



Test Lab
Cert 2951.01

FCC TEST REPORT

for

KADENCE DESIGNS LLC

AudioRock 5

Model Number: R5.2.0

Prepared for : KADENCE DESIGNS LLC
Address : P.O.Box 2359,Thompson Falls,MT 59873

Prepared By : NS Technology Co., Ltd.
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Report Number : NSE-F10064933
Date of Test : May 23, 2010
Date of Report : May 26, 2010





NS Technology Co., Ltd.

| | | | |
|---|--|---|--------------|
| Applicant: Address: | KADENCE DESIGNS LLC P.O.Box 2359,Thompson Falls,MT 59873 | | |
| Manufacturer: Address: | Celewave Electronics(shenzhen) Co.,Ltd No 1-2 building,No 2 Industry District, Shang Heng lang Huaxing Road, Dalang Street,Baoan District, Shenzhen City,China | | |
| E.U.T: | AudioRock 5 | | |
| Model Number: | R5.2.0 | | |
| Report Number: | NSE- F10064933 | | |
| Trade Name: | Lightspeaker | | |
| Operating Frequency: | 2412~2464MHz | | |
| Date of Receipt: | Apr.17, 2010 | Date of Test: | May 23, 2010 |
| Test Specification: | 47 CFR FCC Part 2 Subpart J, section 2.1091 | | |
| Test Result: | The equipment under test was found to be compliance with the requirements of the standards applied. | | |
| | Issue Date: May 26, 2010 | | |
| Tested by: | Reviewed by: | Approved by: | |
|  <hr/> Jade/ Engineer |  <hr/> Iceman Hu / Supervisor |  <hr/> Steven Lee / Manager | |
| Other Aspects: | None. | | |
| <i>Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested</i> | | | |
| <i>This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of NS Technology Co., Ltd.</i> | | | |



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/cm ²) | 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/cm ²) | 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

$$E \text{ (V/m)} = (30 \cdot P \cdot G)^{0.5} / d \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = E^2 / 377$$

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

$$Pd = (30 \cdot P \cdot G) / (377 \cdot d^2)$$

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/cm ²) at 20cm | Limit of MPE Estimation (mW/cm ²) | Test result |
|----------|-------------|--------------------|------------------------|--------------------|---|---|-------------|
| Antenna1 | CH1:2412MHz | 15.84 | 38.37×10^{-3} | 5.5 | 0.0564 | 1 | Compiles |
| | CH2:2438MHz | 13.71 | 23.50×10^{-3} | 5.5 | 0.0346 | 1 | Compiles |
| | CH3:2464MHz | 13.91 | 24.60×10^{-3} | 5.5 | 0.0362 | 1 | Compiles |
| Antenna2 | CH1:2412MHz | 14.33 | 27.10×10^{-3} | 5.5 | 0.0399 | 1 | Compiles |
| | CH2:2438MHz | 11.35 | 13.65×10^{-3} | 5.5 | 0.0201 | 1 | Compiles |
| | CH3:2464MHz | 10.74 | 11.86×10^{-3} | 5.5 | 0.0175 | 1 | Compiles |