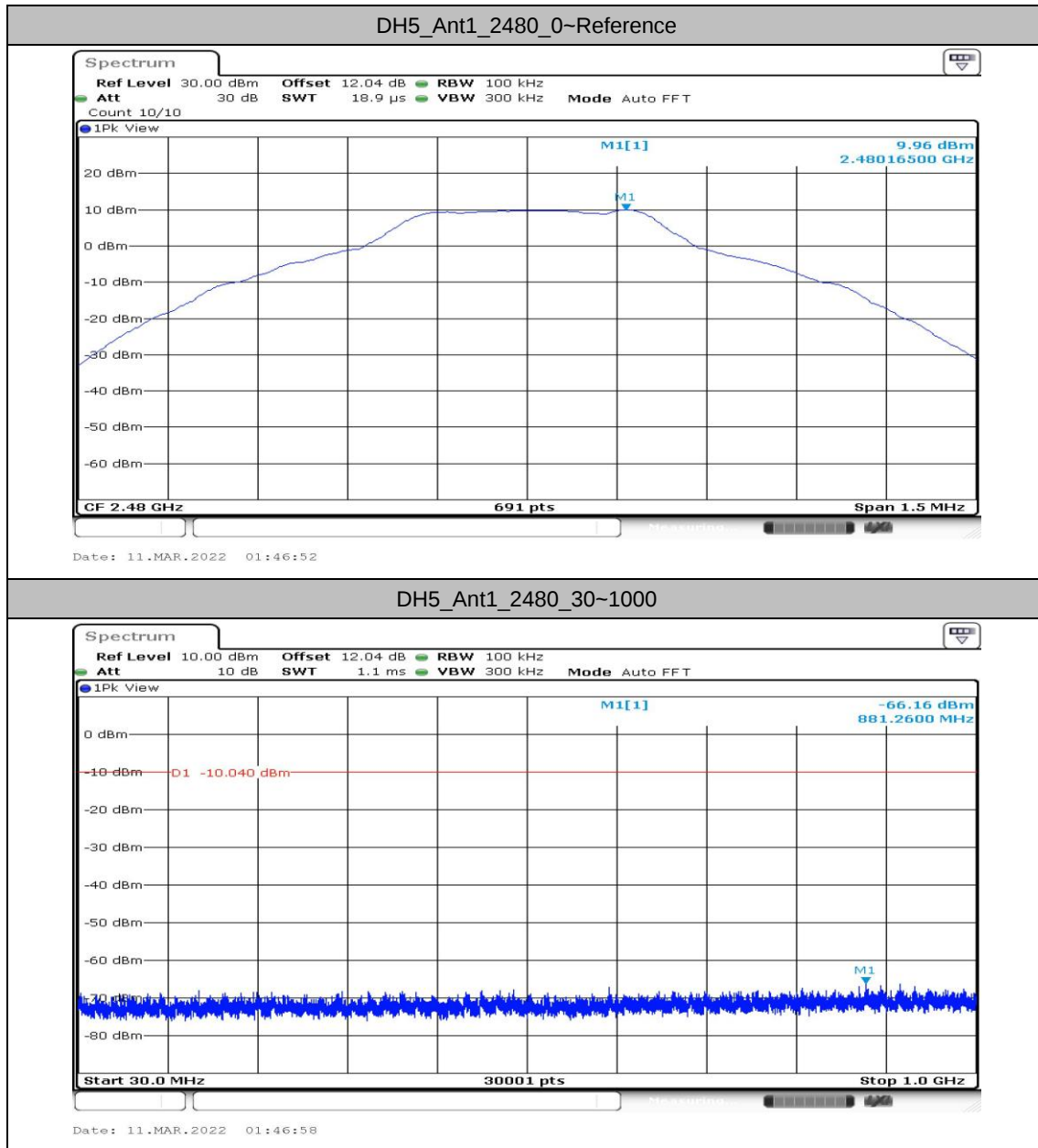
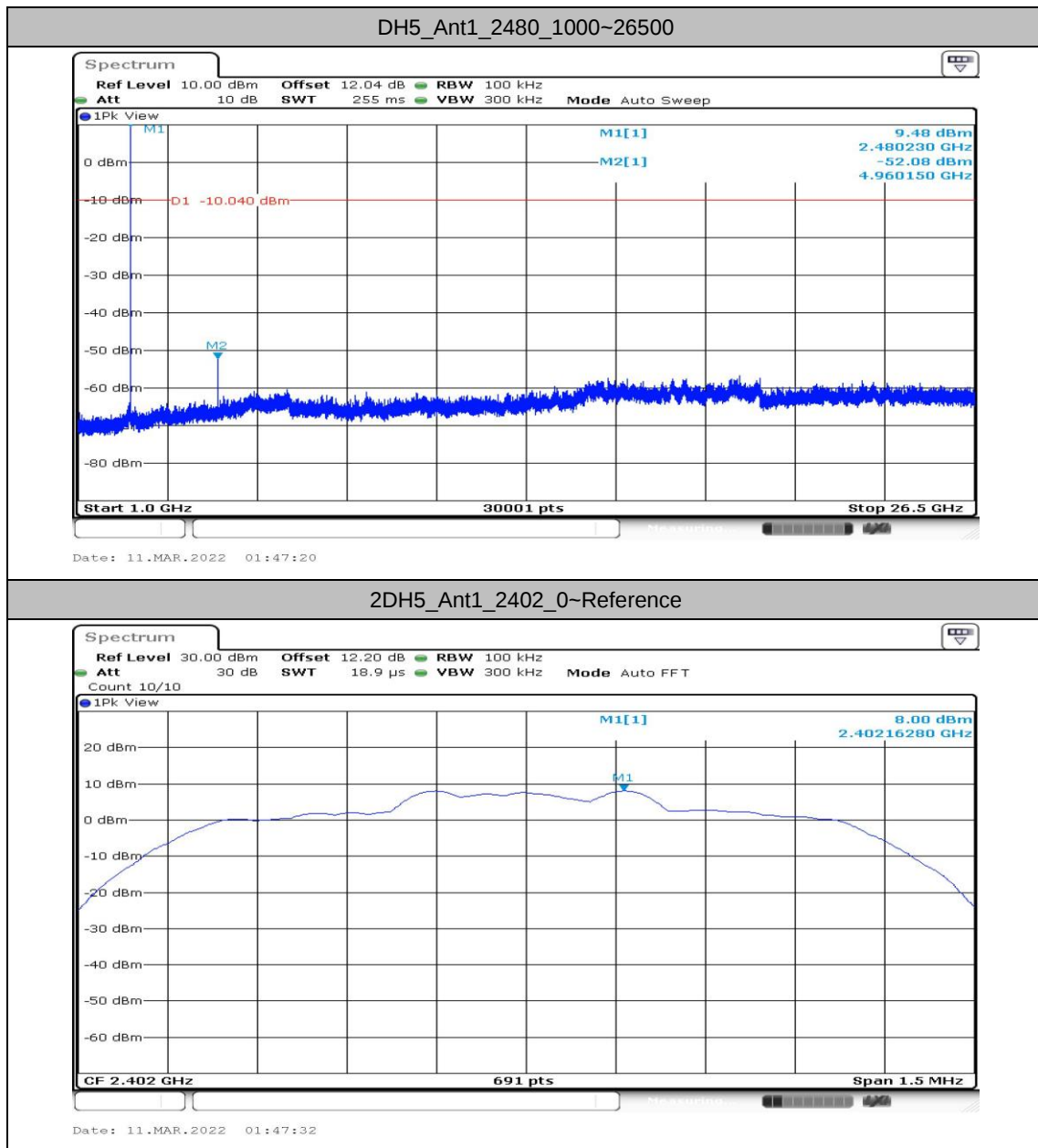
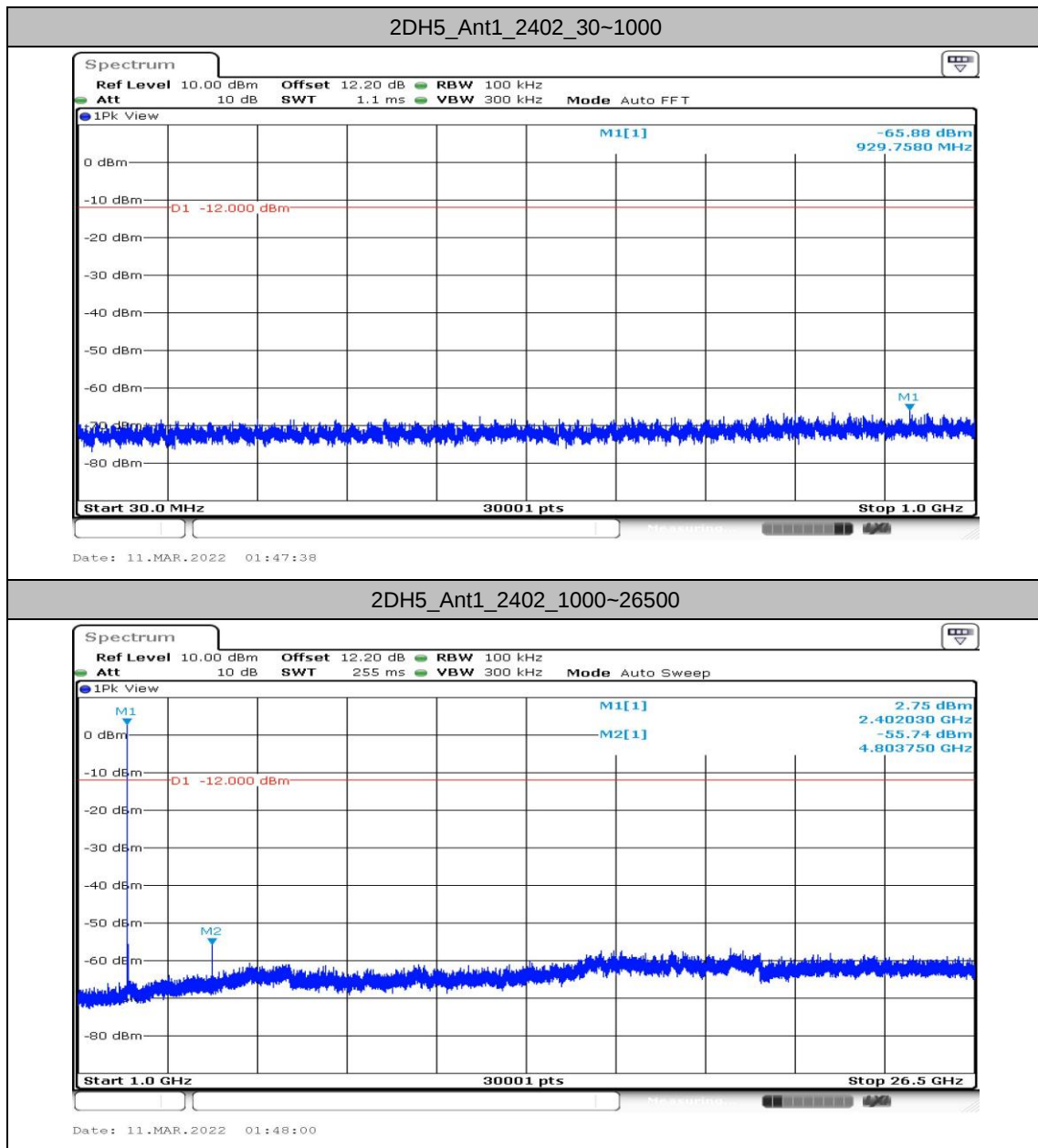
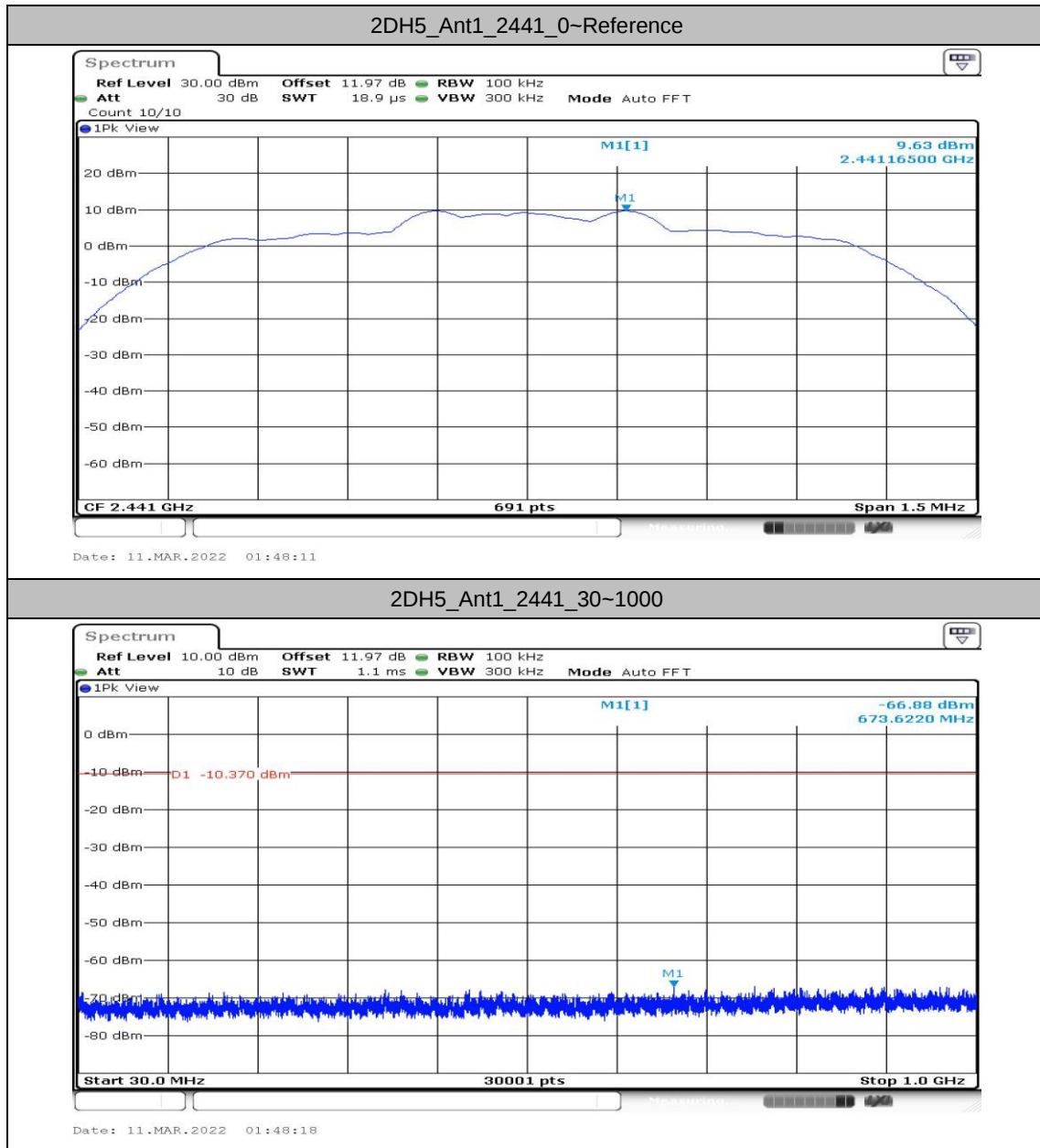
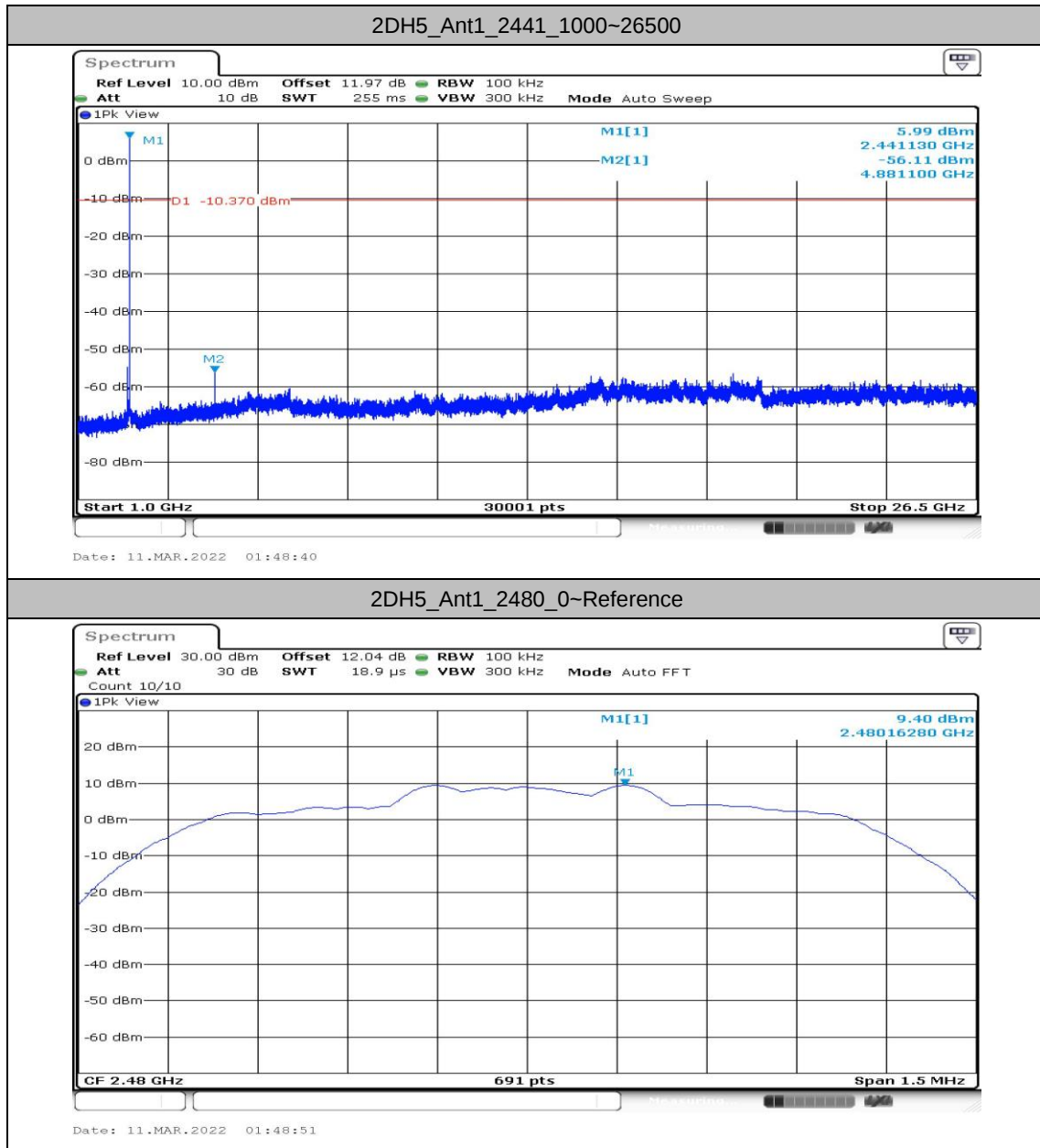


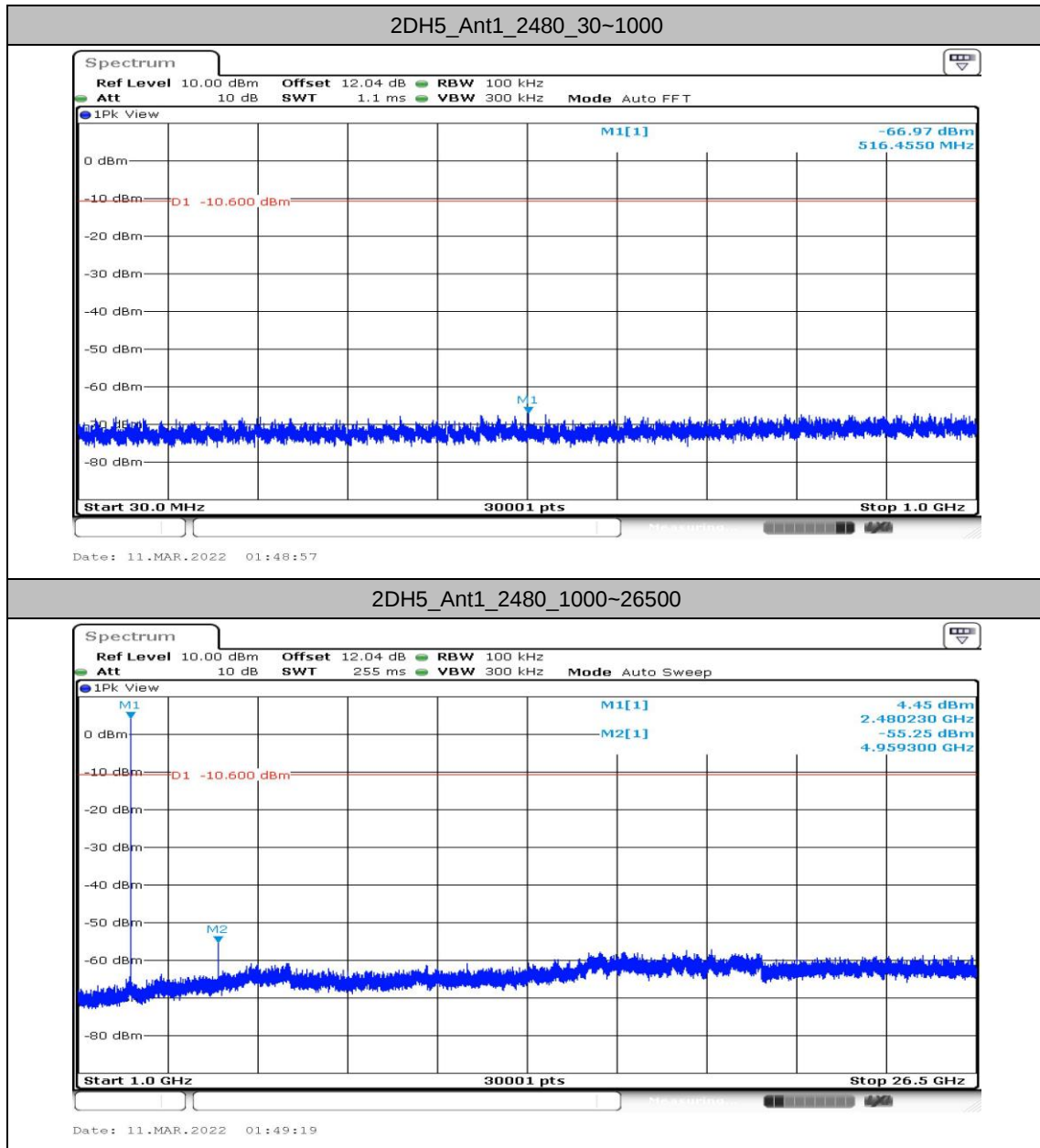


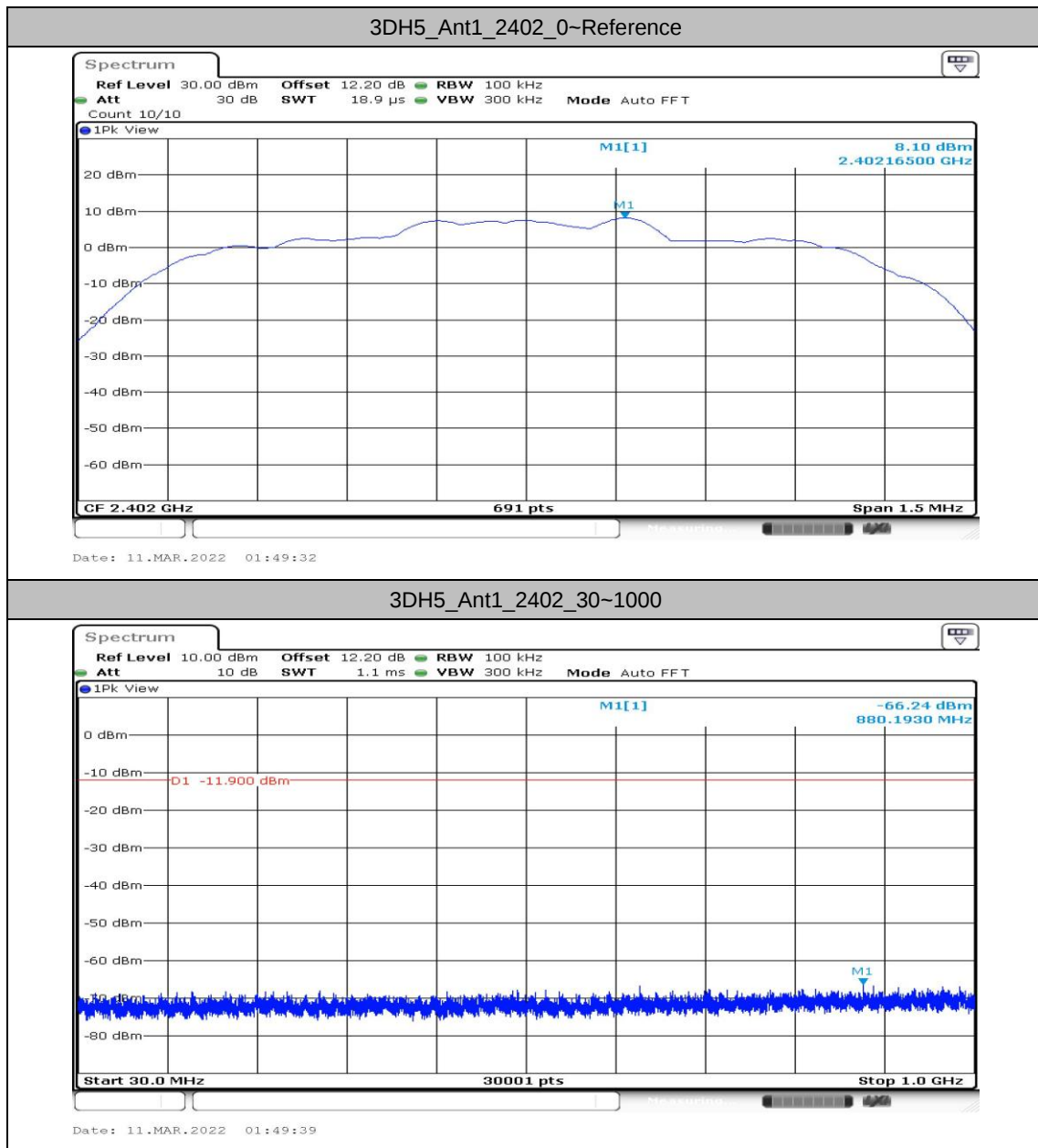


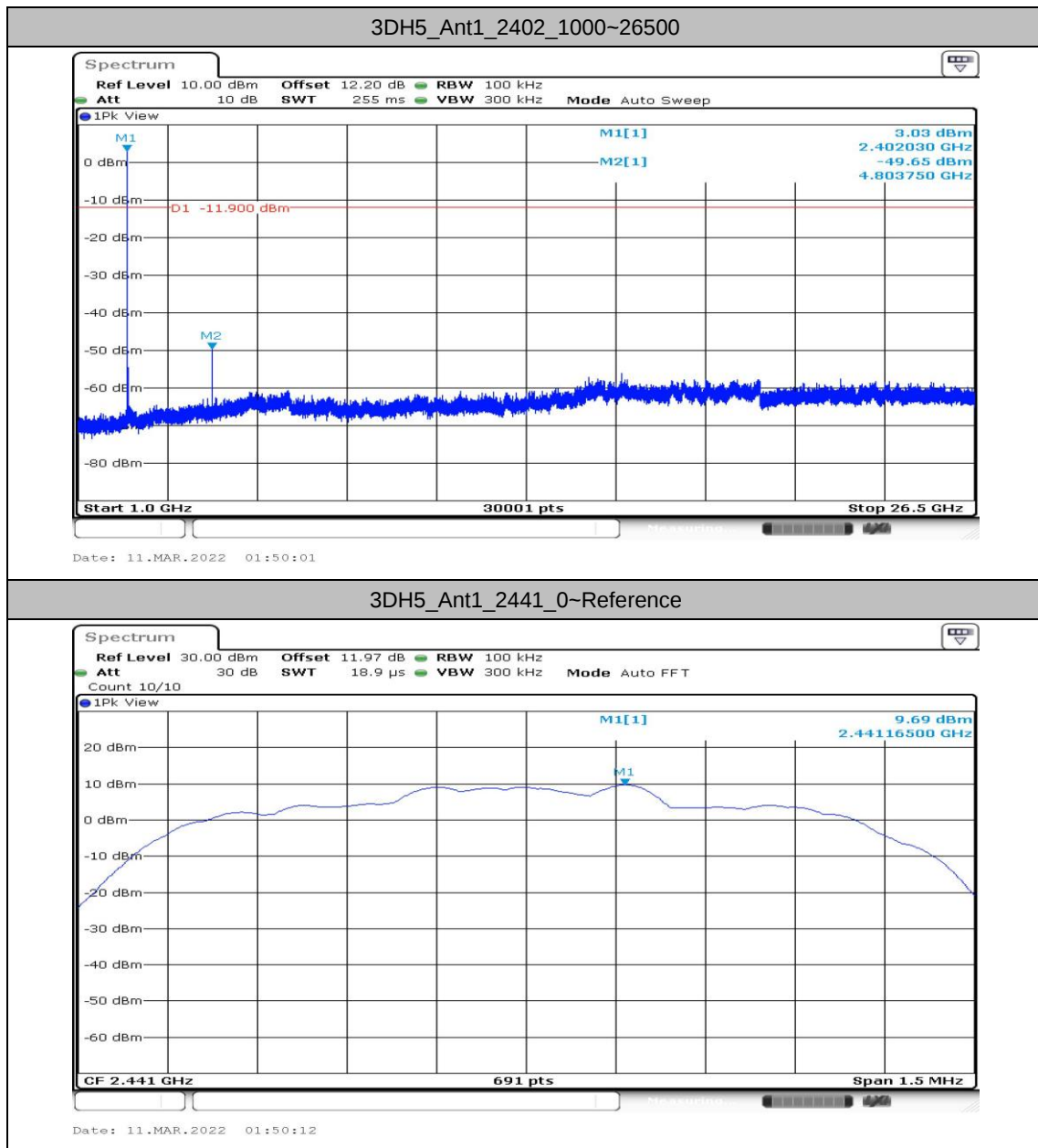


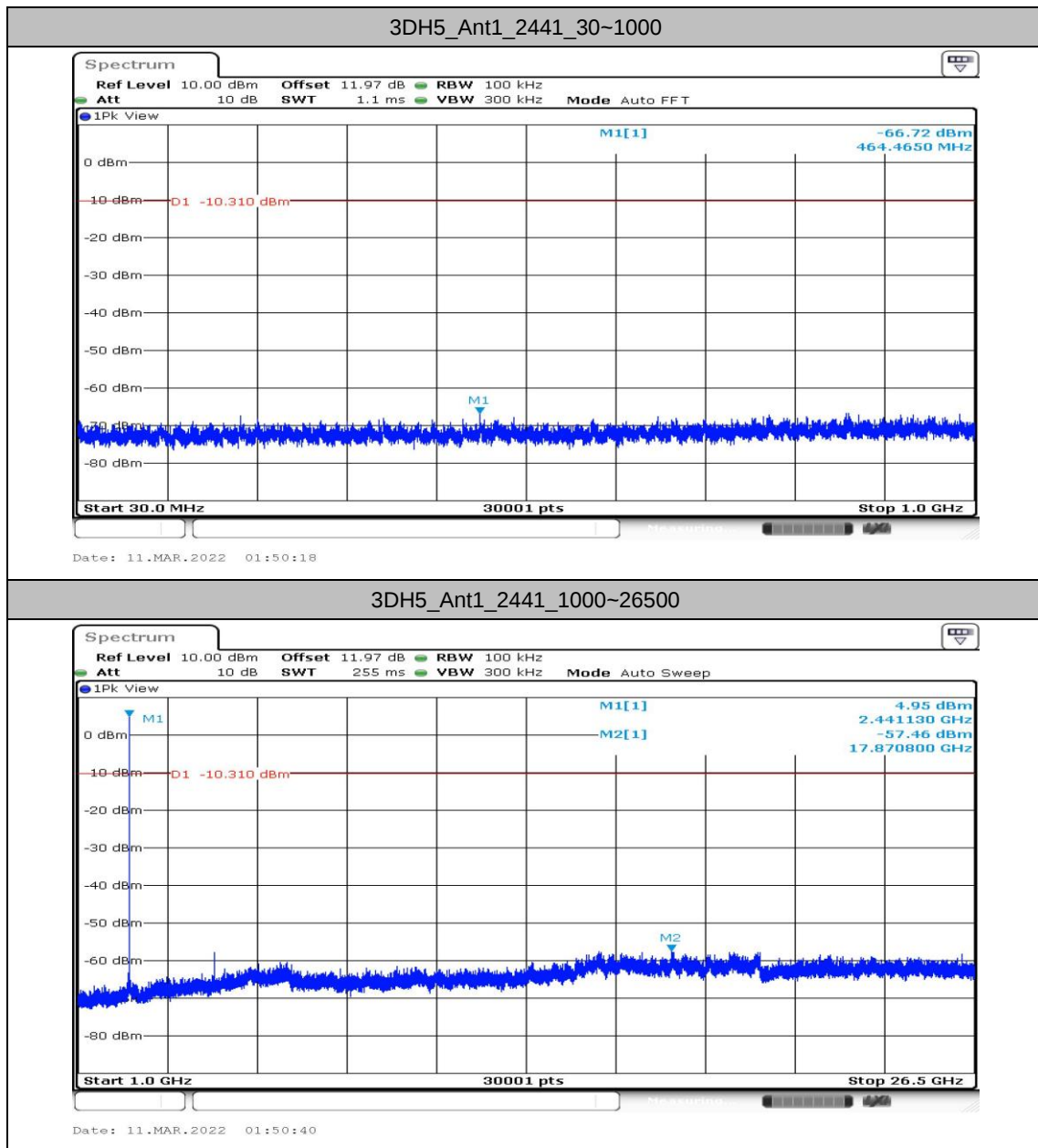


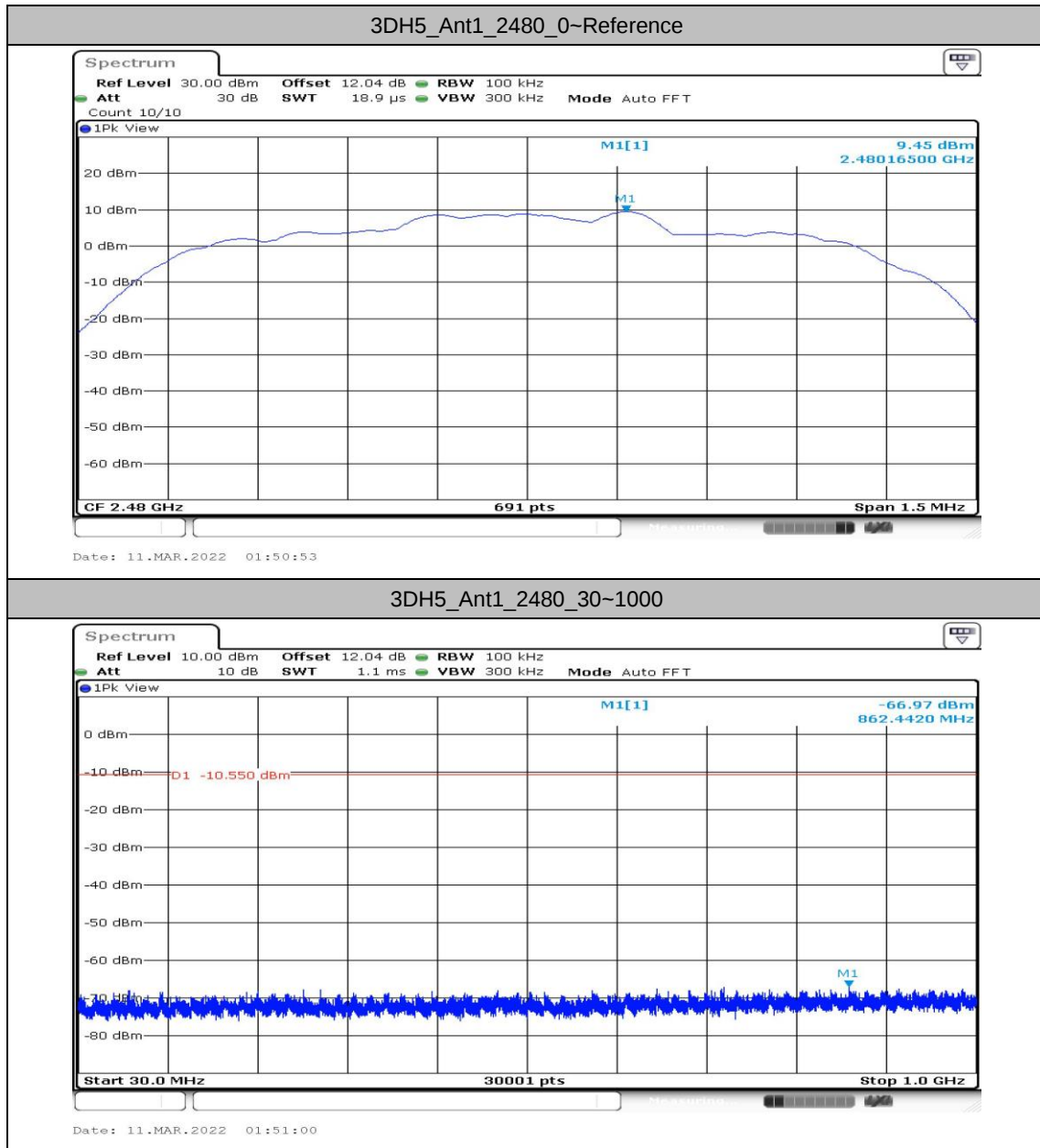


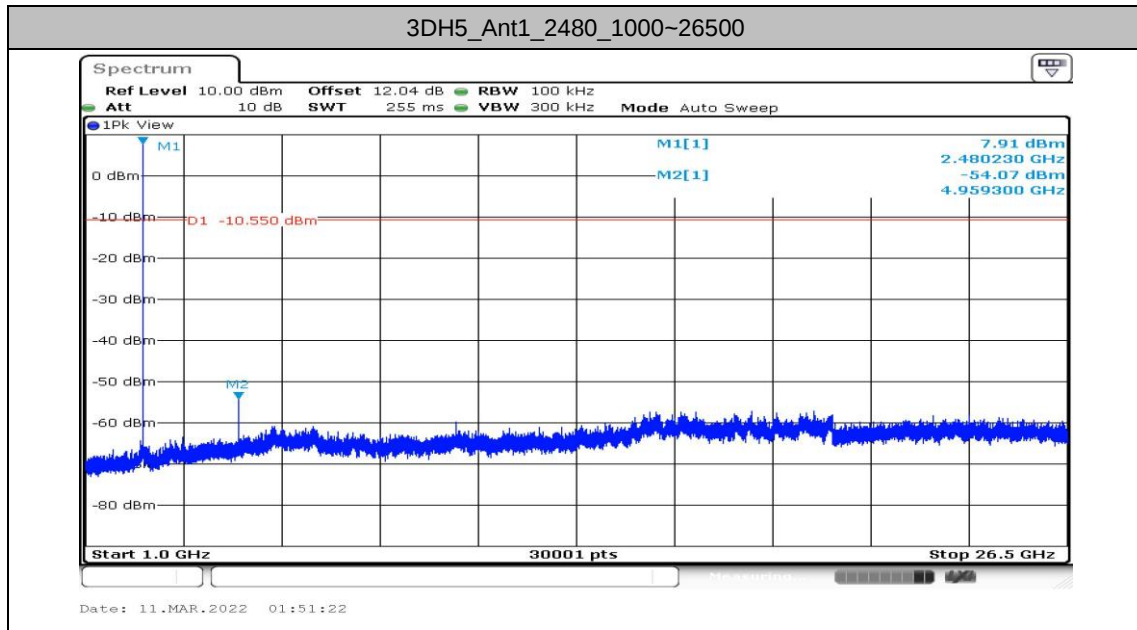














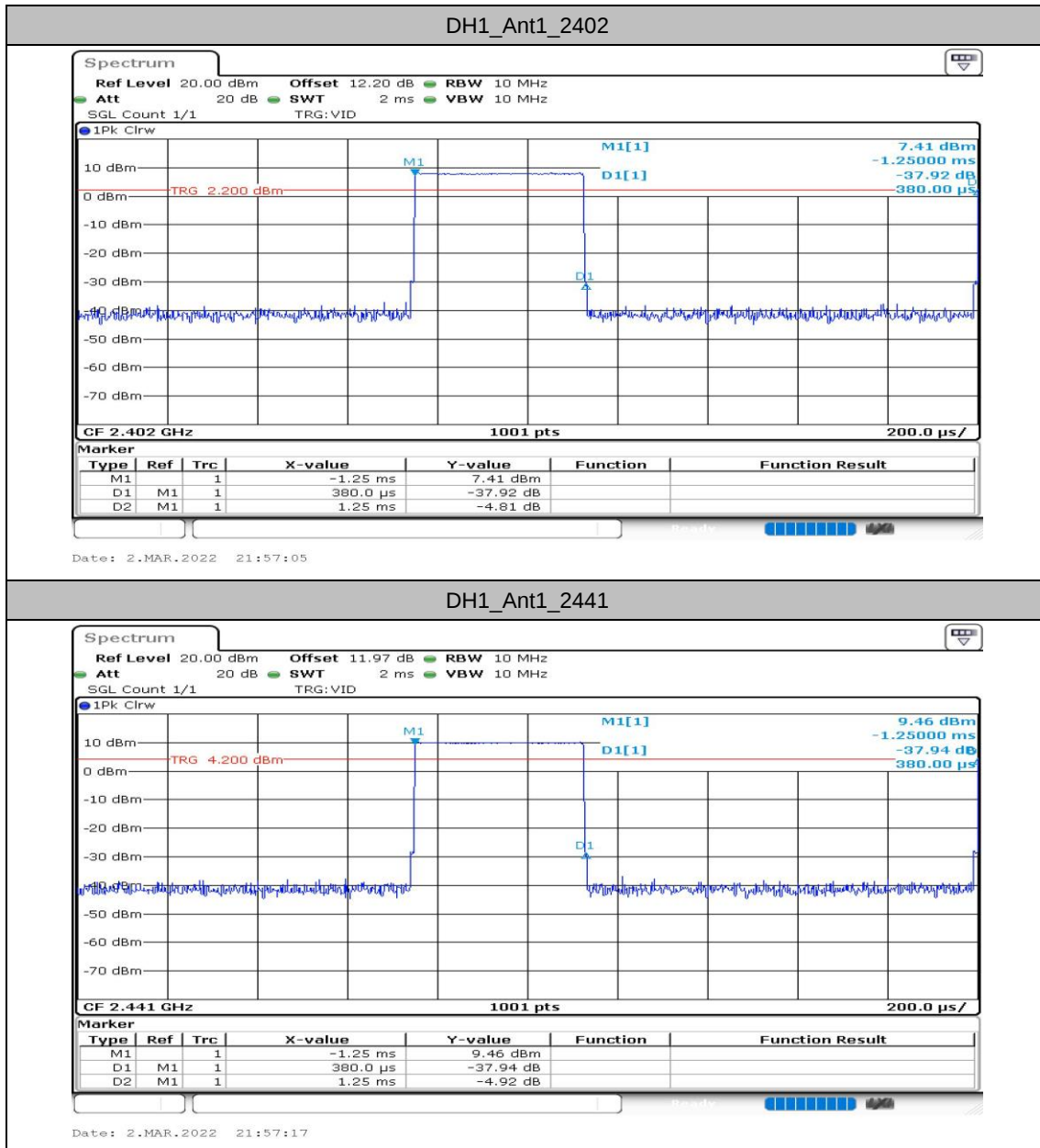
Duty Cycle

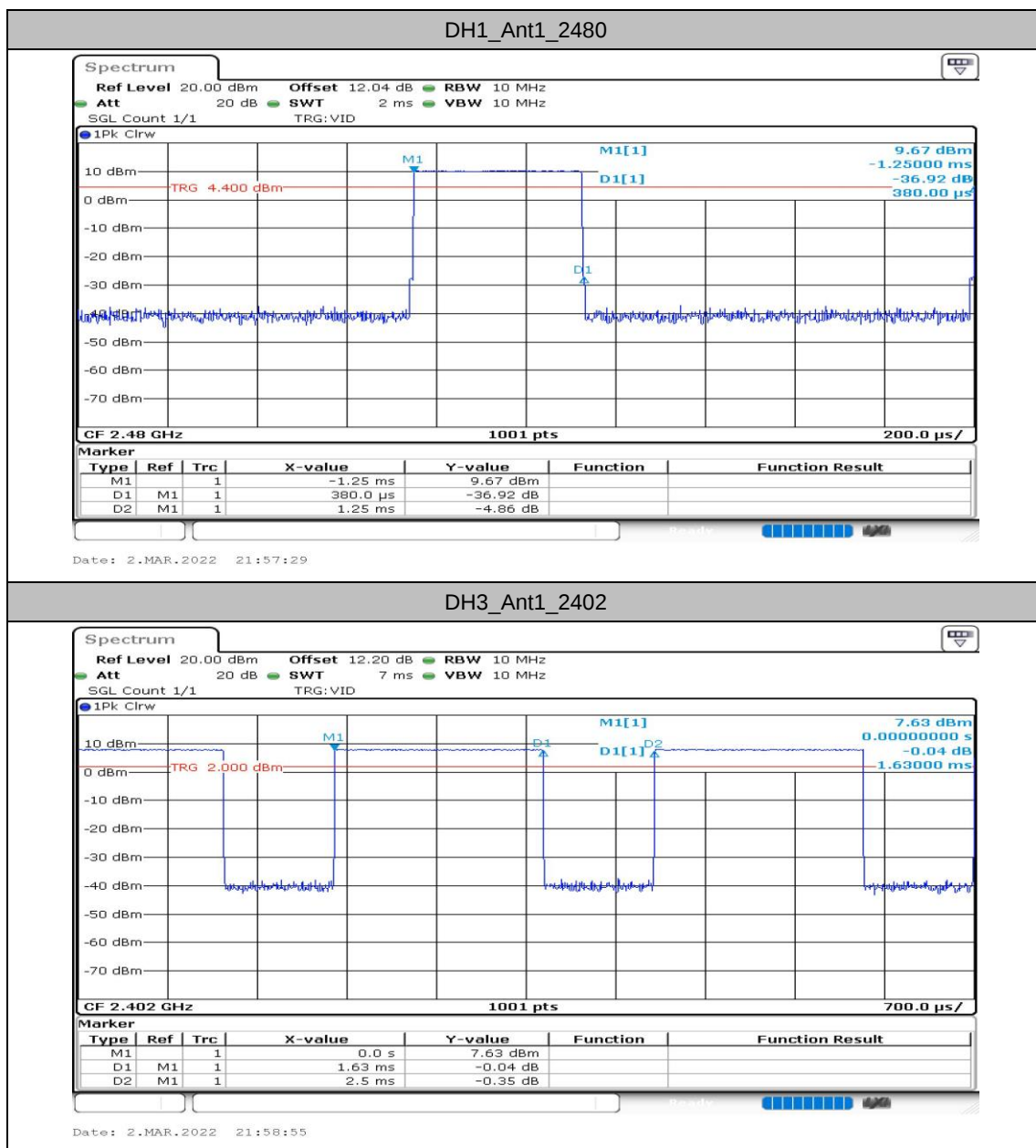
Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	DC [%]	xFactor	Limit	Verdict
DH1	Ant1	2402	0.38	1.25	30.40	5.17	---	---
		2441	0.38	1.25	30.40	5.17	---	---
		2480	0.38	1.25	30.40	5.17	---	---
DH3	Ant1	2402	1.63	2.50	65.20	1.86	---	---
		2441	1.63	2.50	65.20	1.86	---	---
		2480	1.63	2.50	65.20	1.86	---	---
DH5	Ant1	2402	2.88	3.75	76.80	1.15	---	---
		2441	2.89	3.75	77.07	1.13	---	---
		2480	2.88	3.75	76.80	1.15	---	---
2DH1	Ant1	2402	0.38	1.25	30.40	5.17	---	---
		2441	0.38	1.25	30.40	5.17	---	---
		2480	0.38	1.25	30.40	5.17	---	---
2DH3	Ant1	2402	1.63	2.50	65.20	1.86	---	---
		2441	1.63	2.50	65.20	1.86	---	---
		2480	1.64	2.50	65.60	1.83	---	---
2DH5	Ant1	2402	2.88	3.74	77.01	1.13	---	---
		2441	2.89	3.76	76.86	1.14	---	---
		2480	2.89	3.75	77.07	1.13	---	---
3DH1	Ant1	2402	0.38	1.25	30.40	5.17	---	---
		2441	0.38	1.25	30.40	5.17	---	---
		2480	0.38	1.25	30.40	5.17	---	---
3DH3	Ant1	2402	1.64	2.50	65.60	1.83	---	---
		2441	1.63	2.50	65.20	1.86	---	---
		2480	1.63	2.50	65.20	1.86	---	---
3DH5	Ant1	2402	2.89	3.75	77.07	1.13	---	---
		2441	2.88	3.74	77.01	1.13	---	---
		2480	2.89	3.76	76.86	1.14	---	---

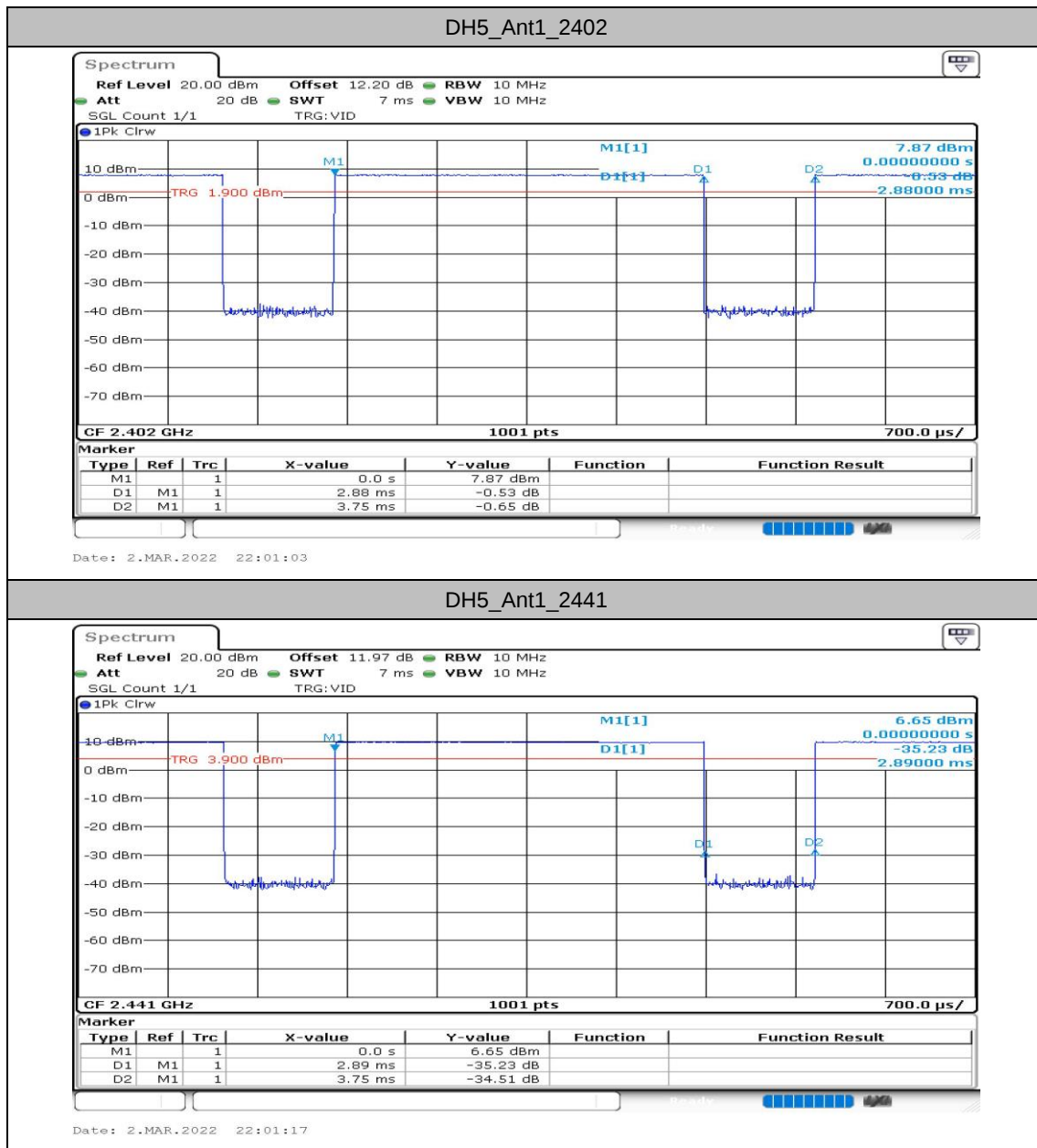


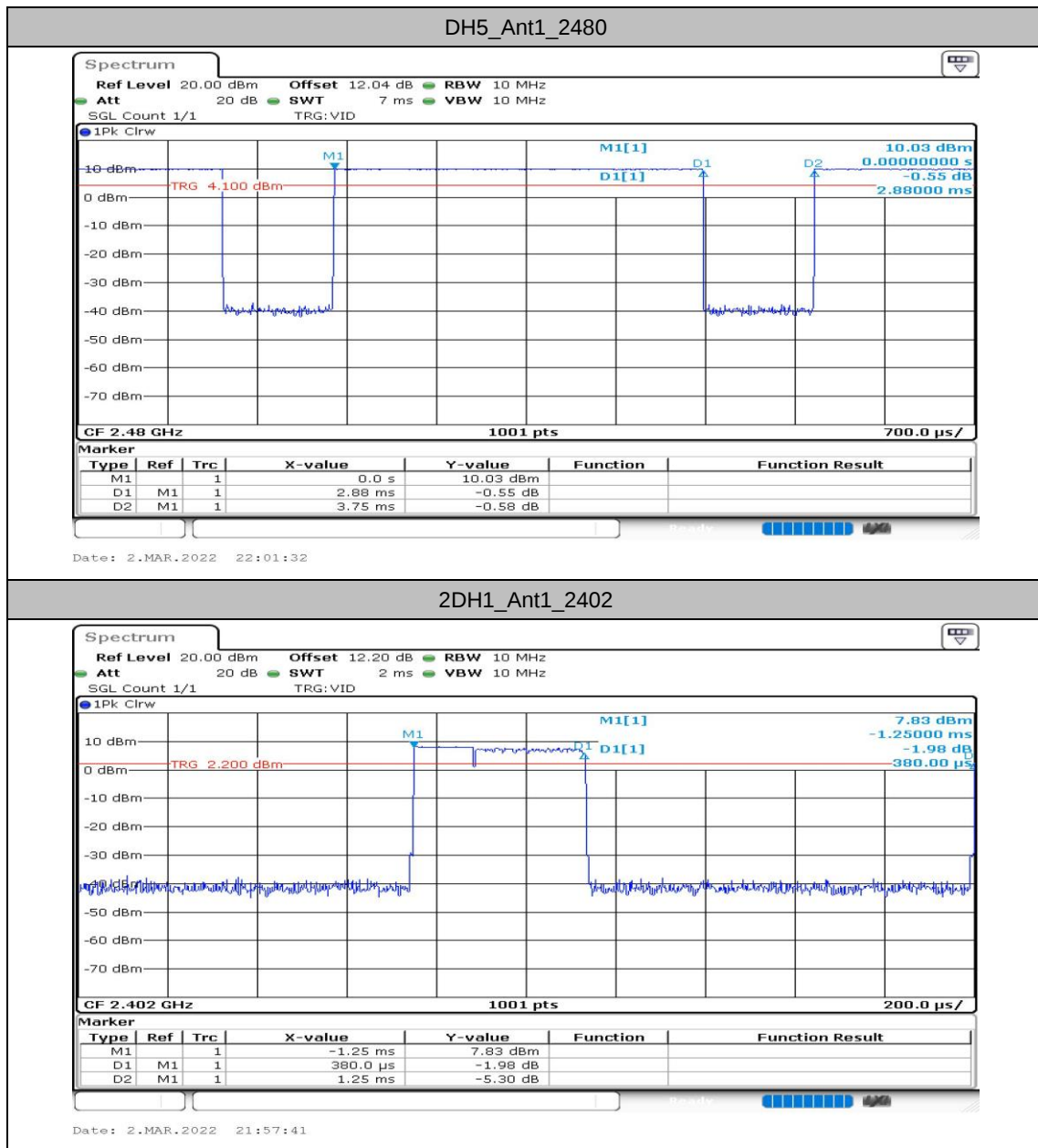
Test Graphs

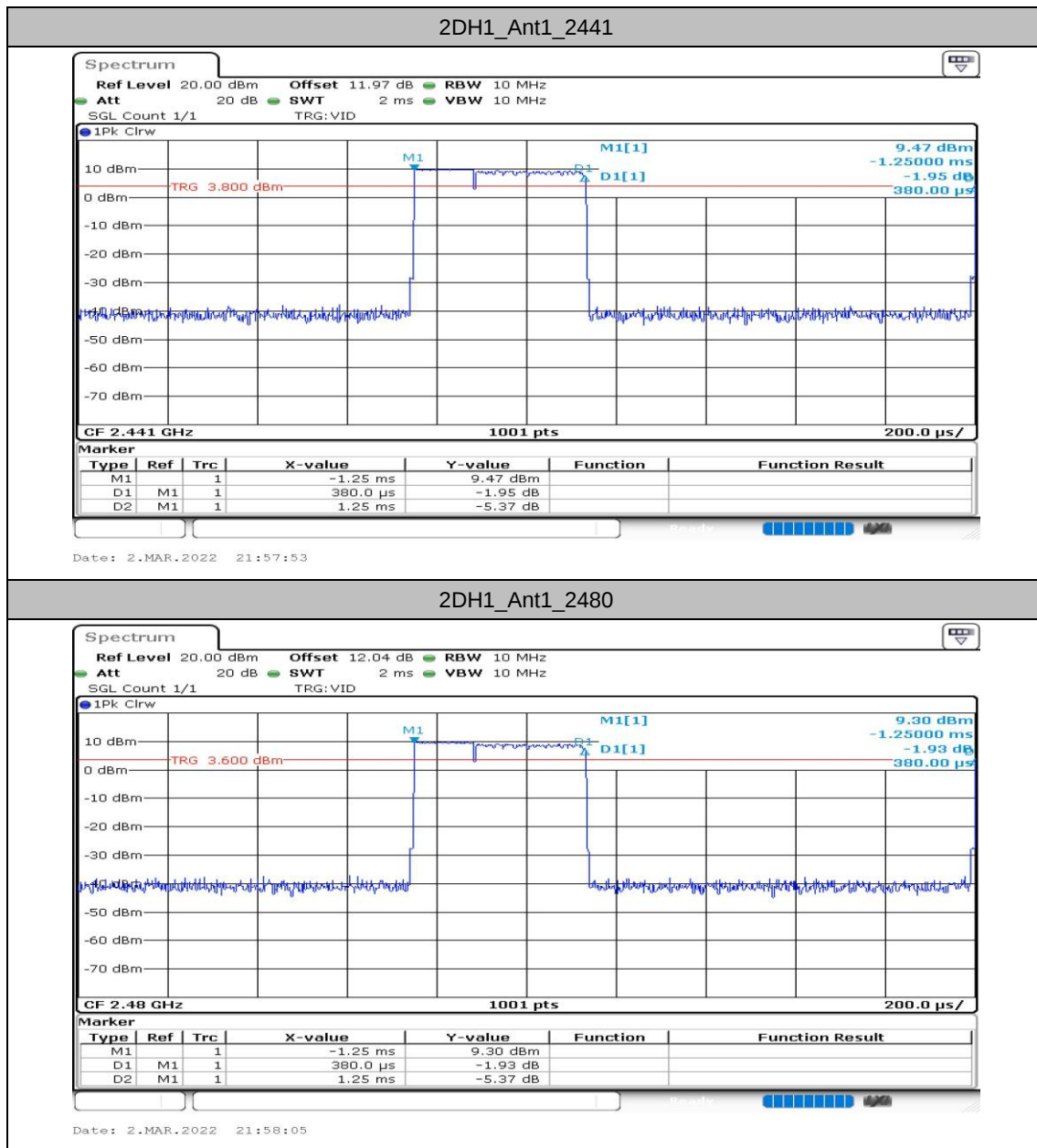


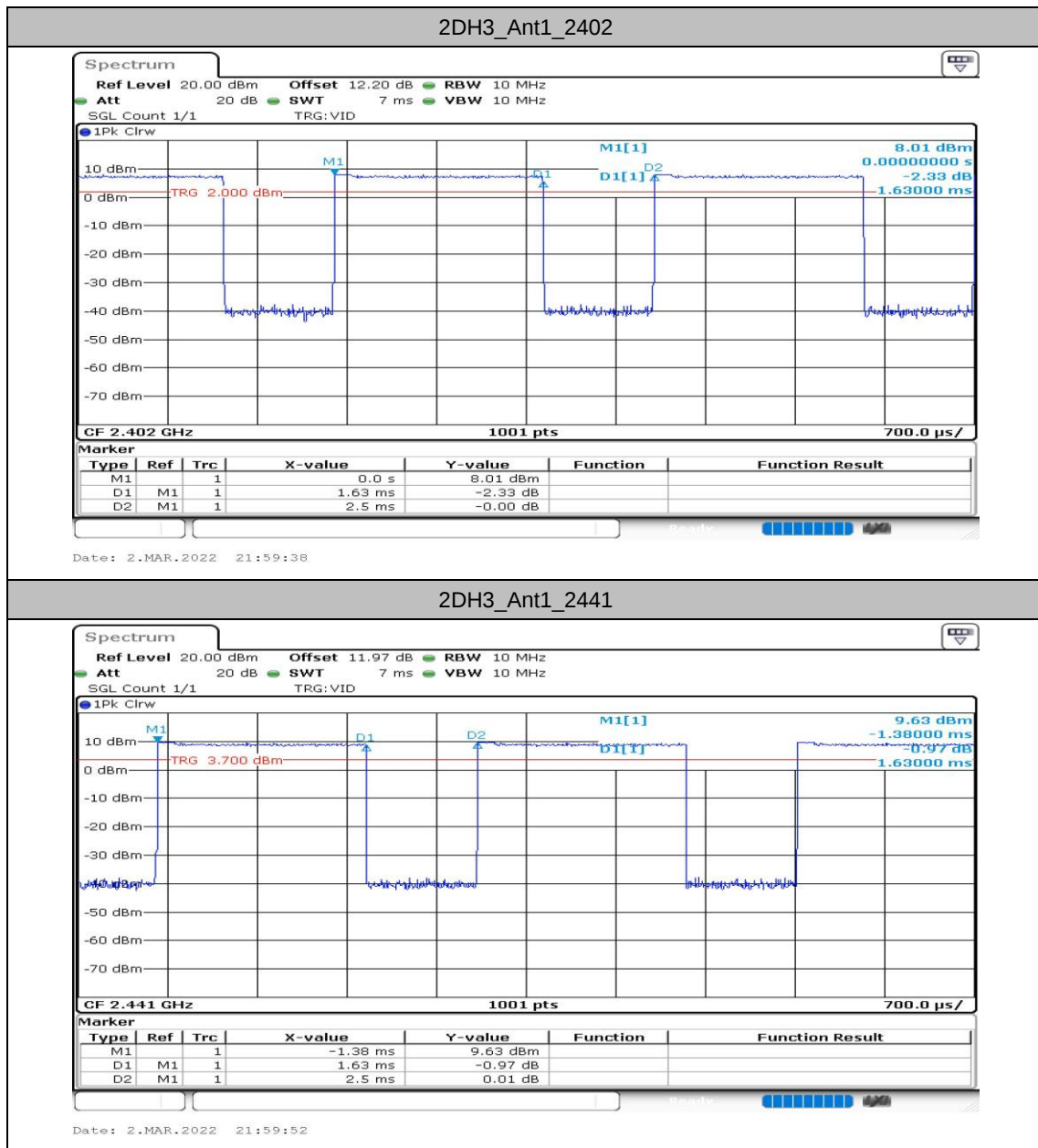


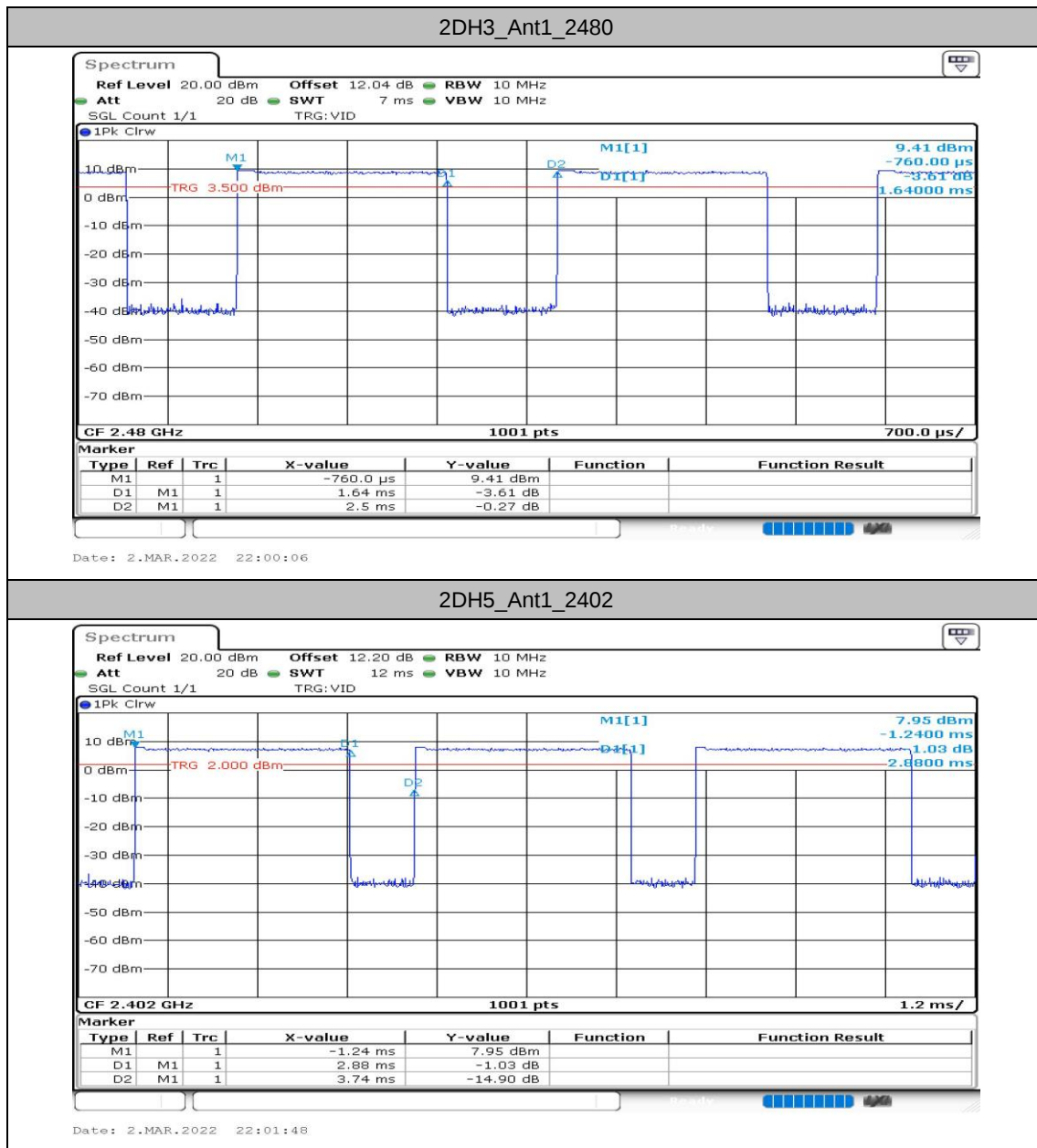


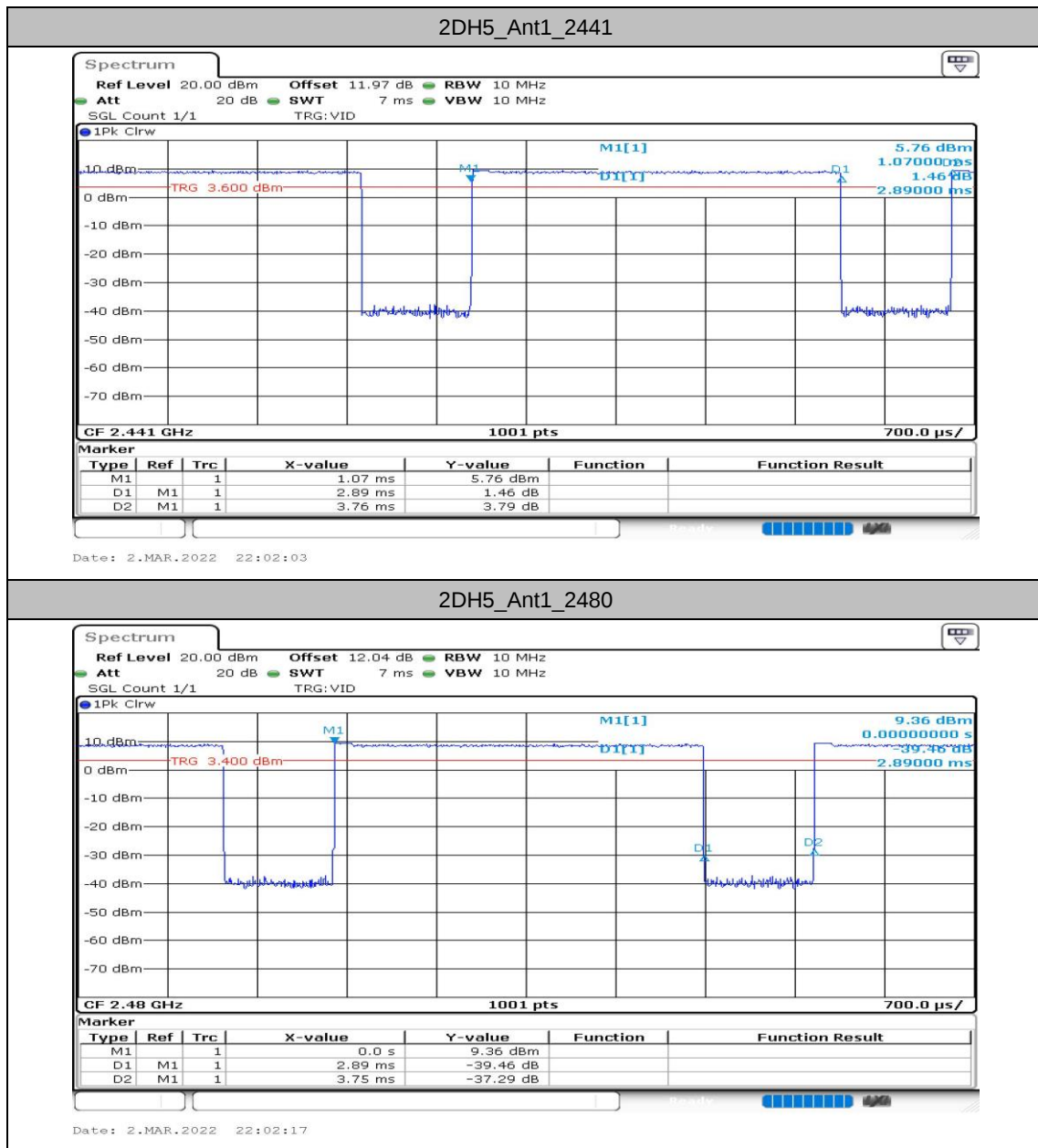


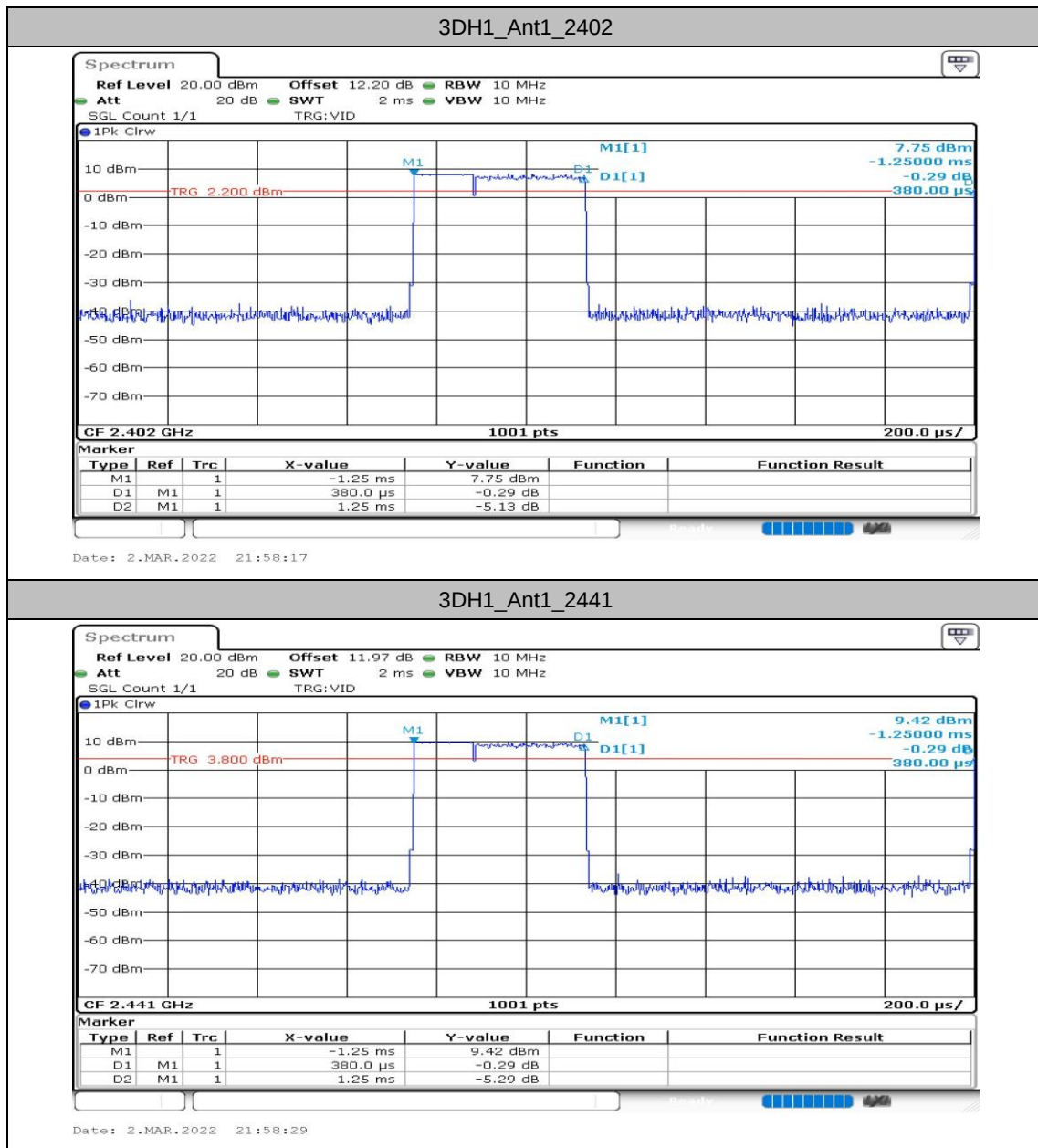


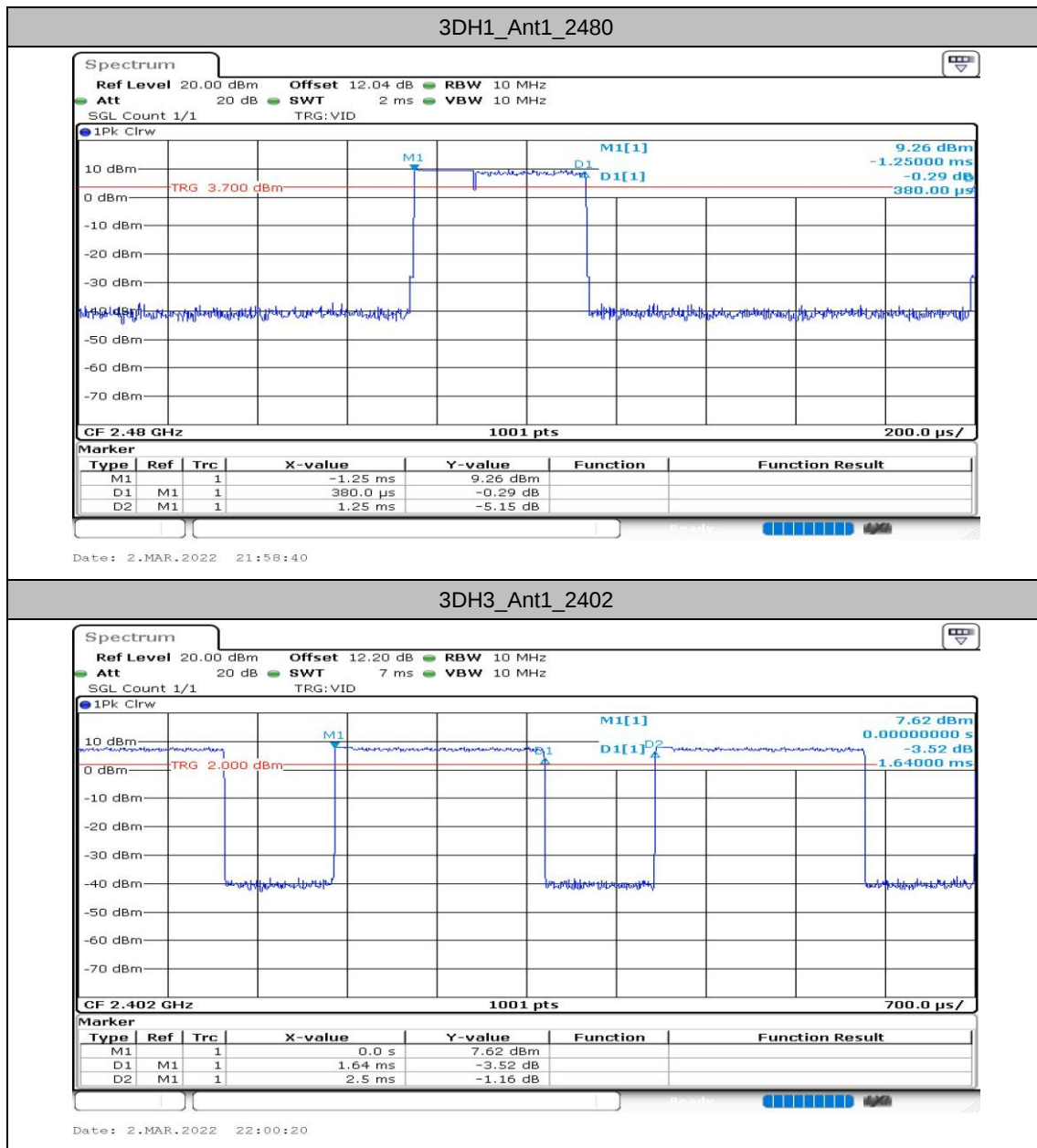


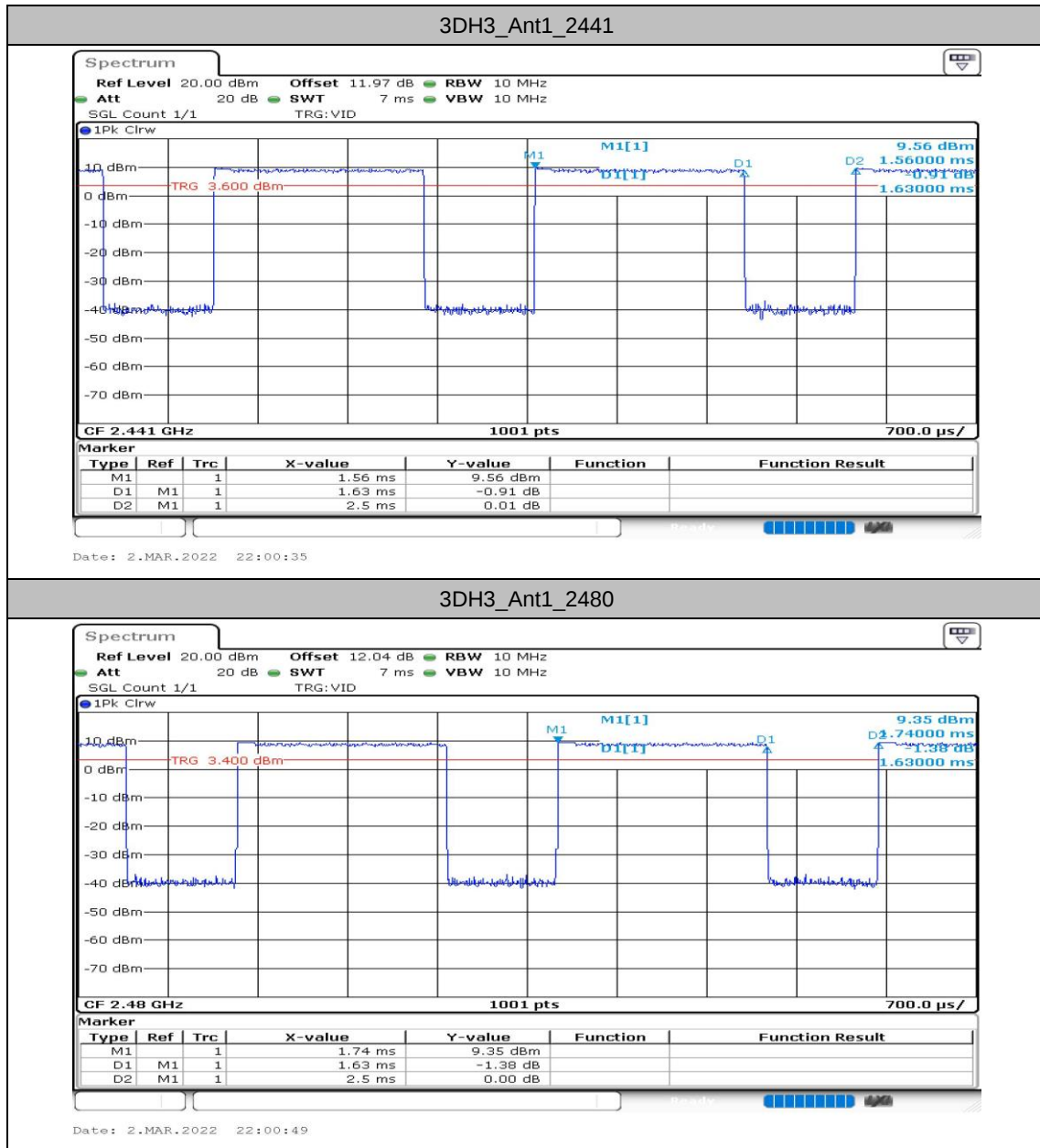


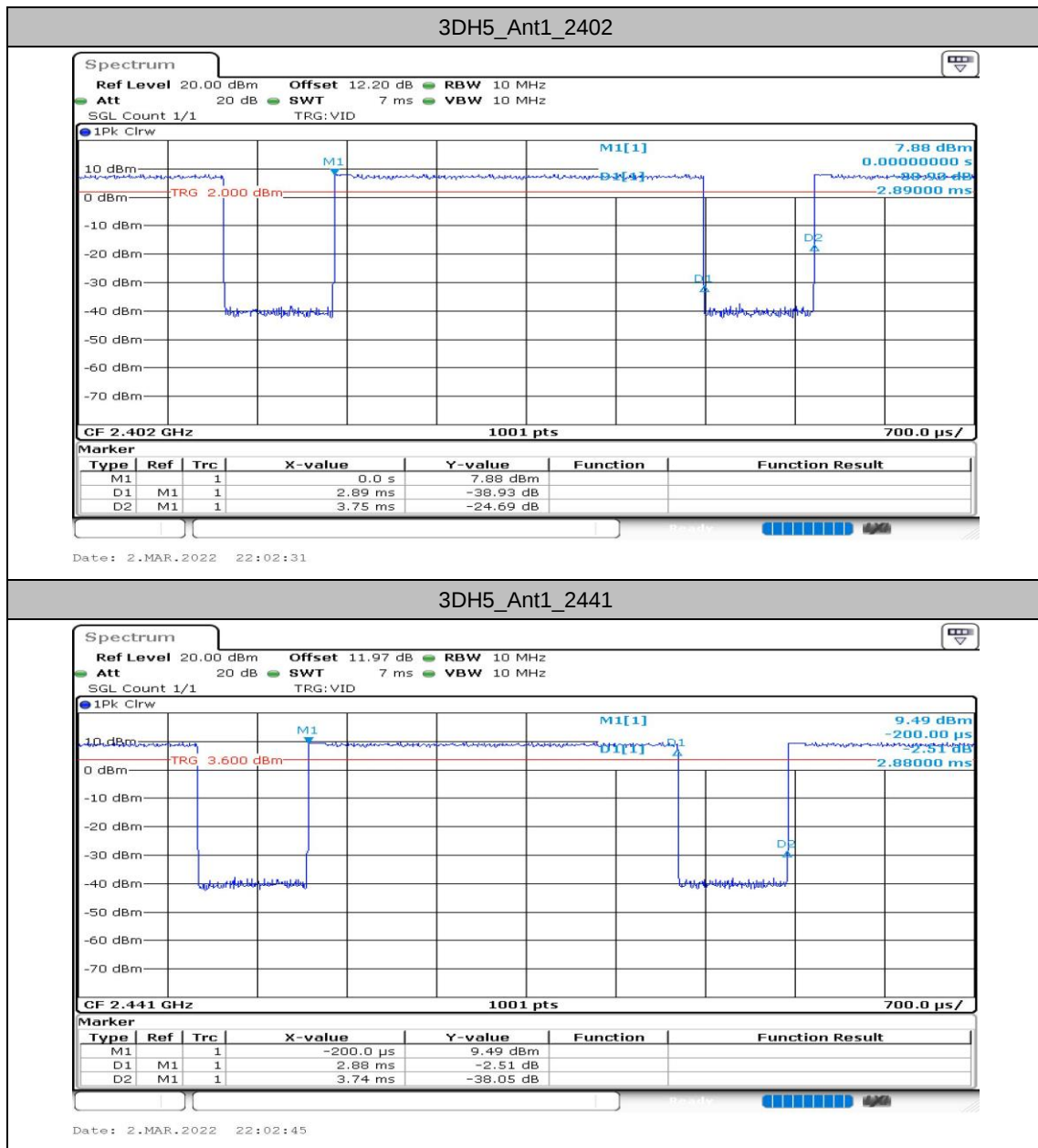


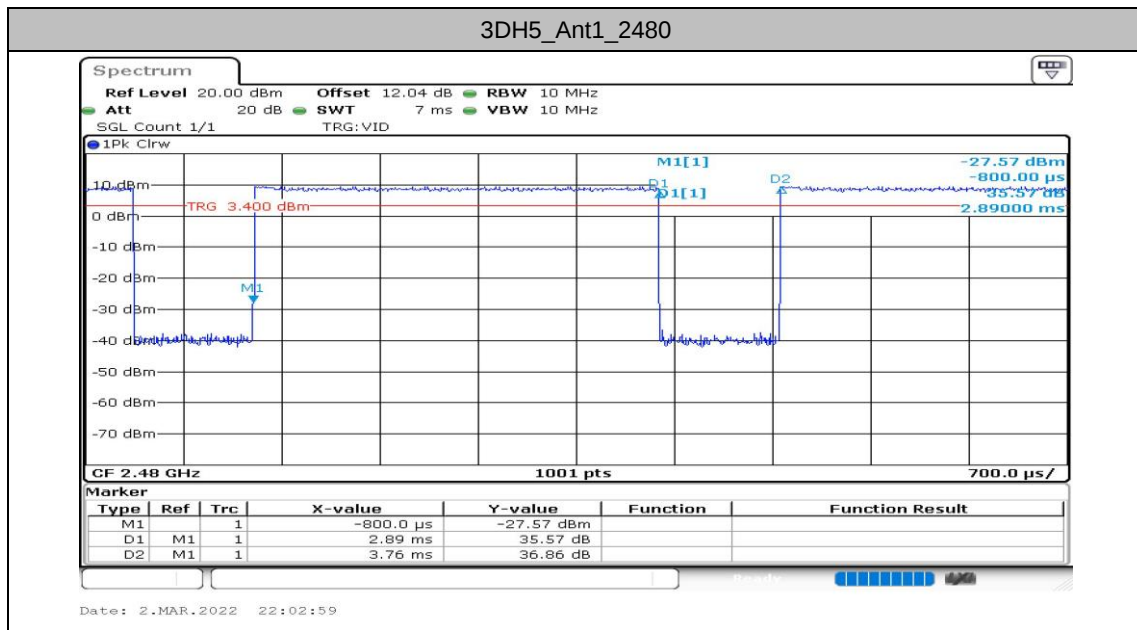






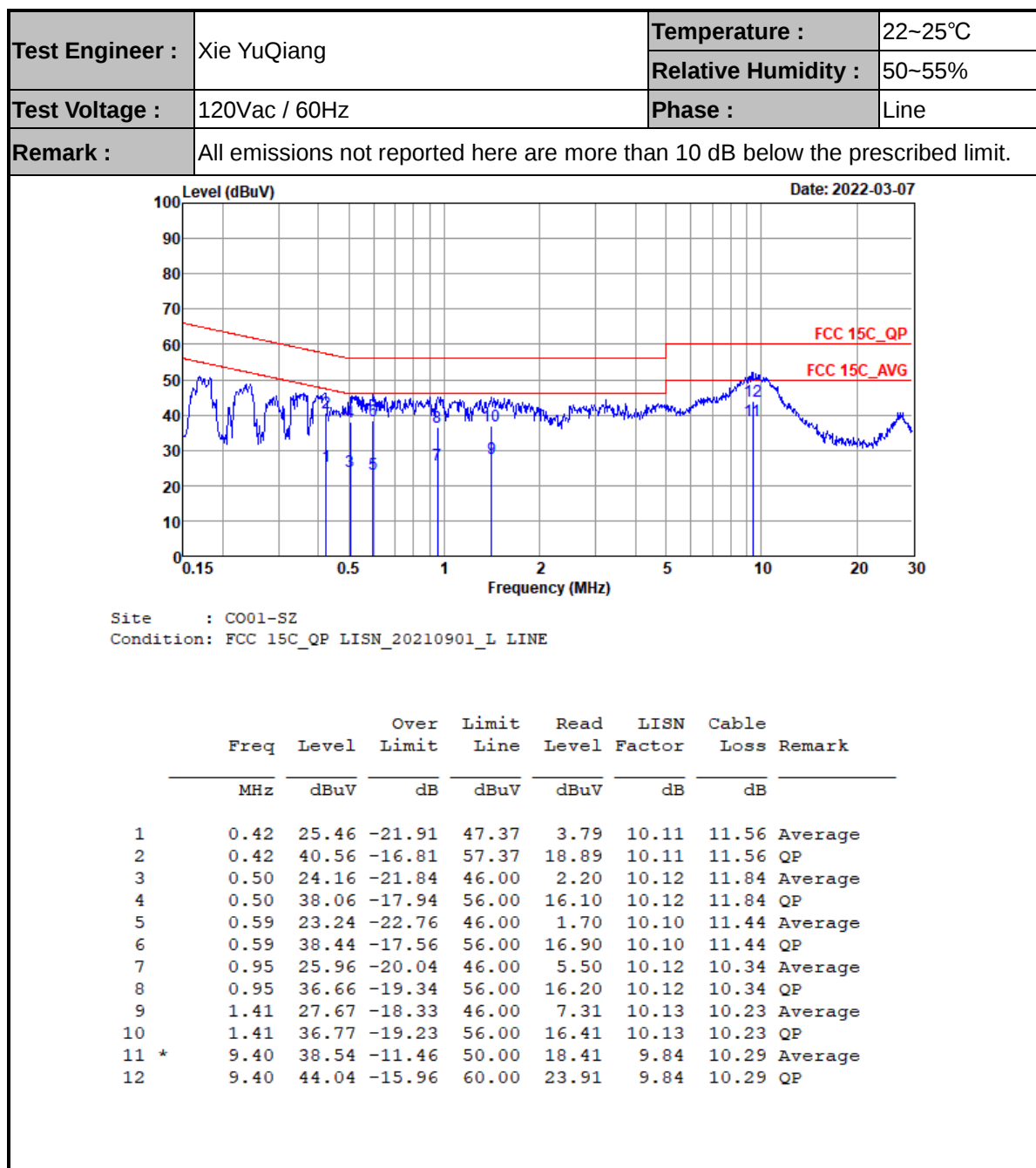






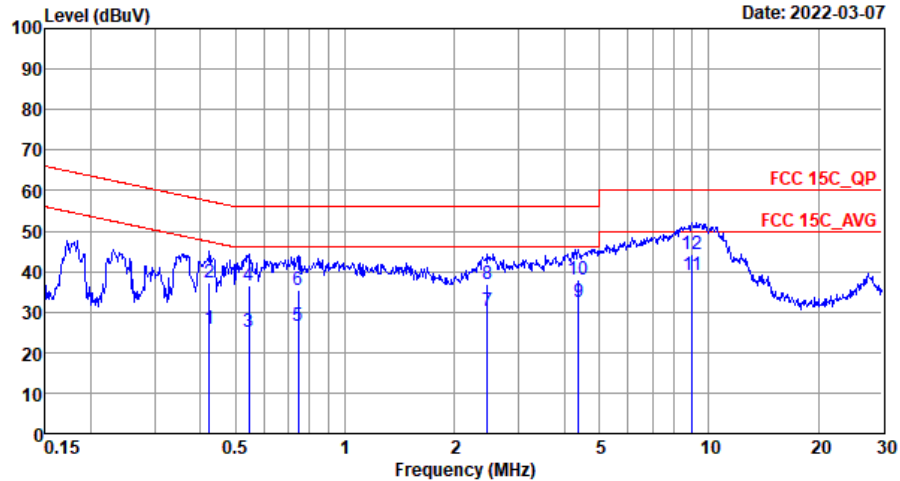


Appendix B. AC Conducted Emission Test Results





Test Engineer :	Xie YuQiang	Temperature :	22~25°C
		Relative Humidity :	50~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
Condition: FCC 15C_QP LISN_20210901_N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.42	25.95	-21.42	47.37	4.20	10.19	11.56	Average
2	0.42	37.35	-20.02	57.37	15.60	10.19	11.56	QP
3	0.54	25.17	-20.83	46.00	3.31	10.21	11.65	Average
4	0.54	36.37	-19.63	56.00	14.51	10.21	11.65	QP
5	0.74	26.55	-19.45	46.00	5.40	10.22	10.93	Average
6	0.74	35.25	-20.75	56.00	14.10	10.22	10.93	QP
7	2.46	30.39	-15.61	46.00	10.00	10.15	10.24	Average
8	2.46	36.79	-19.21	56.00	16.40	10.15	10.24	QP
9	4.38	32.38	-13.62	46.00	12.00	10.14	10.24	Average
10	4.38	37.98	-18.02	56.00	17.60	10.14	10.24	QP
11 *	9.01	39.19	-10.81	50.00	18.90	10.00	10.29	Average
12	9.01	44.39	-15.61	60.00	24.10	10.00	10.29	QP

Note:

1. $\text{Level(dB}\mu\text{V)} = \text{Read Level(dB}\mu\text{V)} + \text{LISN Factor(dB)} + \text{Cable Loss(dB)}$
2. $\text{Over Limit(dB)} = \text{Level(dB}\mu\text{V)} - \text{Limit Line(dB}\mu\text{V)}$



Appendix C. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

BT (Band Edge @ 3m)

BT	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH00 2402MHz		2362.08	48.77	-25.23	74	39.8	32.07	9.6	32.7	110	280	P	H
		2362.08	23.98	-30.02	54	-	-	-	-	-	-	A	H
	*	2402	107.9	-	-	98.95	32	9.65	32.7	110	280	P	H
	*	2402	83.11	-	-	-	-	-	-	-	-	A	H
		2362.5	49.01	-24.99	74	40.03	32.07	9.61	32.7	100	84	P	V
		2362.5	24.22	-29.78	54	-	-	-	-			A	V
	*	2402	96	-	-	87.05	32	9.65	32.7	100	84	P	V
	*	2402	71.21	-	-	-	-	-	-	-	-	A	V
BT CH 39 2441MHz		2376.5	49.45	-24.55	74	40.5	32.03	9.62	32.7	103	289	P	H
		2376.5	24.66	-29.34	54	-	-	-	-	-	-	A	H
	*	2441	109.79	-	-	100.49	32.3	9.7	32.7	103	289	P	H
	*	2441	85	-	-	-	-	-	-	-	-	A	H
		2488.45	48.94	-25.06	74	39.78	32.1	9.76	32.7	103	289	P	H
		2488.45	24.15	-29.85	54	-	-	-	-	-	-	A	H
		2385.46	49.01	-24.99	74	40.05	32.03	9.63	32.7	100	187	P	V
		2385.46	24.22	-29.78	54	-	-	-	-	-	-	A	V
	*	2441	98.54	-	-	89.24	32.3	9.7	32.7	100	187	P	V
	*	2441	73.75	-	-	-	-	-	-	-	-	A	V
		2485.3	48.58	-25.42	74	39.36	32.17	9.75	32.7	100	187	P	V
		2485.3	23.79	-30.21	54	-	-	-	-	-	-	A	V



BT CH 78 2480MHz	*	2480	107.83	-	-	98.61	32.17	9.75	32.7	108	286	P	H
	*	2480	83.04	-	-	-	-	-	-	-	-	A	H
		2486.48	50.66	-23.34	74	41.44	32.17	9.75	32.7	108	286	P	H
		2486.48	25.87	-28.13	54	-	-	-	-	-	-	A	H
	*	2480	95.48	-	-	86.26	32.17	9.75	32.7	134	35	P	V
	*	2480	70.69	-	-	-	-	-	-	-	-	A	V
		2486.28	49.37	-24.63	74	40.15	32.17	9.75	32.7	134	35	P	V
		2486.28	24.58	-29.42	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

BT (Harmonic @ 3m)

BT	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
BT CH 00 2402MHz		4804	49.75	-24.25	74	56	33.9	12	52.15	-	-	P	H
		4804	24.96	-29.04	54	-	-	-	-	-	-	A	H
		4804	46.97	-27.03	74	53.22	33.9	12	52.15	-	-	P	V
		4804	22.18	-31.82	54	-	-	-	-	-	-	A	V
BT CH 39 2441MHz		4882	49.88	-24.12	74	56.2	33.73	12.05	52.1	-	-	P	H
		4882	25.09	-28.91	54	-	-	-	-	-	-	A	H
		7323	47.65	-26.35	74	49.48	35.77	14.17	51.77	-	-	P	H
		7323	22.86	-31.14	54	-	-	-	-	-	-	A	H
		4882	49.2	-24.8	74	55.52	33.73	12.05	52.1	-	-	P	V
		4882	24.41	-29.59	54	-	-	-	-	-	-	A	V
		7323	47.39	-26.61	74	49.22	35.77	14.17	51.77	-	-	P	V
		7323	22.6	-31.4	54	-	-	-	-	-	-	A	V
BT CH 78 2480MHz		4960	50.32	-23.68	74	56.53	33.73	12.09	52.03	-	-	P	H
		4960	25.53	-28.47	54	-	-	-	-	-	-	A	H
		7440	47.26	-26.74	74	48.88	35.79	14.24	51.65	-	-	P	H
		7440	22.47	-31.53	54	-	-	-	-	-	-	A	H
		4960	46.33	-27.67	74	52.54	33.73	12.09	52.03	-	-	P	V
		4960	21.54	-32.46	54	-	-	-	-	-	-	A	V
		7440	46.71	-27.29	74	48.33	35.79	14.24	51.65	-	-	P	V
		7440	21.92	-32.08	54	-	-	-	-	-	-	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

2.4GHz BT (LF)

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz BT LF		94.02	30.87	-12.63	43.5	49.62	13.98	2.46	35.19	-	-	P	H
		156.1	23.27	-20.23	43.5	36.5	19.3	2.57	35.1	-	-	P	H
		294.81	24.6	-21.4	46	36.72	19.64	3.15	34.91	-	-	P	H
		432.55	22.83	-23.17	46	31.49	22.77	3.3	34.73	-	-	P	H
		637.22	26.67	-19.33	46	31.06	26.22	3.89	34.5	-	-	P	H
		863.23	28.6	-17.4	46	30.1	28.69	4.11	34.3	-	-	P	H
		31.94	26.5	-13.5	40	40.63	18.97	1.9	35	-	-	P	V
		95.96	27.1	-16.4	43.5	45.66	14.15	2.48	35.19	-	-	P	V
		176.47	21.65	-21.85	43.5	35.64	18.45	2.66	35.1	-	-	P	V
		275.41	22.63	-23.37	46	35.42	19.14	3.02	34.95	-	-	P	V
		446.13	23.73	-22.27	46	32.06	23.08	3.3	34.71	-	-	P	V
		575.14	26.27	-19.73	46	31.76	25.29	3.77	34.55	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

**Note symbol**

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	P eak or A verage
H/V	H orizontal or V ertical



A calculation example for radiated spurious emission is shown as below:

BT	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
BT CH 00 2402MHz		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)

2. Level(dBμV/m) =

Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

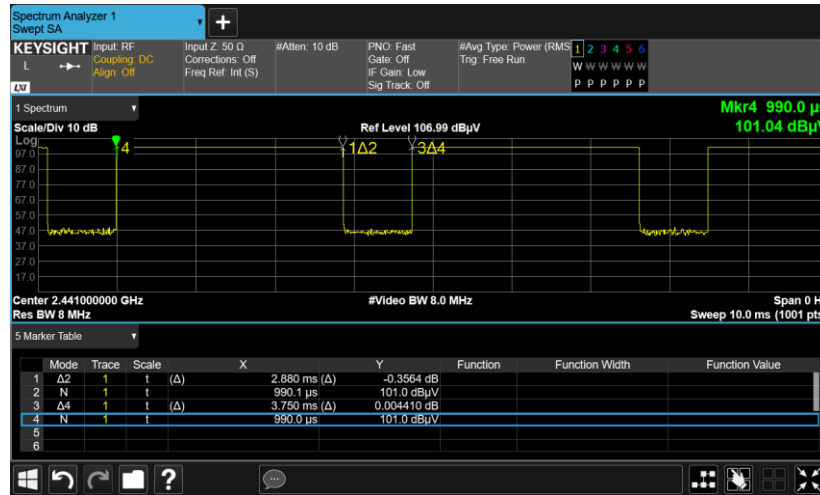
= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.

Appendix D. Duty Cycle Plots

DH5 on time (One Pulse) Plot on Channel 39



DH5 on time (Count Pulses) Plot on Channel 39



Note:

1. Worst case Duty cycle = on time/100 milliseconds = $2 * 2.88 / 100 = 5.76 \%$
2. Worst case Duty cycle correction factor = $20 * \log(\text{Duty cycle}) = -24.79 \text{ dB}$
3. DH5 has the highest duty cycle worst case and is reported.