

RF Exposure Evaluation

FCC ID: 2ABES-KR7013

1. Client Information

| | | |
|---------------------|---|--|
| Applicant | : | Pathway Innovations and Technologies, Inc |
| Address | : | 9985 Pacific Heights Blvd., Suite 100, San Diego, CA 92121, USA |
| Manufacturer | : | ShenZhen Kerun Visual Technology Co., LTD |
| Address | : | AUnit A, F/11, Bldg.1, Senyang Electronic Technology Park, Tianliao Community, Guangming High Tech Zone, Guangming New District, Shenzhen, China |

2. General Description of EUT

| | | |
|-------------------------------|----------------------|--|
| EUT Name | : | G-BOOK |
| Models No. | : | KR7013, KR0512, G-BOOK, G1300 |
| Model Difference | : | All these models are identical in the same PCB, layout and electrical circuit, the only difference is appearance color. |
| Product Description | Operation Frequency: | 802.11b/g/n(HT20): 2412MHz~2462MHz Bluetooth 4.2(BT): 2402MHz~2480MHz |
| | RF Output Power: | 802.11b: 9.36dBm 802.11g: 9.83dBm 802.11n (HT20): 8.83dBm GFSK: 0.78dBm π /4-DQPSK: 0.316dBm 8-DPSK: 0.427dBm BLE:-0.714 |
| | Antenna Gain: | 4.5dBi FPC Antenna |
| Power Supply | : | DC Voltage Supply from USB Port. DC Voltage supplied by Li-ion battery. |
| Power Rating | : | DC 5.0V by USB cable DC 3.7V by 7000mAh Li-ion battery |
| Software Version | : | Q410801620180409 |
| Hardware Version | : | V2.0 |
| Connecting I/O Port(S) | : | Please refer to the User's Manual |

Note: More test information about the EUT please refer the RF Test Report.

SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

(1) Clause 4.3: General SAR test reduction and exclusion guidance

Sub clause 4.31: Standalone SAR test exclusion considerations

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 5 mm are determined by:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}]}{\leq 3.0 \text{ for 1-g SAR}}$$

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}]}{\leq 7.5.0 \text{ for 10-g SAR}}$$

2. Calculation:

| Test separation: 5mm | | | | | | |
|--------------------------|-----------------------|------------------------------|--------------------------------------|-------------------------------------|-------------------|-----------------|
| WiFi Mode(802.11b) | | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dbm) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.412 | 8.87 | 8±1 | 9 | 7.943 | 2.467 | 3.0 |
| 2.437 | 8.96 | 8±1 | 9 | 7.943 | 2.480 | 3.0 |
| 2.462 | 8.41 | 8±1 | 9 | 7.943 | 2.493 | 3.0 |
| WiFi Mode(802.11g) | | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dbm) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.412 | 8.49 | 8±1 | 9 | 7.943 | 2.467 | 3.0 |
| 2.437 | 8.83 | 8±1 | 9 | 7.943 | 2.480 | 3.0 |
| 2.462 | 8.29 | 8±1 | 9 | 7.943 | 2.493 | 3.0 |
| WiFi Mode(802.11n(HT20)) | | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dbm) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.412 | 8.36 | 8±1 | 9 | 7.943 | 2.467 | 3.0 |
| 2.437 | 8.83 | 8±1 | 9 | 7.943 | 2.480 | 3.0 |
| 2.462 | 8.37 | 8±1 | 9 | 7.943 | 2.493 | 3.0 |

| Test separation: 5mm | | | | | | |
|----------------------------|-----------------------|------------------------------|--------------------------------------|-------------------------------------|-------------------|-----------------|
| Bluetooth Mode (GFSK) | | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dbm) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.402 | 0.78 | 0±1 | 1 | 1.259 | 0.390 | 3.0 |
| 2.441 | 0.50 | 0±1 | 1 | 1.259 | 0.393 | 3.0 |
| 2.480 | 0.37 | 0±1 | 1 | 1.259 | 0.397 | 3.0 |
| Bluetooth Mode (π/4-DQPSK) | | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dbm) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.402 | 0.316 | 0±0.5 | 0.5 | 1.122 | 0.348 | 3.0 |
| 2.441 | 0.143 | 0±0.5 | 0.5 | 1.122 | 0.351 | 3.0 |
| 2.480 | -0.451 | 0±0.5 | 0.5 | 1.122 | 0.353 | 3.0 |
| Bluetooth Mode (8-DPSK) | | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dbm) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.402 | 0.427 | 0±0.5 | 0.5 | 1.122 | 0.348 | 3.0 |
| 2.441 | 0.327 | 0±0.5 | 0.5 | 1.122 | 0.351 | 3.0 |
| 2.480 | -0.436 | 0±0.5 | 0.5 | 1.122 | 0.353 | 3.0 |
| BLE Mode (GFSK) | | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dbm) | Max power of tune up tolerance (mw) | Calculation Value | Threshold Value |
| 2.402 | -0.714 | -1±0.5 | -0.5 | 0.891 | 0.276 | 3.0 |
| 2.442 | -1.061 | -1±0.5 | -0.5 | 0.891 | 0.279 | 3.0 |
| 2.480 | -1.492 | -1±0.5 | -0.5 | 0.891 | 0.281 | 3.0 |

| Test separation: 5mm | | | |
|----------------------------------|----------------|-------------------------|-----------------|
| The worst RF Exposure Evaluation | | | |
| Worst Calculation Value | | Total Calculation Value | Threshold Value |
| WiFi Mode | Bluetooth Mode | | |
| 2.493 | 0.397 | 2.89 | 3.0 |

Because the WiFi and Bluetooth can be operated simultaneously, So the worst RF Exposure Evaluation is calculated as $2.493+0.397=2.89 / cm^2 < limit 3.0$, So standalone SAR measurements are not required.

-----END OF REPORT-----