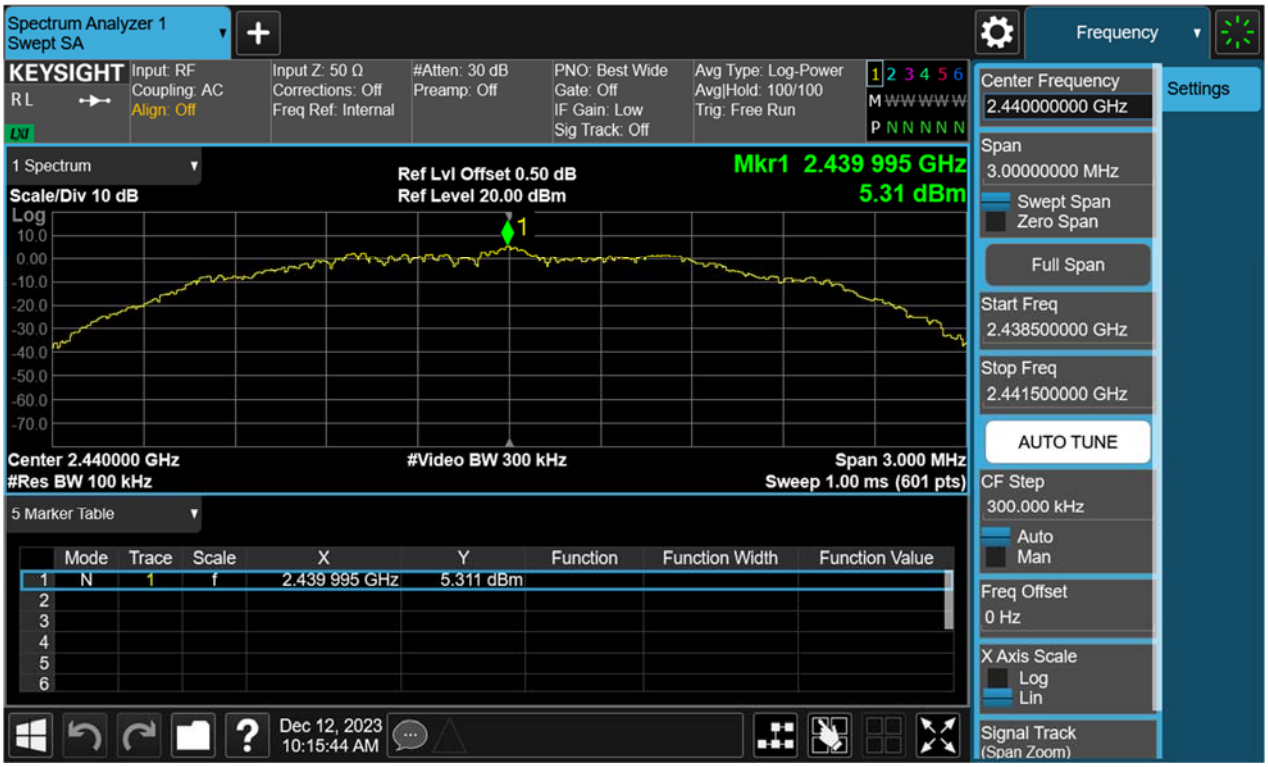
Figure 23: Conducted Spurious Emission & Authorized-band band-edge, 2440MHz, BLE-2Mbps Carrier Level



Conducted spurious emissions 30MHz-25GHz

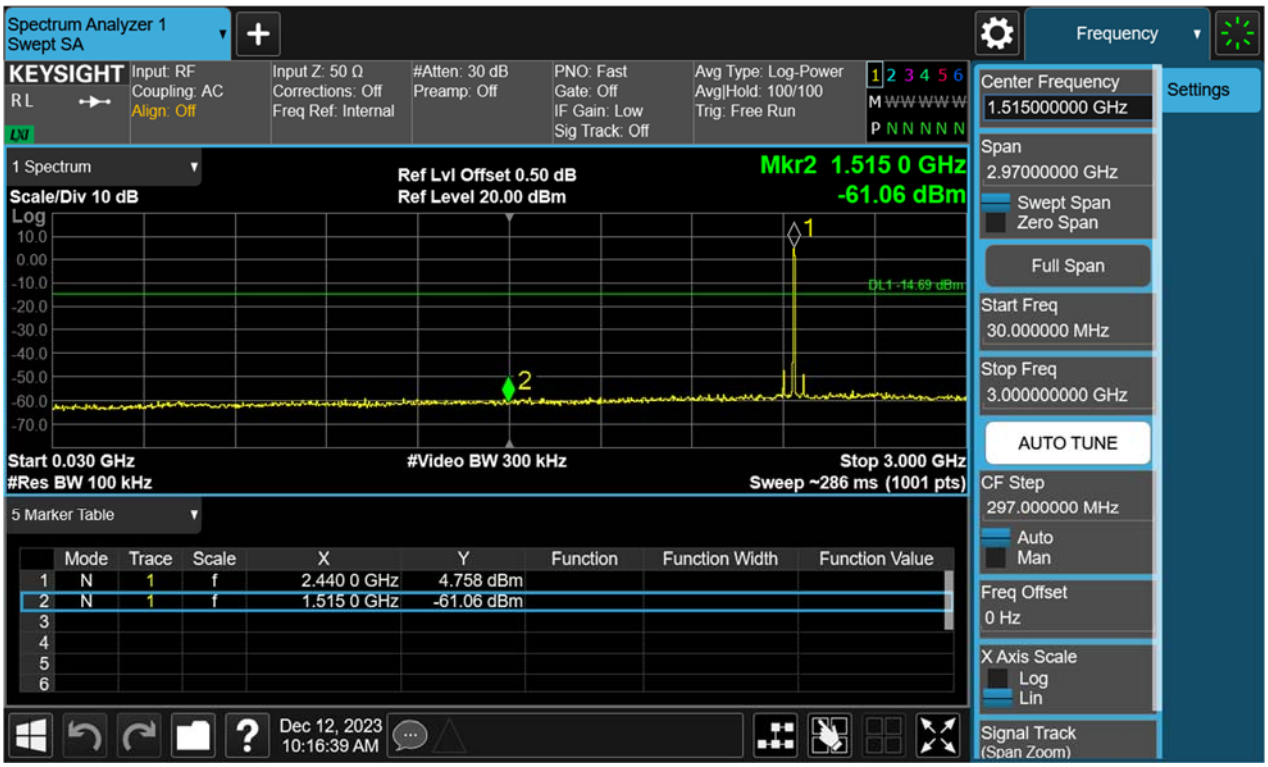
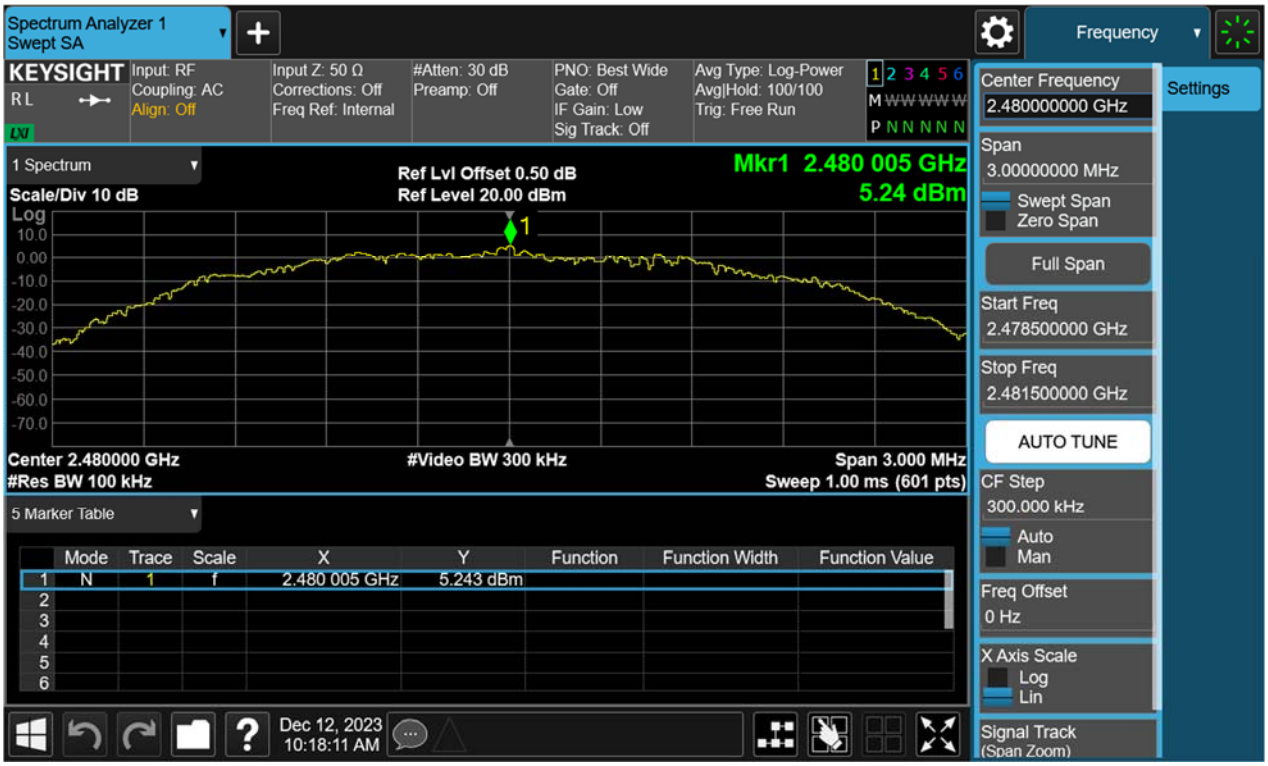


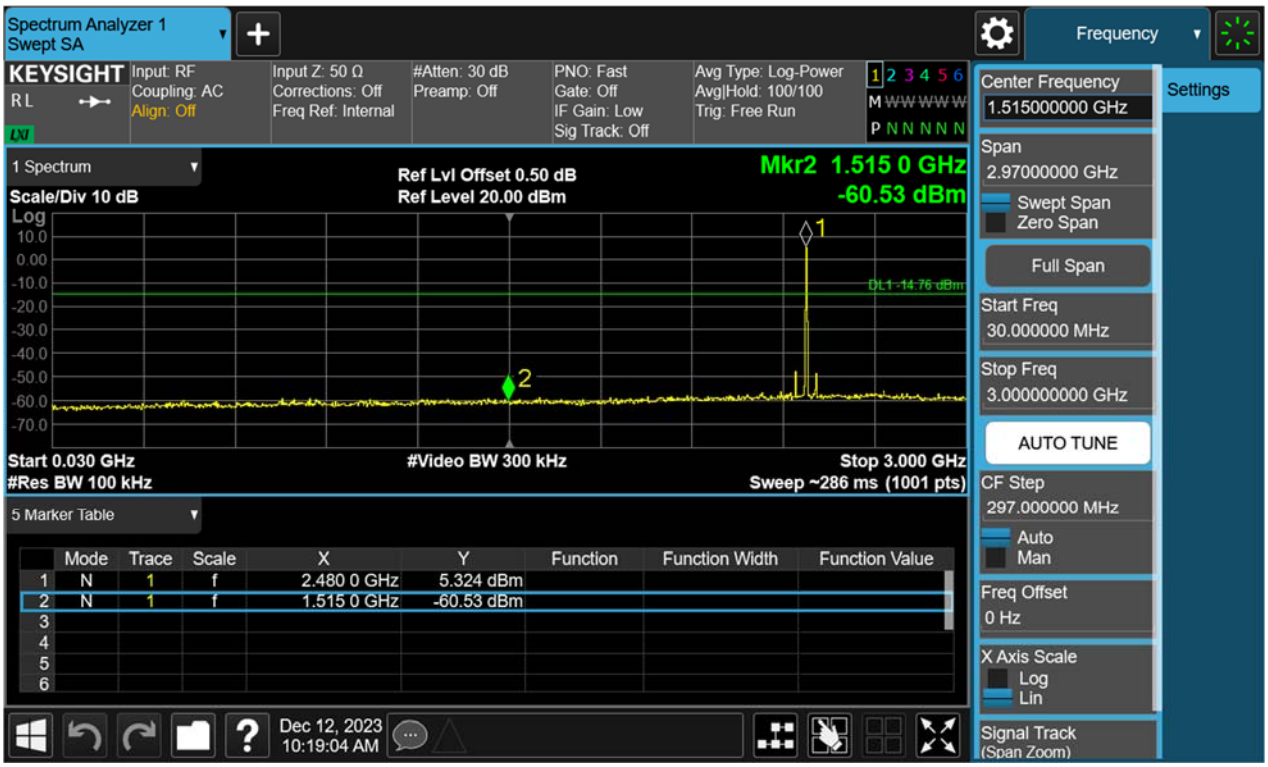
Figure 24: Conducted Spurious Emission & Authorized-band band-edge, 2480MHz, BLE-2Mbps

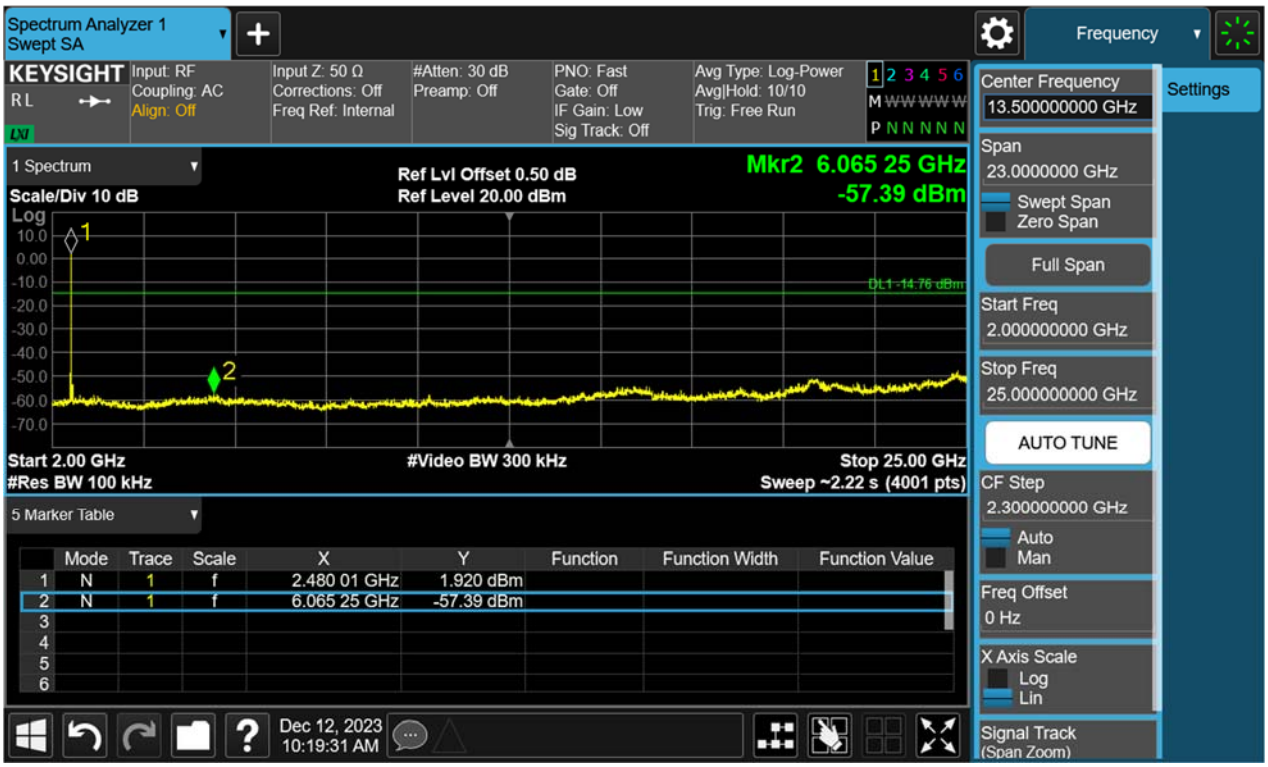
Carrier Level



Band Edge

Conducted spurious emissions 30MHz-25GHz





4.1.6 Radiated Emission

RESULT: **PASS**

Test standard	:	FCC Part 15.247(d), 15.205, 15.209 RSS-GEN 8.9
Requirement	:	ANSI C63.10-2013 clause 11.12, KDB 558074 D01 v05r02, Clause 8.6
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A
Ambient temperature	:	20.5°C
Relative humidity	:	45%

Notes

Test plots please refer to the annex document "SHE23120009-02DE DATA BLE-TX EXHIBIT A of EQM100-1B Model".
Test plots please refer to the annex document "SHE23120009-02DE DATA BLE-TX EXHIBIT A of EQM100-1P Model".
Test plots please refer to the annex document "SHE23120009-02DE DATA BLE-TX EXHIBIT A of EQM100-1U Model".

1. For 9 kHz ~ 30 MHz, the amplitude of spurious emissions that are attenuated by more than 20dB below the permissible. The value has no need to be reported. In addition, During 30MHz to 1GHz test frequency range, only the worst mode data was reported in this report.
2. The spurious above 18GHz is noise only and 20dB below the limit. The value has no need to be reported.
3. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

4.1.7 Band Edge (Restricted-band band-edge)

RESULT: **PASS**

Test standard	:	FCC Part 15.247(d), 15.205, 15.209 RSS-GEN 8.10
Requirement	:	ANSI C63.10-2013 clause 11.13, KDB 558074 D01 v05r02, Clause 8.7
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/Middle/High
Operation Mode	:	A.1
Ambient temperature	:	20.5°C
Relative humidity	:	45%

Notes

Test plots please refer to the annex document "SHE23120009-02DE DATA BLE-TX EXHIBIT A of EQM100-1B Model".

Test plots please refer to the annex document "SHE23120009-02DE DATA BLE-TX EXHIBIT A of EQM100-1P Model".

Test plots please refer to the annex document "SHE23120009-02DE DATA BLE-TX EXHIBIT A of EQM100-1U Model".

4.2 Mains Emissions

4.2.1 Conducted Emission on AC Mains

RESULT: **PASS**

Test standard	:	FCC Part 15.207(a), RSS-Gen 8.8
Requirement	:	ANSI C63.10-2013, Clause 6.2
Kind of test site	:	Shielded room

Test setup

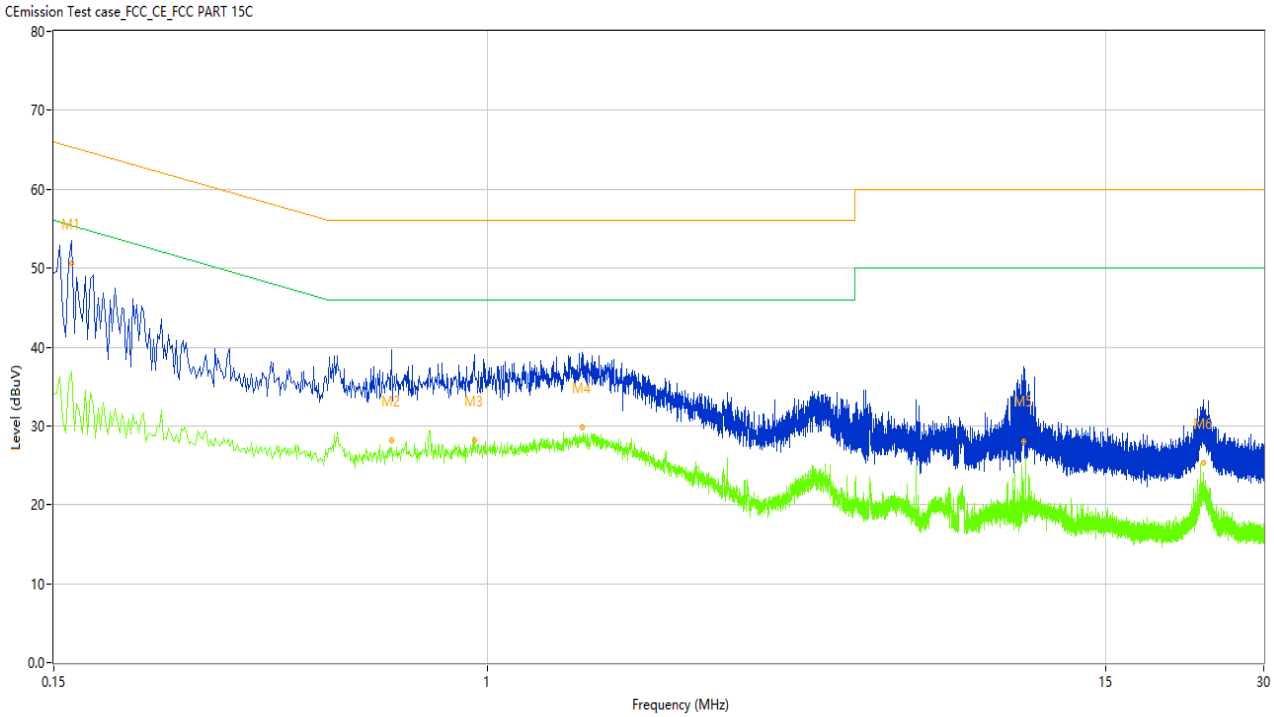
Input Voltage	:	which received AC 120V, 60Hz Power
Operation Mode	:	A.1.a
Earthing	:	Disconnected to GND
Ambient temperature	:	21°C
Relative humidity	:	50%

For details refer to following test plot.

Note：The all configurations were tested respectively, but only the worst data (at low channel) shown here.

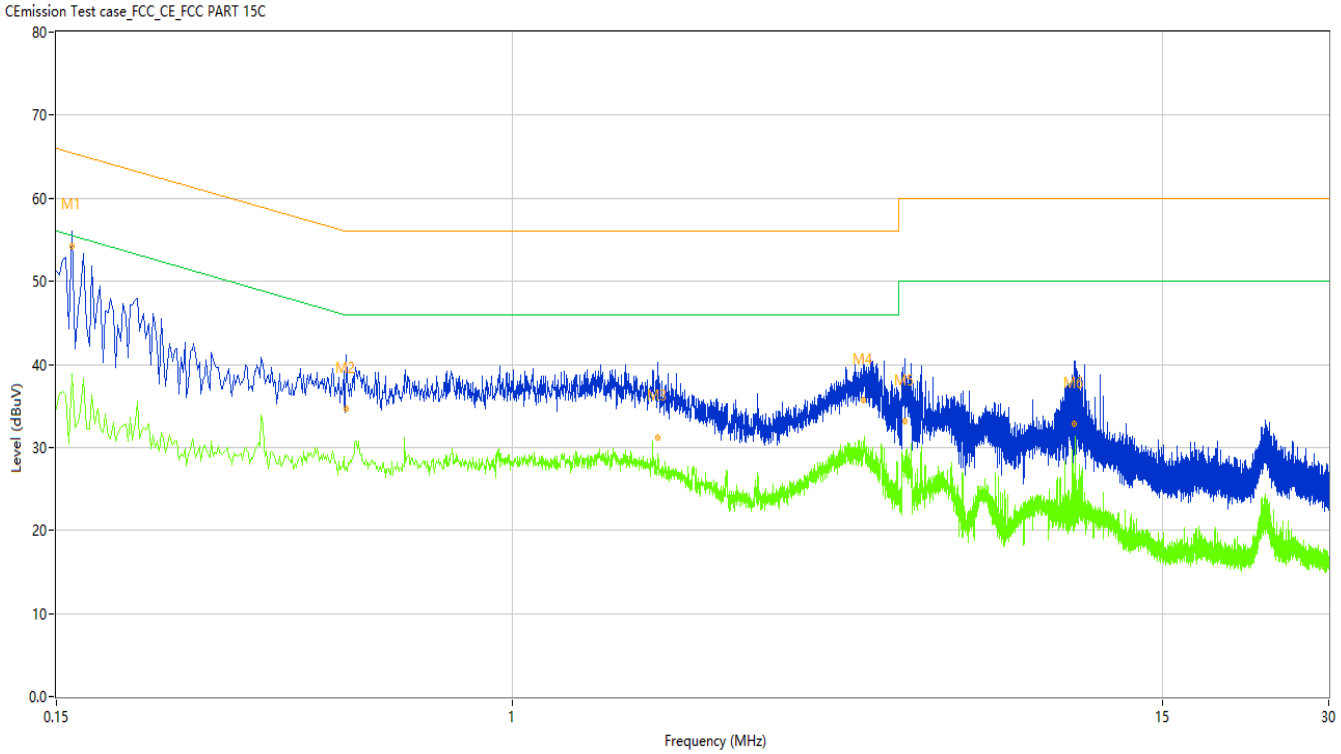
Model: EQM100-1B

Figure 25: Conducted Emission on AC Mains, L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.162	56.42	9.94	65.36	8.94	Peak	L	Pass
1*	0.162	50.59	9.94	65.36	14.77	QP	L	Pass
1**	0.162	36.95	9.94	55.36	18.41	AV	L	Pass
2	0.658	34.72	9.97	56.00	21.28	Peak	L	Pass
2*	0.658	28.25	9.97	56.00	27.75	QP	L	Pass
2**	0.658	27.34	9.97	46.00	18.66	AV	L	Pass
3	0.946	35.87	9.94	56.00	20.13	Peak	L	Pass
3*	0.946	28.15	9.94	56.00	27.85	QP	L	Pass
3**	0.946	27.80	9.94	46.00	18.20	AV	L	Pass
4	1.514	35.29	9.85	56.00	20.71	Peak	L	Pass
4*	1.514	29.85	9.85	56.00	26.15	QP	L	Pass
4**	1.514	28.27	9.85	46.00	17.73	AV	L	Pass
5	10.484	38.31	9.67	60.00	21.69	Peak	L	Pass
5*	10.484	27.99	9.67	60.00	32.01	QP	L	Pass
5**	10.484	22.95	9.67	50.00	27.05	AV	L	Pass
6	23.004	32.12	9.24	60.00	27.88	Peak	L	Pass
6*	23.004	25.28	9.24	60.00	34.72	QP	L	Pass
6**	23.004	22.23	9.24	50.00	27.77	AV	L	Pass

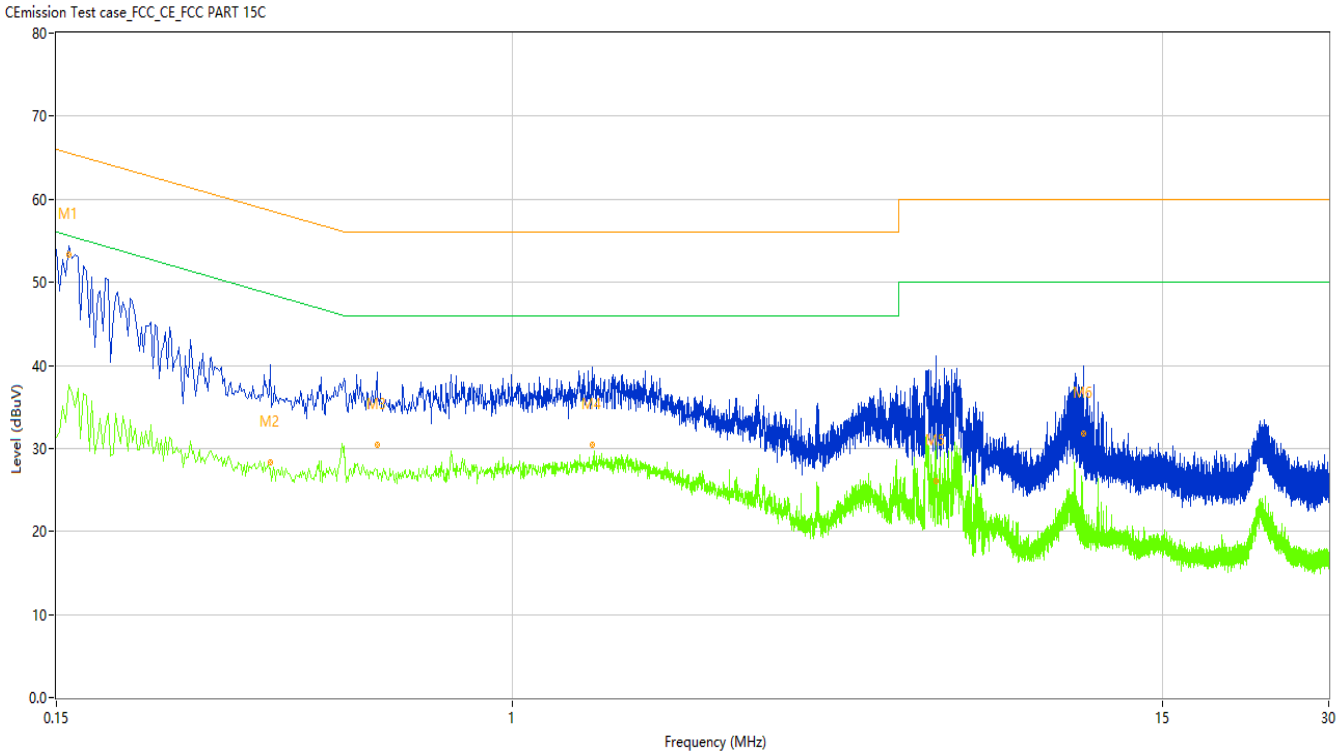
Figure 26: Conducted Emission on AC Mains, N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.160	60.87	10.03	65.46	4.59	Peak	N	Pass
1*	0.160	54.25	10.03	65.46	11.21	QP	N	Pass
1**	0.160	38.86	10.03	55.46	16.60	AV	N	Pass
2	0.502	40.76	10.07	56.00	15.24	Peak	N	Pass
2*	0.502	34.62	10.07	56.00	21.38	QP	N	Pass
2**	0.502	27.69	10.07	46.00	18.31	AV	N	Pass
3	1.838	37.07	9.94	56.00	18.93	Peak	N	Pass
3*	1.838	31.25	9.94	56.00	24.75	QP	N	Pass
3**	1.838	28.98	9.94	46.00	17.02	AV	N	Pass
4	4.312	40.85	9.83	56.00	15.15	Peak	N	Pass
4*	4.312	35.78	9.83	56.00	20.22	QP	N	Pass
4**	4.312	30.25	9.83	46.00	15.75	AV	N	Pass
5	5.144	41.12	9.73	60.00	18.88	Peak	N	Pass
5*	5.144	33.10	9.73	60.00	26.90	QP	N	Pass
5**	5.144	28.38	9.73	50.00	21.62	AV	N	Pass
6	10.402	41.13	9.74	60.00	18.87	Peak	N	Pass
6*	10.402	32.82	9.74	60.00	27.18	QP	N	Pass
6**	10.402	26.83	9.74	50.00	23.17	AV	N	Pass

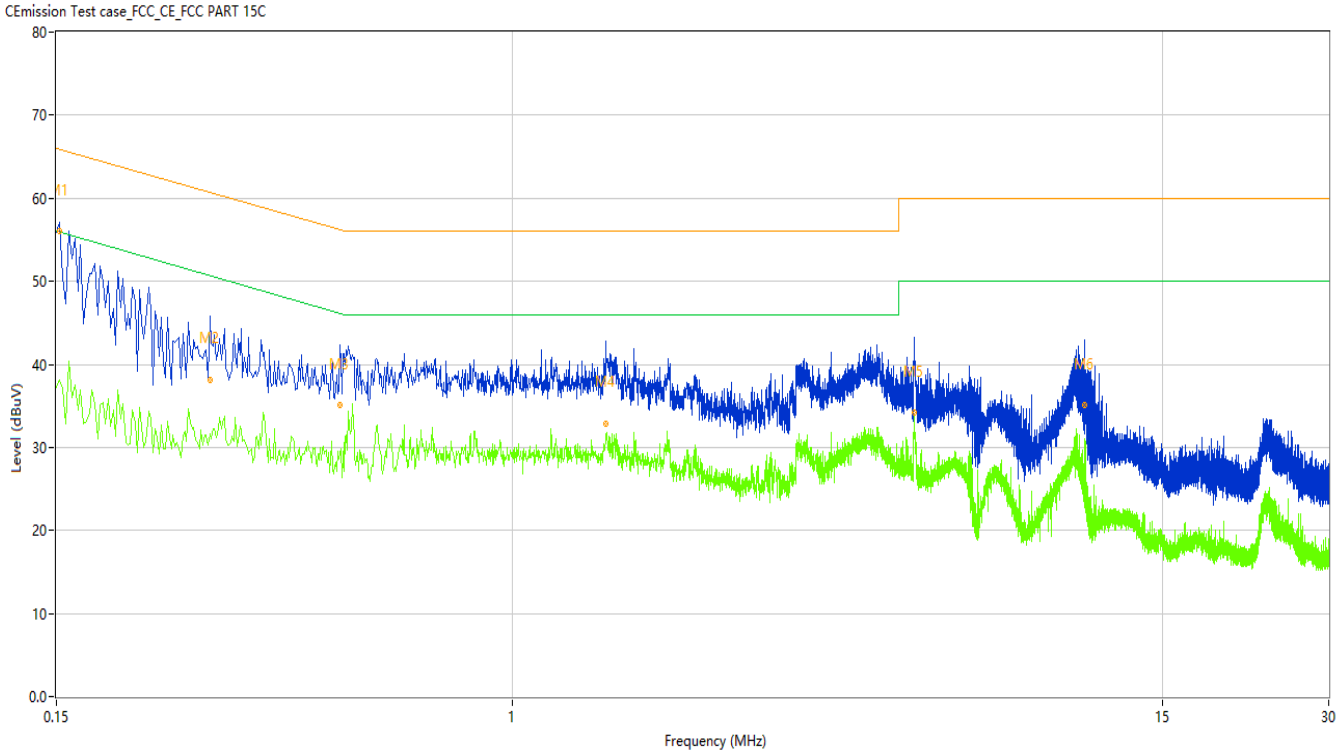
Model: EQM100-1P

Figure 27: Conducted Emission on AC Mains, L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.158	59.07	9.93	65.57	6.50	Peak	L	Pass
1*	0.158	53.34	9.93	65.57	12.23	QP	L	Pass
1**	0.158	37.70	9.93	55.57	17.87	AV	L	Pass
2	0.366	35.96	9.96	58.59	22.63	Peak	L	Pass
2*	0.366	28.34	9.96	58.59	30.25	QP	L	Pass
2**	0.366	27.60	9.96	48.59	20.99	AV	L	Pass
3	0.570	35.98	9.96	56.00	20.02	Peak	L	Pass
3*	0.570	30.42	9.96	56.00	25.58	QP	L	Pass
3**	0.570	27.37	9.96	46.00	18.63	AV	L	Pass
4	1.400	36.05	9.84	56.00	19.95	Peak	L	Pass
4*	1.400	30.43	9.84	56.00	25.57	QP	L	Pass
4**	1.400	28.51	9.84	46.00	17.49	AV	L	Pass
5	5.858	37.99	9.81	60.00	22.01	Peak	L	Pass
5*	5.858	26.04	9.81	60.00	33.96	QP	L	Pass
5**	5.858	30.81	9.81	50.00	19.19	AV	L	Pass
6	10.812	38.50	9.66	60.00	21.50	Peak	L	Pass
6*	10.812	31.74	9.66	60.00	28.26	QP	L	Pass
6**	10.812	22.58	9.66	50.00	27.42	AV	L	Pass

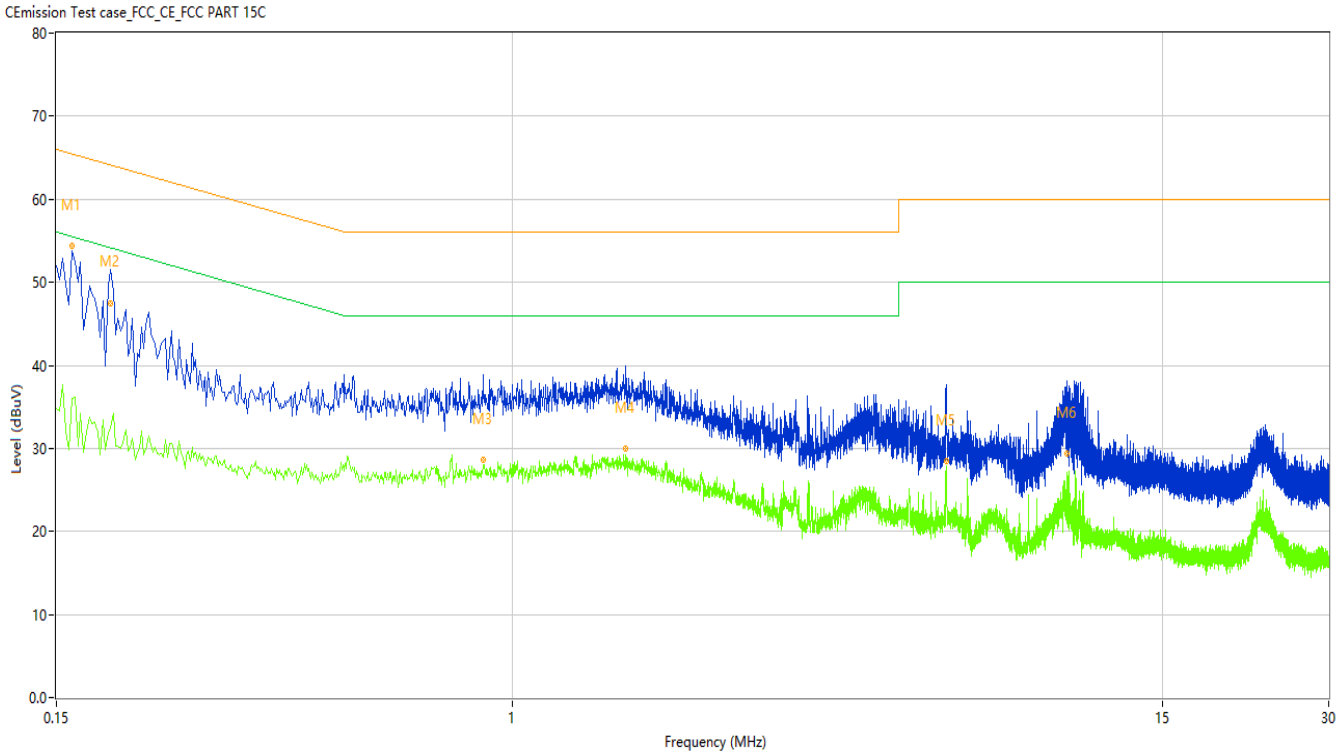
Figure 28: Conducted Emission on AC Mains, N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.152	62.52	10.02	65.89	3.37	Peak	N	Pass
1*	0.152	56.00	10.02	65.89	9.89	QP	N	Pass
1**	0.152	38.18	10.02	55.89	17.71	AV	N	Pass
2	0.284	45.64	10.06	60.70	15.06	Peak	N	Pass
2*	0.284	38.13	10.06	60.70	22.57	QP	N	Pass
2**	0.284	31.71	10.06	50.70	18.99	AV	N	Pass
3	0.488	42.88	10.07	56.20	13.32	Peak	N	Pass
3*	0.488	35.07	10.07	56.20	21.13	QP	N	Pass
3**	0.488	29.25	10.07	46.20	16.95	AV	N	Pass
4	1.478	39.43	9.94	56.00	16.57	Peak	N	Pass
4*	1.478	32.82	9.94	56.00	23.18	QP	N	Pass
4**	1.478	31.58	9.94	46.00	14.42	AV	N	Pass
5	5.332	43.00	9.74	60.00	17.00	Peak	N	Pass
5*	5.332	34.27	9.74	60.00	25.73	QP	N	Pass
5**	5.332	33.97	9.74	50.00	16.03	AV	N	Pass
6	10.876	41.52	9.73	60.00	18.48	Peak	N	Pass
6*	10.876	35.08	9.73	60.00	24.92	QP	N	Pass
6**	10.876	30.99	9.73	50.00	19.01	AV	N	Pass

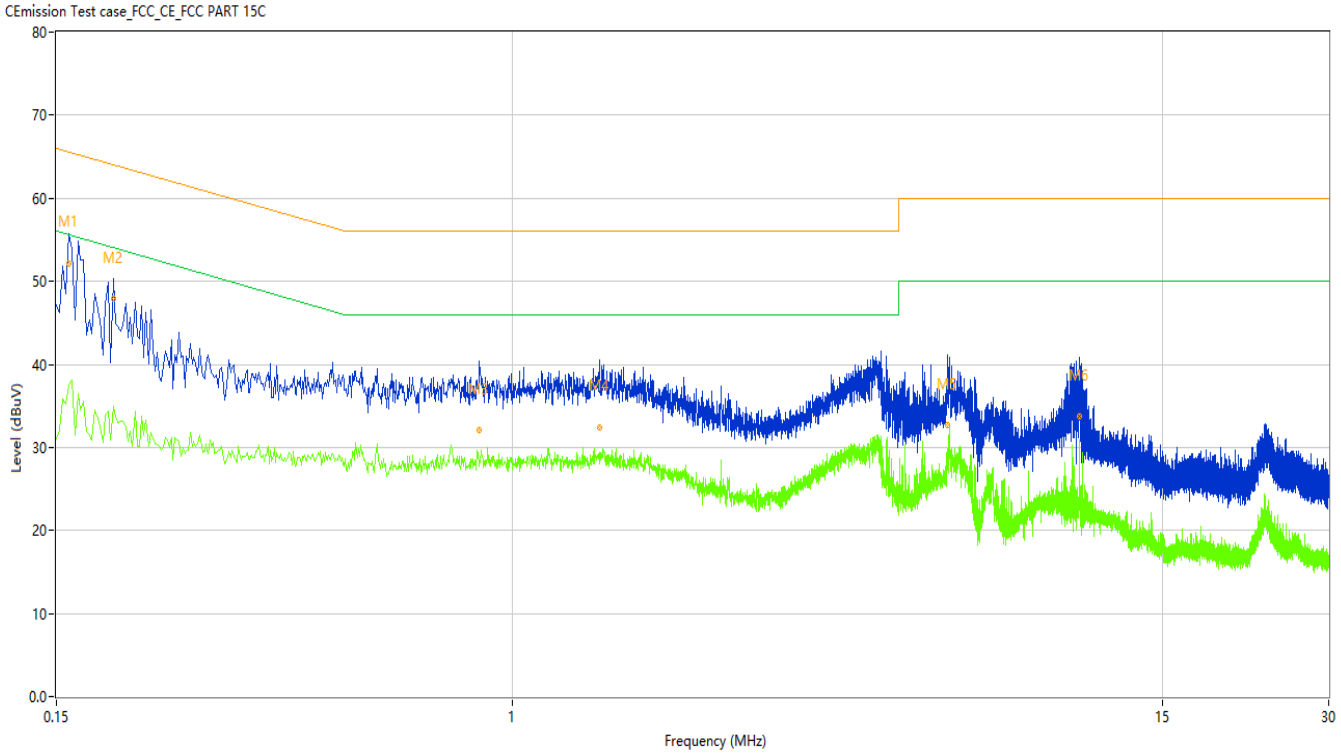
Model: EQM100-1U

Figure 29: Conducted Emission on AC Mains, L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.160	59.86	9.94	65.46	5.60	Peak	L	Pass
1*	0.160	54.45	9.94	65.46	11.01	QP	L	Pass
1**	0.160	36.03	9.94	55.46	19.43	AV	L	Pass
2	0.188	54.27	9.94	64.12	9.85	Peak	L	Pass
2*	0.188	47.52	9.94	64.12	16.60	QP	L	Pass
2**	0.188	32.35	9.94	54.12	21.77	AV	L	Pass
3	0.886	35.25	9.94	56.00	20.75	Peak	L	Pass
3*	0.886	28.68	9.94	56.00	27.32	QP	L	Pass
3**	0.886	27.64	9.94	46.00	18.36	AV	L	Pass
4	1.608	35.87	9.85	56.00	20.13	Peak	L	Pass
4*	1.608	29.94	9.85	56.00	26.06	QP	L	Pass
4**	1.608	29.25	9.85	46.00	16.75	AV	L	Pass
5	6.096	36.84	9.80	60.00	23.16	Peak	L	Pass
5*	6.096	28.51	9.80	60.00	31.49	QP	L	Pass
5**	6.096	27.82	9.80	50.00	22.18	AV	L	Pass
6	10.098	36.64	9.68	60.00	23.36	Peak	L	Pass
6*	10.098	29.33	9.68	60.00	30.67	QP	L	Pass
6**	10.098	26.78	9.68	50.00	23.22	AV	L	Pass

Figure 30: Conducted Emission on AC Mains, N Phase

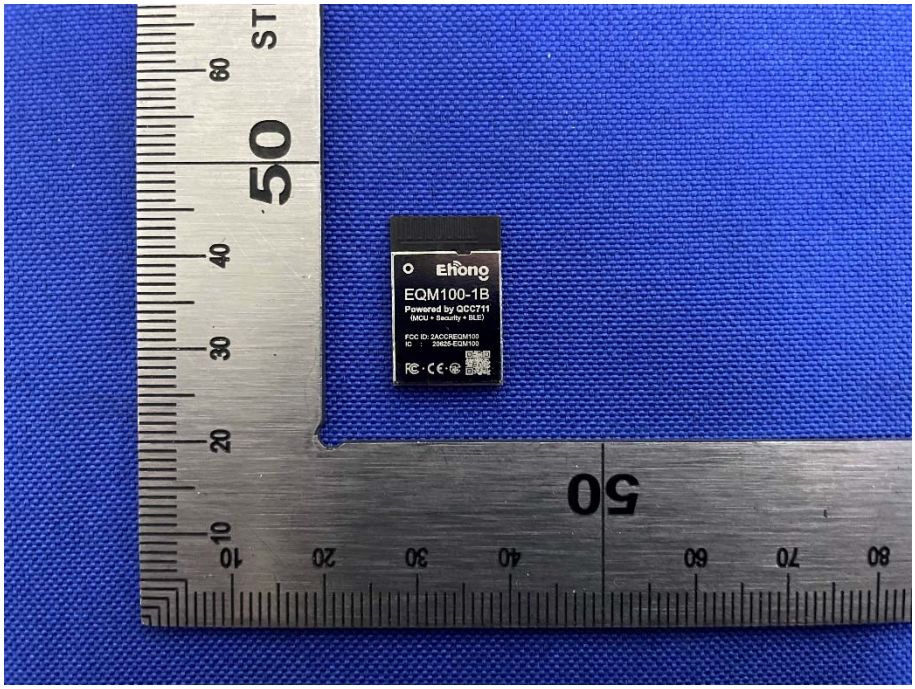


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.158	58.40	10.03	65.57	7.17	Peak	N	Pass
1*	0.158	52.08	10.03	65.57	13.49	QP	N	Pass
1**	0.158	37.52	10.03	55.57	18.05	AV	N	Pass
2	0.190	53.64	10.03	64.04	10.40	Peak	N	Pass
2*	0.190	47.98	10.03	64.04	16.06	QP	N	Pass
2**	0.190	34.88	10.03	54.04	19.16	AV	N	Pass
3	0.874	37.09	10.03	56.00	18.91	Peak	N	Pass
3*	0.874	32.13	10.03	56.00	23.87	QP	N	Pass
3**	0.874	28.49	10.03	46.00	17.51	AV	N	Pass
4	1.438	39.30	9.94	56.00	16.70	Peak	N	Pass
4*	1.438	32.38	9.94	56.00	23.62	QP	N	Pass
4**	1.438	29.17	9.94	46.00	16.83	AV	N	Pass
5	6.142	40.10	9.79	60.00	19.90	Peak	N	Pass
5*	6.142	32.68	9.79	60.00	27.32	QP	N	Pass
5**	6.142	28.91	9.79	50.00	21.09	AV	N	Pass
6	10.606	41.89	9.74	60.00	18.11	Peak	N	Pass
6*	10.606	33.75	9.74	60.00	26.25	QP	N	Pass
6**	10.606	24.98	9.74	50.00	25.02	AV	N	Pass

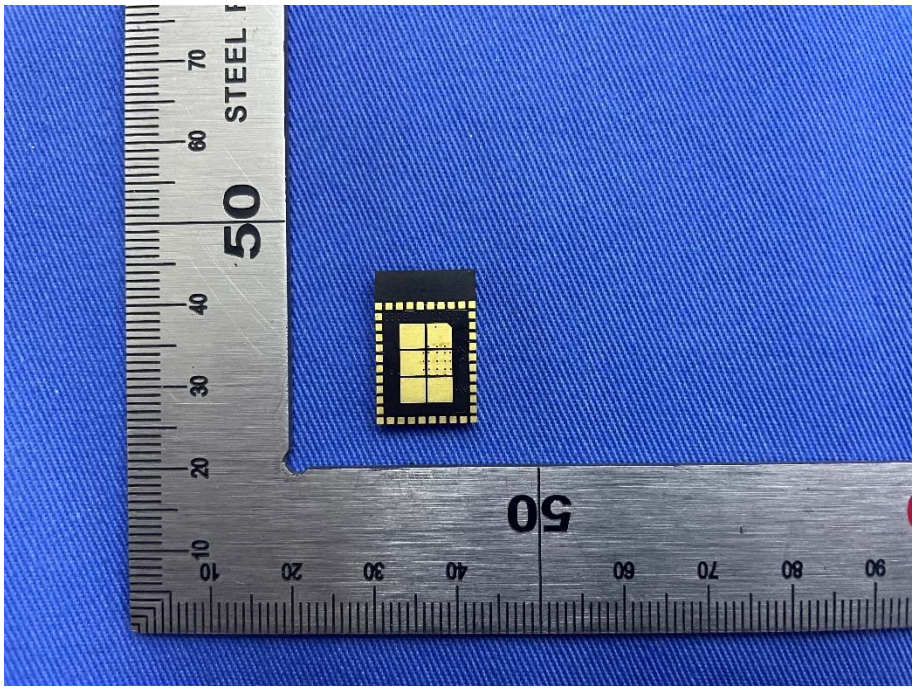
5 Appendixes

5.1 Photographs of the Sample

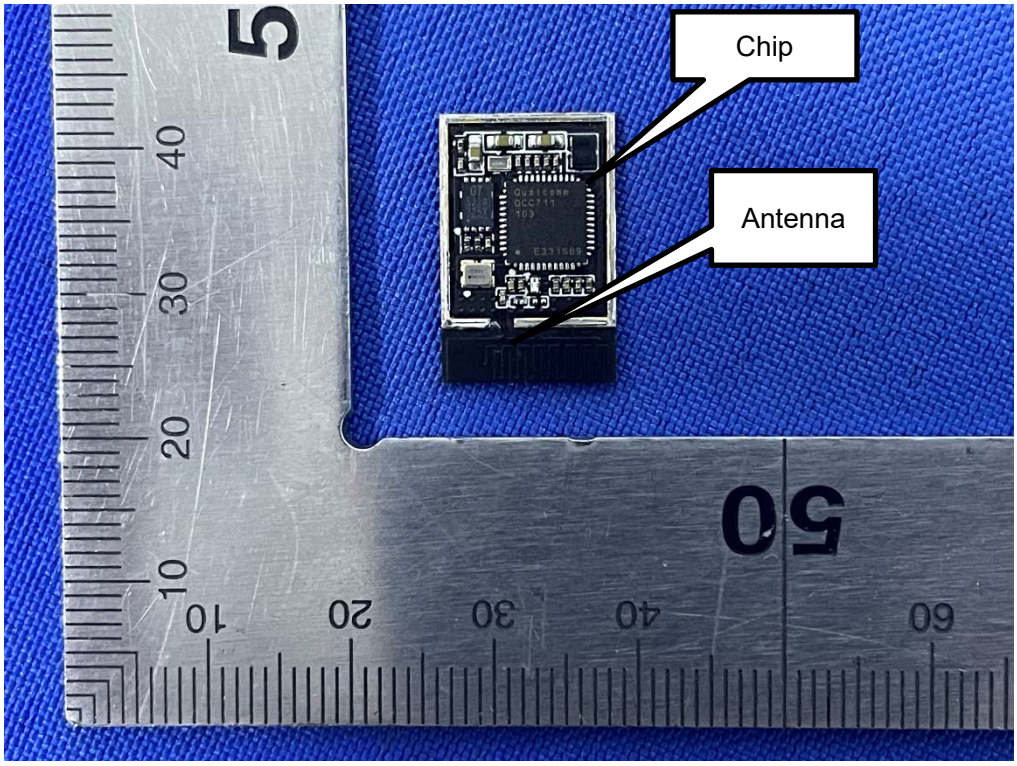
Model: EQM100-1B



Front of the sample

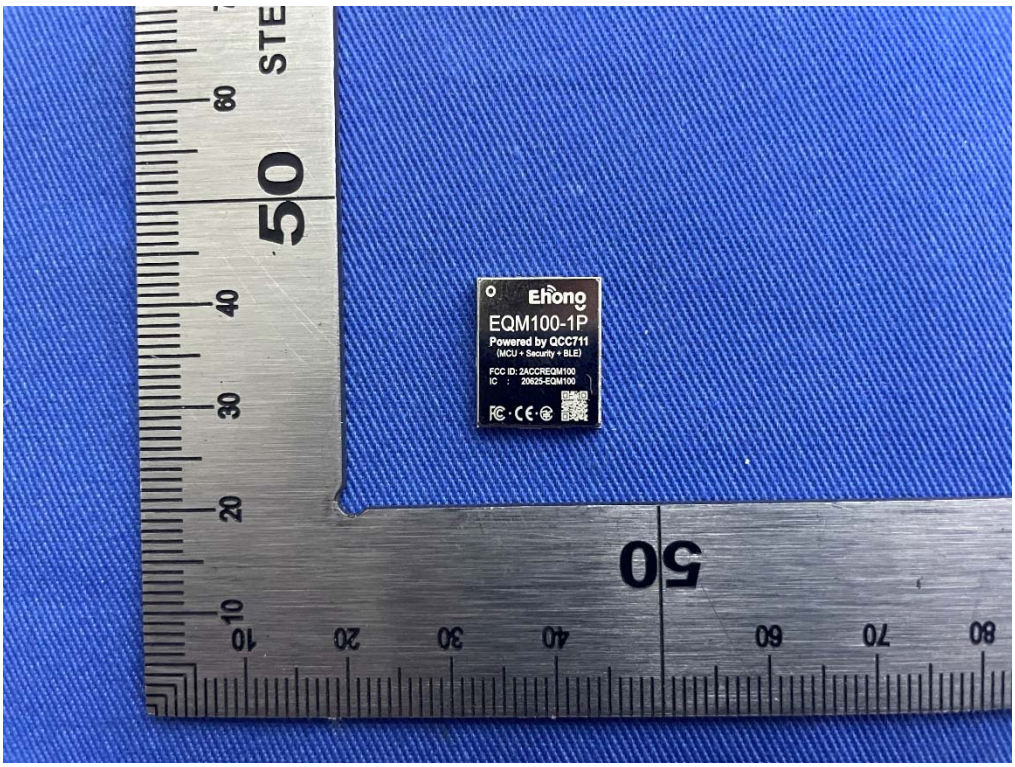


Rear of the sample

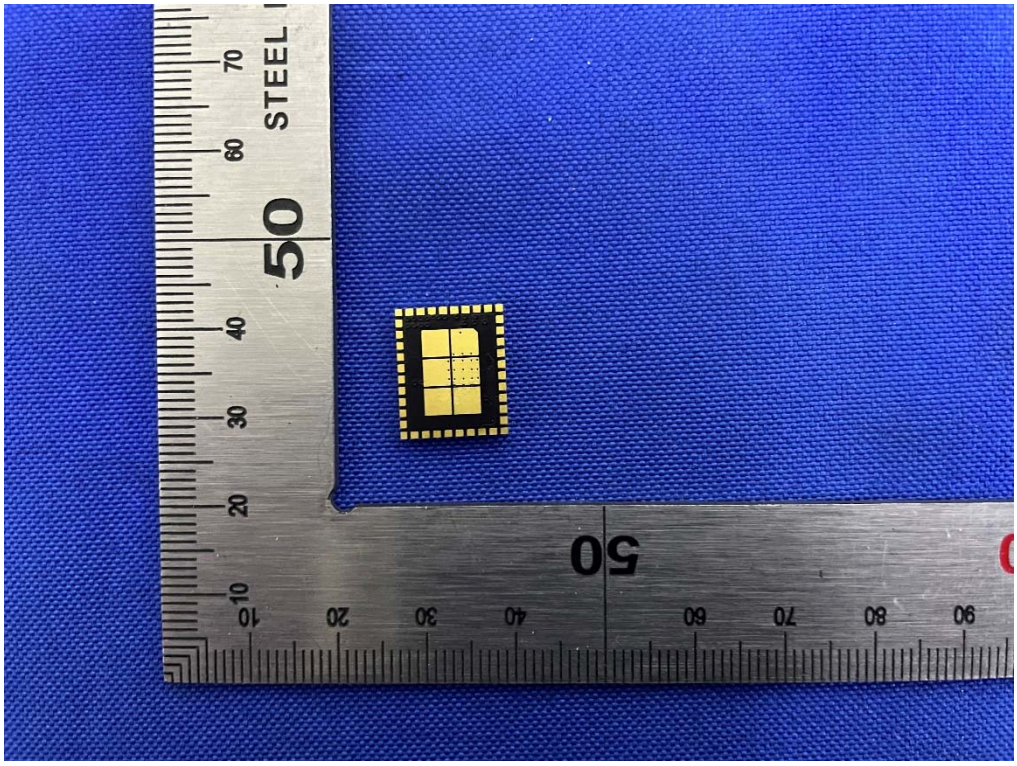


Remove the shield cover and Antenna Position

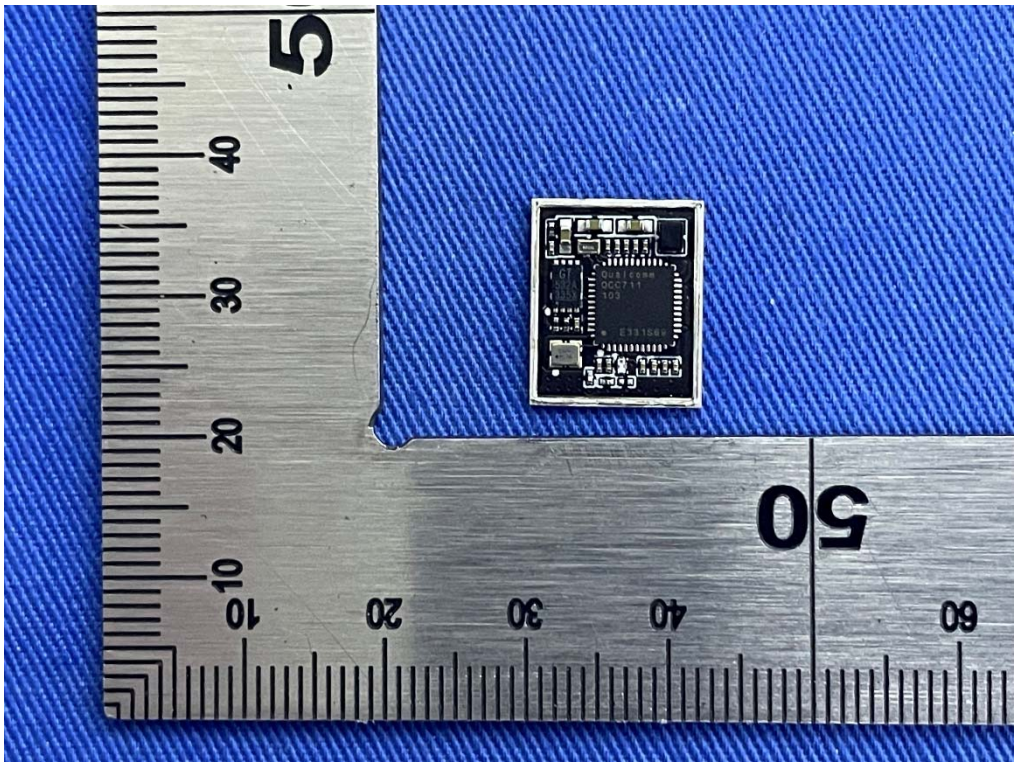
Model: EQM100-1P



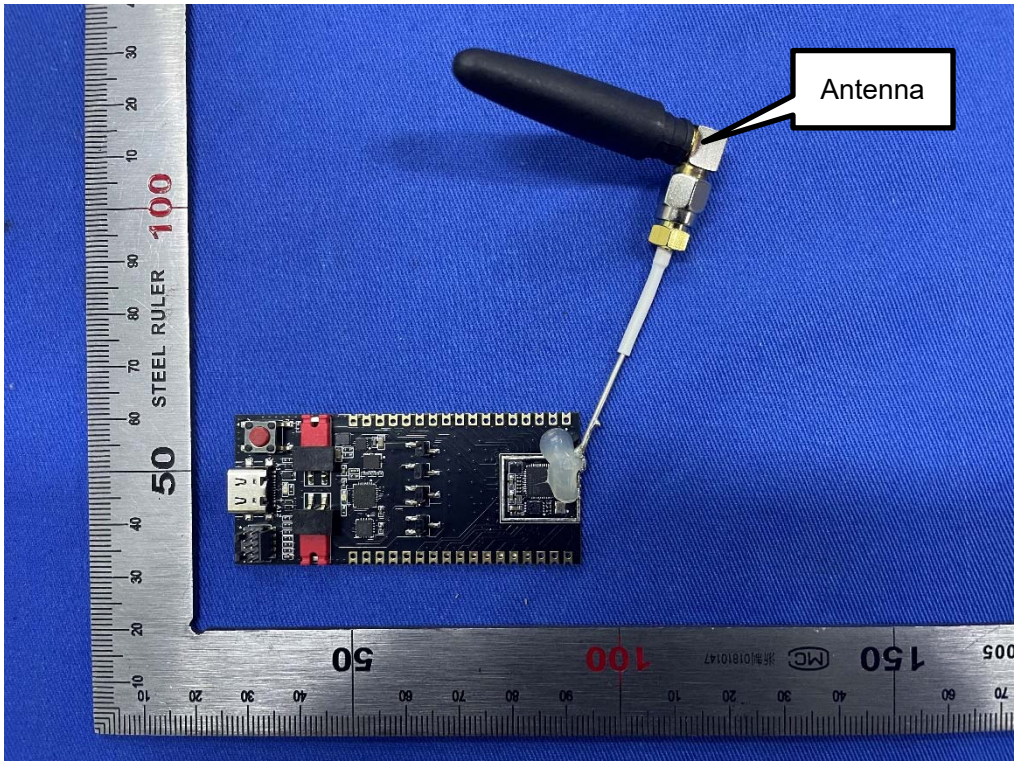
Front of the sample



Rear of the sample

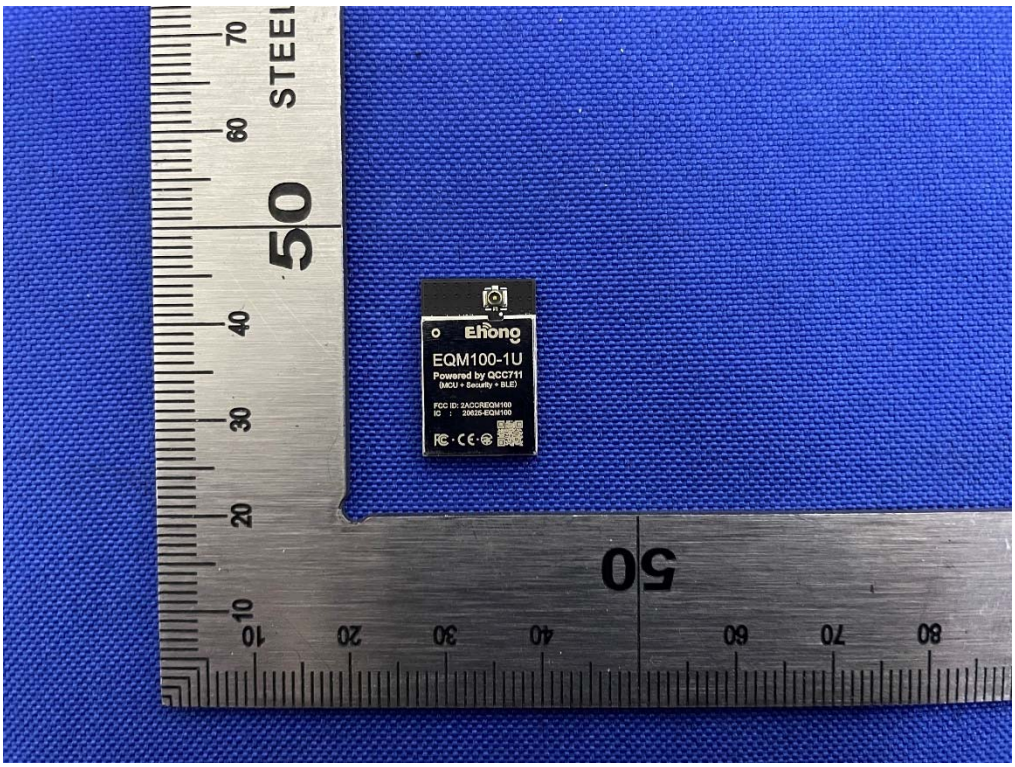


Remove the shield cover

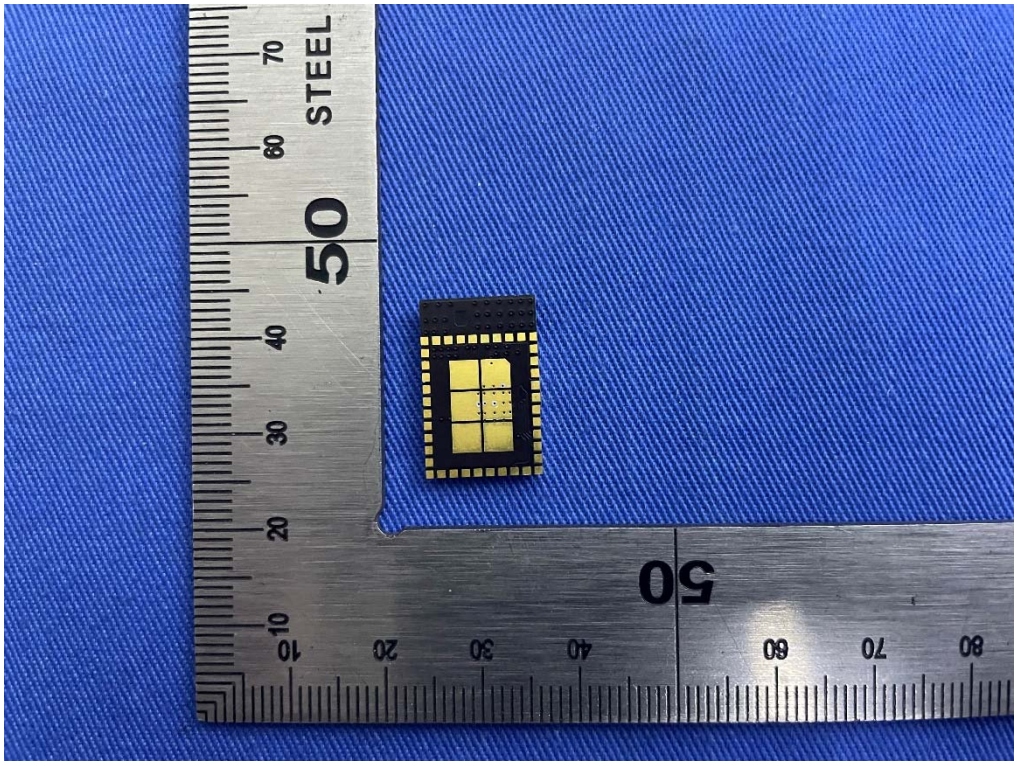


Antenna Position

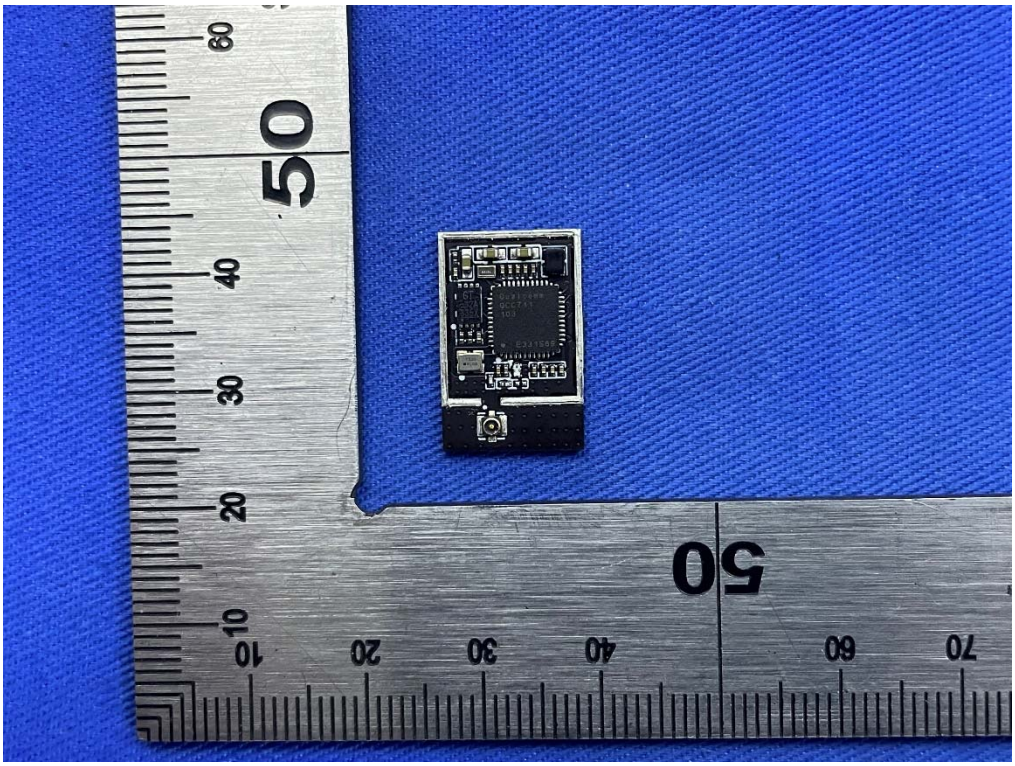
Model: EQM100-1U



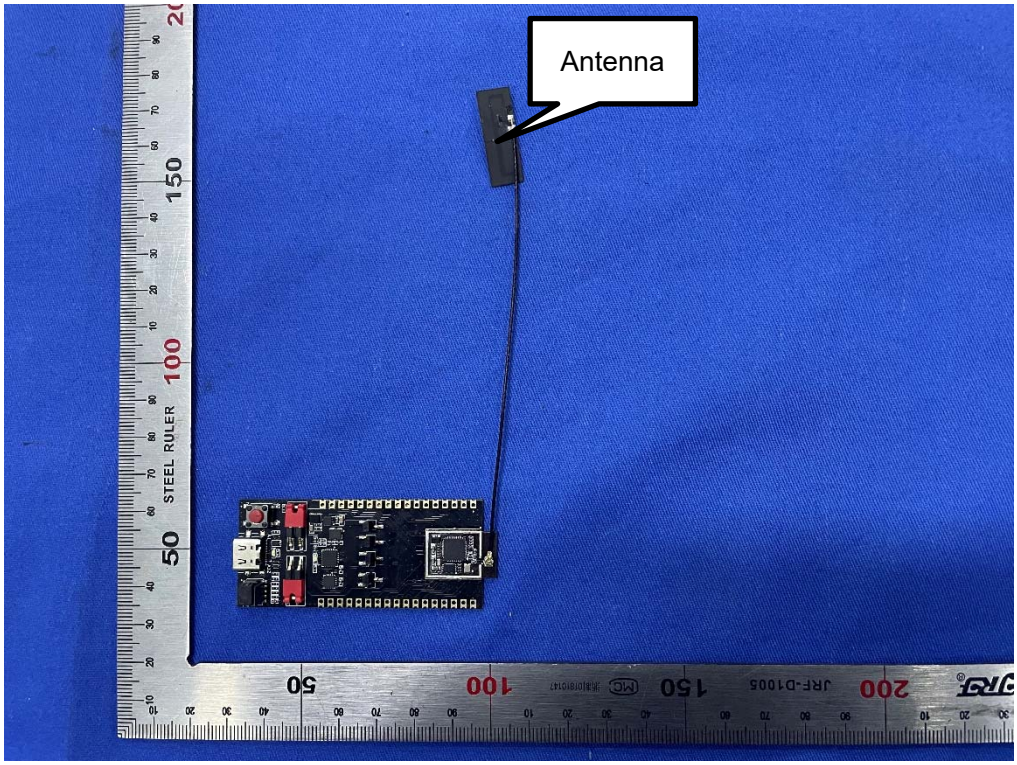
Front of the sample



Rear of the sample



Remove the shield cover



Antenna Position

5.2 Set-up for Conducted Emissions

Model: EQM100-1B

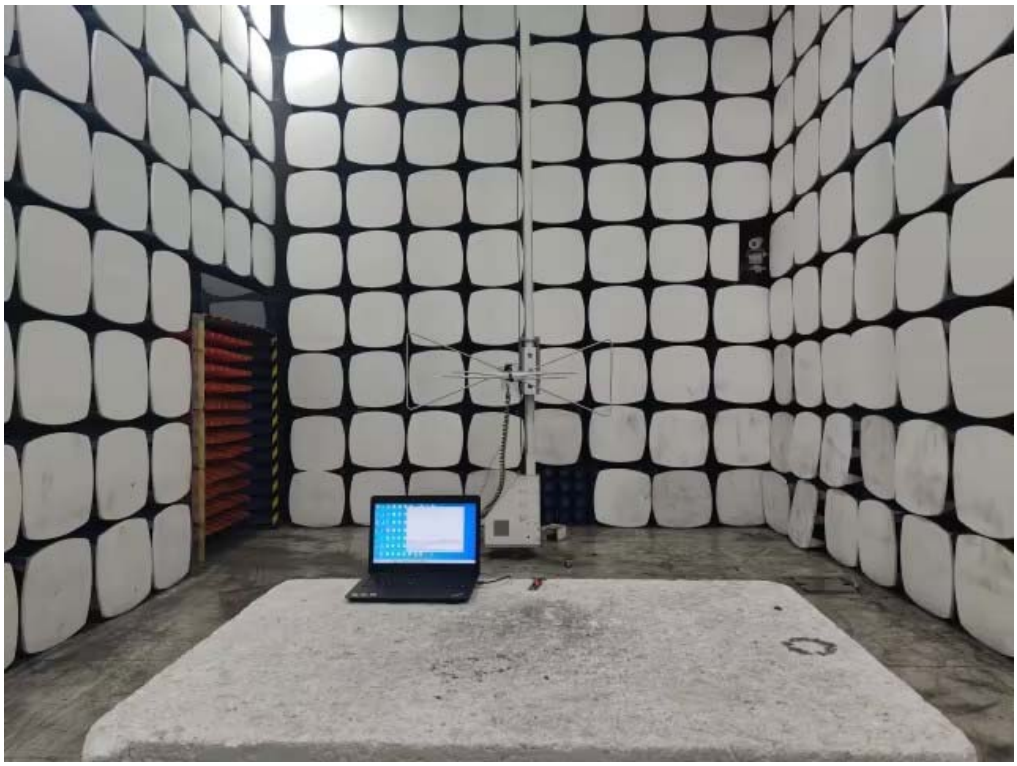
Model: EQM100-1P

Model: EQM100-1U

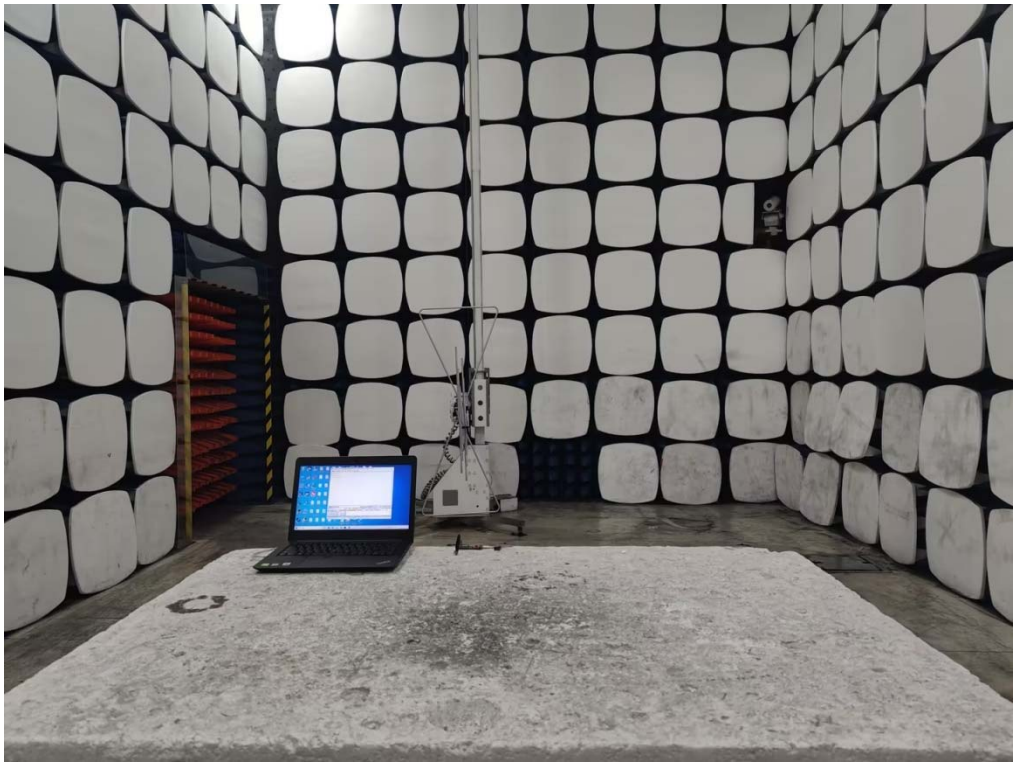
5.3 Set-up for Conducted RF test at Antenna Port

5.4 Set-up for Spurious Emissions below 1GHz

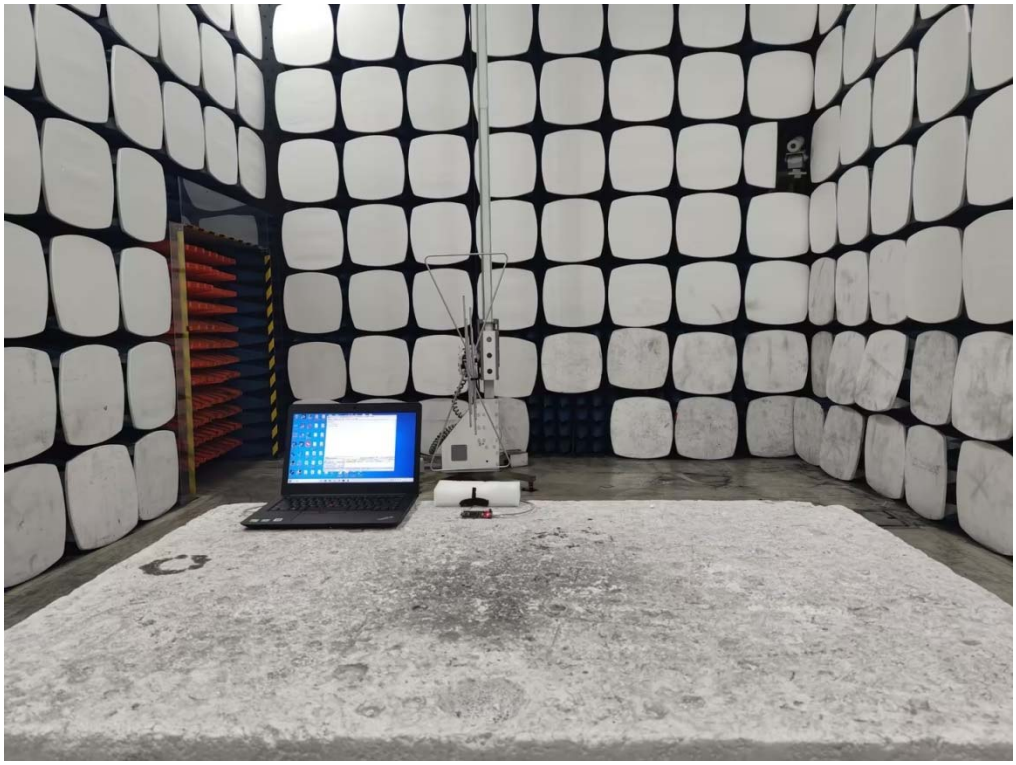
Model: EQM100-1B



Model: EQM100-1P

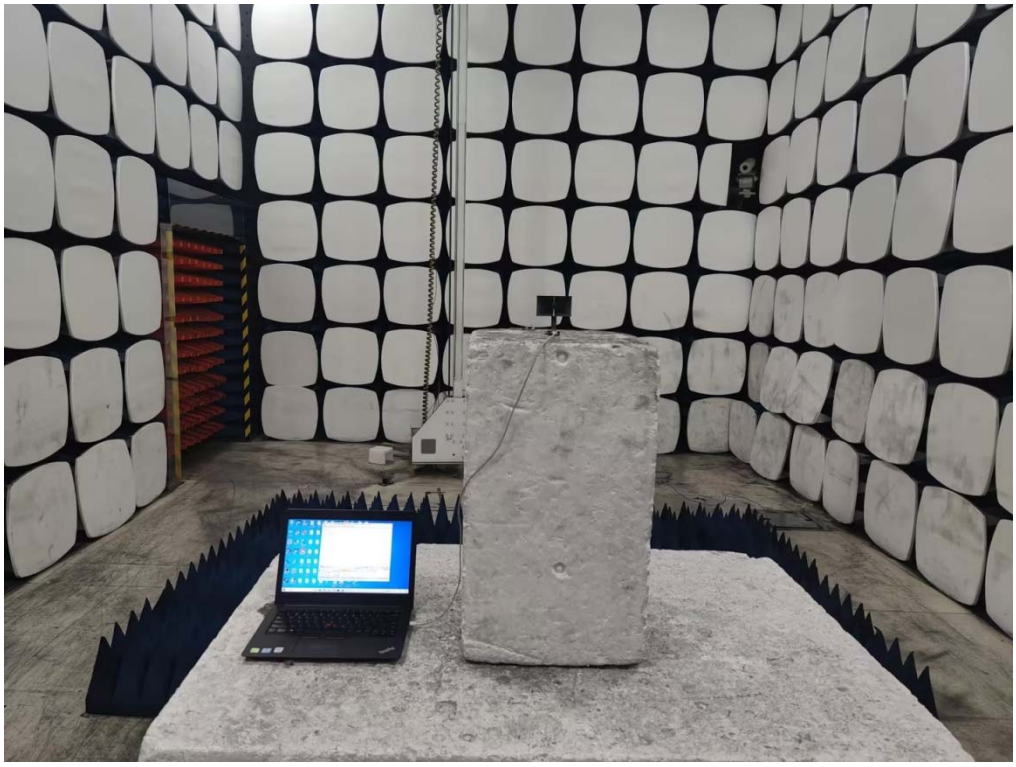


Model: EQM100-1U

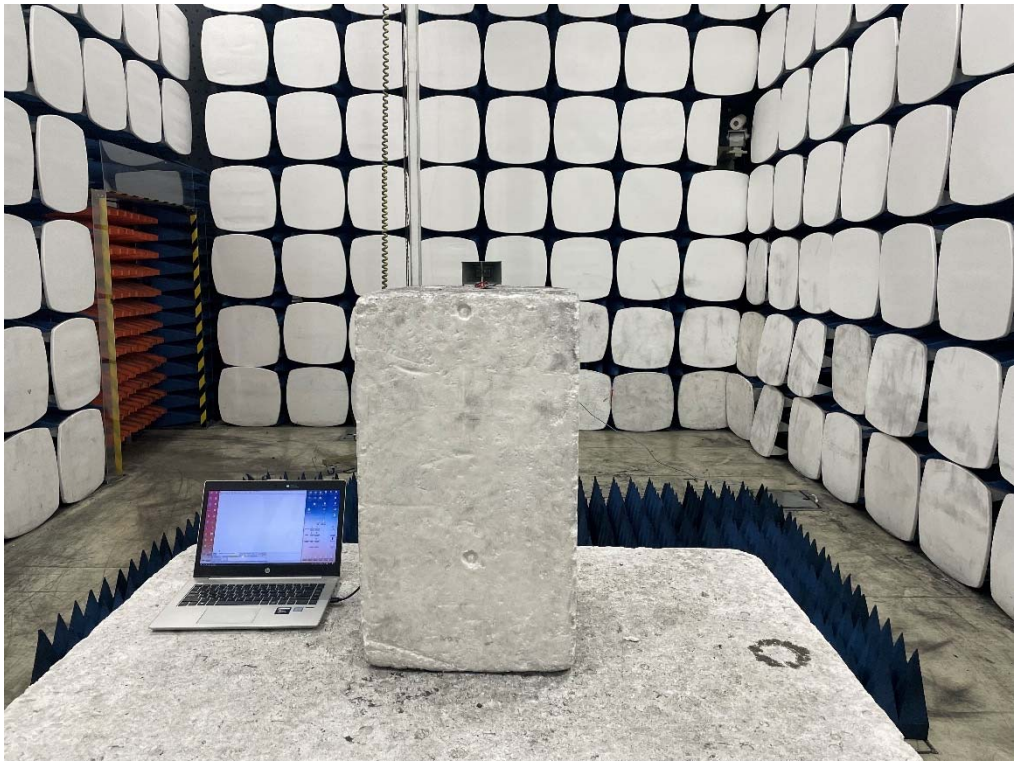


5.5 Set-up for Spurious Emissions above 1GHz

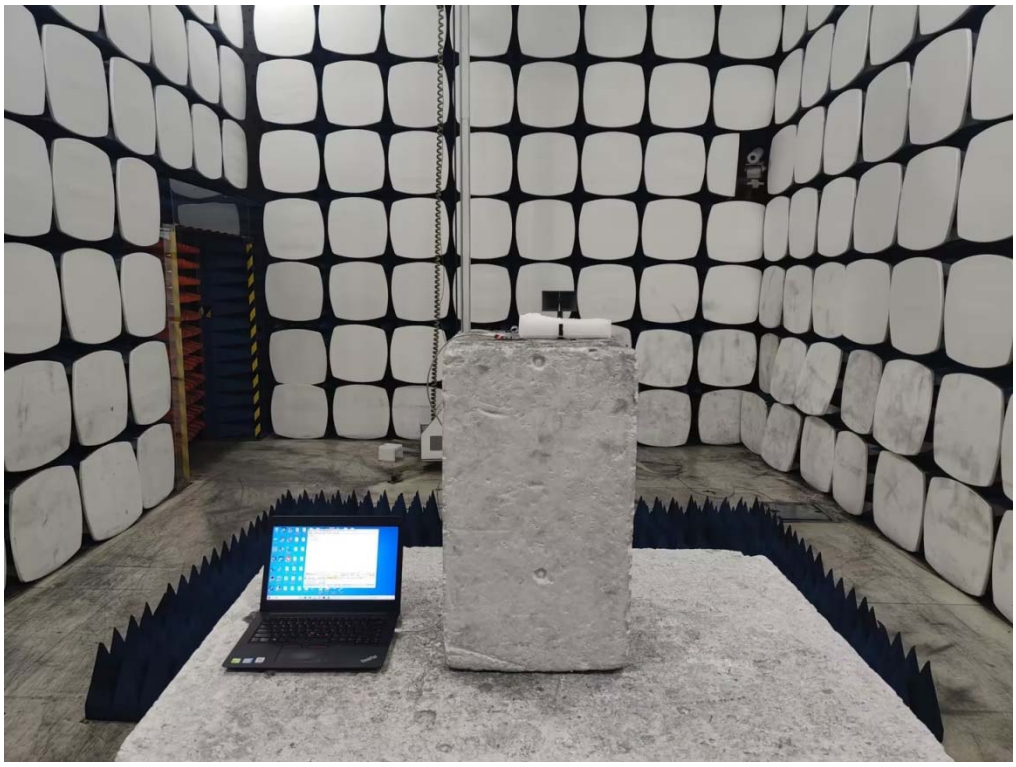
Model: EQM100-1B



Model: EQM100-1P



Model: EQM100-1U



End of the report