



MPE Report

Report No.:STS2509098H01

Issued for

Sapphire Technology PTE. LTD

1 Raffles Place, Tower 2, Level #19-61, Singapore 048616

Product Name: SAPPHIRE EDGE AI Mini PC

Brand Name: N/A

Model Name: SAPPHIRE EDGE AI 370 Mini PC

Series Model(s): SAPPHIRE EDGE AI 350 Mini PC,
SAPPHIRE EDGE AI 340 Mini PC

FCC ID: 2BST8-EAIRZ616

Test Standard: FCC 47CFR §2.1091

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the ShenZhen STS Test Services Co., Ltd.

**TEST REPORT**

Applicant's Name.....: Sapphire Technology PTE. LTD
Address: 1 Raffles Place, Tower 2, Level #19-61, Singapore 048616
Manufacturer's Name.....: Sapphire Technology PTE. LTD
Address: 1 Raffles Place, Tower 2, Level #19-61, Singapore 048616

Product Description

Product Name.....: SAPPHIRE EDGE AI Mini PC
Brand Name: N/A
Model Name: SAPPHIRE EDGE AI 370 Mini PC
Series Model(s).....: SAPPHIRE EDGE AI 350 Mini PC,
SAPPHIRE EDGE AI 340 Mini PC

Test Standards: FCC 47CFR §2.1091
447498 D01 Interim General RF Exposure Guidance v06

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Date of Test

Date of receipt of test item.....: 15 Sept. 2025
Date (s) of performance of tests.....: 15 Sept. 2025~18 Oct. 2025
Date of Issue.....: 18 Oct. 2025
Test Result.....: **Pass**

Testing Engineer :

Aaron Bu

(Aaron Bu)

Technical Manager :

Skylar Li

(Skylar Li)

Authorized Signatory :

Bovey Yang

(Bovey Yang)





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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	18 Oct. 2025	STS2509098H01	ALL	Initial Issue



1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	SAPPHIRE EDGE AI Mini PC	
Brand Name	N/A	
Model Name	SAPPHIRE EDGE AI 370 Mini PC	
Series Model(s)	SAPPHIRE EDGE AI 350 Mini PC, SAPPHIRE EDGE AI 340 Mini PC	
Model Difference	The only difference is the model name.	
Product Description	The EUT is SAPPHIRE EDGE AI Mini PC	
	Operation Frequency:	Bluetooth: 2402~2480 MHz 2.4G WLAN: 802.11b/g/n/ax 20: 2412~2462 MHz 802.11n/ax40:2422~2452MHz 5.2G WLAN: IEEE 802.11a/ n(HT20)/ac(VHT20)/ax(HE20): 5.180GHz-5.240GHz IEEE 802.11n(HT40)/ac(VHT40)/ax(HE40): 5.190GHz-5.230GHz IEEE 802.11ac(VHT80) /ax(HE80): 5.210GHz 5.8G WLAN: IEEE 802.11a/ n(HT20)/ac(VHT20)/ax(HE20): 5.745GHz-5.825GHz IEEE 802.11a/ n(HT40)/ac(VHT40)/ax(HE40): 5.755GHz-5.795GHz IEEE 802.11ac(VHT80)/ax(HE80): 5.775GHz 5.9G WLAN: IEEE 802.11a/ n(HT20)/ac(VHT20))/ax(HE20): 5.845GHz -5.885GHz IEEE 802.11a/ n(HT40)/ac(VHT40)/ax(HE40): 5835GHz -5875GHz IEEE 802.11ac(VHT80)/ax(HE80):5855 GHz 6G WLAN: UNII-5 Band: 5925-6425MHz UNII-6 Band: 6425-6525MHz UNII-7 Band: 6525-6875MHz UNII-8 Band: 6875-7125MHz



	Modulation Type:	BLE:GFSK BT: GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps), 8DPSK(3Mbps) 2.4G WLAN: 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11ax(OFDM, OFDMA): BPSK,QPSK,16-QAM,64-QAM,256-QAM, 1024QAM 5G WLAN: 802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11ac(OFDM): BPSK,QPSK,16-QAM,64-QAM,256-QAM 802.11ax(OFDM, OFDMA): BPSK,QPSK,16-QAM,64-QAM,256-QAM, 1024QAM 6G WLAN: 802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11ax(OFDM, OFDMA): BPSK,QPSK,16-QAM,64-QAM,256-QAM, 1024QAM
	Antenna gain:	Bluetooth:-3.78dBi 2.4G WLAN: ANT 1: -3.81 dBi ANT 2: -3.78 dBi MIMO: -0.78 dBi 5G WLAN: ANT 1: -3.94 dBi ANT 2: -3.76 dBi MIMO: -0.84 dBi 6G WLAN: ANT 1: -3.41 dBi ANT 2: -3.49 dBi MIMO: -0.44 dBi
	Antenna Designation:	Built-in
Power Rating	Input: DC 20V 6A Output: Type-C: 5V 1.5A USB2.0: 5V 0.5A USB3.0: 5V 1A	
Adapter	Model: PA-1121-76E Brand: LITEON Input: 100-240V~50/60Hz 1.9A Output: 20V 6A 120W	
Battery	N/A	
Hardware Version	V12	
Software Version	V2.10	



1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01



2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the 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)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
3.0-30	1842/f	4.89/f	*(900/f ²)
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1.34-30	824/f	2.19/f	*(180f ²)
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss 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 the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.



2.3 TEST RESULT

Tune up

Mode	Tune up Power
BT	1±1dBm
BLE	0±1dBm
2.4G WLAN	20±1dBm
5G WLAN	14±1dBm
6G WLAN	12±1dBm

RF Function	Frequency (MHz)	Separation distance (cm)	Max Output Power (dBm)	Max Tune Up Power (dBm)	Max Tune Up Power (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Ratio	Result
BT	2480	20	1.87	2.00	1.585	0.0003	1	0.0003	Pass
BLE	2480	20	0.67	1.00	1.259	0.0003	1	0.0003	Pass
2.4G WLAN	2462	20	20.25	21.00	125.893	0.0250	1	0.0250	Pass
5G WLAN	5865	20	14.15	15.00	31.623	0.0063	1	0.0063	Pass
6G WLAN	6855	20	12.21	13.00	19.953	0.0040	1	0.0040	Pass

Multiple transmission:

BT+5G WLAN=0.0003+0.0063=0.0066<1

Note: 1. The Maximum power is less than the limit, complies with the exemption requirements.

2. The Bluetooth and WLAN can't simultaneous transmission at the same time.

3. ERP = EIRP - 2.15

*****END OF THE REPORT*****