

FCC Test Report

Apple Inc
Model: A3401



In accordance with FCC 47 CFR Part 15C (2.4 GHz Bluetooth LE/HDR)

Prepared for: Apple Inc
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Cupertino
California
95014
USA

FCC ID: BCGA3401

COMMERCIAL-IN-CONFIDENCE

Document 75961394-68 Issue 01

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Steve Marshall	Senior Engineer	Authorised Signatory	15-October-2024

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15C. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Report Generation	Lauren Walters	15-October-2024	

FCC Accreditation
553713/UK2026 Concorde Park, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15C: 2023 for the tests detailed in section 1.3.



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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	15-October-2024

Table 1

1.2 Introduction

Applicant	Apple Inc
Manufacturer	Apple Inc
EUT/Sample Identification	Refer to section 1.6
Test Specification/Issue/Date	FCC 47 CFR Part 15C: 2023
Start of Test	04-September-2024
Finish of Test	12-October-2024
Name of Engineer(s)	Jayvir Makwana, Ioan-Alexandru Bogatu, Morsalin Hossain, Vineeth Nagaraj, Manohar Thota, Ahmed Al Derdiri, Ian Hart and Elliot Callender
Related Document(s)	ANSI C63.4 (2014) ANSI C63.10 (2020) KDB 662911 D01 v02r01



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: 2.4 GHz Bluetooth LE/HDR				
-	15.203	Antenna Requirement	N/T	The device complies with the provisions of this section, as it uses permanently attached integral antennas.
2.1	15.205	Restricted Band Edges	Pass	ANSI C63.10 (2020)
2.2	15.247 (a)(2)	Emission Bandwidth	Pass	ANSI C63.10 (2020)
2.3	15.247 (b)	Maximum Conducted Output Power	Pass	ANSI C63.10 (2020) KDB 662911 D01 v02r01
2.4	15.247 (d)	Authorised Band Edges	Pass	ANSI C63.10 (2020)
2.5	15.209 and 15.247 (d)	Spurious Radiated Emissions	Pass	ANSI C63.4 (2014) ANSI C63.10 (2020)
2.6	15.247 (e)	Power Spectral Density	Pass	ANSI C63.10 (2020) KDB 662911 D01 v02r01

Table 2



1.4 Product Information

1.4.1 Technical Description

The equipment under test (EUT) was a portable laptop computer.

1.4.2 Test Modes

The EUT's 2.4 GHz Bluetooth radio supports SISO (Single Input/Single Output) operation on three different cores (Core 0, 1, and 2). It also supports MIMO (Multiple Input/Multiple Output) beamforming operation on Cores 0+1. The EUT supports HDR4 (4-DH5), HDR8 (8-DH5), LE1M and LE2M.

Core 0 and Core 1 also operate at two power settings: low power "iPA" and high power "ePA", with core 2 only supporting the lower power mode. The EUT uses different output powers per core dependent on how many cores are used.

After preliminary investigations, conducted tests on the EUT were performed in the following modes:

SISO modes:

- HDR4 (4-DH5) - iPA - Core 1
- HDR8 (8-DH5) - iPA - Core 1
- LE1M - iPA - Core 1
- LE2M - iPA - Core 1
- HDR4 - iPA - Core 2
- HDR8 - iPA - Core 2
- LE1M - iPA - Core 2
- LE2M - iPA - Core 2
- HDR4 - ePA - Core 1
- HDR8 - ePA - Core 1
- LE1M - ePA - Core 0
- LE2M - ePA - Core 0

MIMO modes (Core 0 + Core 1):

- HDR4 - iPA
- HDR8 - iPA
- LE1M - iPA
- LE2M - iPA
- HDR4 - ePA
- HDR8 - ePA
- LE1M - ePA
- LE2M - ePA

With Spurious Radiated Emissions tests limited to the modes shown below, with the device configured to operate at maximum output power. As this was deemed to be worst case.

SISO mode:

- LE1M - iPA - Core 2

MIMO modes:

- LE1M - iPA - Core 0 + Core 1
- HDR4 - ePA - Core 0 + Core 1



1.4.3 Test Setup

For conducted tests the EUT antennas were disconnected and replaced with U.FL to SMA test cables to enable conducted testing on each core. The loss of these test cables were known and compensated for in any conducted measurements.

For all tests the EUT was put into a continuous transmit/receive test mode with the chipset manufacturer's test commands to ensure the measured signals were representative.

All testing was performed with the EUT powered via a 120 V AC, 60 Hz source.

1.4.4 Antenna Gain Table

Antenna Port	Frequency Range (MHz)	Peak Gain (dBi)	Conducted Cable Loss (dB)
Core 0	2400 to 2480	4.5	0.71
Core 1	2400 to 2480	4.8	0.71
Core 2	2400 to 2480	4.8	0.71

Table 3

1.5 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.6 Identification of the EUT

The table below details identification of the EUT(s) that have been used to carry out the testing within this report.

Model: A3401			
Serial Number	Hardware Version	Software Version	Firmware
JVJC362FKV	REV1.0	24A32191s	22.1.65.459
H56R7RH7PK	REV1.0	24A32831c	22.1.65.459
HHJTCJ96L9	REV1.0	24A32191s	22.1.65.459

Table 4



1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: A3401, Serial Number: JVJC362FKV			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3401, Serial Number: H56R7RH7PK			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3401, Serial Number: HHJTCJ96L9			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 5

1.8 Test Location

TÜV SÜD conducted the following tests at our Concorde Park Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: 2.4 GHz Bluetooth LE/HDR		
Restricted Band Edges	Ioan-Alexandru Bogatu, Morsalin Hossain and Vineeth Nagaraj	UKAS
Emission Bandwidth	Jayvir Makwana	UKAS
Maximum Conducted Output Power	Jayvir Makwana	UKAS
Authorised Band Edges	Ioan-Alexandru Bogatu, Morsalin Hossain and Vineeth Nagaraj	UKAS
Spurious Radiated Emissions	Manohar Thota, Ahmed Al Derriri, Ian Hart, Morsalin Hossain and Elliot Callender	UKAS
Power Spectral Density	Jayvir Makwana	UKAS

Table 6

Office Address:

TÜV SÜD
 Concorde Park
 Concorde Way
 Fareham
 Hampshire
 PO15 5FG
 United Kingdom



2 Test Details

2.1 Restricted Band Edges

2.1.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.205

2.1.2 Equipment Under Test and Modification State

A3401, S/N: JVJC362FKV - Modification State 0
A3401, S/N: H56R7RH7PK - Modification State 0

2.1.3 Date of Test

04-September-2024 to 09-September-2024

2.1.4 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 dB μ V/m to μ V/m:
 $10^{(\text{Field Strength in dB}\mu\text{V/m}/20)}$.

2.1.5 Environmental Conditions

Ambient Temperature	22.3 - 24.5 °C
Relative Humidity	41.0 - 54.7 %



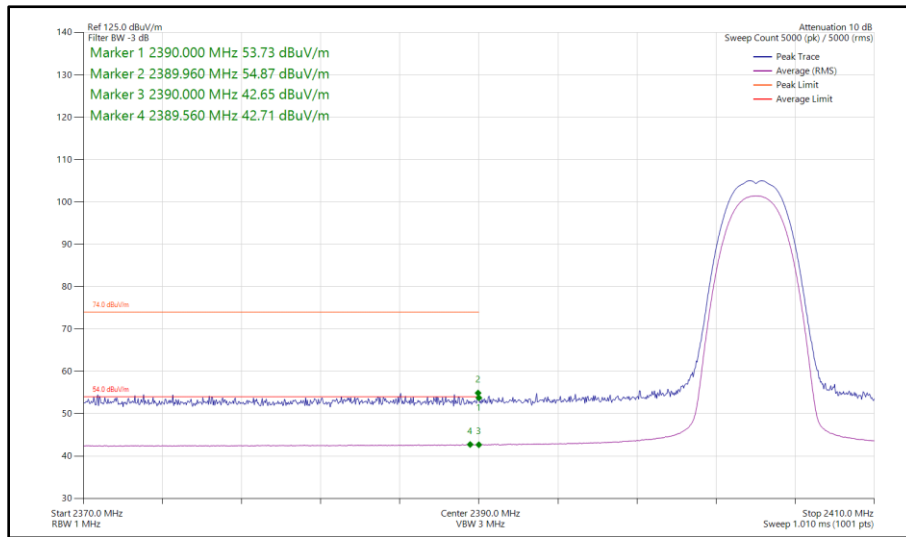
2.1.6 Test Results

2.4 GHz Bluetooth LE/HDR

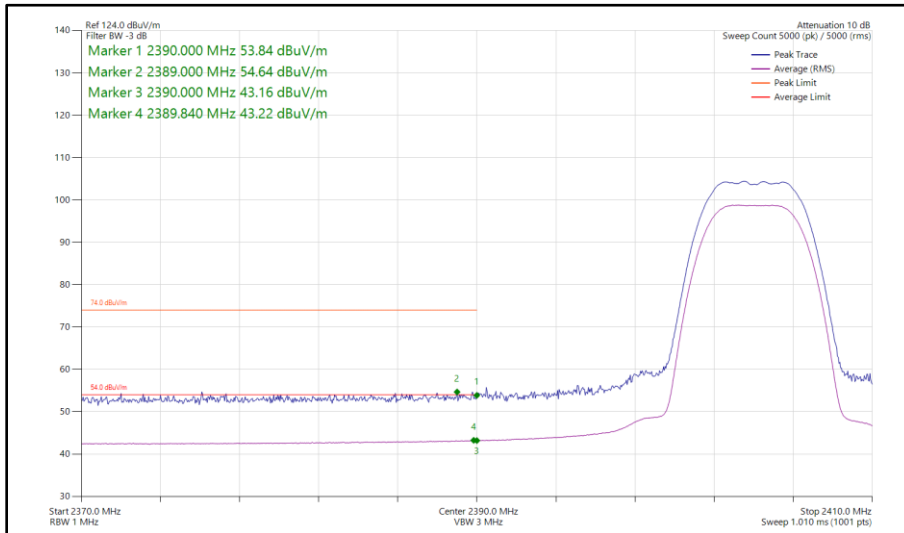
iPA - Core 0 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
Static	HDR4	2404	2390	54.87	42.71
Static	HDR8	2404	2390	54.64	43.22
Static	LE1M	2402	2390	54.54	42.58
Static	LE2M	2402	2390	54.74	42.56
Static	HDR4	2476	2483.5	53.25	41.87
Static	HDR8	2476	2483.5	54.78	43.35
Static	LE1M	2478	2483.5	53.34	41.57
Static	LE1M	2480	2483.5	53.34	41.82
Static	LE2M	2478	2483.5	53.21	41.68
Static	LE2M	2480	2483.5	54.59	42.71

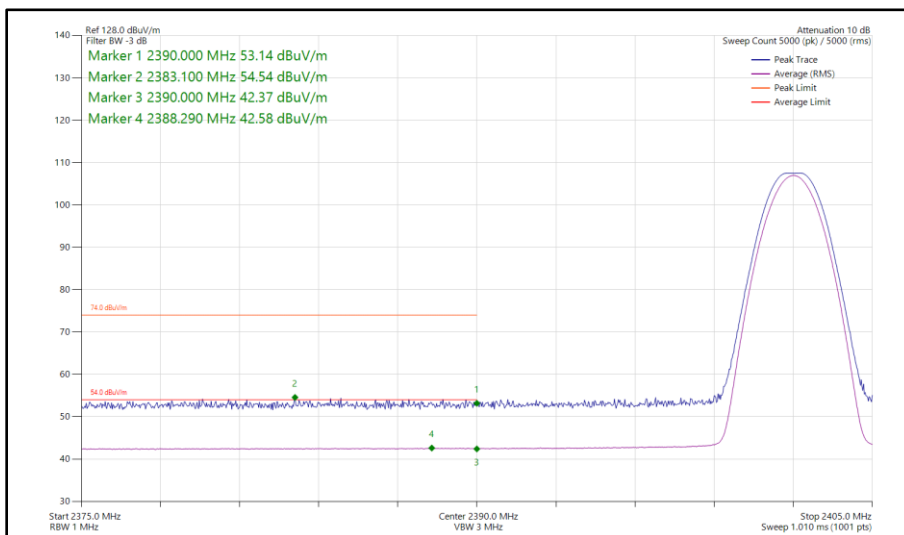
Table 7 - SISO Restricted Band Edge Results



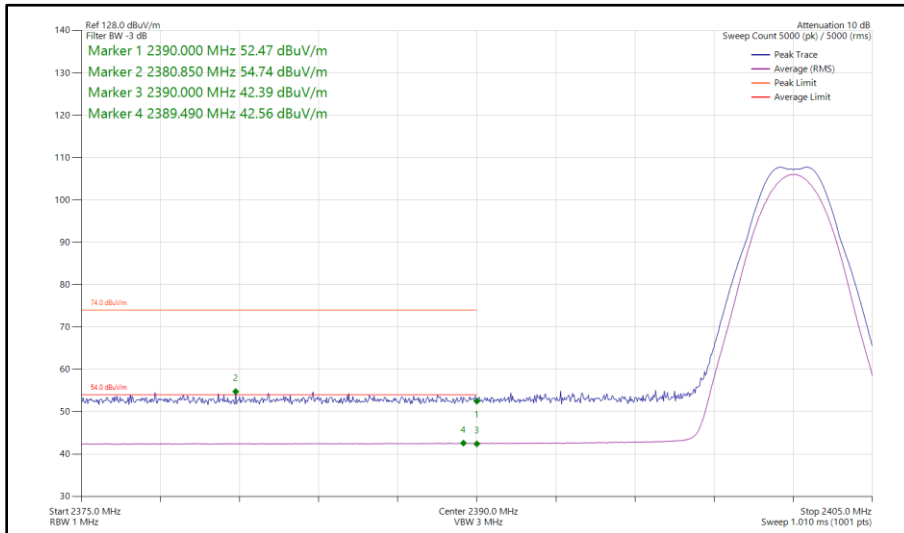
**Figure 1 - Bluetooth HDR4, SISO, Core 0 - 2404 MHz
 Band Edge Frequency 2390 MHz**



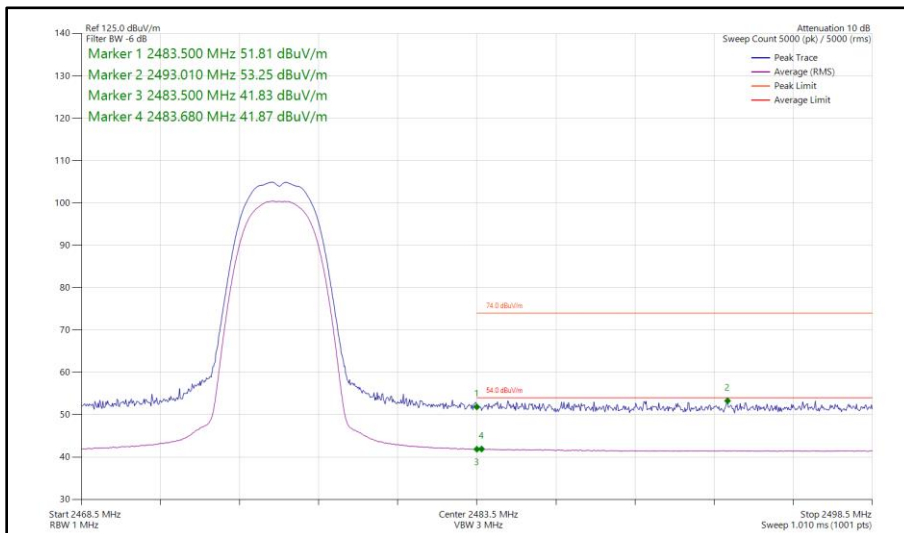
**Figure 2 - Bluetooth HDR8, SISO, Core 0 - 2404 MHz
Band Edge Frequency 2390 MHz**



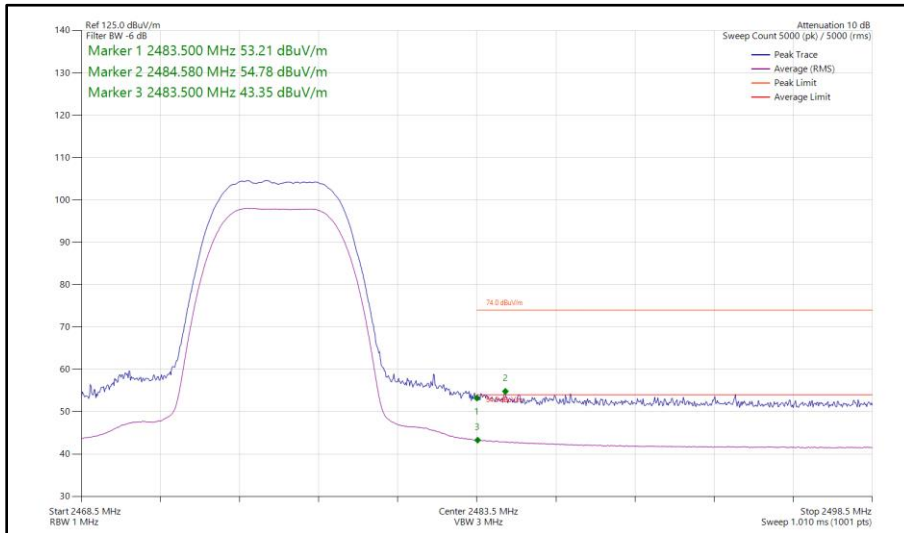
**Figure 3 - Bluetooth LE1M, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2390 MHz**



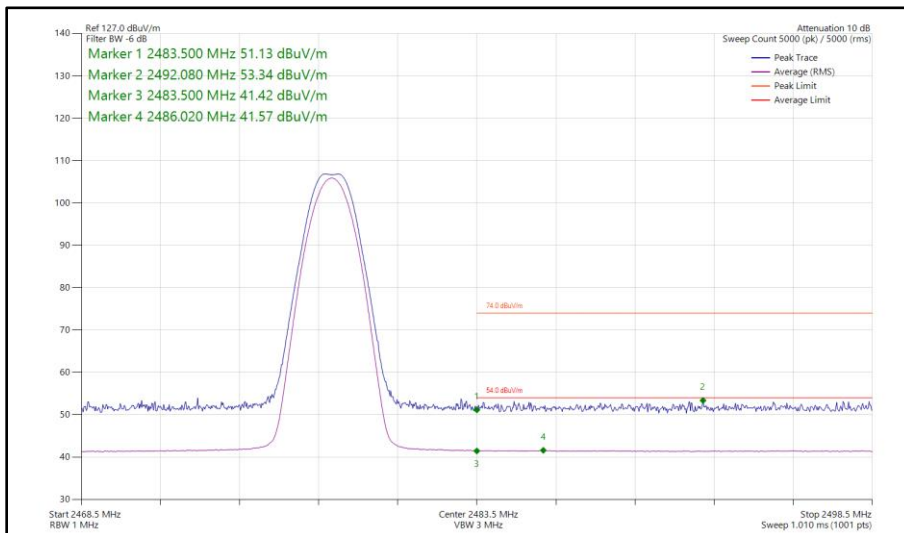
**Figure 4 - Bluetooth LE2M, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2390 MHz**



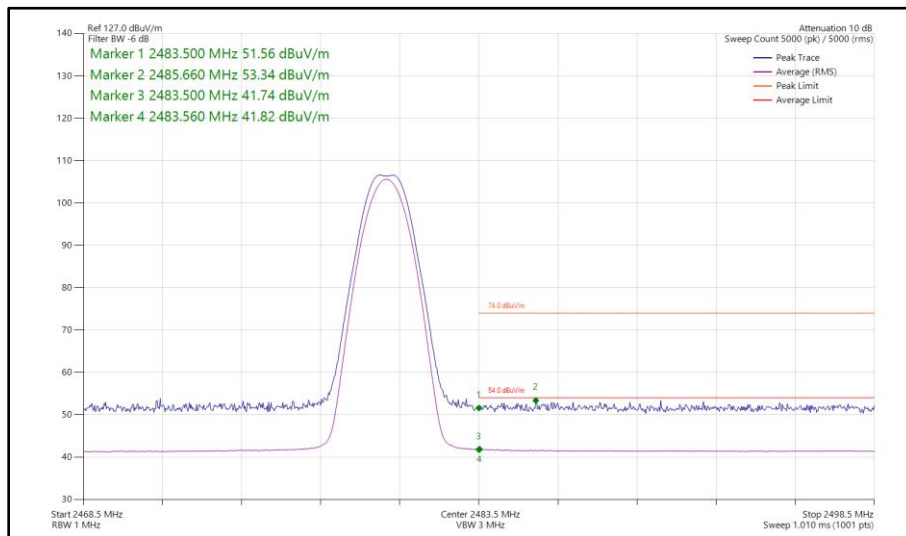
**Figure 5 - Bluetooth HDR4, SISO, Core 0 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



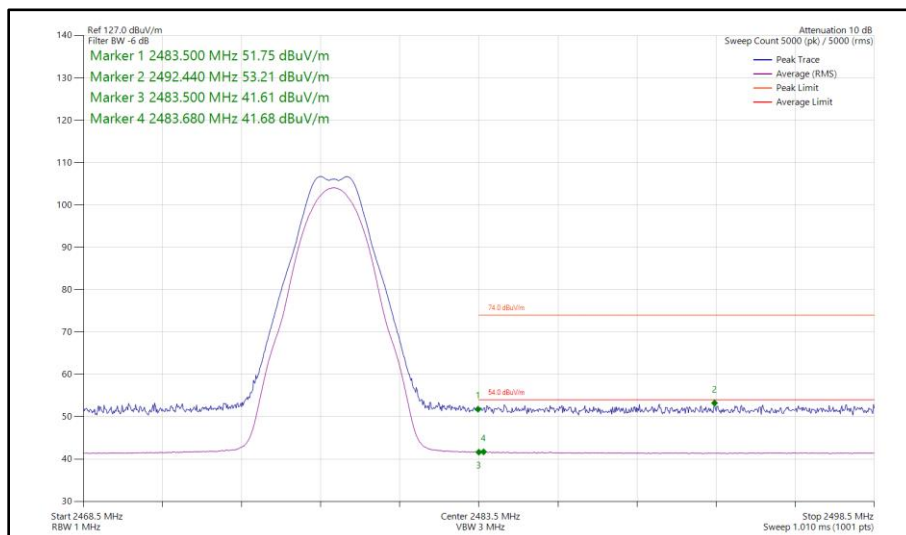
**Figure 6 - Bluetooth HDR8, SISO, Core 0 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



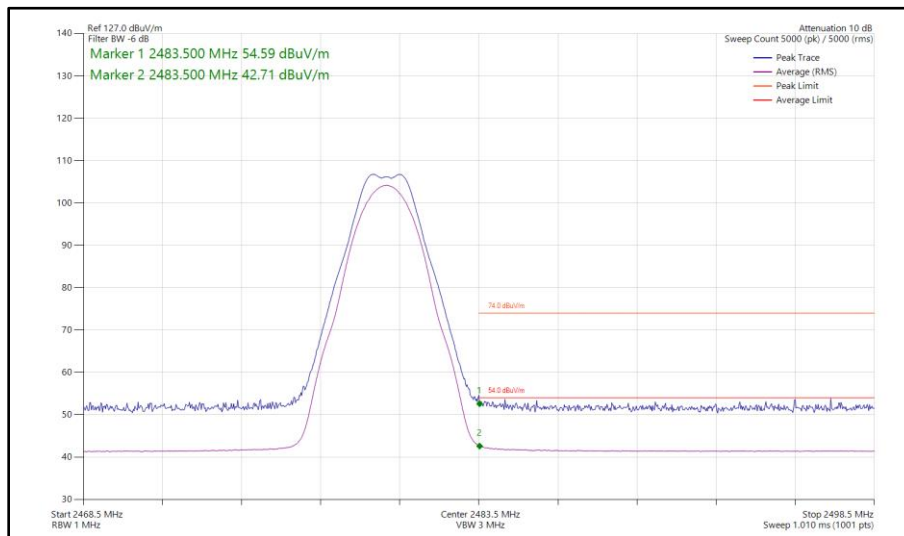
**Figure 7 - Bluetooth LE1M, SISO, Core 0 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 8 - Bluetooth LE1M, SISO, Core 0 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 9 - Bluetooth LE2M, SISO, Core 0 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 10 - Bluetooth LE2M, SISO, Core 0 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



iPA - Core 1 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	HDR4	2404	2390	55.01	42.79
Static	HDR8	2404	2390	54.83	42.92
Static	LE1M	2402	2390	54.97	42.70
Static	LE2M	2402	2390	54.54	42.72
Static	HDR4	2476	2483.5	53.59	41.85
Static	HDR8	2476	2483.5	54.06	42.32
Static	LE1M	2478	2483.5	53.78	41.69
Static	LE1M	2480	2483.5	53.89	42.01
Static	LE2M	2478	2483.5	53.65	41.76
Static	LE2M	2480	2483.5	53.73	42.71

Table 8 - SISO Restricted Band Edge Results

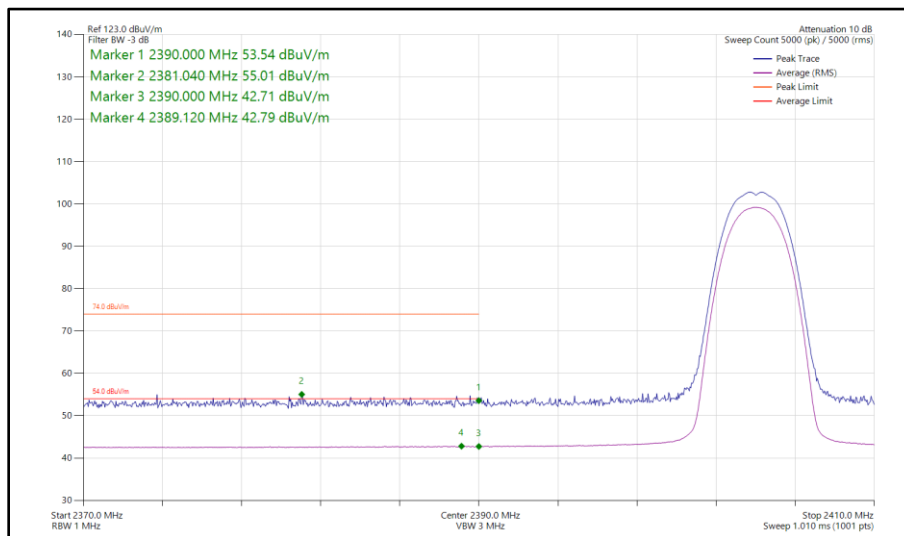
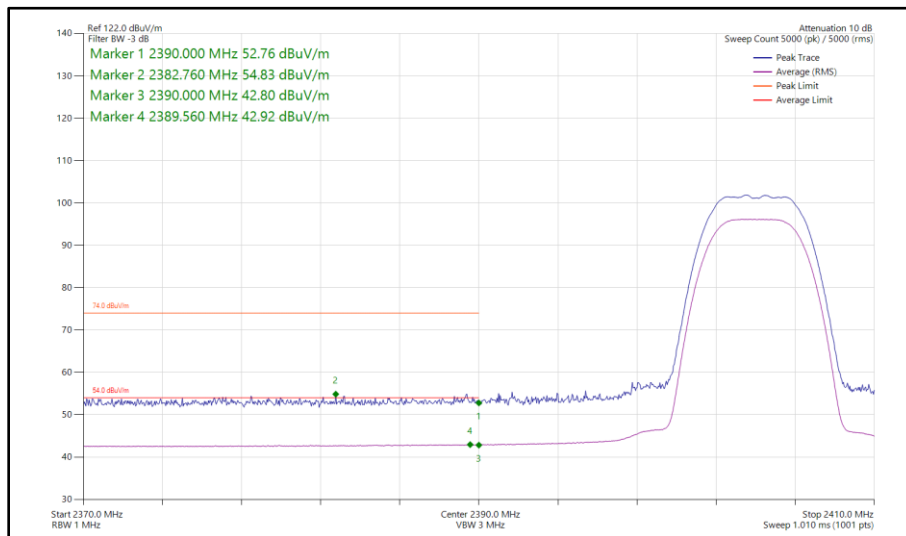
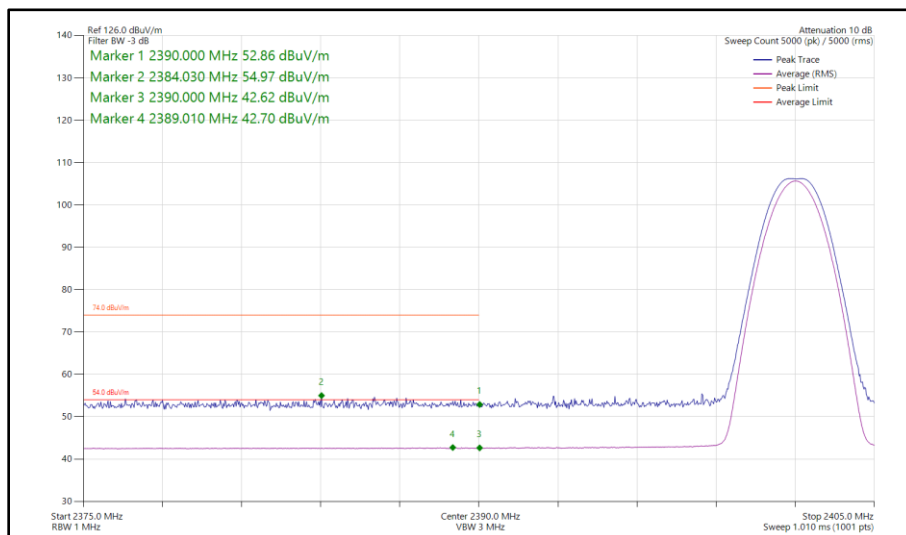


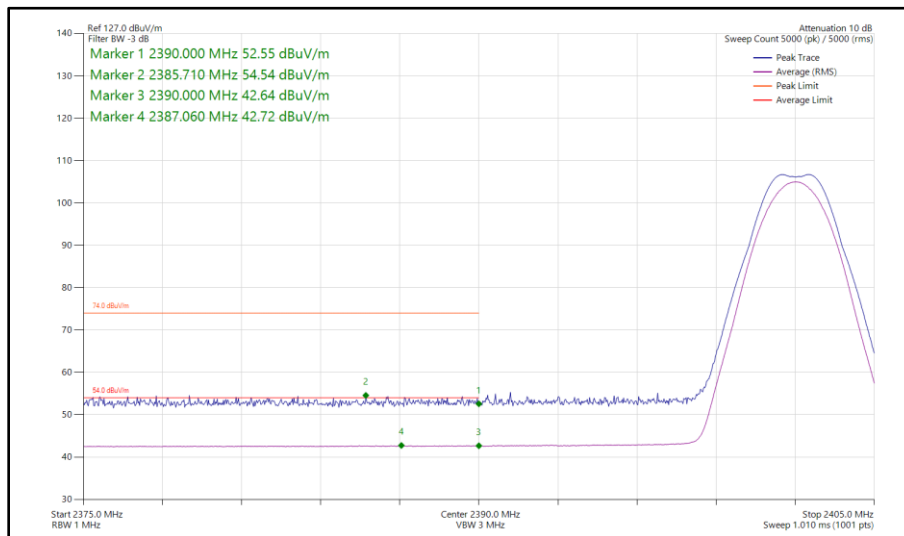
Figure 11 - Bluetooth HDR4, SISO, Core 1 - 2404 MHz
 Band Edge Frequency 2390 MHz



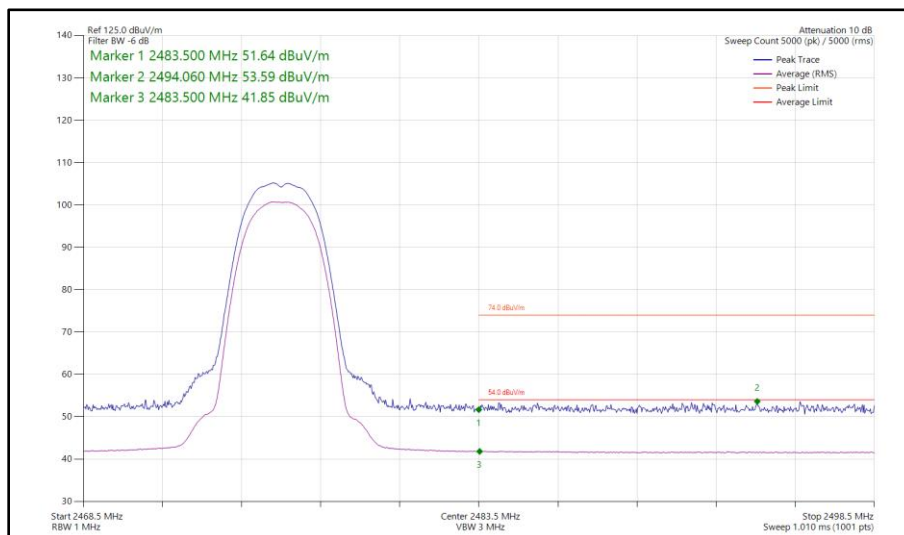
**Figure 12 - Bluetooth HDR8, SISO, Core 1 - 2404 MHz
 Band Edge Frequency 2390 MHz**



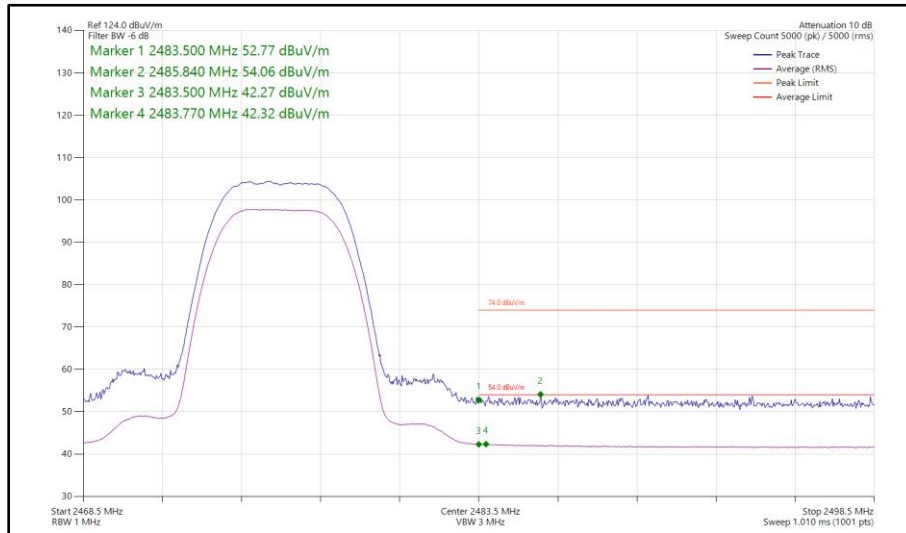
**Figure 13 - Bluetooth LE1M, SISO, Core 1 - 2402 MHz
 Band Edge Frequency 2390 MHz**



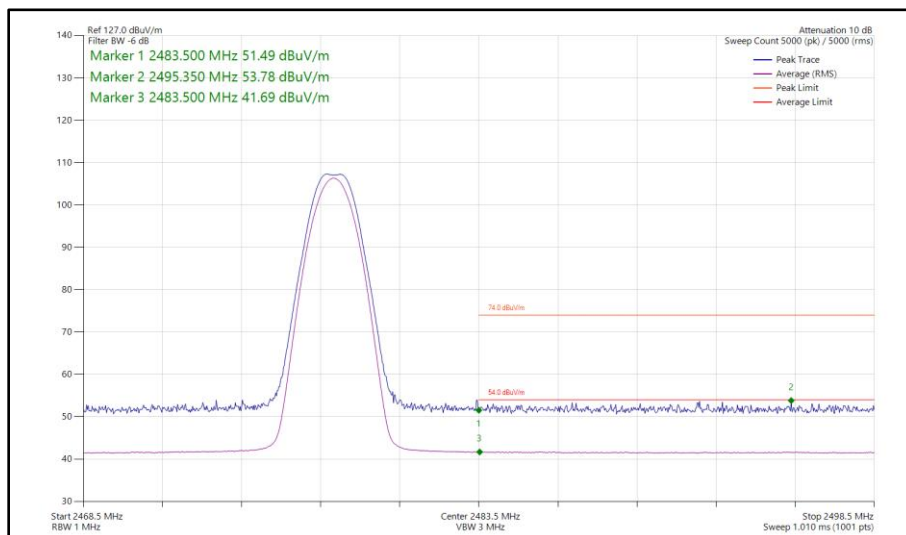
**Figure 14 - Bluetooth LE2M, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2390 MHz**



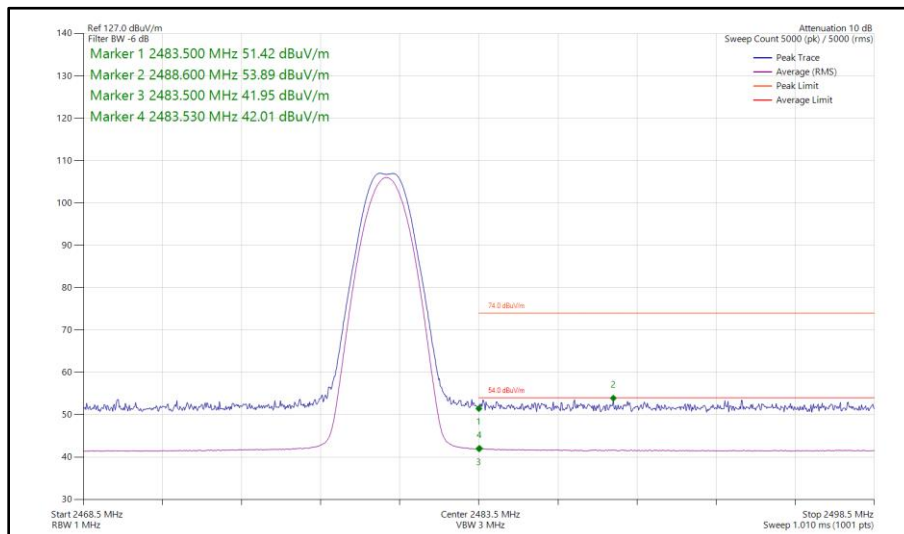
**Figure 15 - Bluetooth HDR4, SISO, Core 1 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



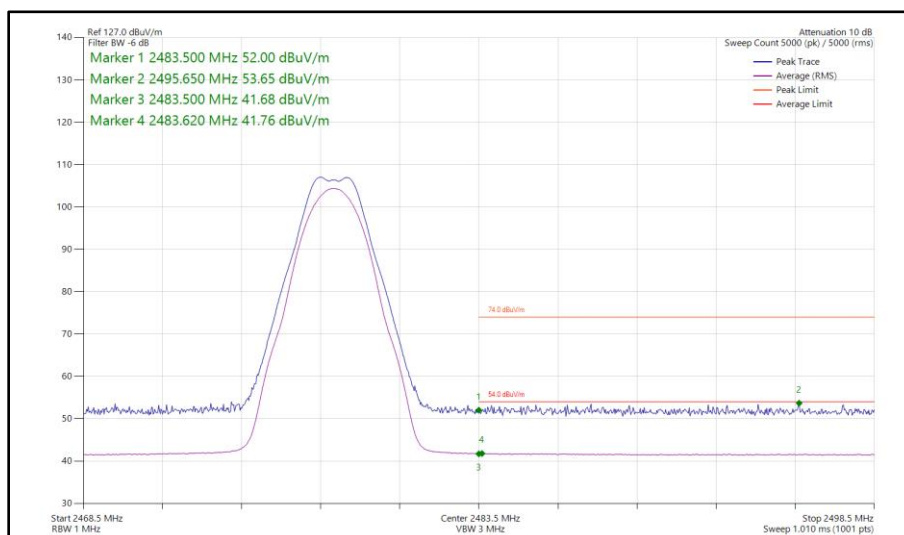
**Figure 16 - Bluetooth HDR8, SISO, Core 1 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



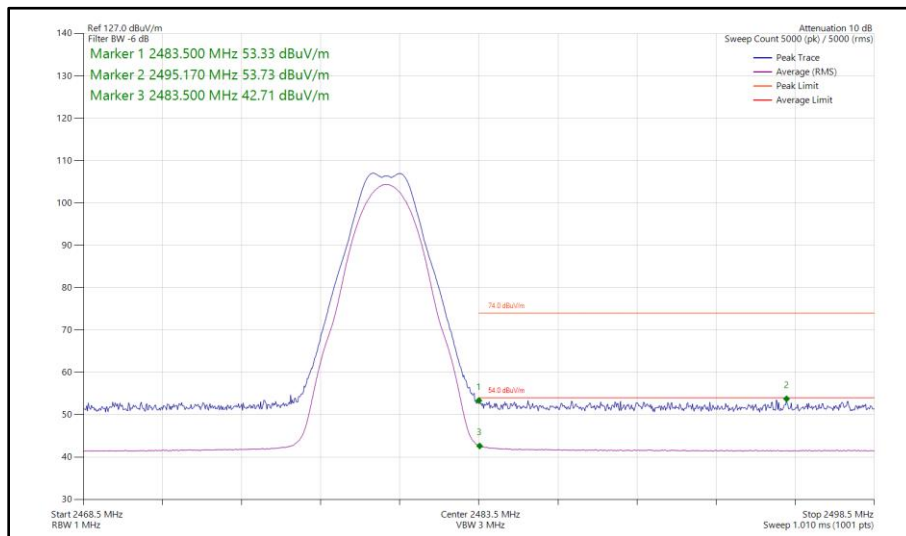
**Figure 17 - Bluetooth LE1M, SISO, Core 1 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 18 - Bluetooth LE1M, SISO, Core 1 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 19 - Bluetooth LE2M, SISO, Core 1 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 20 - Bluetooth LE2M, SISO, Core 1 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



iPA - Core 2 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	HDR4	2404	2390	54.44	42.68
Static	HDR8	2404	2390	55.79	43.55
Static	LE1M	2402	2390	54.82	42.66
Static	LE2M	2402	2390	55.52	43.45
Static	HDR4	2476	2483.5	53.69	41.76
Static	HDR8	2476	2483.5	55.39	43.28
Static	LE1M	2478	2483.5	53.26	41.70
Static	LE1M	2480	2483.5	53.48	41.88
Static	LE2M	2478	2483.5	54.41	42.49
Static	LE2M	2480	2483.5	53.67	42.65

Table 9 - SISO Restricted Band Edge Results

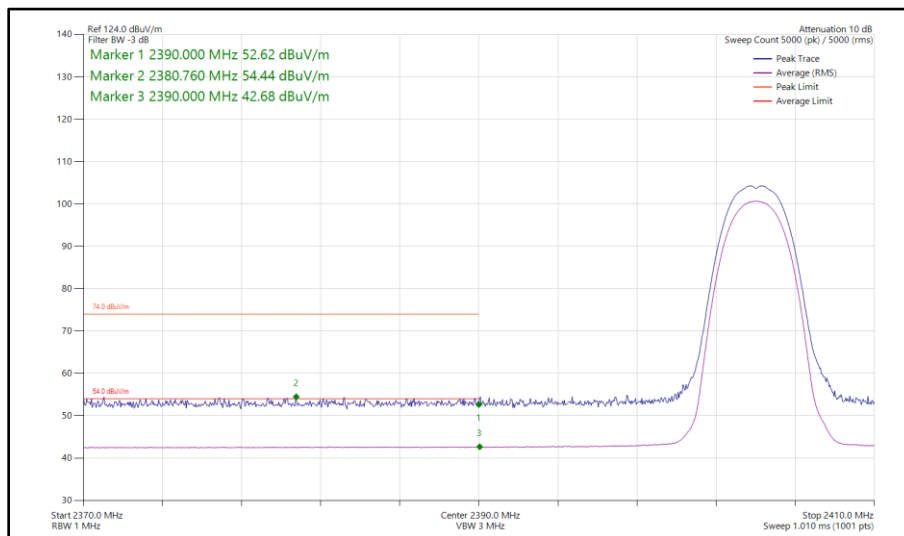
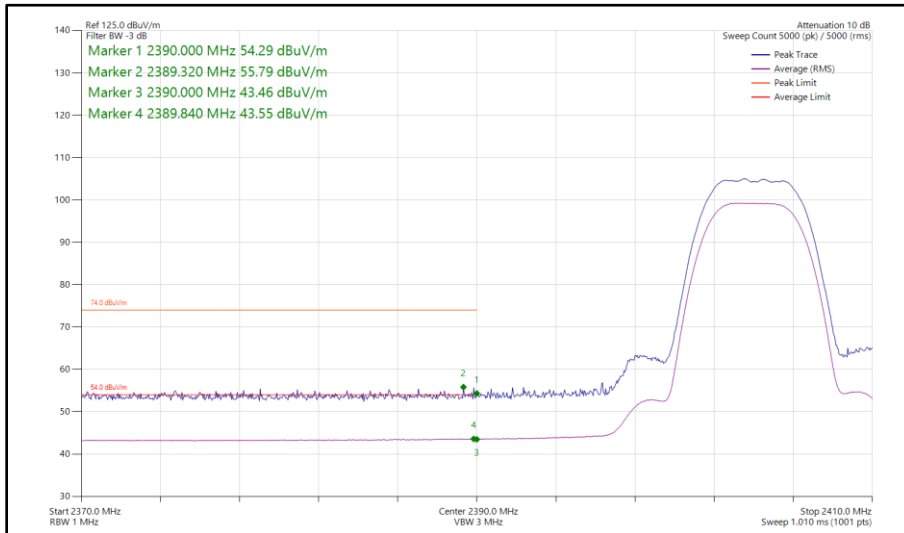
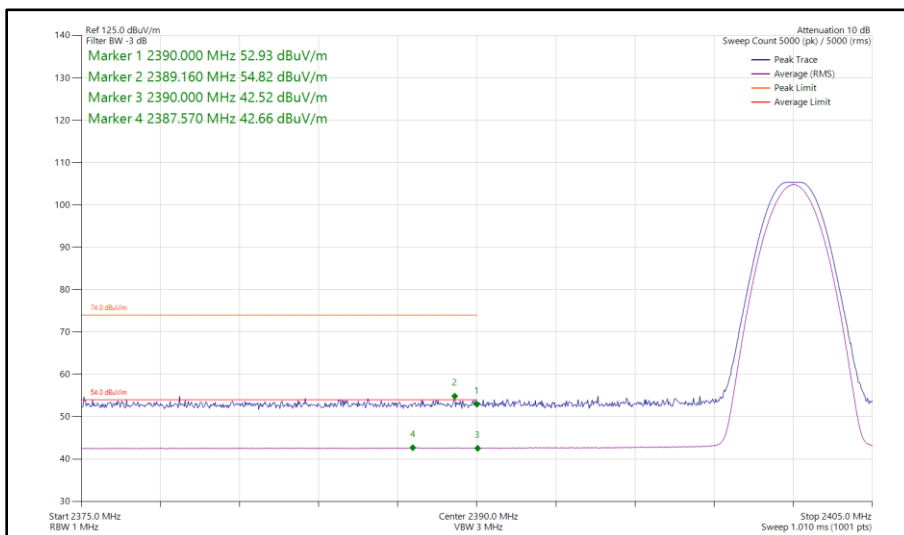


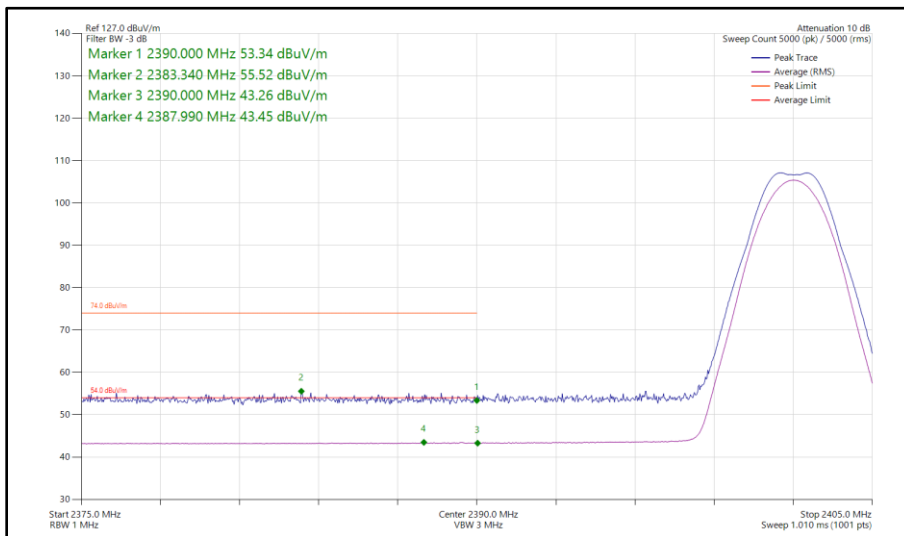
Figure 21 - Bluetooth HDR4, SISO, Core 2 - 2404 MHz
 Band Edge Frequency 2390 MHz



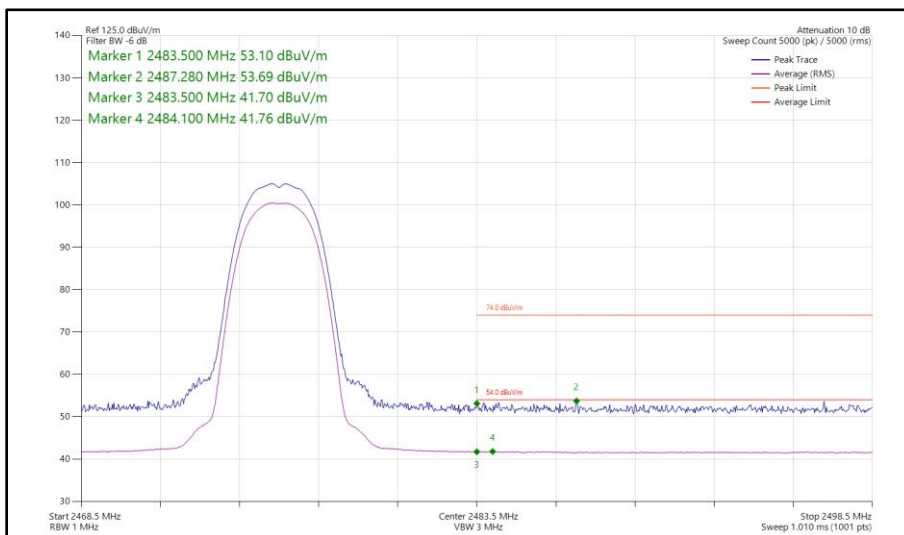
**Figure 22 - Bluetooth HDR8, SISO, Core 2 - 2404 MHz
Band Edge Frequency 2390 MHz**



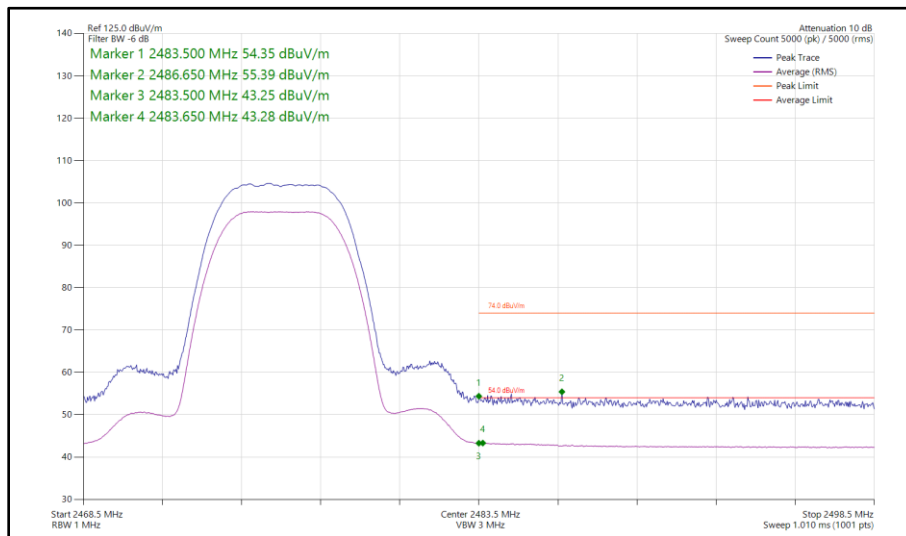
**Figure 23 - Bluetooth LE1M, SISO, Core 2 - 2402 MHz
Band Edge Frequency 2390 MHz**



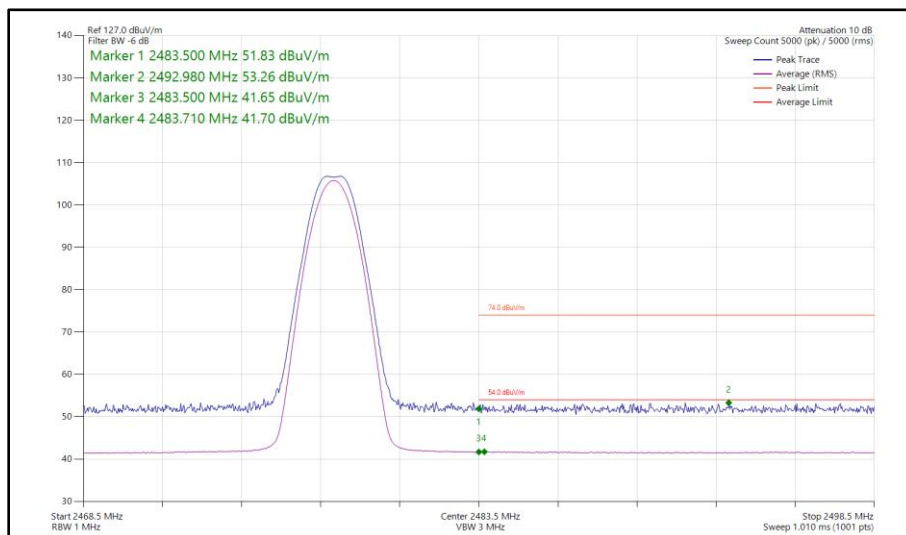
**Figure 24 - Bluetooth LE2M, SISO, Core 2 - 2402 MHz
Band Edge Frequency 2390 MHz**



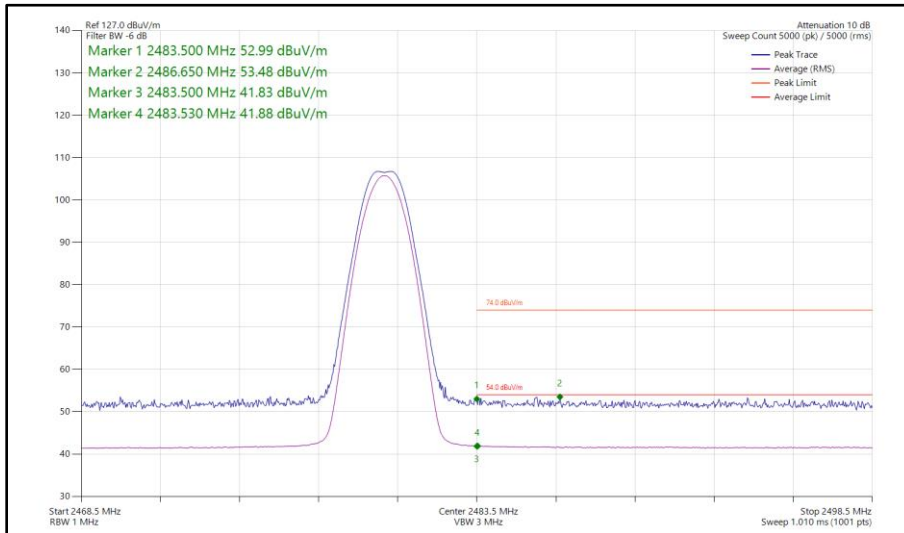
**Figure 25 - Bluetooth HDR4, SISO, Core 2 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



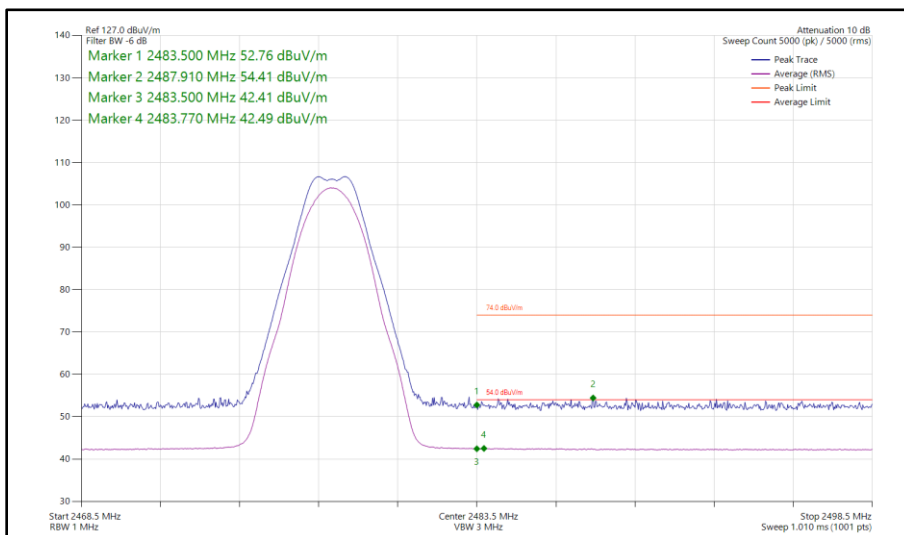
**Figure 26 - Bluetooth HDR8, SISO, Core 2 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



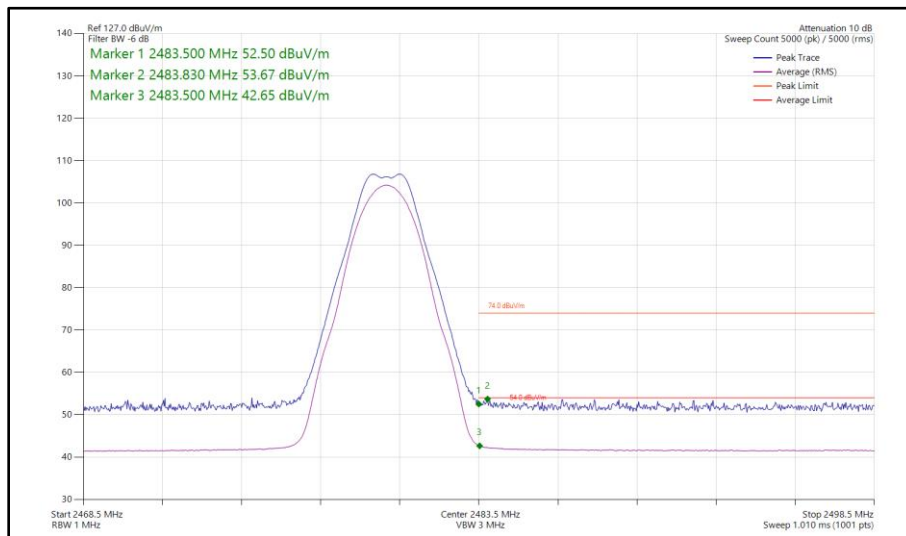
**Figure 27 - Bluetooth LE1M, SISO, Core 2 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 28 - Bluetooth LE1M, SISO, Core 2 - 2480 MHz
 Band Edge Frequency 2483.5 MHz**



**Figure 29 - Bluetooth LE2M, SISO, Core 2 - 2478 MHz
 Band Edge Frequency 2483.5 MHz**



**Figure 30 - Bluetooth LE2M, SISO, Core 2 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



iPA - Core 0 - Core 1 (MIMO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	HDR4	2404	2390	54.55	42.89
Static	HDR8	2404	2390	55.39	43.48
Static	LE1M	2402	2390	54.83	42.73
Static	LE2M	2402	2390	54.92	42.79
Static	HDR4	2476	2483.5	53.71	42.26
Static	HDR8	2476	2483.5	55.18	43.82
Static	LE1M	2478	2483.5	54.21	41.95
Static	LE1M	2480	2483.5	53.62	42.27
Static	LE2M	2478	2483.5	53.49	42.05
Static	LE2M	2480	2483.5	55.04	43.81

Table 10 - MIMO Restricted Band Edge Results

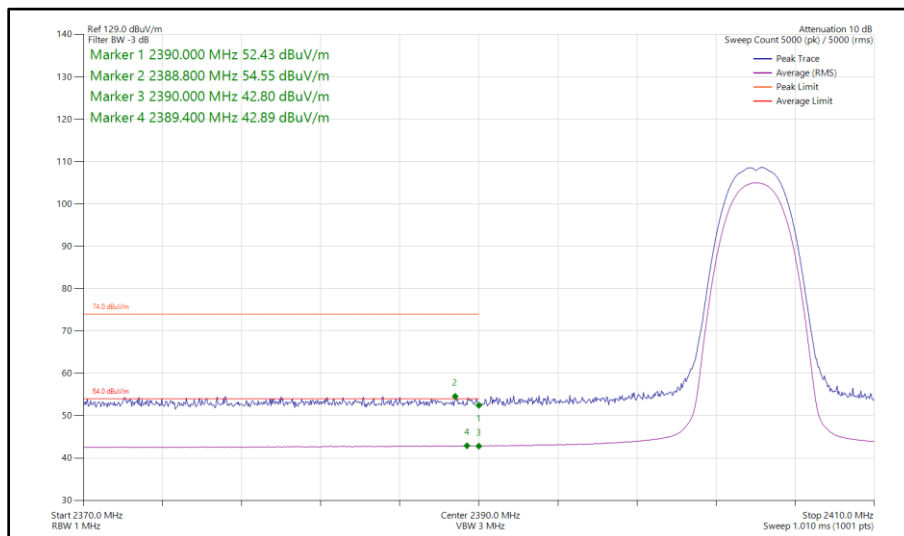
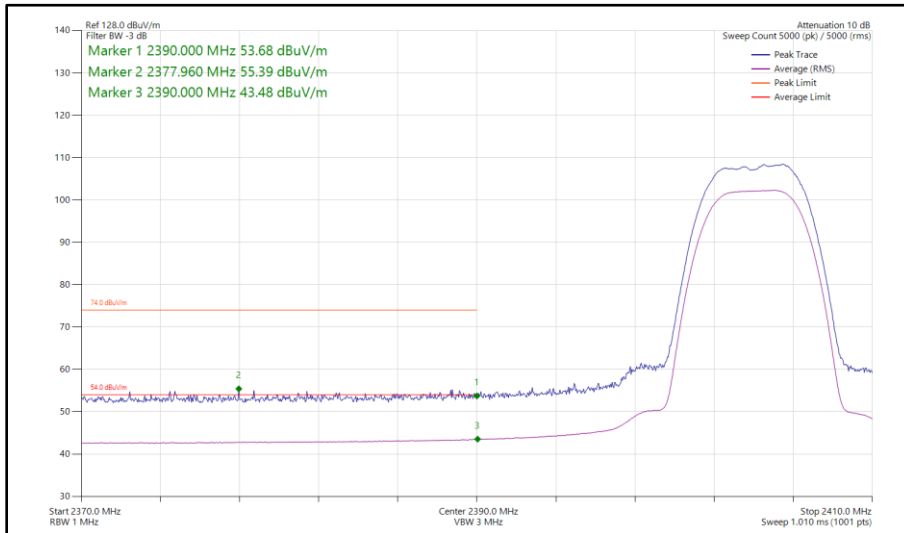
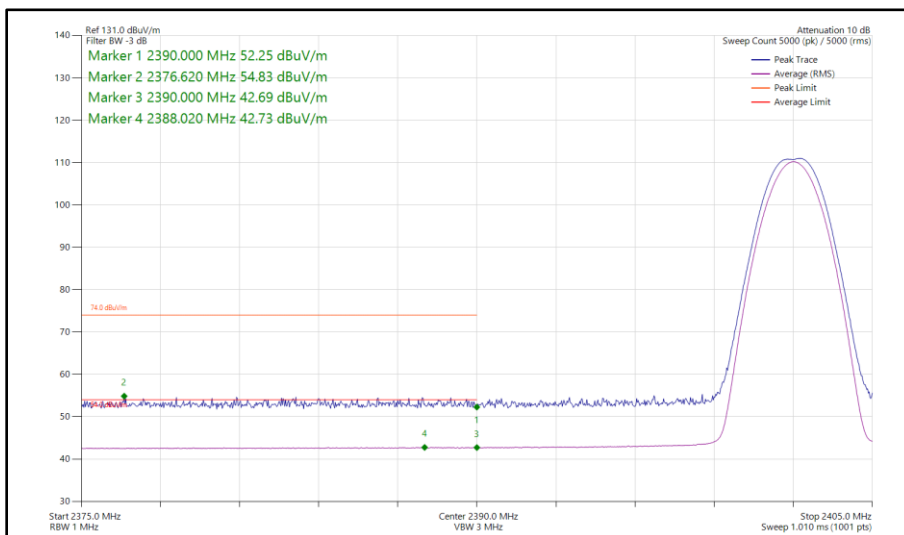


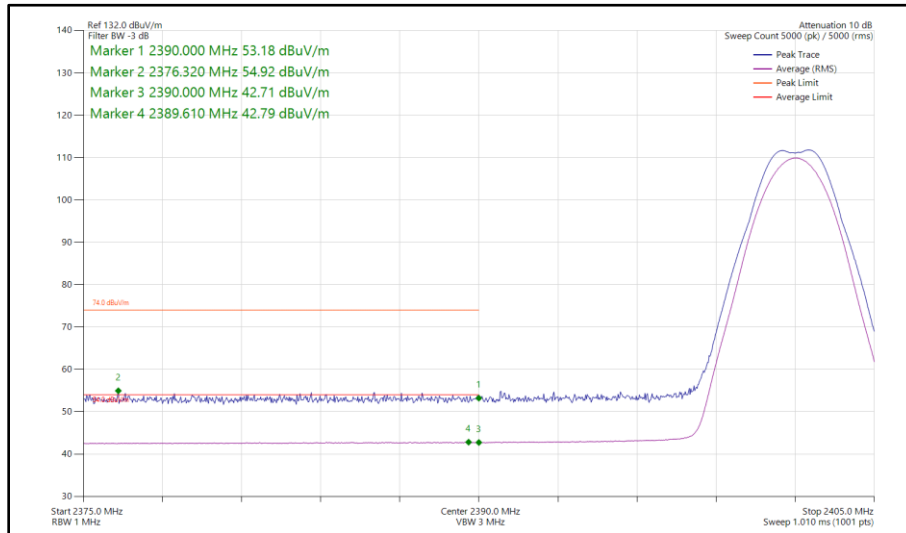
Figure 31 - Bluetooth HDR4, MIMO, Core 0 - Core 1 - 2404 MHz
 Band Edge Frequency 2390 MHz



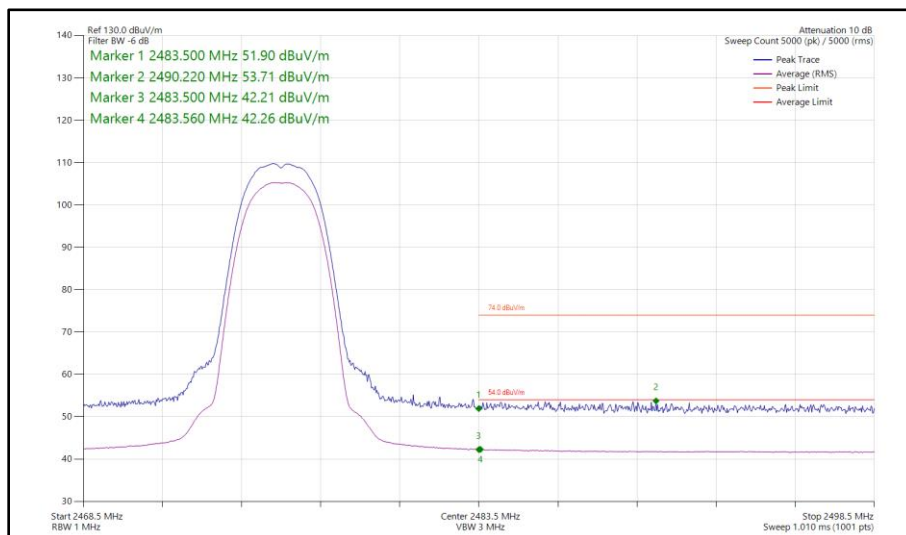
**Figure 32 - Bluetooth HDR8, MIMO, Core 0 - Core 1 - 2404 MHz
Band Edge Frequency 2390 MHz**



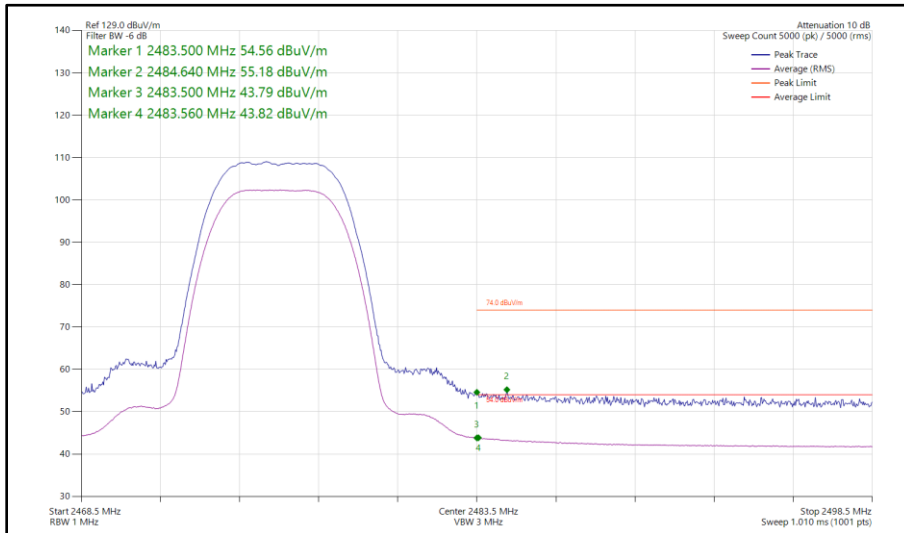
**Figure 33 - Bluetooth LE1M, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2390 MHz**



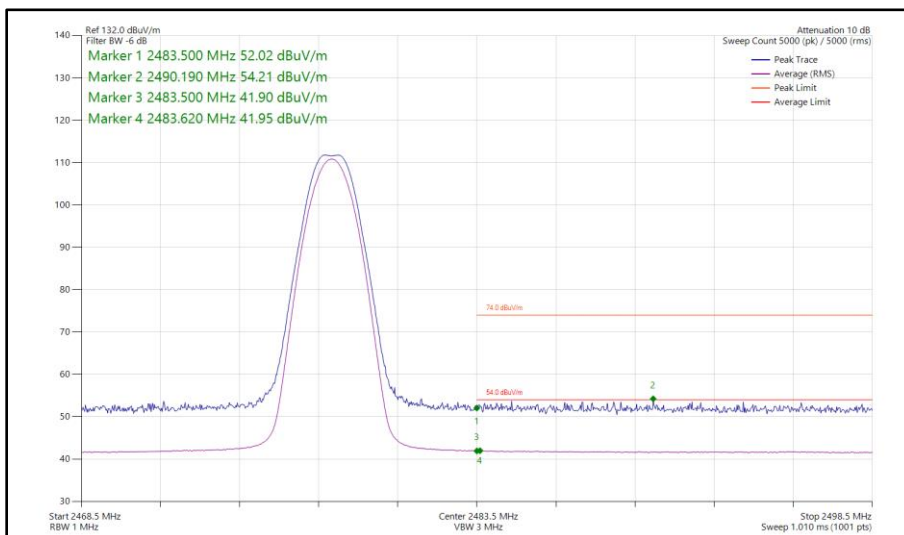
**Figure 34 - Bluetooth LE2M, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2390 MHz**



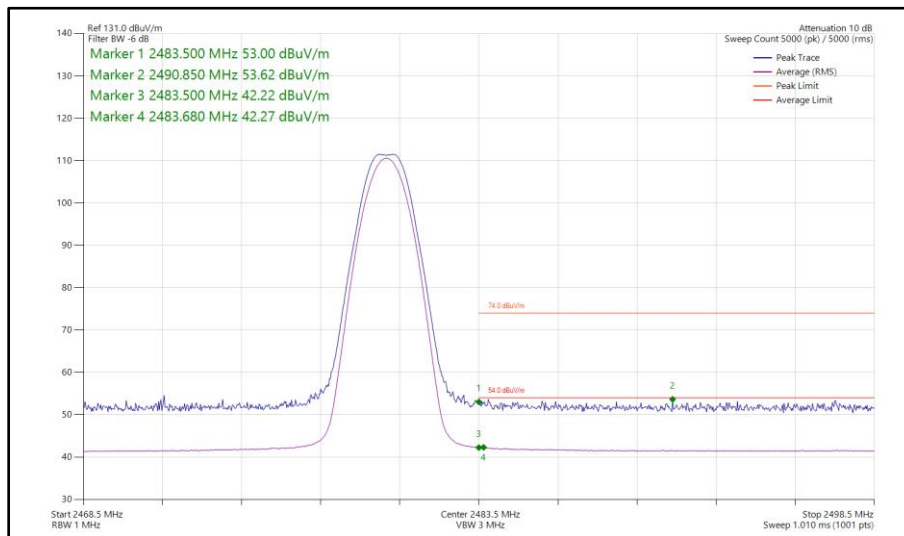
**Figure 35 - Bluetooth HDR4, MIMO, Core 0 - Core 1 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



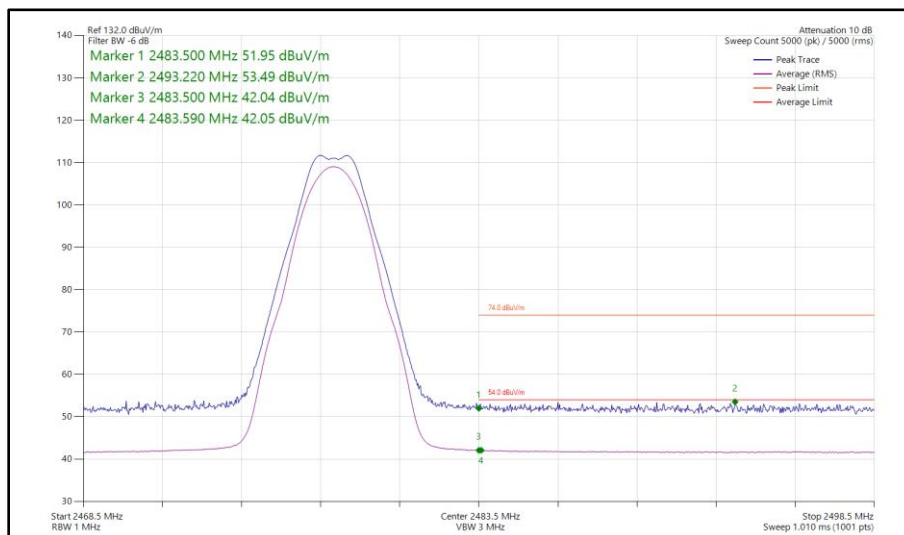
**Figure 36 - Bluetooth HDR8, MIMO, Core 0 - Core 1 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



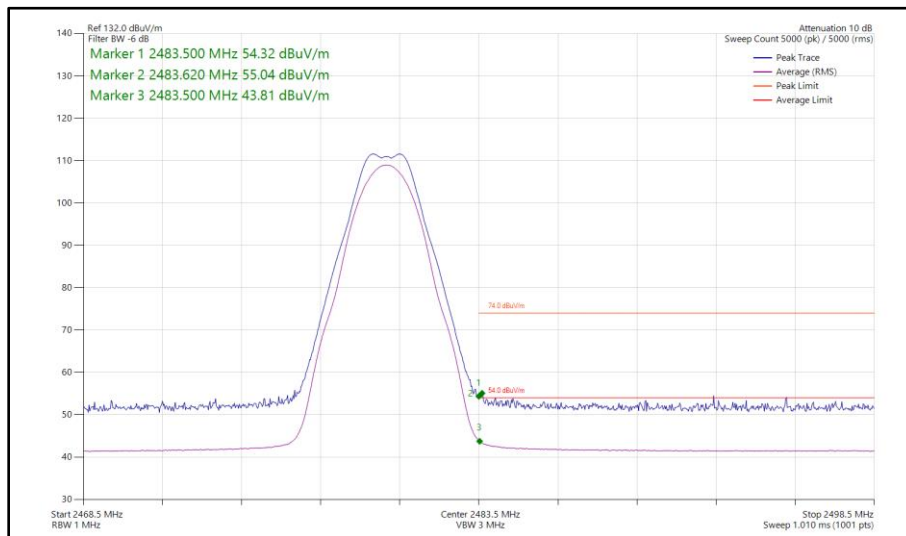
**Figure 37 - Bluetooth LE1M, MIMO, Core 0 - Core 1 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 38 - Bluetooth LE1M, MIMO, Core 0 - Core 1 - 2480 MHz
 Band Edge Frequency 2483.5 MHz**



**Figure 39 - Bluetooth LE2M, MIMO, Core 0 - Core 1 - 2478 MHz
 Band Edge Frequency 2483.5 MHz**



**Figure 40 - Bluetooth LE2M, MIMO, Core 0 - Core 1 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



ePA - Core 0 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	HDR4	2404	2390	56.09	44.09
Static	HDR8	2404	2390	57.15	45.27
Static	LE1M	2402	2390	55.70	43.72
Static	LE2M	2402	2390	56.09	43.93
Static	HDR4	2476	2483.5	56.93	44.74
Static	HDR8	2476	2483.5	58.38	47.39
Static	LE1M	2478	2483.5	55.29	43.70
Static	LE1M	2480	2483.5	55.48	44.73
Static	LE2M	2478	2483.5	55.72	44.17
Static	LE2M	2480	2483.5	57.78	47.59

Table 11 - SISO Restricted Band Edge Results

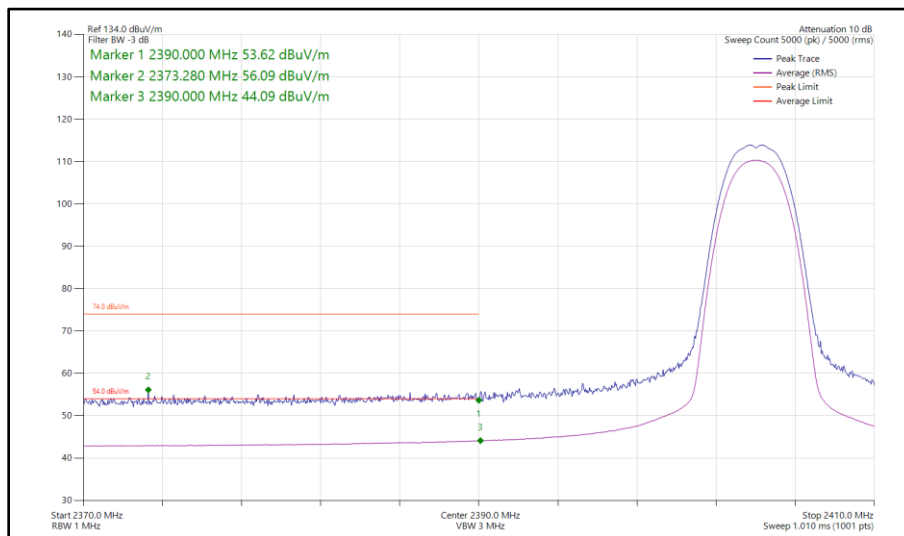
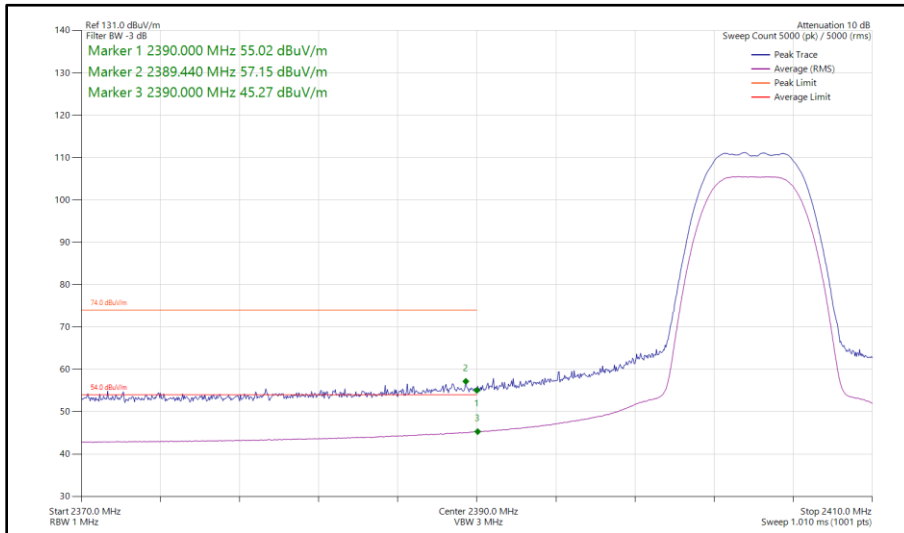
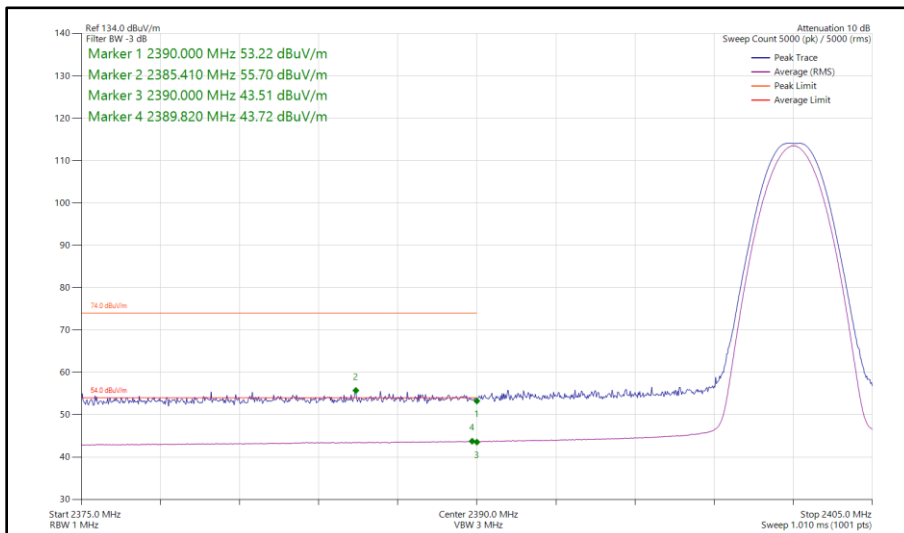


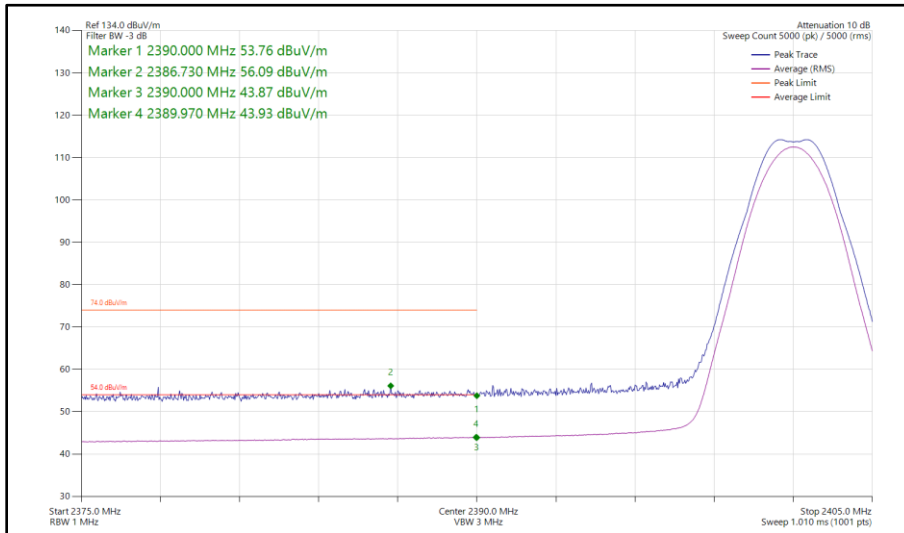
Figure 41 - Bluetooth HDR4, SISO, Core 0 - 2404 MHz
 Band Edge Frequency 2390 MHz



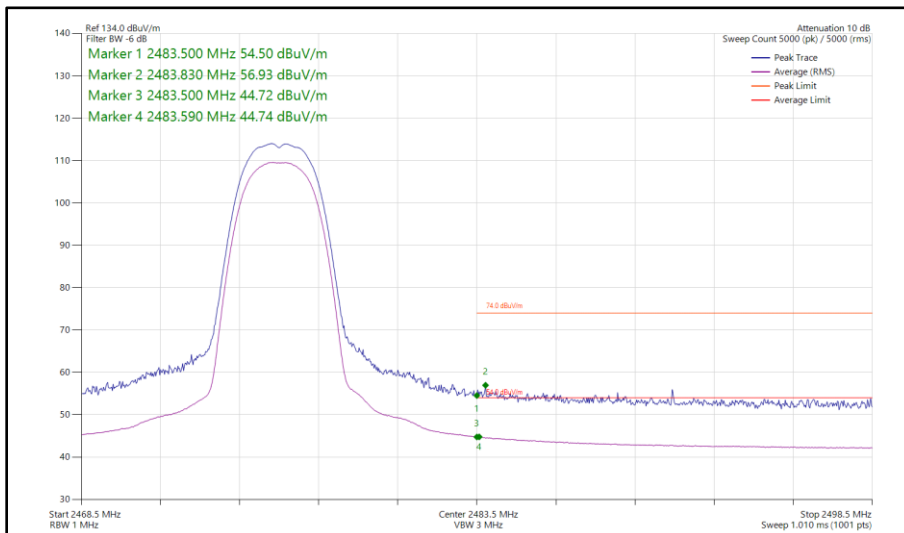
**Figure 42 - Bluetooth HDR8, SISO, Core 0 - 2404 MHz
Band Edge Frequency 2390 MHz**



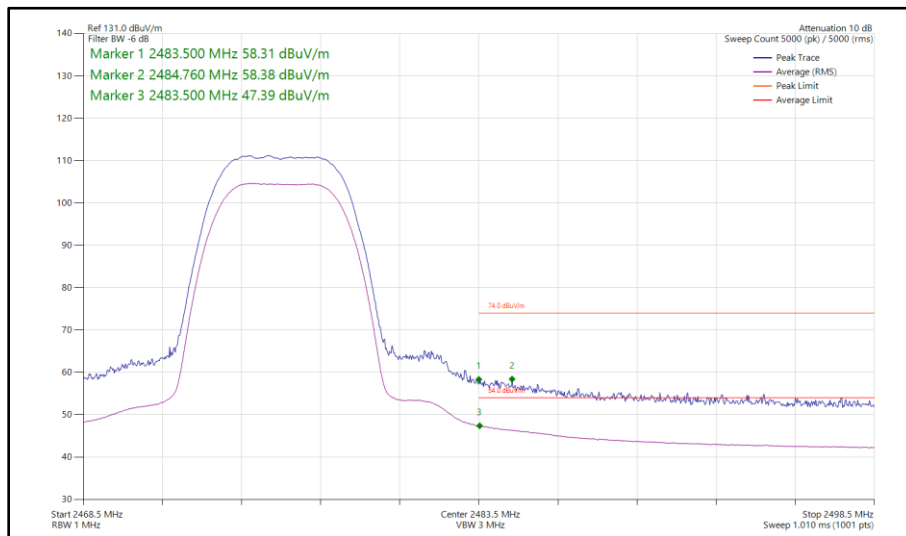
**Figure 43 - Bluetooth LE1M, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2390 MHz**



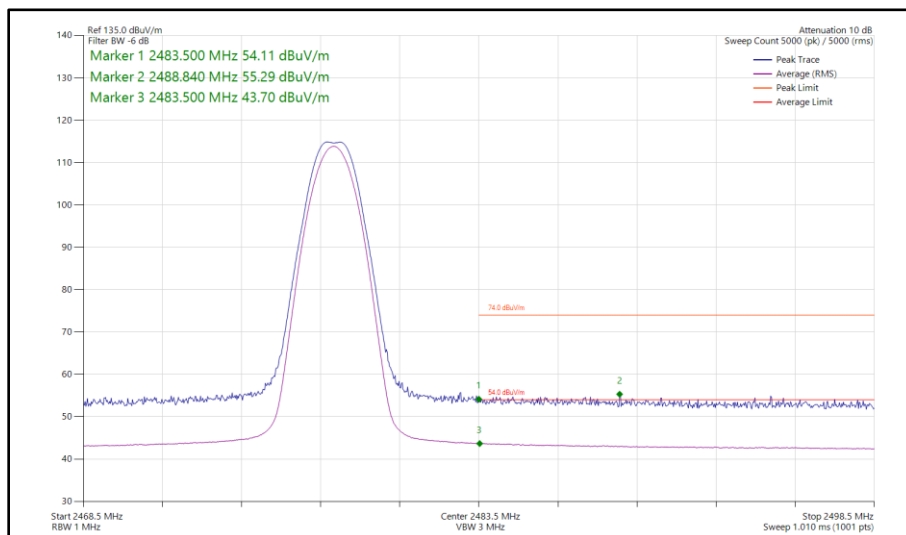
**Figure 44 - Bluetooth LE2M, SISO, Core 0 - 2402 MHz
Band Edge Frequency 2390 MHz**



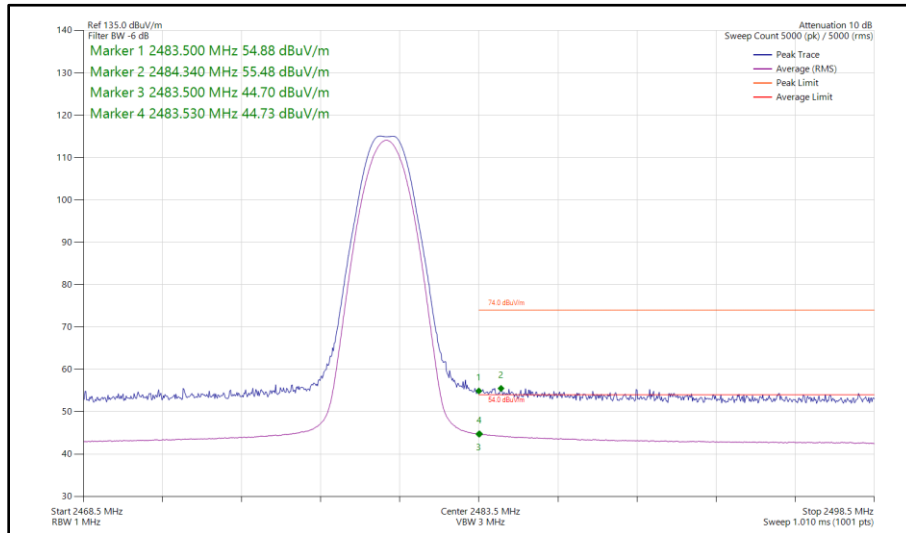
**Figure 45 - Bluetooth HDR4, SISO, Core 0 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



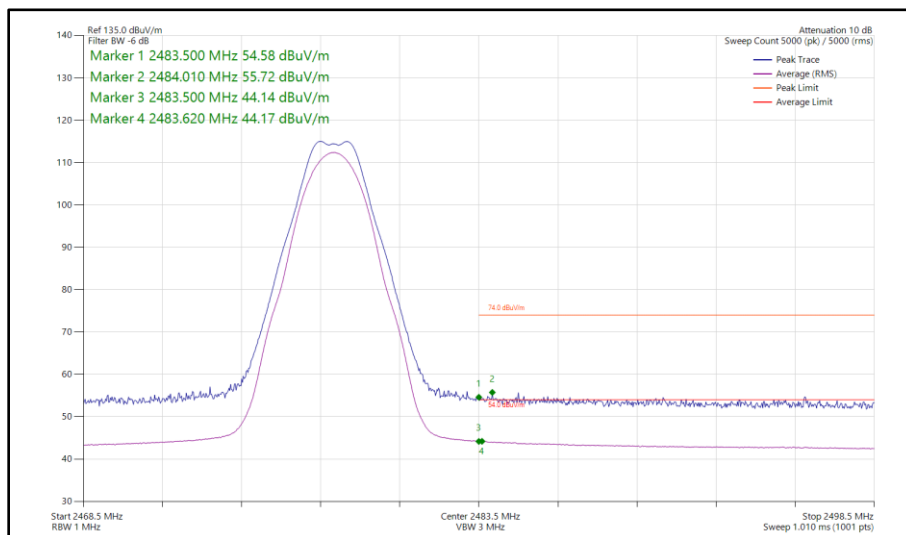
**Figure 46 - Bluetooth HDR8, SISO, Core 0 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



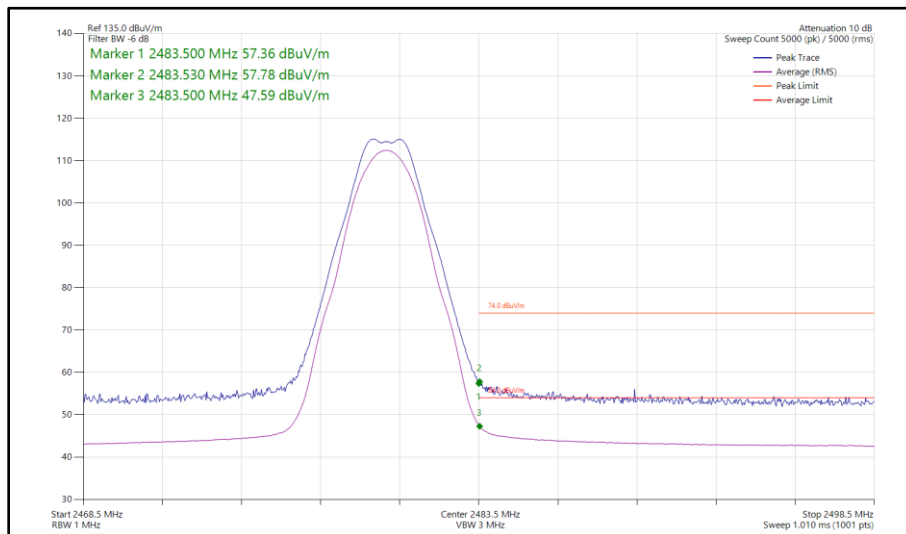
**Figure 47 - Bluetooth LE1M, SISO, Core 0 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 48 - Bluetooth LE1M, SISO, Core 0 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 49 - Bluetooth LE2M, SISO, Core 0 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 50 - Bluetooth LE2M, SISO, Core 0 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



ePA - Core 1 (SISO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	HDR4	2404	2390	55.39	43.67
Static	HDR8	2404	2390	56.17	44.18
Static	LE1M	2402	2390	55.02	43.41
Static	LE2M	2402	2390	55.43	43.49
Static	HDR4	2476	2483.5	56.22	43.76
Static	HDR8	2476	2483.5	56.32	44.88
Static	LE1M	2478	2483.5	54.70	43.49
Static	LE1M	2480	2483.5	55.78	44.67
Static	LE2M	2478	2483.5	55.11	44.02
Static	LE2M	2480	2483.5	57.54	47.44

Table 12 - SISO Restricted Band Edge Results

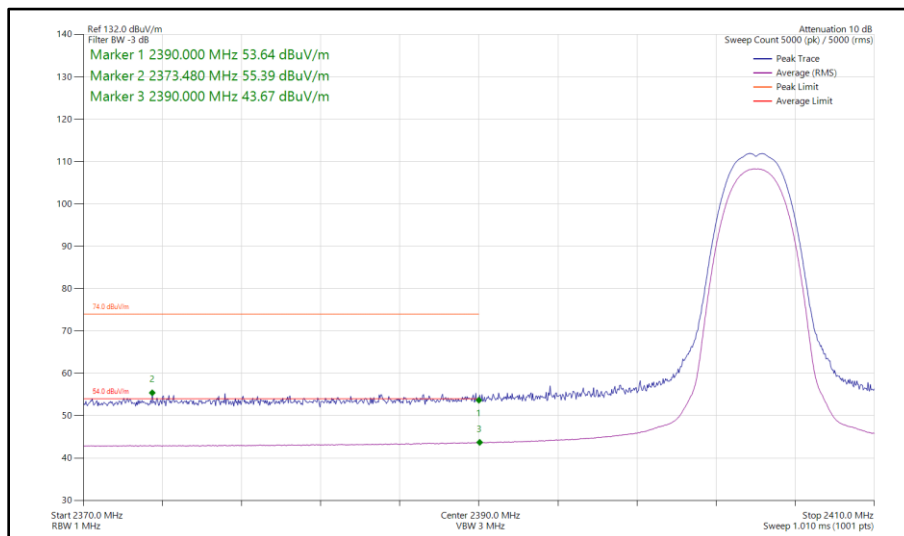
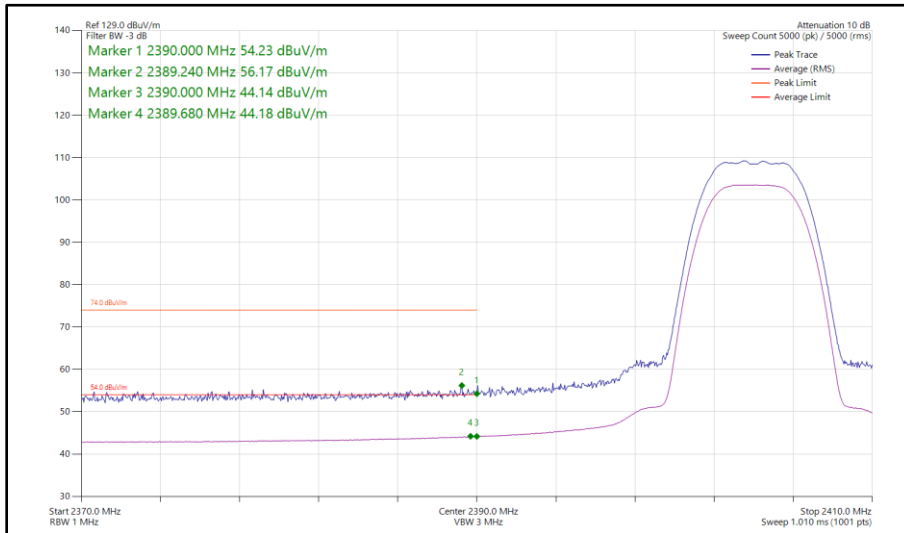
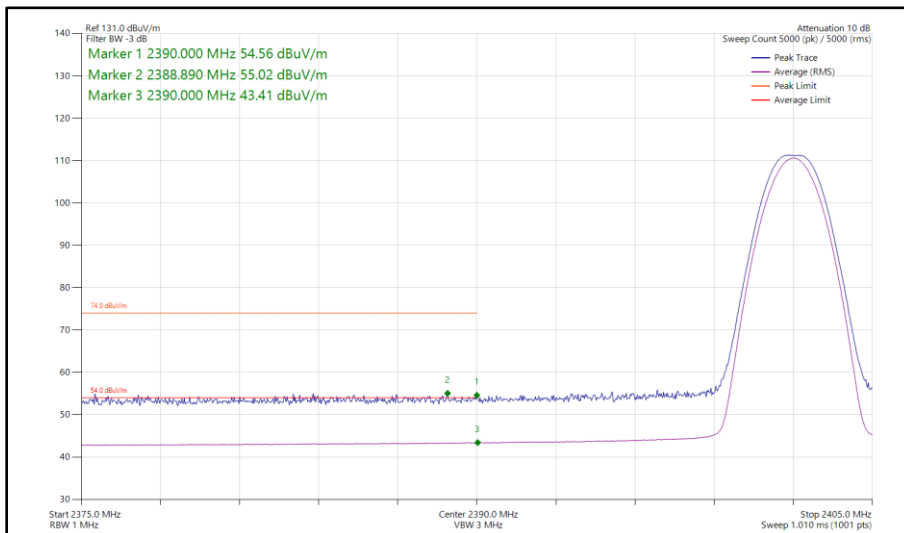


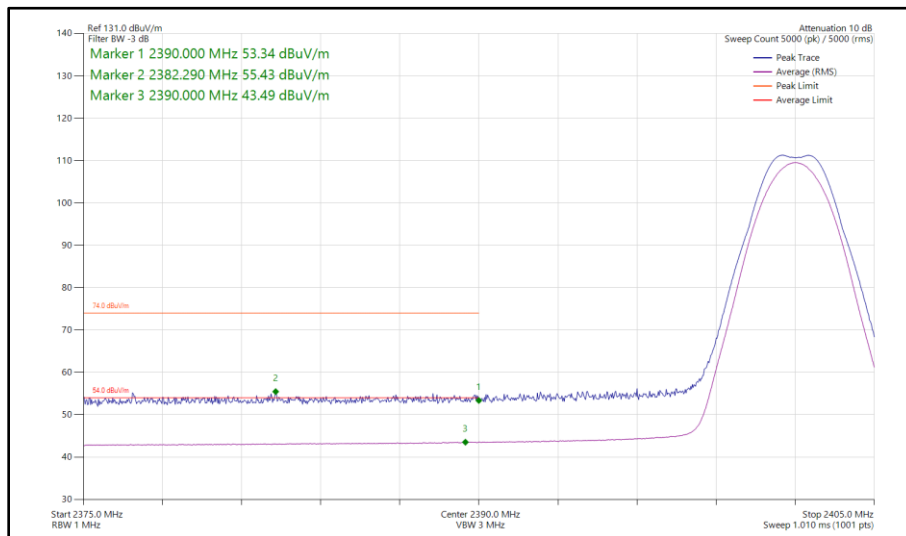
Figure 51 - Bluetooth HDR4, SISO, Core 1 - 2404 MHz
 Band Edge Frequency 2390 MHz



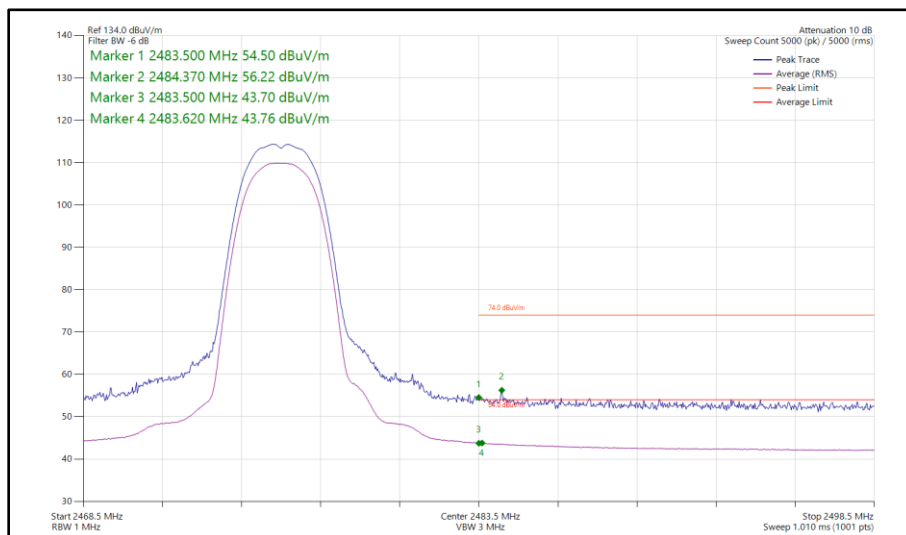
**Figure 52 - Bluetooth HDR8, SISO, Core 1 - 2404 MHz
 Band Edge Frequency 2390 MHz**



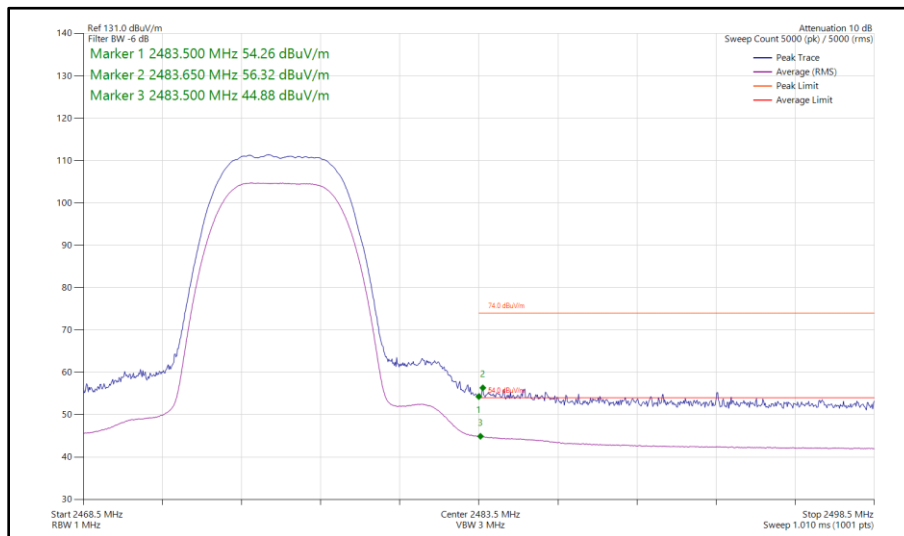
**Figure 53 - Bluetooth LE1M, SISO, Core 1 - 2402 MHz
 Band Edge Frequency 2390 MHz**



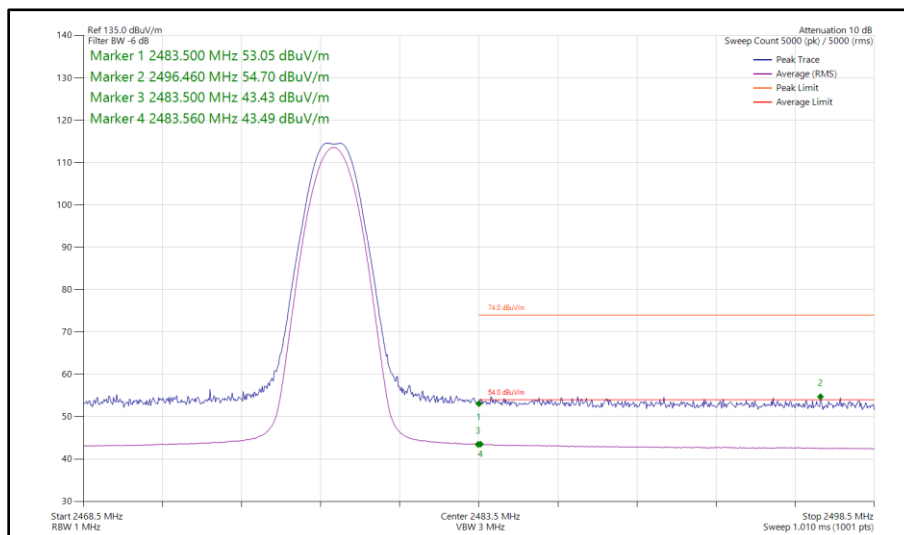
**Figure 54 - Bluetooth LE2M, SISO, Core 1 - 2402 MHz
Band Edge Frequency 2390 MHz**



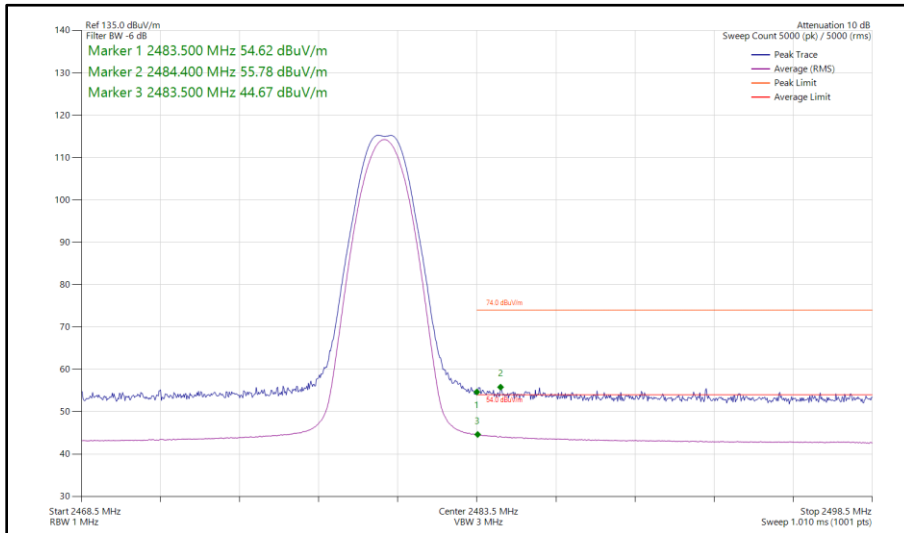
**Figure 55 - Bluetooth HDR4, SISO, Core 1 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



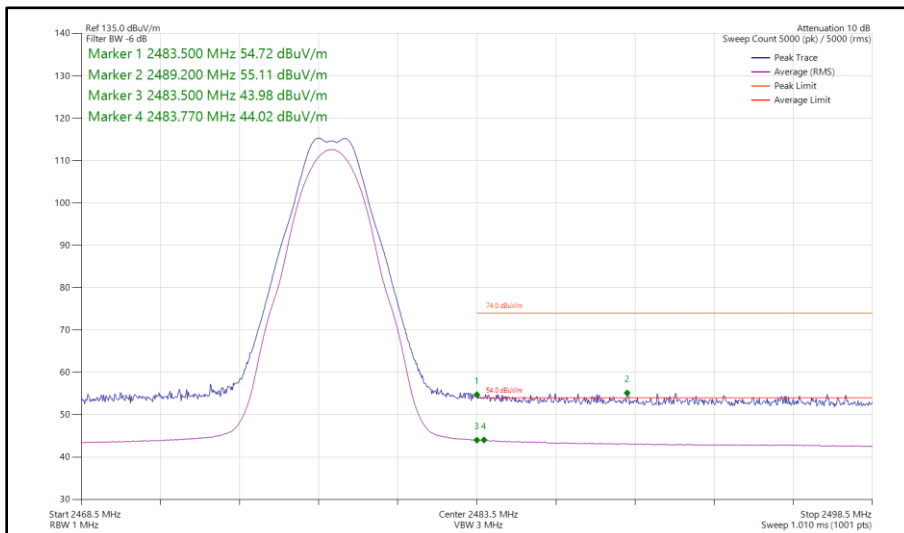
**Figure 56 - Bluetooth HDR8, SISO, Core 1 - 2476 MHz
Band Edge Frequency 2483.5 MHz**



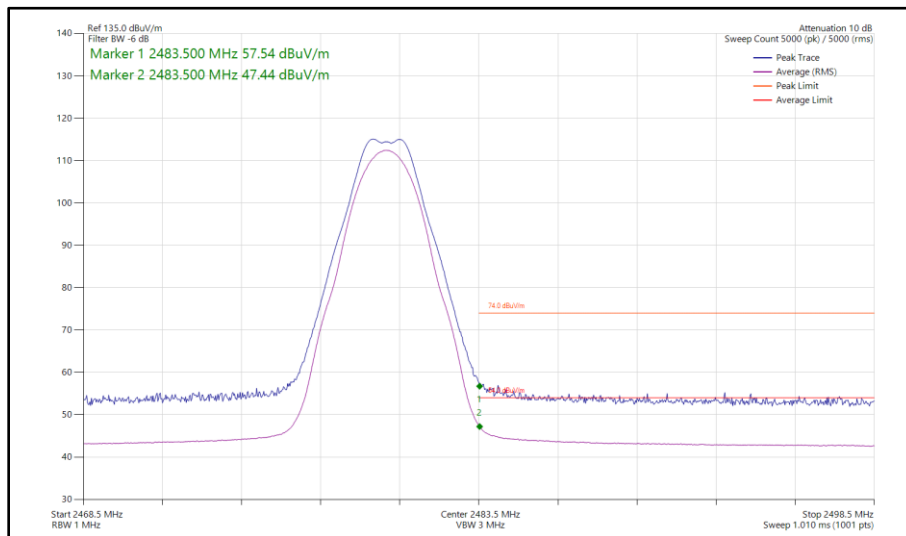
**Figure 57 - Bluetooth LE1M, SISO, Core 1 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 58 - Bluetooth LE1M, SISO, Core 1 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 59 - Bluetooth LE2M, SISO, Core 1 - 2478 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 60 - Bluetooth LE2M, SISO, Core 1 - 2480 MHz
Band Edge Frequency 2483.5 MHz**



ePA - Core 0 - Core 1 (MIMO)

Mode	Packet Type	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Static	HDR4	2404	2390	55.80	44.54
Static	HDR8	2404	2390	57.39	46.21
Static	LE1M	2402	2390	56.20	44.50
Static	LE2M	2402	2390	57.22	44.66
Static	HDR4	2476	2483.5	56.37	45.58
Static	HDR8	2476	2483.5	59.40	48.03
Static	LE1M	2478	2483.5	56.80	44.96
Static	LE1M	2480	2483.5	57.66	46.32
Static	LE2M	2478	2483.5	56.66	45.62
Static	LE2M	2480	2483.5	59.84	49.86

Table 13 - MIMO Restricted Band Edge Results

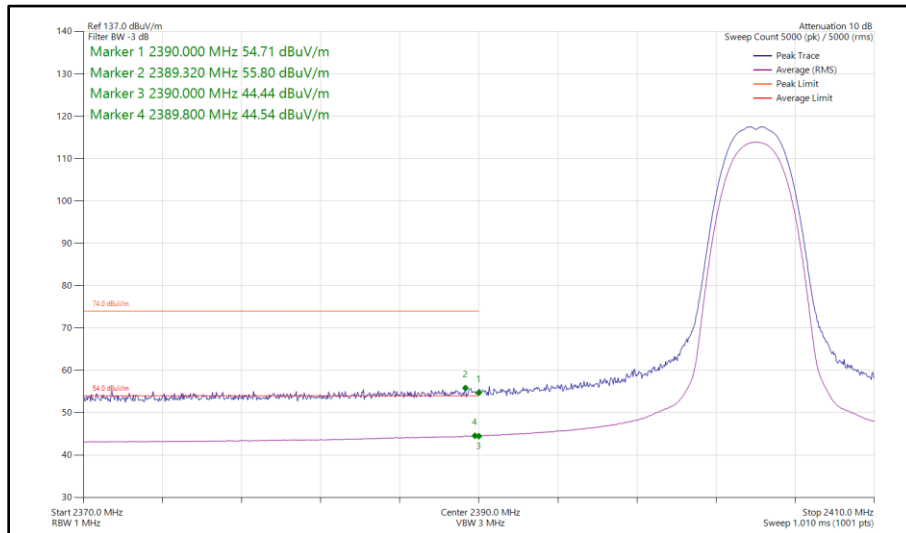
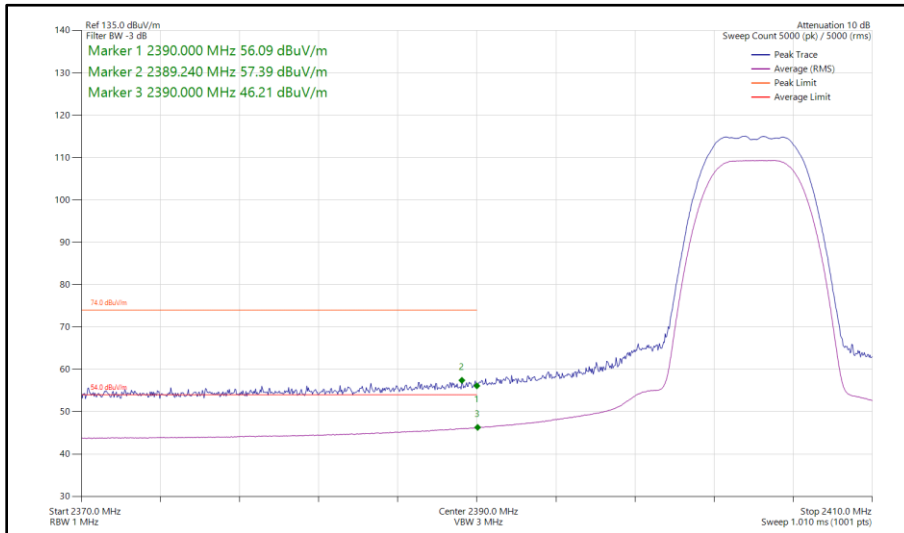
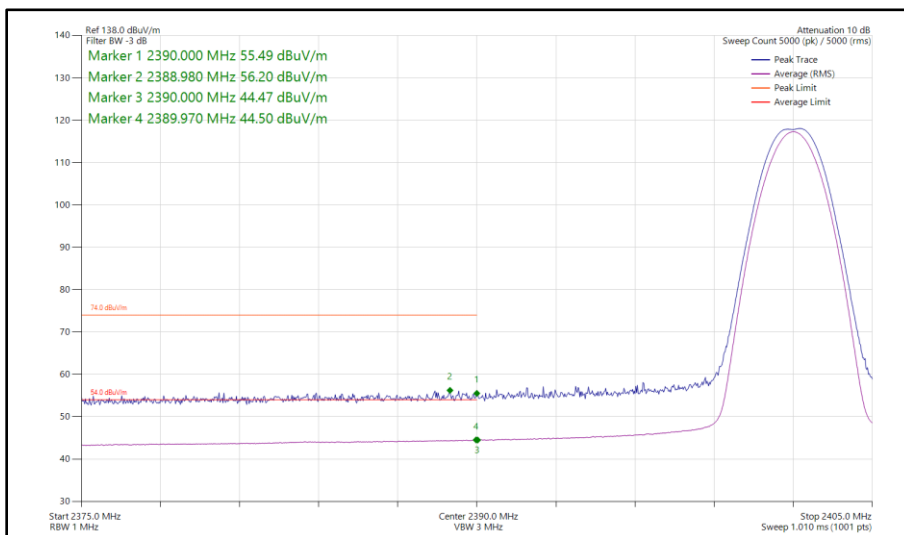


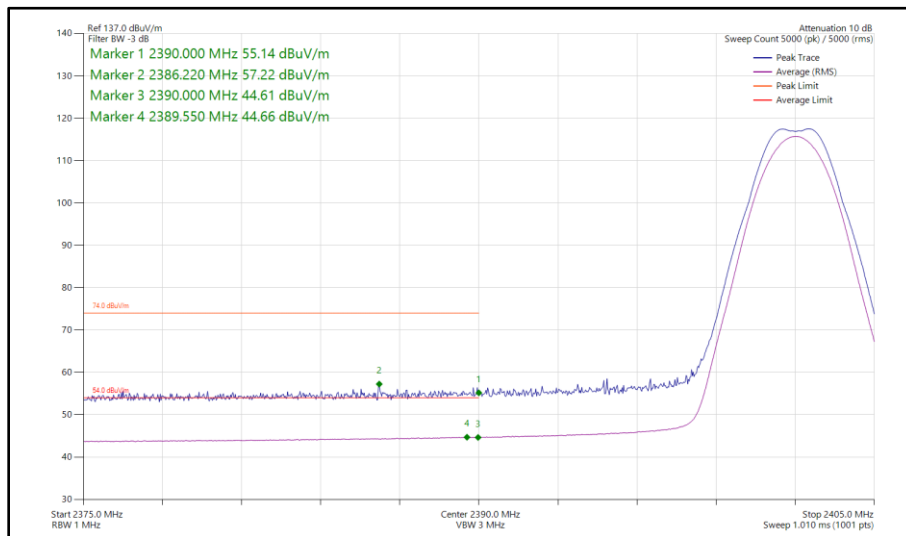
Figure 61 - Bluetooth HDR4, MIMO, Core 0 - Core 1 - 2404 MHz Band Edge Frequency 2390 MHz



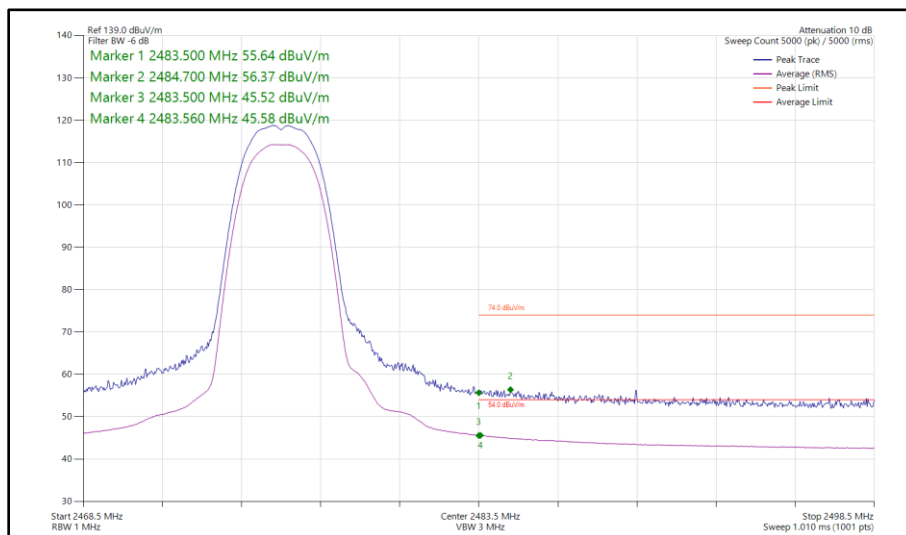
**Figure 62 - Bluetooth HDR8, MIMO, Core 0 - Core 1 - 2404 MHz
Band Edge Frequency 2390 MHz**



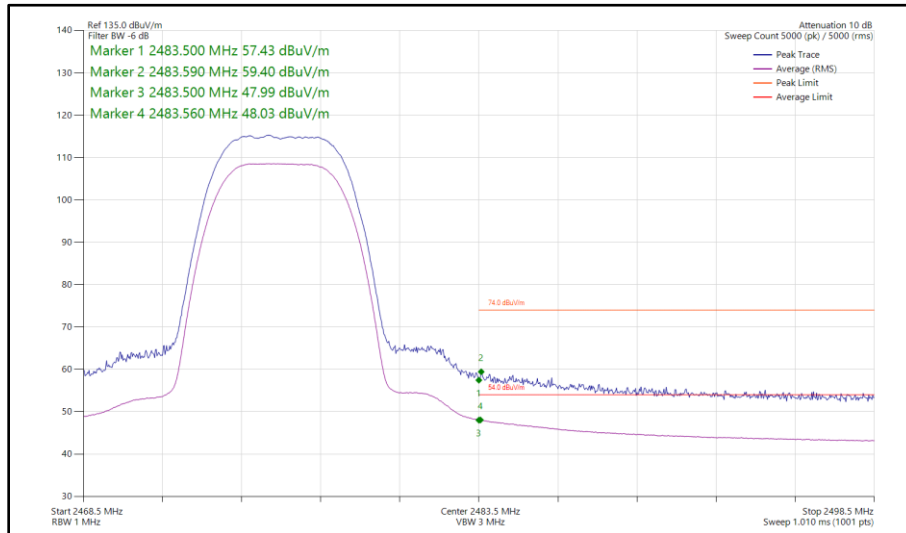
**Figure 63 - Bluetooth LE1M, MIMO, Core 0 - Core 1 - 2402 MHz
Band Edge Frequency 2390 MHz**



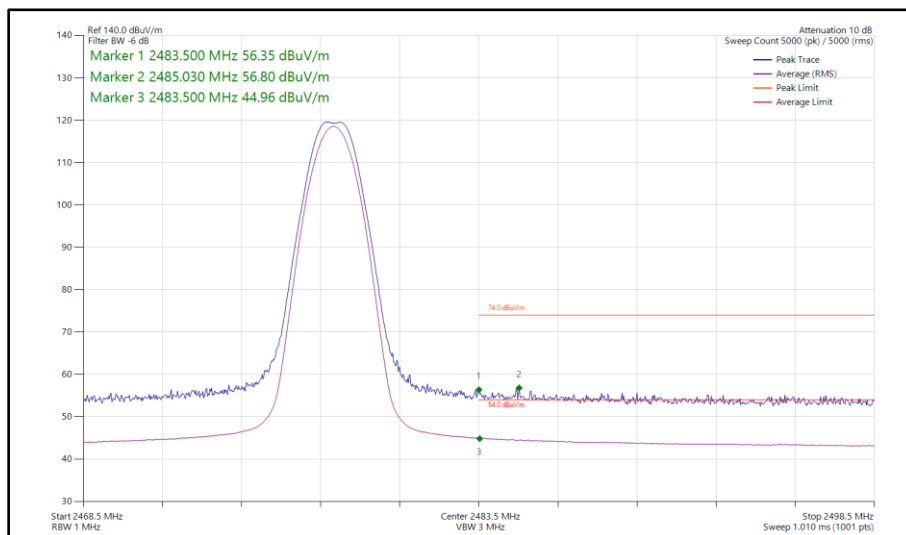
**Figure 64 - Bluetooth LE2M, MIMO, Core 0 - Core 1 - 2402 MHz
 Band Edge Frequency 2390 MHz**



**Figure 65 - Bluetooth HDR4, MIMO, Core 0 - Core 1 - 2476 MHz
 Band Edge Frequency 2483.5 MHz**



**Figure 66 - Bluetooth HDR8, MIMO, Core 0 - Core 1 - 2476 MHz
 Band Edge Frequency 2483.5 MHz**



**Figure 67 - Bluetooth LE1M, MIMO, Core 0 - Core 1 - 2478 MHz
 Band Edge Frequency 2483.5 MHz**