

Company: Actiontec Electronics Inc.

Evaluation of: WCB6240Q  
To: FCC CFR 47 Part 15 RF Exposure requirements

Report No.: ATEC09-MPE Rev A

## MPE TEST REPORT



# MPE TEST REPORT

FROM



Evaluation of: Actiontec Electronics Inc. WCB6240Q  
to

To: FCC CFR 47 Part 15 RF Exposure Requirements

Test Report Serial No.: ATEC09-MPE Rev A

This report supersedes: NONE

Applicant: Actiontec Electronics Inc.  
760 N Mary Avenue  
Sunnyvale, 94085  
USA

Product Function: Gigabit Wireless Router

Issue Date: 16<sup>th</sup> November 2015

## **This Test Report is Issued Under the Authority of:**

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## 1. MAXIMUM PERMISSABLE EXPOSURE

### Calculations for Maximum Permissible Exposure Levels

Power Density =  $P_d$  (mW/cm<sup>2</sup>) =  $EIRP / (4 * \pi * d^2)$

$EIRP = P * G$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

Numeric Gain =  $10^{(G \text{ (dBi)} / 10)}$

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm<sup>2</sup>

The calculations in the table below use the highest conducted power values together with the lowest antenna gain specified for the EUT. These calculations represent worst case in terms of the exposure levels.

| Freq. Band (MHz) | Ant Gain (dBi) | Numeric Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Calculated Safe Distance @ 1mW/cm <sup>2</sup> | Calculated Power Density @ 20cm | Minimum Separation Distance (cm) |
|------------------|----------------|------------------------|-------------------------|------------------------|------------------------------------------------|---------------------------------|----------------------------------|
| 2400.0 - 2483.5  | 3.10           | 2.04                   | 27.74                   | 594.3                  | 9.8                                            | 0.24                            | 20.00                            |
| 5150.0 - 5250.0  | 7.00           | 5.01                   | 26.80                   | 478.6                  | 13.8                                           | 0.48                            | 20.00                            |
| 5250.0 - 5350.0  | 7.00           | 5.01                   | 22.11                   | 162.6                  | 8.1                                            | 0.16                            | 20.00                            |
| 5470.0 - 5725.0  | 6.30           | 4.27                   | 23.33                   | 215.3                  | 8.5                                            | 0.18                            | 20.00                            |
| 5725.0 - 5850.0  | 6.30           | 4.27                   | 27.73                   | 592.9                  | 14.2                                           | 0.50                            | 20.00                            |

### Assessment for simultaneous operation in 2.4 GHz and 5 GHz bands

The Actiontec MWCB6240Q can transmit simultaneously in the 2.4 GHz and 5 GHz bands. The following assessment is based on simultaneous operation in the 2.4 GHz and 5 GHz bands.

| Freq. Band (MHz) | Antenna Gain (dBi) | Numeric Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Calculated Safe Distance @ 1mW/cm <sup>2</sup> Limit(cm) | Minimum Separation Distance (cm) |
|------------------|--------------------|------------------------|-------------------------|------------------------|----------------------------------------------------------|----------------------------------|
| 2400.0 - 2483.5  | 3.10               | 2.04                   | 27.74                   | 594.3                  | 9.8                                                      | 20.00                            |
| 5725.0 - 5850.0  | 6.30               | 4.27                   | 27.73                   | 592.9                  | 14.2                                                     | 20.00                            |
|                  |                    |                        | EIRP Total              |                        |                                                          |                                  |
|                  |                    |                        | 3744.1 mW               |                        | 17.3                                                     | 20.00                            |

**Note:** for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.



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**Specification**  
**Maximum Permissible Exposure Limits**

**FCC §1.1310** Limit =  $1\text{mW} / \text{cm}^2$  from 1.310 Table 1

**RSS-Gen §3.2** In addition to RSS-Gen, the requirements in Radio Standards Specification RSS-102 shall be met.

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