

FCC and ISED Test Report

Apple Inc
Model: A3241



In accordance with FCC 47 CFR Part 15C,
ISED RSS-247 and ISED RSS-GEN
(2.4 GHz WLAN)

Prepared for: Apple Inc
One Apple Park Way
Cupertino
California
95014
USA

FCC ID: BCGA3241

IC: 579C-A3241

COMMERCIAL-IN-CONFIDENCE

Document 75962766-39 Issue 01

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Tiago De Camargo Alves	Technical Support	Authorised Signatory	28 November 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, ISED RSS-247 and ISED RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Report Generation	Lauren Walters	28 November 2024	
FCC Accreditation	ISED Accreditation		
492497/UK2010 Octagon House, Fareham Test Laboratory	12669A/UK0003 Octagon House, Fareham Test Laboratory		
553713/UK2026 Concorde Park, Fareham Test Laboratory	28798/UK0003 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, ISED RSS-247: Issue 3 (2023-08) and ISED RSS-GEN: Issue 5 (2018-04) + A2 (2021-02) for the tests detailed in section 1.3.



DISCLAIMER AND COPYRIGHT

This non-binding report has been prepared by TÜV SÜD with all reasonable skill and care. The document is confidential to the potential Client and TÜV SÜD. No part of this document may be reproduced without the prior written approval of TÜV SÜD. © 2024 TÜV SÜD. This report relates only to the actual item/items tested.

ACCREDITATION

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation. Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited). Results of tests covered by our Flexible UKAS Accreditation Schedule are marked FS (Flexible Scope).

TÜV SÜD
is a trading name of TÜV SÜD Ltd
Registered in Scotland at East Kilbride,
Glasgow G75 0QF, United Kingdom
Registered number: SC215164

TÜV SÜD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuvsud.com/en

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire PO15 5RL
United Kingdom



Contents

1	Report Summary	2
1.1	Report Modification Record.....	2
1.2	Introduction.....	2
1.3	Brief Summary of Results	3
1.4	Product Information	4
1.5	Deviations from the Standard.....	5
1.6	Identification of the EUT	5
1.7	EUT Modification Record	5
1.8	Test Location	6
2	Test Details	7
2.1	Restricted Band Edges.....	7
2.2	Emission Bandwidth	65
2.3	Maximum Conducted Output Power	79
2.4	Authorised Band Edges	93
2.5	Spurious Radiated Emissions	121
2.6	Power Spectral Density	150
3	Measurement Uncertainty	161



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	28-November-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 ISED RSS-247: Issue 3 (2023-08) ISED RSS-GEN: Issue 5 (2018-04) + A2 (2021-02)
Start of Test	16-September-2024
Finish of Test	31-October-2024
Name of Engineer(s)	Thomas Biddlecombe, Akhil Rajendran Bhaskaran Nair, Jamal Imoro Abubakar, Thomas Randall, Vineeth Nagaraj, Colin Brain and Tony Baby
Related Document(s)	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, ISSED RSS-247 and ISSED RSS-GEN is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration and Mode: 2.4 GHz WLAN						
-	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	3.3	8.10	Restricted Band Edges	Pass	ANSI C63.10 (2020)
2.2	15.247 (a)(2)	5.2	6.7	Emission Bandwidth	Pass	ANSI C63.10 (2020)
2.3	15.247 (b)	5.4	6.12	Maximum Conducted Output Power	Pass	ANSI C63.10 (2020) KDB 662911 D01 v02r01
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10 (2020)
2.5	15.209 and 15.247 (d)	3.3 and 5.5	6.13 and 8.9	Spurious Radiated Emissions	Pass	ANSI C63.10 (2020)
2.6	15.247 (e)	5.2	6.12	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 802.11 radio supports SISO (Single Input/Single Output) and 2x2 MIMO (Multiple Input/Multiple Output). It supports 802.11b and g for SISO operation and 802.11n and ax at 20 MHz channel bandwidths for SISO and MIMO. 802.11ax multi-user mode supports RU sizes of 26/52/106/242 subcarriers.

The EUT uses different output powers per core dependent on how many cores are used. It uses the same conducted power across all cores in any given mode, but due to the different antenna gains the radiated powers per core differs.

After preliminary investigations were performed, the EUT was therefore tested in the following worst-case modes unless otherwise specified:

SISO Modes (Core 0):

- 802.11b - 1 Mbps
- 802.11g - 12 Mbps
- 802.11n HT20 - MCS2
- 802.11ax HE20 SU - MCS2x1
- 802.11ax HE20 MU RU26/52/106* - MCS2x1

2x2 MIMO Modes (Core 0 + Core 1):

- 802.11n HT20 - CDD - MCS2
- 802.11ax HE20 SU - CDD - MCS2x1
- 802.11ax HE20 MU RU26/52/106* - CDD - MCS2x1

*Note: The RU offset for bottom and middle channels were placed in the lowest position and on the top channel, the offset was placed in the upper most position.

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 was known and compensated for in any conducted measurements.

For all tests, the EUT was put into a continuous transmit test mode with the chipset manufacturer's test commands. The EUT then transmitted the required type of packeted 802.11 data frames of fixed length, containing the standard headers and with pseudo-random data content, ensuring the measured signals were representative and contained all the symbols at the highest power control level.

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	5.4	0.71
Core 1	2400 to 2480	5.1	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: A3241		
Serial Number	Hardware Version	Software Version
HJKCRQM3K9	REV1.0	24A12461c
K2K9N270NG	REV1.0	24A12461c
FWKQMY7GHY	REV1.0	24A12461c
DT7LYX5QXT	REV1.0	24A12461c

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: A3241, Serial Number: K2K9N270NG			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3241, Serial Number: HJKCRQM3K9			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3241, Serial Number: DT7LYX5QXT			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3241, Serial Number: FWKQMY7GHY			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 5



1.8 Test Location

TÜV SÜD conducted the following tests at our Octagon House Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: 2.4 GHz WLAN		
Emission Bandwidth	Thomas Biddlecombe	UKAS
Maximum Conducted Output Power	Thomas Biddlecombe	UKAS
Power Spectral Density	Thomas Biddlecombe	UKAS

Table 6

Office Address:

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire
PO15 5RL
United Kingdom

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 WLAN		
Restricted Band Edges	Akhil Rajendran Bhaskaran Nair, Jamal Imoro Abubakar, Thomas Randall and Vineeth Nagaraj	UKAS
Authorised Band Edges	Akhil Rajendran Bhaskaran Nair, Jamal Imoro Abubakar, Thomas Randall and Vineeth Nagaraj	UKAS
Spurious Radiated Emissions	Akhil Rajendran Bhaskaran Nair, Colin Brain, Thomas Randall, Tony Baby and Vineeth Nagaraj	UKAS

Table 7

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
ISED RSS-247, Clause 3.3
ISED RSS-GEN, Clause 8.10

2.1.2 Equipment Under Test and Modification State

A3241, S/N: HJKCRQM3K9 - Modification State 0
A3241, S/N: K2K9N270NG - Modification State 0

2.1.3 Date of Test

16-September-2024 to 29-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	20.9 - 23.3 °C
Relative Humidity	41.6 - 50.6 %



2.1.6 Test Results

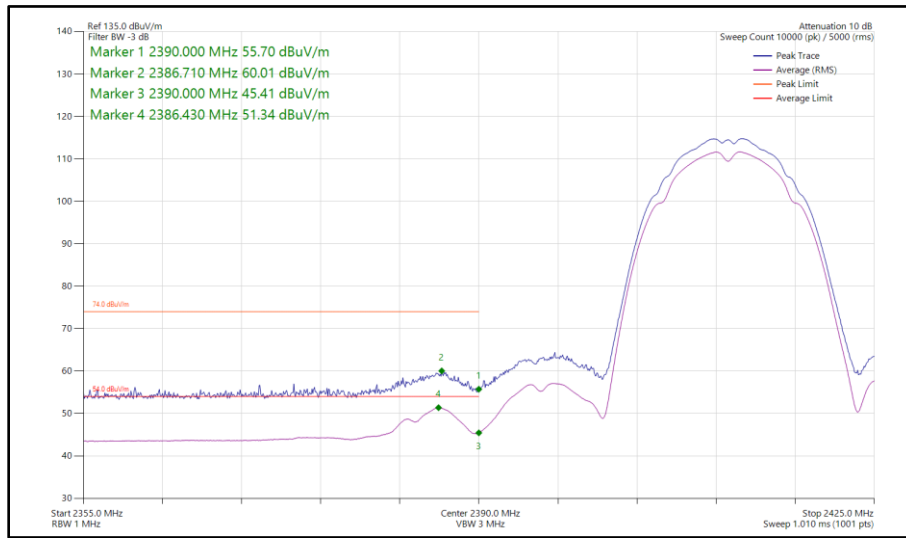
2.4 GHz WLAN

20 MHz Bandwidth - Core 0 (SISO)

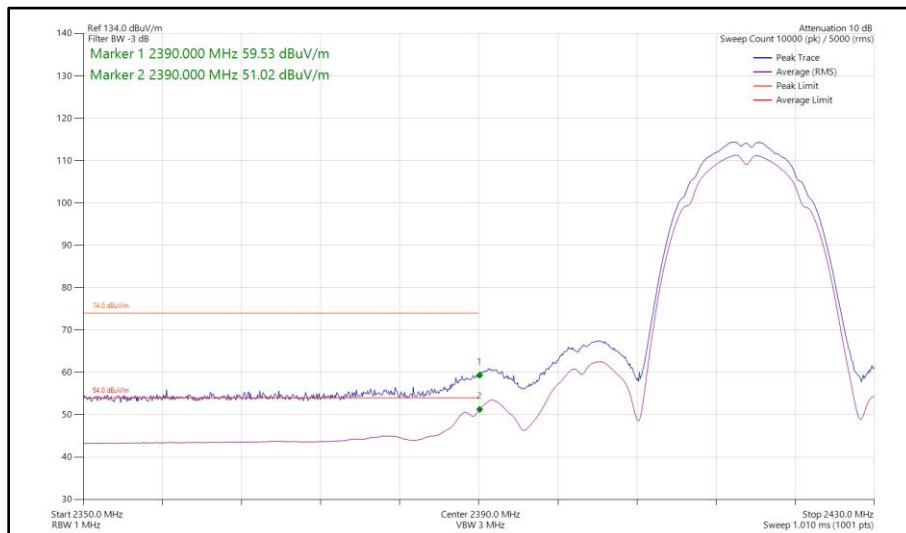
Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
802.11b	1 Mbps	-	-	2412	2390	60.01	51.34
802.11b	1 Mbps	-	-	2417	2390	59.53	51.02
802.11g	12 Mbps	-	-	2412	2390	64.98	51.20
802.11g	24 Mbps	-	-	2417	2390	66.43	51.11
802.11g	54 Mbps	-	-	2422	2390	68.45	51.39
802.11g	54 Mbps	-	-	2427	2390	69.48	51.38
802.11n HT20	MCS 7	-	-	2412	2390	67.47	51.44
802.11n HT20	MCS 7	-	-	2417	2390	68.24	51.50
802.11n HT20	MCS 4	-	-	2422	2390	67.67	51.31
802.11n HT20	MCS 4	-	-	2427	2390	69.47	50.74
802.11ax HE20	MCS 9x1	SU	-	2412	2390	66.39	51.26
802.11ax HE20	MCS 9x1	106	53	2412	2390	67.82	51.46
802.11ax HE20	MCS 2x1	SU	-	2417	2390	65.46	51.02
802.11ax HE20	MCS 9x1	106	54	2417	2390	67.62	49.09
802.11ax HE20	MCS 4x1	SU	-	2422	2390	66.25	51.34
802.11ax HE20	MCS 4x1	SU	-	2427	2390	69.46	49.36
802.11b	1 Mbps	-	-	2462	2483.5	59.77	51.38
802.11b	1 Mbps	-	-	2467	2483.5	60.51	51.36
802.11b	1 Mbps	-	-	2472	2483.5	59.05	51.18
802.11g	24 Mbps	-	-	2452	2483.5	66.40	51.33
802.11g	54 Mbps	-	-	2457	2483.5	69.21	51.20
802.11g	54 Mbps	-	-	2462	2483.5	66.70	51.40
802.11g	54 Mbps	-	-	2467	2483.5	65.31	51.46
802.11g	12 Mbps	-	-	2472	2483.5	64.15	51.17
802.11n HT20	MCS 4	-	-	2452	2483.5	66.18	51.22
802.11n HT20	MCS 4	-	-	2457	2483.5	65.62	51.24
802.11n HT20	MCS 7	-	-	2462	2483.5	66.45	51.49
802.11n HT20	MCS 4	-	-	2467	2483.5	64.91	51.49
802.11n HT20	MCS 2	-	-	2472	2483.5	64.19	51.39
802.11ax HE20	MCS 9x1	SU	-	2452	2483.5	68.06	51.36
802.11ax HE20	MCS 9x1	SU	-	2457	2483.5	68.66	51.03
802.11ax HE20	MCS 9x1	106	54	2457	2483.5	67.79	46.56
802.11ax HE20	MCS 9x1	SU	-	2462	2483.5	65.45	51.35
802.11ax HE20	MCS 9x1	106	54	2462	2483.5	68.04	50.70
802.11ax HE20	MCS 9x1	SU	-	2467	2483.5	64.41	51.15

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
802.11ax HE20	MCS 9x1	52	40	2467	2483.5	68.64	51.38
802.11ax HE20	MCS 2x1	SU	-	2472	2483.5	65.30	51.47
802.11ax HE20	MCS 9x1	26	0	2472	2483.5	69.43	48.55

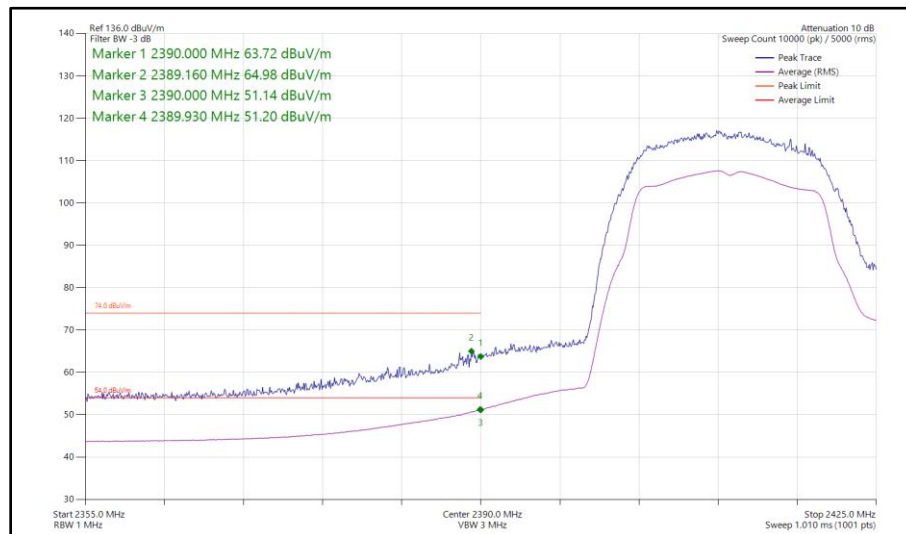
Table 8 - SISO Restricted Band Edge Results



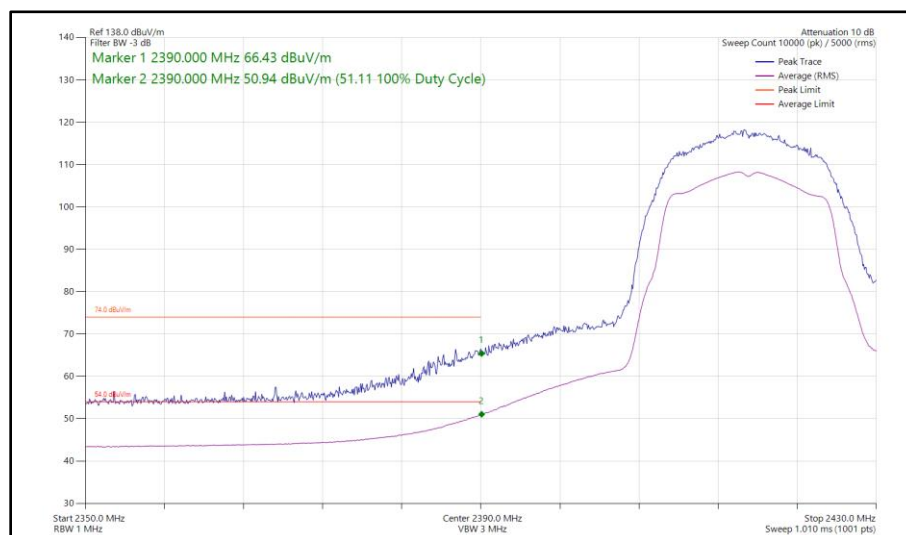
**Figure 1 - 802.11b, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2390 MHz**



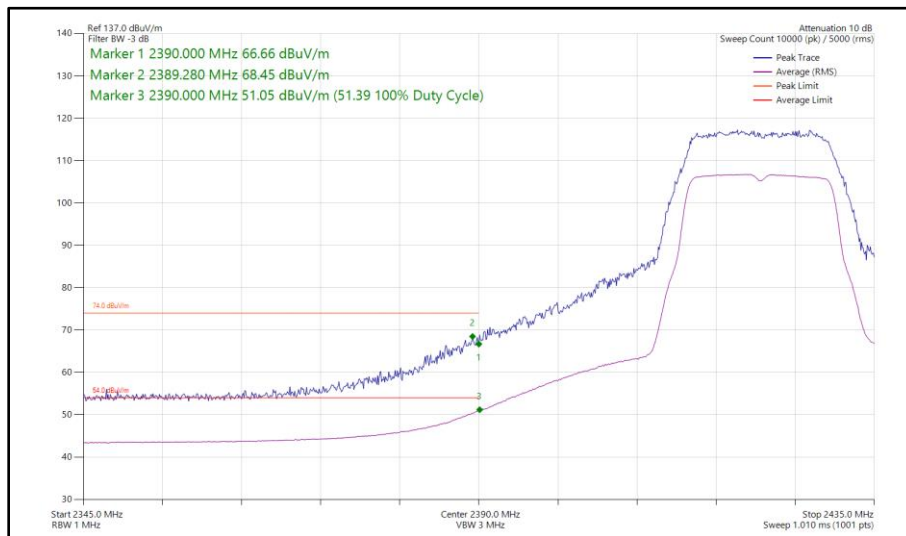
**Figure 2 - 802.11b, SISO, Core 0 - 2417 MHz
Band Edge Frequency 2390 MHz**



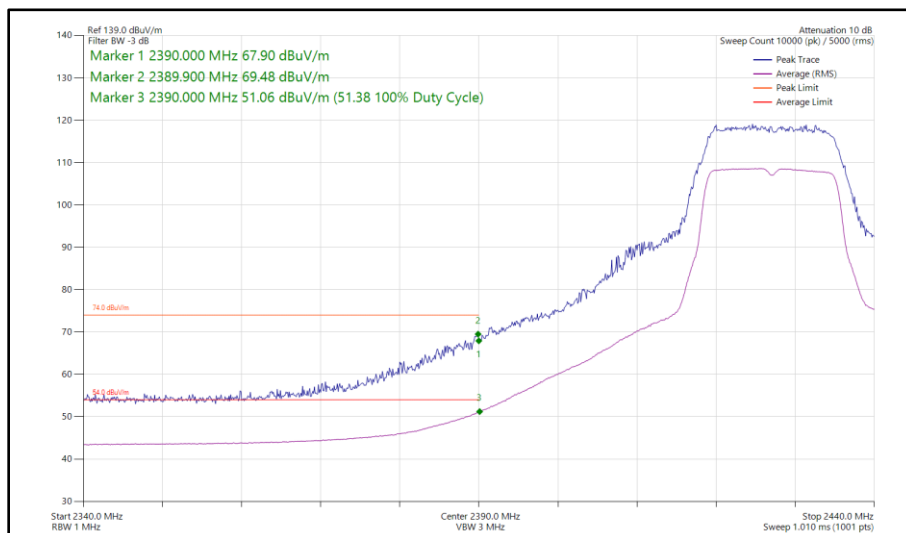
**Figure 3 - 802.11g, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2390 MHz**



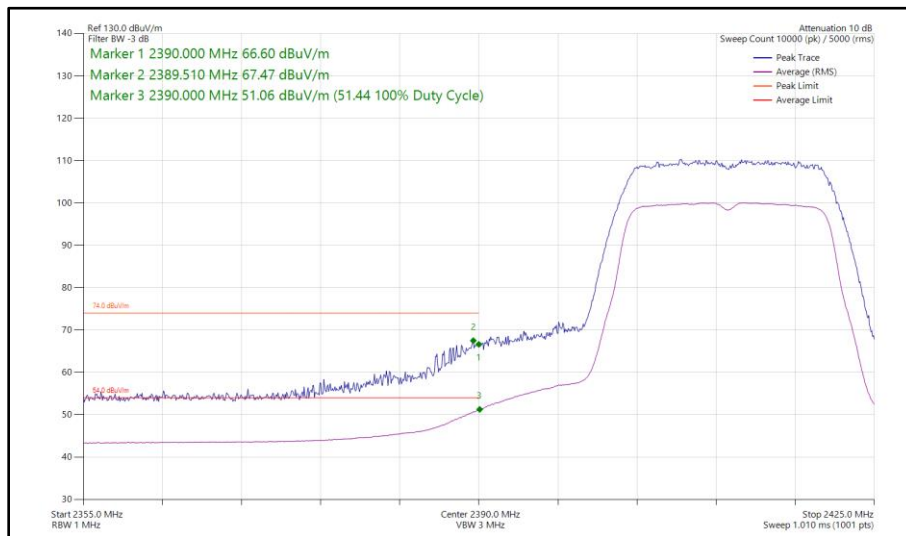
**Figure 4 - 802.11g, SISO, Core 0 - 2417 MHz
Band Edge Frequency 2390 MHz**



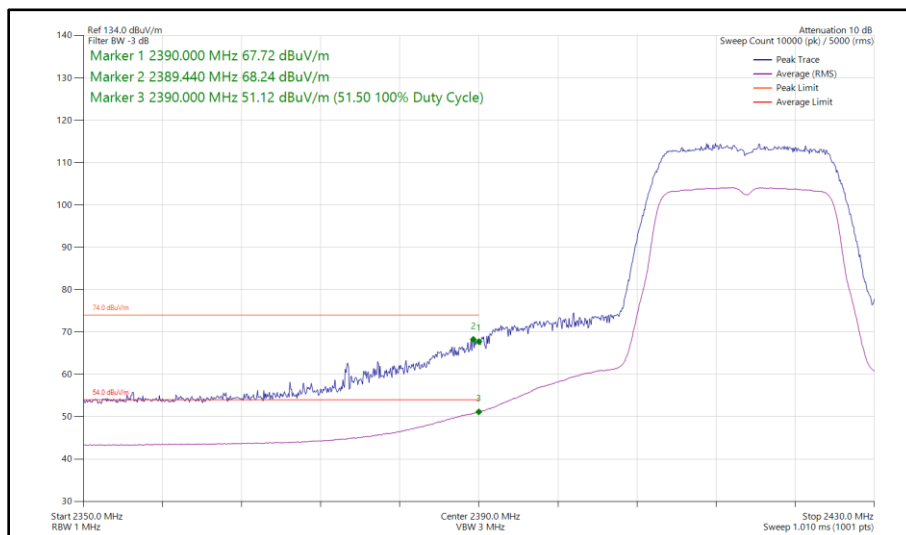
**Figure 5 - 802.11g, SISO, Core 0 - 2422 MHz
Band Edge Frequency 2390 MHz**



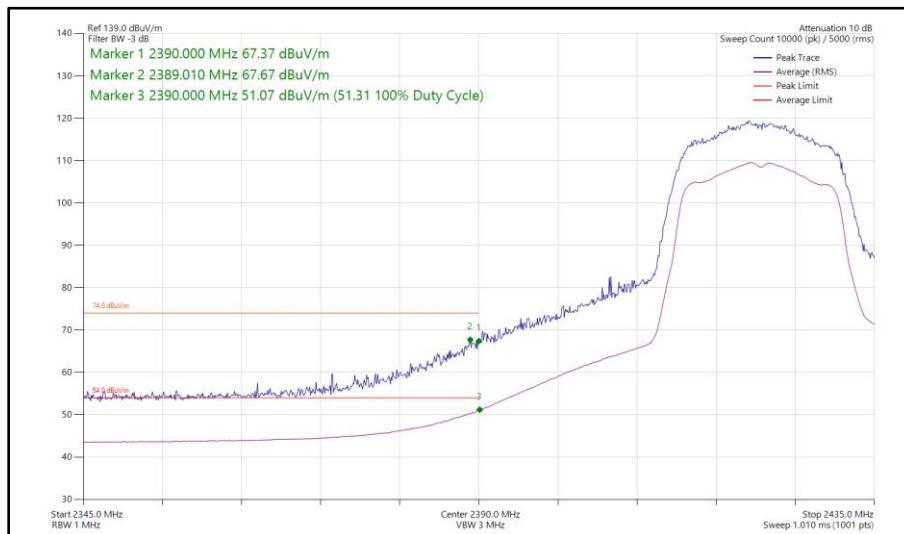
**Figure 6 - 802.11g, SISO, Core 0 - 2427 MHz
Band Edge Frequency 2390 MHz**



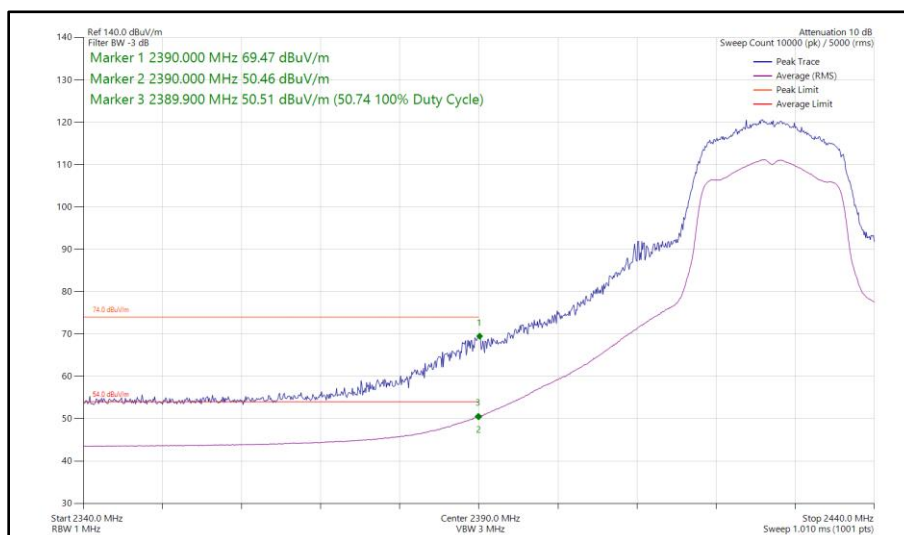
**Figure 7 - 802.11n HT20, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2390 MHz**



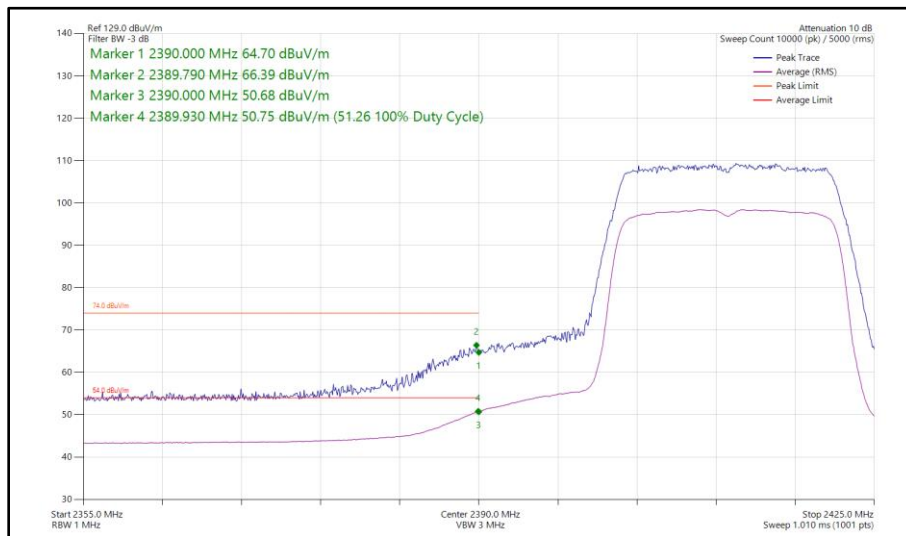
**Figure 8 - 802.11n HT20, SISO, Core 0 - 2417 MHz
Band Edge Frequency 2390 MHz**



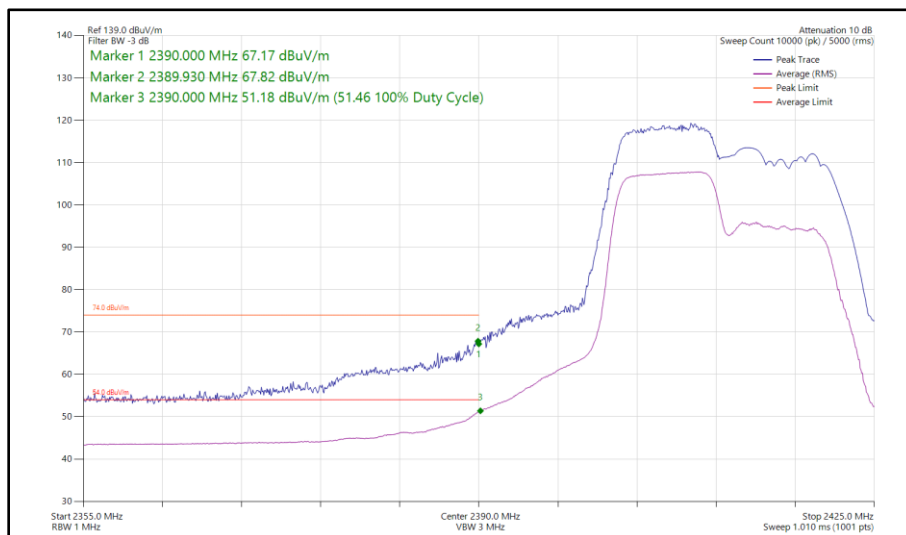
**Figure 9 - 802.11n HT20, SISO, Core 0 - 2422 MHz
Band Edge Frequency 2390 MHz**



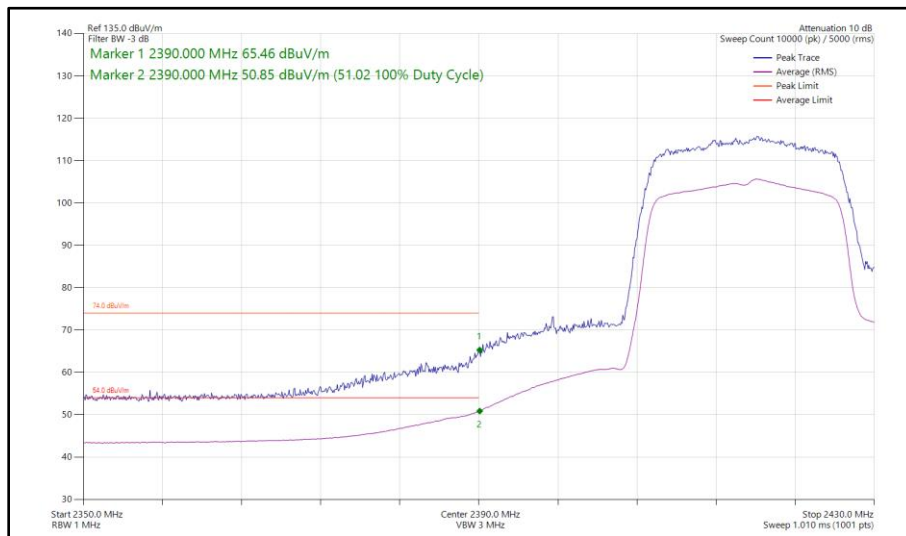
**Figure 10 - 802.11n HT20, SISO, Core 0 - 2427 MHz
Band Edge Frequency 2390 MHz**



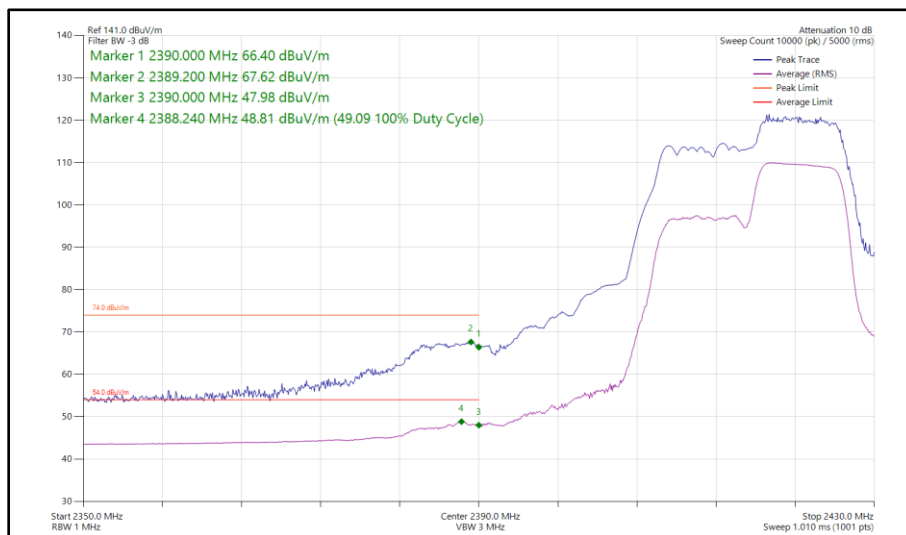
**Figure 11 - 802.11ax HE20, SU, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2390 MHz**



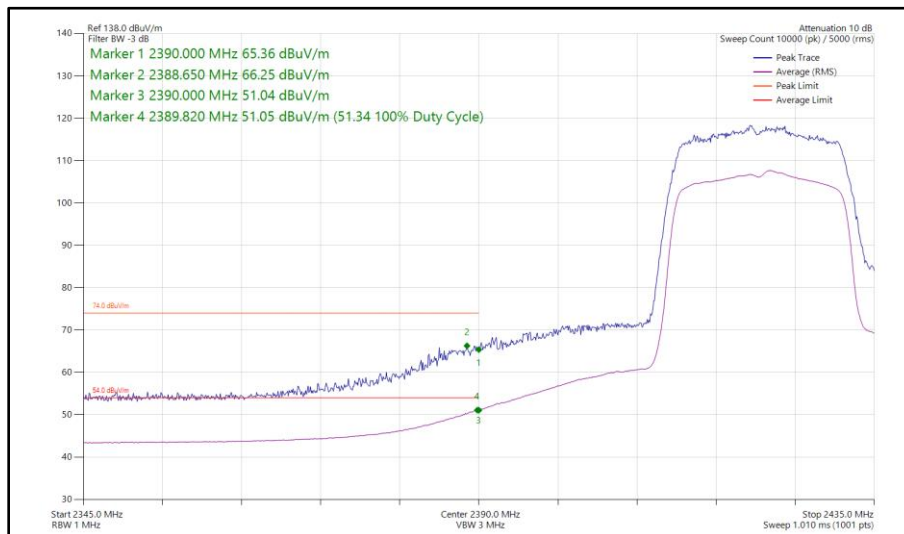
**Figure 12 - 802.11ax HE20, RU 106-53, SISO, Core 0 - 2412 MHz
Band Edge Frequency 2390 MHz**



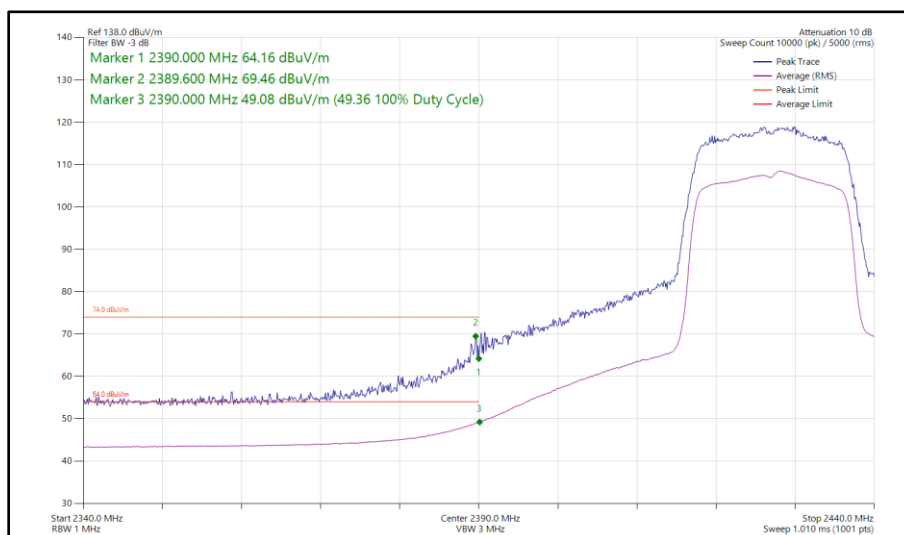
**Figure 13 - 802.11ax HE20, SU, SISO, Core 0 - 2417 MHz
Band Edge Frequency 2390 MHz**



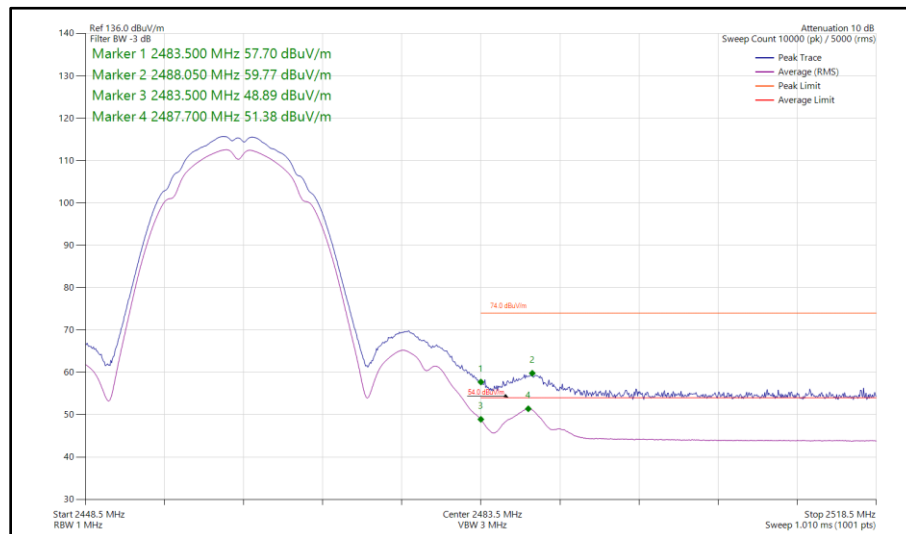
**Figure 14 - 802.11ax HE20, RU 106-54, SISO, Core 0 - 2417 MHz
Band Edge Frequency 2390 MHz**



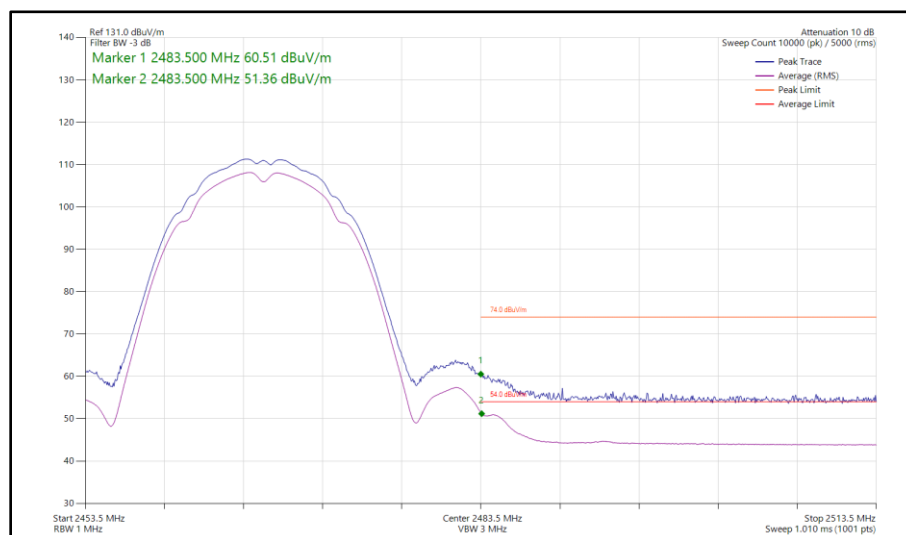
**Figure 15 - 802.11ax HE20, SU, SISO, Core 0 - 2422 MHz
Band Edge Frequency 2390 MHz**



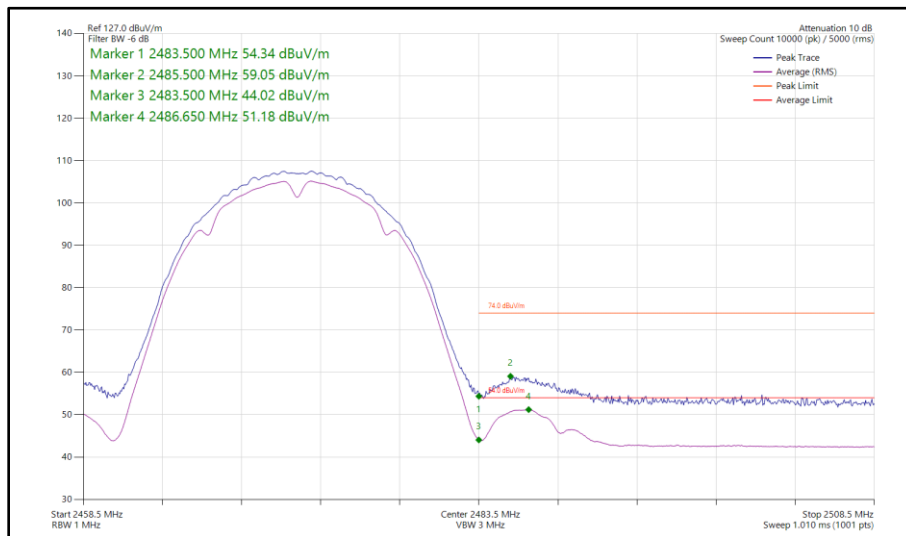
**Figure 16 - 802.11ax HE20, SU, SISO, Core 0 - 2427 MHz
Band Edge Frequency 2390 MHz**



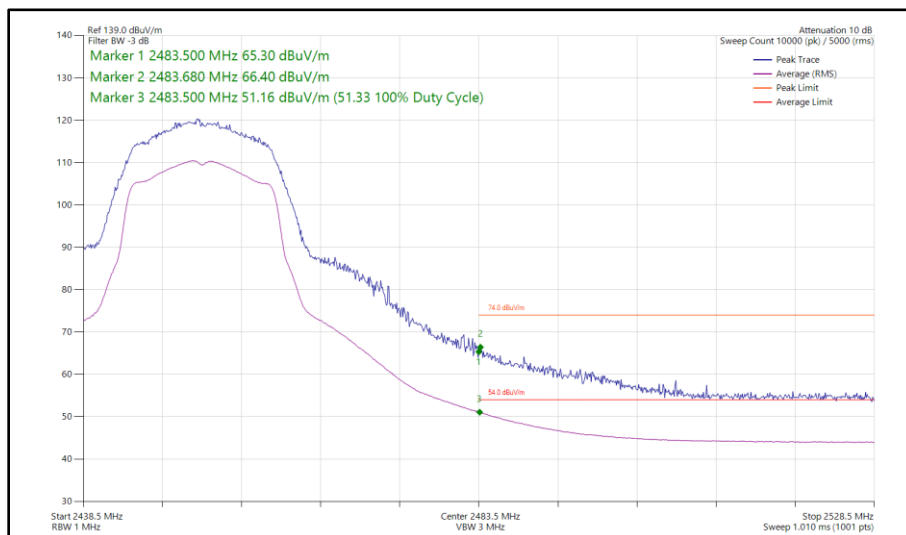
**Figure 17 - 802.11b, SISO, Core 0 - 2462 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 18 - 802.11b, SISO, Core 0 - 2467 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 19 - 802.11b, SISO, Core 0 - 2472 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 20 - 802.11g, SISO, Core 0 - 2452 MHz
Band Edge Frequency 2483.5 MHz**

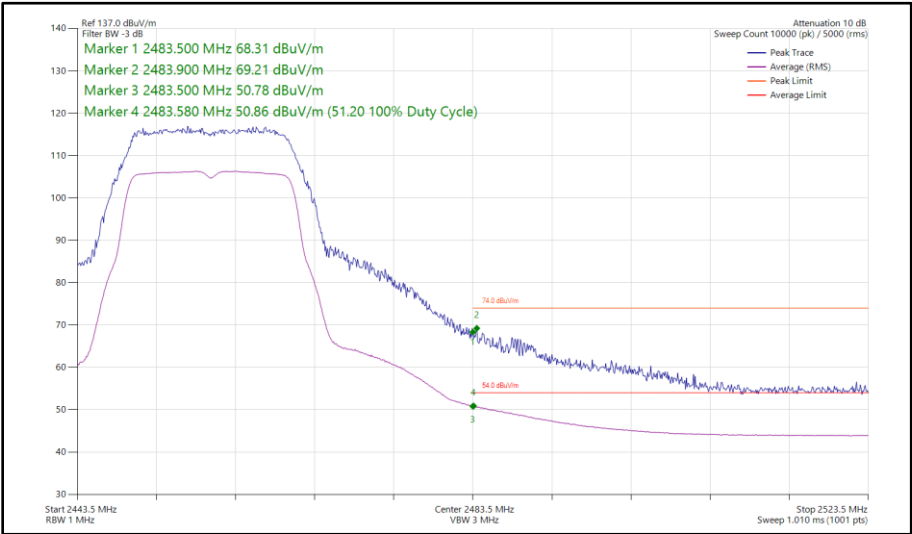


Figure 21 - 802.11g, SISO, Core 0 - 2457 MHz
Band Edge Frequency 2483.5 MHz

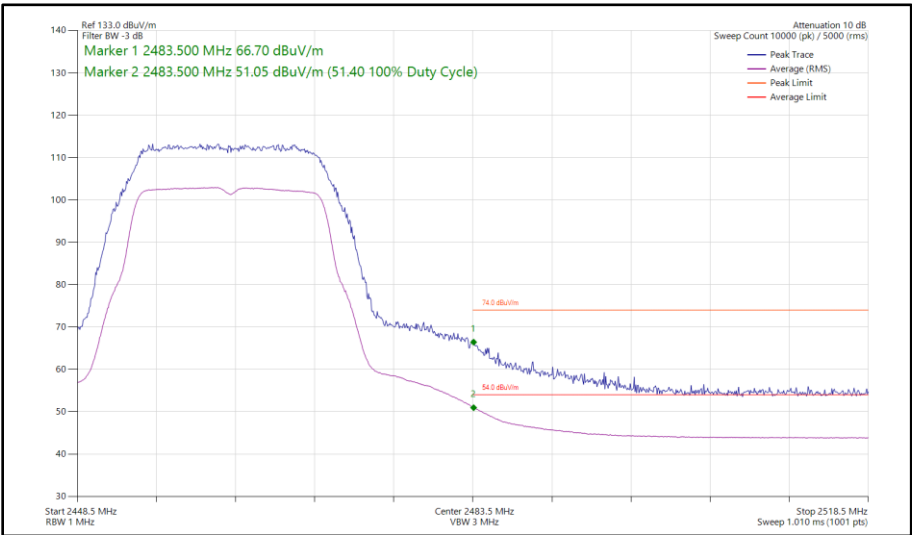
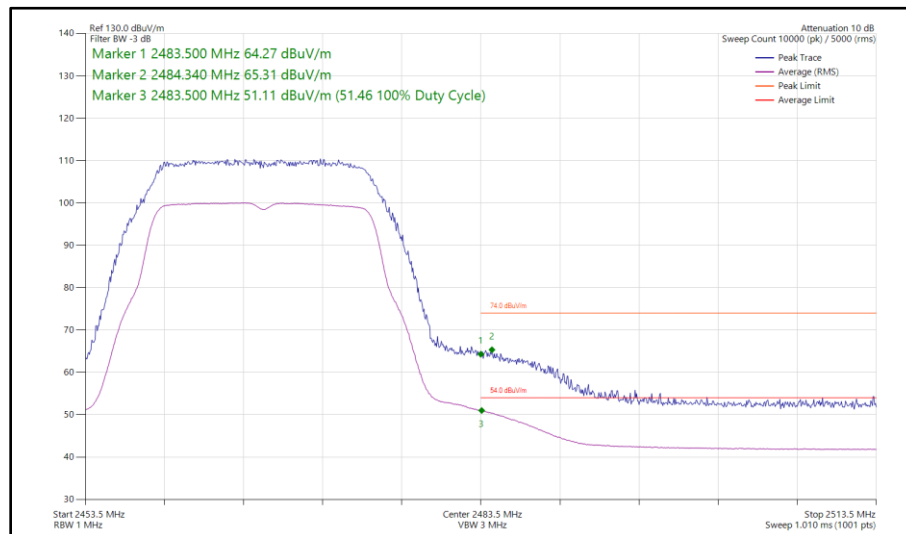
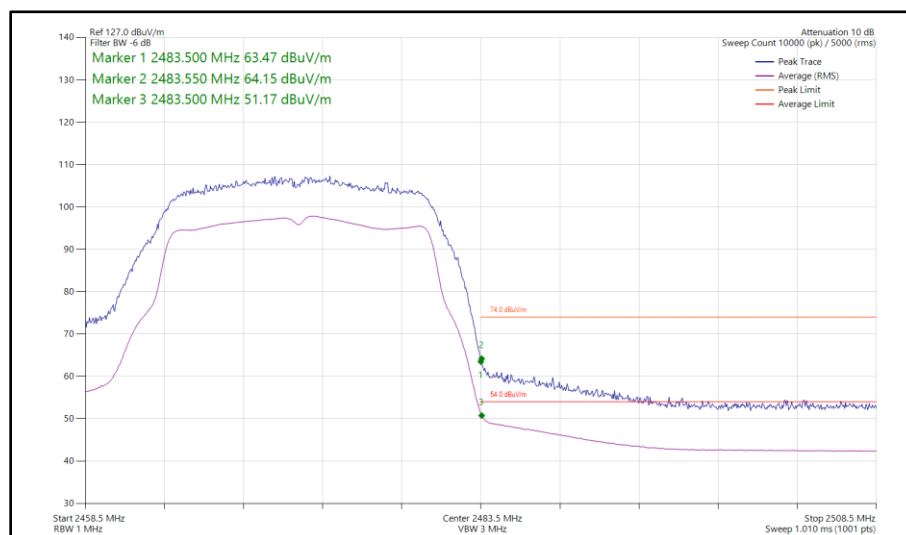


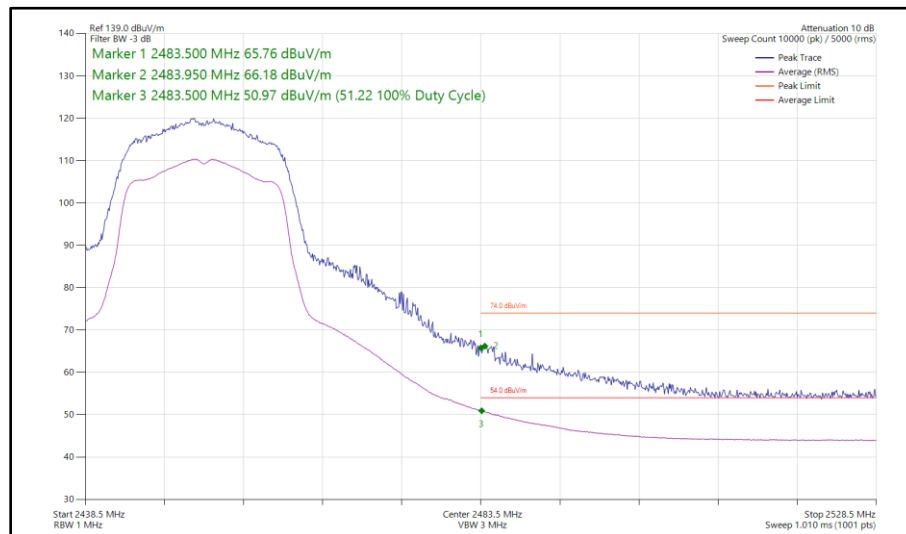
Figure 22 - 802.11g, SISO, Core 0 - 2462 MHz
Band Edge Frequency 2483.5 MHz



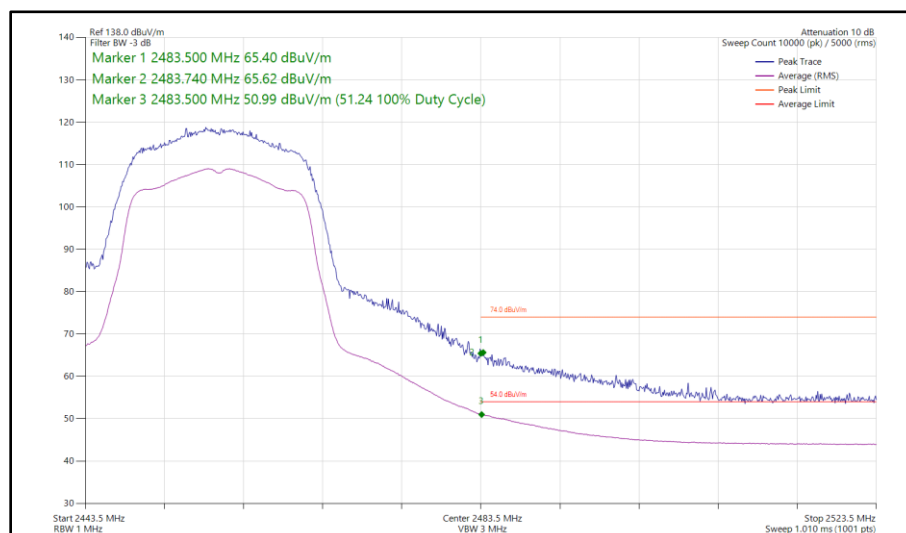
**Figure 23 - 802.11g, SISO, Core 0 - 2467 MHz
Band Edge Frequency 2483.5 MHz**



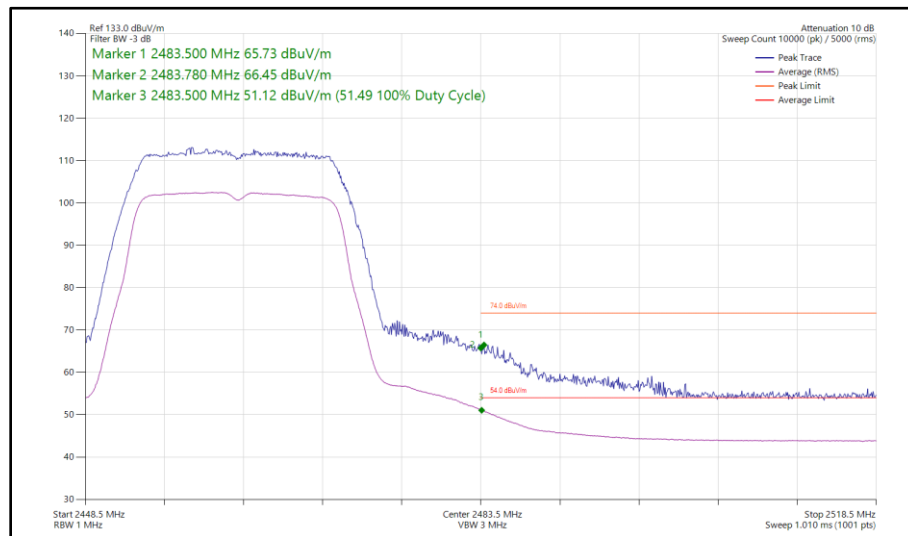
**Figure 24 - 802.11g, SISO, Core 0 - 2472 MHz
Band Edge Frequency 2483.5 MHz**



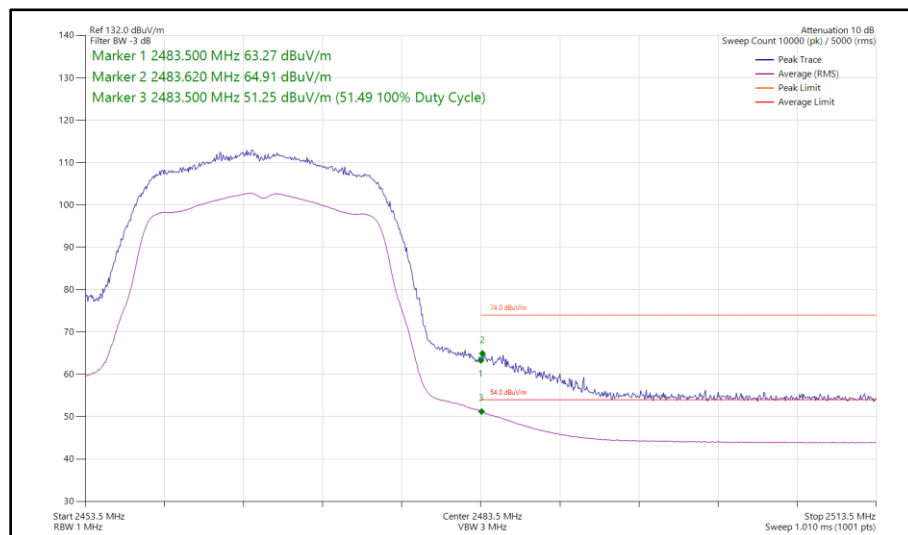
**Figure 25 - 802.11n HT20, SISO, Core 0 - 2452 MHz
Band Edge Frequency 2483.5 MHz**



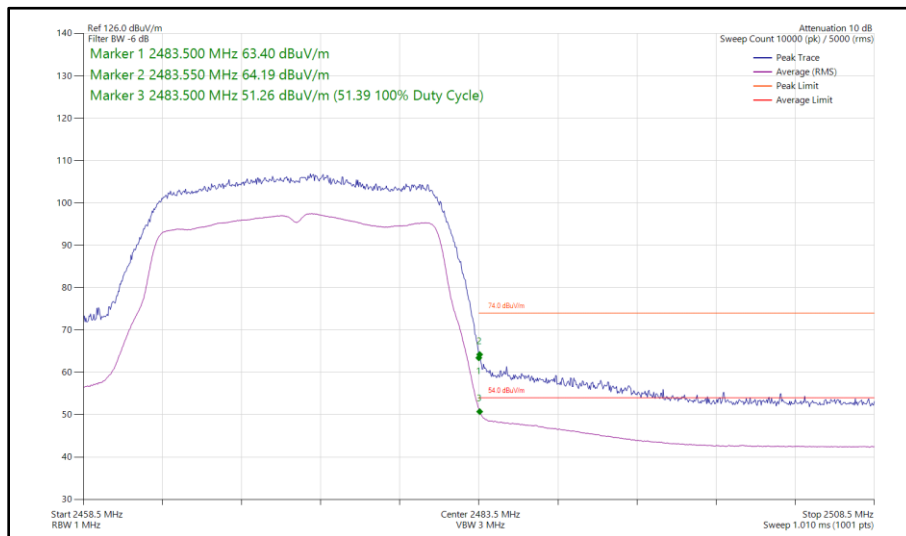
**Figure 26 - 802.11n HT20, SISO, Core 0 - 2457 MHz
Band Edge Frequency 2483.5 MHz**



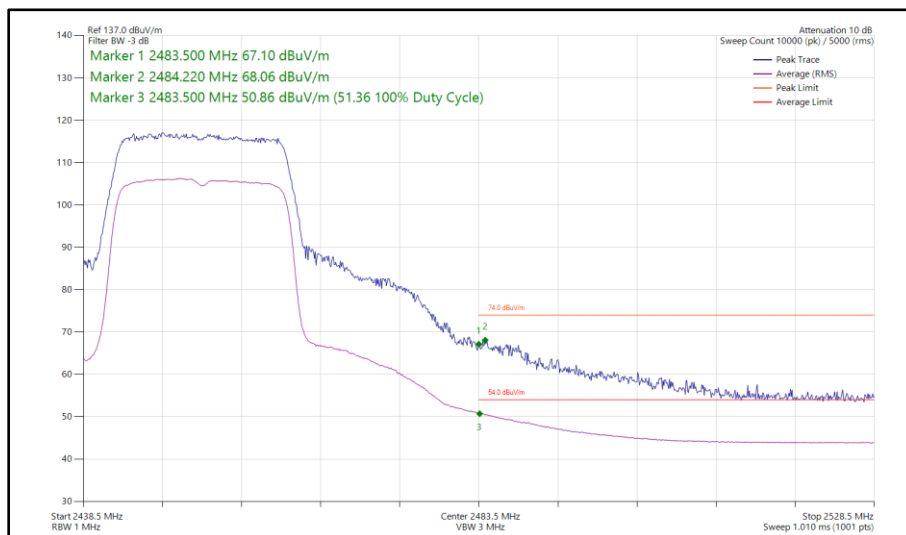
**Figure 27 - 802.11n HT20, SISO, Core 0 - 2462 MHz
Band Edge Frequency 2483.5 MHz**



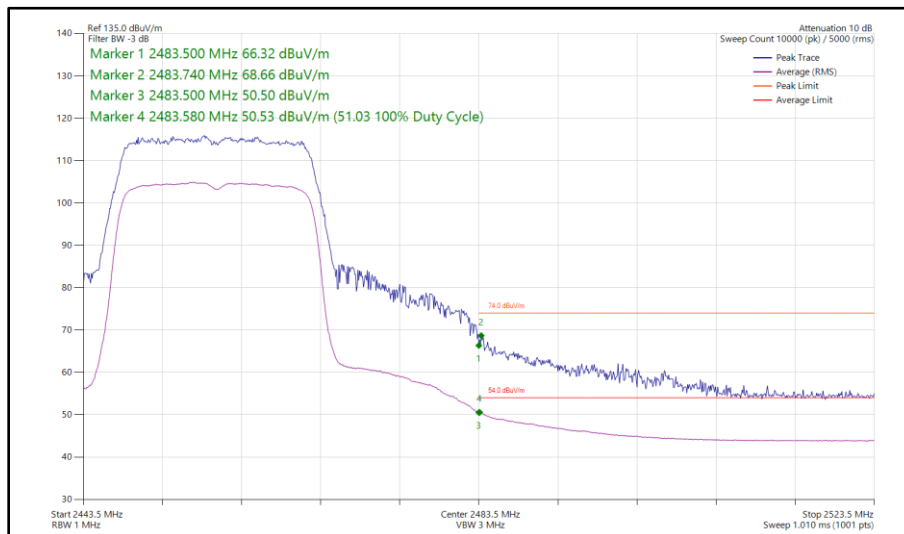
**Figure 28 - 802.11n HT20, SISO, Core 0 - 2467 MHz
Band Edge Frequency 2483.5 MHz**



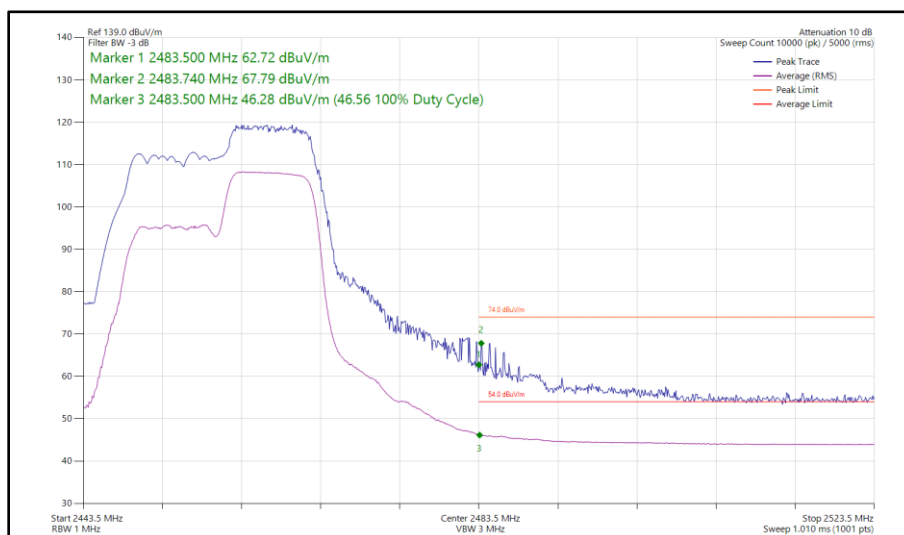
**Figure 29 - 802.11n HT20, SISO, Core 0 - 2472 MHz
Band Edge Frequency 2483.5 MHz**



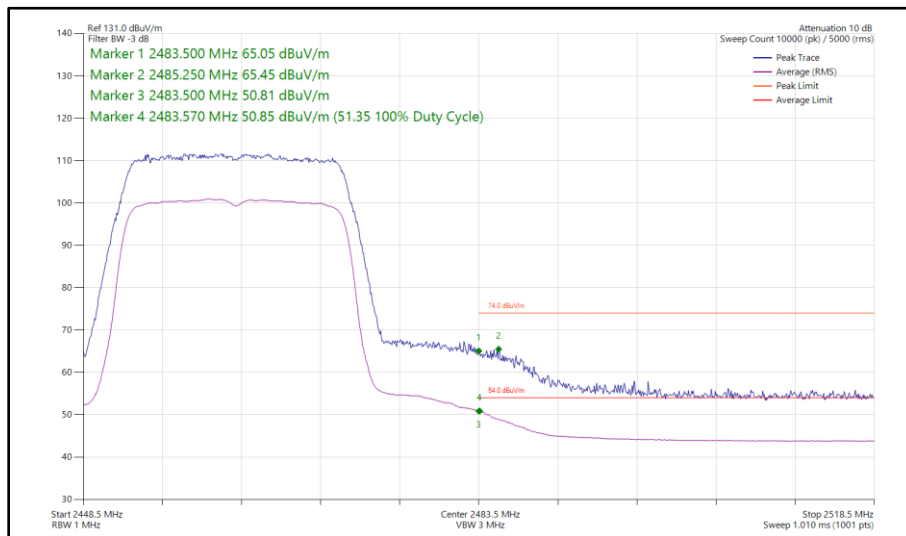
**Figure 30 - 802.11ax HE20, SU, SISO, Core 0 - 2452 MHz
Band Edge Frequency 2483.5 MHz**



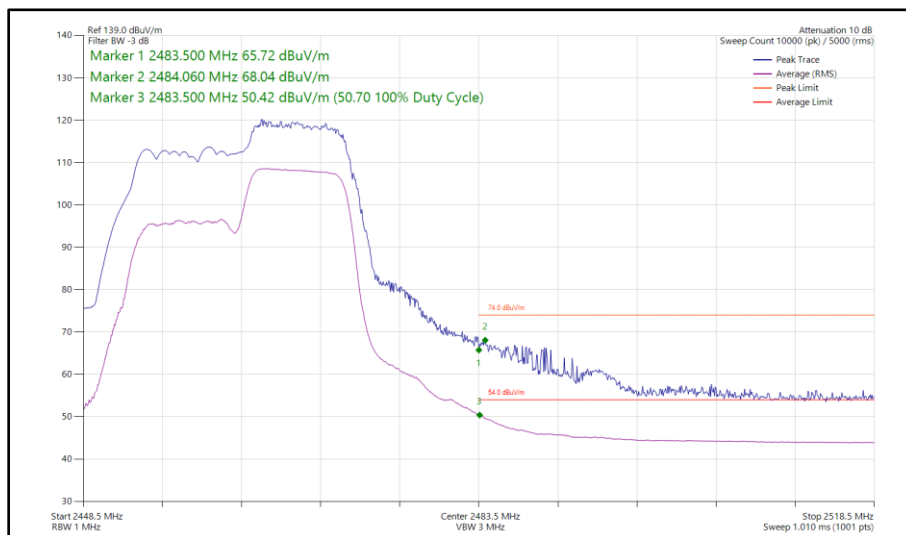
**Figure 31 - 802.11ax HE20, SU, SISO, Core 0 - 2457 MHz
Band Edge Frequency 2483.5 MHz**



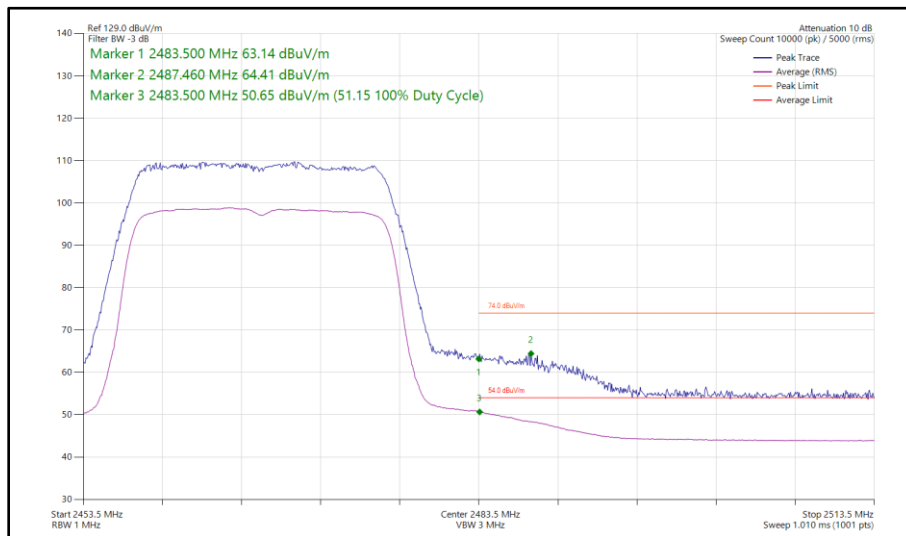
**Figure 32 - 802.11ax HE20, RU 106-54, SISO, Core 0 - 2457 MHz
Band Edge Frequency 2483.5 MHz**



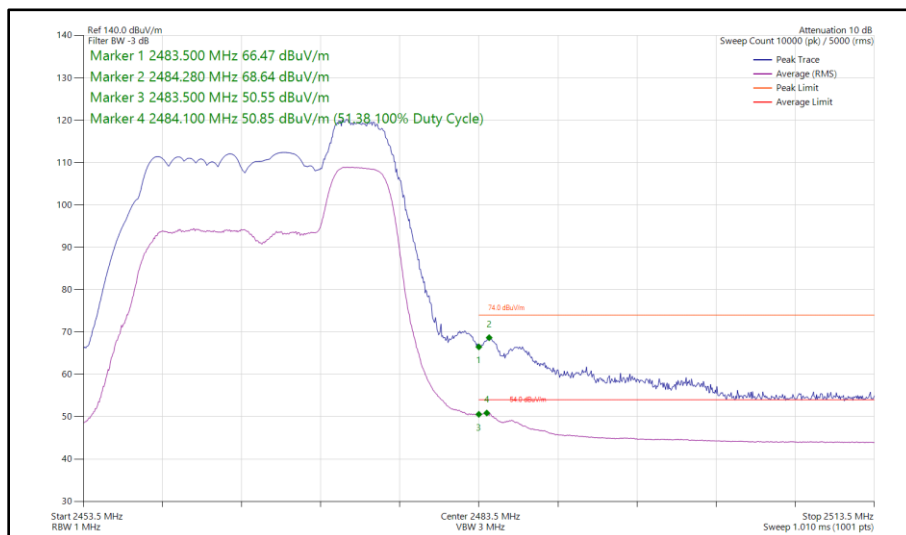
**Figure 33 - 802.11ax HE20, SU, SISO, Core 0 - 2462 MHz
Band Edge Frequency 2483.5 MHz**



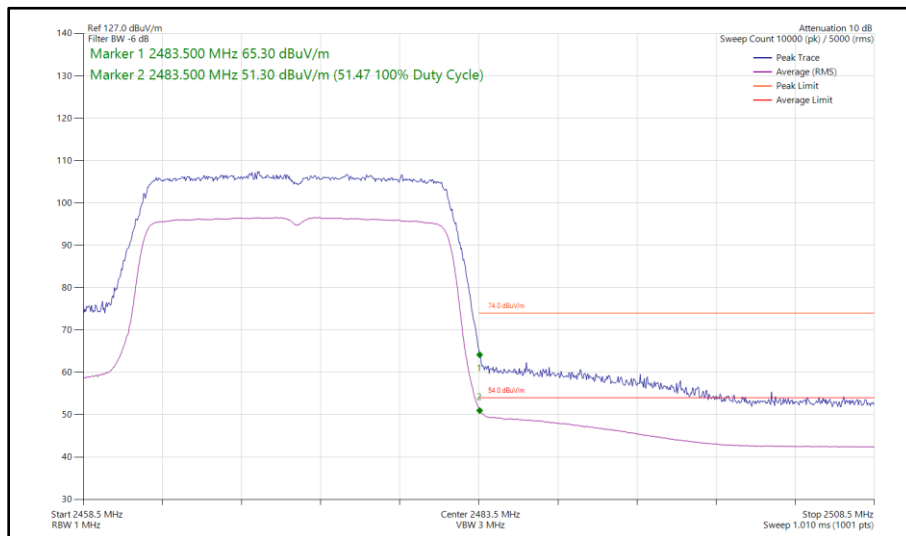
**Figure 34 - 802.11ax HE20, RU 106-54, SISO, Core 0 - 2462 MHz
Band Edge Frequency 2483.5 MHz**



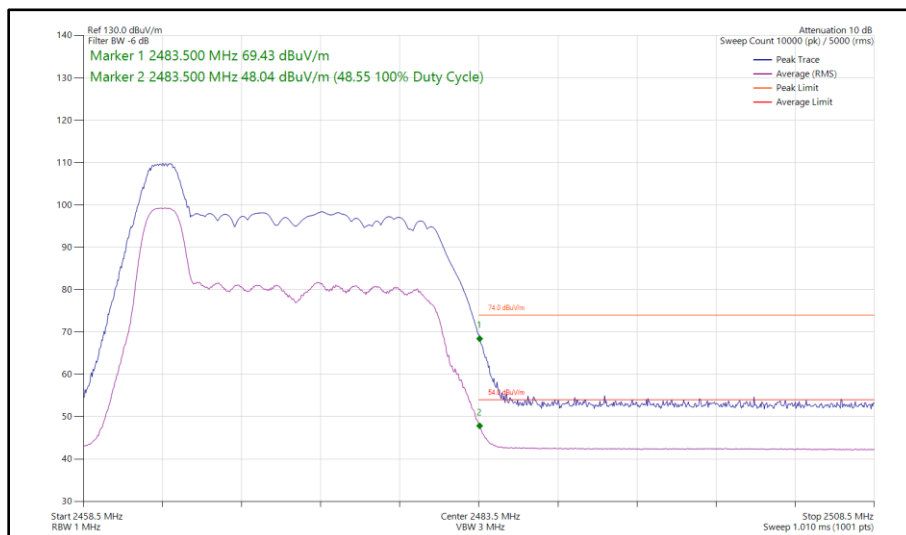
**Figure 35 - 802.11ax HE20, SU, SISO, Core 0 - 2467 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 36 - 802.11ax HE20, RU 52-40, SISO, Core 0 - 2467 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 37 - 802.11ax HE20, SU, SISO, Core 0 - 2472 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 38 - 802.11ax HE20, RU 26-0, SISO, Core 0 - 2472 MHz
Band Edge Frequency 2483.5 MHz**



20 MHz Bandwidth - Core 1 (SISO)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
802.11b	1 Mbps	-	-	2412	2390	59.89	51.39
802.11b	1 Mbps	-	-	2417	2390	59.54	51.01
802.11g	54 Mbps	-	-	2412	2390	65.63	51.20
802.11g	54 Mbps	-	-	2417	2390	69.47	51.45
802.11g	24 Mbps	-	-	2422	2390	69.17	50.10
802.11g	54 Mbps	-	-	2427	2390	69.18	50.92
802.11n HT20	MCS 4	-	-	2412	2390	64.46	51.47
802.11n HT20	MCS 7	-	-	2417	2390	69.11	50.63
802.11n HT20	MCS 4	-	-	2422	2390	68.50	51.34
802.11n HT20	MCS 4	-	-	2427	2390	69.05	49.82
802.11ax HE20	MCS 4x1	SU	-	2412	2390	65.87	51.20
802.11ax HE20	MCS 9x1	106	53	2412	2390	69.17	49.56
802.11ax HE20	MCS 9x1	SU	-	2417	2390	69.10	50.07
802.11ax HE20	MCS 9x1	106	53	2417	2390	66.89	46.87
802.11ax HE20	MCS 2x1	SU	-	2422	2390	64.38	51.04
802.11ax HE20	MCS 2x1	SU	-	2427	2390	69.06	50.62
802.11b	1 Mbps	-	-	2462	2483.5	59.32	50.32
802.11b	1 Mbps	-	-	2467	2483.5	60.67	51.16
802.11b	1 Mbps	-	-	2472	2483.5	59.39	51.17
802.11g	54 Mbps	-	-	2452	2483.5	67.51	50.99
802.11g	24 Mbps	-	-	2457	2483.5	66.67	51.41
802.11g	54 Mbps	-	-	2462	2483.5	68.75	51.38
802.11g	12 Mbps	-	-	2467	2483.5	64.21	51.49
802.11g	24 Mbps	-	-	2472	2483.5	64.08	51.15
802.11n HT20	MCS 7	-	-	2452	2483.5	68.71	50.97
802.11n HT20	MCS 4	-	-	2457	2483.5	66.56	51.34
802.11n HT20	MCS 7	-	-	2462	2483.5	65.76	51.25
802.11n HT20	MCS 2	-	-	2467	2483.5	63.33	51.18
802.11n HT20	MCS 2	-	-	2472	2483.5	64.42	51.00
802.11ax HE20	MCS 9x1	SU	-	2452	2483.5	67.86	51.01
802.11ax HE20	MCS 2x1	SU	-	2457	2483.5	66.91	51.34
802.11ax HE20	MCS 9x1	106	54	2457	2483.5	68.98	46.89
802.11ax HE20	MCS 9x1	SU	-	2462	2483.5	65.73	51.48
802.11ax HE20	MCS 9x1	106	54	2462	2483.5	68.73	49.91
802.11ax HE20	MCS 2x1	SU	-	2467	2483.5	63.42	51.42
802.11ax HE20	MCS 9x1	106	54	2467	2483.5	63.59	51.49
802.11ax HE20	MCS 9x1	SU	-	2472	2483.5	66.55	51.02
802.11ax HE20	MCS 9x1	26	0	2472	2483.5	69.44	48.61

Table 9 - SISO Restricted Band Edge Results

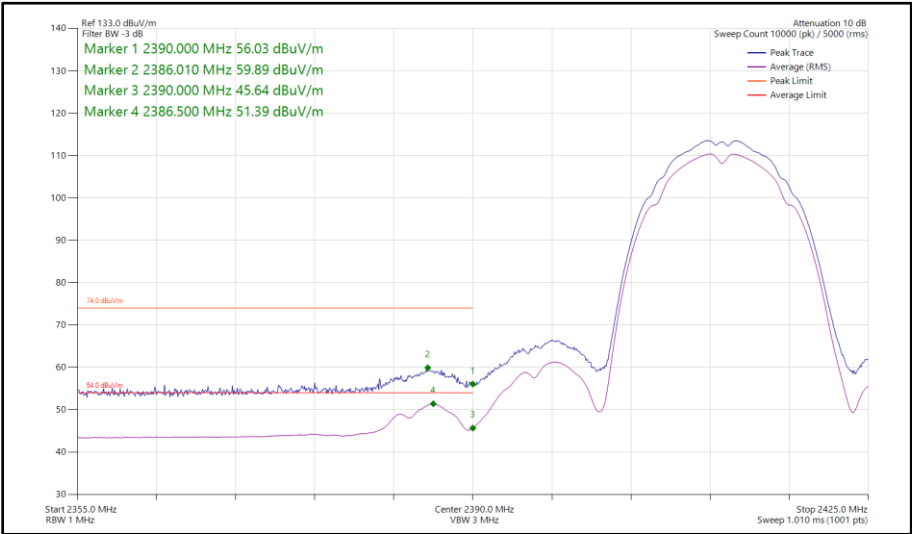


Figure 39 - 802.11b, SISO, Core 1 - 2412 MHz
Band Edge Frequency 2390 MHz

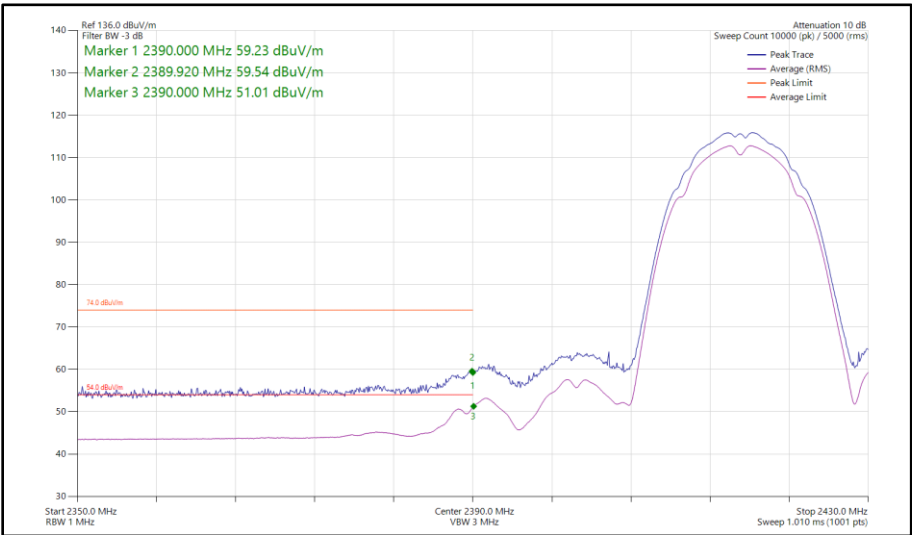


Figure 40 - 802.11b, SISO, Core 1 - 2417 MHz
Band Edge Frequency 2390 MHz

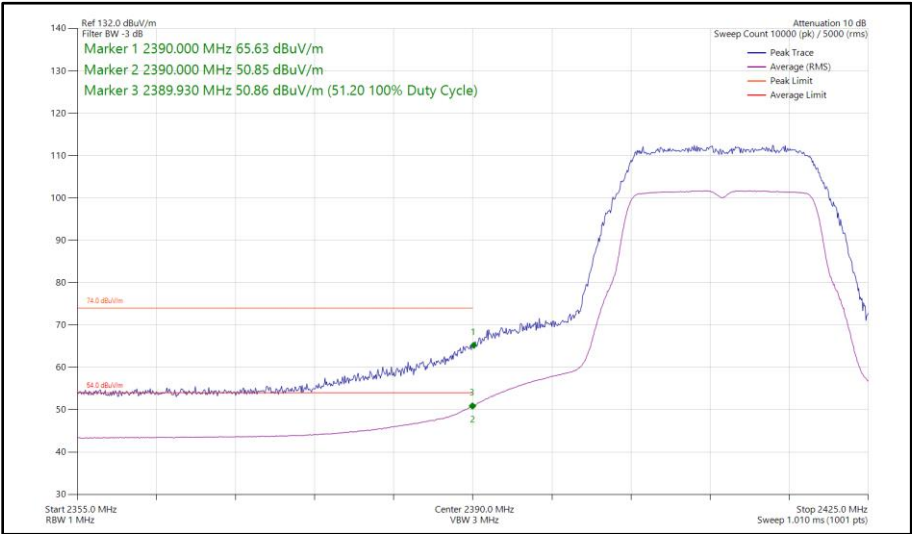


Figure 41 - 802.11g, SISO, Core 1 - 2412 MHz
Band Edge Frequency 2390 MHz

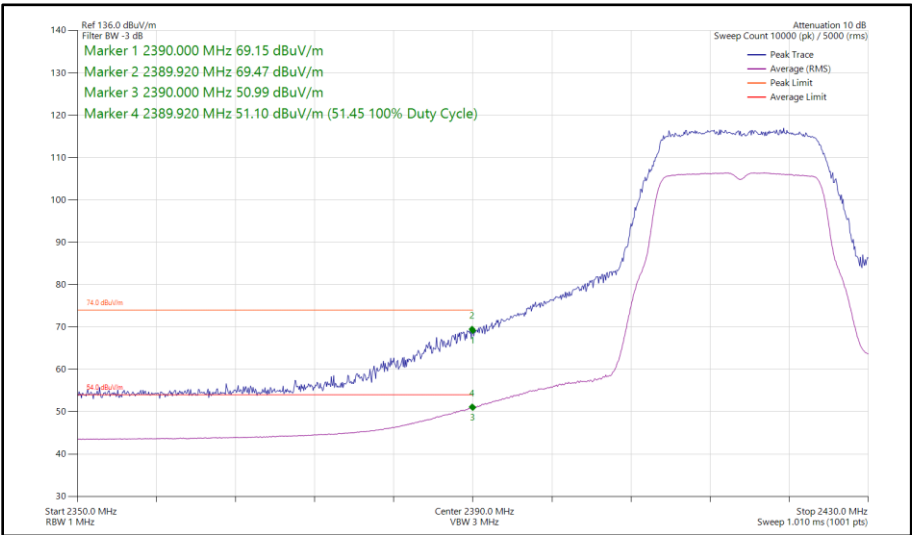
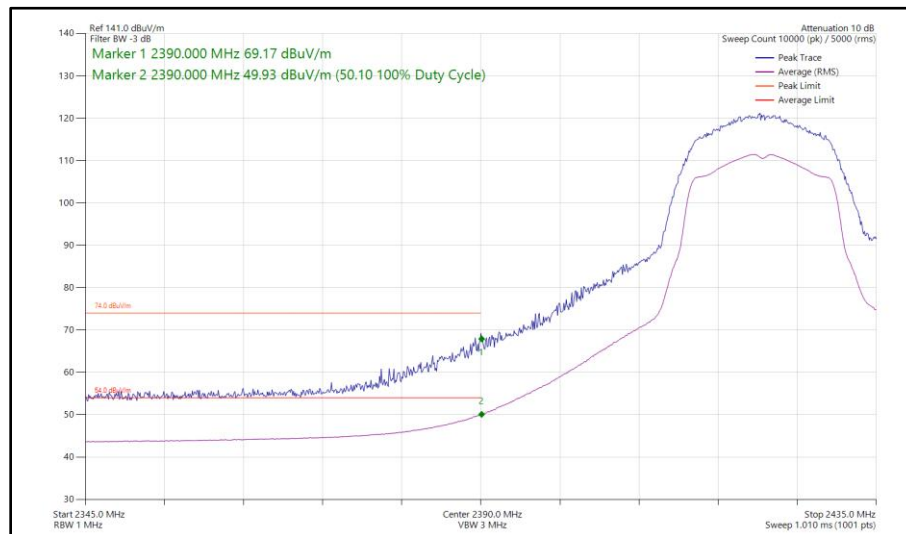
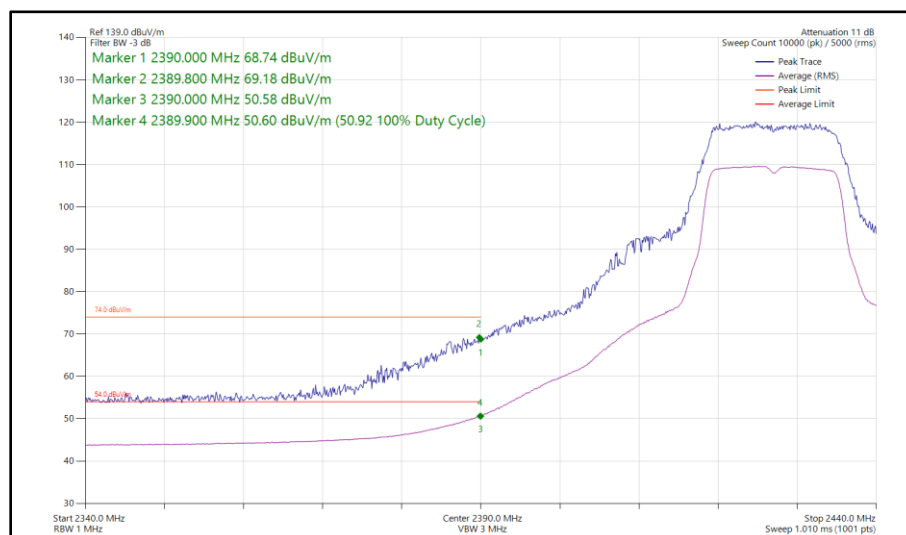


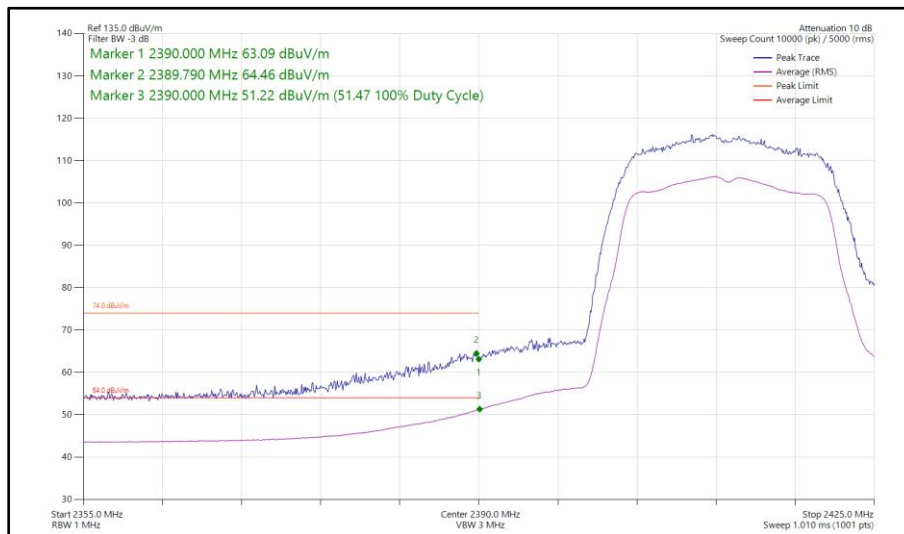
Figure 42 - 802.11g, SISO, Core 1 - 2417 MHz
Band Edge Frequency 2390 MHz



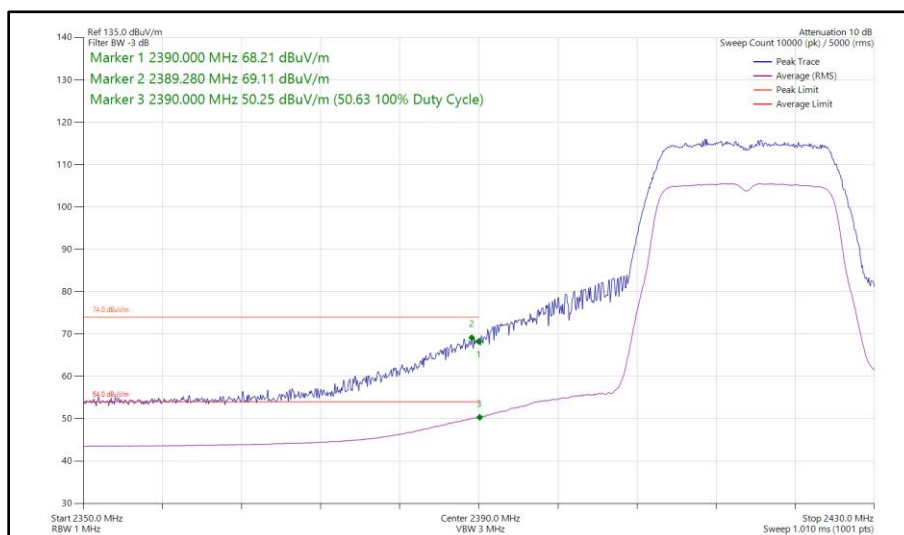
**Figure 43 - 802.11g, SISO, Core 1 - 2422 MHz
Band Edge Frequency 2390 MHz**



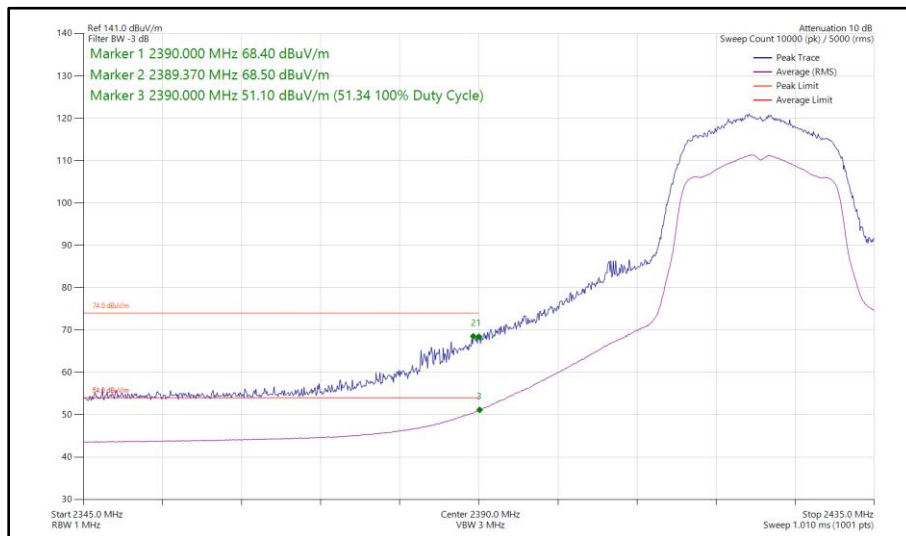
**Figure 44 - 802.11g, SISO, Core 1 - 2427 MHz
Band Edge Frequency 2390 MHz**



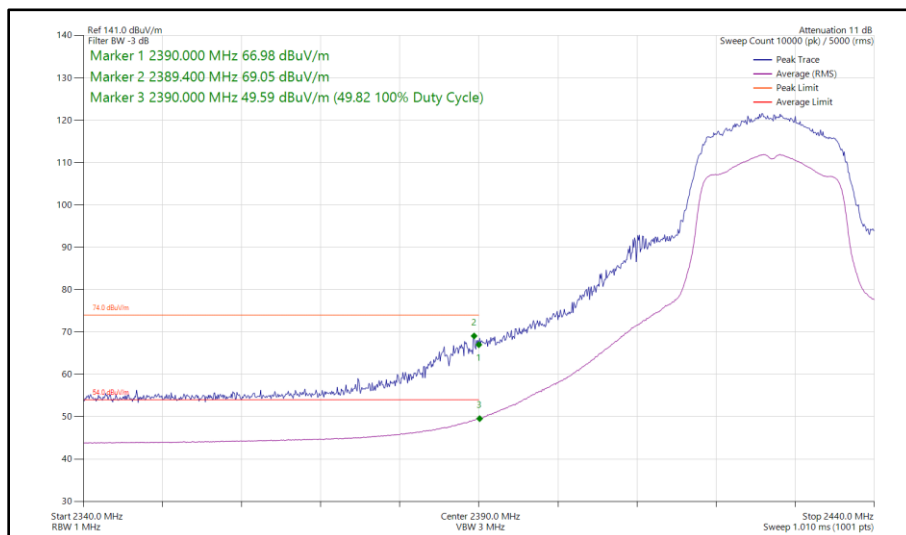
**Figure 45 - 802.11n HT20, SISO, Core 1 - 2412 MHz
Band Edge Frequency 2390 MHz**



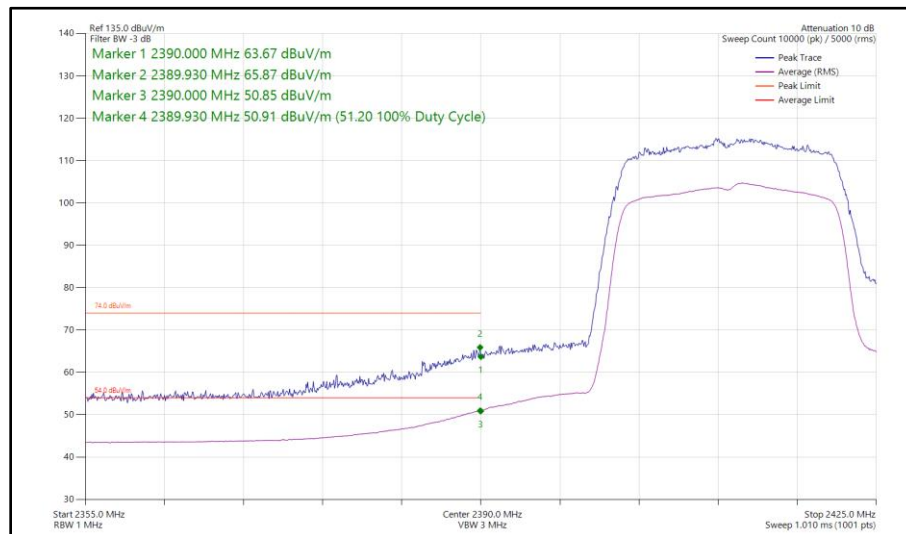
**Figure 46 - 802.11n HT20, SISO, Core 1 - 2417 MHz
Band Edge Frequency 2390 MHz**



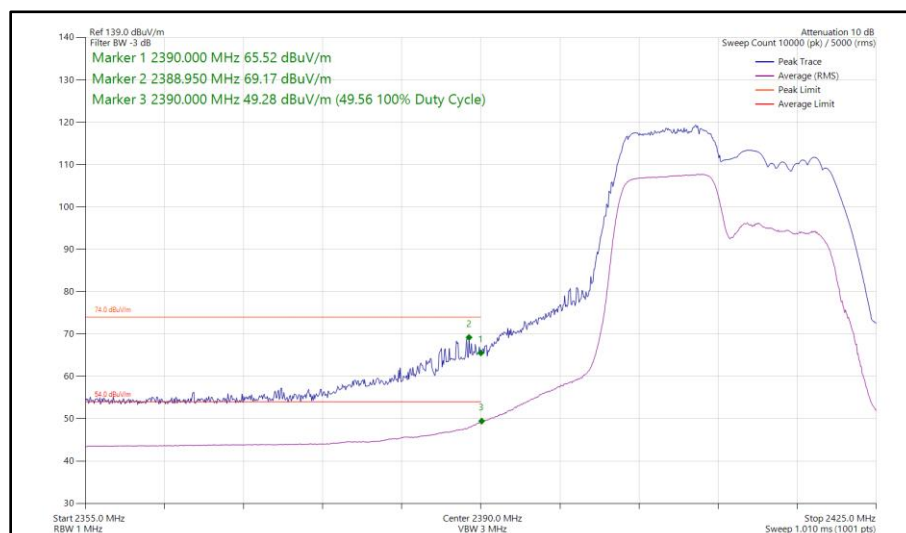
**Figure 47 - 802.11n HT20, SISO, Core 1 - 2422 MHz
Band Edge Frequency 2390 MHz**



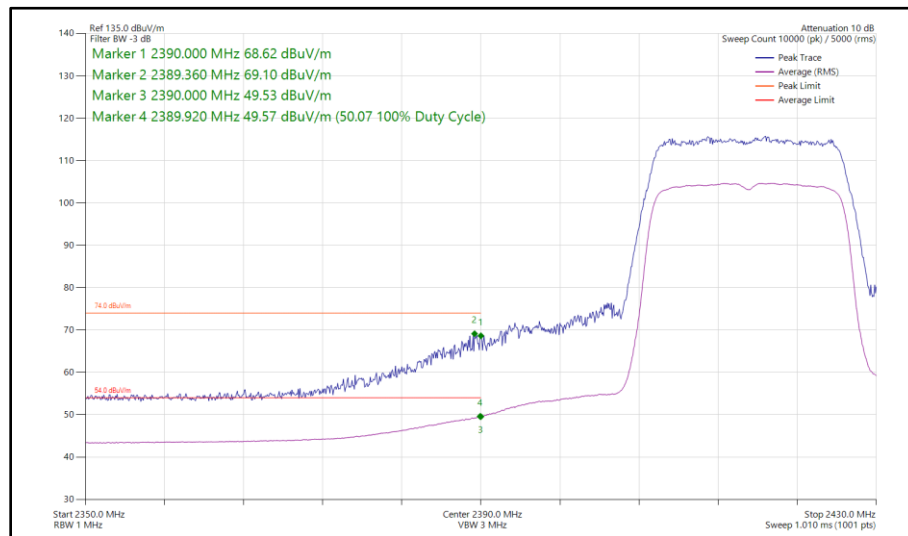
**Figure 48 - 802.11n HT20, SISO, Core 1 - 2427 MHz
Band Edge Frequency 2390 MHz**



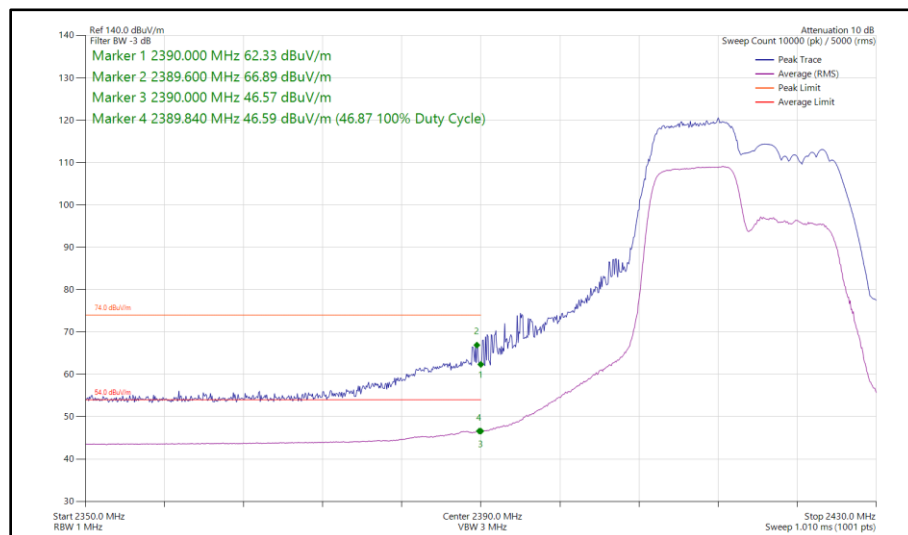
**Figure 49 - 802.11ax HE20, SU, SISO, Core 1 - 2412 MHz
Band Edge Frequency 2390 MHz**



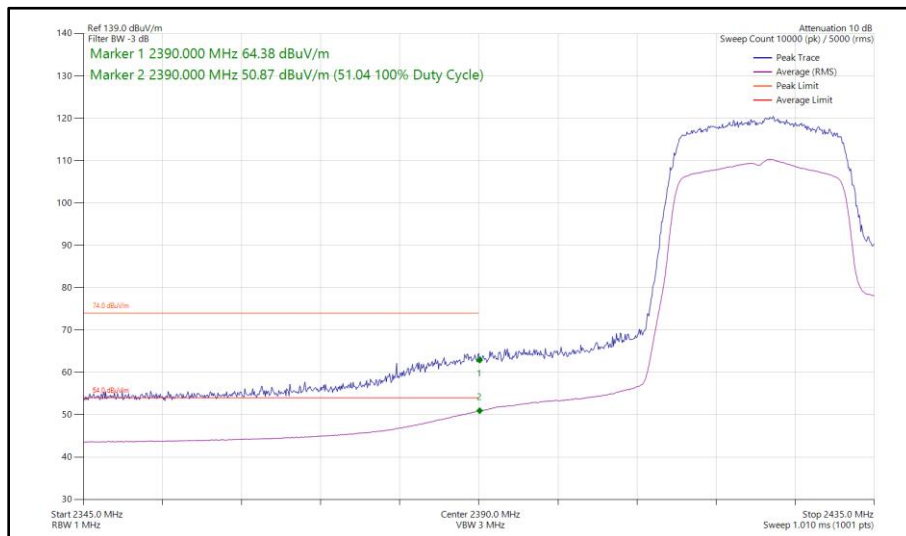
**Figure 50 - 802.11ax HE20, RU 106-53, SISO, Core 1 - 2412 MHz
Band Edge Frequency 2390 MHz**



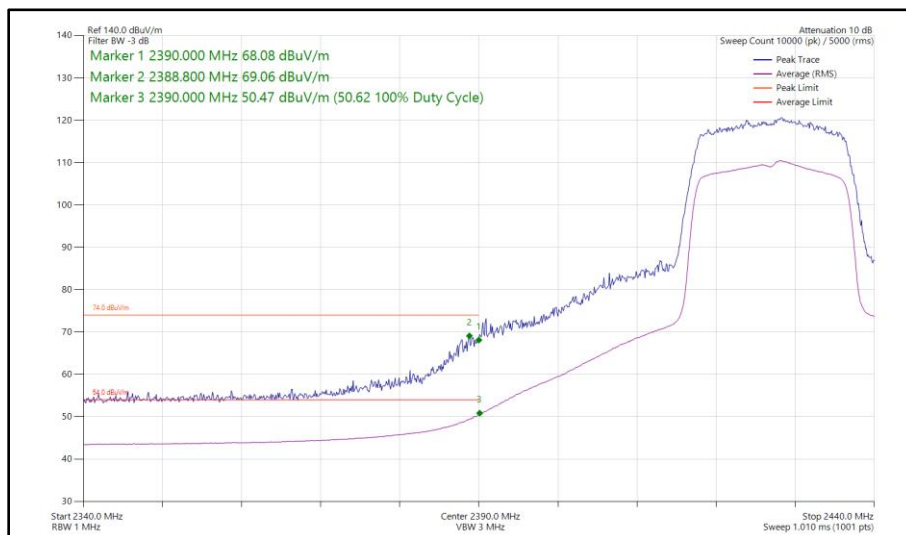
**Figure 51 - 802.11ax HE20, SU, SISO, Core 1 - 2417 MHz
Band Edge Frequency 2390 MHz**



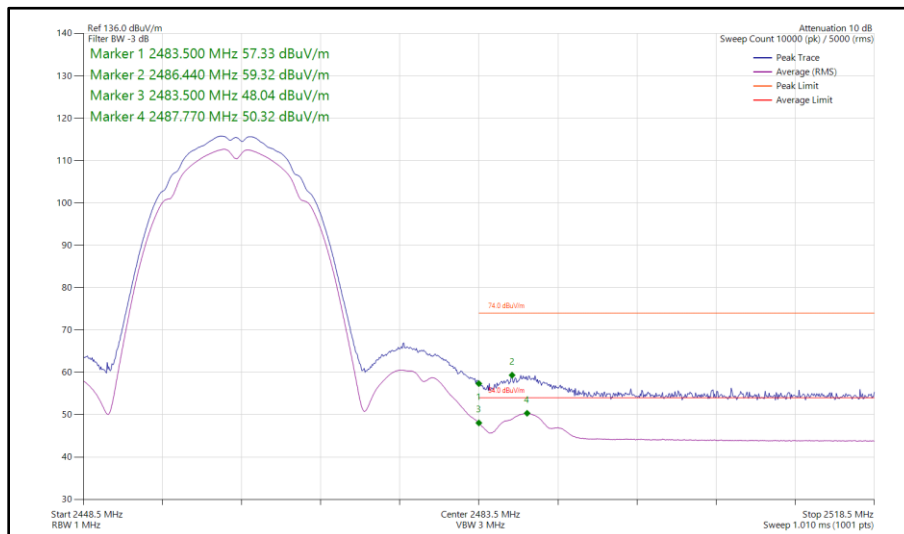
**Figure 52 - 802.11ax HE20, RU 106-53, SISO, Core 1 - 2417 MHz
Band Edge Frequency 2390 MHz**



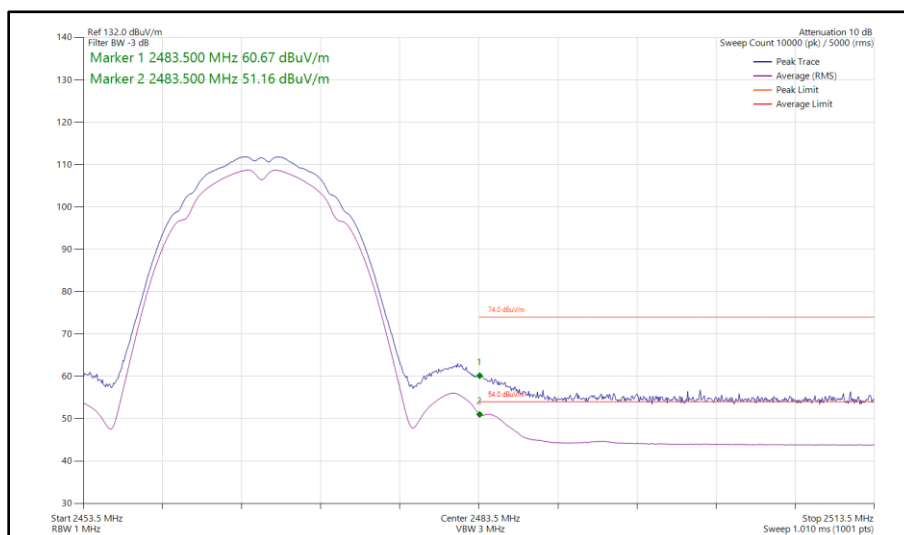
**Figure 53 - 802.11ax HE20, SU, SISO, Core 1 - 2422 MHz
Band Edge Frequency 2390 MHz**



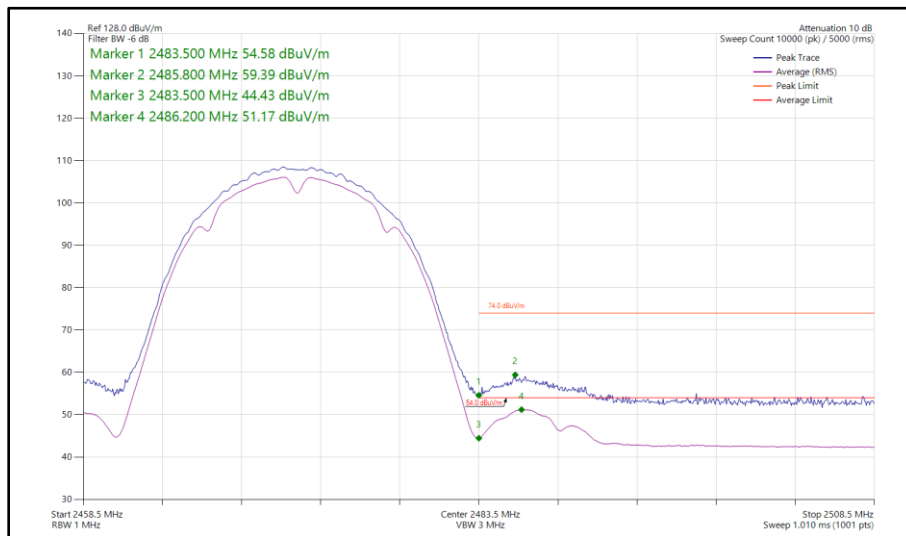
**Figure 54 - 802.11ax HE20, SU, SISO, Core 1 - 2427 MHz
Band Edge Frequency 2390 MHz**



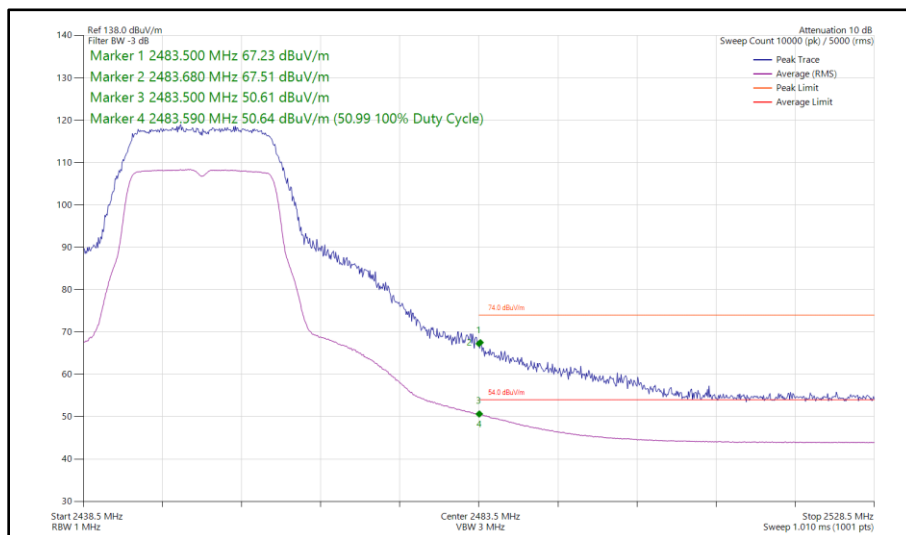
**Figure 55 - 802.11b, SISO, Core 1 - 2462 MHz
Band Edge Frequency 2483.5 MHz**



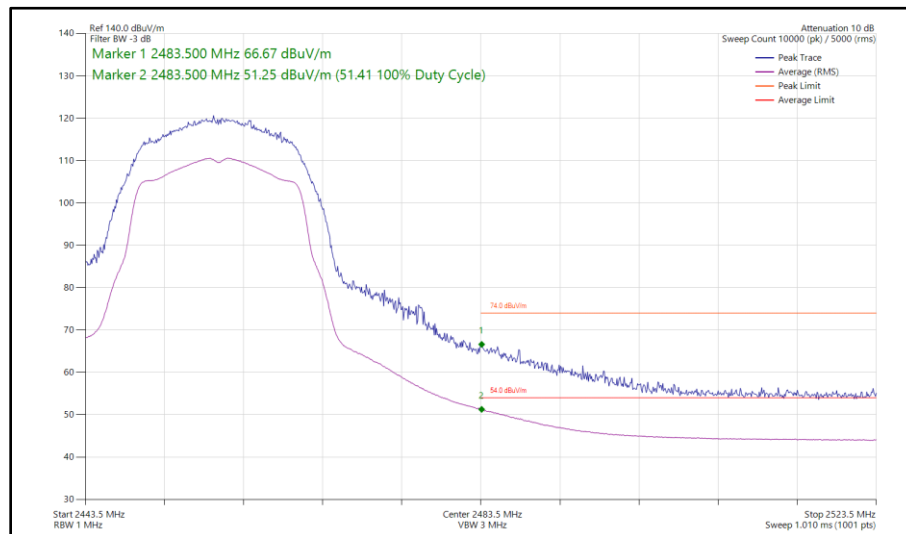
**Figure 56 - 802.11b, SISO, Core 1 - 2467 MHz
Band Edge Frequency 2483.5 MHz**



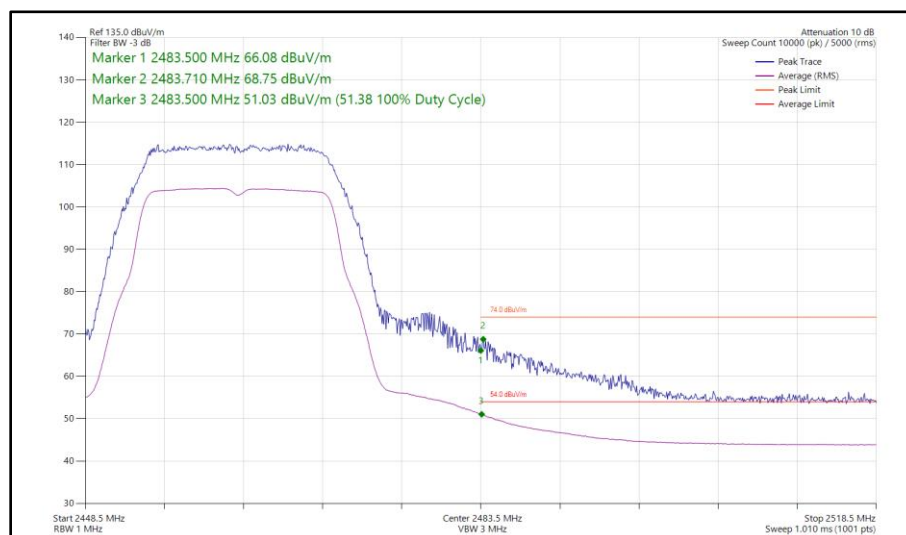
**Figure 57 - 802.11b, SISO, Core 1 - 2472 MHz
Band Edge Frequency 2483.5 MHz**



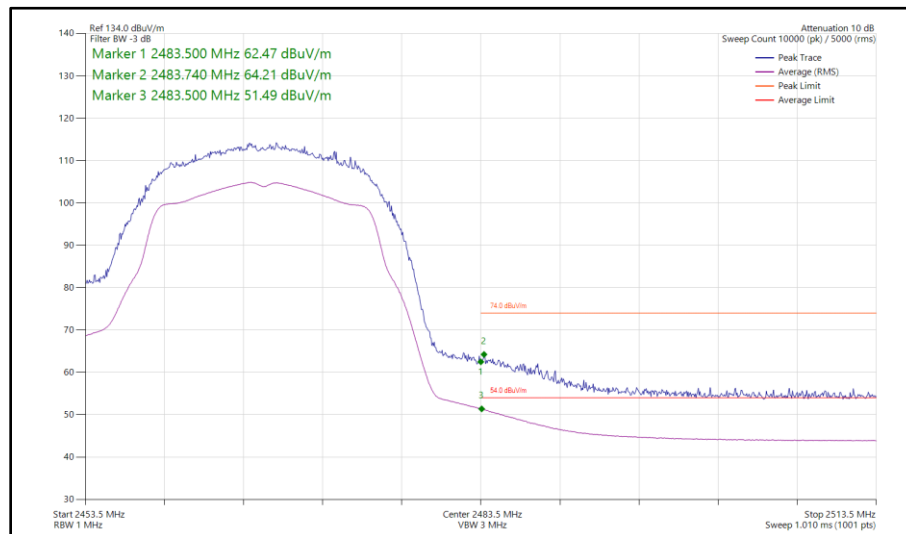
**Figure 58 - 802.11g, SISO, Core 1 - 2452 MHz
Band Edge Frequency 2483.5 MHz**



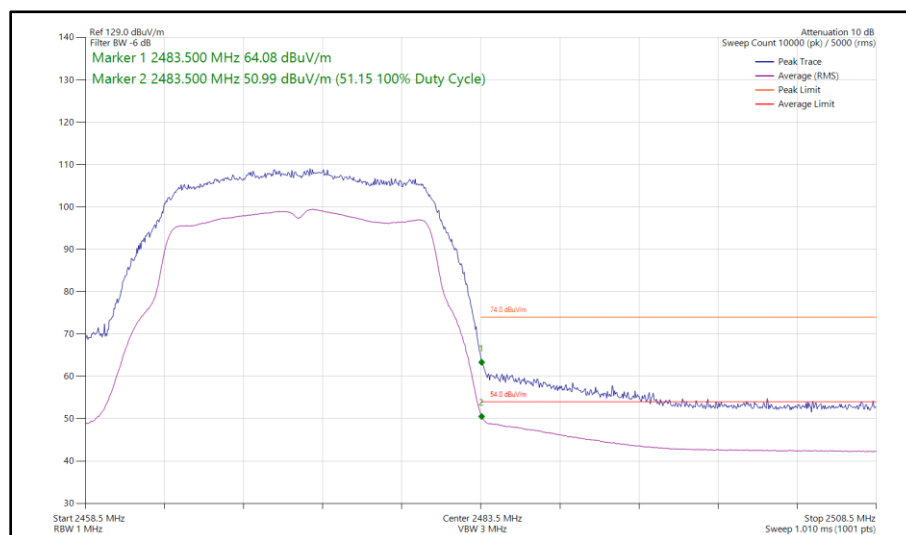
**Figure 59 - 802.11g, SISO, Core 1 - 2457 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 60 - 802.11g, SISO, Core 1 - 2462 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 61 - 802.11g, SISO, Core 1 - 2467 MHz
Band Edge Frequency 2483.5 MHz**



**Figure 62 - 802.11g, SISO, Core 1 - 2472 MHz
Band Edge Frequency 2483.5 MHz**

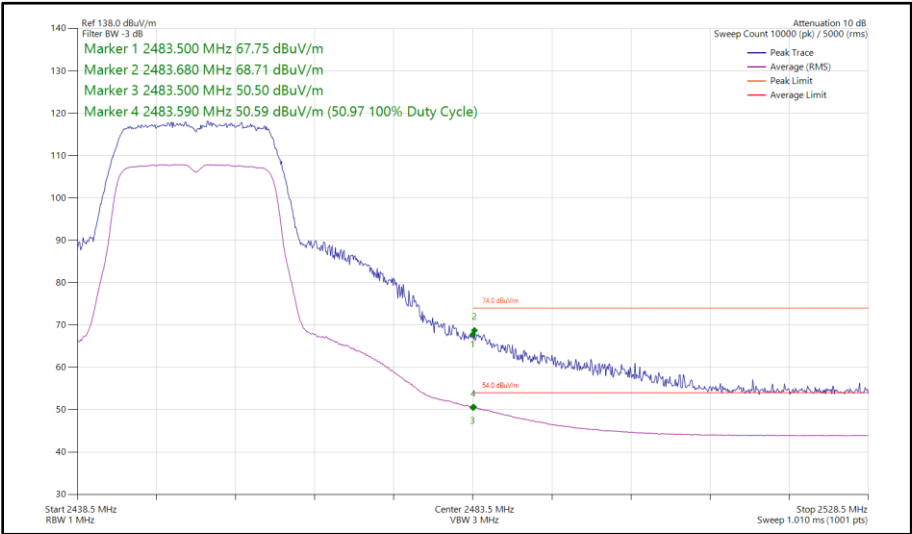


Figure 63 - 802.11n HT20, SISO, Core 1 - 2452 MHz
Band Edge Frequency 2483.5 MHz

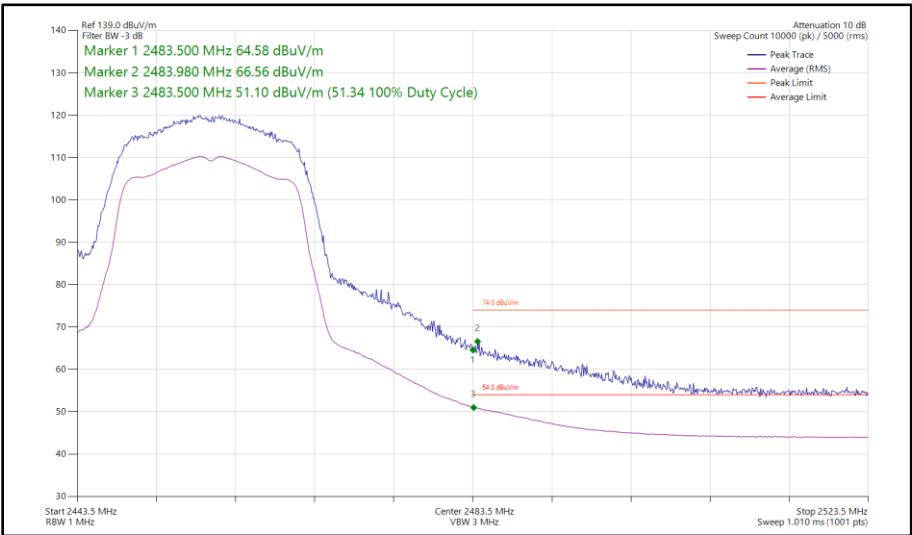


Figure 64 - 802.11n HT20, SISO, Core 1 - 2457 MHz
Band Edge Frequency 2483.5 MHz

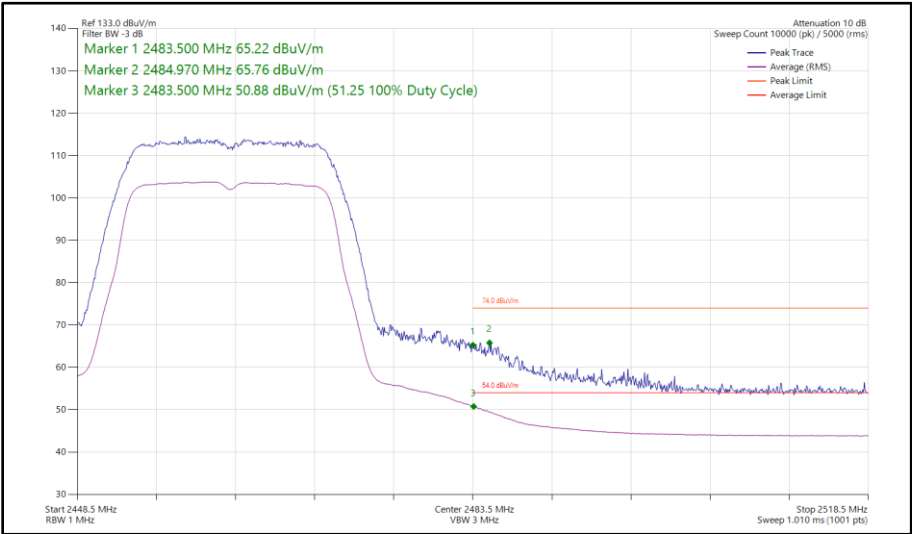


Figure 65 - 802.11n HT20, SISO, Core 1 - 2462 MHz
Band Edge Frequency 2483.5 MHz

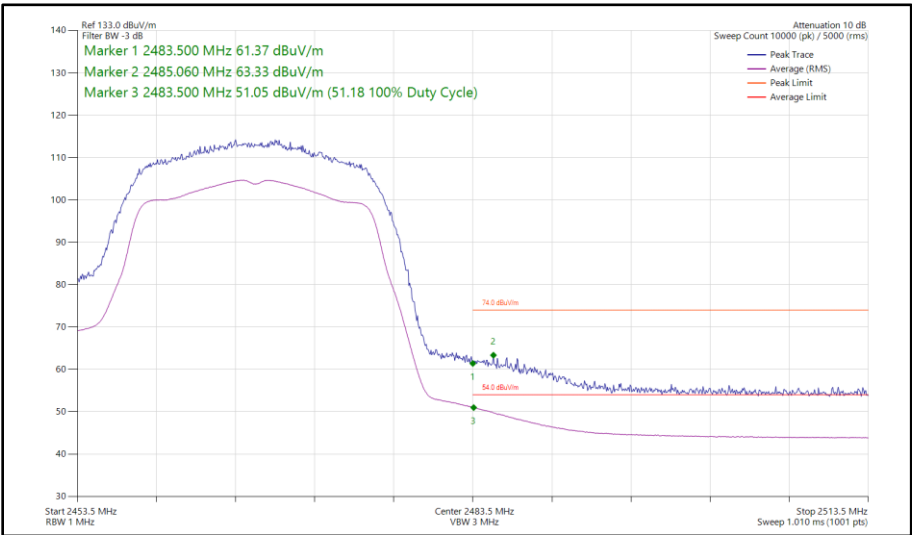


Figure 66 - 802.11n HT20, SISO, Core 1 - 2467 MHz
Band Edge Frequency 2483.5 MHz