

# NINGBO SHARKWARD ELECTRONICS CO.,LTD.

# **SAR COMPLIANCE REPORT**

### **Report Type:**

FCC SAR assessment report

#### Model:

ANT-5-X

#### **REPORT NUMBER:**

200100536SHA-002

### **ISSUE DATE:**

March 10, 2020

#### **DOCUMENT CONTROL NUMBER:**

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Report no.: 200100536SHA-002

**Applicant:** NINGBO SHARKWARD ELECTRONICS CO.,LTD.

#88 GONGMAO ROAD NO.3, JISHIGANG INDUSTRIAL ZONE, HAISHU

DISTRICT, NINGBO 315171, CHINA

Manufacturer: NINGBO SHARKWARD ELECTRONICS CO.,LTD.

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Manufacturing site: NINGBO SHARKWARD ELECTRONICS CO.,LTD.

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DISTRICT, NINGBO 315171, CHINA

FCC ID: 2AVMOANT-5-X

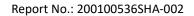
#### **SUMMARY:**

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06 FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

| PREPARED BY:     | REVIEWED BY: |  |
|------------------|--------------|--|
| Stephanie        |              |  |
| Project Engineer | Reviewer     |  |
| Stephanie Zhang  | Wakeyou Wang |  |

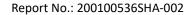
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# **Revision History**

| Report No.       | Version | Description             | Issued Date    |
|------------------|---------|-------------------------|----------------|
| 200100536SHA-002 | Rev. 01 | Initial issue of report | March 10, 2020 |
|                  |         |                         |                |
|                  |         |                         |                |





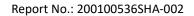
### **1 GENERAL INFORMATION**

# 1.1 Description of Equipment Under Test (EUT)

| Product name:         | Microwave sensor   |
|-----------------------|--|
|                       | ANT-5-X (X -For numbers, and representing different botton shell       |
| Type/Model:           | structure, but they are electrical identical)                          |
|                       | EUT is a microwave sensor that dims lighting from high to low based on |
| Description of EUT:   | movement. It's a transceiver with HF system 5.8GHz.                    |
| Rating:               | Input: 12-24V Output: 0-10V 5.8GHZ                                     |
| Category of EUT:      | Class B  |
| EUT type:             | ☐ Table top ☐ Floor standing   |
| Software Version:     | /  |
| Hardware Version:     | /  |
| Sample received date: | 2020.01.15   |
| Date of test:         | 2020.01.16 ~ 2020.2.25   |

# 1.2 Technical Specification

| Frequency Range:   | 5725MHz – 5875MHz |
|--------------------|-------------------|
| Support Standards: | NA                |

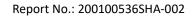




# 1.3 Description of Test Facility

| Name:      | Intertek Testing Services Shanghai                                     |
|------------|--|
| Address:   | Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China |
| Telephone: | 86 21 61278200   |
| Telefax:   | 86 21 54262353   |

| The test facility is | CNAS Accreditation Lab                          |
|----------------------|---|
| recognized,          | Registration No. CNAS L0139                     |
| certified, or        | FCC Accredited Lab                              |
| accredited by these  | Designation Number: CN1175                      |
| organizations:       | ,   |
|                      | IC Registration Lab                             |
|                      | Registration code No.: 2042B-1                  |
|                      | VCCI Registration Lab                           |
|                      | Registration No.: R-4243, G-845, C-4723, T-2252 |
|                      | NVLAP Accreditation Lab                         |
|                      |   |
|                      | NVLAP LAB CODE: 200849-0                        |
|                      | A2LA Accreditation Lab                          |
|                      | Certificate Number: 3309.02                     |





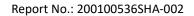
### 2 SAR Assessment

Test result: Pass

### 2.1 SAR Test Exclusion Limit

100 MHz - 6 GHz and  $\leq$  50 mm

| MHz  | 5   | 10  | 15  | 20  | 25  | mm                    |  |  |  |  |
|------|-----|-----|-----|-----|-----|-----------------------|--|--|--|--|
| 150  | 39  | 77  | 116 | 155 | 194 |                       |  |  |  |  |
| 300  | 27  | 55  | 82  | 110 | 137 |                       |  |  |  |  |
| 450  | 22  | 45  | 67  | 89  | 112 |                       |  |  |  |  |
| 835  | 16  | 33  | 49  | 66  | 82  |                       |  |  |  |  |
| 900  | 16  | 32  | 47  | 63  | 79  |                       |  |  |  |  |
| 1500 | 12  | 24  | 37  | 49  | 61  | SAR Test<br>Exclusion |  |  |  |  |
| 1900 | 11  | 22  | 33  | 44  | 54  | Threshold (mW)        |  |  |  |  |
| 2450 | 10  | 19  | 29  | 38  | 48  | 2111 0011010 (1111)   |  |  |  |  |
| 3600 | 8   | 16  | 24  | 32  | 40  |                       |  |  |  |  |
| 5200 | 7   | 13  | 20  | 26  | 33  |                       |  |  |  |  |
| 5400 | 6   | 13  | 19  | 26  | 32  |                       |  |  |  |  |
| 5800 | 6   | 12  | 19  | 25  | 31  |                       |  |  |  |  |
|      |     |     |     |     |     |                       |  |  |  |  |
| MHz  | 30  | 35  | 40  | 45  | 50  | mm                    |  |  |  |  |
| 150  | 232 | 271 | 310 | 349 | 387 |                       |  |  |  |  |
| 300  | 164 | 192 | 219 | 246 | 274 |                       |  |  |  |  |
| 450  | 134 | 157 | 179 | 201 | 224 |                       |  |  |  |  |
| 835  | 98  | 115 | 131 | 148 | 164 |                       |  |  |  |  |
| 900  | 95  | 111 | 126 | 142 | 158 | GAD Took              |  |  |  |  |
| 1500 | 73  | 86  | 98  | 110 | 122 | SAR Test<br>Exclusion |  |  |  |  |
| 1900 | 65  | 76  | 87  | 98  | 109 | Threshold (mW)        |  |  |  |  |
| 2450 | 57  | 67  | 77  | 86  | 96  |                       |  |  |  |  |
| 3600 | 47  | 55  | 63  | 71  | 79  |                       |  |  |  |  |
| 5200 | 39  | 46  | 53  | 59  | 66  |                       |  |  |  |  |
| 5400 | 39  | 45  | 52  | 58  | 65  |                       |  |  |  |  |
| 5800 | 37  | 44  | 50  | 56  | 62  |                       |  |  |  |  |





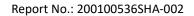
### **TEST REPORT**

### 100 MHz - 6 GHz and > 50 mm

| MHz  | 50  | 60  | 70  | 80  | 90  | 100 | 110 | 120 | 130 | 140  | 150  | 160  | 170  | 180  | 190  | mm |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|----|
| 100  | 474 | 481 | 487 | 494 | 501 | 507 | 514 | 521 | 527 | 534  | 541  | 547  | 554  | 561  | 567  |    |
| 150  | 387 | 397 | 407 | 417 | 427 | 437 | 447 | 457 | 467 | 477  | 487  | 497  | 507  | 517  | 527  |    |
| 300  | 274 | 294 | 314 | 334 | 354 | 374 | 394 | 414 | 434 | 454  | 474  | 494  | 514  | 534  | 554  |    |
| 450  | 224 | 254 | 284 | 314 | 344 | 374 | 404 | 434 | 464 | 494  | 524  | 554  | 584  | 614  | 644  |    |
| 835  | 164 | 220 | 275 | 331 | 387 | 442 | 498 | 554 | 609 | 665  | 721  | 776  | 832  | 888  | 943  |    |
| 900  | 158 | 218 | 278 | 338 | 398 | 458 | 518 | 578 | 638 | 698  | 758  | 818  | 878  | 938  | 998  |    |
| 1500 | 122 | 222 | 322 | 422 | 522 | 622 | 722 | 822 | 922 | 1022 | 1122 | 1222 | 1322 | 1422 | 1522 | mW |
| 1900 | 109 | 209 | 309 | 409 | 509 | 609 | 709 | 809 | 909 | 1009 | 1109 | 1209 | 1309 | 1409 | 1509 |    |
| 2450 | 96  | 196 | 296 | 396 | 496 | 596 | 696 | 796 | 896 | 996  | 1096 | 1196 | 1296 | 1396 | 1496 |    |
| 3600 | 79  | 179 | 279 | 379 | 479 | 579 | 679 | 779 | 879 | 979  | 1079 | 1179 | 1279 | 1379 | 1479 |    |
| 5200 | 66  | 166 | 266 | 366 | 466 | 566 | 666 | 766 | 866 | 966  | 1066 | 1166 | 1266 | 1366 | 1466 |    |
| 5400 | 65  | 165 | 265 | 365 | 465 | 565 | 665 | 765 | 865 | 965  | 1065 | 1165 | 1265 | 1365 | 1465 |    |
| 5800 | 62  | 162 | 262 | 362 | 462 | 562 | 662 | 762 | 862 | 962  | 1062 | 1162 | 1262 | 1362 | 1462 |    |

### < 100 MHz and < 200 mm

| MHz  | < 50 | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  | 150  | 160  | 170  | 180  | 190  | mm |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 100  | 237  | 474  | 481  | 487  | 494  | 501  | 507  | 514  | 521  | 527  | 534  | 541  | 547  | 554  | 561  | 567  |    |
| 50   | 308  | 617  | 625  | 634  | 643  | 651  | 660  | 669  | 677  | 686  | 695  | 703  | 712  | 721  | 729  | 738  |    |
| 10   | 474  | 948  | 961  | 975  | 988  | 1001 | 1015 | 1028 | 1041 | 1055 | 1068 | 1081 | 1095 | 1108 | 1121 | 1135 |    |
| 1    | 711  | 1422 | 1442 | 1462 | 1482 | 1502 | 1522 | 1542 | 1562 | 1582 | 1602 | 1622 | 1642 | 1662 | 1682 | 1702 | mW |
| 0.1  | 948  | 1896 | 1923 | 1949 | 1976 | 2003 | 2029 | 2056 | 2083 | 2109 | 2136 | 2163 | 2189 | 2216 | 2243 | 2269 |    |
| 0.05 | 1019 | 2039 | 2067 | 2096 | 2125 | 2153 | 2182 | 2211 | 2239 | 2268 | 2297 | 2325 | 2354 | 2383 | 2411 | 2440 |    |
| 0.01 | 1185 | 2370 | 2403 | 2437 | 2470 | 2503 | 2537 | 2570 | 2603 | 2637 | 2670 | 2703 | 2737 | 2770 | 2803 | 2837 |    |





### 2.2 Assessment Results

| The highest EIRP adjusted with tune-up tolerance is 73.10 dBuV/m, which is equivalent to |
|--|
| -22.1dBm = 0.079mW < 6mW (Test Exclusion Thresholds of 5800MHz at 5mm). Therefore, the   |
| SAR requirement is deemed to be satisfied without test.                                  |
|  |
|  |
|  |
|  |
|  |
| **************************************   |