

**IEEE C95.1  
KDB 447498 D03  
47 C.F.R. Part 1, Subpart I, Section 1.1310  
47 C.F.R. Part 2, Subpart J, Section 2.1091**

## **RF EXPOSURE REPORT**

**For**

**Car Video Recorder**

**Model: DrivePro 200**

**Trade Name: Transcend**

*Issued to*

**Transcend Information Inc  
No.70, Xing Zhong Rd., NeiHu Dist., Taipei, Taiwan**

*Issued by*

**Compliance Certification Services Inc.  
No.11, Wugong 6th Rd., Wugu Dist.,  
New Taipei City 24891, Taiwan. (R.O.C.)  
<http://www.ccsrf.com>  
[service@ccsrf.com](mailto:service@ccsrf.com)  
Issued Date: November 4, 2015**



## Revision History

| Rev. | Issue Date       | Revisions     | Effect Page | Revised By |
|------|------------------|---------------|-------------|------------|
| 00   | November 4, 2015 | Initial Issue | ALL         | Doris Chu  |

## TABLE OF CONTENTS

|                                       |   |
|---------------------------------------|---|
| 1. LIMIT .....                        | 4 |
| 2. EUT SPECIFICATION.....             | 4 |
| 3. TEST RESULTS.....                  | 5 |
| 4. MAXIMUM PERMISSIBLE EXPOSURE ..... | 6 |

## 1. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

## 2. EUT SPECIFICATION

|                                     |                                                                                                                                                                                             |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EUT</b>                          | Car Video Recorder                                                                                                                                                                          |
| <b>Model</b>                        | DrivePro 200                                                                                                                                                                                |
| <b>Trade Name</b>                   | Transcend                                                                                                                                                                                   |
| <b>Frequency band (Operating)</b>   | <input checked="" type="checkbox"/> 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz<br>802.11n HT40: 2.422GHz ~ 2.452GHz<br><input type="checkbox"/> Others                                           |
| <b>Device category</b>              | <input type="checkbox"/> Portable (<20cm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)<br><input type="checkbox"/> Others                                    |
| <b>Exposure classification</b>      | <input type="checkbox"/> Occupational/Controlled exposure ( $S = 5\text{mW/cm}^2$ )<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure ( $S=1\text{mW/cm}^2$ ) |
| <b>Antenna Specification</b>        | Chip Antenna Antenna Gain : 3.32 dBi (Numeric gain: 2.15)                                                                                                                                   |
| <b>Maximum Average output power</b> | IEEE 802.11b Mode: 22.28 dBm (169.044 mW)<br>IEEE 802.11g Mode: 17.24 dBm (52.966 mW)<br>IEEE 802.11n HT 20 Mode: 17.19 dBm (52.360 mW)<br>IEEE 802.11n HT 40 Mode: 18.89 dBm (77.446 mW)   |
| <b>Maximum Tune up Power</b>        | IEEE 802.11b Mode: 23.00 dBm (199.526 mW)<br>IEEE 802.11g Mode: 18.00 dBm (63.096 mW)<br>IEEE 802.11n HT 20 Mode: 18.00 dBm (63.096 mW)<br>IEEE 802.11n HT 40 Mode: 19.00 dBm (79.433 mW)   |
| <b>Evaluation applied</b>           | <input checked="" type="checkbox"/> MPE Evaluation*<br><input type="checkbox"/> SAR Evaluation<br><input type="checkbox"/> N/A                                                              |

### 3. TEST RESULTS

No non-compliance noted.

#### Calculation

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>

## 4. 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>

### IEEE 802.11b mode:

| Ch. | Frq.(MHz) | P (mW)  | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|---------|-------------|--------|---------------------------------------|----------------|
| 11  | 2462      | 199.526 | 2.15        | 20     | 0.0854                                | 1              |

### IEEE 802.11g mode:

| Ch. | Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|--------|-------------|--------|---------------------------------------|----------------|
| 11  | 2462      | 63.096 | 2.15        | 20     | 0.0270                                | 1              |

### IEEE 802.11n HT20 mode:

| Ch. | Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|--------|-------------|--------|---------------------------------------|----------------|
| 11  | 2462      | 63.096 | 2.15        | 20     | 0.0270                                | 1              |

### IEEE 802.11n HT40 mode:

| Ch. | Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|--------|-------------|--------|---------------------------------------|----------------|
| 9   | 2452      | 79.433 | 2.15        | 20     | 0.0340                                | 1              |