



시험 성적서

TEST REPORT

페이지(page) : (1) / (총(Total) 5)

성적서 번호 Report No.		ICRT-TR-E190570-0A	
신청자 Client	기관명 Name	Sena Technologies, Inc.	
	주 소 Address	FCC: 19, Heolleung-ro 569-gil, Gangnam-gu, Seoul, South Korea IC: 210 Yangjae-dong, Seocho-gu Seoul 137-130 South Korea	
시험대상품목 Sample description		ARK	
모델명 Type designation		SP66	
정 격 Ratings		DC 3.7 V	
시험기간 Date of test		Mar. 22, 2019 ~ Mar. 26, 2019	
시험방법/항목 Test Method/Item		FCC Part 15 Subpart C §15.247 / IC RSS-247	
시험결과 Test Results		Refer to 3.3 Calculated MPE Safe Distance	
확 인 Affirmation	작성자 Tested by	기술책임자 Technical Manager	
	성 명 Name	성 명 Name	
	Hong-Kyu, Lee (Signature)	Jun-Hui, Lee (Signature)	
□ 위 성적서는 고객이 제공한 시료에 대한 시험결과이며, 용도 이외의 사용은 금합니다. This is certified that the above mentioned products have been tested for the sample provided by customer and forbid the use except for original purpose. □ 위 성적서는 한국인정기구(KOLAS)인정과 관련이 없습니다. The above test report is not related to accreditation by Korea Laboratory Accreditation scheme. □ 위 성적서는 주식회사 아이씨알의 승인 없이는 복제 및 재발급이 금지됩니다. No part of this document may be duplicated or reproduced by any means without the express written permission of the ICR.			
2019. 04. 05 주식회사 아이씨알 대표이사 The head of INTERNATIONAL CERTIFICATION REGISTRAR			

본 성적서의 진위 확인은 G4B 혹은 ICR 홈페이지에서 가능합니다.

경기도 김포시 양촌읍 황금3로7번길 112

112, Hwanggeum3-ro 7beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea



Contents

1. Applicant & Manufacturer & Test Laboratory Information	3
1.1 Applicant information	3
1.2 Manufacturer Information	3
1.3 Test Laboratory Information	3
2. Equipment under Test(EUT) Information.....	4
2.1 General Information.....	4
2.2 Additional Information.....	4
2.3 Mode of operation during the test	4
2.4 Modifications of EUT	4
3. Maximum Permissible Exposure	5
3.1 RF Exposure calculation	5
3.2 Result	5

Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E190570-0A	05-Apr-2019	Initial Issue	All



1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant information

Applicant	Sena Technologies, Inc.	
Address	FCC	19, Heolleung-ro 569-gil, Gangnam-gu, Seoul, South Korea
	IC	210 Yangjae-dong, Seocho-gu Seoul 137-130 South Korea
Contact Person	Seunghyun Kim	
Telephone No.	+82-2-571-8283	
Fax No.	+82-2-573-7710	
E-mail	shkim77@sena.com	

1.2 Manufacturer Information

Manufacturer	Sena Technologies, Inc.	
Address	FCC	19, Heolleung-ro 569-gil, Gangnam-gu, Seoul, South Korea
	IC	210 Yangjae-dong, Seocho-gu Seoul 137-130 South Korea

1.3 Test Laboratory Information

Conducted tests were performed at	
Laboratory	ICR Co., Ltd.
Address	112, Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea
Telephone No.	+82-2-6351-9002
Fax No.	+82-2-6351-9007
RRA No.	KR0165
KOLAS No.	KT652



2. Equipment under Test(EUT) Information

2.1 General Information

Product Name	ARK
Brand Name	-
Model Name	SP66
Additional Model Name	-
FCC ID / ISED number	S7A-SP66 / 8154A-SP66
Hardware Version	-
Software Version	-
Power Supply	DC 3.7 V

2.2 Additional Information

Equipment Class	Bluetooth BDR/EDR	DSS-Part 15 Spread Spectrum Transmitter / Frequency hopping systems (FHS)
	Bluetooth LE	DTS-Digital Transmission System
Device Type	Stand-alone	
Operating Frequency	2 402 MHz ~ 2 480 MHz	
RF Output Power	Bluetooth BDR/EDR	18.33 dBm
	Bluetooth LE	10.32 dBm
Number of Channel	Bluetooth BDR/EDR	79
	Bluetooth LE	40
Modulation Type	Bluetooth BDR/EDR	GFSK / $\pi/4$ -DQPSK / 8DPSK
	Bluetooth LE	GFSK
Antenna Type	PCB Pattern Antenna	
Antenna Gain	0.55 dBi	
Antenna Operating Mode	Single Antenna Equipment with only one antenna	
List of Each Oscillator or Crystal Frequency	26 MHz	

2.3 Mode of operation during the test

- The EUT is continuous transmission mode during the test with set at Low Channel, Middle Channel, and High Channel. To get a maximum radiated emission levels from the EUT, the EUT was moved throughout the XY, YZ, XZ planes.

2.4 Modifications of EUT

- None



3. Maximum Permissible Exposure

3.1 RF Exposure calculation

According to the FCC rule §1.1310 and RSS-102 issue 5, the limit for General Population/Uncontrolled exposure is 1 mW/cm² for the device operating 1 500 MHz ~ 100 000 MHz.

Kind of EUT	ARK	
Operating Frequency Band	☐ WLAN(802.11b/g/n(HT20)): 2 412 MHz ~ 2 462 MHz ☐ WLAN(802.11n(HT40)): 2 422 MHz ~ 2 452 MHz ☐ WLAN: 5 180 MHz ~ 5 320 MHz / 5 500 MHz ~ 5 700 MHz ☐ WLAN: 5 745 MHz ~ 5 825 MHz ☒ Bluetooth: 2 402 MHz ~ 2 480 MHz	
Max. Output Power	Bluetooth LE	18.33 dBm
	Bluetooth BDR	10.86 dBm
	Bluetooth EDR	10.82 dBm
Exposure Evaluation Applied	☐ MPE ☐ SAR ☒ N/A	

3.2 Result

According to the procedure, KDB 447498 D01, the standalone SAR test exclusion threshold is

$$[(\text{Max. Power of channel, including tune-up tolerance, mW}) / (\text{Min. test separation distance, mm})] \times [\sqrt{f(\text{GHz})}] < 3$$

$$= (68.08/52.5) \times \sqrt{2.480} = 2.04 \text{ at Bluetooth BDR}$$

$$= (12.19/52.5) \times \sqrt{2.480} = 0.37 \text{ at Bluetooth EDR}$$

$$= (12.08/52.5) \times \sqrt{2.480} = 0.36 \text{ at Bluetooth LE}$$

Conclusion: The SAR test exclusion threshold is less than 3, so the device meets the RF Exposure Requirement and excluded SAR Test.

Operating Mode	Frequency (MHz)	Target Power W / tolerance	Max tune up power		Separation distance (mm)	RF exposure
		(dBm)	(dBm)	(mW)		
Bluetooth BDR	2 480	18.33 ± 0.5	18.33	68.08	52.5	2.04
Bluetooth EDR	2 480	10.36 ± 0.5	10.86	12.19	52.5	0.37
Bluetooth LE	2 480	10.32 ± 0.5	10.82	12.08	52.5	0.36