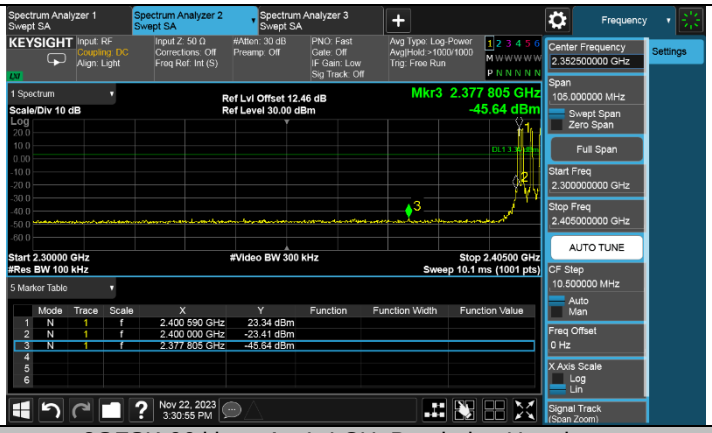
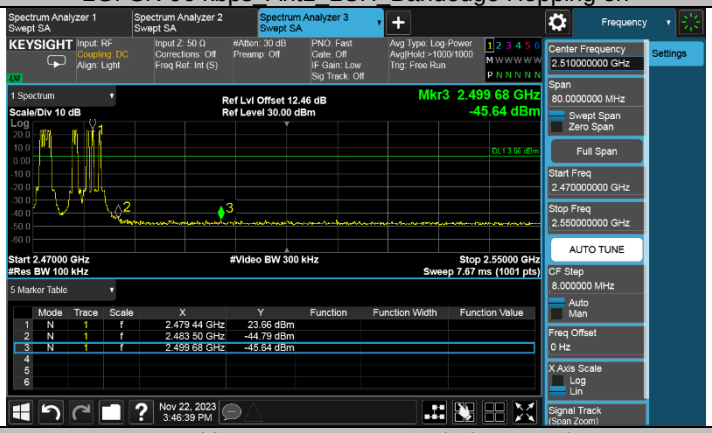


2GFSK-96 kbps_Ant1_LCH_Bandedge Hopping on



2GFSK-96 kbps_Ant1_HCH_Bandedge Hopping on

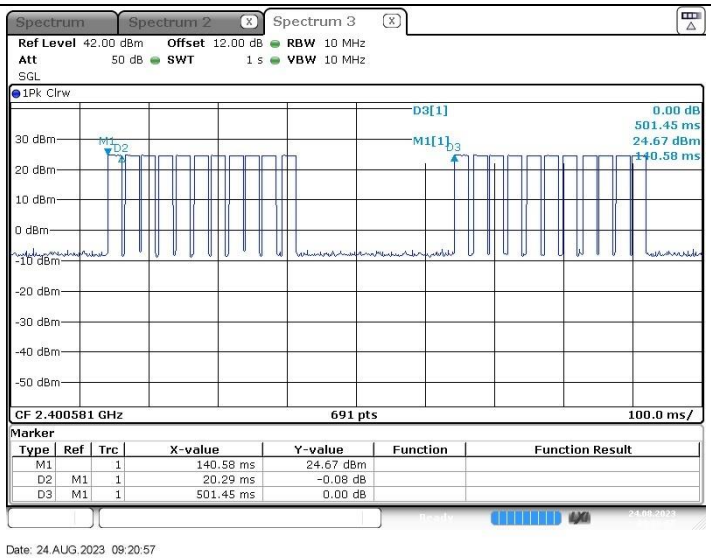
14.7. Appendix G4: Duty Cycle

14.7.1. Test Result

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
2GFSK-96 kbps	223.19	501.45	0.4451	44.51%	3.52	0.0045	0.01

Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
On Time=D2*3=20.29*11=223.19 ms
If that calculated VBW is not available on the analyzer then the next higher value should be used.

14.7.2. Test Graphs



15. FCC.2400M.2GFSK.150kbps

15.1. Appendix A5: 20dB Emission Bandwidth and Occupied Channel Bandwidth

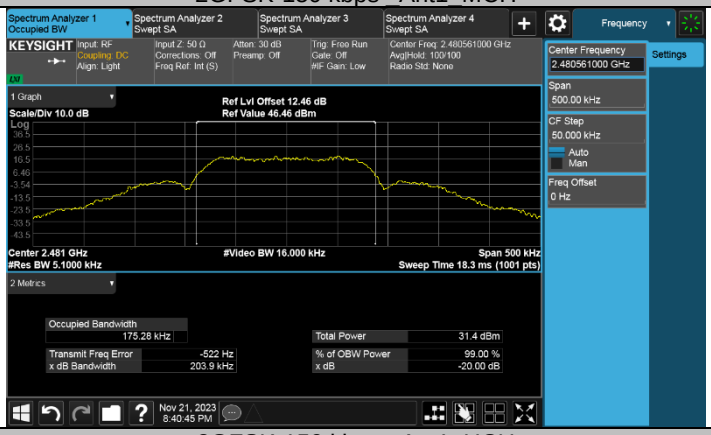
15.1.1. Test Result

Test Mode	Antenna	Channel	20db EBW[MHz]	OCB [MHz]	Verdict
2GFSK-150 kbps	Ant1	LCH	0.1823	0.17526	PASS
		MCH	0.1820	0.17326	PASS
		HCH	0.2039	0.17528	PASS

15.1.2. Test Graphs

2GFSK-150 kbps _Ant1_LCH

2GFSK-150 kbps _Ant1_MCH



2GFSK-150 kbps _Ant1_HCH

15.2. Appendix B5: Maximum conducted output power

15.2.1. Test Result

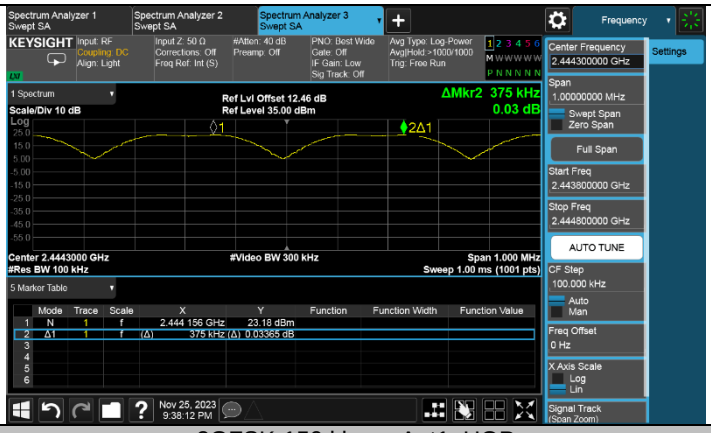
Test Mode	Antenna	Channel	PEAK Result[dBm]	AVG Result[dBm]	Limit[dBm]	Verdict
2GFSK-150 kbps	Ant1	LCH	24.67	24.40	≤30	PASS
		MCH	24.45	24.18	≤30	PASS
		HCH	24.96	24.81	≤30	PASS

15.3. Appendix C5: Carrier frequency separation

15.3.1. Test Result

Test Mode	Antenna	Channel	Result [MHz]	Limit [MHz]	Verdict
2GFSK-150 kbps	Ant1	Hop	0.375	≥0.2039	PASS

15.3.2. Test Graphs



2GFSK-150 kbps _Ant1_HOP

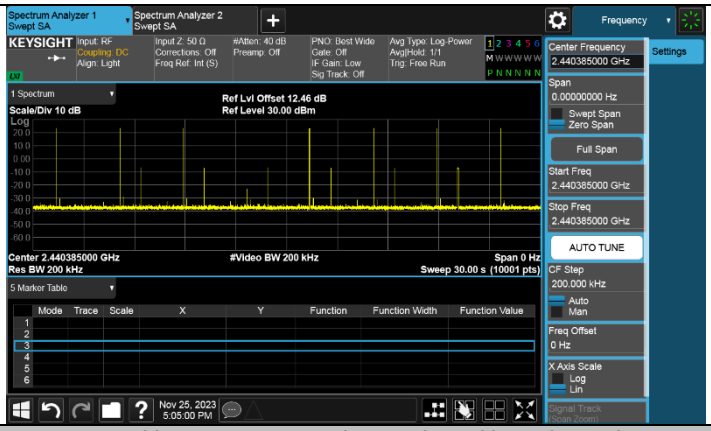
15.4. Appendix D5: Time of occupancy

15.4.1. Test Result

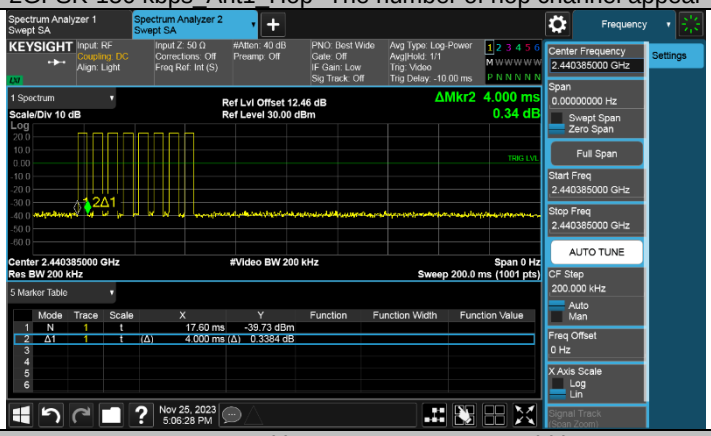
FHSS Mode									
Test Mode	Antenna	Channel	Time of single slot [ms]	number of single slot	BurstWidth [ms]	The number of hop channel appear	Result[ms]	Limit[ms]	Verdict
2GFSK-150 kbps	Ant1	Hop	4.00	8	32.00	7	224.00	<=400	PASS

Note:
2GFSK-150 kbps: The dwell time = Time of single slot * The number of hop channel appear within (0.4 * the number of hopping channels employed)s
BurstWidth =Time of single slot*number of single slot

15.4.2. Test Graphs



2GFSK-150 kbps_Ant1_Hop- The number of hop channel appear



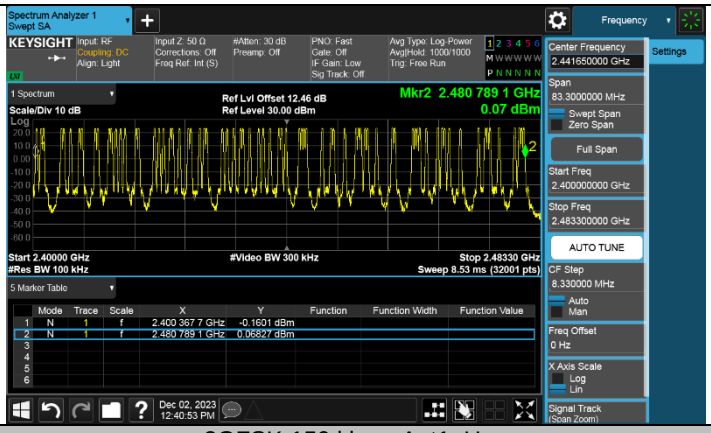
2GFSK-150 kbps_Ant1_Hop- BurstWidth

15.5. Appendix E5: Number of hopping channels

15.5.1. Test Result

Test Mode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
2GFSK-150 kbps	Ant1	Hop	75	≥15	PASS

15.5.2. Test Graphs



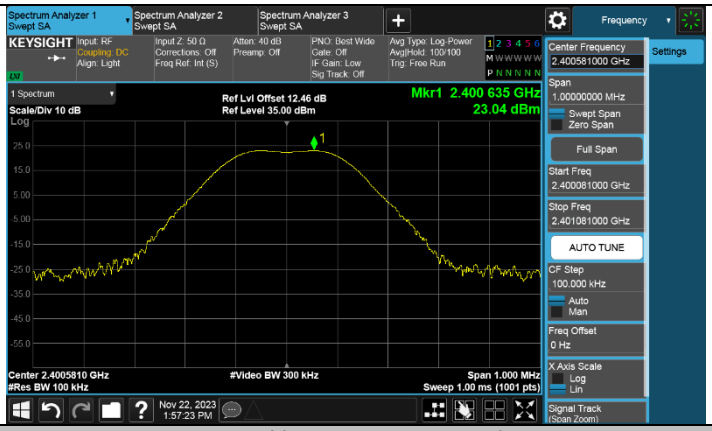
2GFSK-150 kbps_Ant1_Hop

15.6. Appendix F5: Band edge measurements& Conducted Spurious Emission

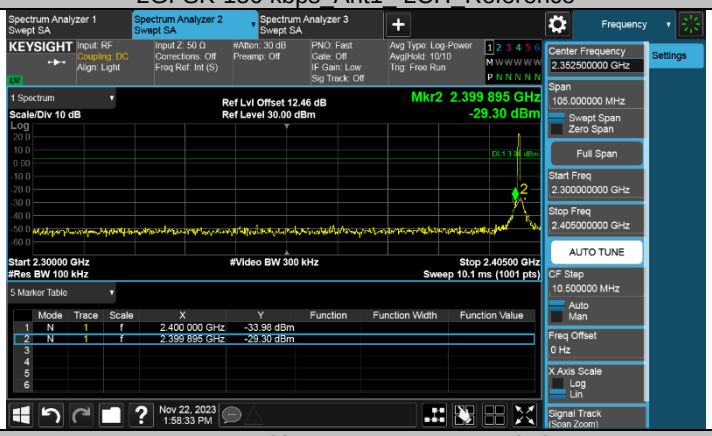
15.6.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-150 kbps	Ant1	LCH	See the below graphs	PASS
		MCH		PASS
		HCH		PASS
		Hop_ LCH		PASS
		Hop_ HCH		PASS

15.6.2. Test Graphs

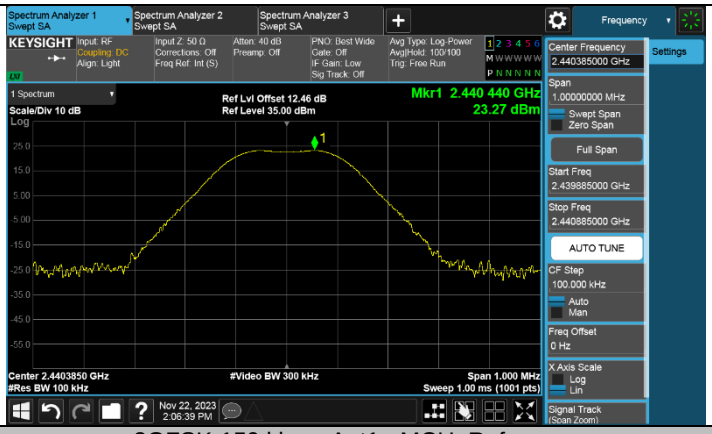


2GFSK-150 kbps_Ant1_ LCH_Reference



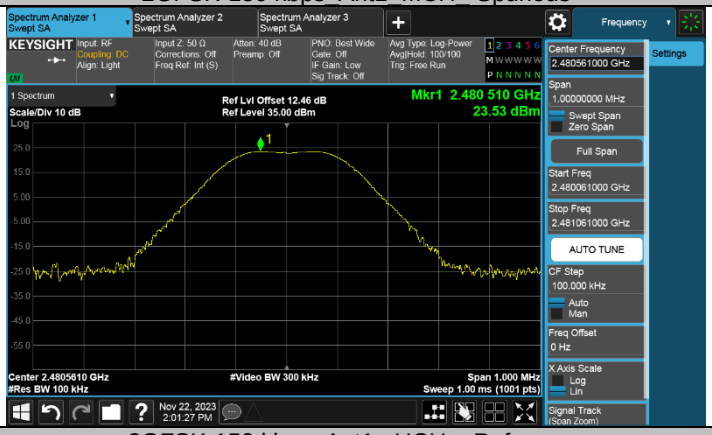
2GFSK-150 kbps_Ant1_LCH_ Bandedge

2GFSK-150 kbps_Ant1_LCH_ Spurious

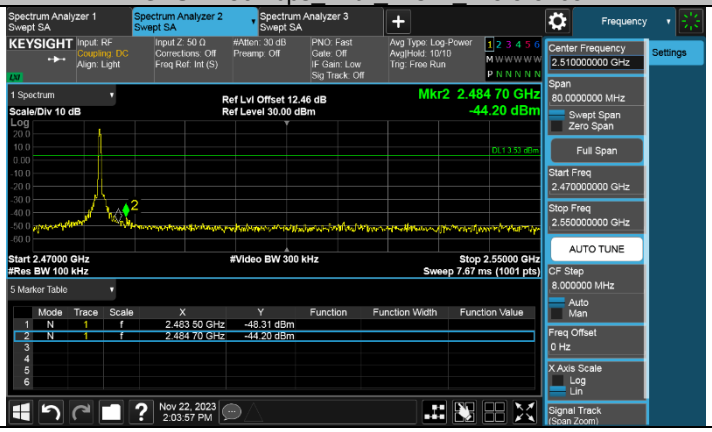


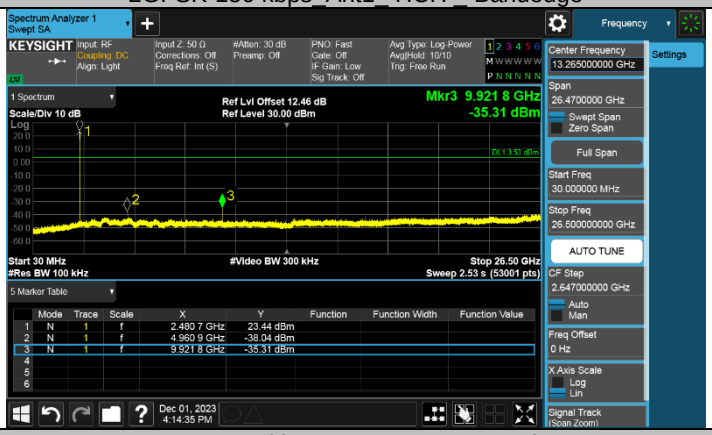
2GFSK-150 kbps_Ant1_ MCH_Reference

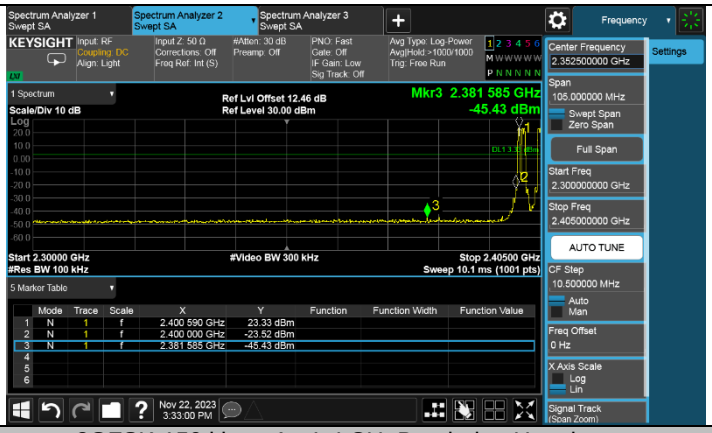
2GFSK-150 kbps_Ant1_MCH_ Spurious



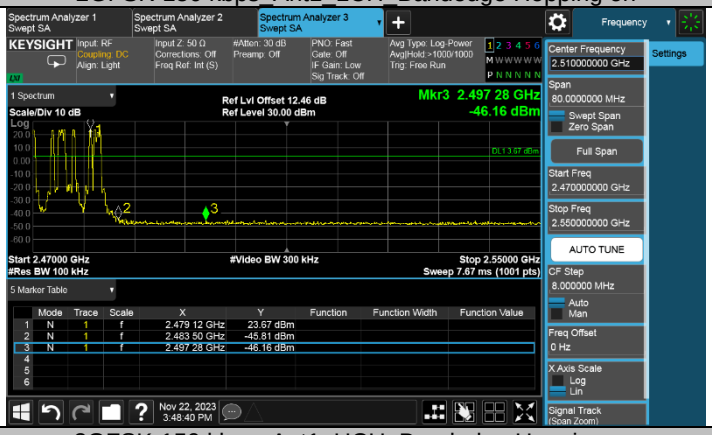
2GFSK-150 kbps_Ant1_ HCH_ Reference



2GFSK-150 kbps_Ant1_ HCH _ Bandedge

2GFSK-150 kbps_Ant1_ HCH _ Spurious



2GFSK-150 kbps_Ant1_LCH_Bandedge Hopping on



2GFSK-150 kbps_Ant1_HCH_Bandedge Hopping on

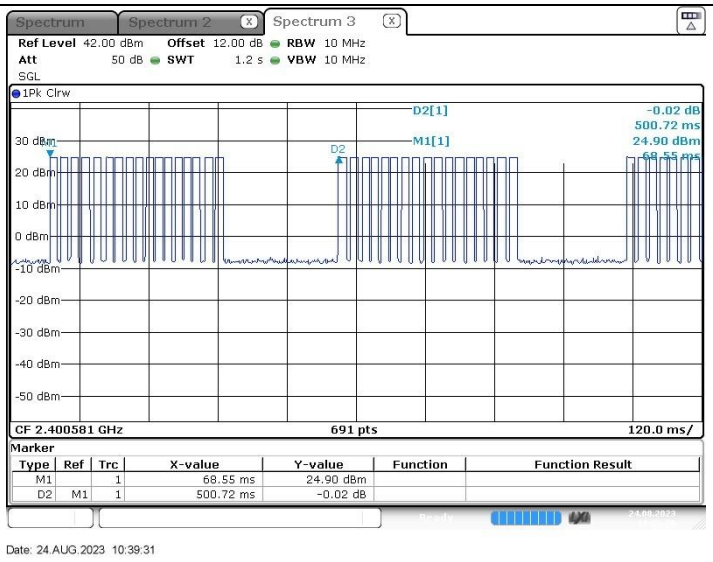
15.7. Appendix G5: Duty Cycle

15.7.1. Test Result

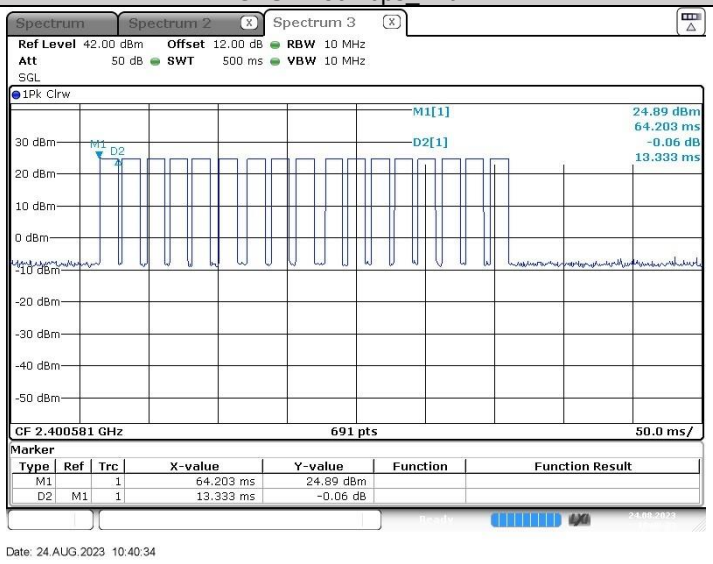
Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
2GFSK-150 kbps	226.661	500.72	0.4527	45.27%	3.44	0.0044	0.01

Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
On Time=D2*3=13.333*17=226.661 ms
If that calculated VBW is not available on the analyzer then the next higher value should be used.

15.7.2. Test Graphs



2GFSK-150 kbps_Ant1-1



2GFSK-150 kbps_Ant1-2

16. FCC.2400M.2GFSK.400kbps.H05

16.1. Appendix A6: 20dB Emission Bandwidth and Occupied Channel Bandwidth

16.1.1. Test Result

Test Mode	Antenna	Channel	20db EBW[MHz]	OCB [MHz]	Verdict
2GFSK-400 kbps.H05	Ant1	LCH	0.4881	0.43000	PASS
		MCH	0.5007	0.43367	PASS
		HCH	0.5063	0.43533	PASS

16.1.2. Test Graphs

2GFSK-400 kbps.H05 _Ant1_LCH

2GFSK-400 kbps.H05 _Ant1_MCH

2GFSK-400 kbps.H05 _Ant1_HCH

16.2. Appendix B6: Maximum conducted output power

16.2.1. Test Result

Test Mode	Antenna	Channel	PEAK Result[dBm]	AVG Result[dBm]	Limit[dBm]	Verdict
2GFSK-400 kbps.H05	Ant1	LCH	23.17	23.13	≤30	PASS
		MCH	23.41	23.36	≤30	PASS
		HCH	23.54	23.49	≤30	PASS

16.3. Appendix C6: Carrier frequency separation

16.3.1. Test Result

Test Mode	Antenna	Channel	Result [MHz]	Limit [MHz]	Verdict
2GFSK-400 kbps.H05	Ant1	Hop	0.742	≥0.5063	PASS

16.3.2. Test Graphs

2GFSK-400 kbps.H05 _Ant1_HOP

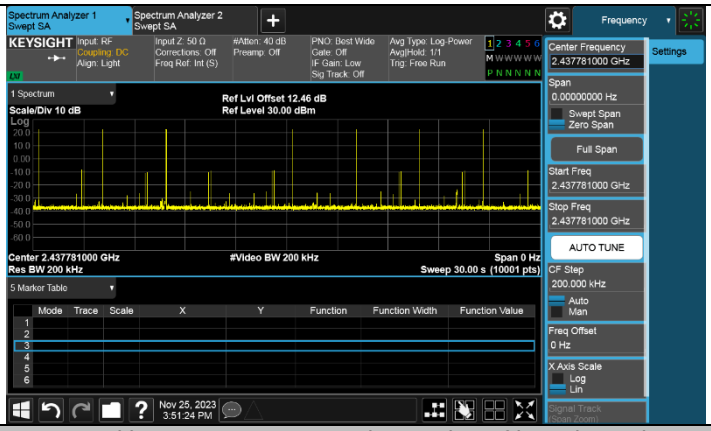
16.4. Appendix D6: Time of occupancy

16.4.1. Test Result

FHSS Mode									
Test Mode	Antenna	Channel	Time of single slot [ms]	number of single slot	BurstWidth [ms]	The number of hop channel appear	Result [ms]	Limit [ms]	Verdict
2GFSK-400 kbps.H05	Ant1	Hop	1.60	14	22.40	7	156.80	<=400	PASS

Note:
2GFSK-400 kbps.H05: The dwell time = Time of single slot * The number of hop channel appear within (0.4 * the number of hopping channels employed)s
BurstWidth =Time of single slot*number of single slot

16.4.2. Test Graphs



2GFSK-400 kbps.H05_Ant1_Hop- The number of hop channel appear

2GFSK-400 kbps.H05_Ant1_Hop- BurstWidth

16.5. Appendix E6: Number of hopping channels

16.5.1. Test Result

Test Mode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
2GFSK-400 kbps.H05	Ant1	Hop	75	≥15	PASS

16.5.2. Test Graphs

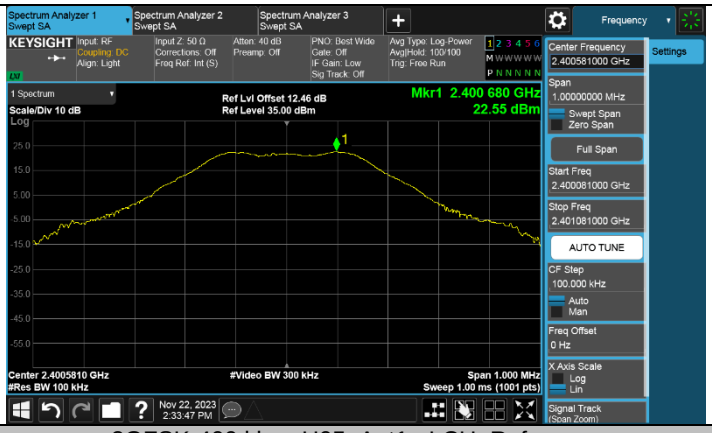
2GFSK-400 kbps.H05_Ant1_Hop

16.6. Appendix F6: Band edge measurements& Conducted Spurious Emission

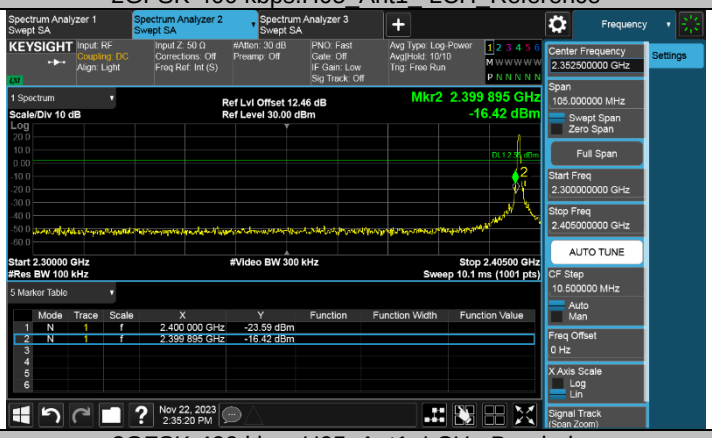
16.6.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-400 kbps.H05	Ant1	LCH	See the below graphs	PASS
		MCH		PASS
		HCH		PASS
		Hop_ LCH		PASS
		Hop_ HCH		PASS

16.6.2. Test Graphs

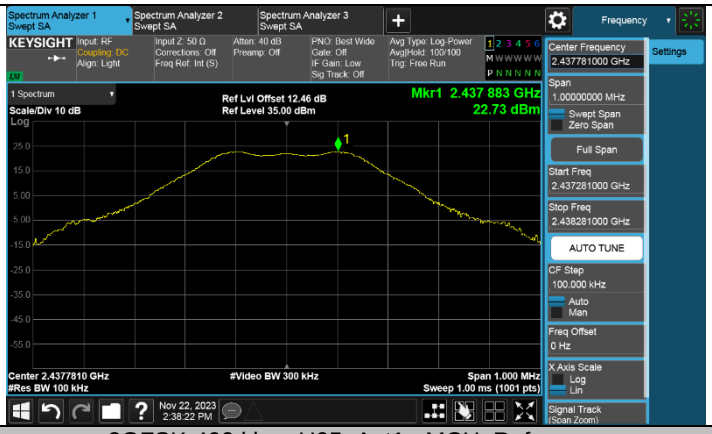


2GFSK-400 kbps.H05_Ant1_ LCH_Reference

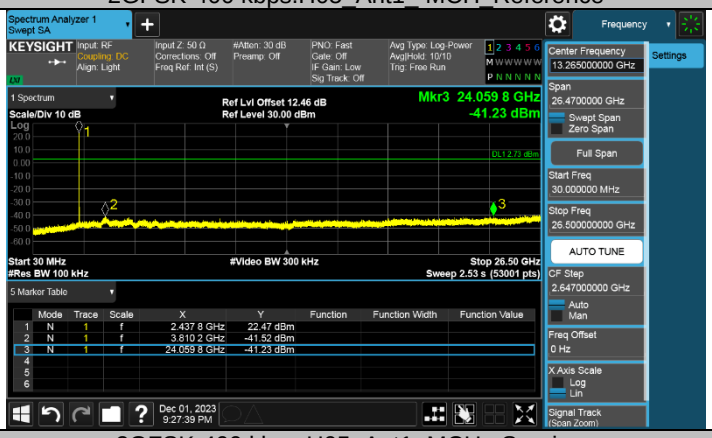


2GFSK-400 kbps.H05_Ant1_LCH_ Bandedge

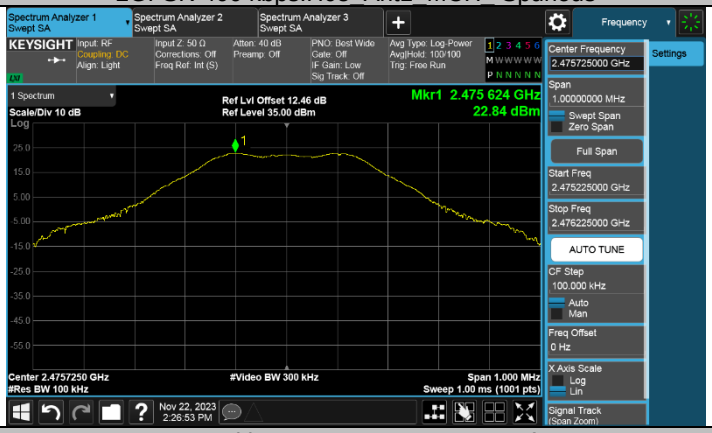
2GFSK-400 kbps.H05_Ant1_LCH_ Spurious



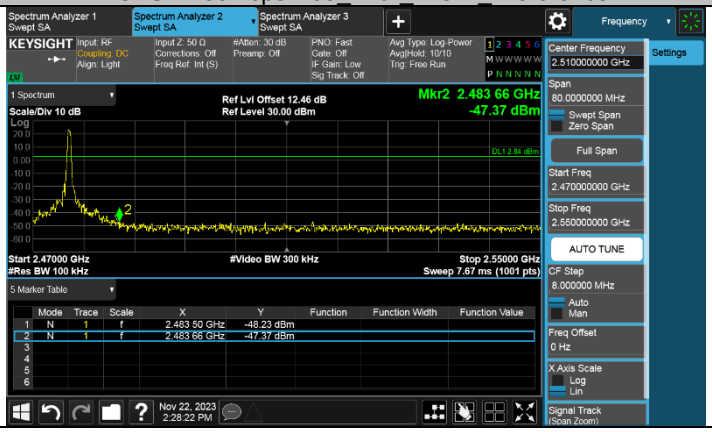
2GFSK-400 kbps.H05_Ant1_ MCH_Reference

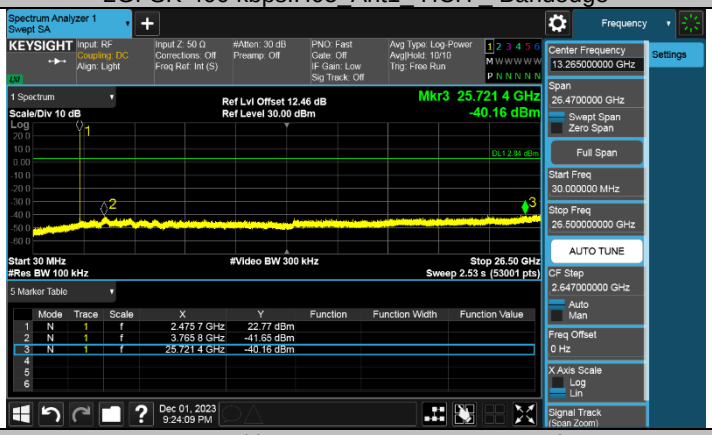


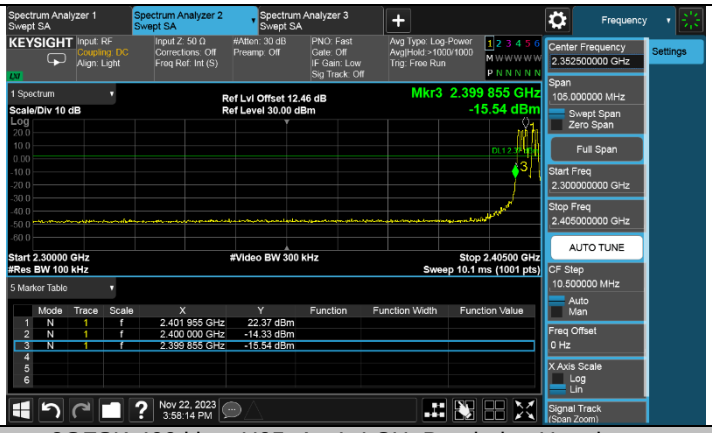
2GFSK-400 kbps.H05_Ant1_ MCH_ Spurious



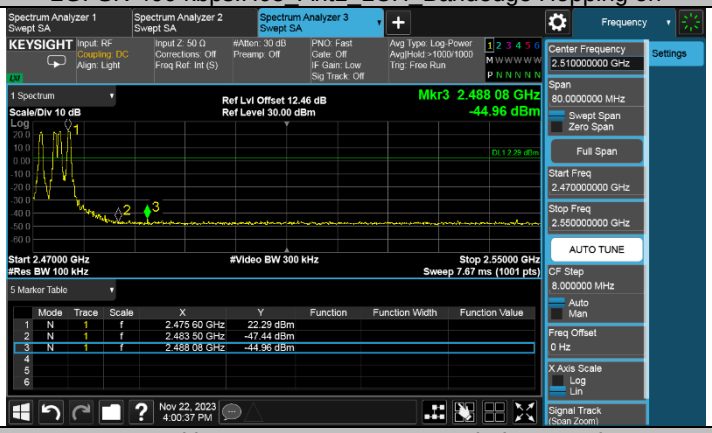
2GFSK-400 kbps.H05_Ant1_ HCH_ Reference



2GFSK-400 kbps.H05_Ant1_ HCH _ Bandedge

2GFSK-400 kbps.H05_Ant1_ HCH _ Spurious



2GFSK-400 kbps.H05_Ant1_LCH_Bandedge Hopping on



2GFSK-400 kbps.H05_Ant1_HCH_Bandedge Hopping on

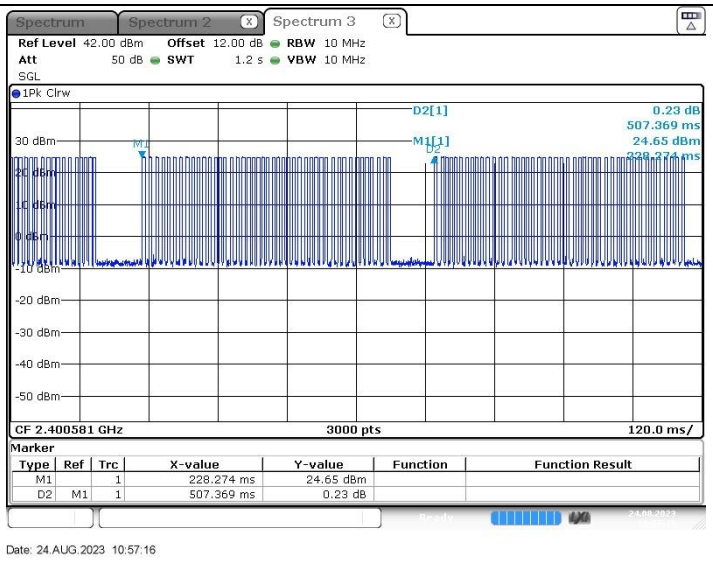
16.7. Appendix G6: Duty Cycle

16.7.1. Test Result

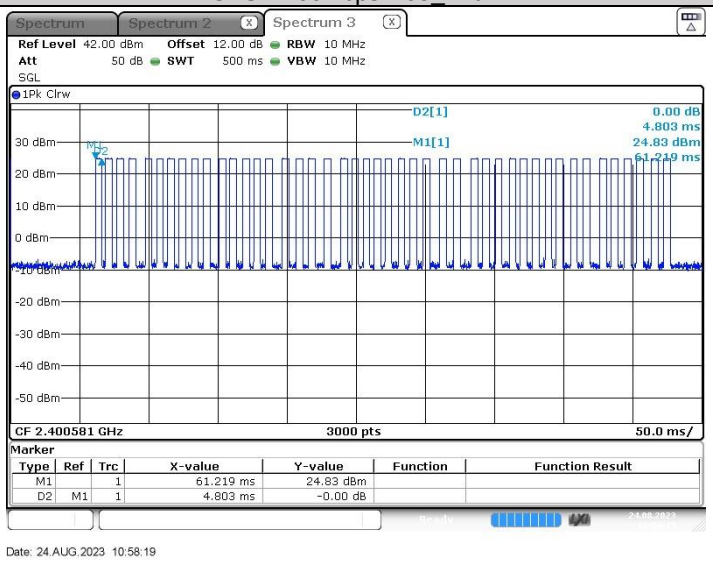
Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
2GFSK-400 kbps.H05	216.135	507.369	0.4260	42.60%	3.71	0.0046	0.01

Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
On Time=D2*3=4.803*45=216.135 ms
If that calculated VBW is not available on the analyzer then the next higher value should be used.

16.7.2. Test Graphs



2GFSK-400 kbps.H05_Ant1-1



2GFSK-400 kbps.H05_Ant1-2

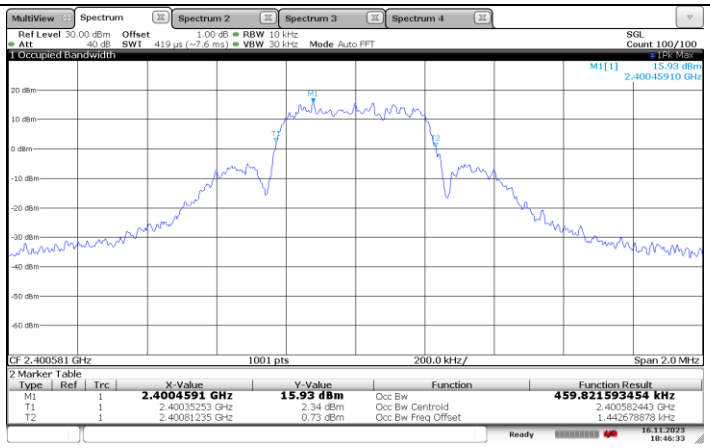
17. FCC.2400M.2GFSK.400kbps

17.1. Appendix A7: 20dB Emission Bandwidth and Occupied Channel Bandwidth

17.1.1. Test Result

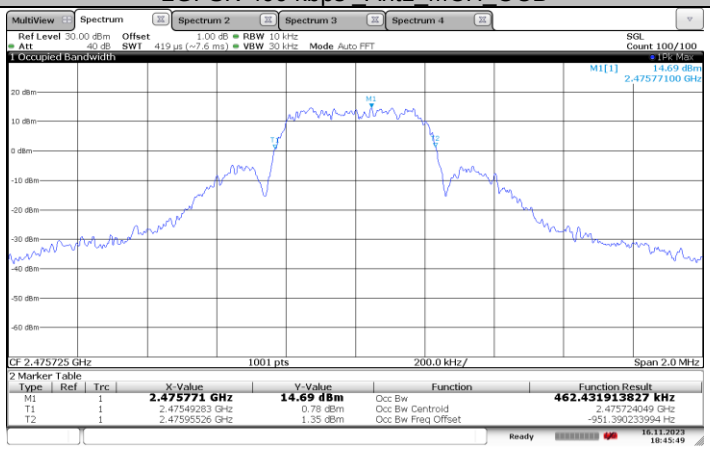
Test Mode	Antenna	Channel	20db EBW[MHz]	OCB [MHz]	Verdict
2GFSK-400 kbps	Ant1	LCH	0.4855	0.4598	PASS
		MCH	0.4775	0.4631	PASS
		HCH	0.4835	0.4624	PASS

17.1.2. Test Graphs

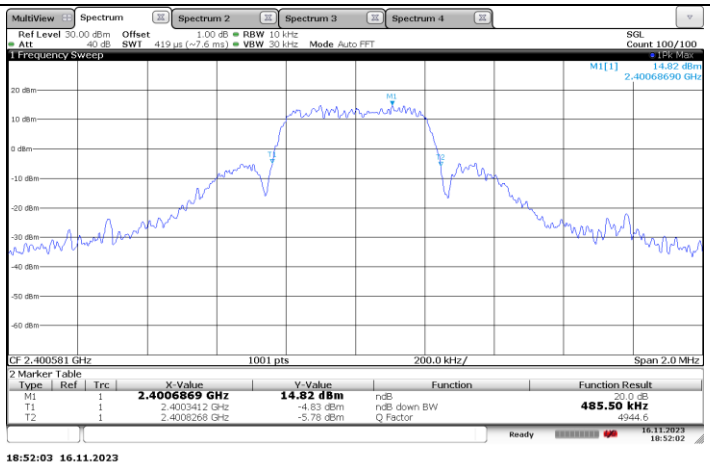


2GFSK-400 kbps _Ant1_LCH_OCB

2GFSK-400 kbps _Ant1_MCH_OCB

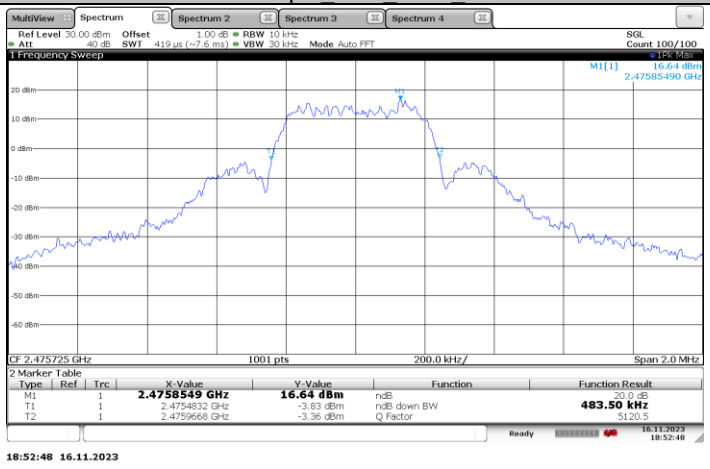


2GFSK-400 kbps _Ant1_HCH_OCB



2GFSK-400 kbps _Ant1_LCH_20db EBW

2GFSK-400 kbps _Ant1_MCH_20db EBW



2GFSK-400 kbps _Ant1_HCH_20db EBW

17.2. Appendix B7: Maximum conducted output power

17.2.1. Test Result

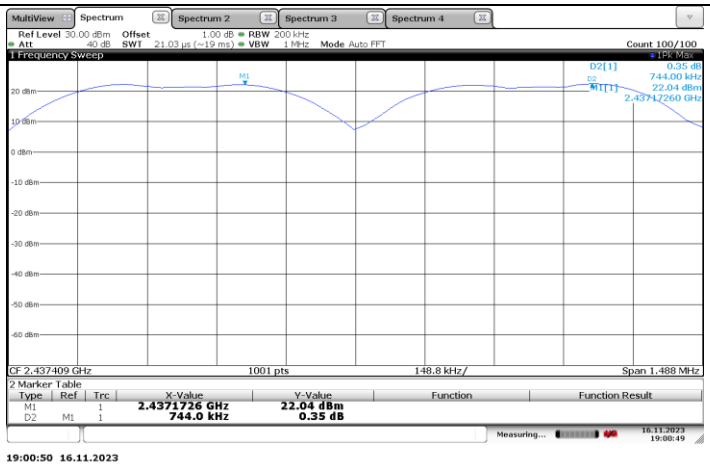
Test Mode	Antenna	Channel	PEAK Result[dBm]	AVG Result[dBm]	Limit[dBm]	Verdict
2GFSK-400 kbps	Ant1	LCH	23.31	23.27	≤30	PASS
		MCH	23.39	23.34	≤30	PASS
		HCH	23.54	23.52	≤30	PASS

17.3. Appendix C7: Carrier frequency separation

17.3.1. Test Result

Test Mode	Antenna	Channel	Result [MHz]	Limit[MHz]	Verdict
2GFSK-400 kbps	Ant1	Hop	0.744	0.4855	PASS

17.3.2. Test Graphs



2GFSK-400 kbps _Ant1_HOP

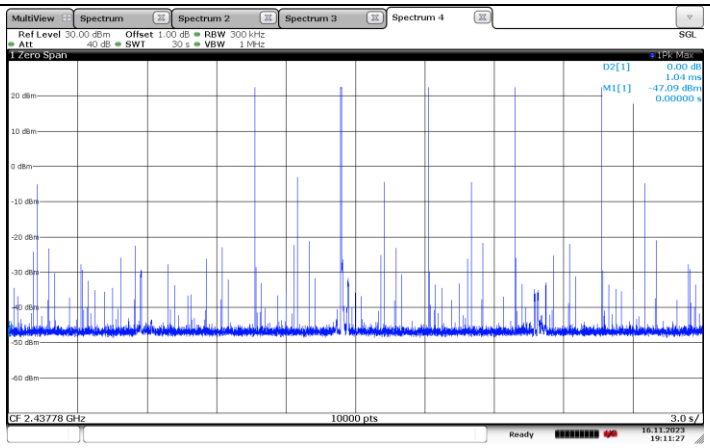
17.4. Appendix D7: Time of occupancy

17.4.1. Test Result

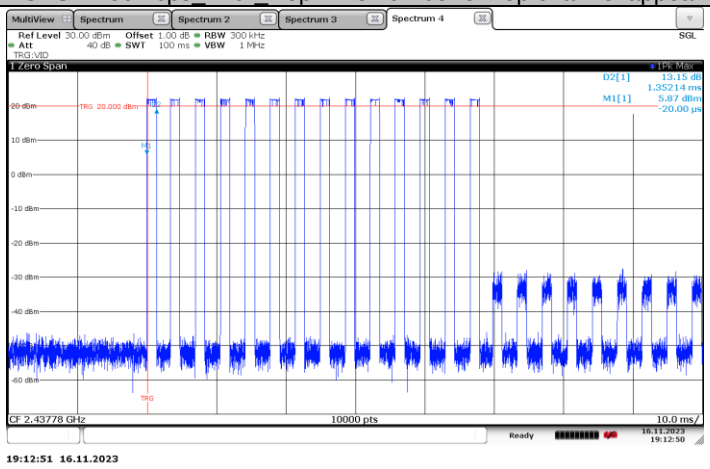
FHSS Mode									
Test Mode	Antenna	Channel	Time of single slot [ms]	number of single slot	BurstWidth [ms]	The number of hop channel appear	Result[ms]	Limit[ms]	Verdict
2GFSK-400 kbps	Ant1	Hop	1.35	14	18.90	5	94.50	<=400	PASS

Note:
2GFSK-400 kbps: The dwell time = Time of single slot * The number of hop channel appear within (0.4 * the number of hopping channels employed)s
BurstWidth =Time of single slot*number of single slot

17.4.2. Test Graphs



2GFSK-400 kbps_Ant1_Hop- The number of hop channel appear



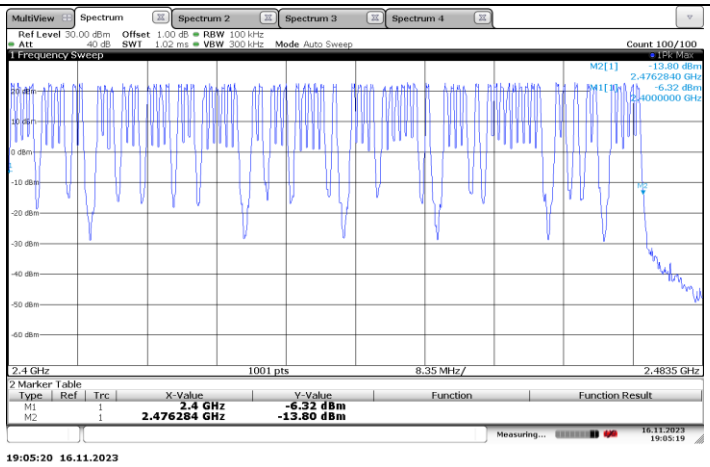
2GFSK-400 kbps_Ant1_Hop- BurstWidth

17.5. Appendix E7: Number of hopping channels

17.5.1. Test Result

Test Mode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
2GFSK-400 kbps	Ant1	Hop	75	≥15	PASS

17.5.2. Test Graphs



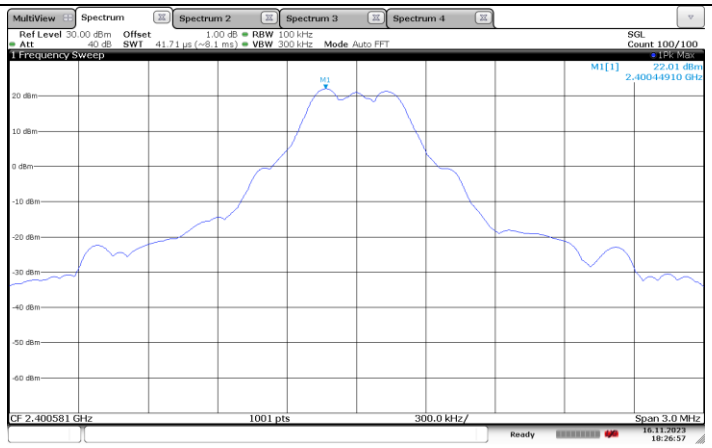
2GFSK-400 kbps_Ant1_Hop

17.6. Appendix F7: Band edge measurements& Conducted Spurious Emission

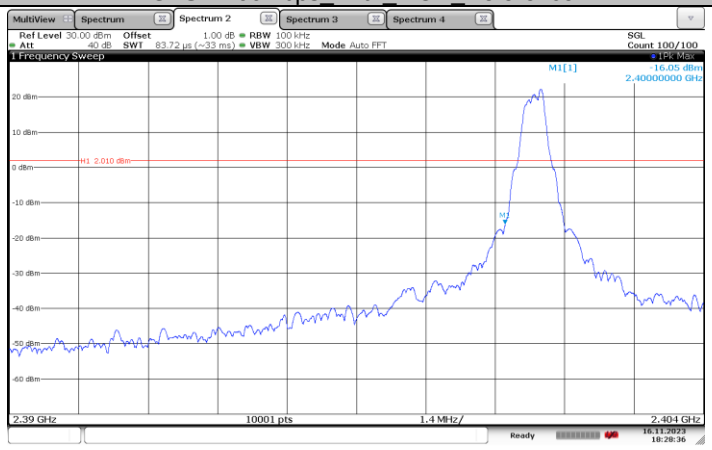
17.6.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
2GFSK-400 kbps	Ant1	LCH	See the below graphs	PASS
		MCH		PASS
		HCH		PASS
		Hop_ LCH		PASS
		Hop_ HCH		PASS

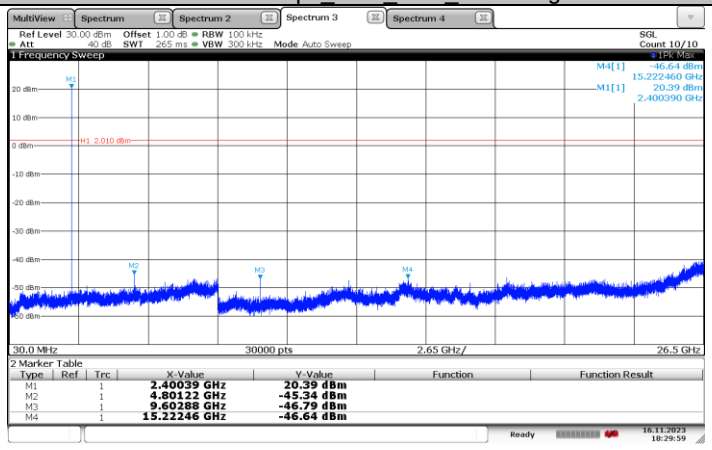
17.6.2. Test Graphs



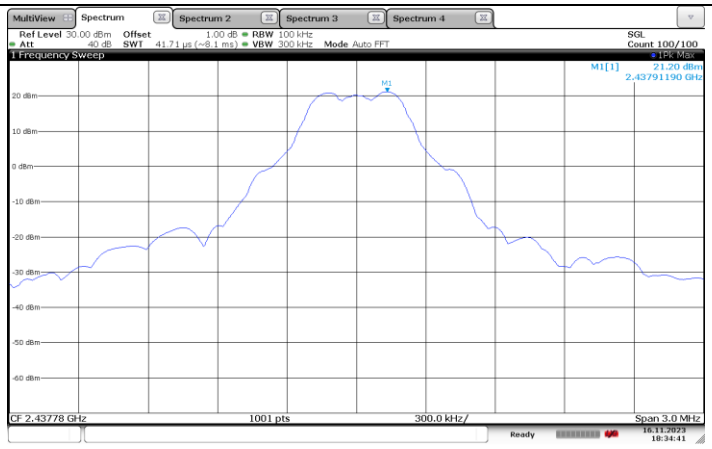
2GFSK-400 kbps_Ant1_ LCH_Reference



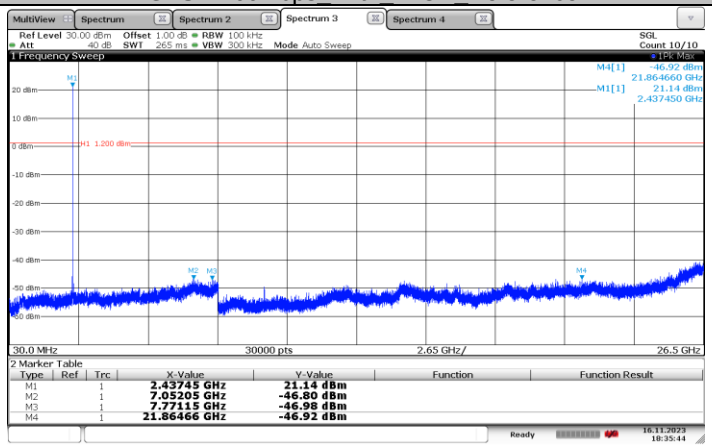
2GFSK-400 kbps_Ant1_LCH_ Bandedge



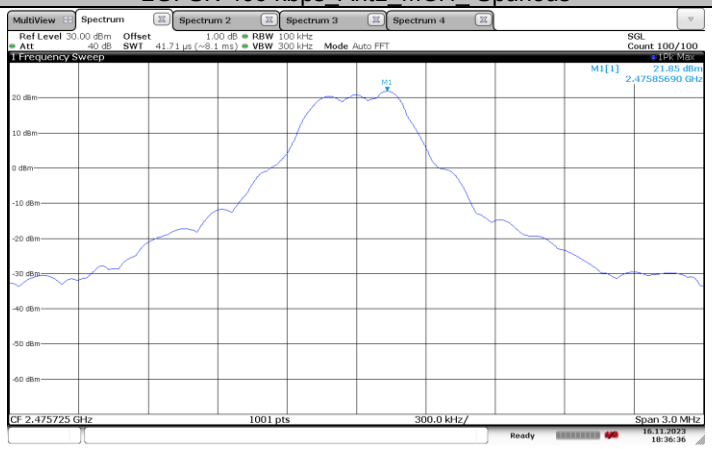
2GFSK-400 kbps_Ant1_LCH_ Spurious



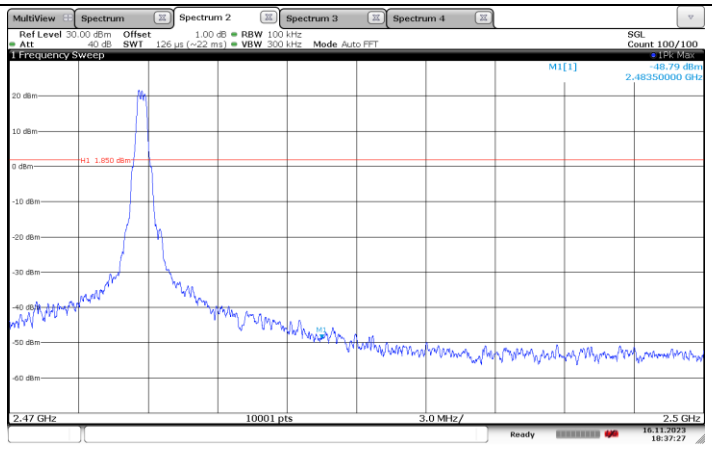
2GFSK-400 kbps_Ant1_ MCH_Reference



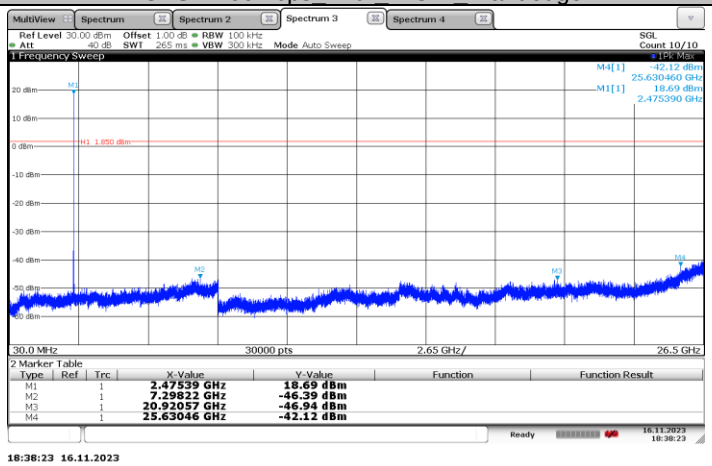
2GFSK-400 kbps_Ant1_MCH_ Spurious



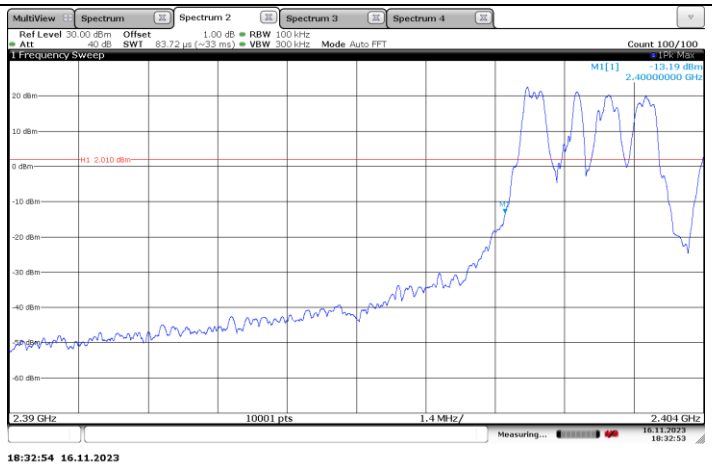
2GFSK-400 kbps_Ant1_ HCH _ Reference



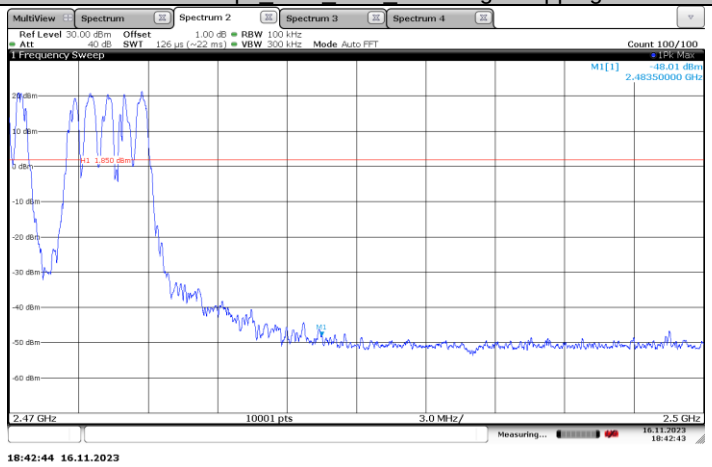
2GFSK-400 kbps_Ant1_ HCH _ Bandedge



2GFSK-400 kbps_Ant1_ HCH _ Spurious



2GFSK-400 kbps_Ant1_LCH_Bandedge Hopping on



2GFSK-400 kbps_Ant1_HCH_Bandedge Hopping on

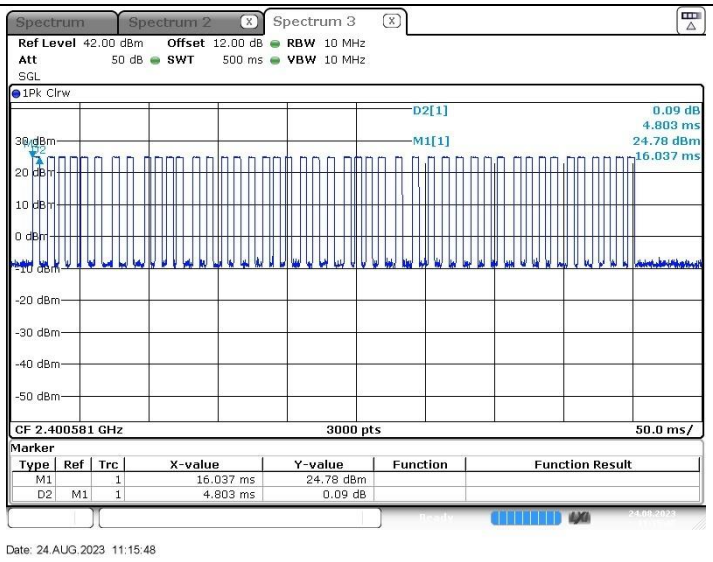
17.7. Appendix G7: Duty Cycle

17.7.1. Test Result

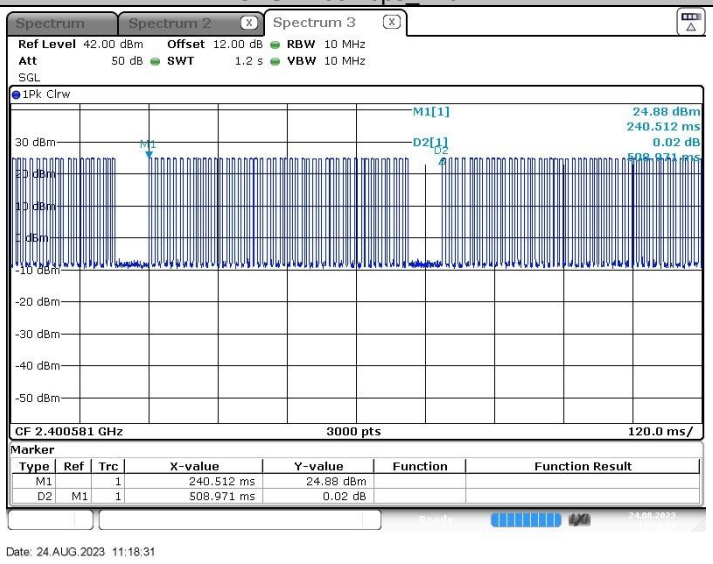
Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
2GFSK-400 kbps	216.135	508.971	0.4247	42.47	3.72	0.0046	0.01

Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
If that calculated VBW is not available on the analyzer then the next higher value should be used.

17.7.2. Test Graphs



2GFSK-400 kbps_Ant1-1



2GFSK-400 kbps_Ant1-2

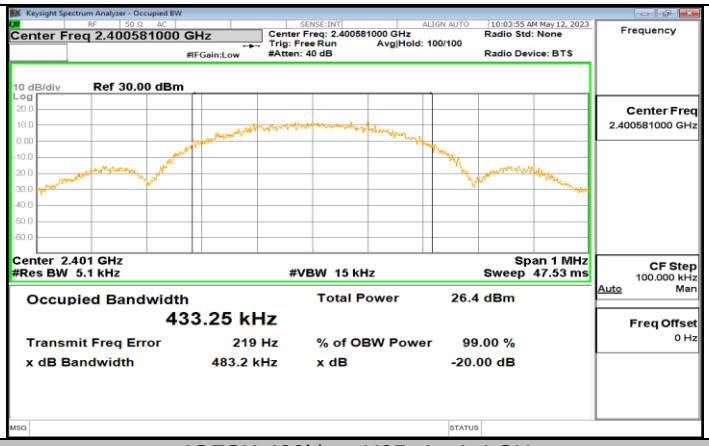
18. FCC.2400M.4GFSK.400kbps.H05

18.1. Appendix A8: 20dB Emission Bandwidth and Occupied Channel Bandwidth

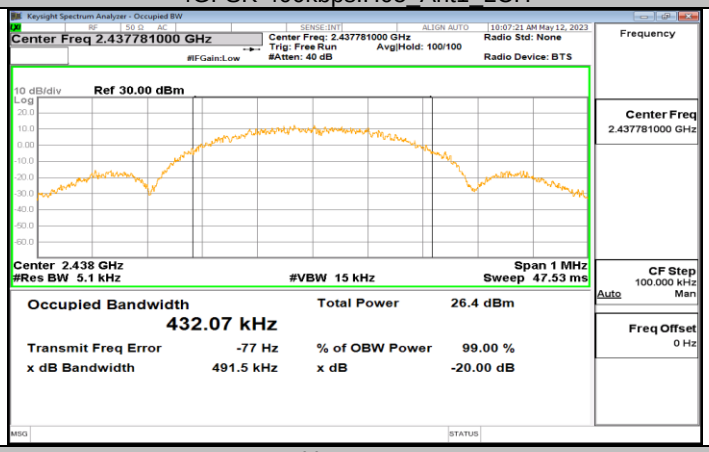
18.1.1. Test Result

Test Mode	Antenna	Channel	20db EBW[MHz]	OCB [MHz]	Verdict
4GFSK-400kbps.H05	Ant1	LCH	0.4832	0.4332	PASS
		MCH	0.4915	0.4320	PASS
		HCH	0.4962	0.4342	PASS

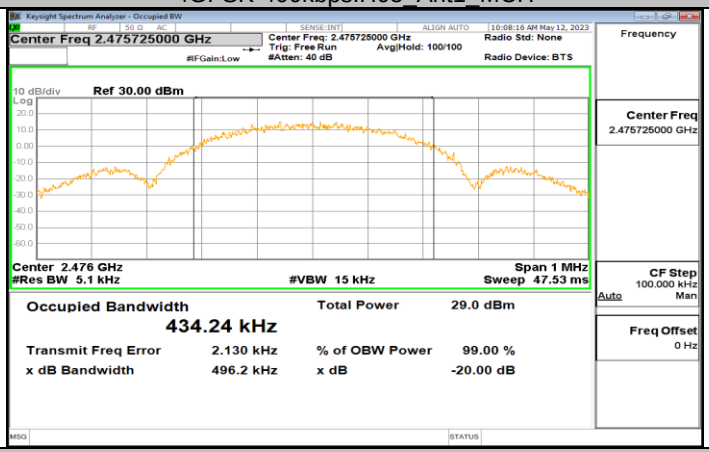
18.1.2. Test Graphs



4GFSK-400kbps.H05_Ant1_LCH



4GFSK-400kbps.H05_Ant1_MCH



4GFSK-400kbps.H05_Ant1_HCH

18.2. Appendix B8: Maximum conducted output power

18.2.1. Test Result

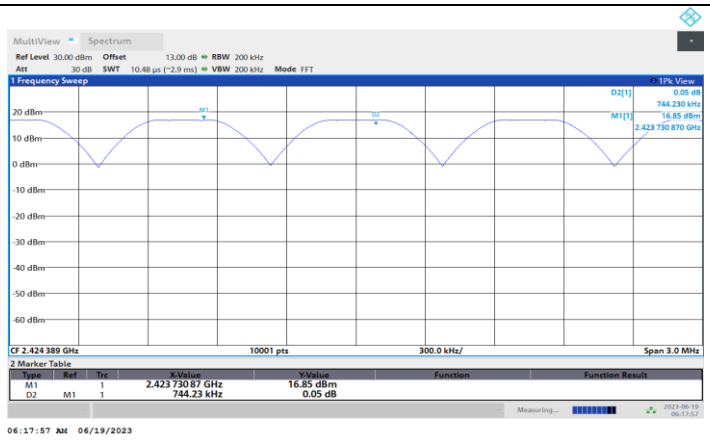
Test Mode	Antenna	Channel	PEAK Result[dBm]	AVG Result[dBm]	Limit[dBm]	Verdict
4GFSK-400kbps.H05	Ant1	LCH	24.58	24.54	≤30	PASS
		Mid	24.83	24.70	≤30	PASS
		HCH	24.90	24.82	≤30	PASS

18.3. Appendix C8: Carrier frequency separation

18.3.1. Test Result

Test Mode	Antenna	Channel	Result [MHz]	Limit[MHz]	Verdict
4GFSK-400kbps.H05	Ant1	Hop	0.744	0.4962	PASS

18.3.2. Test Graphs



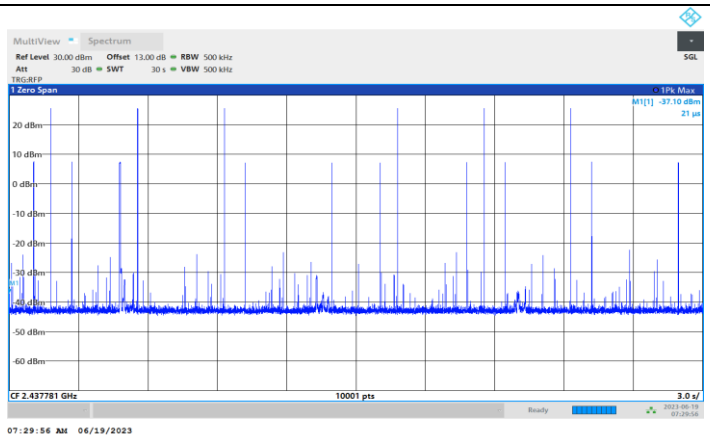
4GFSK-400kbps.H05_Ant1_HOP

18.4. Appendix D8: Time of occupancy

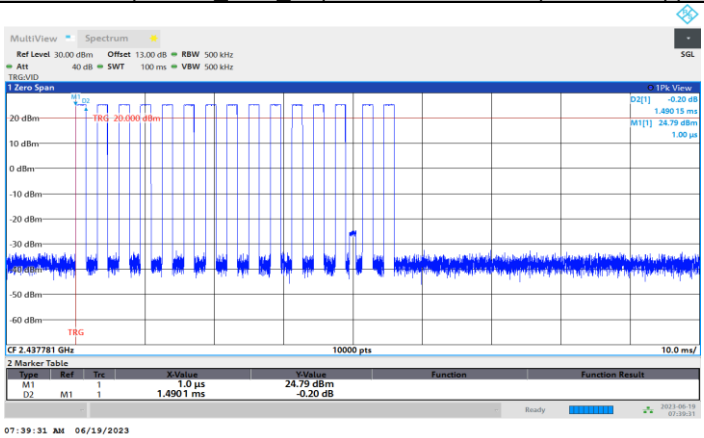
18.4.1. Test Result

FHSS Mode									
Test Mode	Antenna	Channel	Time of single slot [ms]	number of single slot	BurstWidth [ms]	The number of hop channel appear	Result[ms]	Limit[ms]	Verdict
4GFSK-400kbps.H05	Ant1	Hop	1.49	15	22.35	6	134.11	<=400	PASS

18.4.2. Test Graphs



4GFSK-400kbps.H05 _Ant1_Hop- The number of hop channel appear



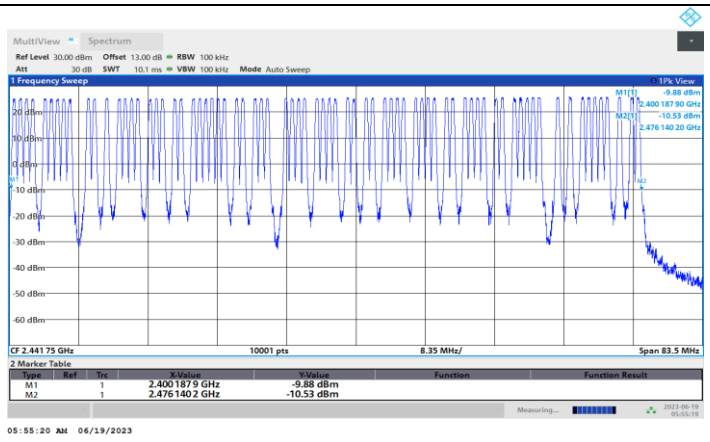
4GFSK-400kbps.H05 _Ant1_Hop- BurstWidth

18.5. Appendix E8: Number of hopping channels

18.5.1. Test Result

Test Mode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
4GFSK-400kbps.H05	Ant1	Hop	75	≥15	PASS

18.5.2. Test Graphs



4GFSK-400kbps.H05 _Ant1_Hop

18.6. Appendix F8: Band edge measurements& Conducted Spurious Emission

18.6.1. Test Result

Test Mode	Antenna	ChName	Result [dBm]	Verdict
4GFSK-400kbps.H05	Ant1	LCH	See the beLCH graphs	PASS
		MCH		PASS
		HCH		PASS
		Hop_ LCH		PASS
		Hop_ HCH		PASS