



RF Exposure Evaluation Report

Equipment : MOD6213/MOD6212 transiver
Brand Name : Sibeam Snap Technology Transceiver module
Model No. : MOD6213/MOD6212
FCC ID : UK2-MOD621X
Standard : 47 CFR Part 2.1091
Applicant : Lattice Semiconductor Corporation
111 SW 5th Avenue Suite 700 Portland, OR 97204
United States.
Manufacturer : Lattice Semiconductor Corporation
111 SW 5th Avenue Suite 700 Portland, OR 97204
United States.

The product sample received on Aug. 16, 2016 and completely tested on Oct. 07, 2016. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with 47 CFR Part 2.1091, and pass the limit.

Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.


Cliff Chang
SPORTON INTERNATIONAL INC.





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PHOTOGRAPHS OF EUT V01



1 General Description

1.1 EUT General Information

| The Channel Plan(s) | |
|---------------------------|-----------------|
| Operating Frequency (GHz) | Modulation Type |
| 60.48 GHz | OOK |

1.1.1 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

| Model | Radiation | I ² C Tunneling | PROX Detection | EUT |
|---------|------------|----------------------------|----------------|-------|
| MOD6213 | Broad Fire | Connect to Slave | Initiator | EUT1 |
| MOD6212 | Broad Fire | Connect to Master | Responder | EUT 2 |

Note: All test results were recorded in the report.

1.2 Testing Location

| Testing Location | | |
|-------------------------------------|--------|---|
| <input type="checkbox"/> | HWA YA | ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973 |
| <input checked="" type="checkbox"/> | JHUBEI | ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085 |

2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(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 Time 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 |
| 1500-100,000 | | | 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 Time 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 |
| 1500-100,000 | | | 1.0 | 30 |

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

2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = 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

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



2.3 Calculated Result and Limit

| | | | |
|-----------------------------|--|------------------|-----------------------------|
| Exposure Environment | General Population / Uncontrolled Exposure | | |
| Temp | 22°C | Humidity | 54% |
| Test Engineer | Paul Chen / Welson Chen | Test Date | Sep. 02, 2016~Oct. 07, 2016 |

<EUT 1>

| Test results | | | | | |
|--|--------------------------|-------------------------|---|--------------------------|--|
| Maximum EIPR Power of Test Frequency (GHz) | Average EIRP Power (dBm) | Average EIRP Power (mW) | Power Density (S) (mW/cm ²) | Separation Distance (cm) | Limit of Power Density (S) (mW/cm ²) |
| 60.48 GHz | 0.40 | 1.10 | 0.00022 | 20 | 1.00 |

<EUT 2>

| Test results | | | | | |
|--|--------------------------|-------------------------|---|--------------------------|--|
| Maximum EIPR Power of Test Frequency (GHz) | Average EIRP Power (dBm) | Average EIRP Power (mW) | Power Density (S) (mW/cm ²) | Separation Distance (cm) | Limit of Power Density (S) (mW/cm ²) |
| 60.48 GHz | -3.49 | 0.45 | 0.00009 | 20 | 1.00 |