

TEST REPORT

Applicant: SYNCOMM TECHNOLOGY CORP.
Address: 10F-1, No.101, Sec. 2, Gongdao 5th Rd., Hsinchu City, 30070, Taiwan
Equipment Type: IA9QH5 S83D-F
Model Name: IA9QH5 S83D-F
Brand Name: SYNCOMM
FCC ID: PJH-9QH5S83DF
Test Standard: 47 CFR Part 2.1091
KDB 447498 D04 v01
Sample Arrival Date: Mar. 28, 2025
Test Date: Apr. 08, 2025 - May 15, 2025
Date of Issue: Jun. 04, 2025

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Xiong Lining

Xiong Li Ning

Checked by: Xu Rui

Xu Rui

Approved by: Tolan Tu

(Testing Director)

Tolan Tu

Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>May 28, 2025</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Jun. 04, 2025</u>	<u>Added the HVIN Number in Section 2.3</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION.....	3
1.1	Test Laboratory	3
1.2	Test Location	3
2	PRODUCT INFORMATION	4
2.1	Applicant Information	4
2.2	Manufacturer Information.....	4
2.3	General Description for Equipment under Test (EUT).....	4
2.4	Technical Information	4
3	SUMMARY OF TEST RESULT	5
3.1	Test Standards	5
3.2	Limit Standards.....	5
4	DEVICE CATEGORY AND LEVELS LIMITS	6
5	ASSESSMENT RESULT	8
5.1	Output Power	8
5.2	Tune-up power	8
5.3	RF Exposure Evaluation Result	8
5.4	Conclusion.....	8

1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☒ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	SYNCOMM TECHNOLOGY CORP.
Address	10F-1, No.101, Sec. 2, Gongdao 5th Rd., Hsinchu City, 30070, Taiwan

2.2 Manufacturer Information

Manufacturer	SYNCOMM TECHNOLOGY CORP.
Address	10F-1, No.101, Sec. 2, Gongdao 5th Rd., Hsinchu City, 30070, Taiwan

2.3 General Description for Equipment under Test (EUT)

EUT Name	IA9QH5 S83D-F
Model Name Under Test	IA9QH5 S83D-F
Series Model Name	N/A
Description of Model name differentiation	N/A
HVIN Number	9QH5S83DF
Hardware Version	V1
Software Version	V1
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Technical Information

Network and Wireless connectivity	5.2G ISM Band, 5.8G ISM Band, 5.9G ISM Band
-----------------------------------	---

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	5.2G ISM Band, 5.8G ISM Band, 5.9G ISM Band	
Frequency Range	5.2G ISM Band	5150 ~ 5250 MHz
	5.8G ISM Band	5725 ~ 5850 MHz
	5.9G ISM Band	5850 ~ 5895 MHz
Antenna Type	5.2G ISM Band	Monopole Antenna
	5.8G ISM Band	
	5.9G ISM Band	
Exposure Category	General Population/Uncontrolled Exposure	
Product Type	Mobile Device	

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	KDB 447498 D04 v01	447498 D04 Interim General RF Exposure Guidance v01

3.2 Limit Standards

No.	Identity	Document Title
1	47 CFR Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices

4 DEVICE CATEGORY AND LEVELS LIMITS

Mobile Devices:

CFR Title 47 §2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

FCC KDB 447498 D04 General RF Exposure Guidance v01 Limit

Evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i. e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{\text{th}} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).
The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Table B-2 Example Power Thresholds (mW)											
Frequency (MHz)	Distance (mm)										
	5	10	15	20	25	30	35	40	45	50	
	300	39	65	88	110	129	148	166	184	201	217
	450	22	44	67	89	112	135	158	180	203	226
	835	9	25	44	66	90	116	145	175	207	240
	1900	3	12	26	44	66	92	122	157	195	236
	2450	3	10	22	38	59	83	111	143	179	219
	3600	2	8	18	32	49	71	96	125	158	195
	5800	1	6	14	25	40	58	80	106	136	169

5 ASSESSMENT RESULT

5.1 Output Power

Mode	5.2G ISM Band	5.8G ISM Band	5.9G ISM Band
Conducted Power (dBm)	9.07	11.98	11.48
Antenna Gain (dBi)	1.0	2.5	2.5
EIRP (dBm)	10.07	14.48	13.98
Note: This report listed the worst case conducted power value, please refer to BL-SZ2531360-601 report for more details.			

5.2 Tune-up power

Mode	Conducted Power Range (dBm)	EIRP Range (dBm)	ERP Range (dBm)
5.2G ISM Band	[7.50, 9.50]	[8.50, 10.50]	[6.35, 8.35]
5.8G ISM Band	[10.00, 12.00]	[12.50, 14.50]	[10.35, 12.35]
5.9G ISM Band	[9.50, 11.50]	[12.00, 14.00]	[9.85, 11.85]
Note1: ERP= EIRP -2.15dB.			
Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth.			

5.3 RF Exposure Evaluation Result

Evolution Mode	Frequency (MHz)	Maximum power (dBm)	Maximum power (mw)	Distance (mm)	Threshold Power (mW)	Verdict
5.2G ISM Band	5150	9.50	8.91	200	3060.00	Pass
5.8G ISM Band	5725	12.35	17.18	200	3060.00	Pass
5.9G ISM Band	5850	11.85	15.31	200	3060.00	Pass

5.4 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
2. The report without China inspection body and laboratory Mandatory Approval (CMA) mark has no effect of proving to the society.
3. For the report with CNAS mark or A2LA mark, the items marked with "☆" are not within the accredited scope.
4. This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the "inspection and testing dedicated stamp" or test report stamp.
5. The test data and results are only valid for the tested samples provided by the customer.
6. This report shall not be partially reproduced without the written permission of the laboratory.
7. Any objection shall be raised to the laboratory within 30 days after receiving the report.

--END OF REPORT--