

MPE TEST REPORT

Report No.: SHE23060104-02FE

Date: 2023-08-09

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Applicant : SIMCom Wireless Solutions Limited
Address of Applicant : SIMCom Headquarters Building, Building 3, No.289
Linhong Road, Changning District, Shanghai,China

Product Name : Wireless Data Module
Brand Name : SIMCom
Model Name : SIM8070
Sample Acquisition Method : Sent by Client

Sample No. : E23060104-01#02

FCC ID : 2AJYU-8XK0002

Standard : FCC Part 2.1091

Date of Receipt : 2023-07-07
Date of Test : 2023-07-13~ 2023-08-04
Date of Issue : 2023-08-09

Remark:

This report details the results of the testing carried out on one sample, the results contained in this report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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(Erik Yang)

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Approved by: Echo Mu
(Authorized signatory: Echo Mu)

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1 General Information

1.1 Testing Laboratory

Company Name	ICAS Testing Technology Service (Shanghai) Co., Ltd.
Address	No.1298, Pingan Road, Minhang District, Shanghai, China
Telephone	0086 21-51682999
Fax	0086 21-54711112
Homepage	www.icasiso.com

1.2 Environmental conditions

Temperature (°C)	18-25
Humidity (%RH)	40-65
Barometric Pressure (mbar)	960-1060
Ambient noise & Reflection (W/kg)	< 0.012

1.3 Details of Application

Applicant Company Name	SIMCom Wireless Solutions Limited
Address	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai,China
Contact Person	Yongsheng Li
Telephone	+86 21 3252 3134
Email	yongsheng.li@simcom.com
Manufacturer Company Name	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai,China
Address	SIMCom Wireless Solutions Limited
Factory Company Name	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai,China
Address	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai,China

1.4 Details of EUT

Product Name	Wireless Data Module	
Brand Name	SIMCom	
Test Model Name	SIM8070	
FCC ID	2AJYU-8XK0002	
Mode of Operation	WLAN 802.11b/g/n(HT20/40) for 2.4GHz WLAN 802.11a/n(HT20/HT40)/ac(VHT20/VHT40/VHT80) for 5GHz Bluetooth dual mode	
Frequency Range	Band	Frequency (MHz)
	802.11b/g/n(HT20/HT40)	2400~2483.5

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	802.11a/n(20M/40M)/ac(20M/40M/80M)	5150~5250
		5725~5850
	Bluetooth	2400~2483.5
Modulation Type	DSSS/OFDM for WLAN 2.4GHz and OFDM for WLAN 5GHz GFSK/8DPSK/π/4DQPSK for Bluetooth	
Antenna Type	External Antenna	
Antenna Gain	BT/WLAN 2.4G: 4.01dBi WLAN 5G: 4.32dBi	
Hardware version	SIM8970CE_V1.02	
Software version	SIM8070B01V01_A10	

2 Maximum Permissible Exposure (MPE)

2.1 Limits

According to FCC Part 1.1307, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the commission's guidelines.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(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
1,500-100,000			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/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

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2.2 Assessment methods

Calculation Formula from FCC OET 65:

$$S = \frac{P * G}{4 * \pi * R^2}$$

Where:

S = Power Density (mW/cm²)

P = Input Power of the Antenna (mW)

G = Antenna Gain Relative to an Isotropic Antenna

R = Distance from the Antenna to the Point of Investigation (cm)

2.3 Test Result

Operation Mode	Frequency Range (MHz)	Max Conducted Power (dBm)	Antenna Gain (dBi)	Max EIRP (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
WLAN 2.4GHz	2400~2483.5	15.41	4.01	87.50	0.0174	1.0
BR/EDR	2400~2483.5	10.84	4.01	30.55	0.0061	1.0
BLE	2400~2483.5	5.95	4.01	9.91	0.0020	1.0
WLAN 5GHz	5150~5250	11.64	4.32	39.45	0.0078	1.0
	5725~5850	16.18	4.32	112.20	0.0223	1.0

Note(s):

1. For 300 – 1,500MHz: Power Density limit is f/1500 mW/cm²
2. For 1,500 – 100,000MHz: Power Density limit is 1.0 mW/cm²
3. The device can not transmit with WIFI and BT simultaneously, so MPE is not evaluated in this configuration.

2.4 Conclusion

The Power Density at the position which is 20 cm far from the EUT is smaller than the General Population/Uncontrolled Exposure limit.

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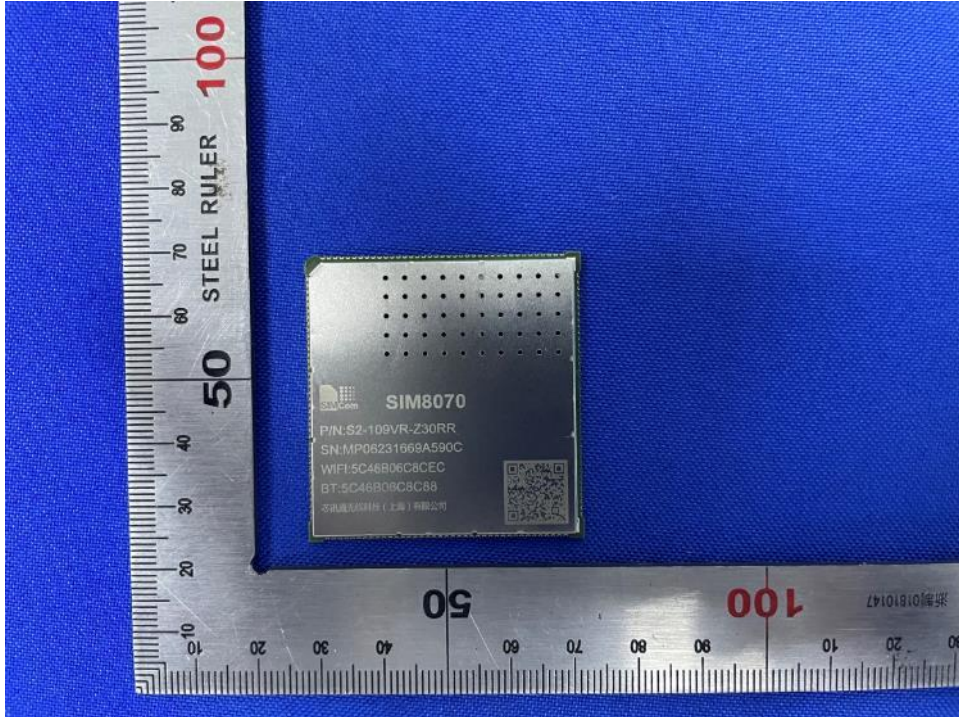
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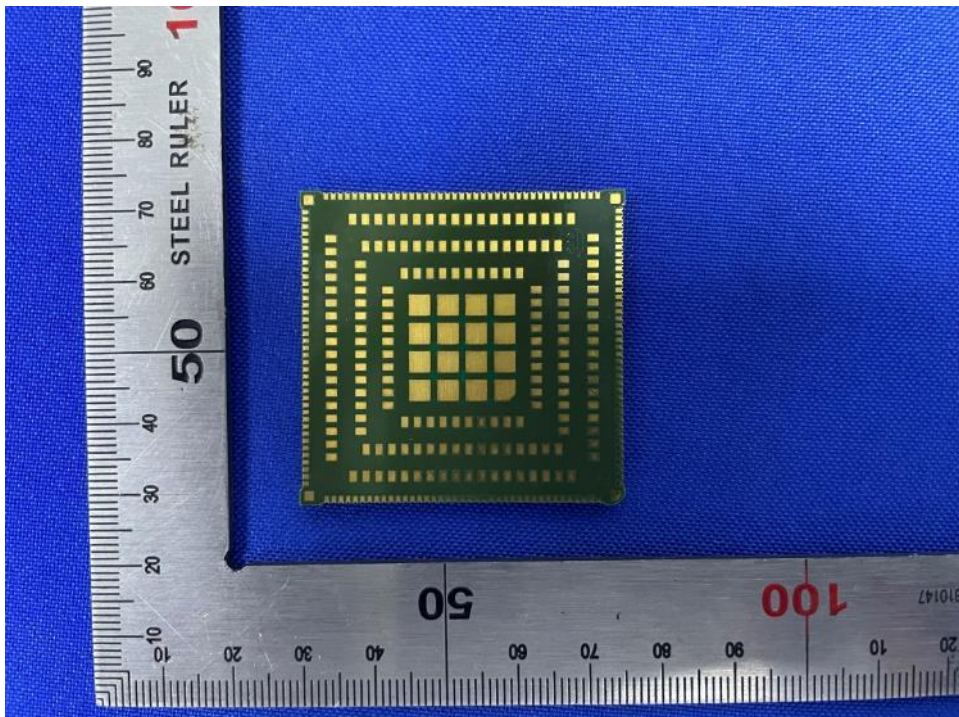
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3 Appendixes

3.1 Sample Photograph



Front of the sample



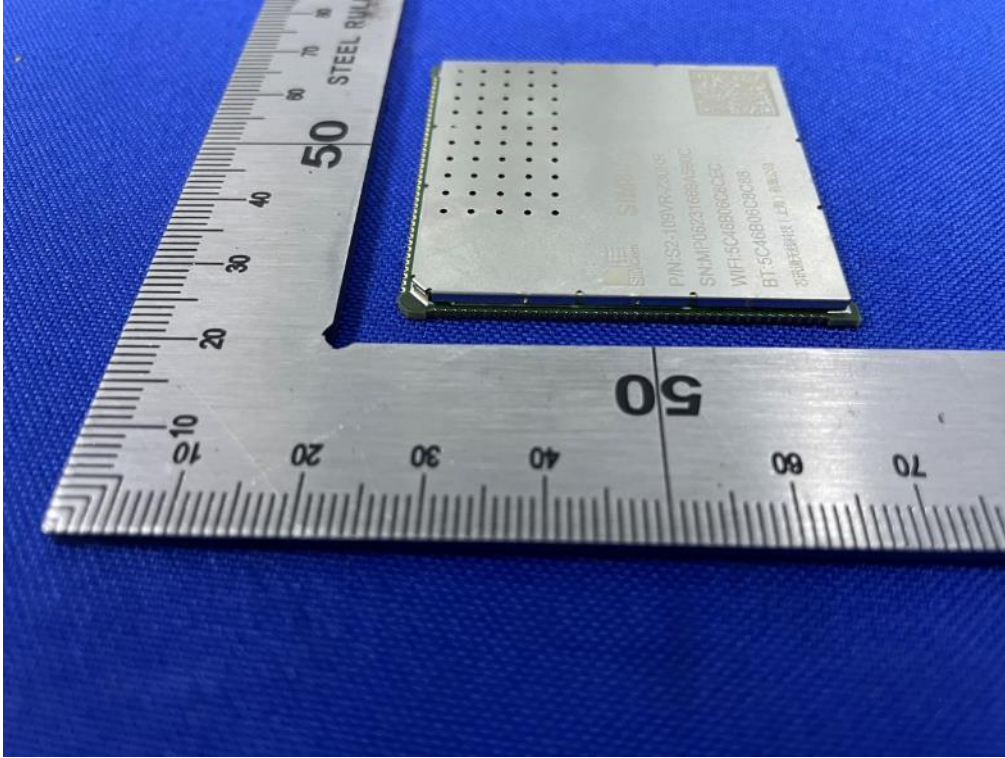
Rear of the sample

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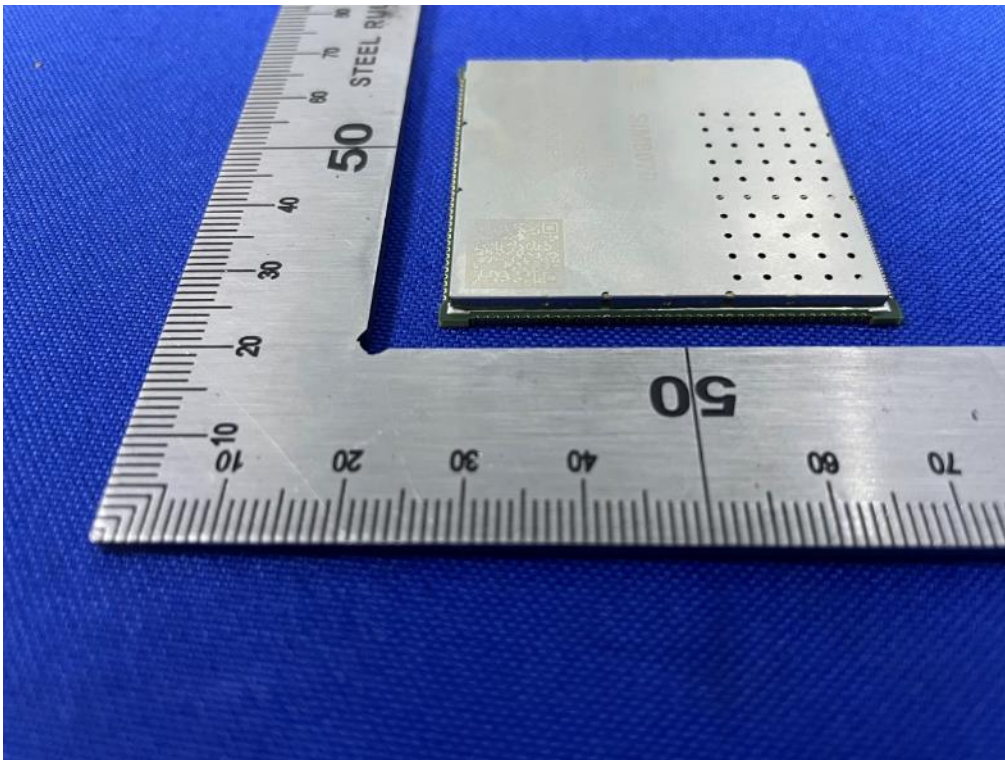
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Left of the sample



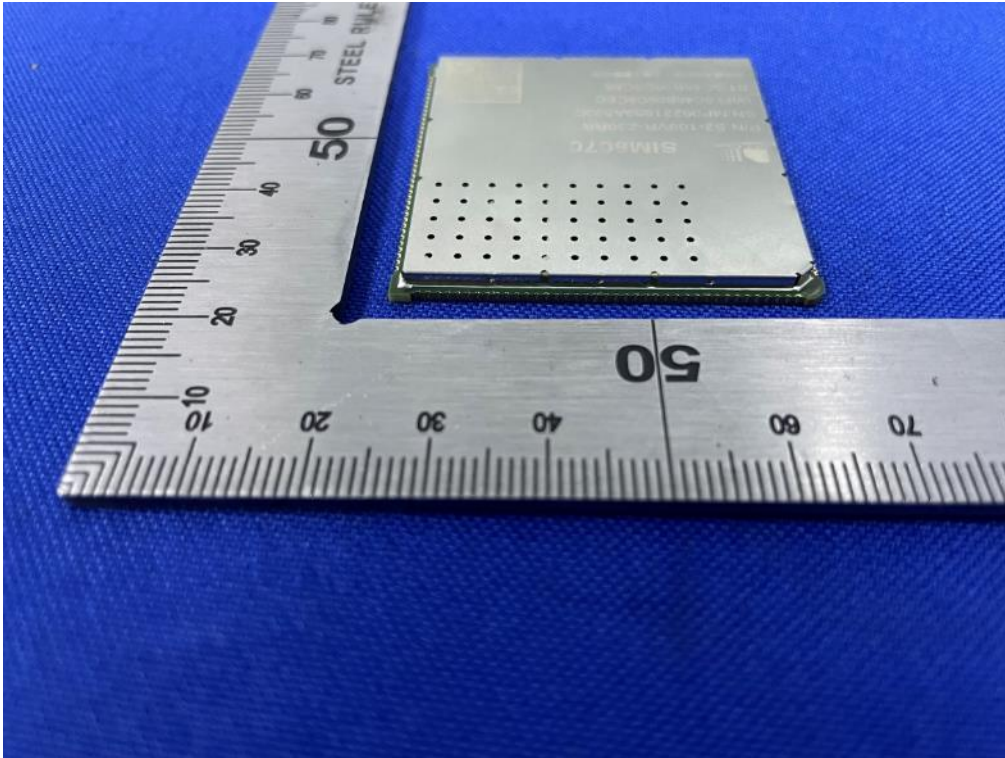
Right of the sample

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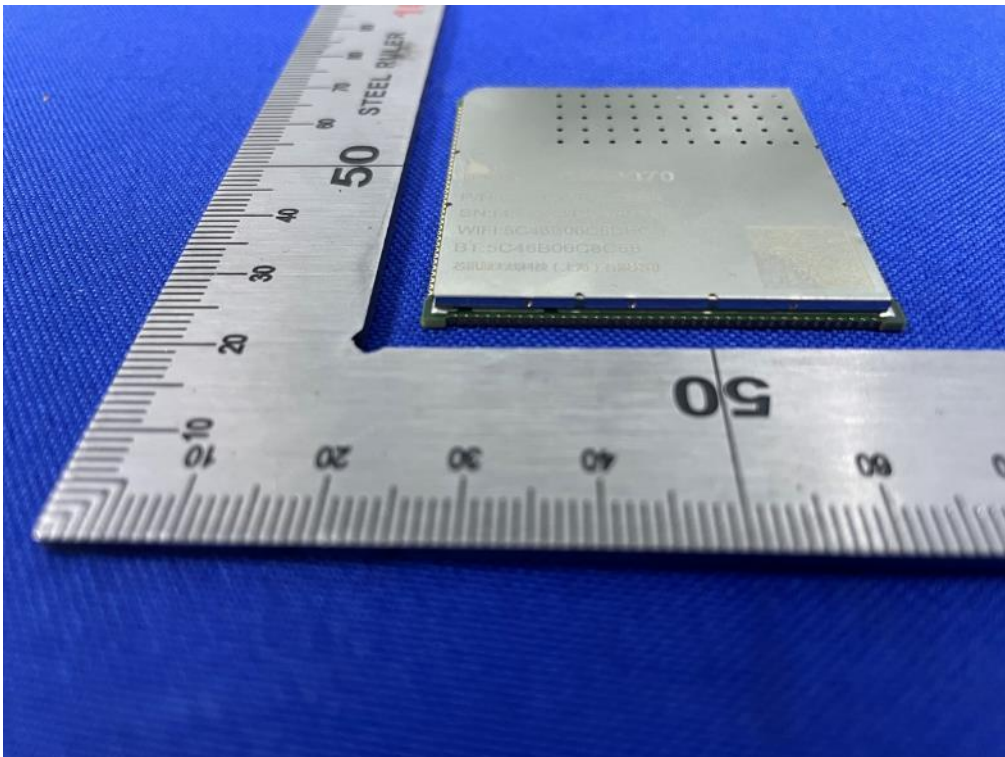
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Top of the sample



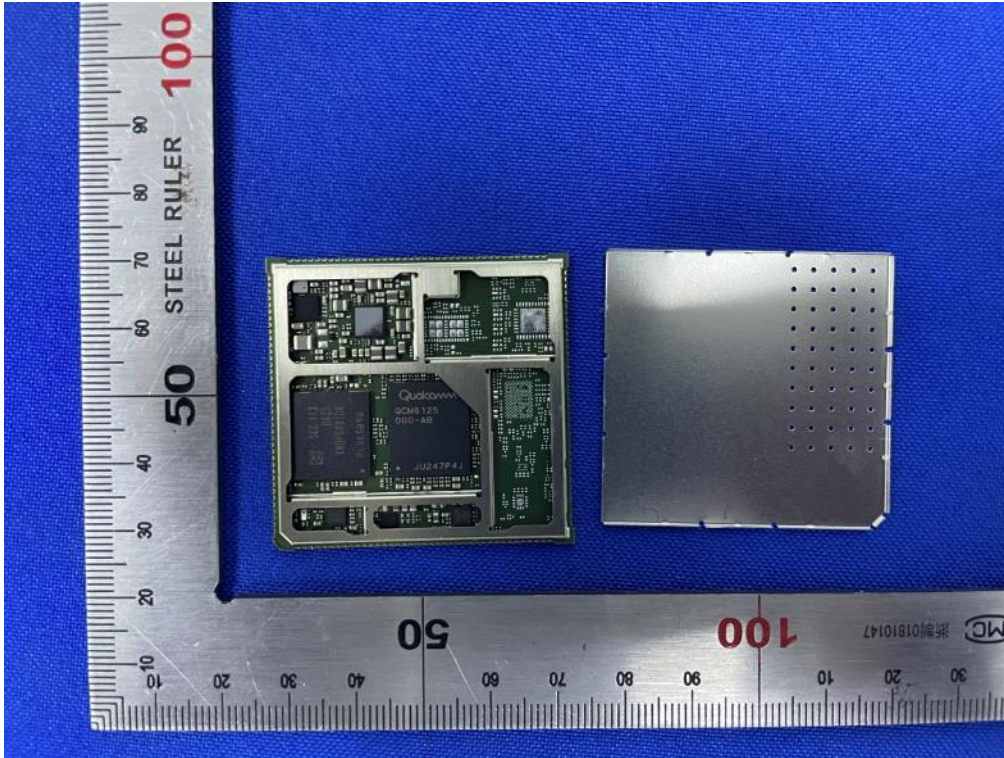
Bottom of the sample

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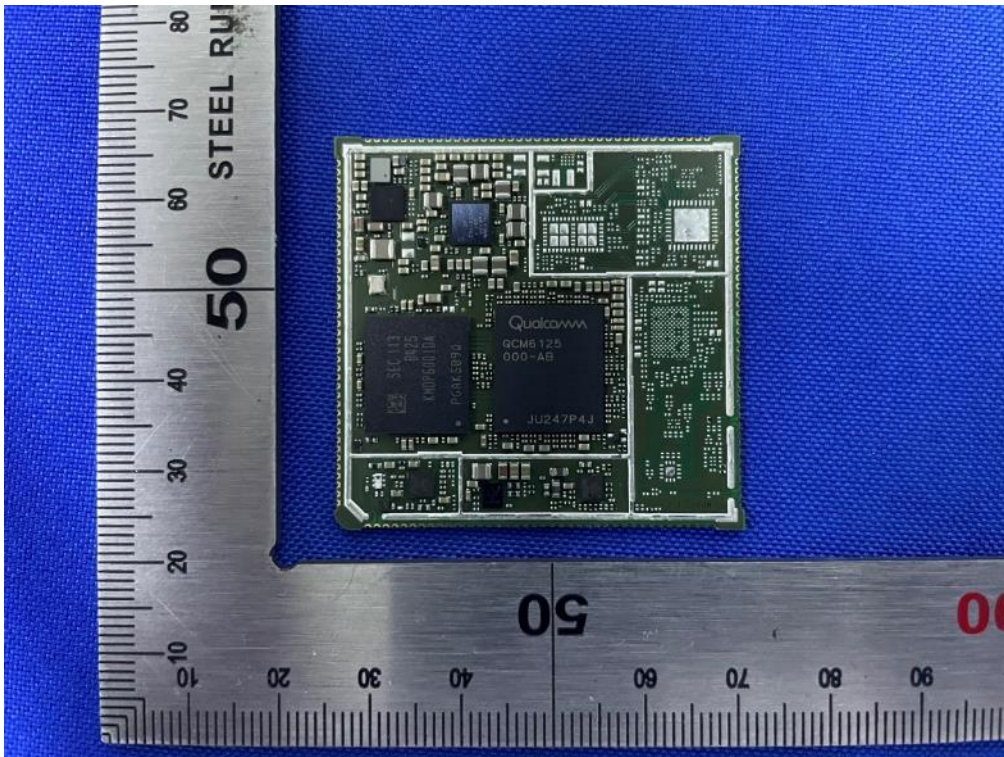
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Open of the sample



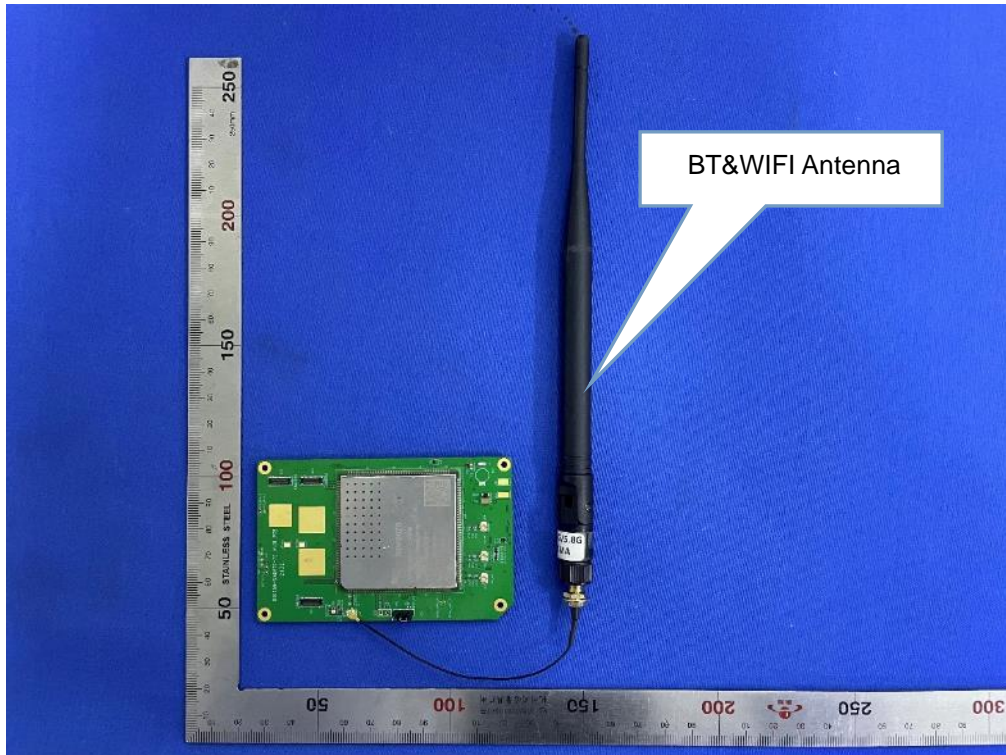
Internal-1 of the sample

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Antenna Position

End of the report