

RF Exposure Report

FCC ID: 2AKVKCA-MARVEL

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

Equipment	Captain America Bluetooth Speak
Model Name	CA-MARVEL
Additional Model Number(s)	N/A
Model Difference	N/A
Frequency Range	Bluetooth V4.2+EDR 2402~2480 MHz
Number of Channel:	EDR: 79 Channels BLE: 40 Channels
Modulation Type	Bluetooth: GFSK(BLE)/ π /4-DQPSK/8-DPSK
RF Output Power	GFSK: 4.177 dBm π /4-DQPSK: 2.539 dBm 8-DPSK: 2.676 dBm BLE: 6.675 dBm
Antenna Type	Integral Antenna (Gain: 0dBi)
Power Source	DC Powered by host system or Battery .
Power Rating	DC 5V from USB interference. DC 3.7V from 1000mAh Battery.
Remark	More details EUT technical specifications, please refer to the User's Manual.

2. RF EXPOSURE INFORMATION

SAR Test Exclusion Calculations

2.1 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 distances ≤ 50 mm are determined by:

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

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

2.2

Calculation:

Bluetooth Mode						
GFSK(1Mbps)						
Frequency (MHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	MAX Power of Turn-up Tolerance (dbm)	TX Power (mW)	Calculation Value	Threshold Value
2402	2.453	2 ± 1	3	1.995	0.618	3.0
2441	3.388	3 ± 1	4	2.512	0.785	3.0
2480	4.177	4 ± 1	5	3.162	0.996	3.0
$\pi/4$ -DQPSK(2Mbps)						
Frequency (MHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	MAX Power of Turn-up Tolerance (dbm)	TX Power (mW)	Calculation Value	Threshold Value
2402	0.783	1 ± 1	2	1.585	0.491	3.0
2441	1.731	1 ± 1	2	1.585	0.495	3.0
2480	2.539	2 ± 1	3	1.995	0.628	3.0
8-DPSK(3Mbps)						
Frequency (MHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	MAX Power of Turn-up Tolerance (dbm)	TX Power (mW)	Calculation Value	Threshold Value
2402	0.921	1 ± 1	2	1.585	0.491	3.0
2441	1.880	1 ± 1	2	1.585	0.495	3.0
2480	2.676	2 ± 1	3	1.995	0.628	3.0

BLE						
Frequency (MHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	MAX Power of Turn-up Tolerance (dbm)	TX Power (mW)	Calculation Value	Threshold Value
2402	4.445	4±1	5	3.162	0.980	3.0
2441	6.154	6±1	7	5.012	1.566	3.0
2480	6.675	6±1	7	5.012	1.579	3.0

So standalone SAR measurements are not required.

*****END OF REPORT*****