

FCC and ISED Test Report

Apple Inc
Model: A3113

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

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

FCC ID: BCGA3113

IC: 579C-A3113

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Document 75959605-09 Issue 01



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NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Matthew Russell	Chief Engineer	Authorised Signatory	10-November-2023

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 15E, 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	10-November-2023	

FCC Accreditation

553713/UK2026 Concorde Park, Fareham Test Laboratory

ISED Accreditation

28798 Concorde Park, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15E: 2021, ISED RSS-247: Issue 2 (2017-02) and ISED RSS-GEN: Issue 5 (2018-04) + A2 (2021-02) 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	10-November-2023

Table 1

1.2 Introduction

Applicant	Apple Inc
Manufacturer	Apple Inc
Model Number(s)	A3113
Serial Number(s)	D6HCD7RY3W, KVQP772HX1, FNN231249F, XXRVY66Q51, NJFQGT4KJT, QVVKQ44WGR, J1HGXV9V04 and HPHV6327GY
Hardware Version(s)	REV 1.0
Software Version(s)	23A32770p, 23A32771a, 23A32770p, 23A32770p, 23A32771a, 23A32770p, 23A32771a and 23B26
Number of Samples Tested	8
Test Specification/Issue/Date	FCC 47 CFR Part 15E: 2021 ISED RSS-247: Issue 2 (2017-02) ISED RSS-GEN: Issue 5 (2018-04) + A2 (2021-02)
Start of Test	01-August-2023
Finish of Test	24-October-2023
Name of Engineer(s)	Akhil Rajendran Bhaskaran Nair, Colin Brain, Ian Hart, Ioan-Alexandru Bogatu, Nicolae Mihailiuc, Thomas Randall, Feda Hussein, Mustafa Murad, Dale Hills, James Woods Morsalin Hossain and Stefan Gilfedder
Related Document(s)	ANSI C63.10 (2013) ANSI C63.10 (2020) KDB 662911 D01 v02r01 KDB 789033 D02 v02r01 KDB 905462 D02 v02 KDB 905462 D03 v01r02



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15E, ISED RSS-247 and ISED RSS-GEN is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15E	RSS-247	RSS-GEN			
Configuration and Mode: 5 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) ANSI C63.10 (2013)
2.2	15.407 (a)	6.2	-	Emission Bandwidth	Pass	ANSI C63.10 (2020) ANSI C63.10 (2013)
2.3	15.407 (a)	6.2	-	Maximum Conducted Output Power	Pass	ANSI C63.10 (2020) KDB 662911 D01 v02r01 ANSI C63.10 (2013)
2.4	15.407 (a)	6.2	-	Maximum Conducted Power Spectral Density	Pass	ANSI C63.10 (2020) KDB 662911 D01 v02r01 ANSI C63.10 (2013)
2.5	15.407 (b)	6.2	-	Authorised Band Edges	Pass	ANSI C63.10 (2020) ANSI C63.10 (2013)
2.6	15.209 and 15.407 (b)	6.2	6.13 and 8.9	Spurious Radiated Emissions	Pass	ANSI C63.10 (2020) ANSI C63.10 (2013)
2.7	15.407 (h)(2)(iii)(iv)	6.3.2(c)(d)(e)	-	Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period	Pass	KDB 905462 D02 v02 KDB 905462 D03 v01r02

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 5 GHz 802.11 radio supported Single Input/Single Output (SISO) and 2x2 Multiple Input/Multiple Output (MIMO) modes. 802.11a supports 20 MHz bandwidth only. 802.11n supports 20 MHz and 40 MHz bandwidths and 802.11ac and ax support 20 MHz, 40 MHz, 80 MHz & 160 MHz bandwidths.

802.11a mode supports SISO operation only. 802.11n, ac and ax support SISO, Cyclic Delay Diversity (CDD) and Space Division Multiplexing (SDM). 802.11n and ac also additionally support Transmit Beamforming (TxBF) mode for 20 MHz, 40 MHz and 80 MHz operation. The EUT supports 802.11ax Single User (SU) and Multi-User (MU) with all Resource Unit (RU) sizes from 52 subcarriers, up to the maximum allowed, dependent on channel bandwidth. Additionally, RU-26 is supported in U-NII-1 and U-NII-3.

The EUT uses different output powers dependent on how many cores are active. The EUT also uses different power tables for Cyclic Delay Diversity (CDD), Space Division Multiplexing (SDM) and Transmit Beamforming (TxBF) modes. 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 differ.

US and CA country codes changed the power table used for U-NII band 1. Therefore U-NII-1 channels were tested using both power settings for each country's respective limits.

Band edge testing was performed in all modes with multiple modulation types, with only the worst-case reported. After band edge and additional preliminary investigations were performed to find worst-case operation, the EUT was tested in the following supported transmit modes:

SISO Modes (Core 0):

- 802.11a – 12 Mbps
- 802.11n HT20 – MCS2
- 802.11n HT40 – MCS2
- 802.11ac VHT80 – MCS2x1
- 802.11ac VHT160 – MCS2x1
- 802.11ax HE20 SU – MCS2x1
- 802.11ax HE40 SU – MCS2x1
- 802.11ax HE80 SU – MCS2x1
- 802.11ax HE160 SU – MCS2x1
- 802.11ax HE20 MU RU26/52/106 – MCS2x1

2x2 MIMO Modes (Core 0+1 for U-NII-1 / 2A / 2C / 3):

- 802.11n/ac (V)HT20 - CDD (MCS2), SDM (MCS10) and TxBF (MCS2x1)
- 802.11n/ac (V)HT40 - CDD (MCS2), SDM (MCS10) and TxBF (MCS2x1)
- 802.11ac VHT80 – CDD (MCS2x1), SDM (MCS2x2) and TxBF (MCS2x1)
- 802.11ac VHT160 – CDD (MCS2x1) and SDM (MCS2x2)
- 802.11ax HE20 SU – CDD (MCS2x1) and SDM (MCS2x2)
- 802.11ax HE40 SU – CDD (MCS2x1) and SDM (MCS2x2)
- 802.11ax HE80 SU – CDD (MCS2x1) and SDM (MCS2x2)
- 802.11ax HE160 SU – CDD (MCS2x1) and SDM (MCS2x2)
- 802.11ax HE20 MU RU26/52/106 – CDD (MCS2x1) and SDM (MCS2x2)



*Notes: 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. HT (802.11n) modes were used for CDD and SDM. VHT (802.11ac) modes were used for TxBF.

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 testing except DFS 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 packetized 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.

The test setup used for DFS is described in the test result section of the present document.

1.4.4 Antenna Gain Table

Antenna Port	Frequency Range (MHz)	Peak Gain (dBi)	Conducted Cable Loss (dB)
Core 0	5150 to 5250	7.17	1.1
	5250 to 5350	7.54	1.1
	5470 to 5725	7.75	1.2
	5725 to 5850	7.48	1.2
Core 1	5150 to 5250	4.67	1.1
	5250 to 5350	6.34	1.1
	5470 to 5725	7.08	1.2
	5725 to 5850	6.01	1.2

Table 3

1.5 Deviations from the Standard

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



1.6 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: A3113, Serial Number: D6HCD7RY3W			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3113, Serial Number: FNN231249F			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3113, Serial Number: XXRVY66Q51			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3113, Serial Number: NJFQGT4KJT			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3113, Serial Number: KVQP772HX1			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3113, Serial Number: J1HGXFV9V04			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3113, Serial Number: HPHV6327GY			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3113, Serial Number: QVVKQ44WGR			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 4



1.7 Test Location

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

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: 5 GHz WLAN		
Restricted Band Edges	Akhil Rajendran Bhaskaran Nair, Colin Brain, Ian Hart, Ioan-Alexandru Bogatu, Nicolae Mihailiuc and Thomas Randall	UKAS
Emission Bandwidth	Feda Hussein and Mustafa Murad	UKAS
Maximum Conducted Output Power	Feda Hussein and Mustafa Murad	UKAS
Maximum Conducted Power Spectral Density	Feda Hussein and Mustafa Murad	UKAS
Authorised Band Edges	Akhil Rajendran Bhaskaran Nair, Colin Brain, Ian Hart, Ioan-Alexandru Bogatu, Nicolae Mihailiuc and Thomas Randall	UKAS
Spurious Radiated Emissions	Dale Hills, Ian Hart, James Woods and Morsalin Hossain	UKAS
Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period	Stefan Gilfedder	UKAS

Table 5

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 15E, Clause 15.205
ISED RSS-247, Clause 3.3
ISED RSS-GEN, Clause 8.10

2.1.2 Equipment Under Test and Modification State

A3113, S/N: D6HCD7RY3W - Modification State 0
A3113, S/N: KVQP772HX1 - Modification State 0
A3113, S/N: FNN231249F - Modification State 0

2.1.3 Date of Test

01-August-2023 to 23-October-2023

2.1.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.10.5.

Restricted Band Edge measurements were performed with the device operating in SISO, MIMO and TxBF, across the various modes supported by the device.

The measurements displayed within this report have been limited to those modes which have been shown to be worst case.

Further measurements are held on file by TÜV SÜD and are available if required.

2.1.5 Environmental Conditions

Ambient Temperature	22.2 - 24.4 °C
Relative Humidity	51.9 - 56.5 %



2.1.6 Test Results

5 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 (dBuV/m)
802.11a	54 Mbps	-	-	5180	5150	66.87	51.40
802.11a	54 Mbps	-	-	5200	5150	60.03	46.38
802.11n HT20	MCS2	-	-	5180	5150	64.46	51.38
802.11n HT20	MCS7	-	-	5200	5150	62.45	46.51
802.11ax HE20	MCS11x1	SU	-	5180	5150	68.41	51.20
802.11ax HE20	MCS11x1	106	54	5180	5150	67.69	50.35
802.11ax HE20	MCS11x1	SU	-	5200	5150	66.34	47.61
802.11a	54 Mbps	-	-	5300	5350	62.42	50.03
802.11a	12 Mbps	-	-	5320	5350	63.42	51.50
802.11n HT20	MCS7	-	-	5300	5350	67.47	50.18
802.11n HT20	MCS7	-	-	5320	5350	68.95	51.34
802.11ax HE20	MCS11x1	SU	-	5300	5350	68.98	50.67
802.11ax HE20	MCS2x1	SU	-	5320	5350	65.32	51.42
802.11ax HE20	MCS11x1	106	54	5320	5350	66.44	50.34
802.11a	54 Mbps	-	-	5500	5460	63.64	47.86
802.11a	54 Mbps	-	-	5520	5460	63.42	48.93
802.11n HT20	MCS2	-	-	5500	5460	63.70	49.50
802.11n HT20	MCS7	-	-	5520	5460	63.25	48.35
802.11ax HE20	MCS11x1	SU	-	5500	5460	63.62	47.27
802.11ax HE20	MCS11x1	106	53	5500	5460	63.39	48.09
802.11ax HE20	MCS2x1	SU	-	5520	5460	63.40	48.76
802.11ax HE20	MCS11x1	106	54	5520	5460	60.16	48.01
802.11ax HE20	MCS11x1	SU	-	5540	5460	60.38	48.18

Table 6 - SISO Restricted Band Edge Results

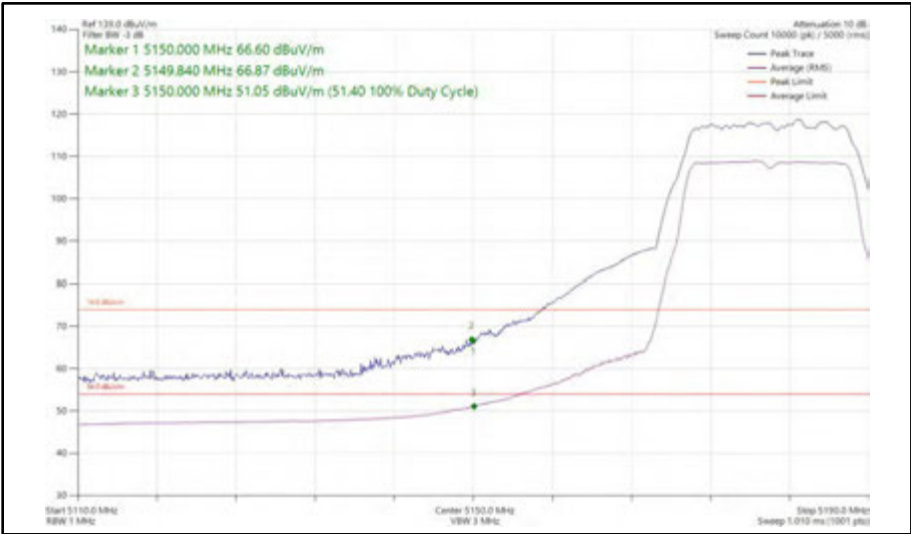


Figure 1 - 802.11a, SISO, Core 0 - 5180 MHz
Band Edge Frequency 5150 MHz

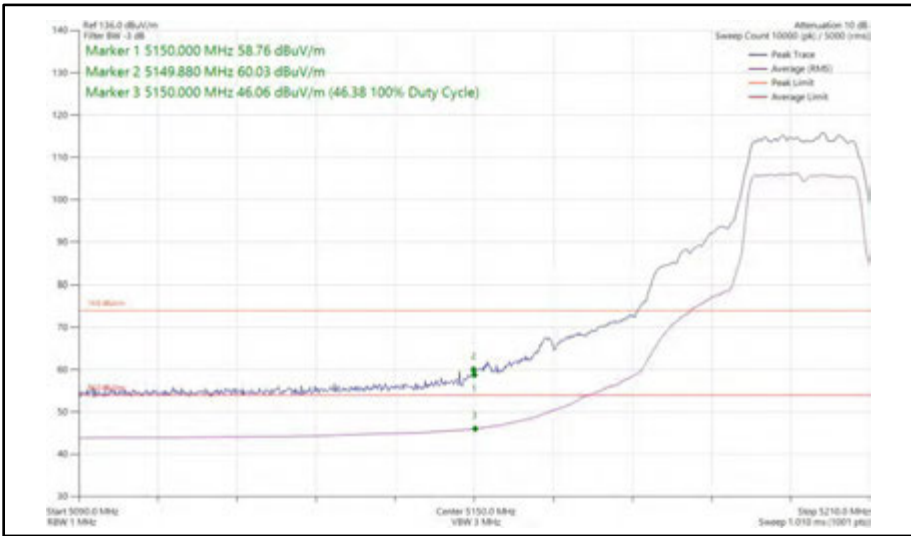


Figure 2 - 802.11a, SISO, Core 0 - 5200 MHz
Band Edge Frequency 5150 MHz

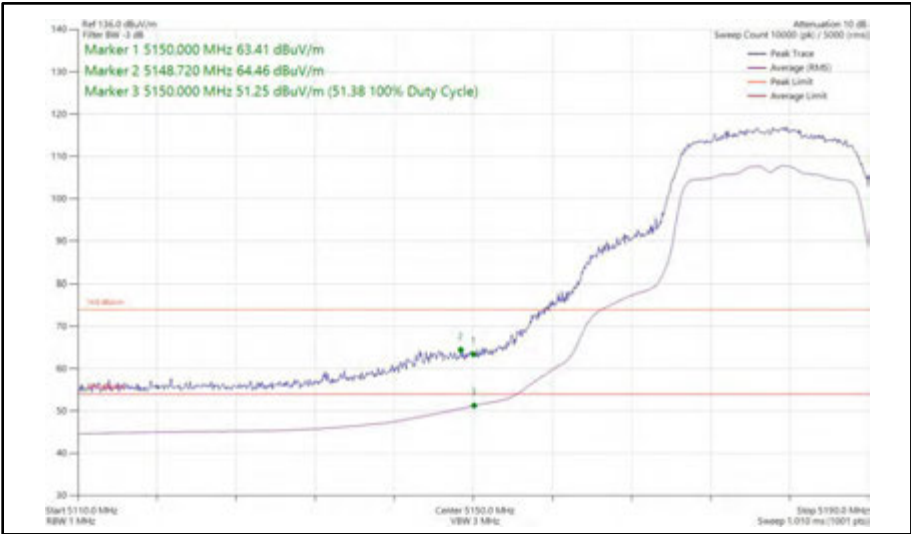


Figure 3 - 802.11n HT20, SISO, Core 0 - 5180 MHz
Band Edge Frequency 5150 MHz

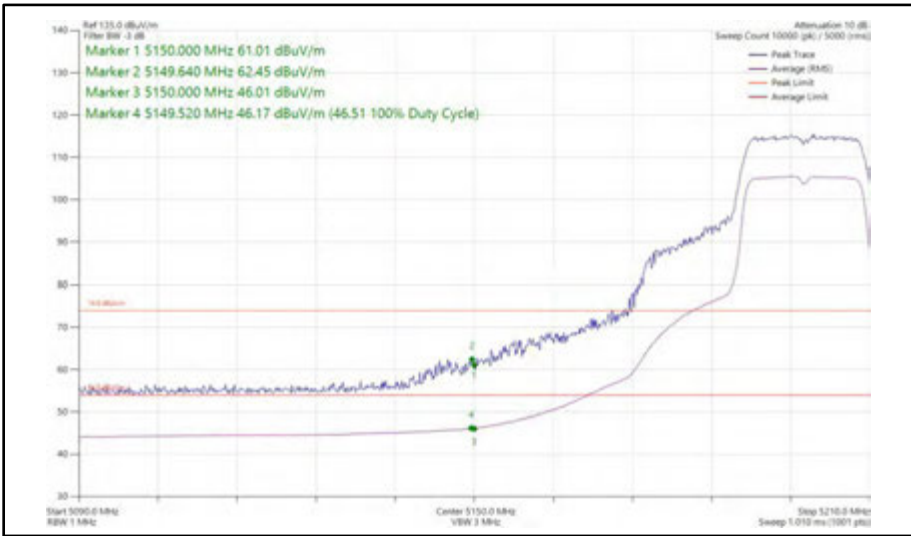


Figure 4 - 802.11n HT20, SISO, Core 0 - 5200 MHz
Band Edge Frequency 5150 MHz

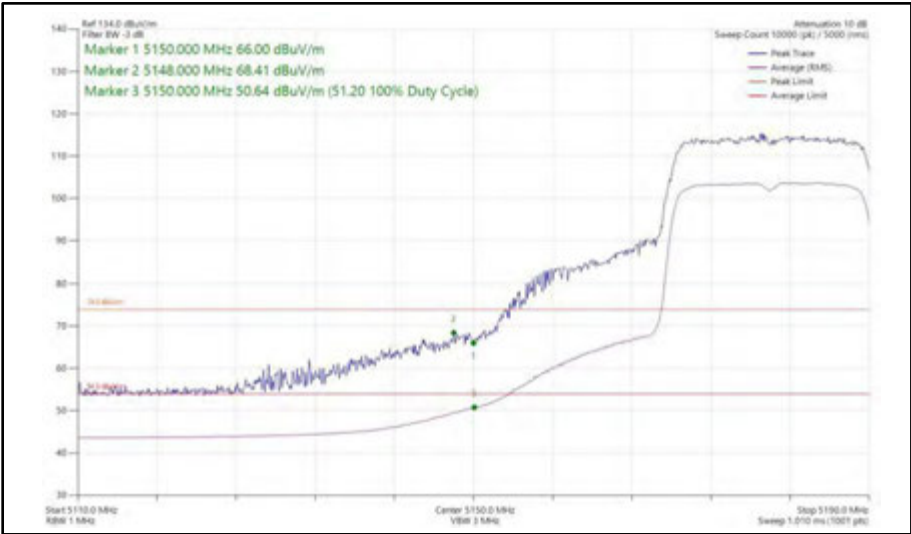


Figure 5 - 802.11ax HE20, SU, SISO, Core 0 - 5180 MHz
Band Edge Frequency 5150 MHz

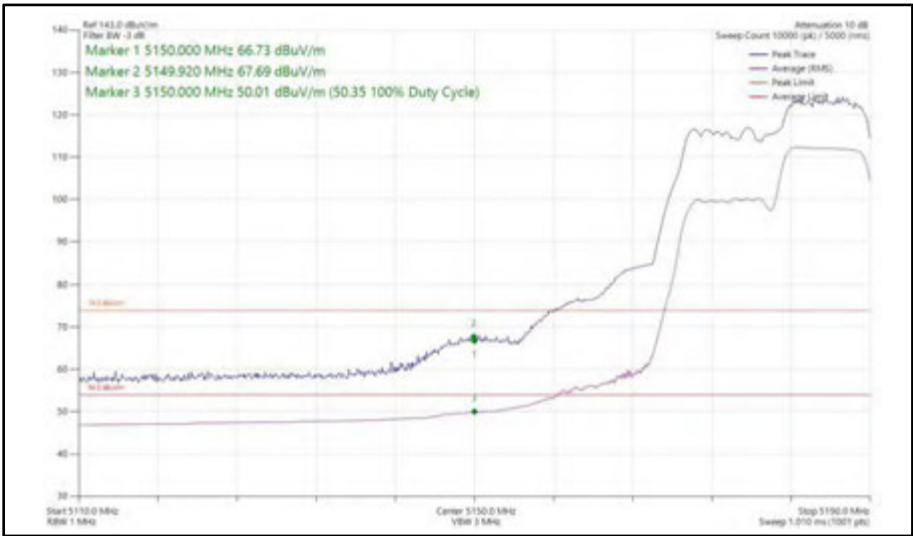


Figure 6 - 802.11ax HE20, RU 106-54, SISO, Core 0 - 5180 MHz
Band Edge Frequency 5150 MHz

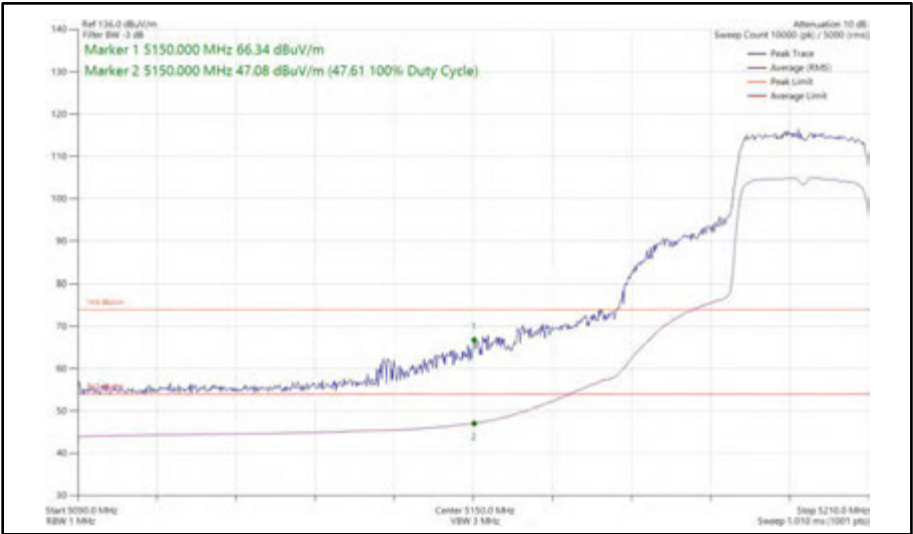


Figure 7 - 802.11ax HE20, SU, SISO, Core 0 - 5200 MHz
Band Edge Frequency 5150 MHz

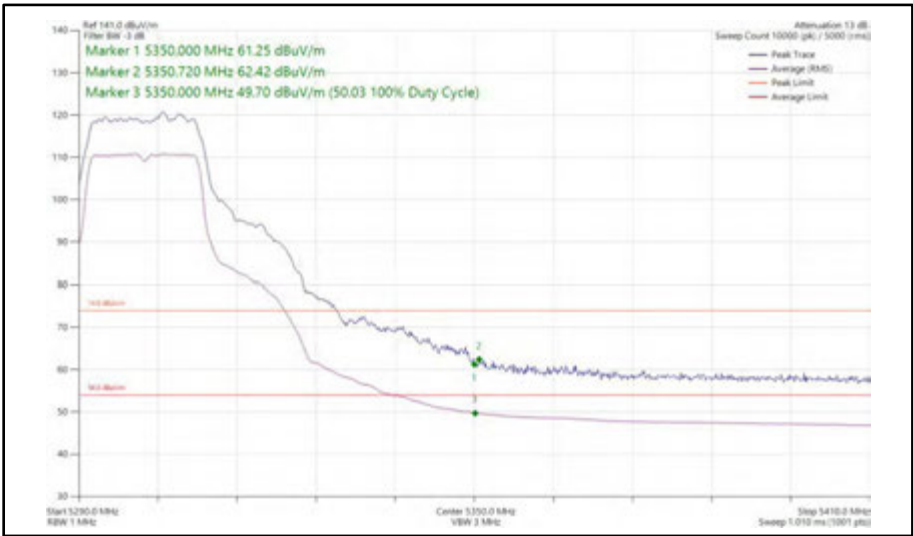


Figure 8 - 802.11a, SISO, Core 0 - 5300 MHz
Band Edge Frequency 5350 MHz

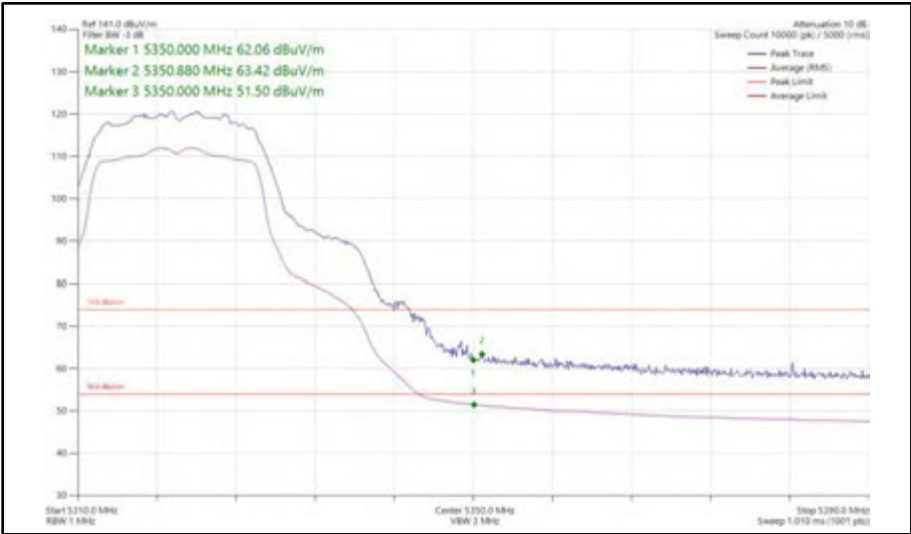


Figure 9 - 802.11a, SISO, Core 0 - 5320 MHz
Band Edge Frequency 5350 MHz

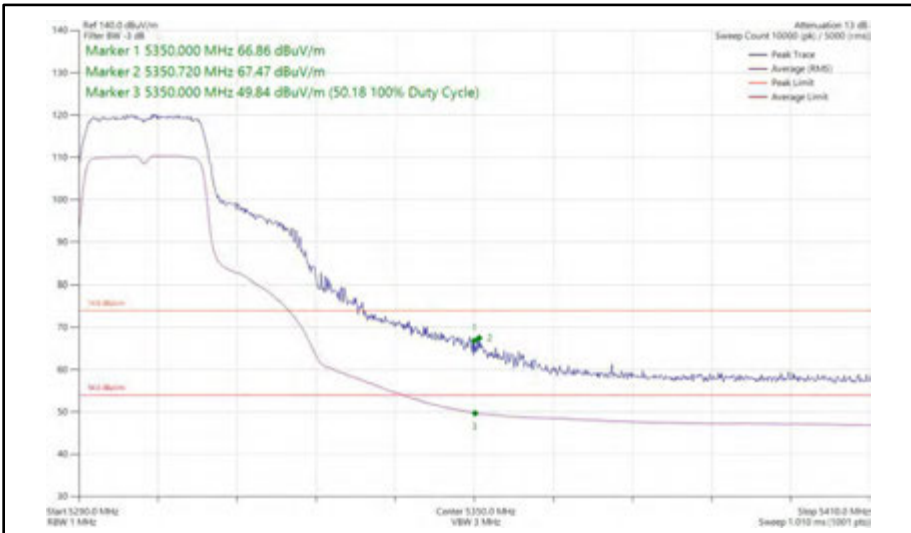


Figure 10 - 802.11n HT20, SISO, Core 0 - 5300 MHz
Band Edge Frequency 5350 MHz

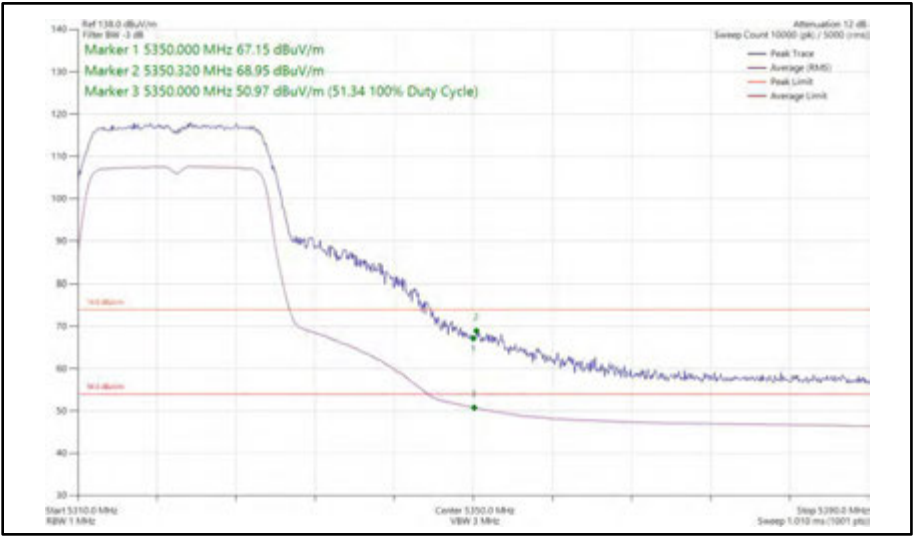


Figure 11 - 802.11n HT20, SISO, Core 0 - 5320 MHz
Band Edge Frequency 5350 MHz

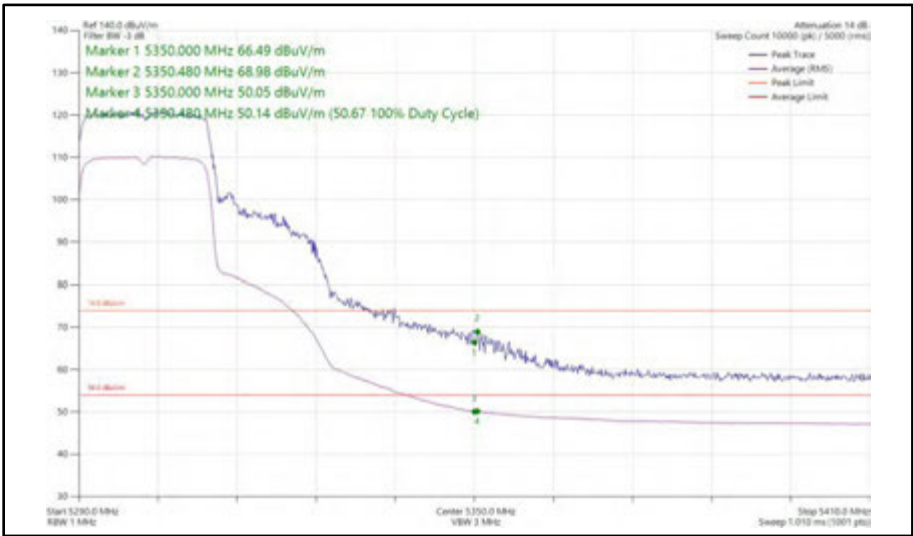


Figure 12 - 802.11ax HE20, SU, SISO, Core 0 - 5300 MHz
Band Edge Frequency 5350 MHz

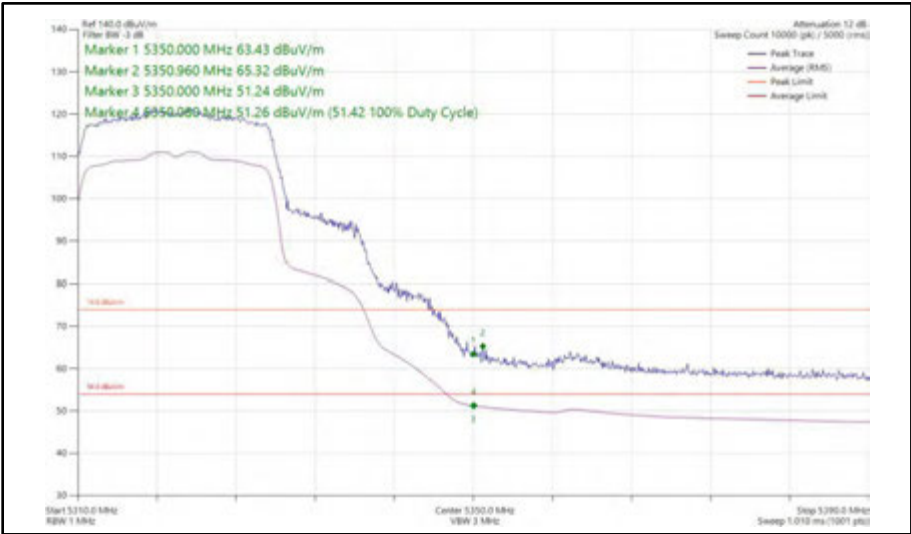


Figure 13 - 802.11ax HE20, SU, SISO, Core 0 - 5320 MHz
Band Edge Frequency 5350 MHz

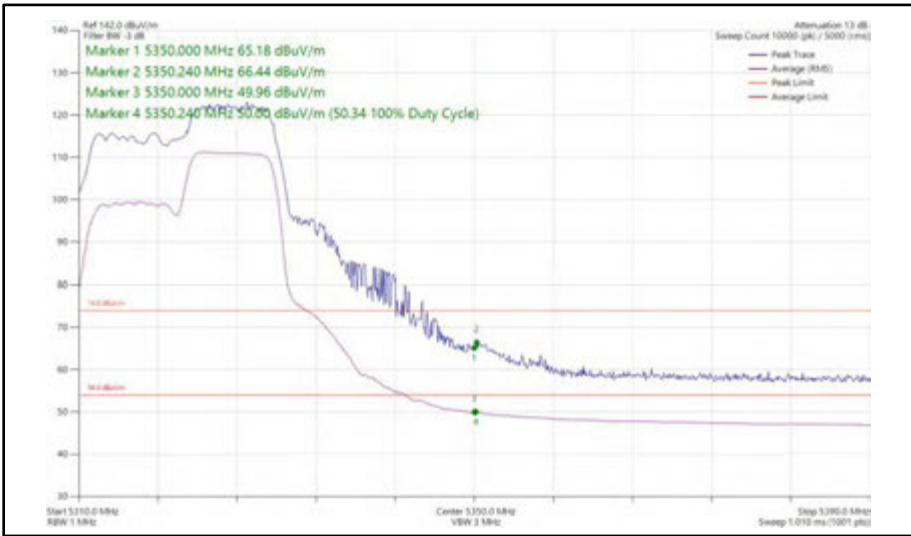


Figure 14 - 802.11ax HE20, RU 106-54, SISO, Core 0 - 5320 MHz
Band Edge Frequency 5350 MHz

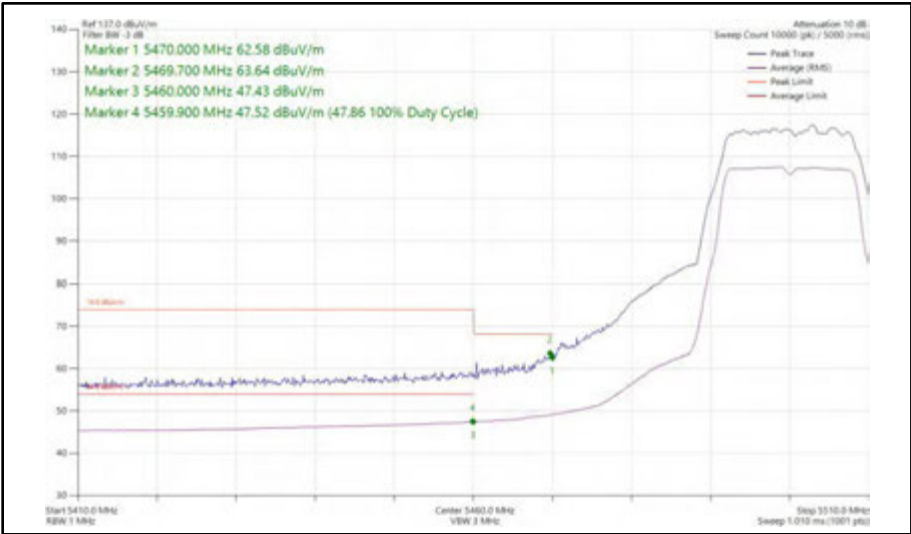


Figure 15 - 802.11a, SISO, Core 0 - 5500 MHz
Band Edge Frequency 5460 MHz

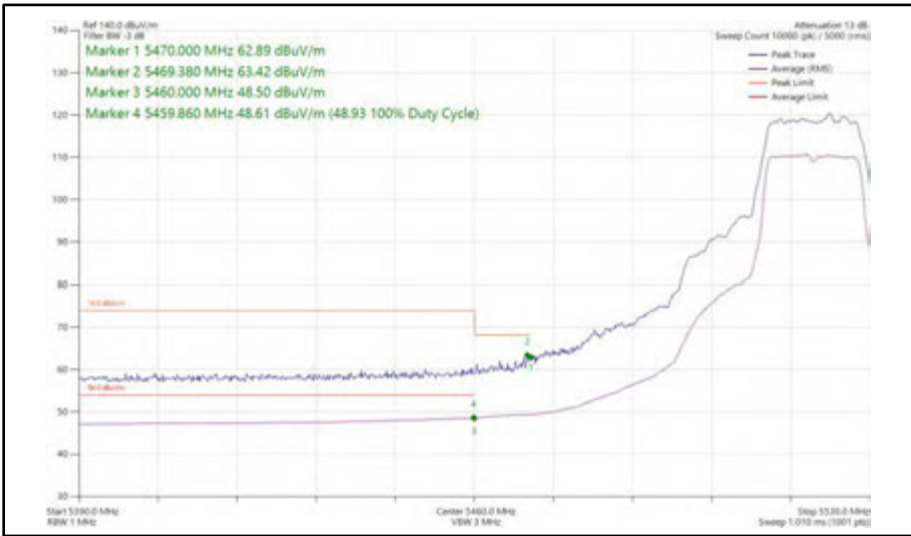


Figure 16 - 802.11a, SISO, Core 0 - 5520 MHz
Band Edge Frequency 5460 MHz

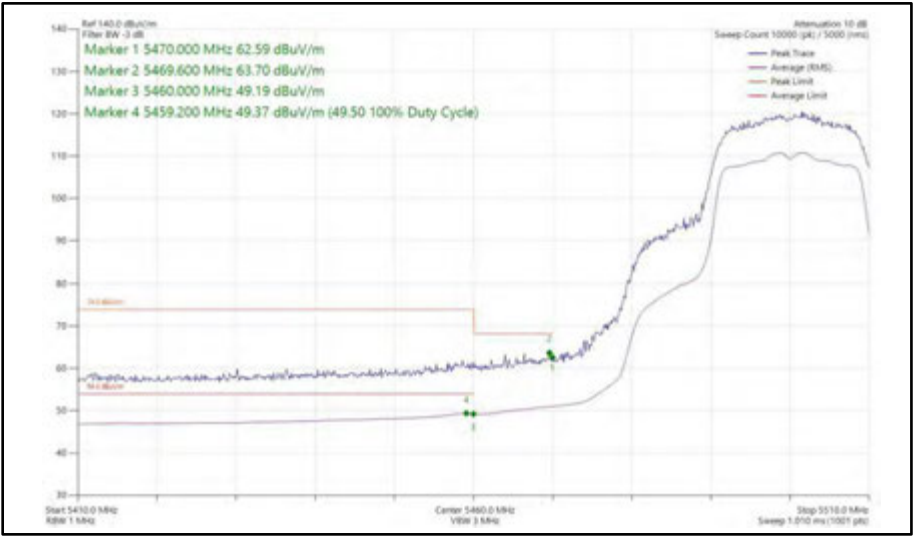


Figure 17 - 802.11n HT20, SISO, Core 0 - 5500 MHz
Band Edge Frequency 5460 MHz

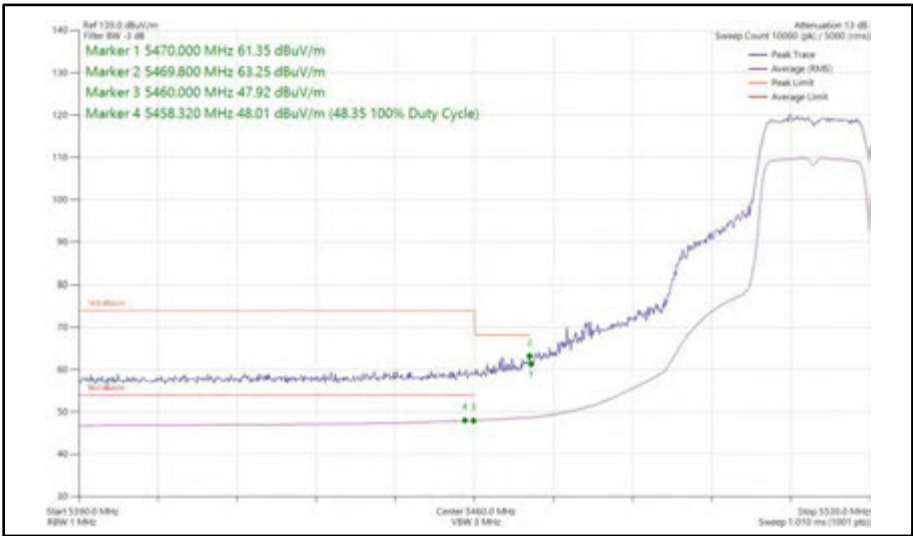


Figure 18 - 802.11n HT20, SISO, Core 0 - 5520 MHz
Band Edge Frequency 5460 MHz

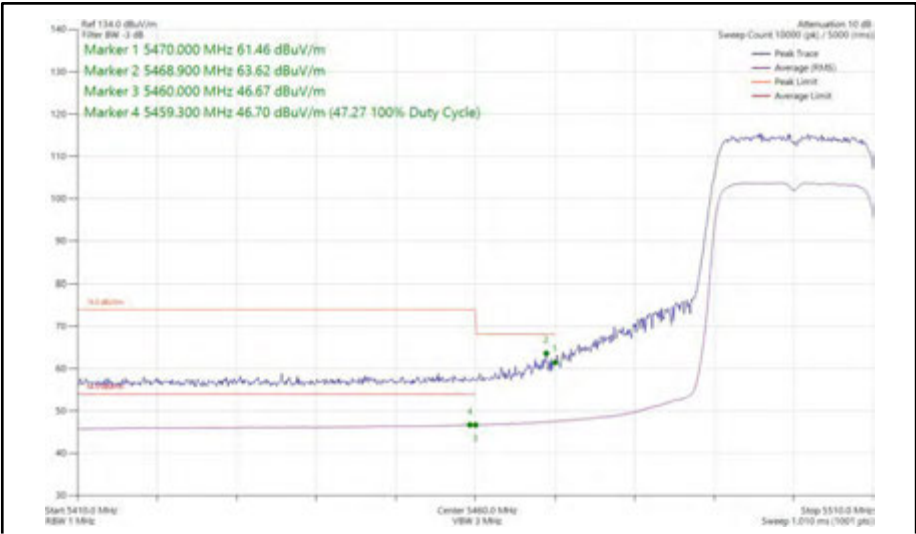


Figure 19 - 802.11ax HE20, SU, SISO, Core 0 - 5500 MHz
Band Edge Frequency 5460 MHz

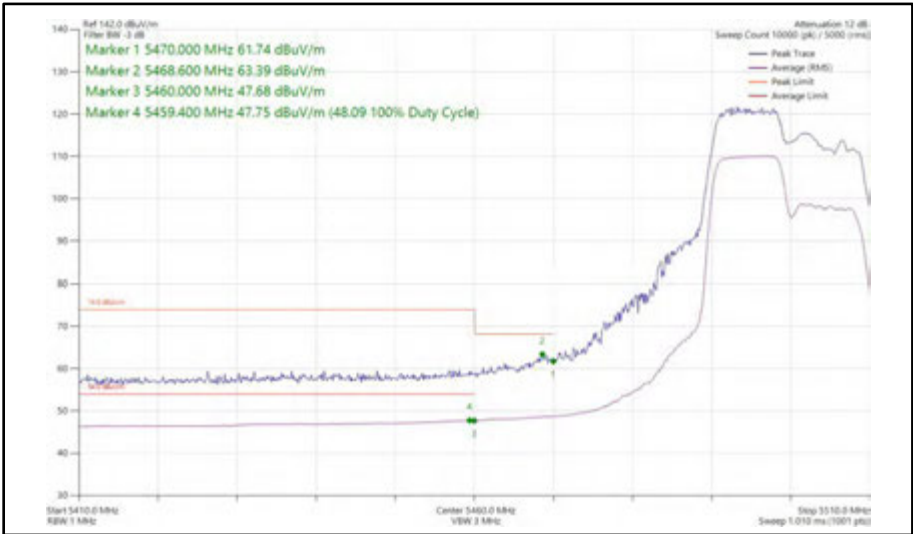


Figure 20 - 802.11ax HE20, RU 106-53, SISO, Core 0 - 5500 MHz
Band Edge Frequency 5460 MHz

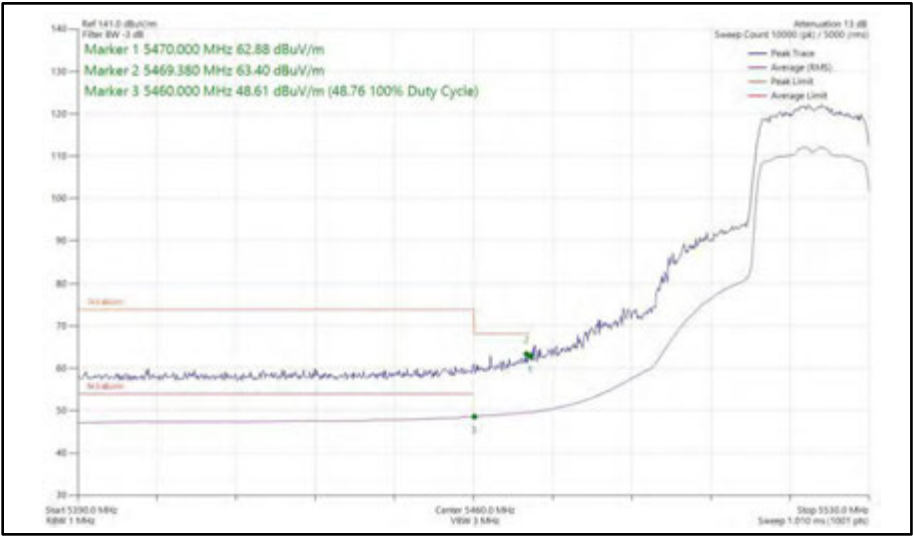


Figure 21 - 802.11ax HE20, SU, SISO, Core 0 - 5520 MHz
Band Edge Frequency 5460 MHz

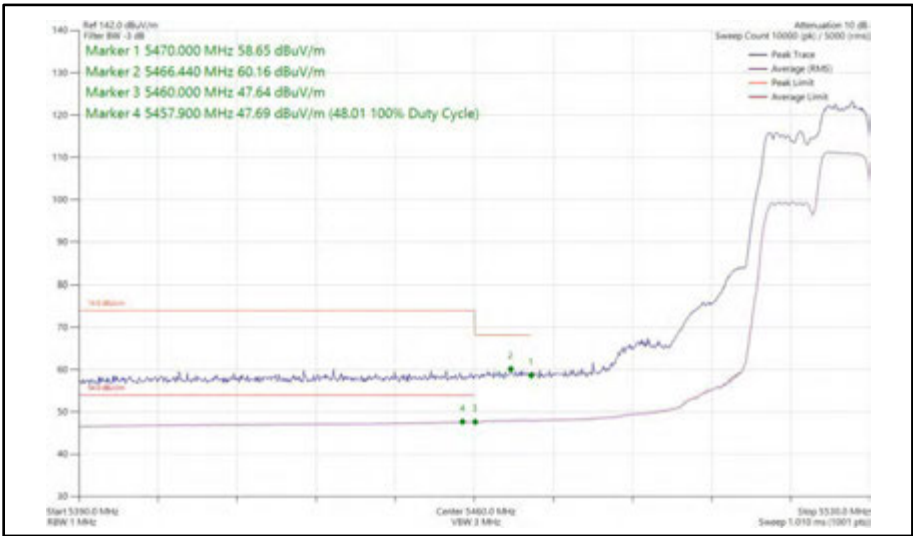


Figure 22 - 802.11ax HE20, RU 106-54, SISO, Core 0 - 5520 MHz
Band Edge Frequency 5460 MHz

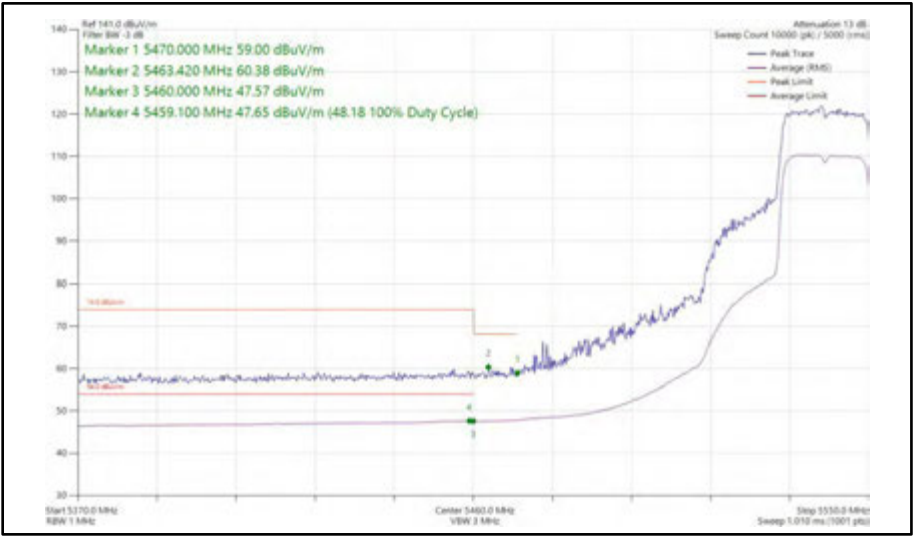


Figure 23 - 802.11ax HE20, SU, SISO, Core 0 - 5540 MHz
Band Edge Frequency 5460 MHz



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 (dBuV/m)
802.11a	12 Mbps	-	-	5180	5150	65.95	51.38
802.11a	24 Mbps	-	-	5200	5150	56.21	45.00
802.11n HT20	MCS4	-	-	5180	5150	67.30	51.19
802.11n HT20	MCS7	-	-	5200	5150	57.80	44.75
802.11ax HE20	MCS4x1	SU	-	5180	5150	66.15	51.43
802.11ax HE20	MCS11x1	106	53	5180	5150	65.57	49.23
802.11ax HE20	MCS2x1	SU	-	5200	5150	57.05	45.12
802.11a	54 Mbps	-	-	5300	5350	61.29	48.44
802.11a	24 Mbps	-	-	5320	5350	65.36	51.46
802.11n HT20	MCS4	-	-	5300	5350	60.82	48.13
802.11n HT20	MCS2	-	-	5320	5350	64.61	51.45
802.11ax HE20	MCS11x1	SU	-	5300	5350	67.43	49.22
802.11ax HE20	MCS4x1	SU	-	5320	5350	65.21	51.22
802.11ax HE20	MCS11x1	106	54	5320	5350	64.93	49.66
802.11a	12 Mbps	-	-	5500	5460	63.60	48.89
802.11a	24 Mbps	-	-	5520	5460	63.59	48.10
802.11n HT20	MCS7	-	-	5500	5460	63.55	46.61
802.11n HT20	MCS4	-	-	5520	5460	63.60	47.33
802.11ax HE20	MCS11x1	SU	-	5500	5460	63.57	47.46
802.11ax HE20	MCS11x1	106	54	5500	5460	63.19	48.14
802.11ax HE20	MCS11x1	SU	-	5520	5460	63.32	46.87
802.11ax HE20	MCS11x1	106	53	5520	5460	59.83	47.62
802.11ax HE20	MCS11x1	SU	-	5540	5460	60.14	47.41

Table 7 - SISO Restricted Band Edge Results

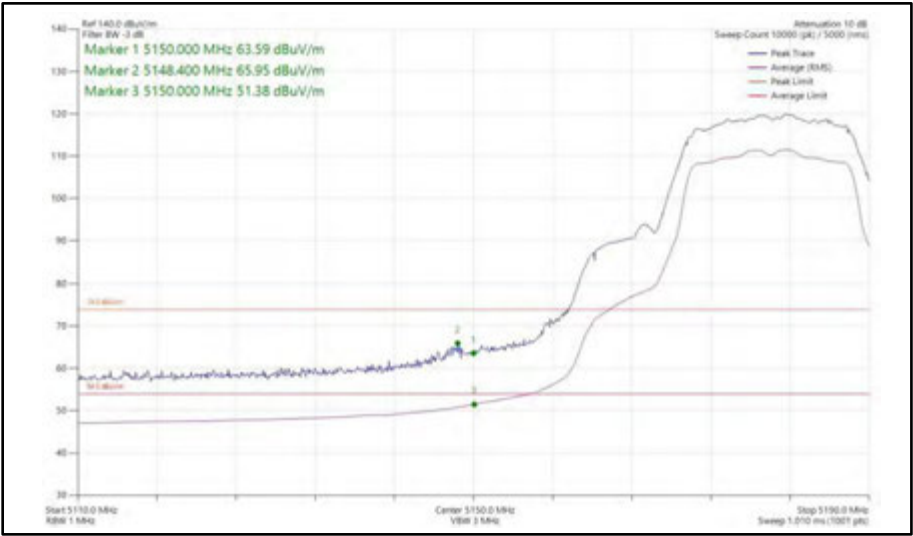


Figure 24 - 802.11a, SISO, Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz

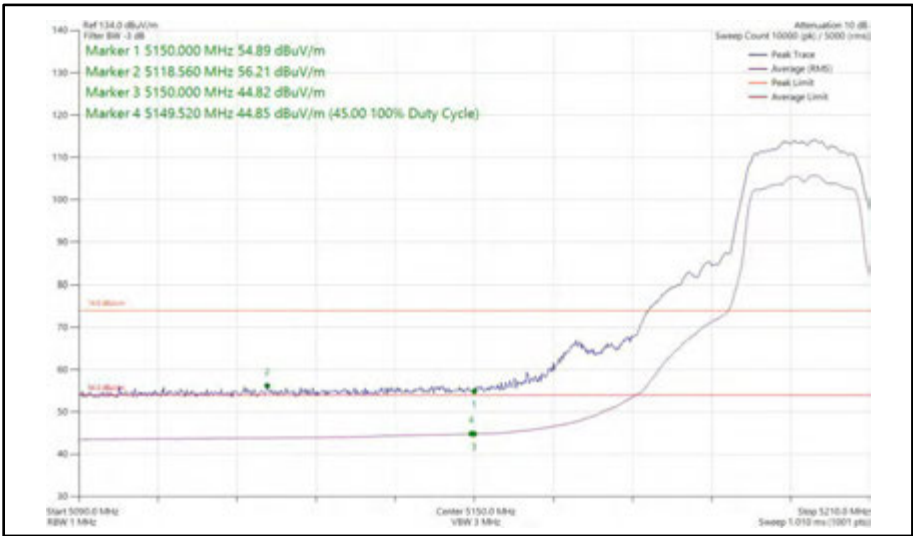


Figure 25 - 802.11a, SISO, Core 1 - 5200 MHz
Band Edge Frequency 5150 MHz

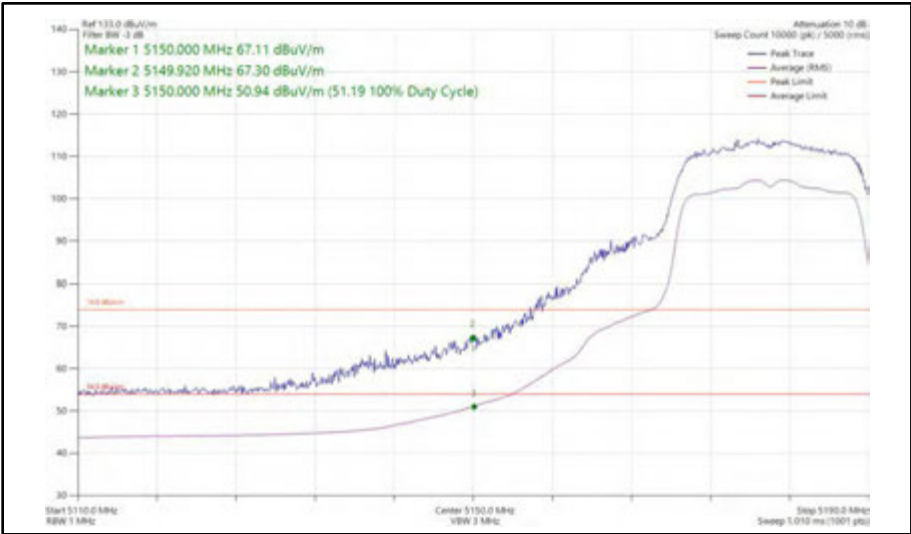


Figure 26 - 802.11n HT20, SISO, Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz

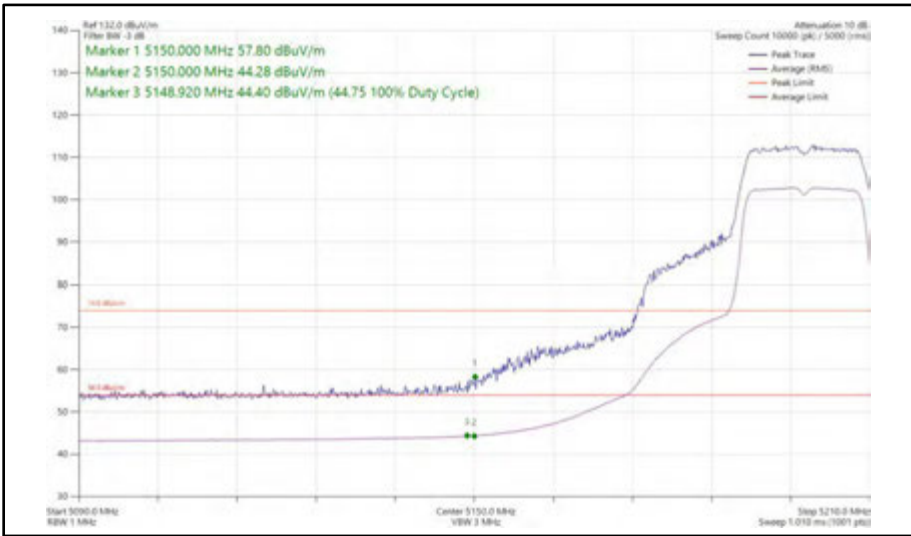


Figure 27 - 802.11n HT20, SISO, Core 1 - 5200 MHz
Band Edge Frequency 5150 MHz

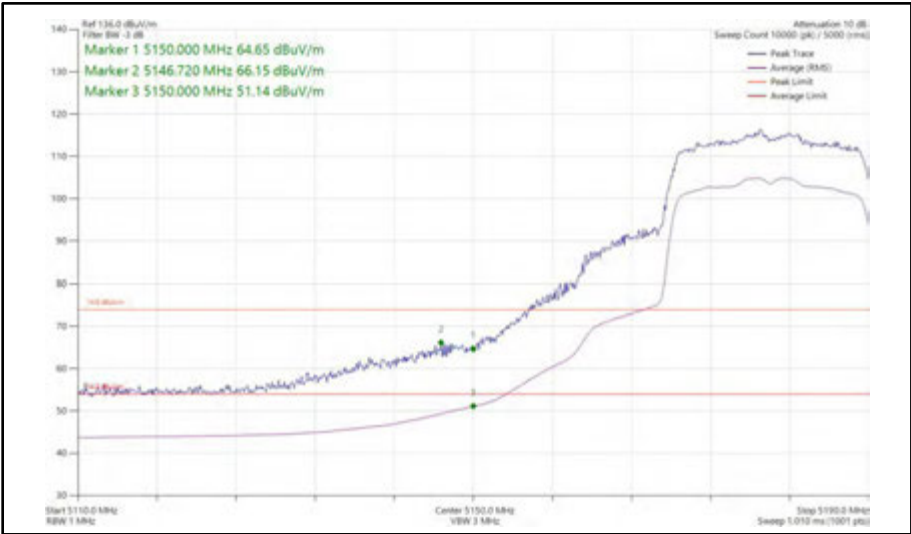


Figure 28 - 802.11ax HE20, SU, SISO, Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz

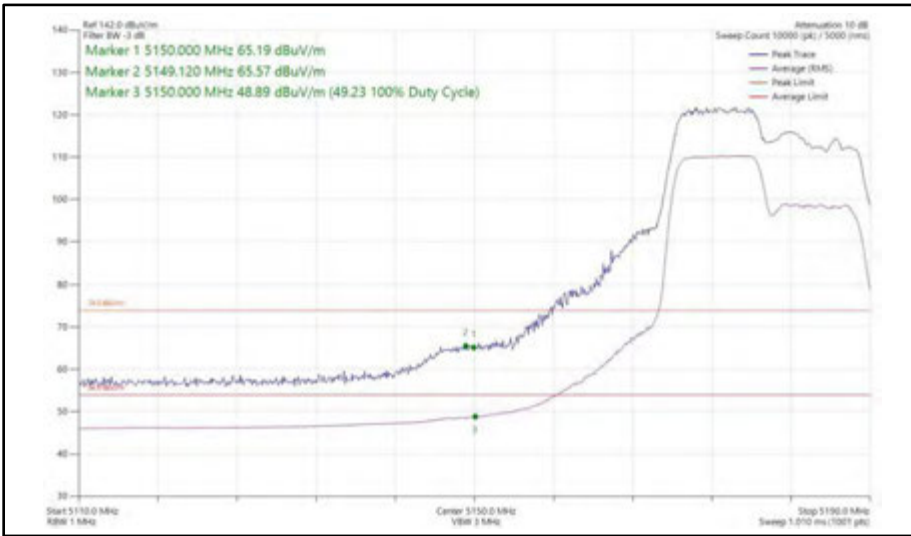


Figure 29 - 802.11ax HE20, RU 106-53, SISO, Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz

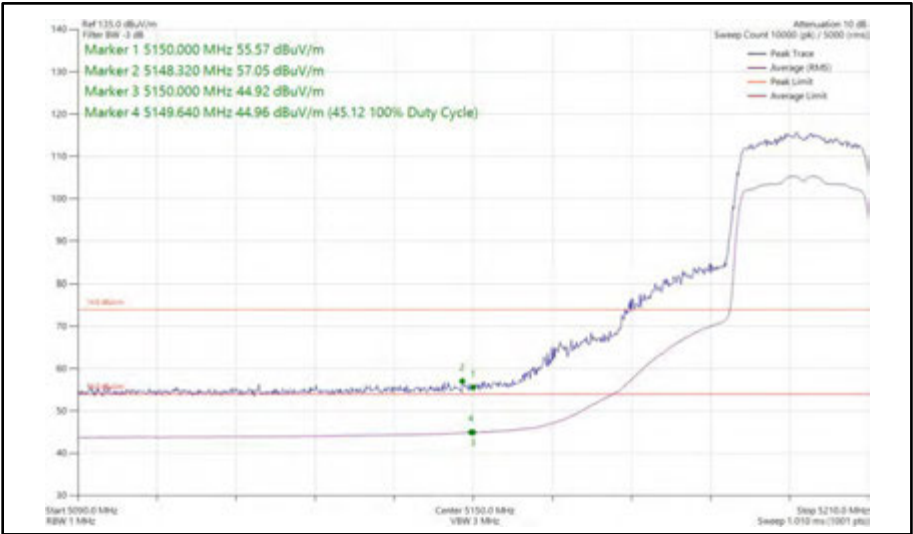


Figure 30 - 802.11ax HE20, SU, SISO, Core 1 - 5200 MHz
Band Edge Frequency 5150 MHz

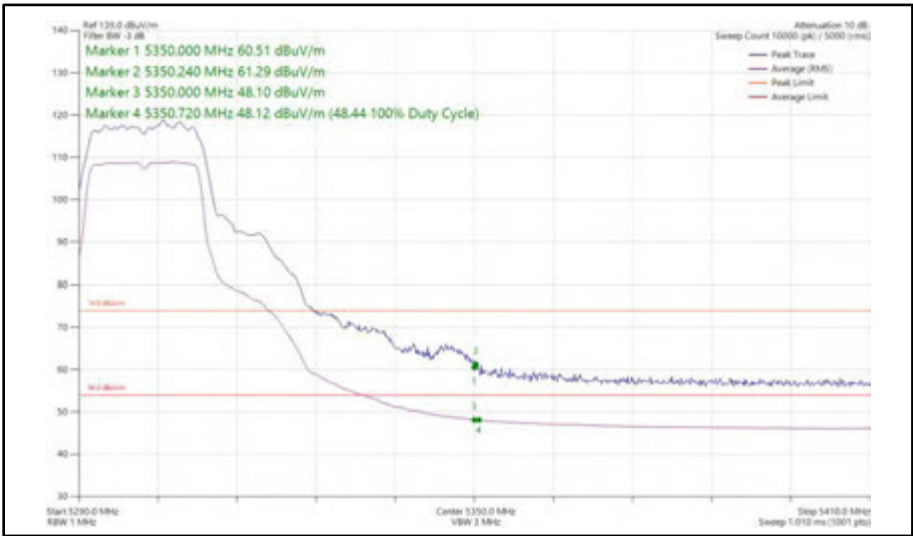


Figure 31 - 802.11a, SISO, Core 1 - 5300 MHz
Band Edge Frequency 5350 MHz

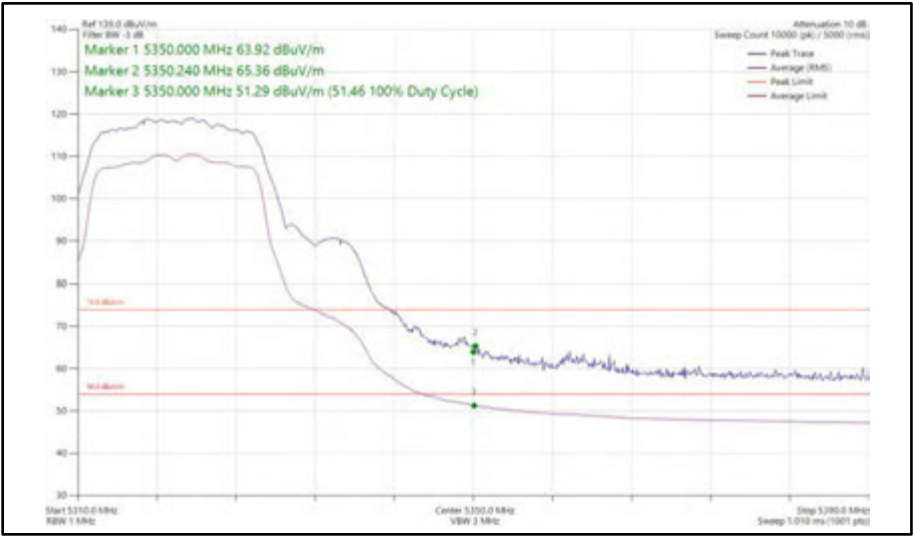


Figure 32 - 802.11a, SISO, Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

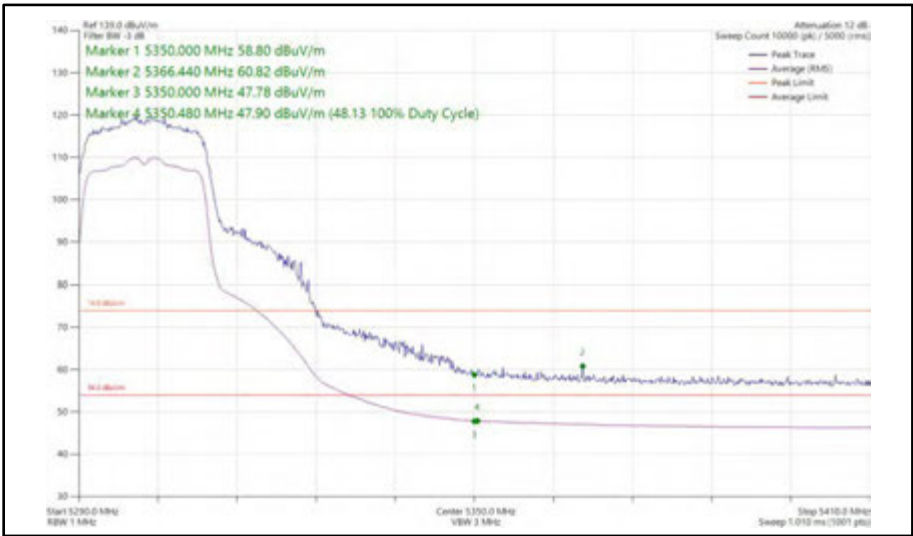


Figure 33 - 802.11n HT20, SISO, Core 1 - 5300 MHz
Band Edge Frequency 5350 MHz

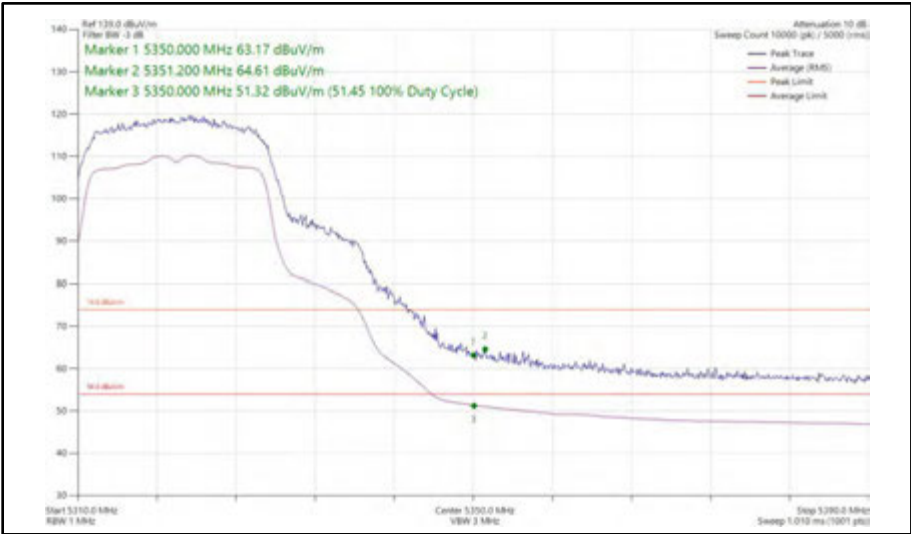


Figure 34 - 802.11n HT20, SISO, Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

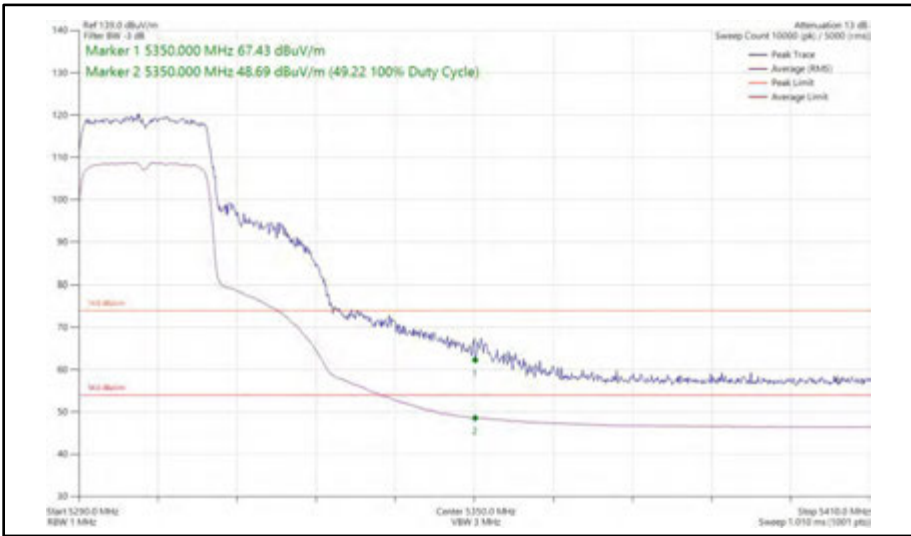


Figure 35 - 802.11ax HE20, SU, SISO, Core 1 - 5300 MHz
Band Edge Frequency 5350 MHz

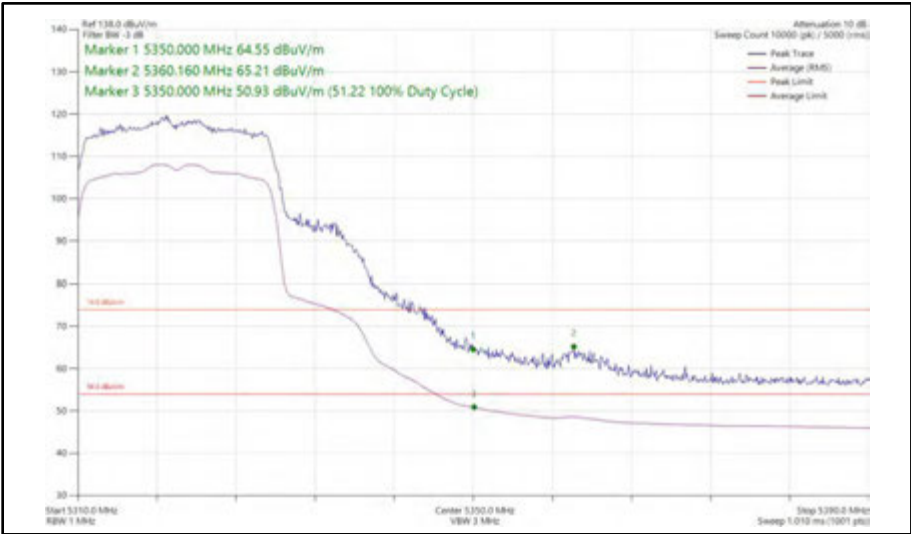


Figure 36 - 802.11ax HE20, SU, SISO, Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

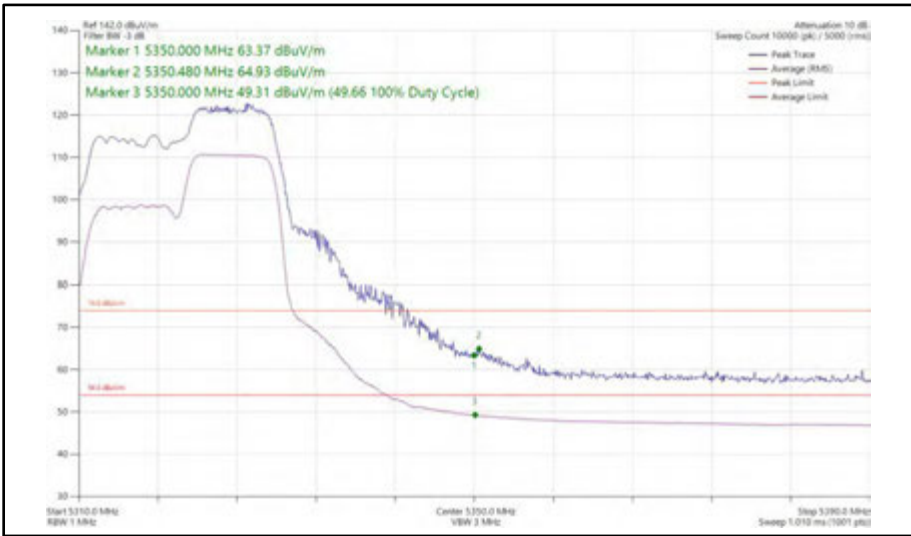


Figure 37 - 802.11ax HE20, RU 106-54, SISO, Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

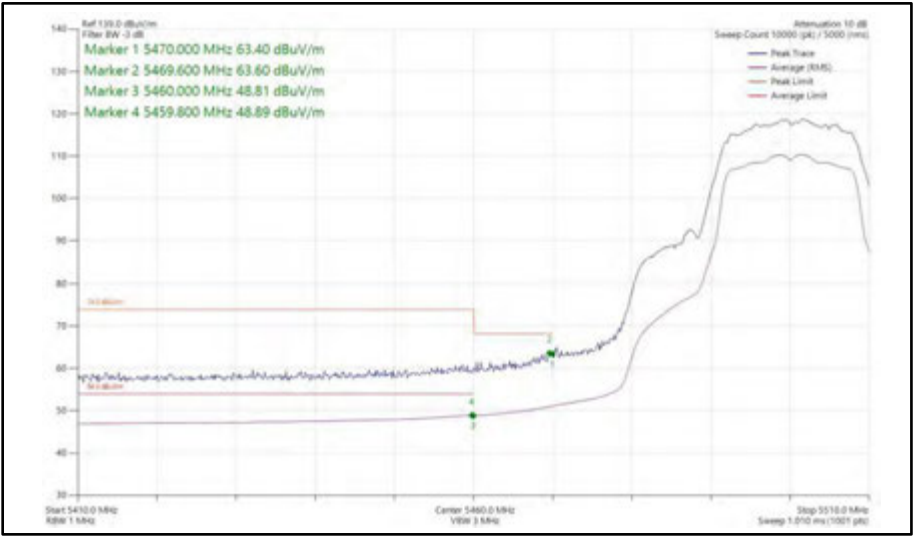


Figure 38 - 802.11a, SISO, Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

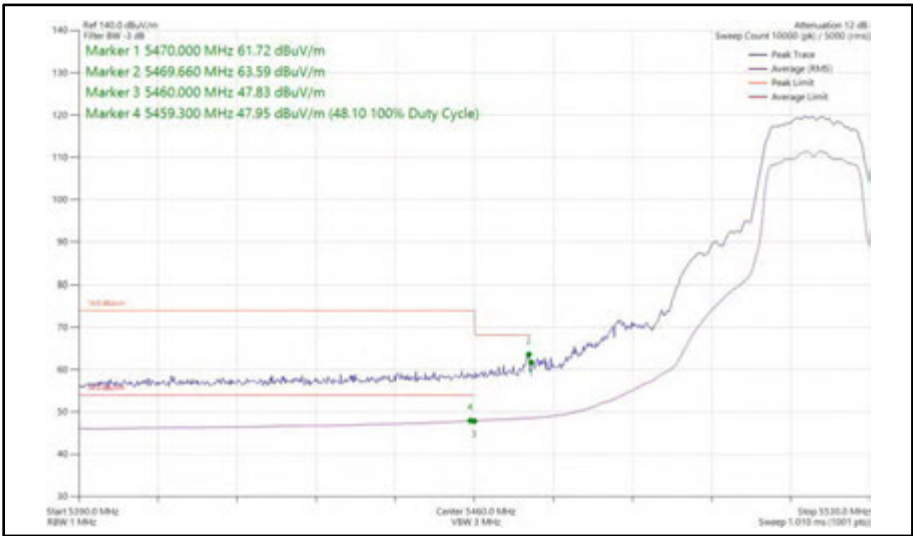


Figure 39 - 802.11a, SISO, Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

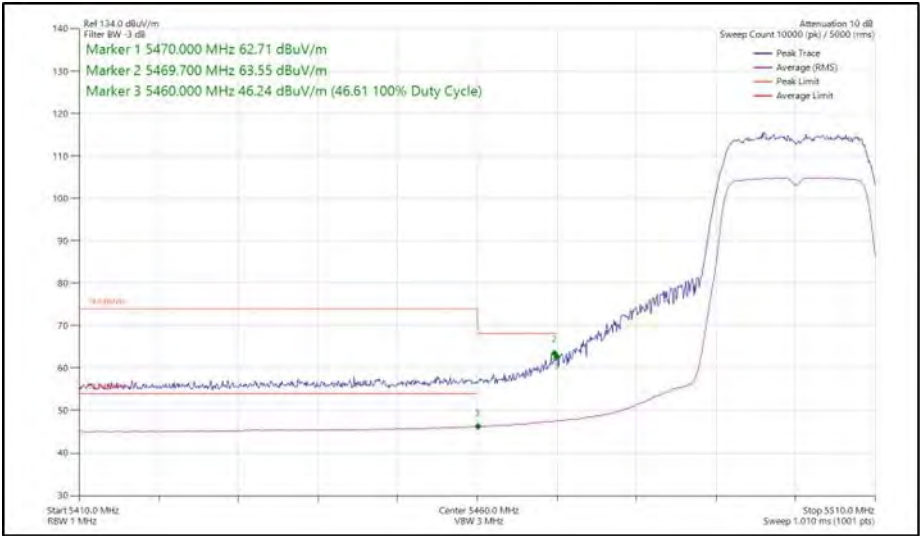


Figure 40 - 802.11n HT20, SISO, Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

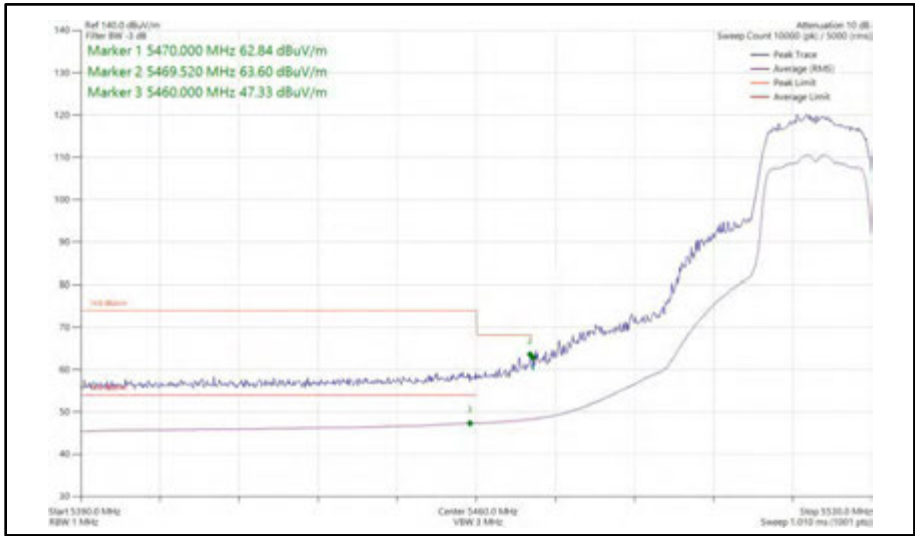


Figure 41 - 802.11n HT20, SISO, Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

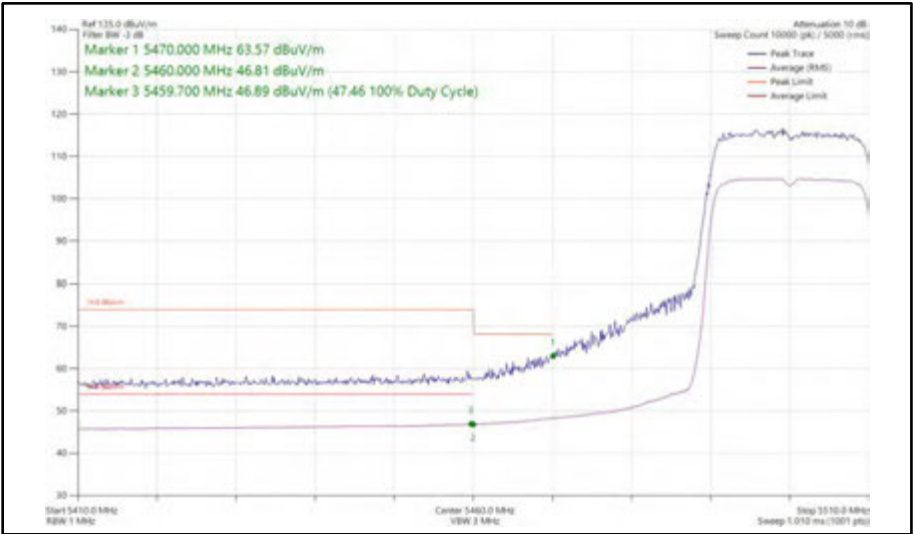


Figure 42 - 802.11ax HE20, SU, SISO, Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

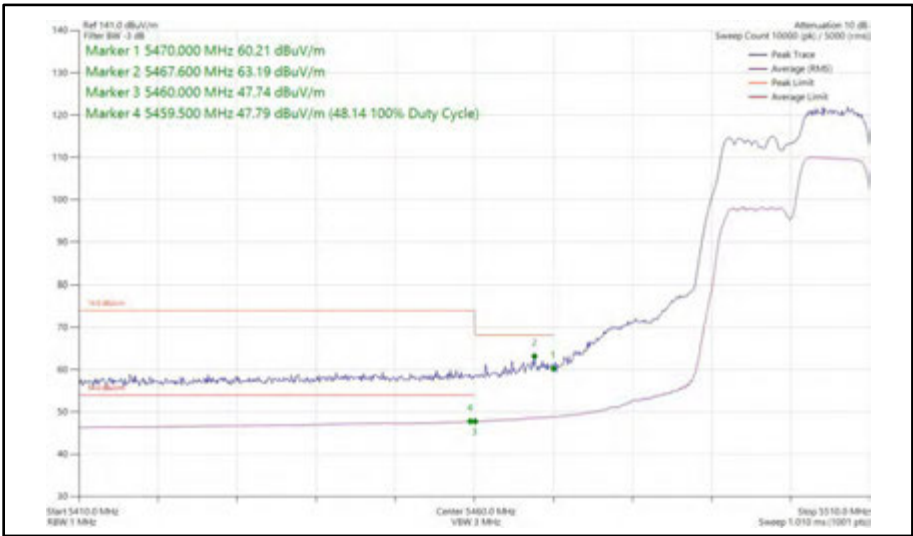


Figure 43 - 802.11ax HE20, RU 106-54, SISO, Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

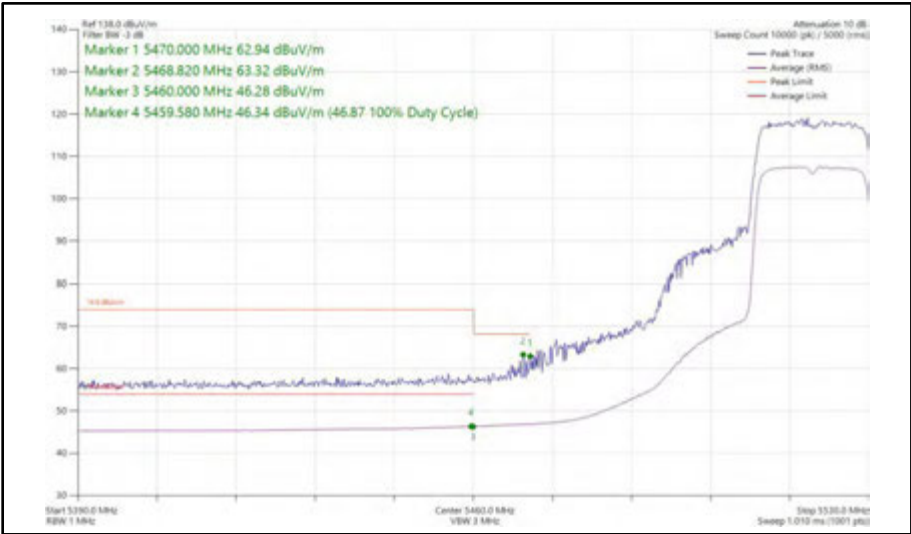


Figure 44 - 802.11ax HE20, SU, SISO, Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

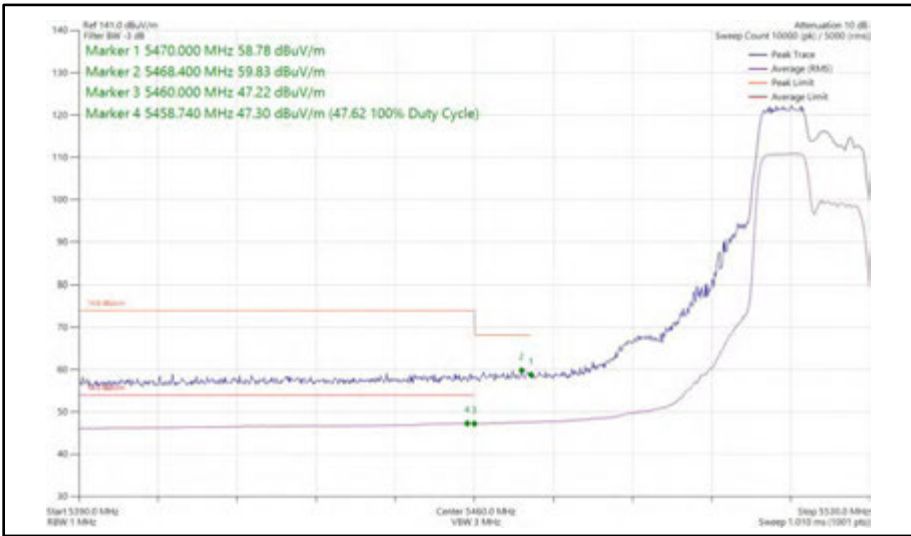


Figure 45 - 802.11ax HE20, RU 106-53, SISO, Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

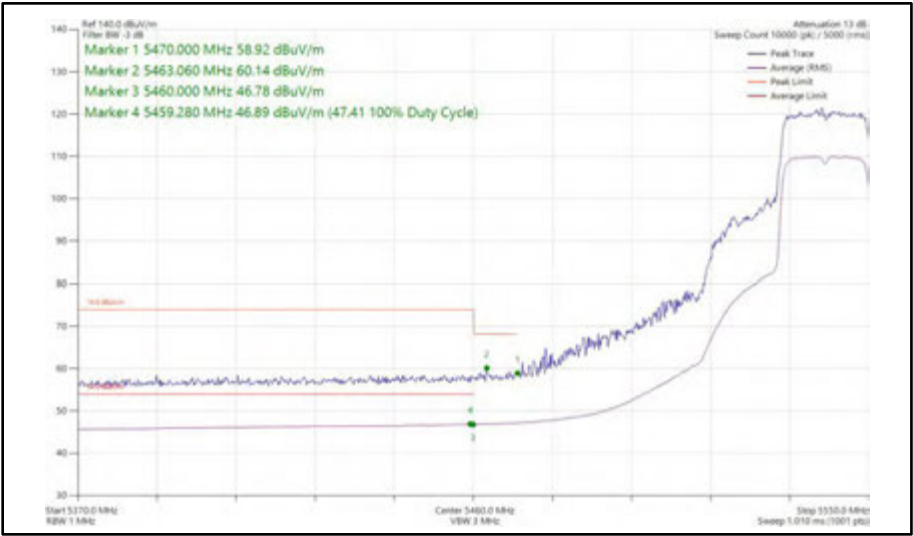
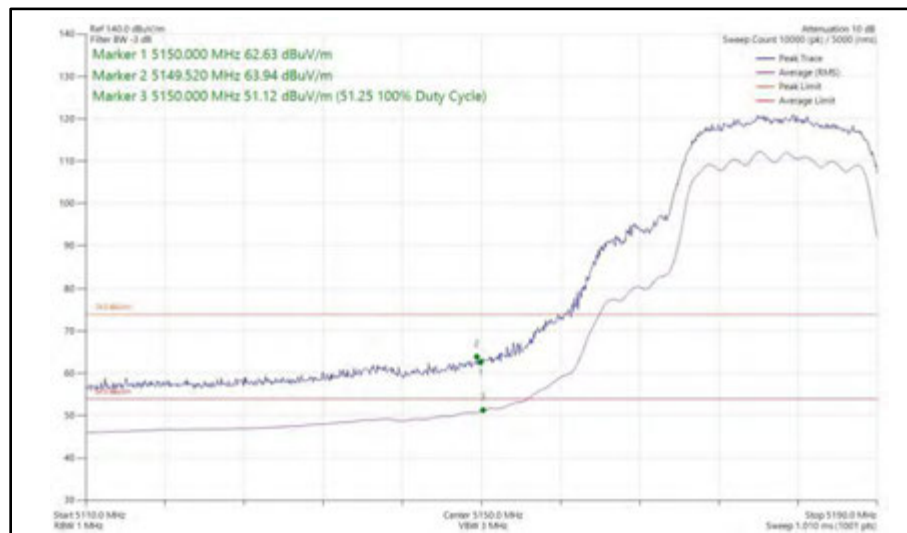


Figure 46 - 802.11ax HE20, SU, SISO, Core 1 - 5540 MHz
Band Edge Frequency 5460 MHz

20 MHz Bandwidth - Core 0 + Core 1 (CDD)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBuV/m)
802.11n HT20	MCS2	-	-	5180	5150	63.94	51.25
802.11n HT20	MCS7	-	-	5200	5150	68.76	50.25
802.11ax HE20	MCS11x1	SU	-	5180	5150	68.83	51.08
802.11ax HE20	MCS11x1	106	54	5180	5150	67.47	50.84
802.11ax HE20	MCS4x1	SU	-	5200	5150	69.29	51.21
802.11n HT20	MCS7	-	-	5300	5350	66.22	50.67
802.11n HT20	MCS4	-	-	5320	5350	66.87	51.48
802.11ax HE20	MCS11x1	SU	-	5300	5350	69.12	51.11
802.11ax HE20	MCS11x1	SU	-	5320	5350	69.08	51.33
802.11ax HE20	MCS11x1	106	54	5320	5350	66.83	51.10
802.11n HT20	MCS7	-	-	5500	5460	63.65	47.03
802.11n HT20	MCS7	-	-	5520	5460	63.33	48.61
802.11n HT20	MCS7	-	-	5540	5460	60.84	47.97
802.11ax HE20	MCS2x1	SU	-	5500	5460	63.68	49.85
802.11ax HE20	MCS11x1	106	53	5500	5460	63.64	48.26
802.11ax HE20	MCS2x1	SU	-	5520	5460	63.32	48.87
802.11ax HE20	MCS11x1	106	53	5520	5460	60.22	48.69
802.11ax HE20	MCS11x1	SU	-	5540	5460	60.21	48.52

Table 8 - CDD Restricted Band Edge Results



**Figure 47 - 802.11n HT20, CDD, Core 0 + Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz**

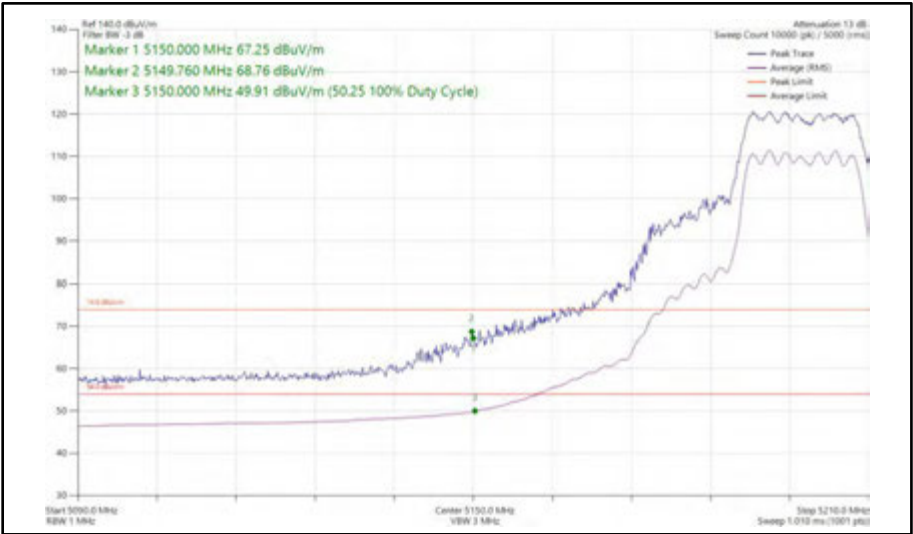


Figure 48 - 802.11n HT20, CDD, Core 0 + Core 1 - 5200 MHz
Band Edge Frequency 5150 MHz

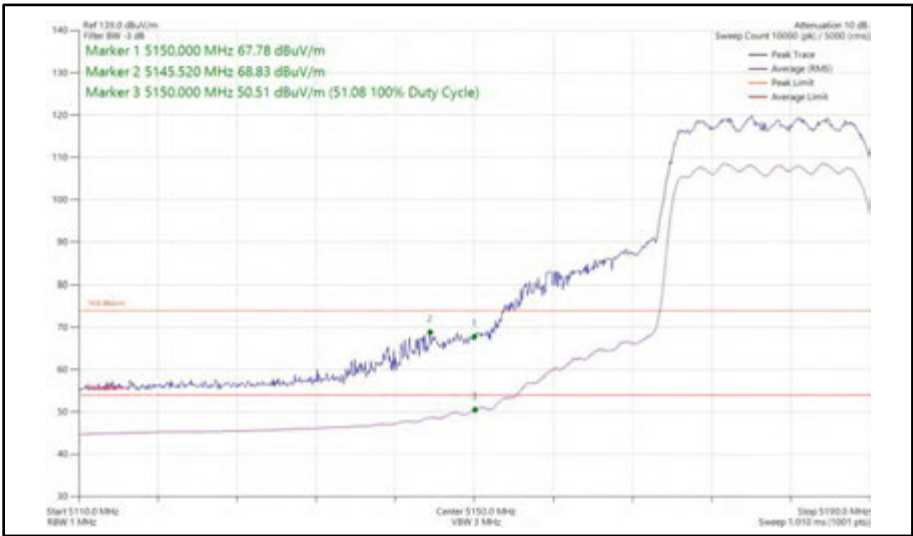


Figure 49 - 802.11ax HE20, SU, CDD, Core 0 + Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz

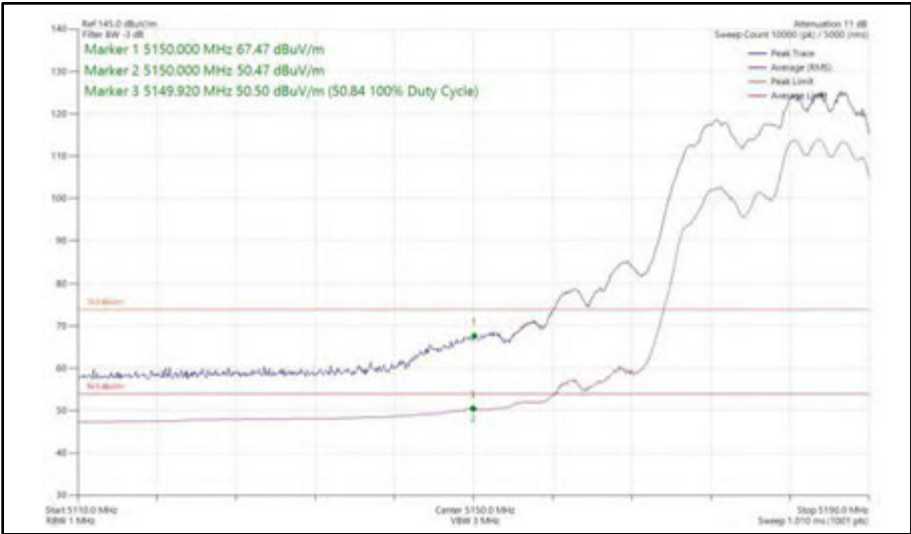


Figure 50 - 802.11ax HE20, RU 106-54, CDD, Core 0 + Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz

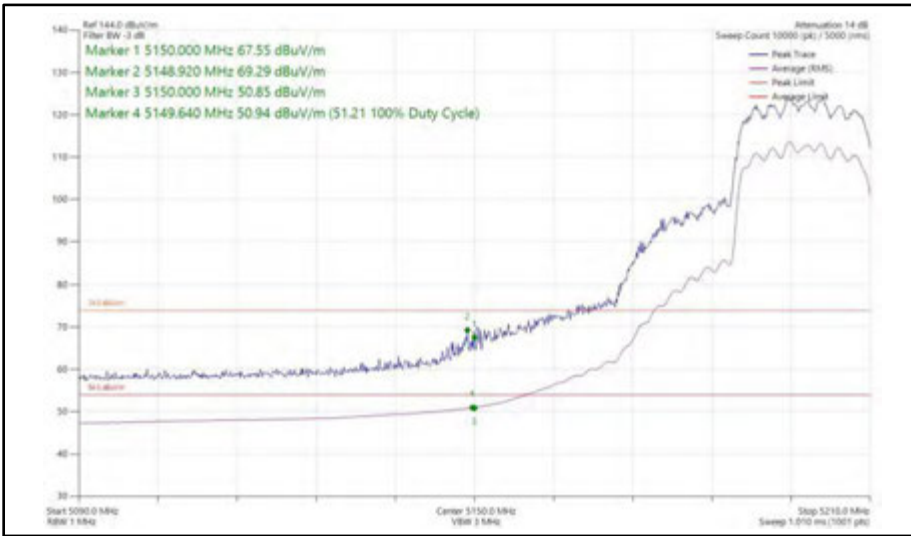


Figure 51 - 802.11ax HE20, SU, CDD, Core 0 + Core 1 - 5200 MHz
Band Edge Frequency 5150 MHz

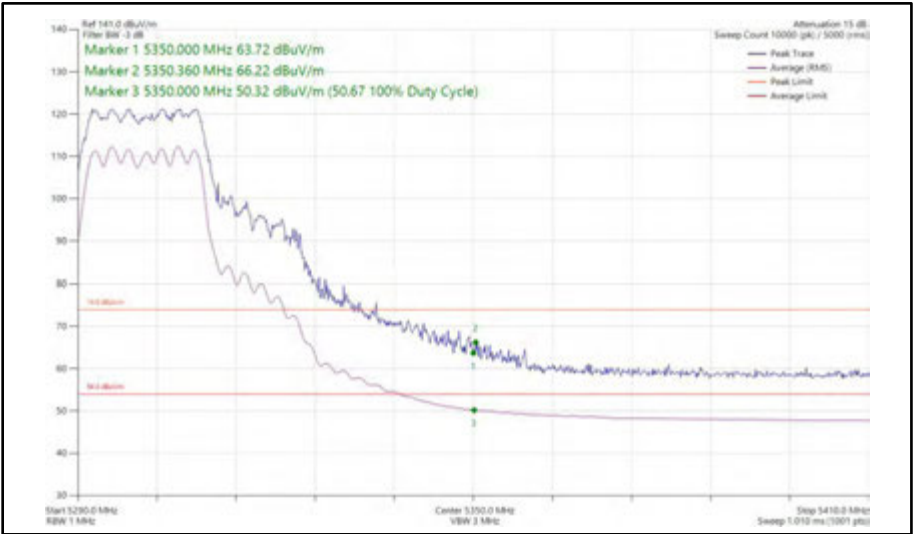


Figure 52 - 802.11n HT20, CDD, Core 0 + Core 1 - 5300 MHz
Band Edge Frequency 5350 MHz

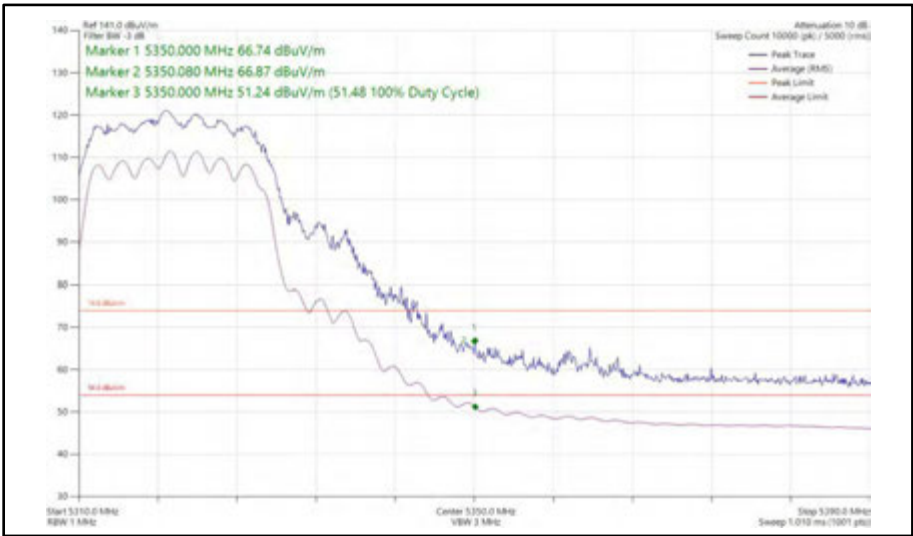


Figure 53 - 802.11n HT20, CDD, Core 0 + Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

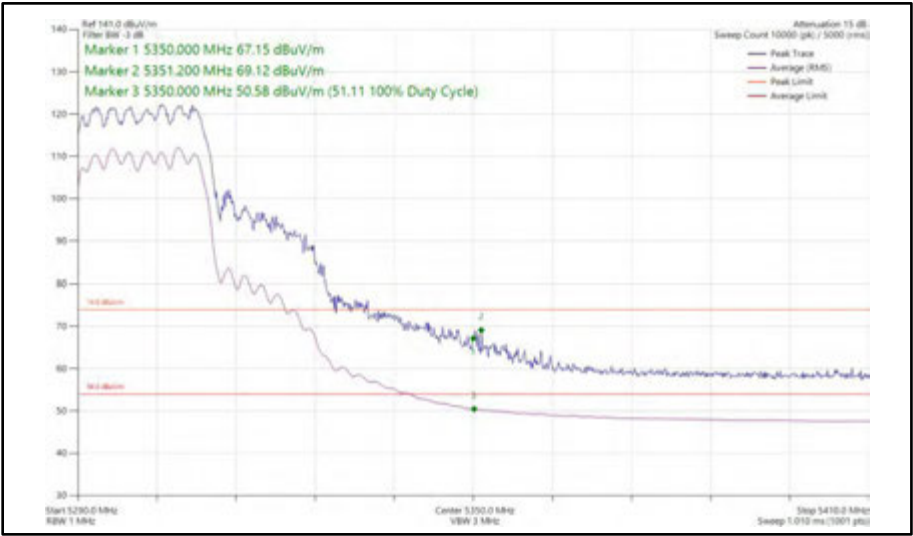


Figure 54 - 802.11ax HE20, SU, CDD, Core 0 + Core 1 - 5300 MHz
Band Edge Frequency 5350 MHz

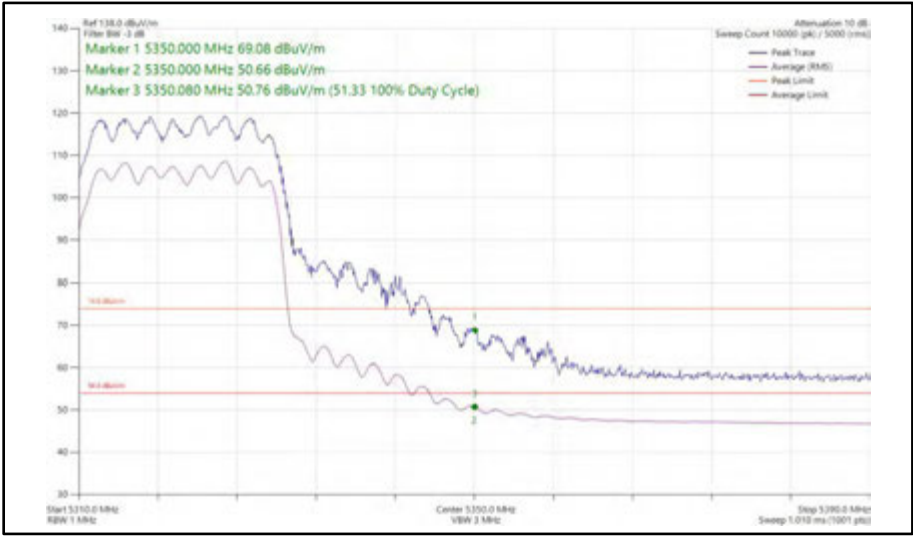
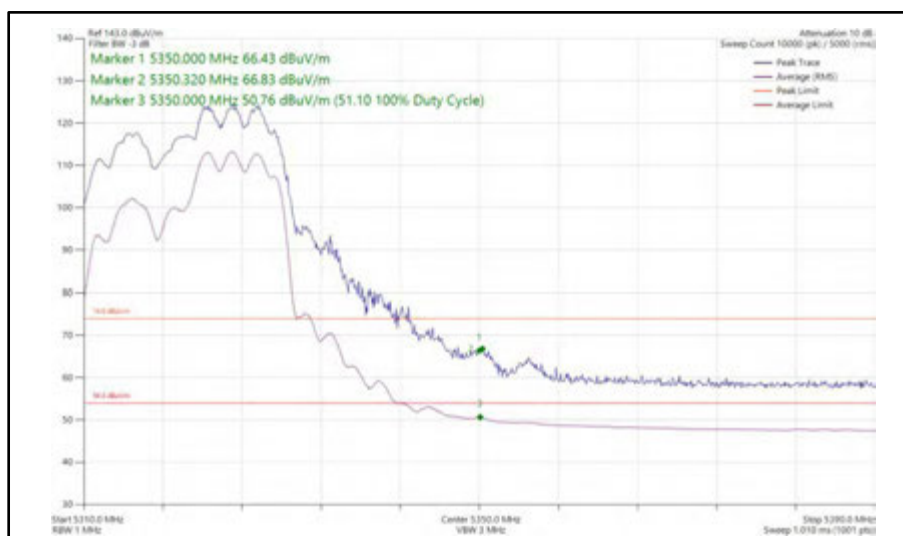
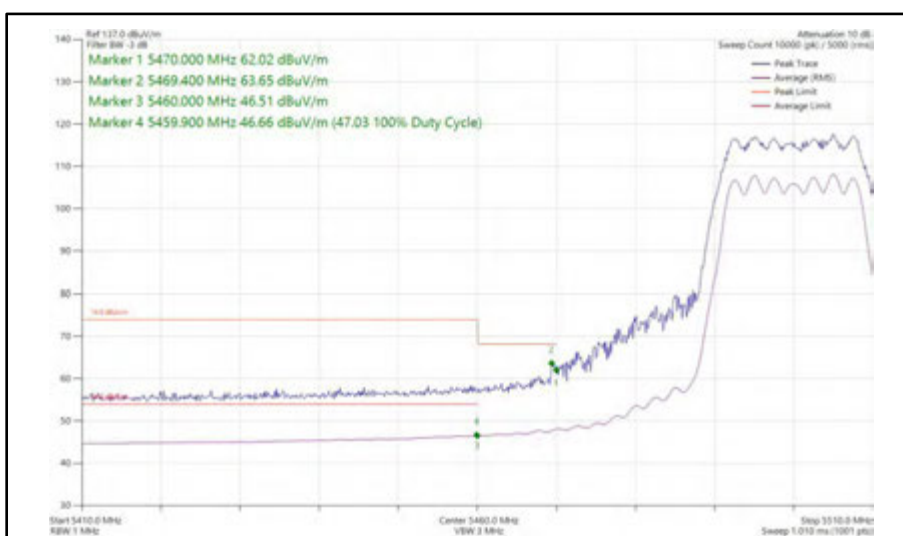


Figure 55 - 802.11ax HE20, SU, CDD, Core 0 + Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz



**Figure 56 - 802.11ax HE20, RU 106-54, CDD, Core 0 + Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz**



**Figure 57 - 802.11n HT20, CDD, Core 0 + Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz**

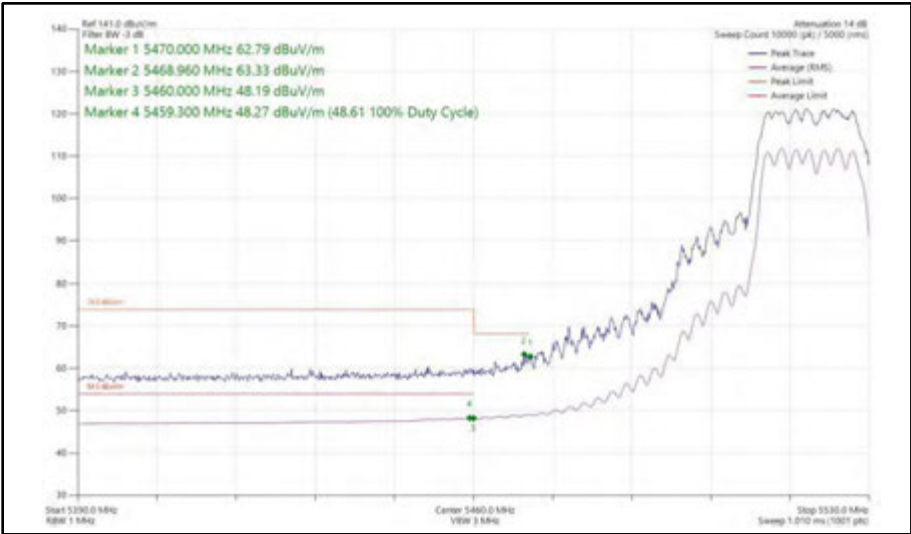


Figure 58 - 802.11n HT20, CDD, Core 0 + Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

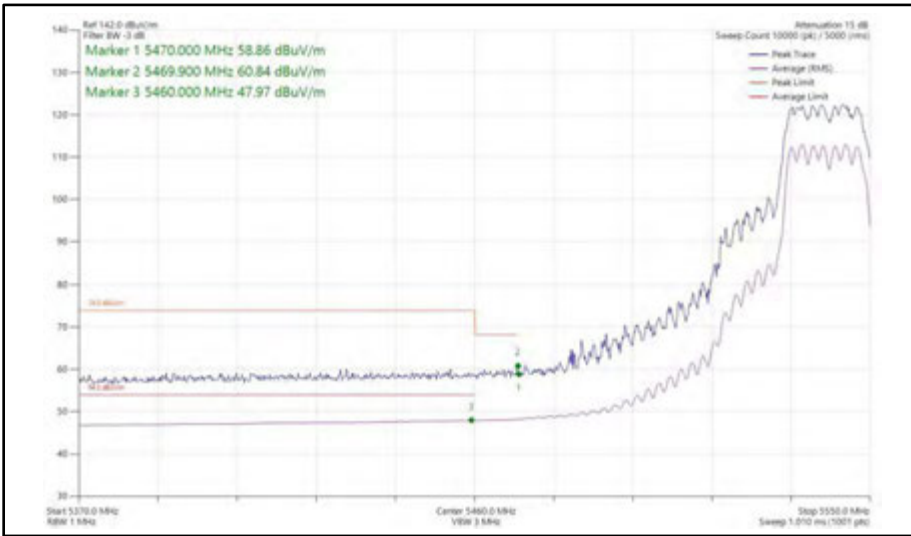


Figure 59 - 802.11n HT20, CDD, Core 0 + Core 1 - 5540 MHz
Band Edge Frequency 5460 MHz

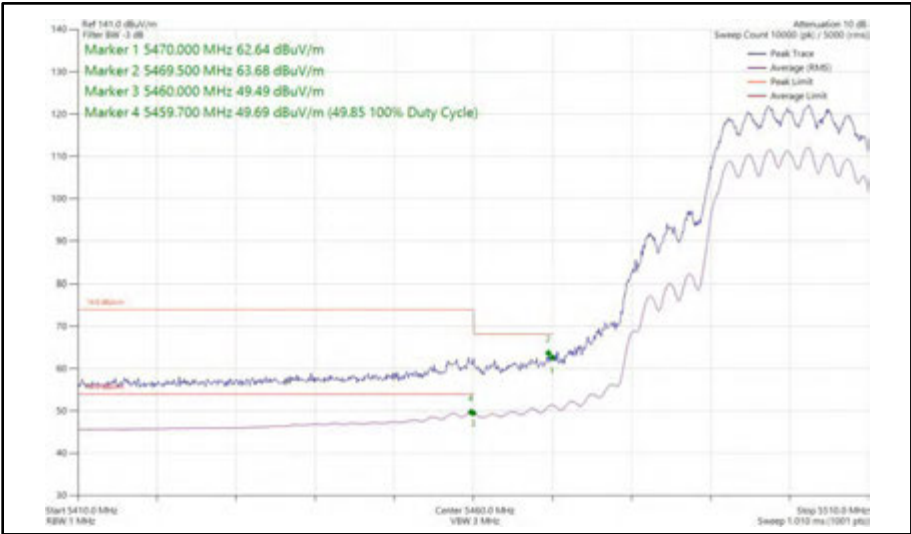


Figure 60 - 802.11ax HE20, SU, CDD, Core 0 + Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

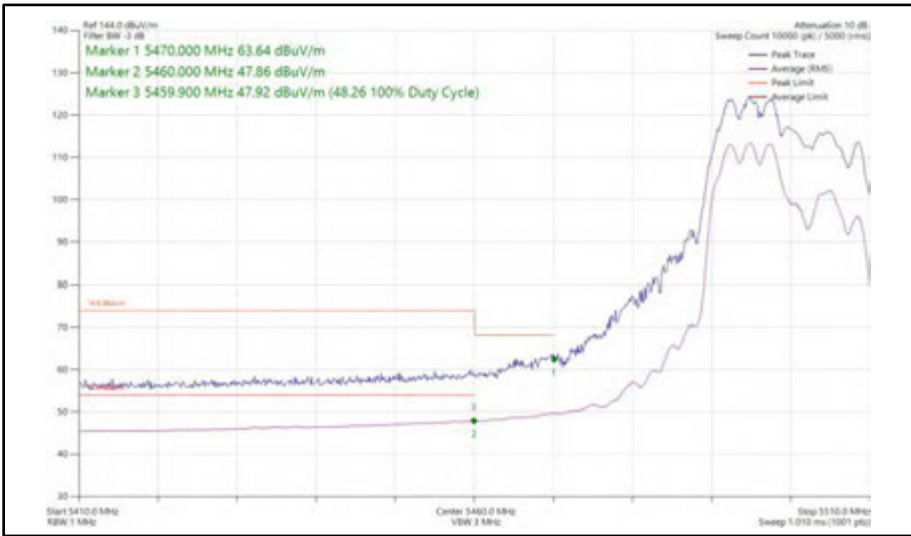


Figure 61 - 802.11ax HE20, RU 106-53, CDD, Core 0 + Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

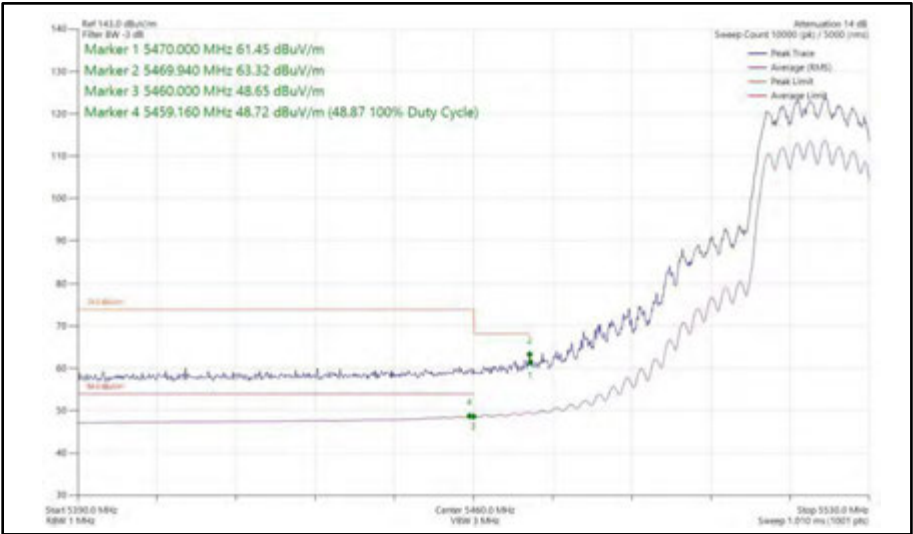


Figure 62 - 802.11ax HE20, SU, CDD, Core 0 + Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

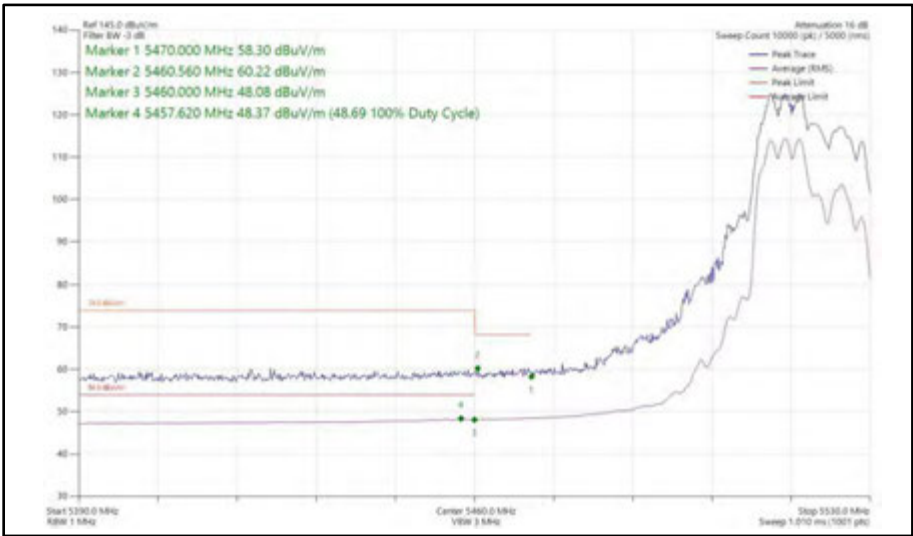


Figure 63 - 802.11ax HE20, RU 106-53, CDD, Core 0 + Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

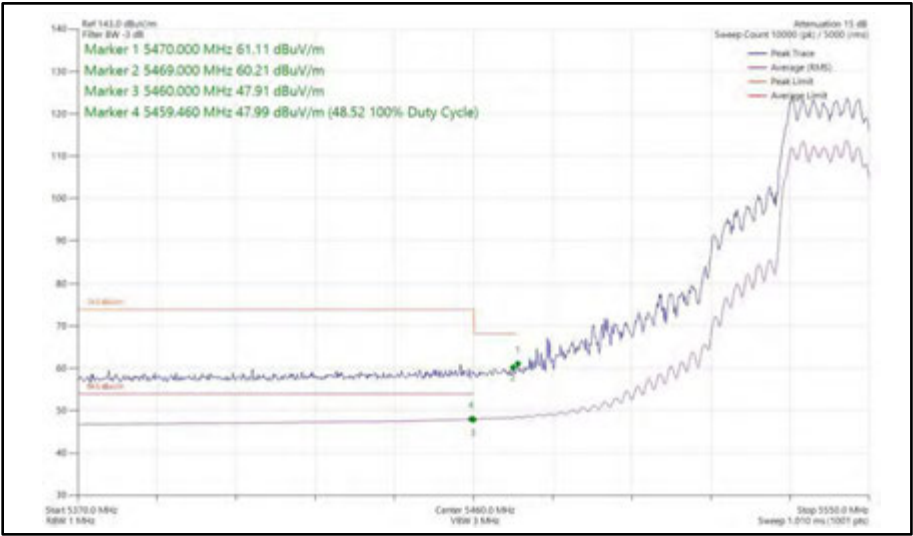
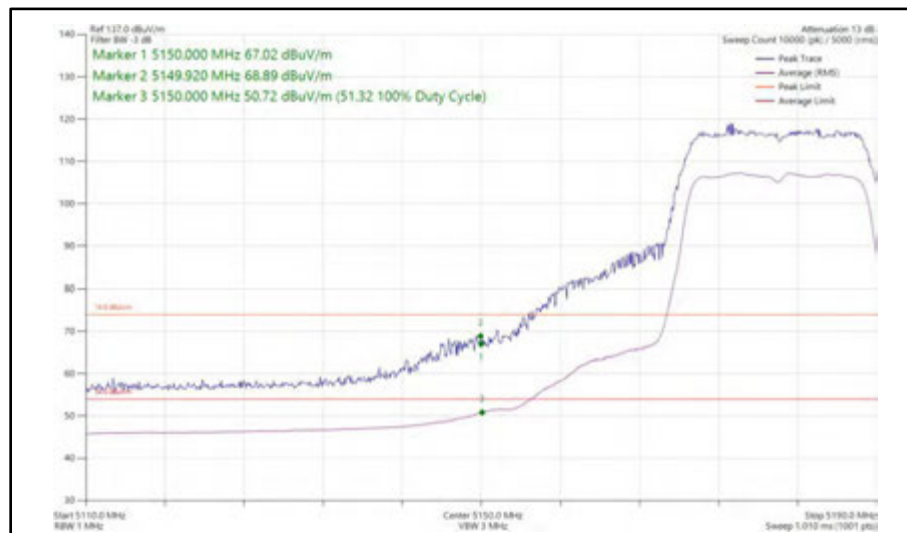


Figure 64 - 802.11ax HE20, SU, CDD, Core 0 + Core 1 - 5540 MHz
Band Edge Frequency 5460 MHz

20 MHz Bandwidth - Core 0 + Core 1 (SDM)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
802.11n HT20	MCS15	-	-	5180	5150	68.89	51.32
802.11n HT20	MCS15	-	-	5200	5150	68.93	51.37
802.11ax HE20	MCS11x2	SU	-	5180	5150	69.16	51.33
802.11ax HE20	MCS11x2	106	53	5180	5150	67.20	51.18
802.11ax HE20	MCS4x2	SU	-	5200	5150	66.44	50.99
802.11n HT20	MCS15	-	-	5300	5350	65.12	50.61
802.11n HT20	MCS15	-	-	5320	5350	67.22	51.08
802.11ax HE20	MCS11x2	SU	-	5300	5350	65.87	50.96
802.11ax HE20	MCS2x2	SU	-	5320	5350	62.79	51.10
802.11ax HE20	MCS11x2	106	54	5320	5350	66.90	51.25
802.11n HT20	MCS15	-	-	5500	5460	63.17	47.67
802.11n HT20	MCS12	-	-	5520	5460	63.17	49.66
802.11n HT20	MCS15	-	-	5540	5460	60.61	49.12
802.11ax HE20	MCS4x2	SU	-	5500	5460	63.50	49.40
802.11ax HE20	MCS11x2	106	54	5500	5460	63.48	48.69
802.11ax HE20	MCS4x2	SU	-	5520	5460	63.24	49.34
802.11ax HE20	MCS11x2	106	53	5520	5460	61.17	48.51
802.11ax HE20	MCS11x2	SU	-	5540	5460	60.41	48.74

Table 9 - SDM Restricted Band Edge Results



**Figure 65 - 802.11n HT20, SDM, Core 0 + Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz**

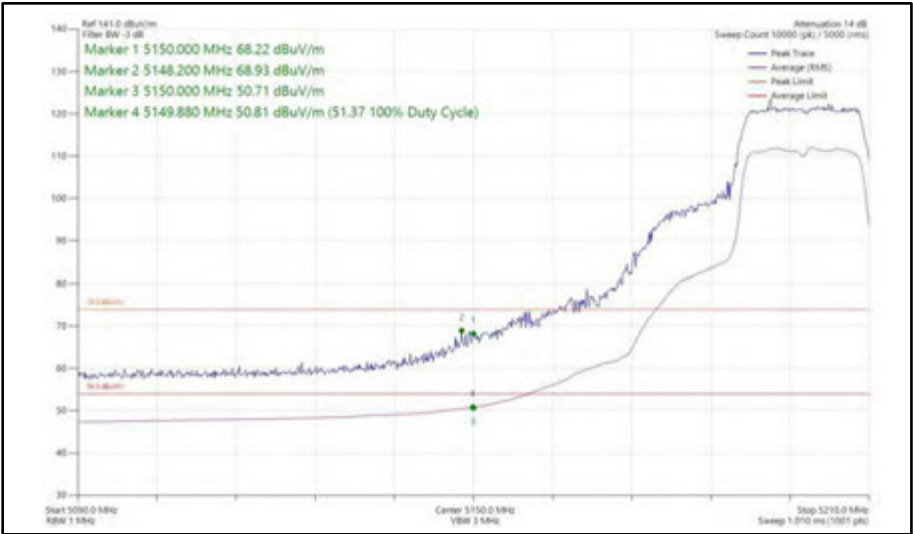


Figure 66 - 802.11n HT20, SDM, Core 0 + Core 1 - 5200 MHz
Band Edge Frequency 5150 MHz

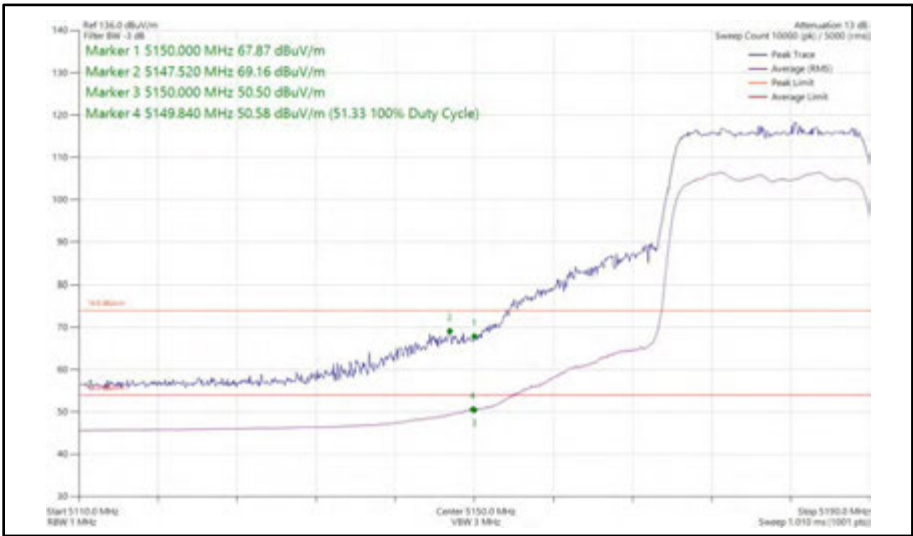


Figure 67 - 802.11ax HE20, SU, SDM, Core 0 + Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz

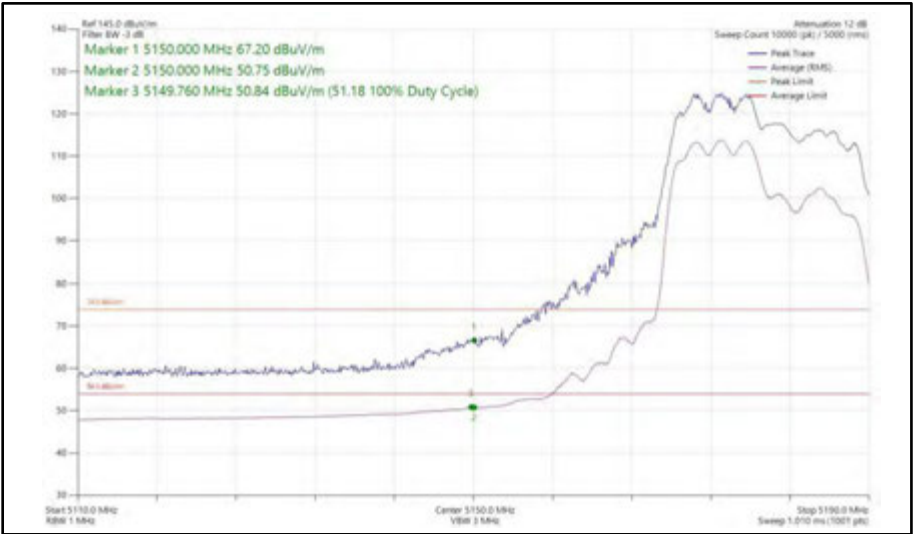


Figure 68 - 802.11ax HE20, RU 106-53, SDM, Core 0 + Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz

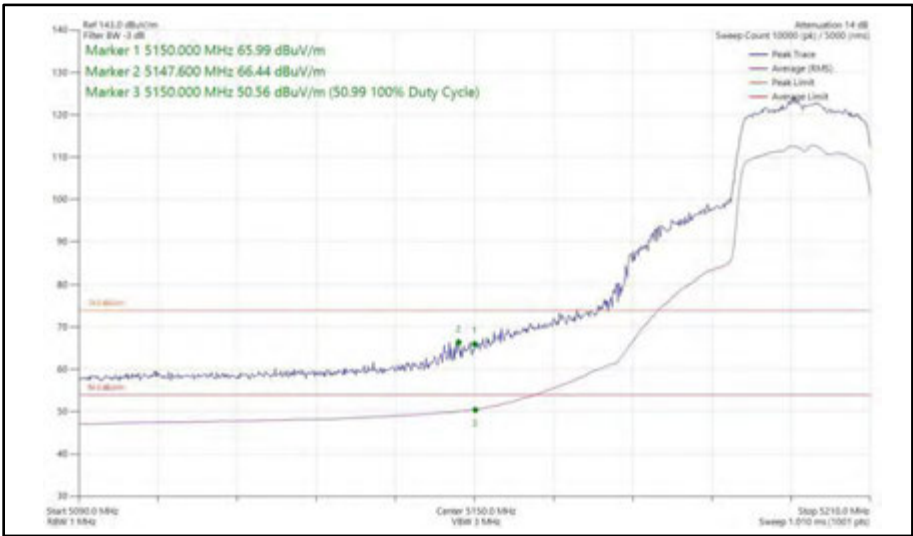


Figure 69 - 802.11ax HE20, SU, SDM, Core 0 + Core 1 - 5200 MHz
Band Edge Frequency 5150 MHz

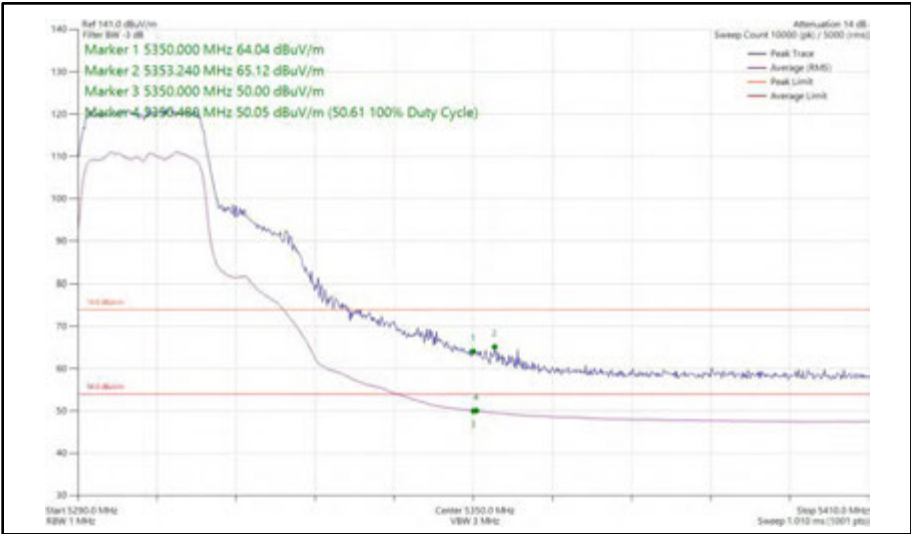


Figure 70 - 802.11n HT20, SDM, Core 0 + Core 1 - 5300 MHz
Band Edge Frequency 5350 MHz

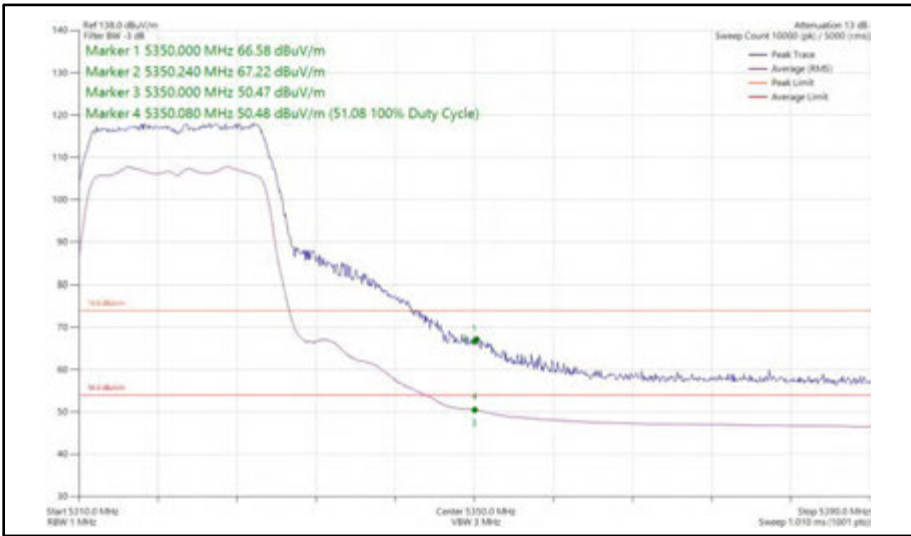


Figure 71 - 802.11n HT20, SDM, Core 0 + Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

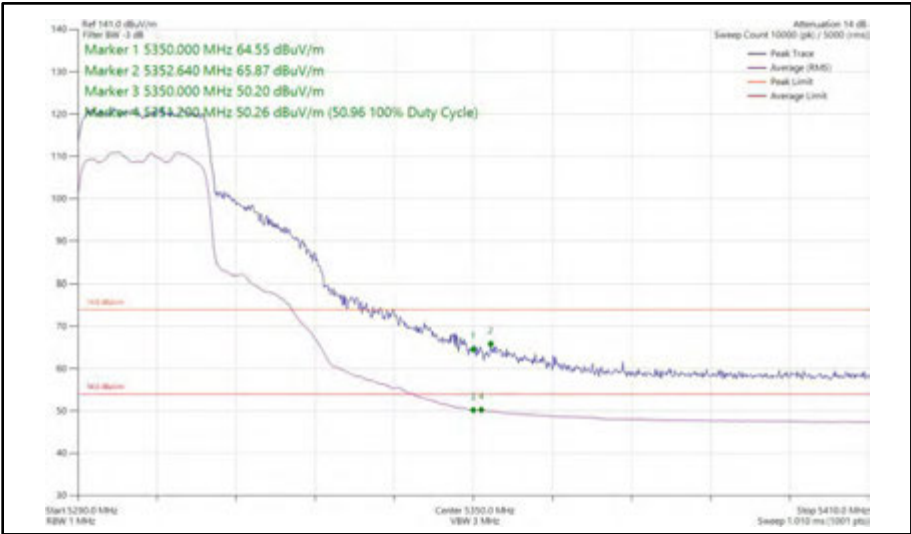


Figure 72 - 802.11ax HE20, SU, SDM, Core 0 + Core 1 - 5300 MHz
Band Edge Frequency 5350 MHz

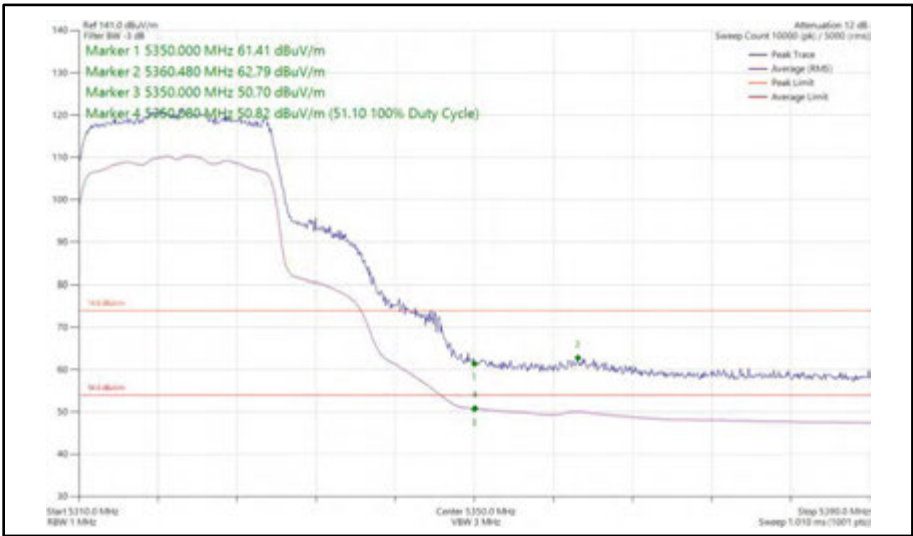


Figure 73 - 802.11ax HE20, SU, SDM, Core 0 + Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

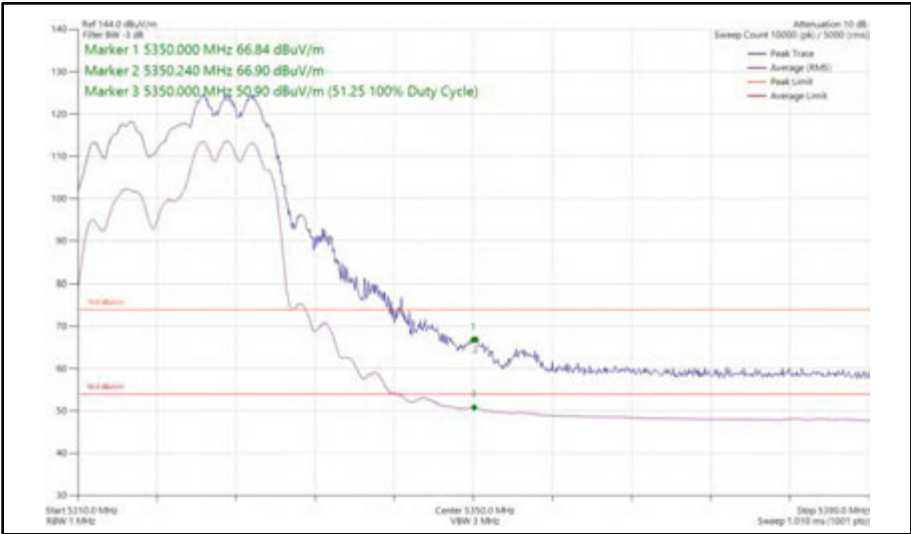


Figure 74 - 802.11ax HE20, RU 106-54, SDM, Core 0 + Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

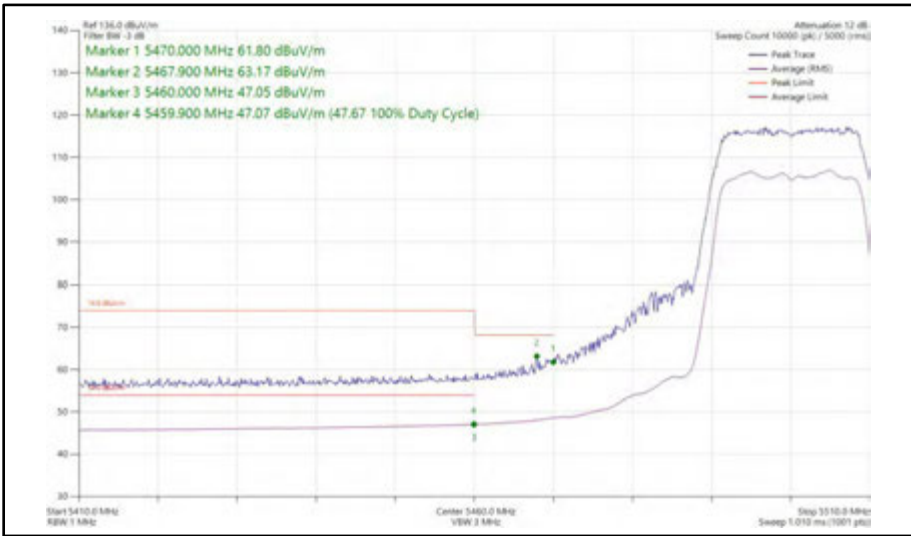


Figure 75 - 802.11n HT20, SDM, Core 0 + Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

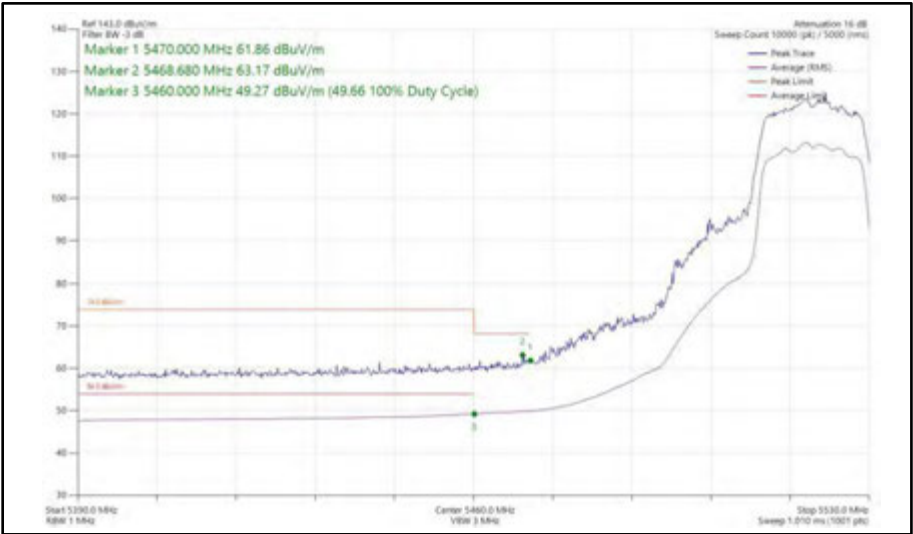


Figure 76 - 802.11n HT20, SDM, Core 0 + Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

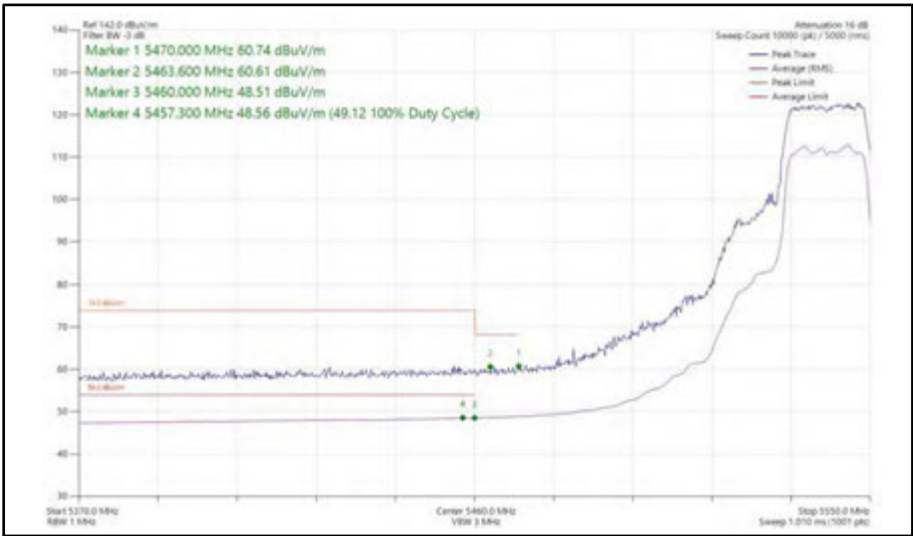


Figure 77 - 802.11n HT20, SDM, Core 0 + Core 1 - 5540 MHz
Band Edge Frequency 5460 MHz

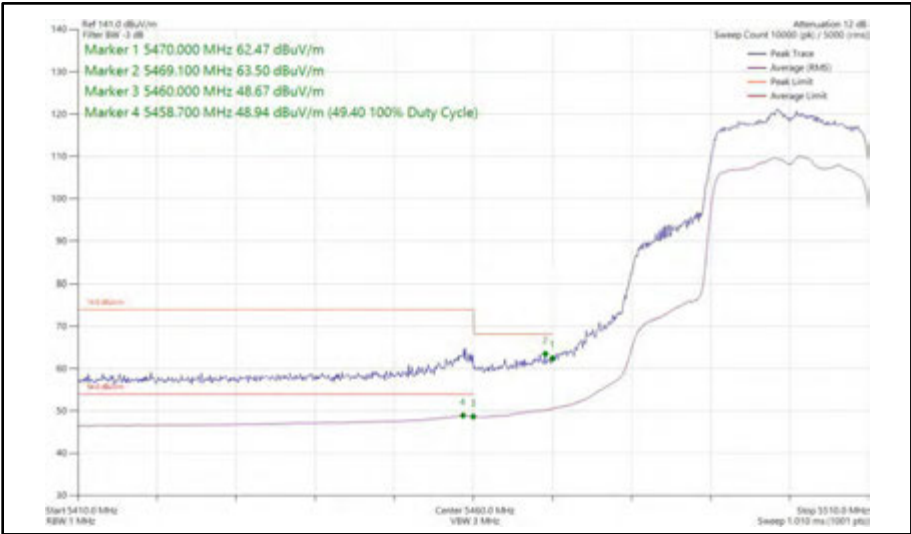


Figure 78 - 802.11ax HE20, SU, SDM, Core 0 + Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

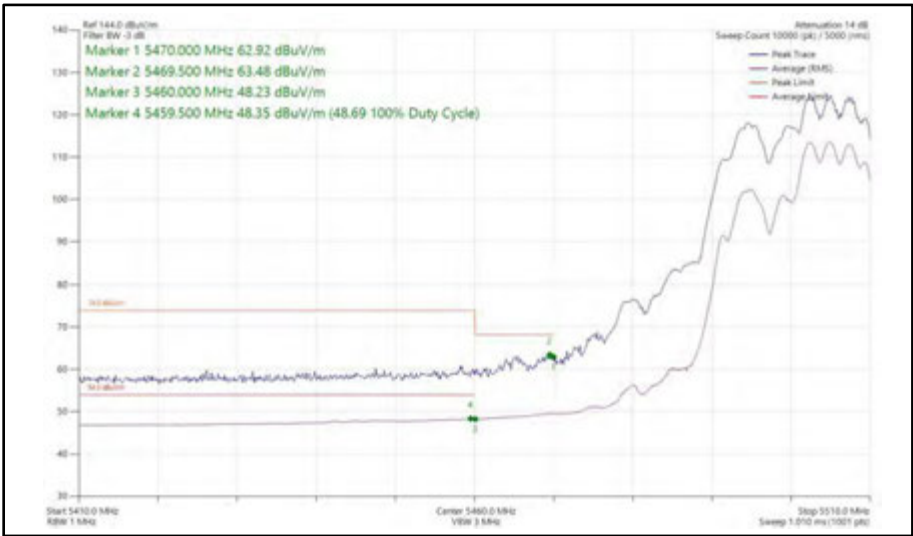


Figure 79 - 802.11ax HE20, RU 106-54, SDM, Core 0 + Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

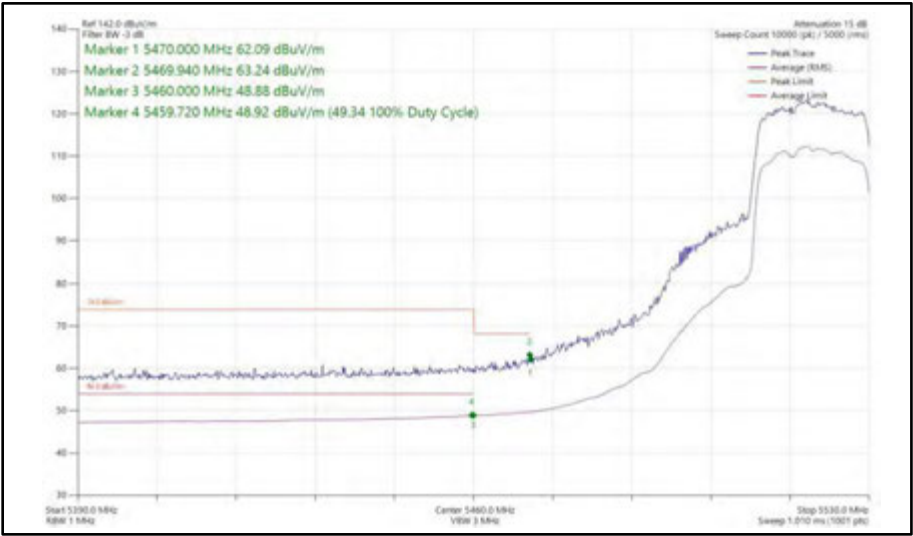


Figure 80 - 802.11ax HE20, SU, SDM, Core 0 + Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

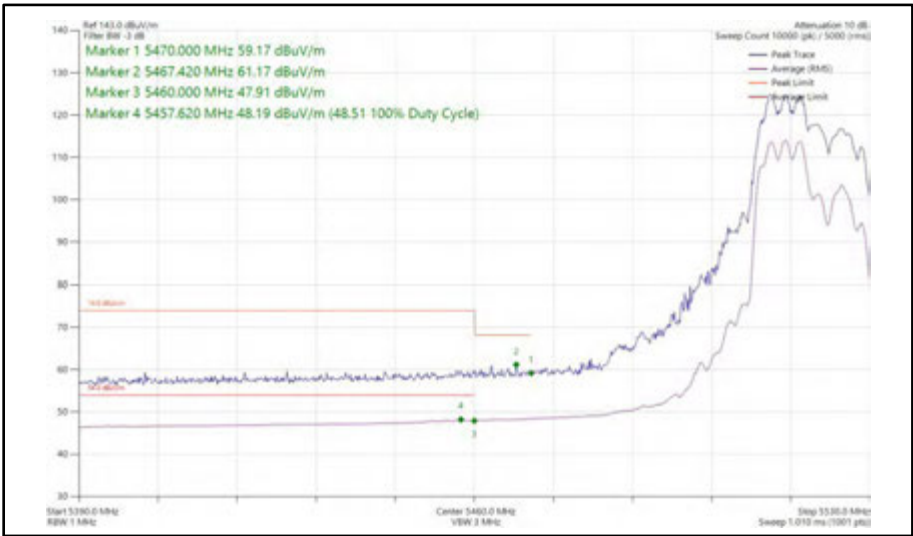


Figure 81 - 802.11ax HE20, RU 106-53, SDM, Core 0 + Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

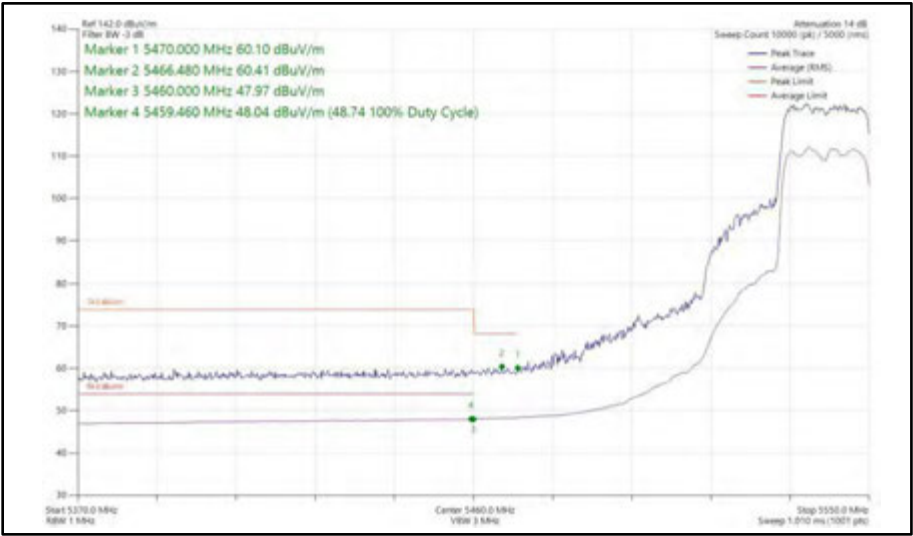
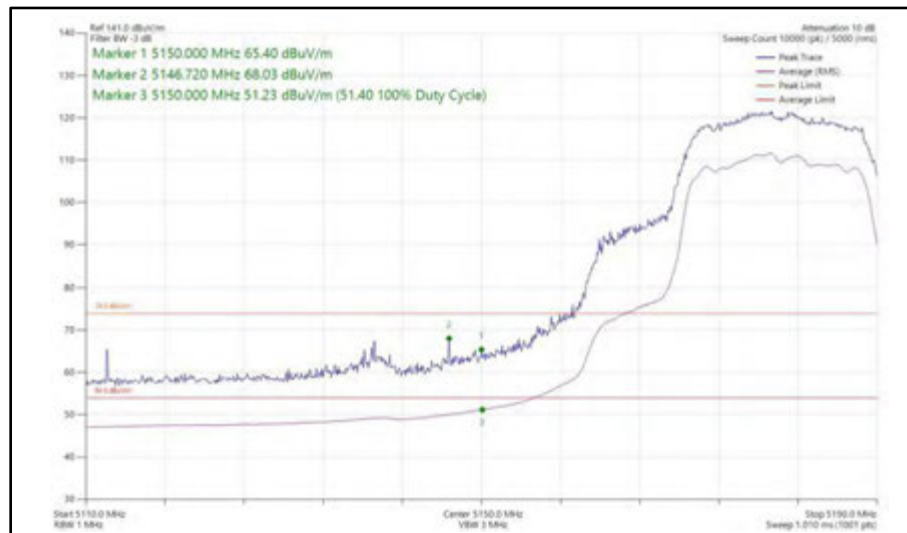


Figure 82 - 802.11ax HE20, SU, SDM, Core 0 + Core 1 - 5540 MHz
Band Edge Frequency 5460 MHz

20 MHz Bandwidth - Core 0 + Core 1 (TxBF)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
802.11ac VHT20	MCS4x1	-	-	5180	5150	68.03	51.40
802.11ac VHT20	MCS2x1	-	-	5200	5150	67.11	51.33
802.11ac VHT20	MCS4x1	-	-	5300	5350	66.83	51.15
802.11ac VHT20	MCS2x1	-	-	5320	5350	64.38	48.97
802.11ac VHT20	MCS2x1	-	-	5500	5460	63.18	50.05
802.11ac VHT20	MCS4x1	-	-	5520	5460	63.45	50.20
802.11ac VHT20	MCS4x1	-	-	5540	5460	61.18	49.32

Table 10 - TxBF Restricted Band Edge Results



**Figure 83 - 802.11ac VHT20, TxBF, Core 0 + Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz**

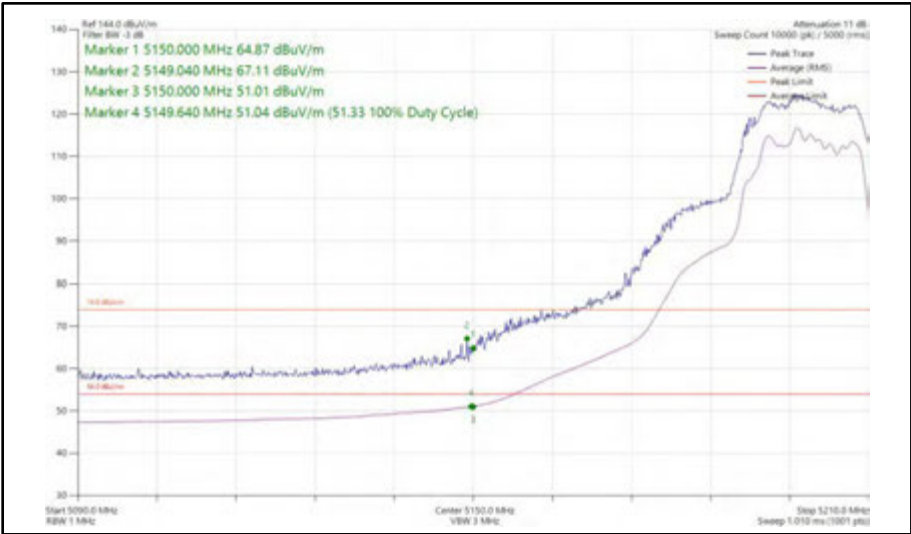


Figure 84 - 802.11ac VHT20, TxBF, Core 0 + Core 1 - 5200 MHz
Band Edge Frequency 5150 MHz

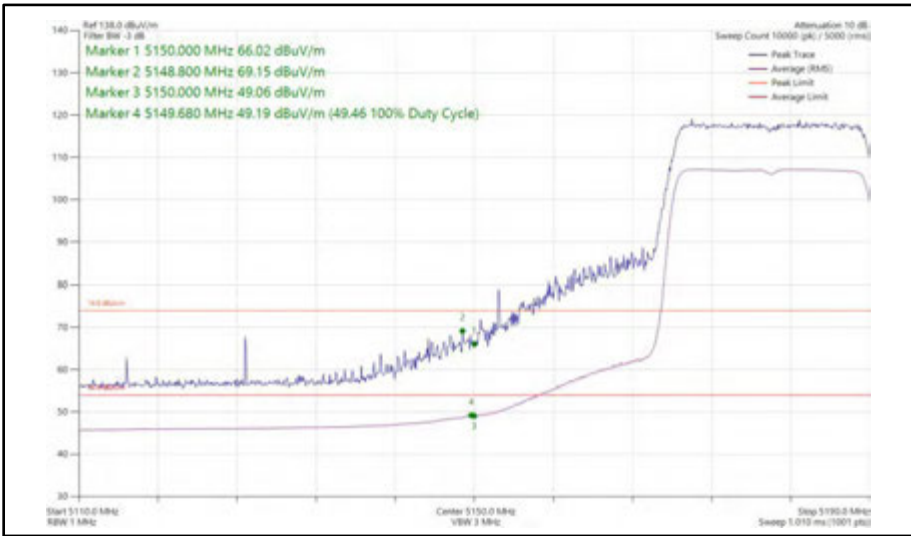


Figure 85 - 802.11ax HE20, SU, TxBF, Core 0 + Core 1 - 5180 MHz
Band Edge Frequency 5150 MHz

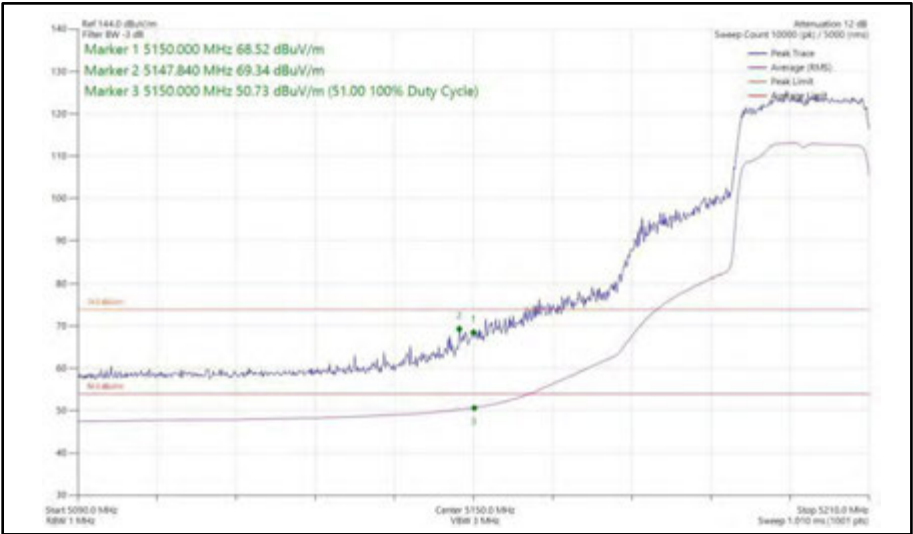


Figure 86 - 802.11ax HE20, SU, TxBF, Core 0 + Core 1 - 5200 MHz
Band Edge Frequency 5150 MHz

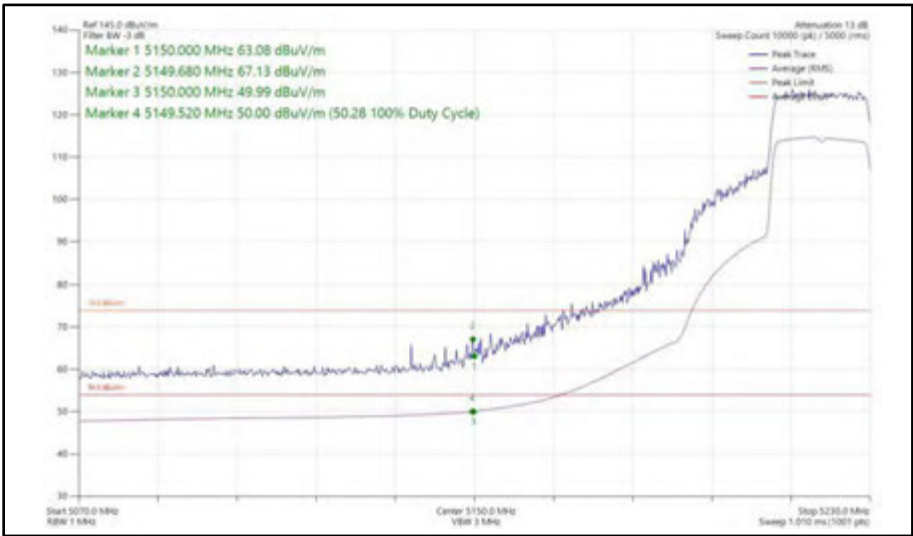


Figure 87 - 802.11ax HE20, SU, TxBF, Core 0 + Core 1 - 5220 MHz
Band Edge Frequency 5150 MHz

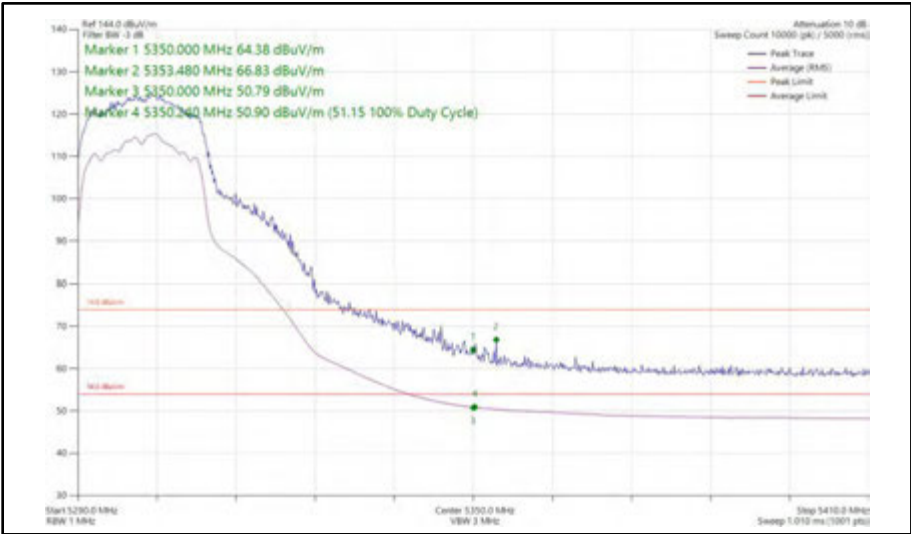


Figure 88 - 802.11ac VHT20, TxBF, Core 0 + Core 1 - 5300 MHz
Band Edge Frequency 5350 MHz

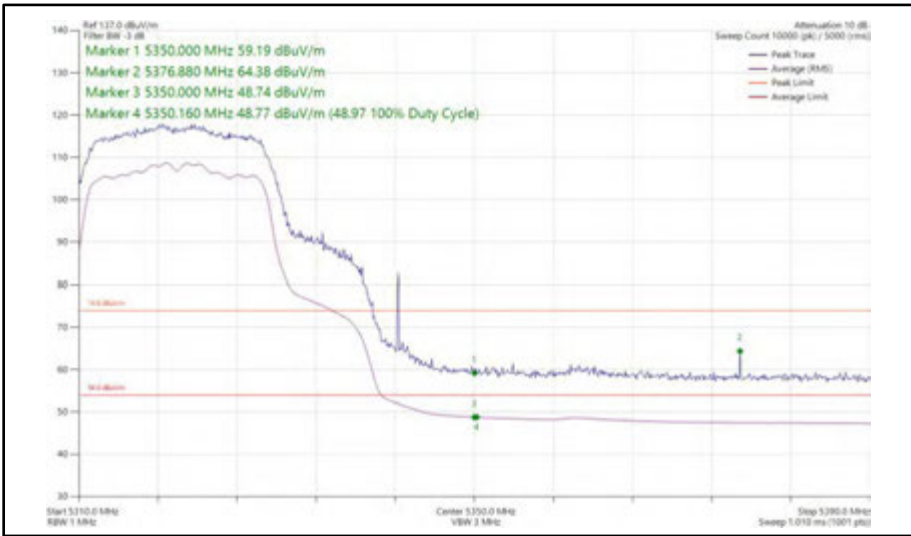


Figure 89 - 802.11ac VHT20, TxBF, Core 0 + Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

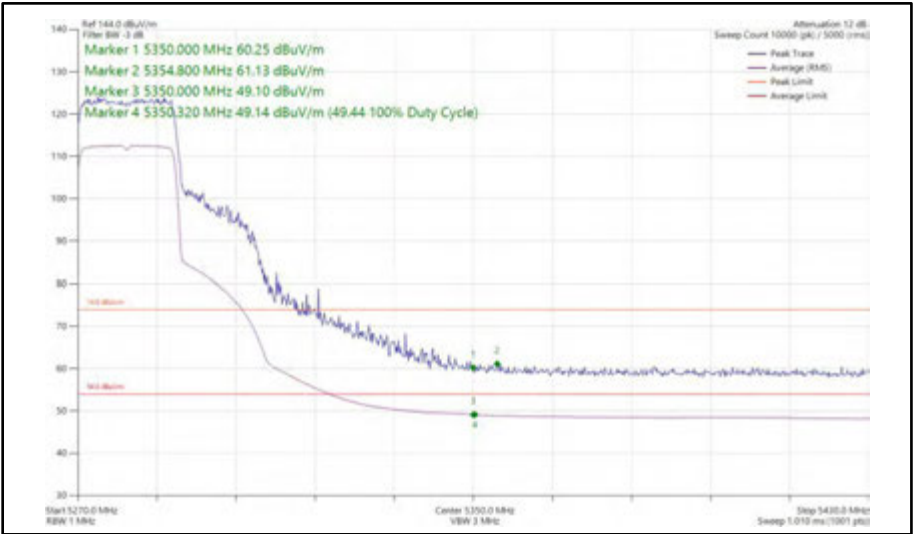


Figure 90 - 802.11ax HE20, SU, TxBF, Core 0 + Core 1 - 5280 MHz
Band Edge Frequency 5350 MHz

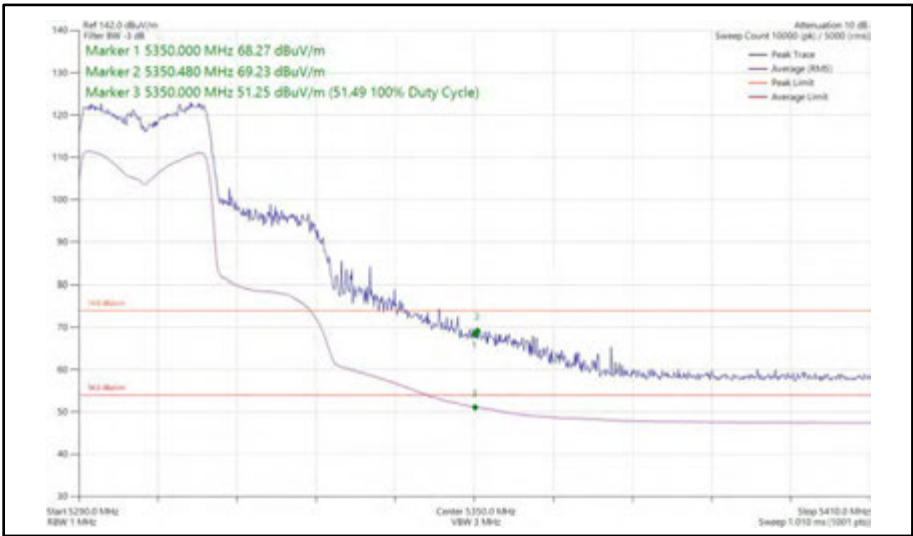


Figure 91 - 802.11ax HE20, SU, TxBF, Core 0 + Core 1 - 5300 MHz
Band Edge Frequency 5350 MHz

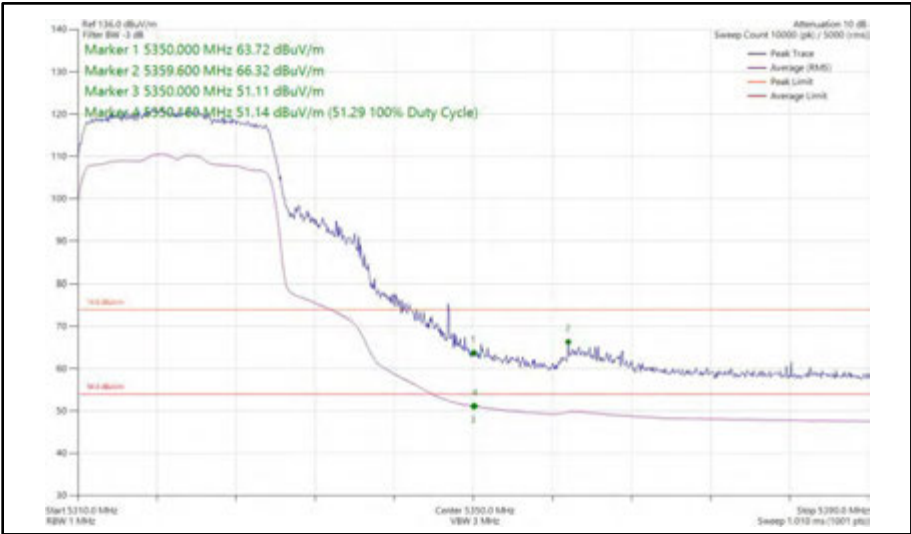


Figure 92 - 802.11ax HE20, SU, TxBF, Core 0 + Core 1 - 5320 MHz
Band Edge Frequency 5350 MHz

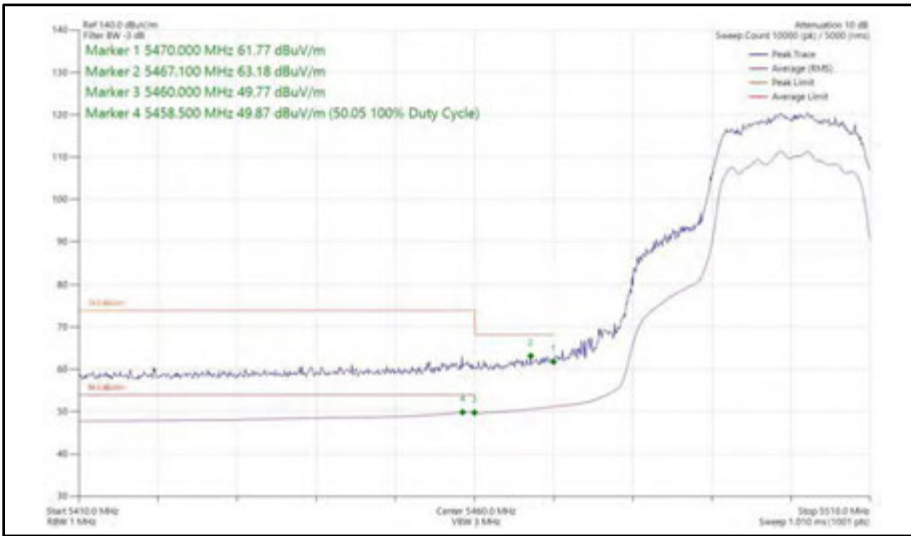


Figure 93 - 802.11ac VHT20, TxBF, Core 0 + Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

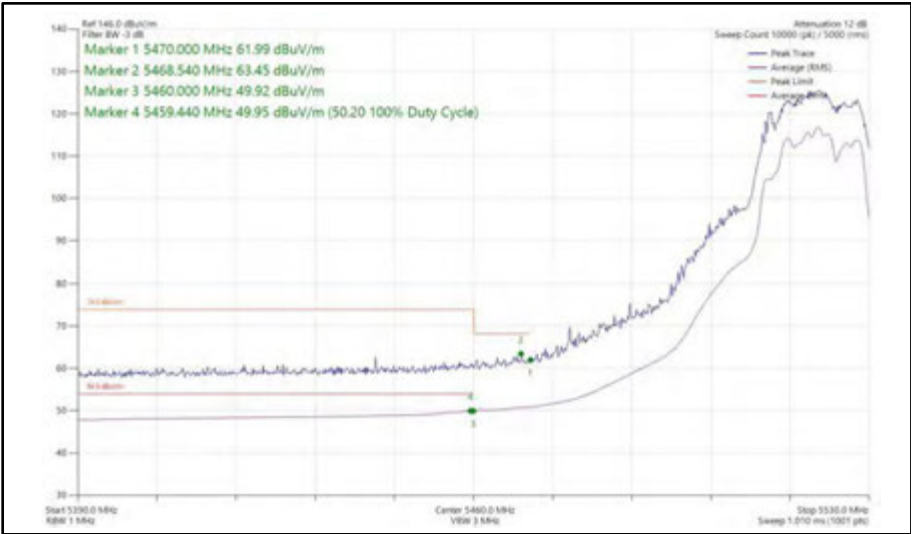


Figure 94 - 802.11ac VHT20, TxBF, Core 0 + Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

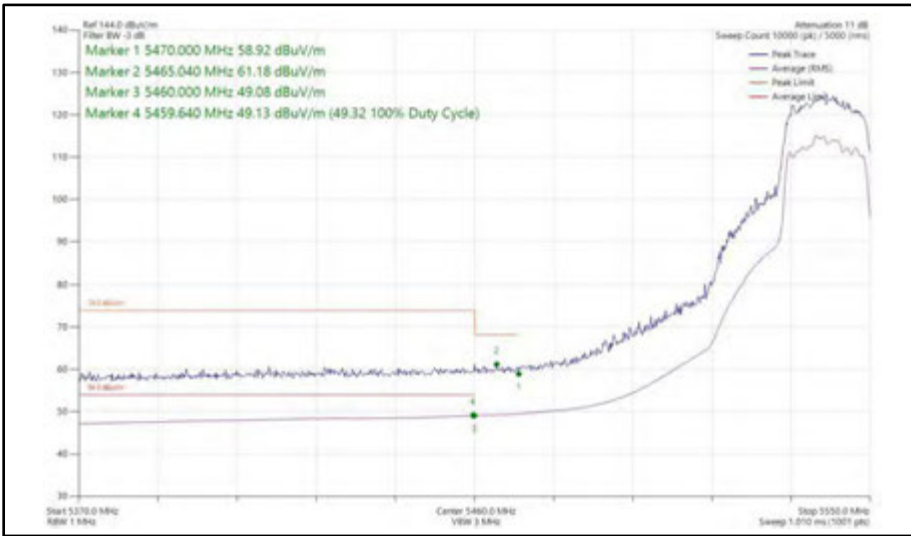


Figure 95 - 802.11ac VHT20, TxBF, Core 0 + Core 1 - 5540 MHz
Band Edge Frequency 5460 MHz

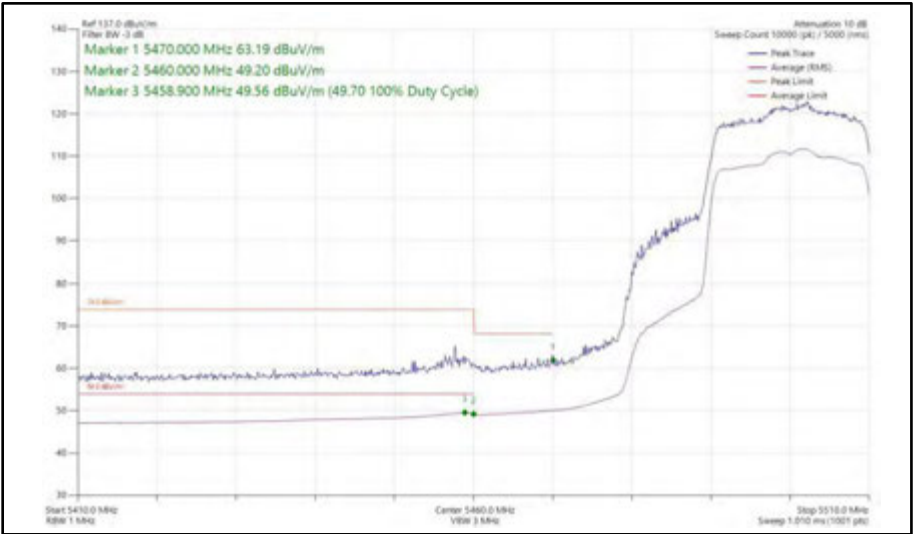


Figure 96 - 802.11ax HE20, SU, TxBF, Core 0 + Core 1 - 5500 MHz
Band Edge Frequency 5460 MHz

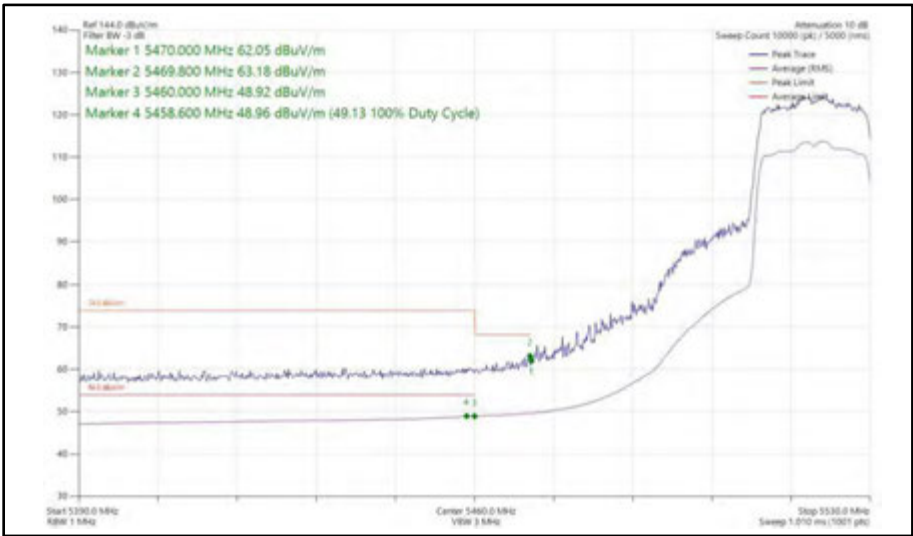


Figure 97 - 802.11ax HE20, SU, TxBF, Core 0 + Core 1 - 5520 MHz
Band Edge Frequency 5460 MHz

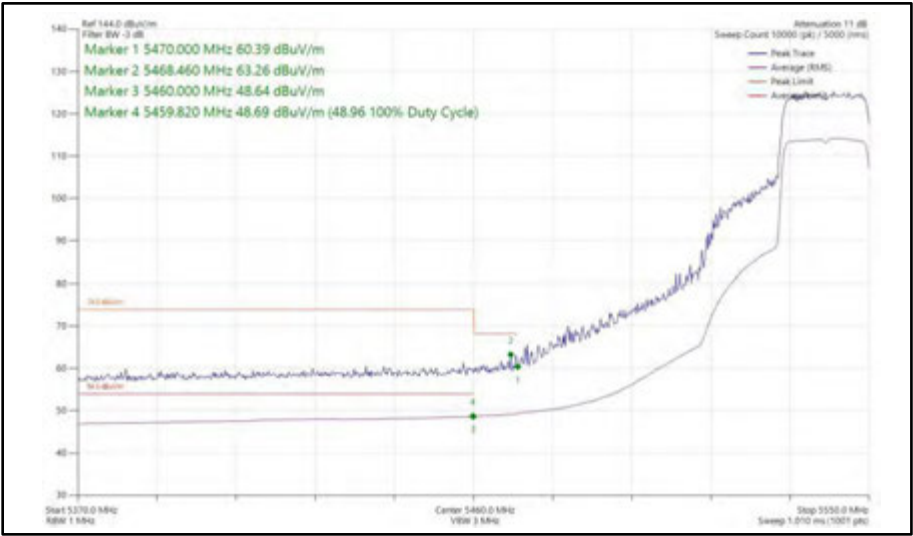


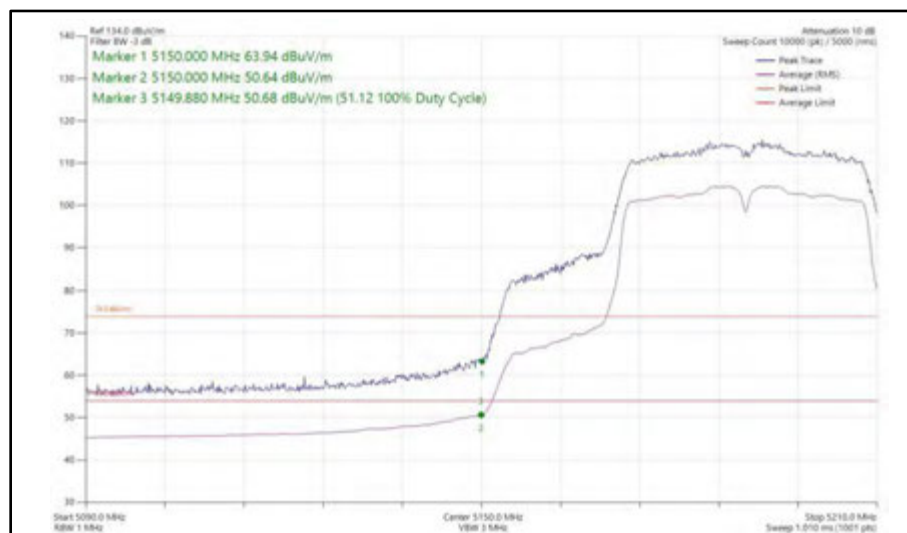
Figure 98 - 802.11ax HE20, SU, TxBF, Core 0 + Core 1 - 5540 MHz
Band Edge Frequency 5460 MHz



40 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)
802.11n HT40	MCS4	-	-	5190	5150	63.94	51.12
802.11n HT40	MCS2	-	-	5230	5150	64.47	51.28
802.11ax HE40	MCS4x1	SU	-	5190	5150	64.18	51.35
802.11ax HE40	MCS11x1	106	53	5190	5150	68.88	49.32
802.11ax HE40	MCS4x1	SU	-	5230	5150	67.15	51.39
802.11ax HE40	MCS11x1	106	53	5230	5150	59.68	47.49
802.11n HT40	MCS7	-	-	5270	5350	67.61	51.45
802.11n HT40	MCS2	-	-	5310	5350	63.49	51.26
802.11ax HE40	MCS2x1	SU	-	5270	5350	65.62	51.46
802.11ax HE40	MCS11x1	106	56	5270	5350	59.14	47.63
802.11ax HE40	MCS2x1	SU	-	5310	5350	63.55	51.17
802.11ax HE40	MCS11x1	52	37	5310	5350	69.49	50.28
802.11n HT40	MCS7	-	-	5510	5460	63.60	47.57
802.11n HT40	MCS7	-	-	5550	5460	63.50	48.12
802.11n HT40	MCS7	-	-	5590	5460	59.61	47.66
802.11ax HE40	MCS2x1	SU	-	5510	5460	63.23	49.34
802.11ax HE40	MCS11x1	52	44	5510	5460	63.50	49.52
802.11ax HE40	MCS11x1	SU	-	5550	5460	63.36	48.20
802.11ax HE40	MCS11x1	106	53	5550	5460	58.43	47.40
802.11ax HE40	MCS11x1	SU	-	5590	5460	60.19	47.80

Table 11 - SISO Restricted Band Edge Results



**Figure 99 - 802.11n HT40, SISO, Core 0 - 5190 MHz
Band Edge Frequency 5150 MHz**

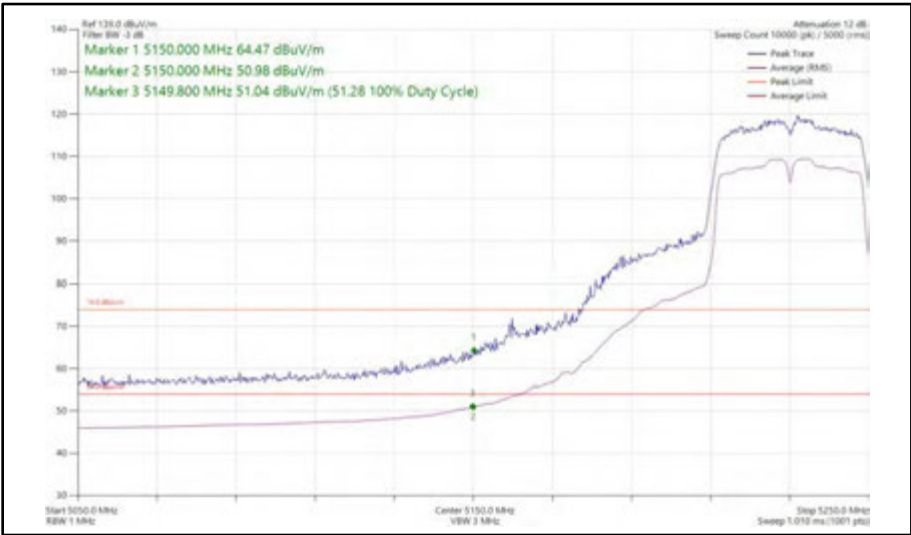


Figure 100 - 802.11n HT40, SiSO, Core 0 - 5230 MHz
Band Edge Frequency 5150 MHz

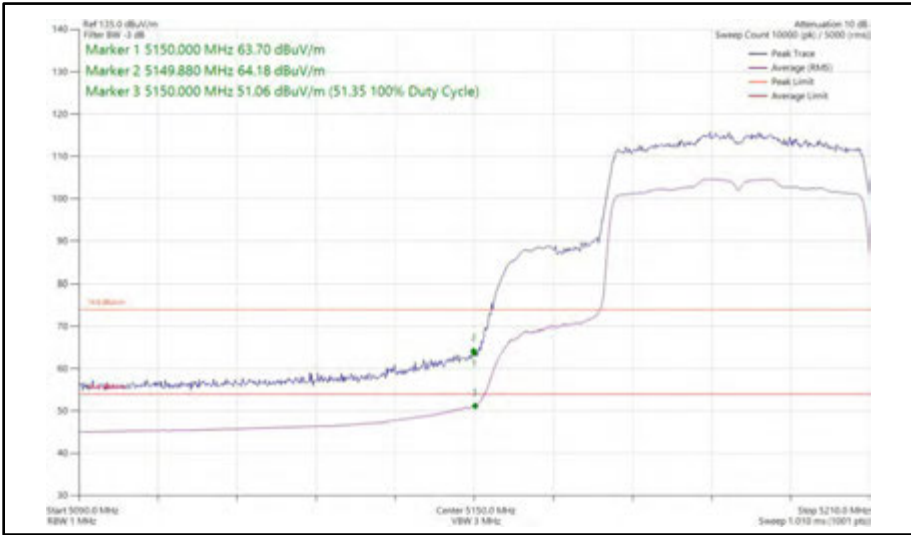


Figure 101 - 802.11ax HE40, SU, SiSO, Core 0 - 5190 MHz
Band Edge Frequency 5150 MHz

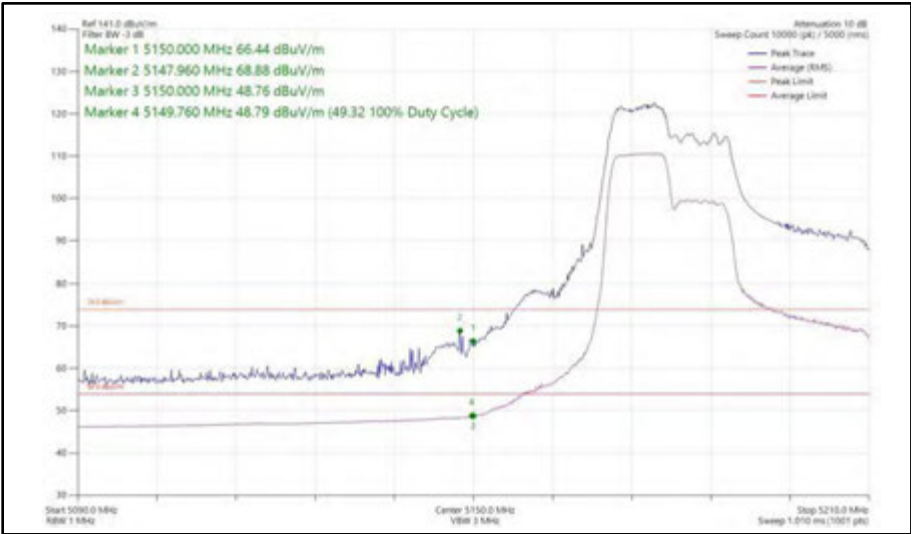


Figure 102 - 802.11ax HE40, RU 106-53, SISO, Core 0 - 5190 MHz
Band Edge Frequency 5150 MHz

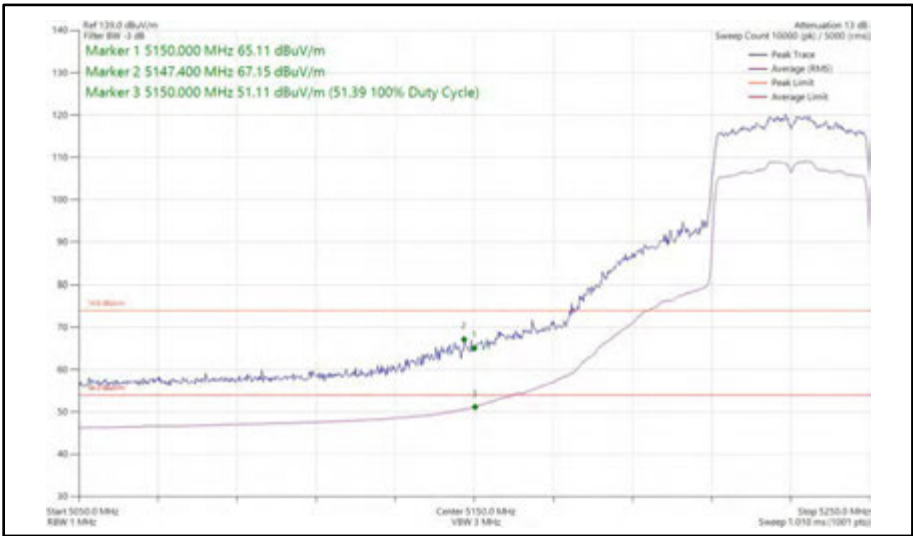


Figure 103 - 802.11ax HE40, SU, SISO, Core 0 - 5230 MHz
Band Edge Frequency 5150 MHz

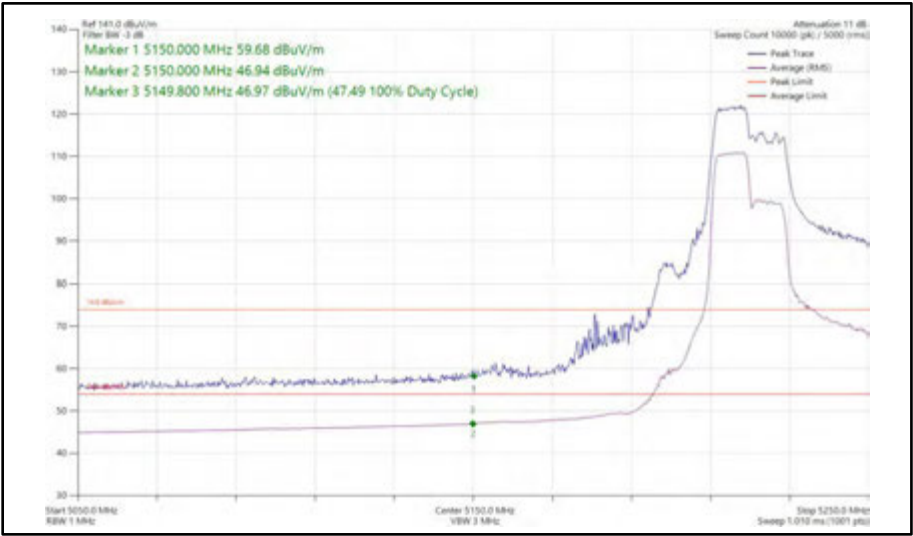


Figure 104 - 802.11ax HE40, RU 106-53, SISO, Core 0 - 5230 MHz
Band Edge Frequency 5150 MHz

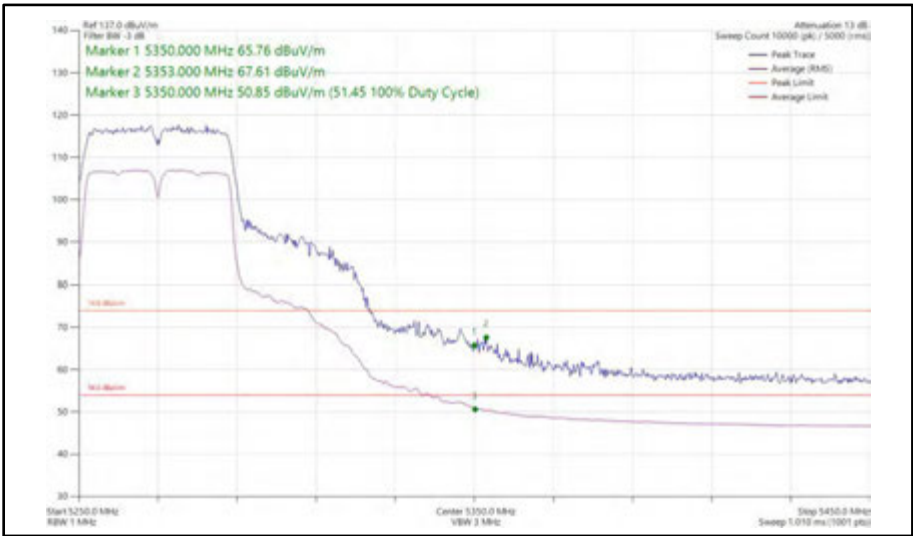


Figure 105 - 802.11n HT40, SISO, Core 0 - 5270 MHz
Band Edge Frequency 5350 MHz

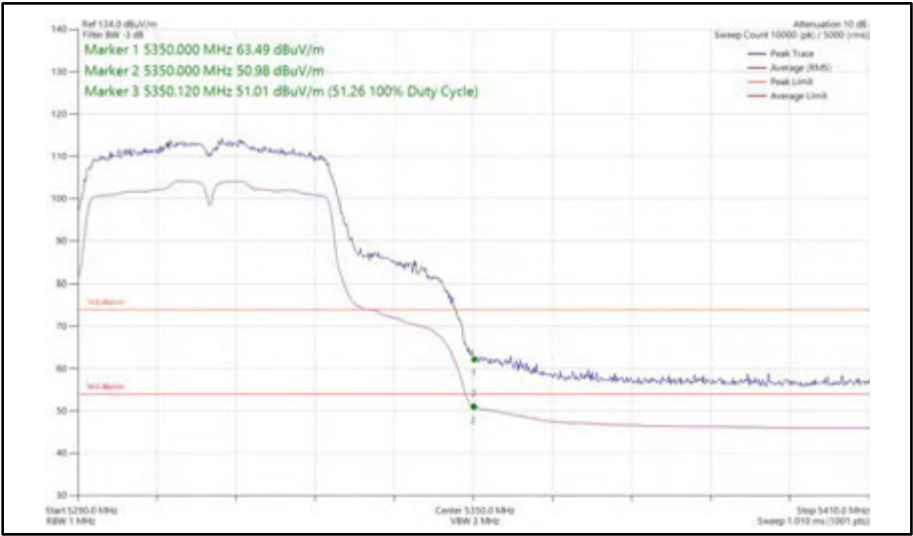


Figure 106 - 802.11n HT40, SISO, Core 0 - 5310 MHz
Band Edge Frequency 5350 MHz

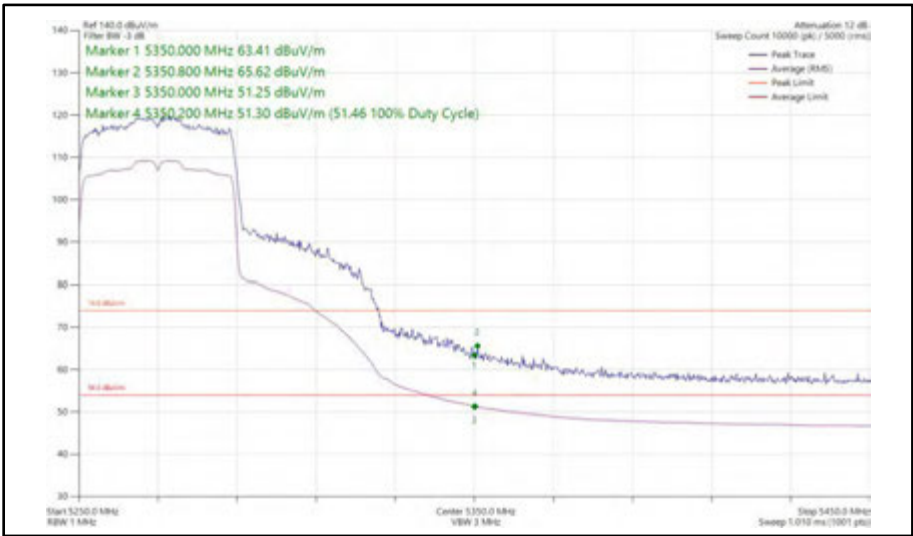


Figure 107 - 802.11ax HE40, SU, SISO, Core 0 - 5270 MHz
Band Edge Frequency 5350 MHz

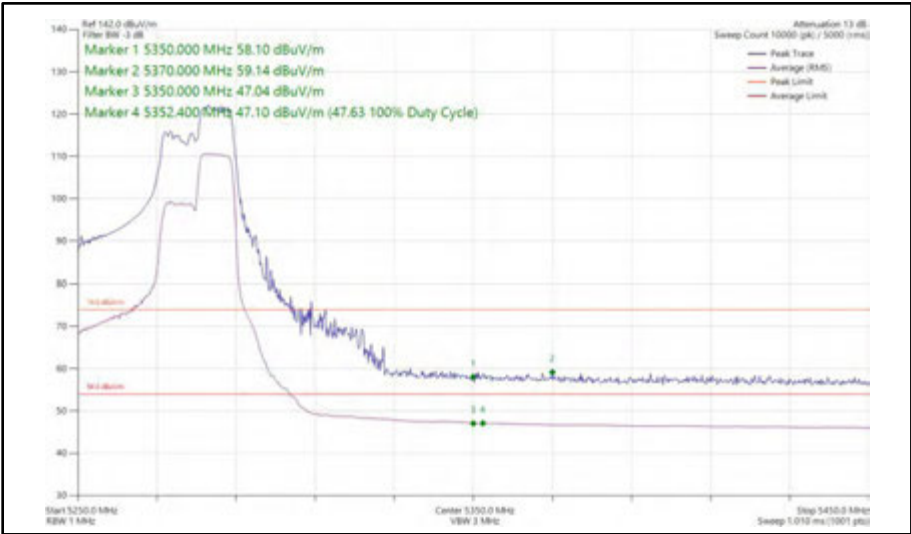


Figure 108 - 802.11ax HE40, RU 106-56, SISO, Core 0 - 5270 MHz
Band Edge Frequency 5350 MHz

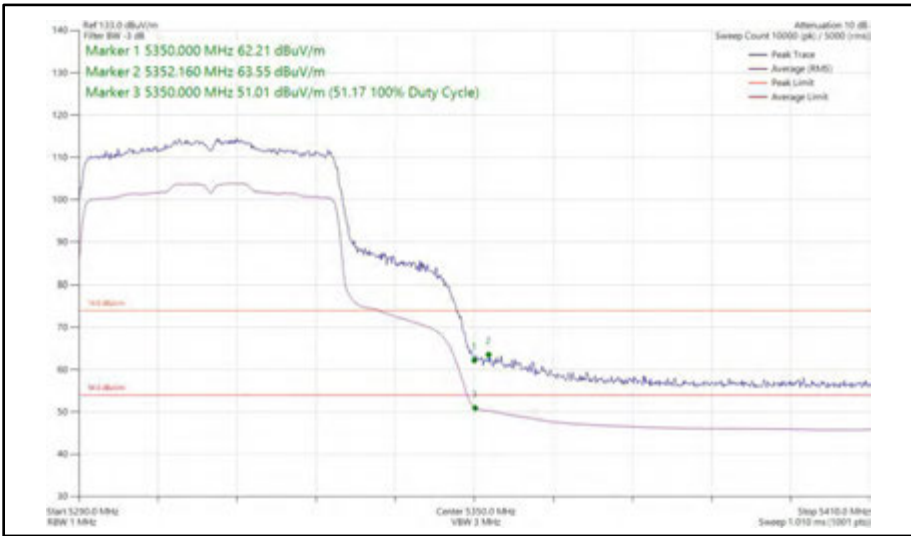


Figure 109 - 802.11ax HE40, SU, SISO, Core 0 - 5310 MHz
Band Edge Frequency 5350 MHz

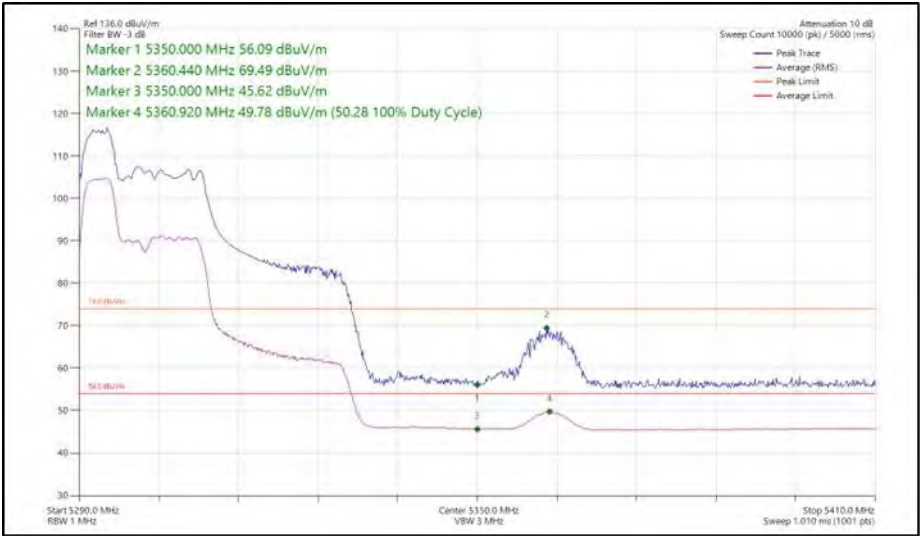


Figure 110 - 802.11ax HE40, RU 52-37, SISO, Core 0 - 5310 MHz
Band Edge Frequency 5350 MHz

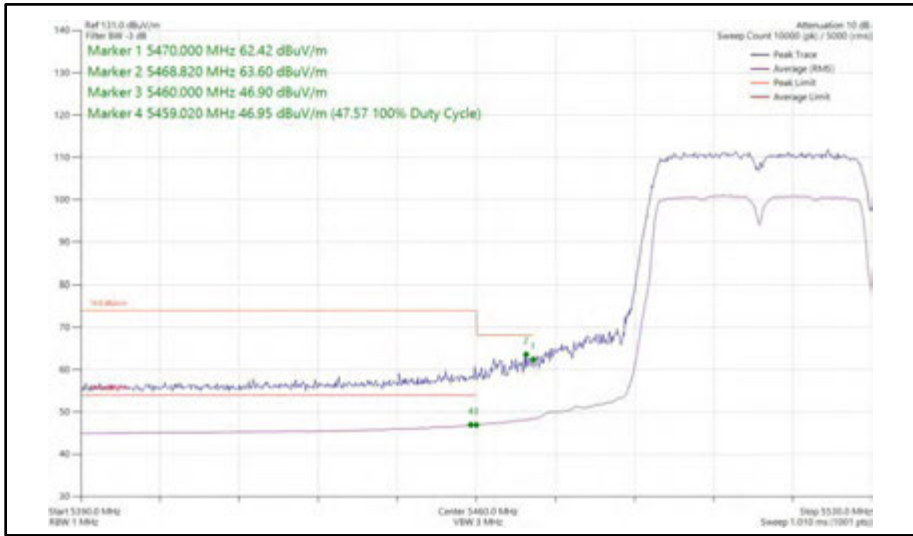


Figure 111 - 802.11n HT40, SISO, Core 0 - 5510 MHz
Band Edge Frequency 5460 MHz

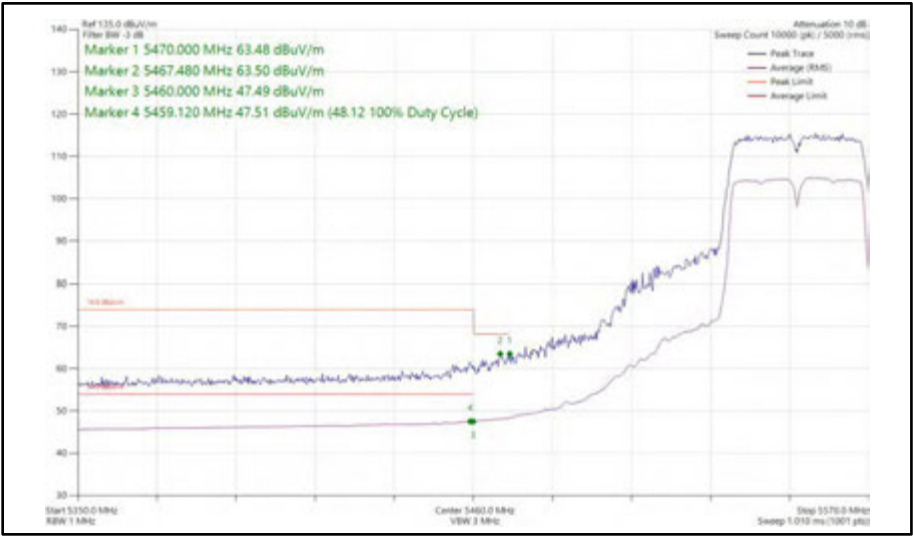


Figure 112 - 802.11n HT40, SISO, Core 0 - 5550 MHz
Band Edge Frequency 5460 MHz

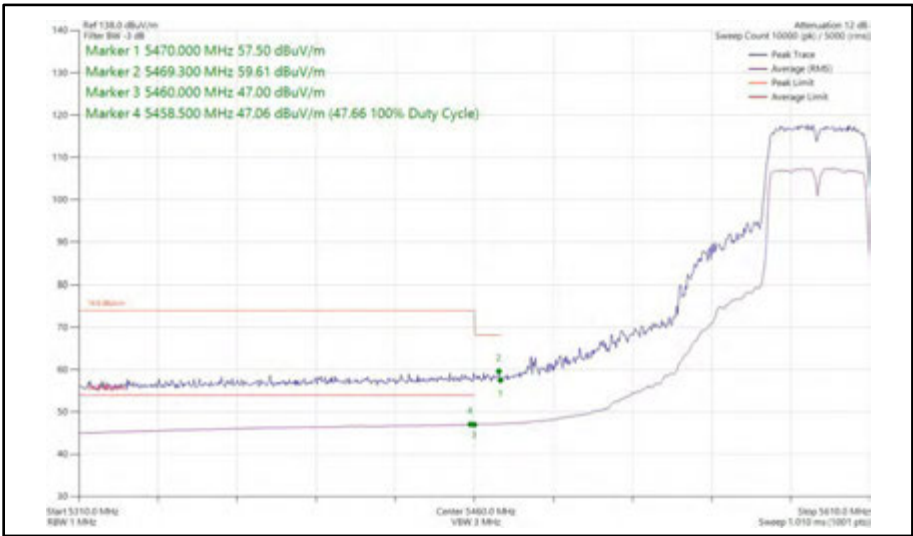


Figure 113 - 802.11n HT40, SISO, Core 0 - 5590 MHz
Band Edge Frequency 5460 MHz

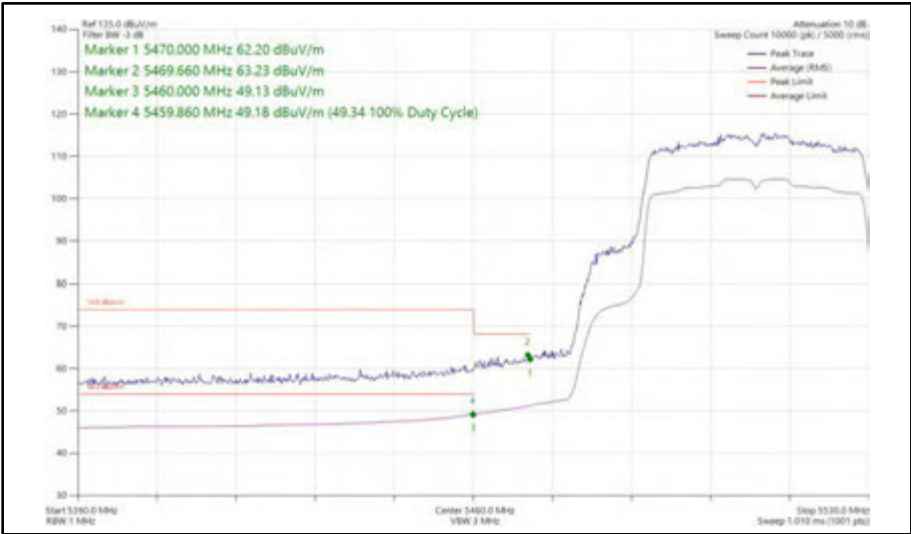


Figure 114 - 802.11ax HE40, SU, SISO, Core 0 - 5510 MHz
Band Edge Frequency 5460 MHz

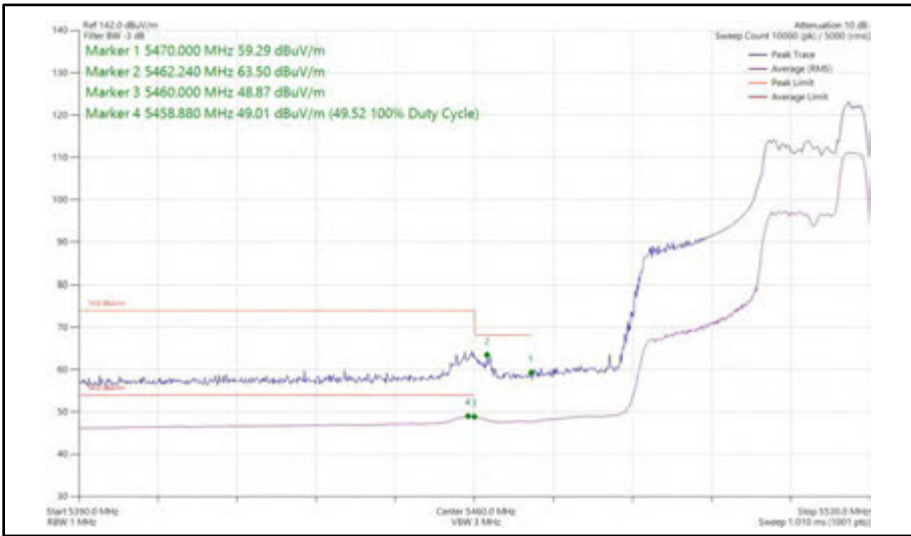


Figure 115 - 802.11ax HE40, RU 52-44, SISO, Core 0 - 5510 MHz
Band Edge Frequency 5460 MHz

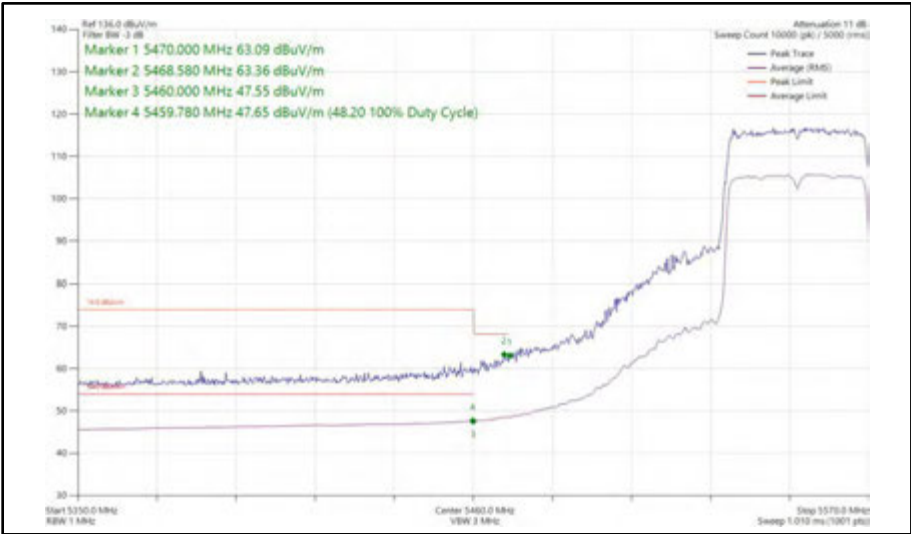


Figure 116 - 802.11ax HE40, SU, SISO, Core 0 - 5550 MHz
Band Edge Frequency 5460 MHz

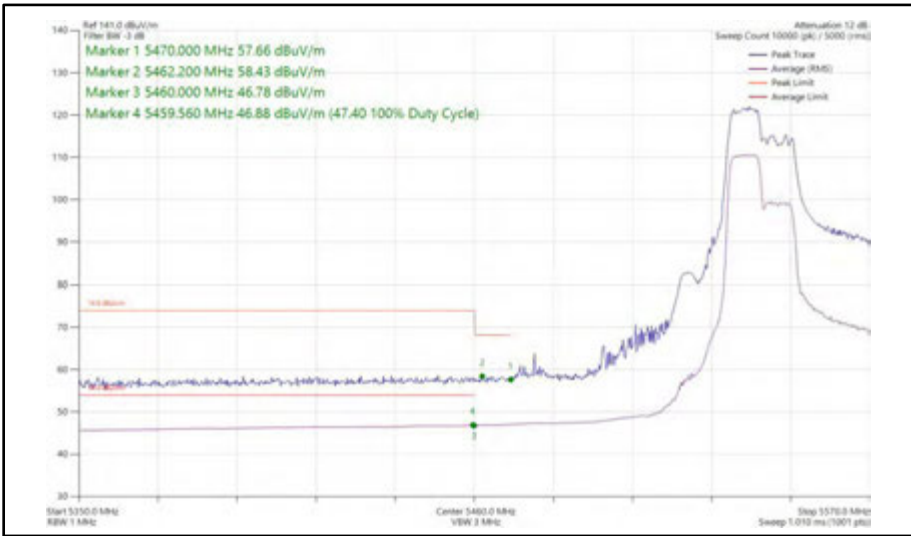


Figure 117 - 802.11ax HE40, RU 106-53, SISO, Core 0 - 5550 MHz
Band Edge Frequency 5460 MHz

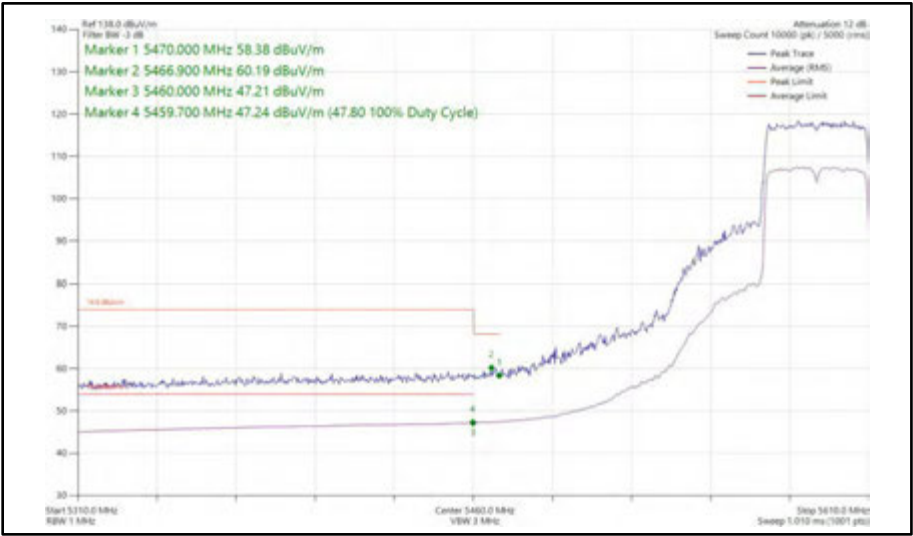


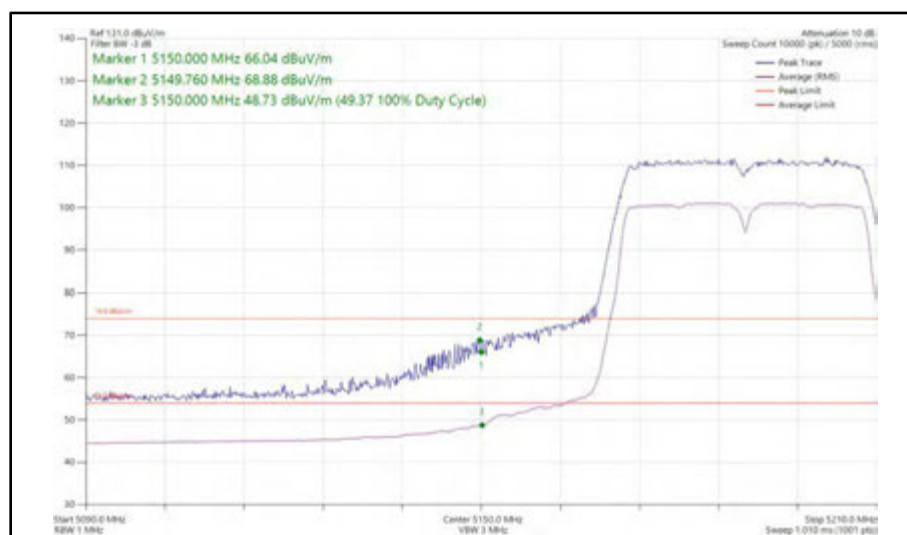
Figure 118 - 802.11ax HE40, SU, SISO, Core 0 - 5590 MHz
Band Edge Frequency 5460 MHz



40 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)
802.11n HT40	MCS7	-	-	5190	5150	68.88	49.37
802.11n HT40	MCS7	-	-	5230	5150	66.34	50.42
802.11ax HE40	MCS2x1	SU	-	5190	5150	63.31	51.48
802.11ax HE40	MCS11x1	106	53	5190	5150	68.80	48.90
802.11ax HE40	MCS11x1	SU	-	5230	5150	67.29	50.71
802.11ax HE40	MCS11x1	106	53	5230	5150	57.38	46.13
802.11n HT40	MCS7	-	-	5270	5350	65.49	49.79
802.11n HT40	MCS7	-	-	5310	5350	69.21	50.31
802.11ax HE40	MCS11x1	SU	-	5270	5350	67.30	50.75
802.11ax HE40	MCS11x1	106	56	5270	5350	58.52	46.58
802.11ax HE40	MCS4x1	SU	-	5310	5350	63.79	51.08
802.11ax HE40	MCS11x1	106	56	5310	5350	69.33	48.34
802.11n HT40	MCS7	-	-	5510	5460	63.41	46.97
802.11n HT40	MCS2	-	-	5550	5460	63.37	48.06
802.11n HT40	MCS7	-	-	5590	5460	58.81	46.95
802.11ax HE40	MCS4x1	SU	-	5510	5460	63.07	48.98
802.11ax HE40	MCS11x1	106	53	5510	5460	63.50	47.21
802.11ax HE40	MCS11x1	SU	-	5550	5460	63.24	47.46
802.11ax HE40	MCS11x1	106	53	5550	5460	58.36	46.79
802.11ax HE40	MCS11x1	SU	-	5590	5460	58.86	46.94

Table 12 - SISO Restricted Band Edge Results



**Figure 119 - 802.11n HT40, SISO, Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz**

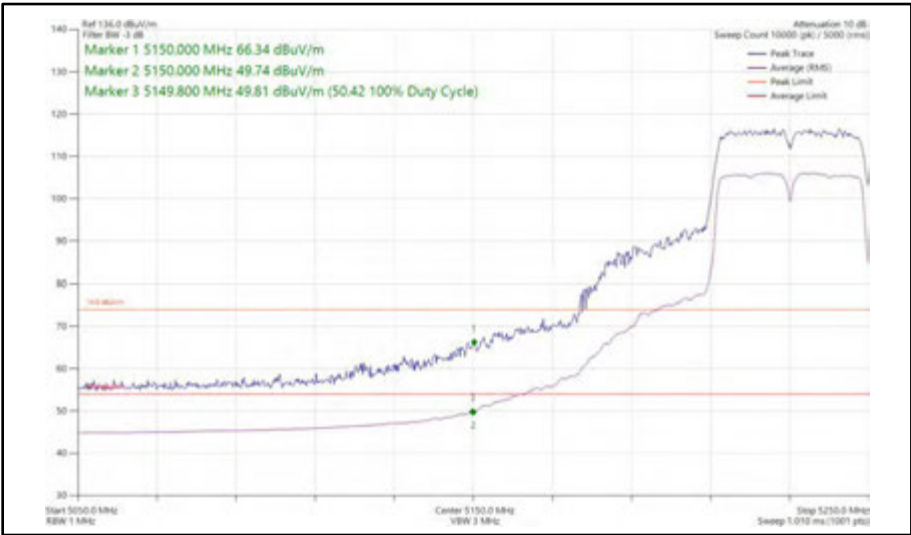


Figure 120 - 802.11n HT40, SISO, Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

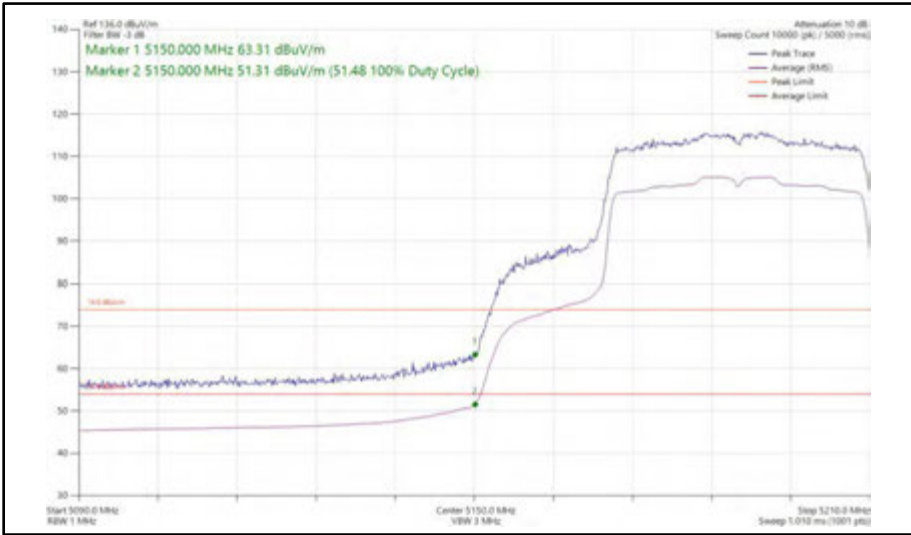


Figure 121 - 802.11ax HE40, SU, SISO, Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz

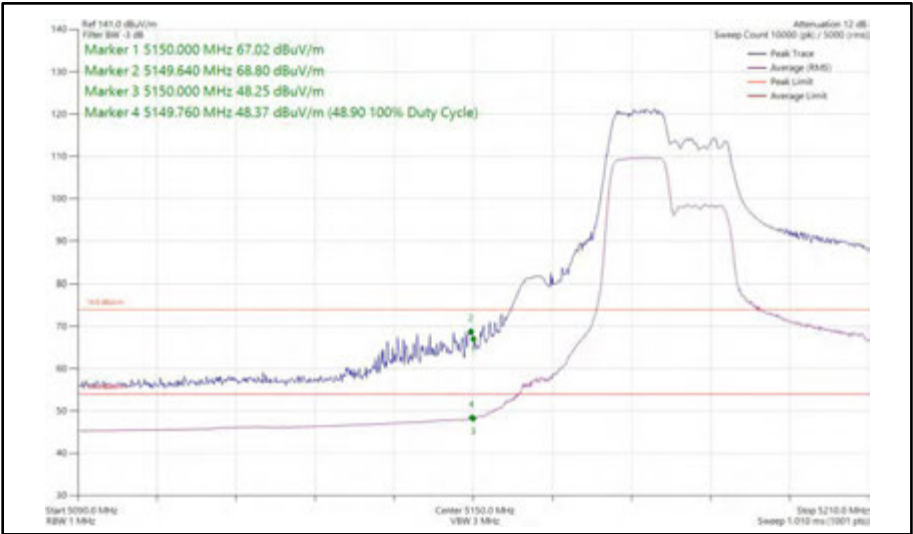


Figure 122 - 802.11ax HE40, RU 106-53, SISO, Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz

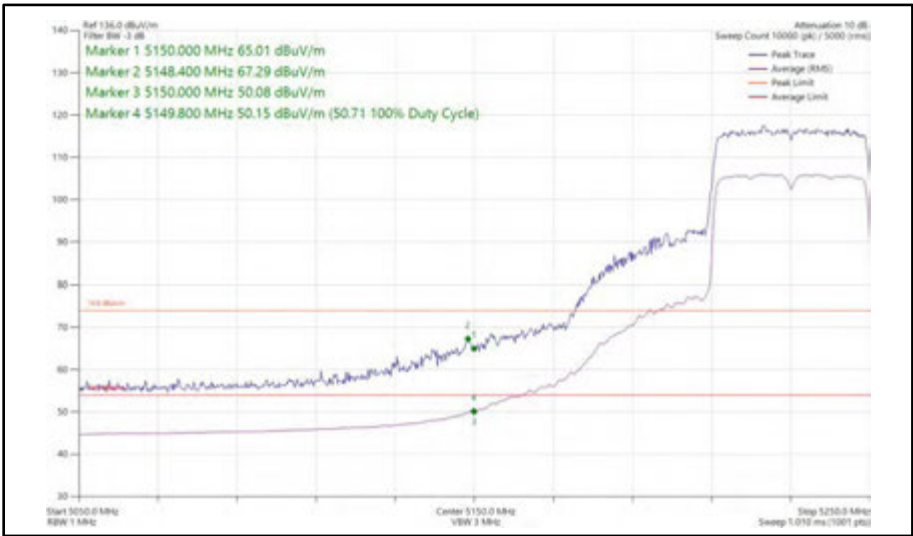


Figure 123 - 802.11ax HE40, SU, SISO, Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

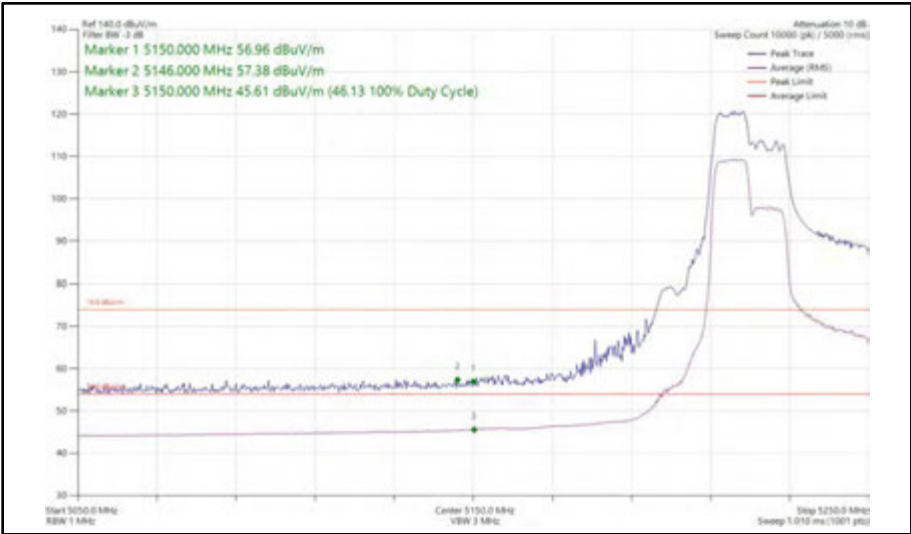


Figure 124 - 802.11ax HE40, RU 106-53, SISO, Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

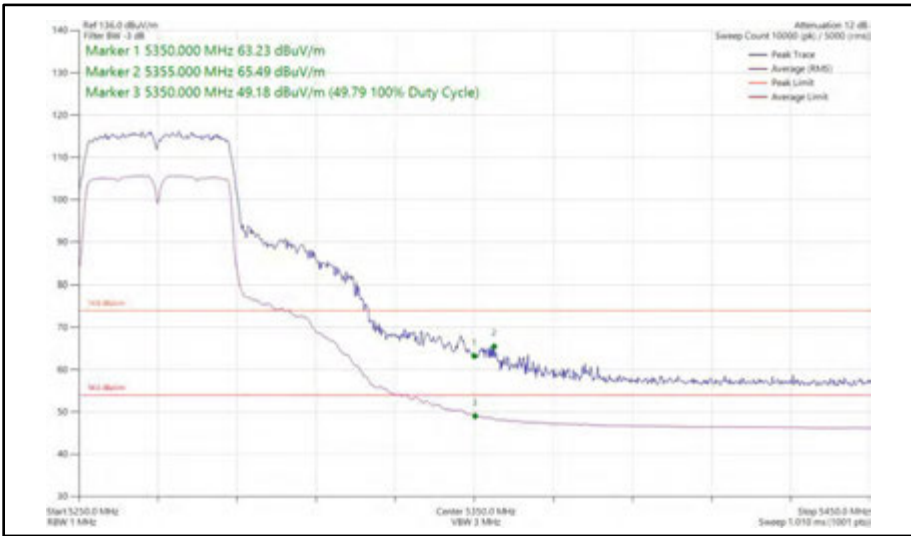


Figure 125 - 802.11n HT40, SISO, Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

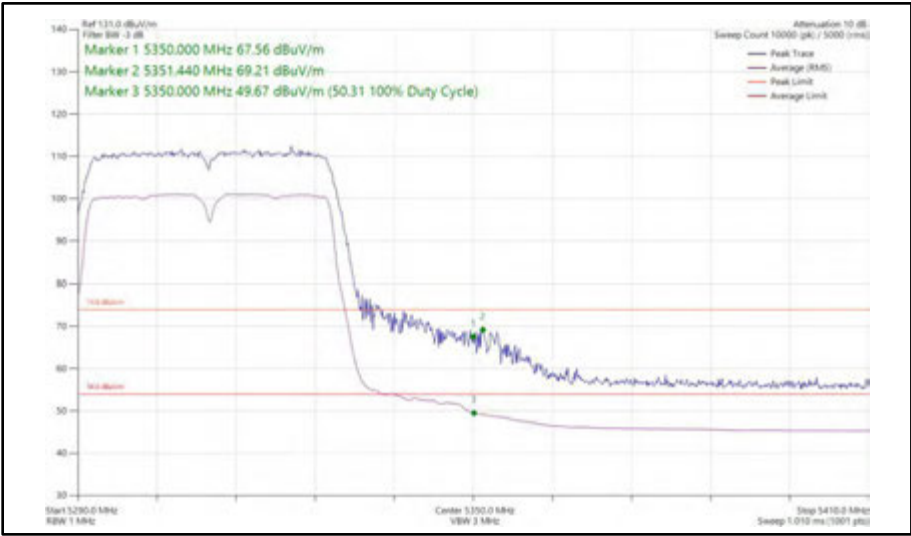


Figure 126 - 802.11n HT40, SISO, Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz

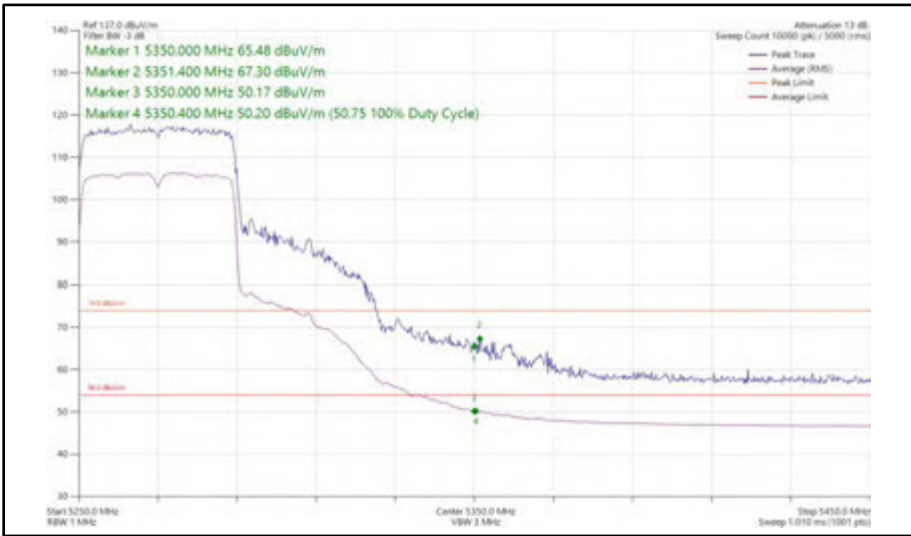


Figure 127 - 802.11ax HE40, SU, SISO, Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

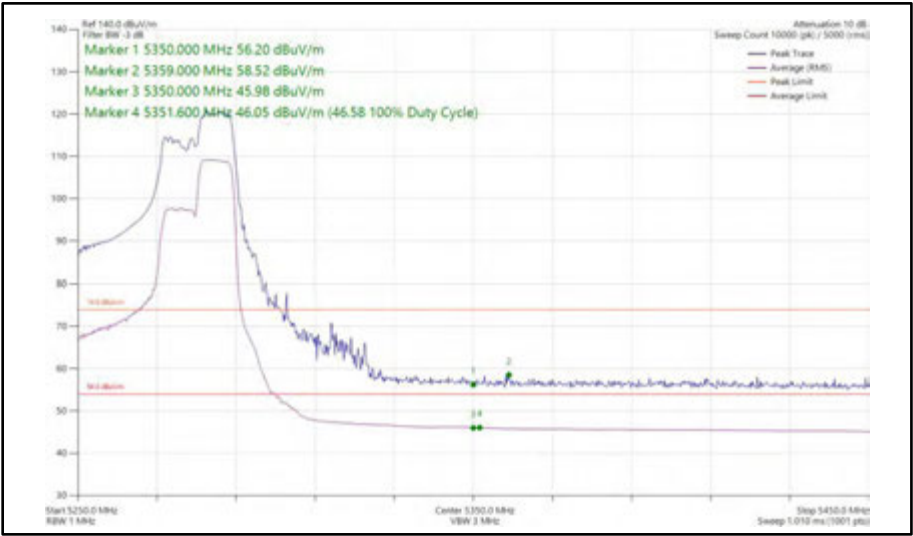


Figure 128 - 802.11ax HE40, RU 106-56, SISO, Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

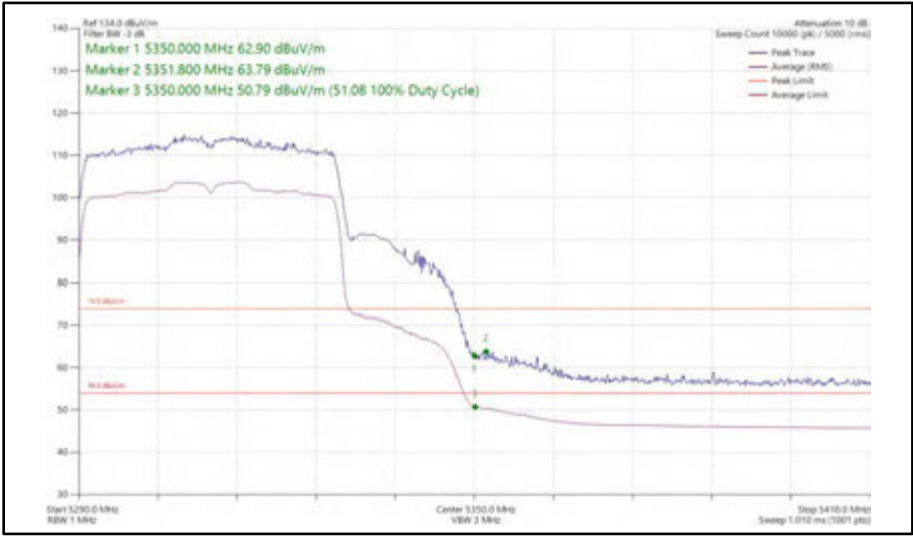
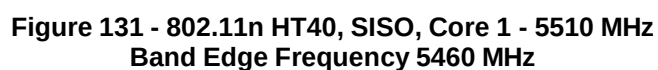


Figure 129 - 802.11ax HE40, SU, SISO, Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz



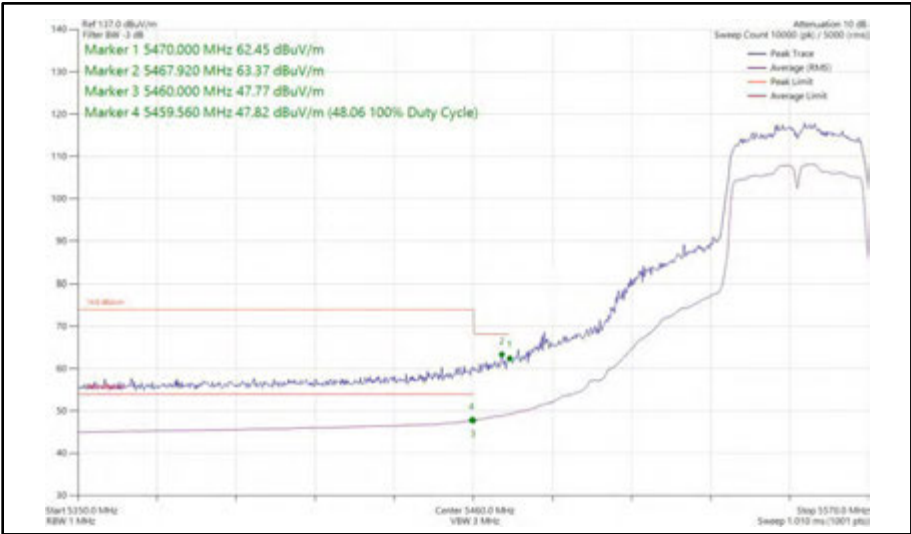


Figure 132 - 802.11n HT40, SISO, Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

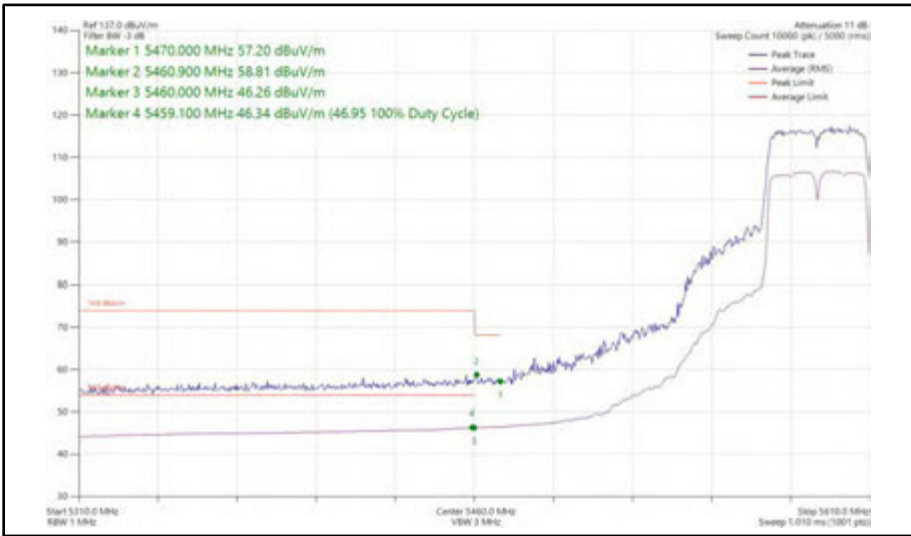


Figure 133 - 802.11n HT40, SISO, Core 1 - 5590 MHz
Band Edge Frequency 5460 MHz

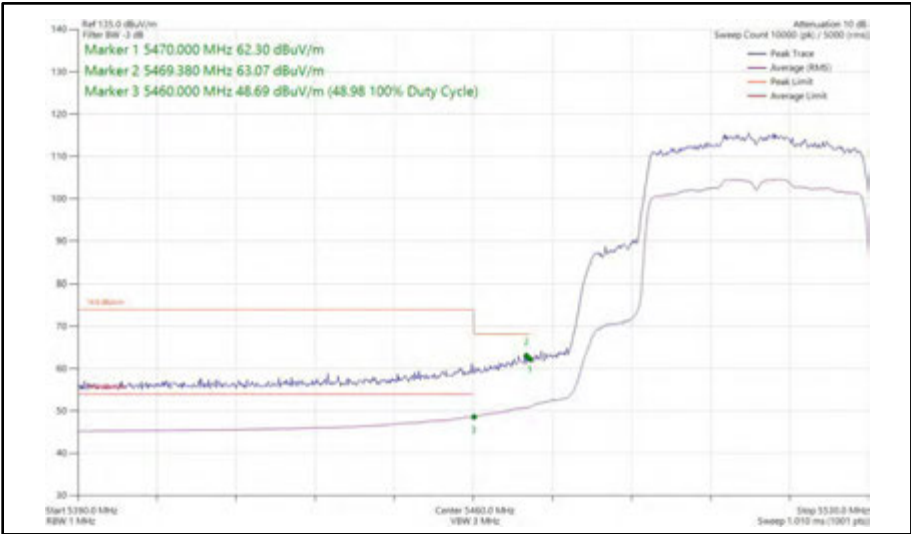


Figure 134 - 802.11ax HE40, SU, SISO, Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

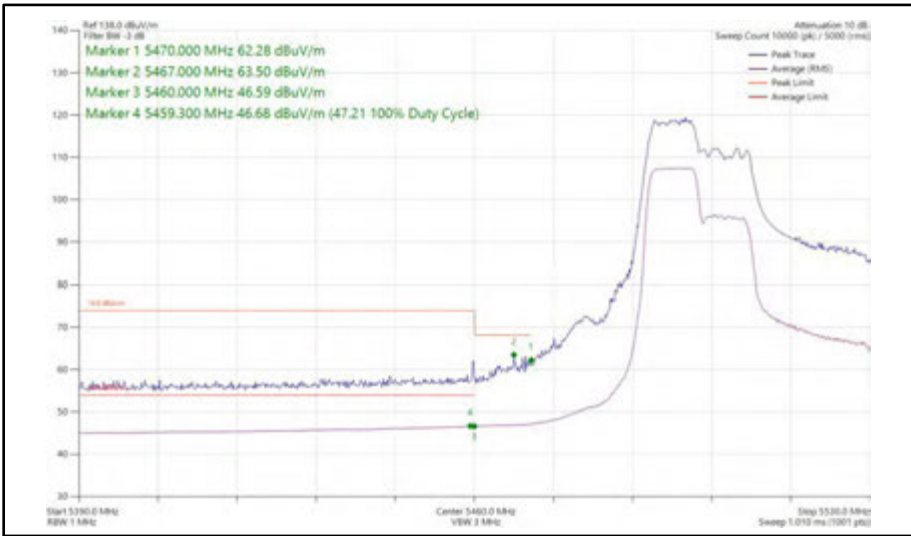


Figure 135 - 802.11ax HE40, RU 106-53, SISO, Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

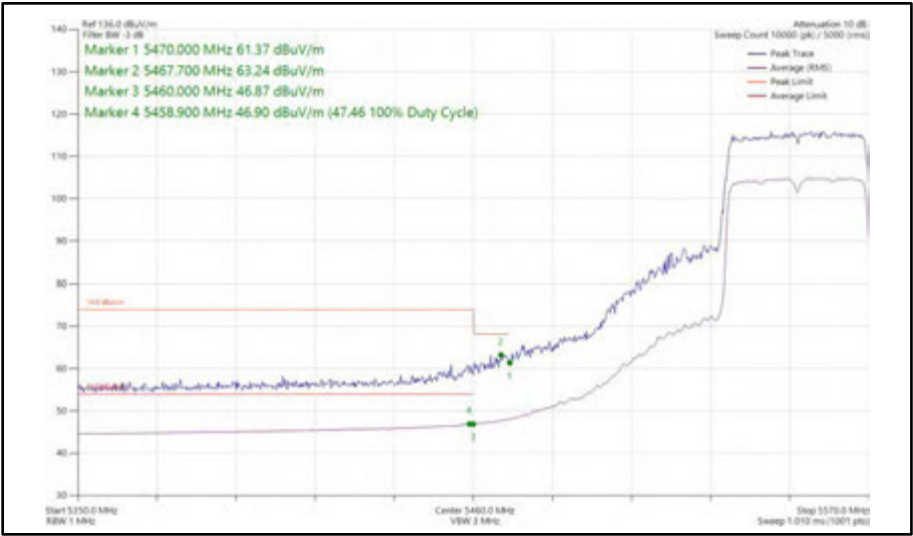


Figure 136 - 802.11ax HE40, SU, SISO, Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

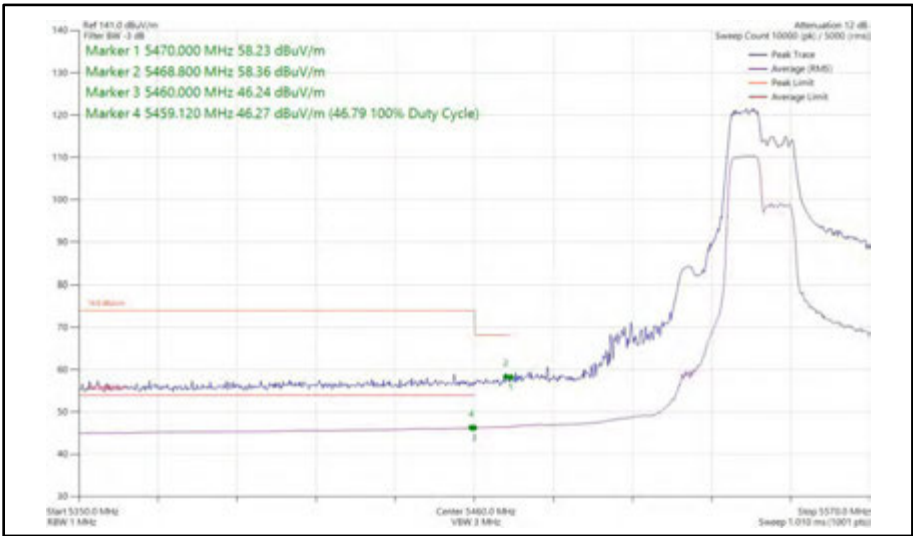


Figure 137 - 802.11ax HE40, RU 106-53, SISO, Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

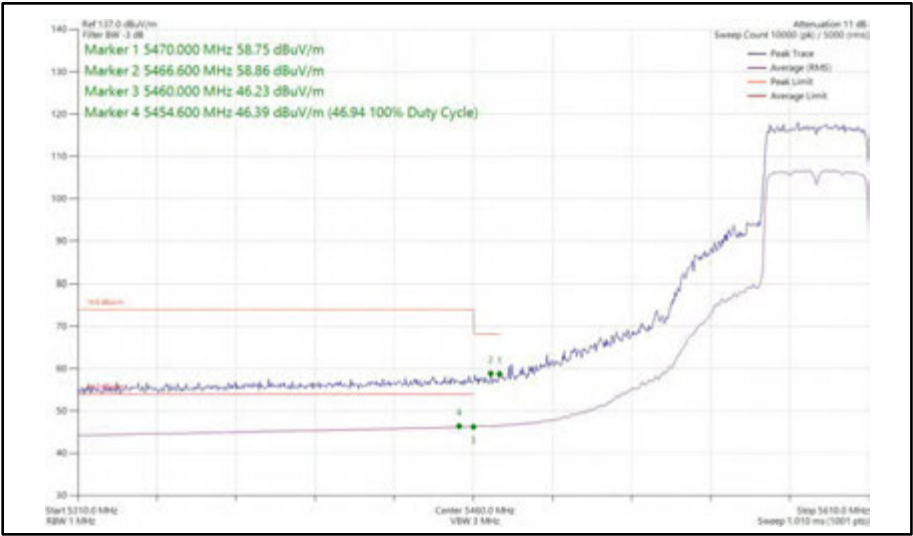


Figure 138 - 802.11ax HE40, SU, SISO, Core 1 - 5590 MHz
Band Edge Frequency 5460 MHz

40 MHz Bandwidth - Core 0 + Core 1 (CDD)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
802.11n HT40	MCS7	-	-	5190	5150	66.57	51.00
802.11n HT40	MCS4	-	-	5230	5150	66.16	51.37
802.11ax HE40	MCS4x1	SU	-	5190	5150	64.95	51.49
802.11ax HE40	MCS11x1	106	53	5190	5150	69.33	49.10
802.11ax HE40	MCS11x1	SU	-	5230	5150	66.71	51.23
802.11ax HE40	MCS11x1	106	53	5230	5150	61.41	48.02
802.11n HT40	MCS7	-	-	5270	5350	66.56	51.23
802.11n HT40	MCS7	-	-	5310	5350	69.44	51.49
802.11ax HE40	MCS2x1	SU	-	5270	5350	64.04	51.09
802.11ax HE40	MCS11x1	106	56	5270	5350	60.25	48.59
802.11ax HE40	MCS2x1	SU	-	5310	5350	64.53	51.43
802.11ax HE40	MCS11x1	106	56	5310	5350	69.45	49.76
802.11n HT40	MCS7	-	-	5510	5460	63.55	48.76
802.11n HT40	MCS4	-	-	5550	5460	63.45	48.53
802.11n HT40	MCS7	-	-	5590	5460	61.33	47.83
802.11ax HE40	MCS11x1	SU	-	5510	5460	63.68	48.92
802.11ax HE40	MCS11x1	52	44	5510	5460	63.69	48.30
802.11ax HE40	MCS11x1	SU	-	5550	5460	63.69	48.48
802.11ax HE40	MCS11x1	106	53	5550	5460	59.69	48.01
802.11ax HE40	MCS11x1	SU	-	5590	5460	60.75	47.97

Table 13 - CDD Restricted Band Edge Results

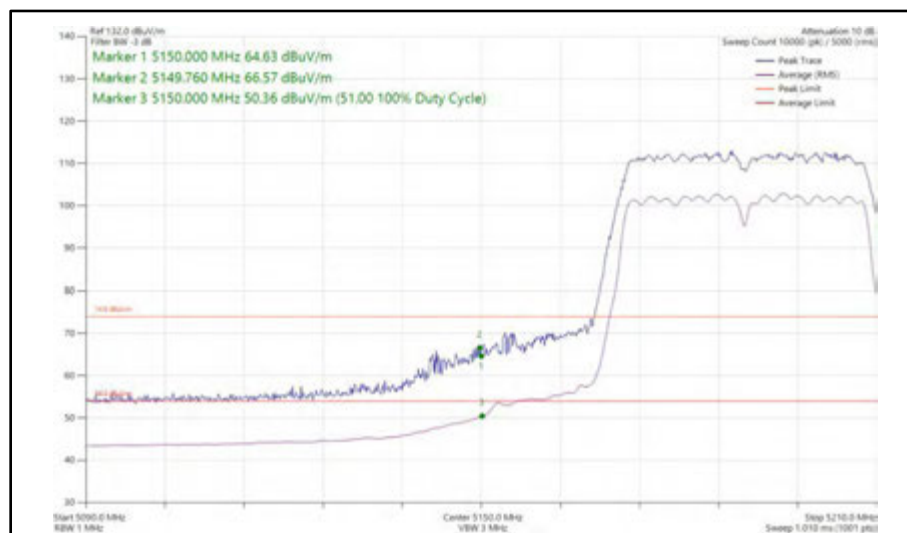


Figure 139 - 802.11n HT40, CDD, Core 0 + Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz

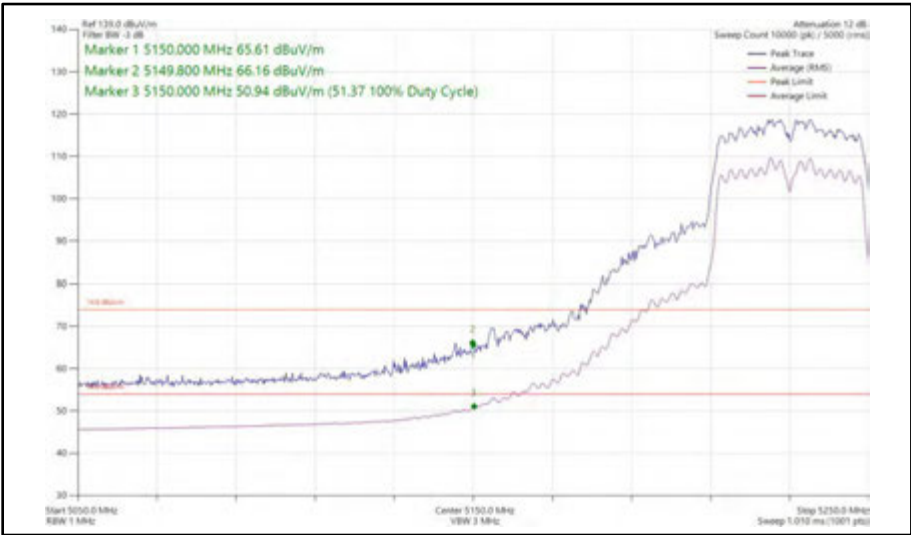


Figure 140 - 802.11n HT40, CDD, Core 0 + Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

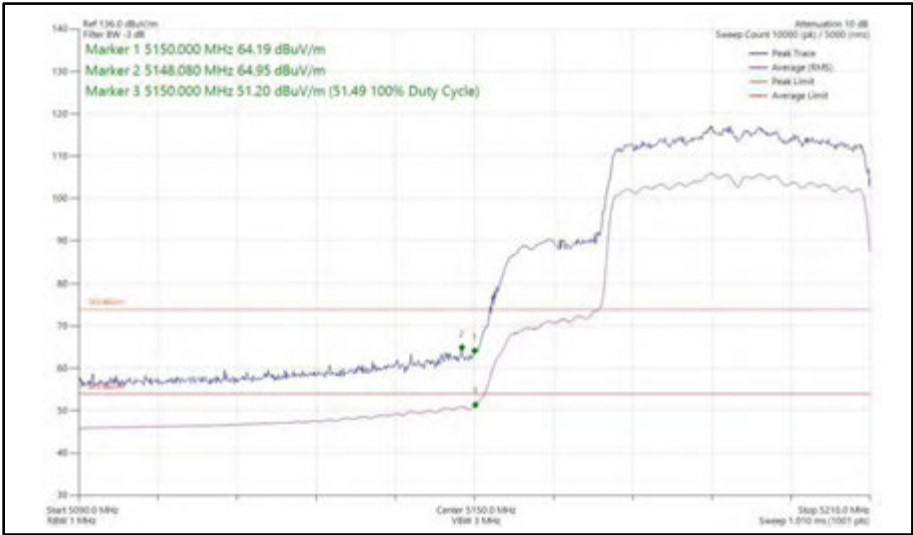


Figure 141 - 802.11ax HE40, SU, CDD, Core 0 + Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz

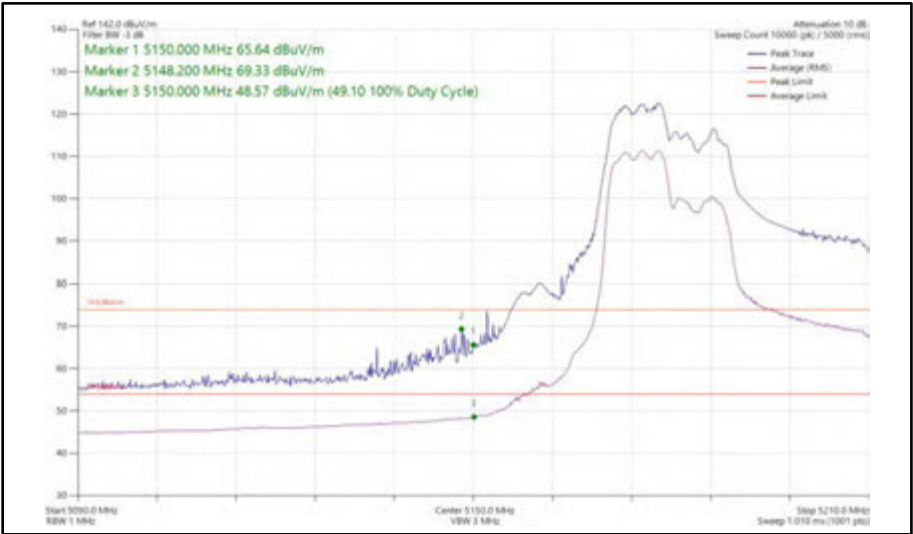


Figure 142 - 802.11ax HE40, RU 106-53, CDD, Core 0 + Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz

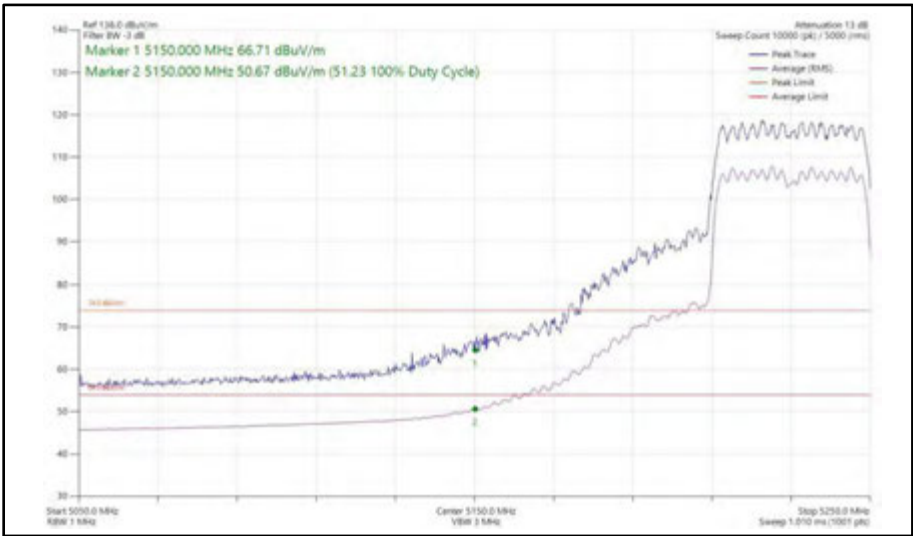


Figure 143 - 802.11ax HE40, SU, CDD, Core 0 + Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

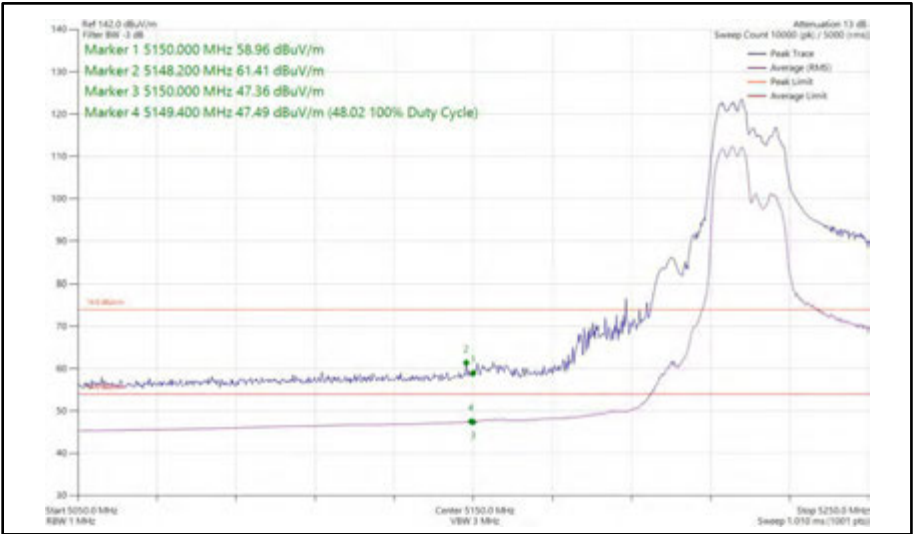


Figure 144 - 802.11ax HE40, RU 106-53, CDD, Core 0 + Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

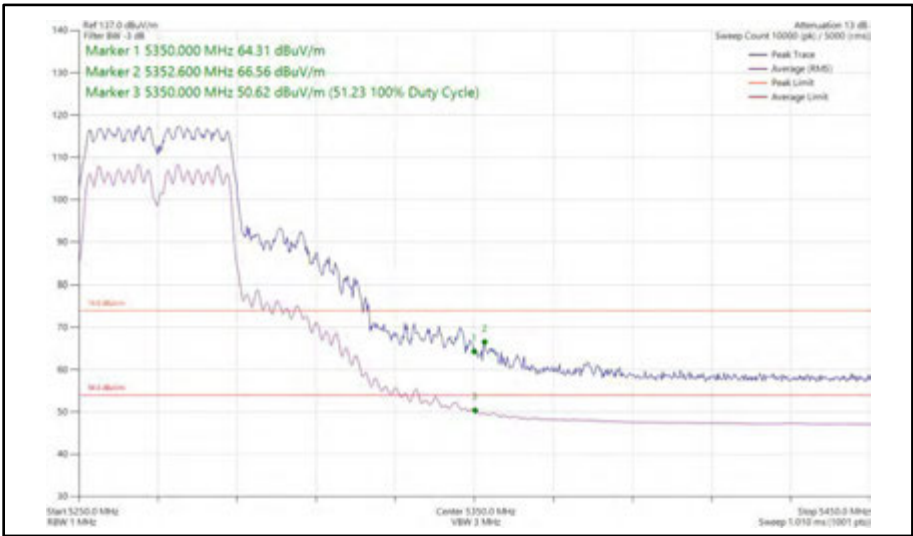


Figure 145 - 802.11n HT40, CDD, Core 0 + Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

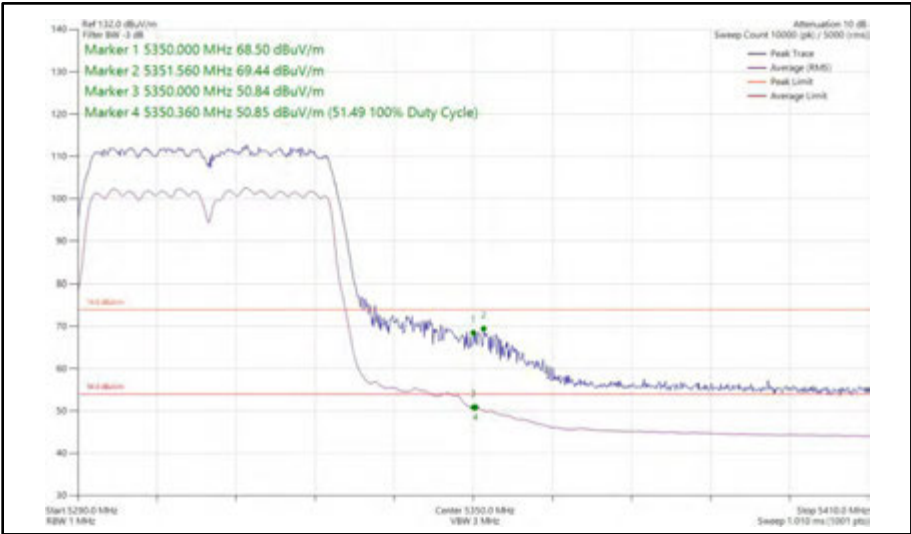


Figure 146 - 802.11n HT40, CDD, Core 0 + Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz

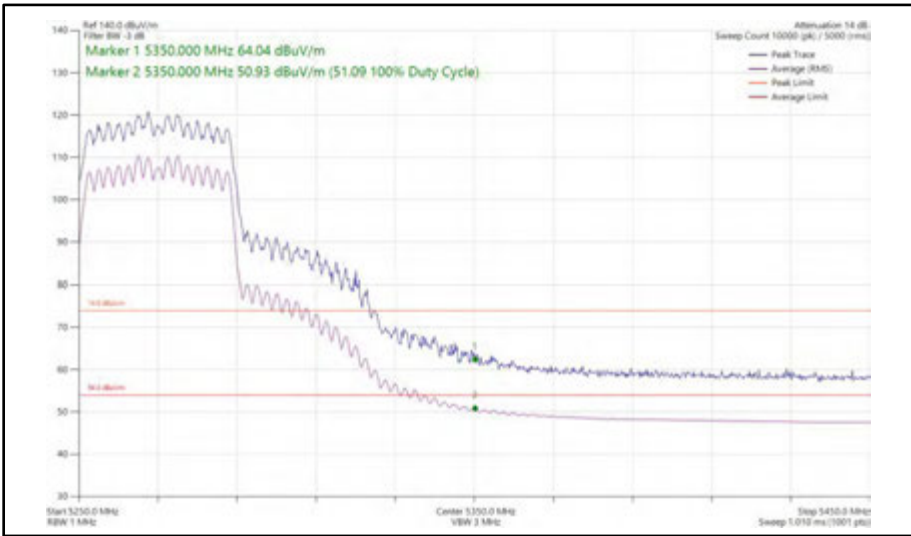


Figure 147 - 802.11ax HE40, SU, CDD, Core 0 + Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

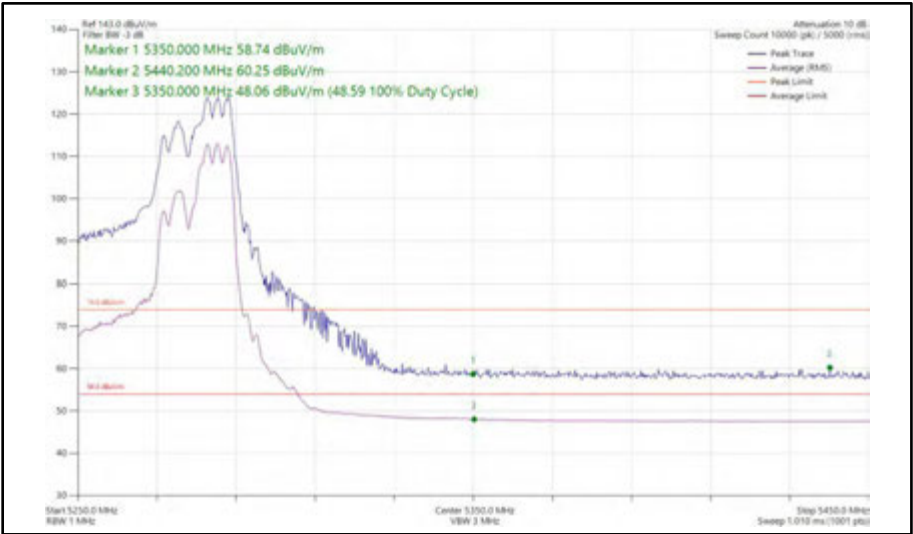


Figure 148 - 802.11ax HE40, RU 106-56, CDD, Core 0 + Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

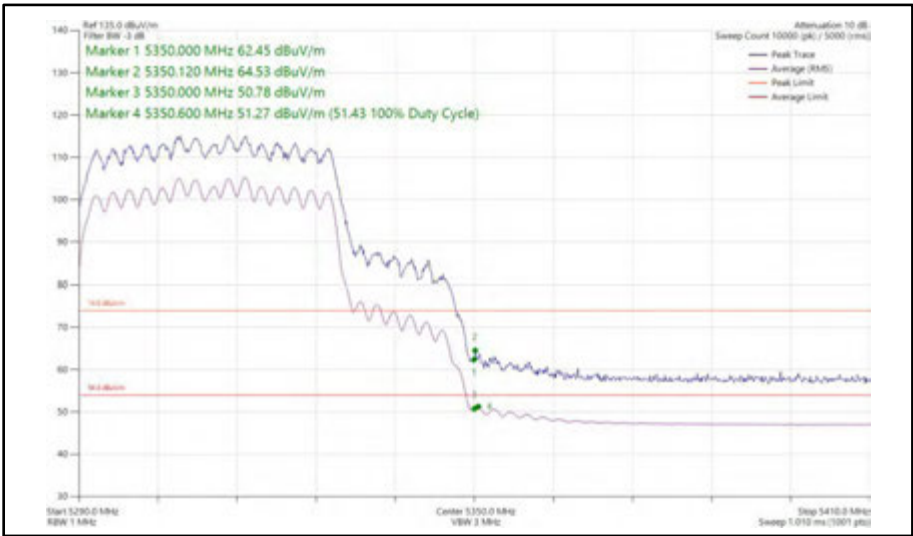


Figure 149 - 802.11ax HE40, SU, CDD, Core 0 + Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz

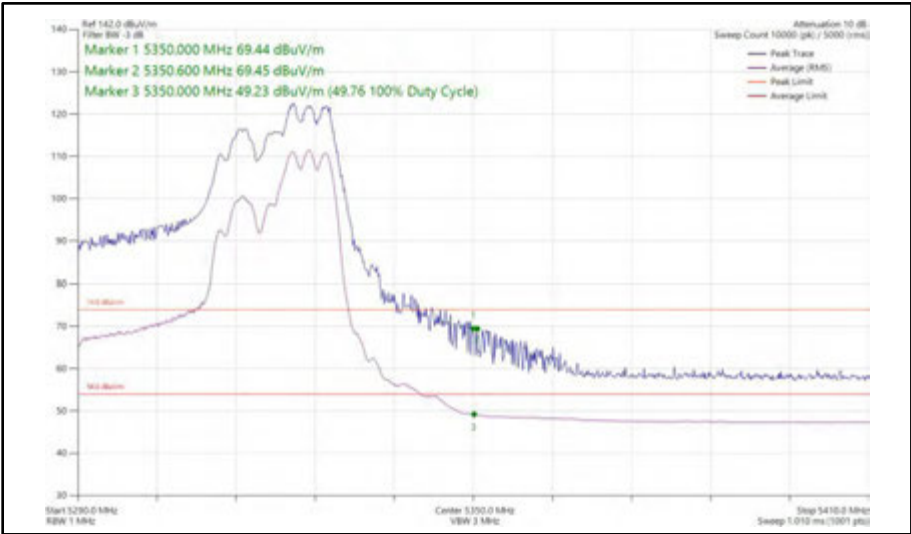


Figure 150 - 802.11ax HE40, RU 106-56, CDD, Core 0 + Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz

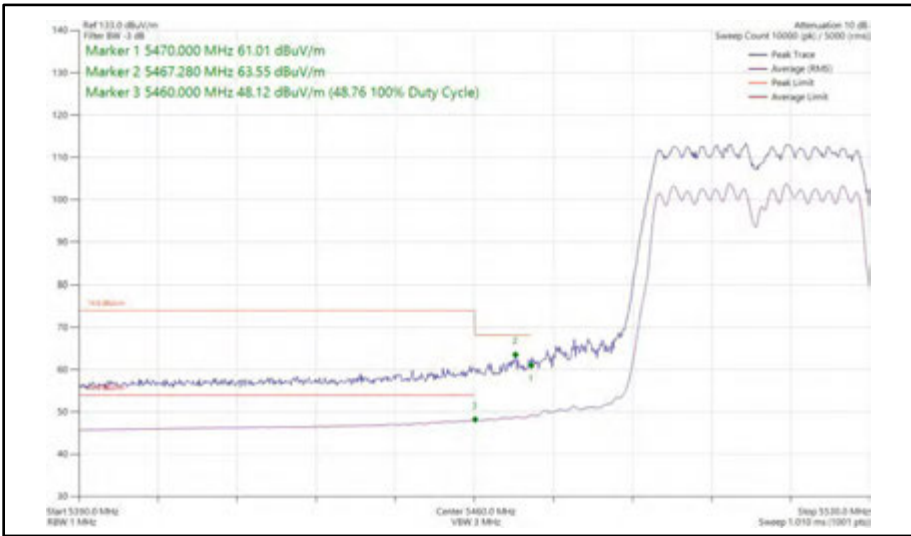


Figure 151 - 802.11n HT40, CDD, Core 0 + Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

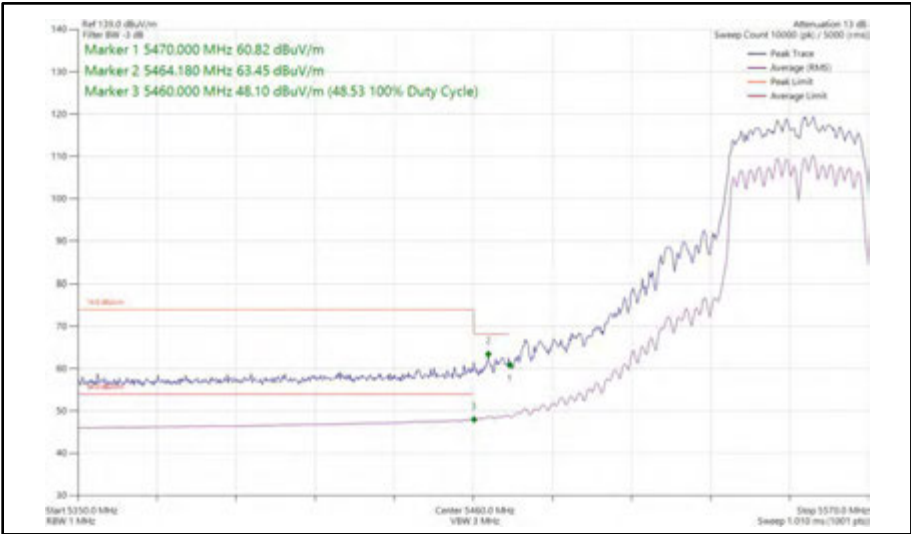


Figure 152 - 802.11n HT40, CDD, Core 0 + Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

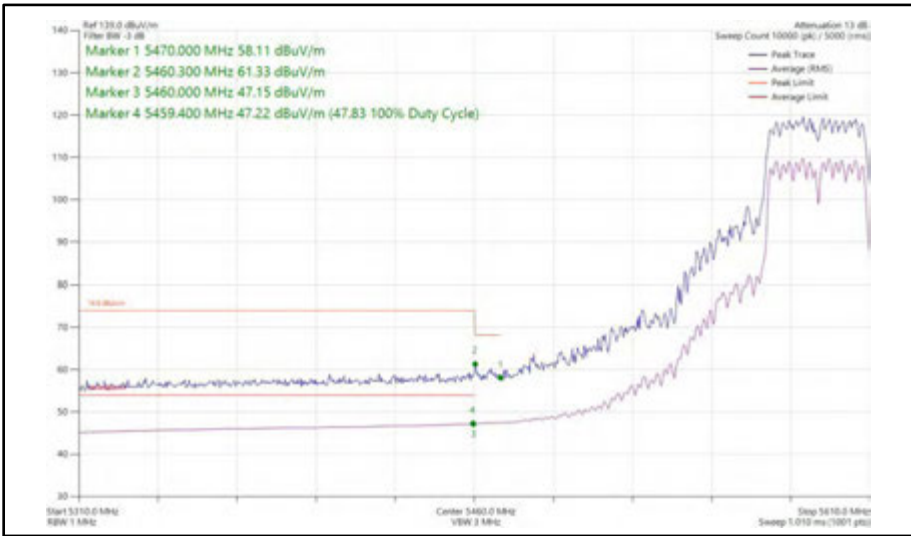


Figure 153 - 802.11n HT40, CDD, Core 0 + Core 1 - 5590 MHz
Band Edge Frequency 5460 MHz

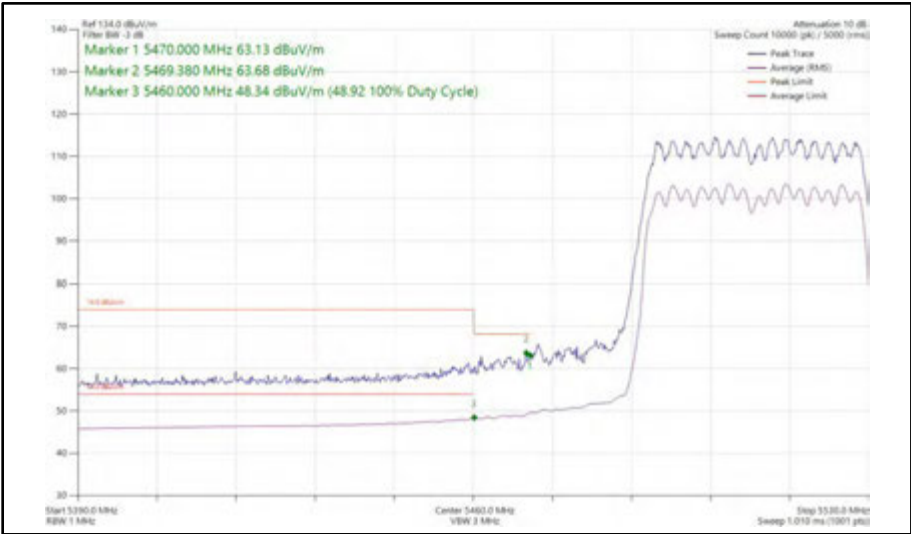


Figure 154 - 802.11ax HE40, SU, CDD, Core 0 + Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

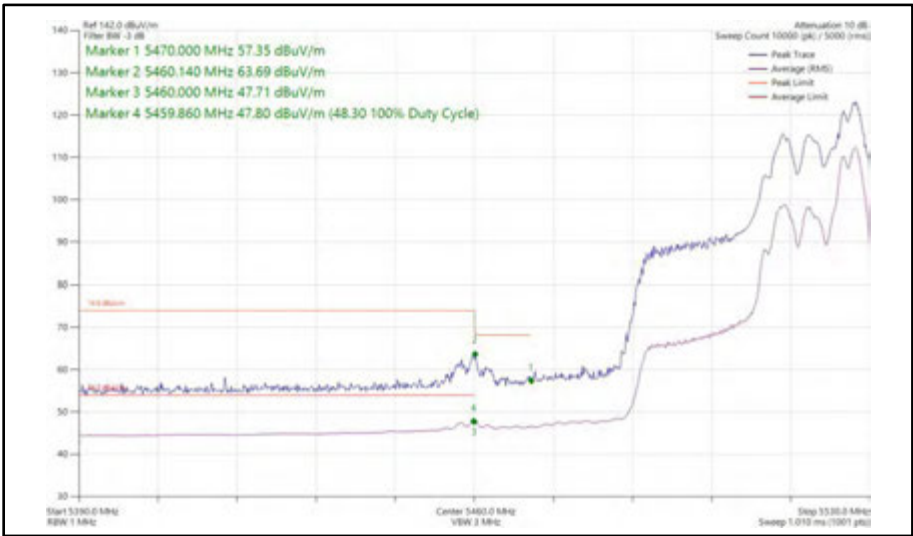


Figure 155 - 802.11ax HE40, RU 52-44, CDD, Core 0 + Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

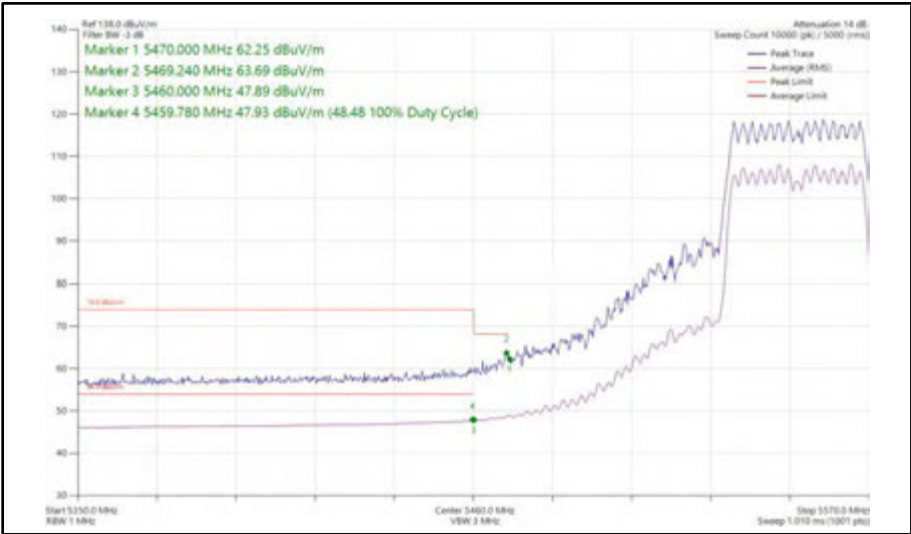


Figure 156 - 802.11ax HE40, SU, CDD, Core 0 + Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

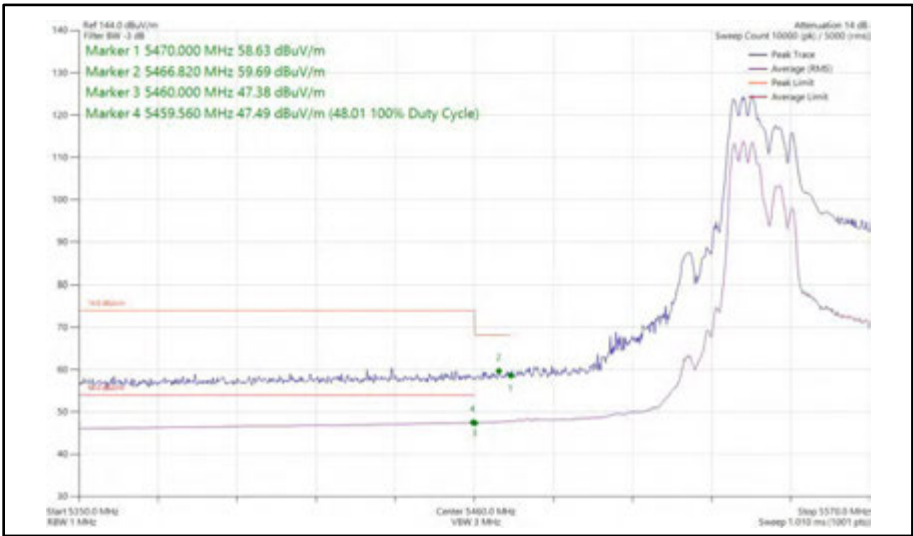


Figure 157 - 802.11ax HE40, RU 106-53, CDD, Core 0 + Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

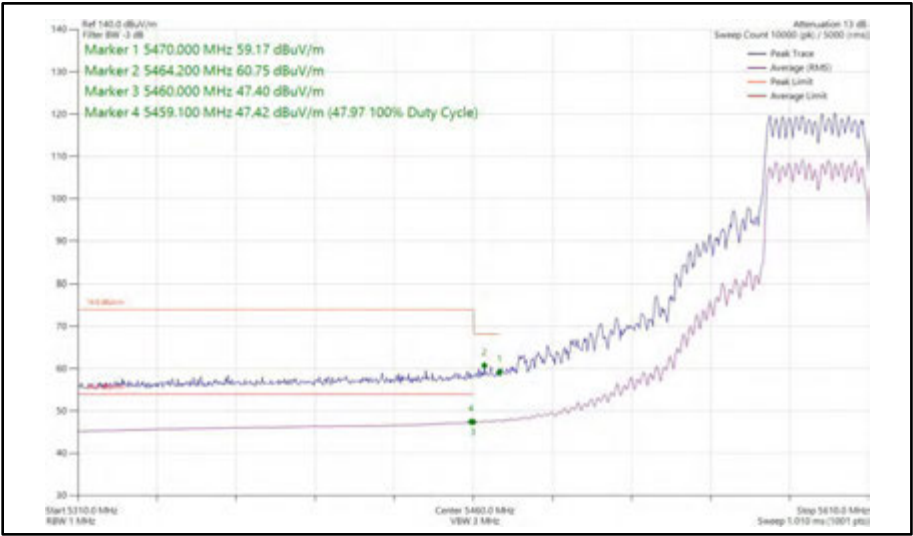


Figure 158 - 802.11ax HE40, SU, CDD, Core 0 + Core 1 - 5590 MHz
Band Edge Frequency 5460 MHz



40 MHz Bandwidth - Core 0 + Core 1 (SDM)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
802.11n HT40	MCS15	-	-	5190	5150	69.14	51.16
802.11n HT40	MCS15	-	-	5230	5150	65.66	51.08
802.11ax HE40	MCS2x2	SU	-	5190	5150	64.24	51.27
802.11ax HE40	MCS11x2	106	56	5190	5150	63.76	51.08
802.11ax HE40	MCS4x2	SU	-	5230	5150	68.17	51.49
802.11ax HE40	MCS11x2	106	53	5230	5150	61.15	47.78
802.11n HT40	MCS12	-	-	5270	5350	65.13	51.44
802.11n HT40	MCS12	-	-	5310	5350	63.46	51.15
802.11ax HE40	MCS11x2	SU	-	5270	5350	65.49	51.00
802.11ax HE40	MCS11x2	106	53	5270	5350	60.34	48.57
802.11ax HE40	MCS2x2	SU	-	5310	5350	63.48	51.36
802.11ax HE40	MCS11x2	106	53	5310	5350	66.93	51.41
802.11n HT40	MCS12	-	-	5510	5460	63.29	49.23
802.11n HT40	MCS10	-	-	5550	5460	63.35	49.71
802.11n HT40	MCS15	-	-	5590	5460	60.87	48.10
802.11ax HE40	MCS4x2	SU	-	5510	5460	63.15	48.88
802.11ax HE40	MCS11x2	52	44	5510	5460	63.53	49.33
802.11ax HE40	MCS2x2	SU	-	5550	5460	63.33	49.59
802.11ax HE40	MCS11x2	106	56	5550	5460	59.64	48.31
802.11ax HE40	MCS11x2	SU	-	5590	5460	61.16	48.11

Table 14 - SDM Restricted Band Edge Results

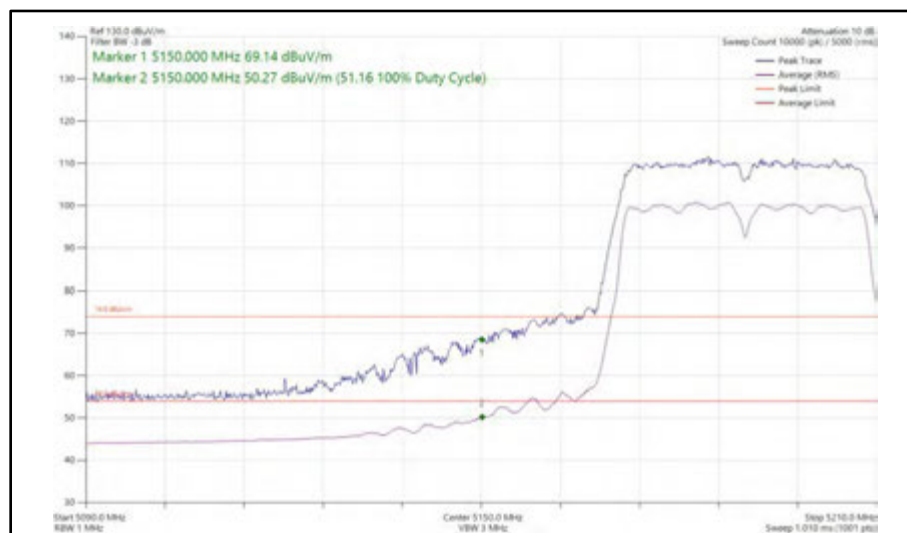


Figure 159 - 802.11n HT40, SDM, Core 0 + Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz

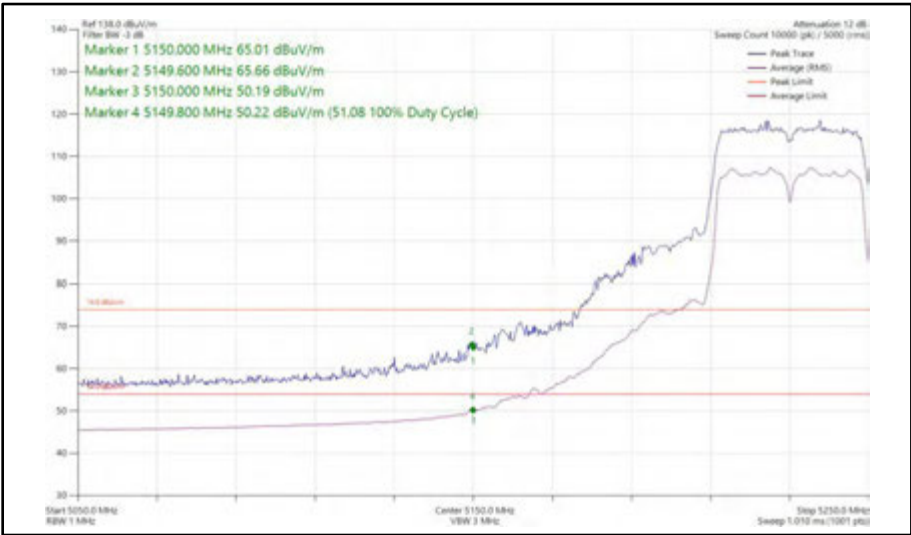


Figure 160 - 802.11n HT40, SDM, Core 0 + Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

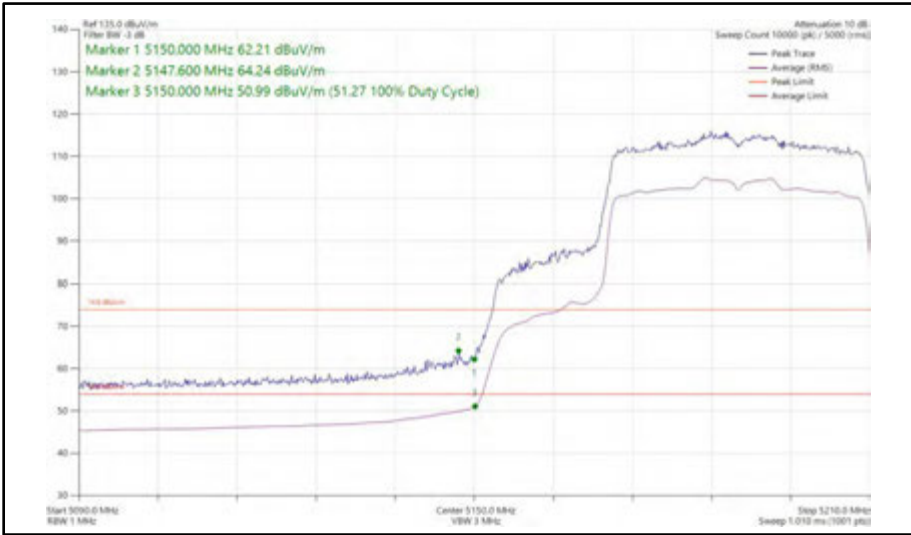


Figure 161 - 802.11ax HE40, SU, SDM, Core 0 + Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz

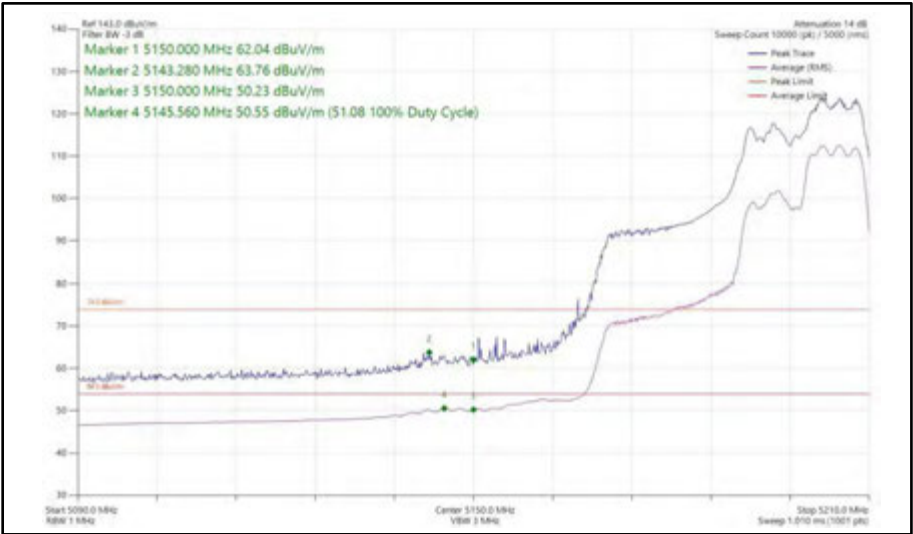


Figure 162 - 802.11ax HE40, RU 106-56, SDM, Core 0 + Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz

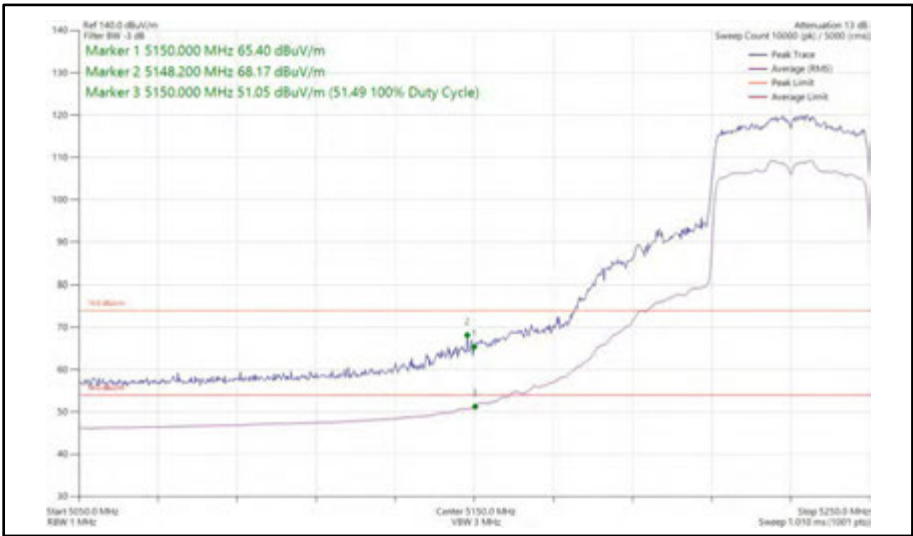


Figure 163 - 802.11ax HE40, SU, SDM, Core 0 + Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

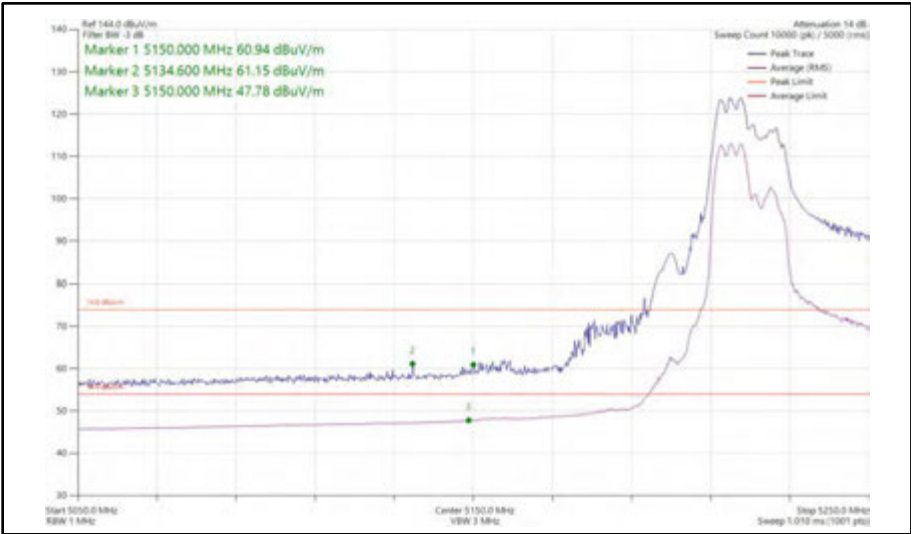


Figure 164 - 802.11ax HE40, RU 106-53, SDM, Core 0 + Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

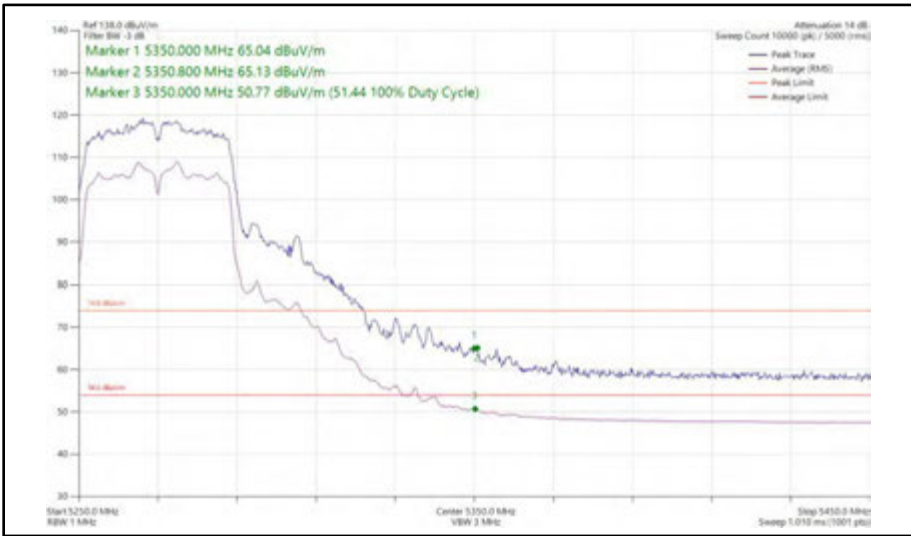


Figure 165 - 802.11n HT40, SDM, Core 0 + Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

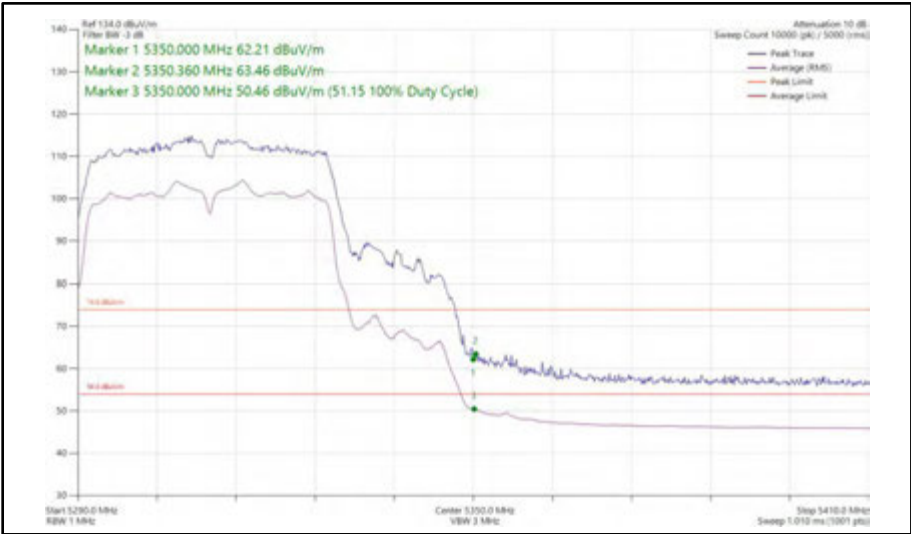


Figure 166 - 802.11n HT40, SDM, Core 0 + Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz

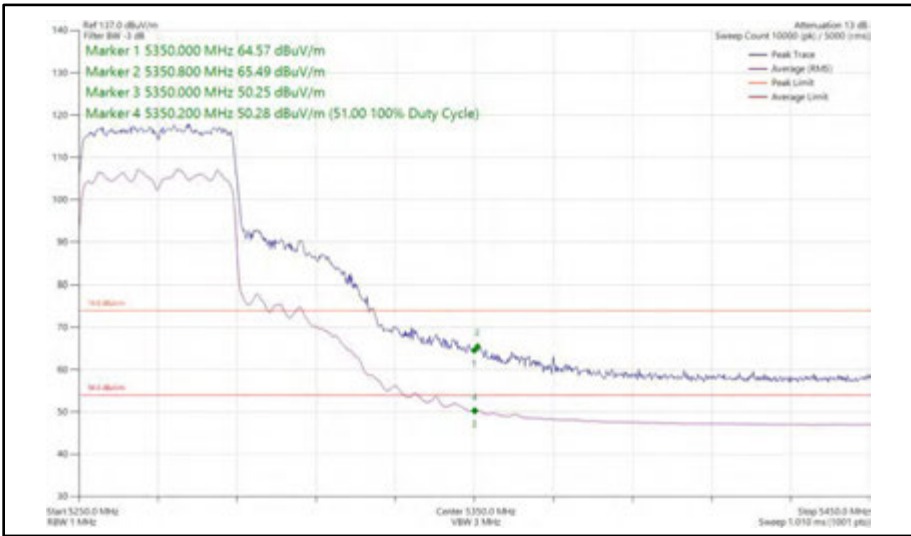


Figure 167 - 802.11ax HE40, SU, SDM, Core 0 + Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

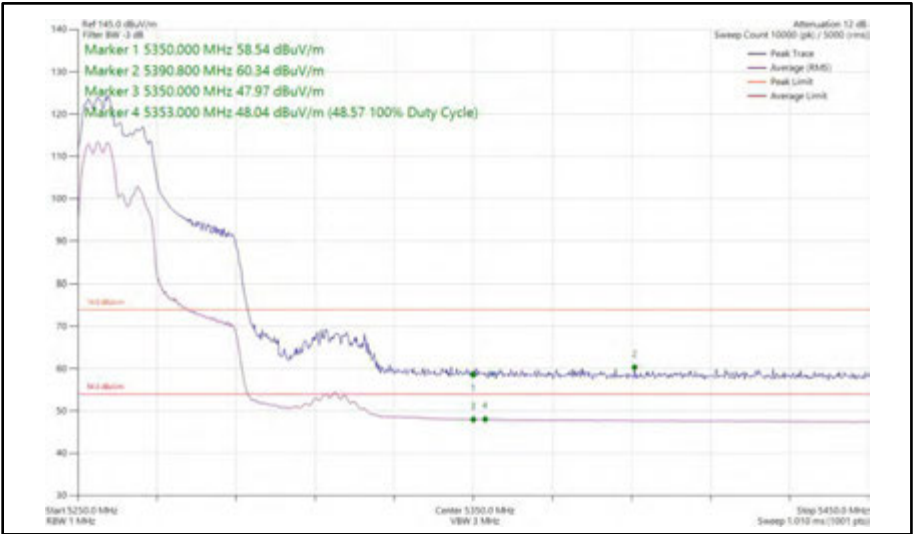


Figure 168 - 802.11ax HE40, RU 106-53, SDM, Core 0 + Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

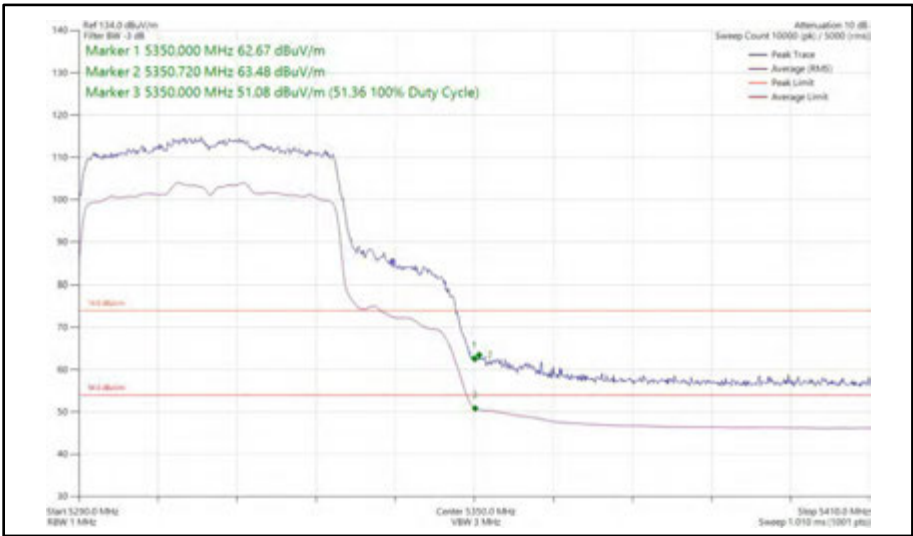


Figure 169 - 802.11ax HE40, SU, SDM, Core 0 + Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz

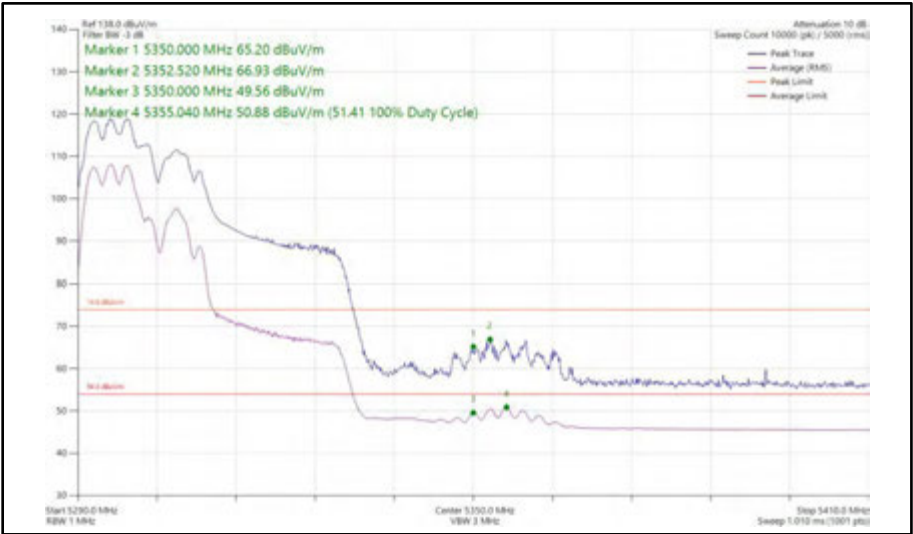


Figure 170 - 802.11ax HE40, RU 106-53, SDM, Core 0 + Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz

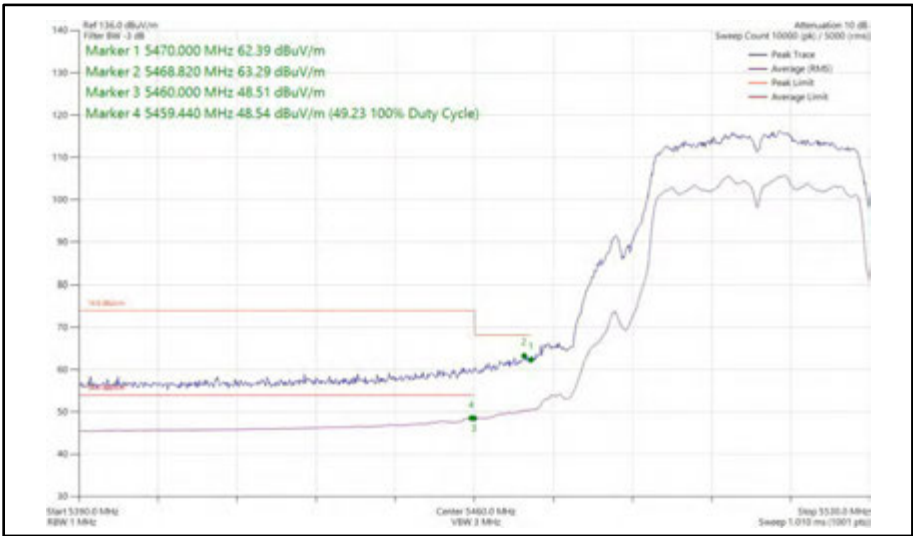


Figure 171 - 802.11n HT40, SDM, Core 0 + Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

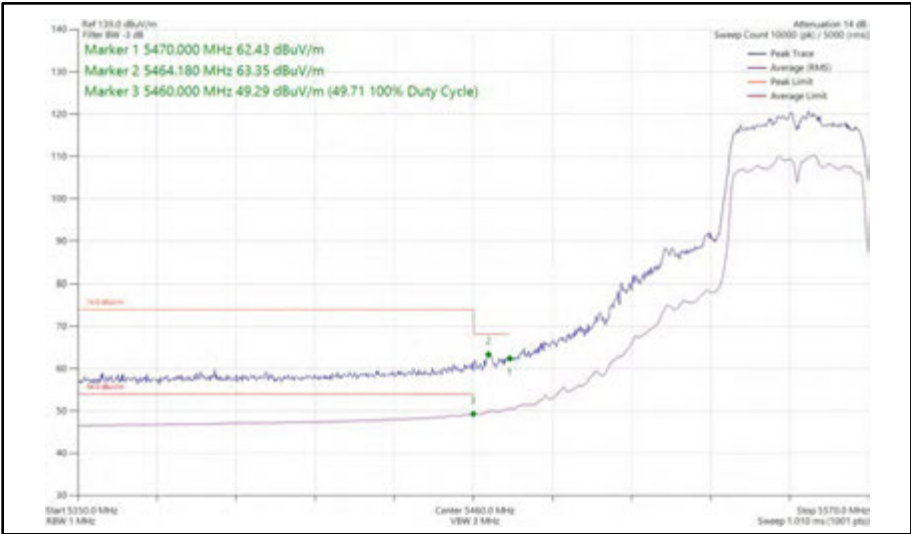


Figure 172 - 802.11n HT40, SDM, Core 0 + Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

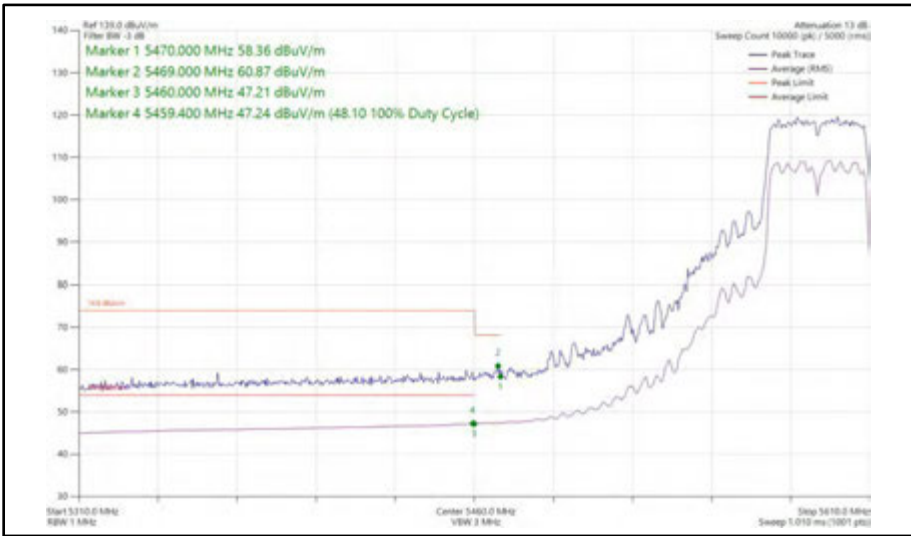


Figure 173 - 802.11n HT40, SDM, Core 0 + Core 1 - 5590 MHz
Band Edge Frequency 5460 MHz

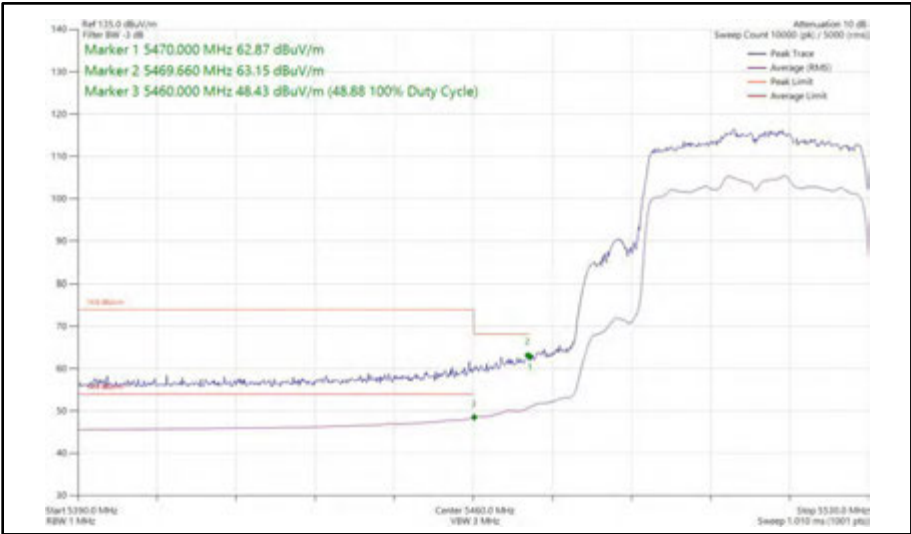


Figure 174 - 802.11ax HE40, SU, SDM, Core 0 + Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

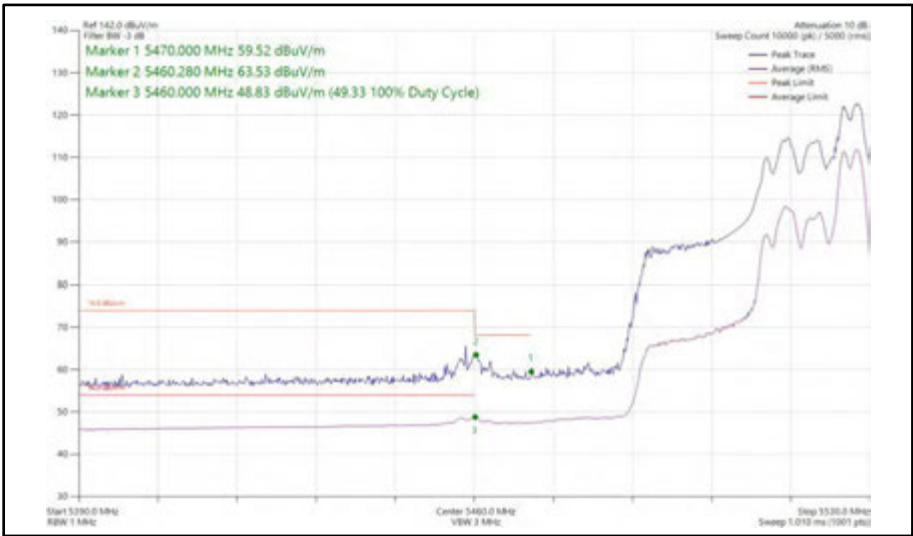


Figure 175 - 802.11ax HE40, RU 52-44, SDM, Core 0 + Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

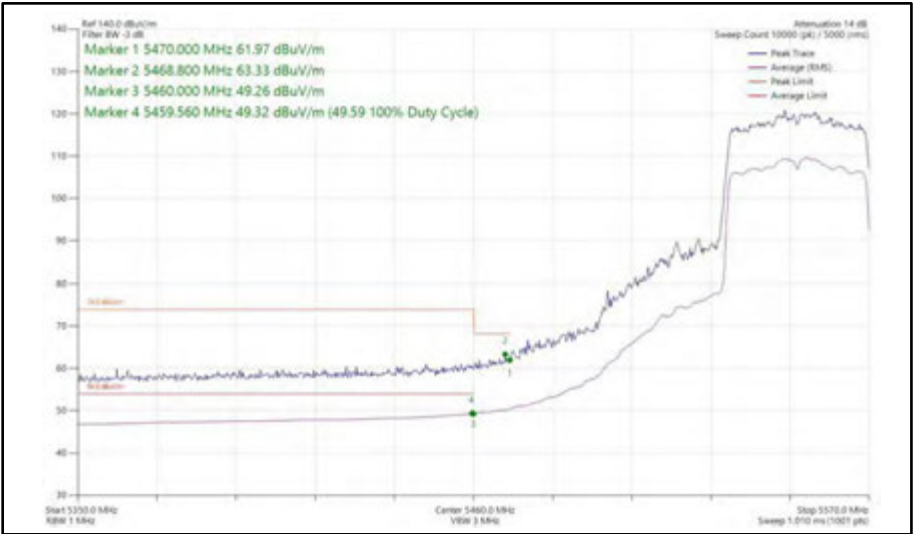


Figure 176 - 802.11ax HE40, SU, SDM, Core 0 + Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

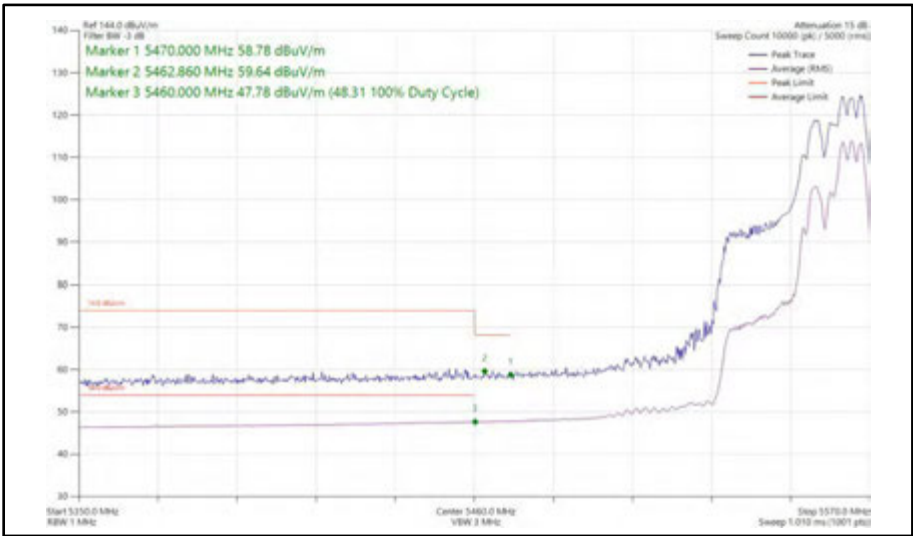


Figure 177 - 802.11ax HE40, RU 106-56, SDM, Core 0 + Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

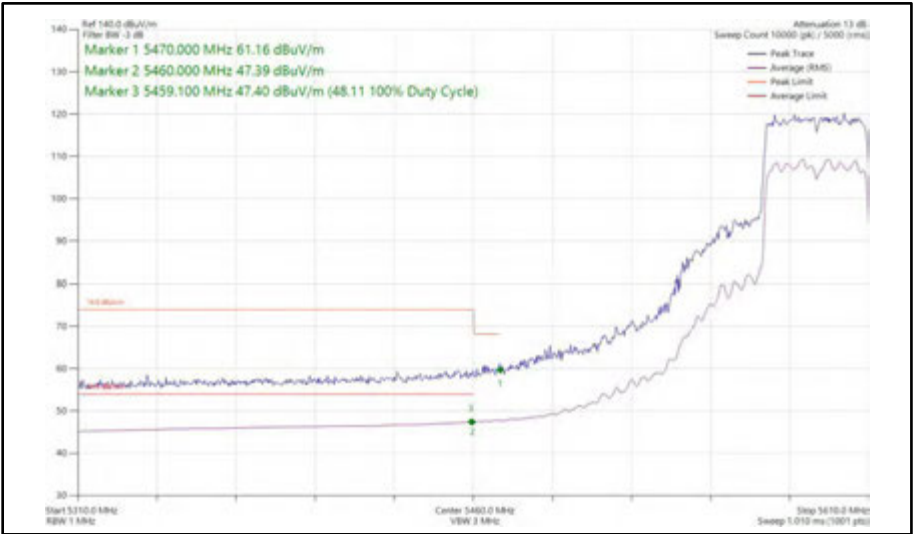
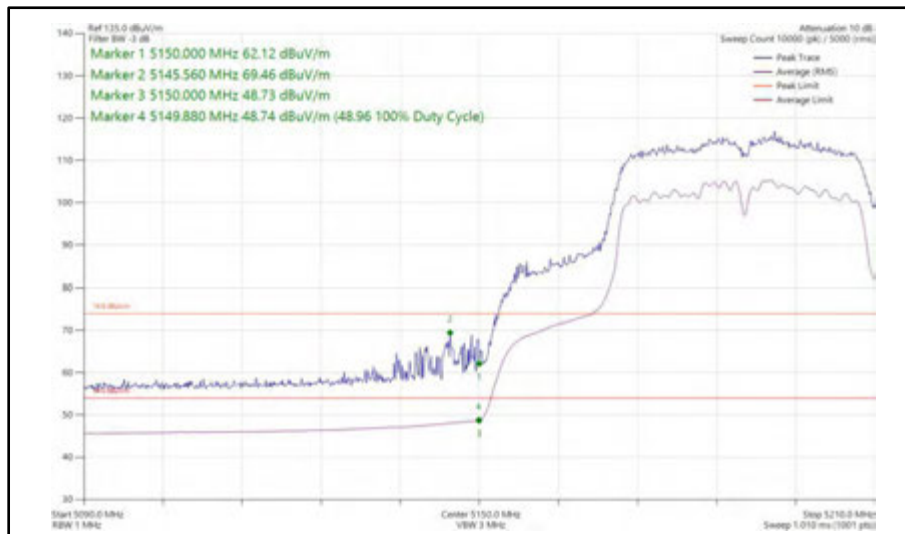


Figure 178 - 802.11ax HE40, SU, SDM, Core 0 + Core 1 - 5590 MHz
Band Edge Frequency 5460 MHz

40 MHz Bandwidth - Core 0 + Core 1 (TxBF)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
802.11ac VHT40	MCS2x1	-	-	5190	5150	69.46	48.96
802.11ac VHT40	MCS2x1	-	-	5230	5150	64.75	51.39
802.11ax HE40	MCS11x1	SU	-	5190	5150	69.47	48.62
802.11ax HE40	MCS11x1	SU	-	5230	5150	68.00	51.43
802.11ac VHT40	MCS2x1	-	-	5270	5350	63.92	51.25
802.11ac VHT40	MCS2x1	-	-	5310	5350	63.57	51.09
802.11ax HE40	MCS2x1	SU	-	5270	5350	67.34	51.44
802.11ax HE40	MCS11x1	SU	-	5310	5350	68.80	51.17
802.11ac VHT40	MCS2x1	-	-	5510	5460	63.64	48.78
802.11ac VHT40	MCS2x1	-	-	5550	5460	63.51	50.27
802.11ac VHT40	MCS7x1	-	-	5590	5460	63.21	48.98
802.11ax HE40	MCS11x1	SU	-	5510	5460	63.69	47.84
802.11ax HE40	MCS4x1	SU	-	5550	5460	63.66	48.85
802.11ax HE40	MCS4x1	SU	-	5590	5460	63.35	49.73

Table 15 - TxBF Restricted Band Edge Results



**Figure 179 - 802.11ac VHT40, TxBF, Core 0 + Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz**

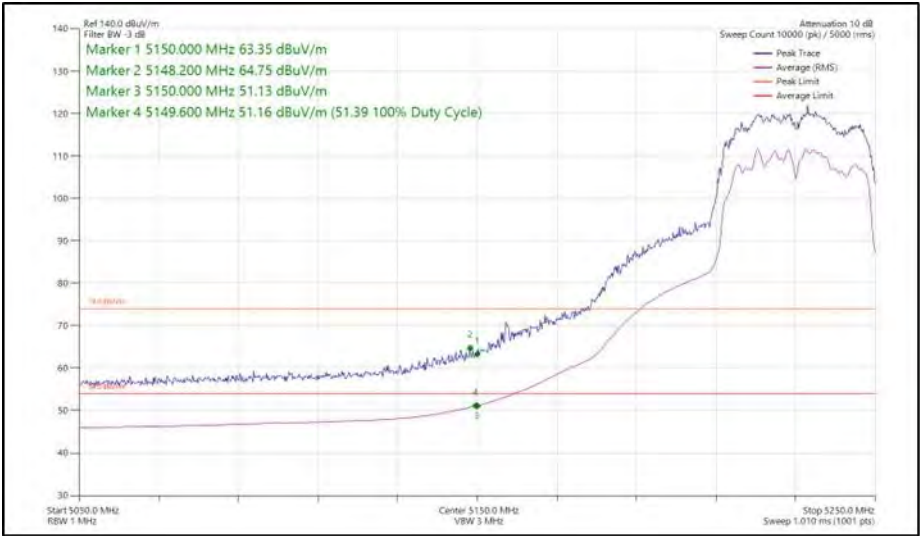


Figure 180 - 802.11ac VHT40, TxBF, Core 0 + Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

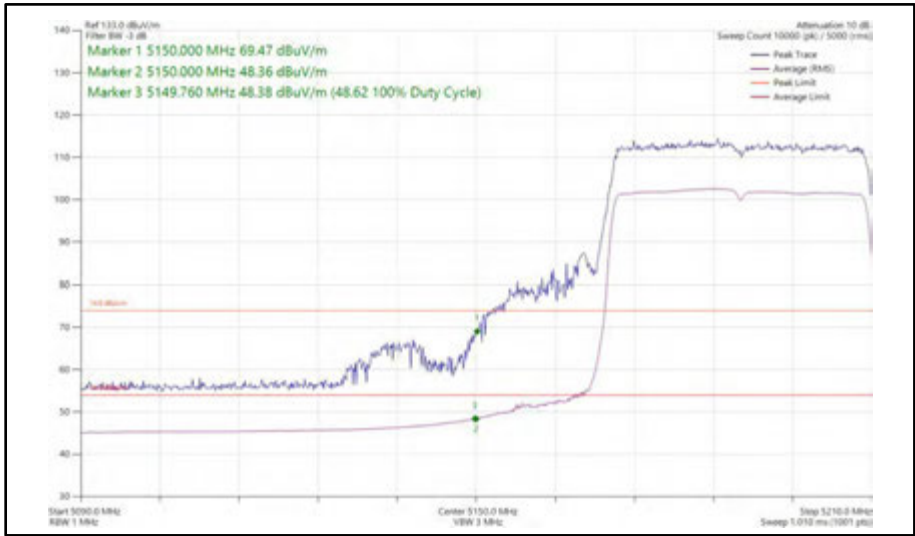


Figure 181 - 802.11ax HE40, SU, TxBF, Core 0 + Core 1 - 5190 MHz
Band Edge Frequency 5150 MHz

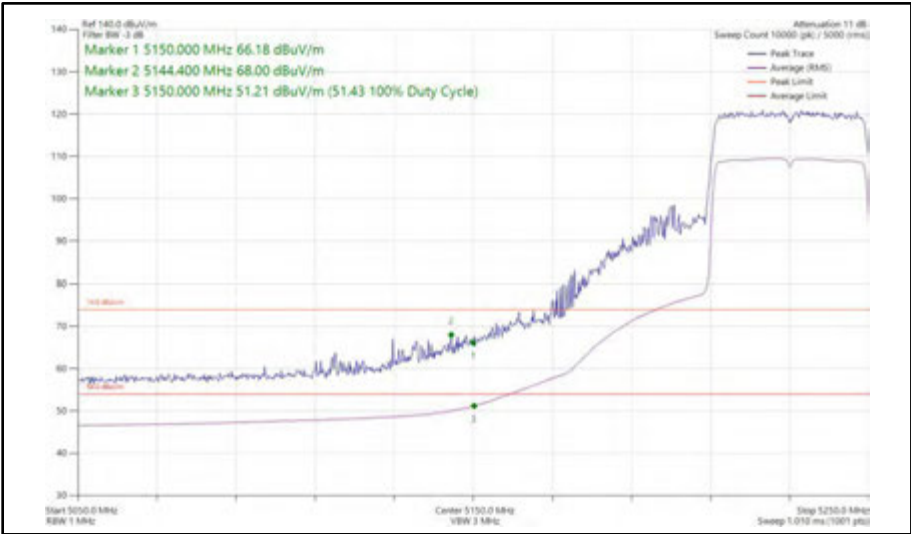


Figure 182 - 802.11ax HE40, SU, TxBF, Core 0 + Core 1 - 5230 MHz
Band Edge Frequency 5150 MHz

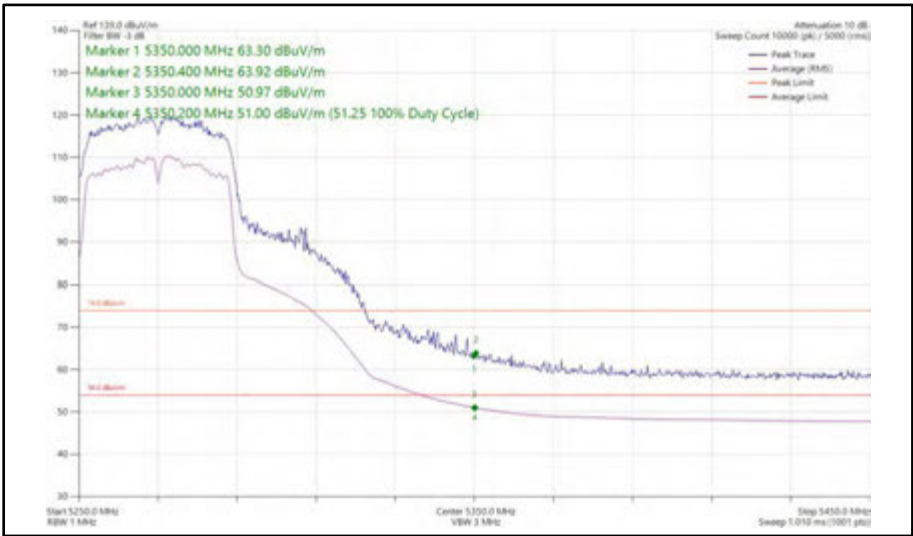


Figure 183 - 802.11ac VHT40, TxBF, Core 0 + Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

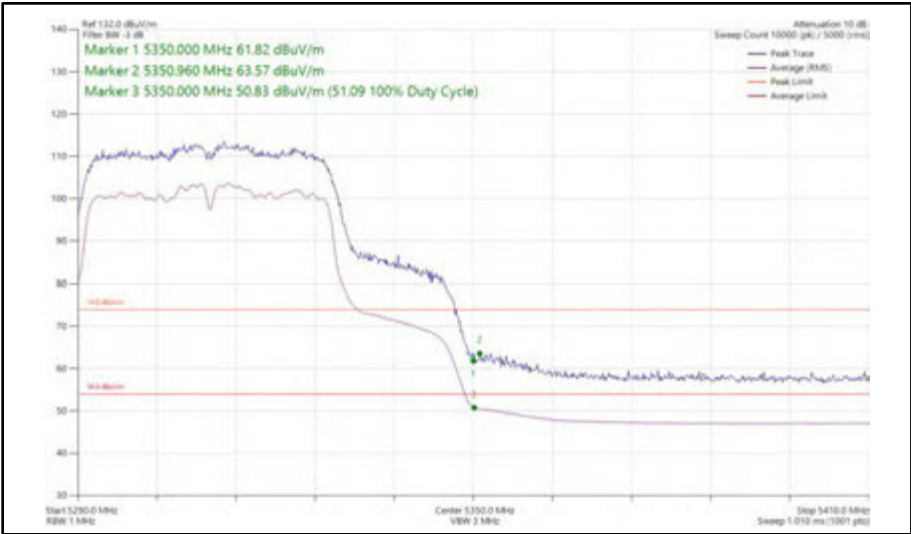


Figure 184 - 802.11ac VHT40, TxBF, Core 0 + Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz

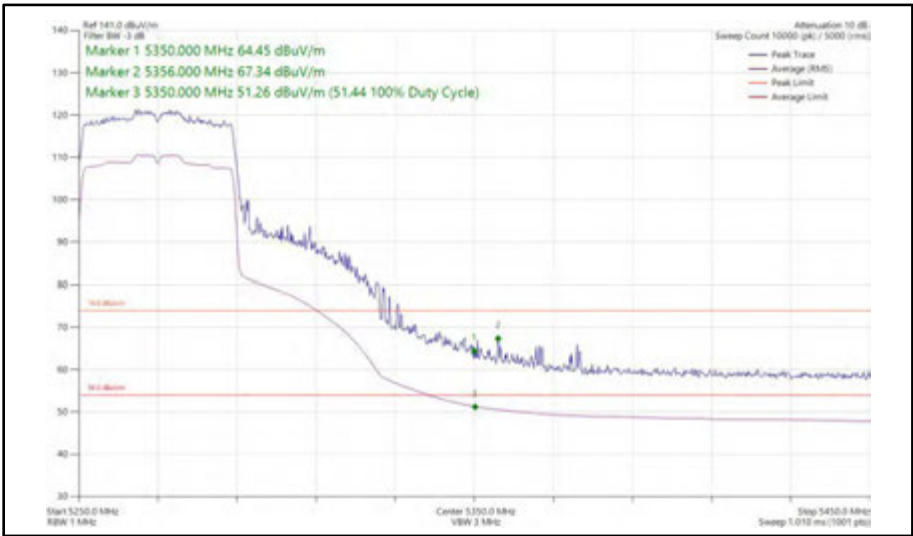


Figure 185 - 802.11ax HE40, SU, TxBF, Core 0 + Core 1 - 5270 MHz
Band Edge Frequency 5350 MHz

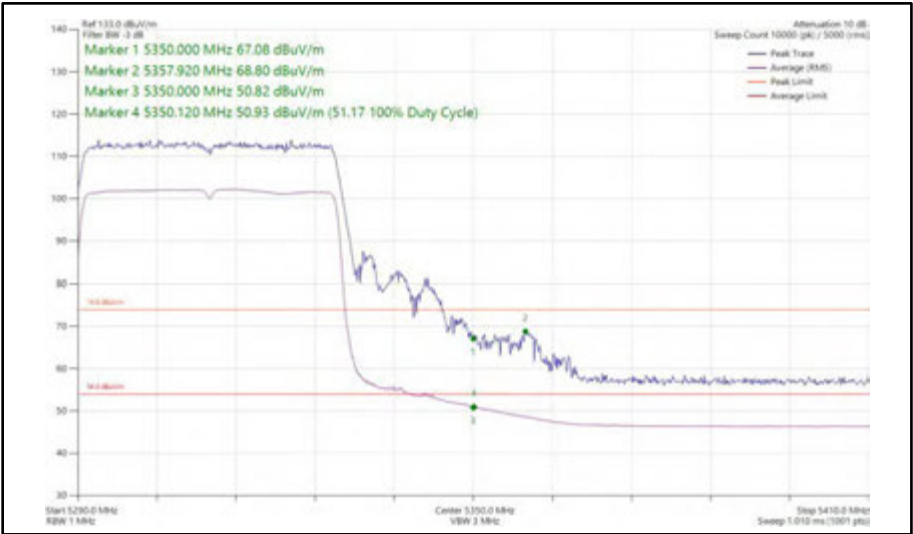


Figure 186 - 802.11ax HE40, SU, TxBF, Core 0 + Core 1 - 5310 MHz
Band Edge Frequency 5350 MHz

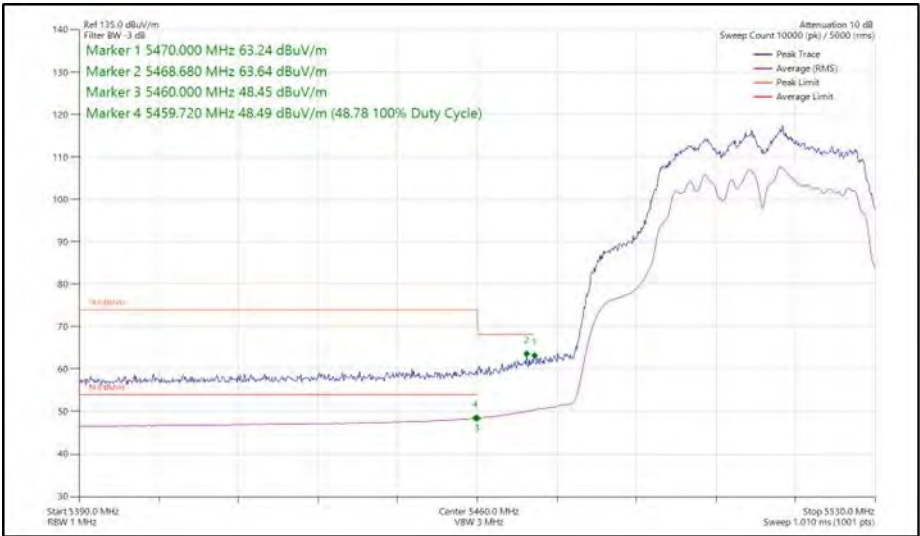


Figure 187 - 802.11ac VHT40, TxBF, Core 0 + Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

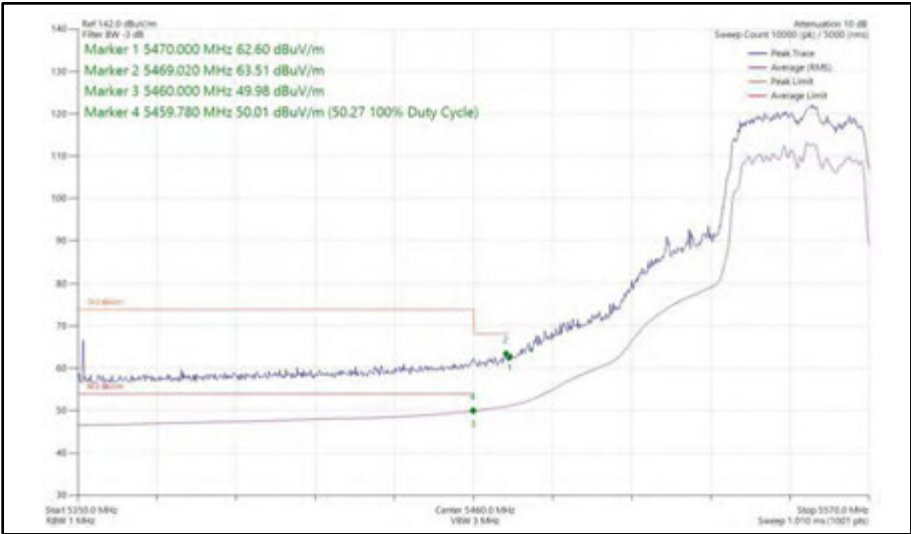


Figure 188 - 802.11ac VHT40, TxBF, Core 0 + Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

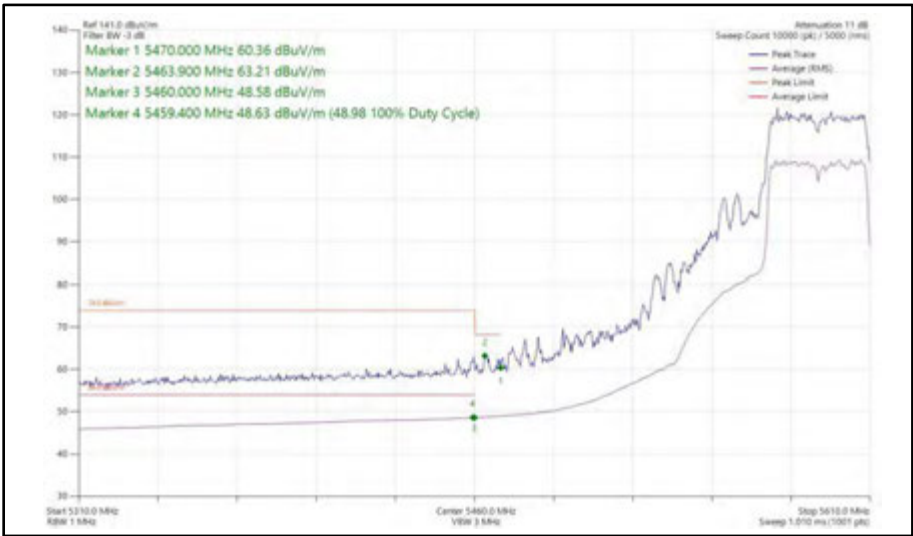


Figure 189 - 802.11ac VHT40, TxBF, Core 0 + Core 1 - 5590 MHz
Band Edge Frequency 5460 MHz

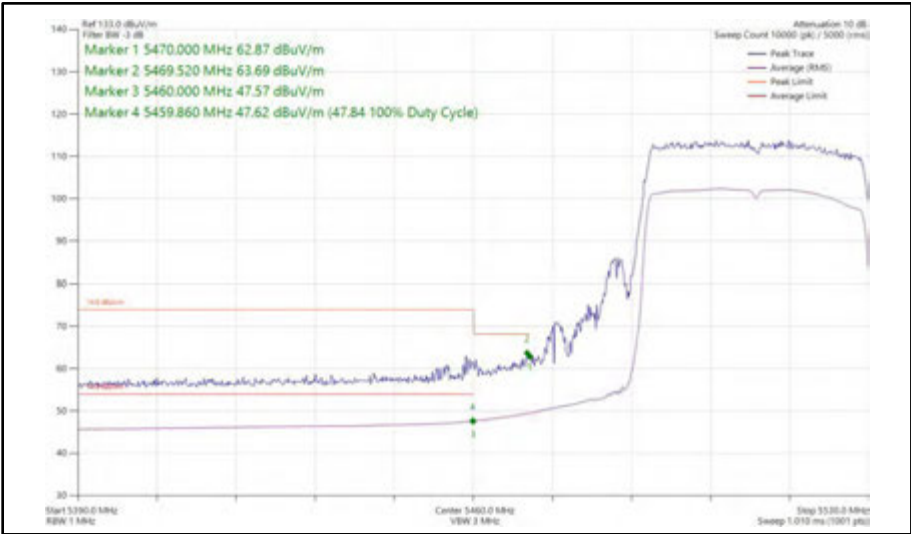


Figure 190 - 802.11ax HE40, SU, TxBF, Core 0 + Core 1 - 5510 MHz
Band Edge Frequency 5460 MHz

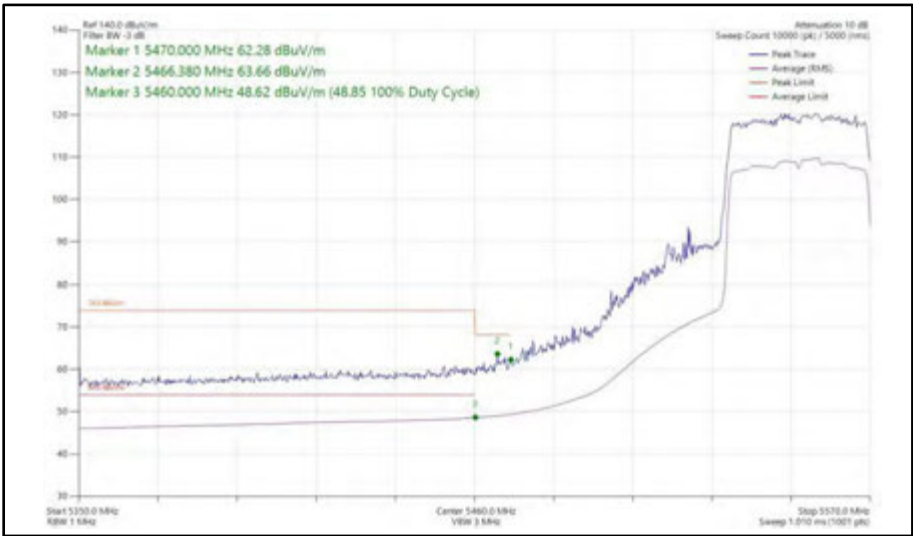


Figure 191 - 802.11ax HE40, SU, TxBF, Core 0 + Core 1 - 5550 MHz
Band Edge Frequency 5460 MHz

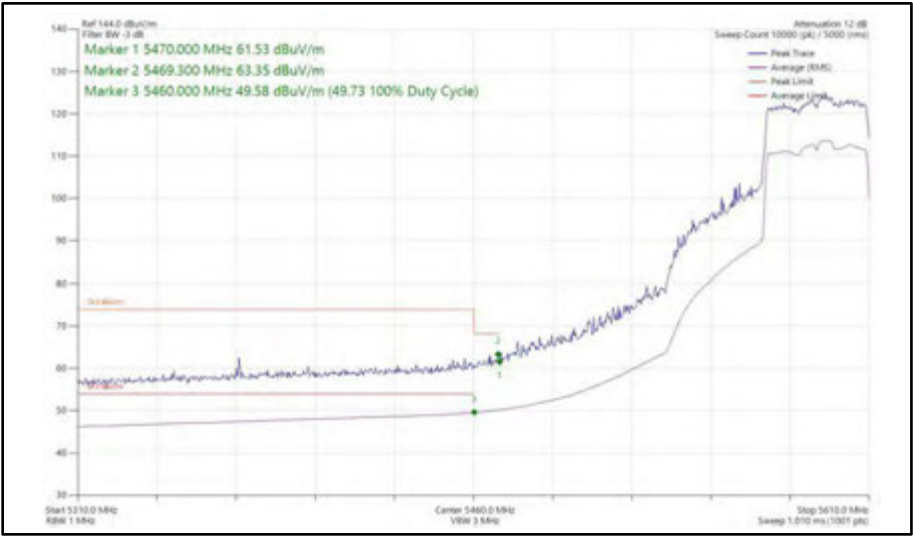
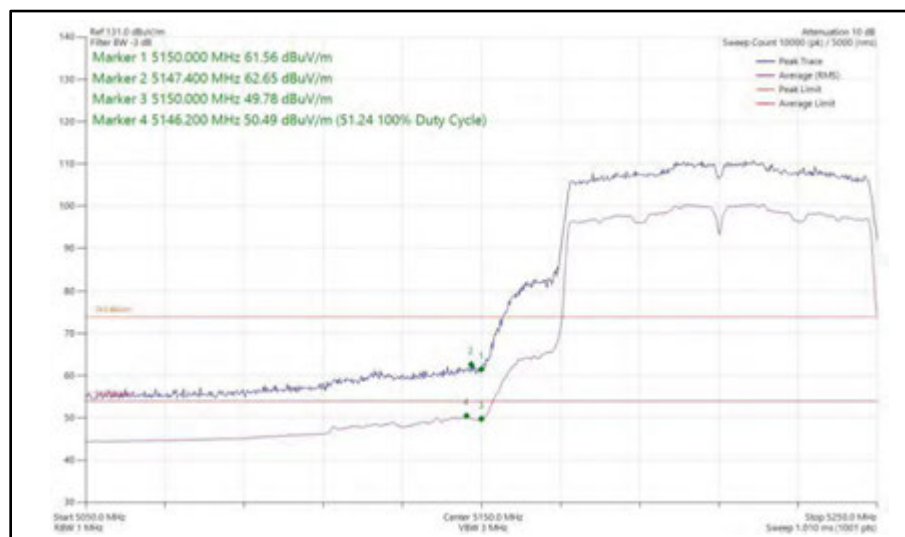


Figure 192 - 802.11ax HE40, SU, TxBF, Core 0 + Core 1 - 5590 MHz
Band Edge Frequency 5460 MHz

80 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)
802.11ac VHT80	MCS4x1	-	-	5210	5150	62.65	51.24
802.11ax HE80	MCS11x1	SU	-	5210	5150	66.81	51.34
802.11ax HE80	MCS11x1	52	37	5210	5150	69.46	49.63
802.11ac VHT80	MCS8x1	-	-	5290	5350	65.37	51.35
802.11ax HE80	MCS4x1	SU	-	5290	5350	63.84	51.11
802.11ax HE80	MCS11x1	106	53	5290	5350	67.10	51.32
802.11ac VHT80	MCS8x1	-	-	5530	5460	63.34	50.56
802.11ax HE80	MCS11x1	SU	-	5530	5460	63.44	50.28
802.11ax HE80	MCS11x1	106	53	5530	5460	63.69	50.63

Table 16 - SISO Restricted Band Edge Results



**Figure 193 - 802.11ac VHT80, SISO, Core 0 - 5210 MHz
Band Edge Frequency 5150 MHz**

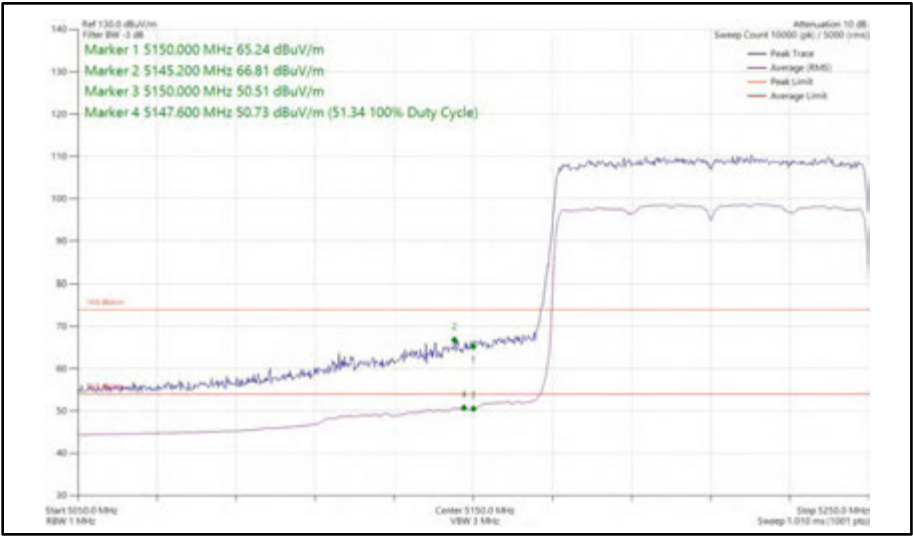


Figure 194 - 802.11ax HE80, SU, SISO, Core 0 - 5210 MHz
Band Edge Frequency 5150 MHz

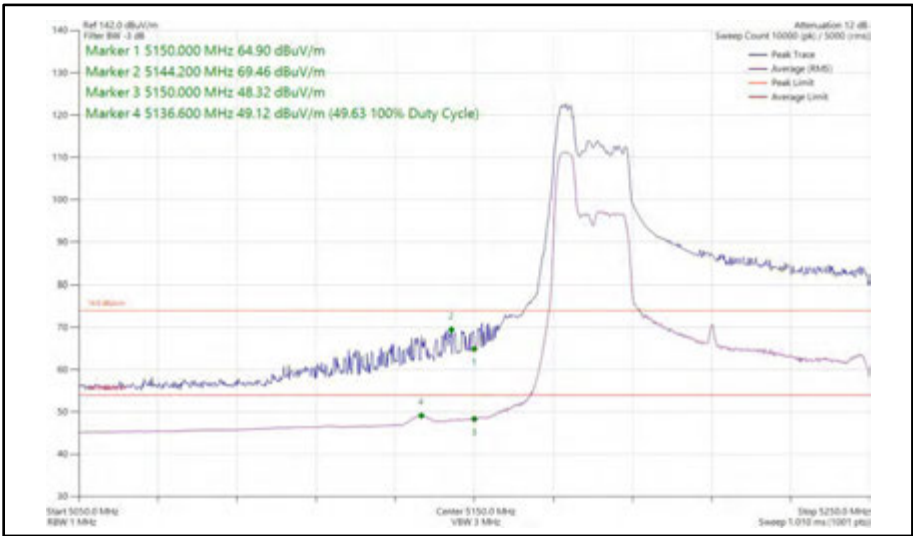


Figure 195 - 802.11ax HE80, RU 52-37, SISO, Core 0 - 5210 MHz
Band Edge Frequency 5150 MHz

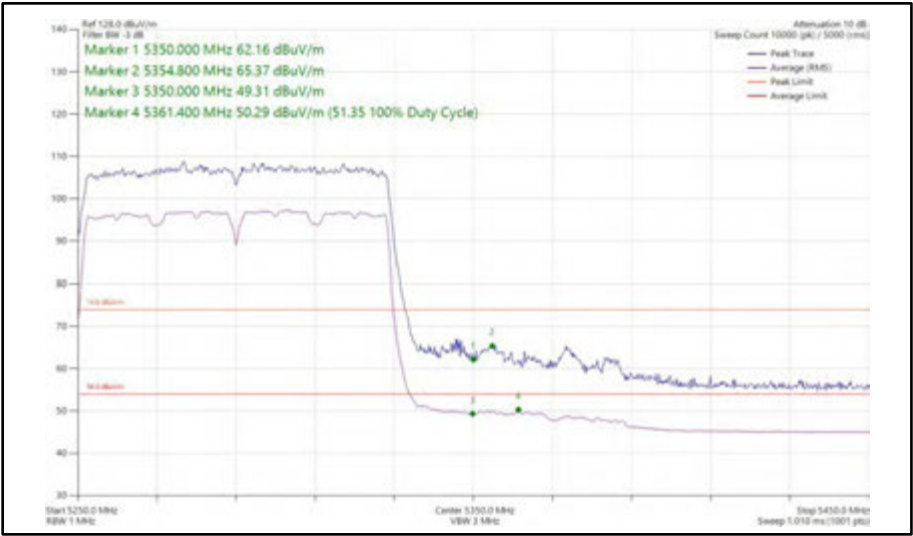


Figure 196 - 802.11ac VHT80, SISO, Core 0 - 5290 MHz
Band Edge Frequency 5350 MHz

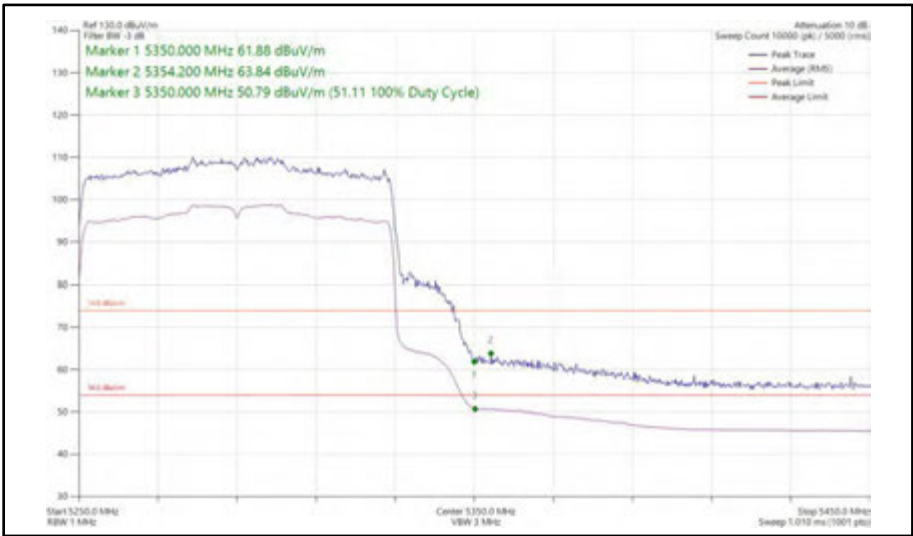


Figure 197 - 802.11ax HE80, SU, SISO, Core 0 - 5290 MHz
Band Edge Frequency 5350 MHz

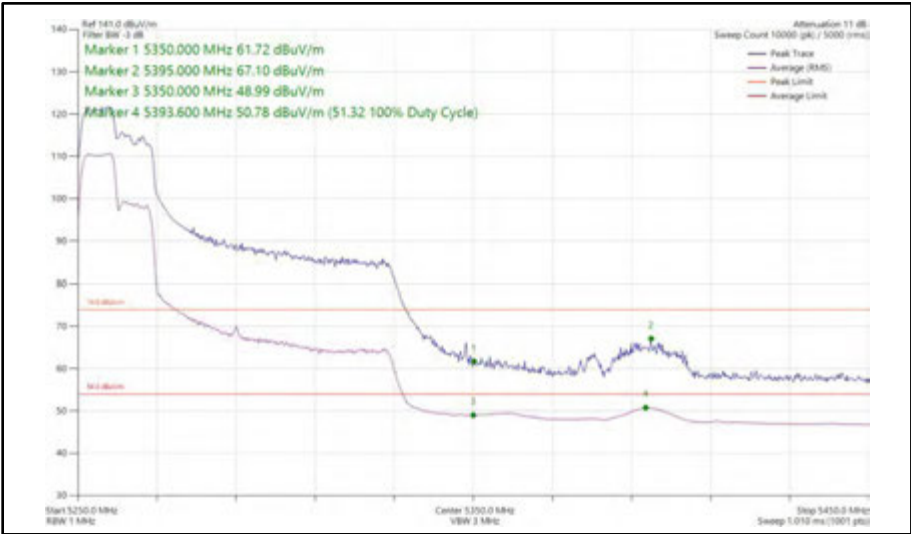


Figure 198 - 802.11ax HE80, RU 106-53, SISO, Core 0 - 5290 MHz
Band Edge Frequency 5350 MHz

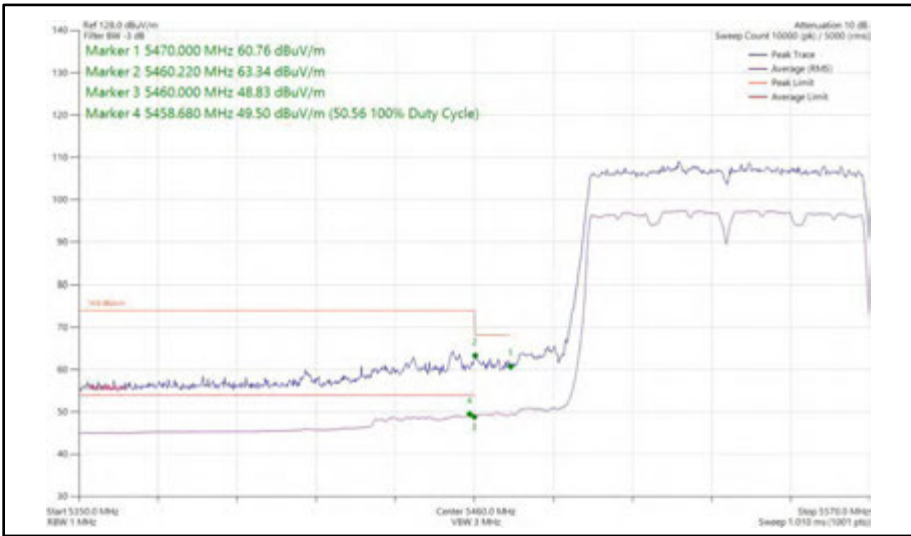


Figure 199 - 802.11ac VHT80, SISO, Core 0 - 5530 MHz
Band Edge Frequency 5460 MHz

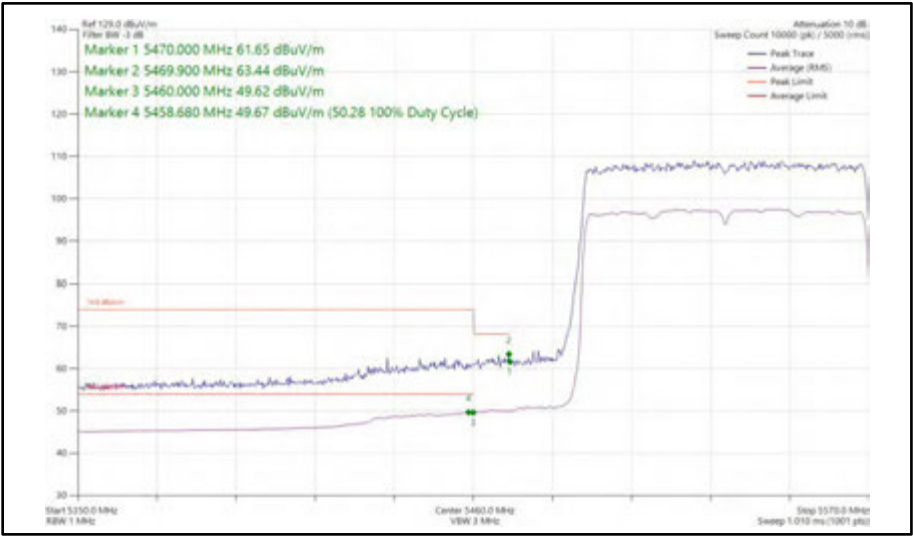


Figure 200 - 802.11ax HE80, SU, SISO, Core 0 - 5530 MHz
Band Edge Frequency 5460 MHz

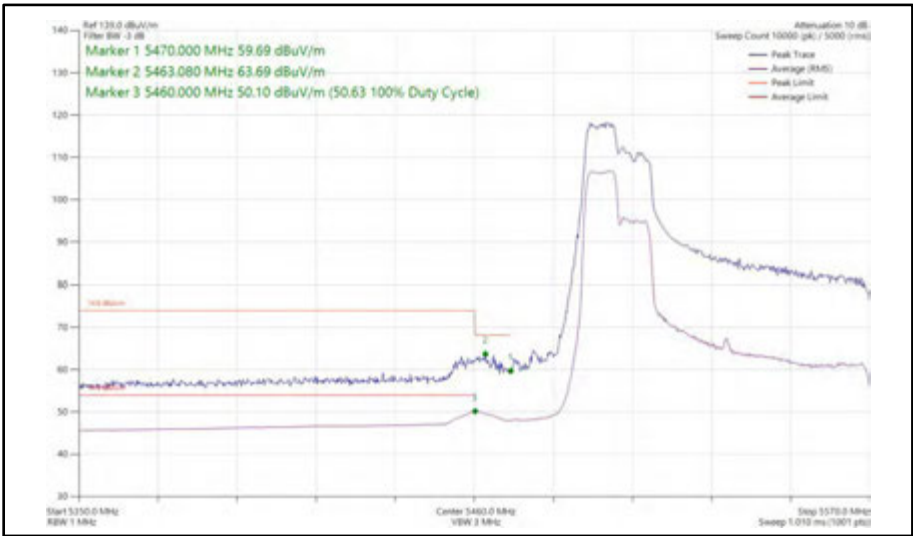
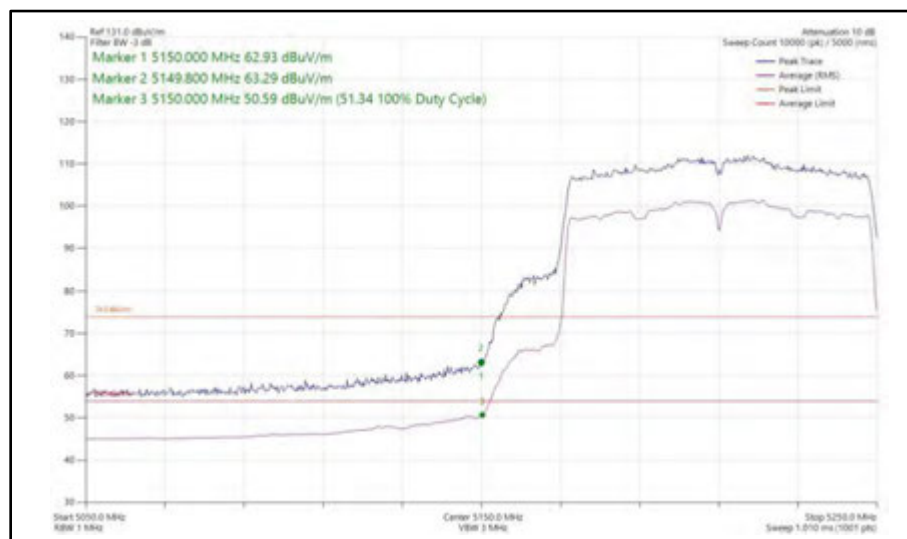


Figure 201 - 802.11ax HE80, RU 106-53, SISO, Core 0 - 5530 MHz
Band Edge Frequency 5460 MHz

80 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)
802.11ac VHT80	MCS4x1	-	-	5210	5150	63.29	51.34
802.11ax HE80	MCS2x1	SU	-	5210	5150	61.92	51.04
802.11ax HE80	MCS11x1	106	53	5210	5150	68.34	51.17
802.11ac VHT80	MCS8x1	-	-	5290	5350	66.61	51.41
802.11ax HE80	MCS4x1	SU	-	5290	5350	63.33	51.28
802.11ax HE80	MCS11x1	52	37	5290	5350	69.41	49.87
802.11ac VHT80	MCS8x1	-	-	5530	5460	63.43	49.17
802.11ax HE80	MCS4x1	SU	-	5530	5460	63.67	50.38
802.11ax HE80	MCS11x1	106	53	5530	5460	63.70	50.46

Table 17 - SISO Restricted Band Edge Results



**Figure 202 - 802.11ac VHT80, SISO, Core 1 - 5210 MHz
Band Edge Frequency 5150 MHz**

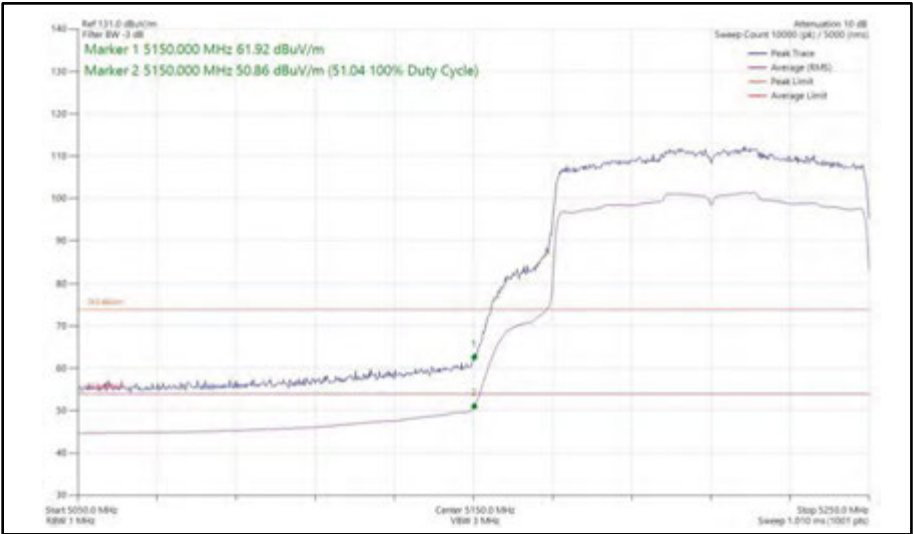


Figure 203 - 802.11ax HE80, SU, SISO, Core 1 - 5210 MHz
Band Edge Frequency 5150 MHz

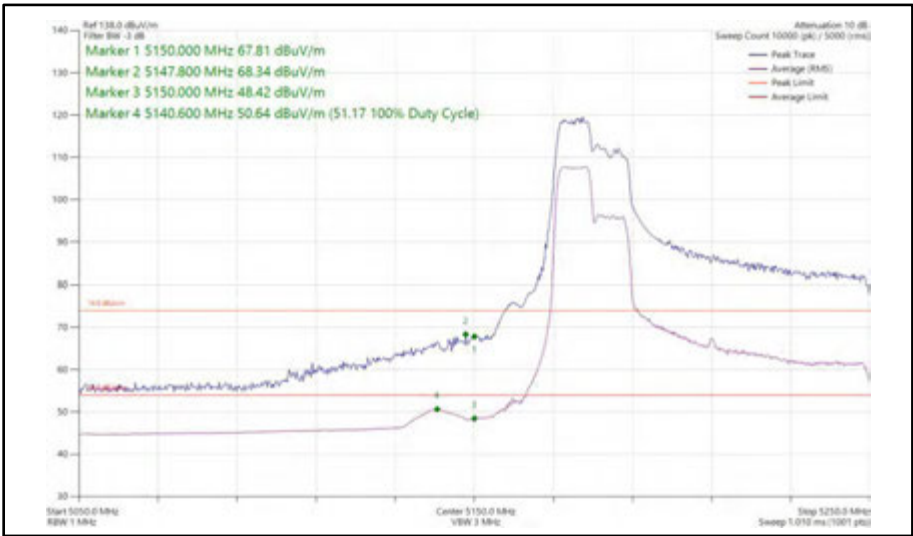


Figure 204 - 802.11ax HE80, RU 106-53, SISO, Core 1 - 5210 MHz
Band Edge Frequency 5150 MHz

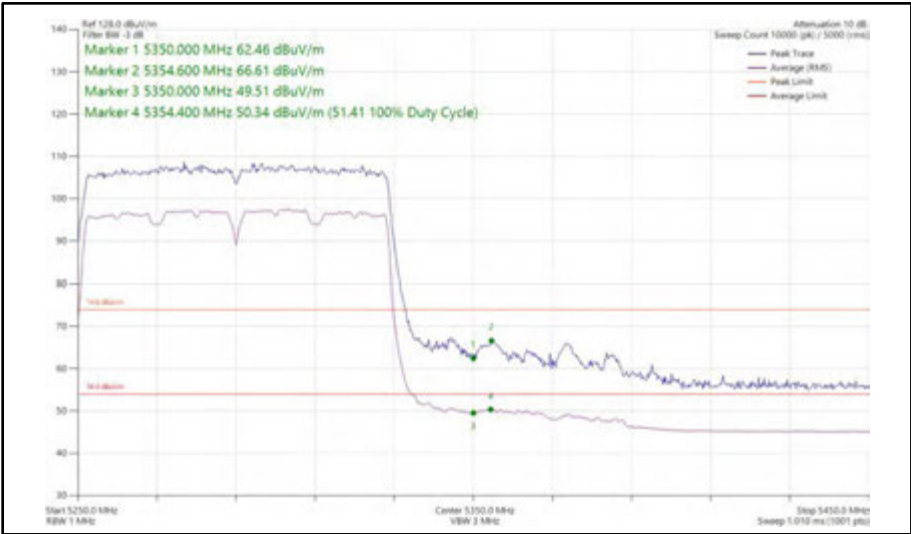


Figure 205 - 802.11ac VHT80, SISO, Core 1 - 5290 MHz
Band Edge Frequency 5350 MHz

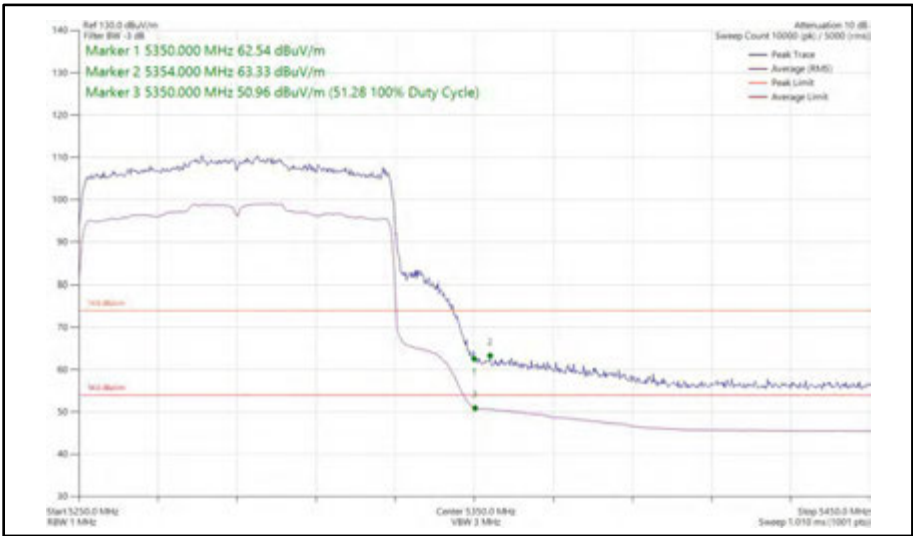


Figure 206 - 802.11ax HE80, SU, SISO, Core 1 - 5290 MHz
Band Edge Frequency 5350 MHz

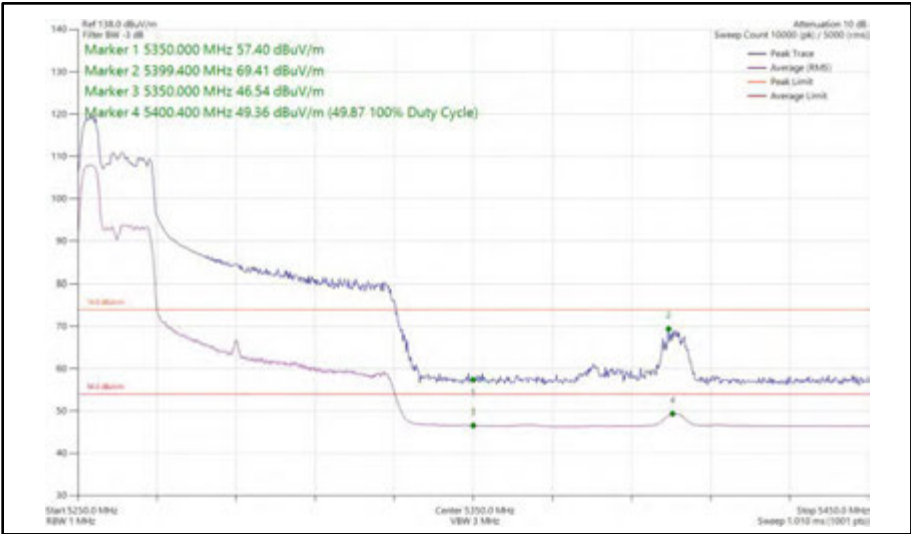


Figure 207 - 802.11ax HE80, RU 52-37, SISO, Core 1 - 5290 MHz
Band Edge Frequency 5350 MHz

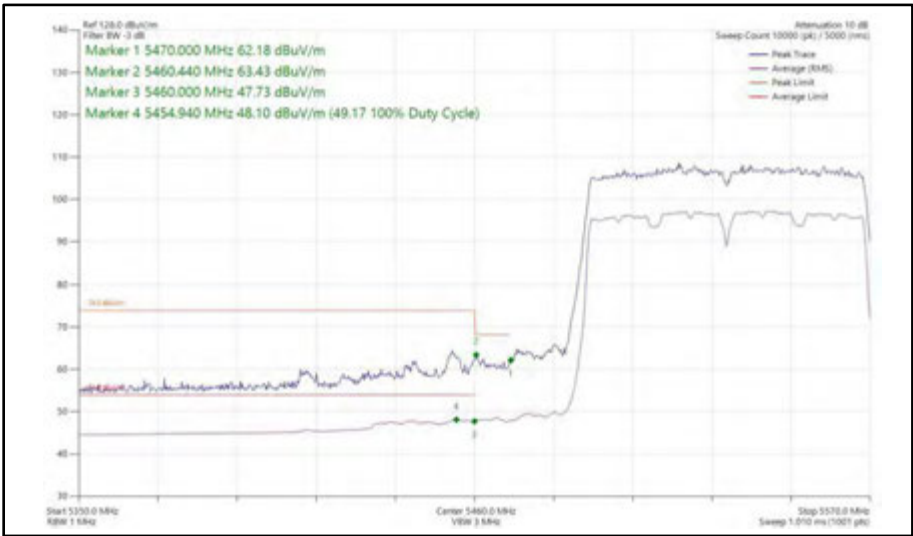


Figure 208 - 802.11ac VHT80, SISO, Core 1 - 5530 MHz
Band Edge Frequency 5460 MHz

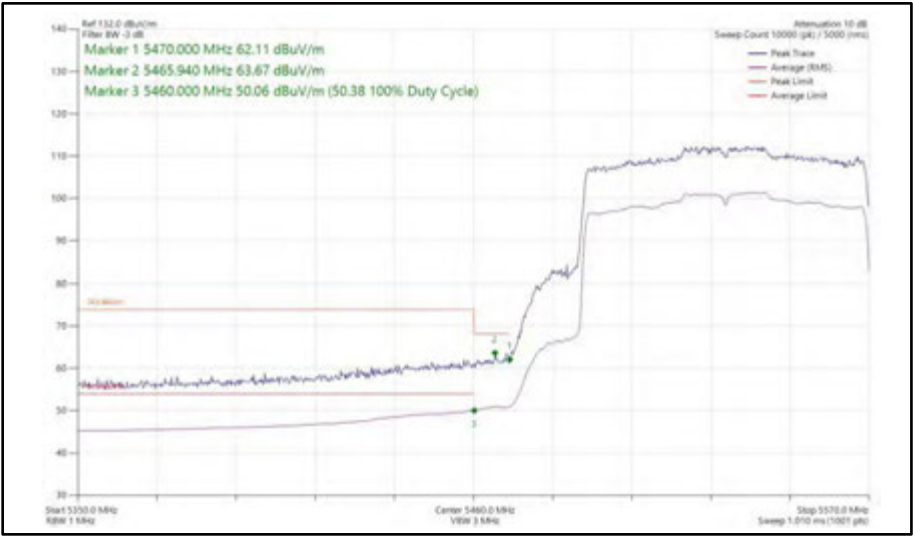


Figure 209 - 802.11ax HE80, SU, SISO, Core 1 - 5530 MHz
Band Edge Frequency 5460 MHz

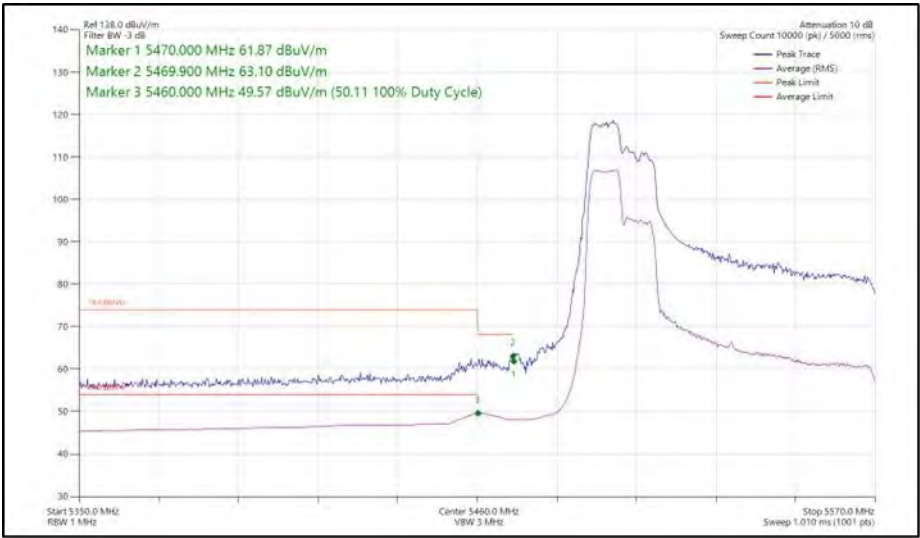


Figure 210 - 802.11ax HE80, RU 106-53, SISO, Core 1 - 5530 MHz
Band Edge Frequency 5460 MHz

80 MHz Bandwidth - Core 0 + Core 1 (CDD)

Mode	Data Rate/ MCS	Resource Size	Resource Index	TX Frequency (MHz)	Band Edge Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
802.11ac VHT80	MCS4x1	-	-	5210	5150	63.00	51.50
802.11ax HE80	MCS4x1	SU	-	5210	5150	63.80	51.38
802.11ax HE80	MCS11x1	52	37	5210	5150	65.69	51.34
802.11ac VHT80	MCS8x1	-	-	5290	5350	63.75	51.30
802.11ax HE80	MCS11x1	SU	-	5290	5350	64.54	51.40
802.11ax HE80	MCS11x1	106	60	5290	5350	69.47	50.86
802.11ac VHT80	MCS2x1	-	-	5530	5460	63.62	51.40
802.11ax HE80	MCS2x1	SU	-	5530	5460	63.69	51.23
802.11ax HE80	MCS11x1	106	53	5530	5460	63.69	49.53

Table 18 - CDD Restricted Band Edge Results

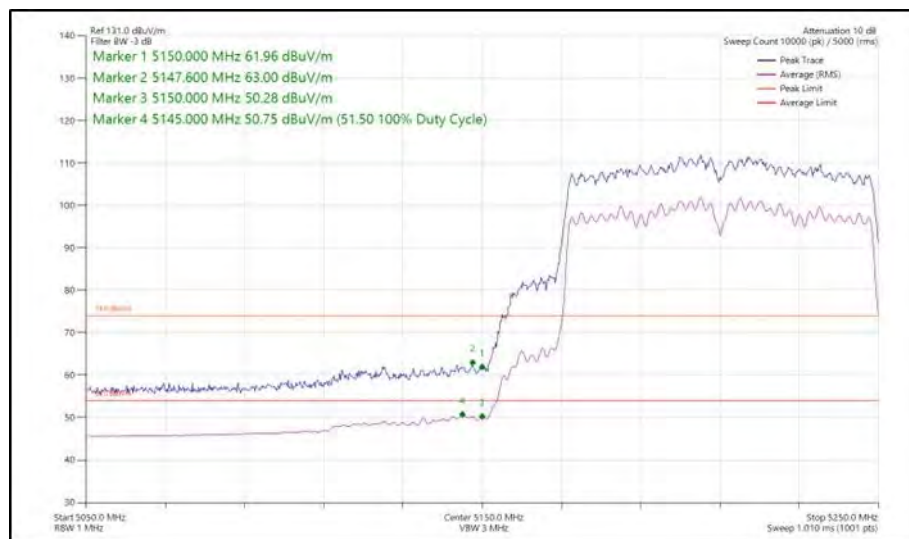


Figure 211 - 802.11ac VHT80, CDD, Core 0 + Core 1 - 5210 MHz
Band Edge Frequency 5150 MHz

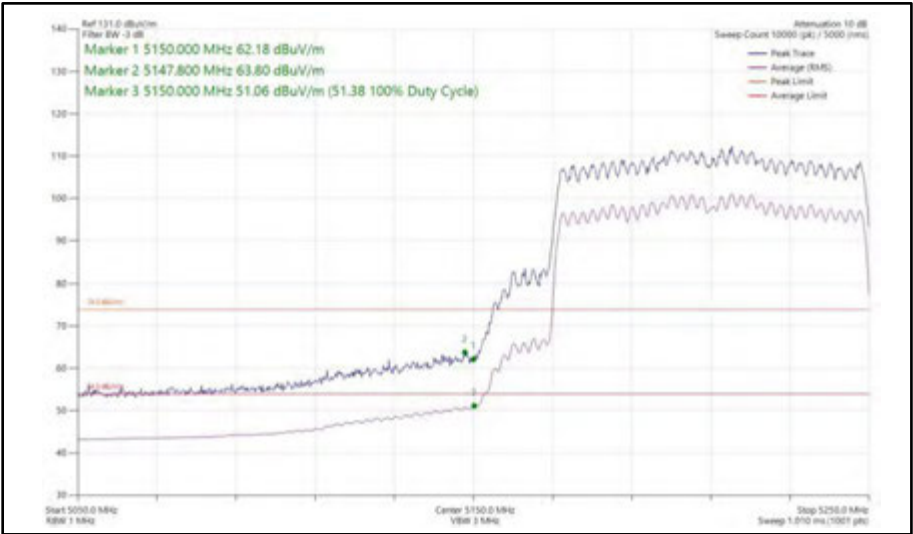


Figure 212 - 802.11ax HE80, SU, CDD, Core 0 + Core 1 - 5210 MHz
Band Edge Frequency 5150 MHz

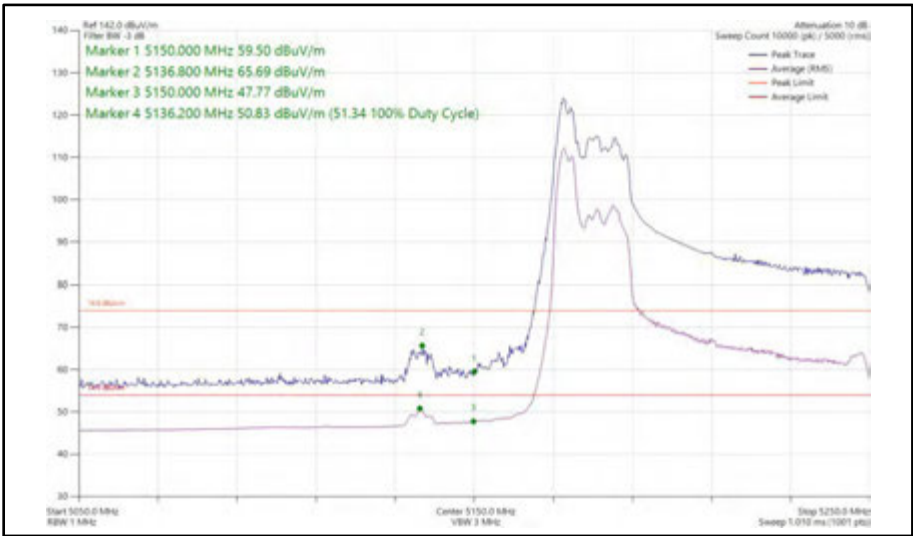


Figure 213 - 802.11ax HE80, RU 52-37, CDD, Core 0 + Core 1 - 5210 MHz
Band Edge Frequency 5150 MHz

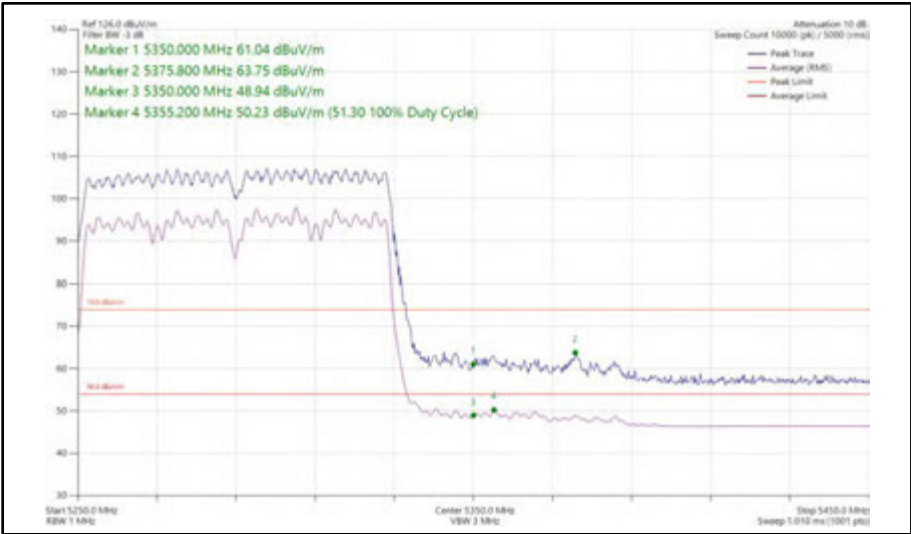


Figure 214 - 802.11ac VHT80, CDD, Core 0 + Core 1 - 5290 MHz
Band Edge Frequency 5350 MHz

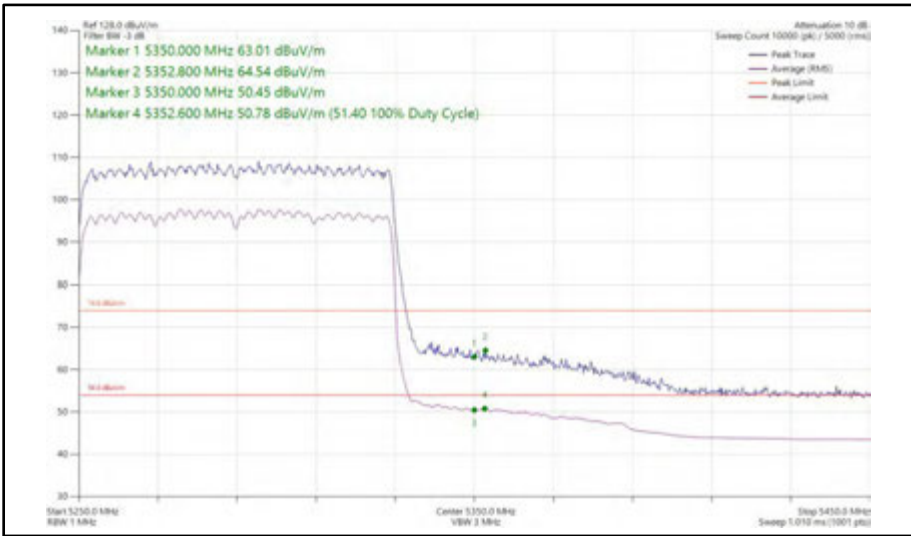


Figure 215 - 802.11ax HE80, SU, CDD, Core 0 + Core 1 - 5290 MHz
Band Edge Frequency 5350 MHz