



RF Exposure Evaluation Declaration

FCC ID: H8NRTV7805VW
APPLICANT: ASKEY COMPUTER CORP

Application Type: Certification
Product: VDSL
Model No.: RTV7805VW(RoHS)
Trademark: ASKEY
FCC Classification: Digital Transmission System (DTS)

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The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
1607RSU01502	Rev. 01	Initial report	08-26-2016	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	VDSL
Model No.	RTV7805VW(RoHS)
Brand Name	ASKEY
WLAN Specification	
Frequency Range	802.11b/g/n-HT20: 2412 ~ 2462 MHz 802.11n-HT40: 2422 ~ 2452 MHz
Maximum Peak Output Power	802.11b: 19.43dBm 802.11g: 24.79dBm 802.11n-HT20: 27.11dBm 802.11n-HT40: 27.11dBm
Maximum Average Output Power	802.11b: 17.61dBm 802.11g: 17.21dBm 802.11n-HT20: 20.38dBm 802.11n-HT40: 20.14dBm
Type of Modulation	802.11b: DSSS 802.11g/n: OFDM

1.2. Antenna Description

Antenna Type	Frequency Band (MHz)	Tx Paths	Per Chain Max Antenna Gain (dBi)		Directional Gain (dBi)
			Ant 0	Ant 1	
PCB Antenna	2412 ~2462	2	2.88	4.71	3.89

Note: The EUT supports MIMO technology at 802.11n mode, and that technology is uncorrelated.

(1) Uncorrelated signals include, but are not limited to, signals transmitted in any of the following modes:

- Unequal Antenna gains, with equal transmit powers. For Antenna gains given by G_1, G_2, \dots, G_N dBi transmit signals are correlated, then
- Directional gain = $10 \cdot \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10})/N_{ANT}]$ dBi
2.4GHz Directional Gain = $10 \cdot \log[(10^{2.88/10} + 10^{4.71/10})/2] = 3.89$ dBi

2. RF Exposure Evaluation

2.1. 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/cm ²)	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

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

P_d is the limit of MPE, 1mW/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.

2.2. Test Result of RF Exposure Evaluation

Product	VDSL
Test Item	RF Exposure Evaluation

Antenna Gain: refer to section 1.2

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
802.11b/g/n-HT20/ n-HT40	2412 ~ 2462	20.38	0.0532	1

CONCLUSION:

Therefore, the Max Power Density at R (20 cm) = 0.0532mW/cm² < 1mW/cm².

So the EUT complies with the requirement.