



Appendix A

RF Test: General Information

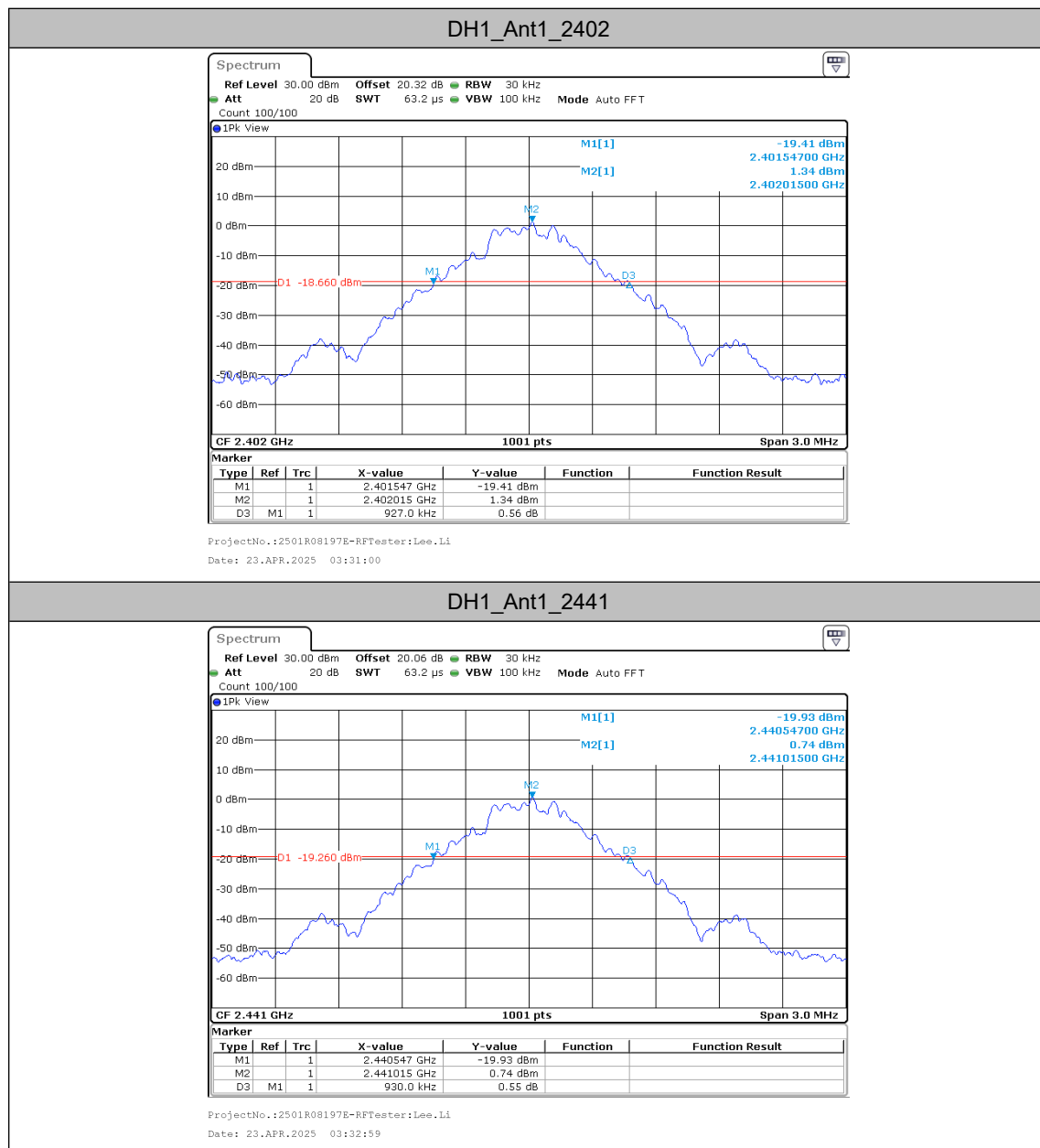
Project No.:	2501R08197E-RF
EUT Number:	30LS-4
Operating Mode:	Transmitting
Teststandard	FCC 15.247/RSS-247
Test Conditions:	Temperature: <u>25</u> °C Relative Humidity: <u>55</u> % ATM Pressure: <u>101</u> kPa
Test Engineer:	Lee Li
Test Date:	2025-4-23

20dB Emission Bandwidth

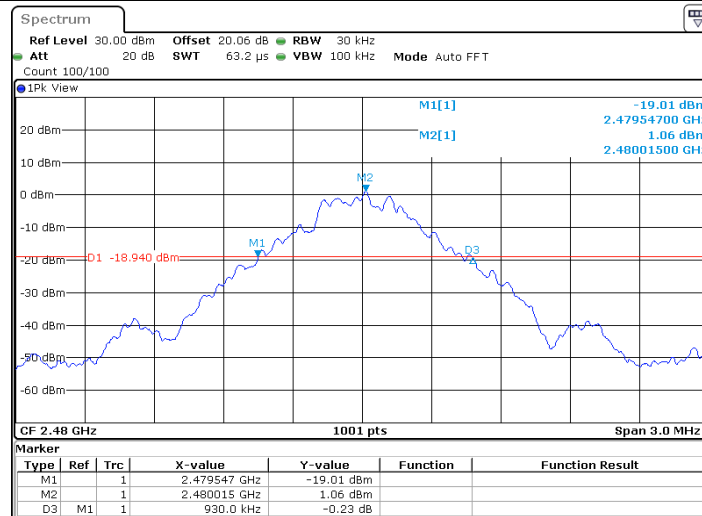
Test Result

Test Mode	Antenna	Frequency[MHz]	20dB EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.93	2401.55	2402.48	---	---
		2441	0.93	2440.55	2441.48	---	---
		2480	0.93	2479.55	2480.48	---	---
2DH1	Ant1	2402	1.43	2401.27	2402.70	---	---
		2441	1.43	2440.27	2441.70	---	---
		2480	1.43	2479.27	2480.70	---	---
3DH1	Ant1	2402	1.44	2401.28	2402.72	---	---
		2441	1.44	2440.28	2441.72	---	---
		2480	1.44	2479.27	2480.71	---	---

Test Graphs

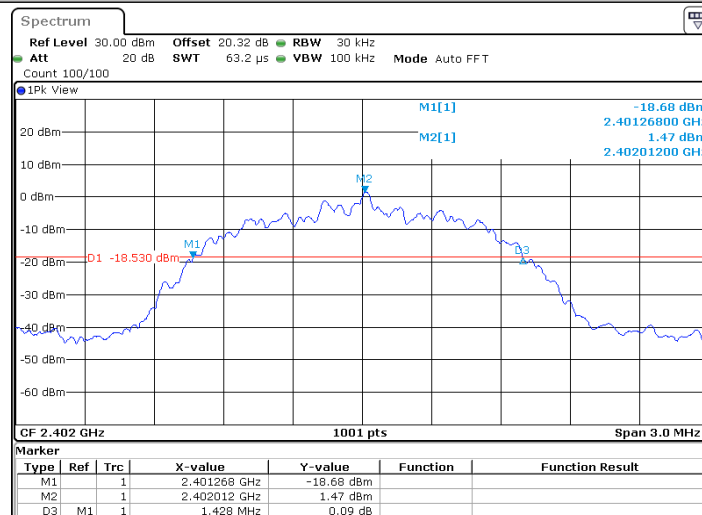


DH1_Ant1_2480



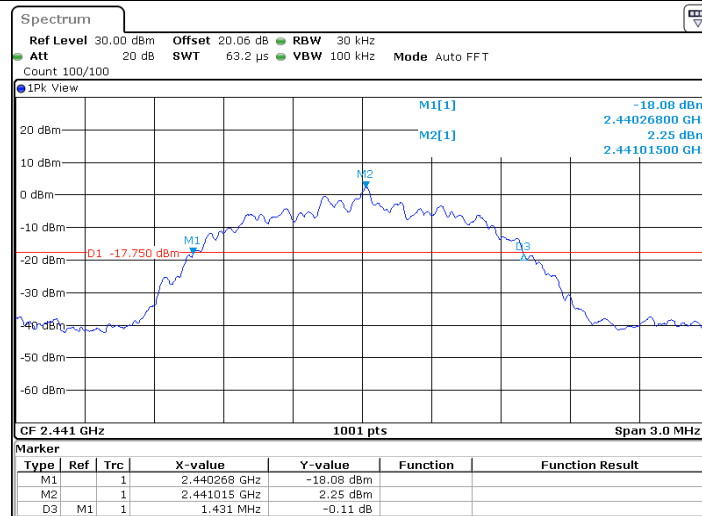
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:36:06

2DH1_Ant1_2402



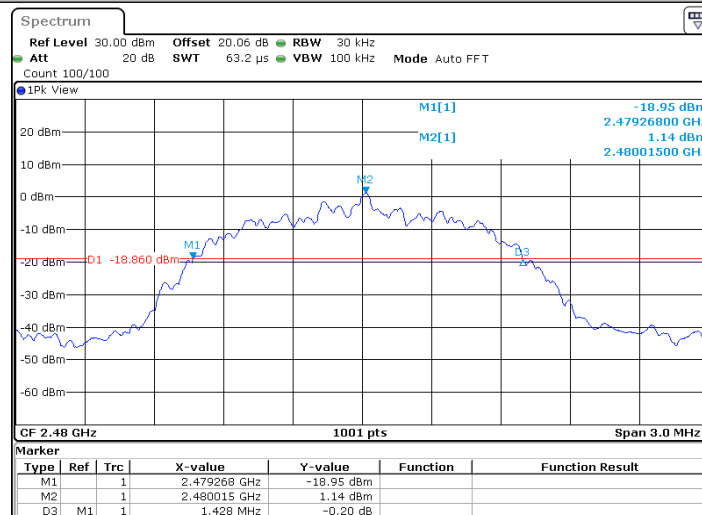
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:37:26

2DH1_Ant1_2441



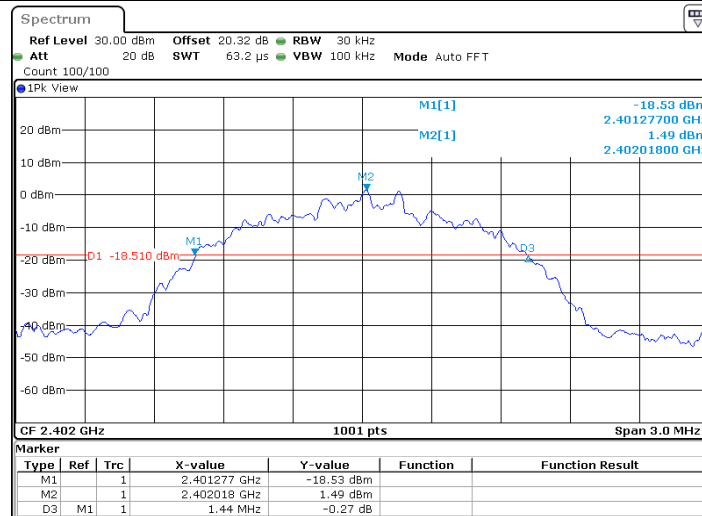
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:38:38

2DH1_Ant1_2480



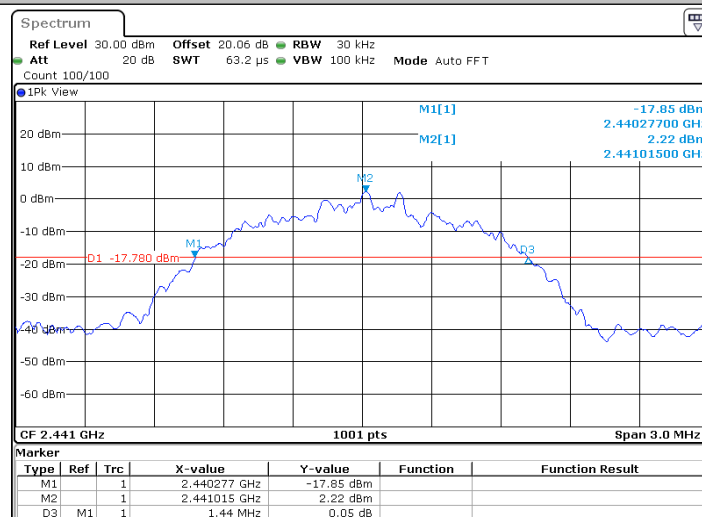
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:39:48

3DH1_Ant1_2402

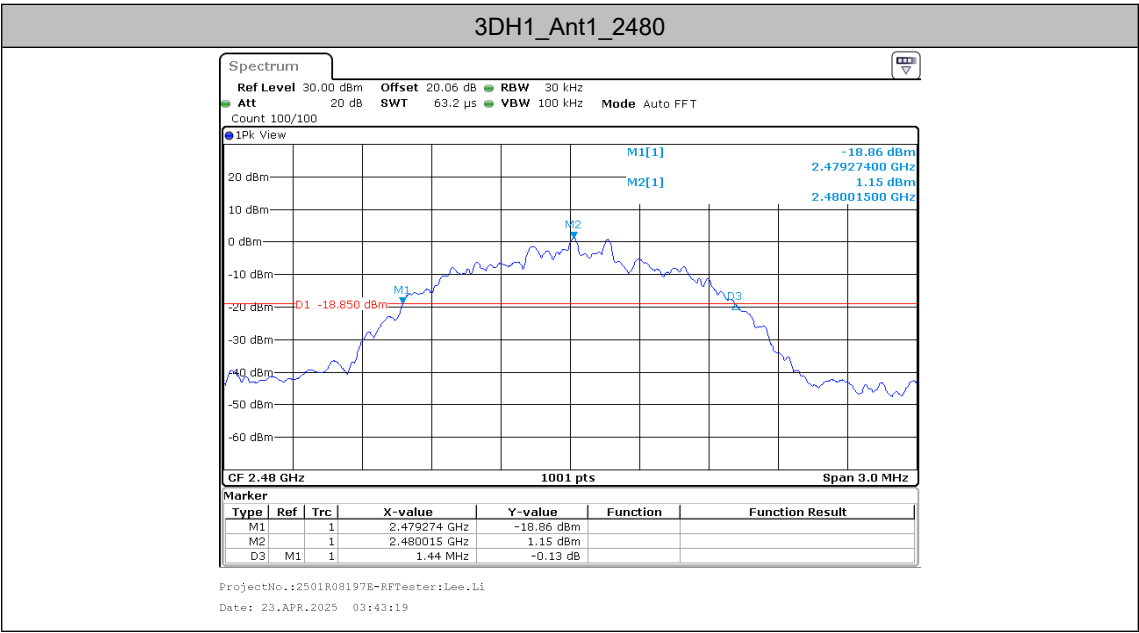


ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:41:08

3DH1_Ant1_2441



ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:42:18



Occupied Channel Bandwidth

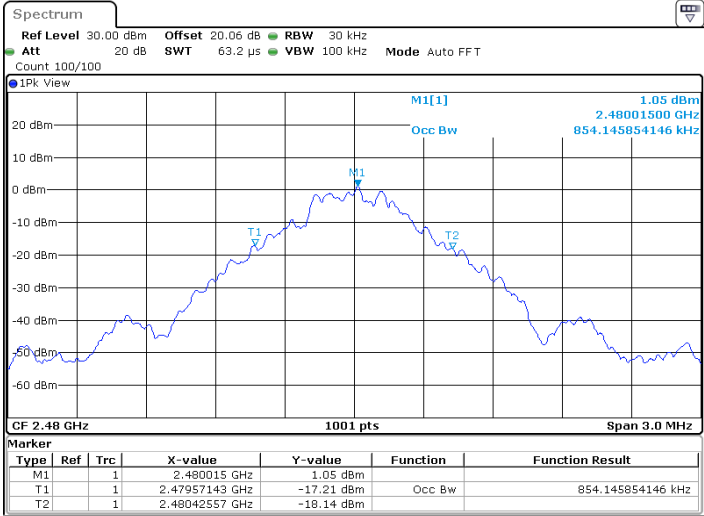
Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.851	2401.5744	2402.4256	---	---
		2441	0.854	2440.5744	2441.4286	---	---
		2480	0.854	2479.5714	2480.4256	---	---
2DH1	Ant1	2402	1.346	2401.3227	2402.6683	---	---
		2441	1.346	2440.3227	2441.6683	---	---
		2480	1.349	2479.3197	2480.6683	---	---
3DH1	Ant1	2402	1.334	2401.3257	2402.6593	---	---
		2441	1.334	2440.3287	2441.6623	---	---
		2480	1.334	2479.3257	2480.6593	---	---

Test Graphs

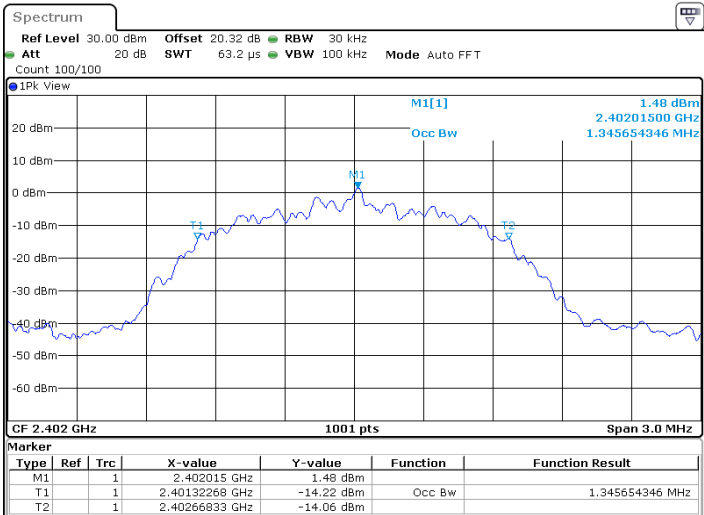


DH1_Ant1_2480



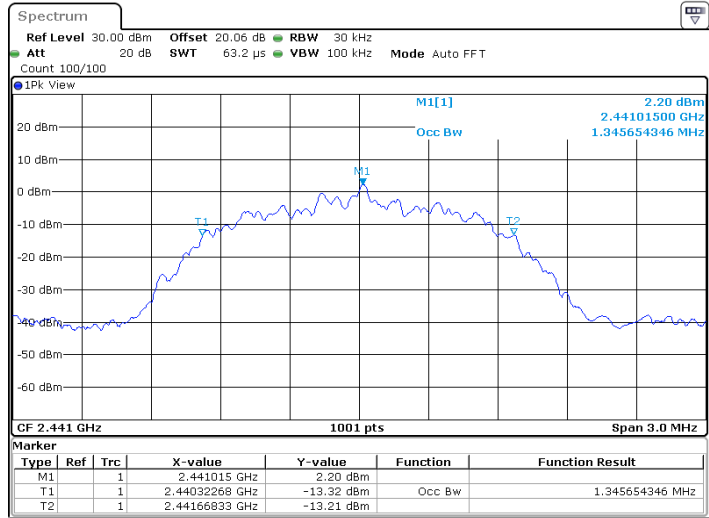
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Date: 23.APR.2025 03:36:12

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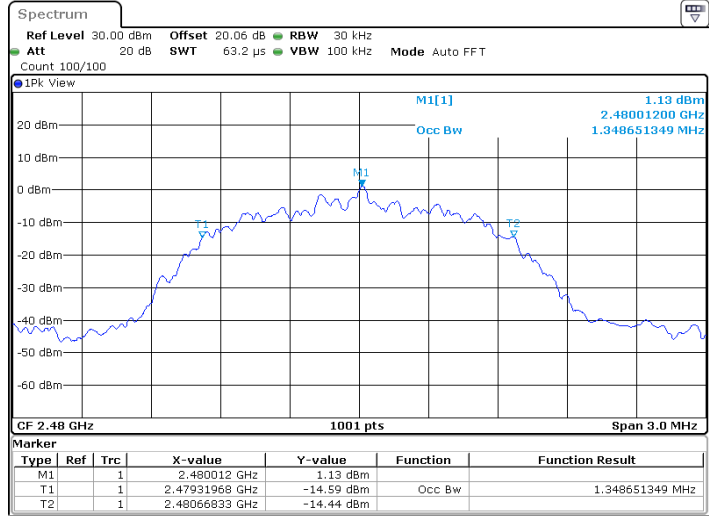
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Date: 23.APR.2025 03:37:32

2DH1_Ant1_2441



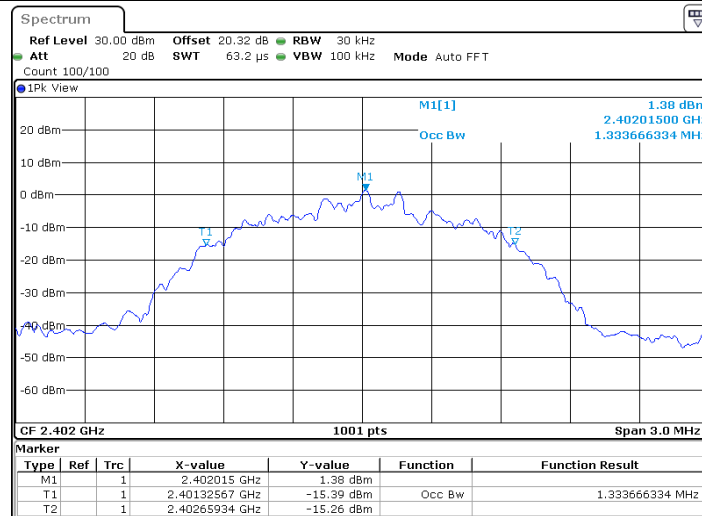
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Date: 23.APR.2025 03:38:44

2DH1_Ant1_2480



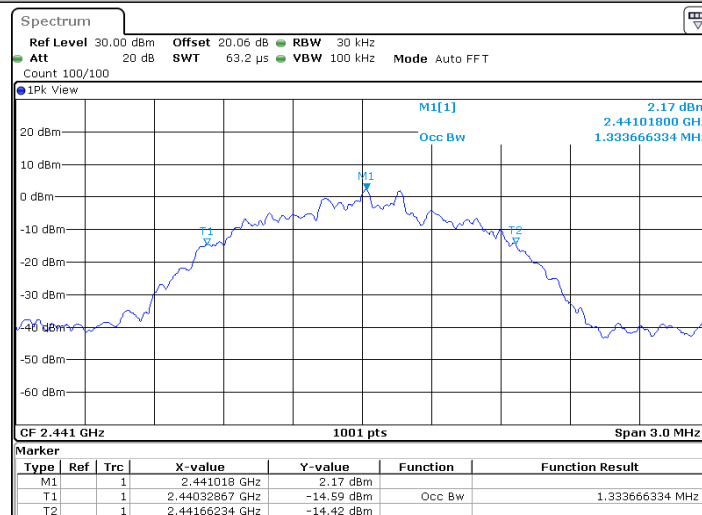
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:39:53

3DH1_Ant1_2402

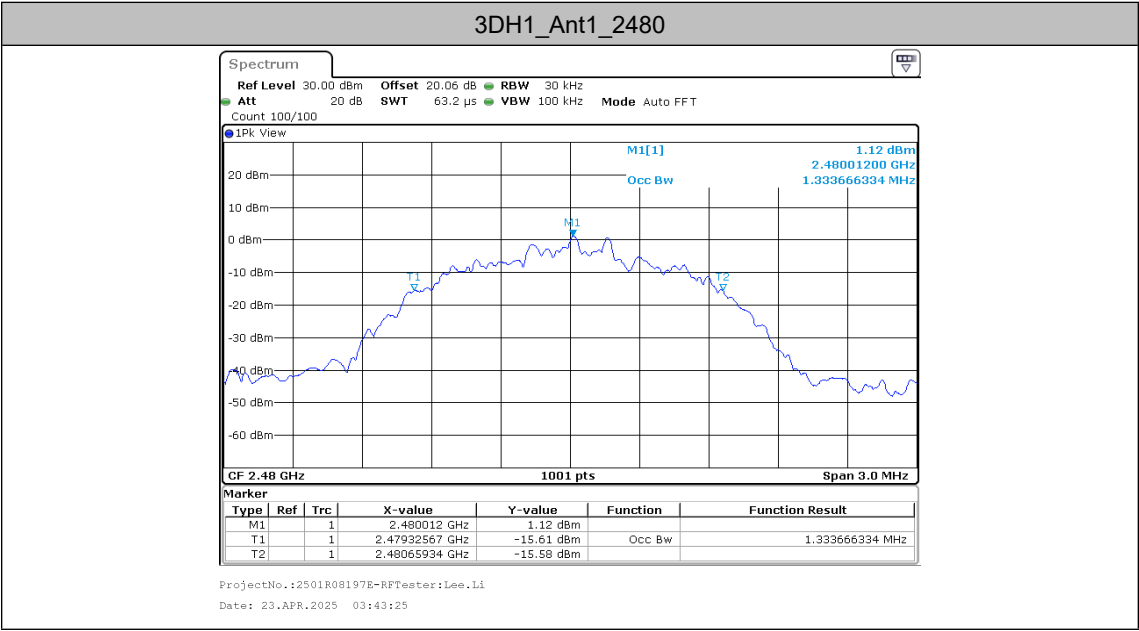


ProjectNo.:2501R08197E-RFTester:Lee.Li
 Date: 23.APR.2025 03:41:14

3DH1_Ant1_2441



ProjectNo.:2501R08197E-RFTester:Lee.Li
 Date: 23.APR.2025 03:42:24

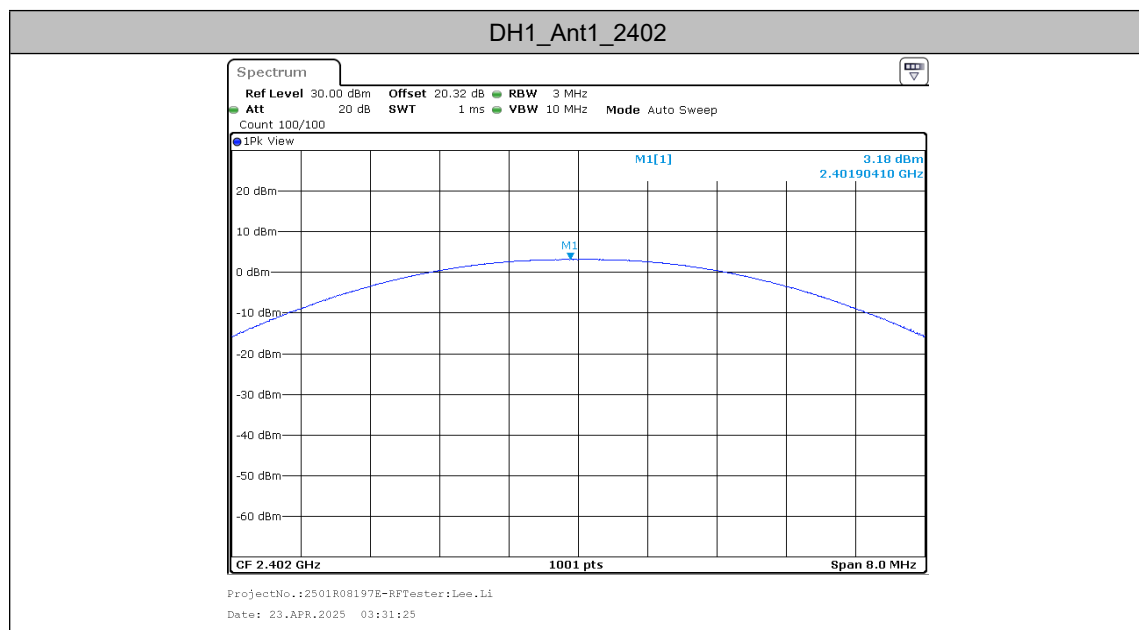


Maximum conducted output power

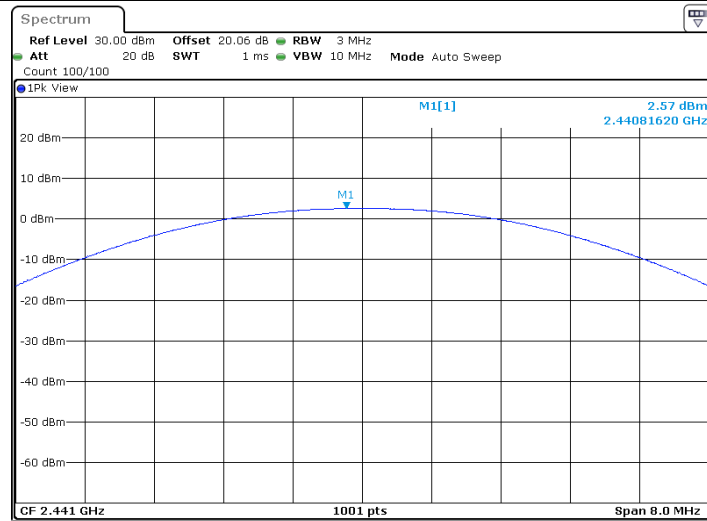
Test Result Peak

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
DH1	Ant1	2402	3.18	≤20.97	5.97	≤36	PASS
		2441	2.57	≤20.97	5.36	≤36	PASS
		2480	2.93	≤20.97	5.72	≤36	PASS
2DH1	Ant1	2402	5.61	≤20.97	8.40	≤36	PASS
		2441	6.25	≤20.97	9.04	≤36	PASS
		2480	5.27	≤20.97	8.06	≤36	PASS
3DH1	Ant1	2402	5.80	≤20.97	8.59	≤36	PASS
		2441	6.44	≤20.97	9.23	≤36	PASS
		2480	5.50	≤20.97	8.29	≤36	PASS

Test Graphs

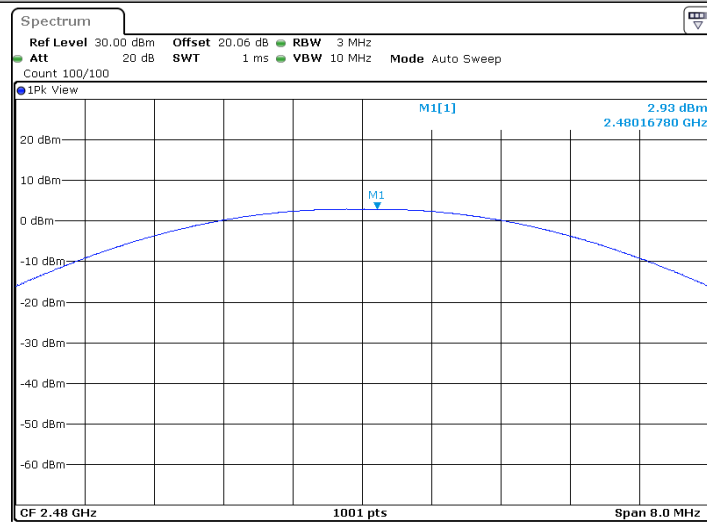


DH1_Ant1_2441



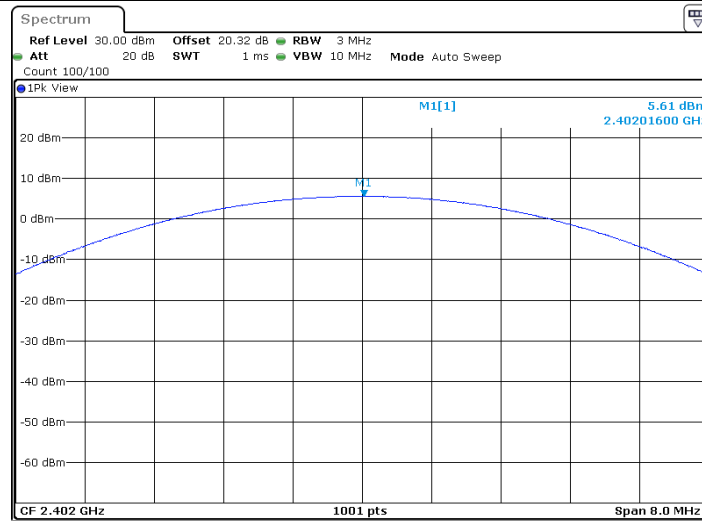
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:33:13

DH1_Ant1_2480



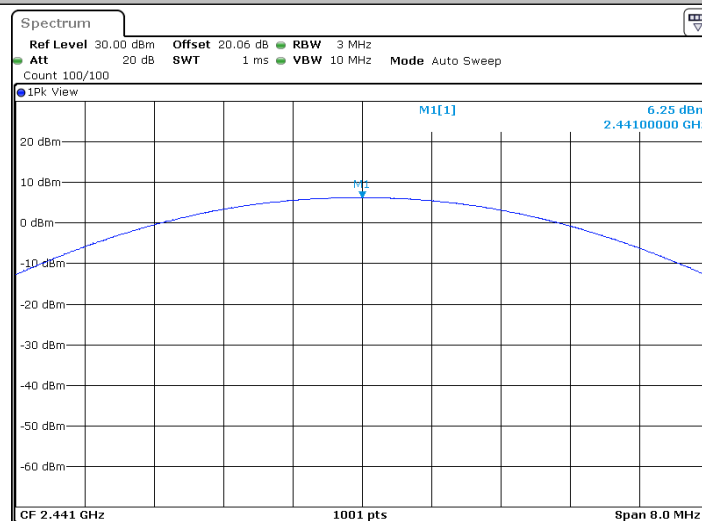
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:36:29

2DH1_Ant1_2402



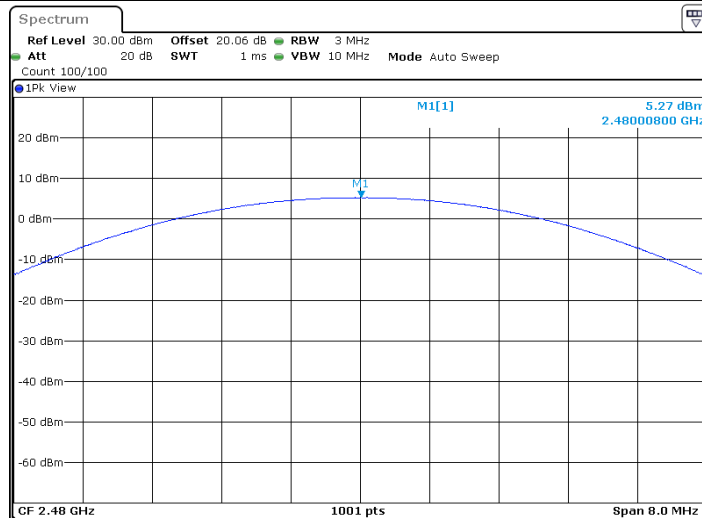
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:37:59

2DH1_Ant1_2441



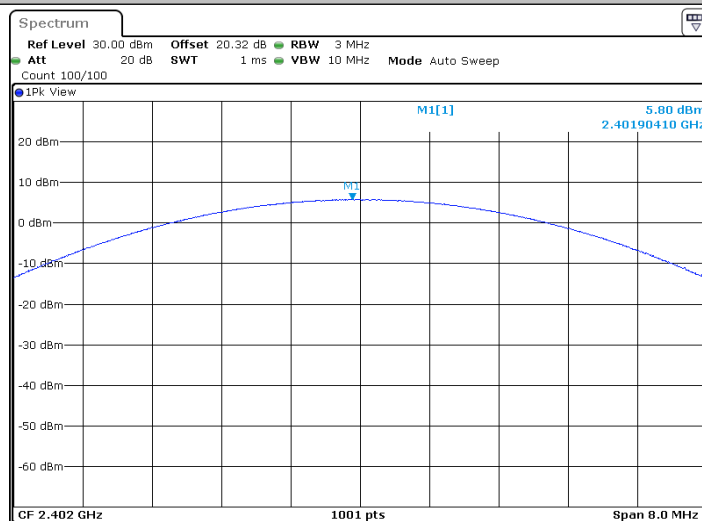
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Date: 23.APR.2025 03:39:01

2DH1_Ant1_2480



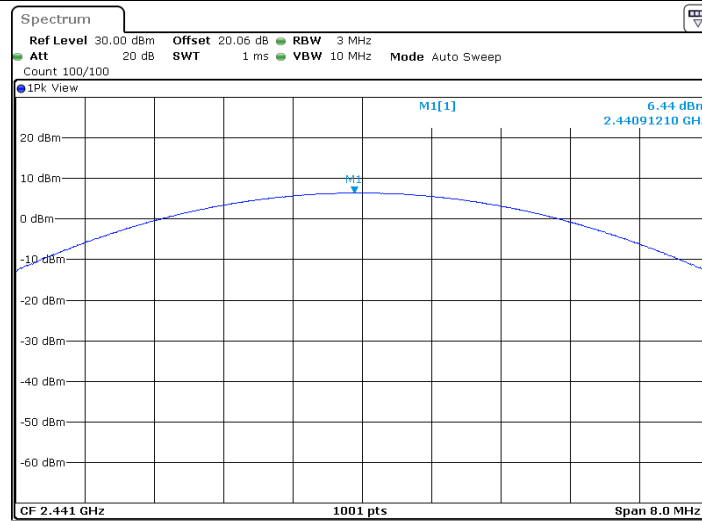
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Date: 23.APR.2025 03:40:20

3DH1_Ant1_2402



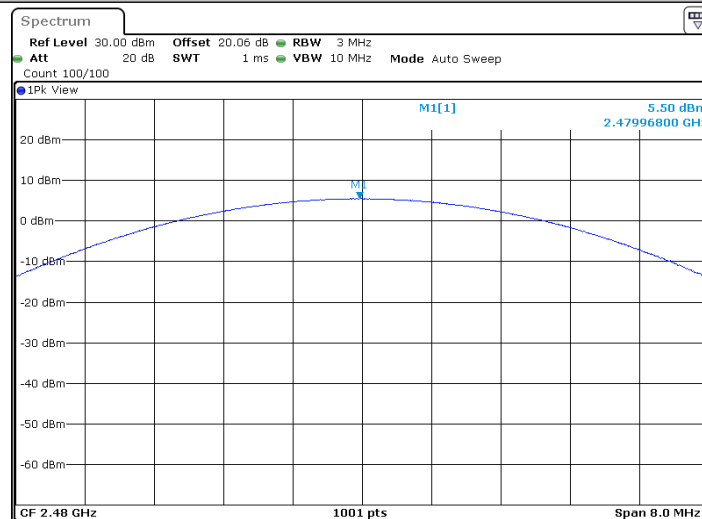
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Date: 23.APR.2025 03:41:31

3DH1_Ant1_2441



ProjectNo.:2501R08197E-RFTester:Lee.Li
 Date: 23.APR.2025 03:42:32

3DH1_Ant1_2480



ProjectNo.:2501R08197E-RFTester:Lee.Li
 Date: 23.APR.2025 03:43:51

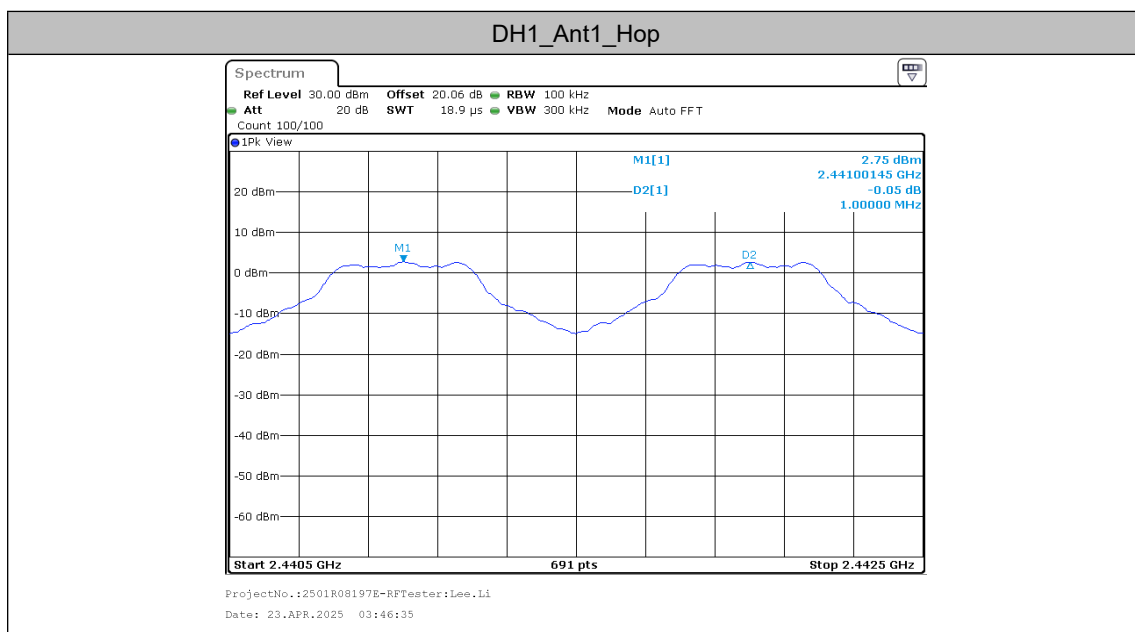
Carrier frequency separation

Test Result

Test Mode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop	1	≥0.960	PASS

Note: Only the BDR (GFSK) mode result is reported since EDR ($\pi/4$ -DQPSK) and EDR (8DPSK) modes have the exact same channel plan, and the limit is the maximum 20dB bandwidth *2/3

Test Graphs

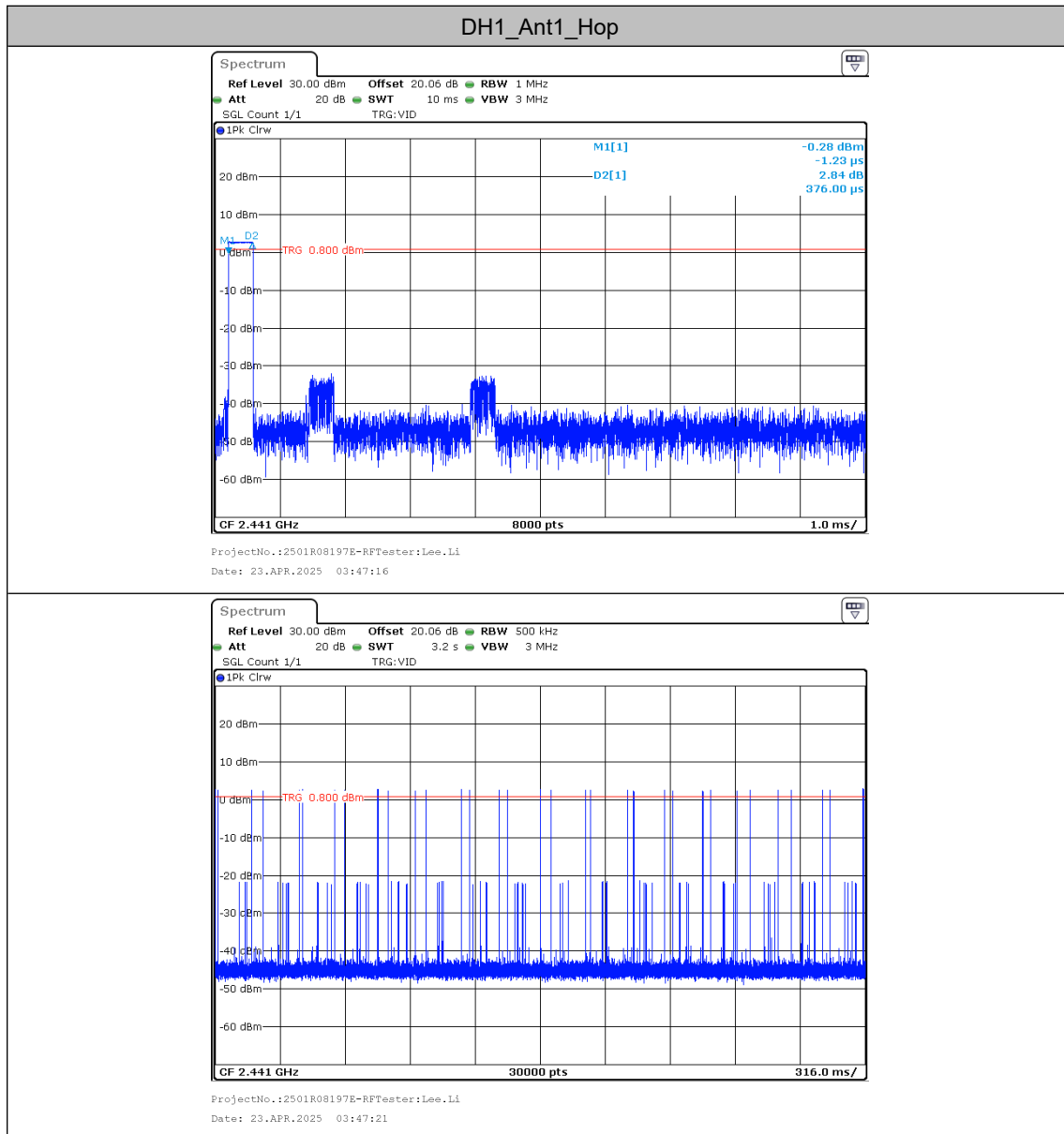


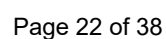
Time of occupancy

Test Result

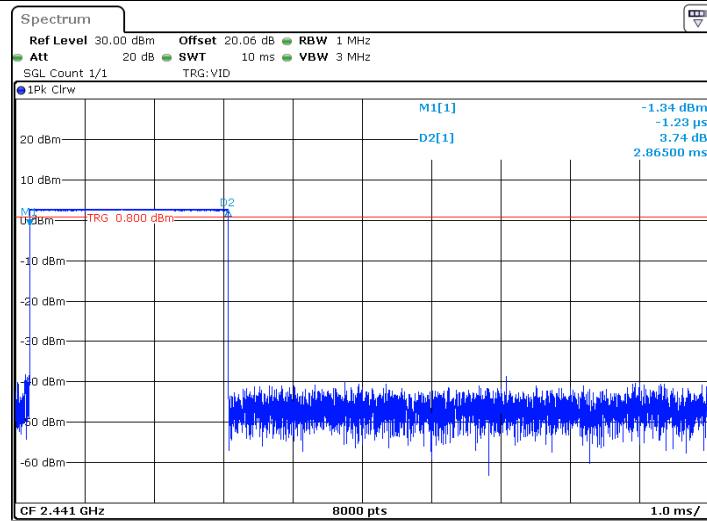
Test Mode	Antenna	Frequency[MHz]	Burst Width [ms]	Total Hops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.376	330	0.124	≤0.4	PASS
DH3	Ant1	Hop	1.625	170	0.276	≤0.4	PASS
DH5	Ant1	Hop	2.865	130	0.372	≤0.4	PASS
2DH1	Ant1	Hop	0.385	320	0.123	≤0.4	PASS
2DH3	Ant1	Hop	1.630	170	0.277	≤0.4	PASS
2DH5	Ant1	Hop	2.869	120	0.344	≤0.4	PASS
3DH1	Ant1	Hop	0.386	330	0.127	≤0.4	PASS
3DH3	Ant1	Hop	1.629	170	0.277	≤0.4	PASS
3DH5	Ant1	Hop	2.872	110	0.316	≤0.4	PASS
Note 1: A period time=$0.4 \times 79 = 31.6(S)$, Result=Burst Width*Total hops Note 2: Total hops=Hopping Number in 3.16s*10 Note 3: Hopping Number in 3.16s=Total of highest signals in 3.16s(Second high signals were other channe							

Test Graphs

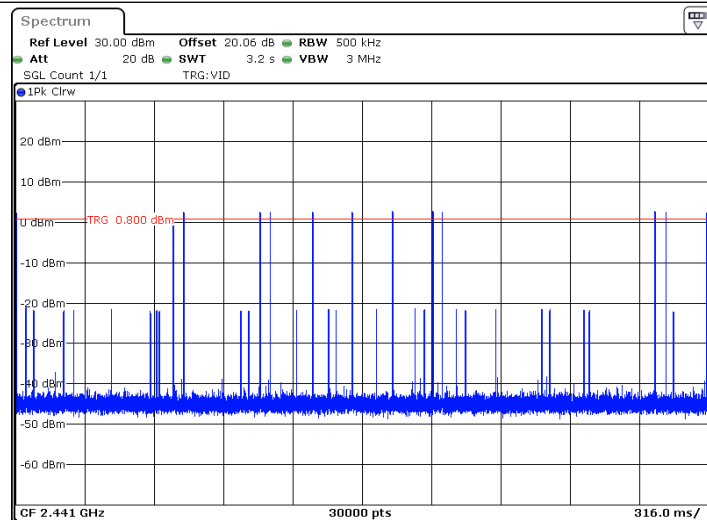




DH5_Ant1_Hop

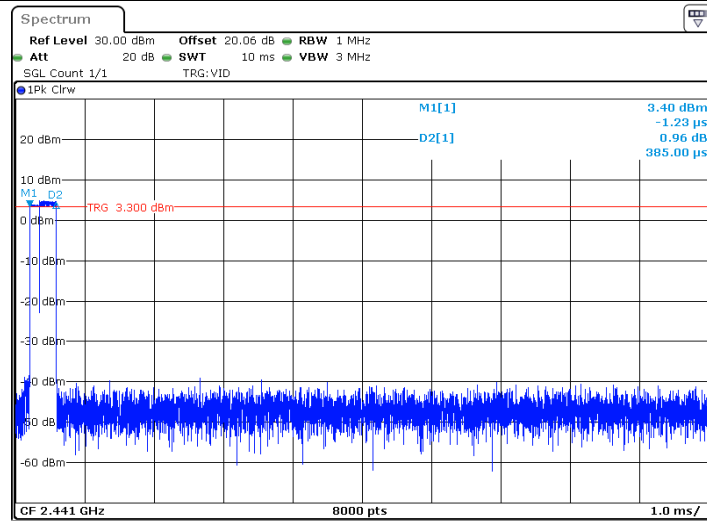


ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:51:02

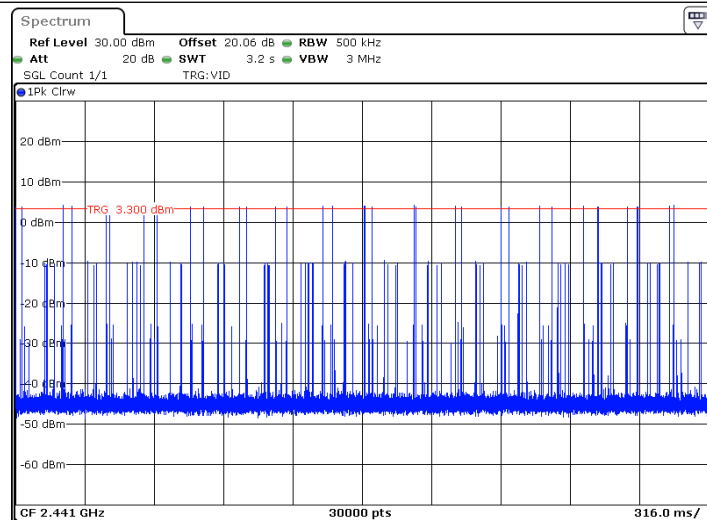


ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:51:07

2DH1_Ant1_Hop

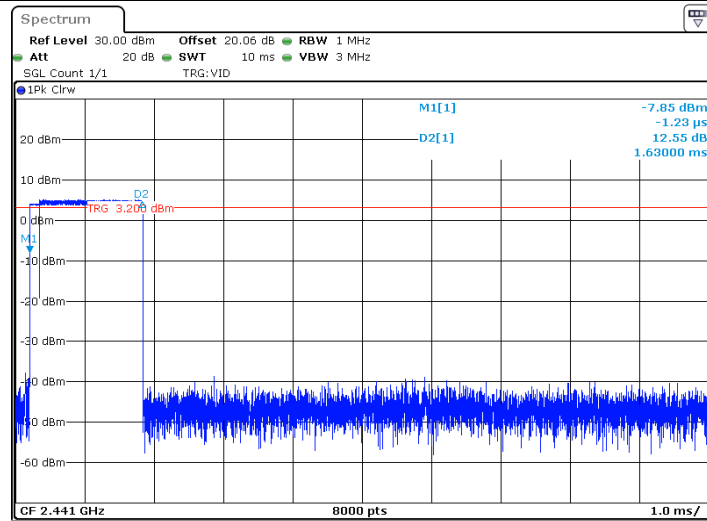


ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:55:25

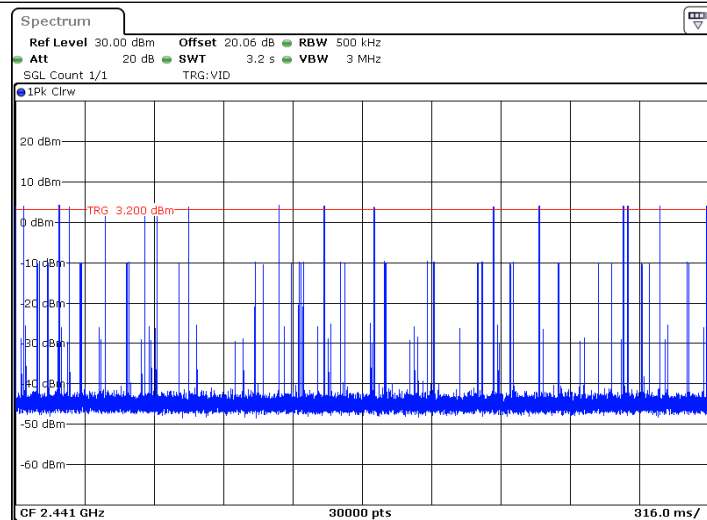


ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:55:29

2DH3_Ant1_Hop

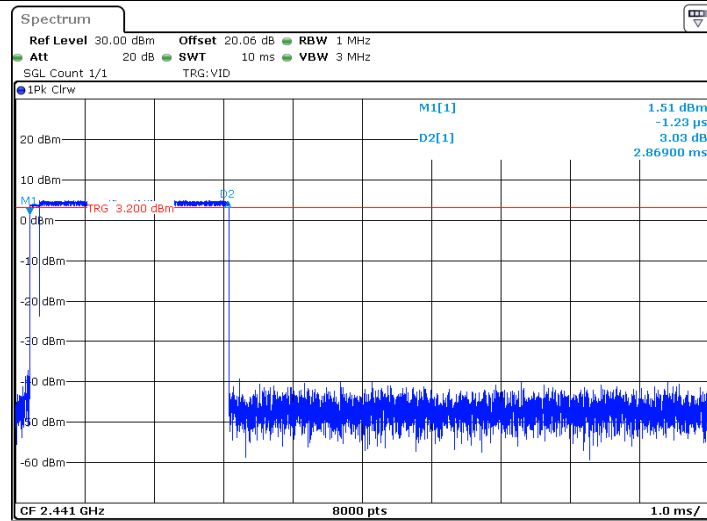


ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:56:25

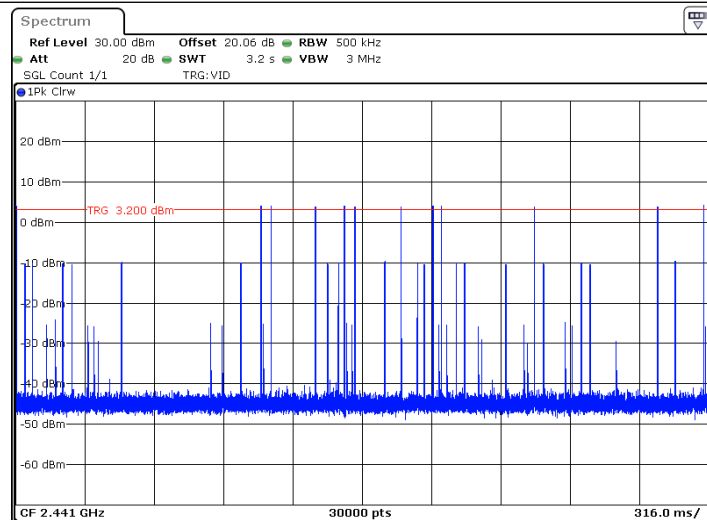


ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:56:30

2DH5_Ant1_Hop

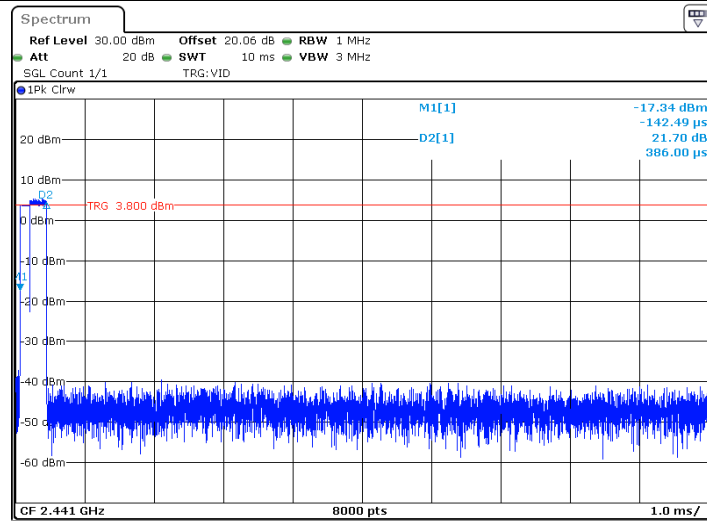


ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:59:46

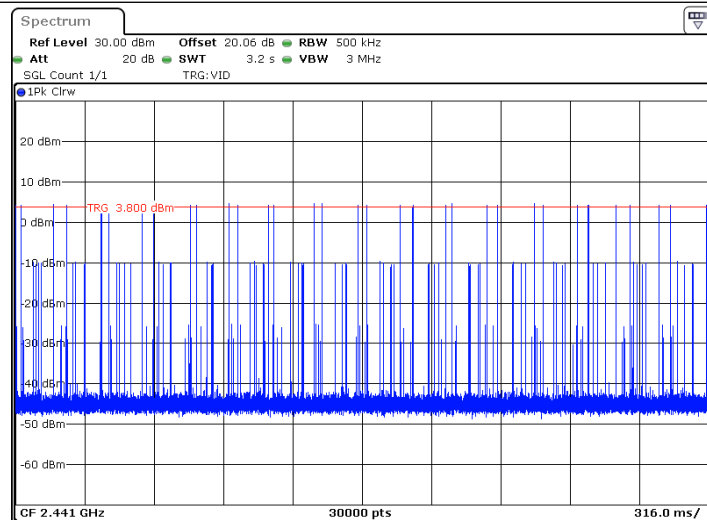


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Date: 23.APR.2025 03:59:51

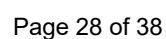
3DH1_Ant1_Hop



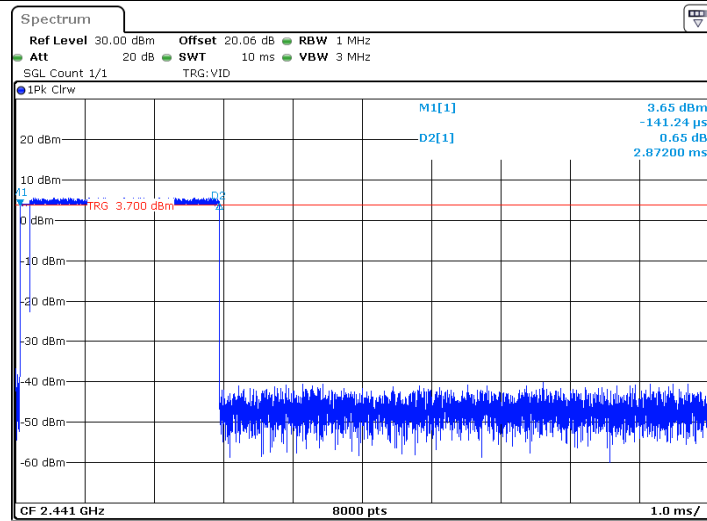
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Date: 23.APR.2025 04:13:06



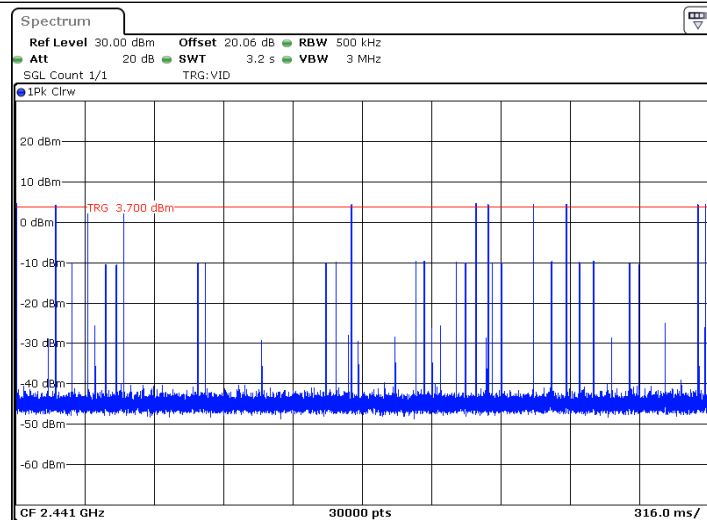
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 04:13:11



3DH5_Ant1_Hop



ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 04:27:54



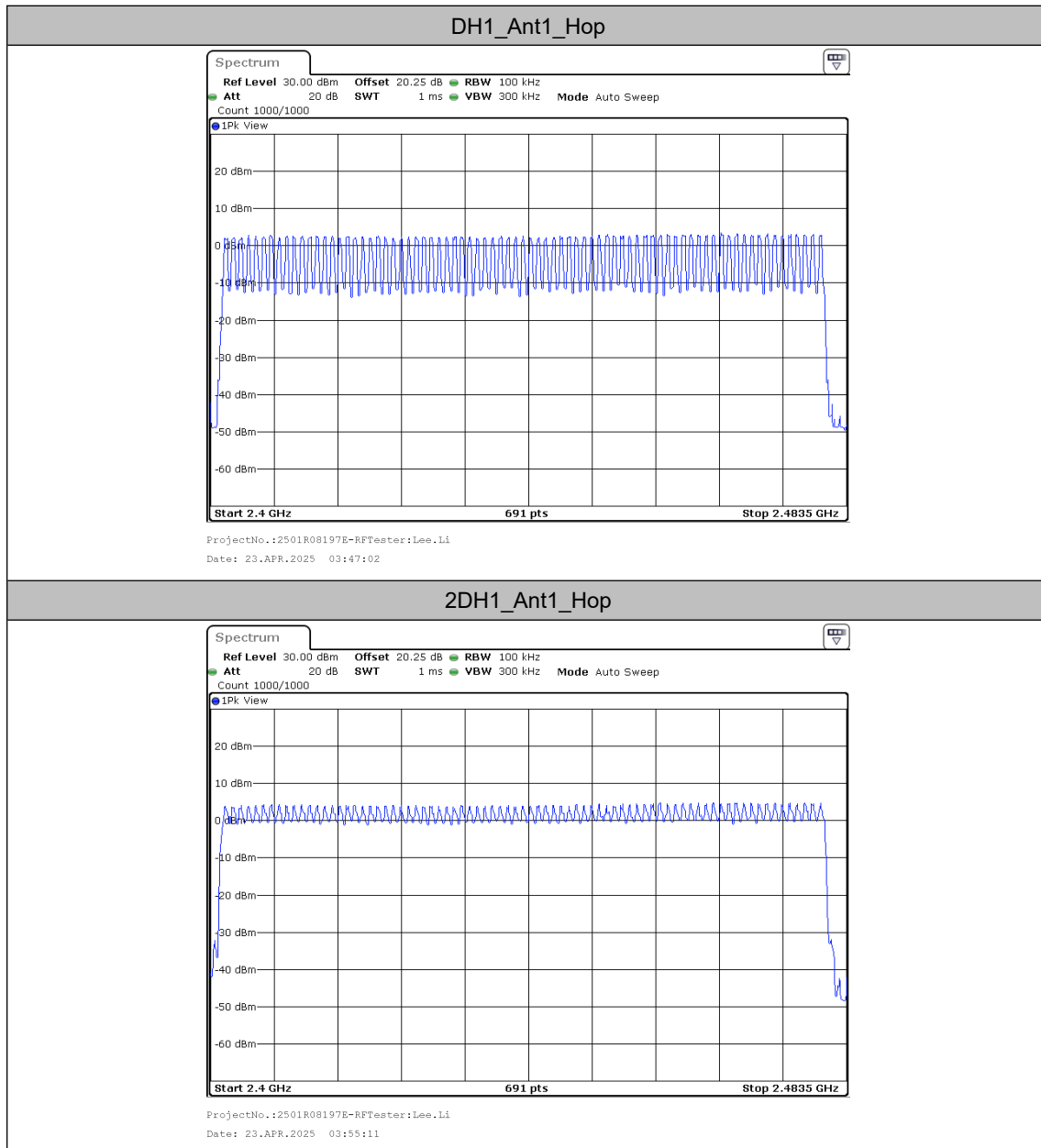
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Date: 23.APR.2025 04:27:58

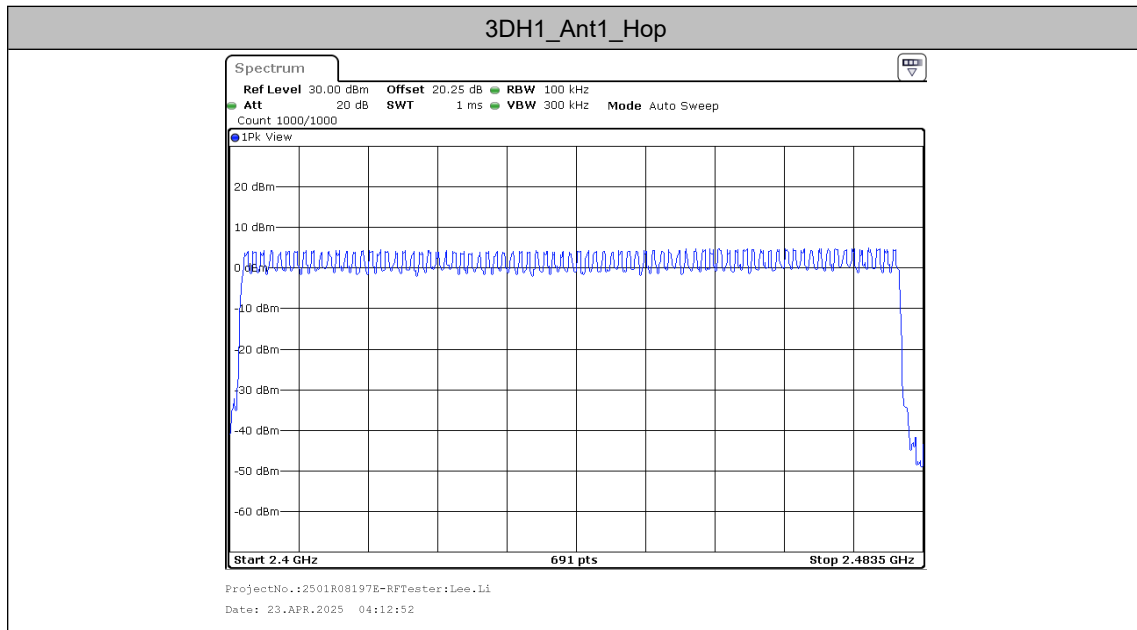
Number of hopping channels

Test Result

Test Mode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH1	Ant1	Hop	79	≥15	PASS
2DH1	Ant1	Hop	79	≥15	PASS
3DH1	Ant1	Hop	79	≥15	PASS

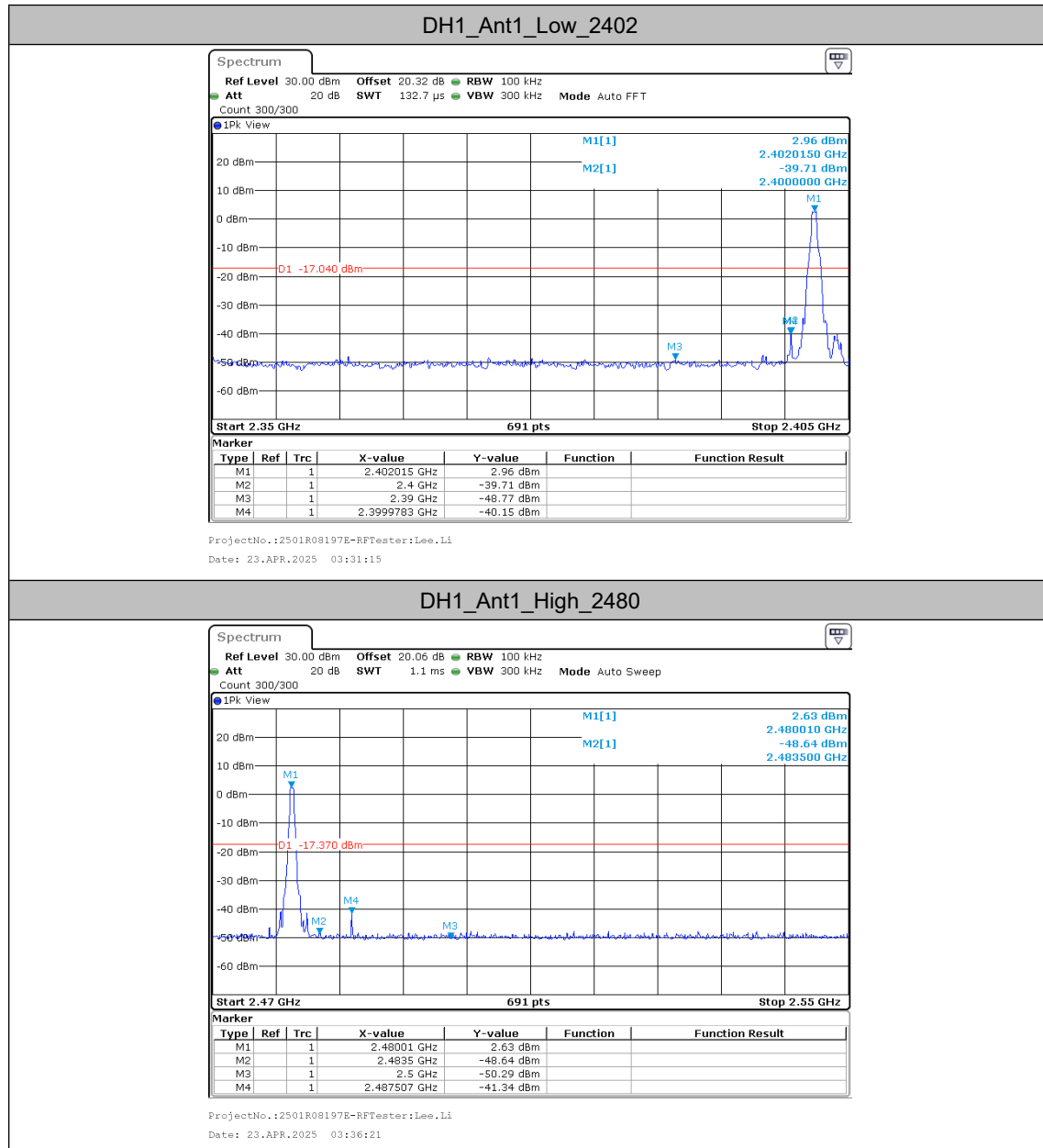
Test Graphs



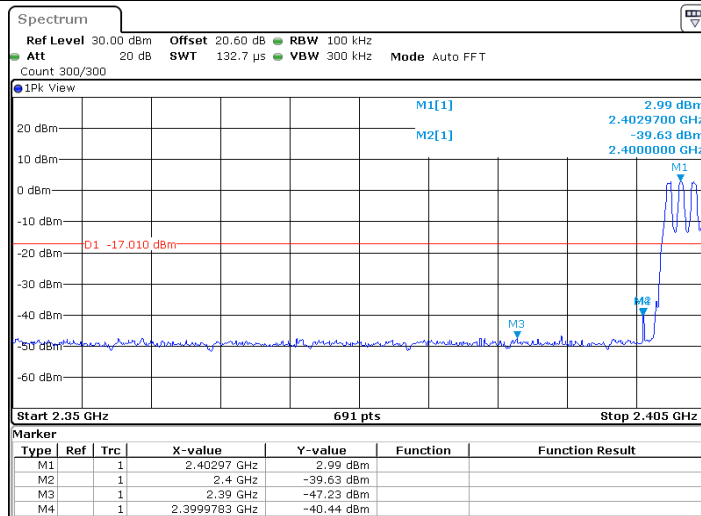


Band edge measurements

Test Graphs



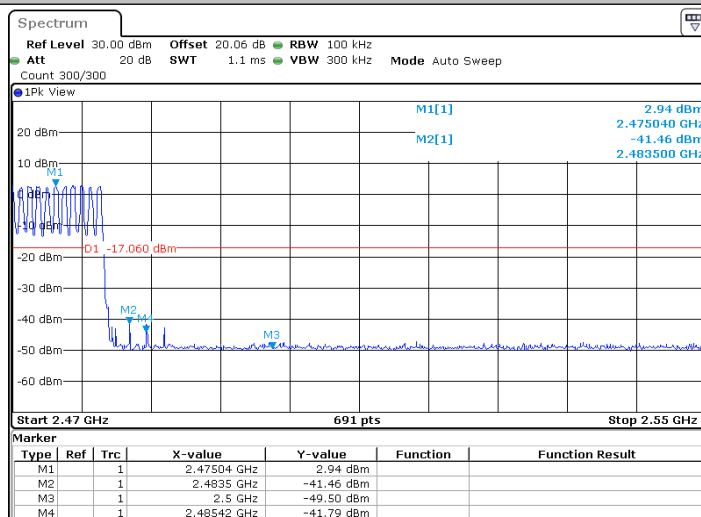
DH1_Ant1_Low_Hop_2402



ProjectNo.:2501R08197E-RFTester:Lee.Li

Date: 23.APR.2025 03:46:06

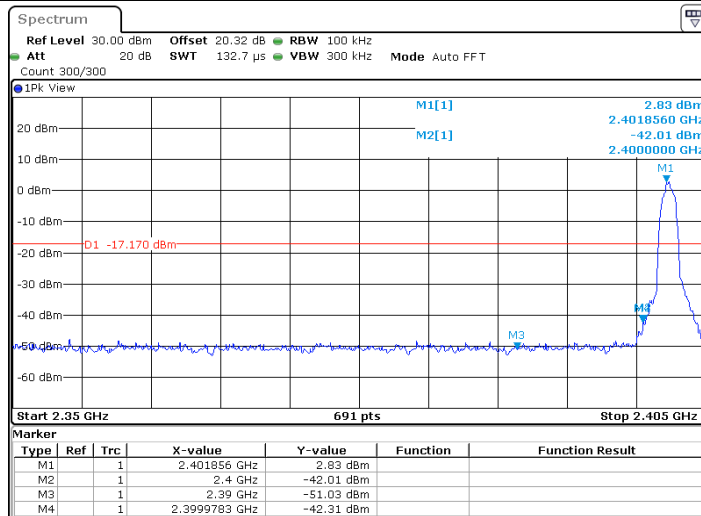
DH1_Ant1_High_Hop_2480



ProjectNo.:2501R08197E-RFTester:Lee.Li

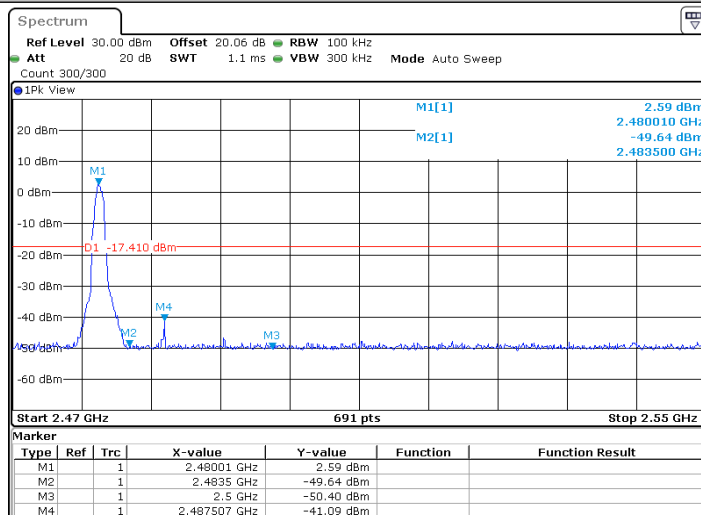
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2DH1_Ant1_Low_2402



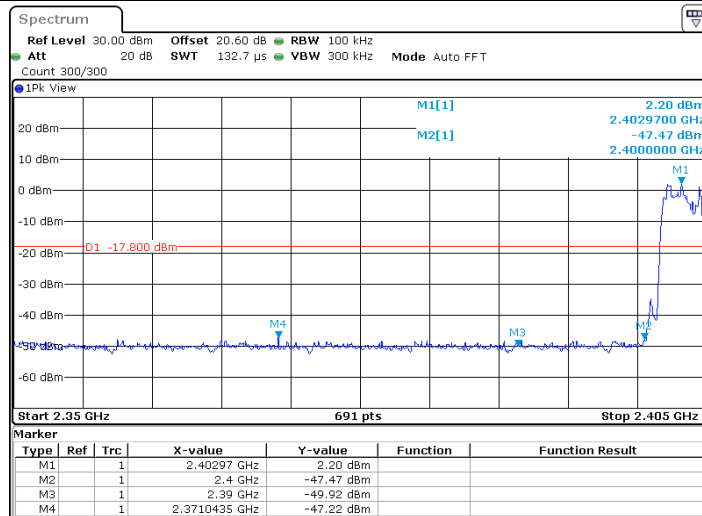
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:37:41

2DH1_Ant1_High_2480



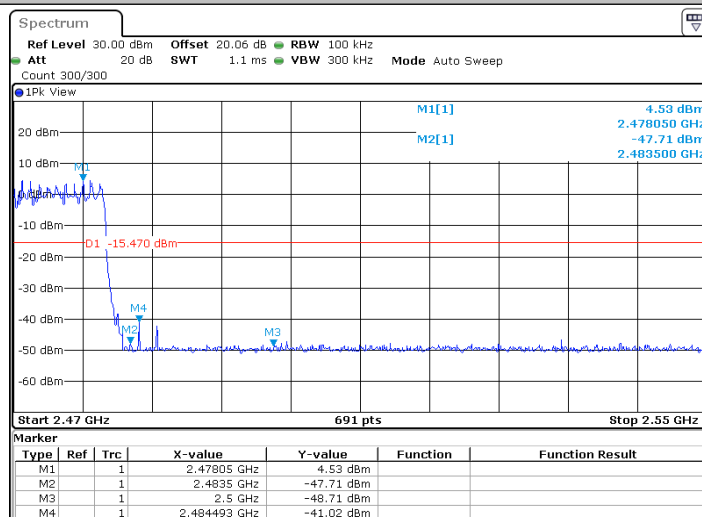
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:40:02

2DH1_Ant1_Low_Hop_2402



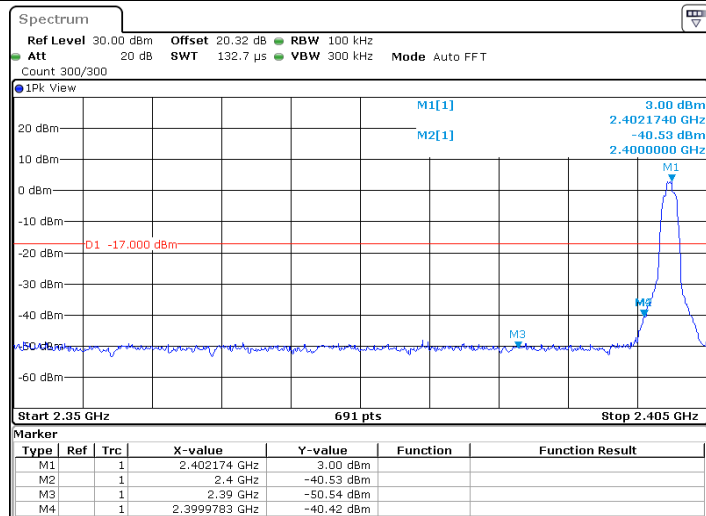
ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:53:33

2DH1_Ant1_High_Hop_2480



ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 03:55:40

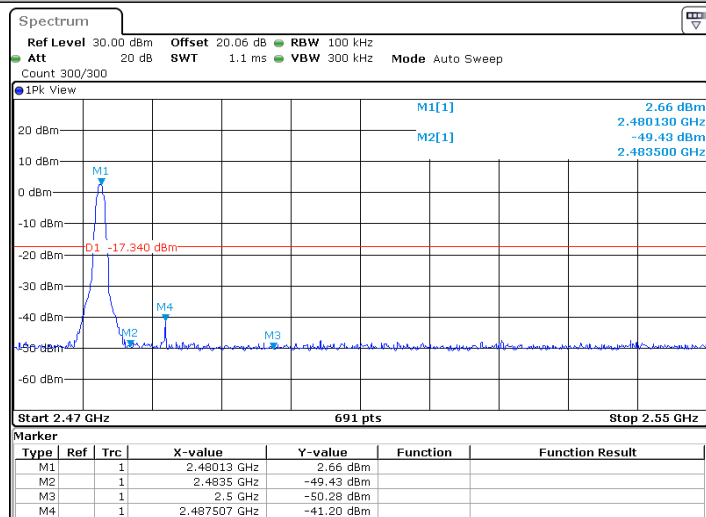
3DH1_Ant1_Low_2402



ProjectNo.:2501R08197E-RFTester:Lee.Li

Date: 23.APR.2025 03:41:23

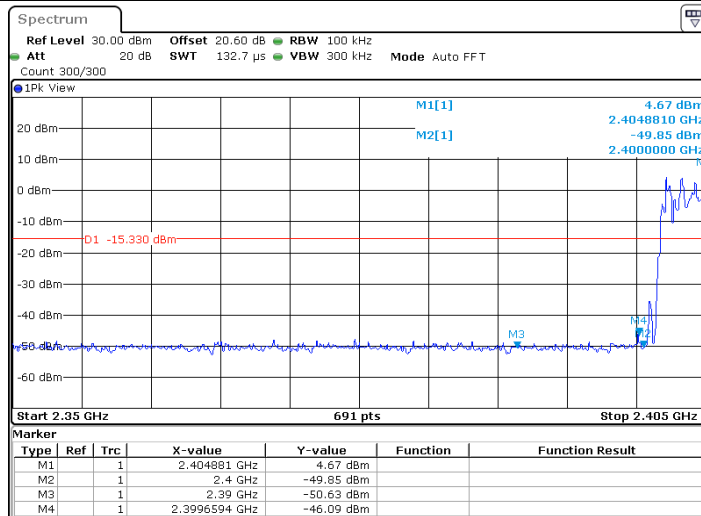
3DH1_Ant1_High_2480



ProjectNo.:2501R08197E-RFTester:Lee.Li

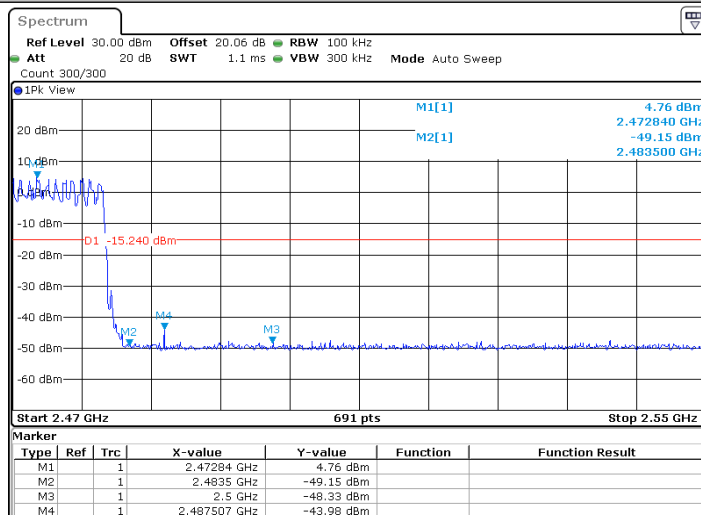
Date: 23.APR.2025 03:43:33

3DH1_Ant1_Low_Hop_2402



ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 04:04:42

3DH1_Ant1_High_Hop_2480



ProjectNo.:2501R08197E-RFTester:Lee.Li
Date: 23.APR.2025 04:13:43