

# FCC RF EXPOSURE REPORT

## FCC ID: RWO-RZ010299

**Project No.** : 2002C032B  
**Equipment** : Wireless Trackball Mouse  
**Brand Name** : SANWA  
**Test Model** : GMATB155  
**Series Model** : N/A  
**Applicant** : Sanwa Supply Inc.  
**Address** : 1-10-1, Tamachi, Kita-ku, Okayama-shi, Okayama, 700-0825, Japan  
**Manufacturer** : iOne Electronic Technology co., LTD. Taiwan Branch  
**Address** : Rm. 2, 8F., No. 75, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei city, Taiwan  
**Factory** : Dong Guan Ione Electronic Co., Ltd.  
**Address** : Yong Jun 2rd Rd, Jin Qian Ling Ind. District, Jitigang, Huang Jiang Town, Dong Guan, Guang Dong Province, China (Post Code:523715)  
**Date of Receipt** : Mar. 24, 2020  
**Date of Test** : Mar. 25, 2020 ~ Mar. 28, 2020  
**Issued Date** : Apr. 13, 2020  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: DG2020022044  
**Standard(s)** : FCC Guidelines for Human Exposure IEEE C95.1 & KDB447498 D01

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

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**REPORT ISSUED HISTORY**

| Report Version | Description     | Issued Date   |
|----------------|-----------------|---------------|
| R00            | Original Issue. | Apr. 13, 2020 |

## 1. GENERAL INFORMATION

### 1.1 GENERAL DESCRIPTION OF EUT

|                                  |                          |  |
|----------------------------------|--------------------------|--|
| Equipment                        | Wireless Trackball Mouse |  |
| Brand Name                       | SANWA                    |  |
| Test Model                       | GMATB155                 |  |
| Series Model                     | N/A                      |  |
| Model Difference(s)              | N/A                      |  |
| Power Source                     | Battery supplied.        |  |
| Power Rating                     | DC 1.5V                  |  |
| Product Description for LE       | Operation Frequency      | 2402 MHz ~ 2480 MHz  |
|                                  | Modulation Technology    | GFSK   |
|                                  | Bit Rate of Transmitter  | 1Mbps, 2Mbps   |
|                                  | Max. Output Power        | -9.01 dBm (0.000126 W) For 1Mbps<br>-5.14 dBm (0.000306 W) For 2Mbps |
| Product Description for 2.4G SRD | Operation Frequency      | 2405MHz ~ 2470MHz  |
|                                  | Modulation Technology    | GFSK   |
|                                  | Bit Rate of Transmitter  | 2 Mbps   |
|                                  | Max. Output Power        | -7.47 dBm (0.000179W)  |

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

## 2. Channel List:

For LE:


| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 00      | 2402            | 20      | 2442            |
| 01      | 2404            | 21      | 2444            |
| 02      | 2406            | 22      | 2446            |
| 03      | 2408            | 23      | 2448            |
| 04      | 2410            | 24      | 2450            |
| 05      | 2412            | 25      | 2452            |
| 06      | 2414            | 26      | 2454            |
| 07      | 2416            | 27      | 2456            |
| 08      | 2418            | 28      | 2458            |
| 09      | 2420            | 29      | 2460            |
| 10      | 2422            | 30      | 2462            |
| 11      | 2424            | 31      | 2464            |
| 12      | 2426            | 32      | 2466            |
| 13      | 2428            | 33      | 2468            |
| 14      | 2430            | 34      | 2470            |
| 15      | 2432            | 35      | 2472            |
| 16      | 2434            | 36      | 2474            |
| 17      | 2436            | 37      | 2476            |
| 18      | 2438            | 38      | 2478            |
| 19      | 2440            | 39      | 2480            |

For 2.4G SRD:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 00      | 2405            | 01      | 2412            |
| 02      | 2422            | 03      | 2430            |
| 04      | 2440            | 05      | 2450            |
| 06      | 2460            | 07      | 2470            |

## 3. Table for Filed Antenna:

For LE/2.4G:

| Ant. | Brand   | Model Name | Antenna Type | Connector | Gain (dBi) |
|------|---|------------|--------------|-----------|------------|
| 1    |  | LYNX-W11BT | Internal     | N/A       | 0.71       |

## 2. GENERAL CONCLUSION

According to FCC KDB447498 D01, Appendix A, SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$   
 $\leq 3.0$  for 1-g SAR, and  $\leq 7.5$  for 10-g extremity SAR, where

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

| Appendix A - SAR Test Exclusion Thresholds for 100 MHz - 6 GHz<br>and $\leq 50$ mm |    |    |     |     |     |     |     |     |     |     |                                       |
|--|----|----|-----|-----|-----|-----|-----|-----|-----|-----|---------------------------------------|
| MHz  | 5  | 10 | 15  | 20  | 25  | 30  | 35  | 40  | 45  | 50  | mm                                    |
| 150  | 39 | 77 | 116 | 155 | 194 | 232 | 271 | 310 | 349 | 387 | SAR Test Exclusion<br>Thresholds (mW) |
| 300  | 27 | 55 | 82  | 110 | 137 | 164 | 192 | 219 | 246 | 274 |                                       |
| 450  | 22 | 45 | 67  | 89  | 112 | 134 | 157 | 179 | 201 | 224 |                                       |
| 835  | 16 | 33 | 49  | 66  | 82  | 98  | 115 | 131 | 148 | 164 |                                       |
| 900  | 16 | 32 | 47  | 63  | 79  | 95  | 111 | 126 | 142 | 158 |                                       |
| 1500   | 12 | 24 | 37  | 49  | 61  | 73  | 86  | 98  | 110 | 122 |                                       |
| 1900   | 11 | 22 | 33  | 44  | 54  | 65  | 76  | 87  | 98  | 109 |                                       |
| 2450   | 10 | 19 | 29  | 38  | 48  | 57  | 67  | 77  | 86  | 96  |                                       |
| 3600   | 8  | 16 | 24  | 32  | 40  | 47  | 55  | 63  | 71  | 79  |                                       |
| 5200   | 7  | 13 | 20  | 26  | 33  | 39  | 46  | 53  | 59  | 66  |                                       |
| 5400   | 6  | 13 | 19  | 26  | 32  | 39  | 45  | 52  | 58  | 65  |                                       |
| 5800   | 6  | 12 | 19  | 25  | 31  | 37  | 44  | 50  | 56  | 62  |                                       |

### 3. TEST RESULTS

For LE:

| Max. Output Power (dBm) | Max. Output Power (mW) | Limit (mW) |
|-------------------------|------------------------|------------|
| -5.14                   | 0.3062                 | 10         |

For 2.4G SRD:

| Max. Output Power (dBm) | Max. Output Power (mW) | Limit (mW) |
|-------------------------|------------------------|------------|
| -7.47                   | 0.1791                 | 10         |

Note:

- (1) The maximum measured output peak power of this EUT is 0.3062mW, less than 10mW at 5mm distance.  
Conclusion: No SAR evaluation required since transmitter power is below FCC threshold.

**End of Test Report**