



427 West 12800 South
Draper, UT 84020

Test Report Attachment

FCC ID	SWX-WAVEML
Equipment Under Test	Wave-MLO5
Test Report Serial Number	TR9529_02
Date of Test(s)	13, 29 – 30 August; 3 – 5 September; 30 October 2024, 21 December 2024 – 3 January 2025.
Report Issue Date	03 January 2025

Test Personnel

Testing performed by	Evan Hartzell / Clay Allred
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Test Location

Testing was performed at the Unified Compliance Laboratory located at 427 West 12800 South, Draper, UT 84020. Unified Compliance Laboratory is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Code 600241-0 which is effective until 30 June 2025. This site has also been registered with Innovations, Science and Economic Development (ISED) department as was accepted under Appendix B, Phase 1 procedures of the APEC Tel MRA for Canadian recognition. ISED No.: 25346, effective until 30 June 2025. Unified Compliance Laboratory has been assigned Conformity Assessment Number US0223 by ISED and MRA US5037.



NVLAP LAB CODE 600241-0

1 UNII-1 Band

1.1 Omni Antenna

1.1.1 Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Emission Bandwidth 26 dB	5180.000	24.0	20.000000	PASS
RF output power	5180.000	24.0	20.000000	PASS
Power Spectral Density	5180.000	24.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5180.000	24.0	20.000000	PASS
Emission Bandwidth 26 dB	5210.000	24.0	20.000000	PASS
Power Spectral Density	5210.000	24.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5210.000	24.0	20.000000	PASS
Emission Bandwidth 26 dB	5240.000	24.0	20.000000	PASS
Power Spectral Density	5240.000	24.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5240.000	24.0	20.000000	PASS
Emission Bandwidth 26 dB	5190.000	24.0	40.000000	PASS
Power Spectral Density	5190.000	24.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5190.000	24.0	40.000000	PASS
Emission Bandwidth 26 dB	5230.000	24.0	40.000000	PASS
Power Spectral Density	5230.000	24.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5230.000	24.0	40.000000	PASS
Emission Bandwidth 26 dB	5210.000	24.0	80.000000	PASS
Power Spectral Density	5210.000	24.0	80.000000	PASS
Occupied Channel Bandwidth 99%	5210.000	24.0	80.000000	PASS
Emission Bandwidth 26 dB	5250.000	24.0	160.000000	PASS
Power Spectral Density	5250.000	24.0	160.000000	PASS
Occupied Channel Bandwidth 99%	5250.000	24.0	160.000000	PASS

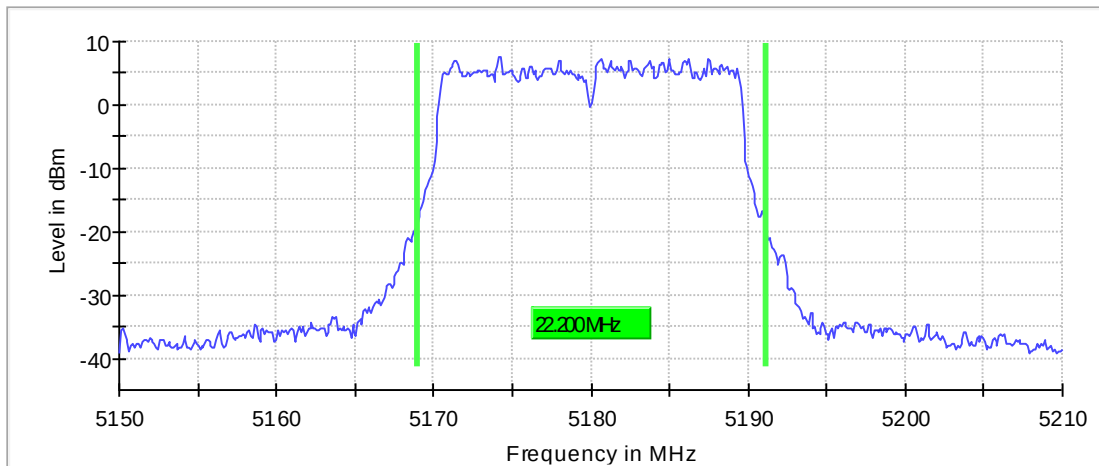
Emission Bandwidth 26 dB (5180 MHz; 24.000 dBm; 20 MHz)

26 dB Bandwidth

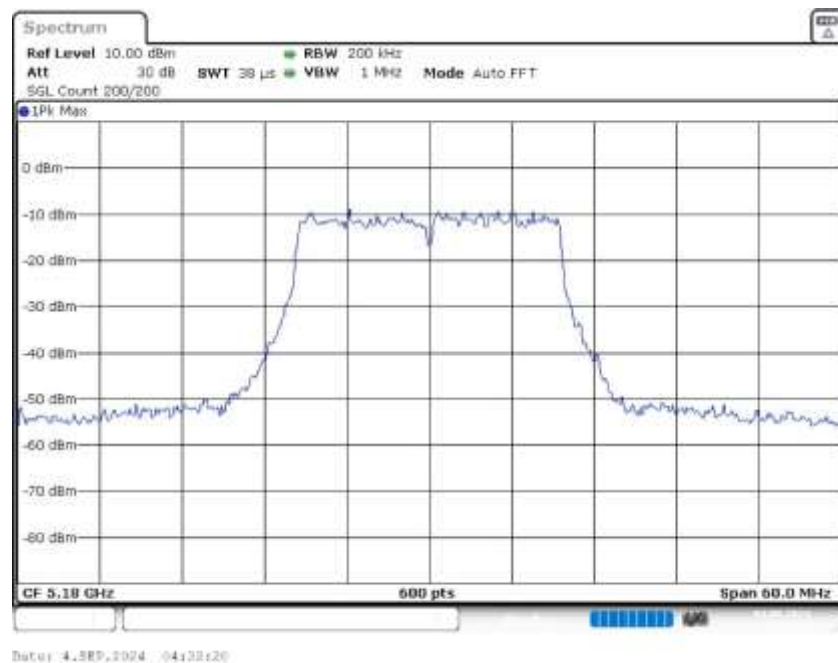
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	22.200000	---	---	5168.950000	5191.150000

DUT Frequency (MHz)	Max Level (dBm)	Result
5180.000000	7.6	PASS

26 dB Bandwidth



Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.21000 GHz	5.21000 GHz
Span	60.000 MHz	60.000 MHz
RBW	200.000 kHz	~ 200.000 kHz
VBW	1.000 MHz	>= 600.000 kHz
SweepPoints	600	~ 600
Sweptime	37.969 μ s	AUTO
Reference Level	10.000 dBm	10.000 dBm

Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off

RF output power (5180 MHz; 24.000 dBm; 20 MHz)

Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5180.000000	21.3	30.0	21.3	99.720	PASS

OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

Power Spectral Density (5180 MHz; 24.000 dBm; 20 MHz)

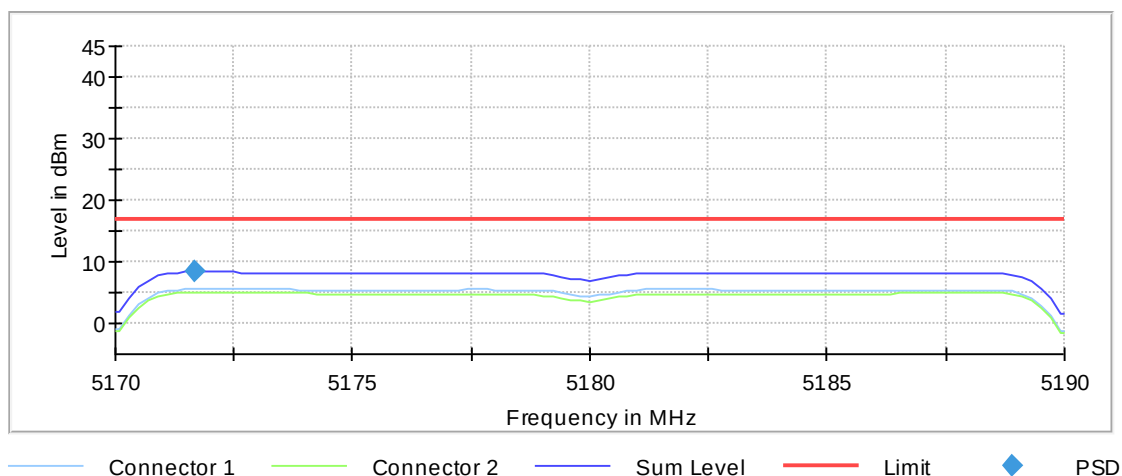
Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5180.000000	5171.683168	8.317	17.0	PASS

Ports

Port	State
1	used
2	used

Power Spectral Density



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.17000 GHz	5.17000 GHz
Stop Frequency	5.19000 GHz	5.19000 GHz
Span	20.000 MHz	20.000 MHz
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 40
SweepTime	2.020 ms	2.020 ms
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	RMS	RMS
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Power	Average Power
SweepType	FFT	AUTO
Preamp	off	off

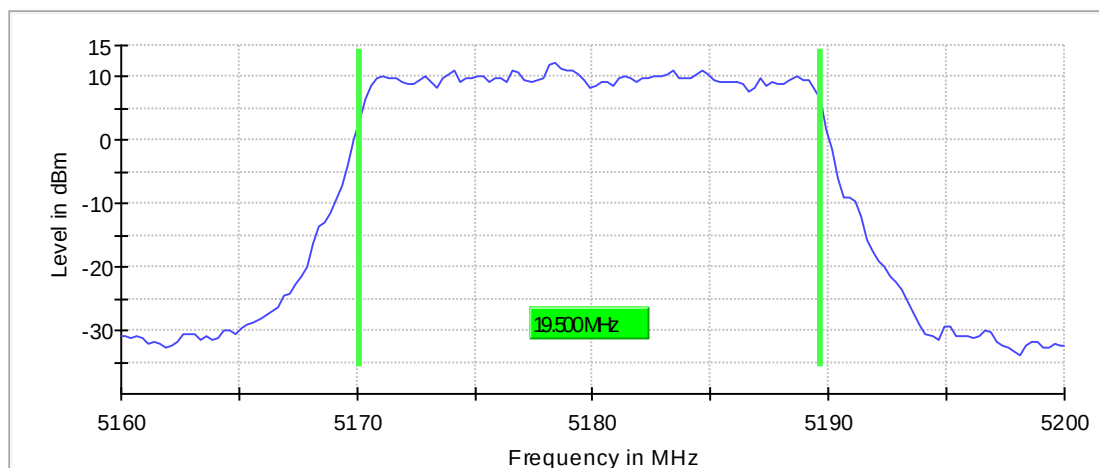
Occupied Channel Bandwidth 99% (5180 MHz; 24.000 dBm; 20 MHz)

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	19.500000	---	---	5170.125000	5189.625000

DUT Frequency (MHz)	Result
5180.000000	PASS

99 % Bandwidth



Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.16000 GHz	5.16000 GHz
Stop Frequency	5.20000 GHz	5.20000 GHz
Span	40.000 MHz	40.000 MHz
RBW	500.000 kHz	>= 500.000 kHz
VBW	2.000 MHz	>= 1.500 MHz
SweepPoints	160	~ 160
SweepTime	11.344 μ s	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off

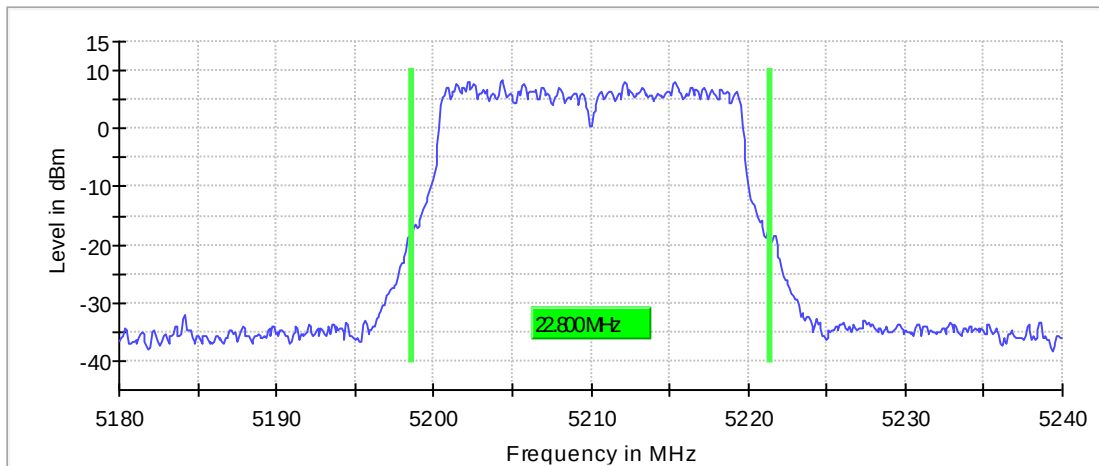
Emission Bandwidth 26 dB (5210 MHz; 24.000 dBm; 20 MHz)

26 dB Bandwidth

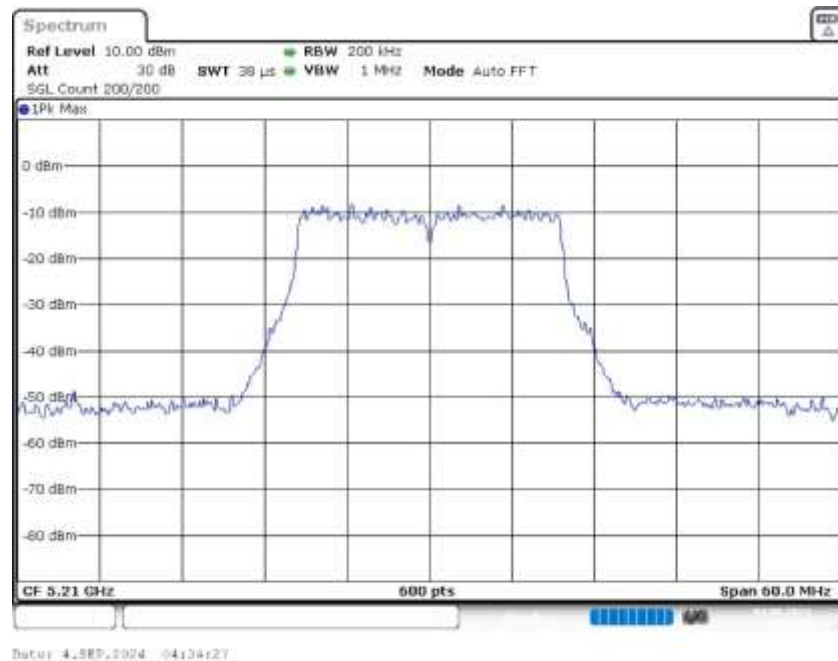
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	22.800000	---	---	5198.650000	5221.450000

DUT Frequency (MHz)	Max Level (dBm)	Result
5210.000000	8.4	PASS

26 dB Bandwidth



Bandwidth



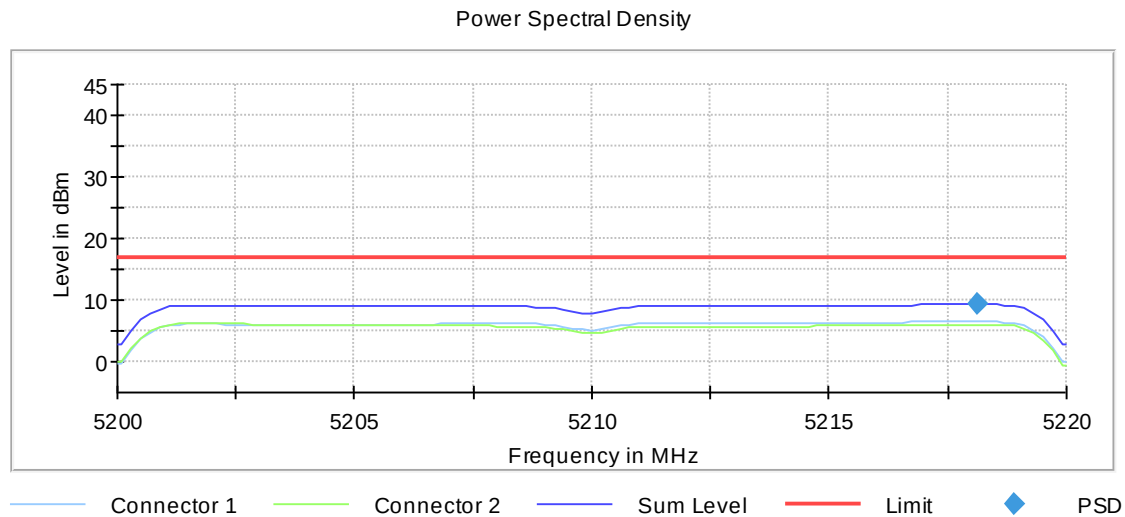
Power Spectral Density (5210 MHz; 24.000 dBm; 20 MHz)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5210.000000	5218.118812	9.275	17.0	PASS

Ports

Port	State
1	used
2	used

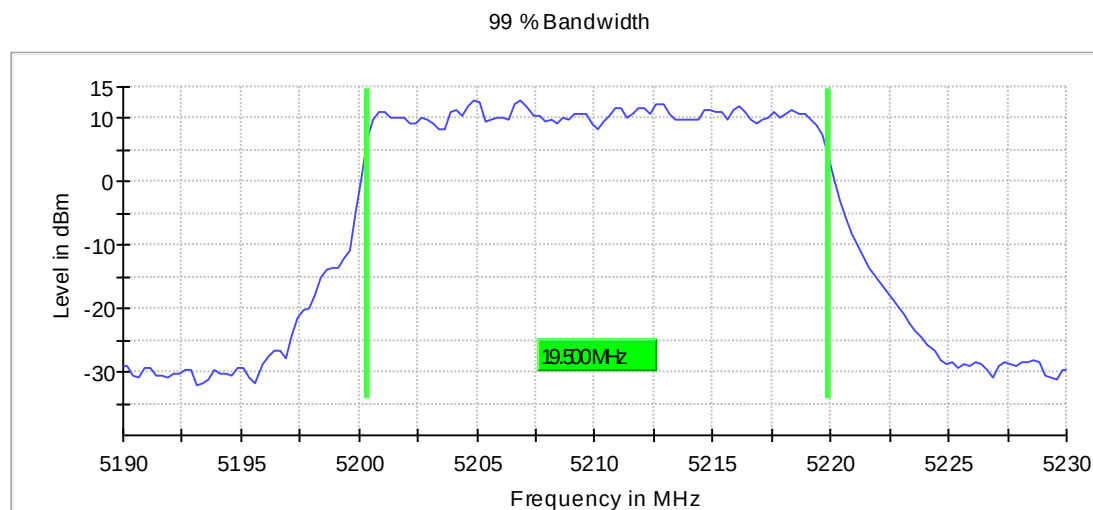


Occupied Channel Bandwidth 99% (5210 MHz; 24.000 dBm; 20 MHz)

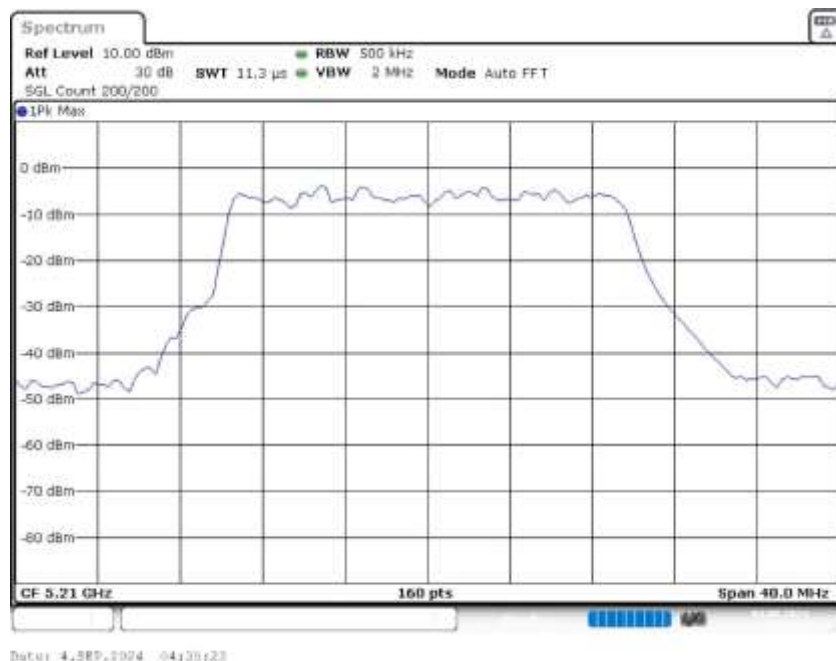
99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	19.500000	---	---	5200.375000	5219.875000

DUT Frequency (MHz)	Result
5210.000000	PASS



Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.19000 GHz	5.19000 GHz
Stop Frequency	5.23000 GHz	5.23000 GHz
Span	40.000 MHz	40.000 MHz
RBW	500.000 kHz	>= 500.000 kHz
VBW	2.000 MHz	>= 1.500 MHz
SweepPoints	160	~ 160
SweepTime	11.344 μ s	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off

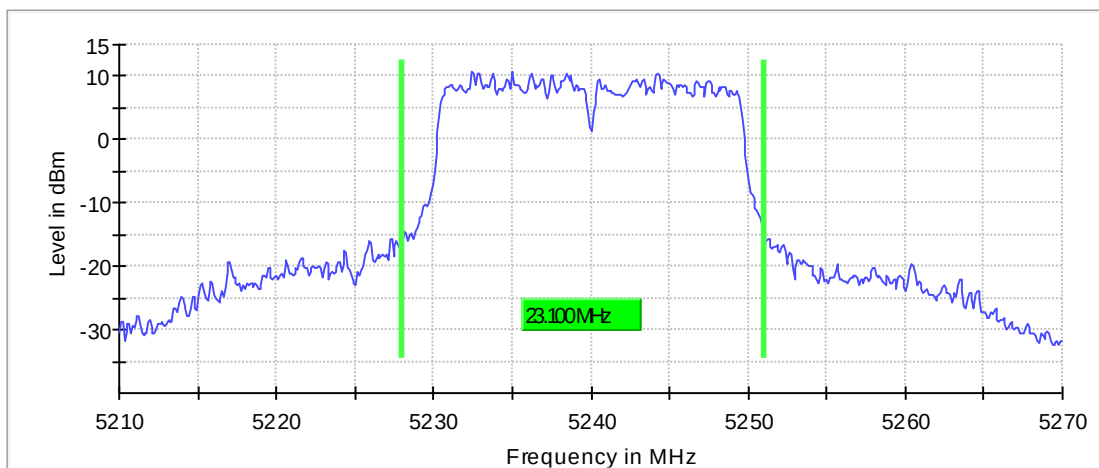
Emission Bandwidth 26 dB (5240 MHz; 24.000 dBm; 20 MHz)

26 dB Bandwidth

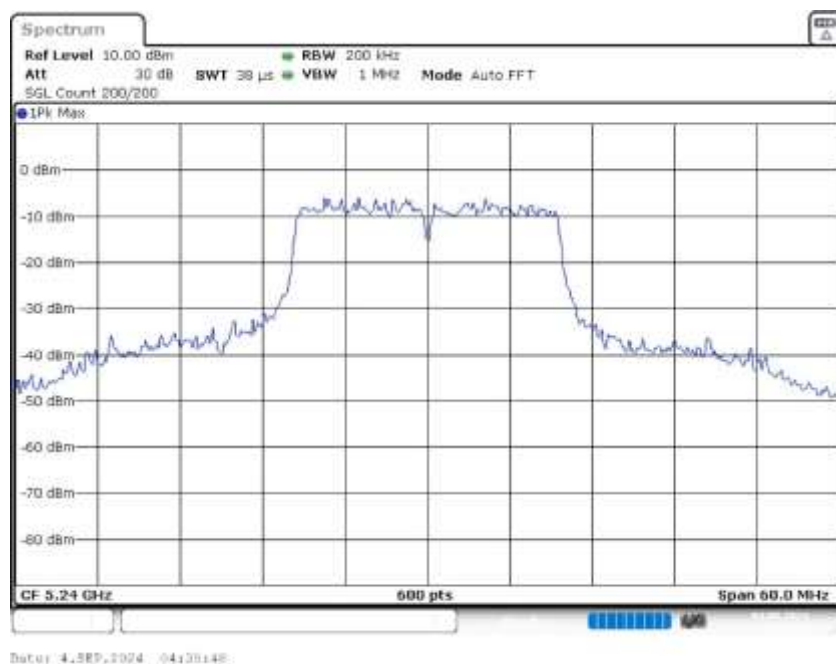
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	23.100000	---	---	5227.950000	5251.050000

DUT Frequency (MHz)	Max Level (dBm)	Result
5240.000000	10.6	PASS

26 dB Bandwidth



Bandwidth



Power Spectral Density (5240 MHz; 24.000 dBm; 20 MHz)

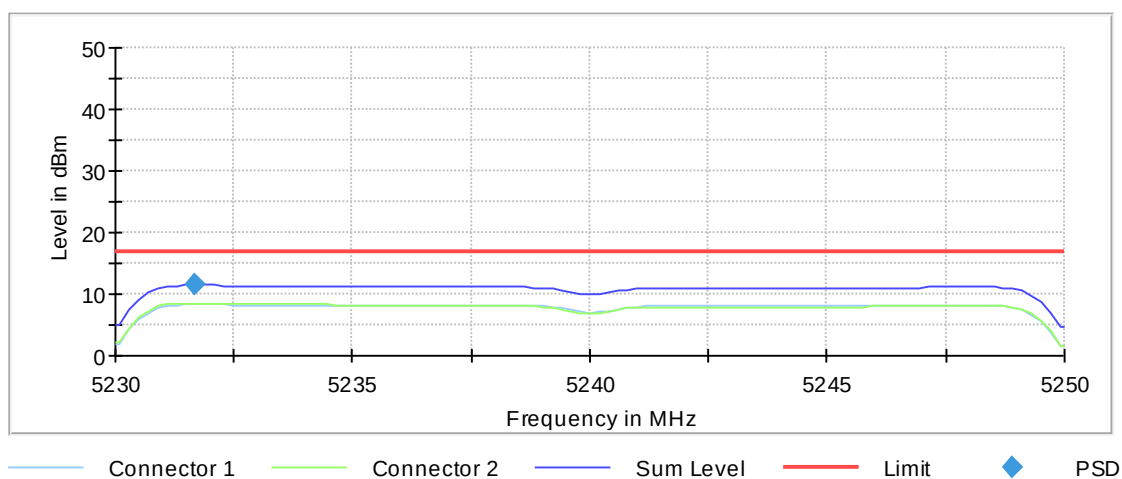
Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5240.000000	5231.683168	11.448	17.0	PASS

Ports

Port	State
1	used
2	used

Power Spectral Density



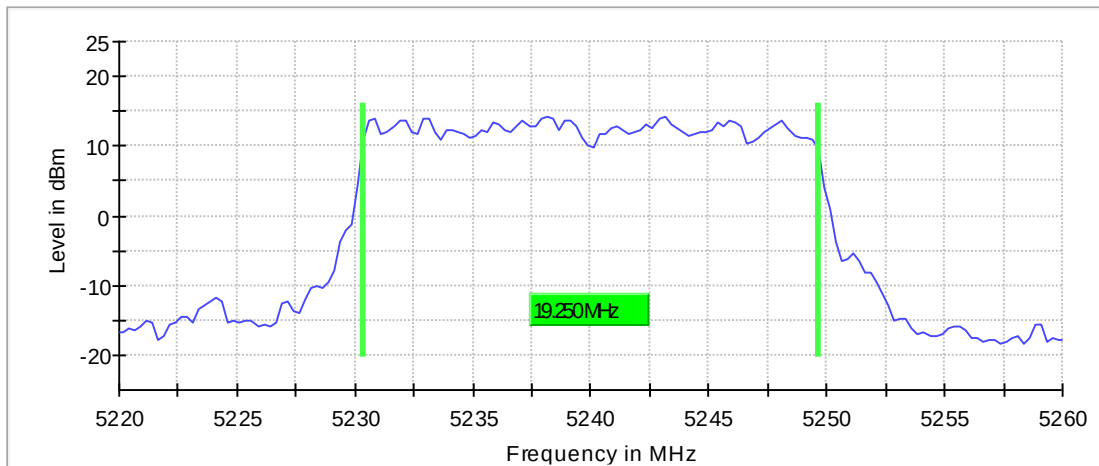
Occupied Channel Bandwidth 99% (5240 MHz; 24.000 dBm; 20 MHz)

99 % Bandwidth

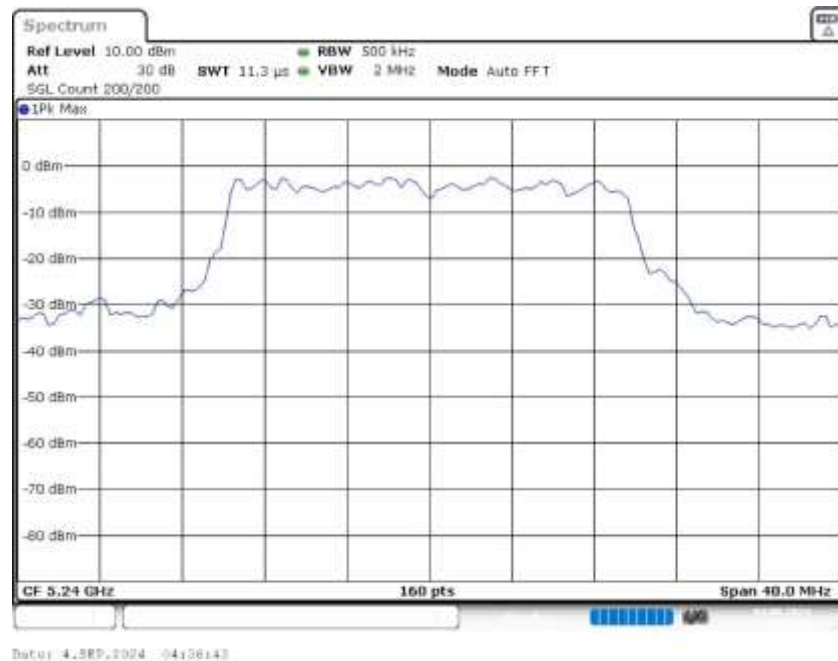
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	19.250000	---	---	5230.375000	5249.625000

DUT Frequency (MHz)	Result
5240.000000	PASS

99 % Bandwidth



Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.22000 GHz	5.22000 GHz
Stop Frequency	5.26000 GHz	5.26000 GHz
Span	40.000 MHz	40.000 MHz
RBW	500.000 kHz	≥ 500.000 kHz
VBW	2.000 MHz	≥ 1.500 MHz
SweepPoints	160	~ 160
SweepTime	11.344 μ s	AUTO
Reference Level	10.000 dBm	10.000 dBm

Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off

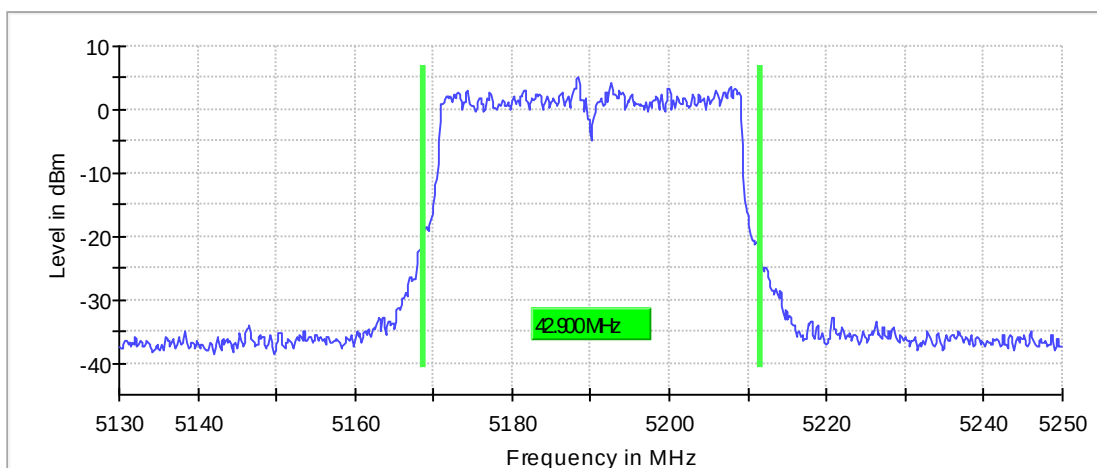
Emission Bandwidth 26 dB (5190 MHz; 24.000 dBm; 40 MHz)

26 dB Bandwidth

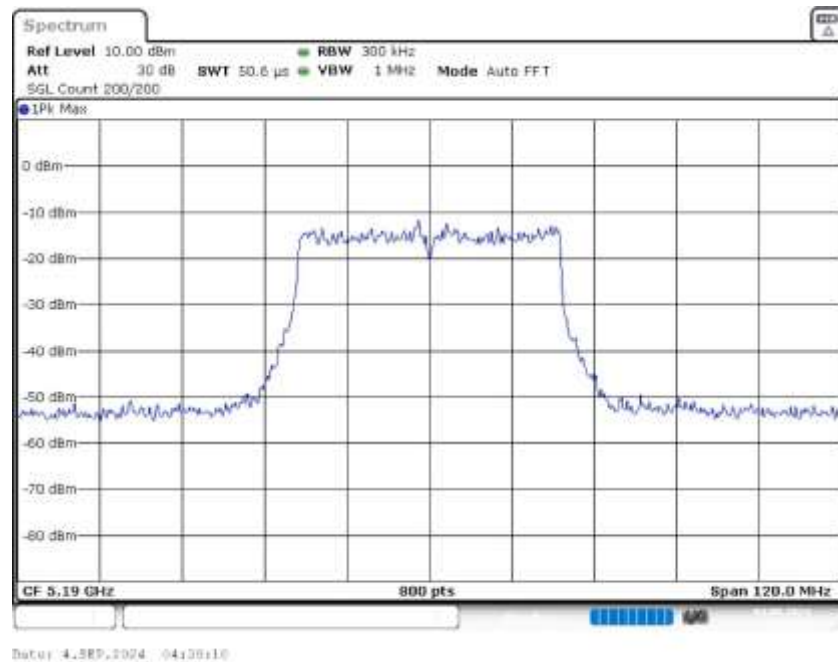
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	42.900000	---	---	5168.625000	5211.525000

DUT Frequency (MHz)	Max Level (dBm)	Result
5190.000000	5.0	PASS

26 dB Bandwidth



Bandwidth



Power Spectral Density (5190 MHz; 24.000 dBm; 40 MHz)

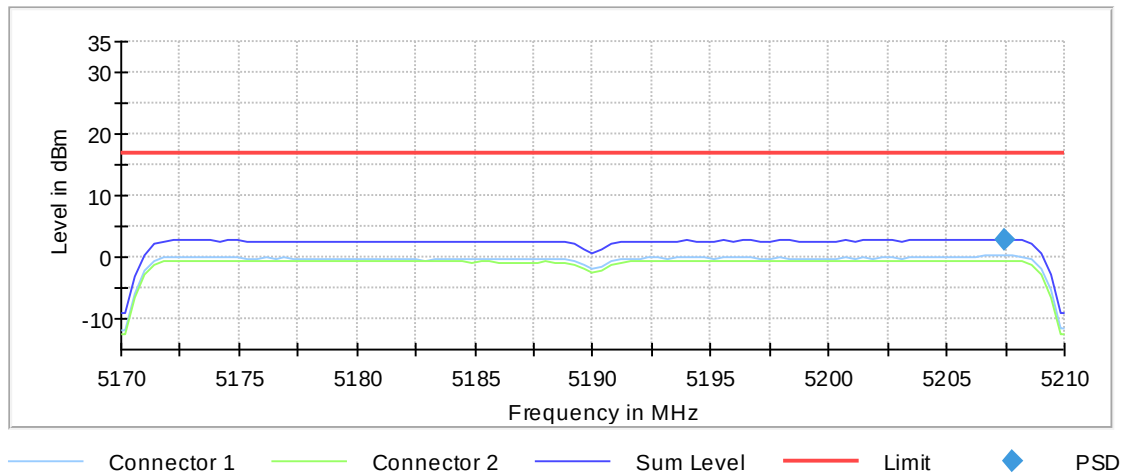
Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5190.000000	5207.425743	2.895	17.0	PASS

Ports

Port	State
1	used
2	used

Power Spectral Density



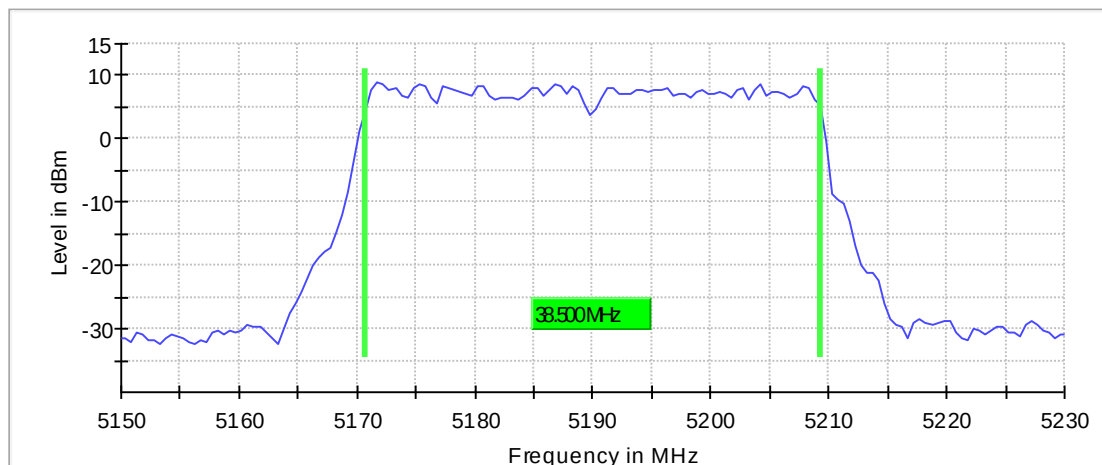
Occupied Channel Bandwidth 99% (5190 MHz; 24.000 dBm; 40 MHz)

99 % Bandwidth

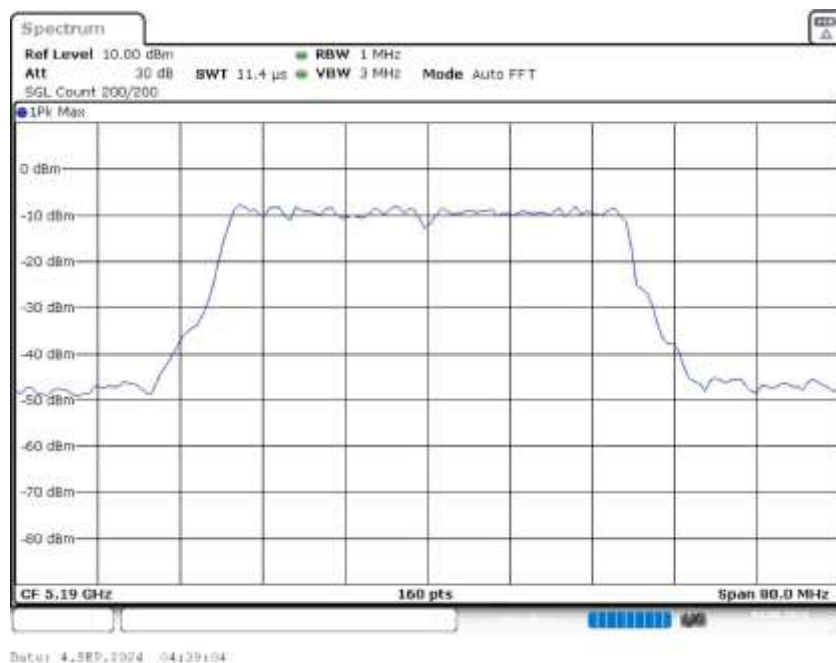
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	38.500000	---	---	5170.750000	5209.250000

DUT Frequency (MHz)	Result
5190.000000	PASS

99 % Bandwidth



Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.15000 GHz	5.15000 GHz
Stop Frequency	5.23000 GHz	5.23000 GHz
Span	80.000 MHz	80.000 MHz
RBW	1.000 MHz	≥ 1.000 MHz
VBW	3.000 MHz	≥ 3.000 MHz
SweepPoints	160	~ 160
SweepTime	11.438 μ s	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off

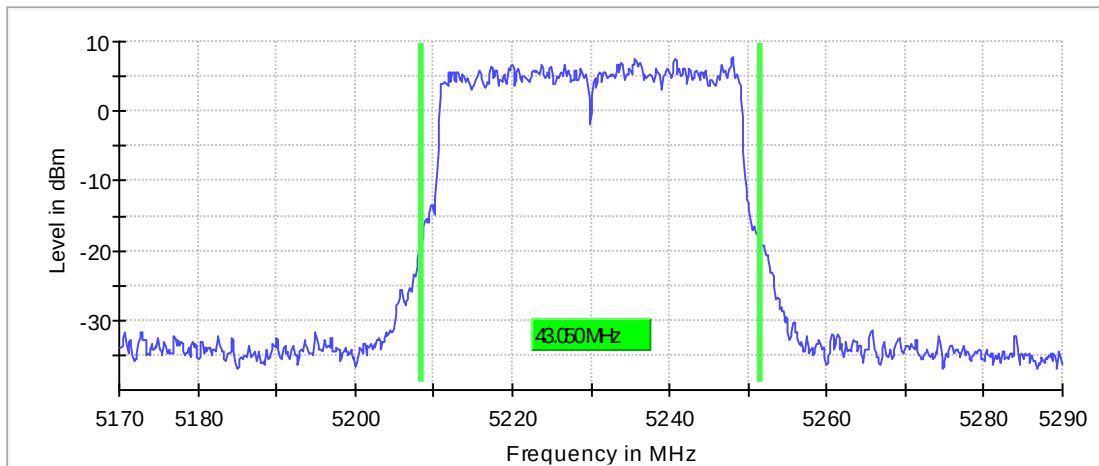
Emission Bandwidth 26 dB (5230 MHz; 24.000 dBm; 40 MHz)

26 dB Bandwidth

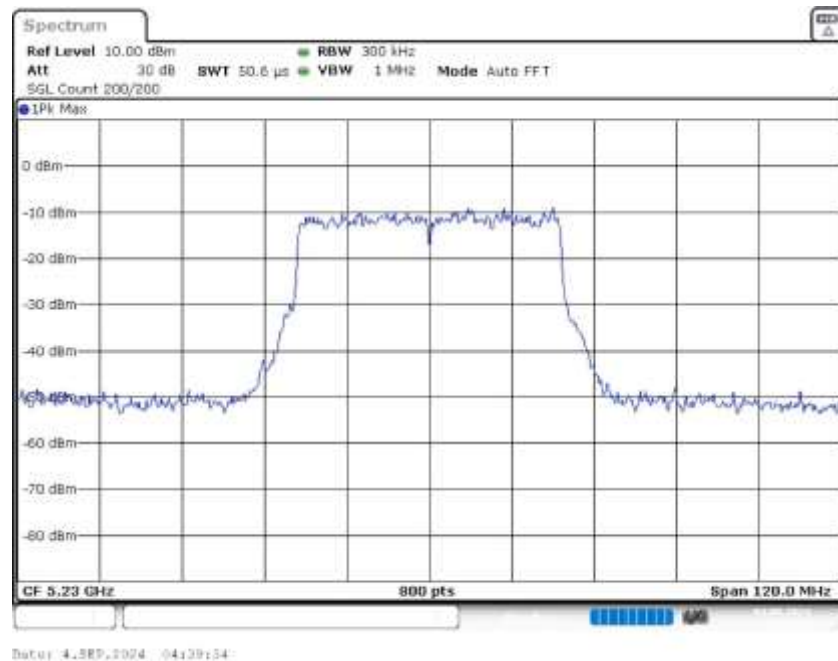
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	43.050000	---	---	5208.475000	5251.525000

DUT Frequency (MHz)	Max Level (dBm)	Result
5230.000000	7.8	PASS

26 dB Bandwidth



Bandwidth



Power Spectral Density (5230 MHz; 24.000 dBm; 40 MHz)

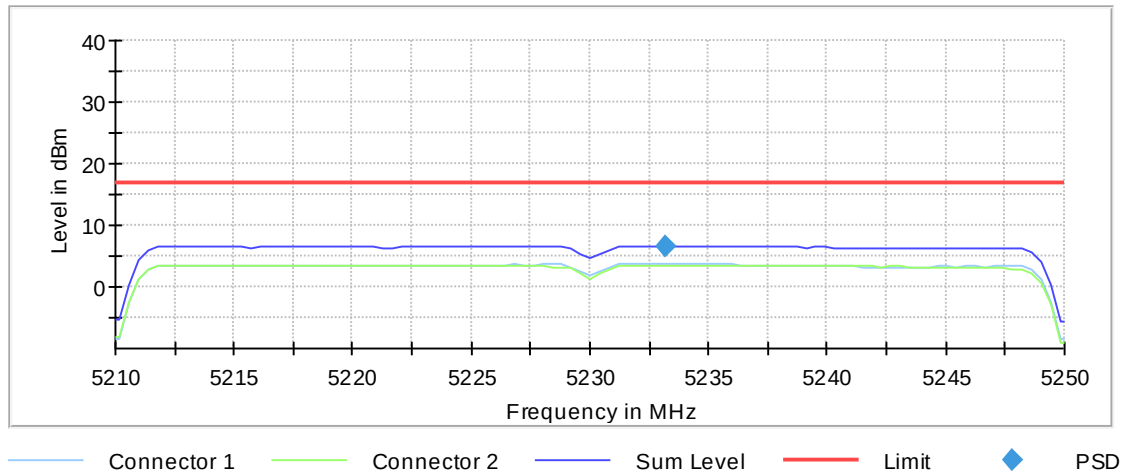
Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5230.000000	5233.168317	6.621	17.0	PASS

Ports

Port	State
1	used
2	used

Power Spectral Density



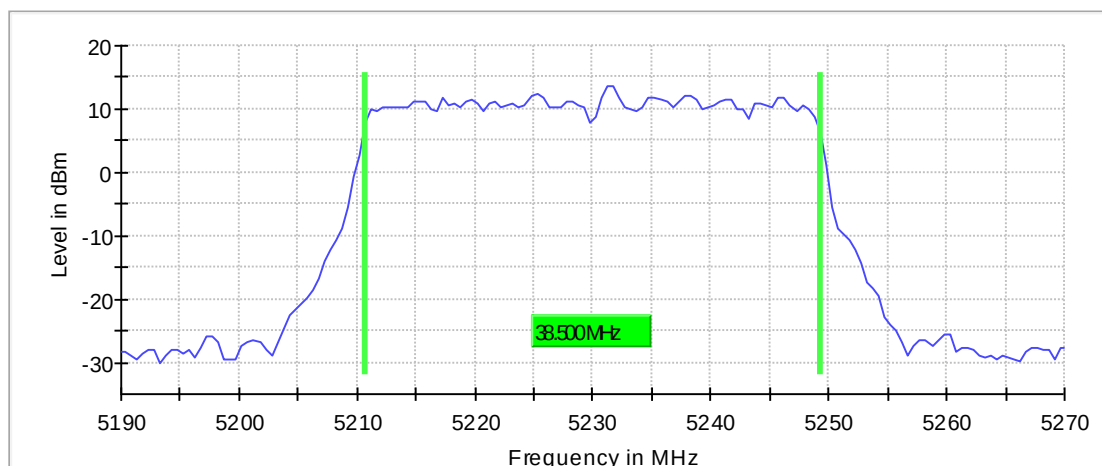
Occupied Channel Bandwidth 99% (5230 MHz; 24.000 dBm; 40 MHz)

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	38.500000	---	---	5210.750000	5249.250000

DUT Frequency (MHz)	Result
5230.000000	PASS

99 % Bandwidth



Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.19000 GHz	5.19000 GHz
Stop Frequency	5.27000 GHz	5.27000 GHz
Span	80.000 MHz	80.000 MHz
RBW	1.000 MHz	>= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	160	~ 160
SweepTime	11.438 μs	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off

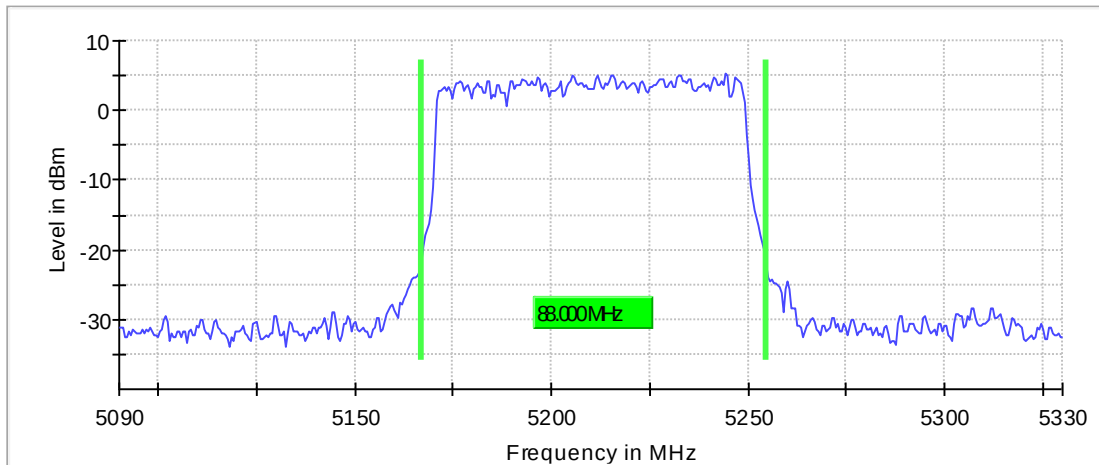
Emission Bandwidth 26 dB (5210 MHz; 24.000 dBm; 80 MHz)

26 dB Bandwidth

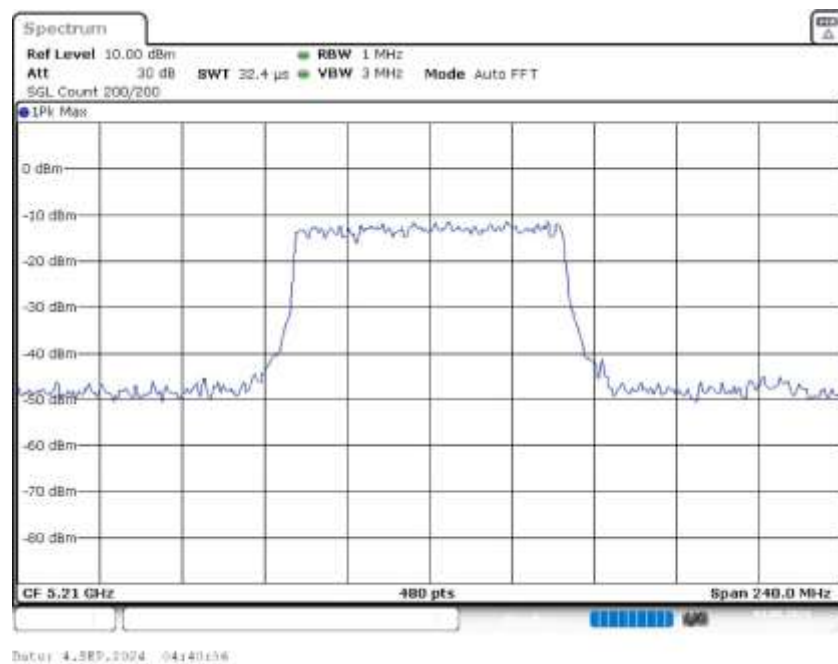
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	88.000000	---	---	5166.750000	5254.750000

DUT Frequency (MHz)	Max Level (dBm)	Result
5210.000000	5.2	PASS

26 dB Bandwidth



Bandwidth



Power Spectral Density (5210 MHz; 24.000 dBm; 80 MHz)

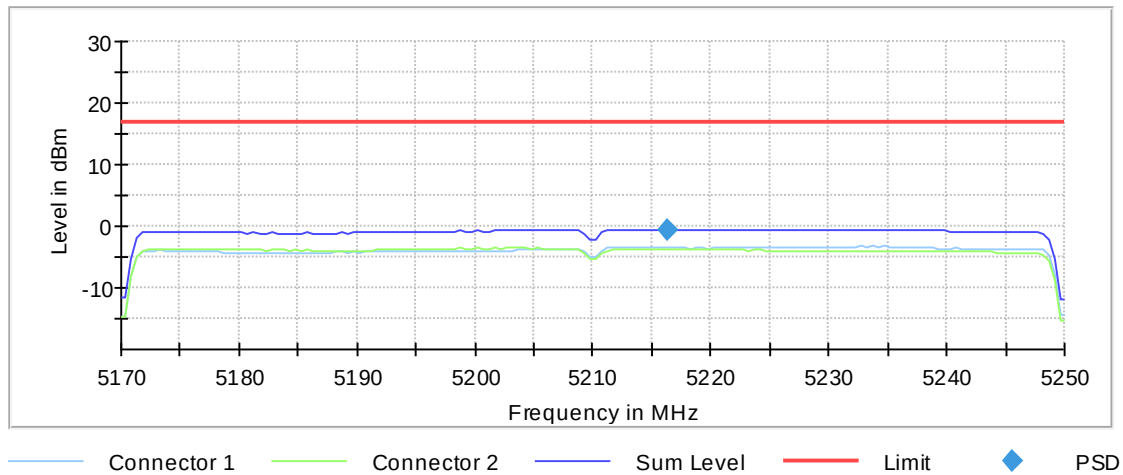
Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5210.000000	5216.250000	-0.542	17.0	PASS

Ports

Port	State
1	used
2	used

Power Spectral Density



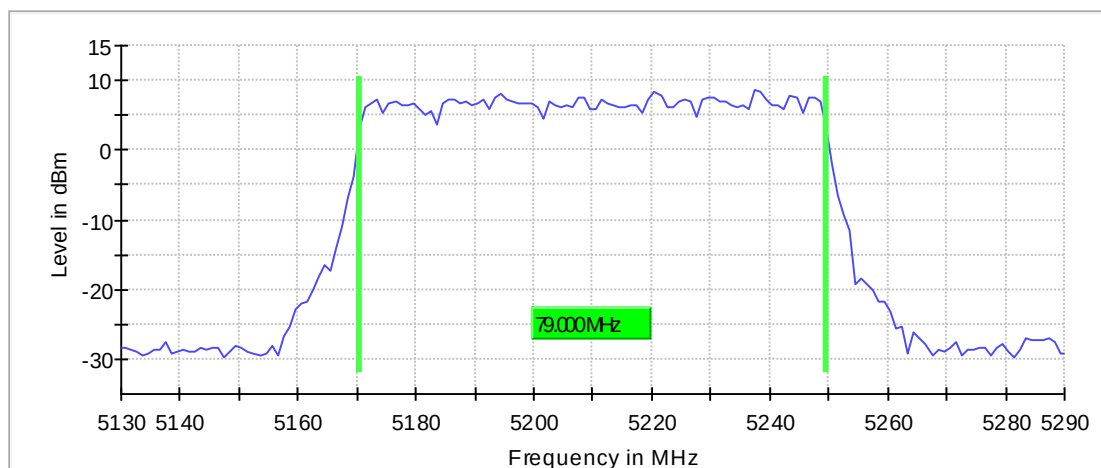
Occupied Channel Bandwidth 99% (5210 MHz; 24.000 dBm; 80 MHz)

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	79.000000	---	---	5170.500000	5249.500000

DUT Frequency (MHz)	Result
5210.000000	PASS

99 % Bandwidth



Bandwidth



Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.13000 GHz	5.13000 GHz
Stop Frequency	5.29000 GHz	5.29000 GHz
Span	160.000 MHz	160.000 MHz
RBW	2.000 MHz	≥ 2.000 MHz
VBW	10.000 MHz	≥ 6.000 MHz
SweepPoints	160	~ 160
Sweptime	16.875 μ s	AUTO
Reference Level	10.000 dBm	10.000 dBm

Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamp	off	off

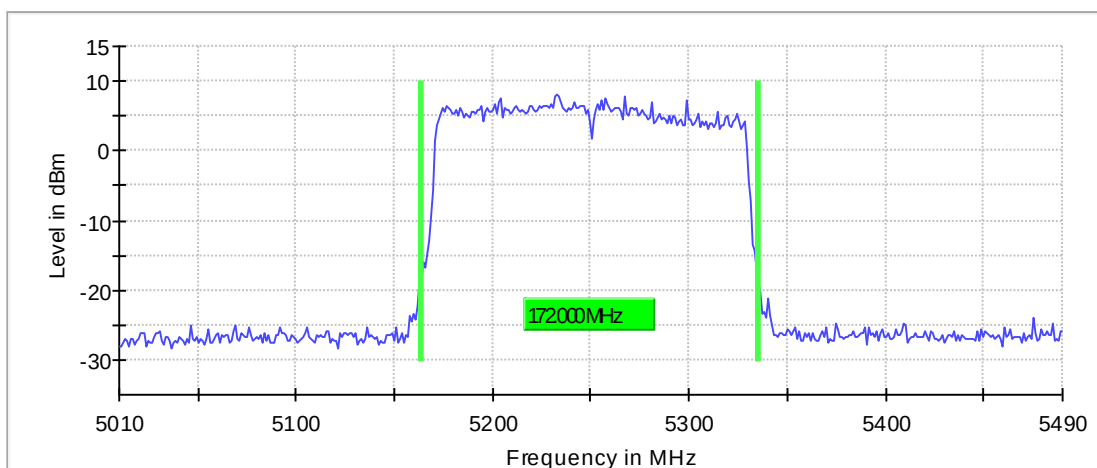
Emission Bandwidth 26 dB (5250 MHz; 24.000 dBm; 160 MHz)

26 dB Bandwidth

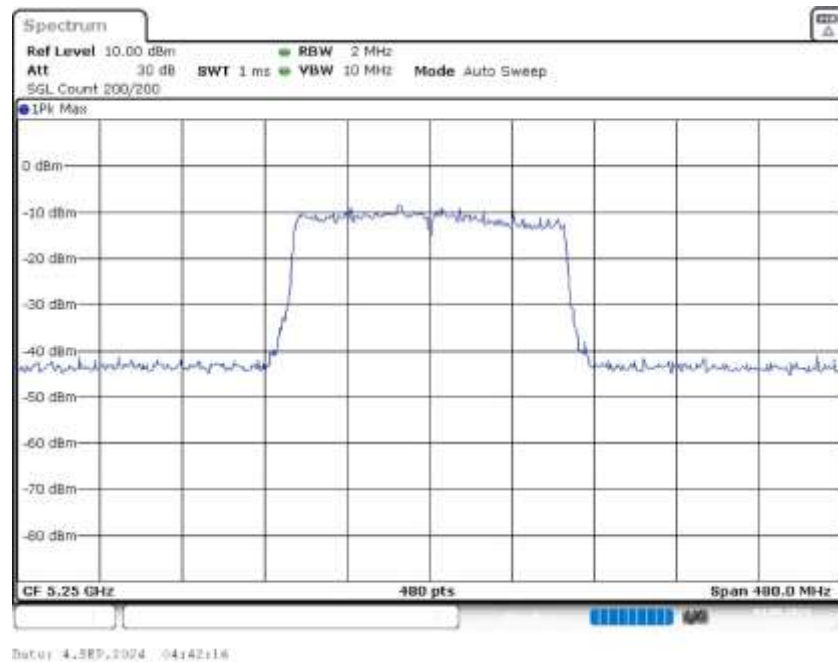
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5250.000000	172.000000	---	---	5163.500000	5335.500000

DUT Frequency (MHz)	Max Level (dBm)	Result
5250.000000	8.2	PASS

26 dB Bandwidth



Bandwidth



Power Spectral Density (5250 MHz; 24.000 dBm; 160 MHz)

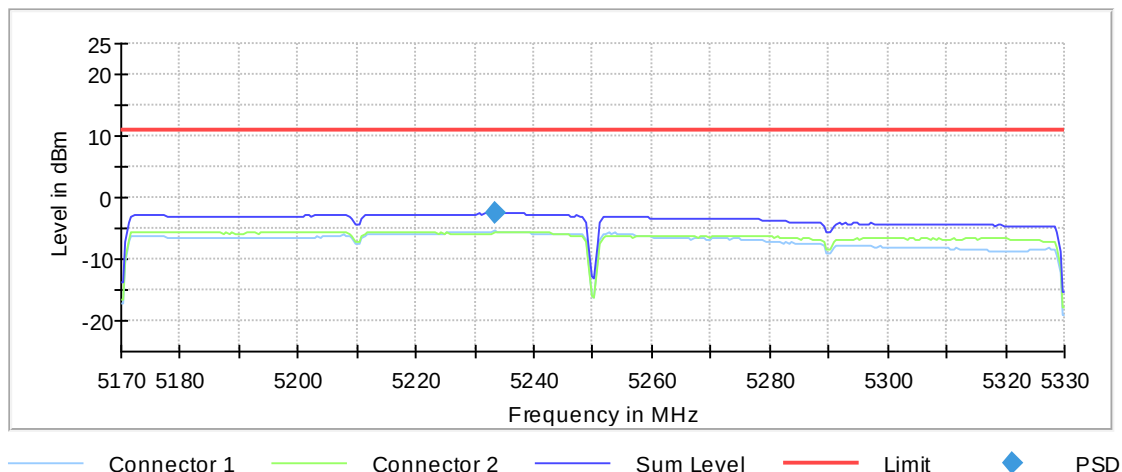
Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5250.000000	5233.250000	-2.582	11.0	PASS

Ports

Port	State
1	used
2	used

Power Spectral Density



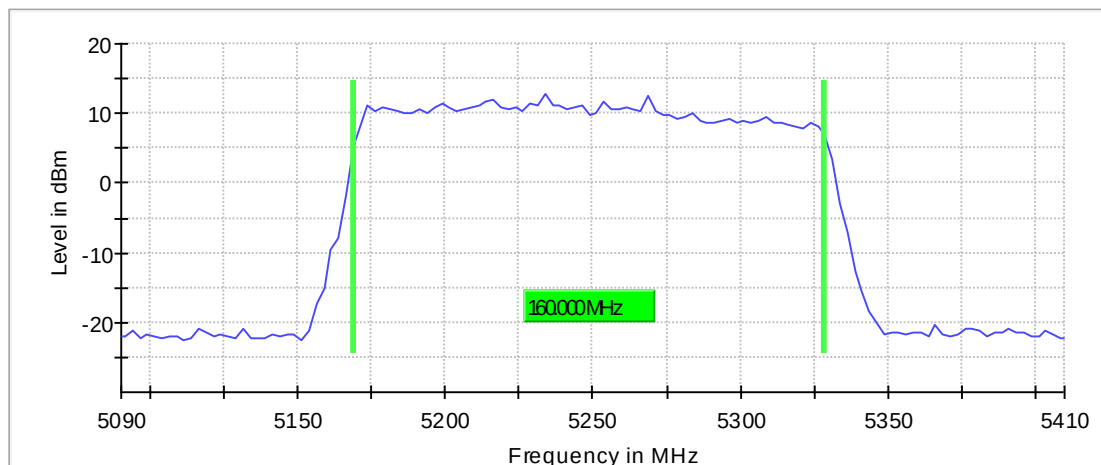
Occupied Channel Bandwidth 99% (5250 MHz; 24.000 dBm; 160 MHz)

99 % Bandwidth

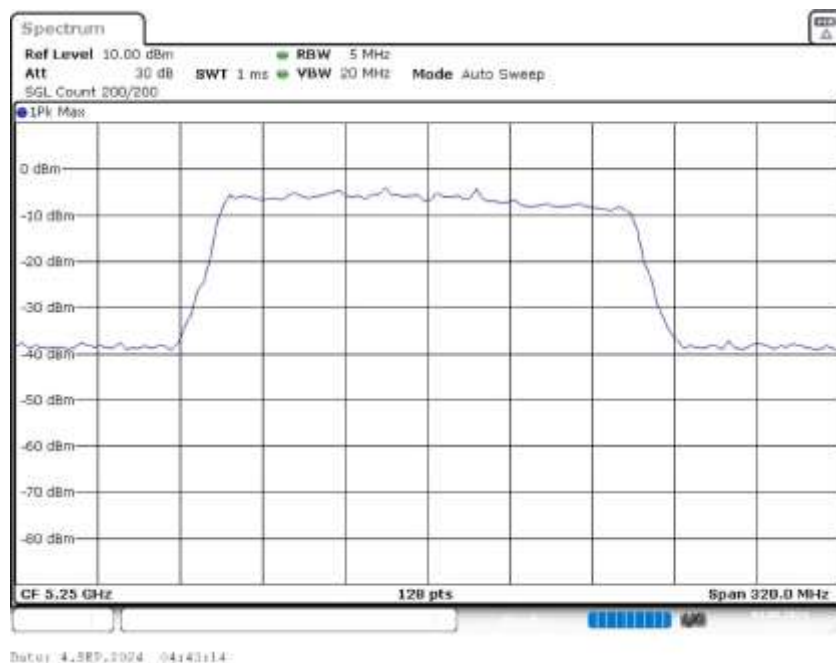
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5250.000000	160.000000	---	---	5168.750000	5328.750000

DUT Frequency (MHz)	Result
5250.000000	PASS

99 % Bandwidth



Bandwidth

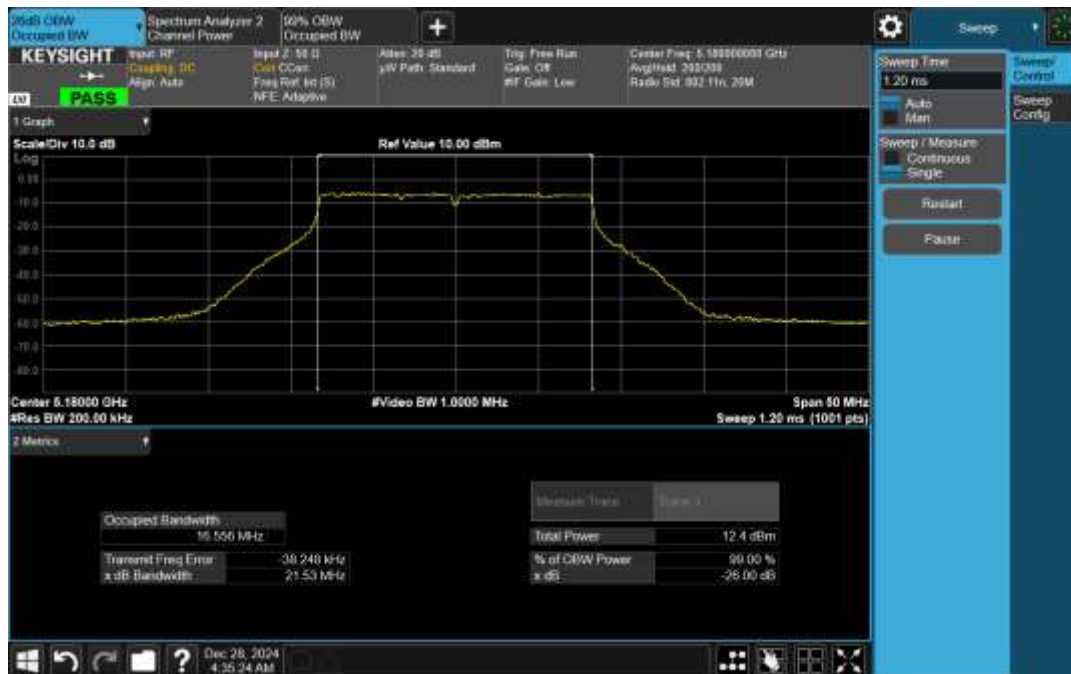


Measurement

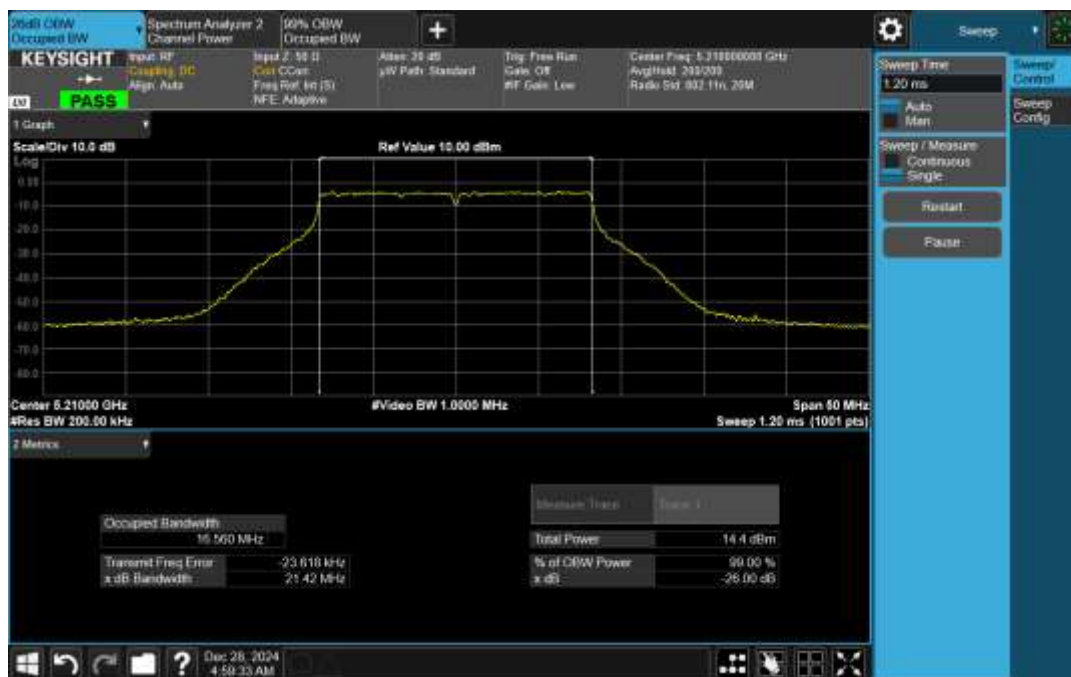
Setting	Instrument Value	Target Value
Start Frequency	5.09000 GHz	5.09000 GHz
Stop Frequency	5.41000 GHz	5.41000 GHz
Span	320.000 MHz	320.000 MHz
RBW	5.000 MHz	>= 4.000 MHz
VBW	20.000 MHz	>= 15.000 MHz
SweepPoints	128	~ 128
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	30.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	200	200
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off

1.2 Dish Antenna

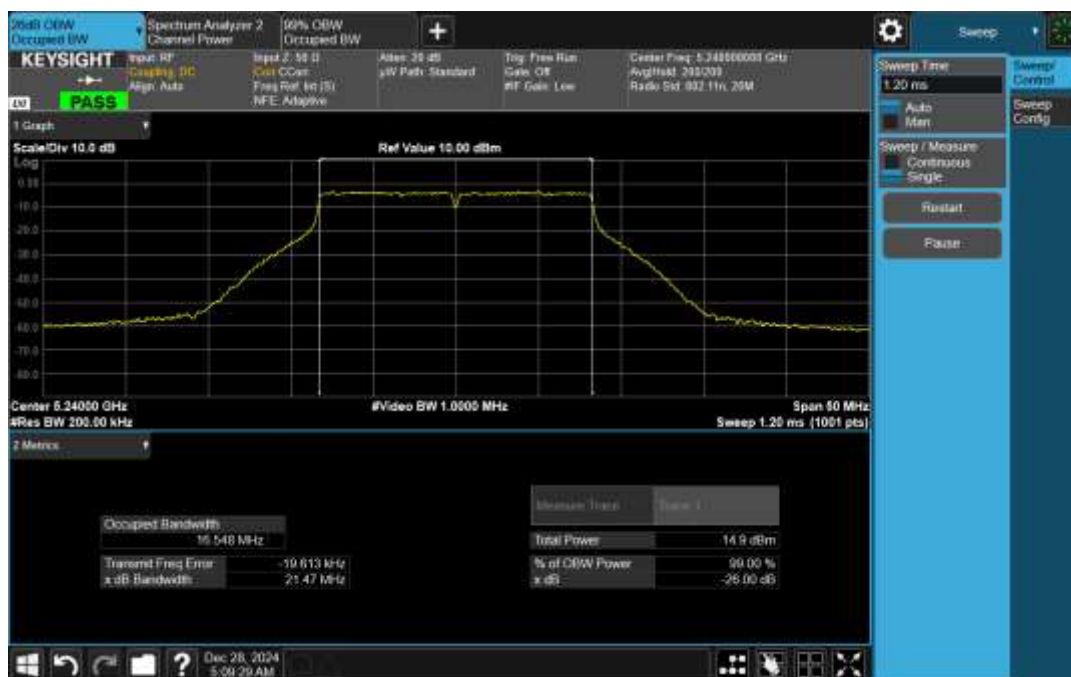
26 dB Bandwidth



Wave-MLO5_UNII-1_26dB_OBW_OFDM20_5180_CH0



Wave-MLO5_UNII-1_26dB_OBW_OFDM20_5210_CH0



Wave-MLO5_UNII-1_26dB_OBW_OFDM20_5240_CH1



Wave-

MLO5_UNII-1_26dB_OBW_HE20_5180_CH1



Wave-MLO5_UNII-1_26dB_OBW_HE20_5210_CH0



Wave-MLO5_UNII-1_26dB_OBW_HE20_5240_CH1



Wave-MLO5_UNII-1_26dB_OBW_HE40_5190_CH0



Wave-MLO5_UNII-1_26dB_OBW_HE40_5230_CH1



Wave-MLO5_UNII-1_26dB_OBW_HE80_5210_CH1



Wave-MLO5_UNII-1_26dB_OBW_HE160_5250_CH0

99% Bandwidth



Wave-MLO5_UNII-1_99_OBW_OFDM20_5180_CH0



Wave-MLO5_UNII-1_99_OBW_OFDM20_5210_CH0



Wave-MLO5_UNII-1_99_OBW_OFDM20_5240_CH0



Wave-MLO5_UNII-1_99_OBW_HE20_5180_CH0



Wave-MLO5_UNII-1_99_OBW_HE20_5210_CH0



Wave-MLO5_UNII-1_99_OBW_HE20_5240_CH0



Wave-MLO5_UNII-1_99_OBW_HE40_5190_CH0



Wave-MLO5_UNII-1_99_OBW_HE40_5230_CH1

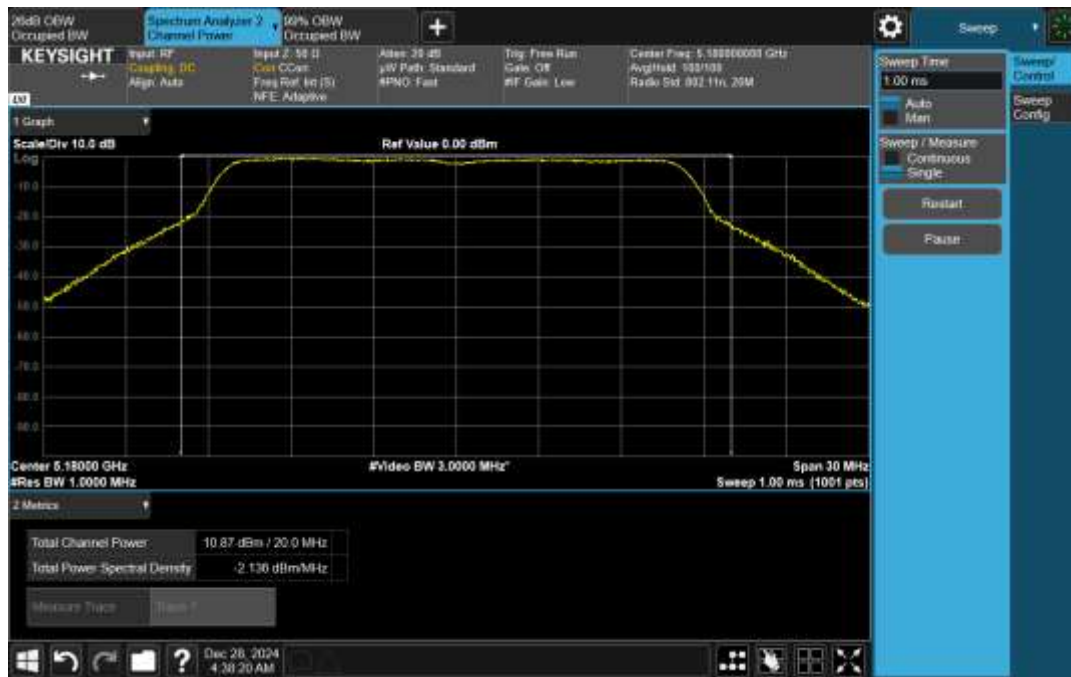


Wave-MLO5_UNII-1_99_OBW_HE80_5210_CH0

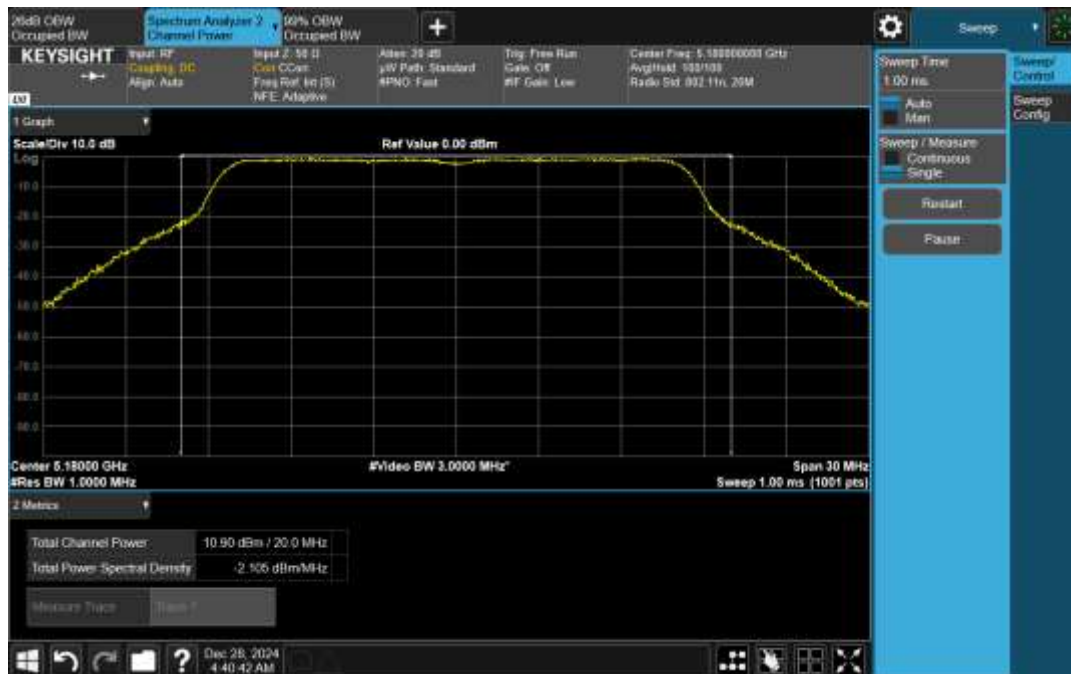


Wave-MLO5_UNII-1_99_OBW_HE180_5250_CH1

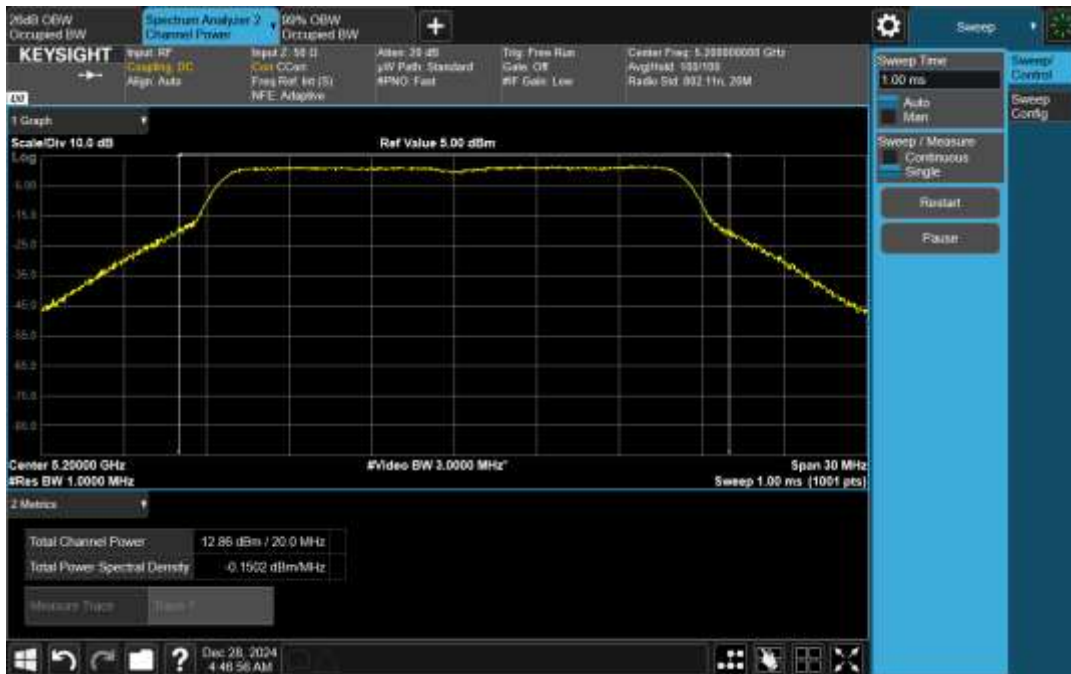
RF Power and PSD



5180 OFDM20 CH0



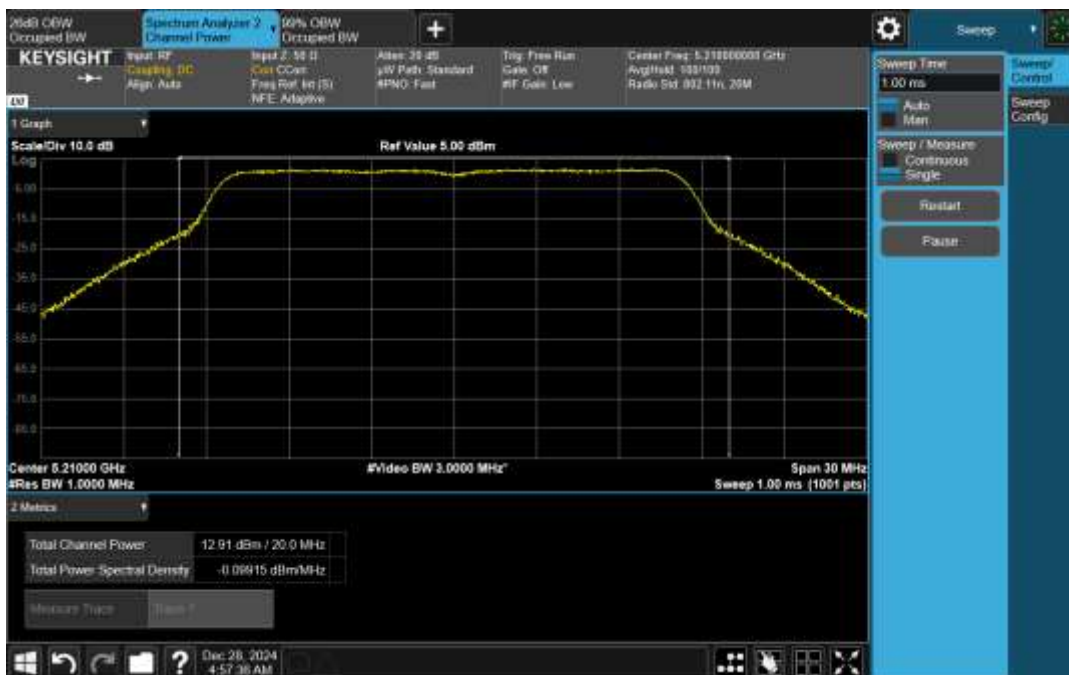
5180 OFDM20 CH1



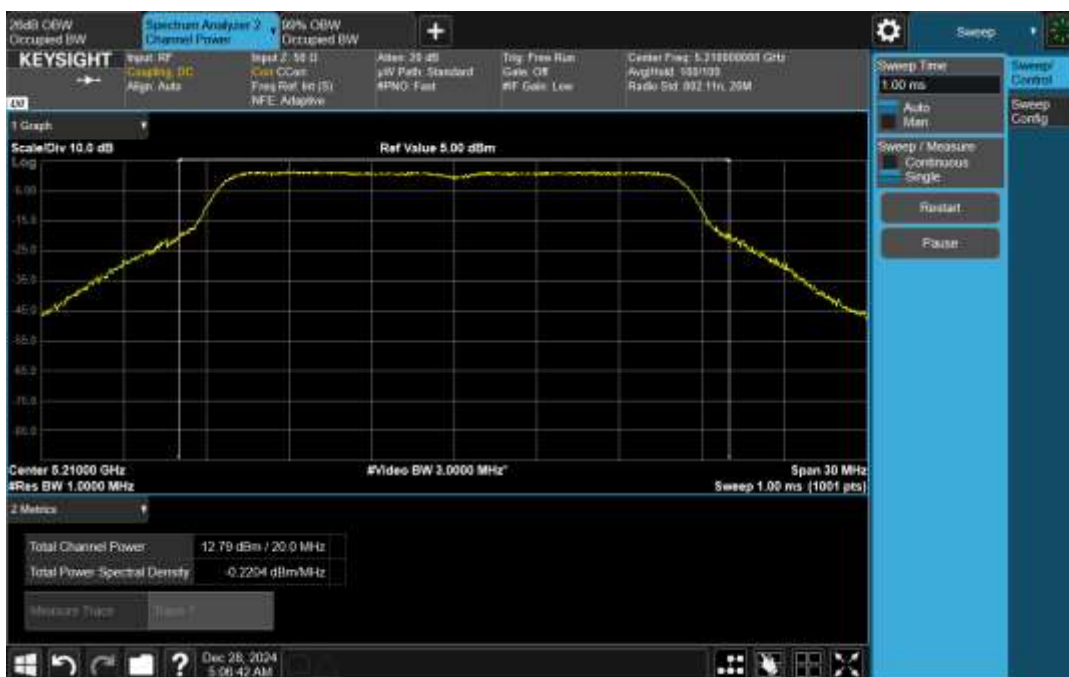
5200 OFDM20 CH0



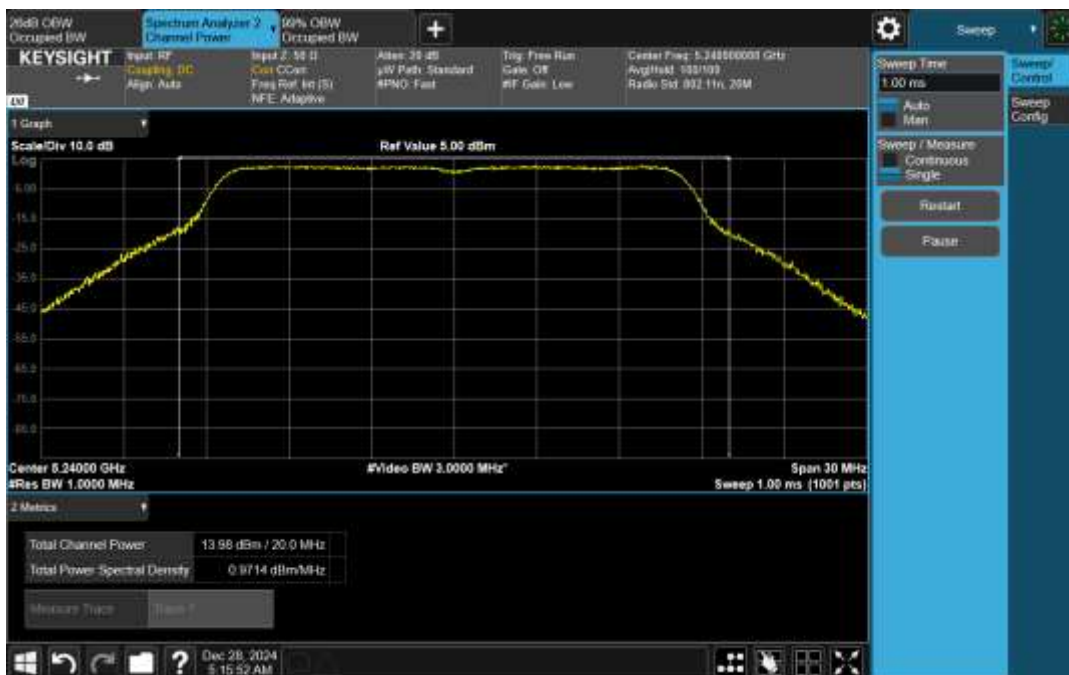
5200 OFDM20 CH1



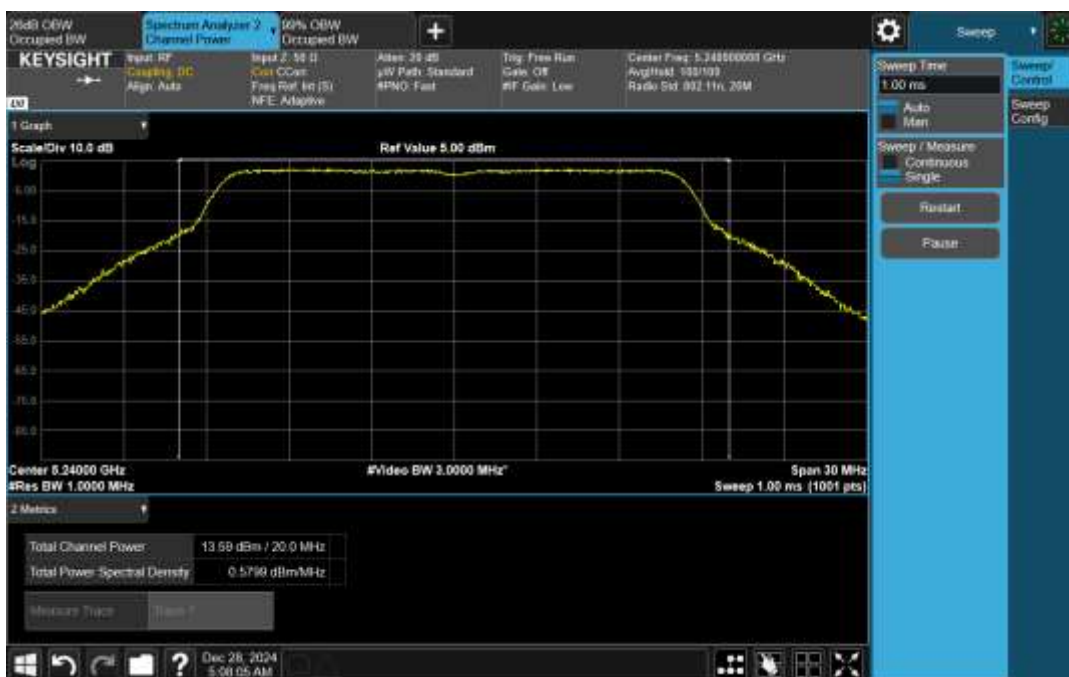
5210 OFDM20 CH0



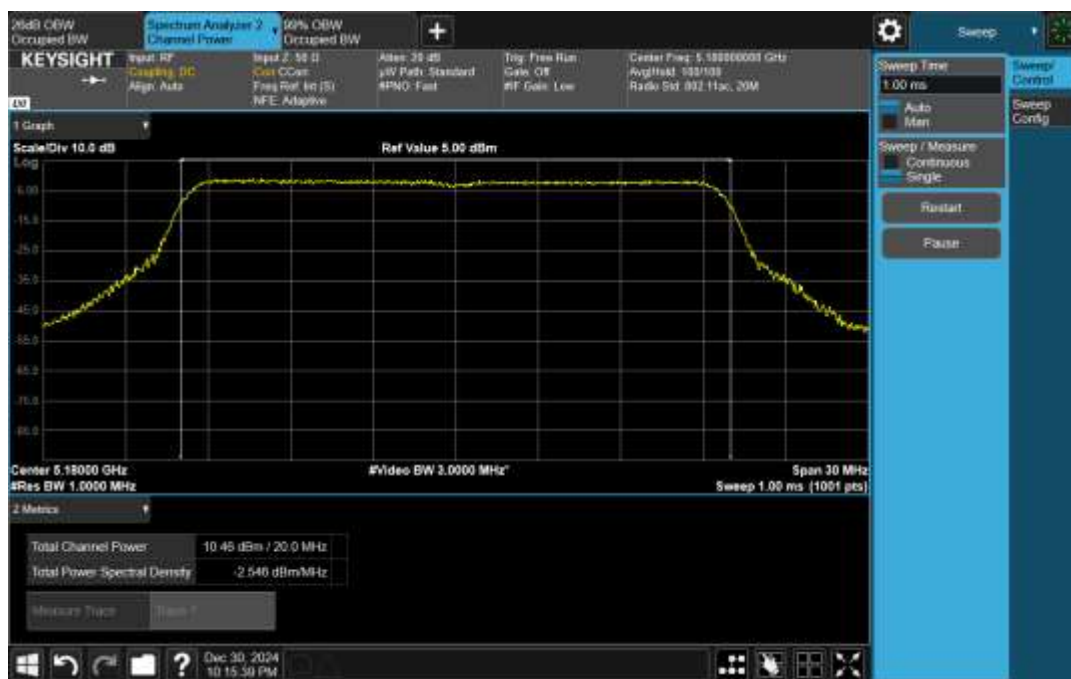
5210 OFDM20 CH1



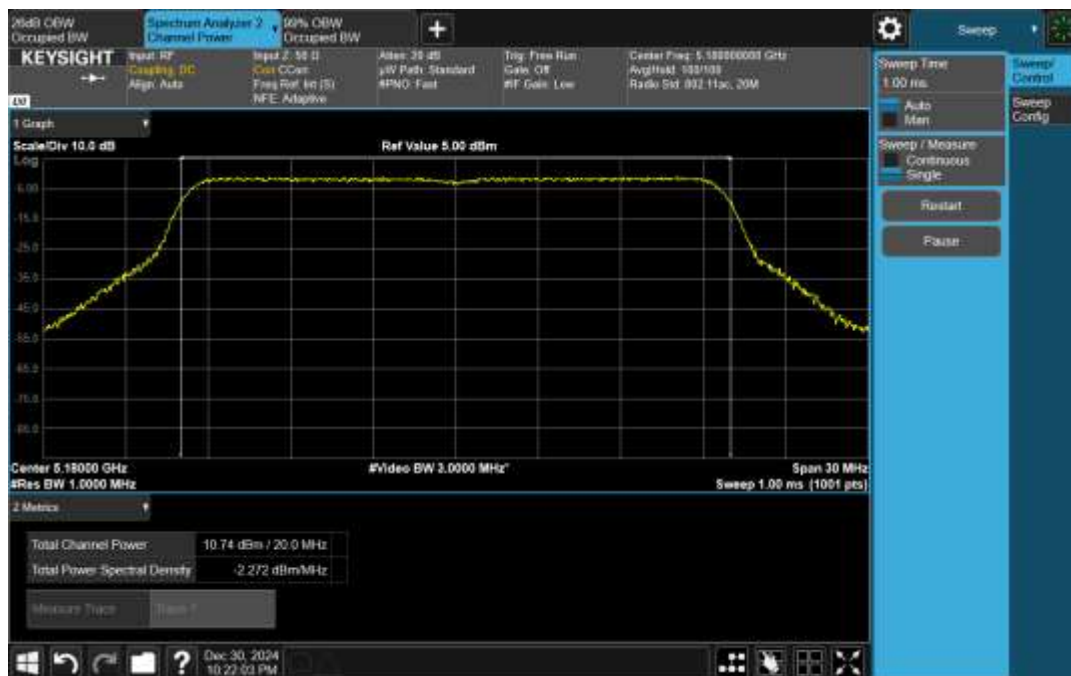
5240 OFDM20 CH0



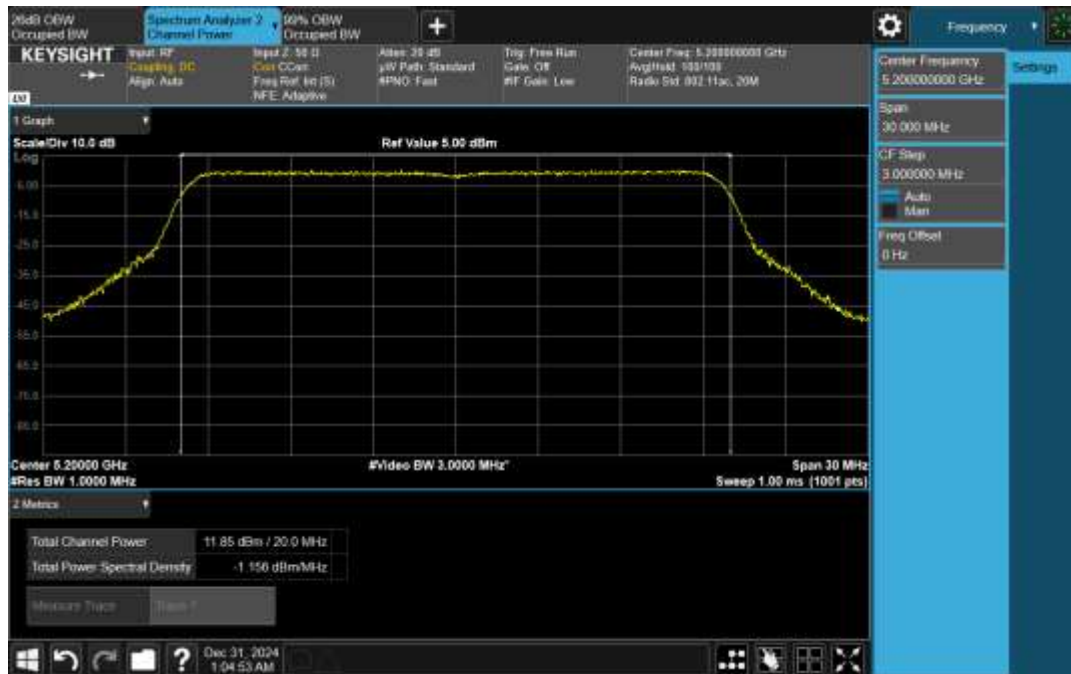
5240 OFDM20 CH1



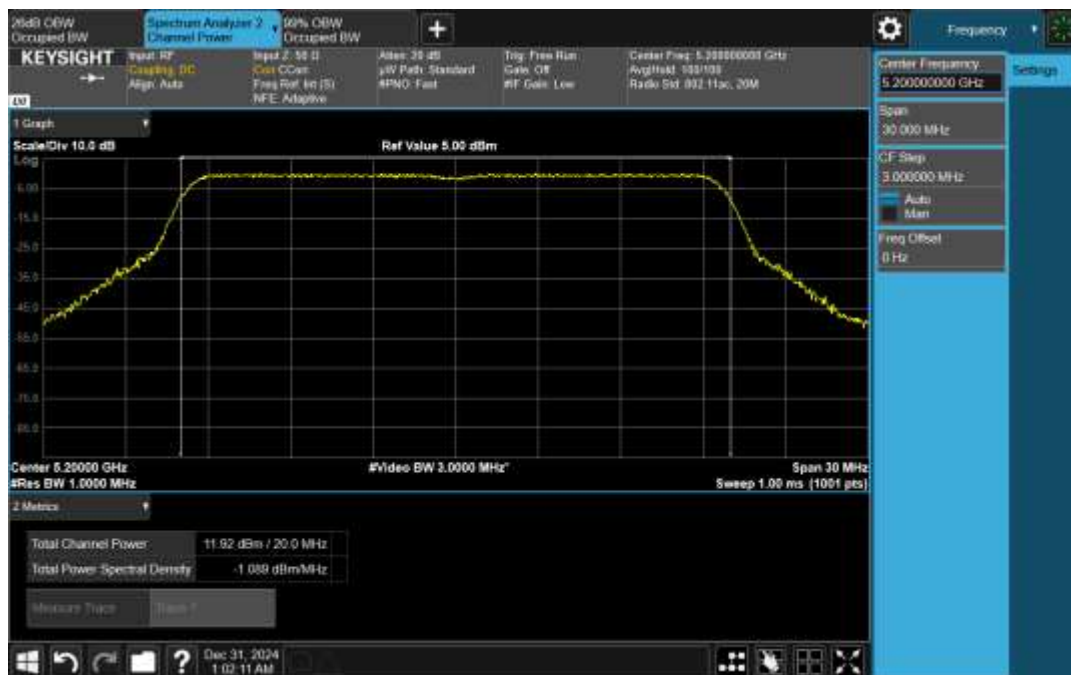
5180 HE 20 CH0



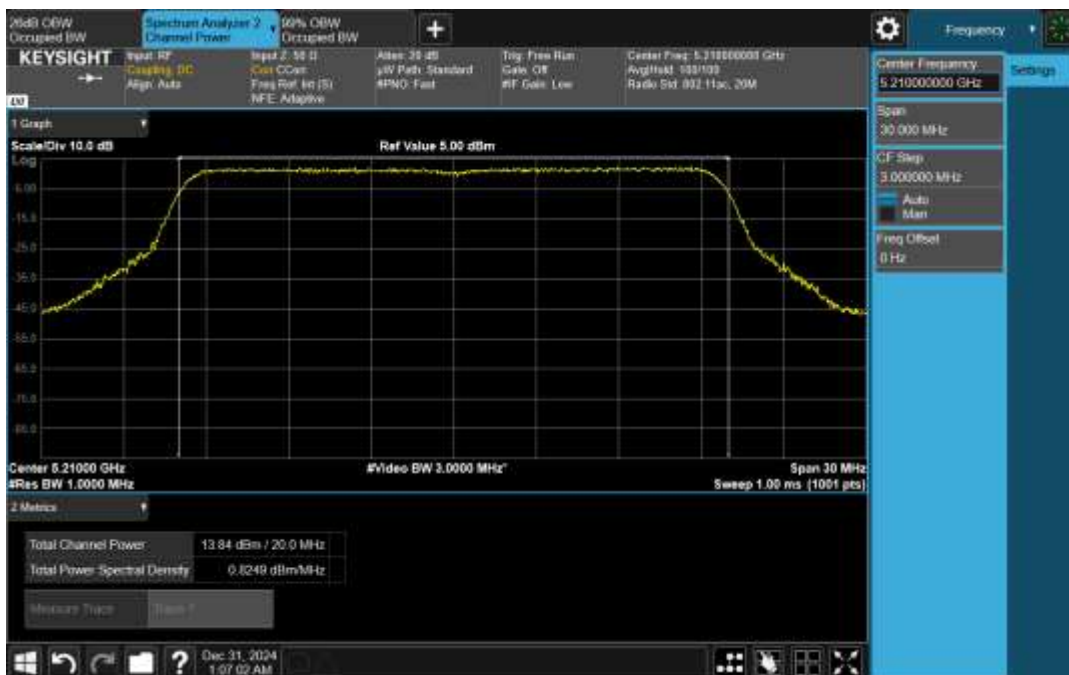
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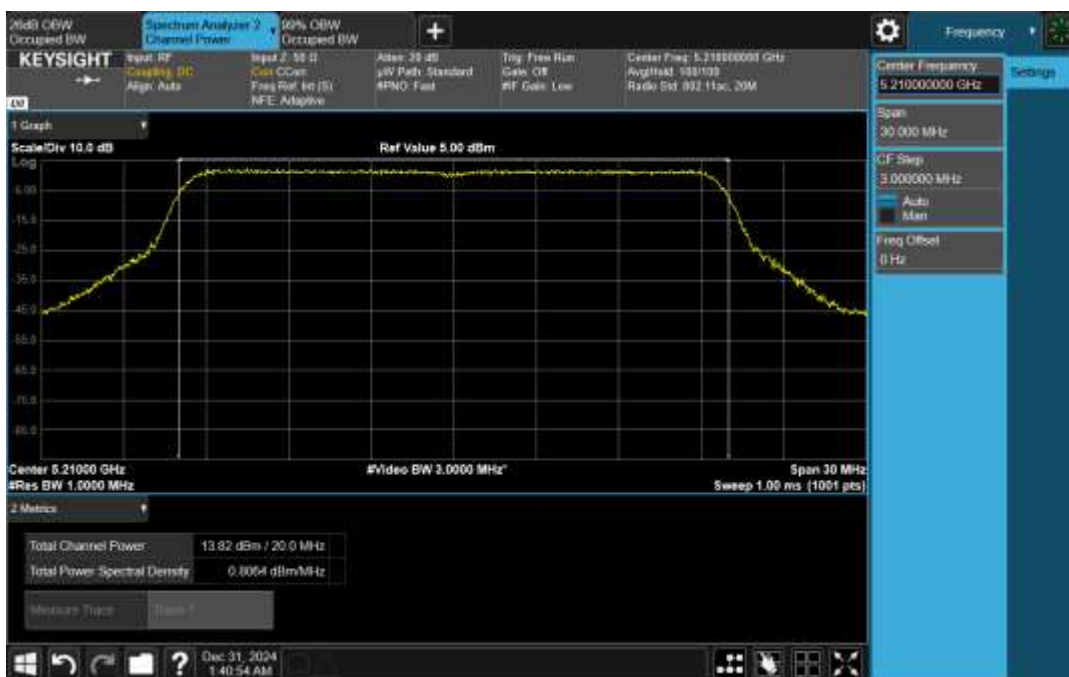
5200 HE 20 CH0



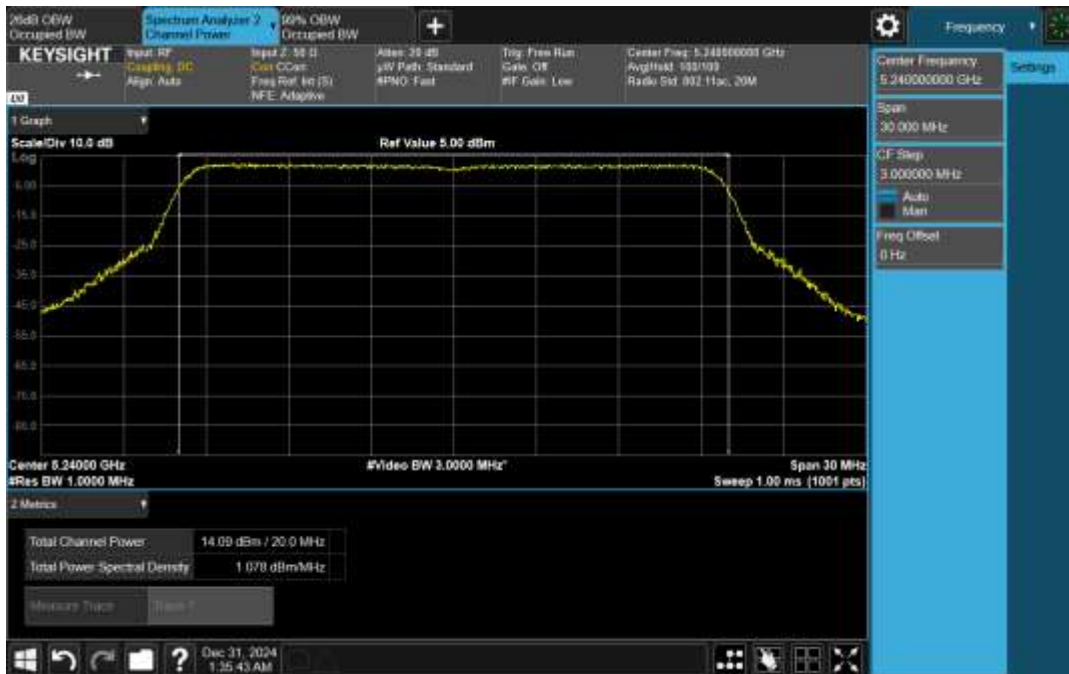
5200 HE 20 CH1



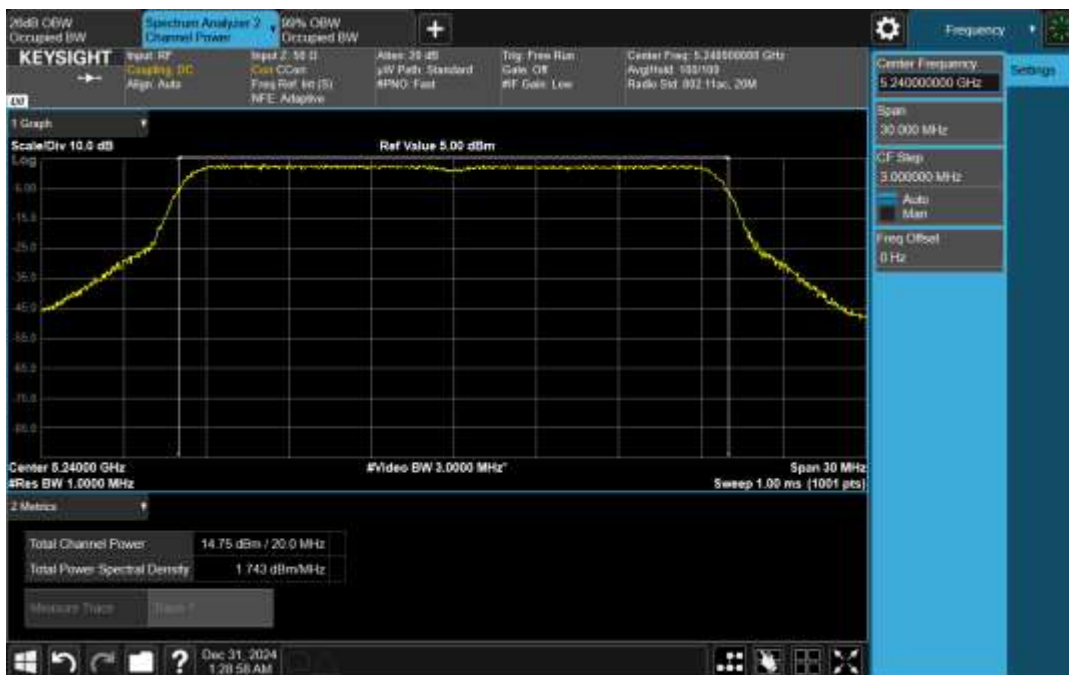
5210 HE 20 CH0



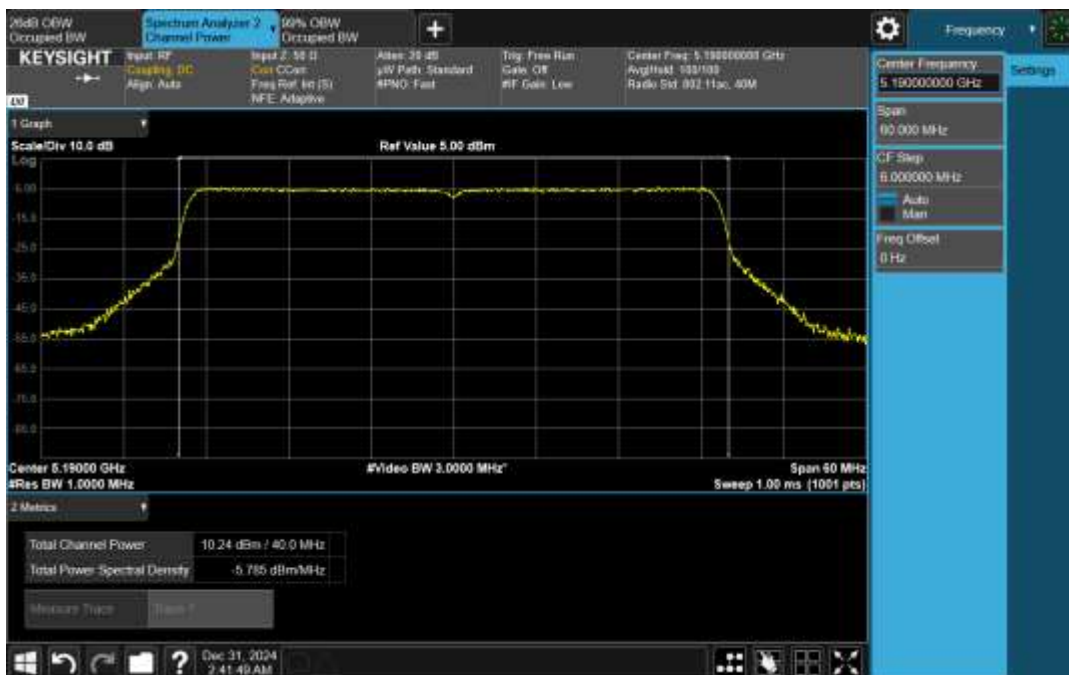
5210 HE 20 CH1



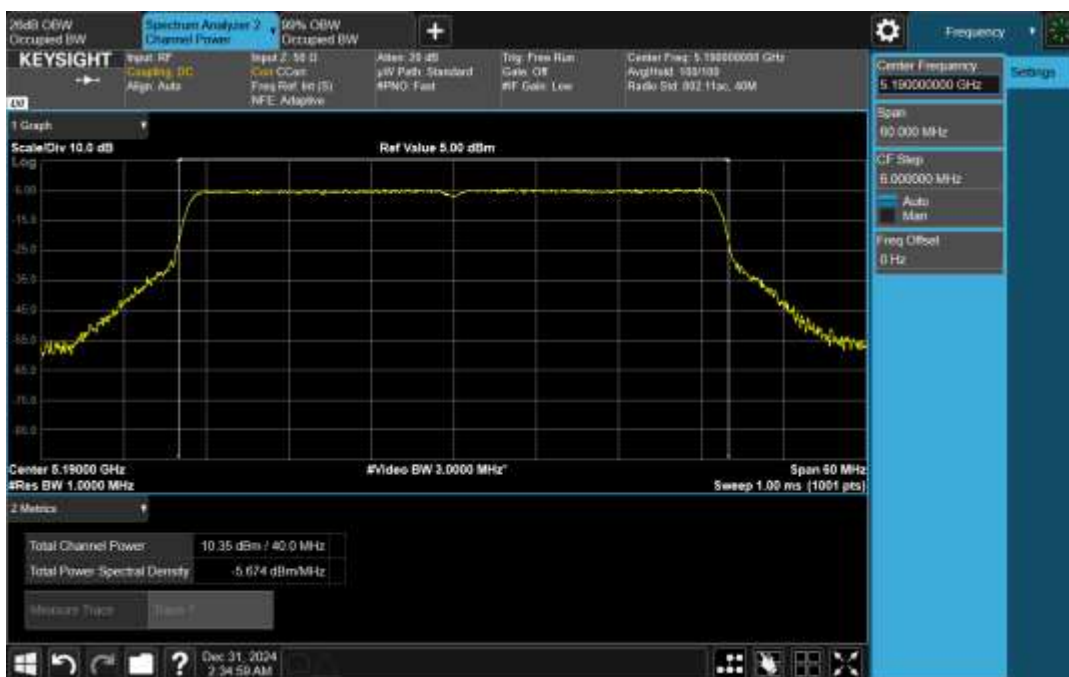
5240 HE 20 CH0



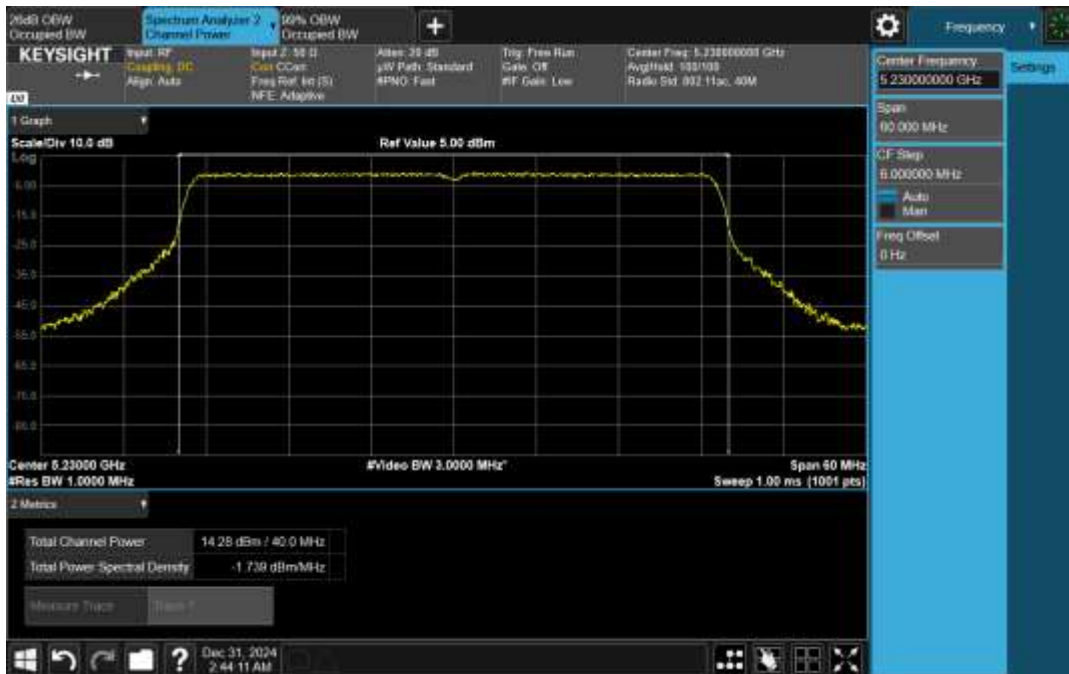
5240 HE 20 CH1



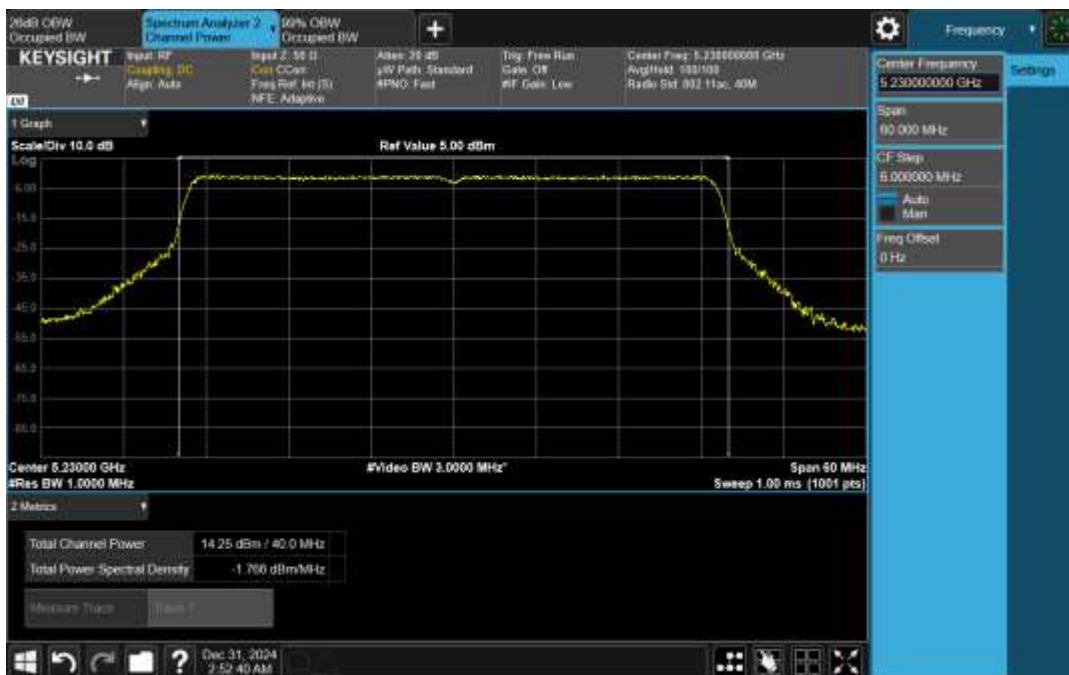
5190 HE 40 CH0



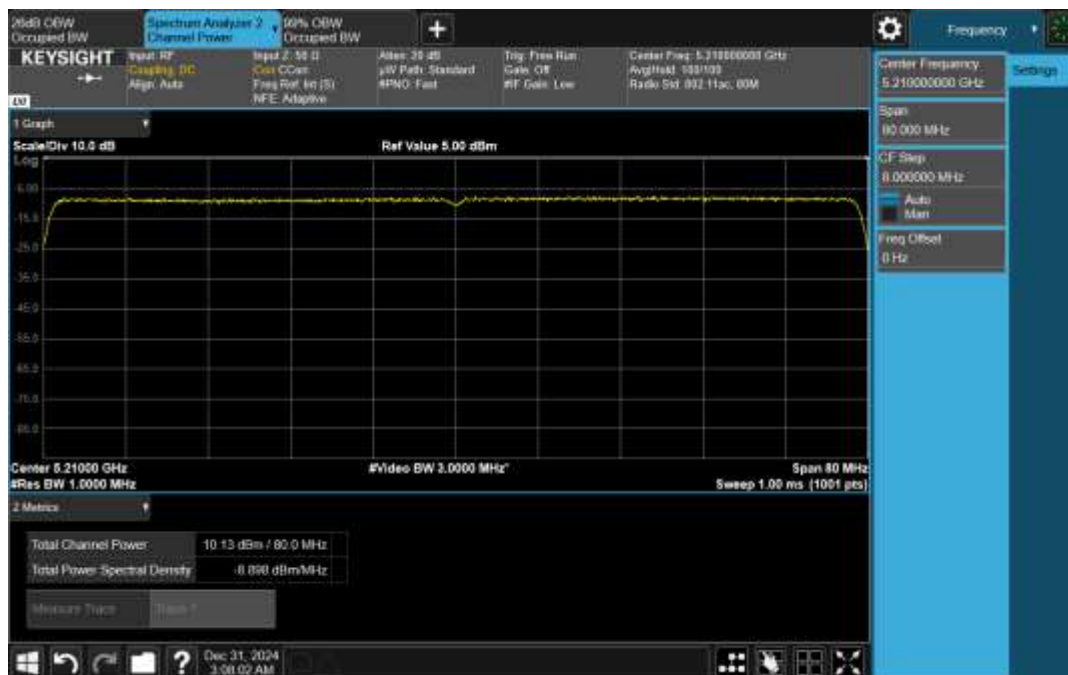
5190 HE 40 CH1



5230 HE 40 CH0



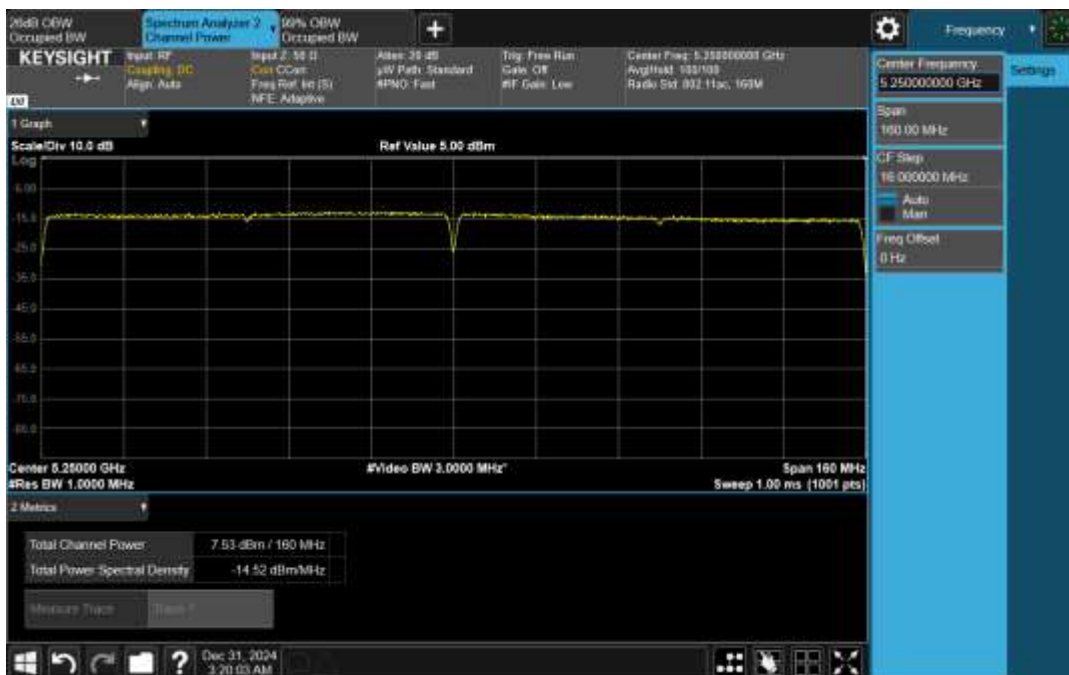
5230 HE 40 CH1



5210 HE 80 CH0



5210 HE 80 CH1



5250 HE 160 CH0



5250 HE 160 CH1

-- End of Report --

