**IEEE C95.1**
**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

## NETWORK MEDIA PLAYER

### Model: TV-204W

## Trade Name: DUNE HD ; Kartina.TV

*Issued for*

**DUNE HD LTD**
**2F., No.297, Sec. 2, Tiding Blvd., Neihu Dist., Taipei City 11493, Taiwan (R.O.C.)**

*Issued by*

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Testing Laboratory
0240

# Revision History

| Rev. | Issue Date | Revisions | Effect Page | Revised By |
|------|------------|-----------|-------------|------------|
| 00 | 07/16/2015 | Initial Issue | ALL | Michelle Chiu |

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## 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

| | |
|---|---|
| **EUT** | NETWORK MEDIA PLAYER |
| **Model** | TV-204W |
| **Frequency band (Operating)** | ☒ 802.11b/g/n HT20: 2.412GHz ~ 2.462GHz<br>802.11n HT40: 2.422GHz ~ 2.452GHz<br>☐ Others |
| **Device category** | ☐ Portable (<20cm separation)<br>☒ Mobile (>20cm separation)<br>☐ Others |
| **Exposure classification** | ☐ Occupational/Controlled exposure (S = 5mW/cm$^2$)<br>☒ General Population/Uncontrolled exposure (S=1mW/cm$^2$) |
| **Antenna Specification** | Antenna 1<br>2.4GHz:   Antenna Gain :    2.00 dBi    (Numeric gain 1.58) |
| **Maximum Average output power** | 2.4G<br>IEEE 802.11b Mode:            13.12 dBm  (20.512 mW)<br>IEEE 802.11g Mode:            14.82 dBm  (30.339 mW)<br>IEEE 802.11gn HT 20 Mode 14.12 dBm  (25.823 mW)<br>IEEE 802.11gn HT 40 Mode 12.87 dBm  (19.364 mW) |
| **Evaluation applied** | ☒ MPE Evaluation*<br>☐ SAR Evaluation<br>☐ N/A |

# 3. TEST RESULTS

## No non-compliance noted.

**Calculation**

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

*Where E = Field strength in Volts / meter*
*P = Power in Watts*
*G = Numeric antenna gain*
*d = Distance in meters*
*S = Power density in watts / meter*

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 (mW) = P (W) / 1000 and*

*d (cm) = d(m) / 100*

Yields

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

*Where d = Distance in cm*
*P = Power in mW*
*G = Numeric antenna gain*
*S = Power density in mW / cm²*

## 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$^2$*

### 2.4G

### IEEE 802.11b mode:

| Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm$^2$ | Limit (mW/cm$^2$) |
|---|---|---|---|---|---|
| 2462 | 20.512 | 1.58 | 20 | 0.0064 | 1 |

### IEEE 802.11g mode:

| Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm$^2$ | Limit (mW/cm$^2$) |
|---|---|---|---|---|---|
| 2462 | 30.339 | 1.58 | 20 | 0.0095 | 1 |

### IEEE 802.11gn HT20 mode:

| Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm$^2$ | Limit (mW/cm$^2$) |
|---|---|---|---|---|---|
| 2462 | 25.823 | 1.58 | 20 | 0.0081 | 1 |

### IEEE 802.11gn HT40 mode:

| Frq.(MHz) | P (mW) | Gain (num.) | D (cm) | Power density in mW / cm$^2$ | Limit (mW/cm$^2$) |
|---|---|---|---|---|---|
| 2452 | 19.364 | 1.58 | 20 | 0.0061 | 1 |