

# **RF EXPOSURE EXEMPT REPORT**

**APPLICANT** : Grain Spark LLC

**PRODUCT NAME** : Mod Dock Circa / Mod Dock Banda

**MODEL NAME** : GS-VSN1/GS-VSN2

**BRAND NAME** : Grain Spark

**FCC ID** : 2AXJN-1229020GS  
47 CFR Part 1.1307

**STANDARD(S)** : 47 CFR Part 2.1093  
KDB447498D01 General RF Exposure  
Guidance v06

**RECEIPT DATE** : 2020-09-14

**TEST DATE** : 2020-12-01

**ISSUE DATE** : 2020-12-01

**Equipment Under Test (EUT) Description**

<b>EUT Type:</b>	Mod Dock Circa / Mod Dock Banda
<b>Hardware Version:</b>	N/A
<b>Software Version:</b>	N/A
<b>Antenna Type:</b>	PCB Antenna
<b>Antenna Gain:</b>	-1 dBi
<b>For BT:</b>	
<b>Frequency Bands:</b>	2402MHz ~ 2480MHz
<b>Modulation Mode:</b>	GFSK, $\pi$ /4-DQPSK, 8-DPSK

## Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

## Limits

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

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

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

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 is applied to determine SAR test exclusion

## EUT RF Exposure

### For BT

The Max. power (including tune-up tolerance) is 4.62 dBm on the highest channel 2.402 GHz.

4.62 dBm logarithmic terms convert to numeric result is nearly 2.9 mW According to the formula. calculate the test exclusion thresholds:

$$\left[ \frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f(\text{GHz})}$$

$$\text{General RF Exposure} = \left( \frac{2.9}{5} \right) * \sqrt{2.402} = 0.9 \quad (1)$$

SAR requirement:

$$S = 3.0 \quad (2)$$

$$(1) < (2)$$

So the SAR report is not required.

--End of the Report--