

# TEST REPORT

**Report Number :** R14720550-E2

**Applicant :** Samsung Electronics Company Limited  
129 Samsung-Ro Yeongtong-Gu  
Suwon-Si, Gyeonggi-Do, 16677, Korea

**Model :** SM-X716B

**FCC ID :** A3LSMX716B

**EUT Description :** GSM/WCDMA/LTE 5G NR Tablet + BT/BLE, DTS/UNII  
a/b/g/n/ac/ax and WPT

**Test Standard(s) :** FCC 47 CFR PART 15 SUBPART E:2023  
ISED RSS-247 ISSUE 2:2020  
ISED RSS-GEN ISSUE 5 + A1 + A2:2021

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## REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2023-05-15	Initial Issue	B. Kiewra
V2	2023-05-31	Revised standard versions. Added note regarding antenna nomenclature. Extended calibration date to end of the due month.	B. Kiewra
V3	2023-06-05	Added gain calculation	B. Kiewra
V4	2023-06-09	Added additional information regarding direction gain to section 9.3	B. Kiewra
V5	2023-06-14	Added note regarding UNII-4 band to section 2	B. Kiewra
V6	2023-07-03	Revised antenna description	N. Haydon

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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** Samsung Electronics Company Limited  
129 Samsung-Ro Yeongtong-Gu  
Suwon-Si, Gyeonggi-Do, 16677, Korea

**EUT DESCRIPTION:** GSM/WCDMA/LTE 5G NR Tablet + BT/BLE, DTS/UNII  
a/b/g/n/ac/ax and WPT

**MODEL:** SM-X716B

**SERIAL NUMBER:** 5918385, R32W3004BTT, 5918394, 5918392, R32W300404N

**SAMPLE RECEIPT DATE:** 2023-03-24

**DATE TESTED:** 2023-04-14 to 2023-05-11

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
47 CFR Part 15 Subpart E	Refer to section 2
ISED RSS-247 Issue 2	Refer to section 2
ISED RSS-GEN Issue 5 + A1+A2	Refer to section 2

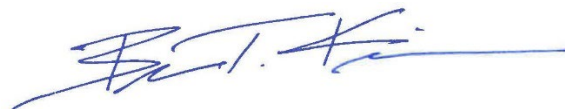
UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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.

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## 2. TEST RESULT SUMMARY

This report contains data/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) Antenna gain and type (see section 6.3)
- 2) Worst-case data rates (see section 6.5)

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	Reporting purposes only	Per ANSI C63.10 Sections 6.9.2 and 6.9.3
15.407 (e)	RSS-247 6.2.4.1	6 dB BW	Compliant	None
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		

Note: EUT does not support UNII-4 band in Canada. This band is for FCC certification only.

## 3. TEST METHODOLOGY

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

- FCC 47 CFR Part 2
- FCC 47 CFR Part 15,
- FCC KDB 662911 D01 v02r01,
- FCC KDB 789033 D02 v02r01,
- KDB 414788 D01 Radiated Test Site v01r01
- ANSI C63.10-2013
- RSS-GEN Issue 5 + A1/2
- RSS-247 Issue 2

## 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 type="checkbox"/>	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
<input checked="" type="checkbox"/>	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

## 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	U <sub>Lab</sub>
Radio Frequency (Spectrum Analyzer)	141.2 Hz
Occupied Channel Bandwidth	1.22%
RF output power, conducted	1.3 dB (PK) 0.45 dB (AV)
Power Spectral Density, conducted	2.47 dB
Unwanted Emissions, conducted	1.94 dB
All emissions, radiated	6.01 dB
Mains Conducted Emissions (0.150-30MHz) - LISN	3.40 dB
Temperature	0.57°C
Humidity	3.39%
DC Supply voltages	1.70%

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

### 5.4. SAMPLE CALCULATION

#### RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

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

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

#### MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

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

$$36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$$

## 6. EQUIPMENT UNDER TEST

### 6.1. EUT DESCRIPTION

The EUT is a GSM/WCDMA/LTE 5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac/ax and WPT.

### 6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

#### 5.2 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
<b>5.2 GHz band, 2TX</b>			
5180-5240	802.11a CDD	17.73	59.29
5180-5240	802.11n HT20 CDD	19.90	97.72
5190-5230	802.11n HT40 CDD	19.56	90.36
5210	802.11ac VHT80 CDD	18.51	70.96
5250	802.11ac VHT160 CDD	17.88	61.38
5180-5240	802.11ax HE20 CDD	19.84	96.38
5190-5230	802.11ax HE40 CDD	19.84	96.38
5210	802.11ax HE80 CDD	17.01	50.23
5250	802.11ax HE160 CDD	16.07	40.46

#### 5.3 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
<b>5.3 GHz band, 2TX</b>			
5260 - 5320	802.11a CDD	19.90	97.72
5260 - 5320	802.11n HT20 CDD	19.95	98.86
5270 - 5310	802.11n HT40 CDD	19.83	96.16
5290	802.11ac VHT80 CDD	18.99	79.25
5250	802.11ac VHT160 CDD	17.88	61.38
5260 - 5320	802.11ax HE20 CDD	19.86	96.83
5270 - 5310	802.11ax HE40 CDD	19.84	96.38
5290	802.11ax HE80 CDD	18.78	75.51
5250	802.11ax HE160 CDD	16.07	40.46

### 5.6 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
<b>5.6 GHz band, 2TX</b>			
5500-5720	802.11a CDD	19.76	94.62
5500-5720	802.11n HT20 CDD	19.81	95.72
5510-5710	802.11n HT40 CDD	19.94	98.63
5530-5690	802.11ac VHT80 CDD	18.95	78.52
5570	802.11ac VHT160 CDD	17.90	61.66
5510-5710	802.11ax HE20 CDD	19.70	93.33
5510-5710	802.11ax HE40 CDD	19.94	98.63
5530-5690	802.11ax HE80 CDD	17.76	59.70
5570	802.11ax HE160 CDD	16.94	49.43

### 5.8 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
<b>5.8 GHz band, 2TX</b>			
5745-5825	802.11a CDD	19.76	94.62
5745-5825	802.11n HT20 CDD	19.83	96.16
5755-5795	802.11n HT40 CDD	19.73	93.97
5775	802.11ac VHT80 CDD	18.95	78.52
5745-5825	802.11ax HE20 CDD	19.84	96.38
5755-5795	802.11ax HE40 CDD	19.88	97.27
5775	802.11ax HE80 CDD	18.76	75.16

### 5.9 GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
<b>5.8 GHz band, 2TX</b>			
5845-5885	802.11a CDD	17.70	58.88
5845-5885	802.11n HT20 CDD	17.79	60.12
5835-5875	802.11n HT40 CDD	17.87	61.24
5855	802.11ac VHT80 CDD	16.76	47.42
5815	802.11ac VHT160 CDD	18.84	76.56
5845-5885	802.11ac HE20 CDD	18.03	63.53
5835-5875	802.11ax HE40 CDD	18.11	64.71
5855	802.11ax HE80 CDD	16.69	46.67
5815	802.11ax HE160 CDD	15.96	39.45

### 6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

Frequency Range (MHz)	Type	Maximum Gain (dBi)	
		Chain 0	Chain 1
5180-5240	Stamped metal PIFA	0.14	-3.38
5260-5320		0.23	-3.01
5500-5720		0.08	-2.82
5745-5825		-0.87	-3.58
5835-5885		-0.97	-3.13

Note: Throughout report Chain 0 is BT/WiFi 1 Antenna and Chain 1 is BT/WiFi 2 Antenna as noted in the antenna document.

### 6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was REV0.1.  
 The test utility software used during testing was X716B.001.

### 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. These scans were chosen and run based on higher power measurements than reported.

Radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low and high channels on all modes for bandedge and low, middle and high channels on modes with worst-case power/PSD for harmonics and spurious.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

All testing performed in 2Tx mode (NSS=1), where power per chain is equivalent to the 1Tx power on each chain. Based on preliminary testing, this allows 2Tx testing to cover all 1Tx testing.

Worst-case data rates as provided by the client were:

- 802.11a mode: 6 Mbps
- 802.11n HT20mode: MCS0
- 802.11n HT40mode: MCS0
- 802.11ac VHT80 mode: MCS0
- 802.11ac VHT160 mode: MCS0
- 802.11ax HE20mode: MCS0 (Nss = 1)
- 802.11ax HE40mode: MCS0 (Nss = 1)
- 802.11ax HE80mode: MCS0 (Nss = 1)

802.11ax HE160mode: MCS0 (Nss = 1)

802.11ax modes were determined by the following:

- 802.11ax HE20 26T, 52T, 106T, and 242T modes tested.
- 802.11ax HE40 484T mode tested. 26T, 52T, 106T, and 242T modes are covered by the HE 20MHz modes.
- 802.11ax HE80 996T mode tested. 26T, 52T, 106T, 242T, and 484T modes are covered by the HE20 HE40 modes.
- 802.11ax HE160 2x996T mode tested. 26T, 52T, 106T, 242T, 484T, and 996T modes are covered by the HE 20MHz, 40MHz, and 80MHz modes.

For PSD testing 11a mode covers remaining non-11ax modes and HE20 modes cover remaining 11ax modes.

Preliminary Investigation scans were completed to compare Full RU Tone modes and Single User Tone modes. It was found that Full RU Tone modes were worst case over Single User in every instance. Therefore, only full tone was testing as it is representative of SU worst case scenario.

The EUT was pre-tested in its two configurations; with and without the keyboard attached. As determined through pretesting, without the keyboard was found to be the worst-case configuration. Therefore all final testing was performed without the keyboard attached.

## 6.6. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	EP-TA800	R37TCCJ49LASEA	-

### I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Charging	1	USB C to USB A	Shielded	<3m	Used to charge the device

### TEST SETUP

The EUT is installed as a standalone device.

### SETUP DIAGRAM

Please refer to R14720550-EP1 for setup diagrams

## 7. 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 C63.10-2013, Section 6.2.

Radiated Spurious Emissions: ANSI C63.10-2013 Section 6.3 to 6.6



## 8. 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.
SA0025	Spectrum Analyzer	Keysight Technologies	N9030A	2022-05-02	2023-05-31
HI0090	Environmental Meter	Fisher Scientific	15-077-963	2022-07-20	2023-07-20
PWM005	RF Power Meter	Keysight Technologies	N1912A	2022-09-02	2024-09-02
PWS005	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2022-06-15	2023-06-15
226563	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2023-02-16	2024-02-16
CBL098	Micro-Coax UTIFLEX Cable Assembly, Low Loss,40Ghz, 39.3", Connectors 2	Carlisle Interconnect Technologies	UFA147A-0-0180-200200	2023-02-17	2024-02-17
CBL101	Micro-Coax UTIFLEX Cable Assembly, Low Loss,40Ghz, 39.3", Connectors 2	Carlisle Interconnect Technologies	UFA147A-0-0180-200200	2023-01-24	2024-01-24
CPL001	Ultra-Wideband Directional Coupler 0.5-18GHz	Mini-Circuits	ZUDC10-183+	2023-02-17	2024-02-17
PWM001 (PRE0136343)	RF Power Meter	Keysight Technologies	N1912A	2022-08-30	2023-08-30
PWS002	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2022-09-27	2023-09-27
90418	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2023-02-02	2024-02-02
SA0027	Spectrum Analyzer	Keysight Technologies	N9030A	2022-05-24	2023-05-31
PWM001 (PRE0136343)	RF Power Meter	Keysight Technologies	N1912A	2022-08-30	2023-08-30
90418	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	02/02/2023	2024-02-02
PWS002	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2022-09-27	2023-09-27
HI0091	Environmental Meter	Fisher Scientific	15-077-963	2022-07-20	2023-07-20
SOFTEMI	Antenna Port Software	UL	Version 2022.8.16		

Note: all equipment was in calibration at time of test

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	2023-04-04	2024-04-04
HI0091	Environmental Meter	Fisher Scientific	15-077-963	2022-07-20	2023-07-20
LISN001	LISN, 50-ohm/50-uH, 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50-25-2-01-550V	2022-08-01	2023-08-01
LISN003	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2022-08-01	2023-08-01
75141	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2022-08-03	2023-08-03
52859	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2023-04-04	2024-04-04
PS216	AC Power Source	Elgar	CW2501M-1 (s/n 1045A04231)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
CDECABLE001	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2022-09-12	2023-09-12

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

Equipment ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
<b>1-18 GHz</b>					
86408	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-05-24	2023-05-31
<b>Gain-Loss Chains</b>					
207640	Gain-loss string: 1-18GHz	Various	Various	2022-05-20	2023-05-31
<b>Receiver &amp; Software</b>					
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2023-03-24	2024-03-24
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
<b>Additional Equipment used</b>					
21642	Environmental Meter	Fisher Scientific	15-077-963 (s/n 210701692)	2021-08-16	2023-08-16

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

Equipment ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
<b>0.009-30MHz</b>					
135144	Active Loop Antenna	ETS-Lindgren	6502	2023-01-17	2024-01-17
<b>30-1000 MHz</b>					
90627	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2022-09-07	2023-09-07
<b>1-18 GHz</b>					
88761	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-09-13	2023-09-13
<b>18-40 GHz</b>					
204704	Horn Antenna, 18-26.5GHz	Com-Power	AH-626	2022-07-11	2023-07-11
204705	Horn Antenna, 26-40GHz	Com-Power	AH-640	2022-07-11	2023-07-11
<b>Gain-Loss Chains</b>					
91975	Gain-loss string: 0.009-30MHz	Various	Various	2022-05-10	2023-05-31
91978	Gain-loss string: 25-1000MHz	Various	Various	2022-05-10	2023-05-31
91977	Gain-loss string: 1-18GHz	Various	Various	2022-05-10	2023-05-31
136042	Gain-loss string: 18-40GHz	Various	Various	2022-05-10	2023-05-31
<b>Receiver &amp; Software</b>					
SA0026	Spectrum Analyzer	Keysight	N9030A	2022-08-02	2023-08-23
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
<b>Additional Equipment used</b>					
200540	Environmental Meter	Fisher Scientific	15-077-963 s/n 181474409	2022-10-05	2023-10-05
A45	10dB, DC-18GHz, 5W	Mini-Circuits	BW-N10W5	2022-10-21	2023-10-21

## 9. ANTENNA PORT TEST RESULTS

### 9.1. ON TIME AND DUTY CYCLE

#### LIMITS

None; for reporting purposes only.

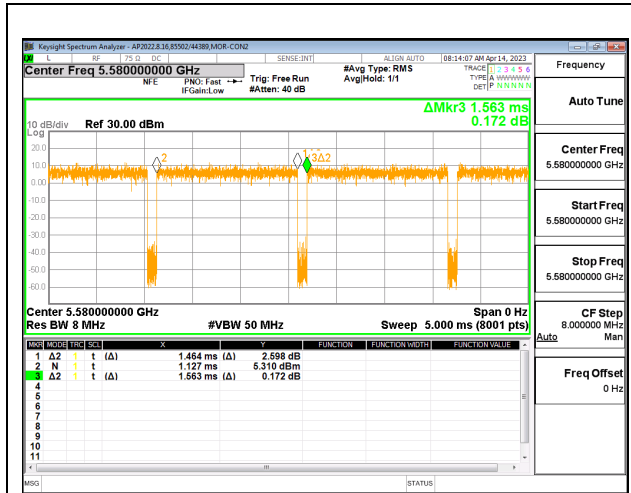
#### PROCEDURE

KDB 558074 D01 Zero-Span Spectrum Analyzer Method.

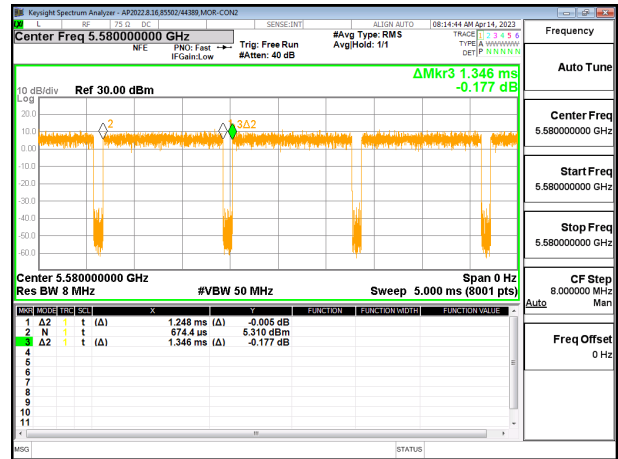
#### ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	DCCF For Voltage AV (dB)	DCCF For RMS AV (dB)
802.11a	1.464	1.563	0.937	93.67	0.57	0.28
802.11n HT20	1.248	1.346	0.927	92.72	0.66	0.33
802.11n HT40	0.619	0.717	0.864	86.37	1.27	0.64
802.11ac VHT80	3.620	3.716	0.974	97.42	0.23	0.11
802.11ac VHT160	3.624	3.720	0.974	97.42	0.23	0.11

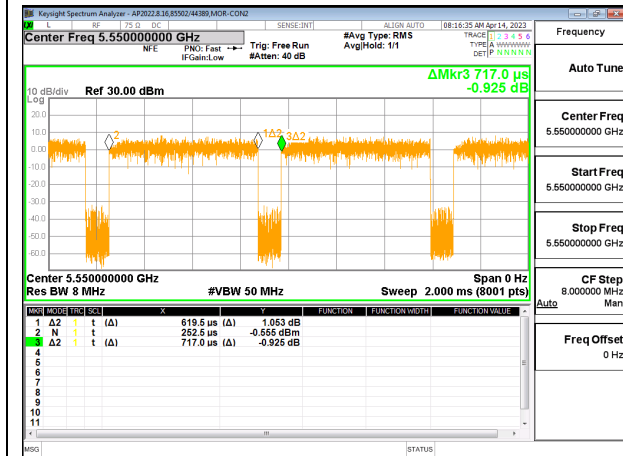
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	DCCF For Voltage AV (dB)	DCCF For RMS AV (dB)
802.11ax HE20 242T	2.388	2.404	0.993	99.33%	0.00	0.00
802.11ax HE20 106T	2.435	2.452	0.993	99.31%	0.00	0.00
802.11ax HE20 52T	2.590	2.608	0.993	99.31%	0.00	0.00
802.11ax HE20 26T	2.595	2.612	0.993	99.35%	0.00	0.00
802.11ax HE40 484T	2.383	2.400	0.993	99.29%	0.00	0.00
802.11ax HE80 996T	2.418	2.435	0.993	99.30%	0.00	0.00
802.11ax HE160 2x996T	5.444	5.459	0.997	99.73%	0.00	0.00



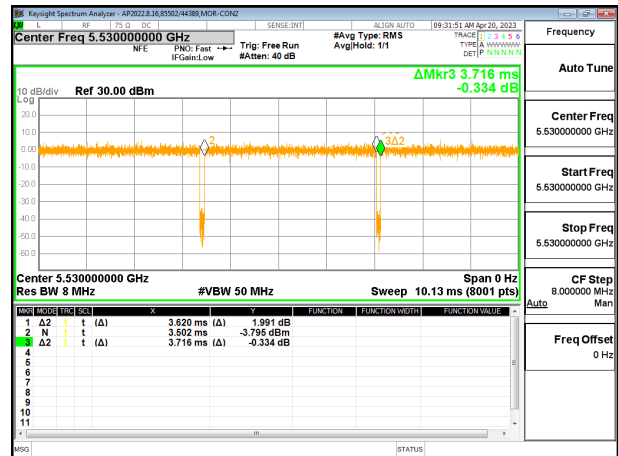
DUTY CYCLE 802.11a



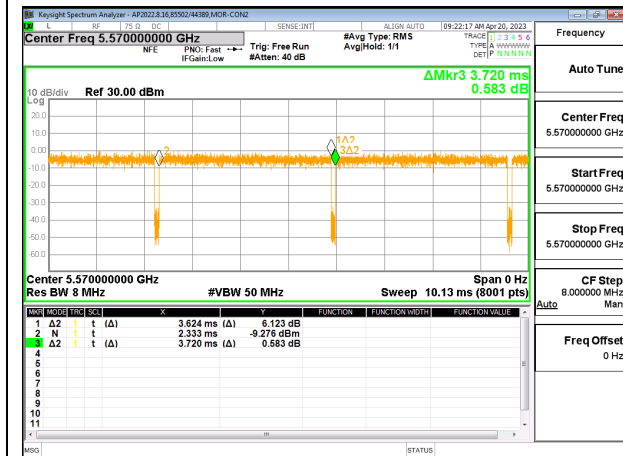
DUTY CYCLE 802.11n HT20



DUTY CYCLE 802.11n HT40



DUTY CYCLE 802.11ac HT80



DUTY CYCLE 802.11ac HT160

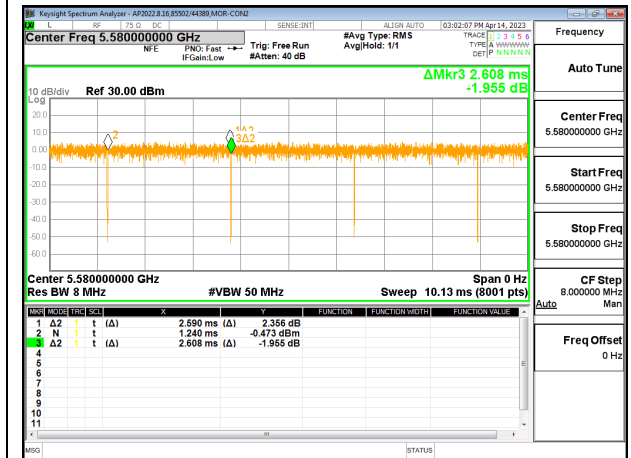
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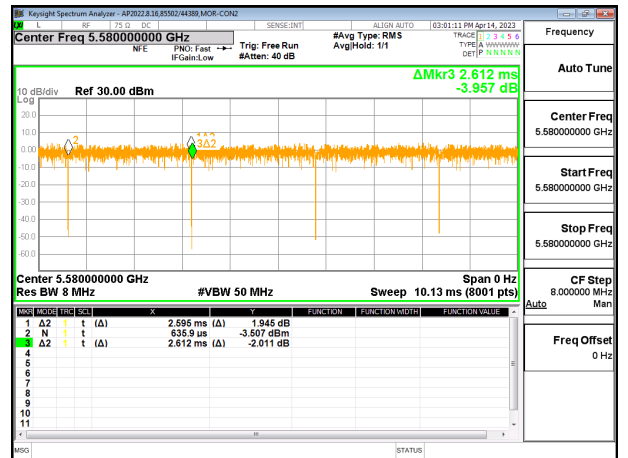
802.11ax HE20 242T



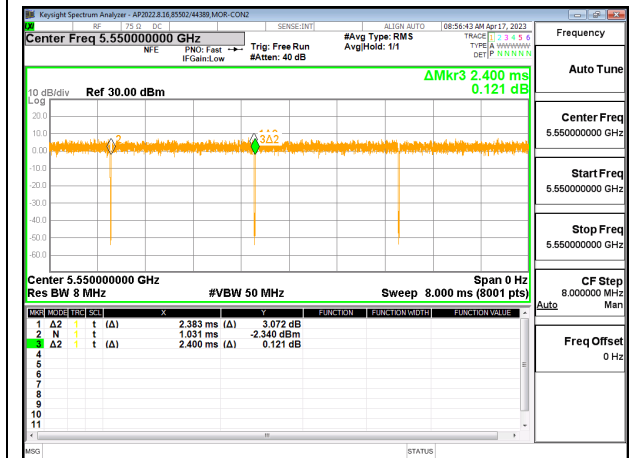
802.11ax HE20 106T



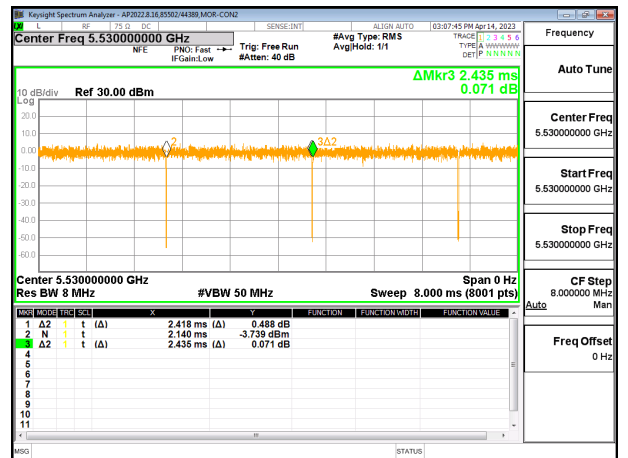
802.11ax HE20 52T



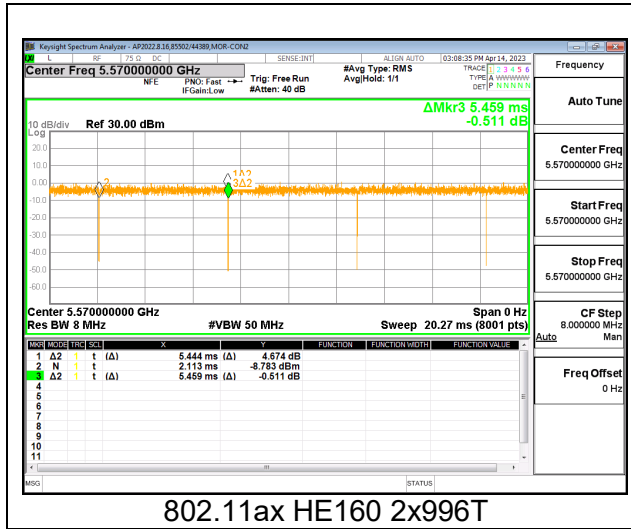
802.11ax HE20 26T



802.11ax HE40 484T



802.11ax HE80 996T



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## **9.2. 26 dB BANDWIDTH**

### **LIMITS**

None; for reporting purposes only.

### **RESULTS**

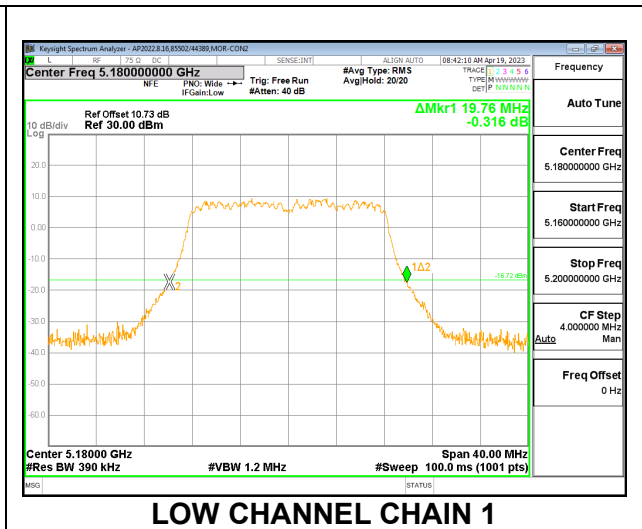
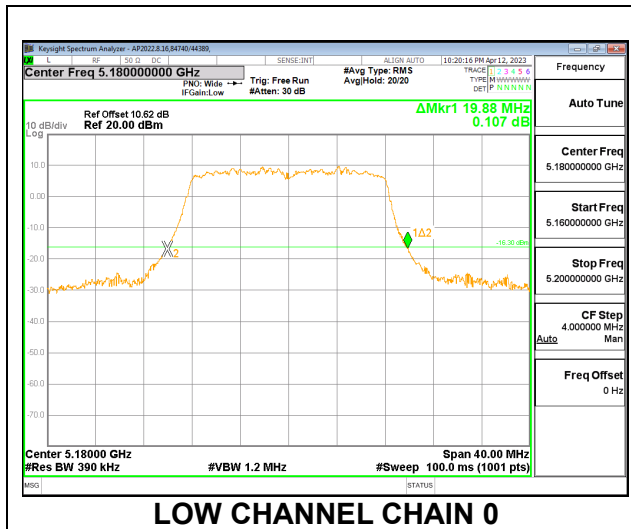


### 9.2.1. 802.11a MODE IN THE 5.2 GHz BAND

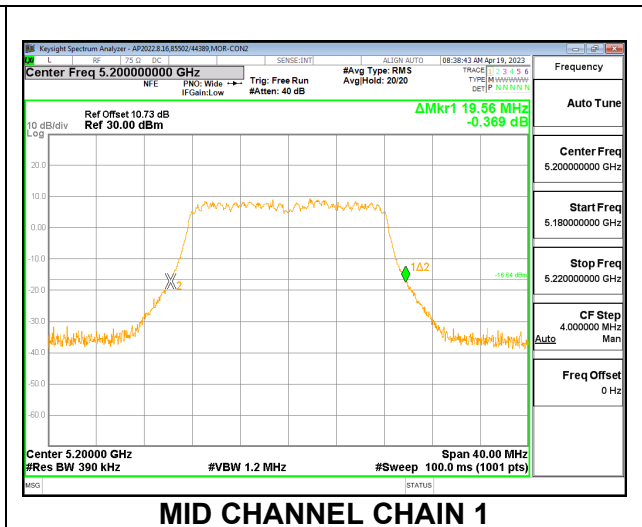
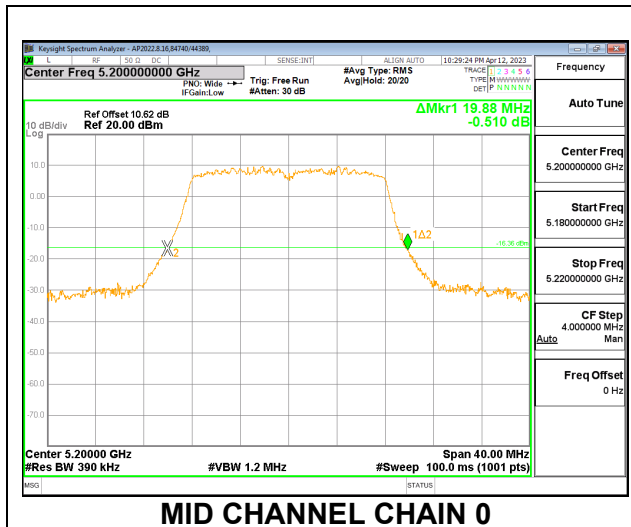
#### 2TX CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth	
		Chain 0 (MHz)	Chain 1 (MHz)
Low	5180	19.88	19.76
Mid	5200	19.88	19.56
High	5240	19.88	19.60

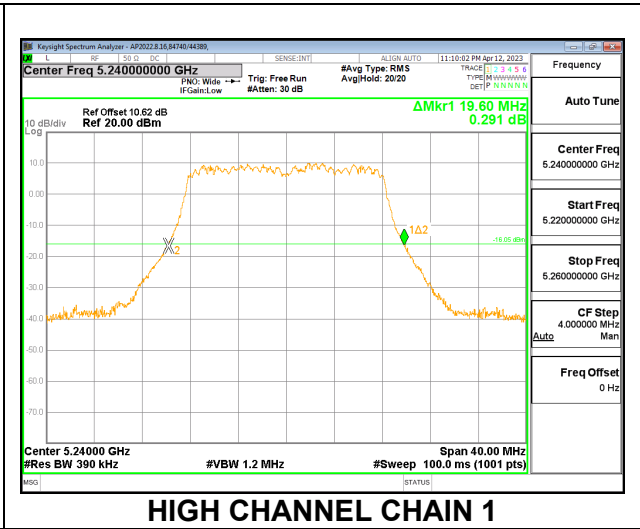
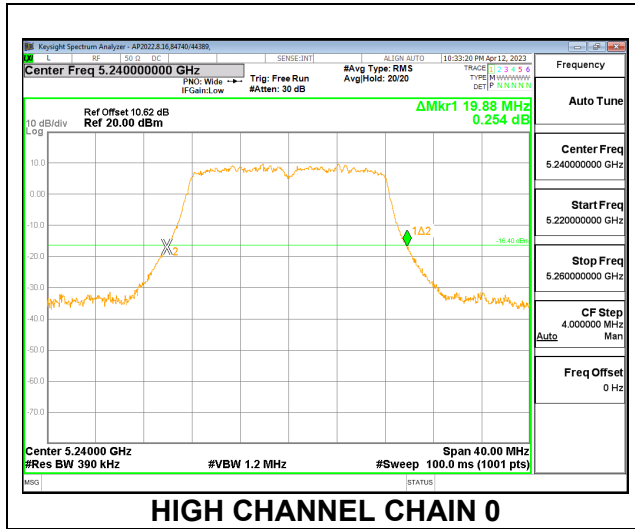
#### LOW CHANNEL



#### MID CHANNEL



**HIGH CHANNEL**

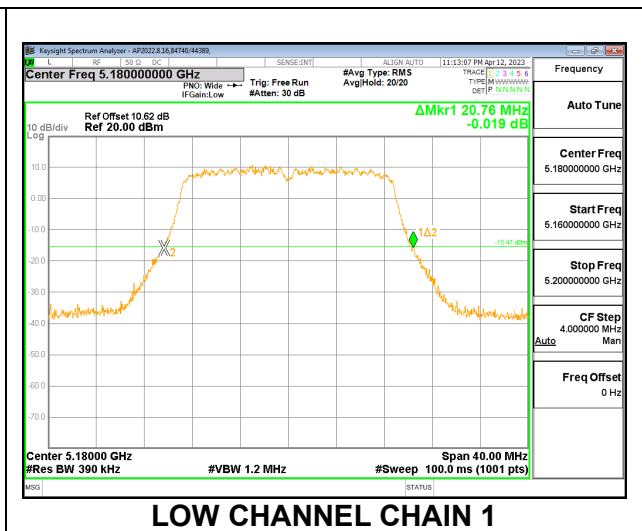
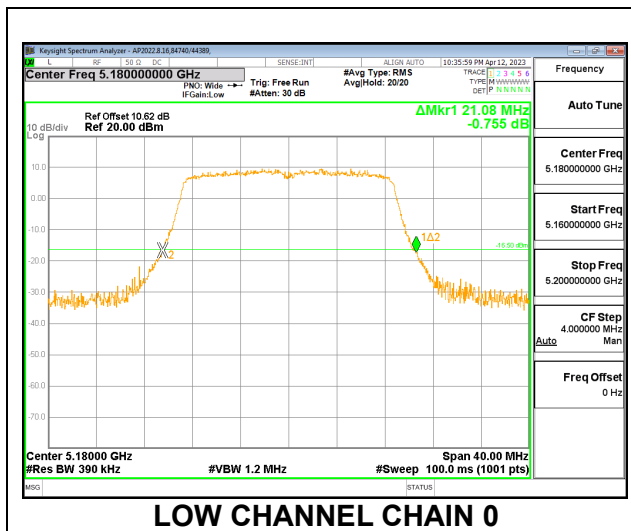


### 9.2.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

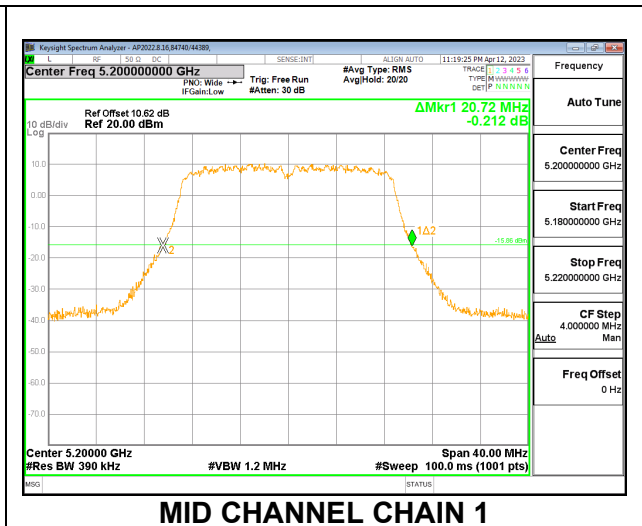
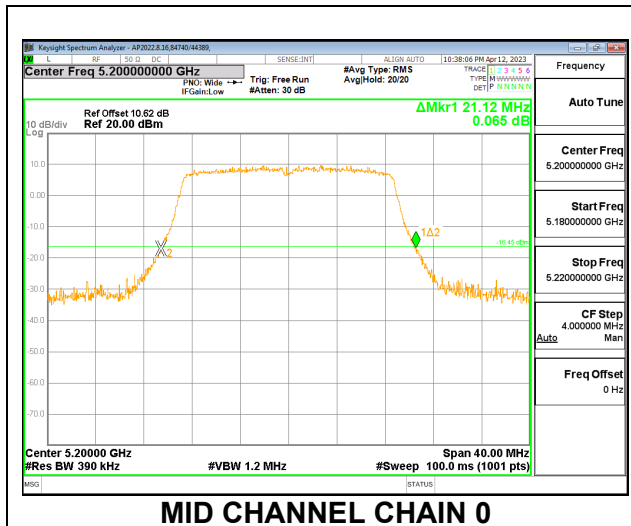
#### 2TX CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth	
		Chain 0 (MHz)	Chain 1 (MHz)
Low	5180	21.08	20.76
Mid	5200	21.12	20.72
High	5240	21.00	20.92

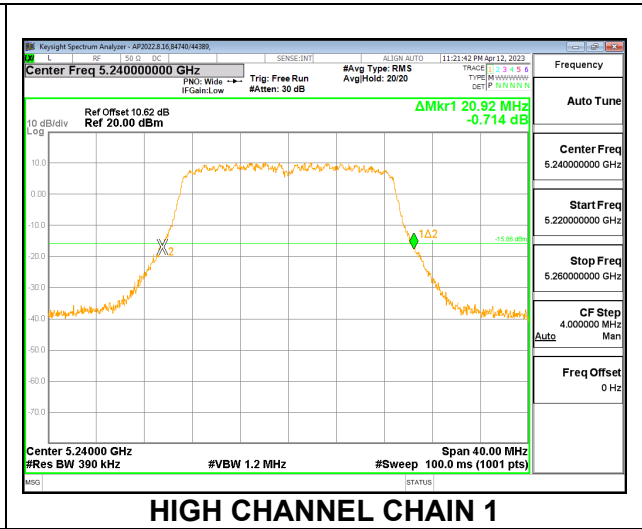
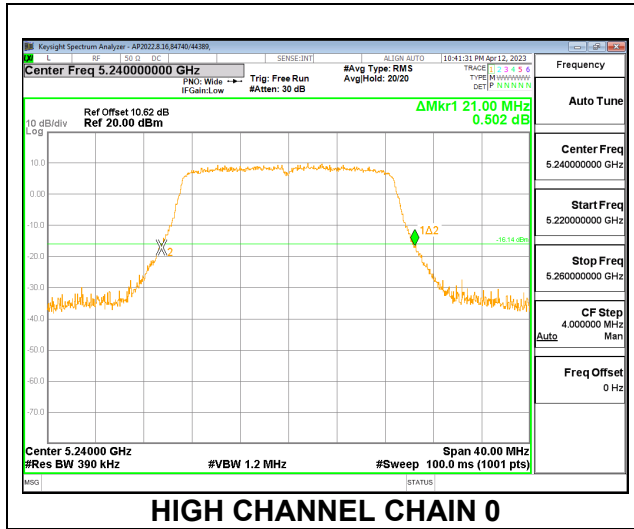
#### LOW CHANNEL



#### MID CHANNEL



**HIGH CHANNEL**

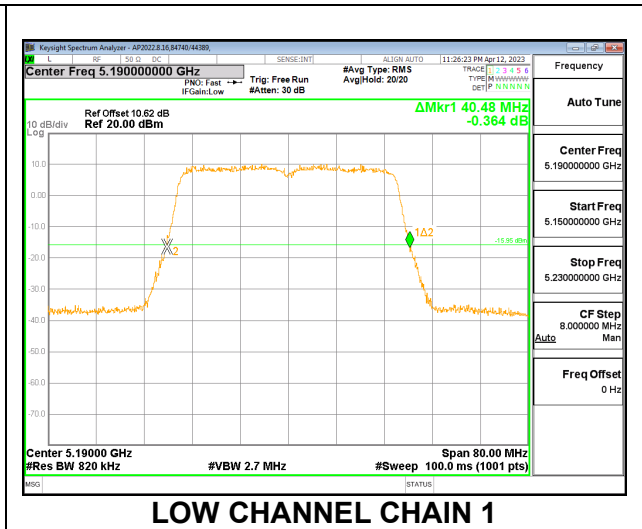
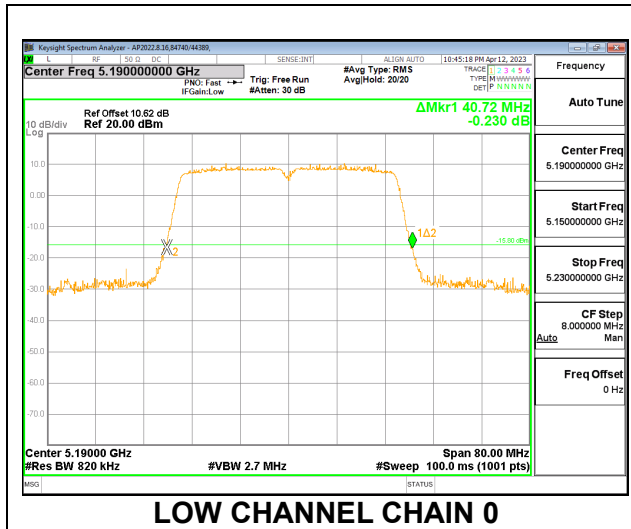


### 9.2.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

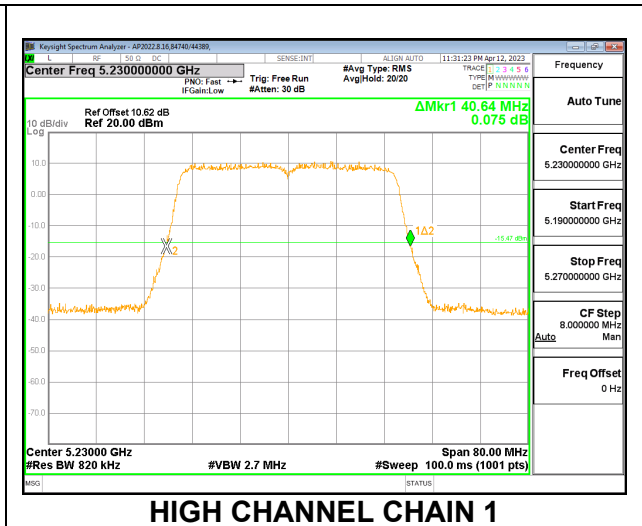
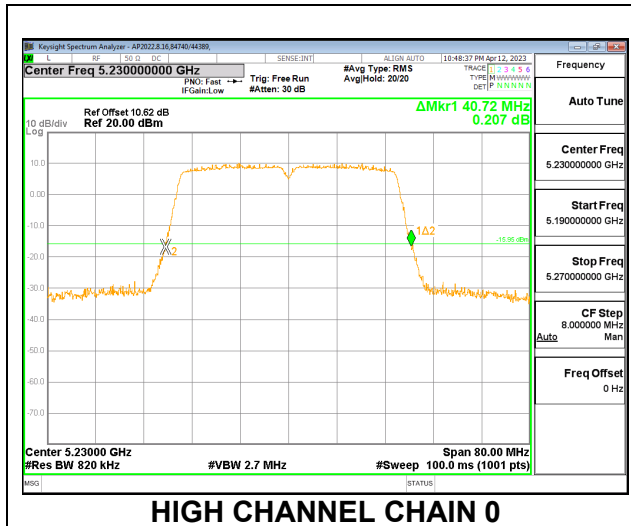
#### 2TX CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth	
		Chain 0 (MHz)	Chain 1 (MHz)
Low	5190	40.72	40.48
High	5230	40.72	40.64

#### LOW CHANNEL



#### HIGH CHANNEL

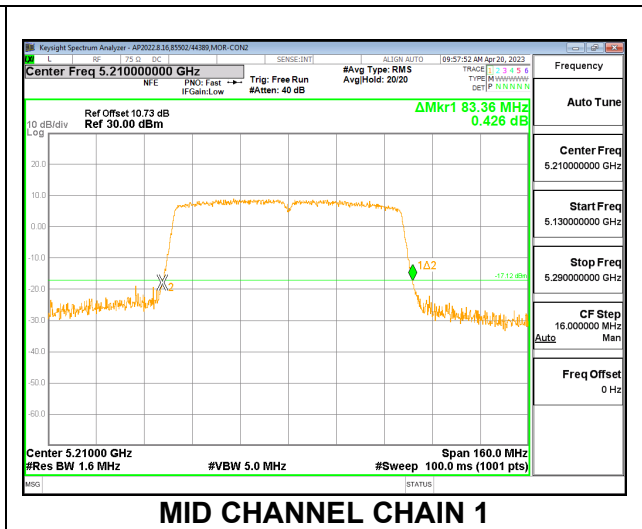
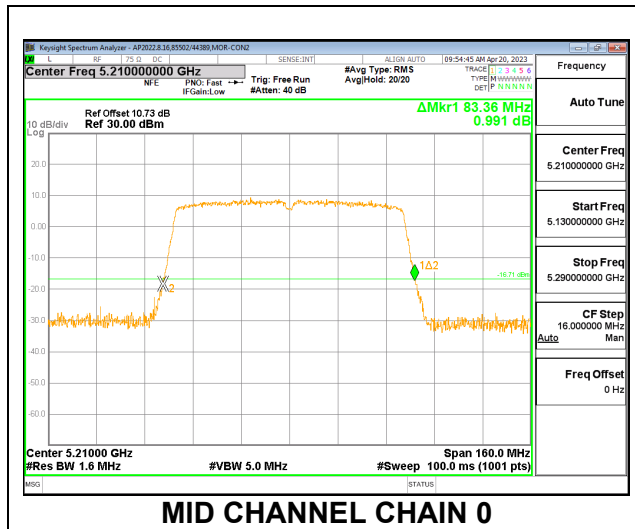


### 9.2.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

#### 2TX CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 1 (MHz)	26 dB Bandwidth Antenna 2 (MHz)
Mid	5210	83.36	83.36

#### MID CHANNEL

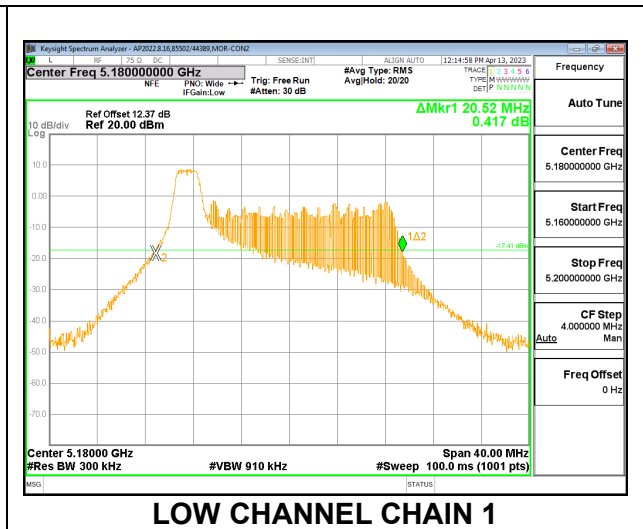
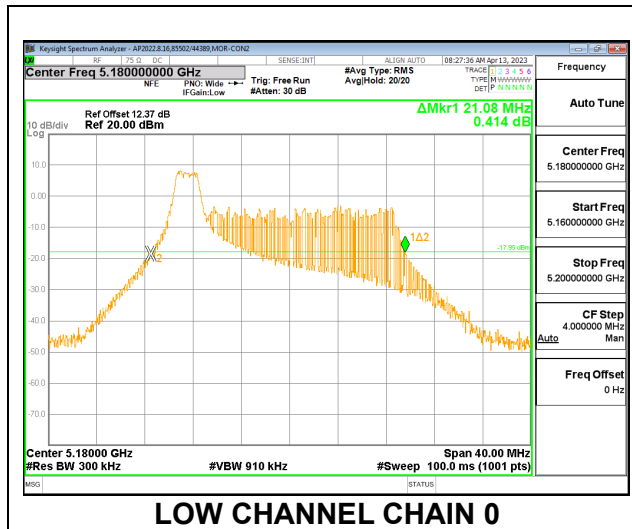


### 9.2.5. 802.11ax HE20 MODE IN THE 5.2 GHz BAND

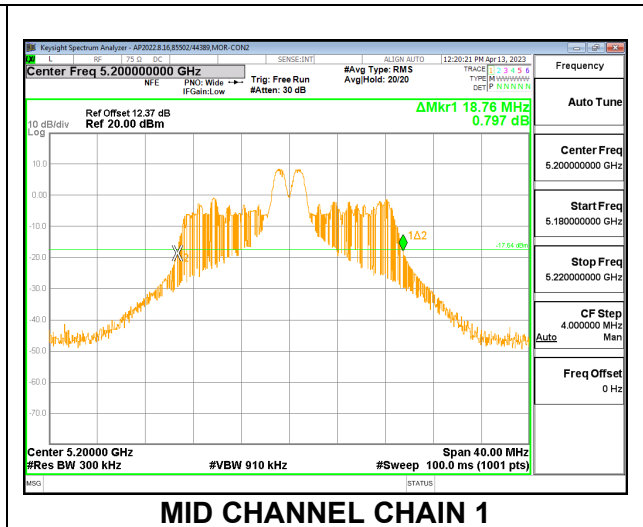
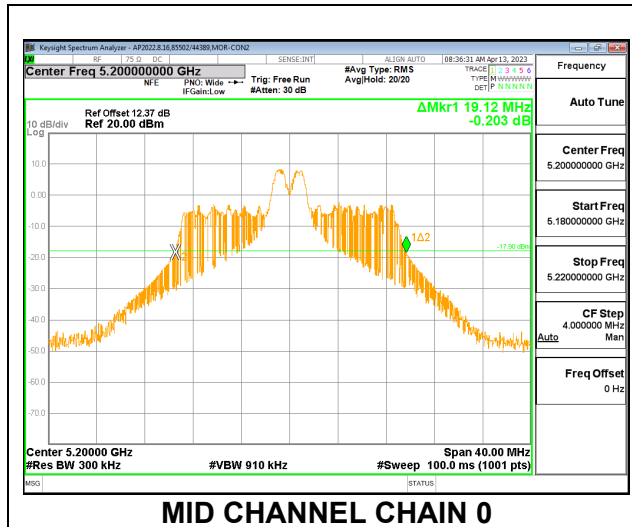
#### 2TX CDD MODE – 26T

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5180	21.08	20.52
Mid	5200	19.12	18.76
High	5240	20.72	20.40

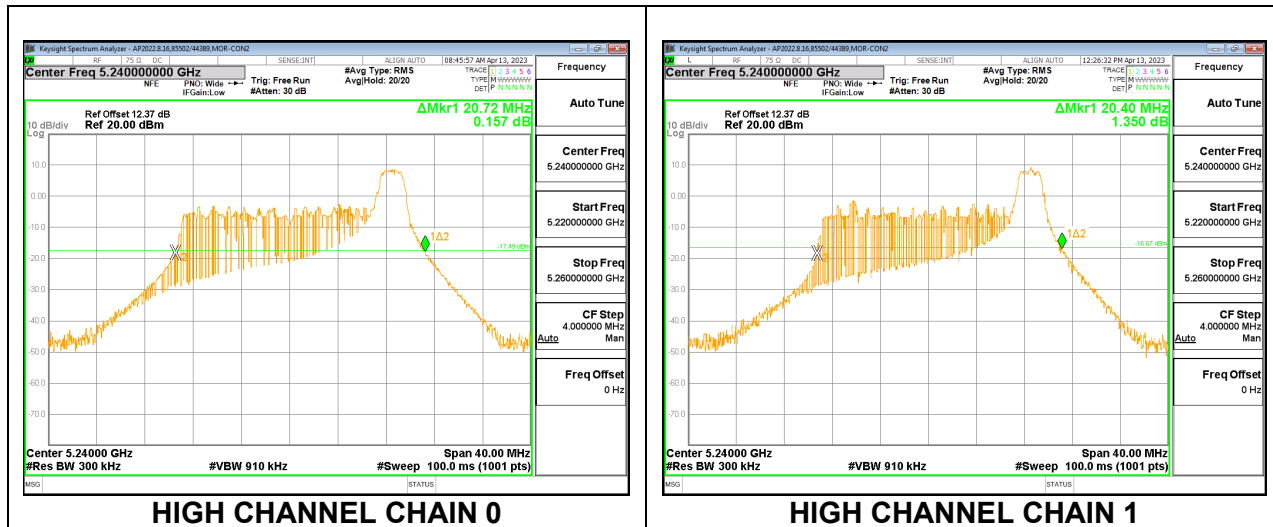
#### LOW CHANNEL



#### MID CHANNEL



### HIGH CHANNEL

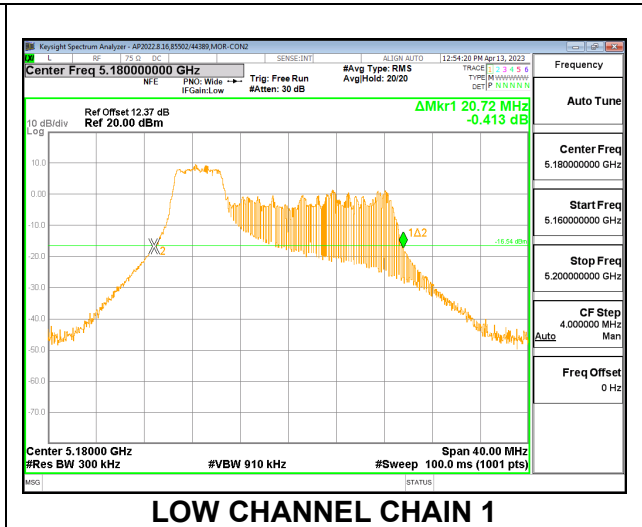
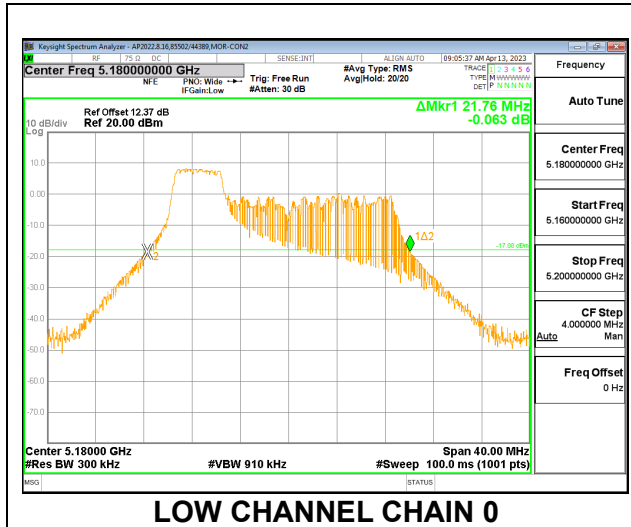




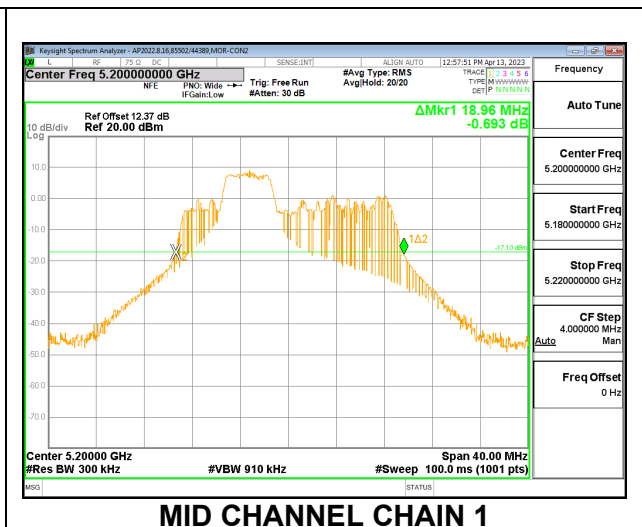
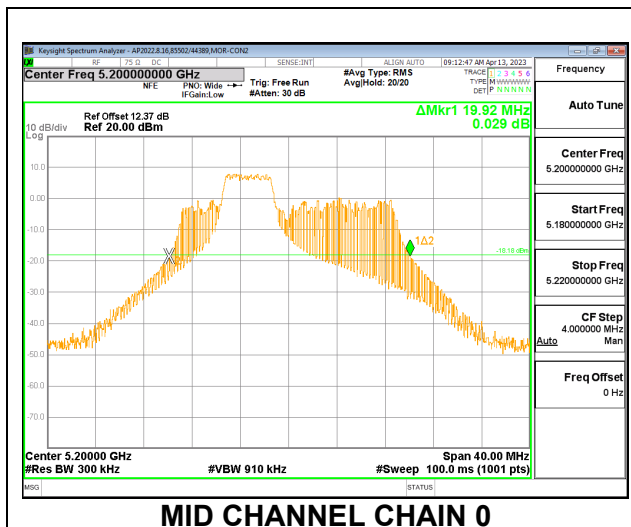
**2TX CDD MODE – 52T**

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5180	21.76	20.72
Mid	5200	19.92	18.96
High	5240	21.16	20.36

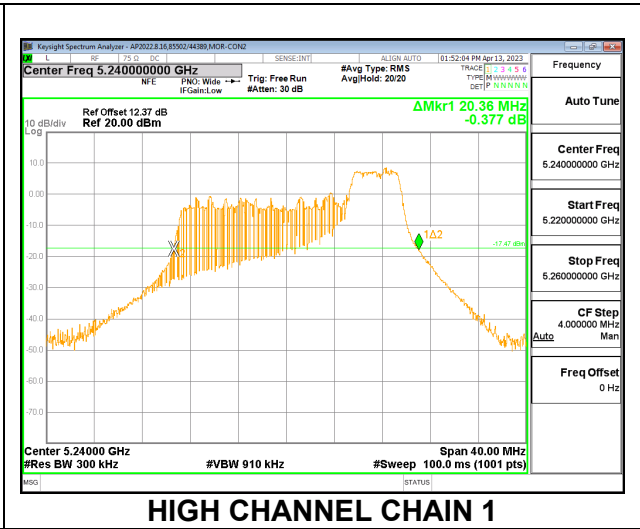
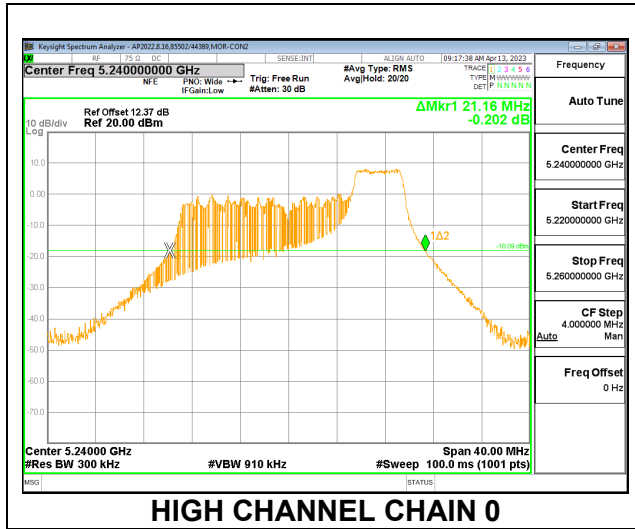
**LOW CHANNEL**



**MID CHANNEL**



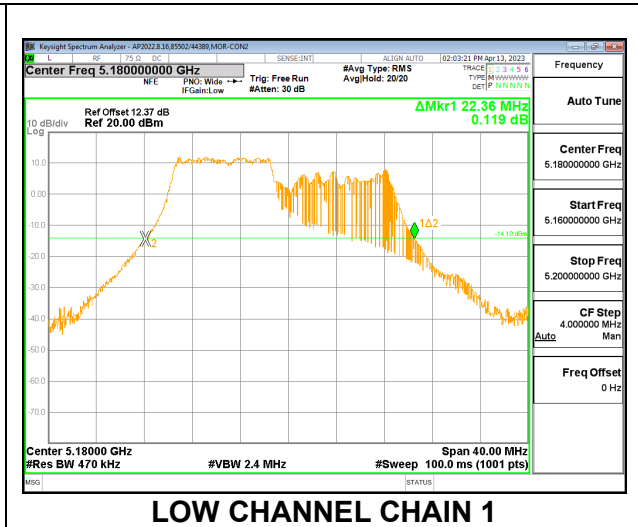
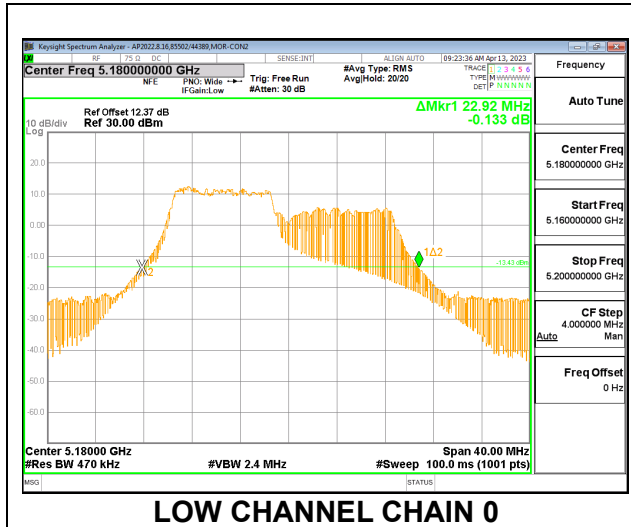
**HIGH CHANNEL**



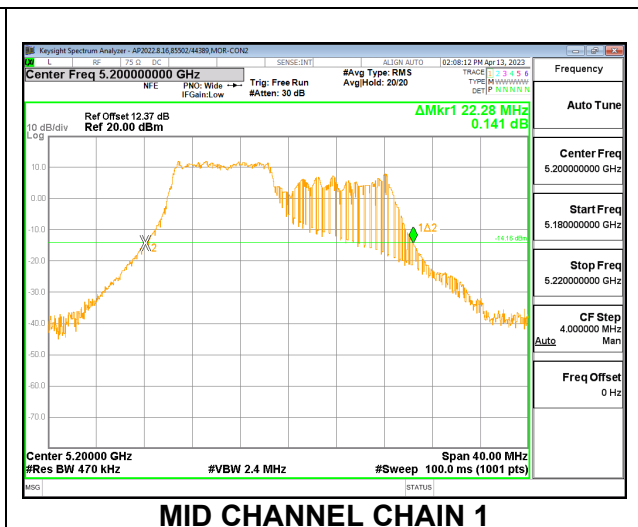
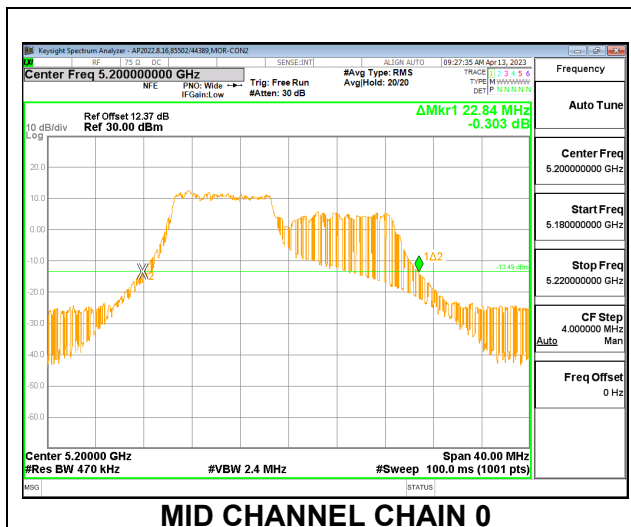
**2TX CDD MODE – 106T**

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5180	22.92	22.36
Mid	5200	22.84	22.28
High	5240	22.08	21.60

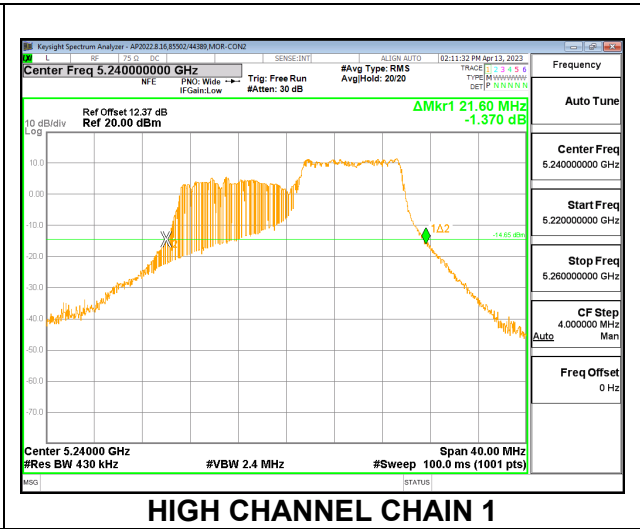
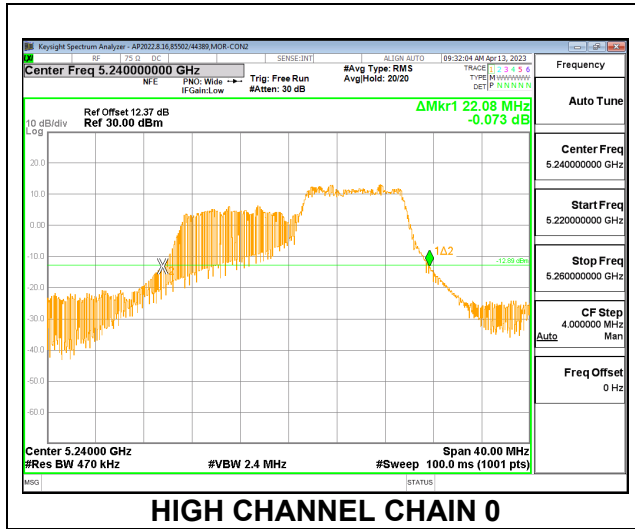
**LOW CHANNEL**



**MID CHANNEL**



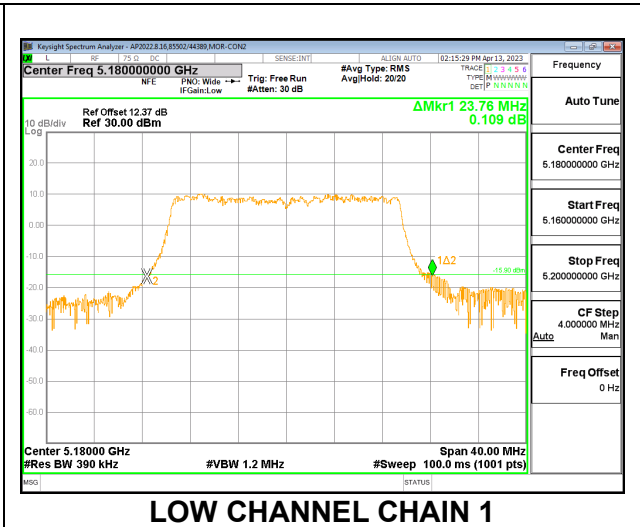
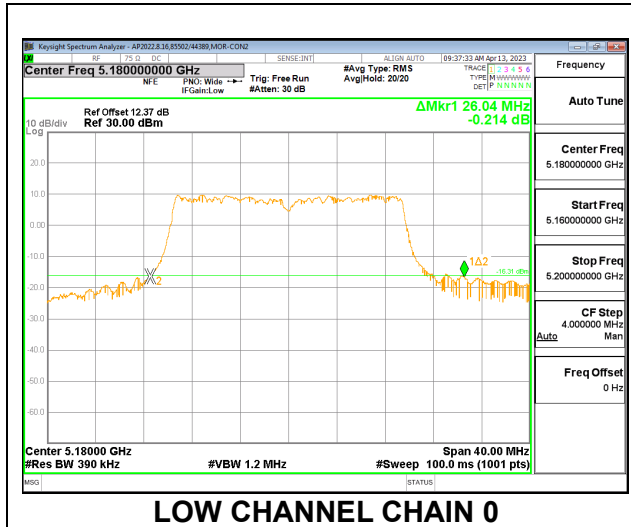
**HIGH CHANNEL**



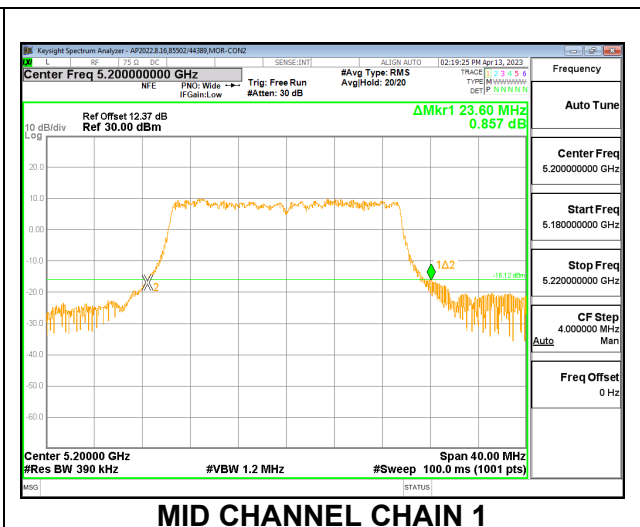
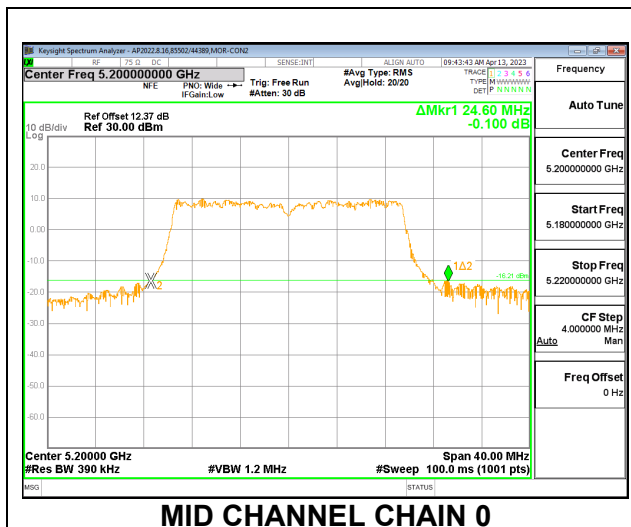
**2TX CDD MODE – 242T**

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5180	26.04	23.76
Mid	5200	24.60	23.60
High	5240	24.84	24.36

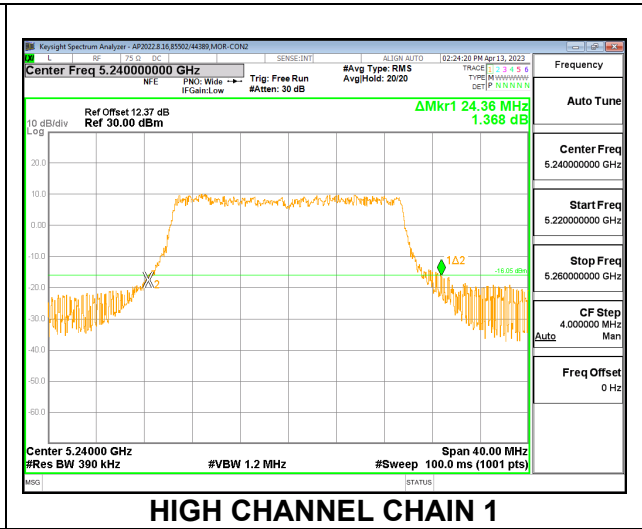
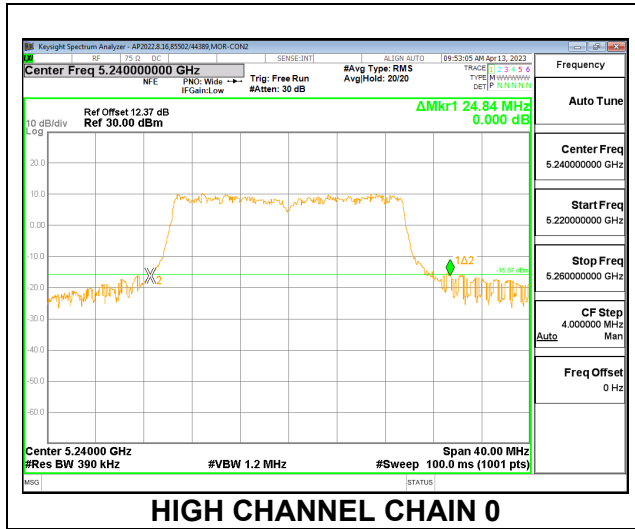
**LOW CHANNEL**



**MID CHANNEL**



**HIGH CHANNEL**

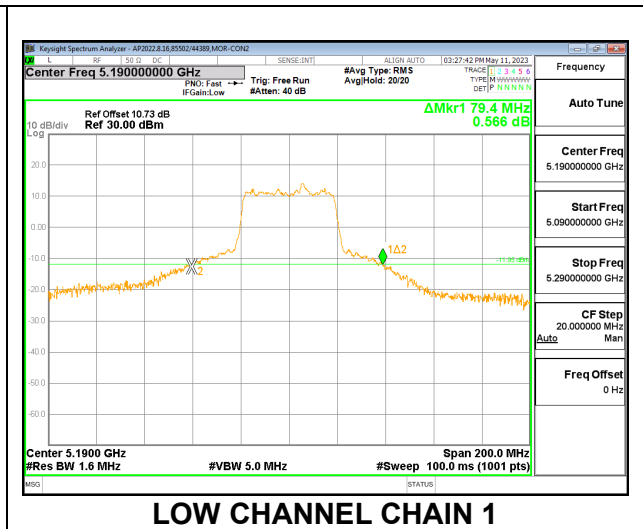
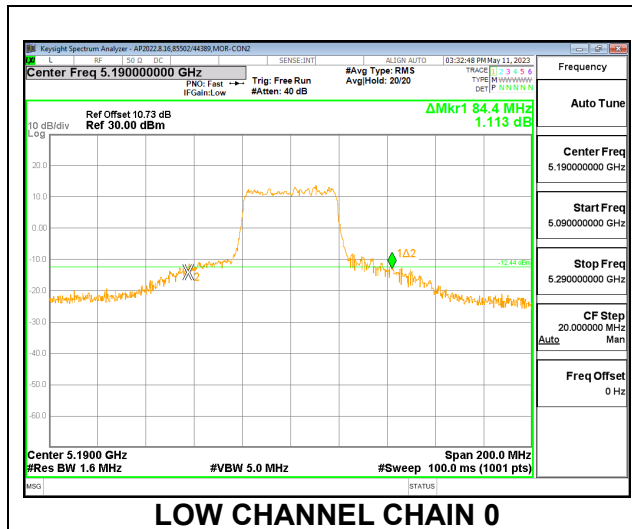


### 9.2.6. 802.11ax HE40 MODE IN THE 5.2 GHz BAND

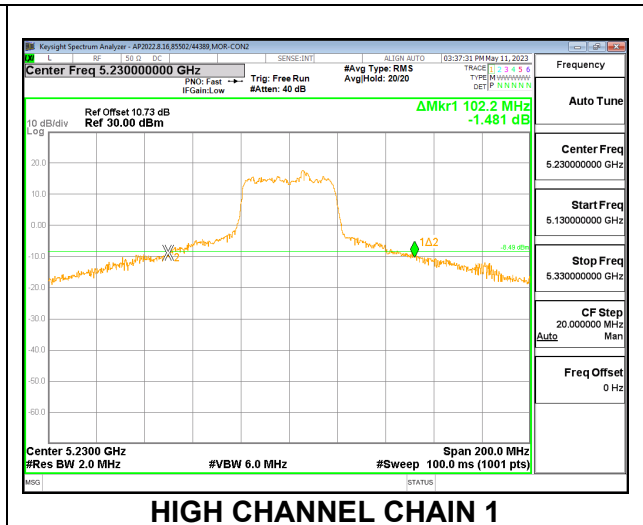
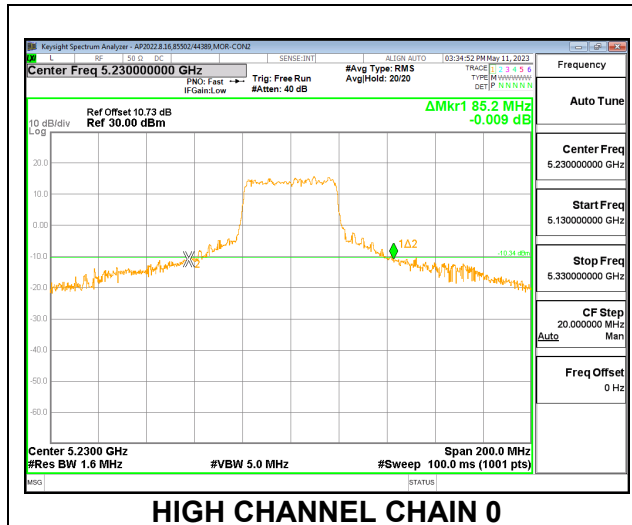
#### 2TX CDD MODE – 484T

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5190	84.40	79.40
High	5230	85.20	102.20

#### LOW CHANNEL



#### HIGH CHANNEL

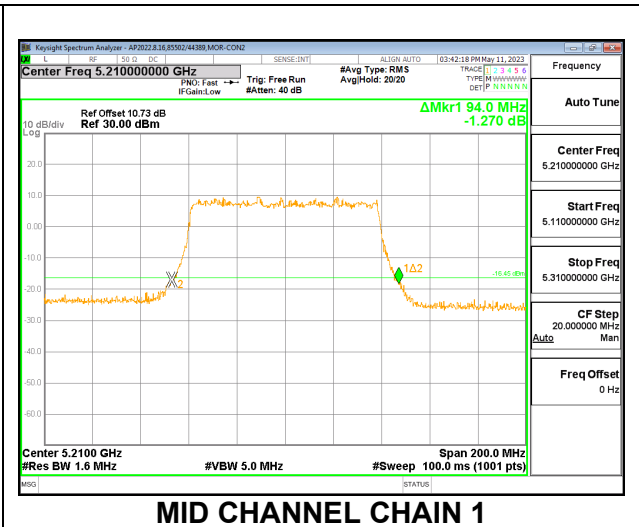
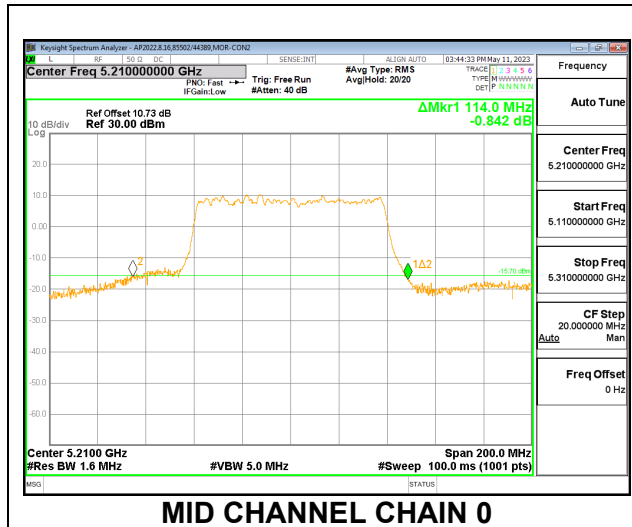


**9.2.7. 802.11ax HE80 MODE IN THE 5.2 GHz BAND**

**2TX CDD MODE – 996T**

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Mid	5210	114.00	94.00

**MID CHANNEL**



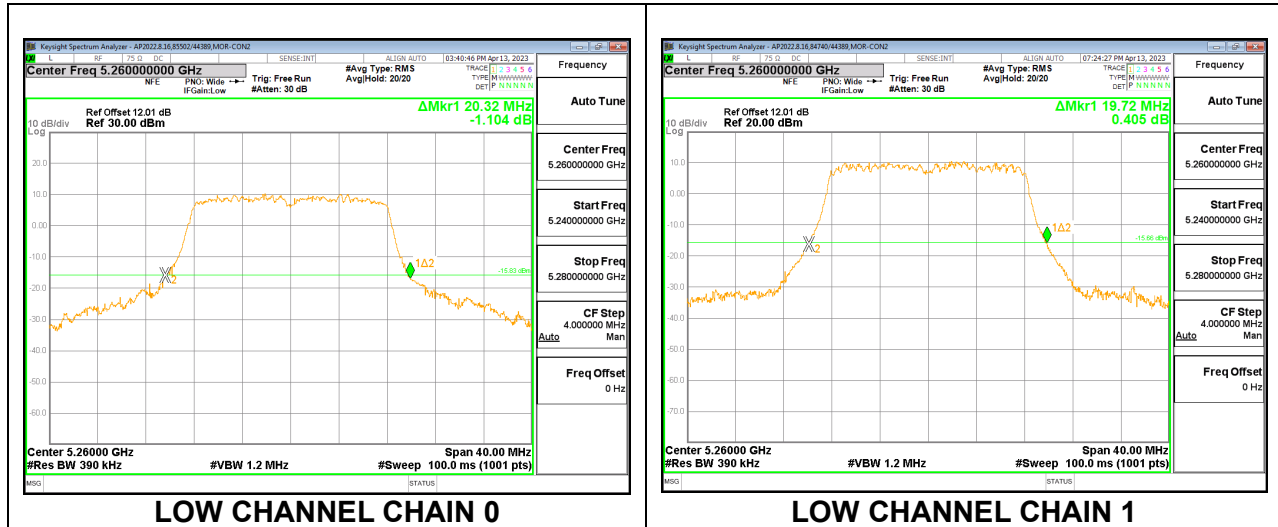


### 9.2.8. 802.11a MODE IN THE 5.3 GHz BAND

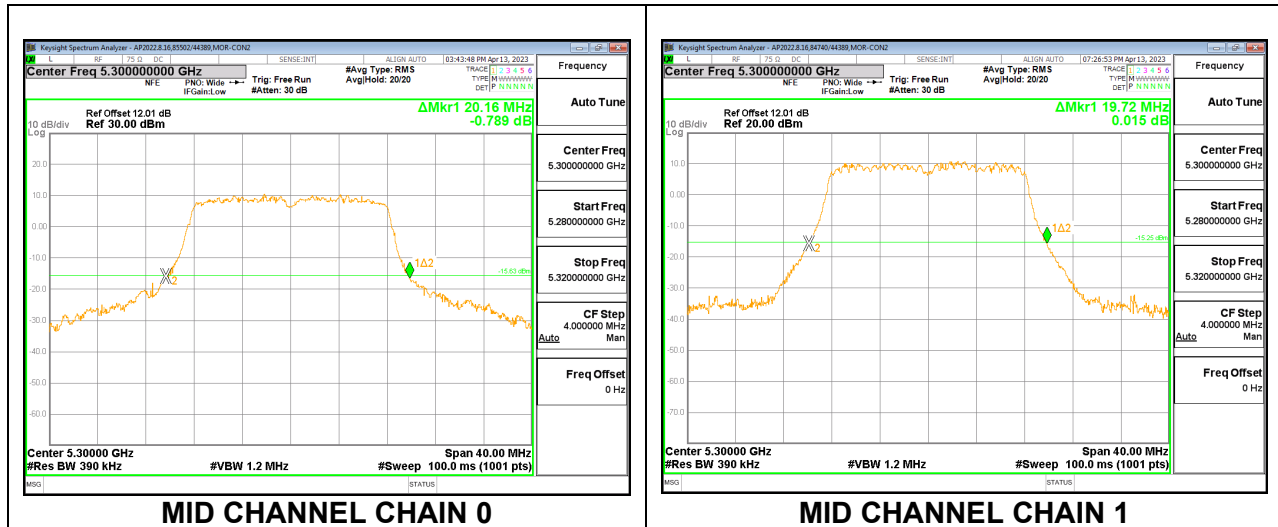
#### 2TX CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5260	20.32	19.72
Mid	5300	20.16	19.72
High	5320	20.44	19.68

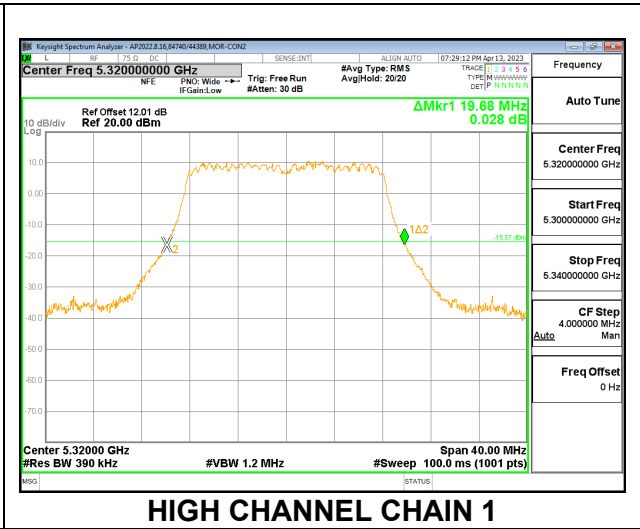
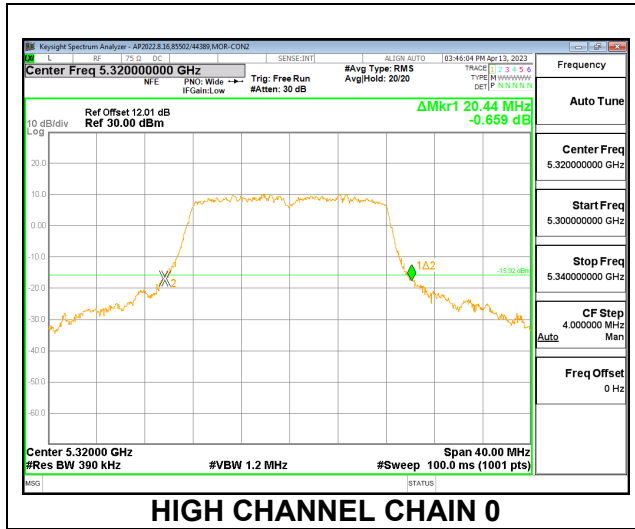
#### LOW CHANNEL



#### MID CHANNEL



**HIGH CHANNEL**

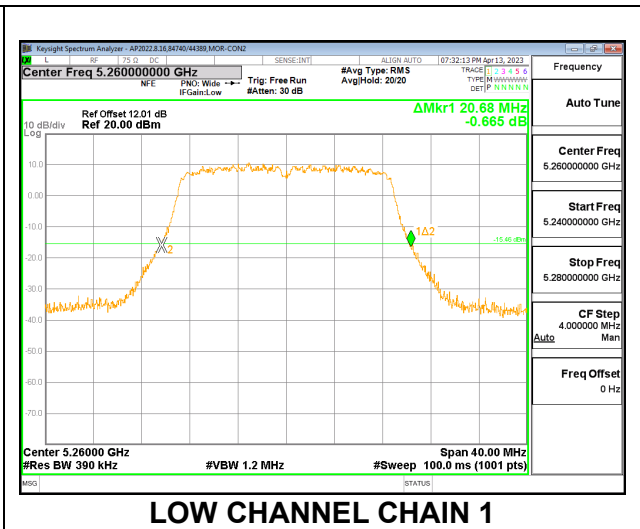
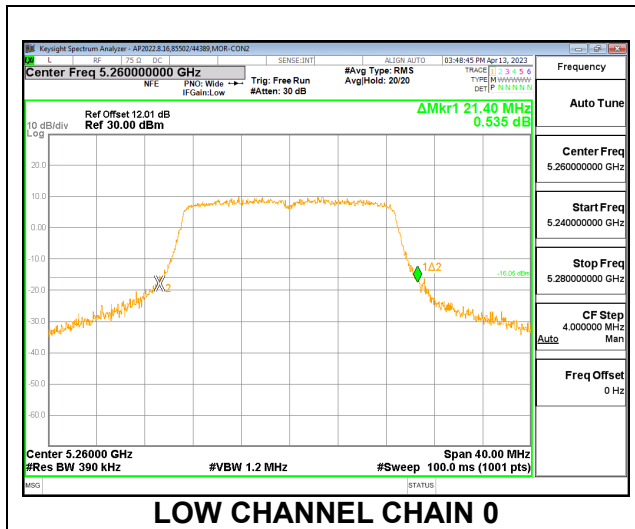


### 9.2.9. 802.11n HT20 MODE IN THE 5.3 GHz BAND

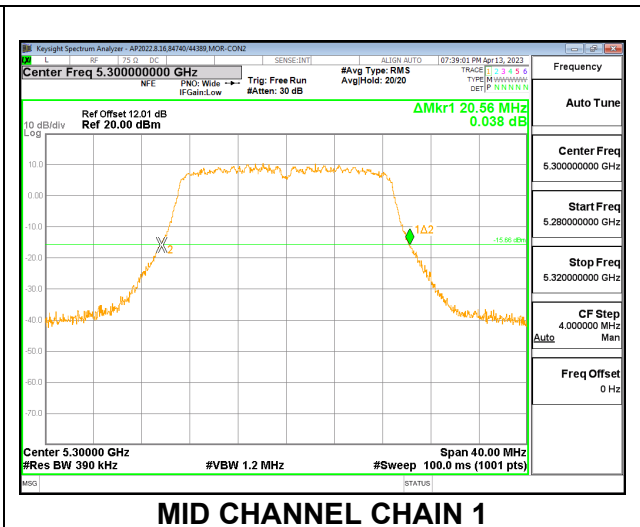
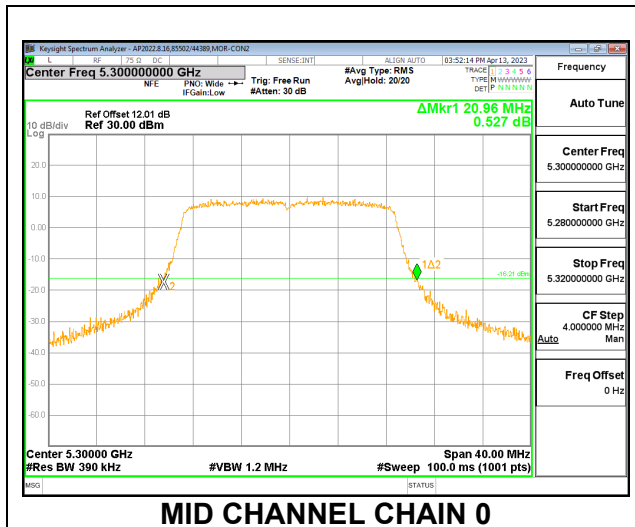
#### 2TX CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5260	21.40	20.68
Mid	5300	20.96	20.56
High	5320	20.92	20.92

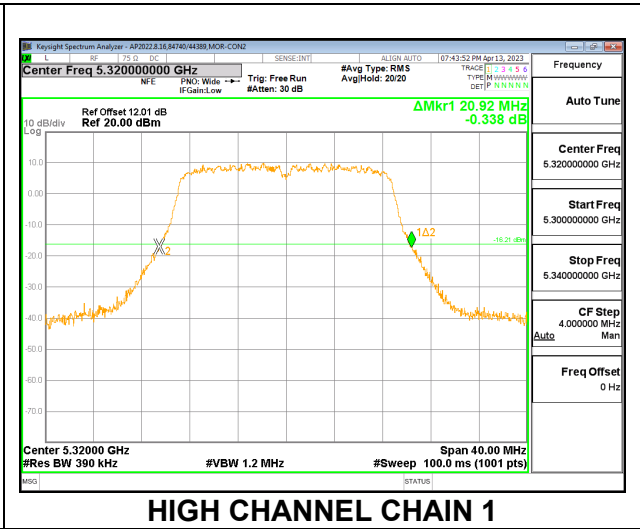
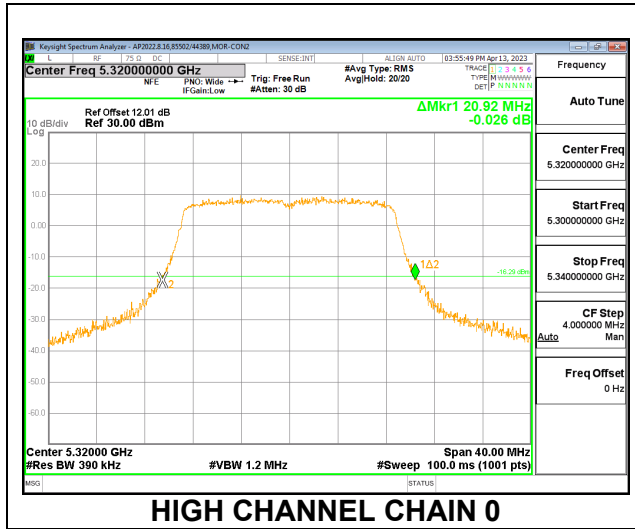
#### LOW CHANNEL



#### MID CHANNEL



**HIGH CHANNEL**

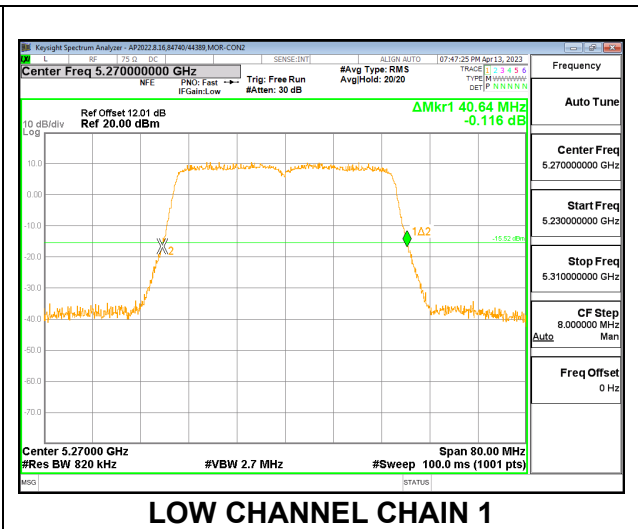
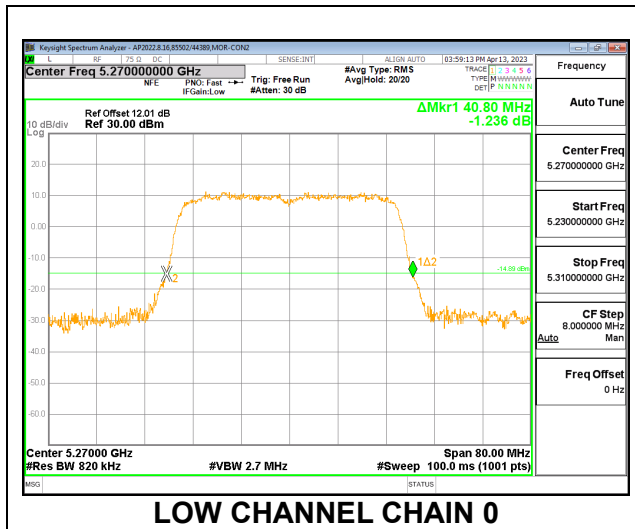


**9.2.10. 802.11n HT40 MODE IN THE 5.3 GHz BAND**

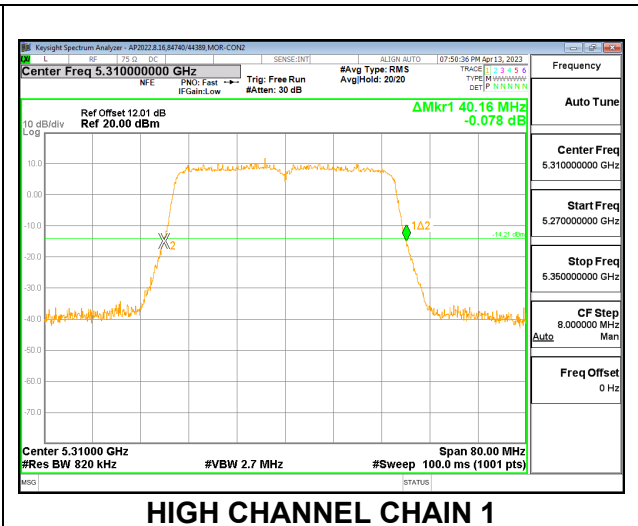
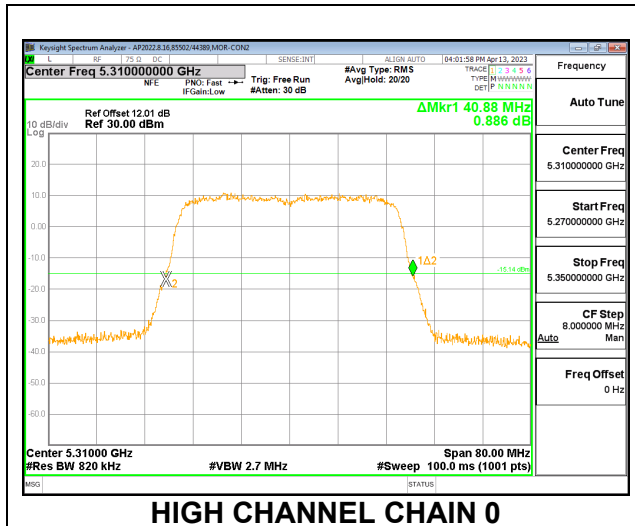
**2TX CDD MODE**

Channel	Frequency (MHz)	26 dB Bandwidth Antenna 1 (MHz)	26 dB Bandwidth Antenna 2 (MHz)
Low	5270	40.80	40.64
High	5310	40.88	40.16

**LOW CHANNEL**



**HIGH CHANNEL**

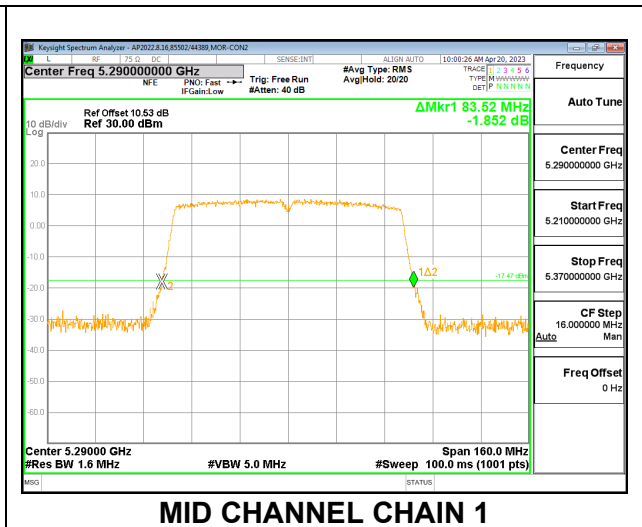
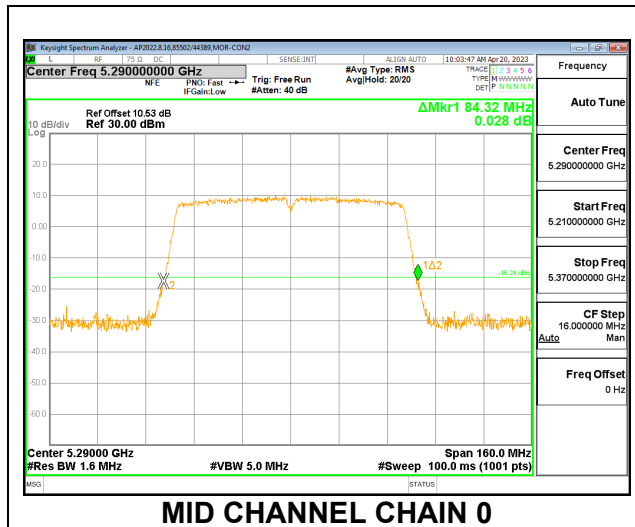


### 9.2.11. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

#### 2TX CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth	26 dB Bandwidth
		Chain 0 (MHz)	Chain 1 (MHz)
Mid	5290	84.32	83.52

#### MID CHANNEL

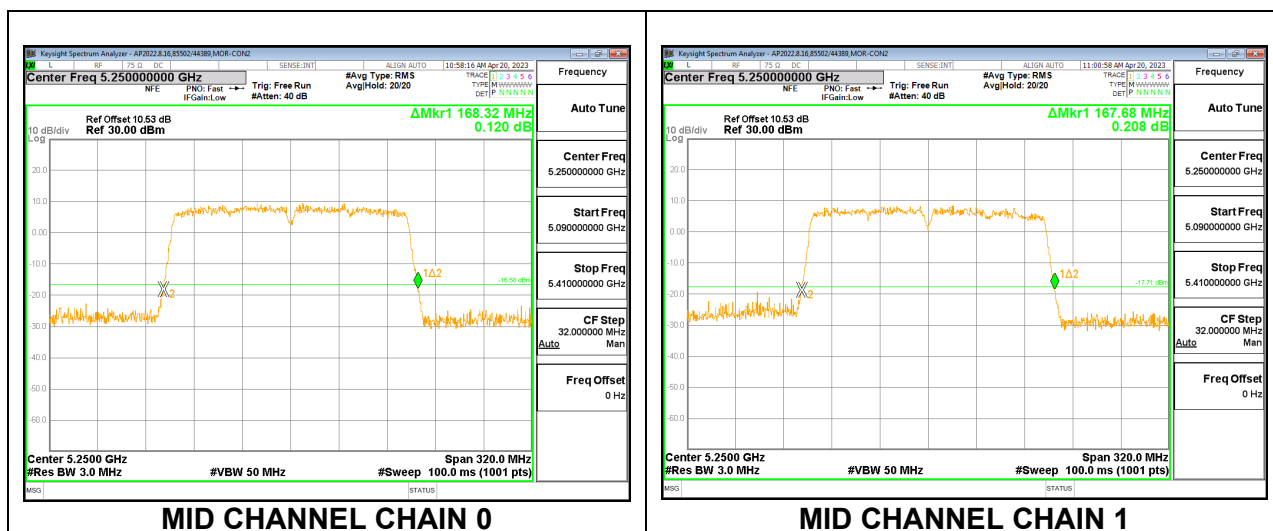


### 9.2.12. 802.11ac VHT160 MODE IN THE 5.2 AND 5.3 GHz BAND

#### 2TX CDD MODE

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Mid	5250	168.32	167.68

#### MID CHANNEL

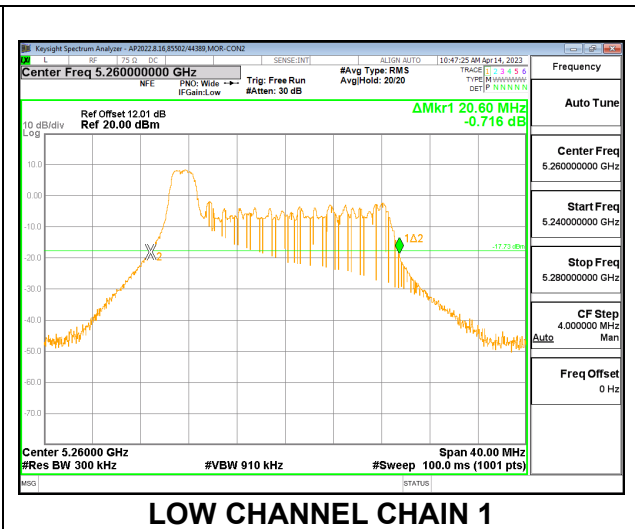
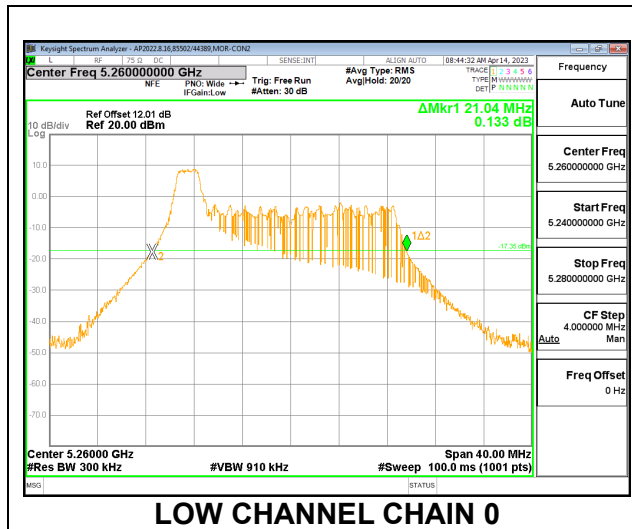


### 9.2.13. 802.11ax HE20 MODE IN THE 5.3 GHz BAND

#### 2TX CDD MODE – 26T

Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5260	21.04	20.60
Mid	5300	19.28	18.80
High	5320	20.76	20.36

#### LOW CHANNEL



#### MID CHANNEL

