

***BAND EDGE
DATA SHEETS***

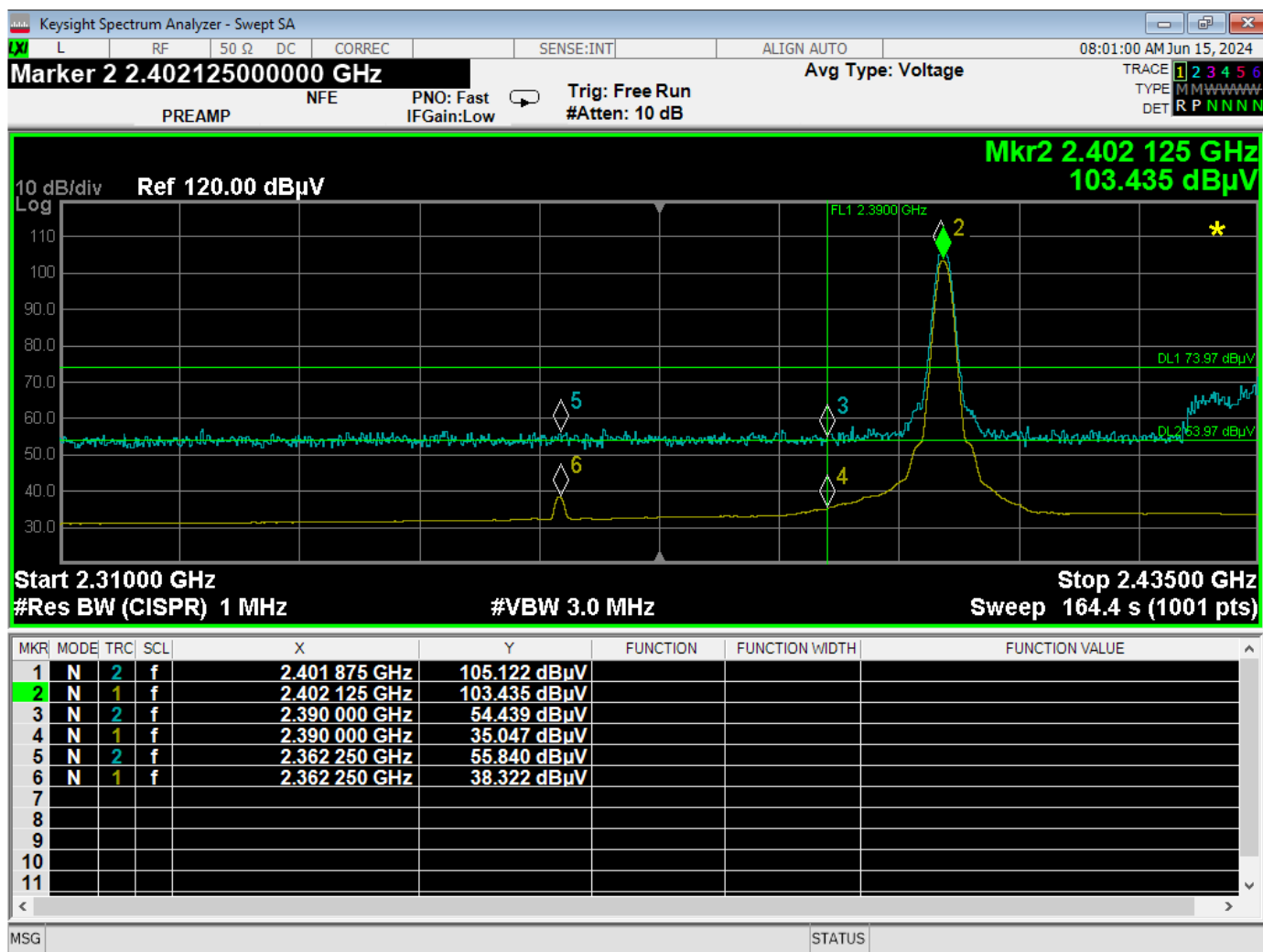
FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

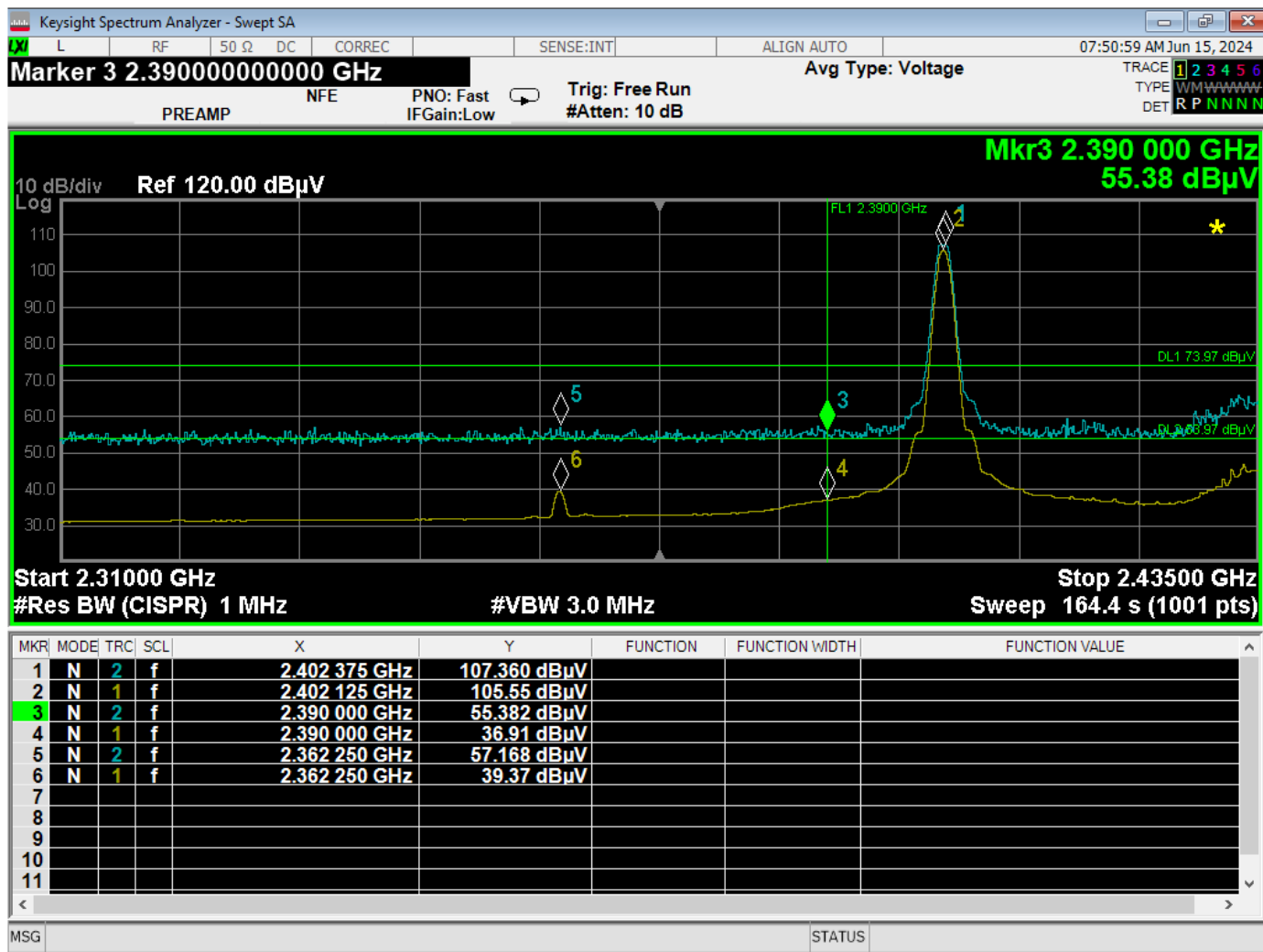
Date: 06/15/2024
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Low Channel BLE Mode - RedPine RF Module

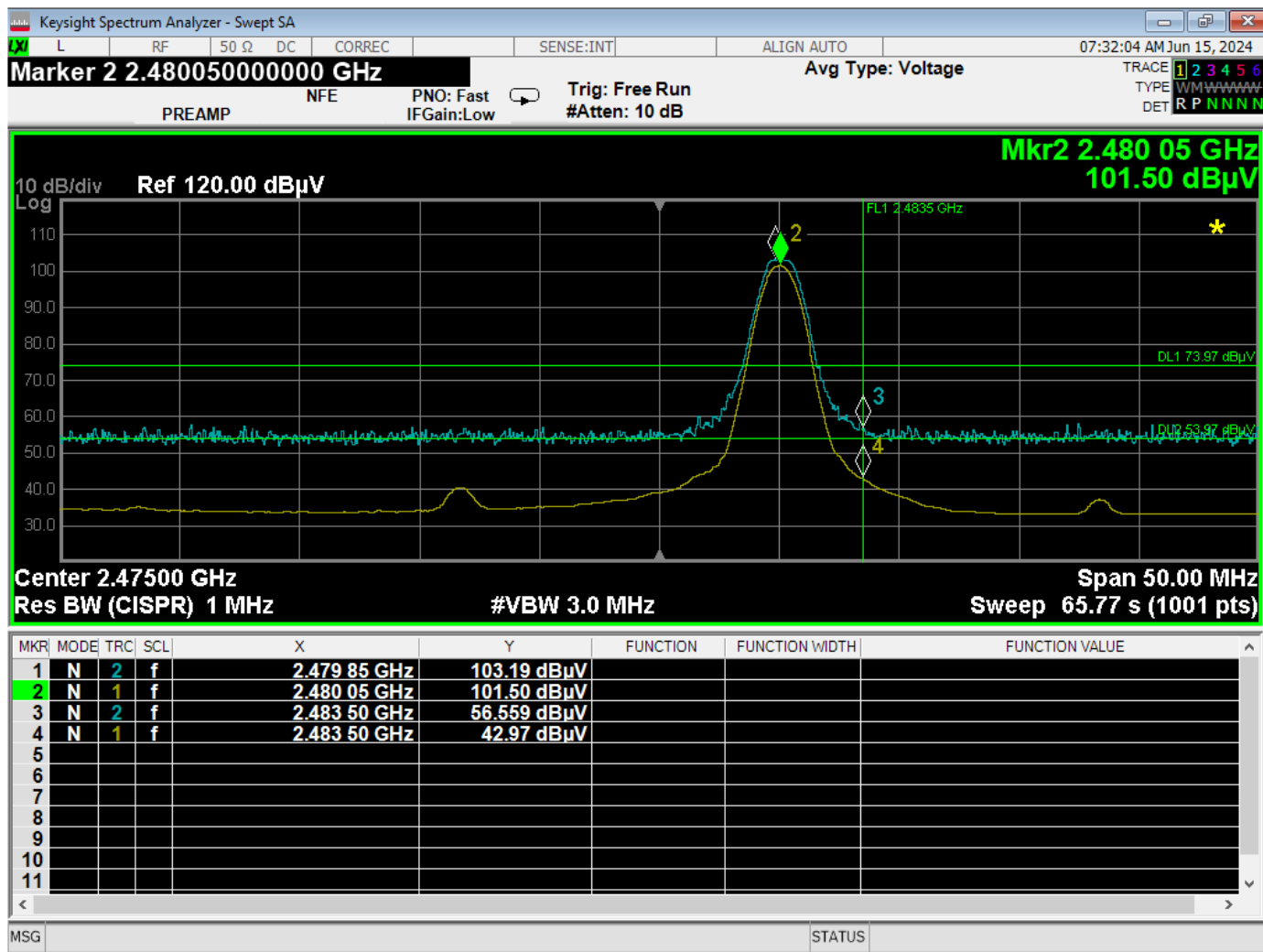
[illegible]



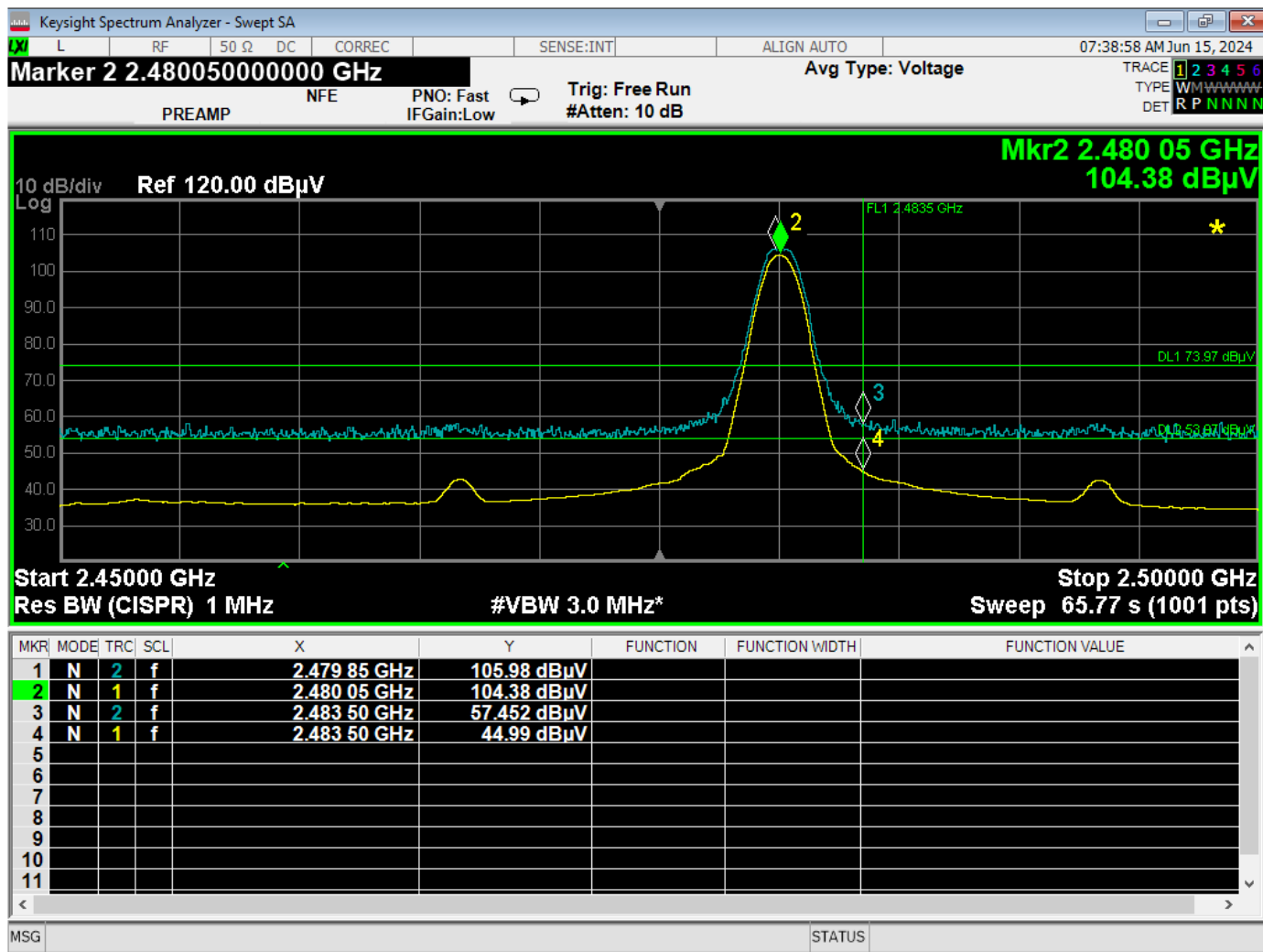
Band Edge – Low Channel – Horizontal Polarization – BLE Mode – 1 MBit – RedPine



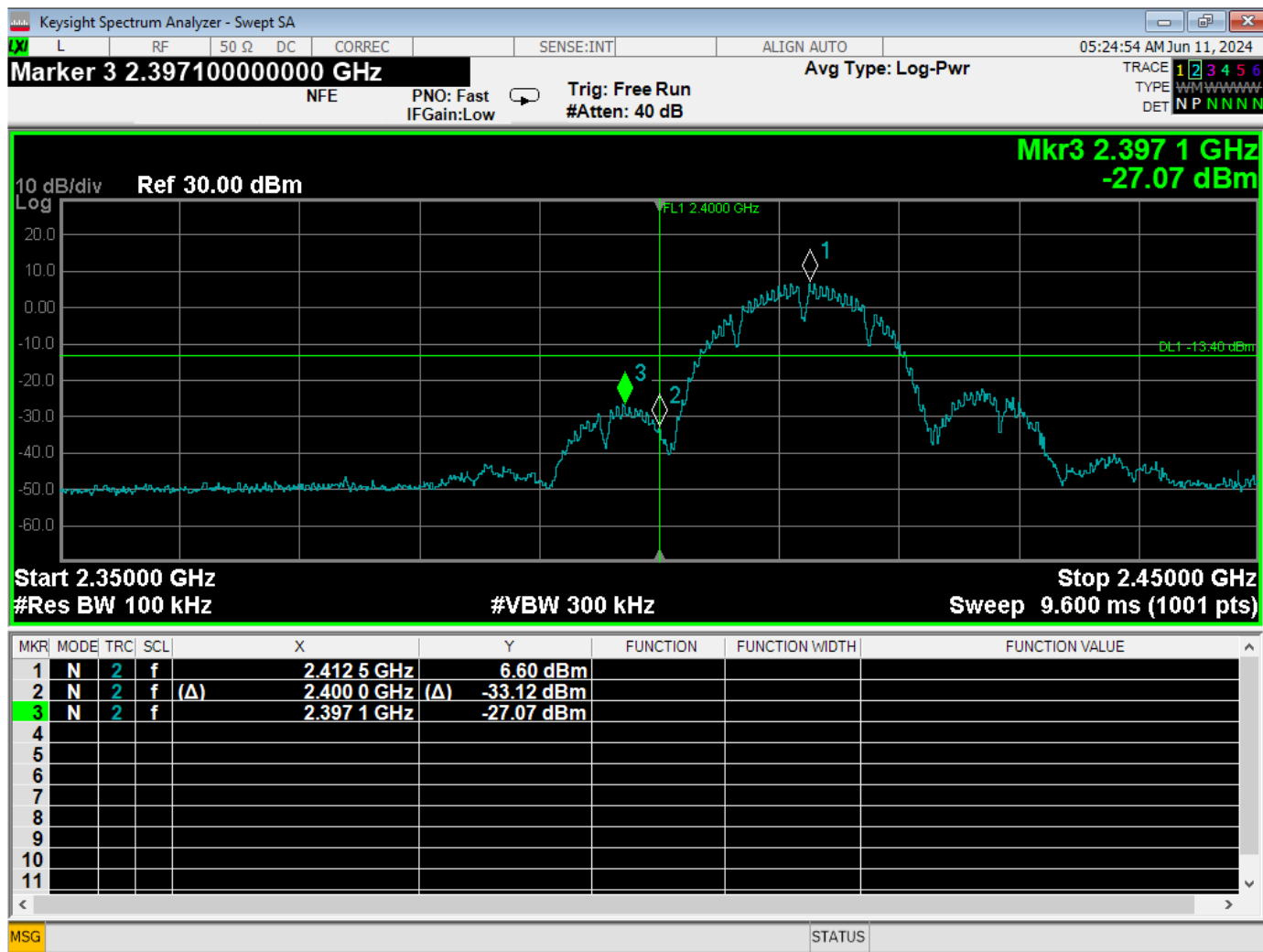
Band Edge – Low Channel – Vertical Polarization – BLE Mode – 1 Mbit – RedPine



Band Edge – High Channel – Horizontal Polarization – BLE Mode – 1 MBit – RedPine



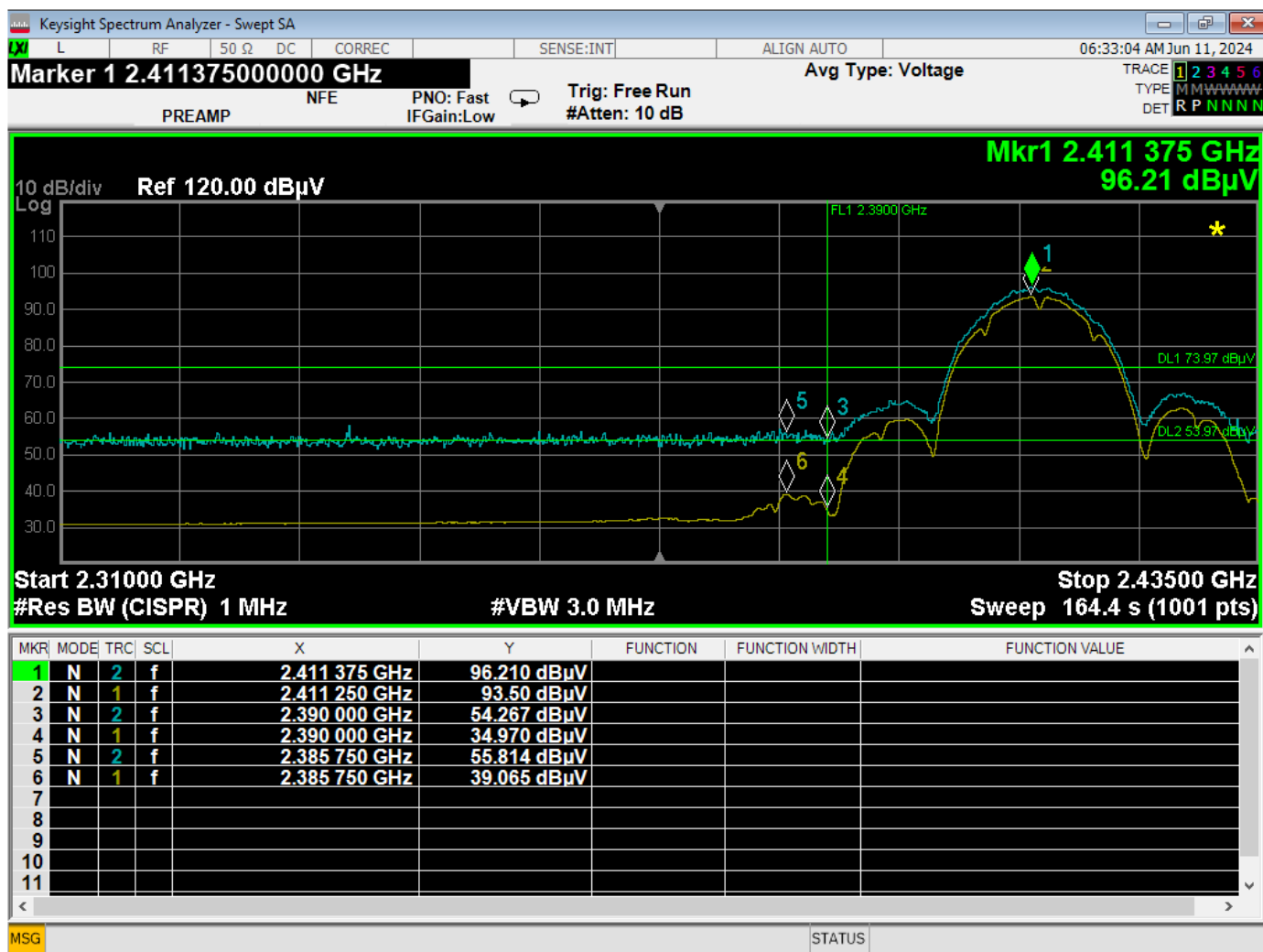
Band Edge – High Channel – Vertical Polarization – BLE Mode – 1 Mbit – RedPine



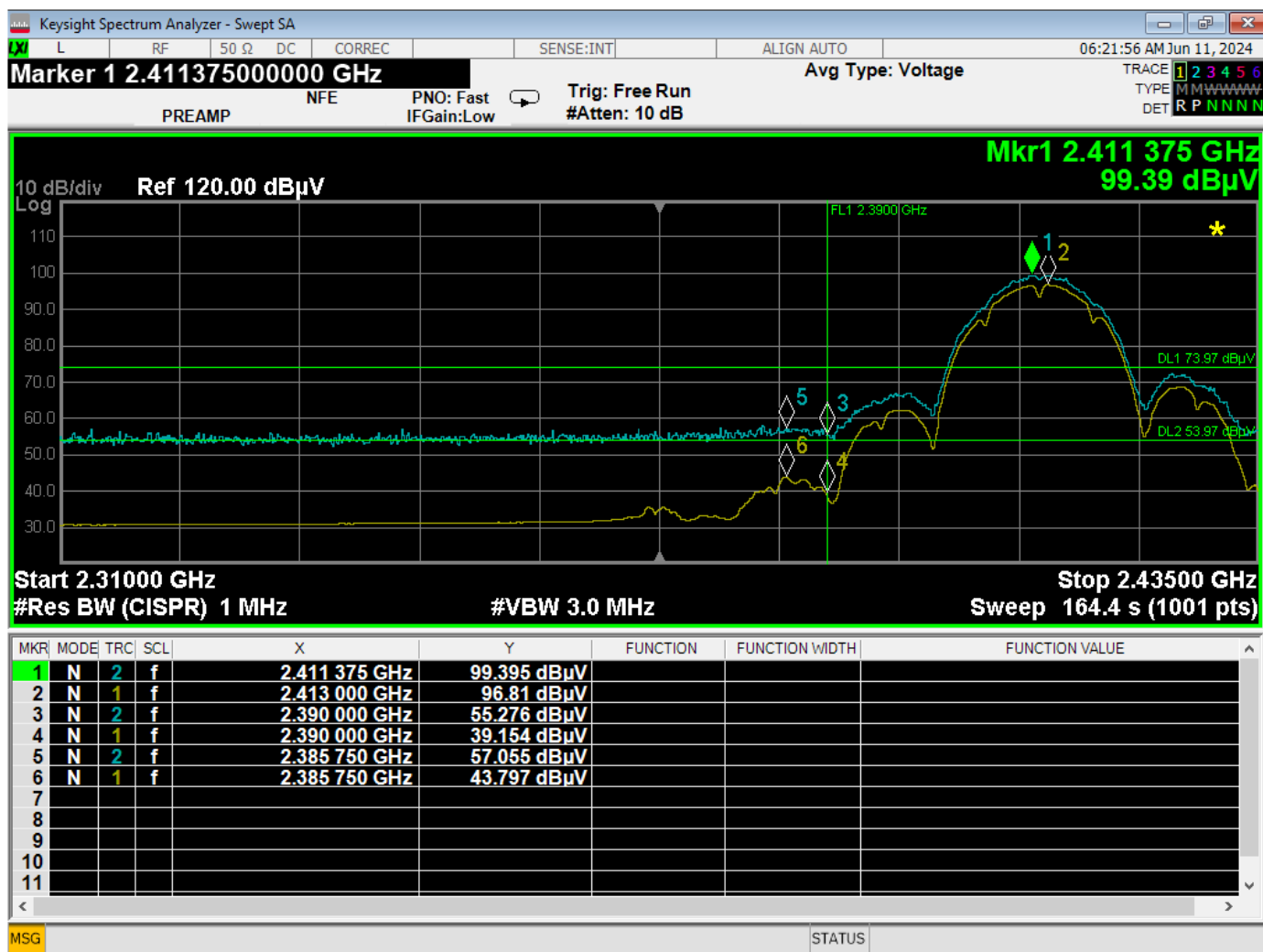
Band Edge – BLE Mode – Low Channel – at 2400 MHz – Conducted Measurement – RedPine

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/11/2024
Lab: D
Tested By: Kyle Fujimoto**Band Edges - Low Channel**
802.11b Mode - RedPine RF Module

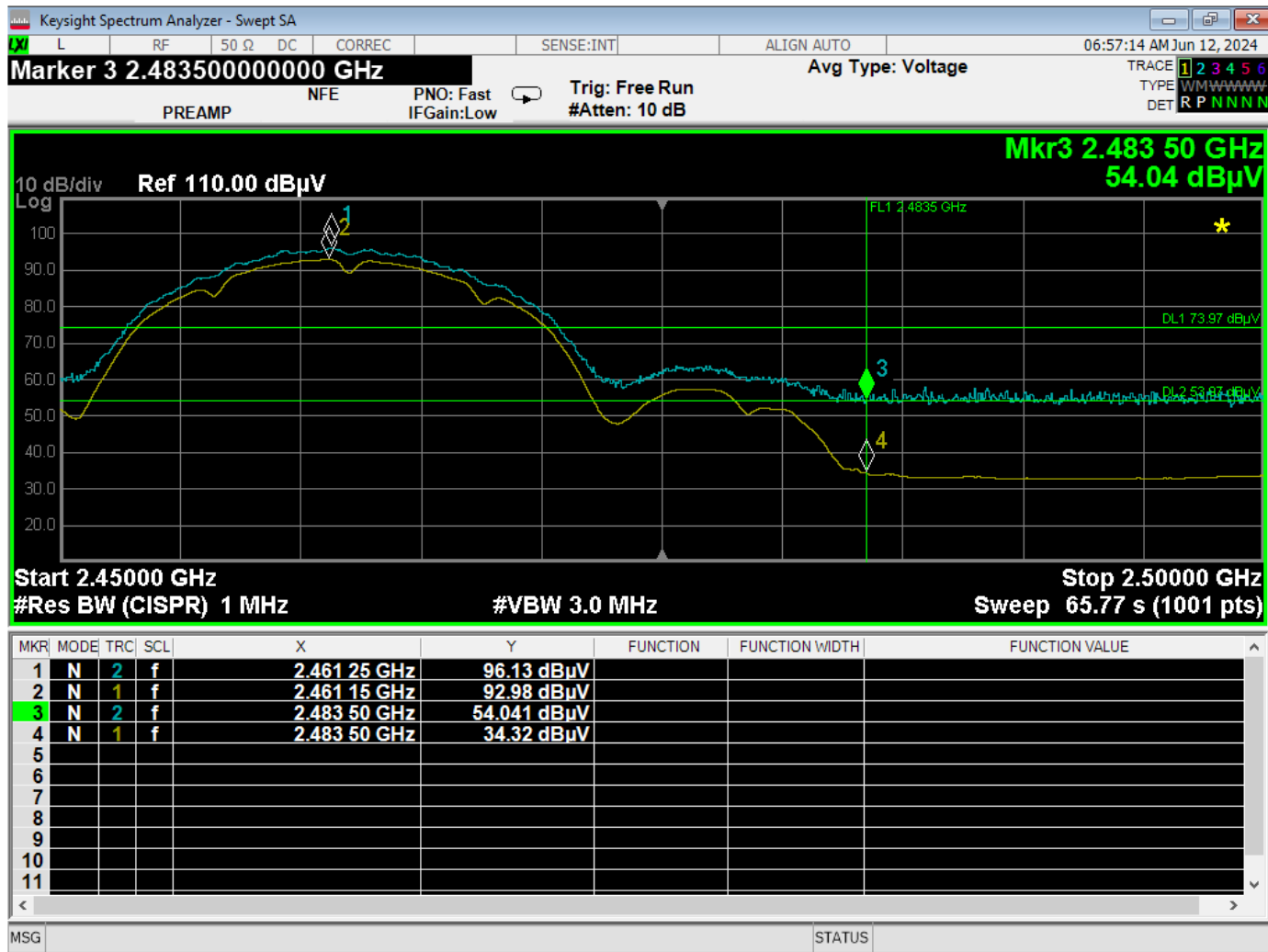
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2412.00	96.21	H	--	--	Peak	268.50	215.29	Fundamental - Low Ch.
2412.00	93.50	H	--	--	Avg	268.50	215.29	Y-Axis
2385.75	55.81	H	73.97	-18.16	Peak	268.50	215.29	Band Edge
2385.75	39.07	H	53.97	-14.90	Avg	268.50	215.29	Y-Axis
2390.00	54.27	H	73.97	-19.70	Peak	268.50	215.29	Band Edge
2390.00	34.97	H	53.97	-19.00	Avg	268.50	215.29	Y-Axis
2412.00	99.40	V	---	--	Peak	285.25	235.29	Fundamental - Low Ch.
2412.00	96.81	V	--	--	Avg	285.25	235.29	Y-Axis
2385.75	57.06	V	73.97	-16.91	Peak	285.25	235.29	Band Edge
2385.75	43.80	V	53.97	-10.17	Avg	285.25	235.29	Y-Axis
2390.00	55.80	V	73.97	-18.17	Peak	285.25	235.29	Band Edge
2390.00	39.15	V	53.97	-14.82	Avg	285.25	235.29	Y-Axis



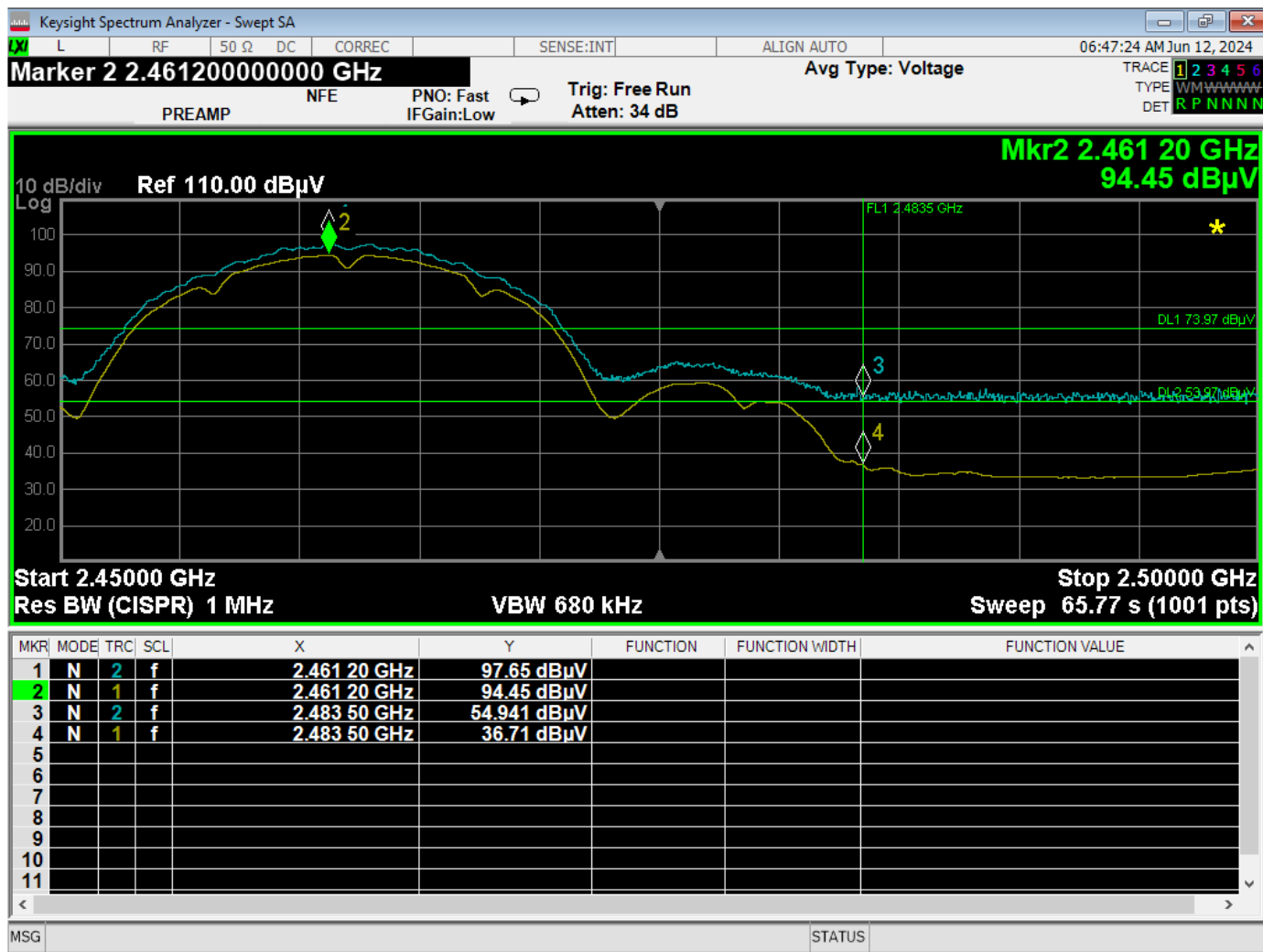
Band Edge – Low Channel – Horizontal Polarization – 802.11b Mode – RedPine



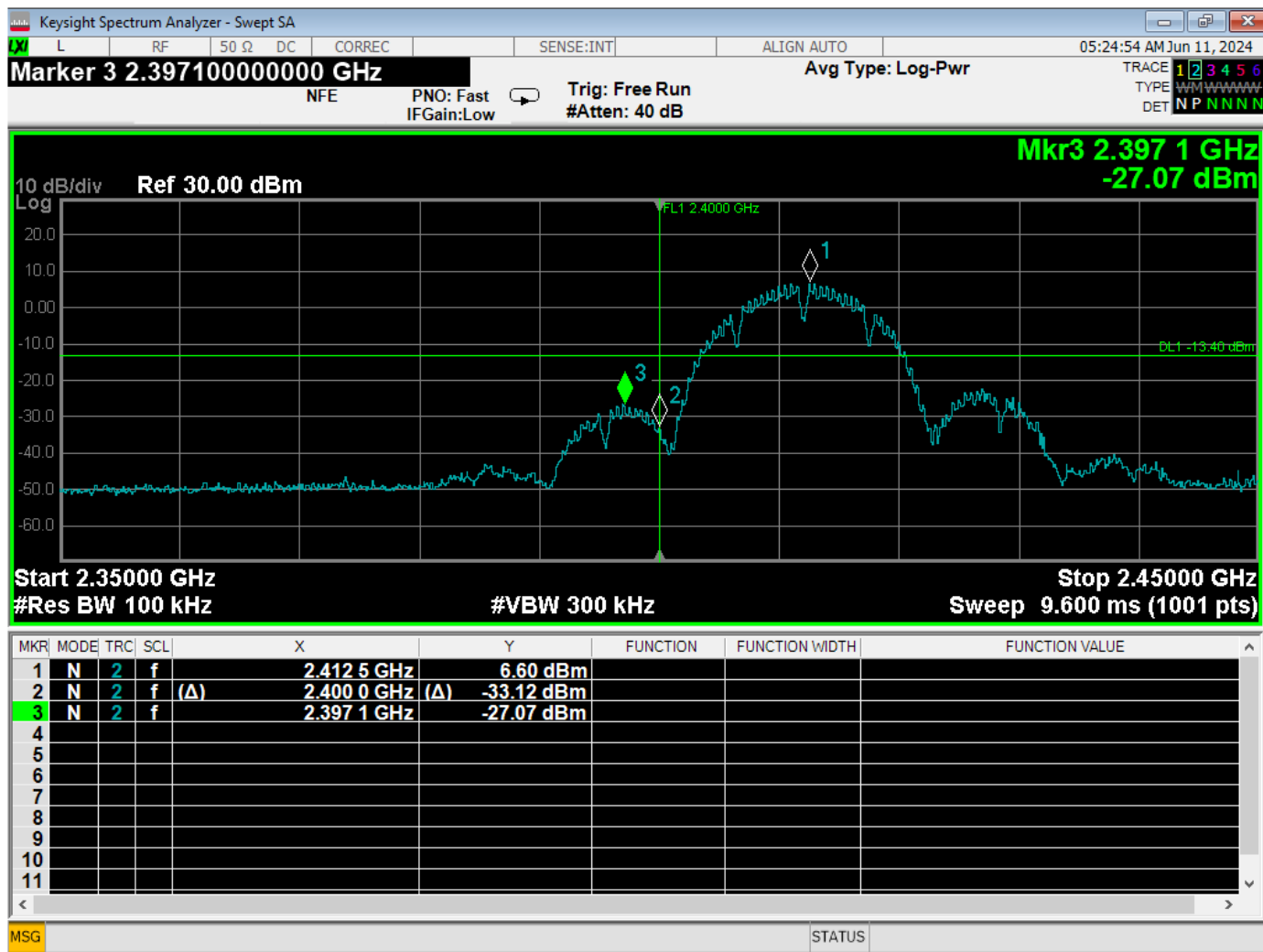
Band Edge – Low Channel – Vertical Polarization – 802.11b Mode – RedPine



Band Edge – High Channel – Horizontal Polarization – 802.11b Mode – RedPine



Band Edge – High Channel – Vertical Polarization – 802.11b Mode – RedPine



Band Edge – 802.11b Mode – RedPine – Low Channel – at 2400 MHz – Conducted Measurement

FCC 15.247 and RSS-247

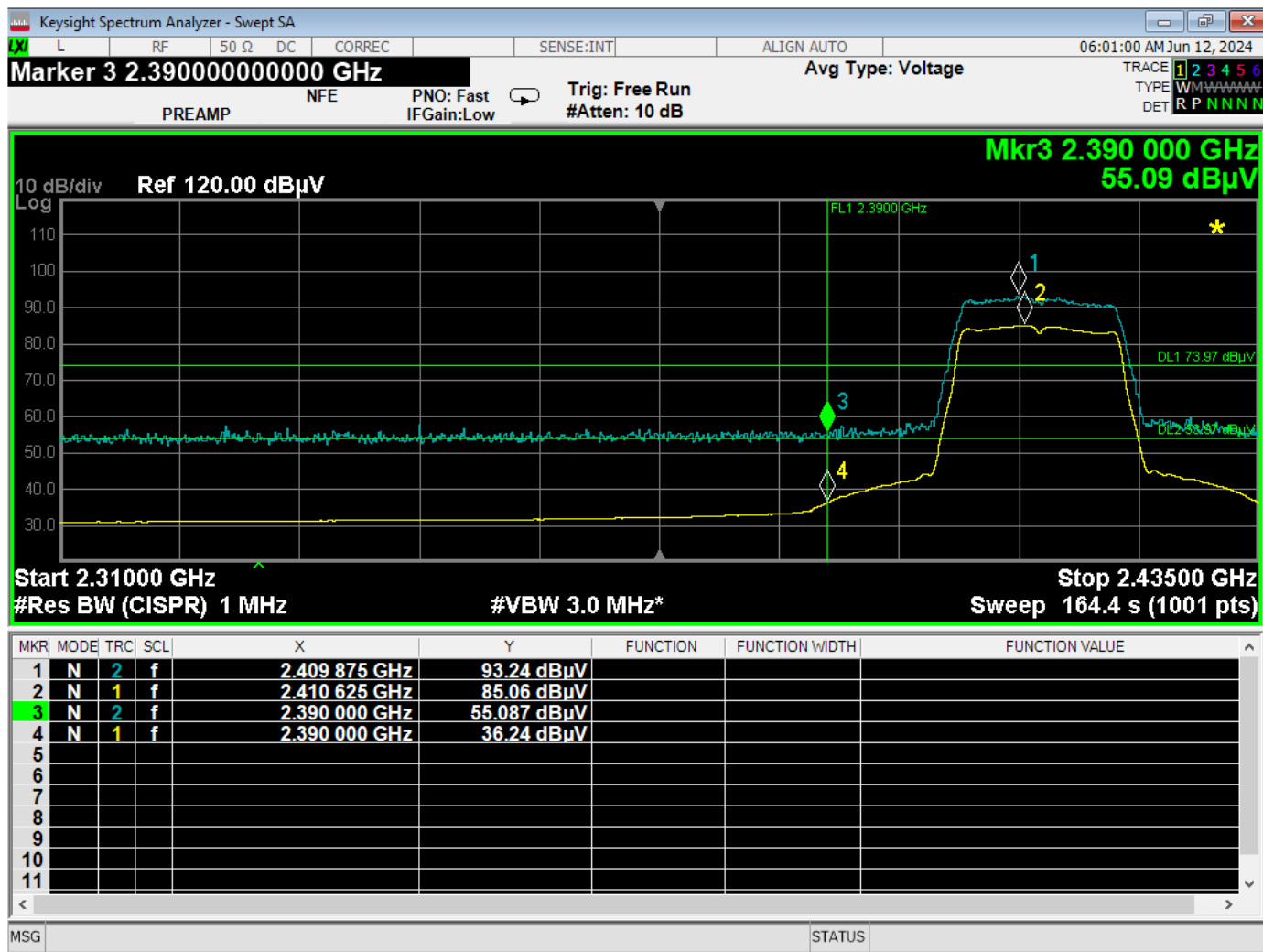
Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Date: 06/12/2024
Lab: D
Tested By: Kyle Fujimoto

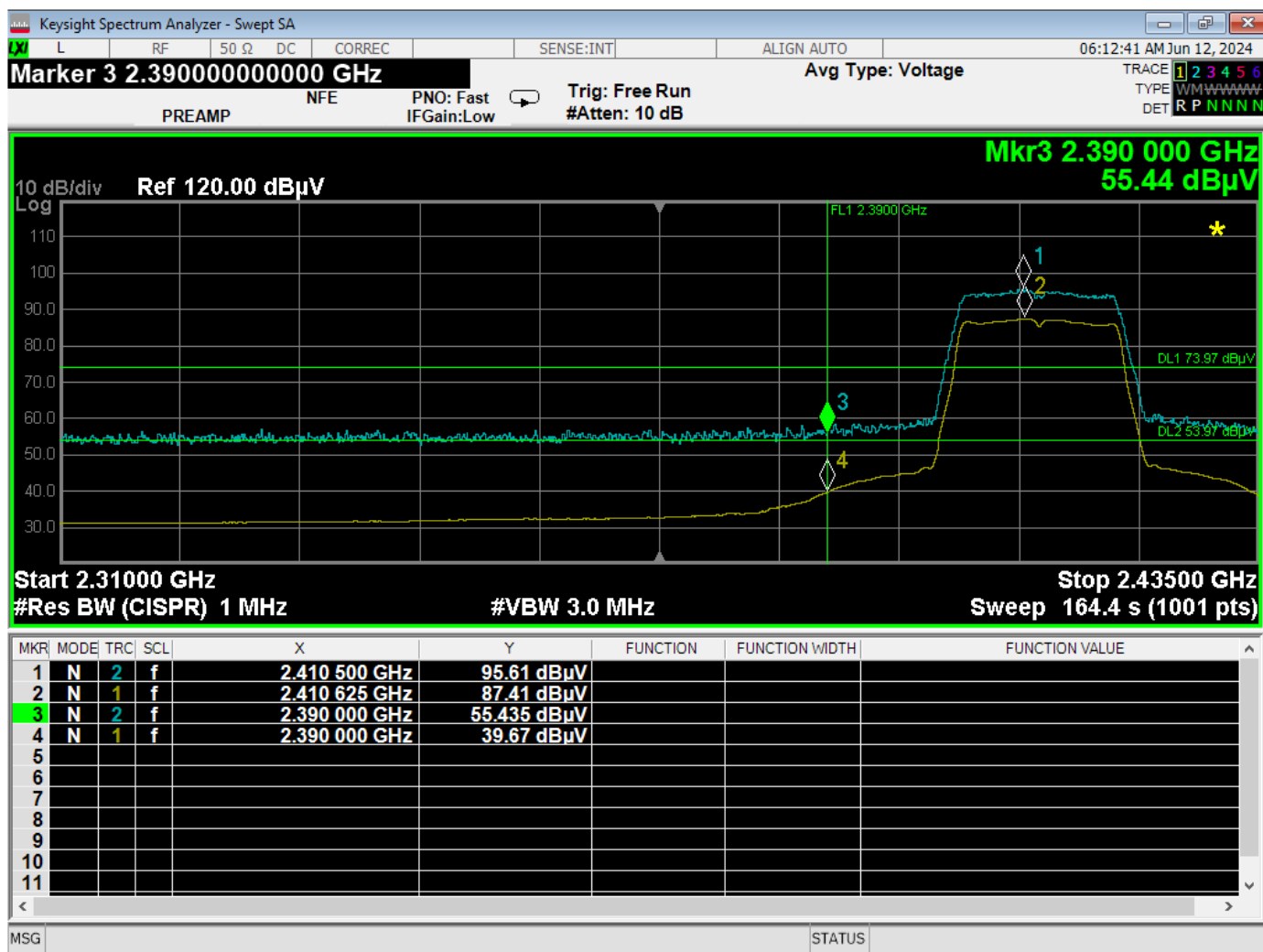
Band Edges - Low Channel

802.11g Mode - RedPine RF Module

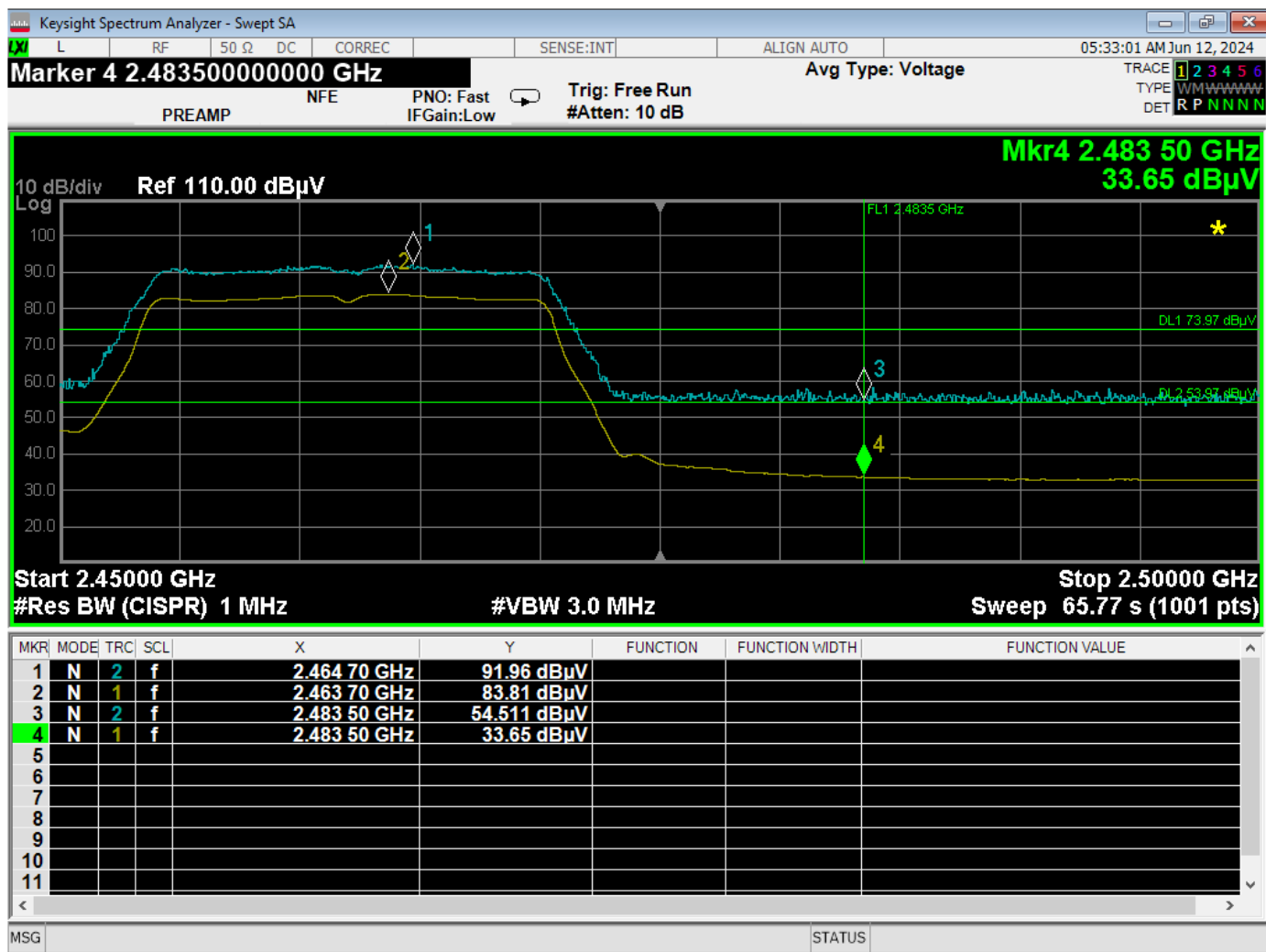
[illegible]



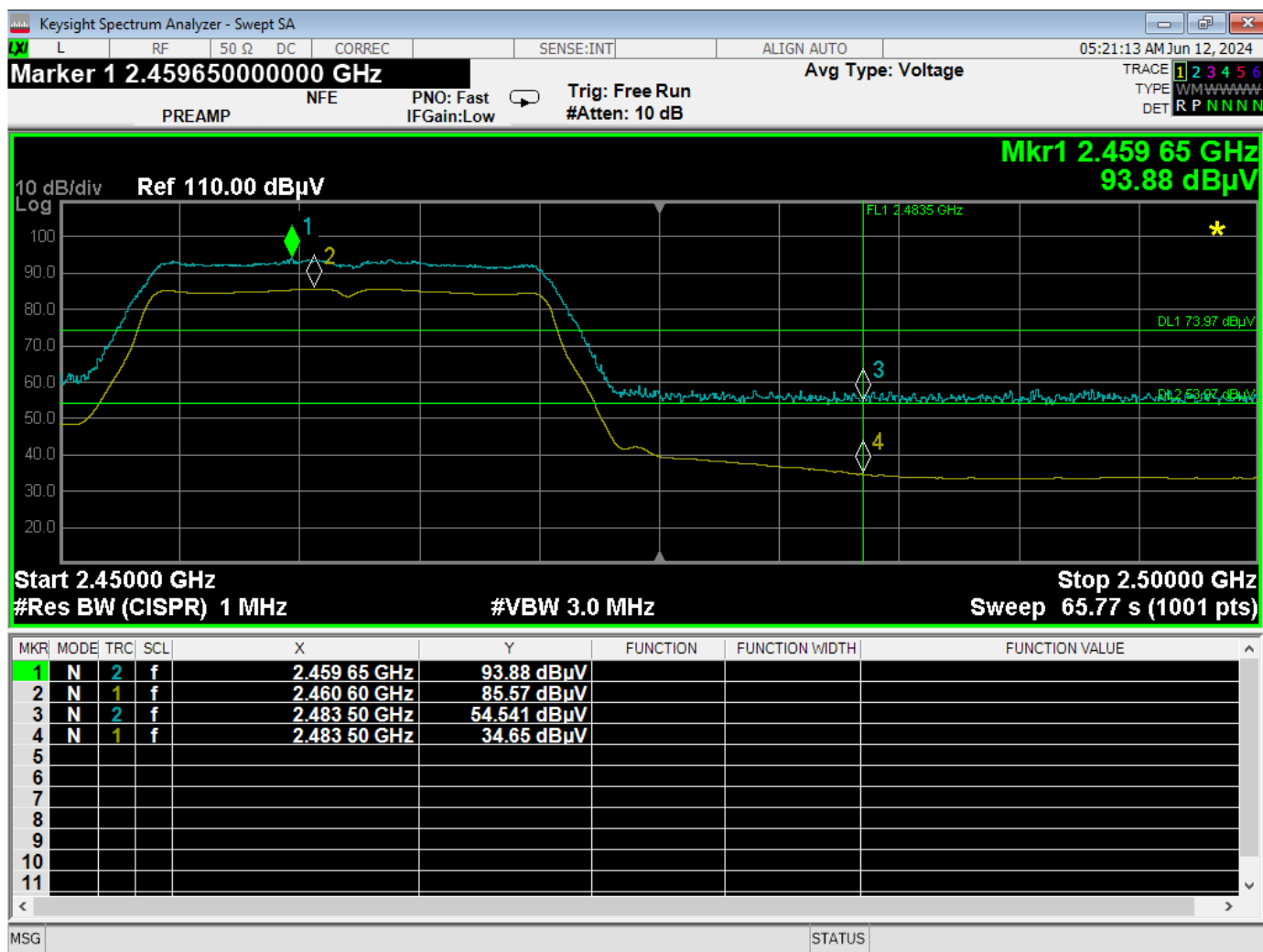
Band Edge – Low Channel – Horizontal Polarization – 802.11g Mode – RedPine



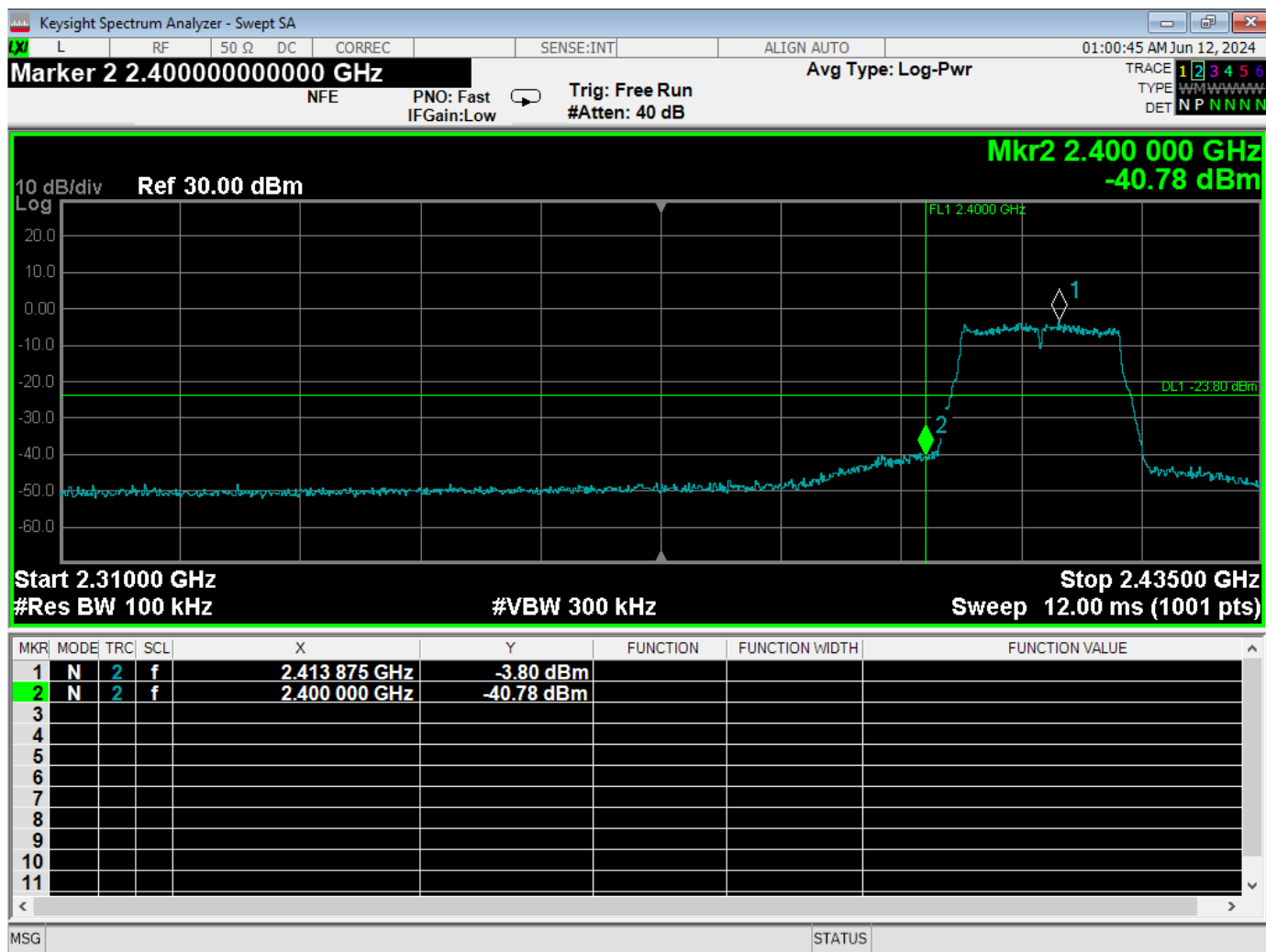
Band Edge – Low Channel – Vertical Polarization – 802.11g Mode – RedPine



Band Edge – High Channel – Horizontal Polarization – 802.11g Mode – RedPine



Band Edge – High Channel – Vertical Polarization – 802.11g Mode – RedPine



Band Edge – 802.11g Mode – RedPine – Low Channel – at 2400 MHz – Conducted Measurement



FCC 15.247 and RSS-247

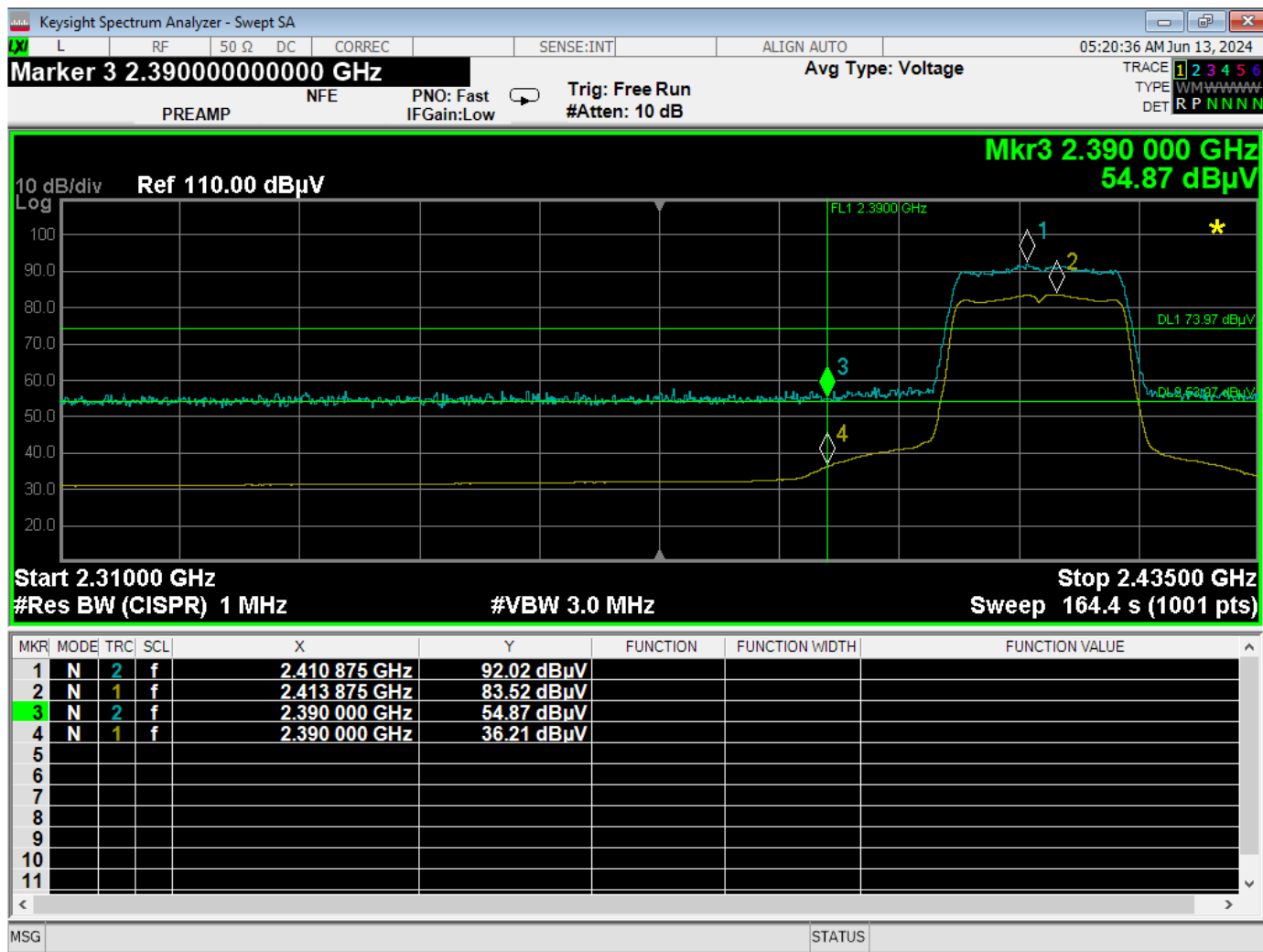
Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

Date: 06/13/2024
Lab: D
Tested By: Kyle Fujimoto

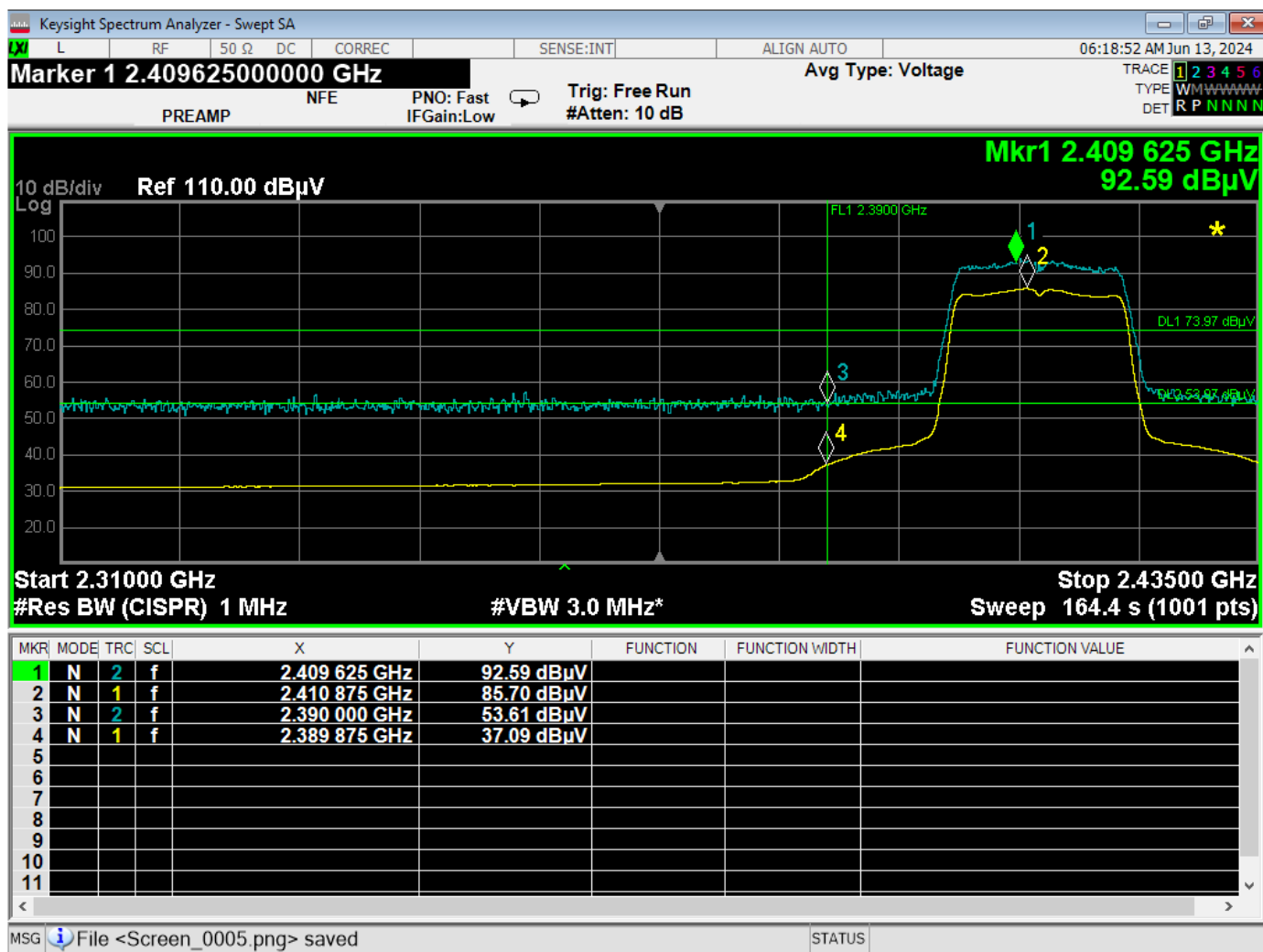
Band Edges - High Channel

802.11n (HT 20) Mode - RedPine RF Module

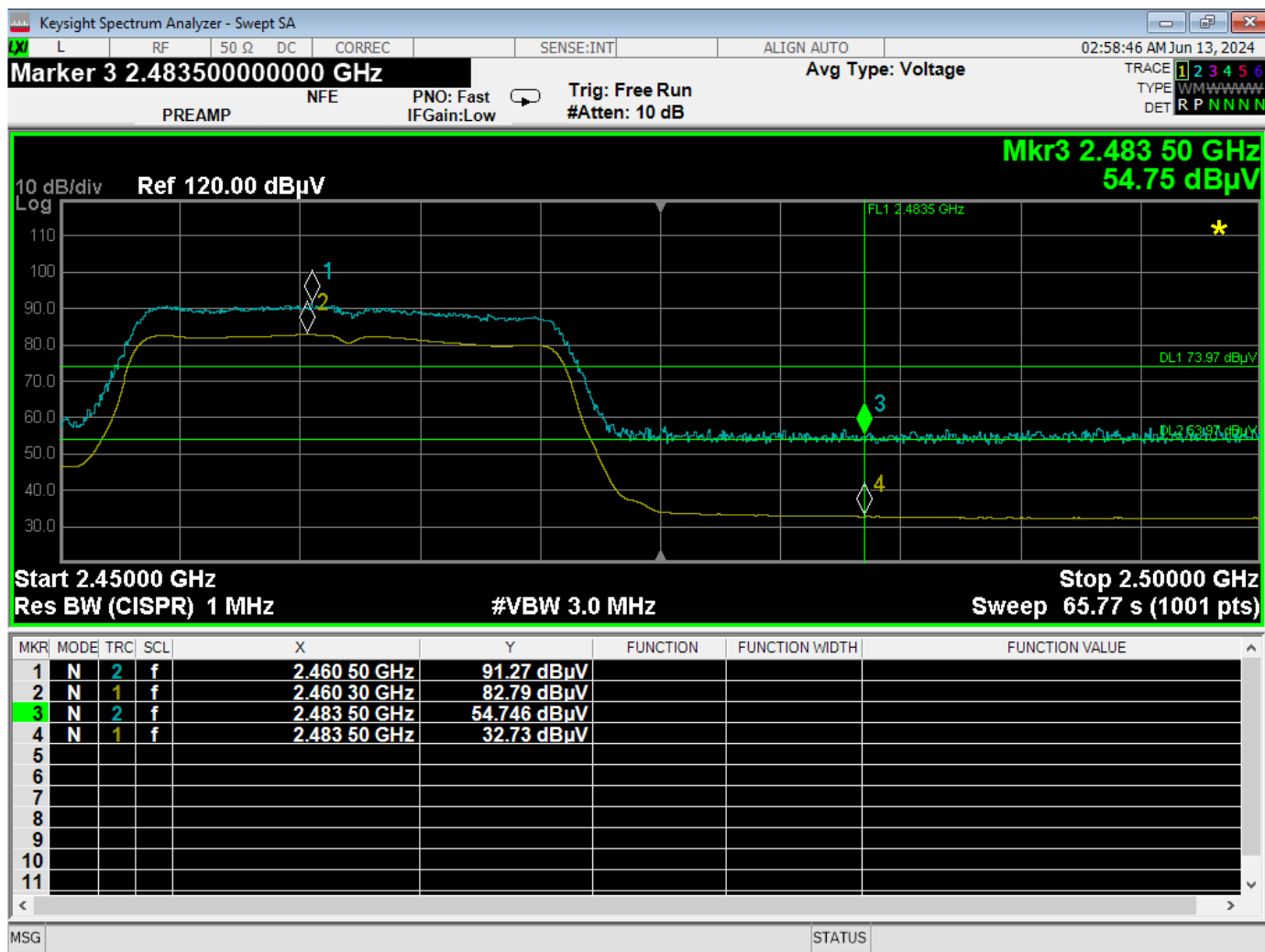
[illegible]



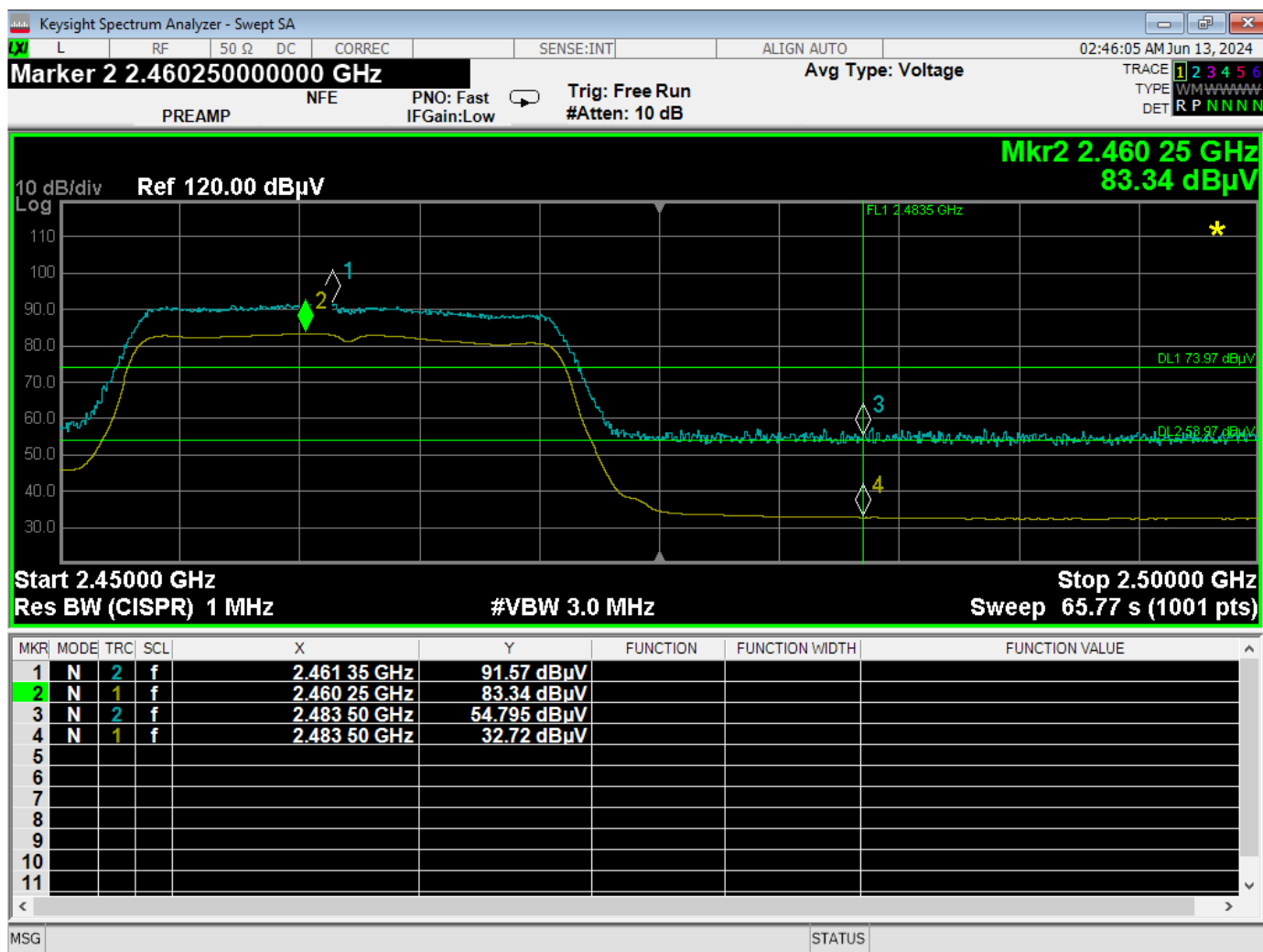
Band Edge – Low Channel – Horizontal Polarization – 802.11n Mode – 20 MHz – RedPine



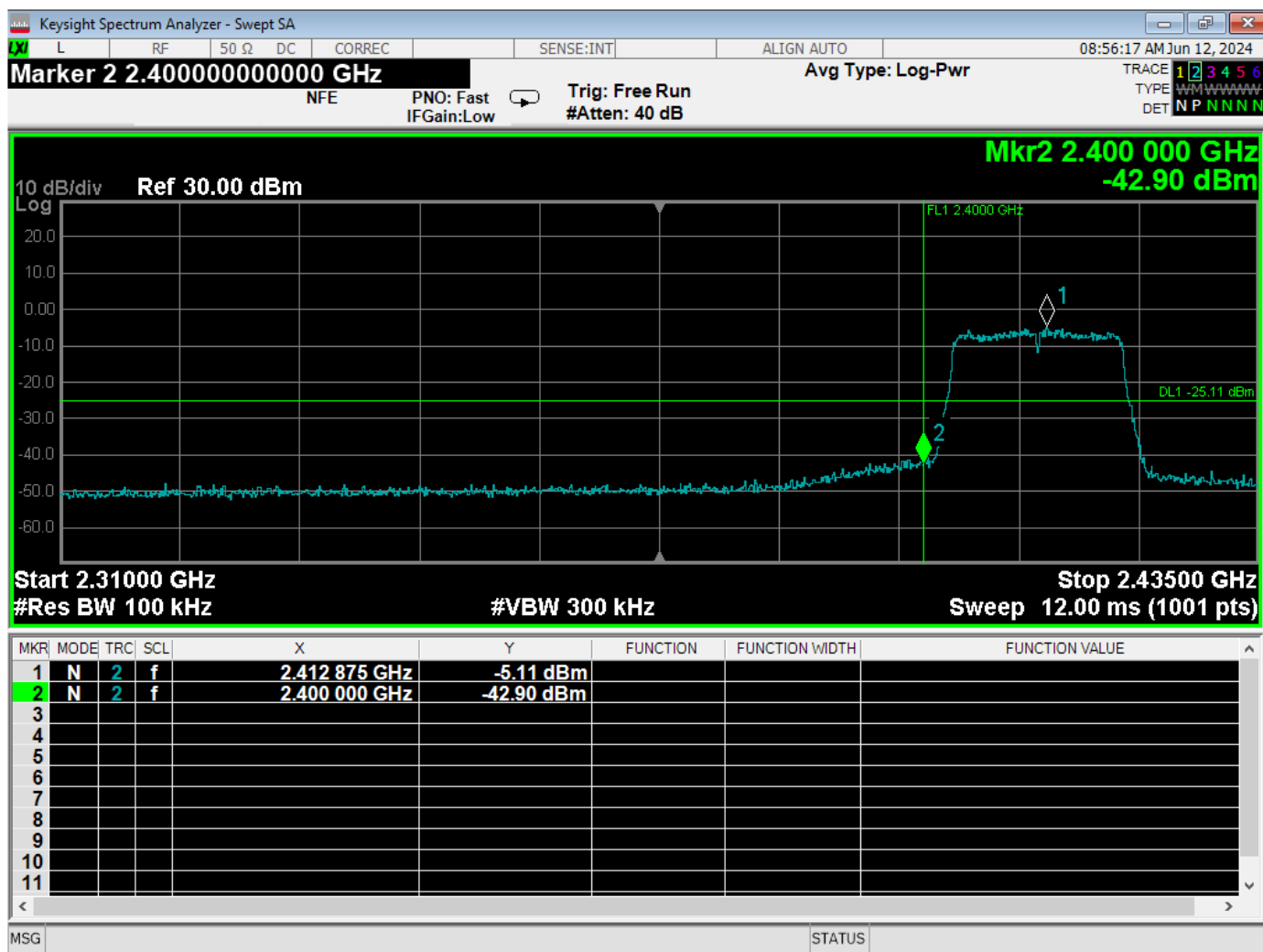
Band Edge – Low Channel – Vertical Polarization – 802.11n Mode – 20 MHz



Band Edge – High Channel – Horizontal Polarization – 802.11n Mode – 20 MHz



Band Edge – High Channel – Vertical Polarization – 802.11n Mode – 20 MHz



Band Edge – 802.11g Mode – RedPine – Low Channel – at 2400 MHz – Conducted Measurement

FCC 15.247 and RSS-247

Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3

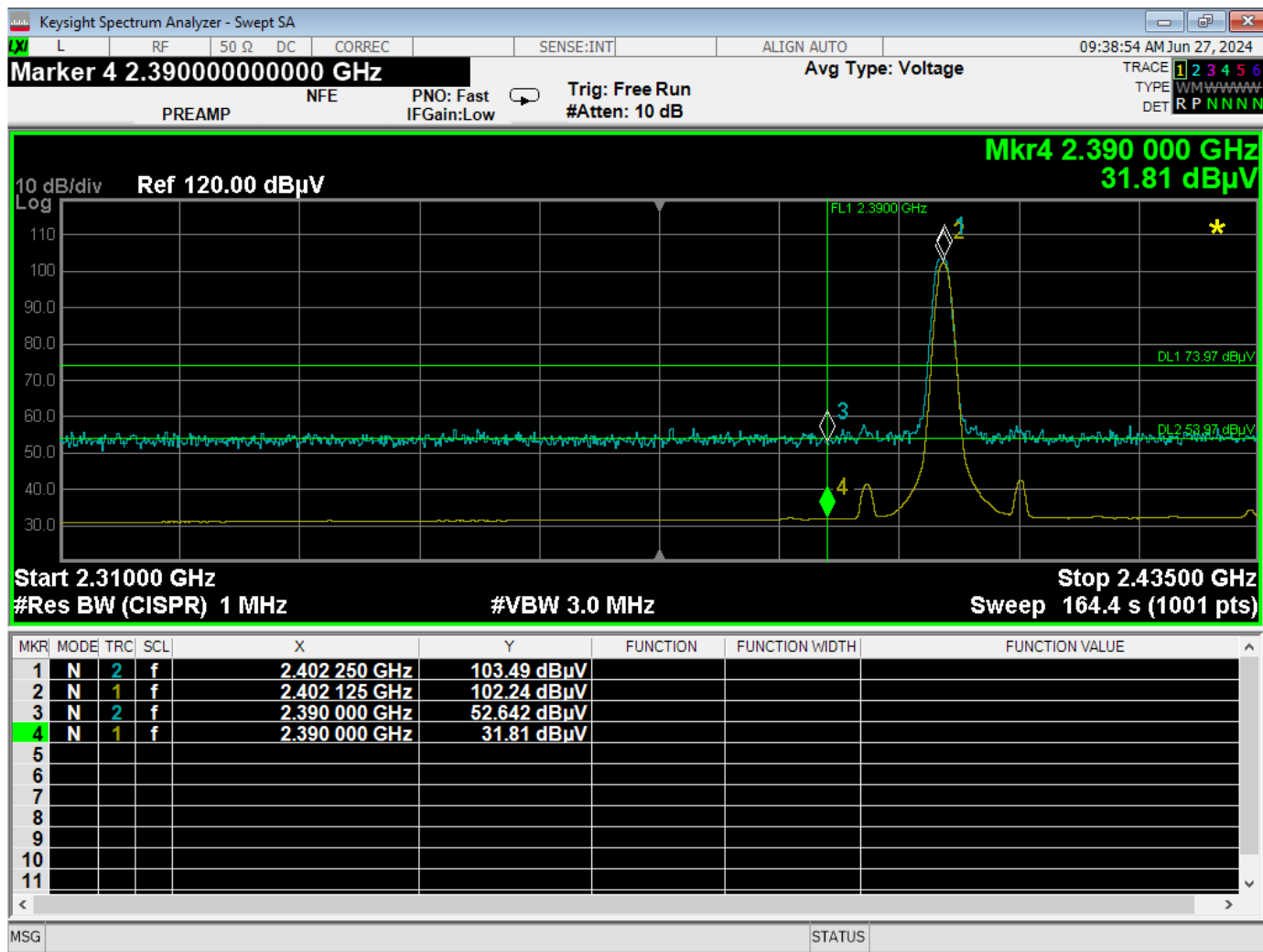
Date: 06/27/2024
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Low Channel BLE Mode - Nordic RF Module

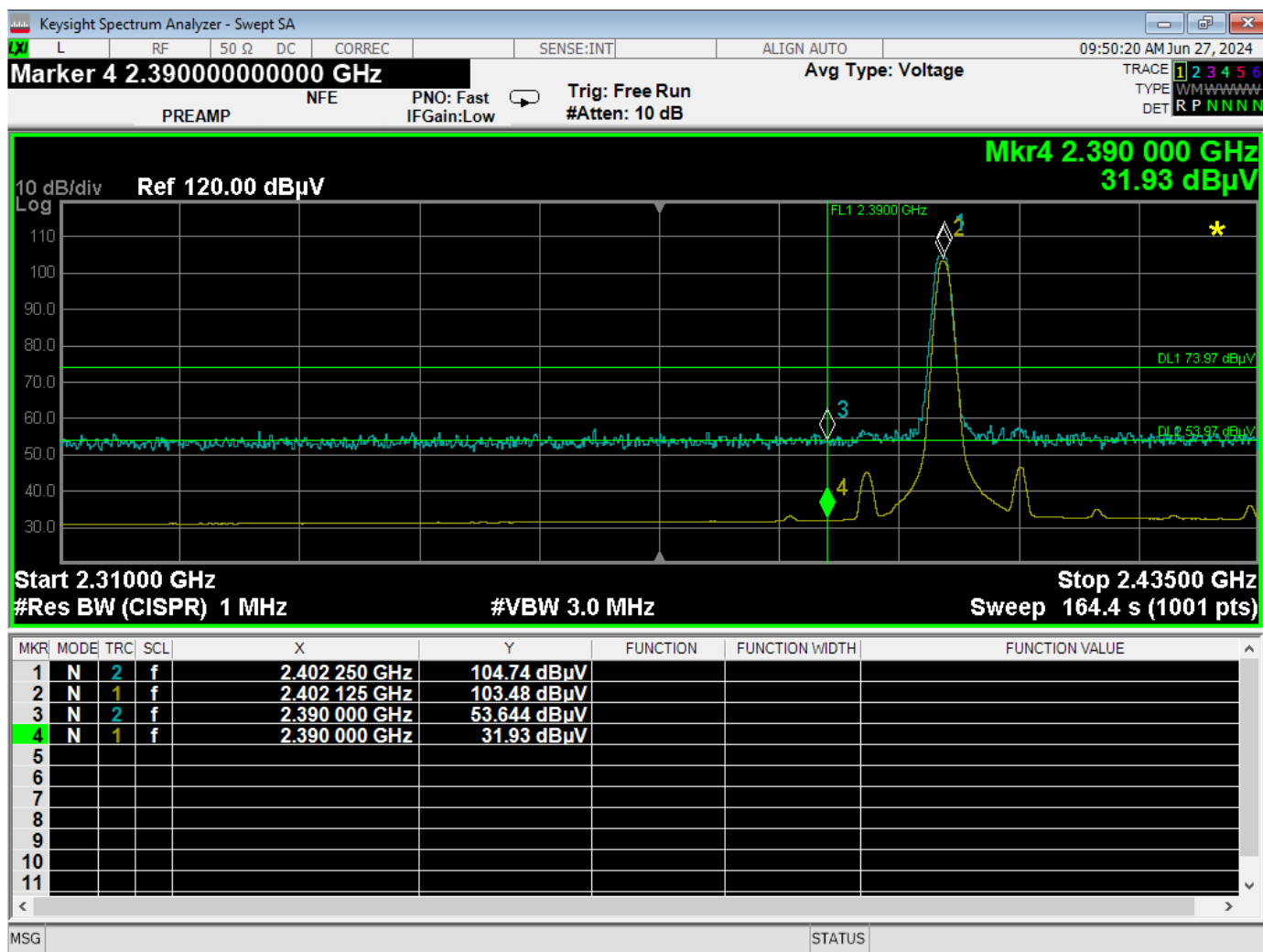
[illegible]

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/27/2024
Lab: D
Tested By: Kyle Fujimoto**Band Edges - High Channel**
BLE Mode - Nordic RF Module

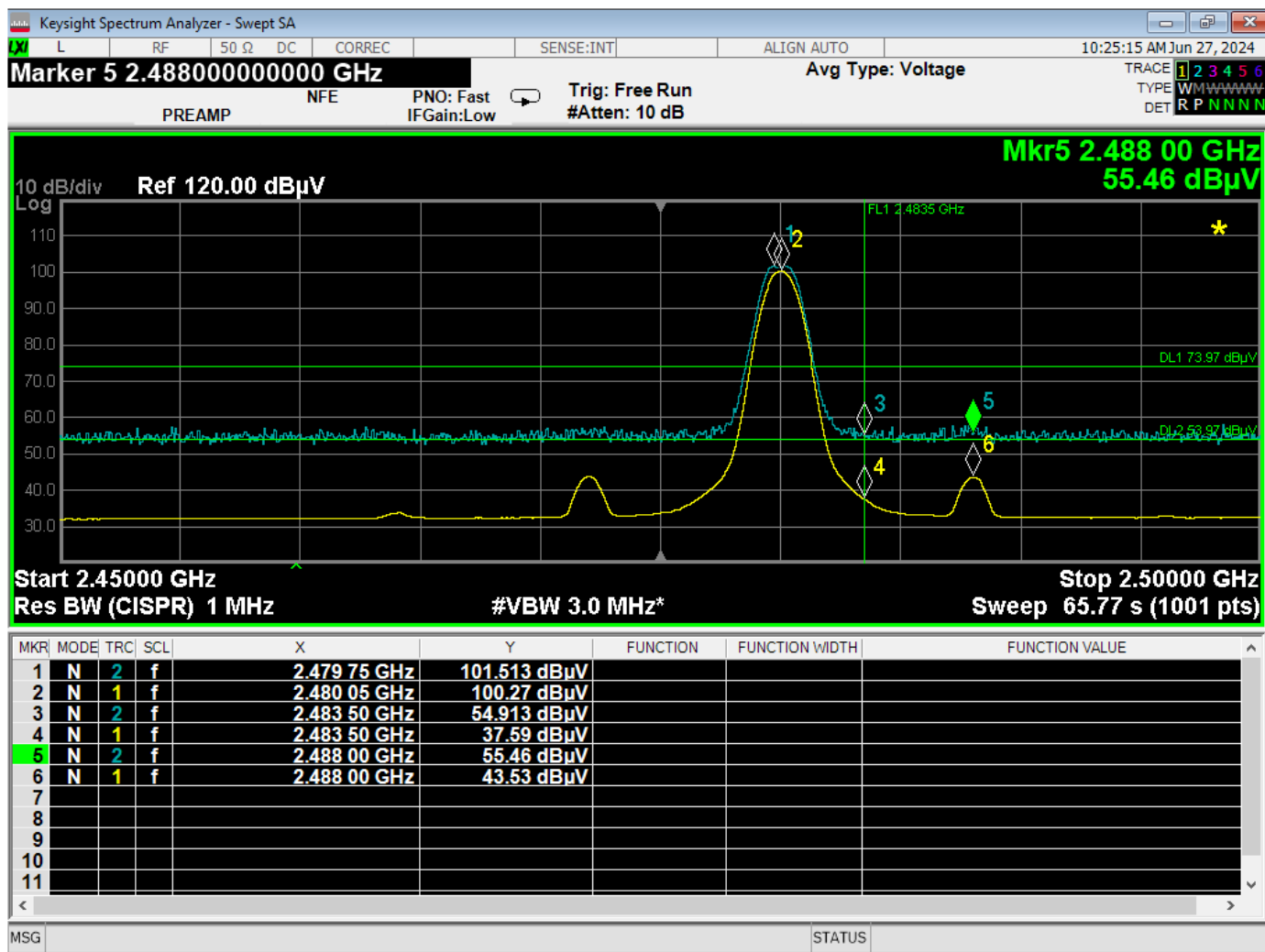
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	101.51	H	---	--	Peak	309.00	170.04	Fundamental - High Ch.
2480.00	100.27	H	--	--	Avg	309.00	170.04	Y-Axis
2483.50	54.91	H	73.97	-19.06	Peak	309.00	170.04	Band Edge
2483.50	37.57	H	53.97	-16.40	Avg	309.00	170.04	Y-Axis
2488.00	55.46	H	73.97	-18.51	Peak	309.00	170.04	Band Edge
2488.00	43.53	H	53.97	-10.44	Avg	309.00	170.04	Y-Axis
2480.00	104.94	V	---	--	Peak	104.00	137.50	Fundamental - High Ch.
2480.00	103.70	V	--	--	Avg	104.00	137.50	Y-Axis
2483.50	56.06	V	73.97	-17.91	Peak	104.00	137.50	Band Edge
2483.50	41.56	V	53.97	-12.41	Avg	104.00	137.50	Y-Axis
2488.05	57.30	V	73.97	-16.67	Peak	104.00	137.50	Band Edge
2488.05	47.30	V	53.97	-6.67	Avg	104.00	137.50	Y-Axis



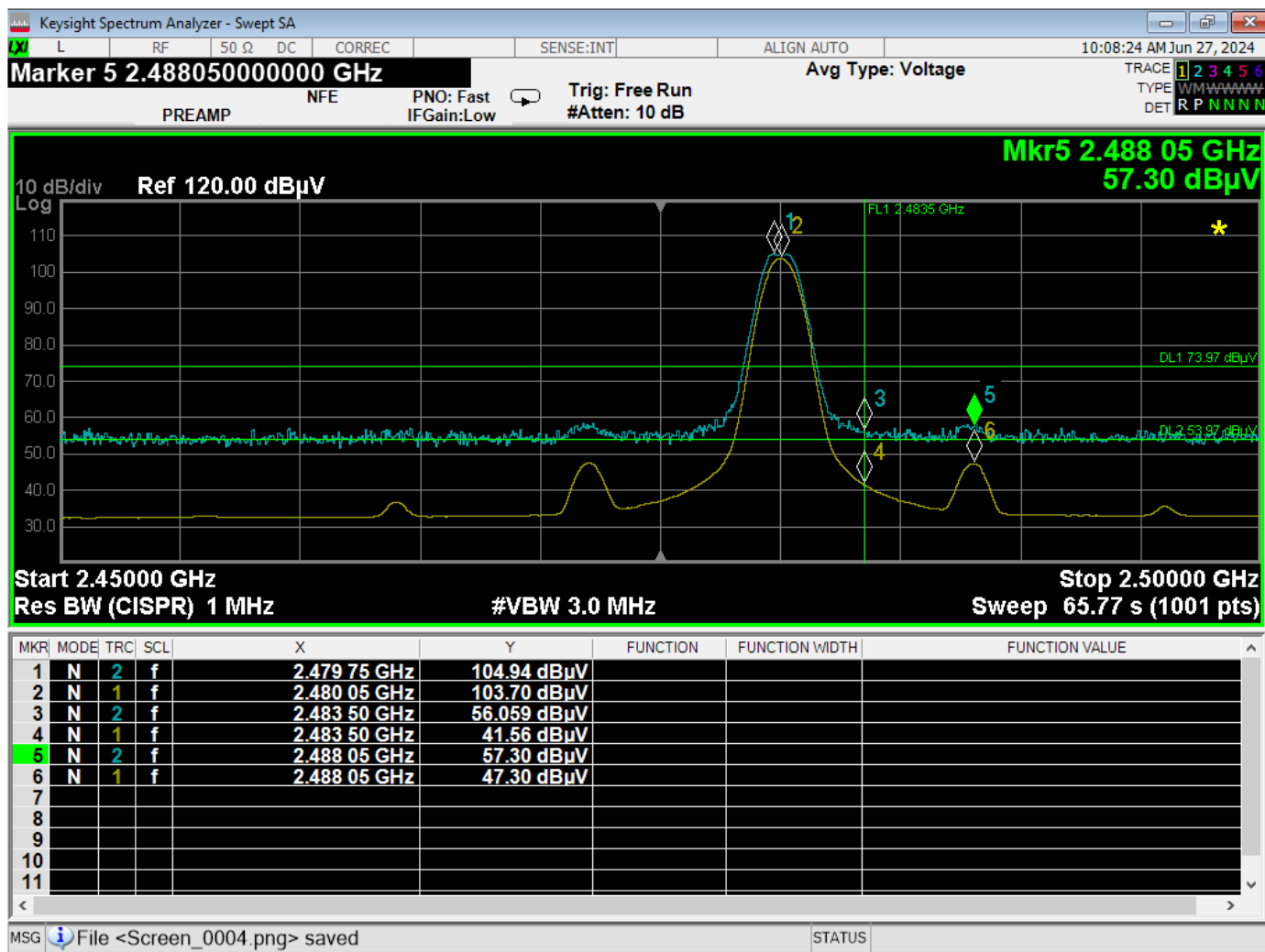
Band Edge – Low Channel – Horizontal Polarization – BLE Mode – 1 Mbit – Nordic



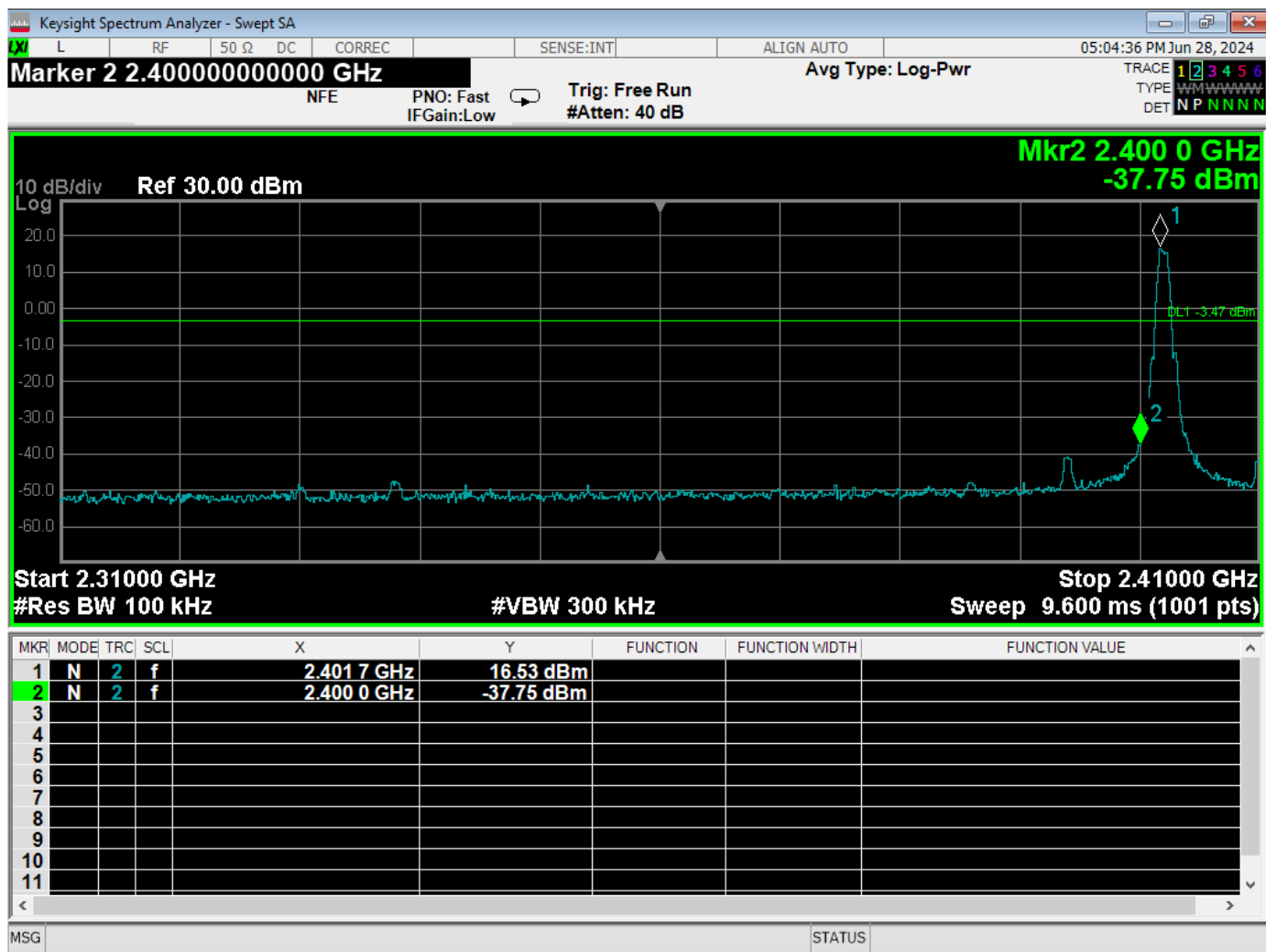
Band Edge – Low Channel – Vertical Polarization – BLE Mode – 1 Mbit – Nordic



Band Edge – High Channel – Horizontal Polarization – BLE Mode – 1 Mbit – Nordic



Band Edge – High Channel – Vertical Polarization – BLE Mode – 1 Mbit – Nordic



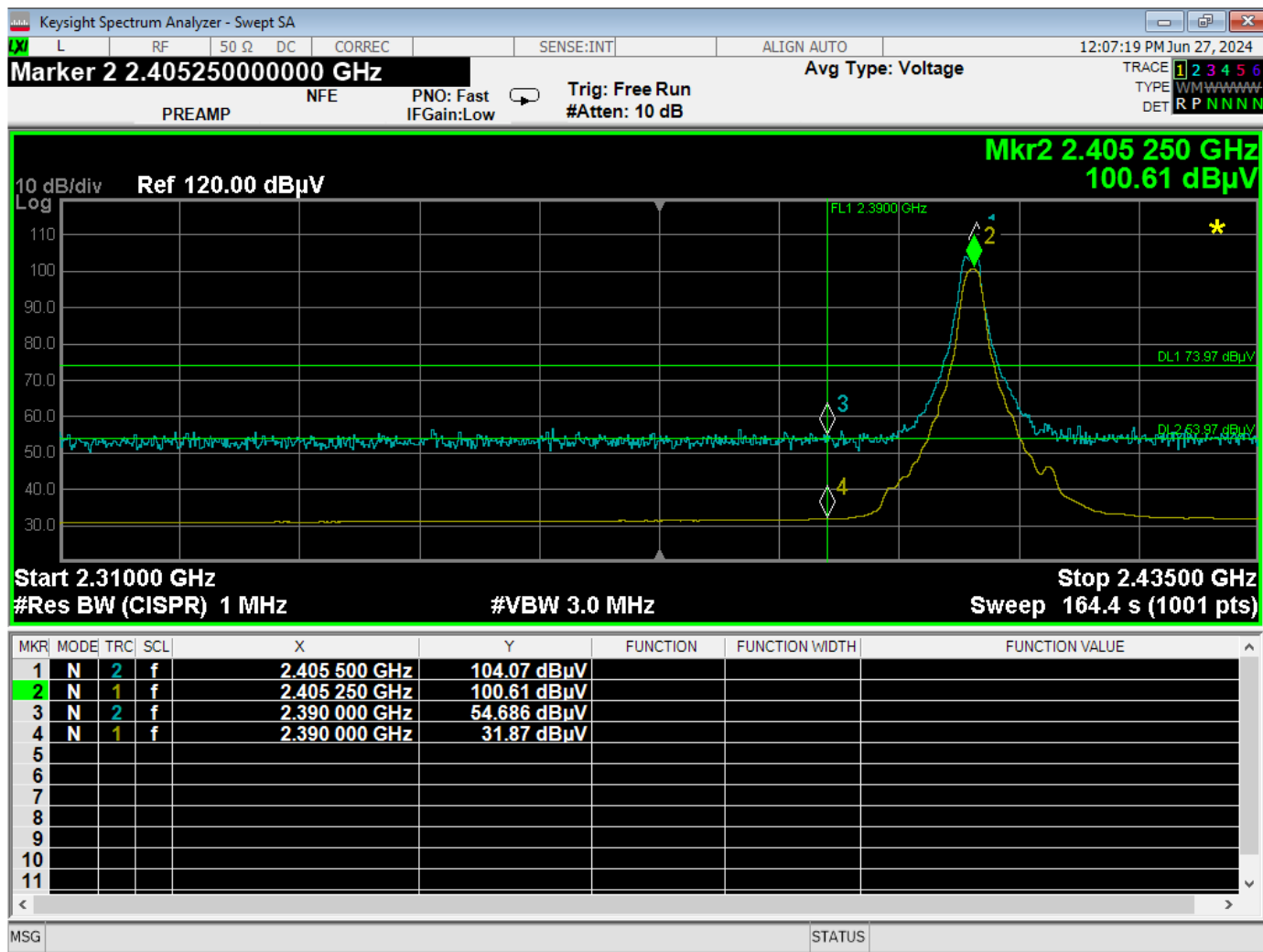
Band Edge – BLE Mode – Nordic – Low Channel – at 2400 MHz – Conducted Measurement

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto**Band Edges - Low Channel**
Thread Mode - Nordic RF Module

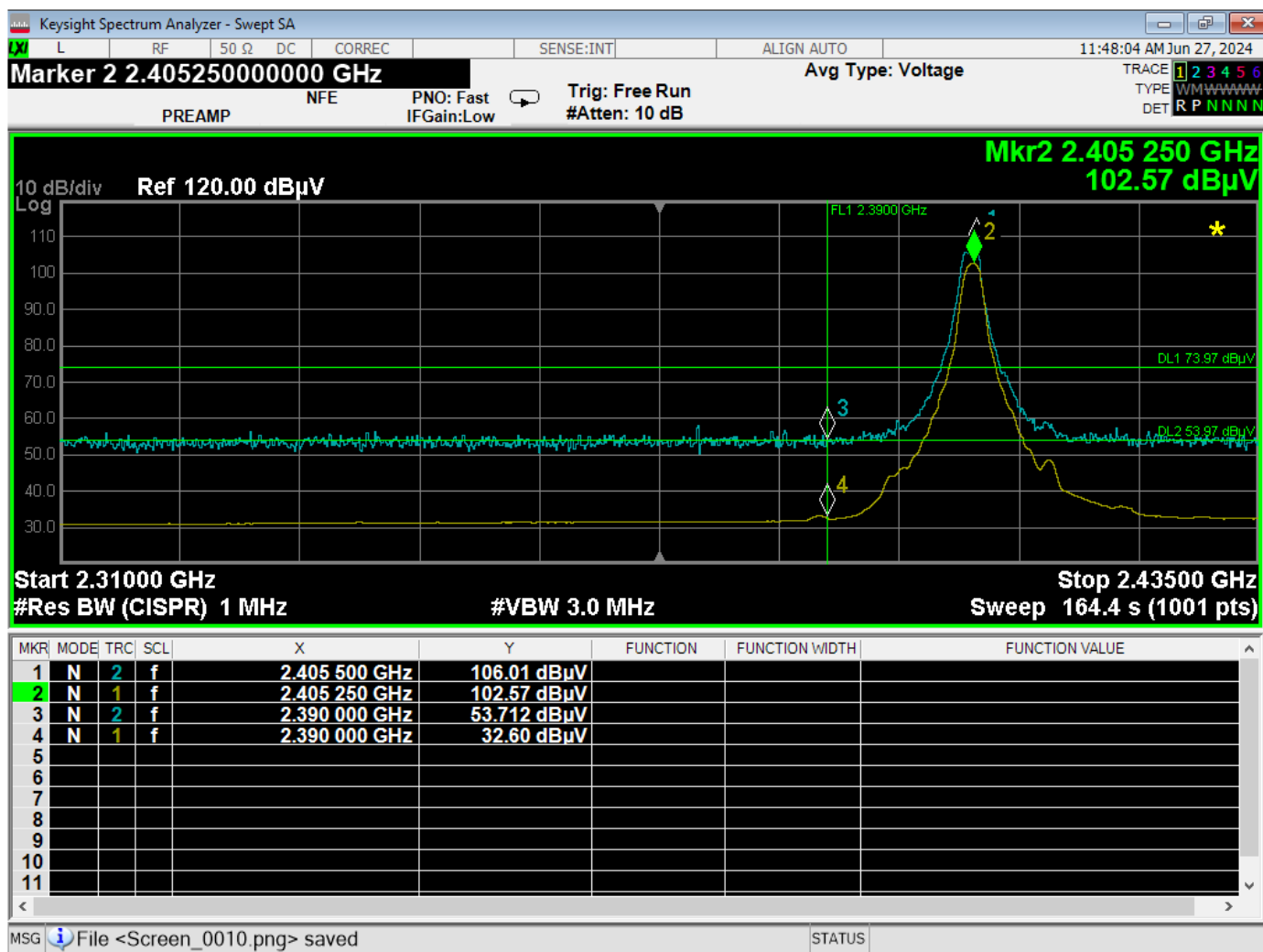
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2405.00	104.07	H	--	--	Peak	289.00	191.00	Fundamental - Low Ch.
2405.00	100.61	H	--	--	Avg	289.00	191.00	Y-Axis
2390.00	54.69	H	73.97	-19.28	Peak	289.00	191.00	Band Edge
2390.00	31.87	H	53.97	-22.10	Avg	289.00	191.00	Y-Axis
2405.00	106.01	V	---	--	Peak	119.50	188.25	Fundamental - Low Ch.
2405.00	102.57	V	--	--	Avg	119.50	188.25	Y-Axis
2390.00	53.71	V	73.97	-20.26	Peak	119.50	188.25	Band Edge
2390.00	32.60	V	53.97	-21.37	Avg	119.50	188.25	Y-Axis

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/26/2024
Lab: D
Tested By: Kyle Fujimoto**Band Edges - High Channel
Thread Mode - Nordic RF Module**

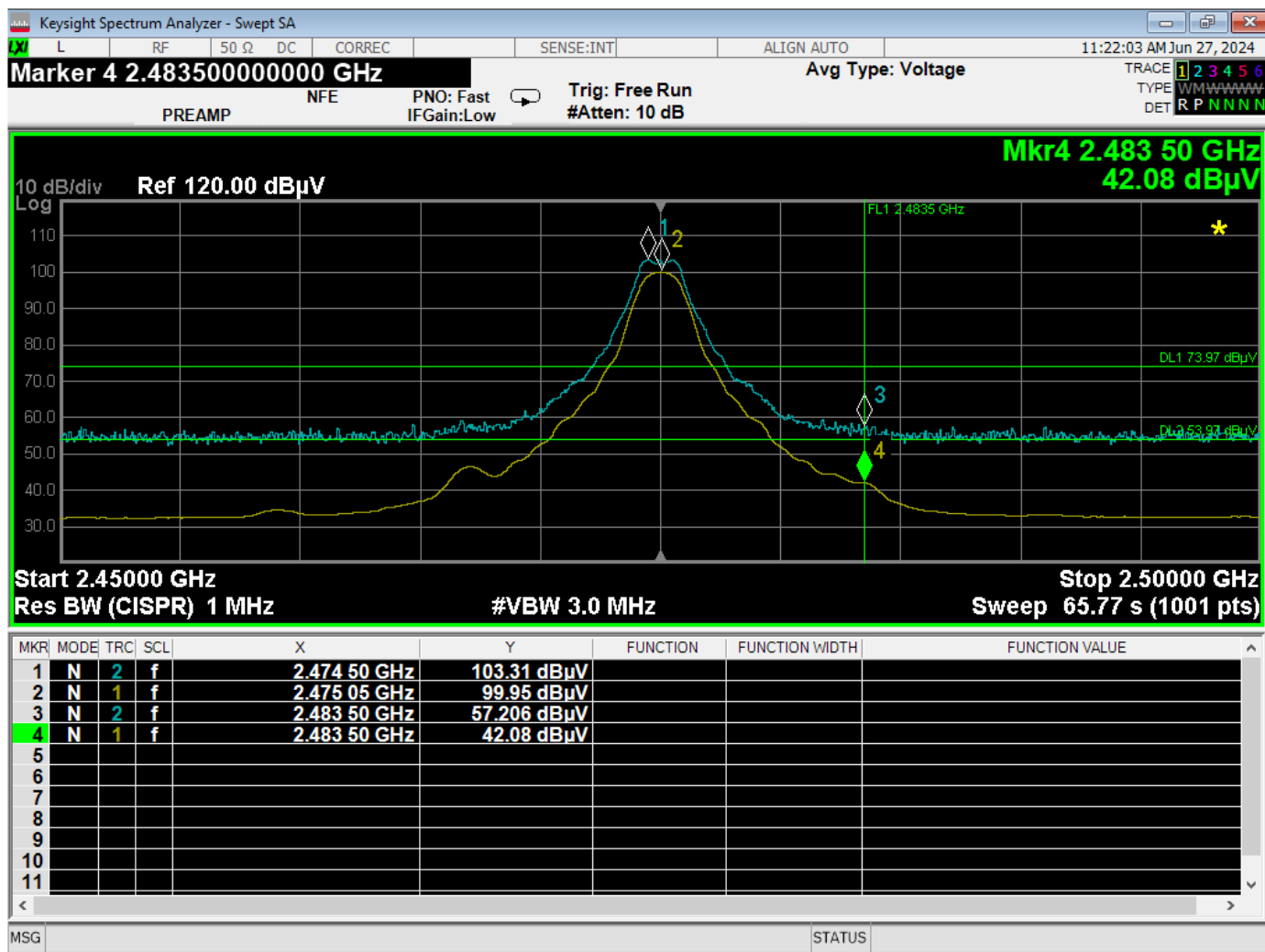
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2475.00	103.31	H	---	--	Peak	229.00	111.41	Fundamental - High Ch.
2475.00	99.95	H	--	--	Avg	229.00	111.41	Y-Axis
2483.50	57.21	H	73.97	-16.76	Peak	229.00	111.41	Band Edge
2483.50	42.08	H	53.97	-11.89	Avg	229.00	111.41	Y-Axis
2475.00	103.45	V	---	--	Peak	190.50	242.22	Fundamental - High Ch.
2475.00	100.12	V	--	--	Avg	190.50	242.22	Y-Axis
2483.50	55.83	V	73.97	-18.14	Peak	190.50	242.22	Band Edge
2483.50	43.21	V	53.97	-10.76	Avg	190.50	242.22	Y-Axis



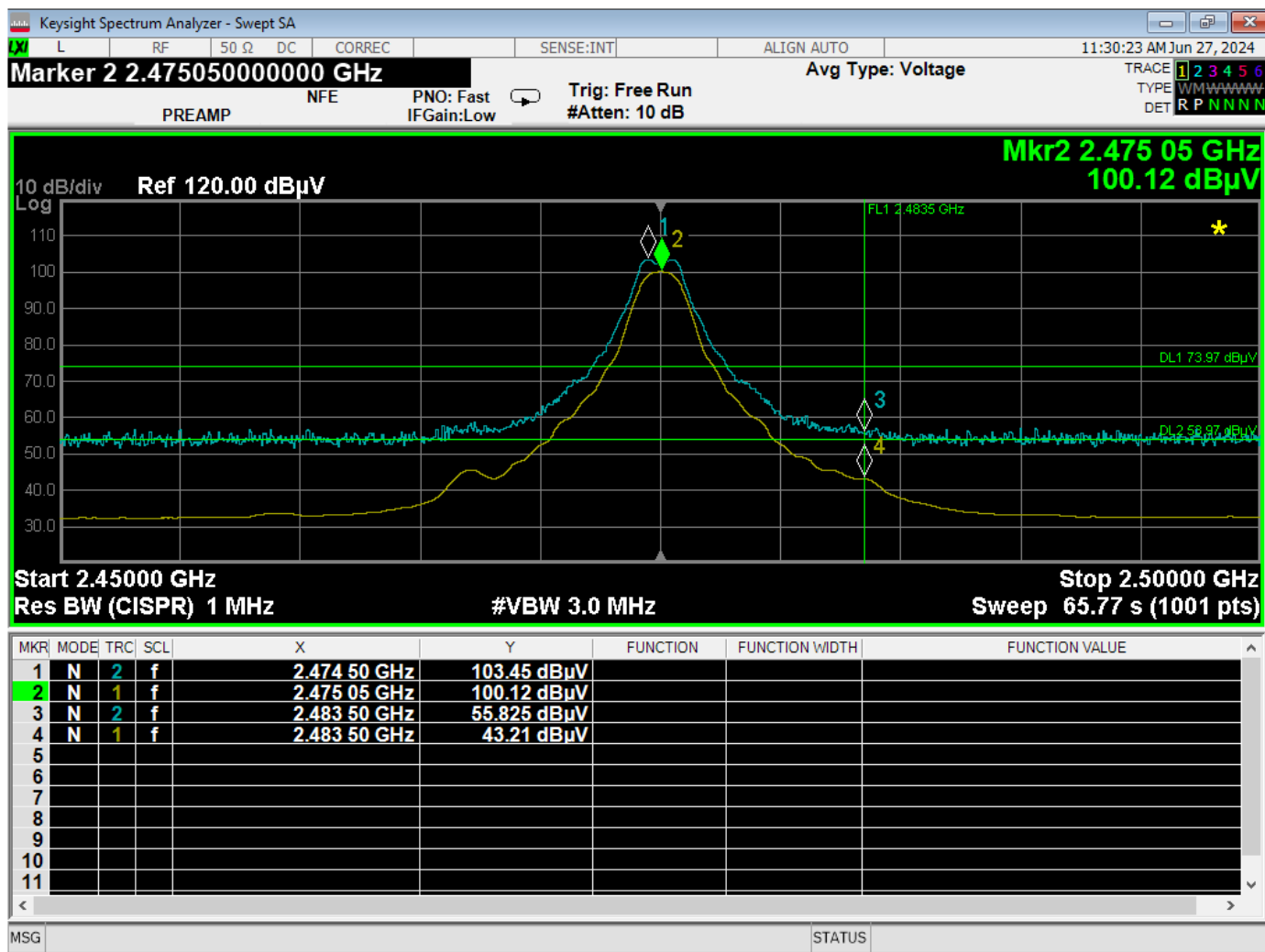
Band Edge – Low Channel – Horizontal Polarization – Thread Mode – Nordic



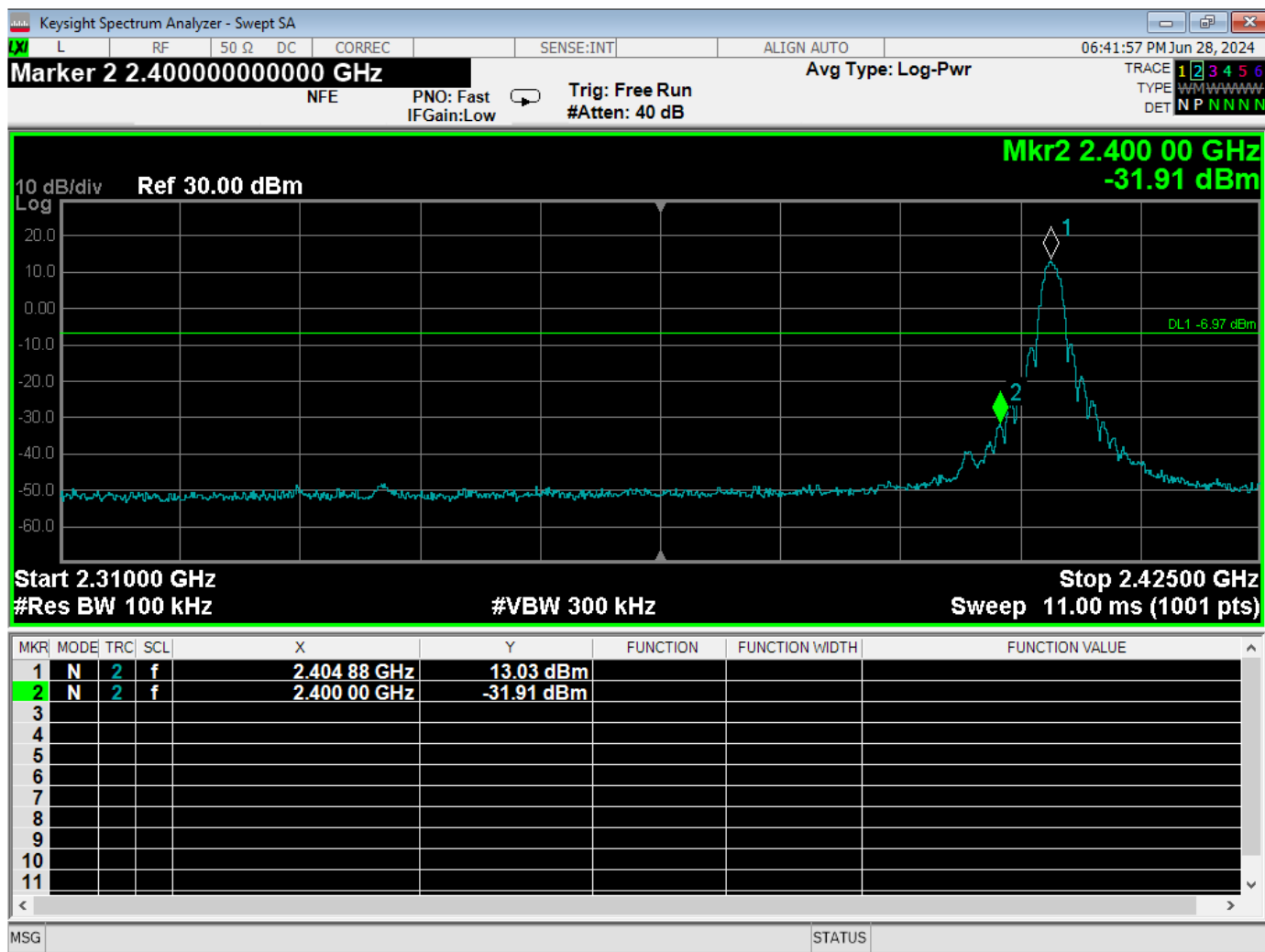
Band Edge – Low Channel – Vertical Polarization – Thread Mode – Nordic



Band Edge – High Channel – Horizontal Polarization – Thread Mode – Nordic



Band Edge – High Channel – Vertical Polarization – Thread Mode – Nordic



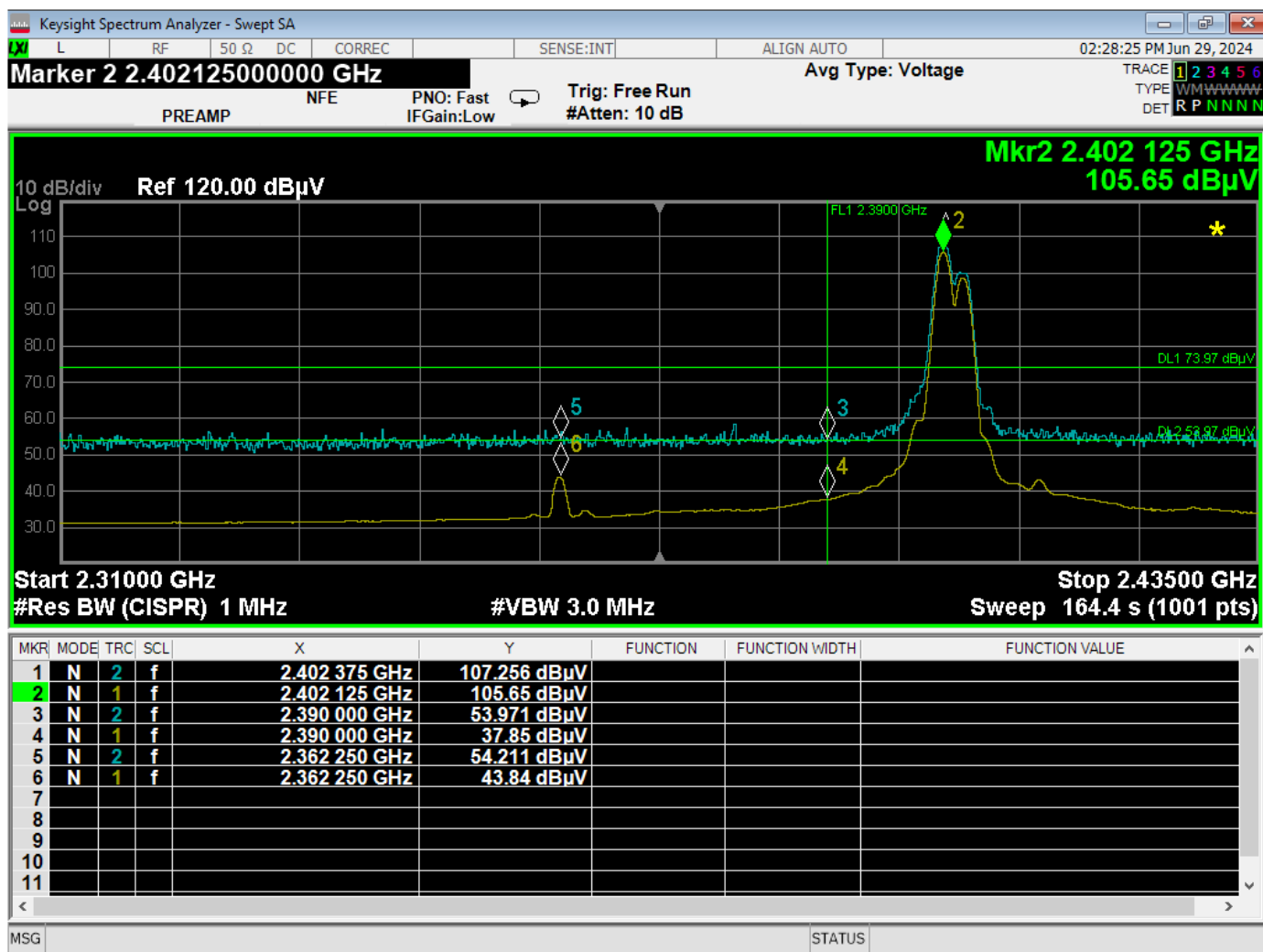
Band Edge – Thread Mode – Nordic – Low Channel – at 2400 MHz – Conducted Measurement

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/28/2024
Lab: D
Tested By: Kyle Fujimoto**Band Edges - Low Channel****BLE Mode - Both Nordic and RedPine RF Module**

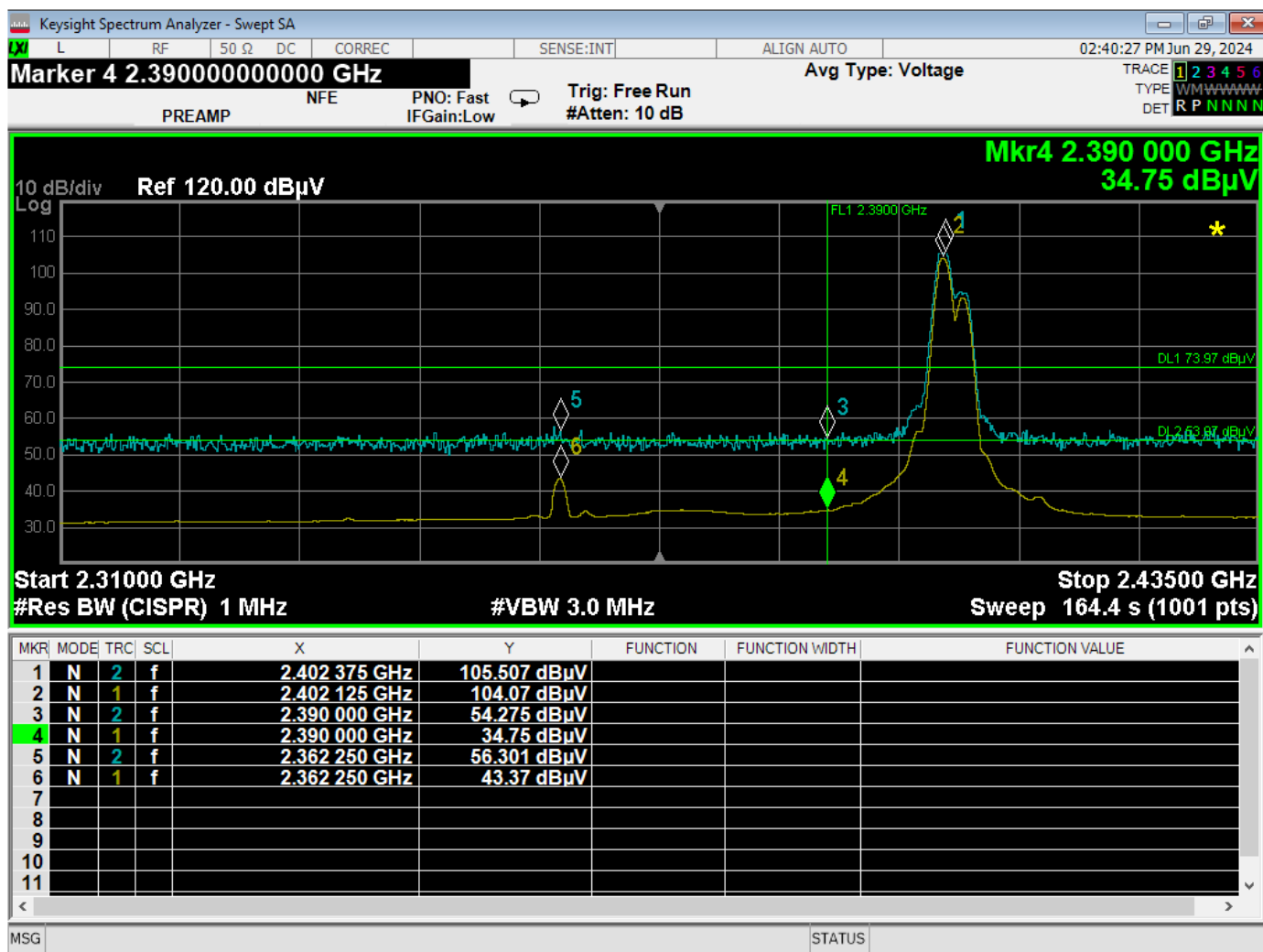
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	105.51	H	--	--	Peak	3.25	214.34	Fundamental - Low Ch.
2402.00	104.07	H	--	--	Avg	3.25	214.34	Y-Axis
2362.25	56.30	H	73.97	-17.67	Peak	3.25	214.34	
2362.25	43.37	H	53.97	-10.60	Avg	3.25	214.34	
2390.00	54.28	H	73.97	-19.69	Peak	3.25	214.34	Band Edge
2390.00	34.75	H	53.97	-19.22	Avg	3.25	214.34	Y-Axis
2402.00	107.26	V	---	--	Peak	3.25	214.34	Fundamental - Low Ch.
2402.00	105.65	V	--	--	Avg	3.25	214.34	Y-Axis
2362.25	54.21	V	73.97	-19.76	Peak	3.25	214.34	
2362.25	43.84	V	53.97	-10.13	Avg	3.25	214.34	
2390.00	53.97	V	73.97	-20.00	Peak	3.25	214.34	Band Edge
2390.00	37.85	V	53.97	-16.12	Avg	3.25	214.34	Y-Axis

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/28/2024
Lab: D
Tested By: Kyle Fujimoto**Band Edges - High Channel****BLE Mode - Both Nordic and RedPine RF Module**

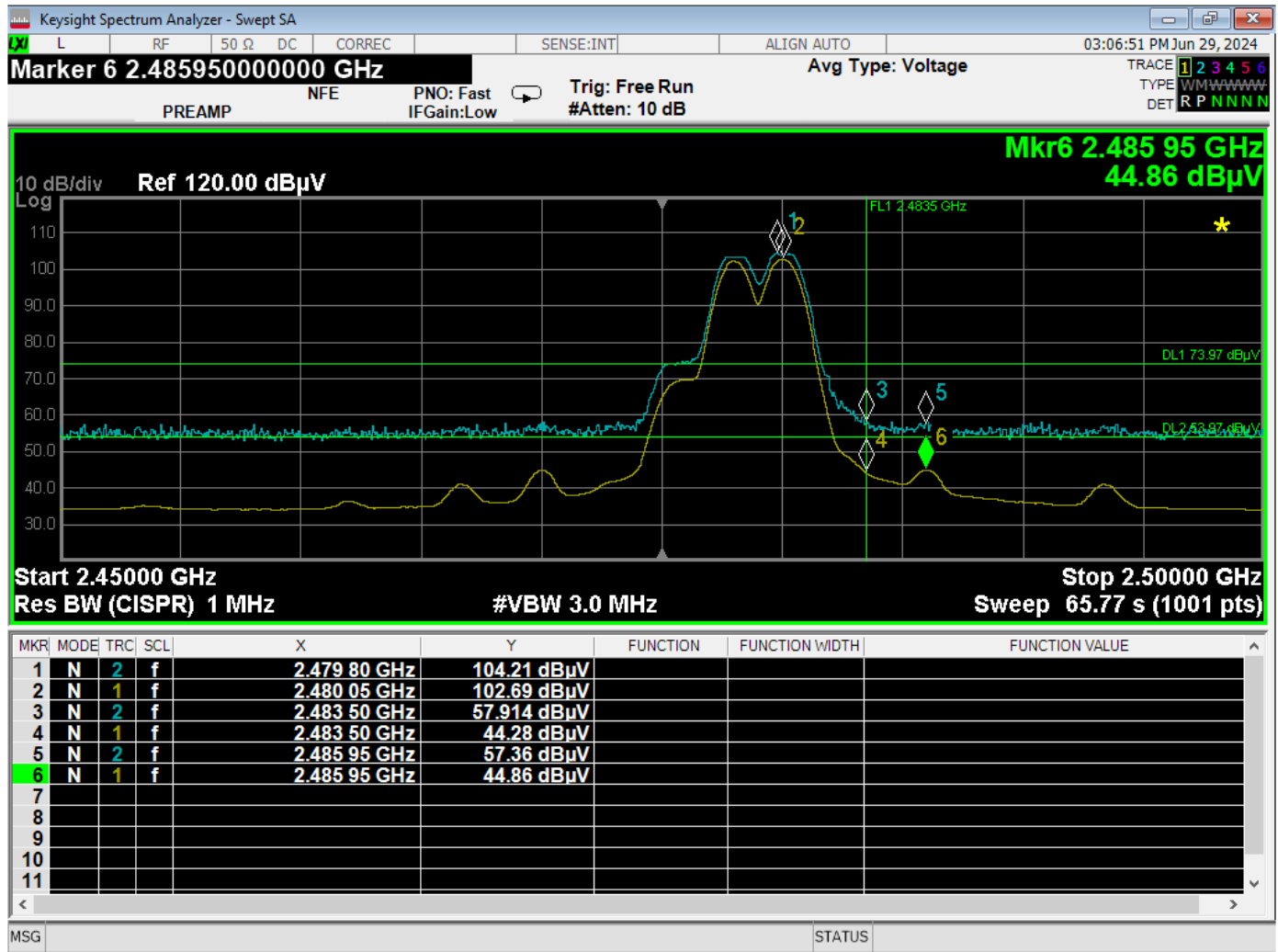
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	99.72	H	---	--	Peak	93.00	181.02	Fundamental - High Ch.
2480.00	98.11	H	--	--	Avg	93.00	181.02	Y-Axis
2488.00	55.78	H	73.97	-18.19	Peak	93.00	181.02	Band Edge
2488.00	39.49	H	53.97	-14.48	Avg	93.00	181.02	Y-Axis
2480.00	104.21	V	---	--	Peak	144.75	165.95	Fundamental - High Ch.
2480.00	102.69	V	--	--	Avg	144.75	165.92	Y-Axis
2483.50	57.91	V	73.97	-16.06	Peak	144.75	165.92	Band Edge
2483.50	44.28	V	53.97	-9.69	Avg	144.75	165.92	Y-Axis
2485.95	57.36	V	73.97	-16.61	Peak	144.75	165.92	Band Edge
2485.95	44.86	V	53.97	-9.11	Avg	144.75	165.92	Y-Axis



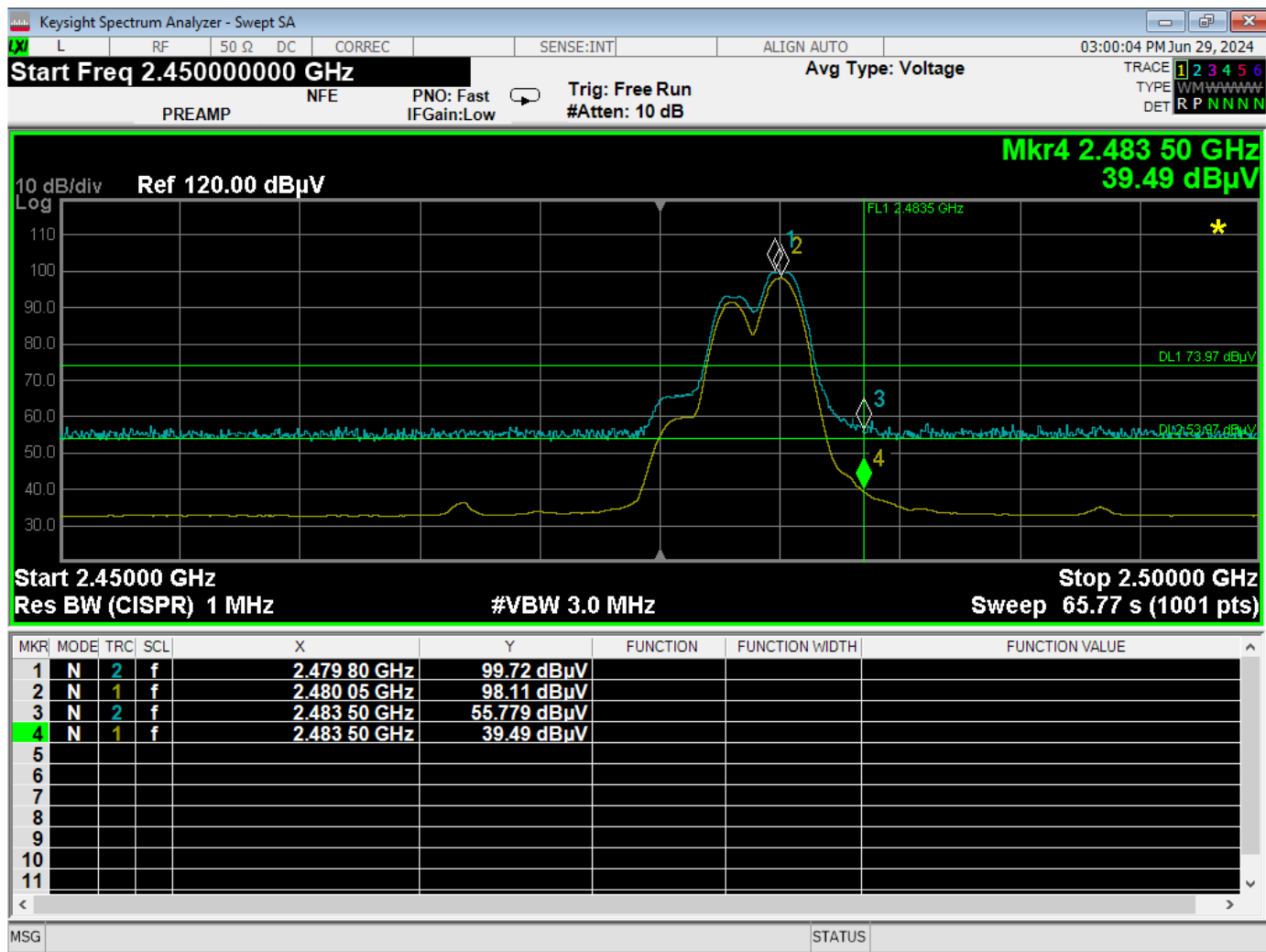
Band Edge – Low Channel – Vertical Polarization – BLE Mode – RedPine and Nordic



Band Edge – Low Channel – Horizontal Polarization – BLE Mode – RedPine and Nordic



Band Edge – High Channel – Vertical Polarization – BLE Mode – RedPine and Nordic



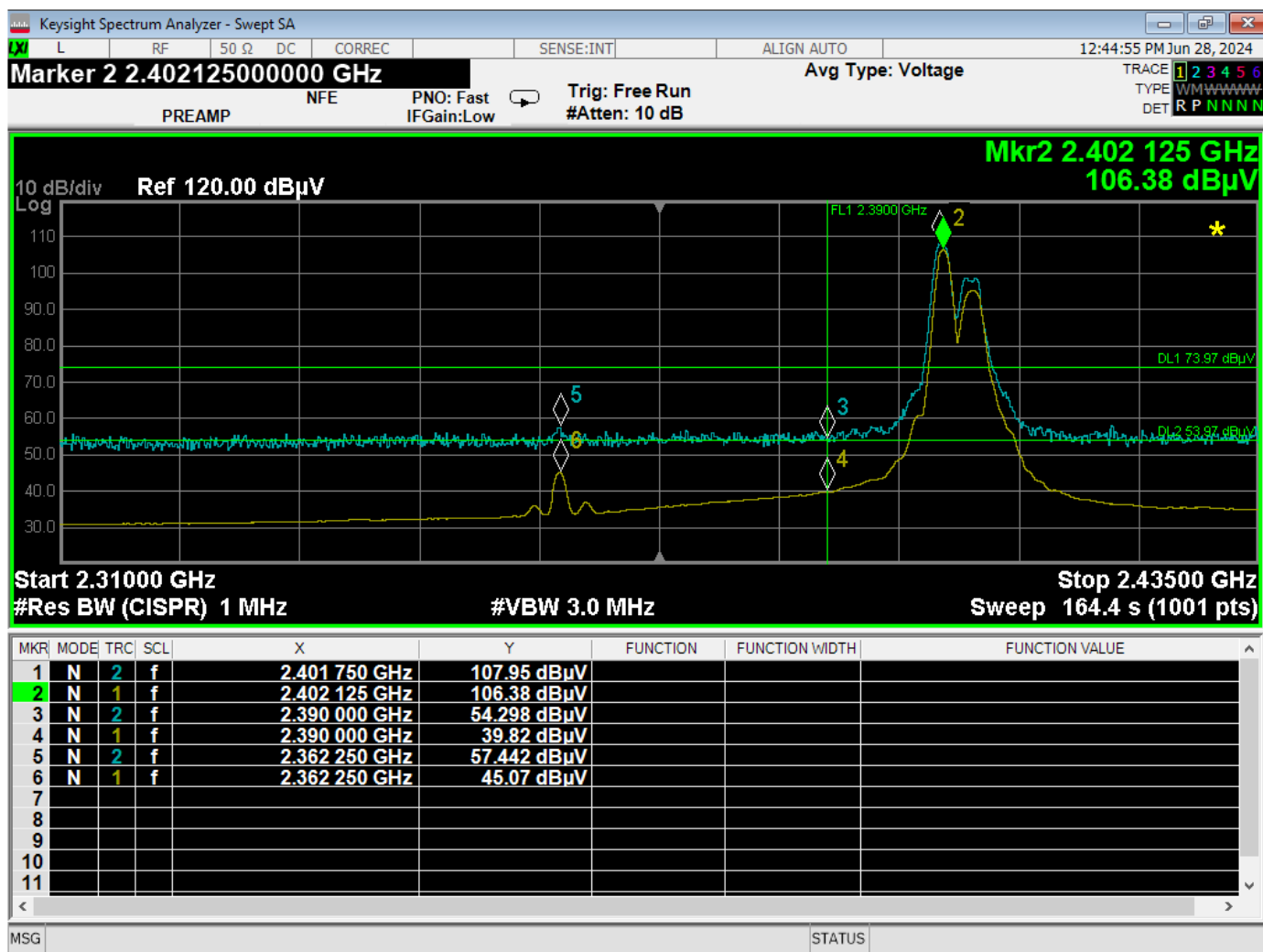
Band Edge – High Channel – Horizontal Polarization – BLE Mode – RedPine and Nordic

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/28/2024
Lab: D
Tested By: Kyle Fujimoto**Band Edges - Low Channel****Thread Mode Ch 11 - Nordic RF Module****BLE Mode - 2402 MHz - RedPine RF Module**

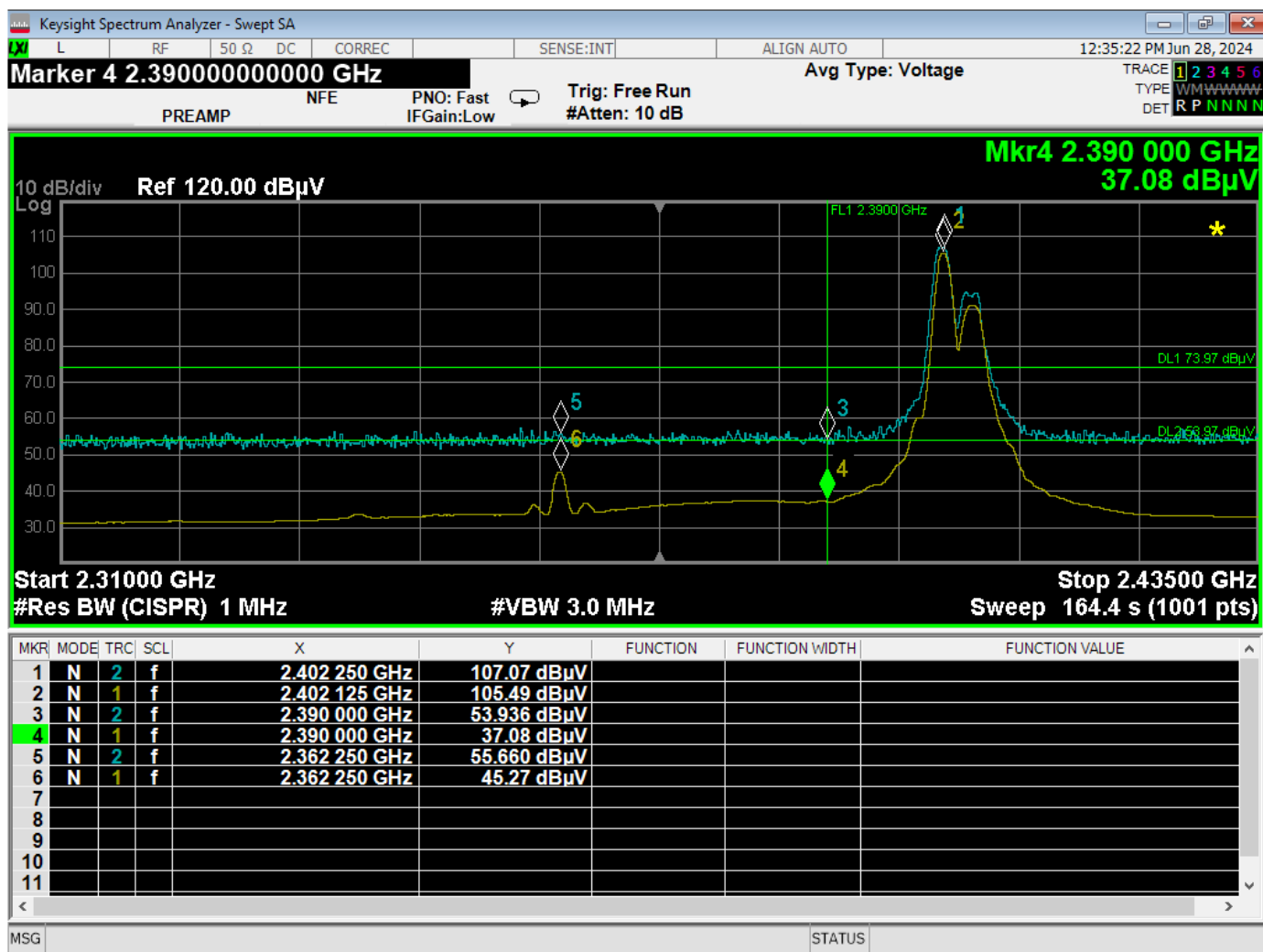
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	107.07	H	--	--	Peak	177.00	142.10	Fundamental - Low Ch.
2402.00	105.49	H	--	--	Avg	177.00	142.40	Y-Axis
2362.25	55.66	H	73.97	-18.31	Peak	177.00	142.40	Band Edge
2362.25	45.27	H	53.97	-8.70	Avg	177.00	142.40	Y-Axis
2390.00	53.94	H	73.97	-20.03	Peak	177.00	142.40	Band Edge
2390.00	37.08	H	53.97	-16.89	Avg	177.00	142.40	Y-Axis
2402.00	107.95	V	---	--	Peak	216.25	224.25	Fundamental - Low Ch.
2402.00	106.38	V	--	--	Avg	216.25	224.25	Y-Axis
2362.25	57.44	V	73.97	-16.53	Peak	216.25	224.25	Band Edge
2362.25	45.07	V	53.97	-8.90	Avg	216.25	224.25	Y-Axis
2390.00	54.30	V	73.97	-19.67	Peak	216.25	224.25	Band Edge
2390.00	39.82	V	53.97	-14.15	Avg	216.25	224.25	Y-Axis

FCC 15.247 and RSS-247Spectrum Brands, Inc.
Residential Electronic Deadbolt
Model: 9800, HVIN: HAL3Date: 06/28/2024
Lab: D
Tested By: Kyle Fujimoto**Band Edges - Low Channel****Thread Mode Ch 25 - Nordic RF Module****BLE Mode - 2480 MHz - RedPine RF Module**

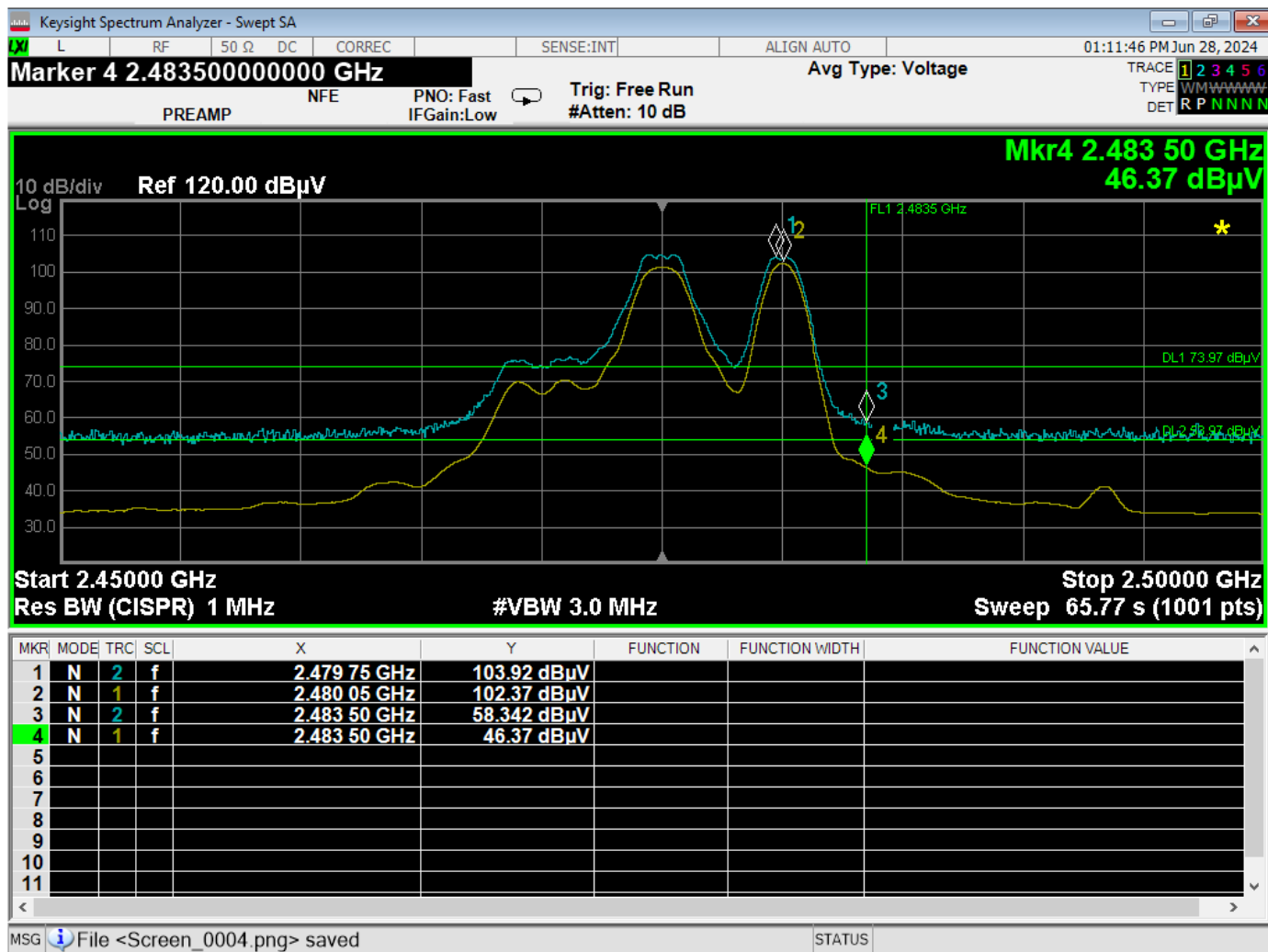
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2475.00	105.04	H	---	--	Peak	290.00	159.11	Fundamental - High Ch.
2475.00	101.62	H	--	--	Avg	290.00	159.11	Y-Axis
2483.50	56.07	H	73.97	-17.90	Peak	290.00	159.11	Band Edge
2483.50	44.22	H	53.97	-9.75	Avg	290.00	159.11	Y-Axis
2480.00	103.92	V	---	--	Peak	144.25	179.59	Fundamental - High Ch.
2480.00	102.37	V	--	--	Avg	144.25	179.59	Y-Axis
2483.50	58.58	V	73.97	-15.63	Peak	144.25	179.59	Band Edge
2483.50	46.10	V	53.97	-7.60	Avg	144.25	179.59	Y-Axis



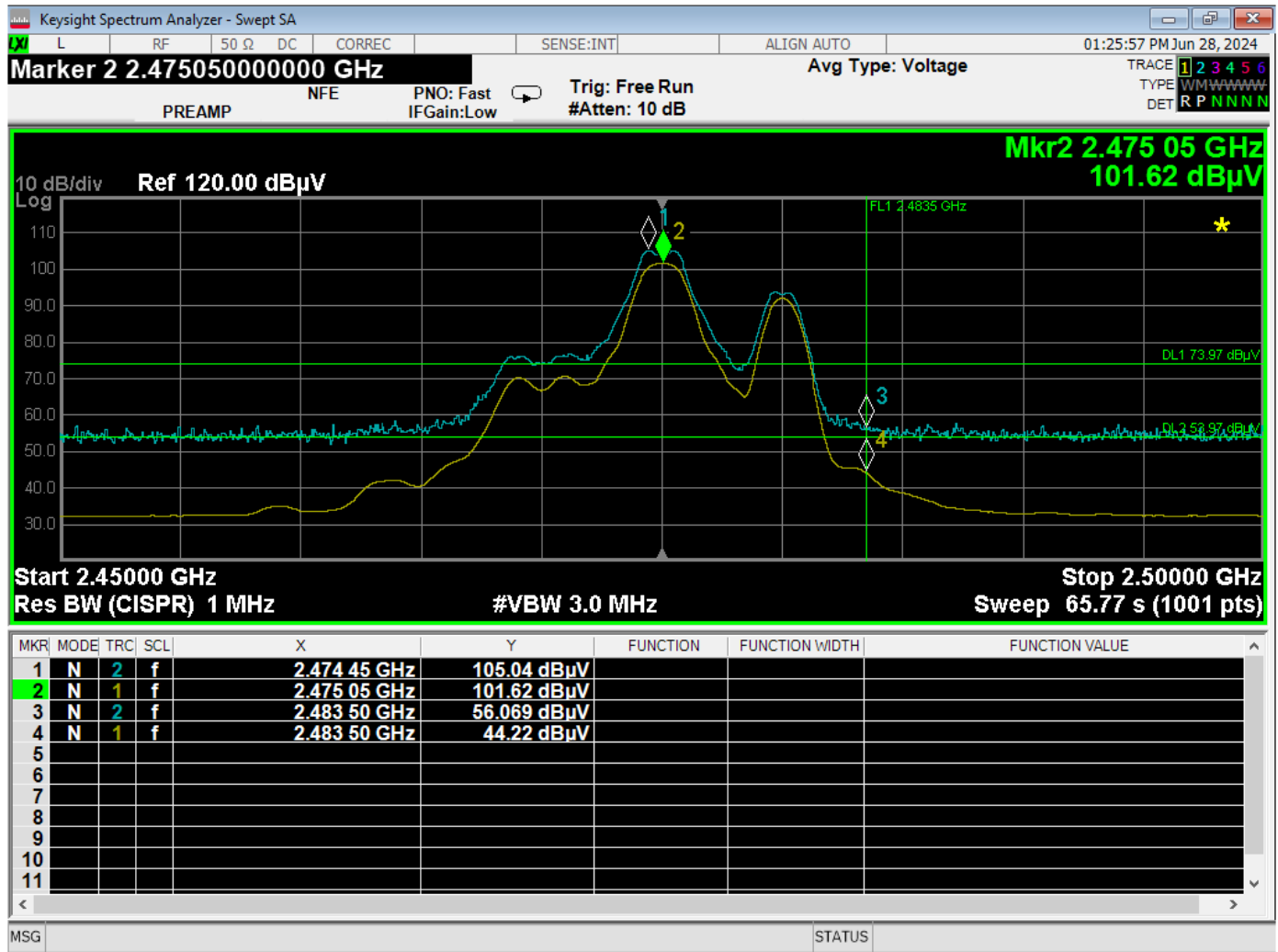
Band Edge – Low Channel – Vertical Polarization – BLE Mode RedPine – Thread Mode Nordic



Band Edge – Low Channel – Horizontal Polarization – BLE Mode – BLE Mode RedPine – Thread Mode Nordic



Band Edge – High Channel – Vertical Polarization – BLE Mode RedPine – Thread Mode Nordic



Band Edge – High Channel – Horizontal Polarization – BLE Mode RedPine – Thread Mode Nordic