RF Exposure Evaluation declaration

Product Name : Video Reader Pro

Model No. : OP-VID-PRO-RDR

FCC ID : 2APJVOPVRC

Applicant : Openpath Security Inc.

Address : 13428 Maxella Ave, #866 Marina Del Rey, CA 90292

Date of Receipt : Jul. 01, 2021

Date of Declaration : Nov. 16, 2021

Report No. : 2170041R-RFUSMPEV02

Report Version : V1.0

Testing Laboratory
3023

Issued Date: Nov. 16, 2021
Report No.: 2170041R-RFUSMPEV02

Product Name	Video Reader Pro	
Applicant	Openpath Security Inc.	
Address	13428 Maxella Ave, #866 Marina Del Rey, CA 90292	
Manufacturer	VIVOTEK INC.	
Model No.	OP-VID-PRO-RDR	
FCC ID.	2APJVOPVRC	
Trade Name	Openpath Security Inc.	
Applicable Standard	KDB 447498 D01 v06	☒ Minimum test separation distance ≥ 20 cm ☐ For low power devices
Test Result	Complied	

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(Senior Engineer / Jack Hsu)

Approved By : Tim Sung

(Manager / Tim Sung)

Revision History

Report No.	Version	Description	Issued Date
2170041R-RFUSMPEV02	V1.0	Initial issue of report.	2021-11-16

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Video Reader Pro
Model No.	OP-VID-PRO-RDR
Trade Name	Openpath Security Inc.
FCC ID	2APJVOPVRC
Contains FCC ID	SH6MDBT50Q
Frequency Range	13.56MHz, 125kHz
Modulation	ASK
Antenna Type	Loop coil Antenna

1.2. Antenna List

No	Manufacturer	Part No	Antenna Type	Peak Gain
1	LYNwave	ALX20P-051AA6-00	PCB Antenna	3.3dBi for 2.4GHz

2. RF Exposure Evaluation

2.1. Standard Applicable

According to KDB 447498 D01 (7.1), A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits.

2.2. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
3.0-30	1842/f	4.89/f	$900/f^2$	6
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
1.34-30	824/f	2.19/f	$180/f^2$	30
300-1500	--	--	F/1500	30
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0

2.3. Test Result of RF Exposure Evaluation

Product : Video Reader Pro
Test Item : RF Exposure Evaluation

NFC:

Frequency (MHz)	H-Field (dBuV/3m)	H-Field (ERP) (dBm)	H-Field (ERP) (mW)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Pass/Fail
13.56	59.25	-38.12878745	0.0001539	0.0000000306	0.979	Pass

Note: The conducted output power is refer to report No.: 2170041R-RFUSOTHV03 from the DEKRA.

Frequency (kHz)	H-Field (dBuV/3m)	H-Field (ERP) (dBm)	H-Field (ERP) (mW)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Pass/Fail
125	70.43	-26.94878745	0.0020189	--	--	Pass

Note: The H-Field power is refer to report No.: 2170041R-RFUSOTHV02-A from the DEKRA.

WLAN 2.4G Peak Gain: 3.3dBi

Band	Frequency (MHz)	Tune UP Conducted Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Pass/Fail
BT	2402-2480	8.45	7.0	0.002977	1	Pass
Zigbee	2405-2480	9.19	8.3	0.003530	1	Pass

Note: The Tune UP Power is refer to report No.: E2/2018/50099 and E2/2018/50091 from the SGS Lab.