

# RF Exposure Evaluation Report

**Product** : Digital Video Recorder  
**Trade mark** : **REI**<sup>®</sup>  
**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:

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Nov. 24, 2021

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Check No.:3619060921



## 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:<br>IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz<br>IEEE 802.11n(HT40): 2422MHz to 2452MHz<br>5GHz Wi-Fi:<br>U-NII-1: 5180-5240MHz<br>U-NII-3: 5745-5825MHz |

### 4.3 Product Specification subjective to this standard

|                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Range:                                                                                                                                                                             | 2.4GHz Wi-Fi:<br>IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz<br>IEEE 802.11n(HT40): 2422MHz to 2452MHz<br>5GHz Wi-Fi:<br>U-NII-1: 5180-5240MHz<br>U-NII-3: 5745-5825MHz                                                                                                                            |
| Modulation Type:                                                                                                                                                                             | IEEE for 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK)<br>IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK)<br>IEEE for 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>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<br>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 / cm<sup>2</sup>

## 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 / cm<sup>2</sup>

### 2.4G WIFI:

| Ch. | Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm <sup>2</sup> ) |
|-----|-----------|--------|-------------|--------|---------------------------------------|-----------------------------|
| 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 <sup>2</sup> | Limit (mW/cm <sup>2</sup> ) |
|-----|-----------|--------|-------------|--------|---------------------------------------|-----------------------------|
| 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 \*\*\*