

TEST DATA

[TestMode: 8DPSK]

Remark: During the test, pre-scan the GFSK, Pi/4QPSK, 8-DPSK modulation, and found the 8-DPSK modulation which it is worse case.

Test channel:lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310	44.77	-4.2	40.57	74	-33.43	Horizontal
2390	46.9	-3.88	43.02	74	-30.98	Horizontal
2310	47.15	-4.49	42.66	74	-31.34	Vertical
2390	47.57	-4.21	43.36	74	-30.64	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor(dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310	31.81	-4.2	27.61	54	-26.39	Horizontal
2390	32.46	-3.88	28.58	54	-25.42	Horizontal
2310	32.12	-4.49	27.63	54	-26.37	Vertical
2390	32.21	-4.21	28	54	-26	Vertical

Test channel:Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Correct factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.5	67.29	-3.39	63.9	74	-10.1	Horizontal
2500	49.49	-3.3	46.19	74	-27.81	Horizontal
2483.5	63.34	-3.77	59.57	74	-14.43	Vertical
2500	51.29	-3.7	47.59	74	-26.41	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Correct factor(dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.5	40.25	-3.39	36.86	54	-17.14	Horizontal
2500	37.05	-3.3	33.75	54	-20.25	Horizontal
2483.5	37.86	-3.77	34.09	54	-19.91	Vertical

2500	37.49	-3.7	33.79	54	-20.21	Vertical
Test Result: Pass						

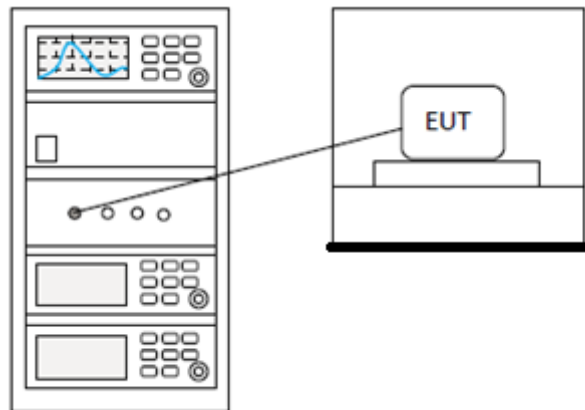
CONDUCTED BAND EDGES MEASUREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25°C
Humidity	60%

LIMITS

Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
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BLOCK DIAGRAM OF TEST SETUP



TEST DATA

Pass: Please Refer To Appendix: Appendix1, Section 10.6

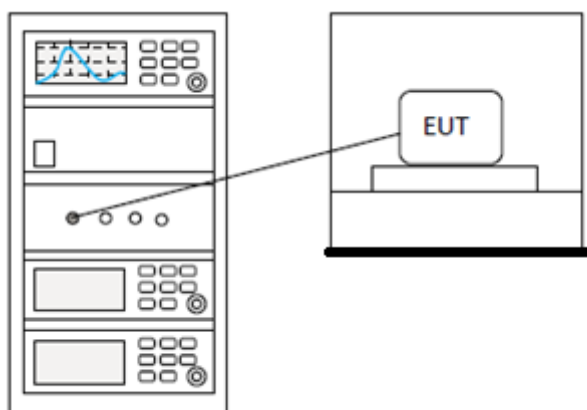
DWELL TIME

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.4
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

LIMITS

Frequency(MHz)	Limit
902-928	0.4S within a 20S period(20dB bandwidth<250kHz)
	0.4S within a 10S period(20dB bandwidth≥250kHz)
2400-2483.5	0.4S within a period of 0.4S multiplied by the number of hopping channels
5725-5850	0.4S within a 30S period

BLOCK DIAGRAM OF TEST SETUP



TEST DATA

Pass: Please Refer To Appendix: Appendix1, Section 10.4

BlueAsia

10 APPENDIX

Appendix1

10.1 APPENDIX: 20DBEMISSION BANDWIDTH

Test Result

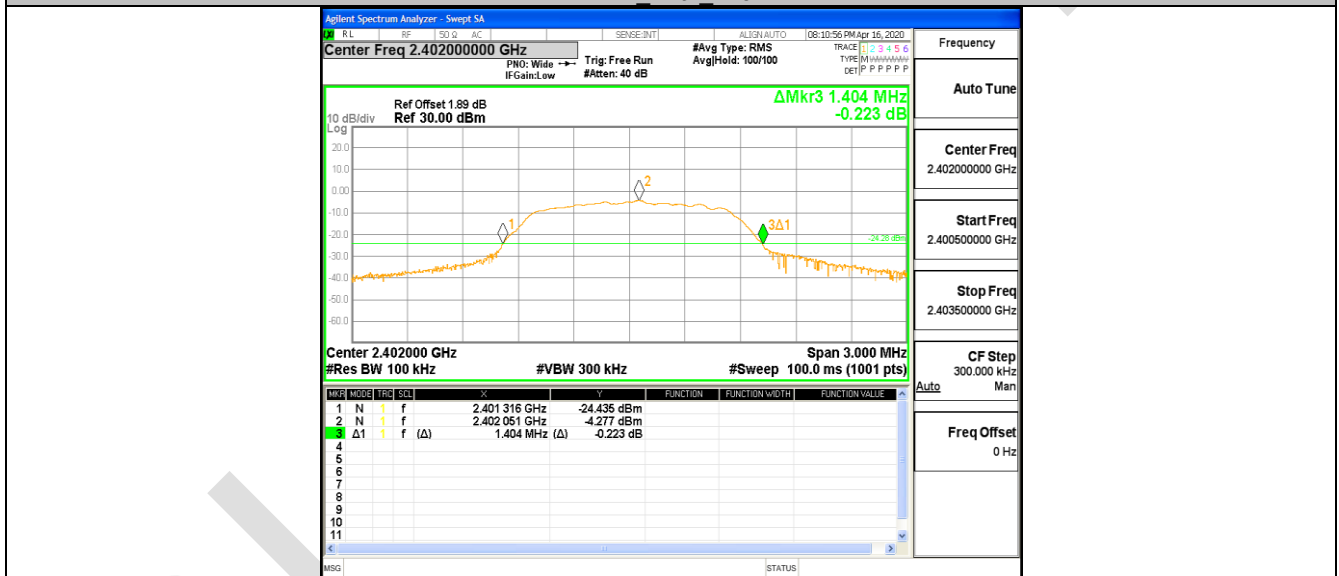
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	1.128	2401.457	2402.585	---	PASS
		2441	1.134	2440.457	2441.591	---	PASS
		2480	1.128	2479.457	2480.585	---	PASS
2DH1	Ant1	2402	1.404	2401.316	2402.720	---	PASS
		2441	1.398	2440.319	2441.717	---	PASS
		2480	1.398	2479.319	2480.717	---	PASS
3DH1	Ant1	2402	1.458	2401.289	2402.747	---	PASS
		2441	1.446	2440.298	2441.744	---	PASS
		2480	1.416	2479.316	2480.732	---	PASS

Test Graphs

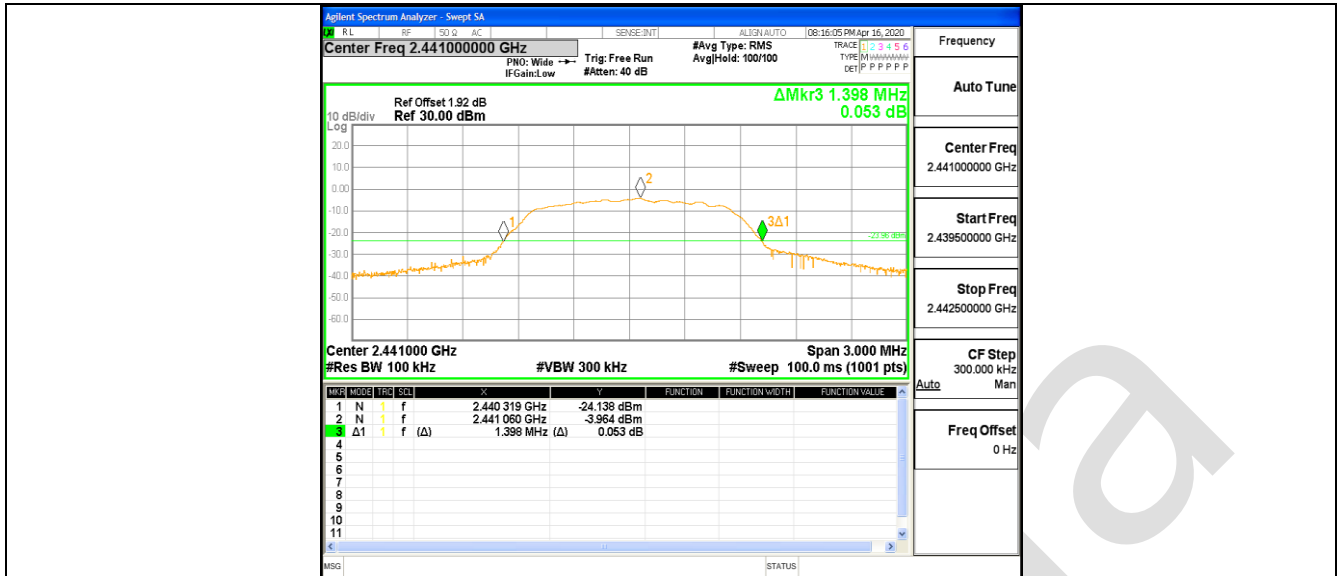




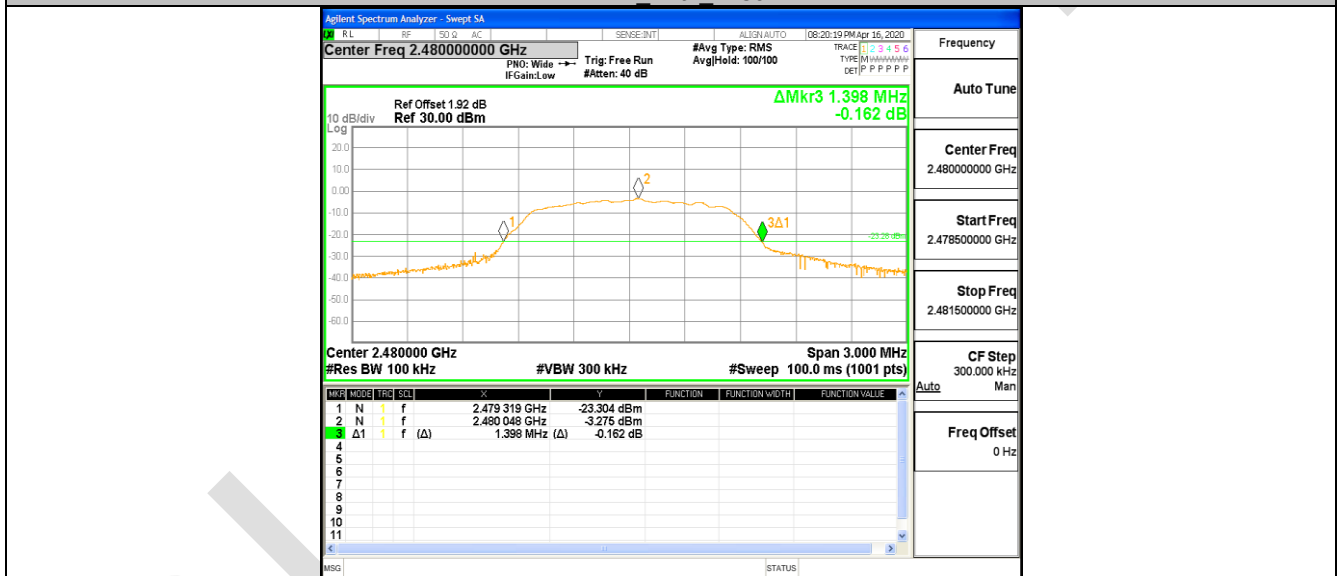
2DH1_Ant1_2402



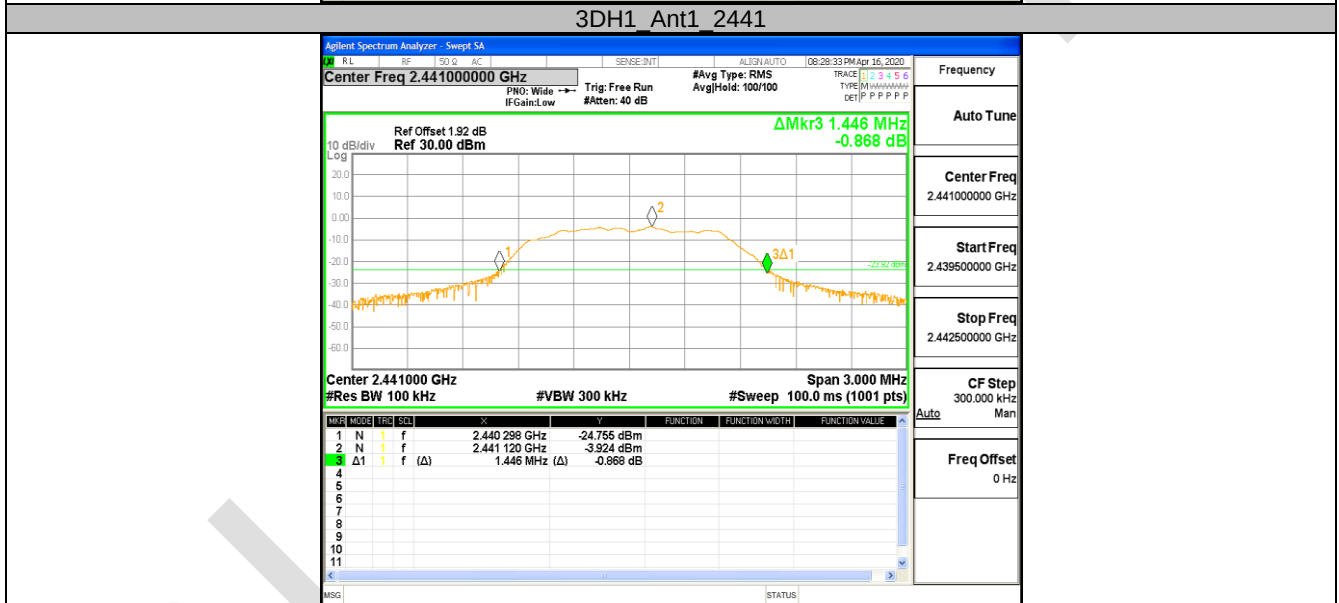
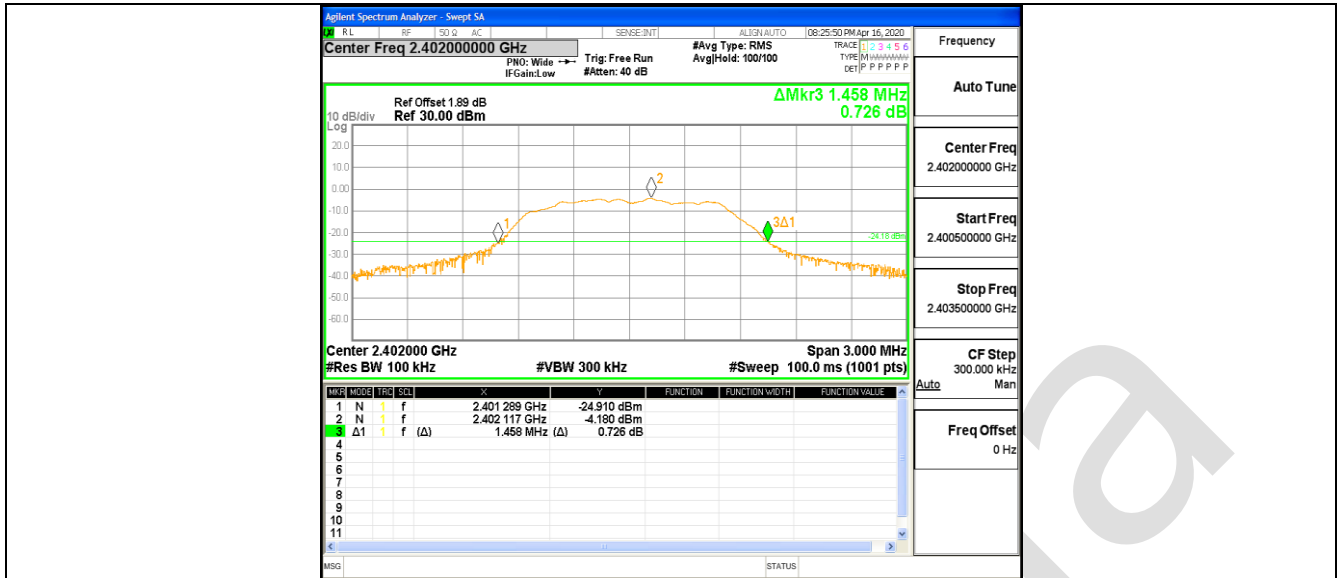
2DH1_Ant1_2441

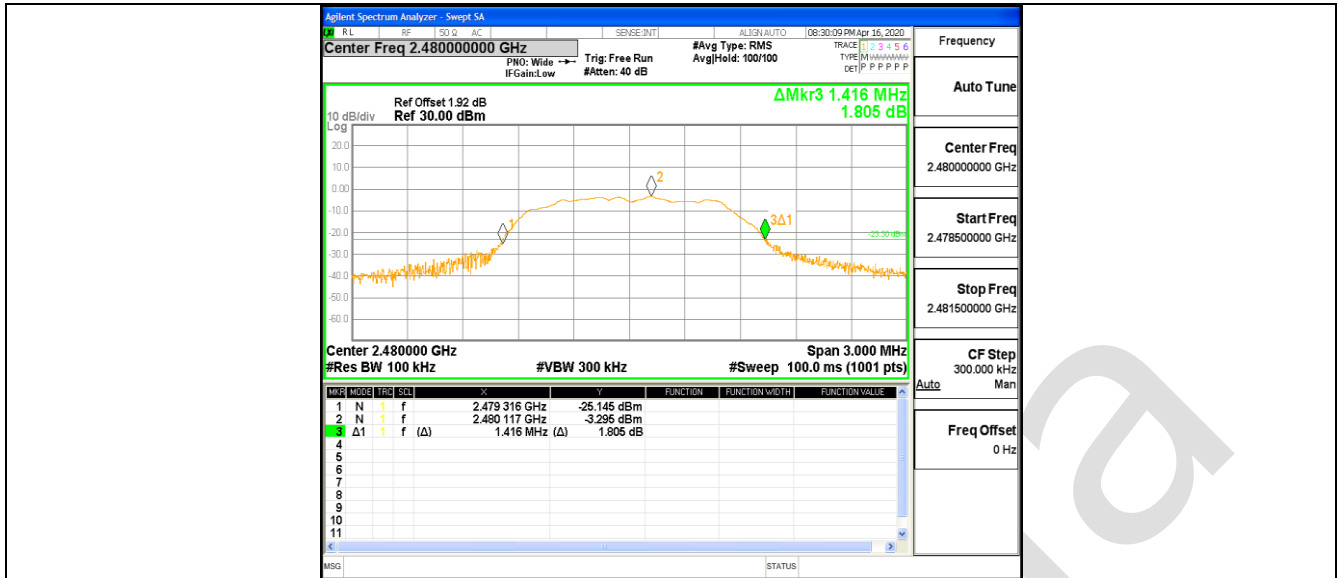


2DH1 Ant1_2480



3DH1 Ant1_2402



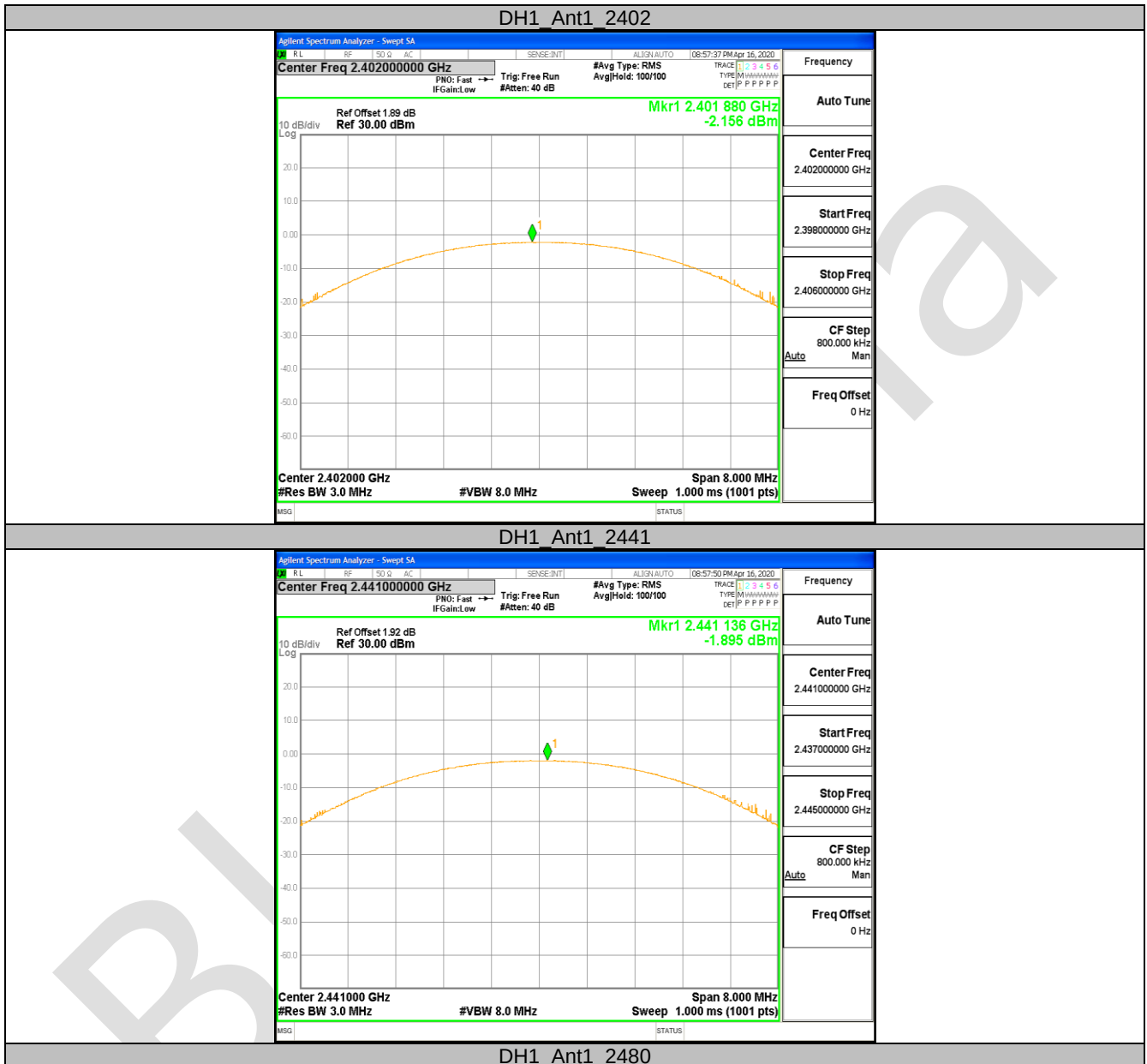


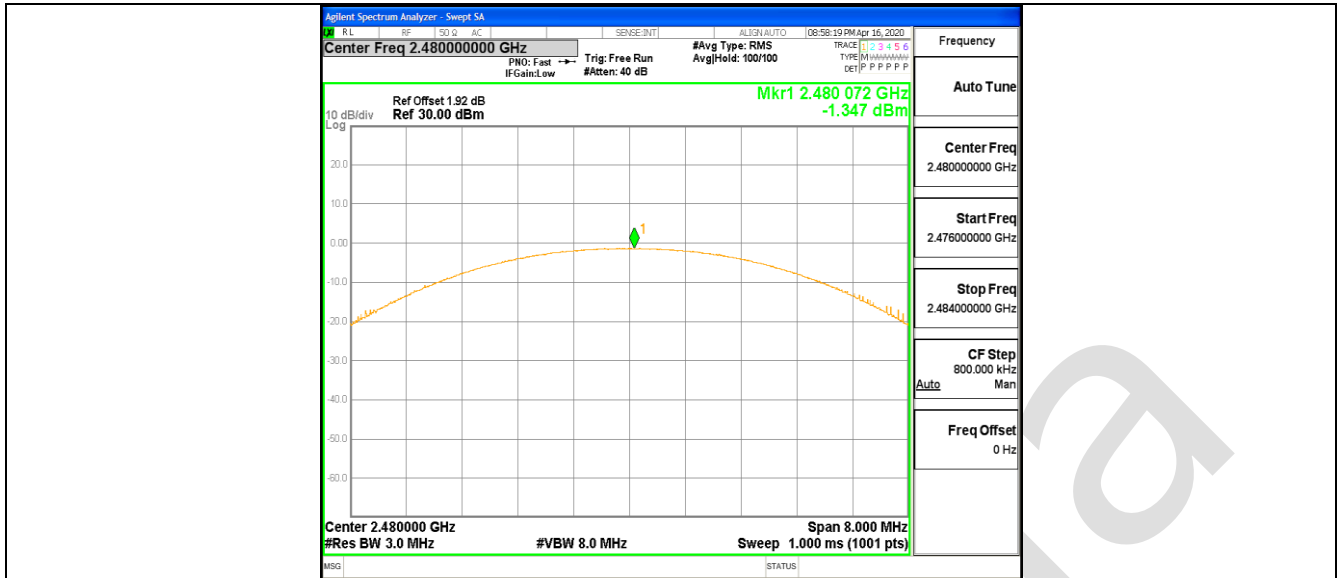
10.2 APPENDIX: MAXIMUM CONDUCTED OUTPUT POWER

Test Result

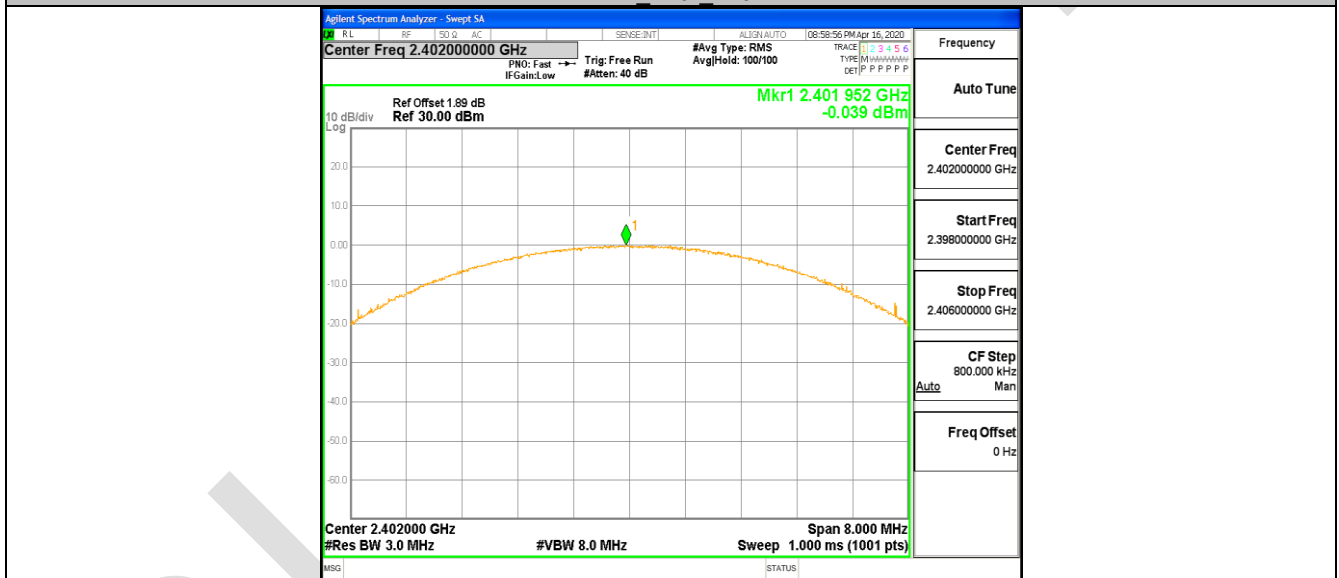
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH1	Ant1	2402	-2.16	<=20.97	PASS
		2441	-1.9	<=20.97	PASS
		2480	-1.35	<=20.97	PASS
2DH1	Ant1	2402	-0.04	<=20.97	PASS
		2441	0.31	<=20.97	PASS
		2480	0.82	<=20.97	PASS
3DH1	Ant1	2402	0.21	<=20.97	PASS
		2441	0.42	<=20.97	PASS
		2480	0.97	<=20.97	PASS

Test Graphs

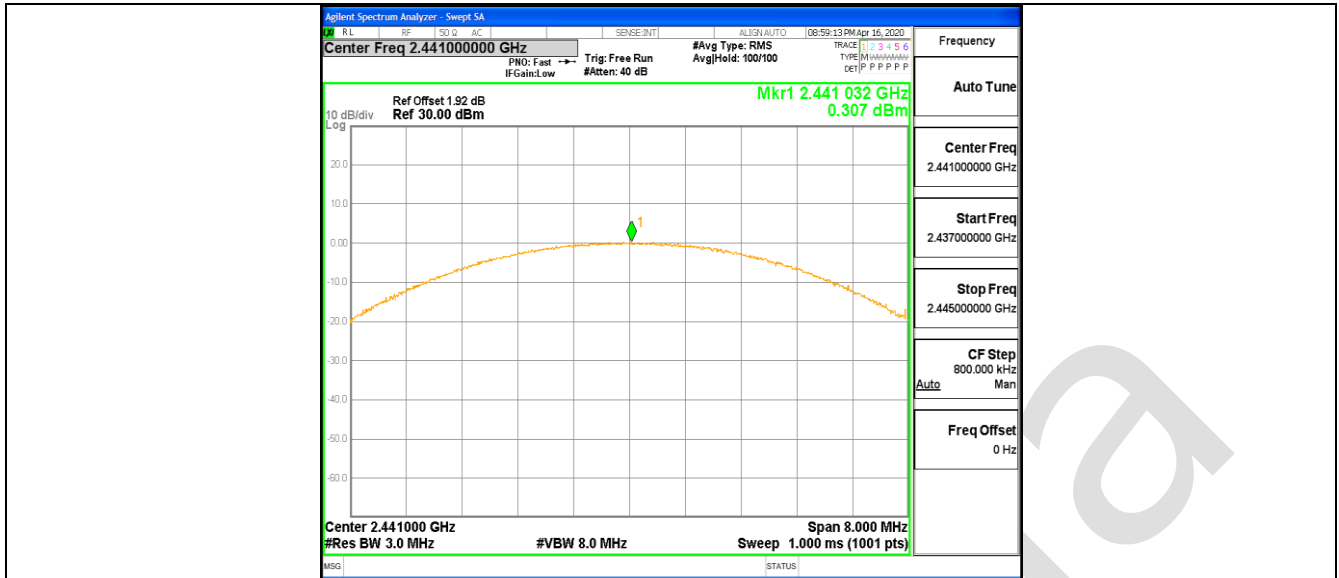




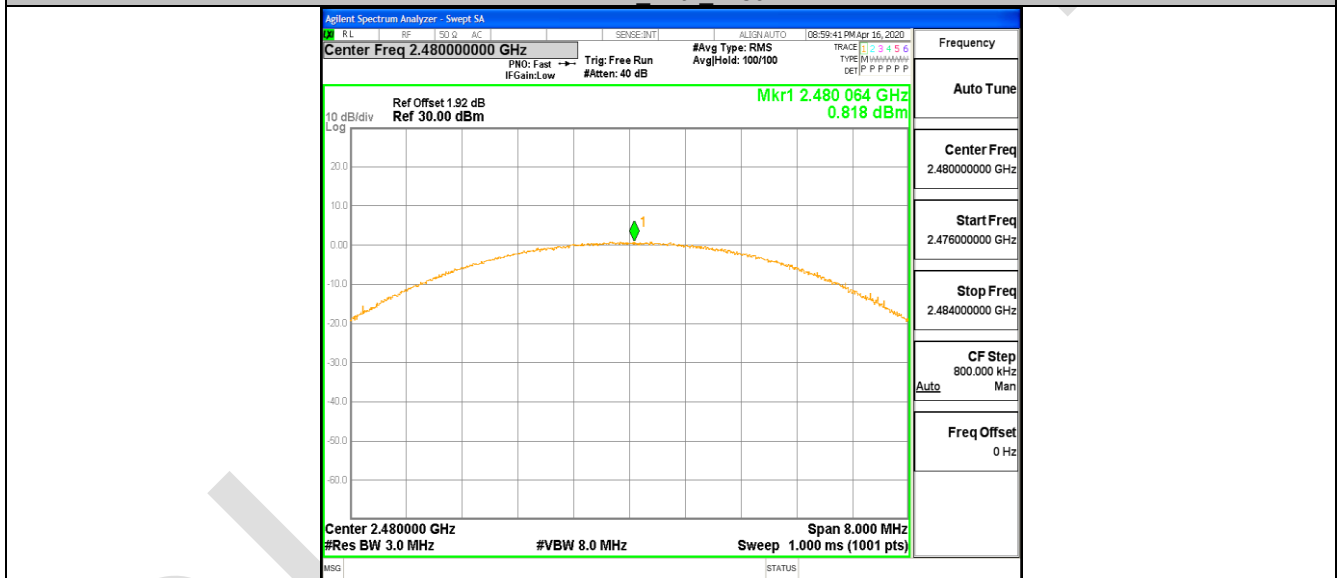
2DH1_Ant1_2402



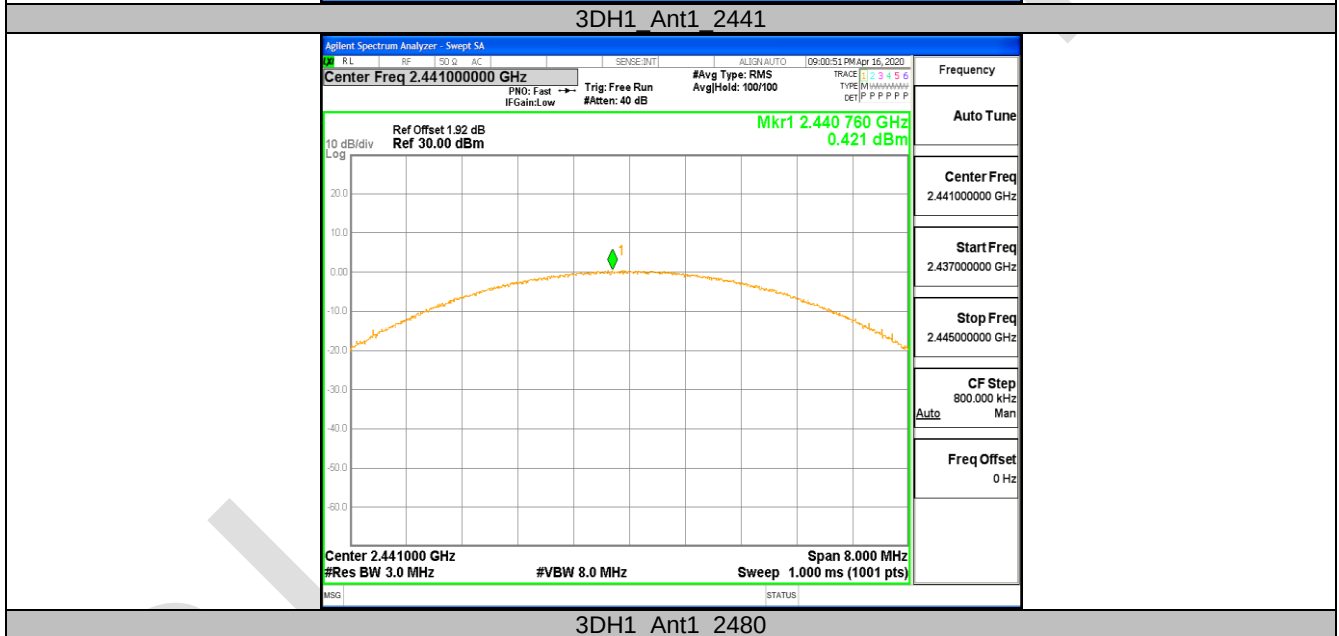
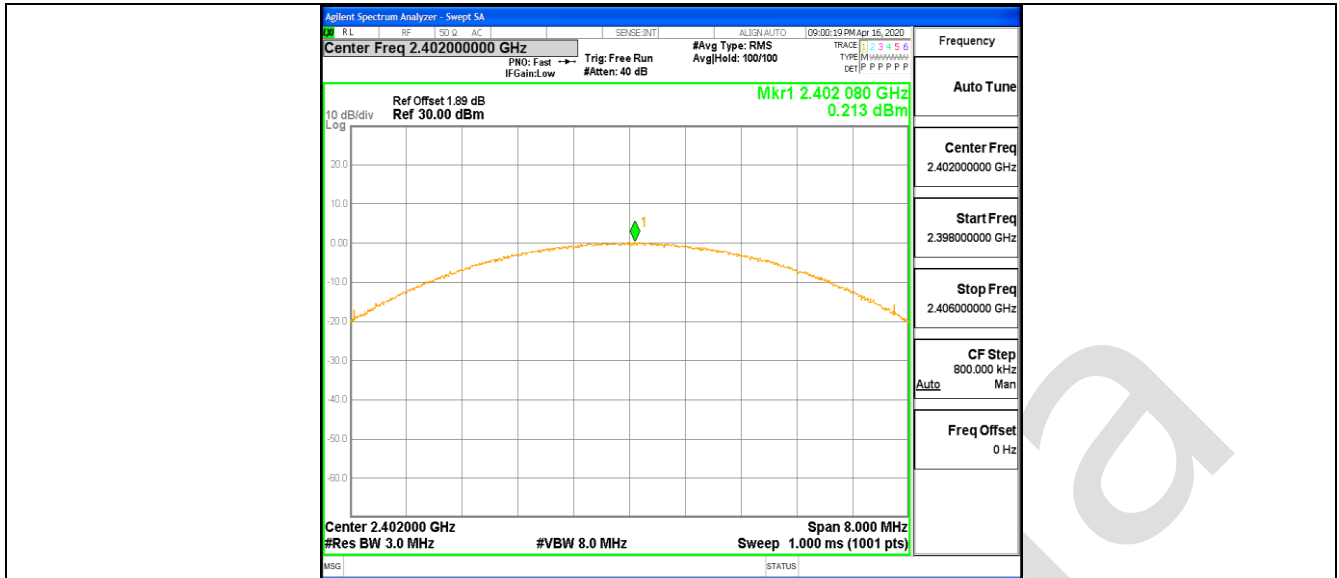
2DH1_Ant1_2441

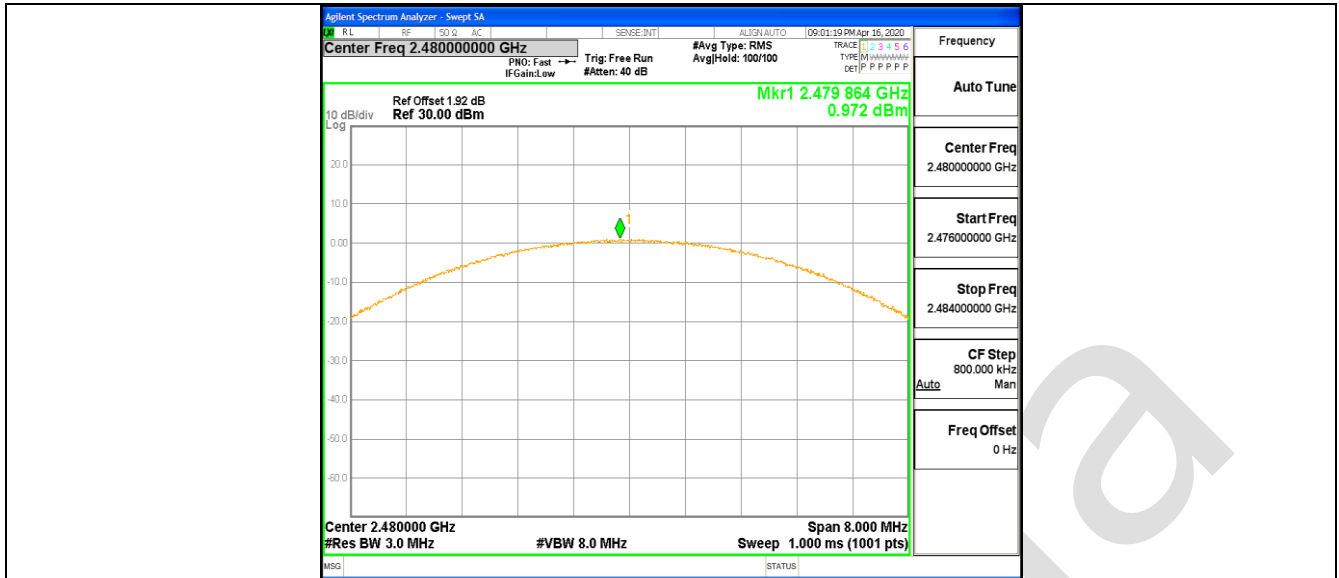


2DH1_Ant1_2480



3DH1_Ant1_2402





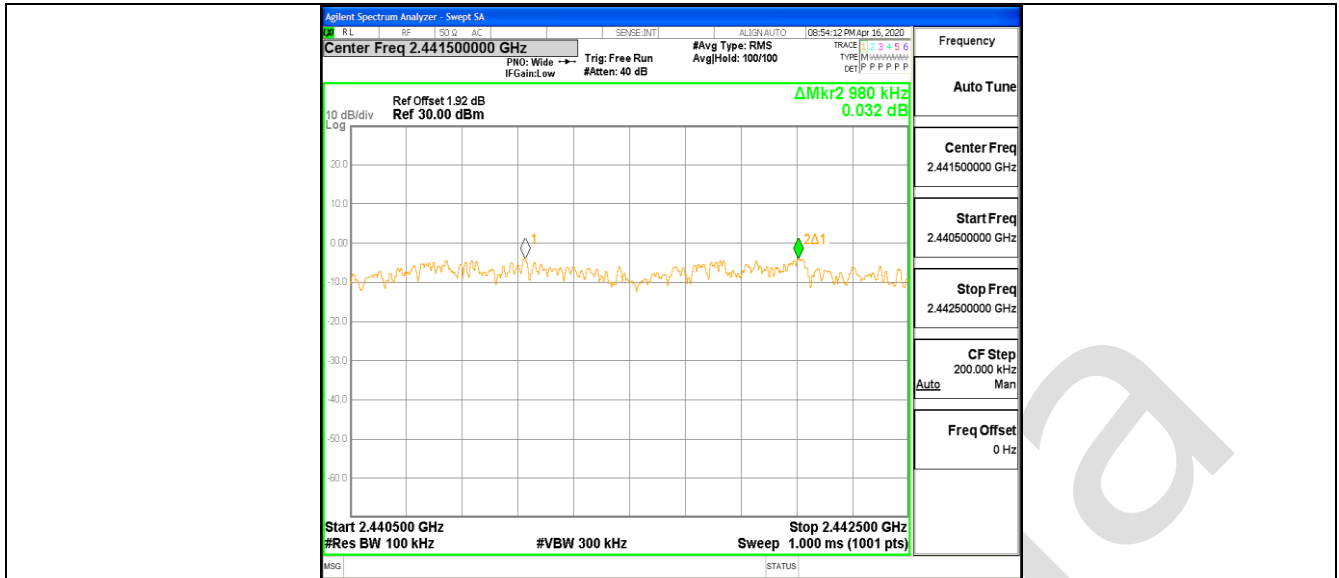
10.3 APPENDIX: CARRIER FREQUENCY SEPARATION

Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop	0.986	≥ 0.756	PASS
2DH1	Ant1	Hop	1.002	≥ 0.936	PASS
3DH1	Ant1	Hop	0.98	≥ 0.972	PASS

Test Graphs

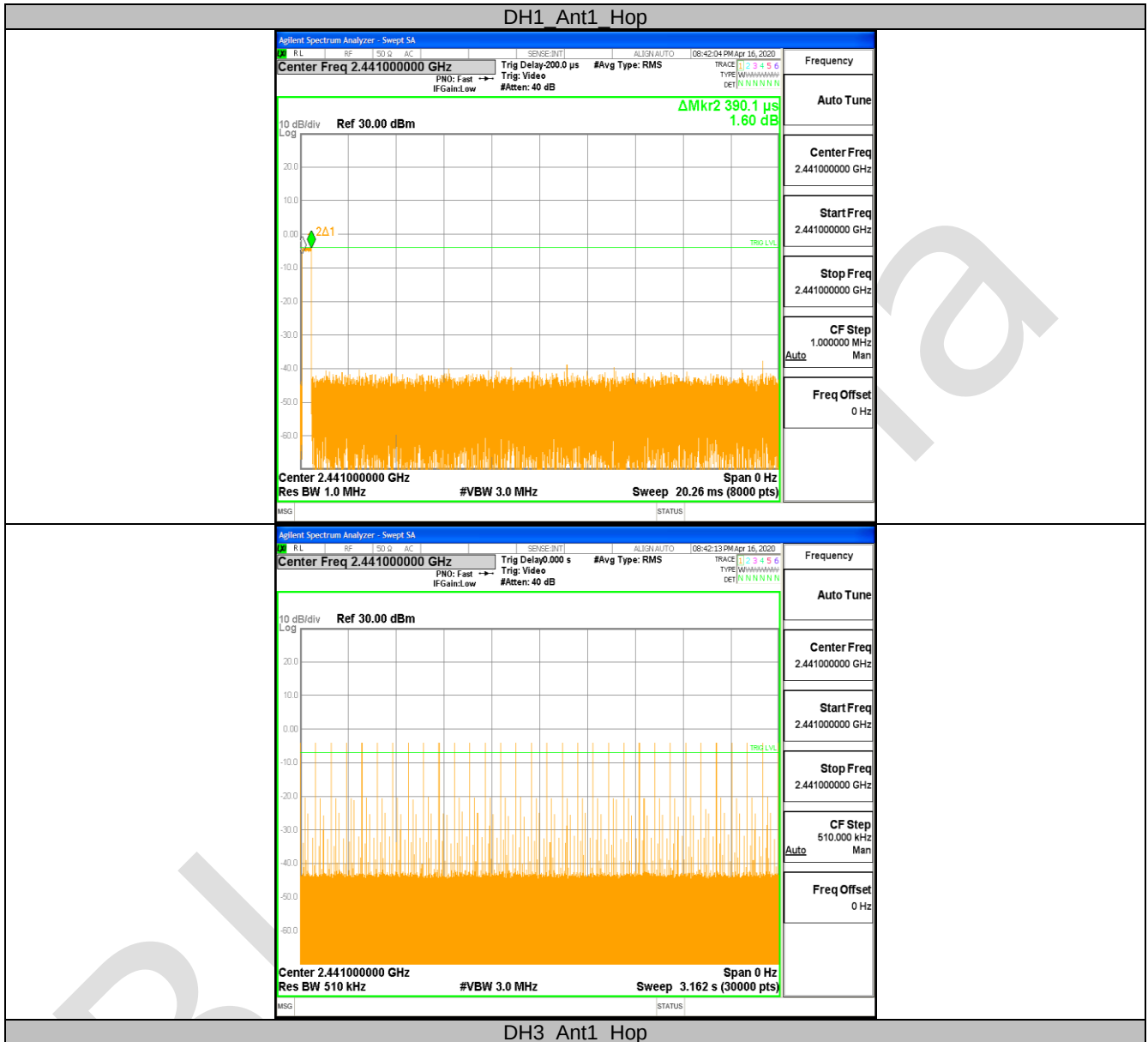


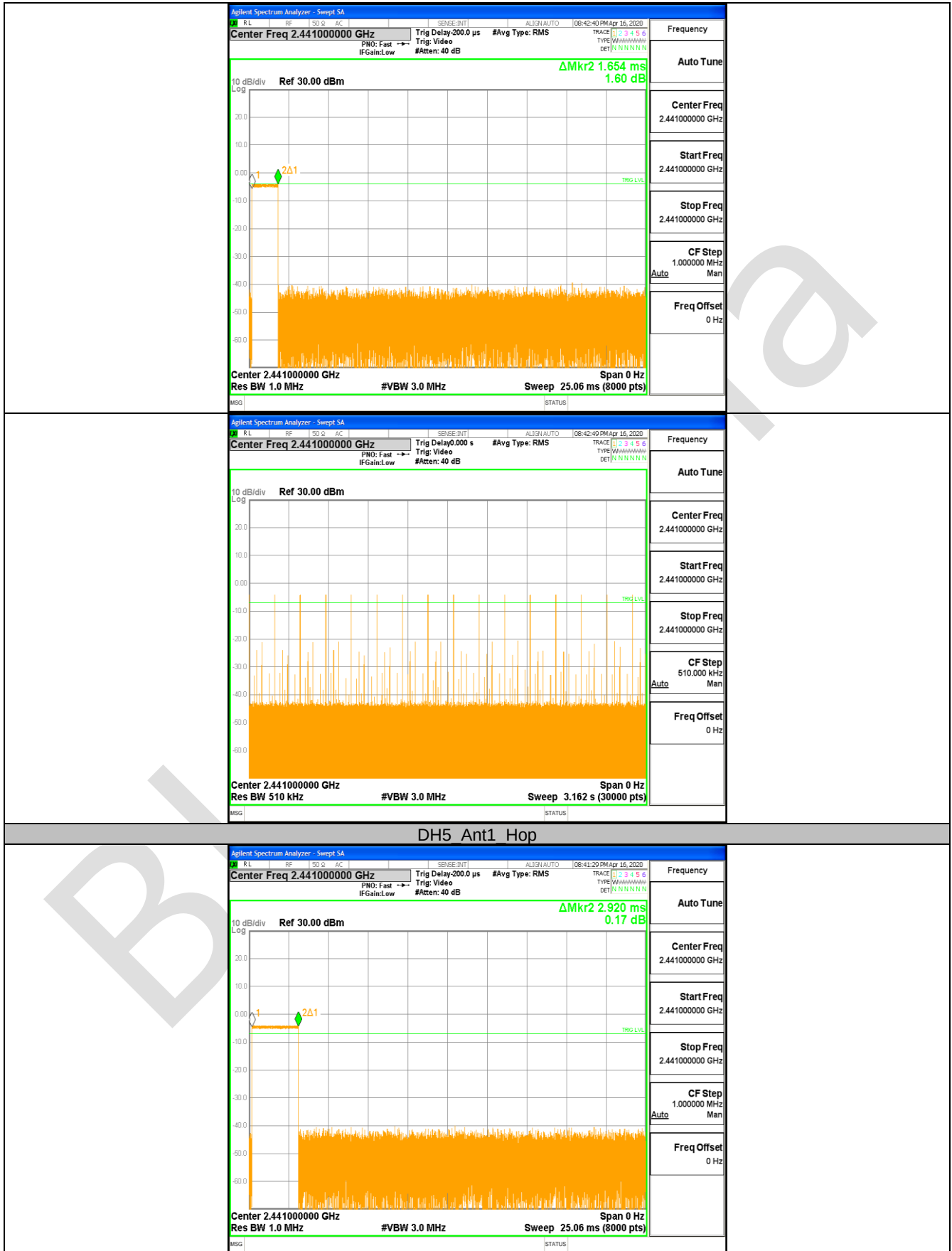


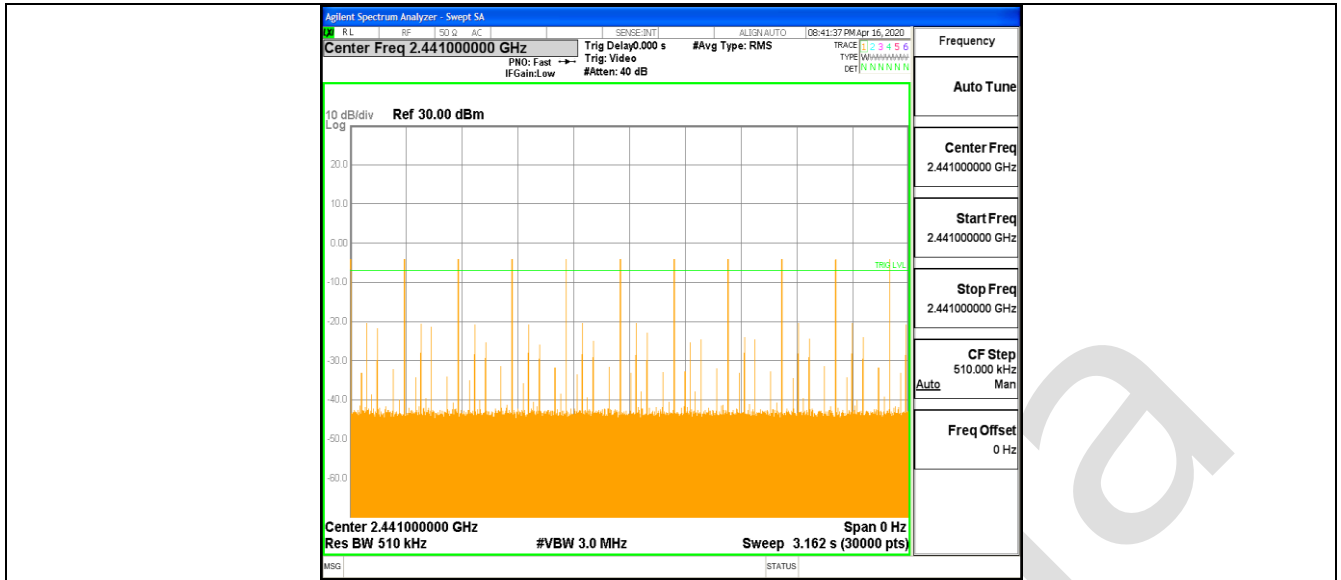
10.4 APPENDIX: DWELL TIME**Test Result**

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.39	320	0.125	≤ 0.4	PASS
DH3	Ant1	Hop	1.65	160	0.265	≤ 0.4	PASS
DH5	Ant1	Hop	2.92	110	0.321	≤ 0.4	PASS

Test Graphs





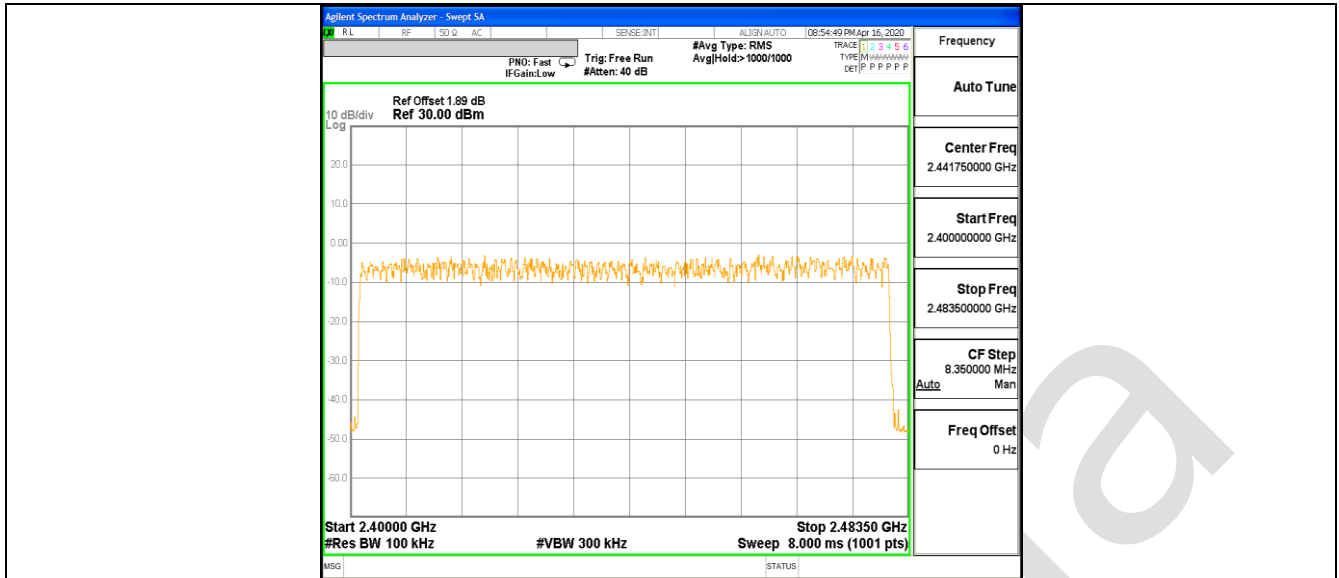


10.5 APPENDIX: NUMBER OF HOPPING CHANNELS**Test Result**

TestMode	Antenna	Channel	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





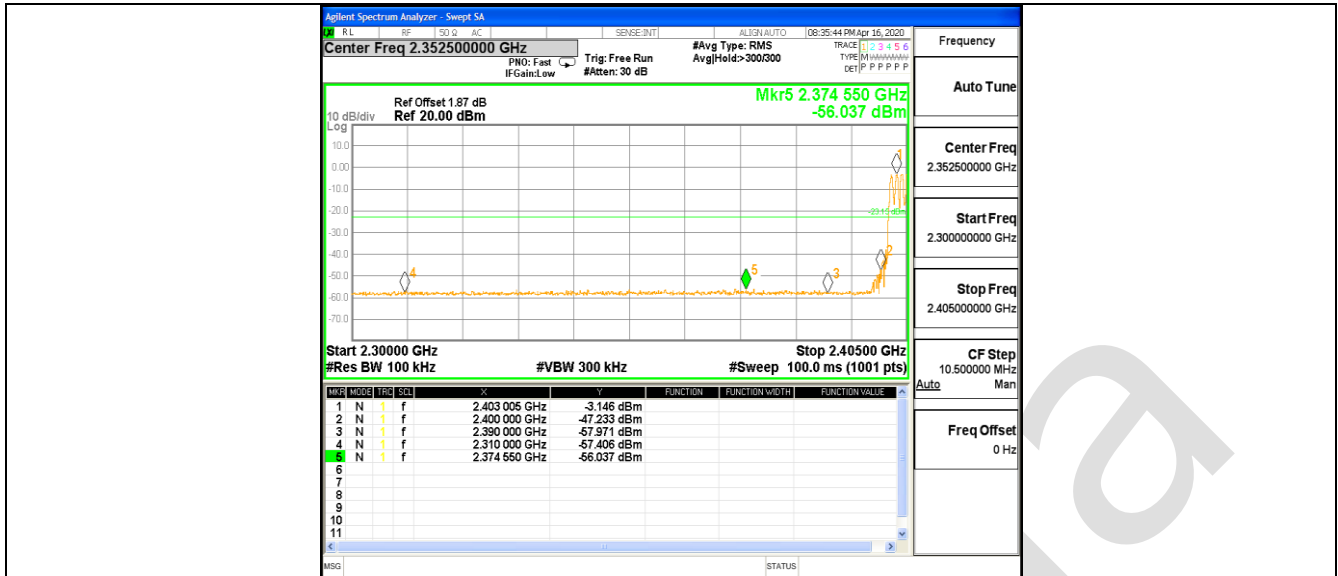
10.6 APPENDIX: BAND EDGE MEASUREMENTS

Test Result

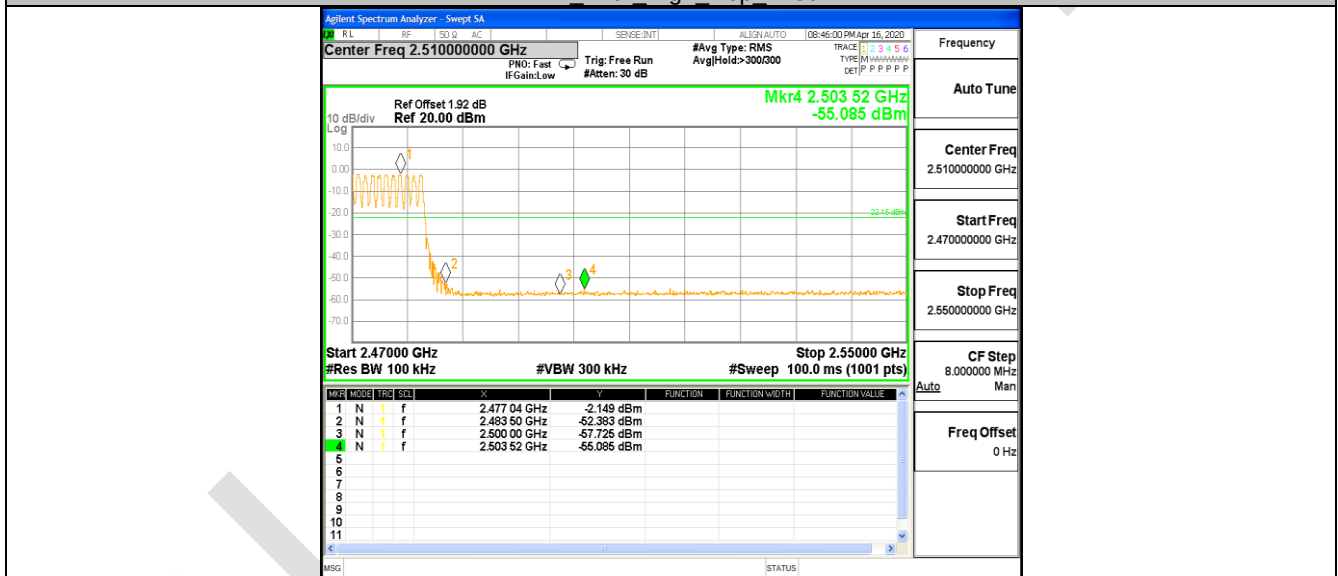
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	-3.26	-56.78	<=-23.26	PASS
		High	2480	-2.32	-55.54	<=-22.32	PASS
		Low	Hop 2402	-3.15	-56.04	-23.15	PASS
		High	Hop 2480	-2.15	-55.09	-22.15	PASS
2DH1	Ant1	Low	2402	-4.43	-56.19	<=-24.43	PASS
		High	2480	-3.48	-55.25	<=-23.48	PASS
		Low	Hop 2402	-5.46	-55.95	-25.46	PASS
		High	Hop 2480	-3.40	-54.45	-23.4	PASS
3DH1	Ant1	Low	2402	-4.32	-56.23	<=-24.32	PASS
		High	2480	-3.30	-55.53	<=-23.3	PASS
		Low	Hop 2402	-4.45	-56	-24.45	PASS
		High	Hop 2480	-3.10	-55.07	-23.1	PASS

Test Graphs

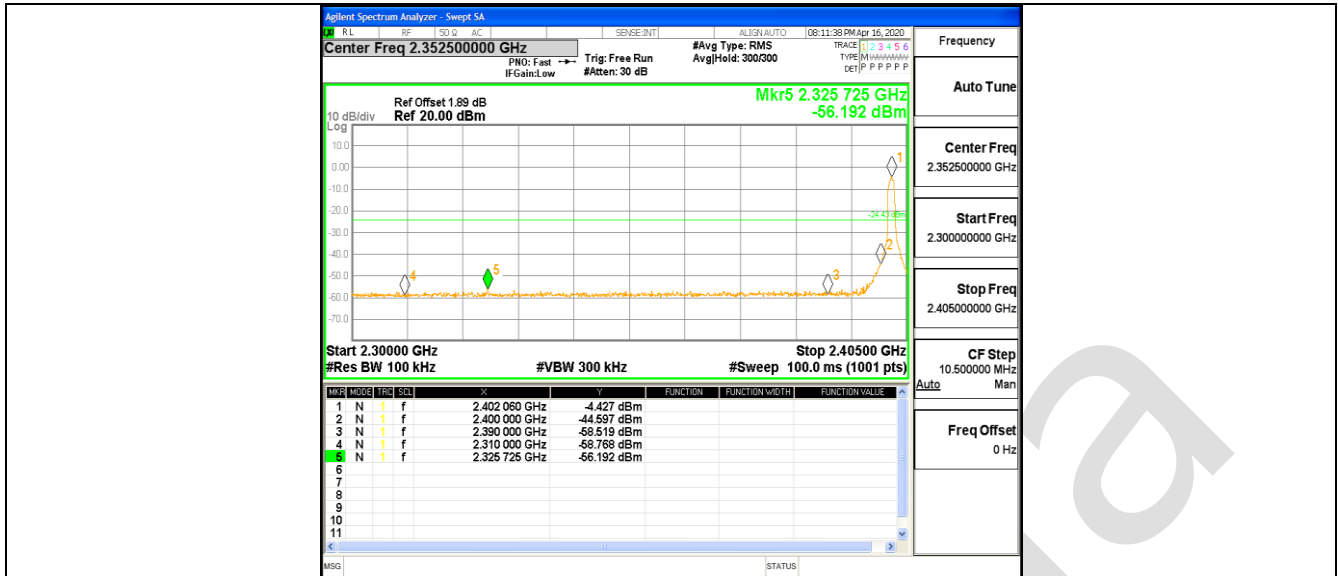




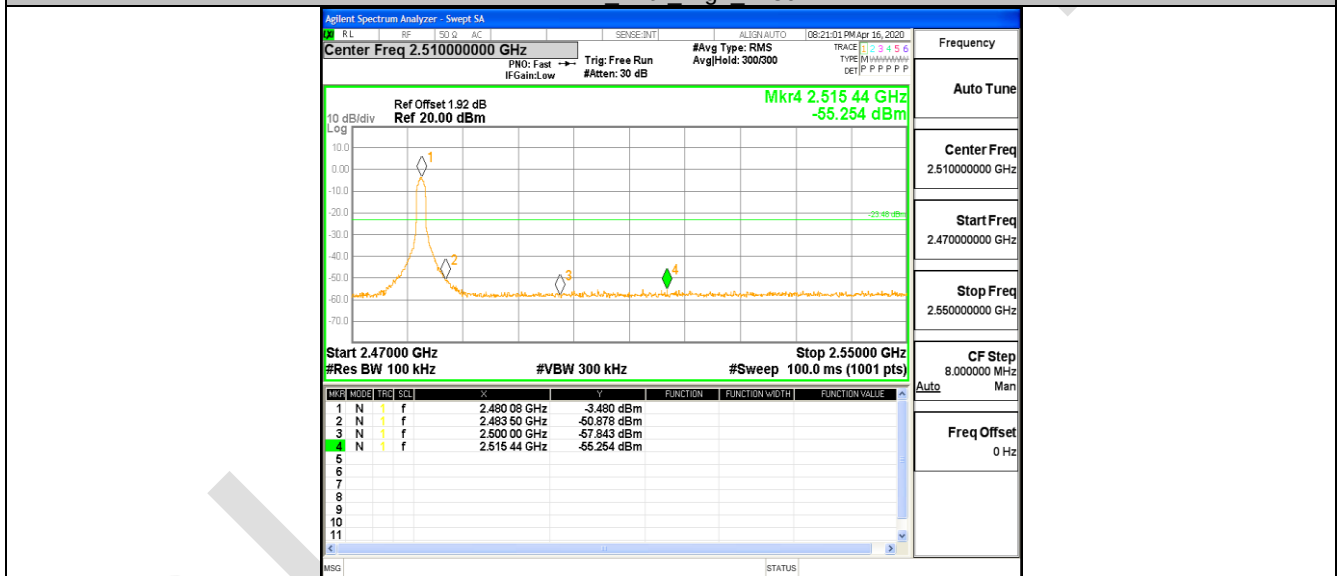
DH1 Ant1 High Hop 2480



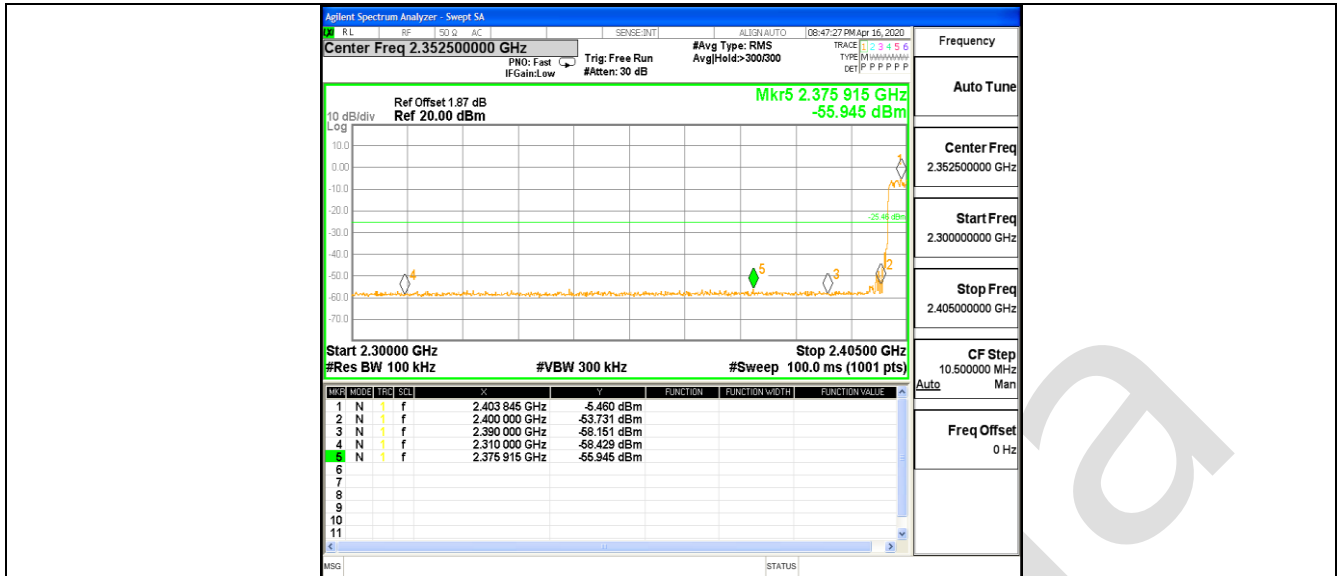
2DH1 Ant1 Low 2402



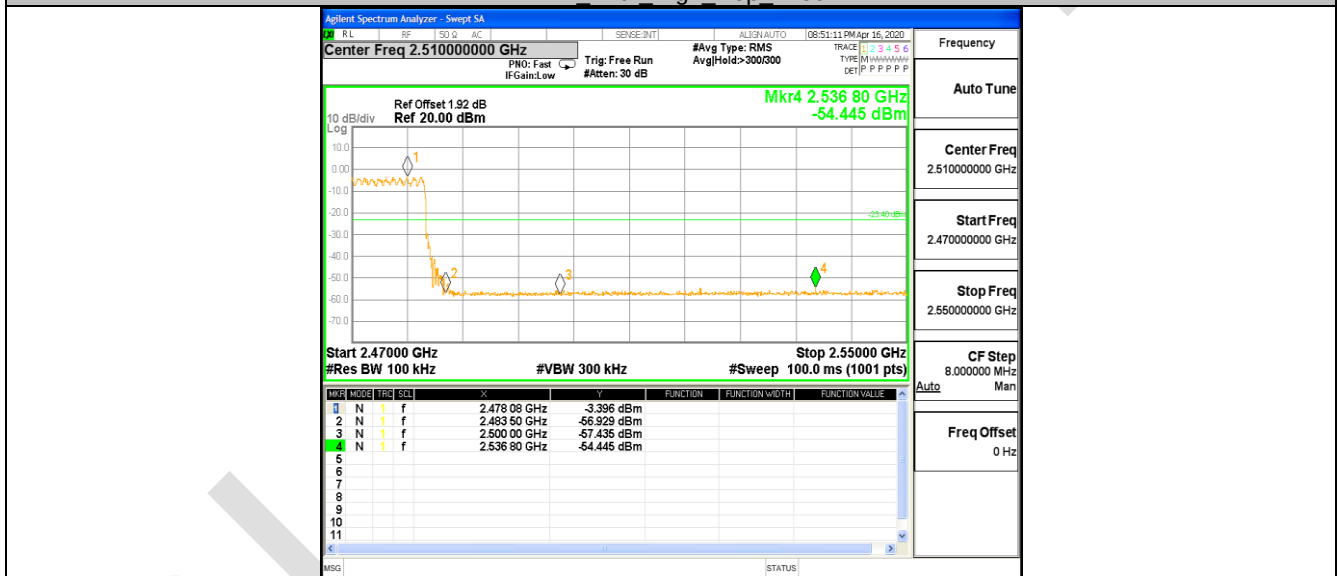
2DH1_Ant1_High_2480



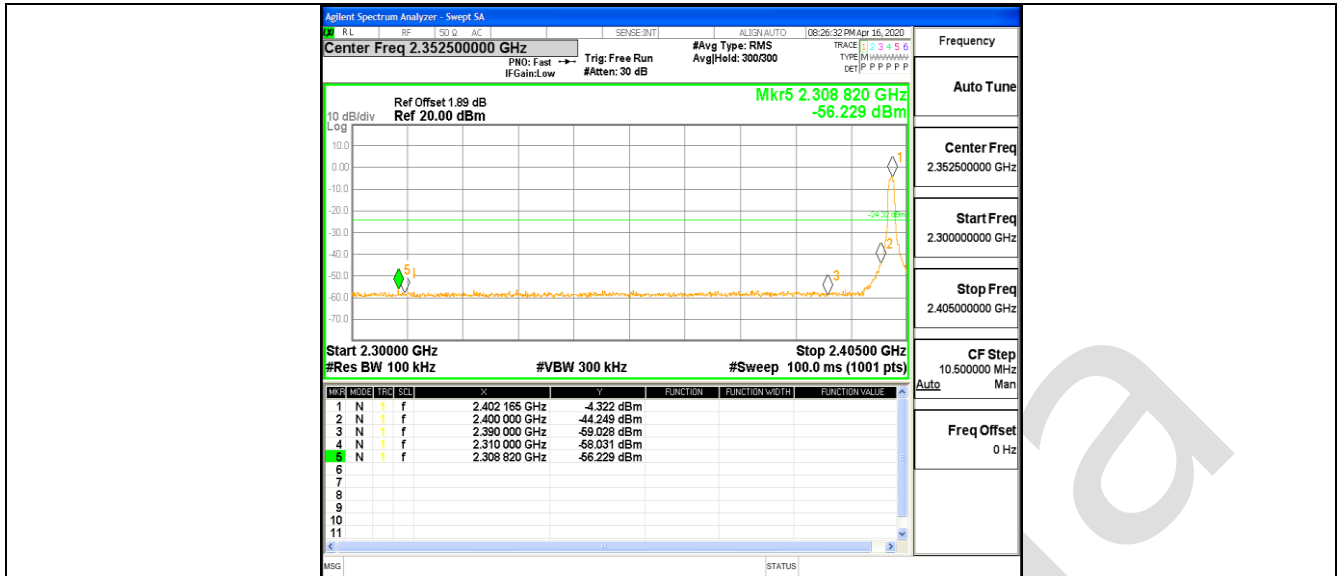
2DH1_Ant1_Low_Hop_2402



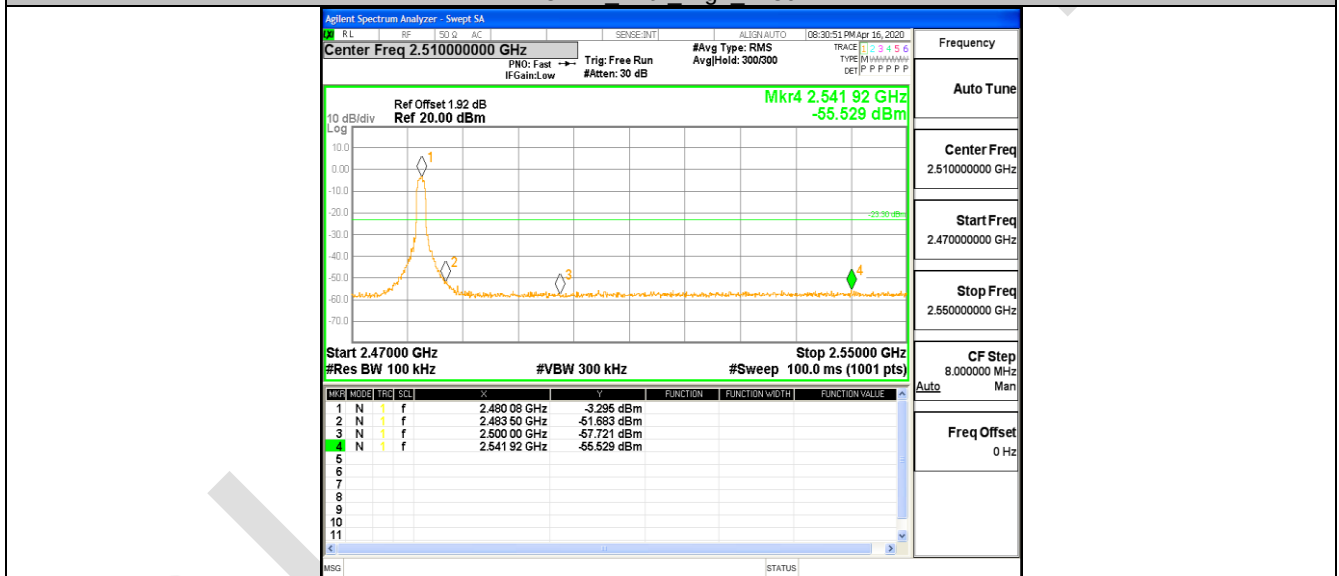
2DH1 Ant1 High Hop 2480



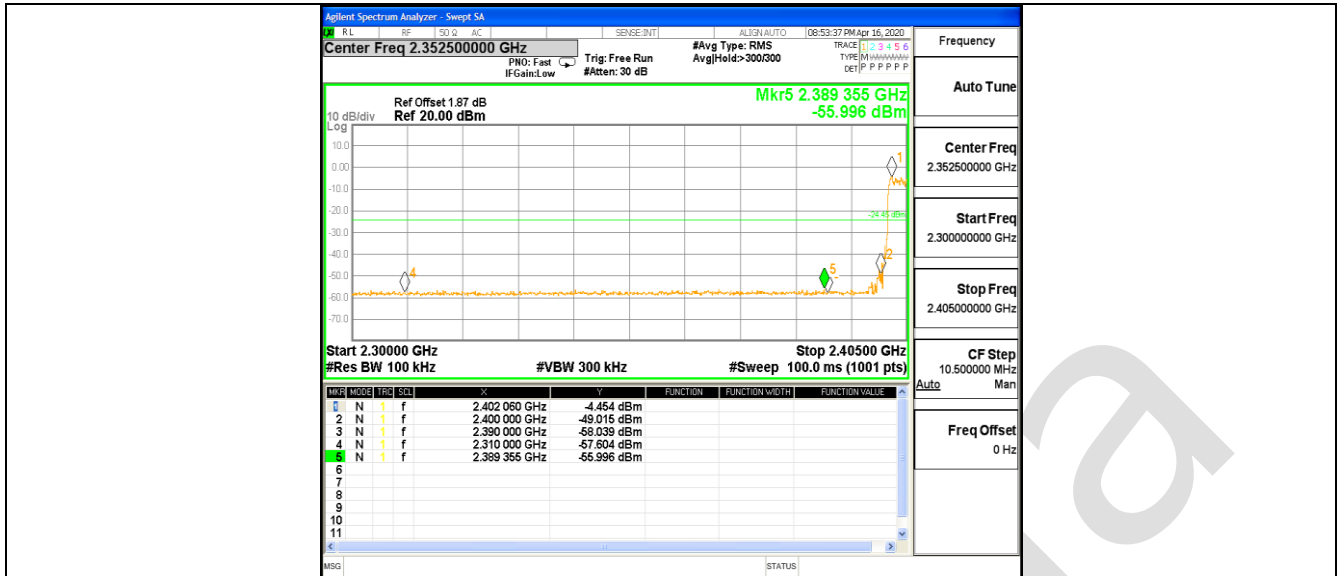
3DH1 Ant1 Low 2402



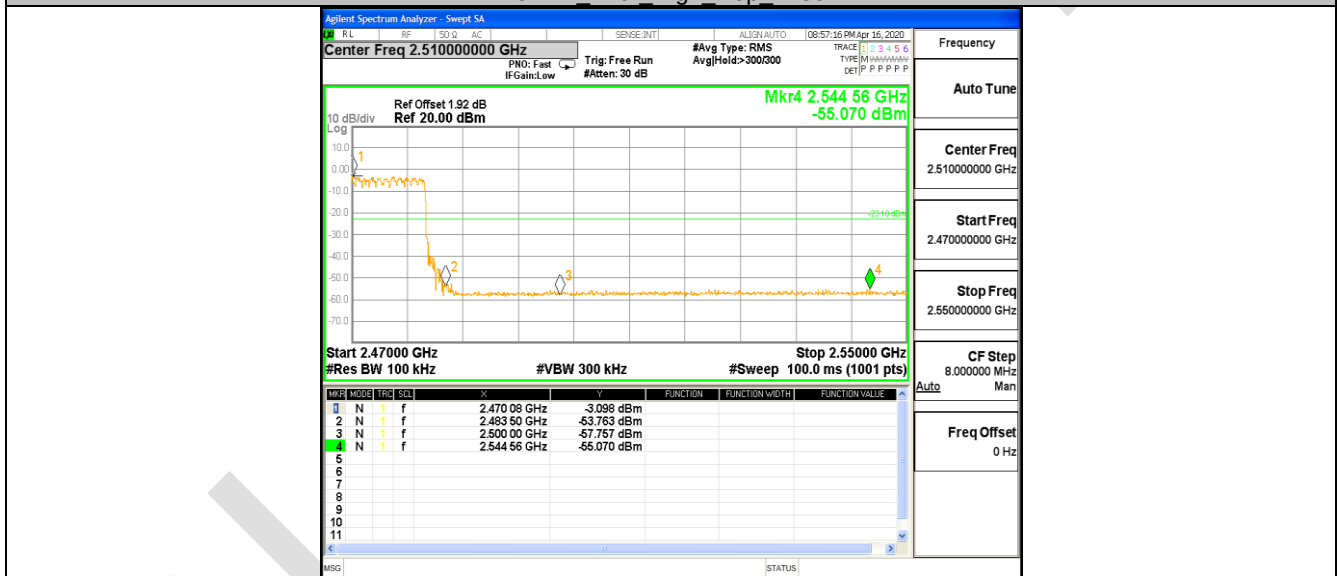
3DH1_Ant1_High_2480



3DH1_Ant1_Low_Hop_2402



3DH1 Ant1 High Hop 2480



10.7 APPENDIX: CONDUCTED SPURIOUS EMISSION

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	-3.35	-3.35	---	PASS
			30~1000	30~1000	-64.612	<=-23.347	PASS
			1000~26500	1000~26500	-47.447	<=-23.347	PASS
		2441	Reference	-2.95	-2.95	---	PASS
			30~1000	30~1000	-65.575	<=-22.954	PASS
			1000~26500	1000~26500	-49.145	<=-22.954	PASS
		2480	Reference	-2.30	-2.30	---	PASS
			30~1000	30~1000	-65.153	<=-22.297	PASS
			1000~26500	1000~26500	-52.41	<=-22.297	PASS
2DH1	Ant1	2402	Reference	-4.49	-4.49	---	PASS
			30~1000	30~1000	-66.532	<=-24.494	PASS
			1000~26500	1000~26500	-47.391	<=-24.494	PASS
		2441	Reference	-4.25	-4.25	---	PASS
			30~1000	30~1000	-66.356	<=-24.254	PASS
			1000~26500	1000~26500	-50.014	<=-24.254	PASS
		2480	Reference	-3.75	-3.75	---	PASS
			30~1000	30~1000	-64.641	<=-23.75	PASS
			1000~26500	1000~26500	-52.525	<=-23.75	PASS
3DH1	Ant1	2402	Reference	-4.38	-4.38	---	PASS
			30~1000	30~1000	-66.363	<=-24.383	PASS
			1000~26500	1000~26500	-47.632	<=-24.383	PASS
		2441	Reference	-4.10	-4.10	---	PASS
			30~1000	30~1000	-66.749	<=-24.098	PASS
			1000~26500	1000~26500	-49.126	<=-24.098	PASS
		2480	Reference	-3.97	-3.97	---	PASS
			30~1000	30~1000	-67.431	<=-23.966	PASS
			1000~26500	1000~26500	-52.422	<=-23.966	PASS