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Figure 31: Hopping Frequency Separation, Hopping Mode, GFSK



Figure 32: Hopping Frequency Separation, Hopping Mode, $\pi/4$ -DQPSK



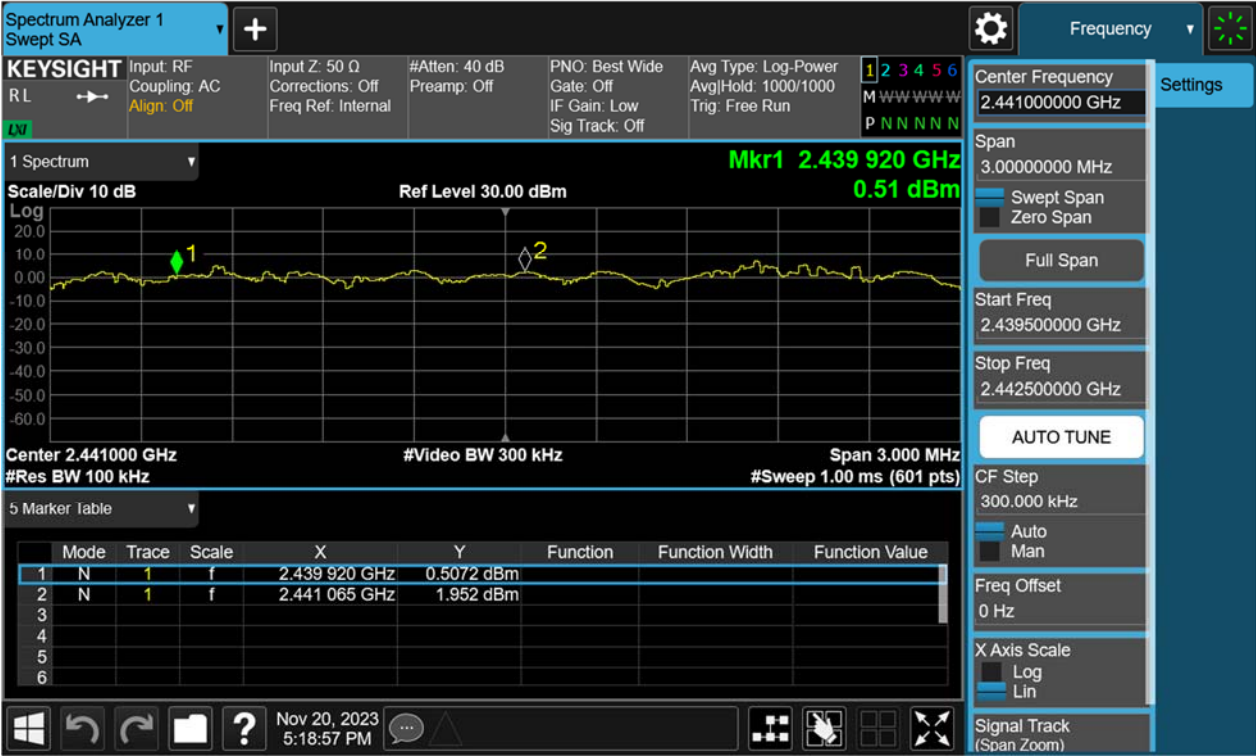
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Figure 33: Hopping Frequency Separation, Hopping Mode, 8DPSK



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4.1.8 Number of Hopping Frequency

RESULT:

PASS

Test standard : FCC Part 15.247(a)(1)(iii)

Requirement : ANSI C63.10-2013, Clause 7.8.3
KDB 558074 D01 v05r02, Clause 2.2

Kind of test site : Shielded room

Test setup

Test Channel : Hopping

Operation Mode : A.1.a.iv

Ambient temperature : 21.3°C

Relative humidity : 42%

Table 4: Number of Hopping Frequency

Mode	Frequency Range	Measured Quantity of Hopping Channel	Limit
GFSK	2400 – 2483.5	79	≥15
π /4-DQPSK	2400 – 2483.5	79	≥15
8-DPSK	2400 – 2483.5	79	≥15

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

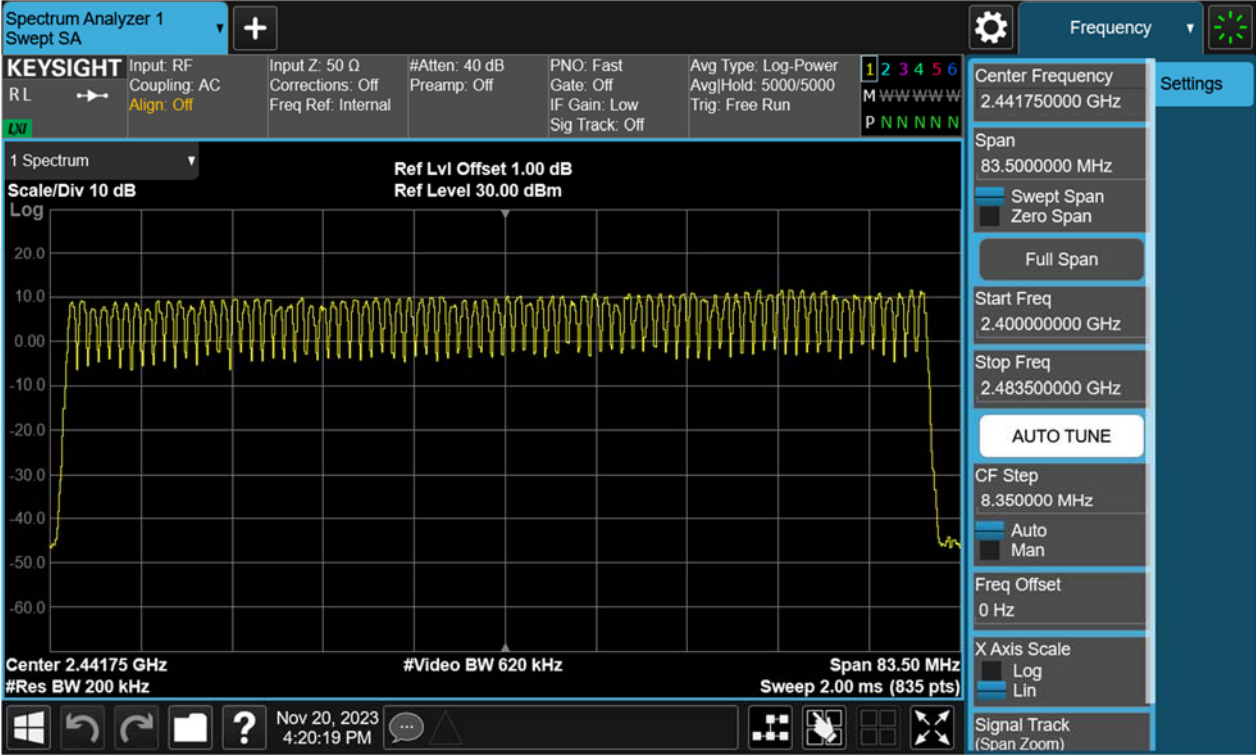
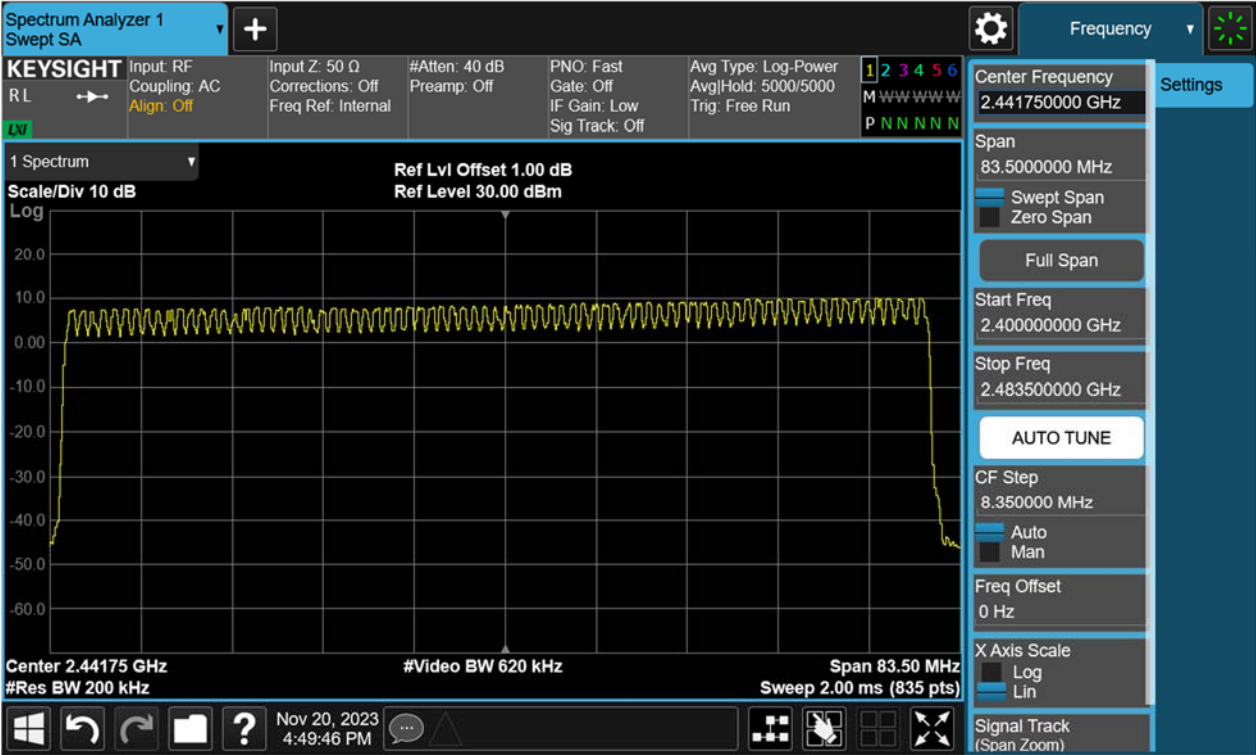


Figure 35: Number of Hopping Frequency, Hopping Mode, $\pi/4$ -DQPSK



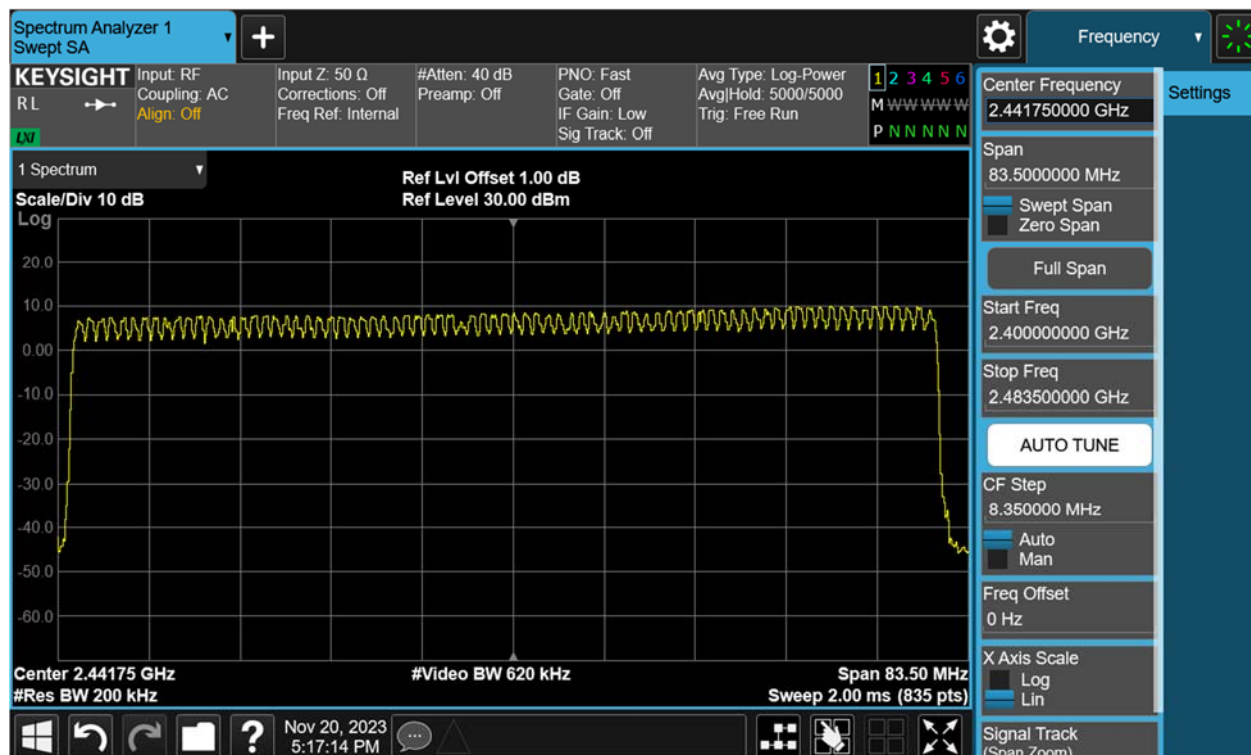
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Figure 36: Number of Hopping Frequency, Hopping Mode, 8-DPSK



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4.1.9 Time of Occupancy

RESULT:

PASS

Test standard : FCC Part 15.247(a)(1)(iii)

Requirement : ANSI C63.10-2013, 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 : 21.3°C

Relative humidity : 42%

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	0.3783	121.056	0.1211	0.4
	DH3	1.6350	261.600	0.2616	0.4
	DH5	2.8870	307.947	0.3079	0.4
$\pi/4$ -DQPSK	DH1	0.3867	123.744	0.1237	0.4
	DH3	1.6400	262.400	0.2624	0.4
	DH5	2.8870	307.947	0.3079	0.4
8-DPSK	DH1	0.3867	123.744	0.1237	0.4
	DH3	1.6400	261.600	0.2624	0.4
	DH5	2.8930	308.587	0.3086	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

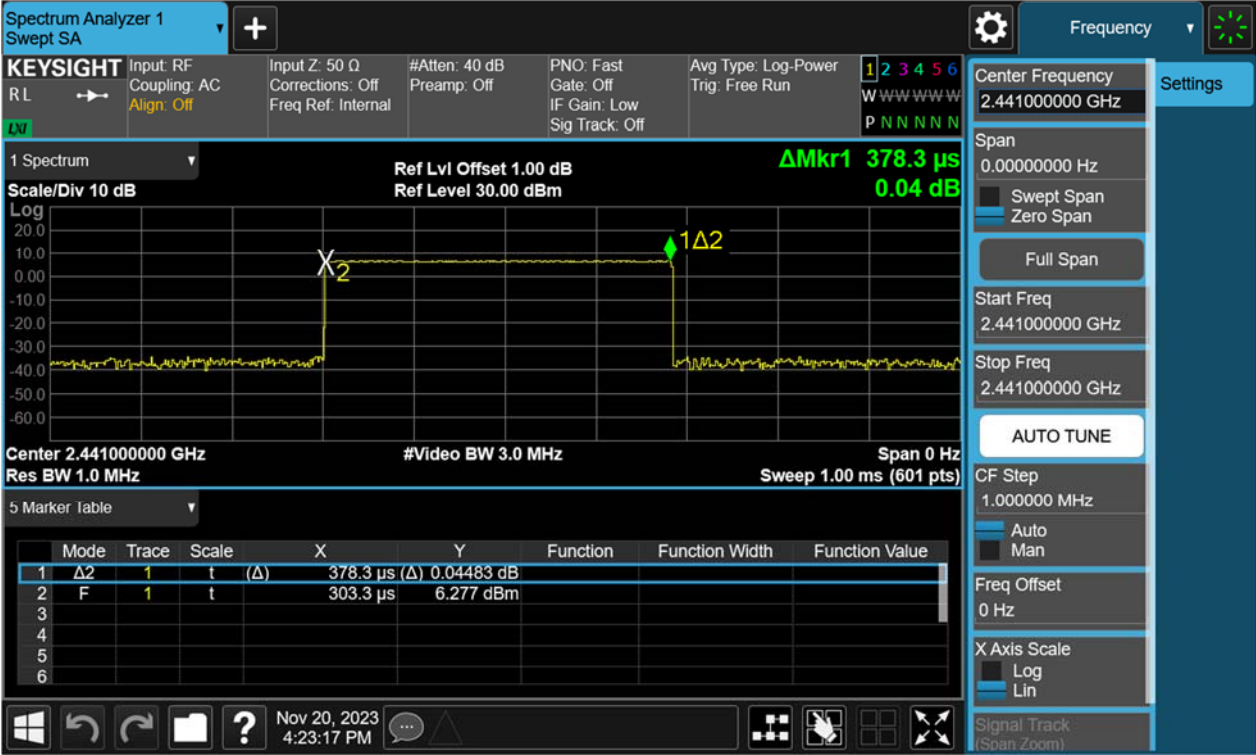
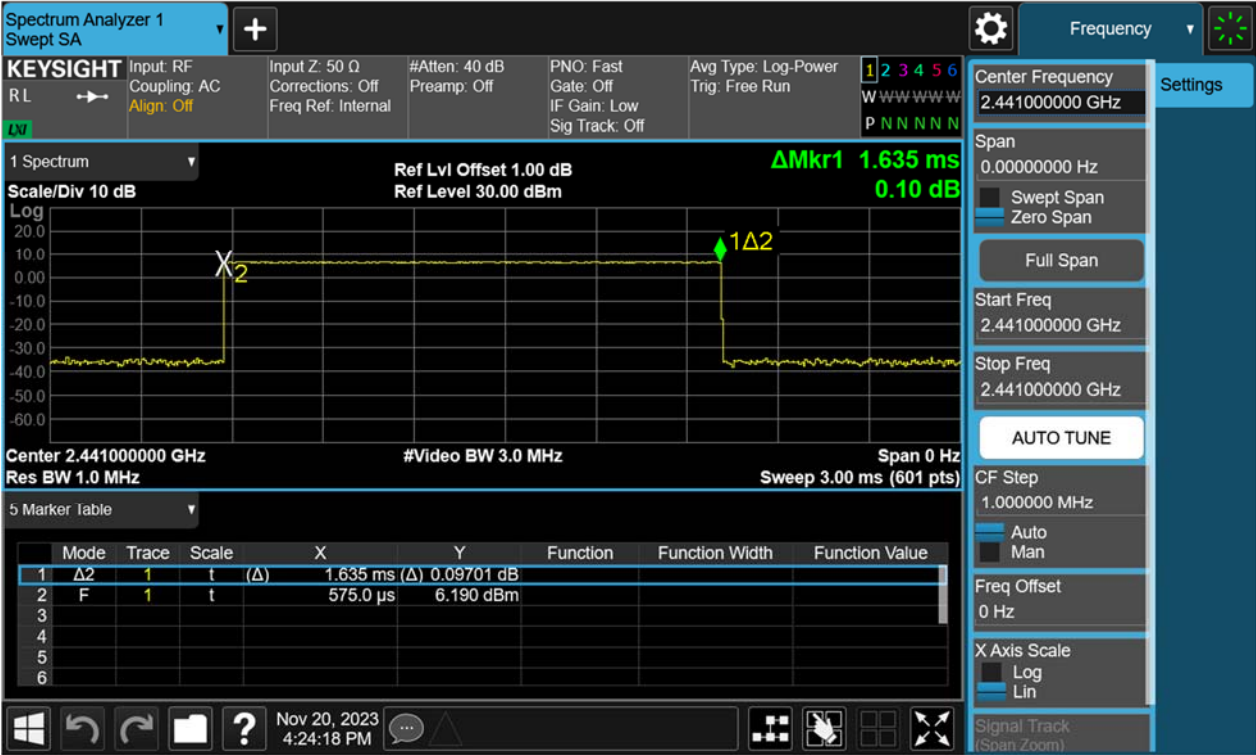


Figure 38: Time of Occupancy, 2441MHz, GFSK DH3



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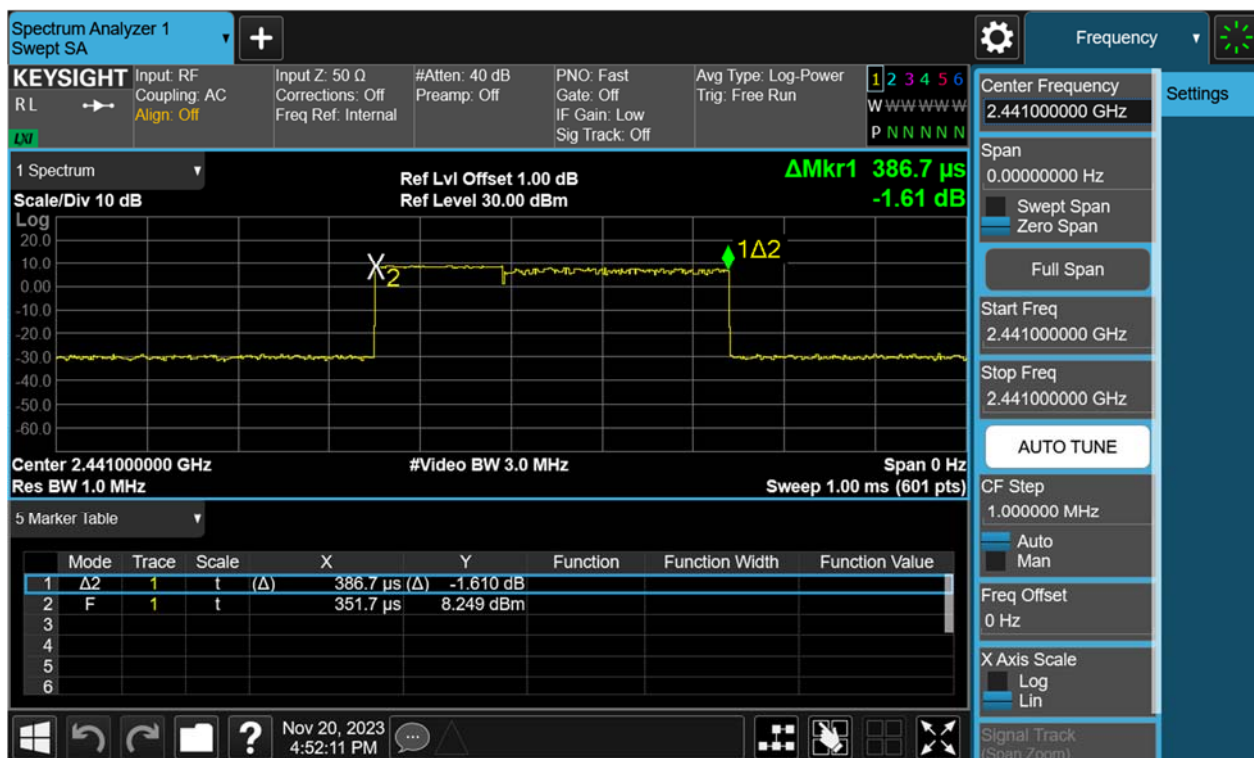
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Figure 39: Time of Occupancy, 2441MHz, GFSK DH5



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



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Figure 41: Time of Occupancy, 2441MHz, $\pi/4$ -DQPSK DH3

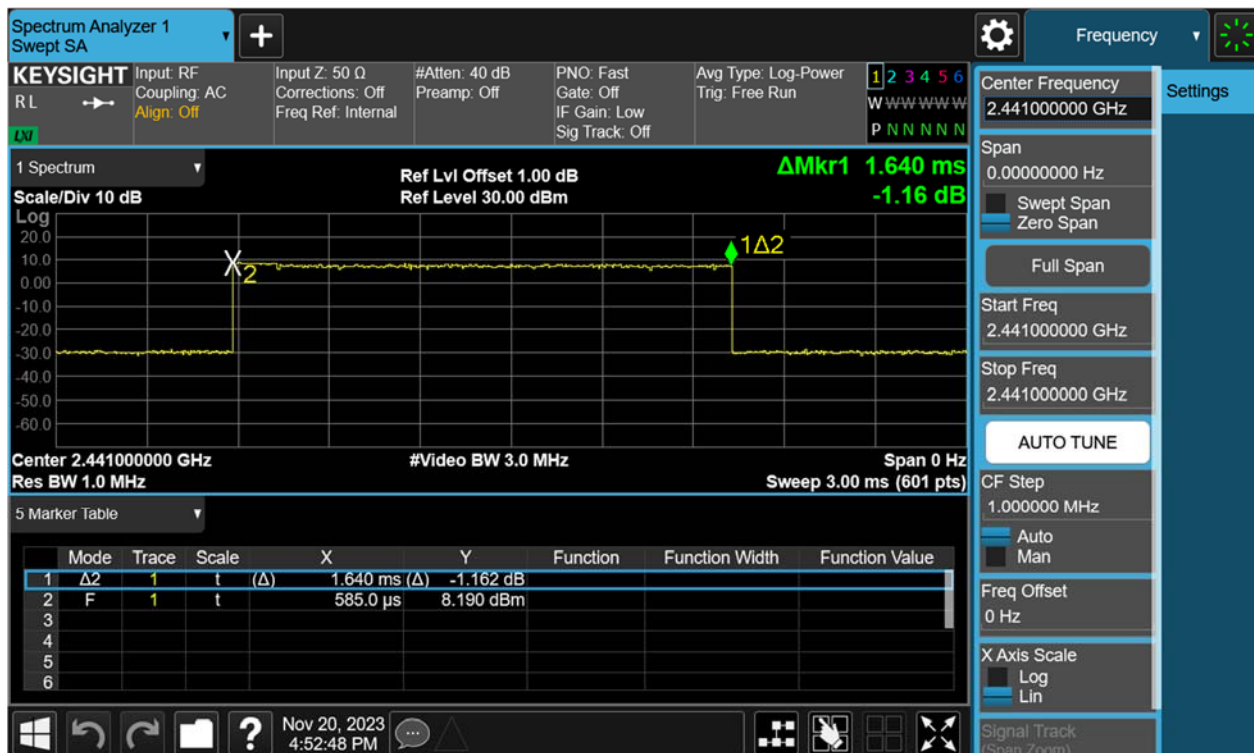
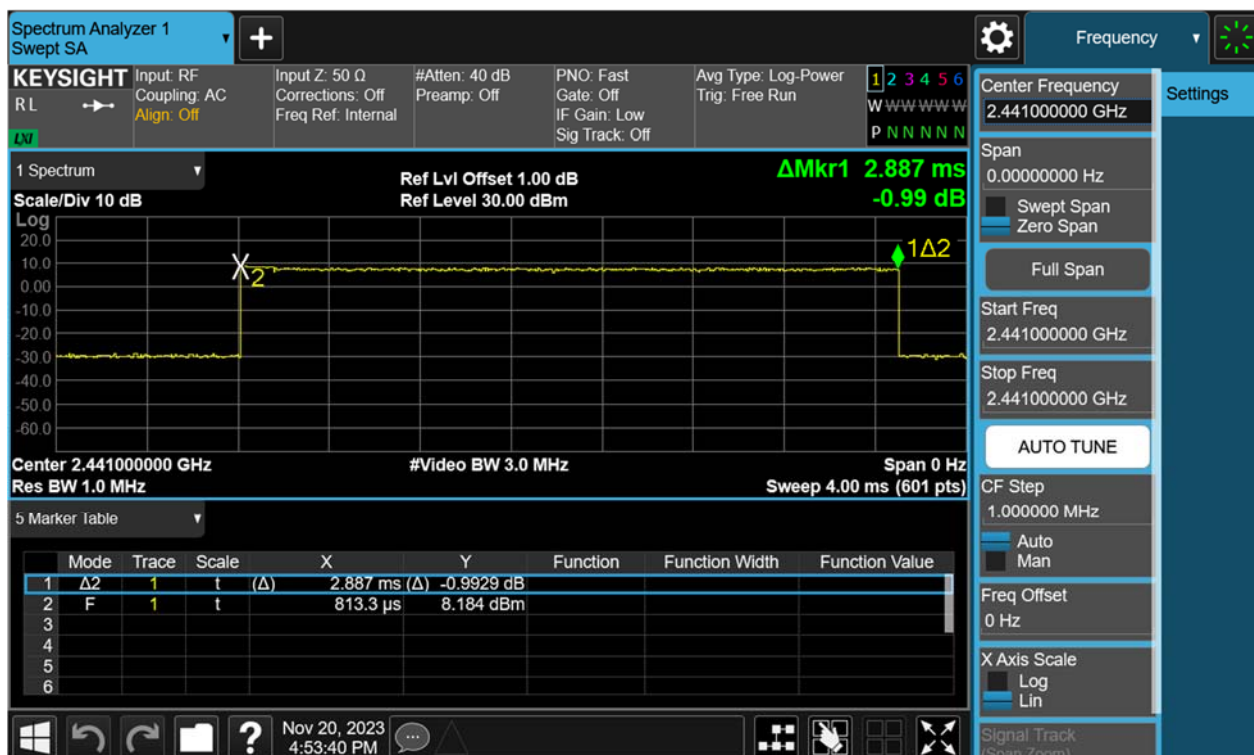


Figure 42: Time of Occupancy, 2441MHz, $\pi/4$ -DQPSK DH5



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

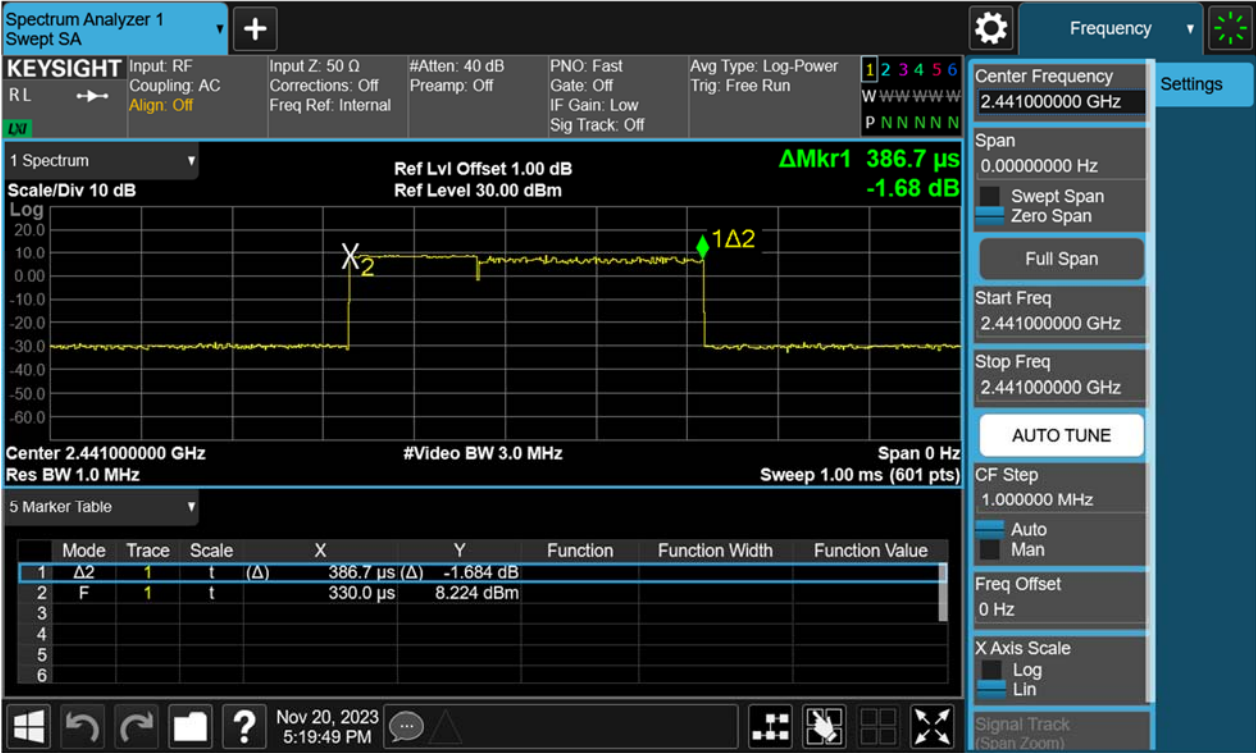


Figure 44: Time of Occupancy, 2441MHz, 8-DPSK DH3



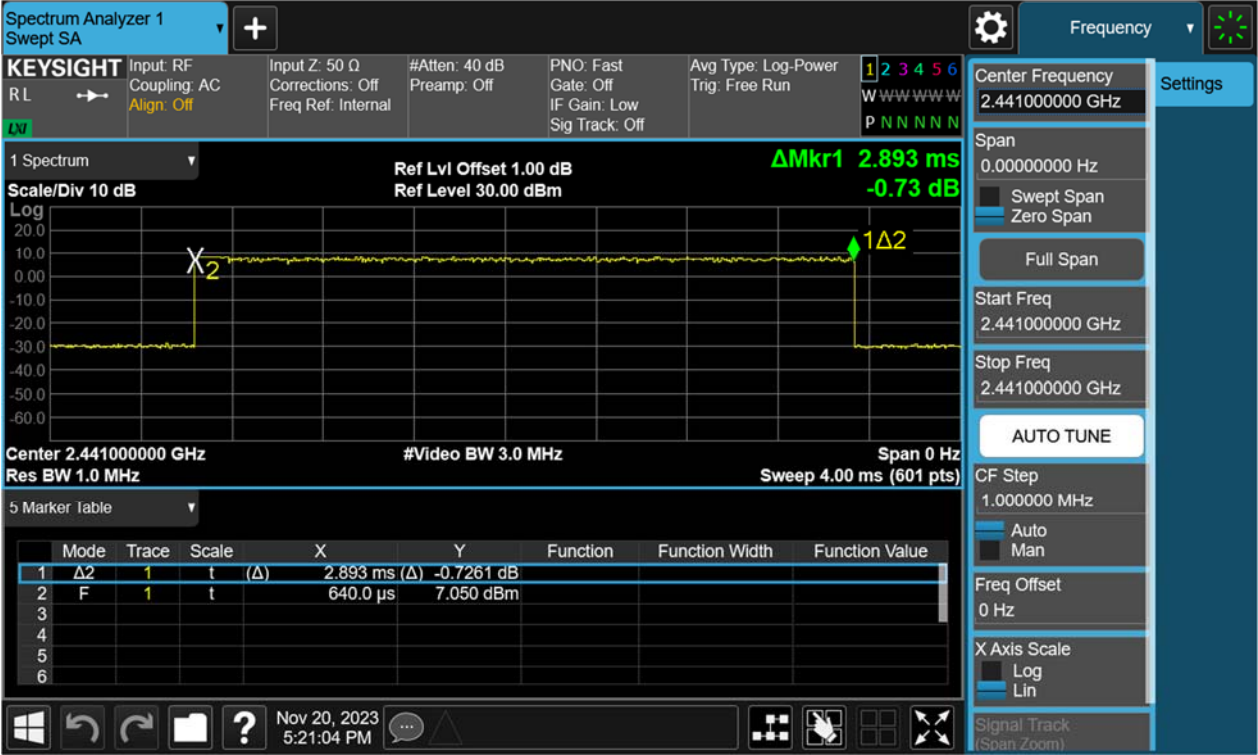
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Figure 45: Time of Occupancy, 2441MHz, 8-DPSK DH5



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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 C63.10-2013, Clause 6.2
Kind of test site	: Shielded room

Test setup

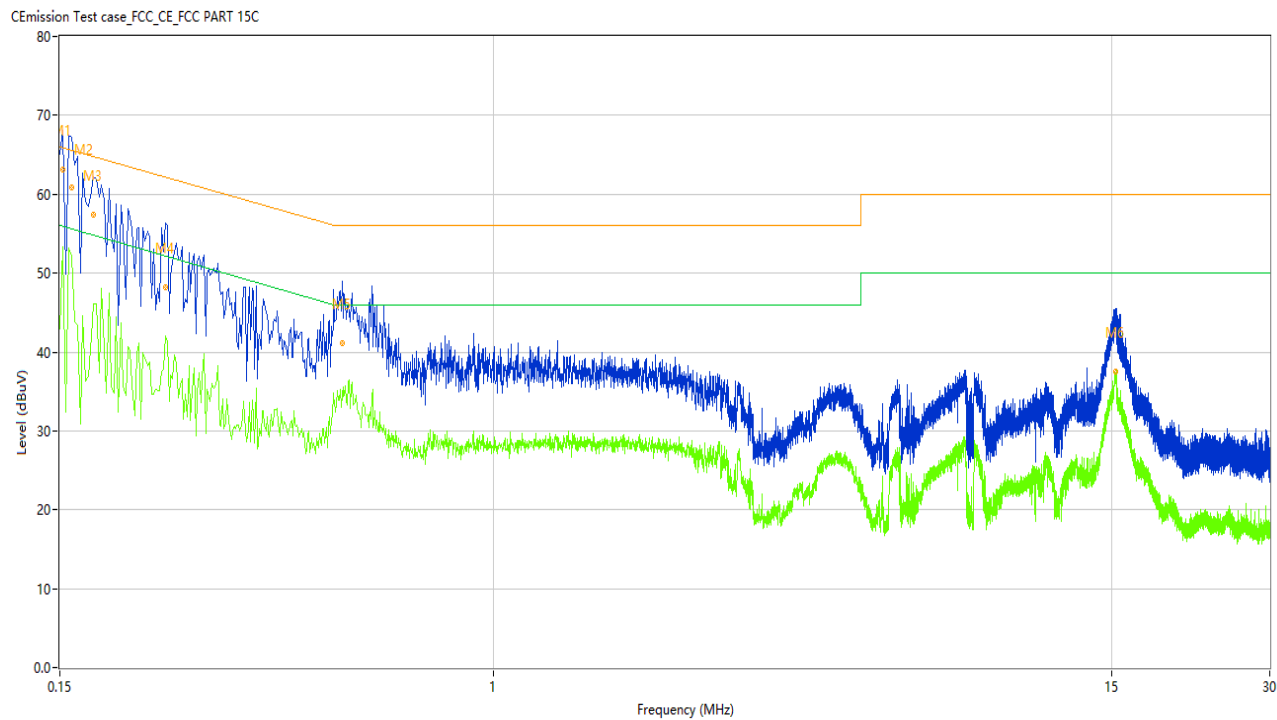
Input Voltage	: which received AC 120V, 60Hz Power
Operation Mode	: A.1.a
Earthing	: Connected to GND
Ambient temperature	: 26°C
Relative humidity	: 49%

For details refer to following test plot.

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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.

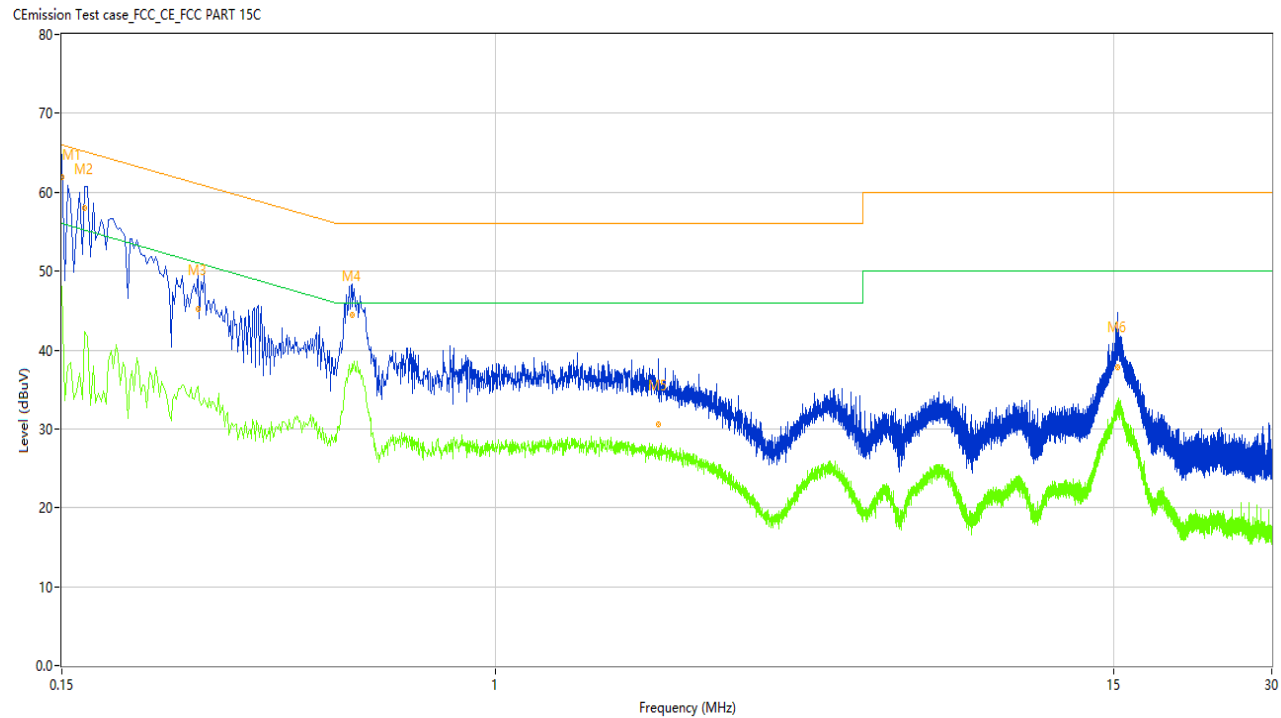
Figure 46: Conducted Emission on AC Mains, L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.152	67.91	9.92	65.89	-2.02	Peak	L	N/A
1*	0.152	63.09	9.92	65.89	2.80	QP	L	Pass
1**	0.152	53.35	9.92	55.89	2.54	AV	L	Pass
2	0.158	64.34	9.93	65.57	1.23	Peak	L	Pass
2*	0.158	60.84	9.93	65.57	4.73	QP	L	Pass
2**	0.158	52.18	9.93	55.57	3.39	AV	L	Pass
3	0.174	61.95	9.93	64.77	2.82	Peak	L	Pass
3*	0.174	57.47	9.93	64.77	7.30	QP	L	Pass
3**	0.174	46.17	9.93	54.77	8.60	AV	L	Pass
4	0.238	54.66	9.96	62.17	7.51	Peak	L	Pass
4*	0.238	48.17	9.96	62.17	14.00	QP	L	Pass
4**	0.238	42.05	9.96	52.17	10.12	AV	L	Pass
5	0.516	48.49	9.96	56.00	7.51	Peak	L	Pass
5*	0.516	41.15	9.96	56.00	14.85	QP	L	Pass
5**	0.516	34.69	9.96	46.00	11.31	AV	L	Pass
6	15.284	45.09	9.51	60.00	14.91	Peak	L	Pass
6*	15.284	37.57	9.51	60.00	22.43	QP	L	Pass
6**	15.284	36.63	9.51	50.00	13.37	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	0.150	67.48	10.02	66.00	-1.48	Peak	N	N/A
1*	0.150	61.87	10.02	66.00	4.13	QP	N	Pass
1**	0.150	48.12	10.02	56.00	7.88	AV	N	Pass
2	0.166	62.66	10.03	65.16	2.50	Peak	N	Pass
2*	0.166	57.94	10.03	65.16	7.22	QP	N	Pass
2**	0.166	42.37	10.03	55.16	12.79	AV	N	Pass
3	0.272	51.23	10.06	61.06	9.83	Peak	N	Pass
3*	0.272	45.27	10.06	61.06	15.79	QP	N	Pass
3**	0.272	35.43	10.06	51.06	15.63	AV	N	Pass
4	0.534	49.98	10.06	56.00	6.02	Peak	N	Pass
4*	0.534	44.43	10.06	56.00	11.57	QP	N	Pass
4**	0.534	38.20	10.06	46.00	7.80	AV	N	Pass
5	2.046	36.74	9.94	56.00	19.26	Peak	N	Pass
5*	2.046	30.65	9.94	56.00	25.35	QP	N	Pass
5**	2.046	27.28	9.94	46.00	18.72	AV	N	Pass
6	15.246	45.08	9.59	60.00	14.92	Peak	N	Pass
6*	15.246	37.77	9.59	60.00	22.23	QP	N	Pass
6**	15.246	33.05	9.59	50.00	16.95	AV	N	Pass

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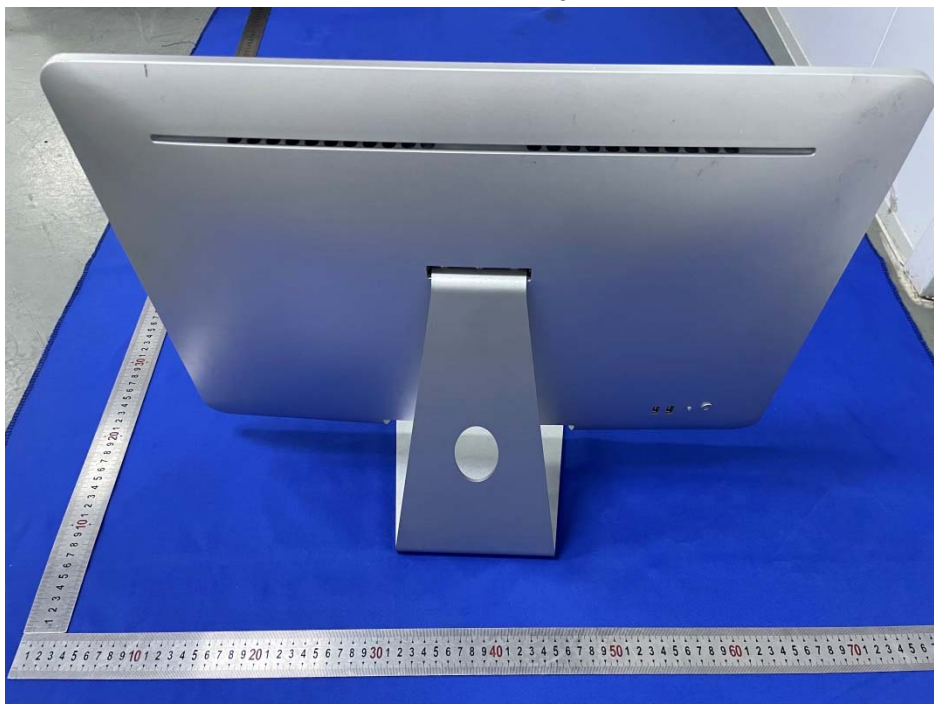
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5 Appendixes

5.1 Photographs of the Sample



Front of the sample



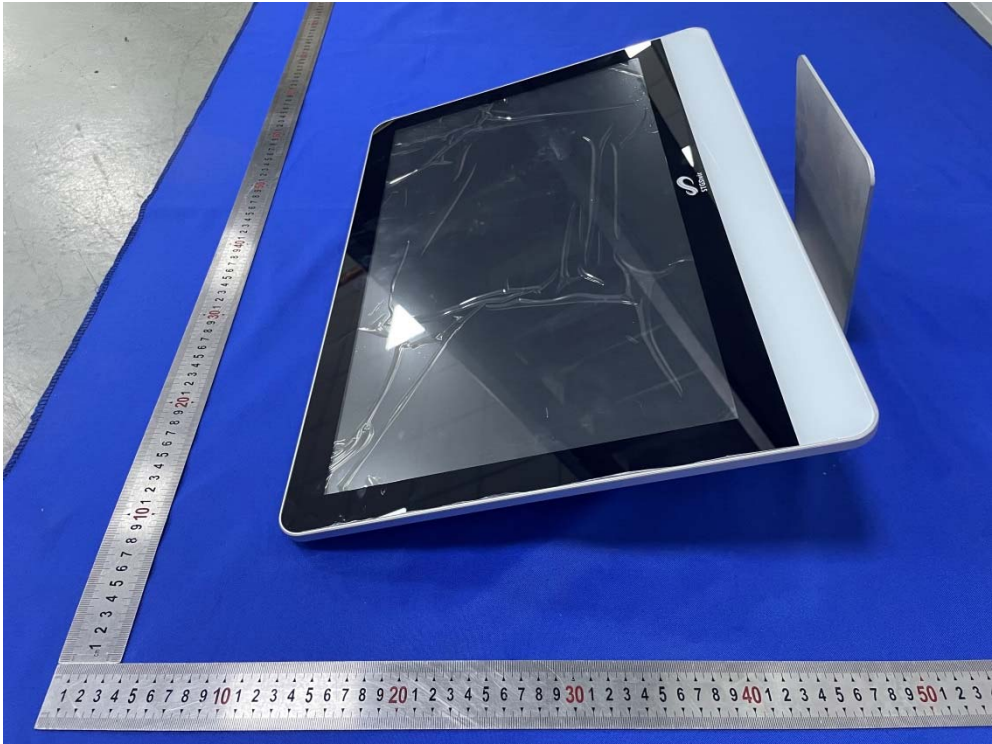
Rear of the sample

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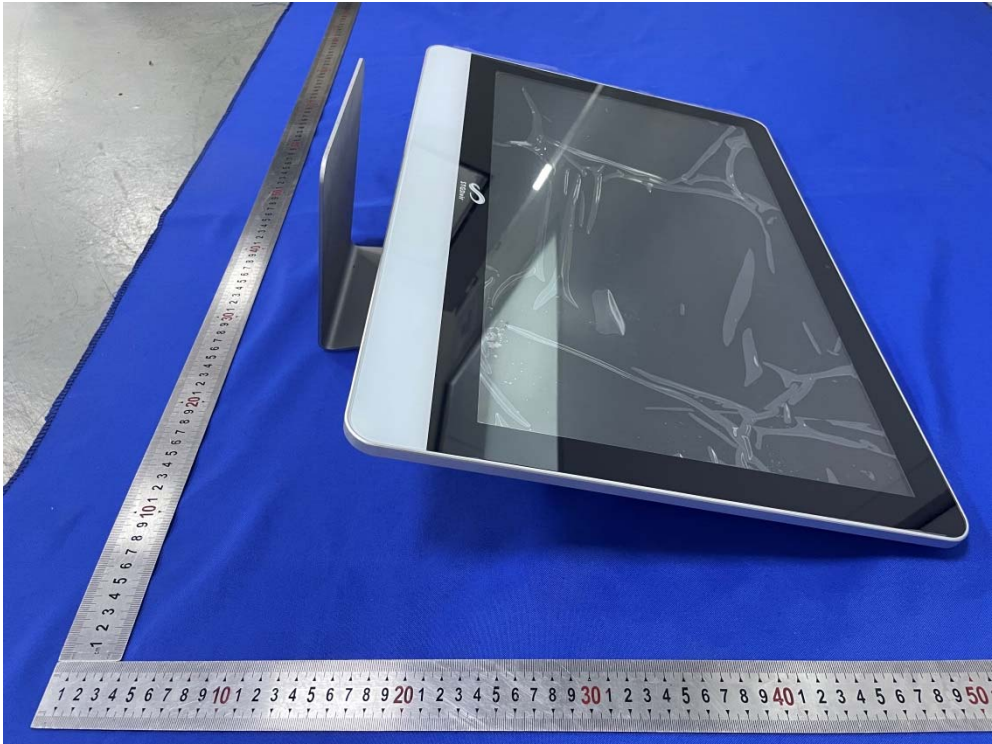
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Left of the sample



Right of the sample

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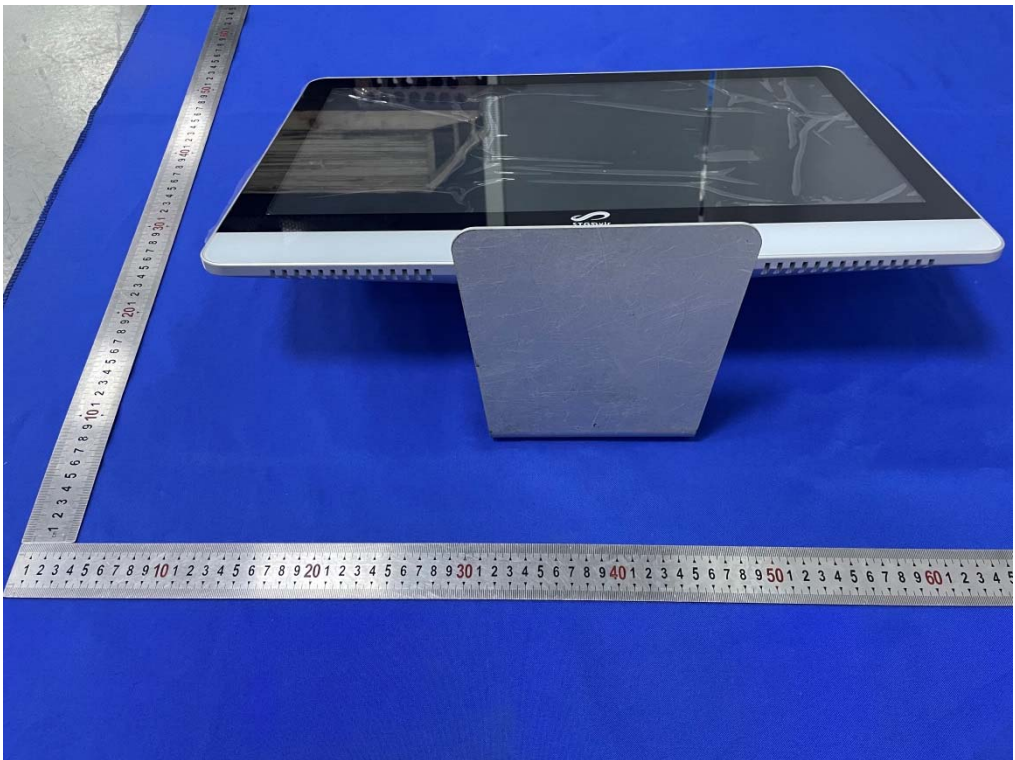
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Top of the sample



Bottom of the sample

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5.2 Set-up for Conducted Emission on AC Mains



5.3 Set-up for Conducted RF test at Antenna Port



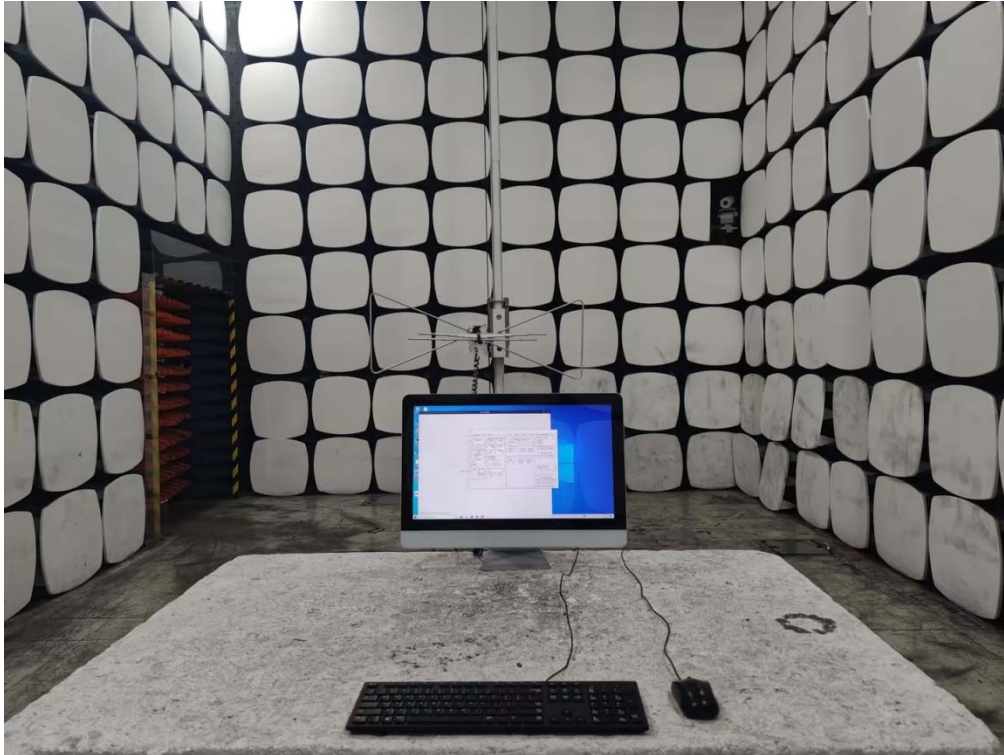
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5.4 Set-up for Radiated Spurious Emissions below 1GHz



5.5 Set-up for Radiated Spurious Emissions above 1GHz



End of the report