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## Hardware Setup: WMS Measurements\TS8997 Hardware Setup

Spectrum Analyzer: SA FSV 40 (SA FSV 40) @ VISA (ADR  
TCPIP::192.168.48.100::inst0::instr), SN 1321.3008K40/101752,  
FW 3.60

Vector Generator: VG SMW200A (VG SMW200A) @ VISA (ADR TCPIP0::A-N5182B-  
301471::inst0::INSTR), SN 101752, FW 3.70

Generator: SMB100A (SMB100A) @ VISA (ADR  
TCPIP::192.168.48.110::inst0::INSTR), SN 180599, FW  
3.20.390.24 / Drv:Rev 2.21.0, 07/2016, CVI 2015

OSP: OSP-B157W8PLUS (OSP-B157W8PLUS) @ VISA (ADR  
TCPIP::192.168.48.157::inst0::instr), SN 1527.1144.06 / 100955,  
FW 2.00.1.0

## Summary

Test	Frequency (MHz)	Nominal Power (dBm)	Nominal Bandwidth (MHz)	Result
Emission Bandwidth 26 dB	5260.000	24.0	20.000000	PASS
RF output power	5260.000	24.0	20.000000	PASS
Power Spectral Density	5260.000	24.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5260.000	24.0	20.000000	PASS
Emission Bandwidth 26 dB	5300.000	24.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5300.000	24.0	20.000000	PASS
Emission Bandwidth 26 dB	5335.000	24.0	20.000000	PASS
Occupied Channel Bandwidth 99%	5335.000	24.0	20.000000	PASS
Emission Bandwidth 26 dB	5270.000	24.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5270.000	24.0	40.000000	PASS
Emission Bandwidth 26 dB	5300.000	24.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5300.000	24.0	40.000000	PASS
Emission Bandwidth 26 dB	5325.000	24.0	40.000000	PASS
Occupied Channel Bandwidth 99%	5325.000	24.0	40.000000	PASS
Emission Bandwidth 26 dB	5290.000	24.0	80.000000	PASS
Occupied Channel Bandwidth 99%	5290.000	24.0	80.000000	PASS
Emission Bandwidth 26 dB	5300.000	24.0	80.000000	PASS
Occupied Channel Bandwidth 99%	5300.000	24.0	80.000000	PASS
Emission Bandwidth 26 dB	5305.000	24.0	80.000000	PASS
Occupied Channel Bandwidth 99%	5305.000	24.0	80.000000	PASS
Emission Bandwidth 26 dB	5250.000	24.0	160.000000	PASS
Occupied Channel Bandwidth 99%	5250.000	24.0	160.000000	PASS

## Emission Bandwidth 26 dB (5260 MHz; 24.000 dBm; 20 MHz)

Customized settings.

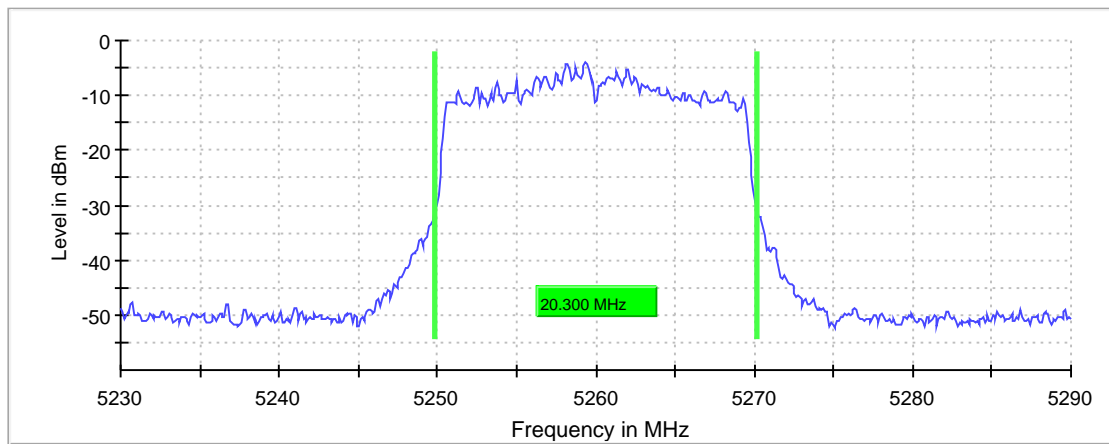
### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5260.000000	20.300000	---	---	5249.850000	5270.150000

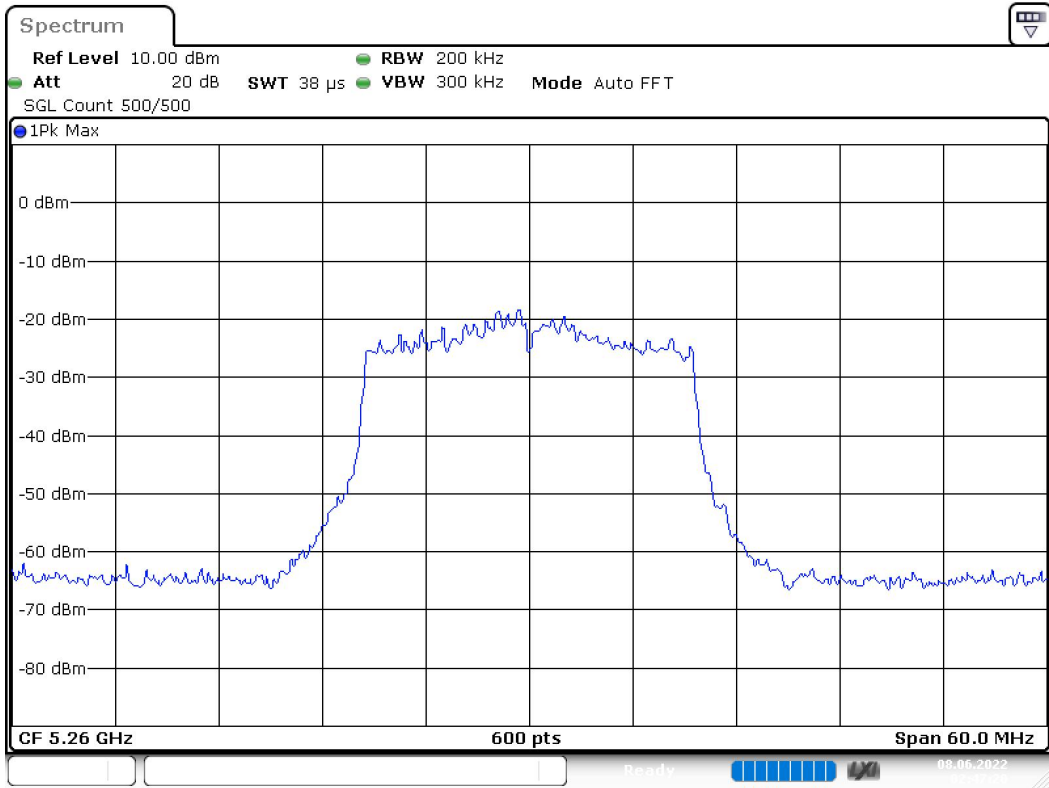
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5260.000000	-4.1	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 02:47:20

### Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.23000 GHz	5.23000 GHz
Stop Frequency	5.29000 GHz	5.29000 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	10.000 dBm	AUTO
Attenuation	20.000 dB	20.000 dB
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 (5260 MHz; 24.000 dBm; 20 MHz)

Customized settings.

### Result

DUT Frequency (MHz)	Gated RMS (dBm)	Limit Max (dBm)	Gated EIRP (dBm)	DutyCycle (%)	Result
5260.000000	8.7	24.0	8.7	91.976	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

# Power Spectral Density (5260 MHz; 24.000 dBm; 20 MHz)

Customized settings.

Max level of analyzer (-4.8 dBm) more than 28.0 dB below the nominal power level.

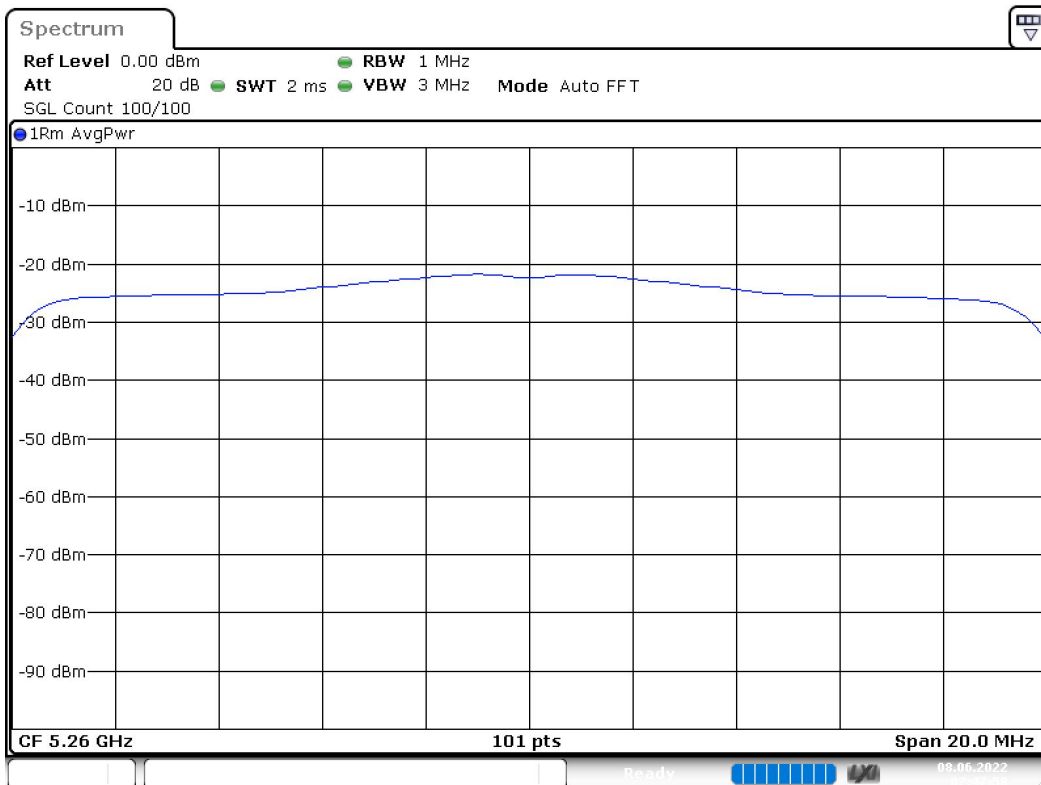
## Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
5260.000000	5259.009901	-4.796	11.0	PASS

## Ports

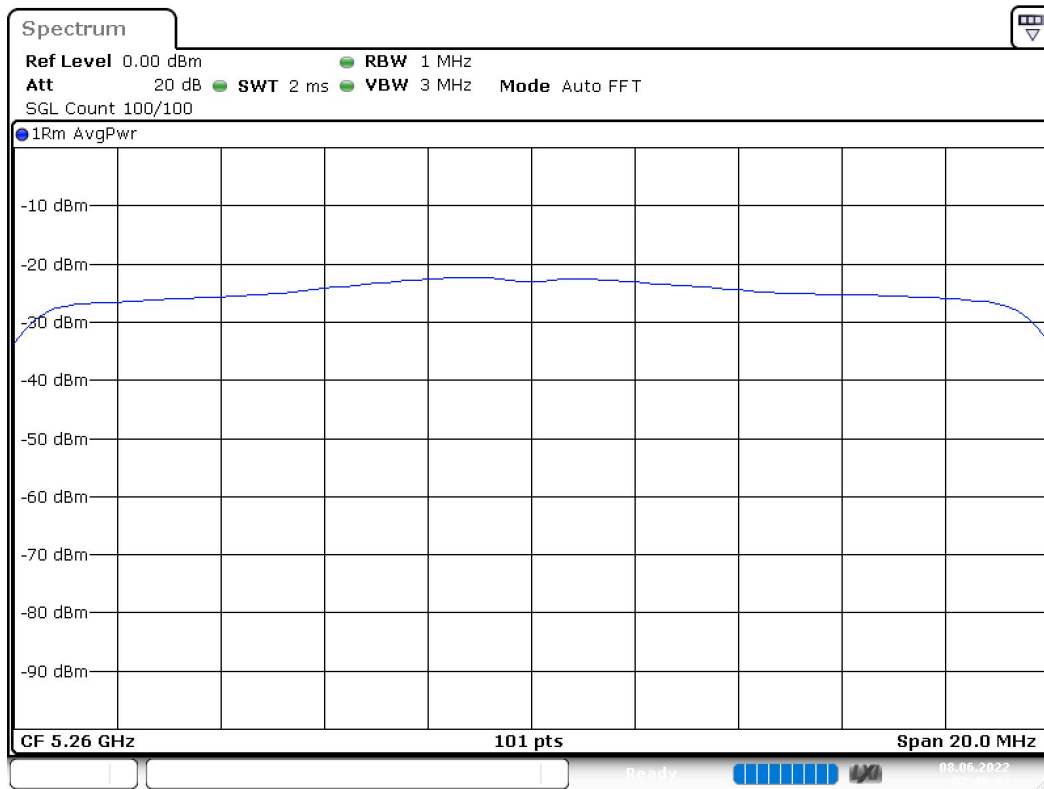
Port	State
1	used
2	used

### PSD Connector 1



Date: 8.JUN.2022 02:47:58

### PSD Connector 2



Date: 8.JUN.2022 02:48:03

### Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.25000 GHz	5.25000 GHz
Stop Frequency	5.27000 GHz	5.27000 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

## Occupied Channel Bandwidth 99% (5260 MHz; 24.000 dBm; 20 MHz)

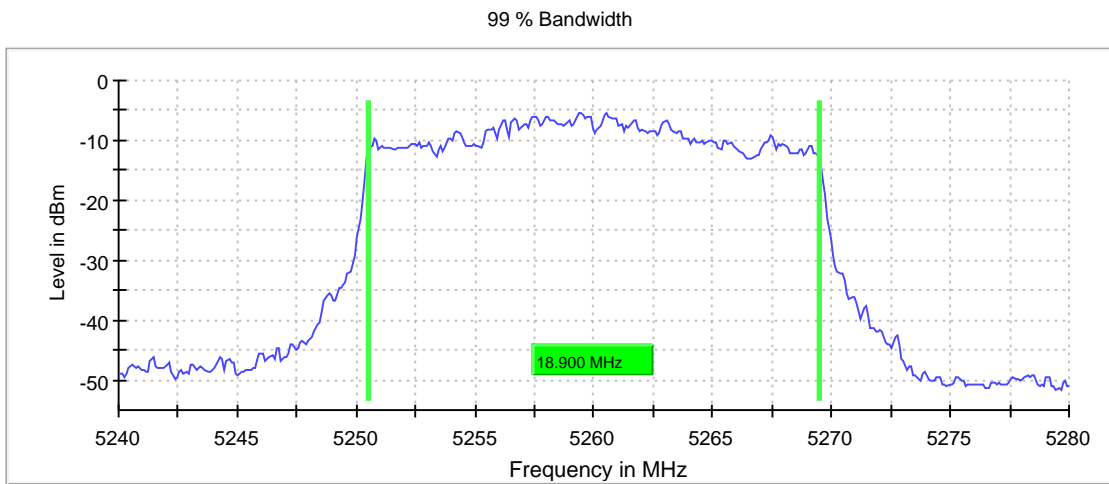
Customized settings.

### 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5260.000000	18.900000	---	---	5250.550000	5269.450000

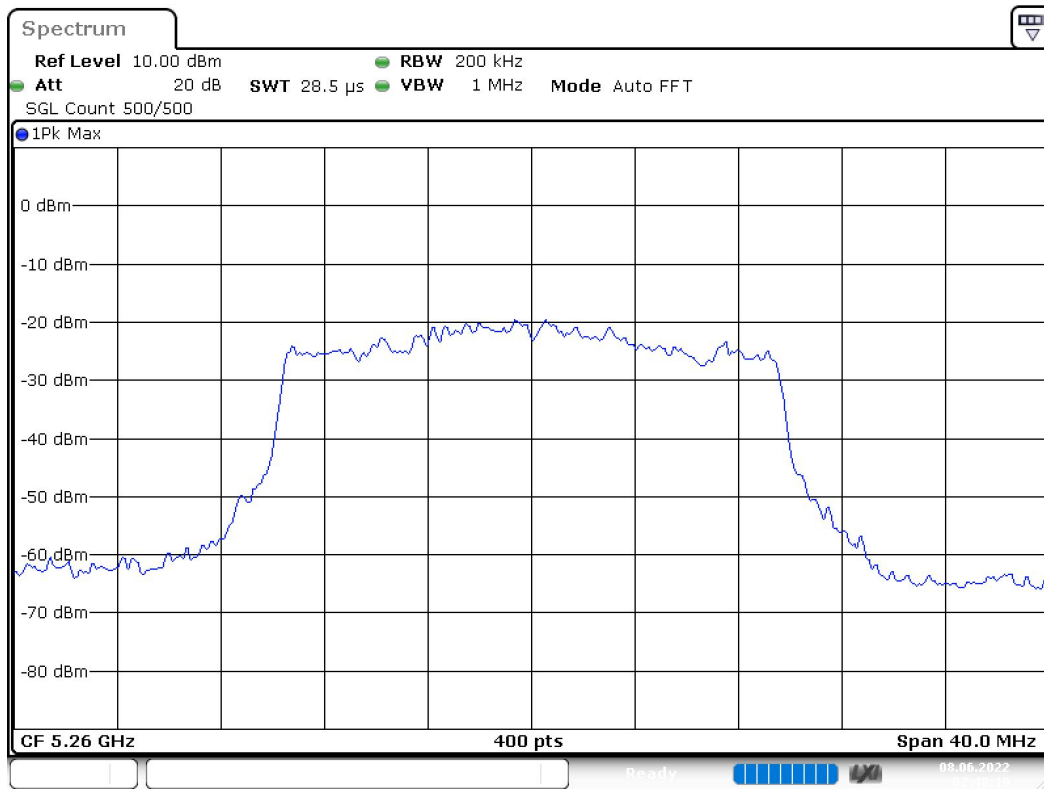
(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5260.000000	PASS



Bandwidth





Date: 8.JUN.2022 02:48:20

### Measurement

Setting	Instrument Value	Target Value
Start Frequency	5.24000 GHz	5.24000 GHz
Stop Frequency	5.28000 GHz	5.28000 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	10.000 dBm	AUTO
Attenuation	20.000 dB	20.000 dB
Detector	MaxPeak	MaxPeak
SweepCount	500	500
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	FFT	AUTO
Preamp	off	off

## Emission Bandwidth 26 dB (5300 MHz; 24.000 dBm; 20 MHz)

Customized settings.

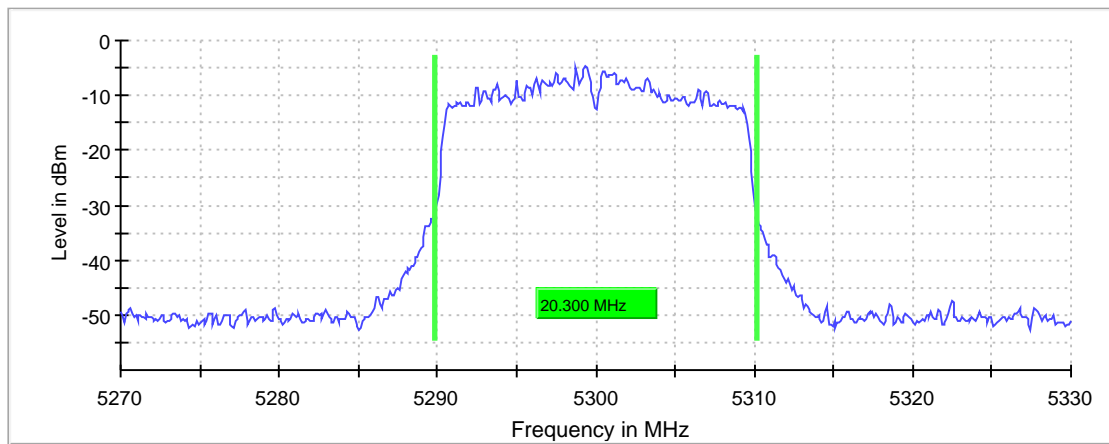
### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5300.000000	20.300000	---	---	5289.850000	5310.150000

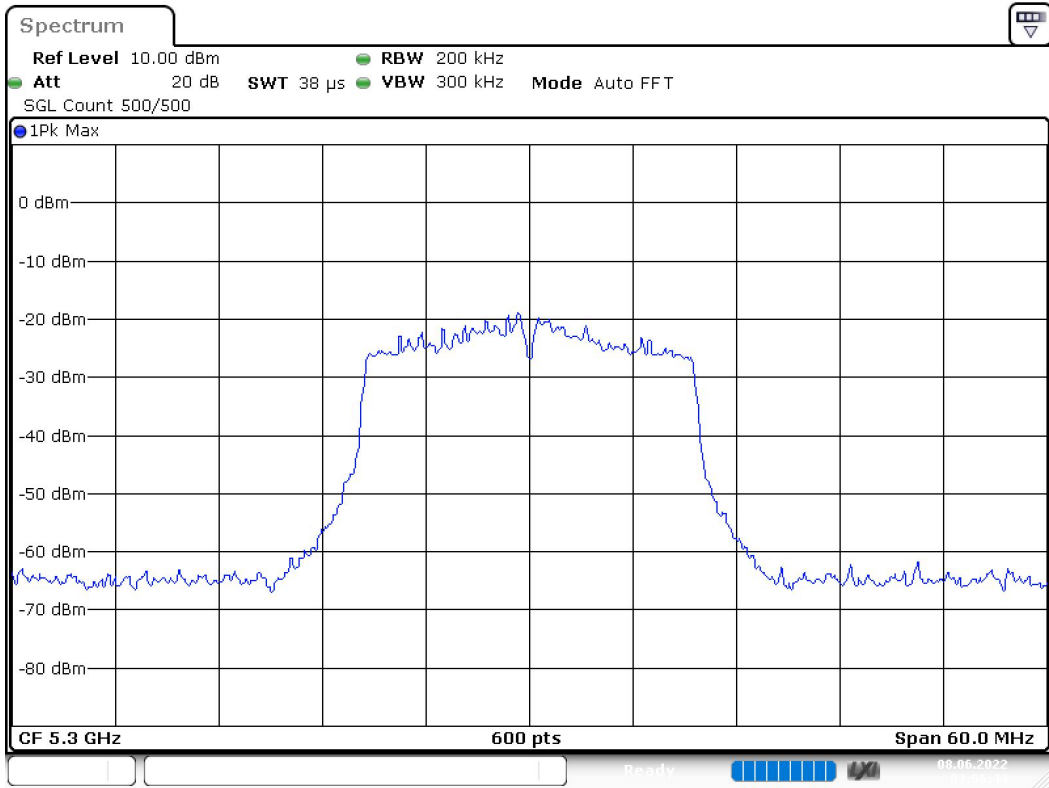
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5300.000000	-4.7	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 03:06:45

## Occupied Channel Bandwidth 99% (5300 MHz; 24.000 dBm; 20 MHz)

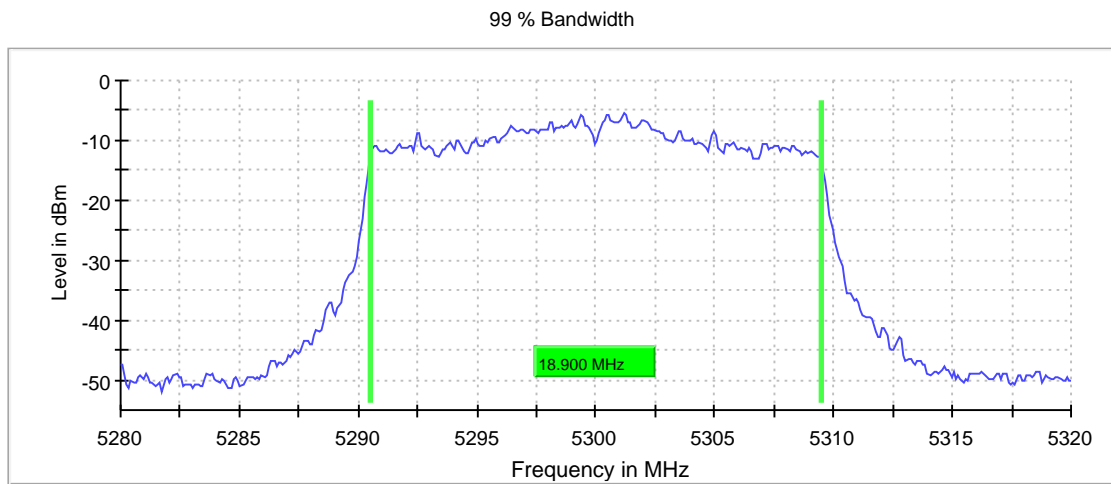
Customized settings.

### 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5300.000000	18.900000	---	---	5290.550000	5309.450000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5300.000000	PASS



Bandwidth



Date: 8.JUN.2022 03:08:03

## Emission Bandwidth 26 dB (5335 MHz; 24.000 dBm; 20 MHz)

Customized settings.

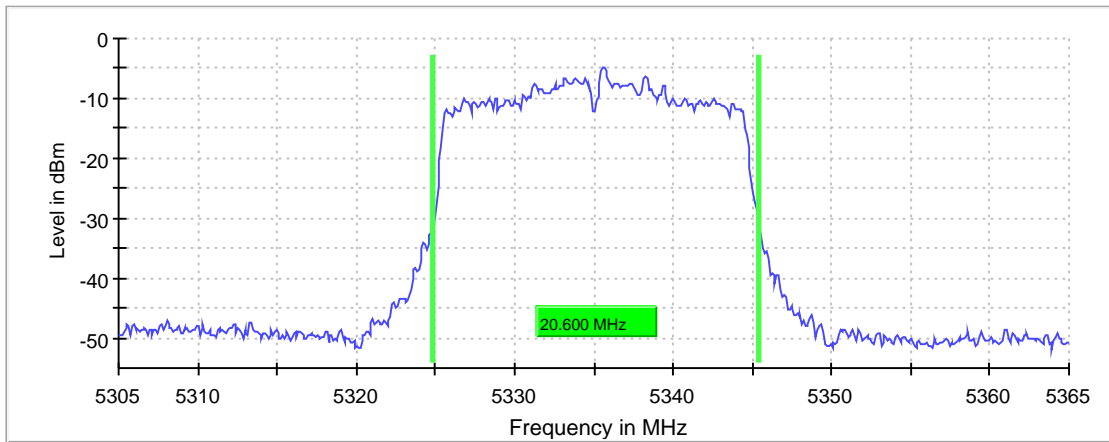
### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5335.000000	20.600000	---	---	5324.850000	5345.450000

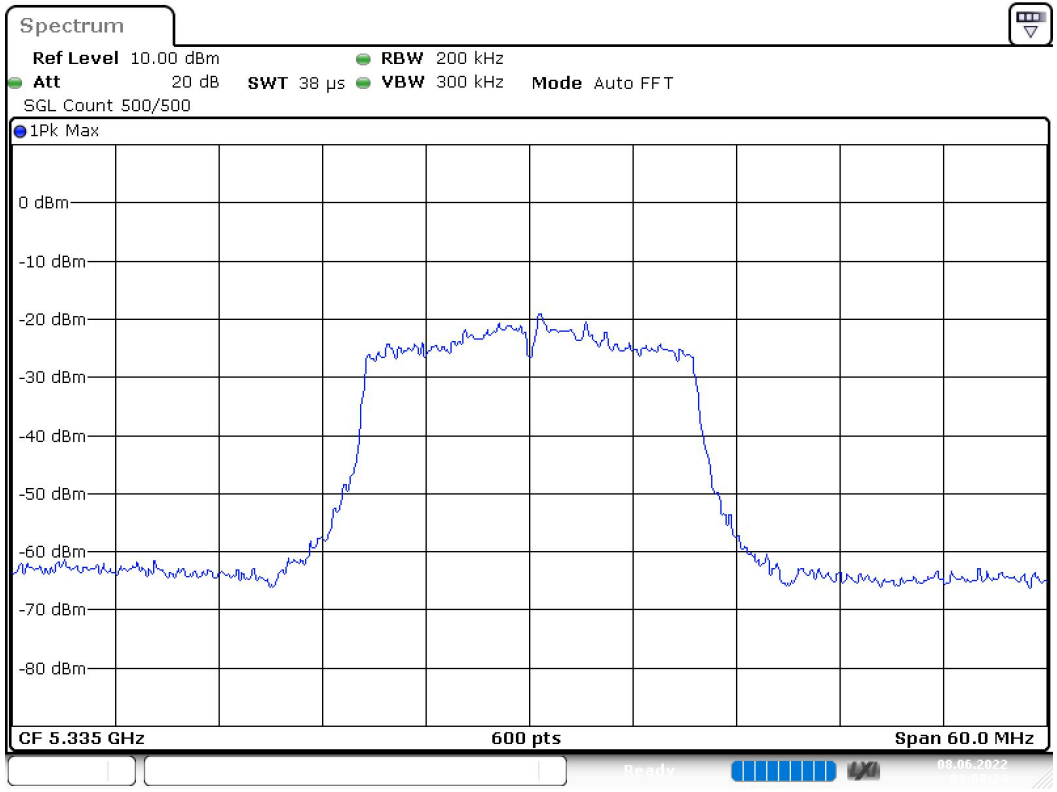
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5335.000000	-4.9	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 03:08:24

# Occupied Channel Bandwidth 99% (5335 MHz; 24.000 dBm; 20 MHz)

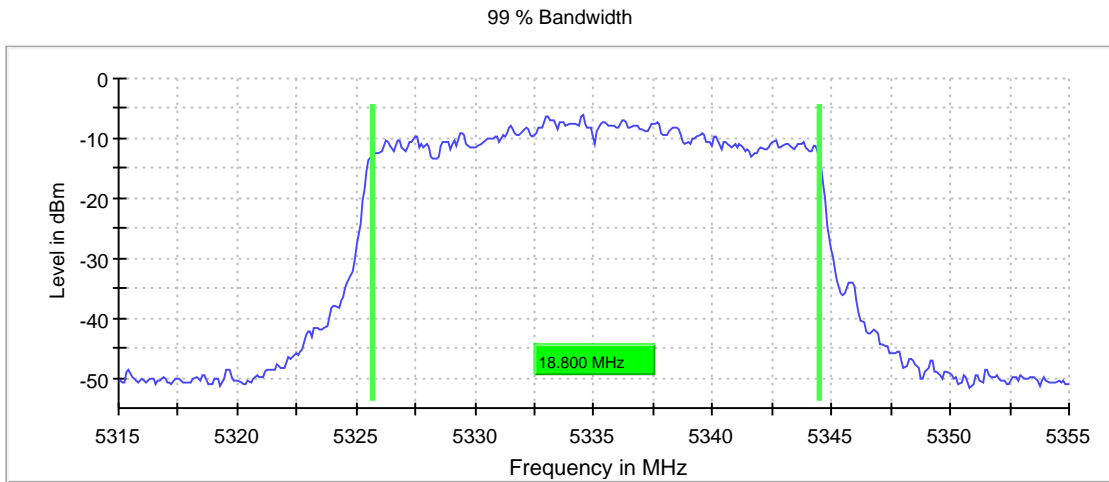
Customized settings.

## 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5335.000000	18.800000	---	---	5325.650000	5344.450000

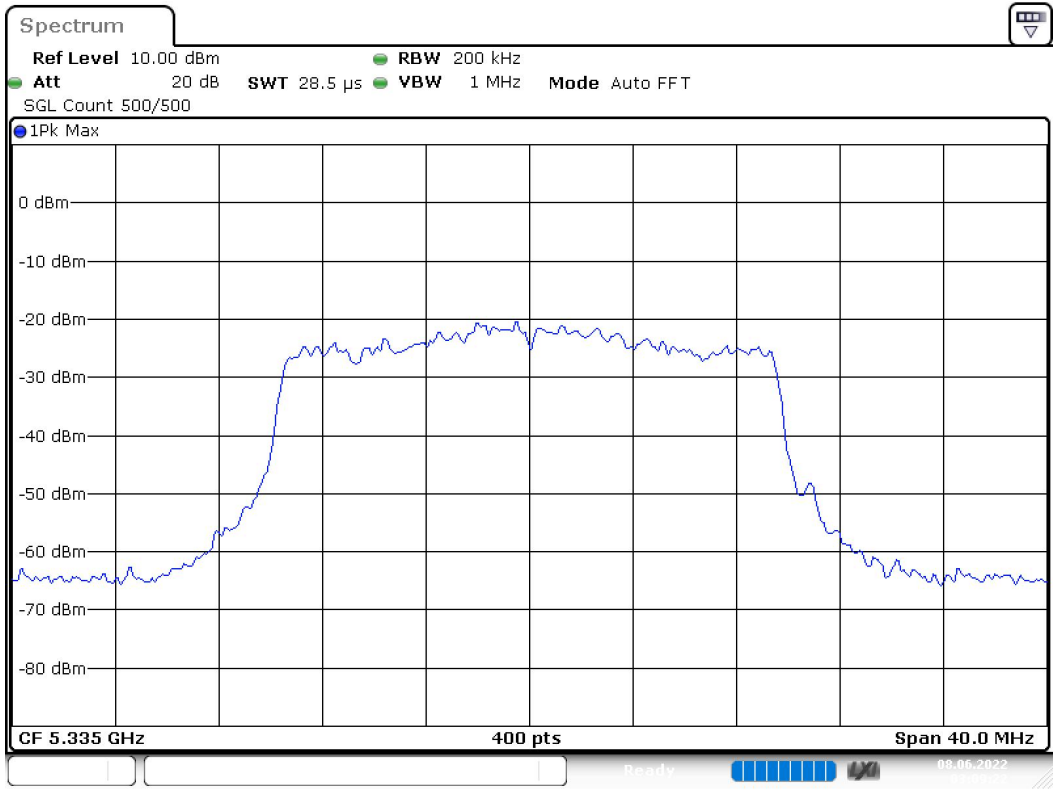
(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5335.000000	PASS



Bandwidth





Date: 8.JUN.2022 03:09:23

## Emission Bandwidth 26 dB (5270 MHz; 24.000 dBm; 40 MHz)

Customized settings.

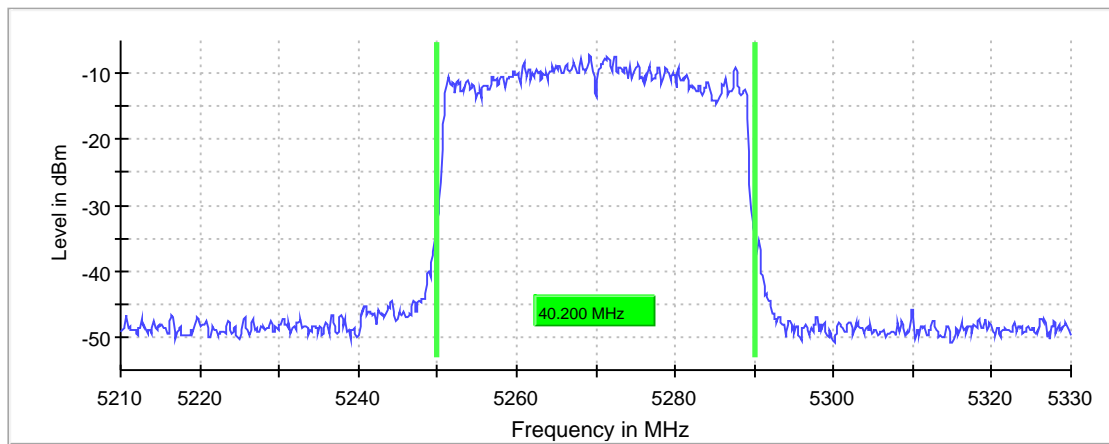
### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5270.000000	40.200000	---	---	5249.825000	5290.025000

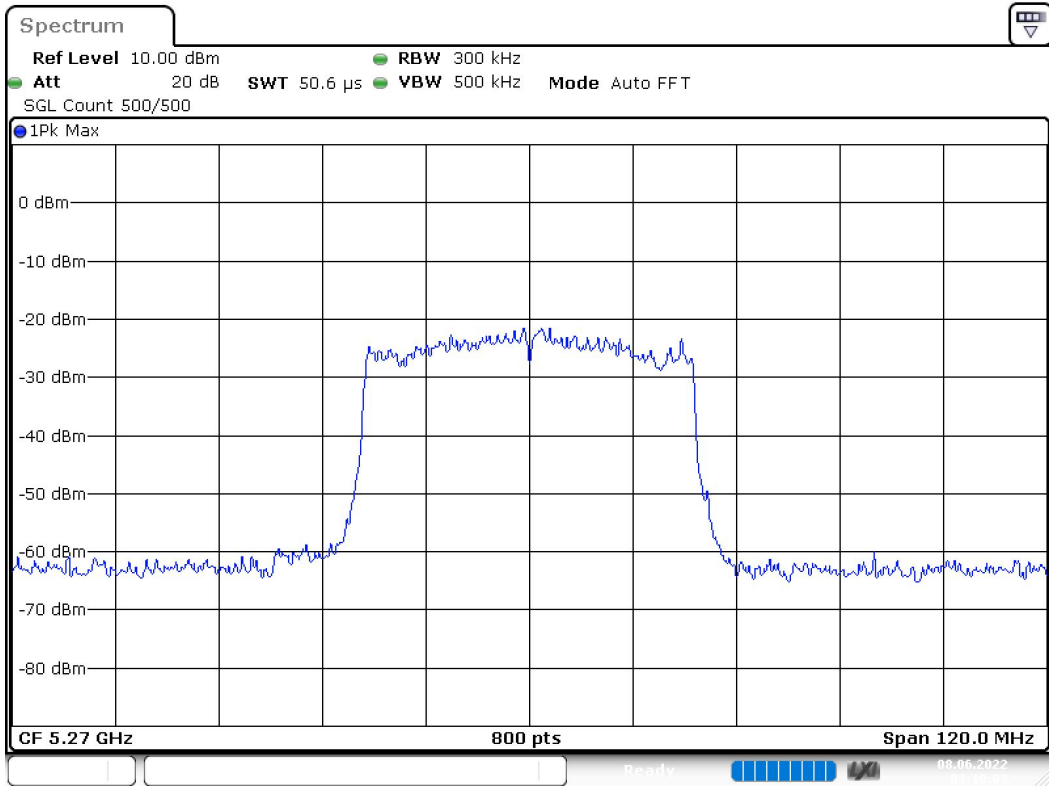
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5270.000000	-7.3	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 03:10:04

# Occupied Channel Bandwidth 99% (5270 MHz; 24.000 dBm; 40 MHz)

Customized settings.

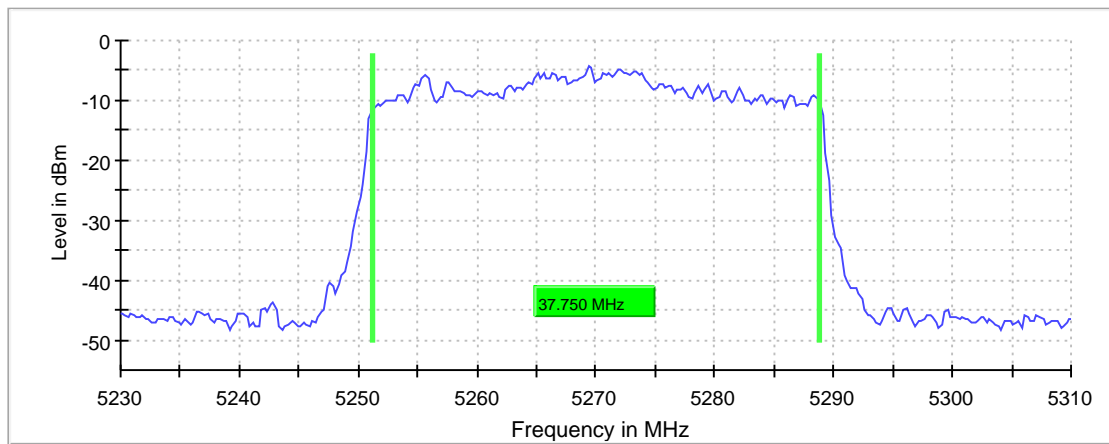
## 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5270.000000	37.750000	---	---	5251.125000	5288.875000

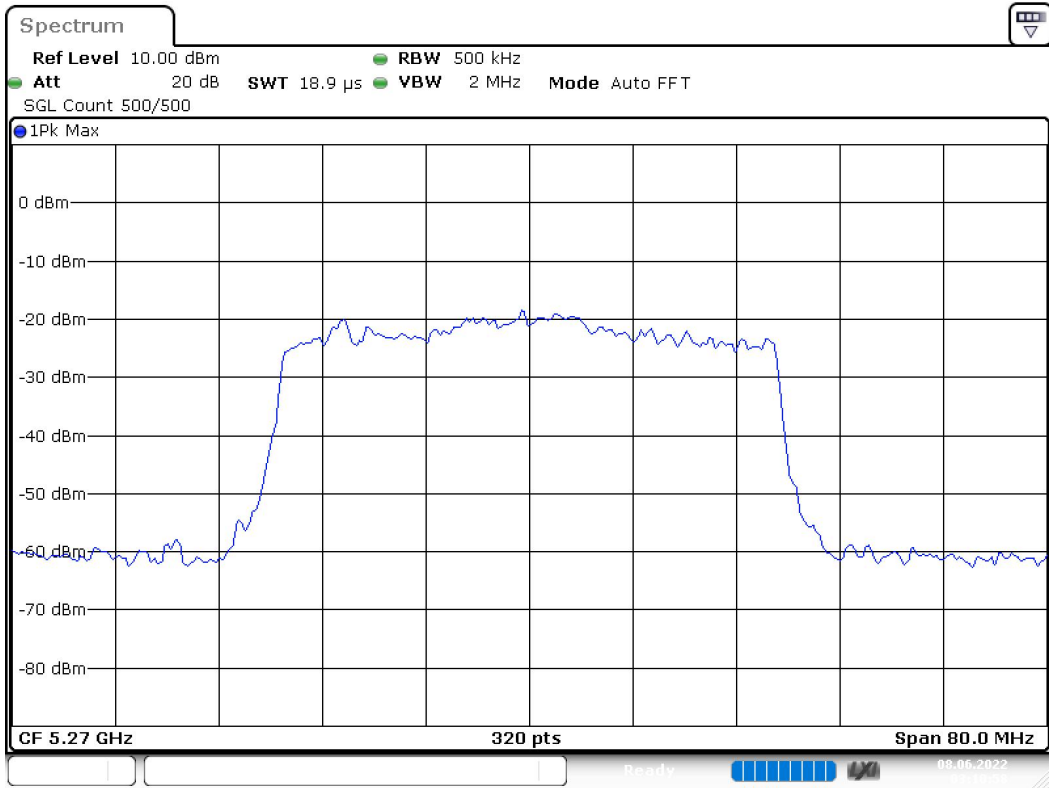
(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5270.000000	PASS

99 % Bandwidth



Bandwidth



Date: 8.JUN.2022 03:10:59

## Emission Bandwidth 26 dB (5300 MHz; 24.000 dBm; 40 MHz)

Customized settings.

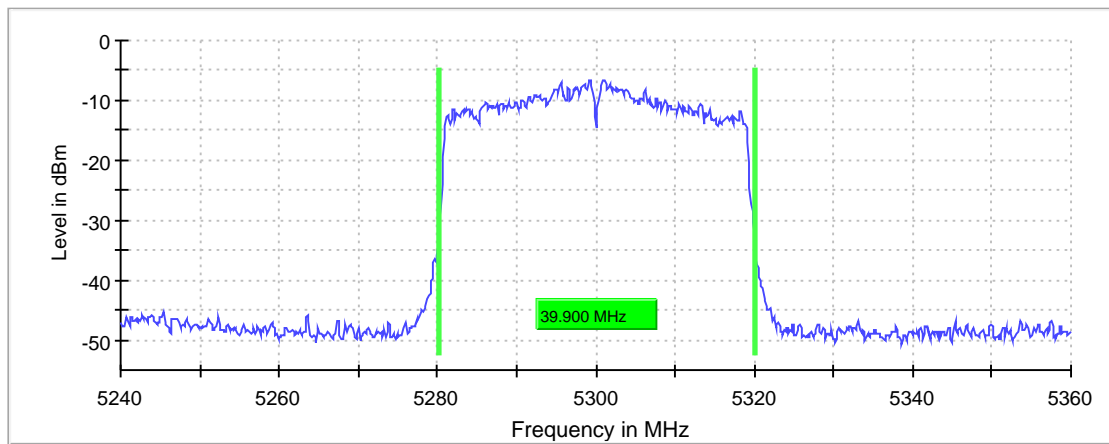
### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5300.000000	39.900000	---	---	5280.125000	5320.025000

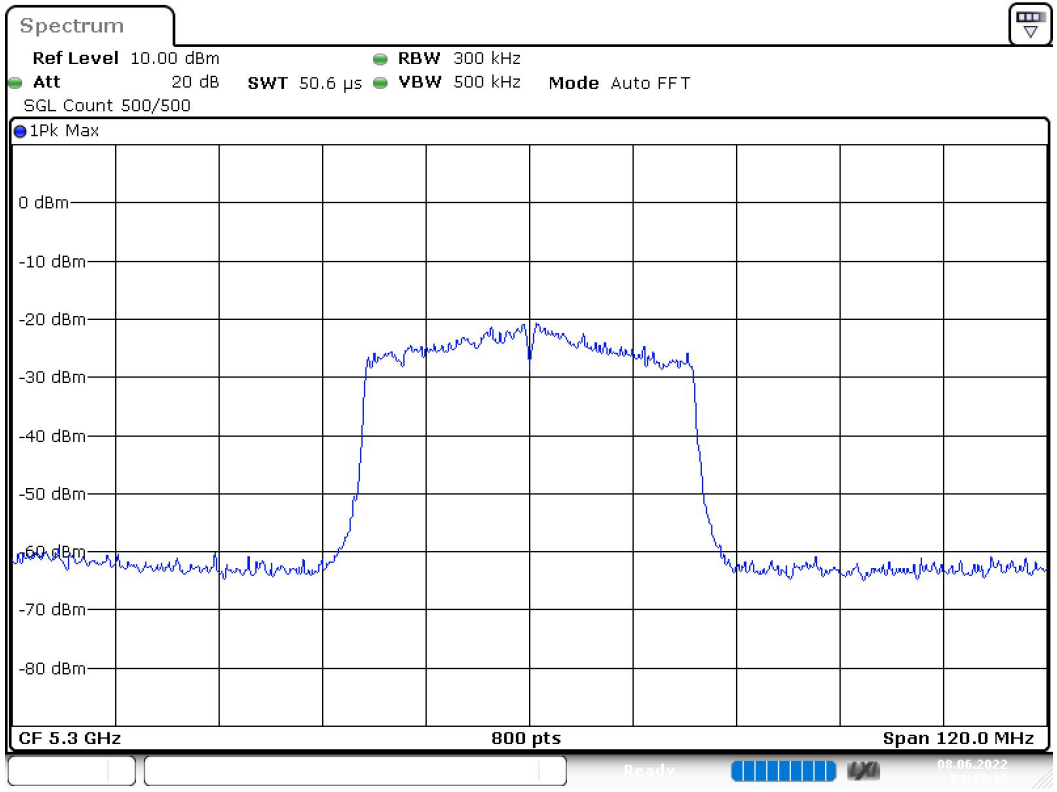
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5300.000000	-6.6	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 03:17:19

# Occupied Channel Bandwidth 99% (5300 MHz; 24.000 dBm; 40 MHz)

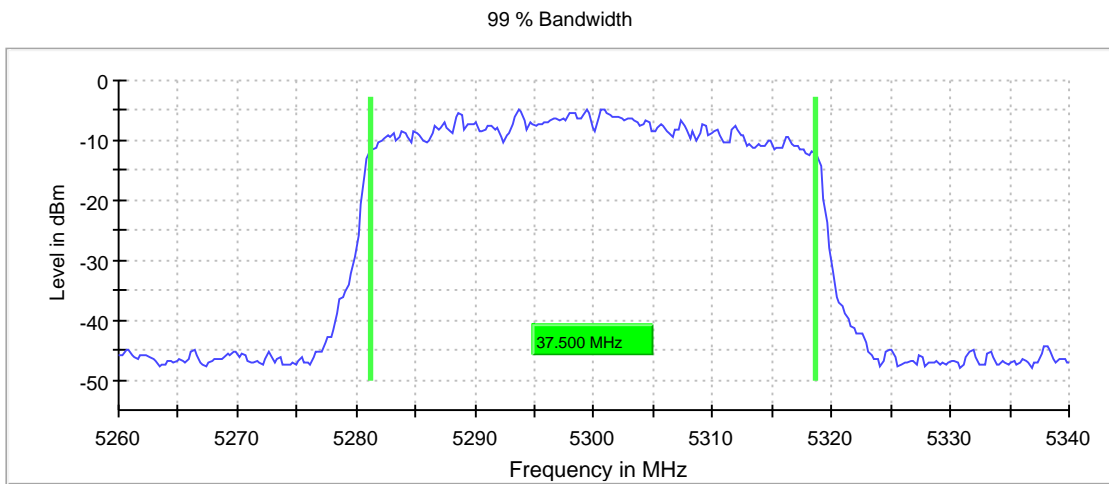
Customized settings.

## 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5300.000000	37.500000	---	---	5281.125000	5318.625000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5300.000000	PASS



Bandwidth





Date: 8.JUN.2022 03:18:28

## Emission Bandwidth 26 dB (5325 MHz; 24.000 dBm; 40 MHz)

Customized settings.

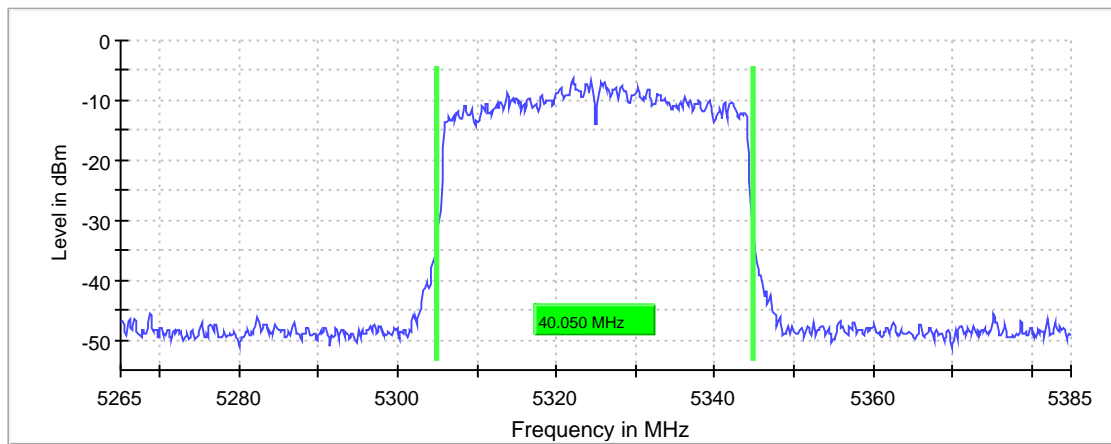
### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5325.000000	40.050000	---	---	5304.825000	5344.875000

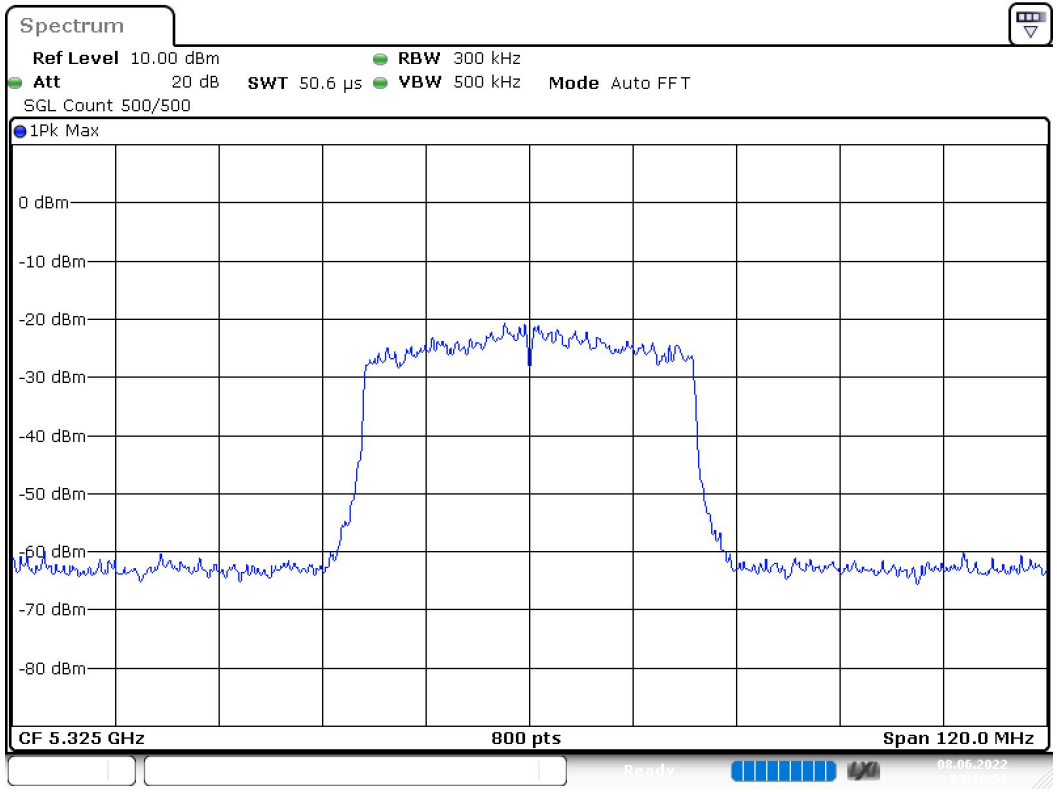
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5325.000000	-6.4	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 03:18:57

## Occupied Channel Bandwidth 99% (5325 MHz; 24.000 dBm; 40 MHz)

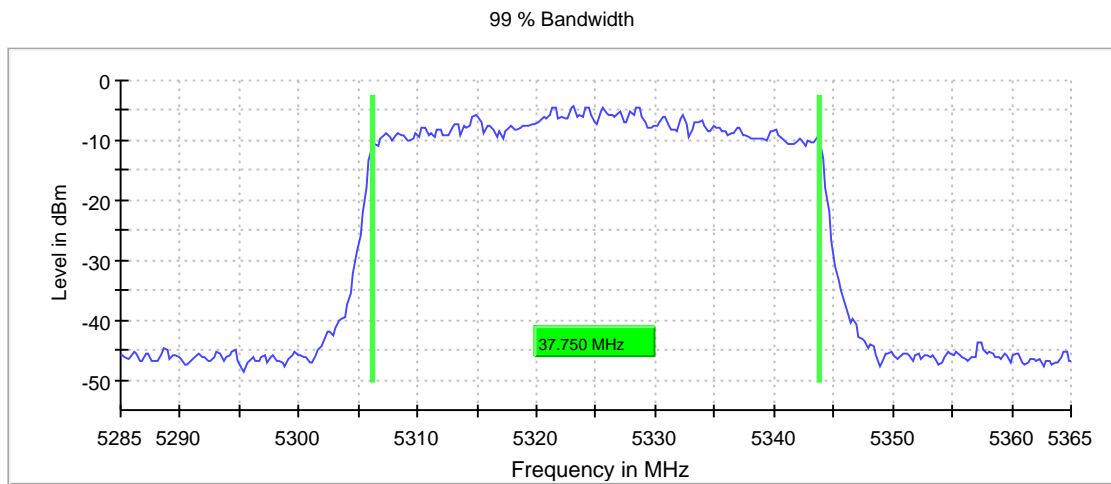
Customized settings.

### 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5325.000000	37.750000	---	---	5306.125000	5343.875000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5325.000000	PASS



Bandwidth



Date: 8.JUN.2022 03:19:53

## Emission Bandwidth 26 dB (5290 MHz; 24.000 dBm; 80 MHz)

Customized settings.

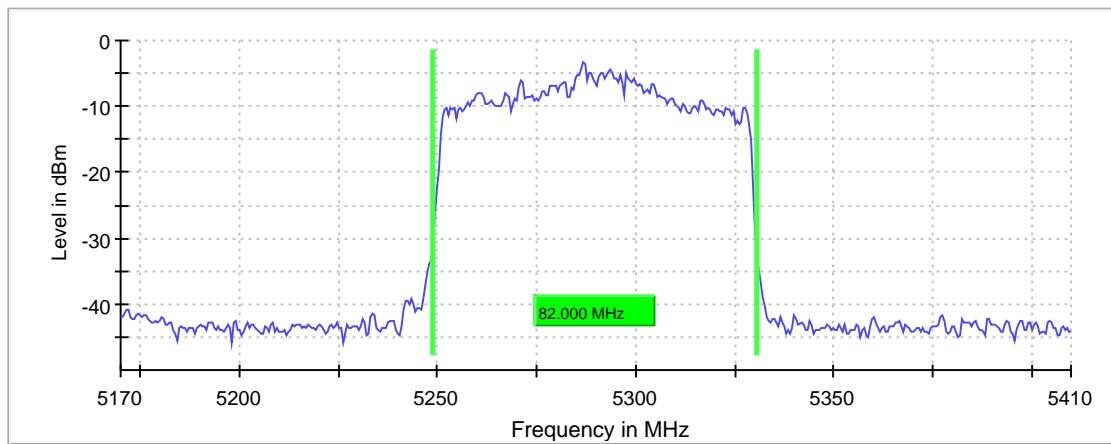
### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5290.000000	82.000000	---	---	5248.750000	5330.750000

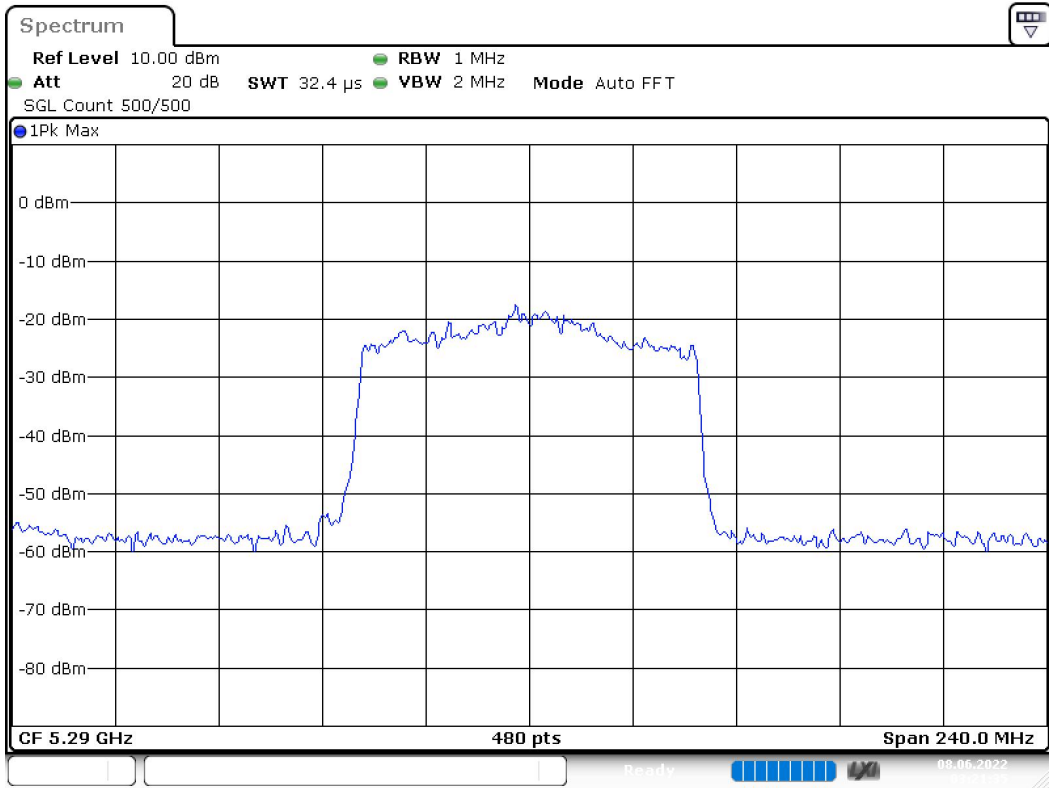
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5290.000000	-3.3	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 03:21:36

# Occupied Channel Bandwidth 99% (5290 MHz; 24.000 dBm; 80 MHz)

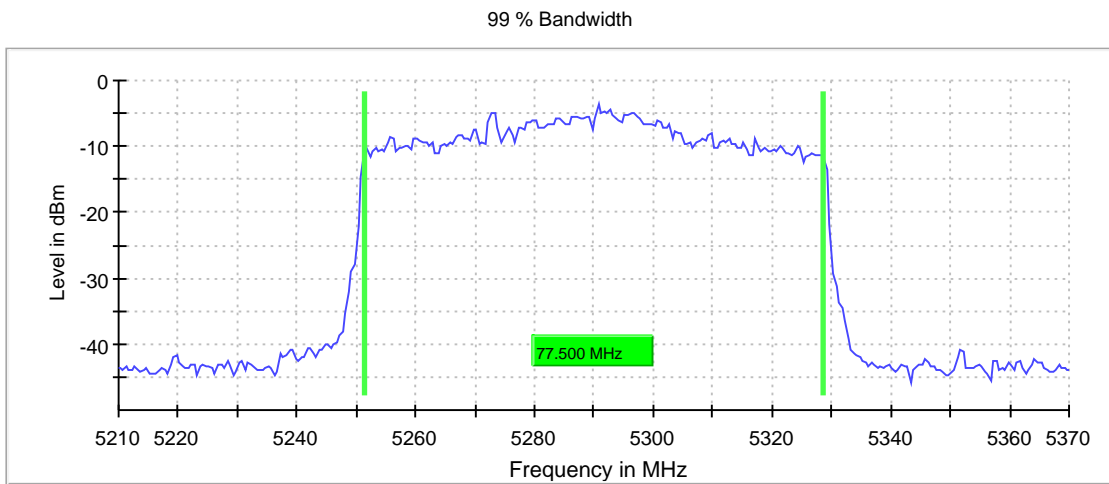
Customized settings.

## 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5290.000000	77.500000	---	---	5251.250000	5328.750000

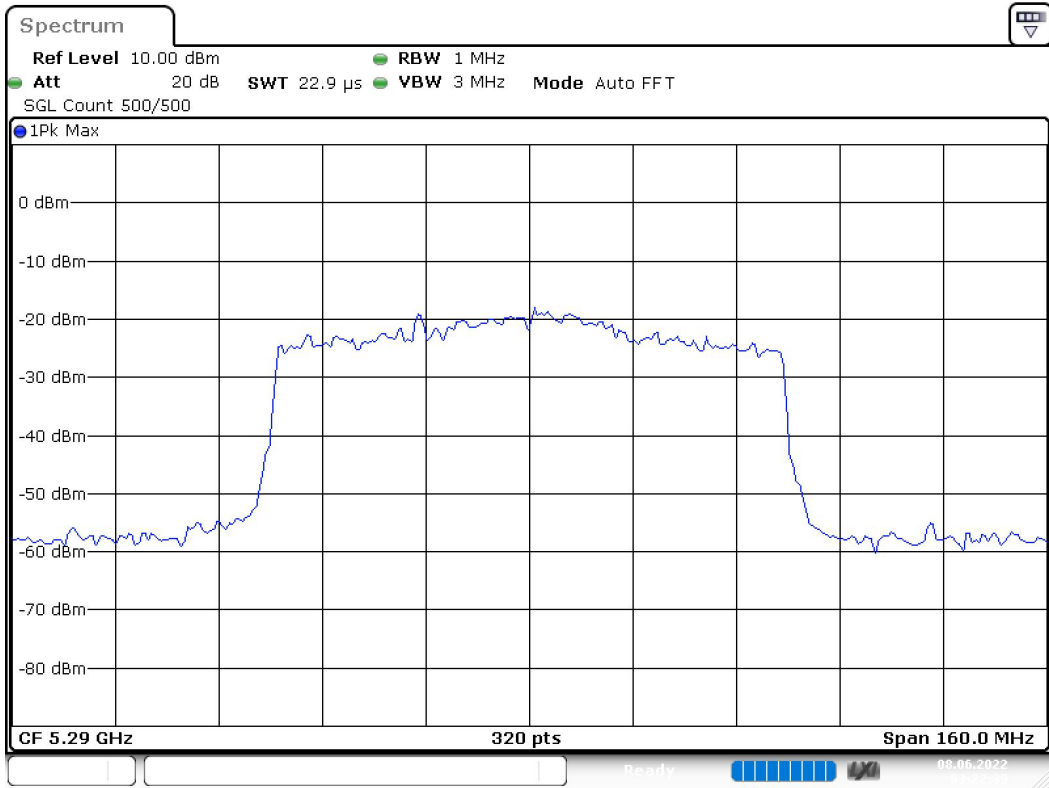
(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5290.000000	PASS



Bandwidth





Date: 8.JUN.2022 03:22:40

## Emission Bandwidth 26 dB (5300 MHz; 24.000 dBm; 80 MHz)

Customized settings.

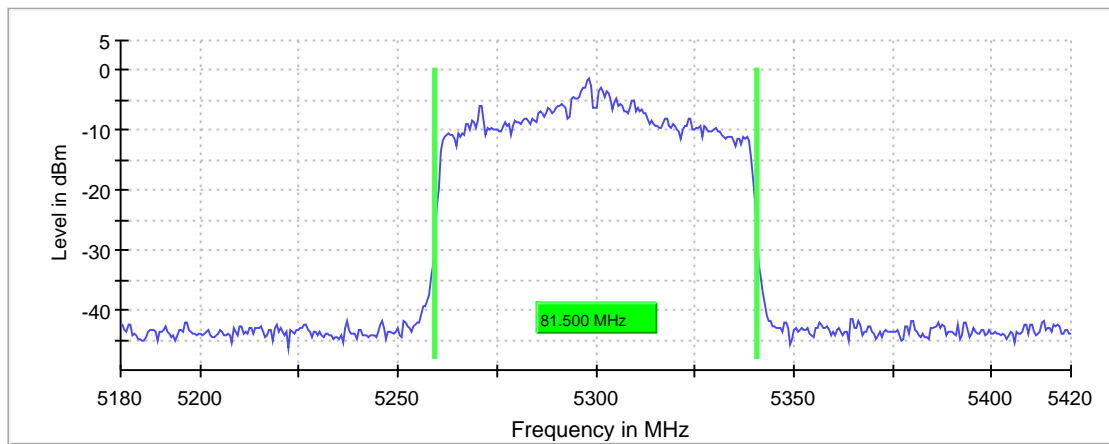
### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5300.000000	81.500000	---	---	5259.250000	5340.750000

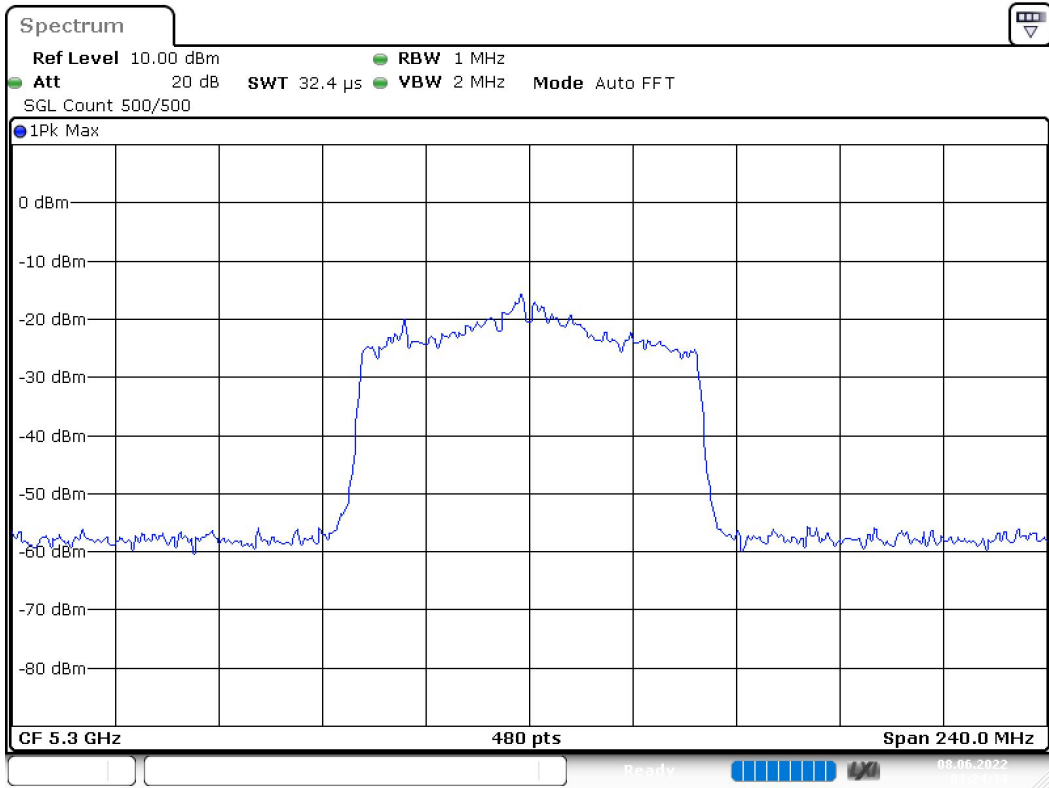
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5300.000000	-1.5	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 03:24:35

# Occupied Channel Bandwidth 99% (5300 MHz; 24.000 dBm; 80 MHz)

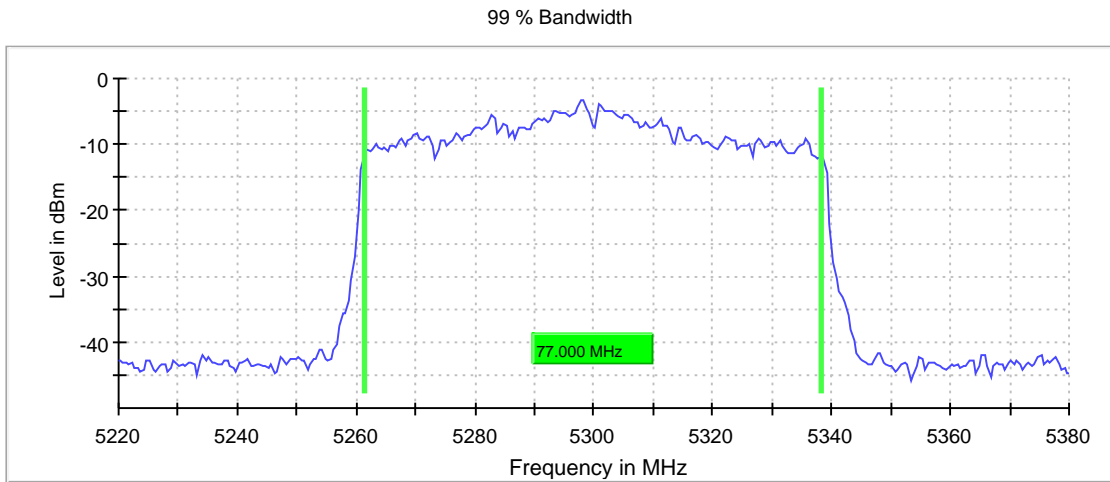
Customized settings.

## 99 % Bandwidth

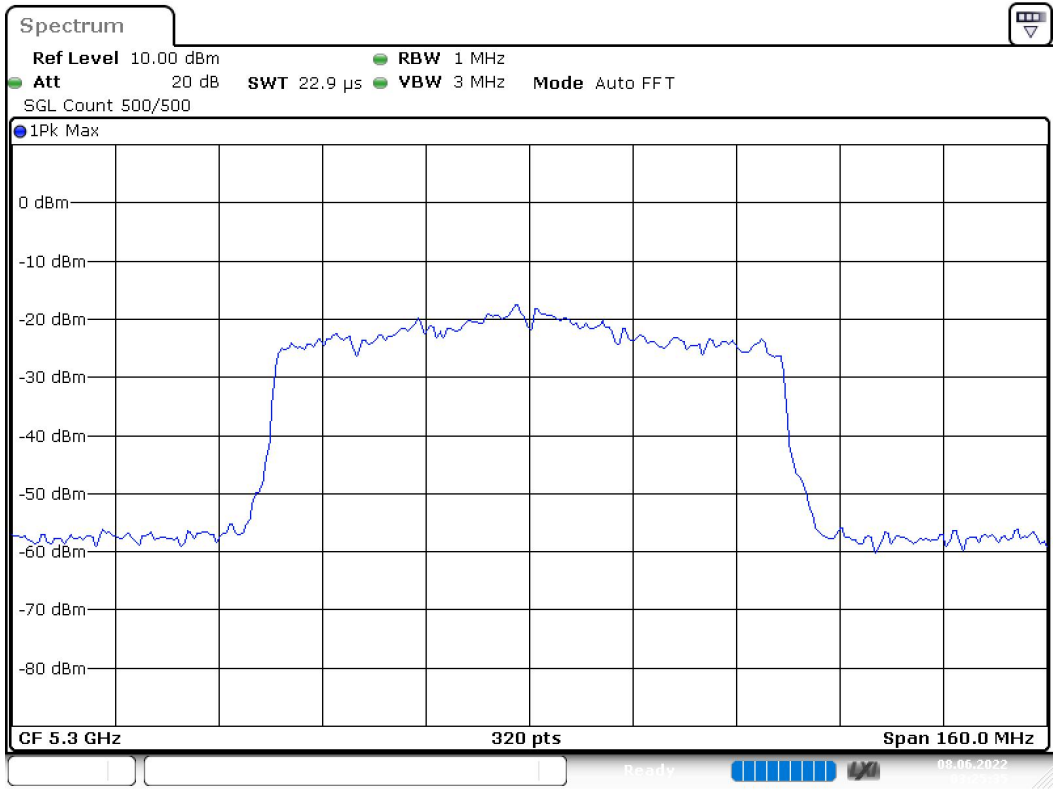
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5300.000000	77.000000	---	---	5261.250000	5338.250000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5300.000000	PASS



Bandwidth



Date: 8.JUN.2022 03:25:36

## Emission Bandwidth 26 dB (5305 MHz; 24.000 dBm; 80 MHz)

Customized settings.

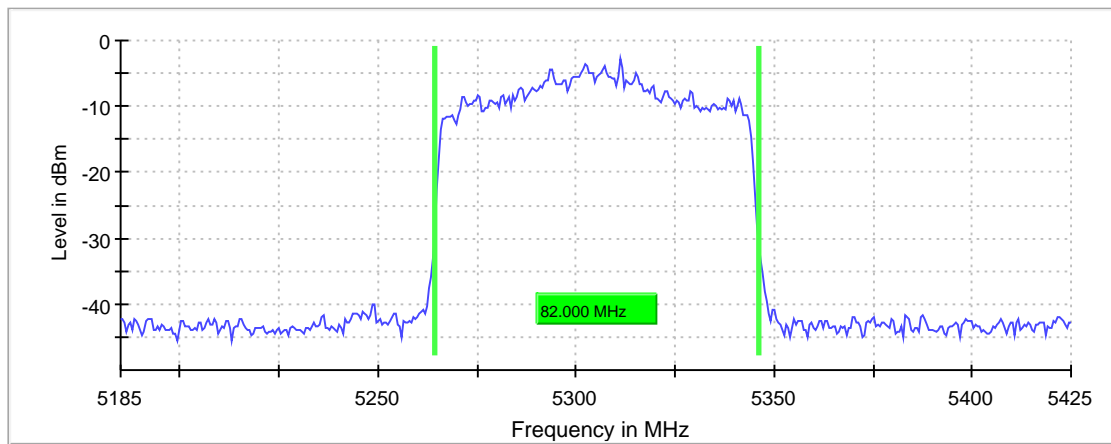
### 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5305.000000	82.000000	---	---	5264.250000	5346.250000

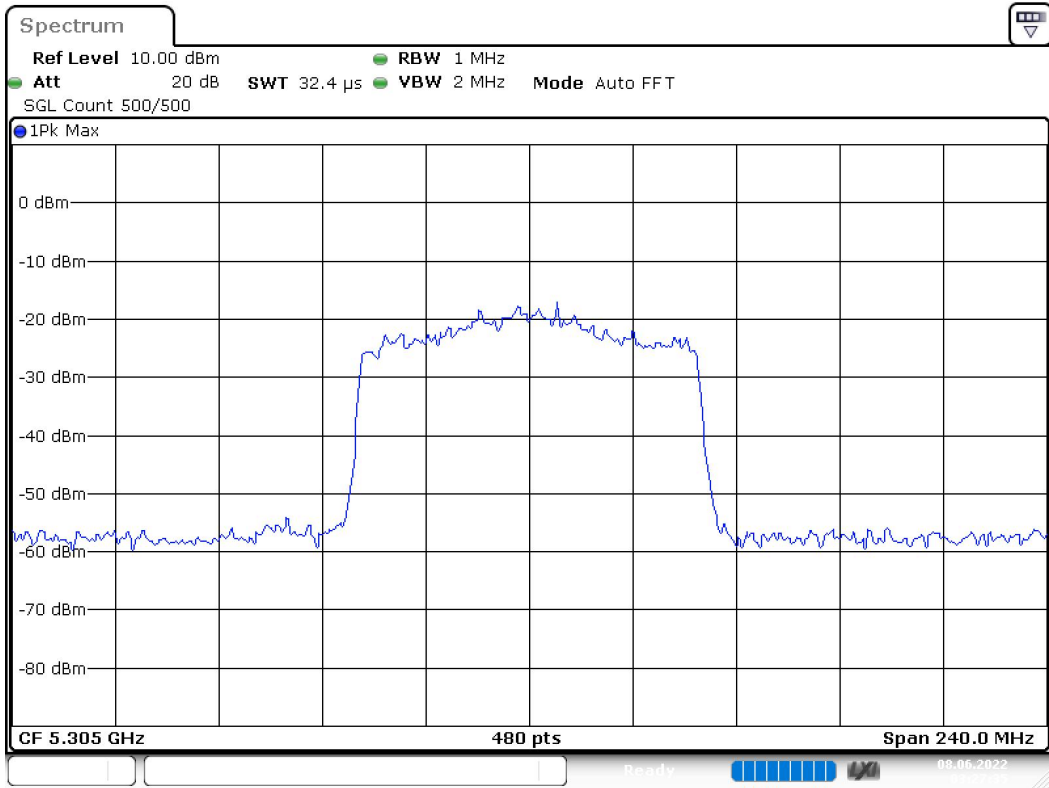
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5305.000000	-2.8	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 03:27:36

# Occupied Channel Bandwidth 99% (5305 MHz; 24.000 dBm; 80 MHz)

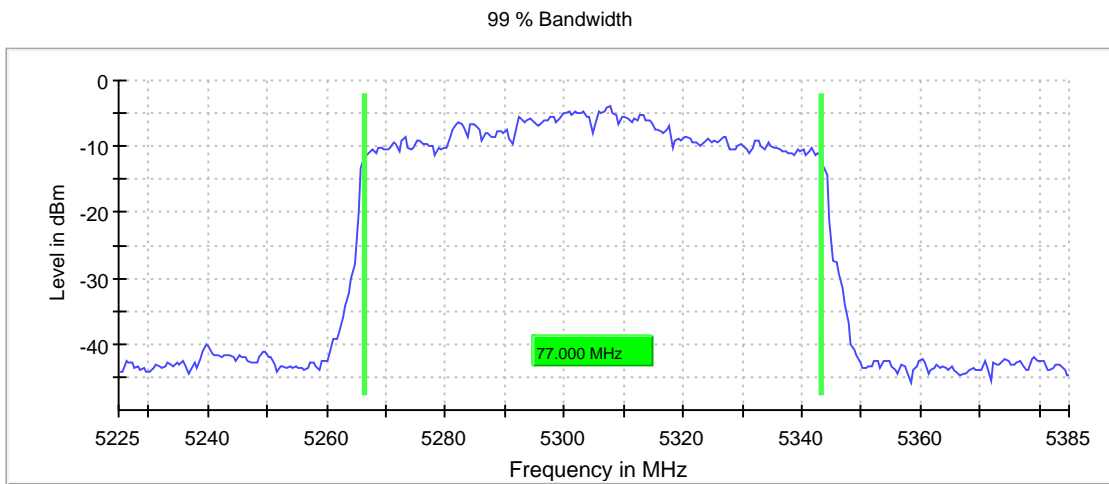
Customized settings.

## 99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5305.000000	77.000000	---	---	5266.250000	5343.250000

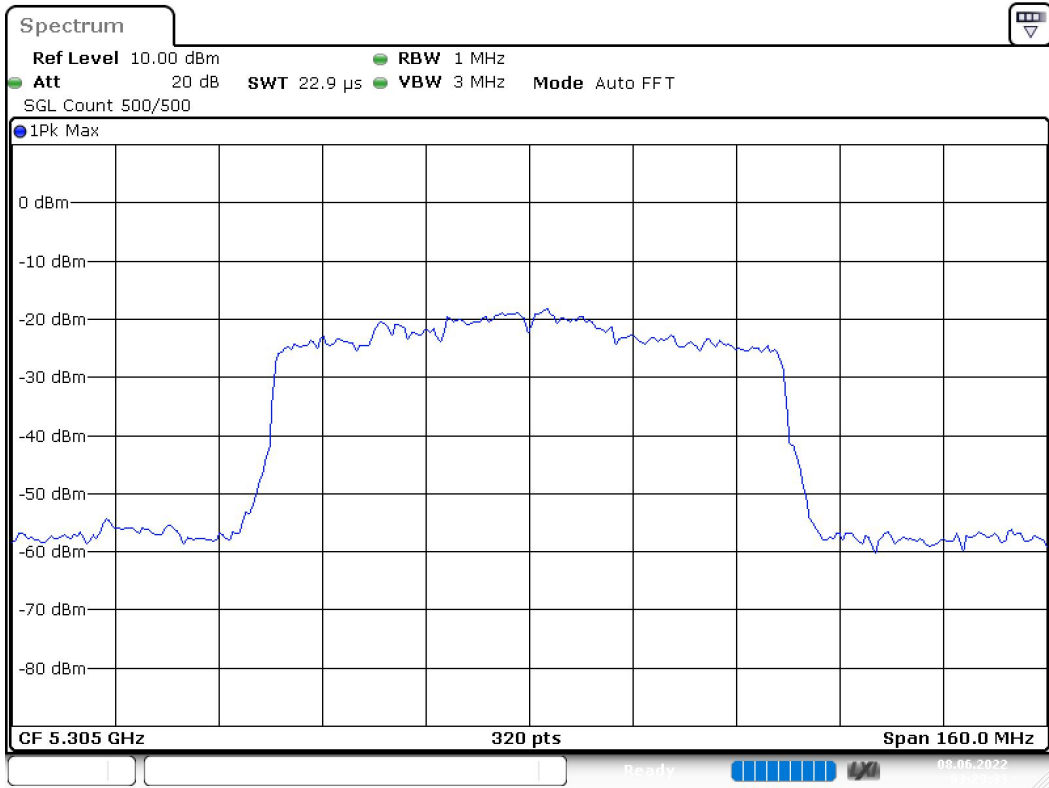
(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5305.000000	PASS



Bandwidth





Date: 8.JUN.2022 03:29:34

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

Customized settings.

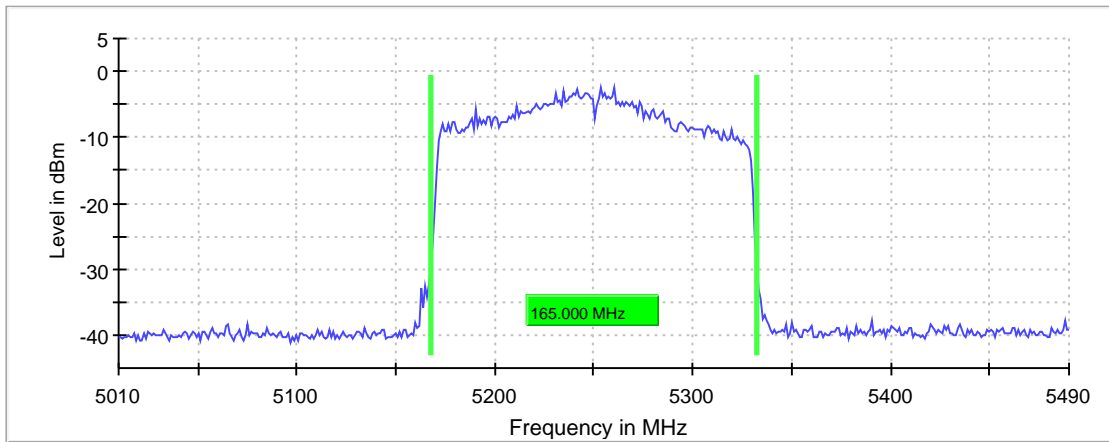
## 26 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5250.000000	165.000000	---	---	5167.500000	5332.500000

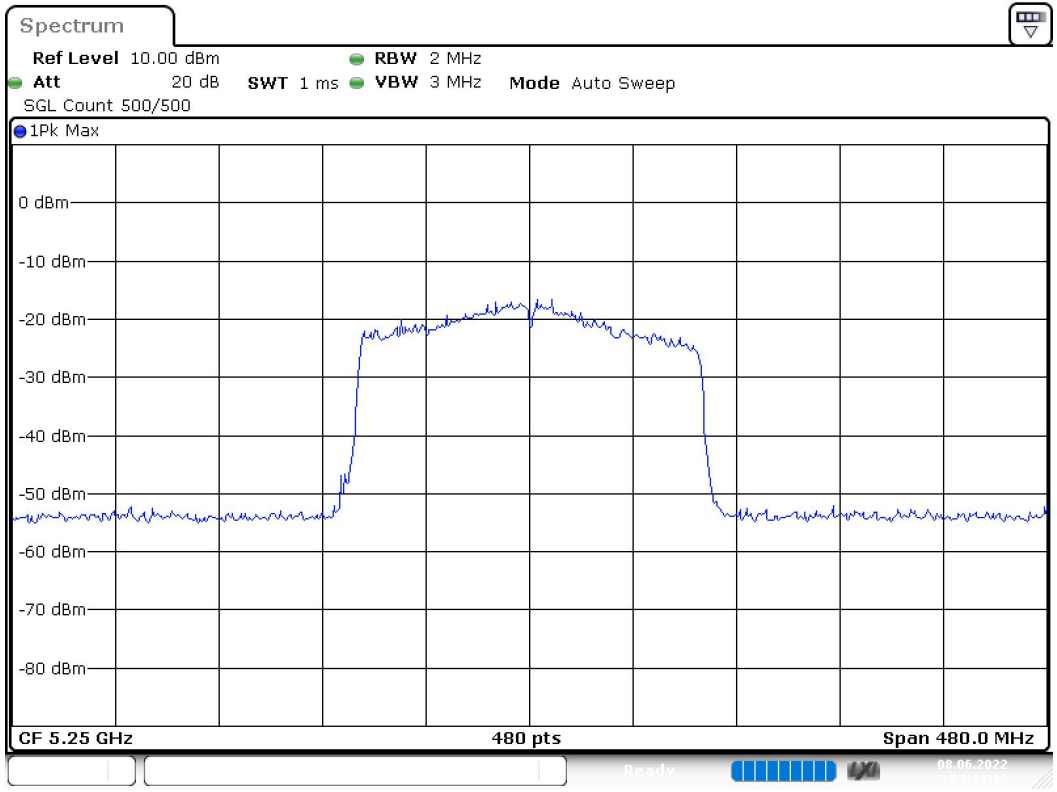
(continuation of the "26 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
5250.000000	-2.4	PASS

26 dB Bandwidth



Bandwidth



Date: 8.JUN.2022 03:31:16

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

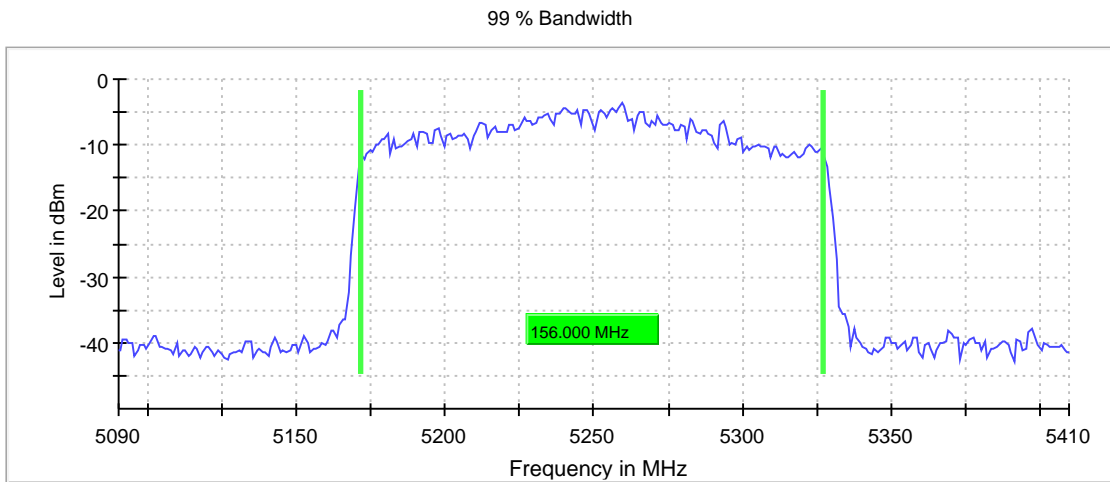
Customized settings.

## 99 % Bandwidth

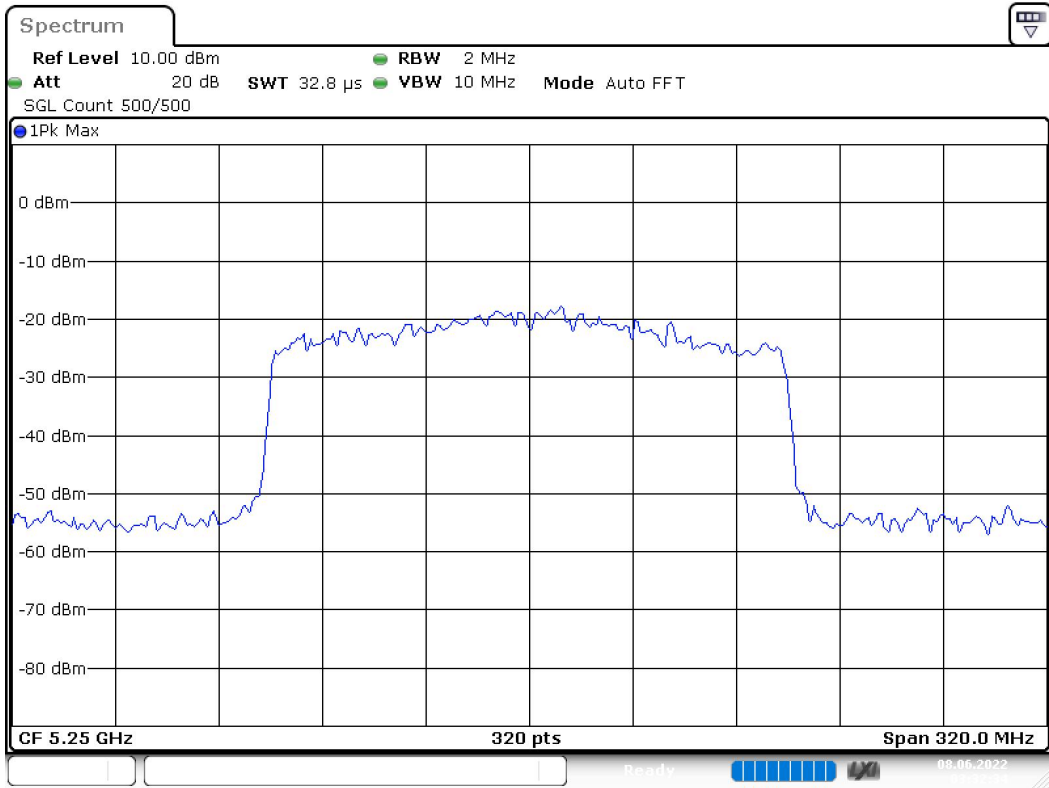
DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
5250.000000	156.000000	---	---	5171.500000	5327.500000

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
5250.000000	PASS



Bandwidth



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