



## 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

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Report Number : NSE-F10064933  
Date of Test : May 23, 2010  
Date of Report : May 26, 2010





# NS Technology Co., Ltd.

<b>Applicant:</b>	KADENCE DESIGNS LLC		
<b>Address:</b>	P.O.Box 2359, Thompson Falls, MT 59873		
<b>Manufacturer:</b>	Celewave Electronics(shenzhen) Co.,Ltd		
<b>Address:</b>	No 1-2 building, No 2 Industry District, Shang Heng lang Huaxing Road, Dalang Street, Baoan District, Shenzhen City, China		
<b>E.U.T:</b>	AudioRock 5		
<b>Model Number:</b>	R5.2.0		
<b>Report Number:</b>	NSE- F10064933		
<b>Trade Name:</b>	Lightspeaker		
<b>Operating Frequency:</b>	2412~2464MHz		
<b>Date of Receipt:</b>	Apr.17, 2010	<b>Date of Test:</b>	May 23, 2010
<b>Test Specification:</b>	47 CFR FCC Part 2 Subpart J, section 2.1091		
<b>Test Result:</b>	The equipment under test was found to be compliance with the requirements of the standards applied.		
<b>Issue Date: May 26, 2010</b>			
Tested by:	Reviewed by:	Approved by:	
			
Jade/ Engineer	Iceman Hu / Supervisor	Steven Lee / Manager	
<b>Other Aspects:</b> None.			
Abbreviations: <i>OK/P=passed</i> <i>fail/F=failed</i> <i>n.a/N=not applicable</i> <i>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 <sup>2</sup> )	Averaging Times   E   <sup>2</sup> ,   H   <sup>2</sup> 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 <sup>2</sup> )	Averaging Times   E   <sup>2</sup> ,   H   <sup>2</sup> 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

$$E \text{ (V/m)} = (30*P*G)^{0.5}/d$$

$$\text{Power Density: } Pd \text{ (W/m}^2\text{)} = E^2/377$$

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

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

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 <sup>2</sup> ) at 20cm	Limit of MPE Estimation (mW/cm <sup>2</sup> )	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

