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Report No.: 1803RSU002-U4 Report Version: Issue Date: 08-14-2018

RF Exposure Evaluation Declaration

FCC ID: XR3-NOTE

APPLICANT: ONYX INTERNATIONAL INC.

Certification **Application Type:**

Product: E-reader

Model No.: Note

Serial No. Note Pro, Note Lite, Note S, Note SL,

Note SML, Note SC, Note SD, Note+

Brand Name: BOOX

FCC Classification: Digital Transmission System (DTS)

Spread Spectrum Transmitter(DSS)

Reviewed By

Approved By

(Robin Wu)





The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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Revision History

| Report No. | Version | Description | Issue Date | Note |
|---------------|---------|----------------|------------|-------|
| 1803RSU002-U4 | Rev. 01 | Initial report | 08-14-2018 | Valid |
| | | | | |

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1. RF Exposure Evaluation

1.1. Limits

SAR Test Exclusion Thresholds for 100 MHz - 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in Note 1 must be applied to determine SAR test exclusion.

| MHz 5 10 15 20 25 mm 150 39 77 116 155 194 SAR Test 300 27 55 82 110 137 Exclusion 450 22 45 67 89 112 Threshold 835 16 33 49 66 82 19 66 82 19 66 82 19 66 82 19 61 19 11 10 19 29 38 48 48 48 48 48 48 48 48 3600 8 16 24 32 40 40 5200 7 13 20 26 33 5400 6 13 19 26 32 5800 6 12 19 25 31 54 50 mm 54 50 mm 54 50 mm 54 50 54 | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----------|
| Seculation | MHz | 5 | 10 | 15 | 20 | 25 | mm |
| A50 | 150 | 39 | 77 | 116 | 155 | 194 | SAR Test |
| Sas 16 | 300 | 27 | 55 | 82 | 110 | 137 | Exclusion |
| 900 | 450 | 22 | 45 | 67 | 89 | 112 | Threshold |
| 1500 | 835 | 16 | 33 | 49 | 66 | 82 | (mW) |
| 1900 11 22 33 44 54 2450 10 19 29 38 48 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 SAR Test 300 164 192 219 246 274 Exclusion 450 134 157 179 201 224 Threshold 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 150 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 96 <td< th=""><th>900</th><th>16</th><th>32</th><th>47</th><th>63</th><th>79</th><th></th></td<> | 900 | 16 | 32 | 47 | 63 | 79 | |
| 2450 10 19 29 38 48 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 SAR Test Exclusion 300 164 192 219 246 274 Exclusion Threshold 450 134 157 179 201 224 Threshold (mW) 900 95 111 126 142 158 158 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 96 3600 47 55 63 71 79 5200 39 46 53 59 <th>1500</th> <th>12</th> <th>24</th> <th>37</th> <th>49</th> <th>61</th> <th></th> | 1500 | 12 | 24 | 37 | 49 | 61 | |
| 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 SAR Test 300 164 192 219 246 274 Exclusion 450 134 157 179 201 224 Threshold 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 | 1900 | 11 | 22 | 33 | 44 | 54 | |
| 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 SAR Test 300 164 192 219 246 274 Exclusion 450 134 157 179 201 224 Threshold 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 (mW) 1900 65 76 87 98 109 109 109 109 109 109 109 109 109 109 109 109 109 109 109 109 109 109 109 109 109 109 109 <td< th=""><th>2450</th><th>10</th><th>19</th><th>29</th><th>38</th><th>48</th><th></th></td<> | 2450 | 10 | 19 | 29 | 38 | 48 | |
| 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 SAR Test 300 164 192 219 246 274 Exclusion 450 134 157 179 201 224 Exclusion 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 (mW) 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 65 5400 39 45 52 58 | 3600 | 8 | 16 | 24 | 32 | 40 | |
| MHz 30 35 40 45 50 mm 150 232 271 310 349 387 SAR Test 300 164 192 219 246 274 Exclusion 450 134 157 179 201 224 Threshold 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | 5200 | 7 | 13 | 20 | 26 | 33 | |
| MHz 30 35 40 45 50 mm 150 232 271 310 349 387 SAR Test 300 164 192 219 246 274 Exclusion 450 134 157 179 201 224 Threshold 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 158 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | 5400 | 6 | 13 | 19 | 26 | 32 | |
| 150 232 271 310 349 387 SAR Test 300 164 192 219 246 274 Exclusion 450 134 157 179 201 224 Threshold 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 1500 73 86 98 110 122 1900 65 76 87 98 109 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 | 6 | 12 | 19 | 25 | 31 | |
| 150 232 271 310 349 387 SAR Test 300 164 192 219 246 274 Exclusion 450 134 157 179 201 224 Threshold 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | | | | | | | |
| 300 164 192 219 246 274 Exclusion 450 134 157 179 201 224 Threshold 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | MHz | 30 | 35 | 40 | 45 | 50 | mm |
| 450 134 157 179 201 224 Threshold 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | 150 | 232 | 271 | 310 | 349 | 387 | SAR Test |
| 835 98 115 131 148 164 (mW) 900 95 111 126 142 158 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | 300 | 164 | 192 | 219 | 246 | 274 | Exclusion |
| 900 95 111 126 142 158 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | 450 | 134 | 157 | 179 | 201 | 224 | Threshold |
| 1500 73 86 98 110 122 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | 835 | 98 | 115 | 131 | 148 | 164 | (mW) |
| 1900 65 76 87 98 109 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | 900 | 95 | 111 | 126 | 142 | 158 | |
| 2450 57 67 77 86 96 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | 1500 | 73 | 86 | 98 | 110 | 122 | |
| 3600 47 55 63 71 79 5200 39 46 53 59 66 5400 39 45 52 58 65 | 1900 | 65 | 76 | 87 | 98 | 109 | |
| 5200 39 46 53 59 66 5400 39 45 52 58 65 | 2450 | 57 | 67 | 77 | 86 | 96 | |
| 5400 39 45 52 58 65 | 3600 | 47 | 55 | 63 | 71 | 79 | |
| | 5200 | 39 | 46 | 53 | 59 | 66 | |
| F900 27 44 F0 FC C2 | 5400 | 39 | 45 | 52 | 58 | 65 | |
| 3000 31 44 50 50 62 | 5800 | 37 | 44 | 50 | 56 | 62 | |

Note: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

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

- f(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
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is \leq 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

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1.3. Test Result of RF Exposure Evaluation

| Product | E-reader |
|-----------|------------------------|
| Test Item | RF Exposure Evaluation |

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0dBi for 2.4GHz in logarithm scale.

Output Power into Antenna:

| Test Mode | Frequency Band (MHz) | Maximum output power to antenna (mW) | SAR Test Exclusion Threshold (mW) |
|-----------|-------------------------|--------------------------------------|--------------------------------------|
| Wi-Fi | 2412 ~ 2480 | 4.76 | 10 |
| Bluetooth | 2402 ~ 2480 | 3.77 | 10 |

Per FCC KDB 447498 D01v06, the SAR exclusion threshold for distances<50mm is defined by the following equation:

$$\frac{Max\ Power\ of\ Channel\ (mW)}{Test\ Separation\ Dist\ (mm)}*\sqrt{Frequency(GHz)} \leq 3.0$$

Based on the maximum conducted power of Wi-Fi and the antenna to use separation distance, Bluetooth SAR was not required;

$$[(4.76 \text{mW/5})^* \sqrt{2.437}] = 1.18 < 3.0$$

Based on the maximum conducted power of Bluetooth and the antenna to use separation distance, Bluetooth SAR was not required;

$$[(3.77 \text{mW/5})^* \sqrt{2.402}] = 1.17 < 3.0$$

The 2.4GHz WLAN and Bluetooth can't transmit simultaneously. Therefore, the Max P_d = 1.18 < 3.0

Note: When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

——— The End

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