TEST REPORT

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SRF0098 Page (1) of (8)	eurofins | KCTL

1. Client

- Name : SORIA CO.,LTD.
- Address : #952, J-Tower 3rd, 337 Bupyeong-Daero, Bupyeong-Gu, Incheon, KOREA, 21315
- Date of Receipt : 2025-02-24

2. Use of Report : Certification

3. Name of Product / Model : 2.4GHZ BT MODULE / SBT-50D

4. Manufacturer / Country of Origin : SORIA CO.,LTD. / Korea

5. FCC ID : 2BOVG-SBT-50D

6. Date of Test : 2025-03-21 to 2025-04-03

7. Location of Test : ■ Permanent Testing Lab ☐ On Site Testing
(Address:65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea)

8. Test method used : 47 CRF Part 1.1310

9. Test Result : Refer to the test result in the test report

Affirmation	Tested by Name : Seung Kim (Signature)	Technical Manager Name : Hyeonsu Jang (Signature)

2025-04-29

Eurofins KCTL Co.,Ltd.

REPORT REVISION HISTORY

Date	Revision	Page No
2025-04-29	Originally issued	-

General remarks for test reports

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

☒ **Statement not required by the standard or client used for type testing**

CONTENTS

1. General information

Client	:	SORIA CO.,LTD.
Address	:	#952, J-Tower 3rd, 337 Bupyeong-Daero, Bupyeong-Gu, Incheon, KOREA, 21315
Manufacturer	:	SORIA CO.,LTD.
Address	:	#952, J-Tower 3rd, 337 Bupyeong-Daero, Bupyeong-Gu, Incheon, KOREA, 21315
Laboratory	:	Eurofins KCTL Co.,Ltd.
Address	:	65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea
Accreditations	:	FCC Site Designation No: KR0040, FCC Site Registration No: 687132 VCCI Registration No. : R-20080, G-20078, C-20059, T-20056 CAB Identifier: KR0040 ISED Number: 8035A KOLAS No.: KT231

2. Device information

Equipment under test	:	2.4GHZ BT MODULE		
Model	:	SBT-50D		
Modulation technique	:	Bluetooth(BDR/EDR)	:	GFSK, π/4DQPSK, 8DPSK
		Bluetooth(BLE)	:	GFSK, π/4DQPSK
Number of channels	:	Bluetooth	:	79 ch
		BLE	:	40 ch
Power source	:	DC 3.3 V		
Antenna specification	:	PCB Pattern Antenna		
Antenna gain	:	-0.58 dBi		
Frequency range	:	2 402 ㎒ ~ 2 480 ㎒ (BDR/EDR/BLE)		
Software version	:	VER 1.0		
Hardware version	:	VER 1.0		
Test device serial No.	:	20241010 (Conducted) 20241010 (Radiated)		
Operation temperature	:	0 ℃ ~ 40 ℃		

2.1. Frequency/channel operations

This device contains the following capabilities:
Bluetooth(BDR/EDR/LE)

Ch.	Frequency (㎒)
00	2 402
.	.
.	.
39	2 441
.	.
.	.
78	2 480

Table 2.1.1. Bluetooth(BDR/EDR) mode

Ch.	Frequency (㎒)
00	2 402
.	.
.	.
19	2 440
.	.
.	.
39	2 480

Table 2.1.2. Bluetooth Low Energy

3. RF Exposure

Regulation

This document is prepared to show compliance with the RF Exposure requirements as required in §1.1310 of the FCC rules and Regulations.
The limit for Maximum Permissible Exposure (MPE), specified in FCC §1.1310, is listed in Table 1-1.
According to FCC §1.1310: the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b).

Table 1 – Limits for Maximum Permissible Exposure (MPE)

Frequency Range (㎒)	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density [㎽/㎠]	Averaging Time [minute]
(A) Limits for Occupational / Controlled Exposure				
0.3 ~ 3.0	614	1.63	*100	6
3.0 ~ 30	1842/f	4.89/f	*900/f^2	6
30 ~ 300	61.4	0.163	1.0	6
300 ~ 1 500	/	/	f/300	6
1 500 ~ 15 000	/	/	5	6
(B) Limits for General Population / Uncontrolled Exposure				
0.3 ~ 1.34	614	1.63	*100	30
1.34 ~ 30	824/f	2.19/f	*180/f^2	30
30 ~ 300	27.5	0.073	0.2	30
300 ~ 1 500	/	/	f/1 500	30
1 500 ~ 15 000	/	/	1.0	30

*f=frequency in ㎒, *= plane-wave equivalent power density*

Per the guidance of KDB 680106, the E-field and H-field limits shown in the table above are extended down to 100 ㎑

3.1. Test results

MPE (Maximum Permissive Exposure) Prediction

Predication of MPE limit at a given distance: Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2 \quad \left(\Rightarrow R = \sqrt{PG/4\pi S}\right)$$

S = power density [㎽/㎠]

P = Power input to antenna [㎽]

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna [㎝]

Calculation Result of RF exposure

Maximum tune-up tolerance (Worst Case)

Mode	Frequency [㎒]	Max Tune-up Power [dBm]	Ant Gain [dBi]	Power density at 20 ㎝ [㎽/㎠]	Limit [㎽/㎠]
Bluetooth	2 402	-2.50	-0.58	0.000 10	1.00
Bluetooth Low Energy	2 402	-2.00	-0.58	0.000 11	1.00

Note.

1. The power density Pd (5th column) at a distance of 20 ㎝ calculated from the friis transmission Formula is far below the limit of 1 ㎽/㎠.

4. Measurement Equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSV40	100989	25.10.10
Power Sensor	R&S	NRP-Z81	1137.9009.02-106223-bB	26.04.23
Attenuator	HP	8491A	29738	25.10.10
Attenuator	API Inmet	40AH2W-10	12	26.04.28
Signal Generator	R&S	SMB100A	176206	26.01.17
DC Power Supply	AGILENT	E3632A	MY40007371	26.04.23

End of test report