



Test report No. : 4788774190-US-R1-V0
Page : 1 of 9
Issued date : Jun. 5, 2019
FCC ID : VGY2620

Maximum Permissible Exposure Report

Product : Vigor2620PVn series Router

Model Name : Vigor2620PVn

Series Model : Refer to Ch.4.1 Note.3

FCC ID : VGY2620

Test Regulation : 47 CFR FCC Part 2.1093

Received Date : Nov. 2, 2018

Issued Date : Jun. 5, 2019

Applicant : DrayTek Corp.
No.26 Fu Shing Rd., HuKou County,Hsin-Chu Industrial
Park,Hsin-Chu,Taiwan 303 R.O.C

Issued By : Underwriters Laboratories Taiwan Co., Ltd.
Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd.,
Zhudong Township, Hsinchu County, Taiwan



The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report are responsible of the test sample(s) provided by the client only and are not to be used to indicate applicability to other similar products.

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Telephone :+886-2-7737-3000
Facsimile (FAX) :+886-3-583-7948

Doc No: 17-EM-F0864 / 2.0



Test report No. : 4788774190-US-R1-V0
Page : 2 of 9
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REVISION HISTORY

Original Test Report No.: 4788774190-US-R1-V0

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Table Of Contents

1. Attestation of Test Results.....	4
2. Test Methodology	5
3. Facilities and Accreditation	5
4. Equipment Under Test	6
4.1. Description of EUT.....	6
4.2. Technical Information.....	7
4.3. Description Of Available Antennas	7
5. Requirement	8
6. Radio Frequency Radiation Exposure Evaluation	9

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Test report No. : 4788774190-US-R1-V0
Page : 4 of 9
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1. Attestation of Test Results

APPLICANT: DrayTek Corp.
No.26 Fu Shing Rd., HuKou County,Hsin-Chu Industrial Park,Hsin-Chu,Taiwan 303 R.O.C

MANUFACTURER DrayTek Corp.
No.26 Fu Shing Rd., HuKou County,Hsin-Chu Industrial Park,Hsin-Chu,Taiwan 303 R.O.C

EUT DESCRIPTION: Vigor2620PVn series Router

BRAND: DrayTek

MODEL: Vigor2620PVn

SERIES MODEL Refer to Ch.4.1 Note.3

SAMPLE STAGE: Production Unit

APPLICABLE STANDARDS	
STANDARD	Test Results
47 CFR FCC PART 2.1093	PASS

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Prepared By:

Evelyn Lee
Project Handler

Date : Jun. 5, 2019

Approved and Authorized By:

Stanley Wu
Senior Project Engineer

Date : Jun. 5, 2019

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2. Test Methodology

The tests documented in this report were performed in accordance with KDB 447498 D01 General RF Exposure Guidance v06.

3. Facilities and Accreditation

Test Location	Underwriters Laboratories Taiwan Co., Ltd.
Address	Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Accreditation Certificate	Underwriters Laboratories Taiwan Co., Ltd. is accredited by TAF, Laboratory Code 3398. The full scope of accreditation can be viewed at http://accreditation.taftw.org.tw/taf/public/basic/viewApplyItems.action?unitNo=3398

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4. Equipment Under Test

4.1. Description of EUT

Product Name	Vigor2620PVn series Router
Brand Name	DrayTek
Model Name	Vigor2620PVn
Series Model	Refer to Note 3
Normal Voltage	12Vdc from adapter 48Vdc from PoE
Hardware Version	V0A
Software Version	V2620_For_VoIP_FW_Jj V2620_r77002_3.8.9RC7_STD

Note:

1. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

Modulation Mode	Tx,Rx Function
802.11b	1TX,1RX
802.11g	2TX,2RX
802.11n (HT20)	2TX,2RX
802.11n (HT40)	2TX,2RX

2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adaptor	Asian Power Devices Inc.	WA-24Q12FU	Input:100~240Vac, 50~60Hz, 0.7A Max. Output:12Vdc, 2A
RJ-45 Cable	N/A	N/A	Non-shield, Length: 1m
RJ-11 Cable	N/A	N/A	Non-shield, Length: 1m

The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual.

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3. The models difference table as below:

Main Model	Function				
	PoE	DSL	LAN	Wi-Fi 2.4G	FXS
Vigor2620PVn	PD	VDSL2/ADSL2+/RJ11	Eth/RJ45x2	V	V
Series Model	Function difference				
	PoE	DSL	LAN	Wi-Fi 2.4G	FXS
Vigor2620n		VDSL2/ADSL2+/RJ11	Eth/RJ45x2	V	
Vigor2620Vn		VDSL2/ADSL2+/RJ11	Eth/RJ45x2	V	V
Vigor2620Pn	PD	VDSL2/ADSL2+/RJ11	Eth/RJ45x2	V	
Vigor2620ne		VDSL2/ADSL2+/RJ11	Eth/RJ45x4	V	
Vigor2620Vne		VDSL2/ADSL2+/RJ11	Eth/RJ45x4	V	V
Vigor2620Pne	PD	VDSL2/ADSL2+/RJ11	Eth/RJ45x4	V	
Vigor2620PVne	PD	VDSL2/ADSL2+/RJ11	Eth/RJ45x4	V	V

Note:

- The above models are declared by the manufacturer for market segmentation that difference between the main model and the series model is the combination of hardware design and appearance, there is nothing changed to RF related part that does not affect the RF characteristics.

4.2. Technical Information

Frequency Bands	■ 2.4G WLAN	2412MHz ~ 2462MHz
Modulation Mode	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM	

4.3. Description Of Available Antennas

Band	Antenna Type	Antenna Gain(dBi)
WLAN 2.4G	PIFA	2.68

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5. Requirement

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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
1500-100,000	--	--	1.0	30
Note 1: f = frequency in MHz, * means Plane-wave equivalent power density				
Note 2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.				

Power Density (S) is calculated by the following formula:

$$S=(P*G)/4\pi R^2$$

where:

S = power density (in appropriate units, e.g. mW/ cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

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 (appropriate units, e.g., cm)

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6. Radio Frequency Radiation Exposure Evaluation

WLAN

Band	Max. Conducted Power (dBm)	Antenna Gain (dBi)	Max. EIRP (mW)	Power density @ 20 cm (mW/cm ²)	Limit (mW/cm ²)	Result
WLAN 2.4G	27.24	2.68	981.748	0.195	1	Pass

Note:

1. Max. EIRP (dBm) = Max. Conducted power (dBm) + Antenna Gain (dBi)
2. Max. EIRP (mW) = $10^{(\text{Max. EIRP (dBm)} / 10)}$
3. Power density (mW/cm²) = Max. EIRP (mW) / $[4 \times \pi \times (\text{calculated distance})^2]$, the calculated distance is 20 cm.

Conclusion:

According to 47 CFR §2.1093, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

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