



427 West 12800 South  
Draper, UT 84020

## Test Report Attachment

<b>FCC ID</b>	SWX-AF60XRR
<b>Equipment Under Test</b>	AF60-XRR
<b>Test Report Serial Number</b>	TR8567_02
<b>Date of Test</b>	14 July 2023
<b>Report Issue Date</b>	19 October 2023

### Test Personnel

<b>Testing performed by</b>	Tyler Parry
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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 2024. 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 2024. 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 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
Occupied Channel Bandwidth 99%	5210.000	24.0	20.000000	PASS
Emission Bandwidth 26 dB	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
Occupied Channel Bandwidth 99%	5190.000	24.0	40.000000	PASS
Emission Bandwidth 26 dB	5210.000	24.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5210.000	24.0	40.000000	PASS
Emission Bandwidth 26 dB	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
Occupied Channel Bandwidth 99%	5210.000	24.0	80.000000	PASS

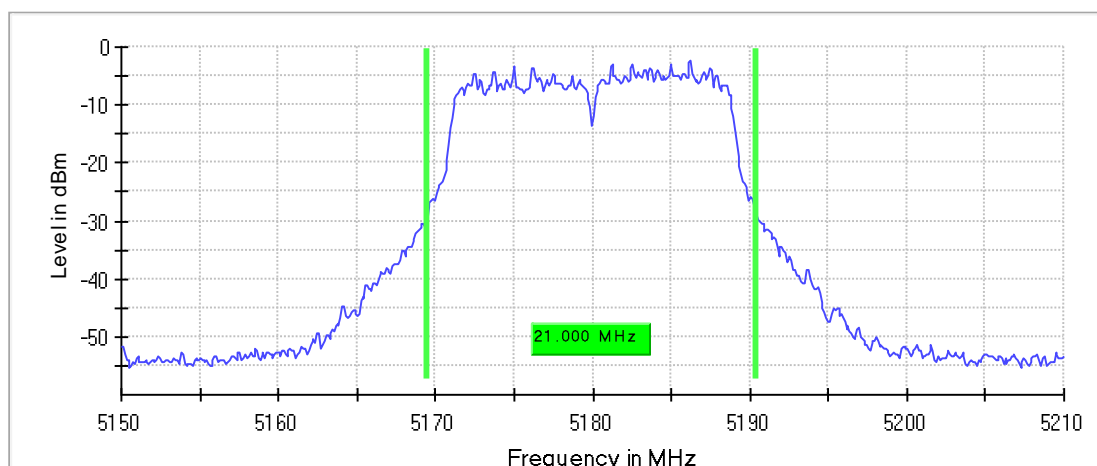
### Emission Bandwidth 26 dB (5180 MHz; 24.000 dBm; 20 MHz)

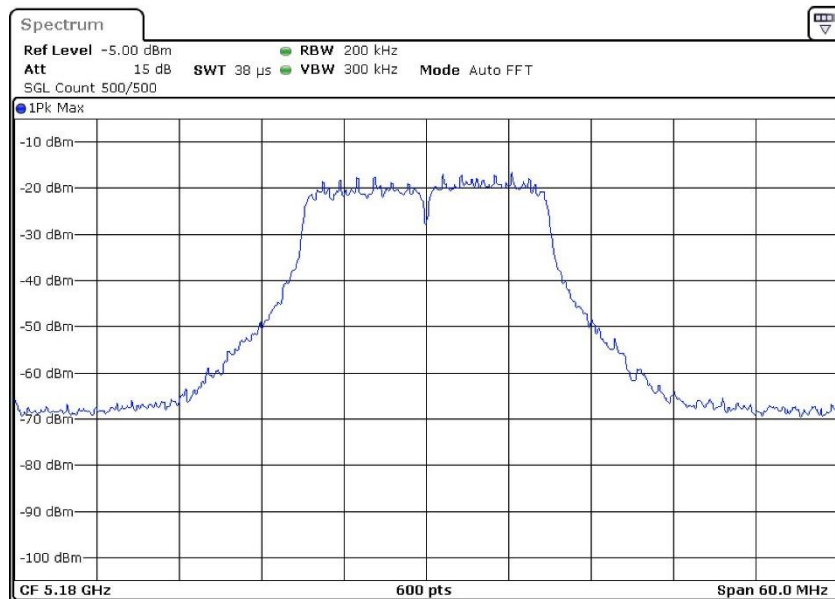
#### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	21.000000	---	---	5169.450000	5190.450000

DUT Frequency (MHz)	Max Level (dBm)	Result
5180.000000	-2.5	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	300.000 kHz	>= 240.000 kHz
SweepPoints	600	~ 600
SweepTime	37.969 $\mu$ s	AUTO
Reference Level	-5.000 dBm	-5.000 dBm
Attenuation	15.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
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	12.5	30.0	12.5	95.135	PASS

**OSP PowerMeter settings**

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

Time resolution	1.000 $\mu$ s	1.000 $\mu$ s
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## Power Spectral Density (5180 MHz; 24.000 dBm; 20 MHz)

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5180.000000	5185.148515	-2.088	17.0	PASS

### Ports

Port	State
1	used
2	used

### Measurement

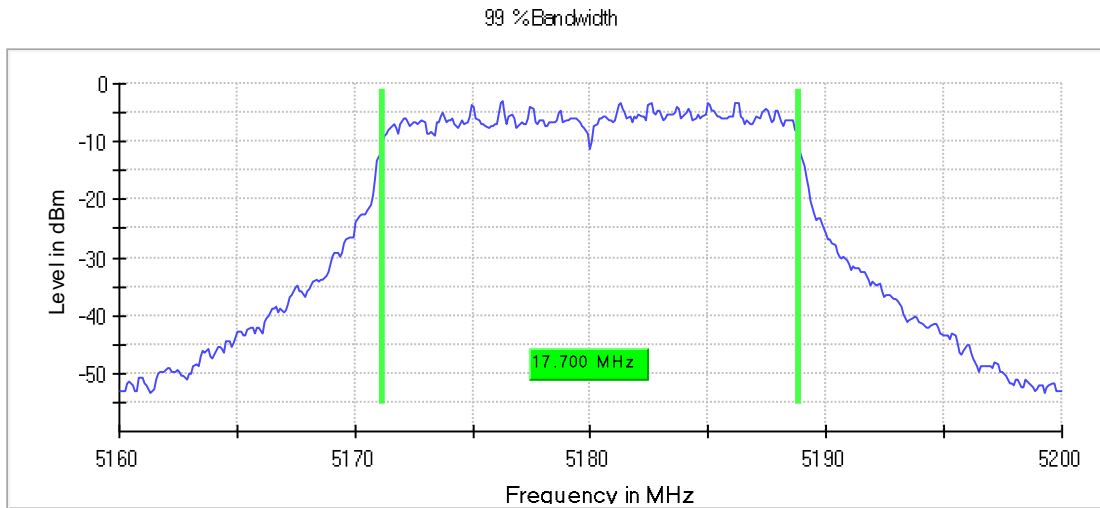
Setting	Instrument Value	Target Value
Start Frequency	5.17000 GHz	5.17000 GHz
Stop Frequency	5.19000 GHz	5.19000 GHz
Span	20.000 MHz	20.000 MHz
RBW	1.000 MHz	$\leq$ 1.000 MHz
VBW	3.000 MHz	$\geq$ 3.000 MHz
SweepPoints	101	$\sim$ 40
Sweeptime	2.020 ms	2.020 ms
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 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)

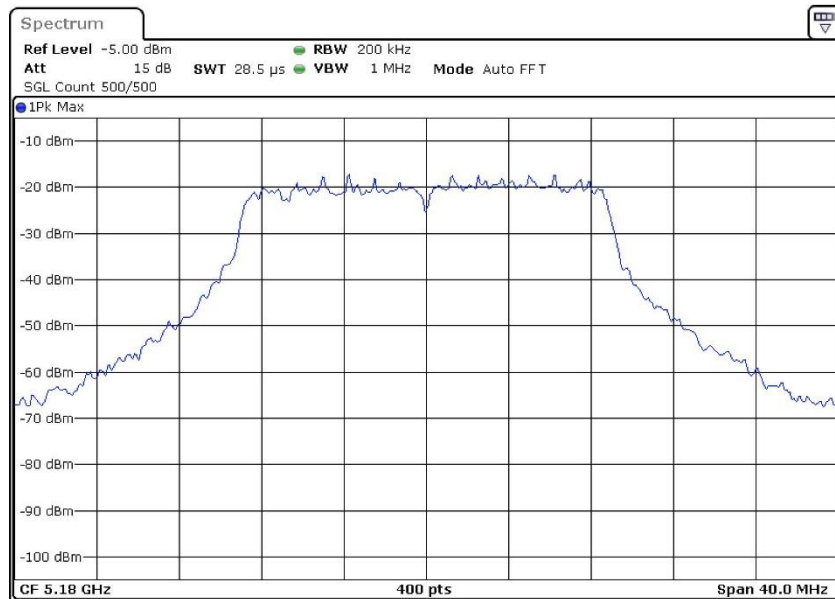
### 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5180.000000	17.700000	---	---	5171.150000	5188.850000

DUT Frequency (MHz)	Result
5180.000000	PASS



**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	200.000 kHz	$\geq$ 200.000 kHz
VBW	1.000 MHz	$\geq$ 600.000 kHz
SweepPoints	400	$\sim$ 400
Sweeptime	28.477 $\mu$ s	AUTO
Reference Level	-5.000 dBm	-5.000 dBm
Attenuation	15.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB

Trace Mode	Max Hold	Max Hold
Sweep type	FFT	AUTO
Preamp	off	off

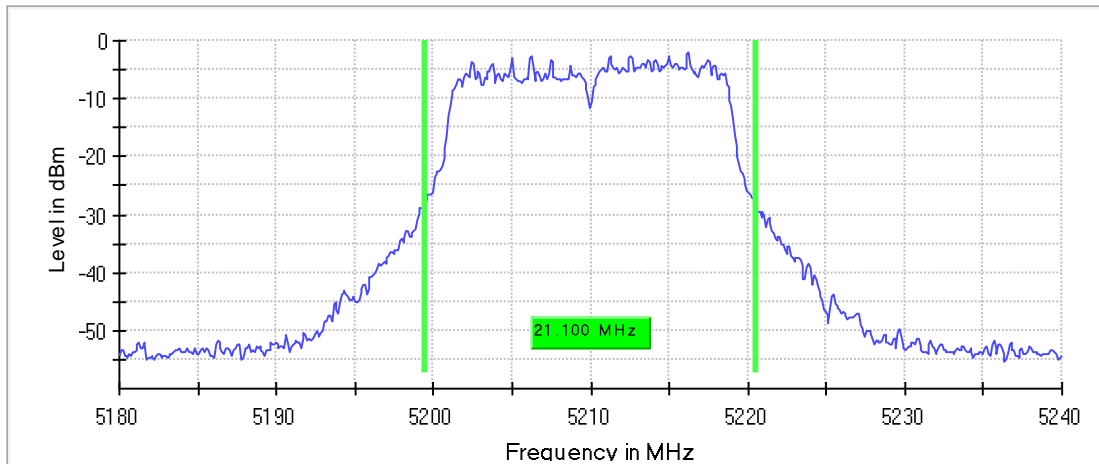
## Emission Bandwidth 26 dB (5210 MHz; 24.000 dBm; 20 MHz)

### 26 dB Bandwidth

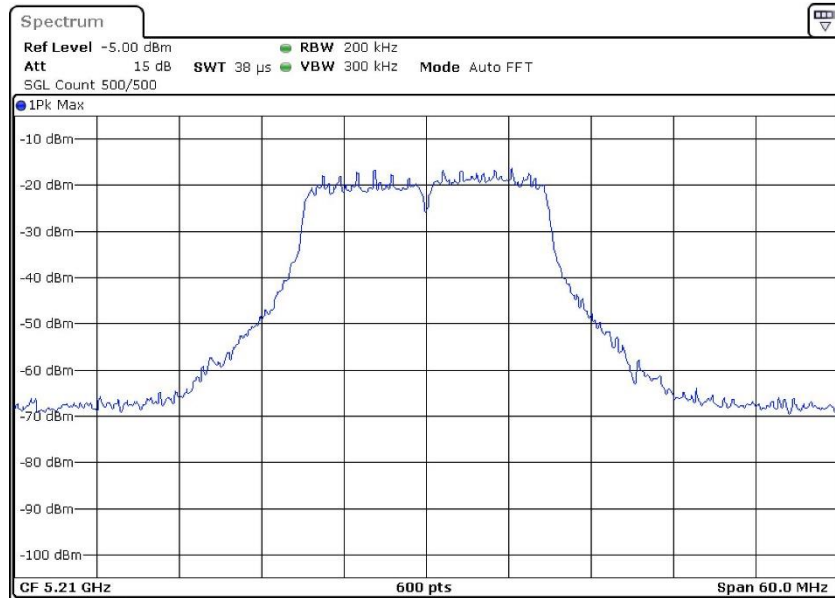
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	21.100000	---	---	5199.450000	5220.550000

DUT Frequency (MHz)	Max Level (dBm)	Result
5210.000000	-2.1	PASS

26 dB Bandwidth



Bandwidth



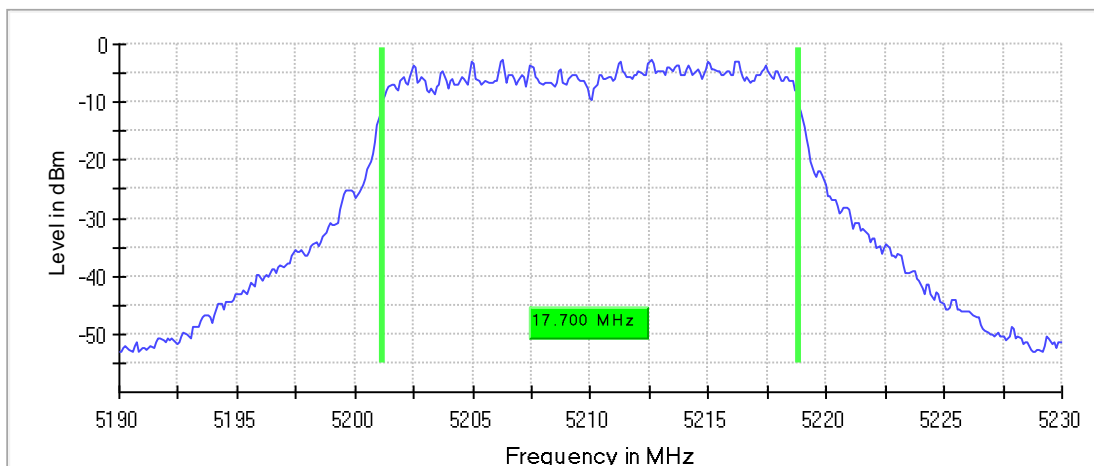
**Occupied Channel Bandwidth 99% (5210 MHz; 24.000 dBm; 20 MHz)**

**99 % Bandwidth**

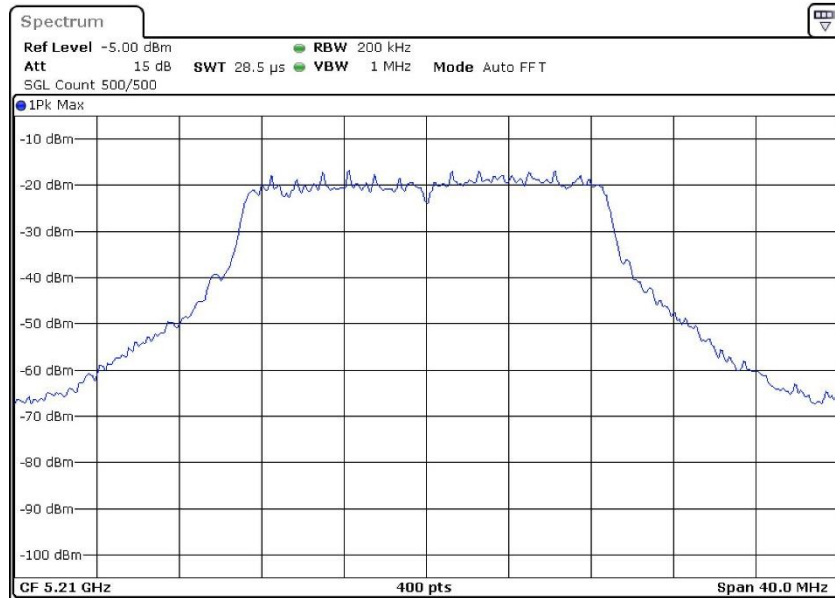
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	17.700000	---	---	5201.150000	5218.850000

DUT Frequency (MHz)	Result
5210.000000	PASS

99 % Bandwidth



Bandwidth



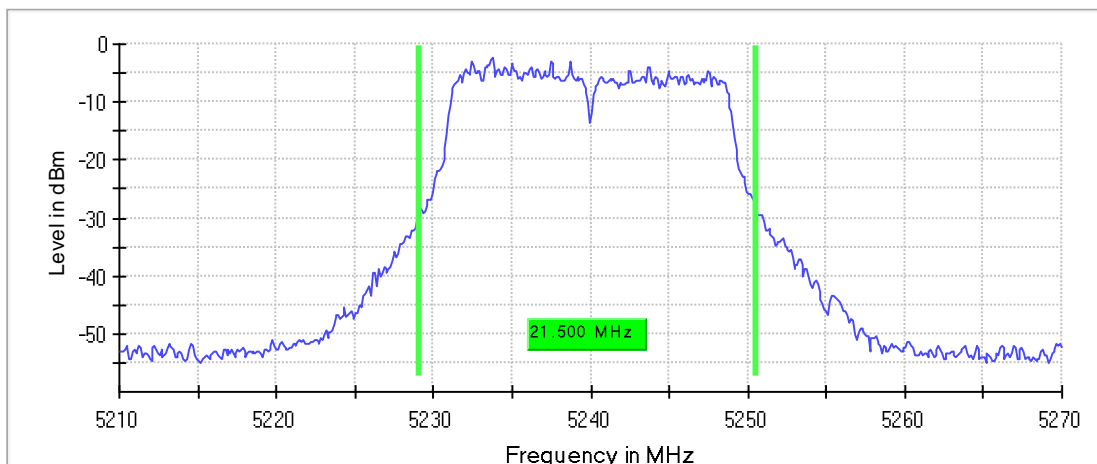
### Emission Bandwidth 26 dB (5240 MHz; 24.000 dBm; 20 MHz)

#### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	21.500000	---	---	5229.050000	5250.550000

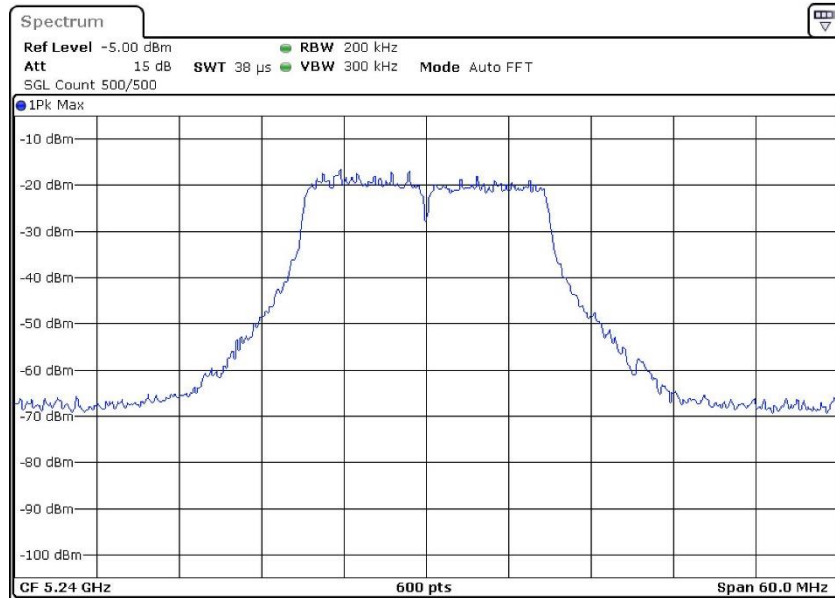
DUT Frequency (MHz)	Max Level (dBm)	Result
5240.000000	-2.4	PASS

26 dB Bandwidth



Bandwidth





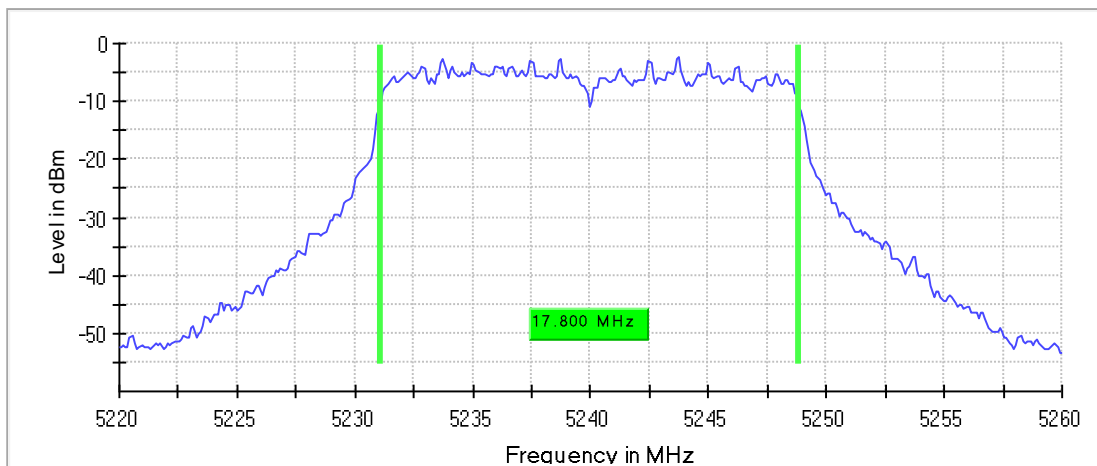
**Occupied Channel Bandwidth 99% (5240 MHz; 24.000 dBm; 20 MHz)**

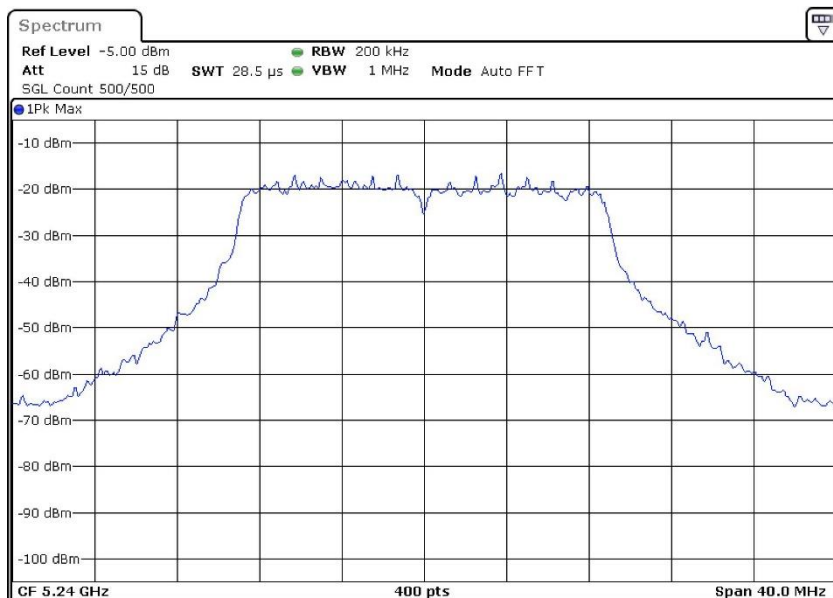
**99 % Bandwidth**

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5240.000000	17.800000	---	---	5231.050000	5248.850000

DUT Frequency (MHz)	Result
5240.000000	PASS

99 %Bandwidth





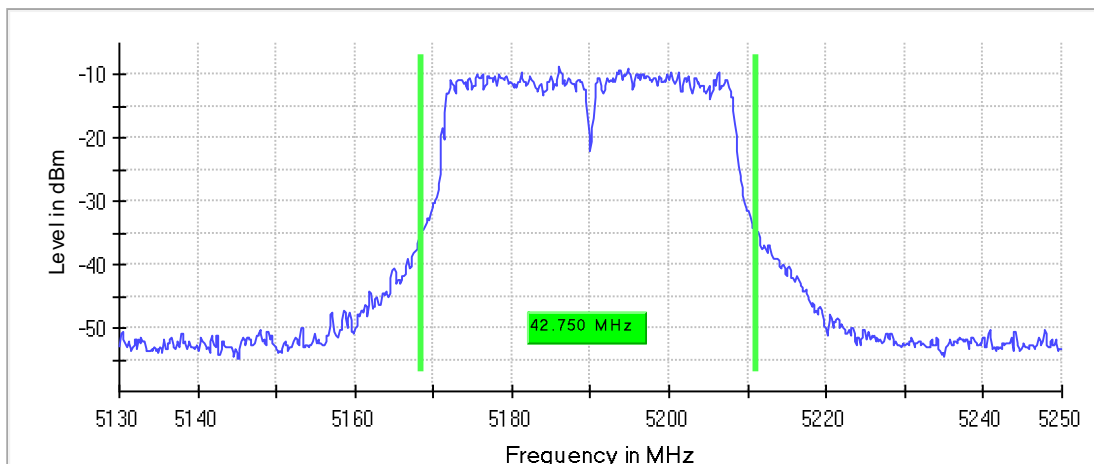
**Emission Bandwidth 26 dB (5190 MHz; 24.000 dBm; 40 MHz)**

**26 dB Bandwidth**

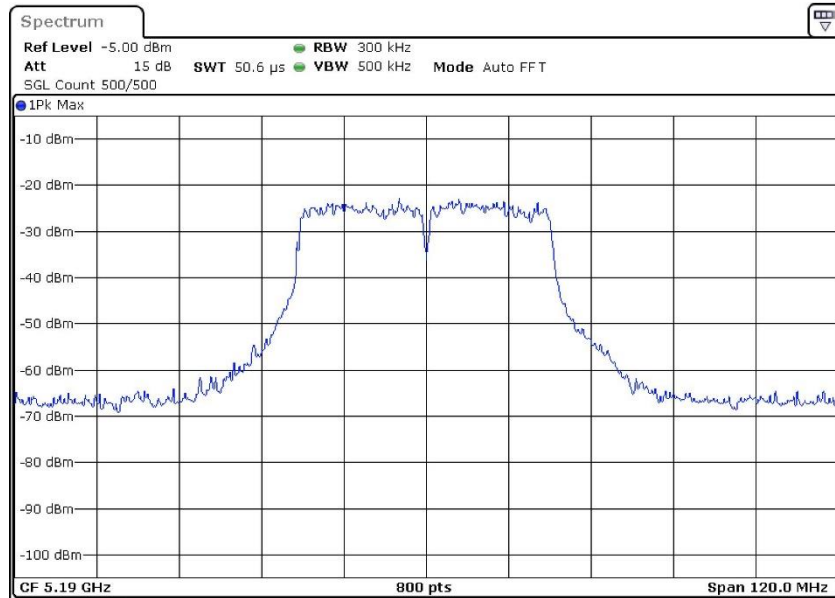
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	42.750000	---	---	5168.325000	5211.075000

DUT Frequency (MHz)	Max Level (dBm)	Result
5190.000000	-8.7	PASS

26 dB Bandwidth



Bandwidth



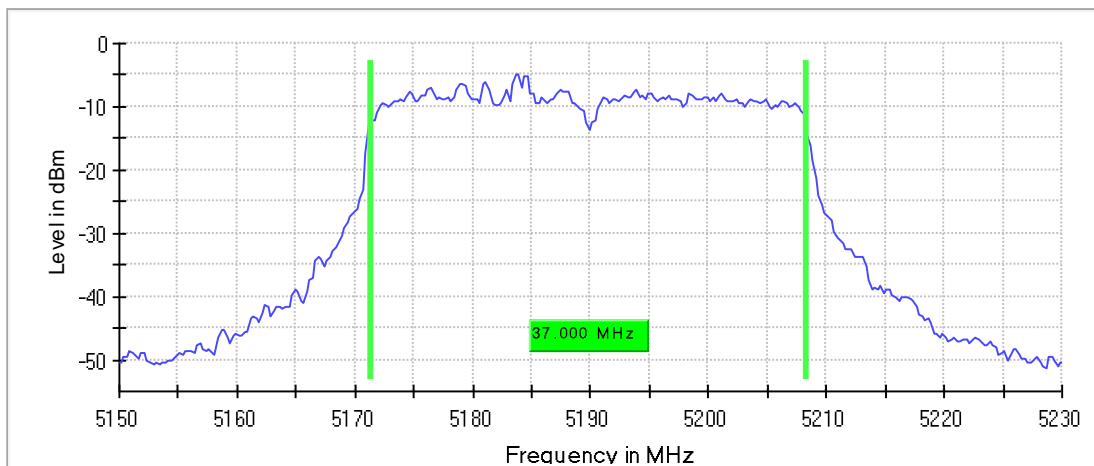
**Occupied Channel Bandwidth 99% (5190 MHz; 24.000 dBm; 40 MHz)**

**99 % Bandwidth**

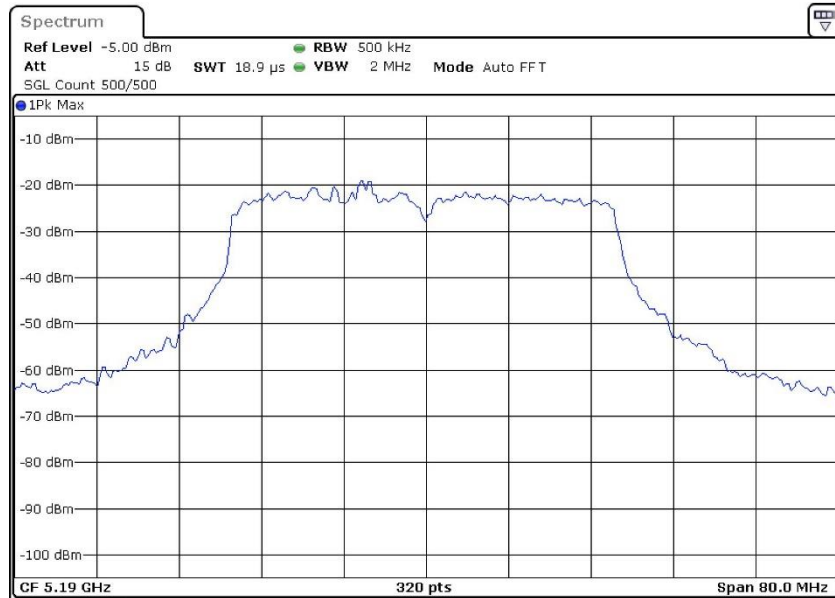
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5190.000000	37.000000	---	---	5171.375000	5208.375000

DUT Frequency (MHz)	Result
5190.000000	PASS

99 % Bandwidth



Bandwidth



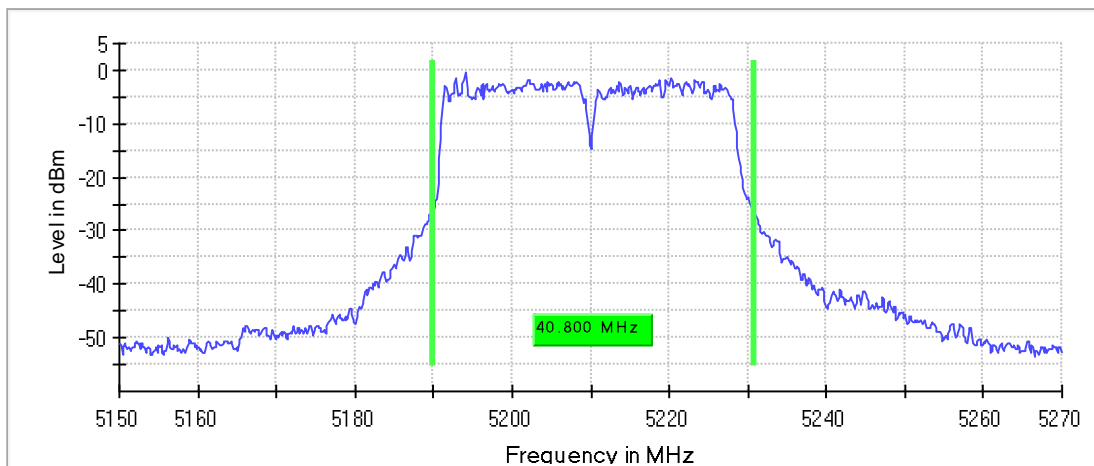
**Emission Bandwidth 26 dB (5210 MHz; 24.000 dBm; 40 MHz)**

**26 dB Bandwidth**

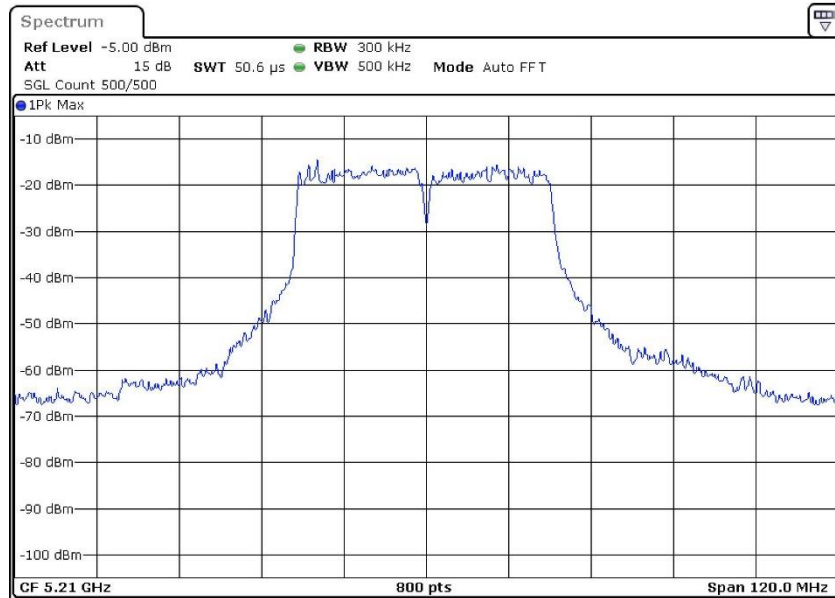
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	40.800000	---	---	5189.975000	5230.775000

DUT Frequency (MHz)	Max Level (dBm)	Result
5210.000000	-0.4	PASS

26 dB Bandwidth



Bandwidth



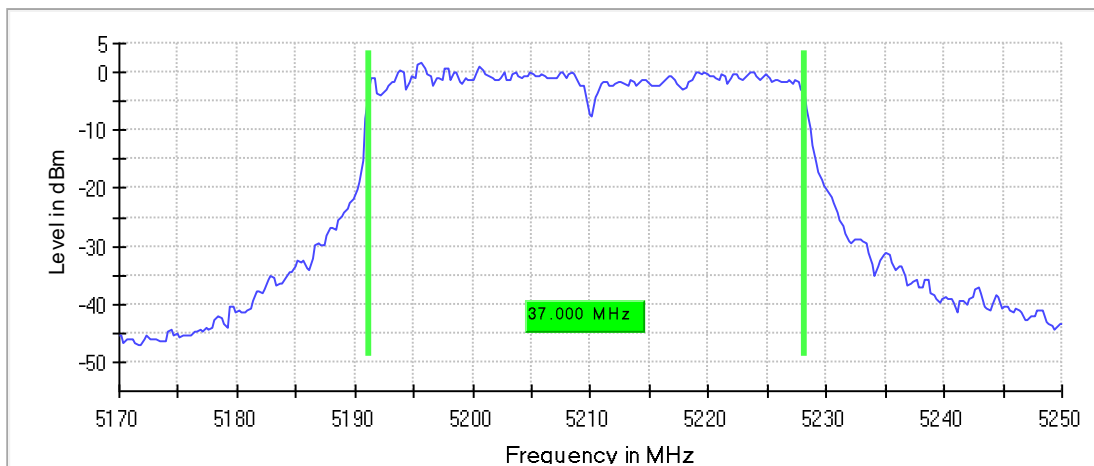
**Occupied Channel Bandwidth 99% (5210 MHz; 24.000 dBm; 40 MHz)**

**99 % Bandwidth**

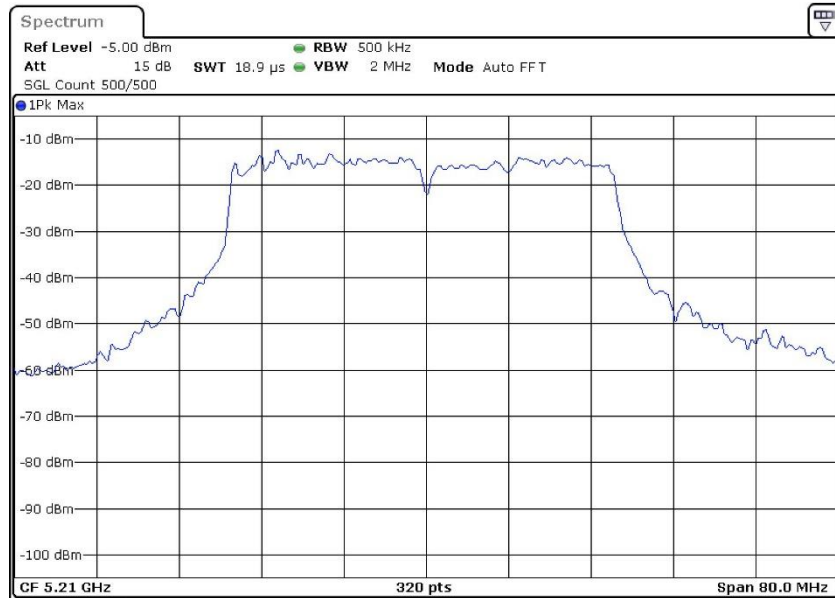
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	37.000000	---	---	5191.125000	5228.125000

DUT Frequency (MHz)	Result
5210.000000	PASS

99 % Bandwidth



Bandwidth



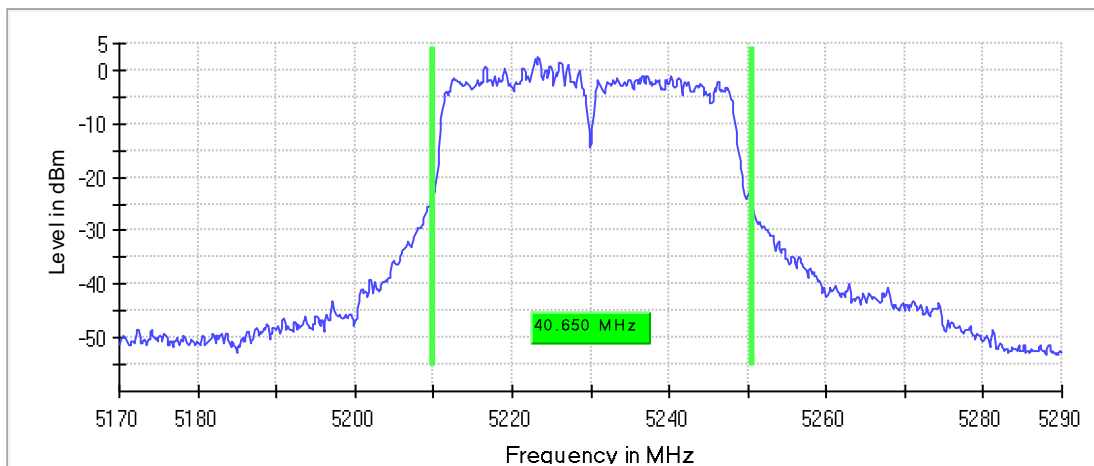
### Emission Bandwidth 26 dB (5230 MHz; 24.000 dBm; 40 MHz)

#### 26 dB Bandwidth

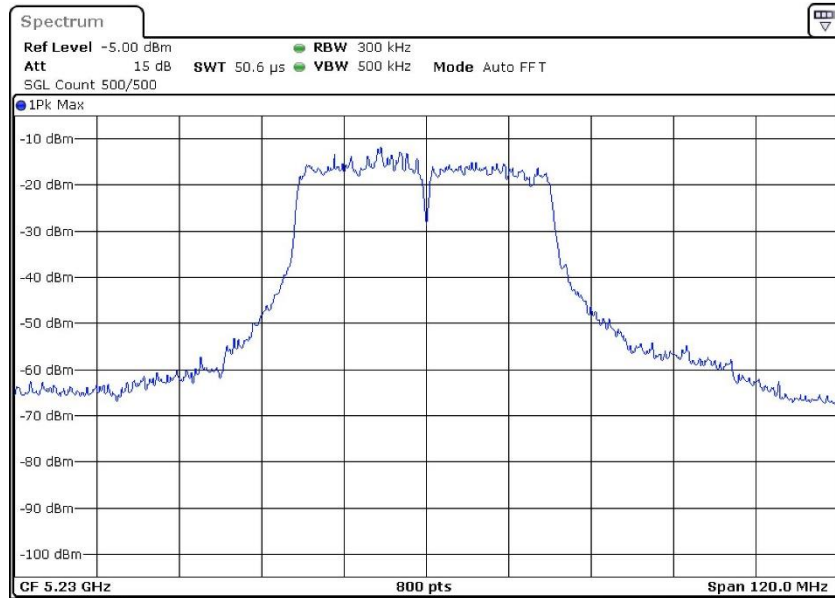
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	40.650000	---	---	5209.825000	5250.475000

DUT Frequency (MHz)	Max Level (dBm)	Result
5230.000000	2.4	PASS

26 dB Bandwidth



Bandwidth



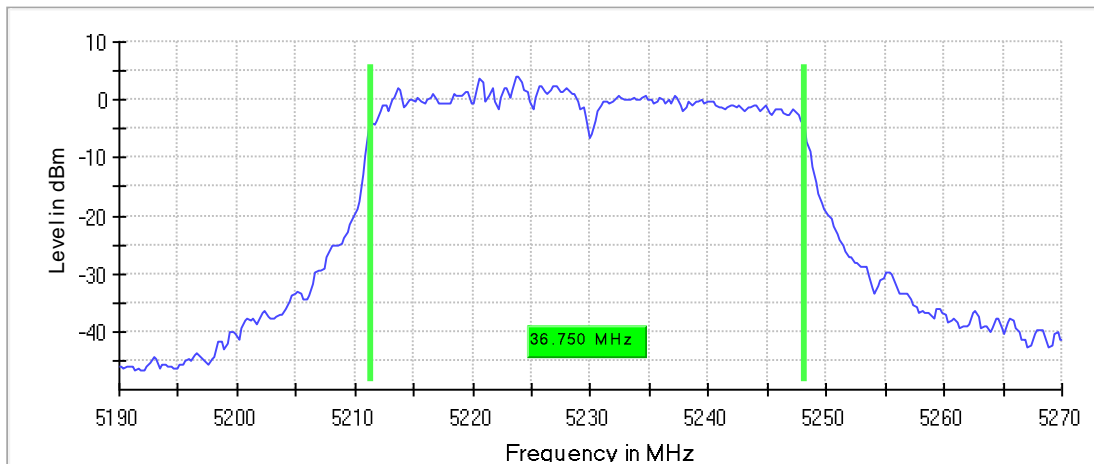
**Occupied Channel Bandwidth 99% (5230 MHz; 24.000 dBm; 40 MHz)**

**99 % Bandwidth**

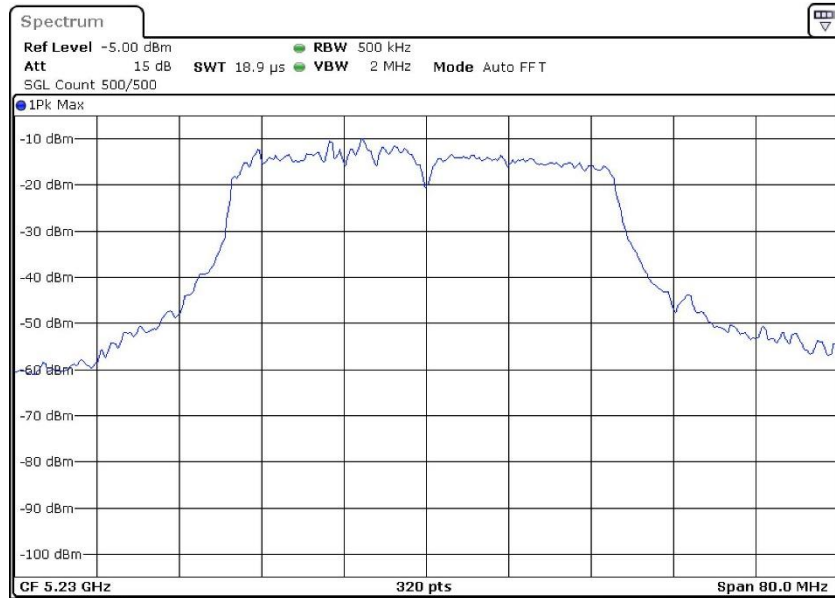
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5230.000000	36.750000	---	---	5211.375000	5248.125000

DUT Frequency (MHz)	Result
5230.000000	PASS

99 %Bandwidth



Bandwidth



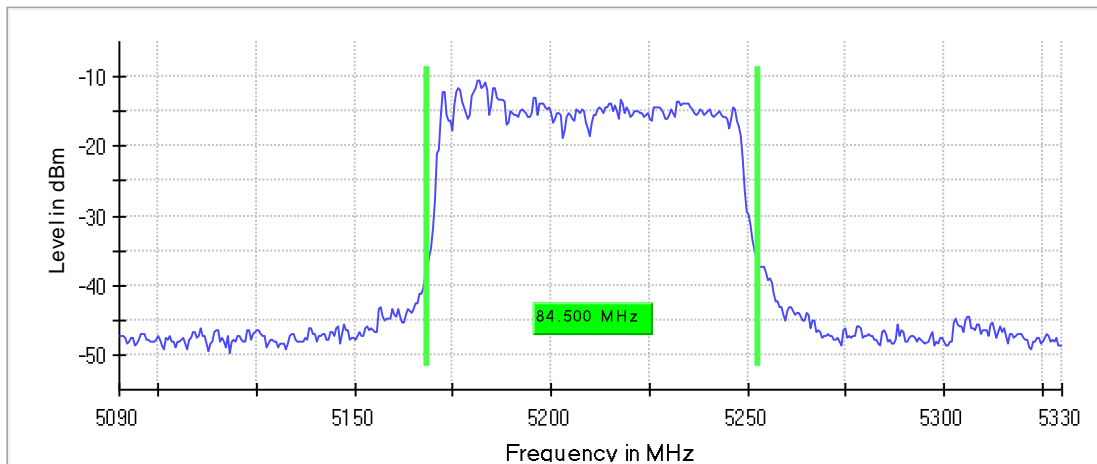
**Emission Bandwidth 26 dB (5210 MHz; 24.000 dBm; 80 MHz)**

**26 dB Bandwidth**

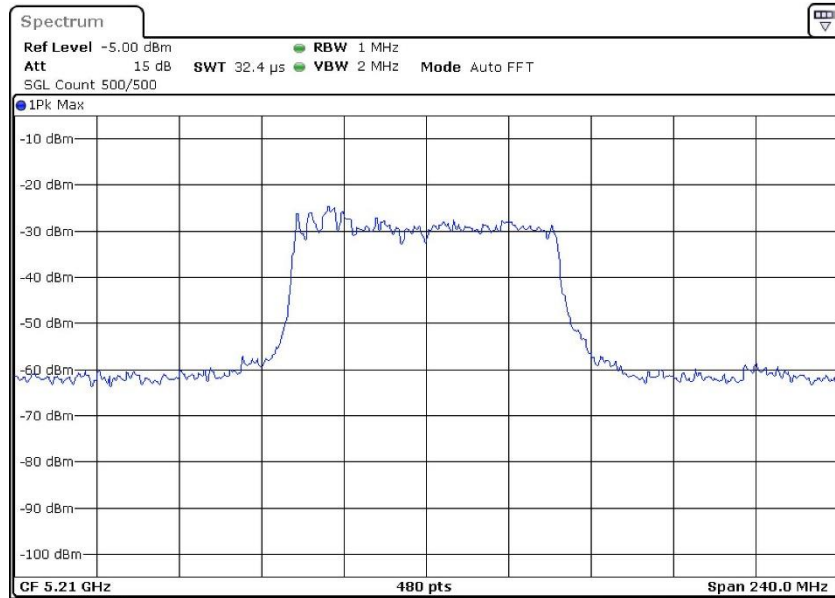
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	84.500000	---	---	5168.250000	5252.750000

DUT Frequency (MHz)	Max Level (dBm)	Result
5210.000000	-10.5	PASS

26 dB Bandwidth







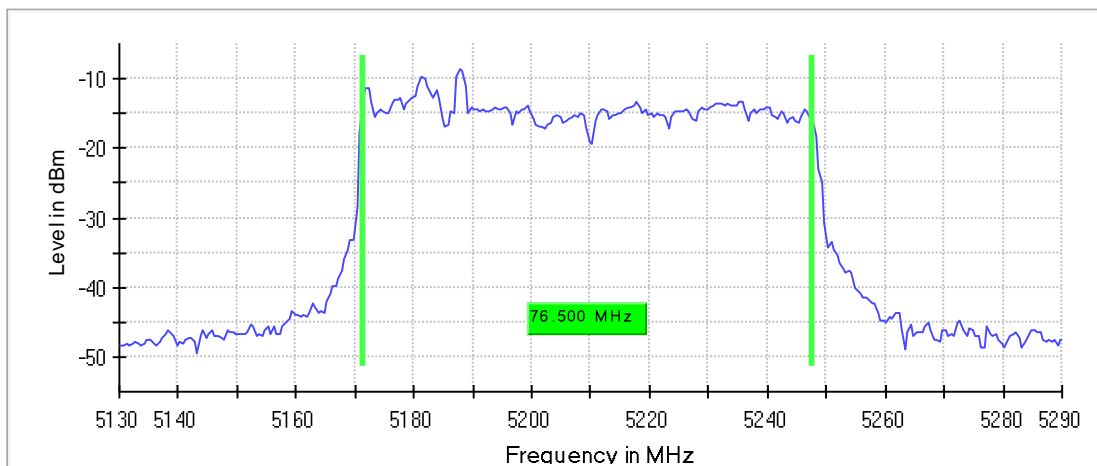
**Occupied Channel Bandwidth 99% (5210 MHz; 24.000 dBm; 80 MHz)**

**99 % Bandwidth**

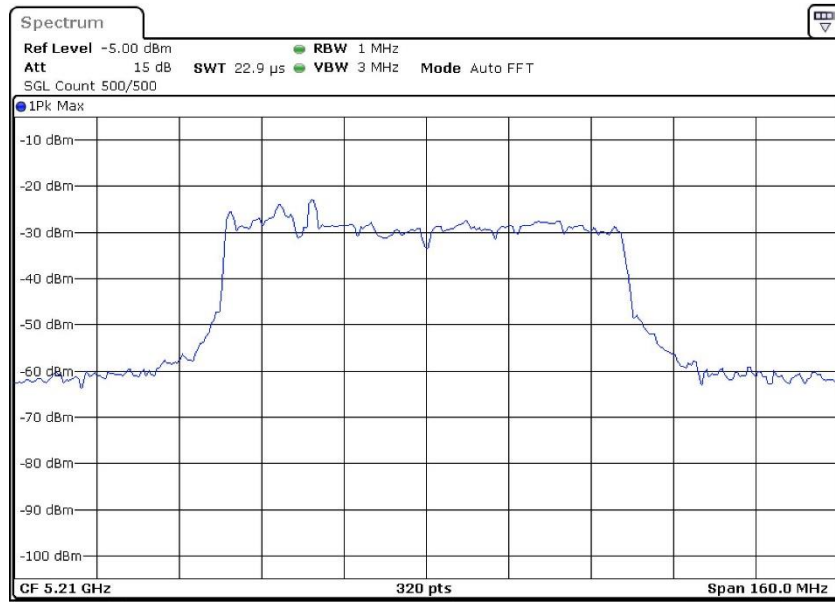
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5210.000000	76.500000	---	---	5171.250000	5247.750000

DUT Frequency (MHz)	Result
5210.000000	PASS

99 %Bandwidth



Bandwidth



## 1.2 Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Power Spectral Density	5180.000	24.0	20.000000	PASS
Power Spectral Density	5210.000	24.0	20.000000	PASS
Power Spectral Density	5240.000	24.0	20.000000	PASS
Power Spectral Density	5190.000	24.0	40.000000	PASS
Power Spectral Density	5210.000	24.0	40.000000	PASS
Power Spectral Density	5230.000	24.0	40.000000	PASS
Power Spectral Density	5210.000	24.0	80.000000	PASS

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

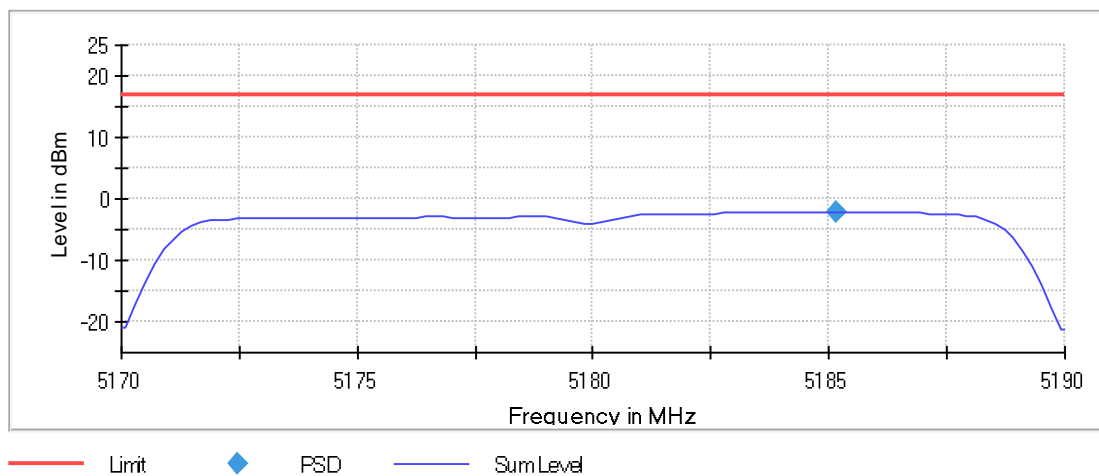
#### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5180.000000	5185.148515	-2.088	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	0.000 dBm	0.000 dBm

Attenuation	20.000 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

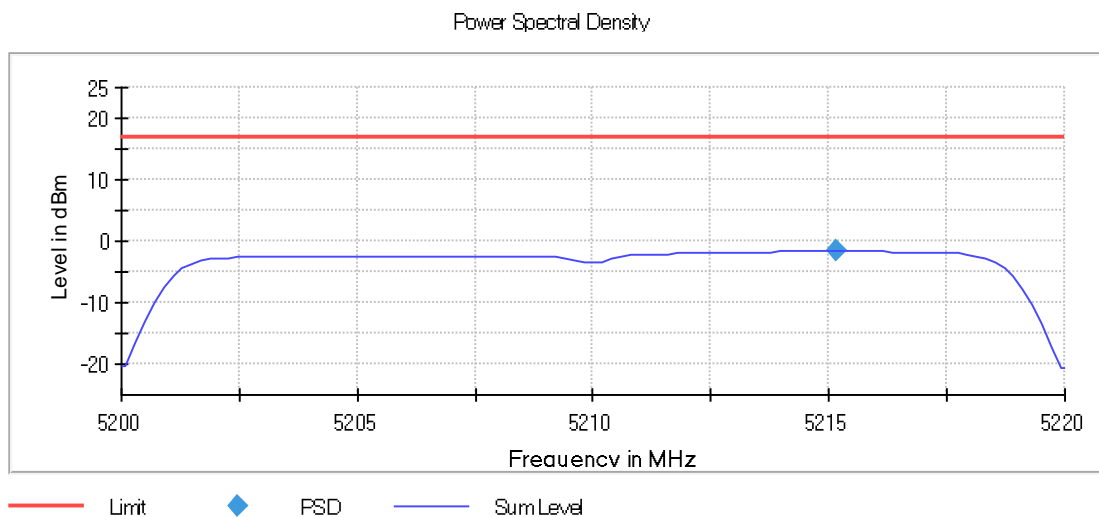
## Power Spectral Density (5210 MHz; 24.000 dBm; 20 MHz)

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5210.000000	5215.148515	-1.591	17.0	PASS

### Ports

Port	State
1	used
2	used



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.20000 GHz	5.20000 GHz
Stop Frequency	5.22000 GHz	5.22000 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	0.000 dBm	0.000 dBm
Attenuation	20.000 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
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## Power Spectral Density (5240 MHz; 24.000 dBm; 20 MHz)

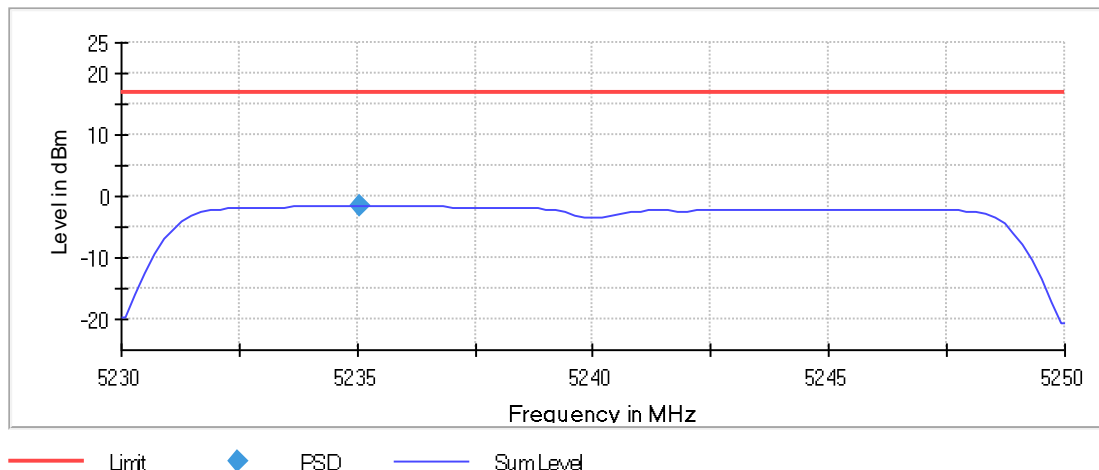
### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5240.000000	5235.049505	-1.592	17.0	PASS

### Ports

Port	State
1	used
2	used

Power Spectral Density



— Limit    ◆ PSD    — SumLevel

### Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.23000 GHz	5.23000 GHz
Stop Frequency	5.25000 GHz	5.25000 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

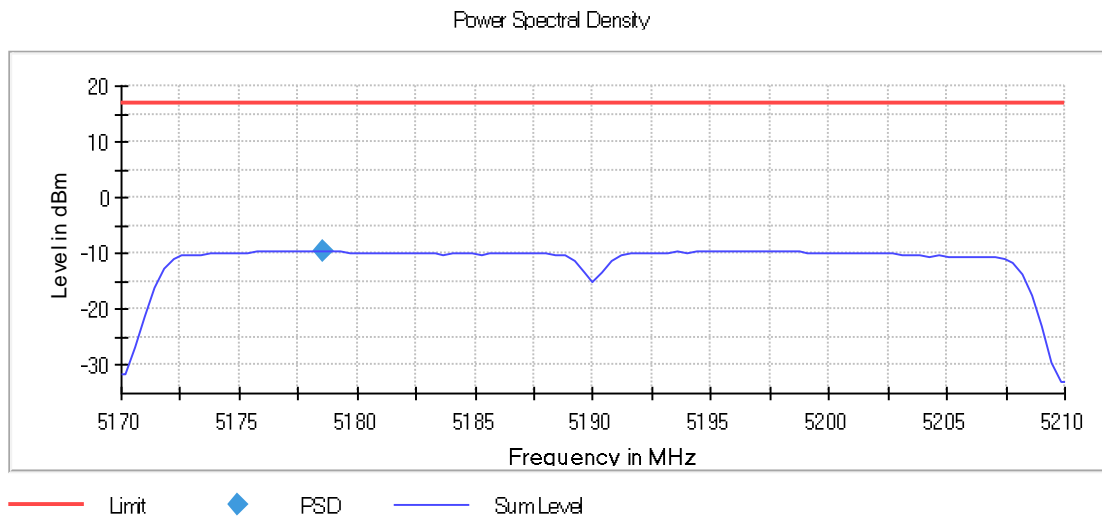
## Power Spectral Density (5190 MHz; 24.000 dBm; 40 MHz)

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5190.000000	5178.514851	-9.431	17.0	PASS

### Ports

Port	State
1	used
2	used



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.17000 GHz	5.17000 GHz
Stop Frequency	5.21000 GHz	5.21000 GHz
Span	40.000 MHz	40.000 MHz
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 80
SweepTime	2.020 ms	2.020 ms
Reference Level	0.000 dBm	0.000 dBm
Attenuation	20.000 dB	AUTO
Detector	RMS	RMS
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Power	Average Power
SweepType	Sweep	AUTO
Preamp	off	off

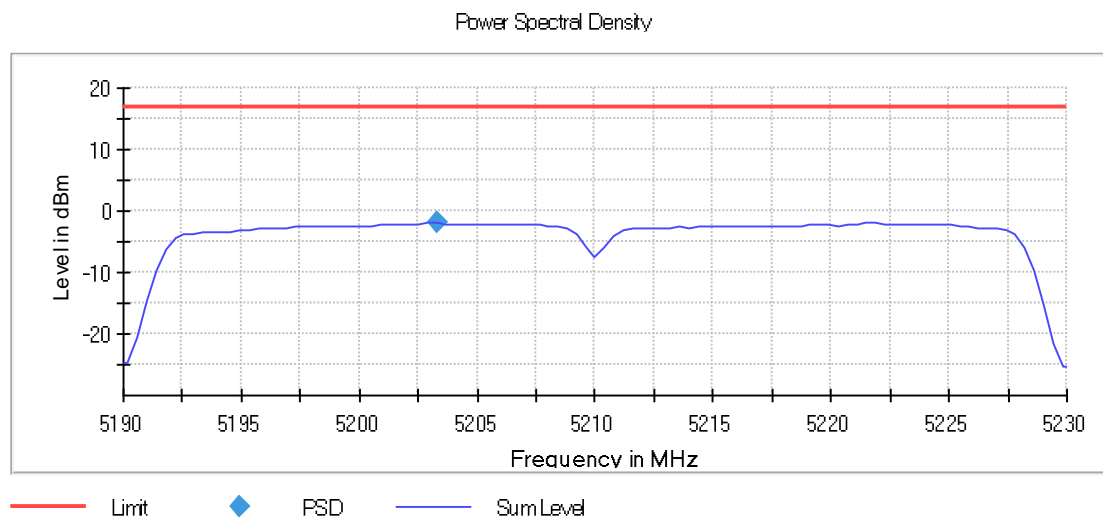
## Power Spectral Density (5210 MHz; 24.000 dBm; 40 MHz)

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5210.000000	5203.267327	-1.985	17.0	PASS

### Ports

Port	State
1	used
2	used



### 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	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 80
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	Sweep	AUTO
Preamp	off	off

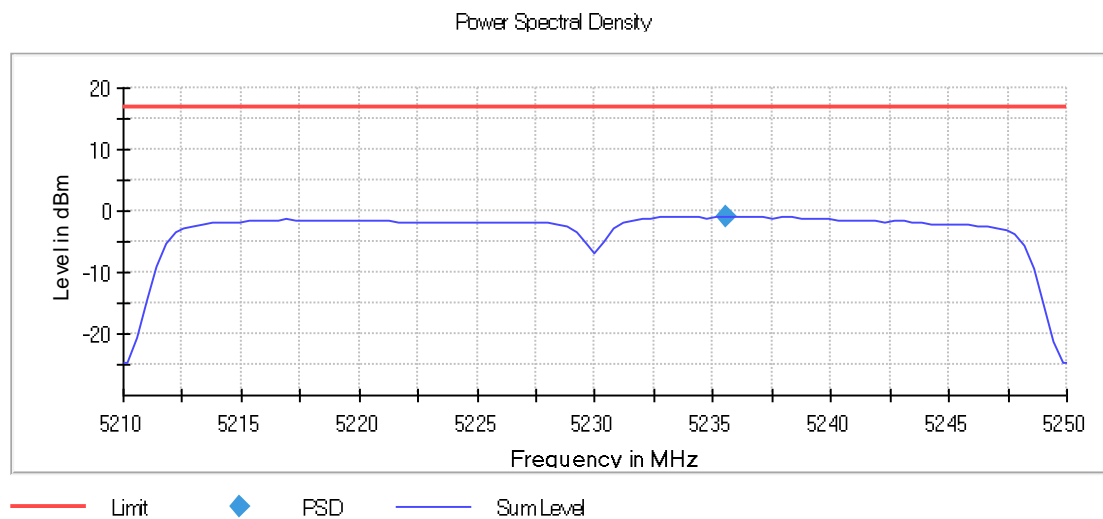
## Power Spectral Density (5230 MHz; 24.000 dBm; 40 MHz)

### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5230.000000	5235.544554	-0.889	17.0	PASS

### Ports

Port	State
1	used
2	used



### Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.21000 GHz	5.21000 GHz
Stop Frequency	5.25000 GHz	5.25000 GHz
Span	40.000 MHz	40.000 MHz
RBW	1.000 MHz	<= 1.000 MHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 80
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	Sweep	AUTO
Preamp	off	off



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

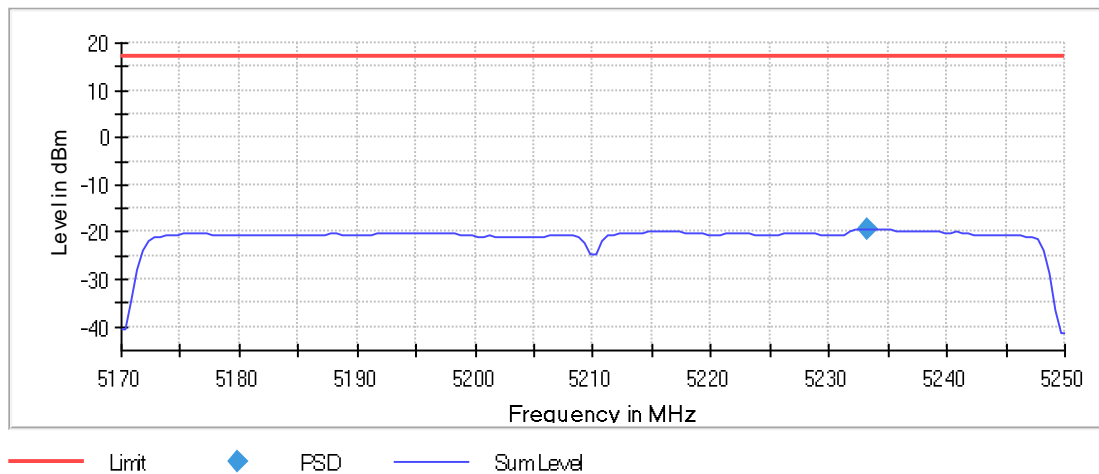
### Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5210.000000	5233.250000	-19.299	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	5.25000 GHz	5.25000 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	3.200 ms	3.200 ms
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	10.000 dB	AUTO
Detector	RMS	RMS
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Power	Average Power
SweepType	Sweep	AUTO
Preamp	off	off

-- End of Report --