

# 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  
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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.



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### ACCREDITATION

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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           | 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<br>ISED RSS-247: Issue 3 (2023-08)<br>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,<br>Jamal Imoro Abubakar, Thomas Randall, Vineeth Nagaraj,<br>Colin Brain and Tony Baby |
| Related Document(s)           | ANSI C63.10 (2020)<br>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)<br>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)<br>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,<br>Jamal Imoro Abubakar, Thomas<br>Randall and Vineeth Nagaraj   | UKAS          |
| Authorised Band Edges                | Akhil Rajendran Bhaskaran Nair,<br>Jamal Imoro Abubakar, Thomas<br>Randall and Vineeth Nagaraj   | UKAS          |
| Spurious Radiated Emissions          | Akhil Rajendran Bhaskaran Nair,<br>Colin Brain, Thomas Randall, Tony<br>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 $\mu$ V/m to  $\mu$ 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

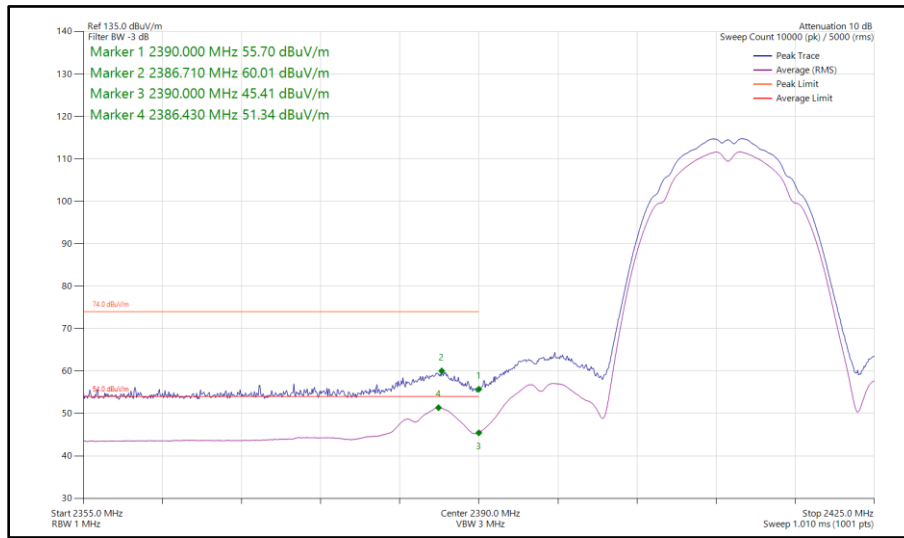
### 2.4 GHz WLAN

#### 20 MHz Bandwidth - Core 0 (SISO)

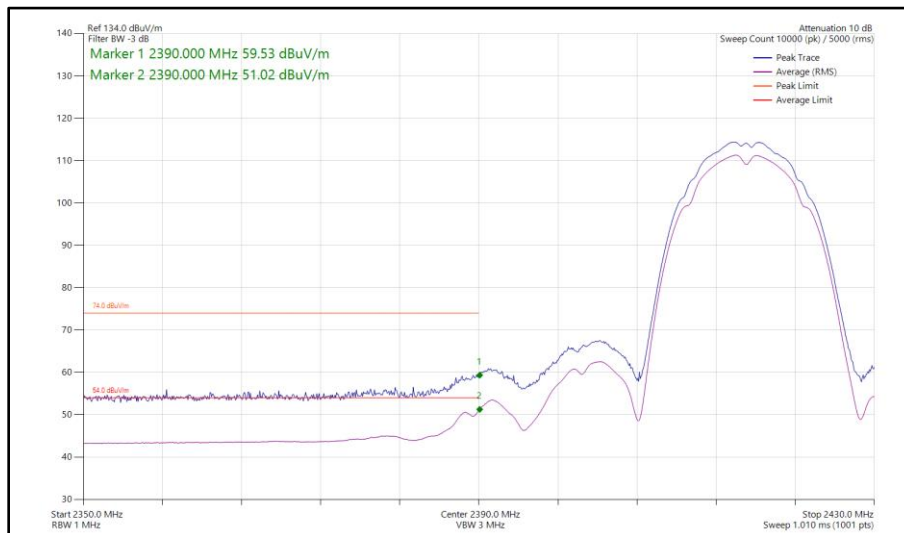
| Mode          | Data Rate/<br>MCS | Resource<br>Size | Resource<br>Index | TX<br>Frequency<br>(MHz) | Band Edge<br>Frequency<br>(MHz) | Peak Level<br>(dBμV/m) | Average<br>Level<br>(dBμV/m) |
|---------------|-------------------|------------------|-------------------|--------------------------|---------------------------------|------------------------|------------------------------|
| 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/<br>MCS | Resource<br>Size | Resource<br>Index | TX<br>Frequency<br>(MHz) | Band Edge<br>Frequency<br>(MHz) | Peak Level<br>(dBμV/m) | Average<br>Level<br>(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                        |

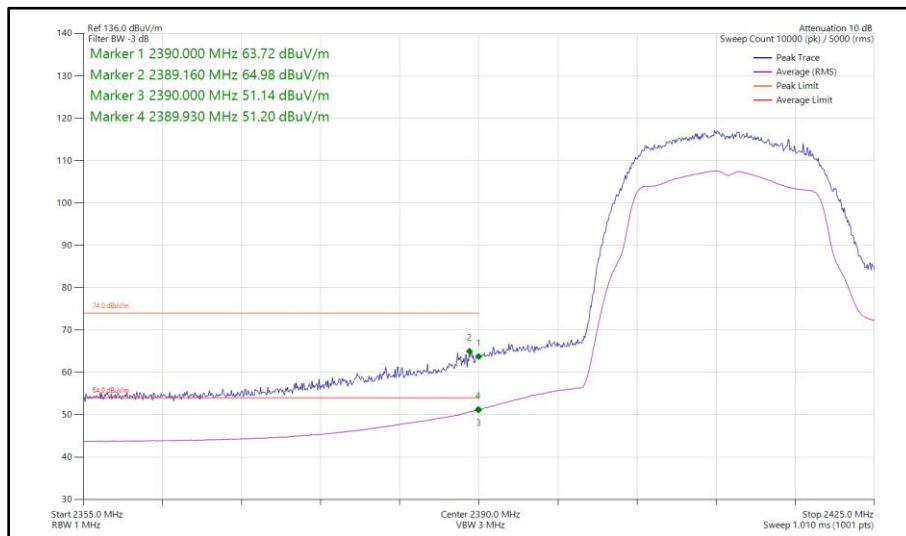
**Table 8 - SISO Restricted Band Edge Results**



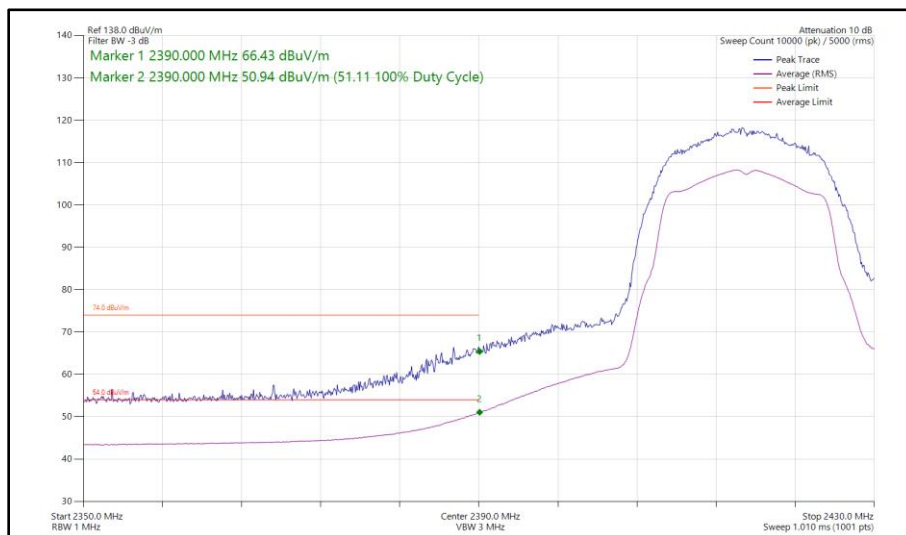
**Figure 1 - 802.11b, SISO, Core 0 - 2412 MHz  
Band Edge Frequency 2390 MHz**



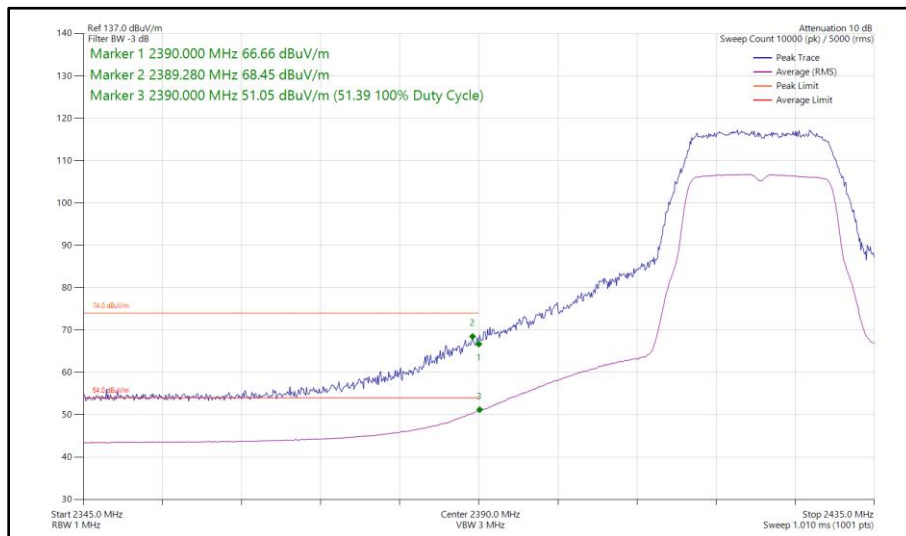
**Figure 2 - 802.11b, SISO, Core 0 - 2417 MHz  
Band Edge Frequency 2390 MHz**



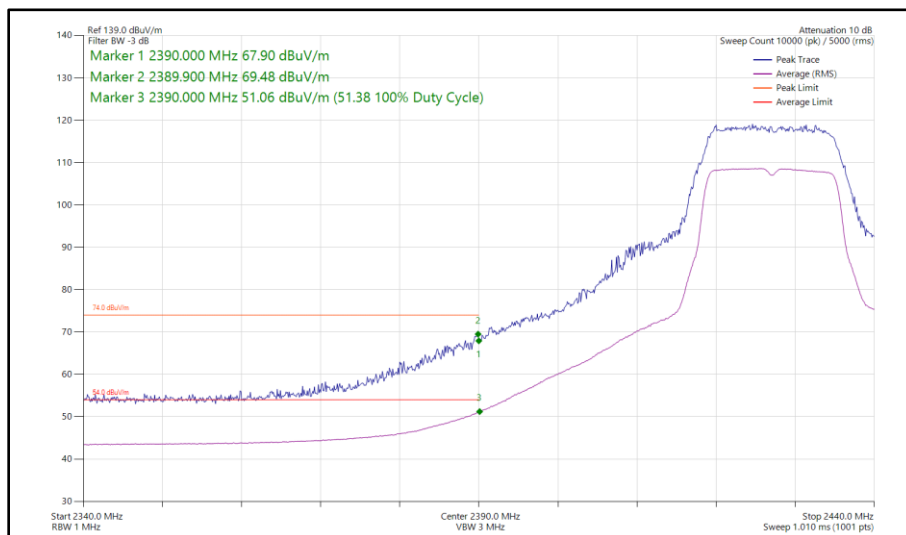
**Figure 3 - 802.11g, SISO, Core 0 - 2412 MHz  
Band Edge Frequency 2390 MHz**



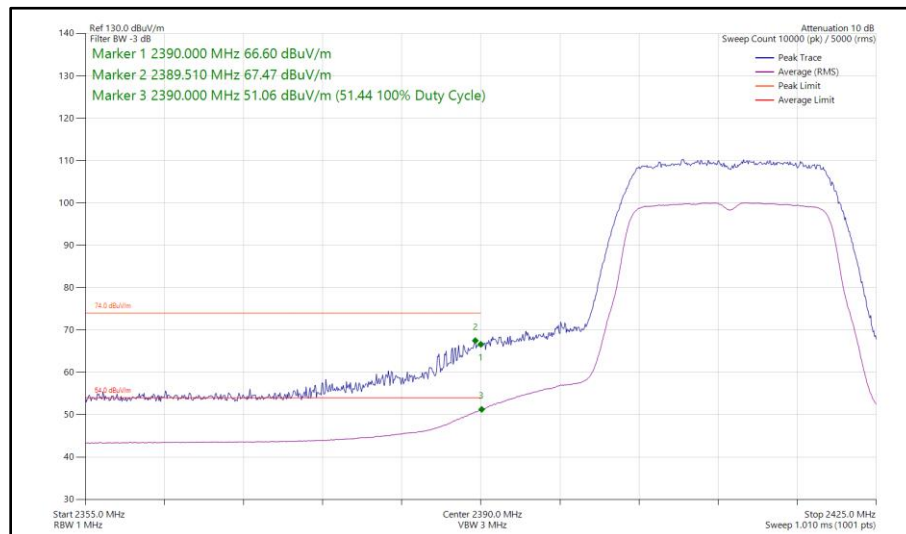
**Figure 4 - 802.11g, SISO, Core 0 - 2417 MHz  
Band Edge Frequency 2390 MHz**



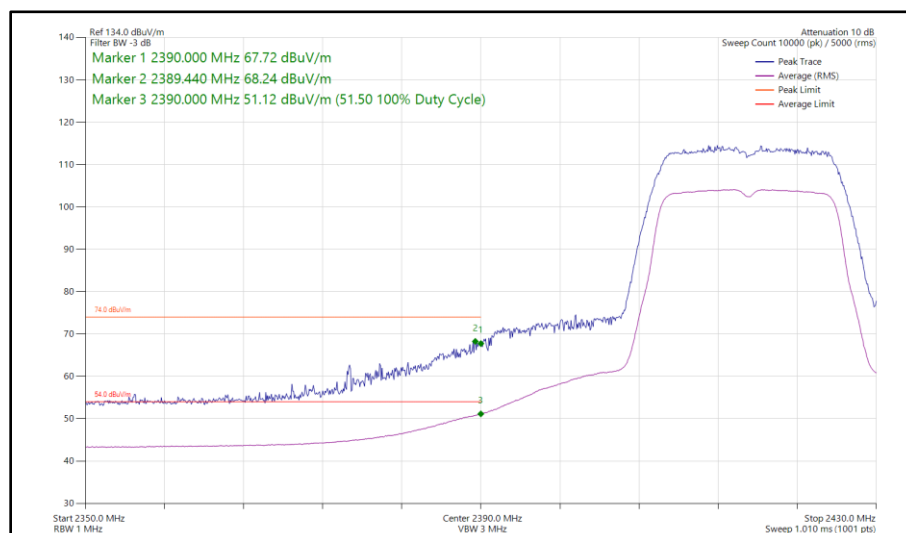
**Figure 5 - 802.11g, SISO, Core 0 - 2422 MHz  
Band Edge Frequency 2390 MHz**



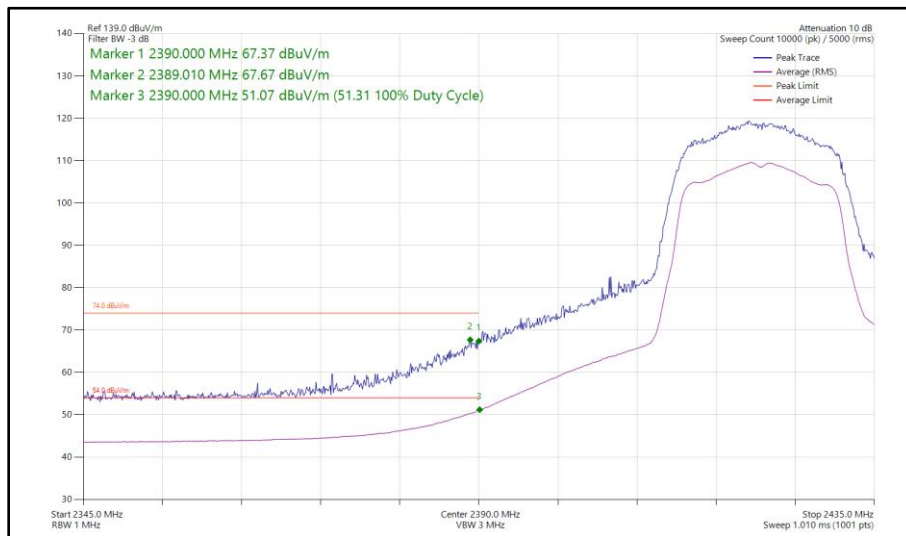
**Figure 6 - 802.11g, SISO, Core 0 - 2427 MHz  
Band Edge Frequency 2390 MHz**



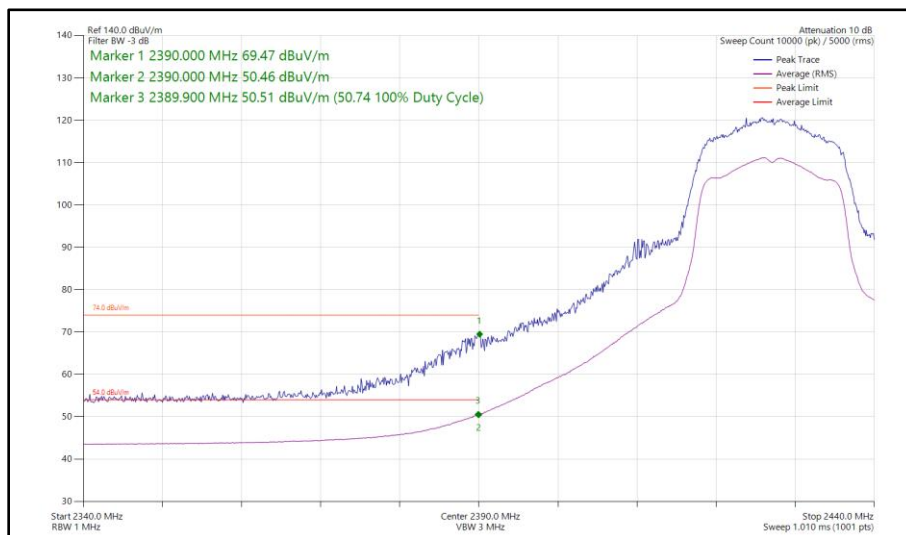
**Figure 7 - 802.11n HT20, SISO, Core 0 - 2412 MHz  
Band Edge Frequency 2390 MHz**



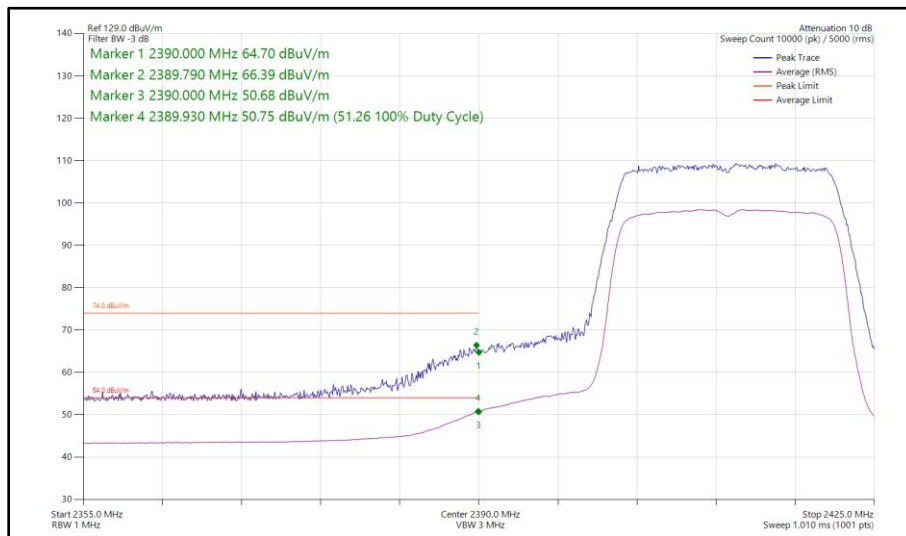
**Figure 8 - 802.11n HT20, SISO, Core 0 - 2417 MHz  
Band Edge Frequency 2390 MHz**



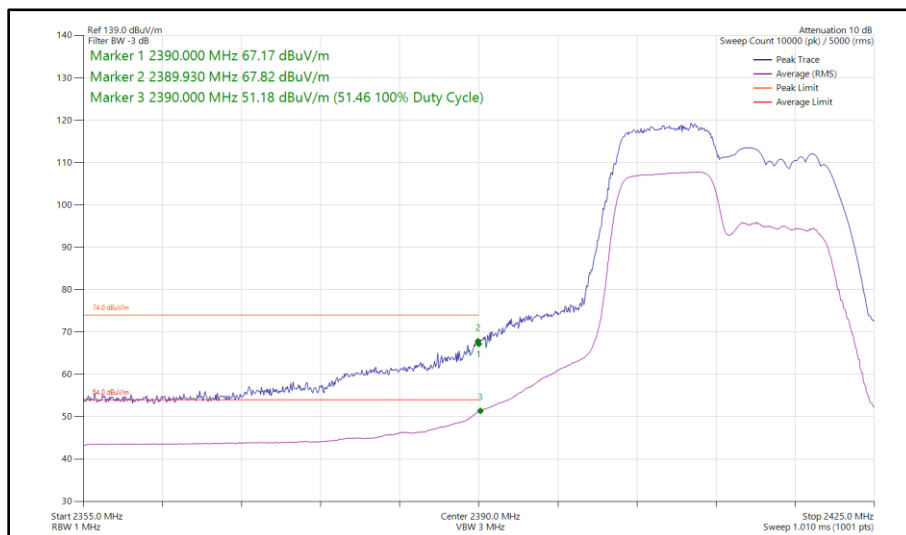
**Figure 9 - 802.11n HT20, SISO, Core 0 - 2422 MHz  
Band Edge Frequency 2390 MHz**



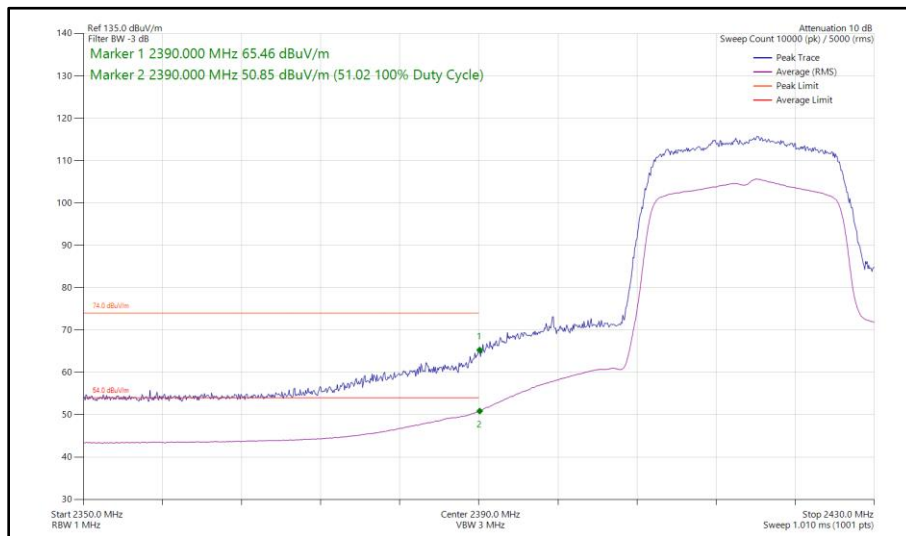
**Figure 10 - 802.11n HT20, SISO, Core 0 - 2427 MHz  
Band Edge Frequency 2390 MHz**



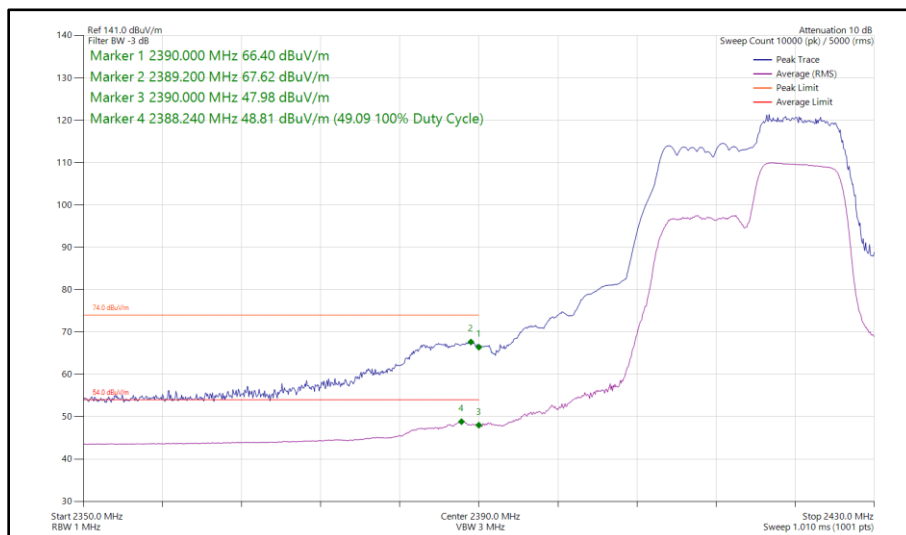
**Figure 11 - 802.11ax HE20, SU, SISO, Core 0 - 2412 MHz  
Band Edge Frequency 2390 MHz**



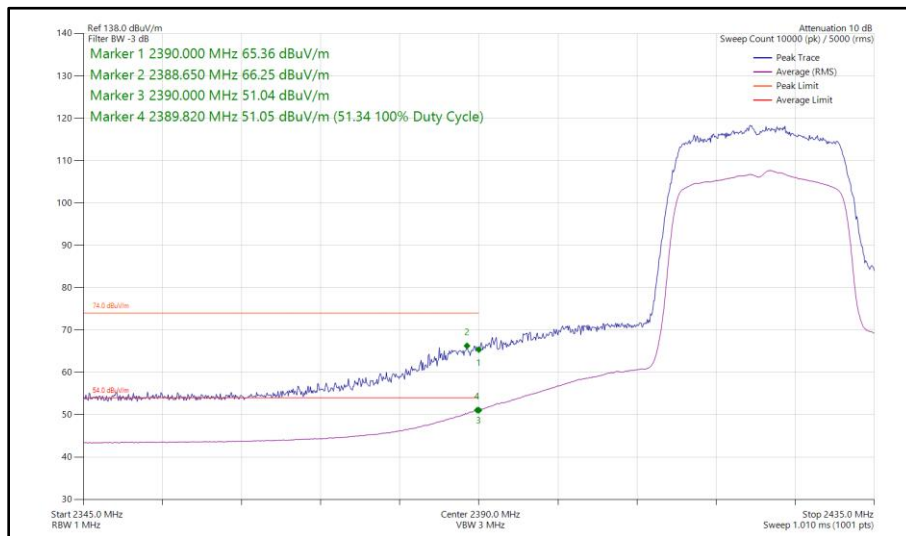
**Figure 12 - 802.11ax HE20, RU 106-53, SISO, Core 0 - 2412 MHz  
Band Edge Frequency 2390 MHz**



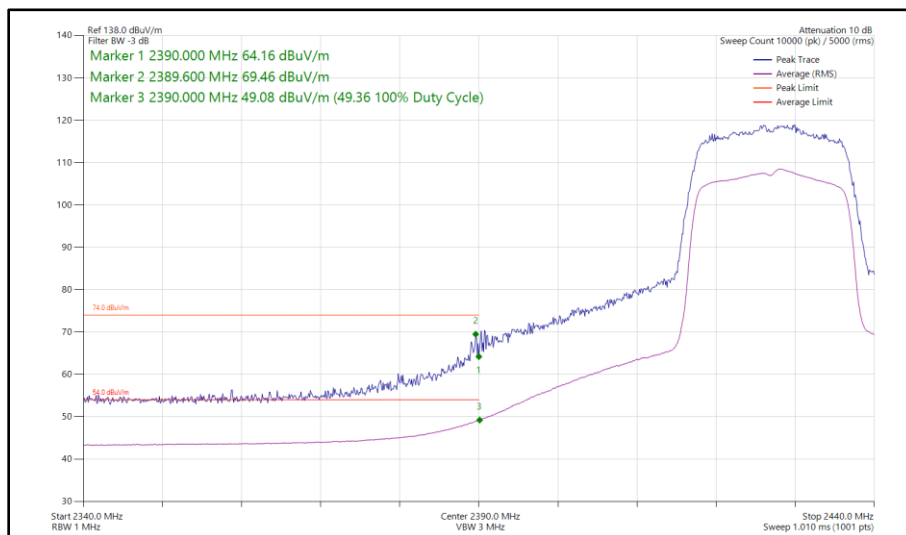
**Figure 13 - 802.11ax HE20, SU, SISO, Core 0 - 2417 MHz  
 Band Edge Frequency 2390 MHz**



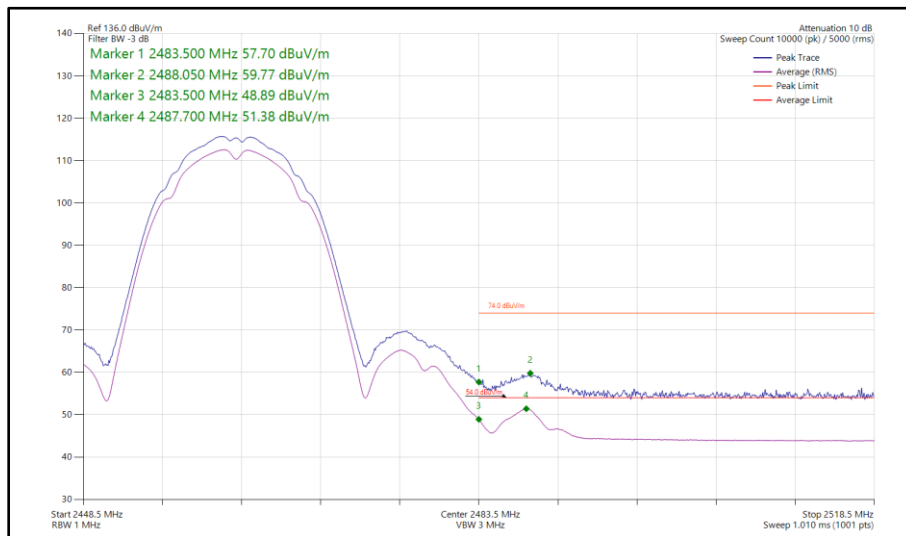
**Figure 14 - 802.11ax HE20, RU 106-54, SISO, Core 0 - 2417 MHz  
 Band Edge Frequency 2390 MHz**



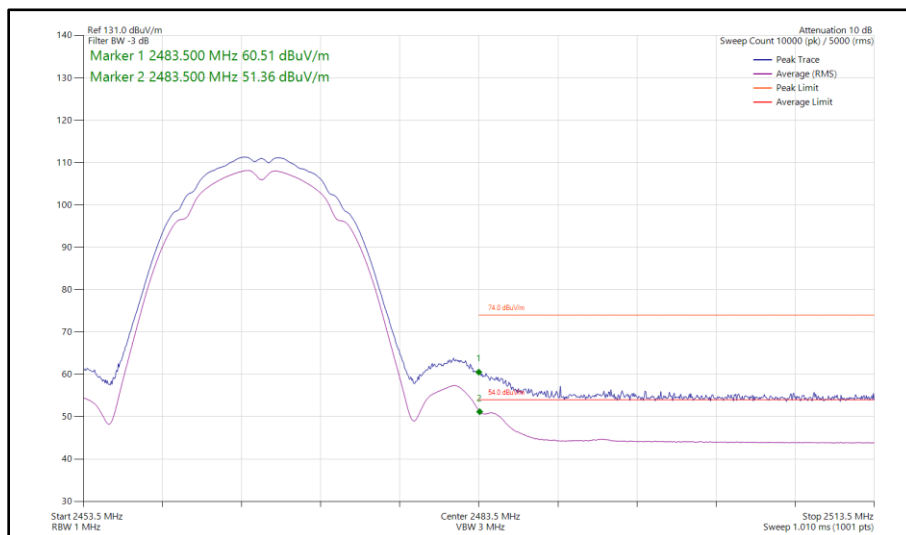
**Figure 15 - 802.11ax HE20, SU, SISO, Core 0 - 2422 MHz  
Band Edge Frequency 2390 MHz**



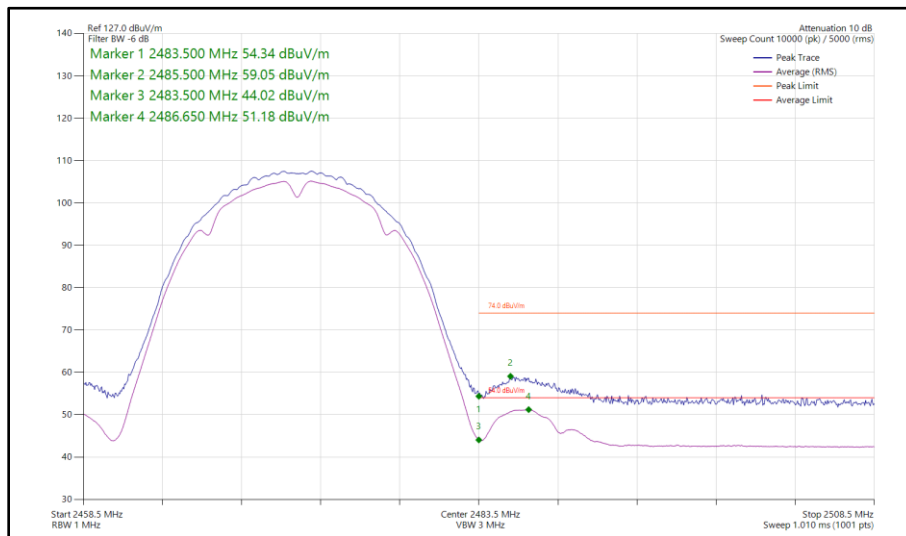
**Figure 16 - 802.11ax HE20, SU, SISO, Core 0 - 2427 MHz  
Band Edge Frequency 2390 MHz**



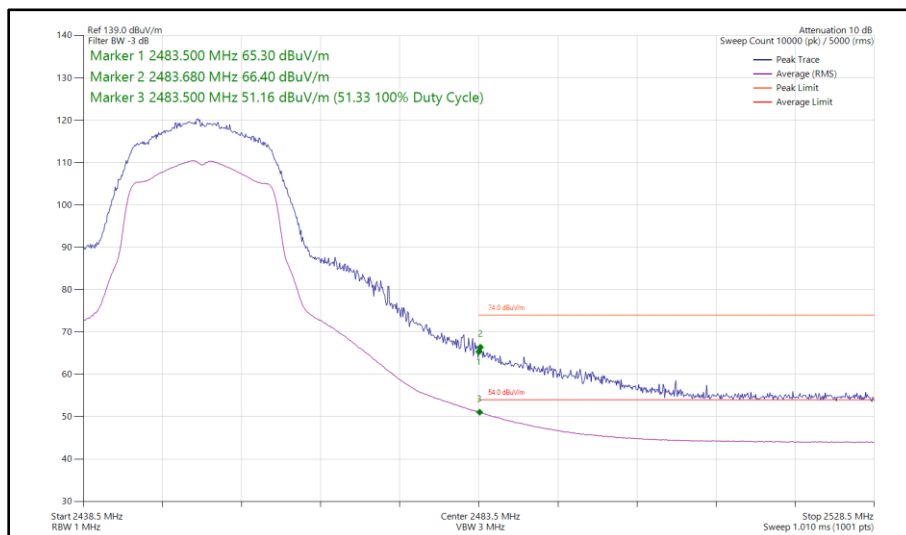
**Figure 17 - 802.11b, SISO, Core 0 - 2462 MHz  
Band Edge Frequency 2483.5 MHz**



**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**

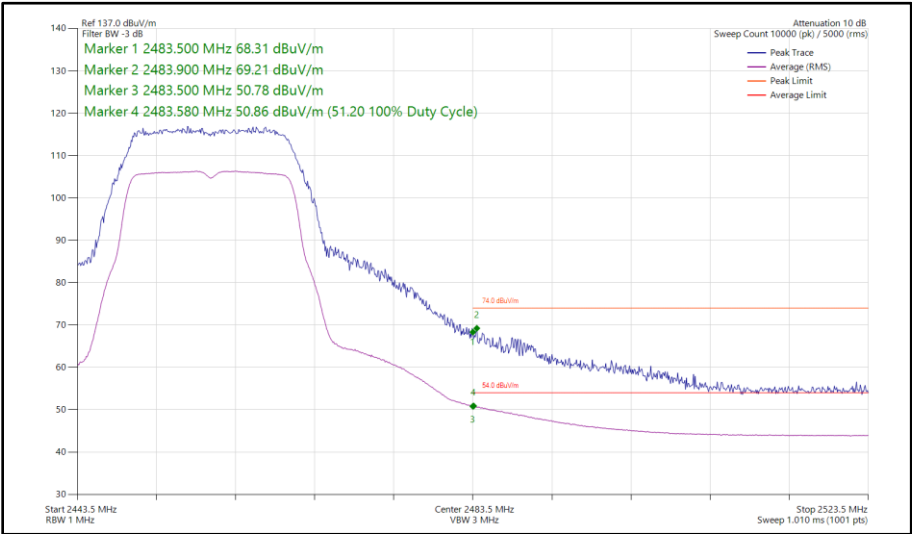


Figure 21 - 802.11g, SISO, Core 0 - 2457 MHz  
Band Edge Frequency 2483.5 MHz

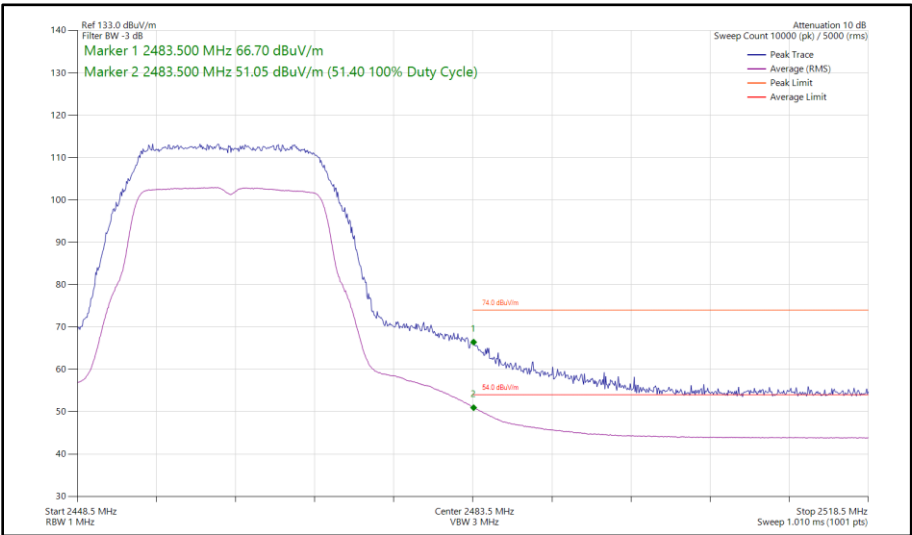
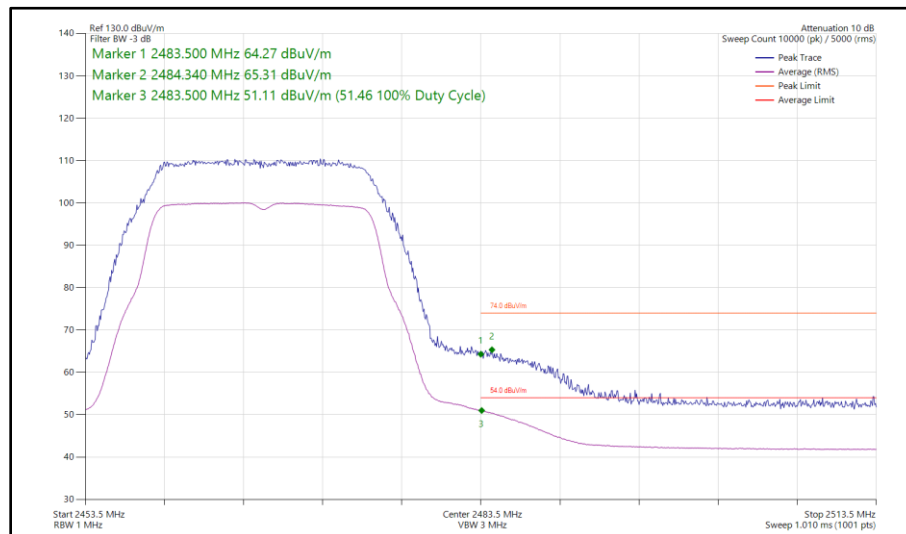
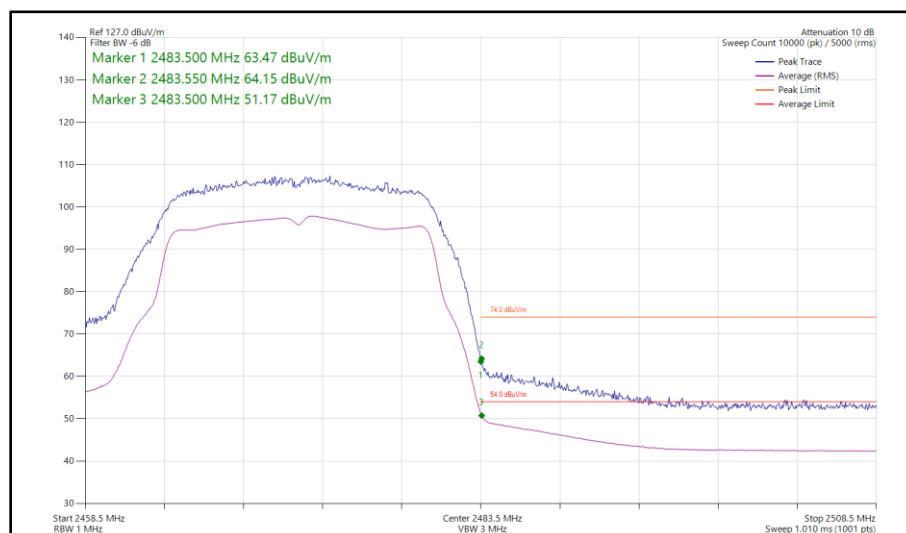


Figure 22 - 802.11g, SISO, Core 0 - 2462 MHz  
Band Edge Frequency 2483.5 MHz



**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**

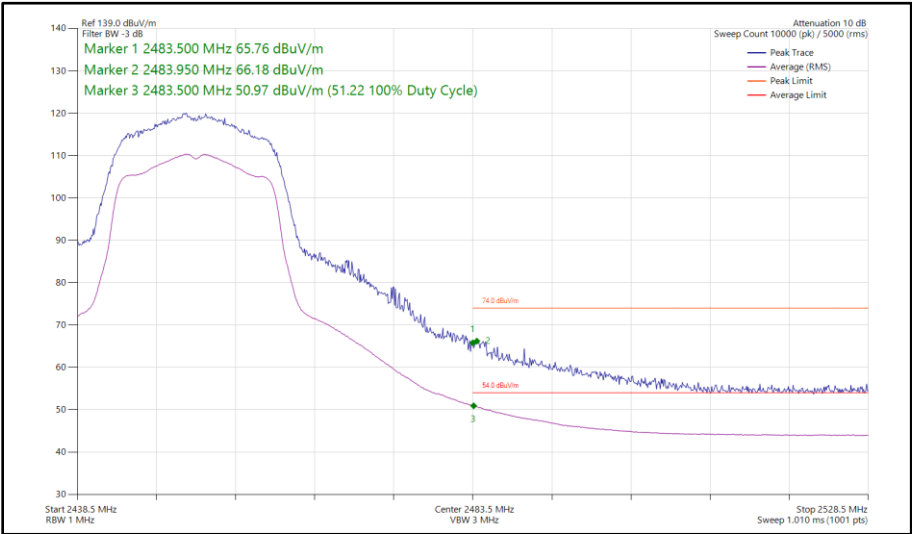


Figure 25 - 802.11n HT20, SISO, Core 0 - 2452 MHz  
Band Edge Frequency 2483.5 MHz

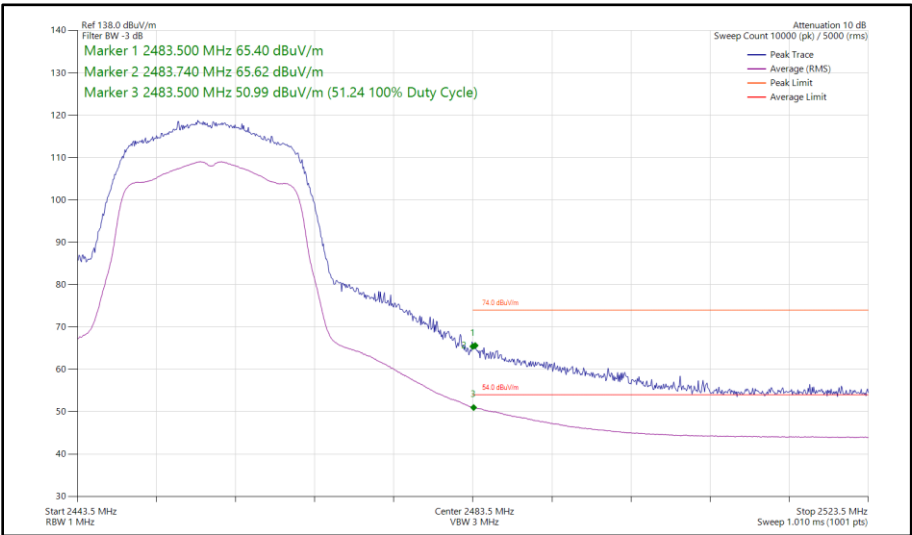
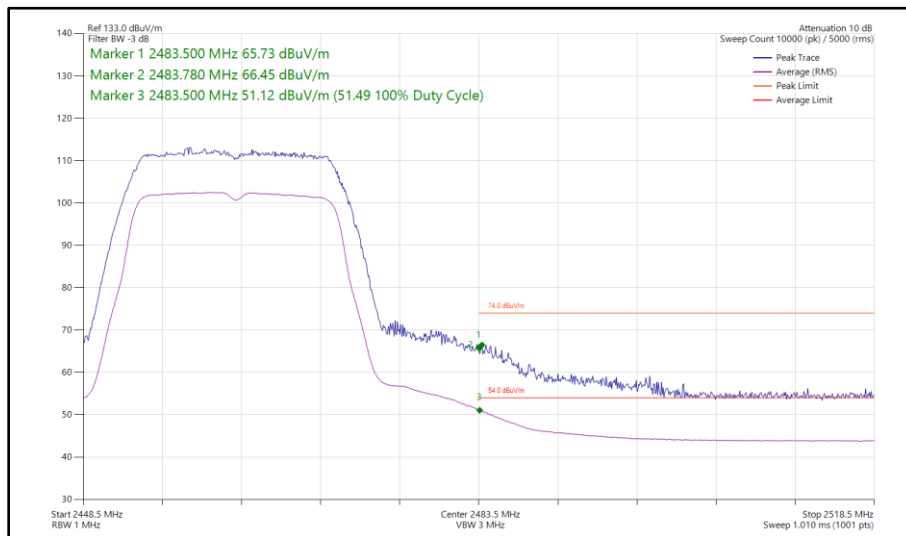
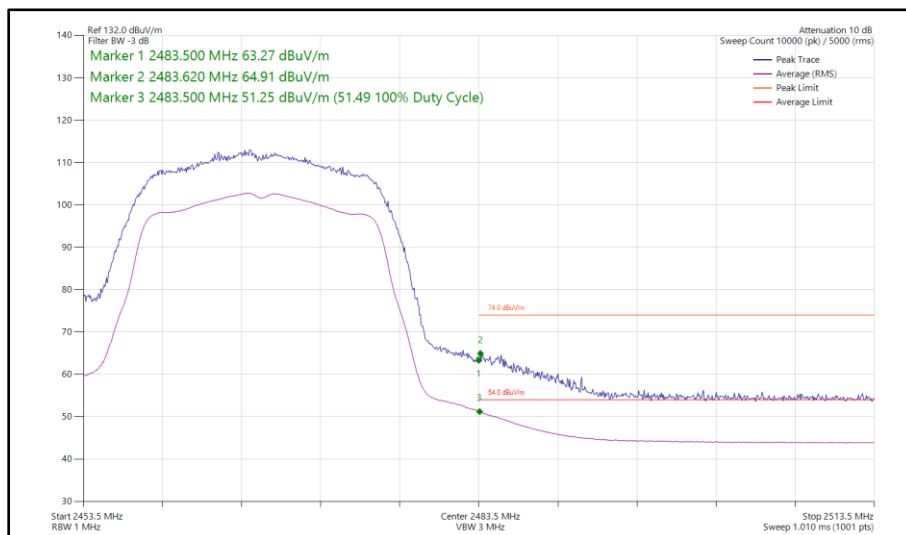


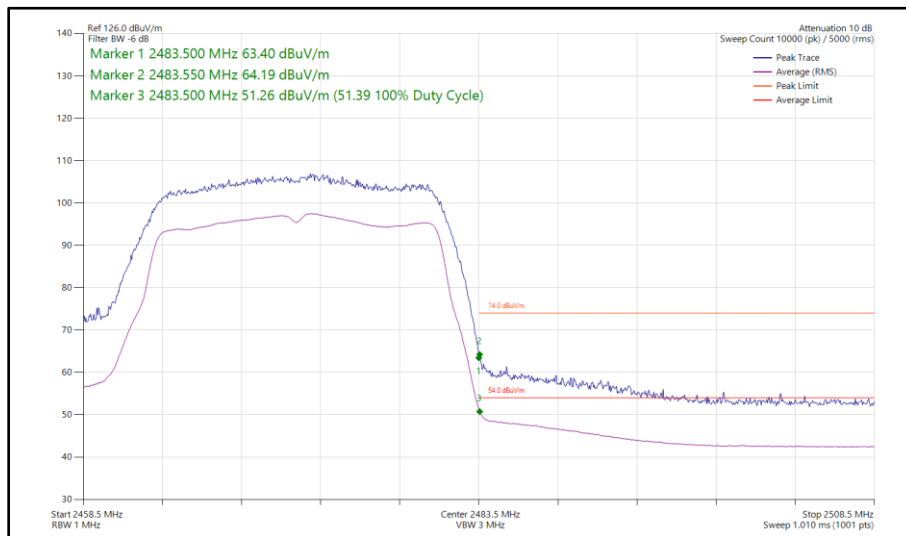
Figure 26 - 802.11n HT20, SISO, Core 0 - 2457 MHz  
Band Edge Frequency 2483.5 MHz



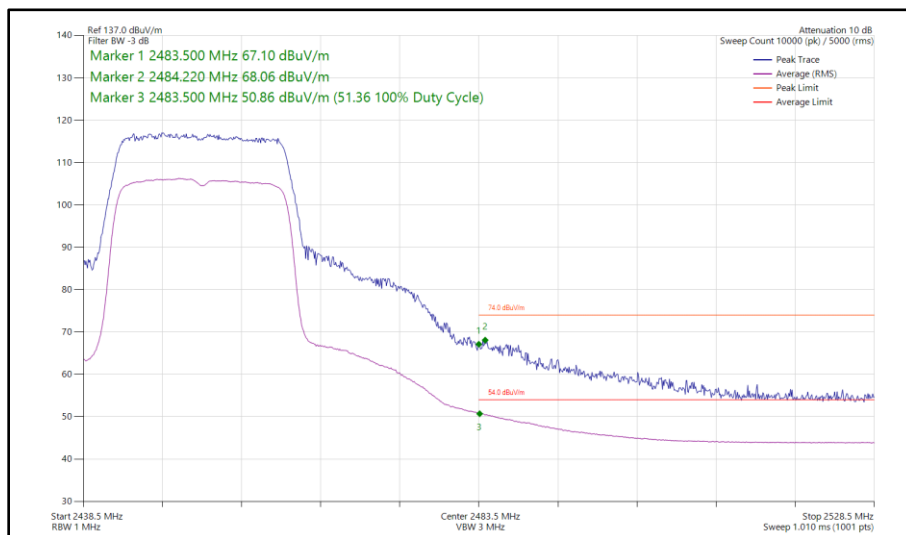
**Figure 27 - 802.11n HT20, SISO, Core 0 - 2462 MHz  
Band Edge Frequency 2483.5 MHz**



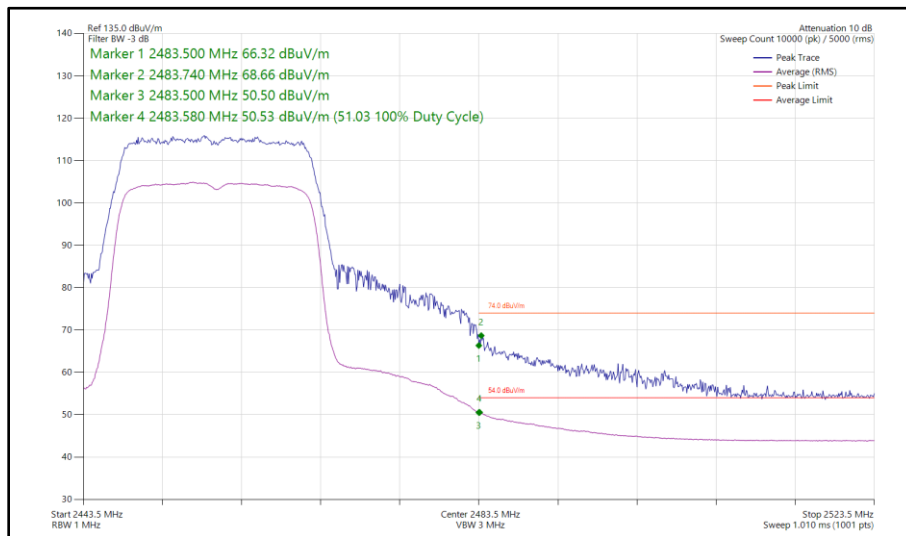
**Figure 28 - 802.11n HT20, SISO, Core 0 - 2467 MHz  
Band Edge Frequency 2483.5 MHz**



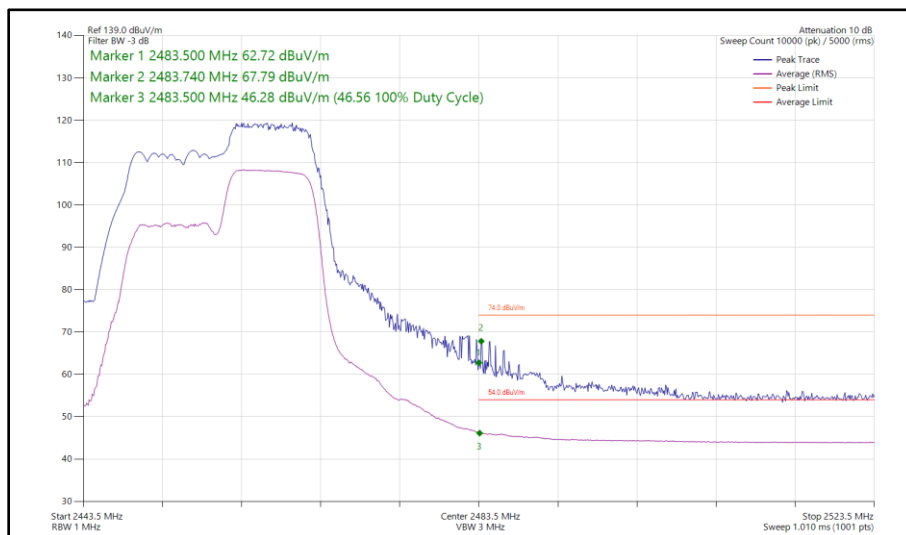
**Figure 29 - 802.11n HT20, SISO, Core 0 - 2472 MHz  
Band Edge Frequency 2483.5 MHz**



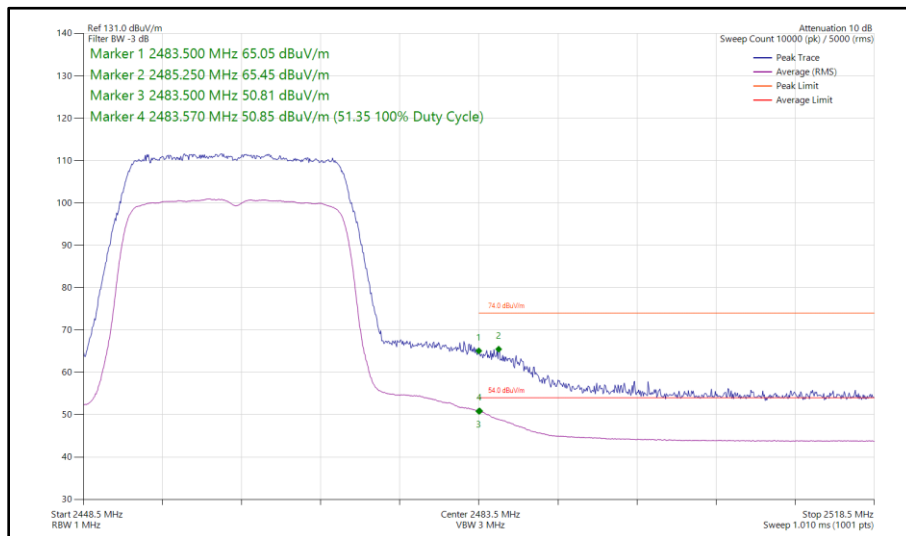
**Figure 30 - 802.11ax HE20, SU, SISO, Core 0 - 2452 MHz  
Band Edge Frequency 2483.5 MHz**



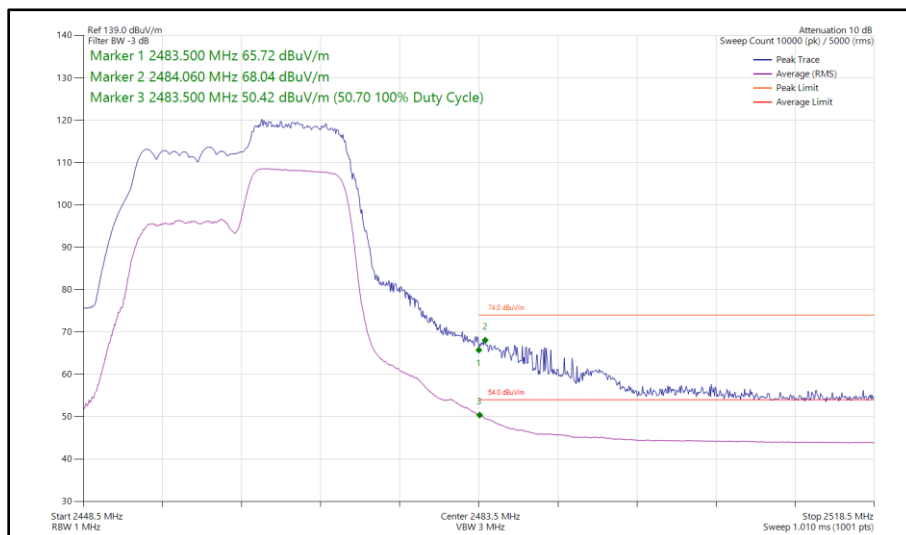
**Figure 31 - 802.11ax HE20, SU, SISO, Core 0 - 2457 MHz  
Band Edge Frequency 2483.5 MHz**



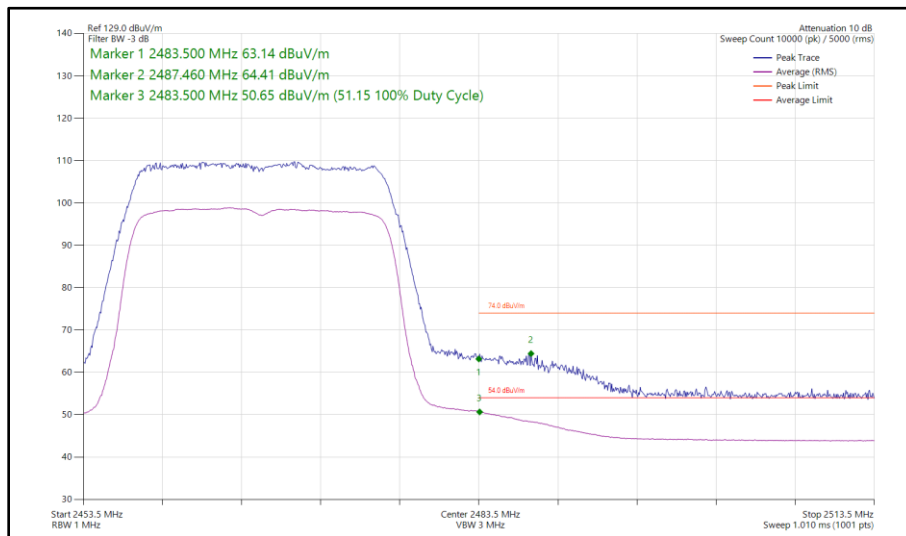
**Figure 32 - 802.11ax HE20, RU 106-54, SISO, Core 0 - 2457 MHz  
Band Edge Frequency 2483.5 MHz**



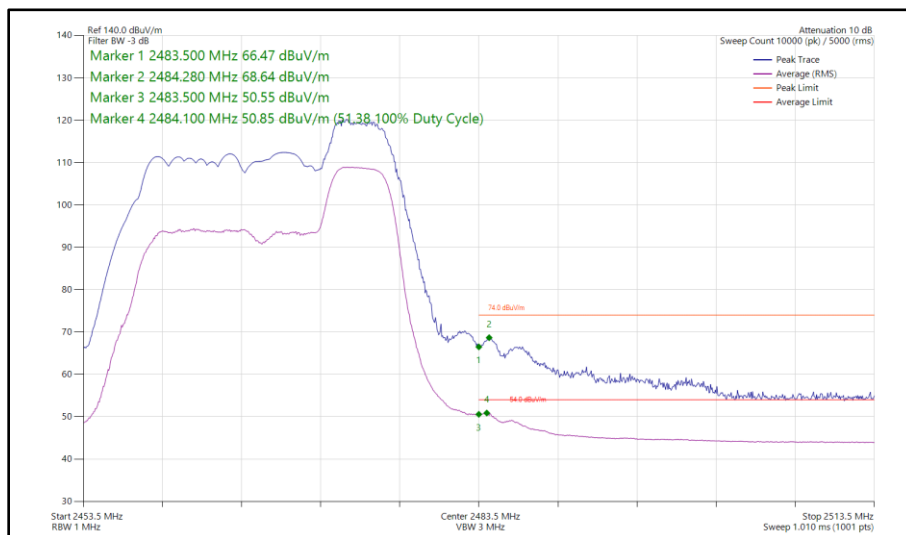
**Figure 33 - 802.11ax HE20, SU, SISO, Core 0 - 2462 MHz  
Band Edge Frequency 2483.5 MHz**



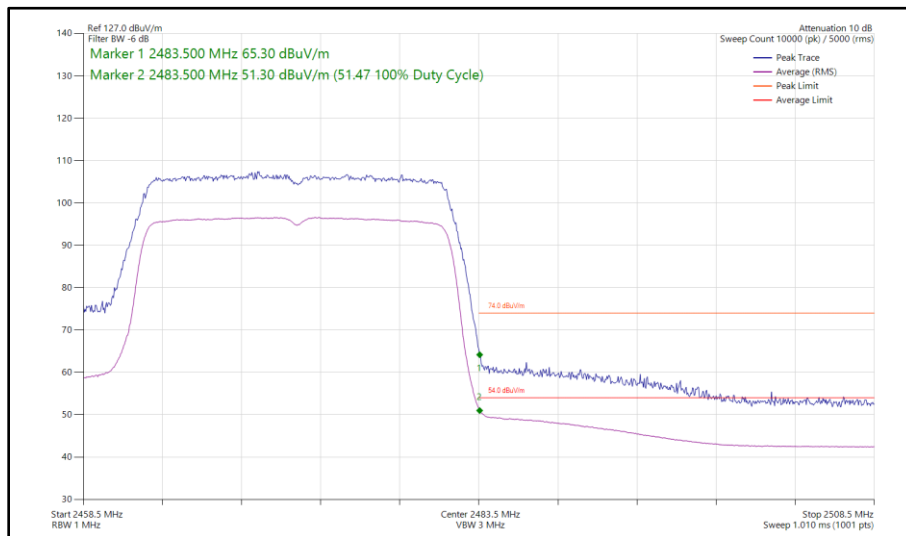
**Figure 34 - 802.11ax HE20, RU 106-54, SISO, Core 0 - 2462 MHz  
Band Edge Frequency 2483.5 MHz**



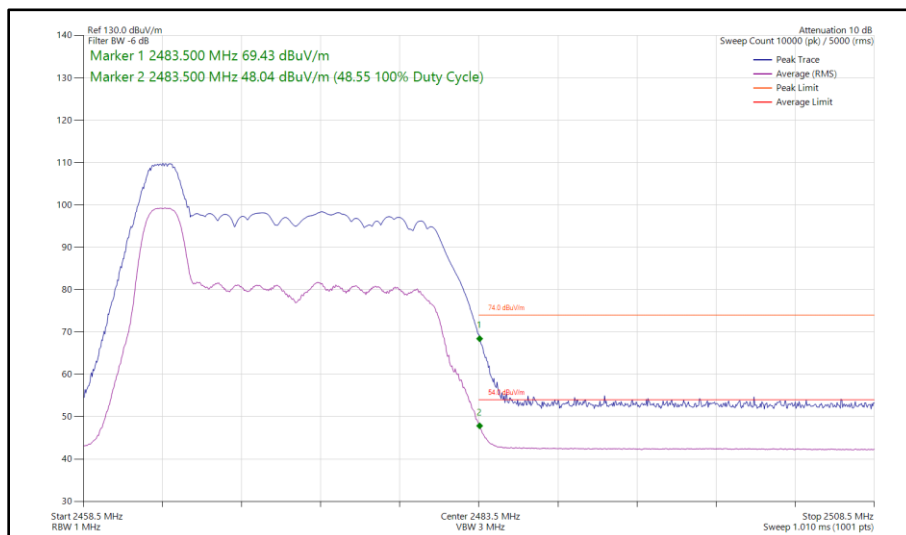
**Figure 35 - 802.11ax HE20, SU, SISO, Core 0 - 2467 MHz  
Band Edge Frequency 2483.5 MHz**



**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/<br>MCS | Resource<br>Size | Resource<br>Index | TX<br>Frequency<br>(MHz) | Band Edge<br>Frequency<br>(MHz) | Peak Level<br>(dBμV/m) | Average<br>Level<br>(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**

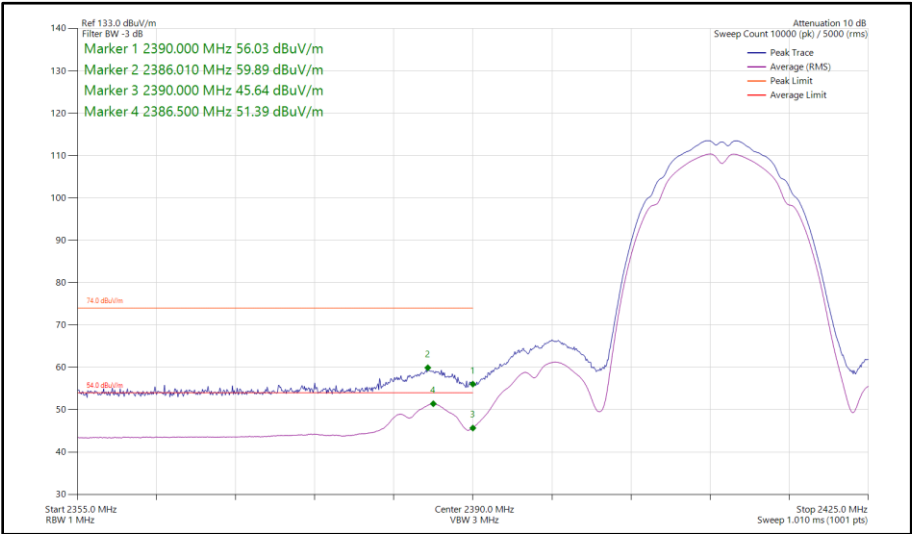


Figure 39 - 802.11b, SISO, Core 1 - 2412 MHz  
Band Edge Frequency 2390 MHz

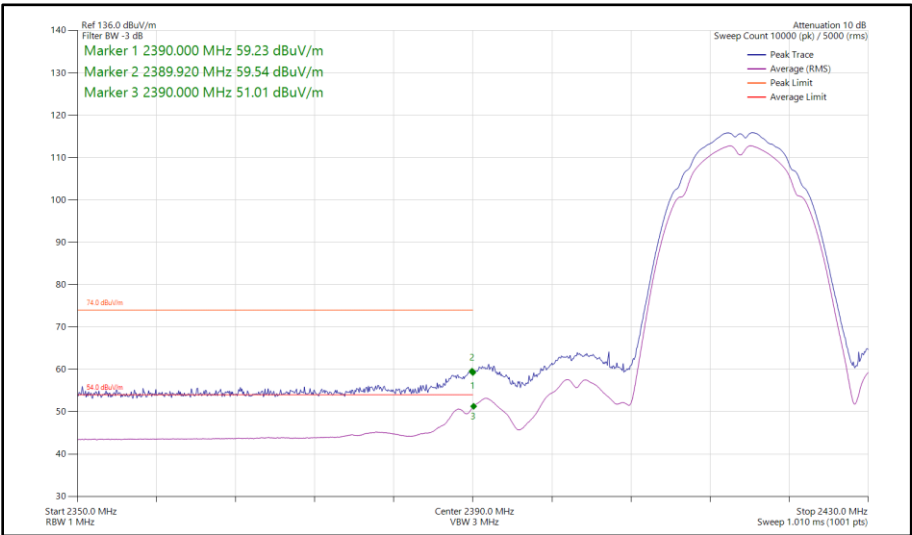
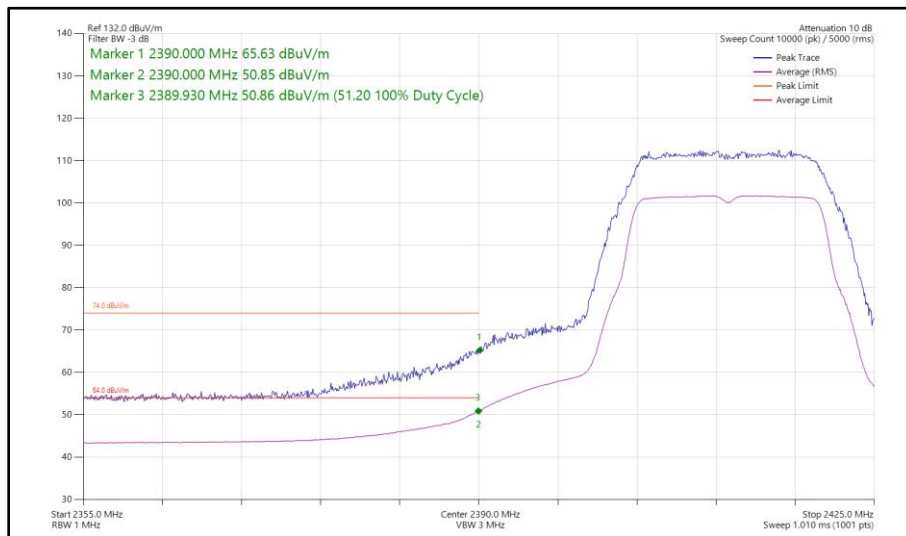
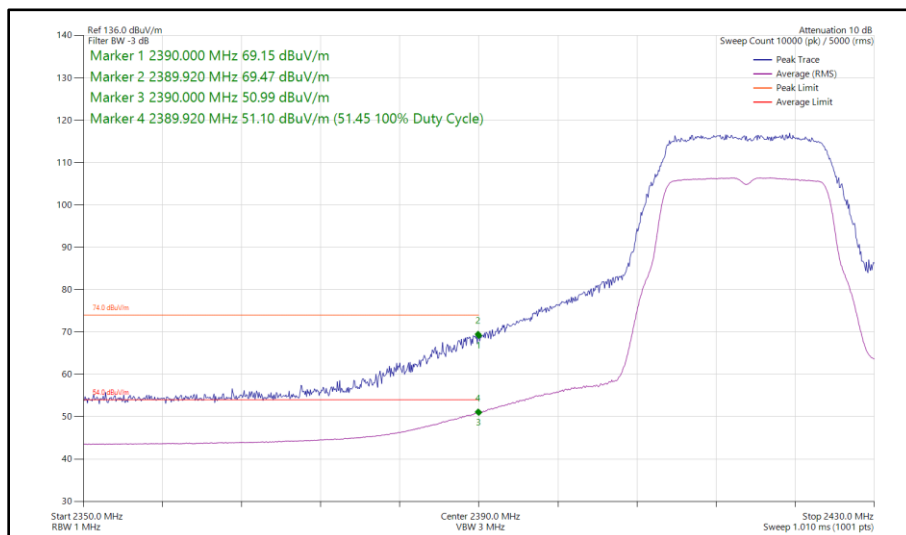


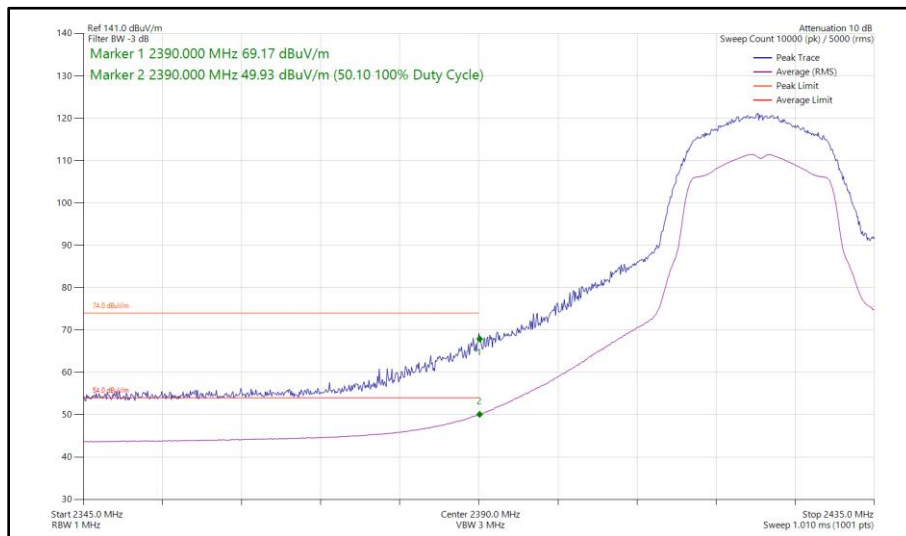
Figure 40 - 802.11b, SISO, Core 1 - 2417 MHz  
Band Edge Frequency 2390 MHz



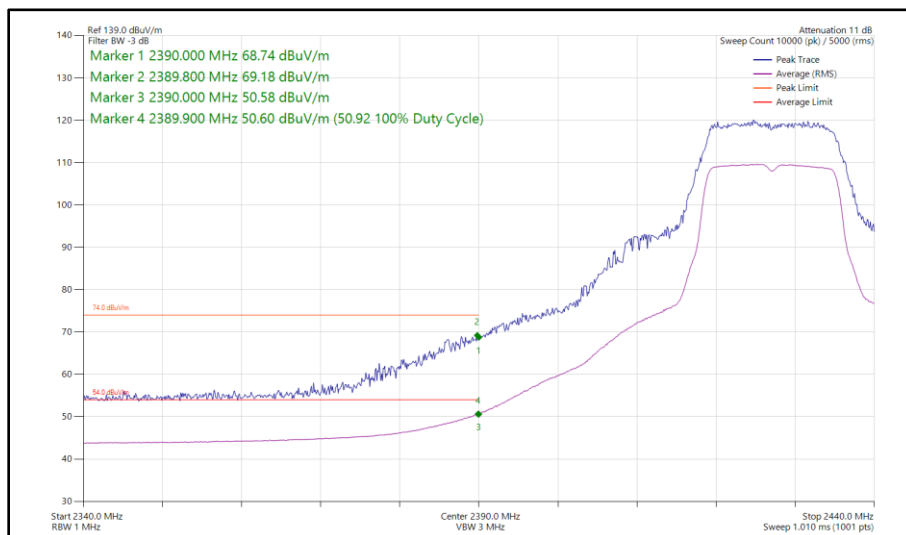
**Figure 41 - 802.11g, SISO, Core 1 - 2412 MHz  
 Band Edge Frequency 2390 MHz**



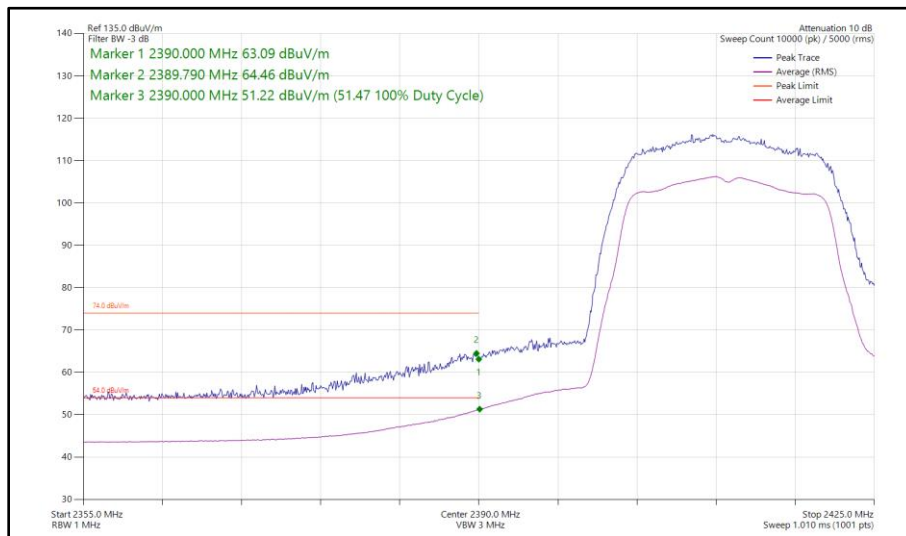
**Figure 42 - 802.11g, SISO, Core 1 - 2417 MHz  
 Band Edge Frequency 2390 MHz**



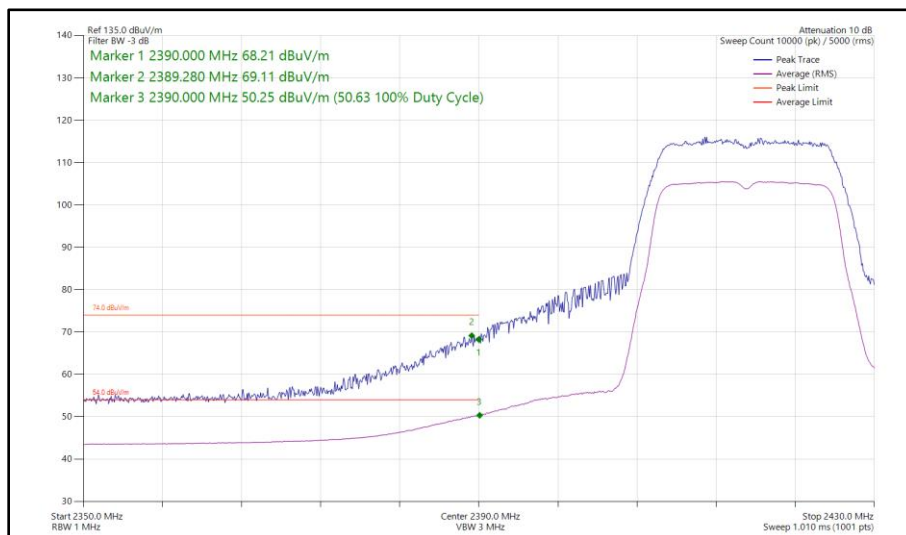
**Figure 43 - 802.11g, SISO, Core 1 - 2422 MHz  
Band Edge Frequency 2390 MHz**



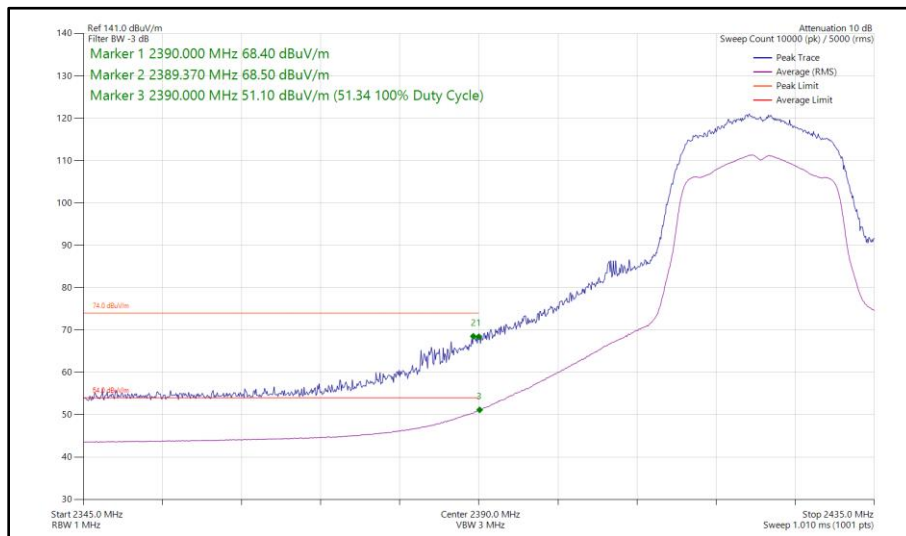
**Figure 44 - 802.11g, SISO, Core 1 - 2427 MHz  
Band Edge Frequency 2390 MHz**



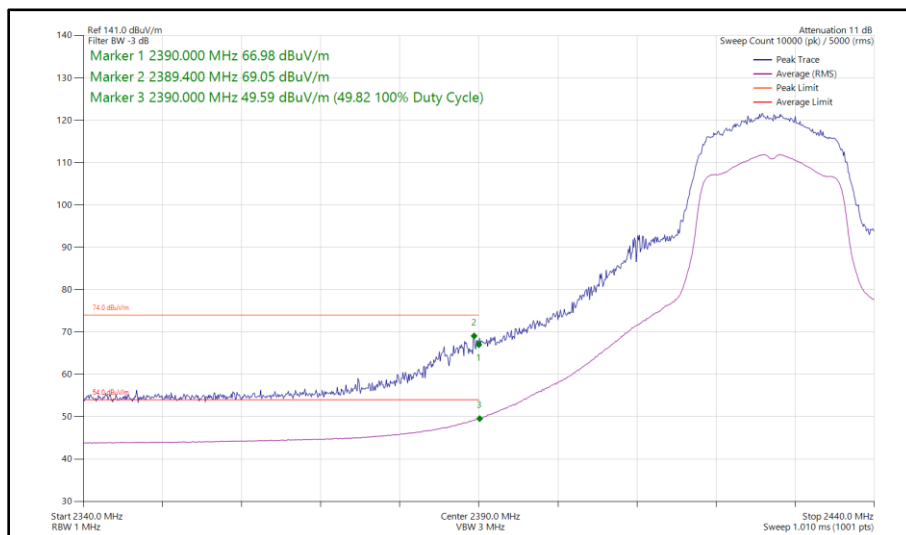
**Figure 45 - 802.11n HT20, SISO, Core 1 - 2412 MHz  
Band Edge Frequency 2390 MHz**



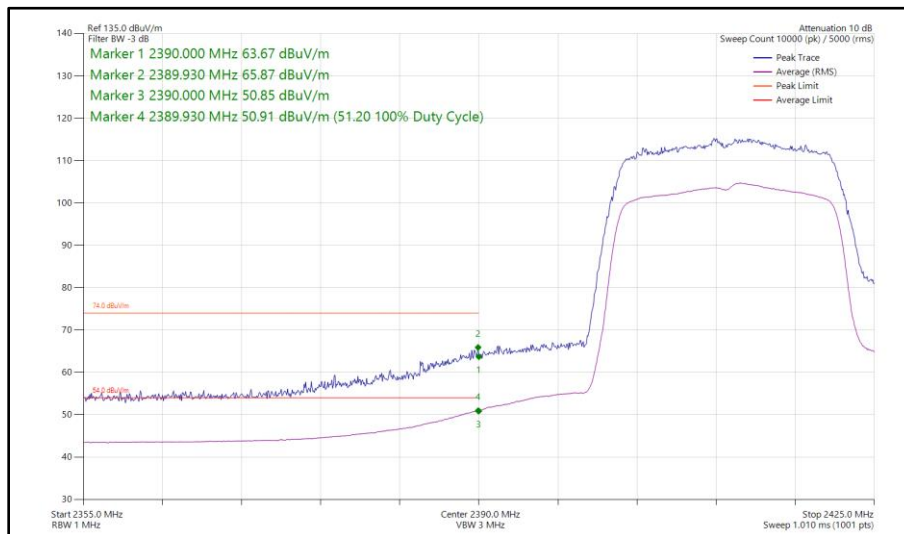
**Figure 46 - 802.11n HT20, SISO, Core 1 - 2417 MHz  
Band Edge Frequency 2390 MHz**



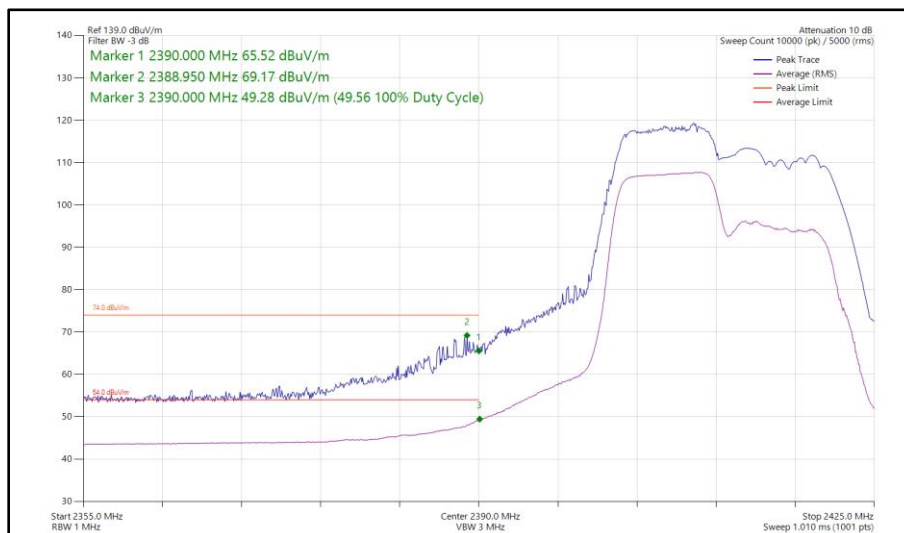
**Figure 47 - 802.11n HT20, SISO, Core 1 - 2422 MHz  
Band Edge Frequency 2390 MHz**



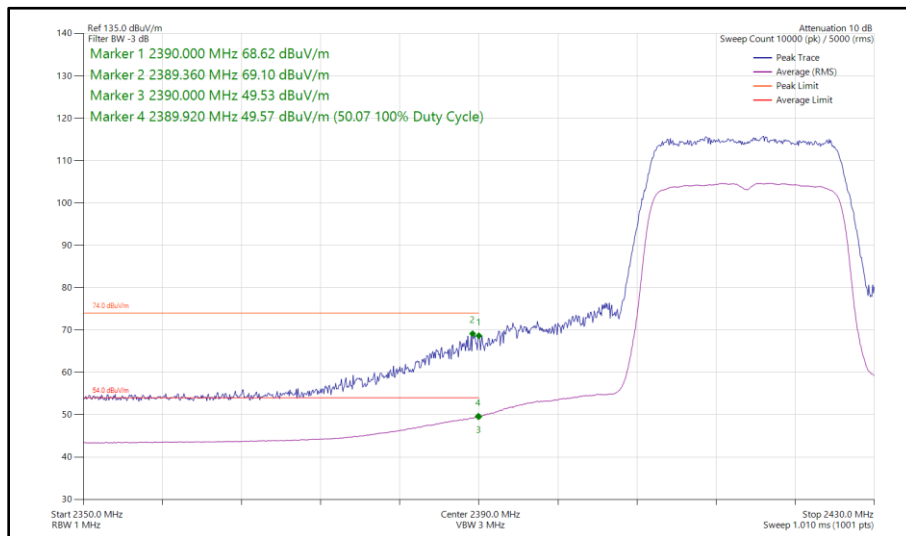
**Figure 48 - 802.11n HT20, SISO, Core 1 - 2427 MHz  
Band Edge Frequency 2390 MHz**



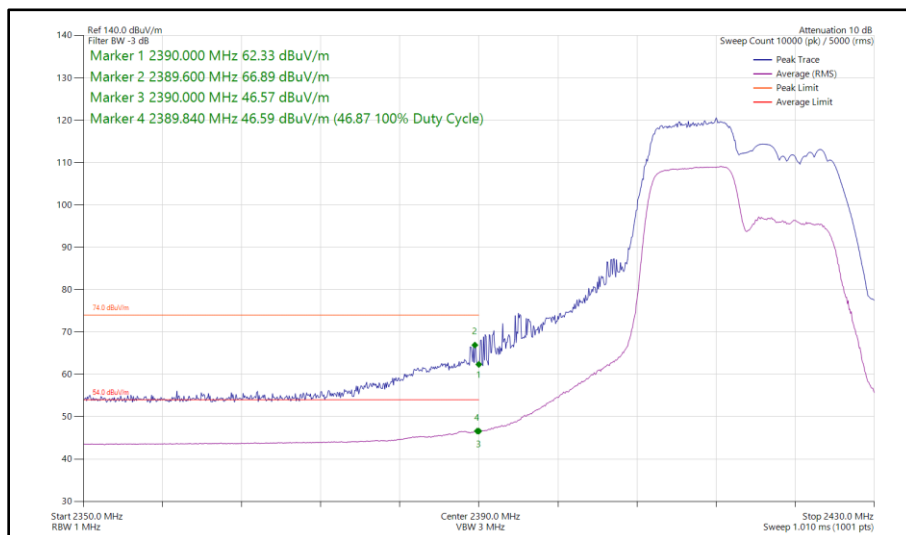
**Figure 49 - 802.11ax HE20, SU, SISO, Core 1 - 2412 MHz  
Band Edge Frequency 2390 MHz**



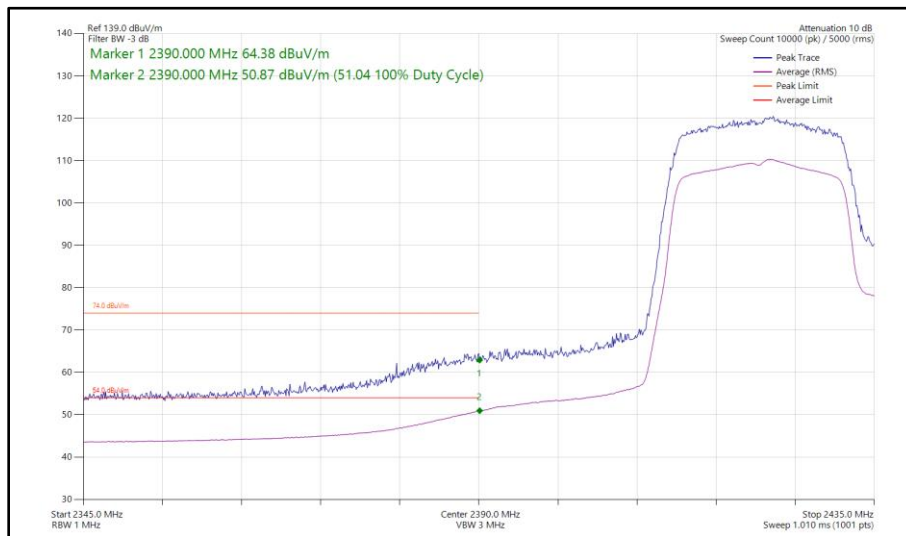
**Figure 50 - 802.11ax HE20, RU 106-53, SISO, Core 1 - 2412 MHz  
Band Edge Frequency 2390 MHz**



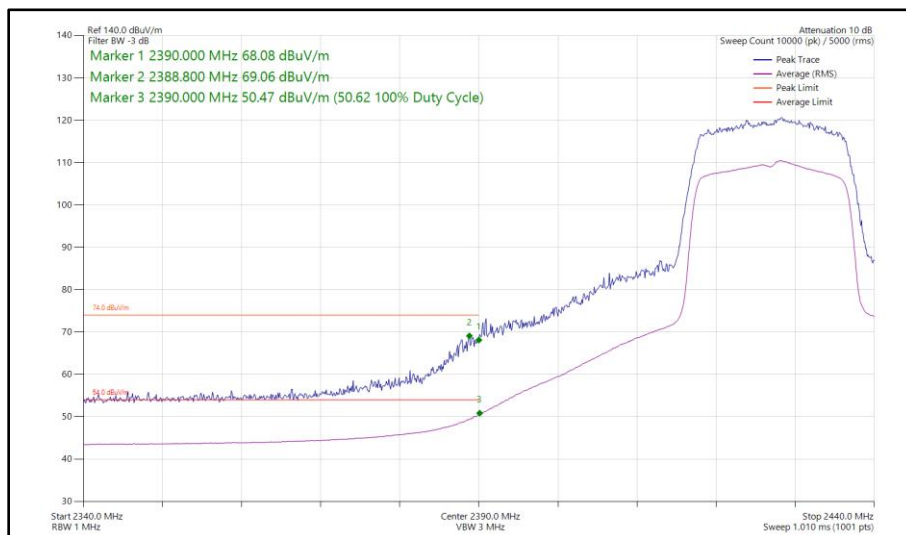
**Figure 51 - 802.11ax HE20, SU, SISO, Core 1 - 2417 MHz  
Band Edge Frequency 2390 MHz**



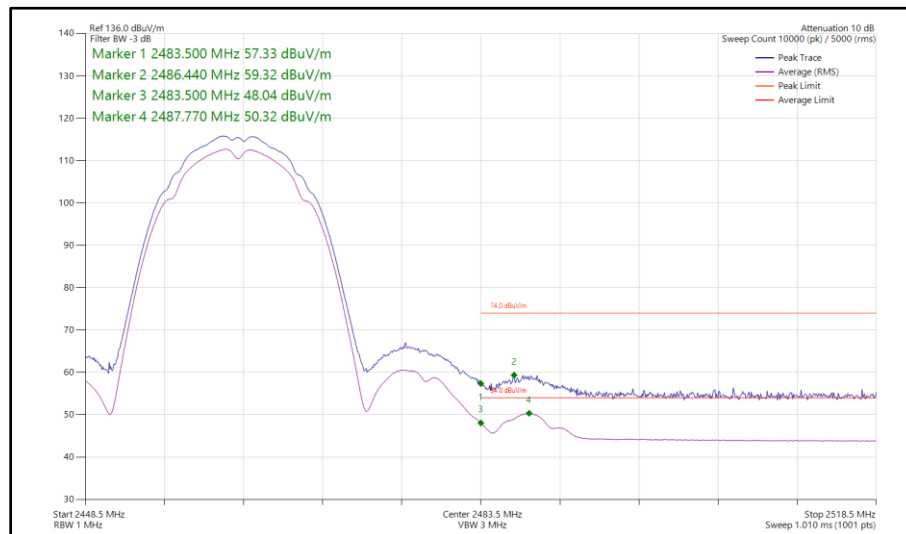
**Figure 52 - 802.11ax HE20, RU 106-53, SISO, Core 1 - 2417 MHz  
Band Edge Frequency 2390 MHz**



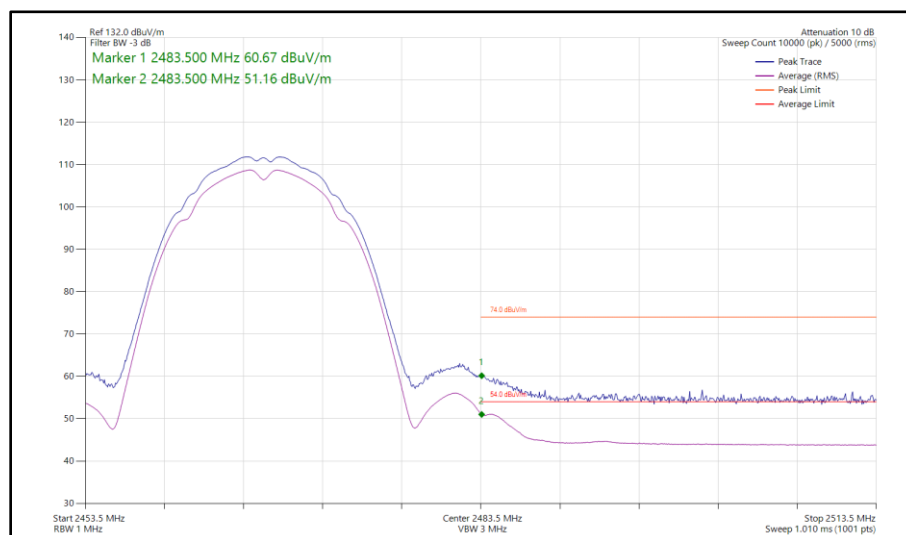
**Figure 53 - 802.11ax HE20, SU, SISO, Core 1 - 2422 MHz  
Band Edge Frequency 2390 MHz**



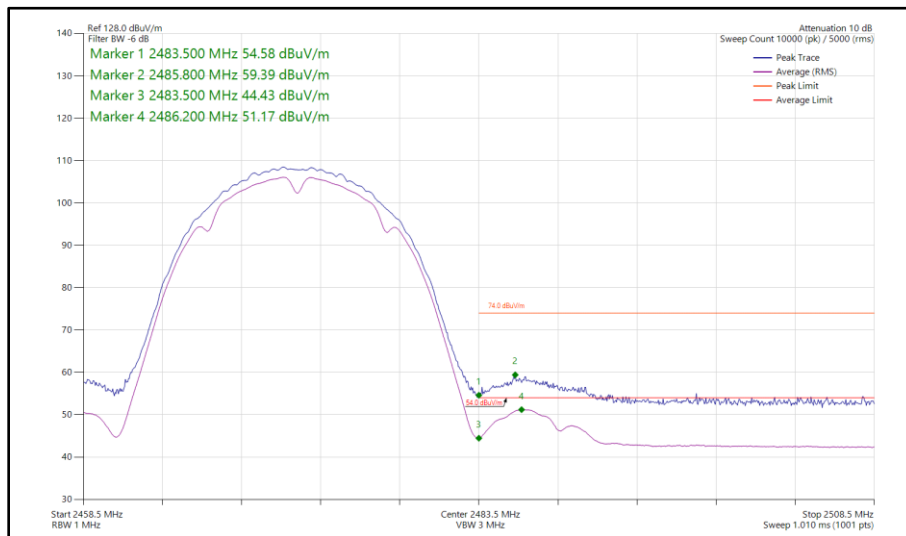
**Figure 54 - 802.11ax HE20, SU, SISO, Core 1 - 2427 MHz  
Band Edge Frequency 2390 MHz**



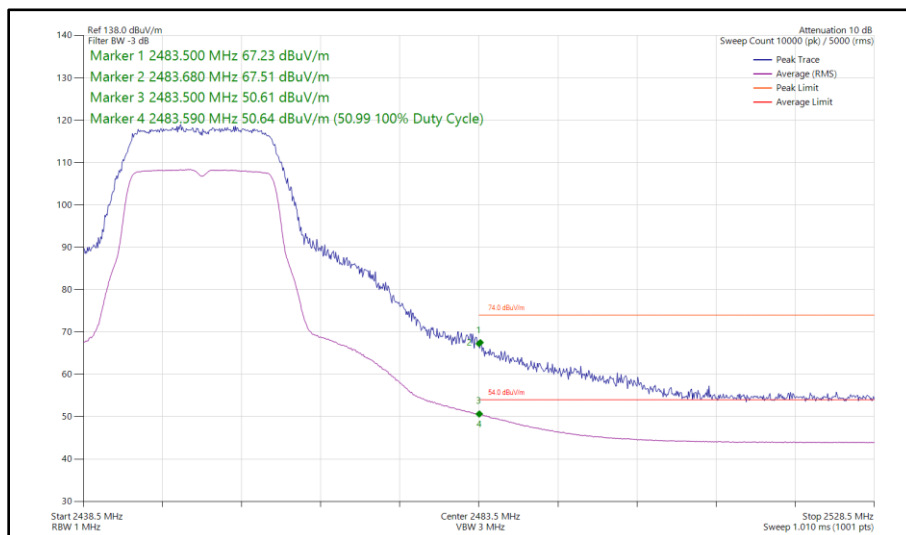
**Figure 55 - 802.11b, SISO, Core 1 - 2462 MHz  
Band Edge Frequency 2483.5 MHz**



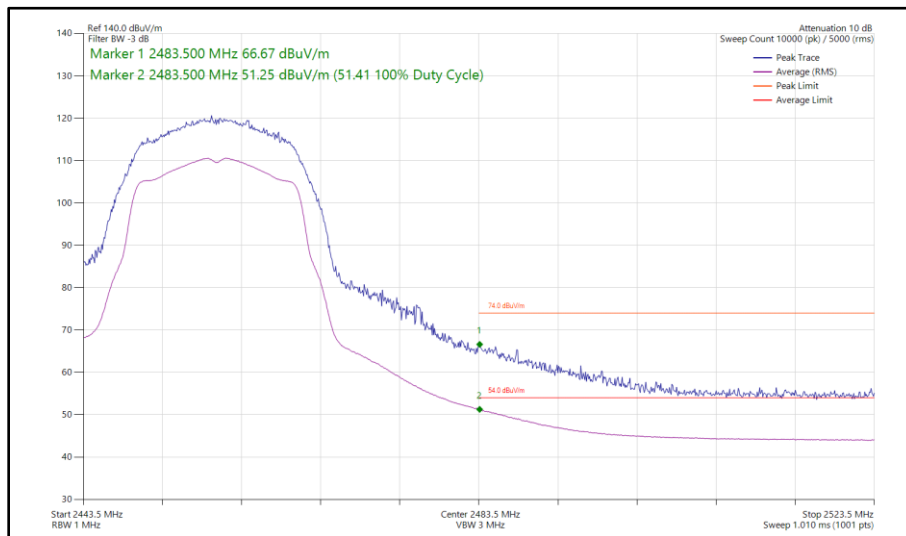
**Figure 56 - 802.11b, SISO, Core 1 - 2467 MHz  
Band Edge Frequency 2483.5 MHz**



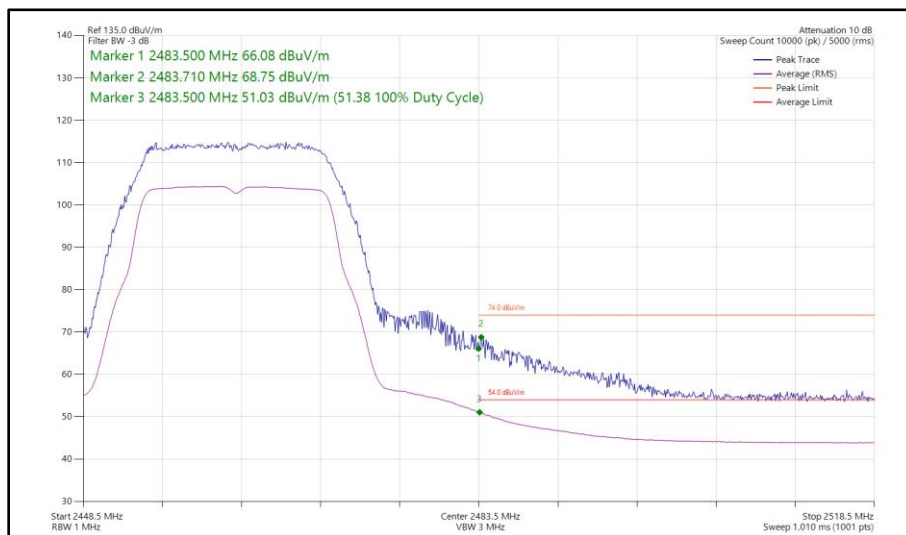
**Figure 57 - 802.11b, SISO, Core 1 - 2472 MHz  
Band Edge Frequency 2483.5 MHz**



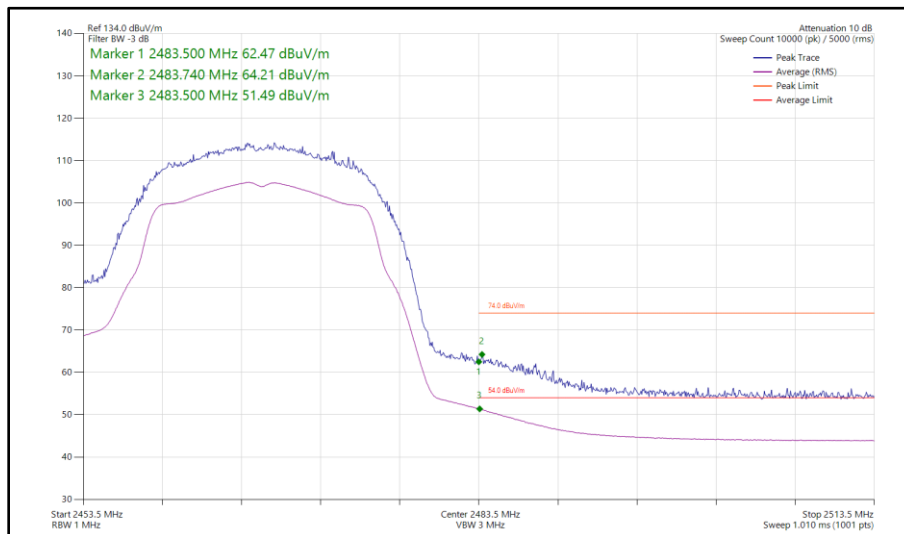
**Figure 58 - 802.11g, SISO, Core 1 - 2452 MHz  
Band Edge Frequency 2483.5 MHz**



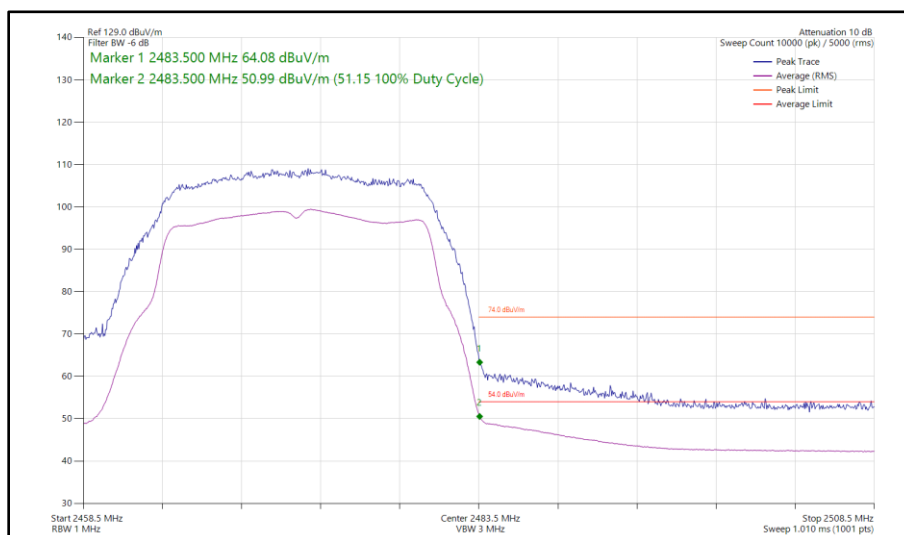
**Figure 59 - 802.11g, SISO, Core 1 - 2457 MHz  
Band Edge Frequency 2483.5 MHz**



**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**

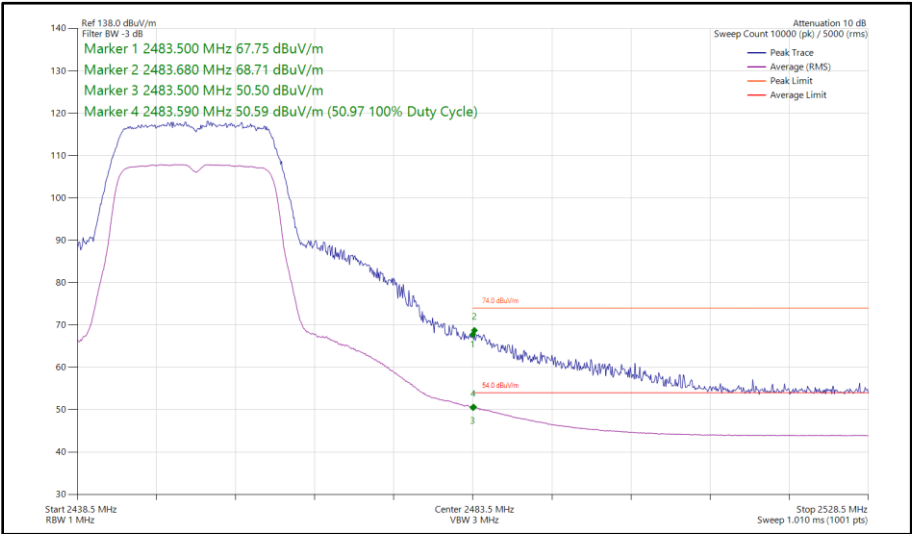


Figure 63 - 802.11n HT20, SISO, Core 1 - 2452 MHz  
Band Edge Frequency 2483.5 MHz

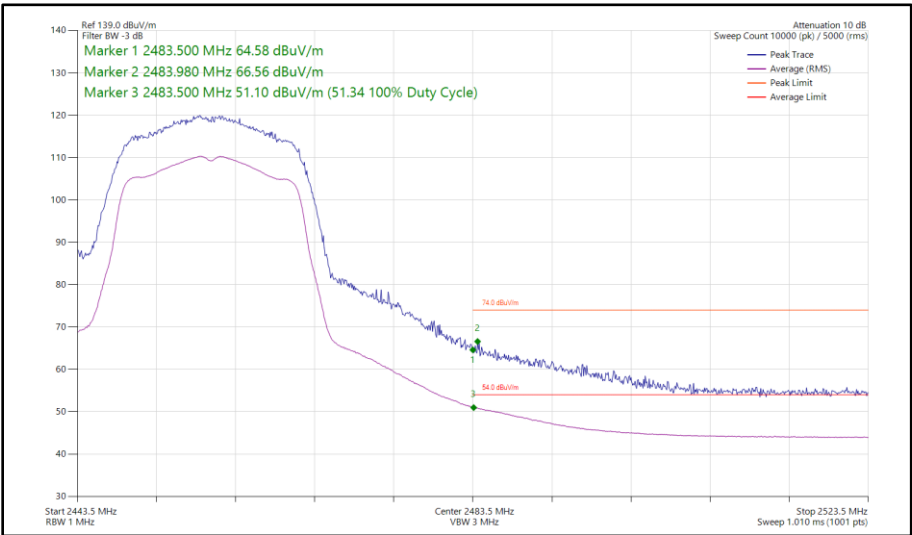


Figure 64 - 802.11n HT20, SISO, Core 1 - 2457 MHz  
Band Edge Frequency 2483.5 MHz

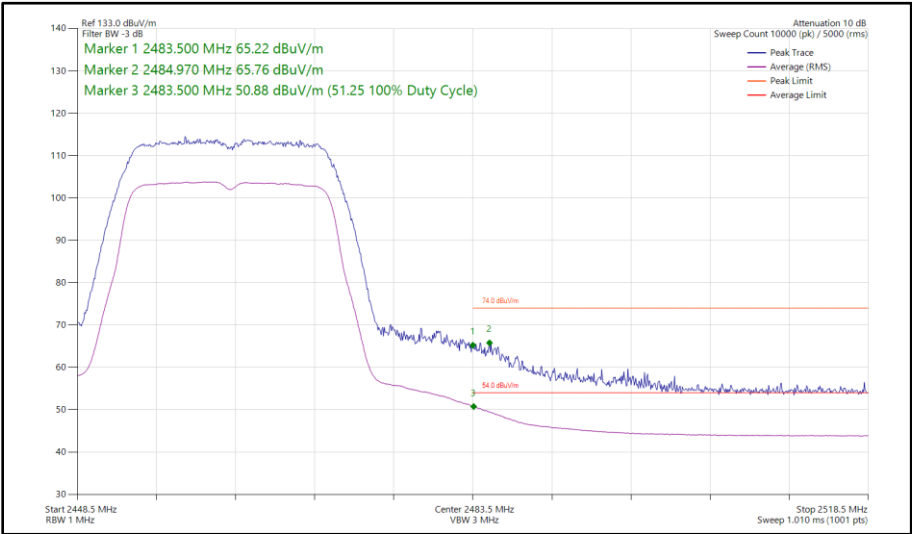


Figure 65 - 802.11n HT20, SISO, Core 1 - 2462 MHz  
Band Edge Frequency 2483.5 MHz

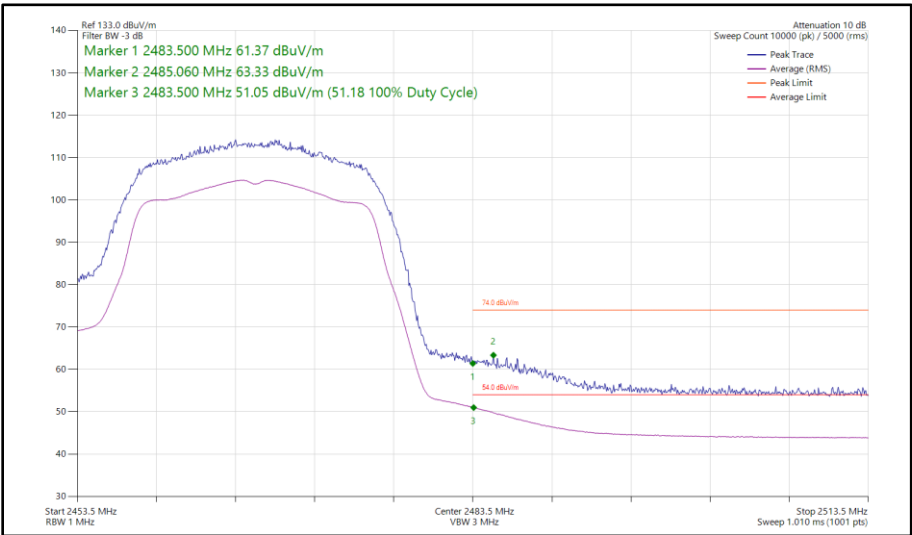


Figure 66 - 802.11n HT20, SISO, Core 1 - 2467 MHz  
Band Edge Frequency 2483.5 MHz