# RF EXPOSURE REPORT

**REPORT NO.:** SA121015E03B

**MODEL NO.:** TD-W8961ND, TD-W8961N

**FCC ID:** TE7TDW8961NDV3

**RECEIVED:** Jan. 13, 2014

**TESTED:** Feb. 25, 2014

**ISSUED:** Mar. 05, 2014

**APPLICANT:** TP-LINK TECHNOLOGIES CO., LTD.

**ADDRESS:** Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park,Shennan Rd, Nanshan, Shenzhen,China

**ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

**LAB ADDRESS:** No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by any government agencies.

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# RELEASE CONTROL RECORD

| ISSUE NO. | REASON FOR CHANGE | DATE ISSUED |
|---|---|---|
| SA121015E03B | Original release | Mar. 05, 2014 |

## 1. CERTIFICATION

| | |
|---|---|
| **PRODUCT:** | 300Mbps Wireless N ADSL2+ Modem Router |
| **BRAND NAME:** | TP-LINK |
| **MODEL NO.:** | TD-W8961ND, TD-W8961N |
| **TEST SAMPLE:** | PROTOTYPE |
| **APPLICANT:** | TP-LINK TECHNOLOGIES CO., LTD. |
| **TESTED DATE:** | Dec. 20, 2012 |
| **STANDARDS:** | FCC Part 2 (Section 2.1091) |
| | FCC OET Bulletin 65, Supplement C (01-01) |
| | IEEE C95.1 |

The above equipment (Model: TD-W8961ND) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY :** _____ , **DATE:** *Mar. 05, 2014*
( Claire Kuan, Specialist )

**APPROVED BY :** _____ , **DATE:** *Mar. 05, 2014*
( May Chen, Manager )

## 2. RF EXPOSURE LIMIT

### 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) |
|---|---|---|---|---|
| **LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE** | | | | |
| 300-1500 | … | … | F/1500 | 30 |
| 1500-100,000 | … | … | 1.0 | 30 |

F = Frequency in MHz

## 3. MPE CALCULATION FORMULA

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in $mW/cm^2$

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

## 4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 5. ANTENNA GAIN

| Original | | | | | | |
|---|---|---|---|---|---|---|
| Removable antennas for TD-W8961ND | | | | | | |
| Transmitter Circuit | Antenna Type | No. | Gain (dBi) (Exclude cable loss) | Connector type | Cable Loss(dB) | Frequency range (MHz to MHz) |
| Chain (0) | Dipole | 3101500193 | 3 | SMA Male Reverse | 0.5 | 2400-2483.5 |
| Chain (1) | Dipole | 3101500193 | 3 | SMA Male Reverse | 0.5 | 2400~2483.5 |
| Newly | | | | | | |
| Removable antennas for TD-W8961ND | | | | | | |
| Transmitter Circuit | Antenna Type | No. | Gain (dBi) (Exclude cable loss) | Connector type | Cable Loss(dB) | Frequency range (MHz to MHz) |
| Chain (0) | Dipole | 3101500328 | 5 | SMA Male Reverse | 0.8 | 2400-2483.5 |
| Chain (1) | Dipole | 3101500328 | 5 | SMA Male Reverse | 0.96 | 2400-2483.5 |
| Immovable antennas for TD-W8961N | | | | | | |
| Transmitter Circuit | Antenna Type | No. | Gain (dBi) (Exclude cable loss) | Connector type | Cable Loss(dB) | Frequency range (MHz to MHz) |
| Chain (0) | Dipole | 3101500229 | 5 | Weld | 0.8 | 2400-2483.5 |
| Chain (1) | Dipole | 3101500178 | 5 | Weld | 0.96 | 2400~2483.5 |

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

| FREQUENCY BAND (MHz) | MAX POWER (mW) | ANTENNA GAIN (dBi) | DISTANCE (cm) | POWER DENSITY (mW/ $cm^2$) | LIMIT (mW/$cm^2$) |
|---|---|---|---|---|---|
| 2412-2462 | 322.535 | 7.13 | 20 | 0.33136 | 1 |

**NOTE:** Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$)$^2$ / 2] = 7.13dBi

**--- END ---**