Company: Actiontec Electronics Inc

MPE Evaluation of: Actiontec T3200BV

To: FCC CFR 47 Part 1.1310

Report No.: ATEC23-MPE Non DFS Bands Rev A

**MPE/RF EXPOSURE TEST REPORT**

# MPE/RF EXPOSURE TEST REPORT

FROM

MiCOM Labs
opening wireless markets

MPE Evaluation of: Actiontec Electronics Inc T3200BV

to

To: FCC CFR 47 Part 1.1310

Test Report Serial No.: ATEC23-MPE Non DFS Bands Rev A

This report supersedes: NONE

| | |
|---|---|
| Applicant: | Actiontec Electronics Inc<br>760 N Mary Avenue<br>Sunnyvale, California 94085<br>USA |
| Product Function: | Bonded VDSL2/G.fast Wireless AC Gateway Router |
| Issue Date: | 1st March 2017 |

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

**MiCOM Labs, Inc.**
575 Boulder Court
Pleasanton California 94566
USA
Phone: +1 (925) 462-0304
Fax: +1 (925) 462-0306
www.micomlabs.com

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TESTING CERT #2381.01

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# 1. MAXIMUM PERMISSABLE EXPOSURE

**Calculations for Maximum Permissible Exposure Levels**

Power Density = Pd (mW/cm$^2$) = EIRP/(4*π*d$^2$)
EIRP = P * G
P = Peak output power (mW)
G = Antenna numeric gain (numeric)
d = Separation distance (cm)
Numeric Gain = 10 ^ (G (dBi)/10)
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 Power Density (mW/cm$^2$) @ 20cm | Power Density Limit (mW/cm$^2$) | Min Calculated safe distance for Limit (cm) | Calculated Power Density (mW/cm$^2$) @ Safe Distance |
|---|---|---|---|---|---|---|---|---|
| 5150.0 - 5250.0 | 5.70 | 3.72 | 29.73 | 940.64 | 0.70 | 1.00 | 17 | 0.96 |
| 5725.0 - 5850.0 | 5.60 | 3.63 | 29.52 | 895.21 | 0.65 | 1.00 | 17 | 0.89 |
| 2400.0 - 2483.5 | 2.70 | 1.86 | 29.91 | 978.53 | 0.36 | 1.00 | 13 | 0.86 |

Assessment for simultaneous operation:

| Freq. Band (MHz) | Ant Gain (dBi) | Numeric Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Calculated Safe Distance for Summation (cm) | Power Density Limit (mW/cm$^2$) $E_{ref}$ | Power Density (mW/cm$^2$) @New Distance $E_i$ | Summation $E_i/E_{ref}$ |
|---|---|---|---|---|---|---|---|---|
| 2400.0 - 2483.5 | 2.70 | 1.86 | 29.91 | 978.53 | 21 | 1.00 | 0.33 | 0.33 |
| 5150.0 - 5250.0 | 5.70 | 3.72 | 29.73 | 940.64 | 21 | 1.00 | 0.63 | 0.63 |
| | | | | | | | **Total Evaluation:** | **0.96** |

The Total Evaluation was calculated using the formula:

$$\sum_{i=1}^{n} Ei/Eref \leq 1$$

Where
Ei: calculated E-field Strength for transmitter
Eref: E-field strength related limit

Note: for mobile or fixed location transmitters the minimum separation distance is 21cm, even if calculations indicate the MPE distance to be less.

**Specification - Maximum Permissible Exposure Limits**

The Limit is defined in Table 1 of FCC §1.1310.


575 Boulder Court
Pleasanton, California 94566, USA
Tel: +1 (925) 462 0304
Fax: +1 (925) 462 0306
www.micomlabs.com