

# TEST REPORT

**Report Number:** R14634918-E6b

**Applicant :** Sony Corporation  
1-7-1 Konan Minato-ku  
Tokyo, 108-0075, Japan

**FCC ID :** PY7-12907W

**EUT Description :** GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS,  
WPT & NFC

**Test Standard(s) :** FCC 47 CFR PART 15 SUBPART E

**Date Of Issue:**  
2023-03-16

**Prepared by:**  
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## REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2023-02-24	Initial Issue	Brian Kiewra
V2	2023-03-08	Corrected typos throughout report.	Brian Kiewra
V3	2023-03-16	Added clarification to the 2Tx covering 1Tx note in section 6.5	Brian Kiewra

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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** Sony Corporation  
1-7-1 Konan Minato-ku  
Tokyo, 108-0075, Japan

**EUT DESCRIPTION:** GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax,  
GPS, WPT & NFC

**SERIAL NUMBERS:** QV7700E1FN, QV7700FRFN, QV70015FA

**SAMPLE RECEIPT DATE:** 2022-12-12

**DATE TESTED:** 2023-02-02 to 2023-02-22

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart E	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. This report must not be used by the client to claim product certification, approval, or endorsement by a2La, NIST, or any agency of the U.S. government.

Approved & Released  
For UL LLC By:

Prepared By:



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Consumer, Medical and IT Segment  
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Project Engineer  
Consumer, Medical and IT Segment  
UL LLC

## 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)

Note - This report covers the 802.11ax mode in the 5.6GHz band testing requirements of the EUT.

FCC Clause	Requirement	Result	Comment
See Comment	Duty Cycle	Reporting purposes only	Per ANSI C63.10, Section 12.2.
See Comment	26 dB BW	Reporting purposes only	Per ANSI C63.10, Section 12.4.1
15.407 (a) (2)	Output Power	Compliant	None
15.407 (a) (2)	PSD		
15.209, 15.205, 15.407 (b)	Radiated Emissions		
15.207	AC Mains Conducted Emissions	See Comment	Refer to test report R14634918-E5b

## 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

## 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	$U_{Lab}$
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

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

#### **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 GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPT & NFC. This test report covers 5.6 UNII Band 802.11ax mode testing

### 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)
<b>5.6 GHz band, 2TX CDD</b>			
5500-5720	802.11ax HE20 OFDMA, 242-Tones	13.84	24.21
	802.11ax HE20 OFDMA, 106-Tones	13.90	24.55
	802.11ax HE20 OFDMA, 52-Tones	14.01	25.18
	802.11ax HE20 OFDMA, 26-Tones	11.56	14.32
5510-5710	802.11ax HE40 OFDMA, 484-Tones	13.63	23.07
5530-5690	802.11ax HE80 OFDMA, 996-Tones	13.73	23.60
5570	802.11ax HE160 OFDMA, 2x996-Tones	10.92	12.36

### 6.3. DESCRIPTION OF AVAILABLE ANTENNAS

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

Chain	Designation in Documentation	Type	Frequency Range (MHz)	Maximum Gain (dBi)
0	WiFi Main	Loop	5500-5700	0.53
1	WiFi Sub	Monopole	5500-5700	-0.43

### 6.4. SOFTWARE AND FIRMWARE

The firmware version installed during testing was 0.81.



## 6.5. WORST-CASE CONFIGURATION AND MODE

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

Band edge was performed with the EUT set to transmit on low and high channels. Radiated spurious and harmonic emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the worst-case mode/channel based on power and PSD.

For this report, the worst-case Radiated Emissions from 1-18 GHz was found to be HE20 26T and 52T.

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel/mode with highest output power/PSD as worst-case scenario and can be found in report R14634918-E5b.

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

802.11ax HE20mode: MCS0 (Nss = 1)  
802.11ax HE40mode: MCS0 (Nss = 1)  
802.11ax HE80mode: MCS0 (Nss = 1)  
802.11ax HE160mode: MCS0 (Nss = 1)

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.

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 and 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.

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.

## 6.6. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Dell	Inspiron 15 3000	5KPQJP3	NA
AC Adaptor	Sony	XQZ-UC1	1821W34209742	NA
Headphones	Sony	MDR-EX15AP	NA	NA

### I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB-C	1	USB-C	Shielded	<3m	XQZ-UB1
2	Aux	1	AUX	Shielded	<3m	Headphones

### TEST SETUP

The EUT is connected to a host laptop computer and configured via test software before the tests. Test software exercised the radio card.

### SETUP DIAGRAM

Please refer to R14634918-EP5 for setup diagrams

## 7. MEASUREMENT METHOD

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

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

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

Power Spectral Density: KDB 789033 D02 v02r01, Section F

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

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

## 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	2023-05-02
PWM005	RF Power Meter	Keysight Technologies	N1912A	2022-09-02	2024-09-02
PWM001 (PRE0136343)	RF Power Meter	Keysight Technologies	N1912A	2022-08-30	2023-08-30
PWS001 (PRE0137347)	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2022-07-07	2023-07-07
PWS002	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2022-09-27	2023-09-27
PWS005	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2022-06-15	2023-06-15
HI0090	Environmental Meter	Fisher Scientific	15-077-963	2022-07-20	2023-07-20
76021	DC Regulated Power Supply	CircuitSpecialists.Com	CSI3005X5	NA	NA
SOFTEMI	Antenna Port Software	UL	Version 2022.8.16	NA	NA
MM0167 (PRE0126458)	True RMS Multimeter	Agilent	U1232A	2021-08-17	2023-08-17
CBL091	Micro-Coax UTIFLEX Cable Assembly, Low Loss,40Ghz	Carlisle Interconnect Technologies	UFA147A-2-0360-200200	2022-02-15	2023-02-15
CBL092	Micro-Coax UTIFLEX Cable Assembly, Low Loss,40Ghz	Carlisle Interconnect Technologies	UFA147A-2-0360-200200	2022-02-15	2023-02-15
226561	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2022-05-03	2023-05-03
226563	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2022-05-03	2023-05-03

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

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
<b>1-18 GHz</b>					
AT0072	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-05-11	2023-05-11
<b>Gain-Loss Chains</b>					
C1-SAC03	Gain-loss string: 1-18GHz	Various	Various	2022-12-02	2023-12-02
<b>Receiver &amp; Software</b>					
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2022-02-15	2023-02-15
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
<b>Additional Equipment used</b>					
200539	Environmental Meter	Fisher Scientific	15-077-963 s/n 181474341	2022-10-05	2023-10-05

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

Equipment ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
<b>1-18 GHz</b>					
206211	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-03-21	2023-03-21
<b>Gain-Loss Chains</b>					
C2-SAC03	Gain-loss string: 1-18GHz	Various	Various	2022-05-10	2023-05-10
<b>Receiver &amp; Software</b>					
197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2022-03-08	2023-03-08
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
<b>Additional Equipment used</b>					
210642	Environmental Meter	Fisher Scientific	15-077-963 s/n 210701942	2021-08-16	2023-08-16

## 9. ANTENNA PORT TEST RESULTS

### 9.1. ON TIME AND DUTY CYCLE

#### LIMITS

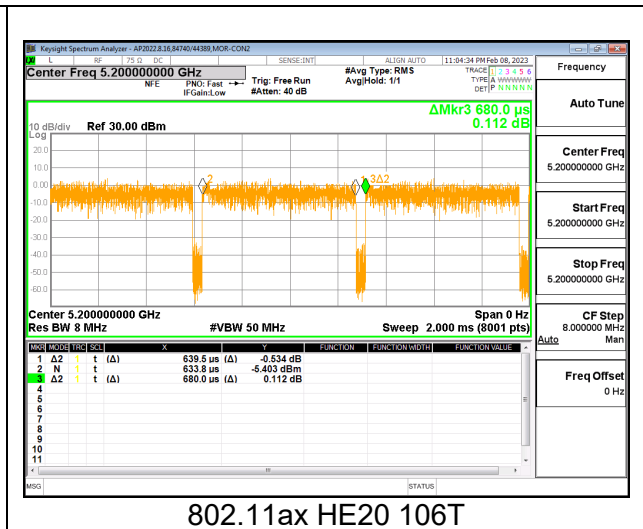
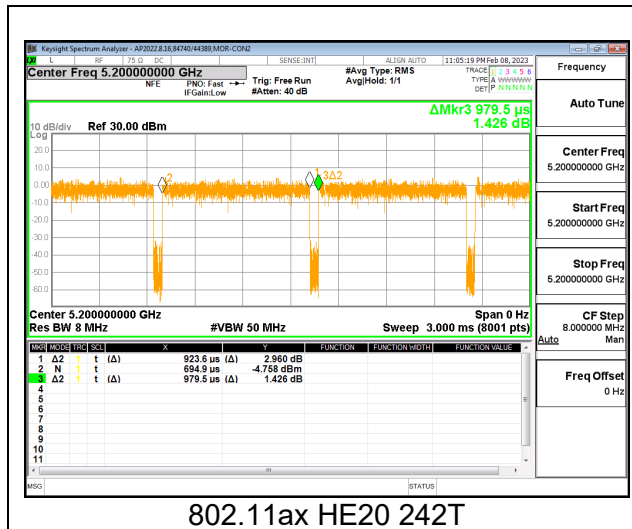
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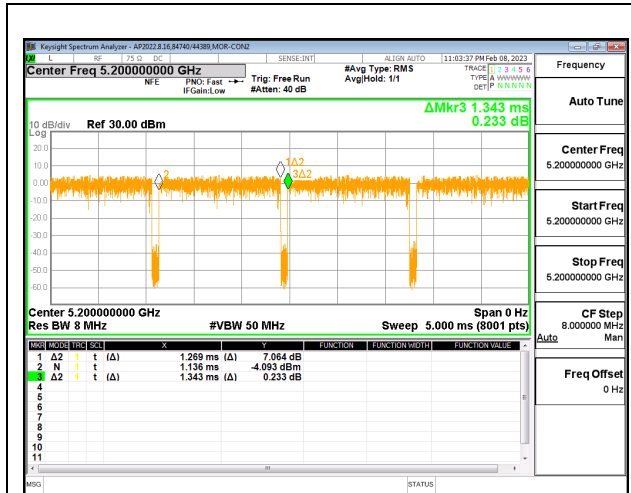
#### PROCEDURE

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 (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11ax HE20 242T	0.924	0.980	0.943	94.29%	0.51	1.083
802.11ax HE20 106T	0.640	0.680	0.940	94.04%	0.53	1.564
802.11ax HE20 52T	1.269	1.343	0.945	94.49%	0.49	0.788
802.11ax HE20 26T	2.328	2.457	0.947	94.75%	0.47	0.430
802.11ax HE40 484T	0.507	0.542	0.935	93.55%	0.58	1.971
802.11ax HE80 996T	0.387	0.424	0.912	91.20%	0.80	2.587
802.11ax HE160 2x996T	0.381	0.420	0.906	90.60%	0.86	2.626

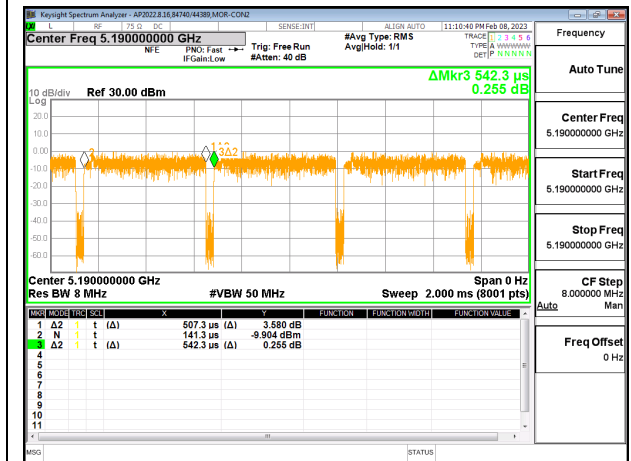




802.11ax HE20 52T



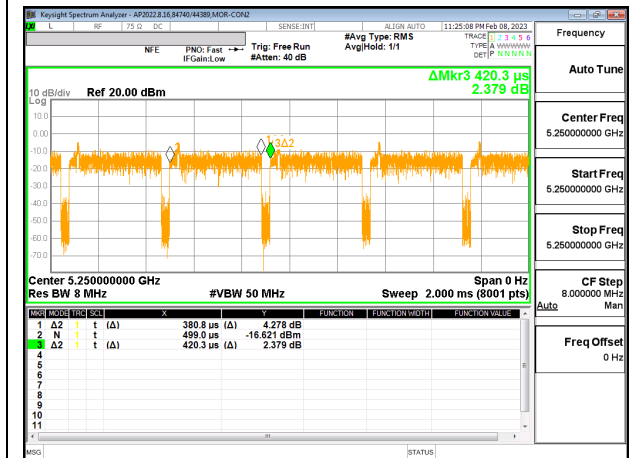
802.11ax HE20 26T



802.11ax HE40 484T



802.11ax HE80 996T



802.11ax HE160 2x996T

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## 9.2. 26 dB BANDWIDTH

### LIMITS

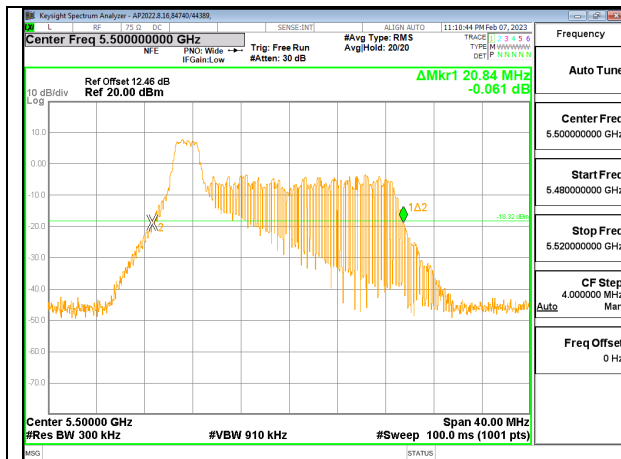
None; for reporting purposes only.

### RESULTS

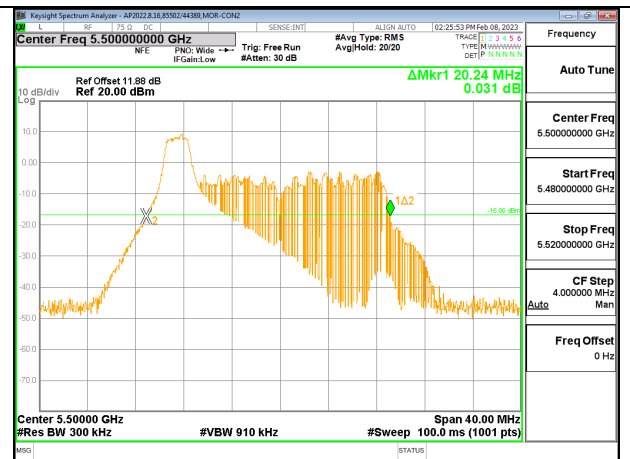
#### 9.2.1. 802.11ax HE20 MODE 2TX IN THE 5.6GHz BAND

#### 2Tx 26T MODE

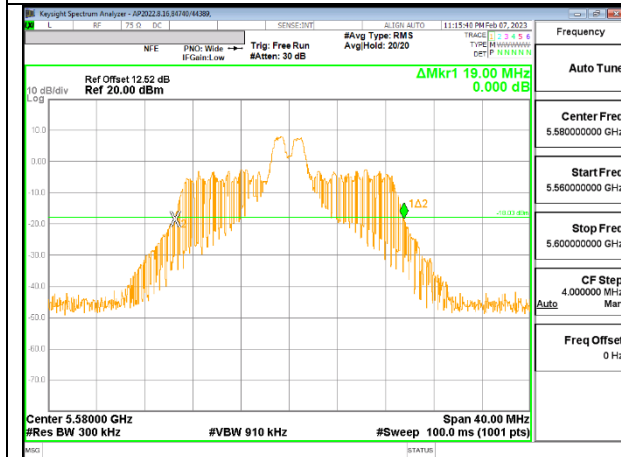
Channel	Frequency	26 dB Bandwidth	26 dB Bandwidth
		Chain 0	Chain 1
		(MHz)	(MHz)
Low	5500	20.84	20.24
Mid	5580	19.00	18.36
High	5700	20.52	20.24
144	5720	16.32	16.12



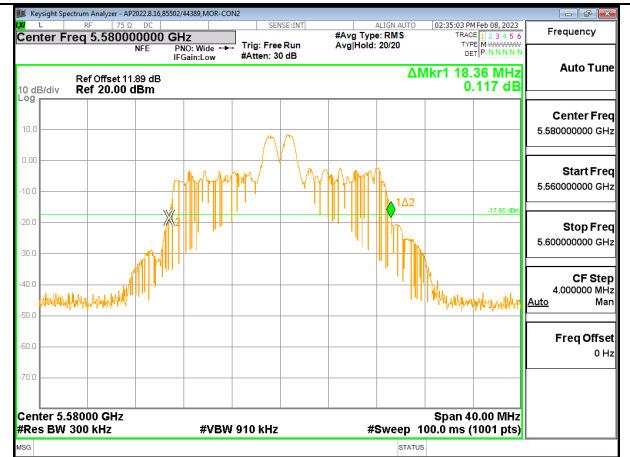
LOW CHANNEL RU 0 Chain 0



LOW CHANNEL RU 0 Chain 1

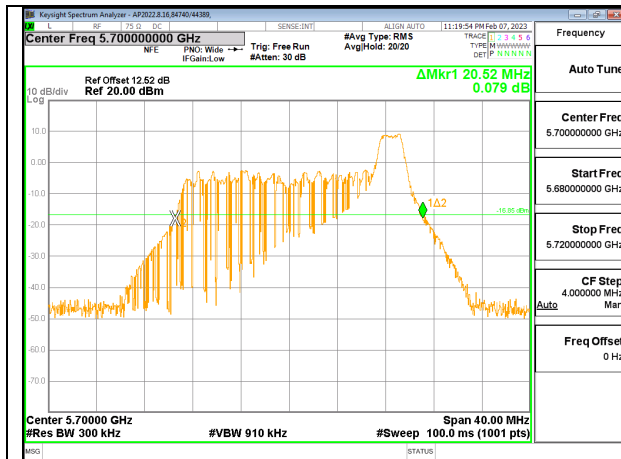


MID CHANNEL RU 4 Chain 0

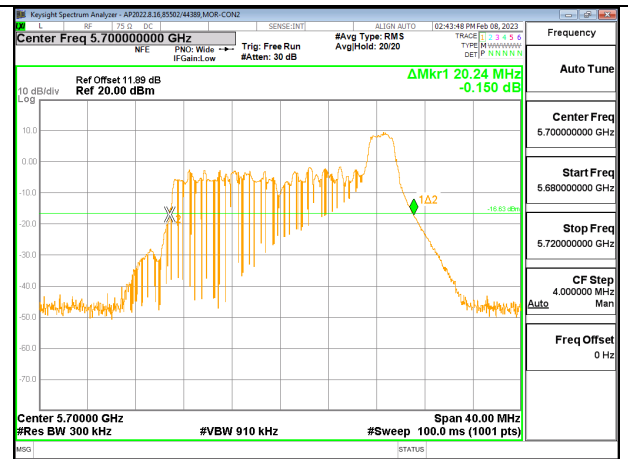


MID CHANNEL RU 4 Chain 1

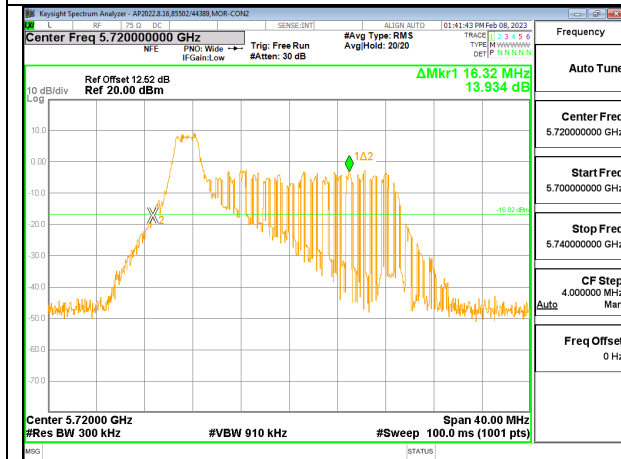




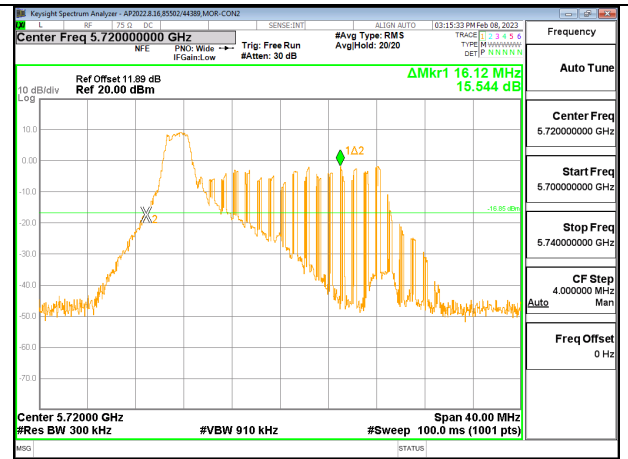
**HIGH CHANNEL RU 8 Chain 0**



**HIGH CHANNEL RU 8 Chain 1**



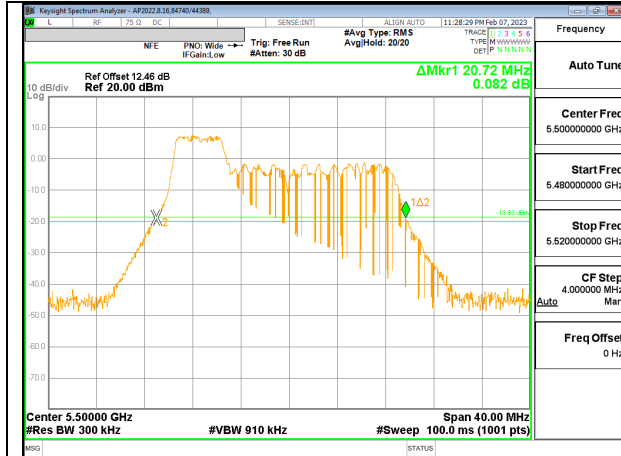
**CHANNEL 144 RU 0 Chain 0**



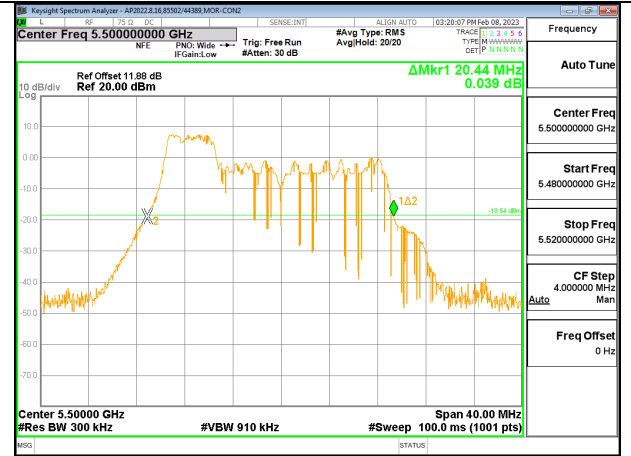
**CHANNEL 144 RU 0 Chain 1**

**2TX 52T MODE**

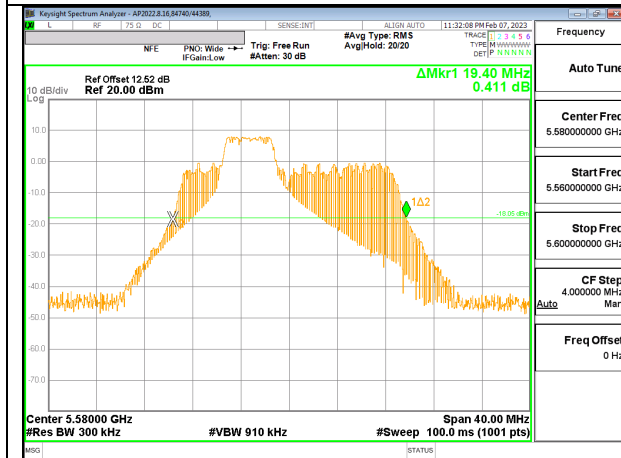
Channel	Frequency	26 dB Bandwidth Chain 0	26 dB Bandwidth Chain 1
	(MHz)	(MHz)	(MHz)
Low	5500	20.72	20.44
Mid	5580	19.40	18.80
High	5700	20.92	20.40
144	5720	16.04	16.04



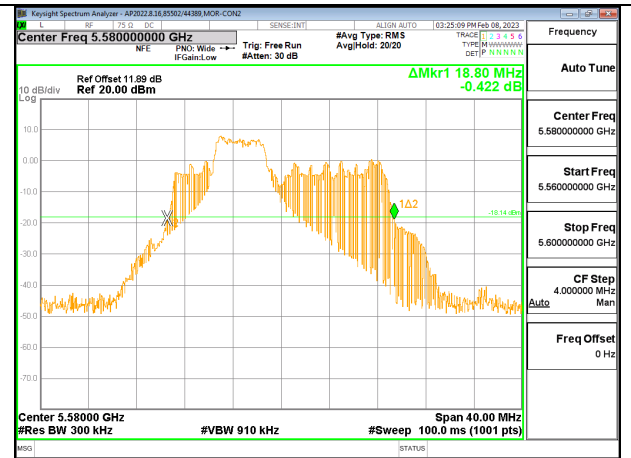
**LOW CHANNEL RU 37 Chain 0**



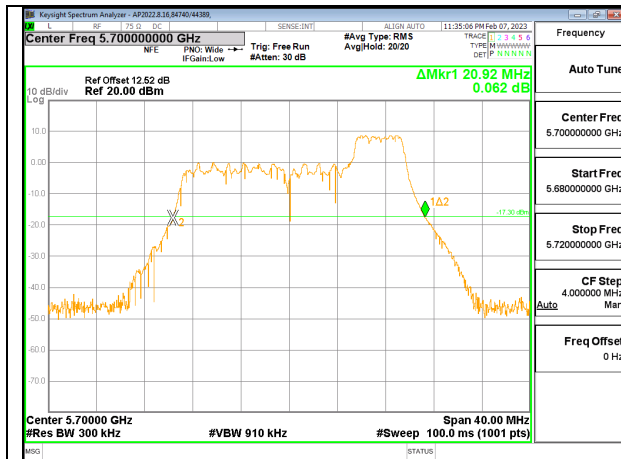
**LOW CHANNEL RU 37 Chain 1**



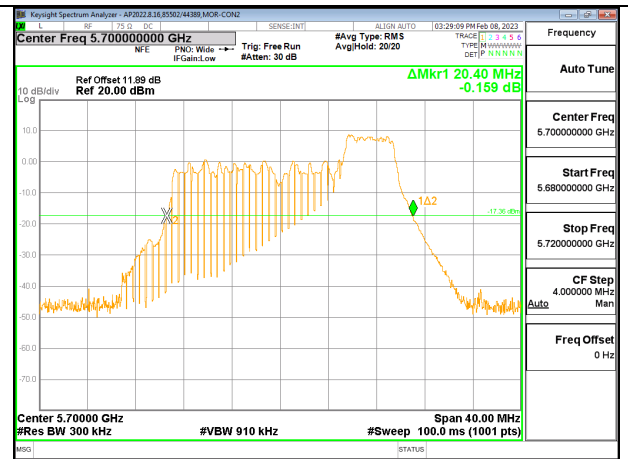
**MID CHANNEL RU 38 Chain 0**



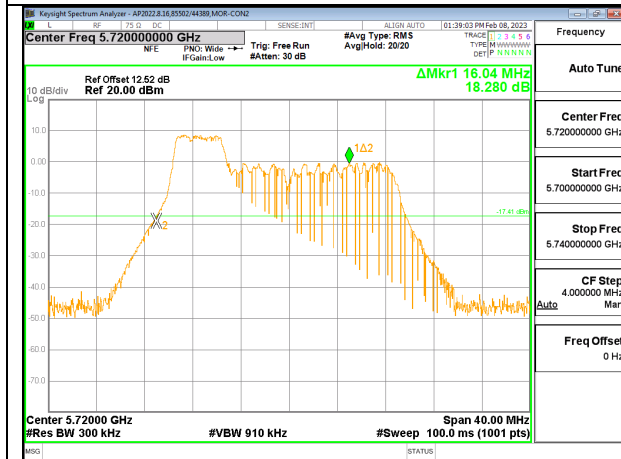
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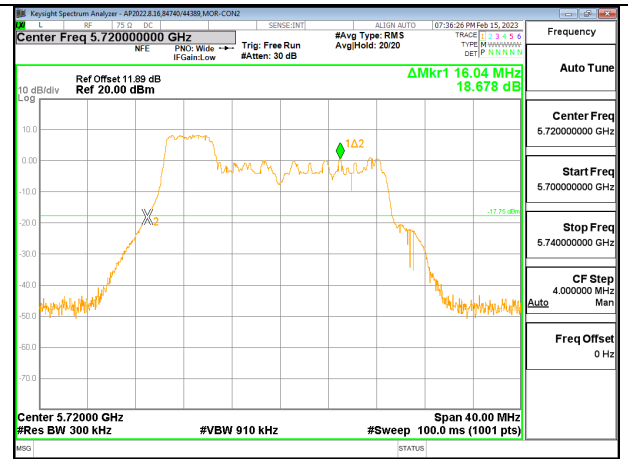
**HIGH CHANNEL RU 40 Chain 0**



**HIGH CHANNEL RU 40 Chain 1**



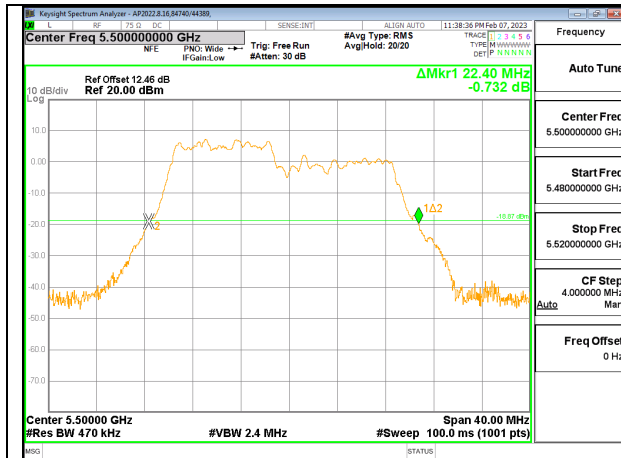
**CHANNEL 144 RU 37 Chain 0**



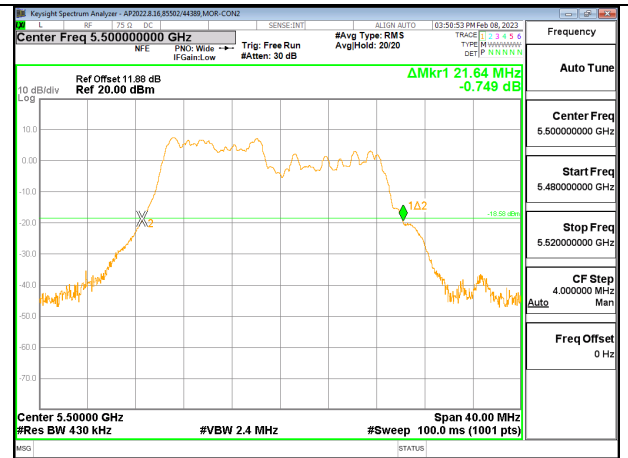
**CHANNEL 144 RU 37 Chain 1**

**2TX 106T MODE**

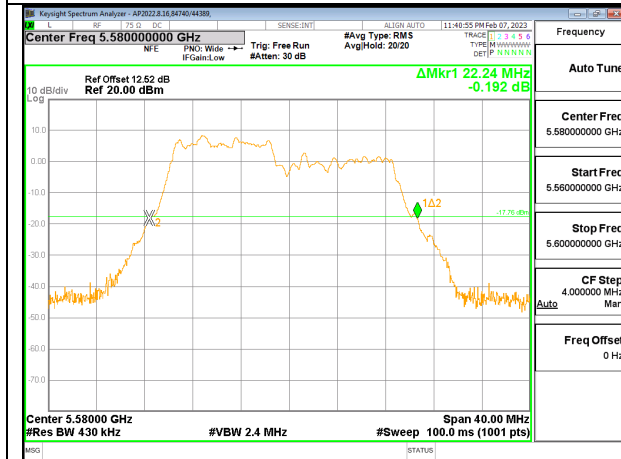
Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5500	22.40	21.64
Mid	5580	22.24	21.76
High	5700	21.32	21.24
144	5720	16.60	16.12



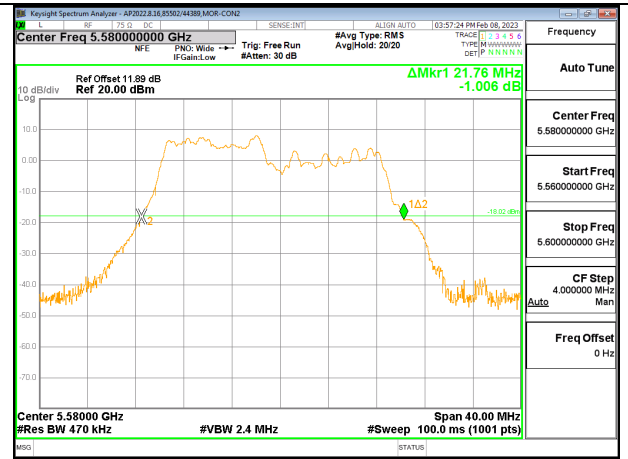
**LOW CHANNEL RU 53 Chain 0**



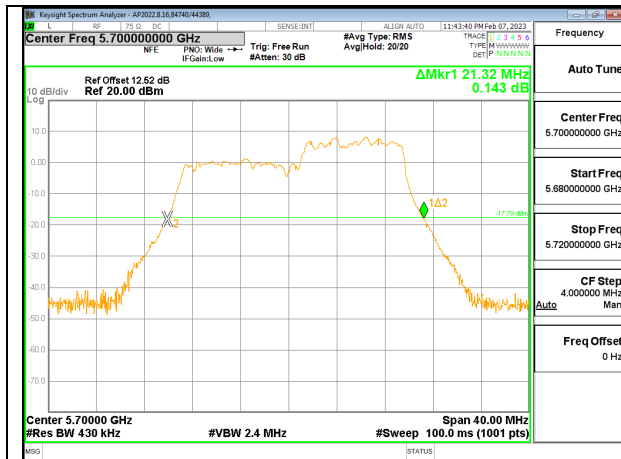
**LOW CHANNEL RU 53 Chain 1**



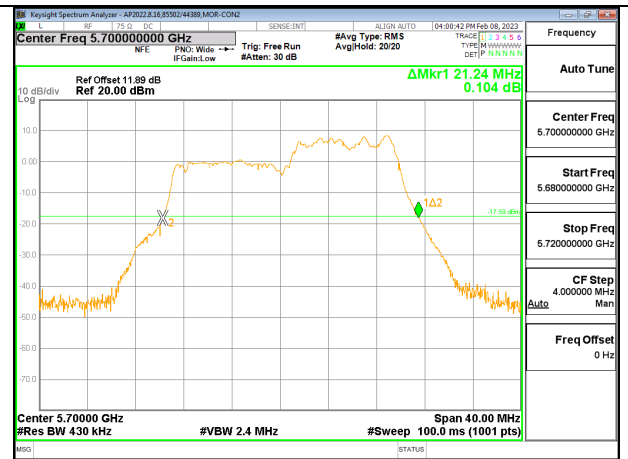
**MID CHANNEL RU 53 Chain 0**



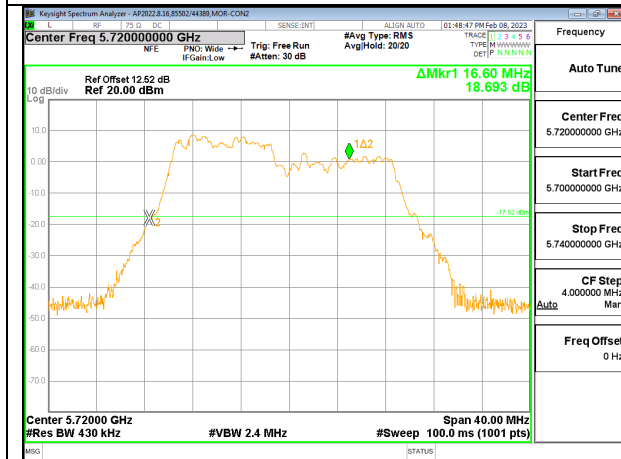
**MID CHANNEL RU 53 Chain 1**



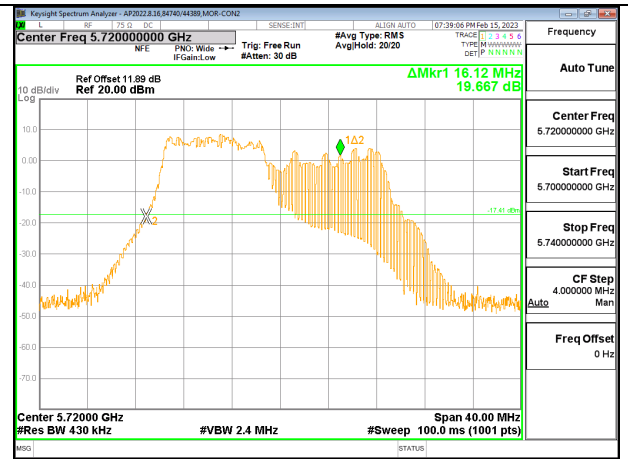
**HIGH CHANNEL RU 54 Chain 0**



**HIGH CHANNEL RU 54 Chain 1**



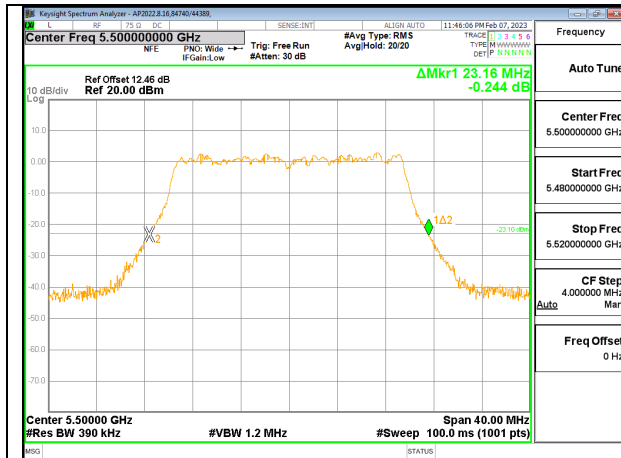
**CHANNEL 144 RU 53 Chain 0**



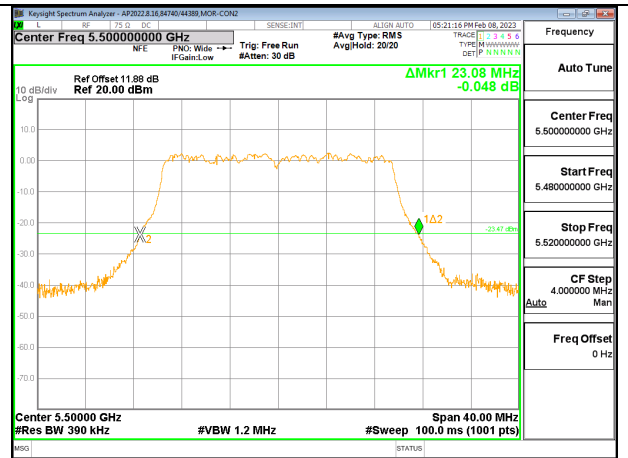
**CHANNEL 144 RU 53 Chain 1**

**2TX 242T MODE**

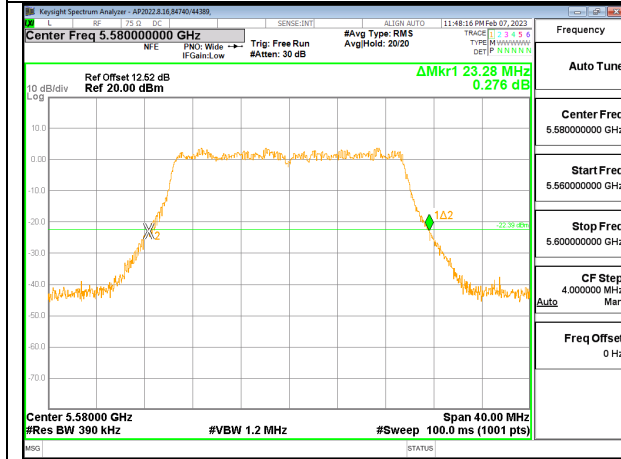
Channel	Frequency (MHz)	26 dB Bandwidth Chain 0 (MHz)	26 dB Bandwidth Chain 1 (MHz)
Low	5500	23.16	23.08
Mid	5580	23.28	23.16
High	5700	23.20	23.12
144	5720	16.68	16.60



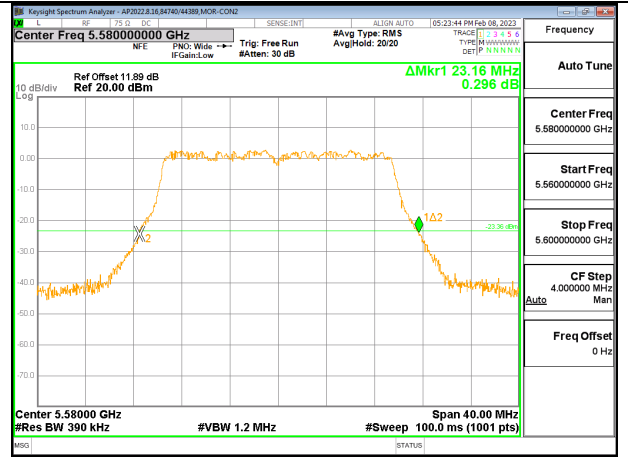
**LOW CHANNEL RU 61 Chain 0**



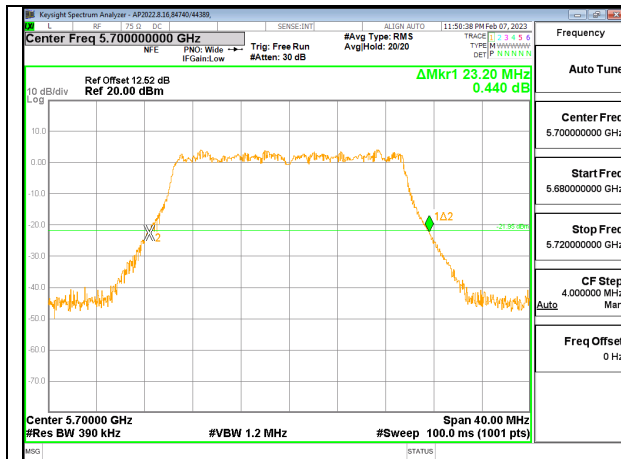
**LOW CHANNEL RU 61 Chain 1**



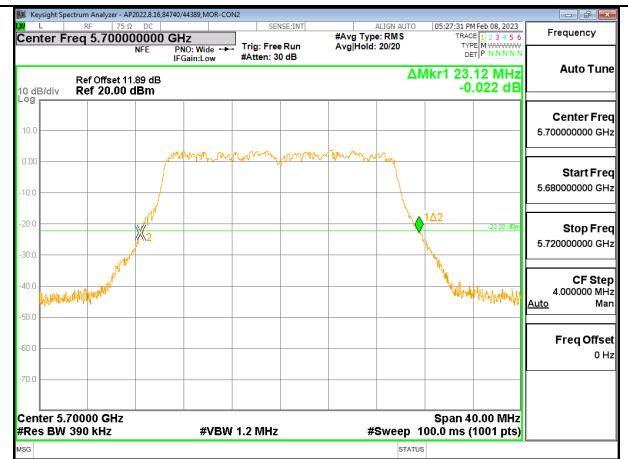
**MID CHANNEL RU 61 Chain 0**



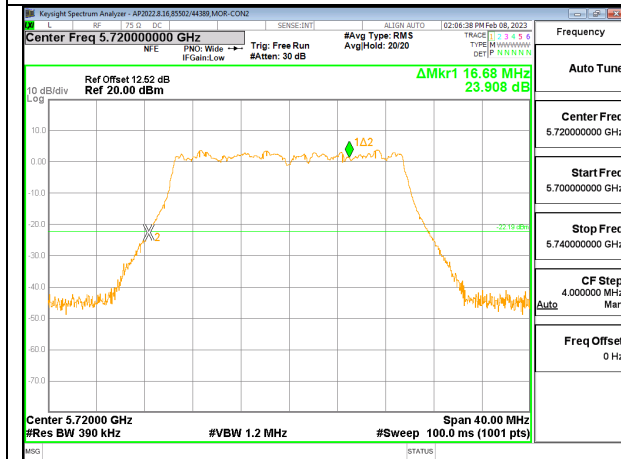
**MID CHANNEL RU 61 Chain 1**



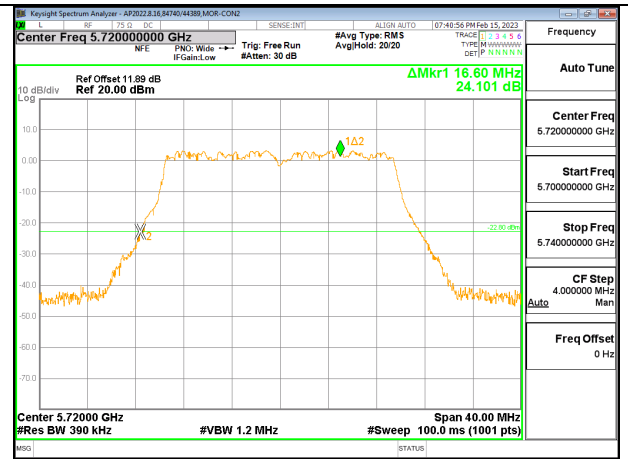
**HIGH CHANNEL RU 61 Chain 0**



**HIGH CHANNEL RU 61 Chain 1**



**CHANNEL 144 RU 61 Chain 0**

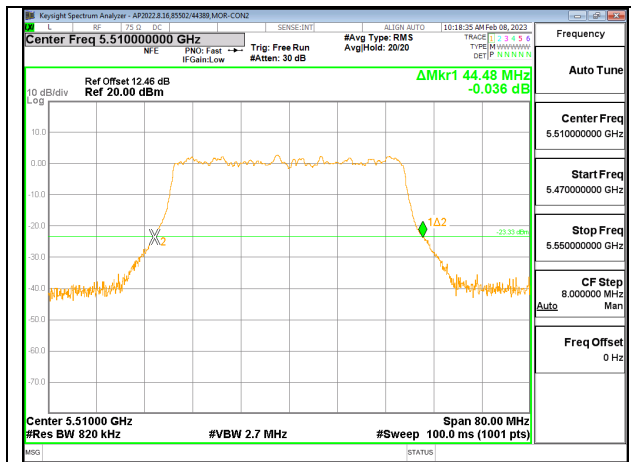


**CHANNEL 144 RU 61 Chain 1**

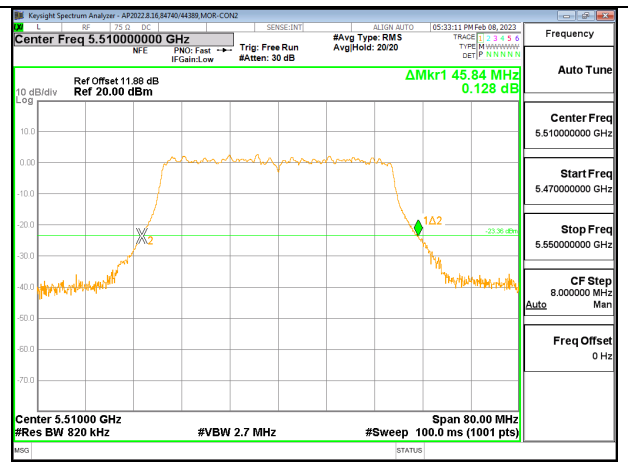
## 9.2.2. 802.11ax HE40 MODE 2TX IN THE 5.6GHz BAND

### 2TX 484T MODE

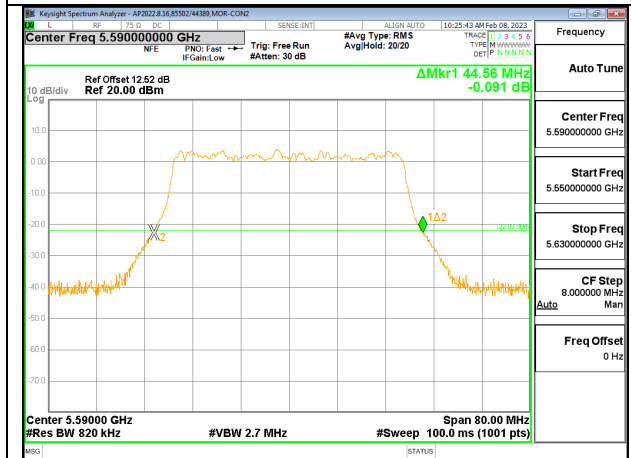
Channel	Frequency (MHz)	26 dB Bandwidth	
		Chain 0 (MHz)	Chain 1 (MHz)
Low	5510	44.48	45.84
Mid	5590	44.56	45.60
High	5670	44.48	45.52
142	5710	37.48	37.48



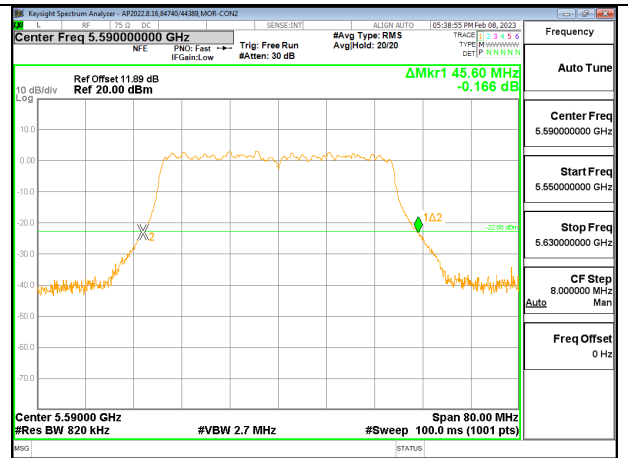
LOW CHANNEL RU 65 Chain 0



LOW CHANNEL RU 65 Chain 1

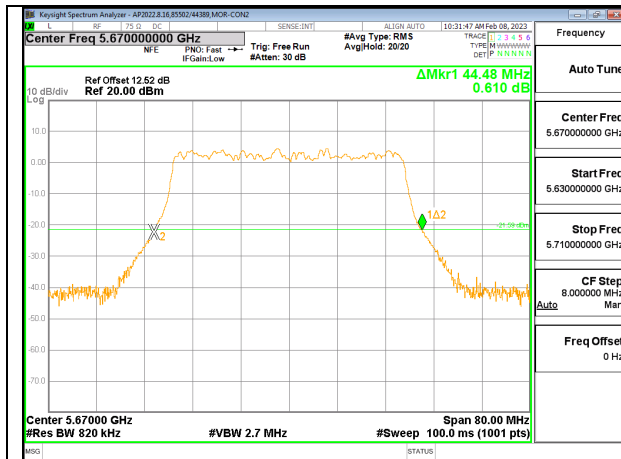


MID CHANNEL RU 65 Chain 0

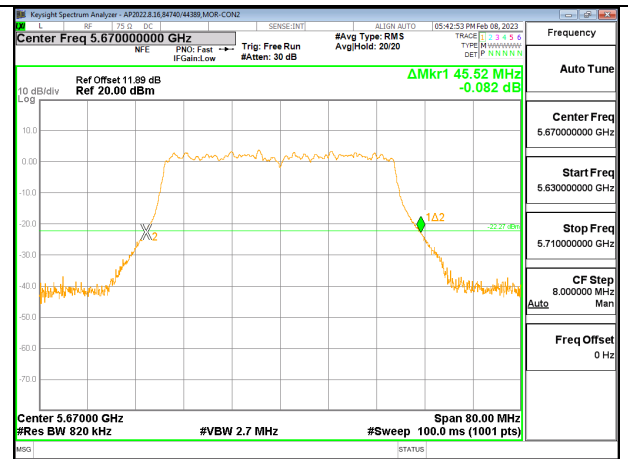


MID CHANNEL RU 65 Chain 1

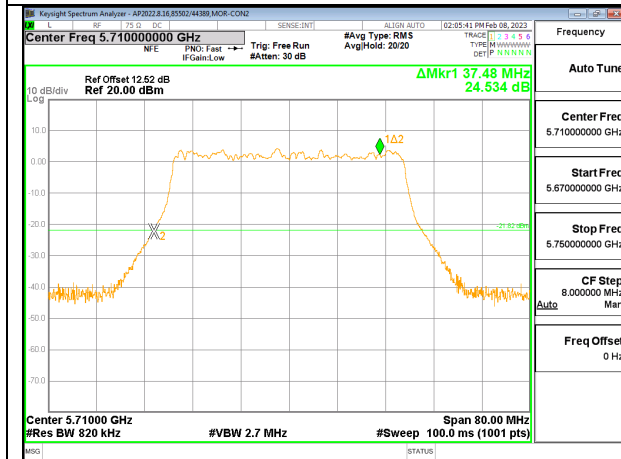




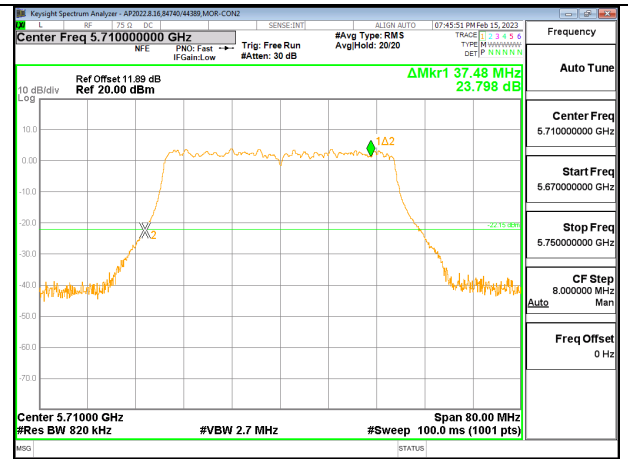
**HIGH CHANNEL RU 65 Chain 0**



**HIGH CHANNEL RU 65 Chain 1**



**CHANNEL 142 RU 65 Chain 0**



**CHANNEL 142 RU 65 Chain 1**

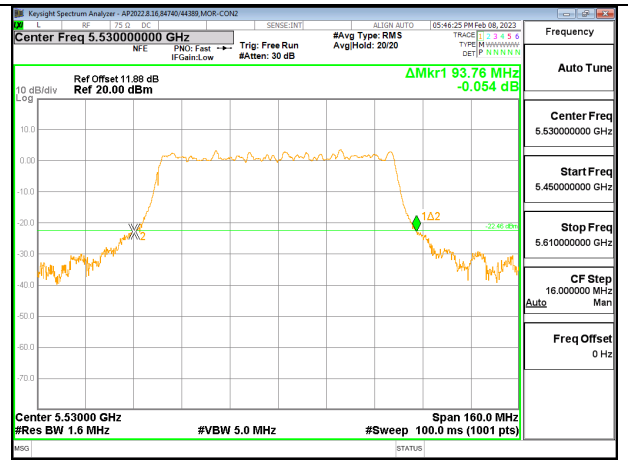
### 9.2.3. 802.11ax HE80 MODE 2TX IN THE 5.6GHz BAND

#### 2TX 996T MODE

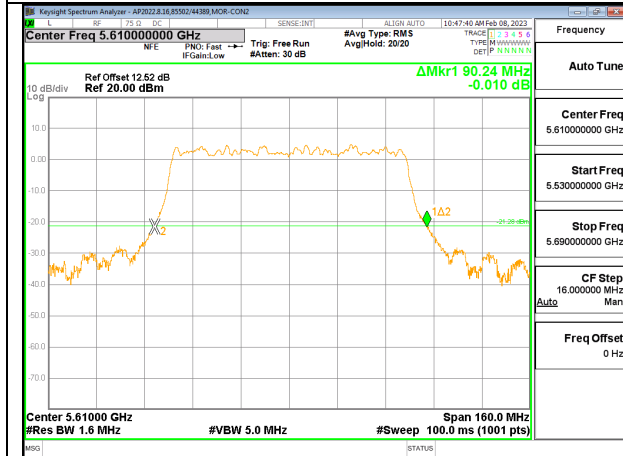
Channel	Frequency (MHz)	26 dB Bandwidth	
		Chain 0 (MHz)	Chain 1 (MHz)
Low	5530	90.56	93.76
High	5610	90.24	93.92
138	5690	79.80	83.32



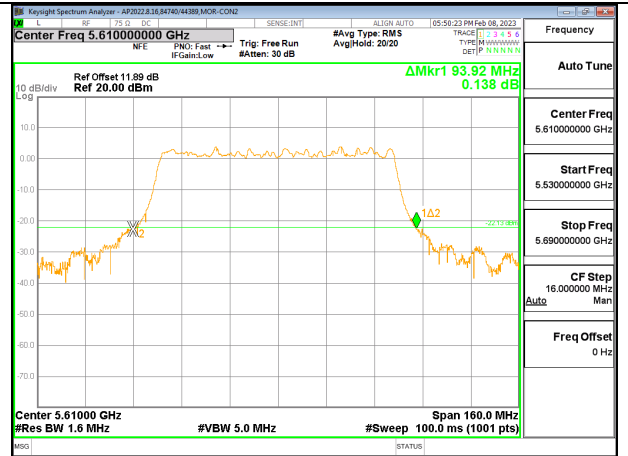
**LOW CHANNEL RU 67 Chain 0**



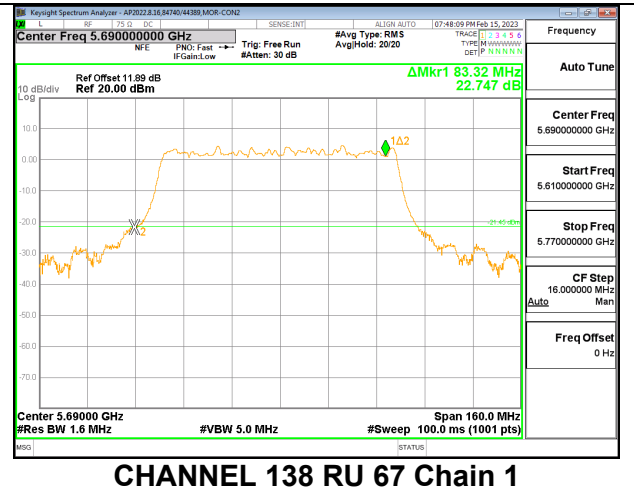
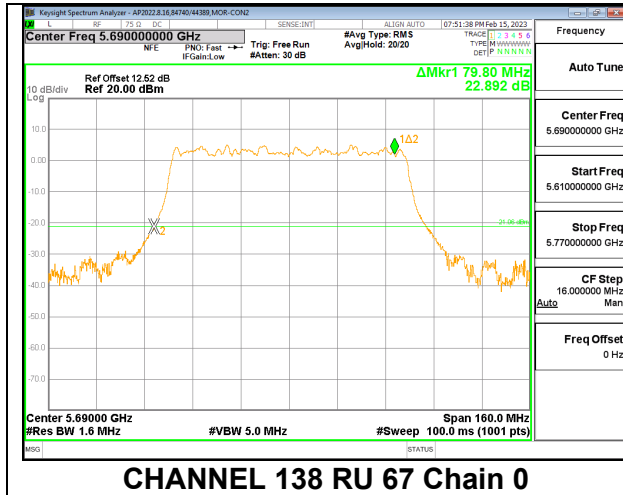
**LOW CHANNEL RU 67 Chain 1**



**HIGH CHANNEL RU 67 Chain 0**



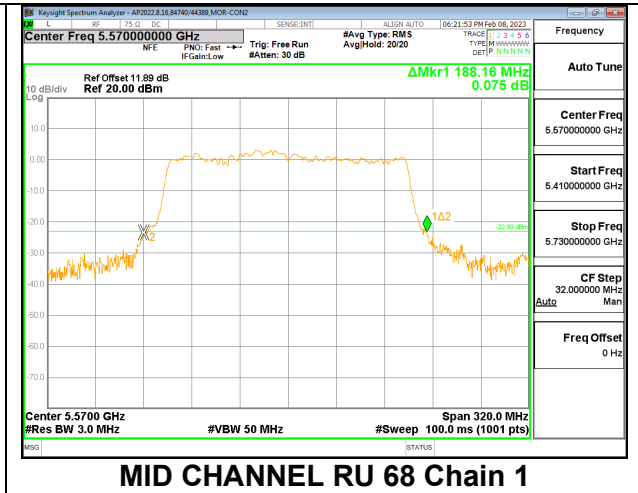
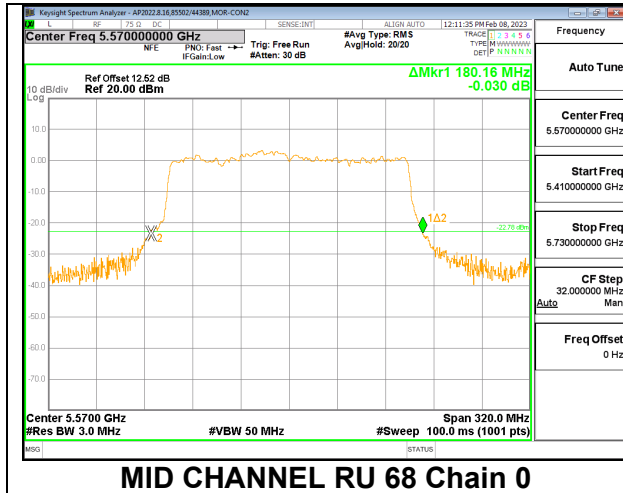
**HIGH CHANNEL RU 67 Chain 1**



### 9.2.4. 802.11ax HE160 MODE 2TX IN THE 5.6GHz BAND

#### 2TX 2x996T MODE

Channel	Frequency (MHz)	26 dB Bandwidth	
		Chain 0 (MHz)	Chain 1 (MHz)
Mid	5570	180.16	188.16



### 9.3. OUTPUT POWER AND PSD

#### LIMITS

FCC §15.407

#### **Bands 5.25-5.35 GHz and 5.47-5.725 GHz**

The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### 2 TX DIRECTIONAL ANTENNA GAIN

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Band (GHz)	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
5500-5720	0.53	-0.43	0.08	3.07

#### RESULT

### 9.3.1. 802.11ax HE20 MODE 2TX IN THE 5.6GHz BAND

#### 2TX 26T MODE

<b>Test Engineer:</b>	84740/44389, 85502/44389
<b>Test Date:</b>	2023-02-02 to 2023-02-08

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	20.24	0.08	3.07	24.00	11.00
Mid	5580	18.36	-3.15	-0.68	23.64	11.00
High	5700	20.24	-3.15	-0.68	24.00	11.00
144	5720	16.12	0.08	3.07	23.07	11.00

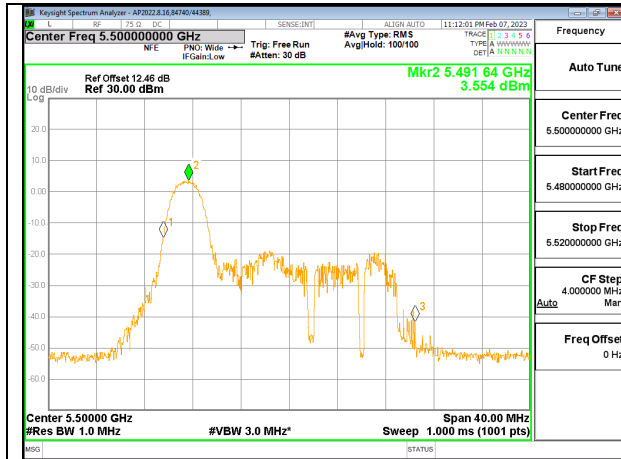
<b>Duty Cycle CF (dB)</b>	0.47	<b>Included in Calculations of Corr'd PSD</b>
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#### Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	8.27	8.47	11.38	24.00	-12.62
Mid	5580	8.20	7.87	11.05	23.64	-12.59
High	5700	8.49	8.60	11.56	24.00	-12.44
144	5720	8.35	8.71	11.54	23.07	-11.53

#### PSD Results

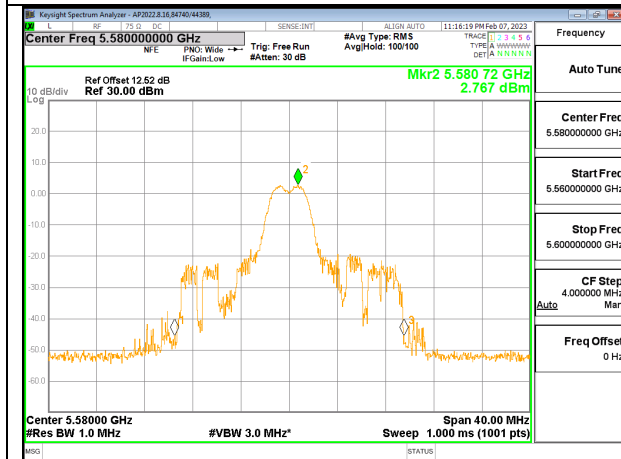
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	3.55	3.77	7.14	11.00	-3.86
Mid	5580	2.77	2.74	6.23	11.00	-4.77
High	5700	4.43	4.64	8.02	11.00	-2.98
144	5720	4.32	5.00	8.15	11.00	-2.85



LOW CHANNEL RU 0 Chain 0



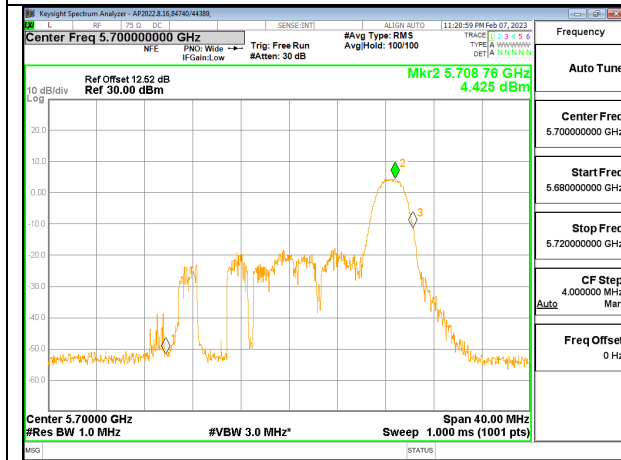
LOW CHANNEL RU 0 Chain 1



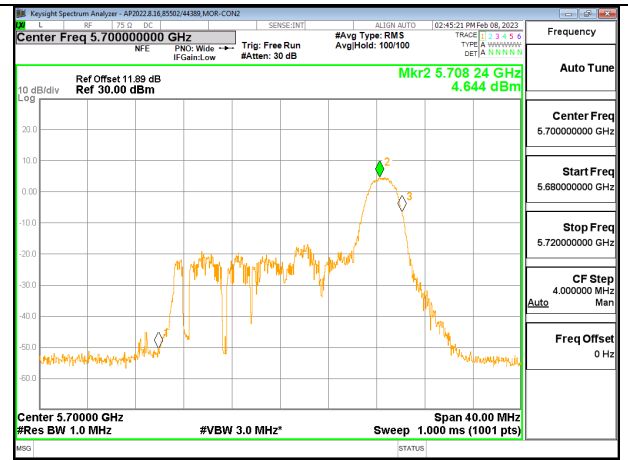
MID CHANNEL RU 4 Chain 0



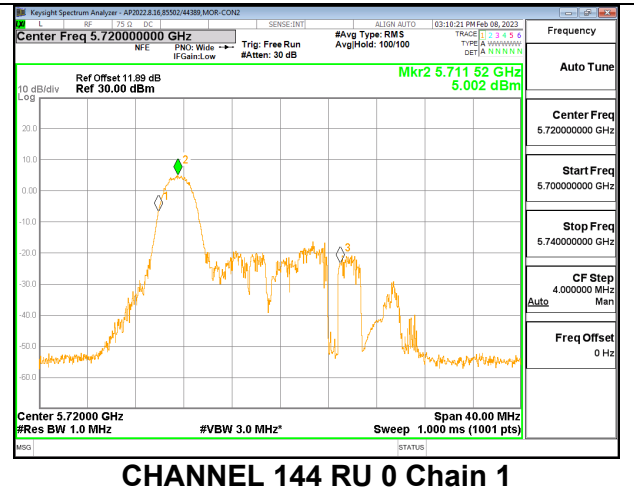
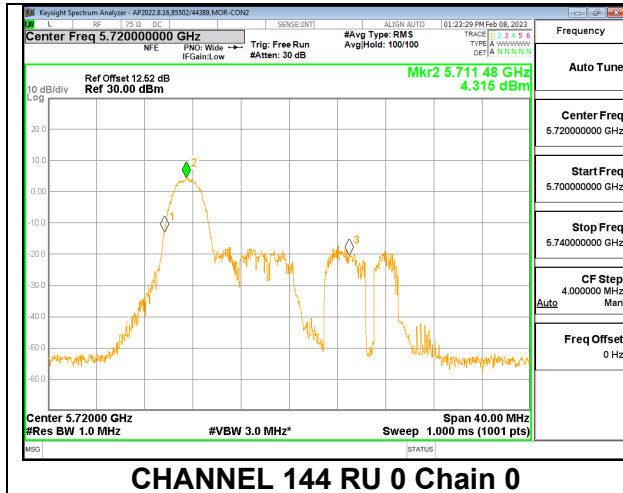
MID CHANNEL RU 4 Chain 1



HIGH CHANNEL RU 8 Chain 0



HIGH CHANNEL RU 8 Chain 1





**2TX 52T MODE**

<b>Test Engineer:</b>	84740/44389, 85502/44389
<b>Test Date:</b>	2023-02-02 to 2023-02-08

**Bandwidth, Antenna Gain, and Limits**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	20.44	0.08	3.07	24.00	11.00
Mid	5580	18.80	0.08	3.07	23.74	11.00
High	5700	20.40	0.08	3.07	24.00	11.00
144	5720	16.04	0.08	3.07	23.05	11.00

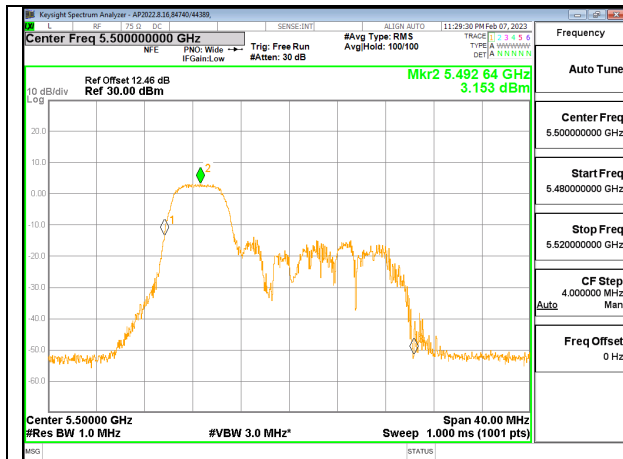
<b>Duty Cycle CF (dB)</b>	0.49	<b>Included in Calculations of Corr'd PSD</b>
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**Output Power Results**

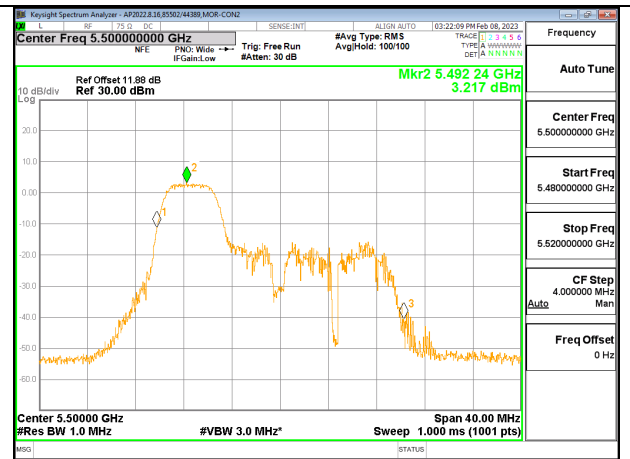
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	10.59	10.65	13.63	24.00	-10.37
Mid	5580	10.89	10.28	13.61	23.74	-10.14
High	5700	11.04	10.96	14.01	24.00	-9.99
144	5720	10.94	10.91	13.94	23.05	-9.12

**PSD Results**

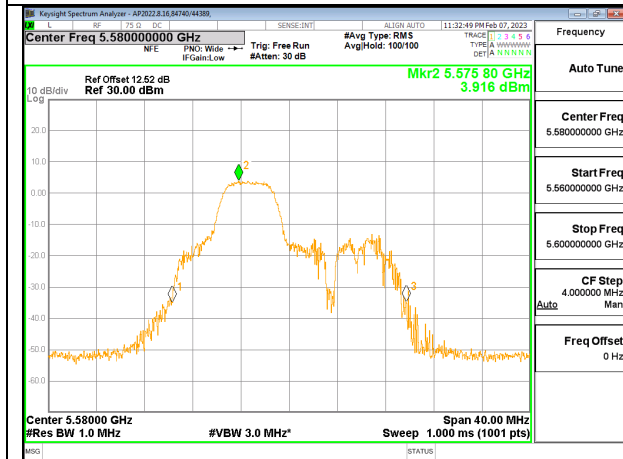
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	3.15	3.22	6.69	11.00	-4.31
Mid	5580	3.92	3.11	7.03	11.00	-3.97
High	5700	4.25	4.07	7.66	11.00	-3.34
144	5720	4.07	3.95	7.51	11.00	-3.49



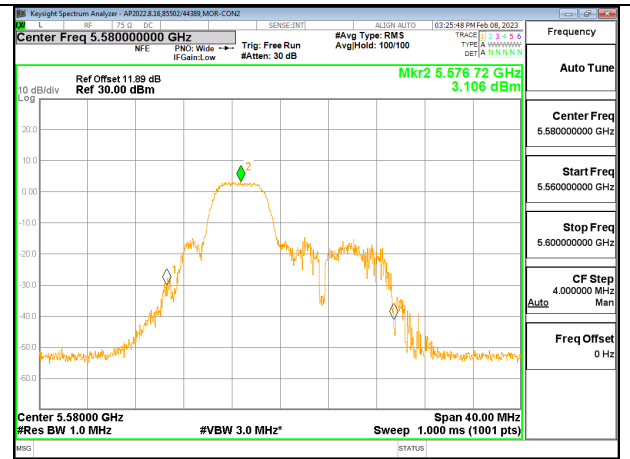
LOW CHANNEL RU 37 Chain 0



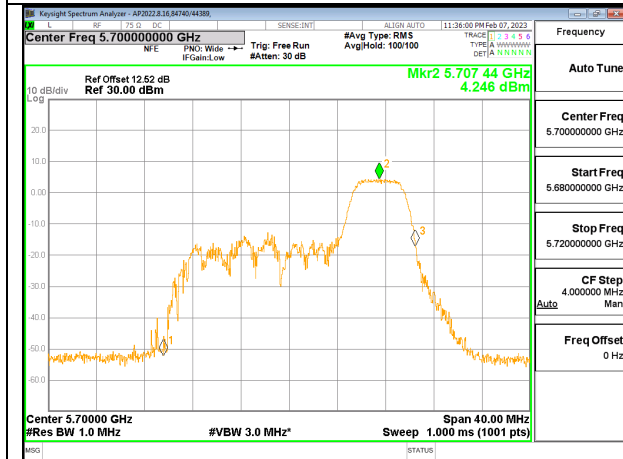
LOW CHANNEL RU 37 Chain 1



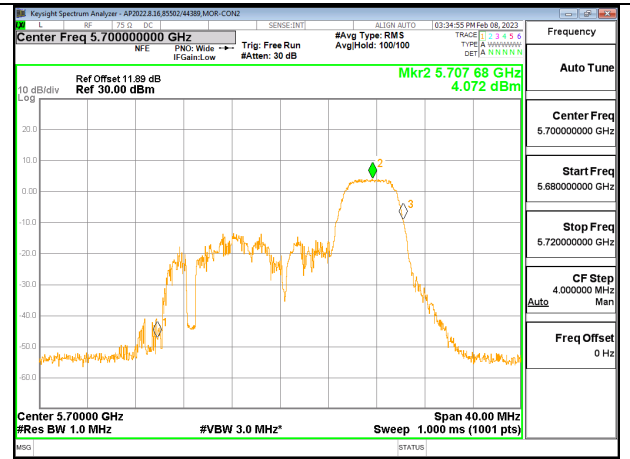
MID CHANNEL RU 38 Chain 0



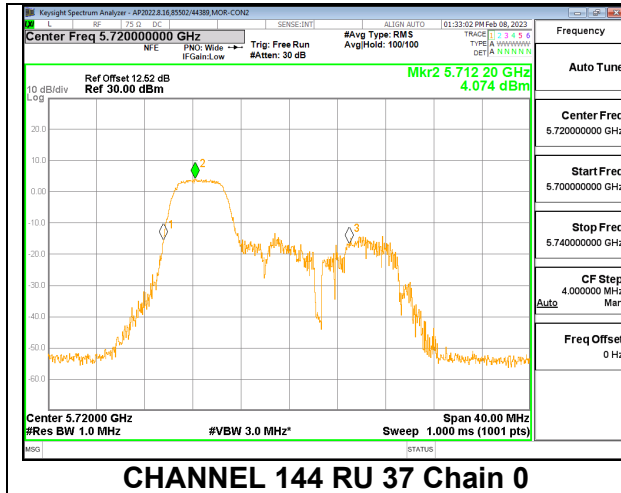
MID CHANNEL RU 38 Chain 1



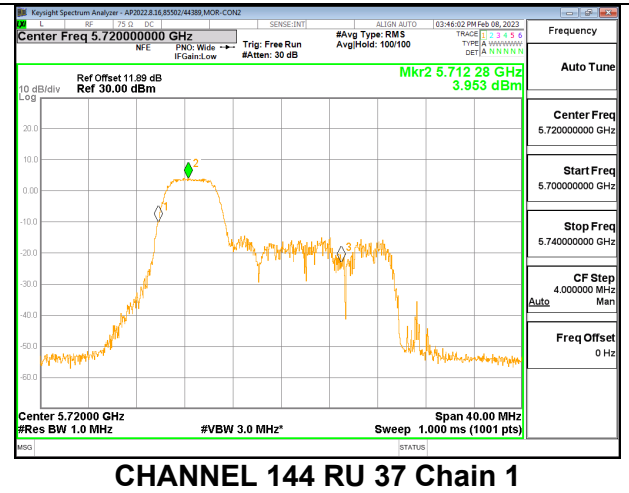
HIGH CHANNEL RU 40 Chain 0



HIGH CHANNEL RU 40 Chain 1



**CHANNEL 144 RU 37 Chain 0**



**CHANNEL 144 RU 37 Chain 1**

**2TX 106T MODE**

<b>Test Engineer:</b>	84740/44389, 85502/44389
<b>Test Date:</b>	2023-02-02 to 2023-02-08

**Bandwidth, Antenna Gain, and Limits**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	21.64	0.08	3.07	24.00	11.00
Mid	5580	21.76	0.08	3.07	24.00	11.00
High	5700	21.24	0.08	3.07	24.00	11.00
144	5720	16.12	0.08	3.07	23.07	11.00

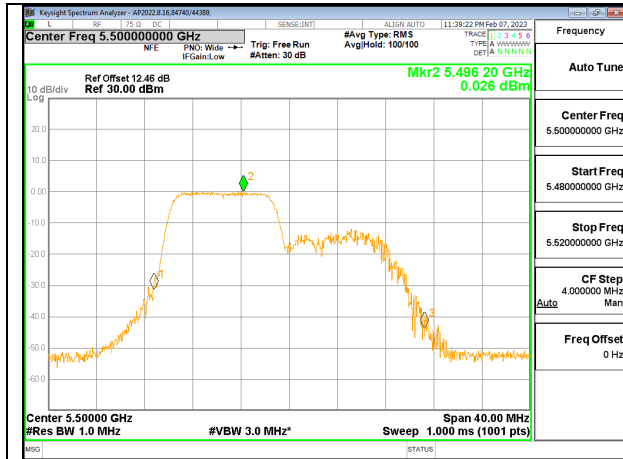
<b>Duty Cycle CF (dB)</b>	0.53	<b>Included in Calculations of Corr'd PSD</b>
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**Output Power Results**

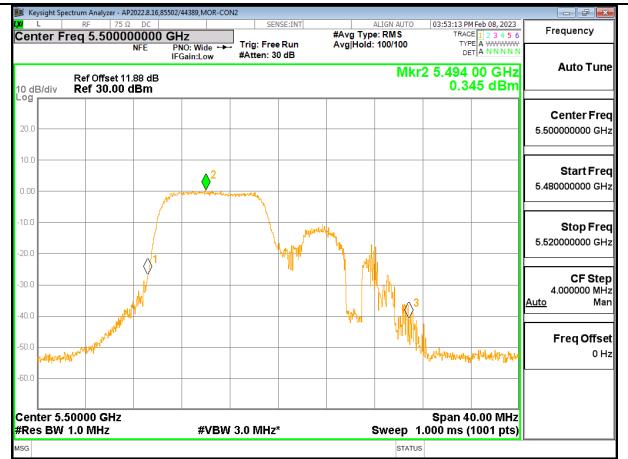
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	10.47	10.60	13.55	24.00	-10.45
Mid	5580	11.02	10.40	13.73	24.00	-10.27
High	5700	10.89	10.89	13.90	24.00	-10.10
144	5720	10.89	10.77	13.84	23.07	-9.23

**PSD Results**

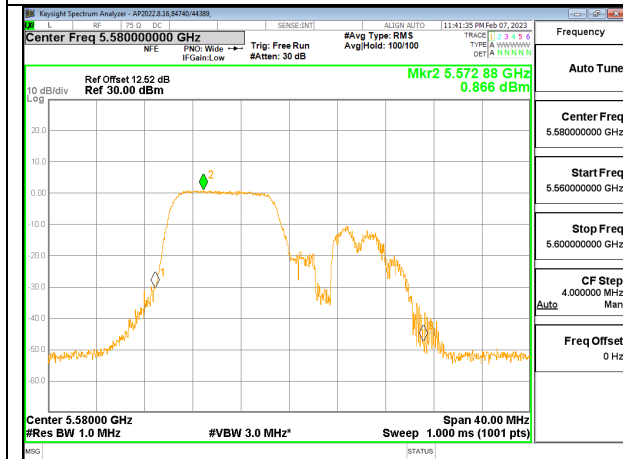
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	0.03	0.35	3.73	11.00	-7.27
Mid	5580	0.87	0.67	4.31	11.00	-6.69
High	5700	1.22	1.23	4.76	11.00	-6.24
144	5720	1.29	1.08	4.72	11.00	-6.28



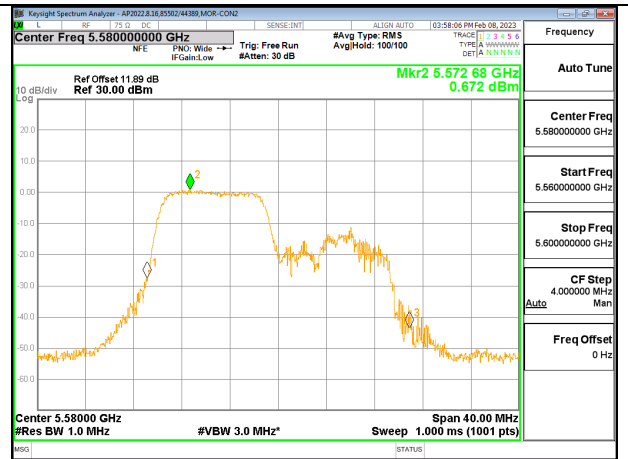
LOW CHANNEL RU 53 Chain 0



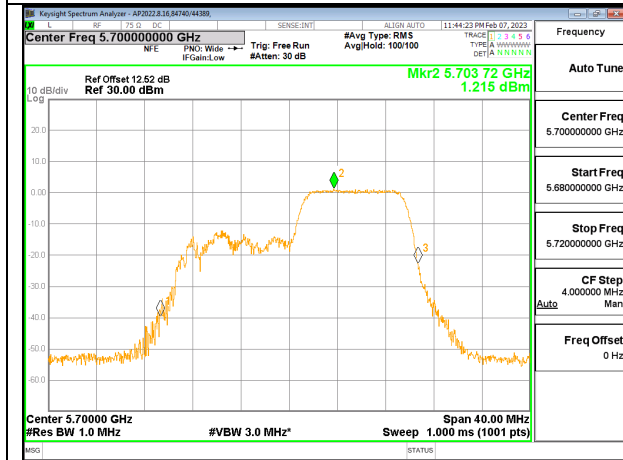
LOW CHANNEL RU 53 Chain 1



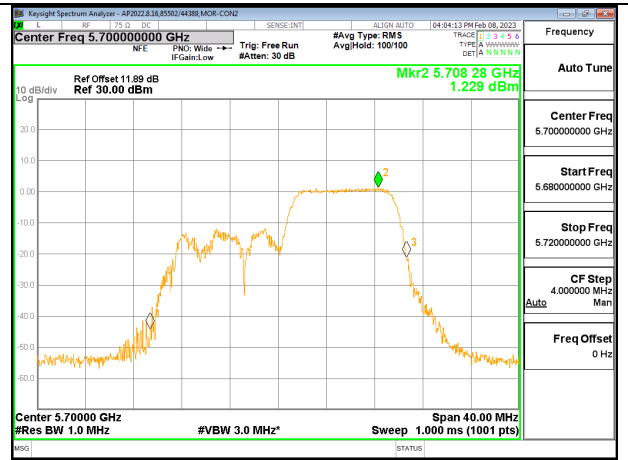
MID CHANNEL RU 53 Chain 0



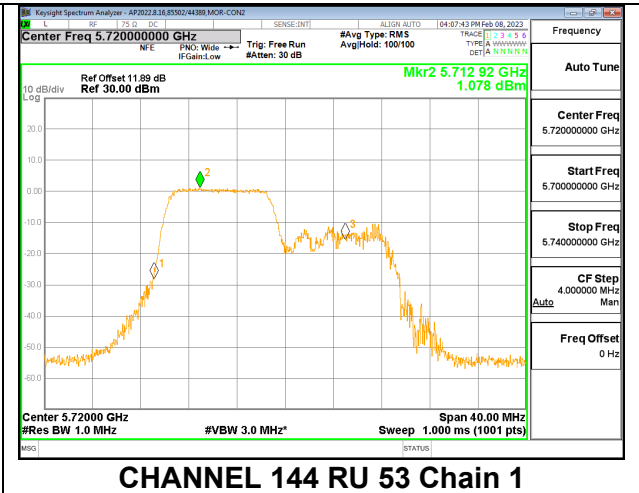
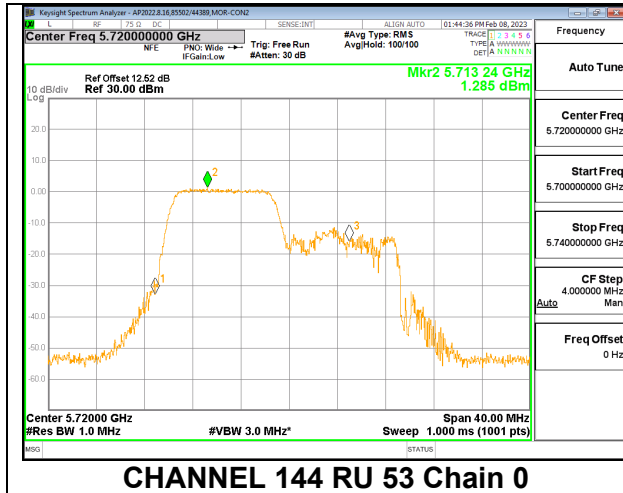
MID CHANNEL RU 53 Chain 1



HIGH CHANNEL RU 54 Chain 0



HIGH CHANNEL RU 54 Chain 1



**2TX 242T MODE**

<b>Test Engineer:</b>	84740/44389, 85502/44389
<b>Test Date:</b>	2023-02-02 to 2023-02-08

**Bandwidth, Antenna Gain, and Limits**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	23.08	0.08	3.07	24.00	11.00
Mid	5580	23.16	0.08	3.07	24.00	11.00
High	5700	23.12	0.08	3.07	24.00	11.00
144	5720	16.60	0.08	3.07	23.20	11.00

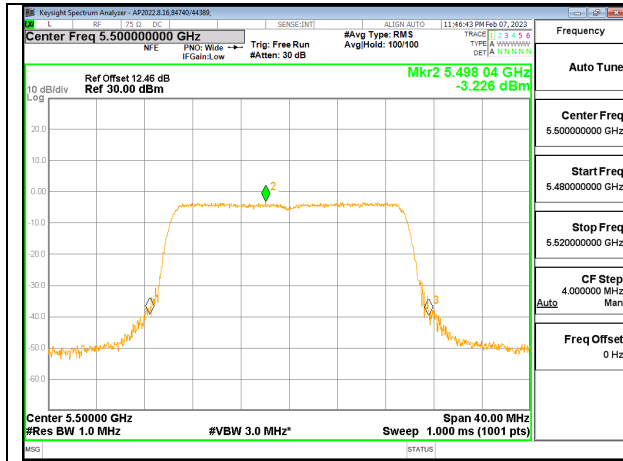
<b>Duty Cycle CF (dB)</b>	0.51	<b>Included in Calculations of Corr'd PSD</b>
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**Output Power Results**

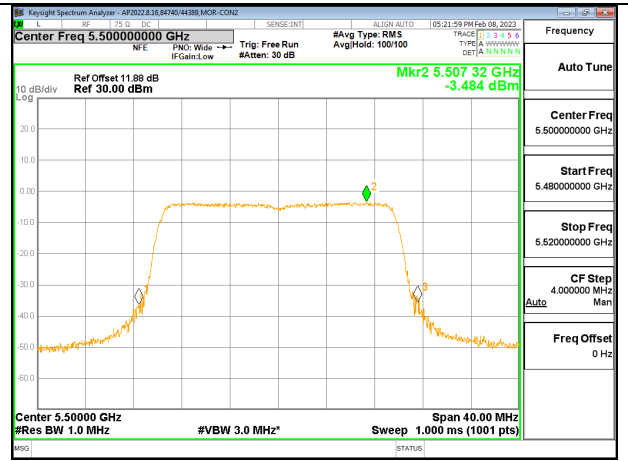
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	10.37	10.30	13.35	24.00	-10.65
Mid	5580	10.90	10.32	13.63	24.00	-10.37
High	5700	10.81	10.85	13.84	24.00	-10.16
144	5720	10.65	10.64	13.66	23.20	-9.55

**PSD Results**

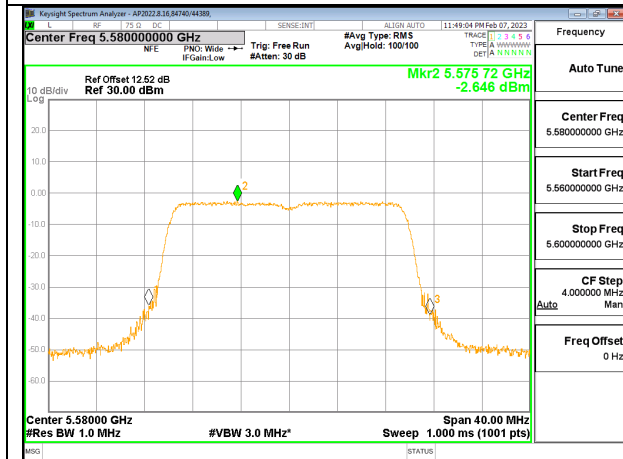
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	-3.23	-3.48	0.17	11.00	-10.83
Mid	5580	-2.65	-3.03	0.69	11.00	-10.31
High	5700	-2.50	-2.52	1.01	11.00	-9.99
144	5720	-2.41	-2.23	1.20	11.00	-9.80



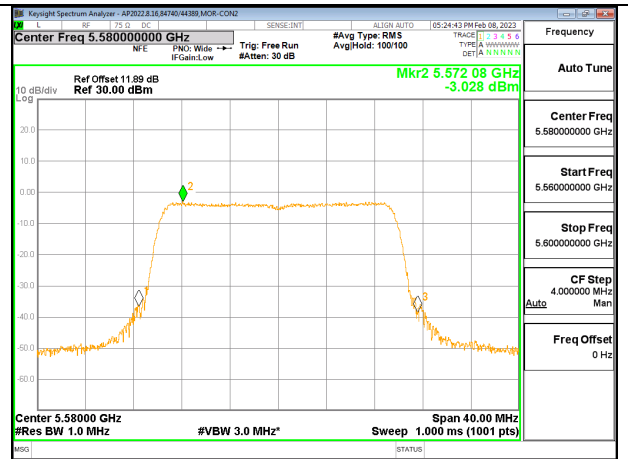
LOW CHANNEL RU 61 Chain 0



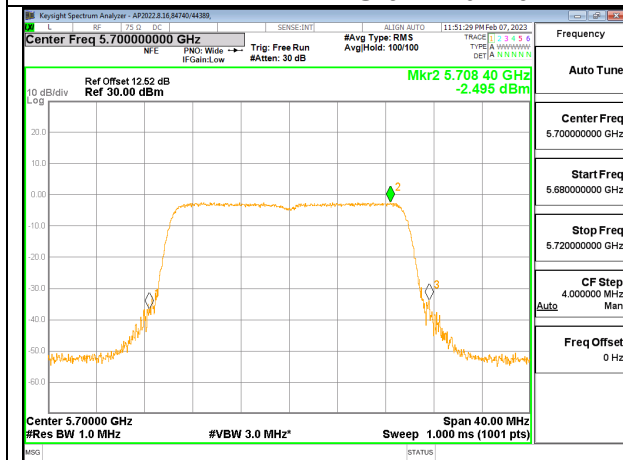
LOW CHANNEL RU 61 Chain 1



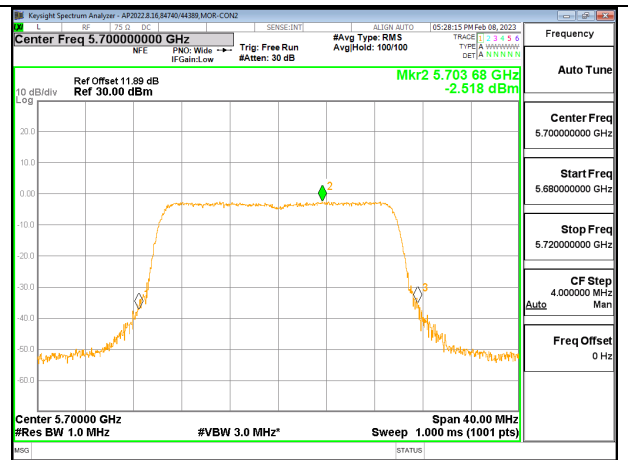
MID CHANNEL RU 61 Chain 0



MID CHANNEL RU 61 Chain 1

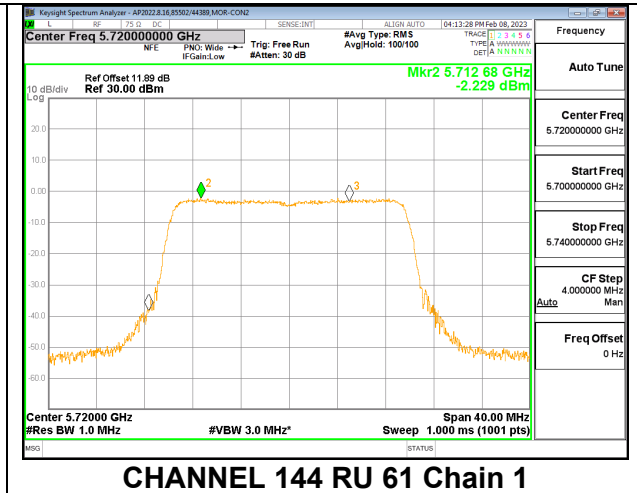
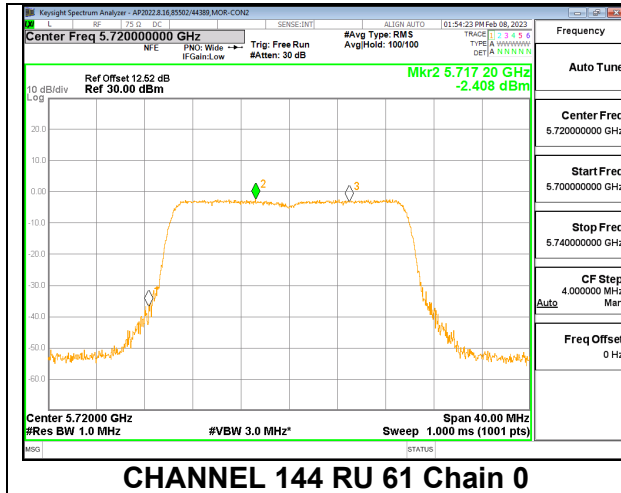


HIGH CHANNEL RU 61 Chain 0



HIGH CHANNEL RU 61 Chain 1





### 9.3.2. 802.11ax HE40 MODE 2TX IN THE 5.6GHz BAND

#### 2TX 484T MODE

<b>Test Engineer:</b>	84740/44389, 85502/44389
<b>Test Date:</b>	2023-02-02 to 2023-02-08

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5510	44.48	0.08	3.07	24.00	11.00
Mid	5590	44.56	0.08	3.07	24.00	11.00
High	5670	44.48	0.08	3.07	24.00	11.00
142	5710	37.48	0.08	3.07	24.00	11.00

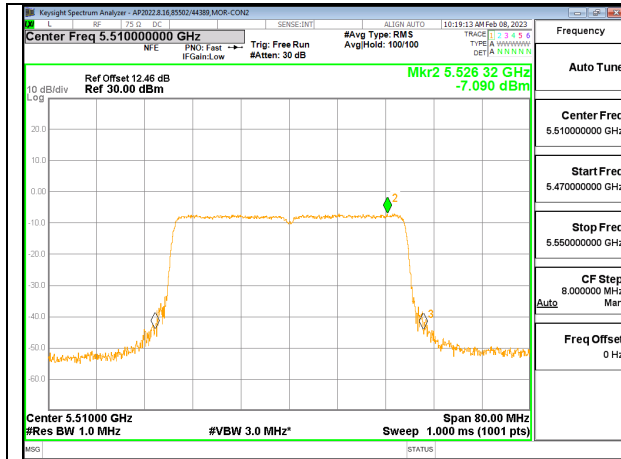
<b>Duty Cycle CF (dB)</b>	0.58	<b>Included in Calculations of Corr'd PSD</b>
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#### Output Power Results

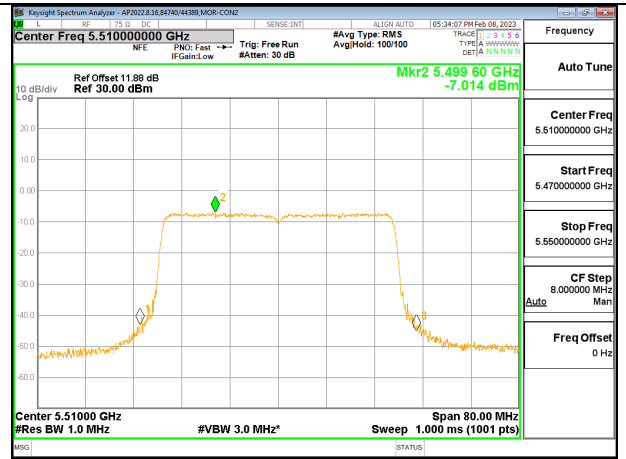
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	9.87	9.90	12.90	24.00	-11.10
Mid	5590	10.78	10.24	13.53	24.00	-10.47
High	5670	10.84	10.38	13.63	24.00	-10.37
142	5710	10.61	10.57	13.60	24.00	-10.40

#### PSD Results

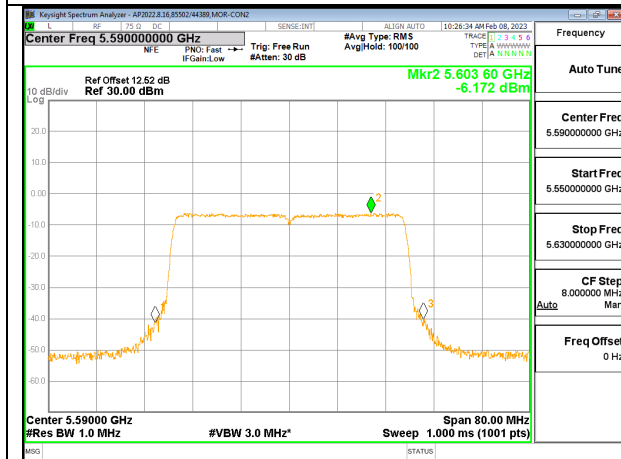
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5510	-7.09	-7.01	-3.46	11.00	-14.46
Mid	5590	-6.17	-6.47	-2.73	11.00	-13.73
High	5670	-5.27	-6.04	-2.04	11.00	-13.04
142	5710	-5.67	-5.48	-1.98	11.00	-12.98



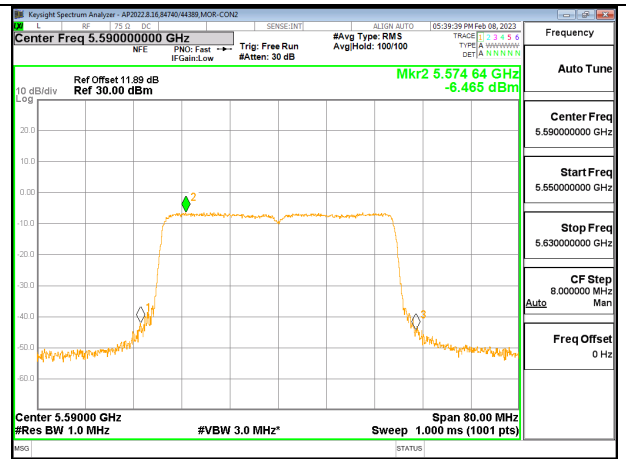
LOW CHANNEL RU 65 Chain 0



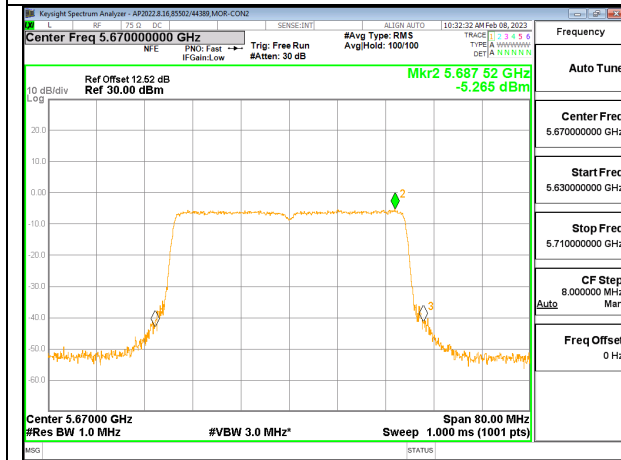
LOW CHANNEL RU 65 Chain 1



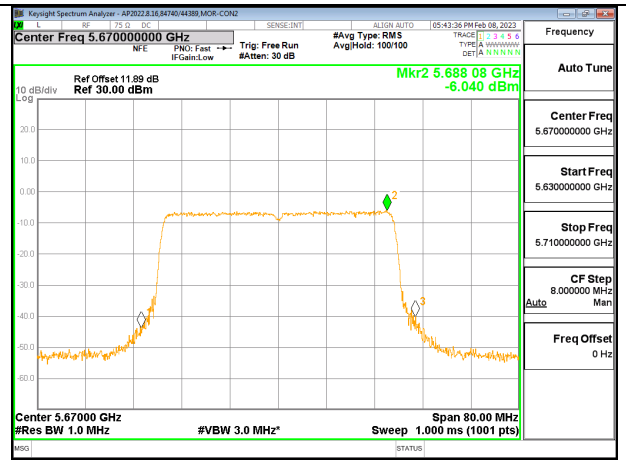
MID CHANNEL RU 65 Chain 0



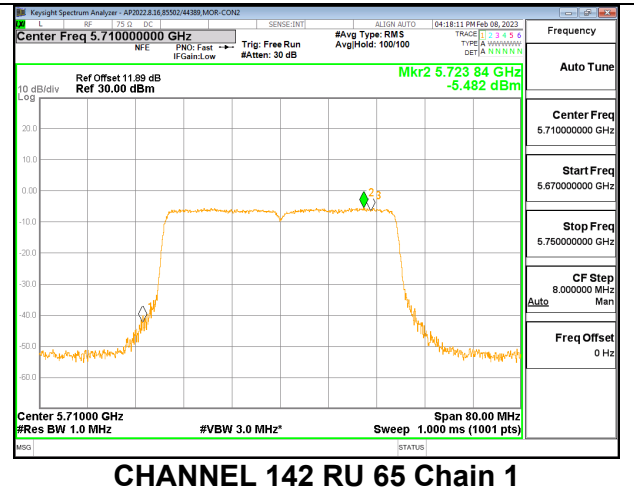
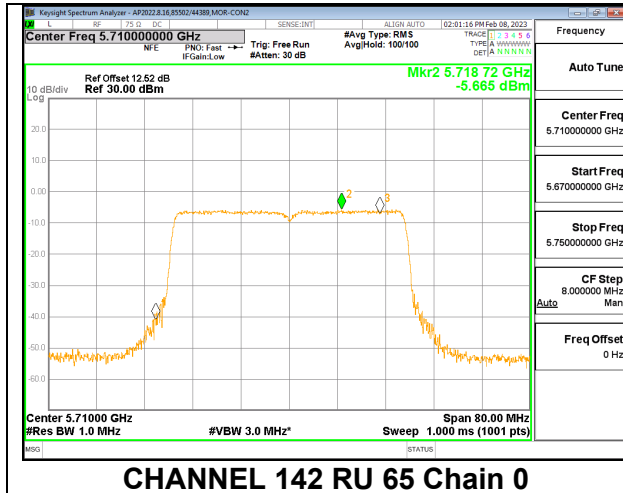
MID CHANNEL RU 65 Chain 1



HIGH CHANNEL RU 65 Chain 0



HIGH CHANNEL RU 65 Chain 1



### 9.3.3. 802.11ax HE80 MODE 2TX IN THE 5.6GHz BAND

#### 2TX 996T MODE

<b>Test Engineer:</b>	84740/44389, 85502/44389
<b>Test Date:</b>	2023-02-02 to 2023-02-08

#### Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5530	90.56	0.08	3.07	24.00	11.00
High	5610	90.24	0.08	3.07	24.00	11.00
138	5690	79.80	0.08	3.07	24.00	11.00

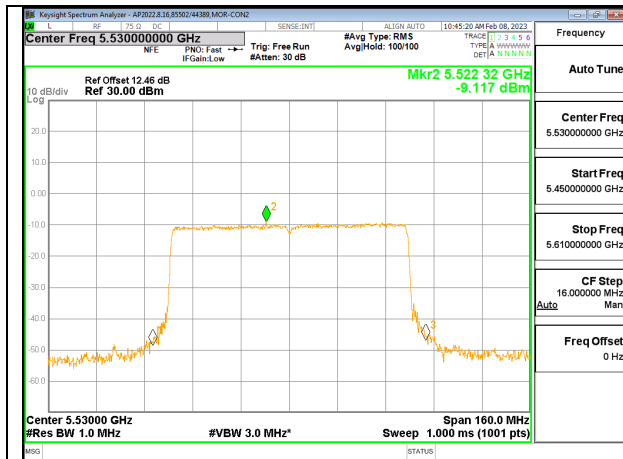
<b>Duty Cycle CF (dB)</b>	0.80	<b>Included in Calculations of Corr'd PSD</b>
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#### Output Power Results

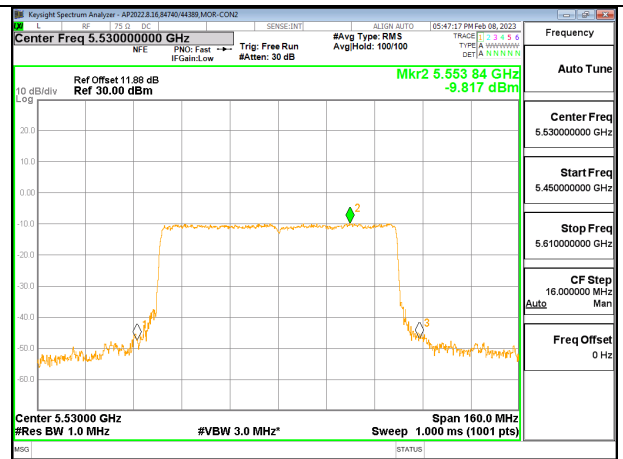
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	10.13	9.79	12.97	24.00	-11.03
High	5610	10.90	10.04	13.50	24.00	-10.50
138	5690	10.95	10.47	13.73	24.00	-10.27

#### PSD Results

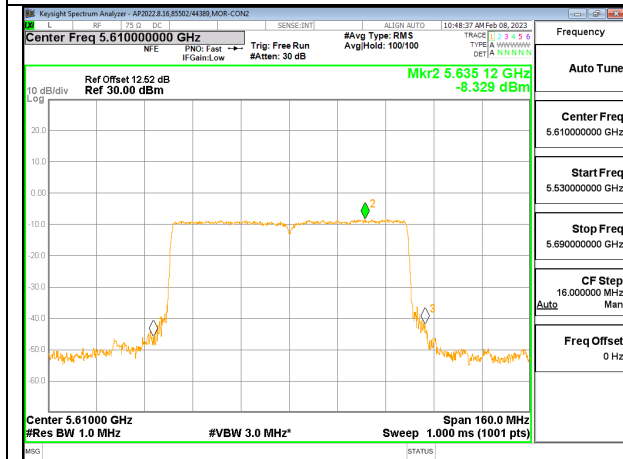
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5530	-9.12	-9.82	-5.64	11.00	-16.64
High	5610	-8.33	-9.41	-5.03	11.00	-16.03
138	5690	-8.28	-8.64	-4.65	11.00	-15.65



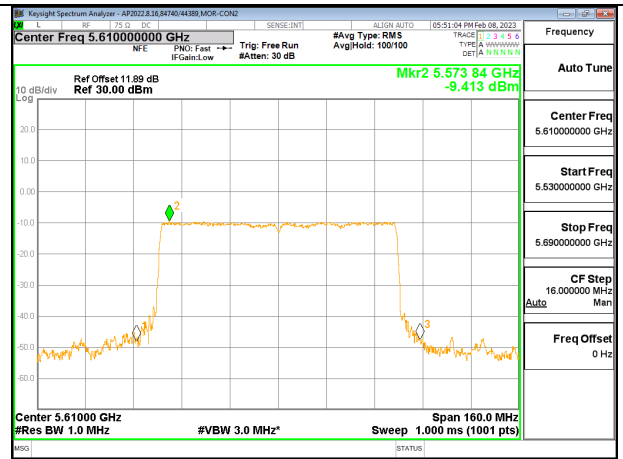
**LOW CHANNEL RU 65 Chain 0**



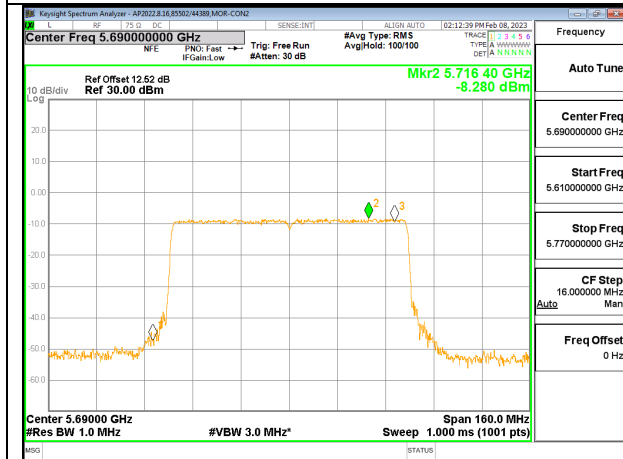
**LOW CHANNEL RU 65 Chain 1**



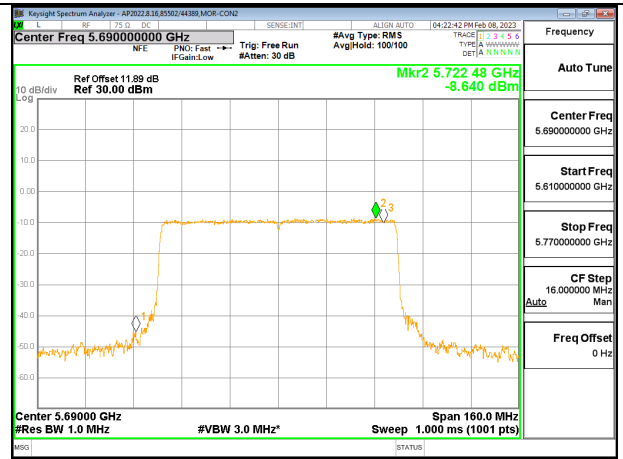
**HIGH CHANNEL RU 65 Chain 0**



**HIGH CHANNEL RU 65 Chain 1**



**CHANNEL 138 RU 65 Chain 0**



**CHANNEL 138 RU 65 Chain 1**

**9.3.4. 802.11ax HE160 MODE 2TX IN THE 5.6GHz BAND**

**2TX 2x996T MODE**

<b>Test Engineer:</b>	84740/44389, 85502/44389
<b>Test Date:</b>	2023-02-02 to 2023-02-08

**Bandwidth, Antenna Gain, and Limits**

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Mid	5570	180.16	0.08	3.07	24.00	11.00

<b>Duty Cycle CF (dB)</b>	0.86	<b>Included in Calculations of Corr'd PSD</b>
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**Output Power Results**

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5570	7.97	7.84	10.92	24.00	-13.08

**PSD Results**

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm/ 1MHz)	Chain 1 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Mid	5570	-14.04	-14.11	-10.20	11.00	-21.20