



深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司

Shenzhen Alpha Product Testing Co., Ltd

地址: ALPHA 深圳市宝安区福永街道立新路2号i栋

TEL:4008-3008-95

Site LAB 966 Chamber 1

Polarization: Horizontal

Temperature: 22.5

Limit: FCC Part 15 Class B Radiation (30-1000)

Power: DC 5V From USB

Humidity: 55 %

EUT/Task No : A2503072-C02

Distance: 3m

M/N/Sample No: A2503072-S0004

Mode : GFSK 902.75MHz

Note: ANT2

Engineer Signature:

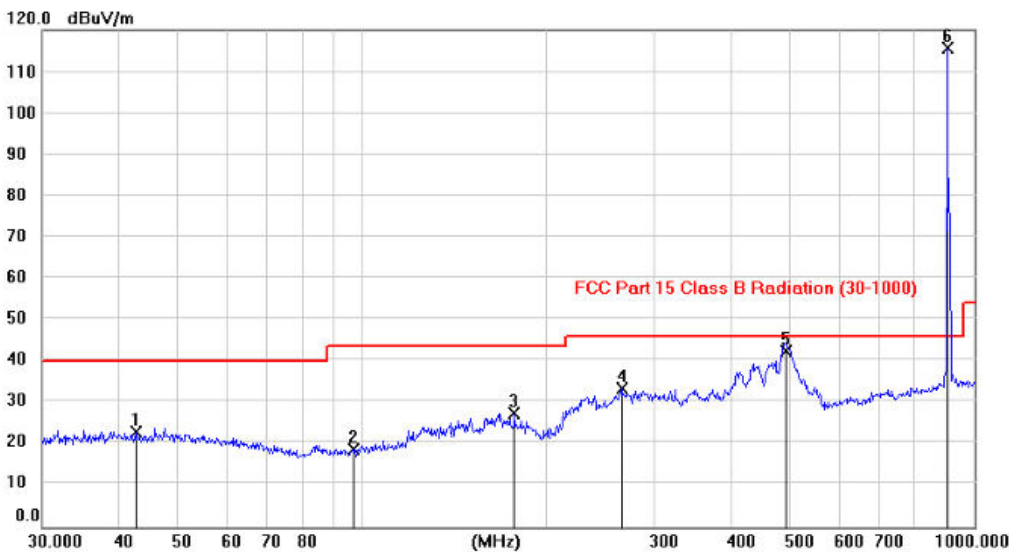
Radiated Emission Measurement

File :A2503272-C02

Data :#11

Date: 2025/7/26

Time: 14:05:32



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table
		MHz	Level	Factor	ment			Height	Degree
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree
							Detector		Comment
1		42.6148	8.55	14.27	22.82	40.00	-17.18	peak	
2		96.5489	8.26	10.62	18.88	43.50	-24.62	peak	
3		177.2022	14.48	13.07	27.55	43.50	-15.95	peak	
4		265.3233	20.41	13.14	33.55	46.00	-12.45	peak	
5		492.1195	24.39	18.11	42.50	46.00	-3.50	QP	
6	*	903.2173	91.69	24.08	115.77	46.00	69.77	peak	

Note: 1. *:Maximum data; x:Over limit; !:over margin.

2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



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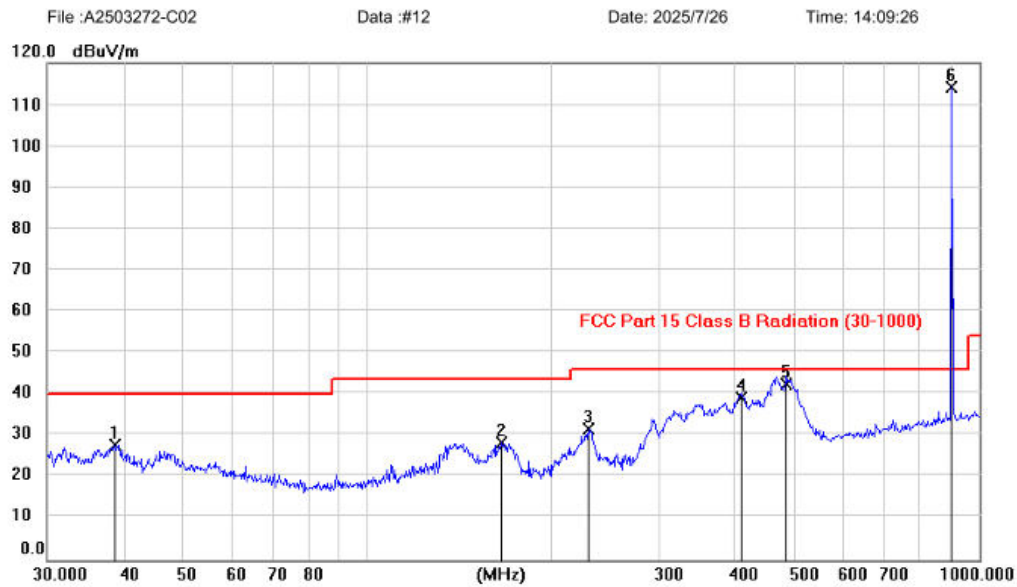
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地址: ALPHA 深圳市宝安区福永街道立新路2号i栋

TEL:4008-3008-95

Site LAB 966 Chamber 1	Polarization: Vertical	Temperature: 22.5
Limit: FCC Part 15 Class B Radiation (30-1000)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 902.75MHz		
Note: ANT2		
Engineer Signature:		

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		38.6567	13.48	14.34	27.82	40.00	-12.18	peak		
2		165.5060	13.80	14.51	28.31	43.50	-15.19	peak		
3		229.8026	19.33	12.30	31.63	46.00	-14.37	peak		
4		409.8550	22.77	16.49	39.26	46.00	-6.74	QP		
5		485.4956	24.49	18.02	42.51	46.00	-3.49	QP		
6	*	902.7816	90.00	24.08	114.08	46.00	68.08	peak		

Note: 1. *:Maximum data; x:Over limit; !:over margin.
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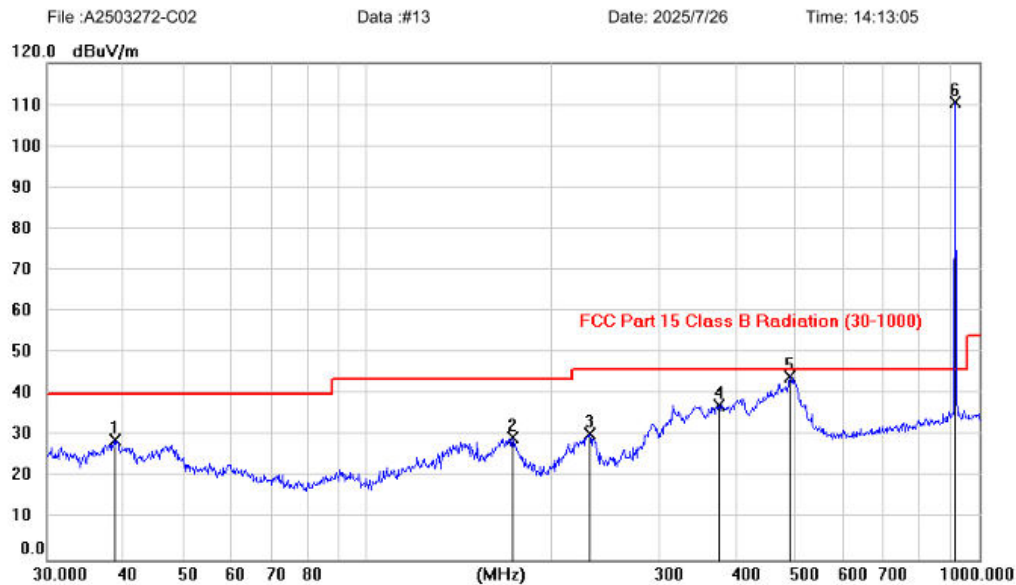
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Site LAB 966 Chamber 1	Polarization: Vertical	Temperature: 22.5
Limit: FCC Part 15 Class B Radiation (30-1000)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 915.25MHz		
Note: ANT2		
Engineer Signature:		

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		38.7426	14.50	14.37	28.87	40.00	-11.13	peak		
2		173.0834	15.79	13.65	29.44	43.50	-14.06	peak		
3		231.6637	18.02	12.35	30.37	46.00	-15.63	peak		
4		376.8623	21.44	15.83	37.27	46.00	-8.73	peak		
5		490.8020	26.20	18.09	44.29	46.00	-1.71	peak		
6	*	915.3192	86.33	24.25	110.58	46.00	64.58	peak		

Note:1. *:Maximum data; x:Over limit; !:over margin.
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Limit: FCC Part 15 Class B Radiation (30-1000)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 915.25MHz		
Note: ANT2		
Engineer Signature:		



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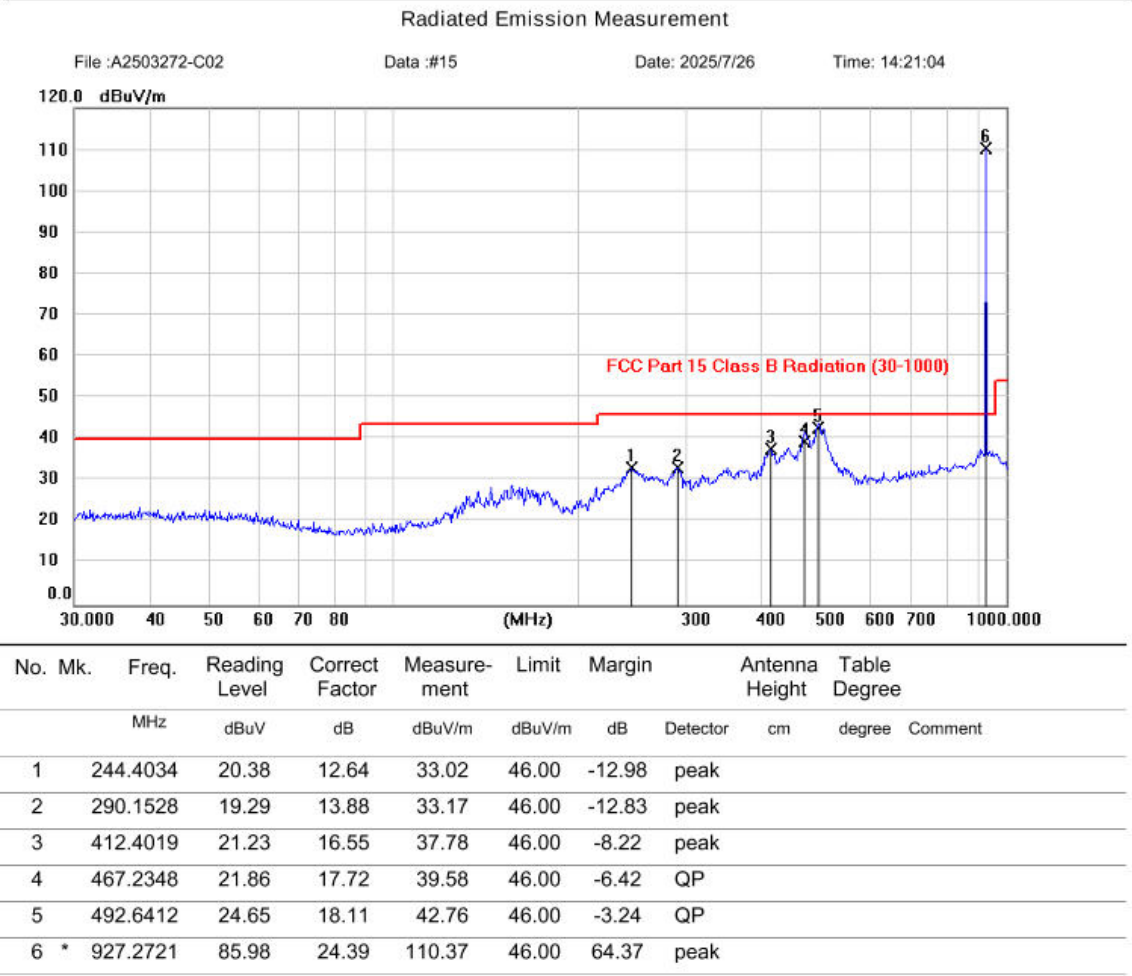
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Site LAB 966 Chamber 1	Polarization: Horizontal	Temperature: 22.5
Limit: FCC Part 15 Class B Radiation (30-1000)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 927.25MHz		
Note: ANT2		
Engineer Signature:		



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Site LAB 966 Chamber 1

Polarization: Vertical

Temperature: 22.5

Limit: FCC Part 15 Class B Radiation (30-1000)

Power: DC 5V From USB

Humidity: 55 %

EUT/Task No : A2503072-C02

Distance: 3m

M/N/Sample No: A2503072-S0004

Mode : GFSK 927.25MHz

Note: ANT2

Engineer Signature:

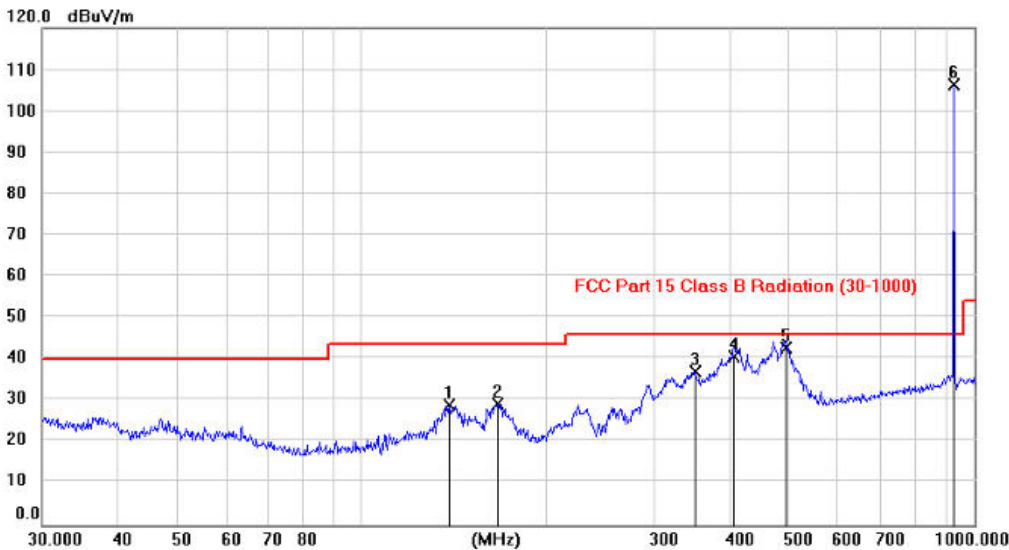
Radiated Emission Measurement

File :A2503272-C02

Data :#16

Date: 2025/7/26

Time: 14:23:58



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		139.2471	14.71	14.26	28.97	43.50	-14.53	peak		
2		166.8853	14.78	14.38	29.16	43.50	-14.34	peak		
3		350.1082	21.81	15.23	37.04	46.00	-8.96	peak		
4		405.1397	24.28	16.37	40.65	46.00	-5.35	QP		
5		493.6211	24.73	18.13	42.86	46.00	-3.14	QP		
6	*	927.2722	81.99	24.39	106.38	46.00	60.38	peak		

Note: 1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

For ANT1

Frequency range: 1GHz~25GHz

Test Mode : GFSK TX 902.75MHz								
No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	1805.5	H	69.71	-19.9	49.81	74	-24.19	Peak
2	1805.5	H	--	-19.9	--	54	--	AVG
3	2708.25	H	64.33	-13.88	50.45	74	-23.55	Peak
4	2708.25	H	--	-13.88	--	54	--	AVG
5	1805.5	V	70.48	-19.9	50.58	74	-23.42	Peak
6	1805.5	V	--	-19.9	--	54	--	AVG
7	2708.25	V	63.25	-13.88	49.37	74	-24.63	Peak
8	2708.25	V	--	-13.88	--	54	--	AVG
Test Mode : GFSK TX 915.25MHz								
1	1830.5	H	71.01	-19.9	51.11	74	-22.89	Peak
2	1830.5	H	--	-19.9	--	54	--	AVG
3	2745.75	H	64.50	-13.88	50.62	74	-23.38	Peak
4	2745.75	H	--	-13.88	--	54	--	AVG
5	1830.5	V	71.70	-19.9	51.80	74	-22.2	Peak
6	1830.5	V	--	-19.9	--	54	--	AVG
7	2745.75	V	63.99	-13.88	50.11	74	-23.89	Peak
8	2745.75	V	--	-13.88	--	54	--	AVG
Test Mode : GFSK TX 927.25MHz								
1	1854.5	H	71.10	-19.9	51.20	74	-22.8	Peak
2	1854.5	H	--	-19.9	--	54	--	AVG
3	2781.75	H	64.50	-13.88	50.62	74	-23.38	Peak
4	2781.75	H	--	-13.88	--	54	--	AVG
5	1854.5	V	70.76	-19.9	50.86	74	-23.14	Peak
6	1854.5	V	--	-19.9	--	54	--	AVG
7	2781.75	V	64.18	-13.88	50.30	74	-23.7	Peak
8	2781.75	V	--	-13.88	--	54	--	AVG
Note:	1. Means other frequency and mode comply with standard requirements and at least have 20dB margin. 2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain. Result=Reading + Correct Factor. Margin= Result-Limit. 3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.							

For ANT2

Frequency range: 1GHz~25GHz

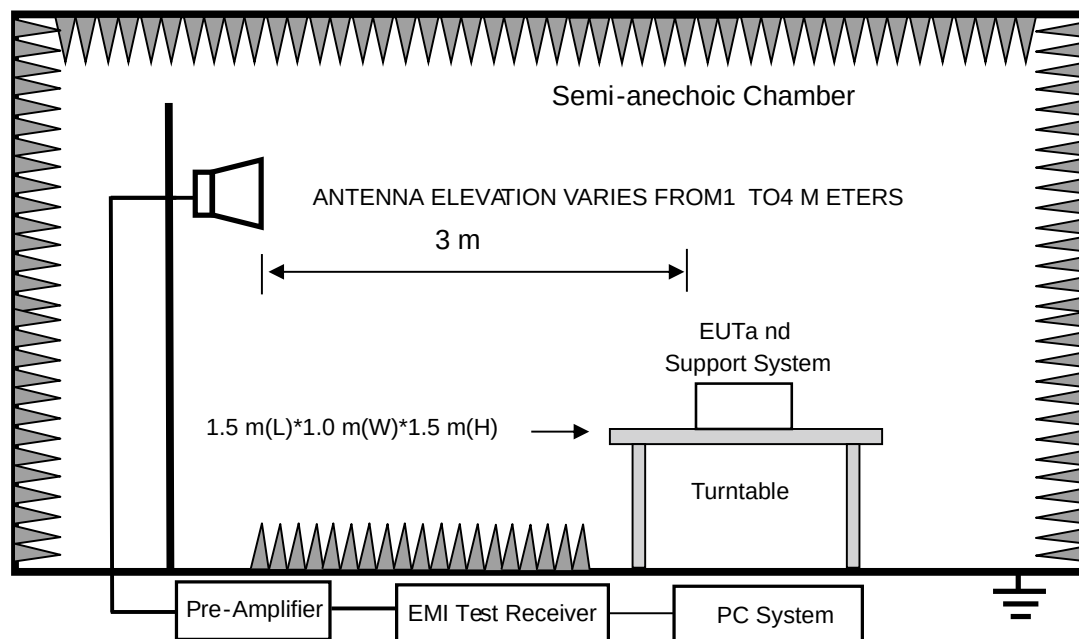
Test Mode : GFSK TX 902.75MHz								
No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	1805.5	H	69.75	-18.73	51.02	74	-22.98	Peak
2	1805.5	H	--	-18.73	--	54	--	AVG
3	2708.25	H	64.30	-14.33	49.97	74	-24.03	Peak
4	2708.25	H	--	-14.33	--	54	--	AVG
5	1805.5	V	70.47	-18.73	51.74	74	-22.26	Peak
6	1805.5	V	--	-18.73	--	54	--	AVG
7	2708.25	V	63.23	-14.33	48.90	74	-25.10	Peak
8	2708.25	V	--	-14.33	--	54	--	AVG
Test Mode : GFSK TX 915.25MHz								
1	1830.5	H	70.16	-18.60	51.56	74	-22.44	Peak
2	1830.5	H	--	-18.60	--	54	--	AVG
3	2745.75	H	64.75	-14.28	50.47	74	-23.53	Peak
4	2745.75	H	--	-14.28	--	54	--	AVG
5	1830.5	V	71.46	-18.60	52.86	74	-21.14	Peak
6	1830.5	V	--	-18.60	--	54	--	AVG
7	2745.75	V	63.66	-14.28	49.38	74	-24.62	Peak
8	2745.75	V	--	-14.28	--	54	--	AVG
Test Mode : GFSK TX 927.25MHz								
1	1854.5	H	71.34	-18.49	52.85	74	-21.15	Peak
2	1854.5	H	--	-18.49	--	54	--	AVG
3	2781.75	H	65.89	-14.23	51.66	74	-22.34	Peak
4	2781.75	H	--	-14.23	--	54	--	AVG
5	1854.5	V	70.53	-18.49	52.04	74	-21.96	Peak
6	1854.5	V	--	-18.49	--	54	--	AVG
7	2781.75	V	64.19	-14.23	49.96	74	-24.04	Peak
8	2781.75	V	--	-14.23	--	54	--	AVG
Note:	1. Means other frequency and mode comply with standard requirements and at least have 20dB margin. 2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain. Result=Reading + Correct Factor. Margin= Result-Limit. 3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.							

14. Band Edge (Radiated)

14.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
Spectrum analyzer	ROHDE&SCHWARZ	FSU	Aa-EE075	2024/08/08	2025/08/07
Horn Antenna	SCHWARZBECK	BBHA 9120 D	Aa-EE076	2023/08/19	2025/08/18
Test Receiver	ROHDE&SCHWARZ	ESR	Aa-EE048	2024/08/08	2025/08/07
Bilog Antenna	SCHWARZBECK	VULB 9168	Aa-EE001	2023/08/28	2025/08/27
Amplifier	SKET	LNPA_0118G-45	Aa-EE087	2024/08/08	2025/08/07
Horn Antenna	SCHWARZBECK	BBHA 9170	Aa-EE077	2023/08/19	2025/08/18
Loop Antenna	SCHWARZBECK	FMZB 1519B	Aa-EE074	2023/08/19	2025/08/18

14.2. Block diagram of test setup



14.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under [paragraph \(b\)\(3\)](#) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in [§ 15.209\(a\)](#) is not required. In addition, radiated emissions which fall in the restricted

bands, as defined in [§ 15.205\(a\)](#), must also comply with the radiated emission limits specified in [§ 15.209\(a\)](#) (see [§ 15.205\(c\)](#)).

14.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
Portable laptop	Lenovo	ThinkPad L14 Gan 1	/	/
Adapter	OLEAD	OLD050300AC N2U	Input: 100-240V~50/60Hz 0.5A max;5.0V=3.0A	/

14.5. Test procedure

Details see the KDB 558074 D01 15.247 Meas Guidance v05r02

- § Put the EUT on a 0.8m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission
- § Check the spurious emissions out of band.
- § RBW 1MHz, VBW 3MHz, peak detector for peak value, RBW 1MHz, VBW 3MHz, RMS detector for AV value.

All restriction band and non- restriction band have been tested, only worse case is reported.

14.6. Test result

Test Site: Chamber 1#(RSE)	Test Date: 2025/06/27--2025/07/26
Condition: 22.5°C,55%RH,101kPa	Test Engineer: Yannis Wen
Memo: Only show the test data of the worst case.	

EUT Name: Lumatas RFID US kit	EUT Model: CM710-4-NA
Sample No.: A2503072-S0004	Test Mode: GFSK Mode-L/H & GFSK hopping Mode
Power supply: DC 5V from adapter	Memo: /

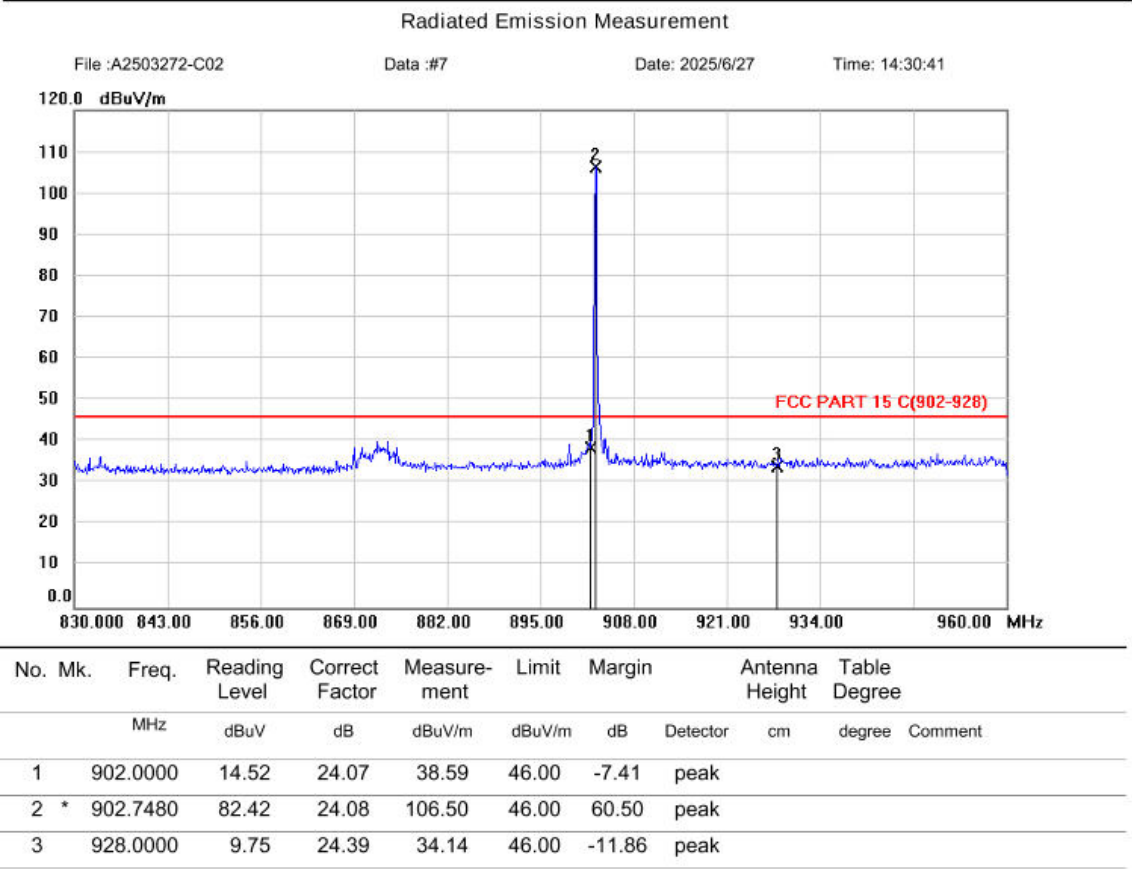
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14.7. Test data

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TEL:4008-3008-95

Site	LAB 966 Chamber 1	Polarization:	Vertical	Temperature:	22.5
Limit:	FCC PART 15 C(902-928)	Power:	DC 5V From USB	Humidity:	55 %
EUT/Task No	: A2503072-C02	Distance:	3m		
M/N/Sample No:	A2503072-S0004				
Mode	: GFSK 902.75MHz				
Note:	ANT1				
Engineer Signature:					



Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



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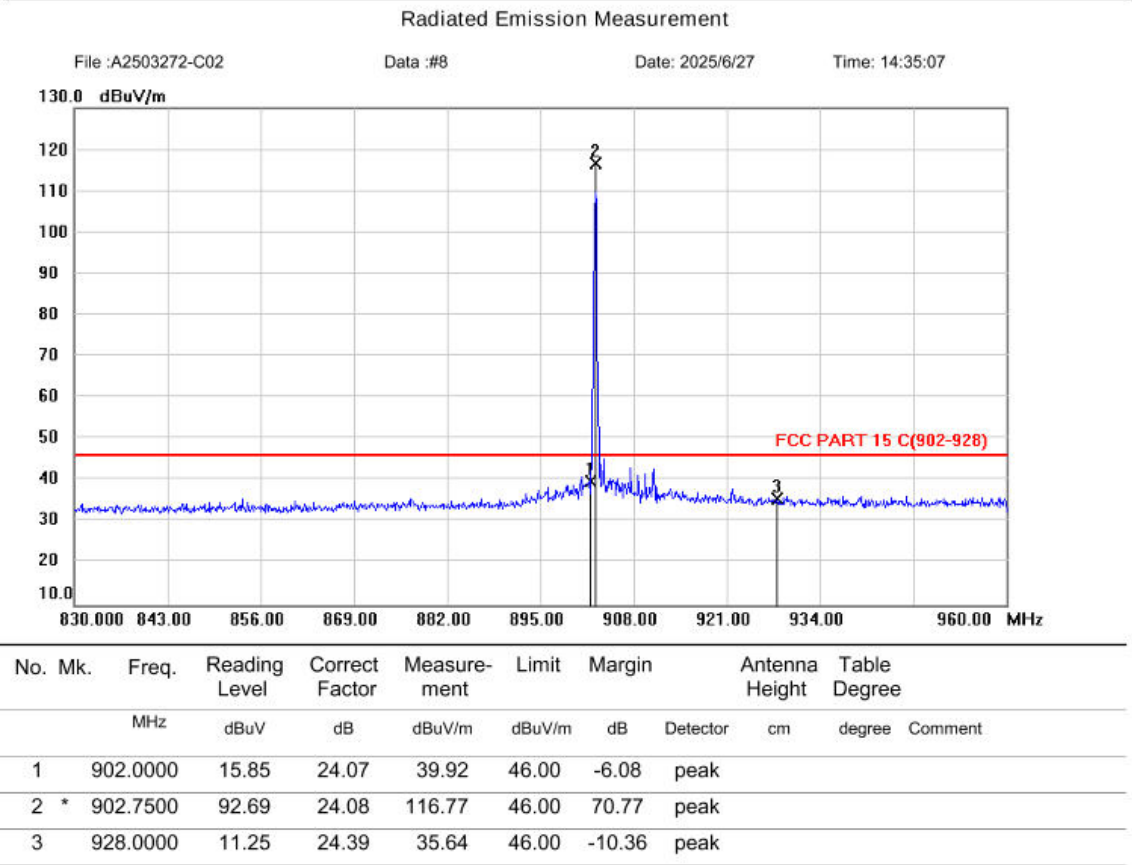
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Site LAB 966 Chamber 1	Polarization: Horizontal	Temperature: 22.5
Limit: FCC PART 15 C(902-928)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 902.75MHz		
Note: ANT1		
Engineer Signature:		



Note:1. *:Maximum data; x:Over limit; !:over margin.
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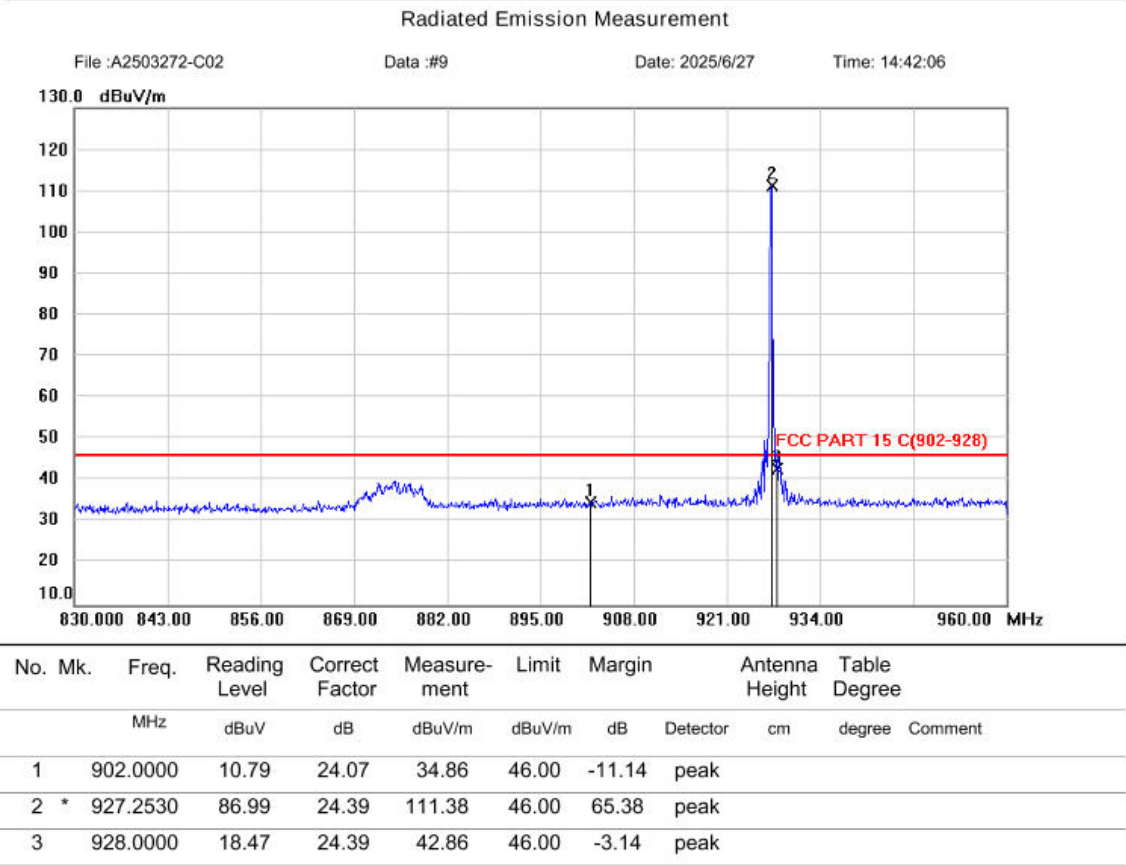
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EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 927.25MHz		
Note: ANT1		
Engineer Signature:		



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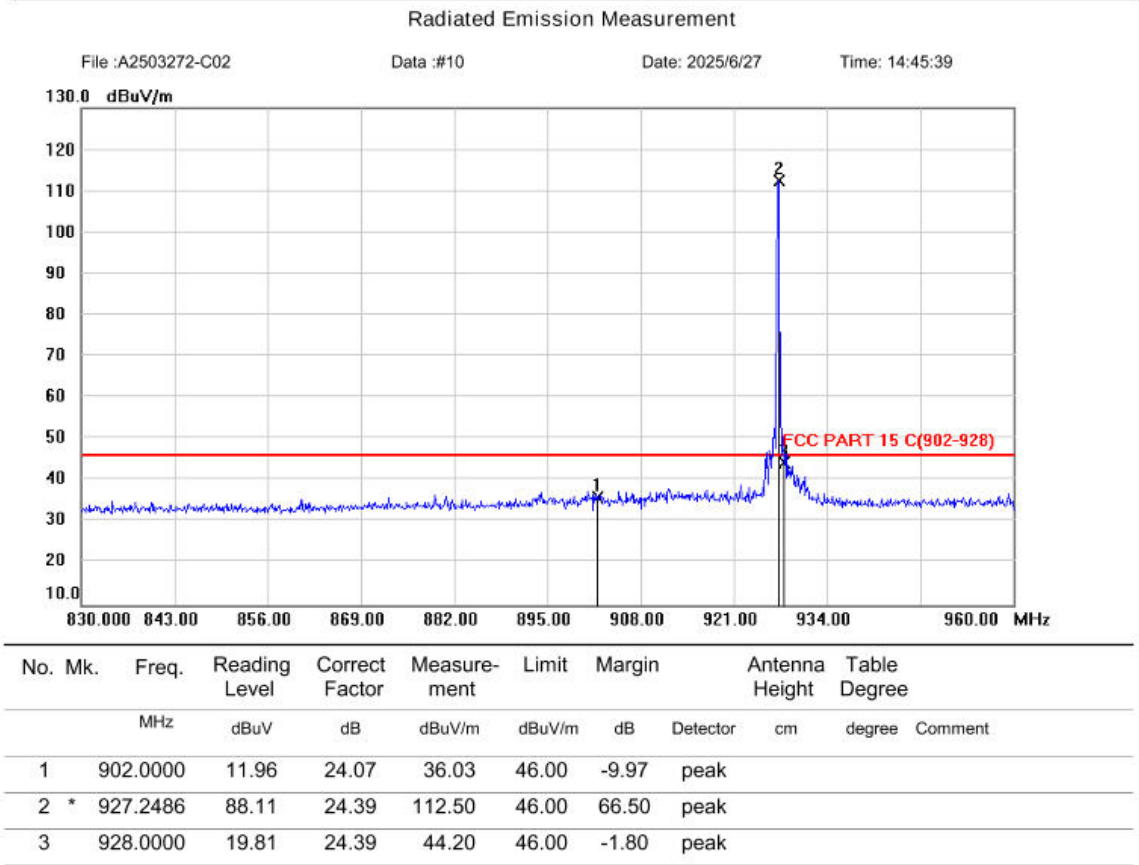
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Site LAB 966 Chamber 1	Polarization: Horizontal	Temperature: 22.5
Limit: FCC PART 15 C(902-928)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 927.25MHz		
Note: ANT1		
Engineer Signature:		



Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



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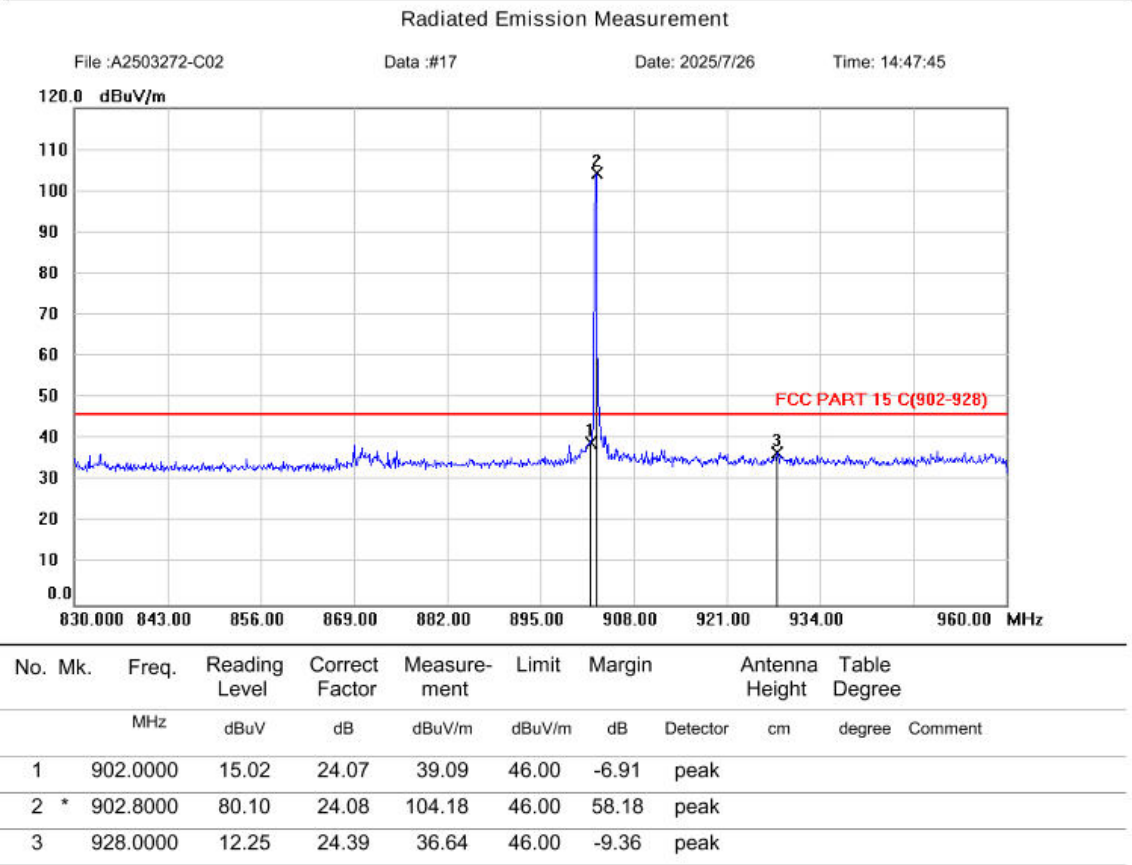
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Site LAB 966 Chamber 1	Polarization: Vertical	Temperature: 22.5
Limit: FCC PART 15 C(902-928)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 902.75MHz		
Note: ANT2		
Engineer Signature:		



Note:1. *:Maximum data; x:Over limit; !:over margin.
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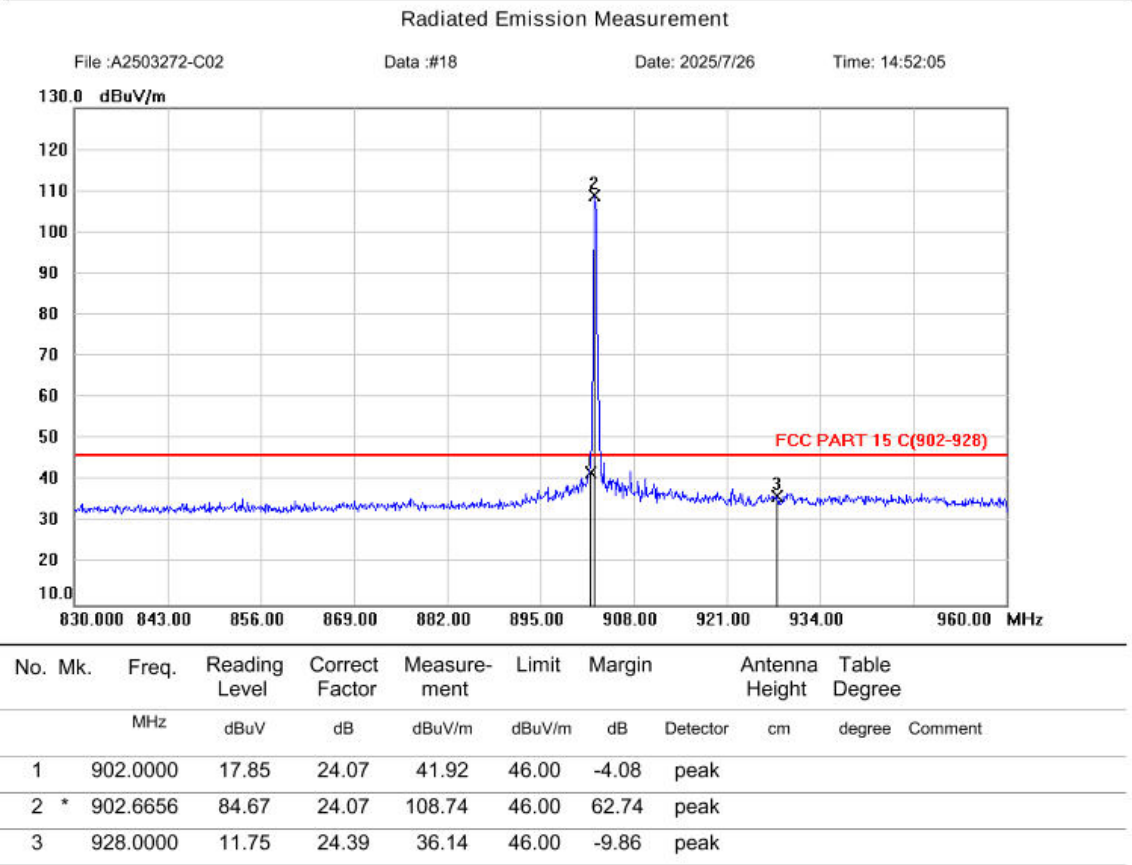
深圳阿尔法商品检验有限公司

Shenzhen Alpha Product Testing Co., Ltd

地址: ALPHA 深圳市宝安区福永街道立新路2号i栋

TEL:4008-3008-95

Site LAB 966 Chamber 1	Polarization: Horizontal	Temperature: 22.5
Limit: FCC PART 15 C(902-928)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 902.75MHz		
Note: ANT2		
Engineer Signature:		



Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



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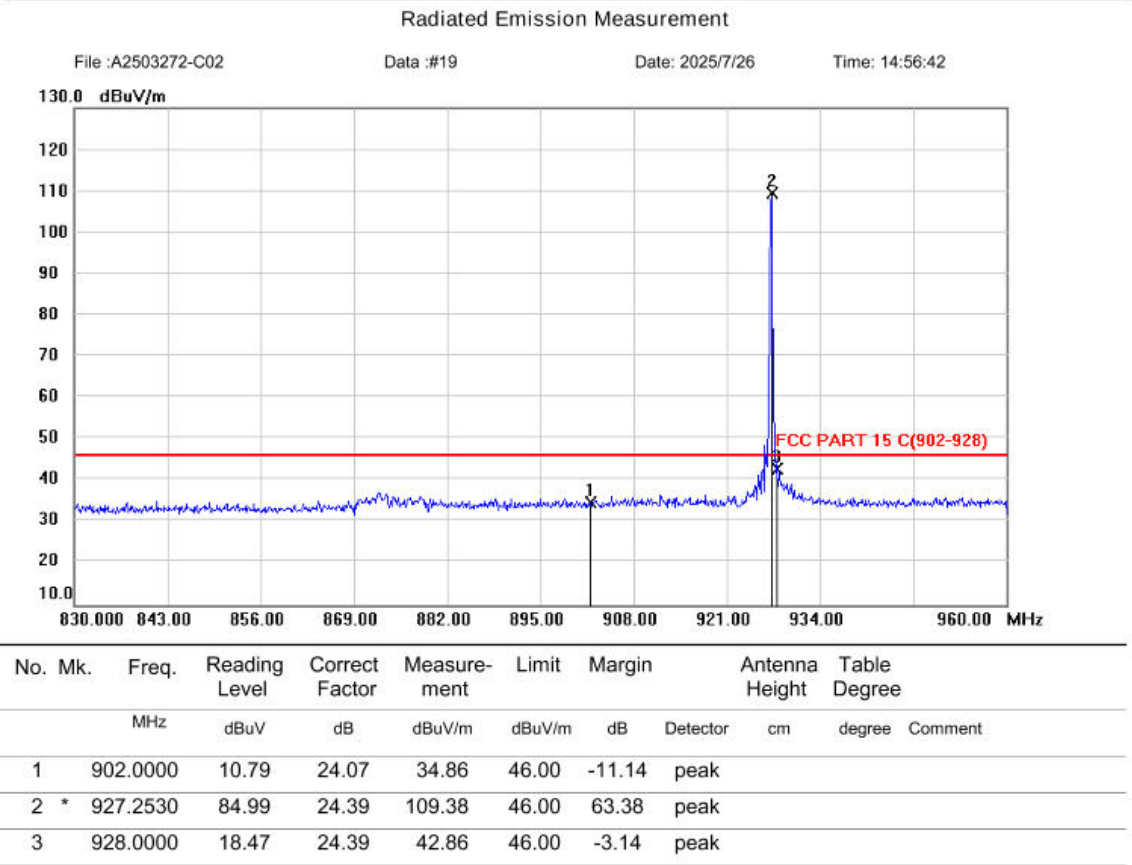
深圳阿尔法商品检验有限公司

Shenzhen Alpha Product Testing Co., Ltd

地址: ALPHA 深圳市宝安区福永街道立新路2号i栋

TEL:4008-3008-95

Site LAB 966 Chamber 1	Polarization: Vertical	Temperature: 22.5
Limit: FCC PART 15 C(902-928)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 927.25MHz		
Note: ANT2		
Engineer Signature:		



Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



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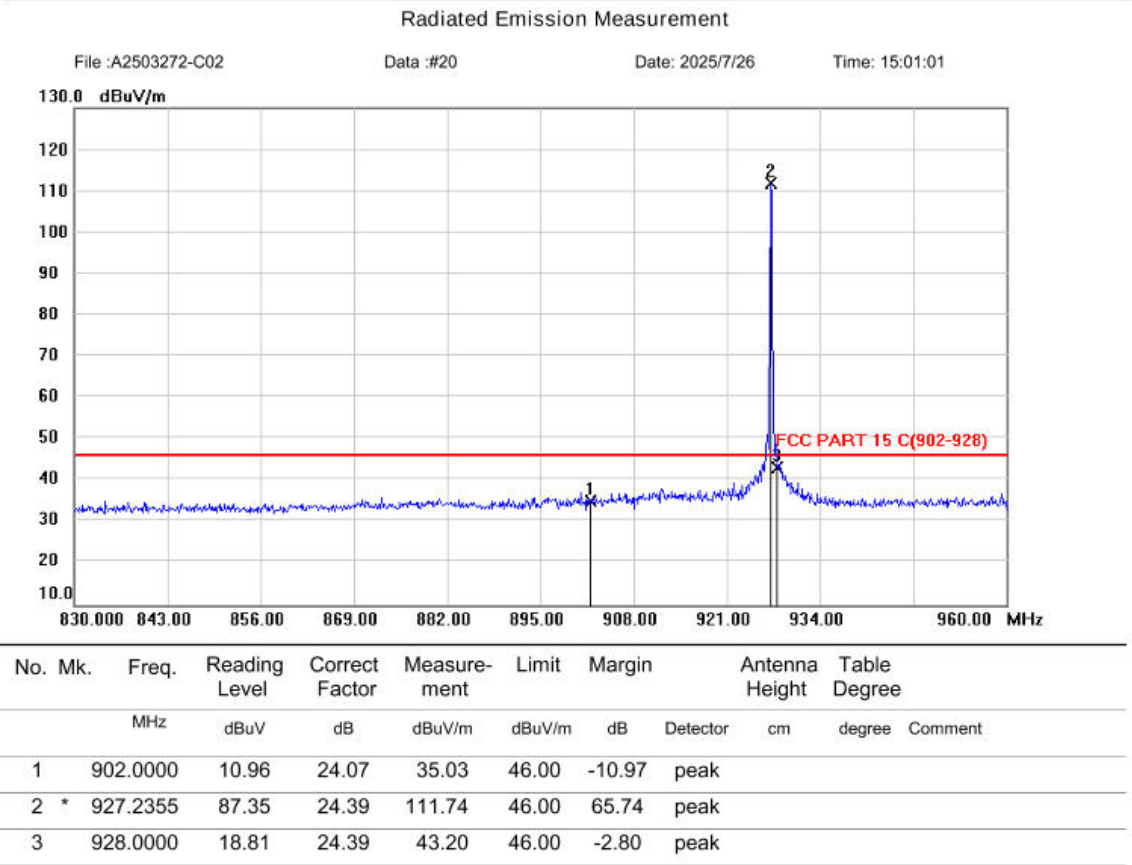
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地址: ALPHA 深圳市宝安区福永街道立新路2号i栋

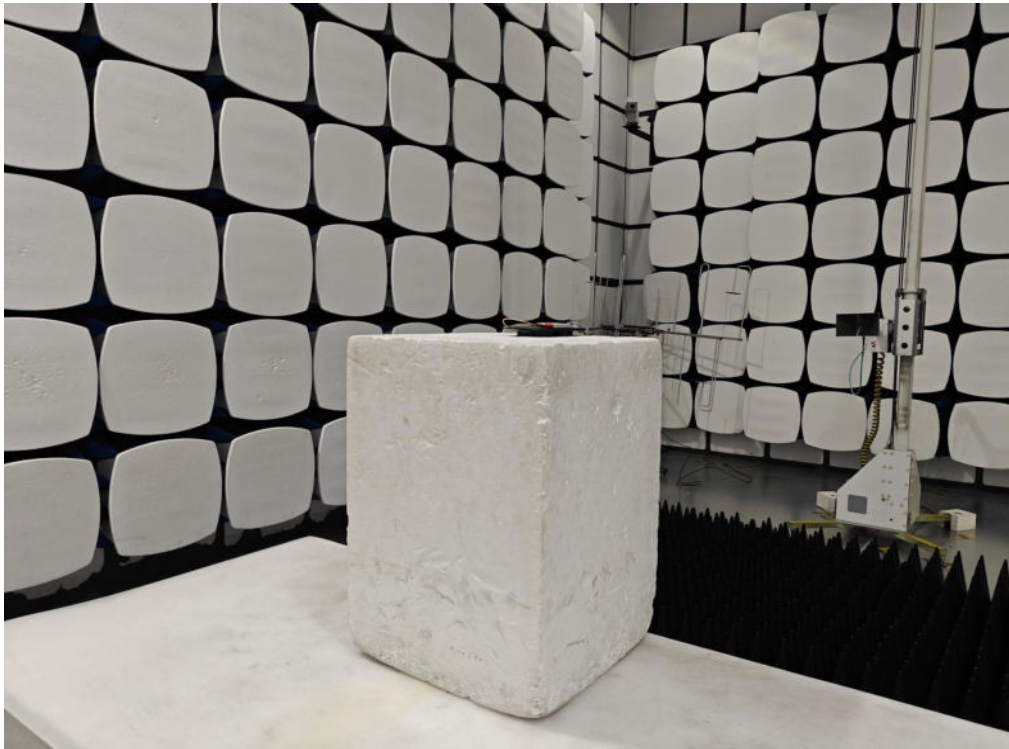
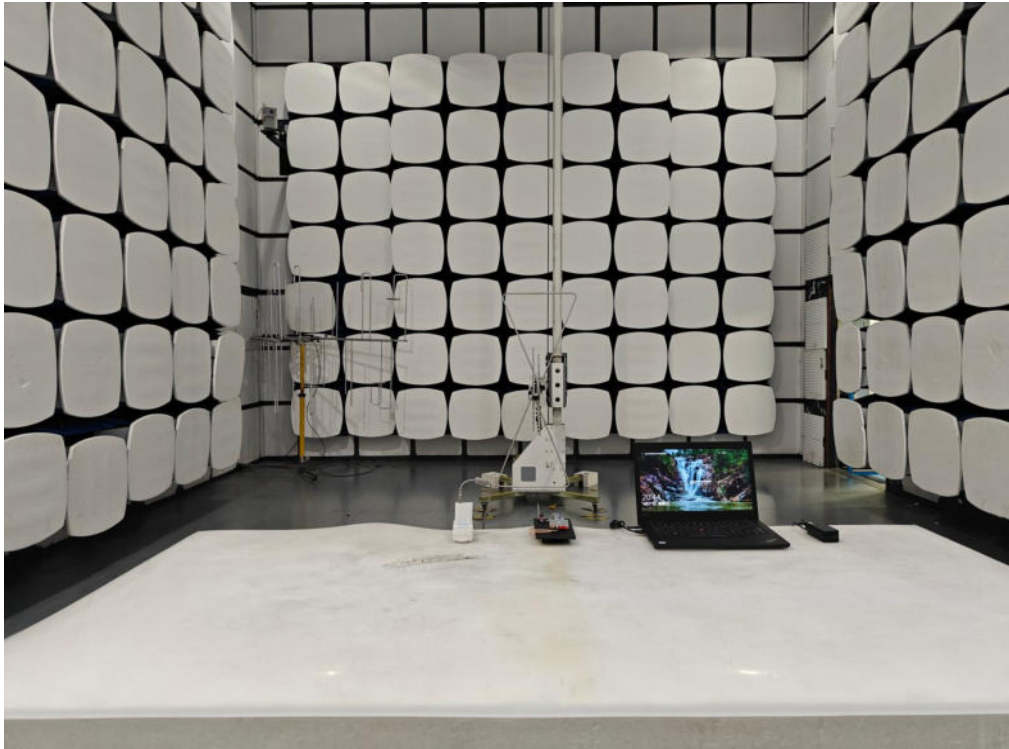
TEL:4008-3008-95

Site LAB 966 Chamber 1	Polarization: Horizontal	Temperature: 22.5
Limit: FCC PART 15 C(902-928)	Power: DC 5V From USB	Humidity: 55 %
EUT/Task No : A2503072-C02	Distance: 3m	
M/N/Sample No: A2503072-S0004		
Mode : GFSK 927.25MHz		
Note: ANT2		
Engineer Signature:		



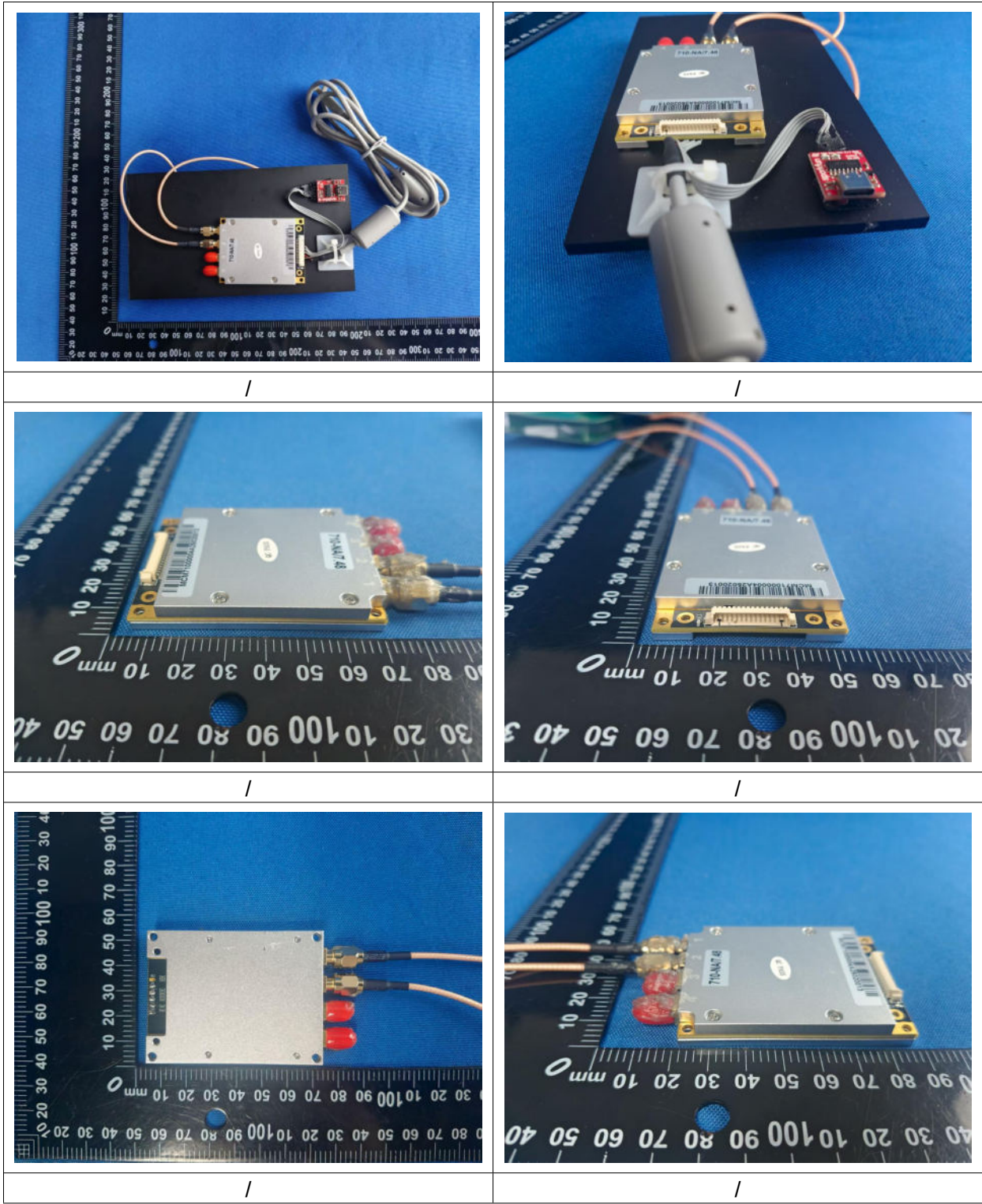
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2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

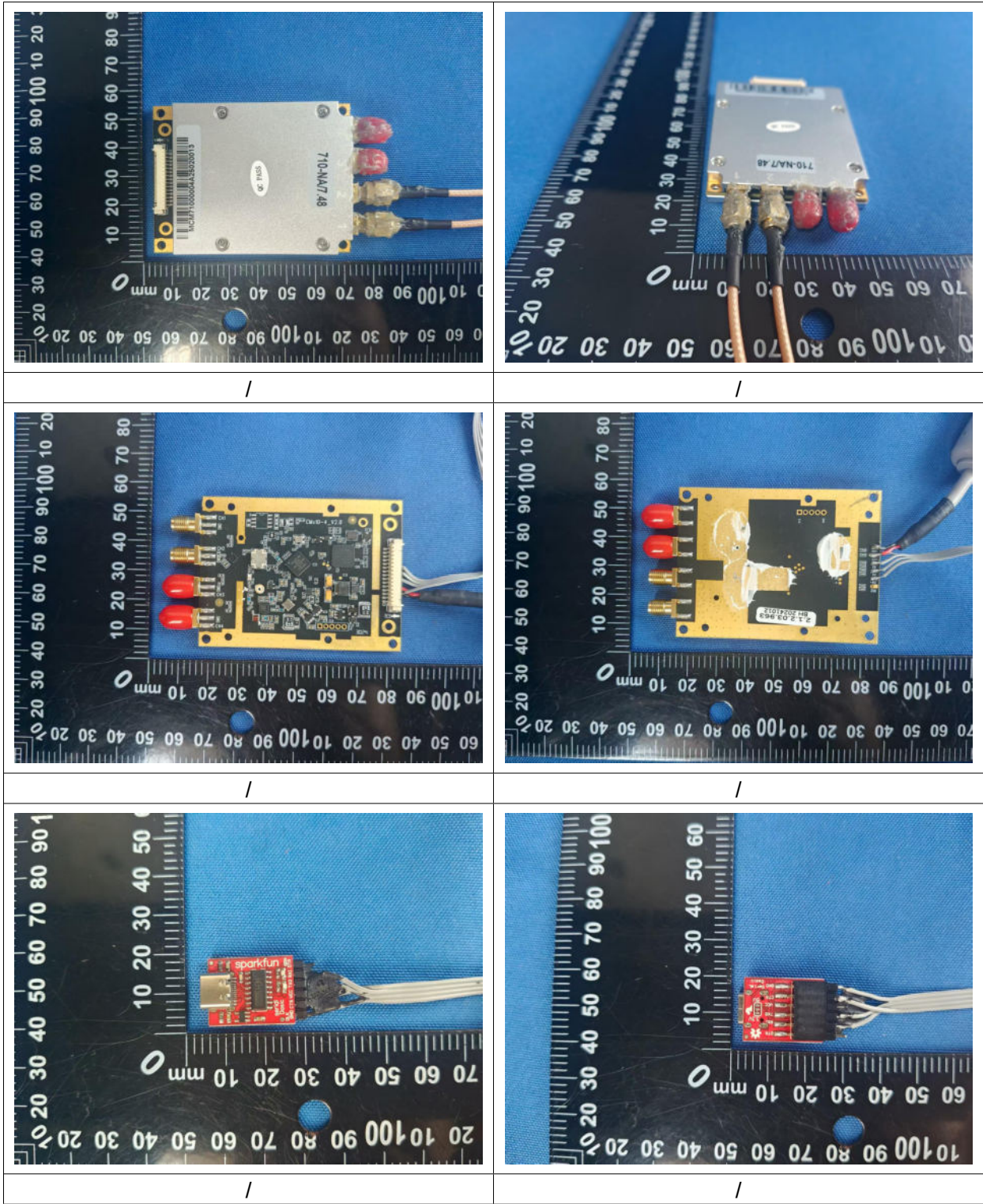
15. Test Setup Photograph

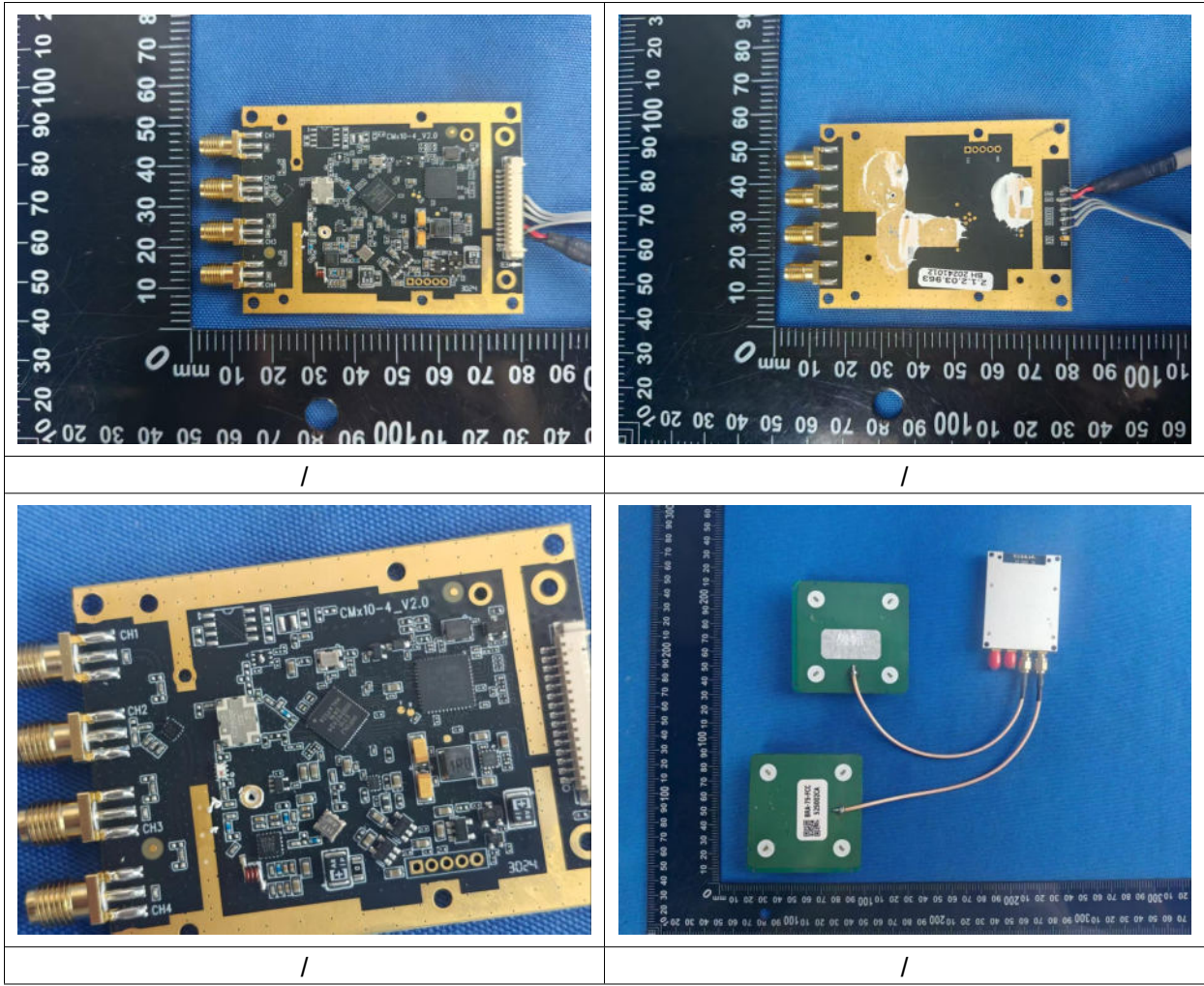




16. Photos of the EUT







-----End Report-----