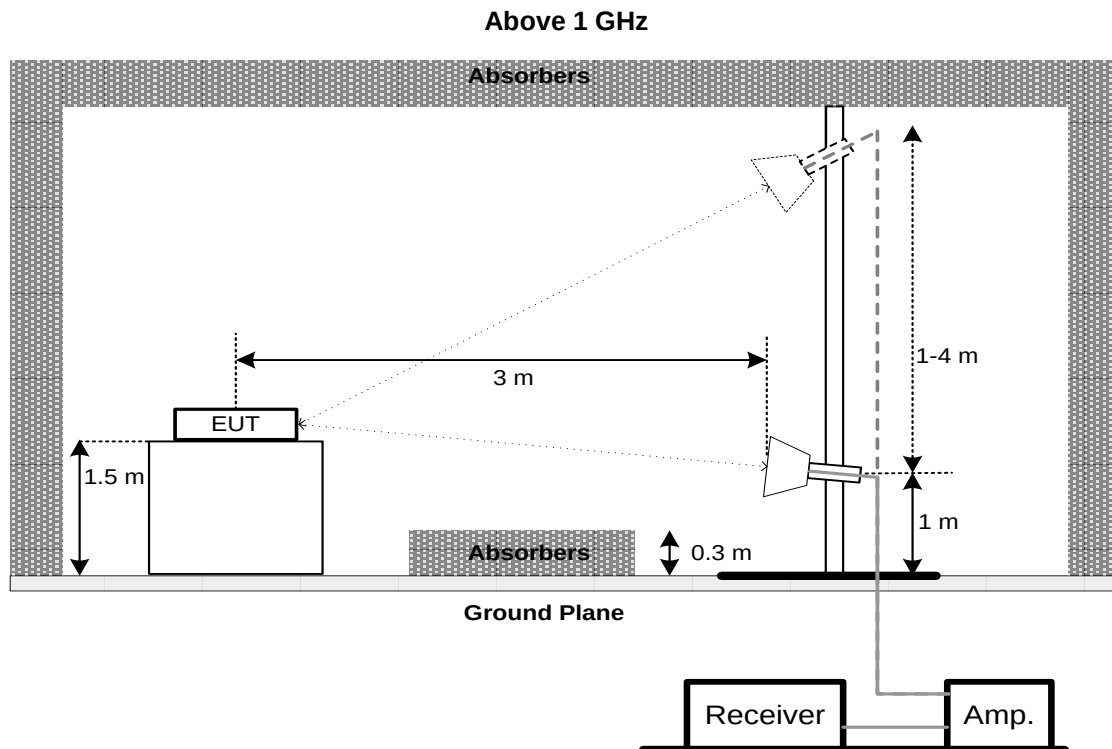




4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

4.6 TEST RESULTS - 9 KHZ TO 30 MHZ

Please refer to the APPENDIX B.

Remark:

- (1) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.7 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.

4.8 TEST RESULTS - ABOVE 1000 MHZ

Please refer to the APPENDIX D.

Remark:

- (1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5.BANDWIDTH

5.1LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.407(a) FCC 15.407(e)	26 dB Bandwidth	-	5150-5250
	26 dB Bandwidth	-	5250-5350
	26 dB Bandwidth	-	5470-5725
	6dB Bandwidth	Minimum 500 kHz	5725-5850

5.2TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below

b. Spectrum Setting:

For UNII-1

Spectrum Parameter	Setting
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	> RBW
Detector	Peak
Trace	MAX Hold
Sweep Time	Auto

For UNII-3:

Spectrum Parameter	Setting
Span Frequency	> 6dB Bandwidth
RBW	1MHz
VBW	3MHz
Detector	Peak
Trace	MAX Hold
Sweep Time	Auto

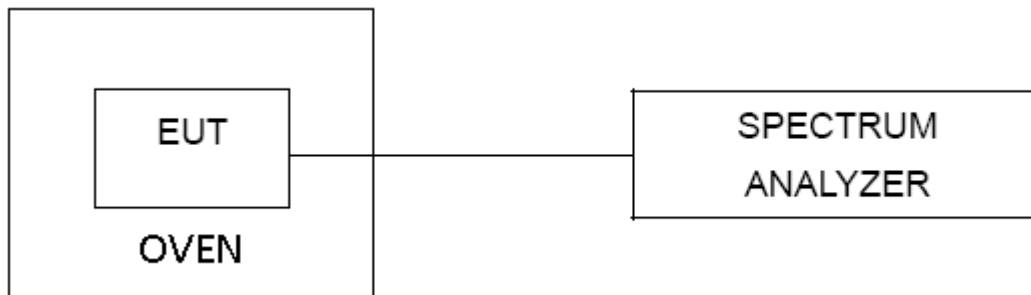
For 99% Occupied Bandwidth:

Spectrum Parameter	Setting
Span Frequency	1.5 times to 5 times the OBW
RBW	1% to 5% of the OBW
VBW	$\geq 3 \times \text{RBW}$
Detector	Peak
Trace	MAX Hold
Sweep Time	Auto

c. Measured the spectrum width with power higher than 26dB / 6dB below carrier.

5.3DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP**5.5 EUT OPERATION CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX E.

6. MAXIMUM OUTPUT POWER

6.1 LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.407(a)	MAXimumOutput Power	AP device: 1 Watt (30dBm) Client device: 250mW (23.98dBm)	5150-5250
		250mW (23.98dBm)	5250-5350
		250mW (23.98dBm)	5470-5725
		1 Watt (30dBm)	5725-5850

Note:

- For client devices in the 5.15-5.25 GHz band, the Maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the Maximum antenna gain does not exceed 6 dBi. In addition, the Maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the Maximum conducted output power and the Maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the Maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26dB Bandwidth in megahertz.

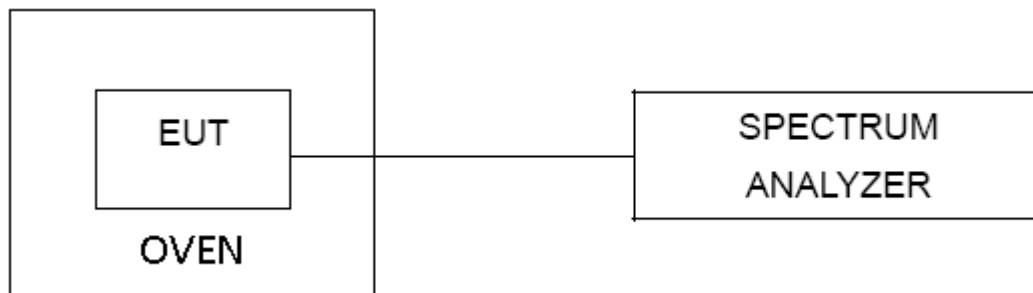
6.2 TEST PROCEDURE

- The EUT was directly connected to the peak power analyzer and antenna output port as shown in the block diagram below.
- The test was performed in accordance with method of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX F.

7.POWER SPECTRAL DENSITY

7.1LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.407(a)	Power Spectral Density	AP device:17dBm/MHz Client device:11dBm/MHz	5150-5250
		11dBm/MHz	5250-5350
		11dBm/MHz	5470-5725
		30dBm/500kHz	5725-5850

7.2TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting:
For UNII-1

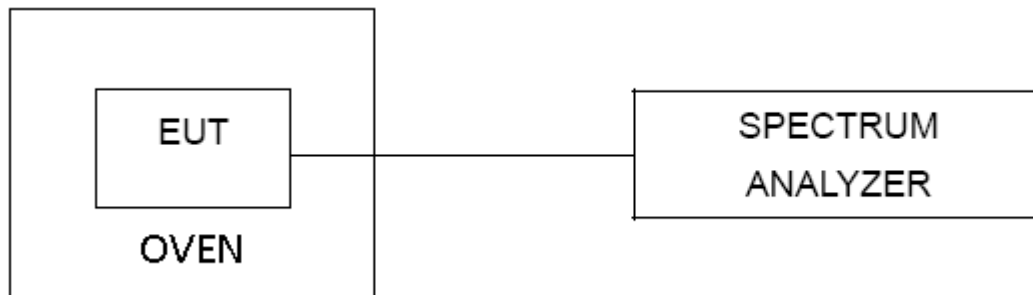
Spectrum Parameter	Setting
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1MHz.
VBW	3MHz.
Detector	RMS
Trace average	100 trace
Sweep Time	Auto

For UNII-3:

Spectrum Parameter	Setting
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	500KHz.
VBW	2MHz.
Detector	RMS
Trace average	100 trace
Sweep Time	Auto

7.3DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP**7.5 EUT OPERATION CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIXG.

8.FREQUENCY STABILITY

8.1LIMIT

Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.407(g)	Frequency Stability	An emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.	5150-5250
			5250-5350
			5470-5725
			5725-5850

8.2TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting:

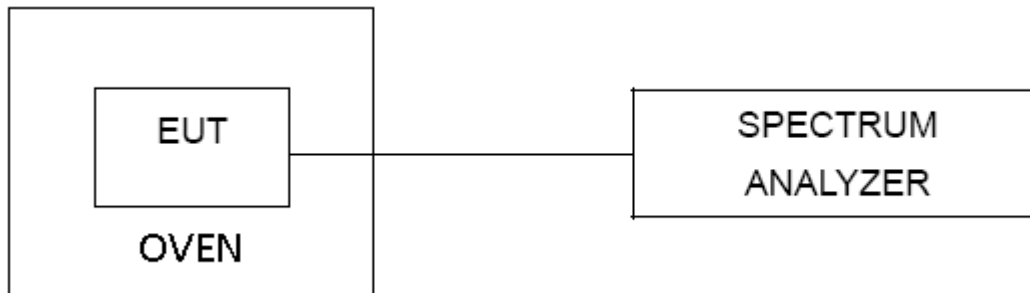
Spectrum Parameter	Setting
Span Frequency	Entire absence of modulation emissionsbandwidth
RBW	10 kHz
VBW	10kHz
Detector	Peak
Trace	MAX Hold
Sweep Time	Auto

- The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
- User manual temperature is -30°C~75°C.

8.3DEVIATION FROM STANDARD

No deviation.

8.4TEST SETUP



8.5EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

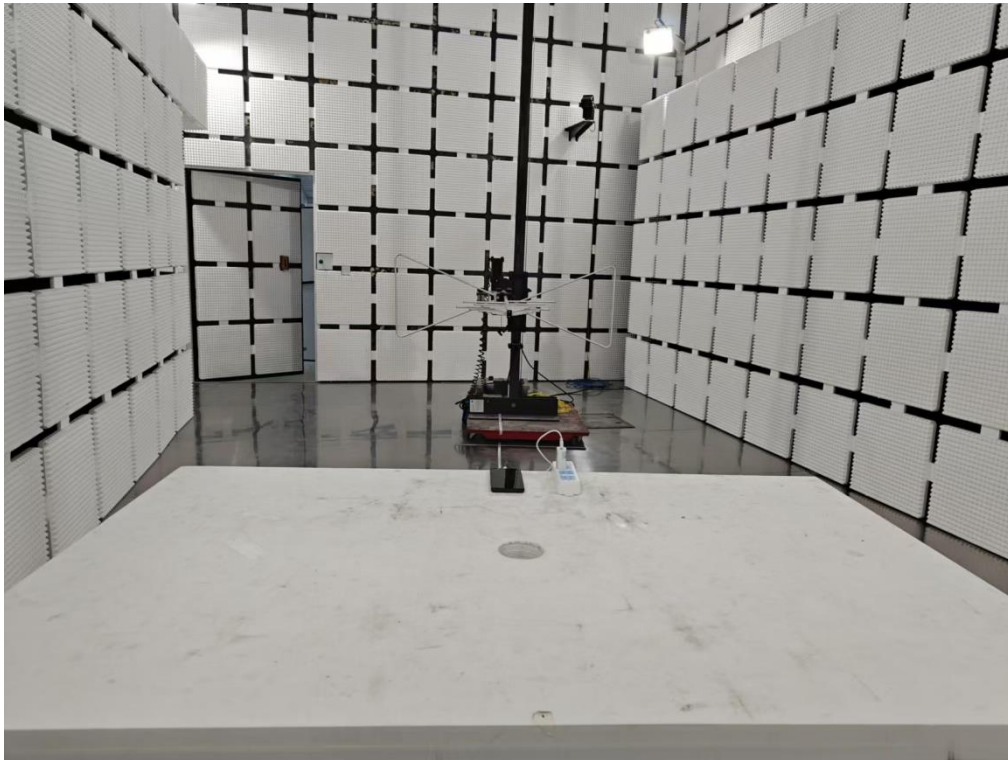
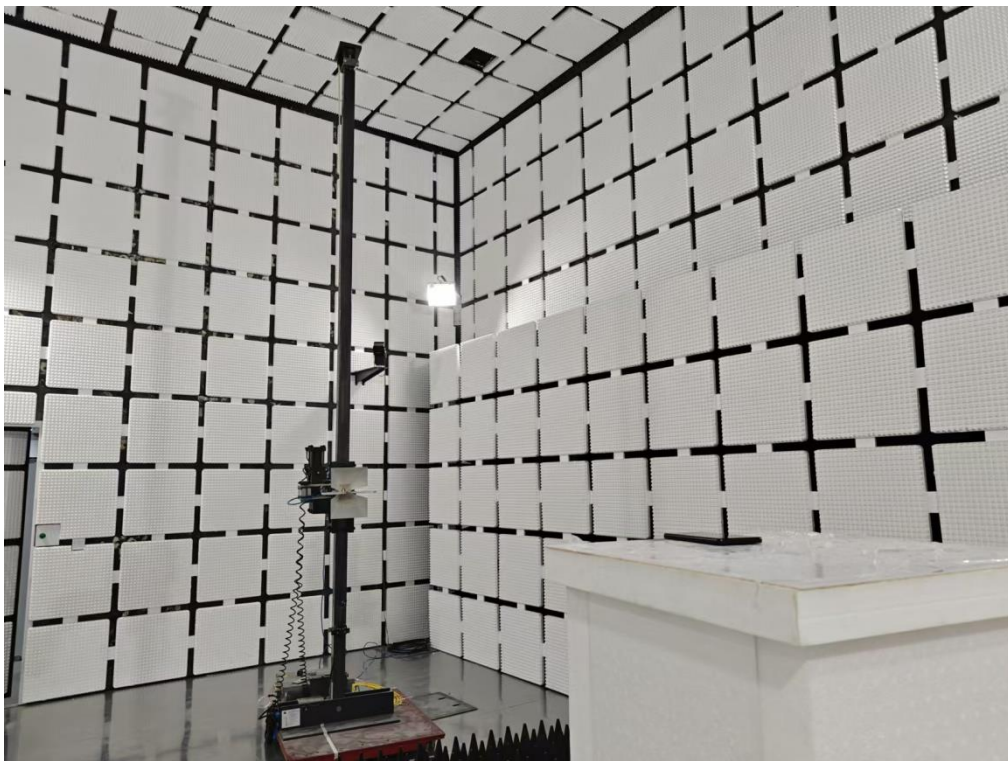
8.6 TEST RESULTS

N/A.

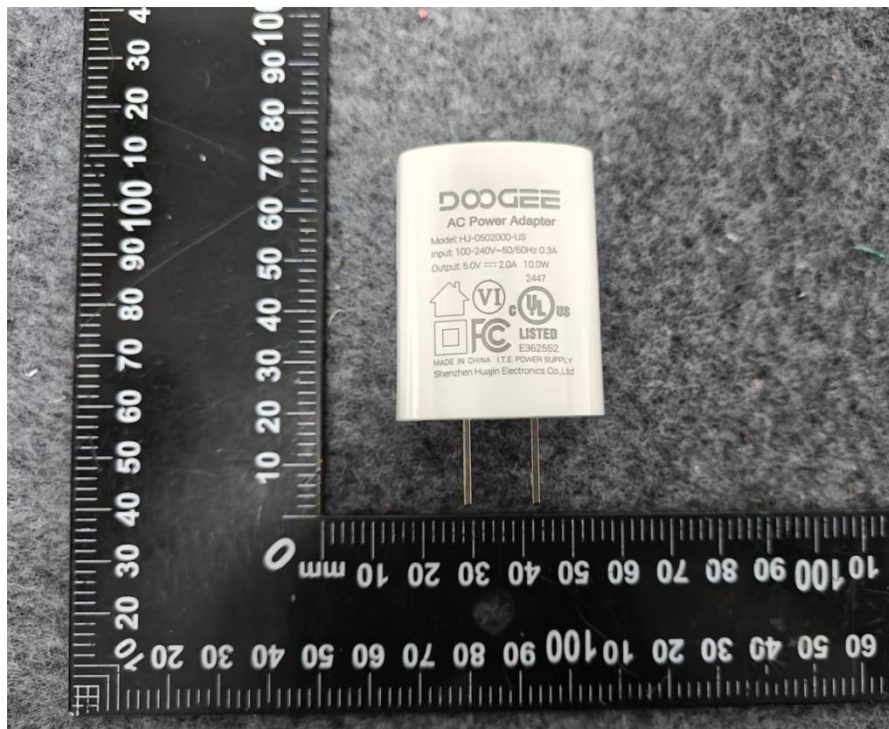
9. MEASUREMENT INSTRUMENTS LIST

Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Receiver	Rohde&Schwarz	ESIB 40	YH-TIRT-SAC-966-20220911	2024/01/05	2025/01/04
Integral Antenna	Schwarzbeck	VULB 9163	01314	2023.12.11	2025.12.10
Integral Antenna	Rohde&Schwarz	HF907	RSM2991424	2023.12.11	2025.12.10
Preamplifier	Emtrace	RP01A	'02017	2024/01/05	2025/01/04
Preamplifier	Schwarzbeck	BBV9744	00143	2024/01/05	2025/01/04
Loop Antenna	ZHINAN	ZN30900A	12024	2024/01/05	2025/01/04
Horn Antenna	Schwarzbeck	BBHA9170	00956	2024/01/05	2025/01/04
RF Cable	/	LMR400UF-NMNM-7.0M	/	2024/01/05	2025/01/04
RF Cable	/	SFT2050PUR-NMNM-7.0M	/	2024/01/05	2025/01/04
EMI Receiver	Rohde&Schwarz	ESR7	1316.3003K07-102611-mk	2024/11/02	2025/11/01
LISN	Rohde&Schwarz	ENV216	3560.655.12-102915-Bp	2024/11/02	2025/11/01
RF Cable	\	SFT2050PUR-NMNM-2.0M	\	2024/01/05	2025/01/04
Spectrum analyzer	ROHDE&SCHWARZ	FSU26	200732	2024/01/05	2025/01/04
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	101722	2024/01/05	2025/01/04
Filter	HEWLETT PACKARD	JS0806-F	19K8060209	2024/01/05	2025/01/04

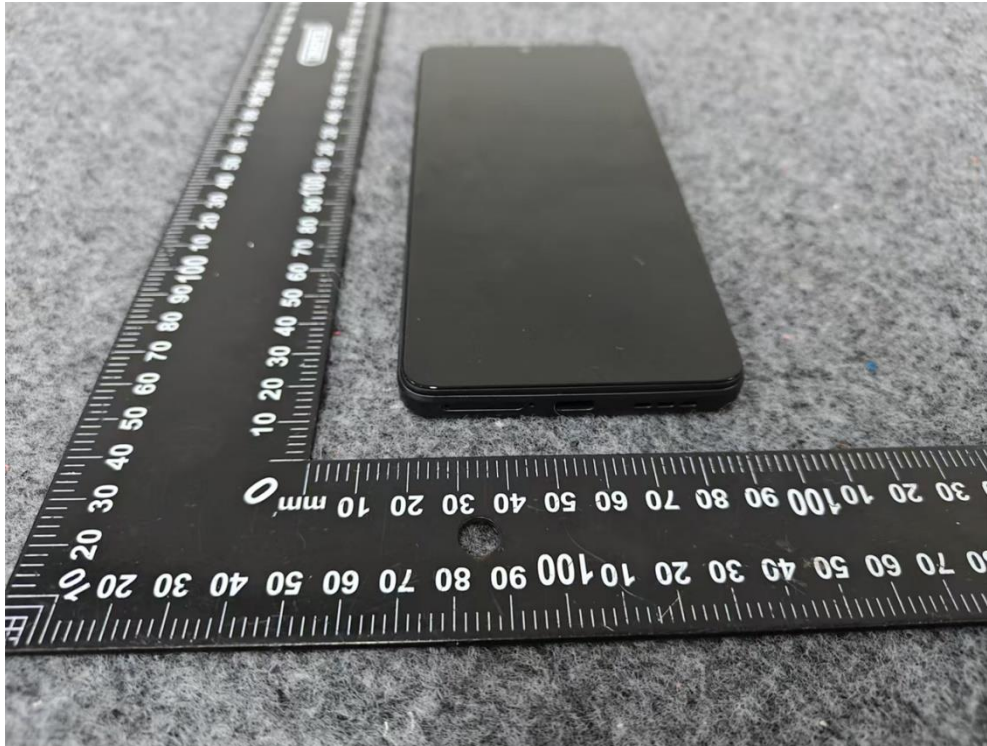
10.EUT TEST PHOTOS**AC Power Line Conducted Emissions Test Photos****Conducted RF Test Photos**

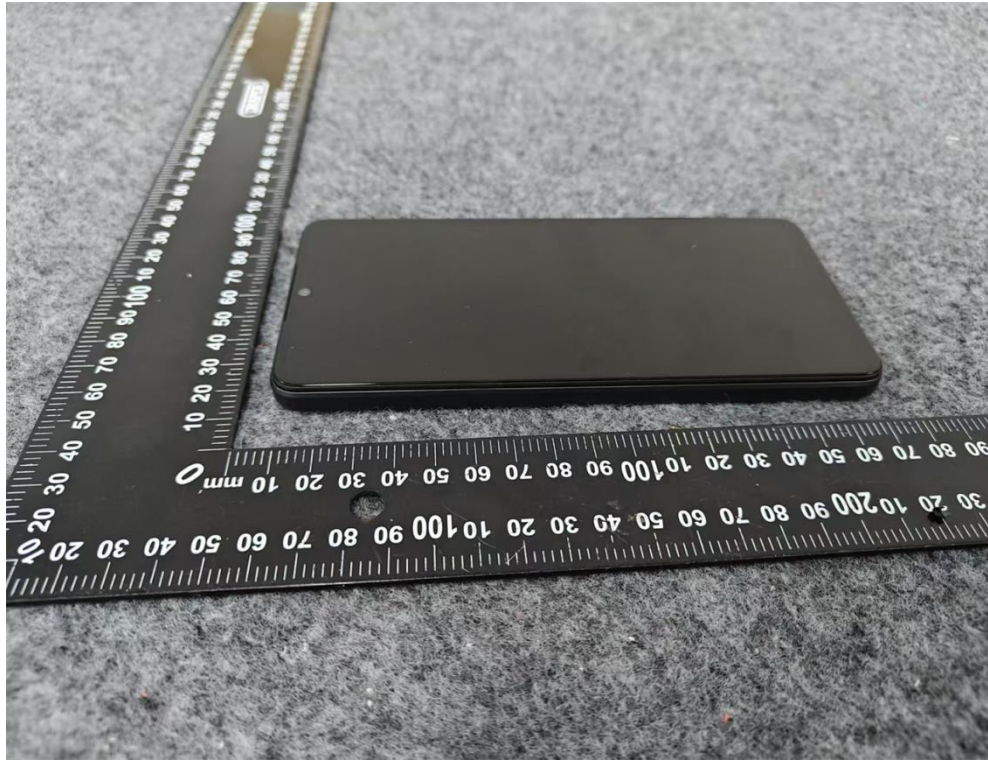
Radiated Emissions Test Photos**30 MHz to 1 GHz****Radiated Emissions Test Photos****Above 1 GHz**

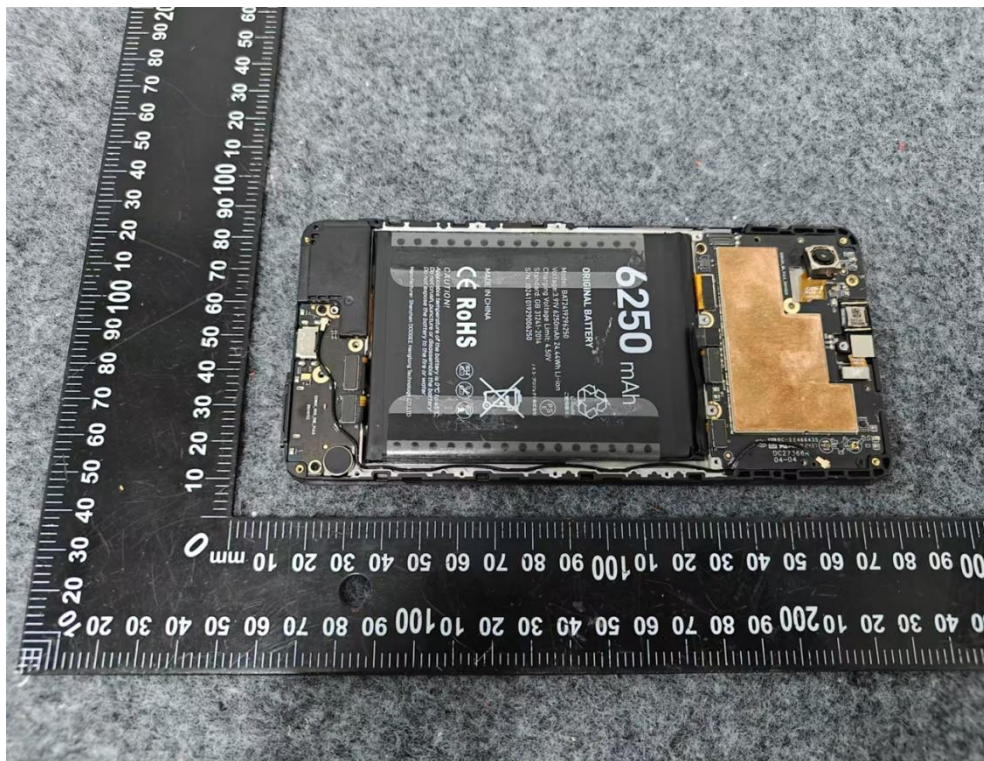
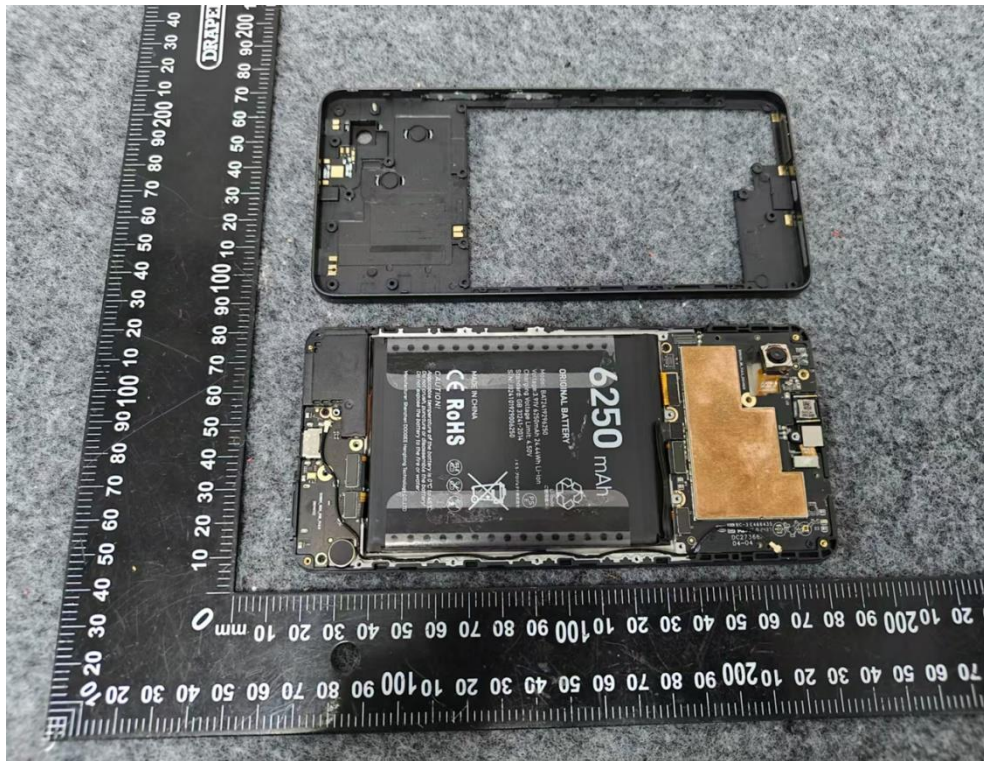
11.EUT PHOTOS

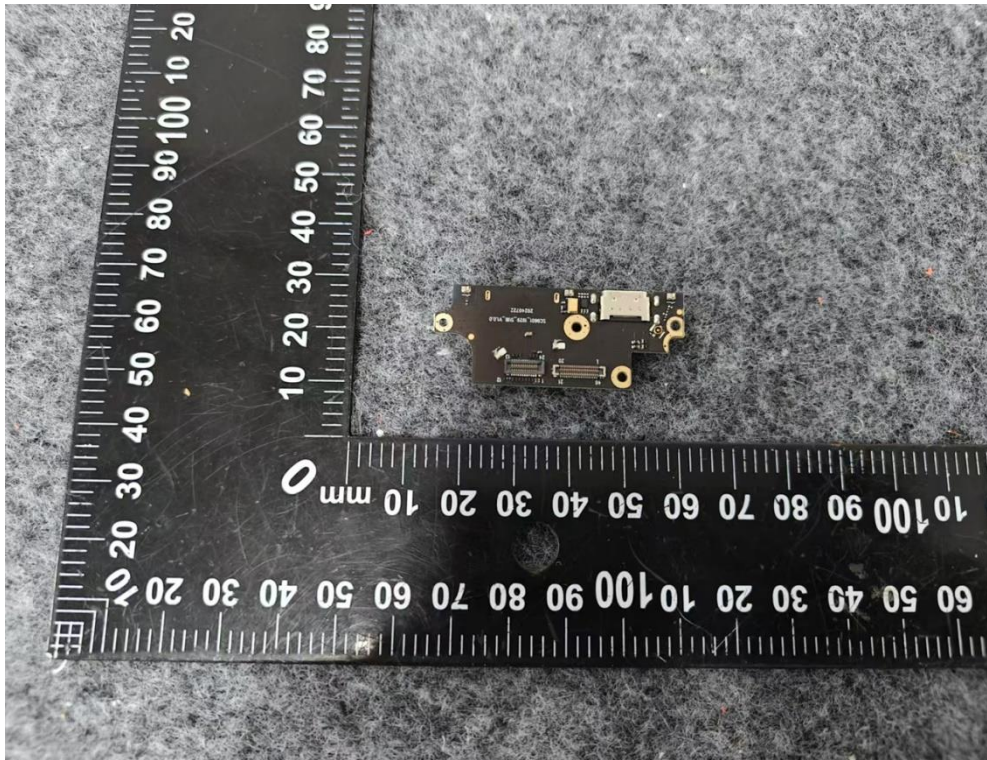
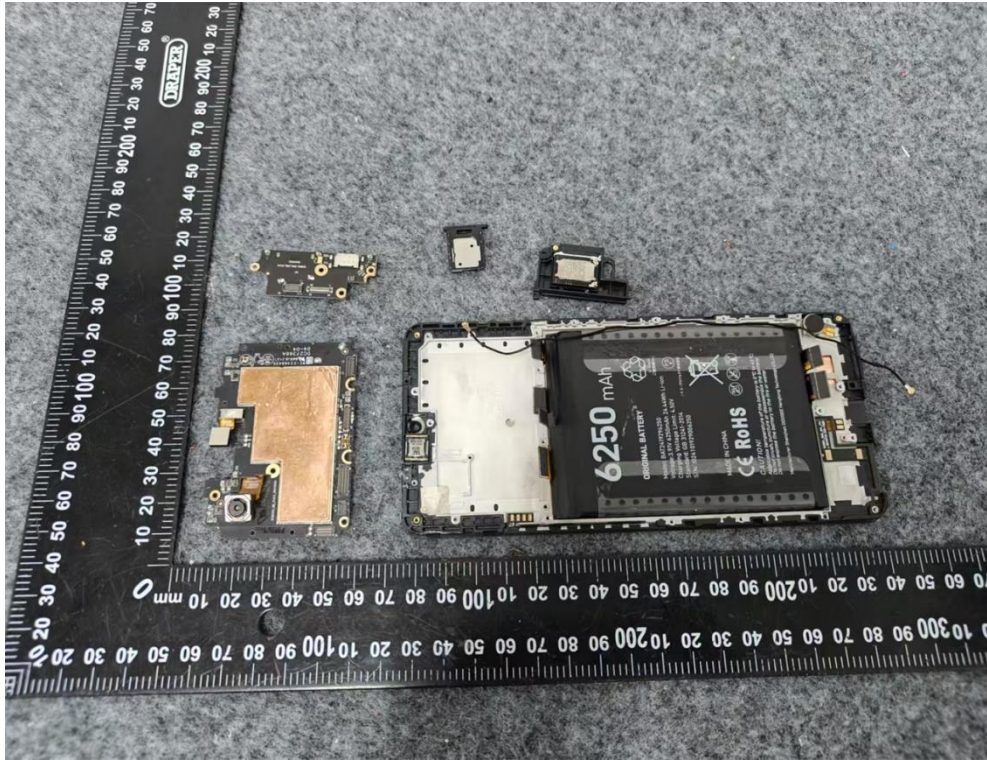


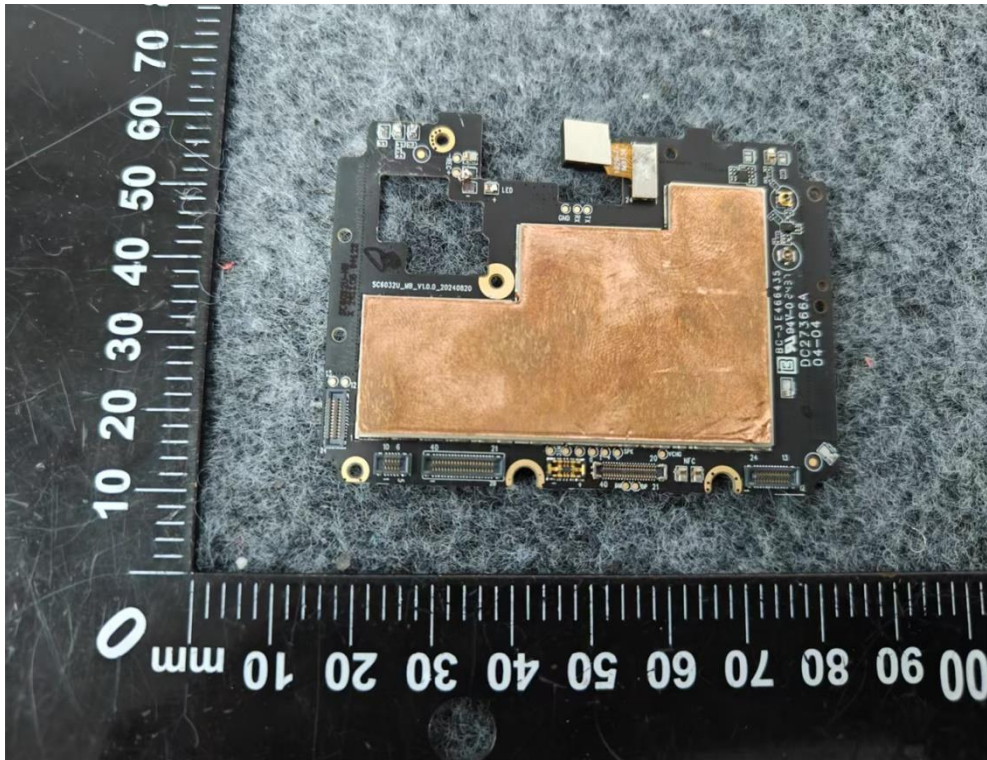
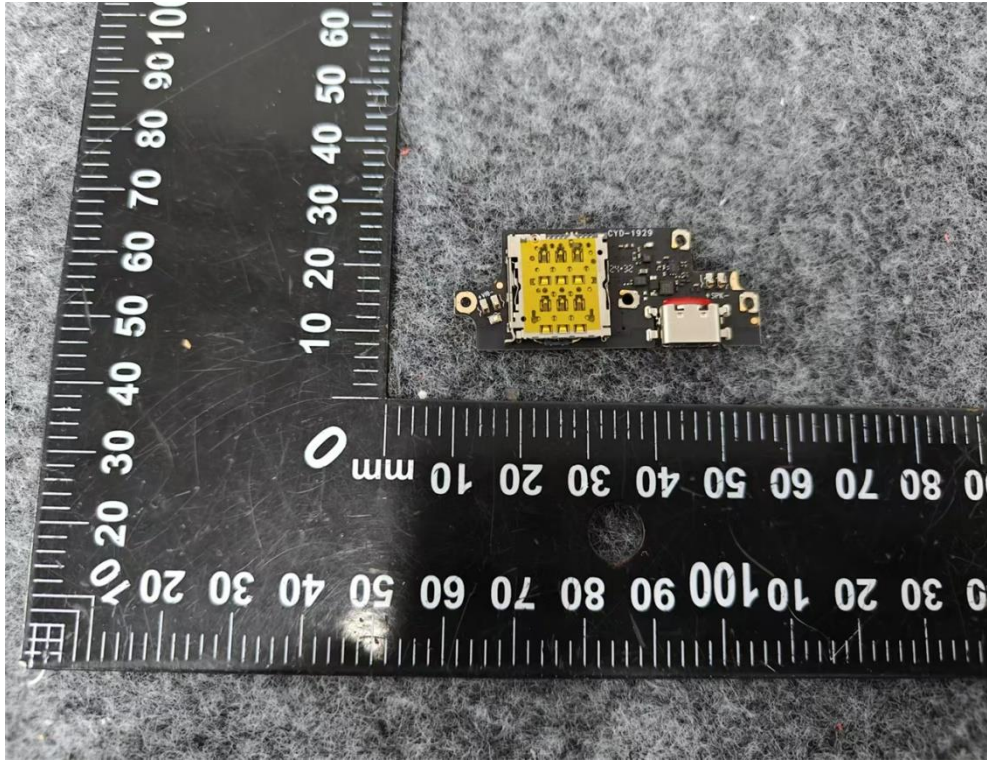


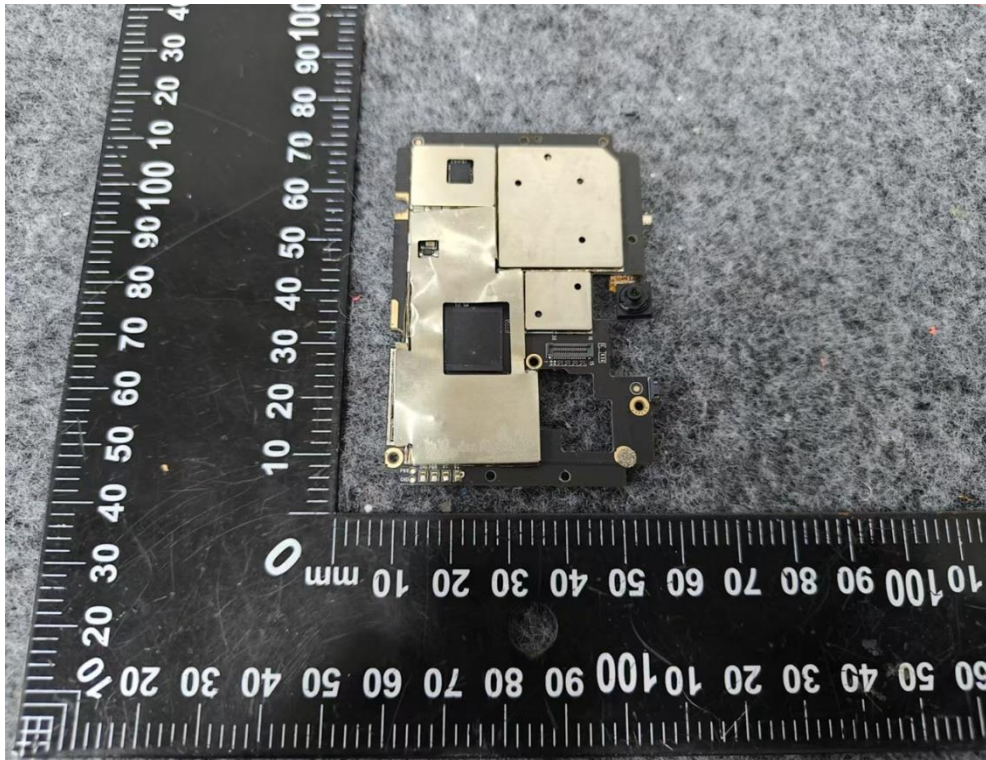
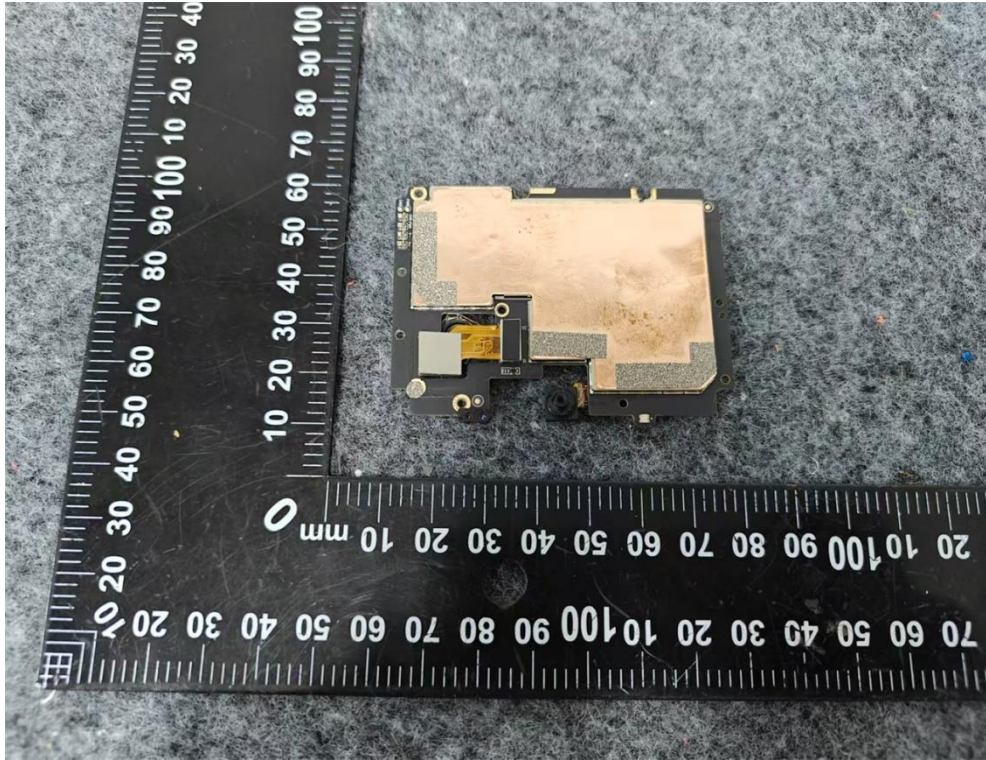


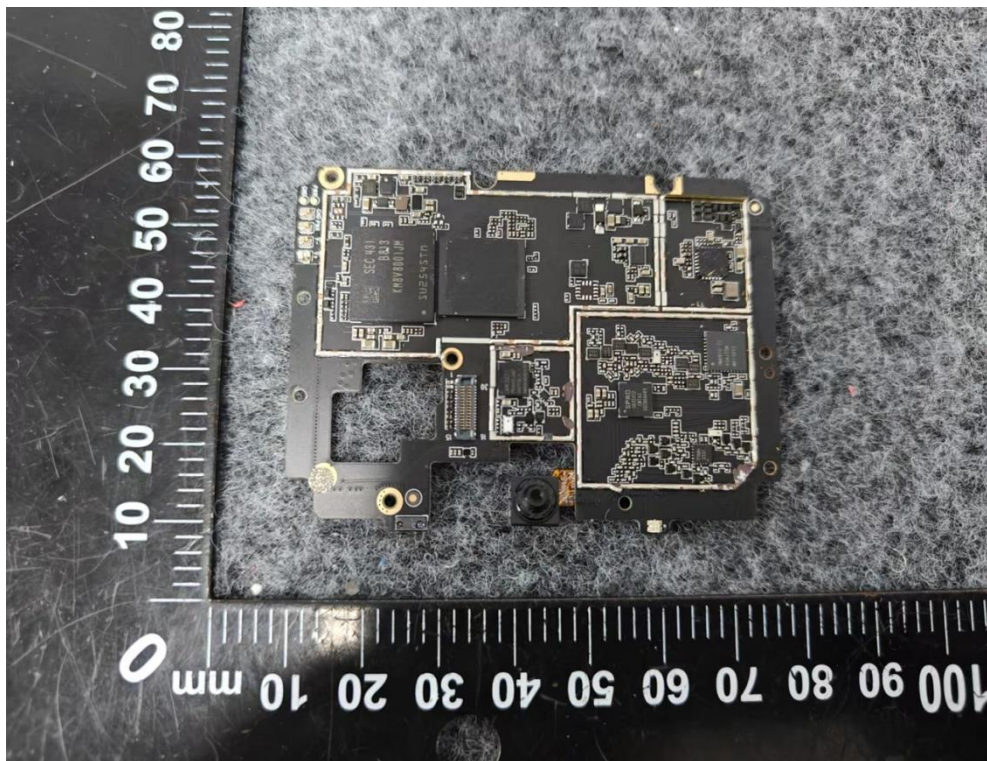
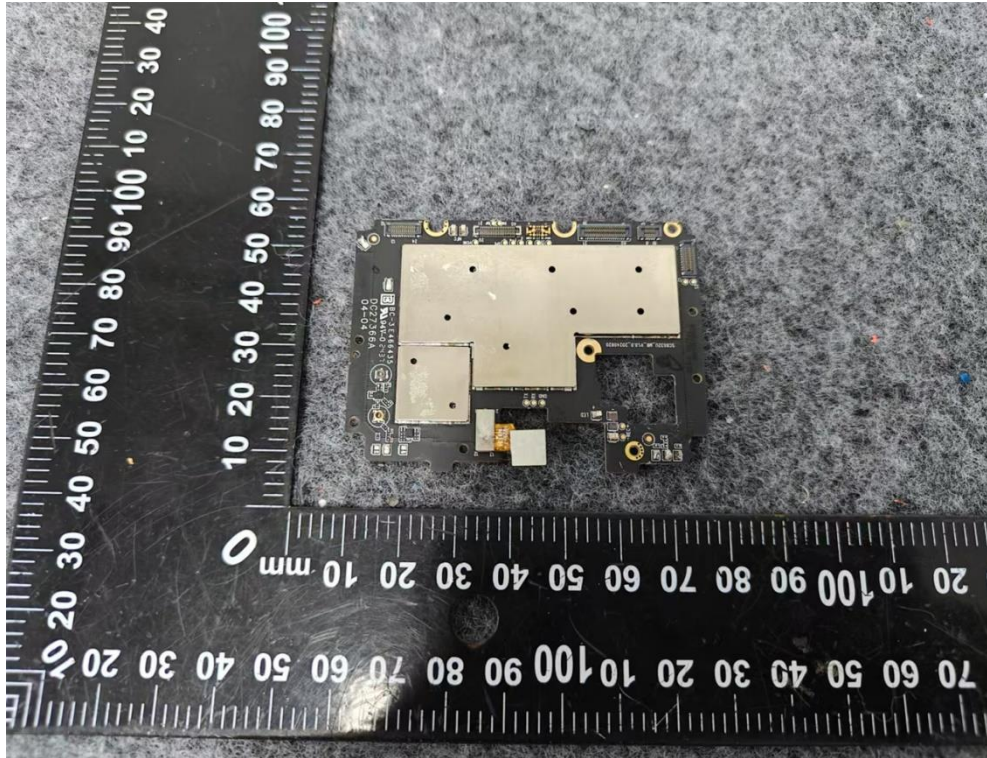


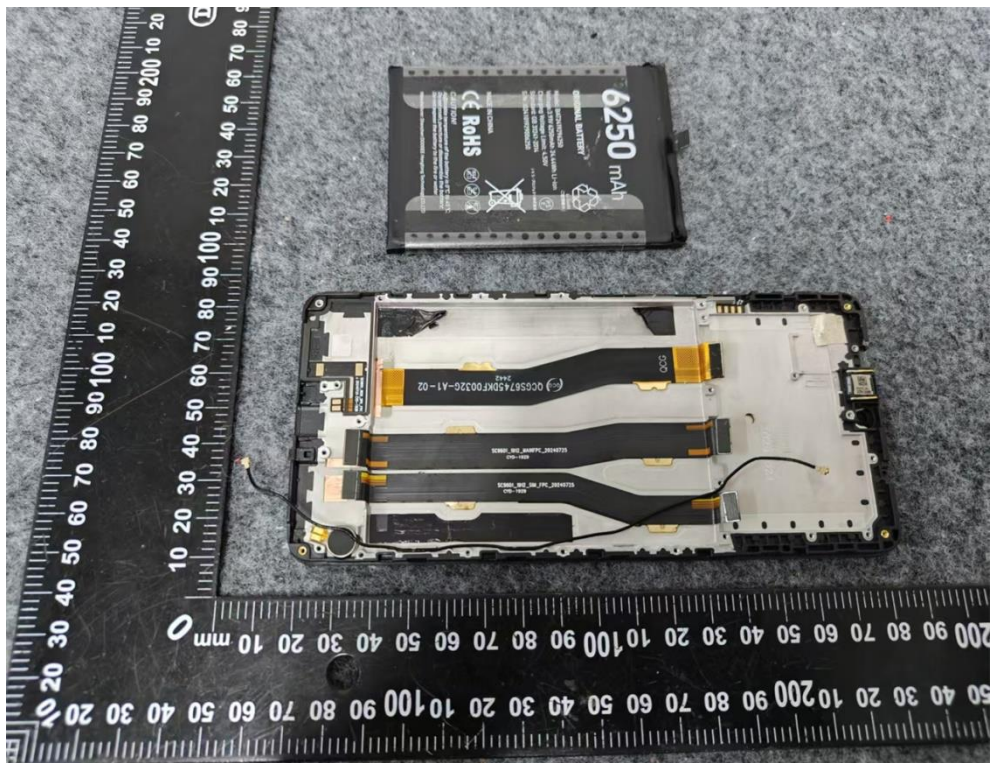
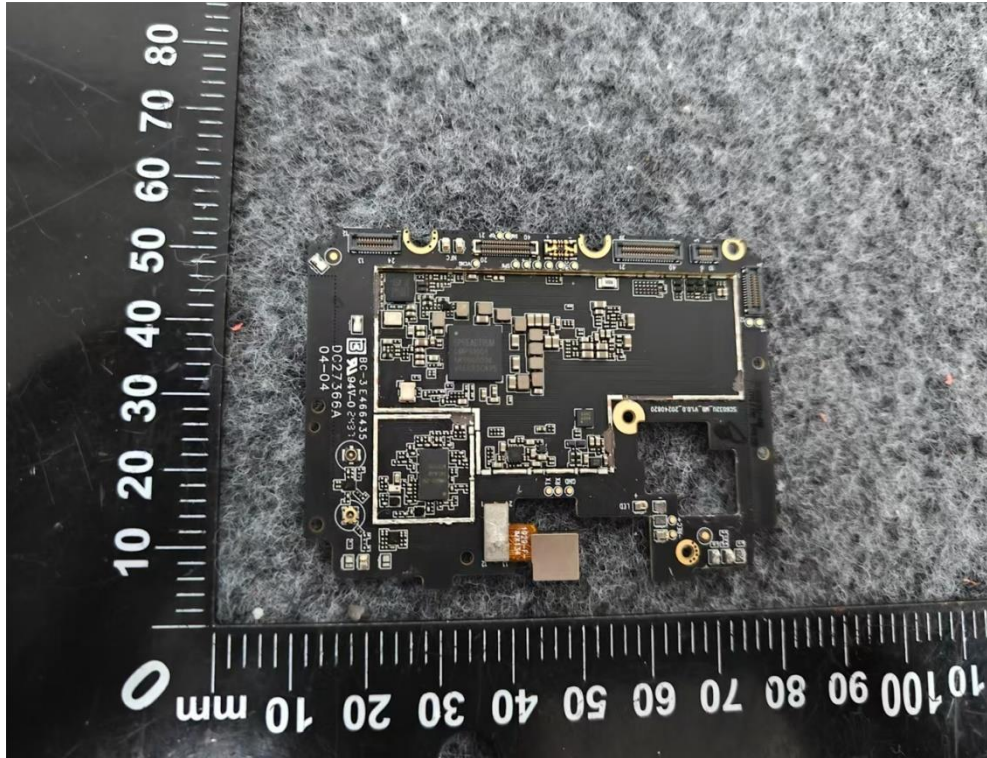








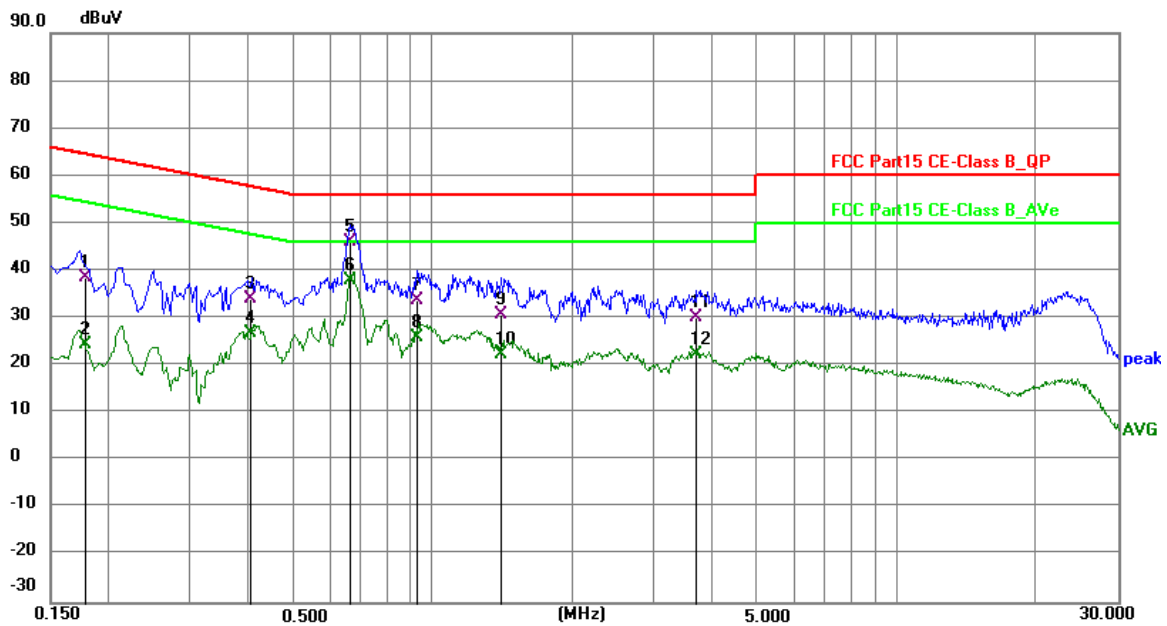






APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode	TX N20 ModeChannel 40 (UNII-1)	Phase	Line
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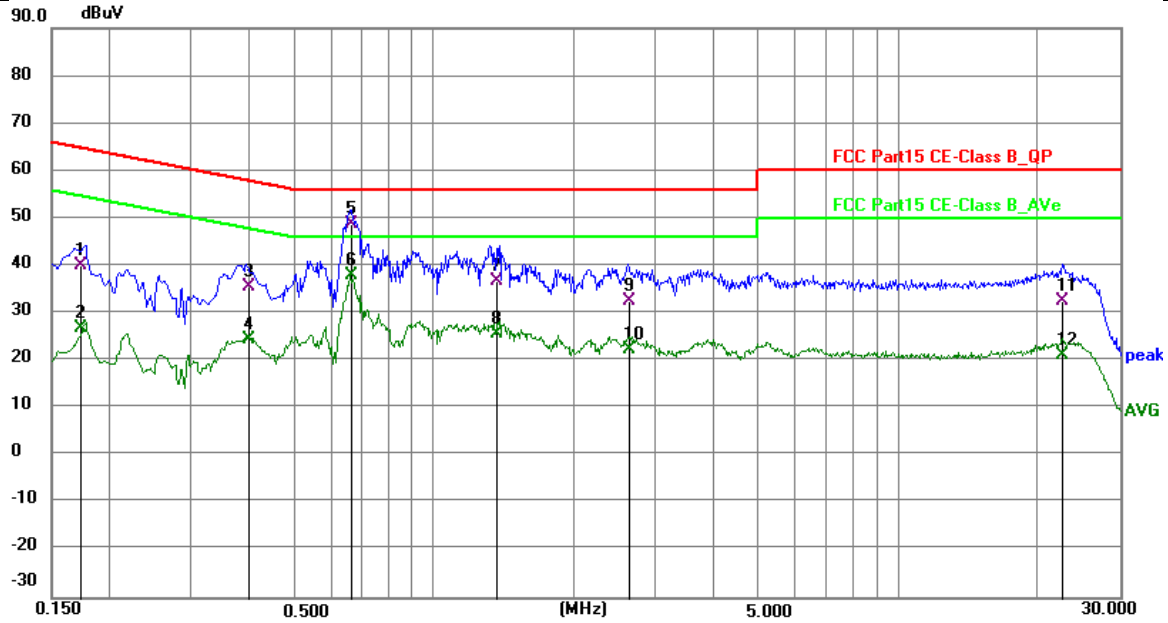


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1783	28.89	9.63	38.52	64.56	-26.04	QP	P	
2	0.1783	14.96	9.63	24.59	54.56	-29.97	AVG	P	
3	0.4040	24.53	9.63	34.16	57.77	-23.61	QP	P	
4	0.4040	17.28	9.63	26.91	47.77	-20.86	AVG	P	
5	0.6656	36.53	9.63	46.16	56.00	-9.84	QP	P	
6 *	0.6656	28.19	9.63	37.82	46.00	-8.18	AVG	P	
7	0.9301	23.99	9.64	33.63	56.00	-22.37	QP	P	
8	0.9301	16.26	9.64	25.90	46.00	-20.10	AVG	P	
9	1.4110	21.06	9.64	30.70	56.00	-25.30	QP	P	
10	1.4110	12.80	9.64	22.44	46.00	-23.56	AVG	P	
11	3.7173	20.55	9.67	30.22	56.00	-25.78	QP	P	
12	3.7173	12.58	9.67	22.25	46.00	-23.75	AVG	P	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.
- (3) The test result has included the cable loss.

Test Mode	TX N20 ModeChannel 40 (UNII-1)	Phase	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1735	30.52	9.62	40.14	64.79	-24.65	QP	P	
2	0.1735	17.34	9.62	26.96	54.79	-27.83	AVG	P	
3	0.4004	25.97	9.62	35.59	57.85	-22.26	QP	P	
4	0.4004	14.74	9.62	24.36	47.85	-23.49	AVG	P	
5 *	0.6652	39.27	9.62	48.89	56.00	-7.11	QP	P	
6	0.6652	28.37	9.62	37.99	46.00	-8.01	AVG	P	
7	1.3680	27.20	9.64	36.84	56.00	-19.16	QP	P	
8	1.3680	16.08	9.64	25.72	46.00	-20.28	AVG	P	
9	2.6390	22.90	9.65	32.55	56.00	-23.45	QP	P	
10	2.6390	12.76	9.65	22.41	46.00	-23.59	AVG	P	
11	22.5787	22.60	9.83	32.43	60.00	-27.57	QP	P	
12	22.5787	11.36	9.83	21.19	50.00	-28.81	AVG	P	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.
- (3) The test result has included the cable loss.

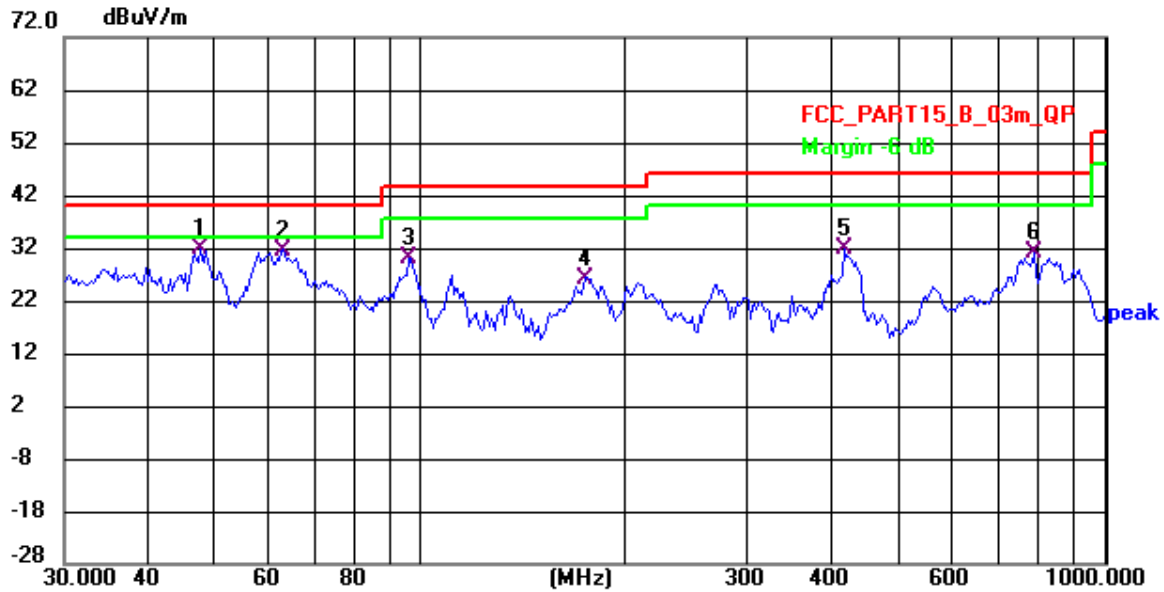
APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

Test Mode	TX N20 ModeChannel 40 (UNII-1)	Polarization	Vertical
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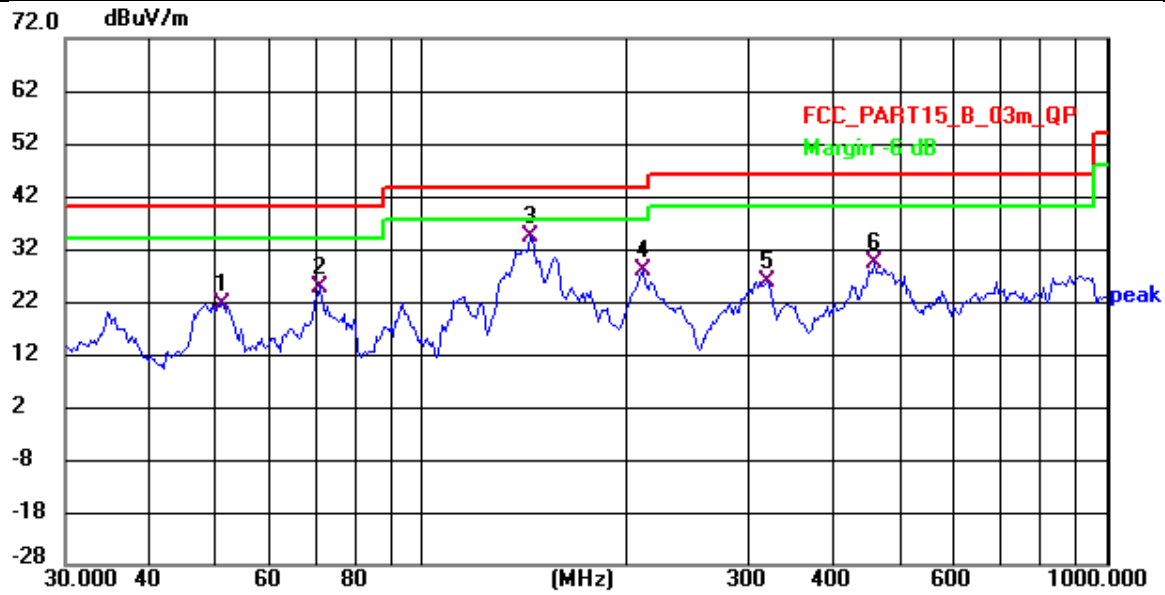


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	47.369	53.78	-22.13	31.65	40.00	-8.35	QP	100	66	P	
2	62.743	54.45	-22.94	31.51	40.00	-8.49	QP	100	123	P	
3	95.649	55.26	-25.23	30.03	43.50	-13.47	QP	200	183	P	
4	173.815	47.73	-21.55	26.18	43.50	-17.32	QP	100	41	P	
5	415.449	50.41	-18.65	31.76	46.00	-14.24	QP	100	235	P	
6	787.475	41.10	-10.06	31.04	46.00	-14.96	QP	200	337	P	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX N20 ModeChannel 40 (UNII-1)	Polarization	Horizontal
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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	50.817	43.56	-22.09	21.47	40.00	-18.53	QP	200	154	P	
2	70.705	48.82	-24.17	24.65	40.00	-15.35	QP	200	9	P	
3 *	143.776	55.53	-21.30	34.23	43.50	-9.27	QP	200	280	P	
4	210.129	53.02	-25.11	27.91	43.50	-15.59	QP	100	276	P	
5	318.088	47.17	-21.39	25.78	46.00	-20.22	QP	100	109	P	
6	458.399	46.82	-17.61	29.21	46.00	-16.79	QP	200	307	P	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ

Test Result of Band edges.

Test Result B1

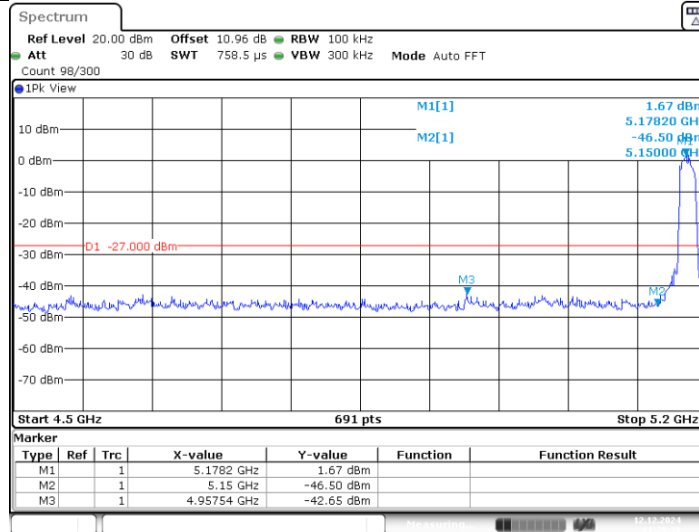
TestMode	Antenna	ChName	Freq(MHz)	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	Low	5180	-42.65	≤ -27	PASS
		High	5240	-43	≤ -27	PASS
11N20SISO	Ant1	Low	5180	-42.39	≤ -27	PASS
		High	5240	-42.85	≤ -27	PASS
11N40SISO	Ant1	Low	5190	-42.4	≤ -27	PASS
		High	5230	-43.41	≤ -27	PASS
11AC20SISO	Ant1	Low	5180	-43.03	≤ -27	PASS
		High	5240	-42.8	≤ -27	PASS
11AC40SISO	Ant1	Low	5190	-42.7	≤ -27	PASS
		High	5230	-42.73	≤ -27	PASS
11AC80SISO	Ant1	Low	5210	-42.93	≤ -27	PASS
		High	5210	-43.18	≤ -27	PASS

Test Result B3

TestMode	Antenna	ChName	Freq(MHz)	FreqRange [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5745	5650~5700	-43.87	≤-26.75	PASS
				5700~5720	-43.54	≤10.75	PASS
				5720~5725	-42.54	≤15.98	PASS
				5760~5650	-44.48	≤-27	PASS
		High	5825	5850~5855	-44.18	≤16.10	PASS
				5855~5875	-43.02	≤11.17	PASS
				5875~5925	-44.5	≤-26.58	PASS
				5925~5935	-43.72	≤-27	PASS
11N20SISO	Ant1	Low	5745	5650~5700	-44.44	≤-26.88	PASS
				5700~5720	-43.38	≤11.17	PASS
				5720~5725	-41.07	≤17.12	PASS
				5760~5650	-43.52	≤-27	PASS
		High	5825	5850~5855	-44.88	≤15.65	PASS
				5855~5875	-42.48	≤11.77	PASS
				5875~5925	-44.02	≤-26.44	PASS
				5925~5935	-43.78	≤-27	PASS
11N40SISO	Ant1	Low	5755	5650~5700	-43.89	≤-25.20	PASS
				5700~5720	-36.72	≤15.03	PASS
				5720~5725	-34.82	≤17.68	PASS
				5780~5650	-43.93	≤-27	PASS
		High	5795	5850~5855	-45.07	≤15.85	PASS
				5855~5875	-43.92	≤10.01	PASS
				5875~5925	-44.29	≤-26.26	PASS
				5925~5935	-44.32	≤-27	PASS
11AC20SISO	Ant1	Low	5745	5650~5700	-44.95	≤-26.75	PASS
				5700~5720	-43.39	≤10.33	PASS
				5720~5725	-43.31	≤16.36	PASS
				5760~5650	-43.18	≤-27	PASS
		High	5825	5850~5855	-44.49	≤15.65	PASS
				5855~5875	-44.22	≤10.07	PASS
				5875~5925	-44.49	≤-26.58	PASS
				5925~5935	-44.2	≤-27	PASS
11AC40SISO	Ant1	Low	5755	5650~5700	-44.86	≤-26.36	PASS
				5700~5720	-42.15	≤10.98	PASS
				5720~5725	-37.15	≤16.79	PASS
				5780~5650	-44.17	≤-27	PASS
		High	5795	5850~5855	-43.59	≤15.85	PASS
				5855~5875	-43.28	≤10.81	PASS
				5875~5925	-44.04	≤-26.44	PASS
				5925~5935	-44.41	≤-27	PASS
11AC80SISO	Ant1	Low	5775	5650~5700	-44.4	≤-26.54	PASS
				5700~5720	-40.66	≤10.07	PASS
				5720~5725	-38.16	≤15.67	PASS
				5800~5650	-43.41	≤-27	PASS
		High	5775	5850~5855	-42.63	≤15.98	PASS
				5855~5875	-40.72	≤11.82	PASS
				5875~5925	-44.82	≤-26.27	PASS
				5925~5935	-43.96	≤-27	PASS

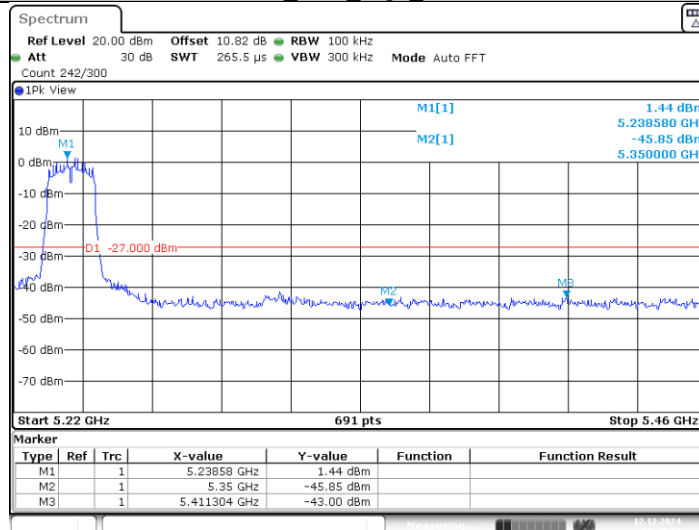
Test Graphs B1/2/3

11A_Ant1_Low_5180



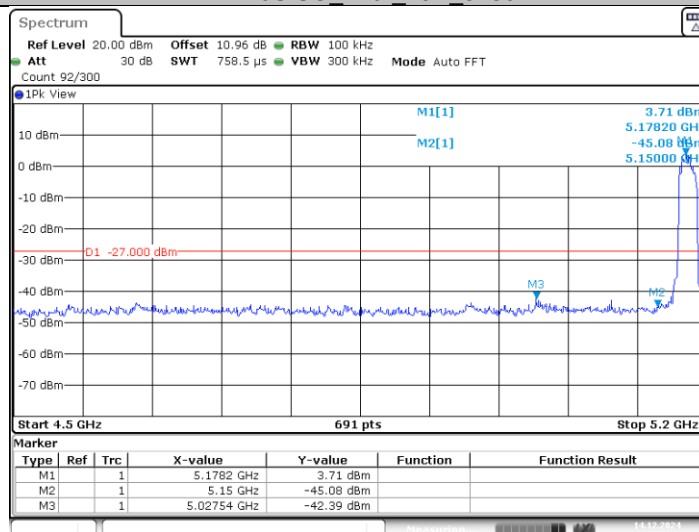
Date: 12.DEC.2024 11:29:38

11A_Ant1_High_5240



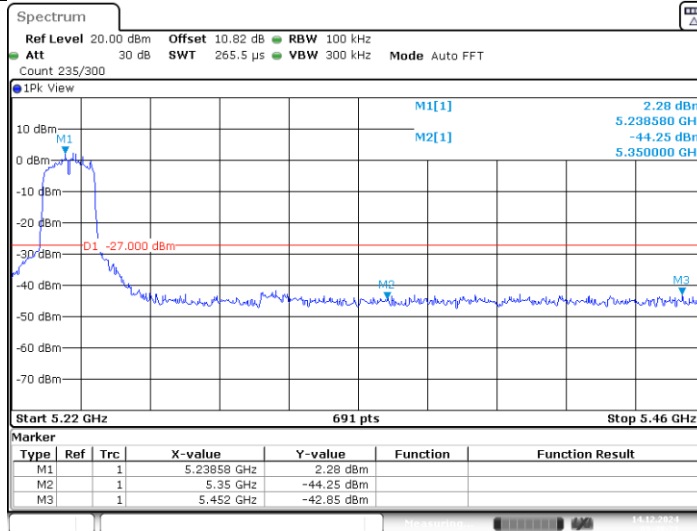
Date: 12.DEC.2024 11:40:13

11N20SISO_Ant1_Low_5180



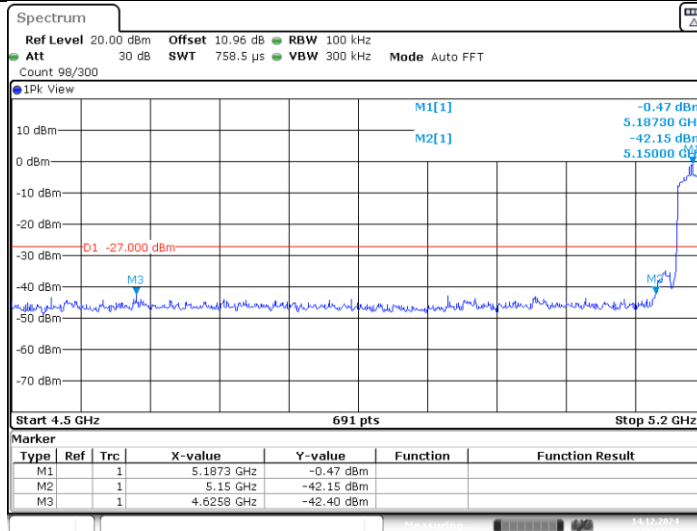
Date: 14.DEC.2024 09:35:46

11N20SISO_Ant1_High_5240



Date: 14.DEC.2024 09:49:21

11N40SISO_Ant1_Low_5190



Date: 14.DEC.2024 10:13:22

11N40SISO_Ant1_High_5230



Date: 14.DEC.2024 10:22:55