

RF EXPOSURE REPORT

REPORT NO.: SA140508E03

MODEL NO.: D1201

FCC ID: V7TD1201

RECEIVED: May 02, 2014

TESTED: June 18 to 25, 2014

ISSUED: July 04, 2014

APPLICANT: SHENZHEN TENDA TECHNOLOGY CO.,LTD.

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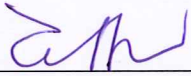
RELEASE CONTROL RECORD

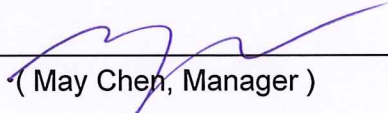
ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140508E03	Original release	July 04, 2014

1. CERTIFICATION

PRODUCT: Wireless AC1200 ADSL2+ Dual Band Modem Router
BRAND NAME: Tenda
MODEL NO.: D1201
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: SHENZHEN TENDA TECHNOLOGY CO.,LTD.
TESTED DATE: June 18 to 25, 2014
STANDARDS: FCC Part 2 (Section 2.1091)
FCC OET Bulletin 65, Supplement C (01-01)
IEEE C95.1

The above equipment (Model: D1201) 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:** July 04, 2014
(Elsie Hsu, Specialist)

APPROVED BY :  , **DATE:** July 04, 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

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

4. CLASSIFICATION

This Wireless AC1200 ADSL2+ Dual Band Modem Router will be sold and used with Projector. 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

- The antennas provided to the EUT, please refer to the following table:

For 2.4GHz						
Transmitter Circuit	Gain(dBi) Exclude cable loss	Cable Loss(dB) (External only, if any)	Antenna Type	Connector Type	Frequency range (MHz to MHz)	Cable Length
Chain (0)	5	0.4	dipole	SMA Straight Plug	2400-2500	272mm
Chain (1)	5	0.4	dipole	SMA Straight Plug	2400-2500	90mm
For 5GHz						
Transmitter Circuit	Gain(dBi) Exclude cable loss	Cable Loss(dB)	Antenna Type	Connector Type	Frequency range (MHz to MHz)	Cable Length
Chain (0)	2.5	0.4	PCB	NA	5150-5850	60mm
Chain (1)	2.5	0.4	PCB	NA	5150-5850	145mm

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For WLAN: 15.247(2.4GHz)

802.11b

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412 - 2462	67.764	4.60	20	0.03888	1.00

802.11g

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412 - 2462	168.655	4.60	20	0.09677	1.00

802.11n (HT20)

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412 - 2462	364.591	4.60	20	0.20919	1.00

802.11n (HT40)

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2422 - 2452	179.999	4.60	20	0.10328	1.00

For WLAN: 15.407(5GHz)

802.11a

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5180 - 5240, 5745 - 5825	45.394	2.10	20	0.01465	1.00

802.11ac (VHT20)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5180 - 5240, 5745 - 5825	109.997	2.10	20	0.03549	1.00

802.11ac (VHT40)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5190 - 5230, 5755 - 5795	92.485	2.10	20	0.02984	1.00

802.11ac (VHT80)

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5210, 5775	45.723	2.10	20	0.01475	1.00

CONCLUSION:

Both of the 2.4GHz and 5GHz can transmit simultaneously, the formula of calculated the MPE is:

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is $0.20919 / 1 + 0.03549 / 1 = 0.245$, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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