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Band Edge



Conducted spurious emissions 30MHz-25GHz

Spect Swep	rum Analy t SA	/zer 1	•	+								Display	•	쁥
KEY RL	′SIGHT ↔	Input: R Coupling Align: O	g: AC	Input Ζ: 50 Ω Corrections: Off Freq Ref: Internal	#Atten: 36 dB Preamp: Off	PNO: Gate: IF Gai Sig Tra	Off	Avg Type: Log Avg Hold: 10/ Trig: Free Ru	10	123456 MWWWWW PNNNNN	Line	t Display ay Line 1 र	Meas Display	
1 Spe Scale	ctrum e/Div 10 d	B	•		Ref LvI Offset 0.5 Ref Level 25.00 c			M		157 3 GHz 4.34 dBm		ay Line 56 dBm	View Annota	tion
Log 15.0 5.00 -5.00 -15.0 -25.0									↓ 1 —	DL1 -22.56 dBm	Selec Line	On Off t Freq Line 1 ▼,		
-35.0 -45.0 -55.0 -65.0	y which an strain		aritha	مىرىدىنىيەرلەرلىكى بار انىي بىر		Harry Made and Marry		مەركىرىمەلىرلىلىزىدىدىرىمى	A	er falfnydeltur yn yy fydiawarwys		Line 00 GHz On Off		
#Res	0.030 GH BW 100 I				#Video BW 300	kHz		Swee		op 3.000 GHz ns (1001 pts)				
5 Mar 1 2 3 4 5 6		Trace 1	Scale f	X 2.457 3 GHz	Y -4.337 dBm	Functi	on Fu	nction Width	Func	tion Value				
	5	2		? Jul 12, 2023 1:54:35 PM										

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4.1.6 Radiated Emission		
RESULT:		PASS
Test standard	: FCC Part 15.247(d), 15.205, 15.209	
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.1.a	
Ambient temperature	: 24°C	

Notes

Relative humidity

Test plots please refer to the annex document "SHE23060039-04CE DATA WIFI 2.4GHz-TX EXHIBIT A".

: 57%

1. For 9 kHz \sim 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.

2. The spurious above 18GHz is noise only and 20dB below the limit. The value has no need to be reported.

3. All test modes had been pre-tested, but only the 802.11b at low channel of below 1 GHz is the worst case and recorded in the report.

4. 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.

	·	TEST	-	REPORT		
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4.1.7 Band	Edge (Restricted-ba	and band	d-edg	e)		
RESULT:					I	PASS
Test standard		:	FCC	Part 15.247(d), 15.205, 15.20	9	
Requirement		:	ANSI	C63.10-2013, Clause 11.13		
			KDB	558074 D01 v05r02, Clause 8	3.7	
Kind of test site	9	:	3m S	emi-Anechoic Chamber		
Test setup						
Test Channel		:	Low/I	Middle/High		
Operation Mod	e	:	A.1.a			
Ambient tempe	rature	:	22.4°	С		
Relative humid	ity	:	55%			

Notes:

1. Test plots please refer to the annex document "SHE23060039-04CE DATA WIFI 2.4GHz-TX EXHIBIT A".

2. 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.

REPORT TEST

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PASS

4.2 Mains Emissions

4.2.1 Conducted Emission on AC Mains

RESULT:

Earthing

Test standard Requirement Kind of test site	: : :	FCC Part 15.207(a) ANSI C63.10-2013, Clause 6.2 Shielded room
Test setup		
Input Voltage	:	DC 5.9V supply by AC adapter (which received
		AC 120V, 60Hz)
Operation Mode	:	A.1.a

: A.1.a

: Disconnected to GND

: 21°C Ambient temperature Relative humidity

: 50%

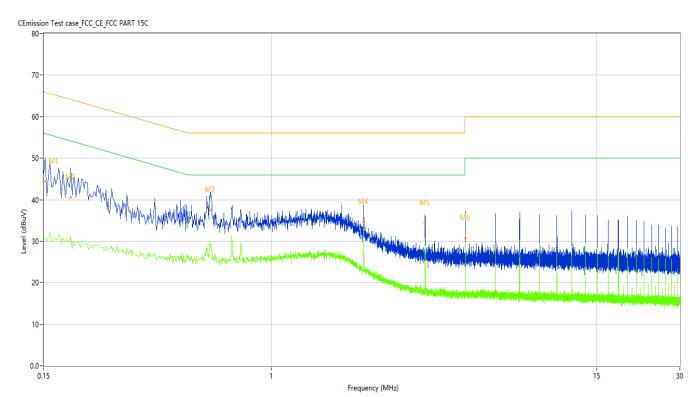
For details refer to following test plot.

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Note: All test modes had been pre-tested, but only the 802.11b at low channel is the worst case and recorded in the report.

Figure 28: Conducted Emission on AC Mains, L Phase

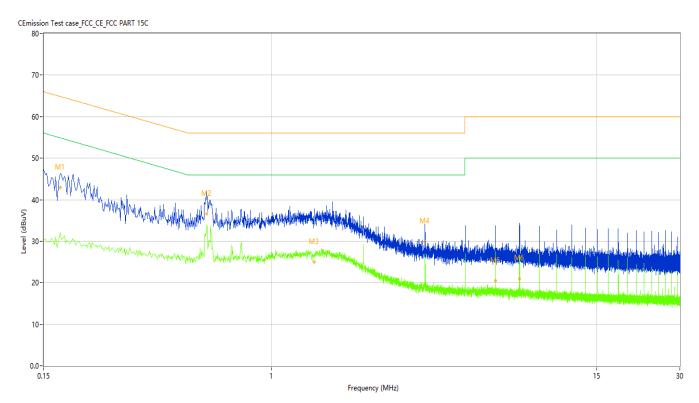


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.152	50.74	9.92	65.89	15.15	Peak	L	Pass
1*	0.152	44.45	9.92	65.89	21.44	QP	L	Pass
1**	0.152	30.88	9.92	55.89	25.01	AV	L	Pass
2	0.188	46.82	9.94	64.12	17.30	Peak	L	Pass
2*	0.188	40.45	9.94	64.12	23.67	QP	L	Pass
2**	0.188	31.00	9.94	54.12	23.12	AV	L	Pass
3	0.600	42.61	9.97	56.00	13.39	Peak	L	Pass
3*	0.600	37.56	9.97	56.00	18.44	QP	L	Pass
3**	0.600	28.59	9.97	46.00	17.41	AV	L	Pass
4	2.156	37.53	9.85	56.00	18.47	Peak	L	Pass
4*	2.156	34.72	9.85	56.00	21.28	QP	L	Pass
4**	2.156	30.30	9.85	46.00	15.70	AV	L	Pass
5	3.594	37.01	9.82	56.00	18.99	Peak	L	Pass
5*	3.594	34.42	9.82	56.00	21.58	QP	L	Pass
5**	3.594	30.74	9.82	46.00	15.26	AV	L	Pass
6	5.028	34.95	9.82	60.00	25.05	Peak	L	Pass
6*	5.028	30.67	9.82	60.00	29.33	QP	L	Pass
6**	5.028	29.58	9.82	50.00	20.42	AV	L	Pass

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Figure 29: Conducted Emission on AC Mains, N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.172	48.48	10.02	64.86	16.38	Peak	Ν	Pass
1*	0.172	42.93	10.02	64.86	21.93	QP	Ν	Pass
1**	0.172	32.09	10.02	54.86	22.77	AV	Ν	Pass
2	0.584	40.79	10.07	56.00	15.21	Peak	N	Pass
2*	0.584	36.65	10.07	56.00	19.35	QP	Ν	Pass
2**	0.584	34.04	10.07	46.00	11.96	AV	Ν	Pass
3	1.430	31.66	9.94	56.00	24.34	Peak	Ν	Pass
3*	1.430	25.07	9.94	56.00	30.93	QP	Ν	Pass
3**	1.430	26.09	9.94	46.00	19.91	AV	Ν	Pass
4	3.592	33.52	9.89	56.00	22.48	Peak	Ν	Pass
4*	3.592	29.86	9.89	56.00	26.14	QP	Ν	Pass
4**	3.592	26.18	9.89	46.00	19.82	AV	Ν	Pass
5	6.462	27.68	9.81	60.00	32.32	Peak	Ν	Pass
5*	6.462	20.54	9.81	60.00	39.46	QP	Ν	Pass
5**	6.462	26.69	9.81	50.00	23.31	AV	Ν	Pass
6	7.900	28.55	9.82	60.00	31.45	Peak	Ν	Pass
6*	7.900	20.90	9.82	60.00	39.10	QP	Ν	Pass
6**	7.900	26.64	9.82	50.00	23.36	AV	Ν	Pass

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5 Appendixes

5.1 Photographs of the Sample



All of the sample



Front of the sample

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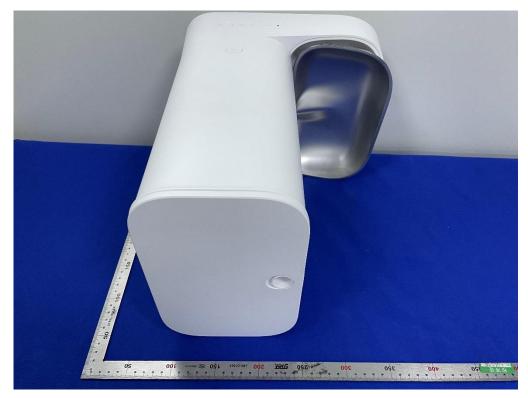
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Rear of the sample



Top of the sample

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Bottom of the sample



Left of the sample

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Right of the sample



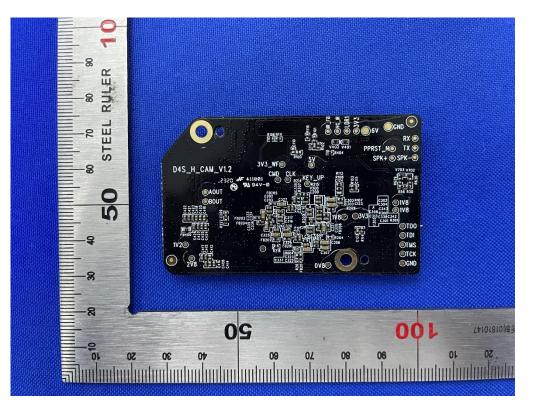
Open of the sample

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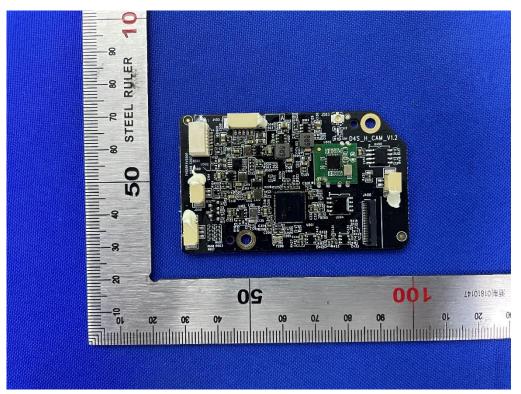
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Internal-1 of the sample



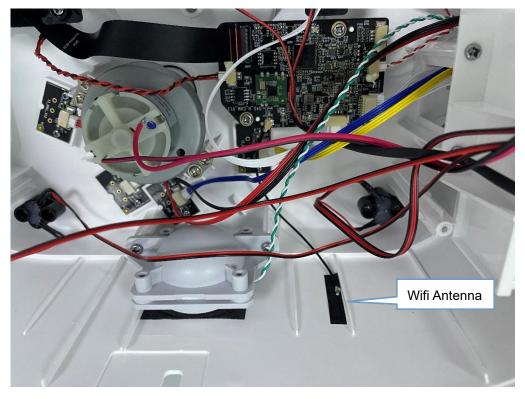
Internal-2 of the sample

Report No.: SHE23060039-04CE

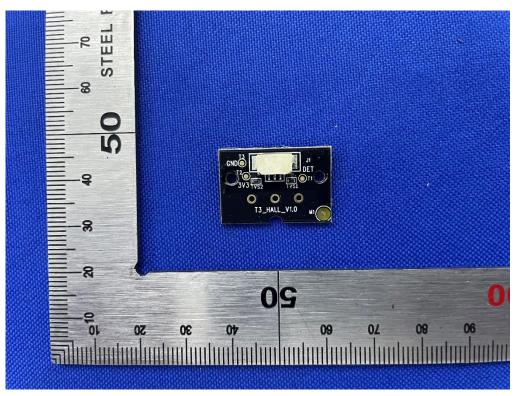
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WIFI Antenna position



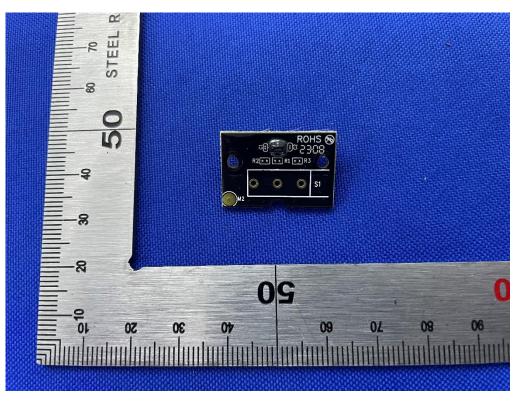
Internal-3 of the sample

Report No.: SHE23060039-04CE

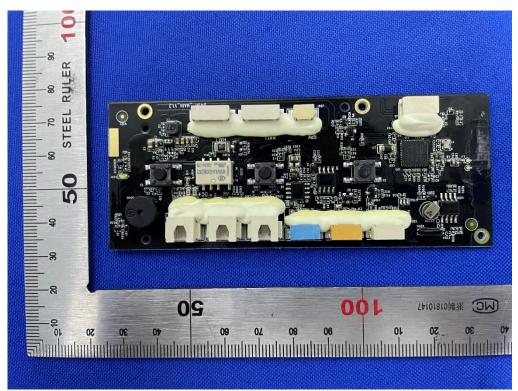
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Internal-4 of the sample



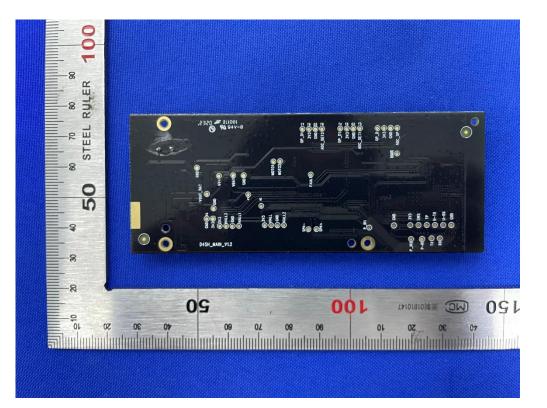
Internal-5 of the sample

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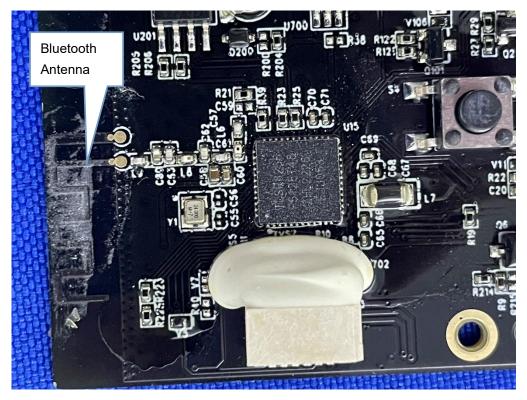
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Internal-6 of the sample



Bluetooth Antenna position

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5.2 Set-up for Conducted Emissions



5.3 Set-up for Conducted RF test at Antenna Port



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5.4 Set-up for Spurious Emissions below 1GHz



5.5 Set-up for Spurious Emissions above 1GHz



End of the report