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Figure 34: Number of Hopping Frequency, Hopping Mode, GFSK

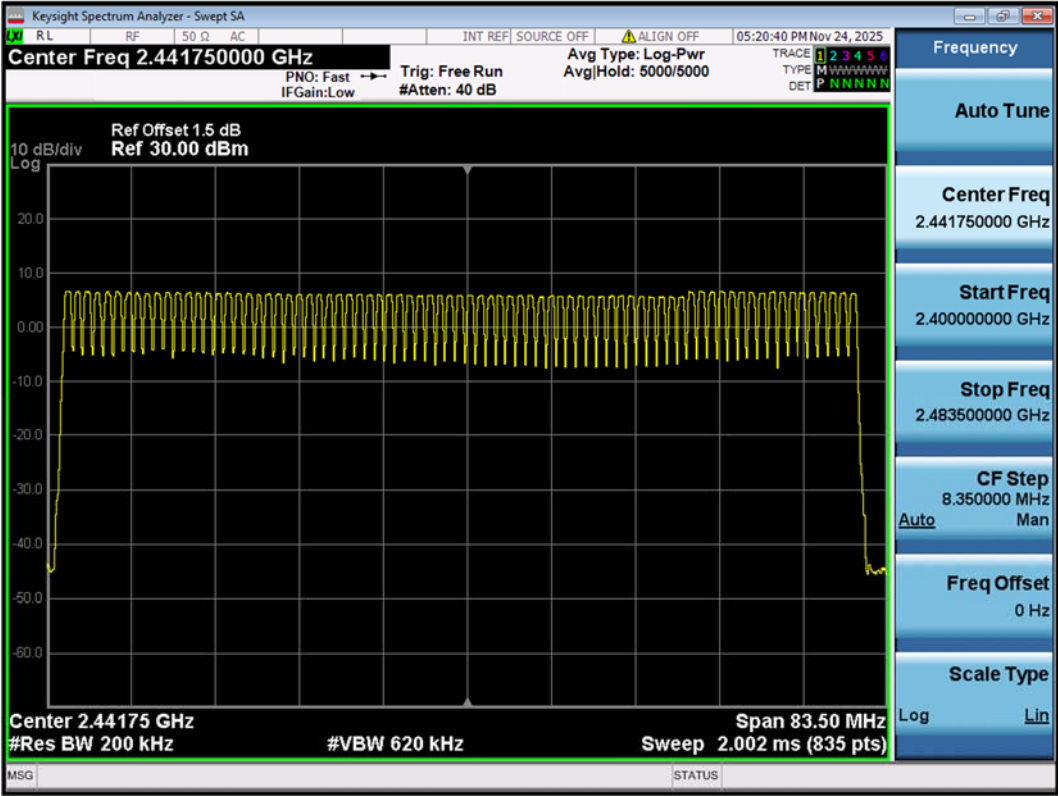
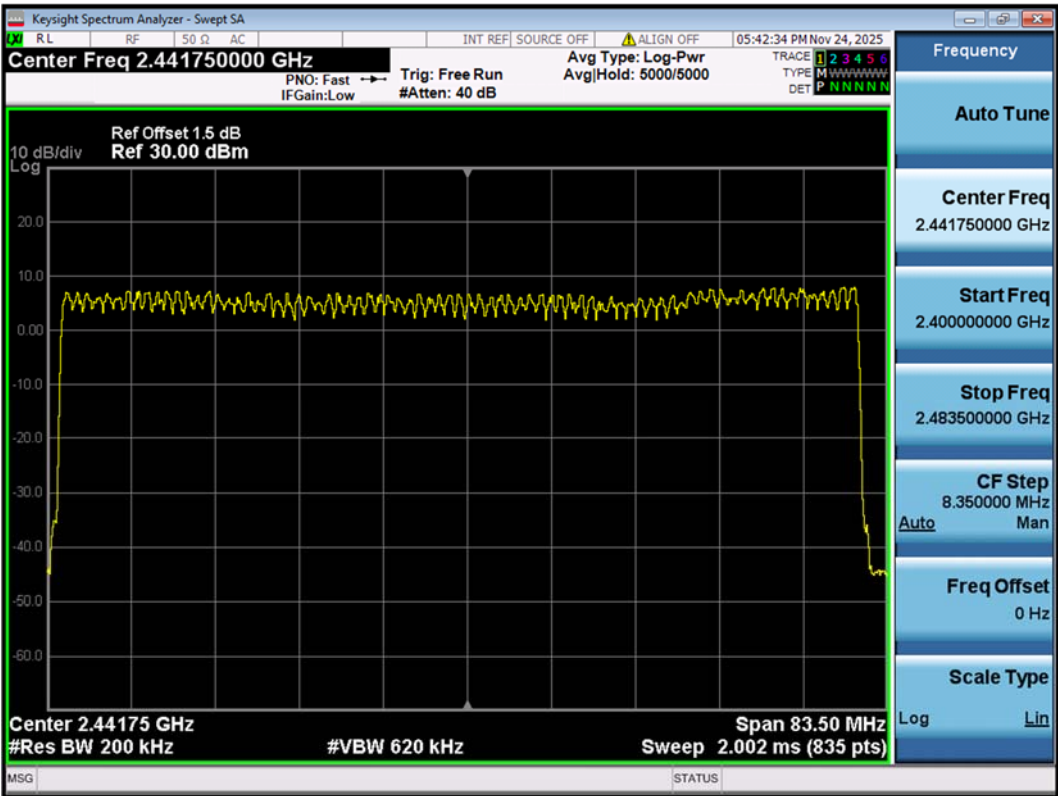


Figure 35: Number of Hopping Frequency, Hopping Mode, $\pi/4$ -DQPSK



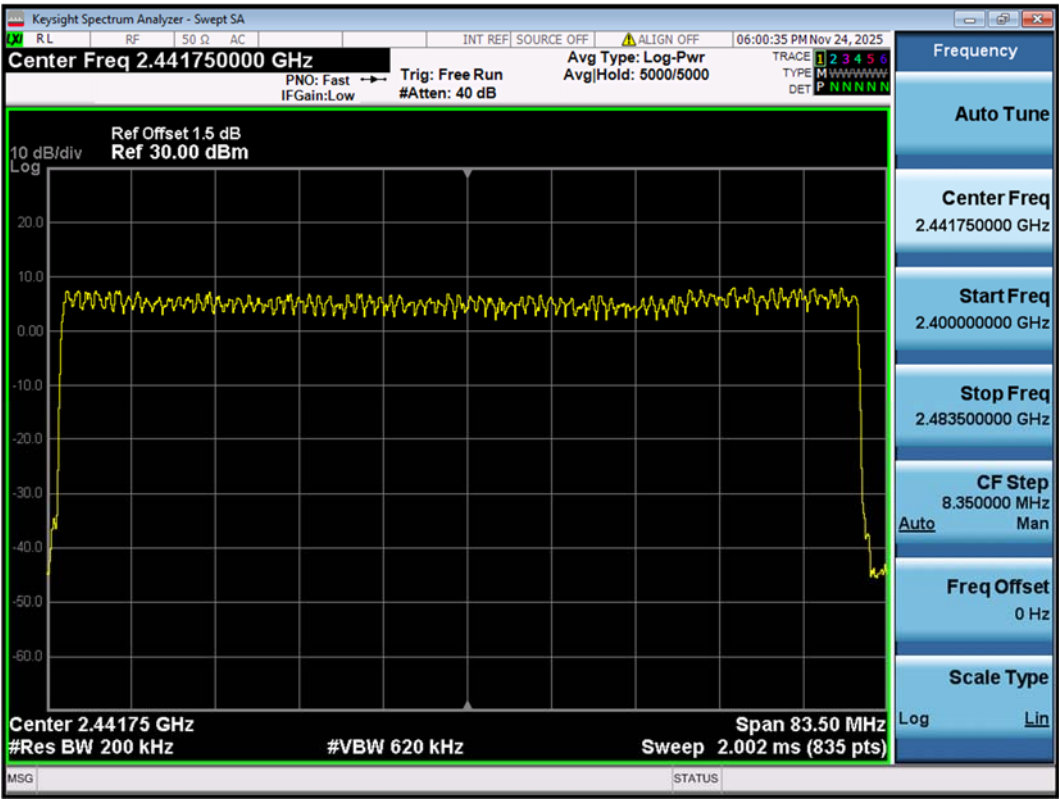
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Figure 36: Number of Hopping Frequency, Hopping Mode, 8-DPSK



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4.1.9 Time of Occupancy

RESULT:

PASS

Test standard : FCC Part 15.247(a)(1)(iii)
Requirement : ANSI C63.10-2020, Clause 7.8.4
KDB 558074 D01 v05r02, Clause 2.2
Kind of test site : Shielded room

Test setup

Test Channel : Middle
Operation Mode : A.1.a
Ambient temperature : 22.2°C
Relative humidity : 32%

Table 5: Time of Occupancy

Mode	Packet Type	Pulse Time (ms)	Total of Dwell Time (ms)	Total of Dwell Time (s)	Limit (s)
GFSK	DH1	0.3867	123.744	0.1237	0.4
	DH3	1.6400	262.400	0.2624	0.4
	DH5	2.8780	306.987	0.3070	0.4
$\pi/4$ -DQPSK	DH1	0.3783	121.056	0.1211	0.4
	DH3	1.6320	261.120	0.2611	0.4
	DH5	2.8770	306.880	0.3069	0.4
8-DPSK	DH1	0.3867	123.744	0.1237	0.4
	DH3	1.6380	262.080	0.2621	0.4
	DH5	2.8780	306.987	0.3070	0.4

Note:

For DH1 package type:

Total of Dwell = Pulse Time*(1600/2)/Number of Hopping Frequency*Period

Period = 0.4* Number of Hopping Frequency

For DH3 package type:

Total of Dwell = Pulse Time*(1600/4)/Number of Hopping Frequency*Period

Period = 0.4* Number of Hopping Frequency

For DH5 package type:

Total of Dwell = Pulse Time*(1600/6)/Number of Hopping Frequency*Period

Period = 0.4* Number of Hopping Frequency

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Figure 37: Time of Occupancy, 2441MHz, GFSK DH1

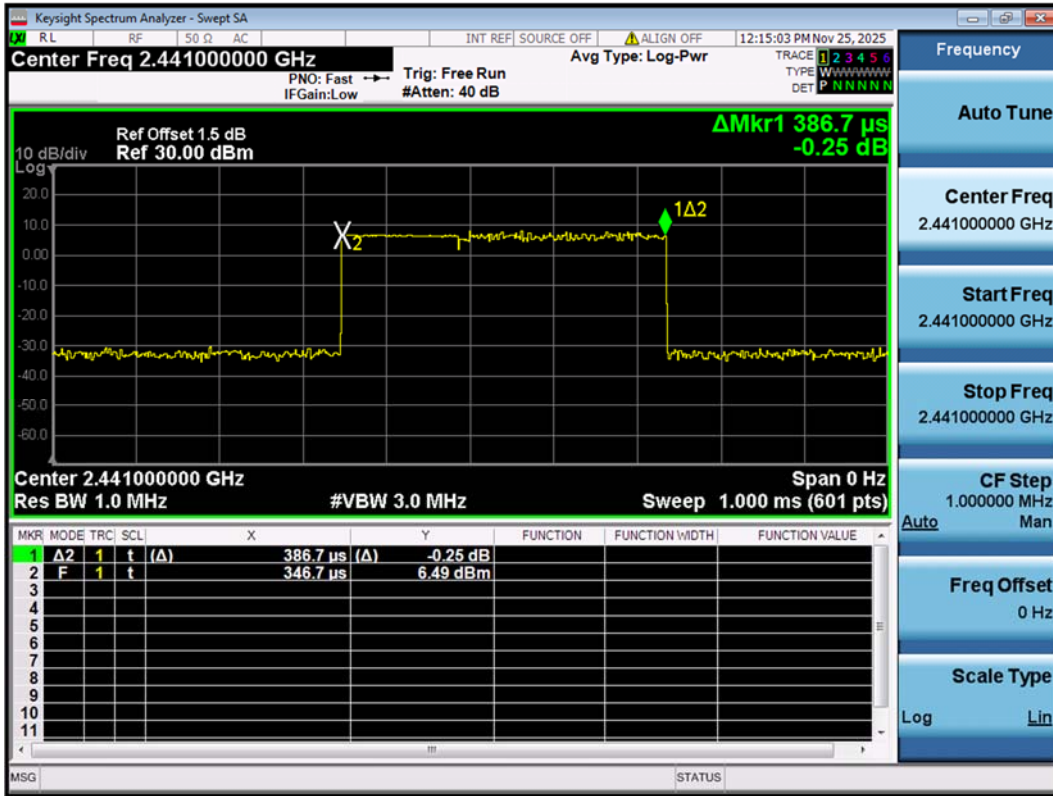
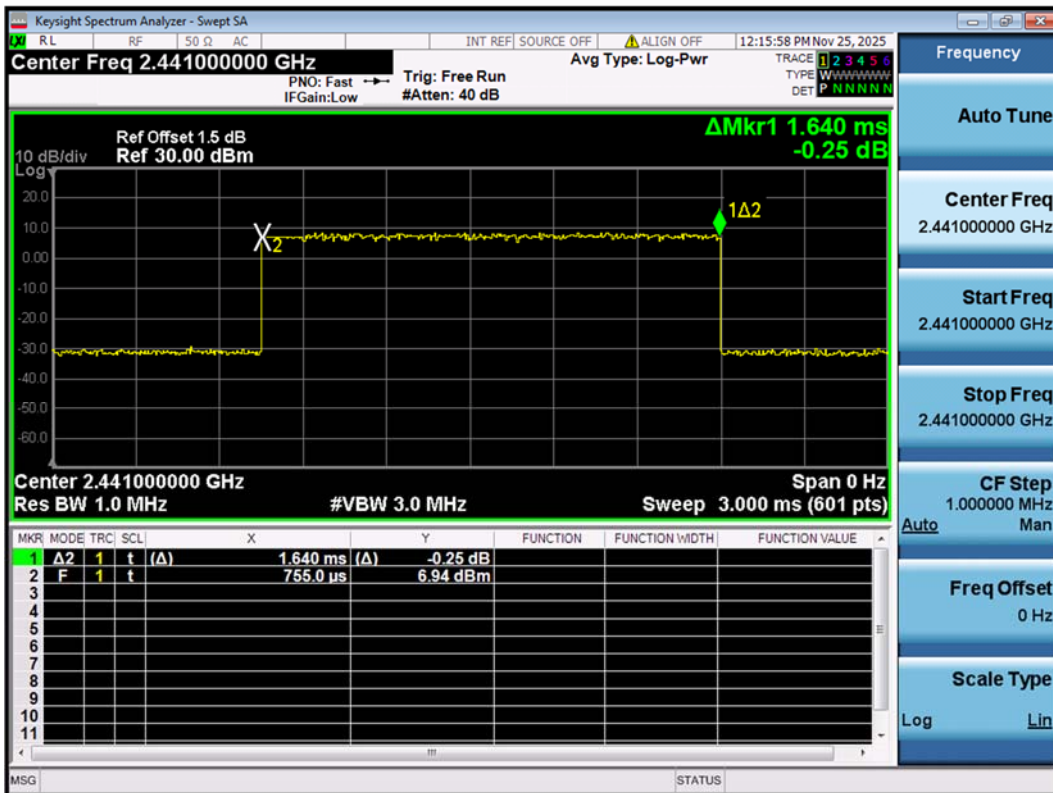


Figure 38: Time of Occupancy, 2441MHz, GFSK DH3



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Figure 39: Time of Occupancy, 2441MHz, GFSK DH5

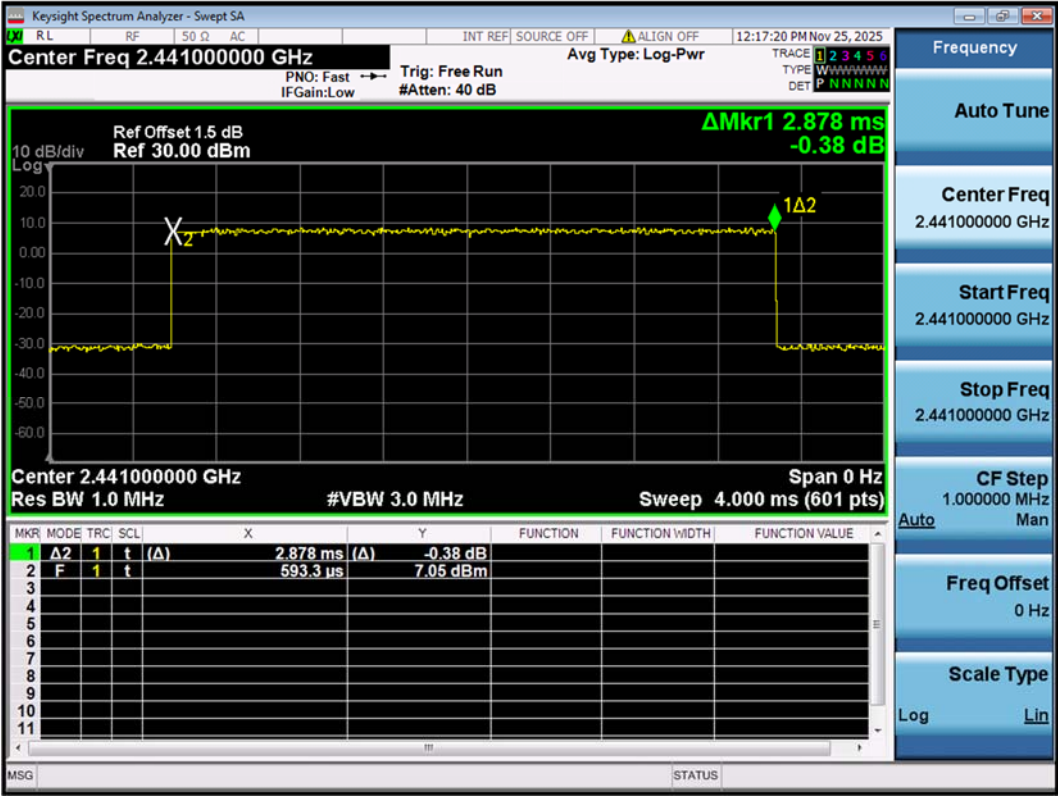
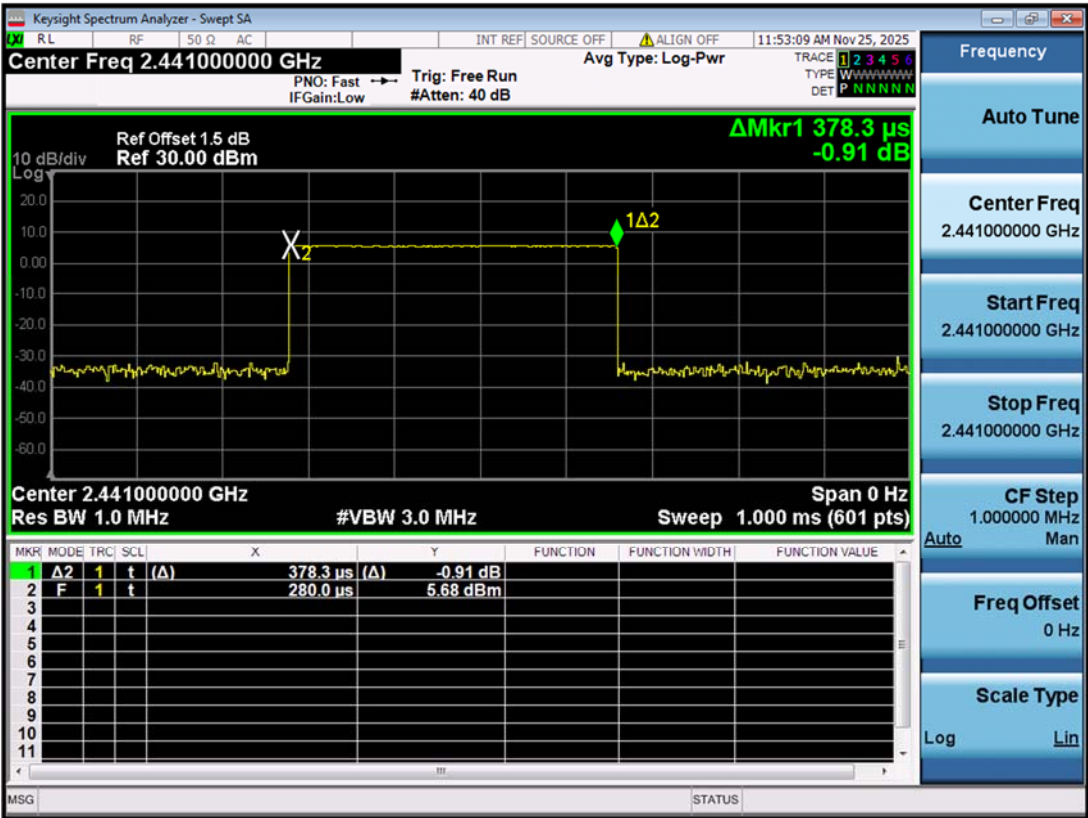


Figure 40: Time of Occupancy, 2441MHz, $\pi/4$ -DQPSK DH1



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Figure 41: Time of Occupancy, 2441MHz, π /4-DQPSK DH3

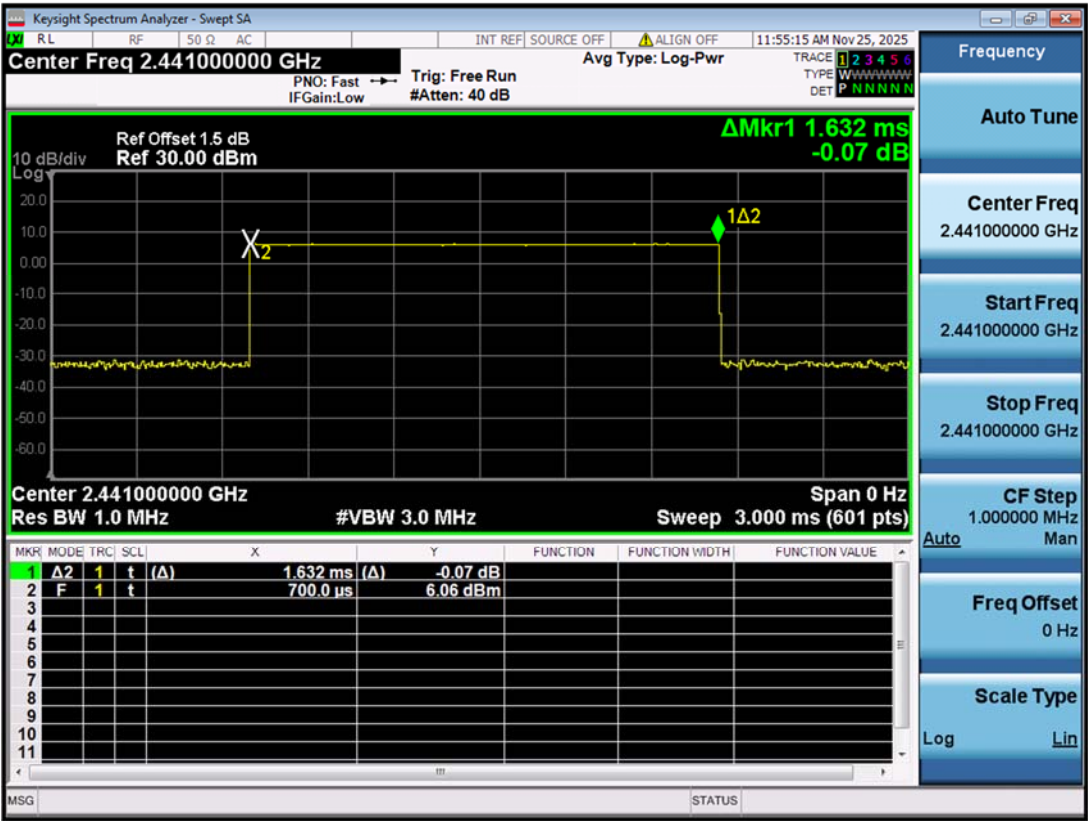
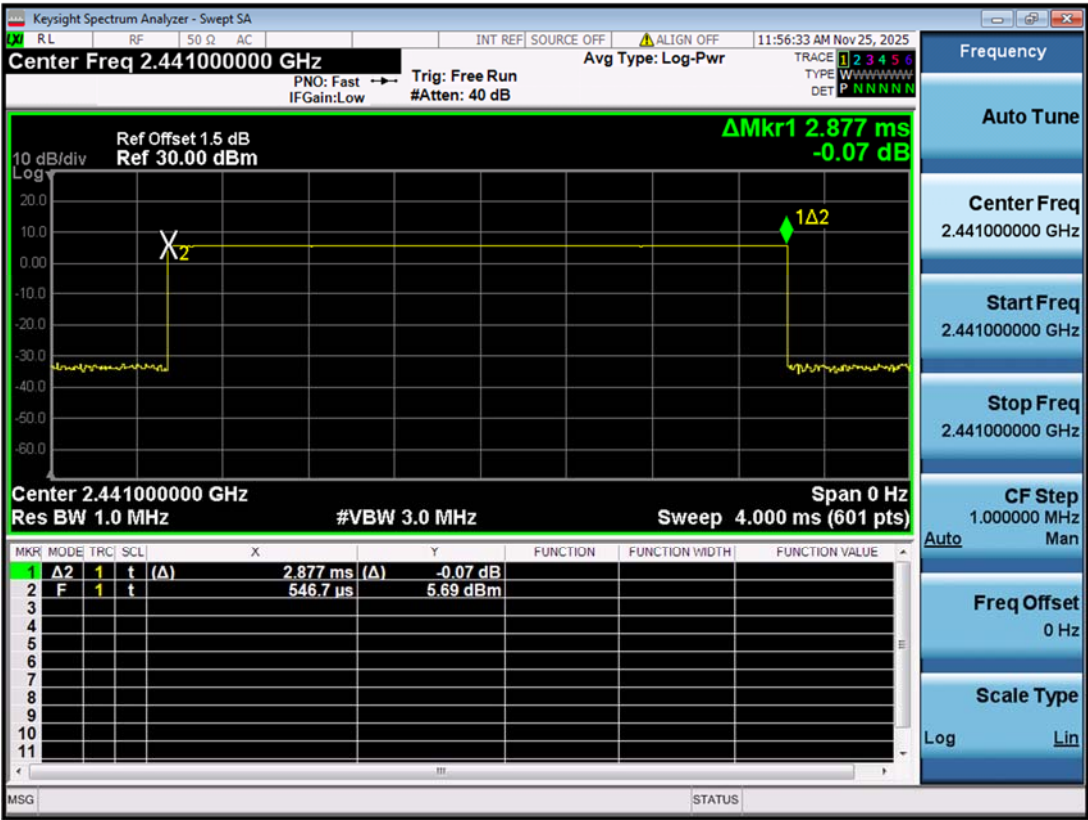


Figure 42: Time of Occupancy, 2441MHz, π /4-DQPSK DH5



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Figure 43: Time of Occupancy, 2441MHz, 8-DPSK DH1

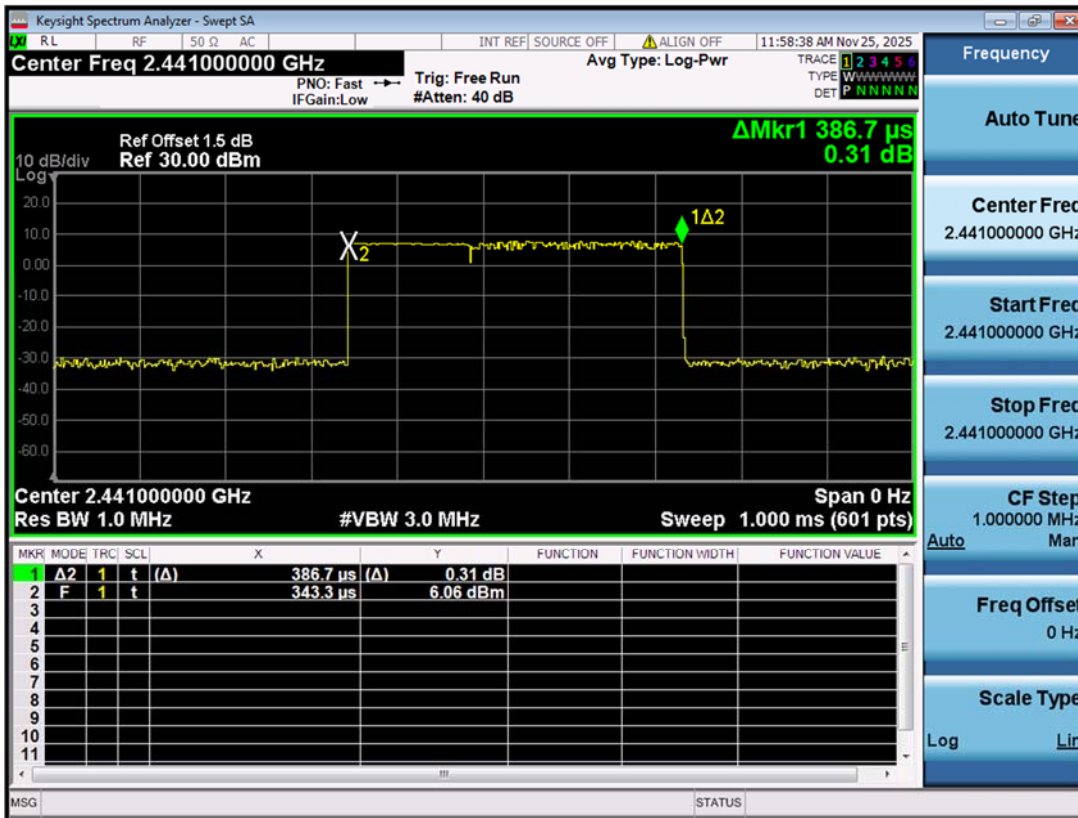
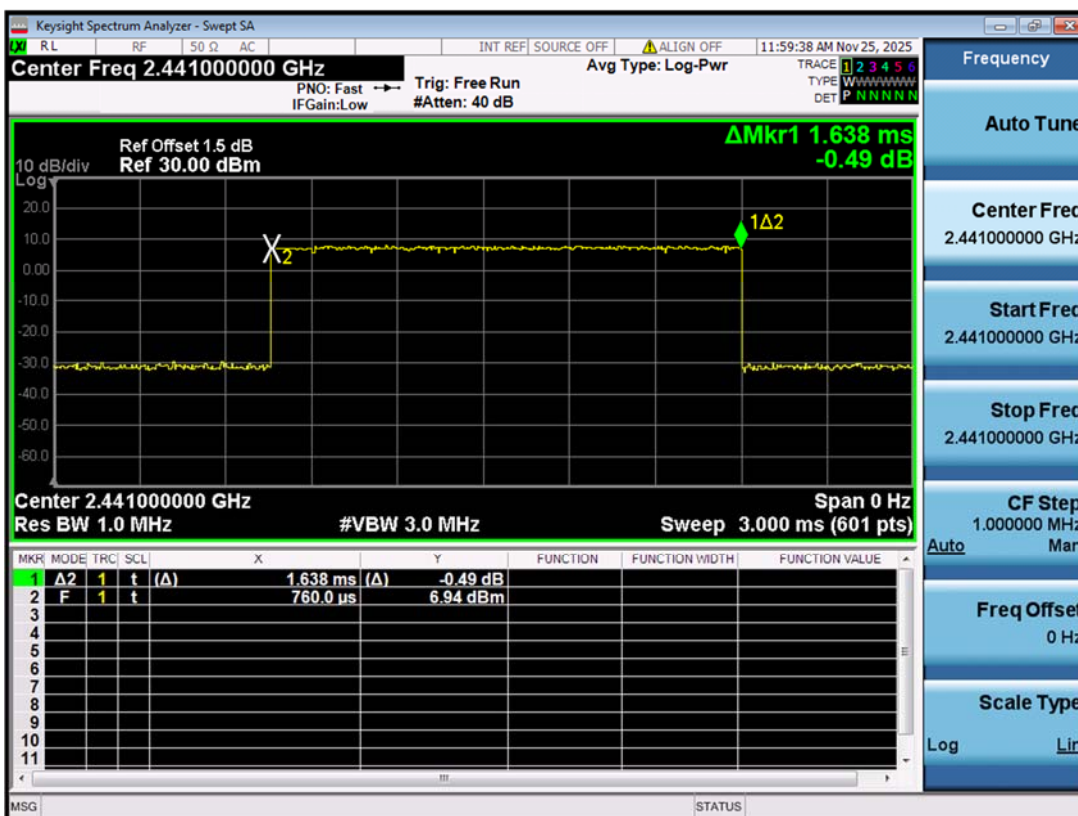


Figure 44: Time of Occupancy, 2441MHz, 8-DPSK DH3



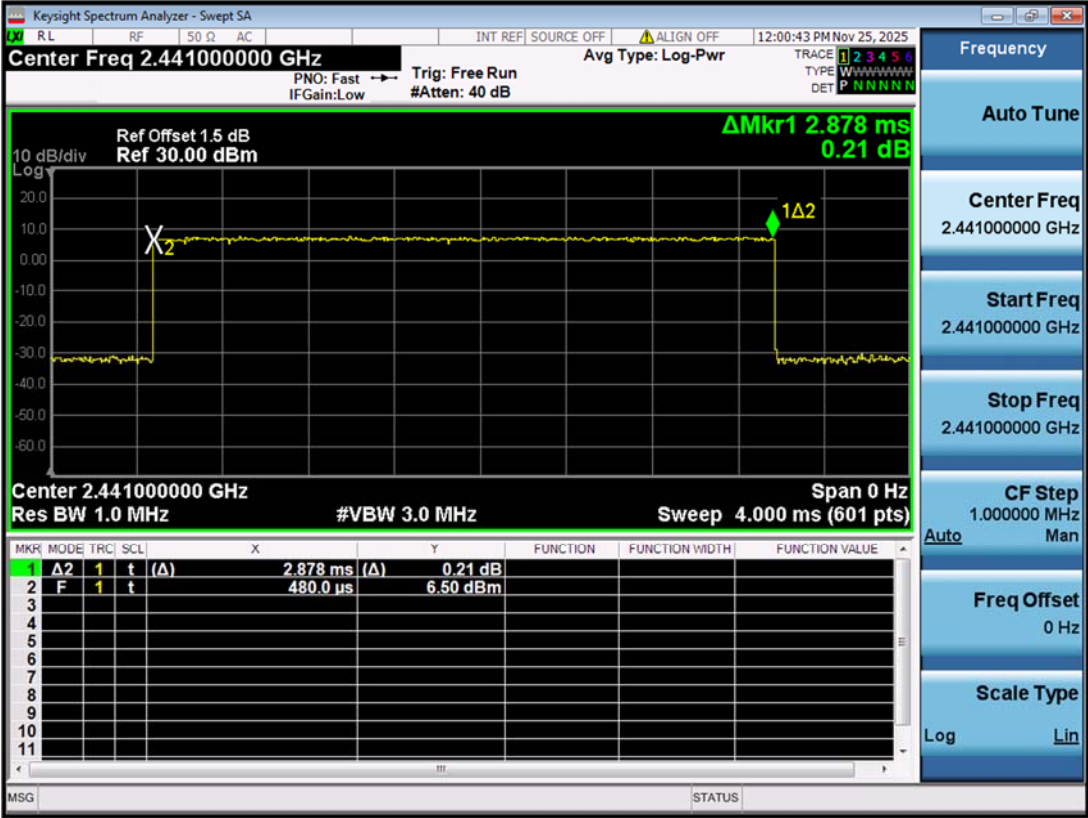
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Figure 45: Time of Occupancy, 2441MHz, 8-DPSK DH5



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4.2 Mains Emissions

4.2.1 Conducted Emission on AC Mains

RESULT: **PASS**

Test standard	: FCC Part 15.207(a)
Requirement	: ANSI C63.10-2020, Clause 6.2
Kind of test site	: Shielded room

Test setup

Input Voltage	: DC 33.6V 5A supply by Power Unit (which received AC 120V, 60Hz)
Operation Mode	: A.1.a
Earthing	: Disconnected to GND
Ambient temperature	: 23.2°C
Relative humidity	: 47%

For details refer to following test plot.

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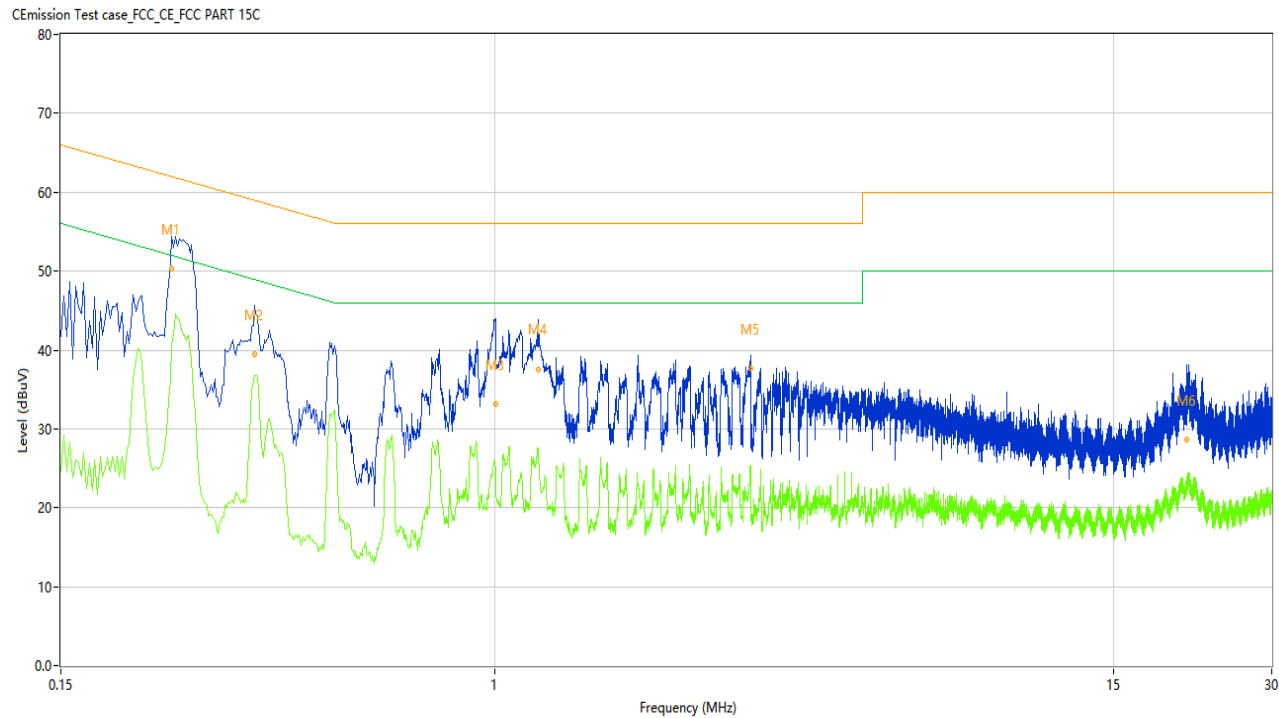
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Note: The all configurations were tested respectively, Only the worst mode data of 8DPSK-hopping-DH5 was recorded in the test report.

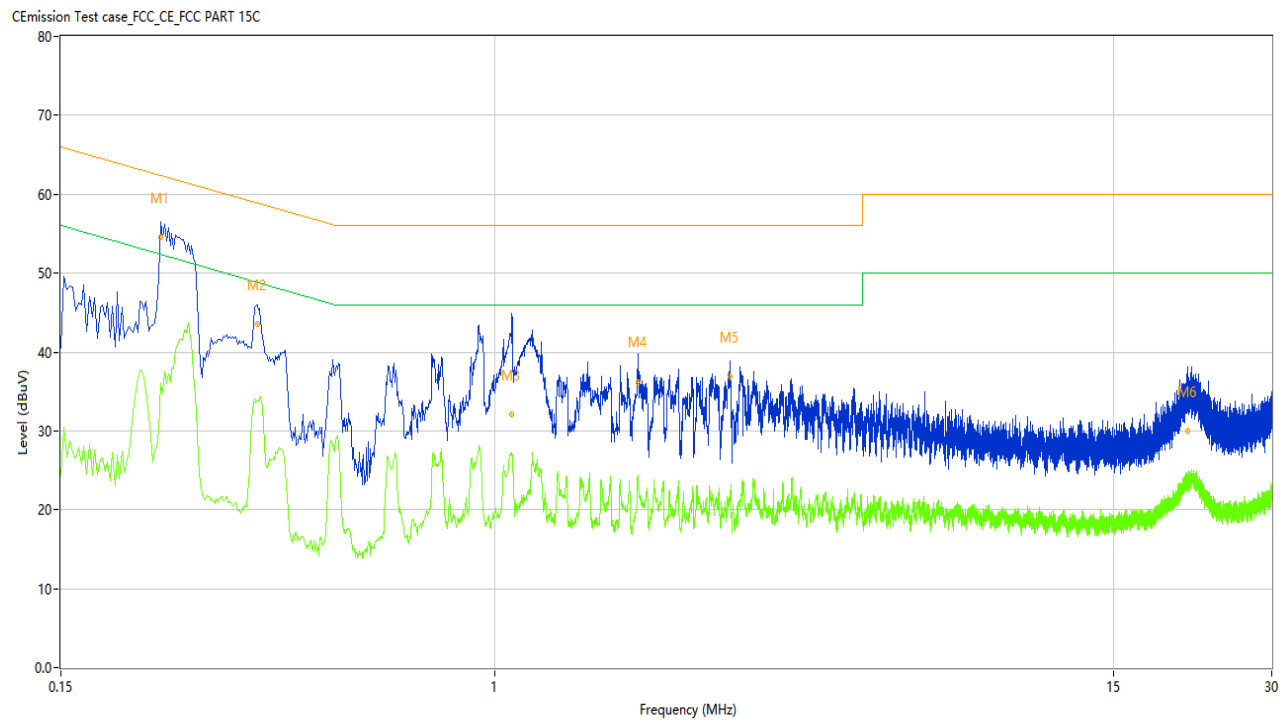
Figure 46: Conducted Emission on AC Mains, L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.244	53.95	10.19	61.96	8.01	Peak	L	Pass
1*	0.244	50.30	10.19	61.96	11.66	QP	L	Pass
1**	0.244	40.61	10.19	51.96	11.35	AV	L	Pass
2	0.350	42.27	10.23	58.96	16.69	Peak	L	Pass
2*	0.350	39.51	10.23	58.96	19.45	QP	L	Pass
2**	0.350	36.81	10.23	48.96	12.15	AV	L	Pass
3	1.004	38.10	9.96	56.00	17.90	Peak	L	Pass
3*	1.004	33.16	9.96	56.00	22.84	QP	L	Pass
3**	1.004	25.02	9.96	46.00	20.98	AV	L	Pass
4	1.210	41.72	10.00	56.00	14.28	Peak	L	Pass
4*	1.210	37.53	10.00	56.00	18.47	QP	L	Pass
4**	1.210	27.60	10.00	46.00	18.40	AV	L	Pass
5	3.064	40.84	10.10	56.00	15.16	Peak	L	Pass
5*	3.064	37.71	10.10	56.00	18.29	QP	L	Pass
5**	3.064	25.26	10.10	46.00	20.74	AV	L	Pass
6	20.700	35.09	10.84	60.00	24.91	Peak	L	Pass
6*	20.700	28.56	10.84	60.00	31.44	QP	L	Pass
6**	20.700	23.27	10.84	50.00	26.73	AV	L	Pass

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Figure 47: Conducted Emission on AC Mains, N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.232	56.69	10.16	62.38	5.69	Peak	N	Pass
1*	0.232	54.52	10.16	62.38	7.86	QP	N	Pass
1**	0.232	36.02	10.16	52.38	16.36	AV	N	Pass
2	0.354	47.16	10.12	58.87	11.71	Peak	N	Pass
2*	0.354	43.53	10.12	58.87	15.34	QP	N	Pass
2**	0.354	33.97	10.12	48.87	14.90	AV	N	Pass
3	1.080	38.45	9.84	56.00	17.55	Peak	N	Pass
3*	1.080	32.06	9.84	56.00	23.94	QP	N	Pass
3**	1.080	27.20	9.84	46.00	18.80	AV	N	Pass
4	1.878	39.34	9.99	56.00	16.66	Peak	N	Pass
4*	1.878	36.14	9.99	56.00	19.86	QP	N	Pass
4**	1.878	22.94	9.99	46.00	23.06	AV	N	Pass
5	2.804	39.33	10.09	56.00	16.67	Peak	N	Pass
5*	2.804	36.94	10.09	56.00	19.06	QP	N	Pass
5**	2.804	21.93	10.09	46.00	24.07	AV	N	Pass
6	20.794	36.75	10.85	60.00	23.25	Peak	N	Pass
6*	20.794	29.98	10.85	60.00	30.02	QP	N	Pass
6**	20.794	24.42	10.85	50.00	25.58	AV	N	Pass

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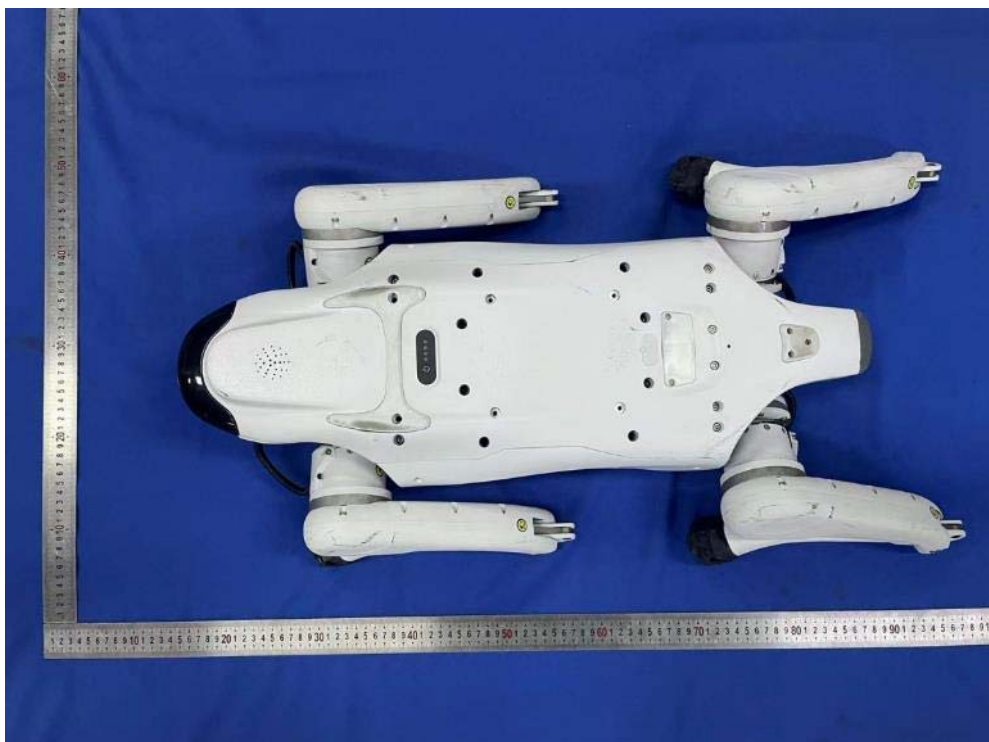
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5 Appendixes

5.1 Externa Photo of the Sample



All of the sample



Top of the sample

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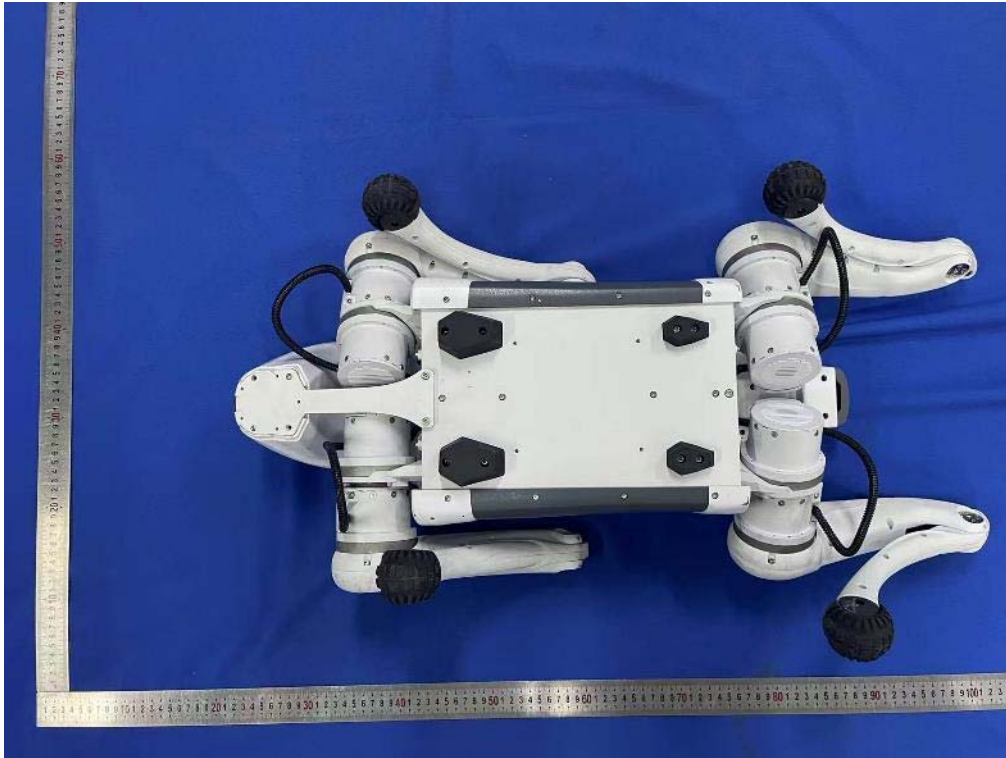
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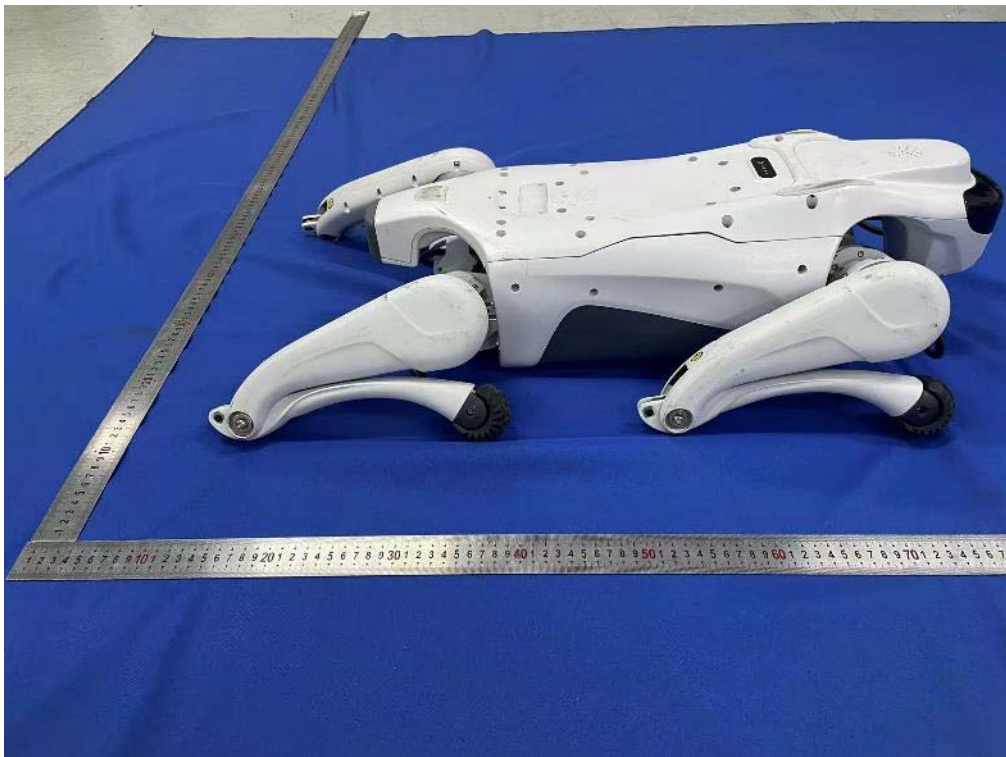
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Bottom of the sample



Left of the sample

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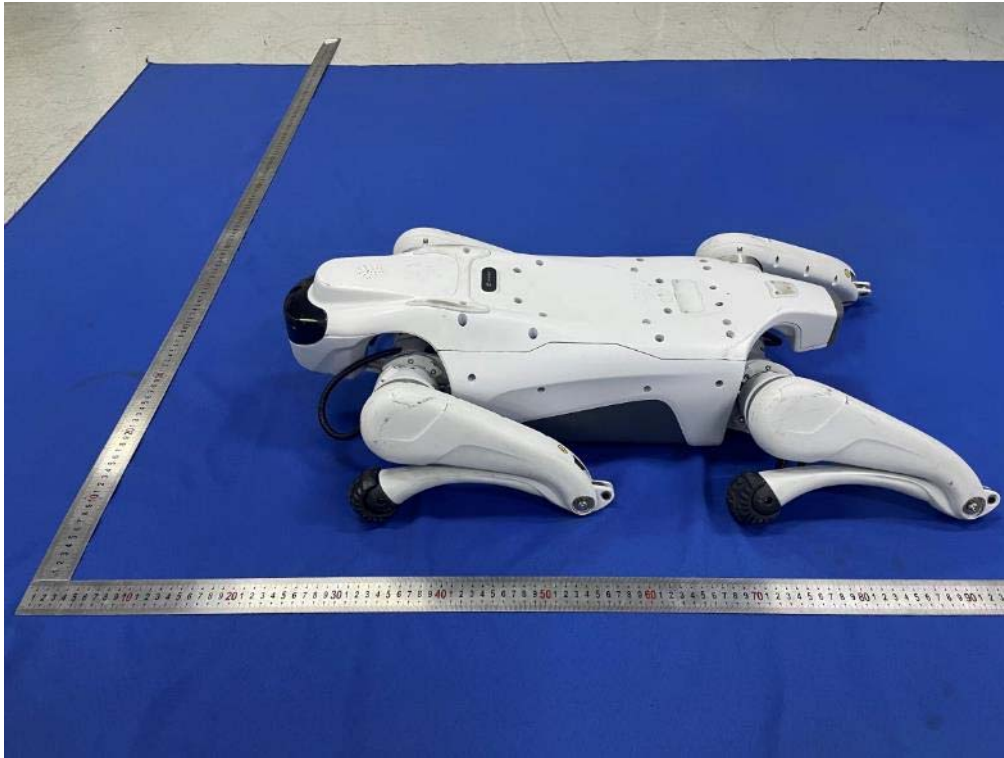
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Right of the sample



Front of the sample

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Back of the sample



Port of the sample

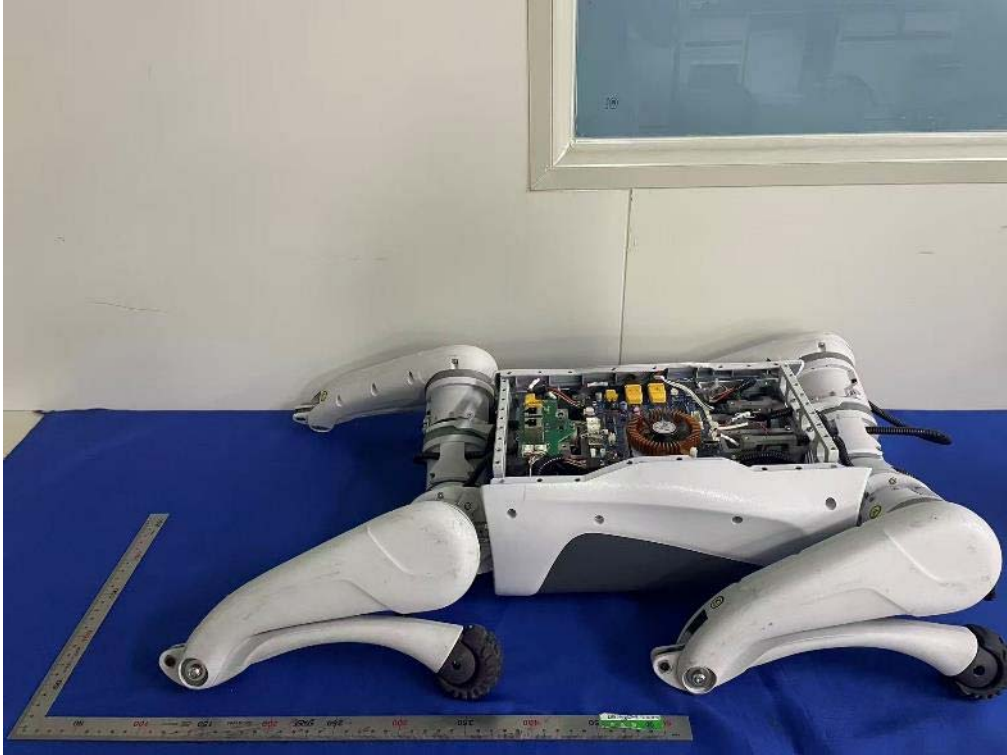
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5.2 Internal Photo of the Sample



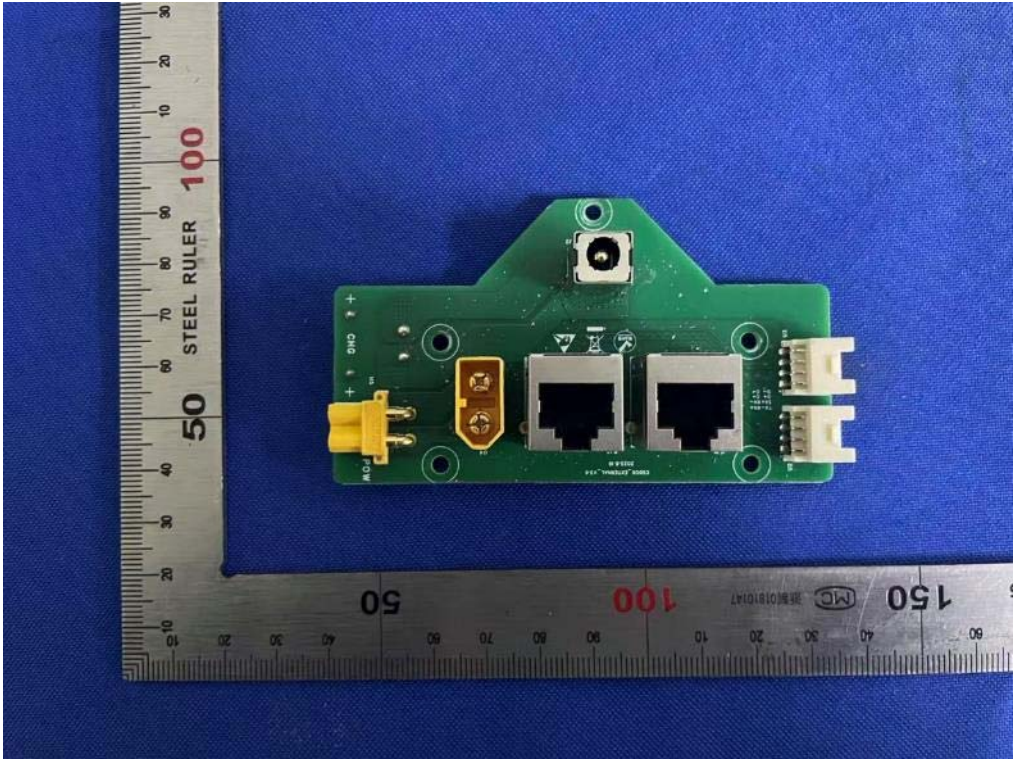
Open-1 of the sample



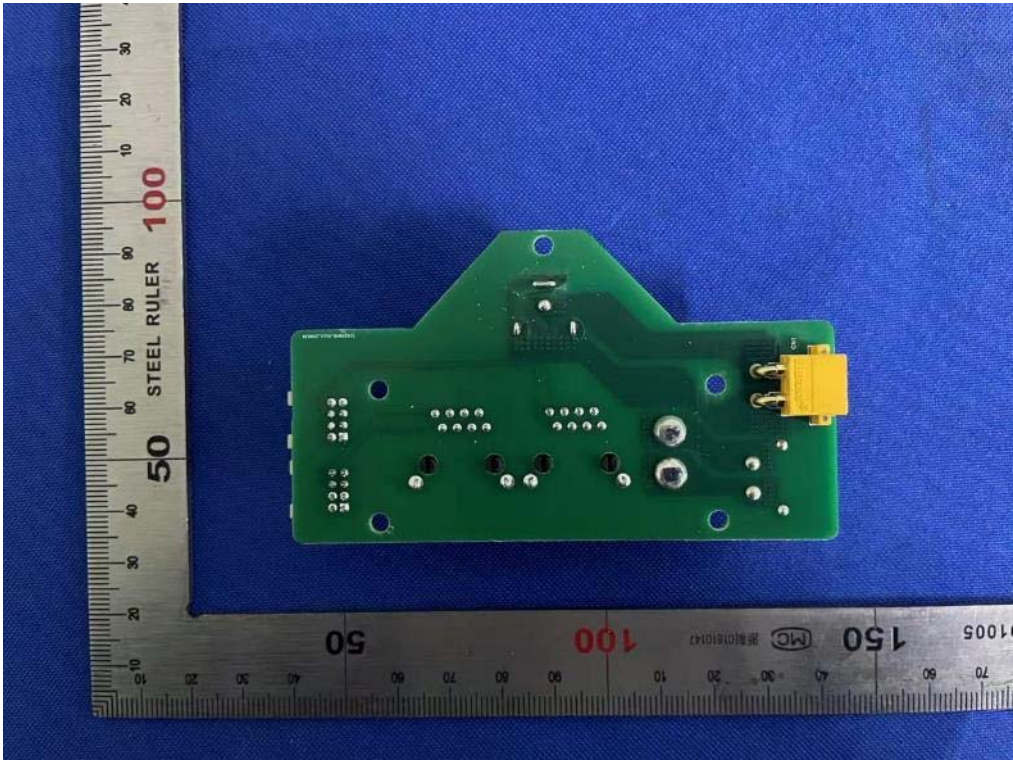
Open-2 of the sample

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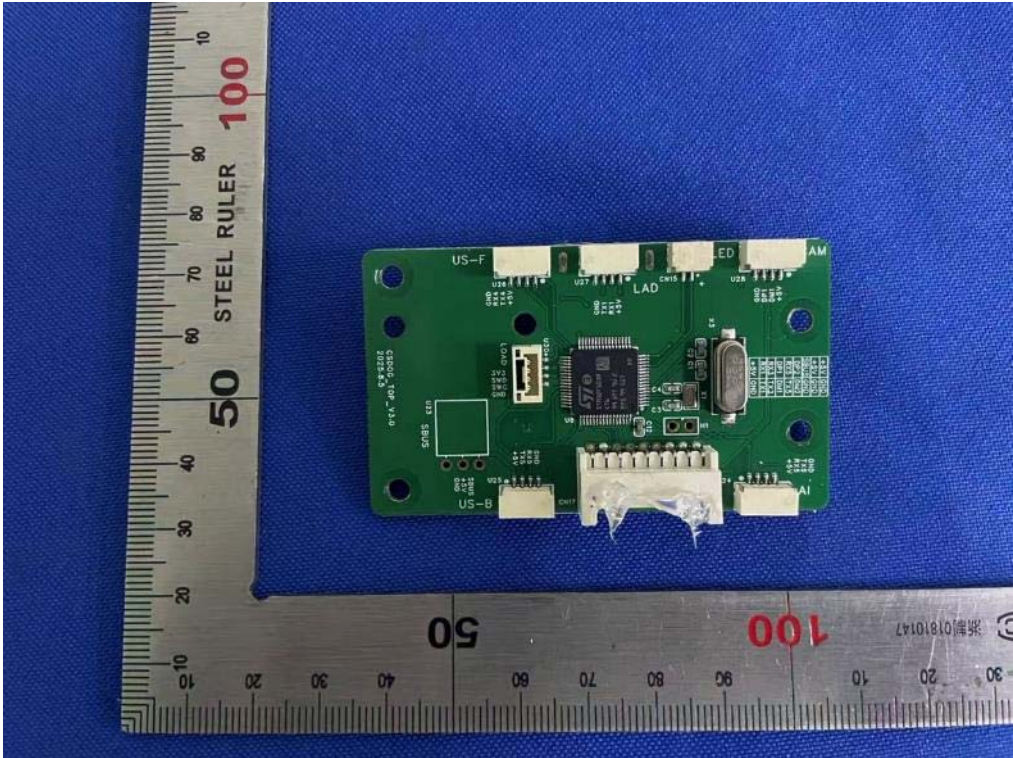


Internal-1 of the sample

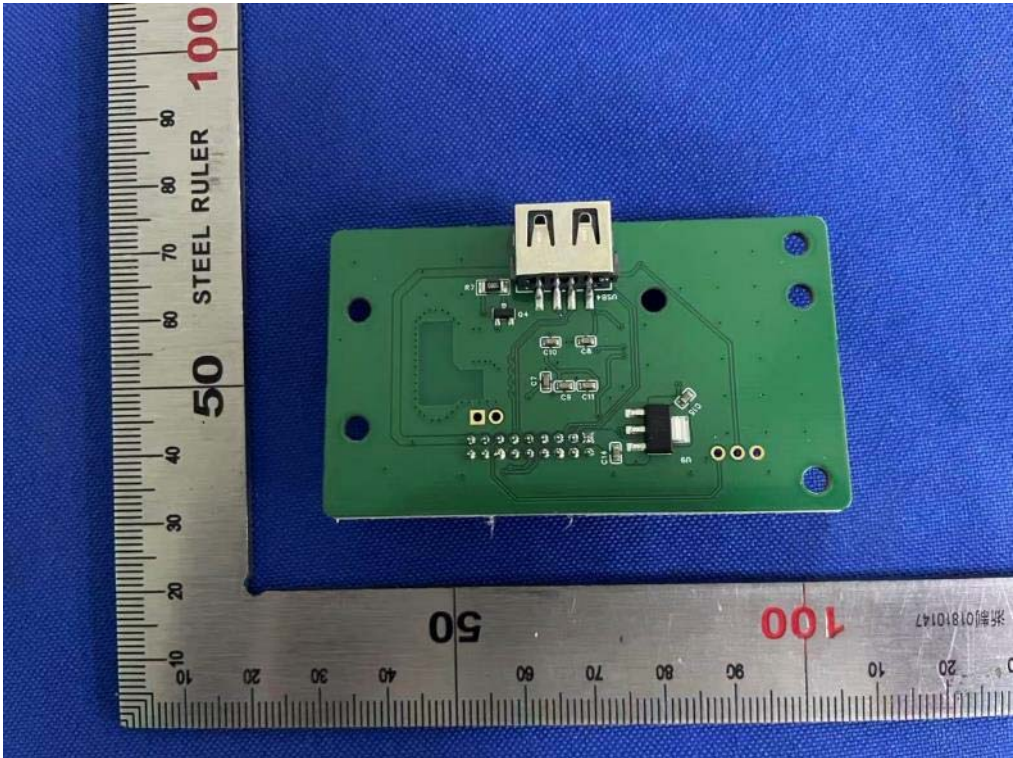


Internal-2 of the sample

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Internal-3 of the sample



Internal-4 of the sample

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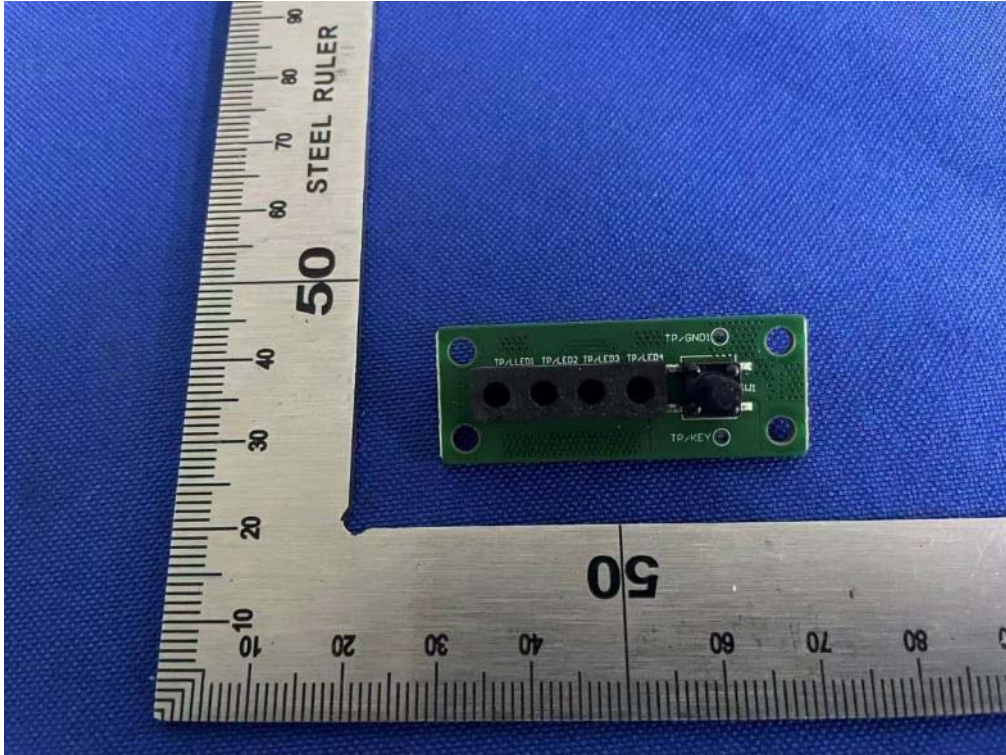
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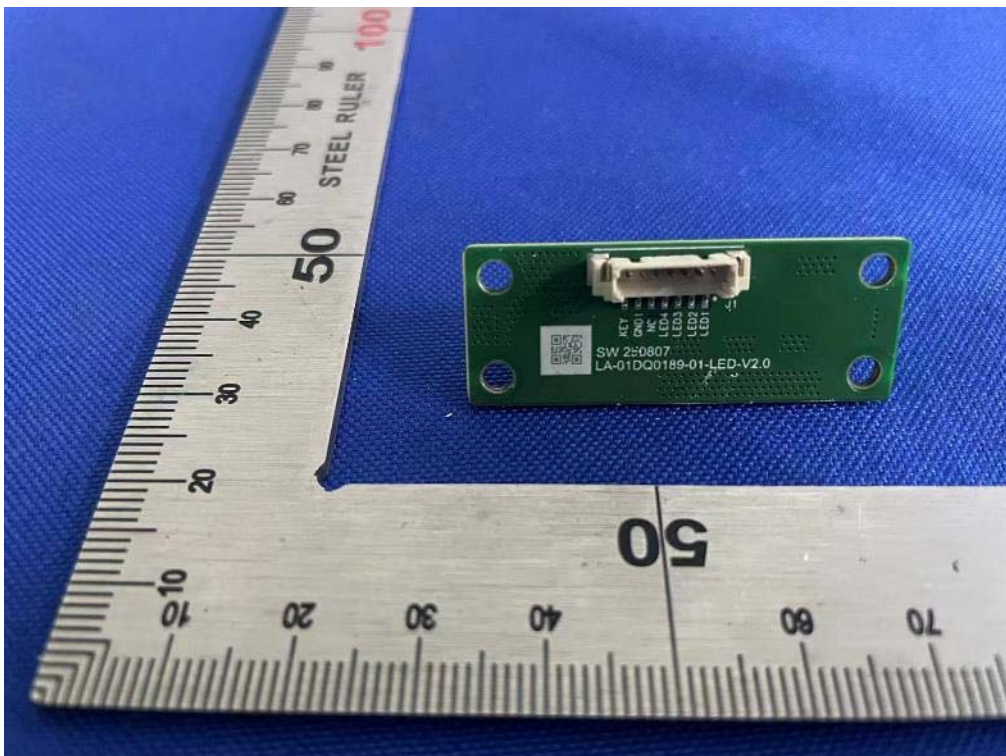
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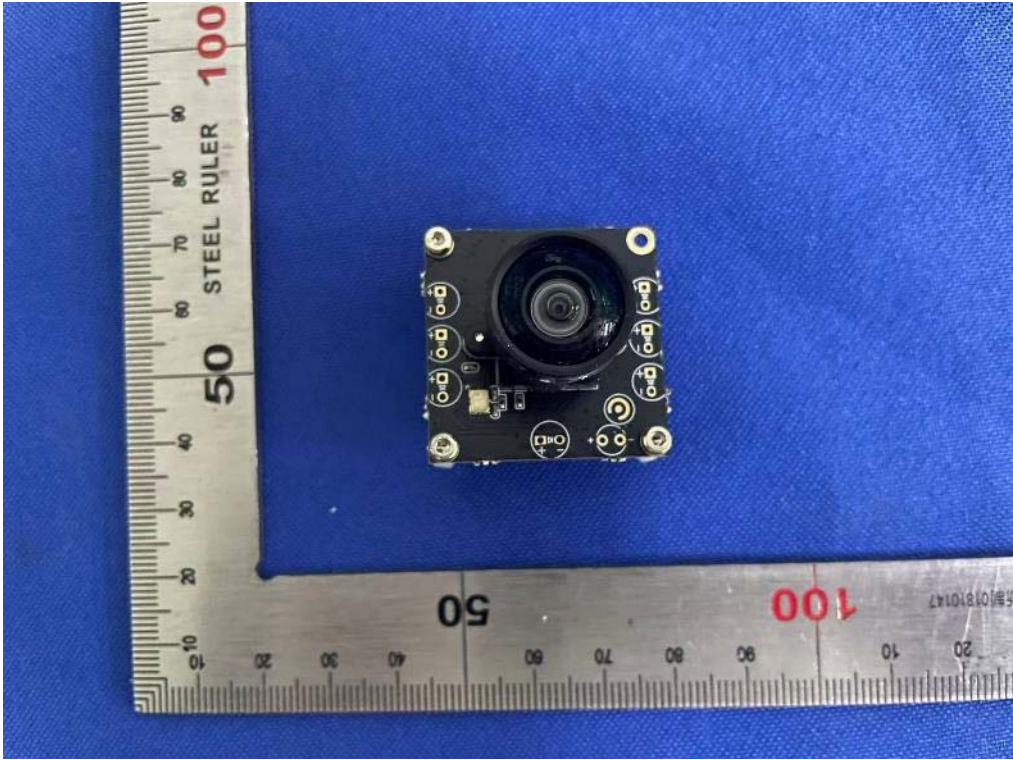


Internal-5 of the sample

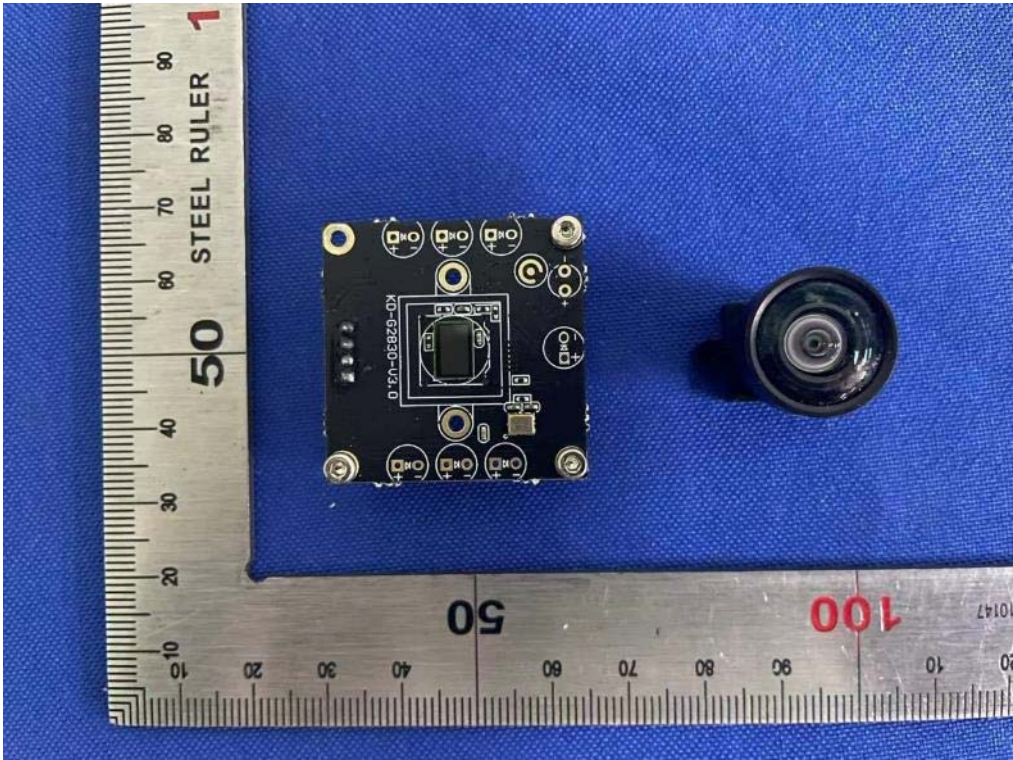


Internal-6 of the sample

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Internal-7 of the sample



Internal-8 of the sample

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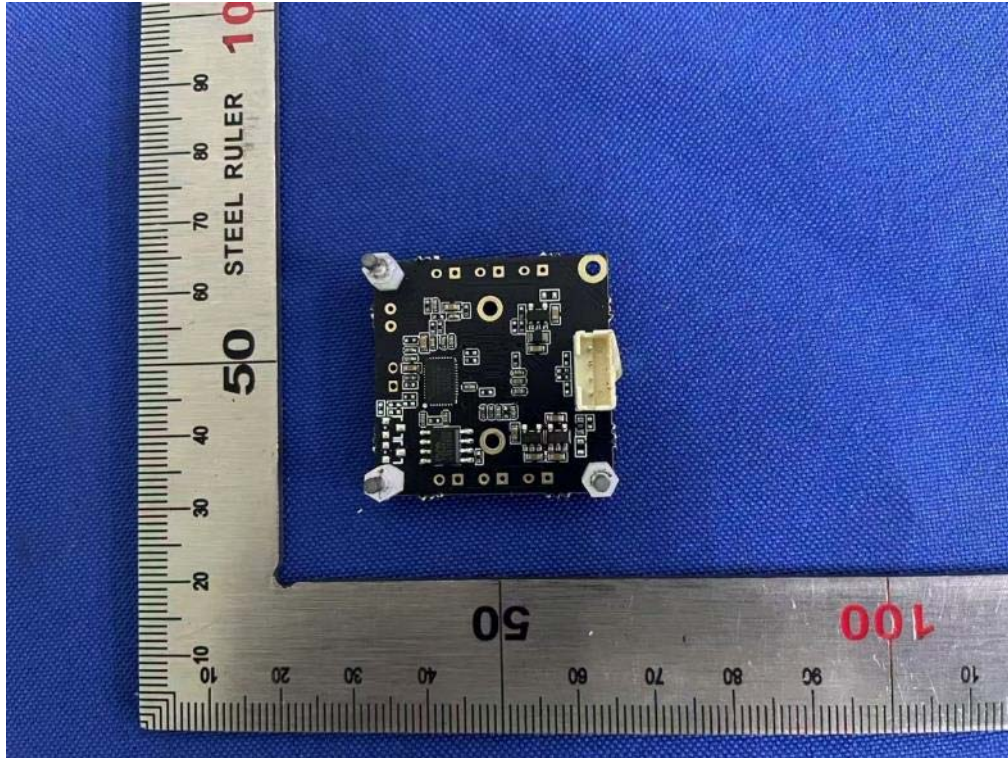
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Internal-9 of the sample



Internal-10 of the sample

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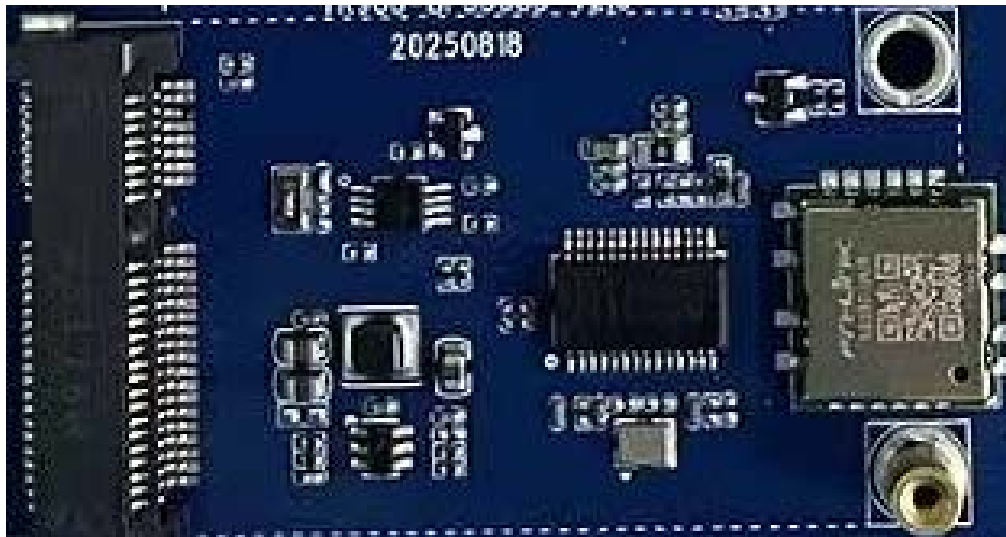
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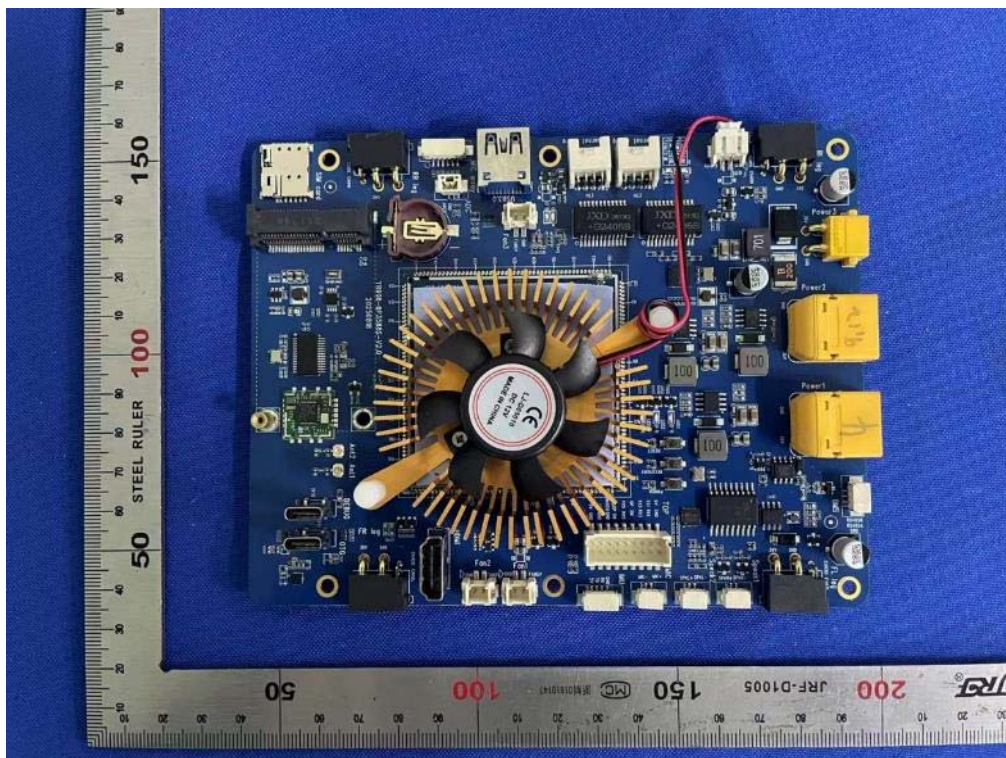
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Internal-11 of the sample (Module with shielding cover)



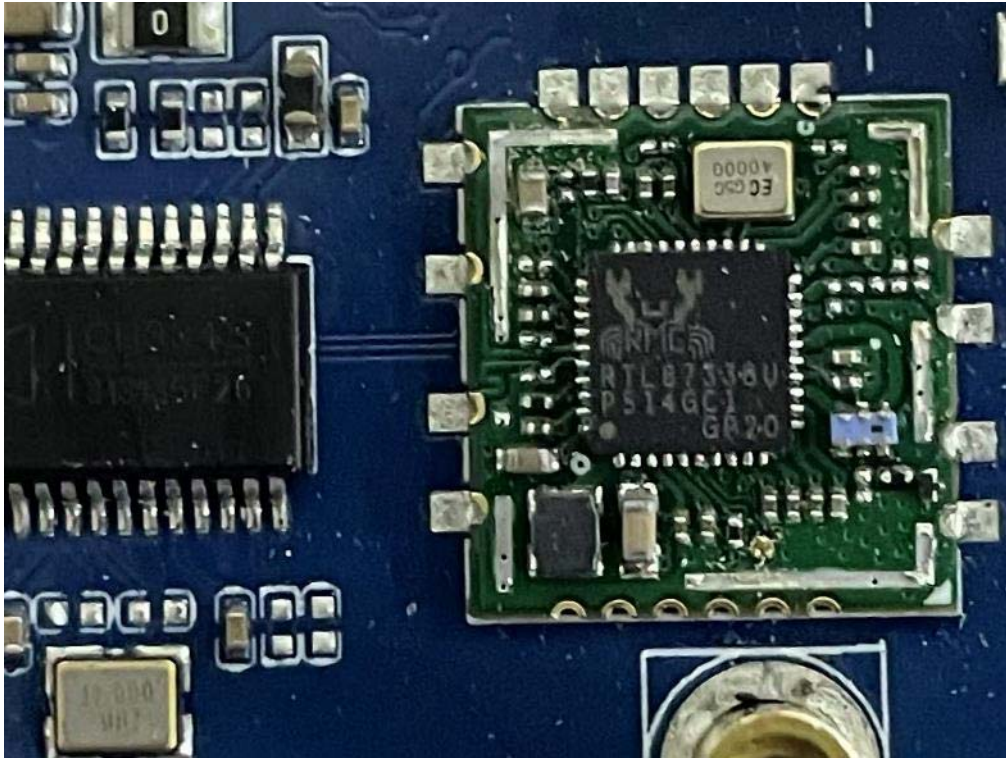
Internal-12 of the sample (Remove the module shielding cover)

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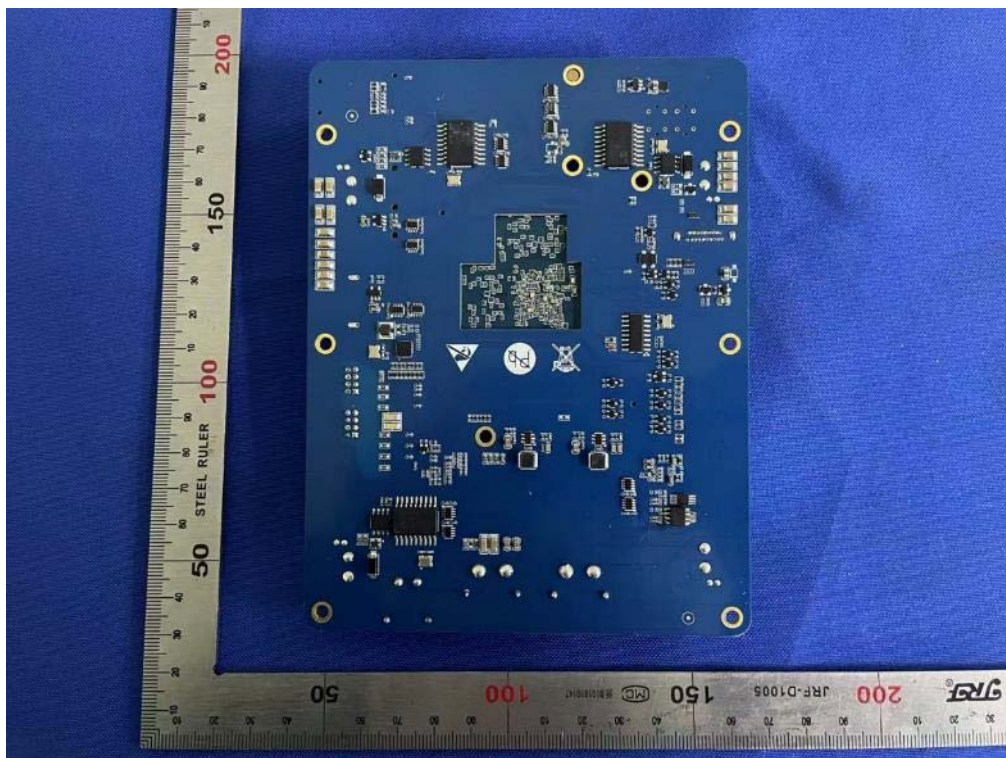
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Internal-13 of the sample



Internal-14 of the sample

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Internal-15 of the sample



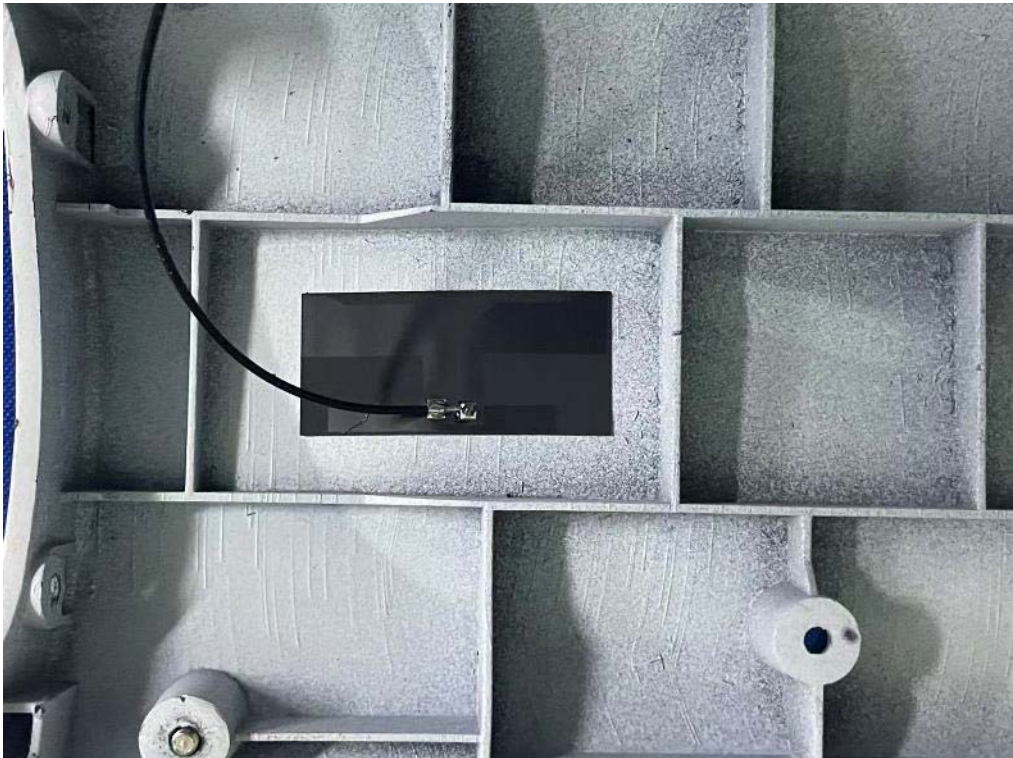
Battery of the sample

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Power Unit



Antenna Position

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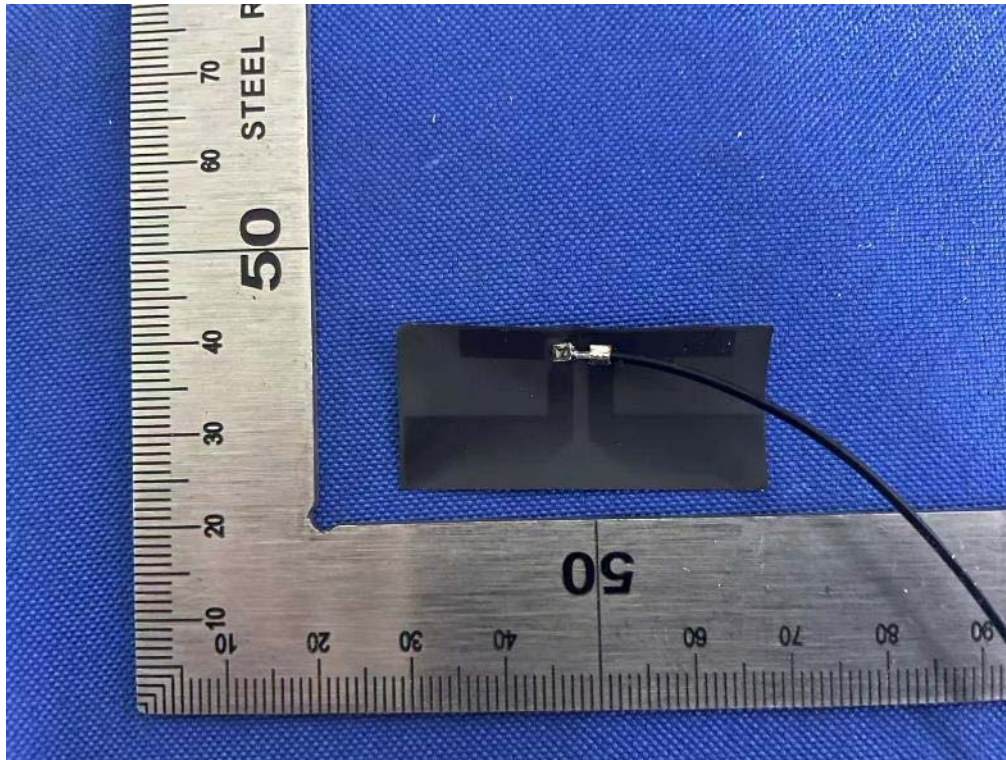
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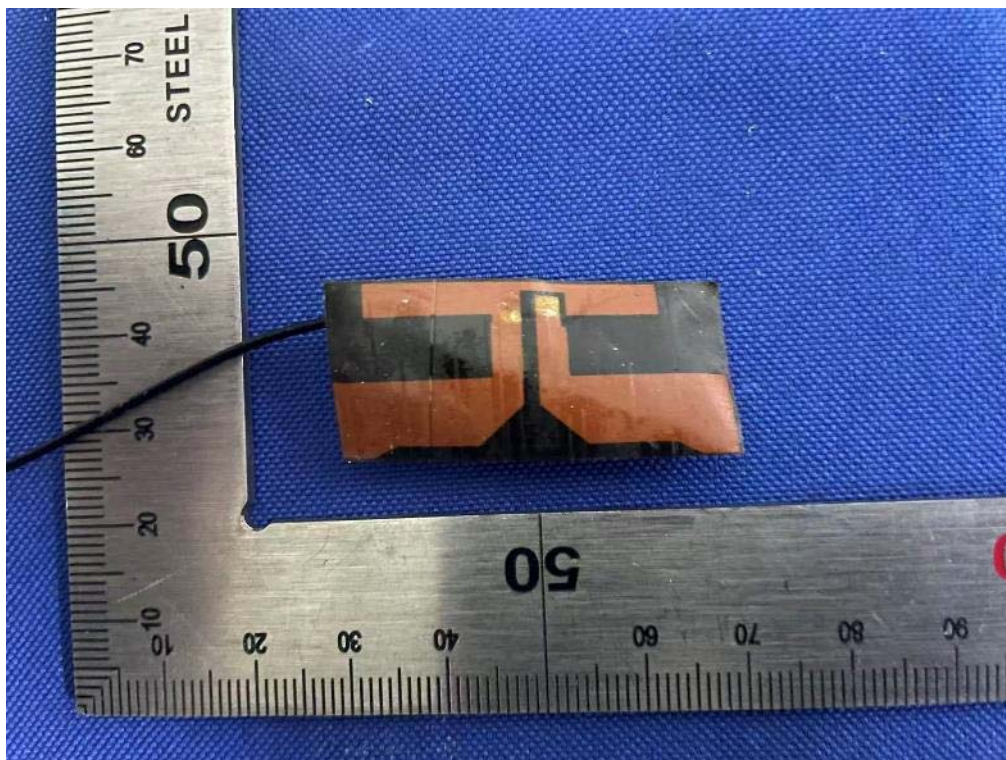
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Antenna Photo-Front



Antenna-Back

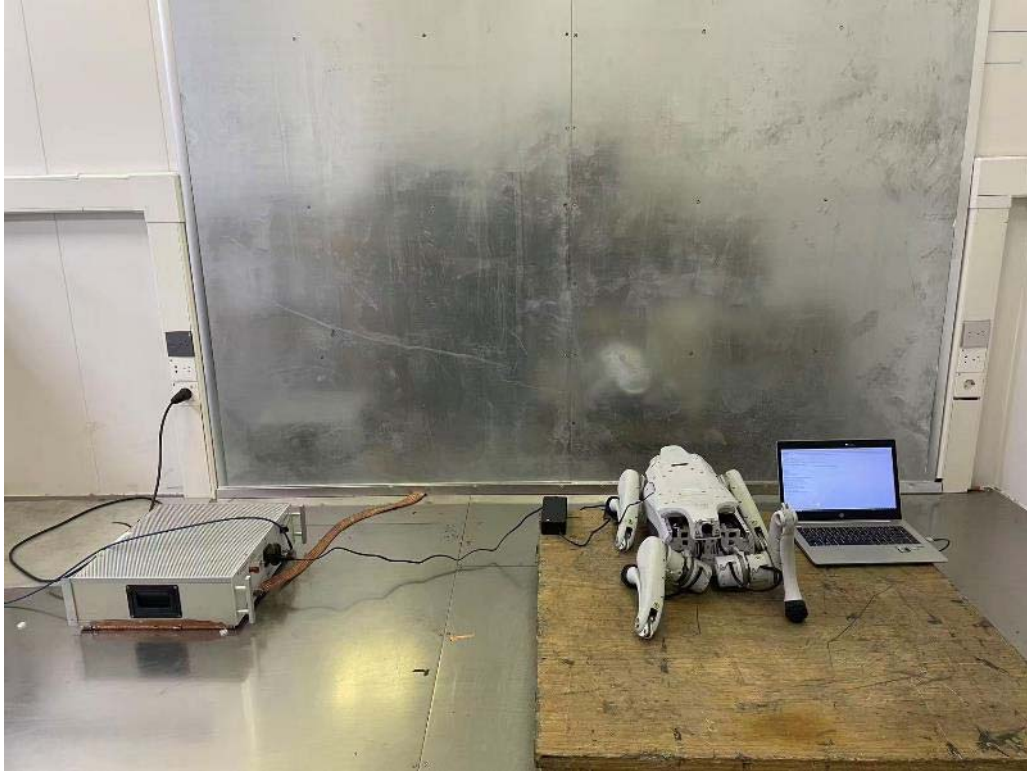
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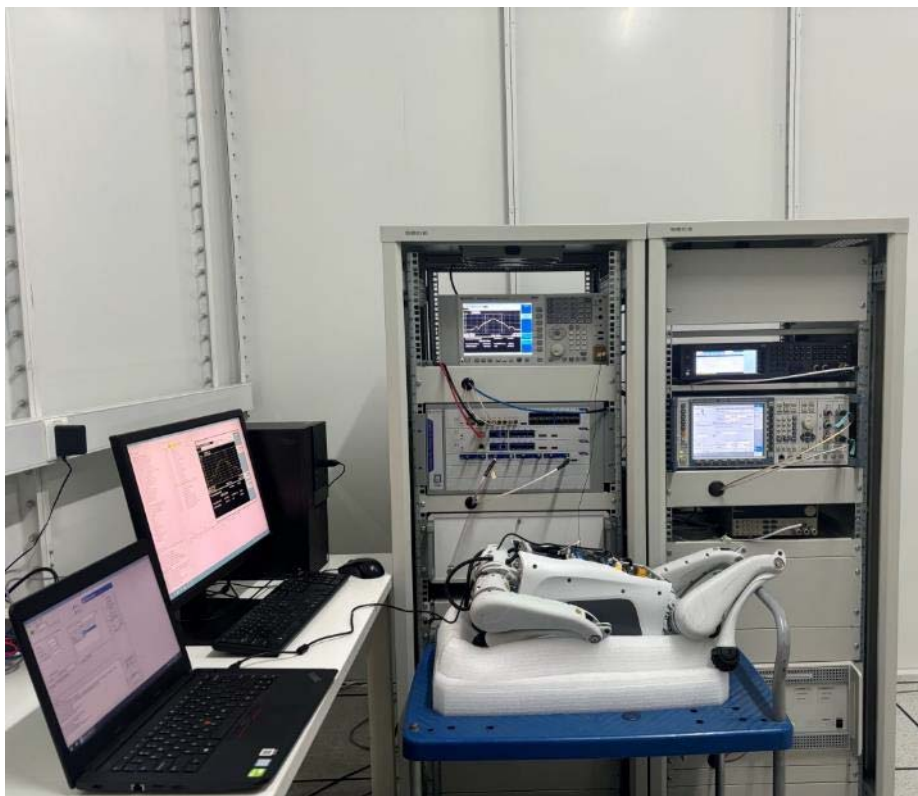
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5.3 Set-up for Conducted Emission on AC Mains



5.4 Set-up for Conducted RF test at Antenna Port



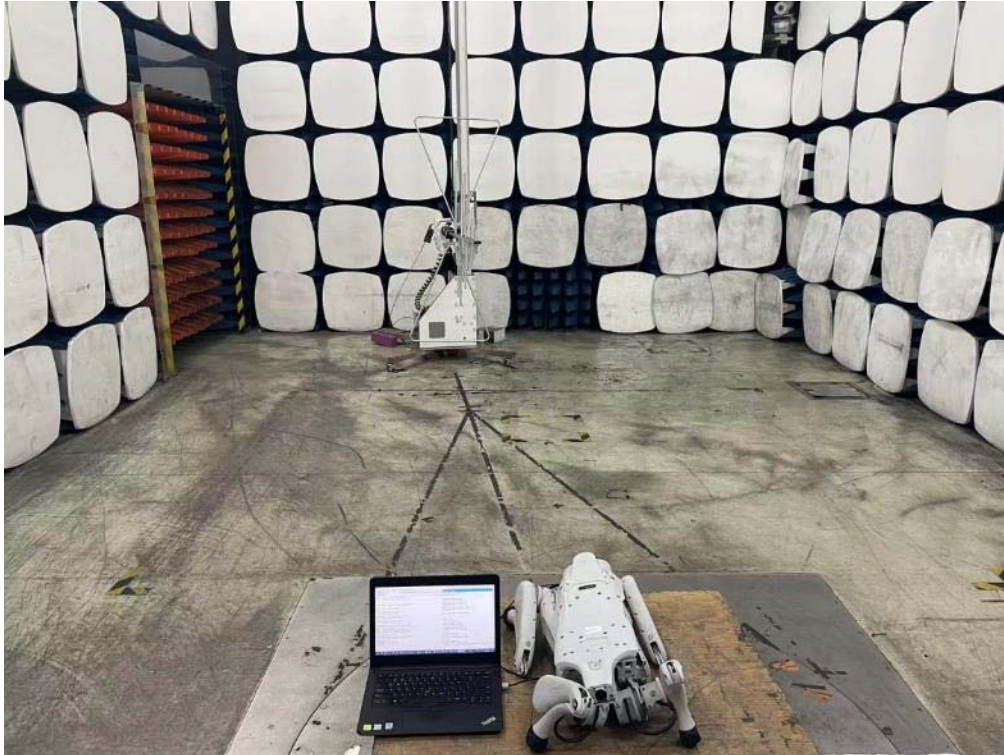
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5.5 Set-up for Radiated Spurious Emissions below 1GHz



5.6 Set-up for Radiated Spurious Emissions above 1GHz



End of the report