

Case No. : <u>CTA24081600301</u>	
Ambient Condition: <u>22</u> °C, <u>53</u> %RH	
According Standard: ■Part15C	
Test Date: <u>2024.8.19</u>	Test Engineer: <u>Lushan Kong</u>

Appendix A.1: 20dB Emission Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.906	2401.547	2402.453	---	---
		2441	0.906	2440.538	2441.444	---	---
		2480	0.912	2479.565	2480.477	---	---
2DH1	Ant1	2402	1.419	2401.271	2402.690	---	---
		2441	1.437	2440.256	2441.693	---	---
		2480	1.446	2479.253	2480.699	---	---
3DH1	Ant1	2402	1.425	2401.271	2402.696	---	---
		2441	1.473	2440.259	2441.732	---	---
		2480	1.485	2479.253	2480.738	---	---

Test Graphs

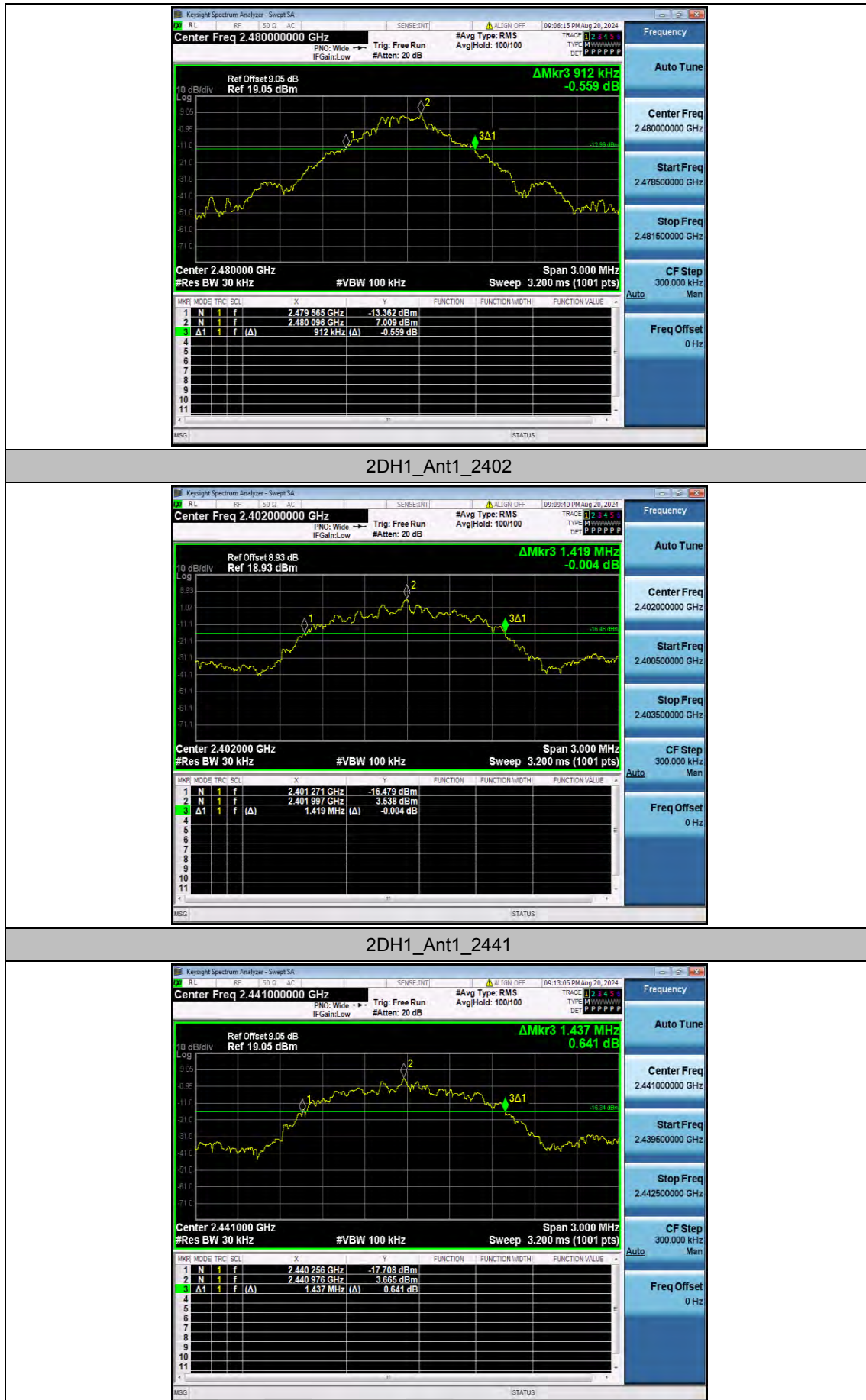
DH1_Ant1_2402



DH1_Ant1_2441



DH1_Ant1_2480



2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441

The screenshot displays the Keysight Spectrum Analyzer interface. The main plot shows a frequency spectrum with a peak at 2.48 GHz. The plot is titled "Center Freq 2.480000000 GHz". The y-axis is labeled "10 dB/div" and ranges from -90 to 10. The x-axis is labeled "Span 3.000 MHz" and ranges from 2.475 to 2.485 GHz. The plot shows a peak at 2.48 GHz with a power level of -18.731 dBm. A table at the bottom lists the measurement data.

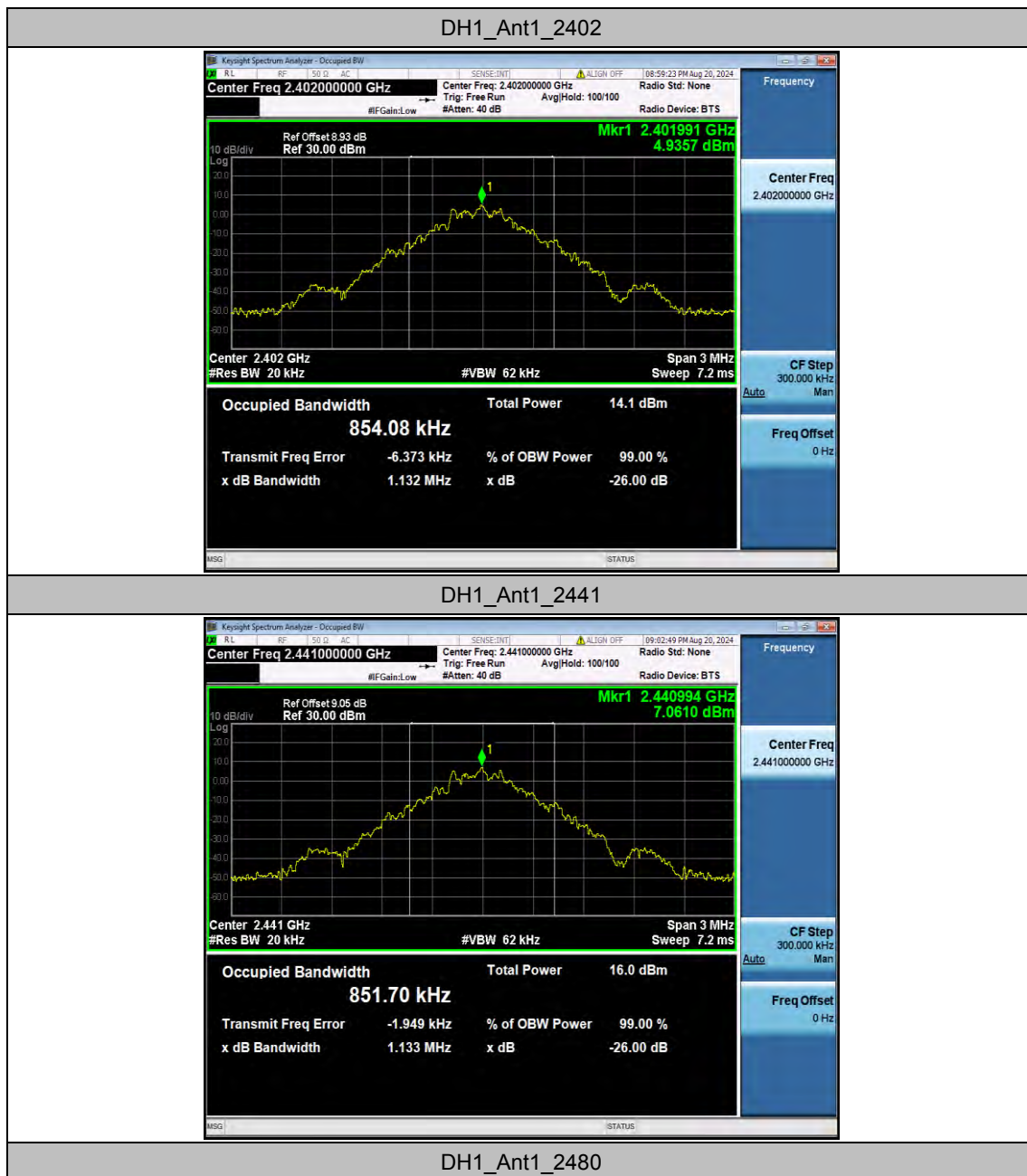
MNR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.479 263 GHz	-18.731 dBm			
2	N	1	f	2.480 012 GHz	-19.25 dBm			
3	Δ	1	f (Δ)	1.485 MHz (Δ)	0.287 dB			

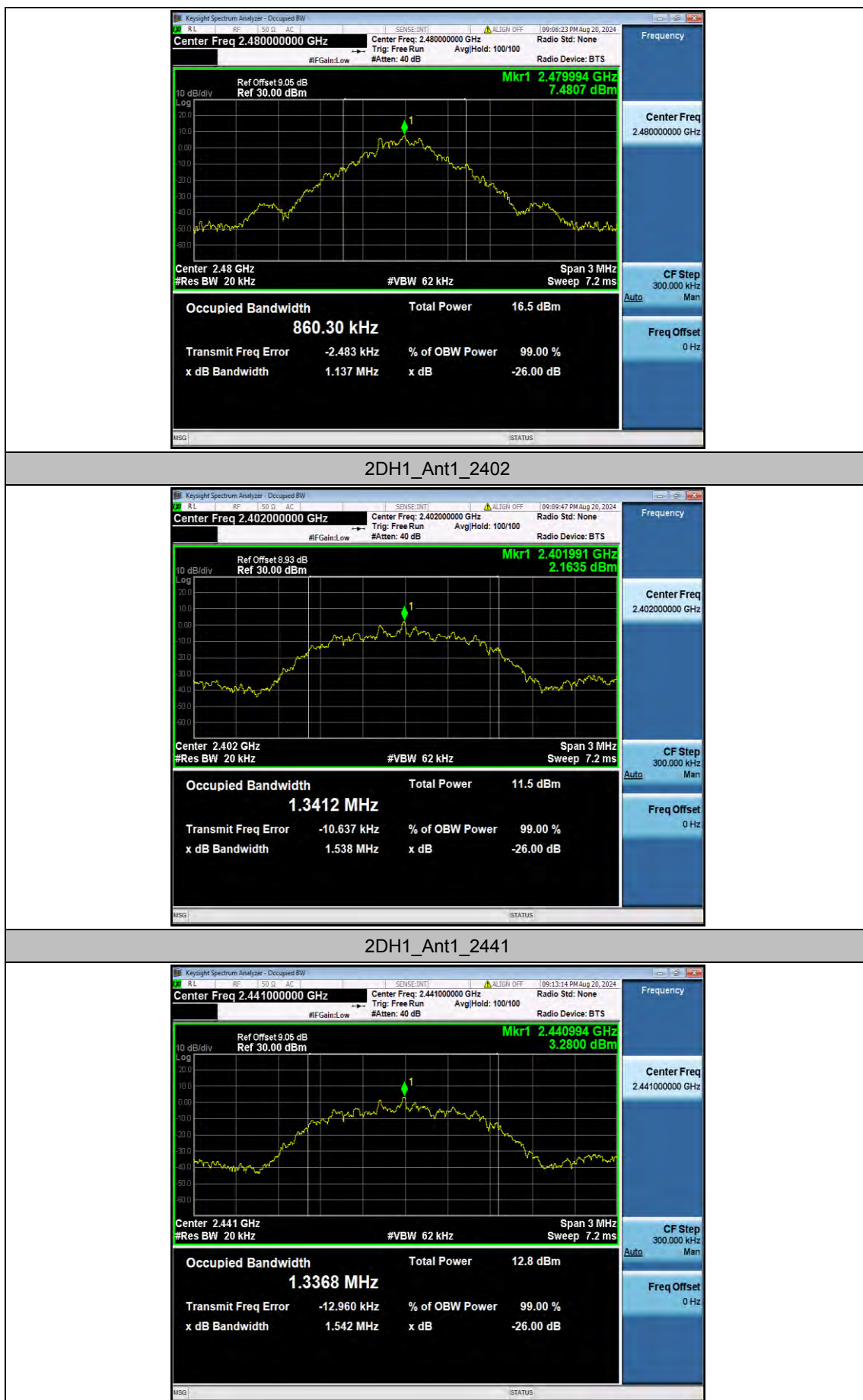
Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.85408	2401.5666	2402.4207	---	---
		2441	0.85170	2440.5722	2441.4239	---	---
		2480	0.86030	2479.5674	2480.4277	---	---
2DH1	Ant1	2402	1.3412	2401.3188	2402.6600	---	---
		2441	1.3368	2440.3186	2441.6554	---	---
		2480	1.3402	2479.3150	2480.6552	---	---
3DH1	Ant1	2402	1.3320	2401.3268	2402.6588	---	---
		2441	1.3355	2440.3240	2441.6595	---	---
		2480	1.3382	2479.3186	2480.6568	---	---

Test Graphs





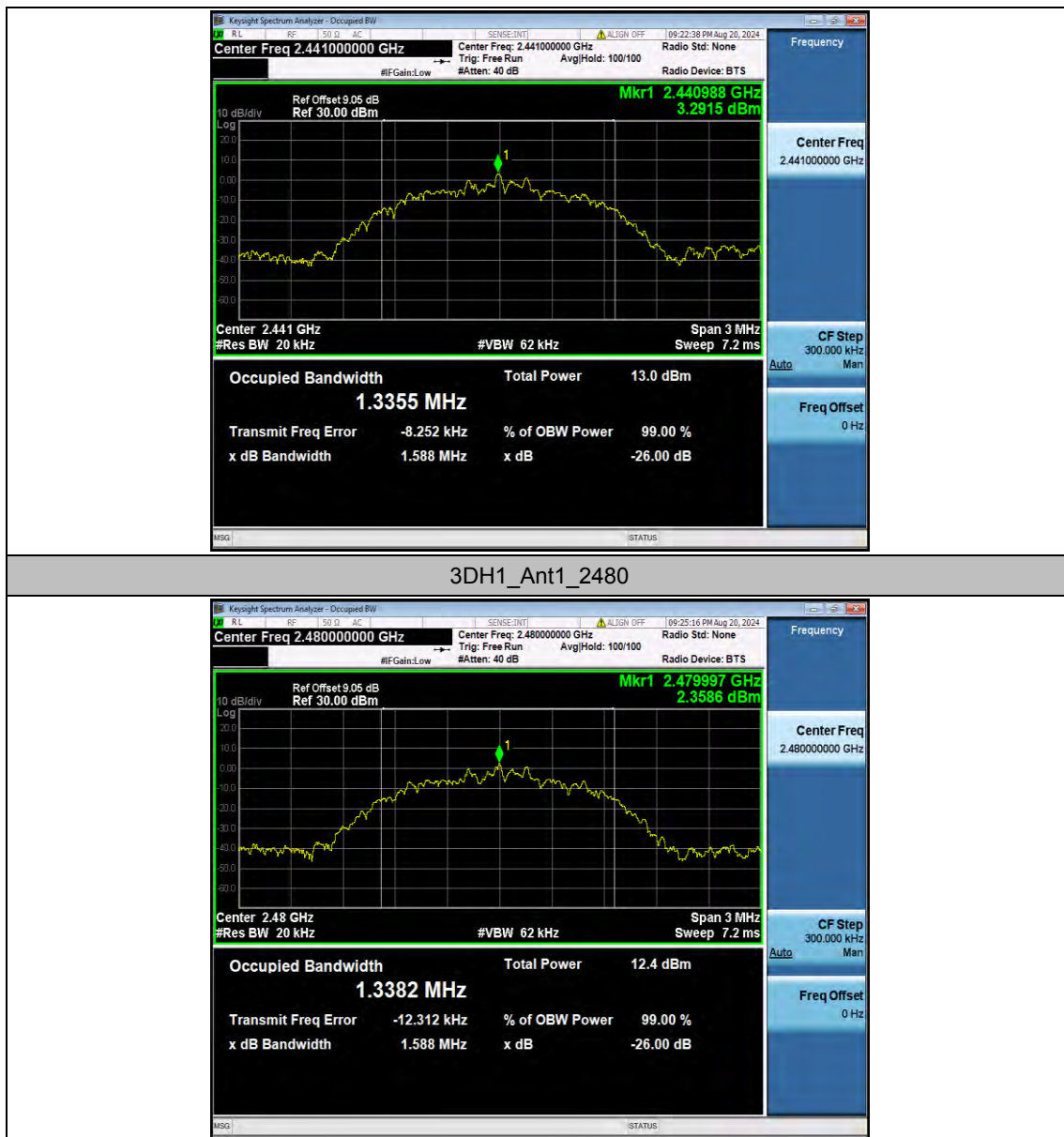
2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441



Appendix A.3: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH1	Ant1	2402	7.81	≤20.97	PASS
		2441	9.85	≤20.97	PASS
		2480	10.92	≤20.97	PASS
2DH1	Ant1	2402	6.60	≤20.97	PASS
		2441	8.00	≤20.97	PASS
		2480	7.75	≤20.97	PASS
3DH1	Ant1	2402	6.69	≤20.97	PASS
		2441	8.14	≤20.97	PASS
		2480	7.91	≤20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	1.008	≥ 0.608	PASS
		Hop_2441	0.828	≥ 0.608	PASS
		Hop_2480	0.858	≥ 0.608	PASS
2DH1	Ant1	Hop_2402	1.016	≥ 0.964	PASS
		Hop_2441	1.03	≥ 0.964	PASS
		Hop_2480	1.156	≥ 0.964	PASS
3DH1	Ant1	Hop_2402	1.022	≥ 0.990	PASS
		Hop_2441	1.146	≥ 0.990	PASS
		Hop_2480	1.022	≥ 0.990	PASS

Test Graphs

DH1_Ant1_Hop_2402



DH1_Ant1_Hop_2441



DH1_Ant1_Hop_2480



2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



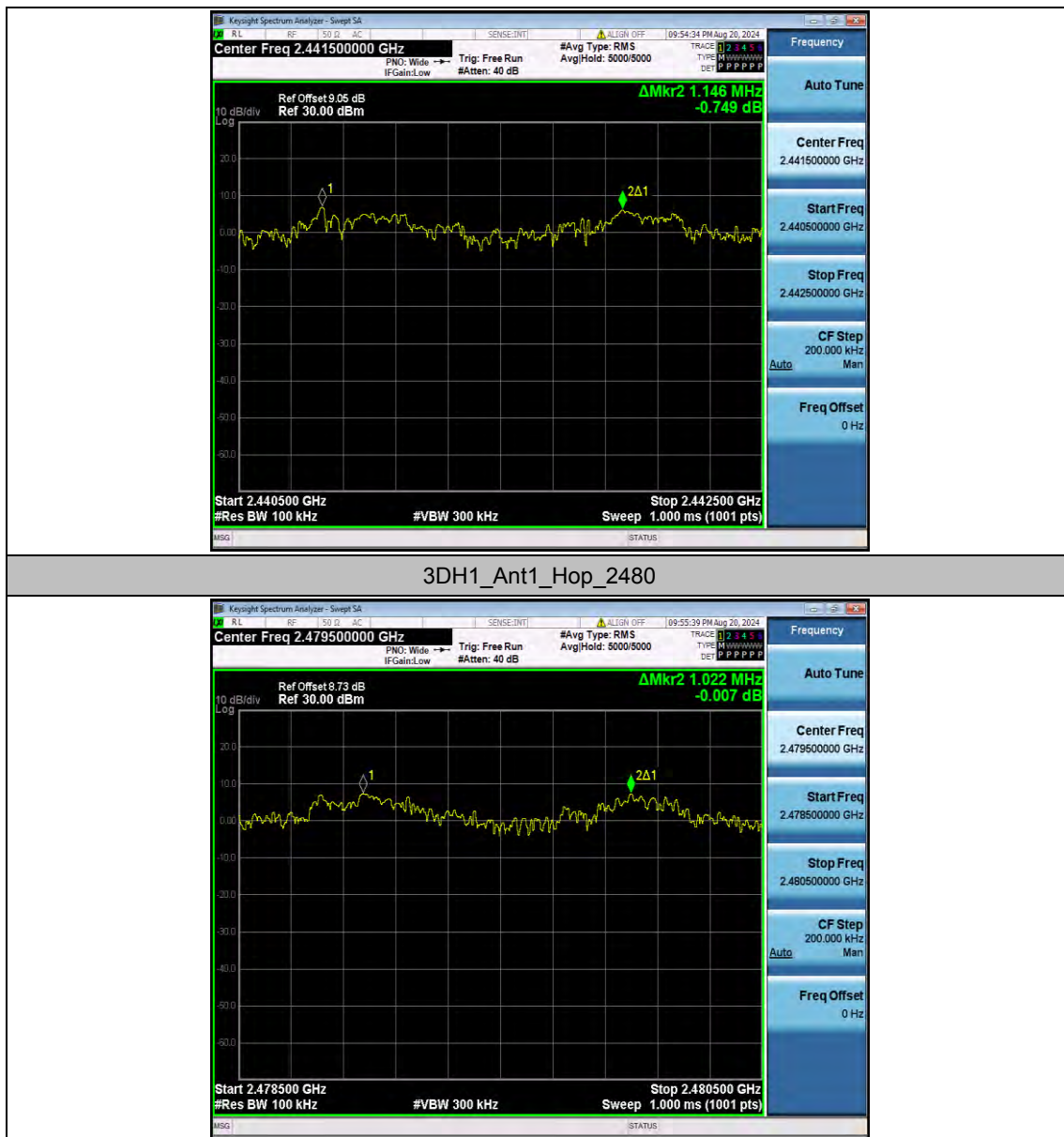
2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441

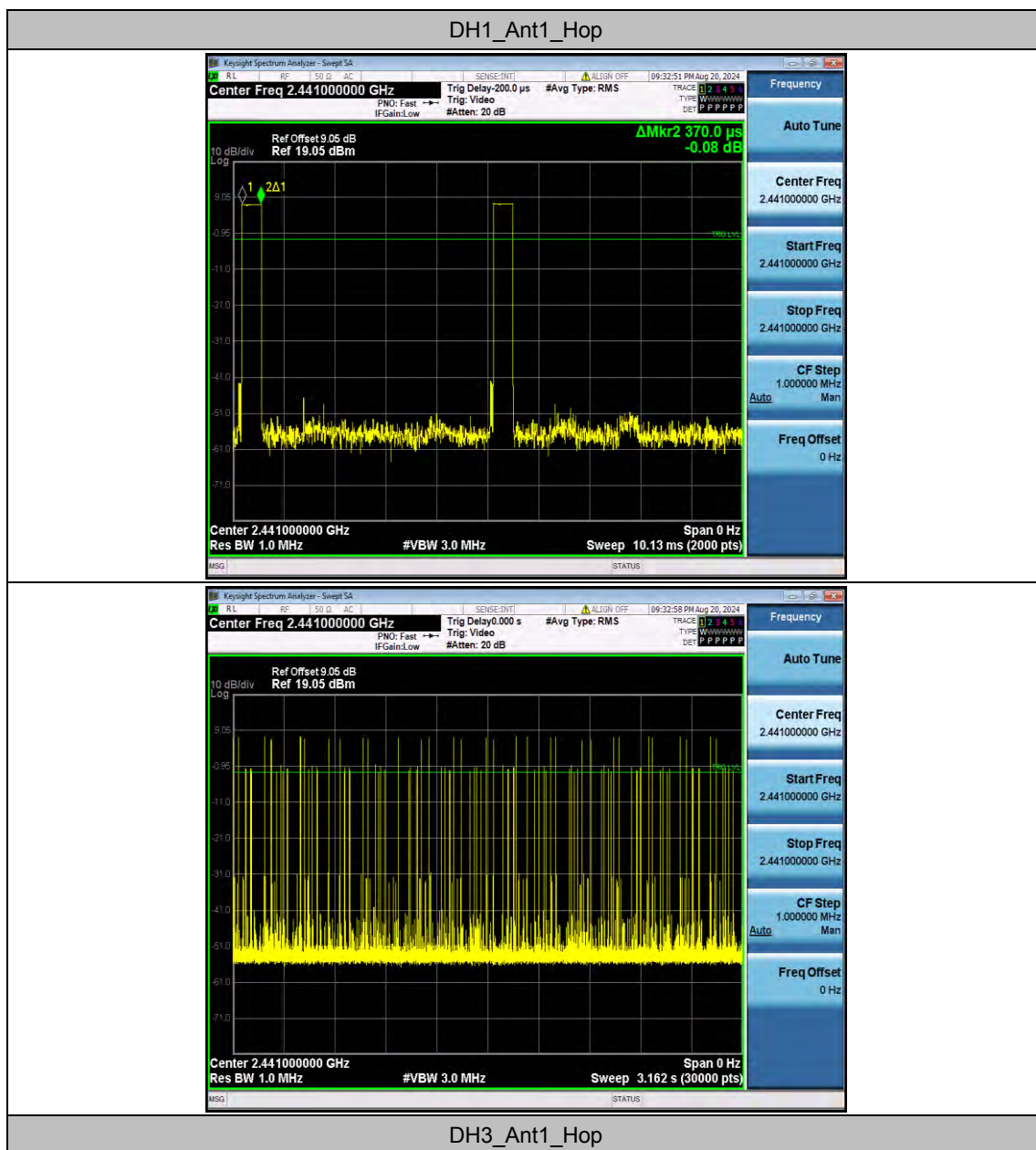


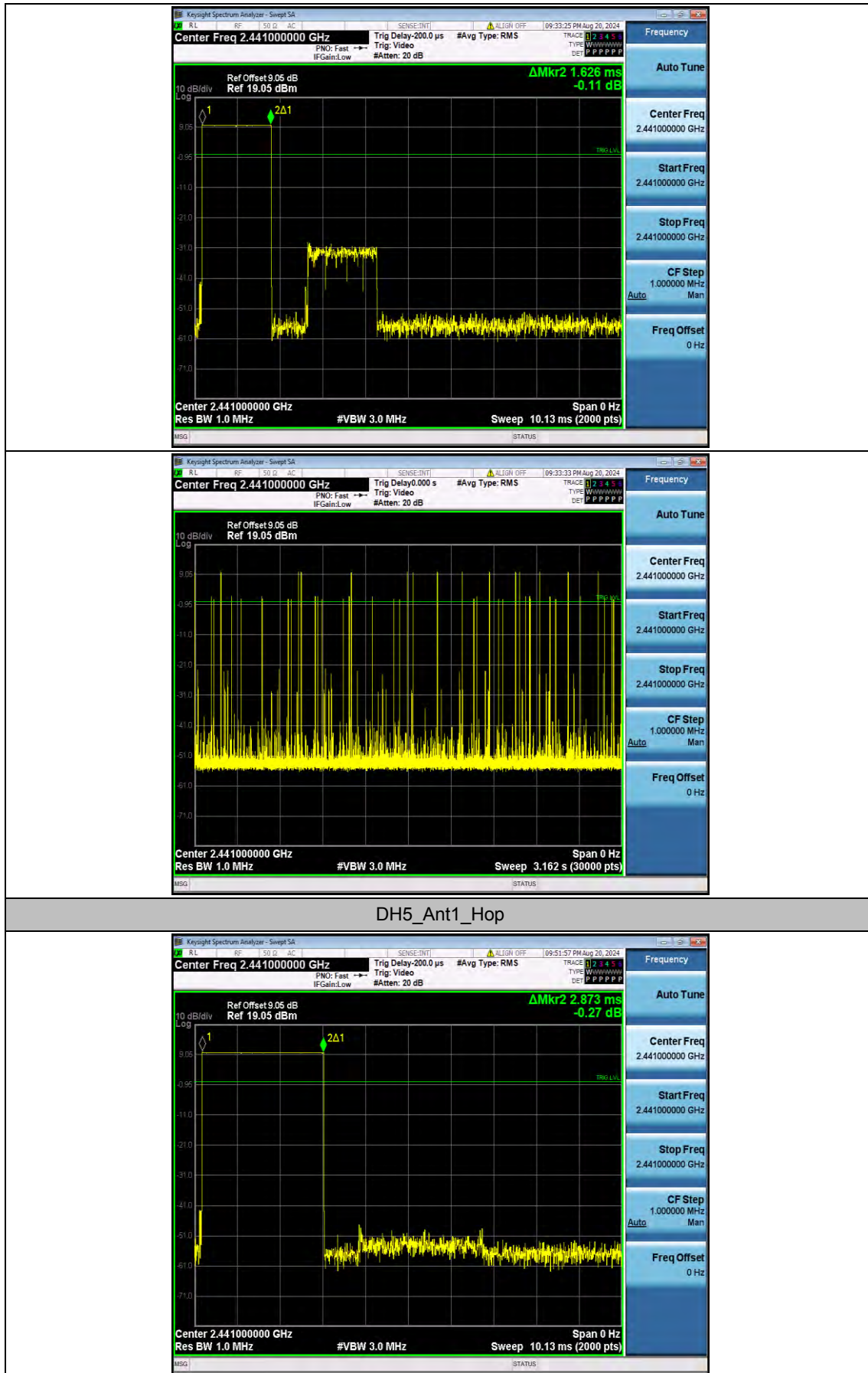
Appendix A.5: Time of occupancy

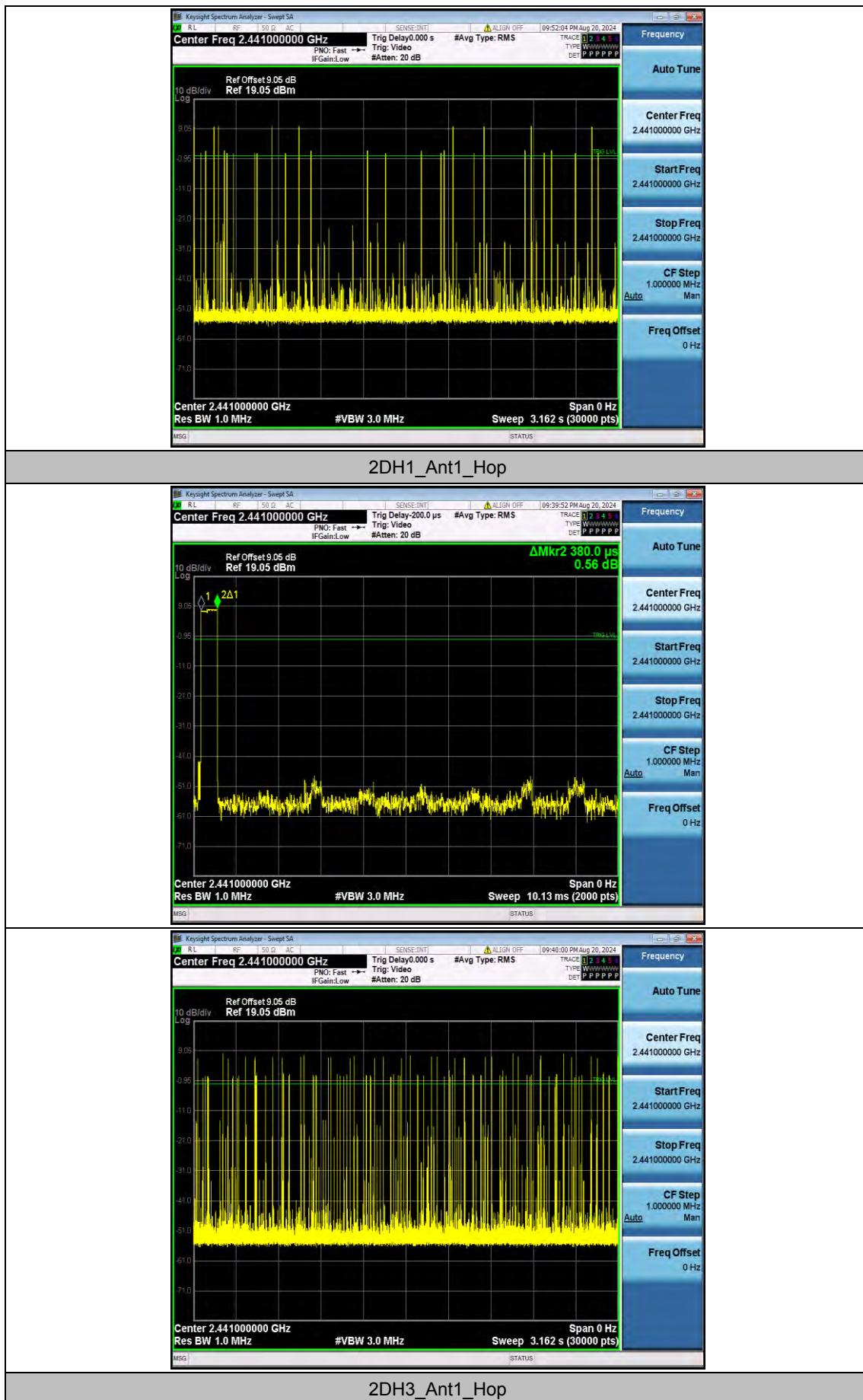
Test Result

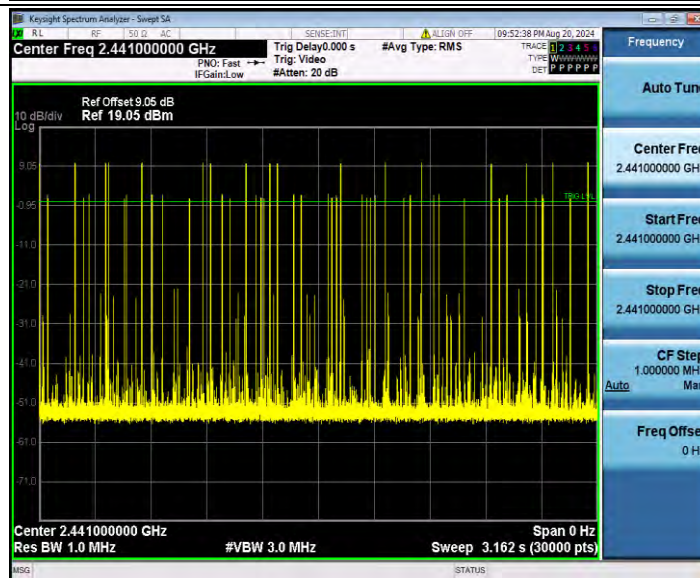
TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.370	320	0.118	≤0.4	PASS
DH3	Ant1	Hop	1.626	150	0.244	≤0.4	PASS
DH5	Ant1	Hop	2.873	90	0.259	≤0.4	PASS
2DH1	Ant1	Hop	0.380	340	0.129	≤0.4	PASS
2DH3	Ant1	Hop	1.631	180	0.294	≤0.4	PASS
2DH5	Ant1	Hop	2.878	80	0.23	≤0.4	PASS
3DH1	Ant1	Hop	0.380	320	0.122	≤0.4	PASS
3DH3	Ant1	Hop	1.631	180	0.294	≤0.4	PASS
3DH5	Ant1	Hop	2.878	120	0.345	≤0.4	PASS

Test Graphs





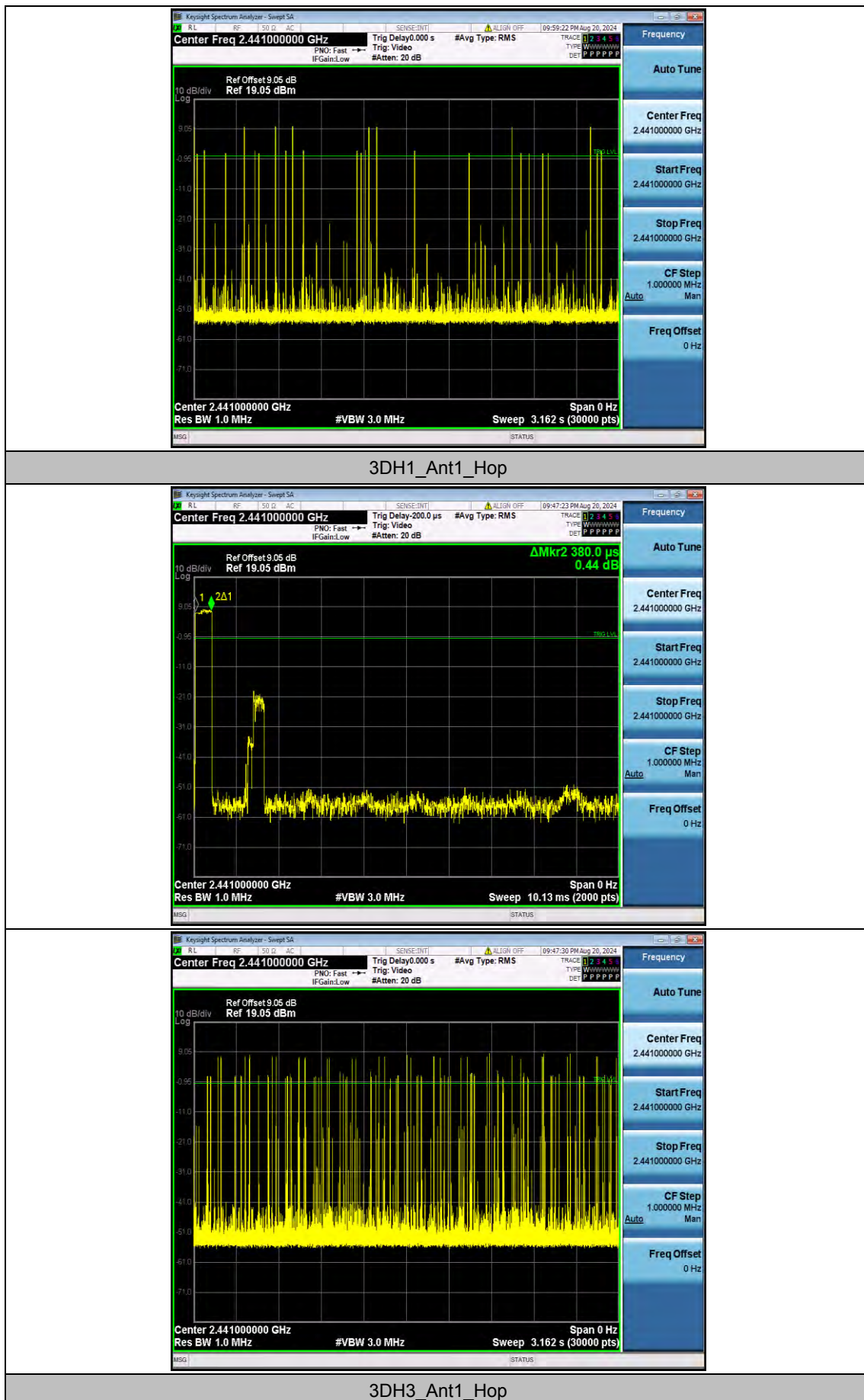


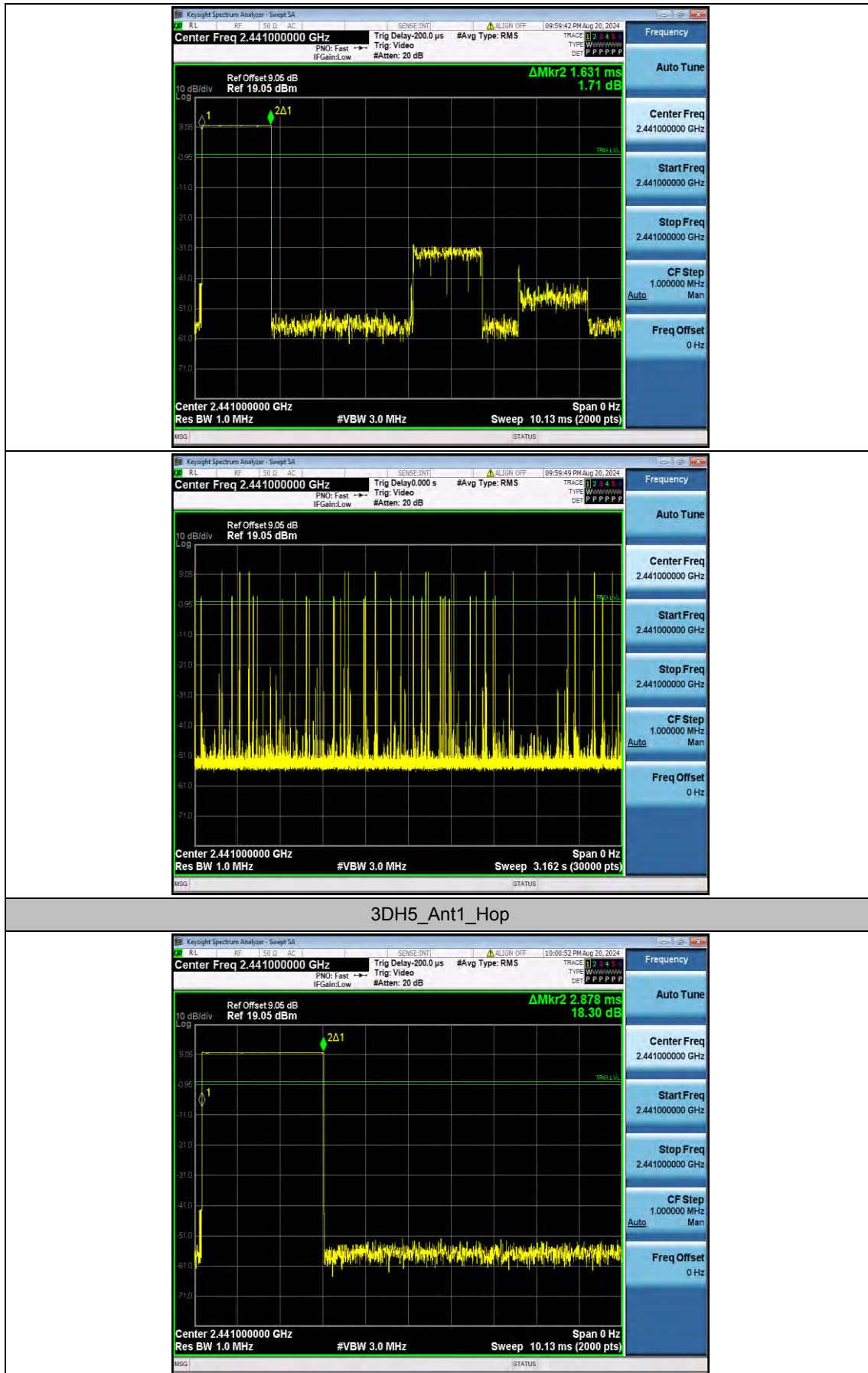


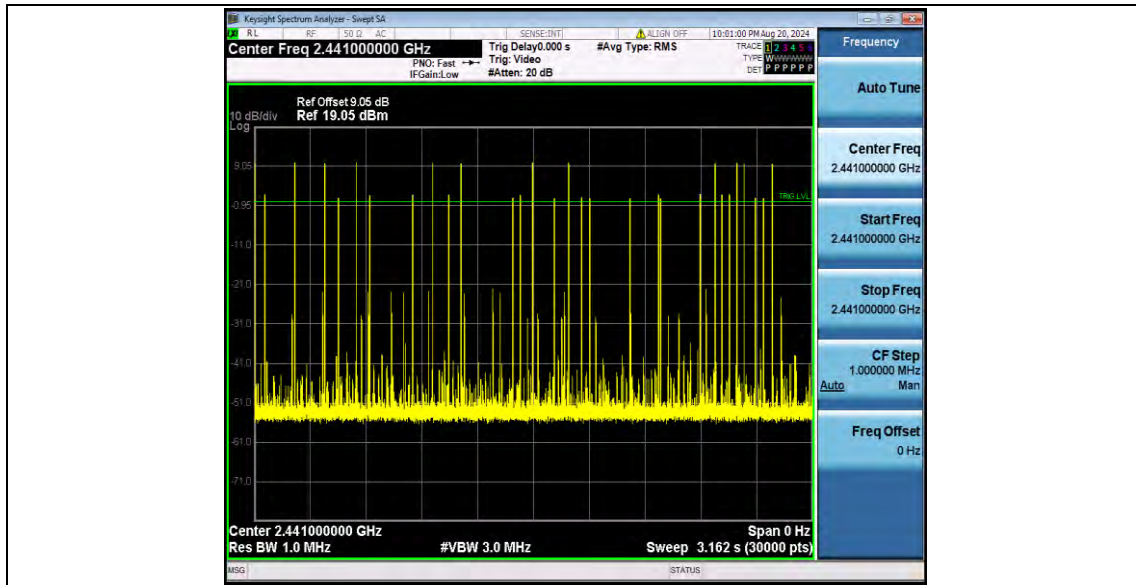
Keysight Spectrum Analyzer - Sweep SA

SENSE: FMT1 ALGN: OFF 09:59:14 PM Aug 30, 2024

Center Freq 2.441000000 GHz Trg Delay: 200.0 μ s #Avg Type: RMS TRACE 0: 1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 25: 26: 27: 28: 29: 30: 31: 32: 33: 34: 35: 36: 37: 38: 39: 40: 41: 42: 43: 44: 45: 46: 47: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 69: 70: 71: 72: 73: 74: 75: 76: 77: 78: 79: 80: 81: 82: 83: 84: 85: 86: 87: 88: 89: 90: 91: 92: 93: 94: 95: 96: 97: 98: 99: 100: 101: 102: 103: 104: 105: 106: 107: 108: 109: 110: 111: 112: 113: 114: 115: 116: 117: 118: 119: 120: 121: 122: 123: 124: 125: 126: 127: 128: 129: 130: 131: 132: 133: 134: 135: 136: 137: 138: 139: 140: 141: 142: 143: 144: 145: 146: 147: 148: 149: 150: 151: 152: 153: 154: 155: 156: 157: 158: 159: 160: 161: 162: 163: 164: 165: 166: 167: 168: 169: 170: 171: 172: 173: 174: 175: 176: 177: 178: 179: 180: 181: 182: 183: 184: 185: 186: 187: 188: 189: 190: 191: 192: 193: 194: 195: 196: 197: 198: 199: 200: 201: 202: 203: 204: 205: 206: 207: 208: 209: 210: 211: 212: 213: 214: 215: 216: 217: 218: 219: 220: 221: 222: 223: 224: 225: 226: 227: 228: 229: 230: 231: 232: 233: 234: 235: 236: 237: 238: 239: 240: 241: 242: 243: 244: 245: 246: 247: 248: 249: 250: 251: 252: 253: 254: 255: 256: 257: 258: 259: 260: 261: 262: 263: 264: 265: 266: 267: 268: 269: 270: 271: 272: 273: 274: 275: 276: 277: 278: 279: 280: 281: 282: 283: 284: 285: 286: 287: 288: 289: 290: 291: 292: 293: 294: 295: 296: 297: 298: 299: 300: 301: 302: 303: 304: 305: 306: 307: 308: 309: 310: 311: 312: 313: 314: 315: 316: 317: 318: 319: 320: 321: 322: 323: 324: 325: 326: 327: 328: 329: 330: 331: 332: 333: 334: 335: 336: 337: 338: 339: 340: 341: 342: 343: 344: 345: 346: 347: 348: 349: 350: 351: 352: 353: 354: 355: 356: 357: 358: 359: 360: 361: 362: 363: 364: 365: 366: 367: 368: 369: 370: 371: 372: 373: 374: 375: 376: 377: 378: 379: 380: 381: 382: 383: 384: 385: 386: 387: 388: 389: 390: 391: 392: 393: 394: 395: 396: 397: 398: 399: 400: 401: 402: 403: 404: 405: 406: 407: 408: 409: 410: 411: 412: 413: 414: 415: 416: 417: 418: 419: 420: 421: 422: 423: 424: 425: 426: 427: 428: 429: 430: 431: 432: 433: 434: 435: 436: 437: 438: 439: 440: 441: 442: 443: 444: 445: 446: 447: 448: 449: 450: 451: 452: 453: 454: 455: 456: 457: 458: 459: 460: 461: 462: 463: 464: 465: 466: 467: 468: 469: 470: 471: 472: 473: 474: 475: 476: 477: 478: 479: 480: 481: 482: 483: 484: 485: 486: 487: 488: 489: 490: 491: 492: 493: 494: 495: 496: 497: 498: 499: 500: 501: 502: 503: 504: 505: 506: 507: 508: 509: 510: 511: 512: 513: 514: 515: 516: 517: 518: 519: 520: 521: 522: 523: 524: 525: 526: 527: 528: 529: 530: 531: 532: 533: 534: 535: 536: 537: 538: 539: 540: 541: 542: 543: 544: 545: 546: 547: 548: 549: 550: 551: 552: 553: 554: 555: 556: 557: 558: 559: 560: 561: 562: 563: 564: 565: 566: 567: 568: 569: 570: 571: 572: 573: 574: 575: 576: 577: 578: 579: 580: 581: 582: 583: 584: 585: 586: 587: 588: 589: 590: 591: 592: 593: 594: 595: 596: 597: 598: 599: 600: 601: 602: 603: 604: 605: 606: 607: 608: 609: 610: 611: 612: 613: 614: 615: 616: 617: 618: 619: 620: 621: 622: 623: 624: 625: 626: 627: 628: 629: 630: 631: 632: 633: 634: 635: 636: 637: 638: 639: 640: 641: 642: 643: 644: 645: 646: 647: 648: 649: 650: 651: 652: 653: 654: 655: 656: 657: 658: 659: 660: 661: 662: 663: 664: 665: 666: 667: 668: 669: 670: 671: 672: 673: 674: 675: 676: 677: 678: 679: 680: 681: 682: 683: 684: 685: 686: 687: 688: 689: 690: 691: 692: 693: 694: 695: 696: 697: 698: 699: 700: 701: 702: 703: 704: 705: 706: 707: 708: 709: 710: 711: 712: 713: 714: 715: 716: 717: 718: 719: 720: 721: 722: 723: 724: 725: 726: 727: 728: 729: 730: 731: 732: 733: 734: 735: 736: 737: 738: 739: 740: 741: 742: 743: 744: 745: 746: 747: 748: 749: 750: 751: 752: 753: 754: 755: 756: 757: 758: 759: 760: 761: 762: 763: 764: 765: 766: 767: 768: 769: 770: 771: 772: 773: 774: 775: 776: 777: 778: 779: 780: 781: 782: 783: 784: 785: 786: 787: 788: 789: 790: 791: 792: 793: 794: 795: 796: 797: 798: 799: 800: 801: 802: 803: 804:





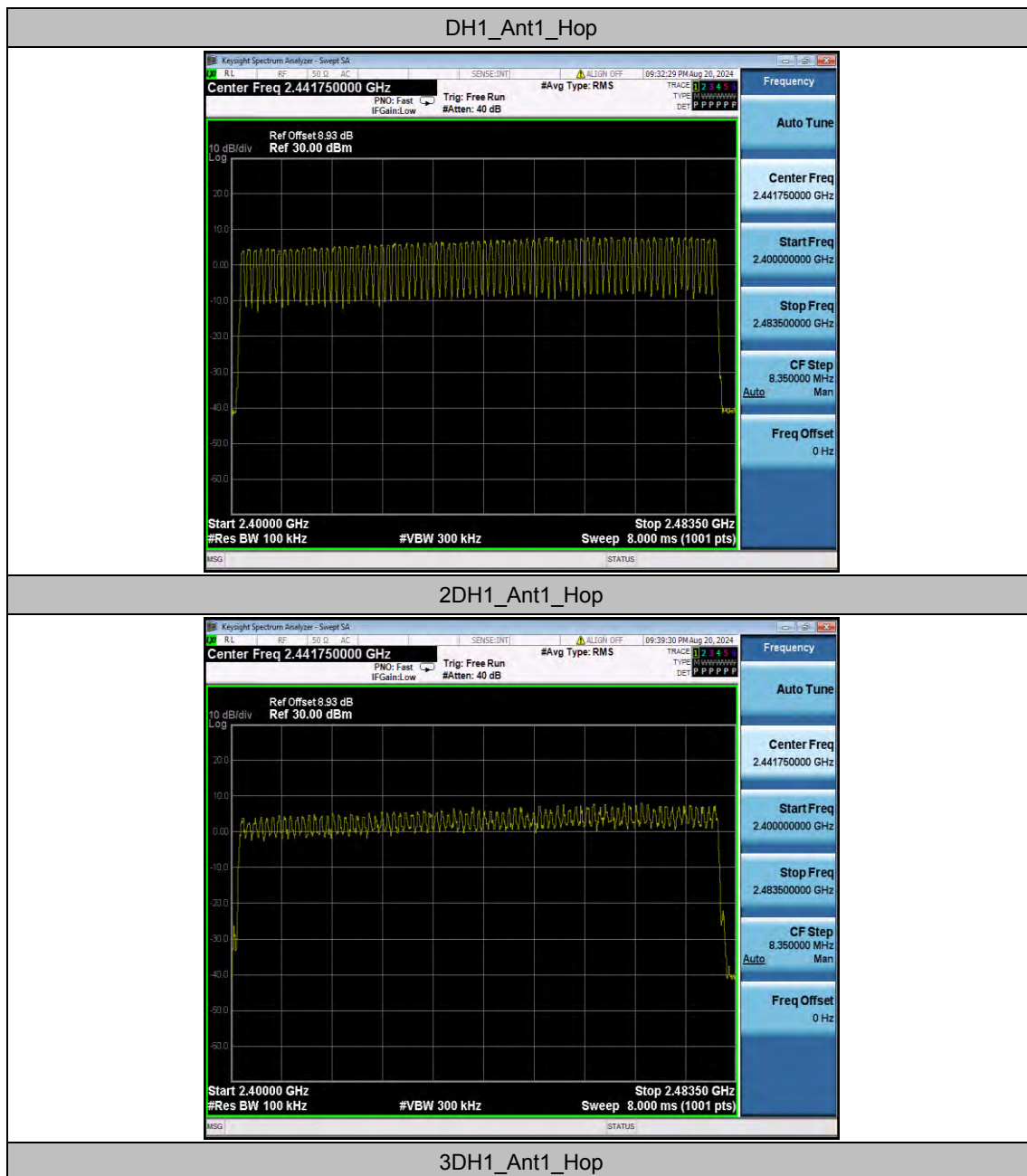


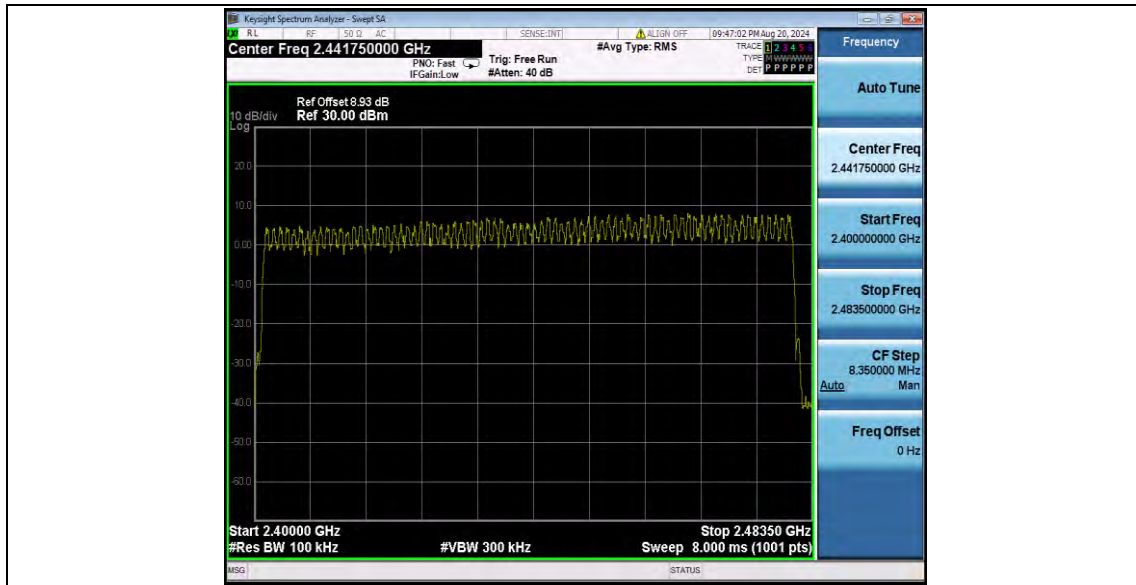
Appendix A.6: Number of hopping channels

Test Result

TestMode	Antenna	Freq(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



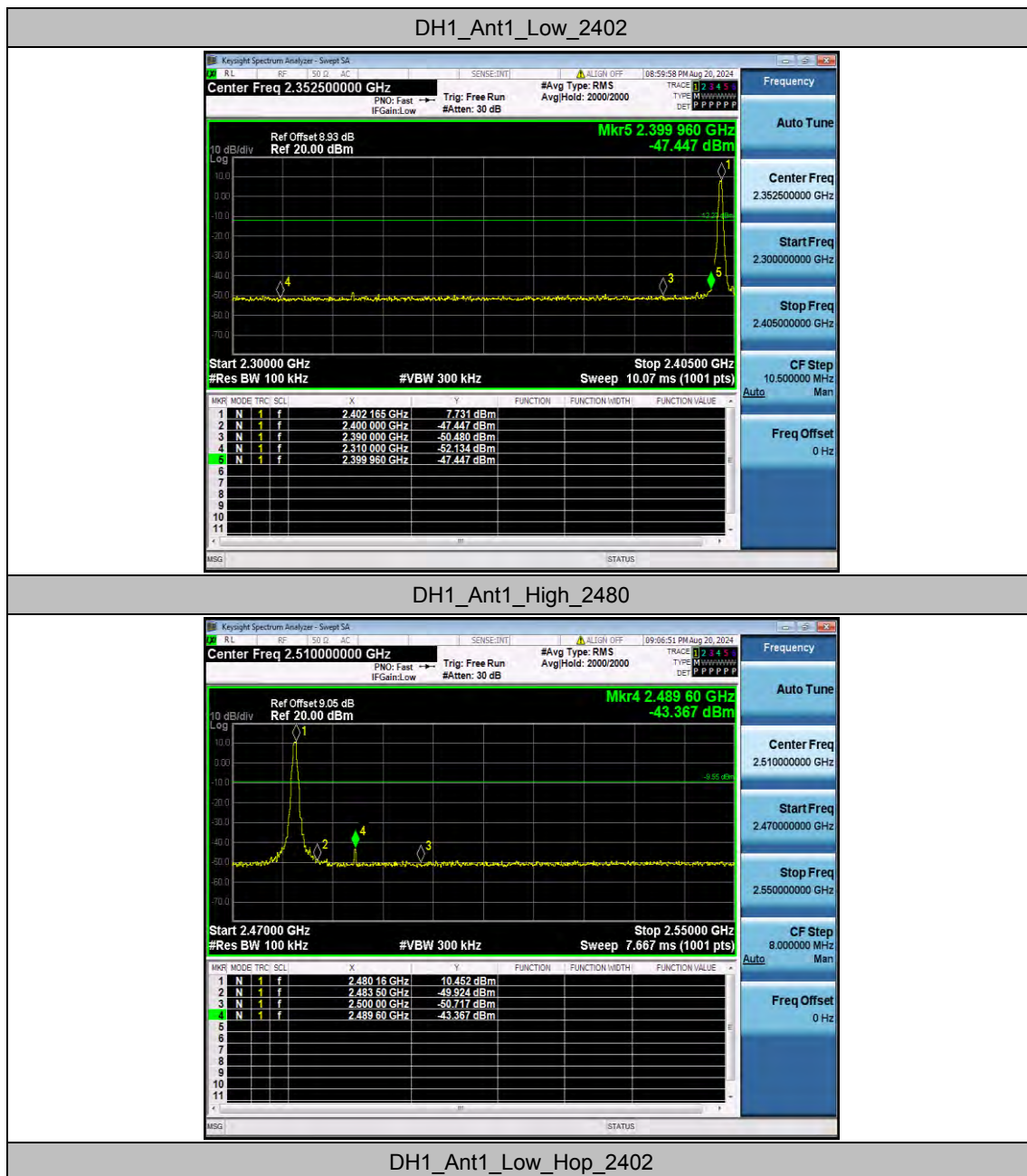


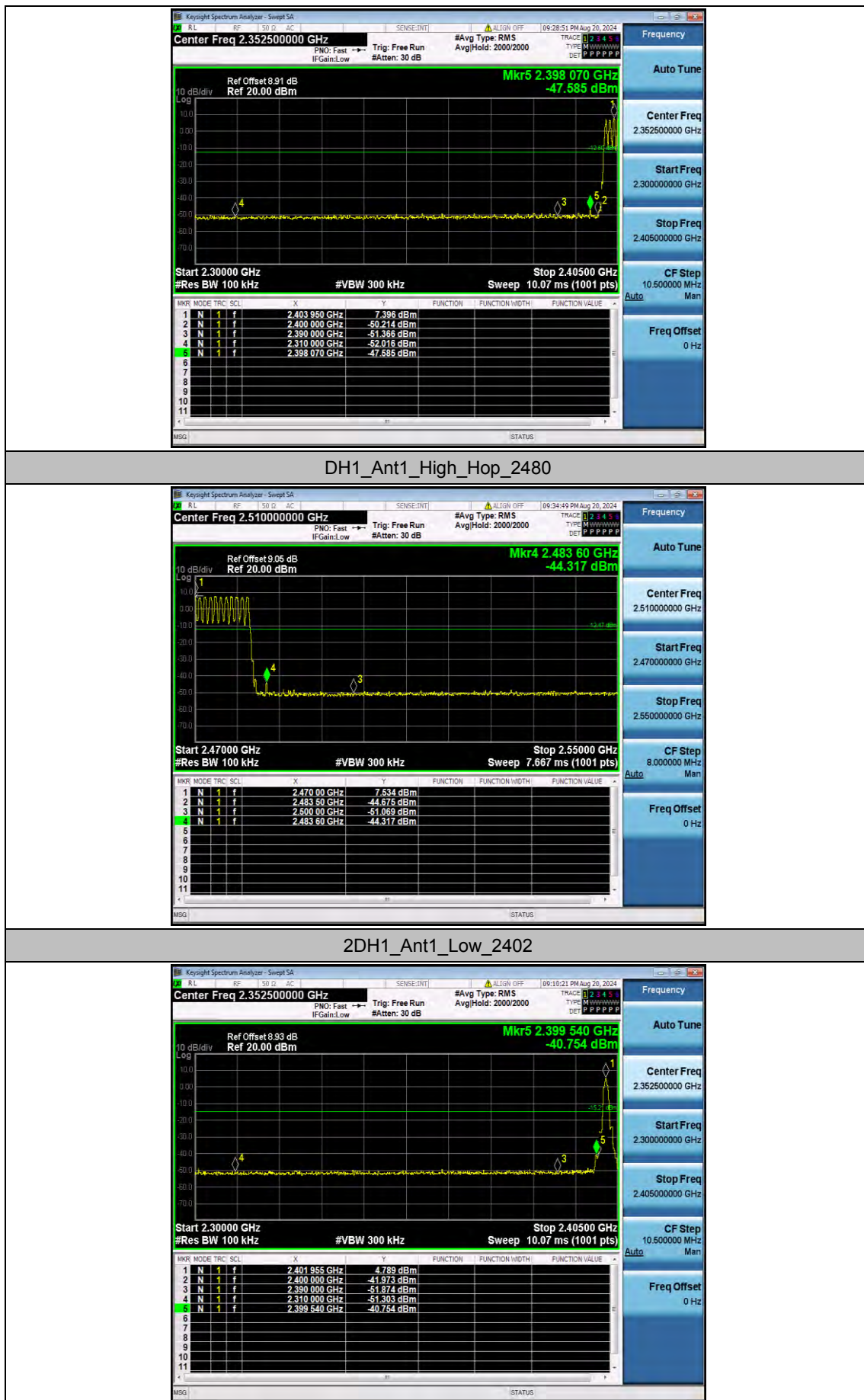
Appendix A.7: Band edge measurements

Test Result

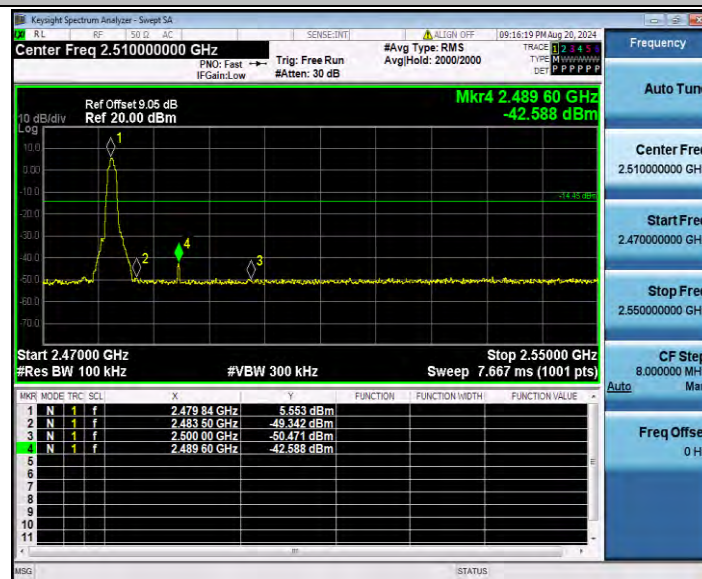
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	7.73	-47.45	≤ -12.27	PASS
		High	2480	10.45	-43.37	≤ -9.55	PASS
		Low	Hop_2402	7.40	-47.59	≤ -12.6	PASS
		High	Hop_2480	7.53	-44.32	≤ -12.47	PASS
2DH1	Ant1	Low	2402	4.79	-40.75	≤ -15.21	PASS
		High	2480	5.55	-42.59	≤ -14.45	PASS
		Low	Hop_2402	4.09	-44.71	≤ -15.91	PASS
		High	Hop_2480	7.57	-47.82	≤ -12.43	PASS
3DH1	Ant1	Low	2402	4.74	-39.9	≤ -15.26	PASS
		High	2480	5.61	-43.03	≤ -14.39	PASS
		Low	Hop_2402	3.26	-43.56	≤ -16.74	PASS
		High	Hop_2480	6.36	-48.68	≤ -13.64	PASS

Test Graphs

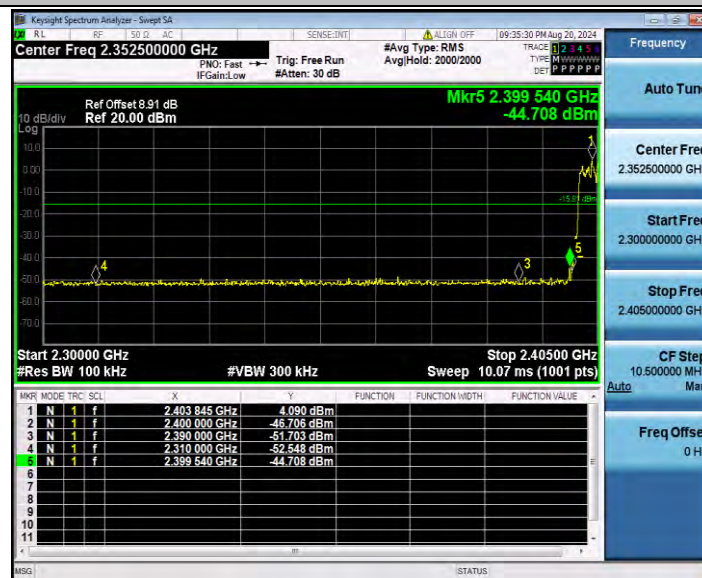




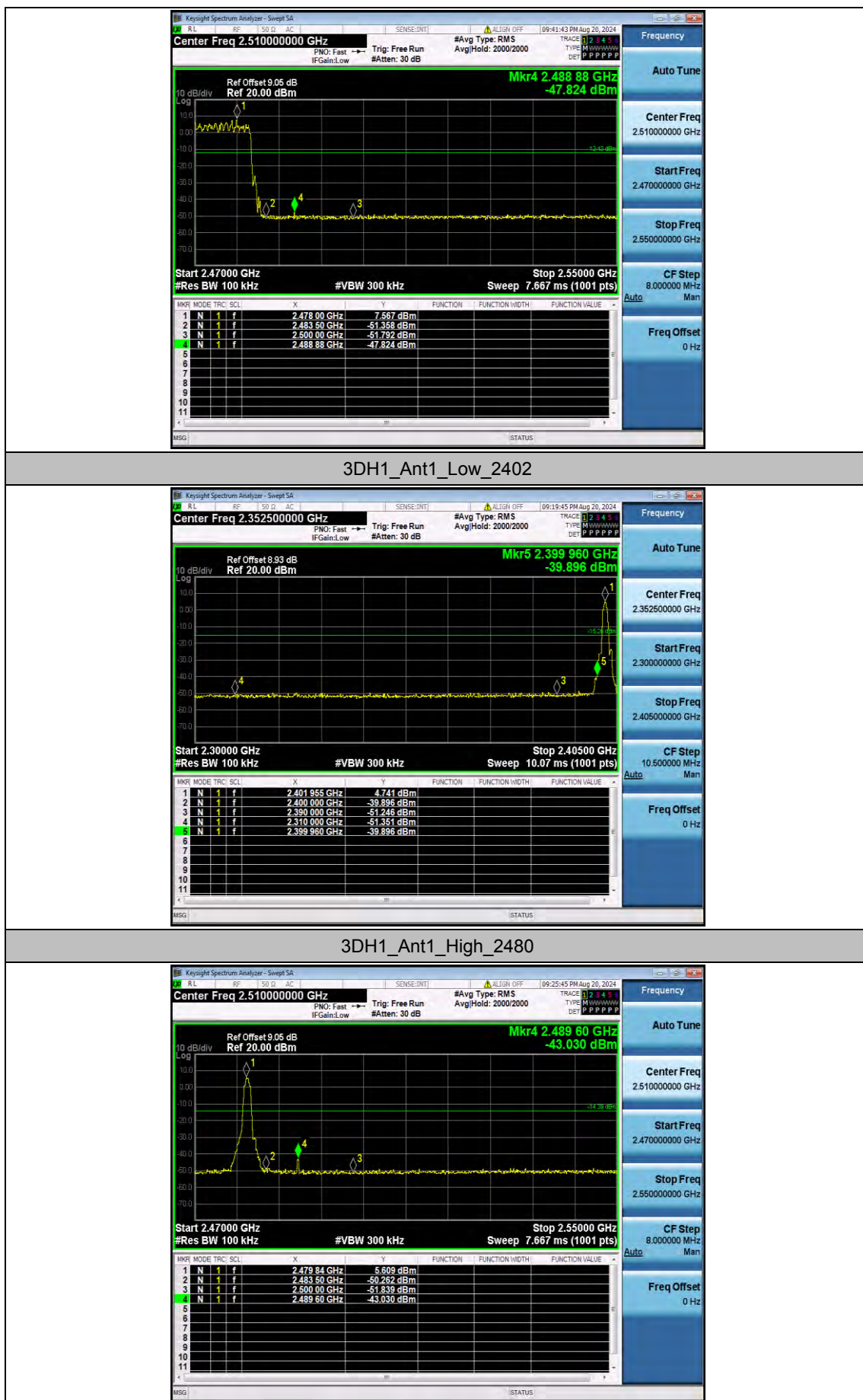
2DH1_Ant1_High_2480



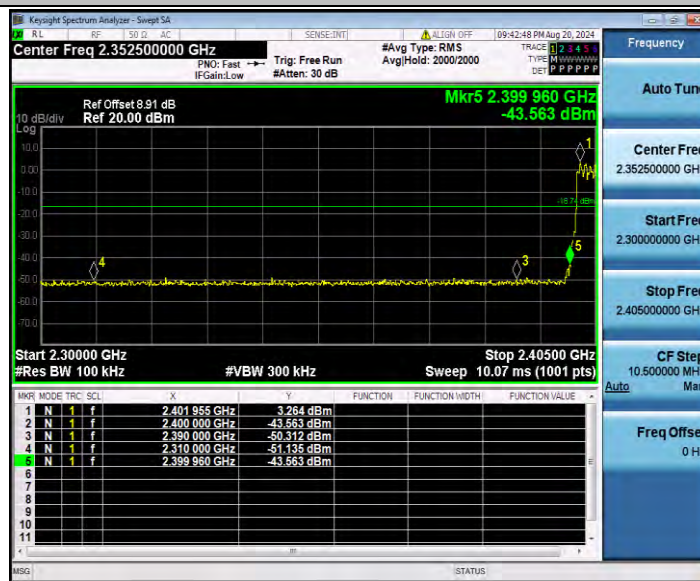
2DH1_Ant1_Low_Hop_2402



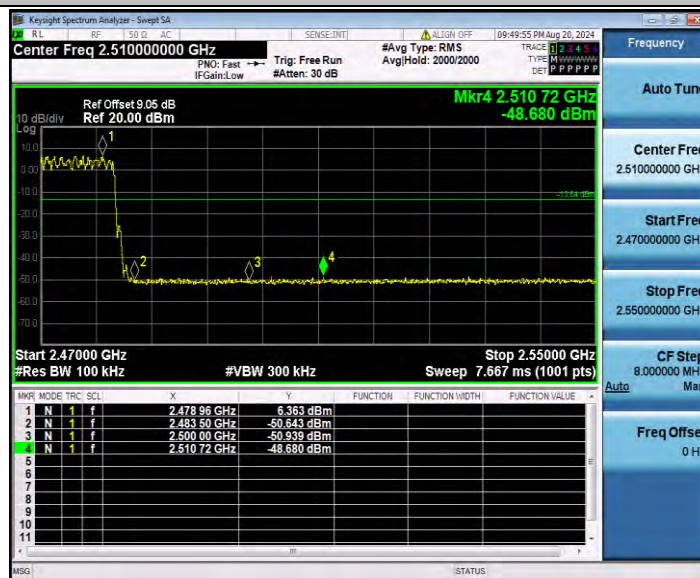
2DH1_Ant1_High_Hop_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480

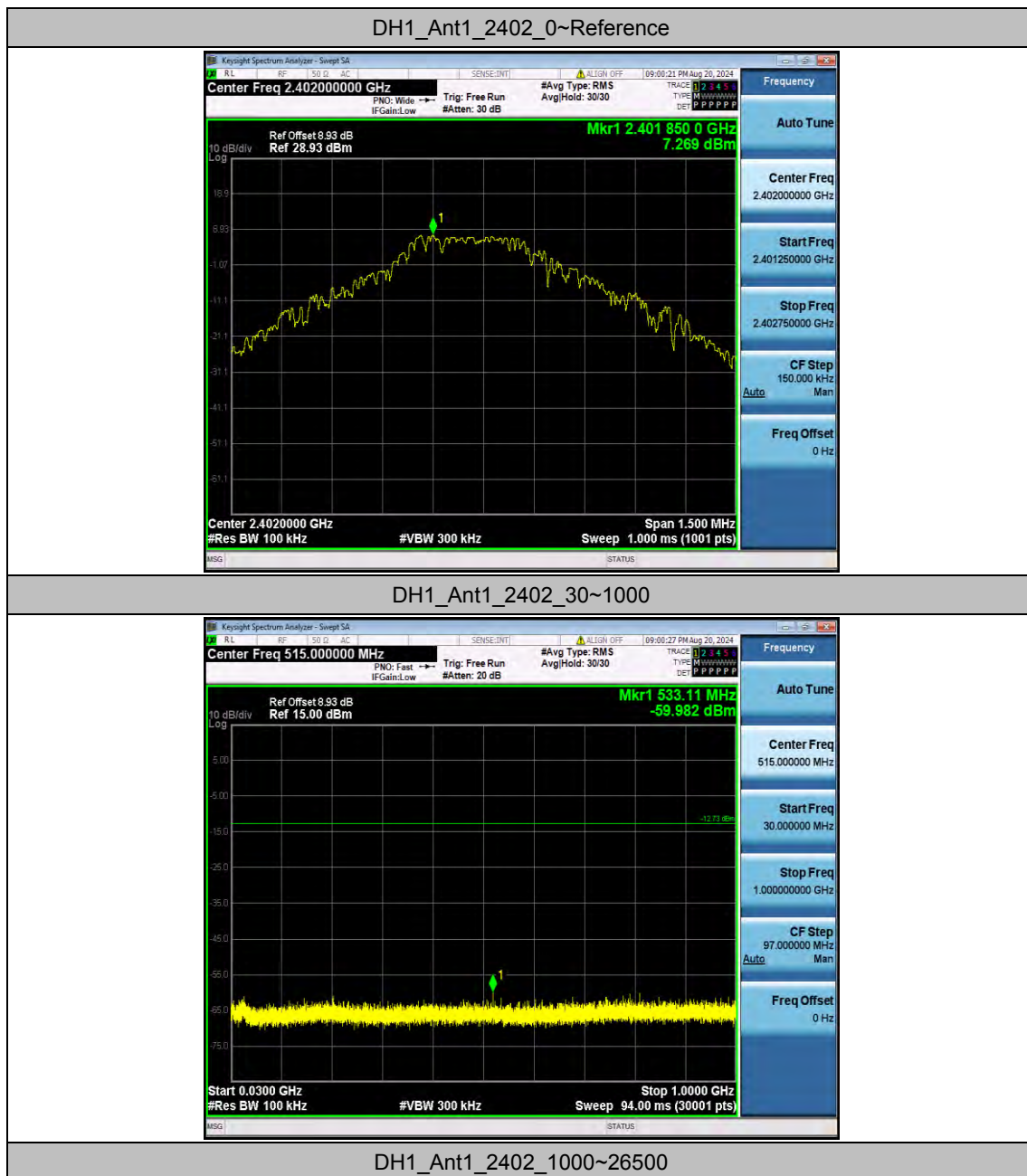


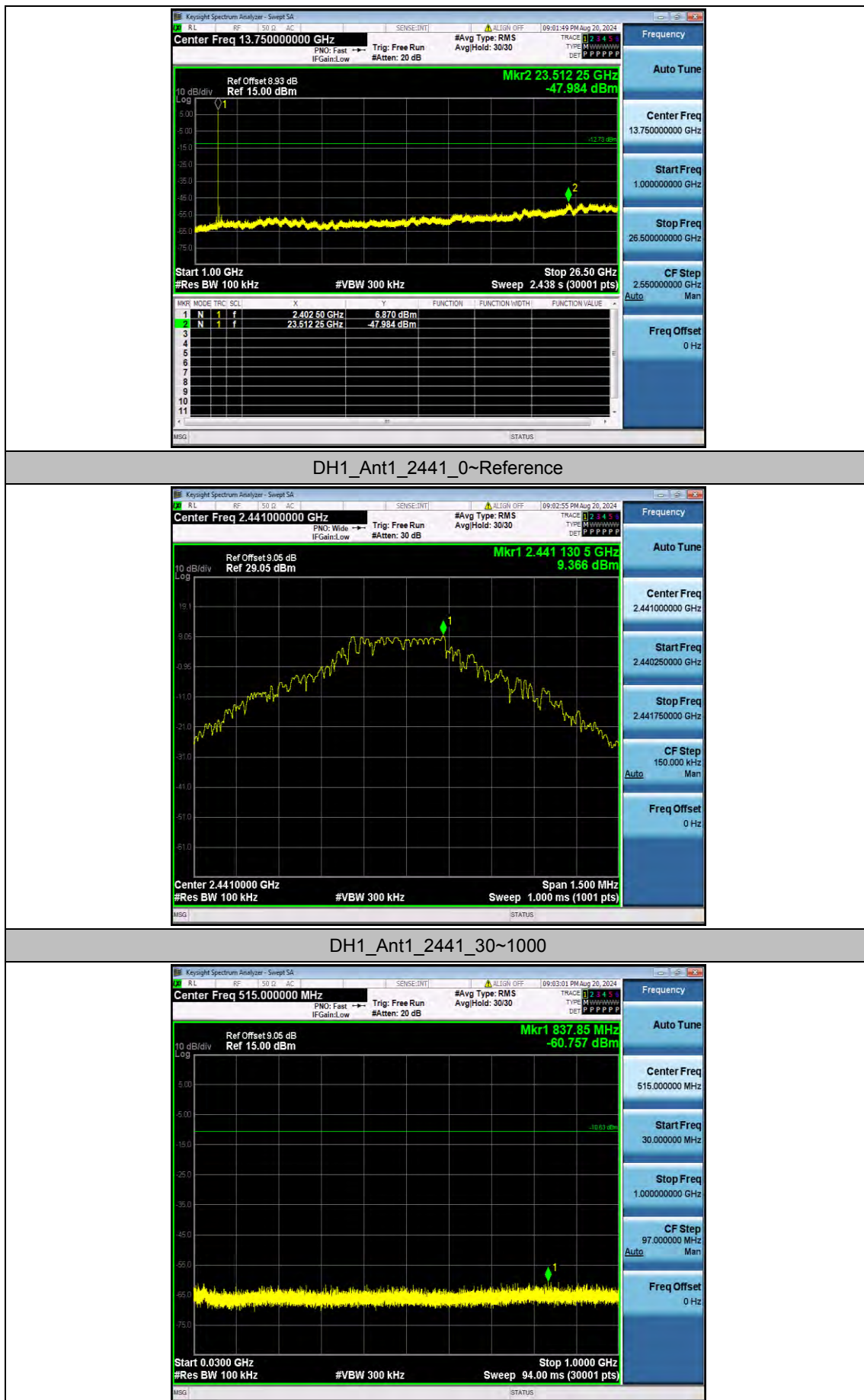
Appendix A.8: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	7.27	7.27	---	PASS
			30~1000	7.27	-59.98	≤ -12.73	PASS
			1000~26500	7.27	-47.98	≤ -12.73	PASS
		2441	Reference	9.37	9.37	---	PASS
			30~1000	9.37	-60.76	≤ -10.63	PASS
			1000~26500	9.37	-48.03	≤ -10.63	PASS
		2480	Reference	10.30	10.30	---	PASS
			30~1000	10.30	-60.2	≤ -9.7	PASS
			1000~26500	10.30	-47.81	≤ -9.7	PASS
2DH1	Ant1	2402	Reference	4.59	4.59	---	PASS
			30~1000	4.59	-60.71	≤ -15.41	PASS
			1000~26500	4.59	-48.19	≤ -15.41	PASS
		2441	Reference	5.81	5.81	---	PASS
			30~1000	5.81	-59.68	≤ -14.19	PASS
			1000~26500	5.81	-47.95	≤ -14.19	PASS
		2480	Reference	5.29	5.29	---	PASS
			30~1000	5.29	-60.42	≤ -14.71	PASS
			1000~26500	5.29	-48	≤ -14.71	PASS
3DH1	Ant1	2402	Reference	4.63	4.63	---	PASS
			30~1000	4.63	-60.83	≤ -15.37	PASS
			1000~26500	4.63	-47.57	≤ -15.37	PASS
		2441	Reference	5.74	5.74	---	PASS
			30~1000	5.74	-59.99	≤ -14.26	PASS
			1000~26500	5.74	-47.33	≤ -14.26	PASS
		2480	Reference	5.52	5.52	---	PASS
			30~1000	5.52	-60.68	≤ -14.48	PASS
			1000~26500	5.52	-47.89	≤ -14.48	PASS

Test Graphs





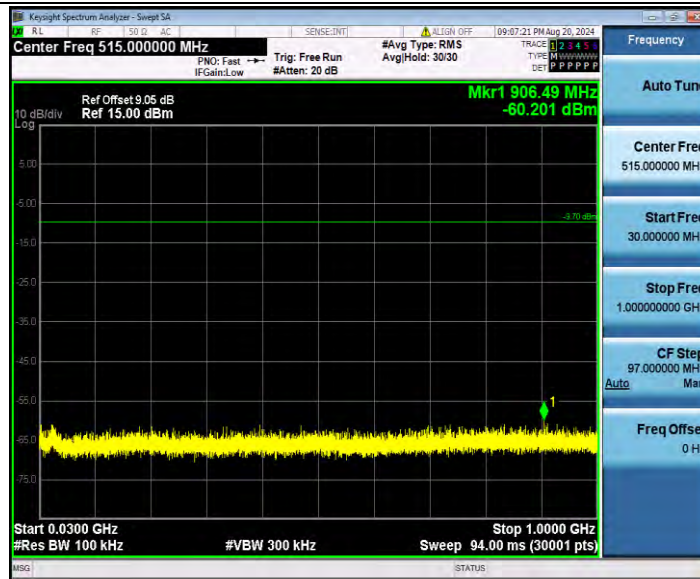
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000

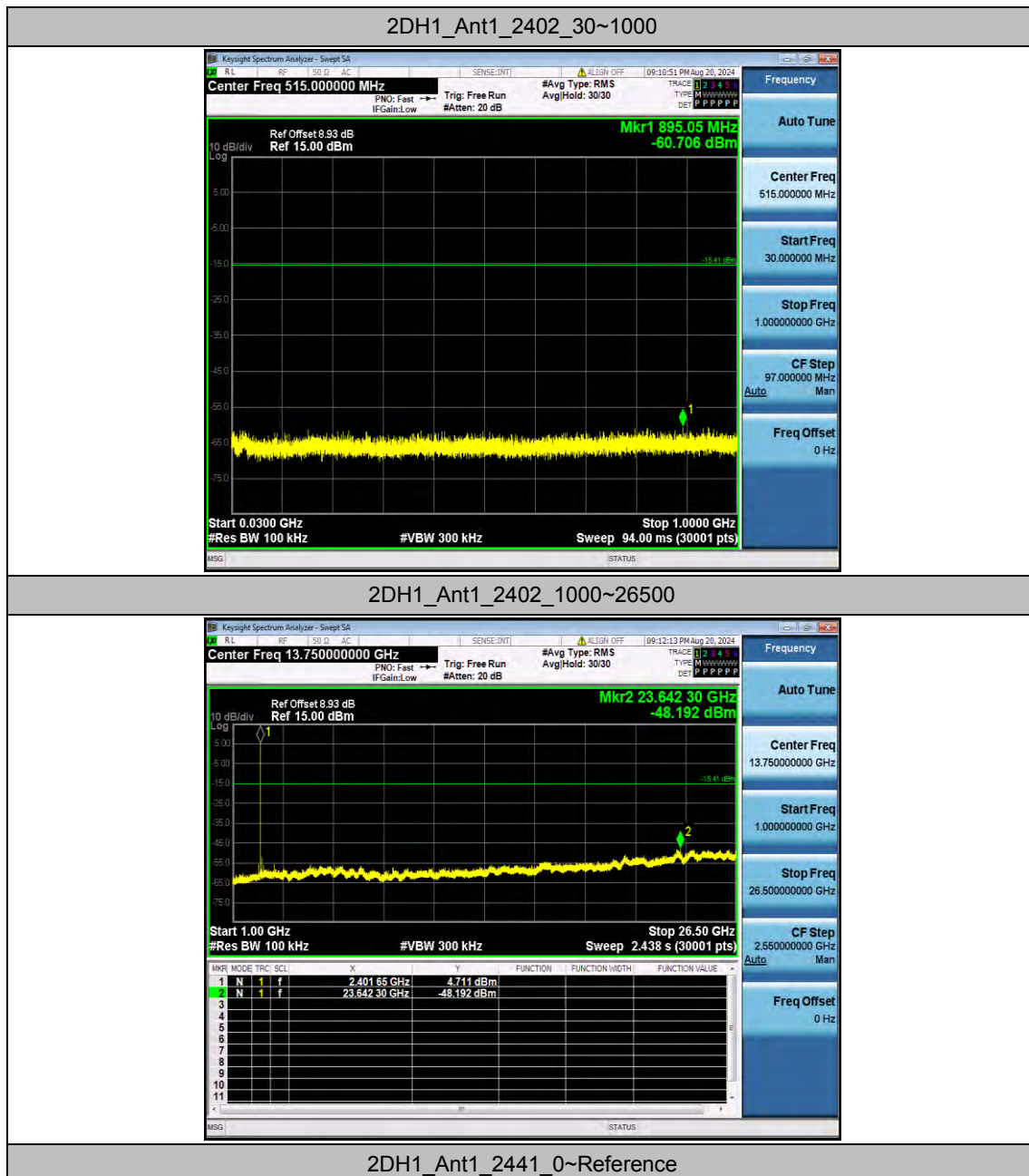


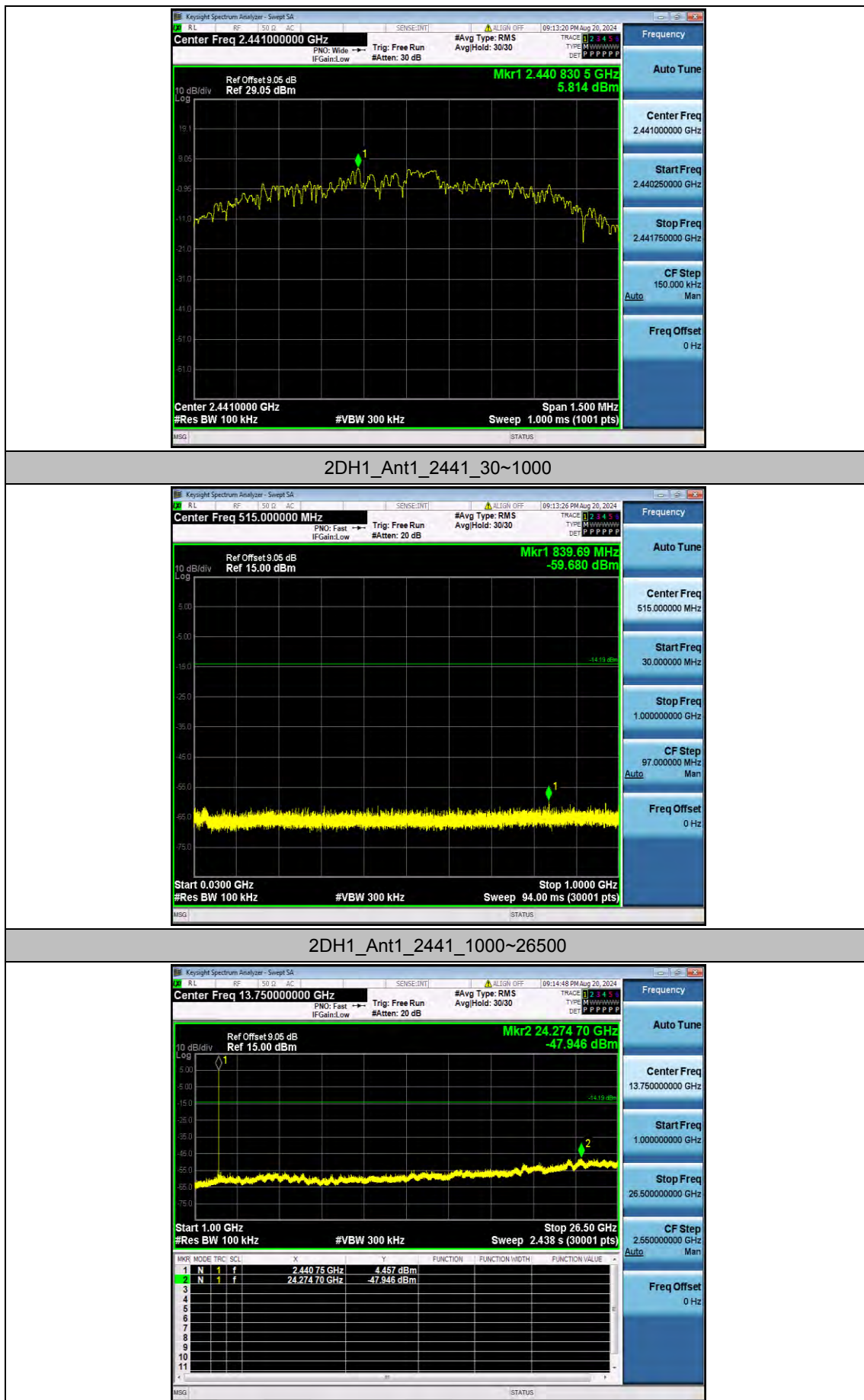
DH1_Ant1_2480_1000~26500



2DH1_Ant1_2402_0~Reference



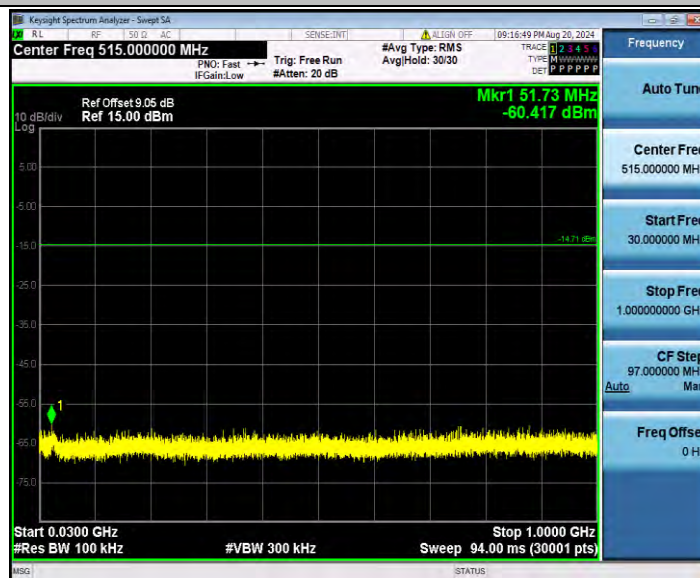




2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



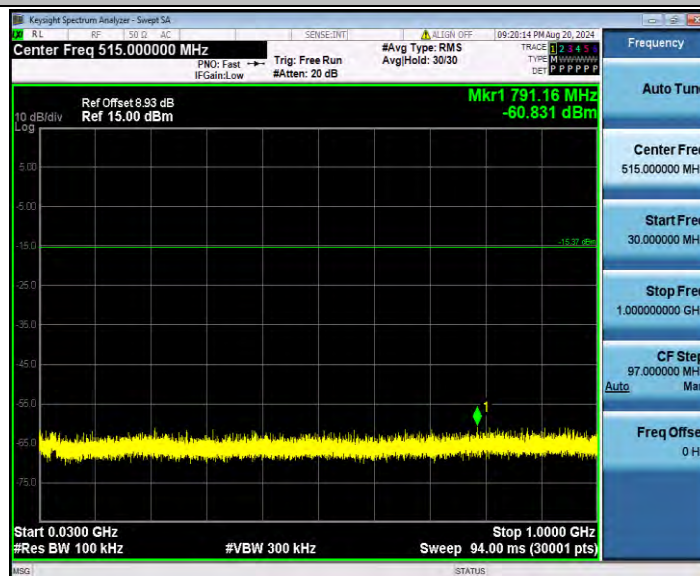
2DH1_Ant1_2480_1000~26500



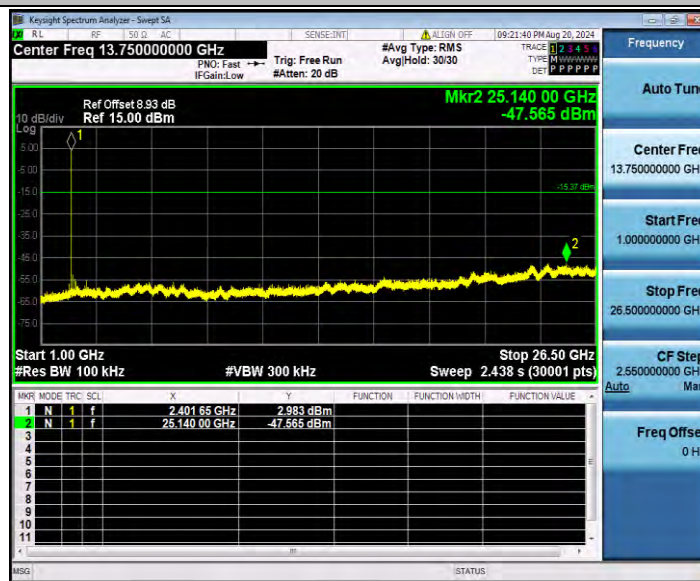
3DH1_Ant1_2402_0~Reference



3DH1_Ant1_2402_30~1000



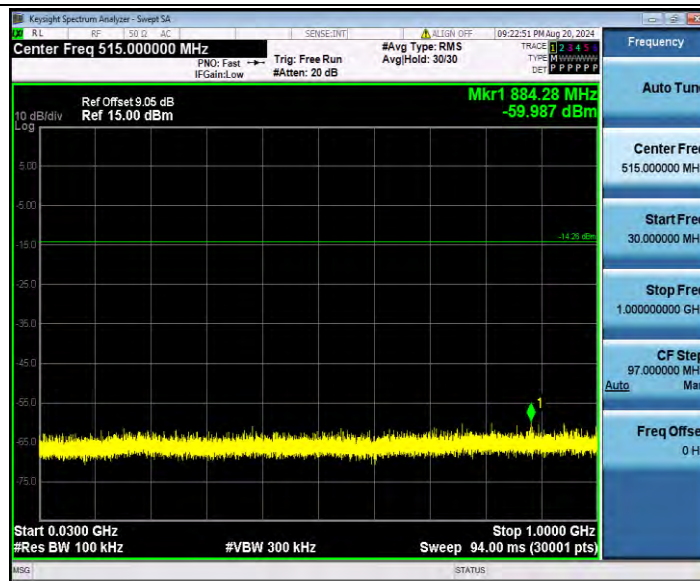
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000



3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference



