Shenzhen Huatongwei International Inspection Co., Ltd.
Keji S,12th , Road, Hi-tech Industrial Park, Shenzhen, Guangdong, China
Phone:86-755-26748099 Fax:86-755-26748089 http://www.szhtw.com.cn

MPE TEST REPORT

FCC Per 47 CFR 2.1091(b)

FCC ID .....:	**TE7TDW8950ND**
Compiled by (position+printed name+signature)..:	File administrators Xiankun Ding
Supervised by (position+printed name+signature)..:	Test Engineer Wenliang Li
Approved by (position+printed name+signature)..:	Manager Jimmy Li
Date of issue.....:	May 10, 2010
Testing Laboratory Name .....:	**Shenzhen Huatongwei International Inspection Co., Ltd**
Address.....:	Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Applicant's name.....:	**TP-LINK TECHNOLOGIES CO.,LTD.**
Address.....:	Building 7,Section 2,Honghualing Industrial Park,Xili,Nanshan District, Shenzhen, P.R.C.
Test specification:	
Standard .....:	**FCC Per 47 CFR 2.1091(b)**
TRF Originator.....:	Shenzhen Huatongwei International Inspection CO., Ltd
Master TRF.....:	Dated 2006-06

Test item description ..... :	150Mbps Wireless Lite N ADSL2+ Modem Router
Trade Mark .....:	TP-LINK
Manufacturer .....:	**TP-LINK TECHNOLOGIES CO.,LTD.**
Model/Type reference.....:	TD-W8950ND
Listed Models .....:	/
Ratings.....:	DC 12V Adapter From AC 120V/60Hz
Frequency Range	2400-2483.5MHz
Result.....:	**Positive**

MPE T E S T R E P O R T

FCC ID :	TE7TDW8950ND	May 10, 2010 Date of issue

Equipment under Test	:	150Mbps Wireless Lite N ADSL2+ Modem Router
Model /Type	:	TD-W8950ND
Listed Models	:	/
Applicant	:	**TP-LINK TECHNOLOGIES CO.,LTD.**
Address	:	Building 7,Section 2,Honghualing Industrial Park,Xili,Nanshan District, Shenzhen, P.R.C.
Manufacturer		**TP-LINK TECHNOLOGIES CO.,LTD.**
Address	:	Building 7,Section 2,Honghualing Industrial Park,Xili,Nanshan District, Shenzhen, P.R.C.

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1. SUMMARY

1.1. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

○ Power Cable	Length (m) : /
	Shield : /
	Detachable : /
○ Multimeter	Manufacturer : /
	Model No. : /
● AC Adapter	MODEL:MU12-2120100-A1 INPUT:100-240V～50/60Hz 0.5A OUTPUT: 12V DC 1.0A Power Cable: 150cm
	◇ Shield ◆ Unshield

1.2. NOTE

1. The EUT is an 802.11b/g/n 150Mbps Wireless Lite N ADSL2+ Modem Router, The functions of the EUT listed as below:

	Test Standards	Reference Report
WLAN 802.11b/g, 802.11n	FCC Part 15 Subpart C (Section15.247)	WE10040003
WLAN 802.11b/g, 802.11n	FCC Part 15 Subpart B	SQE100400010

2. The frequency bands used in this EUT are listed as follows:

Frequency Band(MHz)	2400-2483.5	5150-5350	5470-5725	5725-5850
802.11b	√	—	—	—
802.11g	√	—	—	—
802.11n(20MHz)	√	—	—	—
802.11n(40MHz)	√	—	—	—

3. The EUT incorporates a SISO function, Physically, the EUT provides one completed transmitter and one completed receivers.

Modulation Mode	TX Function
802.11b	1TX
802.11g	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

2.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24 dB	(1)
Radiated Emission	1~18GHz	5.16 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.15~30MHz	3.39 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. Method of measurement

3.1. Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission’s guidelines.
According to §1.1310 and §2.1091 RF exposure is calculated.

3.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	/	/	f/1500	30
1500 – 100,000	/	/	1.0	30

F=frequency in MHz
*=Plane-wave equivalent power density

3.3. MPE Calculation Method

Predication 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

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna is 3dBi, the RF power density can be obtained.

TEST RESULTS

For 802.11 b

Mode	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm^2)	Power Density At 20 cm (mW/cm^2)	Test Results
2412	20.00	21.96	157.04	1.995	1.000	0.0623	Pass
2437	20.00	22.68	185.35	1.995	1.000	0.0736	Pass
2462	20.00	21.49	140.93	1.995	1.000	0.0559	Pass

For 802.11 g

Mode	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm^2)	Power Density At 20 cm (mW/cm^2)	Test Results
2412	20.00	21.63	145.55	1.995	1.000	0.0578	Pass
2437	20.00	22.26	168.27	1.995	1.000	0.0668	Pass
2462	20.00	20.95	124.45	1.995	1.000	0.0494	Pass

For 802.11 n (20MHz)

Mode	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm^2)	Power Density At 20 cm (mW/cm^2)	Test Results
2412	20.00	21.69	147.57	1.995	1.000	0.0586	Pass
2437	20.00	22.29	169.43	1.995	1.000	0.0673	Pass
2462	20.00	21.05	127.35	1.995	1.000	0.0506	Pass

For 802.11 n (40MHz)

Mode	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm^2)	Power Density At 20 cm (mW/cm^2)	Test Results
2412	20.00	22.50	177.83	1.995	1.000	0.0706	Pass
2437	20.00	22.51	178.24	1.995	1.000	0.0708	Pass
2452	20.00	22.05	160.32	1.995	1.000	0.0636	Pass

4. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 (b) for the controlled RF Exposure.

.....End of Report.....