

Appendix: Bluetooth LE

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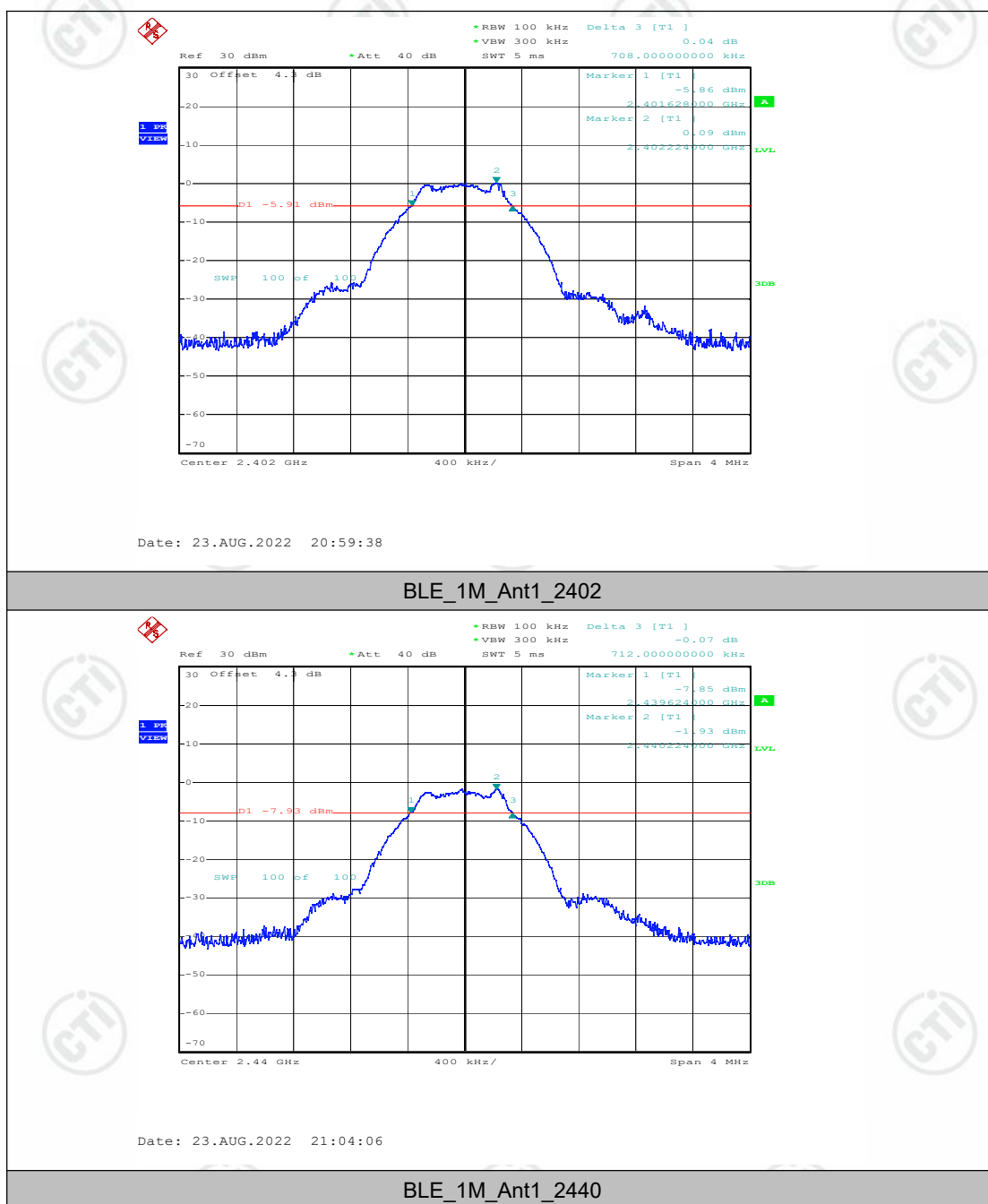
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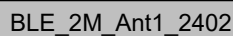
Appendix A: DTS Bandwidth

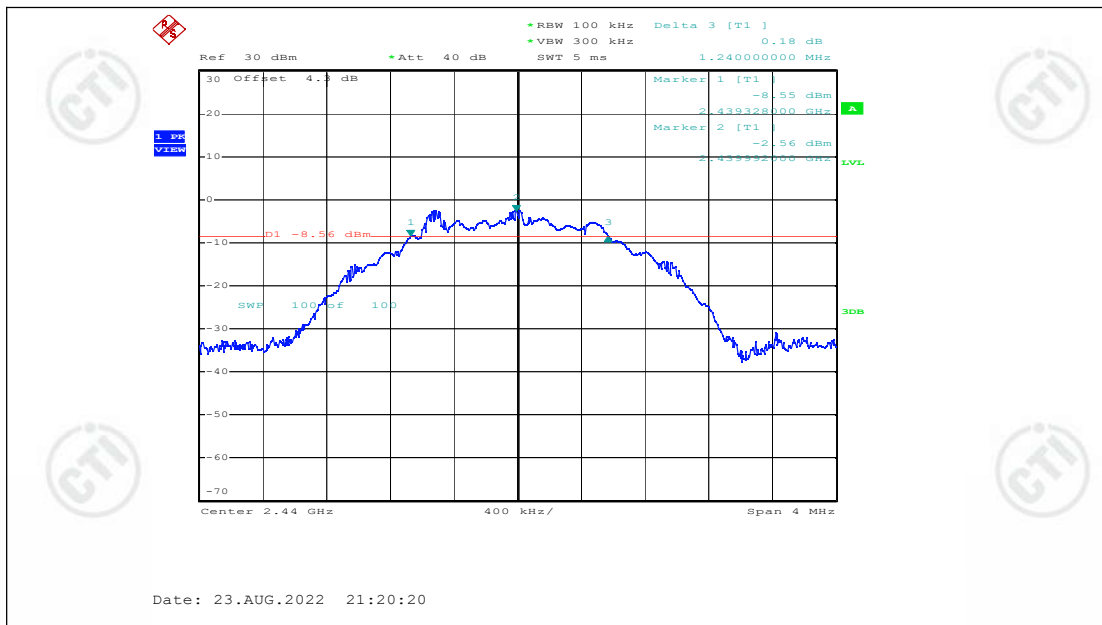
Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.71	2401.63	2402.34	0.5	PASS
		2440	0.71	2439.62	2440.34	0.5	PASS
		2480	0.71	2479.62	2480.33	0.5	PASS
BLE_2M	Ant1	2402	1.24	2401.33	2402.58	0.5	PASS
		2440	1.24	2439.33	2440.57	0.5	PASS
		2480	1.24	2479.33	2480.57	0.5	PASS

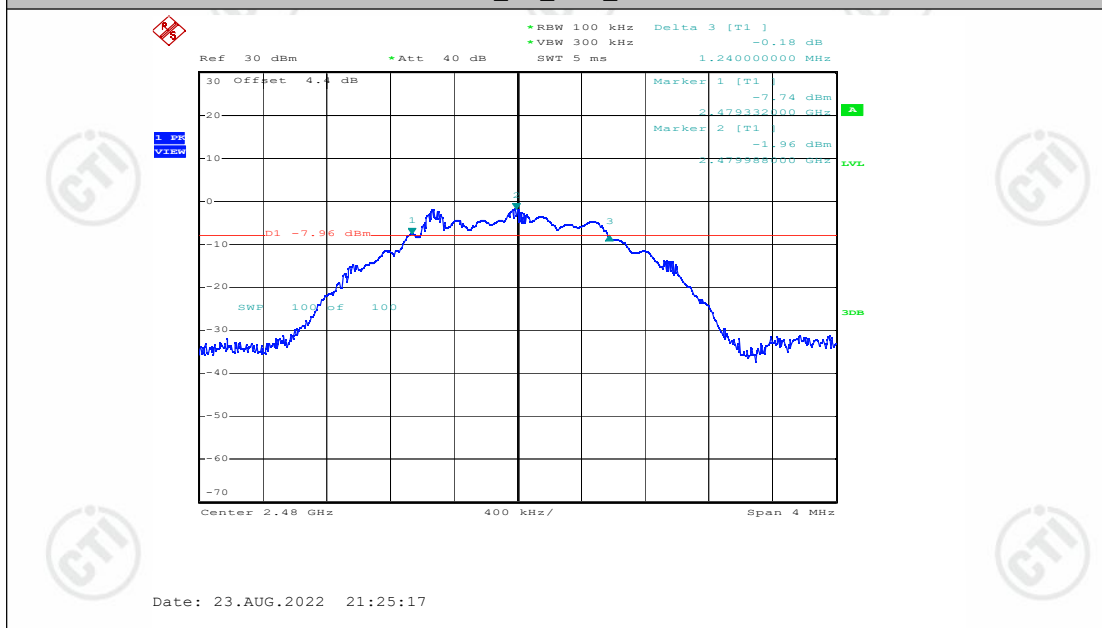
Test Graphs







BLE_2M_Ant1_2440



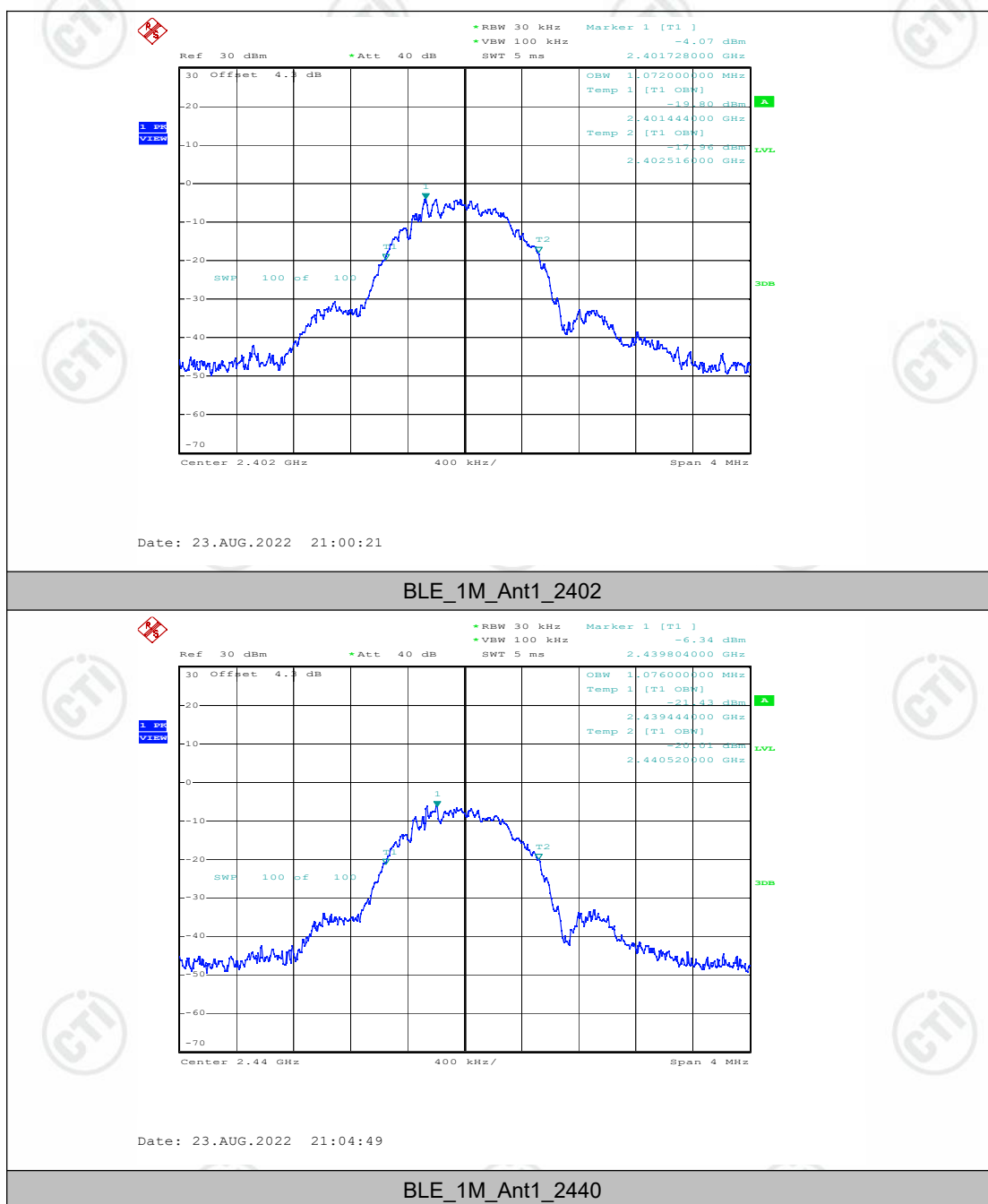
BLE_2M_Ant1_2480

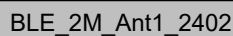
Appendix B: Occupied Channel Bandwidth

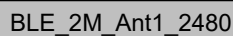
Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.072	0.000	0.000	---	---
		2440	1.076	0.000	0.000	---	---
		2480	1.08	0.000	0.000	---	---
BLE_2M	Ant1	2402	2.064	0.000	0.000	---	---
		2440	2.084	0.000	0.000	---	---
		2480	2.08	0.000	0.000	---	---

Test Graphs







Appendix C: Maximum conducted output power

Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.43	≤30	PASS
		2440	-0.55	≤30	PASS
		2480	-0.03	≤30	PASS
BLE_2M	Ant1	2402	1.37	≤30	PASS
		2440	-0.64	≤30	PASS
		2480	-0.09	≤30	PASS

Ref 30 dBm Att 40 dB RBW 3 MHz VBW 10 MHz SWT 40 ms Marker 1 [T1] 1.43 dBm 2.401905000 GHz

1 dB VIEW A

SWR 62 5 F 100 30B

Center 2.402 GHz 1 MHz / Span 10 MHz

Date: 23.AUG.2022 21:00:35

Ref 30 dBm *Att 40 dB *RBW 3 MHz *VBW 10 MHz Marker 1 [T1] -0.55 dBm SWT 40 ms 2.439923750 GHz

Offset 4.1 dB

1 pk VIEW

SWF 65 of 100

1

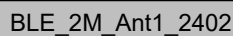
0 dBm

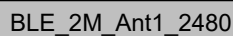
30 dB

Center 2.44 GHz 1 MHz/ Span 10 MHz

Date: 23.AUG.2022 21:05:03

BLE_1M_Ant1_2440





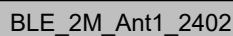
Appendix D: Maximum power spectral density

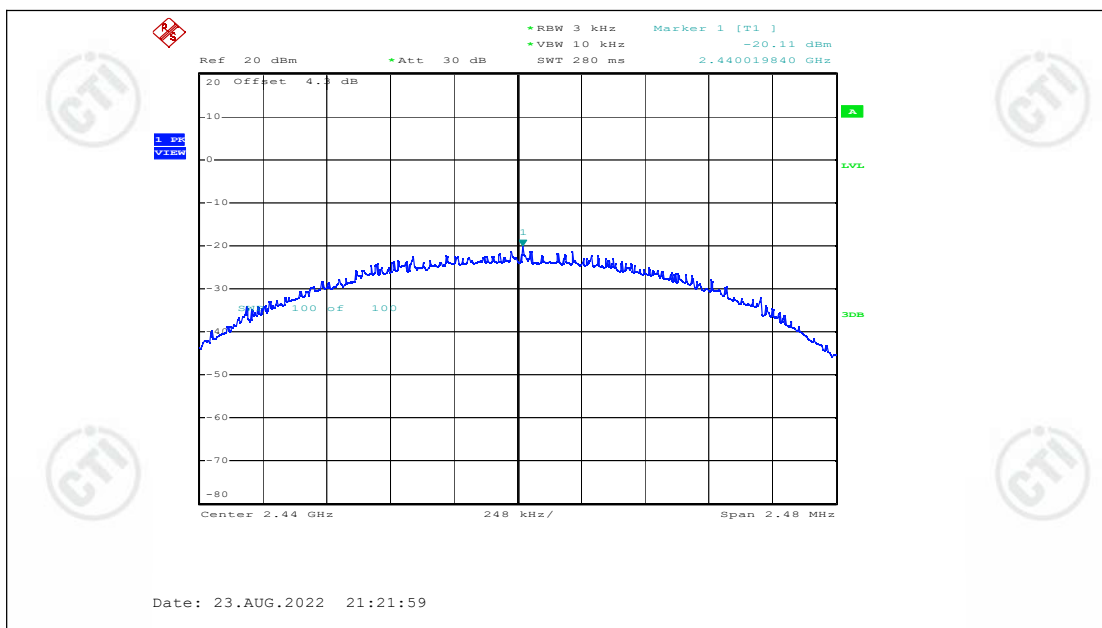
Test Result

Test Mode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.76	≤8.00	PASS
		2440	-16.54	≤8.00	PASS
		2480	-16.13	≤8.00	PASS
BLE_2M	Ant1	2402	-18.08	≤8.00	PASS
		2440	-20.11	≤8.00	PASS
		2480	-19.73	≤8.00	PASS

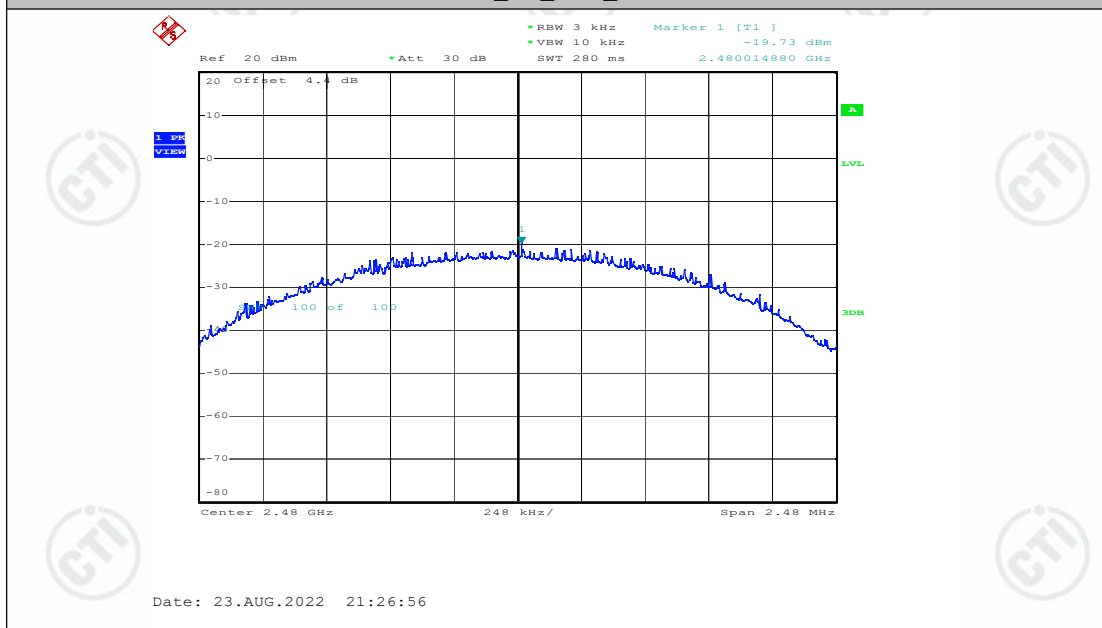
BLE	1M	Ant1	2402
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BLE 2M Ant1 2440



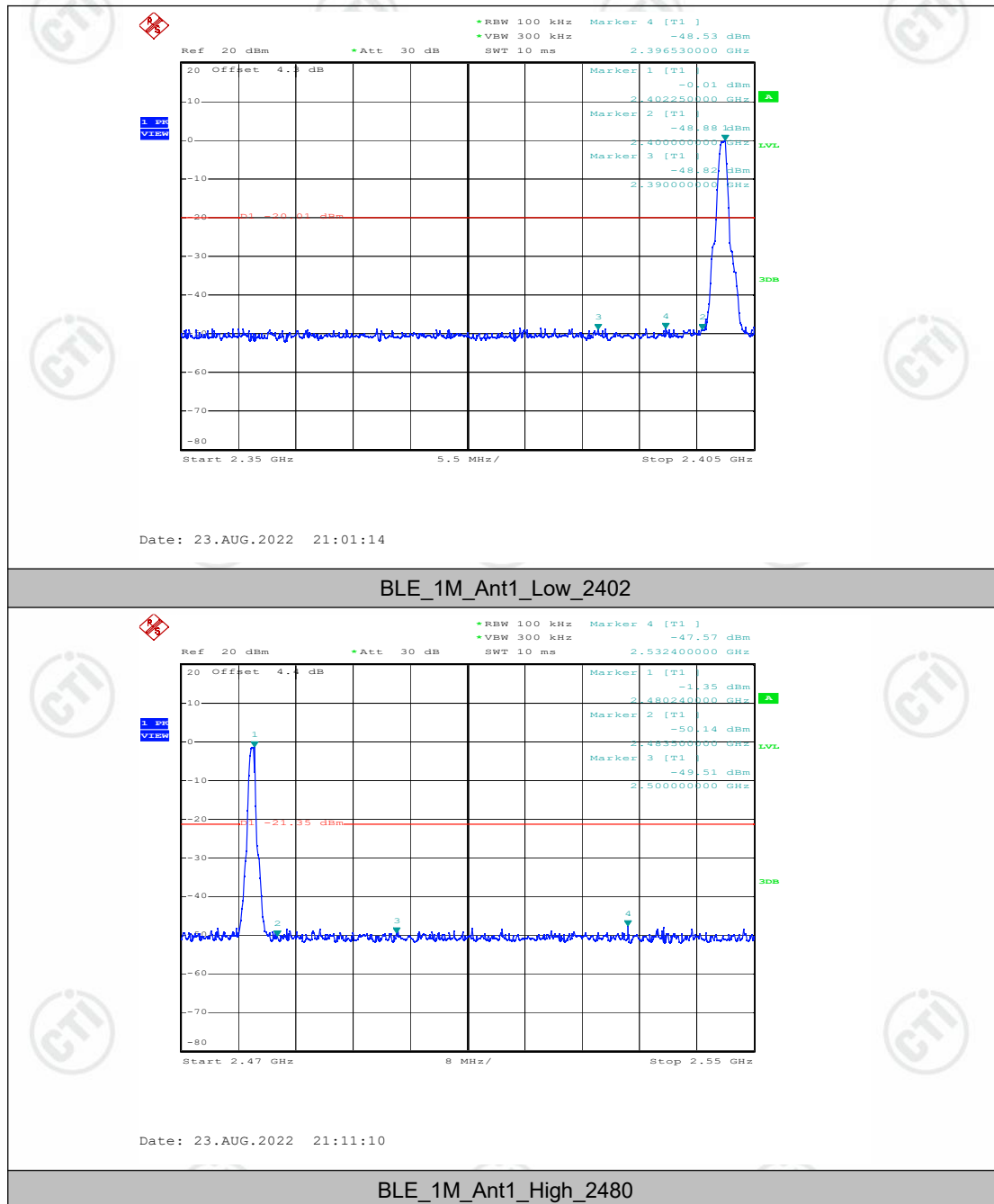
BLE_2M_Ant1_2480

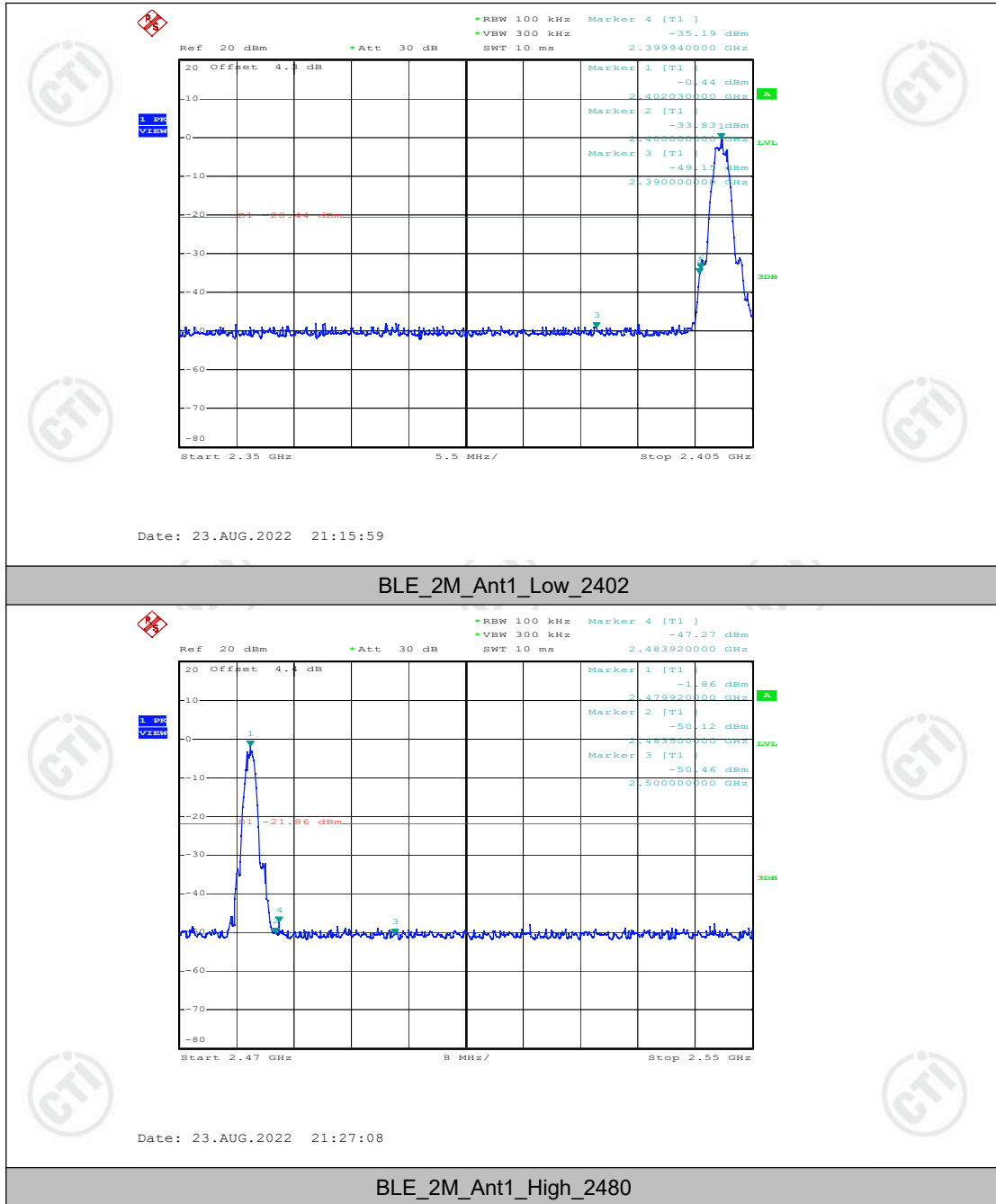
Appendix E: Band edge measurements

Test Result

Test Mode	Antenna	Ch Name	Channel	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-0.01	-48.53	≤-20.01	PASS
		High	2480	-1.35	-47.57	≤-21.35	PASS
BLE_2M	Ant1	Low	2402	-0.44	-35.19	≤-20.44	PASS
		High	2480	-1.86	-47.27	≤-21.86	PASS

Test Graphs





Appendix F: Conducted Spurious Emission

Test Result

Test Mode	Antenna	Channel	Freq Range [MHz]	Ref Level [dBm]	Result [dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	0.08	0.08	---	PASS
			30~1000	0.08	-43.81	≤-19.92	PASS
			1000~26500	0.08	-46.52	≤-19.92	PASS
		2440	Reference	-1.93	-1.93	---	PASS
			30~1000	-1.93	-43.76	≤-21.93	PASS
			1000~26500	-1.93	-46.22	≤-21.93	PASS
		2480	Reference	-1.34	-1.34	---	PASS
			30~1000	-1.34	-43.82	≤-21.34	PASS
			1000~26500	-1.34	-45.55	≤-21.34	PASS
BLE_2M	Ant1	2402	Reference	-0.63	-0.63	---	PASS
			30~1000	-0.63	-43.36	≤-20.63	PASS
			1000~26500	-0.63	-46.14	≤-20.63	PASS
		2440	Reference	-2.55	-2.55	---	PASS
			30~1000	-2.55	-43.92	≤-22.55	PASS
			1000~26500	-2.55	-46.64	≤-22.55	PASS
		2480	Reference	-2.05	-2.05	---	PASS
			30~1000	-2.05	-44	≤-22.05	PASS
			1000~26500	-2.05	-46.41	≤-22.05	PASS

Ref 24.3 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] 0.08 dBm
SWT 2.5 ms 2.402222000 GHz

Offset 4.1 dB

1.08
VIEW

1

3dB

Center 2.402 GHz 300 kHz/ Span 3 MHz

Date: 23.AUG.2022 21:01:24

Ref 24.3 dBm Att 30 dB RBW 100 kHz VBW 300 kHz SWT 100 ms Marker 1 [T1] -43.81 dBm 247.28000000 MHz

Offset 4.1 dB

1 dB VIEW

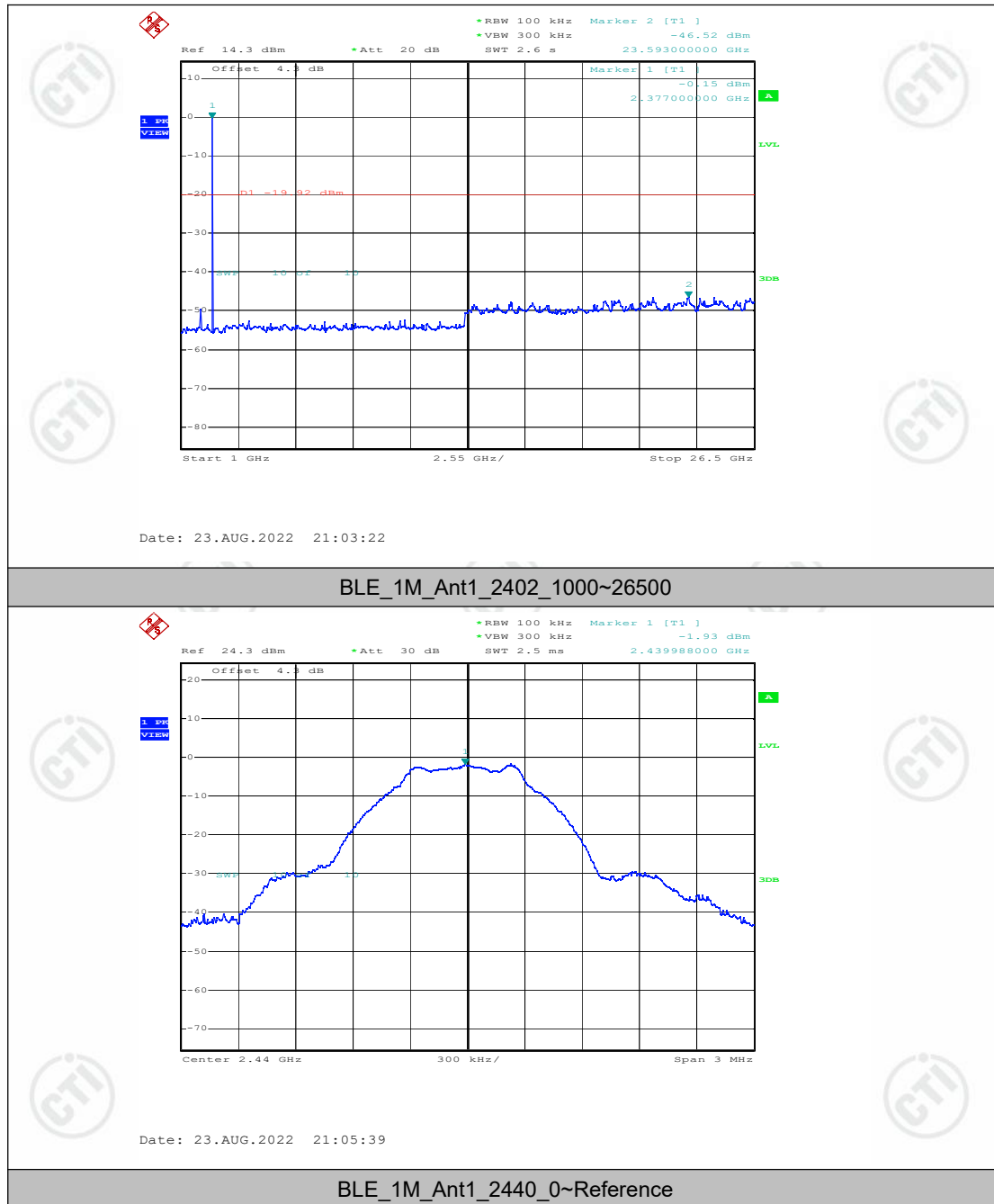
20 dBm

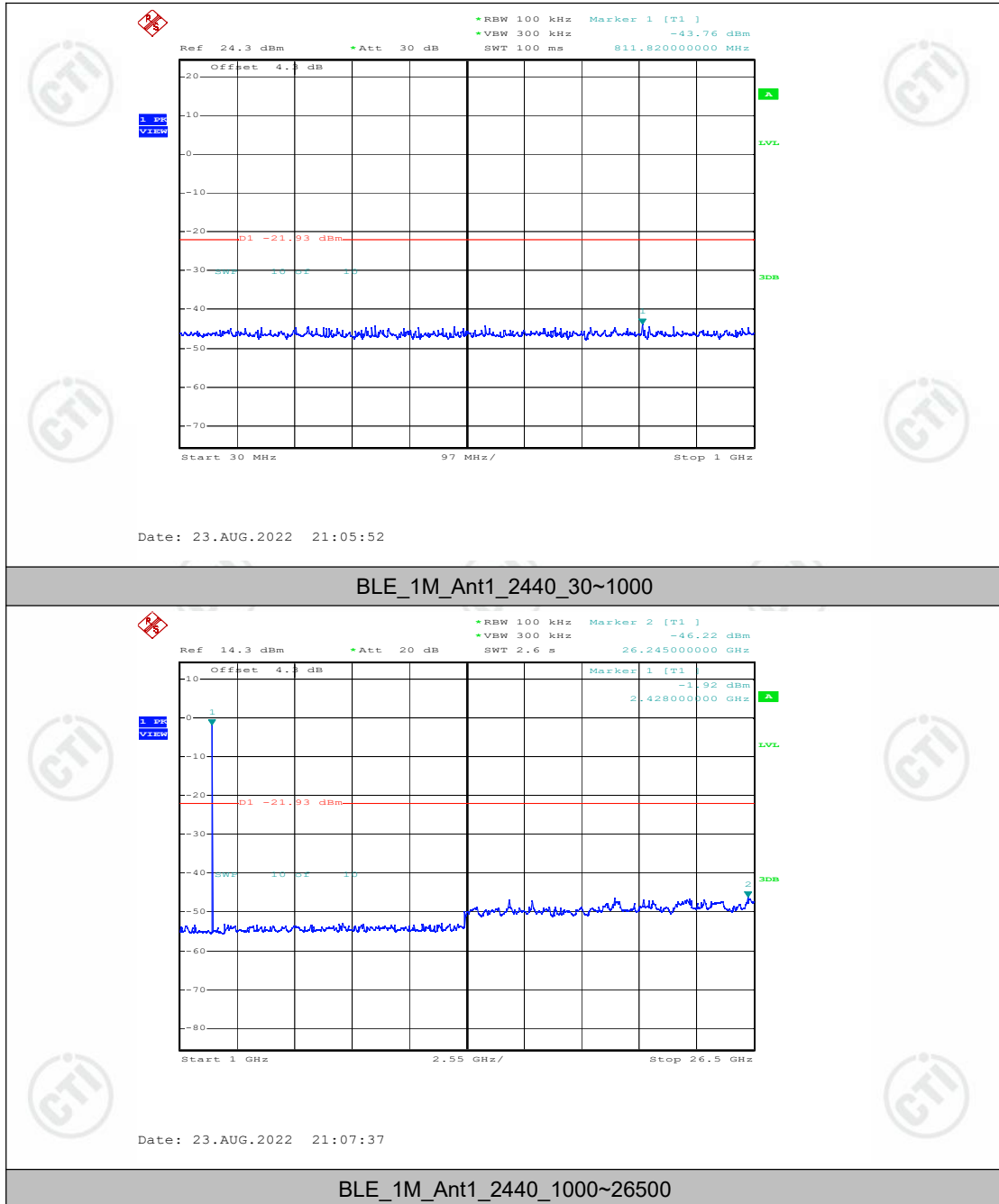
30 dB

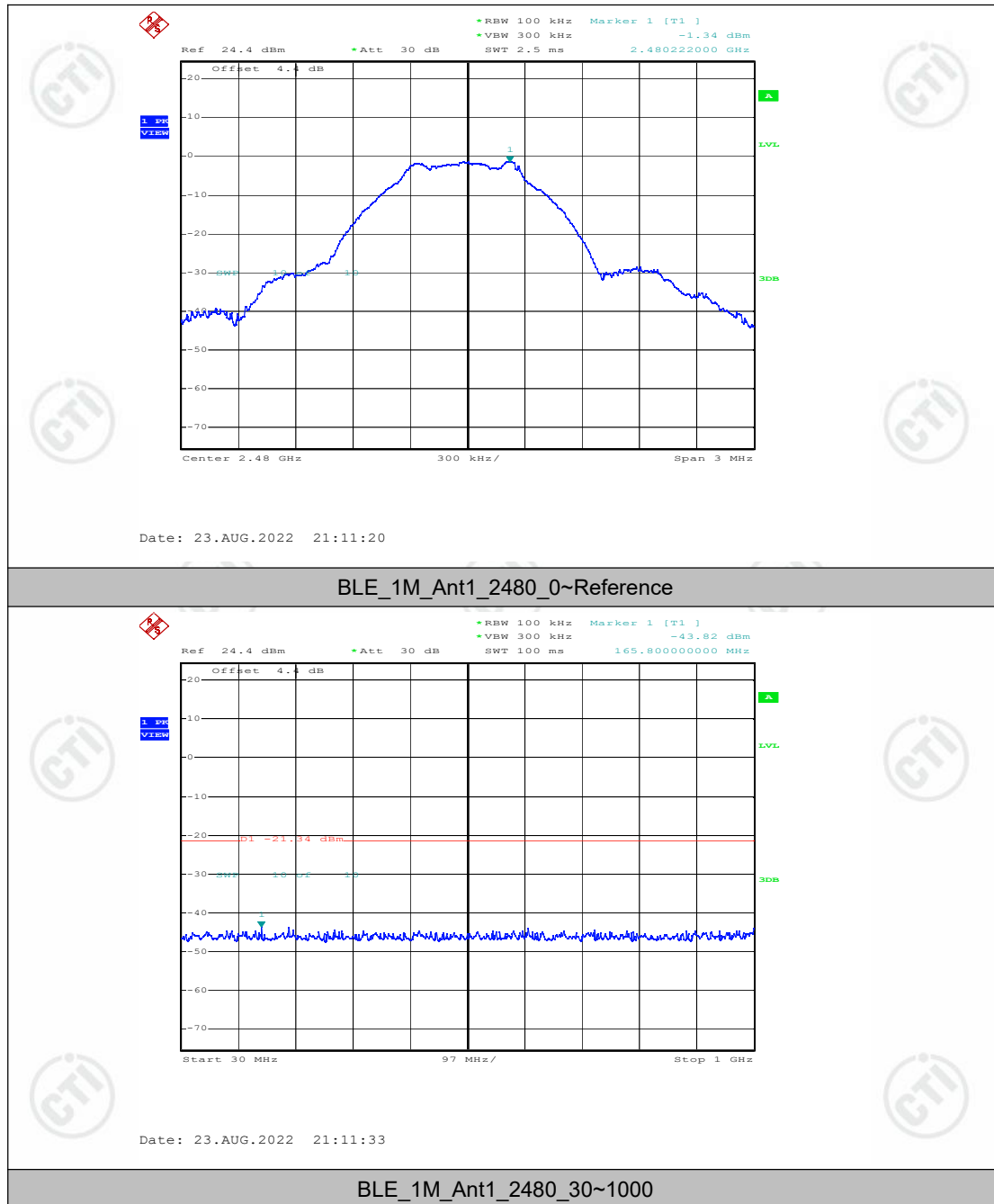
Start 30 MHz 97 MHz/ Stop 1 GHz

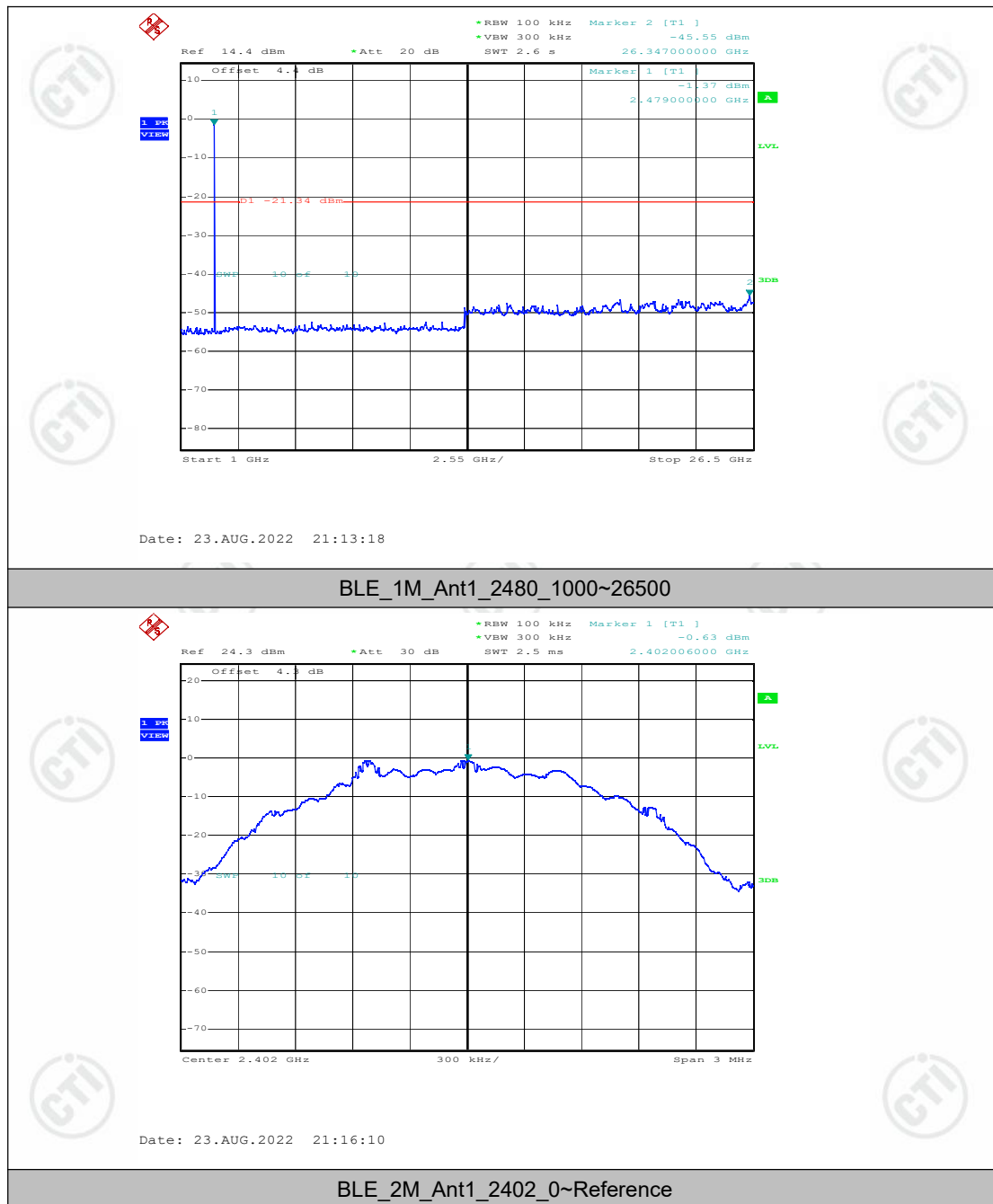
Date: 23.AUG.2022 21:01:37

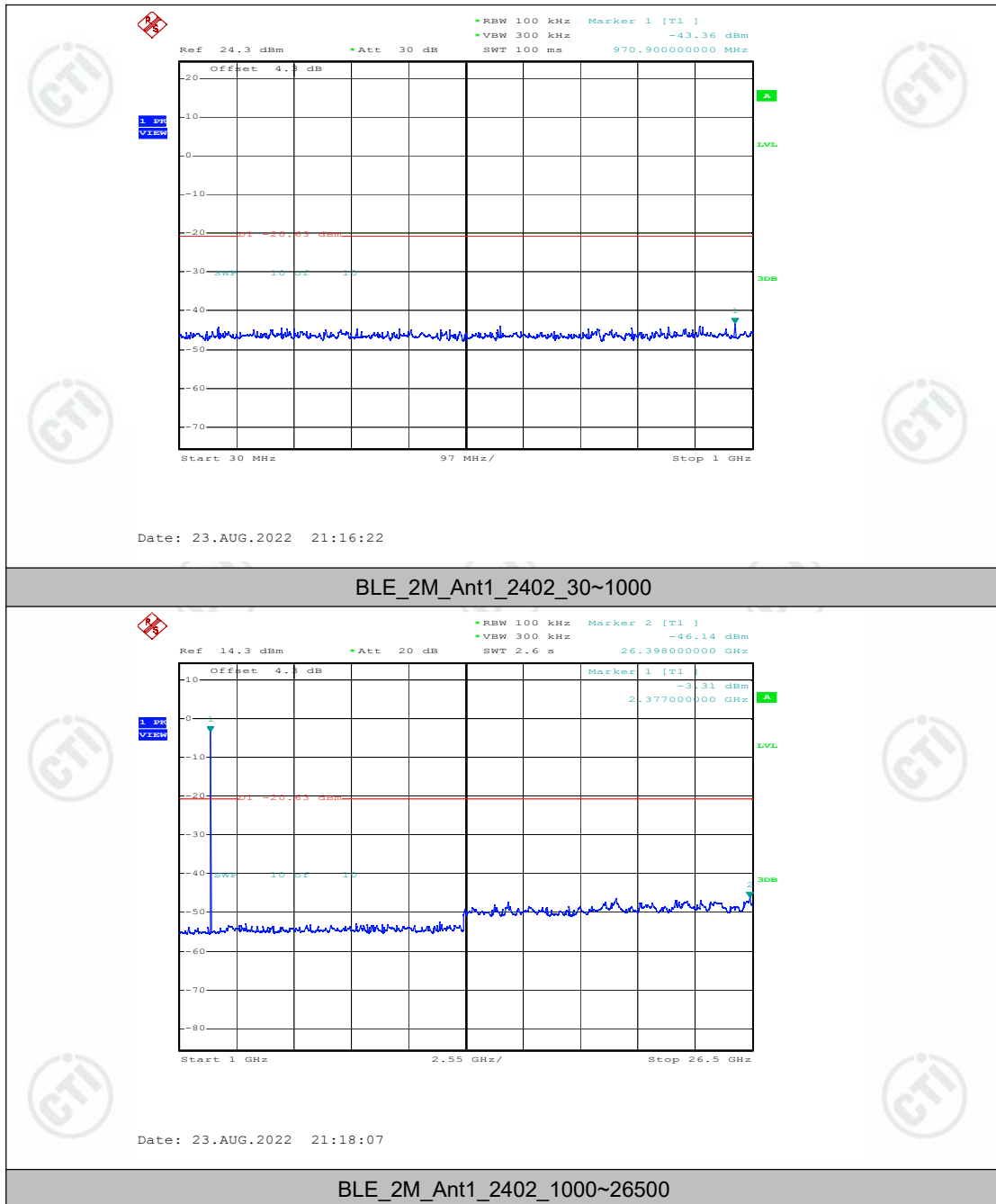
Hotline:400-6788-333 www.cti-cert.com E-mail:info@cti-cert.com Complaint call:0755-33681700 Complaint E-mail:complaint@cti-cert.com

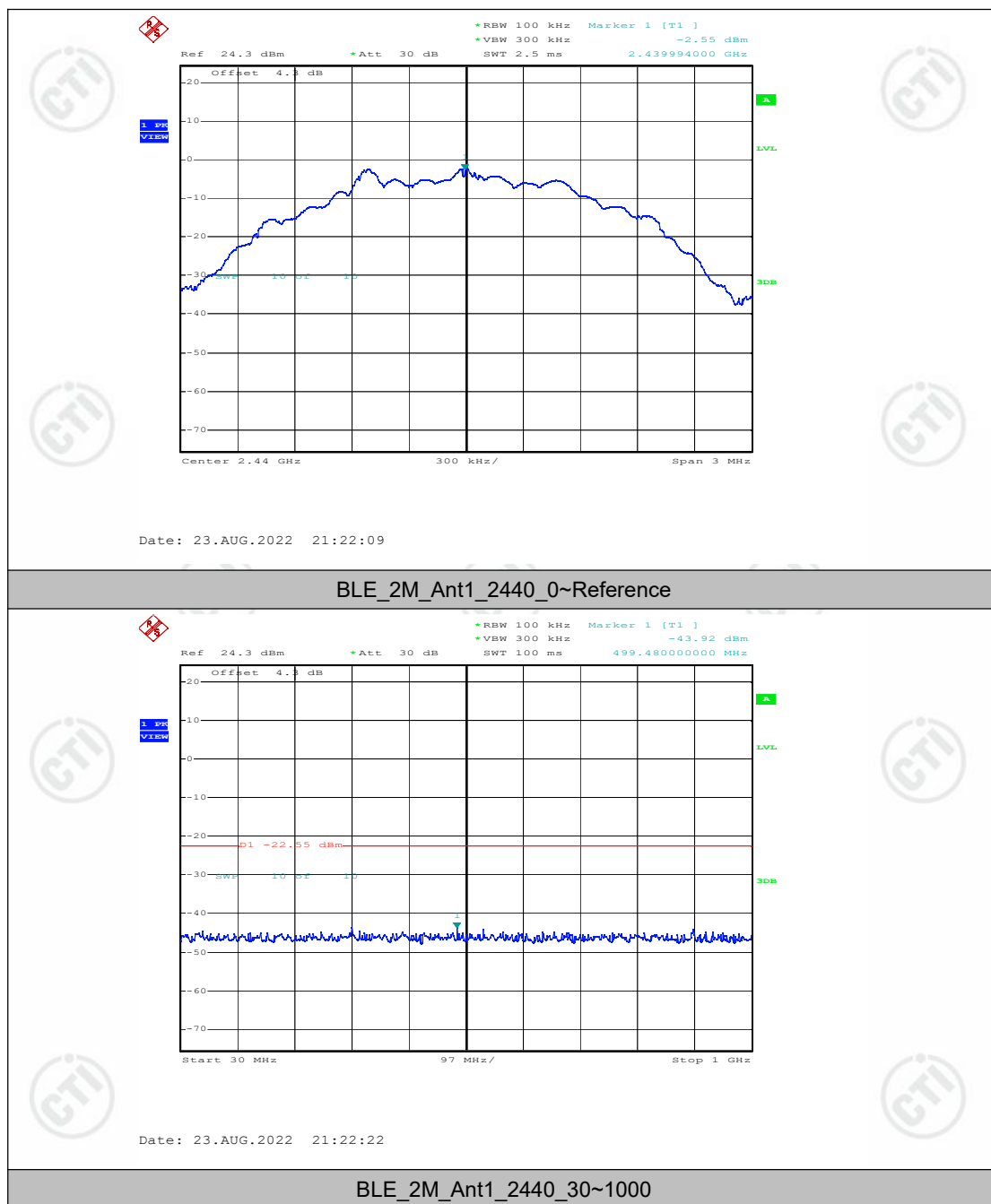


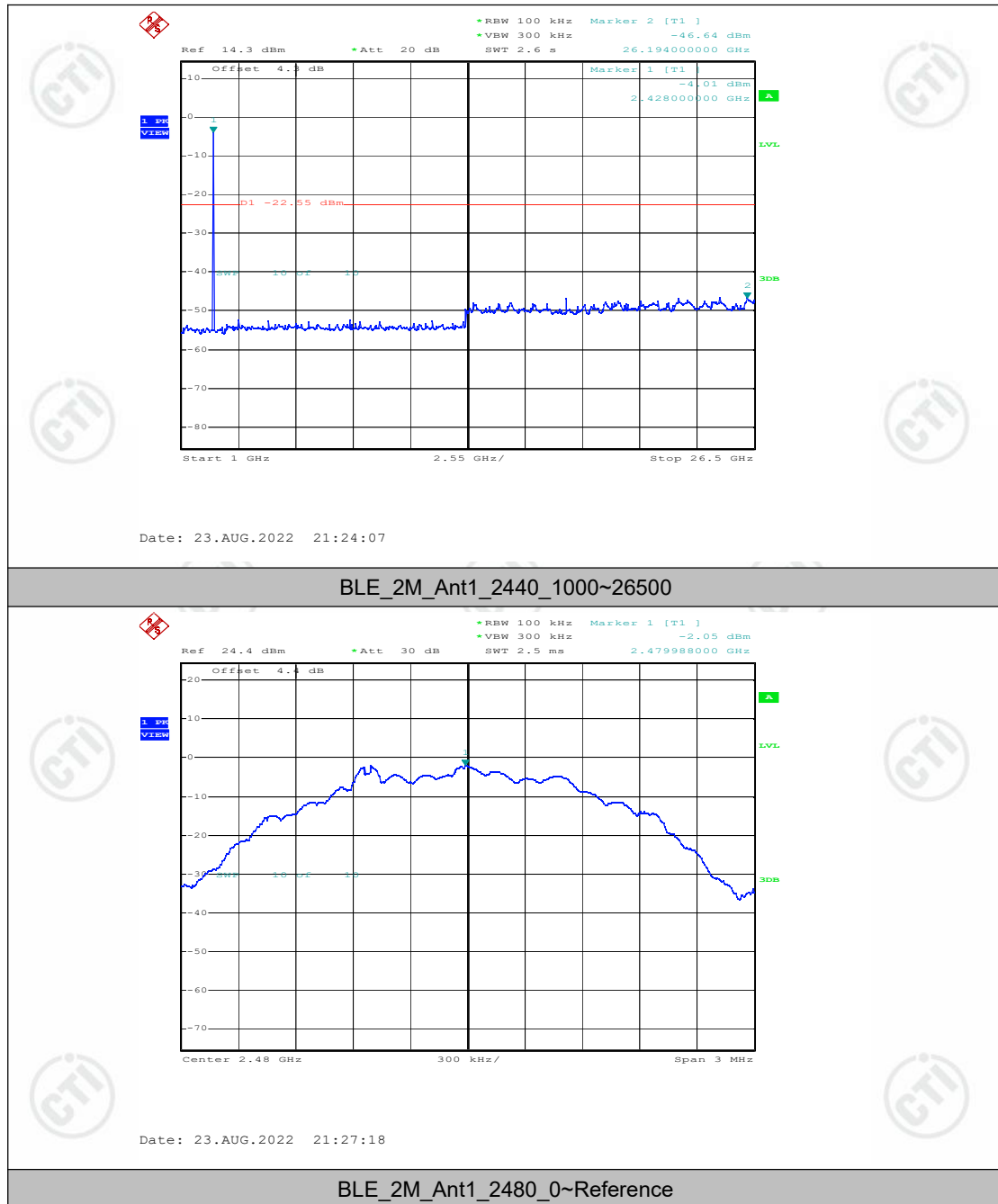


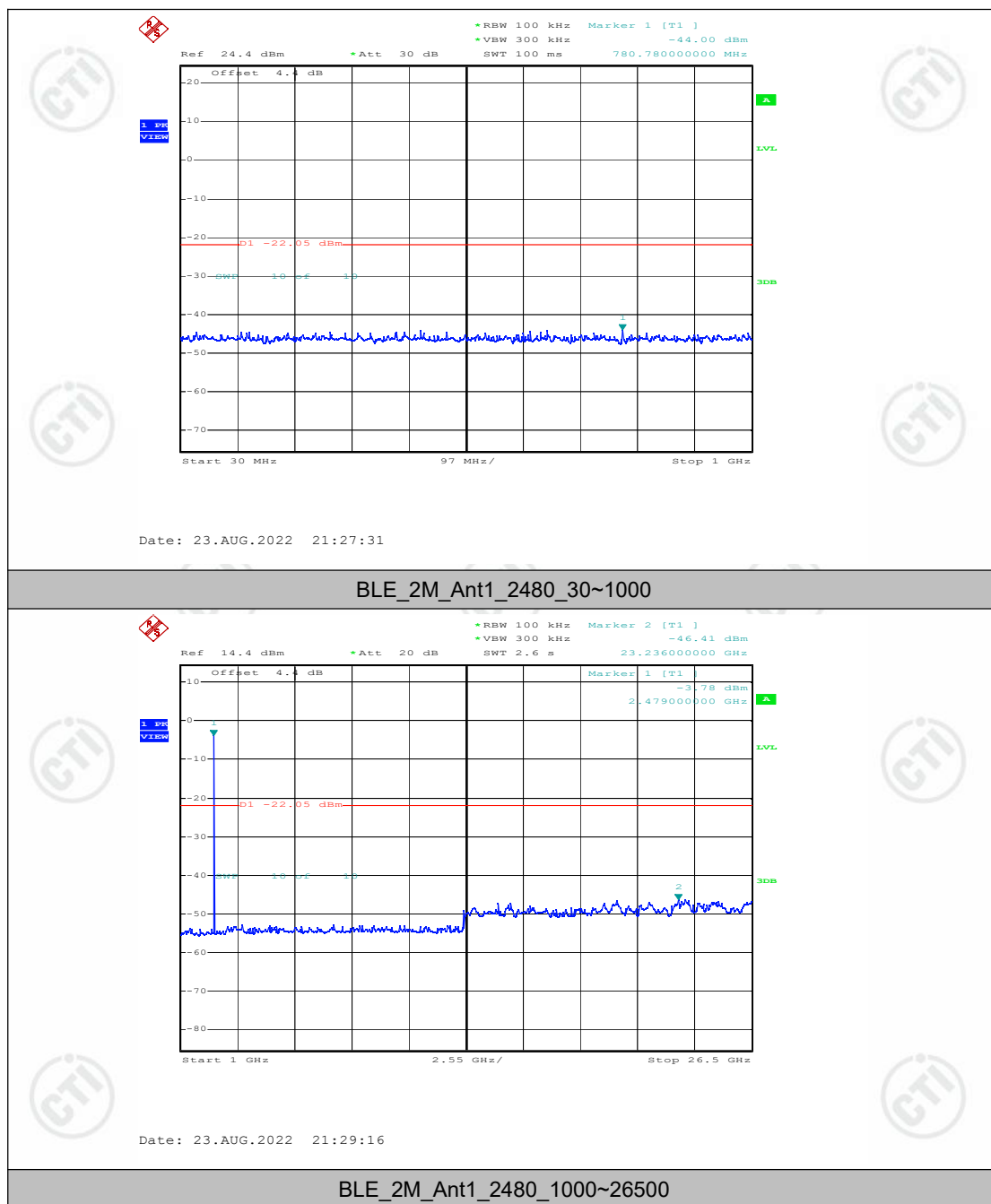










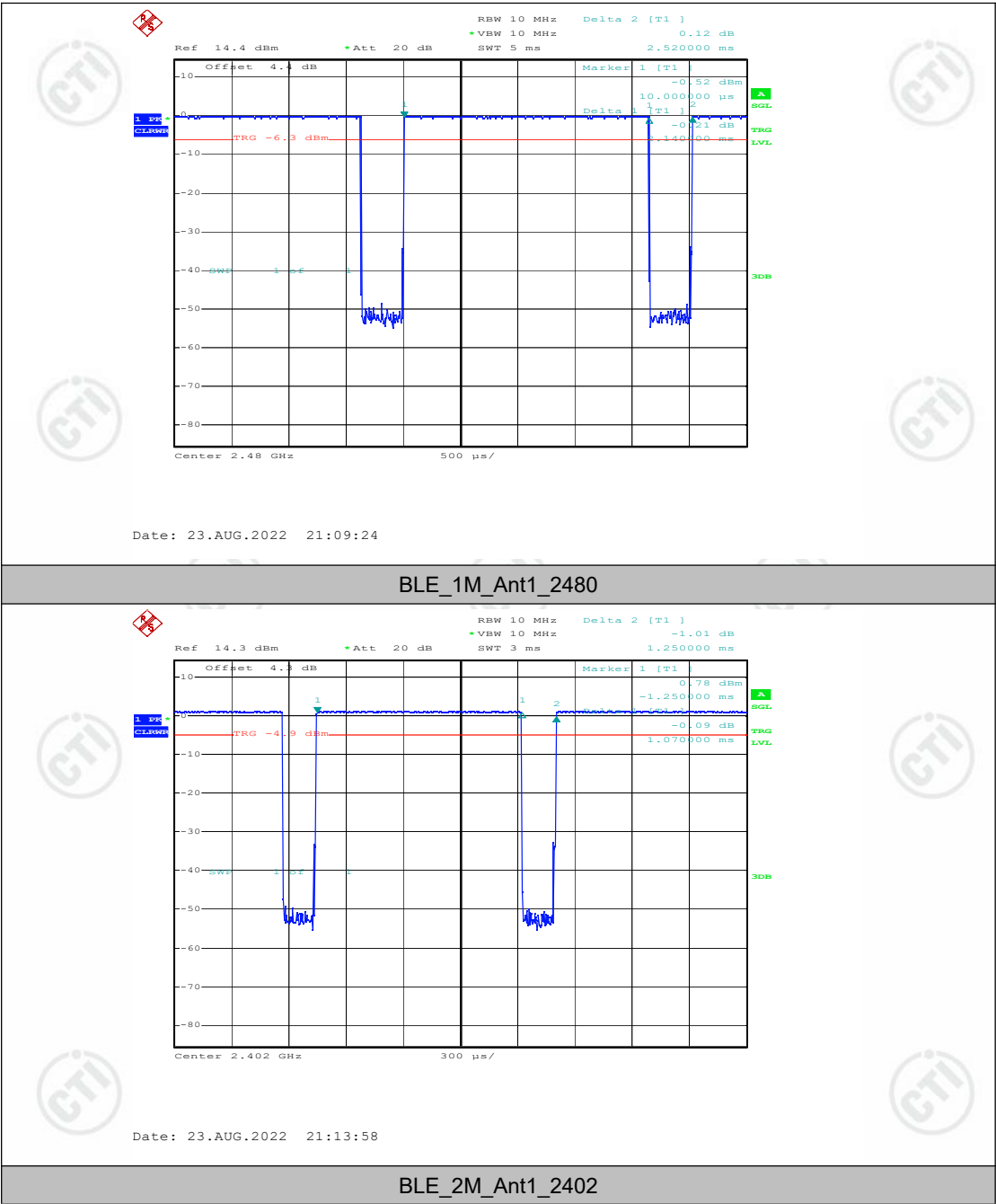


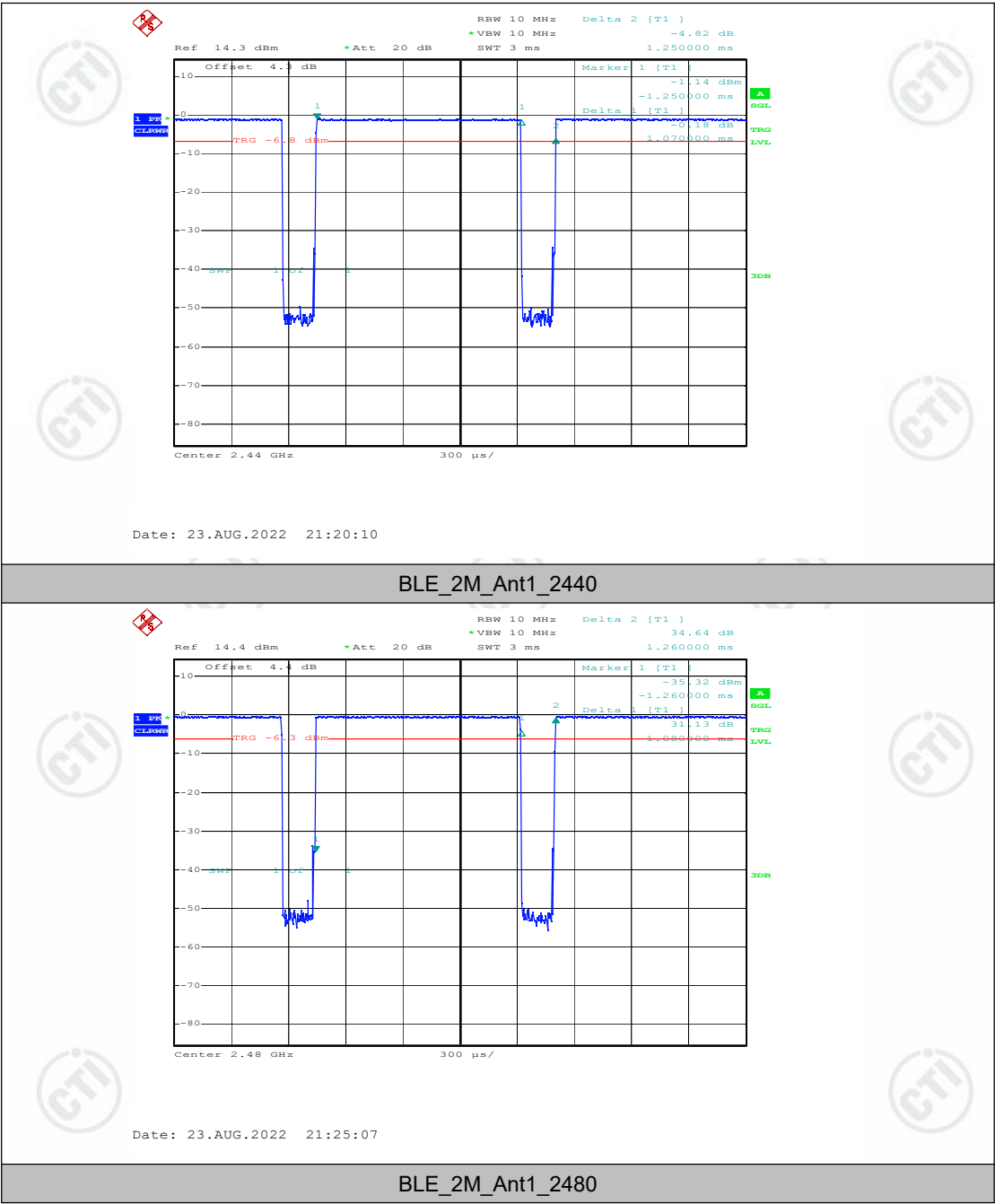
Appendix G: Duty Cycle

Test Result

Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
BLE_1M	Ant1	2402	2.14	2.52	84.92	---	---
		2440	2.14	2.52	84.92	---	---
		2480	2.14	2.52	84.92	---	---
BLE_2M	Ant1	2402	1.07	1.25	85.60	---	---
		2440	1.07	1.25	85.60	---	---
		2480	1.08	1.26	85.71	---	---

BLE 1M Ant1 2440





*** End of Report ***