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SAR EXCLUSION REPORT

Manufacturer: Volk Optical, Inc.
7893 Enterprise Drive
Mentor, OH 44060 USA

Applicant: Same as Above

Product Name: Wi-Fi and Bluetooth Internet of Things Module using BLE technology only

Product Description: A Bluetooth module installed within Volk VistaView cameras, that uses Bluetooth Low Energy (BLE) to control an LED for retinal imaging.

Model: ESP32-WROOM-32E

FCC ID: 2A64W-ESP32WROOM32E

Standard(s):

- KDB447498 Appendix A

Report Constructed by:


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1 ADMINISTRATIVE INFORMATION

1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

1.2 Document History

Document Number	Description	Issue Date	Approved By
F2P21703B-R2A-01E	First Issue	2022-07-26	K. Littell



2 SUMMARY OF RESULTS

	Standard(s)	Results
SAR Exclusion	KDB447498, Appendix A	Complies

Modifications Made to the Equipment
None



3 ENGINEERING STATEMENT

This report has been prepared on behalf of Volk Optical, Inc., to provide documentation for the SAR Exclusion herein. This equipment has been tested and found to comply with the SAR Exclusion levels listed in Appendix A of KDB447498. The minimum distance from the BT module antenna is 5mm. The maximum reported output power of the BT was 6.31mW, which is below the exclusion limit of 10mW at 5mm.

Appendix A

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 section 4.3.1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
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	



4 EUT INFORMATION AND DATA

4.1 Equipment Under Test:

Product: Wi-Fi and Bluetooth Internet of Things Module using BLE technology only

Model: ESP32-WROOM-32E

FCC ID: **2A64W-ESP32WROOM32E**

4.2 Trade Name:

Volk Optical, Inc.

4.3 Power Supply:

DC 3.0 – 3.6V

4.4 Applicable Rules:

KDB447498

4.5 Equipment Category:

Bluetooth using BLE technology only

4.6 Antenna:

Integral PCB Antenna 3.4dBi gain

4.7 Accessories:

N/A