation Technology:	DSSS, OFDM
Modulation type:	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Transition Rate:	802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps
Antenna Designation:	Patch 1 Internal Antenna, Gain:12.84dBi
Type of Emission	16M48M4D

The EUT is compliance with IEEE 802.11 b/g Standard.

This report applies for frequency IEEE 802.11 b/g

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1.1 Standard Applicable

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

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-15000	/	/	1.0	30

F = frequency in MHz

* = Plane-wave equipment power density

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1.2 Maximum Permissible Exposure (MPE) Evaluation

MPE Prediction (802.11b) for Patch 1 Internal Antenna (worse case)

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG / 4 \pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

2437MHz

Maximum peak output power at antenna input terminal:	26.85	(dBm)
Maximum peak output power at antenna input terminal:	484.1723676	(mW)
Duty cycle:	100	(%)
Maximum Pav :	484.1723676	(mW)
Antenna gain (typical):	12.84	(dBi)
Maximum antenna gain:	19.23091729	(numeric)
Prediction distance:	30	(cm)
Prediction frequency:	2437	(MHz)
MPE limit for uncontrolled exposure at prediction	1	(mW/cm ²)
Power density at predication frequency at 30 (cm)	0.8236977	(mW/cm ²)
Measurement Result:		
The predicted power density level at 30 cm is	8.236976959	(W/m ²)
This is below the uncontrolled exposure limit of 1 mW/cm ²	2437	MHz

Measurement Result

The predicted power density level at 30 cm is 0.8236977mW/cm². This is below the uncontrolled exposure limit of 1 mW/cm² at 2437MHz.

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