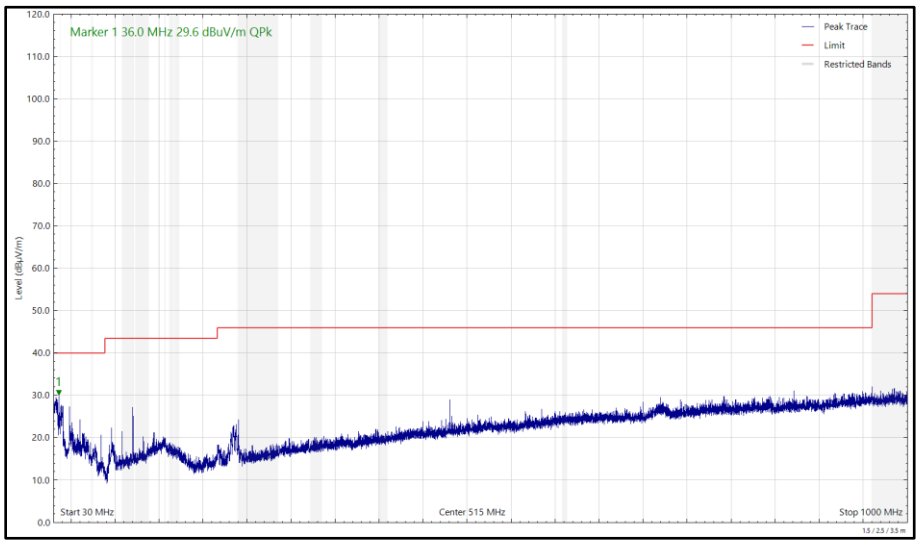

Figure 72 - Ch38_BLE_LE1M - 2478 MHz, 30 MHz to 1 GHz, Vertical (Peak) Z Orientation

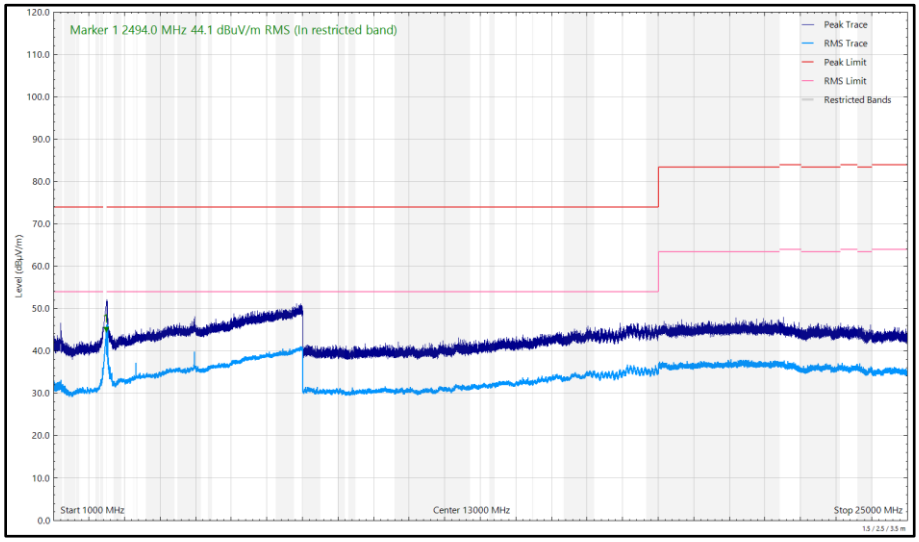

Figure 73 - Ch38_BLE_LE1M - 2478 MHz, 1 GHz to 25 GHz, Vertical Z Orientation

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

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)

ISED RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

In addition, radiated emissions which fall in the restricted bands, as defined in RSS-GEN, clause 8.10, must also comply with the radiated emission limits specified in RSS-GEN clause 8.9.

2.1.8 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
1 Metre SMA Cable	Rhophase	3PS-1801A-1000-3PS	4099	12	26-Jun-2024
4dB Attenuator	Pasternack	PE7047-4	4935	12	20-Jul-2024
Band Reject Filter - 2.425 GHz	Wainwright	WRCGV14-2390-2400-2450-2460-50SS	5066	12	22-Feb-2025
Band Reject Filter - 2.4585 GHz	Wainwright	WRCGV14-2423.5-2433.5-2483.5-2493.5-50SS	5068	12	06-Nov-2024
Test Receiver	Rohde & Schwarz	ESW44	5084	12	04-Nov-2024
Emissions Software	TUV SUD	EmX V3.2.0	5125	-	Software
3m Semi-Anechoic Chamber	Rainford	RF Chamber 11	5136	36	24-Nov-2024
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Antenna (DRG, 1 GHz to 10.5 GHz)	Schwarzbeck	BBHA9120B	5215	12	09-Jul-2024
3 GHz High pass Filter	Wainwright	WHKX12-2580-3000-18000-80SS	5220	12	03-Apr-2025
7 GHz High pass Filter	Wainwright	WHKX12-5850-6800-18000-80SS	5549	12	16-Aug-2024
Pre-Amplifier (8 GHz to 18 GHz)	Wright Technologies	APS06-0061	5595	12	26-Oct-2024
Antenna (DRG, 7.5 GHz to 18 GHz)	Schwarzbeck	HWRD750	5610	12	15-Oct-2024
Cable (K-Type to K-Type, 2 m)	Junkosha	MWX241-02000KMSKMS/B	5934	12	18-Jun-2024
Double Ridge Active Horn Antenna (18-40 GHz)	Com-Power	AHA-840	6189	24	02-Jun-2024
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/B	6330	12	17-Feb-2025
1m Coaxial Cable Assy	Junkosha	MWX221-01000AMSAMS/A	6376	12	14-May-2025
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	6635	24	13-Jun-2025
Preamplifier	Hewlett Packard	HP8449B	6763	12	28-Feb-2025

Table 34

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.2 Emission Bandwidth

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(2)
ISED RSS-247, Clause 5.2
ISED RSS-GEN, Clause 6.7

2.2.2 Equipment Under Test and Modification State

SiW917Y1GN, S/N: BLE MAC address: D4:48:67:DD:D7:30 - Modification State 0

2.2.3 Date of Test

22-May-2024

2.2.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.8.1 for 6 dB BW and 6.9.3 for 99% occupied bandwidth measurements.

The EUT was supplied with 3.3 VDC directly with a DC PSU.

2.2.5 Environmental Conditions

Ambient Temperature	22.7 °C
Relative Humidity	52.5 %

2.2.6 Test Results

2.4 GHz Bluetooth Low Energy - Conducted Tests

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 1M)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-
Supply Voltage:	3.30V	TX Mode:	Continuous Modulated Packet Bursts

Test Frequency (MHz)	Power Index	6 dB Bandwidth (MHz)	Limit (kHz)
2402	16.00	0.710	≥500.0
2404	16.00	0.716	≥500.0
2440	16.00	0.720	≥500.0
2478	16.00	0.720	≥500.0
2480	16.00	0.720	≥500.0

Table 35 - 6 dB Bandwidth Results

Test Frequency (MHz)	Power Index	99% Bandwidth (MHz)	Limit (kHz)
2402	16.00	1.200	-
2404	16.00	1.204	-
2440	16.00	1.200	-
2478	16.00	1.200	-
2480	16.00	1.195	-

Table 36 - 99% Bandwidth Results

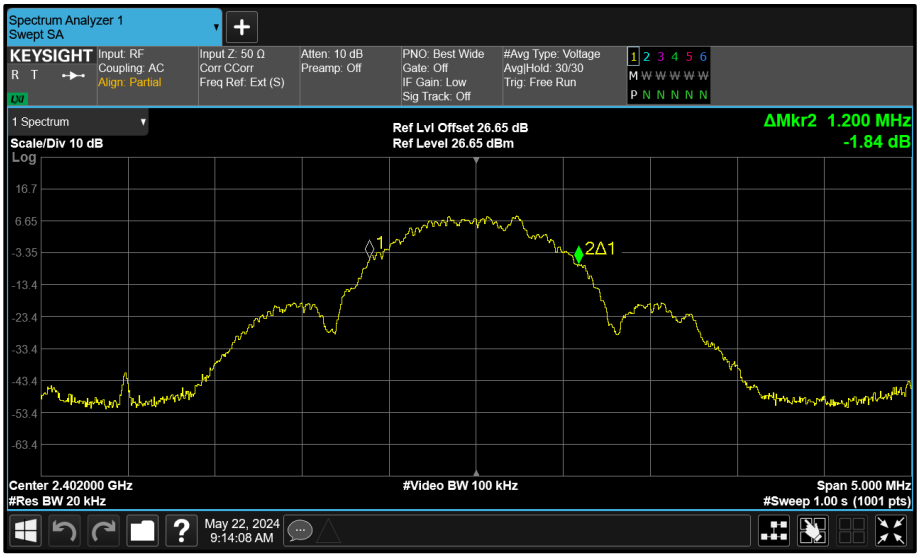

Figure 74 - 2402 MHz (CH37) 99% Bandwidth

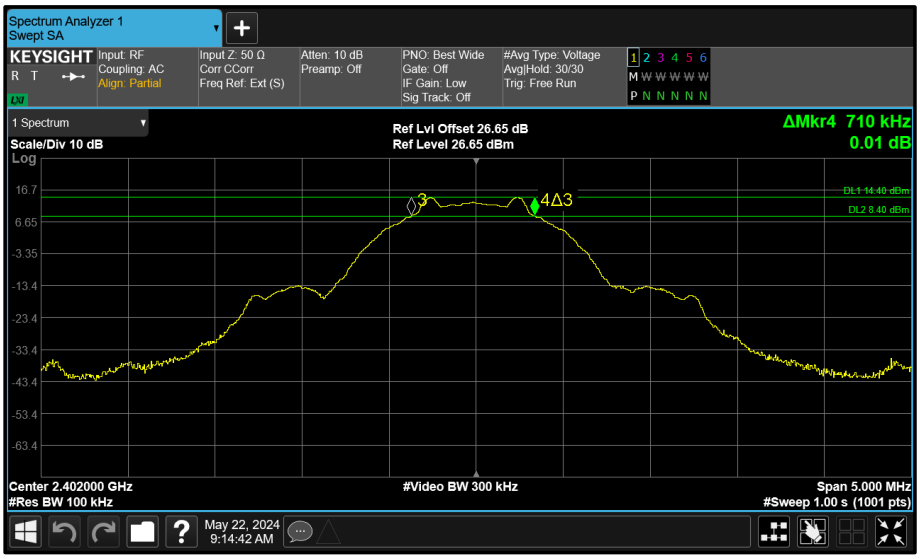

Figure 75 - 2402 MHz (CH37) 6 dB Bandwidth

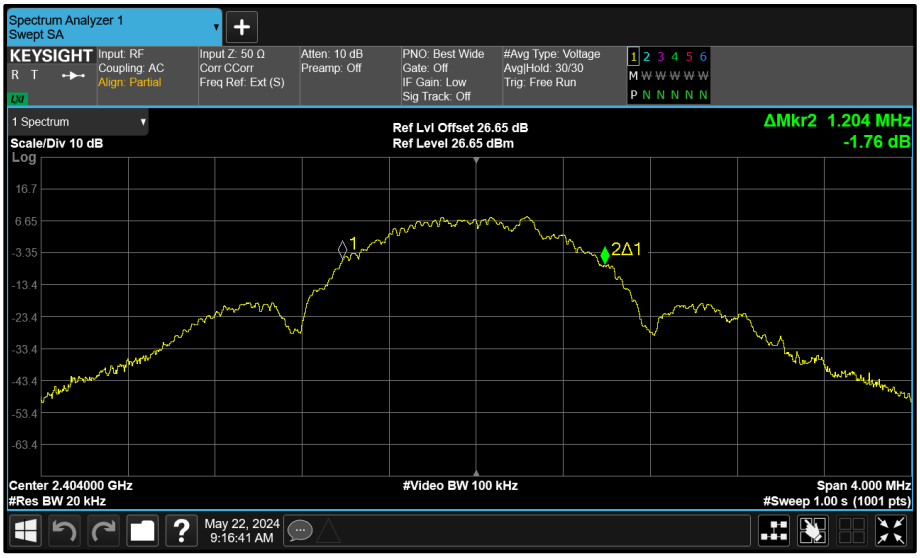

Figure 76 - 2404 MHz (CH0) 99% Bandwidth

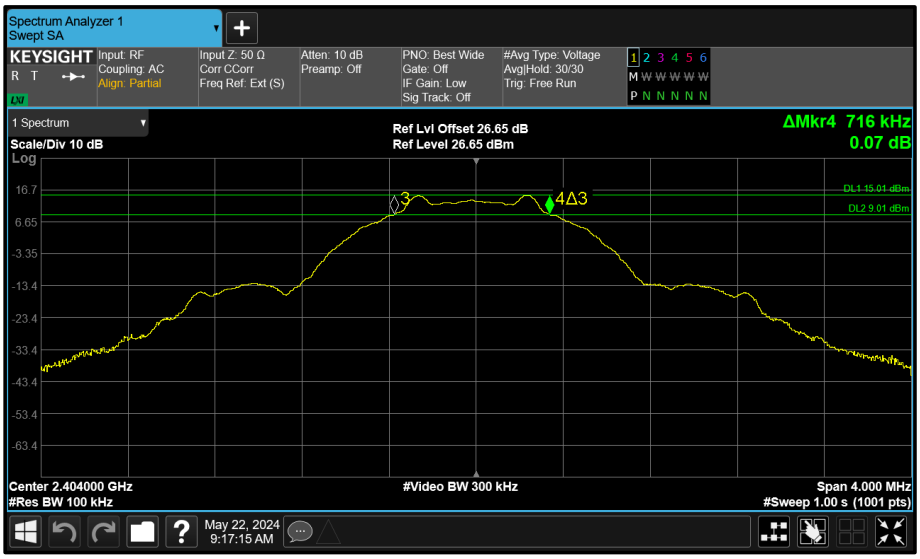

Figure 77 - 2404 MHz (CH0) 6 dB Bandwidth

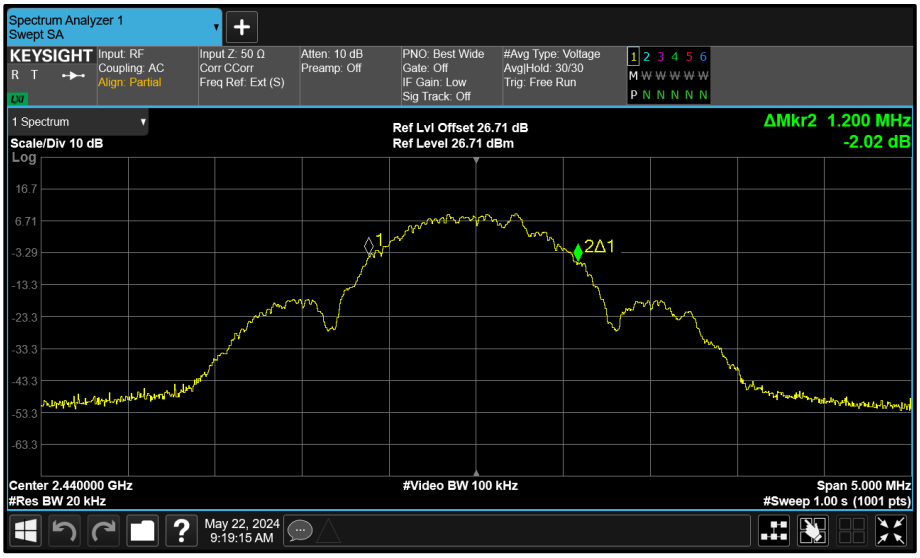

Figure 78 - 2440 MHz (CH17) 99% Bandwidth

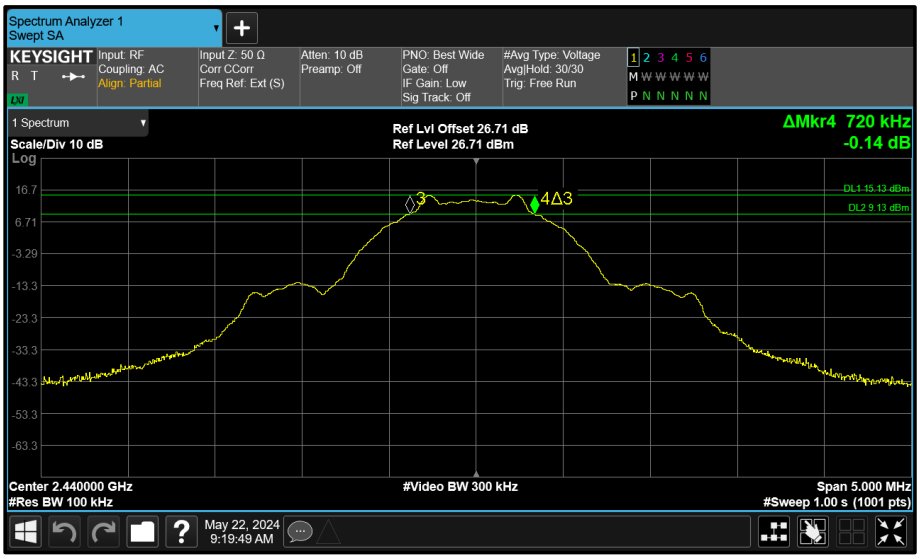

Figure 79 - 2440 MHz (CH17) 6 dB Bandwidth

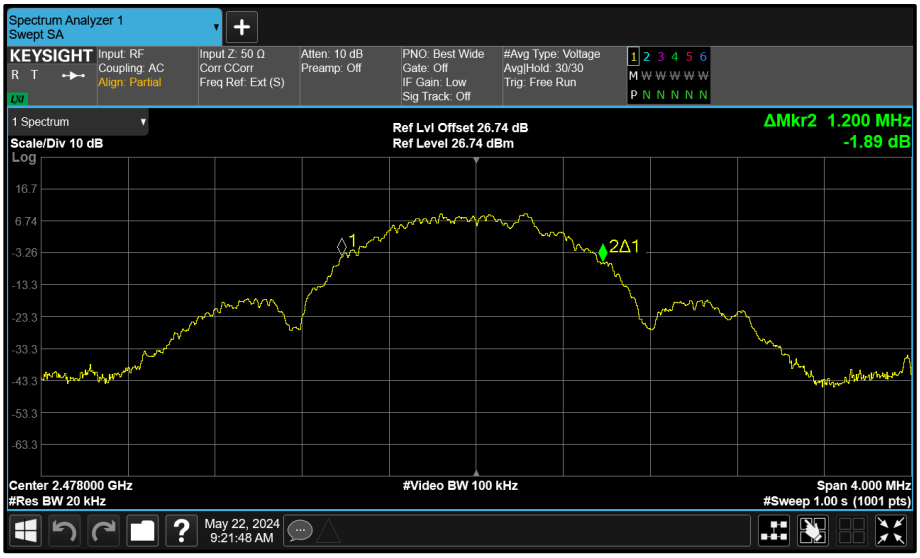

Figure 80 - 2478 MHz (CH36) 99% Bandwidth

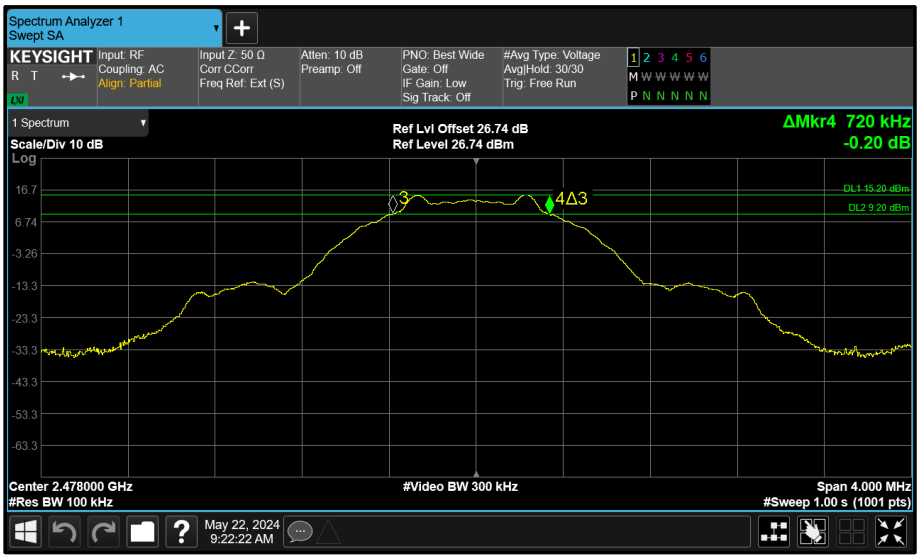

Figure 81 - 2478 MHz (CH36) 6 dB Bandwidth

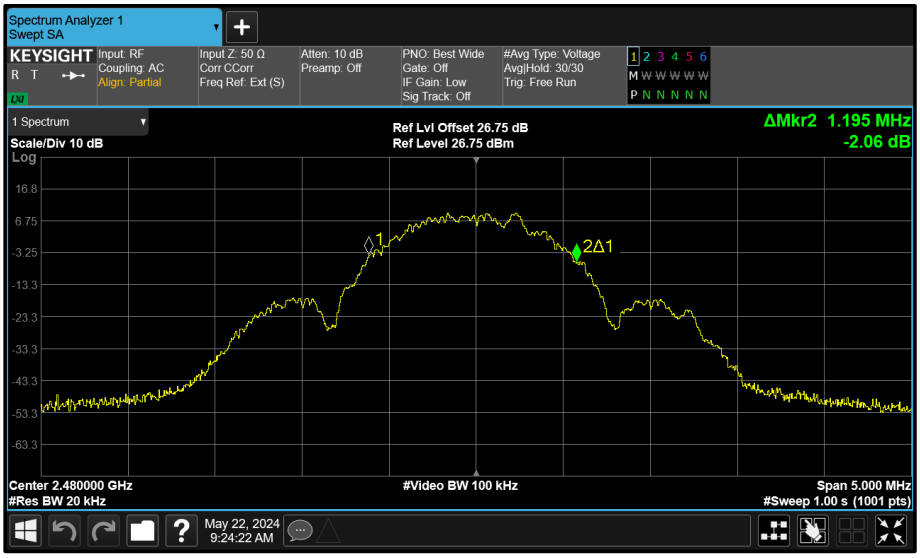

Figure 82 - 2480 MHz (CH39) 99% Bandwidth

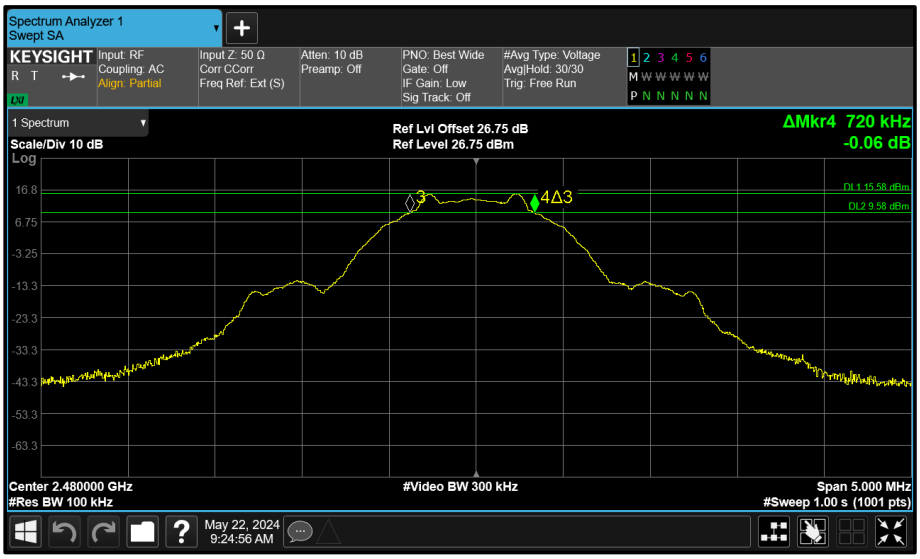

Figure 83 - 2480 MHz (CH39) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 2M)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-
Supply Voltage:	3.30V	TX Mode:	Continuous Modulated Packet Bursts

Test Frequency (MHz)	Power Index	6 dB Bandwidth (MHz)	Limit (kHz)
2404	16.00	1.336	≥500.0
2440	16.00	1.336	≥500.0
2478	16.00	1.336	≥500.0

Table 37 - 6 dB Bandwidth Results

Test Frequency (MHz)	Power Index	99% Bandwidth (MHz)	Limit (kHz)
2404	16.00	2.408	-
2440	16.00	2.408	-
2478	16.00	2.424	-

Table 38 - 99% Bandwidth Results

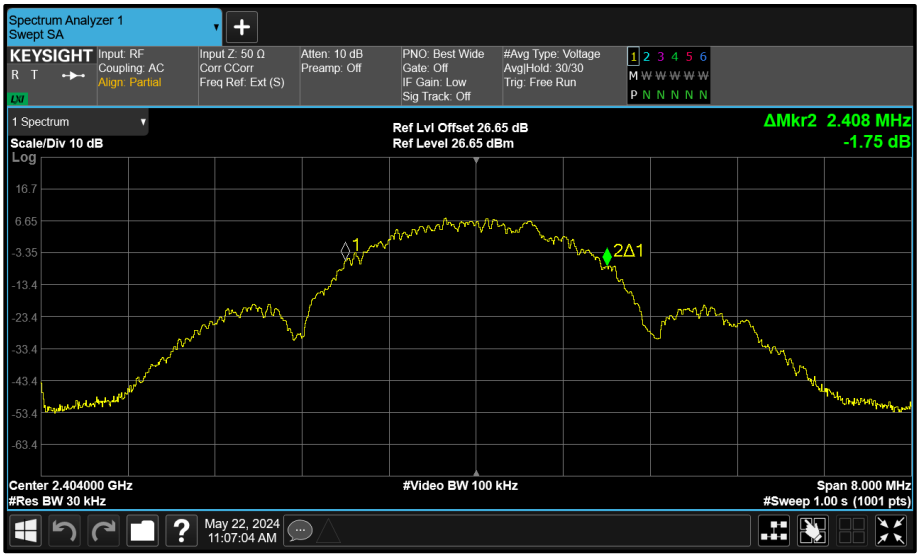

Figure 84 - 2404 MHz (CH0) 99% Bandwidth

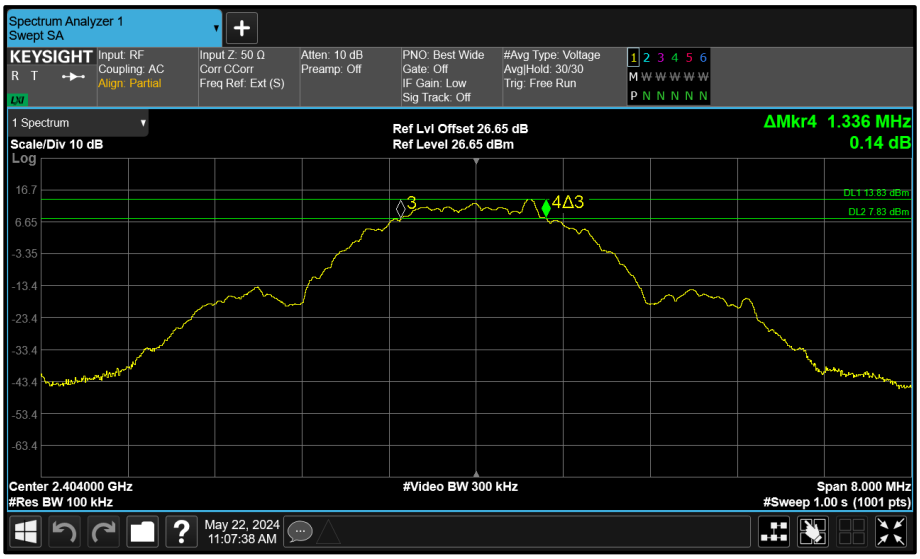

Figure 85 - 2404 MHz (CH0) 6 dB Bandwidth

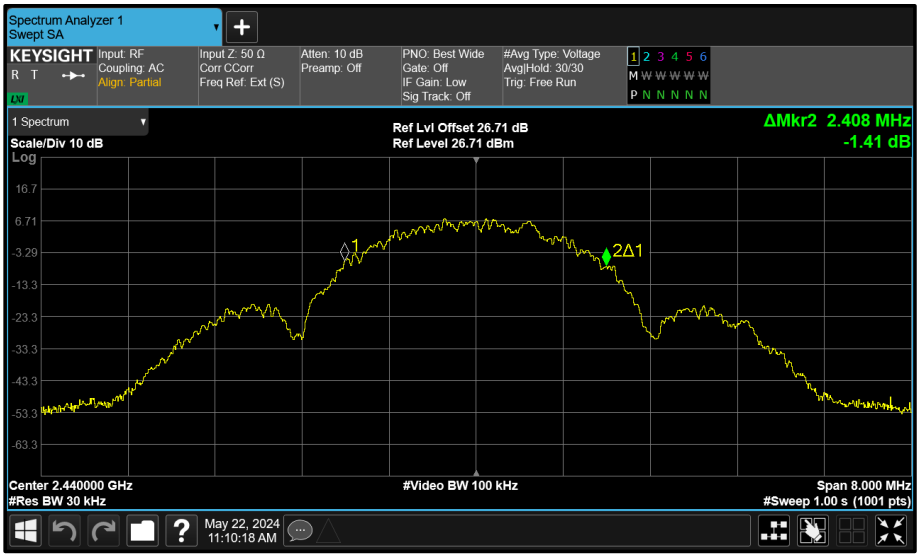

Figure 86 - 2440 MHz (CH17) 99% Bandwidth

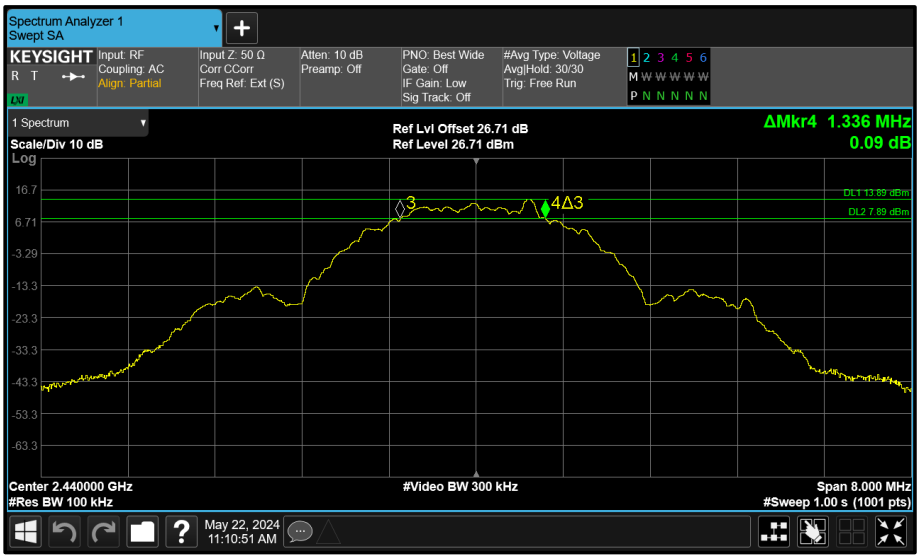

Figure 87 - 2440 MHz (CH17) 6 dB Bandwidth

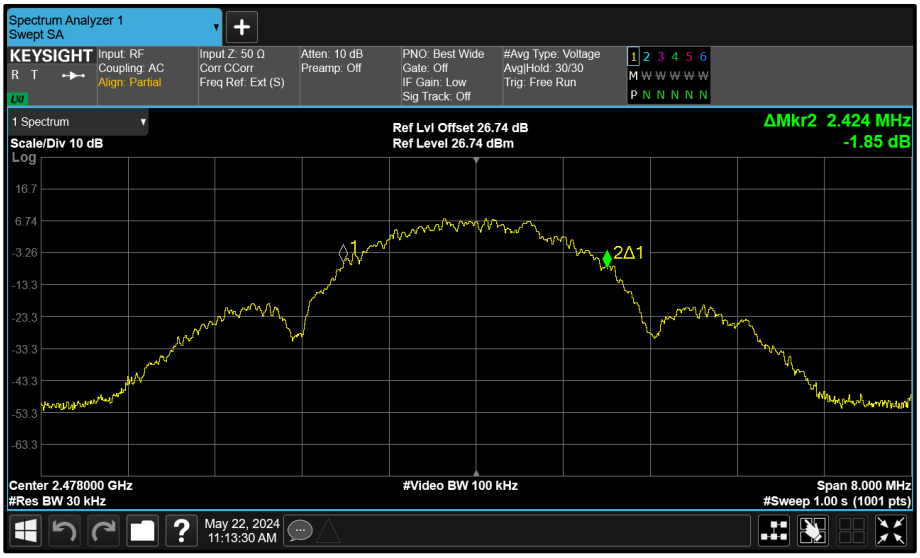

Figure 88 - 2478 MHz (CH36) 99% Bandwidth

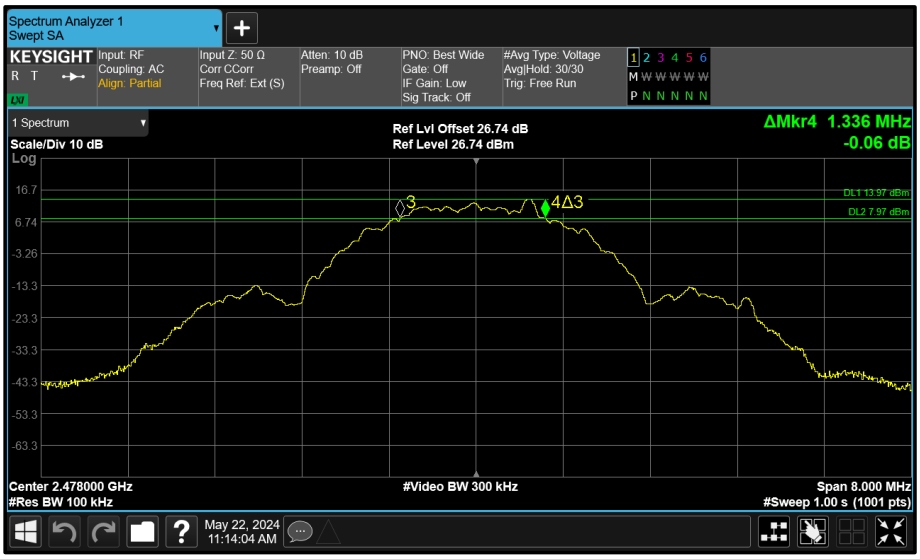

Figure 89 - 2478 MHz (CH36) 6 dB Bandwidth

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 125K)	Duty Cycle (%):	-
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-
Supply Voltage:	3.30V	TX Mode:	Continuous Modulated Packet Bursts

Test Frequency (MHz)	Power Index	6 dB Bandwidth (MHz)	Limit (kHz)
2402	11.00	0.736	≥500.0
2404	11.00	0.736	≥500.0
2440	11.00	0.740	≥500.0
2478	11.00	0.732	≥500.0
2480	11.00	0.736	≥500.0

Table 39 - 6 dB Bandwidth Results

Test Frequency (MHz)	Power Index	99% Bandwidth (MHz)	Limit (kHz)
2402	11.00	1.196	-
2404	11.00	1.196	-
2440	11.00	1.192	-
2478	11.00	1.196	-
2480	11.00	1.196	-

Table 40 - 99% Bandwidth Results

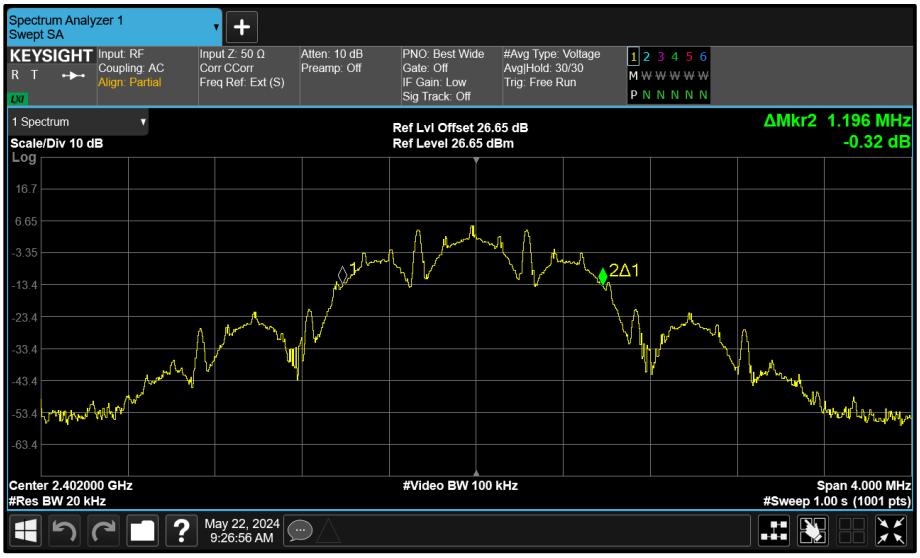

Figure 90 - 2402 MHz (CH37) 99% Bandwidth

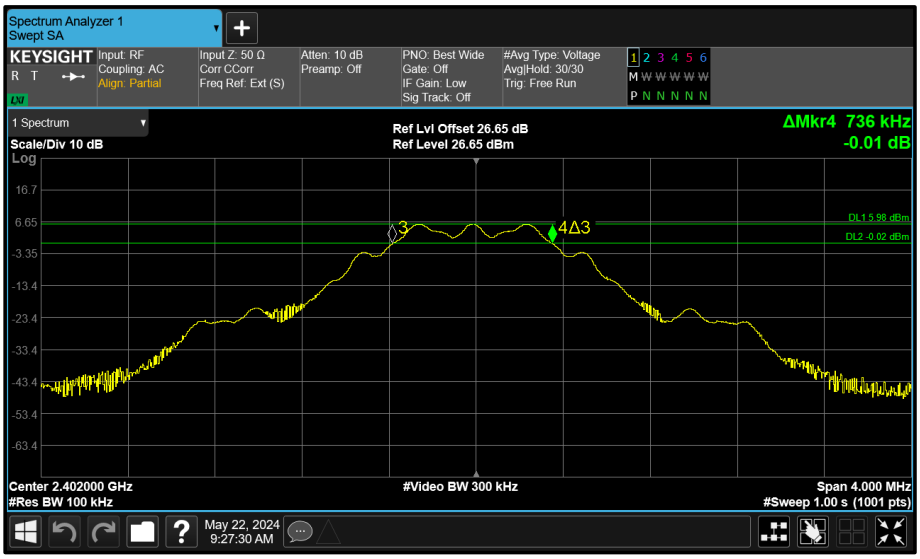

Figure 91 - 2402 MHz (CH37) 6 dB Bandwidth

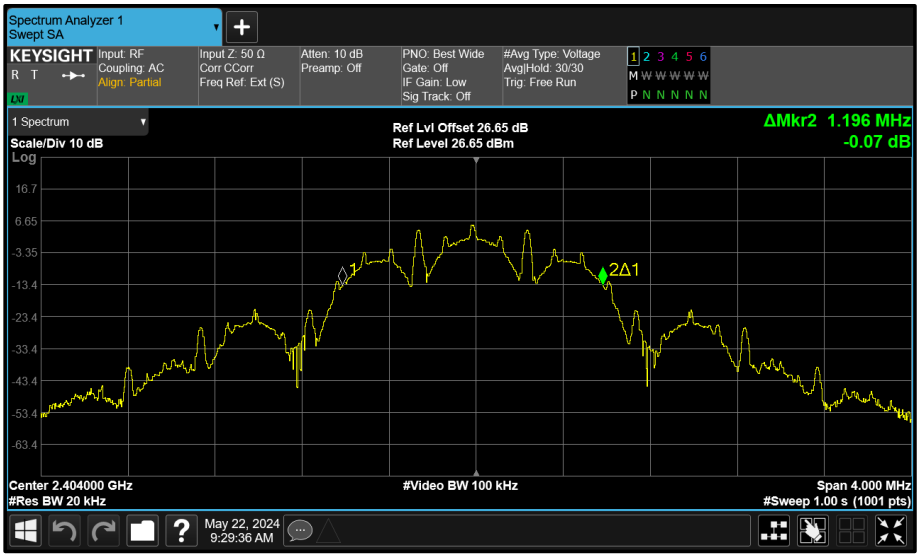

Figure 92 - 2404 MHz (CH0) 99% Bandwidth

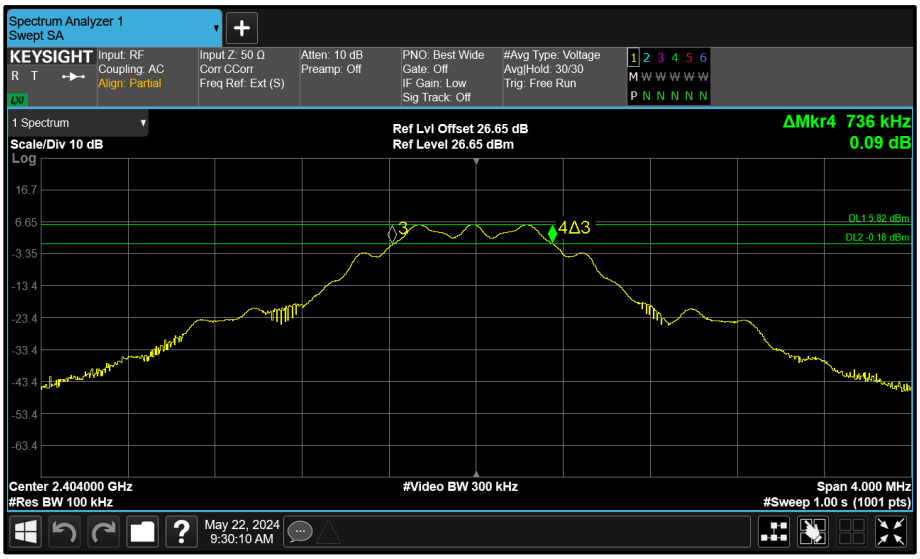

Figure 93 - 2404 MHz (CH0) 6 dB Bandwidth

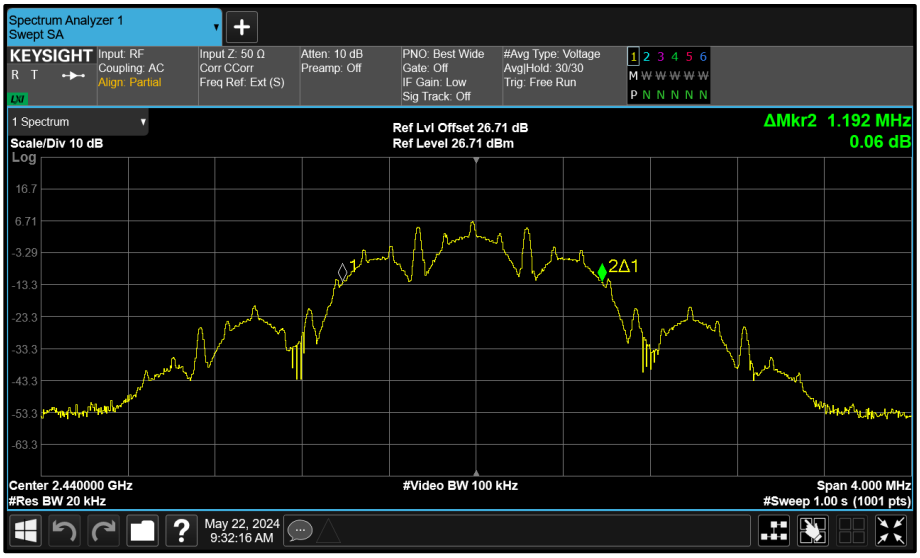

Figure 94 - 2440 MHz (CH17) 99% Bandwidth

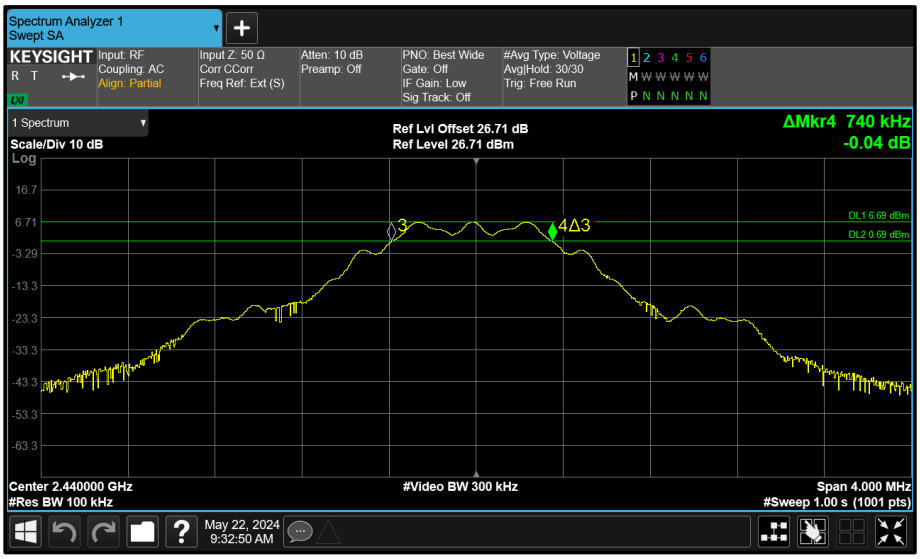

Figure 95 - 2440 MHz (CH17) 6 dB Bandwidth

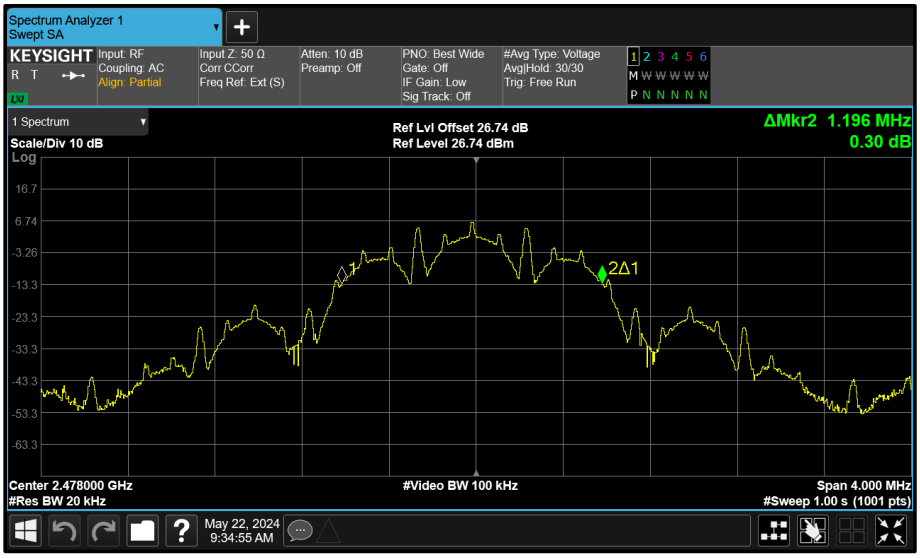

Figure 96 - 2478 MHz (CH36) 99% Bandwidth

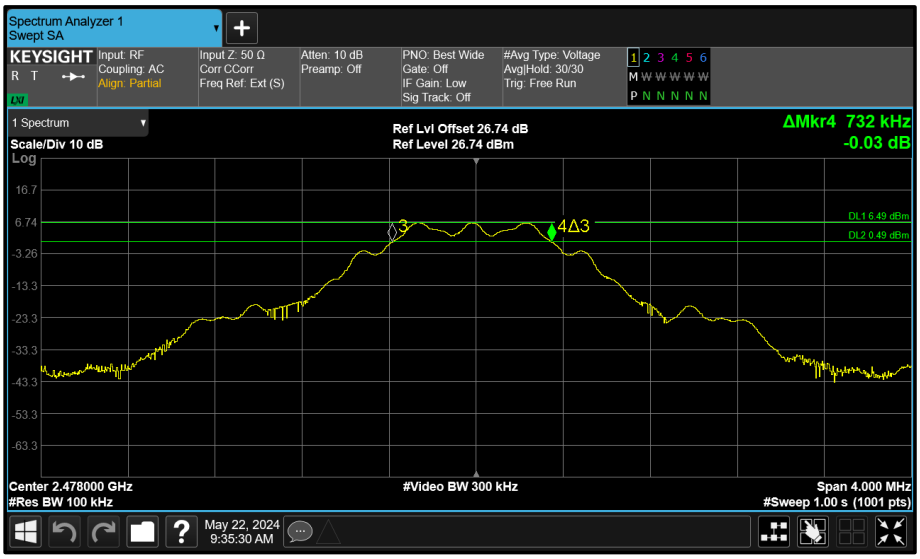

Figure 97 - 2478 MHz (CH36) 6 dB Bandwidth

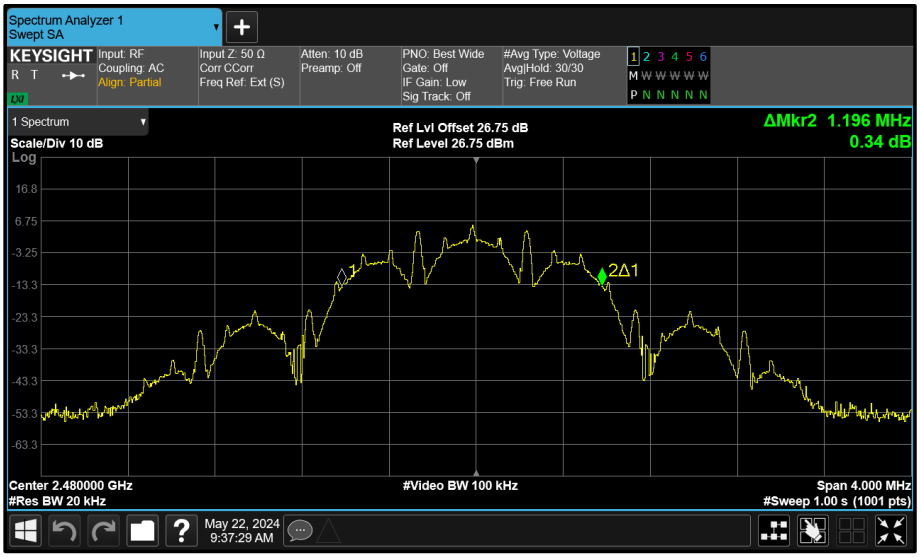

Figure 98 - 2480 MHz (CH39) 99% Bandwidth

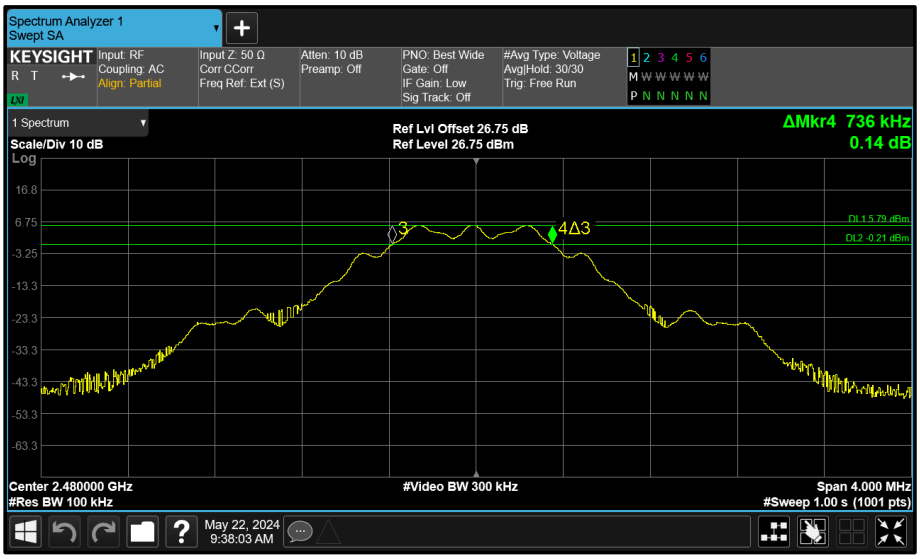

Figure 99 - 2480 MHz (CH39) 6 dB Bandwidth

FCC 47 CFR Part 15, Limit Clause 15.247(a)(2) and ISED RSS-247, Clause 5.2(a)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
True RMS Multimeter	Fluke	79 Series III	411	12	12-Jan-2025
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
GPSDR Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	14-Sep-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Modular Power System Mainframe	Keysight Technologies	N6701C	5835	-	TU
DC Power Module 60V 20A 300W	Keysight Technologies	N6754A	5836	-	O/P Mon
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024

Table 41

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.3 Maximum Conducted Output Power

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (b),
ISED RSS-247, Clause 5.4
ISED RSS-GEN, Clause 6.12

2.3.2 Equipment Under Test and Modification State

SiW917Y1GN, S/N: BLE MAC address: D4:48:67:DD:D7:30 - Modification State 0

2.3.3 Date of Test

22-May-2024

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 11.9.1.2 Method PKPM1.

The EUT was supplied with 3.3 VDC directly with a DC PSU.

2.3.5 Environmental Conditions

Ambient Temperature	22.7 °C
Relative Humidity	52.5 %

2.3.6 Test Results

2.4 GHz Bluetooth Low Energy - Conducted Tests

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 1M)	Duty Cycle (%):	84.5 (Data) 33.9 (Adv)
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	2.80
Supply Voltage:	3.30V	TX Mode:	Continuous Modulated Packet Bursts

Test Frequency (MHz)	Power Index	Maximum Conducted Output Power (dBm)	Limit (dBm)	Margin (dB)
2402	16.00	15.22	30.00	-14.78
2404	16.00	15.14	30.00	-14.86
2440	16.00	15.97	30.00	-14.03
2478	16.00	16.06	30.00	-13.94
2480	16.00	16.18	30.00	-13.82

Table 42 - FCC Maximum Conducted (peak) Output Power Results

Test Frequency (MHz)	Power Index	Maximum Conducted Output Power (dBm)	Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
2402	16.00	15.22	30.00	-14.78	18.02	36.00	-17.98
2404	16.00	15.14	30.00	-14.86	17.94	36.00	-18.06
2440	16.00	15.97	30.00	-14.03	18.77	36.00	-17.23
2478	16.00	16.06	30.00	-13.94	18.86	36.00	-17.14
2480	16.00	16.18	30.00	-13.82	18.98	36.00	-17.02

Table 43 - ISED Maximum Conducted (peak) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 2M)	Duty Cycle (%):	42.5
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	2.80
Supply Voltage:	3.30V	TX Mode:	Continuous Modulated Packet Bursts

Test Frequency (MHz)	Power Index	Maximum Conducted Output Power (dBm)	Limit (dBm)	Margin (dB)
2404	16.00	14.97	30.00	-15.03
2440	16.00	15.71	30.00	-14.29
2478	16.00	15.86	30.00	-14.14

Table 44 - FCC Maximum Conducted (peak) Output Power Results

Test Frequency (MHz)	Power Index	Maximum Conducted Output Power (dBm)	Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
2404	16.00	14.97	30.00	-15.03	17.77	36.00	-18.23
2440	16.00	15.71	30.00	-14.29	18.51	36.00	-17.49
2478	16.00	15.86	30.00	-14.14	18.66	36.00	-17.34

Table 45 - ISED Maximum Conducted (peak) Output Power Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.1.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 125k)	Duty Cycle (%):	96.7 (Data) 34.1 (Adv)
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	2.80
Supply Voltage:	3.30V	TX Mode:	Continuous Modulated Packet Bursts

Test Frequency (MHz)	Power Index	Maximum Conducted Output Power (dBm)	Limit (dBm)	Margin (dB)
2402	11.00	10.51	30.00	-19.49
2404	11.00	10.60	30.00	-19.40
2440	11.00	11.28	30.00	-18.72
2478	11.00	11.09	30.00	-18.91
2480	11.00	10.27	30.00	-19.73

Table 46 - FCC Maximum Conducted (peak) Output Power Results

Test Frequency (MHz)	Power Index	Maximum Conducted Output Power (dBm)	Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
2402	11.00	10.51	30.00	-19.49	13.31	36.00	-22.69
2404	11.00	10.60	30.00	-19.40	13.40	36.00	-22.60
2440	11.00	11.28	30.00	-18.72	14.08	36.00	-21.92
2478	11.00	11.09	30.00	-18.91	13.89	36.00	-22.11
2480	11.00	10.27	30.00	-19.73	13.07	36.00	-22.93

Table 47 - ISED Maximum Conducted (peak) Output Power Results

FCC 47 CFR Part 15, Limit Clause 15.247 (b)(1)

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

ISED RSS-247, Limit Clause 5.4 (b)

For FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channel; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channel. The e.i.r.p. shall not exceed 4 W except as provided in section 5.4(e) of the specification.

FCC 47 CFR Part 15, Limit Clause 15.247 (b)(2)

For frequency hopping systems operating in the 902–928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels.

ISED RSS-247, Limit Clause 5.4 (a)

For FHSs operating in the band 902-928 MHz, the maximum peak conducted output power shall not exceed 1.0 W, and the e.i.r.p. shall not exceed 4 W if the hopset uses 50 or more hopping channels; the maximum peak conducted output power shall not exceed 0.25 W and the e.i.r.p. shall not exceed 1 W if the hopset uses less than 50 hopping channels.

FCC 47 CFR Part 15, Limit Clause 15.247 (b)(3)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

ISED RSS-247, Limit Clause 5.4 (d)

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e) of the specification.

2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
True RMS Multimeter	Fluke	79 Series III	411	12	12-Jan-2025
Multimeter	Fluke	75 Mk3	455	12	15-Dec-2024
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
USB Power Sensor	Boonton	RTP5008	5833	12	12-Jul-2024
Modular Power System Mainframe	Keysight Technologies	N6701C	5835	-	TU
DC Power Module 60V 20A 300W	Keysight Technologies	N6754A	5836	-	O/P Mon
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024

Table 48

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.4 Power Spectral Density

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (e)
ISED RSS-247, Clause 5.2
ISED RSS-GEN, Clause 6.12

2.4.2 Equipment Under Test and Modification State

SiW917Y1GN, S/N: BLE MAC address: D4:48:67:DD:D7:30 - Modification State 0

2.4.3 Date of Test

22-May-2024

2.4.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.10.2.

The EUT was supplied with 3.3 VDC directly with a DC PSU.

2.4.5 Environmental Conditions

Ambient Temperature	22.7 °C
Relative Humidity	52.5 %

2.4.6 Test Results

2.4 GHz Bluetooth Low Energy - Conducted Tests

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 1M)	Duty Cycle (%):	84.5 (Data) 33.9 (Adv)
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-
Supply Voltage:	3.30V	TX Mode:	Continuous Modulated Packet Bursts

Test Frequency (MHz)	Power Index	RBW (kHz)	PSD (dBm/RBW)	Limit (dBm/3 kHz)	Margin (dB)
2402	16.00	3.0	1.86	8.00	-6.15
2404	16.00	3.0	2.55	8.00	-5.45
2440	16.00	3.0	2.71	8.00	-5.29
2478	16.00	3.0	2.86	8.00	-5.14
2480	16.00	3.0	3.32	8.00	-4.69

Table 49 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 2M)	Duty Cycle (%):	42.5
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-
Supply Voltage:	3.30V	TX Mode:	Continuous Modulated Packet Bursts

Test Frequency (MHz)	Power Index	RBW (kHz)	PSD (dBm/RBW)	Limit (dBm/3 kHz)	Margin (dB)
2404	16.00	3.0	-1.53	8.00	-9.53
2440	16.00	3.0	-1.70	8.00	-9.70
2478	16.00	3.0	-1.24	8.00	-9.24

Table 50 - Maximum Power Spectral Density Results

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.2
Additional Reference(s):	-		

DUT Configuration			
Mode:	BLE GFSK (LE 125k)	Duty Cycle (%):	96.7 (Data) 34.1 (Adv)
Antenna Configuration:	SISO	DCCF (dB):	-
Active Port(s):	-	Peak Antenna Gain (dBi):	-
Supply Voltage:	3.30V	TX Mode:	Continuous Modulated Packet Bursts

Test Frequency (MHz)	Power Index	RBW (kHz)	PSD (dBm/RBW)	Limit (dBm/3 kHz)	Margin (dB)
2402	11.00	3.0	3.58	8.00	-4.42
2404	11.00	3.0	4.37	8.00	-3.63
2440	11.00	3.0	4.33	8.00	-3.67
2478	11.00	3.0	4.17	8.00	-3.83
2480	11.00	3.0	2.36	8.00	-5.64

Table 51 - Maximum Power Spectral Density Results

FCC 47 CFR Part 15, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

ISED RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission

2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
True RMS Multimeter	Fluke	79 Series III	411	12	12-Jan-2025
Hygrometer	Rotronic	I-1000	3220	12	28-Nov-2024
GPSDR Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	14-Sep-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	18-Sep-2025
Modular Power System Mainframe	Keysight Technologies	N6701C	5835	-	TU
DC Power Module 60V 20A 300W	Keysight Technologies	N6754A	5836	-	O/P Mon
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024

Table 52

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.5 Restricted Band Edges

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.205
ISED RSS-247, Clause 3.3
ISED RSS-GEN, Clause 8.10

2.5.2 Equipment Under Test and Modification State

SiW917Y1GA, S/N: BLE MAC address: D4:48:67:DD:D6:87 - Modification State 0
SiW917Y1GN, S/N: BLE MAC address: D4:48:67:DD:D7:30 - Modification State 0

2.5.3 Date of Test

28-May-2024 to 05-June-2024

2.5.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.10.5 and 11.12.1.

Plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.2.

The following conversion can be applied to convert from dBµV/m to µV/m:
10^(Field Strength in dBµV/m/20).

The EUT was supplied with 3.3 VDC by means of a regulator residing in the host certification board, which was in turn being powered over the host certification board's USB connector.

2.5.5 Environmental Conditions

Ambient Temperature	19.3 - 23.3 °C
Relative Humidity	49.1 - 51.8 %

2.5.6 Test Results

2.4 GHz Bluetooth Low Energy - PCB Trace Antenna

Mode	Data Rate/MCS	Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
BLE	125k	2402	2390	46.61	33.83
BLE	125k	2480	2483.5	51.96	37.77
BLE	1M	2402	2390	46.91	33.80
BLE	1M	2480	2483.5	52.77	37.80
BLE	125k	2404	2390	46.67	34.25
BLE	125k	2478	2483.5	48.07	36.93
BLE	1M	2404	2390	45.99	34.12
BLE	1M	2478	2483.5	48.71	36.72
BLE	2M	2404	2390	46.35	33.83
BLE	2M	2478	2483.5	50.80	33.83

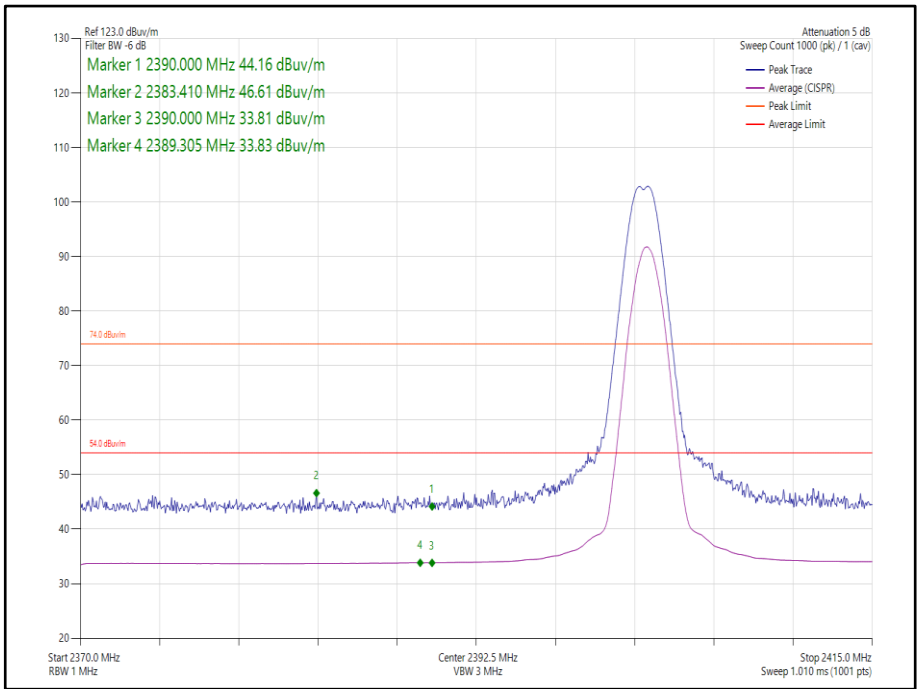

Figure 100 - CH0_125 kHz_TX, 2402 MHz, Band Edge Frequency 2390 MHz

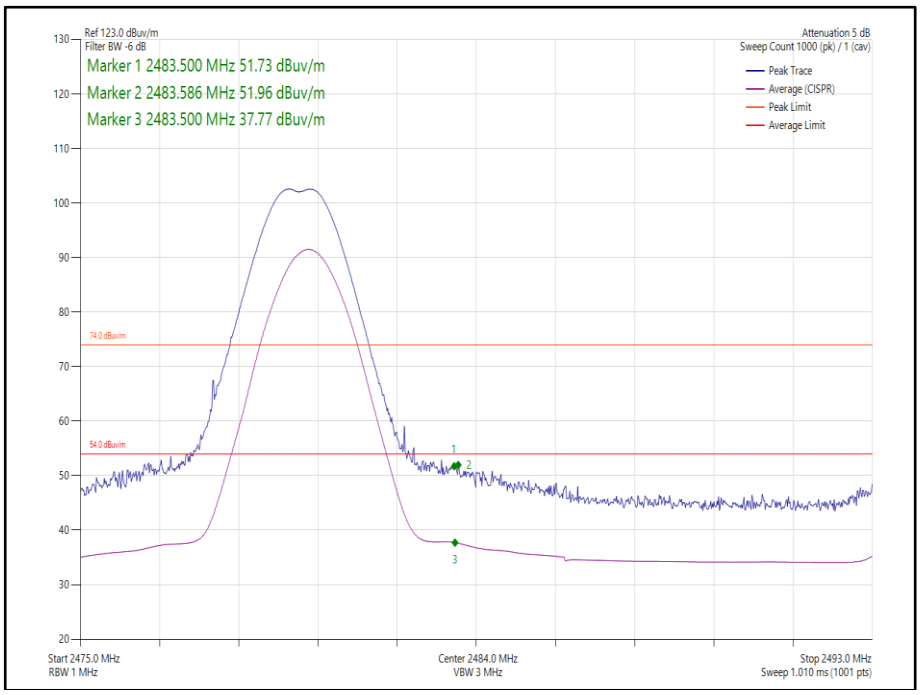

Figure 101 - CH39_125 kHz _TX, 2480 MHz, Band Edge Frequency 2483.5 MHz

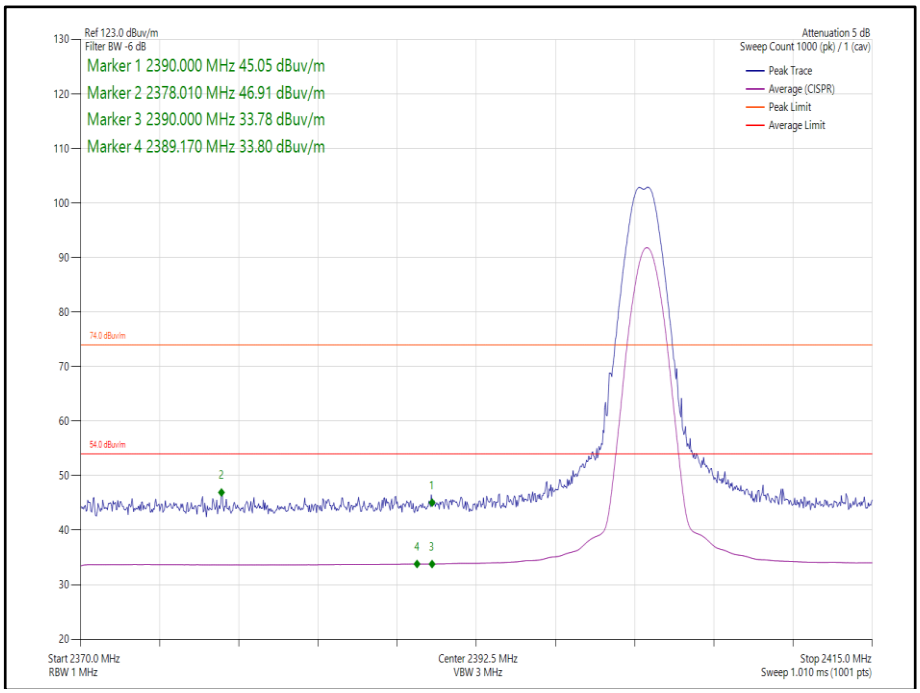

Figure 102 - CH0_1 MHz_TX, 2402 MHz, Band Edge Frequency 2390 MHz

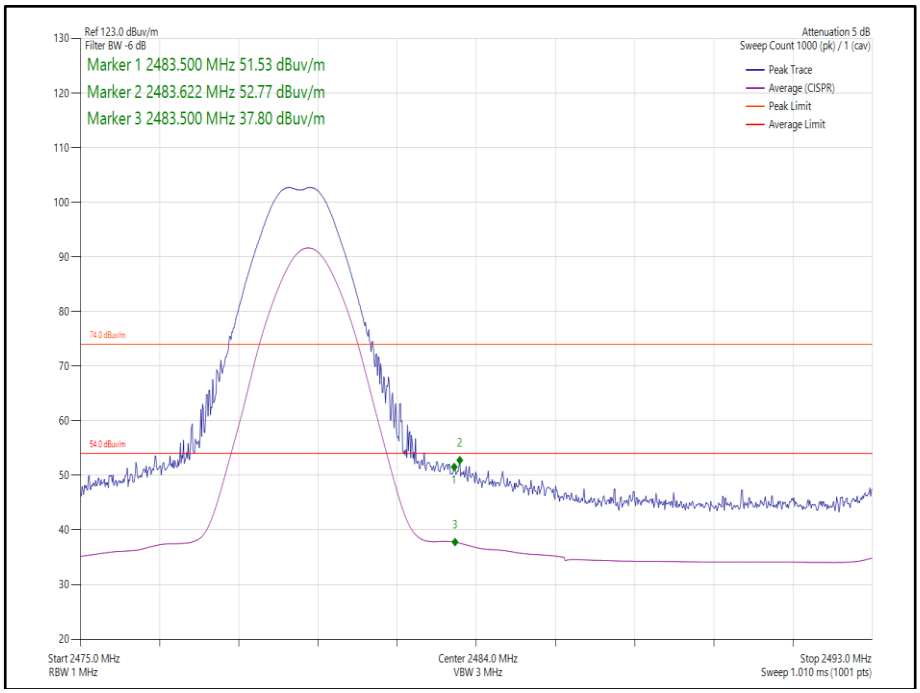

Figure 103 - CH39_1 MHz_TX, 2480 MHz, Band Edge Frequency 2483.5 MHz

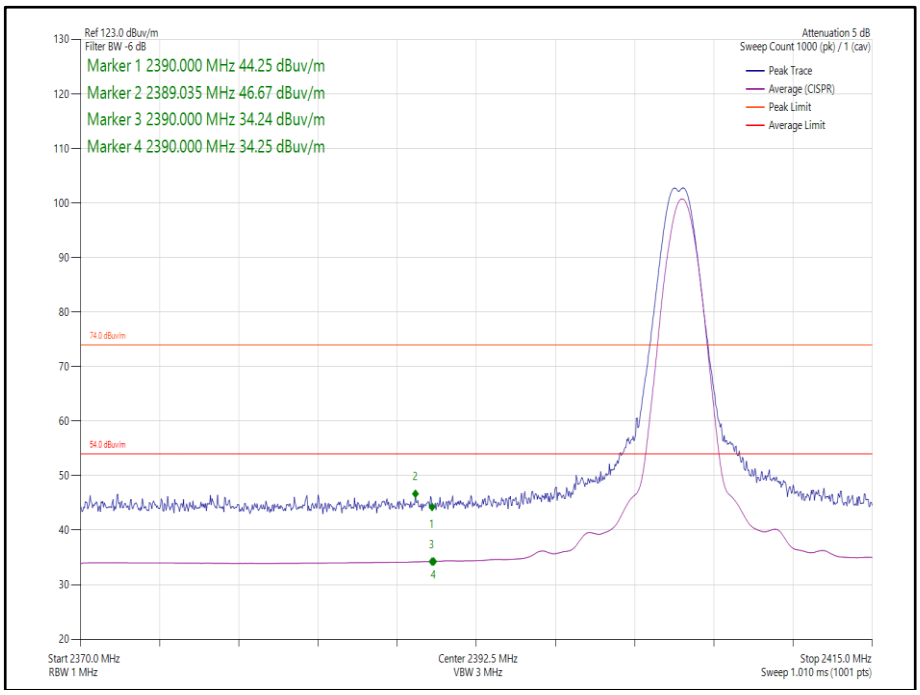

Figure 104 - CH1_125 kHz_TX, 2404 MHz, Band Edge Frequency 2390 MHz

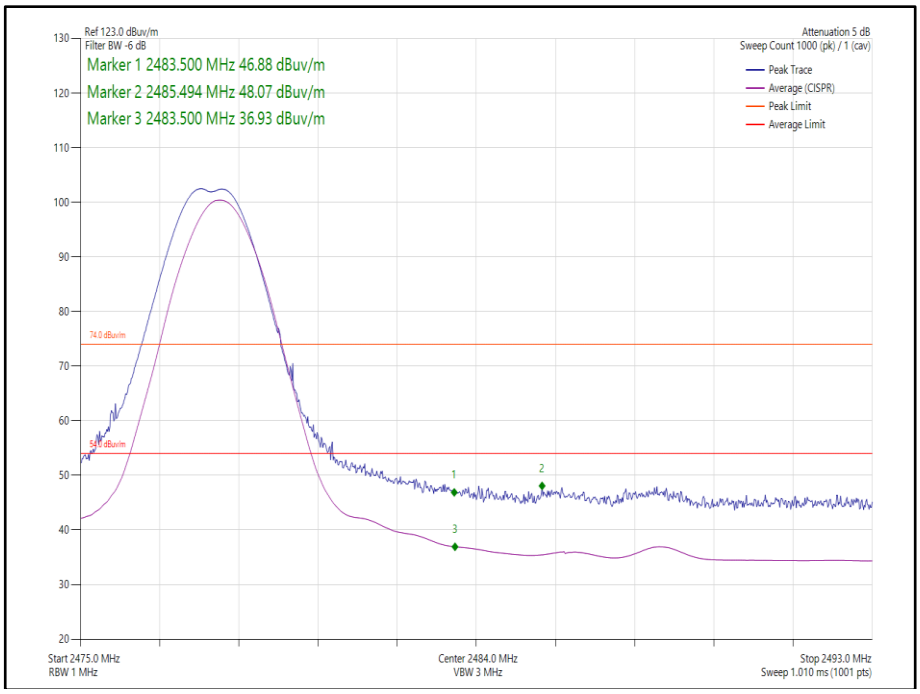

Figure 105 - CH38_125 kHz_TX, 2478 MHz, Band Edge Frequency 2483.5 MHz

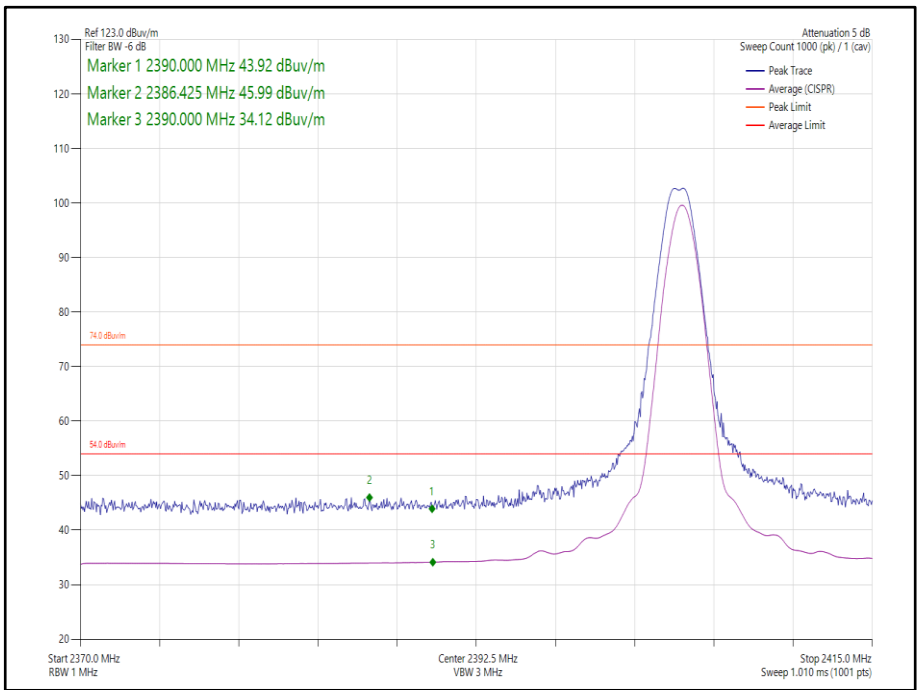

Figure 106 - CH1_1 MHz_TX, 2404 MHz, Band Edge Frequency 2390 MHz

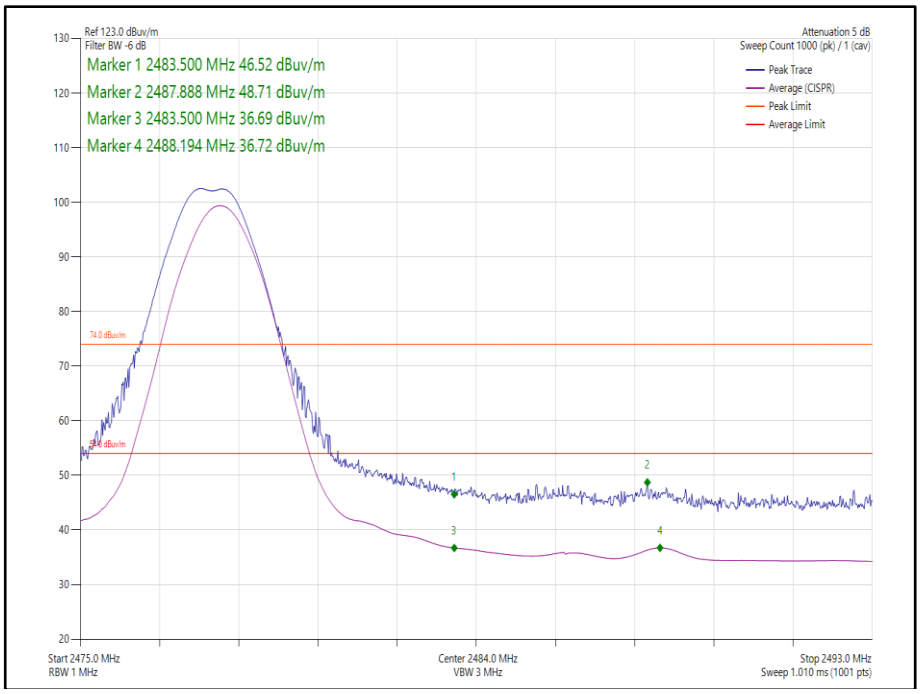

Figure 107 - CH38_1 MHz_TX, 2478 MHz, Band Edge Frequency 2483.5 MHz

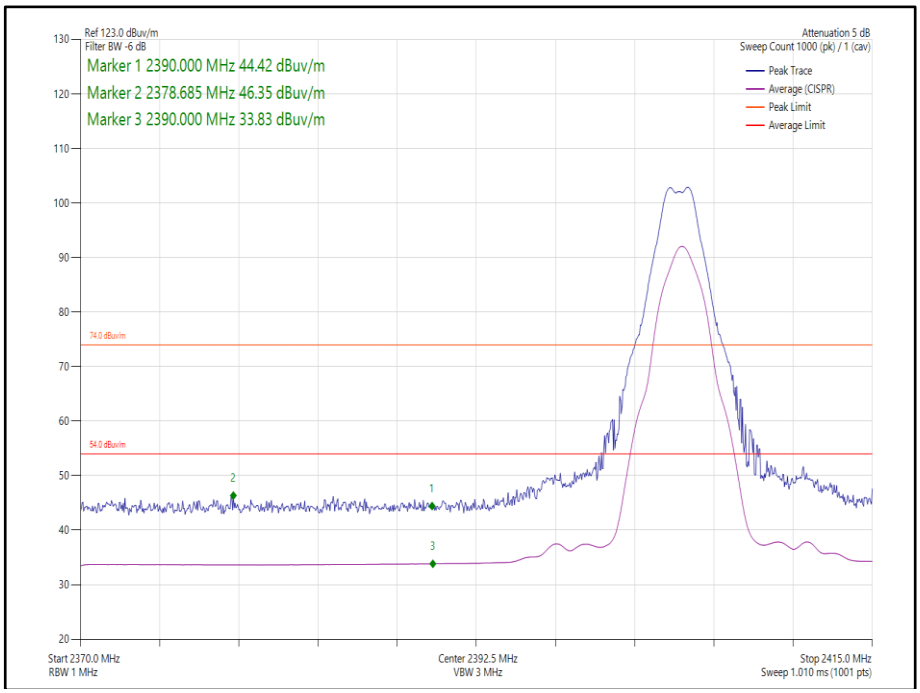

Figure 108 - CH1_2 MHz_TX, 2404 MHz, Band Edge Frequency 2390 MHz

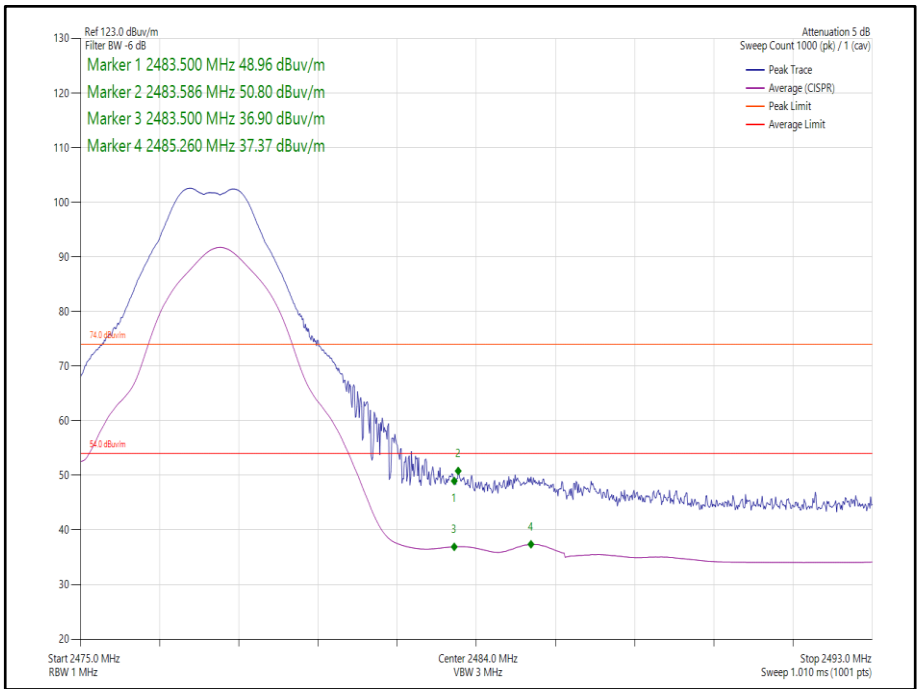

Figure 109 - CH38_2 MHz_TX, 2478 MHz, Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth Low Energy - ANT-2.4-CW-CT-SMA/RPS Antenna

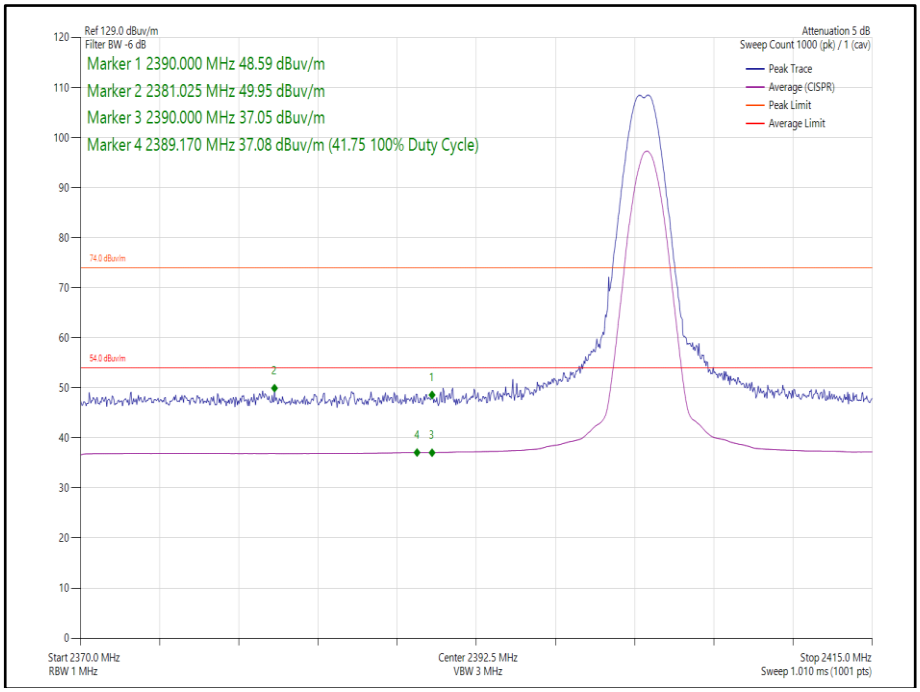

Figure 110 - CH0_125 kHz_TX, 2402 MHz, Band Edge Frequency 2390 MHz

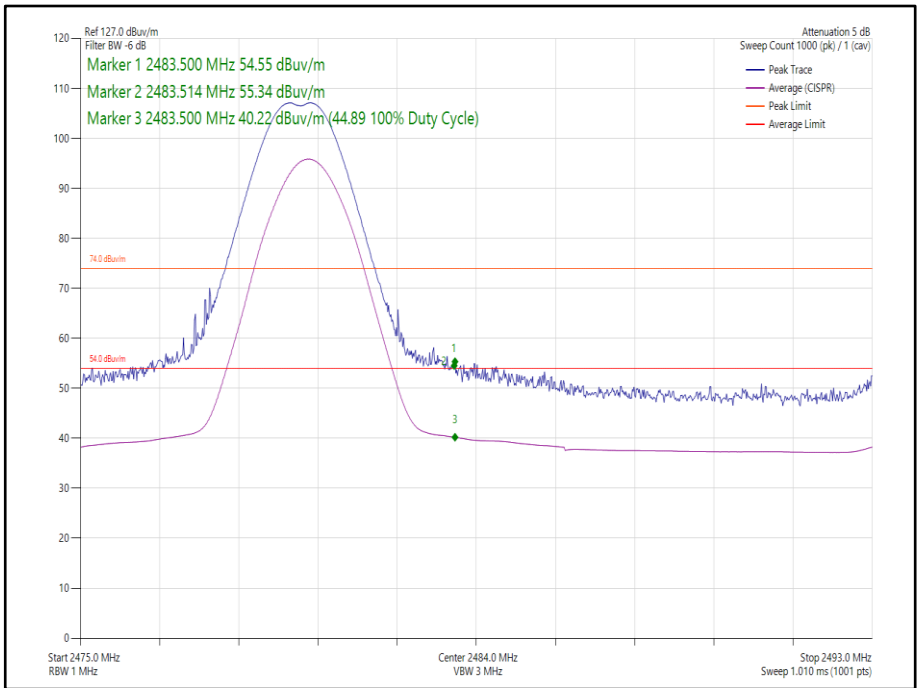

Figure 111 - CH39_125 kHz_TX, 2480 MHz, Band Edge Frequency 2483.5 MHz

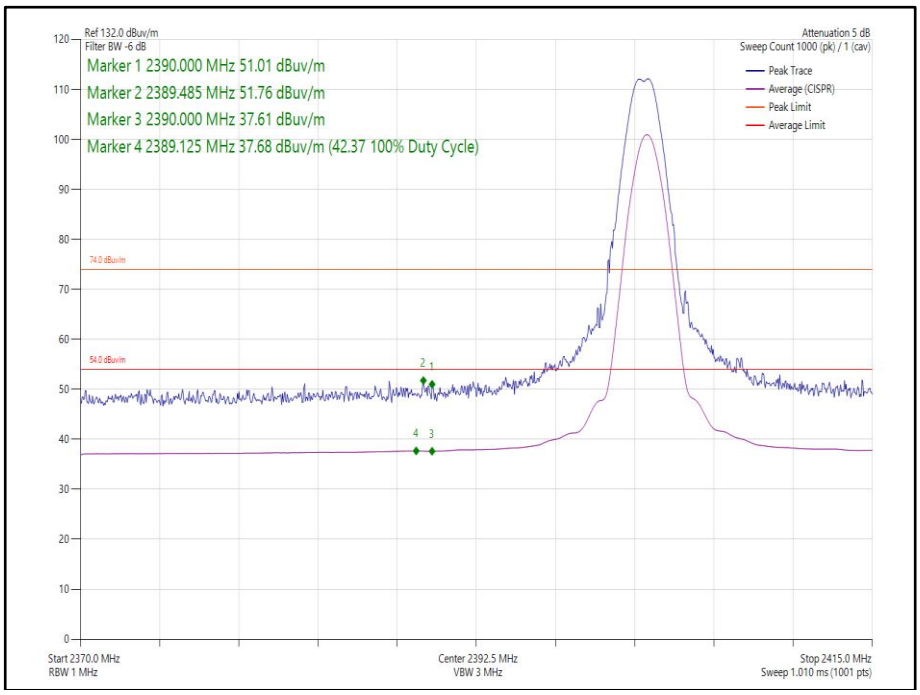

Figure 112 - CH0_1 MHz_TX, 2402 MHz, Band Edge Frequency 2390 MHz

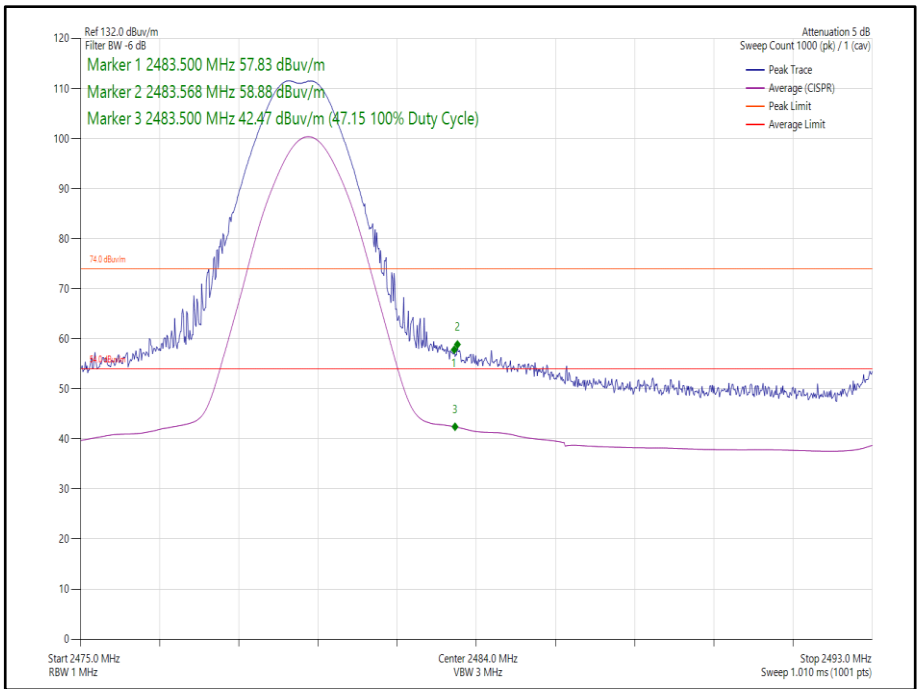

Figure 113 - CH39_1 MHz_TX, 2480 MHz, Band Edge Frequency 2483.5 MHz

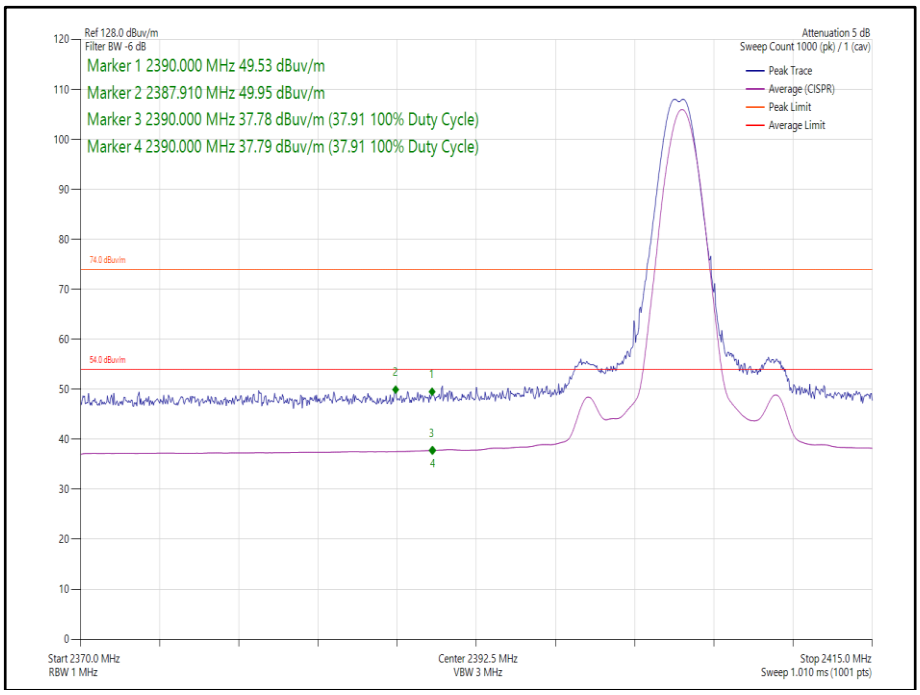

Figure 114 - CH1_125 kHz_TX, 2404 MHz, Band Edge Frequency 2390 MHz

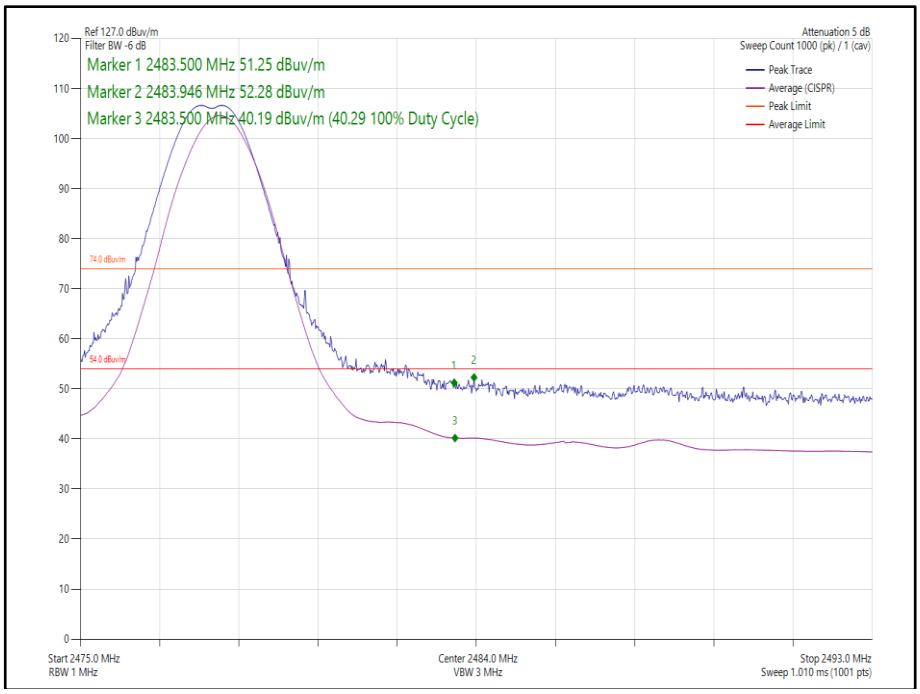

Figure 115 - CH38_125 kHz_TX, 2478 MHz, Band Edge Frequency 2483.5 MHz

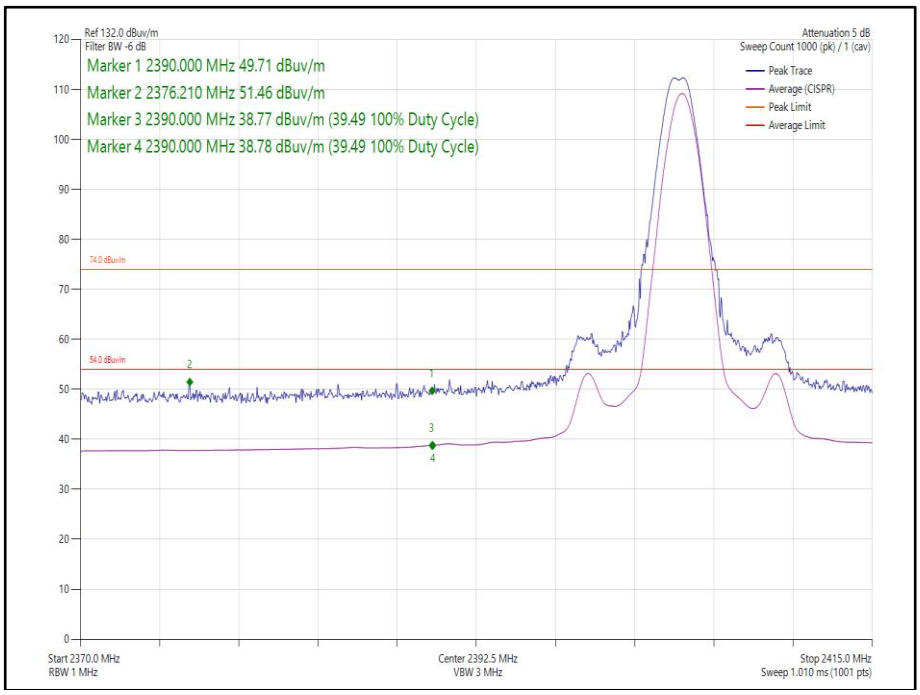

Figure 116 - CH1_1 MHz_TX, 2404 MHz, Band Edge Frequency 2390 MHz

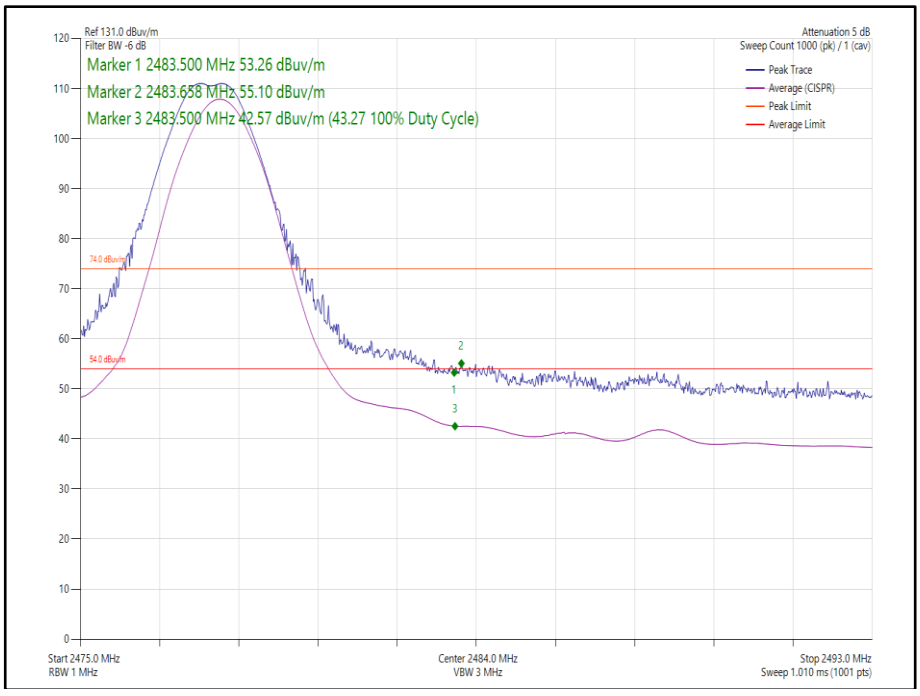

Figure 117 - CH38_1 MHz_TX, 2478 MHz, Band Edge Frequency 2483.5 MHz

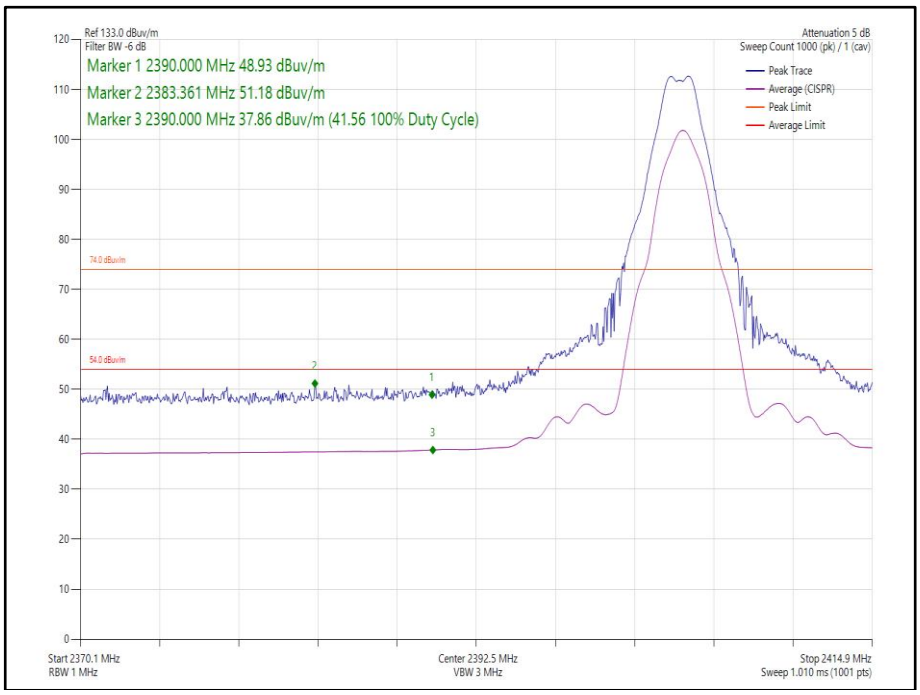

Figure 118 - CH1_2 MHz_TX, 2404 MHz, Band Edge Frequency 2390 MHz

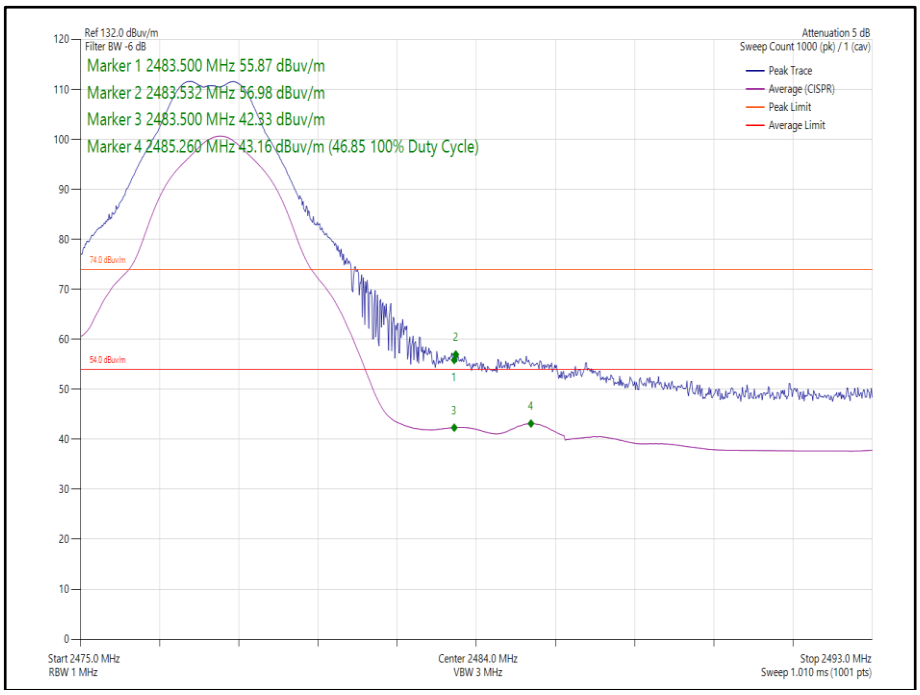

Figure 119 - CH38_2 MHz_TX, 2478 MHz, Band Edge Frequency 2483.5 MHz

FCC 47 CFR Part 15, Limit Clause 15.209

Frequency (MHz)	Field Strength (µV/m at 3 m)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960	500

Table 53

ISED RSS-GEN, Limit Clause 8.9

Frequency (MHz)	Field Strength (µV/m at 3 m)
30 to 88	100
88 to 216	150
216 to 960	200
Above 960*	500

Table 54

*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.

2.5.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Test Receiver	Rohde & Schwarz	ESW44	5084	12	04-Nov-2024
Emissions Software	TUV SUD	EmX V3.2.0	5125	-	Software
3m Semi-Anechoic Chamber	Rainford	RF Chamber 11	5136	36	24-Nov-2024
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Antenna (DRG, 1 GHz to 10.5 GHz)	Schwarzbeck	BBHA9120B	5215	12	09-Jul-2024
Pre-Amplifier (1 GHz to 26.5 GHz)	Agilent Technologies	8449B	5445	12	25-May-2024
Thermo-Hygro-Barometer	PCE Instruments	OCE-THB-40	5470	12	20-Apr-2024
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5512	12	21-May-2024
Cable (SMA to SMA, 2 m)	Junkosha	MWX221-02000AMSAMS/A	5518	12	14-Apr-2024
Cable (N-Type to N-Type, 8 m)	Junkosha	MWX221-08000NMSNMS/B	5522	12	14-Apr-2024

Table 55

TU - Traceability Unscheduled

2.6 Authorised Band Edges

2.6.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d),
ISED RSS-247, Clause 5.5

2.6.2 Equipment Under Test and Modification State

SiW917Y1GA, S/N: BLE MAC address: D4:48:67:DD:D6:87 - Modification State 0
SiW917Y1GN, S/N: BLE MAC address: D4:48:67:DD:D7:30 - Modification State 0

2.6.3 Date of Test

28-May-2024 to 05-June-2024

2.6.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.10.4.

The EUT was supplied with 3.3 VDC by means of a regulator residing in the host certification board, which was in turn being powered over the host certification board's USB connector.

2.6.5 Environmental Conditions

Ambient Temperature	19.3 - 23.3 °C
Relative Humidity	49.1 - 51.8 %

2.6.6 Test Results

2.4 GHz Bluetooth Low Energy - PCB Trace Antenna

Mode	Data Rate/MCS	Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
BLE	125k	2402	2400	-50.94
BLE	125k	2480	2483.5	-54.83
BLE	1M	2402	2400	-55.91
BLE	1M	2480	2483.5	-56.98
BLE	125k	2404	2400	-58.30
BLE	125k	2478	2483.5	-59.40
BLE	1M	2404	2400	-59.95
BLE	1M	2478	2483.5	-62.91
BLE	2M	2404	2400	-56.60
BLE	2M	2478	2483.5	-57.79

Table 29

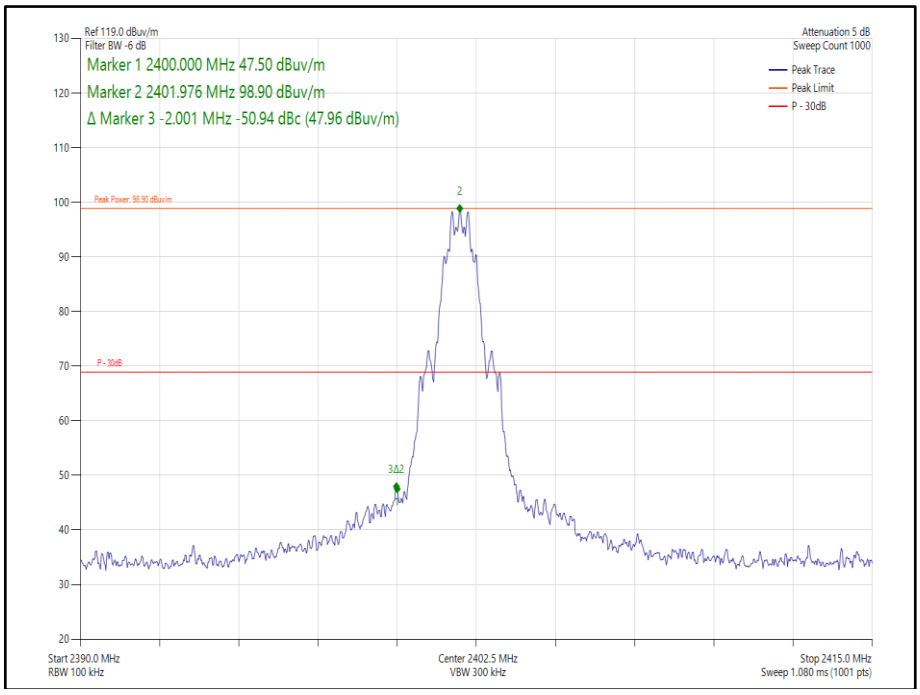

Figure 120 - CH0_125k_TX, 2402 MHz, Band Edge Frequency 2400 MHz

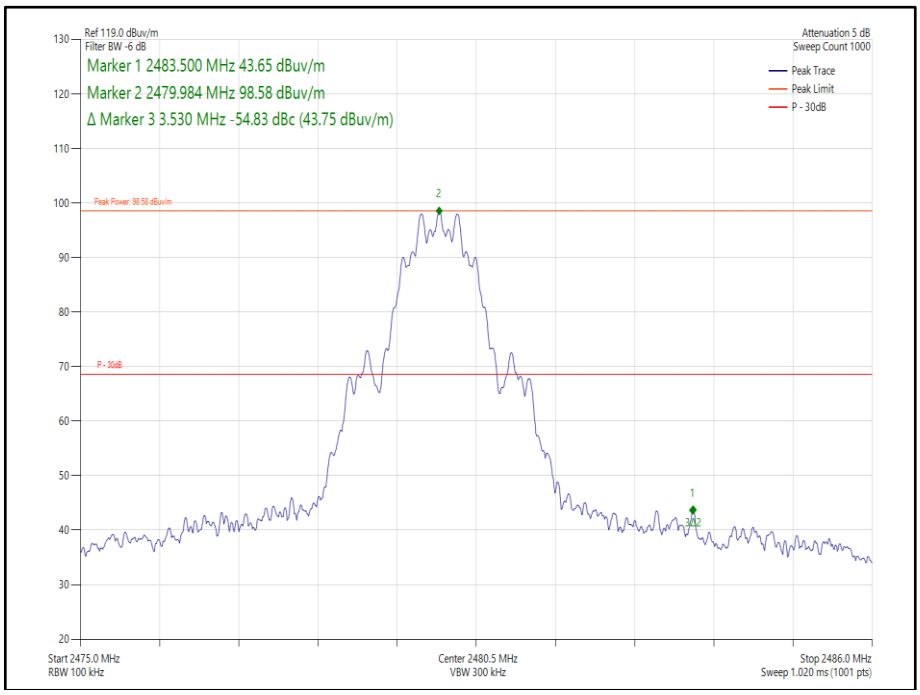

Figure 121 - CH39_125k_TX, 2480 MHz, Band Edge Frequency 2483.5 MHz

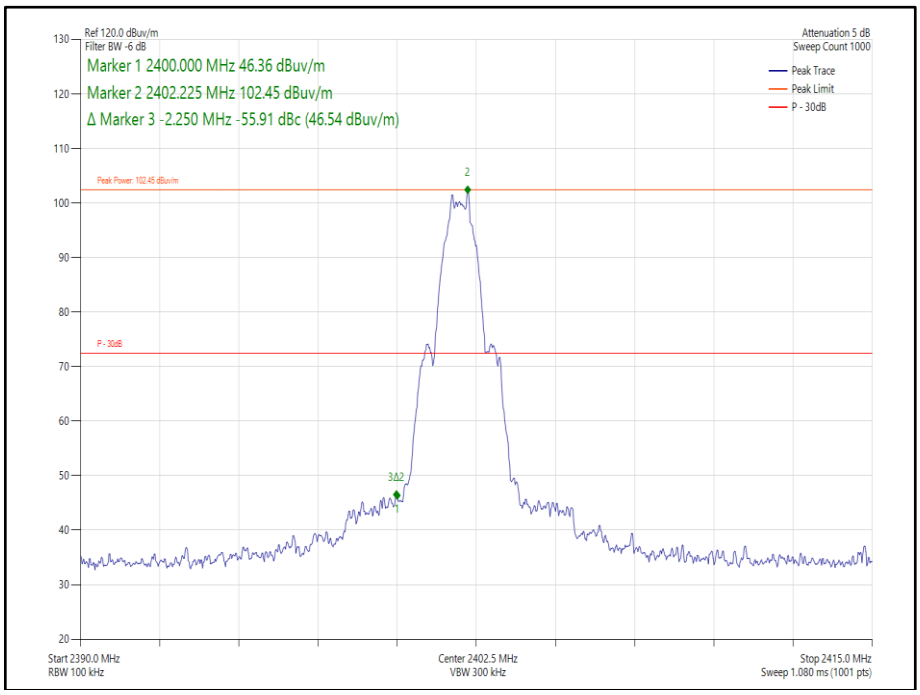

Figure 122 - CH0_1M_TX, 2402 MHz, Band Edge Frequency 2400 MHz

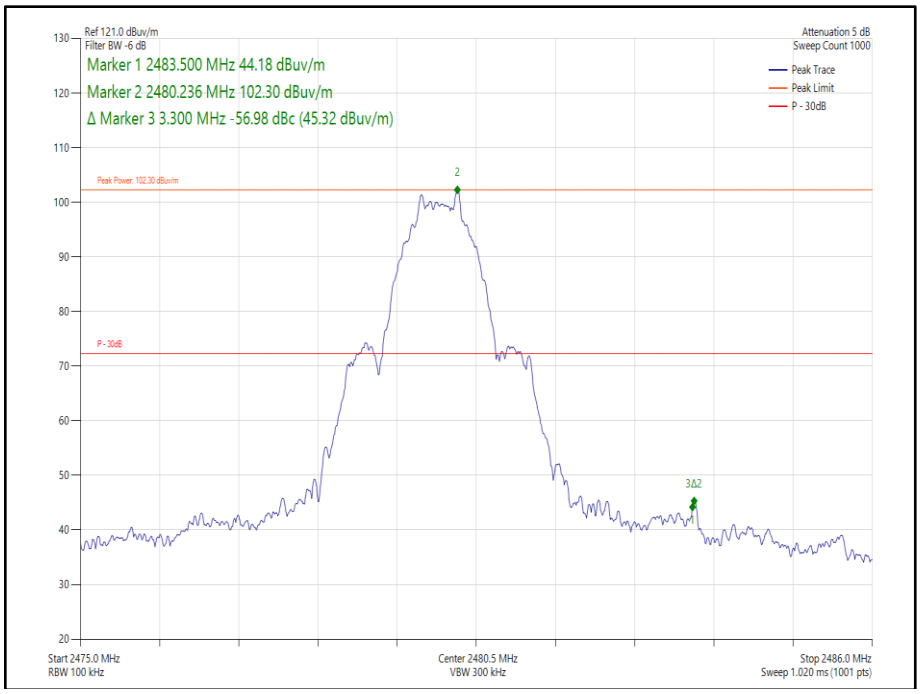

Figure 123 - CH39_1M_TX, 2480 MHz, Band Edge Frequency 2483.5 MHz

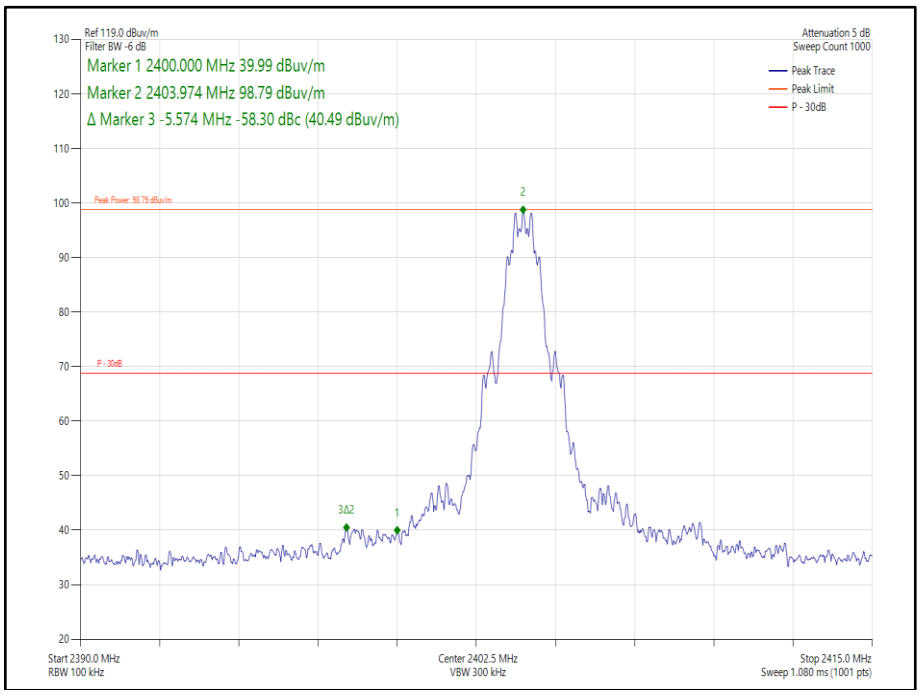

Figure 124 - CH1_125k_TX, 2404 MHz, Band Edge Frequency 2400 MHz

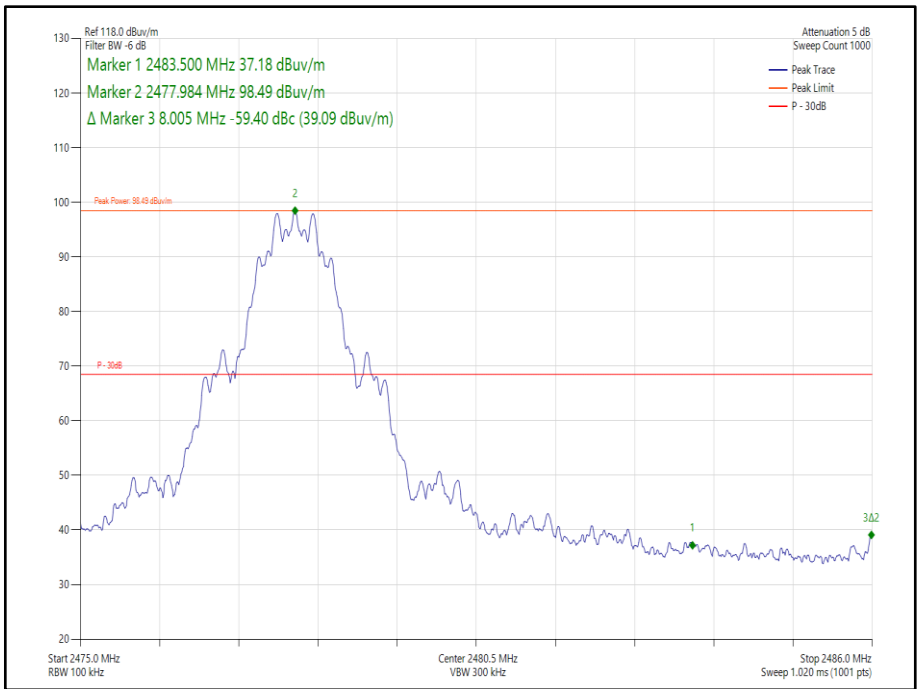

Figure 125 - CH38_125k_TX, 2478 MHz, Band Edge Frequency 2483.5 MHz

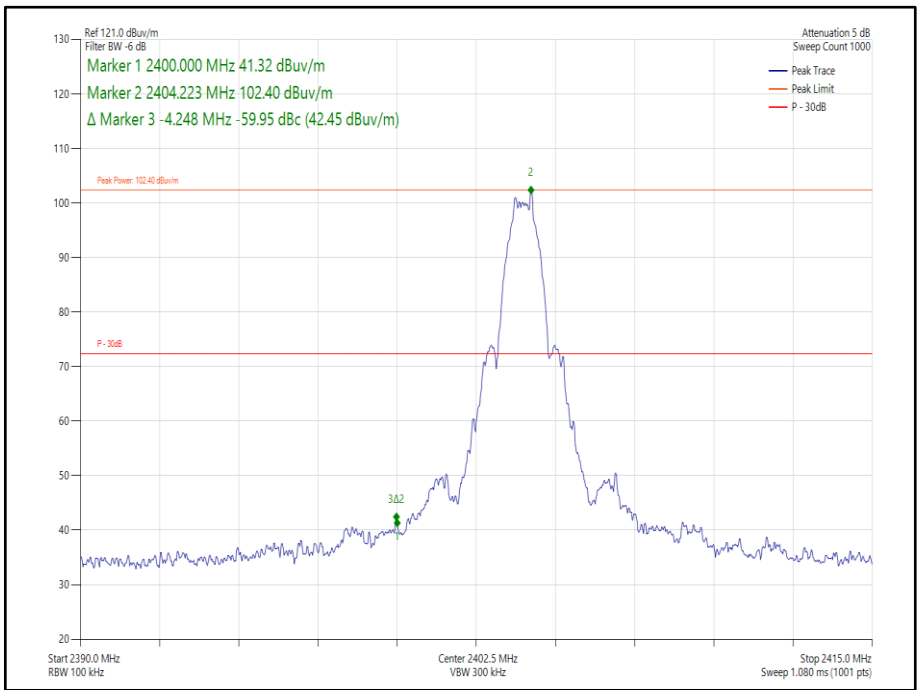

Figure 126 - CH1_1M_TX, 2404 MHz, Band Edge Frequency 2400 MHz

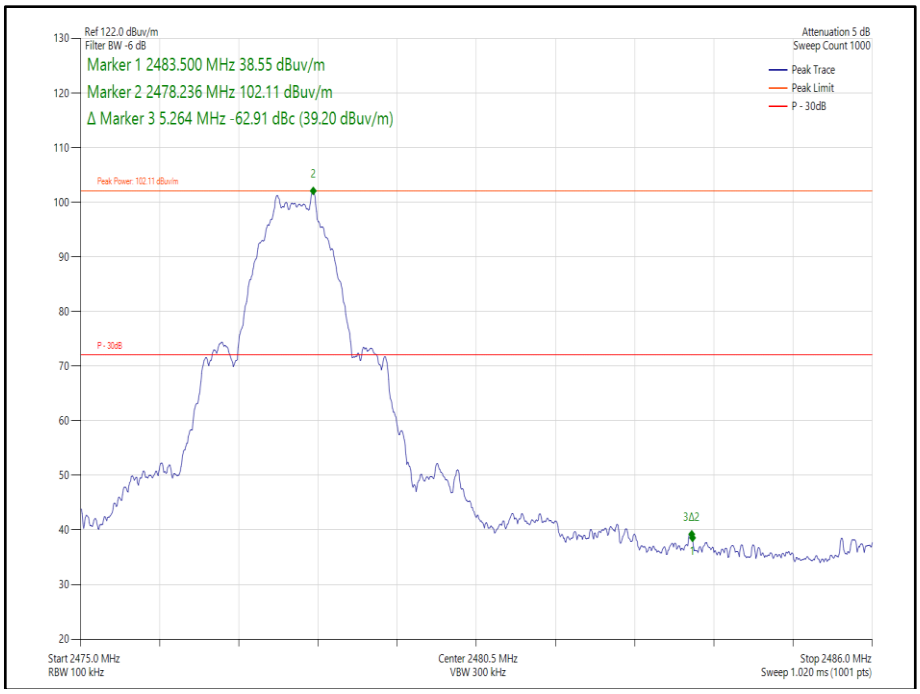

Figure 127 - CH38_1M_TX, 2478 MHz, Band Edge Frequency 2483.5 MHz

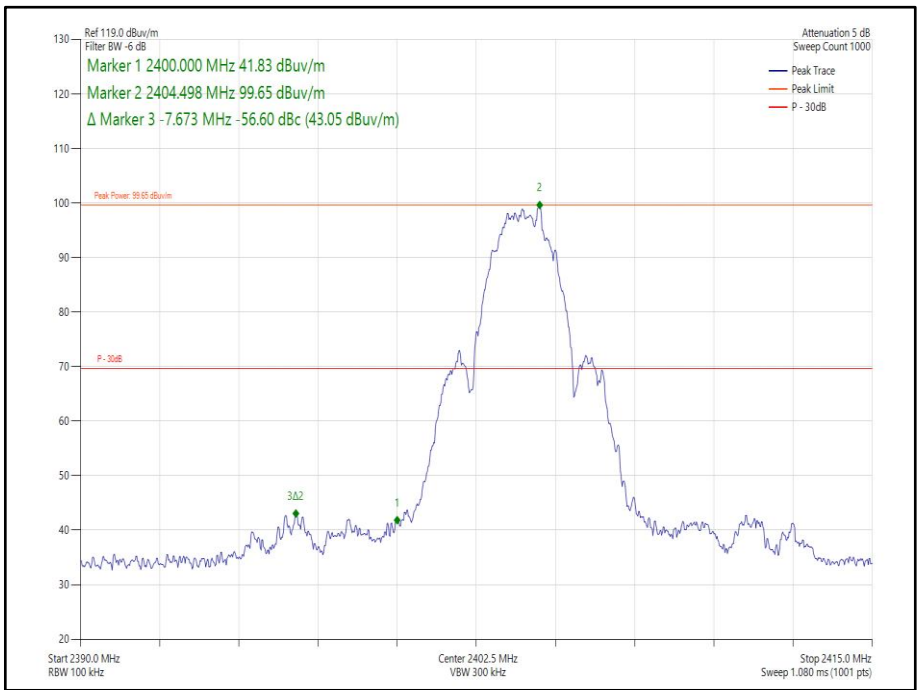

Figure 128 - CH1_2M_TX, 2404 MHz, Band Edge Frequency 2400 MHz

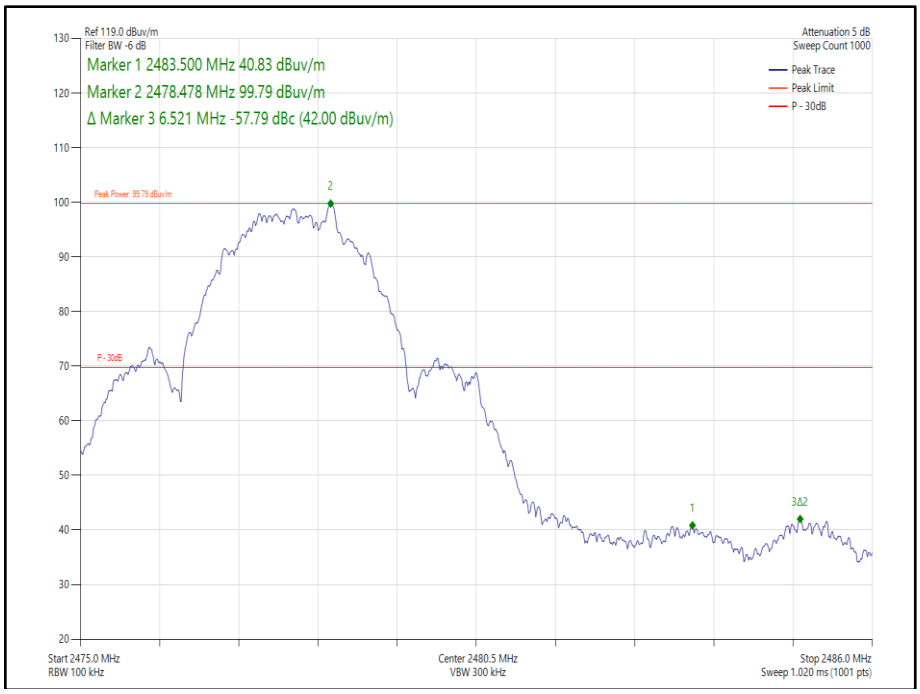

Figure 129 - CH38_2M_TX, 2478 MHz, Band Edge Frequency 2483.5 MHz

2.4 GHz Bluetooth Low Energy - ANT-2.4-CW-CT-SMA/RPS Antenna

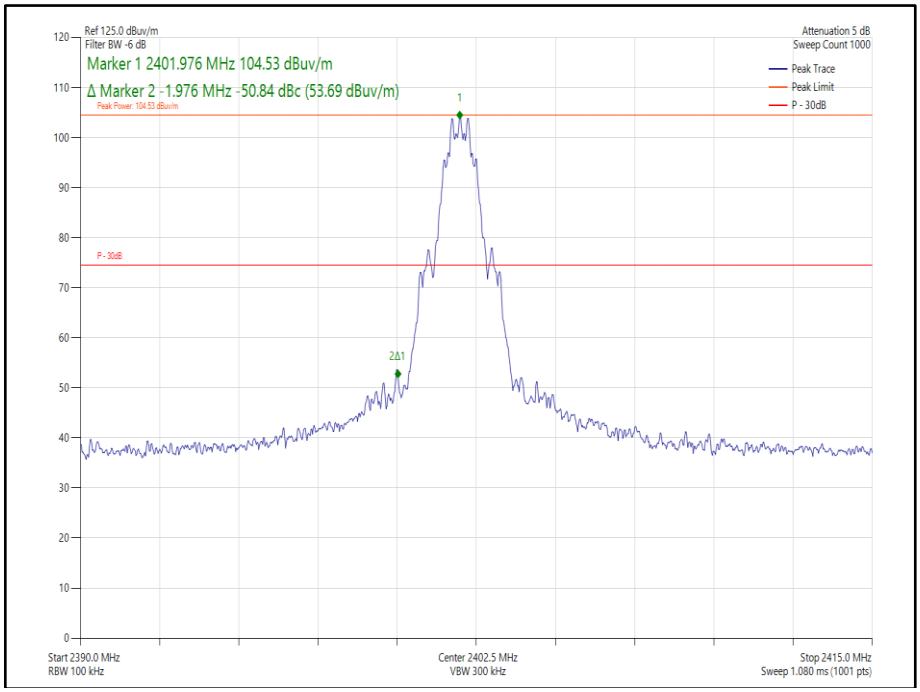

Figure 130 - CH0_125k_TX, 2402 MHz, Band Edge Frequency 2390 MHz

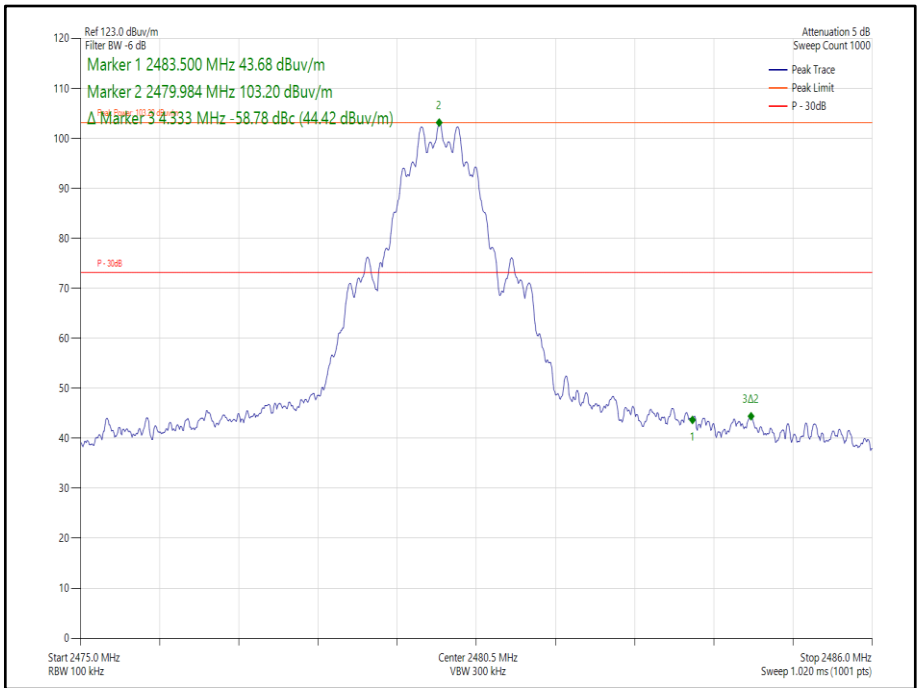

Figure 131 - CH39_125k_TX, 2480 MHz, Band Edge Frequency 2483.5 MHz