

TEST REPORT

Report Number. : R15511224-E2

Applicant : Ademco Inc.
2 Corporate Center Drive
Melville, NY, 11749

Models : SMCO600NV-AC, SMCO600NV
SMCO600NV-A, SMCO600NV-AC-A

FCC ID : M7U-BT110T

IC : 10190A-BT110T

EUT Description : Wireless Smart Smoke & Carbon Monoxide Alarm

Test Standard(s) : FCC 47 CFR PART 15 SUBPART E
ISED RSS-247 ISSUE 3
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2025-03-18

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
1	2025-01-10	Initial Issue	Noah Bennett
2	2025-02-20	TCB Feedback 1: -Various Typographical corrections. -Updated table in section 6.2	Noah Bennett
3	2025-03-14	TCB Feedback 2: -Added ISED Model(s)	Noah Bennett
4	2025-03-17	Fixed Various Typos	Noah Bennett
5	2025-03-18	Updated Model Differences statement in section 6.1 Updated ANSI reference in Section 3	Noah Bennett

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Ademco Inc.
2 Corporate Center Drive
Melville, NY, 11749

EUT DESCRIPTION: Wireless Smart Smoke & Carbon Monoxide Alarm

MODELS: SMCO600NV-AC, SMCO600NV
SMCO600NV-A, SMCO600NV-AC-A

SERIAL NUMBER: 565, 643, 5CFCE152F6EE, 5CFCE152F786, 5CFCE152F786, 5CFCE1512B91,
5CFCE15129AB

SAMPLE RECEIPT DATE: 2024-10-11; 2024-11-13

DATE TESTED: 2024-10-15 thru 2025-01-03

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart E ISED RSS-247 Issue 3 ISED RSS-GEN Issue 5 + A1 + A2	Complies

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released For
UL LLC. By:

Prepared By:



Mike Antola
Staff Engineer
Consumer Technology Division
UL LLC.

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UL LLC.

2. TEST RESULT SUMMARY

This report contains info provided by the customer which can impact the validity of results. UL LLC is only responsible for the validity of results after the integration of the data provided by the customer. Below is a list of the data/info provided by the customer:

1. EUT Supported Channels, Modes, Data-Rates, Model Differences and Power Settings (section 6.1; 6.5)
2. Antenna Gain and Type (section 6.3)
3. Firmware, and Hardware Versions of EUTs (section 6.4)

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	Per ANSI C63.10, Section 12.2.
See Comment	RSS-GEN 6.7	26dB BW/99% OBW	Compliant	None.
15.407 (e)	RSS-247 6.2.4.1	6 dB BW		
15.407 (a) (1-4), (h) (1)	RSS-247 6.2	Output Power		
15.407 (a) (1-3, 5)	RSS-247 6.2	PSD		
15.209, 15.205, 15.407 (b)	RSS-GEN 8.9, 8.10, RSS-247 6.2	Radiated Emissions		
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions		

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with;

- FCC CFR 47 Part 2
- FCC CFR 47 Part 15E
- FCC KDB 789033 D02 v02r01,
- KDB 414788 D01 Radiated Test Site v01r01
- ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024
- RSS-GEN Issue 5 + A1 + A2
- RSS-247 Issue 3

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
<input checked="" type="checkbox"/>	Building 2800 Suite Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A	US0067	27265	825374

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	ULab
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Power Spectral Density	2.47 dB
RF Power Measurement Direct Method Using Power Meter	1.3 dB (PK) / 0.45 dB (AV)
Unwanted Emissions, Conducted	1.94 dB
Worst Case Radiated Disturbance, 9kHz to 40 GHz	6.01 dB
Time Domain Measurements	3.39%
Temperature	0.57°C
Humidity	3.39%
DC Supply Voltages	0.57%

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Wireless Smart Smoke & Carbon Monoxide Alarm. This report covers the full testing of the 5GHz WiFi portion of Chipset 1 only.

The EUT supports the following wireless technologies and modes of operation:

Wireless technologies	Frequency Band(s)	Operating mode(s)	Additional Config
Wi-Fi	2.4 GHz	802.11b 802.11g 802.11n (HT20)	
	5 GHz ¹ UNII-1,2,3	802.11a 802.11n (HT20)	
Bluetooth	2.4 GHz	LE (1Mbps Only)	³ Max Operational Duty Cycle of 1%
802.15.4	2.4GHz	Zigbee (250Kbps Only)	³ Max Operational Duty Cycle of 1%

Notes:

- 1) The EUT operated in a 1x1 SISO mode.
- 2) The EUT has 2 Antennas for Diversity on both chipsets.
- 3) Operational Duty Cycles apply to chipset 2 only.

The primary distinction between the two variants is their power source: the SMCO600NV-AC operates on AC power with a DC battery backup, whereas the SMCO600NV relies solely on DC battery power. Beyond this, both variants are identical in terms of electrical and mechanical design.

Model(s) SMCO600NV-A and SMCO600NV-AC-A are ISSED variants.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
1Tx			
5180 – 5240	802.11a	19.99 (15.16) ¹	99.77 (32.81)
	802.11nHT20	19.00 (14.96) ¹	79.43 (31.33)
5260 – 5320	802.11a	19.20	83.18
	802.11nHT20	18.92	77.98
5500 – 5720	802.11a	17.74	59.43
	802.11nHT20	19.16	82.41
5745 - 5825	802.11a	17.98	62.81
	802.11nHT20	18.58	72.11
Notes:			
1) IC Only.			

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Designation in Documentation	Frequency Range (MHz)	Maximum 3D Gain (dBi)
1	RTL8721DM-VA1-CGT	2412-2462MHz	2.54
		5150-5825MHz	6.32
2		2412-2462MHz	2.34
		5150-5825MHz	4.50

6.4. SOFTWARE AND FIRMWARE

EUT FW Version: 1.0

EUT HW Version: 1.0

EUT Control SW Version: TeraTerm v4.106
YAT Terminal v2.7.2

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario. All antennas were tested, with the worst-case scenario per mode being reported.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, on both Antenna 1 and Antenna 2. It was determined that X orientation was worst-case orientation for both antennas; therefore, all final radiated testing was performed with the EUT in X orientation.

The worst-case data-rates are as follows:

802.11a mode: 6 Mbps

802.11n HT20 mode: MCS0

For radiated testing, the EUT was connected to AC-Lines as worst-case.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Support Laptop	Lenovo	T14S Gen3	PF4FKVY8	N/A

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	4 Pin PWR	1	AC In	Unshielded	<3m	Connects EUT to AC Lines
2	3 Pin debug	1	UART	Unshielded	<3m	Used to Program EUT.

TEST SETUP

The EUT was connected to a support laptop to program the EUT for testing. The EUT was set to transmit continuously throughout the test. The support laptop and cable 2 were removed from the chamber for testing.

SETUP DIAGRAM

Please refer to R15511224-EP1 for setup diagrams

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Common Equipment					
90410	Spectrum Analyzer	Keysight Technologies	N9030A	2024-06-14	2025-06-14
248881	Environmental Meter	Control Company	06-662-4	2024-04-10	2026-04-10
SOFTMI	Antenna Port Software	UL	Version 2022.8.16	NA	NA
Power Software	Boonton Power Analyzer	Boonton	Version 3.0.13.0	NA	NA
Additional Equipment used					
211055	Real-Time Peak Power Sensor 50MHz to 8GHz	Boonton	RTP5000	2024-07-31	2025-07-31
Attenuators					
226561	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2024-02-29	2025-02-28
Cables					
CBL105	Micro-Coax UTIFLEX Cable Assembly, Low Loss	Carlisle Interconnect Technologies	UFB-197C-0-0160-300300	2024-03-01	2025-03-01

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2024-04-04	2025-04-04
179892	Environmental Meter	Fisher Scientific	15-077-963	2024-08-12	2025-08-12
80391	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2024-08-01	2025-08-01
75141	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2024-08-01	2025-08-01
52859	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2024-04-04	2025-04-04
PS216	AC Power Source	Elgar	CW2501M	NA	NA
SOFTMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
89509	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2023-05-23	2025-05-23
	Gain-Loss Chains				
207640	Gain-loss string: 1-18GHz	Various	Various	2024-05-22	2025-05-22
	Receiver & Software				
197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2024-04-16	2025-04-16
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241204	Environmental Meter	Fisher Scientific	15-077-963	2023-09-05	2025-09-05

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 2)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	0.009-30MHz				
135144	Active Loop Antenna	ETS-Lindgren	6502	2024-10-02	2025-10-02
	30-1000 MHz				
159203	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2024-03-05	2026-03-05
	Gain-Loss Chains				
91975	Gain-loss string: 0.009-30MHz	Various	Various	2024-05-10	2025-05-10
91978	Gain-loss string: 25-1000MHz	Various	Various	2024-05-10	2025-05-10
	Receiver & Software				
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2024-08-29	2025-08-29
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
200540	Environmental Meter	Fisher Scientific	15-077-963	2023-07-19	2025-07-19

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
135143	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2024-02-07	2026-02-07
	Gain-Loss Chains				
91979	Gain-loss string: 1-18GHz	Various	Various	2024-05-08	2025-05-08
	Receiver & Software				
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2024-03-05	2025-03-05
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241205	Environmental Meter	Fisher Scientific	15-077-963	2023-09-05	2025-09-05
170112	10dB Pad, DC-18GHz, 5W	Mini-Circuits	BW-N10W5+	2023-11-09	2024-11-30

8. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 789033 D02 v02r01, Section B.

6 dB Emission BW: KDB 789033 D02 v02r01, Section C.2

26 dB Emission BW: KDB 789033 D02 v02r01, Section C.1

99% Occupied BW: KDB 789033 D02 v02r01, Section D.

Conducted Output Power: KDB 789033 D02 v02r01, Section E.3.b (Method PM-G) and KDB 789033 D02 v02r01, Section E.2.b (Method SA-1)

Power Spectral Density: KDB 789033 D02 v02r01, Section F

Unwanted emissions in restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, and G.5.

AC Power Line Conducted Emissions: ANSI C63.10-2020, Section 6.2.

Radiated emissions in restricted frequency bands: ANSI C63.10 Subclause -11.12.1, 6.3 thru 6.6

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

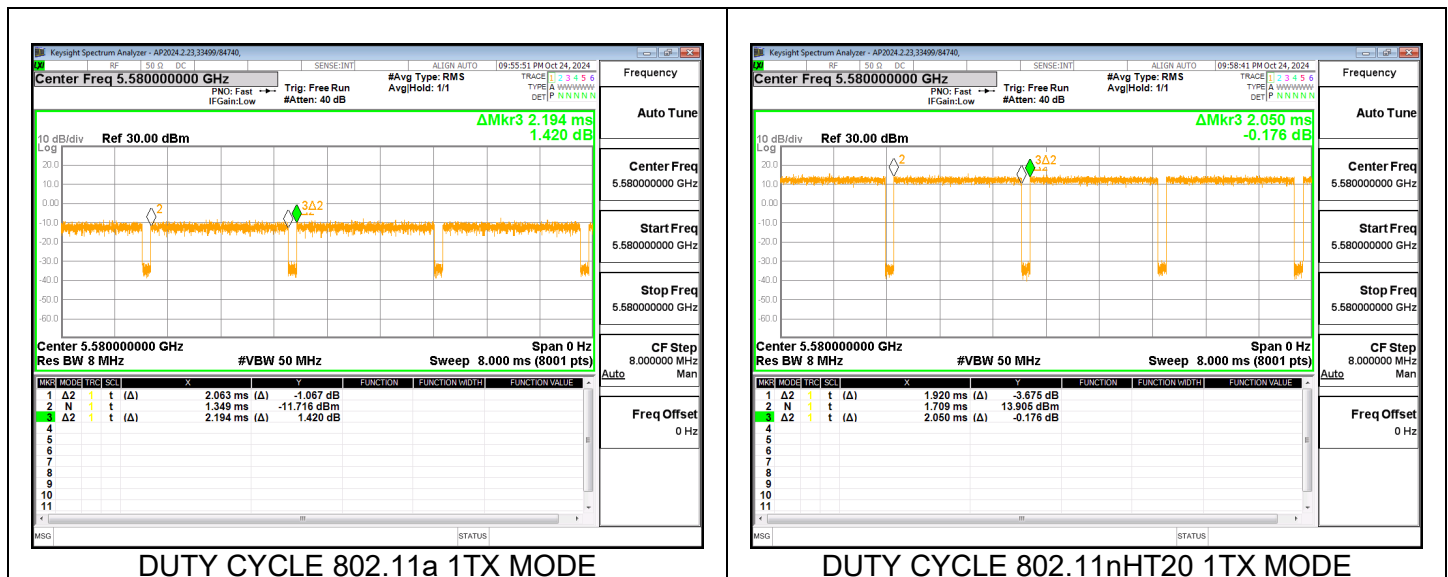
PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time T (ms)	Total Period (ms)	Duty Cycle (x)	10*Log(x) DCCF (dB)	20*Log(x) DCCF (dB)	1/T Min VBW (kHz)
802.11a	2.06	2.19	94.03%	0.27	0.53	0.4847
802.11nHT20	1.92	2.05	93.66%	0.28	0.57	0.5208

DUTY CYCLE PLOTS



9.2. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

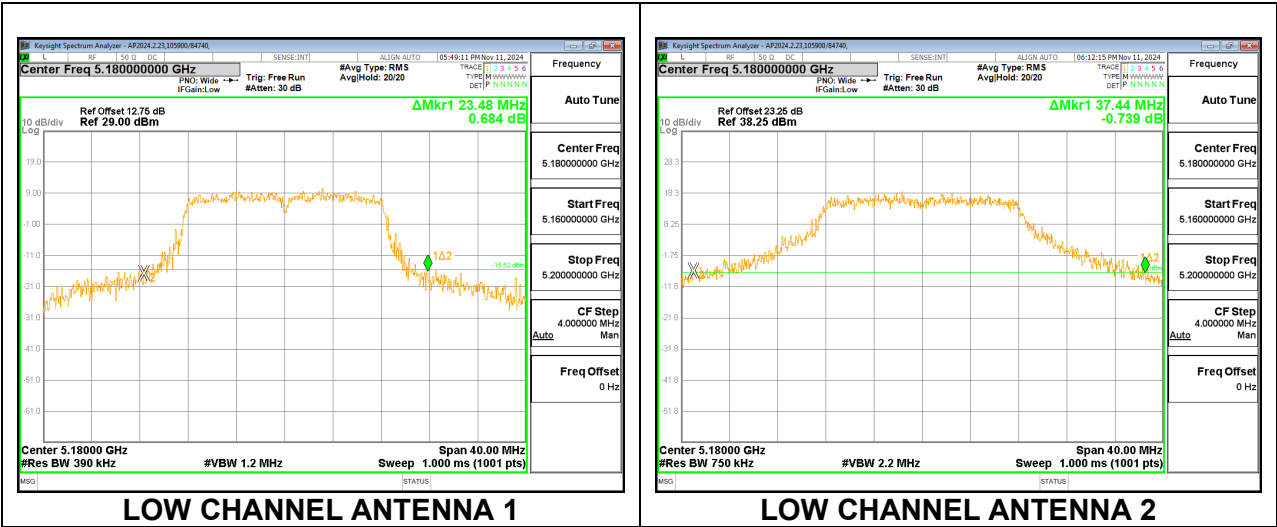
RESULTS

9.2.1. 802.11a MODE IN THE 5.2 GHz BAND

1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 1 (MHz)	26 dB Bandwidth Antenna 2 (MHz)
Low	5180	23.48	37.44
Mid	5200	21.96	21.52
High	5240	25.56	31.00

LOW CHANNEL



The figure displays two side-by-side screenshots of a Keysight Spectrum Analyzer, showing the frequency response of two different antennas, labeled 'MID CHANNEL ANTENNA 1' and 'MID CHANNEL ANTENNA 2'.

Left Screenshot (MID CHANNEL ANTENNA 1):

- Center Freq:** 5.200000000 GHz
- Span:** 40.00 MHz
- Ref Offset:** 12.75 dB
- Ref:** 20.00 dBm
- Peak Label:** ΔMkr1 21.96 MHz, -0.797 dB
- CF Step:** 4.000000 MHz
- Res BW:** 390 kHz
- #VBW:** 1.2 MHz
- Sweep:** 1.000 ms (1001 pts)

Right Screenshot (MID CHANNEL ANTENNA 2):

- Center Freq:** 5.200000000 GHz
- Span:** 40.00 MHz
- Ref Offset:** 23.25 dB
- Ref:** 20.00 dBm
- Peak Label:** ΔMkr1 21.52 MHz, -0.621 dB
- CF Step:** 4.000000 MHz
- Res BW:** 390 kHz
- #VBW:** 1.2 MHz
- Sweep:** 1.000 ms (1001 pts)

The figure displays two side-by-side screenshots of a Keysight Spectrum Analyzer (AR024.2.21.02500/94740) showing channel power measurements for two antennas.

Left Screenshot: HIGH CHANNEL ANTENNA 1

- Center Freq: 5.240000000 GHz
- Ref Offset: 12.75 dB
- Ref: 20.00 dBm
- ΔMkr1: 25.56 MHz
- 0.156 dB
- Span: 40.00 MHz
- Res BW: 390 kHz
- VBW: 1.2 MHz
- Sweep: 1.000 ms (1001 pts)

Right Screenshot: HIGH CHANNEL ANTENNA 2

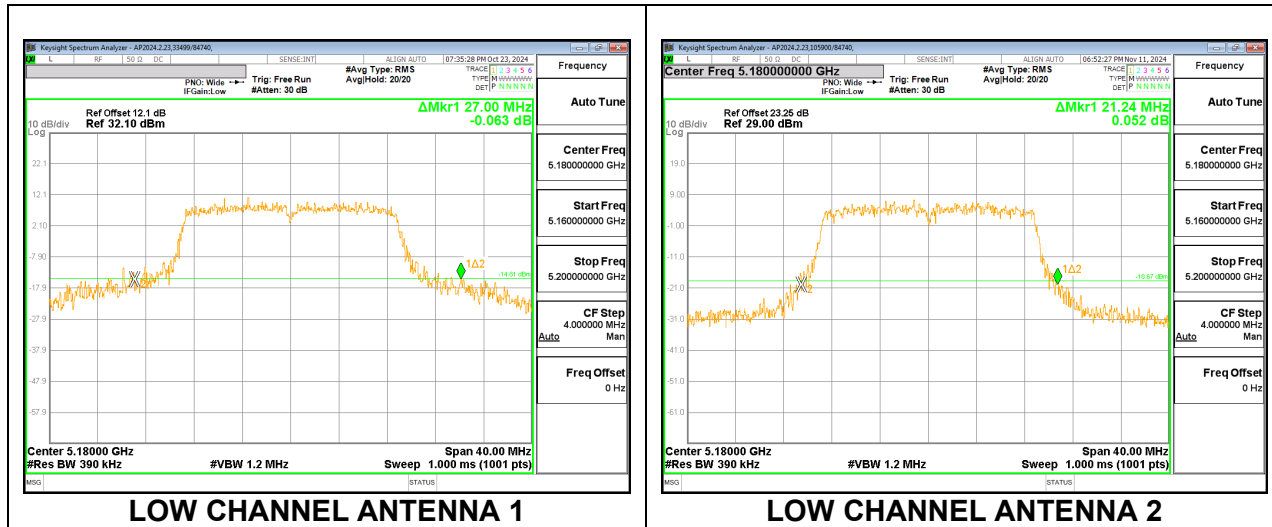
- Center Freq: 5.240000000 GHz
- Ref Offset: 23.25 dB
- Ref: 29.00 dBm
- ΔMkr1: 31.00 MHz
- 0.297 dB
- Span: 40.00 MHz
- Res BW: 390 kHz
- VBW: 1.2 MHz
- Sweep: 1.000 ms (1001 pts)

9.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

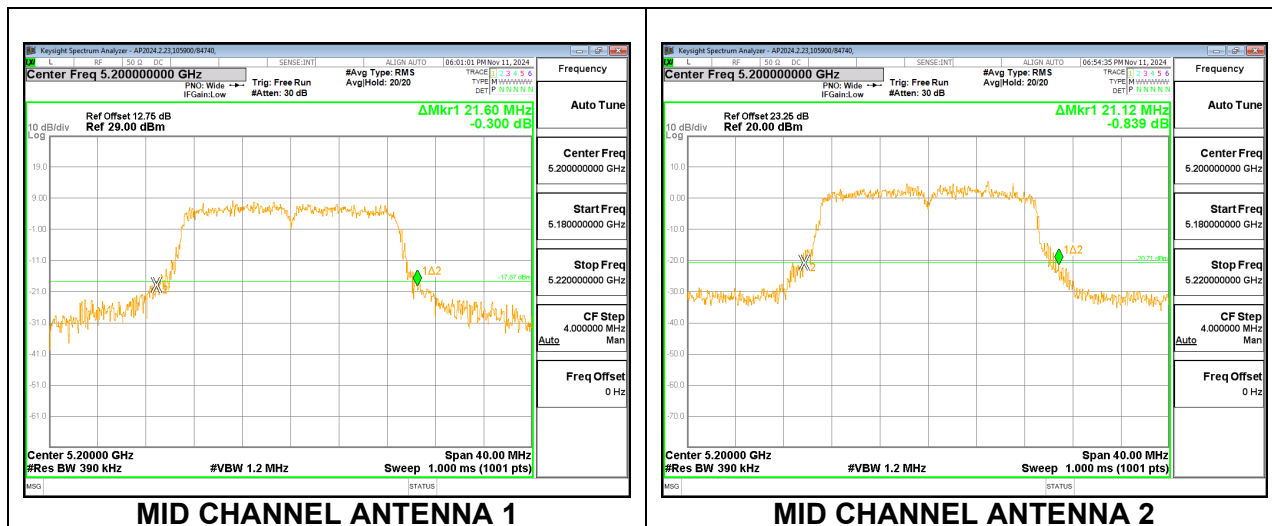
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 1 (MHz)	26 dB Bandwidth Antenna 2 (MHz)
Low	5180	27.00	21.24
Mid	5200	21.60	21.12
High	5240	29.20	21.36

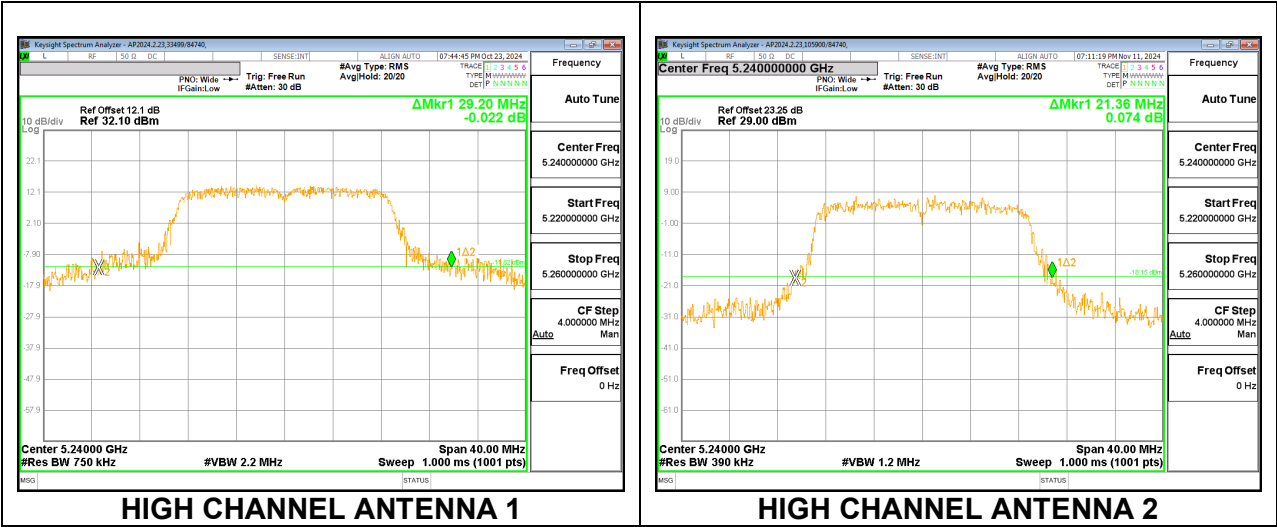
LOW CHANNEL



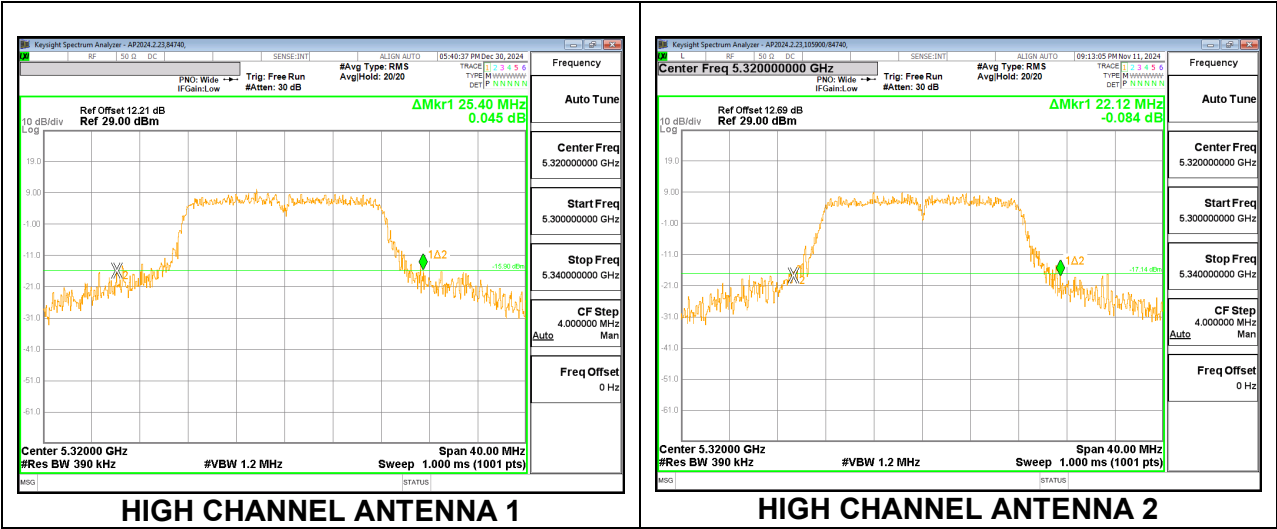
MID CHANNEL



HIGH CHANNEL



HIGH CHANNEL

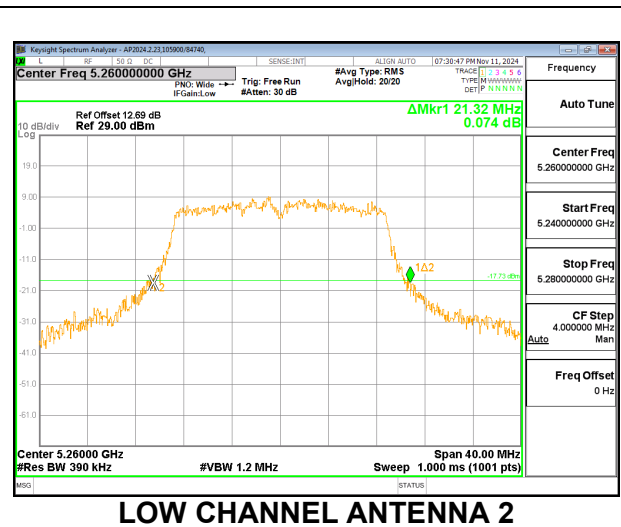
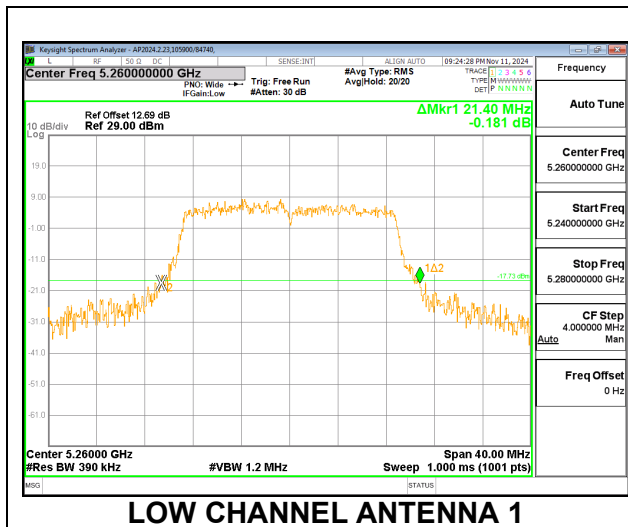


9.2.4. 802.11n HT20 MODE IN THE 5.3 GHz BAND

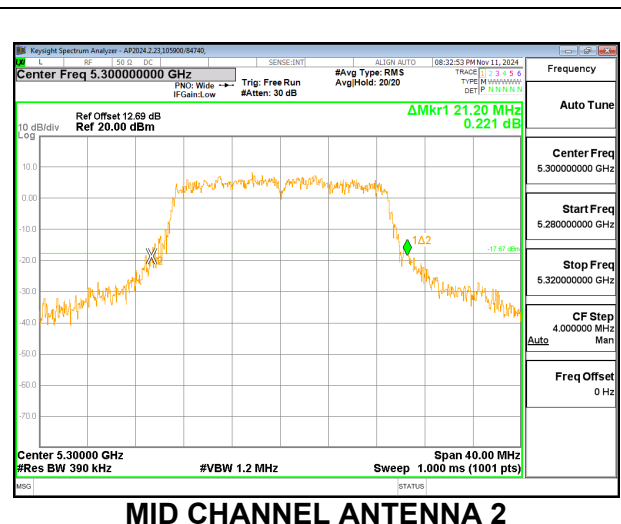
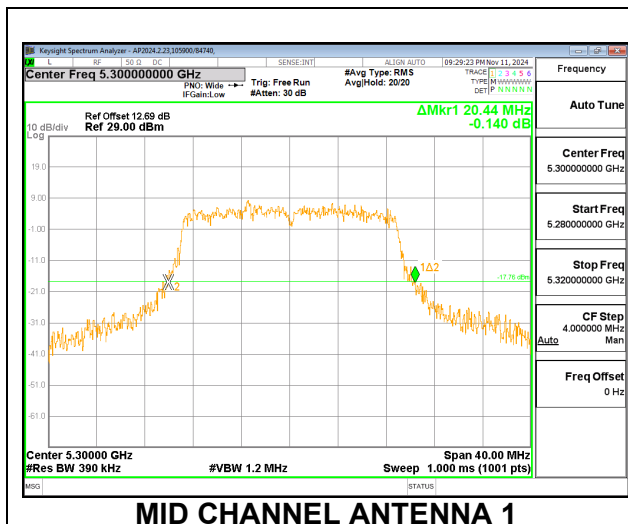
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 1 (MHz)	26 dB Bandwidth Antenna 2 (MHz)
Low	5260	21.40	21.32
Mid	5300	20.44	21.20
High	5320	21.72	20.88

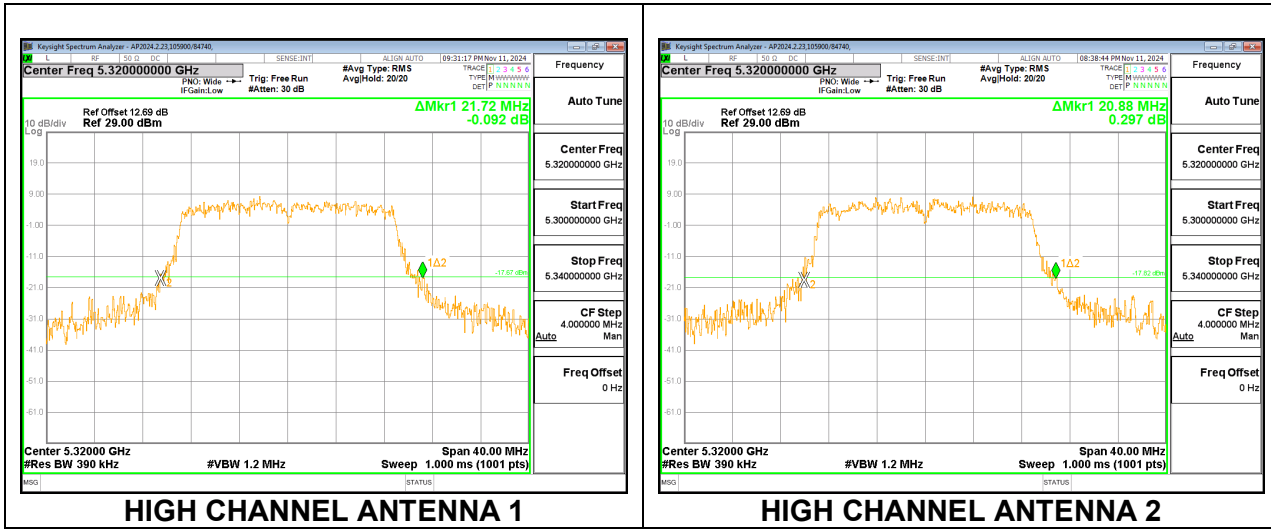
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

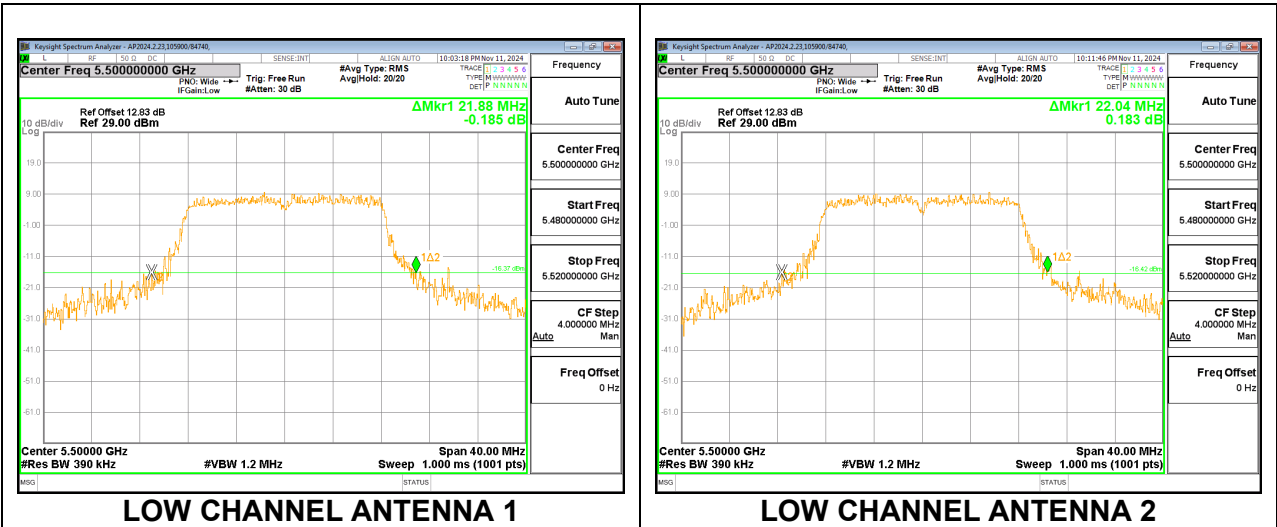


9.2.5. 802.11a MODE IN THE 5.6 GHz BAND

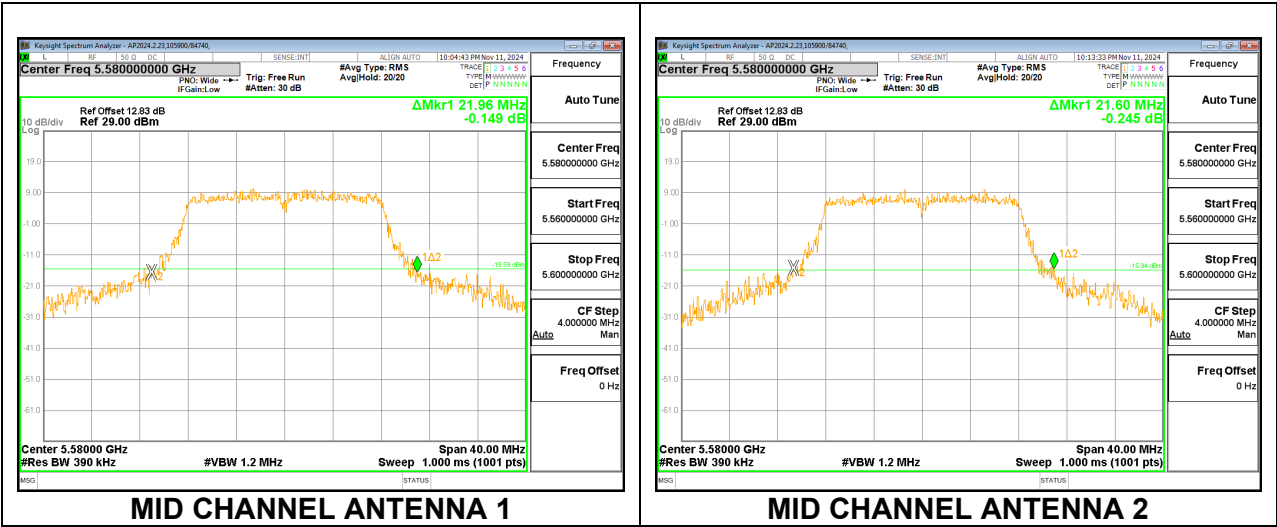
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	26 dB BW Antenna 1 (MHz)	26 dB BW Antenna 2 (MHz)
Low	5500	21.880	22.040
Middle	5580	21.960	21.600
High	5700	23.280	21.080
144	5720	19.040	18.680

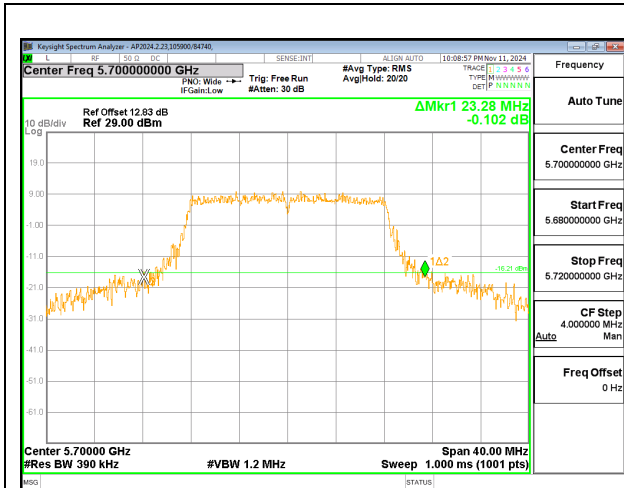
LOW CHANNEL



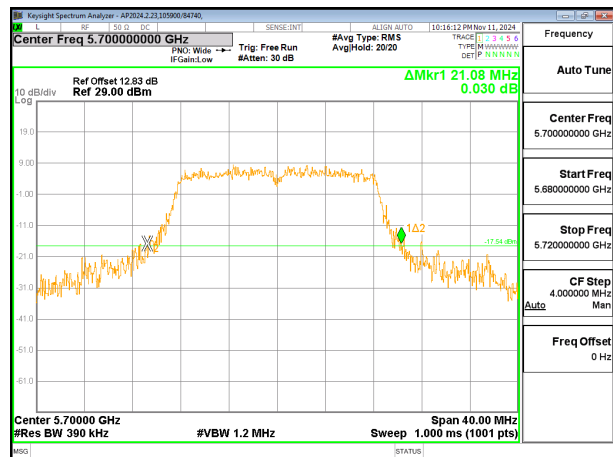
MID CHANNEL



HIGH CHANNEL

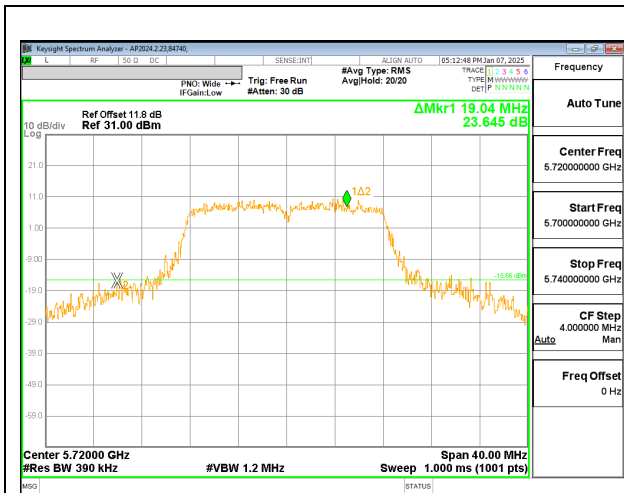


HIGH CHANNEL ANTENNA 1

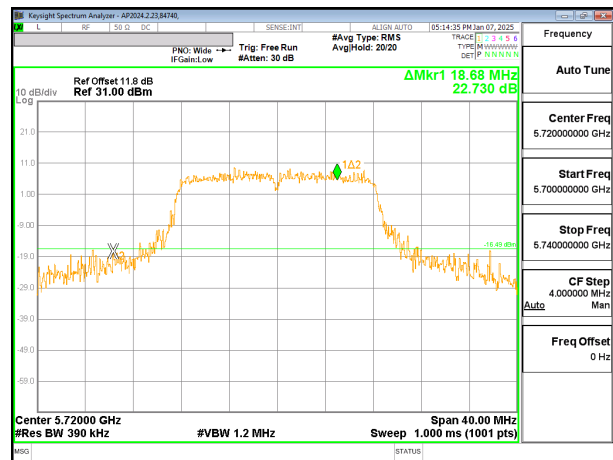


HIGH CHANNEL ANTENNA 2

CHANNEL 144



CHANNEL 144 ANTENNA 1



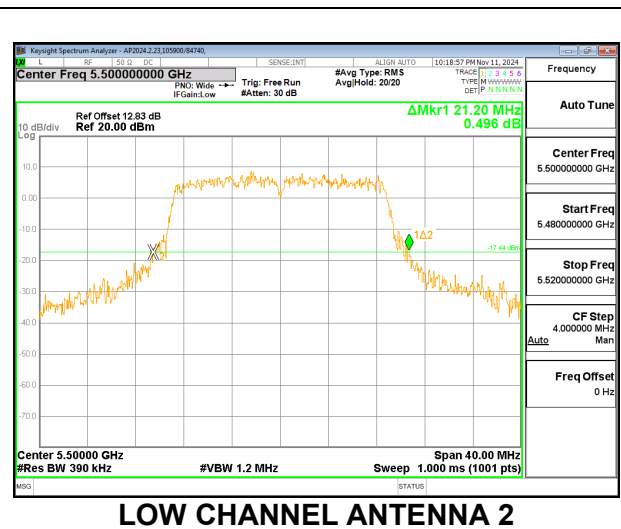
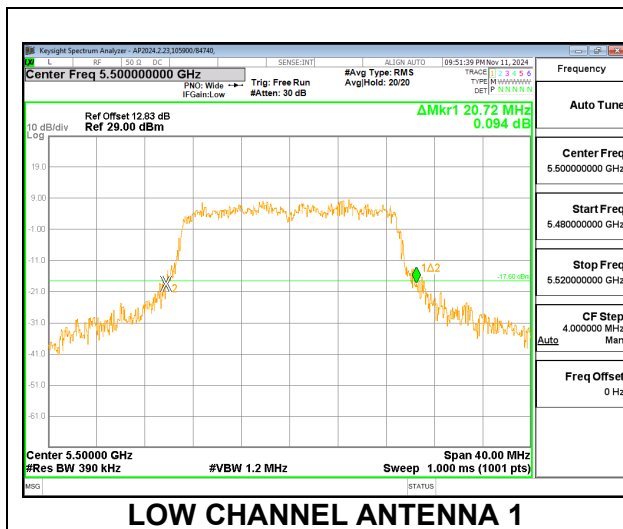
CHANNEL 144 ANTENNA 2

9.2.6. 802.11n HT20 MODE IN THE 5.6 GHz BAND

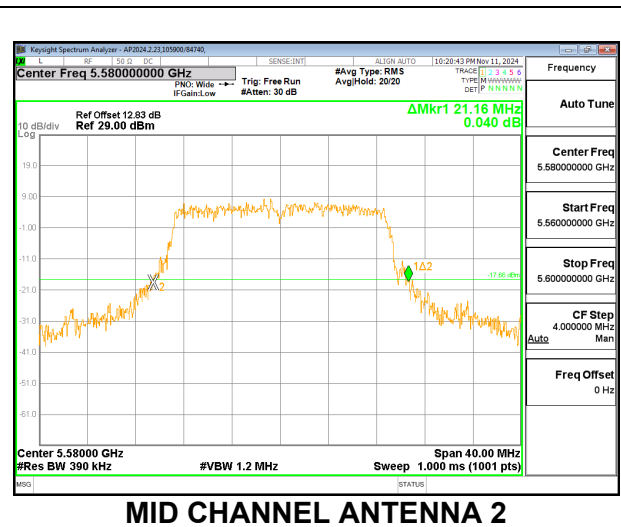
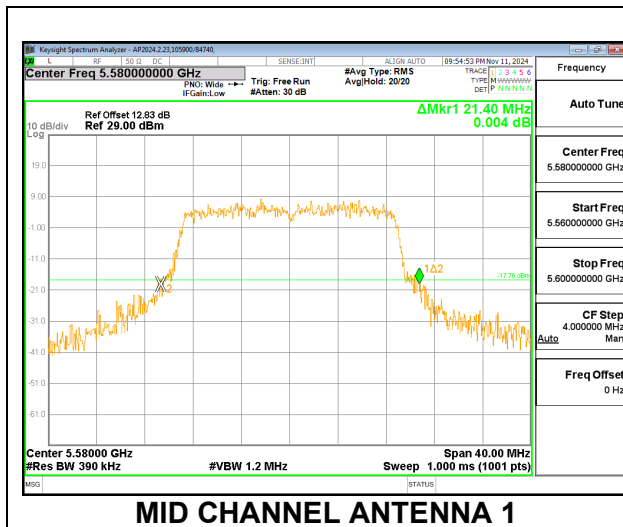
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	26 dB BW Antenna 1 (MHz)	26 dB BW Antenna 2 (MHz)
Low	5500	20.720	21.200
Middle	5580	21.400	21.160
High	5700	21.240	20.160
144	5720	21.520	22.320

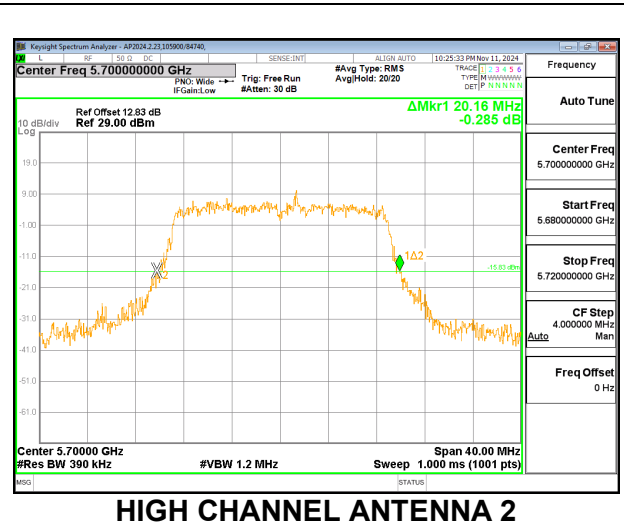
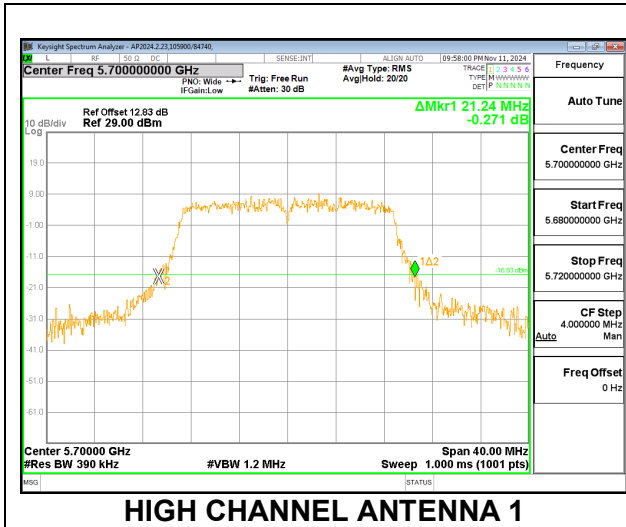
LOW CHANNEL



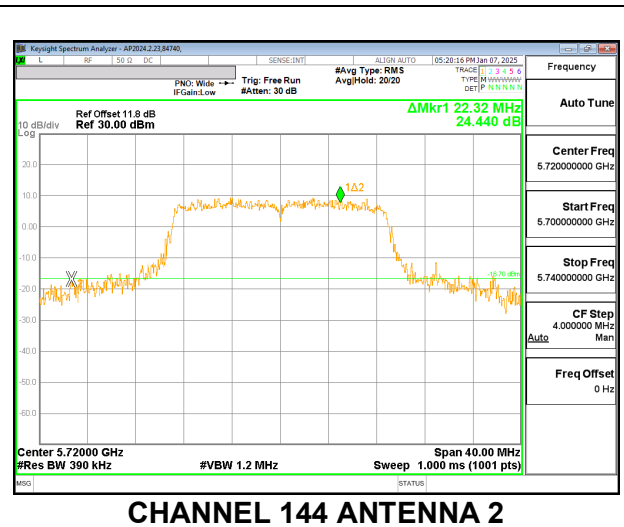
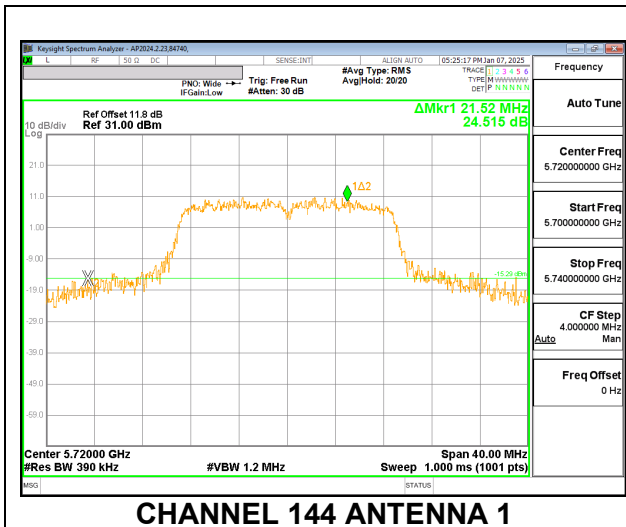
MID CHANNEL



HIGH CHANNEL



CHANNEL 144



9.3. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

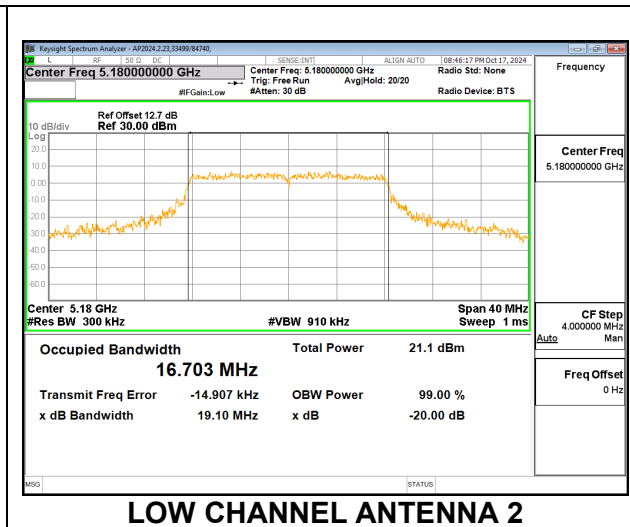
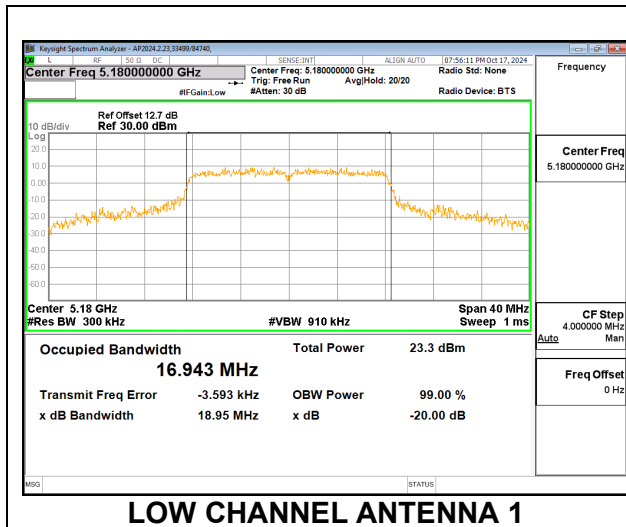
RESULTS

9.3.1. 802.11a MODE IN THE 5.2 GHz BAND

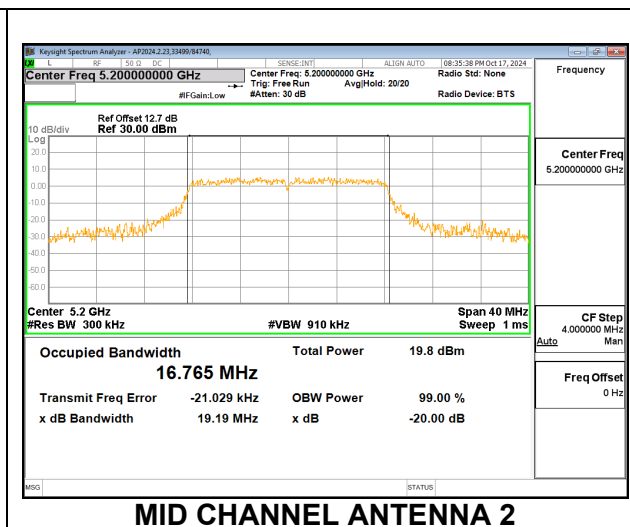
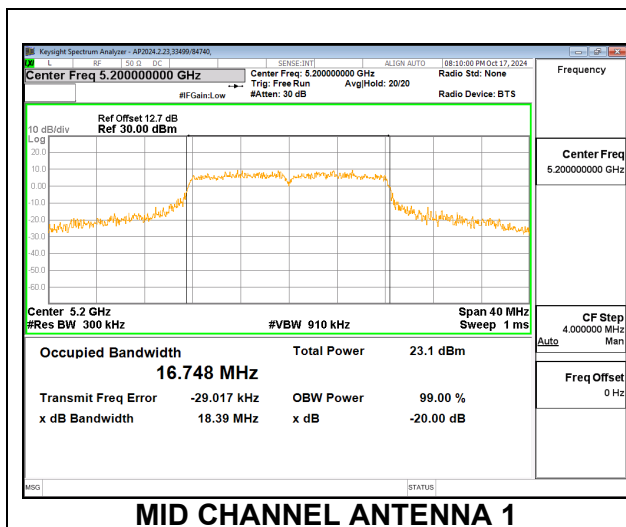
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)
Low	5180	16.943	16.703
Mid	5200	16.748	16.765
High	5240	17.200	17.128

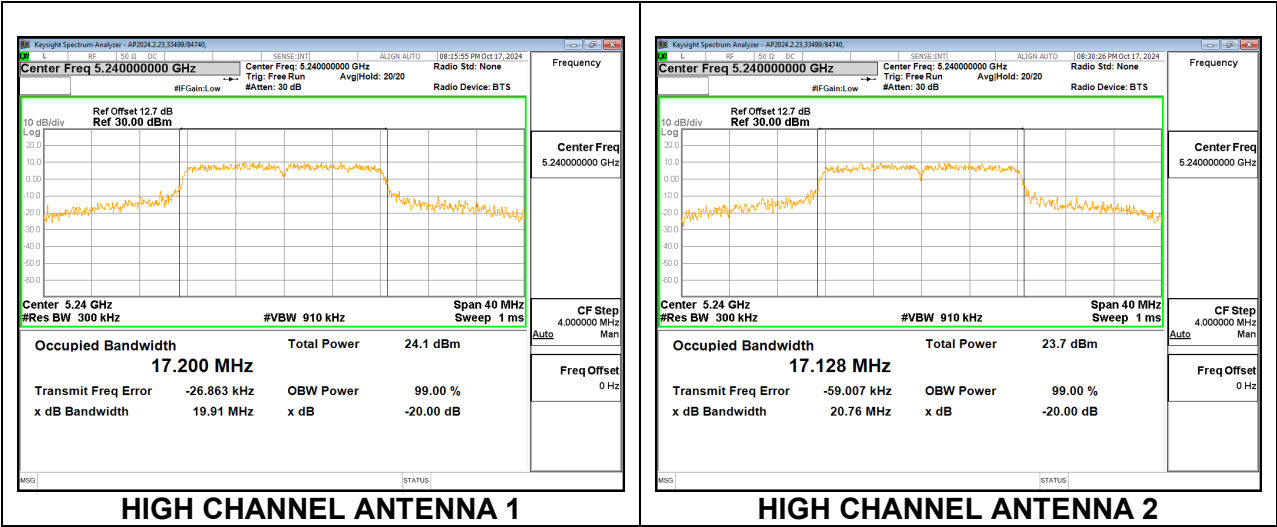
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

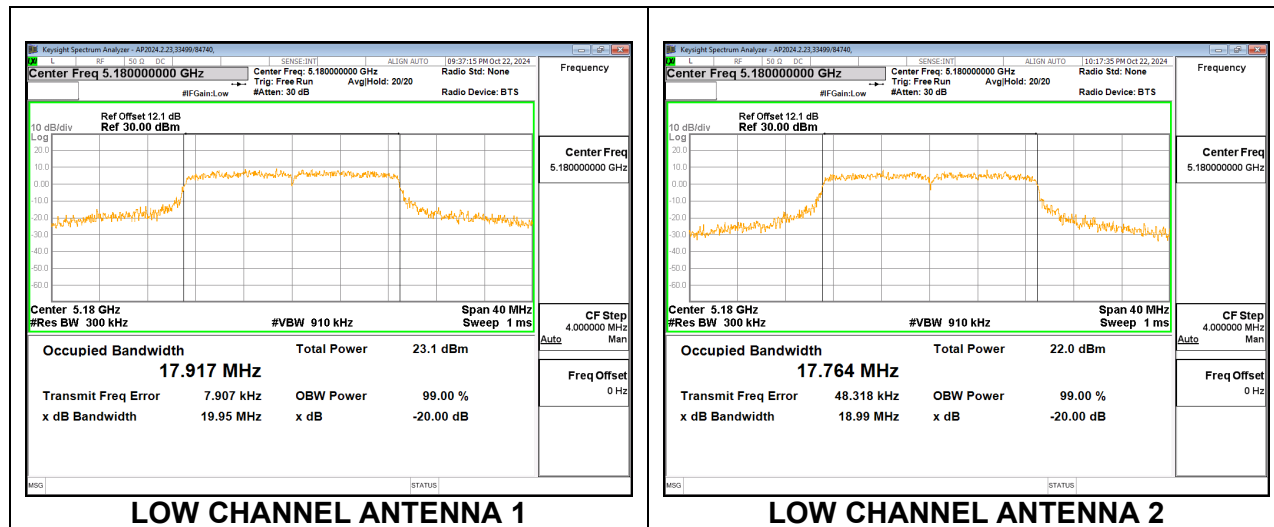


9.3.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

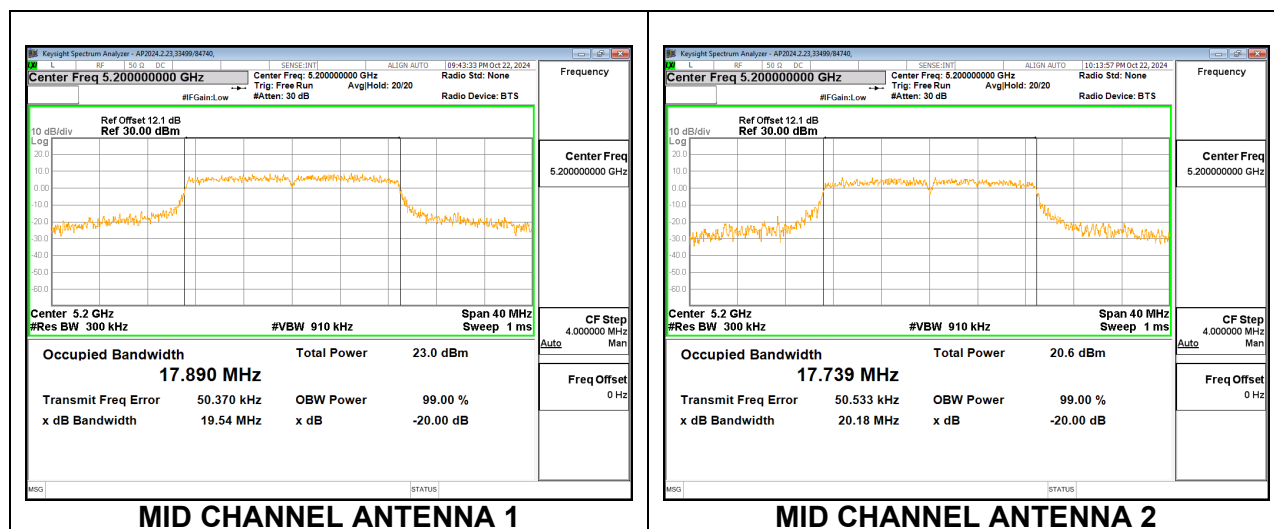
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)
Low	5180	17.917	17.764
Mid	5200	17.890	17.739
High	5240	17.993	17.964

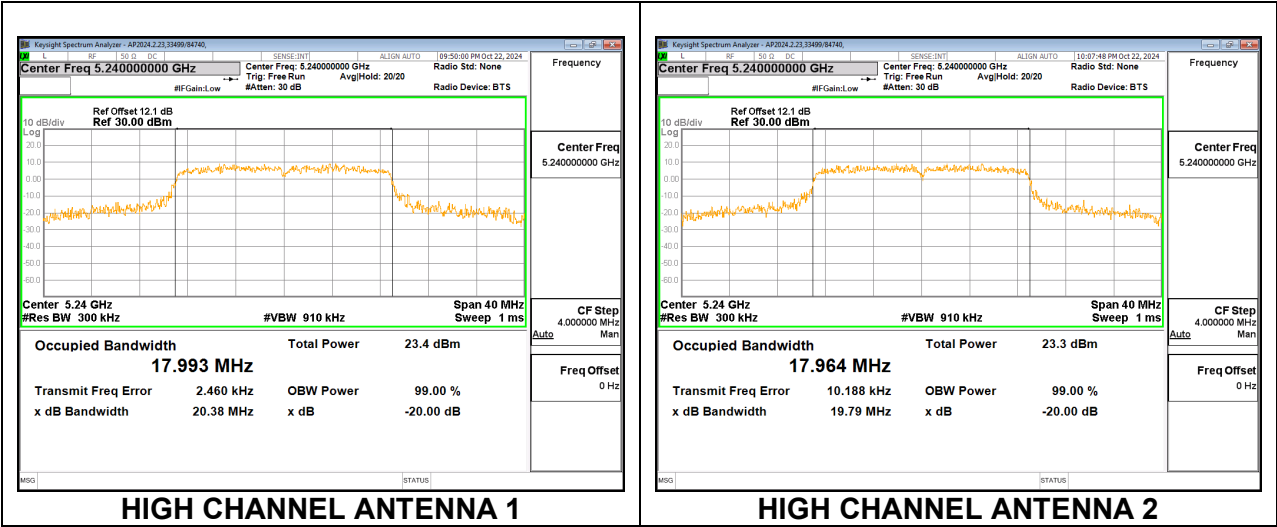
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

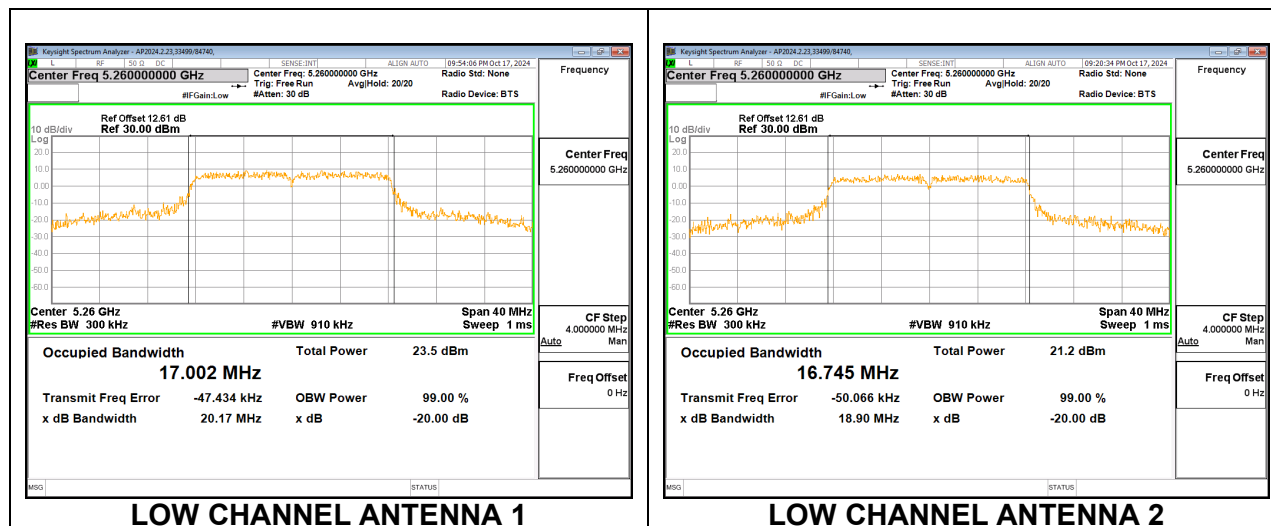


9.3.3. 802.11a MODE IN THE 5.3 GHz BAND

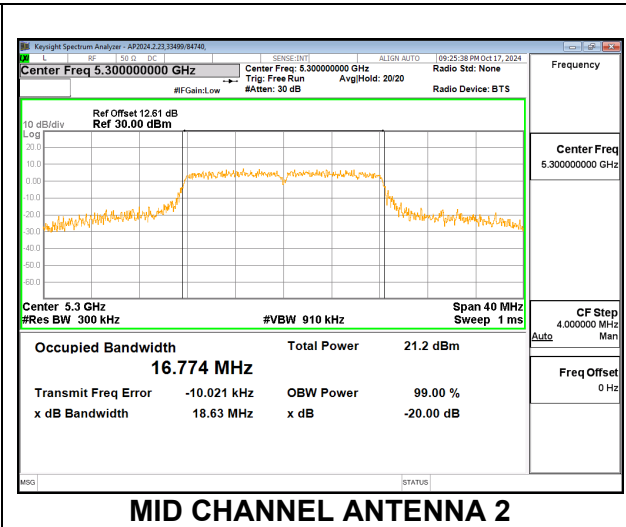
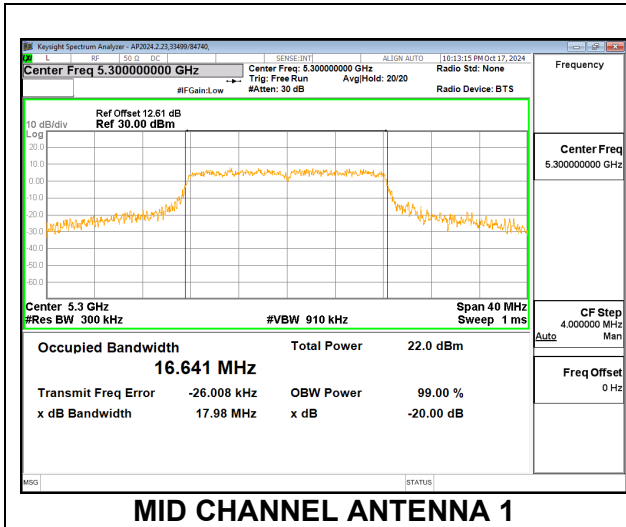
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)
Low	5260	17.002	16.745
Mid	5300	16.641	16.774
High	5320	16.786	16.749

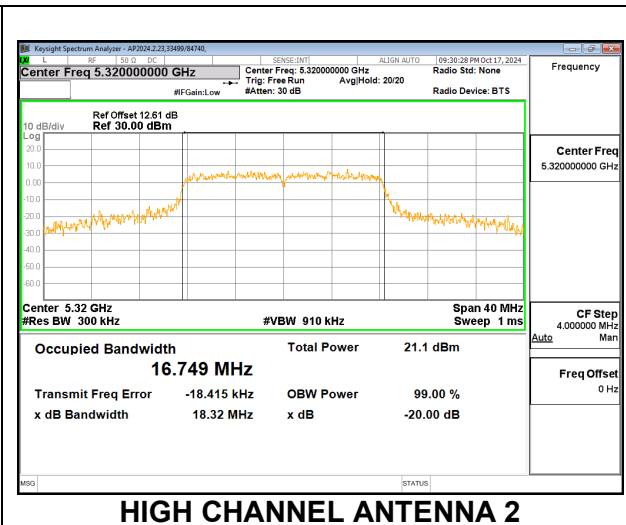
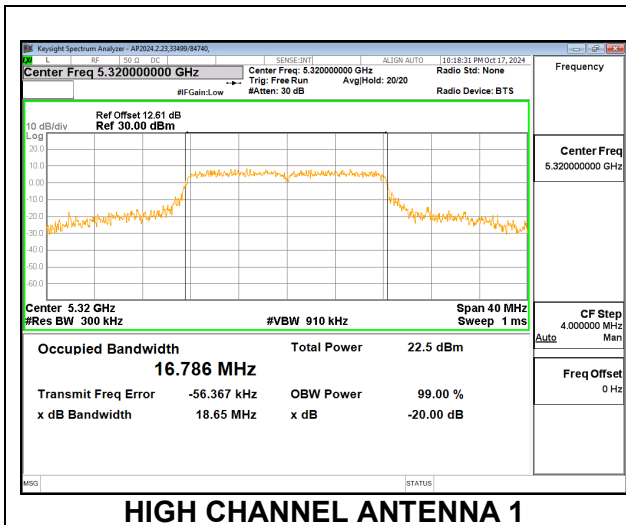
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

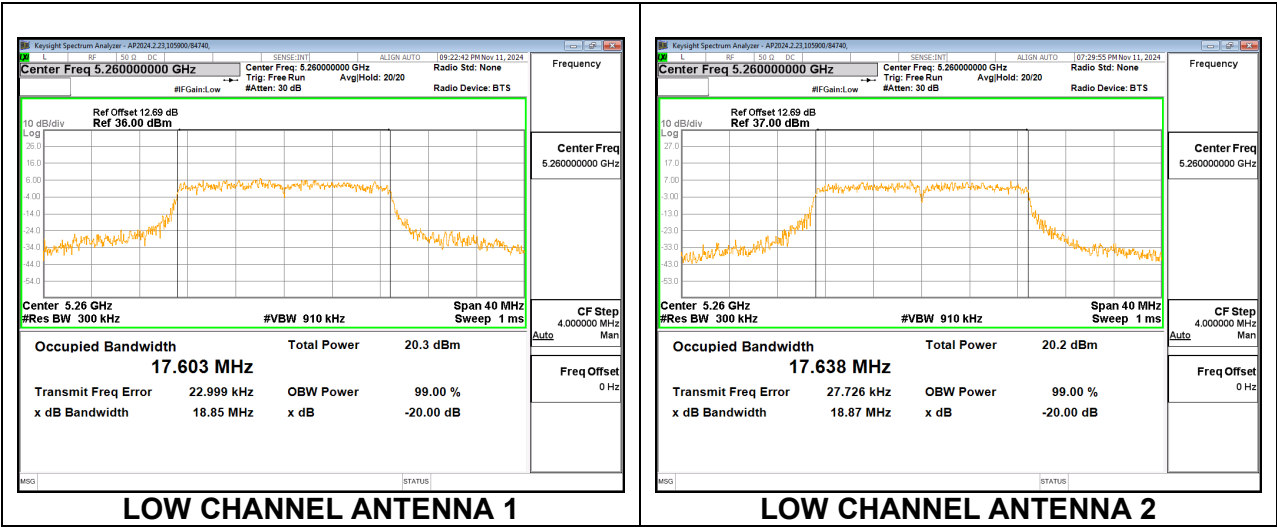


9.3.4. 802.11n HT20 MODE IN THE 5.3 GHz BAND

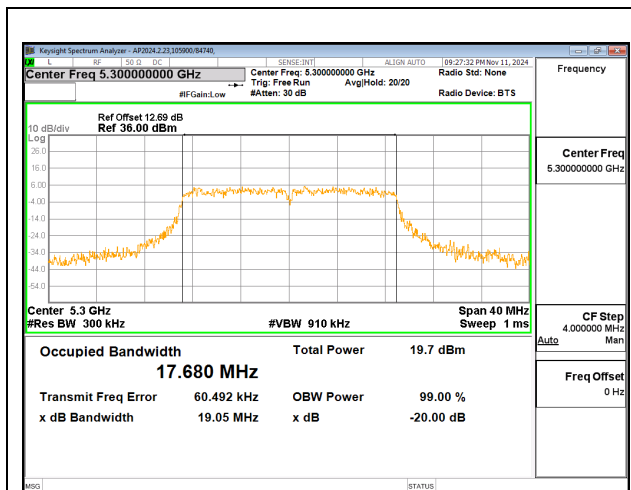
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)
Low	5260	17.603	17.638
Mid	5300	17.680	17.668
High	5320	17.734	17.691

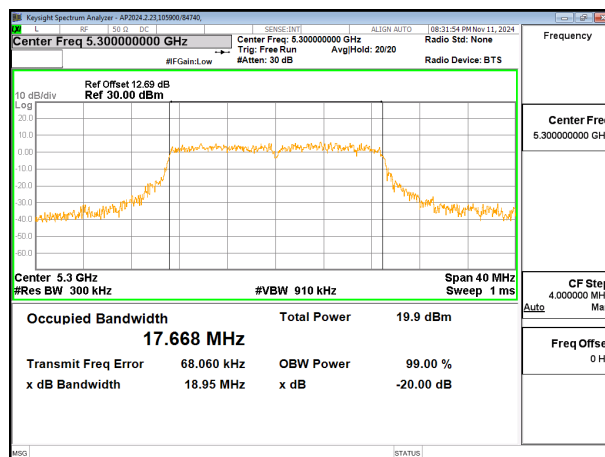
LOW CHANNEL



MID CHANNEL

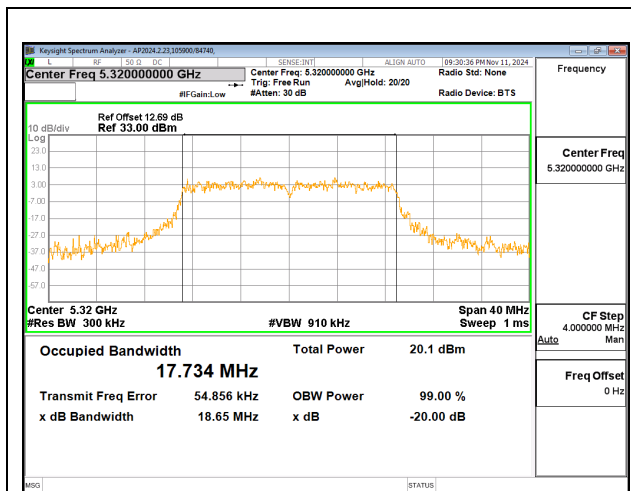


MID CHANNEL ANTENNA 1

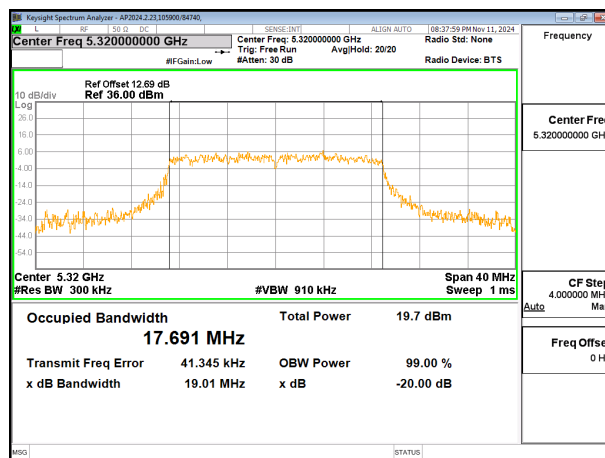


MID CHANNEL ANTENNA 2

HIGH CHANNEL



HIGH CHANNEL ANTENNA 1



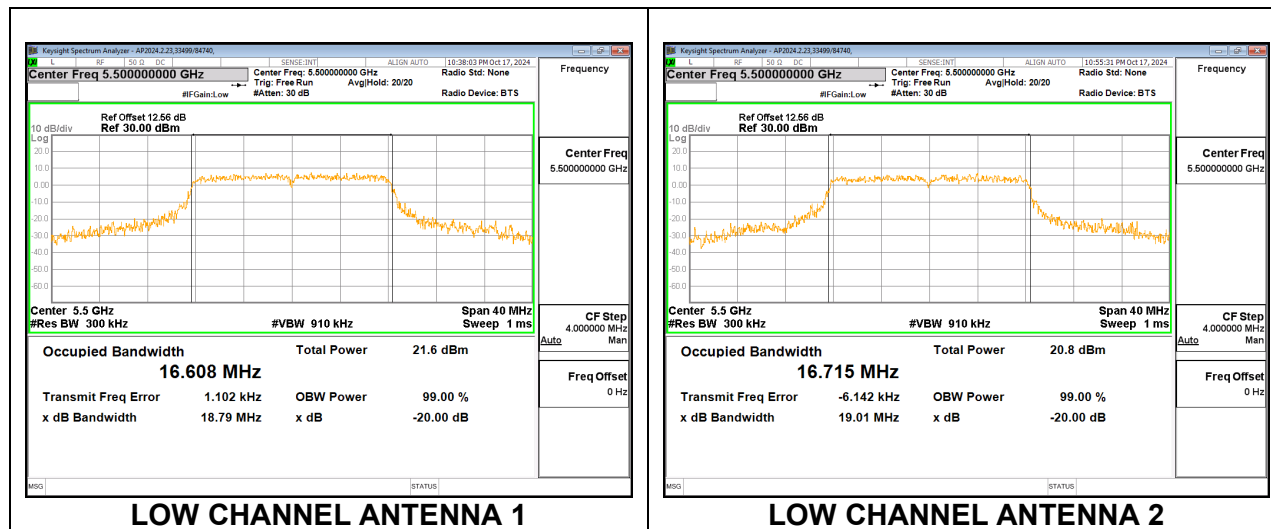
HIGH CHANNEL ANTENNA 2

9.3.5. 802.11a MODE IN THE 5.6 GHz BAND

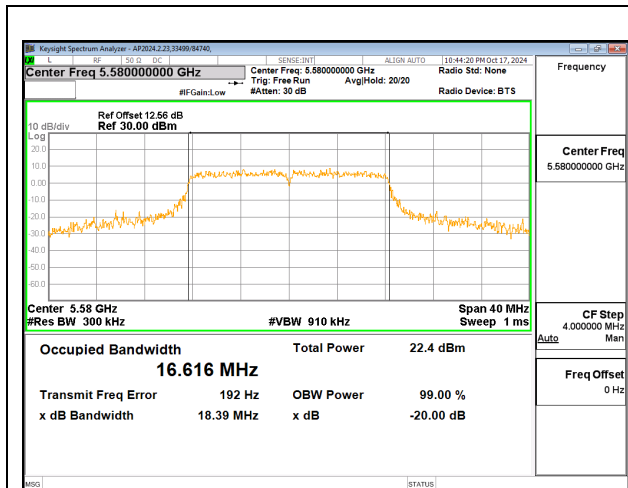
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)
Low	5500	16.608	16.715
Mid	5580	16.616	16.629
High	5700	16.771	16.720
144	5720	16.708	23.695

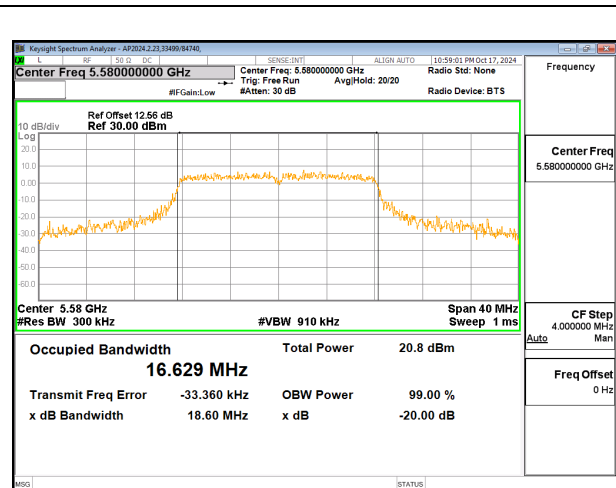
LOW CHANNEL



MID CHANNEL

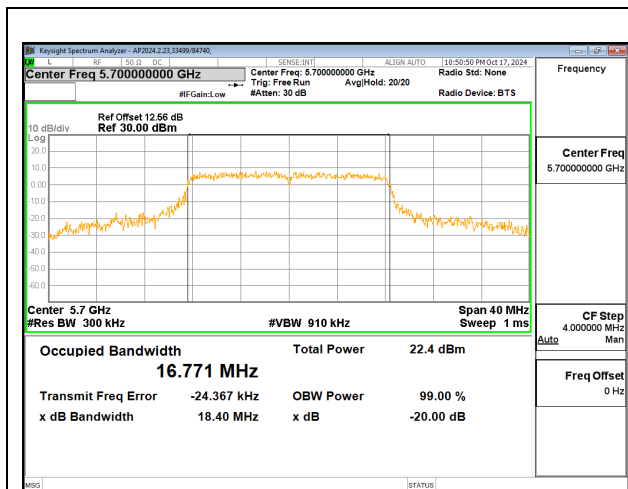


MID CHANNEL ANTENNA 1

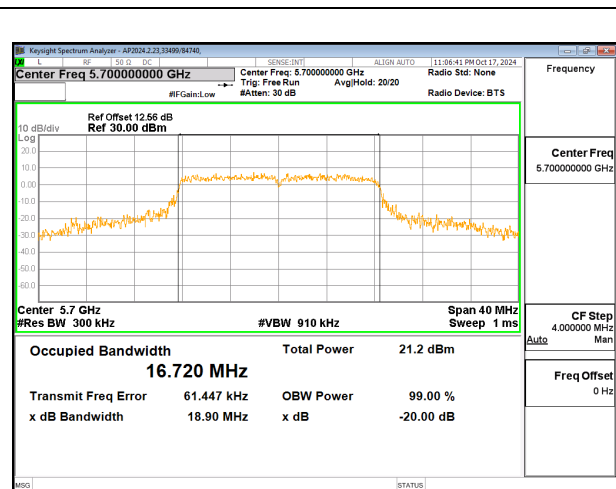


MID CHANNEL ANTENNA 2

HIGH CHANNEL

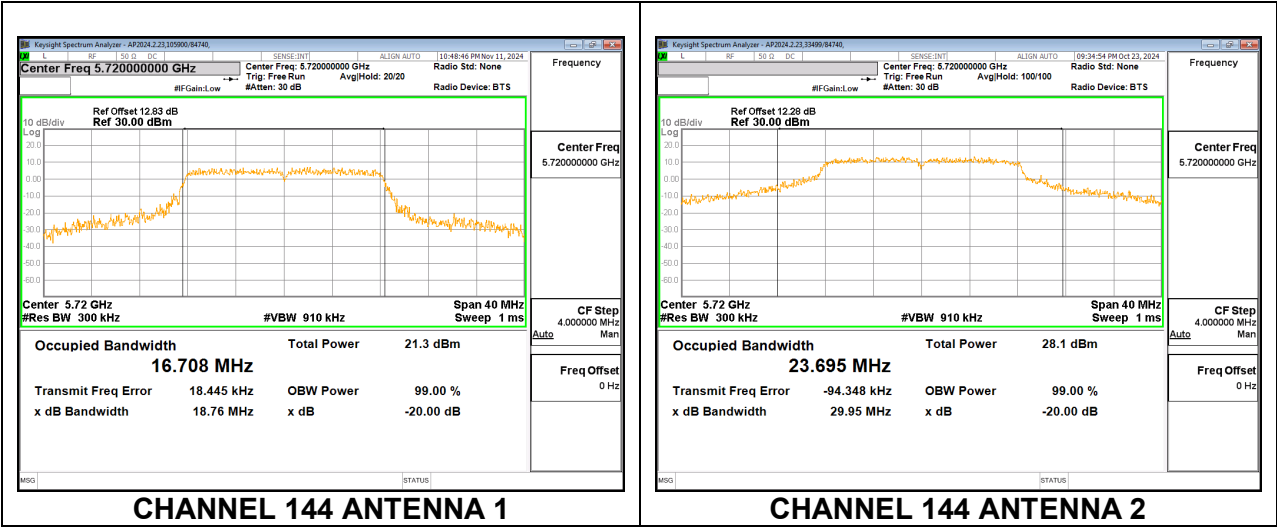


HIGH CHANNEL ANTENNA 1



HIGH CHANNEL ANTENNA 2

CHANNEL 144

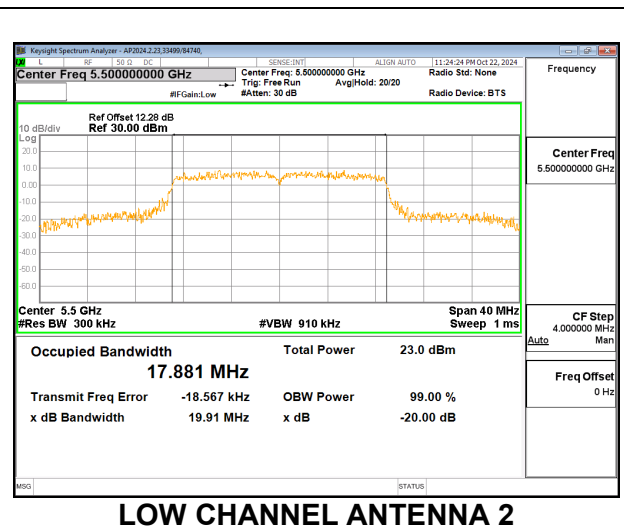
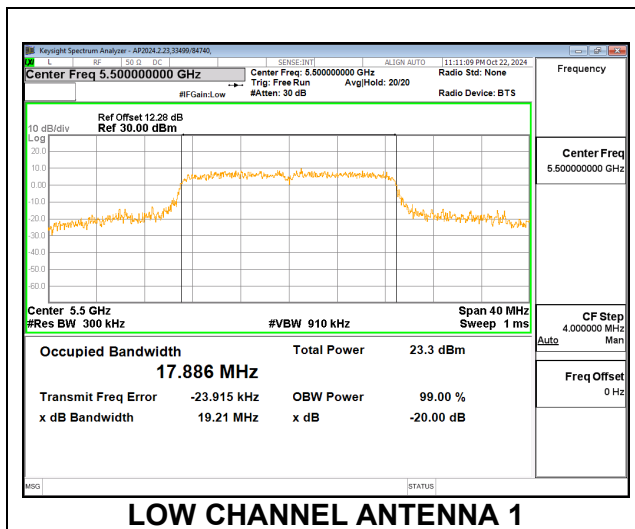


9.3.6. 802.11n HT20 MODE IN THE 5.6 GHz BAND

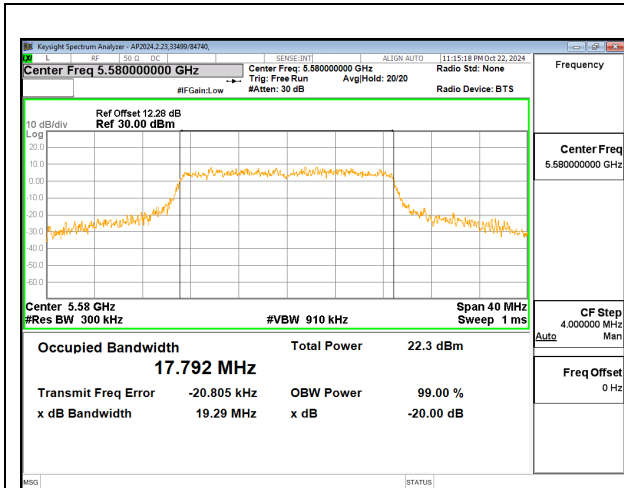
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)
Low	5500	17.886	17.881
Mid	5580	17.792	17.933
High	5700	18.111	17.832
144	5720	17.641	17.825

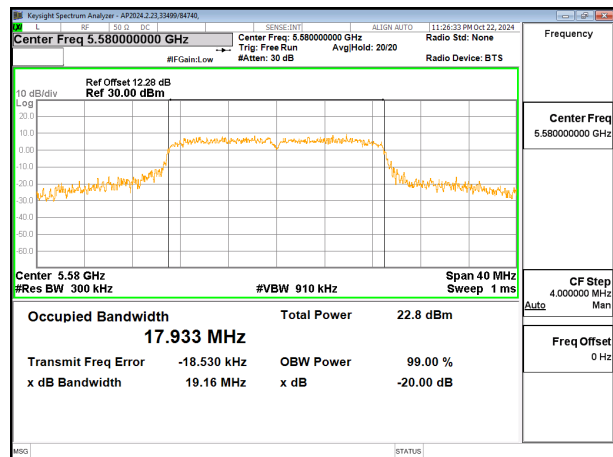
LOW CHANNEL



MID CHANNEL

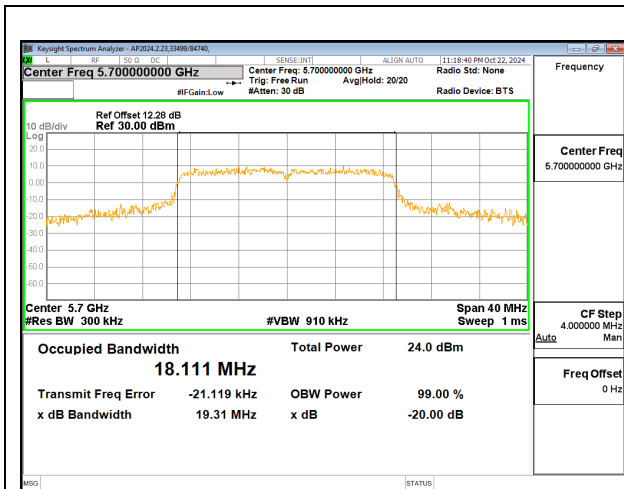


MID CHANNEL ANTENNA 1

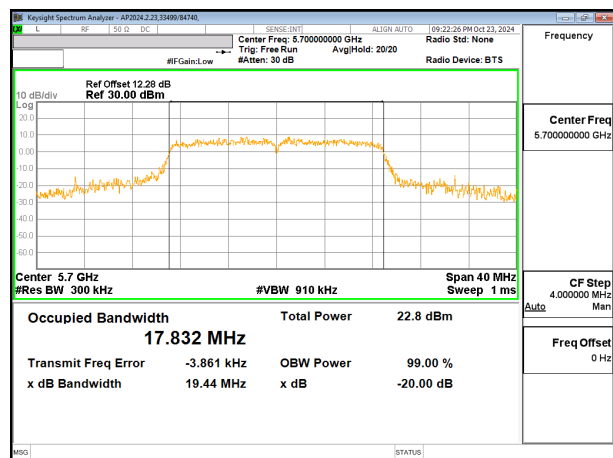


MID CHANNEL ANTENNA 2

HIGH CHANNEL

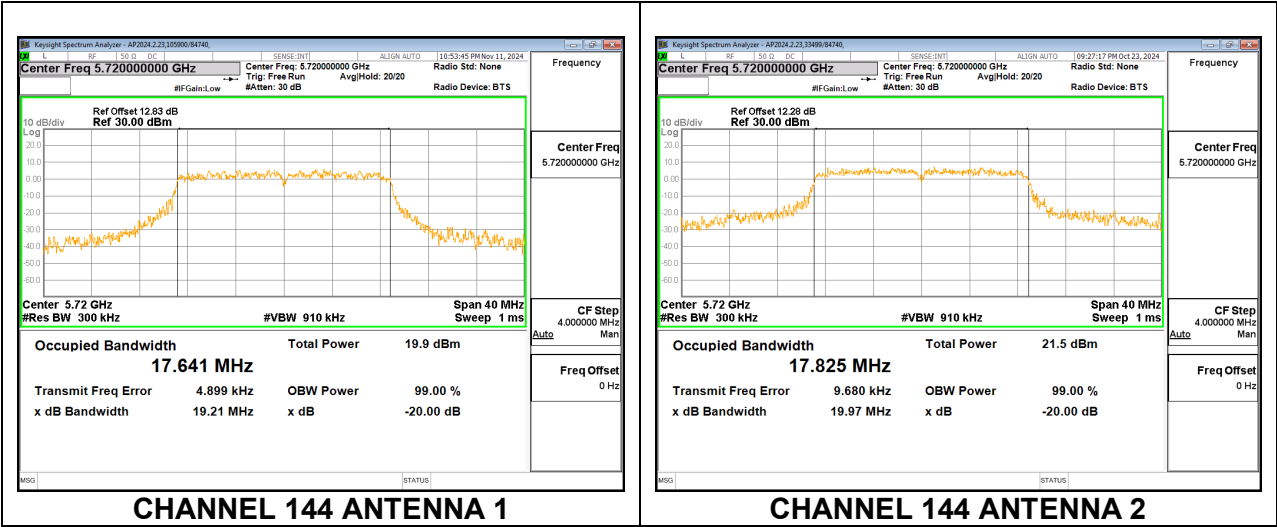


HIGH CHANNEL ANTENNA 1



HIGH CHANNEL ANTENNA 2

CHANNEL 144

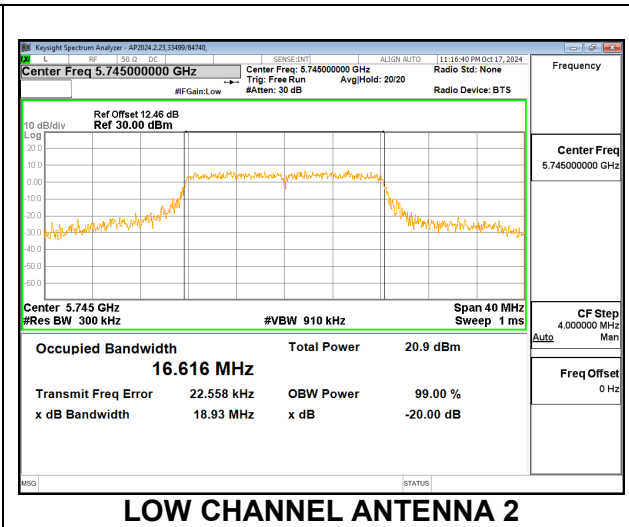
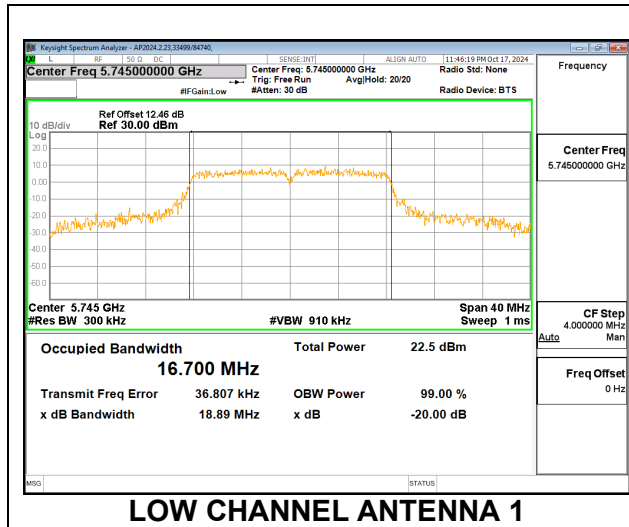


9.3.7. 802.11a MODE IN THE 5.8 GHz BAND

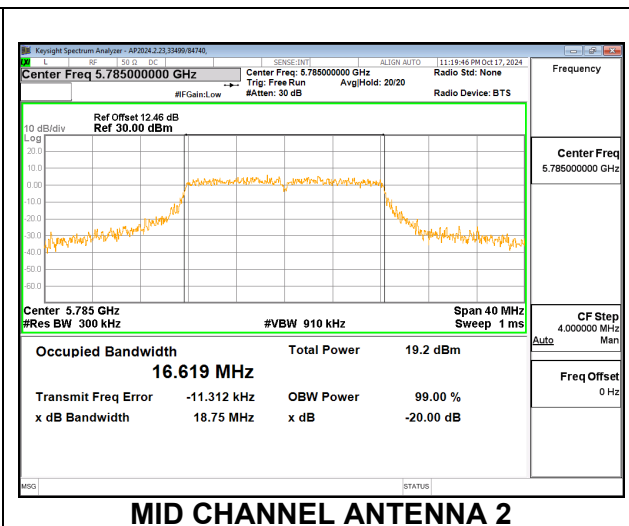
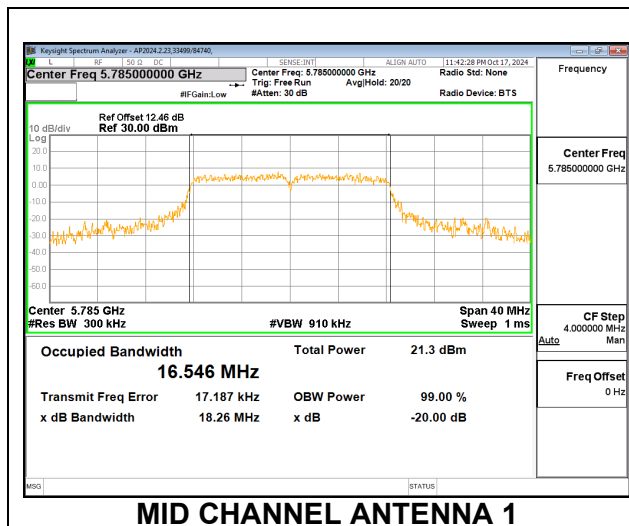
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)
Low	5745	16.700	16.616
Mid	5785	16.546	16.619
High	5825	16.666	16.680

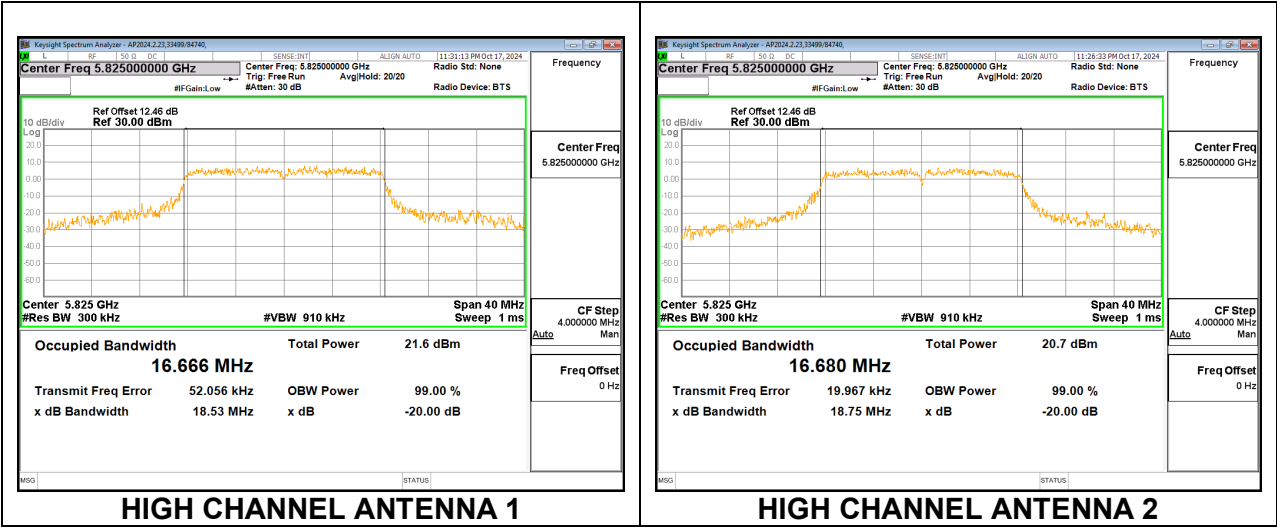
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

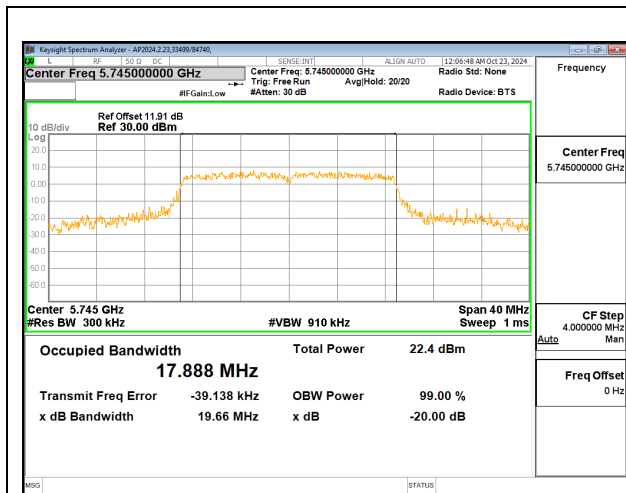


9.3.8. 802.11n HT20 MODE IN THE 5.8 GHz BAND

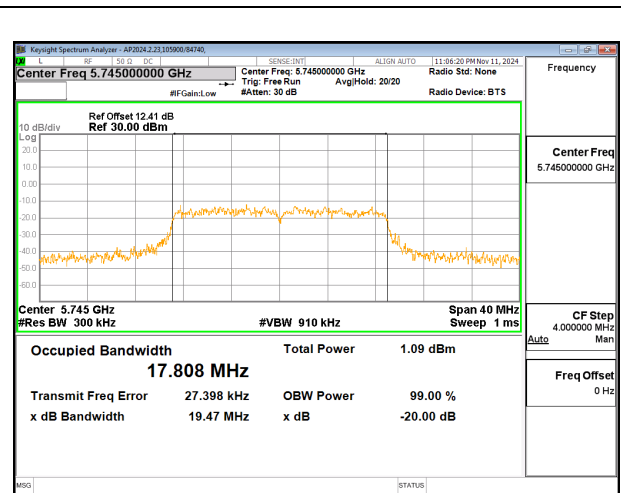
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)
Low	5745	17.888	17.800
Mid	5785	17.775	17.737
High	5825	18.242	18.403

LOW CHANNEL

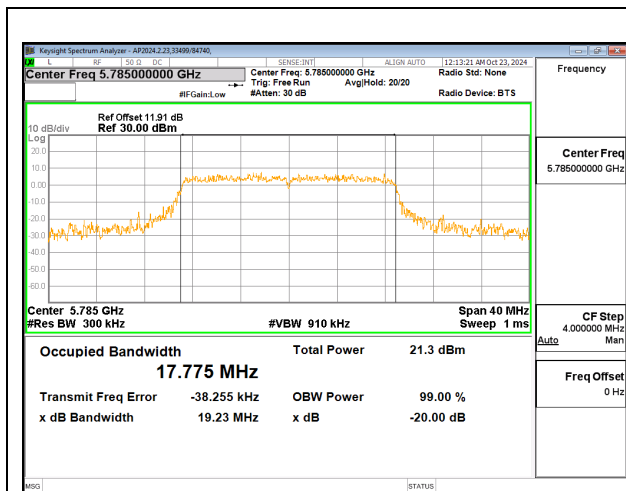


LOW CHANNEL ANTENNA 1

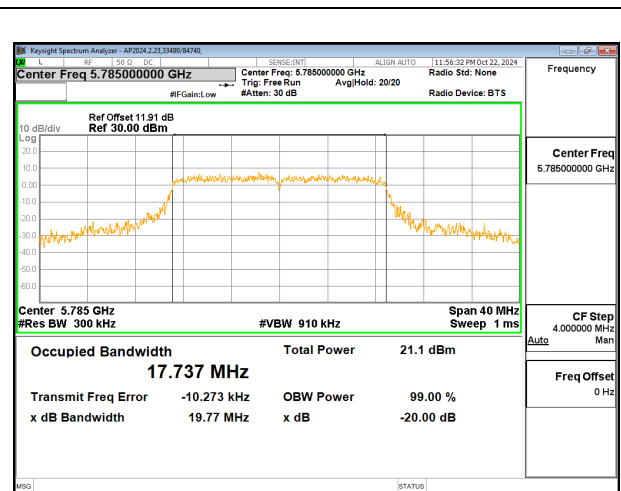


LOW CHANNEL ANTENNA 2

MID CHANNEL

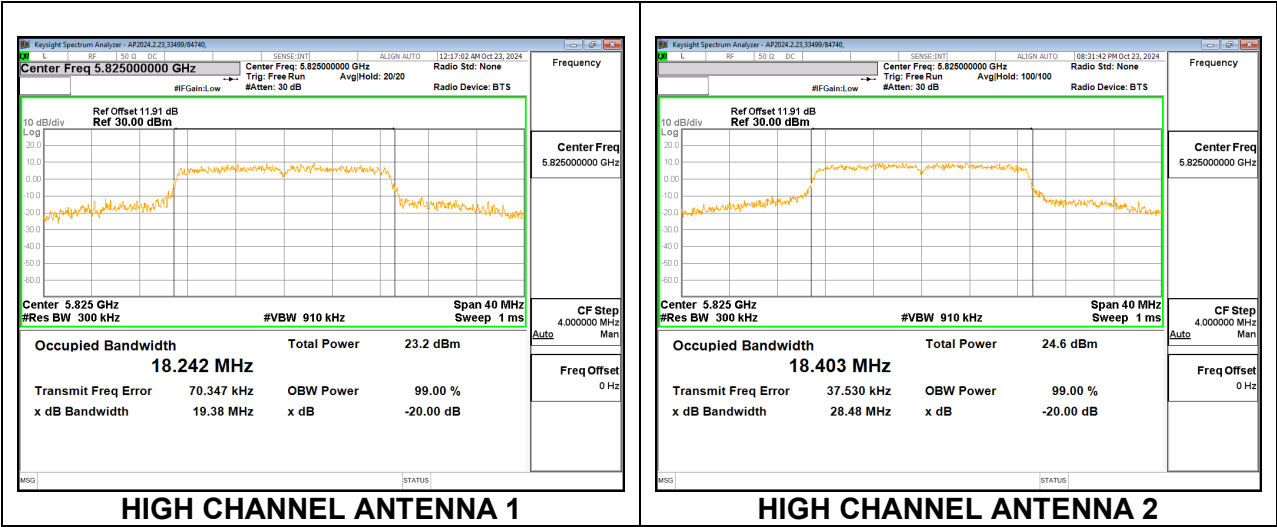


MID CHANNEL ANTENNA 1



MID CHANNEL ANTENNA 2

HIGH CHANNEL



9.4. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)
RSS-247 6.2.4.2, 6.2.5.2

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

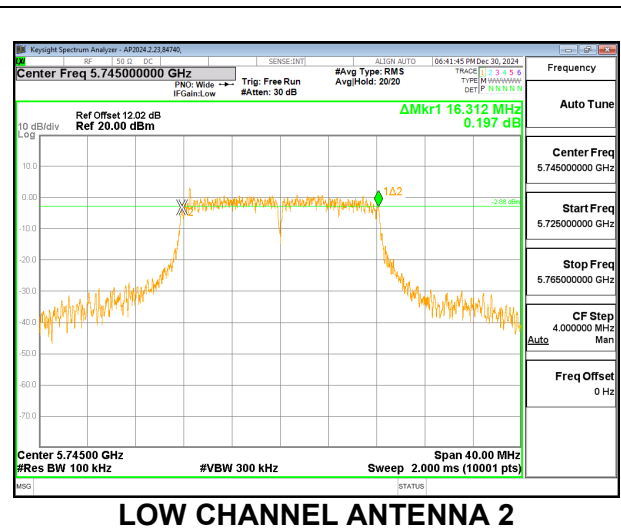
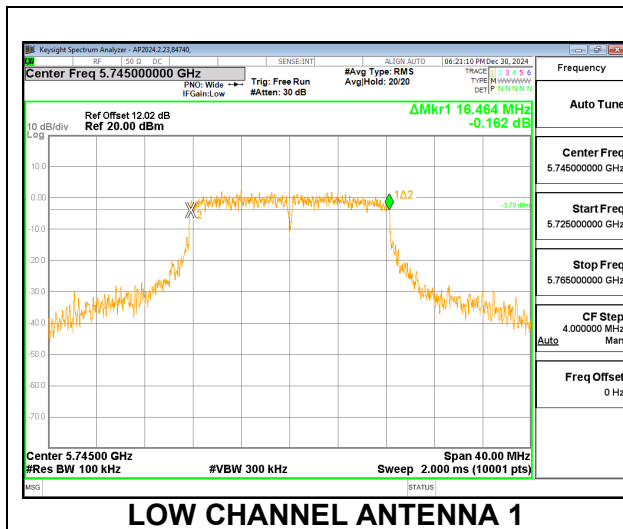
RESULTS

9.4.1. 802.11a MODE IN THE 5.8 GHz BAND

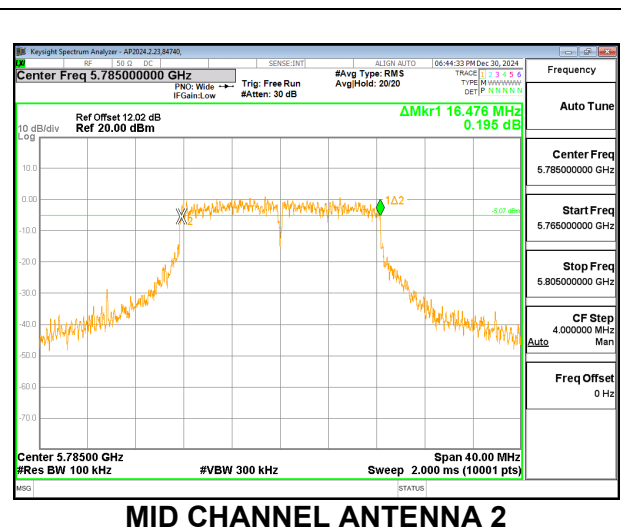
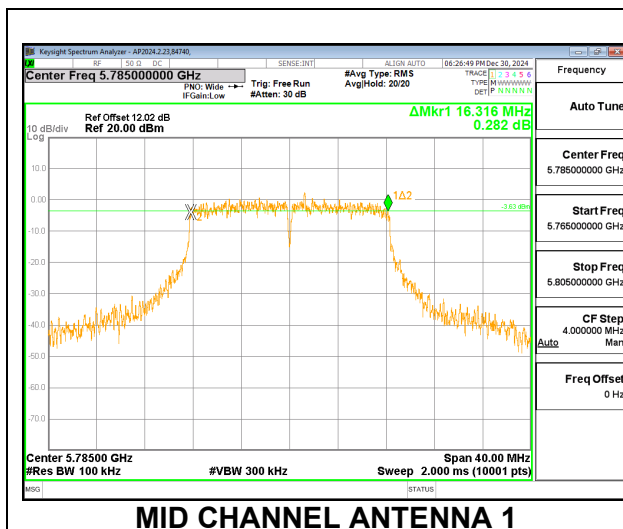
1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	6 dB BW Antenna 1 (MHz)	6 dB BW Antenna 2 (MHz)	6 dB BW Min. Limit (MHz)
Low	5745	16.646	16.312	0.5
Middle	5785	16.316	16.476	0.5
High	5825	16.536	16.484	0.5
144	5720	3.236	3.276	0.5

LOW CHANNEL



MID CHANNEL



The figure displays two side-by-side screenshots of a Keysight Spectrum Analyzer, showing the frequency response of two antennas. Both plots are set to a center frequency of 5.825 MHz, a resolution bandwidth (RBW) of 100 kHz, and a span of 40.0 MHz. The y-axis represents the signal level in dBm, ranging from -70 to 10. The x-axis represents frequency in MHz, ranging from 5.845 to 5.855. Both plots show a flat response around 0 dBm, with a sharp drop-off outside this range. The left plot (Antenna 1) has a peak marker at 16.536 MHz and -0.196 dB. The right plot (Antenna 2) has a peak marker at 16.484 MHz and 0.178 dB. Both plots have a center frequency of 5.825 MHz, a resolution bandwidth of 100 kHz, and a span of 40.0 MHz.

Channel 144 Antenna 1

Center Freq 5.720000000 GHz
 Ref Offset 11.75 dB
 Ref 20.00 dBm
 DMkr1 3.236 MHz
 -3.826 dBm

Row	Mode	Freq [GHz]	Mag [dBm]	Function	Function Width	Function Value
1	AZ	f	3.236 MHz (Δ)			3.236 dBm
2	F	f	5.725 000 GHz			0.213 dBm
3	N	f	5.725 304 GHz			2.353 dBm

Channel 144 Antenna 2

Center Freq 5.720000000 GHz
 Ref Offset 11.75 dB
 Ref 20.00 dBm
 DMkr1 3.276 MHz
 -4.749 dBm

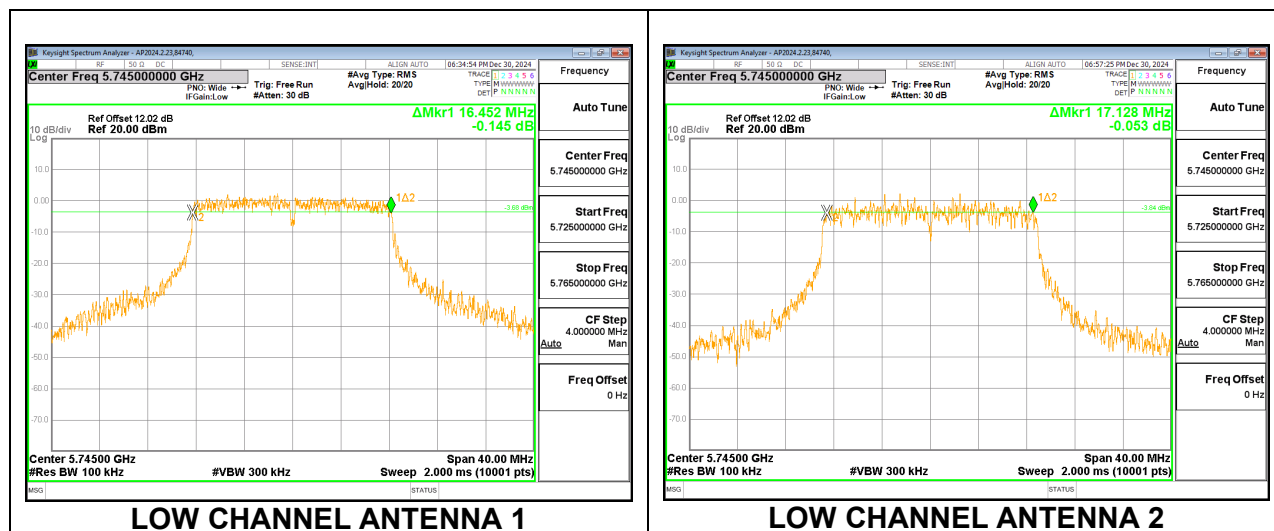
Row	Mode	Freq [GHz]	Mag [dBm]	Function	Function Width	Function Value
1	AZ	f	3.276 MHz (Δ)			-4.749 dB
2	F	f	5.725 000 GHz			0.937 dBm
3	N	f	5.725 996 GHz			2.120 dBm

9.4.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

1TX Antenna 1 + Antenna 2 CDD MODE

Channel	Frequency (MHz)	6 dB BW Antenna 1 (MHz)	6 dB BW Antenna 2 (MHz)	6 dB BW Min. Limit (MHz)
Low	5745	16.452	17.128	0.5
Middle	5785	17.260	16.804	0.5
High	5825	17.288	17.588	0.5
144	5720	3.792	3.896	0.5

LOW CHANNEL



MID CHANNEL

