

RF Exposure Evaluation Report

Product : Digital Video Recorder
Trade mark : **REI**[®]
Model/Type reference : HD6-600W
Serial Number : N/A
Report Number : EED32N80836803
FCC ID : SZR-HD6-600W
Date of Issue : Nov. 24, 2021
Test Standards : 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Test result : PASS

Prepared for:

Radio Engineering Industries Inc.
6534 L Street Omaha, Nebraska 68117, United States

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Compiled by:

Tom Chen

Tom Chen

Reviewed by:

Aaron Ma

Aaron Ma

Approved by:

David Wang

David Wang

Date:

Nov. 24, 2021



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2 Version

Version No.	Date	Description
00	Nov. 24, 2021	Original

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4 General Information

4.1 Client Information

Applicant:	Radio Engineering Industries Inc.
Address of Applicant:	6534 L Street Omaha, Nebraska 68117, United States
Manufacturer:	Streamax Technology Co.,Ltd
Address of Manufacturer:	21-23/F, Building B1 ,Zhiyuan, No.1001, Xueyuan Avenue, Nanshan District, Shenzhen City, Guangdong Province, P.R.China

4.2 General Description of EUT

Product Name:	Digital Video Recorder
Model No.:	HD6-600W
Trade mark:	
EUT Supports Radios application:	2.4GHz Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz 5GHz Wi-Fi: U-NII-1: 5180-5240MHz U-NII-3: 5745-5825MHz

4.3 Product Specification subjective to this standard

Frequency Range:	2.4GHz Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz 5GHz Wi-Fi: U-NII-1: 5180-5240MHz U-NII-3: 5745-5825MHz
Modulation Type:	IEEE for 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE for 802.11ac(VHT20/VHT40/VHT80): OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Test Power Grade:	Default
Test Software of EUT:	PUTTY
Antenna Type:	Monopole Antenna
Antenna Gain:	2dBi
Power Supply:	DC 12V
Max Conducted Peak Output Power:	2.4G WIFI:16.28dBm; 5G WIFI:12.69dBm The Max Conducted Peak Output Power data refer to the report EED32N80836801, EED32N80836802.
Sample Received Date:	Sep. 06, 2021
Sample tested Date:	Sep. 06, 2021 to Oct. 13, 2021
Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.	

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

2.4G WIFI:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
6	2437	42.461	1.584	20	0.0134	1

5G WIFI:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
38	5190	18.578	1.584	20	0.0059	1

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32N80836801 for EUT external and internal photos.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***