

# RF Exposure Evaluation

## FCC ID: 2A4RO-K16

### 1. Client Information

|                     |   |   |
|---------------------|---|---|
| <b>Applicant</b>    | : | Shenzhen Amesra Technology Co., Ltd.  |
| <b>Address</b>      | : | Room 406, Building B, Enterprise Business Network Maker Center, Huarong Road, Gaofeng Community, Dalang Street, Longhua District, Shenzhen, China |
| <b>Manufacturer</b> | : | Shenzhen Amesra Technology Co., Ltd.  |
| <b>Address</b>      | : | Room 406, Building B, Enterprise Business Network Maker Center, Huarong Road, Gaofeng Community, Dalang Street, Longhua District, Shenzhen, China |

### 2. General Description of EUT

|   |                      |   |
|---|----------------------|---|
| <b>EUT Name</b>   | :                    | Bluetooth Adapter   |
| <b>Model(s) No.</b>   | :                    | K16, K3, K3 Pro, K5, K5 Pro, K8, D80, H6, H8, H9, H10, H16  |
| <b>Model Different</b>  | :                    | All these models are identical in the same PCB layout and electrical circuit, the only difference is that names and appearance. |
| <b>Product Description</b>  | Operation Frequency: | Bluetooth 5.0(BT): 2402~2480 MHz  |
|   | Number of Channel:   | Bluetooth: 79 Channels  |
|   | RF Output Power:     | GFSK: -5.94dBm<br>$\pi$ /4-DQPSK: -5.2dBm   |
|   | Antenna Gain:        | -0.58dBi PCB Antenna  |
|   | Modulation Type:     | GFSK, $\pi$ /4-DQPSK  |
| <b>Power Supply</b>   | :                    | Input: AC 100-240V 50~60Hz 500mA<br>Output: DC 5V 2.1A  |
| <b>Software Version</b>   | :                    | V1.3  |
| <b>Hardware Version</b>   | :                    | K16-V01   |
| <b>Remark:</b> The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab. |                      |   |

**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  $\leq 5$  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             |                       |                              |                                      |                                     |                   |                 |
|----------------------------------|-----------------------|------------------------------|--------------------------------------|-------------------------------------|-------------------|-----------------|
| 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                            | -5.94                 | $-6 \pm 1$                   | -5                                   | 0.3162                              | 0.0990            | 3.0             |
| 2.441                            | -5.94                 | $-6 \pm 1$                   | -5                                   | 0.3162                              | 0.0990            | 3.0             |
| 2.480                            | -6.04                 | $-6 \pm 1$                   | -5                                   | 0.3162                              | 0.0990            | 3.0             |
| Bluetooth Mode ( $\pi/4$ -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                            | -5.2                  | $-5 \pm 1$                   | -4                                   | 0.3981                              | 0.1246            | 3.0             |
| 2.441                            | -5.25                 | $-5 \pm 1$                   | -4                                   | 0.3981                              | 0.1246            | 3.0             |
| 2.480                            | -5.35                 | $-5 \pm 1$                   | -4                                   | 0.3981                              | 0.1246            | 3.0             |

**Conclusion:**

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

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