

RF Exposure Evaluation Report

Product Name : Radar Sensor

Model No. : TK0020

FCC ID : 2A6LN-TK0020

Applicant : Biological Sensing System Co., Ltd.

Address : 2F., NO. 4, S. 3RD RD.CIANJHEN DIST.KAOHSIUNG CITY
806011, TAIWAN

Date of Receipt : Apr. 12, 2022

Date of Declaration : May 24, 2022

Report No. : 2240312R-RFUSMPEV02-A

Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Issued Date: May 24, 2022

Report No.: 2240312R-RFUSMPEV02-A



Product Name	Radar Sensor	
Applicant	Biological Sensing System Co., Ltd.	
Address	2F., NO. 4, S. 3RD RD.CIANJHEN DIST.KAOHSIUNG CITY 806011, TAIWAN	
Manufacturer	Biological Sensing System Co., Ltd.	
Model No.	TK0020	
FCC ID.	2A6LN-TK0020	
Trade Name	Biological Sensing System Co., Ltd.	
Applicable Standard	KDB 447498 D01 v06	<input checked="" type="checkbox"/> Minimum test separation distance ≥ 20 cm <input type="checkbox"/> For low power devices
Test Result	Complied	

Documented By : Jinn Chen
(Supervisor / Jinn Chen)

Tested By : Alan Chen
(Senior Engineer / Alan Chen)

Approved By : Tim Sung
(Manager / Tim Sung)

Revision History

Report No.	Version	Description	Issued Date
2240312R-RFUSMPEV02-A	V1.0	Initial issue of report.	May 24, 2022

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Radar Sensor
Trade Name	Biological Sensing System Co., Ltd.
Model No.	TK0020
FCC ID.	2A6LN-TK0020
Frequency Range	76 – 81GHz
Channel Control	Auto
Type of Modulation	FMCW

1.2. Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	MTK	MT2706	Integrated Antenna	5 dBi

2. Test Facility

USA : FCC Registration Number: TW0033

Canada : CAB Identifier Number: TW3023 / Company Number: 26930

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No. 5-22, Ruishukeng Linkou District, New Taipei City,
24451, Taiwan

Performed Location : No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City
333411, Taiwan, R.O.C.

Phone number : +886-3-275-7255

Fax number : +866-3-327-8031

Email address : info.tw@dekra.com

Website : <http://www.dekra.com.tw>

3. RF Exposure Evaluation

3.1. 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.

3.2. 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				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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

3.3. Test Result of RF Exposure Evaluation

Product : Radar Sensor
Test Item : RF Exposure Evaluation

Band	Frequency (MHz)	Maximum Peak E.I.R.P Power (dBm)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)
FMCW 76-81GHz	79000	19.94	0.0196	1

Note: The conducted output power is refer to report No.: 2240312R-RFUSOTHV12-A from the DEKRA.

Results	PASS
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