# FCC 47 CFR

# MPE REPORT

Applicant By

**DESAY A&V SCIENCE AND TECHNOLOGY CO.,LTD**

Report Number

**NSE-F09073501**

Model Number

**NS-WBRDVD**

Issued By

**NS Technology Co., Ltd.**

**Chenwu Industrial Zone, Houjie Town,**

**Dongguan City, Guangdong, China**

**TEL: 86-769-85935656**

**FAX: 86-769-85931080**

# Maximum Permissible Exposure

## 1 Applicable Standard

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 level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

**(a) Limits for Occupational / Controlled Exposure**

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm2) | Averaging Times ｜E｜2 , ｜H｜2 or S (minutes) |
|---|---|---|---|---|
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842/f | 4.89/f | (900/f)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | | | F/300 | 6 |
| 1500-100000 | | | 5 | 6 |

**(b) 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/cm2) | Averaging Times ｜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)* | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | | | F/1500 | 30 |
| 1500-100000 | | | 1.0 | 30 |

Note: f=frequency in MHz; *Plane-wave equivalent power density

## 2 MPE Calculation Method

E (V/m) = (30*P*G) 0.5/d  Power Density: Pd (W/m2) = E2/377

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd = (30*P*G) / (377*d2)

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

## 3 Calculated Result and Limit

| Mode | CH | Output power (dBm) | Output power (mW) | Antenna Gain(dBi) | MPE estimation result(mW/cm²) at 20cm |
|---|---|---|---|---|---|
| IEEE802.11b | CH1:2412MHz | **20.27** | 106.41 | 2 | 0.03 |
| | CH6:2437MHz | **20.38** | 109.14 | 2 | 0.03 |
| | CH11:2462MHz | **20.54** | 113.24 | 2 | 0.04 |
| IEEE802.11g | CH1:2412MHz | **22.38** | 172.98 | 2 | 0.05 |
| | CH6:2437MHz | **22.53** | 179.06 | 2 | 0.06 |
| | CH11:2462MHz | **22.56** | 180.3 | 2 | 0.06 |
| IEEE802.11n HT20 | CH1:2412MHz | **22.69** | 185.78 | 2 | 0.06 |
| | CH6:2437MHz | **22.65** | 184.08 | 2 | 0.06 |
| | CH11:2462MHz | **22.6** | 181.97 | 2 | 0.06 |
| IEEE802.11n HT40 | CH1:2422MHz | **24.28** | 267.92 | 2 | 0.08 |
| | CH4:2437MHz | **24.07** | 255.27 | 2 | 0.08 |
| | CH7:2452MHz | **24.01** | 251.77 | 2 | 0.08 |